Jaw

In This Section:

- L Type
- LC Type
- Al Type - Aluminum
- SS Type - Stainless
- RRS and RRSC Types - Spacer
- C and H Type - Medium / Heavy Duty
- RRC Type - Spacer



Jaw

Safety Warning

When using Lovejoy products, you must follow these instructions and take the following precautions. Failure to do so may cause the power transmission product to break and parts to be thrown with sufficient force to cause severe injury or death.

Refer to this Lovejoy Catalog for proper selection, sizing, horsepower, torque range, and speed range of power transmission products, including elastomeric elements for couplings. Follow the installation instructions included with the product, and in the individual product catalogs for proper installation of power transmission products. Do not exceed catalog ratings.

During start up and operation of power transmission product, avoid sudden shock loads. Coupling assembly should operate quietly and smoothly. If coupling assembly vibrates or makes beating sound, shut down immediately, and recheck alignment. Shortly after initial operation and periodically thereafter, where applicable, inspect coupling assembly for: alignment, wear of elastomeric element, bolt torques, and flexing elements for signs of fatigue. Do not operate coupling assembly if alignment is improper, or where applicable, if elastomeric element is damaged, or worn to less than 75% of its original thickness.

Do not use any of these power transmission products for elevators, man lifts, or other devices that carry people. If the power transmission product fails, the lift device could fall resulting in severe injury or death.

For all power transmission products, you must install suitable guards in accordance with OSHA and American Society of Mechanical Engineers Standards. Do not start power transmission product before suitable guards are in place. Failure to properly guard these products may result in severe injury or death from personnel contacting moving parts or from parts being thrown from assembly in the event the power transmission product fails.

If you have any questions, contact the Lovejoy Engineering Department at 1-630-852-0500.

Jaw

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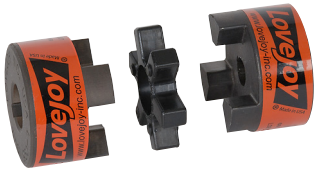
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Jaw Type Couplings

The Jaw Type couplings from Lovejoy are offered in the industry's largest variety of stock bore/keyway combinations. These couplings require no lubrication and provide highly reliable service for light, medium, and heavy duty electrical motor and internal combustion power transmission applications.

Features

- Fail-safe – will still perform if elastomer fails
- No metal to metal contact
- Resistant to oil, dirt, sand, moisture and grease
- More than 850,000 combinations of bore sizes
- Most types available from stock in 24 hours



L Type



LC Type

Applications include power transmission to industrial equipment such as pumps, gear boxes, compressors, blowers, mixers, and conveyors. Lovejoy's Jaw Type couplings are available in 24 sizes from a minimum torque rating of 3.5 in–lbs to a maximum torque rating of 170,004 in–lbs and a bore range of .125 inches to 7 inches. Lovejoy's standard bore program covers AGMA, SAE, and DIN bore/keyway and spline bore combinations.

The Lovejoy Jaw Type coupling is available in a variety of metal hub and insert materials. Hubs are offered in sintered metal, aluminum, bronze, steel, stainless steel, and ductile iron.



AL Type Jaw



SS Type

L Type

- Coupling offers standard shaft-to-shaft connection for general industrial duty applications
- Standard L Type coupling hub materials are either sintered iron (L035-L190) or cast iron (L225-L276)

LC Type

- Uses the standard L Type hubs with a snap wrap spider and retaining ring
- Suited for applications over 1,750 RPM

AL Type

- Aluminum hubs offer light weight with low overhung load and low inertia
- Excellent resistance to atmospheric conditions, perfect for corrosive environment applications



RRS Type

SS Type

- The SS Type coupling provides maximum protection against harsh environmental conditions
- Sizes SS075-SS150 available from stock, other sizes available on request

RRS Type

- Center "drop out" section of this coupling provides proper shaft separation, while also allowing easy elastomer installation without disturbing the hubs or requiring the realignment of shafts
- Accommodates American and European industry standard pump/motor shaft separations
- The spacer is made of glass reinforced plastic, cast iron, or aluminum



SW Type



C & H Types

SW Type

- Standard L Type coupling with a snap wrap elastomer with retaining ring
- Well suited for standard shaft to shaft connection in general industrial purpose applications under 1,750 RPM

C & H Types

- Couplings provide standard shaft-to-shaft connection for medium (C) and Heavy (H) duty range applications
- Standard C coupling hub is made of cast iron, while the H is constructed of ductile iron

Elastomers In Compression

Lovejoy offers four types of elastomer designs to allow for additional flexibility in addressing specific application requirements. One piece designs are used in the "L" and "AL" models (referred to as spiders) and multiple part "load cushions" are used in the "C" and "H" model couplings. The load cushions are in sets of 6 to 14 pieces depending on coupling size.

Solid Center Spider

- The solid center design is commonly used design when shafts of the driver and driven equipment can be kept separate by a standard gap

Open Center Spider

- The open center design allows for the shafts of the driver and driven to be positioned within a short distance
- Open center spiders offer shaft positioning flexibility but have a lower RPM capacity (1,750 RPM maximum for NBR, 3,600 maximum for Urethane/Hytrel®)

Cushions

- Used exclusively for the C and H Type couplings
- Load cushions are held in place radially by a steel collar which is attached to one of the hubs

Snap Wrap Flexible Spider

- Design allows for easy removal of the spider without moving the hubs
- Allows for close shaft separation all the way up to the hubs maximum bore
- Maximum RPM is 1,750 RPM with the retaining ring, but if used with the LC Type (with collar) the normal RPM rating of the coupling applies
- Style is available in NBR and Urethane only, and in limited sizes

Note: ■ Complete technical data for the new Jaw In-Shear elastomer is contained in the next section of this catalog, labeled "JIS" on the page tabs.



Spider Materials

SOX (NBR) Rubber

- The standard material that is highly flexible material that is oil resistant
- Resembles natural rubber in resilience and elasticity, and operates effectively in temperature ranges of -40° to 212° F (-40° to 100° C)

Urethane

- Has 1.5 times greater torque capacity than NBR
- Good resistance to oil and chemicals
- Material provides less dampening effect and operates at a temperature range of -30° to 160° F

Hytrel

- Flexible elastomer designed for high torque and high temperature operations
- Operates in temperatures of -60° to 250° F (-51° to 121° C)

Bronze

- Rigid, porous, oil-impregnated metal insert exclusively for low speed (max 250 RPM) applications requiring high torque capabilities
- Not affected by water, oil, dirt, or extreme temperatures – operates in temperatures of -40° to 450° F (-40° to 232° C)

WARNING

You must refer to page JW-2 (Page 14) for Important Safety Instructions and Precautions for the selection and use of these products. Failure to follow the instructions and precautions can result in severe injury or death.

Jaw Type Coupling Selection Process

The selection process for determining the proper jaw coupling size and elastomer requires using the charts shown on the following pages. There are three components to be selected, two hubs and one elastomer. When the shaft size of the driver and driven of the application are of the same diameter, the hubs selected will be the same. When shaft diameters differ, hubs selected will differ accordingly.

Information necessary before a coupling can be selected:

- HP (or KW) and RPM or Torque of driver
- Shaft sizes of driver and driven equipment and corresponding keyways
- Application description
- Environmental conditions (i.e. extreme temperature, corrosive conditions, space limitations)

List of Charts provided for Selection:

- Chart 1 – Application Service Factors (page JW-8)
- Chart 2 – Spider Performance Data (page JW-9)
- Chart 3 – Jaw Nominal Rated Torque (page JW-9)
- Jaw Type Performance Ratings (page JW-22)

Formulas:

$$\text{Nominal Torque} = \text{in-lb} = \frac{(HP \times 63025)}{RPM}$$

$$\text{Nm} = \frac{(KW \times 9550)}{RPM}$$

Design Torque = Nominal Torque x Application Service Factor

Steps In Selecting A Jaw Coupling

Step 1: Determine the Nominal Torque of your application by using the following formula:

$$\text{Nominal Torque} = \text{in-lb} = \frac{(HP \times 63025)}{RPM}$$

$$\text{Nm} = \frac{(KW \times 9550)}{RPM}$$

Step 2: Using the Application Service Factors Chart 1 (page JW-8) select the service factor which best corresponds to your application.

Step 3: Calculate the Design Torque of your application by multiplying the Nominal Torque calculated in Step 1 by the Application Service Factor determined in Step 2.

Design Torque = Nominal Torque x Application Service Factor

Step 4: Using the Spider Performance Data Chart 2 (page JW-9), select the elastomer material which best corresponds to your application.

Step 5: Using the Jaw Nominal Rated Torque Chart 3 (page JW-9), locate the appropriate elastomer material column for the elastomer selected in Step 4.

Scan down this column to the first entry where the Torque Value in the appropriate column is greater than or equal to the Design Torque calculated in Step 3.

Once this value is located, refer to the corresponding coupling size in the first column of the Jaw Nominal Rated Torque Chart 3 (page JW-9).

Refer to the maximum RPM value (page JW-22) for this elastomer torque capability to ensure that the application requirements are met. If the requirement is not satisfied at this point, another type of coupling may be required for the application. Please consult Lovejoy engineering for assistance.

Step 6: Compare the application driver/driven shaft sizes to the maximum bore size available on the coupling selected. If coupling bore size is not large enough for the shaft diameter, select the next largest coupling that will accommodate the driver/driven shaft diameters. Refer to Chart 3 (page JW-9).

Step 7: Using the UPC number selection table (pages JW-11 or JW-12), find the appropriate Bore and Keyway sizes required and locate the Lovejoy UPC number.

Selection Example

A coupling is needed to connect a 20 HP standard electric motor rated at 1,800 RPM to a rotary pump. The shaft size of the electric motor (driver) is 2.0 inches and the pump (driven) is 1.75 inches. There are no special environmental conditions and the general operating temperature is normal room temperature of 72° F. Less than 1° of misalignment is expected.

Step 1: Determine the Nominal Torque:

$$\text{Nominal Torque} = \frac{(HP \times 63025)}{RPM}$$

$$= \frac{(20 \times 63025)}{1800}$$

$$= 700.28 \text{ in-lb}$$

Step 2: Using the Application Service Factors Chart 1 (page JW-8), select the service factor which best corresponds to your application. The Application Service Factor for an electric motor with standard torque driving a rotary pump is 1.25. The value of 1.25 is found under the application category Pumps, Rotary, column: Electric Motor w/Standard Torque in Chart 1.

Step 3: Calculate the Design Torque of your application:

Design Torque = Nominal Torque x Application Service Factor
= 700.28 x 1.25
= 875.35 in-lb

Step 4: Using the Spider Performance Data Chart 2 (page JW-9), select the elastomer material which best corresponds to your application. Since there are no special environmental conditions, the operating temperature is 72° F and less than 1° of angular misalignment is required, the NBR elastomer material is selected.

Step 5: Using the Jaw Nominal Rated Torque Chart 3 (page JW-9), the NBR elastomer column is used to determine the proper coupling size. Scanning down the NBR column, the first entry to accommodate the Design Torque value of 875.35 in-lb is the size L150 with a nominal torque rating of 1,240 in-lb. Referring to page JW-20, the maximum RPM of 1,800 on the electric motor of the application does not exceed the 5,000 RPM maximum allowed for the L150 size coupling with an NBR elastomer.

Step 6: Compare the application driver/driven shaft size to the maximum bore available in the coupling selected (page JW-9). The electric motor (driver) of this application has a shaft size of 2.0 inches and the pump (driven) has a shaft size of 1.75 inches. The L150 coupling has a maximum bore less than the driver shaft size. Continuing down the Maximum Bore column, in Chart 3 (page JW-9), the L190 size is found to have a maximum bore size of 2.125 and is able to accommodate the driver/driven shaft sizes. Therefore, the proper coupling size for this application is a Lovejoy L190 with an NBR elastomer.

Step 7: Using the UPC number Selection table, locate the appropriate Lovejoy UPC numbers. The L Type Spider Table (page JW-10), and the L Type hub table (page JW-11), provides easy reference to the Lovejoy UPC numbers.

Locate the L Type Spider Table (page JW-10).

The spider is selected by scanning down the type column and locating the NBR (Solid) entry. Read across to the L190 column and locate the Lovejoy UPC number of 12274. This number should be prefixed with the Lovejoy UPC number of 685144.

Locate the L Type Hub Table (page JW-11).

The first bore size to be located is for the 2 inch shaft on the electric motor. Scan down the Bore/Keyway column to the 2 inch bore entry. Read across to the L190 column to locate the Lovejoy UPC number of 12303. This number should be prefixed with the Lovejoy UPC number of 685144.

The second bore size to be located is for the 1.75 inch shaft on the pump. Scan down the Bore/Keyway column to the 1-3/4 inch bore entry. Read across to the L190 column to locate the Lovejoy UPC number of 12299. This number should be prefixed with the Lovejoy UPC number of 685144.

Application Service Factors

Chart 1

	Service Factors				
	Electric Motor w/ Standard Torque	Electric Motor w/ High Torque	Steam Turbines & Engines w/4 or more cyl*	Reciprocating Engines*	
				1-Cyl	2-Cyl
Agitators	1.00	1.25	1.00	1.7	1.3
Band Resaw (lumber)	1.50	1.75	1.50	2.2	1.8
Barge Haul Puller	2.00	2.25	2.00	2.7	2.3
Beaters	1.50	1.75	1.50	2.2	1.8
Blowers					
Centrifugal	1.00	1.25	1.00	1.7	1.3
Lobe, Vane	1.25	1.50	1.25	2.0	1.6
Bottling Machinery	1.25	1.50	1.25	2.0	1.6
Brew Kettles (distilling)	1.25	1.50	1.25	2.0	1.6
Can Filling Machinery	1.00	1.25	1.00	1.7	1.3
Car Dumpers	2.50	2.75	2.50	3.2	2.8
Car Pullers	1.50	1.75	1.50	2.2	1.8
Card Machine	1.75	2.00	1.75	2.5	2.0
Chiller (oil)	1.50	2.00	1.25	2.0	2.0
Compressors					
Centrifugal	1.00	1.25	1.00	1.7	1.3
Screw, Lobe	1.25	1.50	1.25	2.0	1.6
Reciprocating	See Note				
Conveyors, Uniformly Fed					
Assembly, Belt, Screw	1.00	1.25	1.00	1.7	1.3
Bucket, Sawdust	1.25	1.50	1.25	2.0	1.6
Live Roll, Shaker, Reciprocating	3.00	3.25	3.00	3.7	3.3
Conveyors, Not Uniformly Fed					
Assembly, Belt, Oven, Screw	1.20	1.45	1.20	1.9	1.5
Reciprocating	2.50	2.75	2.50	3.2	2.8
Shaker	3.00	3.25	3.00	3.7	3.3
Cookers—Brewing, Distilling, Food	1.25	1.50	1.25	2.0	1.6
Cranes & Hoist[1]	2.00	2.25	2.00	2.7	2.3
Crushers—Cane (sugar), Stone, or Ore	3.00	3.25	3.00	3.7	3.3
Dredges					
Cable reels	2.00	2.25	2.00	2.7	2.3
Conveyors, Pumps, Maneuvering Winches	1.50	1.75	1.50	2.2	1.8
Cutter Head Drives	2.50	2.75	2.50	3.2	2.8
Dynamometer	1.50	1.75	1.50	2.2	1.8
Evaporators	1.00	1.25	1.00	1.7	1.3
Fans					
Centrifugal	1.00	1.25	1.00	1.7	1.3
Cooling Towers	2.00	2.25	2.00	2.7	2.3
Forced Draft, Propeller	1.50	1.75	1.50	2.2	1.8
Induced draft w/damper control	2.00	2.25	2.00	2.7	2.3
Induced draft w/o damper control	1.25	1.50	1.25	2.0	1.6
Feeders					
Belt, Screw	1.00	1.25	1.00	1.7	1.3
Reciprocating	2.50	2.75	2.50	3.2	2.8
Filter, Press-oil	1.50	1.75	1.50	2.2	1.8
Generators					
Not Welding	1.00	1.25	1.00	1.7	1.3
Welding	2.00	2.25	2.00	2.7	2.3
Hoist	1.50	1.75	1.50	2.2	1.8
Hammermills	2.00	2.25	2.00	2.7	2.3
Kilns	1.50	1.75	1.50	2.2	1.8
Laundry Washers —					
Reversing	2.00	2.25	2.00	2.7	2.3
Lumber Machinery					
Barkers, Edger Feeder, Live Roll	2.00	2.25	2.00	2.7	2.3
Planer, Slab Conveyor	2.00	2.25	2.00	2.7	2.3
Machine Tools					
Punch Press-gear Driven, Plate Planer	2.00	2.25	2.00	2.7	2.3
Tapping Machinery, Bending Roll	2.00	2.25	2.00	2.7	2.3
Main Drive	1.50	1.75	1.50	2.2	1.8
Auxiliary Drives	1.00	1.25	1.00	1.7	1.3
Metal Forming Machines					
Draw Bench-carriage & Main Drive	2.00	2.25	2.00	2.7	2.3
Extruder, Forming Machine, Wire Drawing	2.00	2.25	2.00	2.7	2.3
Table Conveyors	2.50	2.75	2.50	3.2	2.8
Wire Winding, Coilers, Slitters	1.50	1.75	1.50	2.2	1.8
Mills, Rotary Type					
Ball, Kilns, Pebble, Rolling, Tube	2.00	2.25	2.00	2.7	2.3
Cement Kilns, Dryers, Coolers	2.00	2.25	2.00	2.7	2.3
Tumbling	1.50	1.75	1.50	2.2	1.8
Mixers					
Concrete, continuous	1.75	2.00	1.75	2.5	2.0
Muller	1.50	1.75	1.50	2.2	1.8
Paper Mills					
Agitator (mixers), Reel, Winder	1.20	1.45	1.20	1.9	1.5
Winder	1.20	1.45	1.20	1.9	1.5
Barker (mechanical), Log Haul, Chipper	2.00	2.25	2.00	2.7	2.3
Barking Drum (spur gear)	2.50	2.75	2.50	3.2	2.8
Beater, Pulper, Jordans, Dresses	2.00	2.25	2.00	2.7	2.3
Calenders, Dryers, Washers, Thickener	1.50	1.75	1.50	2.2	1.8
Converting Machines, Conveyors	1.20	1.45	1.20	1.9	1.5
Printing Presses	1.50	1.75	1.50	1.7	1.3
Pug Mill	1.75	2.00	1.75	2.0	1.6
Pumps					
Centrifugal	1.00	1.25	1.00	1.7	1.3
Gear, Rotary, Vane	1.25	1.50	1.25	2.0	1.6
Reciprocating:					
1–Cyl. Single or Double Acting	2.00	2.25	2.00	2.7	2.3
2–Cyl. Single Acting	2.00	2.25	2.00	2.7	2.3
2–Cyl. Double Acting	1.75	2.00	1.75	2.5	2.0
3 or more Cyl.	1.50	1.75	1.50	2.2	1.8
Rubber Machinery					
Mixers	2.50	2.75	2.50	3.2	2.8
Rubber Calender	2.00	2.25	2.00	2.7	2.3
Screens					
Air washing, Water	1.00	1.25	1.00	1.7	1.3
Rotary—stone or gravel, Dewatering	1.50	1.75	1.50	2.2	1.8
Vibrating	2.50	2.75	2.50	3.2	2.8
Grizzly	2.00	2.25	2.00	2.7	2.3
Shredders	1.50	1.75	1.50	2.2	1.8
Steering Gears	1.00	1.25	1.00	1.7	1.3
Stokers	1.00	1.25	1.00	1.7	1.3
Suction Roll (paper)	1.50	1.75	1.50	2.2	1.8
Textile Machinery					
Dryers, Dyeing Machinery, Mangle	1.20	1.45	1.20	2.0	1.6
Loom, Spinner, Tenter frames	1.50	1.75	1.50	2.2	1.8
Tumbling Barrels	1.75	2.00	1.75	2.5	2.0
Windlass	2.00	2.25	2.00	2.7	2.3
Woodworking Mach.	1.00	1.25	1.00	1.7	1.3

Caution: Applications involving reciprocating engines and reciprocating driven devices are subject to critical rotational speeds which may damage the coupling and/or connected equipment. Contact Lovejoy Engineering with specific requirements.

Note: ■ 1 indicates: If people are transported, Lovejoy does not recommend and will not warranty the use of the coupling.

Spider Performance Data

Chart 2

Characteristics	Temperature Range	Misalignment		Shore Hardness[1]	Dampening Capacity	Chemical Resistance[2]	Color
		Angular Degree	Parallel Inch				
SOX (NBR) Rubber – Nitrile Butadiene (Buna N) Rubber is a flexible elastomer material that is oil resistant, resembles natural rubber in resilience and elasticity and operates effectively in temperature range of -40° to 212° F (-40° to 100° C). Good resistance to oil. Standard elastomer. (Also applies to SXB Cushions.)	-40° to 212° F -40° to 100° C	1°	.015	80A	HIGH	GOOD	BLACK
URETHANE – Urethane has greater torque capability than NBR (1.5 times), provides less dampening effect, and operates at a temperature range of -30° to 160° F (-34° to 71° C). Good resistance to oil and chemicals. Not recommended for cyclic or start/stop applications.	-30° to 160° F -34° to 71° C	1°	.015	55D L050-L110 90-95A L150-L225	LOW	VERY GOOD	BLUE
HYTREL® – Hytrel is a flexible elastomer designed for high torque and high temperature operations. Hytrel can operate in temperatures of -60° to 250° F (-51° to 121° C) and has an excellent resistance to oil and chemicals. Not recommended for cyclic or start/stop applications.	-60° to 250° F -51° to 121° C	1/2°	.015	55D	LOW	EXCELLENT	TAN
BRONZE – Bronze is a rigid, porous oil-impregnated metal insert exclusively for slow speed (maximum 250 RPM) applications requiring high torque capabilities. Bronze operations are not affected by extreme temperatures, water, oil, or dirt.	-40° to 450° F -40° to 232° C	1/2°	.010	—	NONE	EXCELLENT	BRONZE

Notes: ■ 1 indicates: NBR standard shore hardness is 80A ±5A – Except L035=60A. Other softer or harder designs are available in NBR material; consult Lovejoy.
■ 2 indicates: Chemical Resistance chart shown in Engineering Data Section (page ED-9).

Jaw Nominal Rated Torque Data

Chart 3

Size	Max Bore		Spider Material							
			SOX (NBR) Torque		Urethane Torque		Hytrel Torque		Bronze Torque	
	in	mm	in-lbs	Nm	in-lbs	Nm	in-lbs	Nm	in-lbs	Nm
L035	0.375	9	3.5	0.4	—	—	—	—	—	—
L/AL050	0.625	16	26.3	3.0	39	4.5	50	5.60	50	5.60
L/AL070	0.750	19	43.2	4.9	65	7.3	114	12.90	114	12.90
L/AL075	0.875	22	90.0	10.2	135	15.3	227	25.60	227	25.60
L/AL090	1.000	25	144.0	16.3	216	24.4	401	45.30	401	45.30
L/AL095	1.125	28	194.0	21.9	291	32.9	561	63.40	561	63.40
L/AL099	1.188	30	318.0	35.9	477	53.9	792	89.50	792	89.50
L/AL100	1.375	35	417.0	47.1	626	70.7	1,134	128.00	1,134	128.00
L/AL110	1.625	42	792.0	89.5	1,188	134.0	2,268	256.00	2,268	256.00
L150	1.875	48	1,240.0	140.0	1,860	210.0	3,708	419.00	3,706	419.00
AL150	1.875	48	1,450.0	163.8	—	—	—	—	—	—
L190	2.125	55	1,728.0	195.0	2,592	293.0	4,680	529.00	4,680	529.00
L225	2.625	65	2,340.0	264.0	3,510	397.0	6,228	704.00	6,228	704.00
L276	2.875	73	4,716.0	533.0	—	—	—	—	12,500	1 412.00
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C280	3.000	76	7,560.0	854.0	—	—	13,866	1 567.00	—	—
C285	4.000	102	9,182.0	1 038.0	—	—	16,680	1 882.00	—	—
C295	3.500	89	11,340.0	1 281.0	—	—	22,680	2 563.00	22,680	2 563.00
C2955	4.000	102	18,900.0	2 136.0	—	—	37,800	4 271.00	37,800	4 271.00
H3067	4.500	114	33,395.0	3 774.0	—	—	47,196	5 333.00	47,196	5 333.00
H3567	5.000	127	46,632.0	5 269.0	—	—	63,000	7 119.00	63,000	7 119.00
H3667	5.629	143	64,812.0	7 323.0	—	—	88,200	9 966.00	88,200	9 966.00
H4067	6.250	159	88,224.0	9 969.0	—	—	126,000	14 237.00	126,000	14 237.00
H4567	7.000	178	119,700.0	13 525.0	—	—	170,000	19 209.00	170,000	19 209.00

Note: ■ Bronze has a maximum RPM capability of 250 RPM.

L Type Coupling

- Sizes range from L035 to L276
- Ordering requires selecting UPC numbers for two standard L hubs and one standard open or solid center elastomer (spider)

SW Type Coupling

- Sizes range from L090 to L190
- Ordering requires selecting UPC numbers for two standard L hubs and one snap wrap spider with snap ring
- Both L and SW Type couplings, select hubs from the standard bore and keyway chart (pages JW-11 and JW-12) maximum RPM for SW + Ring is 1,750 RPM
- LC coupling uses a snap wrap spider with a collar instead of a retaining ring



Jaw In-Shear Coupling

- Ordering requires selecting item numbers for two standard hubs, one In-Shear elastomer and one In-Shear ring. See pages JIS-1 through JIS-4

L Type Spider UPC Number Selection Table

Spider Type	Coupling Size										
	L035	L050	L070	L075	L090/095	L099/100	L110	L150	L190	L225	L276
SOX (NBR) (Solid)	10118	10194	10406	10621	11070	11494	11724	12001	12274	12409	—
SOX (NBR) (open center)	—	—	10393	10620	10968	11492	11711	37880	37881	12406	12612
Urethane (Solid)	—	37786	10395	—	—	—	—	—	—	12417	—
Urethane (open center)	—	—	10411	10626	11075	11499	11729	12006	12280	—	—
Hytrel® (Solid)	—	25307	—	—	—	—	11717	11993	12265	12401	—
Hytrel® (open center)	—	—	25308	25309	25310	11486	38097	38098	38099	12400	—
Bronze (open center)	—	10198	10409	10624	11073	11497	11727	12004	12277	34517	25767
Snap Wrap (NBR) w/ring	—	—	—	—	24669	24670	24671	24672	24673	—	—
Snap Wrap (NBR) w/o ring	—	—	—	—	11071	11495	11725	12002	12275	—	—
SOX (NBR) Bulk - pk 25	50115	50116	50117	50118	50119	—	—	—	—	—	—
SOX (NBR) Bulk - pk 10	—	—	—	—	—	51020	50121	50122	—	—	—
Snap Wrap Urethane - solid ring	—	—	—	—	—	41170	41171	—	28284	26093	—
In-Shear Elastomer	—	—	—	—	67576	67577	67578	67579	67580	68559	67581
In-Shear Ring	—	—	—	—	67584	67585	67586	67587	67588	68560	67589

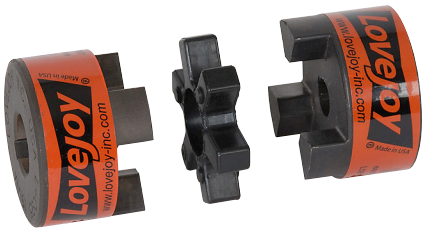
Note: ■ When referencing the Lovejoy UPC number in this table, include 685144 as a prefix to the number shown.

L Type Hub - Spline Bore UPC Number Selection Table

Teeth	Pitch	SAE	Spline Bore Diameters		Major	Coupling Size								
			Major	Minor	Dia	L090	L095	L099	L100	L110	L150	L190	L225	L276
9	16/32	A	0.651	0.509	0.625	38568	37900	38571	37904	—	—	—	—	—
11	16/32		0.776	0.631	0.750	38569	37901	38572	37905	37909	37917	37925	—	—
13	16/32	B	0.901	0.754	0.875	38570	37902	38573	37906	37910	37918	37926	37935	—
13	8/16	D, E	1.798	1.506	1.750	—	—	—	—	37915	37923	37931	37940	38576
14	12/24	C	1.289	1.087	1.250	—	—	—	—	37912	37920	37928	37937	38577
15	16/32	BB	1.026	0.877	1.000	—	—	38574	37907	37911	37919	37927	37936	38578
21	16/32		1.401	1.250	1.375	—	—	—	—	37913	37921	37929	37938	—
23	16/32		1.526	1.375	1.500	—	—	—	—	37914	37922	37930	37939	—
27	16/32		1.776	1.625	1.750	—	—	—	—	37916	37924	37932	37941	38579
15	8/16	F	2.048	1.753	2.000	—	—	—	—	—	—	37933	37942	—

Notes:
- ■ All pressure angles on above splines = 30°. Class 5 fit is standard, unless otherwise specified.
- ■ All stock spline bore hubs are supplied standard with Lovejoy's exclusive L-LOC Clamping Feature. See page T-7 for description.
- ■ When referencing the Lovejoy UPC number in this table, include 685144 as a prefix to the number shown.

The L Type coupling consists of two standard L Type hubs and one spider. Refer to pages JW-11, JW-12, and JW-10.



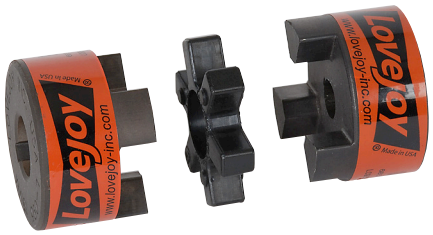


Bore	Keyway	L035	L050	L070	L075	L090	L095	L099	L100	L110	L150	L190	L225	L276
1/8	No Keyway	10124	—	—	—	—	—	—	—	—	—	—	—	—
3/16	No Keyway	10126	—	—	—	—	—	—	—	—	—	—	—	—
1/4	No Keyway	10127	10206	10416	10680	10766	—	—	—	—	—	—	—	—
1/4	1/8 x 1/16	—	—	—	35744	—	—	—	—	—	—	—	—	—
5/16	No Keyway	10128	10207	10417	10681	26209	—	—	—	—	—	—	—	—
3/8	No Keyway	24687	10208	10418	10682	10767	—	—	—	—	—	—	—	—
3/8	3/32 x 3/64	—	46121	41985	37234	37235	—	—	—	—	—	—	—	—
3/8	1/8 x 1/16	—	44136	48829	35745	37236	—	—	—	—	—	—	—	—
7/16	No Keyway	—	10209	10419	10683	10768	11082	31297	11505	—	—	—	—	—
7/16	3/32 x 3/64	—	44713	44007	28089	28877	27613	38198	37237	—	—	—	—	—
7/16	1/8 x 1/16	—	—	44066	28875	28878	28879	38199	37238	—	—	—	—	—
1/2	No Keyway	—	10210	10420	10684	10769	11083	11333	11506	—	—	—	—	—
1/2	1/8 x 1/16	—	10211	10421	10685	26087	26088	11334	26089	—	—	—	—	—
9/16	No Keyway	—	10212	52338	10686	24976	37239	11335	11508	—	—	—	—	—
9/16	1/8 x 1/16	—	10213	10423	10687	28876	11084	38200	11509	—	—	—	—	—
5/8	No Keyway	—	10214	24771	44322	46052	41911	44174	44291	11733	12101	—	—	—
5/8	5/32 x 5/64	—	—	51104	37240	37241	37242	38201	37243	37244	37245	—	—	—
5/8	3/16 x 3/32	—	—	10424	10688	10771	11085	11336	11510	26211	26212	—	—	—
11/16	3/16 x 3/32	—	—	10425	10689	10772	11086	11337	11511	11734	12102	—	—	—
3/4	No Keyway	—	—	46116	56140	54282	56887	49705	45212	—	—	12285	12422	—
3/4	1/8 x 1/16	—	—	51719	35881	37246	37074	38202	37247	37248	37249	37250	—	—
3/4	3/16 x 3/32	—	—	10426	10690	10773	11087	11338	11512	11735	12103	38468	35882	—
13/16	3/16 x 3/32	—	—	—	10691	10774	11088	11339	11513	11736	12104	37252	37255	—
7/8	No Keyway	—	—	—	56941	—	—	59063	—	—	—	—	—	12582
7/8	3/16 x 3/32	—	—	—	10692	10775	11089	11340	11514	11737	12105	12286	12423	12585
7/8	1/4 x 1/8	—	—	—	—	38188	35747	38203	35686	35749	35750	37256	35753	54883
15/16	1/4 x 1/8	—	—	—	—	32332	11090	11341	11515	11738	12160	12287	12424	—
1	1/4 x 1/8	—	—	—	—	31296	11091	11342	11516	11739	12107	12288	12425	12586
1	3/16 x 3/32	—	—	—	—	37257	37258	38204	37259	37260	37261	37262	37263	—
1-1/16	1/4 x 1/8	—	—	—	—	—	11092	11343	11517	11740	12108	12289	12426	—
1-1/8	1/4 x 1/8	—	—	—	—	—	11093	11344	11518	11741	12109	12290	12427	12587
1-3/16	1/4 x 1/8	—	—	—	—	—	—	11345	11519	11742	12110	12291	12428	—
1-1/4	1/4 x 1/8	—	—	—	—	—	—	—	11520	11743	12111	12292	12429	12588
1-1/4	5/16 x 5/32	—	—	—	—	—	—	—	35748	35752	35751	37294	35754	12589
1-5/16	5/16 x 5/32	—	—	—	—	—	—	—	11521	11744	12112	12293	26090	—
1-3/8	5/16 x 5/32	—	—	—	—	—	—	—	11522	11745	12113	12294	12430	12590
1-3/8	3/8 x 3/16	—	—	—	—	—	—	—	44348	37265	37266	37267	37568	46758
1-7/16	3/8 x 3/16	—	—	—	—	—	—	—	—	11746	12114	12295	12431	12591
1-1/2	5/16 x 5/32	—	—	—	—	—	—	—	—	37269	37270	37271	37272	—
1-1/2	3/8 x 3/16	—	—	—	—	—	—	—	—	11747	12115	12296	12432	12592
1-9/16	3/8 x 3/16	—	—	—	—	—	—	—	—	11748	12116	37273	12433	45689
1-5/8	3/8 x 3/16	—	—	—	—	—	—	—	—	11749	12117	12297	12434	12593
1-11/16	3/8 x 3/16	—	—	—	—	—	—	—	—	—	12118	12298	12435	60057
1-3/4	3/8 x 3/16	—	—	—	—	—	—	—	—	—	12119	12299	13436	12594
1-3/4	7/16 x 7/32	—	—	—	—	—	—	—	—	—	37274	37275	37276	48250
1-13/16	1/2 x 1/4	—	—	—	—	—	—	—	—	—	12120	12300	26091	—
1-7/8	1/2 x 1/4	—	—	—	—	—	—	—	—	—	12121	12301	12437	12595
1-15/16	1/2 x 1/4	—	—	—	—	—	—	—	—	—	—	12302	12438	49762
2	1/2 x 1/4	—	—	—	—	—	—	—	—	—	—	12303	12439	12596
2-1/16	1/2 x 1/4	—	—	—	—	—	—	—	—	—	—	12304	26092	—
2-1/8	1/2 x 1/4	—	—	—	—	—	—	—	—	—	—	12305	12440	12597
2-3/16	1/2 x 1/4	—	—	—	—	—	—	—	—	—	—	—	12441	12598
2-1/4	1/2 x 1/4	—	—	—	—	—	—	—	—	—	—	—	12442	12599
2-3/8	5/8 x 5/16	—	—	—	—	—	—	—	—	—	—	—	12443	12602
2-5/8	5/8 x 5/16	—	—	—	—	—	—	—	—	—	—	—	41809	12605
2-7/8	3/4 x 3/8	—	—	—	—	—	—	—	—	—	—	—	—	12607

Notes:
- Tolerances for bore and keyways are found in Engineering Data section (pages ED-10 and ED-11). All hubs supplied standard with one set screw.
- Non-standard bores available – consult Lovejoy Engineering.
- When referencing the Lovejoy UPC number in this table, include 685144 as a prefix to the number shown.

Jaw
L Type Metric Bore / Keyway
Item Selection

The L Type coupling consists of two standard L Type hubs and one spider. Refer to pages JW-10, JW-12, and JW-10.





L Type Hub - Metric Bore and Keyway UPC Number Selection Table

Bore	Keyway	L035	L050	L070	L075	L090	L095	L099	L100	L110	L150	L190	L225	L276
4	No Keyway	41850	—	—	—	—	—	—	—	—	—	—	—	—
5	No Keyway	47419	46214	—	—	—	—	—	—	—	—	—	—	—
6	No Keyway	45872	50351	—	—	—	—	—	—	—	—	—	—	—
7	No Keyway	60679	10215	58803	—	—	—	—	—	—	—	—	—	—
8	No Keyway	55169	41460	46151	—	60945	—	—	—	—	—	—	—	—
9	3 x 1.4	—	41313	56177	44298	—	—	—	—	—	—	—	—	—
10	No Keyway	—	10216	41452	41456	—	—	—	—	—	—	—	—	—
10	3 x 1.4	—	41450	49870	41457	52828	—	—	—	—	—	—	—	—
11	4 x 1.8	—	41314	41453	50811	—	49424	—	—	—	—	—	—	—
12	No Keyway	—	48510	51562	—	48276	—	—	—	—	—	—	—	—
12	4 x 1.8	—	41315	41454	44153	44329	44832	—	55195	—	—	—	—	—
14	No Keyway	—	58036	47505	—	41461	41465	—	—	—	—	—	—	—
14	5 x 2.3	—	41316	41317	41321	51231	41466	60094	45101	—	—	—	—	—
15	No Keyway	—	60708	—	10693	—	46561	52697	41469	—	—	—	—	—
15	5 x 2.3	—	41451	41455	41454	52096	45778	46972	47123	—	—	—	—	—
16	5 x 2.3	—	56176	41318	41322	49198	41325	52098	55534	52092	52471	—	—	—
17	5 x 2.3	—	—	45333	49398	—	49704	—	56178	60067	60156	—	—	—
18	6 x 2.8	—	—	59724	41884	46433	46626	44647	41926	44288	—	—	—	—
19	No Keyway	—	—	—	—	10777	—	—	—	41471	—	—	—	—
19	6 x 2.8	—	—	41319	41323	41462	41326	44157	14329	49700	48821	46717	—	—
20	6 x 2.8	—	—	—	41459	41925	41467	47122	52093	41804	61218	61497	—	—
22	6 x 2.8	—	—	—	58246	41968	44827	41959	44467	45214	44720	—	—	—
24	8 x 3.3	—	—	—	—	41463	41327	41990	41330	48301	48182	59109	—	—
25	8 x 3.3	—	—	—	—	41464	41468	45055	41470	41906	46751	52153	—	—
28	No Keyway	—	—	—	—	—	—	—	—	—	56179	56182	—	—
28	8 x 3.3	—	—	—	—	—	41328	50103	41331	41333	45679	52976	—	—
30	8 x 3.3	—	—	—	—	—	—	47132	48317	45681	41738	44471	48982	—
32	No Keyway	—	—	—	—	—	—	—	—	—	41472	41473	48319	56232
32	10 x 3.3	—	—	—	—	—	—	—	—	41334	41873	45562	41849	41885
35	No Keyway	—	—	—	—	—	—	—	41332	—	56180	56183	56184	—
35	10 x 3.3	—	—	—	—	—	—	—	49925	45682	46562	58035	52197	—
38	10 x 3.3	—	—	—	—	—	—	—	—	41335	41337	41474	49664	52961
40	12 x 3.3	—	—	—	—	—	—	—	—	45683	48318	48320	49605	59308
42	12 x 3.3	—	—	—	—	—	—	—	—	41336	41338	41475	47492	45609
45	14 x 3.8	—	—	—	—	—	—	—	—	—	45102	56017	52674	50292
48	No Keyway	—	—	—	—	—	—	—	—	—	56181	—	—	—
48	14 x 3.8	—	—	—	—	—	—	—	—	—	56227	48322	47569	61202
50	No Keyway	—	—	—	—	—	—	—	—	—	—	56228	56230	56233
50	14 x 3.8	—	—	—	—	—	—	—	—	—	—	44392	48797	45062
55	No Keyway	—	—	—	—	—	—	—	—	—	—	56229	56231	56234
55	16 x 4.3	—	—	—	—	—	—	—	—	—	—	47006	44089	56067
60	No Keyway	—	—	—	—	—	—	—	—	—	—	—	56185	56235
60	18 x 4.4	—	—	—	—	—	—	—	—	—	—	—	44598	56236
65	No Keyway	—	—	—	—	—	—	—	—	—	—	—	—	56237
65	18 x 4.4	—	—	—	—	—	—	—	—	—	—	—	56544	50102
70	20 x 4.9	—	—	—	—	—	—	—	—	—	—	—	—	58268

Notes:
- Tolerances for bore and keyways are found in Engineering Data section (page ED-17 and ED-18). All hubs supplied standard with one set screw.
- Non-standard bores available – consult Lovejoy Engineering.
- When referencing the Lovejoy UPC number in this table, include 685144 as a prefix to the number shown.

LC Type Couplings

The LC Type coupling consists of one standard L Type hub (without collar attachment), one LC Type hub (provides collar attachment), one standard snap wrap center and one collar with screws. Refer to pages JW-11, JW-12 and JW-13 for details.



Features

- Radially removable insert
- Collar allows for maximum speed of 3,600 RPM
- Collar manufactured from 1018 Steel

LC Type Hub - Inch Bore and Keyway UPC Number Selection Table

Bore	Keyway	LC090	LC095	LC099	LC100	LC110	LC150	LC190	LC225
1/4	No Keyway	45321	—	—	—	—	—	—	—
3/8	No Keyway	45322	—	—	—	—	—	—	—
1/2	No Keyway	45323	11133	—	11575	—	—	—	—
1/2	1/8 x 1/16	—	—	—	48768	—	—	—	—
5/8	No Keyway	—	—	—	—	11828	45412	—	—
5/8	3/16 x 3/32	45324	11134	48886	11577	—	—	—	—
3/4	No Keyway	—	—	—	—	—	—	12322	12456
3/4	1/8 x 1/16	—	—	—	55466	—	—	—	—
3/4	3/16 x 3/32	45325	11135	—	41920	11829	—	12323	—
13/16	3/16 x 3/32	—	11136	—	—	11830	—	—	—
7/8	3/16 x 3/32	45326	11137	—	11578	11832	—	—	—
7/8	1/4 x 1/8	—	—	56567	49553	56566	60343	—	—
15/16	1/4 x 1/8	—	11138	—	—	11834	—	—	—
1	1/4 x 1/8	45327	11139	52825	11579	11836	12069	44161	50125
1	3/16 x 3/32	—	—	—	—	55552	—	—	—
1-1/8	1/4 x 1/8	—	44156	—	11580	11838	12071	44160	50126
1-3/16	1/4 x 1/8	—	11140	—	—	11840	—	—	—
1-1/4	1/4 x 1/8	—	—	—	11581	11841	12073	12327	12462
1-1/4	5/16 x 5/32	—	—	—	59046	—	48273	—	—
1-3/8	5/16 x 5/32	—	—	—	45257	11842	12075	12329	50127
1-7/16	3/8 x 3/16	—	—	—	—	11844	—	—	12465
1-1/2	5/16 x 5/32	—	—	—	—	—	12077	—	—
1-1/2	3/8 x 3/16	—	—	—	—	11846	—	12332	12466
1-9/16	3/8 x 3/16	—	—	—	—	11848	—	12332	—
1-5/8	3/8 x 3/16	—	—	—	—	11849	12079	12334	12468
1-3/4	3/8 x 3/16	—	—	—	—	—	44159	12336	46818
1-7/8	1/2 x 1/4	—	—	—	—	—	12082	12337	12472
1-15/16	1/2 x 1/4	—	—	—	—	—	—	12339	—
2	1/2 x 1/4	—	—	—	—	—	—	12341	14276
2-1/8	1/2 x 1/4	—	—	—	—	—	—	44064	12477
2-1/4	1/2 x 1/4	—	—	—	—	—	—	—	12480
2-3/8	5/8 x 5/16	—	—	—	—	—	—	—	12482

Notes:
- These “LC” hubs are drilled and tapped to accept collar mounting screws but the collar and hardware are not included.
- See L Type (inch or metric) coupling chart for standard hub.
- Tolerances for bore and keyways are found in Engineering Data section (pages ED-10 and ED-11).
- All hubs are supplied standard with one set screw.
- When referencing the Lovejoy UPC number in this table, include 685144 as a prefix to the number shown.

LC Type Couplings

The LC Type coupling consists of one standard L Type hub (without collar attachment), one LC Type hub (provides collar attachment), one standard snap wrap center and one collar with screws. Refer to pages JW-11, JW-12 and JW-13 for details.



Features

- Radially removable insert
- Collar allows for maximum speed of 3,600 RPM
- Collar manufactured from 1018 Steel

LC Type Wrap Spider / Collar UPC Number Selection Table

	LC090	LC095	LC099	LC100	LC110	LC150	LC190	LC225
Snap Wrap Spider/No Ring	11071	11071	11495	11495	11725	12002	12275	26093[1]
Collar Only w/Screws	48340	48340	45258	45258	47932	47933	47934	47935

Notes:
- 1 indicates: L225 snap wrap spider is urethane, solid ring.
- When referencing the Lovejoy UPC number in this table, include 685144 as a prefix to the number shown.

LC Type Hub - Metric Bore and Keyway UPC Number Selection Table

Bore	Keyway	LC090	LC095	LC099	LC100	LC110	LC150	LC190	LC225
12	No Keyway	58596	—	—	—	—	—	—	—
12	4 x 1.8	58597	—	—	—	—	—	—	—
14	No Keyway	58598	58592	—	—	—	—	—	—
14	5 x 2.3	58556	58559	—	—	—	—	—	—
15	5 x 2.3	58599	—	—	—	—	—	—	—
16	5 x 2.3	—	58593	—	—	—	—	—	—
19	6 x 2.8	58557	58560	56197	58563	58566	—	—	—
20	6 x 2.8	—	58594	—	—	—	—	—	—
24	8 x 3.3	58558	58561	58588	58564	58567	—	—	—
25	8 x 3.3	58600	58595	58589	—	—	—	—	—
28	8 x 3.3	—	58562	58590	58565	58568	58571	58575	—
32	10 x 3.3	—	—	—	52806	58587	58585	58586	—
38	10 x 3.3	—	—	—	—	58569	58572	58576	58580
42	12 x 3.3	—	—	—	—	58570	58573	58577	58581
48	14 x 3.8	—	—	—	—	—	58574	58578	58582
55	16 x 4.3	—	—	—	—	—	—	58579	58583
65	No Keyway	—	—	—	—	—	—	—	58584

Notes:
- These “LC” hubs are drilled and tapped to accept collar mounting screws but the collar and hardware are not included.
- See L Type (inch or metric) UPC Number Selection Table for standard hub (pages JW-11 or JW-10).
- Tolerances for bore and keyways are found in Engineering Data section (pages ED-17 and ED-18).
- All hubs are supplied with one set screw.
- When referencing the Lovejoy UPC number in this table, include 685144 as a prefix to the number shown.

AL and SS Type Couplings



The AL Type coupling consists of two hubs and one spider.

Features

- Interchangeable with all hub sizes standard for the L-Line and AL-Line products
- Available in a variety of different finished bore and keyway combinations
- Finished bores passivated for additional rust protection

AL Type Hub - Inch Bore and Keyway UPC Number Selection Table

Bore	Keyway	AL050	AL070	AL075	AL090	AL095	AL099	AL100	AL110	AL150
1/4	No Keyway	10252	10463	10630	10791	—	—	—	—	—
5/16	No Keyway	10253	10464	10631	10792	—	—	—	—	—
3/8	No Keyway	10254	10466	10632	10793	—	—	—	—	—
7/16	No Keyway	10256	10469	10633	10794	—	—	—	—	—
1/2	No Keyway	10257	10471	10634	10795	17847	17880	17914	—	—
1/2	1/8 x 1/16	49706	10473	10635	10796	17848	17881	17915	—	—
9/16	No Keyway	—	—	10637	10797	—	—	56473	—	—
9/16	1/8 x 1/16	—	—	10638	4412	37994	44323	17917	—	—
5/8	No Keyway	10259	10480	61817	44004	—	—	—	17977	18035
5/8	3/16 x 3/32	—	10482	10639	10798	17855	17882	17918	38888	44828
11/16	3/16 x 3/32	—	—	45227	10799	17851	45494	17919	44059	46642
3/4	1/8 x 1/16	—	—	47835	47725	46295	—	—	—	—
3/4	3/16 x 3/32	—	10491	10640	10800	17852	17883	17920	17978	18036
13/16	3/16 x 3/32	—	—	10641	10801	17853	17884	17921	—	—
7/8	3/16 x 3/32	—	—	10642	10802	17854	17885	17922	17979	18037
15/16	1/4 x 1/8	—	—	—	—	17855	17886	17923	17980	18038
1	1/4 x 1/8	—	—	—	—	17856	17887	17924	17981	18039
1-1/16	1/4 x 1/8	—	—	—	—	17857	17888	17925	26094	18040
1-1/8	1/4 x 1/8	—	—	—	—	17858	17889	17926	17982	18041
1-3/16	1/4 x 1/8	—	—	—	—	—	17890	17927	17983	18042
1-1/4	1/4 x 1/8	—	—	—	—	—	—	17928	17984	18043
1-5/16	5/16 x 5/32	—	—	—	—	—	—	17929	17985	18044
1-3/8	5/16 x 5/32	—	—	—	—	—	—	17930	17986	18045
1-7/16	3/8 x 3/16	—	—	—	—	—	—	45508	17987	18046
1-1/2	3/8 x 3/16	—	—	—	—	—	—	—	17988	18047
1-9/16	3/8 x 3/16	—	—	—	—	—	—	—	17989	18048
1-5/8	3/8 x 3/16	—	—	—	—	—	—	—	17990	18049
1-11/16	3/8 x 3/16	—	—	—	—	—	—	—	—	18050
1-3/4	3/8 x 3/16	—	—	—	—	—	—	—	—	18051
1-13/16	1/2 x 1/4	—	—	—	—	—	—	—	—	18052
1-7/8	1/2 x 1/4	—	—	—	—	—	—	—	—	18053

Notes:
- Tolerances for bore and keyways are found in Engineering Data section (page ED-10).
- Lovejoy does not recommend reboring AL hubs.
- All hubs are supplied standard with one set screw, except the AL150 which is provided with two set screws.
- When referencing the Lovejoy UPC number in this table, include 685144 as a prefix to the number shown.

SS Type Hub - Inch Bore and Keyway UPC Number Selection Table



Size	RSB	1/4	1/2	5/8	3/4	7/8	1	1-1/8	1-3/8	1-1/2
SS075	70001	70006	70007	70008	70009	70010	—	—	—	—
SS095	70002	70011	70011	70012	70013	70014	70015	70016	—	—
SS100	70003	—	—	—	70017	70018	70019	70020	70022	—
SS110	70004	—	—	—	—	—	70023	70024	70026	70027
SS150	70005	—	—	—	—	—	70029	70030	70032	70033

Note:
- When referencing the Lovejoy UPC number in this table, include 685144 as a prefix to the number shown.

AL Type Couplings



The AL Type coupling consists of two hubs and one spider. Refer to page JW-10 for spider details.

Features

- Aluminum material is corrosion resistant
- Lightweight
- Hubs compatible with standard Lovejoy hub design (except AL150)

AL Type Spider UPC Number Selection Table

Spider Type	AL050	AL070	AL075	AL090/095	AL099/100	AL110	AL150
SOX (NBR) (solid)	10194	10406	10621	11070	11494	11724	18027
SOX (NBR) (open center)	—	10393	10620	10968	11492	11711	—
Urethane (solid)	37786	10395	—	—	—	—	—
Urethane (open center)	—	10411	10626	11075	11499	11729	—
Hytrel (solid)	25307	—	—	—	—	11717	—
Hytrel (open center)	—	25308	25309	25310	11486	38097	—
Bronze (open center)	10198	10409	10624	11073	11497	11727	—
Snap Wrap w/ring	—	—	—	24669	24670	24671	—
Snap Wrap no ring	—	—	—	11071	11495	11725	—

Notes:
- AL Type couplings use the same spiders as L Type couplings, except AL150 which has four jaws instead of three.
- When referencing the Lovejoy UPC number in this table, include 685144 as a prefix to the number shown.

AL Type Hub - Metric Bore and Keyway UPC Number Selection Table

Bore	Keyway	AL050	AL070	AL075	AL090	AL095	AL099	AL100	AL110	AL150
8	No Keyway	—	—	48973	—	—	—	—	—	—
10	3 x 1.4	—	—	41924	56514	—	—	—	—	—
11	4 x 1.8	—	65694	51098	58620	—	—	—	—	—
12	4 x 1.8	—	56487	64655	60429	—	—	—	—	—
14	5 x 2.3	—	65696	47302	58621	56800	58624	—	—	—
15	5 x 2.3	—	62906	49633	58622	56801	—	49629	—	—
16	5 x 2.3	—	—	52221	—	47014	—	45012	—	—
17	5 x 2.3	—	—	—	60887	44712	—	59164	—	—
19	6 x 2.8	—	65698	47427	44679	47012	58625	47253	59064	—
20	No Keyway	—	—	56137	—	—	—	—	—	—
20	6 x 2.8	—	—	59394	61478	48347	49634	49630	49631	60878
22	6 x 2.8	—	—	—	—	47013	—	—	—	—
24	8 x 3.3	—	—	—	—	45736	58626	44058	45690	64634
25	8 x 3.3	—	—	—	—	65469	49709	55687	45933	64633
28	8 x 3.3	—	—	—	—	47015	58627	47393	45463	—
30	8 x 3.3	—	—	—	—	—	52048	58266	49632	45063
32	10 x 3.3	—	—	—	—	—	—	—	54417	44347
35	10 x 3.3	—	—	—	—	—	—	—	46215	64803
36	10 x 3.3	—	—	—	—	—	—	—	—	51737
38	10 x 3.3	—	—	—	—	—	—	—	52692	58215
42	12 x 3.3	—	—	—	—	—	—	—	—	45404
46	14 x 3.8	—	—	—	—	—	—	—	—	64119

Notes:
- Tolerances for bore and keyways are found in Engineering Data section (page ED-17).
- Lovejoy does not recommend reboring AL hubs.
- All hubs are supplied standard with one set screw, except the AL150 which is provided with two set screws.
- When referencing the Lovejoy UPC number in this table, include 685144 as a prefix to the number shown.

RRS and RRSC Type Radially Removable Spacer Couplings



RRS Type couplings range from sizes RRS090 to RRS225. The RRS Type coupling consists of:

RRS090 – RRS110:

2 Standard RRS Hubs
1 Spacer Assembly consisting of:
- 2 snap wrap spiders w/o ring
- 2 collars with screws
- 1 spacer

RRS150 – RRS225:

1 Standard RRS Hub
1 Standard RRSC Hub – Drilled for collar
1 Spacer Assembly consisting of:
- 2 snap wrap spiders w/o ring
- 2 collars with screws
- 1 spacer

RRS Type Hub - Inch Bore and Keyway UPC Number Selection Table

Bore	Keyway	RRS090	RRS095	RRS099	RRS100	RRS110	RRS150	RRS190	RRS225
7/16	No Keyway	—	41229	52184	41231	—	—	—	—
1/2	No Keyway	41227	50357	41230	52199	—	—	—	—
1/2	1/8 x 1/16	56512	38145	—	38151	—	—	—	—
9/16	3/16 x 3/32	—	44474	—	—	—	—	—	—
5/8	No Keyway	—	—	—	—	38159	45265	—	—
5/8	3/16 x 3/32	38143	38146	38168	38152	—	50163	—	—
3/4	No Keyway	—	—	—	—	—	—	45273	45290
3/4	3/16 x 3/32	38144	38147	38169	38153	38160	45266	—	45292
7/8	1/4 x 1/8	—	—	—	52966	—	—	—	—
7/8	3/16 x 3/32	41228	38148	38170	38154	38161	45267	45274	45291
1	1/4 x 1/8	51672	38149	38171	38155	38162	45268	45275	45294
1-1/8	1/4 x 1/8	—	38150	38172	38156	38163	45153	45276	45295
1-1/8	5/16 x 5/32	—	—	—	—	—	48104	—	—
1-1/4	1/4 x 1/8	—	—	—	38157	38164	45392	48503	50743
1-3/8	5/16 x 5/32	—	—	—	38158	38165	44002	44725	45296
1-7/16	3/8 x 3/16	—	—	—	—	51579	49659	48933	49658
1-1/2	3/8 x 3/16	—	—	—	—	40816	49638	46628	45297
1-5/8	3/8 x 3/16	—	—	—	—	38166	41880	45277	45298
1-3/4	3/8 x 3/16	—	—	—	—	—	45162	45278	45299
1-7/8	1/2 x 1/4	—	—	—	—	—	44214	45279	41953
2	1/2 x 1/4	—	—	—	—	—	—	45280	45300
2-1/8	1/2 x 1/4	—	—	—	—	—	—	—	44724
2-3/8	5/8 x 5/16	—	—	—	—	—	—	—	45106

Notes:
- RRS inch hubs are standard with two set screws, including those with no keyway.
- When referencing the Lovejoy UPC number in this table, include 685144 as a prefix to the number shown.

RRS / RRSC Type Hub - Metric Bore and Keyway UPC Number Selection Table

Bore	Keyway	RRSC150	RRSC190	RRSC225
32	No Keyway	55675	55679	55683
38	10 x 3.3	55676	55680	—
40	12 x 3.3	55677	55681	—
42	12 x 3.3	55678	55682	—

Notes:
- RRS inch hubs are standard with two set screws and are drilled to accept retaining collar. Collars are supplied with spacers.
- When referencing the Lovejoy UPC number in this table, include 685144 as a prefix to the number shown.

RRS / RRSC Type Hub - Inch Bore and Keyway UPC Number Selection Table

Bore	Keyway	RRSC150	RRSC190	RRSC225
5/8	No Keyway	45269	—	—
3/4	No Keyway	—	45281	45301
3/4	3/16 x 3/32	45312	—	45303
7/8	3/16 x 3/32	45270	45282	45293
1	1/4 x 1/8	45271	45283	45305
1-1/8	1/4 x 1/8	44779	45284	45105
1-3/8	5/16 x 5/32	44006	45285	45306
1-1/2	3/8 x 3/16	46939	—	45307
1-5/8	3/8 x 3/16	14881	45286	45308
1-3/4	3/8 x 3/16	—	45287	45309
1-7/8	1/2 x 1/4	45272	45288	41954
2	1/2 x 1/4	—	45289	45310
2-1/8	1/2 x 1/4	—	—	45311

Notes:
- RRS inch hubs are standard with two set screws and are drilled to accept retaining collar. Collars are supplied with spacers.
- When referencing the Lovejoy UPC number in this table, include 685144 as a prefix to the number shown.

RRS Type Radially Removable Spacer Couplings



RRS Type couplings range from sizes RRS090 to RRS225.
The RRS Type coupling consists of:

RRS090 – RRS110:
2 Standard RRS Hubs
1 Spacer Assembly consisting of:
- 2 snap wrap spiders w/o ring
- 2 collars with screws
- 1 spacer

RRS150 – RRS225:
1 Standard RRS Hub
1 Standard RRSC Hub – Drilled for collar
1 Spacer Assembly consisting of:
- 2 snap wrap spiders w/o ring
- 2 collars with screws
- 1 spacer

Note: ■ RRS Type Inch Hubs provided standard with two set screws at 90°.

Features

- Standard API based spacers available
- Radially removable inserts
- Standard Lovejoy hub design with additional set screw at 90°

RRS Type Spacer UPC Number Selection Table

Description		RRS090	RRS095	RRS099	RRS100	RRS110	RRS150	RRS190	RRS225
3-1/2 in	Spacer Assembly	12620	12620	12630	12630	12644	12660	12676	12685
5 in	Spacer Assembly	26119	26119	26123	26123	26128	26770	27046	27041
7 in	Spacer Assembly	26120	26120	26124	26124	26129	27044	27043	27039
100mm	Spacer Assembly	55563	55563	55567	55567	55570	61056	61057	61058
140mm	Spacer Assembly	55281	55281	55569	55569	55571	55572	55573	55574
180mm	Spacer Assembly	61055	61055	55575	55575	55576	55577	55578	55579

Notes: ■ Spacer length denotes separation between shaft ends. Assembly includes spacer, two snap wrap spiders w/o ring, and two collars with screws. See page JW-10 for ordering information on spiders.
■ When referencing the Lovejoy UPC number in this table, include 685144 as a prefix to the number shown.

RRS Type Hub - Metric Bore and Keyway UPC Number Selection Table

Bore	Keyway	RRS090	RRS095	RRS099	RRS100	RRS110	RRS150	RRS190	RRS225
12	No Keyway	48276	—	—	—	—	—	—	—
14	No Keyway	41461	41465	—	—	—	—	—	—
14	5 x 2.3	51231	41466	60094	45101	—	—	—	—
15	No Keyway	—	46561	52697	41469	—	—	—	—
15	5 x 2.3	52096	45778	46972	47123	—	—	—	—
16	5 x 2.3	49198	41325	52098	55534	52092	52471	—	—
19	No Keyway	10777	—	—	—	41471	—	—	—
19	6 x 2.8	41462	41326	44157	41329	49700	48821	46717	—
20	6 x 2.8	41925	41467	47122	52093	41804	—	61497	—
23	8 x 3.3	50135	—	—	—	—	—	—	—
24	8 x 3.3	41463	41327	41990	41330	48301	48182	59109	—
25	8 x 3.3	41464	41468	45055	41470	41906	46751	52153	—
28	8 x 3.3	—	41328	50103	41331	41333	45679	52976	—
30	8 x 3.3	—	—	47132	48317	45681	41738	44471	48982
32	No Keyway	—	—	—	—	—	41472	41473	48319
32	10 x 3.3	—	—	—	41332	41334	41873	45562	41849
35	10 x 3.3	—	—	—	49925	45682	46562	58035	52197
38	10 x 3.3	—	—	—	—	41335	41337	41474	49664
40	12 x 3.3	—	—	—	—	45683	48318	48320	49605
42	12 x 3.3	—	—	—	—	41336	41338	41475	47492

Note: ■ When referencing the Lovejoy UPC number in this table, include 685144 as a prefix to the number shown.

C Type Couplings

The C Type coupling consists of two standard hubs, one cushion set and collar with hardware.



Features

- Greater torque and bore capacity than the L-Line series jaw coupling
- Elastomeric cushions are radially removable
- Cushions available in SXB rubber and Hytrel

C Type Cushions / Collar UPC Number Selection Table

Size	C226	C276	C280	C285	C295	C2955
Number of Cushions	6	6	6	6	6	10
SXB (NBR) cushion set	14547	14633	14712	14771	14805	14856
Hytrel® cushion set	27529	14637	14716	14774	14808	14859
Bronze cushion set	14545	—	—	—	51914	51915
Collar with hardware	40122	40123	40124	40292	40293	40293

Notes:
- Chemical resistance and compatibility for cushions is described in Engineering Data section (page ED-9).
- When referencing the Lovejoy UPC number in this table, include 685144 as a prefix to the number shown.

C Type Hub - Inch Bore and Keyway UPC Number Selection Table

Bore	Keyway	C226	C276	C280	C285	C295	C2955
7/8 RSB	No Keyway	40125	40126	—	—	—	—
1-1/8	1/4 x 1/8	26036	26050	—	—	—	—
1-1/4 RSB	No Keyway	—	—	20607	41036	—	—
1-1/4	1/4 x 1/8	26037	26051	48988	47173	—	—
1-3/8	5/16 x 5/32	26038	26052	46278	55546	—	—
1-7/16	3/8 x 3/16	26039	—	—	—	—	—
1-1/2 RSB	No Keyway	—	—	—	—	41037	—
1-1/2	3/8 x 3/16	26040	26053	46277	48366	44824	—
1-5/8	3/8 x 3/16	26041	26054	46194	41892	56078	—
1-3/4 RSB	No Keyway	—	—	—	—	—	41038
1-3/4	3/8 x 3/16	26042	26055	44011	52311	45780	—
1-7/8	1/2 x 1/4	26043	26056	44012	51533	47080	49075
2	1/2 x 1/4	26044	26057	48194	—	—	—
2-1/8	1/2 x 1/4	26045	26058	44370	49809	44711	—
2-1/4	1/2 x 1/4	26046	44547	—	—	—	—
2-3/8	5/8 x 5/16	26047	26060	44014	47288	44825	52703
2-1/2	5/8 x 5/16	26048	46120	51998	56779	45249	48454
2-5/8	5/8 x 5/16	—	46755	44013	—	50145	54549
2-7/8	3/4 x 3/8	—	26064	51525	49456	52702	48108
3	3/4 x 3/8	—	—	48193	—	—	—
3-3/8	7/8 x 7/16	—	—	—	47171	45402	49077
3-1/2	7/8 x 7/16	—	—	—	46844	52988	44545
3-5/8	7/8 x 7/16	—	—	—	—	—	50106
3-3/4	7/8 x 7/16	—	—	—	—	—	58378
3-7/8	1 x 1/2	—	—	—	48247	—	49351
4	1 x 1/2	—	—	—	—	—	55016

Notes:
- RSB (Rough Stock Bore) hub has no keyway or set screw hole, it is not useable as shown and must be machined to proper bore tolerances. Hub includes inside sleeve and is drilled and tapped for collar bolts. Non-standard bores available – consult Lovejoy Engineering.
- When referencing the Lovejoy UPC number in this table, include 685144 as a prefix to the number shown.

C Type Hub - Metric Bore and Keyway UPC Number Selection Table

Bore	Keyway	C226	C276	C280	C285	C295	C2955
30	8 x 3.3	62792	—	—	—	—	—
35	10 x 3.3	60243	47386	—	—	—	—
38	10 x 3.3	45348	62160	—	—	—	—
40	12 x 3.3	49379	54037	—	—	—	—
42	12 x 3.3	—	45219	—	—	—	—
45	14 x 3.8	52550	44723	58265	—	—	—
48	14 x 3.8	54288	—	52205	—	—	—
55	16 x 4.3	58011	58444	49012	—	—	—
60	18 x 4.4	—	47265	49378	—	—	—
65	18 x 4.4	—	52008	—	—	—	58676
70	20 x 4.9	—	59032	—	56794	54355	58677
75	22 x 5.4	—	—	—	—	47913	58678
80	22 x 5.4	—	—	—	44487	58675	58679
90	25 x 5.4	—	—	—	54363	—	—
95	25 x 5.4	—	—	—	—	—	62695

Notes:
- RSB (Rough Stock Bore) hub has no keyway or set screw hole, it is not useable as shown and must be machined to proper bore tolerances. Hub includes inside sleeve and is drilled and tapped for collar bolts. Non-standard bores available – consult Lovejoy Engineering. For RSB hub part numbers see the C Type Inch Hub table.
- When referencing the Lovejoy UPC number in this table, include 685144 as a prefix to the number shown.

H Type Couplings

The H Type coupling consists of two hubs, two inside sleeves, one cushion set and one collar with hardware. H Type coupling hubs are supplied with an inside sleeve. For technical assistance, please contact Lovejoy Engineering.



Features

- Greater torque and bore capacity than the C-Line series jaw coupling
- Elastomeric cushions are radially removable
- Cushions available in SXB rubber and Hytrel

H Type Cushions / Collar UPC Number Selection Table

Size	H3067	H3567	H3667	H4067	H4567
Number of Cushions	14	14	14	14	14
SXB cushion set	15365	15386	15419	15457	15473
Hytrel® cushion set	15367	15388	45223	15459	55475
Collar with hardware	15361	15381	15411	55472	55476

Note: ■ When referencing the Lovejoy UPC number in this table, include 685144 as a prefix to the number shown.

H Type Hubs - Rough Stock Inch Bore UPC Number Selection Table

Bore	H3067	H3567	H3667	H4067	H4567
2-1/8 RSB	48070	—	—	—	—
2-5/8 RSB	—	50883	—	—	—
3 RSB	—	—	47878	—	—
3-1/4 RSB	—	—	—	55473	—
3-1/2 RSB	—	—	—	—	55477

Notes: ■ RSB (Rough Stock Bore) hub has no keyway or set screw hole.
■ RSB bores should not be used as shown and may need additional machinign to reach proper tolerances.
■ When referencing the Lovejoy UPC number in this table, include 685144 as a prefix to the number shown.

RRC Type Radially Removable Spacer Coupling

RRC Type couplings range from sizes RRC226to RRC2955. The RRC Type coupling consists of:

2 RRC Hub Adapters (includes bolts)
1 Spacer assembly consisting of:
- 2 RRC Jaw rings
- 1 collar with hardware
- 1 set of SXB (NBR) cushions

RRC Type Spacer UPC Number Selection Table

Description		RRC226	RRC276	RRC280	RRC285	RRC295	RRC2955
3-1/2 in	Spacer Assembly	55709	55712	55715	55718	—	—
4 in	Spacer Assembly	—	—	—	—	55721	55724
5 in	Spacer Assembly	55710	55713	55716	55719	55722	55751
7 in	Spacer Assembly	55711	55174	55717	55720	55723	55752

Note: ■ When referencing the Lovejoy UPC number in this table, include 685144 as a prefix to the number shown.

RRC Type Adapter Hubs - Rough Stock Inch Bore UPC Number Selection Table

Bore	RRC226	RRC276	RRC280	RRC285	RRC295	RRC2955
7/8 RSB	55770	55771	—	—	—	—
1-1/4 RSB	—	—	52030	55772	—	—
1-1/2 RSB	—	—	—	—	55773	—
1-3/4 RSB	—	—	—	—	—	55774

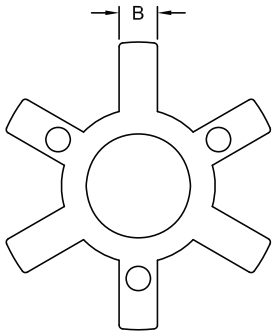
Note: ■ When referencing the Lovejoy UPC number in this table, include 685144 as a prefix to the number shown.

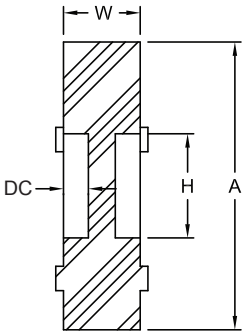
Jaw Type Performance Ratings

Size	Elastomeric Member	Number of Jaws	Basic HP Ratings @ Varying RPM				Torque Rating		Max Bore		Max x1000
			100	1200	1800	3600	in-lbs	Nm	in	mm	RPM
L, AL & LC Type											
L035	SOX (NBR)	2	0.006	0.07	0.10	0.22	3.5	0.40	0.375	9	31.0
L050/AL050	SOX (NBR)	2	0.042	0.50	0.75	1.51	26.3	2.97	0.625	16	18.0
L050/AL050	Hytrel®	2	0.080	0.96	1.43	2.88	50.0	5.65	0.625	16	18.0
L070/AL070	SOX (NBR)	2	0.070	0.84	1.23	2.52	43.2	4.88	0.750	19	14.0
L070/AL070	Hytrel	2	0.180	2.16	3.26	6.48	114.0	12.88	0.750	19	3.6
L075/AL075	SOX (NBR)	3	0.140	1.68	2.57	5.04	90.0	10.17	0.875	22	11.0
L075/AL075	Hytrel	3	0.360	4.32	6.48	12.96	227.0	25.65	0.875	22	3.6
L090/AL090/LC090	SOX (NBR)	3	0.230	2.76	4.11	8.28	144.0	16.27	1.000	25	9.0
L090/AL090	Hytrel	3	0.640	7.68	11.50	23.04	401.0	42.31	1.000	25	3.6
L095/AL095/LC095	SOX (NBR)	3	0.310	3.72	5.50	11.16	194.0	21.92	1.125	32	9.0
L095/AL095	Hytrel	3	0.890	10.68	16.00	32.04	561.0	63.38	1.125	32	3.6
L099/AL099/LC099	SOX (NBR)	3	0.500	6.00	9.10	18.00	318.0	35.93	1.180	30	7.0
L099/AL099	Hytrel	3	1.260	15.12	22.60	45.36	792.0	89.48	1.180	30	3.6
L100/AL100/LC100	SOX (NBR)	3	0.660	7.92	11.90	23.76	417.0	47.11	1.380	35	7.0
L100/AL100	Hytrel	3	1.800	21.60	32.40	64.80	1,134.0	128.12	1.380	35	3.6
L110/AL110/LC110	SOX (NBR)	3	1.260	15.12	23.00	45.36	792.0	89.48	1.620	42	5.0
L110/AL110	Hytrel	3	3.600	43.20	65.00	129.60	2,268.0	256.25	1.620	42	5.0
L150/LC150	SOX (NBR)	3	2.000	24.00	35.00	72.00	1,240.0	140.10	1.880	48	5.0
L150	Hytrel	3	5.900	70.80	106.00	212.40	3,708.0	418.95	1.880	48	5.0
AL-150	SOX (NBR)	4	2.300	27.60	41.40	82.80	1,450.0	163.83	1.880	48	5.0
L190/LC190	SOX (NBR)	3	2.700	32.40	49.00	97.20	1,728.0	195.24	2.120	55	5.0
L190	Hytrel	3	7.400	88.80	134.00	266.40	4,680.0	528.77	2.120	55	5.0
L225/LC225	SOX (NBR)	3	3.700	44.40	67.00	133.20	2,340.0	264.38	2.620	65	4.2
L225	Hytrel	3	9.900	118.80	178.00	356.40	6,228.0	703.67	2.620	65	4.2
L276	SOX (NBR)	3	7.500	90.00	135.00	+	4,716.0	532.84	2.880	73	1.8
C Type											
C226	SXB (NBR)	3	4.700	56.40	85.00	169.20	2,988.0	337.60	2.500	64	4.8
C226	Hytrel	3	9.400	112.80	170.00	338.40	5,940.0	671.13	2.500	64	4.8
C276	SXB (NBR)	3	7.500	90.00	135.00	270.00	4,716.0	532.84	2.880	73	4.2
C276	Hytrel	3	15.000	180.00	269.00	540.00	9,432.0	1065.67	2.880	73	4.2
C280	SXB (NBR)	3	12.000	114.00	216.00	+	7,560.0	854.17	3.000	76	3.5
C280	Hytrel	3	22.000	264.00	396.00	+	13,866.0	1 566.65	3.000	76	3.5
C285	SXB (NBR)	3	14.600	175.20	262.00	+	9,182.0	1 037.43	4.000	102	3.2
C285	Hytrel	3	26.000	312.00	476.00	+	16,680.0	1 882.33	4.000	102	3.2
C295	SXB (NBR)	3	18.000	216.00	324.00	+	11,340.0	1 281.25	3.500	89	2.3
C295	Hytrel	3	36.000	432.00	648.00	+	22,680.0	2 562.50	3.500	89	2.3
C2955	SXB (NBR)	5	30.000	360.00	540.00	+	18,900.0	2 135.42	4.000	102	2.3
C2955	Hytrel	5	60.000	720.00	1,080.00	+	37,800.0	4 270.83	4.000	102	2.3
H Type											
H3067	SXB (NBR)	7	53.000	639.00	954.00	+	33,396.0	3 773.25	4.500	114	2.3
H3067	Hytrel	7	75.000	900.00	1,348.00	+	47,196.0	5 332.44	4.000	102	2.3
H3567	SXB (NBR)	7	74.000	888.00	1,332.00	+	46,632.0	5 268.72	5.000	127	2.1
H3567	Hytrel	7	100.000	1,200.00	1,799.00	+	63,000.0	7 118.06	4.500	114	2.1
H3667	SXB (NBR)	7	103.000	1,236.00	1,851.00	+	64,812.0	7 322.78	5.620	146	1.9
H3667	Hytrel	7	140.000	1,680.00	2,519.00	+	88,200.0	9 965.28	5.000	127	1.9
H4067	SXB (NBR)	7	140.000	1,680.00	2,520.00	+	88,224.0	9 967.99	6.250	159	1.8
H4067	Hytrel	7	200.000	2,400.00	3,600.00	+	126,000.0	14 236.11	5.500	140	1.8
H4567	SXB (NBR)	7	190.000	2,280.00	+	+	119,700.0	13 524.30	7.000	178	1.5
H4567	Hytrel	7	270.000	3,240.00	+	+	170,000.0	19 207.45	6.000	152	1.5
RRS Type											
RRS090	SOX (NBR)	3	0.230	2.76	4.11	8.28	144.0	16.27	1.000	25	3.6
RRS095	SOX (NBR)	3	0.310	3.72	5.50	11.16	194.0	21.92	1.120	28	3.6
RRS099	SOX (NBR)	3	0.500	6.00	9.10	18.00	318.0	35.93	1.180	30	3.6
RRS100	SOX (NBR)	3	0.660	7.92	11.90	23.76	417.0	47.11	1.380	35	3.6
RRS110	SOX (NBR)	3	1.260	15.12	23.00	45.36	792.0	89.48	1.620	42	3.6
RRS150	SOX (NBR)	3	2.000	24.00	35.00	72.00	1,240.0	140.10	1.880	48	3.6
RRS190	SOX (NBR)	3	2.700	32.40	49.00	97.20	1,728.0	195.24	2.120	55	3.6

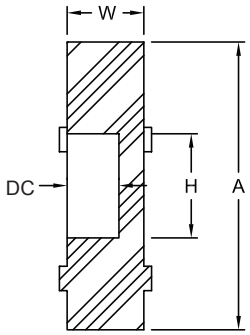
Notes: ■ + indicates: exceeds RPM capacity.
■ See Chart on page JW-9 for Bronze and Urethane ratings.

Elastomers In Compression (Spiders)

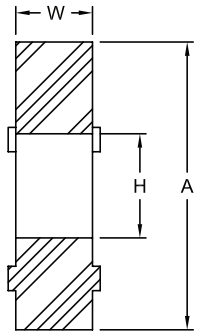




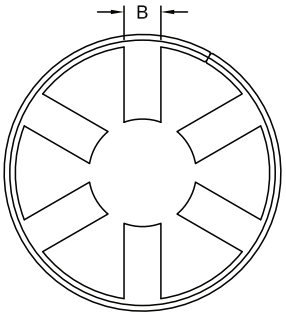
Solid Center

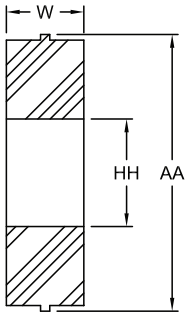


L095 & L225 NBR Only



Open Center





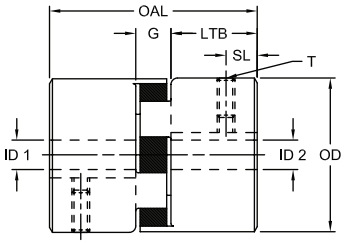
Snap Wrap

Elatomers In Compression (Spiders) Dimensional Data

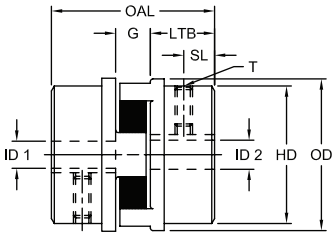
Size	Solid Center Spiders: Material Available NBR SOX	Urethane URE	Hytrel® HYT	Bronze BRZ	A in	DC in	H in	Open Center Spiders: Material Available NBR SOX	Urethane URE	Hytrel® HYT	Bronze BRZ	A in	H: NBR in	URE in	HYT in	BRZ in	Snap Wrap Spiders: Material NBR	AA in	HH in	All: W in	B in
L035	X	—	—	—	0.62	—	—	—	—	—	—	—	—	—	—	—	N/A	—	—	0.28	0.21
L050	X	X	X	—	1.07	—	—	—	—	—	X	1.07	0.31			0.31	N/A	—	—	0.42	0.27
L070	X	X	—	—	1.38	—	—	X	X	X	X	1.38	0.50			0.50	N/A	—	—	0.42	0.27
L075	X	—	—	—	1.75	—	—	X	X	X	X	1.75	0.75			0.75	N/A	—	—	0.44	0.27
L090/L095	X	—	—	—	2.12	0.18	0.88	X	X	X	X	2.12	0.88			0.75	X	2.56	1.06	0.44	0.36
L099/L100	X	—	—	—	2.54	0.25	1.03	X	X	X	X	2.54	1.03			1.03	X	3.08	1.37	0.61	0.43
L110	X	—	X	—	3.31	NBR .25 HYT .18	1.19	X	X	X	X	3.31	1.18			1.38	X	3.87	1.50	0.75	0.45
L150	X	—	X	—	3.75	NBR .31 HYT .21	1.25	X	X	X	X	3.75	1.25			1.125	X	4.56	1.75	0.88	0.59
L190	X	—	X	—	4.50	NBR .31 HYT .18	1.38	X	X	X	X	4.50	1.38			1.38	X	5.18	2.25	0.88	0.60
L225	X	—	X	—	4.98	NBR .38 HYT .18	1.75	X	X	X	X	4.98	1.75			1.75	URE	5.44	2.75	0.88	0.73
L276	—	—	—	—	—	—	—	X	—	—	X	6.19	1.75			1.75	N/A	—	—	1.45	0.75

Notes:
- X indicates: Applicable.
- See pages JW-5 and JW-9 for more information on spiders.

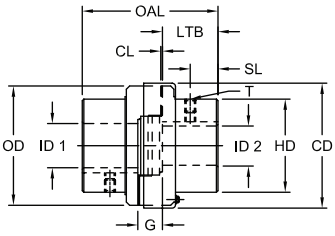
L, C and H Type Couplings



Style 1



Style 2



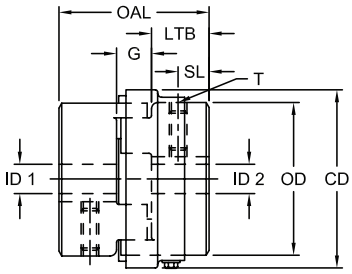
Style 3

L Type, C Type & H Type Dimensional Data

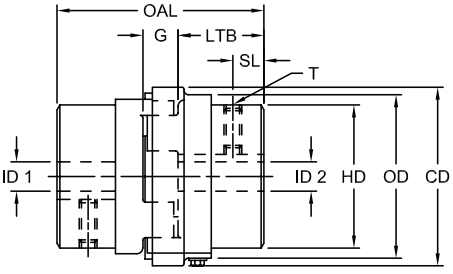
Size	Style No	OAL	G	LTB	SL	CL	T	ID1 - ID2 Min Bore		ID1 - ID2 Max Bore		OD	CD	HD	Weight Min Bore	Weight Max Bore	Moment of Inertia (Solid) WR^2
		in	in	in	in	in	in	in	mm	in	mm	in	in	in	lbs	lbs	lb-in²
L Type																	
L035	1	0.81	0.28	0.27	0.13	N/A	#6-32	0.125	3	0.375	9	0.63	N/A	0.63	0.10	0.10	0.003
L050	1	1.71	0.48	0.62	0.31	N/A	1/4-20	0.250	6	0.625*	16	1.08	N/A	1.08	0.30	0.20	0.054
L070	1	1.98	0.48	0.75	0.38	N/A	1/4-20	0.250	6	0.750	19	1.36	N/A	1.36	0.60	0.40	0.115
L075	1	2.13	0.50	0.82	0.31	N/A	1/4-20	0.250	6	0.875	22	1.75	N/A	1.75	1.00	0.80	0.388
L090	1	2.15	0.52	0.82	0.44	N/A	1/4-20	0.250	6	1.000	25	2.11	N/A	2.11	1.50	1.20	0.772
L095	1	2.51	0.52	1.00	0.44	N/A	5/16-18	0.437	11	1.125	29	2.11	N/A	2.11	1.80	1.30	0.890
L099	1	2.84	0.71	1.06	0.44	N/A	5/16-18	0.437	11	1.188	30	2.54	N/A	2.54	2.50	2.00	2.048
L100	1	3.48	0.71	1.38	0.44	N/A	5/16-18	0.437	11	1.375	35	2.54	N/A	2.54	3.20	2.40	2.783
L110	1	4.22	0.88	1.68	0.75	N/A	3/8-16	0.625	16	1.625	42	3.32	N/A	3.32	6.60	5.30	8.993
L150	1	4.50	1.00	1.75	0.75	N/A	3/8-16	0.625	16	1.875	48	3.75	N/A	3.75	8.80	7.00	11.477
L190	2	4.86	1.00	1.94	0.88	N/A	1/2-13	0.750	19	2.125	54	4.50	N/A	4.00	15.30	12.30	39.256
L225	2	5.34	1.00	2.18	1.00	N/A	1/2-13	0.750	19	2.625	67	5.00	N/A	4.25	19.60	15.00	65.000
L276	2	7.82	1.58	3.12	1.56	N/A	1/2-13	0.875	22	2.875	73	6.18	N/A	5.00	40.00	30.50	188.000
C Type																	
C226	3	7.00	1.50	2.75	1.38	0.12	1/2-13	0.875	22	2.500	64	5.15	5.50	4.12	29.00	22.00	74.000
C276	3	7.87	1.63	3.12	1.56	0.12	1/2-13	0.875	22	2.875	73	6.18	6.53	5.00	47.00	36.00	188.000
C280	3	7.87	1.63	3.12	1.56	0.12	1/2-13	1.250	32	3.000	76	7.50	7.81	5.50	61.00	49.00	362.000
C285	3	9.13	1.63	3.75	1.75	0.12	5/8-11	1.250	32	4.000	102	8.50	8.88	6.50	87.00	68.00	642.000
C295	3	9.38	1.88	3.75	1.88	0.12	5/8-11	1.500	38	3.500	89	9.12	9.62	6.25	97.00	78.00	862.000
C2955	3	10.38	1.88	4.25	2.12	0.12	5/8-11	1.750	44	4.000	102	9.12	9.62	7.12	117.00	90.00	932.000
H Type																	
H3067																	
SXB(NBR)	3	11.62	2.12	4.75	2.37	0.12	5/8-11	2.125	54	4.500	114	10.00	10.68	7.00	162.00	123.00	1,485.000
HYTREL®		11.62	2.12	4.75	2.37	0.12	5/8-11	2.125	54	4.000	102	10.00	10.68	7.00	162.00	123.00	1,485.000
H3567																	
SXB(NBR)	3	12.38	2.38	5.00	2.50	0.12	5/8-11	2.625	67	5.000	127	11.00	11.68	7.75	246.00	195.00	2,174.000
HYTREL		12.38	2.38	5.00	2.50	0.12	5/8-11	2.625	67	4.500	114	11.00	11.68	7.75	246.00	195.00	2,174.000
H3667																	
SXB(NBR)	3	13.88	2.62	5.63	2.81	0.12	3/4-10	3.000	76	5.625	143	12.00	12.45	8.75	262.00	190.00	3,591.000
HYTREL		13.88	2.62	5.63	2.81	0.12	3/4-10	3.000	76	5.000	127	12.00	12.45	8.75	262.00	190.00	3,591.000
H4067																	
SXB(NBR)	3	15.38	2.88	6.25	3.12	0.12	3/4-10	3.250	83	6.250	159	13.25	14.00	9.75	390.00	291.00	6,287.000
HYTREL		15.38	2.88	6.25	3.12	0.12	3/4-10	3.250	83	5.500	140	13.25	14.00	9.75	390.00	291.00	6,287.000
H4567																	
SXB(NBR)	3	17.12	3.12	7.00	3.50	0.12	3/4-10	3.500	89	7.000	178	14.50	15.75	10.75	575.00	435.00	10,565.000
HYTREL		17.12	3.12	7.00	3.50	0.12	3/4-10	3.500	89	6.000	152	14.50	15.75	10.75	575.00	435.00	10,565.000

Notes:
- * indicates: Without keyway.
- 2 indicates: Maximum bore is less for H Type couplings with Hytrel due to increased torque capacity.
- N/A indicates: Not Applicable.
- Jaw coupling hubs are standard with one set screw, for two set screws see RRS & RRC sections.
- See pages JW-9 and JW-22 for Performance Data.

LC and AL Type Couplings



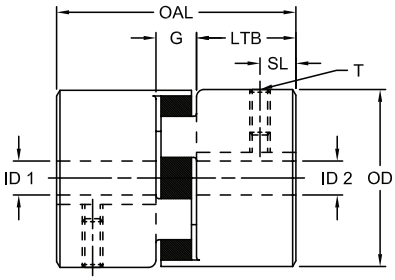
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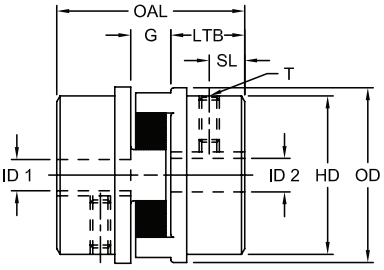
Style 2

LC Type Dimensional Data

Size	Style No	OAL	G	LTB	SL	T	ID1 - ID2 Min Bore		ID1 - ID2 Max Bore		CD	OD	HD	Weight Solid	Weight Max Bore	Moment of Inertia (Solid) WR^2
		in	in	in	in	in	in	mm	in	mm	in	in	in	lbs	lbs	lb-in²
LC090	1	2.12	0.50	0.81	0.44	1/4-20	0.250	6	1.00	25	2.54	2.11	2.11	1.5	1.2	0.772
LC095	1	2.50	0.50	1.00	0.44	5/16-18	0.437	11	1.12	29	2.54	2.11	2.11	1.8	1.3	0.890
LC099	1	2.87	0.75	1.06	0.44	5/16-18	0.437	11	1.18	30	3.11	2.53	2.53	2.5	2.0	2.048
LC100	1	3.50	0.75	1.38	0.44	5/16-18	0.437	11	1.37	35	3.11	2.53	2.53	3.5	2.5	2.783
LC110	1	4.25	0.87	1.69	0.75	3/8-16	0.625	16	1.62	41	3.81	3.31	3.31	6.6	5.0	8.993
LC150	1	4.50	1.00	1.75	0.75	3/8-16	0.625	16	1.88	48	4.41	3.75	3.75	9.1	7.0	11.477
LC190	2	4.88	1.00	1.94	0.88	1/2-13	0.750	19	2.12	54	5.01	4.50	4.00	17.0	13.0	39.256
LC225	2	5.38	1.00	2.19	1.00	1/2-13	0.875	22	2.62	67	5.61	5.00	4.25	23.0	18.0	62.003



Style 1

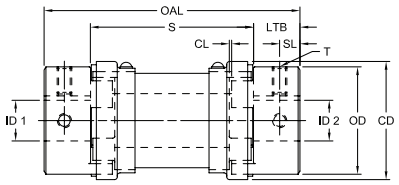


Style 2

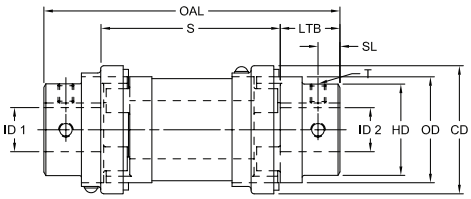
AL Type Dimensional Data

Size	Style No	OAL	G	LTB	SL	T	ID1 - ID2 Min Bore		ID1 - ID2 Max Bore		CD	OD	HD	Weight Solid	Weight Max Bore	Moment of Inertia (Solid) WR^2
		in	in	in	in	in	in	mm	in	mm	in	in	in	lbs	lbs	lb-in²
AL050	1	1.71	0.48	0.62	0.31	1/4-20	0.250	6	0.625	16	N/A	1.08	1.08	0.2	0.2	0.020
AL070	1	2.00	0.50	0.75	0.38	1/4-20	0.250	6	0.750	19	N/A	1.36	1.36	0.3	0.2	0.040
AL075	2	2.12	0.50	0.81	0.31	1/4-20	0.250	6	0.875	22	N/A	1.75	1.53	0.4	0.3	0.121
AL090	2	2.34	0.52	0.91	0.34	1/4-20	0.250	13	0.875	22	N/A	2.12	1.53	0.5	0.4	0.271
AL095	1	2.50	0.50	1.00	0.44	5/16-18	0.500	13	1.125	29	N/A	2.12	2.12	0.8	0.6	0.336
AL099	2	2.81	0.75	1.03	0.44	5/16-18	0.500	13	1.187	30	N/A	2.53	2.06	1.0	0.8	0.644
AL100	2	3.50	0.75	1.37	0.44	5/16-18	0.500	13	1.375	35	N/A	2.53	2.41	1.5	1.1	1.207
AL110	1	4.25	0.87	1.69	0.75	5/16-18	0.625	16	1.625	41	N/A	3.31	3.31	2.7	2.1	3.531
AL150	2	4.50	1.00	1.75	0.63	5/16-18	0.625	16	1.875	48	N/A	4.25	3.19	3.7	2.8	7.002

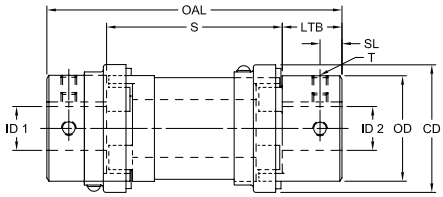
Notes: ■ N/A indicates: Not Applicable.
■ See pages JW-9 and JW-22 for Performance Data.



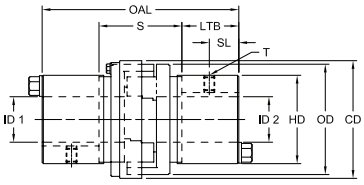
Style 1



Style 2



Style 3



Style 4

RRS & RRC Type Dimensional Data

Size	Style No	OAL in	S in	LTB in	SL in	CL in	T in	ID1 - ID2 Min Bore in	ID1 - ID2 Min Bore mm	ID1 - ID2 Max Bore in	ID1 - ID2 Max Bore mm	CD in	OD in	HD in	Weight lbs
RRS090	1	5.12	3.5	0.81	0.43	0.09	1/4-20	0.250	6	1.000	25	2.50	2.11	—	1.7
		6.62	5.0												1.8
		8.62	7.0												1.9
RRS095	1	5.50	3.5	1.00	0.43	0.09	5/16-18	0.437	11	1.125	29	2.50	2.11	—	1.9
		7.00	5.0												2.0
		9.00	7.0												2.1
RRS099	1	5.62	3.5	1.06	0.44	0.12	5/16-18	0.437	11	1.187	30	3.12	2.53	—	2.2
		7.12	5.0												2.5
		9.12	7.0												2.8
RRS100	1	6.25	3.5	1.38	0.44	0.12	5/16-18	0.437	11	1.375	35	3.12	2.53	—	3.2
		7.75	5.0												3.5
		9.75	7.0												3.8
RRS110	1	6.88	3.5	1.68	0.75	0.12	5/16-18	0.625	16	1.625	41	3.81	3.31	—	6.2
		8.36	5.0												6.6
		10.36	7.0												7.2
RRS150	2	7.00	3.5	1.75	0.62	0.12	3/8-16	0.625	16	1.875	48	4.44	3.75	—	12.2
		8.50	5.0												15.7
		10.50	7.0												20.3
RRS190	3	7.38	3.5	1.94	0.88	0.12	1/2-13	0.750	19	2.125	54	5.00	4.50	4.00	23.0
		8.88	5.0												28.2
		10.88	7.0												35.0
RRS225	3	7.88	3.5	2.18	1.00	0.12	1/2-13	0.750	19	2.625	67	5.62	5.00	4.25	26.5
		9.38	5.0												33.0
		11.38	7.0												41.4
RRC226	4	9.19	3.5	2.84	1.38	N/A	1/2-13	0.875	22	2.125	54	5.50	5.16	4.12	37.0
		10.68	5.0												43.0
		12.68	7.0												49.0
RRC276	4	8.60	3.5	2.47	1.00	N/A	1/2-13	0.875	22	2.875	73	6.50	6.18	5.00	52.0
		9.94	5.0												59.0
		11.94	7.0												69.0
RRC280	4	5.50	3.5	2.47	1.00	N/A	1/2-13	1.250	32	3.375	86	7.81	7.50	5.50	66.0
		9.94	5.0												75.0
		11.94	7.0												87.0
RRC285	4	9.31	3.5	2.87	1.00	N/A	1/2-13	1.250	32	4.125	105	8.88	8.50	6.50	92.0
		10.75	5.0												104.0
		12.75	7.0												121.0
RRC295	4	9.50	4.0	2.75	1.38	N/A	1/2-13	1.500	38	4.125	105	9.56	9.12	6.50	100.0
		10.50	5.0												112.0
		12.50	7.0												128.0
RRC2955	4	9.50	4.0	2.75	1.88	N/A	5/8-11	1.750	44	4.125	105	9.56	9.12	6.50	96.0
		10.50	5.0												111.0
		12.50	7.0												132.0

Notes: ■ N/A indicates: Not Applicable.
■ See pages JW-9 and JW-22 for Performance Data.

RRS Type - Metric Spacer Dimensional Data

Size	Style No	ID1 - ID2 Min Bore in	ID1 - ID2 Min Bore mm	ID1 - ID2 Max Bore in	ID1 - ID2 Max Bore mm	S mm	OAL mm	Spacer Weight lbs	Spacer Weight Kg
RRS090	1	0.250	11	1.000	25	100	141	0.83	0.38
						140	181	1.21	0.55
						180	221	1.59	0.79
RRS095	1	0.437	11	1.125	28	100	151	0.83	0.38
						140	191	1.21	0.55
						180	231	1.59	0.79
RRS099	1	0.437	11	1.188	30	100	154	1.08	0.49
						140	194	1.63	0.74
						180	234	2.17	0.98
RRS100	1	0.437	11	1.375	35	100	170	1.08	0.49
						140	210	1.63	0.74
						180	250	2.17	0.98
RRS110	1	0.625	16	1.625	41	100	186	1.64	0.74
						140	226	2.55	1.16
						180	266	3.48	1.58
RRS150	2	0.625	16	1.875	48	100	189	5.92	2.69
						140	229	9.54	4.33
						180	269	13.19	5.98
RRS190	2	0.750	19	2.125	54	100	199	8.75	3.97
						140	239	14.00	6.35
						180	277	19.26	8.74
RRS225	2	0.750	19	2.625	67	100	221	10.83	4.91
						140	261	17.49	7.93
						180	291	24.18	10.97

Note: ■ See pages JW-9 and JW-22 for Performance Data.

L Type Hubs - Special Lengths

Size	OAL Standard Dimensions Complete Couplings Overall Length in	LTB Standard Dimensions Hub Length Thru Bore in	OAL Special Dimensions Complete Couplings Overall Length in	LTB Special Dimensions Hub Length Thru Bore in
L050	1.720	0.620	1.10	0.31
			1.34	0.43
			2.24	0.88
L070	2.000	0.750	1.23	0.38
			3.00	1.25
L095	2.500	1.000	3.86	1.68
L100	3.500	1.375	7.99	3.62
L110	4.250	1.690	2.37	0.75
			2.47	0.80
			6.63	2.88

Notes: ■ For ordering information on any special length jaw hub, please contact Lovejoy Customer Service.
■ The Overall Length is calculated using two hubs with the same length thru bore.

where the world turns for Lovejoy® Coupling Solutions

Disc

In This Section:

- SU-6 Series
- SX-6 Series
- SX-8 Series
- SXC-6 Series
- SXCS-6 Series
- SXCST-6 Series
- DI-6 Series
- DI-8 Series
- DIR-6 / DILR-6 Series
- DIRA-6 / DILRA-6 Series



Disc

Safety Warning

When using Lovejoy products, you must follow these instructions and take the following precautions. Failure to do so may cause the power transmission product to break and parts to be thrown with sufficient force to cause severe injury or death.

Refer to this Lovejoy Catalog for proper selection, sizing, horsepower, torque range, and speed range of power transmission products, including elastomeric elements for couplings. Follow the installation instructions included with the product, and in the individual product catalogs for proper installation of power transmission products. Do not exceed catalog ratings.

During start up and operation of power transmission product, avoid sudden shock loads. Coupling assembly should operate quietly and smoothly. If coupling assembly vibrates or makes beating sound, shut down immediately, and recheck alignment. Shortly after initial operation and periodically thereafter, where applicable, inspect coupling assembly for: alignment, wear of elastomeric element, bolt torques, and flexing elements for signs of fatigue. Do not operate coupling assembly if alignment is improper, or where applicable, if elastomeric element is damaged, or worn to less than 75% of its original thickness.

Do not use any of these power transmission products for elevators, man lifts, or other devices that carry people. If the power transmission product fails, the lift device could fall resulting in severe injury or death.

For all power transmission products, you must install suitable guards in accordance with OSHA and American Society of Mechanical Engineers Standards. Do not start power transmission product before suitable guards are in place. Failure to properly guard these products may result in severe injury or death from personnel contacting moving parts or from parts being thrown from assembly in the event the power transmission product fails.

If you have any questions, contact the Lovejoy Engineering Department at 1-630-852-0500.

Disc

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Overview

Lovejoy takes great pride in being able to offer a wide variety of superior disc coupling products in models designed to meet the application needs of today's worldwide power transmission market.

Using advanced design techniques, implementation of Finite Element Analysis, and extensive testing of materials, Lovejoy has developed an innovative disc pack profile design revolutionary to traditional disc pack designs found in the market. This disc pack, which can accommodate 1/2° to 1-1/2° of angular misalignment and is used in all Lovejoy disc coupling products.

Lovejoy disc packs are manufactured using high grade stainless steel (AISI-301), ensuring high strength, high endurance to fatigue, and resistance to most environmental conditions.

Lovejoy disc couplings utilize unitized disc packs with both 6 or 8 bolt designs. The 8 bolt design can transmit greater torque than the 6 bolt design, however, it is not able to accommodate as much angular misalignment.

Lovejoy couplings can be fitted with overload bushings to protect the disc pack during momentary torsional overloads.

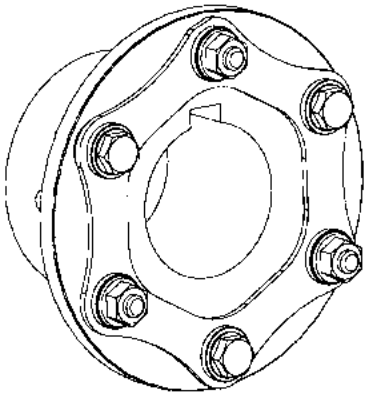
Lovejoy couplings are offered in a variety of configurations to fit most applications. In addition, Lovejoy's engineering department can customize a coupling to meet many special requirements such as close coupled, drop-out centers, electrically insulated, vertical mounting, and safety couplings. A notable design offered by Lovejoy is the reduced moment (DI Type) coupling that meets the anti-flail device requirements mandated in API-610 while offering a low weight and short center of gravity to bearing distance.

The design and manufacture of Lovejoy disc couplings is integrated into a certified Quality System according to ISO-9001 to fulfill the high quality requirements of Lovejoy customers.

WARNING

You must refer to page D-2 (Page 232) for Important Safety Instructions and Precautions for the selection and use of these products. Failure to follow the instructions and precautions can result in severe injury or death.

Advantages of the Lovejoy Disc Coupling

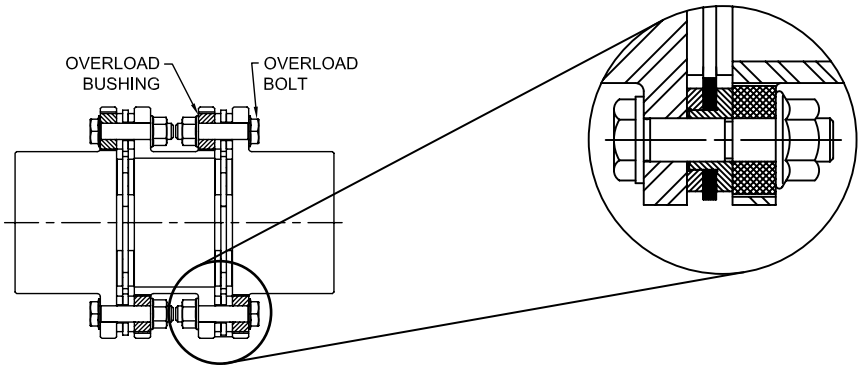


- Eliminates the need for lubrication and coupling maintenance
- Coupling can be inspected without disassembly
- Condition of disc packs can be inspected with a strobe light while the machine is running

  Note: It is not recommended that couplings be operated without coupling guards.
- Easy to assess equipment misalignment
- Torsionally rigid without any backlash
- No wearing parts
- Resistance to harsh environments
- Long life when properly sized and aligned
- High power density (higher torque for a given outside diameter)
- Lovejoy supports the API-610 Standard up to 3,800 RPM
- Unitized disc packs ensure repeatability necessary for meeting the balance and piloting requirements as mandated by API-610

Available with Overload Bushings to protect the coupling from momentary torque overloads

- Prevents the disc pack from being plastically deformed
- Allows for shorter BSE (shaft separation) because bolts can be turned to face inward
- Special orientation of bolts allows the bolts to be tightened using a torque wrench instead of nuts (Normal is to tighten nuts with torque wrench)

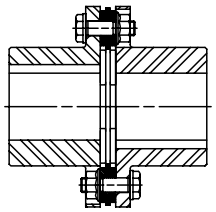


Lovejoy Disc Coupling Overview

Industrial SU Type

The SU Type coupling has a single flex plane with two hubs and a single disc pack. It is suitable for angular and axial misalignment only. Two SU couplings are often combined with a shaft to make a floating shaft coupling. The shaft can be hollow for long light weight floating shaft couplings.

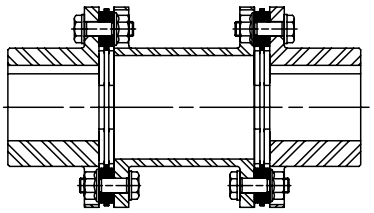
SU Type



Industrial SX Type

This is the standard coupling type that includes two hubs, a stock length spacer designed to meet industry standard lengths, and two unitized disc packs. The coupling has two flex planes, one at each disc pack, allowing this coupling to accommodate parallel, angular, and axial misalignment with specified limits. The coupling is available in 6 and 8 bolt designs and bore sizes up to 13 inches (330mm) on the largest size. Custom spacer lengths can be manufactured to meet special shaft separations required for specific applications. The SX coupling can be fitted with overload bushings to protect the disc packs in over torque conditions and can act as an anti-flail device. SX couplings are assembled at the time of installation on the equipment where the coupling will be in service.

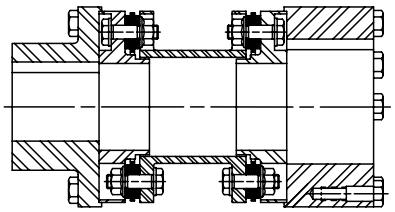
SX Type



Industrial DI Type

The DI Type coupling has a “Drop-In” spacer assembly that is assembled at the factory. The coupling consists of two hubs and a spacer assembly comprising of the spacer, two unitized disc packs, and two guard rings. The disc packs are bolted to the spacer and guard rings at the factory using the torque values recommended by Lovejoy for the disc pack bolts. With the hubs mounted on the shafts, the entire disc pack assembly can be “Dropped In” place between the two hubs. The hubs are piloted to ensure proper centering of the spacer assembly. This piloting serves as an anti-flail feature and aids in the coupling’s ability to meet the balance standards mandated by API. This style coupling is designed to meet the balance and anti-flail requirements specified in API-610.

DI Type

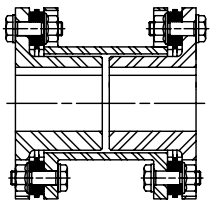


Oversized, or Jumbo, hubs are available for use with the DI Type coupling to allow for larger bore sizes on most DI coupling sizes. This allows for the use of smaller DI couplings in applications where a smaller size coupling can still accommodate the application torque.

Industrial SXC Type

The SXC Type is the close coupled variation of the SX Type coupling. The SXC is similar to the SX coupling in that the disc packs are attached when the coupling is installed. In the close coupled units, the hubs are turned inward and are mounted inside the spacer. Note that with the hubs inside the spacer, the maximum bore allowed in the hub will be decreased. The SXC couplings can be used with one or both hubs turned outward to allow the coupling to accommodate different shaft separations.

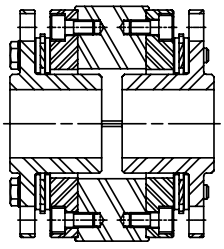
SXC Type



Industrial SXCS and SXCST Types

The SXCS and SXCST Types have split spacers and the disc packs can be serviced or removed without moving the hubs on the shafts and without moving the equipment. The SXCS Type has the bolts that connect the hubs to the split spacer installed from the ends of the couplings. The SXCST have the bolts installed from inside the spacer pointing outward towards the hubs.

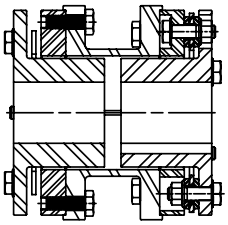
SXCS Type



Additional Types

Additional types of Lovejoy Disc couplings are illustrated on page D-28. Please contact Lovejoy Technical Support for couplings shown on these pages, or for special requirements not shown in this catalog.

SXCST Type



Steps In Selecting A Disc Coupling

The following is a sample application used to illustrate the standard process for selecting a Lovejoy Disc coupling. Any resemblance to any existing company's application is neither intentional nor meant to resemble that company's actual application.

Sample Application:

A company has a compressor application using a 225 horsepower electric motor running at 1,150 RPM to drive a three cylinder multi stage reciprocating air compressor. The electric motor has a 3-3/8 inch shaft with a 7/8 inch keyway and the compressor has a 92mm shaft with a 25mm keyway. The shaft separation is roughly 7 inches between shaft ends with some ability to adjust the motor location. The shafts have a parallel misalignment/offset of roughly 1/32 of an inch.

Checking in the Applications Service Factors Table on Page D-7, it's noted that a three cylinder reciprocating compressor has a service factor of 3.0.

Step 1: The first step is to determine what coupling type is to be selected for this application. Since the SU Type coupling only supports a single flex plane, it can only accommodate angular and axial misalignment, but not parallel misalignment. The next choice would be to look at an SX or DI Type coupling. The 6 bolt SX Type will accommodate both parallel misalignment and the defined shaft separation. The size will be determined by the selection torque and the shaft diameters.

Step 2: Next, calculate the application torque and apply the service factor to calculate the selection torque.

The formula used to calculate torque is as follows:

$$\text{Application Torque (in–lb)} = \frac{(\text{HP} \times 63025)}{\text{RPM}}$$

or

$$\text{Nm} = \frac{(\text{KW} \times 9550)}{\text{RPM}}$$

Plugging in the numbers from the application description:

Application Torque (in-lbs) =

$$\frac{(\text{HP} \times 63025)}{\text{RPM}} = \frac{(225 \times 63025)}{1150} = 12{,}331 \text{ in-lbs}$$

Application Torque x Service Factor = Selection Torque

12,331 in-lbs x 3.0 = 36,993 in-lbs

Step 3: Use the SX coupling tables starting on page D-12 and note that the SX 202-6 is rated at 40,700 in-lbs, more than enough to handle the selection torque calculated in step 2. The SX202-6, however, will not support the 92mm shaft size. The next larger size coupling, the SX228-6, will support the 92mm shaft size and the shaft separation dimension (BSE) is 6.88 inches, very close to the application's desired 7 inch separation. The SX228-6 is rated at 62,000 in-lbs which may seem to be excessive, however, the coupling size is necessary to handle the bore size.

Step 4: The SX228-6 coupling is rated for a maximum unbalanced speed of 3,400 RPM, more than enough to support the application speed of 1,150 RPM.

Step 5: To determine if the coupling will handle the parallel misalignment, use the trig function of tan 1° = offset allowed for 1 inch = 0.0174

Multiply the 0.0174 x the distance between disc packs or 'S' dimension from the table on page D-13, or 5.50 inches.

The allowable parallel offset is 0.0174 x 5.50 = 0.096 inches. The maximum offset for the application is 1/32 inches (0.031), therefore this coupling can accommodate the parallel misalignment.

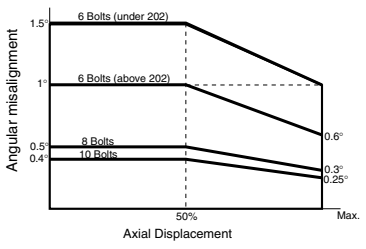
Note: ■ It is always recommended to try to install the coupling at roughly 20% of the allowable misalignment. For this coupling the installer should try to achieve better than 0.020 parallel misalignment at the time of installation. This will allow for the additional misalignment that will occur as the result of equipment settle and general equipment wear.

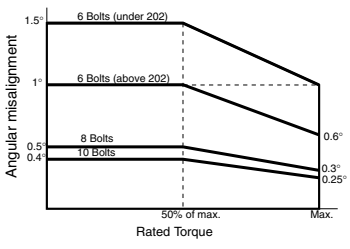
Recommended Information Needed to Specify a Lovejoy Disc Coupling

The following information should be provided to Lovejoy when placing an order to ensure the proper selection of the disc coupling (see sample worksheet on page D-8):

- ■ Application and type of duty
- ■ Type of driver (engine, motor, turbine, etc.)
- ■ Speed and horsepower
- ■ Type of driven equipment
- ■ Shaft sizes and separation
- ■ Space limitations for major diameter and length
- ■ Type of fit (Interference fit default, clearance fit and shaft locking device preparation available upon request)
- ■ Special requirements (vertical mounting, drop out center, flange mount, electrically insulated, API-610 up to 3,800 RPM, shear pins, balancing, etc.)

Angular misalignment, axial misalignment, and rated torque are all related to the coupling's capacity to accommodate application torque over any period of time. As illustrated in the following charts, when the application torque increases to 50% of the coupling capacity, the ability of the coupling to accommodate angular misalignment to is reduced. The same holds true for the ability to accommodate axial misalignment.





Selection Procedure

1. Select the coupling type.
2. Select the driven machine service factor SF_A from Table 1.
3. Select the driving machine service factor SF_D from Table 2.

Care should be taken when the driving machine is other than a standard electric motor or turbine. Some engines will impose extra fluctuations on the drive system and allowance should be made accordingly. Please refer to Table 2. A torsional coupling may be required for diesel drives.

The two service factors SF_A and SF_D must be added resulting in the combined service factor SF. $SF = SF_A + SF_D$

Driven Machine Service Factor SFA Table — *Table 1*

Driven equipment	SF_A
BLOWERS, FANS	
Centrifugal	1.0
Lobe / Vane / Turboblowers	1.25
Forced draught fans	1.5
Induc.draught with damper	1.5
Induc.draught without control	2.0
Cooling towers	2.0
CHEMICAL INDUSTRY	
Agitators (thin liquid)	1.0
Agitators (viscous liquid)	1.5
Centrifuges (light)	1.25
Centrifuges (heavy)	1.75
Mixers	1.75
COMPRESSORS	
Centrifugal	1.0
Lobe/Rotary	1.25
Turbocompressors	1.75
Reciprocating:	
1 to 3 cylinders	3.0
4 or more cylinders	1.75
CONVEYOR, HOISTS[1], ELEVATORS[1]	
Conveyors:	
Screw / Apron / Belt / Chain	1.25
Bucket / Rotary / Lifts	1.5
Reciprocating	3.0
Hoists:	
Medium duty	2.5
Heavy duty	3.0
Elevators:	
Centrifugal and gravity disch	1.25
DREDGERS	**2.0**
FOOD INDUSTRY	
Packaging machines and fillers	1.25
Kneading machines	1.5
Cane crushers	1.5
Cane cutters	1.5
Cane mills	2.0
Sugar beet cutters	1.5
Sugar beet washing machines	1.5
GENERATORS	
Even load	1.0
Frequency converters	1.5
Welding generators	2.0
MACHINE TOOLS	
Main Drives	2.0
Auxiliary and transverse drives	1.5
METAL WORKING	
Presses/Hammers	2.0
Straighteners	2.0
Bending machines / Shears	1.5
Punching machines	2.0
MARINE APPLICATIONS	**2.5**
MINING AND STONES	
Crushers	2.5
Mills	2.5
Mine ventilators	2.0
Vibrators	1.5
OIL INDUSTRY	
Pipeline pumps	1.5
Rotary drilling equipment	2.0
PAPER INDUSTRY	
Calenders	2.0
Couches	2.0
Drying cylinders	2.25
Pulpers	2.0
Pulp grinders	2.0
Suction rolls	2.0
Wet presses	2.0
Reels	2.0
Agitators	2.0
PLASTIC INDUSTRY	
Calenders, Crushers, Mixers	1.75
PUMPS	
Centrifugal,General Feed or Boiler Feed	1.0
Centrifugal, Slurry	1.5
Centrifugal, Dredge	2.0
Rotary / Gear / Lobe or Vane	1.5
Reciprocating:	
1 cylinder	3.0
2 cylinders, single acting	2.0
2 cylinders, double acting	1.75
3 cylinders or more	1.5
ROLLING MILLS	
Billet shears	2.5
Chain transfers	1.5
Cold rolling mills	2.0
Continuous casting plants	2.5
Cooling beds	1.5
Cropping shears	2.0
Cross transfers	1.5
Descaling machines	2.0
Heavy and medium duty mills	3.0
Ingot and blooming mills	2.5
Ingot handling machinery	2.5
Ingot pushers	2.5
Manipulators	2.0
Plate shears	2.0
Roller adjustment drives	1.5
Roller straighteners	1.5
Roller tables (heavy)	2.5
Roller tables (light)	1.5
Sheet mills	2.5
Trimming shears	1.5
Tube and welding machines	2.0
Winding machines	1.5
Wire drawing benches	1.5
RUBBER INDUSTRY	
Extruder	1.75
Calender	2.0
Mixing mill / Refiner / Crusher	2.5
STEEL PLANTS	
Blast furnace blowers	1.5
Converters	2.5
Inclined blast furnace elev.	2.0
Crushers	2.0
TEXTILE MACHINES	
Printing and drying machines	1.5
Tanning vats	1.5
Calenders	1.5
Looms	1.5
WATER AND WASTE INDUSTRY	
Aerators, Screw pumps, Screens	1.5
WOOD WORKING MACHINERY	
Trimmers, Barkers, Saws, Planes	2.0

Note: ■ 1 indicates: If people are transported, Lovejoy does not recommend and will not warranty the use of the coupling.

The factors in Table 1 are for general guidance and can be modified by customers´ specialist knowledge of their own equipment.

Driving Machine Service Factor SFD Table 2

Driving equipment		SF_D
Multi-cylinder engine		
8 or more		0.5
6		1.0
4 or 5		1.5
Less than 4	*Refer to Lovejoy*	
Variable speed motors		0.8
Electric motors[1] and turbines		0

[1]Except variable speed motors

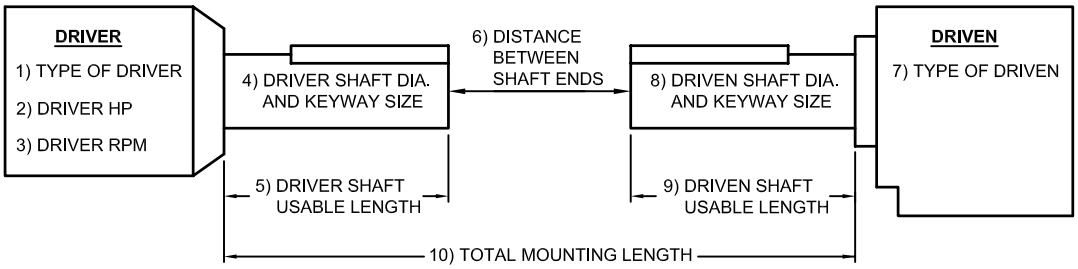
Please consult our Application Engineering Department if axial excitations are foreseeable either on the driving or driven side.

D

Disc Coupling Selection Worksheet

Customer Name: _____ **Contact Name:** _____

Phone Number: _____ **Email Address:** _____



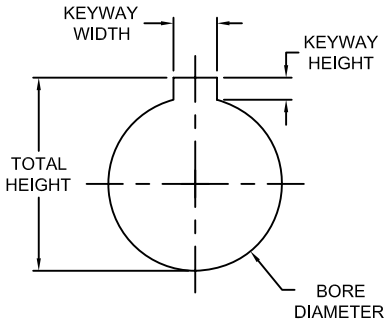
1. Type of Driver (Electric Motor, Combustion Engine, Gearbox, etc.) : _____

For combustion engines, define type
Gasoline, Diesel, Natural Gas, etc. : _____ Number of cylinders _____

2. Driver Horse Power : _____ **3.** Driver or Gearbox output RPM : _____

Retrieve the Application Service Factor from Page D-7 : _____ then calculate the Selection Torque using the following formula:

Torque (in-lbs) = $\frac{\text{HP x 63025}}{\text{RPM}}$ x Service Factor = Selection Torque = _____ in-lbs



4. Driver Shaft Diameter : _____ Keyway size : KW Width _____ KW Height _____

Specify Clearance Fit, Interference Fit, Metric (P7, H7, etc), Shaft Locking Device, and Set Screw or No Set Screw

5. Driver Usable Shaft Length : _____ (Measure from the end of the shaft to any obstruction)

6. Distance between shaft ends (BSE) : _____

7. Type of Driven Equipment : _____

8. Driven Shaft Diameter : _____ Keyway size : KW Width _____ KW Height _____

Specify Clearance Fit, Interference Fit, Metric (P7, H7, etc), Shaft Locking Device, and Set Screw or No Set Screw

9. Driven Usable Shaft Length : _____ (Measure from the end of the shaft to any obstruction)

10. Total Mounting Length : _____ (Advise of any obstructions, walls, beams, guards, pipes, etc.)

11. For Tapered Shafts specify the following:

Minimum or Maximum Taper diameter: _____

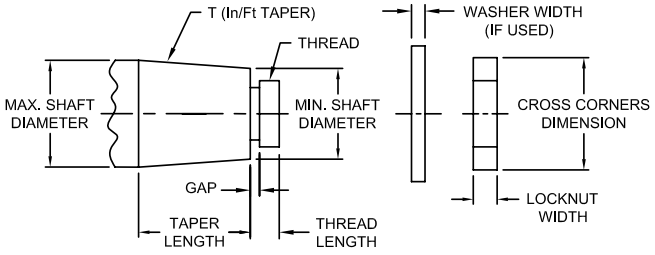
Taper Length: _____ T (Taper Inch per Foot) : _____

Gap or Hub Overhang amount: _____

Locknut Width: _____ Size of nut cross corners: _____

Thread Size: _____ Thread Length: _____

Washer Diameter (if used) : _____ Washer Width: _____



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2655 Wisconsin Avenue
Downers Grove, IL 60515

Send this form to:
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or fax to: 800-446-0878

Performance Data by Size

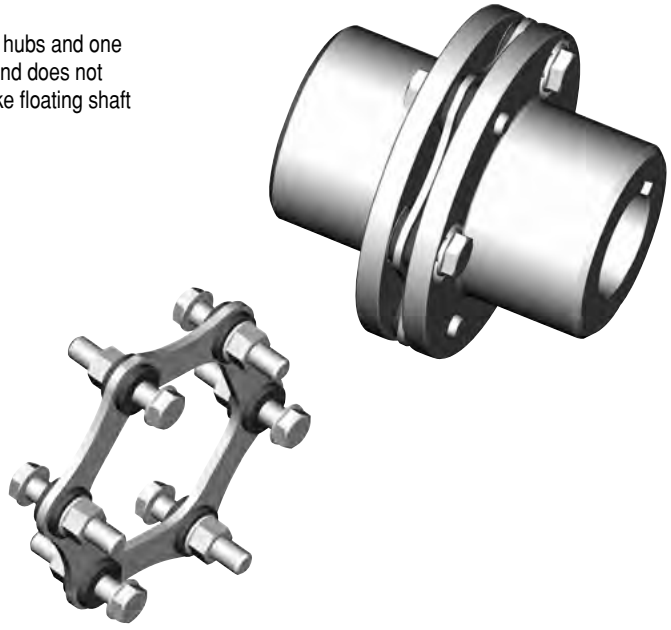
Size	HP per 100 RPM	kW per 100 RPM	Nominal Torque in-lbs	Nominal Torque Nm	Peak Torque in-lbs	Peak Torque Nm	Torsional[1] Stiffness x 10^6 in-lbs/rad	Torsional[1] Stiffness x 10^6 Nm/rad	Axial[2] Misalign ±DKa in	Axial[2] Misalign ±DKa mm	Angular[3] Misalign Max Degrees
90-6	3.5	2.6	2,100	240	4,200	480	2.4	0.3	0.059	1.5	
110-6	8.0	6.0	5,100	575	10,200	1 150	3.4	0.4	0.083	2.1	
132-6	15.4	11.5	9,700	1 100	19,500	2 200	4.4	0.5	0.102	2.6	* 1.5°
158-6	28.2	21.0	17,700	2 000	35,400	4 000	5.8	0.7	0.122	3.1	
185-6	46.3	34.5	29,200	3 300	58,400	6 600	11.5	1.3	0.146	3.7	
202-6	64.6	48.2	40,700	4 600	81,400	9 200	13.3	1.5	0.150	3.8	
228-6	98.3	73.3	62,000	7 000	123,900	14 000	23.0	2.6	0.165	4.2	
255-6	143.2	106.8	90,300	10 200	180,600	20 400	41.0	4.7	0.185	4.7	
278-6	199.5	148.8	125,700	14 200	251,400	28 400	63.0	7.1	0.205	5.2	
302-6	281.1	209.6	177,000	20 000	354,000	40 000	84.0	9.5	0.224	5.7	* 1°
325-6	351.2	261.9	221,300	25 000	442,600	50 000	115.0	13.0	0.256	6.5	
345-6	436.0	325.0	274,400	31 000	549,000	62 000	150.0	17.0	0.272	6.9	
380-6	594.0	443.0	374,400	42 300	749,000	84 600	195.0	22.0	0.299	7.6	
410-6	802.0	598.0	505,400	57 100	1,011,000	114 200	248.0	28.0	0.323	8.2	
440-6	1033.0	770.0	650,500	73 500	1,301,000	147 000	310.0	35.0	0.346	8.8	
278-8	280.1	209.6	177,000	20 000	354,000	40 000	84.0	9.5	0.146	3.7	
302-8	421.5	314.3	265,500	30 000	531,000	60 000	132.0	14.9	0.157	4.0	
325-8	519.8	387.6	327,500	37 000	655,000	74 000	181.0	20.4	0.169	4.3	
345-8	646.0	482.0	407,100	46 000	814,200	92 000	221.0	25.0	0.181	4.6	
380-8	885.0	660.0	557,600	63 000	1,115,200	126 000	301.0	34.0	0.197	5.0	
410-8	1208.0	901.0	761,200	86 000	1,522,400	172 000	354.0	40.0	0.213	5.4	* .5°
440-8	1545.0	1152.0	973,600	110 000	1,947,200	220 000	434.0	49.0	0.228	5.8	
475-8	1939.0	1446.0	1,221,400	138 000	2,442,800	276 000	531.0	60.0	0.248	6.3	
505-8	2459.0	1833.0	1,548,900	175 000	3,097,800	350 000	646.0	73.0	0.264	6.7	
540-8	3091.0	2305.0	1,947,200	220 000	3,894,400	440 000	788.0	89.0	0.283	7.2	
570-8	3639.0	2713.0	2,292,300	259 000	4,584,600	518 000	912.0	103.0	0.299	7.6	

Notes:
- * indicates: See Page D-6 for additional information regarding misalignment.
- 1 indicates: Torsional stiffness is provided for one disc pack. This should be combined with hubs, spacers, etc. as calculated from ANSI/AGMA 9004-A99.
- 2 indicates: Axial misalignment is provided for couplings with two disc packs.
- 3 indicates: Angular misalignment is provided per single disc pack.
- For larger sizes, please contact Lovejoy Technical Support.

D

SU-6 Type Industrial Coupling

The SU Type coupling is a 6 bolt single flex plane coupling which consists of two hubs and one disc pack kit. It is only suitable for the specified axial and angular misalignment and does not accommodate parallel misalignment. It is often combined with solid shafts to make floating shaft couplings. See Page D-28 for a picture of an SXFS Type floating shaft coupling.



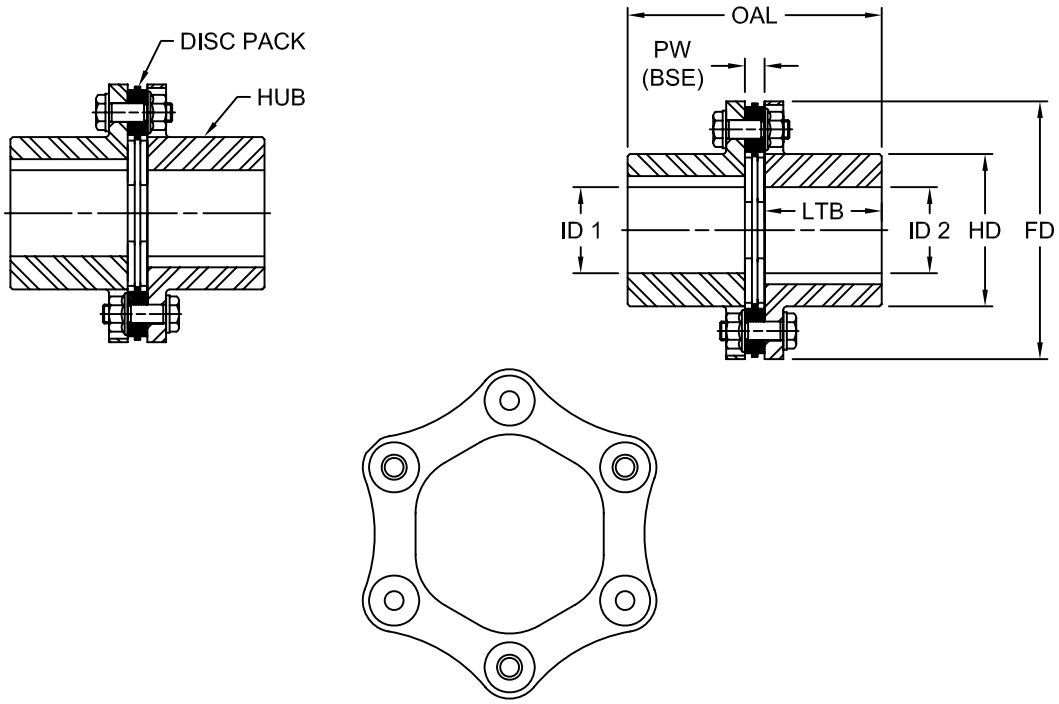
Features

- Unitized disc pack
- Infinite life when properly aligned
- Torsionally rigid without any back lash
- No need for lubrication or maintenance
- No wearing parts and high resistance to harsh environmental conditions
- Larger sizes are available upon request

SU-6 Performance Data

Size	Nominal Torque in-lbs	Nominal Torque Nm	Peak Torque in-lbs	Peak Torque Nm	Max Speed Unbal[1] RPM	Max Speed Bal[2] RPM	ID1-ID2 Max Bore[3] in	ID1-ID2 Max Bore[3] mm	Weight[4] lbs	Weight[4] kg	Axial[5] Misalignment ±ΔKa in	Axial[5] Misalignment ±ΔKa mm	Angular[6] Misalignment Max Degrees
90-6	2,100	240	4,200	480	9,100	22,700	1.50	38	3.1	1.4	0.030	0.75	
110-6	5,100	575	10,200	1 150	7,200	18,000	1.81	46	5.1	2.3	0.039	1.00	
132-6	9,700	1 100	19,500	2 200	5,840	14,600	2.38	60	8.4	3.8	0.051	1.30	1.5°
158-6	17,700	2 000	35,400	4 000	4,920	12,300	2.75	70	14.1	6.4	0.059	1.50	
185-6	29,200	3 300	58,400	6 600	4,200	10,500	3.13	80	21.8	9.9	0.071	1.80	
202-6	40,700	4 600	81,400	9 200	3,840	9,600	3.50	90	29.8	13.5	0.075	1.90	
228-6	62,000	7 000	123,900	14 000	3,400	8,500	3.94	100	41.9	19.0	0.083	2.10	
255-6	90,300	10 200	180,600	20 400	3,080	7,700	4.31	110	63.9	29.0	0.091	2.30	
278-6	125,700	14 200	251,400	28 400	2,800	7,000	4.88	124	81.6	37.0	0.102	2.60	
302-6	177,000	20 000	354,000	40 000	2,560	6,400	5.31	135	108.0	49.0	0.110	2.80	
325-6	221,300	25 000	442,600	50 000	2,400	6,000	5.75	145	133.4	60.5	0.126	3.20	1°
345-6	274,400	31 000	549,000	62 000	2,200	5,500	6.06	155	160.9	73.0	0.134	3.40	
380-6	374,400	42 300	749,000	84 600	2,040	5,100	6.69	170	211.6	96.0	0.150	3.80	
410-6	505,400	57 100	1,011,000	114 200	1,880	4,700	7.13	180	273.4	124.0	0.161	4.10	
440-6	650,500	73 500	1,301,000	147 000	1,740	4,350	7.69	195	332.9	151.0	0.173	4.40	

Notes:
- * indicates: Operating speed must be equal or less than permissible speed.
- 2 indicates: Couplings as manufactured can accommodate maximum speeds as listed. Higher speeds listed as 'Bal' require special balancing.
- 3 indicates: The maximum bores shown are for cylindrical or taper shafts with keys. For splines and other bore types, contact Lovejoy Technical Support.
- 4 indicates: Weight is given for a complete coupling with maximum bores.
- 5 indicates: Axial misalignment is given for one disc pack.
- 6 indicates: Angular misalignment is given for one disc pack. There is no parallel misalignment for the SU Type.



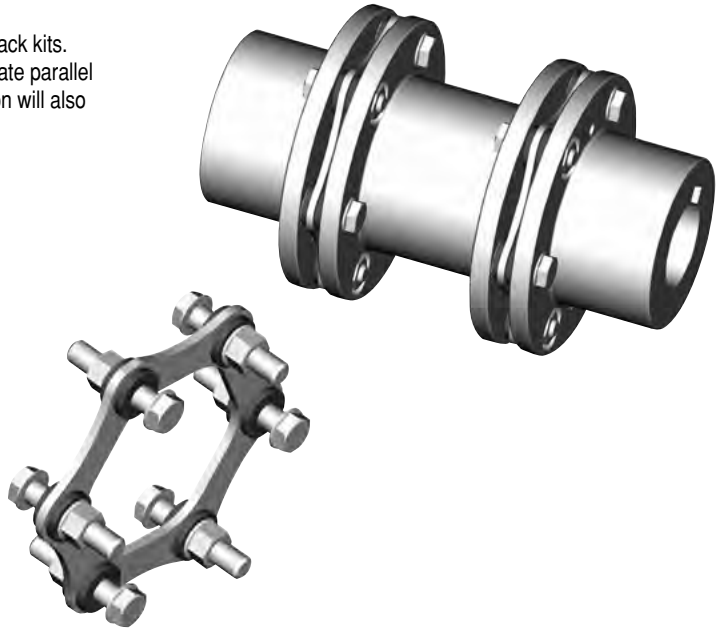
SU-6 Dimensional Data

Size	OAL		PW - BSE		LTB		ID1-ID2 Max Bore[3]		FD		HD	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
90-6	3.44	88	0.295	7.5	1.57	40	1.50	38	3.54	90	2.28	58
110-6	4.27	108	0.331	8.4	1.97	50	1.81	46	4.33	110	2.56	65
132-6	5.05	128	0.331	8.4	2.36	60	2.38	60	5.20	132	3.31	84
158-6	5.96	151	0.441	11.2	2.76	70	2.75	70	6.22	158	3.86	98
185-6	6.85	174	0.551	14.0	3.15	80	3.13	80	7.28	185	4.41	112
202-6	7.69	196	0.610	15.5	3.54	90	3.50	90	7.95	202	4.92	125
228-6	8.57	218	0.689	17.5	3.94	100	3.94	100	8.98	228	5.51	140
255-6	9.87	251	0.807	20.5	4.53	115	4.31	110	10.04	255	6.10	155
278-6	10.67	271	0.835	21.2	4.92	125	4.88	124	10.95	278	6.85	174
302-6	11.60	294	0.961	24.4	5.32	135	5.31	135	11.89	302	7.48	190
325-6	12.44	316	1.024	26.0	5.71	145	5.75	145	12.80	325	8.07	205
345-6	13.31	338	1.110	28.2	6.10	155	6.06	155	13.58	345	8.55	217
380-6	14.66	372	1.260	32.0	6.70	170	6.69	170	14.96	380	9.37	238
410-6	15.87	403	1.307	33.2	7.28	185	7.13	180	16.14	410	10.04	255
440-6	16.79	426	1.433	36.4	7.68	195	7.69	195	17.32	440	10.75	273

Notes:
- 3 indicates: The maximum bores shown are for cylindrical or taper shafts with keys. For splines and other bore types, contact Lovejoy Technical Support.
- Metric dimensions are rounded to the nearest 'mm' except where otherwise shown.
- Larger sizes available upon request.

SX-6 Type Industrial Coupling

The SX-6 Type is a standard coupling with two hubs, a spacer, and two disc pack kits. The coupling has two flex planes (one at each disc pack) so it can accommodate parallel misalignment by the angular misalignment in each disc pack. This configuration will also accommodate axial misalignment within the specified limits.



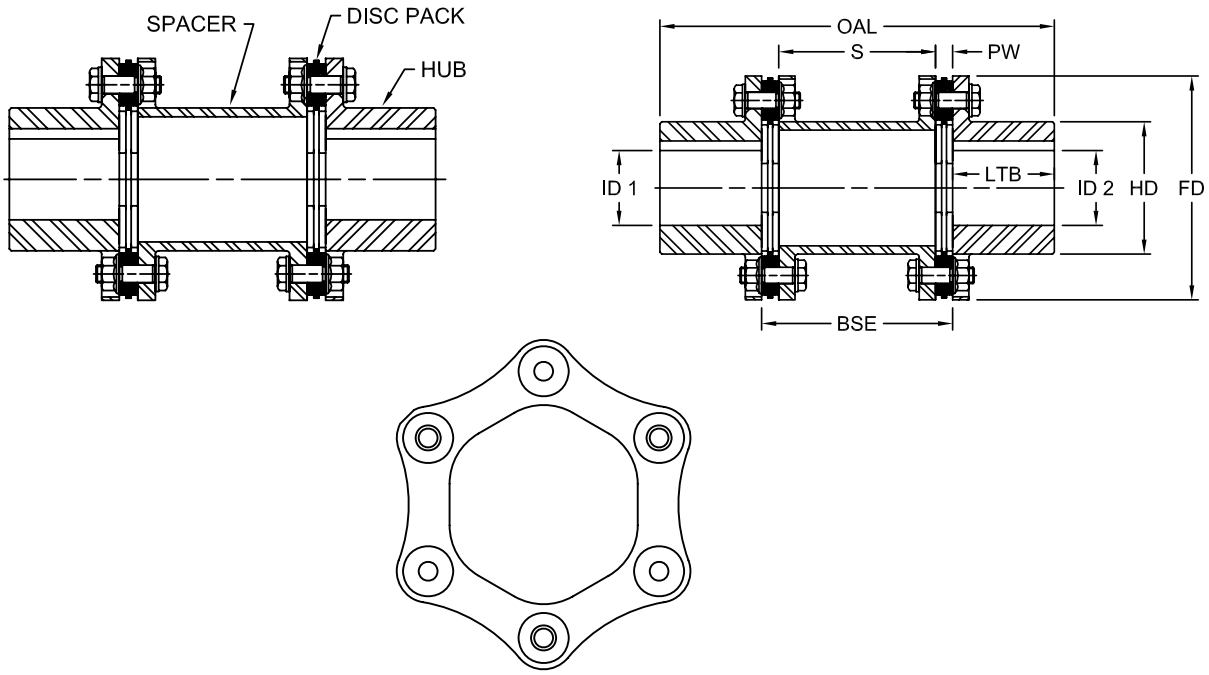
Features

- Unitized disc pack
- Infinite life when properly sized and aligned
- Accommodates angular, axial, and parallel misalignment
- Torsionally rigid without any back lash
- No need for lubrication or maintenance
- No wearing parts and high resistance to harsh environmental conditions
- Overload Bushings are available, see page D-4

SX-6 Performance Data

Size	Nominal Torque in-lbs	Nominal Torque Nm	Peak Torque in-lbs	Peak Torque Nm	Max Speed Unbal[1] RPM	Max Speed Bal[2] RPM	ID1-ID2 Max Bore[3] in	ID1-ID2 Max Bore[3] mm	Weight[4] lbs	Weight[4] kg	Axial[5] Misalignment ±ΔKa in	Axial[5] Misalignment ±ΔKa mm	Angular[6] Misalignment Max Degrees
90-6	2,100	240	4,200	480	9,100	22,700	1.50	38	4.6	2.1	0.059	1.5	
110-6	5,100	575	10,200	1 150	7,200	18,000	1.81	46	6.4	2.9	0.083	2.1	
132-6	9,700	1 100	19,500	2 200	5,840	14,600	2.38	60	12.1	5.5	0.102	2.6	1.5°
158-6	17,700	2 000	35,400	4 000	4,920	12,300	2.76	70	19.0	8.6	0.122	3.1	
185-6	29,200	3 300	58,400	6 600	4,200	10,500	3.13	80	33.1	15.0	0.146	3.7	
202-6	40,700	4 600	81,400	9 200	3,840	9,600	3.50	90	46.3	21.0	0.150	3.8	
228-6	62,000	7 000	123,900	14 000	3,400	8,500	3.94	100	66.1	30.0	0.165	4.2	
255-6	90,300	10 200	180,600	20 400	3,080	7,700	4.31	110	88.2	40.0	0.185	4.7	
278-6	125,700	14 200	251,400	28 400	2,800	7,000	4.88	124	125.7	57.0	0.205	5.2	
302-6	177,000	20 000	354,000	40 000	2,560	6,400	5.31	135	163.1	74.0	0.224	5.7	
325-6	221,300	25 000	442,600	50 000	2,400	6,000	5.75	145	196.2	89.0	0.256	6.5	1°
345-6	274,400	31 000	549,000	62 000	2,200	5,500	6.06	155	240.3	109.0	0.272	6.9	
380-6	374,400	42 300	749,000	84 600	2,040	5,100	6.69	170	321.9	146.0	0.299	7.6	
410-6	505,400	57 100	1,011,000	114 200	1,880	4,700	7.13	180	418.8	190.0	0.323	8.2	
440-6	650,500	73 500	1,301,000	147 000	1,740	4,350	7.69	195	493.8	224.0	0.346	8.8	

Notes:
- 1 indicates: Operating speed must be equal or less than permissible speed. Permissible speeds could be limited by the weight and the critical speeds of the spacer.
- 2 indicates: Couplings as manufactured can accommodate maximum speeds as listed. Higher speeds up to the value shown as 'Bal' require special balancing.
- 3 indicates: The maximum bores shown are for cylindrical or taper shafts with keys. For splines and other type bores contact Lovejoy Technical Support.
- 4 indicates: Weight is given for a complete coupling with minimum BSE and maximum bores.
- 5 indicates: Axial misalignment is given for two disc packs.
- 6 indicates: Angular misalignment is given for single disc pack.
- For higher torque capacities, see SX-8 Type couplings on page D-14 and D-15.



SX-6 Dimensional Data

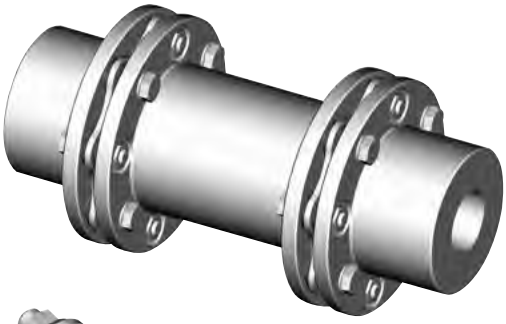
Size	OAL		S		PW		LTB		ID1-ID2 Max Bore[3]		BSE[7] Standard		FD		HD	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
90-6	5.50	140	1.77	45	0.295	7.5	1.57	40	1.50	38	2.36	60	3.54	90	2.28	58
110-6	7.44	189	2.84	72	0.331	8.4	1.97	50	1.81	46	3.50	89	4.33	110	2.56	65
132-6	8.97	228	3.59	91	0.331	8.4	2.36	60	2.38	60	4.25	108	5.20	132	3.31	84
158-6	10.40	264	4.00	102	0.441	11.2	2.76	70	2.76	70	4.88	124	6.22	158	3.86	98
185-6	11.80	300	4.40	112	0.551	14.0	3.15	80	3.13	80	5.50	140	7.28	185	4.41	112
202-6	13.33	339	5.03	128	0.610	15.5	3.54	90	3.50	90	6.25	159	7.95	202	4.92	125
228-6	14.76	375	5.50	140	0.689	17.5	3.94	100	3.94	100	6.88	175	8.98	228	5.51	140
255-6	16.81	427	6.14	156	0.807	20.5	4.53	115	4.31	110	7.75	197	10.04	255	6.10	155
278-6	18.47	469	6.96	177	0.835	21.2	4.92	125	4.88	124	8.63	219	10.95	278	6.85	174
302-6	19.89	505	7.33	186	0.961	24.4	5.32	135	5.31	135	9.25	235	11.89	302	7.48	190
325-6	21.42	544	7.95	202	1.024	26.0	5.71	145	5.75	145	10.00	254	12.80	325	8.07	205
345-6	22.83	580	8.41	214	1.110	28.2	6.10	155	6.06	155	10.63	270	13.58	345	8.55	217
380-6	25.08	637	9.16	233	1.260	32.0	6.70	170	6.69	170	11.68	297	14.96	380	9.37	238
410-6	27.18	690	10.01	254	1.307	33.2	7.28	185	7.13	180	12.62	321	16.14	410	10.04	255
440-6	28.55	725	10.32	262	1.433	36.4	7.68	195	7.69	195	13.19	335	17.32	440	10.75	273

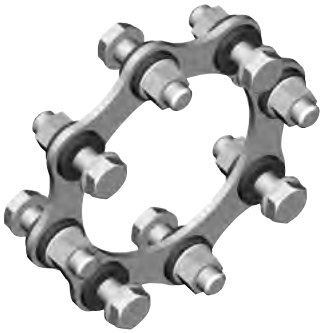
Notes:
- 3 indicates: The maximum bores shown are for cylindrical or taper shafts with keys. For splines and other type bores contact Lovejoy Technical Support.
- 7 indicates: BSE is the distance between shaft ends and is a variable parameter.
- Metric dimensions are rounded to the nearest 'mm' except where otherwise shown.

D

SX-8 Type Industrial Coupling

The SX-8 Type is a standard coupling with two hubs, a spacer, and two disc pack kits. The coupling has two flex planes (one at each disc pack) so it can accommodate parallel misalignment by the angular misalignment in each disc pack. This configuration will also accommodate axial misalignment within the specified limits.





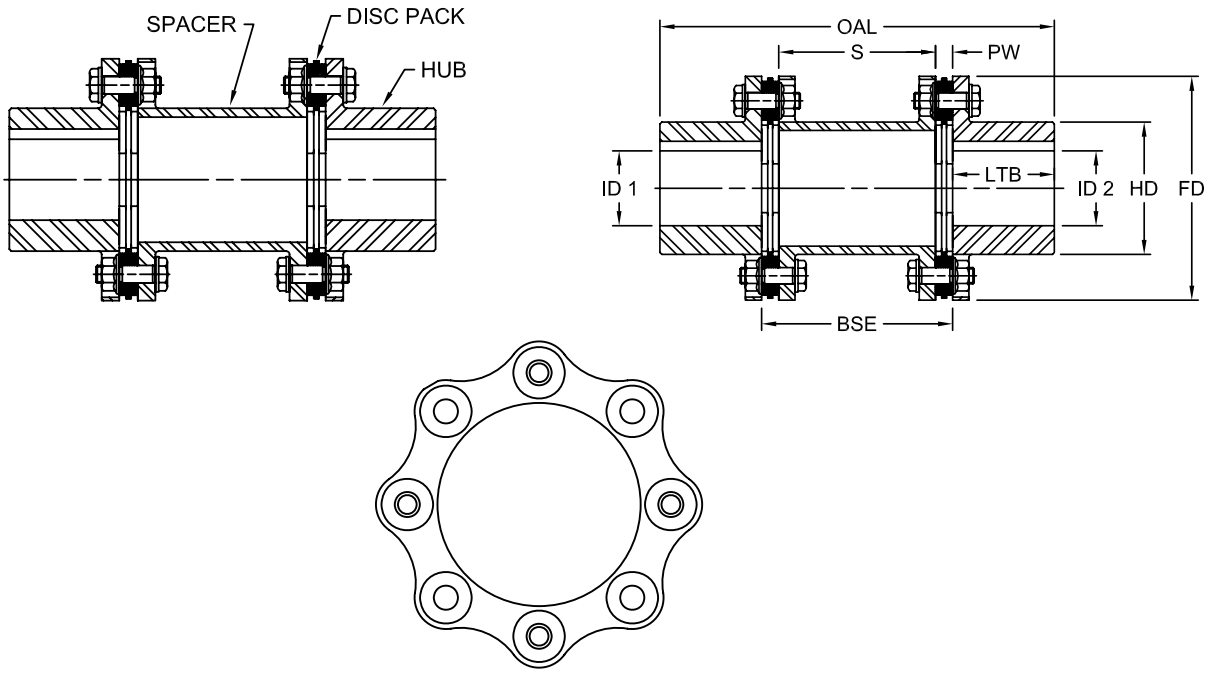
Features

- Unitized disc pack
- Infinite life if properly aligned
- Accommodates angular, axial, and parallel misalignment
- Torsionally rigid without any back lash
- No need for lubrication or maintenance
- No wearing parts and high resistance to harsh environmental conditions

SX-8 Performance Data

Size	Nominal Torque in-lbs	Nominal Torque Nm	Peak Torque in-lbs	Peak Torque Nm	Max Speed Unbal[1] RPM	Max Speed Bal[2] RPM	ID1-ID2 Max Bore[3] in	ID1-ID2 Max Bore[3] mm	Weight[4] lbs	Weight[4] kg	Axial[5] Misalignment ±ΔKa in	Axial[5] Misalignment ±ΔKa mm	Angular[6] Misalignment Max Degrees
278-8	177,000	20 000	354,000	40 000	2,800	7,000	4.88	124	130	59	0.146	3.7	
302-8	265,500	30 000	531,000	60 000	2,560	6,400	5.38	135	169	77	0.157	4.0	
325-8	327,500	37 000	655,000	74 000	2,400	6,000	5.75	145	202	92	0.169	4.3	
345-8	407,000	46 000	814,200	92 000	2,200	5,500	6.13	155	246	112	0.181	4.6	
380-8	558,000	63 000	1,115,000	126 000	2,040	5,100	6.63	170	330	150	0.197	5.0	
410-8	761,000	86 000	1,522,000	172 000	1,880	4,700	7.13	180	429	195	0.213	5.4	.5°
440-8	974,000	110 000	1,947,000	220 000	1,740	4,350	7.69	195	506	230	0.228	5.8	
475-8	1,221,000	138 000	2,443,000	276 000	1,680	4,200	8.25	210	649	295	0.248	6.3	
505-8	1,549,000	175 000	3,098,000	350 000	1,520	3,800	8.88	220	823	374	0.264	6.7	
540-8	1,947,000	220 000	3,894,000	440 000	1,440	3,600	9.25	235	999	454	0.283	7.2	

Notes:
- 1 indicates: Operating speed must be equal or less than permissible speed. Permissible speeds could be limited by the weight and the critical speeds of the spacer.
- 2 indicates: Couplings as manufactured can accommodate maximum speeds as listed. Higher speeds up to the value shown as 'Bal' require special balancing.
- 3 indicates: The maximum bores shown are for cylindrical or taper shafts with keys. For splines and other type bores contact Lovejoy Technical Support.
- 4 indicates: Weight is given for a complete coupling with minimum BSE and maximum bores.
- 5 indicates: Axial misalignment is given for two disc packs.
- 6 indicates: Angular misalignment is given for single disc pack.
- For larger sizes and higher torque capacities, contact Lovejoy Technical Support.



SX-8 Dimensional Data

Size	OAL		S		PW		LTB		ID1-ID2 Max Bore[3]		BSE[7] Standard		FD		HD	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
278-8	18.47	469	6.96	177	0.835	21.2	4.92	125	4.88	124	8.63	219	10.95	278	6.85	174
302-8	19.89	505	7.33	186	0.961	24.4	5.32	135	5.38	135	9.25	235	11.89	302	7.48	190
325-8	21.42	544	7.95	202	1.024	26.0	5.71	145	5.75	145	10.00	254	12.80	325	8.07	205
345-8	22.83	580	8.41	214	1.110	28.2	6.10	155	6.13	155	10.63	270	13.58	345	8.55	217
380-8	25.08	637	9.16	233	1.260	32.0	6.70	170	6.63	170	11.68	297	14.96	380	9.37	238
410-8	27.18	690	10.01	254	1.307	33.2	7.28	185	7.13	180	12.62	321	16.14	410	10.04	255
440-8	28.55	725	10.32	262	1.433	36.4	7.68	195	7.69	195	13.19	335	17.32	440	10.75	273
475-8	30.67	779	11.12	283	1.504	38.2	8.27	210	8.25	210	14.13	359	18.70	475	11.62	295
505-8	33.62	854	12.19	310	1.654	42.0	9.06	230	8.88	220	15.50	394	19.88	505	12.20	310
540-8	35.28	896	12.76	324	1.811	46.0	9.45	240	9.25	235	16.38	416	21.26	540	12.99	330

Notes:
- 3 indicates: The maximum bores shown are for cylindrical or taper shafts with keys. For splines and other type bores contact Lovejoy Technical Support.
- 7 indicates: BSE is the distance between shaft ends and is a variable parameter.
- Metric dimensions are rounded to the nearest 'mm' except where otherwise shown.

D

SXC-6 Type Closed Coupled Industrial Coupling

The SXC-6 Type is the standard 6 bolt coupling with two hubs, two disc packs and a spacer. The hubs can both be turned inward to accommodate close coupled applications or one hub can be turned outward to accommodate additional BSE's (shaft separation). The coupling has two flex planes (one at each disc pack) so it can accommodate parallel misalignment by the angular misalignment in each disc pack. This configuration will also accommodate axial misalignment within the specified limits.





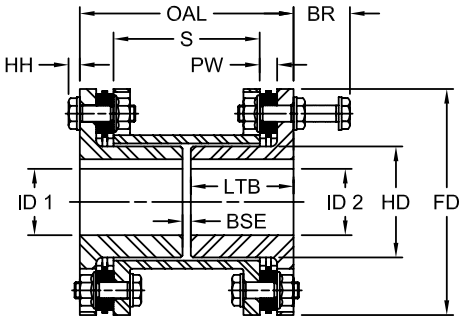
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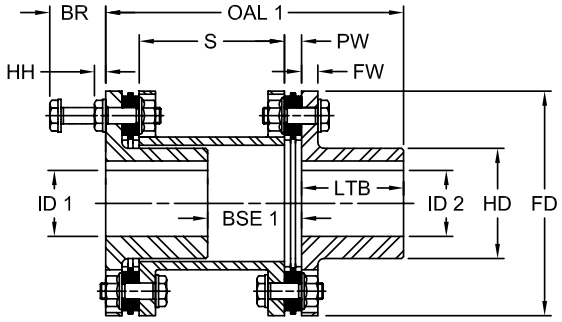
- Unitized disc packs
- Infinite life if properly aligned
- Torsionally rigid without any back lash
- No need for lubrication or maintenance
- No wearing parts and high resistance to harsh environmental conditions
- Can be combined with SU/SX hub for increased bore capacity (See page D-15)

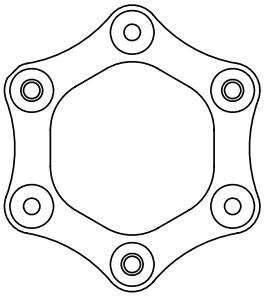
SXC-6 Performance Data

Size	Nominal Torque in-lbs	Nominal Torque Nm	Peak Torque in-lbs	Peak Torque Nm	Max Speed Unbal[1] RPM	Max Speed Bal[2] RPM	ID1-ID2 Max Bore[3] in	ID1-ID2 Max Bore[3] mm	Weight[4] lbs	Weight[4] kg	Axial[5] Misalignment ±ΔKa in	Axial[5] Misalignment ±ΔKa mm	Angular[6] Misalignment Max Degrees
110-6	5,100	600	10,200	1 200	7,200	18,000	1.56	39	4	1.8	0.083	2.1	1.5°
132-6	9,700	1 100	19,500	2 200	5,840	14,600	2.06	50	8	3.8	0.102	2.6	
158-6	17,700	2 000	35,400	4 000	4,920	12,300	2.38	60	13	5.8	0.122	3.1	
185-6	29,200	3 300	58,400	6 600	4,200	10,500	2.68	68	22	10.0	0.146	3.7	
202-6	40,700	4 600	81,400	9 200	3,840	9,600	3.06	75	33	15.0	0.150	3.8	1°
228-6	62,000	7 000	123,900	14 000	3,400	8,500	3.44	85	46	21.0	0.165	4.2	
255-6	90,300	10 200	180,600	20 400	3,080	7,700	3.88	95	60	27.0	0.185	4.7	
278-6	125,700	14 200	251,400	28 400	2,800	7,000	4.25	105	79	36.0	0.205	5.2	
302-6	177,000	20 000	354,000	40 000	2,560	6,400	4.63	115	101	46.0	0.224	5.7	
325-6	221,300	25 000	442,600	50 000	2,400	6,000	4.88	125	121	55.0	0.256	6.5	
345-6	274,400	31 000	548,800	62 000	2,200	5,500	5.25	130	154	70.0	0.272	6.9	
380-6	374,400	42 300	748,800	84 600	2,040	5,100	5.75	145	203	92.0	0.299	7.6	
410-6	505,400	57 100	1,011,000	114 200	1,880	4,700	6.25	160	256	116.0	0.323	8.2	
440-6	650,500	73 500	1,301,000	147 000	1,740	4,350	6.50	165	300	136.0	0.346	8.8	

Notes:
- 1 indicates: Operating speed must be equal or less than permissible speed. Permissible speeds could be limited by the weight and the critical speeds of the spacer.
- 2 indicates: Couplings as manufactured can accommodate maximum speeds as listed. Higher speeds up to the value shown as 'Bal' require special balancing.
- 3 indicates: The maximum bores shown are for cylindrical or taper shafts with keys. For other type of connections contact Lovejoy Technical Support.
- 4 indicates: Weight is given for a complete coupling with minimum BSE and maximum bores.
- 5 indicates: Axial misalignment is given for two disc packs.
- 6 indicates: Angular misalignment is given for one disc pack.
- SU/SX hubs can be used (turned outward) to accommodate maximum bore sizes for the specified hub.







BSE1: To calculate the BSE 1 (Between Shaft Ends) with one hub turned out
BSE 1 = BSE + LTB – FW

OAL1: To calculate the OAL 1 (Overall Length) with one hub turned out
OAL 1 = OAL + LTB - FW

SXC-6 Dimensional Data

	OAL		BR[8]		S		HH		PW		LTB		BSE[7] Standard		FD		HD		FW	
Size	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
110-6	4.12	105	1.77	45	2.84	72	0.24	6	0.33	8.4	1.97	50	0.18	5	4.33	110	2.13	54	0.31	8
132-6	4.87	124	1.77	45	3.59	91	0.24	6	0.33	8.4	2.36	60	0.15	4	5.20	132	2.79	71	0.31	8
158-6	5.66	144	2.17	55	4.00	102	0.28	7	0.44	11.2	2.76	70	0.14	4	6.22	158	3.31	84	0.39	10
185-6	6.44	164	2.56	65	4.40	112	0.31	8	0.55	14.0	3.15	80	0.14	4	7.28	185	3.74	95	0.47	12
202-6	7.35	187	2.95	75	5.03	128	0.35	9	0.61	15.5	3.54	90	0.27	7	7.95	202	4.25	108	0.55	14
228-6	8.14	207	3.35	85	5.50	140	0.39	10	0.69	17.5	3.94	100	0.26	7	8.98	228	4.84	123	0.63	16
255-6	9.33	237	3.94	100	6.14	156	0.51	13	0.81	20.5	4.53	115	0.27	7	10.04	255	5.43	138	0.79	20
278-6	10.20	259	4.13	105	6.96	177	0.51	13	0.84	21.2	4.92	125	0.35	9	10.95	278	5.99	152	0.79	20
302-6	10.99	279	4.53	115	7.33	186	0.55	14	0.96	24.4	5.32	135	0.35	9	11.89	302	6.50	165	0.87	22
325-6	11.74	298	4.53	115	7.95	202	0.55	14	1.02	26.0	5.71	145	0.32	8	12.80	325	6.85	174	0.87	22
345-6	12.51	318	4.92	125	8.41	214	0.59	15	1.11	28.2	6.10	155	0.31	8	13.58	345	7.32	186	0.94	24
380-6	13.80	350	5.51	140	9.16	233	0.67	17	1.26	32.0	6.70	170	0.40	10	14.96	380	8.03	204	1.06	27
410-6	14.98	380	5.91	150	10.01	254	0.75	19	1.31	33.2	7.28	185	0.42	11	16.14	410	8.78	223	1.18	30
440-6	15.79	401	6.50	165	10.32	262	0.83	21	1.43	36.4	7.68	195	0.43	11	17.32	440	9.17	233	1.30	33

Notes:
- 7 indicates: BSE is the distance between shaft ends and is a variable parameter.
- 8 indicates: Customer is responsible for ensuring there is enough room between the coupling and equipment to install the bolts and properly torque them with a torque wrench. Additional shaft length may be required. See Disc Coupling Worksheet, page D-8 item 5.
- Metric dimensions are rounded to the nearest 'mm' except where otherwise shown.
- ID1 – ID2 Dimensional Data on page D-16.

SXCS-6 Type Closed Coupled Industrial Coupling

The SXCS Type is the standard 6 bolt coupling with two hubs, two mounting rings, two disc packs and a split spacer designed for ease of installation and maintenance. Custom spacer lengths can be specified for special applications. The coupling has two flex planes (one at each disc pack) allowing it to accommodate parallel misalignment by the angular misalignment in each disc pack. This configuration will also accommodate axial misalignment within the specified limits.



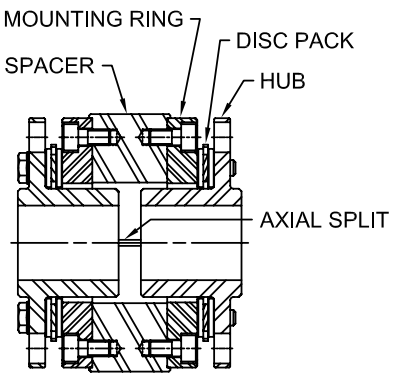
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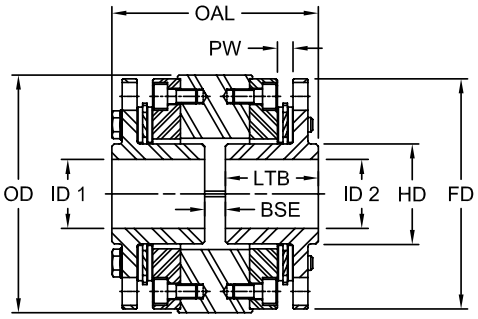
- Unitized disc pack
- Infinite life when properly sized and aligned
- Torsionally rigid without any back lash
- No need for lubrication or maintenance
- No wearing parts and high resistance to harsh environmental conditions
- Disc packs can be replaced without moving equipment
- For larger sizes, refer to SXCST couplings, see Page D-20

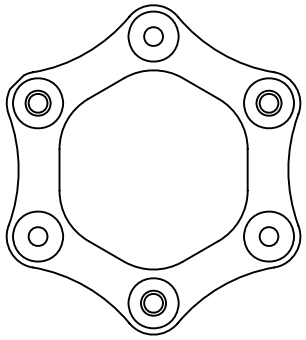
SXCS-6 Performance Data

Size	Nominal Torque in-lbs	Nominal Torque Nm	Peak Torque in-lbs	Peak Torque Nm	Max Speed Unbal[1] RPM	Max Speed Bal[2] RPM	ID1 - ID2 Max Bore[3] in	ID1 - ID2 Max Bore[3] mm	Weight[4] lbs	Weight[4] kg	Axial[5] Misalignment ±ΔKa in	Axial[5] Misalignment ±ΔKa mm	Angular[6] Misalignment Max Degrees
110-6	5,100	575	10,200	1 150	7,200	18,000	1.56	40	16.5	7.5	0.083	2.1	1.5°
132-6	9,700	1 100	19,500	2 200	5,840	14,600	2.06	52	24.3	11.0	0.102	2.6	
158-6	17,700	2 000	35,400	4 000	4,920	12,300	2.38	60	41.9	19.0	0.122	3.1	
185-6	29,200	3 300	58,400	6 600	4,200	10,500	2.68	68	64.0	29.0	0.146	3.7	
202-6	40,700	4 600	81,400	9 200	3,840	9,600	3.06	78	84.0	38.0	0.150	3.8	1°
228-6	62,000	7 000	123,900	14 000	3,400	8,500	3.44	87	126.0	57.0	0.165	4.2	
255-6	90,300	10 200	180,600	20 400	3,080	7,700	3.88	99	185.0	84.0	0.185	4.7	
278-6	125,700	14 200	251,400	28 400	2,800	7,000	4.25	108	230.0	104.0	0.205	5.2	
302-6	177,000	20 000	354,000	40 000	2,560	6,400	4.63	118	306.0	139.0	0.224	5.7	

Notes:
- 1 indicates: Operating speed must be equal or less than permissible speed which is limited by the weight and critical speed of the spacer.
- 2 indicates: Couplings as manufactured can accommodate maximum speeds as listed. Higher speeds up to the value shown as 'Bal' require special balancing.
- 3 indicates: The maximum bores shown are for cylindrical or taper shafts with keys. For other type of connections contact Lovejoy Technical Support.
- 4 indicates: Weight is given for a complete coupling with minimum BSE and maximum bores.
- 5 indicates: Axial misalignment is given for two disc packs.
- 6 indicates: Angular misalignment is given for one disc pack.







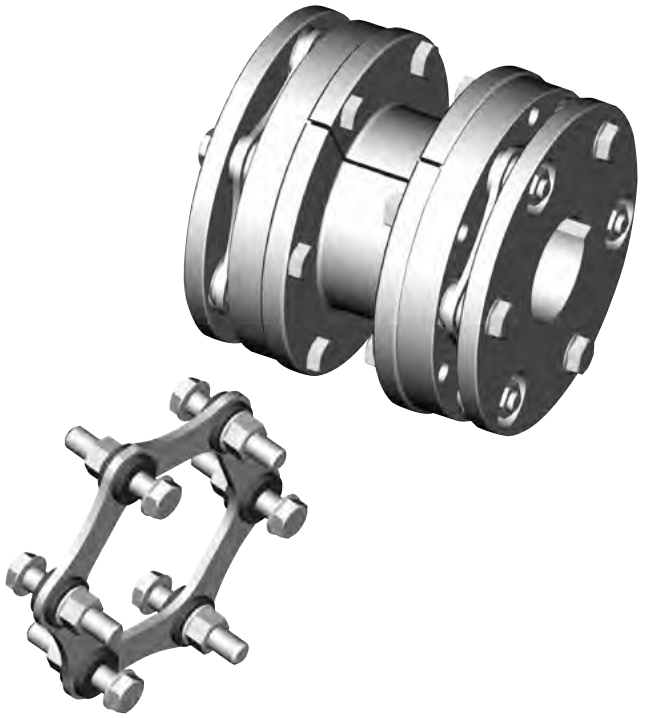
SXCS-6 Dimensional Data

Size	OAL[8]		PW		LTB		ID1 - ID2 Max Bore[3]		BSE[7] Standard		FD		HD		OD	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
110-6	4.38	111.3	0.331	8.4	1.97	50	1.56	40	0.44	11.2	4.88	124.0	2.13	54	5.04	128.0
132-6	5.08	129.0	0.331	8.4	2.36	60	2.06	52	0.36	9.1	5.71	145.0	2.79	71	5.87	149.1
158-6	5.99	152.1	0.441	11.2	2.76	70	2.38	60	0.47	11.9	6.73	170.9	3.31	84	6.89	175.0
185-6	6.88	174.8	0.551	14.0	3.15	80	2.68	68	0.58	14.7	7.68	195.1	3.74	95	7.83	198.9
202-6	7.72	196.1	0.610	15.5	3.54	90	3.06	78	0.64	16.3	8.43	214.1	4.25	108	8.58	217.9
228-6	8.60	218.4	0.689	17.5	3.94	100	3.44	87	0.72	18.3	9.57	243.1	4.84	123	9.72	246.9
255-6	10.27	260.9	0.807	20.5	4.53	115	3.88	99	1.21	30.7	10.79	274.1	5.43	138	10.94	277.9
278-6	10.71	272.0	0.835	21.2	4.92	125	4.25	108	0.87	22.1	11.58	294.1	5.99	152	11.73	297.9
302-6	11.72	297.7	0.961	24.4	5.32	135	4.63	118	1.08	27.4	12.88	327.2	6.50	165	13.03	331.0

Notes:
- 3 indicates: The maximum bores shown are for cylindrical or taper shafts with keys. For splines and other types of bores, contact Lovejoy Technical Support.
- 7 indicates: BSE is the distance between shaft ends and is a variable parameter.
- 8 indicates: OAL is measured from the end of the hubs and does not include the bolt heads.
- Customer is responsible for ensuring there is enough room between the coupling and equipment to install the bolts and properly torque them with a torque wrench. Additional shaft length may be required. See Disc Coupling Worksheet, page D-8 item 5.

SXCST-6 Type Closed Coupled Industrial Coupling

The SXCST Type is a standard 6 bolt coupling consisting of two hubs, two mounting rings, two disc packs and a split spacer. Custom spacer lengths can be specified for special applications. The coupling has two flex planes (one at each disc pack) so it can accommodate parallel misalignment by the angular misalignment in each disc pack. This configuration will also accommodate axial misalignment within the specified limits.



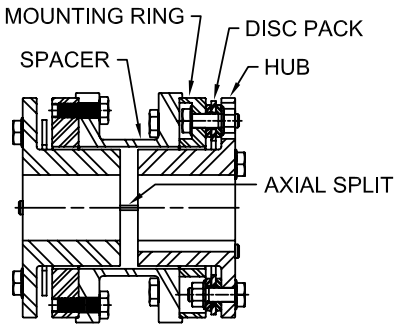
Features

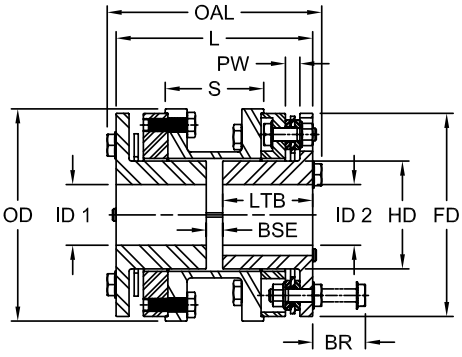
- Unitized disc pack
- Infinite life when properly sized and aligned
- Accommodates angular, axial, and parallel misalignment
- Torsionally rigid without any back lash
- No need for lubrication or maintenance
- No wearing parts and high resistance to harsh environmental conditions
- Close coupled
- Split spacer design allows for ease of maintenance and disc pack removal or replacement without moving equipment

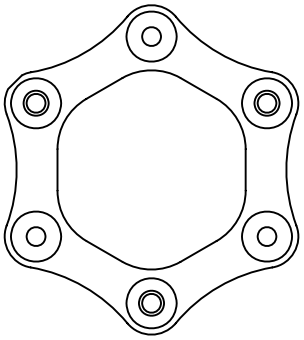
SXCST-6 Performance Data

Size	Nominal Torque in-lbs	Nominal Torque Nm	Peak Torque in-lbs	Peak Torque Nm	Max Speed Unbal[1] RPM	Max Speed Bal[2] RPM	ID1 - ID2 Max Bore[3] in	ID1 - ID2 Max Bore[3] mm	Axial[4] Misalignment ±ΔKa in	Axial[4] Misalignment ±ΔKa mm	Angular[5] Misalignment Max Degrees
90-6	2,100	240	4,200	480	9,100	22,700	1.20	31	0.059	1.5	
110-6	5,100	575	10,200	1 150	7,200	18,000	1.56	39	0.083	2.1	
132-6	9,700	1 100	19,500	2 200	5,840	14,600	2.06	50	0.102	2.6	1.5°
158-6	17,700	2 000	35,400	4 000	4,920	12,300	2.38	60	0.122	3.1	
185-6	29,200	3 300	58,400	6 600	4,200	10,500	2.68	68	0.146	3.7	
202-6	40,700	4 600	81,400	9 200	3,840	9,600	3.06	75	0.150	3.8	
228-6	62,000	7 000	123,900	14 000	3,400	8,500	3.44	85	0.165	4.2	
255-6	90,300	10 200	180,600	20 400	3,080	7,700	3.88	95	0.185	4.7	
278-6	125,700	14 200	251,400	28 400	2,800	7,000	4.25	105	0.205	5.2	
302-6	177,000	20 000	354,000	40 000	2,560	6,400	4.63	115	0.224	5.7	
325-6	221,300	25 000	442,600	50 000	2,400	6,000	4.88	125	0.256	6.5	1°
345-6	274,400	31 000	549,000	62 000	2,200	5,500	5.25	130	0.272	6.9	
380-6	374,400	42 300	749,000	84 600	2,040	5,100	5.75	145	0.299	7.6	
410-6	505,400	57 100	1,011,000	114 200	1,880	4,700	6.25	160	0.323	8.2	
440-6	650,500	73 500	1,301,000	147 000	1,740	4,350	6.50	165	0.346	8.8	

Notes:
- 1 indicates: Operating speed must be equal or less than permissible speed which is limited by the weight and critical speed of the spacer.
- 2 indicates: For higher speeds contact Lovejoy Technical Support.
- 3 indicates: The maximum bores shown are for cylindrical or taper shafts with keys. For splines and other types of bores, contact Lovejoy Technical Support.
- 4 indicates: Axial misalignment is given for two disc packs.
- 5 indicates: Angular misalignment is given for one disc pack.







SXCST-6 Dimensional Data

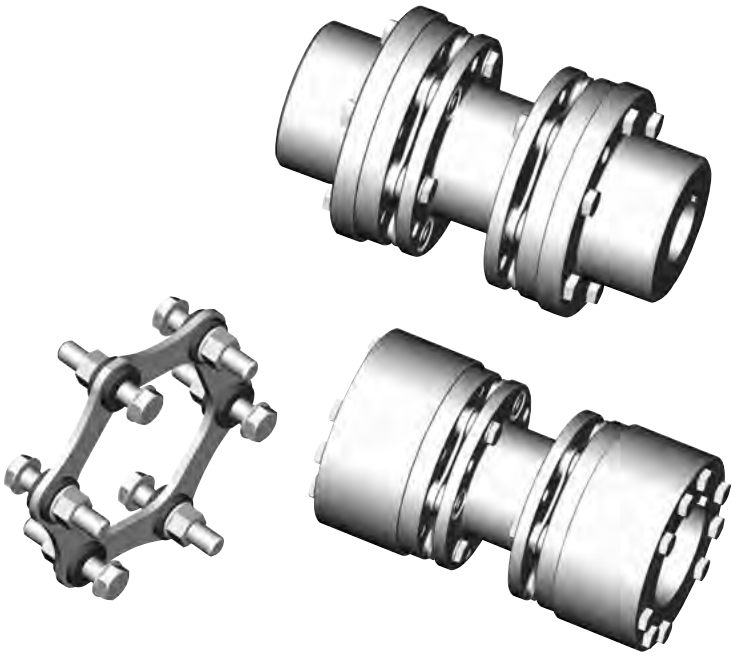
Size	OAL		L		PW		S		LTB		BSE[7] Standard		BR		FD		HD		OD	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
90-6	3.92	99.6	3.60	91.4	0.295	7.5	1.83	46.5	1.57	40	0.46	11.6	1.77	45	3.54	89.9	1.67	42.4	3.70	94.0
110-6	5.06	128.5	4.62	117.3	0.331	8.4	2.27	57.5	1.97	50	0.68	17.2	1.77	45	4.33	110.0	2.13	54.1	4.53	121.2
132-6	5.54	140.7	5.10	129.7	0.331	8.4	2.75	69.9	2.36	60	0.38	9.7	1.77	45	5.20	132.1	2.79	70.9	5.47	138.9
158-6	6.58	167.0	6.02	152.9	0.441	11.2	3.02	76.7	2.76	70	0.50	12.7	2.17	55	6.22	158.0	3.31	84.1	6.50	165.1
185-6	8.15	207.2	7.53	191.2	0.551	14.0	3.88	98.5	3.15	80	1.23	31.2	2.56	65	7.28	184.9	3.74	95.0	7.60	193.0
202-6	8.76	222.5	8.06	204.7	0.610	15.5	4.01	101.9	3.53	90	1.00	25.4	2.95	75	7.95	201.9	4.25	108.0	8.27	210.1
228-6	10.06	255.6	9.28	235.7	0.689	17.5	4.68	118.9	3.94	100	1.40	35.6	3.35	85	8.98	228.1	4.84	122.9	9.29	236.0
255-6	12.29	312.2	11.27	286.3	0.807	20.5	5.57	141.5	4.52	115	2.23	56.6	3.94	100	10.04	255.0	5.30	134.6	10.35	262.9
278-6	12.31	312.7	11.29	286.8	0.835	21.2	5.53	140.5	4.91	125	1.47	37.3	4.13	105	10.95	278.1	5.99	152.1	11.26	286.0
302-6	13.93	353.8	12.81	325.6	0.961	24.4	6.40	162.6	5.31	135	2.19	55.6	4.53	115	11.88	301.8	6.49	164.8	12.20	309.9
325-6	13.62	346.0	12.52	318.0	1.020	16.0	8.74	222.0	5.71	145	1.10	28.0	4.53	115	12.80	325.0	6.85	14.0	13.11	333.0
345-6	14.57	370.0	13.39	340.0	1.110	28.2	9.28	235.6	6.10	155	1.18	30.0	4.92	125	13.58	345.0	7.32	186.0	13.58	345.0
380-6	16.06	408.0	14.72	374.0	1.260	32.0	10.08	256.0	6.69	170	1.34	34.0	5.51	140	14.96	380.0	8.03	204.0	15.35	390.0
410-6	17.44	443.0	15.94	405.0	1.310	33.2	10.97	278.6	7.28	185	1.38	35.0	5.91	150	16.14	410.0	9.13	232.0	16.14	410.0
440-6	18.51	470.0	16.85	428.0	1.430	36.4	11.39	289.2	7.68	195	1.50	38.0	6.50	165	17.32	440.0	9.17	233.0	17.32	440.0

Notes:
- 7 indicates: BSE is the distance between shaft ends and is a variable parameter.
- Metric dimensions are rounded to the nearest 'mm' except where otherwise shown.
- Customer is responsible for ensuring there is enough room between the coupling and equipment to install the bolts and properly torque them with a torque wrench. Additional shaft length may be required. See Disc Coupling Worksheet, page D-8 item 5.
- ID1 – ID2 Dimensional Data on page D-20.

D

DI-6 Type Drop-In Center Industrial Coupling

The DI Type coupling is the standard 6 bolt coupling with two hubs and a spacer assembly that can be installed or removed without disturbing the equipment and hubs and without removing the disc packs from the spacer assembly. Custom spacer lengths can be specified for special applications. The coupling has two flex planes (one at each disc pack) so it can accommodate parallel misalignment by the angular misalignment in each disc pack. This configuration will also accommodate axial misalignment within the specified limits.



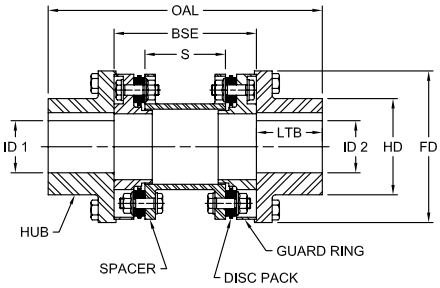
Features

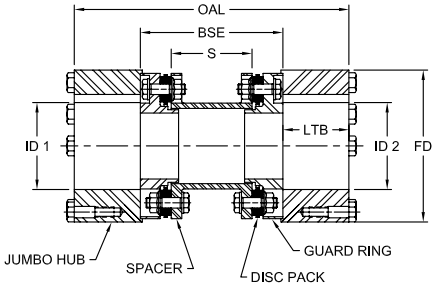
- Designed to meet the API 610 Standard
- Support for additional API requirements available on request
- Unitized disc pack
- Infinite life if properly aligned
- Torsionally rigid without any back lash
- No need for lubrication or maintenance
- No wearing parts and high resistance to harsh environmental conditions

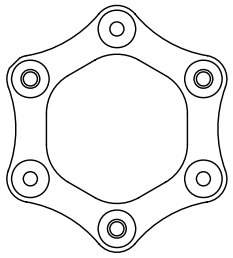
DI-6 Performance Data

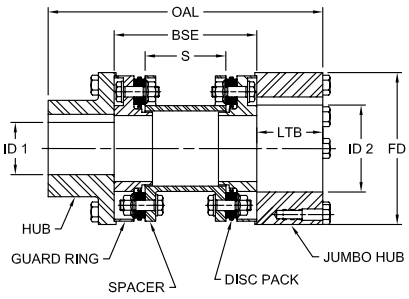
Size	Nominal Torque		Peak Torque		Max Speed		ID1 - ID2 Max Bore[3] Std Hub		ID1 - ID2 Max Bore[3] Jumbo Hub		Weight[4]		Axial[5] Misalignment ±ΔKa		Angular[6] Misalignment Max
	in-lbs	Nm	in-lbs	Nm	Unbal[1] RPM	Bal[2] RPM	in	mm	in	mm	lbs	kg	in	mm	Degrees
90-6	2,100	240	4,200	480	9,100	22,700	1.68	43	2.25	59	8	4	0.059	1.5	
110-6	5,100	575	10,200	1 150	7,200	18,000	2.06	52	2.94	75	12	6	0.083	2.1	
132-6	9,700	1 100	19,500	2 200	5,840	14,600	2.69	67	3.56	90	22	10	0.102	2.6	1.5°
158-6	17,700	2 000	35,400	4 000	4,920	12,300	3.13	80	4.13	105	40	18	0.122	3.1	
185-6	29,200	3 300	58,400	6 600	4,200	10,500	3.75	95	4.94	125	62	28	0.146	3.7	
202-6	40,700	4 600	81,400	9 200	3,840	9,600	4.06	102	5.38	135	84	38	0.150	3.8	
228-6	62,000	7 000	123,900	14 000	3,400	8,500	4.50	115	5.94	150	121	55	0.165	4.2	
255-6	90,300	10 200	180,600	20 400	3,080	7,700	4.94	125	6.63	170	159	72	0.185	4.7	
278-6	125,700	14 200	251,400	28 400	2,800	7,000	5.50	140	7.31	185	223	101	0.205	5.2	
302-6	177,000	20 000	354,000	40 000	2,560	6,400	6.13	155	7.88	200	293	133	0.224	5.7	
325-6	221,300	25 000	442,600	50 000	2,400	6,000	6.75	170	8.44	215	353	160	0.256	6.5	1°
345-6	274,400	31 000	549,000	62 000	2,200	5,500	7.13	180	9.13	230	425	193	0.272	6.9	
380-6	374,400	42 300	749,000	84 600	2,040	5,100	8.31	210	9.88	250	578	262	0.299	7.6	
410-6	505,400	57 100	1,011,000	114 200	1,880	4,700	8.88	225	10.63	270	739	335	0.323	8.2	
440-6	650,500	73 500	1,301,000	147 000	1,740	4,350	9.25	235	11.44	290	875	397	0.346	8.8	

Notes:
- 1 indicates: Operating speed must be equal or less than permissible speed which is limited by the weight and critical speed of the spacer.
- 2 indicates: Couplings as manufactured can accommodate maximum speeds as listed. Higher speeds up to the value shown as 'Bal' require special balancing.
- 3 indicates: The maximum bores shown are for cylindrical or taper shafts with keys. For splines and other types of bores, contact Lovejoy Technical Support.
- 4 indicates: Weight is given for a complete coupling with maximum bores.
- 5 indicates: Axial misalignment is given for two disc packs.
- 6 indicates: Angular misalignment is given for one disc pack.









Standard BSE Sizes

Size	3.1 in	3.5 in	4.38 in	5 in	5.5 in	7 in	7.5 in	8 in	9 in
90-6	●	●	●	●	●	●			
110-6		●	●	●	●	●			
132-6		●	●	●	●	●			
158-6			●	●	●	●			
185-6				●	●	●	●	●	●
202-6					●	●	●	●	●
228-6						●	●	●	●
255-6							●	●	●
278-6							●	●	●
302-6									●

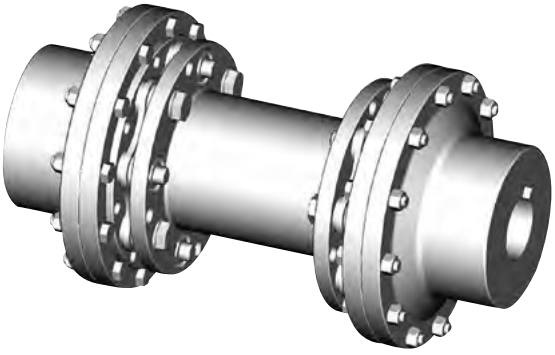
DI-6 Dimensional Data

Size	OAL in	OAL mm	BSE in	BSE mm	S in	S mm	LTB in	LTB mm	BSE Standard See Note in	BSE Standard See Note mm	FD in	FD mm	HD in	HD mm	ID1 - ID2 Max Bore[3] Std Hub in	Std Hub mm	Jumbo Hub in	Jumbo Hub mm
90-6	6.25	159	3.11	79	1.27	32	1.57	40	3.11	79	3.70	94	2.36	60	1.68	43	2.25	59
110-6	8.19	208	4.25	108	2.41	61	1.97	50	4.25	108	4.53	115	2.87	73	2.06	52	2.94	75
132-6	9.10	231	4.38	111	2.54	64	2.36	60	4.38	111	5.47	139	3.74	95	2.69	67	3.56	90
158-6	11.02	280	5.50	140	3.12	79	2.76	70	5.50	140	6.50	165	4.41	112	3.13	80	4.13	105
185-6	12.61	320	6.31	160	3.48	88	3.15	80	6.31	160	7.60	193	5.28	134	3.75	95	4.94	125
202-6	14.39	366	7.31	186	4.12	105	3.54	90	7.31	186	8.27	210	5.67	144	4.06	102	5.38	135
228-6	15.94	405	8.06	205	4.48	114	3.94	100	8.06	205	9.29	236	6.30	160	4.50	115	5.94	150
255-6	18.94	481	9.88	251	5.51	140	4.53	115	9.88	251	10.35	263	6.89	175	4.94	125	6.63	170
278-6	19.90	505	10.06	256	5.63	143	4.92	125	10.06	256	11.26	286	7.68	195	5.50	140	7.31	185
302-6	21.68	551	11.06	281	6.15	156	5.32	135	11.06	281	12.20	310	8.40	213	6.13	155	7.88	200
325-6	22.67	576	11.25	286	6.21	158	5.71	145	11.25	286	13.11	333	9.45	240	6.75	170	8.44	215
345-6	24.83	631	12.63	321	7.18	182	6.10	155	12.63	321	13.98	355	10.04	255	7.13	180	9.13	230
380-6	27.01	686	13.63	346	7.49	190	6.70	170	13.63	346	15.35	390	11.61	295	8.31	210	9.88	250
410-6	29.31	744	14.75	375	8.12	206	7.28	185	14.75	375	16.54	420	12.40	315	8.88	225	10.63	270
440-6	31.74	806	16.38	416	9.10	231	7.68	195	16.38	416	17.72	450	12.99	330	9.25	235	11.44	290

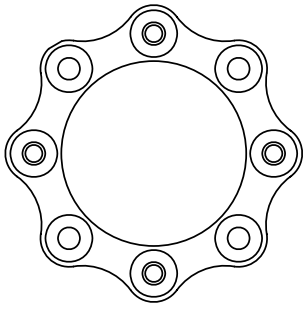
Notes:
- 3 indicates: The maximum bores shown are for cylindrical or taper shafts with keys. For splines and other type bores, contact Lovejoy Technical Support.
- Metric dimensions are rounded to the nearest 'mm' except where otherwise shown.
- Custom spacer sizes are available in both longer and shorter lengths. For a list of standard spacer sizes, see page D-27.

DI-8 Type Drop-In Center Industrial Coupling

The DI Type coupling is the standard 6 bolt coupling with two hubs and a spacer assembly that can be installed or removed without disturbing the equipment and hubs and without removing the disc packs from the spacer assembly. The coupling has two flex planes (one at each disc pack) so it can accommodate parallel misalignment by the angular misalignment in each disc pack. This configuration will also accommodate axial misalignment within the specified limits.







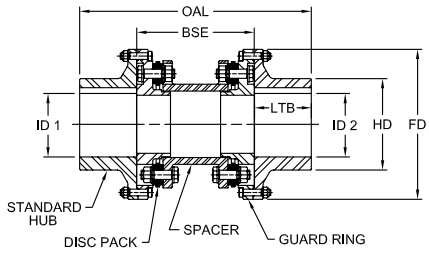
Features

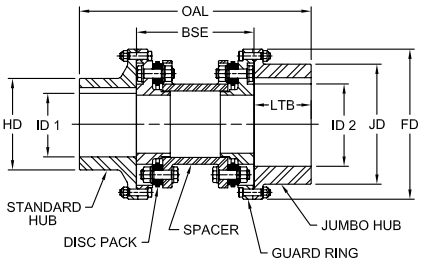
- Designed to meet the API 610 Standard
- Support for additional API requirements available on request
- Unitized disc pack
- Infinite life if properly aligned
- Torsionally rigid without any back lash
- No need for lubrication or maintenance
- No wearing parts and high resistance to harsh environmental conditions
- Puller holes standard with this design

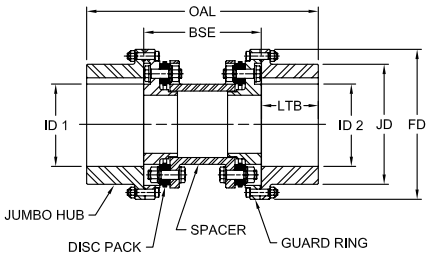
DI-8 Performance Data

Size	Nominal Torque		Peak Torque		Max Speed		ID1 - ID2 Max Bore[3] Std Hub		ID1 - ID2 Max Bore[3] Jumbo Hub		Weight[4]		Axial[5] Misalignment ±ΔKa		Angular[6] Misalignment Max
	in-lbs	Nm	in-lbs	Nm	Unbal[1] RPM	Bal[2] RPM	in	mm	in	mm	lbs	kg	in	mm	Degrees
278-8	177,000	20 000	354,000	40 000	2,800	7,000	5.50	140	7.31	185	287	130	0.146	3.7	
302-8	265,500	30 000	531,000	60 000	2,560	6,400	6.13	155	7.88	200	362	164	0.157	4.0	
325-8	327,500	37 000	655,000	74 000	2,400	6,000	6.75	170	8.50	215	470	213	0.169	4.3	
345-8	407,100	46 000	814,000	92 000	2,200	5,500	7.13	180	9.06	230	551	250	0.181	4.6	
380-8	557,500	63 000	1,115,000	126 000	2,040	5,100	8.31	210	10.13	255	717	325	0.197	5.0	
410-8	761,000	86 000	1,522,000	172 000	1,880	4,700	8.88	225	10.94	275	908	412	0.213	5.4	1/2°
440-8	973,500	110 000	1,947,000	220 000	1,740	4,350	9.25	235	11.88	300	1,058	480	0.228	5.8	
475-8	1,221,000	138 000	2,443,000	276 000	1,680	4,200	9.94	250	12.63	320	1,393	632	0.248	6.3	
505-8	1,549,000	175 000	3,098,000	350 000	1,520	3,800	10.88	275	13.44	341	1,750	794	0.264	6.7	
540-8	1,947,000	220 000	3,894,000	440 000	1,440	3,600	11.63	295	14.25	360	1,852	840	0.283	7.2	
570-8	2,292,000	259 000	4,585,000	518 000	1,360	3,400	12.63	320	15.25	385	2,094	950	0.299	7.6	

Notes:
- 1 indicates: Operating speed must be equal or less than permissible speed.
- 2 indicates: Couplings as manufactured can accommodate maximum speeds as listed. Higher speeds up to the value shown as 'Bal' require special balancing.
- 3 indicates: The maximum bores shown are for cylindrical or taper shafts with keys. For splines and other type bores, contact Lovejoy Technical Support.
- 4 indicates: Weight is given for a complete coupling with maximum bores.
- 5 indicates: Axial misalignment is given for two disc packs.
- 6 indicates: Angular misalignment is given for one disc pack.



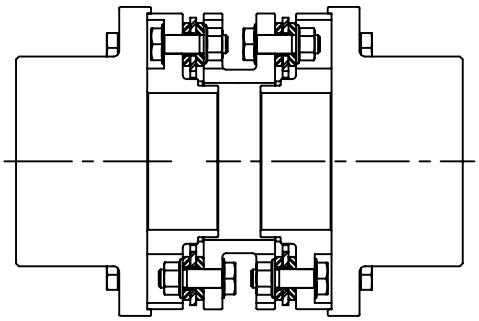




DI-8 Dimensional Data

Size	OAL		BSE		LTB		ID1 - ID2 Max Bore[3] Std Hub		ID1 - ID2 Max Bore[3] Jumbo Hub		FD		HD		JD	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
278-8	19.90	505	10.06	256	4.92	125	5.50	140	7.31	185	13.07	332	7.68	195	10.24	260
302-8	21.70	551	11.06	281	5.32	135	6.13	155	7.88	200	14.02	356	8.54	217	11.22	285
325-8	22.67	576	11.25	286	5.71	145	6.75	170	8.50	215	15.75	400	9.45	240	12.01	305
345-8	24.83	631	12.63	321	6.10	155	7.13	180	9.06	230	16.42	417	10.04	255	12.68	322
380-8	27.01	686	13.63	346	6.69	170	8.31	210	10.13	255	17.91	455	11.61	295	14.17	360
410-8	29.31	744	14.75	375	7.28	185	8.88	225	10.94	275	19.60	498	12.40	315	15.35	390
440-8	31.74	806	16.38	416	7.68	195	9.25	235	11.88	300	20.79	528	12.99	330	16.54	420
475-8	34.26	870	17.75	451	8.27	210	9.94	250	12.63	320	23.03	585	13.98	355	17.72	450
505-8	37.43	951	19.31	490	9.06	230	10.88	275	13.44	341	24.21	615	15.16	385	18.90	480
540-8	40.96	1 040	22.06	560	9.45	240	11.63	295	14.25	360	26.38	670	16.34	415	20.00	508
570-8	43.56	1 106	23.88	607	9.84	250	12.63	320	15.25	385	27.64	702	17.72	450	21.26	540

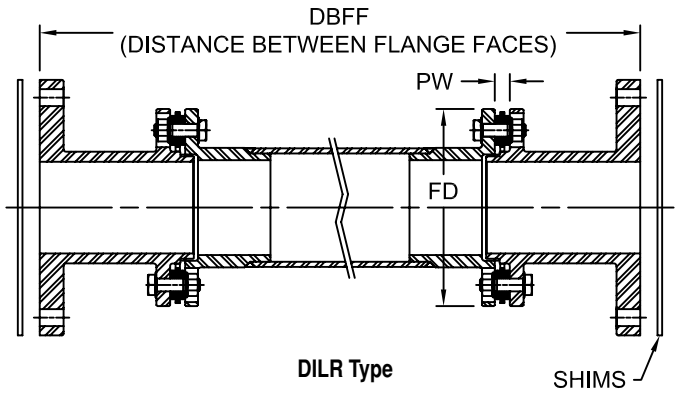
Notes:
- 3 indicates: The maximum bores shown are for cylindrical or taper shafts with keys. For splines and other type bores, contact Lovejoy Technical Support.
- Metric dimensions are rounded to the nearest 'mm' except where otherwise shown.



Please Note, Lovejoy DI-6 and DI-8 Type Drop-In Spacer style couplings are specially piloted to provide anti-flail protections and prevent the spacer from coming out of the coupling if the disc packs or bolts fail.

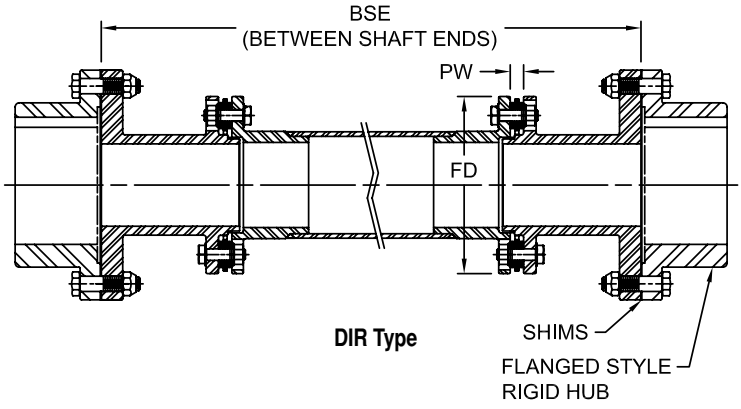
DIR-6 and DILR-6 Type Drop-In Center

The DIR and DILR Type coupling is designed to be a direct replacement for floating shafts in flanged series floating shaft gear couplings. The DIR is provided with F-Style rigid gear coupling hubs and the DILR can be manufactured to work with existing rigid hubs without disturbing or moving the equipment. All spacers are manufactured to the customer's specified length and are sized using a service factor of 2.0. The coupling has two flex planes (one at each disc pack) so it can accommodate parallel misalignment by the angular misalignment in each disc pack and it is suitable for axial displacement within specified limits. DILR Type couplings are manufactured slightly shorter than the DBFF dimension specified by the customer and shims are provided to aid in simplifying the installation.



Features

- No need for lubrication or maintenance
- Can utilize existing rigid Flanged Gear hubs or custom paper machine hubs (Beloit and Voith)
- Can be inspected while in operation
- Can run at higher speeds than floating shaft gear couplings
- Unitized disc pack
- Infinite life if properly aligned
- Torsionally rigid with minimal back lash
- No wearing parts and high resistance to harsh environmental conditions
- Shim kits are standard for ease of installation and precise spacer positioning
- Anti Flail / Anti Fly piloting option is standard to prevent the spacer assembly from flying out if a disc pack and bolts fail
- Adjustable lengths using shaft locking devices



Selection Process for DIR, DIRA, DILR, and DILRA Disc Couplings

The DILR and DILRA Type coupling are a direct replacement for a floating shaft style gear coupling. The DILR/DILRA is designed to utilize the hubs already on the customer's equipment. The DILR drop in replacement will be manufactured slightly shorter that the DBFF and shims will be used for ease of maintenance. The DILRA is adjustable using an SLD (Shaft Locking Device) to make axial or length adjustments. Customers with multiple pieces of equipment with similar length couplings can stock one spare spacer that can be used as a replacement for more than one coupling.

If the end user requires rigid hubs be provided with the coupling, a DIR or DIRA Type coupling will be recommended and the BSE (distance Between Shaft Ends) must be specified.

Required Information:

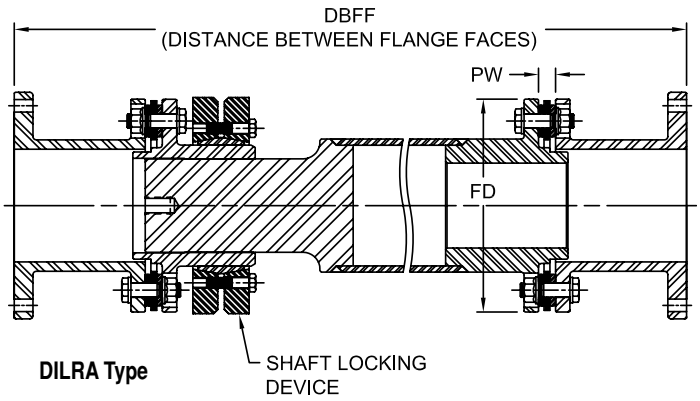
The end user should be prepared to provide the following information when contacting Lovejoy Technical Support:

- Motor horse power and speed (include gearbox ratio – input and output).
- Rigid hub sizes (if the customer is using existing F-Style rigid gear coupling hubs).
- DBFF or distance between flange faces of the rigid hubs for DILR Type.
- BSE shaft separation can be specified for DIR Type.
- Shaft sizes for rigid hubs DIR and DIRA Type couplings.
- For maximum bore sizes, consult with Lovejoy Gear Coupling Catalog pages F-Style rigid hubs.

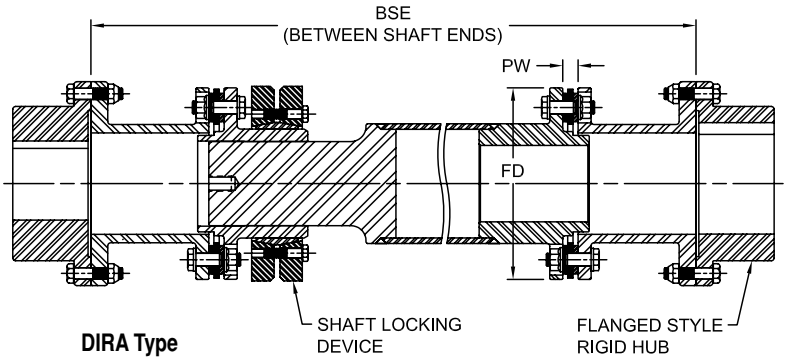
DIRA-6 and DILRA-6 Type

Drop-In Center

The DIRA and DILRA Type couplings are designed to be direct replacements for floating shafts in flanged series floating shaft gear couplings. This type uses existing or Lovejoy supplied rigid F-Style gear coupling hubs. The DIRA/DILRA are similar to the DIR and DILR Types with the exception these incorporate the use of an SLD shaft locking device to make length adjustments instead of shims. The standard axial adjustment is +/- 2.0 inches for this type of coupling. Custom length adjustment amounts can be provided on request. The DIRA is provided with rigid hubs. The DILRA can be manufactured to serve as a direct drop in replacement for use with existing rigid hubs without disturbing or moving the equipment. All spacers are manufactured to the customer's specified length and are sized using a service factor of 2.0. The coupling has two flex planes (one at each disc pack) so it can accommodate parallel misalignment by the angular misalignment in each disc pack and it is suitable for axial displacement within specified limits.



DILRA Type



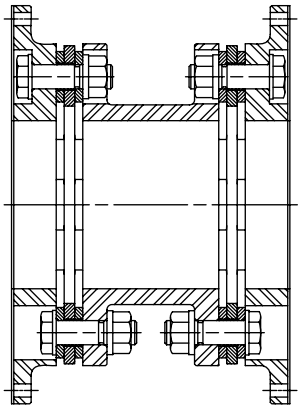
DIRA Type

D

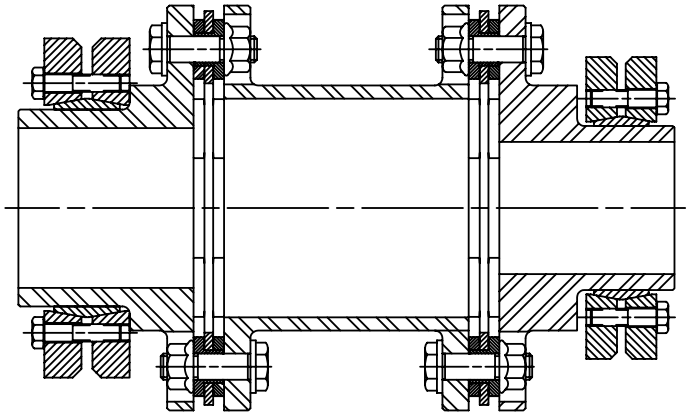
DIR / DILR - 6 Performance and Dimensional Data

Size	Nominal Torque in-lb	Nominal Torque Nm	Peak Torque in-lb	Peak Torque Nm	Max Speed RPM	FD in	FD mm	PW in	PW mm	Axial Misalignment ±ΔKa in	Axial Misalignment ±ΔKa mm	Angular Misalignment Degrees
132-6	9,700	1 100	19,500	2 200	Maximum Speed is determined by the length and critical speed of the spacer assembly	5.20	132	0.331	8.4	0.102	2.6	1.5°
158-6	17,700	2 000	35,400	4 000		6.22	158	0.441	11.2	0.122	3.1	
185-6	29,200	3 300	58,400	6 600		7.28	185	0.551	14.0	0.146	3.7	
202-6	40,700	4 600	81,400	9 200		7.95	202	0.610	15.5	0.150	3.8	1°
228-6	62,000	7 000	123,900	14 000		8.98	228	0.689	17.5	0.165	4.2	
255-6	90,300	10 200	180,600	20 400		10.04	255	0.807	20.5	0.185	4.7	
278-6	125,700	14 200	251,400	28 400		10.94	278	0.835	21.2	0.205	5.2	
302-6	177,000	20 000	354,000	40 000		11.89	302	0.961	24.4	0.224	5.7	
325-6	221,300	25 000	442,600	50 000		12.80	325	1.024	26.0	0.256	6.5	
345-6	274,400	31 000	549,000	62 000		13.58	345	1.110	28.2	0.272	6.9	
380-6	374,400	42 300	749,000	84 600		14.96	380	1.260	32.0	0.299	7.6	
410-6	505,000	57 100	1,011,000	114 200		16.14	410	1.307	33.2	0.323	8.2	
440-6	651,000	73 500	1,301,000	147 000		17.32	440	1.433	36.4	0.346	8.8	

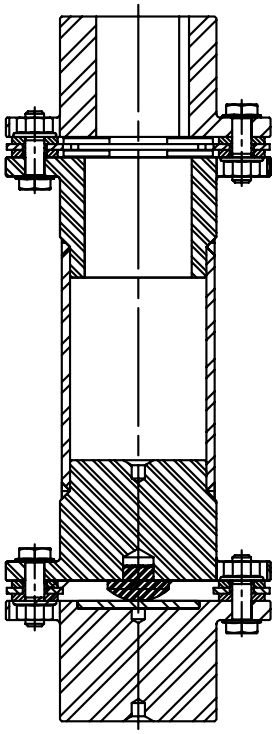
Note: ■ Axial misalignment is given for two disc packs, angular misalignment is given for one disc pack.



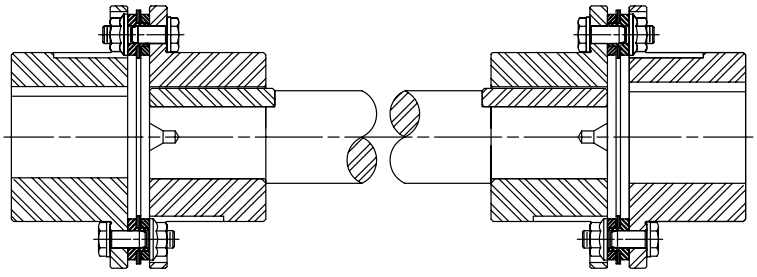
SXFA Type with Flanges



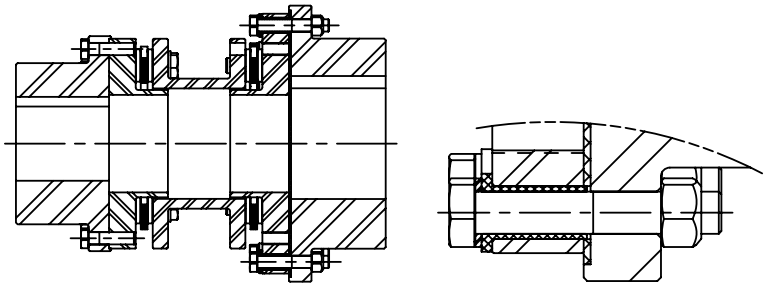
SX Type with SLD Shaft Locking Device



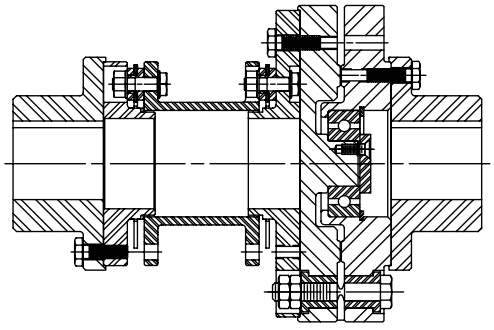
SXV Type for Vertical Mounting



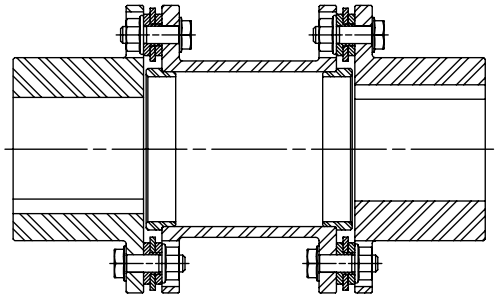
SXFS Type with Floating Shaft



DIEI Type with Electrical Insulation



DISP Type with Shear Pins



SXLEF Type with LEF Limited End Float

where the world turns for Lovejoy® Coupling Solutions

Gear

In This Section:

- C Types – Continuous Sleeve
- Nyflex® and Mite®
- Dentex®
- F Types – Flanged Sleeve
- R Types – Rigid Adjustable
- Coupling Grease



Gear

Safety Warning

When using Lovejoy products, you must follow these instructions and take the following precautions. Failure to do so may cause the power transmission product to break and parts to be thrown with sufficient force to cause severe injury or death.

Refer to this Lovejoy Catalog for proper selection, sizing, horsepower, torque range, and speed range of power transmission products, including elastomeric elements for couplings. Follow the installation instructions included with the product, and in the individual product catalogs for proper installation of power transmission products. Do not exceed catalog ratings.

During start up and operation of power transmission product, avoid sudden shock loads. Coupling assembly should operate quietly and smoothly. If coupling assembly vibrates or makes beating sound, shut down immediately, and recheck alignment. Shortly after initial operation and periodically thereafter, where applicable, inspect coupling assembly for: alignment, wear of elastomeric element, bolt torques, and flexing elements for signs of fatigue. Do not operate coupling assembly if alignment is improper, or where applicable, if elastomeric element is damaged, or worn to less than 75% of its original thickness.

Do not use any of these power transmission products for elevators, man lifts, or other devices that carry people. If the power transmission product fails, the lift device could fall resulting in severe injury or death.

For all power transmission products, you must install suitable guards in accordance with OSHA and American Society of Mechanical Engineers Standards. Do not start power transmission product before suitable guards are in place. Failure to properly guard these products may result in severe injury or death from personnel contacting moving parts or from parts being thrown from assembly in the event the power transmission product fails.

If you have any questions, contact the Lovejoy Engineering Department at 1-630-852-0500.

Gear

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Lovejoy / Sier-Bath Continuous Sleeve and Flanged Sleeve Couplings





Continuous Sleeve Series

Features

- Simple and inexpensive all steel type of gear coupling constructed with a single sleeve and 2 hubs
- Comparatively simple installation
- Precision cut 20° pressure angle gear teeth with minimum backlash
- Most standard configurations are available as stock items
- Angular misalignment of 1/2° per gear mesh (flex-plane)
- Sizes 7/8 through 12, to accommodate bore sizes up to and including 12.50 inches
- Interference fit (standard) and Clearance fit on bores are available
- Load Capacities range from 2,500 in-lbs up to 2,520,000 in-lbs
- Designs for applications requiring horizontal and vertical orientation, full-flex, flex-rigid, mill-motor, disengagement, sliding hubs, Shear Pin, floating shaft, and spacers
- Patented and tested BUNA N seal design with reinforced washers bonded to the inside edges which positively retain lubricant and seal the interior from outside contaminants
- Reinforced rubber seals with snap rings to hold in lubricant
- Two snap rings made of hardened spring steel which securely hold the coupling together, are easy to install or remove, yet withstand 100,000 pounds of end thrust
- Inch and Metric bore sizes available

Flanged Sleeve Series

Features

- Patented Vari-Crown® tooth form for long coupling life
- Precision cut 20° pressure angle gear teeth with minimum backlash
- All steel sleeves and hubs (stainless steel available)
- Designs for applications requiring horizontal and vertical orientation
- Most standard configurations are available as stock items
- Angular misalignment of 1-1/2° per gear mesh (flex-plane) up to size 5.5, 3/4° for sizes 6 and above
- Coupling sizes available through size 30 to accommodate bore sizes up to and including 44 inches
- Interference fit (standard) and Clearance fit on bores are available
- Load capacities range from 7,600 in-lbs up to 47,269,000 in-lbs
- Exposed bolts standard on all sizes, shrouded available by request up to size 6
- Standard bolts supplied by Lovejoy are treated to be corrosion resistant
- Flanged sleeve couplings are interchangeable with industry standards
- Piloted gear fit for higher speeds and less vibration
- Labyrinth all steel seal design in FL series
- Inch and Metric bore sizes available

Standard Types and Sizes

Lovejoy / Sier-Bath couplings are stocked in an assortment of configurations which include C and F standard hubs and sleeves, Mill Motor hubs, Vertical style, Floating Shaft, and Spacer designs. Lovejoy's superb engineering staff make it possible to support many additional coupling types such as the Brakedrum type, Sliding Hub type, Shear Pin type, Jordan type, and custom lengths for non standard shaft separations. Additional size ranges and designs to meet unusual application requirements can also be manufactured by Lovejoy to meet market demands. Material can range from standard steel to alloy steel and even stainless steel. The exceptional simplicity of the Lovejoy coupling design make this all possible.

Misalignment and End-Float Capability

The basic principle of Lovejoy / Sier-Bath C and F type couplings is similar to that of other conventional flexible gear couplings. While it is desirable to align shafts as accurately as possible, the purpose of any flexible coupling is to absorb probable angular, parallel, and axial (end-float) misalignment. Lovejoy/Sier-Bath couplings utilize a unique gear tooth geometry developed specifically to resolve issues with shaft misalignment and accommodate from 1/2° to 1-1/2° per gear mesh or flex plane. The hub teeth are fully crowned to provide for a larger contact area and lower stresses under misaligned conditions. The crowned tooth design also eliminates most of the end loading that occurs on straight gear teeth under misalignment.

WARNING

You must refer to page G-2 (Page 116) for Important Safety Instructions and Precautions for the selection and use of these products. Failure to follow the instructions and precautions can result in severe injury or death.

Lovejoy / Sier-Bath Nyflex® and Mite®

Lovejoy / Sier-Bath Nylon couplings are compact and require no lubrication. They operate over a wide temperature range at speeds up to 5,000 RPM and are effectively used in applications such as Motor/ Generator sets, pump sets, and many light to medium duty industrial coupling applications.

No lubricants are ever required, eliminating the need for seals. The resilient nature of the nylon material makes the contact of the hubs and sleeves almost frictionless. Since no lubrication is used, the coupling can readily be adapted to many applications including vertical and blind installations where the slip-together components offer easy inspection and adjustment.

Operationally, the coupling offers a minimum backlash solution that will operate in ambient temperature environments from -40° to 150° F. Nylon Sleeve couplings have precision molded sleeves and hubs with no bolts, pins, flanges, or protrusions to affect balance or safety. The nylon sleeve permits misalignment up to 5° for Dentex and Nyflex couplings and 3° for the Mite.

When completely assembled, the Mite coupling weighs less than 1lb and the Nyflex only 3.50 lbs. Weights for Dentex® couplings can be found on page G-30.

Features

- Molded nylon sleeve
- No internal frictional loss or heat buildup
- Minimum backlash
- High ambient temperature allowed
- Resistance to dirt, moisture, most chemicals
- Low maintenance (no seals, lubricant, retainers)
- High torque, low intertia
- Standard bores are available



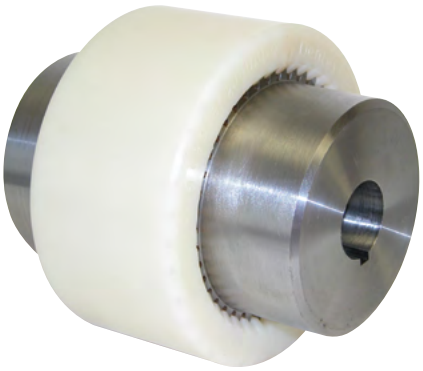
2 Spirolox Retaining Rings
Sleeve is securely held on the hubs by these spring-steel retaining rings. They can be removed in seconds, yet they'll withstand 5,000 lbs endthrust.

Nylon Sleeve
Resilient, lightweight, abrasion and corrosion resistant nylon is accurately molded to mesh precisely with hubs. Their almost frictionless properties eliminate the need for lubrication.

2 Hubs
Sintered iron is standard in the Nyflex and Mite. Teeth are crowned to provide greater misalignment capacity and to prevent gouging of Nylon sleeve. Maintain 0.13 inch spacing between hubs.

G

Dentex® / Dentex® FL - The Flexible Coupling



Features

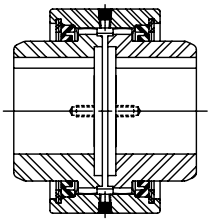
Compensation of axial, radial and angular misalignment of shafts through double cardanic action

- Simple and easy assembly
- High electrical insulating property
- High thermal stability
- No maintenance

Lovejoy / Sier-Bath Continuous Sleeve Series Couplings

Standard C Type

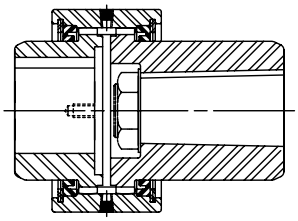
- Basis for all types of Lovejoy / Sier-Bath Continuous Sleeve Couplings
- Low profile compact design is easy to implement
- Single (flex-rigid) or double (flex-flex) engagement



C Type
CFR Type
Section Pages G-16 and G-17

Mill Motor CMM Type

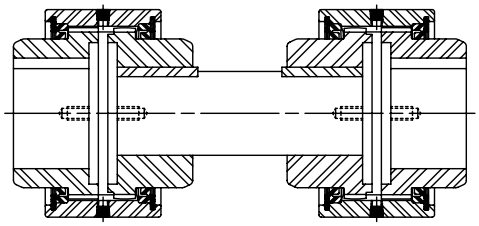
- Designed with longer universal hub on one end to accommodate straight or tapered shafts
- Standard hub and sleeve on the other end
- Universal hub bored to customer specifications
- Available with longer universal hubs on both ends



CMM Type
Section Pages G-18 and G-19

Floating Shaft CFS Type

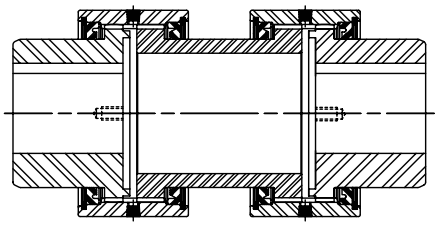
- Two flex-rigid couplings connected by an intermediate shaft
- Increased capability to accommodate parallel misalignment
- Allows for longer shaft separations



CFS Type
Section Pages G-20 and G-21

Spacer CSPCR Type

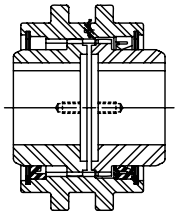
- Drop-out spacer design allows for ease of maintenance without disturbing the equipment mountings
- Spacer has rigid teeth to mate with sleeves on each coupling
- Increased capability to accommodate parallel misalignment
- Allows for longer shaft separations



CSPCR Type
Section Pages G-22 and G-23

Cut-out Shifter CCS Type

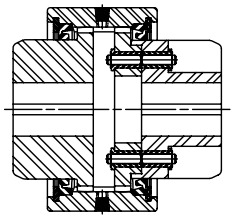
- Designed for quick disengagement between the driver and driven equipment
- Special seal in disengagement hub to prevent undue friction when hub turns in sleeve
- Widely used on dual drive operations and equipment operating in tandem
- Available with pins to maintain sleeve in engaged and disengaged positions
- Shifting mechanisms available upon request



CCS Type
Section Pages G-24 and G-25

Shear Pin CSHP Type

- Designed to limit and protect against excessive torque or sudden shock loads
- Sheer pins designed and manufactured for predetermined loads
- Pins are inserted in hardened bushings to minimize wear
- Easy to install new pins
- For Flanged FSHP Style see page G-8

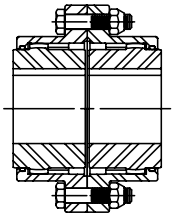


CSHP Type
Section Pages G-26 and G-27

Lovejoy / Sier-Bath Flanged Sleeve Series Couplings

Standard F Type

- Double engagement ('F' flex-flex) for parallel and angular misalignment
- Single engagement ('FFR' flex-rigid) accommodates angular misalignment only and is ideal for floating shaft applications
- Industry standard flange bolt patterns
- FHD Type standard for sizes 10 through 30 (other sizes available upon request)



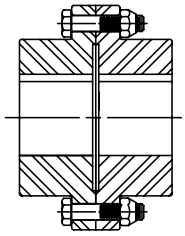
F Type Section Pages G-34 and G-35
FFR Type Section Pages G-36 and G-37
FHD Type Section Pages G-40 and G-41

Rigid-Rigid FRR Type

- Designed for connecting two rigidly mounted shafts with no misalignment capability

Alloy Rigid-Rigid FARR Type

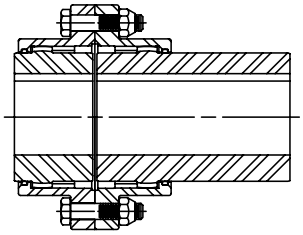
- Longer piloted hubs maintain rigidity and concentricity
- Used for cantilevered loads such as gear boxes that hang off conveyor systems
- Alloy steel available for greater strength (FARR)



FRR Type Section Pages G-58 and G-59
FARR Type Contact Lovejoy Technical Support

Mill Motor FMM Type

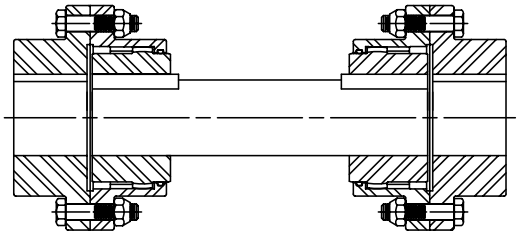
- First hub designed with longer universal hub on one end to accommodate straight or tapered shafts
- Second hub bored to customer specifications
- Standard design accommodates AISE Mill Motor frame sizes
- Sleeves and second hub are standard



FMM Type Section Pages G-46, G-47, G-48 and G-49

Floating Shaft FFS Type

- Two flex-rigid couplings connected by an intermediate shaft
- Increased ability to accommodate parallel misalignment
- Accommodate longer shaft separations
- Standard construction with rigid hubs on outboard (equipment) shafts, flex on inboard (floating) shaft
- Rigid hubs inboard (on floating shaft) available upon request

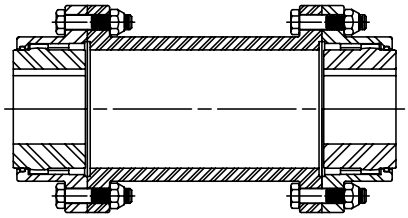


FFS Type
Section Pages G-38 and G-39

FHDFS Type
Section Pages G-44 and G-45

Spacer FSPCR Type

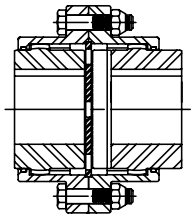
- Drop-out spacer design allows for ease of maintenance without disturbing the equipment mountings
- Lightweight construction reduces load on equipment bearings



FSPCR Type
Section Pages G-54 and G-55

Slide FSL and FSLX Types

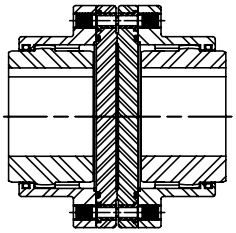
- Allows for a predetermined amount of axial slide
- Longer hubs and sleeves available to accommodate additional slide capacity
- Custom slide lengths available



FSL Type **Section pages G-50, G-51,**
FSLX Type **G-52 and G-53**

Shear Pin FSHP and FSHPB Types

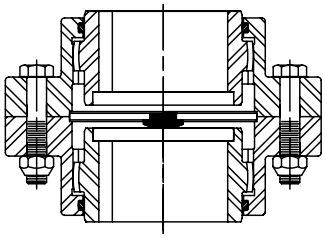
- Designed to limit and protect equipment against excessive torque or sudden shock loads
- Shear pins designed and manufactured to shear at predetermined torque loads
- Pins are inserted in hardened bushings to minimize wear
- Easy to install new pins
- Available with bearing support to maintain alignment after the pins shear



FSHP and FSHPB Type
Contact Lovejoy Technical Support

Standard Vertical FVX Type

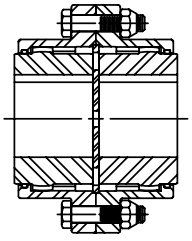
- Designed for use with vertical shafts
- Vertical kit prevents shafts from contacting each other
- Maintains ability to accommodate misalignment
- Available in vertical floating shaft design



FV and FVX Type
Contact Lovejoy Technical Support

Limited End Float FLEF Type

- Designed for equipment with sleeve bearings
- Designed to limit axial travel of the rotor in the motor and prevent the rotor from coming into contact and damaging sleeve bearings



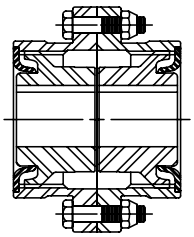
FLEF Type **Section pages G-56 and G-57**

Lovejoy / Sier-Bath All Metal Labyrinth Seal Series Couplings

- All AISI 4140 Alloy Steel Design
- No rubber seals – metal labyrinth design
- Standard with exposed bolts
- Fully interchangeable with Industry standards
- Ideal for higher temperature applications

Standard FLA Type

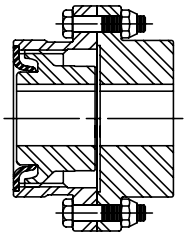
- Double engagement ('F' flex-flex) for parallel and angular misalignment
- Industry standard flange bolt patterns



FLA Type **Section Pages G-60 and G-61**

Single Engagement FLAFR Type

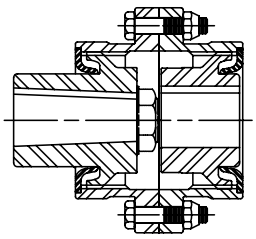
- Single engagement ('FFR' flex-rigid) accommodates angular misalignment only and is ideal for floating shaft applications



FLAFR Type **Section Pages G-62 and G-63**

Mill Motor FLAMM Type

- First hub designed with longer universal hub on one end to accommodate straight or tapered shafts
- Second hub bored to customer specifications
- Standard design accommodates AISE Mill Motor frame sizes
- Sleeves and second hub are standard

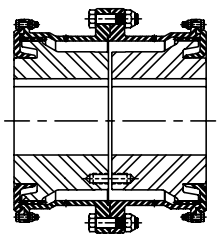


FLAMM Type **Section Pages G-64 and G-65**

Lovejoy Forged Steel Series

Standard FLHD Type

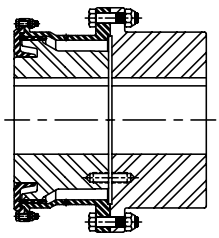
- Piloted Sleeves
- Exposed Bolts Standard
- Excellent for high torque at low speeds
- Bore range from 7.75 inches up to 44.88 inches
- Torque capacity up to 54,390,000 in-lbs
- Alloy Steel (AISI 4140) construction available



FLHD Type **Contact Lovejoy Technical Support**

Single Engagement FLHDFR Type

- Capacities the same as FHD
- Ideal for heavy duty floating shaft applications



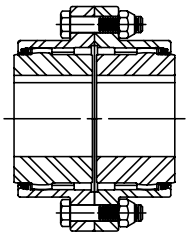
FLHDFR Type **Contact Lovejoy Technical Support**

Lovejoy Alloy Steel Series Couplings

- All alloy steel construction
- Fully molded seals maintain lubricant retention under misalignment conditions
- Exposed bolts are standard, shrouded bolts are optional

Standard FA Type

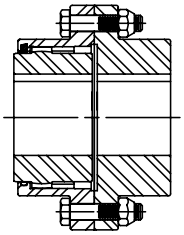
- Double engagement ('F' flex-flex) for parallel and angular misalignment
- Industry standard flange bolt patterns



FA Type **Section Pages G-66 and G-67**

Single engagement FAFR Type

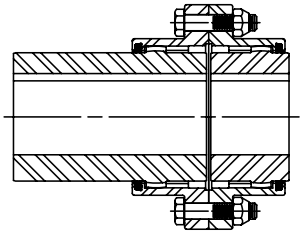
- Single engagement ('FFR' Flex-Rigid) accommodates angular misalignment only and is ideal for floating shaft applications



FAFR Type **Contact Lovejoy Technical Support**

Mill Motor FAMM Type

- First hub designed with longer universal hub on one end to accommodate straight or tapered shafts
- Second hub bored to customer specifications
- Standard design accommodates AISE Mill Motor frame sizes
- Sleeves and second hub are standard

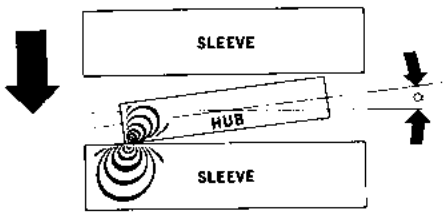


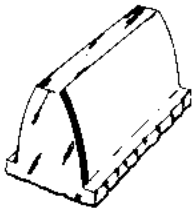
FAMM Type **Contact Lovejoy Technical Support**

Additional Specialty Coupling Types

- Stainless Steel
- Nylon Sleeves
- High Speed RAHS Type
- Brake Drum FBD and FBW Types
- Insulated FI Type
- Vertical Floating Shaft FVFS Type
- F Style Cutout Shifter FCS Type

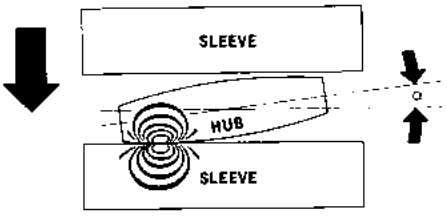
Vari-Crown® Tooth Form

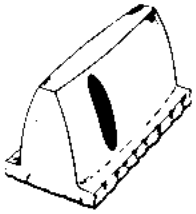




Straight

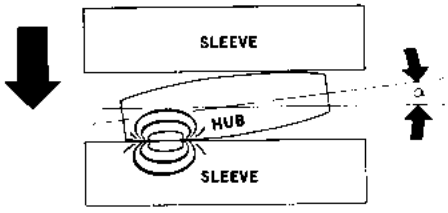
With straight hub teeth, there is a high concentration of load under misaligned conditions. As misalignment increases, more of the load is carried by the ends of the teeth, resulting in premature breakdown and coupling failure.

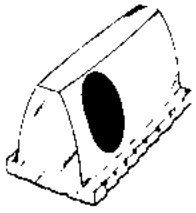




Conventional Crown

Some manufacturers use a conventionally crowned hub tooth known by various trade names. Regardless of the nomenclature, however, the contour of the tooth is a segment of an arc. Under all operating conditions, equal or similar contact areas between the hub teeth and the sleeve teeth exist.





Lovejoy / Sier-Bath Vari-Crown®

The Sier-Bath Vari-Crown tooth form has a crown at the center of the tooth which is similar to a conventionally crowned tooth coupling. However, as soon as misalignment occurs, the transmitted torque is carried on a flattened area of the hub tooth which is considerably broader and stronger than the conventionally crowned tooth form. Note the larger contact area and reduced stress area of the Vari-Crown tooth form.

Patented Vari-Crown® Tooth Form for Long Life

Facts

- It can be shown[1] that bodies with the smallest relative curvature have the largest area of contact under load, or specifically, a body with the largest radius of curvature has the largest area of contact with another body when under load. More importantly, under a given load the bodies with the greater radii of curvature have lower induced surface contact stresses.
- Gear tooth couplings have fewer teeth in contact as misalignment increases.

Lower Stresses

Lovejoy / Sier-Bath's solution to these facts was the development of the patented Vari-Crown tooth form. The Vari-Crown tooth form is a curve with constantly changing radii of curvature. The tooth contact area under misaligned conditions has a much larger radius of curvature than conventional crowning. The contact area is larger, thus reducing the unit stress.

Constant Velocity Power Transmission

Lovejoy / Sier-Bath produces the Vari-Crown tooth form by a generating method maintaining the necessary characteristics for conjugate tooth action, which are:

1. Constant normal base pitch at any position on the crowned teeth.
2. Correct pressure angle matching of the normal to the curved surface and the sleeve surface at any position of misalignment.

Less Backlash

The tooth design requires less backlash for a given angle of misalignment than the conventional or circular arc crown. In many applications this is a desirable feature in a gear tooth coupling.

Note: ■ 1 indicates: Hertz's study of contact stresses of curved surfaces.

Gear Coupling Selection Process

Factors Affecting Selection

The following is a list of the information necessary to assist in making a coupling selection. Not all of these items will come into play in all selection processes. These items include, but are not limited to:

Application related:

- Application details
- Type of motor and driven equipment
- Motor horsepower or KW
- Operating/coupling speed
- Shaft sizes and separation
- Space and size constraints
- Environment (temperature, chemicals, etc)
- Balance requirements
- Special modifications

Steps In Selecting A Gear Coupling

Refer to the gear coupling specifications charts displayed with each type of coupling throughout the Gear Coupling Products section of this catalog. The pictures and charts provide visualization, specifications, and dimensional data for Lovejoy's wide range of gear coupling products. Typically start with an F Type flanged gear coupling (page G-34) or a C Type continuous sleeve gear coupling (page G-16) and proceed from there.

Step 1: Review the gear coupling series and type as selected to ensure the selection meets application requirements.

Step 2: Determine the nominal application torque in in–lbs by using the following formula:

$$\text{Application Torque (in–lb)} = \frac{\text{HP} \times 63025}{\text{RPM}}$$

or

$$\text{Nm} = \frac{\text{KW} \times 9550}{\text{RPM}}$$

Step 3: Review the Application Service Factor chart for the service factor number associated with the application where this coupling will be used. Multiply the application torque by the application service factor to determine the total torque required for the coupling selection.

Step 4: Compare the required total torque value with the nominal torque capacity listed in the Gear Coupling Selection chart for the desired coupling type.

Step 5: Check that the maximum bore size and the maximum RPM of the coupling type selected to ensure the coupling will meet these application requirements.

Step 6: Note any special requirements including the BSE dimension for floating shaft and spacer types, shear pin torque, slide coupling details, mill motor tapered shaft data, and any other pertinent information.

Consult with Lovejoy Technical support or Engineering for any unique application concerns.

Selection Example (Flanged Gear Coupling)

Application Data: This sample application calls for a coupling to connect the output side of a reducer gearbox to a dredge pump. There is a 400 HP electric motor, running at 3,600 RPM driving the gearbox which has a 10:1 speed reduction. The gearbox has a 6 inch diameter shaft, the pump has a 6-1/2 inch diameter shaft. There is an angular misalignment potential of slightly more than 1°.

Step 1: Since C Type gear couplings are only capable of 1/2° misalignment per flex plane, the F Type coupling is selected. The F Type coupling is capable of accommodating 1-1/2° per flex plane. Note, it is highly recommended that couplings are installed at no more than 20% of the allowable misalignment since the alignment often changes during operation.

Step 2: Refer to page G-34 and G-35 for Flanged series (F Type) double engagement, or flex-flex, coupling information. The bore size and torque should be addressed interactively when selecting a coupling size.

Step 3: The application service factor can be found on page G-13. Application service factors are multipliers assigned to assorted applications for the purpose of guiding the coupling selection process to a torque rating that will prevent premature failure caused by the characteristics of that application. For this sample application, note that the service factor for a dredge pump application is 2.0.

Step 4: Calculate the torque requirements for the application using the formula:

$$\text{Design Torque (in–lbs)} = \frac{\text{HP} \times 63025}{\text{RPM}}$$

or

$$\text{Nm} = \frac{\text{KW} \times 9550}{\text{RPM}}$$

$$\text{Selection Torque} = \text{Application Torque} \times \text{Service Factor}$$

In this example, a gearbox is in use that reduces the operating speed where the coupling is being used from 3,600 RPM on the input side to 360 RPM on the gearbox output side.

Please note that any speed decrease at the reducer (gear box) will cause an increase in the application torque.

$$\text{Application Torque (in-lbs)} = \frac{\text{HP} \times 63025}{\text{RPM}} = \frac{400 \times 63025}{360} = 70{,}028 \text{ in-lbs}$$

$$\text{Selection Torque} = \text{Application Torque} \times \text{Service Factor} = 70{,}028 \times 2.0 = 140{,}056 \text{ in-lbs}$$

An F 3.5 coupling is rated at 151,200 in-lbs and could easily accommodate the torque requirement, however, to accommodate the 6-1/2 inch pump shaft diameter the selection of an F 5E size coupling will be necessary. The F 5 coupling is rated at 434,700 in-lbs and may seem to be too large or overrated for this application, but the larger size is necessary to accommodate the shaft size.

Step 5: Confirm that the RPM is within range specified for the selected coupling. The chart shows the F 5 has a 2,500 RPM maximum speed and this will accommodate the 360 RPM speed requirement on the output side of the gearbox.

Step 6: Please refer to the coupling specifications on page G-34 and G-35. Note that F 5E couplings are manufactured with interference fits and exposed bolts as standard. When contacting your sales representative, the description for this coupling would be an F 5E gear coupling and include the bore size, keyway information, and shaft separation. Also, provide a list of any requirements that might supersede the coupling defaults.

Special Note: If the shaft separation is greater than specified in the chart on Page G-35, refer to the Floating shaft or Spacer style couplings on pages G-39 or G-55. If the desired shaft separation, or BSE, is not listed, contact Lovejoy Technical Support for assistance.

Please refer to the Lovejoy website for installation instructions and lubrication requirements for gear couplings.

Application Service Factors

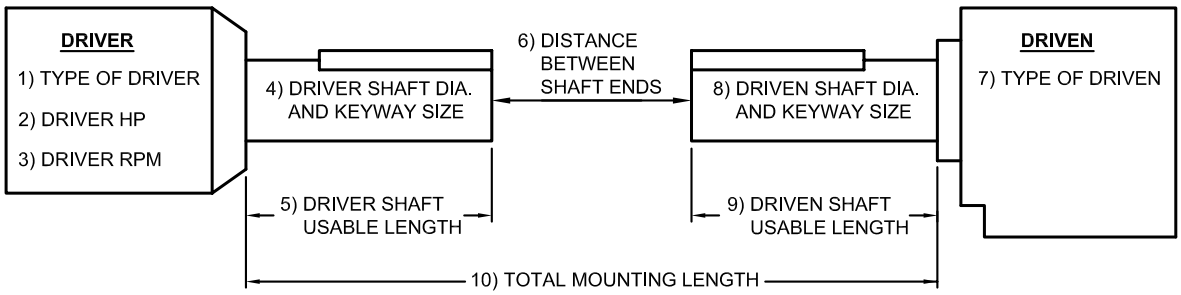
Agitators	
Pure Liquids	1.0
Liquids—Variable Density	1.0
Blowers	
Centrifugal	1.0
Lobe	1.2
Can Filling Machines	1.0
Car Dumpers	2.0
Car Pullers, Intermittent Duty	1.5
Compressors	
Centrifugal	1.0
Reciprocating	2.2
Multi-Cylinder	2.0
Single Cylinder	2.0
Conveyors, Uniformly Loaded or Fed	
Assembly	1.2
Belt	1.2
Screw	1.2
Conveyors, Heavy Duty	
Not Uniformly Fed Assembly	1.5
Belt	1.5
Oven	1.5
Reciprocating	2.0
Screw	1.5
Shaker	1.5
Cranes and Hoists[1]	
Main Hoists	2.0
Reversing	2.0
Skip Hoists	2.0
Trolley Drive	2.0
Bridge Drive	2.0
Crushers	
Ore	3.0
Stone	3.0
Dredges	
Conveyors	2.0
Cutter Head Drives	2.0
Maneuvering Winches	2.0
Pumps	2.0
Fans	
Centrifugal	1.0
Cooling Towers Forced Draft	1.5
Feeders	
Screw	1.5
Generators	
Not Welding	1.0
Welding	1.5
Hammer Mills	2.0
Laundry Washers	
Reversing	1.5
Lumber Industry	
Barkers—Drum Type	2.0
Edger Feed	2.0
Live Rolls	2.0
Log Haul—Incline	2.0
Log Haul—Well Type	2.0
Off Bearing Rolls	2.0
Planer Feed Chains	1.75
Planer Tilting Hoist	1.75
Planer Floor Chains	1.75
Slab Conveyor	1.5
Sorting Table	1.5
Trimmer Feed	1.5
Machine Tools	
Bending Roll	2.0
Punch Press, Gear Driven	2.0
Tapping Machines	2.0
Main Drives	1.5
Auxiliary Drives	1.5
Metal Mills	
Draw Bench—Carriage	2.0
Draw Bench—Main Drive	2.0
Forming Machines	2.0
Slitters	1.5
Table Conveyors	
Non-Reversing	2.25
Reversing	2.5
Wire Drawing & Flattening Machine	2.0
Wire Winding Machine	1.75
Metal Rolling Mills	
Blooming Mills	2.5
Coilers, hot mill	2.0
Coilers, cold mill	1.5
Cold Mills	2.0
Cooling Beds	1.75
Door Openers	2.0
Draw Benches	2.0
Edger Drives	1.75
Feed Rolls, Reversing Mills	3.5
Furnace Pushers	2.5
Hot Mills	3.0
Ingot Cars	2.5
Kick-outs	2.5
Manipulators	3.0
Merchant Mills	3.0
Piercers	3.0
Pusher Rams	2.5
Reel Drives	1.75
Reel Drums	2.0
Reelers	3.0
Rod and Bar Mills	3.0
Roughing Mill Delivery Table	3.0
Runout Tables	2.5
Saws, hot & cold	2.5
Screwdown Drives	3.0
Skelp Mills	3.0
Slitters	3.0
Slabing Mills	1.75
Soaking Pit Cover Drives	3.0
Straighteners	2.5
Tables, transfer & runout	2.5
Thrust Block	3.0
Traction Drive	3.0
Tube Conveyor Rolls	2.5
Unscramblers	2.5
Wire Drawing	1.75
Mills, Rotary Type	
Ball	2.25
Dryers & Coolers	2.0
Hammer	1.75
Kilns	2.0
Pebble & Rod	2.0
Pug	1.75
Tumbling Barrels	2.0
Mixers	
Concrete Mixers, Continuous	1.5
Concrete Mixers, Intermittent	2.0
Oil Industry	
Oil Well Pumping	2.0
Rotary Kilns	2.0
Paper Mills	
Agitators, Mixers	1.5
Barker Auxiliaries, Hydraulic	2.0
Barker Mechanical	2.0
Barking Drum Spur Gear Only	2.0
Beater & Pulper	1.75
Bleacher	1.0
Calenders	2.0
Calenders, Super	1.5
Chippers	2.5
Coaters	1.0
Converting Machines, except Cutters, Platers	1.5
Conveyors	1.5
Couch Roll	1.75
Cutters, Platters	2.0
Cylinders	1.75
Disc Refiners	1.75
Dryers	1.75
Felt Stretcher	1.25
Felt Whipper	2.0
Jordans	1.75
Line Shaft	1.5
Log Haul	2.0
Pulp Grinder	1.75
Press Roll	2.0
Reel	1.5
Stock Chests	1.5
Suction Roll	1.75
Washers & Thickeners	1.5
Winders	1.5
Printing Presses	1.5
Pumps	
Centrifugal	1.0
Reciprocating	
Single Acting 3 or more Cylinders	1.5
Double Acting 2 or more Cylinders	2.0
Rotary, Gear Type, Lobe Vane	1.5
Rubber Industry	
Mixer	2.0
Rubber Calender	2.0
Screens	
Rotary, Stone or Gravel	1.5
Steering Gear	1.0
Stokers	1.0
Textile Industry	
Dryers	1.5
Dyeing Machinery	1.5
Windlass	2.0

Notes:
- 1 indicates: If people are transported, Lovejoy does not recommend and will not warranty the use of the coupling.
- Values contained in the table should be used as a general guide and are to be applied to smooth power sources such as electric motors and steam turbines.
- For drives involving internal combustion engines add 1.0 to the values listed.

Selection Worksheet

Customer Name:_____ **Contact Name:** _____

Phone Number:_____ **Email Address:**_____



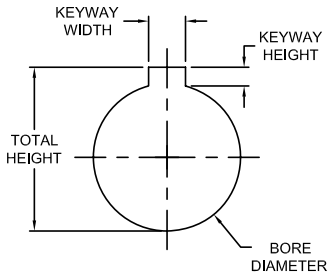
1. Type of Driver (Electric Motor, Combustion Engine, Gearbox, etc.) : _____

For combustion engines, define type
Gasoline, Diesel, Natural Gas, etc. : _____ Number of cylinders _____

2. Driver Horse Power : _____ 3. Driver or Gearbox output RPM : _____

Retrieve the Application Service Factor from Page G-13 : _____ then calculate the Selection Torque using the following formula:

Torque (in-lbs) = $\frac{\text{HP x 63025}}{\text{RPM}}$ x Service Factor = Selection Torque = _____ in-lbs



For additional bore and keyway information, see the Engineering Data Section of the Power Transmission Products Catalog

4. Driver Shaft Diameter : _____ Keyway size : KW Width _____ KW Height _____

Specify Clearance Fit, Interference Fit, Metric (P7, H7, etc), Shaft Locking Device, and Set Screw or No Set Screw

5. Driver Usable Shaft Length : _____ (Measure from the end of the shaft to any obstruction)

6. Distance between shaft ends (BSE) : _____

7. Type of Driven Equipment : _____

8. Driven Shaft Diameter : _____ Keyway size : KW Weight _____ KW Height _____

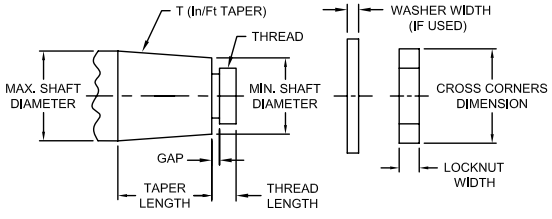
Specify Clearance Fit, Interference Fit, Metric (P7, H7, etc), Shaft Locking Device, and Set Screw or No Set Screw

9. Driven Usable Shaft Length : _____ (Measure from the end of the shaft to any obstruction)

10. Total Mounting Length : _____ (Advise of any obstructions, walls, beams, guards, pipes, etc.)

11. For Tapered Shafts specify the following:

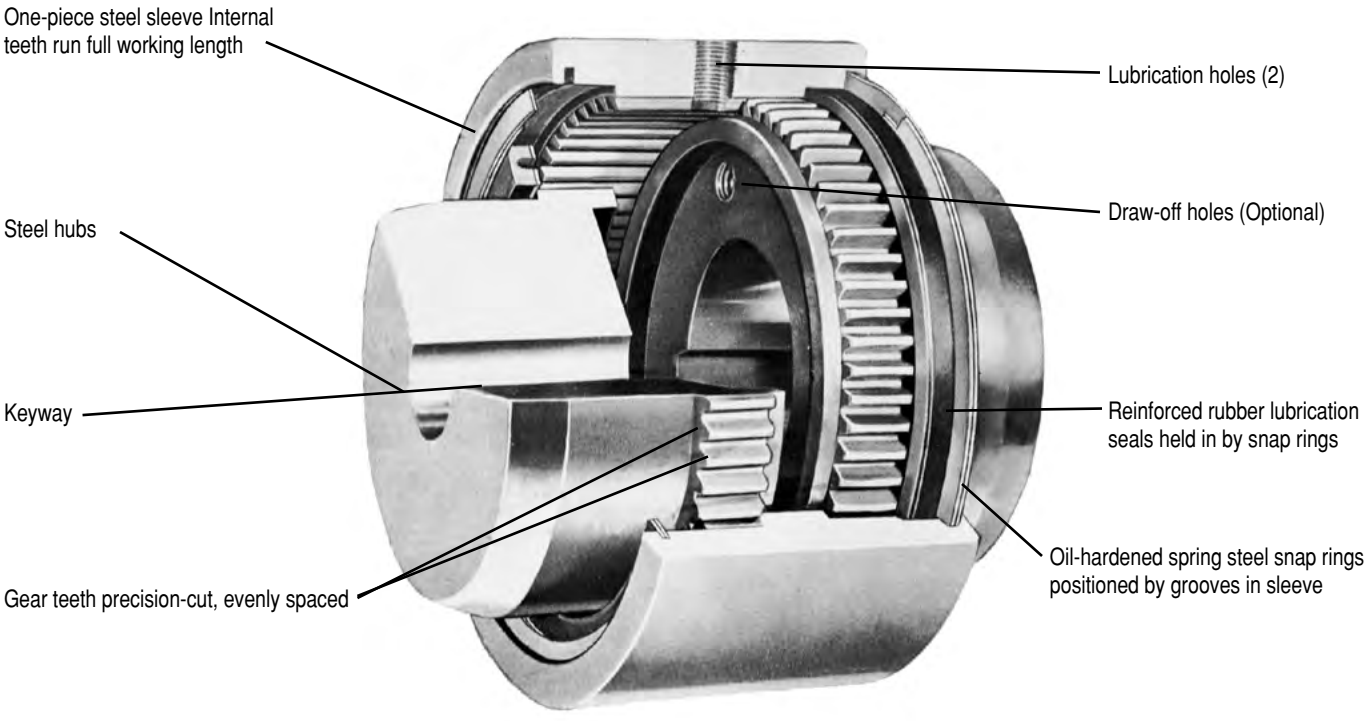
Minimum or Maximum Taper diameter: _____
Taper Length: _____ T (Taper Inch per Foot) : _____
Gap or Hub Overhang amount: _____
Locknut Width: _____ Size of nut cross corners: _____
Thread Size: _____ Thread Length: _____
Washer Diameter (if used) : _____ Washer Width: _____



Lovejoy, Inc.
World Headquarters
2655 Wisconsin Avenue
Downers Grove, IL 60515

Send this form to:
appleng@lovejoy-inc.com
or fax to: 800-446-0878

Lovejoy / Sier-Bath Continuous Sleeve Gear Couplings



The One-Piece Sleeve Gear Coupling

Lovejoy / Sier-Bath Continuous Sleeve Gear Couplings





C Type Flex-Flex Couplings

The C Type coupling consists of two flex hubs, one sleeve and one accessory kit consisting of seals and snap rings.

CFR Type Flex-Rigid Couplings

The CFR Type coupling consist of one flex hub, one rigid hub, one sleeve, one accessory kit consisting of seals and snap rings.

Features

- Simple and inexpensive type of gear coupling
- All steel sleves and hubs
- Reinforced rubber seals with snap rings to hold lubricant in place
- Available as vertical and horizontal couplings
- Wide variety of special variations such as full-flex, flex-rigid mill motor
- Standard configurations are available of the shelf

G

C - CFR Performance Data

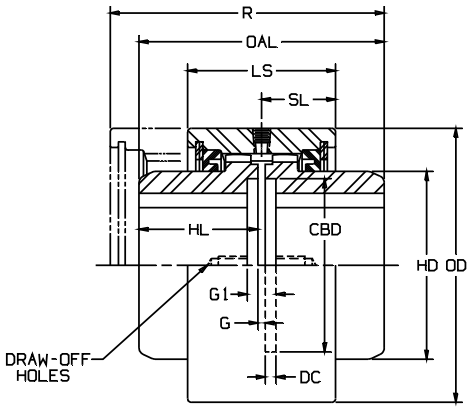
Size	Nominal Torque		Maximum Speed		ID1 - ID2 Flex & Rigid Max Bore		ID1 - ID2 Flex & Rigid Rough Stock Bore		Weight		Parallel Misalignment		Angular Misalignment Degrees
	in-lb	Nm	Unbal RPM	Bal RPM	in	mm	in	mm	lbs	kg	in	mm	
7/8	2,500	300	6,000	18,000	1.25	31	Solid with Center		5	2	0.005	0.13	1/2° per Mesh
1.5	7,600	900	5,000	15,000	1.63	42			8	4	0.007	0.18	
2	20,200	2 300	4,200	12,600	2.13	56			13	6	0.007	0.18	
2.5	30,200	3 400	3,750	11,250	2.63	70			20	9	0.007	0.25	
3	50,400	5 700	3,600	9,000	3.13	84			33	15	0.010	0.30	
3.5	88,200	10 000	2,800	8,400	3.63	97	1.25	32	63	29	0.012	0.30	
4	126,000	14 200	2,400	7,200	4.13	111	1.75	44	91	41	0.012	0.30	1/4° per Mesh
4.5	184,000	20 800	2,200	6,600	4.75	130	2.38	60	126	57	0.007	0.18	
5	270,900	30 600	2,100	6,300	5.75	160	2.88	73	195	89	0.007	0.18	
6	378,000	42 700	2,000	6,000	6.75	186	3.88	99	267	121	0.009	0.23	
7	598,500	67 600	1,000	3,000	7.50	200	4.69	119	320	145	0.010	0.25	
9	1,260,000	142 400	800	2,400	9.50	240	5.88	149	520	236	0.011	0.28	
11	2,205,000	249 200	600	1,800	11.50	305	7.75	197	925	420	0.013	0.33	
12	2,520,000	284 700	550	1,650	12.50	330	9.75	248	1,200	545	0.014	0.36	

Ordering Information

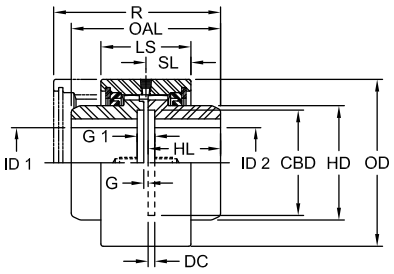
- Application: Driver and Driven.
- Type and size of coupling, horizontal, vertical etc.
- Power: Motor horspower or torque requirement.
- Speed: Motor RPM or Driven RPM.
- Distance between shaft ends (BSE).
- Shaft sizes.

Lovejoy / Sier-Bath Continuous Sleeve Gear Couplings

C and CFR Type Couplings



C Type Flex-Flex Coupling



CFR Type Flex-Rigid Coupling

C and CFR Type Dimensional Data

Size	R in	OAL in	LS in	SL in	ID1 - ID2 Flex & Rigid Max Bore in	ID1 - ID2 Flex & Rigid Max Bore mm	ID1 - ID2 Flex & Rigid Rough Stock Bore in	ID1 - ID2 Flex & Rigid Rough Stock Bore mm	HL in	DC in	BSE G in	BSE G1 in	OD in	HD in	CBD in
7/8	3.75	3.13	2.00	1.00	1.25	31	Solid with Center		1.50	0.13	0.13	0.38	3.31	2.00	1.94
1.5	4.59	3.75	2.53	1.27	1.63	42			1.81	0.19	0.13	0.50	3.75	2.38	2.25
2	4.88	4.25	2.56	1.28	2.13	56			2.06	0.19	0.13	0.50	4.75	3.25	3.00
2.5	5.72	4.75	3.06	1.53	2.63	70			2.25	0.25	0.25	0.75	5.50	3.94	3.75
3	6.88	5.50	3.75	1.88	3.13	84			2.63	0.25	0.25	0.75	6.63	4.75	4.75
3.5	9.25	8.75	4.00	2.00	3.63	97	1.25	30	4.25	0.25	0.25	0.75	7.50	5.38	5.50
4	9.50	9.00	4.63	2.31	4.13	111	1.75	44	4.38	0.25	0.25	0.75	8.75	6.25	6.50
4.5	10.38	10.25	4.88	2.44	4.75	130	2.38	60	5.00	0.25	0.25	0.75	9.50	7.25	7.25
5	12.25	12.25	5.75	2.88	5.75	160	2.88	73	6.00	0.25	0.25	0.75	10.75	8.25	8.12
6	13.38	13.00	6.50	3.25	6.75	186	3.88	99	6.38	0.25	0.25	0.75	12.25	9.50	9.25
7	15.38	14.88	7.50	3.75	7.50	200	4.69	119	7.25	0.25	0.38	0.88	14.00	10.50	9.75
9	19.00	19.00	8.13	4.06	9.50	240	5.88	149	9.25	0.25	0.50	1.00	16.25	12.63	12.25
11	22.50	22.50	8.13	4.06	11.50	305	7.75	197	11.00	0.25	0.50	1.00	19.25	15.63	15.00
12	25.00	25.00	8.38	4.19	12.50	330	9.75	248	12.25	0.25	0.50	1.00	20.50	16.50	16.00

Ordering Information

- Puller Holes are standard on sizes 4 through 12.
- Puller Holes are available for sizes 7/8 through 3.5 at an additional charge.
- The BSE (distance Between Shaft Ends) may vary between G and G1.
- Interference bores with no set screws are standard unless otherwise specified.
- Inch bores and keyway tolerances conform to ANSI / AGMA 9002-B04.
- For metric bores and keyway tolerances, consult Lovejoy Engineering Section.
- Larger sizes are available, please consult Lovejoy Technical Support.

Lovejoy / Sier-Bath Continuous Sleeve Gear Couplings

CMM Type Mill Motor Couplings

The CMM Type coupling consists of one standard flex hub, one universal hub, one standard sleeve and one accessary kit consisting of seals and snap rings.



Features

- Specifically designed for mill motors with tapered bores
- Universal hub counterbored for the nut on the end of the motor shaft
- One piece cylindrical sleeve for smoother, faster, quieter and and safer operation
- Quick assembly and disassembly

CMM Type Performance Data

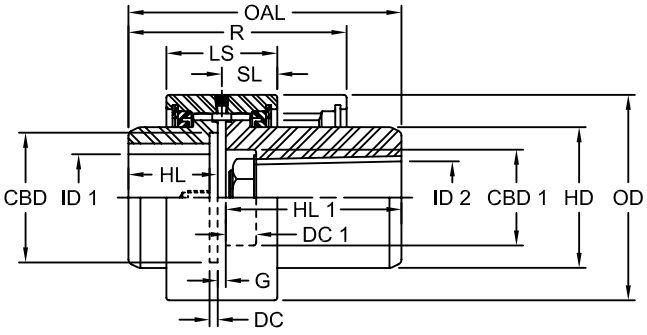
Size	Nominal Torque		Maximum Speed		ID1 - ID2 Max Bore		ID1 - ID2 Rough Stock Bore		Weight		Parallel Misalignment		Max Angular Misalignment Degrees
	in-lb	Nm	Unbal RPM	Bal RPM	in	mm	in	mm	lbs	kg	in	mm	
7/8	2,500	300	6,000	18,000	1.25	31	0.44	11	7	3.2	0.005	.13	
1.5	7,600	900	5,000	15,000	1.63	42	0.63	16	11	5.0	0.007	.18	
2	20,200	2 300	4,200	12,600	2.13	56	0.73	19	19	8.6	0.007	.18	1/2°
2.5	30,200	3 400	3,750	11,250	2.63	70	0.88	22	29	13.0	0.007	.18	
3	50,400	5 700	3,600	9,000	3.13	84	1.19	30	46	21.0	0.010	.25	
3.5	88,200	10 000	2,800	8,400	3.63	97	1.25	32	77	35.0	0.012	.30	
4	126,000	14 200	2,400	7,200	4.13	111	1.75	44	109	49.0	0.012	.30	
4.5	184,000	20 800	2,200	6,600	4.75	130	2.38	60	155	70.0	0.007	.18	1/4°
5	270,000	30 600	2,100	6,300	5.75	160	2.88	73	220	100.0	0.007	.18	
6	378,000	42 700	2,000	6,000	6.75	186	3.88	99	315	143.0	0.009	.23	

Ordering Information

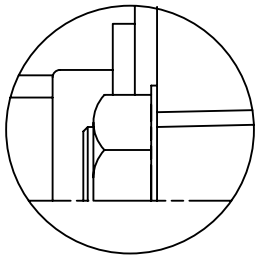
- Application: Driver and Driven.
- Type and size of coupling, horizontal, vertical etc.
- Power: Motor horspower or torque requirement.
- Speed: Motor RPM or Driven RPM.
- Distance between shaft ends (BSE).
- Shaft sizes.
- Length and taper per foot of Mill Motor shaft.
- Size of nut to be used on Mill Motor (DC1 and CBD1).
- Specify if keyways are to be parallel to shaft axis or tapered.

Lovejoy / Sier-Bath Continuous Sleeve Gear Couplings

CMM Type Mill Motor Couplings



Standard Type



Alternative Type

CMM Type Dimensional Data

Size	OAL in	R in	LS in	SL in	ID1 - ID2 Max Bore in	ID1 - ID2 Max Bore mm	ID1 - ID2 Rough Stock Bore in	ID1 - ID2 Rough Stock Bore mm	HL in	HL1 in	DC in	DC1 in	G in	OD in	HD in	CBD in	CBD 1 in
7/8	Determined by Length of Mill Motor Hub	3.75	2.00	1.00	1.25	31	0.44	11	1.50	3.75	0.13	Determined by Customer Specifications	0.13	3.31	2.00	1.94	1.63
1.5		4.59	2.53	1.27	1.63	42	0.63	16	1.81	4.00	0.19		0.13	3.75	2.38	2.25	1.88
2		4.88	2.56	1.28	2.13	56	0.73	19	2.06	4.63	0.19		0.13	4.75	3.25	3.00	2.75
2.5		5.72	3.06	1.53	2.63	70	0.88	22	2.25	5.13	0.25		0.25	5.50	3.94	3.75	3.25
3		6.88	3.75	1.88	3.13	84	1.19	30	2.63	5.75	0.25		0.25	6.63	4.75	4.75	3.88
3.5		9.25	4.00	2.00	3.63	97	1.25	32	4.25	6.50	0.25		0.25	7.50	5.38	5.50	4.50
4		9.50	4.63	2.31	4.13	111	1.75	44	4.38	6.63	0.25		0.25	8.75	6.25	6.50	5.13
4.5		10.38	4.88	2.44	4.75	130	2.38	60	5.00	7.75	0.25		0.25	9.50	7.25	7.25	5.50
5		12.25	5.75	2.88	5.75	160	2.88	73	6.00	7.88	0.25		0.25	10.75	8.25	8.13	6.50
6		13.38	6.50	3.25	6.75	186	3.88	99	6.38	9.25	0.25		0.25	12.25	9.50	9.25	7.75

Ordering Information

- HL1 Dimensions are the maximum lengths of Universal hubs kept in stock and altered to customer specifications. Longer length hubs are made to order.
- Dimension CBD1 as shown is the maximum safe counterbore. Diameter of this counterbore is to customer specifications.
- Rough bore mill motor hubs are manufactured to HL1 length with straight bores.
- Puller Holes are standard on sizes 4 through 12.
- Puller Holes are available for sizes 7/8 through 3.5 at an additional charge.
- Interference bores with no set screws are standard unless otherwise specified.
- Inch bores and keyway tolerances conform to ANSI / AGMA 9002-B04.
- For metric bores and keyway, consult Lovejoy Engineering Section.
- Larger sizes are available, please consult Lovejoy Technical Support.

Lovejoy / Sier-Bath Continuous Sleeve Gear Couplings

CFS Type Floating Shaft Coupling

The CFS Type coupling consists of two flex-rigid (CFR) couplings with a shaft between them. Normally the driver and driven ends are rigid while the two center hubs connected by the center shaft are flexible. These hubs can be reversed if necessary without sacrificing ease of installation or disassembly.



CFS Type Performance Data

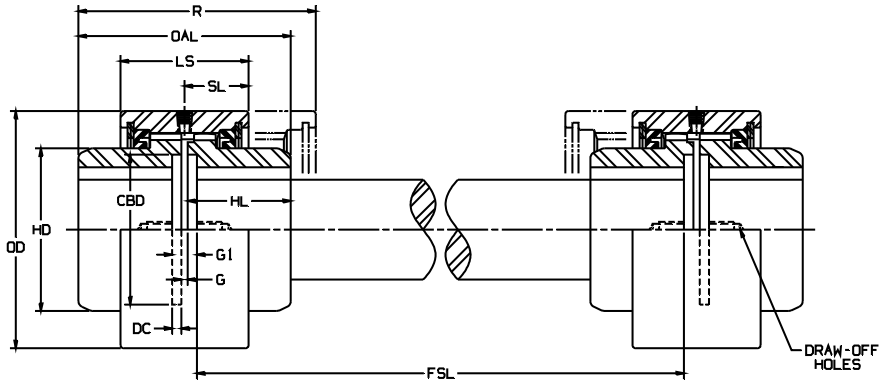
Size	Nominal Torque		Maximum Speed		ID1 - ID2 Flex & Rigid Max Bore		ID1 - ID2 Flex & Rigid Rough Stock Bore		Weight Coupling Only		Parallel Misalignment		Max Angular Misalignment Degrees
	in-lb	Nm	Unbal RPM	Bal RPM	in	mm	in	mm	lbs	kg	in	mm	
7/8	2,500	300	6,000	18,000	1.25	31	0.44	11	10	4.5	0.005	.13	
1.5	7,600	900	5,000	15,000	1.63	42	0.63	16	16	7.3	0.007	.18	
2	20,200	2 300	4,200	12,600	2.13	56	0.73	19	26	12.0	0.007	.18	1/2°
2.5	30,200	3 400	3,750	11,250	2.63	70	0.88	22	40	18.0	0.007	.18	
3	50,400	5 700	3,600	9,000	3.13	84	1.19	30	66	30.0	0.010	.25	
3.5	88,200	10 000	2,800	8,400	3.63	97	1.25	32	126	57.0	0.012	.30	
4	126,000	14 200	2,400	7,200	4.13	111	1.75	44	182	83.0	0.012	.30	
4.5	184,000	20 800	2,200	6,600	4.75	130	2.38	60	252	114.0	0.007	.18	1/4°
5	270,000	30 600	2,100	6,300	5.75	160	2.88	73	390	177.0	0.007	.18	
6	378,000	42 700	2,000	6,000	6.75	186	3.88	99	534	242.0	0.009	.23	

Ordering Information

- Application: Driver and Driven.
- Type and size of coupling, horizontal, vertical etc.
- Power: Motor horspower or torque requirement.
- Speed: Motor RPM or Driven RPM.
- Distance between shaft ends (BSE).
- Shaft sizes.

Lovejoy / Sier-Bath Continuous Sleeve Gear Couplings

CFS Type Floating Shaft Couplings



CFS Type Dimensional Data

Size	R	OAL	LS	SL	ID1 - ID2 Flex & Rigid Max Bore		ID1 - ID2 Flex & Rigid Rough Stock Bore		HL	DC	BSE Min	G	G1	OD	HD	CBD
	in	in	in	in	in	mm	in	mm	in	in	in	in	in	in	in	in
7/8	3.75	3.13	2.00	1.00	1.25	31	0.44	11	1.50	0.13	3.75	0.13	0.38	3.31	2.00	1.94
1.5	4.59	3.75	2.53	1.27	1.63	42	0.63	16	1.81	0.19	4.63	0.13	0.50	3.75	2.38	2.25
2	4.88	4.25	2.56	1.28	2.13	56	0.73	19	2.06	0.19	5.13	0.13	0.50	4.75	3.25	3.00
2.5	5.72	4.75	3.06	1.53	2.63	70	0.88	22	2.25	0.25	6.00	0.25	0.75	5.50	3.94	3.75
3	6.88	5.50	3.75	1.88	3.13	84	1.19	30	2.63	0.25	6.75	0.25	0.75	6.63	4.75	4.75
3.5	9.25	8.75	4.00	2.00	3.63	97	1.25	32	4.25	0.25	9.50	0.25	0.75	7.50	5.38	5.50
4	9.50	9.00	4.63	2.31	4.13	111	1.75	44	4.38	0.25	9.75	0.25	0.75	8.75	6.25	6.50
4.5	10.38	10.25	4.88	2.44	4.75	130	2.38	60	5.00	0.25	11.00	0.25	0.75	9.50	7.25	7.25
5	12.25	12.25	5.75	2.88	5.75	160	2.88	73	6.00	0.25	13.00	0.25	0.75	10.75	8.25	8.13
6	13.38	13.00	6.50	3.25	6.75	186	3.88	99	6.38	0.25	13.75	0.25	0.75	12.25	9.50	9.25

Notes:
- FSL Dimension is the minimum length of the floating shaft.
- The BSE (distance Between Shaft Ends) vary between G and G1.
- Puller Holes are standard on sizes 4 through 6.
- Puller Holes are available for sizes 7/8 through 3.5 at an additional charge.
- Interference bores with no set screws are standard unless otherwise specified.
- Inch bores and keyway tolerances conform to ANSI / AGMA 9002-B04.
- For metric bores and keyway tolerances, consult Lovejoy Engineering Section.
- Larger sizes are available, please consult Lovejoy Technical Support.

Lovejoy / Sier-Bath Continuous Sleeve Gear Couplings

CSPCR Type Spacer Couplings

The CSPCR Type coupling consists of two flex hubs, two sleeves, one spacer, one accessory kit, two split seals and two lock rings.



Features

- Easy removal of hubs without disturbing the mounting of connected units
- Spacer teeth are rigid with a slight interference fit with the mating flex hub
- Split seals on the spacer

CSPCR Type Performance Data

Size	Nominal Torque in-lb	Nominal Torque Nm	Maximum Speed[1] Unbal RPM	Maximum Speed[1] Bal RPM	ID1 - ID2 Max Bore in	ID1 - ID2 Max Bore mm	ID1 - ID2 Rough Stock Bore in	ID1 - ID2 Rough Stock Bore mm	Weight Couplings Only lbs	Weight Couplings Only kg	Parallel Misalignment in	Parallel Misalignment mm	Max Angular Misalignment Degrees
7/8	2,500	300	6,000	18,000	1.25	31	Solid		7	3.2	0.005	.13	1/2° per Mesh
1.5	7,600	900	5,000	15,000	1.63	42			11	5.0	0.007	.18	
2	20,200	2 300	4,200	12,600	2.13	56			16	7.3	0.007	.18	
2.5	30,200	3 400	3,750	11,250	2.63	70			26	12.0	0.007	.18	
3	50,400	5 700	3,600	9,000	3.13	84			43	20.0	0.010	.25	
3.5	88,200	10 000	2,800	8,400	3.63	97			79	36.0	0.012	.30	1/4° per mesh
4	126,000	14 200	2,400	7,200	4.13	111	1.75	44	115	52.0	0.012	.30	
4.5	184,000	20 800	2,200	6,600	4.75	130	2.38	60	158	72.0	0.007	.18	
5	270,000	30 600	2,100	6,300	5.75	160	2.88	73	248	113.0	0.007	.18	
6	378,000	42 700	2,000	6,000	6.75	186	3.88	99	340	154.0	0.009	.23	

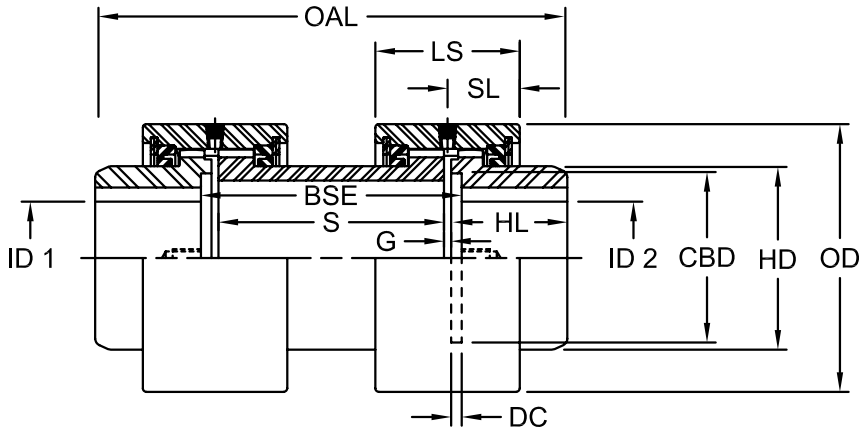
Note: ■ 1 indicates: Maximum RPM of spacer coupling determined by critical speed of spacer shaft.

Ordering Information

- Application: Driver and Driven.
- Type and size of coupling, horizontal, vertical etc.
- Power: Motor horspower or torque requirement.
- Speed: Motor RPM or Driven RPM.
- Distance between shaft ends (BSE).
- Shaft sizes.

Lovejoy / Sier-Bath Continuous Sleeve Gear Couplings

CSPCR Type Spacer Couplings



CSPCR Type Dimensional Data

Size	OAL Min in	LS in	SL in	ID1 - ID2 Max Bore in	ID1 - ID2 Max Bore mm	ID1 - ID2 Rough Stock Bore in	ID1 - ID2 Rough Stock Bore mm	BSE Min in	S Min in	HL in	G in	DC in	OD in	HD in	CBD in
7/8	6.76	2.00	1.00	1.25	31	Solid		4.00	3.50	1.50	0.13	0.13	3.31	2.00	1.94
1.5	7.38	2.53	1.27	1.63	42			4.13	3.50	1.81	0.13	0.19	3.75	2.38	2.25
2	8.51	2.56	1.28	2.13	56			4.75	4.13	2.06	0.13	0.19	4.75	3.25	3.00
2.5	9.50	3.06	1.53	2.63	70			5.50	4.50	2.25	0.25	0.25	5.50	3.94	3.75
3	11.01	3.75	1.88	3.13	84			6.25	5.25	2.63	0.25	0.25	6.63	4.75	4.75
3.5	15.00	4.00	2.00	3.63	97			7.00	6.00	4.25	0.25	0.25	7.50	5.38	5.50
4	15.89	4.63	2.31	4.13	111	1.75	44	7.63	6.63	4.38	0.25	0.25	8.75	6.25	6.50
4.5	17.38	4.88	2.44	4.75	130	2.38	60	7.88	6.88	5.00	0.25	0.25	9.50	7.25	7.25
5	20.25	5.75	2.88	5.75	160	2.88	73	8.75	7.75	6.00	0.25	0.25	10.75	8.25	8.13
6	21.76	6.50	3.25	6.75	186	3.88	99	9.50	8.50	6.38	0.25	0.25	12.25	9.50	9.25

Notes:
- Puller Holes are standard on sizes 4 through 6.
- Puller Holes are available for sizes 7/8 through 3.5 at an additional charge.
- Interference bores with no set screws are standard unless otherwise specified.
- Inch bores and keyway tolerances conform to ANSI / AGMA 9002-B04.
- For metric bores and keyway tolerances, consult Lovejoy Engineering Section.
- Larger sizes are available, please consult Lovejoy Technical Support.

Lovejoy / Sier-Bath Continuous Sleeve Gear Couplings

CCS Type Cut-Out Shifter Couplings

The CCS Type coupling consists of two flex hubs, one special sleeve without lubrication holes and one accessory kit which includes a special seal for the hub that disengages to elliminate undue friction when the disengaged hub is turning in the sleeve. Standard hub is hand packed with grease.



Features

- Permits quick disengagement of driver and driven shafts without disassembling the coupling
- Widely used on dual drives and equipment operated in tandem
- Special seal for disengaging hub
- Also available with pins to maintain sleeve in both engaged and disengaged positions

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CCS Type Performance Data

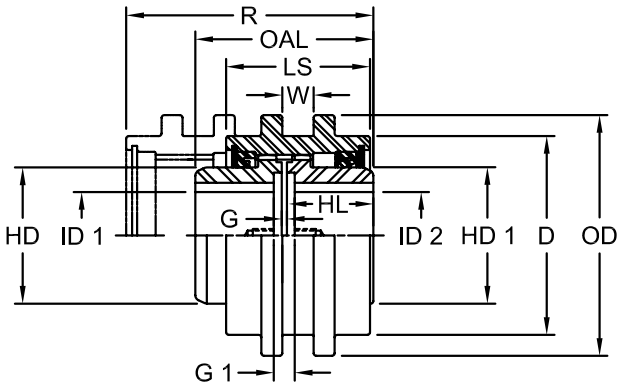
Size	Nominal Torque in-lb	Nm	Maximum Speed Unbal RPM	Bal RPM	ID1 - ID2 Max Bore in	mm	Rough Stock Bore in	mm	Weight lbs	kg	Parallel Misalignment in	mm	Max Angular Misalignment Degrees
7/8	2,500	300	6,000	18,000	1.25	31	0.44	11			0.005	.13	
1.5	7,600	900	5,000	15,000	1.63	42	0.63	16	Weight		0.007	.18	
2	20,200	2 300	4,200	12,600	2.13	56	0.73	19	Determined		0.007	.18	1/2°
2.5	30,200	3 400	3,750	11,250	2.63	70	0.88	22	by		0.007	.18	
3	50,400	5 700	3,600	9,000	3.13	84	1.19	30	W & OD		0.010	.25	
3.5	88,200	10 000	2,800	8,400	3.63	97	1.25	32	Dimensions		0.012	.30	
4	126,000	14 200	2,400	7,200	4.13	111	1.75	44	supplied		0.012	.30	
4.5	184,000	20 800	2,200	6,600	4.75	130	2.38	60	by		0.007	.18	1/4°
5	270,000	30 600	2,100	6,300	5.75	160	2.88	73	Customer		0.007	.18	
6	378,000	42 700	2,000	6,000	6.75	186	3.88	99			0.009	.23	

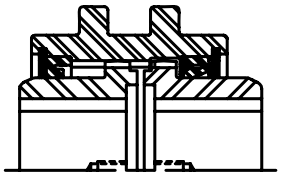
Ordering Information

- Application: Driver and Driven.
- Type and size of coupling, horizontal, vertical etc.
- Power: Motor horspower or torque requirement.
- Speed: Motor RPM or Driven RPM.
- Distance between shaft ends (BSE).
- Shaft sizes.
- Dimensions of Shifter Groove (width and outside diameter).
- Specify which hub will be stationary when coupling is disengaged.

Lovejoy / Sier-Bath Continuous Sleeve Gear Couplings

CCS Type Cut-Out Shifter Couplings





Disengaged Position

CCS Type Dimensional Data

Size	R in	OAL in	LS in	W in	ID1 - ID2 Max Bore in	ID1 - ID2 Max Bore mm	ID1 - ID2 Rough Stock Bore in	ID1 - ID2 Rough Stock Bore mm	HL in	BSE G in	BSE G1 in	OD in	D in	HD1 in	HD in	T[1] in
7/8	4.31	3.13	2.56		1.25	31	0.44	11	1.50	0.13	0.38		3.31	1.985	2.00	0.38
1.5	5.38	3.75	3.31	Per	1.63	42	0.63	16	1.81	0.13	0.50	Per	3.75	2.365	2.38	0.63
2	5.75	4.25	3.44	Cust	2.13	56	0.73	19	2.06	0.13	0.50	Cust	4.75	3.235	3.25	0.56
2.5	6.41	4.75	3.88	Specs	2.63	70	0.88	22	2.25	0.25	0.75	Specs	5.50	3.925	3.94	0.69
3	7.69	5.50	4.63		3.13	84	1.19	30	2.63	0.25	0.75		6.63	4.735	4.75	0.75
3.5	9.63	8.75	4.88		3.63	97	1.25	32	4.25	0.25	0.75		7.50	5.365	5.38	0.81
4	10.69	9.00	5.81		4.13	111	1.75	44	4.38	0.25	0.75		8.75	6.235	6.25	1.00
4.5	11.44	10.25	5.94		4.75	130	2.38	60	5.00	0.25	0.75		9.50	7.235	7.25	1.00
5	14.00	12.25	7.50		5.75	160	2.88	73	6.00	0.25	0.75		10.75	8.235	8.25	1.50
6	15.44	13.00	8.56		6.75	186	3.88	99	6.38	0.25	0.75		12.25	9.485	9.50	1.88

Notes:
- 1 indicates: T is the length of travel to disengage sleeve.
- The BSE (distance Between Shaft Ends) vary between G and G1.
- Puller Holes are standard on sizes 4 through 6.
- Puller Holes are available for sizes 7/8 through 3.5 at an additional charge.
- Interference bores with no set screws are standard unless otherwise specified.
- Inch bores and keyway tolerances conform to ANSI / AGMA 9002-B04.
- For metric bores and keyway tolerances, consult Lovejoy Engineering Section.
- Larger sizes are available, please consult Lovejoy Technical Support.

Lovejoy / Sier-Bath Continuous Sleeve Gear Couplings



CSHP Type Shear Pin Couplings

The CSHP Type coupling consists of one standard flex hub, two piece shear hub and one set of shear pins, one standard sleeve and accessory kit.

Features

- Designed to prevent damage to connected equipment
- Manufactured to shear at predetermined loads
- New Pins can be quickly inserted

CSHP Type Performance Data

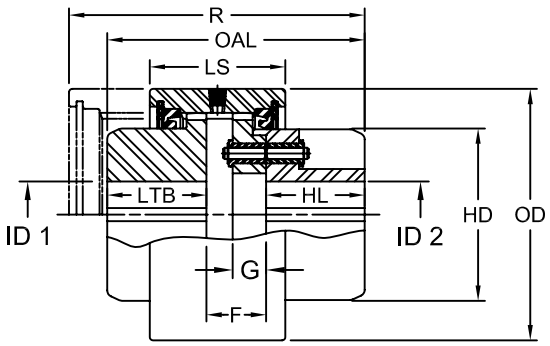
Size	Nominal Torque		Maximum Speed		ID1 - ID2 Flex or Rigid Max Bore		ID1 - ID2 Shear Hub Max Bore		Weight		Parallel Misalignment		Max Angular Misalignment Degrees
	in-lb	Nm	Unbal RPM	Bal RPM	in	mm	in	mm	lbs	kg	in	mm	
1.5	7,600	900	5,000	15,000	1.63	42	0.938	24	8	4	0.007	.18	1/2°
2	20,200	2 300	4,200	12,600	2.13	56	1.500	38	10	5	0.007	.18	
2.5	30,200	3 400	3,750	11,250	2.63	70	1.750	44	15	7	0.007	.18	
3	50,400	5 700	3,600	9,000	3.13	84	2.250	57	23	10	0.010	.25	
3.5	88,200	10 000	2,800	8,400	3.63	97	2.625	66	47	21	0.012	.30	1/4°
4	126,000	14 200	2,400	7,200	4.13	111	3.625	92	90	41	0.012	.30	
4.5	184,000	20 800	2,200	6,600	4.75	130	4.125	104	112	51	0.007	.18	
5	270,000	30 600	2,100	6,300	5.75	160	4.500	114	177	80	0.007	.18	
6	378,000	42 700	2,000	6,000	6.75	186	5.875	149	250	114	0.009	.23	

Ordering Information

- Application: Driver and Driven.
- Type and size of coupling, horizontal, vertical etc.
- Power: Motor horspower or torque requirement.
- Speed: Motor RPM or Driven RPM.
- Distance between shaft ends (BSE).
- Shaft sizes.
- Specify which is the Shear Pin hub.
- Specify the required shear torque.

Lovejoy / Sier-Bath Continuous Sleeve Gear Couplings

CSHP Type Spacer Couplings



CSHP Type Dimensional Data

Size	R in	OAL in	LS in	SL in	ID1 Flex or Rigid Max Bore in	ID1 Flex or Rigid Max Bore m	ID2 Shear Hub Max Bore in	ID2 Shear Hub Max Bore mm	LTB in	HL in	G in	F in	OD in	HD in
1.5	5.28	4.38	2.53	1.27	1.63	42	0.938	24	1.63	2.25	0.50	1.13	3.75	2.38
2	5.56	4.88	2.56	1.28	2.13	56	1.500	38	1.88	2.50	0.50	1.13	4.75	3.25
2.5	6.50	5.44	3.06	1.53	2.63	70	1.750	44	2.00	2.69	0.75	1.50	5.50	3.94
3	7.75	6.38	3.75	1.88	3.13	84	2.250	57	2.38	3.25	0.75	1.63	6.63	4.75
3.5	8.13	8.13	4.00	2.00	3.63	97	2.625	66	4.00	3.38	0.75	1.75	7.50	5.38
4	9.50	9.00	4.63	2.31	4.13	111	3.625	92	4.13	4.13	0.75	2.00	8.75	6.25
4.5	9.88	9.75	4.88	2.44	4.75	130	4.125	104	4.75	4.25	0.75	2.00	9.50	7.25
5	11.50	11.50	5.75	2.88	5.75	160	4.500	114	5.75	5.00	0.75	2.25	10.75	8.25
6	13.13	13.00	6.50	3.25	6.75	186	5.875	149	6.13	6.13	0.75	2.88	12.25	9.50

Notes:
- Puller Holes are standard on sizes 4 through 6.
- Puller Holes are available for sizes 1.5 through 3.5 at an additional charge.
- Interference bores with no set screws are standard unless otherwise specified.
- Inch bores and keyway tolerances conform to ANSI / AGMA 9002-B04.
- For metric bores and keyway tolerances, consult Lovejoy Engineering Section.
- Larger sizes are available, please consult Lovejoy Technical Support.

Lovejoy / Sier-Bath Nylon Sleeve Gear Couplings

Nyflex® and Mite® Type Couplings

The Nyflex and Mite coupling consists of two sintered iron flex hubs, one Nylon sleeve and two Spiirolox rings.



Features

- No lubrication required elliminating the need for seals
- Sintered Iron hubs with crowned teeth to provider greater misalignment and gouging of nylon sleeve
- Resilient, lightweight, abrasion and corrosion resistant nylon sleeve accurately molded to mesh with hubs elliminating friction and need of lubrication
- Center groove in sleeves readily permits their use in vertical applications and for blind assembly
- Securely held hubs and sleeves by spring-steel retaing rings yet capable of easy removal and still withstand a 5,000 lbs end thrust
- Minimum backlash operating in an ambient temperture environment of -40 to 150° F

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Nyflex and Mite Type Performance Data

Speed	Nyflex			Mite		
		Torque			Torque	
RPM	HP	in-lb	Nm	HP	in	Nm
100	2.25	1,420	164	0.60	360	40.7
500	9.50	1,190	135	2.40	307	34.7
1,000	18.00	1,125	127	4.50	285	32.2
1,150	20.30	1,110	125	5.10	282	31.9
1,500	24.00	970	110	6.40	274	30.9
1,750	25.00	900	102	7.50	270	30.5
2,000	26.60	840	95	8.40	267	30.2
2,500	29.80	750	85	11.10	262	29.6
3,000	32.50	680	77	12.10	256	28.9
3,500	35.30	630	76	13.80	254	28.7
4,000	37.50	590	67	17.60	251	28.3
5,000	42.00	530	60	19.40	243	27.4

Notes:
- Angular Misalignment: Nyflex 5°; Mite 3°.
- Clearence fit bores standard through 1.250 inch bores.
- Interference fit bores standard over 1.250 inch bores.

Nyflex		Mite	
Bore	Keyway	Bore	Keyway
in	in	in	in
0.375*	No Keyway	0.312**	No Keyway
0.500	1/8 x 1/16	0.500	1/8 x 1/16
0.625	3/16 x 3/32	0.625	3/16 x 3/32
0.750	3/16 x 3/32	0.750	3/16 x 3/32
0.875	3/16 x 3/32	0.875	3/16 x 3/32
0.937	1/4 x 1/8	0.937	1/4 x 1/8
1.000	1/4 x 1/8	1.000	1/4 x 1/8
1.125	1/4 x 1/8	1.125	1/4 x 1/8
1.187	1/4 x 1/8		
1.250	1/4 x 1/8		
1.312	5/16 x 5/32		
1.375	5/16 x 5/32		
1.437	3/8 x 3/16		
1.500	3/8 x 3/16		
1.625	3/8 x 3/16		

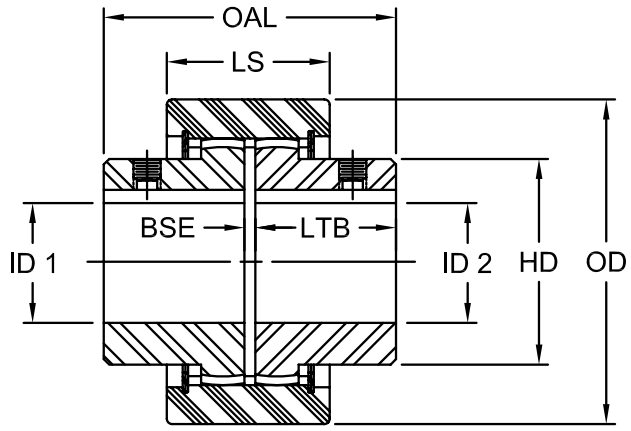
Notes:
- * indicates: Rough Stock Bore .375 – .390 inches.
- ** indicates: Rough Stock Bore .312 – .327 inches.

Ordering Information

- Application: Driver and Driven.
- Type and size of coupling, horizontal, vertical etc.
- Power: Motor horspower or torque requirement.
- Speed: Motor RPM or Driven RPM.

Lovejoy / Sier-Bath Nylon Sleeve Gear Couplings

Nyflex® and Mite® Type Couplings



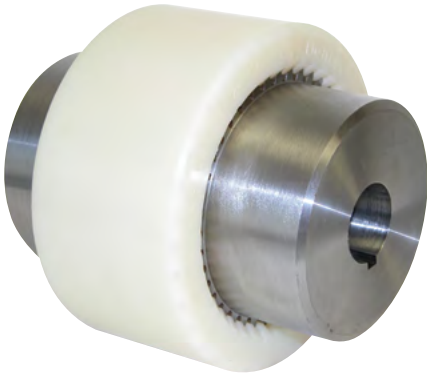
Nyflex and Mite Type Dimensional Data

Size	ID1 - ID2 Max Bore in	OAL in	LS in	LTB in	BSE in	OD in	HD in	Weight lbs
Nyflex	1.625	3.38	1.88	1.63	0.13	3.75	2.38	3.50
Mite	1.125	2.38	1.31	1.13	0.13	2.88	1.75	1.00

Notes:
- Clearence fit bores with set screw over keyway is standard through 1.250 inch bores.
- Interference fit bores with no set screw is standard for bores over 1.250 inch.
- Bore and keyway tolerances conform to ANSI / AGMA 9002-B04.

Dentex® Nylon Sleeve Series Flexible Couplings

The series is a standard coupling with two hubs, a nylon sleeve, and retaining rings depending on the model selected. The coupling has a precision molded nylon sleeve and powder metal hub with no bolts, pins, flanges, or protrusions that could have an effect on balance or operational safety. Since no lubrication is used, the couplings can readily be adapted to many applications including vertical and blind installations.



Features

- Compact in size
- Maintenance Free – No Lubrication required
- Can accommodate axial, angular, and parallel misalignment
- Easy to assemble
- Electrically insulating
- Can be used in temperature ranges from -25° to 80° C (optional 140° C)
- Nylon sleeve has high resistance to condensation and water, hydrocarbon based petroleums, and alcohols
- Not ideal for use with acids, benzyl based products, cresol, or glycols

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Dentex® B - Series Performance Data

Size	Torque Capacity Nominal in-lbs	Nominal Nm	Maximum in-lbs	Maximum Nm	Max Speed RPM	Misalignment Angular Degrees	Axial in	Axial mm	Parallel in	Parallel mm	Weight[1] kg	Weight[1] lbs	ID1 - ID2[2] Min Bore in	Min Bore mm	Max Bore in	Max Bore mm
B 14	89	10	177	20	8,000	1° Per Hub	+/-.039	+/-1	0.012	0.3	0.2	0.4	0.25	6	0.56	14
B 19	142	16	283	32	8,000				0.012	0.3	0.3	0.7	0.38	9	0.75	19
B 24	177	20	354	40	8,000				0.016	0.4	0.3	0.7	0.44	10	0.94	24
B 28	398	45	797	90	8,000				0.016	0.4	0.7	1.6	0.44	10	1.13	28
B 32	531	60	1,062	120	7,000				0.016	0.4	1.0	2.1	0.50	12	1.25	32
B 38	708	80	1,416	160	6,000				0.016	0.4	1.2	2.7	0.56	14	1.38	38
B 42	885	100	1,770	200	5,400				0.016	0.4	1.5	3.3	0.81	20	1.56	42
B 48	1,239	140	2,478	280	5,000				0.016	0.4	1.8	4.0	0.81	20	1.75	48
B 55	2,213	250	4,425	500	4,000				0.016	0.4	3.5	7.6	1.00	25	2.06	55
B 65	3,452	390	6,903	780	3,800				0.024	0.6	5.2	11.4	1.25	32	2.38	65
B 80	6,195	700	12,390	1 400	3,000				0.028	0.7	11.5	25.3	1.19	30	3.00	80
B 100	11,063	1 250	22,125	2 500	2,400				0.031	0.8	20.5	45.2	1.62	40	3.75	100

Notes:
- 1 indicates: Weight is calculated using maximum bore and no keyway.
- 2 indicates: Minimum and maximum bore sizes are given for straight bores. For Taper bores and splines, contact Lovejoy Technical Support.

Dentex® B4R - Series Performance Data

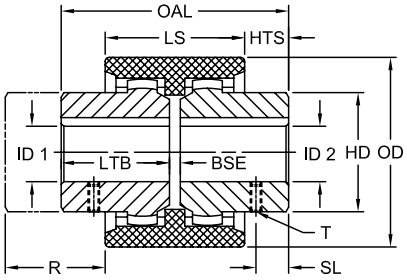
Size	Torque Capacity Nominal in-lbs	Nominal Nm	Maximum in-lbs	Maximum Nm	Max Speed RPM	Misalignment Angular Degrees	Axial in	Axial mm	Parallel in	Parallel mm	Weight 1 kg	Weight 1 lbs	ID1 - ID2 2 Min Bore in	Min Bore mm	Max Bore in	Max Bore mm
B4R 32	708	80	1,416	160	7,000	1° Per Hub	+/-.039	+/-1	0.016	0.4	1.1	2.4	0.50	12	1.25	32
B4R 45	1,239	140	2,478	280	5,000				0.016	0.4	1.5	3.3	0.81	20	1.56	42
B4R 65	3,452	390	6,903	780	3,800				0.024	0.6	5.4	11.9	1.00	25	2.38	65
B4R 80	6,195	700	12,390	1 400	3,000				0.028	0.7	11.7	25.8	1.19	30	3.00	80
B4R 100	11,063	1 250	22,125	2 400	2,400				0.031	0.8	20.8	45.9	1.62	40	3.75	100

Notes:
- 1 indicates: Weight is calculated using maximum bore and no keyway.
- 2 indicates: Minimum and maximum bore sizes are given for straight bores. For Taper bores and splines, contact Lovejoy Technical Support.

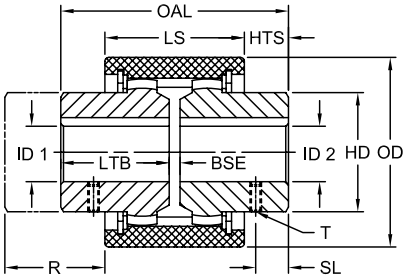
Dentex® B3R - Series Performance Data

Size	Torque Capacity Nominal in-lbs	Nominal Nm	Maximum in-lbs	Maximum Nm	Max Speed RPM	Misalignment Angular Degrees	Axial in	Axial mm	Parallel in	Parallel mm	Weight 1 kg	Weight 1 lbs	ID1 - ID2 2 Min Bore in	Min Bore mm	Max Bore in	Max Bore mm
B3R 24	177	20	354	40	10,200	1° Per Hub	+/-.039	+/-1	0.016	0.4	0.3	0.7	0.44	10	0.94	24
B3R 28	398	45	797	90	8,300				0.016	0.4	0.8	1.8	0.44	10	1.13	28
B3R 32	708	80	1,416	160	7,000				0.016	0.4	1.1	2.4	0.50	12	1.25	32
B3R 45	1,239	140	2,478	280	5,000				0.016	0.4	1.5	3.3	0.81	20	1.56	42
B3R 65	3,452	390	6,903	780	3,800				0.024	0.6	5.4	11.9	1.25	32	2.38	65
B3R 80	6,195	700	12,390	1 400	3,000				0.028	0.7	11.6	25.6	1.19	30	3.00	80
B3R 100	11,063	1 250	22,125	2 400	2,400				0.031	0.8	20.7	45.6	1.62	40	3.75	100

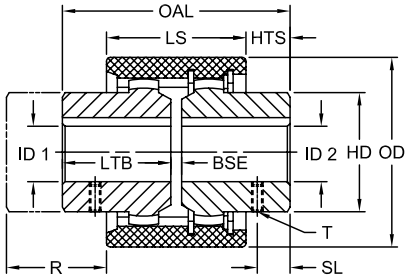
Notes:
- 1 indicates: Weight is calculated using maximum bore and no keyway.
- 2 indicates: Minimum and maximum bore sizes are given for straight bores. For Taper bores and splines, contact Lovejoy Technical Support.



B



B4R



B3R

Dentex® B - Series Dimensional Data

Size	OAL in	OAL mm	LS in	LS mm	HTS in	HTS mm	LTB in	LTB mm	BSE in	BSE mm	OD in	OD mm	HD in	HD mm	R (Clearance) in	R (Clearance) mm	T - Metric Set Screw Size	T - Metric Set Screw SL (mm)	T - Inch Set Screw Size	T - Inch Set Screw SL (in)
B 14	1.97	50	1.46	37	0.26	6.5	0.91	23	0.16	4	1.57	40	0.98	25	0.65	16.5	M5	6	10-24	0.24
B 19	2.13	54	1.46	37	0.28	7.0	0.98	25	0.16	4	1.89	48	1.26	32	0.71	18.0	M5	6	10-24	0.24
B 24	2.20	56	1.61	41	0.30	7.5	1.02	26	0.16	4	2.05	52	1.42	36	0.73	18.5	M5	6	10-24	0.24
B 28	3.31	84	1.81	46	0.75	19.0	1.57	40	0.16	4	2.60	66	1.73	44	0.83	21.0	M8	10	5/16-18	0.39
B 32	3.31	84	1.89	48	0.71	18.0	1.57	40	0.16	4	2.99	76	1.97	50	0.87	22.0	M8	10	5/16-18	0.39
B 38	3.31	84	1.89	48	0.71	18.0	1.57	40	0.16	4	3.27	83	2.28	58	0.87	22.0	M8	10	5/16-18	0.39
B 42	3.46	88	1.97	50	0.75	19.0	1.65	42	0.16	4	3.62	92	2.56	65	0.91	23.0	M8	10	5/16-18	0.39
B 48	4.09	104	1.97	50	1.06	27.0	1.97	50	0.16	4	3.94	100	2.68	68	0.91	23.0	M8	10	5/16-18	0.39
B 55	4.88	124	2.56	65	1.16	29.5	2.36	60	0.16	4	4.92	125	3.27	83	1.20	30.5	M10	20	3/8-16	0.79
B 65	5.67	144	2.83	72	1.42	36.0	2.76	70	0.16	4	5.51	140	3.78	96	1.34	34.0	M10	20	3/8-16	0.79
B 80	7.32	186	3.66	93	1.83	46.5	3.54	90	0.24	6	6.89	175	4.88	124	1.71	43.5	M10	20	3/8-16	0.79
B 100	8.98	228	4.02	102	2.48	63.0	4.33	110	0.31	8	8.27	210	5.98	152	1.85	47.0	M12	30	3/8-16	1.18

Dentex® B4R - Series Dimensional Data

Size	OAL in	OAL mm	LS in	LS mm	HTS in	HTS mm	LTB in	LTB mm	BSE in	BSE mm	OD in	OD mm	HD in	HD mm	R (Clearance) in	R (Clearance) mm	T - Metric Set Screw Size	T - Metric Set Screw SL (mm)	T - Inch Set Screw Size	T - Inch Set Screw SL (in)
B4R 32	3.31	84	2.28	58	0.51	13.0	1.57	40	0.16	4	3.31	84	1.97	50	1.06	27.0	M8	10	5/16-18	0.39
B4R 45	3.46	88	2.36	60	0.55	14.0	1.65	42	0.16	4	3.94	100	2.56	65	1.10	28.0	M8	10	5/16-18	0.39
B4R 65	5.67	144	3.31	84	1.18	30.0	2.76	70	0.16	4	5.51	140	3.78	96	1.57	40.0	M10	20	3/8-16	0.79
B4R 80	7.32	186	3.66	93	1.83	46.5	3.54	90	0.24	6	6.89	175	4.88	124	1.71	43.5	M10	20	3/8-16	0.79
B4R 100	8.98	228	4.02	102	2.48	63.0	4.33	110	0.31	8	8.27	210	5.98	152	1.85	47.0	M12	30	3/8-16	0.79

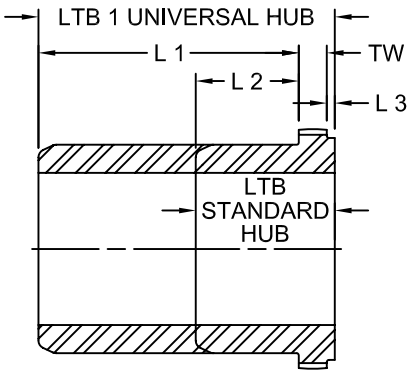
Dentex® B3R - Series Dimensional Data

Size	OAL in	OAL mm	LS in	LS mm	HTS in	HTS mm	LTB in	LTB mm	BSE in	BSE mm	OD in	OD mm	HD in	HD mm	R (Clearance) in	R (Clearance) mm	T - Metric Set Screw Size	T - Metric Set Screw SL (mm)	T - Inch Set Screw Size	T - Inch Set Screw SL (in)
B3R 24	2.20	56	2.01	51	0.10	2.5	1.02	26	0.16	4	2.28	58	1.42	36	0.93	23.5	M5	6	10-24	0.24
B3R 28	3.31	84	2.20	56	0.55	14.0	1.57	40	0.16	4	2.76	70	1.73	44	1.02	26.0	M8	10	3/8-16	0.39
B3R 32	3.31	84	2.28	58	0.51	13.0	1.57	40	0.16	4	3.31	84	1.97	50	1.06	27.0	M8	10	3/8-16	0.39
B3R 45	3.46	88	2.36	60	0.55	14.0	1.65	42	0.16	4	3.94	100	2.56	65	1.10	28.0	M8	10	3/8-16	0.39
B3R 65	5.67	144	3.31	84	1.18	30.0	2.76	70	0.16	4	5.51	140	3.78	96	1.57	40.0	M10	20	3/8-16	0.39
B3R 80	7.32	186	3.66	93	1.83	46.5	3.54	90	0.24	6	6.89	175	4.88	124	1.71	43.5	M10	20	3/8-16	0.39
B3R 100	8.98	228	4.02	102	2.48	63.0	4.33	110	0.31	8	8.27	210	5.98	152	1.85	47.0	M12	30	3/8-16	0.39

Notes:
- Inch bore and keyway tolerances conform to ANSI / AGMA 9002-B04.
- Metric bores and keyway tolerances conform to ISO 286 and ANSI / AGMA 9112-A04.

Lovejoy / Sier-Bath Continuous Sleeve Gear Couplings

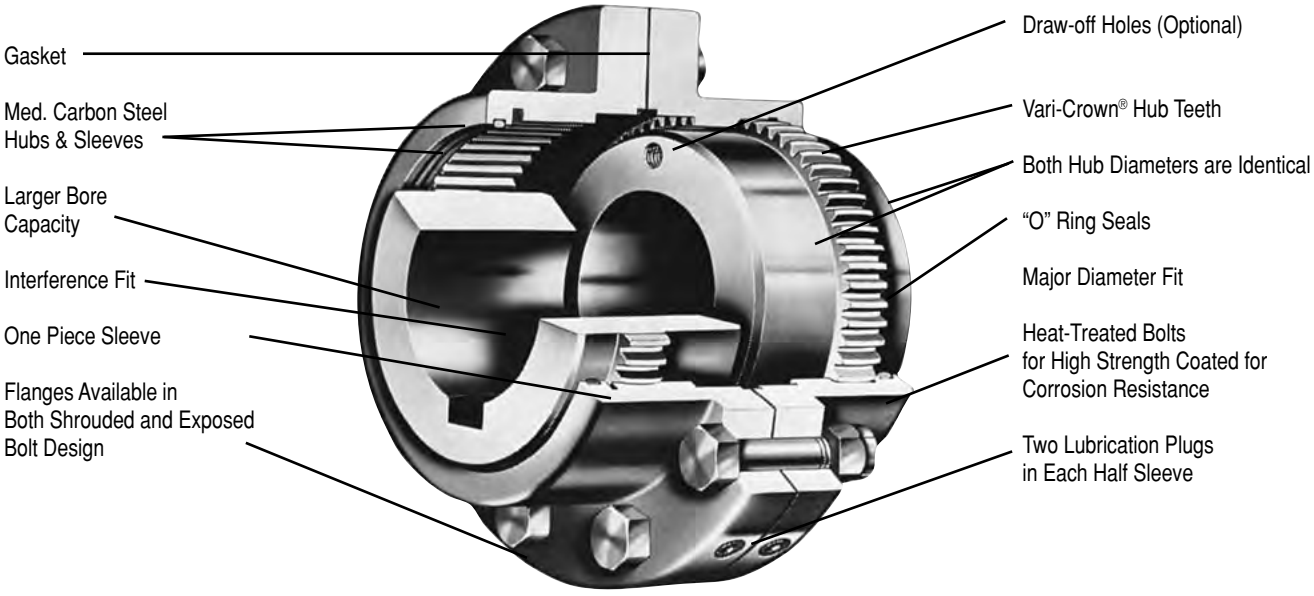
C Type Universal Hub



C Standard and Universal Hub Dimensions

Size	L1 in	L2 in	L3 in	TW in	LTB STD HUB in	LTB1 UNIV HUB in
7/8	3.38	1.13	0.13	0.25	1.50	3.75
1.5	3.36	1.17	0.13	0.52	1.81	4.00
2	4.06	1.50	0.13	0.44	2.06	4.63
2.5	4.39	1.52	0.16	0.58	2.25	5.13
3	4.89	1.77	0.25	0.61	2.63	5.75
3.5	5.58	3.33	0.25	0.67	4.25	6.50
4	5.52	3.27	0.25	0.86	4.38	6.63
4.5	6.64	3.89	0.25	0.86	5.00	7.75
5	6.39	4.52	0.25	1.23	6.00	7.88
6	7.64	4.52	0.25	1.61	6.38	9.50

Lovejoy / Sier-Bath Flanged Sleeve Gear Couplings



Lovejoy / Sier-Bath Flanged Sleeve Gear Couplings



F Type Flex-Flex Couplings

The F Type coupling consists of two flex hubs, two sleeves and one accessory kit. This coupling is supplied with exposed bolts as standard. Shrouded bolts are available upon request through size 5.5.

Features

- Patented Vari-Crown® tooth form for long life
- Standard 20° pressure angle
- Heat treated bolts for greater strength
- Corrosion resistant bolts and nuts for ease of maintenance
- Provides parallel, angular misalignment and end float
- Flex Half coupling interchangeable with industry standards

G

F Type Performance Data

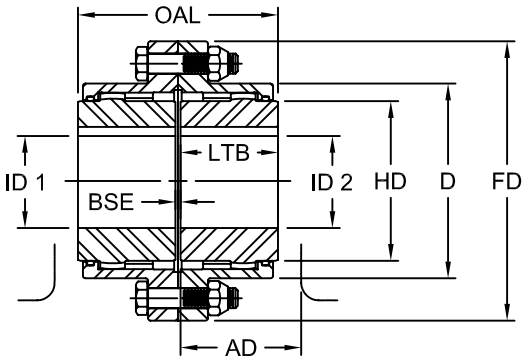
Size	Nominal Torque		Maximum Speed		ID1 - ID2 Max Bore		ID1 - ID2 Rough Stock Bore		Weight		Axial Misalignment		Max Angular Misalignment Degrees
	in-lb	Nm	Unbal RPM	Bal RPM	in	mm	in	mm	lbs	kg	in	mm	
1	7,600	850	6,000	9,000	1.625	42	0.44	11	9	4	0.056	1.4	1.5° Per Gear Mesh
1.5	18,900	2 140	5,500	8,250	2.125	56	0.69	18	19	9	0.060	1.5	
2	31,500	3 560	5,000	7,500	2.750	73	0.94	24	34	15	0.085	2.2	
2.5	56,700	6 410	4,400	6,600	3.250	85	1.44	37	54	25	0.105	2.7	
3	94,500	10 700	4,000	6,000	4.000	107	1.44	37	80	36	0.115	2.9	
3.5	151,200	17 100	3,500	5,250	4.625	125	1.81	46	130	59	0.130	3.3	
4	220,500	24 900	3,000	4,500	5.375	145	2.44	62	190	86	0.150	3.8	
4.5	302,400	34 200	2,700	4,050	6.000	165	3.00	76	250	114	0.175	4.4	
5	434,700	49 100	2,500	3,750	6.500	180	3.00	76	380	173	0.200	5.1	
5.5	573,300	64 800	2,200	3,300	7.500	200	4.00	101	520	236	0.220	5.6	
6	749,700	84 700	2,100	3,150	8.250	225	4.00	101	650	295	0.120	3.0	0.75° Per Gear Mesh
7	1,008,000	113 900	2,000	3,000	9.500	255	5.00	127	950	431	0.135	3.4	
8	1,323,000	149 500	1,900	2,850	11.500	310	6.00	152	1,560	708	0.160	4.1	
9	1,827,000	206 400	1,800	2,700	12.500	340	7.00	177	2,015	915	0.165	4.2	

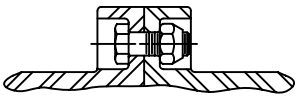
Ordering Information

- Application: Driver and Driven.
- Type and size of coupling, horizontal, vertical etc.
- Power: Motor horspower or torque requirement.
- Speed: Motor RPM or Driven RPM.
- Distance between shaft ends (BSE).
- Shaft sizes.

Lovejoy / Sier-Bath Flanged Sleeve Gear Couplings

F Type Flex-Flex Couplings





Shrouded bolt design
also available

F Type Dimensional Data

Size	OAL	ID1 - ID2				LTB	BSE	AD	FD	D	HD
		Max Bore		Rough Stock Bore							
	in	in	mm	in	mm	in	in	in	in	in	in
1	3.50	1.625	42	0.44	11	1.69	0.13	2.04	4.56	3.06	2.31
1.5	4.00	2.125	56	0.69	18	1.94	0.13	2.32	6.00	3.97	3.00
2	5.00	2.750	73	0.94	24	2.44	0.13	2.94	7.00	4.86	4.00
2.5	6.25	3.250	85	1.44	37	3.03	0.19	3.47	8.38	5.84	4.63
3	7.38	4.000	107	1.44	37	3.59	0.19	3.97	9.44	6.84	5.63
3.5	8.63	4.625	125	1.81	46	4.19	0.25	4.57	11.00	7.91	6.50
4	9.75	5.375	145	2.44	62	4.75	0.25	5.00	12.50	9.25	7.50
4.5	10.94	6.000	165	3.00	76	5.31	0.31	5.50	13.63	10.38	8.50
5	12.38	6.500	180	3.00	76	6.03	0.31	6.34	15.31	11.56	9.50
5.5	14.13	7.500	200	4.00	101	6.91	0.31	7.04	16.75	12.72	10.50
6	15.13	8.250	225	4.00	101	7.41	0.31	8.35	18.00	14.00	11.50
7	17.75	9.500	255	5.00	127	8.69	0.38	9.82	20.75	15.75	13.00
8	22.38	11.500	310	6.00	152	11.00	0.38	12.31	23.25	18.34	15.50
9	23.50	12.500	340	7.00	177	11.50	0.50	13.00	26.00	20.38	17.00

Notes:
- Exposed Bolt Design is standard.
- Shrouded Bolt Design available upon request for sizes 1 through 5.5.
- Puller Holes are standard on sizes 4 through 9.
- Puller Holes are available for sizes 1 through 3.5 at an additional charge.
- Interference bores with no set screws are standard unless otherwise specified.
- Bore and keyway tolerances conform to ANSI / AGMA 9002-B04.
- For metric bores and keyway tolerances, consult Lovejoy Engineering Section.

Lovejoy / Sier-Bath Flanged Sleeve Gear Couplings



FFR Single Engagement (Flex-Rigid)

The FRR Type coupling consists of one flex hub, one rigid hub, one sleeve and one accessory kit. This coupling is supplied with exposed bolts as standard. Shrouded bolts are available upon request through size 5.5.

Features

- Patented Vari-Crown® tooth form on the Flex Hub for long life
- Standard 20° pressure angle
- Heat treated bolts for greater strength
- Corrosion resistant bolts and nuts for ease of maintenance
- Accommodates angular misalignment only
- Half coupling interchangeable with industry standards

G

FFR Type Performance Data

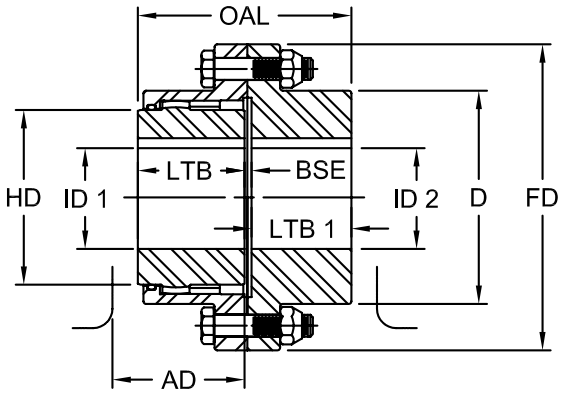
Size	Nominal Torque		Maximum Speed		ID1				ID2				Weight		Max Angular Misalignment
					Flex Hubs Max Bore		Flex Hubs Rough Stock Bore		Rigid Hubs Max Bore		Rigid Hubs Rough Stock Bore				
	in-lb	Nm	Unbal RPM	Bal RPM	in	mm	in	mm	in	mm	in	mm	lbs	kg	Degrees
1	7,600	850	6,000	9,000	1.625	42	0.44	11	2.125	56	solid	solid	9	4	1.5° Per Gear Mesh
1.5	18,900	2 140	5,500	8,250	2.125	56	0.69	18	2.813	76	solid	solid	17	8	
2	31,500	3 560	5,000	7,500	2.750	73	0.94	24	3.500	95	solid	solid	34	15	
2.5	56,700	6 410	4,400	6,600	3.250	85	1.44	37	4.250	114	solid	solid	55	25	
3	94,500	10 700	4,000	6,000	4.000	107	1.44	37	4.875	134	solid	solid	86	39	
3.5	151,200	17 100	3,500	5,250	4.625	125	1.81	46	5.625	150	solid	solid	125	61	
4	220,500	24 900	3,000	4,500	5.375	145	2.44	62	6.500	176	solid	solid	195	89	
4.5	302,400	34 200	2,700	4,050	6.000	165	3.00	76	7.625	202	solid	solid	268	122	
5	434,700	49 100	2,500	3,750	6.500	180	3.00	76	8.750	230	4.00	101	394	179	
5.5	573,300	64 800	2,200	3,300	7.500	200	4.00	101	9.500	260	4.50	114	526	239	
6	749,700	84 700	2,100	3,150	8.250	225	4.00	101	10.500	285	5.50	127	687	312	0.75° Per Gear Mesh
7	1,008,000	113 900	2,000	3,000	9.500	255	5.00	127	12.000	320	5.75	139	1,017	462	
8	1,323,000	149 500	1,900	2,850	11.500	310	6.00	152	14.000	375	6.50	165	1,609	730	
9	1,827,000	206 400	1,800	2,700	12.500	340	7.00	177	15.500	415	7.50	190	2,128	966	

Ordering Information

- Application: Driver and Driven.
- Type and size of coupling, horizontal, vertical etc.
- Power: Motor horspower or torque requirement.
- Speed: Motor RPM or Driven RPM.
- Distance between shaft ends (BSE).
- Shaft sizes.

Lovejoy / Sier-Bath Flanged Sleeve Gear Couplings

FFR Type Flex-Rigid Couplings



FFR Type Dimensional Data

	OAL	ID1				ID2				LTB	LTB 1	BSE	AD	FD	D	HD
		Flex Hubs Max Bore		Flex Hubs Rough Stock Bore		Rigid Hubs Max Bore		Rigid Hubs Rough Stock Bore								
Size	in	in	mm	in	mm	in	mm	in	mm	in	in	in	in	in	in	in
1	3.41	1.625	42	0.44	11	2.125	56	solid	solid	1.69	1.56	0.16	2.19	4.56	3.06	2.31
1.5	3.94	2.125	56	0.69	18	2.813	76	solid	solid	1.94	1.84	0.16	2.47	6.00	3.97	3.00
2	4.88	2.750	73	0.94	24	3.500	95	solid	solid	2.44	2.28	0.16	3.10	7.00	4.86	4.00
2.5	6.13	3.250	85	1.44	37	4.250	114	solid	solid	3.03	2.91	0.19	3.65	8.38	5.84	4.63
3	7.19	4.000	107	1.44	37	4.875	134	solid	solid	3.59	3.41	0.19	4.15	9.44	6.84	5.63
3.5	8.38	4.625	125	1.81	46	5.625	150	solid	solid	4.19	3.97	0.22	4.78	11.00	7.91	6.50
4	9.50	5.375	145	2.44	62	6.500	176	solid	solid	4.75	4.43	0.31	5.31	12.50	9.25	7.50
4.5	10.68	6.000	165	3.00	76	7.625	202	solid	solid	5.31	5.03	0.34	5.97	13.63	10.38	8.50
5	12.06	6.500	180	3.00	76	8.750	230	4.00	101	6.03	5.69	0.34	6.69	15.31	11.56	9.50
5.5	13.40	7.500	200	4.00	101	9.500	260	4.50	114	6.91	6.15	0.34	7.34	16.75	12.72	10.50
6	15.23	8.250	225	4.00	101	10.500	285	5.50	127	7.41	7.41	0.41	8.78	18.00	14.00	11.50
7	17.88	9.500	255	5.00	127	12.000	322	5.75	139	8.69	8.69	0.50	10.31	20.75	15.75	13.00
8	22.50	11.500	310	6.00	152	14.000	375	6.50	165	11.00	11.00	0.50	12.81	23.25	18.34	15.50
9	23.56	12.500	340	7.00	177	15.500	415	7.50	190	11.50	11.50	0.56	13.56	26.00	20.38	17.00

Notes:
- Exposed Bolt Design is standard.
- Shrouded Bolt Design available upon request for sizes 1 through 5.5.
- Puller Holes are standard on sizes 4 through 9.
- Puller Holes are available for sizes 1 through 3.5 at an additional charge.
- Interference bores with no set screws are standard unless otherwise specified.
- Bore and keyway tolerances conform to ANSI / AGMA 9002-B04.
- For metric bores and keyway tolerances, consult Lovejoy Engineering Section.

Lovejoy / Sier-Bath Flanged Sleeve Gear Couplings

FFS – Floating Shaft Gear Coupling

The FFS Type coupling consists of two flex-rigid couplings and one floating shaft. This coupling is supplied with rigid hubs outboard unless otherwise specified. Exposed bolts are standard. Shrouded bolts are available upon request tru sizes 5.5.



Features

- Patented Vari-Crown® tooth form on Flex Hubs for long life
- Standard 20° pressure angle
- Heat treated bolts for greater strength
- Corrosion resistant bolts and nuts for ease of maintenance
- Accommodates angular, parallel, and axial misalignment
- Removal of center assembly allows for ease of maintenance without repositioning machinery
- Rigid hubs outboard allows for larger shaft diameters

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FFS Type Performance Data

Size	Nominal Torque		Maximum Speed[1]		ID1 - ID2 Rigid Hubs Max Bore		ID1 - ID2 Rigid Hubs Rough Stock Bore		ID1 - ID2 Flex Hubs Max Bore		ID1 - ID2 Flex Hubs Rough Stock Bore		Weight		Angular Misalignment Max Degrees
	in-lb	Nm	Unbal RPM	Bal RPM	in	mm	in	mm	in	mm	in	mm	lbs	kg	
1	7,600	850	6,000	9,000	2.125	56			1.625	42	0.44	11	9	4	
1.5	18,900	2 140	5,500	8,250	2.813	76			2.125	56	0.69	18	19	9	
2	31,500	3 560	5,000	7,500	3.500	95			2.750	73	0.94	24	34	15	
2.5	56,700	6 410	4,400	6,600	4.250	114			3.250	85	1.44	37	54	25	
3	94,500	10 700	4,000	6,000	4.875	134	Solid w/Center		4.000	107	1.44	37	80	36	1.5° Per Gear Mesh
3.5	151,200	17 100	3,500	5,250	5.625	150			4.625	125	1.81	46	130	59	
4	220,500	24 900	3,000	4,500	6.500	176			5.375	145	2.44	62	190	86	
4.5	302,400	34 200	2,700	4,050	7.625	202			6.000	165	3.00	76	250	114	
5	434,700	49 100	2,500	3,750	8.750	231	4.000	101	6.500	180	3.00	76	380	173	
5.5	573,300	64 800	2,200	3,300	9.500	260	4.500	114	7.500	200	4.00	101	520	236	
6	749,700	84 700	2,100	3,150	10.500	288	5.500	127	8.250	225	4.00	101	650	295	
7	1,008,000	113 900	2,000	3,000	12.000	318	5.750	139	9.500	255	5.00	127	950	431	0.75° Per Gear Mesh
8	1,323,000	149 500	1,900	2,850	14.000	380	6.500	165	11.500	310	6.00	152	1,560	708	
9	1,827,000	206 400	1,800	2,700	15.500	418	7.500	190	12.500	340	7.00	177	2,015	915	

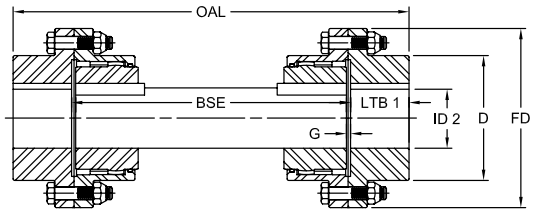
Note: ■ 1 indicates: Maximum RPM of floating shaft set determined by critical speed of floating shaft.

Ordering Information

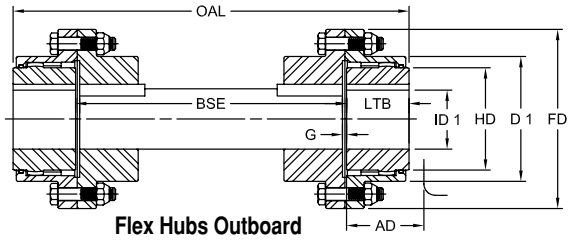
- Application: Driver and Driven.
- Type and size of coupling, horizontal, vertical etc.
- Power: Motor horspower or torque requirement.
- Speed: Motor RPM or Driven RPM.
- Distance between shaft ends (BSE).
- Equipment shaft sizes.
- Specify which hubs are to be used on the equipment (Rigid or Flex).
- Rigid hubs will be used on the equipment unless otherwise specified.

Lovejoy / Sier-Bath Flanged Gear Couplings

FFS Type Floating Shaft Couplings



Rigid Hubs Outboard



Flex Hubs Outboard

Maximum RPM of floating shaft set determined by critical speed of floating shaft

FFS Type Dimensional Data

Size	OAL Min in	BSE Min in	ID1 - ID2 Rigid Hubs Max Bore in	mm	ID1 - ID2 Rigid Hubs Rough Stock Bore in	mm	ID1 - ID2 Flex Hubs Max Bore in	mm	ID1 - ID2 Flex Hubs Rough Stock Bore in	mm	LTB 1 in	LTB in	G in	AD in	FD in	D in	D 1 in	HD in
1	8.07	4.94	2.125	56	Solid w/Center		1.625	42	0.44	11	1.56	1.69	0.16	2.06	4.56	3.06	3.06	2.31
1.5	9.19	5.50	2.813	76			2.125	56	0.69	18	1.84	1.94	0.16	2.37	6.00	3.97	3.97	3.00
2	12.06	7.50	3.500	95			2.750	73	0.94	24	2.28	2.44	0.16	2.94	7.00	4.84	4.91	4.00
2.5	14.37	8.56	4.250	114			3.250	85	1.44	37	2.91	3.03	0.19	3.53	8.38	5.84	5.91	4.63
3	16.69	9.88	4.875	134			4.000	107	1.44	37	3.41	3.59	0.19	3.97	9.44	6.84	6.91	5.63
3.5	19.25	11.31	5.625	150			4.625	125	1.81	46	3.97	4.19	0.22	4.56	11.00	7.91	7.91	6.50
4	21.82	12.94	6.500	176			5.375	145	2.44	62	4.44	4.75	0.31	5.00	12.50	9.25	9.25	7.50
4.5	24.69	14.63	7.625	202			6.000	165	3.00	76	5.03	5.31	0.34	5.69	13.63	10.38	10.38	8.50
5	28.07	16.69	8.750	231	4.000	101	6.500	180	3.00	76	5.69	6.03	0.34	6.35	15.31	11.56	11.56	9.50
5.5	30.87	18.56	9.500	260	4.500	114	7.500	200	4.00	101	6.16	6.91	0.34	6.59	16.75	12.72	12.81	10.50
6	35.37	20.56	10.500	288	5.500	127	8.250	225	4.00	101	7.41	7.41	0.41	8.78	18.00	14.00	14.00	11.50
7	40.63	23.25	12.000	318	5.750	139	9.500	255	5.00	127	8.69	8.69	0.50	10.31	20.75	15.75	15.75	13.00
8	49.63	27.63	14.000	380	6.500	165	11.500	310	6.00	152	11.00	11.00	0.50	12.81	23.25	18.34	18.50	15.50
9	52.13	29.13	15.500	418	7.500	190	12.500	340	7.00	177	11.50	11.50	0.56	13.56	26.00	20.38	20.38	17.00

Notes:
- Exposed Bolt Design is standard.
- Shrouded Bolt Design available upon request for sizes 1 through 5.5.
- Puller Holes are standard on sizes 4 through 9.
- Puller Holes are available for sizes 1 through 3.5 at an additional charge.
- Interference bores with no set screws are standard unless otherwise specified.
- Bore and keyway tolerances conform to ANSI / AGMA 9002-B04.
- For metric bores and keyway tolerances, consult Lovejoy Engineering Section.

Lovejoy / Sier-Bath Heavy Duty Flanged Sleeve Gear Couplings



FHD Type Flex-Flex Couplings

The FHD Type coupling consists of two flex hubs, two sleeves with bolt-on seal carriers and one accessory kit. This coupling is supplied with exposed bolts only.

Features

- Patented Vari-Crown® tooth form for long life
- Standard 20° pressure angle
- Heat treated bolts for greater strength
- Corrosion resistant bolts and nuts for ease of maintenance
- Provides parallel, angular misalignment and end float
- Designed for high-torque low-speed applications that occur in mill operations

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FHD Type Performance Data

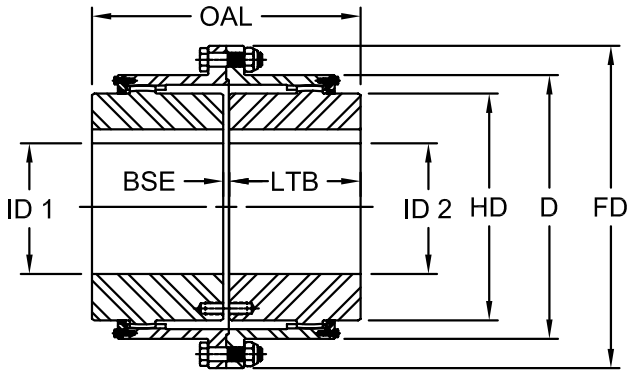
Size	Nominal Torque in-lb	Nominal Torque Nm	Maximum Speed Unbal RPM	Maximum Speed Bal RPM	ID1 - ID2 Max Bore Standard Keyway in	ID1 - ID2 Max Bore Standard Keyway mm	Weight lbs	Weight kg	Parallel Misalignment in	Parallel Misalignment mm	Angular Misalignment Degrees
7	1,008,000	113 900	2,000	3,000	9.500	255	950	431	0.135	3.429	0.75° Per Gear Mesh
8	1,323,500	149 000	1,900	2,850	11.500	310	1,560	708	0.160	4.064	
9	1,827,700	206 400	1,750	2,625	12.500	340	2,015	915	0.165	4.191	
10	2,521,000	280 000	1,550	2,325	13.750	355	2,500	1,135	0.180	4.572	
11	3,466,000	390 000	1,400	2,100	15.500	410	3,380	1,535	0.205	5.207	
12	4,412,000	500 000	1,300	1,950	17.000	435	4,165	1,891	0.210	5.334	
13	5,249,000	600 000	1,150	1,725	18.250	480	5,215	2,368	0.230	5.842	
14	6,429,000	730 000	1,050	1,575	19.500	—	6,400	2,906	0.255	6.477	
15	7,752,000	880 000	900	1,350	21.000	—	7,710	3,500	0.280	7.112	
16	9,454,000	1 070 000	800	1,200	22.500	—	9,250	4,200	0.295	7.493	
18	12,605,000	1 420 000	550	825	25.500	—	11,890	5,398	0.295	7.493	
20	17,017,000	1 920 000	450	675	28.000	—	16,830	7,641	0.280	7.112	
22	21,429,000	2 420 000	380	570	31.000	—	21,970	9,974	0.310	7.874	
24	26,471,000	2 990 000	325	485	34.000	—	27,735	12,592	0.300	7.620	
26	32,773,000	3 700 000	280	420	37.000	—	34,370	15,604	0.300	7.620	
28	39,076,000	4 410 000	240	360	40.000	—	40,910	18,573	0.320	8.128	
30	47,269,000	5 340 000	220	330	42.000	—	47,470	21,551	0.320	8.128	

Ordering Information

- Application: Driver and Driven.
- Type and size of coupling, horizontal, vertical etc.
- Power: Motor horspower or torque requirement.
- Speed: Motor RPM or Driven RPM.
- Distance between shaft ends (BSE).
- Shaft sizes.

Lovejoy / Sier-Bath Heavy Duty Flanged Sleeve Gear Couplings

FHD Type Flex-Flex Couplings



FHD Type Dimensional Data

Size	OAL	ID1 - ID2 Max Bore Standard Keyway		1 Rectangular Keyway		LTB	BSE	FD	D	HD
				Width	Depth					
	in	in	mm	in	in	in	in	in	in	in
7	17.76	9.500	255	2.5000	0.8750	8.69	0.38	20.75	15.75	13.00
8	22.38	11.500	310	3.0000	1.0000	11.00	0.38	23.25	18.34	15.50
9	23.50	12.500	340	3.0000	1.0000	11.50	0.50	26.00	20.38	17.00
10	24.50	13.750	355	3.5000	1.2500	12.00	0.50	28.00	22.31	18.50
11	26.75	15.500	410	4.0000	1.5000	13.13	0.50	30.50	24.36	21.00
12	28.25	17.000	435	4.0000	1.5000	13.88	0.50	33.00	26.63	22.75
13	30.00	18.250	480	5.0000	1.7500	14.63	0.75	35.75	28.88	24.75
14	31.75	19.500	—	5.0000	1.7500	15.50	0.75	38.00	31.68	26.50
15	33.75	21.000	—	5.0000	1.7500	16.50	0.75	40.50	32.97	28.50
16	35.75	22.500	—	6.0000	2.0000	17.38	1.00	43.00	35.13	30.38
18	37.00	25.500	—	6.0000	2.0000	18.00	1.00	47.25	39.25	34.25
20	43.25	28.000	—	7.0000	2.5000	21.13	1.00	53.50	43.50	38.00
22	47.00	31.000	—	8.0000	2.7500	23.00	1.00	59.00	47.63	41.81
24	50.50	34.000	—	9.0000	3.0000	24.75	1.00	64.25	51.75	45.50
26	54.00	37.000	—	9.0000	3.0000	26.50	1.00	68.50	55.88	49.38
28	55.25	40.000	—	10.0000	3.5000	27.13	1.00	73.75	60.00	53.00
30	56.25	42.000	—	10.0000	3.5000	27.63	1.00	78.00	64.13	57.00

Notes:
- Exposed Bolt Design is standard.
- Puller Holes are standard.
- Interference bores with no set screws are standard unless otherwise specified.
- Inch bore and keyway tolerances conform to ANSI / AGMA 9002-B04, for bores above 18 inches, keyways conform to ANSI B17.1.
- For metric bore and keyway tolerances, consult Lovejoy Engineering Section.

Lovejoy / Sier-Bath Heavy Duty Flanged Sleeve Gear Couplings

FHDFR Type Flex-Rigid Couplings

The FHDFR Type coupling consists of one flex hub, one sleeve with bolt-on seal carrier, one rigid hub and one accessory kit. This coupling is supplied with exposed bolts only.



Features

- Patented Vari-Crown® tooth form for long life
- Standard 20° pressure angle
- Heat treated bolts for greater strength
- Corrosion resistant bolts and nuts for ease of maintenance
- Provides parallel, angular misalignment and end float
- Designed for high-torque low-speed applications that occur in mill operations

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FHDFR Type Performance Data

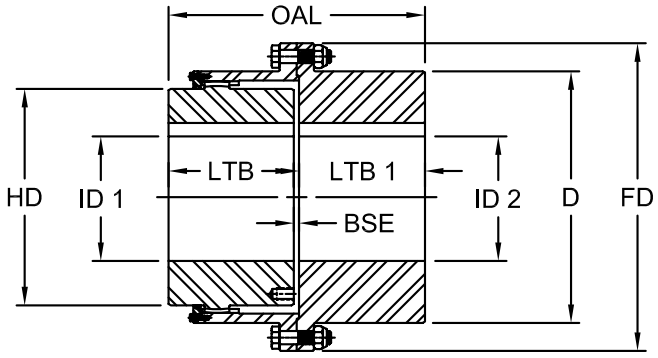
Size	Nominal Torque in-lb	Nominal Torque Nm	Maximum Speed Unbal RPM	Maximum Speed Bal RPM	ID1 Flex Hubs Max Bore Std Keyway in	ID1 Flex Hubs Max Bore Std Keyway mm	ID2 Rigid Hubs Max Bore Std Keyway in	ID2 Rigid Hubs Max Bore Std Keyway mm	Weight lbs	Weight kg	Max Angular Misalignment Degrees
7	1,008,000	113 900	2,000	3,000	9.500	255	12.000	320	1,017	462	0.75° Per Gear Mesh
8	1,323,500	149 000	1,900	2,850	11.500	310	14.000	375	1,609	730	
9	1,827,700	206 400	1,750	2,625	12.500	340	15.500	415	2,128	966	
10	2,521,000	280 000	1,550	2,325	13.750	355	17.000	455	2,723	1,236	
11	3,466,000	390 000	1,400	2,100	15.500	410	18.500	500	3,640	1,653	
12	4,412,000	500 000	1,300	1,950	17.000	435	20.250	—	4,508	2,047	
13	5,249,000	600 000	1,150	1,725	18.250	480	22.000	—	5,600	2,542	
14	6,429,000	730 000	1,050	1,575	19.500	—	23.500	—	6,837	3,104	
15	7,752,000	880 000	900	1,350	21.000	—	24.250	—	8,244	3,743	
16	9,454,000	1 070 000	800	1,200	22.500	—	26.000	—	9,848	4,471	
18	12,605,000	1 420 000	550	825	25.500	—	28.000	—	12,673	5,754	
20	17,017,000	1 920 000	450	675	28.000	—	31.000	—	18,113	8,223	
22	21,429,000	2 420 000	380	570	31.000	—	34.000	—	23,671	10,747	
24	26,471,000	2 990 000	325	485	34.000	—	37.000	—	29,958	13,601	
26	32,773,000	3 700 000	280	420	37.000	—	40.000	—	37,014	16,845	
28	39,076,000	4 410 000	240	360	40.000	—	43.000	—	44,012	19,981	
30	47,269,000	5 340 000	220	330	42.000	—	46.000	—	51,065	23,184	

Ordering Information

- Application: Driver and Driven.
- Type and size of coupling, horizontal, vertical etc.
- Power: Motor horspower or torque requirement.
- Speed: Motor RPM or Driven RPM.
- Distance between shaft ends (BSE).
- Shaft sizes.

Lovejoy / Sier-Bath Heavy Duty Flanged Sleeve Gear Couplings

FHDFR Type Flex-Rigid Couplings



FHDFR Type Dimensional Data

	OAL	ID1		ID2		LTB	LTB1	BSE	FD	D	HD
		Flex Hubs Max Bore Std Keyway		Rigid Hubs Max Bore Std Keyway							
Size	in	in	mm	in	mm	in	in	in	in	in	in
7	17.81	9.500	255	12.000	320	8.69	8.69	0.50	20.75	15.75	13.00
8	22.50	11.500	310	14.000	375	11.00	11.00	0.50	23.25	18.34	15.50
9	23.56	12.500	340	15.500	415	11.50	11.50	0.56	26.00	20.38	17.00
10	24.63	13.750	355	17.000	455	12.00	12.00	0.63	28.00	22.31	18.50
11	26.88	15.500	410	18.500	500	13.13	13.13	0.63	30.50	24.36	21.00
12	28.38	17.000	435	20.250	—	13.88	13.88	0.63	33.00	26.63	22.75
13	30.00	18.250	480	22.000	—	14.63	14.63	0.75	33.75	28.88	24.75
14	31.75	19.500	—	23.500	—	15.50	15.50	0.75	38.00	31.00	26.50
15	33.75	21.000	—	24.250	—	16.50	16.50	0.75	40.50	32.97	28.50
16	35.75	22.500	—	26.000	—	17.38	17.38	1.00	43.00	35.13	30.38
18	37.00	25.500	—	28.000	—	18.00	18.00	1.00	47.25	39.25	34.25
20	43.25	28.000	—	31.000	—	21.13	21.13	1.00	53.50	43.50	38.00
22	47.13	31.000	—	34.000	—	23.00	23.00	1.13	59.00	47.63	41.81
24	50.63	34.000	—	37.000	—	24.75	24.75	1.13	64.25	51.75	45.50
26	54.13	37.000	—	40.000	—	26.50	26.50	1.13	68.50	55.88	49.38
28	55.38	40.000	—	43.000	—	27.13	27.13	1.13	73.75	60.00	53.00
30	56.38	42.000	—	46.000	—	27.63	27.63	1.13	78.00	64.13	57.00

Notes:
- Exposed Bolt Design is standard.
- Puller Holes are standard.
- Interference bores with no set screws are standard unless otherwise specified.
- Inch bore and keyway tolerances conform to ANSI / AGMA 9002-B04, for bores above 18 inches, keyways are to ANSI B17.1.
- Metric bore and keyway tolerances conform to ISO 286 and ANSI / AGMA 9112-A04.
- Consult Lovejoy Technical Support for metric bores larger than 500mm.

Lovejoy / Sier-Bath Heavy Duty Flanged Sleeve Gear Couplings

FHDFS Type Floating Shaft Couplings

The FHDFS Type coupling consists of two flex-rigid couplings and one floating shaft. The coupling is supplied with the rigid hubs outboard unless otherwise specified. The coupling comes with exposed bolts only.

Features

- Patented Vari-Crown® tooth form on Flex Hubs for long life
- Standard 20° pressure angle
- Heat treated bolts for greater strength
- Corrosion resistant bolts and nuts for ease of maintenance
- Accommodates parallel and angular misalignment
- Removal of center assembly allows forease of maintenance without repositioning machinery
- Rigid hubs outboard allows for larger shaft diameters
- Designed for high-torque low-speed applications that occur in mill operations

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FHDFS Type Performance Data

Size	Nominal Torque in-lb	Nominal Torque Nm	Maximum Speed[1] Unbal RPM	Maximum Speed[1] Bal RPM	ID1 Flex Hubs Max Bore Std Keyway in	ID1 Flex Hubs Max Bore Std Keyway mm	ID2 Rigid Hubs Max Bore Std Keyway in	ID2 Rigid Hubs Max Bore Std Keyway mm	Weight lbs	Weight kg	Max Angular Misalignment Degrees
7	1,008,000	113 900	2,000	3,000	9.500	255	12.000	320	1,017	462	0.75° Per Gear Mesh
8	1,323,000	149 000	1,900	2,850	11.500	310	14.000	375	1,609	730	
9	1,827,000	206 400	1,750	2,625	12.500	340	15.500	415	2,128	966	
10	2,521,000	280 000	1,550	2,325	13.750	355	17.000	455	2,723	1,236	
11	3,500,000	390 000	1,400	2,100	15.500	410	18.500	500	3,640	1,653	
12	4,400,000	500 000	1,300	1,950	17.000	435	20.250	—	4,508	2,047	
13	5,300,000	600 000	1,150	1,725	18.250	480	22.000	—	5,600	2,542	
14	6,400,000	730 000	1,050	1,575	19.500	—	23.500	—	6,837	3,104	
15	7,700,000	880 000	900	1,350	21.000	—	24.250	—	8,244	3,743	
16	9,500,000	1 070 000	800	1,200	22.500	—	26.000	—	9,848	4,471	
18	12,600,000	1 420 000	550	825	25.500	—	28.000	—	12,673	5,754	
20	17,000,000	1 920 000	450	675	28.000	—	31.000	—	18,113	8,223	
22	21,400,000	2 420 000	380	570	31.000	—	34.000	—	23,671	10,747	
24	26,500,000	2 990 000	325	488	34.000	—	37.000	—	29,958	13,601	
26	32,800,000	3 700 000	280	420	37.000	—	40.000	—	37,104	16,845	
28	39,100,000	4 410 000	240	360	40.000	—	43.000	—	44,012	19,981	
30	47,300,000	5 340 000	220	330	42.000	—	46.000	—	51,065	23,184	

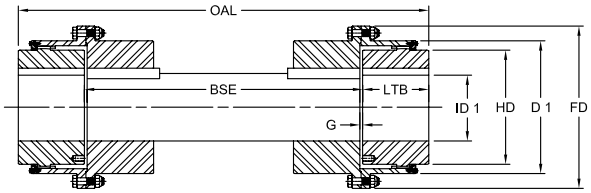
Note: ■ 1 indicates: Maximum RPM of floating shaft set determined by critical speed of floating shaft.

Ordering Information

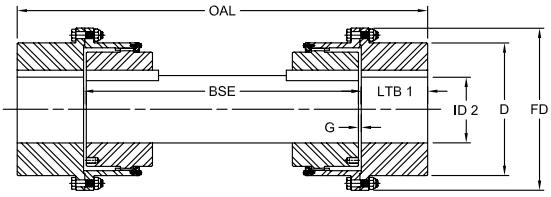
- Application: Driver and Driven.
- Type and size of coupling, horizontal, vertical etc.
- Power: Motor horspower or torque requirement.
- Speed: Motor RPM or Driven RPM.
- Distance between shaft ends (BSE).
- Connecting equipment shaft sizes.
- Specify which hubs are to be used on the equipment (Rigid or Flex).
- Rigid hubs will be used on the equipment unless otherwise specified.
- Length of floating shaft may affect max angular misalignment.

Lovejoy / Sier-Bath Heavy Duty Flanged Sleeve Gear Couplings

FHDFS Type Floating Shaft Couplings



Flex Hubs Outboard



Rigid Hubs Outboard

Maximum RPM of floating shaft set determined by critical speed of floating shaft

G

FHDFS Type Dimensional Data

Size	OAL in	BSE in	ID1 Flex Hubs Max Bore Std Keyway in	ID1 mm	ID2 Rigid Hubs Max Bore Std Keyway in	ID2 mm	LTB 1 in	LTB in	G in	FD in	D in	D 1 in	HD in
7	To Be Determined From Customer Specifications		9.500	255	12.000	320	8.69	8.69	0.50	20.75	15.75	15.75	13.00
8			11.500	310	14.000	375	11.00	11.00	0.50	23.25	18.34	18.50	15.50
9			12.500	340	15.500	415	11.50	11.50	0.56	26.00	20.38	20.38	17.00
10			13.750	355	17.000	455	12.00	12.00	0.63	28.00	22.31	22.38	18.50
11			15.500	410	18.500	500	13.13	13.13	0.63	30.50	24.36	24.50	21.00
12			17.000	435	20.250	—	13.88	13.88	0.63	33.00	26.63	26.63	22.75
13			18.250	480	22.000	—	14.63	14.63	0.75	33.75	28.88	28.88	24.75
14			19.500	—	23.500	—	15.50	15.50	0.75	38.00	31.00	31.00	26.50
15			21.000	—	24.250	—	16.50	16.50	0.75	40.50	32.97	33.13	28.50
16			22.500	—	26.000	—	17.38	17.38	1.00	43.00	35.13	35.13	30.38
18			25.500	—	28.000	—	18.00	18.00	1.00	47.25	39.25	39.25	34.25
20			28.000	—	31.000	—	21.13	21.13	1.00	53.50	43.50	43.50	38.00
22			31.000	—	34.000	—	23.00	23.00	1.13	59.00	47.63	47.63	41.81
24			34.000	—	37.000	—	24.75	24.75	1.13	64.25	51.75	51.75	45.50
26			37.000	—	40.000	—	26.50	26.50	1.13	68.50	55.88	55.88	49.38
28			40.000	—	43.000	—	27.13	27.13	1.13	73.75	60.00	60.00	53.00
30			42.000	—	46.000	—	27.63	27.63	1.13	78.00	64.13	64.13	57.00

Notes:
- Exposed Bolt Design is standard.
- Puller Holes are standard.
- Interference bores with no set screws are standard unless otherwise specified.
- Inch bore and keyway tolerances conform to ANSI / AGMA 9002-B04, for bores about 18 inches, keyways are to ANSI B17.1.
- For metric bore and keyway tolerances, consult Lovejoy Engineering Section.
- Consult Lovejoy Technical Support for metric bores larger than 500mm.

Lovejoy / Sier-Bath Flanged Sleeve Gear Couplings

FMM Type Mill Couplings

The FMM Type coupling consists of one standard flex hub, one universal straight bored hub as standard, two sleeves and one accessory kit. This coupling is supplied with exposed bolts as standard. Shrouded bolts are available upon request through size 5.5.



Features

- Patented Vari-Crown® tooth form for long life
- Standard 20° pressure angle
- Heat treated bolts for greater strength
- Corrosion resistant bolts and nuts for ease of maintenance
- Provides parallel, angular misalignment and end float
- Flex Half coupling interchangeable with industry standards
- Long Universal Hub supplied to customer specifications with straight or tapered bores

G

FMM Type Performance Data

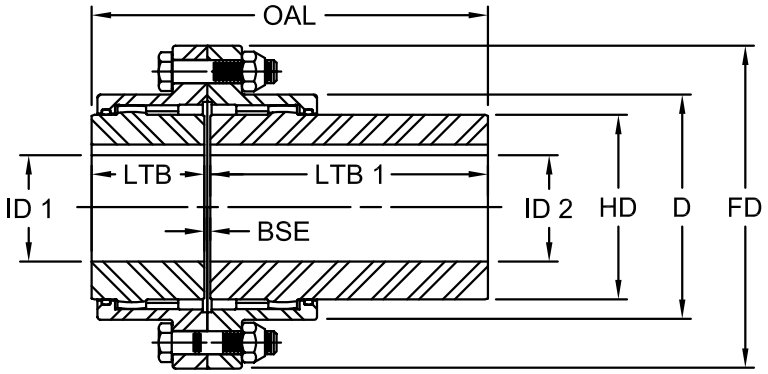
Size	Nominal Torque		Maximum Speed		ID1 - ID2 Max Bore		ID1 - ID2 Rough Stock Bore		Weight		Parallel Misalignment		Max Angular Misalignment Degrees
	in-lb	Nm	Unbal RPM	Bal RPM	in	mm	in	mm	lbs	kg	in	mm	
1	7,600	850	6,000	9,000	1.625	42	0.44	11	12	5	0.056	1.4	1.5° Per Gear Mesh
1.5	18,900	2 140	5,500	8,250	2.125	56	0.69	18	24	11	0.060	1.5	
2	31,500	3 560	5,000	7,500	2.750	73	0.94	24	45	20	0.085	2.2	
2.5	56,700	6 410	4,400	6,600	3.250	85	1.44	37	71	32	0.105	2.7	
3	94,500	10 700	4,000	6,000	4.000	107	1.44	37	104	47	0.115	2.9	
3.5	151,200	17 100	3,500	5,250	4.625	125	1.81	46	151	69	0.130	3.3	
4	220,500	24 900	3,000	4,500	5.375	145	2.44	62	234	86	0.150	3.8	
4.5	302,400	34 200	2,700	4,050	6.000	165	3.00	76	310	141	0.175	4.4	
5	434,700	49 100	2,500	3,750	6.500	180	3.00	76	450	204	0.200	5.1	
5.5	573,300	64 800	2,200	3,300	7.500	200	4.00	101	609	276	0.220	5.6	
6	749,700	84 700	2,100	3,150	8.250	225	4.00	101	764	347	0.120	3.0	0.75° Per Gear Mesh

Ordering Information

- Application: Driver and Driven.
- Type and size of coupling, horizontal, vertical etc.
- Power: Motor horspower or torque requirement.
- Speed: Motor RPM or Driven RPM.
- Distance between shaft ends (BSE).
- Shaft sizes.
- Taper per foot and length of taper if tapered bore is required.
- Specify counterbore dimensions if desired.
- Submit a drawing if available.

Lovejoy / Sier-Bath Flanged Sleeve Gear Couplings

FMM Type Mill Couplings



FMM Type Dimensional Data

Size	OAL	ID1 - ID2				LTB	LTB1 Max	BSE	FD	D	HD
		Max Bore		Rough Stock Bore							
	in	in	mm	in	mm	in	in	in	in	in	in
1	5.81	1.625	42	0.44	11	1.69	4.00	0.13	4.56	3.06	2.31
1.5	6.56	2.125	56	0.69	18	1.94	4.50	0.13	6.00	3.97	3.00
2	8.06	2.750	73	0.94	24	2.44	5.50	0.13	7.00	4.86	4.00
2.5	9.72	3.250	85	1.44	37	3.03	6.50	0.19	8.38	5.84	4.63
3	10.78	4.000	107	1.44	37	3.59	7.00	0.19	9.44	6.84	5.63
3.5	11.94	4.625	125	1.81	46	4.19	7.50	0.25	11.00	7.91	6.50
4	13.25	5.375	145	2.44	62	4.75	8.25	0.25	12.50	9.25	7.50
4.5	14.63	6.000	165	3.00	76	5.31	9.00	0.31	13.63	10.38	8.50
5	15.84	6.500	180	3.00	76	6.03	9.50	0.31	15.31	11.56	9.50
5.5	17.72	7.500	200	4.00	101	6.91	10.50	0.31	16.75	12.72	10.50
6	18.97	8.250	225	4.00	101	7.41	11.25	0.31	18.00	14.00	11.50

Notes:
- LTB1 Dimensions are the maximum lengths of Universal Hubs kept in stock and altered to customer specifications. Longer length hubs are made to order.
- Exposed Bolt Design is standard.
- Shrouded Bolt Design available upon request for sizes 1 through 5.5.
- Puller Holes are standard on sizes 4 through 6.
- Puller Holes are available for sizes 1 through 3.5 at an additional charge.
- Interference bores with no set screws are standard unless otherwise specified.
- Inch bore and keyway tolerances conform to ANSI / AGMA 9002-B04.
- For metric bore and keyway tolerances, consult Lovejoy Engineering Section.

Lovejoy / Sier-Bath Flanged Sleeve Gear Couplings

FMM Type Mill Motor Couplings

The FMM Type coupling consists of one standard flex hub, one universal straight bored hub as standard, two sleeves and one accessory kit. This coupling is supplied with exposed bolts as standard. Shrouded bolts are available upon request through size 5.5.



Features

- Patented Vari-Crown® tooth form for long life
- Standard 20° pressure angle
- Heat treated bolts for greater strength
- Corrosion resistant bolts and nuts for ease of maintenance
- Provides parallel, angular misalignment and end float
- Flex Half coupling interchangeable with industry standards
- Long Universal Hub used for AISE Motor Frames

FMM Type Mill Motor Performance Data

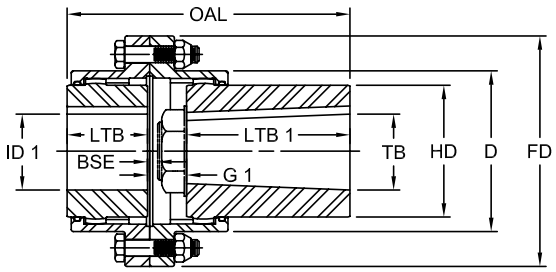
Size	Nominal Torque		Maximum Speed		ID1 - ID2 Max Bore		ID1 - ID2 Rough Stock Bore		Weight		Parallel Misalignment		Max Angular Misalignment Degrees
	in-lb	Nm	Unbal RPM	Bal RPM	in	mm	in	mm	lbs	kg	in	mm	
1	7,600	850	6,000	9,000	1.625	42	0.44	11	12	5	0.056	1.4	1.5° Per Gear Mesh
1.5	18,900	2 140	5,500	8,250	2.125	56	0.69	18	24	11	0.060	1.5	
2	31,500	3 560	5,000	7,500	2.75	73	0.94	24	45	20	0.085	2.2	
2.5	56,700	6 410	4,400	6,600	3.25	85	1.44	37	71	32	0.105	2.7	
3	94,500	10 700	4,000	6,000	4.000	107	1.44	37	104	47	0.115	2.9	
3.5	151,200	17 100	3,500	5,250	4.625	125	1.81	46	151	69	0.130	3.3	
4	220,500	24 900	3,000	4,500	5.375	145	2.44	62	234	86	0.150	3.8	
4.5	302,400	34 200	2,700	4,050	6.000	165	3.00	76	310	141	0.175	4.4	
5	434,700	49 100	2,500	3,750	6.500	180	3.00	76	450	204	0.200	5.1	
5.5	573,300	64 800	2,200	3,300	7.500	200	4.00	101	609	276	0.220	5.6	
6	749,700	84 700	2,100	3,150	8.250	225	4.00	101	764	347	0.120	3.0	0.75° Per Gear Mesh

Ordering Information

- Application: Driver and Driven.
- Type and size of coupling, horizontal, vertical etc.
- Power: Motor horspower or torque requirement.
- Speed: Motor RPM or Driven RPM.
- Distance between shaft ends (BSE).
- Shaft sizes.
- Mill Motor frame size.
- Submit a drawing if available.

Lovejoy / Sier-Bath Flanged Sleeve Gear Couplings

FMM Type Mill Motor Couplings



FMM Type Mill Motor Dimensional Data

Size	AISE Frame No	OAL in	ID1 in	LTB in	LTB1 in	G1	BSE in	FD in	D in	HD in	TB in	Mill Motor Hub Kw W in	Mill Motor Hub Kw H in
1.5	602/802 603/803 604/804	6.00 6.56 6.56	2.125	1.94	3.00 3.50 3.50	1.06 * 1.13 * 1.13 *	0.13	6.00	3.97	3.00	1.7485 - 1.7495 1.998 - 1.999 1.998 - 1.999	0.50 0.50 0.50	0.25 0.25 0.25
2	603/803 604/804 606/806	7.06 7.06 7.69	2.750	2.44	3.50 3.50 4.00	1.13 1.13 1.25	0.13	7.00	4.86	4.00	1.998 - 1.999 1.998 - 1.999 2.498 - 2.499	0.50 0.50 0.50	0.25 0.25 0.25
2.5	603/803 604/804 606/806 608/808	7.72 7.72 8.34 8.34	3.250	3.03	3.50 3.50 4.00 4.50	1.19 1.19 1.31 1.44	0.19	8.38	5.84	4.63	1.998 - 1.999 1.998 - 1.999 2.498 - 2.499 2.998 - 2.999	0.50 0.50 0.50 0.75	0.25 0.25 0.25 0.25
3	606/806 608/808 610/810 612/812	8.91 9.53 9.66 10.28	4.000	3.59	4.00 4.50 4.50 5.00	1.31 1.44 1.56 1.69	0.19	9.44	6.84	5.63	2.498 - 2.499 2.998 - 2.999 3.248 - 3.249 3.623 - 3.624	0.50 0.75 0.75 0.75	0.25 0.25 0.25 0.25
3.5	608/808 610/810 612/812 614/814	10.19 10.31 10.94 11.06	4.625	4.19	4.50 4.50 5.00 5.00	1.50 1.63 1.75 1.88	0.25	11.00	7.91	6.50	2.998 - 2.999 3.248 - 3.249 3.623 - 3.624 4.270 - 4.2485	0.75 0.75 0.75 1.00	0.25 0.25 0.25 0.38
4	610/810 612/812 614/814 616/816 618/818	10.88 11.50 11.63 12.25 12.31	5.375	4.75	4.50 5.00 5.00 5.50 6.00	1.63 1.75 1.88 2.00 1.56	0.25	12.50	9.25	7.50	3.248 - 3.249 3.623 - 3.624 4.2470 - 4.2485 4.6220 - 4.6235 4.9970 - 4.9985	0.75 0.75 1.00 1.25 1.25	0.25 0.25 0.38 0.38 0.50
4.5	614/814 616/816 618/818	12.25 12.88 12.94	6.000	5.31	5.00 5.50 6.00	1.94 2.06 1.63	0.31	13.63	10.38	8.50	4.2470 - 4.2485 4.6220 - 4.6235 4.9970 - 4.9985	1.00 1.25 1.25	0.38 0.38 0.50
5	614/814 616/816 618/818 620	12.97 13.59 13.66 14.84	6.500	6.03	5.00 5.50 6.00 6.75	1.94 2.06 1.63 2.06	0.31	15.31	11.56	9.50	4.2470 - 4.2485 4.6220 - 4.6235 4.9970 - 4.9985 5.8720 - 5.8735	1.00 1.25 1.25 1.50	0.38 0.38 0.50 0.75
5.5	616/816 618/818 620 622	14.47 14.53 15.72 16.84	7.500	6.91	5.50 6.00 6.75 7.25	2.06 1.63 2.06 2.69	0.31	16.75	12.72	10.50	4.6220 - 4.6235 4.9970 - 4.9985 5.8720 - 5.8735 6.2470 - 6.2485	1.25 1.25 1.50 1.50	0.38 0.50 0.75 0.75
6	616/816 618/818 620 622	14.97 15.03 16.22 17.34	8.250	7.41	5.50 6.00 6.75 7.25	2.06 1.63 2.06 2.69	0.31	18.00	14.00	11.50	4.6220 - 4.6235 4.9970 - 4.9985 5.8720 - 5.8735 6.2470 - 6.2485	1.25 1.25 1.50 1.50	0.38 0.50 0.75 0.75

Notes:
- * indicates: That a counterbore is required.
- Bore taper is 1-1/4 inch per foot on diameter.
- Exposed Bolt Design is standard.
- Shrouded Bolt Design available upon request for sizes 1.5 through 5.5.
- Puller Holes are standard on sizes 4 through 6.
- Puller Holes are available for sizes 1.5 through 3.5 at an additional charge.
- Interference bores with no set screws are standard unless otherwise specified.
- Inch bore and keyway tolerances conform to ANSI / AGMA 9002-B04.
- For metric bore and keyway tolerances, consult Lovejoy Engineering Section.
- 1/4 inch hub standoff.

Lovejoy / Sier-Bath Flanged Sleeve Gear Couplings



FSL Type Slide Coupling

The FSL Type coupling consists of one or two modified flex hubs depending on the maximum slide required, two sleeves, one plate with lube holes and one accessory kit. The coupling is supplied with exposed bolts as standard. Shrouded bolts are available upon request through size 5.5.

Features

- Patented Vari-Crown® tooth form for long life
- Standard 20° pressure angle
- Heat treated bolts for greater strength
- Corrosion resistant bolts and nuts for ease of maintenance
- Assembled to suit a wide range of axial movement
- Plates with lube holes so both halves of the coupling will be adequately lubricated

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FSL Type Performance Data

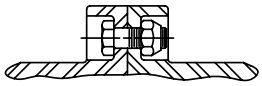
Size	Nominal Torque in-lb	Nominal Torque Nm	Maximum Speed Unbal RPM	Maximum Speed Bal RPM	ID1 - ID2 Max Bore in	ID1 - ID2 Max Bore mm	ID1 - ID2 Rough Stock Bore in	ID1 - ID2 Rough Stock Bore mm	Weight lbs	Weight kg	Max Angular Misalignment Degrees
1	7,600	850	6,000	9,000	1.625	42	0.44	11	9	4	1.5° Per Gear Mesh
1.5	18,900	2 140	5,500	8,250	2.125	56	0.69	18	19	9	
2	31,500	3 560	5,000	7,500	2.750	73	0.94	24	34	15	
2.5	56,700	6 410	4,400	6,600	3.250	85	1.44	37	54	25	
3	94,500	10 700	4,000	6,000	4.000	107	1.44	37	80	36	
3.5	151,200	17 100	3,500	5,250	4.625	125	1.81	46	130	59	
4	220,500	24 900	3,000	4,500	5.375	145	2.44	62	190	86	
4.5	302,400	34 200	2,700	4,050	6.000	165	3.00	76	250	114	
5	434,700	49 100	2,500	3,750	6.500	180	3.00	76	380	173	
5.5	573,300	64 800	2,200	3,300	7.500	200	4.00	101	520	236	
6	749,700	84 700	2,100	3,150	8.250	225	4.00	101	650	295	0.75° Per Gear Mesh
7	1,008,000	113 900	2,000	3,000	9.500	255	5.75	139	950	431	

Ordering Information

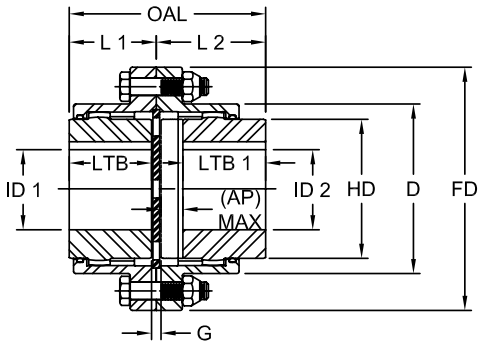
- Application: Driver and Driven.
- Type and size of coupling, horizontal, vertical etc.
- Power: Motor horspower or torque requirement.
- Speed: Motor RPM or Driven RPM.
- Distance between shaft ends (maximum-minimum shaft separation).
- Shaft sizes.
- Amount of slide required.

Lovejoy / Sier-Bath Flanged Sleeve Gear Couplings

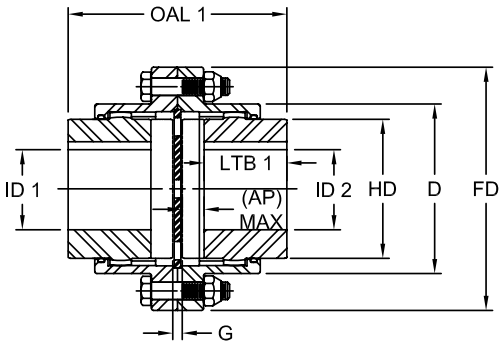
FSL Type Slide Couplings



Shrouded Bolt Design
Also Available



1 Hub Reversed
And Modified



2 Hubs Reversed
And Modified

FSL Type Dimensional Data

Size	OAL One Hub Reversed in	OAL1 Two Hubs Reversed in	L1 Std Hub in	L2 Slide Half in	ID1 - ID2 Max Bore in	ID1 - ID2 Max Bore mm	ID1 - ID2 Rough Stock Bore in	ID1 - ID2 Rough Stock Bore mm	LTB Std Hub in	LTB1 Slide Hub in	AP[1] Max in	G Min in	FD in	D in	HD in
1	3.81	4.13	1.75	2.06	1.625	42	0.44	11	1.59	1.50	0.41	0.31	4.56	3.06	2.31
1.5	4.25	4.50	2.00	2.25	2.125	56	0.69	18	1.84	1.75	0.34	0.31	6.00	3.97	3.00
2	5.69	6.38	2.50	3.19	2.750	73	0.94	24	2.34	2.25	0.78	0.31	7.00	4.86	4.00
2.5	7.03	7.81	3.13	3.91	3.250	85	1.44	37	2.94	2.78	0.94	0.38	8.38	5.84	4.63
3	8.03	8.69	3.69	4.34	4.000	107	1.44	37	3.50	3.13	1.03	0.38	9.44	6.84	5.63
3.5	9.19	9.75	4.31	4.88	4.625	125	1.81	46	4.09	3.59	1.06	0.44	11.00	7.91	6.50
4	10.44	11.13	4.88	5.56	5.375	145	2.44	62	4.56	3.94	1.31	0.63	12.50	9.25	7.50
4.5	12.00	13.06	5.47	6.53	6.000	165	3.00	76	5.13	4.50	1.69	0.69	13.63	10.38	8.50
5	13.72	15.06	6.19	7.53	6.500	180	3.00	76	5.84	5.22	1.97	0.69	15.31	11.56	9.50
5.5	15.34	16.56	7.06	8.28	7.500	200	4.00	101	6.72	5.88	2.06	0.69	16.75	12.72	10.50
6	16.53	17.94	7.56	8.97	8.250	225	4.00	101	7.16	7.09	1.47	0.81	18.00	14.00	11.50
7	19.06	20.38	8.88	10.19	9.500	255	5.75	139	8.38	7.78	1.91	1.00	20.75	15.75	13.00

Notes:
- 1 indicates: AP Max = Maximum slide per coupling half.
- Exposed Bolt Design is standard.
- Shrouded Bolt Design available upon request for sizes 1 through 5.5.
- Puller Holes are standard on sizes 4 through 9.
- Puller Holes are available for sizes 1 through 3.5 at an additional charge.
- Interference bores with no set screws are standard unless otherwise specified.
- Inch bore and keyway tolerances conform to AGMA 9002-B04.
- For metric bore and keyway tolerances, consult Lovejoy Engineering Section.

Lovejoy / Sier-Bath Flanged Sleeve Gear Couplings



FSLX Type Long Slide Couplings

The FSLX Type basic coupling consists of a standard flex half and a custom designed long slide half. The standard flex half can be replaced by a reversed and modified hub for additional slide requirement. These couplings are also supplied with a plate with lube holes. The coupling is supplied with exposed bolts as standard. Shrouded bolts available upon request through size 5.5.

Features

- Patented Vari-Crown® tooth form for long life
- Standard 20° pressure angle
- Heat treated bolts for greater strength
- Corrosion resistant bolts and nuts for ease of maintenance
- Assembled to suit a wide range of axial movement
- Plates with lube holes so both halves of the coupling will be adequately lubricated

G

FSLX Type Performance Data

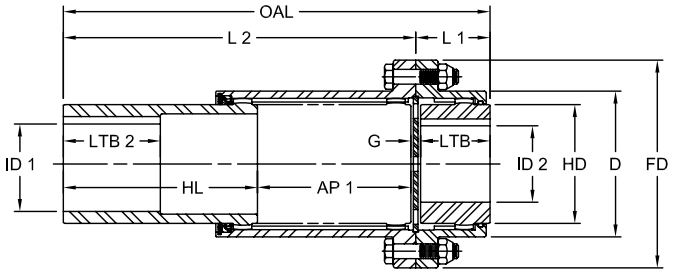
Size	Nominal Torque in-lb	Nominal Torque Nm	Maximum Speed Unbal RPM	Maximum Speed Bal RPM	ID1 - ID2 Max Bore in	ID1 - ID2 Max Bore mm	ID1 - ID2 Rough Stock Bore in	ID1 - ID2 Rough Stock Bore mm	Weight lbs	Weight kg	Max Angular Misalignment Degrees
1.5	18,900	2 140	5,500	8,250	2.125	56	0.69	18	19	9	1.5° Per Gear Mesh
2	31,500	3 560	5,000	7,500	2.750	73	0.94	24	34	15	
2.5	56,700	6 410	4,400	6,600	3.250	85	1.44	37	54	25	
3	94,500	10 700	4,000	6,000	4.000	107	1.44	37	80	36	
3.5	151,200	17 100	3,500	5,250	4.625	125	1.81	46	130	59	
4	220,500	24 900	3,000	4,500	5.375	145	2.44	62	190	86	
4.5	302,400	34 200	2,700	4,050	6.000	165	3.00	76	250	114	
5	434,700	49 100	2,500	3,750	6.500	180	3.00	76	380	173	
5.5	573,300	64 800	2,200	3,300	7.500	200	4.00	101	520	236	
6	749,700	84 700	2,100	3,150	8.250	225	4.00	101	650	295	0.75° Per Gear Mesh
7	1,008,000	113 900	2,000	3,000	9.500	255	5.75	139	950	431	

Ordering Information

- Application: Driver and Driven.
- Type and size of coupling, horizontal, vertical etc.
- Power: Motor horspower or torque requirement.
- Speed: Motor RPM or Driven RPM.
- Distance between shaft ends (maximum-minimum shaft separation).
- Shaft sizes.
- Amount of slide required.
- HL Dimension.
- LTB2 Dimension.

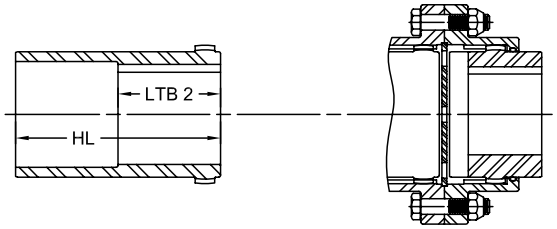
Lovejoy / Sier-Bath Flanged Sleeve Gear Couplings

FSLX Type Long Slide Couplings



Long Slide Half

Standard Half



Alternate Type hub shaft contact is deep inside hub

One Hub reversed with long slide half

G

FSLX Type Dimensional Data

Size	OAL	L1 Std Hub	L2 Slide Half	ID1 - ID2 Max Bore		ID1 - ID2 Rough Stock Bore		LTB Std Hub	LTB2 Slide Hub	G Min	AP1 Long Slide Max	AP2 Long Slide w/one Hub Reversed Max	AP3 Long Slide Both Ends Max	HL	FD	D	HD
	in	in	in	in	mm	in	mm	in	in	in	in	in	in	in	in	in	in
1.5	10.41	2.00	8.41	2.125	56	0.69	18	1.84	2.19	0.31	3.38	3.72	6.75	4.88	6.00	3.97	3.00
2	10.88	2.50	8.38	2.750	73	0.94	24	2.34	2.69	0.31	3.31	4.09	6.63	4.91	7.00	4.86	4.00
2.5	13.59	3.13	10.47	3.250	85	1.44	37	2.94	3.28	0.38	4.16	5.09	8.31	6.13	8.83	5.84	4.63
3	21.72	3.69	18.03	4.000	107	1.44	37	3.50	3.84	0.38	7.78	8.81	15.56	10.06	9.44	6.84	5.63
3.5	22.38	4.31	18.06	4.625	125	1.81	46	4.09	4.44	0.44	7.66	8.72	15.31	10.19	11.00	7.91	6.50
4	23.00	4.88	18.13	5.375	145	2.44	62	4.56	5.00	0.63	7.50	8.81	15.00	10.31	12.50	9.25	7.50
4.5	23.75	5.47	18.28	6.000	165	3.00	76	5.13	5.56	0.69	7.38	9.06	14.75	10.56	13.63	10.38	8.50
5	24.16	6.19	17.97	6.500	180	3.00	76	5.84	6.28	0.69	7.06	9.03	14.13	10.56	15.31	11.56	9.50
5.5	25.09	7.06	18.03	7.500	200	4.00	101	6.72	6.88	0.69	6.81	8.88	13.63	10.88	16.75	12.72	10.50
6	25.66	7.56	18.09	8.250	225	4.00	101	7.16	7.66	0.81	6.81	8.28	13.63	10.88	18.00	14.00	11.50
7	27.06	8.88	18.19	9.500	255	5.75	139	8.38	8.94	1.00	6.81	8.72	13.63	10.88	20.75	15.75	13.00

Notes:
- Exposed Bolt Design is standard.
- Shrouded Bolt Design available upon request for sizes 1 through 5.5.
- Puller Holes are standard on sizes 4 through 9.
- Puller Holes are available for sizes 1 through 3.5 at an additional charge.
- Interference bores with no set screws are standard unless otherwise specified.
- Inch bore and keyway tolerances conform to AGMA 9002-B04.
- For metric bore and keyway tolerances, consult Lovejoy Engineering Section.

Lovejoy / Sier-Bath Flanged Sleeve Gear Couplings



FSPCR Type Spacer Couplings

The FSPCR Type coupling consists of two flex hubs, two sleeves, one spacer and two accessory kits. This coupling is supplied with exposed bolts as standard. Shrouded bolts are available upon request through size 5.5.

Features

- Patented Vari-Crown® tooth form for long life
- Standard 20° pressure angle
- Heat treated bolts for greater strength
- Corrosion resistant bolts and nuts for ease of maintenance
- Provides parallel, angular misalignment and end float
- Removal of spacer provides adequate space for the removal of either coupling half without moving the driver or driven units

G

FSPCR Type Performance Data

Size	Nominal Torque		Maximum Speed[1]		ID1 - ID2 Max Bore		ID1 - ID2 Rough Stock Bore		Weight Less Spacer		Max Angular Misalignment Degrees
	in-lb	Nm	Unbal RPM	Bal RPM	in	mm	in	mm	lbs	kg	
1	7,600	850	6,000	9,000	1.625	42	0.44	11	9	4	1.5° Per Gear Mesh
1.5	18,900	2 140	5,500	8,250	2.125	56	0.69	18	19	9	
2	31,500	3 560	5,000	7,500	2.750	73	0.94	24	34	15	
2.5	56,700	6 410	4,400	6,600	3.250	85	1.44	37	54	25	
3	94,500	10 700	4,000	6,000	4.000	107	1.44	37	80	36	
3.5	151,200	17 100	3,500	5,250	4.625	125	1.81	46	130	59	
4	220,500	24 900	3,000	4,500	5.375	145	2.44	62	190	86	
4.5	302,400	34 200	2,700	4,050	6.000	165	3.00	76	250	114	
5	434,700	49 100	2,500	3,750	6.500	180	3.00	76	380	173	
5.5	573,300	64 800	2,200	3,300	7.500	200	4.00	101	520	236	
6	749,700	84 700	2,100	3,150	8.250	225	4.00	101	650	295	0.75° Per Gear Mesh
7	1,008,000	113 900	2,000	3,000	9.500	255	5.00	127	950	431	

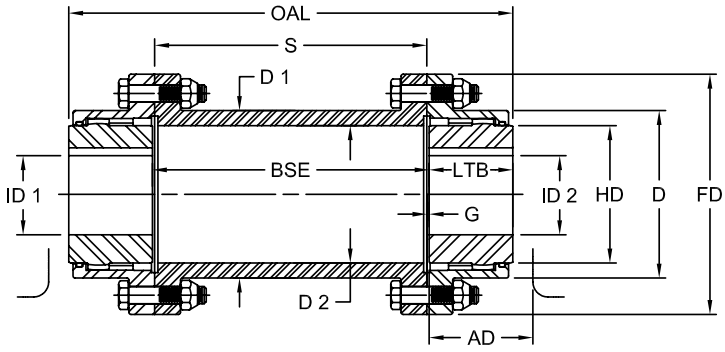
Note: ■ 1 indicates: Maximum RPM of spacer set determined by critical speed of spacer.

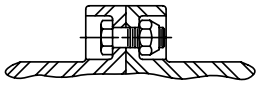
Ordering Information

- Application: Driver and Driven.
- Type and size of coupling, horizontal, vertical etc.
- Power: Motor horspower or torque requirement.
- Speed: Motor RPM or Driven RPM.
- Distance between shaft ends (BSE).
- Shaft sizes.

Lovejoy / Sier-Bath Flanged Sleeve Gear Couplings

FSPCR Type Spacer Couplings





Shrouded bolt design also available

G

FSPCR Type Dimensional Data

Size	OAL in	S in	AD in	ID1 - ID2 Max Bore in	ID1 - ID2 Max Bore mm	ID1 - ID2 Rough Stock Bore in	ID1 - ID2 Rough Stock Bore mm	LTB in	BSE in	G in	FD in	D in	HD in	D1 in	D2 in
1	Determined by Shaft Separation		2.04	1.625	42	0.44	11	1.69	Determined by Customer Specs	0.06	4.56	3.06	2.31	3.00	2.41
1.5			2.32	2.125	56	0.69	18	1.94		0.06	6.00	3.97	3.00	3.75	3.13
2			2.94	2.750	73	0.94	24	2.44		0.06	7.00	4.86	4.00	4.75	4.00
2.5			3.47	3.250	85	1.44	37	3.03		0.09	8.38	5.84	4.63	5.50	4.78
3			3.97	4.000	107	1.44	37	3.59		0.09	9.44	6.84	5.63	6.50	5.75
3.5			4.57	4.625	125	1.81	46	4.19		0.13	11.00	7.91	6.50	7.38	6.63
4			5.00	5.375	145	2.44	62	4.75		0.13	12.50	9.25	7.50	8.63	7.75
4.5			5.50	6.000	165	3.00	76	5.31		0.16	13.63	10.38	8.50	9.38	8.50
5			6.34	6.500	180	3.00	76	6.03		0.16	15.31	11.56	9.50	10.38	9.56
5.5			7.04	7.500	200	4.00	101	6.91		0.16	16.75	12.72	10.50	11.44	10.56
6			8.35	8.250	225	4.00	101	7.41		0.16	18.00	14.00	11.50	12.38	11.44
7			9.82	9.500	255	5.00	127	8.69		0.19	20.75	15.75	13.00	14.00	13.00

Notes:
- Exposed Bolt Design is standard.
- Shrouded Bolt Design available upon request for sizes 1 through 5.5.
- Puller Holes are standard on sizes 4 through 9.
- Puller Holes are available for sizes 1 through 3.5 at an additional charge.
- Interference bores with no set screws are standard unless otherwise specified.
- Inch bore and keyway tolerances conform to AGMA 9002-B04.
- For metric bore and keyway tolerances, consult Lovejoy Engineering Section.

Lovejoy / Sier-Bath Flanged Sleeve Gear Couplings

FLEF Type Limited End Float Couplings

The FLEF Type coupling consists of two flex hubs, two sleeves, one accessory kit and a steel plate to limit the movement. This coupling is supplied with exposed bolts as standard. Shrouded bolts are available upon request through size 5.5.



Features

- Patented Vari-Crown® tooth form for long life
- Standard 20° pressure angle
- Heat treated bolts for greater strength
- Corrosion resistant bolts and nuts for ease of maintenance
- Provides and maintains restriced end float in sleeve bearings and rotor systems where thrust is not permitted
- Optional flow-through steel plate with lube holes available

FLEF Type Performance Data

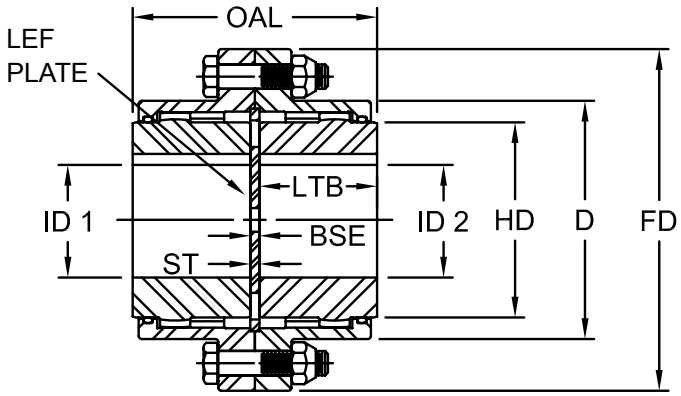
Size	Nominal Torque		Maximum Speed		ID1 - ID2 Max Bore		ID1 - ID2 Rough Stock Bore		Weight		Parallel Misalignment		Max Angular Misalignment Degrees
	in-lb	Nm	Unbal RPM	Bal RPM	in	mm	in	mm	lbs	kg	in	mm	
1	7,600	850	6,000	9,000	1.625	42	0.44	11	9	4	0.056	1.4	1.5° Per Gear Mesh
1.5	18,900	2 140	5,500	8,250	2.125	56	0.69	18	19	9	0.060	1.5	
2	31,500	3 560	5,000	7,500	2.750	73	0.94	24	34	15	0.085	2.2	
2.5	56,700	6 410	4,400	6,600	3.250	85	1.44	37	54	25	0.105	2.7	
3	94,500	10 700	4,000	6,000	4.000	107	1.44	37	80	36	0.115	2.9	
3.5	151,200	17 100	3,500	5,250	4.625	125	1.81	46	130	59	0.130	3.3	
4	220,500	24 900	3,000	4,500	5.375	145	2.44	62	190	86	0.150	3.8	
4.5	302,400	34 200	2,700	4,050	6.000	165	3.00	76	250	114	0.175	4.4	
5	434,700	49 100	2,500	3,750	6.500	180	3.00	76	380	173	0.200	5.1	
5.5	573,300	64 800	2,200	3,300	7.500	200	4.00	101	520	236	0.220	5.6	
6	749,700	84 700	2,100	3,150	8.250	225	4.00	101	650	295	0.120	3.0	0.75° Per Gear Mesh
7	1,008,000	113 900	2,000	3,000	9.500	255	5.00	127	950	431	0.135	3.4	

Ordering Information

- Application: Driver and Driven.
- Type and size of coupling, horizontal, vertical etc.
- Power: Motor horspower or torque requirement.
- Speed: Motor RPM or Driven RPM.
- Distance between shaft ends (BSE).
- Shaft sizes.
- Amount of thrust on either or both shafts.
- Submit a drawing if available.

Lovejoy / Sier-Bath Flanged Sleeve Gear Couplings

FLEF Type Limited End Float Couplings



FLEF Type Dimensional Data

Size	OAL	ID1 - ID2				LTB	BSE	F[1] (ref)	ST	FD	D	HD
		Max Bore		Rough Stock Bore								
	in	in	mm	in	mm	in	in	in	in	in	in	in
1	3.56	1.625	42	0.44	11	1.69	0.19	0.13	0.13	4.56	3.06	2.31
1.5	4.06	2.125	56	0.69	18	1.94	0.19	0.13	0.13	6.00	3.97	3.00
2	5.06	2.750	73	0.94	24	2.44	0.19	0.13	0.13	7.00	4.86	4.00
2.5	6.34	3.250	85	1.44	37	3.03	0.28	0.19	0.19	8.38	5.84	4.63
3	7.47	4.000	107	1.44	37	3.59	0.28	0.19	0.19	9.44	6.84	5.63
3.5	8.69	4.625	125	1.81	46	4.19	0.31	0.25	0.19	11.00	7.91	6.50
4	9.88	5.375	145	2.44	62	4.75	0.38	0.25	0.25	12.50	9.25	7.50
4.5	11.06	6.000	165	3.00	76	5.31	0.44	0.25	0.31	13.63	10.38	8.50
5	12.59	6.500	180	3.00	76	6.03	0.53	0.31	0.38	15.31	11.56	9.50
5.5	14.34	7.500	200	4.00	101	6.91	0.53	0.31	0.38	16.75	12.72	10.50
6	15.28	8.250	225	4.00	101	7.41	0.47	0.31	0.31	18.00	14.00	11.50
7	17.94	9.500	255	5.00	127	8.69	0.56	0.38	0.38	20.75	15.75	13.00

Notes:
- 1 indicates: F is the total end float. (May be modified.)
- Exposed Bolt Design is standard.
- Shrouded Bolt Design available upon request for sizes 1 through 5.5.
- Puller Holes are standard on sizes 4 through 9.
- Puller Holes are available for sizes 1 through 3.5 at an additional charge.
- Interference bores with no set screws are standard unless otherwise specified.
- Inch bore and keyway tolerances conform to AGMA 9002-B04.
- For metric bore and keyway tolerances, consult Lovejoy Engineering Section.

Lovejoy / Sier-Bath Flanged Sleeve Gear Couplings



FRR Type Rigid-Rigid Couplings

The F Type coupling consists of two rigid hubs and one accessory kit. This coupling is supplied with exposed bolts as standard. Shrouded bolts are available upon request through size 5.5.

Features

- All Steel construction
- Torque capacities that exceed the mild steel shafts to be coupled
- Heat treated bolts for greater strength
- Corrosion resistant bolts and nuts for ease of maintenance
- Rigid Half coupling interchangeable with industry standards

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FRR Type Performance Data

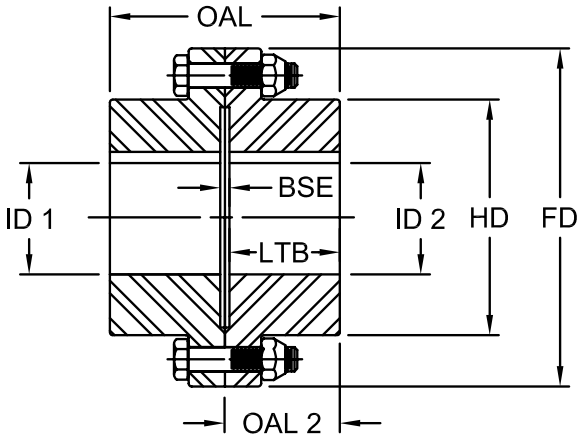
Size	Nominal Torque in-lb	Nominal Torque Nm	Maximum Speed Unbal RPM	Maximum Speed Bal RPM	ID1 - ID2 Max Bore in	ID1 - ID2 Max Bore mm	ID1 - ID2 Rough Stock Bore in	ID1 - ID2 Rough Stock Bore mm	Weight lbs	Weight kg	Max Angular Misalignment Degrees
1	7,600	850	6,000	9,000	2.125	56	solid	solid	10	5	0°
1.5	18,900	2 140	5,500	8,250	2.813	76	solid	solid	20	9	
2	31,500	3 560	5,000	7,500	3.500	95	solid	solid	34	15	
2.5	56,700	6 410	4,400	6,600	4.250	114	solid	solid	60	27	
3	94,500	10 700	4,000	6,000	4.875	134	solid	solid	91	41	
3.5	151,200	17 100	3,500	5,250	5.625	150	solid	solid	143	65	
4	220,500	24 900	3,000	4,500	6.500	176	solid	solid	211	96	
4.5	302,400	34 200	2,700	4,050	7.625	202	solid	solid	289	131	
5	434,700	49 100	2,500	3,750	8.750	230	4.00	101	417	189	
5.5	573,300	64 800	2,200	3,300	9.500	260	4.50	114	541	246	
6	749,700	84 700	2,100	3,150	10.500	285	5.50	127	724	329	
7	1,008,000	113 900	2,000	3,000	12.000	320	5.75	139	1,084	492	

Ordering Information

- Application: Driver and Driven.
- Type and size of coupling, horizontal, vertical etc.
- Power: Motor horspower or torque requirement.
- Speed: Motor RPM or Driven RPM.
- Distance between shaft ends (BSE).
- Shaft sizes.
- Submit drawing if available.

Lovejoy / Sier-Bath Flanged Sleeve Gear Couplings

FRR Type Rigid-Rigid Couplings



FRR Type Dimensional Data

Size	OAL in	OAL2 in	ID1 - ID2 Max Bore in	ID1 - ID2 Max Bore mm	ID1 - ID2 Rough Stock Bore in	ID1 - ID2 Rough Stock Bore mm	LTB in	BSE in	FD in	HD in
1	3.31	1.66	2.125	56	solid	solid	1.56	0.19	4.56	3.06
1.5	3.88	1.94	2.813	76	solid	solid	1.84	0.19	6.00	3.97
2	4.75	2.38	3.500	95	solid	solid	2.28	0.19	7.00	4.86
2.5	6.00	3.00	4.250	114	solid	solid	2.91	0.19	8.38	5.84
3	7.00	3.50	4.875	134	solid	solid	3.41	0.19	9.44	6.84
3.5	8.13	4.07	5.625	150	solid	solid	3.97	0.19	11.00	7.91
4	9.25	4.63	6.500	176	solid	solid	4.44	0.38	12.50	9.25
4.5	10.44	5.22	7.625	202	solid	solid	5.03	0.38	13.63	10.38
5	11.75	5.88	8.750	230	4.00	101	5.69	0.38	15.31	11.56
5.5	12.69	6.35	9.500	260	4.50	114	6.16	0.38	16.75	12.72
6	14.88	7.44	10.500	285	5.50	127	7.25	0.50	18.00	14.00
7	18.00	9.00	12.000	320	5.75	139	8.69	0.63	20.75	15.75

Notes:
- Exposed Bolt Design is standard.
- Shrouded Bolt Design available upon request for sizes 1 through 5.5.
- Puller Holes are standard on sizes 4 through 7.
- Puller Holes are available for sizes 1 through 3.5 at an additional charge.
- Interference bores with no set screws are standard unless otherwise specified.
- Inch bore and keyway tolerances conform to AGMA 9002-B04.
- For metric bore and keyway tolerances, consult Lovejoy Engineering Section.

Lovejoy / Sier-Bath Flanged Sleeve Gear Couplings



FLA Type Flex-Flex All-Metal Labyrinth Seal Couplings

The FLA Type coupling consists of two special flex hubs, Two sleeves and one accessory kit. This coupling is supplied with exposed bolts as standard. Shrouded bolts are available upon request through size 5.5.

Features

- All-Metal Labyrinth Seals
- AISI 4140 Alloy Steel Construction
- Patented Vari-Crown® tooth form for long life
- Standard 20° pressure angle
- Heat treated bolts for greater strength
- Corrosion resistant bolts and nuts for ease of maintenance
- Provides parallel, angular misalignment and end float
- Flex Half coupling interchangeable with industry standards

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FLA Type Performance Data

Size	Nominal Torque in-lb	Nominal Torque Nm	Maximum Speed Unbal RPM	Maximum Speed Bal RPM	ID1 - ID2 Max Bore Standard Keyway in	ID1 - ID2 Max Bore Standard Keyway mm	ID1 - ID2 Rough Stock Bore in	ID1 - ID2 Rough Stock Bore mm	Weight lbs	Weight kg	Parallel Misalignment in	Parallel Misalignment mm	Max Angular Misalignment Degrees
1.5	15,000	1 700	12,000	18,000	1.625	41	0.38	9	17.6	8	0.028	0.7	0.5° Per Gear Mesh
2	35,500	4 000	9,300	13,950	2.125	53	0.5	12	29.1	13	0.035	0.9	
2.5	69,300	7 800	7,900	11,850	2.750	69	0.75	19	50.9	23	0.044	1.1	
3	118,900	13 400	6,800	10,200	3.125	79	1.13	28	74.4	34	0.052	1.3	
3.5	188,500	21 300	6,000	9,000	3.750	95	1.50	38	120	55	0.061	1.5	
4	283,800	32 100	5,260	7,890	4.250	107	1.50	38	185	84	0.070	1.8	
4.5	393,800	44 500	4,770	7,155	4.750	120	1.50	38	240	109	0.079	2.0	
5	551,300	62 300	4,300	6,450	5.500	139	2.50	63	365	166	0.087	2.2	
5.5	732,500	82 800	3,880	5,820	5.875	149	3.00	76	435	198	0.096	2.4	
6	952,500	107 600	3,600	5,400	6.500	165	4.00	101	538	244	0.105	2.7	
7	1,512,500	170 900	3,000	4,500	8.000[1]	203	4.50	114	860	390	0.122	3.1	

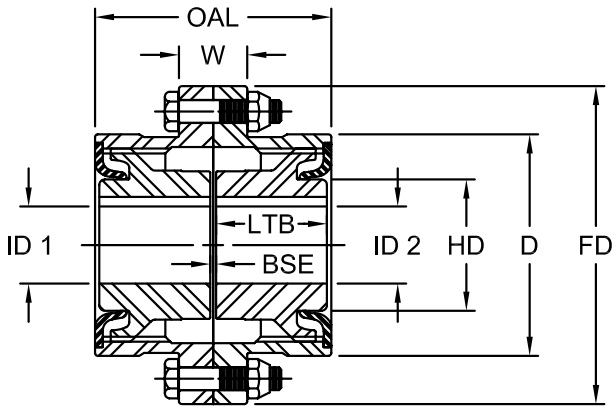
Note: ■ 1 Indicates: Maximum bore for square keyway.

Ordering Information

- Application: Driver and Driven.
- Type and size of coupling, horizontal, vertical etc.
- Power: Motor horspower or torque requirement.
- Speed: Motor RPM or Driven RPM.
- Distance between shaft ends (BSE).
- Shaft sizes.

Lovejoy / Sier-Bath Flanged Sleeve Gear Couplings

FLA Type All Metal Labyrinth Seal Couplings



FLA Type Dimensional Data

Size	OAL in	W in	ID1 - ID2 Max Bore Standard Keyway in	ID1 - ID2 Max Bore Standard Keyway mm	ID1 - ID2 Rough Stock Bore in	ID1 - ID2 Rough Stock Bore mm	LTB in	BSE in	FD in	D in	HD in	C/L - C/L of Teeth* in	Puller Holes
1.5	4.19	1.50	1.625	41	0.38	9	1.94	0.13	6.00	3.97	2.19	3.25	1/4-20
2	5.19	1.50	2.125	53	0.50	12	2.44	0.13	7.00	4.91	2.88	4.00	38-16
2.5	6.44	1.75	2.750	69	0.75	19	3.03	0.19	8.38	5.91	3.63	5.00	1/2-13
3	7.69	1.75	3.125	79	1.13	28	3.59	0.19	9.44	6.91	4.25	6.00	5/8-11
3.5	8.88	2.25	3.750	95	1.50	38	4.19	0.25	11.00	7.91	5.00	7.00	5/8-11
4	10.13	2.50	4.250	107	1.50	38	4.75	0.25	12.50	9.25	5.75	8.00	7/8-9
4.5	11.38	2.50	4.750	120	1.50	38	5.31	0.31	13.63	10.38	6.50	9.00	1-8
5	12.63	3.00	5.500	139	2.50	63	6.03	0.31	15.31	11.56	7.31	10.00	1-8
5.5	14.13	1.88	5.875	149	3.00	76	6.91	0.31	16.75	12.81	8.00	11.00	1-8
6	15.13	2.00	6.500	165	4.00	101	7.41	0.31	18.00	14.00	8.81	12.00	1-8
7	17.75	2.25	8.000[1]	203	4.50	114	8.69	0.38	20.75	15.75	10.31	14.00	1 1/4-7

Notes:
- 1 indicates: Maximum bore for square keyway.
- * indicates: Center line to center line of teeth.
- Exposed Bolt Design is standard.
- Shrouded Bolt Design available upon request for sizes 1 through 5.
- Puller Holes are standard on sizes 4 through 7.
- Puller Holes are available for sizes 1 through 3.5 at an additional charge.
- Interference bores with no set screws are standard unless otherwise specified.
- Inch bore and keyway tolerances conform to AGMA 9002-B04.
- For metric bore and keyway tolerances, consult Lovejoy Engineering Section.

Lovejoy / Sier-Bath Flanged Sleeve Gear Couplings



FLAFR Type Flex-Rigid All-Metal Labyrinth Seal Couplings

The FLAFR Type coupling consists of one special flex hub, one rigid hub, one sleeve and one accessory kit. This coupling is supplied with exposed bolts as standard. Shrouded bolts are available upon request through size 5.5.

Features

- All-metal labyrinth seal
- AISI 4140 alloy steel construction (flex half)
- Patented Vari-Crown® tooth form for long life
- Standard 20° pressure angle
- Heat treated bolts for greater strength
- Corrosion resistant bolts and nuts for ease of maintenance
- Provides angular misalignment only
- Flex Half coupling interchangeable with industry standards

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FLAFR Type Performance Data

Size	Nominal Torque in-lb	Nominal Torque Nm	Maximum Speed Unbal RPM	Maximum Speed Bal RPM	ID1 Flex Hubs Max Bore Standard Keyway in	ID1 Flex Hubs Max Bore Standard Keyway mm	ID2 Flex Hubs Rough Stock Bore in	ID2 Flex Hubs Rough Stock Bore mm	ID1 Rigid Hubs Max Bore Standard Keyway in	ID1 Rigid Hubs Max Bore Standard Keyway mm	ID2 Rigid Hubs Rough Stock Bore in	ID2 Rigid Hubs Rough Stock Bore mm	Weight lbs	Weight kg	Max Angular Misalignment Degrees
1.5	15,000	1 700	12,000	18,000	1.625	41	0.38	9	2.813	76	0.75	19	19	8	0.5° Per Gear Mesh
2	35,500	4 000	9,300	13,950	2.125	53	0.50	12	3.500	95	1.00	25	31	14	
2.5	69,300	7 800	7,900	11,850	2.750	69	0.75	19	4.250	114	1.50	38	55	25	
3	118,900	13 400	6,800	10,200	3.125	79	1.13	28	4.875	134	1.75	44	83	38	
3.5	188,500	21 300	6,000	9,000	3.750	95	1.50	38	5.625	150	2.50	63	131	60	
4	283,800	32 100	5,260	7,890	4.250	107	1.50	38	6.500	176	3.00	76	193	88	
4.5	393,800	44 500	4,770	7,155	4.750	120	1.50	38	7.625	202	3.50	88	258	117	
5	551,300	62 300	4,300	6,450	5.500	139	2.50	63	8.750	230	4.00	101	383	174	
5.5	732,500	82 800	3,880	5,820	5.875	149	3.00	76	9.500	260	4.50	114	436	198	
6	952,500	107 600	3,600	5,400	6.500	165	4.00	101	10.500	285	5.00	127	536	243	
7	1,512,500	170 900	3,000	4,500	8.000[1]	203	4.50	114	12.000	320	5.50	139	851	386	

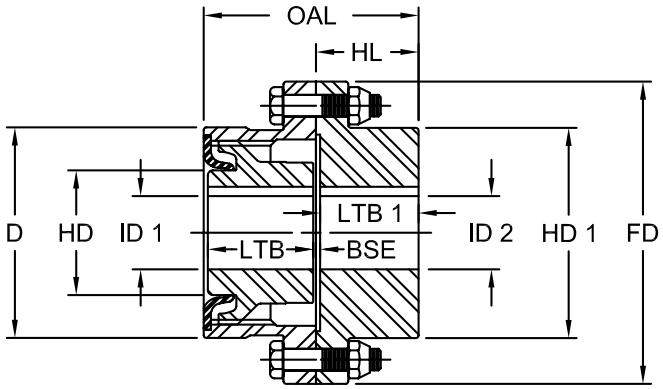
Note: ■ 1 indicates: Maximum bore for square keyway.

Ordering Information

- Application: Driver and Driven.
- Type and size of coupling, horizontal, vertical etc.
- Power: Motor horspower or torque requirement.
- Speed: Motor RPM or Driven RPM.
- Distance between shaft ends (BSE).
- Shaft sizes.

Lovejoy / Sier-Bath Flanged Sleeve Gear Couplings

FLAFR Type Flex-Rigid All Metal Labyrinth Seal Couplings



FLAFR Type Dimensional Data

Size	OAL	HL	ID1 Flex Hubs Max Bore Standard Keyway		ID2 Flex Hubs Rough Stock Bore		ID1 Rigid Hubs Max Bore Standard Keyway		ID2 Rigid Hubs Rough Stock Bore		LTB	LTB1	BSE	FD	HD1	HD	D	Puller Holes Flex Hub	Puller Holes Rigid Hub
	in	in	in	mm	in	mm	in	mm	in	mm	in	in	in	in	in	in	in	in	in
1.5	4.03	1.94	1.625	41	0.38	9	2.813	76	0.75	19	1.94	1.84	0.16	6.00	3.97	2.19	3.97	1/4-20	None
2	4.97	2.38	2.125	53	0.50	12	3.500	95	1.00	25	2.44	2.28	0.16	7.00	4.86	2.88	4.91	38-16	5/16-18
2.5	6.22	3.00	2.750	69	0.75	19	4.250	114	1.50	38	3.03	2.91	0.19	8.38	5.84	3.63	5.91	1/2-13	3/8-16
3	7.41	3.50	3.125	79	1.13	28	4.875	134	1.75	44	3.59	3.41	0.19	9.44	6.84	4.25	6.91	5/8-11	1/2-13
3.5	8.56	4.06	3.750	95	1.50	38	5.625	150	2.50	63	4.19	3.97	0.22	11.00	7.91	5.00	7.91	5/8-11	1/2-13
4	9.69	4.63	4.250	107	1.50	38	6.500	176	3.00	76	4.75	4.44	0.31	12.50	9.25	5.75	9.25	7/8-9	5/8-11
4.5	10.91	5.22	4.750	120	1.50	38	7.625	202	3.50	88	5.31	5.03	0.34	13.63	10.38	6.50	10.38	1-8	5/8-11
5	12.19	5.88	5.500	139	2.50	63	8.750	230	4.00	101	6.03	5.69	0.34	15.31	11.56	7.31	11.56	1-8	3/4-10
5.5	13.41	6.34	5.875	149	3.00	76	9.500	260	4.50	114	6.91	6.16	0.34	16.75	12.72	8.00	12.81	1-8	1-8
6	15.22	7.66	6.500	165	4.00	101	10.500	285	5.00	127	7.41	7.41	0.41	18.00	14.00	8.81	14.00	1-8	1-8
7	17.88	9.00	8.000[1]	203	4.50	114	12.000	320	5.50	139	8.69	8.69	0.50	20.75	15.75	10.31	15.75	1 1/4-7	1-8

Notes:
- 1 indicates: Maximum bore for square keyway.
- Exposed Bolt Design is standard.
- Shrouded Bolt Design available upon request for sizes 1 through 5.
- Puller Holes are standard on sizes 4 through 7.
- Puller Holes are available for sizes 1 through 3.5 at an additional charge.
- Interference bores with no set screws are standard unless otherwise specified.
- Inch bore and keyway tolerances conform to AGMA 9002-B04.
- For metric bore and keyway tolerances, consult Lovejoy Engineering Section.

Lovejoy / Sier-Bath Flanged Sleeve Gear Couplings

FLAMM Type Flex-Flex Mill Motor Couplings

The FLAMM Type coupling consists of one standard FLA flex hub, one universal flex hub bored to an A.I.S.E. frame size, two sleeves and one accessory kit. This coupling is supplied with exposed bolts as standard. Shrouded bolts are available upon request through size 5.5.

FLAMMFR Type Flex-Rigid Mill Motor Couplings

The FLAMMFR Type coupling consists of a rigid hub, one universal flex hub bored to A.I.S.E. frame size, one sleeve and one accessory kit. This coupling is supplied with exposed bolts as standard. Shrouded bolts are available upon request through size 5.5.



Features

- Patented Vari-Crown® tooth form for long life on Flex Half
- Standard 20° pressure angle
- Heat treated bolts for greater strength
- Corrosion resistant bolts and nuts for ease of maintenance
- Provides parallel, angular misalignment and end float
- Flex Half coupling interchangeable with industry standards
- Long Universal Hub used for A.I.S.E. Motor Frames

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FLAMM and FLAMMFR Type Performance Data

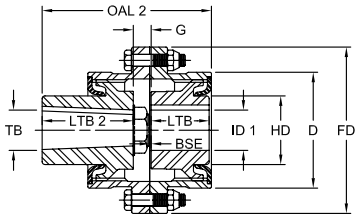
Size	Nominal Torque		Max Speed		ID1 Flex Hub Max Bore Standard Keyway		ID2 Flex Hub Rough Stock Bore		ID1 Rigid Hub Max Bore Standard Keyway		ID2 Rigid Hub Rough Stock Bore		Weight		Parallel Misalignment FLAMM only		Max Angular Misalignment Degrees
	in-lb	Nm	Unbal RPM	Bal RPM	in	mm	in	mm	in	mm	in	mm	lbs	kg	in	mm	
1.5	18,900	2 140	5,500	8,250	1.625	41	0.38	9	2.813	76	solid	solid	24	11	0.28	0.7	0.5° Per Gear Mesh
2	31,500	3 560	5,000	7,500	2.125	53	0.50	12	3.500	95	solid	solid	45	20	0.35	0.9	
2.5	56,700	6 410	4,400	6,600	2.750	69	0.75	19	4.250	114	solid	solid	71	32	0.44	1.1	
3	94,500	10 700	4,000	6,000	3.125	79	1.13	28	4.875	134	solid	solid	104	47	0.52	1.3	
3.5	151,200	17 100	3,500	5,250	3.750	95	1.50	38	5.625	150	solid	solid	151	69	0.61	1.5	
4	220,500	24 900	3,000	4,500	4.250	17	1.50	38	6.500	176	solid	solid	234	86	0.70	1.8	
4.5	302,400	34 200	2,700	4,050	4.750	120	1.50	38	7.625	202	solid	solid	310	141	0.79	2.0	
5	434,700	49 100	2,500	3,750	5.500	139	2.50	63	8.750	230	4.00	101	450	204	0.87	2.2	
5.5	573,300	64 800	2,200	3,300	5.875	149	3.00	76	9.500	260	4.50	114	609	276	0.96	2.4	
6	749,700	84 700	2,100	3,150	6.500	165	4.00	101	10.500	285	5.50	127	764	347	0.105	2.7	
7	1,008,000	113 900	2,000	3,000	8.000[1]	203	4.50	114	12.000	320	5.75	139	1,212	551	0.122	3.1	

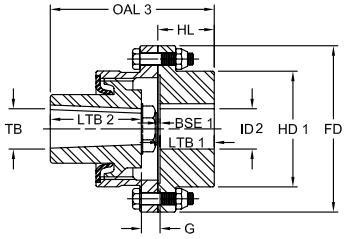
Notes:
- 1 indicates: Maximum bore for square keyway.
- Application: Driver and Driven.
- Type and size of coupling, horizontal, vertical etc.
- Power: Motor horspower or torque requirement.
- Speed: Motor RPM or Driven RPM.
- Distance between shaft ends (BSE).
- Shaft sizes.
- Mill Motor frame size.
- Submit a drawing if available.

Lovejoy / Seir-Bath Flanged Sleeve Gear Couplings

FLAMM and FLAMMFR Type

All Metal Labyrinth Seal Mill Motor Couplings





FLAMM and FLAMMFR Type Dimensional Data

Size	AISE Frame No	OAL 2 in	OAL 3 in	LTB in	LTB1 in	LTB2 in	G in	BSE in	BSE 1 in	FD in	D in	HD in	HD 1 in	TB in	Mill Mtr Hub Kw W in	Mill Mtr Hub Kw H in
1.5	602/802	6.00	5.91	1.94	1.84	3.00	1.06	0.13	0.16	6.00	3.97	2.19	3.97	1.7485 - 1.7495	0.50	0.13
2	602/802	6.50	6.34	2.44	2.28	3.00	1.06	0.13	0.16	7.00	4.91	2.88	4.86	1.7485 - 1.7495	0.50	0.25
	603/803	7.06	6.91			3.50	1.13							1.998 - 1.999	0.50	0.25
	604/804	7.06	6.91			3.50	1.13							1.998 - 1.999	0.50	0.25
2.5	602/802	7.16	7.03	3.03	2.28	3.00	1.13	0.19	0.19	8.38	5.91	3.63	5.84	1.7485 - 1.7495	0.50	0.25
	603/803	7.72	7.59			3.50	1.19							1.998 - 1.999	0.50	0.25
	604/804	7.72	7.59			3.50	1.19							1.998 - 1.999	0.50	0.25
	606/806	8.34	8.22			4.00	1.31							2.498 - 2.499	0.50	0.25
3	602/802	7.72	7.53	3.59	2.91	3.00	1.13	0.19	0.19	9.44	6.91	4.25	6.84	1.7485 - 1.7495	0.50	0.25
	603/803	8.28	8.09			3.50	1.19							1.998 - 1.999	0.50	0.25
	604/804	8.28	8.09			3.50	1.19							1.998 - 1.999	0.50	0.25
	606/806	8.91	8.72			4.00	1.31							2.498 - 2.499	0.50	0.25
	608/808	9.53	9.34			4.50	1.44							2.998 - 2.999	0.75	0.25
	610/810	9.66	9.47			4.50	1.56							3.248 - 3.249	0.75	0.25
3.5	603/803	8.88	8.66	4.19	3.97	3.50	1.19	0.25	0.22	11.00	7.91	5.00	7.91	1.998 - 1.999	0.50	0.25
	604/804	8.88	8.66			3.50	1.19							1.998 - 1.999	0.50	0.25
	606/806	9.50	9.28			4.00	1.31							2.498 - 2.499	0.50	0.25
	608/808	10.13	9.91			4.50	1.44							2.998 - 2.999	0.75	0.25
	610/810	10.25	10.03			4.50	1.56							3.248 - 3.249	0.75	0.25
	612/812	10.94	10.72			5.00	1.75							3.623 - 3.624	0.75	0.25
4	606/806	10.13	9.81	4.75	4.44	4.00	1.38	0.25	0.31	12.50	9.25	5.75	9.25	2.498 - 2.499	0.50	0.25
	608/808	10.75	10.44			4.50	1.50							2.998 - 2.999	0.75	0.25
	610/810	10.88	10.56			4.50	1.63							3.248 - 3.249	0.75	0.25
	612/812	11.50	11.19			5.00	1.75							3.623 - 3.624	0.75	0.25
	614/814	11.63	11.31			5.00	1.88							4.2470 - 4.2485	1.00	0.38
	616/816	12.25	11.94			5.00	2.00							4.6220 - 4.6235	1.25	0.28
4.5	610/810	11.50	11.22	5.31	5.03	4.50	1.69	0.31	0.34	13.63	10.38	6.50	10.38	3.248 - 3.249	0.75	0.25
	612/812	12.12	11.84			5.00	1.81							6.623 - 3.624	0.75	0.25
	614/814	12.25	11.97			5.00	1.94							4.2470 - 4.2485	1.00	0.38
	616/816	12.88	12.59			5.50	2.06							4.6220 - 4.6235	1.25	0.38
	618/818	12.94	12.66			6.00	1.63							4.9970 - 4.9985	1.25	0.50
5	612/812	12.84	12.50	6.03	5.69	5.00	1.81	0.31	0.34	15.31	11.56	7.31	11.56	3.623 - 3.624	0.75	0.25
	614/814	12.97	12.63			5.00	1.94							4.2470 - 4.2485	1.00	0.38
	616/816	13.59	13.25			5.50	2.06							4.6220 - 4.6235	1.25	0.38
	618/818	13.66	13.31			6.00	1.63							4.9970 - 4.9985	1.25	0.50
5.5	616/816	14.47	13.72	6.91	6.16	5.50	2.06	0.31	0.34	16.75	12.81	8.00	12.72	4.6220 - 4.6235	1.25	0.38
	618/818	14.53	13.78			6.00	1.63							4.9970 - 4.9985	1.25	0.50
	620	15.72	14.97			6.75	2.06							5.8720 - 5.8735	1.50	0.75
	622	16.84	16.09			7.25	2.69							6.2470 - 6.2485	1.50	0.56
6	620	16.22	16.22	7.41	7.41	6.75	2.06	0.31	0.41	18.00	14.00	8.81	14.00	5.8720 - 5.8735	1.50	0.75
	622	17.34	17.34			7.25	2.69							6.2470 - 6.2485	1.50	0.75
	624	19.34	19.34			9.25	2.69							6.9970 - 6.9985	1.50	0.50
7	622	18.69	18.69	8.69	8.69	7.25	2.75	0.38	0.50	20.75	15.75	10.31	15.75	6.2470 - 6.2485	1.50	0.75
	624	20.69	20.69			9.25	2.75							6.9970 - 6.9985	1.50	0.75

Notes:
- Bore taper is 1-1/4 inch per foot on diameter.
- Exposed Bolt Design is standard.
- Shrouded Bolt Design available upon request for sizes 1.5 through 5.
- Puller Holes are standard on sizes 4 through 7.
- Puller Holes are available for sizes 1.5 through 3.5 at an additional charge.
- Interference bores with no set screws are standard unless otherwise specified.
- Inch bore and keyway tolerances conform to AGMA 9002-B04.
- For metric bore and keyway tolerances, consult Lovejoy Engineering Section.

Lovejoy / Sier-Bath Flanged Sleeve Gear Couplings



FA Type Alloy Steel Flex-Flex Couplings

The FA Type coupling consists of two flex hubs, two sleeves and one accessory kit. This coupling is supplied with exposed bolts as standard. Shrouded bolts are available upon request through size 5.5.

Features

- Molded seals maintain proper lubricant retention during misalignment conditions
- AISI 4140 Alloy Steel Construction
- Patented Vari-Crown® tooth form for long life
- Standard 20° pressure angle
- Heat treated bolts for greater strength
- Corrosion resistant bolts and nuts for ease of maintenance
- Provides parallel, angular misalignment and end float
- Flex Half coupling interchangeable with industry standards

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FA Type Performance Data

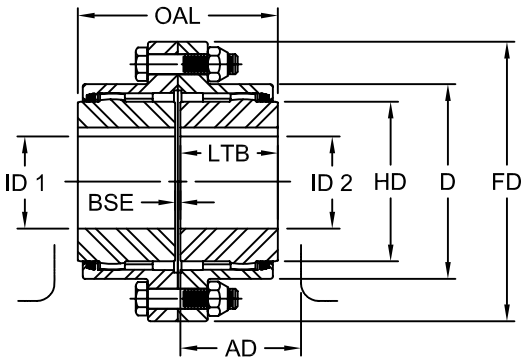
Size	Nominal Torque		Maximum Speed		ID1 - ID2 Max Bore Standard Keyway		ID1 - ID2 Rough Stock Bore		Weight		Parallel Misalignment		Max Angular Misalignment Degrees
	in-lb	Nm	Unbal RPM	Bal RPM	in	mm	in	mm	lbs	kg	in	mm	
1	11,300	1 280	6,000	9,000	1.625	42	0.44	11	9	4	0.056	1.4	1.5° Per Gear Mesh
1.5	22,700	2 560	5,500	8,250	2.125	56	0.69	18	19	9	0.060	1.5	
2	39,000	4 410	5,000	7,500	2.75	73	0.94	24	34	15	0.085	2.2	
2.5	69,300	7 930	4,400	6,600	3.25	88	1.44	37	54	25	0.105	2.7	
3	118,000	13 300	4,000	6,000	4.000	107	1.44	37	80	36	0.115	2.9	
3.5	177,000	20 000	3,500	5,250	4.625	124	1.81	46	130	59	0.130	3.3	
4	263,400	29 760	3,000	4,500	5.375	147	2.44	62	190	86	0.150	3.8	
4.5	354,000	40 000	2,700	4,050	6.000	167	3.00	76	250	114	0.175	4.4	
5	508,600	57 470	2,500	3,750	6.500	176	3.00	76	380	173	0.200	5.1	
5.5	670,700	75 790	2,200	3,300	7.500	202	4.00	101	520	236	0.220	5.6	
6	877,100	99 110	2,100	3,150	8.250	225	4.00	101	650	295	0.120	3.0	0.75° Per Gear Mesh
7	1,179,300	1 332 600	2,000	3,000	9.500	255	5.00	127	950	431	0.135	3.4	

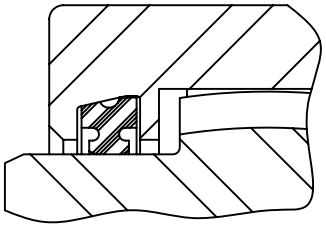
Ordering Information

- Application: Driver and Driven.
- Type and size of coupling, horizontal, vertical etc.
- Power: Motor horspower or torque requirement.
- Speed: Motor RPM or Driven RPM.
- Distance between shaft ends (BSE).
- Shaft sizes.

Lovejoy / Sier-Bath Flanged Sleeve Gear Couplings

FA Type Alloy Steel Couplings





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FA Type Dimensional Data

Size	OAL in	AD in	ID1 - ID2 Max Bore Standard Keyway in	ID1 - ID2 Max Bore Standard Keyway mm	ID1 - ID2 Rough Stock Bore in	ID1 - ID2 Rough Stock Bore mm	LTB in	BSE in	FD in	D in	HD in
1	3.50	4.19	1.625	42	0.44	11	1.69	0.13	4.56	3.06	2.31
1.5	4.00	4.75	2.125	56	0.69	18	1.94	0.13	6.00	3.97	3.00
2	5.00	6.00	2.750	73	0.94	24	2.44	0.13	7.00	4.86	4.00
2.5	6.25	7.13	3.250	88	1.44	37	3.03	0.19	8.38	5.84	4.63
3	7.38	8.13	4.000	107	1.44	37	3.59	0.19	9.44	6.84	5.63
3.5	8.63	9.38	4.625	124	1.81	46	4.19	0.25	11.00	7.91	6.50
4	9.75	10.25	5.375	147	2.44	62	4.75	0.25	12.50	9.25	7.50
4.5	10.94	11.50	6.000	167	3.00	76	5.31	0.31	13.63	10.38	8.50
5	12.38	13.00	6.500	176	3.00	76	6.03	0.31	15.31	11.56	9.50
5.5	14.13	14.38	7.500	202	4.00	101	6.91	0.31	16.75	12.72	10.50
6	15.13	17.00	8.250	225	4.00	101	7.41	0.31	18.00	14.00	11.50
7	17.75	20.00	9.500	255	5.00	127	8.69	0.38	20.75	15.75	13.00

Notes:
- Exposed Bolt Design is standard.
- Shrouded Bolt Design available upon request for sizes 1 through 5.5.
- Puller Holes are standard on sizes 4 through 7.
- Puller Holes are available for sizes 1 through 3.5 at an additional charge.
- Interference bores with no set screws are standard unless otherwise specified.
- Inch bore and keyway tolerances conform to AGMA 9002-B04.
- For metric bore and keyway tolerances, consult Lovejoy Engineering Section.

Lovejoy / Sier-Bath Rigid Adjustable Couplings

RA and RAHS Type Rigid Adjustable Couplings

The RA and RAHS couplings are offered in two different styles. Type II coupling consists of two rigid hubs, adjusting nut and split ring and split ring for motor bub. Type IV coupling consists of two rigid hubs, adjusting nut, split ring for motor hub and spacer.



Features

- Axial positioning of the pump impeller in vertical pump applications
- Clearence fit bores allows for easy installation and maintenance for pump and/or motor
- Easily adjustable for vertical clearence
- Removable spacer for easy maintenance
- AISI 1045 Steel
- Stainless Steel coupling also available

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RA and RAHS Type Performance Data

Size	HP/100 RPM	Nominal Torque in-lb	Thrust Capacity lbs	Motor & Pump Hubs Min Bore in	Motor & Pump Hubs Min Bore mm	Motor & Pump Hubs Max Bore in	Motor & Pump Hubs Max Bore mm
1125	2.7	1,702	4,500	0.44	11	1.125	29
1625	8.0	5,042	11,000	0.63	16	1.625	42
2125	17.9	11,282	31,000	0.73	18	2.125	56
2625	33.8	21,302	31,000	0.88	22	2.625	70
2875	44.4	27,983	31,000	0.88	22	2.875	77
3125	57.0	35,924	41,000	1.19	30	3.125	84
3875	109.0	68,697	73,000	1.25	31	3.875	103
5000	310.0	195,378	160,000	2.38	60	5.000	135
6000	404.0	254,621	300,000	2.88	73	6.000	167
7250	712.0	448,738	300,000	4.00	101	7.250	194
8500	1148.0	723,527	350,000	4.00	101	8.500	225
10500	2164.0	1,363,861	400,000	5.00	127	10.500	276

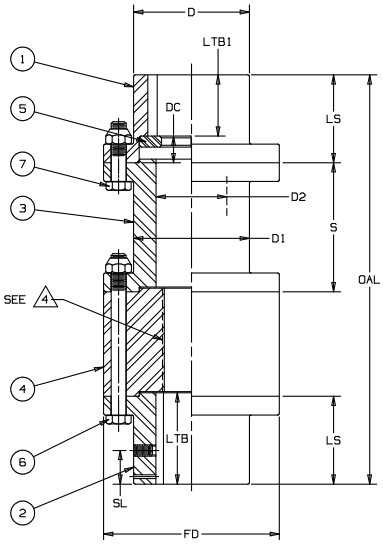
Ordering Information

- Application: Driver and Driven.
- Power: Motor horspower or torque requirement.
- Speed: Motor Speed or Driven RPM.
- Distance between shaft ends (BSE).
- Shaft sizes.
- Adjusting nut threads.
- Amount of trust on either or both shafts.
- Submit drawing if available.

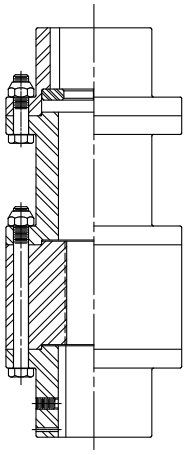
Lovejoy / Sier-Bath Rigid Adjustable Couplings

RA and RAHS Type Rigid Adjustable Couplings

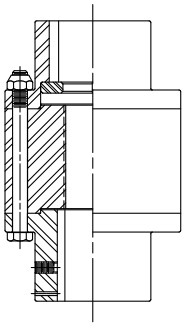
Item	Description
1	Upper Hub - Motor
2	Lower hub - Pump
3	Spacer
4	Adjusting Nut, Threaded
5	Washer, Split
6	RA and RAHS Accessory Kit
7	RA and RAHS Accessory Kit



RA & RAHS SPACER COUPLING
TYPE IV



RA & RAHS COUPLING
TYPE II

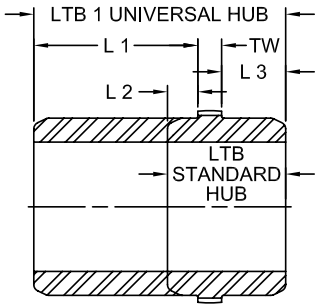


RA and RAHS Type Dimensional Data

Size	STD OAL Type II in	STD OAL Type IV in	FD in	D in	LTB in	LTB1 in	LS in	DC in	N in	SL in	D1 in	D2 in	S Std in	S Min in	BOLTS Qty	BOLTS Size	B.C. Dia in
1125	5.25	9.56	3.00	1.75	2.13	1.11	2.00	0.89	1.25	0.88	1.75	1.25	4.44	1.63	4	1/4 - 28	2.375
1625	6.00	10.31	4.00	2.50	2.38	1.36	2.25	0.89	1.50	0.88	2.50	1.75	4.44	1.75	6	5/16 - 24	3.250
2125	7.13	11.44	5.13	3.13	2.81	1.80	2.69	0.89	1.75	1.00	3.13	2.25	4.44	2.63	6	1/2 - 20	4.250
2625	9.38	13.69	5.88	3.88	3.06	2.05	2.94	0.89	3.50	1.13	3.88	2.75	4.44	2.63	6	1/2 - 20	4.938
2875	10.38	14.69	6.38	4.38	3.56	2.55	3.44	0.89	3.50	1.38	4.38	3.00	4.44	2.88	6	1/2 - 20	5.438
3125	11.50	15.81	6.75	4.63	4.13	3.11	4.00	0.89	3.50	1.63	4.63	3.25	4.44	2.88	8	1/2 - 20	5.813
3875	12.75	17.06	8.94	5.88	4.50	3.48	4.38	0.89	4.00	1.75	5.88	4.00	4.44	3.13	6	3/4 - 16	7.625
5000	15.00	NO STD	11.75	7.50	6.25	4.63	6.00	1.38	3.00	2.44	7.50	5.13	NO STD	4.50	8	1 - 14	10.000
6000	20.88	NO STD	13.25	9.00	9.50	7.63	9.25	1.63	2.38	4.00	9.00	6.13	NO STD	4.75	10	1 - 14	11.500
7250	25.19	NO STD	15.00	10.75	11.06	8.81	10.75	1.94	3.69	4.75	10.75	7.38	NO STD	7.06	14	1 - 14	13.250
7500	33.56	NO STD	17.25	12.50	15.31	13.06	15.00	1.94	3.56	6.63	12.50	8.63	NO STD	7.31	12	1-1/8 - 12	15.000
10500	40.94	NO STD	20.50	15.00	18.69	16.44	18.38	1.94	4.19	8.13	15.00	10.63	NO STD	8.31	12	1-1/8 - 12	18.000

Notes:
- Clearence fit bores with set screw are standard.
- RA couplings meet standard tolerances.
- Inch bore and keyway tolerances conform to AINSI / AGMA 9002-B04.
- For metric bore and keyway tolerances, consult Lovejoy Engineering Section.
- RAHS couplings conform to API 610 8th edition tolerances.

Lovejoy / Sier-Bath Flanged Sleeve Gear Couplings

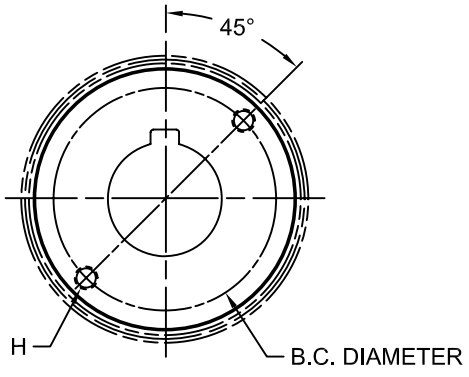


F Type Standard and Universal Hub Dimensions

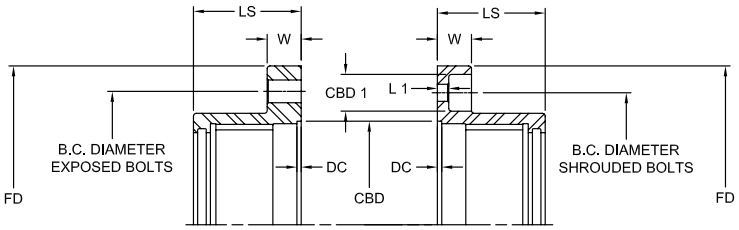
Size	L1 in	L2 in	L3 in	TW in	LTB STD in	LTB1 UNIV HUB in
1	2.75	0.44	0.75	0.50	1.69	4.00
1.5	3.13	0.56	0.81	0.56	1.94	4.50
2	3.63	0.56	1.25	0.63	2.44	5.50
2.5	4.22	0.75	1.53	0.75	3.03	6.50
3	4.44	1.03	1.69	0.88	3.59	7.00
3.5	4.63	1.31	1.88	1.00	4.19	7.50
4	4.97	1.47	2.16	1.13	4.75	8.25
4.5	5.19	1.50	2.56	1.25	5.31	9.00
5	5.06	1.59	2.94	1.50	6.03	9.50
5.5	5.56	1.97	3.19	1.75	6.91	10.50

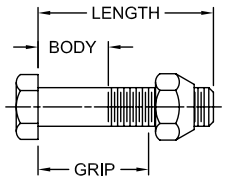
Flex Hubs Puller Bolt Holes

Size	B.C. Diameter in	Tap Size	
		UNC	Depth
1	None	None	None
1.5	None	None	None
2	3.38	5/16 - 18	0.50
2.5	3.94	3/8 - 16	0.56
3	4.94	1/2 - 13	0.75
3.5	5.56	1/2 - 13	0.75
4	6.44	5/8 - 11	0.94
4.5	7.38	5/8 - 11	0.94
5	8.00	3/4 - 10	1.13
5.5	9.00	1 - 8	1.50
6	9.75	1 - 8	1.50
7	11.63	1 - 8	1.50
8	14.00	1 - 8	1.50
9	15.25	1-1/4 - 7	1.88



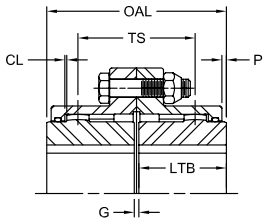
Lovejoy / Sier-Bath Flanged Sleeve Gear Couplings



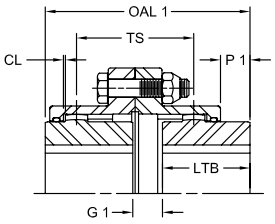


Flange Details

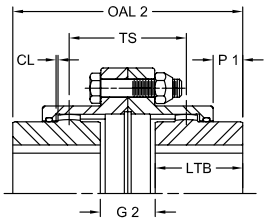
Size	LS in	W in	DC in	FD in	CBD in	B.C. Dia Exposed Bolts in	Exposed Bolts Qty	Exposed Bolts Size	Exposed Bolts Length in	Exposed Bolts Min Body in	Exposed Bolts Max Grip in	B.C. Dia Shrouded Bolts in	Shrouded Bolts Qty	Shrouded Bolts Size	Shrouded Bolts Length in	Shrouded Bolts Min Body in	Shrouded Bolts Max Grip in	CBD 1 in	L1 in
1	1.66	0.56	0.09	4.56	2.812	3.750	6	1/4-28	1-1/2	3/4	1	3.750	6	1/4-28	3/4	9/32	7/16	0.64	0.25
1.5	1.88	0.75	0.09	6.00	3.562	4.812	8	3/8-24	2	15/16	1-1/4	4.812	8	3/8-24	1	9/32	7/16	0.81	0.25
2	2.38	0.75	0.09	7.00	4.562	5.875	6	1/2-20	2-1/4	15/16	1-1/4	5.812	10	3/8-24	1	9/32	7/16	0.81	0.25
2.5	2.88	0.88	0.09	8.38	5.437	7.125	6	5/8-18	2-3/4	7/8	1-1/4	7.000	10	1/2-20	1-1/8	3/8	1/2	1.06	0.31
3	3.31	0.88	0.09	9.44	6.437	8.125	8	5/8-18	2-3/4	7/8	1-1/4	8.000	12	1/2-20	1-1/8	3/8	1/2	1.06	0.31
3.5	3.81	1.13	0.09	11.00	7.375	9.500	8	3/4-16	3-1/4	1	1-7/16	9.281	12	5/8-18	1-3/8	7/16	5/8	1.31	0.38
4	4.25	1.13	0.19	12.50	8.750	11.000	8	3/4-16	3-1/4	1	1-7/16	10.625	14	5/8-18	1-3/8	7/16	5/8	1.31	0.38
4.5	4.81	1.13	0.19	13.63	9.750	12.000	10	3/4-16	3-1/4	1-1/4	1-7/16	11.750	14	5/8-18	1-3/8	7/16	5/8	1.31	0.38
5	5.50	1.50	0.19	15.31	10.750	13.500	8	7/8-14	4-1/4	1-3/4	2-1/4	13.188	14	3/8-16	1-7/8	5/8	1	1.56	0.56
5.5	6.00	1.50	0.19	16.75	12.125	14.500	14	7/8-14	4-1/4	1-3/4	2-1/4	14.437	16	3/4-16	1-7/8	5/8	1	1.56	0.56
6	6.69	1.00	0.25	18.00	13.000	15.750	14	7/8-14	3-1/2	23/32	1-1/4	EXPOSED BOLTS ONLY							
7	7.38	1.13	0.31	20.75	14.625	18.250	16	1-14	3-1/2	5/8	1-1/4								
8	8.38	1.31	0.31	23.75	17.750	20.750	16	1-1/8-12	—	—	—								
9	9.00	1.50	0.31	26.00	19.000	23.250	18	1-1/4-12	—	—	—								



Normal Hub Arrangement



1 Hub Reversed



2 Hubs Reversed

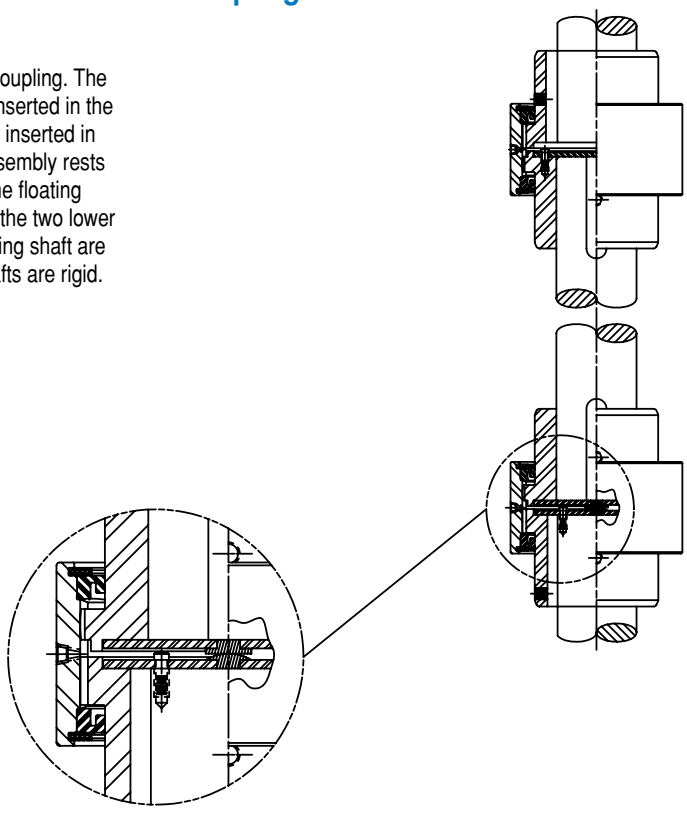
Minimum and Maximum Hub Gaps

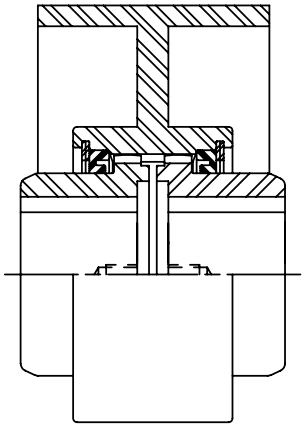
Size	OAL in	OAL1 in	OAL2 in	TS in	CL in	P in	P1 in	LTB in	G in	G1 in	G2 in
1	3.50	3.81	4.13	2.13	0.06	0.09	0.41	1.69	0.13	0.44	0.75
1.5	4.00	4.25	4.50	2.31	0.06	0.13	0.38	1.94	0.13	0.38	0.63
2	5.00	5.81	6.38	3.25	0.06	0.13	0.81	2.44	0.13	0.81	1.50
2.5	6.25	7.03	7.81	4.00	0.09	0.25	1.03	3.03	0.19	0.97	1.75
3	7.38	8.03	8.69	4.44	0.09	0.38	1.03	3.59	0.19	0.84	1.50
3.5	8.63	9.19	9.75	5.00	0.09	0.50	1.06	4.19	0.25	0.81	1.38
4	9.75	10.44	11.13	5.69	0.13	0.63	1.31	4.75	0.25	0.94	1.63
4.5	10.94	12.00	13.06	6.69	0.13	0.66	1.72	5.31	0.31	1.38	2.44
5	12.38	13.72	15.06	7.69	0.19	0.69	2.03	6.03	0.31	1.66	3.00
5.5	14.13	15.34	16.56	8.44	0.19	1.06	2.38	6.91	0.31	1.53	2.75
6	15.13	16.53	17.94	9.13	0.16	0.88	2.28	7.41	0.31	1.72	3.13
7	17.75	19.06	20.38	10.38	0.19	1.50	2.81	8.69	0.38	1.69	3.00
8	22.38	23.13	23.88	12.13	0.19	2.81	3.56	11.00	0.38	1.13	1.88
9	23.50	24.25	25.00	12.75	0.38	2.75	3.50	11.50	0.50	1.25	2.00

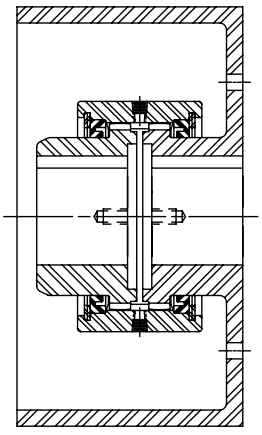
Lovejoy / Sier-Bath Continuous Sleeve Gear Couplings

Vertical Floating Shaft Type

The upper coupling is a Standard Vertical Type coupling. The lower coupling has a hardened crowned button inserted in the plate of the lower hub and a hardened flat button inserted in the plate of the upper hub. The entire floating assembly rests on these two buttons which carry the weight of the floating assembly thus maintaining the spacing between the two lower hubs allowing for flexibility. The hubs on the floating shaft are flexible and the hubs of the driver and driven shafts are rigid.

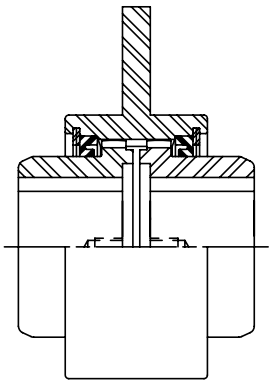


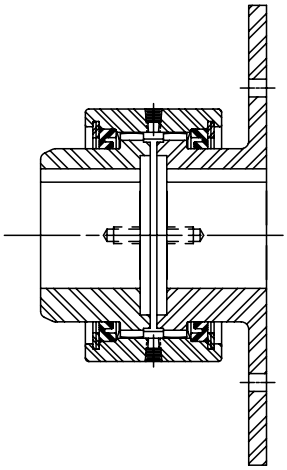




Brakedrum Type

Two different designs of brakedrum couplings are illustrated. One shows the brakedrum as an intergal part of the sleeve and the two hybs are standard. The other design utilizes one standard hub and a standard sleeve with the brakedrum as part of a special hub.

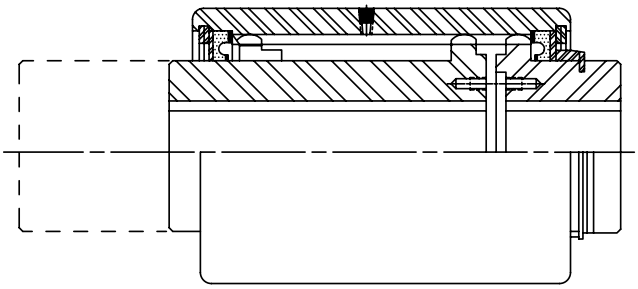




Brake Disc Type

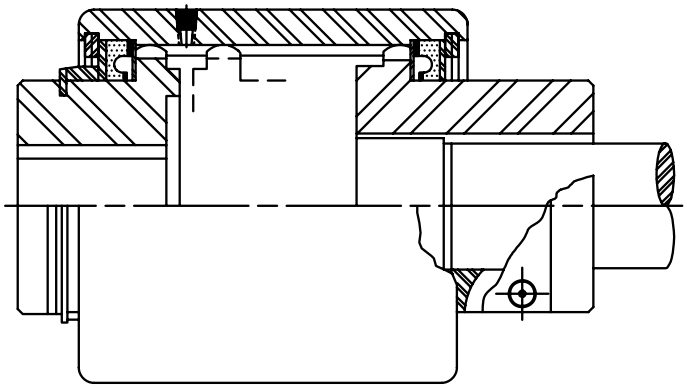
Two different designs of brake disc couplings are illustrated. One shows the brake disc as an intergal part of the sleeve and the two hybs are standard. The other design utilizes one standard hub and a standard sleeve with the brakedrum as part of a special hub.

Lovejoy / Sier-Bath Continuous Sleeve Gear Couplings



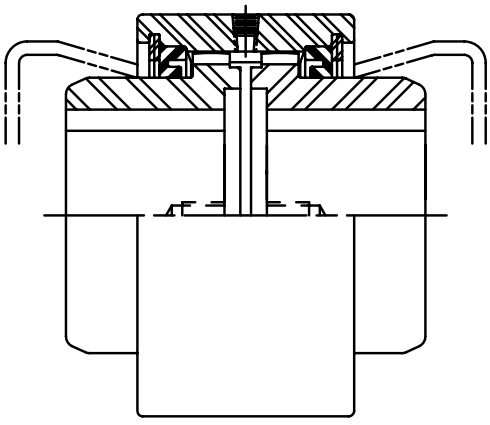
Sliding Hub Type

The sleeve is longer than standard and is designed to allow for a predetermined amount of axial travel on one shaft. The short hub is secured to the sleeve by means of a spacer washer and snap ring which prevents travel. This type is also manufactured to allow for travel of both hubs in the sleeve. This coupling is also available with a rigid type short hub.



Jordan Type

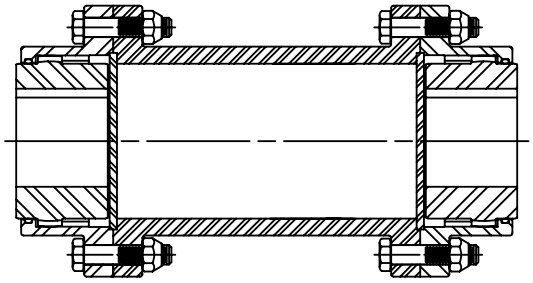
Used on Jordan machines and refiners, this design is similar to the Sliding Hub Type coupling except the long hub is split and secured to the shaft with a bolt. This permits for quick axial adjustment of the Jordan shafts in the hub.



Continuous Lubricated Type

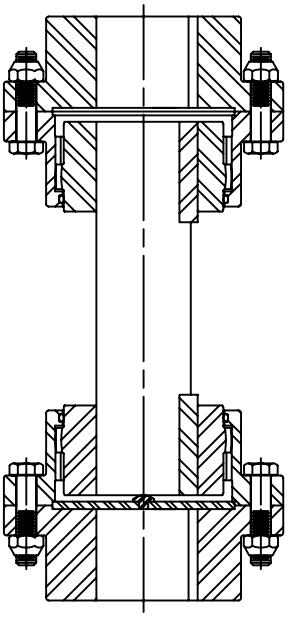
This coupling is adapted from our Standard Type coupling, except the standard seals have been replaced with the special spacer washers. These washers have a snug fit in the sleeve with sufficient clearance on the hub OD to allow for injection of a continuous stream of lubricant.

Lovejoy / Sier-Bath Flanged Sleeve Gear Couplings



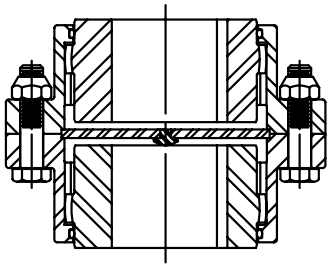
Limited End Float Spacer Type

The addition of plates restricts axial travel to the drive or driven shaft. The spacer makes it possible to remove the hubs from either shaft without disturbing the connected units.



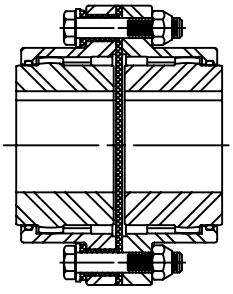
Vertical Floating Shaft Type

The lower coupling has a hardened crowned button inserted in the plate of the lower hub. The entire floating assembly rest on the button. Optional construction of the upper coupling would be a rigid hub on the floating shaft with a flex half on the top.



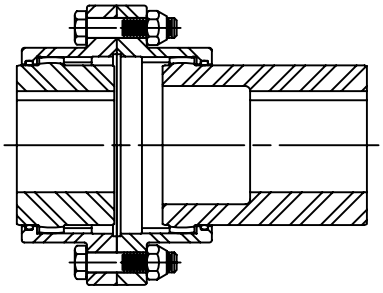
Vertical Type

This coupling has the same horsepower, RPM and misalignment capabilities as the standard couplings of corresponding sizes. A plate with a hardened crowned button rests on the lower shaft which supports the weight of the sleeve.



Insulated Type

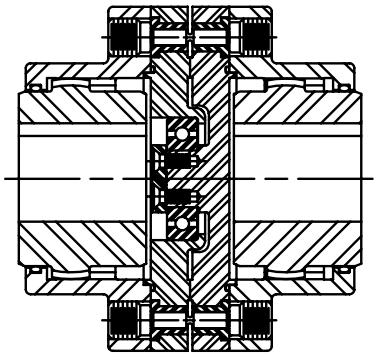
Use of a non-metallic material between flanges and around the bolts prevents any stray currents from one shaft to the other.



Jordan Type

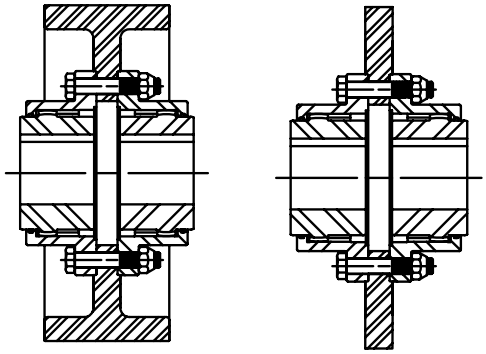
Used on Jordan machines and refiners, this design is similar to the slide type coupling except the long hub is split and secured to the shaft with a bolt clamp. This permits quick axial adjustment of the Jordan shafts i this hub.

Lovejoy / Sier-Bath Flanged Sleeve Gear Couplings



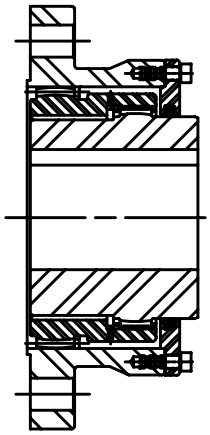
Engineered Shear Pin Type

Shear pin couplings are primarily used to limit transmitted torque to a redetermined load. THis in turn disconnectes the driver and driven shafts if torque exceeds the specified limits. They are especially suited to protect equipment when jams occur. Components are re-useable after pins shear. The coupling will retain lubricant for a short period to allow equipment to be shut down.



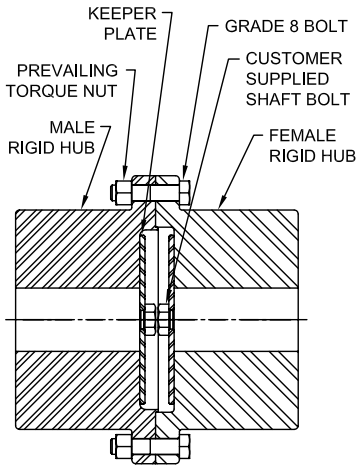
Brakewheel and Brake Disc Type

Replaceable brakewheel and brake disc piloted on the outside diameter of a standard sleeve and/or rigid hub. Offers a choice of applying braking effort to the load or driving motor.



Double Engagement Half Gear Type

Both internal and external teeth in a single sleeve. Can be bolted to a rotating flywheel, shaft or drum to connect driver or driven machine with a shaft extension. This coupling has the same features, ratings and misalignment capability as the standard group of couplings.



Rigid Alloy Steel FARR Type

Male/Female piloted rigid coupling coupling with keeper plates. This coupling is used when a rigid connection is required between the low speed shaft of a gearbox and the head shaft of a conveyor, bucket elevator, mixer or any overhung or suspended load.

Standard Flanged Sleeve Maximum Bores - Inches and Millimeters

Flex Hub Maximum Bores - Interference Fit

	Inch						Metric		
	Max Bore	1 Square Keyway		Max Bore	1 Rectangular Keyway		Max Bore	Metric Keyway	
Size	in	Width in	Depth in	in	Width in	Depth in	mm	Width mm	Depth mm
1	1.625	0.375	0.188	1.750	0.375	0.125	42	12	3.3
1.5	2.125	0.500	0.250	2.250	0.500	0.188	56	16	4.3
2	2.750	0.625	0.313	2.875	0.750	0.250	73	20	4.9
2.5	3.250	0.750	0.375	3.375	0.875	0.313	85	25	5.4
3	4.000	1.000	0.500	4.250	1.000	0.375	107	28	6.4
3.5	4.625	1.250	0.625	4.875	1.250	0.438	125	32	7.4
4	5.375	1.250	0.625	5.625	1.500	0.500	145	36	8.4
4.5	6.000	1.500	0.750	6.500	1.500	0.500	165	40	9.4
5	6.500	1.500	0.750	7.000	1.750	0.750	180	45	10.4
5.5	7.250	1.750	0.875	7.500	1.750	0.750	200	45	10.4
6	8.000	2.000	1.000	8.250	2.000	0.750	225	50	11.4
7	9.000	2.000	1.000	9.500	2.500	0.875	255	56	12.4
8	11.000	2.500	1.250	11.500	3.000	1.000	310	70	14.4
9	12.000	3.000	1.500	12.500	3.000	1.000	340	80	15.4
10				13.750	3.500	1.250	355	80	15.4
11				15.500	4.000	1.500	410	90	17.4
12				17.000	4.000	1.500	435	90	17.4
13				18.250	5.000	1.750	480	100	19.5
14				19.500	5.000	1.750			
15				21.000	5.000	1.750			
16				22.500	6.000	2.000			
18				25.500	6.000	2.000			
20				28.000	7.000	2.500			
22				31.000	8.000	2.750			
24				34.000	9.000	3.000			
26				37.000	9.000	3.000			
28				40.000	10.000	3.500			
30				42.000	10.000	3.500			

Notes: ■ Rectangular (reduced) keyways preferred for bores above 6-1/2 inches.
■ Maximum bores may be reduced for clearance fit bore applications.

Rigid Hub Maximum Bores – Interference Fit

Rigid Hub Maximum Bores - Interference Fit

	Inch						Metric		
	Max Bore	1 Square Keyway		Max Bore	1 Rectangular Keyway		Max Bore	Metric Keyway	
Size	in	Width in	Depth in	in	Width in	Depth in	mm	Width mm	Depth mm
1	2.125	0.500	0.250	2.250	0.500	0.188	56	16	4.3
1.5	2.813	0.750	0.375	3.062	0.750	0.250	76	22	5.4
2	3.500	0.875	0.438	3.750	0.875	0.313	95	25	5.4
2.5	4.250	1.000	0.500	4.500	1.000	0.375	114	32	7.4
3	4.875	1.250	0.625	5.250	1.250	0.438	134	36	8.4
3.5	5.625	1.500	0.750	5.875	1.500	0.500	150	36	8.4
4	6.500	1.500	0.750	6.500	1.500	0.500	176	45	10.4
4.5	7.375	1.750	0.875	7.625	2.000	0.750	202	50	11.4
5	8.375	2.000	1.000	8.750	2.000	0.750	230	50	11.4
5.5	9.250	2.500	1.250	9.500	2.500	0.875	260	56	12.4
6	10.125	2.500	1.250	10.500	2.500	0.875	285	63	12.4
7	11.250	3.000	1.500	12.000	3.000	1.000	320	70	14.4
8	13.500	3.500	1.750	14.000	3.500	1.250	375	80	15.4
9	15.000	3.500	1.750	15.500	4.000	1.500	415	90	17.4
10				17.000	4.000	1.500	455	100	19.5
11				18.500	5.000	1.750	500	100	19.5
12				20.250	5.000	1.750			
13				22.000	5.000	1.750			
14				23.500	6.000	2.000			
15				24.250	6.000	2.000			
16				26.000	6.000	2.000			
18				28.000	7.000	2.500			
20				31.000	8.000	2.750			
22				34.000	8.000	2.750			
24				37.000	9.000	3.000			
26				40.000	10.000	3.500			
28				43.000	11.000	3.750			
30				46.000	11.000	3.750			

Notes: ■ Rectangular (reduced) keyways preferred for bores above 6-1/2 inches.
■ Maximum bores may be reduced for clearance fit bore applications.

G

Why Coupling Grease?

Adequate lubrication is essential for satisfactory gear coupling operation. Lovejoy Gear Coupling Grease is specifically designed for gear coupling applications to increase coupling life while drastically reducing maintenance time. Its high viscosity base oil and tackifier combine to keep the grease in place and prevent separation and it is in complete compliance with NSI/AGMA 9001-B97 lubrication recommendations.

Lovejoy Coupling Grease is dark brown in color and manufactured with a lithium soap/polymer thickener, which has superior resistance to oil separation when subjected to high centrifugal forces normally found in couplings. Bearing or general purpose greases tend to separate and lose effectiveness due to high centrifugal forces on the various ingredients at high rotational speeds. These high centrifugal forces encountered in couplings separate the base oil from the thickeners. Heavy thickeners, which have no lubrication qualities, accumulate in the gear tooth mesh area resulting in premature coupling failure. Lovejoy Gear Coupling Grease is designed to highly resistant to centrifugal separation of the oil and thickener, which allows the lubricant to be used for a relatively long period of time.

One of the secrets to the success of Lovejoy Gear Coupling Grease is the variable consistency throughout the working cycle of the application. The consistency of our gear coupling grease changes with the operating conditions. Working of the lubricant under actual service conditions causes the grease to become semi-fluid, functionally solash lubricating the wear surfaces of the coupling. As the grease cools, it returns to the original consistency, thereby preventing leakage.

Lovejoy Gear Coupling Grease is available from stock in 14 oz. cartridges, 1 lb. and 5 lb. cans.

Features

- Minimizing of coupling wear
- Resistance to water washing
- Corrosion and rust protection
- High load carrying capabilities
- Extended relubrication frequency
- Use at temperatures up to 325° F
- Staying in place under high speeds
- Resistance to centrifugal separation
- Reduction in down time & maintenance cost

Lovejoy Gear Coupling Grease has a consistency which overlaps the NLGI grades 0 and 1. This grease is specially formulated with a lithium/polymer thickener and fortified with corrosion, oxidation, extreme pressure, and a effective rust inhibitor additive package.



Typical Properties of Lovejoy Gear Coupling Grease

NLGI Grade	0/1
Appearance	Dark Brown, Tacky
Lithium Soap / Polymer, wt%	10.0
Viscosity	
@ 40° C, cST	>3200
@ 100° C, cSt	>50
Penetration. Dmm	
Worked, 60x	350
Worked, 10,000, % Change	10
Dropping Point, ° F	320° (160° C)
Centrifugal Oil Separation, vol%	None
Water Spray-Off, wt%	>3
Rust Protection	Pass
Timken, OK Load, lbs	40+
Four-Bal EP	
Load Wear Index, kgf	68
Weld Point, kgf	400
Four-Ball Wear, mm	
1 hr, 75° C, 1200 RPM, 40 kgf	0.4
Guide to Usable Temperature	
Min, ° F	Below -20° (-29° C)
Continuous Service, Max, ° F	250° (121° C)
Short Exposure, Max, ° F	325° (163° C)

HercuFlex by Lovejoy

FX Series

CX Series

FXL Series

RA/RAHS Series



The Reinvention of the Gear Coupling

Gear Coupling Selection Process

Factors Affecting Selection

The following is a list of the information necessary to assist in making a coupling selection. Not all of these items will come into play in all selection processes. These items include, but are not limited to:

- Application details
- Type of motor and driven equipment
- Motor horsepower or KW
- Operating/coupling speed
- Shaft sizes and separation
- Space and size constraints
- Environment (temperature, chemicals, etc)
- Balance requirements
- Special modifications

Steps In Selecting A Gear Coupling

Refer to the gear coupling specifications charts displayed with each type of coupling throughout this catalog. The pictures and charts provide visualization, specifications, and dimensional data for Lovejoy's HercuFlex gear coupling products. Typically start with an FX Type flanged gear coupling or a CX Type continuous sleeve gear coupling and proceed from there.

Step 1: Review the gear coupling series and type as selected to ensure the selection meets application requirements.

Step 2: Determine the nominal application torque in in–lbs by using the following formula:

$$\text{Application Torque (in–lb)} = \frac{(HP \times 63025)}{RPM}$$

or

$$Nm = \frac{(KW \times 9550)}{RPM}$$

Step 3: Review the Application Service Factor chart for the service factor number associated with the application where this coupling will be used. Multiply the application torque by the application service factor to determine the total torque required for the coupling selection.

Step 4: Compare the required total torque value with the nominal torque capacity listed in the Gear Coupling Selection chart for the desired coupling type.

Step 5: Check that the maximum bore size and the maximum RPM of the coupling type selected to ensure the coupling will meet these application requirements.

Step 6: Note any special requirements including the BSE dimension for floating shaft and spacer types, shear pin torque, slide coupling details, mill motor tapered shaft data, and any other pertinent information.

Consult with Lovejoy for any unique applications.

Application Service Factors

HercuFlex by Lovejoy

Agitators	
Pure Liquids	1.0
Liquids—Variable Density	1.0
Blowers	
Centrifugal	1.0
Lobe	1.2
Can Filling Machines	1.0
Car Dumpers	2.0
Car Pullers, Intermittent Duty	1.5
Compressors	
Centrifugal	1.0
Reciprocating	2.2
Multi-Cylinder	2.0
Single Cylinder	2.0
Conveyors, Uniformly Loaded or Fed	
Assembly	1.2
Belt	1.2
Screw	1.2
Conveyors, Heavy Duty	
Not Uniformly Fed Assembly	1.5
Belt	1.5
Oven	1.5
Reciprocating	2.0
Screw	1.5
Shaker	1.5
Cranes and Hoists[1]	
Main Hoists	2.0
Reversing	2.0
Skip Hoists	2.0
Trolley Drive	2.0
Bridge Drive	2.0
Crushers	
Ore	3.0
Stone	3.0
Dredges	
Conveyors	2.0
Cutter Head Drives	2.0
Maneuvering Winches	2.0
Pumps	2.0
Fans	
Centrifugal	1.0
Cooling Towers Forced Draft	1.5
Feeders	
Screw	1.5
Generators	
Not Welding	1.0
Welding	1.5
Hammer Mills	2.0
Laundry Washers	
Reversing	1.5
Lumber Industry	
Barkers—Drum Type	2.0
Edger Feed	2.0
Live Rolls	2.0
Log Haul—Incline	2.0
Log Haul—Well Type	2.0
Off Bearing Rolls	2.0
Planer Feed Chains	1.75
Planer Tilting Hoist	1.75
Planer Floor Chains	1.75
Slab Conveyor	1.5
Sorting Table	1.5
Trimmer Feed	1.5
Machine Tools	
Bending Roll	2.0
Punch Press, Gear Driven	2.0
Tapping Machines	2.0
Main Drives	1.5
Auxiliary Drives	1.5
Metal Mills	
Draw Bench—Carriage	2.0
Draw Bench—Main Drive	2.0
Forming Machines	2.0
Slitters	1.5
Table Conveyors	
Non-Reversing	2.25
Reversing	2.5
Wire Drawing & Flattening Machine	2.0
Wire Winding Machine	1.75
Metal Rolling Mills	
Blooming Mills	2.5
Coilers, hot mill	2.0
Coilers, cold mill	1.5
Cold Mills	2.0
Cooling Beds	1.75
Door Openers	2.0
Draw Benches	2.0
Edger Drives	1.75
Feed Rolls, Reversing Mills	3.5
Furnace Pushers	2.5
Hot Mills	3.0
Ingot Cars	2.5
Kick-outs	2.5
Manipulators	3.0
Merchant Mills	3.0
Piercers	3.0
Pusher Rams	2.5
Reel Drives	1.75
Reel Drums	2.0
Reelers	3.0
Rod and Bar Mills	3.0
Roughing Mill Delivery Table	3.0
Runout Tables	2.5
Saws, hot & cold	2.5
Screwdown Drives	3.0
Skelp Mills	3.0
Slitters	3.0
Slabing Mills	1.75
Soaking Pit Cover Drives	3.0
Straighteners	2.5
Tables, transfer & runout	2.5
Thrust Block	3.0
Traction Drive	3.0
Tube Conveyor Rolls	2.5
Unscramblers	2.5
Wire Drawing	1.75
Mills, Rotary Type	
Ball	2.25
Dryers & Coolers	2.0
Hammer	1.75
Kilns	2.0
Pebble & Rod	2.0
Pug	1.75
Tumbling Barrels	2.0
Mixers	
Concrete Mixers, Continuous	1.5
Concrete Mixers, Intermittent	2.0
Oil Industry	
Oil Well Pumping	2.0
Rotary Kilns	2.0
Paper Mills	
Agitators, Mixers	1.5
Barker Auxiliaries, Hydraulic	2.0
Barker Mechanical	2.0
Barking Drum Spur Gear Only	2.0
Beater & Pulper	1.75
Bleacher	1.0
Calenders	2.0
Calenders, Super	1.5
Chippers	2.5
Coaters	1.0
Converting Machines, except Cutters, Platers	1.5
Conveyors	1.5
Couch Roll	1.75
Cutters, Platters	2.0
Cylinders	1.75
Disc Refiners	1.75
Dryers	1.75
Felt Stretcher	1.25
Felt Whipper	2.0
Jordans	1.75
Line Shaft	1.5
Log Haul	2.0
Pulp Grinder	1.75
Press Roll	2.0
Reel	1.5
Stock Chests	1.5
Suction Roll	1.75
Washers & Thickeners	1.5
Winders	1.5
Printing Presses	1.5
Pumps	
Centrifugal	1.0
Reciprocating Single Acting 3 or more Cylinders	1.5
Double Acting 2 or more Cylinders	2.0
Rotary, Gear Type, Lobe Vane	1.5
Rubber Industry	
Mixer	2.0
Rubber Calender	2.0
Screens	
Rotary, Stone or Gravel	1.5
Steering Gear	1.0
Stokers	1.0
Textile Industry	
Dryers	1.5
Dyeing Machinery	1.5
Windlass	2.0

Notes:
- 1 indicates: If people are transported, Lovejoy does not recommend and will not warranty the use of the coupling.
- Values contained in the table should be used as a general guide and are to be applied to smooth power sources such as electric motors and steam turbines.
- For drives involving internal combustion engines add 1.0 to the values listed.

FX Series

Flange Style Gear Coupling

By incorporating the latest advances in Finite Element Analysis technology, Lovejoy has revolutionized the Gear Coupling. Increased nominal torque, larger maximum bore size and longer service life are just a few of the many advantages of the HercuFlex coupling. Despite the advanced nature of these improvements, the HercuFlex Gear Coupling still utilizes the standard AGMA flange interface to ensure field interchangeability.



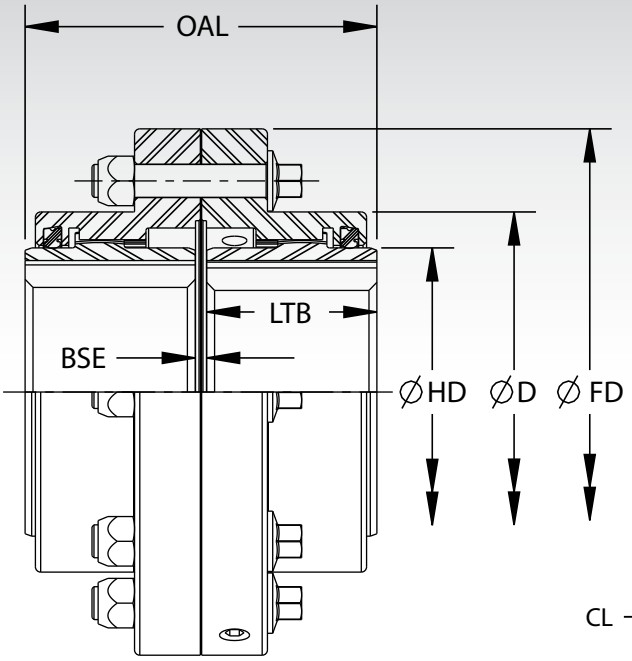
Key Features

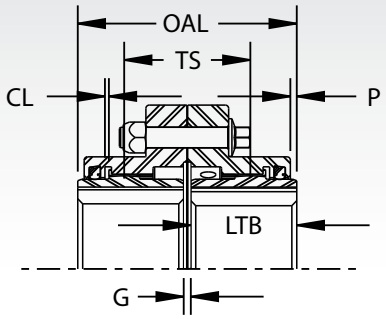
- Unequaled bore and torque capacity
- 1.5° of misalignment per gear mesh
- Improved fastener corrosion resistance
- Advanced seal design intensifying contamination resistance
- Interchangeable with standard AGMA flange interface



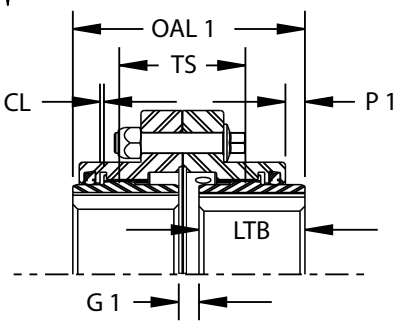


Size	Nominal Torque (in-lb)	Nominal Torque (N-m)	Max Bore (in)	Max Bore (mm)	Max Running Speed (RPM)	
					Unbal	Bal
1	11,300	1,277	1.875	48	6,000	9,000
1.5	26,100	2,949	2.438	62	5,500	8,250
2	44,850	5,067	3.063	78	5,000	7,500
2.5	79,700	9,005	3.625	92	4,400	6,600
3	135,700	15,332	4.250	108	4,000	6,000
3.5	203,550	22,998	5.000	127	3,500	5,250
4	311,540	35,199	5.875	149	3,000	4,500
4.5	427,460	48,296	6.750	171	2,700	4,050
5	584,890	66,084	7.750	197	2,500	3,750
5.5	771,300	87,145	8.625	220	2,200	3,300
6	1,207,500	136,429	9.500	241	2,100	3,150
7	1,638,750	185,154	11.250	287	2,000	3,000

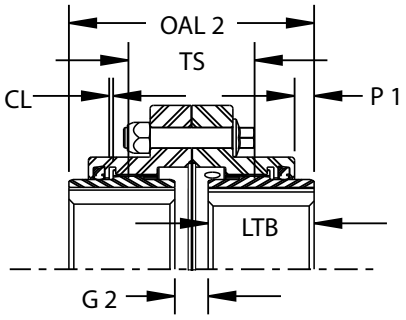




Normal Hub Arrangement



1 Hub Reversed



2 Hubs Reversed

FX Dimensions (Standard Hubs)

Size	OAL (in)	OAL (mm)	OAL 1 (in)	OAL 1 (mm)	OAL 2 (in)	OAL 2 (mm)	LTB (in)	LTB (mm)	BSE (in)	BSE (mm)	HD (in)	HD (mm)	D (in)	D (mm)
1	3.51	89.2	3.82	97.0	4.13	104.9	1.69	42.9	0.13	3.3	2.49	63.3	3.26	82.8
1.5	4.01	101.9	4.25	108.0	4.49	114.0	1.94	49.3	0.13	3.3	3.29	83.5	4.11	104.3
2	5.01	127.3	5.69	144.5	6.37	161.8	2.44	62.0	0.13	3.3	4.21	106.9	5.10	129.6
2.5	6.25	158.8	7.03	178.6	7.81	198.4	3.03	77.0	0.19	4.8	4.97	126.4	6.17	156.6
3	7.37	187.2	8.04	204.2	8.71	221.2	3.59	91.2	0.19	4.8	5.88	149.4	7.17	182.0
3.5	8.63	219.2	9.20	233.7	9.77	248.2	4.19	106.4	0.25	6.4	6.87	174.5	8.35	212.2
4	9.75	247.7	10.44	265.2	11.13	282.7	4.75	120.7	0.25	6.4	8.10	205.7	9.83	249.8
4.5	10.93	277.6	11.99	304.5	13.05	331.5	5.31	134.9	0.31	7.9	9.09	230.9	10.81	274.7
5	12.37	314.2	13.72	348.5	15.07	382.8	6.03	153.2	0.31	7.9	10.24	260.0	12.13	308.0
5.5	14.13	358.9	15.35	389.9	16.57	420.9	6.91	175.5	0.31	7.9	11.28	286.5	13.13	333.4
6	15.13	384.3	16.54	420.1	17.95	455.9	7.41	188.2	0.31	7.9	12.29	312.2	14.38	365.2
7	17.76	451.1	19.07	484.4	20.38	517.7	8.69	220.7	0.38	9.7	14.30	363.3	16.69	423.9

Size	FD (in)	FD (mm)	TS (in)	TS (mm)	CL (in)	CL (mm)	P (in)	P (mm)	P 1 (in)	P 1 (mm)	G (in)	G (mm)	G 1 (in)	G 1 (mm)	G 2 (in)	G 2 (mm)
1	4.56	115.8	2.13	54.1	0.07	1.7	0.01	0.3	0.32	8.1	0.13	3.3	0.44	11.2	0.75	19.1
1.5	6.00	152.4	2.31	58.7	0.07	1.8	0.12	3.0	0.36	9.1	0.13	3.3	0.37	9.4	0.61	15.5
2	7.00	177.8	3.25	82.6	0.07	1.8	0.12	3.0	0.80	20.3	0.13	3.3	0.81	20.6	1.49	37.8
2.5	8.38	212.9	4.00	101.6	0.10	2.6	0.18	4.6	0.96	24.4	0.19	4.8	0.97	24.6	1.75	44.5
3	9.44	239.8	4.45	113.0	0.09	2.3	0.37	9.4	1.04	26.4	0.19	4.8	0.86	21.8	1.53	38.9
3.5	11.00	279.4	5.01	127.3	0.10	2.4	0.50	12.7	1.07	27.2	0.25	6.4	0.82	20.8	1.39	35.3
4	12.50	317.5	5.69	144.5	0.13	3.4	0.62	15.7	1.31	33.3	0.25	6.4	0.94	23.9	1.63	41.4
4.5	13.63	346.2	6.68	169.7	0.14	3.5	0.65	16.5	1.71	43.4	0.31	7.9	1.37	34.8	2.43	61.7
5	15.31	388.9	7.69	195.3	0.20	5.0	0.65	16.5	2.00	50.7	0.31	7.9	1.66	42.2	3.01	76.5
5.5	16.75	425.5	8.44	214.4	0.19	4.9	1.06	26.9	2.28	57.9	0.31	7.9	1.53	38.9	2.75	69.8
6	18.00	457.2	9.13	231.9	0.16	4.0	0.90	22.9	2.31	58.7	0.31	7.9	1.72	43.7	3.13	79.5
7	20.75	527.1	10.38	263.7	0.19	4.8	1.50	38.0	2.81	71.2	0.38	9.7	1.69	42.9	3.00	76.2

CX Series

Continuous Sleeve Style Gear Coupling

The HercuFlex coupling family has expanded to include the continuous sleeve gear coupling. Utilizing the same industry leading design expertise as seen in the FX style, Lovejoy has incorporated multiple innovations to yield previously unseen bore and torque capacity in the Continuous Sleeve gear coupling segment.



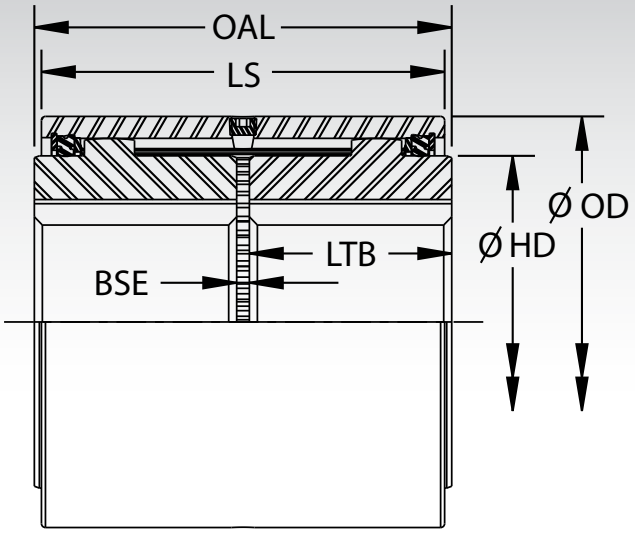
Key Features

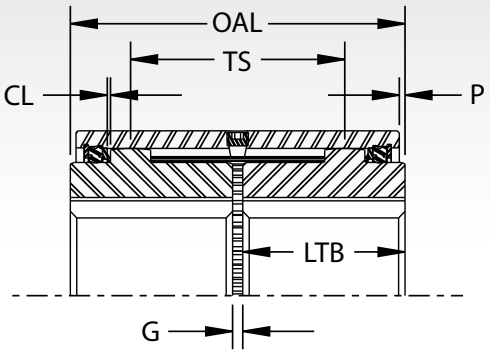
- Unequaled bore and torque capacity
- 1.5° of misalignment per gear mesh
- Improved hardware corrosion resistance
- Advanced seal design intensifying contamination resistance



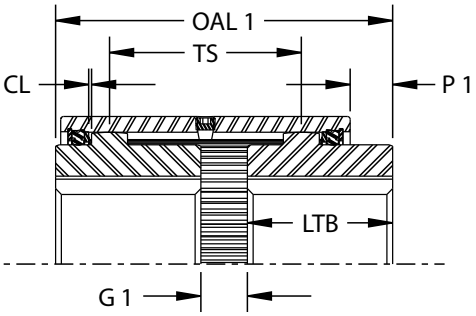


Size	Nominal Torque (in-lb)	Nominal Torque (N-m)	Max Bore (in)	Max Bore (mm)	Max Running Speed (RPM)	
					Unbal	Bal
1	11,300	1,277	1.875	48	6,000	9,000
1.5	26,100	2,949	2.438	62	5,500	8,250
2	44,850	5,067	3.063	78	5,000	7,500
2.5	79,700	9,005	3.625	92	4,400	6,600
3	135,700	15,332	4.250	108	4,000	6,000
3.5	203,550	22,998	5.000	127	3,500	5,250
4	311,540	35,199	5.875	149	3,000	4,500
4.5	427,460	48,296	6.750	171	2,700	4,050
5	584,890	66,084	7.750	197	2,500	3,750
5.5	771,300	87,145	8.625	220	2,200	3,300
6	1,207,500	136,429	9.500	241	2,100	3,150
7	1,638,750	185,154	11.250	287	2,000	3,000

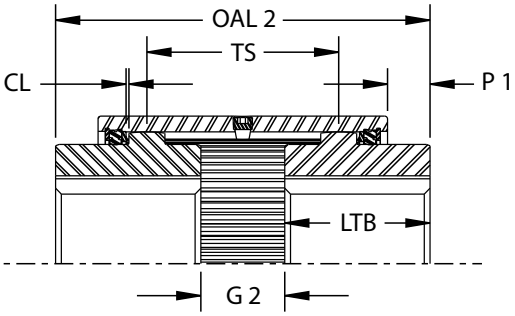




Normal Hub Arrangement



1 Hub Reversed



2 Hubs Reversed

CX Dimensions (Standard Hubs)

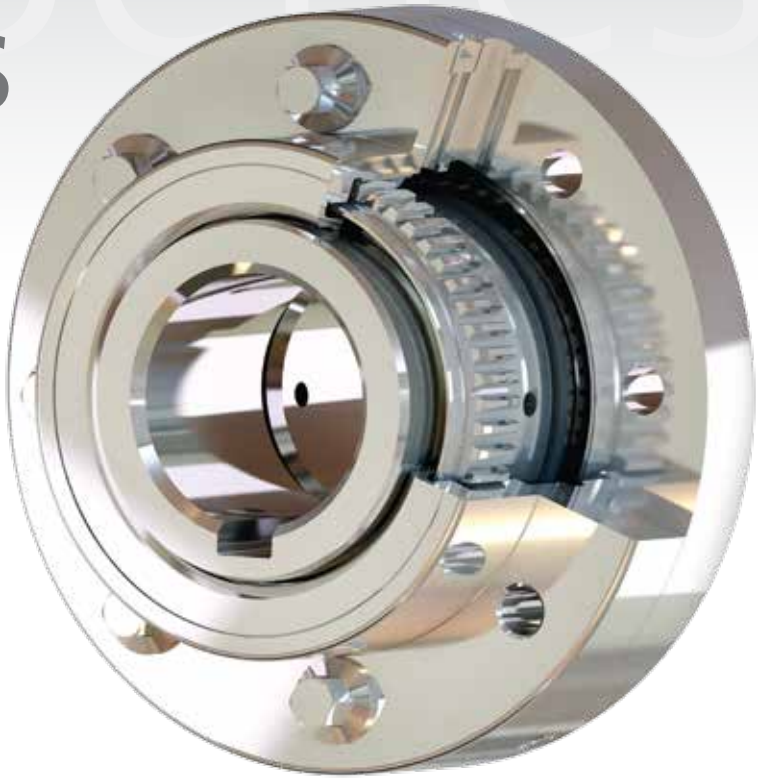
Size	OAL (in)	OAL (mm)	OAL 1 (in)	OAL 1 (mm)	OAL 2 (in)	OAL 2 (mm)	LTB (in)	LTB (mm)	BSE (in)	BSE (mm)	HD (in)	HD (mm)	OD (in)	OD (mm)	TS (in)	TS (mm)
1	3.63	92.2	3.94	100.1	4.25	108.0	1.69	42.9	0.13	3.3	2.49	63.3	3.26	82.8	2.13	54.1
1.5	4.01	101.9	4.25	108.0	4.49	114.0	1.94	49.3	0.13	3.3	3.29	83.5	4.11	104.3	2.31	58.7
2	5.01	127.3	5.69	144.5	6.37	161.8	2.44	62.0	0.13	3.3	4.21	106.9	5.10	129.6	3.25	82.6
2.5	6.25	158.8	7.03	178.6	7.81	198.4	3.03	77.0	0.19	4.8	4.97	126.4	6.17	156.6	4.00	101.6
3	7.37	187.2	8.04	204.2	8.71	221.2	3.59	91.2	0.19	4.8	5.88	149.4	7.17	182.0	4.45	113.0
3.5	8.63	219.2	9.20	233.7	9.77	248.2	4.19	106.4	0.25	6.4	6.87	174.5	8.35	212.2	5.01	127.3
4	9.75	247.7	10.44	265.2	11.13	282.7	4.75	120.7	0.25	6.4	8.10	205.7	9.83	249.8	5.69	144.5
4.5	10.93	277.6	11.99	304.5	13.05	331.5	5.31	134.9	0.31	7.9	9.09	230.9	10.81	274.7	6.68	169.7
5	12.37	314.2	13.72	348.5	15.07	382.8	6.03	153.2	0.31	7.9	10.24	260.0	12.13	308.0	7.69	195.3
5.5	14.13	358.9	15.35	389.9	16.57	420.9	6.91	175.5	0.31	7.9	11.28	286.5	13.13	333.4	8.44	214.4
6	15.13	384.3	16.54	420.1	17.95	455.9	7.41	188.2	0.31	7.9	12.29	312.2	14.38	365.2	9.13	231.9
7	17.76	451.1	19.07	484.4	20.38	517.7	8.69	220.7	0.38	9.7	14.30	363.3	16.69	423.9	10.38	263.7

Size	P (in)	P (mm)	P 1 (in)	P 1 (mm)	G (in)	G (mm)	G 1 (in)	G 1 (mm)	G 2 (in)	G 2 (mm)	LS (in)	LS (mm)	CL (in)	CL (mm)
1	-0.12	-3.0	0.19	4.8	0.13	3.3	0.44	11.2	0.75	19.1	3.63	92.2	0.06	1.5
1.5	0.05	1.3	0.29	7.4	0.13	3.3	0.37	9.4	0.61	15.5	3.90	98.9	0.06	1.5
2	0.00	0.0	0.68	17.3	0.13	3.3	0.81	20.6	1.49	37.8	5.00	126.9	0.06	1.5
2.5	0.10	2.6	0.88	22.4	0.19	4.8	0.97	24.6	1.75	44.5	6.04	153.3	0.06	1.5
3	0.37	9.3	1.04	26.3	0.19	4.8	0.86	21.8	1.53	38.9	6.63	168.3	0.06	1.5
3.5	0.66	16.7	1.23	31.2	0.25	6.4	0.82	20.8	1.39	35.3	7.31	185.6	0.09	2.3
4	0.77	19.5	1.46	37.0	0.25	6.4	0.94	23.9	1.63	41.4	8.21	208.5	0.09	2.3
4.5	0.68	17.3	1.74	44.2	0.31	7.9	1.37	34.8	2.43	61.7	9.56	242.7	0.09	2.3
5	0.60	15.3	1.95	49.6	0.31	7.9	1.66	42.2	3.01	76.5	11.16	283.3	0.13	3.2
5.5	0.98	25.0	2.20	55.9	0.31	7.9	1.53	38.9	2.75	69.8	12.16	308.7	0.13	3.2
6	0.82	20.9	2.23	56.7	0.31	7.9	1.72	43.7	3.13	79.5	13.48	342.3	0.13	3.2
7	1.46	37.0	2.77	70.3	0.38	9.7	1.69	42.9	3.00	76.2	14.84	376.8	0.13	3.2

FXL Series

Labyrinth Seal Flanged Gear Coupling

In extreme high contamination environments, Lovejoy has transformed the HercuFlex coupling to integrate an advanced seal design when performance degradation is not tolerable. This advanced gear coupling still encompasses the torque and misalignment capacities that make the HercuFlex coupling an industry leader.



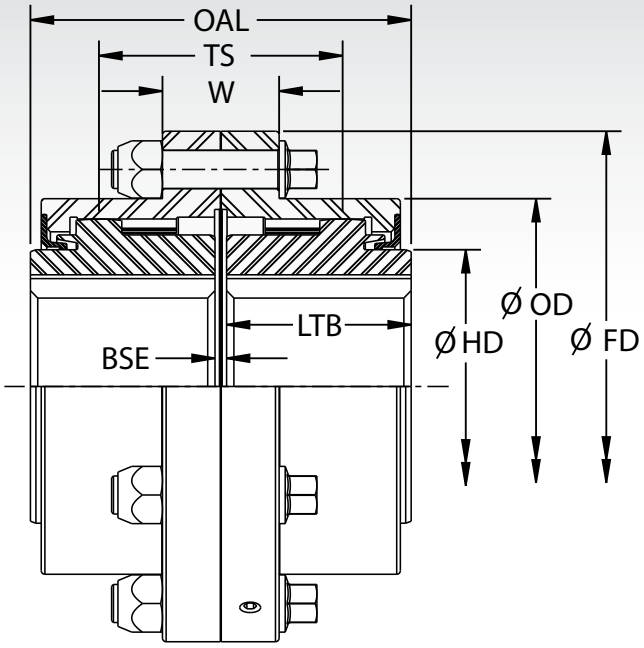
Key Features

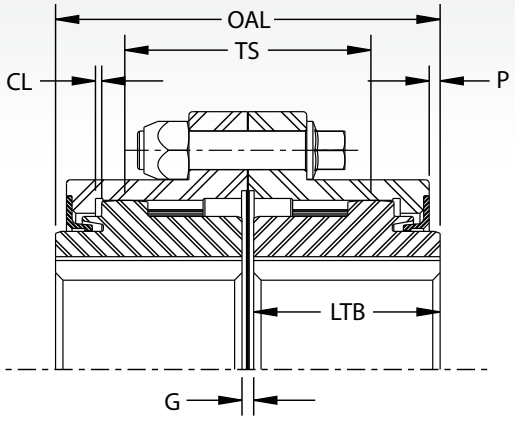
- Unequaled bore and torque capacity
- 1.5° of misalignment per gear mesh
- Improved fastener corrosion resistance
- Advanced seal design intensifying contamination resistance
- Interchangeable with standard AGMA flange interface





Size	Nominal Torque (in-lb)	Nominal Torque (N-m)	Max Bore (in)	Max Bore (mm)	Max Running Speed (RPM)	
					Unbal	Bal
1	8,000	904	1.563	40	6,000	9,000
1.5	15,000	1,695	2.125	55	5,500	8,250
2	39,000	4,406	2.813	71	5,000	7,500
2.5	69,300	7,830	3.370	85	4,400	6,600
3	118,000	13,332	4.063	100	4,000	6,000
3.5	177,000	19,998	4.750	120	3,500	5,250
4	270,900	30,608	5.675	145	3,000	4,500
4.5	370,700	41,883	6.375	167	2,700	4,050
5	508,600	57,464	7.500	190	2,500	3,750
5.5	670,700	75,779	8.375	212	2,200	3,300
6	1,050,000	118,634	9.375	238	2,100	3,150
7	1,425,000	161,003	11.000	280	2,000	3,000





Normal Hub Arrangement

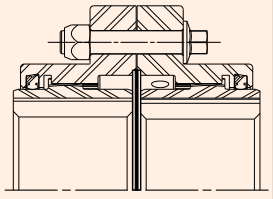
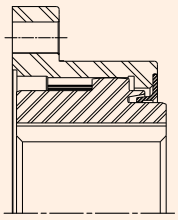
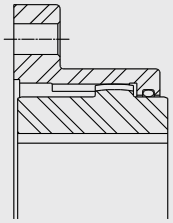
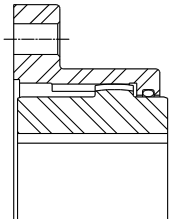
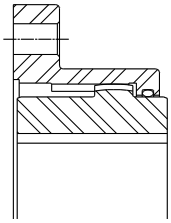
FXL Dimensions (Standard Hubs)

Size	OAL (in)	OAL (mm)	LTB (in)	LTB (mm)	BSE (in)	BSE (mm)	HD (in)	HD (mm)	OD (in)	OD (mm)	TS (in)	TS (mm)
1	3.63	92.2	1.69	42.9	0.13	3.3	2.06	52.3	3.26	82.8	2.13	54.1
1.5	4.01	101.9	1.94	49.3	0.13	3.3	2.85	72.4	4.11	104.3	2.31	58.7
2	5.01	127.3	2.44	62.0	0.13	3.3	3.75	95.2	5.10	129.6	3.25	82.6
2.5	6.25	158.8	3.03	77.0	0.19	4.8	4.49	114.0	6.17	156.6	4.00	101.6
3	7.37	187.2	3.59	91.2	0.19	4.8	5.38	136.6	7.17	182.0	4.45	113.0
3.5	8.63	219.2	4.19	106.4	0.25	6.4	6.34	161.1	8.35	212.2	5.01	127.3
4	9.75	247.7	4.75	120.7	0.25	6.4	7.41	188.3	9.83	249.8	5.69	144.5
4.5	10.93	277.6	5.31	134.9	0.31	7.9	8.38	212.8	10.81	274.7	6.68	169.7
5	12.37	314.2	6.03	153.2	0.31	7.9	9.51	241.5	12.13	308.0	7.69	195.3
5.5	14.13	358.9	6.91	175.5	0.31	7.9	10.52	267.3	13.13	333.4	8.44	214.4
6	15.13	384.3	7.41	188.2	0.31	7.9	11.55	293.5	14.38	365.2	9.13	231.9
7	17.76	451.1	8.69	220.7	0.38	9.7	13.54	343.8	16.69	423.9	10.38	263.7

Size	G (in)	G (mm)	FD (in)	FD (mm)	TS (in)	TS (mm)	CL (in)	CL (mm)	P (in)	P (mm)
1	0.13	3.3	4.56	115.8	2.13	54.1	0.07	1.7	0.01	0.3
1.5	0.13	3.3	6.00	152.4	2.31	58.7	0.07	1.8	0.12	3.0
2	0.13	3.3	7.00	177.8	3.25	82.6	0.07	1.8	0.12	3.0
2.5	0.19	4.8	8.38	212.9	4.00	101.6	0.10	2.6	0.18	4.6
3	0.19	4.8	9.44	239.8	4.45	113.0	0.09	2.3	0.37	9.4
3.5	0.25	6.4	11.00	279.4	5.01	127.3	0.10	2.4	0.50	12.7
4	0.25	6.4	12.50	317.5	5.69	144.5	0.13	3.4	0.62	15.7
4.5	0.31	7.9	13.63	346.2	6.68	169.7	0.14	3.5	0.65	16.5
5	0.31	7.9	15.31	388.9	7.69	195.3	0.20	5.0	0.65	16.5
5.5	0.31	7.9	16.75	425.5	8.44	214.4	0.19	4.9	1.06	26.9
6	0.31	7.9	18.00	457.2	9.13	231.9	0.16	4.0	0.90	22.9
7	0.38	9.7	20.75	527.1	10.38	263.7	0.19	4.8	1.50	38.0

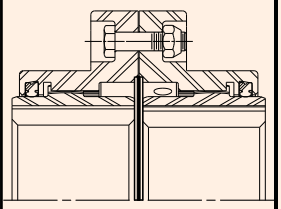
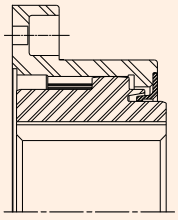
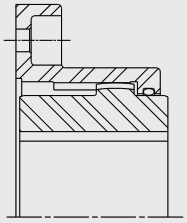
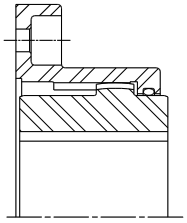
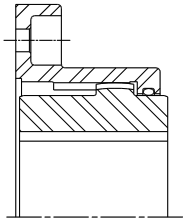
Lovejoy® HercuFlex Gear Coupling Flange Interchangeability*

EXPOSED BOLTS

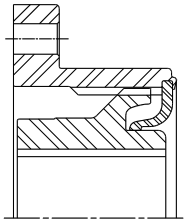
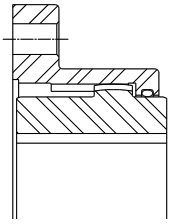
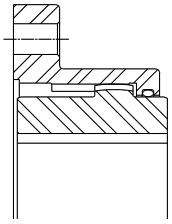
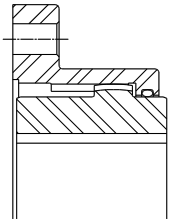
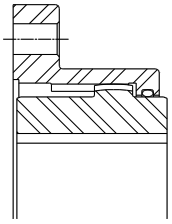
Lovejoy® FX Series				Lovejoy® FXL Series				Lovejoy® F Series				FALK® 1000 Series				FALK® GF Series			
Size	Torque Rating (in-lb)	Max Bore (in)	Max Bore (mm)	Size	Torque Rating (in-lb)	Max Bore (in)	Max Bore (mm)	Size	Torque Rating (in-lbf)	Max Bore (in)	Max Bore (mm)	Size	Torque Rating (in-lbf)	Max Bore (in)	Max Bore (mm)	Size	Torque Rating (in-lbf)	Max Bore (in)	Max Bore (mm)
1	11,300	1.875	48	1	8,000	1.563	40	1	7,600	1.625	42	1010G	10,080	1.875	48	1GF	7,600	1.625	41
1.5	26,100	2.438	62	1.5	15,000	2.125	55	1.5	18,900	2.125	56	1015G	20,790	2.375	60	1-½GF	18,900	2.125	54
2	44,850	3.063	78	2	39,000	2.813	71	2	31,500	2.750	73	1020G	37,800	2.875	73	2GF	31,500	2.750	70
2.5	79,700	3.625	92	2.5	69,300	3.375	85	2.5	56,700	3.250	85	1025G	66,150	3.625	92	2-½GF	56,700	3.250	83
3	135,700	4.250	108	3	118,000	4.063	100	3	94,500	4.000	107	1030G	107,100	4.125	105	3GF	101,000	4.000	102
3.5	203,550	5.000	127	3.5	177,000	4.750	120	3.5	151,200	4.625	125	1035G	163,800	4.875	124	3-½GF	151,300	4.500	114
4	311,540	5.875	149	4	270,900	5.688	145	4	220,500	5.375	145	1040G	270,900	5.750	146	4GF	236,000	5.375	137
4.5	427,460	6.750	171	4.5	370,700	6.375	162	4.5	302,400	6.000	165	1045G	371,700	6.750	171	4-½GF	324,000	6.500	165
5	584,890	7.750	197	5	508,600	7.500	190	5	434,700	6.500	180	1050G	500,900	7.375	187	5GF	441,000	7.000	178
5.5	771,300	8.625	220	5.5	670,700	8.375	212	5.5	573,300	7.500	200	1055G	655,200	8.250	210	5-½GF	580,000	7.750	197
6	1,207,500	9.500	241	6	1,050,000	9.375	238	6	749,700	8.250	225	1060G	800,100	9.125	232	6GF	759,000	8.750	222
7	1,638,750	11.250	287	7	1,425,000	11.000	280	7	1,008,000	9.500	255	1070G	1,197,000	10.000	254				

SHROUDED BOLTS

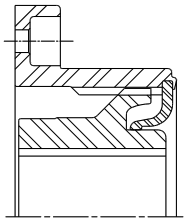
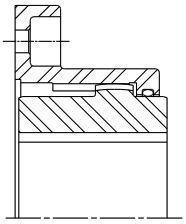
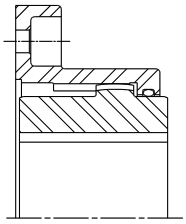
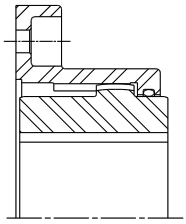
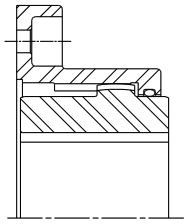






Lovejoy® FX Series				Lovejoy® FXL Series				Lovejoy® F Series				FALK® 1000 Series				FALK® GF Series			
Size	Torque Rating (in-lb)	Max Bore (in)	Max Bore (mm)	Size	Torque Rating (in-lb)	Max Bore (in)	Max Bore (mm)	Size	Torque Rating (in-lbf)	Max Bore (in)	Max Bore (mm)	Size	Torque Rating (in-lbf)	Max Bore (in)	Max Bore (mm)	Size	Torque Rating (in-lbf)	Max Bore (in)	Max Bore (mm)
1	11,300	1.875	48	1	8,000	1.563	40	1	7,600	1.625	42	1010G	10,080	1.875	48	1GF	7,600	1.625	41
1.5	26,100	2.438	62	1.5	15,000	2.125	55	1.5	18,900	2.125	56	1015G	20,790	2.375	60	1-½GF	18,900	2.125	54
2	44,850	3.063	78	2	39,000	2.813	71	2	31,500	2.750	73	1020G	37,800	2.875	73	2GF	31,500	2.750	70
2.5	79,700	3.625	92	2.5	69,300	3.375	85	2.5	56,700	3.250	85	1025G	66,150	3.625	92	2-½GF	56,700	3.250	83
3	135,700	4.250	108	3	118,000	4.063	100	3	94,500	4.000	107	1030G	107,100	4.125	105	3GF	101,000	4.000	102
3.5	203,550	5.000	127	3.5	177,000	4.750	120	3.5	151,200	4.625	125	1035G	163,800	4.875	124	3-½GF	151,300	4.500	114
4	311,540	5.875	149	4	270,900	5.688	145	4	220,500	5.375	145	1040G	270,900	5.750	146	4GF	236,000	5.375	137
4.5	427,460	6.750	171	4.5	370,700	6.375	162	4.5	302,400	6.000	165	1045G	371,700	6.750	171	4-½GF	324,000	6.500	165
5	584,890	7.750	197	5	508,600	7.500	190	5	434,700	6.500	180	1050G	500,900	7.375	187	5GF	441,000	7.000	178
5.5	771,300	8.625	220	5.5	670,700	8.375	212	5.5	573,300	7.500	200	1055G	655,200	8.250	210	5-½GF	580,000	7.750	197

*Note: Special fasteners may be required.

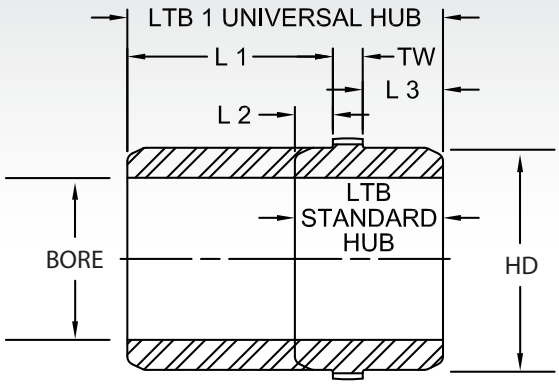






Kop-Flex® FAST				Kop-Flex® H Series				Kop-Flex® Waldron® Series				Renold® Ajax® Series				Ameridrives® Series F			
Size	Torque Rating (in-lbf)	Max Bore (in)	Max Bore (mm)	Size	Torque Rating (in-lbf)	Max Bore (in)	Max Bore (mm)	Size	Torque Rating (in-lbf)	Max Bore (in)	Max Bore (mm)	Size	Torque Rating (in-lbf)	Max Bore (in)	Max Bore (mm)	Size	Torque Rating (in-lbf)	Max Bore (in)	Max Bore (mm)
				1	7,500	1.625	41	1	6,300	1.625	41	1	12,700	1.630	46	201¼	7,600	1.630	41
1 ½	17,000	1.625	41	1 ½	17,000	2.250	57	1 ½	15,100	2.188	56	1-½	23,800	2.130	57	201½	17,000	2.250	57
2	31,500	2.125	54	2	31,500	2.875	73	2	31,500	2.750	70	2	40,600	2.750	78	202	31,500	2.750	70
2 ½	56,700	2.750	70	2 ½	56,700	3.500	89	2 ½	56,700	3.250	83	2-½	65,700	3.250	90	202½	53,600	3.500	89
3	101,000	3.125	79	3	101,000	4.000	102	3	94,500	4.000	102	3	108,000	4.000	110	203	94,500	4.000	102
3 ½	148,000	3.750	95	3 ½	148,000	4.625	117	3 ½	145,000	4.750	121	3-½	166,000	4.500	127	203½	142,000	4.500	114
4	236,000	4.250	108	4	236,000	5.500	140	4	221,000	5.375	137	4	264,000	5.380	145	204	214,000	5.500	140
4 ½	318,000	4.750	121	4 ½	318,000	6.250	159	4 ½	300,000	6.000	152	4-½	365,000	6.000	165	204½	324,000	6.250	159
5	441,000	5.500	140	5	441,000	7.125	181	5	410,000	6.750	171	5	489,000	6.630	185	205	416,000	6.620	168
5 ½	580,000	5.875	149	5 ½	580,000	8.000	203	5 ½	536,000	7.500	191	5-½	725,000	7.500	205	205½	551,000	7.500	191
6	759,000	6.500	165	6	759,000	8.875	225	6	693,000	8.250	210	6	925,000	8.130	225	206	750,000	8.250	210
7	1,160,000	8.000	203	7	1,160,000	10.375	264	7	1,010,000	9.250	235	7	1,390,000	9.630	260	207	1,033,000	9.620	244

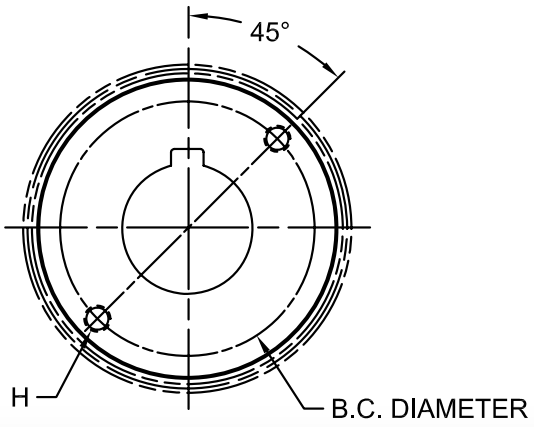
Kop-Flex® FAST				Kop-Flex® H Series				Kop-Flex® Waldron® Series				Renold® Ajax® Series				Ameridrives® Series F			
Size	Torque Rating (in-lbf)	Max Bore (in)	Max Bore (mm)	Size	Torque Rating (in-lbf)	Max Bore (in)	Max Bore (mm)	Size	Torque Rating (in-lbf)	Max Bore (in)	Max Bore (mm)	Size	Torque Rating (in-lbf)	Max Bore (in)	Max Bore (mm)	Size	Torque Rating (in-lbf)	Max Bore (in)	Max Bore (mm)
				1	7,500	1.625	41	1	6,300	1.625	41	1	12,700	1.630	46	201¼	7,600	1.630	41
1 ½	17,000	1.625	41	1 ½	17,000	2.250	57	1 ½	15,100	2.188	56	1-½	23,800	2.130	57	201½	17,000	2.250	57
2	31,500	2.125	54	2	31,500	2.875	73	2	31,500	2.750	70	2	40,600	2.750	78	202	31,500	2.750	70
2 ½	56,700	2.750	70	2 ½	56,700	3.500	89	2 ½	56,700	3.250	83	2-½	65,700	3.250	90	202½	53,600	3.500	89
3	101,000	3.125	79	3	101,000	4.000	102	3	94,500	4.000	102	3	108,000	4.000	110	203	94,500	4.000	102
3 ½	148,000	3.750	95	3 ½	148,000	4.625	117	3 ½	145,000	4.750	121	3-½	166,000	4.500	127	203½	142,000	4.500	114
4	236,000	4.250	108	4	236,000	5.500	140	4	221,000	5.375	137	4	264,000	5.380	145	204	214,000	5.500	140
4 ½	318,000	4.750	121	4 ½	318,000	6.250	159	4 ½	300,000	6.000	152	4-½	365,000	6.000	165	204½	324,000	6.250	159
5	441,000	5.500	140	5	441,000	7.125	181	5	410,000	6.750	171	5	489,000	6.630	185	205	416,000	6.620	168
5 ½	580,000	5.875	149	5 ½	580,000	8.000	203	5 ½	536,000	7.500	191	5-½	725,000	7.500	205	205½	551,000	7.500	191

Additional Dimensional Data



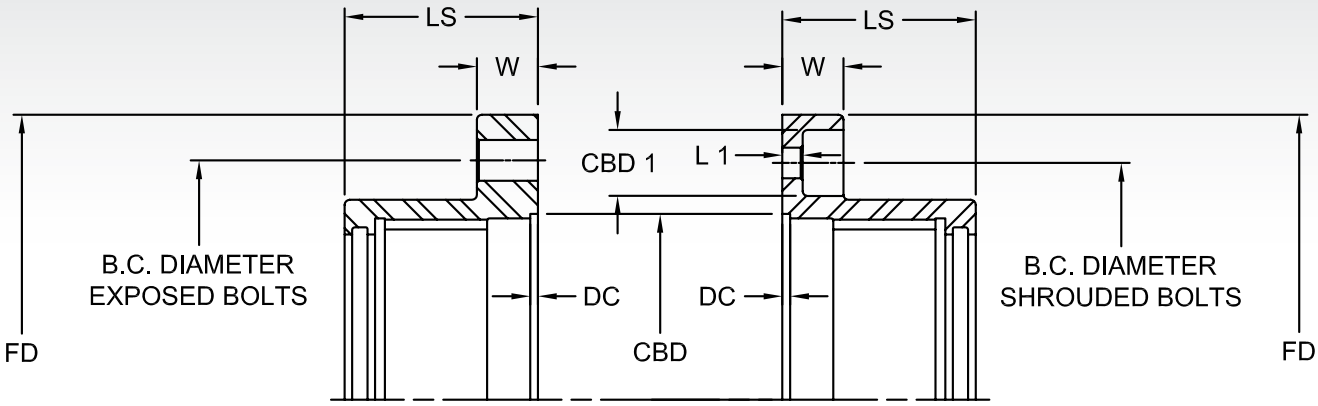
Hub Dimensions

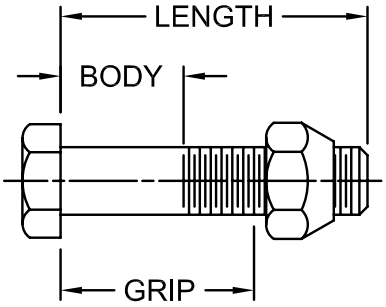
Size	HD (in)	BORE RSB (in)	L1 (in)	L2 (in)	L3 (in)	TW (in)	LTB STD (in)	LTB 1 UNIV HUB (in)
1	2.49	Solid	2.75	0.44	0.75	0.50	1.69	4.00
1.5	3.29	Solid	3.13	0.57	0.81	0.56	1.94	4.50
2	4.21	Solid	3.63	0.57	1.25	0.62	2.44	5.50
2.5	4.97	1.47	4.22	0.75	1.53	0.75	3.03	6.50
3	5.88	1.47	4.43	1.02	1.69	0.88	3.59	7.00
3.5	6.87	1.84	4.62	1.31	1.88	1.00	4.19	7.50
4	8.10	2.47	4.97	1.47	2.16	1.12	4.75	8.25
4.5	9.09	3.00	5.19	1.50	2.56	1.25	5.31	9.00
5	10.24	3.00	5.06	1.59	2.94	1.50	6.03	9.50
5.5	11.28	4.00	5.56	1.97	3.19	1.75	6.91	10.50
6	12.29	4.00	5.65	1.81	3.22	2.38	7.41	11.25
7	14.30	5.00	7.00	2.50	3.81	2.38	8.69	13.19



Flex Hub Puller Bolt Holes

Size	B.C. Diameter (in)	H	
		UNC	Depth
1	None	None	None
1.5	None	None	None
2	3.38	5/16 - 18	0.50
2.5	3.94	3/8 - 16	0.56
3	4.94	1/2 - 13	0.75
3.5	5.56	1/2 - 13	0.75
4	6.44	5/8 - 11	0.94
4.5	7.38	5/8 - 11	0.94
5	8.00	3/4 - 10	1.13
5.5	9.00	1 - 8	1.50
6	9.75	1 - 8	1.50
7	11.63	1 - 8	1.50





Sleeve and Bolt Dimensions

Size	LS (in)	W (in)	DC (in)	FD (in)	CBD (in)	EXPOSED BOLTS						CBD 1 (in)	L (in)	SHROUDED BOLTS					
						B.C. Dia. (in)	Qty	THD Size	Length (in)	Min Body (in)	Max Grip (in)			B.C. Dia. (in)	Qty	THD Size	Length (in)	Min Body (in)	Max Grip (in)
1	1.66	0.56	0.09	4.56	3.03	3.750	6	1/4-28	1.50	0.63	1.063	0.64	0.25	3.750	6	1/4-28	0.81	0.281	0.438
1.5	1.88	0.75	0.09	6.00	3.91	4.812	8	3/8-24	2.00	0.88	1.438	0.81	0.25	4.812	8	3/8-24	1.00	0.281	0.438
2	2.38	0.75	0.09	7.00	4.89	5.875	6	1/2-20	2.25	0.88	1.406	0.81	0.25	5.812	10	3/8-24	1.00	0.281	0.438
2.5	2.88	0.88	0.09	8.38	5.81	7.125	6	5/8-18	2.75	1.00	1.656	1.06	0.31	7.000	10	1/2-20	1.25	0.375	0.531
3	3.31	0.88	0.09	9.44	6.73	8.125	8	5/8-18	2.75	1.00	4.656	1.06	0.31	8.000	12	1/2-20	1.25	0.375	0.531
3.5	3.81	1.13	0.09	11.00	7.73	9.500	8	3/4-16	3.25	1.25	2.156	1.31	0.38	9.281	12	5/8-18	1.50	0.438	0.656
4	4.25	1.13	0.19	12.50	9.02	11.000	8	3/4-16	3.25	1.25	2.156	1.31	0.38	10.625	14	5/8-18	1.50	0.438	0.656
4.5	4.81	1.13	0.19	13.63	10.08	12.000	10	3/4-16	3.25	1.25	1.156	1.31	0.38	11.750	14	5/8-18	1.50	0.438	0.656
5	5.50	1.50	0.19	15.31	11.36	13.500	8	7/8-14	4.25	1.69	2.875	1.56	0.56	13.188	14	3/4-16	2.00	0.625	1.031
5.5	6.00	1.50	0.19	16.75	12.58	14.500	14	7/8-14	3.00	1.13	1.750	1.56	0.56	14.437	16	3/4-16	2.00	0.625	1.031
6	6.69	1.00	0.25	18.00	13.75	15.750	14	7/8-14	3.25	1.19	1.875	Exposed Bolts Only							
7	7.38	1.13	0.31	20.75	15.86	18.250	16	1-14	3.50	1.31	2.125								

RA and RAHS Type Rigid Adjustable Couplings



The RA and RAHS couplings are offered in two different styles. Type II coupling consists of two rigid hubs, adjusting nut and split ring and split ring for motor bub. Type IV coupling consists of two rigid hubs, adjusting nut, and split ring for motor hub and spacer.

Key Features

- Axial positioning of the pump impeller in vertical pump applications
- Clearance fit bores allows for easy installation and maintenance for pump and/or motor
- Easily adjustable for vertical clearance
- Removable spacer for easy maintenance
- AISI 1045 Steel
- Stainless Steel coupling also available

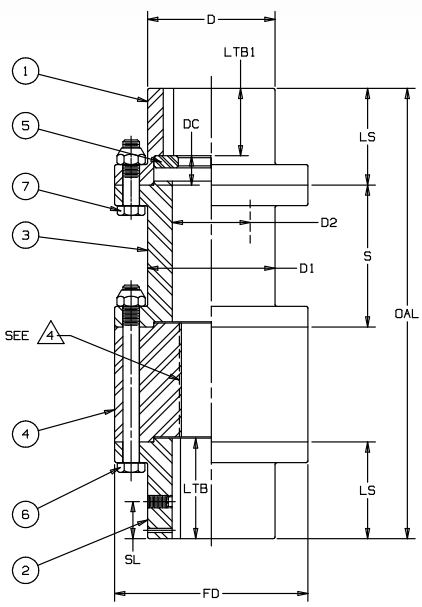
RA and RAHS Type Performance Data

Size	HP/100 RPM	Nominal Torque in-lb	Thrust Capacity lbs	Motor & Pump Hubs Min Bore		Motor & Pump Hubs Max Bore	
				in	mm	in	mm
1125	2.7	1,702	4,500	0.44	11	1.125	29
1625	8.0	5,042	11,000	0.63	16	1.625	42
2125	17.9	11,282	31,000	0.73	18	2.125	56
2625	33.8	21,302	31,000	0.88	22	2.625	70
2875	44.4	27,983	31,000	0.88	22	2.875	77
3125	57.0	35,924	41,000	1.19	30	3.125	84
3875	109.0	68,697	73,000	1.25	31	3.875	103
5000	310.0	195,378	160,000	2.38	60	5.000	135
6000	404.0	254,621	300,000	2.88	73	6.000	167
7250	712.0	448,738	300,000	4.00	101	7.250	194
8500	1148.0	723,527	350,000	4.00	101	8.500	225
10500	2164.0	1,363,861	400,000	5.00	127	10.500	276

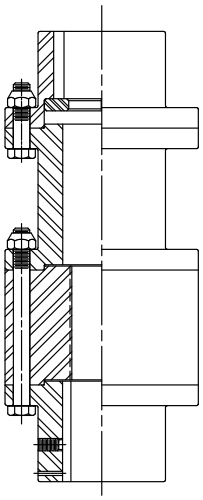
Ordering Information

- Application: Driver and Driven.
- Power: Motor horspower or torque requirement.
- Speed: Motor Speed or Driven RPM.
- Distance between shaft ends (BSE).
- Shaft sizes.
- Adjusting nut threads.
- Amount of trust on either or both shafts.
- Submit drawing if available.

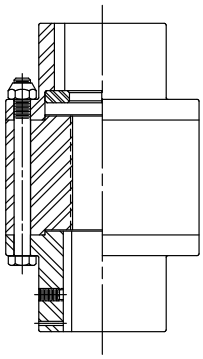
Item	Description
1	Upper Hub - Motor
2	Lower hub - Pump
3	Spacer
4	Adjusting Nut, Threaded
5	Washer, Split
6	RA and RAHS Accessory Kit
7	RA and RAHS Accessory Kit



RA & RAHS SPACER COUPLING
TYPE IV



RA & RAHS COUPLING
TYPE II



RA and RAHS Type Dimensional Data

Size	STD OAL Type II in	STD OAL Type IV in	FD in	D in	LTB in	LTB1 in	LS in	DC in	N in	SL in	D1 in	D2 in	S Std in	S Min in	BOLTS Qty	BOLTS Size	B.C. Dia in
1125	5.25	9.56	3.00	1.75	2.13	1.11	2.00	0.89	1.25	0.88	1.75	1.25	4.44	1.63	4	1/4 - 28	2.375
1625	6.00	10.31	4.00	2.50	2.38	1.36	2.25	0.89	1.50	0.88	2.50	1.75	4.44	1.75	6	5/16 - 24	3.250
2125	7.13	11.44	5.13	3.13	2.81	1.80	2.69	0.89	1.75	1.00	3.13	2.25	4.44	2.63	6	1/2 - 20	4.250
2625	9.38	13.69	5.88	3.88	3.06	2.05	2.94	0.89	3.50	1.13	3.88	2.75	4.44	2.63	6	1/2 - 20	4.938
2875	10.38	14.69	6.38	4.38	3.56	2.55	3.44	0.89	3.50	1.38	4.38	3.00	4.44	2.88	6	1/2 - 20	5.438
3125	11.50	15.81	6.75	4.63	4.13	3.11	4.00	0.89	3.50	1.63	4.63	3.25	4.44	2.88	8	1/2 - 20	5.813
3875	12.75	17.06	8.94	5.88	4.50	3.48	4.38	0.89	4.00	1.75	5.88	4.00	4.44	3.13	6	3/4 - 16	7.625
5000	15.00	NO STD	11.75	7.50	6.25	4.63	6.00	1.38	3.00	2.44	7.50	5.13	NO STD	4.50	8	1 - 14	10.000
6000	20.88	NO STD	13.25	9.00	9.50	7.63	9.25	1.63	2.38	4.00	9.00	6.13	NO STD	4.75	10	1 - 14	11.500
7250	25.19	NO STD	15.00	10.75	11.06	8.81	10.75	1.94	3.69	4.75	10.75	7.38	NO STD	7.06	14	1 - 14	13.250
7500	33.56	NO STD	17.25	12.50	15.31	13.06	15.00	1.94	3.56	6.63	12.50	8.63	NO STD	7.31	12	1-1/8 - 12	15.000
10500	40.94	NO STD	20.50	15.00	18.69	16.44	18.38	1.94	4.19	8.13	15.00	10.63	NO STD	8.31	12	1-1/8 - 12	18.000

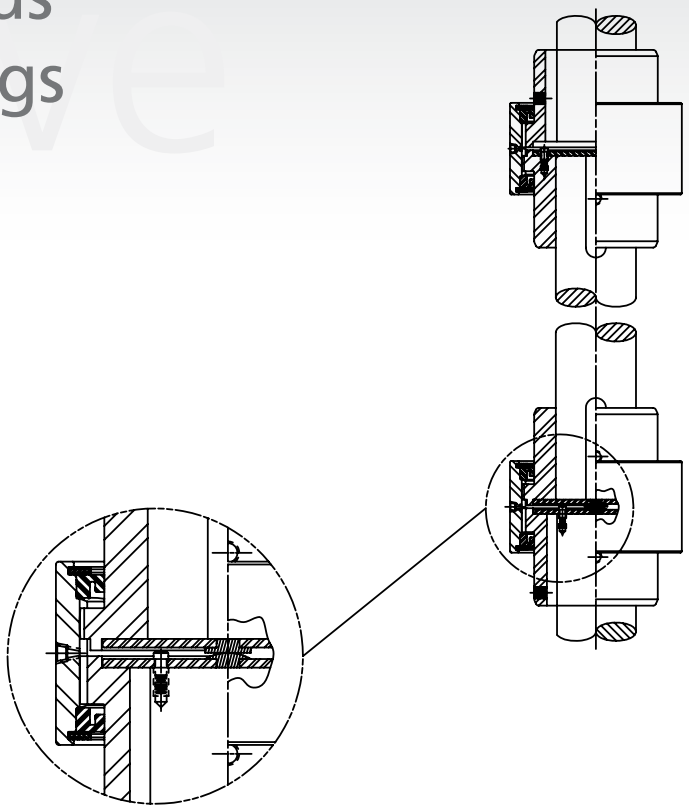
Ordering Information

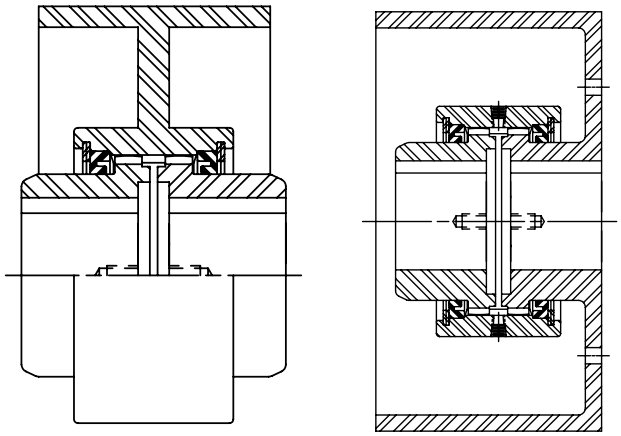
- Clearance fit bores with set screw are standard.
- RA couplings meet standard tolerances.
- Inch bore and keyway tolerances conform to AINSI / AGMA 9002-B04.
- For metric bore and keyway tolerances, consult Lovejoy Application Engineering.
- RAHS couplings conform to API 610 8th edition tolerances.

HercuFlex Continuous Sleeve Gear Couplings

Vertical Floating Shaft Type

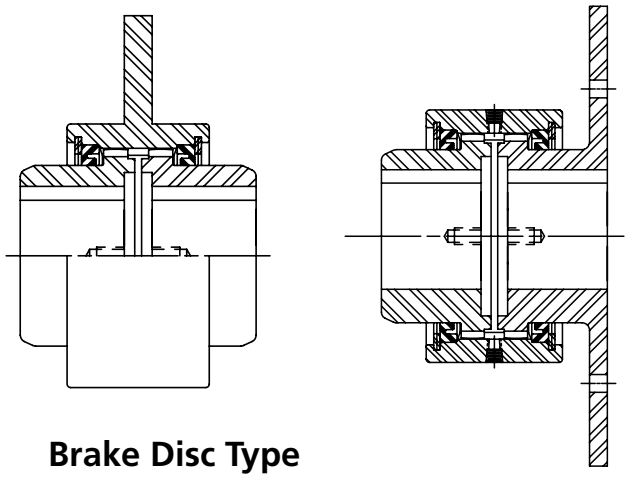
The upper coupling is a Standard Vertical Type coupling. The lower coupling has a hardened crowned button inserted in the plate of the lower hub and a hardened flat button inserted in the plate of the upper hub. The entire floating assembly rests on these two buttons which carry the weight of the floating assembly thus maintaining the spacing between the two lower hubs allowing for flexibility. The hubs on the floating shaft are flexible and the hubs of the driver and driven shafts are rigid.





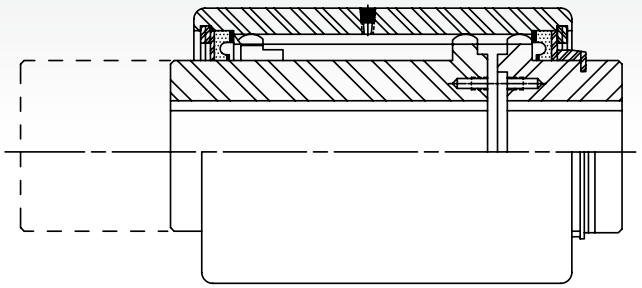
Brakedrum Type

Two different designs of brakedrum couplings are illustrated. One shows the brakedrum as an intergal part of the sleeve and the two hybs are standard. The other design utilizes one standard hub and a standard sleeve with the brakedrum as part of a special hub.



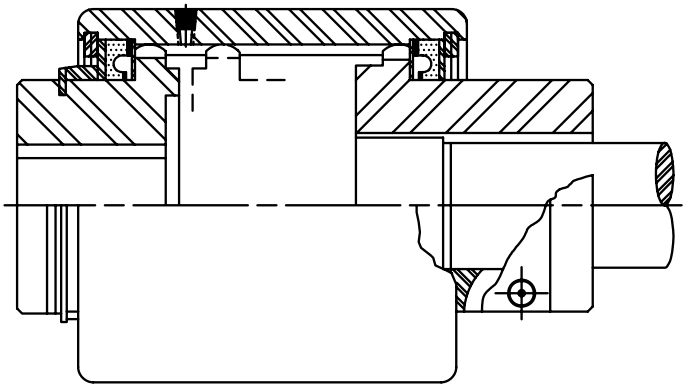
Brake Disc Type

Two different designs of brake disc couplings are illustrated. One shows the brake disc as an intergal part of the sleeve and the two hybs are standard. The other design utilizes one standard hub and a standard sleeve with the brakedrum as part of a special hub.



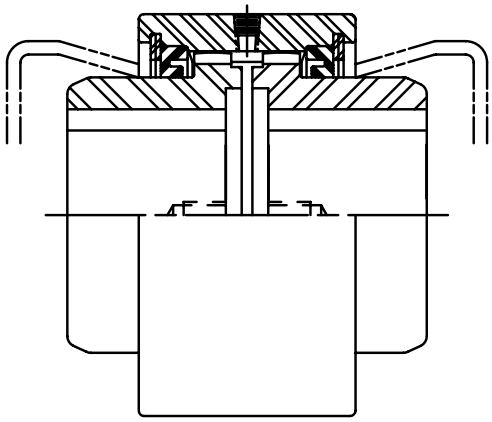
Sliding Hub Type

The sleeve is longer than standard and is designed to allow for a predetermined amount of axial travel on one shaft. The short hub is secured to the sleeve by means of a spacer washer and snap ring which prevents travel. This type is also manufactured to allow for travel of both hubs in the sleeve. This coupling is also available with a rigid type short hub.



Jordan Type

Used on Jordan machines and refiners, this design is similar to the Sliding Hub Type coupling except the long hub is split and secured to the shaft with a bolt. This permits for quick axial adjustment of the Jordan shafts in the hub.



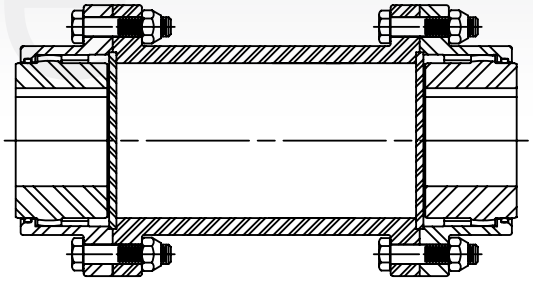
Continuous Lubricated Type

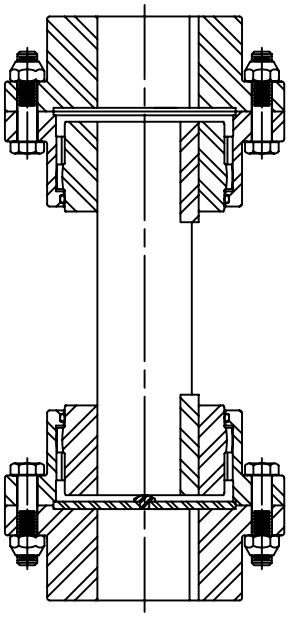
This coupling is adapted from our Standard Type coupling, except the standard seals have been replaced with the special spacer washers. These washers have a snug fit in the sleeve with sufficient clearance on the hub OD to allow for injection of a continuous stream of lubricant.

HercuFlex Flanged Sleeve Gear Couplings

Limited End Float Spacer Type

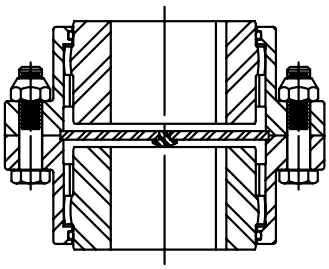
The addition of plates restricts axial travel to the drive or driven shaft. The spacer makes it possible to remove the hubs from either shaft without disturbing the connected units.





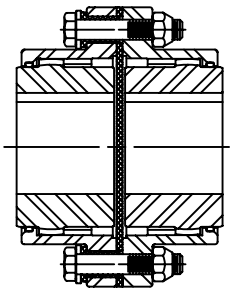
Vertical Floating Shaft Type

The lower coupling has a hardened crowned button inserted in the plate of the lower hub. The entire floating assembly rest on the button. Optional construction of the upper coupling would be a rigid hub on the floating shaft with a flex half on the top.



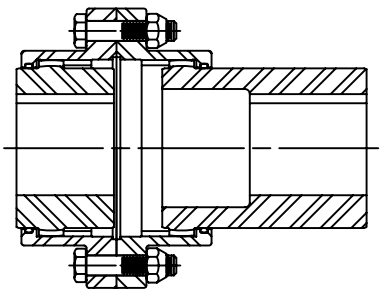
Vertical Type

This coupling has the same horsepower, RPM and misalignment capabilities as the standard couplings of corresponding sizes. A plate with a hardened crowned button rests on the lower shaft which supports the weight of the sleeve.



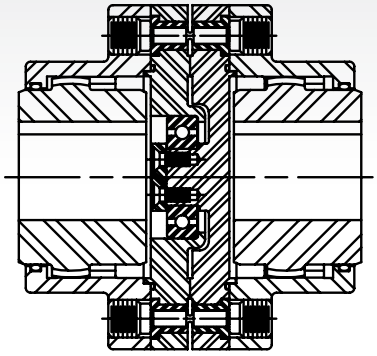
Insulated Type

Use of a non-metallic material between flanges and around the bolts prevents any stray currents from one shaft to the other.



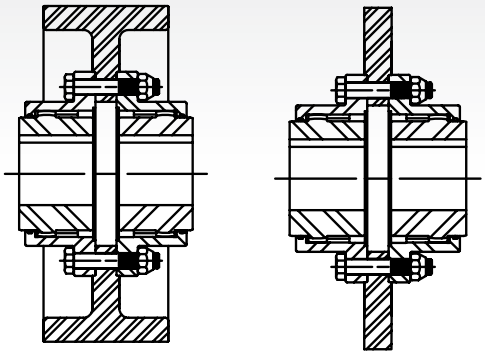
Jordan Type

Used on Jordan machines and refiners, this design is similar to the slide type coupling except the long hub is split and secured to the shaft with a bolt clamp. This permits quick axial adjustment of the Jordan shafts in this hub.



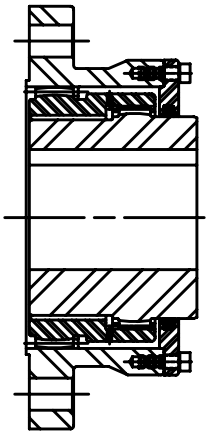
Engineered Shear Pin Type

Shear pin couplings are primarily used to limit transmitted torque to a redetermined load. THis in turn disconnectes the driver and driven shafts if torque exceeds the specified limits. They are especially suited to protect equipment when jams occur. Components are re-useable after pins shear. The coupling will retain lubricant for a short period to allow equipment to be shut down.



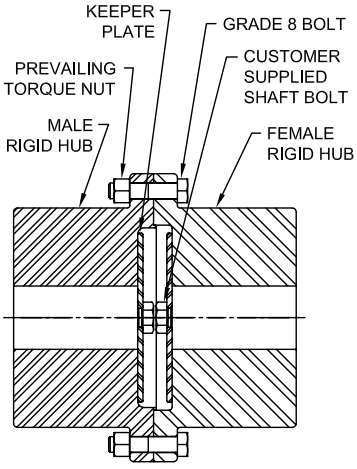
Brakewheel and Brake Disc Type

Replaceable brakewheel and brake disc piloted on the outside diameter of a standard sleeve and/or rigid hub. Offers a choice of applying braking effort to the load or driving motor.



Double Engagement Half Gear Type

Both internal and external teeth in a single sleeve. Can be bolted to a rotating flywheel, shaft or drum to connect driver or driven machine with a shaft extension. This coupling has the same features, ratings and misalignment capability as the standard group of couplings.



Rigid Alloy Steel FARR Type

Male/Female piloted rigid coupling coupling with keeper plates. This coupling is used when a rigid connection is required between the low speed shaft of a gearbox and the head shaft of a conveyor, bucket elevator, mixer or any overhung or suspended load.

Why Coupling Grease?

HercuFlex by Lovejoy

Adequate lubrication is essential for satisfactory gear coupling operation. Lovejoy Gear Coupling Grease is specifically designed for gear coupling applications to increase coupling life while drastically reducing maintenance time. Its high viscosity base oil and tackifier combine to keep the grease in place and prevent separation and it is in complete compliance with NSI/AGMA 9001-B97 lubrication recommendations.

Lovejoy Coupling Grease is dark brown in color and manufactured with a lithium soap/polymer thickener, which has superior resistance to oil separation when subjected to high centrifugal forces normally found in couplings. Bearing or general purpose greases tend to separate and lose effectiveness due to high centrifugal forces on the various ingredients at high rotational speeds. These high centrifugal forces encountered in couplings separate the base oil from the thickeners. Heavy thickeners, which have no lubrication qualities, accumulate in the gear tooth mesh area resulting in premature coupling failure. Lovejoy Gear Coupling Grease is designed to highly resistant to centrifugal separation of the oil and thickener, which allows the lubricant to be used for a relatively long period of time.

One of the secrets to the success of Lovejoy Gear Coupling Grease is the variable consistency throughout the working cycle of the application. The consistency of our gear coupling grease changes with the operating conditions. Working of the lubricant under actual service conditions causes the grease to become semi-fluid, functionally solash lubricating the wear surfaces of the coupling. As the grease cools, it returns to the original consistency, thereby preventing leakage.

Lovejoy Gear Coupling Grease is available from stock in

14 oz. cartridges, 1 lb. and 5 lb. cans.

Features

- Minimizing of coupling wear
- Resistance to water washing
- Corrosion and rust protection
- High load carrying capabilities
- Extended relubrication frequency
- Use at temperatures up to 325° F
- Staying in place under high speeds
- Resistance to centrifugal separation
- Reduction in down time & maintenance cost

Lovejoy Gear Coupling Grease has a consistency which overlaps the NLGI grades 0 and 1. This grease is specially formulated with a lithium/polymer thickener and fortified with corrosion, oxidation, extreme pressure, and a effective rust inhibitor additive package.



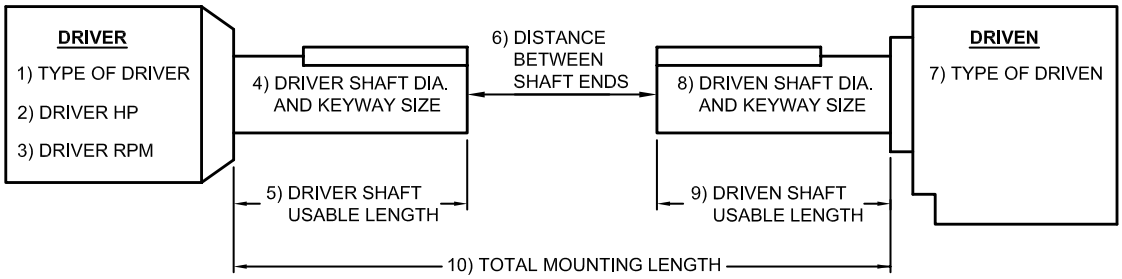
Typical Properties of Lovejoy Gear Coupling Grease

NLGI Grade	0/1
Appearance	Dark Brown, Tacky
Lithium Soap / Polymer, wt%	10.0
Viscosity	
@ 40° C, cST	>3200
@ 100° C, cSt	>50
Penetration. Dmm	
Worked, 60x	350
Worked, 10,000, % Change	10
Dropping Point, ° F	320° (160° C)
Centrifugal Oil Separation, vol%	None
Water Spray-Off, wt%	>3
Rust Protection	Pass
Timken, OK Load, lbs	40+
Four-Bal EP	
Load Wear Index, kgf	68
Weld Point, kgf	400
Four-Ball Wear, mm	
1 hr, 75° C, 1200 RPM, 40 kgf	0.4
Guide to Usable Temperature	
Min, ° F	Below -20° (-29° C)
Continuous Service, Max, ° F	250° (121° C)
Short Exposure, Max, ° F	325° (163° C)

Selection Worksheet

Customer Name:_____ Contact Name: _____

Phone Number:_____ Email Address: _____



1. Type of Driver (Electric Motor, Combustion Engine, Gearbox, etc.) : _____

For combustion engines, define type
Gasoline, Diesel, Natural Gas, etc. : _____ Number of cylinders _____

2. Driver Horse Power : _____ **3.** Driver or Gearbox output RPM : _____

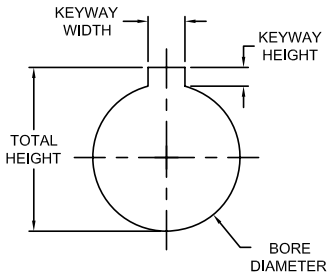
Retrieve the Application Service Factor from page 3 : _____ then

calculate the Selection Torque using the following formula:

Torque (in-lbs) = $\frac{\text{HP x 63025}}{\text{RPM}}$ x Service Factor = Selection Torque = _____ in-lbs

4. Driver Shaft Diameter : _____ Keyway size : KW Width _____ KW Height _____

Specify Clearance Fit, Interference Fit, Metric (P7, H7, etc), Shaft Locking Device, and Set Screw or No Set Screw



For additional bore and keyway information, see the Engineering Data Section of the Power Transmission Products Catalog

5. Driver Usable Shaft Length : _____ (Measure from the end of the shaft to any obstruction)

6. Distance between shaft ends (BSE) : _____

7. Type of Driven Equipment : _____

8. Driven Shaft Diameter : _____ Keyway size : KW Weight _____ KW Height _____

Specify Clearance Fit, Interference Fit, Metric (P7, H7, etc), Shaft Locking Device, and Set Screw or No Set Screw

9. Driven Usable Shaft Length : _____ (Measure from the end of the shaft to any obstruction)

10. Total Mounting Length : _____ (Advise of any obstructions, walls, beams, guards, pipes, etc.)

11. For Tapered Shafts specify the following:

Minimum or Maximum Taper diameter: _____

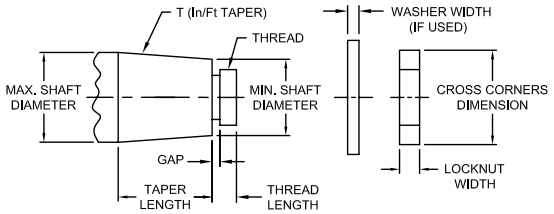
Taper Length: _____ T (Taper Inch per Foot) : _____

Gap or Hub Overhang amount: _____

Locknut Width: _____ Size of nut cross corners: _____

Thread Size: _____ Thread Length: _____

Washer Diameter (if used) : _____ Washer Width: _____



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World Headquarters
2655 Wisconsin Avenue, Downers Grove, IL 60515

Send this form to: appleng@lovejoy-inc.com
or fax to: 800-446-0878



Safety Warning

When using Lovejoy products, you must follow these instructions and take the following precautions. Failure to do so may cause the power transmission product to break and parts to be thrown with sufficient force to cause severe injury or death.

Refer to this Lovejoy Catalog for proper selection, sizing, horsepower, torque range, and speed range of power transmission products, including elastomeric elements for couplings. Follow the installation instructions included with the product, and in the individual product catalogs for proper installation of power transmission products. Do not exceed catalog ratings.

During start up and operation of power transmission product, avoid sudden shock loads. Coupling assembly should operate quietly and smoothly. If coupling assembly vibrates or makes beating sound, shut down immediately, and recheck alignment. Shortly after initial operation and periodically thereafter, where applicable, inspect coupling assembly for: alignment, wear of elastomeric element, bolt torques, and flexing elements for signs of fatigue. Do not operate coupling assembly if alignment is improper, or where applicable, if elastomeric element is damaged, or worn to less than 75% of its original thickness.

Do not use any of these power transmission products for elevators, man lifts, or other devices that carry people. If the power transmission product fails, the lift device could fall resulting in severe injury or death.

For all power transmission products, you must install suitable guards in accordance with OSHA and American Society of Mechanical Engineers Standards. Do not start power transmission product before suitable guards are in place. Failure to properly guard these products may result in severe injury or death from personnel contacting moving parts or from parts being thrown from assembly in the event the power transmission product fails.

If you have any questions, contact the Lovejoy Engineering Department at 1-630-852-0500.

Product Warranty

Lovejoy, Inc. warrants all products it manufactures to be free from defects in material and workmanship at the time of delivery to the purchaser. Defective products may be returned to Lovejoy after inspection by the purchaser and upon receipt from Lovejoy of shipping instructions specific to the defective products authorized by Lovejoy to be returned. Products returned in accordance with the foregoing procedure will be replaced or repaired, at the option of Lovejoy, without charge and returned to the purchaser F.O.B. Downers Grove, Illinois or South Haven, Michigan, depending upon origin of manufacture. In all cases, transportation costs and charges for returned products shall be paid by the purchaser and Lovejoy hereby disclaims all responsibility for any and all such transportation costs and charges.

This warranty is subject to the following LIMITATIONS:

The purchaser's exclusive remedy under this warranty is limited to the repair or replacement of defective products supplied by Lovejoy, as set forth above. LOVEJOY IS NOT RESPONSIBLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE BREACH OF THIS OR ANY OTHER EXPRESS OR IMPLIED WARRANTY WITH RESPECT TO THE PRODUCTS, WHETHER ARISING IN TORT OR BY CONTRACT. LOVEJOY FURTHER DISCLAIMS ALL LIABILITY FROM PERSONAL INJURY RELATING TO ITS PRODUCTS TO THE EXTENT PERMITTED BY LAW. BY ACCEPTANCE OF ANY OF LOVEJOY'S PRODUCTS, THE PURCHASER ASSUMES ALL LIABILITY FOR THE CONSEQUENCES ARISING FROM THEIR USE OR MISUSE.

This express warranty is the only warranty applicable to this transaction. *IT EXCLUDES ALL OTHER EXPRESS ORAL OR WRITTEN WARRANTIES AND ALL WARRANTIES IMPLIED BY LAW WITH RESPECT TO THE PRODUCTS, INCLUDING ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.*

Every claim under this warranty shall be deemed waived by the purchaser unless made in writing within one (1) year of the receipt of the products to which such claim relates. This warranty is void in the event that repairs are made by anyone other than Lovejoy without prior authorization from Lovejoy. No person, firm or corporation is authorized to assume for Lovejoy any other liability in connection with the sale of its products. No person, firm or corporation is authorized to modify or waive the terms of this Warranty unless done in writing and signed by a duly authorized agent of Lovejoy.

Note: Specifications are subject to change without notice, and without liability therefor.

HercuFlex by Lovejoy

The Reinvention of the Gear Coupling

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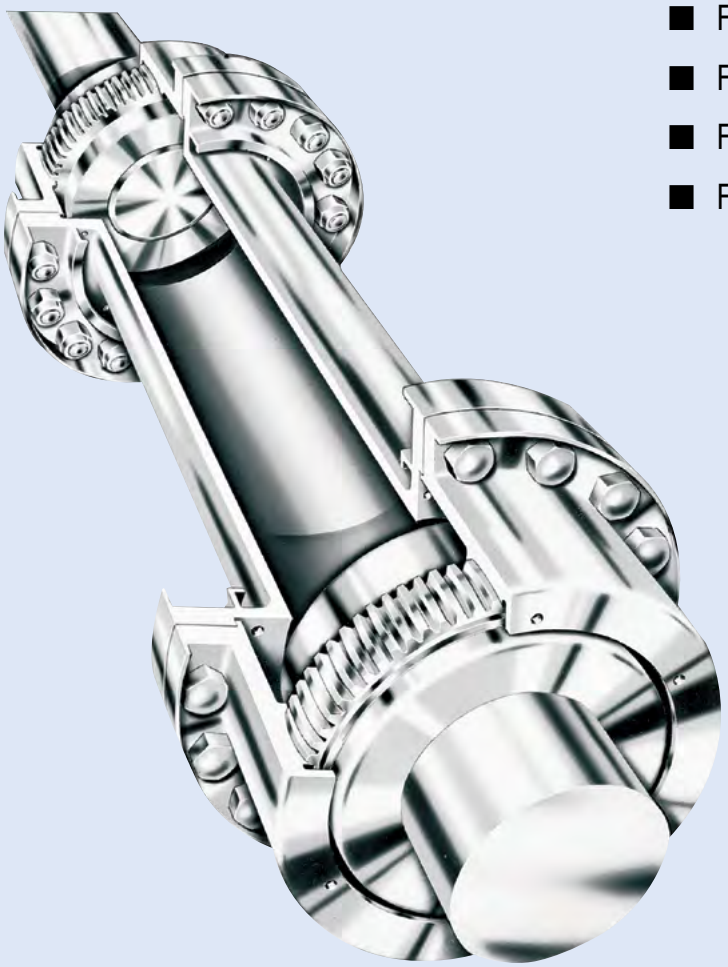
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where the world turns for LoveJoy® Coupling Solutions

High Performance Gear

In This Section:

- FHS Type - High Speed Close Coupled
- FHSA Type - High Speed Standard
- FHSAA Type - High Speed Precision
- FHSPAA Type - High Speed Ultra Precision
- FHSMA Type - High Speed Marine
- FAC Type - High Speed Centrifugal Pump



High Performance Gear

Safety Warning

When using Lovejoy products, you must follow these instructions and take the following precautions. Failure to do so may cause the power transmission product to break and parts to be thrown with sufficient force to cause severe injury or death.

Refer to this Lovejoy Catalog for proper selection, sizing, horsepower, torque range, and speed range of power transmission products, including elastomeric elements for couplings. Follow the installation instructions included with the product, and in the individual product catalogs for proper installation of power transmission products. Do not exceed catalog ratings.

During start up and operation of power transmission product, avoid sudden shock loads. Coupling assembly should operate quietly and smoothly. If coupling assembly vibrates or makes beating sound, shut down immediately, and recheck alignment. Shortly after initial operation and periodically thereafter, where applicable, inspect coupling assembly for: alignment, wear of elastomeric element, bolt torques, and flexing elements for signs of fatigue. Do not operate coupling assembly if alignment is improper, or where applicable, if elastomeric element is damaged, or worn to less than 75% of its original thickness.

Do not use any of these power transmission products for elevators, man lifts, or other devices that carry people. If the power transmission product fails, the lift device could fall resulting in severe injury or death.

For all power transmission products, you must install suitable guards in accordance with OSHA and American Society of Mechanical Engineers Standards. Do not start power transmission product before suitable guards are in place. Failure to properly guard these products may result in severe injury or death from personnel contacting moving parts or from parts being thrown from assembly in the event the power transmission product fails.

If you have any questions, contact the Lovejoy Engineering Department at 1-630-852-0500.

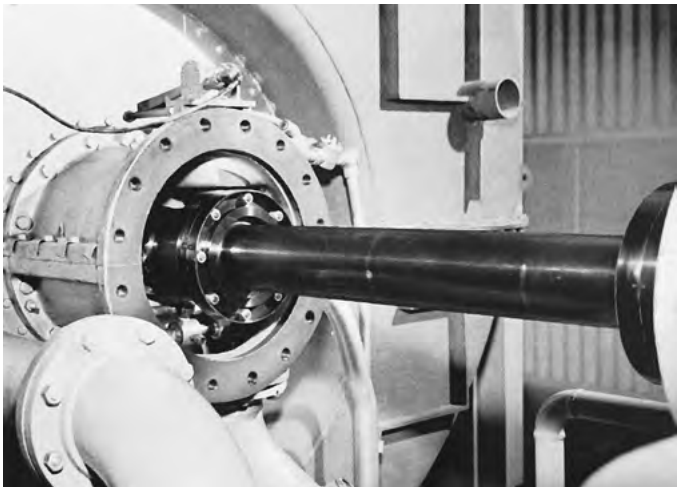
High Performance Gear

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Lovejoy High Speed and Engineered Special Gear Couplings

The High Performance group of gear couplings consists of coupling designs that require additional engineering. While standard components do exist, the unique requirements of individual applications will customize a coupling design.



Lovejoy / Sier-Bath High Speed Couplings

The Lovejoy / Sier-Bath F Series High Speed gear couplings are designed for exacting high speed, high efficiency performance beyond the ranges and limits of standard coupling specifications. Typical applications include high speed centrifugal and axial flow compressors, gas turbines, steam turbines, test stands, etc.

High speed couplings are dynamically balanced as assemblies and match marked. Fasteners are weigh balanced in sets. Major diameter fit gear teeth, precision machined tolerances, and high quality components help to reduce the potential unbalance in the coupling assembly.

Features

- Dynamically balanced
- Fasteners are weigh balanced
- Body fitted bolts in reamed holes
- Precision manufactured close tolerances
- Piloted gear fit
- Hubs, sleeves, and spacers are alloy steel

Lovejoy Engineered Couplings

Our other product lines of engineered couplings are designed to suit special applications. Many of the components are standardized, but the special requirements of certain applications will customize each design. These couplings require specific customer input to properly design the coupling to suit the application.

Features

- Custom design assistance
- Components are standardized, yet design flexibility allows for modifications to specific applications
- Available in sizes from 1 through 30 depending on model

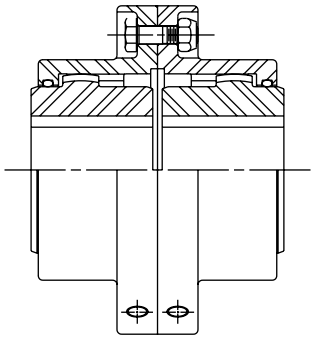
WARNING

You must refer to page HP-2 (Page 194) for Important Safety Instructions and Precautions for the selection and use of these products. Failure to follow the instructions and precautions can result in severe injury or death.

Lovejoy / Sier-Bath F Type High Speed Couplings

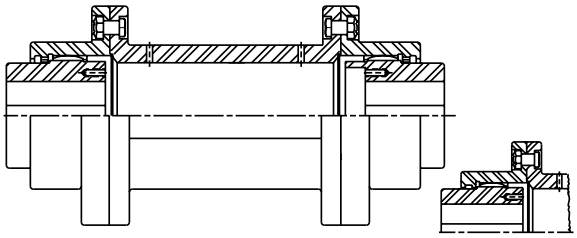
FHS High Speed Close Coupled

This coupling is made from AISI 1045 steel. The design is similar to the standard “F” except the components are machined to tighter tolerances and controlled fits to allow higher operating speeds. The maximum speed is for assembly balanced couplings. Component balancing is available and may result in lower maximum speeds.



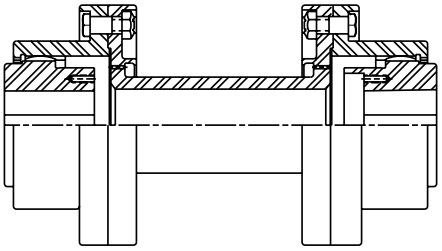
FHSA High Speed Standard

The Lovejoy / Sier-Bath High Speed Standard gear couplings are made of alloy steel with a core hardness of R_C30-35, and they are magnetic particle inspected. They are precision manufactured with ground bores and concentricity for dynamic stability. In addition, gear couplings are dynamically balanced, have a piloted gear fit, and have body-fitted bolts in reamed holes. For nitrided gear teeth, specify Class AN and a surface hardness of 85.5 minimum on the Rockwell 15N scale.



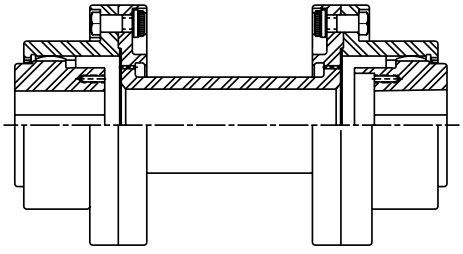
FHSAA High Speed Precision

The Lovejoy / Sier-Bath High Speed Precision gear couplings are made of alloy steel with a core hardness of R_C 30-35 and are magnetic particle inspected. They have close tolerances and precision manufactured mating surfaces with bores ground to accurate tolerances. In addition, gear couplings are dynamically balanced, have a piloted gear fit, and have body-fitted bolts in reamed holes. The low overhung moment reduces bearing loads. They also have low moment of inertia and are extremely light weight. Balancing bands will be included, if required. For nitrided gear teeth, specify Class AAN and a surface hardness of 85.5 minimum on the Rockwell 15N scale.



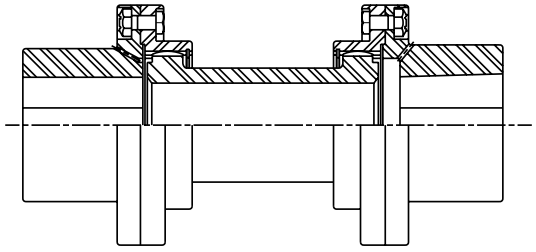
FHSPAA High Speed Ultra Precision

The Lovejoy / Sier-Bath High Speed Ultra Precision gear couplings are made of Nitralloy 135 modified with a core hardness of R_C 32-36 and they are magnetic particle inspected. They have close tolerances and precision manufactured mating surfaces with bores precision-ground for extremely high accuracy. In addition, they have body-fitted bolts with reamed holes. These gear couplings are dynamically balanced and have a piloted gear fit to insure balance integrity during operation. The low overhung moment reduces bearing loads. They also have low moment of inertia and are extremely lightweight. Balancing bands will be included, if required. For nitrided gear teeth, specify Class PAAN and a surface hardness of 90 minimum on the Rockwell 15N scale.



FHSMA High Speed Marine

The Lovejoy / Sier-Bath High Speed Marine gear couplings have a core hardness of R_C 30-35 and are magnetic particle inspected. They are precision manufactured with ground bores and close concentricity for dynamic stability. These couplings are dynamically balanced, have piloted gear fit, and have body-fitted bolts in reamed holes. They also have a larger shaft capacity. For nitrided gear teeth, specify Class MAN and a surface hardness of 85.5 minimum on the Rockwell 15N scale.



Lovejoy / Sier-Bath High Speed Gear Couplings

FHS Type High Speed Close Coupled Couplings

This coupling is made from AISI 4140 steel. The design is similar to the standard F except the components are machined to tighter tolerances and controlled fits to allow higher operating speeds. The maximum speed is for assembly balanced couplings. Component balance is available and may result in lower maximum speeds.

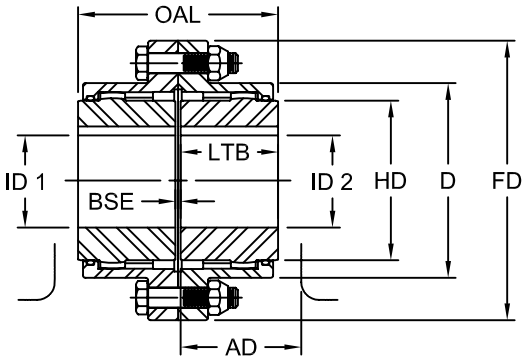
FHS Type High Speed Close Coupled Performance Data

Size	Torque in-lb x 10^3	Torque Nm x 10^3	Max Speed[1] RPM	ID1 - ID2 Max Bore Square Keyway in	Standard Keyway in	Metric Keyway mm	Weight lb	Weight kg	Inertia WR^2 lb-in^2	Inertia GD^2 Nm^2	Torsional Stiffness in-lb/rad x 10^6	Torsional Stiffness Nm/rad x 10^6	Parallel Misalignment in	Parallel Misalignment mm	Max Angular Misalignment Degrees
1	7.6	0.86	14,200	1.625	1.750	42	9	4	18.9	0.2	0.91	0.10	0.003	0.7	
1.5	18.9	2.14	10,800	2.125	2.250	56	19	9	64.9	0.7	3.58	0.40	0.030	0.8	
2	31.5	3.56	9,300	2.750	2.875	73	34	15	149.8	1.7	8.33	0.94	0.043	1.1	
2.5	56.7	6.41	7,800	3.250	3.375	85	54	25	339.8	3.9	15.61	1.76	0.052	1.3	
3	94.5	10.68	6,900	4.000	4.250	107	80	35	656.4	7.5	28.04	3.17	0.058	1.5	
3.5	151.2	17.08	5,900	4.625	4.875	125	130	59	1,482.6	17.0	43.99	4.97	0.066	1.7	3/4°
4	220.5	24.92	5,200	5.375	5.625	145	190	86	2,722.0	31.2	66.09	7.47	0.075	1.9	
4.5	302.4	34.17	4,800	6.000	6.500	165	250	114	4,285.7	49.2	93.31	10.54	0.088	2.2	
5	434.7	49.12	4,200	6.500	7.000	180	380	173	8,262.5	94.8	128.00	14.46	0.101	2.6	
5.5	573.3	64.78	3,900	7.250	7.500	200	520	236	12,779.9	146.7	161.00	18.19	0.111	2.8	
6	749.7	84.71	3,600	8.000	8.250	225	650	295	17,258.7	198.1	222.00	25.08	0.080	2.0	
7	1,008.0	113.90	3,100	9.000	9.500	255	950	431	32,162.1	369.2	341.00	38.53	0.091	2.3	1/2°

Notes:
- 1 indicates: Maximum Speed is based on safe rim stresses and assembly balanced.
- Angular misalignment is reduced to +/- 3/4° per gear mesh for sizes 1 thru 5.5 and +/- 1/2° per gear mesh for sizes 6 and 7.
- Weight and inertia are based on maximum bore. Torsional Stiffness is based on nominal bore equal to coupling size.

Lovejoy / Sier-Bath High Speed Gear Couplings

FHS Type High Speed Close Coupled Couplings



FHS Type Dimensional Data

Size	OAL in	ID1 - ID2 Max Bore Square Keyway in	ID1 - ID2 Max Bore Standard Keyway in	ID1 - ID2 Max Bore Metric Keyway mm	LTB in	BSE in	AD in	FD in	D in	HD in
1	3.50	1.625	1.750	42	1.69	0.13	2.04	4.56	3.06	2.31
1.5	4.00	2.125	2.250	56	1.94	0.13	2.32	6.00	3.97	3.00
2	5.00	2.750	2.875	73	2.44	0.13	2.94	7.00	4.86	4.00
2.5	6.25	3.250	3.375	85	3.03	0.19	3.47	8.38	5.84	4.63
3	7.38	4.000	4.250	107	3.59	0.19	3.97	9.44	6.84	5.63
3.5	8.63	4.625	4.875	125	4.19	0.25	4.57	11.00	7.91	6.50
4	9.75	5.375	5.625	145	4.75	0.25	5.00	12.50	9.25	7.50
4.5	10.94	6.000	6.500	165	5.31	0.31	5.50	13.63	10.38	8.50
5	12.38	6.500	7.000	180	6.03	0.31	6.34	15.31	11.56	9.50
5.5	14.13	7.250	7.500	200	6.91	0.31	7.04	16.75	12.72	10.50
6	15.13	8.000	8.250	225	7.41	0.31	8.35	18.00	14.00	11.50
7	17.75	9.000	9.500	255	8.69	0.38	9.82	20.75	15.75	13.00

Note: ■ Shrouded bolt available on sizes 1 – 5 and recommended for speeds greater than 3600 RPM.

HP

Lovejoy / Sier-Bath High Speed Gear Couplings

FHSA Type High Speed Standard

The High Speed Standard gear couplings are made of alloy steel with a core hardness of HRC 30-35 and are magnetic particle inspected. They are precision manufactured with ground bores and concentricity for dynamic stability. In addition, the gear couplings are dynamically balanced, have a piloted gear fit and have body fitted bolts in reamed holes. For nitrided gear teeth specify Class AN and a surface hardness of 85.5 minimum on the Rockwell 15N scale.

FHSA Type High Speed Standard Performance Data

Size	Torque in-lb x 10^3	Torque Nm x 10^3	Max Speed RPM	ID1 - ID2 Max Bore Square Keyway in	ID1 - ID2 Max Bore Metric Keyway mm	Nominal BSE in	Nominal BSE mm	Weight lb	Weight kg	Inertia WR^2 lb-in^2	Inertia GD^2 Nm^2	Torsional Stiffness in-lb/rad x 10^6	Torsional Stiffness Nm/rad x 10^6	Max Angular Misalignment Degrees
1.5	12.6	1.42	18,000	1.5	38	5	127.00	12.0	5.4	25.7	0.3	2.0	0.23	
2	22.6	2.55	17,000	2.0	52	5	127.00	20.1	9.1	85.4	1.0	5.1	0.58	
2.5	46.6	5.27	16,000	2.5	65	5	127.00	35.2	16.0	163.5	1.9	10.8	1.22	
3	68.0	7.68	15,000	3.0	81	5	127.00	56.0	25.4	325.0	3.7	18.3	2.07	
3.5	135.5	15.31	14,000	3.5	95	5	127.00	77.1	35.0	706.4	8.1	31.0	3.50	1/2°
4	209.9	23.72	13,000	4.0	107	7	177.80	128.7	58.4	1,573.9	18.1	43.7	4.94	
4.5	310.7	35.11	11,000	4.5	114	7	177.80	184.8	83.8	2,997.3	34.4	68.9	7.79	
5	441.0	49.83	10,000	5.0	137	7	177.80	242.6	110.0	4,639.7	53.3	89.7	10.14	
5.5	590.5	66.72	9,600	5.5	150	8	203.20	362.1	164.2	8,758.4	100.5	120.0	13.56	
6	731.0	82.60	9,000	6.0	162	8	203.20	470.1	231.2	13,797.7	158.4	157.3	17.77	

FHSA Type High Speed Standard Performance Data

Size	Weight Hub lb	Weight Sleeve lb	Weight Spacer Per Dim S lb	Weight Bolts & Nuts Per Flange lb	Weight Complete Cplg Per Dim BSE lb	Weight Spacer Body Per Inch lb	WR^2 Hub lb-in^2	WR^2 Sleeve lb-in^2	WR^2 Spacer Per Dim S lb-in^2	WR^2 Complete Cplg Per Dim BSE lb-in^2	WR^2 Spacer Body Per Inch lb-in^2	Torsional Stiffness Spacer Cplg Per BSE (ksi) in-lb/rad x 10^6	Torsional Stiffness Spacer Body Per Inch (ki) in-lb/rad x 10^6
1.5	1.48	1.84	5.10	0.13	12.00	0.71	1.4	5.2	12.5	25.7	1.3	2.0	55
2	2.48	2.83	7.76	0.51	20.12	0.95	4.9	18.9	37.8	85.4	2.8	5.1	120
2.5	6.23	4.83	11.78	0.63	35.16	1.46	17.2	27.1	74.9	163.5	70.0	10.8	298
3	10.03	8.68	15.64	1.47	56.00	1.64	39.1	49.5	147.8	325.0	10.9	18.3	462
3.5	18.02	10.80	15.97	1.76	77.13	2.04	100.1	145.3	215.6	706.4	19.2	31.0	815
4	26.94	17.79	32.09	3.58	128.71	2.33	195.9	318.2	545.7	1,573.9	28.6	43.7	1,215
4.5	41.12	27.03	40.15	4.18	184.81	3.18	393.2	632.7	945.5	2,997.3	53.5	68.9	2,269
5	62.41	31.09	47.24	4.18	242.60	3.48	767.1	901.1	1,303.3	4,639.7	69.5	89.7	2,950
5.5	86.69	51.34	72.53	6.77	362.10	3.60	1,308.0	1,846.0	2,450.4	8,758.4	89.5	120.0	3,799
6	120.66	63.27	86.78	7.74	470.12	4.28	2,225.0	2,787.0	3,773.7	13,979.7	129.6	157.3	5,499

Notes:
- All weights, WR^2 and Torsional Stiffness are based on maximum bore.
- To find the stiffness factor for a coupling assembly with a spacer "n" inches longer than standard:

  Let kx = new stiffness factor
  n = number of additional inches of spacer
  ks = stiffness factor for standard coupling from table
  ki = stiffness factor for 1 inch length of standard spacer body from table

  Then 1/ks + n 1/ki

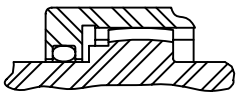
  Example: What is the new stiffness factor for a size 1.5 coupling if the spacer length is 3 inches longer than standard?

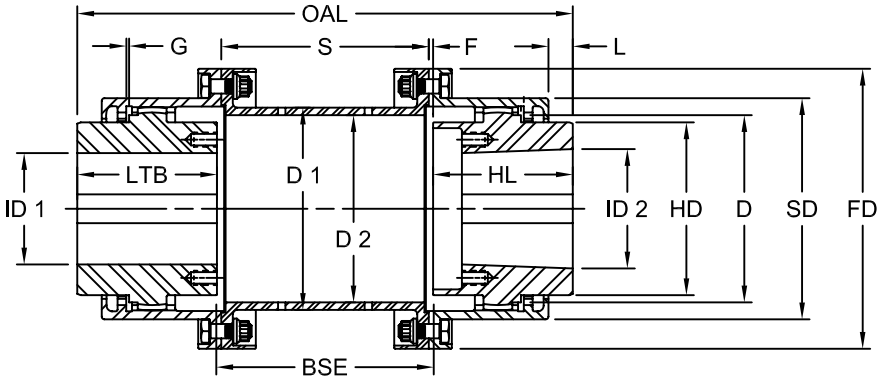
  1/kx = 1/2 + 3 x 1/55 = 0.55454..kx = 1.803

  If coupling spacer is shorter than standard, the formula becomes 1/kx = 1/ks - n 1/ki.

Lovejoy / Sier-Bath High Speed Gear Couplings

FHSA Type High Speed Standard Couplings





FHSA Type Dimensional Data

Size	OAL in	S in	L in	G in	F in	ID1 - ID2 Max Bore in	LTB in	HL in	BSE in	FD in	SD in	D in	HD in	D1 in	D2 in	Bolts Per Flange Qty	Bolts Per Flange Size
1.5	9.13	4.81	0.50	0.06	0.09	1.5	2.06	2.06	5	4.56	3.06	2.38	2.19	3.00	2.41	6	1/4
2	8.88	4.81	0.66	0.06	0.09	2.0	2.44	2.44	5	6.00	3.97	3.06	2.88	3.75	3.13	8	3/8
2.5	11.06	4.81	0.75	0.06	0.09	2.5	3.03	3.03	5	7.00	4.91	3.88	3.63	4.75	4.00	10	3/8
3	12.19	4.81	0.81	0.09	0.09	3.0	3.59	3.59	5	8.38	5.91	4.69	4.25	5.50	4.78	10	1/2
3.5	13.38	4.81	1.00	0.09	0.09	3.5	4.19	4.19	5	9.44	6.91	5.63	5.25	6.50	5.75	12	1/2
4	16.50	6.75	1.06	0.09	0.13	4.0	4.75	4.75	7	11.00	7.91	6.38	6.00	7.38	6.63	12	5/8
4.5	17.63	6.75	1.13	0.13	0.13	4.5	5.31	5.31	7	12.50	9.25	7.25	6.88	8.63	7.75	14	5/8
5	19.06	6.75	1.31	0.13	0.13	5.0	6.03	6.03	7	13.63	10.38	8.25	7.75	9.38	8.50	14	5/8
5.5	21.25	7.75	1.38	0.13	0.13	5.5	6.63	6.63	8	15.31	11.56	9.25	8.75	10.38	9.96	14	5/8
6	22.75	7.75	1.50	0.13	0.13	6.0	7.38	7.38	8	16.75	12.81	10.25	9.63	11.44	10.96	16	3/4

Lovejoy / Sier-Bath High Speed Gear Couplings

FHSAA Type High Speed Precision

The High Speed Precision gear couplings are made of alloy steel with a core hardness of HRC 30-35 and are magnetic particle inspected. They have close tolerances and precision manufactured mating surfaces with bores ground to accurated tolerance. In addition, gear couplings are dynamically balanced, have a piloted gear fit and have body fitted bolts in reamed holes. The low overhung moment reduces bearing loads. They also have a low moment of inertia and are extremely light weight. Balancing bands will be included if required. For nitrided gear teeth, specify ANN and a surface hardness of 85.56 minimum in the Rockwell 15N scale.

FHSAA Type High Speed Precision Performance Data

Size	Torque in-lb x 10^3	Torque Nm x 10^3	Max Speed RPM	ID1 - ID2 Max Bore Square Keyway in	ID1 - ID2 Max Bore Metric Keyway mm	Nominal BSE in	Nominal BSE mm	Weight lb	Weight kg	Inertia WR^2 lb-in^2	Inertia GD^2 Nm^2	Torsional Stiffness in-lb/rad x 10^6	Torsional Stiffness Nm/rad x 10^6	Max Angular Misalignment Degrees
1.5	18.9	2.14	20,000	1.625	42	5	127.0	15.2	6.9	35.5	0.4	1.7	19.00	1/2°
2	28.3	3.20	18,700	2.125	56	5	127.0	25.9	11.8	76.9	0.9	4.0	0.45	
2.5	63.0	7.12	17,600	2.625	70	5	127.0	36.9	16.8	189.8	2.2	9.0	1.02	
3	100.8	11.39	16,500	3.125	84	7	177.8	60.2	27.3	389.8	4.5	12.2	1.38	
3.5	151.2	17.08	15,400	3.625	97	7	177.8	78.5	35.6	659.3	7.6	20.2	2.28	
4	220.6	24.93	14,300	4.125	111	8	203.2	113.3	51.4	1,169.4	13.4	29.7	3.36	
4.5	330.8	37.38	12,100	4.625	124	8	203.2	163.2	74.0	2,178.2	25.0	47.2	5.33	
5	479.0	54.12	11,000	5.125	140	10	254.0	239.5	108.6	4,116.6	47.3	69.4	7.84	
5.5	617.6	69.79	10,500	5.625	150	10	254.0	317.6	144.1	6,719.7	77.1	92.1	10.41	
6	813.0	91.86	9,900	6.125	170	10	254.0	398.4	180.7	8,993.1	103.2	123.3	13.93	

FHSAA Type High Speed Precision Performance Data

Size	Weight Hub lb	Weight Sleeve lb	Weight Spacer Per Dim S lb	Weight Bolts & Nuts Per Flange lb	Weight Complete Cplg Per Dim BSE lb	Weight Spacer Body Per Inch lb	WR^2 Hub lb-in^2	WR^2 Sleeve lb-in^2	WR^2 Spacer Per Dim S lb-in^2	WR^2 Complete Cplg Per Dim BSE lb-in^2	WR^2 Spacer Body Per Inch lb-in^2	Torsional Stiffness Spacer Cplg Per BSE (ksi) in-lb/rad x 10^6	Torsional Stiffness Spacer Body Per Inch (ki) in-lb/rad x 10^6
1.5	2.22	2.18	5.48	0.47	15.22	0.39	2.8	7.5	14.9	35.5	0.3	1.7	12
2	3.81	5.00	7.28	0.51	25.92	0.52	7.7	16.2	29.1	76.9	0.7	4.0	31
2.5	6.96	5.63	10.50	0.63	36.94	0.69	23.7	40.0	62.4	189.8	1.7	9.0	72
3	11.79	8.69	16.32	1.47	60.22	1.02	51.1	82.7	122.2	389.8	3.5	12.2	148
3.5	18.31	10.34	17.72	1.76	78.54	1.27	104.6	141.1	167.9	659.3	6.6	20.2	281
4	25.50	13.80	25.20	3.58	113.32	1.54	218.0	204.7	324.0	1,169.4	11.9	29.7	508
4.5	39.99	19.76	36.50	4.18	163.16	2.36	387.3	408.5	586.4	2,178.2	21.7	47.2	923
5	59.32	29.48	52.54	4.15	239.50	3.23	738.9	797.8	1,043.1	4,116.6	42.5	69.4	1,804
5.5	79.84	38.06	68.26	6.77	317.60	3.56	1,196.3	1,259.6	1,807.7	6,719.7	57.1	92.1	2,422
6	99.66	52.87	77.86	7.74	398.40	3.89	1,774.2	2,089.4	2,465.8	8,993.1	74.6	123.3	3,167

Notes:
- All weights, WR^2 and Torsional Stiffness are based on maximum bore.
- To find the stiffness factor for a coupling assembly with a spacer "n" inches longer than standard:

  Let kx = new stiffness factor
  n = number of additional inches of spacer
  ks = stiffness factor for standard coupling from table
  ki = stiffness factor for 1 inch length of standard spacer body from table

  Then 1/ks + n 1/ki

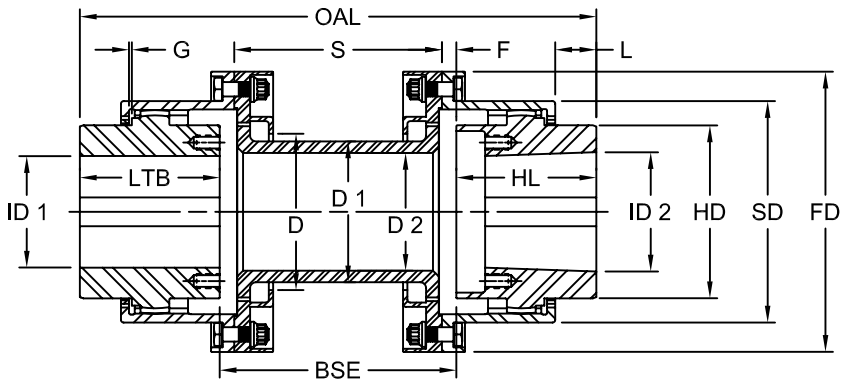
  Example: What is the new stiffness factor for a size 1.5 coupling if the spacer length is 3 inches longer than standard?

  1/kx = 1/21.7 + 3 x 1/12 = 0.83823..kx = 1.192

  If coupling spacer is shorter than standard, the formula becomes 1/kx = 1/ks - n 1/ki.

Lovejoy / Sier-Bath High Speed Gear Couplings

FHSAA Type High Speed Precision Couplings



FHSAA Type Dimensional Data

Size	OAL in	L in	F in	S in	G in	ID1-ID2 Max Bore in	HL in	LTB in	BSE in	FD in	SD in	D in	HD in	D1 in	D2 in	Bolts Per Flange Qty	Bolts Per Flange Size
1.5	9.25	0.19	0.09	4.44	0.06	1.625	2.13	2.13	5	5.00	3.50	2.50	2.56	2.00	1.50	8	5/16
2	10.00	0.25	0.09	4.44	0.06	2.125	2.50	2.50	5	5.88	4.31	3.19	3.19	2.63	2.13	8	3/8
2.5	11.25	0.25	0.09	4.44	0.06	2.625	3.13	3.13	5	6.88	5.31	4.00	4.00	3.38	2.88	10	3/8
3	14.25	0.25	0.09	6.44	0.09	3.125	3.63	3.63	7	8.19	6.13	4.69	4.75	4.00	3.38	10	1/2
3.5	15.50	0.25	0.09	6.44	0.09	3.625	4.25	4.25	7	9.00	7.00	5.56	5.50	4.88	4.25	12	1/2
4	17.75	0.25	0.09	7.44	0.09	4.125	4.88	4.88	8	10.00	7.88	6.75	6.38	5.88	5.25	12	5/8
4.5	19.00	0.38	0.09	7.44	0.09	4.625	5.50	5.50	8	11.63	9.13	7.38	7.00	6.50	5.63	12	5/8
5	22.50	0.50	0.09	9.44	0.09	5.125	6.25	6.25	10	13.00	10.50	8.75	7.13	7.75	6.75	14	5/8
5.5	23.50	0.50	0.09	9.44	0.09	5.625	6.75	6.75	10	14.50	11.50	9.50	8.75	8.50	7.50	14	3/4
6	24.50	0.50	0.09	9.44	0.09	6.125	7.25	7.25	10	15.75	12.75	10.44	9.38	9.25	8.25	16	3/4

Lovejoy / Sier-Bath High Speed Gear Couplings

FHSPAA Type High Speed Ultra Precision

The High Speed Ultra Precision gear couplings are made of Nitalloy 135 modified with a core hardness of HRC 32-36 and are magnetic particle inspected. They have close tolerances and precision manufactured mating surfaces with bores precision-ground for extremely high accuracy. In addition, they have body fitted bolts with reamed holes. These gear couplings are dynamically balanced and have a piloted gear fit to insure balance integrity during operation. The low overhung moment reduces bearing loads. They also have low moment of inertia and are extremely lightweight. Balancing bands will be included, if required. For nitrided teeth, specify class PAAN and a surface hardness of 90 minimum on the Rockwell 15N scale.

FHSPAA Type High Speed Ultra Precision Performance Data

Size	Torque in-lb x 10^3	Torque Nm x 10^3	Max Speed RPM	ID1 - ID2 Max Bore Square Keyway in	ID1 - ID2 Max Bore Metric Keyway mm	Nominal BSE in	Nominal BSE mm	Weight lb	Weight kg	Inertia WR^2 lb-in^2	Inertia GD^2 Nm^2	Torsional Stiffness in-lb/rad x 10^6	Torsional Stiffness Nm/rad x 10^6	Max Angular Misalignment Degrees
1.5	18.9	2.14	20,000	1.625	42	5	127.0	15.2	6.9	35.5	0.4	1.7	0.19	1/2°
2	28.3	3.20	18,700	2.125	56	5	127.0	25.9	11.8	76.9	0.9	4.0	0.45	
2.5	63.0	7.12	17,600	2.625	70	5	127.0	36.9	16.8	189.8	2.2	9.0	1.02	
3	100.8	11.39	16,500	3.125	84	7	177.8	60.2	27.3	389.8	4.5	12.2	1.38	
3.5	151.2	17.08	15,400	3.625	97	7	177.8	78.5	35.6	659.3	7.6	20.2	2.28	
4	220.6	24.93	14,300	4.125	111	8	203.2	113.3	51.4	1,169.4	13.4	29.7	3.86	
4.5	330.8	37.36	12,100	4.625	124	8	203.2	163.2	74.0	2,178.0	25.0	17.2	5.33	
5	479.0	54.12	11,000	5.125	140	10	254.0	239.5	108.6	4,116.6	47.3	69.4	7.84	
5.5	617.6	69.79	10,500	5.625	150	10	254.0	317.6	144.1	6,719.7	77.1	92.1	10.41	
6	813.0	91.86	9,900	6.125	170	10	254.0	398.4	180.7	8,993.1	103.2	123.3	13.93	

FHSPAA Type High Speed Ultra Precision Performance Data

Size	Weight Hub lb	Weight Sleeve lb	Weight Spacer Per Dim S lb	Weight Bolts & Nuts Per Flange lb	Weight Complete Cplg Per Dim BSE lb	Weight Spacer Body Per Inch lb	WR^2 Hub lb-in^2	WR^2 Sleeve lb-in^2	WR^2 Spacer Per Dim S lb-in^2	WR^2 Complete Cplg Per Dim BSE lb-in^2	WR^2 Spacer Body Per Inch lb-in^2	Torsional Stiffness Spacer Cplg Per BSE (ksi) in-lb/rad x 10^6	Torsional Stiffness Spacer Body Per Inch (ki) in-lb/rad x 10^6
1.5	2.22	2.18	5.48	0.47	15.22	0.39	2.8	7.5	14.9	35.5	0.3	1.7	12
2	3.81	5.00	7.28	0.51	25.92	0.52	7.7	16.2	29.1	76.9	0.7	4.0	31
2.5	6.96	5.63	10.50	0.63	36.94	0.69	23.7	40.0	62.4	189.8	1.7	9.0	72
3	11.79	8.69	16.32	1.47	60.22	1.02	51.1	82.7	122.2	389.8	3.5	12.2	148
3.5	18.31	10.34	17.72	1.76	78.54	1.27	104.6	141.1	167.9	659.3	6.6	20.2	281
4	28.50	13.80	25.20	3.58	113.32	1.54	218.0	204.7	324.0	1,169.4	11.9	29.7	508
4.5	39.99	19.76	36.50	4.18	163.16	2.36	387.3	408.5	586.4	2,178.2	21.7	47.2	923
5	59.82	29.48	52.54	4.18	239.50	3.23	738.9	797.8	1,043.1	4,116.6	42.5	69.4	1,804
5.5	79.84	38.06	68.26	6.77	317.60	3.56	1,196.3	1,259.6	1,807.7	6,719.7	57.1	92.1	2,422
6	99.66	52.87	77.86	7.74	398.40	3.89	1,774.2	2,089.4	2,465.8	8,993.1	74.6	123.3	3,167

Notes:
- All weights, WR^2 and Torsional Stiffness are based on maximum bore.
- To find the stiffness factor for a coupling assembly with a spacer "n" inches longer than standard:

  Let kx = new stiffness factor
  n = number of additional inches of spacer
  ks = stiffness factor for standard coupling from table
  ki = stiffness factor for 1 inch length of standard spacer body from table

  Then 1/ks + n 1/ki

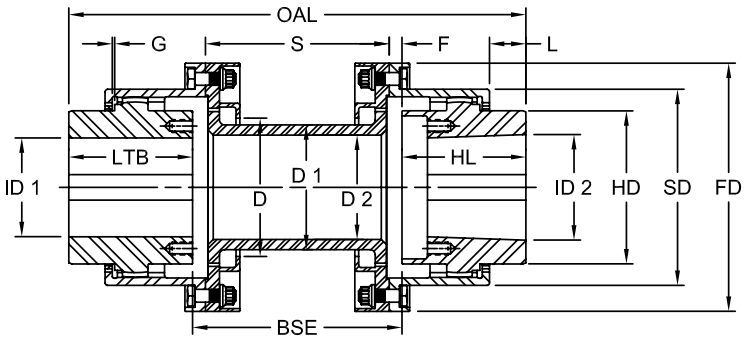
  Example: What is the new stiffness factor for a size 1.5 coupling if the spacer length is 3 inches longer than standard?

  1/kx = 1/1.7 + 3 x 1/12 = 0.83823..kx = 1.192

  If coupling spacer is shorter than standard, the formula becomes 1/kx = 1/ks - n 1/ki.

Lovejoy / Sier-Bath High Speed Gear Couplings

FHSPAA Type High Speed Ultra Precision Couplings



FHSPAA Type Dimensional Data

Size	OAL in	L in	F in	S in	G in	ID1 - ID2 Max Bore in	HL in	LTB in	BSE in	FD in	SD in	HD in	D in	D1 in	D2 in	Bolts Per Flange Qty	Bolts Per Flange Size
1.5	9.25	0.19	0.09	4.44	0.06	1.625	2.13	2.13	5	5.00	3.50	2.56	2.50	2.00	1.50	8	5/16
2	10.00	0.25	0.09	4.44	0.06	2.125	2.50	2.50	5	5.88	4.31	3.19	3.19	2.63	2.13	8	3/8
2.5	11.25	0.25	0.09	4.44	0.06	2.625	3.13	3.13	5	6.88	5.31	4.00	4.00	3.38	2.88	10	3/8
3	14.25	0.25	0.09	6.44	0.09	3.125	3.63	3.63	7	8.19	6.13	4.75	4.69	4.00	3.38	10	1/2
3.5	15.50	0.25	0.09	6.44	0.09	3.625	4.25	4.25	7	9.00	7.00	5.50	5.56	4.88	4.25	12	1/2
4	17.75	0.25	0.09	7.44	0.09	4.125	4.88	4.88	8	10.00	7.88	6.38	6.75	5.88	5.25	12	5/8
4.5	19.00	0.38	0.09	7.44	0.09	4.625	5.50	5.50	8	11.63	9.13	7.00	7.38	6.50	5.63	12	5/8
5	22.50	0.50	0.09	9.44	0.09	5.125	6.25	6.25	10	13.00	10.50	7.13	8.75	7.75	6.75	14	5/8
5.5	23.50	0.50	0.09	9.44	0.09	5.625	6.75	6.75	10	14.50	11.50	8.75	9.50	8.50	7.50	14	3/4
6	24.50	0.50	0.09	9.44	0.09	6.125	7.25	7.25	10	15.75	12.75	9.38	10.44	9.25	8.25	16	3/4

Lovejoy / Sier-Bath Type High Speed Gear Couplings

FHSMA Type High Speed Marine

The High Speed Marine gear couplings have a core hardness of HRC 30-35 and are magnetic particle inspected. They are precision manufactured with ground bores and close concentricity for dynamic stability. These couplings are dynamically balanced, have piloted gear fit, and have body fitted bolts and reamed holes. They also have a larger shaft capacity. For nitrided gear teeth, specify Class MAN and a surface hardness of 85.5 minimum on the Rockwell 15N scale.

FHSMA Type High Speed Marine Performance Data

Size	Torque in-lb x 10^3	Torque Nm x 10^3	Max Speed RPM	ID1 - ID2 Max Bore Square Keyway in	ID1 - ID2 Max Bore Metric Keyway mm	Nominal BSE in	Nominal BSE mm	Weight lb	Weight kg	Inertia WR^2 lb-in^2	Inertia GD^2 Nm^2	Torsional Stiffness in-lb/rad x 10^6	Torsional Stiffness Nm/rad x 10^6	Max Angular Misalignment Degrees
1.5	18.9	2.14	18,000	2.125	56	5	127.0	16.6	7.5	41.2	0.5	3.3	0.37	1/2°
2	28.3	3.20	17,000	2.625	70	5	127.0	26.6	12.1	95.0	1.1	7.0	0.79	
2.5	63.0	7.12	16,000	3.125	84	5	127.0	43.0	19.5	219.6	2.5	13.7	1.55	
3	100.8	11.39	15,000	3.625	97	7	177.8	68.2	30.9	464.0	5.3	20.4	2.31	
3.5	151.2	17.08	14,000	4.625	124	7	177.8	95.1	43.2	885.2	10.2	34.2	3.86	
4	220.6	24.93	13,000	5.125	140	8	203.2	156.3	70.9	1,926.0	22.1	54.6	6.17	
4.5	330.8	37.38	11,000	5.625	150	8	203.2	229.9	104.3	3,695.7	42.4	86.2	9.74	
5	479.0	54.12	10,000	6.625	186	10	254.0	301.3	136.7	6,459.5	74.2	118.1	13.34	
5.5	617.6	69.79	9,600	7.125	192	10	254.0	396.6	179.9	10,200.7	117.1	165.8	18.73	
6	813.0	91.86	9,000	7.625	208	10	254.0	596.3	270.5	19,736.0	226.6	216.7	24.49	

FHSMA Type High Speed Marine Performance Data

Size	Weight Hub lb	Weight Sleeve lb	Weight Spacer Per Dim S lb	Weight Bolts & Nuts Per Flange lb	Weight Complete Cplg Per Dim BSE lb	Weight Spacer Body Per Inch lb	WR^2 Hub lb-in^2	WR^2 Sleeve lb-in^2	WR^2 Spacer Per Dim S lb-in^2	WR^2 Complete Cplg Per Dim BSE lb-in^2	WR^2 Spacer Body Per Inch lb-in^2	Torsional Stiffness Spacer Cplg Per BSE (ksi) in-lb/rad x 10^6	Torsional Stiffness Spacer Body Per Inch (ki) in-lb/rad x 10^6
1.5	4.03	1.92	3.72	0.47	16.56	0.57	10.9	7.3	4.8	41.2	0.62	3.3	26
2	7.39	2.82	5.20	0.51	26.64	0.75	27.2	14.7	11.2	95.0	1.37	7.0	57
2.5	13.2	3.84	7.70	0.63	43.04	0.95	67.3	28.8	27.4	219.6	2.85	13.7	120
3	20.32	5.54	13.52	1.47	68.18	1.38	141.7	57.7	65.2	464.0	5.90	20.4	250
3.5	31.03	5.92	17.72	1.76	95.14	1.59	305.9	78.1	117.2	885.2	8.99	34.2	381
4	49.66	11.06	27.70	3.58	156.30	2.45	635.4	208.4	238.4	1,926.0	18.64	54.6	790
4.5	76.53	15.50	37.44	4.18	229.86	3.22	1248.4	378.7	411.5	3,696.7	33.60	86.2	1,425
5	98.66	19.12	57.40	4.18	301.32	3.61	2216.7	578.3	869.5	6,459.5	46.70	118.1	1,980
5.5	123.24	32.42	69.72	6.77	396.56	4.52	3,190.6	1,249.5	1,320.5	10,200.7	74.95	165.8	3,178
6	209.2	39.42	83.54	7.74	596.26	4.93	7,096.1	1,807.1	1,929.6	19,736.0	97.58	216.7	4,139

Notes:
- All weights, WR^2 and Torsional Stiffness are based on maximum bore.
- To find the stiffness factor for a coupling assembly with a spacer "n" inches longer than standard:

  Let kx = new stiffness factor
  n = number of additional inches of spacer
  ks = stiffness factor for standard coupling from table
  ki = stiffness factor for 1 inch length of standard spacer body from table

  Then 1/ks + n 1/ki

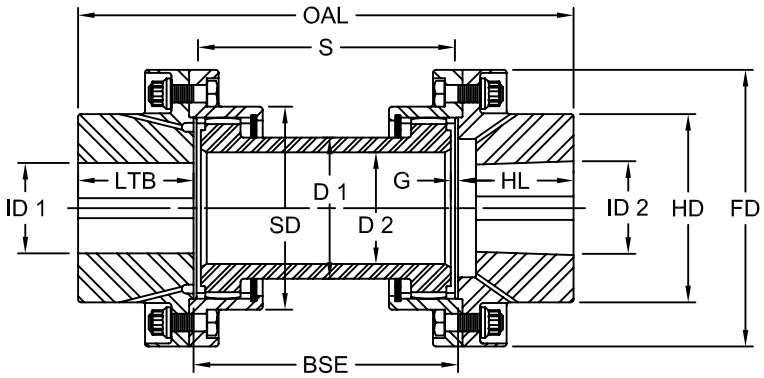
  Example: What is the new stiffness factor for a size 1.5 coupling if the spacer length is 3 inches longer than standard?

  1/kx = 1/3.3 + 3 x 1/26 = 0.41841..kx = 2.389

  If coupling spacer is shorter than standard, the formula becomes 1/kx = 1/ks - n 1/ki.

Lovejoy / Sier-Bath High Speed Gear Couplings

FHSMA Type High Speed Marine Couplings



FHSMA Type Dimensional Data

Size	OAL in	S in	G in	ID1 - ID2 Max Bore in	HL in	LTB in	BSE in	FD in	HD in	SD in	D1 in	D2 in	Bolts Per Flange Qty	Bolts Per Flange Size
1.5	10.00	4.81	0.09	2.125	2.50	2.50	5	5.00	3.19	3.50	2.38	1.75	8	5/16
2	11.25	4.81	0.09	2.625	3.13	3.13	5	5.88	4.00	4.31	3.00	2.38	8	3/8
2.5	12.25	4.81	0.09	3.125	3.63	3.63	5	6.88	5.00	5.31	3.75	3.13	10	3/8
3	15.50	6.81	0.09	3.625	4.25	4.25	7	8.19	5.75	6.13	4.50	3.75	10	1/2
3.5	17.50	6.75	0.13	4.625	5.25	5.25	7	9.44	6.75	7.00	5.13	4.38	12	1/2
4	20.00	7.75	0.13	5.125	6.00	6.00	8	11.00	7.75	7.88	6.00	5.00	12	5/8
4.5	21.25	7.75	0.13	5.625	6.63	6.63	8	12.50	9.00	9.13	7.00	5.88	12	5/8
5	24.25	9.69	0.16	6.625	7.13	7.13	10	13.63	10.13	10.50	7.75	6.63	14	5/8
5.5	26.00	9.69	0.16	7.125	8.00	8.00	10	15.31	11.00	11.50	8.50	7.50	14	3/4
6	27.50	9.69	0.16	7.625	8.75	8.75	10	16.75	12.50	12.75	9.25	8.25	16	3/4

Lovejoy / Sier-Bath High Speed Gear Couplings

FAC Type Engineered Centrifugal Pump Couplings

This coupling is designed specifically for centrifugal pumps and compressors. It is easy to install and replace, efficiently designed to reduce spare part inventory and is precision manufactured.

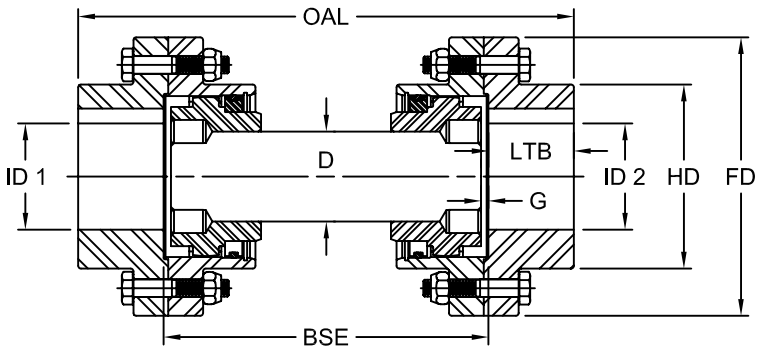
Individual components are easy to assemble and easy to replace. Component balanced parts eliminate your need to keep complete couplings in stock. Grease seals are replaceable without major disassembly. Four sizes accommodate 80% of all normally used shaft diameters. Other features include extended time between lubrications, infinitely adjustable BSE, M-F pilot for proper fit, vertical modification, center assembly independently replaceable, and conforms to API 610 - 6th edition. Its precision balanced parts are made of high strength alloy 4140 steel. Bolts are weigh-balanced as sets.

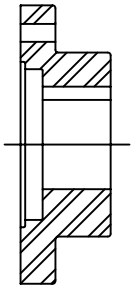
FAC Type Engineered Centrifugal Pump Performance Data

Size	Torque in-lb x 10^3	Torque Nm x 10^3	Max Speed Bal RPM	Max Speed Unbal RPM	ID1 - ID2 Max Bore Square Keyway in	Max Bore Standard Keyway in	Max Bore Metric Keyway mm	Nominal BSE in	Nominal BSE mm	Weight Solid lb	Weight Solid kg	Inertia WR^2 lb-in^2	Inertia GD^2 Nm^2	Max Bore Parallel Misalignment in	Max Bore Parallel Misalignment mm	Max Angular Misalignment Degrees
1	11.3	1.28	16,700	10,500	2.125	2.250	56	5	127.0	19.4	8.8	37.1	0.4	0.04	1.0	1/2°
1.5	22.7	2.56	12,700	9,000	2.813	3.000	76	7	177.8	42.2	19.1	138.9	1.6	0.06	1.5	
2	39.0	4.41	10,900	8,100	3.500	3.750	95	7	177.8	68.7	31.2	298.7	3.4	0.06	1.5	
2.5	69.3	7.83	9,100	7,200	4.250	4.500	114	7	177.8	122.0	55.3	767.3	8.8	0.06	1.5	
3	118.0	13.33	8,100	6,500	4.875	5.250	134	10	254.0	184.8	83.8	1,398.1	16.0	0.06	2.0	
3.5	177.0	20.00	6,900	5,950	5.625	6.125	157	10	254.0	288.0	130.6	3,052.7	35.0	0.06	2.0	

Lovejoy / Sier-Bath High Speed Gear Couplings

FAC Type Engineered Centrifugal Pump Couplings





Optional Rigid Hub Design

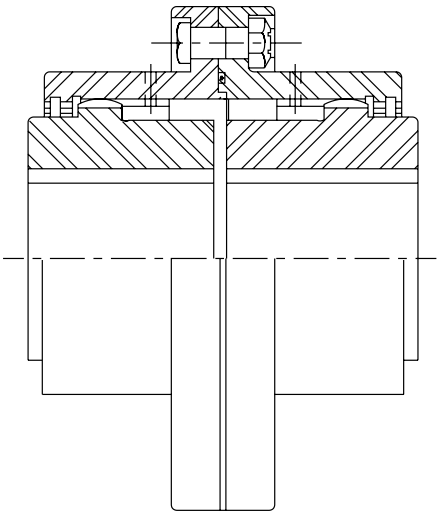
HP

FAC Type Dimensional Data

Size	OAL in	ID1 - ID2 Max Bore Square Keyway in	ID1 - ID2 Max Bore Metric Keyway mm	LTB in	G in	BSE in	FD in	HD in	D in
1	8.12	2.125	56	1.56	0.16	5	4.56	3.06	1.25
1.5	10.69	2.813	76	1.84	0.16	7	6.00	3.97	1.94
2	11.56	3.500	95	2.28	0.16	7	7.00	4.91	2.50
2.5	12.81	4.250	114	2.91	0.19	7	8.38	5.91	3.00
3	16.81	4.875	134	3.41	0.19	10	9.44	6.91	3.75
3.5	17.88	5.625	157	3.97	0.22	10	11.00	7.91	4.50

Lovejoy / Sier-Bath F Type High Speed Standard Couplings

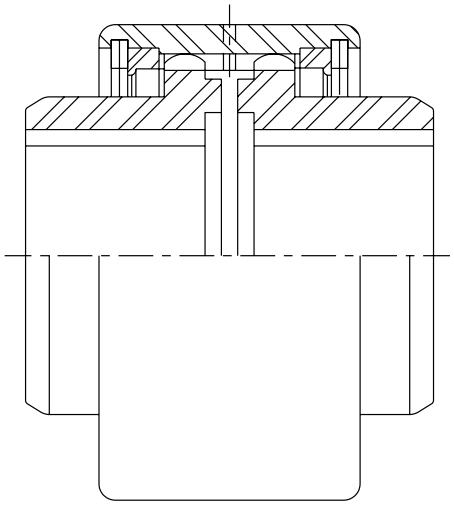
Additional Standard Designs



Standard High Speed Flanged Coupling

Continuously Lubricated

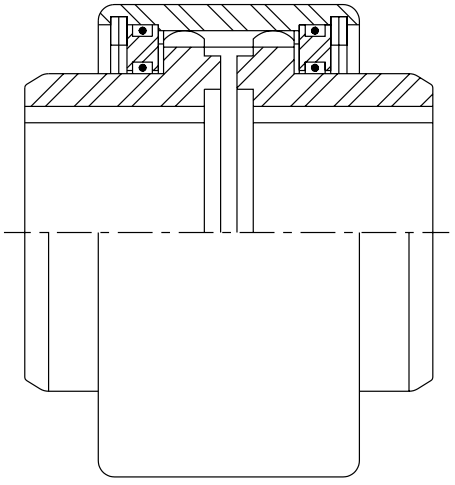
For close coupled, continuously lubricated, high speed applications. Sizes and specifications similar to those shown on the previous pages.



Standard High Speed Continuous Sleeve Coupling

Continuously Lubricated

For lighter weight, close coupled, continuously lubricated applications where flange joint is not required. Materials, heat treatments, and precision manufacturing methods outlined on previous pages apply.



Standard High Speed Continuous Sleeve Coupling

Grease Packed

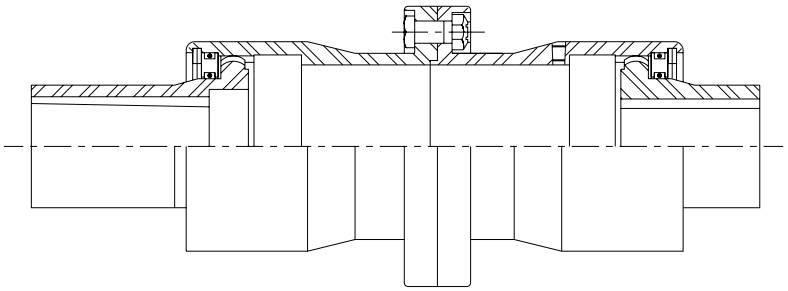
For lighter weight, close coupled, grease packed applications where flange joint is not required. Materials, heat treatments, and precision manufacturing methods outlined on previous pages apply.

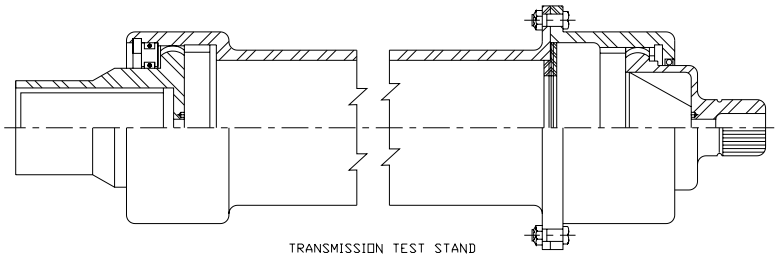
Lovejoy / Sier-Bath F Type High Speed Standard Couplings

Transmission Test Stand

High Speed Spacer Coupling

Self-contained oil lubrication, normal speed 16,000 RPM, maximum speed 25,000 RPM. The dimensions are similar to a size 2.5, with an overall length of 35 inches and a total weight of 29 lbs.





TRANSMISSION TEST STAND

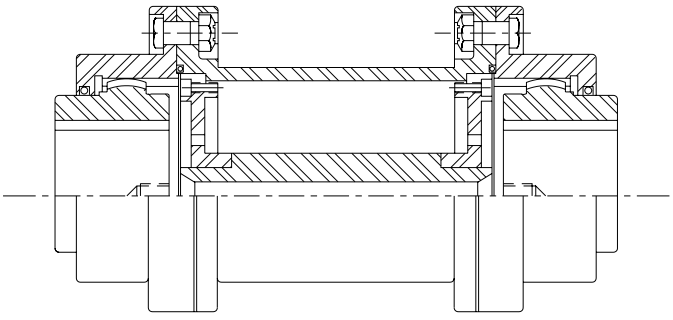
Light Weight Coupling

Made of extremely light weight, vacuum melted, AMS material with magnetic particle inspection. The overall length is 29.5 inches and the weight is 19.4 lbs.

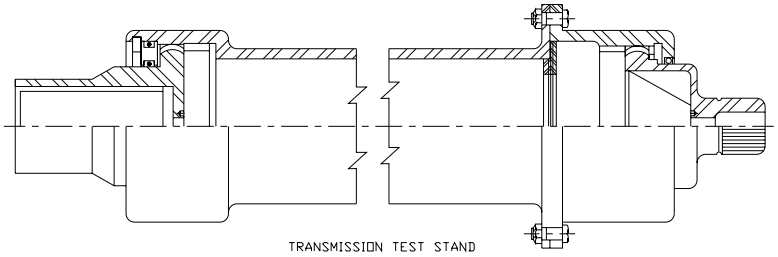
HP

Test Stand

High Speed Spacer coupling with internal support for instrumentation wires. Maximum speed of 7,000 RPM.



TEST STAND HIGH SPEED SPACER COUPLING



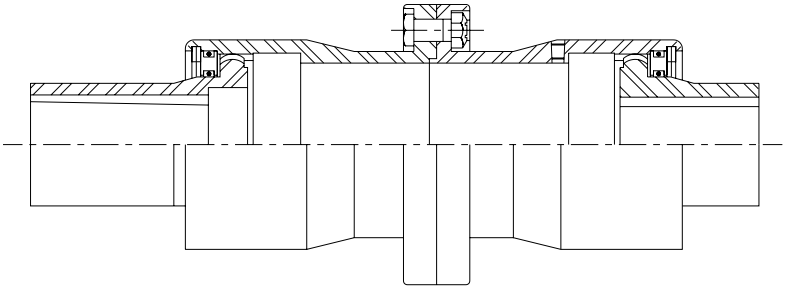
TRANSMISSION TEST STAND

Transmission Test Stand

This High Speed Spacer coupling is grease packed and operates at a maximum speed of 6,000 RPM. Based on a size 3, the overall length is 55 inches.

Single Flange

This High Speed Spacer coupling is grease packed and operates at a maximum speed of 8,000 RPM. The total assembly weight is 19 lbs with an overall length of 19 inches.

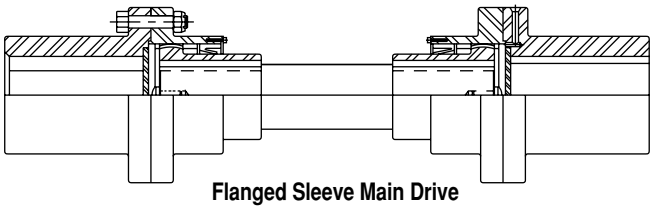


Lovejoy / Sier-Bath Flanged Sleeve Type Spindle Couplings

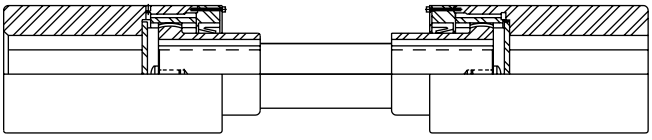
Special Load and No Load Applications

For cases where a spindle coupling operates under a load at a given misalignment angle and requires a higher no load misalignment angle, we design special Vari-Crown® tooth forms. Such forms have compound curvature wherein the Vari-Crown is used for maximum radii of curvature at the load angle. At no load conditions the tooth ends are designed to eliminate edge loading and give proper tangential contact.

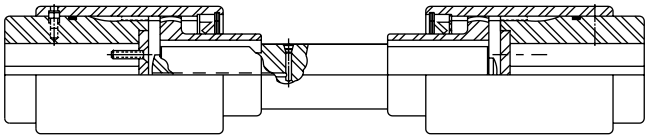
Available in several designs up to 40-inch diameter. Any variations of the designs shown can be incorporated to fit your application.



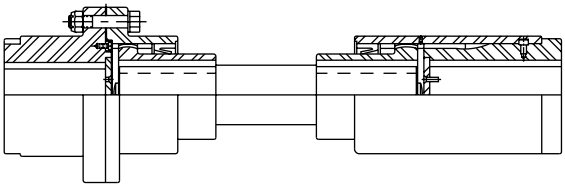
Flanged Sleeve Main Drive
Spindle Coupling



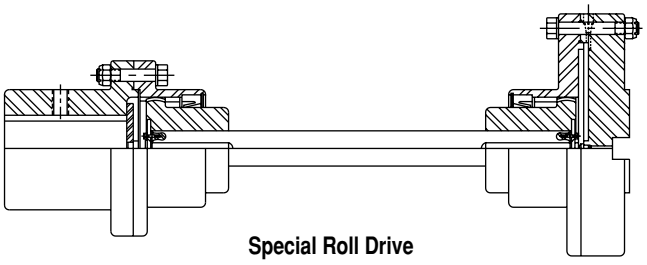
Replaceable Gearing
Spindle Coupling



Leveling and Pinch Roll
Spindle Coupling



Special Indexing
Spindle Coupling



Special Roll Drive
Spindle Coupling

Only a few special types of couplings are illustrated. Additional special types are available on request.

where the world turns for Lovejoy® Coupling Solutions

Motion Control

In This Section:

- Beam Style
- Bellows Style
- Mini Disc Style
- Oldham Style
- Mini Soft Style
- Curved Jaw Style
- Miniature Jaw Style



Motion Control

Safety Warning

When using Lovejoy products, you must follow these instructions and take the following precautions. Failure to do so may cause the power transmission product to break and parts to be thrown with sufficient force to cause severe injury or death.

Refer to this Lovejoy Catalog for proper selection, sizing, horsepower, torque range, and speed range of power transmission products, including elastomeric elements for couplings. Follow the installation instructions included with the product, and in the individual product catalogs for proper installation of power transmission products. Do not exceed catalog ratings.

During start up and operation of power transmission product, avoid sudden shock loads. Coupling assembly should operate quietly and smoothly. If coupling assembly vibrates or makes beating sound, shut down immediately, and recheck alignment. Shortly after initial operation and periodically thereafter, where applicable, inspect coupling assembly for: alignment, wear of elastomeric element, bolt torques, and flexing elements for signs of fatigue. Do not operate coupling assembly if alignment is improper, or where applicable, if elastomeric element is damaged, or worn to less than 75% of its original thickness.

Do not use any of these power transmission products for elevators, man lifts, or other devices that carry people. If the power transmission product fails, the lift device could fall resulting in severe injury or death.

For all power transmission products, you must install suitable guards in accordance with OSHA and American Society of Mechanical Engineers Standards. Do not start power transmission product before suitable guards are in place. Failure to properly guard these products may result in severe injury or death from personnel contacting moving parts or from parts being thrown from assembly in the event the power transmission product fails.

If you have any questions, contact the Lovejoy Engineering Department at 1-630-852-0500.

Motion Control

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Motion Control Coupling Selection Process

- Beam
- Bellows
- Mini-Disc
- Oldham
- Mini-Soft
- Curved Jaw
- Mini-Jaw



The selection process for determining the proper Motion Control coupling starts with selecting the coupling design that best addresses the application requirements. The Lovejoy Motion Control Coupling Quick Reference Chart (pages MC-12 and MC-13) provides a method of weighing performance characteristics of the Beam, Bellows, Mini-Disc, Oldham, Mini-Soft, Curved Jaw, and Mini-Jaw couplings.

Each coupling is compared side by side in critical categories such as: material, torque, torsional stiffness, bore capacity, maximum RPM, misalignment capacity, maximum temperature and moment of inertia. Once a design is selected, the proper size must be determined based on the capabilities of the particular design.

The Beam, Bellows and Mini Disc designs all have a single piece construction, so only one part needs to be selected. The GS Curved Jaw, Oldham, Mini Soft, and Mini Jaw designs have a three piece constructions, consisting of two hubs and an insert. When the shaft size of the driver and driven are the same diameter, the hubs will be the same. When the shaft diameters differ, the hubs selected will differ accordingly.

The following information is necessary before a coupling can be selected:

1. HP and RPM of the driver
2. Shaft size of the driver and driven
3. Application requirements
4. Environmental conditions (i.e. extreme temperature, corrosive conditions, space limitations)
5. Space Limitations (i.e. maximum outside diameter and overall length for the coupling)

Formulas	***Chart 1***
Nominal Torque =	in-lbs = $\frac{(HP \times 63025)}{RPM}$
	Nm = $\frac{(KW \times 9550)}{RPM}$
Design Torque = Nominal Torque X Application Service Factor	

Steps In Selecting A Motion Control Coupling

Step 1: Determine the nominal torque of your application by using formula in Chart 1.

Step 2: Select a coupling design from the Lovejoy Motion Control Quick Reference Chart (pages MC-12 and MC-13). Proceed to the proper coupling section based on the coupling selected.

Beam Coupling Selection Process

For the Beam coupling, determine if the coupling should be mounted with set screws or by the split/clamp method. The split clamp hub option is recommended for accurate positioning. The Bellows and Mini Disc are available with the clamp style only.

The nominal torque should be treated as the design torque for the Beam coupling design. If the Beam coupling application is non-reversing, the listed torque rating can be used for comparison. If the application is reversing, reduce the nominal torque figure by half. Scan the appropriate column to the first entry where the rated torque value in the column is greater than or equal to the Nominal Torque calculated in Step 1. Over sizing the beam coupling can reduce the amount windup. This can be useful in applications that require close positioning in start/stop/reverse drives.

WARNING

You must refer to page MC-2 (Page 94) for Important Safety Instructions and Precautions for the selection and use of these products. Failure to follow the instructions and precautions can result in severe injury or death.

Bellows Coupling Selection Process

For the BWC and BWLC series Bellows coupling, use the following formulas:

Nominal Torque = in-lbs. = HP X 63025 / RPM

$$\text{Design Torque} = \text{SF} \times \text{Nominal Torque (Motor)} \times \frac{\text{Inertia (Driven)}}{\text{Inertia (Driver)} + \text{Inertia (Driven)}}$$

The Service Factors for the BWC and BWLC series should be: 1.5 for uniform movements, 2.0 for non-uniform movements, and 2.5 (maximum) non-uniform/ shock loading movements. The design torque should always be equal to or lower than the nominal rated torque of the coupling. Please consult the allowable misalignment figures on pages MC-9 and MC-10. These figures represent the maximum amount of allowable misalignment.

Mini-Disc Coupling Selection Process

Sizing the Mini-disc coupling, ensure that the maximum torque for the application is under the allowable torque for the particular mini-disc coupling size. Check the maximum bore, misalignment, and torsional stiffness ratings against the requirements of the application.

Oldham, Min-Soft, or Mini-Jaw Coupling Selection Process

When selecting an Oldham style coupling, it should be determined whether a clamp or setscrew style is appropriate. For the Oldham, Mini Soft, or Jaw couplings, refer to the service factor chart below to select the correct service factor for the application. Calculate the design torque by multiplying the nominal torque by the application service factor. Then, select the correct Oldham, Mini Soft, or Jaw size coupling by choosing the size that has a torque rating larger than the calculated design torque.

MC

Oldham, Mini-Soft, and Mini-Jaw Coupling Service Factors

	Constant Torque 0-10 Hrs/Day	Varying Torque 11-24 Hrs/Day	Constant Torque 0-10 Hrs/Day	Varying Torque 11-24 Hrs/Day
Start/Stop = 0-120/Hr Temperature = 50° to 85° F	1.2	1.7	1.7	2.2
Start/Stop=0-120/Hr Temperature = 86° to 104° F	1.4	2.0	2.0	2.6
Start/Stop = 0-120/Hr Temperature = 105° to 140° F	1.7	2.5	2.5	3.2
Start/Stop = 121-240/Hr Temperature = 50° to 85° F	1.5	2.2	2.2	2.8
Start/Stop = 121-240/Hr Temperature = 86° to 104° F	1.8	2.5	2.5	3.3
Start/Stop = 121-240/Hr Temperature = 105° to 140° F	2.2	3.1	3.1	4.1

GS Curved Jaw Coupling Service Factors

Temperature Factor

	-30° to 30° C	40° C	60° C	80° C
K3	1	1,2	1,4	1,8

Torsional Stiffness Factor

	Main Spindle Drive of Machine	Positioning Drive	Shaft Encoders, Angle Encoders
K4	2-5	3-8	10

Shock Load Factors

	K5
Light Shock Loads	1,0
Medium Shock Loads	1,4
Heavy Shock Loads	1,8

GS Curved Jaw Selection Process

$$\text{Rotational inertia coefficient (driver)} = \frac{\text{Moment of inertia (driver)}}{\text{Moment of inertia (driver)} + \text{Moment of inertia (driven)}}$$

$$\text{Rotational inertia coefficient (driven)} = \frac{\text{Moment of inertia (driven)}}{\text{Moment of inertia (driver)} + \text{Moment of inertia (driven)}}$$

Check the nominal torque for the application against the rating for the coupling:

Tkn > Rated torque of machine x K3 x K4

Peak Torque

Shock load (driver side) = Peak torque (driver) x rotational inertia coefficient (driver) x K5
Shock load (driven side) = Peak torque (driven) x rotational inertia coefficient (driven) x K5

Check the peak torque for the application against the rating for the coupling (page MC-19), checking both driver and driven sides:

Tkmax > Peak Torque (driver or driven side) x K3 x K4

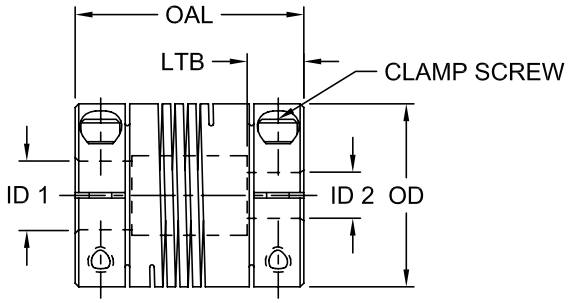
ASB Series - Aluminum Single Beam Clamp Style Coupling

The ASB (Aluminum Single Beam) Series offers additional outside diameter and overall length dimensions to the EC Series of Beam couplings. These options are extremely helpful in applications where the space available for a coupling is limited. The ASB series also offers slightly larger bore capacities than their equivalent size in the EC Series. The 5 sizes of the ASB Series along with the 3 clamping sizes in the EC Series give designers more options for applications with limited coupling space.



Features

- Zero backlash design
- Anodized aluminum material
- Higher torque than the EC/ES series



ASB Series Performance Data

Size	Torque Nominal in-lbs*	Torsional Stiffness in-lb/rad*	Max RPM	Weight* oz	Weight* g	Moment of Inertia* lb-in2	Misalignment Angular	Misalignment Parallel in	Misalignment Axial in
ASB 3	2.0	318.6	10,000	0.2	5.4	0.000	5°	0.005	± 0.010
ASB 3.5	3.4	557.6	10,000	0.3	8.3	0.001	5°	0.005	± 0.010
ASB 4	5.0	442.5	10,000	0.5	15.1	0.002	5°	0.005	± 0.010
ASB 5	10.0	920.4	10,000	1.4	40.6	0.011	5°	0.005	± 0.010
ASB 6	15.0	1,770.0	10,000	3.0	86.2	0.037	5°	0.005	± 0.010

Notes:
- * indicates: Nominal torque, torsional stiffness, weight and moment of inertia are based on minimum bore size.
- Specify Bore sizes ID1 and ID2 when ordering.

ASB Series Dimensional Data

Size	OAL in	OAL mm	LTB in	LTB mm	ID1 - ID2 Min Bore in	ID1 - ID2 Min Bore mm	ID1 - ID2 Max Bore in	ID1 - ID2 Max Bore mm	OD in	OD mm	Clamp Screw Size mm
ASB 3	0.752	19.1	0.236	6	0.118	3	0.197	5.00	0.500	12.7	M2
ASB 3.5	0.799	20.3	0.236	6	0.157	4	0.250	6.35	0.626	15.9	M2.5
ASB 4	0.902	22.9	0.256	7	0.157	4	0.315	8.00	0.752	19.1	M2.5
ASB 5	1.252	31.8	0.354	9	0.236	6	0.433	11.00	1.000	25.4	M3
ASB 6	1.752	44.5	0.472	12	0.236	6	0.551	14.00	1.252	31.8	M4

ES and EC Series - Single Beam Style Coupling

The Beam flexible coupling is formed from one piece of aluminum rod. A spiral slot is cut through the length of the aluminum tube forming a "spring" center section referred to as a helical coil or beam. The flexure allowed by the beam portion of the coupling is capable of accommodating angular, parallel and axial misalignment while continuing to convey power between the attached shafts. This results in a single piece, true flexible coupling.

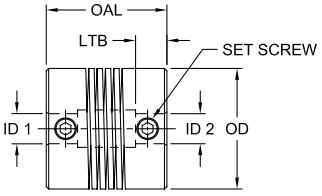
The Miniature Beam coupling is designed for very light power transmission applications where accurate positioning of shafts is an essential requirement. It also has a very high tolerance to heat, chemicals, and corrosion that would be harmful to conventional elastomeric flexible couplings. The Miniature Beam coupling design is very well suited for small shaft applications and the inherent requirements of start/stop/reverse applications where zero backlash and extreme positioning accuracy are important. This coupling operates either clockwise or counter clockwise without sacrificing windup or torque capabilities.



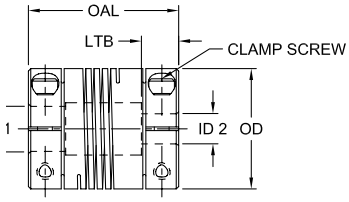
Set Screw Type (ES)



Clamping Type (EC)



Set Screw Type (ES)



Clamping Type (EC)

Features

- All-metal coupling
- Easy to install – one piece
- High angular misalignment capability to 5°
- Anodized aluminum finish
- Zero backlash design

ES and EC Series Performance Data

Size	Torque Nominal in-lbs*	Torsional Stiffness in-lb/rad*	Max RPM	Weight* oz	Weight* g	Moment of Inertia* lb-in2	Misalignment Angular	Misalignment Parallel in	Misalignment Axial in
ES 050	1.8	42.8	10,000	0.1	3.6	2.73	5°	0.005	± 0.010
EC 050	1.8	42.8	10,000	0.2	5.8	4.10	5°	0.005	± 0.010
ES 075	5.0	119.4	10,000	0.4	12.0	20.16	5°	0.005	± 0.010
EC 075	5.0	119.4	10,000	0.5	15.0	24.95	5°	0.005	± 0.010
ES 100	11.0	286.5	10,000	1.1	30.0	86.80	5°	0.005	± 0.010
EC 100	11.0	286.5	10,000	1.3	38.0	111.74	5°	0.005	± 0.010
ES 112	17.0	409.3	10,000	1.4	39.0	148.99	5°	0.005	± 0.010
EC 112	17.0	409.3	10,000	1.9	54.0	207.08	5°	0.005	± 0.010

Notes: ■ * indicates: Nominal torque, torsional stiffness, weight and moment of inertia are based on minimum bore size.
■ Specify Bore sizes ID1 and ID2 when ordering.

ES and EC Series Dimensional Data

Size	OAL in	OAL mm	LTB in	LTB mm	ID1 - ID2 Min Bore in	ID1 - ID2 Min Bore mm	ID1 - ID2 Max Bore in	ID1 - ID2 Max Bore mm	OD in	OD mm	Set Screw or Clamp Screw Size in	Set Screw or Clamp Screw Size mm
ES050	0.512	13	0.118	3	0.118	3	0.188	4	0.512	13	4-40	M2.5
EC050	0.748	19	0.197	5	0.118	3	0.188	4	0.512	13	1-72	M1.6
ES075	0.748	19	0.197	5	0.157	4	0.236	6	0.748	19	8-32	M4
EC075	0.906	23	0.236	6	0.157	4	0.236	6	0.748	19	4-40	M2.5
ES100	0.984	25	0.276	7	0.236	6	0.394	10	0.984	25	10-24	M5
EC100	1.260	32	0.315	8	0.236	6	0.394	10	0.984	25	6-32	M3
ES112	1.102	28	0.276	7	0.315	8	0.472	12	1.102	28	1/4-20	M6
EC112	1.496	38	0.433	11	0.315	8	0.472	12	1.102	28	6-32	M3

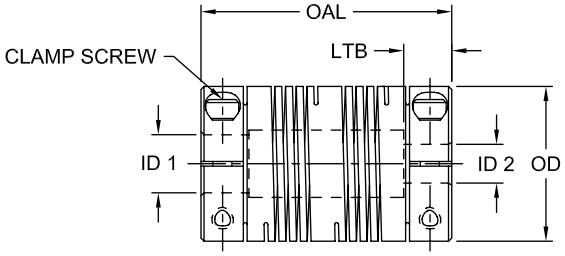
ADB Series - Aluminum Double Beam Clamp Style Coupling

The ADB (Aluminum Double Beam) Series coupling enhances the beam coupling options available from Lovejoy Inc. The longer overall length allows the ADB series to span longer BSE (between shaft end) measurements. The aluminum material used in its construction keeps the coupling's weight low. The ADB design offers two flex points allowing for greater angular misalignment, up to 7°. This design also allows for up to .024 inches of parallel misalignment. The torque capacity ADB series is more than double the range of the single beam designs, with the largest size having a torque capacity of 88 in-lbs.



Features

- Zero backlash design
- Simple one piece assembly
- Aluminum material
- Largest amount of angular misalignment capacity



ADB Series Performance Data

Size	Torque Nominal in-lbs*	Torsional Stiffness in-lb/rad*	Max RPM	Weight* oz	Weight* g	Moment of Inertia* lb-in2	Misalignment Angular	Misalignment Parallel in	Misalignment Axial in
ADB 3	3.5	1,097	10,000	0.2	6.5	0.001	5°	0.007	± 0.010
ADB 3.5	6.2	2,584	10,000	0.4	11.5	0.001	7°	0.008	± 0.010
ADB 4	12.0	4,460	10,000	0.6	16.7	0.003	7°	0.010	± 0.010
ADB 5	20.0	6,266	10,000	1.6	44.3	0.013	7°	0.015	± 0.010
ADB 6	38.0	15,266	10,000	3.7	105.8	0.049	7°	0.020	± 0.010
ADB 7	88.0	20,514	10,000	6.2	175.1	0.118	7°	0.024	± 0.010

Notes:
- * indicates: Nominal torque, torsional stiffness, weight and moment of inertia are based on minimum bore size.
- Specify Bore sizes ID1 and ID2 when ordering.

ADB Series Dimensional Data

Size	OAL in	OAL mm	LTB in	LTB mm	ID1 - ID2 Min Bore in	ID1 - ID2 Min Bore mm	ID1 - ID2 Max Bore in	ID1 - ID2 Max Bore mm	OD in	OD mm	Set Screw or Clamp Screw Size mm
ADB 3	0.902	22.9	0.209	5.3	0.118	3.0	0.250	6.35	0.500	12.7	M2
ADB 3.5	1.000	25.4	0.256	6.5	0.197	5.0	0.315	8.00	0.626	15.9	M2.5
ADB 4	1.043	26.5	0.256	6.5	0.236	6.0	0.394	10.00	0.752	19.1	M2.5
ADB 5	1.500	38.1	0.433	11.0	0.295	7.5	0.500	12.70	1.000	25.4	M3
ADB 6	2.252	57.2	0.630	16.0	0.394	10.0	0.630	16.00	1.252	31.8	M4
ADB 7	2.626	66.7	0.709	18.0	0.394	10.0	0.748	19.00	1.500	38.1	M5

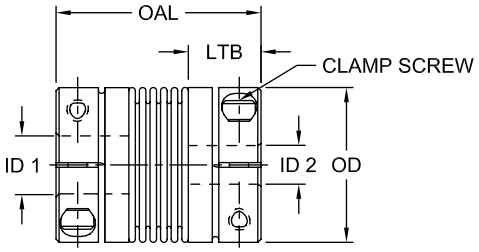
BWC Series - Bellows Clamp Style Coupling

The BWC (Bellows Clamp) Series coupling provides a new range of coupling options with the high torsional stiffness. The higher torsional stiffness provides the benefit of accuracy and repeatability in motion control applications. The BWC series coupling features aluminum hubs and corrosion resistant steel bellow. The compact design also offers the benefit of low inertia. The BWC Series also has a torque capacity of up to 89 in-lbs, with a maximum bore capacity of .748 inches in diameter. The BWC utilizes clamping style hubs that provide easy installation and removal of the coupling. The bellows design also offers up to .016 inches of axial misalignment, with low reactionary loading on bearings.



Features

- High torsional stiffness
- Low reactionary loading
- No maintenance required
- Low inertia



BWC Series Performance Data

Size	Torque Nominal in-lbs*	Torsional Stiffness in-lb/rad*	Max RPM	Weight* oz	Weight* g	Moment of Inertia* lb-in2	Misalignment Angular	Misalignment Parallel in	Misalignment Axial in
BWC-21	3.54	2,248	15,000	0.3	9	0.009	1.2°	0.004	0.009
BWC-23	7.97	4,487	15,000	0.3	9	0.009	1.2°	0.004	0.008
BWC-26	13.28	6,620	15,000	0.8	22	0.038	1.2°	0.004	0.010
BWC-32	17.70	13,541	15,000	1.3	36	0.085	1.2°	0.004	0.012
BWC-41	39.83	57,083	15,000	2.6	74	0.335	1.2°	0.004	0.012
BWC-47	88.50	71,420	15,000	4.2	120	0.789	1.2°	0.006	0.016

Notes:
- * indicates: Nominal torque, torsional stiffness, weight and moment of inertia are based on minimum bore size.
- Specify Bore sizes ID1 and ID2 when ordering.

BWC Series Dimensional Data

Size	OAL in	OAL mm	LTB in	LTB mm	ID1 - ID2 Min Bore in	ID1 - ID2 Min Bore mm	ID1 - ID2 Max Bore in	ID1 - ID2 Max Bore mm	OD in	OD mm	Clamp Screw Size mm
BWC-21	0.827	21	0.276	7.0	0.118	3	0.256	6.5	0.591	15	M2
BWC-23	0.906	23	0.276	7.0	0.118	3	0.256	6.5	0.591	15	M2
BWC-26	1.024	26	0.354	9.0	0.118	3	0.394	10.0	0.748	19	M2.5
BWC-32	1.260	32	0.472	12.0	0.118	3	0.472	12.0	0.945	24	M3
BWC-41	1.614	41	0.551	14.0	0.236	6	0.630	16.0	1.260	32	M4
BWC-47	1.850	47	0.571	14.5	0.315	8	0.748	19.0	1.575	40	M4

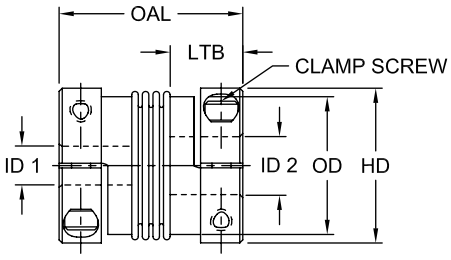
BWLC Series - Bellows Clamp Style Coupling

The BWLC (Bellows Clamp) Series coupling specifically addresses higher torque and bore capacities in the area of motion control. The BWLC Series offers the highest amount of torsional stiffness for accuracy and repeatability. The BWLC Series coupling features a corrosion resistant steel bellow and aluminum or steel hubs. The BWLC Series also has a torque capacity of up to 1,328 in-lbs, with a maximum bore capacity of 1.574 inches in diameter. The larger size of the BWLC allows for a greater amount of axial misalignment of .020 inches, with low reactionary loading on bearings.



Features

- Highest torsional stiffness
- Low reactionary loading
- No maintenance required
- Low inertia



BWLC Series Performance Data

Size	Torque Nominal in-lbs*	Torsional Stiffness in-lb/rad*	Max RPM	Weight* oz	Weight* g	Moment of Inertia* lb-in2	Misalignment Angular	Misalignment Parallel in	Misalignment Axial in
BWLC-63	159	70,800	12,700	7.05	200	0.273	1.5°	0.008	0.020
BWLC-65	266	318,600	10,200	10.58	300	0.547	1.0°	0.004	0.016
BWLC-78	531	646,050	8,600	21.16	600	1.709	1.0°	0.004	0.016
BWLC-91	1,328	1,336,350	6,800	81.13	2,300	9.561	1.0°	0.008	0.016

Notes: ■ * indicates: Nominal torque, torsional stiffness, weight and moment of inertia are based on minimum bore size.
■ Specify Bore sizes ID1 and ID2 when ordering.

BWLC Series Dimensional Data

Size	OAL in	OAL mm	LTB in	LTB mm	ID1 - ID2 Min Bore in	ID1 - ID2 Min Bore mm	ID1 - ID2 Max Bore in	ID1 - ID2 Max Bore mm	HD** in	HD** mm	OD in	OD mm	Clamp Screw Size mm
BWLC-63	2.480	63	0.472	12.0	0.394	10	0.984	25	1.772	45	1.772	45	M5
BWLC-65	2.559	65	0.591	15.0	0.394	10	0.984	25	1.850 / 2.205	47 / 56	2.205	56	M6
BWLC-78	3.071	78	0.768	19.5	0.551	14	1.378	35	2.244 / 2.598	57 / 66	2.598	66	M8
BWLC-91	3.583	91	0.846	21.5	0.787	20	1.575	40	2.677 / 3.150 3.307	68 / 80 84	3.228	82	M10

Note: ■ ** indicates: Various hub diameters available to accommodate different size bore diameters.

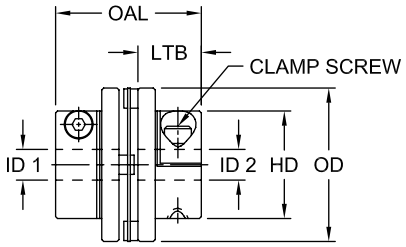
MDSD Series - Mini Disc Single Disc Clamp Style Coupling

The compact design of the MDSD (Mini Disc Single Disc) Series accommodates applications that allow for a minimum amount of space for the coupling. The MDSD Series coupling also features a high torsional stiffness over the MD and MDS Series. The MDSD Series also has the lowest inertia of the mini disc designs.



Features

- Zero backlash design
- Highest torsional stiffness
- Aluminum hubs with stainless steel discs
- Moderate-high torque capabilities
- Low Inertia



MC

MDSD Series Performance Data

Size	Torque Nominal in-lbs*	Torsional Stiffness in-lb/rad*	Max RPM	Weight* oz	Weight* g	Moment of Inertia* lb-in2	Misalignment Angular	Misalignment Parallel in	Misalignment Axial in
MDSD-32C	18	11,505	4,800	1.34	38	0.015377	1°	N/A	± 0.20
MDSD-40C	35	24,780	3,800	2.33	66	0.041006	1°	N/A	± 0.20
MDSD-50C	66	32,745	3,100	4.23	120	0.126435	1°	N/A	± 0.20
MDSD-63C	89	44,250	2,400	6.70	190	0.287042	1°	N/A	± 0.20

Notes:
- * indicates: Nominal torque, torsional stiffness, weight and moment of inertia are based on minimum bore size.
- N/A indicates: Not Applicable.
- Specify Bore sizes ID1 and ID2 when ordering.

MDSD Series Dimensional Data

Size	OAL in	OAL mm	LTB in	LTB mm	ID1 - ID2 Min Bore in	ID1 - ID2 Min Bore mm	ID1 - ID2 Max Bore in	ID1 - ID2 Max Bore mm	OD in	OD mm	HD in	HD mm	Clamp Screw Size mm
MDSD-32C	1.260	32	0.539	13.7	0.118	4	0.394	10	1.260	32	0.866	22	M3
MDSD-40C	1.496	38	0.650	16.5	0.236	6	0.551	14	1.575	40	1.102	28	M4
MDSD-50C	1.732	44	0.764	19.4	0.394	10	0.787	20	1.969	50	1.535	39	M5
MDSD-63C	1.969	50	0.878	22.3	0.472	12	0.984	25	2.480	63	1.772	45	M6

Coupling Types	Beam			Bellows	
					
Summary of Design	ES/EC Series	ASB Series	ADB Series	BWC Series	BWLC Series
	Single beam with setscrew or clamping options	Single beam with clamping style for higher torque applications	Double Beam clamping style coupling	Standard Bellows style coupling	Bellows style coupling
Material Type	Anodized Aluminum	Anodized Aluminum	Aluminum	Aluminum hubs with stainless steel bellows	Aluminum hubs with stainless steel bellows
Torque Capacity (Nominal)	up to 17 in-lbs	up to 15 in-lbs	up to 88 in-lbs	up to 88.5 in-lbs	up to 1,328 in-lbs
Torsional Stiffness	up to 409 in-lb/rad	up to 1,770 in-lb/rad	up to 20,514 in-lb/rad	up to 71,420 in-lb/rad	up to 1,33,350 in-lb/rad
Bore Capacity	up to .500 inches	up to .551 inches	up to .866 inches	up to .748 inches	up to 1.574 inches
Maximum RPM	up to 10,000 RPM	up to 10,000 RPM	up to 10,000 RPM	up to 15,000 RPM	up to 12,700 RPM
Angular Misalignment	up to 5°	up to 5°	up to 7°	up to 1.2°	up to 1.5°
Parallel Misalignment	.005 inches	.005 inches	.024 inches	.006 inches	.008 inches
Axial Misalignment	+/- .010 inches	+/- .010 inches	+/- .010 inches	up to +/- .016 inches	up to +/- .020 inches
Maximum Temperature	200° F	200° F	200° F	212° F	212° F
Moment of Inertia	Up to 207 [lb-in^2]	Up to 0.037 [lb-in^2]	Up to 118 [lb-in^2]	Up to .78937 [lb-in^2]	Up to 9.561 [lb-in^2]

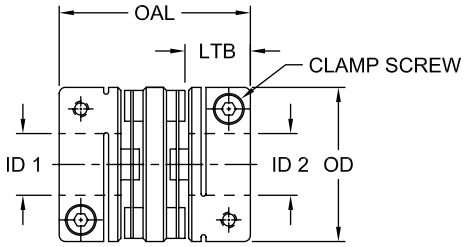
Mini-Disc			Oldham	Mini Soft	GS Curved Jaw	Mini Jaw
						
MD Series	MDS Series	MDSD Series	MOL Series	MSF Series	GS Series	L Series
Standard mini disc configuration utilizing two disc packs	Spacer version of the minidisc style coupling	SIngle disc pack version of the mini disc coupling	Three piece coupling design with Polyacetel insert	Three piece design with Polyurethane sleeve insert	Three piece jaw coupling design with Urethane or Hytrel® insert	Three piece jaw design with buna-N Urethane, or Hytrel® Spider
Aluminum Hubs with stainless steel disc	Aluminum Hubs with stainless steel disc	Aluminum Hubs with stainless steel disc	Aluminum Hhubs, Polyacetel insert	Zinc Alloy/ sintered iron hubs, polyurethane	Aluminum or steel hubs, urethane or Hytrel® insert	Sintered iron hubs, Buna-N, Urethane, or Hytrel® Spider
up to 111 in-lbs	up to 221 in-lbs	up to 89 in-lbs	up to 40 in-lbs	up to 27 in-lbs	up to 7301 in-lbs	up to 50 in-lbs
up to 26,550 in-lb/rad	up to 22,125 in-lb/rad	up to 44,250 in-lb/rad	up to 7,877 in-lb/rad	up to 266 in-lb/rad	up to 366,921 in-lb/rad	N/A
up to 1.18 inches	up to 1,000 inches	up to 1,000 inches	up to .500 inches	up to .500 inches	up to 2.75 inches	up to .625 inches
up to 10,000 RPM	up to 4,800 RPM	up to 4,800 RPM	up to 24,000 RPM	up to 24,000 RPM	up to 25,400 RPM	up to 31,000 RPM
up to 1.5°	up to 2°	up to 1°	up to 3°	up to 2°	up to 1.3°	up to 1°
.006 inches	.010 inches	N/A	.100 inches	.010 inches	.027 inches	.015 inches
+/- .020 inches	+/- .031 inches	+/- .008 inches	+/- .008 inches	N/A	N/A	N/A
300° F	300° F	300° F	176° F	140° F	up to 248° F	up to 250° F
Up to .72 [lb-in^2]	Up to .376 [lb-in^2]	Up to .287 [lb-in^2]	Up to .304 [lb-in^2]	Up to .092 [lb-in^2]	Up to .135 [lb-in^2]	Up to .070 [lb-in^2]

MC

MD Series - Mini Disc Clamp Style Coupling

The MD (mini disc) Series coupling features a higher torque capacity over elastomeric coupling types. The MD Series one piece clamping design allows for easy removal and assembly. The Aluminum hubs and stainless steel disc materials allow for excellent resistance to oil and other chemicals. The MD Series design offers moderate torsional stiffness for applications requiring repeatability. The MD Series also offers up to .020 inches of axial misalignment.





Features

- Zero backlash design
- Moderate torsional stiffness
- Aluminum hubs with stainless steel discs
- Moderate-high torque capabilities

MC

MD Series Performance Data

Size	Torque Nominal in-lbs*	Torsional Stiffness in-lb/rad*	Max RPM	Weight* oz	Weight* g	Moment of Inertia* lb-in2	Misalignment Angular	Misalignment Parallel in	Misalignment Axial in
MD-19C	6	1,770	10,000	0.635	18	0.003	1.5°	0.005	± 0.20
MD-25C	9	3,983	8,000	0.882	25	0.009	1.5°	0.005	± 0.20
MD-32C	22	9,735	6,000	2.116	60	0.033	1.5°	0.006	± 0.20
MD-40C	31	12,390	5,000	3.527	100	0.065	1.5°	0.006	± 0.20
MD-50C	80	19,470	4,000	7.408	210	0.028	1.5°	0.006	± 0.20
MD-63C	111	26,550	3,000	11.993	340	0.718	1.5°	0.006	± 0.20

Notes:
- * indicates: Nominal torque, torsional stiffness, weight and moment of inertia are based on minimum bore size.
- Specify Bore sizes ID1 and ID2 when ordering.

MD Series Dimensional Data

Size	OAL in	OAL mm	LTB in	LTB mm	ID1 - ID2 Min Bore in	ID1 - ID2 Min Bore mm	ID1 - ID2 Max Bore in	ID1 - ID2 Max Bore mm	OD in	OD mm	Clamp Screw Size mm
MD-19C	1.063	27	0.315	8	0.157	4	0.315	8	0.748	19	M2
MD-25C	1.220	31	0.394	10	0.236	6	0.472	12	0.984	25	M2.5
MD-32C	1.575	40	0.472	12	0.315	8	0.591	15	1.260	32	M3
MD-40C	1.732	44	0.551	14	0.315	8	0.787	20	1.575	40	M4
MD-50C	2.244	57	0.709	18	0.551	14	0.984	25	1.969	50	M5
MD-63C	2.402	61	0.787	20	0.591	15	1.181	30	2.480	63	M6

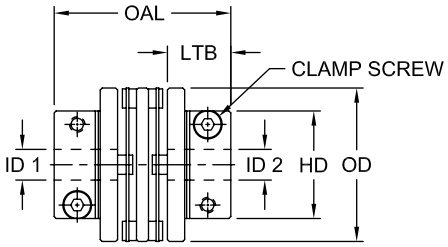
MDS Series – Mini Disc Spacer Clamp Style Coupling

The MDS (mini disc spacer) Series coupling features a higher parallel misalignment capacity over standard MD Series at .006 inches. The MDS Series also has the highest parallel misalignment at .012 inches and angular misalignment at 2° of any of the mini disc couplings.



Features

- Zero backlash design
- High torsional stiffness
- Aluminum hubs with stainless steel discs
- Moderate-high torque capabilities
- Low Inertia



MDS Series Performance Data

Size	Torque Nominal in-lbs*	Torsional Stiffness in-lb/rad*	Max RPM	Weight* oz	Weight* g	Moment of Inertia* lb-in2	Misalignment Angular	Misalignment Parallel in	Misalignment Axial in
MDS-32C	18	8,850	4,800	1.69	48	0.212	2°	0.006	± 0.016
MDS-40C	35	13,275	3,800	2.86	81	0.055	2°	0.007	± 0.016
MDS-50C	66	17,700	3,100	5.29	150	0.157	2°	0.007	± 0.024
MDS-63C	89	22,125	2,400	8.11	230	0.376	2°	0.012	± 0.031

Notes:
- * indicates: Nominal torque, torsional stiffness, weight and moment of inertia are based on minimum bore size.
- Specify Bore sizes ID1 and ID2 when ordering.

MDS Series Dimensional Data

Size	OAL in	OAL mm	LTB in	LTB mm	ID1 - ID2 Min Bore in	ID1 - ID2 Min Bore mm	ID1 - ID2 Max Bore in	ID1 - ID2 Max Bore mm	OD in	OD mm	HD in	HD mm	Clamp Screw Size mm
MDS-32C	1.575	40	0.539	13.7	0.236	6	0.394	10	1.260	32	0.866	22	M3
MDS-40C	1.811	46	0.650	16.5	0.315	8	0.551	14	1.575	40	1.102	28	M4
MDS-50C	2.047	52	0.764	19.4	0.472	12	0.787	20	1.969	50	1.535	39	M5
MDS-63C	2.283	58	0.878	22.3	0.591	15	0.984	25	2.480	63	1.772	45	M6

MOL Series - Oldham Style Coupling



The Lovejoy Oldham coupling is a precision engineered, torsionally stiff, three-piece coupling suitable for a great many applications ranging from incremental control of fluid valves to highly dynamic drives in closed loop servo systems. It accommodates misalignment mechanically through a floating disc that engages tenons machined out of the hubs. As the coupling rotates, the floating disc aligns with each hub alternately to an extent demanded by the alignment error.

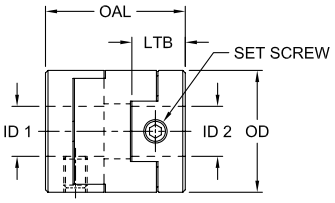
Because parallel misalignment is accommodated by lateral displacement, the Lovejoy Oldham coupling can handle severe alignment errors within a short space envelope. This is a valuable feature in densely packaged and blind assemblies, or where misalignment can accelerate the erosion of shaft bearings.

The Lovejoy Oldham coupling features raised dots on both sides of the floating disc which act as an effective spacer. The dots keep the face of the tenon from contacting the bottom of the floating disc and allows the coupling greater angular misalignment capability. A very important effect is that the spacer dots will greatly reduce the bending load on the shafts because of the freedom of the floating disc.

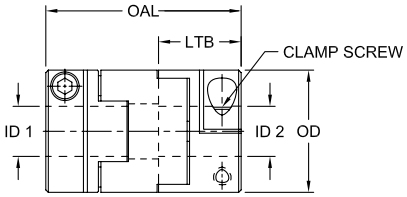
The MOL Coupling consists of two hubs and one center member.

Features

- High torsional stiffness
- Maximum temperature 176° F (80° C)
- Aluminum hubs with a Polyacetal insert
- Available in setscrew or clamping style hubs



Clamping Type



Set Screw Type

MOL Series Performance Data

Size	Torque Nominal in-lbs*	Torsional Stiffness in-lb/rad*	Max RPM	Weight* oz	Weight* g	Moment of Inertia* lb-in2	Misalignment Angular	Misalignment Parallel in	Misalignment Axial in
MOL-16	6.2	620	24,000	0.2	7	0.001	3°	0.40	N/A
MOL-16C	6.2	620	9,500	0.4	11	0.001	3°	0.40	N/A
MOL-20	10.6	974	19,000	0.5	15	0.003	3°	0.60	N/A
MOL-20C	10.6	974	7,600	0.8	22	0.004	3°	0.60	N/A
MOL-25	17.7	1,770	15,000	1.0	28	0.008	3°	0.80	N/A
MOL-25C	17.7	1,770	6,100	1.4	40	0.011	3°	0.80	N/A
MOL-32	39.8	7,877	12,000	1.9	55	0.025	3°	0.10	N/A
MOL-32C	39.8	7,877	4,800	2.6	75	0.034	3°	0.10	N/A

Notes:
- * indicates: Nominal torque, torsional stiffness, weight and moment of inertia are based on minimum bore size.
- N/A indicates: Not Applicable.
- Specify Bore sizes ID1 and ID2 when ordering.

MOL Series Dimensional Data

Size	Attachment	OAL in	OAL mm	LTB in	LTB mm	ID1 - ID2 Min Bore in	ID1 - ID2 Min Bore mm	ID1 - ID2 Max Bore in	ID1 - ID2 Max Bore mm	OD in	OD mm	Set Screw/ Clamp Screw Size mm
MOL-16	Set Screw	0.709	18	0.276	7.0	0.118	3	0.236	6	0.630	16	M3
MOL-16C	Clamp	1.142	29	0.492	12.5	0.118	3	0.236	6	0.630	16	M2.6
MOL-20	Set Screw	0.906	23	0.354	9.0	0.118	3	0.315	8	0.787	20	M4
MOL-20C	Clamp	1.299	33	0.551	14.0	0.118	3	0.315	8	0.787	20	M2.6
MOL-25	Set Screw	1.102	28	0.433	11.0	0.197	5	0.394	10	0.984	25	M5
MOL-25C	Clamp	1.535	39	0.650	16.5	0.197	5	0.394	10	0.984	25	M3
MOL-32	Set Screw	1.299	33	0.512	13.0	0.315	8	0.551	14	1.260	32	M6
MOL-32C	Clamp	1.772	45	0.748	19.0	0.315	8	0.551	14	1.260	32	M4

MSF Series - Mini Soft Style Coupling

The Lovejoy Mini Soft coupling provides protection from misalignment, vibration and shock loads. The simple design of the coupling ensures ease of assembly, installation and reliable performance. No special tools are needed for installation or removal. No lubrication is needed, and once installed and aligned correctly, no maintenance is required.

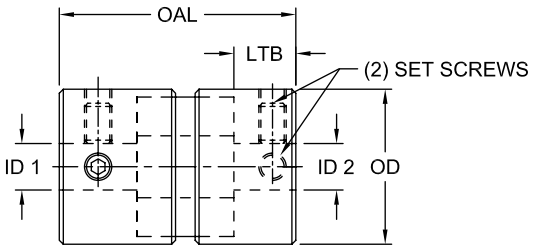
The Mini Soft coupling design is comprised of three parts. Two hubs with internal teeth engage an elastomeric flexible center, or sleeve, with external teeth. Misalignment and torsional shock loads are absorbed by shear deflection in the center sleeve element.

The shear characteristic of the coupling is very well suited to absorb impact. The Lovejoy Mini Soft coupling is designed with tooth contact which provides more surfaces carrying the load resulting in less wear at any one point, and torque that flows more smoothly. Additionally, the coupling allows for axial freedom which results in easier assembly and spacing of shafts. This feature is particularly useful in reducing thrust loads on bearings.

When operating within its rating, the coupling is torsionally stiff and will not react with twist during operation. The Polyurethane center member sleeve is known for its toughness and resistance to abrasion, and also provides for good damping and shock load capabilities.

The MSF coupling consists of two hubs and one center member.





Features

- Easy blind assembly
- Good shock load absorption
- Good abrasion resistance
- Zinc alloy hubs
- Polyurethane insert

MSF Series Performance Data

Size	Torque Nominal in-lbs*	Torsional Stiffness in-lb/rad*	Max RPM	Weight* oz	Weight* g	Moment of Inertia* lb-in2	Misalignment Angular	Misalignment Parallel in	Misalignment Axial in
MSF-16	4.4	27	24,000	0.8	22	0.003	2°	0.01	N/A
MSF-20	8.9	80	19,000	1.5	43	0.010	2°	0.01	N/A
MSF-25	13.3	106	15,000	3.0	84	0.028	2°	0.01	N/A
MSF-32	26.6	266	12,000	5.6	160	0.092	2°	0.01	N/A

Notes:
- * indicates: Nominal torque, torsional stiffness, weight and moment of inertia are based on minimum bore size.
- N/A indicates: Not Applicable.
- Specify Bore sizes ID1 and ID2 when ordering.

MSF Series Dimensional Data

Size	OAL in	OAL mm	LTB in	LTB mm	ID1 - ID2 Min Bore in	ID1 - ID2 Min Bore mm	ID1 - ID2 Max Bore in	ID1 - ID2 Max Bore mm	OD in	OD mm	Set Screw Size mm
MSF-16	1.063	27	0.315	8	0.118	3	0.315	8	0.630	16	M3
MSF-20	1.339	34	0.394	10	0.197	5	0.394	10	0.787	20	M3
MSF-25	1.614	41	0.472	12	0.197	5	0.472	12	0.984	25	M4
MSF-32	1.890	48	0.551	14	0.315	8	0.551	14	1.260	32	M4

GS Series - Curved Jaw Style Coupling

The GS Series curved jaw coupling offers zero backlash capability in a 3-piece design. The coupling is provided assembled under prestress. The GS Series can be used in a variety of different applications requiring precision and accuracy.

The GS Series spider features a straight center of the spider tooth, providing higher stiffness due to coupling prestress. The crowning of the ends of the spider legs allows for misalignment, while the curved jaws and solid spider center provide high-speed capability.



The jaws of the hubs and the spider legs are chamfered to provide easy assembly. The GS Series coupling design also allows the blind assembly in tight spaces. Raised spider dots on the legs of the spider ensure proper spacing of hubs and spider.

The GS Series coupling has spiders available in four different shore hardnesses. Each spider offers benefits for different vibratory, environmental, and torque transmission requirements.

The GS Curved Jaw coupling consists of two hubs and one spider.

Features

- Simple 3 piece jaw design
- Aluminum and steel material hubs
- Clamping and locking device hubs available
- Four different types of urethane shores to chose from

Typical Applications

Measurement And Control Systems

The torsional stiffness of the GS Series coupling provides zero backlash needed for the accuracy for measurement and control systems. The low torques of these applications gives the GS Series the ability to provide zero backlash due to the elastomer pre-stress.

Servo And Positioning Drives

The GS Series provides a zero backlash, flexible connection for servo and positioning drives. An added benefit of the GS Series is its damping capabilities. For applications that have vibrations at critical speeds, the GS Series coupling can provide a zero backlash solution for vibration problems.

Main Spindle Drives

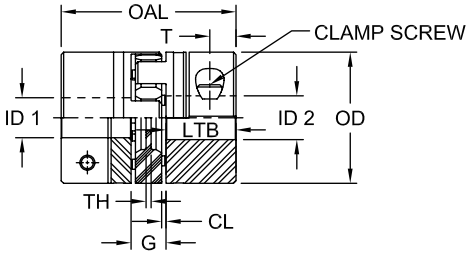
The GS Series coupling is used in main spindle drives for machine tools. Torque spikes and cyclical loading are handled by the GS Series by damping or by shifting the vibratory frequency range to a non-critical speed range.

Elastomer Performance Data

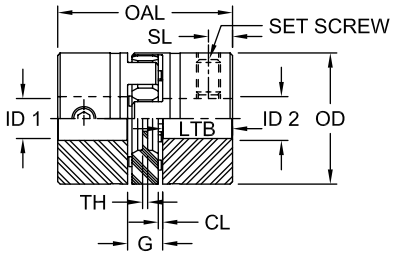
Spider Type	Color	Metal	Temperature Range Normal	Temperature Range Maximum	Sizes Available	Typical Applications
80 Shore A GS	Blue	Urethane	-50° to 176° F	-80° to 248° F	14 - 24	Electric measuring systems
92 Shore A GS	Yellow	Urethane	-40° to 194° F	-50° to 248° F	14 - 55	Electric measuring systems and control systems
95/98 Shore A GS	Red	Urethane	-30° to 194° F	-40° to 248° F	14 - 55	Positioning drives, main spindle drives, high load applications
64 Shore D GS	Green	Urethane	-20° to 230° F	-30° to 248° F	14 - 55	High load applications torsionally stiff spider material

GS Series Performance Data

Size	Spider Durometer	Maximum Speed for Clamping Styles: Clamping Hub RPM	Set Screw Hub RPM	Locking Device Hub RPM	Torque: Tkn in-lbs	Tkmax in-lbs	Static Torsional Stiffness lb-in/rad	Dynamic Torsional Stiffness lb-in/rad	Radial Stiffness b/in	Complete Coupling Max Bore w/o Keyway: Weight lb	Polar Moment of Inertia J (lb-in2) (x10-6)
14	80 Sh A	12,700	15,900	25,400	35.4	70.8	532.8	1,593	874	0.098	57
	92 Sh A				66.4	132.8	1,014.0	3,044	1,920		
	98 Sh A				110.6	221.3	1,521.0	4,540	3,452		
	64 Sh D				141.6	283.2	2,072.0	6,212	4,892		
19/24	80 Sh A	9,550	11,900	19,000	43.4	86.7	3,042.0	9,115	3,326	0.306	374
	92 Sh A				88.5	177.0	5,071.0	15,222	6,401		
	98 Sh A				150.5	300.9	7,606.0	22,833	11,487		
	64 Sh D				185.9	371.7	10,976.0	32,922	16,745		
24/32	92 Sh A	6,950	8,850	13,800	309.8	619.5	12,673.0	38,019	8,458	0.621	965
	98 Sh A				531.0	1,062.0	18,257.0	54,772	14,630		
	64 Sh D				663.8	1,327.0	26,355.0	79,065	21,123		
28/38	92 Sh A	5,850	7,350	11,700	840.8	1,681.0	20,284.0	60,852	10,173	1.178	3,691
	98 Sh A				1,415.0	2,832.0	30,426.0	91,278	18,288		
	64 Sh D				1,770.0	3,540.0	38,497.0	115,492	24,849		
38/45	92 Sh A	4,750	5,950	9,550	1,681.0	3,363.0	40,586.0	121,705	12,430	2.112	7,485
	98 Sh A				2,876.0	5,752.0	63,366.0	190,151	25,146		
	64 Sh D				3,584.0	7,168.0	93,279.0	279,837	36,999		
42/55	92 Sh A	4,000	5,000	8,050	2,345.0	4,690.0	55,755.0	128,236	13,887	8.324	40,639
	98 Sh A				3,982.0	7,965.0	169,920.0	424,800	31,833		
	64 Sh D				4,956.0	9,912.0	244,083.0	610,207	41,548		
48/60	92 Sh A	3,600	4,550	7,200	2,743.0	5,487.0	69,472.0	159,786	14,745	11.317	68,782
	98 Sh A				4,646.0	9,292.0	197,974.0	494,936	33,890		
	64 Sh D				5,796.0	11,593.0	320,370.0	800,925	47,286		
55/70	92 Sh A	3,150	3,950	6,350	3,628.0	7,257.0	84,075.0	193,372	17,031	16.993	135,334
	98 Sh A				6,062.0	12,124.0	210,630.0	526,575	38,210		
	64 Sh D				7,301.0	14,602.0	366,921.0	917,302	52,852		



Clamping Type



Set Screw Type

GS Series Dimensional Data

Size	Material	OAL in	OAL mm	LTB in	LTB mm	ID1 - ID2 Min Bore in	ID1 - ID2 Min Bore mm	ID1 - ID2 Max Bore in	ID1 - ID2 Max Bore mm	OD in	OD mm	Set Screw / Clamp Screw Size mm
14	Aluminum	1.378	35	0.433	11	0.197	5	0.551	14	1.181	30	M3
19/24	Aluminum	2.598	66	0.984	25	0.315	8	0.945	24	1.575	40	M2.6
24/32	Aluminum	3.071	78	1.181	30	0.472	12	1.260	32	2.165	55	M4
28/38	Aluminum	3.543	90	1.378	35	0.709	18	1.496	38	2.559	65	M2.6
38/45	Aluminum	4.488	114	1.772	45	0.709	18	1.772	45	3.150	80	M5
42/55	Steel	4.961	126	1.969	50	0.709	18	2.165	55	3.740	95	M3
48/60	Steel	5.512	140	2.205	56	0.709	18	2.362	60	4.134	105	M6
55/70	Steel	6.299	160	2.559	65	1.024	26	2.756	70	4.724	120	M4

Notes: ■ Specify keyway size if needed when ordering.
■ Specify bore sizes ID1 and ID2 when ordering.

GS Series Dimensional Data *Continued*

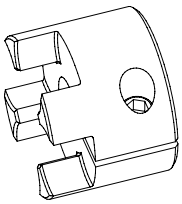
Size	Material	T in	Clamp Screw Size mm	SL in	Set Screw Size in	TH in	TH mm	CL in	CL mm	G in	G mm
14	Aluminum	0.20	M3	0.20	8-32	0.079	2.0	0.039	1.0	0.512	13
19/24	Aluminum	0.47	M2.6	0.39	10-24	0.118	3.0	0.079	2.0	0.630	16
24/32	Aluminum	0.55	M4	0.39	10-24	0.118	3.0	0.079	2.0	0.709	18
28/38	Aluminum	0.59	M2.6	0.59	5/16-18	0.157	4.0	0.098	2.5	0.787	20
38/45	Aluminum	0.79	M5	0.59	5/16-8	0.157	4.0	0.118	3.0	0.945	24
42/55	Steel	0.79	M3	0.79	5/16-8	0.157	4.0	0.118	3.0	1.024	26
48/60	Steel	0.87	M6	0.79	5/16-8	0.157	4.0	0.138	3.5	1.102	28
55/70	Steel	0.98	M4	0.79	3/8-16	0.177	4.5	0.157	4.0	1.181	30

GS Series Hub Design Descriptions

The GS Series coupling features different hub designs for different application situations. Each type offers specific benefits for different types of applications. The clamping styles offer the benefit of minimal to zero backlash.

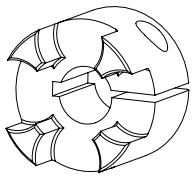
Clamping Hub With Single Slot Without Keyway (C)

Zero backlash, clamping style for torque transmission. Torque capacity of hub depends on bore size. Available standard for sizes GS 14-19.



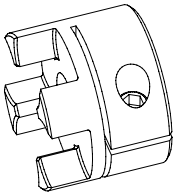
Clamping Hub With Single Slot With Keyway (CWK)

Zero backlash, clamping style with keyway for torque transmission. Usable in applications featuring reversing loads. Available standard for sizes GS 14-19.



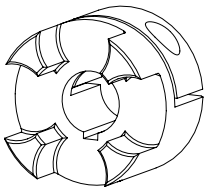
Clamping Hub With Double Slot Without Keyway (DSC)

Transmits torque utilizing a double split clamp to attach hub to shaft. Zero or minimum backlash. Torque capacity of coupling determined by bore size. Available standard for sizes GS 24-55.



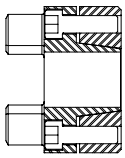
Clamping Hub With Double Slot With Keyway (DSCK)

Transmits torque utilizing a double split clamp to attach hub to shaft. Zero or minimum backlash. Available standard for sizes GS 24-55.



Hub With Frictional Locking (LD)

This hub utilizes a shaft locking device to allow for shaft engagement. This design features bolts tightened on the jaw side of the hub. Available for sizes GS 14-55.



L Series - Miniature Jaw Style Coupling



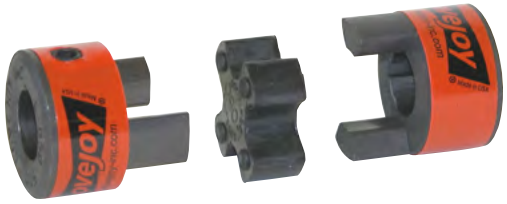
The Lovejoy Miniature Jaw coupling provides positive engagement resulting in great strength because of the large area of contact of the elastomer or "spider" center member with the interlocking jaws. This Miniature coupling provides "fail safe" operations and is the only coupling that will continue to run, even if the elastomer "spider" fails. Torque will continue to be transmitted through the metal jaw contact.

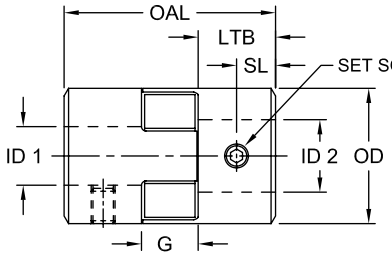
Good torsional stiffness is provided due to high compression loading. Vibration control is provided though the elastomer center member "spider" and its excellent damping ability. Raised "dots", a Lovejoy feature, designed into the elastomer center member "spider", separate the jaw of one hub from the face of the other hub, and automatically set the spacing between the hubs.

The Jaw type coupling design provides rubber in compression which accommodates much more load without failure than rubber in shear or tension.

The Miniature Jaw coupling is radially stiff when misaligned beyond its limits of .015 offset and 1° angular. Radial stiffness results in radial loads on the bearings, called reactionary loads. As the elastomer "set" takes place, the radial loads are eased.

The L-line Miniature Jaw coupling consists of two hubs and one spider.





Elastomer Materials

NBR (SOX) Rubber – Nitrile Butadiene Rubber NBR (SOX) is a flexible insert material that is oil resistant, resembles natural rubber in resilience and elasticity and operates effectively in a temperature range of -40° to 212° F (-40° to 100° C). NBR (SOX) also provides good resistance to oil and is the standard Jaw coupling elastomer.

Urethane – Urethane has greater torque capability (1.5 times)than NBR (SOX), provides less damping effect, and operates at a temperature range of - 30° to 160° F (-34° to 71° C) and has good resistance to oil and chemicals.

Hytrel® – Hytrel is a flexible elastomer designed for high torque and high temperature operations. Hytrel can operate in temperatures of -60° to 250° F (- 51° to 121° C) and has an excellent resistance to oil and chemicals.

Bronze – Bronze is a rigid, porous, oil-impregnated metal insert exclusively for slow speed (maximum 250 RPM) applications requiring high torque capabilities. Bronze operations are not affected by extreme temperatures, water, oil or dirt.

Hub Material:	Sintered iron	
Center Material:	NBR (SOX) Rubber	L035 & L050
	Urethane	L050 only
	Hytrel®	L050 only
	Bronze	L050 only

Features

- Positive engagement with jaw interlocking
- Fail safe
- Good torsional stiffness
- Vibration damping ability
- Easy to install
- Center elastomer dits keep hubs form touching
- Exceptional overload capacity
- Spider arms are in compression
- Widely distributed
- Choice in center elastomer hardness

L Series Dimensional Data

Size	Torque Nominal Sox in-lbs	OAL in	OAL mm	LTB in	LTB mm	SL in	SL mm	ID1 - ID2 Min Bore in	ID1 - ID2 Min Bore mm	ID1 - ID2 Max Bore in	ID1 - ID2 Max Bore mm
L-035	3.5	0.752	19.1	0.276	7	33	3	0.118	3	0.394	10
L-050	26.3	1.34	20.3	0.472	12	128	8	0.236	6	0.630*	16

L Series Dimensional Data *Continued*

Size	G in	G mm	OD in	OD mm	Approximate Weight (lbs) Solid lbs	Approximate Weight (lbs) Max Bore lbs	Moment of Inertia lb-in² (solid)	Set Screw Size mm
L-035	0.276	7	0.630	16	0.1	0.083	0.003	M2
L-050	0.630	16	1.063	27	0.3	0.240	0.054	M2.5

Notes:
- * indicates: Maximum bore without keyway.
- Specify keyway size if needed when ordering.
- Specify bore sizes ID1 and ID2 when ordering.

where the world turns for Lovejoy® Coupling Solutions

S-Flex

In This Section:

- J Type
- S Type
- B Type
- SC Type – Spacer
- T Type



S-Flex

Safety Warning

When using Lovejoy products, you must follow these instructions and take the following precautions. Failure to do so may cause the power transmission product to break and parts to be thrown with sufficient force to cause severe injury or death.

Refer to this Lovejoy Catalog for proper selection, sizing, horsepower, torque range, and speed range of power transmission products, including elastomeric elements for couplings. Follow the installation instructions included with the product, and in the individual product catalogs for proper installation of power transmission products. Do not exceed catalog ratings.

During start up and operation of power transmission product, avoid sudden shock loads. Coupling assembly should operate quietly and smoothly. If coupling assembly vibrates or makes beating sound, shut down immediately, and recheck alignment. Shortly after initial operation and periodically thereafter, where applicable, inspect coupling assembly for: alignment, wear of elastomeric element, bolt torques, and flexing elements for signs of fatigue. Do not operate coupling assembly if alignment is improper, or where applicable, if elastomeric element is damaged, or worn to less than 75% of its original thickness.

Do not use any of these power transmission products for elevators, man lifts, or other devices that carry people. If the power transmission product fails, the lift device could fall resulting in severe injury or death.

For all power transmission products, you must install suitable guards in accordance with OSHA and American Society of Mechanical Engineers Standards. Do not start power transmission product before suitable guards are in place. Failure to properly guard these products may result in severe injury or death from personnel contacting moving parts or from parts being thrown from assembly in the event the power transmission product fails.

If you have any questions, contact the Lovejoy Engineering Department at 1-630-852-0500.

S-Flex

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Elastomer In Shear Type Couplings

The simple design of the S-Flex coupling ensures ease of assembly and reliable performance. No special tools are needed for installation or removal. S-Flex couplings can be used in a wide variety of applications.

Features

- Easy to Install
- Maintenance Free
- No Lubrication
- Dampens Vibration and Controls Shock
- Torsionally Soft
- Double Engagement

SF

Characteristics and Performance Facts

- The S-Flex coupling design is comprised of three parts: two flanges with internal teeth engage an elastomeric flexible sleeve with external teeth
- Torque is transmited through the flanges mounted on both the driver and driven shafts via the sleeve
- Misalignment and torsional shock loads are absorbed by shear deflection in the sleeve
- The shear characteristic of the S-Flex coupling is very well suited to absorb impact loads
- The S-Flex coupling from Lovejoy offers combinations of flanges and sleeves which can be assembled to suit your specific application
- Thirteen sizes are available with torque capabilities that range from 60 in-lbs to 72,480 in-lbs
- The S-Flex flanges are offered in five models which are made from zinc or cast iron
- Sleeves are available in EPDM rubber, Neoprene, or Hytrel® to address a wide variety of application requirements

Flange Types:

J Type — Zinc Die Cast and Cast Iron, Bore Range … 3/8 inch – 1-7/16 inch
S Type — Cast Iron, Bore Range … 1/2 inch – 5-1/2 inch
B Type — Cast Iron with bushing
SC Type — Cast Iron Spacer
T Type — Cast Iron w/Taper-lock bushing

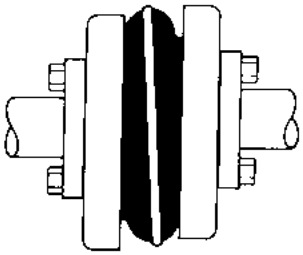
Hubs for SC Type Spacer Coupling:

SCH Type — Powdered Metal or Cast Iron, Standard Length
SCHS Type — Powdered Metal or Cast Iron, Short Length

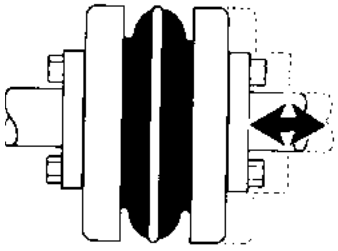
Sleeve Types:

JE –	(EPDM)	1–piece solid
JES –	(EPDM)	1–piece split
JN –	(Neoprene)	1–piece solid
JNS –	(Neoprene)	1–piece split
E –	(EPDM)	2–piece with retaining ring
N –	(Neoprene)	2–piece with retaining ring
H –	(Hytrel)	1–piece
HS –	(Hytrel)	2–piece split

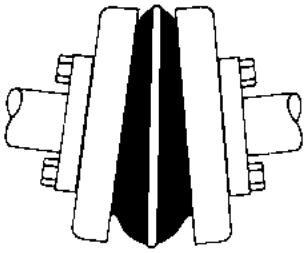
Protection from misalignment, shock, and vibration:



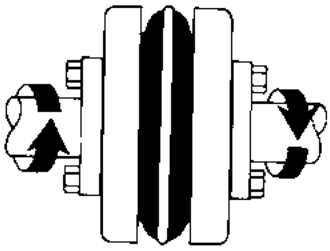
PARALLEL:
The S-Flex coupling accepts up to .062 in of parallel misalignment without wear. The flexible coupling sleeve minimizes the radial loads imposed on equipment bearings, a problem commonly associated with parallel misalignment.



AXIAL:
The S-Flex couplings can be used in applications which require a limited amount of shaft end-float without transferring thrust loads to equipment bearings. Axial movement of approximately 1/8 inch accepted.



ANGULAR:
The flexing action of the elastomeric sleeve and the locking feature of the mating teeth allows the S-Flex coupling to effectively handle angular misalignment up to 1°.



TORSIONAL:
S-Flex couplings effectively dampen torsional shock and vibration to protect connected equipment. The EPDM and Neoprene sleeves have torsional wind-up flexibility of 15° at their rated torque. Hytrel provides 7° wind-up.

WARNING

You must refer to page SF-2 (Page 72) for Important Safety Instructions and Precautions for the selection and use of these products. Failure to follow the instructions and precautions can result in severe injury or death.

Elastomer Designs

- Lovejoy offers flexible sleeve for S-Flex coupling in three designs: one-piece solid, one-piece split, and two-piece with retaining ring
- The one-piece split design provides solutions for applications with unique requirements where small shaft separations inhibit the installation of a one-piece solid sleeve
- Pre-molded teeth along the diameter of the sleeve engage with teeth of the coupling flanges
- No clamps or screws are needed to connect the flanges with the flexible sleeve which securely lock together under torque for smooth transmission of power
- Torque is transmitted through shear loading of the sleeve
- All three sleeve materials are highly elastic which permits the S-Flex coupling to protect connected equipment from harmful shock loading, vibration, and shaft misalignment



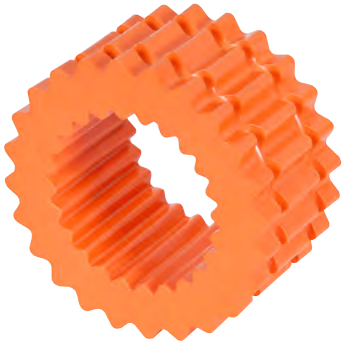
JE and JN Type



JES and JNS Type



E and N Type



H Type

JE, JN, JES, JNS Sleeve Types

These sleeves feature a one-piece design molded in EPDM & Neoprene rubber. In the case of JES & JNS Types, the one-piece design is split to provide for ease of installation and removal.

E, N Sleeve Types

These sleeves feature a two-piece design with retaining ring. The E Type is molded in EPDM rubber and the N Type is molded in Neoprene. The two-piece design is ideal for applications where there is difficulty in separating the shafts of the driver and driven.

H, HS Sleeve Types

These sleeves feature both a one-piece solid (H) and two-piece split (HS) design and are molded of Hytrel. The sleeves in Hytrel material are designed to transmit power for high torque applications. Because of the design and the properties of the Hytrel molded sleeve, the H and HS sleeves should not be used as direct replacements for EPDM or Neoprene sleeves, and can only be used with S, TF, or SC flanges.

Sleeve Materials

EPDM – Unless otherwise specified, S-Flex couplings are supplied with EPDM flexible sleeves. EPDM has good resistance to commonly used chemicals and is generally not affected by dirt or moisture. Color is black.

NEOPRENE – Neoprene provides very good performance characteristics for most applications and offers a very good resistance to chemical and oil conditions. Color is black with a green dot.

HYTREL® – Hytrel is a polyester elastomer designed for high torque and high temperature applications and offers excellent resistance to chemical and oil conditions. Color is orange.

Notes:
- See page ED-9 for sleeve chemical resistance chart.
- Hytrel is a registered trademarks of E.I. DuPont Nemours & Co.

S-Flex Coupling Selection Process

The selection process for determining the proper S-Flex coupling requires using the charts shown on the following pages. There are three components to be selected, two flanges and one sleeve.

Information necessary before a coupling can be selected:

- HP and RPM of Driver or running torque
- Shaft size of Driver and Driven equipment and corresponding keyways
- Application or equipment description
- Environmental conditions (i.e. extreme temperature, corrosive conditions, space limitations)

List of Charts provided for Selection:

- Chart 1 - Application Service Factors (page SF-7)
- Chart 2 - Sleeve Performance Data (page SF-8)
- Chart 3 - S-Flex Nominal Rated Torque Data (page SF-8)

Formulas:

$$\text{Nominal Torque} = \text{in-lb} = \frac{(HP \times 63025)}{RPM}$$

$$\text{Nm} = \frac{(KW \times 9550)}{RPM}$$

Design Torque = Nominal Torque x Application Service Factor

Steps In Selecting An S-Flex Coupling

Step 1: Determine the Nominal Torque in in-lb of your application by using the following formula:

$$\text{Nominal Torque} = \frac{(HP \times 63025)}{RPM}$$

Step 2: Using the Application Service Factor Chart 1 (page SF-7) select the service factor which best corresponds to your application.

Step 3: Calculate the Design Torque of your application by multiplying the Nominal Torque calculated in Step 1 by the Application Service Factor determined in Step 2.

Design Torque = Nominal Torque x Application Service Factor

Step 4: Using the Sleeve Performance Data Chart 2 (page SF-8) select the sleeve material which best corresponds to your application.

Step 5: Using the S-Flex Nominal Rated Torque Chart 3 (page SF-8) locate the appropriate sleeve material column for the sleeve selected in Step 4.

Step 6: Scan down this column to the first entry where the Torque Value in the column is greater than or equal to the Design Torque calculated in Step 3.

Refer to the maximum RPM value of the coupling size to ensure that the application requirements are met. If the maximum RPM value is less than the application requirement, S-Flex couplings are not recommended for the application.

Note:
- If Nominal Torque is less than 1/4 of the coupling's nominal rated torque, misalignment capacities are reduced by 1/2. Once torque value is located, refer to the corresponding coupling size in the first column of the S-Flex Nominal Rated Torque Data Chart 3 (page SF-8).

Step 7: Compare the application driver/driven shaft sizes to the maximum bore size available on the coupling selected. If coupling max bore is not large enough for the shaft diameter, select the next largest coupling that will accommodate the driver/driven shaft diameters.

Step 8: Using the Item Selection tables, find the appropriate Keyway and Bore size required and locate the Lovejoy UPC number.

Application Service Factors

Chart 1

	Service Factors		
	Electric Motor w/ Standard Torque	Electric Motor w/ High Torque	Turbines, Air & Hydraulic Motors
Agitators	1.25	1.50	1.00
Band Resaw (lumber)	1.50	2.00	1.25
Barge Haul Puller	2.00	2.50	1.50
Barking (lumber)	2.00	2.50	1.50
Bar Screen (sewage)	2.00	2.50	1.50
Batches (textile)	1.25	1.50	1.00
Beater and Pulper (paper)	1.50	2.00	1.25
Bending Roll (metal)	1.50	2.00	1.25
Bleacher (paper)	1.25	1.50	1.00
Blowers			
Centrifugal, Vane	1.25	1.50	1.00
Lobe	1.50	2.00	1.25
Bottling Machinery	1.25	1.50	1.00
Brew Kettles (distilling)	1.25	1.50	1.00
Bucket Elevator or Conveyor	1.50	2.00	1.25
Calenders			
Calender (paper)	1.50	2.00	1.25
Calender (rubber), Calender-super (paper)	2.00	2.50	1.50
Cane Knives (sugar)	1.50	2.00	1.25
Card Machine (textile)	2.00	2.50	1.50
Car Dumpers	2.00	2.50	1.50
Car Pullers	1.50	2.00	1.25
Cement Kiln	2.00	2.50	1.50
Centrifugal, Blower, Fans, Compressors, or Pumps	1.25	1.50	1.00
Chemical Feeders (sewage)	1.25	1.50	1.00
Chiller (oil)	1.50	2.00	1.25
Chipper (paper)	2.00	2.50	1.50
Circular Resaw (lumber)	1.50	2.00	1.25
Clarifier or Classifier	1.25	1.50	1.00
Clay Working M'cery	1.50	2.00	1.25
Collectors (sewage)	1.25	1.50	1.00
Compressors			
Centrifugal, Screw, Lobe	1.25	1.50	1.00
Reciprocating	See Note		
Concrete Mixers	1.50	2.00	1.25
Converting Machine (paper)	1.50	2.00	1.25
Conveyors			
Apron, Assembly, Belt, Flight, Oven, Screw	1.25	1.50	1.00
Bucket	1.50	2.00	1.25
Cookers—Brewing, Distilling, Food	1.25	1.50	1.00
Cooling Tower Fans	2.00	2.50	1.50
Couch (paper)	1.50	2.00	1.25
Cranes & Hoists[1]			
Heavy duty mine	2.00	2.50	1.50
Crushers—Cane (sugar), **Stone, Ore**	2.00	2.50	1.50
Cutter-Paper	2.00	2.50	1.50
Cylinder (paper)	2.00	2.50	1.50
Dewatering Screen (sewage)	1.50	2.00	1.25
Disc Feeder	1.25	1.50	1.00
Dough Mixer	1.50	2.00	1.25
Draw Bench Conveyor & Main Drive	2.00	2.50	1.50
Dredges			
Cable reef, Pumps	1.50	2.00	1.25
Cutter head, Jig, & Screen Drives	2.00	2.50	1.50
Maneuvering & Utility Winch, Stacker	1.50	2.00	1.25
Dynamometer	1.25	1.50	1.00
Dryers (rotary)	1.50	2.00	1.25
Edger (lumber)	2.00	2.50	1.50
Escalators[1]	1.25	1.50	1.00
Extruders (metal)	2.00	2.50	1.50
Fans			
Centrifugal	1.25	1.50	1.00
Cooling Towers	2.00	2.50	1.50
Forced Draft, Large Industrial	1.50	2.00	1.25
Feeders			
Apron, Belt, Disc	1.25	1.50	1.00
Reciprocating	2.00	2.50	1.50
Screw	1.50	2.00	1.25
Filter, Press-Oil	1.50	2.00	1.25
Generators			
Uniform Load	1.25	1.50	1.00
Varying Load, Hoist	1.50	2.00	1.25
Welders	2.00	2.50	1.50
Grit Collector (sewage)	1.25	1.50	1.00
Grizzly	2.00	2.50	1.50
Hammermills			
Light Duty, Intermittent	1.50	2.00	1.25
Heavy Duty, Continuous	2.00	2.50	1.50
Hoists			
Heavy Duty	2.00	2.50	1.50
Medium Duty	1.50	2.00	1.25
Jordan (paper)	2.00	2.50	1.50
Kiln, Rotary	2.00	2.50	1.50
Laundry Washer or Tumbler	2.00	2.50	1.50
Line Shafts	1.25	1.50	1.00
Log Haul (lumber)	2.00	2.50	1.50
Loom (textile)	1.50	2.00	1.25
Machine Tools, Main Drives	1.50	2.00	1.25
Mangle (textile)	1.25	1.50	1.00
Mash Tubs (distilling)	1.25	1.50	1.00
Meat Grinder	1.50	2.00	1.25
Metal Forming Machines	1.50	2.00	1.25
Mills			
Ball, Pebble, Rod, Tube, Rubber, Tumbling	2.00	2.50	1.50
Dryers, Coolers	1.50	2.00	1.25
Mixers			
Concrete, Muller	1.50	2.00	1.25
Banbury	2.00	2.50	1.50
Ore Crusher	2.00	2.50	1.50
Oven Conveyor	1.25	1.50	1.00
Planer (metal or wood)	1.50	2.00	1.25
Pressers			
Brick, Briquette Machine	2.00	2.50	1.50
Notching, Paper, Punch Printing	1.50	2.00	1.25
Pug Mill	1.50	2.00	1.25
Pulp Grinder (paper)	2.00	2.50	1.50
Pulverizers			
Hammermill—Light Duty, Roller	1.50	2.50	1.25
Hammermill—Heavy Duty Hog	2.00	2.50	1.50
Pumps			
Centrifugal, Axial	1.25	1.50	1.00
Gear, Lobe, Vane	1.50	2.00	1.25
Reciprocating—Sgl. or Dbl. Acting Cylinder	2.00	2.50	2.00
Reel, Rewinder (paper)			
Cable	1.50	2.00	1.25
Rod Mill	2.00	2.50	1.50
Saw Dust Conveyor	1.25	1.50	1.00
Screens			
Air Washing, Water	1.25	1.50	1.00
Rotary—Coal or Sand	1.50	2.00	1.25
Vibrating	2.00	2.50	2.00
Screw Conveyor	1.25	1.50	1.00
Slab Conveyor (lumber)	1.50	2.00	1.25
Slitters (metal)	1.50	2.00	1.25
Soapers (textile)	1.25	1.50	1.00
Sorting Table (lumber)	1.50	2.00	1.25
Spinner (textile)	1.50	2.00	1.25
Stoker	1.25	1.50	1.00
Suction Roll (paper)	1.50	2.00	1.25
Tenter Frames (textile)	1.50	2.00	1.25
Tire Building Machines	2.00	2.50	1.50
Tire & Tube Press Opener	1.25	1.50	1.00
Tumbling Barrels	2.00	2.50	1.50
Washer & Thickener (paper)	1.50	2.00	1.25
Winches	1.50	2.00	1.25
Winders—Paper, Textile, Wire	1.50	2.00	1.25
Windlass	1.50	2.00	1.25
Wire			
Drawing	2.00	2.50	1.50
Winding	1.50	2.00	1.25
Woodworking			
Machinery	1.25	1.50	1.00

Caution: Applications involving reciprocating engines and reciprocating driven devices are subject to critical rotational speeds which may damage the coupling and/or connected equipment. Contact Lovejoy Engineering with specific requirements.

Note: ■ 1 indicates: If people are transported, Lovejoy does not recommend and will not warranty the use of the coupling.

SF

Sleeve Performance Data

Chart 2

Characteristics	Temperature Range		Misalignment Capabilities			Torsoinal Wind-Up
	F°	C°	Angular (in)	Parallel (in)	Axial (in)	in
EDPM – Unless otherwise specified, S-Flex couplings are supplied with EPDM flexible sleeves. EPDM has good resistance to commonly used chemicals and is generally not affected by dirt or moisture. Color is black.	-30° to 375° F	-34° to 135° C	1°	up to .062	.125	up to 15°
NEOPRENE – Neoprene provides very good performance characteristics for most applications and offers a very good resistance to chemical and oil conditions. Color is black with a green dot.	0° to 200° F	-18° to 93° C	1°	up to .062	.125	up to 15°
HYTREL® – Hytrel is a polyester elastomer designed for high torque and high temperature applications and offers excellent resistance to chemical and oil conditions. Color is orange.	-65° to 250° F	-54° to 121° C	.25°	up to .035	.125	up to 7°

S-Flex Nominal Rated Torque Data

Chart 3

Size	ID1 - ID2		EPDM			Neoprene			Hytrel[1]		
	Min Bore	Max Bore	Torque		Max	Torque		Max	Torque		Max
	in	in	in-lb	Nm	RPM	in-lb	Nm	RPM	in-lb	Nm	RPM
3	0.375	0.875	60	6.78	9,200	60	6.78	9,200	N/A	N/A	N/A
4	0.500	1.000	120	13.56	7,600	120	13.56	7,600	N/A	N/A	N/A
5	0.500	1.188	240	27.12	7,600	240	27.12	7,600	N/A	N/A	N/A
6	0.625	1.438	450	50.84	6,000	450	50.84	6,000	1,800	203.37	6,000
7	0.625	1.625	725	81.91	5,250	725	81.91	5,250	2,875	324.83	5,250
8	0.750	1.938	1,135	128.24	4,500	1,135	128.24	4,500	4,530	511.82	4,500
9	0.875	2.375	1,800	203.37	3,750	1,800	203.37	3,750	7,200	813.49	3,750
10	1.125	2.750	2,875	324.83	3,600	2,875	324.83	3,600	11,350	1 282.38	3,600
11	1.250	3.375	4,530	511.82	3,600	4,530	511.82	3,600	18,000	2 033.73	3,600
12	1.500	3.875	7,200	813.49	2,800	7,200	813.49	2,800	31,500	3 559.03	2,800
13	2.000	4.500	11,350	1 282.38	2,400	11,350	1 282.38	2,400	47,268	5 340.57	2,400
14	2.000	5.000	18,000	2 033.73	2,200	18,000	2 033.73	2,200	72,480	8 189.15	2,200
16	2.000	5.500	47,250	5 338.54	1,500	N/A	N/A	N/A	N/A	N/A	N/A

Note: ■ 1 indicates: Operating Hytrel within a high service factor application is not recommended.

The S Type coupling consists of two flanges and one sleeve.

S Type Flange - Inch Bore and Keyway UPC Number Selection Table

Bore	Keyway	5S	6S	7S	8S	9S	10S	11S	12S	13S	14S	16S
1/2	No Keyway	36349	—	—	—	—	—	—	—	—	—	—
1/2	7/8 x 1/16	36067	—	—	—	—	—	—	—	—	—	—
5/8	No Keyway	—	36353	36355	—	—	—	—	—	—	—	—
5/8	3/16 x 3/32	36068	36093	36116	—	—	—	—	—	—	—	—
3/4	No Keyway	—	—	—	36357	—	—	—	—	—	—	—
3/4	3/16 x 3/32	36069	36094	36117	36132	—	—	—	—	—	—	—
13/16	3/16 x 3/32	36070	—	—	—	—	—	—	—	—	—	—
7/8	No Keyway	—	—	—	—	36359	—	—	—	—	—	—
7/8	3/16 x 3/32	36071	36095	36118	36133	36151	—	—	—	—	—	—
15/16	1/4 x 1/8	36072	36096	36119	36134	44363	—	—	—	—	—	—
1	1/4 x 1/8	36073	36097	36120	36135	36152	—	—	—	—	—	—
1-1/16	1/4 x 1/8	36074	36098	36121	44364	45742	46612	—	—	—	—	—
1-1/8	No Keyway	—	—	—	—	—	36361	—	—	—	—	—
1-1/8	1/4 x 1/8	36075	36099	36122	36136	36153	36363	—	—	—	—	—
1-3/16	1/4 x 1/8	36076	36100	36123	36137	—	46613	—	—	—	—	—
1-1/4	No Keyway	—	—	—	—	—	—	36365	—	—	—	—
1-1/4	1/4 x 1/16	36077	—	—	—	—	—	—	—	—	—	—
1-1/4	1/4 x 1/8	—	36101	36124	36138	36154	36171	36189	—	—	—	—
1-5/16	5/16 x 5/32	—	36102	36125	36139	—	—	—	—	—	—	—
1-3/8	5/16 x 5/32	—	36103	36126	36140	36155	36172	36190	—	—	—	—
1-7/16	3/8 x 3/16	—	36104	36127	36141	36156	36173	—	—	—	—	—
1-1/2	No Keyway	—	—	—	—	—	—	—	36367	—	—	—
1-1/2	3/8 x 1/8	—	36105	—	—	—	—	—	—	—	—	—
1-1/2	3/8 x 3/16	—	—	36128	36142	36157	36174	36191	36200	—	—	—
1-9/16	3/8 x 3/16	—	—	—	—	36158	36980	55291	—	—	—	—
1-5/8	3/8 x 3/16	—	36106	—	—	—	—	—	—	—	—	—
1-5/8	3/8 x 3/16	—	—	36129	36143	36159	36175	36192	55059	—	—	—
1-11/16	3/8 x 3/16	—	—	—	36144	36160	36176	49451	—	—	—	—
1-3/4	3/8 x 1/8	—	36107	36130	—	—	—	—	—	—	—	—
1-3/4	3/8 x 3/16	—	—	—	36145	36161	36177	36193	41773	—	—	—
1-7/8	1/2 x 1/8	—	—	36131	—	—	—	—	—	—	—	—
1-7/8	1/2 x 1/4	—	—	—	36146	36162	36178	36194	36201	—	—	—
1-15/16	1/2 x 1/4	—	—	—	36147	36163	36179	49816	56796	—	—	—
2 RSB	No Keyway	—	—	—	—	—	—	—	—	35441	35445	35448
2	1/2 x 1/4	—	—	—	—	36164	36180	45158	45672	—	—	—
2	1/2 x 3/16	—	—	—	36148	—	—	—	—	—	—	—
2-1/8	1/2 x 3/16	—	—	—	36149	—	—	—	—	—	—	—
2-1/8	1/2 x 1/4	—	—	—	—	36165	36181	36195	36202	55060	55062	—
2-3/16	1/2 x 1/4	—	—	—	—	36166	36182	—	—	—	—	—
2-1/4	1/2 x 1/4	—	—	—	—	36167	36183	45544	55560	—	—	—
2-3/8	5/8 x 1/8	—	—	—	36150	—	—	—	—	—	—	—
2-3/8	5/8 x 5/16	—	—	—	—	36168	36184	36196	36203	35442	55063	—
2-7/16	5/8 x 5/16	—	—	—	—	—	36185	55229	56808	—	—	—
2-1/2	5/8 x 5/16	—	—	—	—	36169	—	—	—	—	—	—
2-1/2	5/8 x 5/16	—	—	—	—	—	36186	56581	47895	—	—	—
2-3/4	5/8 x 5/16	—	—	—	—	46349	46585	45543	54940	—	—	—
2-7/8	3/4 x 1/8	—	—	—	—	36170	36187	—	—	—	—	—
2-7/8	3/4 x 3/8	—	—	—	—	—	—	36197	36204	35443	35446	—
3-3/8	7/8 x 3/16	—	—	—	—	—	36188	—	—	—	—	—
3-3/8	7/8 x 7/16	—	—	—	—	—	—	36198	36205	55061	55064	—
3-7/8	1 x 1/4	—	—	—	—	—	—	36199	—	—	—	—
3-7/8	1 x 1/2	—	—	—	—	—	—	—	36206	—	—	—

Notes:
- All standard finished bore keyway flanges have 2 set screws @ 90°. Sizes 13,14 and 16 RSB flanges are suitable for reboring and have two set screws @ 90°. Sizes 5-12 RSB flanges have no set screws.
- When referencing the Lovejoy UPC number in this table, include 685144 as a prefix to the number shown.

Standard Sleeve, J and S Type Metric Bore / Keyway Item Selection

The J and S Type coupling consists of two flanges and one sleeve.

S-Flex Standard Sleeve UPC Number Selection Table

Size	JE	Bulk Pack JE[1]	JES	Bulk Pack JES[1]	JN	JNS	E	Bulk Pack E[1]	N	H	HS
3	36384	52712	36692	52713	35356	36866	—	—	—	—	—
4	35359	52714	36695	52715	35360	36869	—	—	—	—	—
5	35350	52716	36698	52717	35366	36872	35368	52718	35369	—	—
6	35569	52719	36701	52720	35394	36875	35600	52721	36411	40738	40741
7	35570	52722	36707	52723	36398	36878	36414	52724	36416	36848	41704
8	35572	52725	36864	52726	36402	36881	36419	52727	36421	36514	40072
9	36405	—	35451	—	—	—	36424	—	36426	40744	40747
10	35450	—	—	—	—	—	36429	—	35453	35454	35455
11	—	—	—	—	—	—	36433	—	35457	35458	35459
12	—	—	—	—	—	—	36437	—	35461	35462	35463
13	—	—	—	—	—	—	35464	—	35465	—	35466
14	—	—	—	—	—	—	35467	—	35468	—	35469
16	—	—	—	—	—	—	35470	—	—	—	—

Note: ■ 1 indicates: Bulk pack sizes 3-6 contain ten pieces, sizes 7-8 contain five pieces.

J and S Type - Metric Bore and Keyway UPC Number Selection Table

Bore	Keyway	3J	4J	5S	6S	7S	8S	9S	10S	11S	12S
9	No Keyway	41485	—	—	—	—	—	—	—	—	—
11	4 x 1.8	41486	—	—	—	—	—	—	—	—	—
12	No Keyway	—	41499	—	—	—	—	—	—	—	—
12	4 x 1.8	41487	—	—	—	—	—	—	—	—	—
14	No Keyway	—	—	41514	—	—	—	—	—	—	—
14	5 x 2.3	41488	41500	41515	—	—	—	—	—	—	—
15	No Keyway	—	—	—	41531	—	—	—	—	—	—
15	5 x 2.3	41489	41501	—	—	—	—	—	—	—	—
16	5 x 2.3	41490	41502	41516	—	—	—	—	—	—	—
19	No Keyway	—	—	—	—	41547	—	—	—	—	—
19	6 x 2.8	41491	41503	41517	41532	56571	—	—	—	—	—
20	6 x 2.8	—	41504	41518	41533	—	—	—	—	—	—
24	No Keyway	—	—	—	—	—	41561	41575	—	—	—
24	8 x 3.3	—	41505	41519	41534	51257	55746	—	—	—	—
25	8 x 3.3	—	—	41520	41535	41548	—	—	—	—	—
28	8 x 3.3	—	—	41521	41536	41549	41562	—	—	—	—
30	8 x 3.3	—	—	—	41537	41550	41563	41576	52258	—	—
32	10 x 3.3	—	—	—	41538	41551	41564	41577	59839	—	—
35	10 x 3.3	—	—	—	41539	49552	—	—	59721	—	—
38	10 x 3.3	—	—	—	55323	41552	41565	41578	45222	59889	—
42	12 x 3.3	—	—	—	—	41553	41566	41579	45883	59888	—
45	14 x 3.8	—	—	—	—	—	41567	46034	48389	—	—
48	14 x 3.8	—	—	—	—	—	41568	41580	59838	59887	—
50	14 x 3.8	—	—	—	—	—	—	—	44380	—	59855
52	16 x 4.3	—	—	—	—	—	—	—	58450	59720	—
55	16 x 4.3	—	—	—	—	—	—	—	45956	64136	—
60	18 x 4.4	—	—	—	—	—	—	—	52009	52711	54955
65	18 x 4.4	—	—	—	—	—	—	—	—	—	54941
70	20 x 4.9	—	—	—	—	—	—	—	—	59886	58725
80	22 x 5.4	—	—	—	—	—	—	—	—	59885	59856
90	25 x 5.4	—	—	—	—	—	—	—	—	—	59857

Notes: ■ Metric Bore / Keyway per DIN specifications. See engineering section for tolerances (page ED-17 and ED-19).
■ When referencing the Lovejoy UPC number in this table, include 685144 as a prefix to the number shown.

The J Type coupling consists of two J flanges and one sleeve.

J Type Flange - Inch Bore and Keyway UPC Number Selection Table

Bore	Keyway	3J	4J	5J	6J
3/8	No Keyway	36046	—	—	—
1/2	No Keyway	36114	36115	36347	—
1/2	1/8 x 1/16	36047	36051	36057	—
5/8	No Keyway	—	—	—	36351
5/8	3/16 x 3/32	36048	36052	36058	36078
3/4	3/16 x 3/32	36049	36053	36059	36079
7/8	3/16 x 3/32	36050	36054	36060	36080
15/16	1/4 x 1/8	—	36055	36061	36081
1	1/4 x 1/8	—	36056	36062	36082
1-1/16	1/4 x 1/8	—	—	36063	36083
1-1/8	1/4 x 1/8	—	—	36064	36084
1-3/16	1/4 x 1/8	—	—	—	36085
1-1/4	1/4 x 1/8	—	—	—	36086
1-5/16	5/16 x 5/32	—	—	—	36087
1-3/8	5/16 x 5/32	—	—	—	36088

Notes:
- We do not recommend reboring 3J or 4J Flanges.
- See page ED-8 for standard keyway dimensions.



J Type

The SC Type coupling consists of two SCH or SCHS hubs, two SC spacer flanges, and one sleeve.

SC Type Spacer Flanges

For Required Shaft Separation[1]	SC Flange Size	Coupling Size														
		5	6	7	8	8-10	9	9-11	10	10-13	11	11-14	12	12-14	13	14
3-1/2	35	36524	36526	36532	36538	36540	36548	—	—	—	—	—	—	—	—	—
4-3/8	44	—	36528	36534	36542	—	36550	—	—	—	—	—	—	—	—	—
4-3/4	48	—	—	—	—	—	—	—	36560	—	36570	—	—	—	—	—
5	50	—	36530	36536	36544	36546	36552	36554	36562	—	36572	—	—	—	—	—
7	70	—	—	—	—	—	—	36556	—	36564	—	36574	36580	38582	—	—
7-3/4	78	—	—	—	—	—	—	36558	—	36566	—	36576	36584	36586	54200	54202
10	100	—	—	—	—	—	—	—	—	36568	—	36578	—	36588	—	—

Note: ■ 1 indicates: See page SF-22 for other lengths possible thru various combinations.

SCH and SCHS Type - Inch Bore and Keyway UPC Number Selection Table

Bore	Keyway	5SCH	6SCH	7SCH	8SCH	9SCH	9SCHS	10SCH	10SCHS	11SCH	11SCHS	12SCH	12SCHS	13SCH	13SCHS	14SCH
1/2	No Keyway	36710	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1/2	1/8 x 1/16	36711	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5/8	No Keyway	—	36712	—	36714	—	—	—	—	—	—	—	—	—	—	—
5/8	3/16 x 3/32	36590	36713	36715	—	—	—	—	—	—	—	—	—	—	—	—
3/4	No Keyway	—	—	—	36718	—	—	—	—	—	—	—	—	—	—	—
3/4	3/16 x 3/32	36591	36600	36716	36719	—	—	—	—	—	—	—	—	—	—	—
7/8	No Keyway	—	—	—	—	36721	36910	—	—	—	—	—	—	—	—	—
7/8	3/16 x 3/32	36592	36601	36612	36624	36722	—	—	—	—	—	—	—	—	—	—
1	1/4 x 1/8	36593	36602	36613	36625	36640	—	—	—	—	—	—	—	—	—	—
1-1/8	No Keyway	—	—	—	—	—	—	36729	36912	36737	36914	—	—	—	—	—
1-1/8	1/4 x 1/8	36594	36603	36614	36626	36641	36682	36728	36684	36738	36686	—	—	—	—	—
1-1/4	1/4 x 1/8	—	36604	36717	36720	36723	36725	59905	36733	—	36741	—	—	—	—	—
1-3/8	5/16 x 5/32	—	36605	36615	36627	36642	36726	56486	36734	—	36742	—	—	—	—	—
1-1/2	3/8 x 3/16	—	—	36616	36628	36643	36727	59906	36735	59908	36743	—	—	—	—	—
1-5/8	3/8 x 3/16	—	—	36617	36629	36644	—	36656	36736	54909	36687	—	—	—	—	—
1-3/4	3/8 x 3/16	—	—	—	36630	36645	—	36730	—	59909	—	—	—	—	—	—
1-7/8	1/2 x 1/4	—	—	—	36631	36646	—	36657	—	36664	—	36745	36747	—	—	—
2	1/2 x 1/4	—	—	—	—	36724	—	36731	—	36739	—	—	36748	—	—	—
2-1/8	1/2 x 1/4	—	—	—	—	36647	—	36658	—	36665	—	36672	36749	—	36756	—
2-1/4	1/2 x 1/4	—	—	—	—	—	—	36732	—	36740	—	36746	36750	—	—	—
2-3/8	5/8 x 5/16	—	—	—	—	—	—	36659	—	36666	—	36673	—	36752	36757	36759
2-7/8	3/4 x 3/8	—	—	—	—	—	—	—	—	36667	—	36674	—	36753	—	36760
3-3/8	7/8 x 7/16	—	—	—	—	—	—	—	—	—	—	—	—	36754	—	36761
3-7/8	1 x 1/2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	36762

Note: ■ When referencing the Lovejoy UPC number in this table, include 685144 as a prefix to the number shown.

SF

S-Flex Performance Ratings

Size	Sleeve Material	Basic HP Ratings @ Varying RPM				Torque Rating		Torsional[1] Stiffness	Max Bore		Max
		100	1200	1800	3600	in-lbs	Nm	in-lb/rad	in	mm	RPM
3	EPDM & Neoprene	0.1	1.1	1.7	3.4	60	6.78	229	0.875	22	9,200
4	EPDM & Neoprene	0.2	2.3	3.4	6.9	120	13.56	458	1.000	25	7,600
5	EPDM & Neoprene	0.4	4.6	6.9	13.7	240	27.12	916	1.188	30	7,600
6	EPDM & Neoprene	0.7	8.6	12.9	25.7	450	50.84	1,718	1.438	38	6,000
6H	Hytrel®	2.9	34.0	51.0	103.0	1,800	203.37	10,000	1.438	38	6,000
7	EPDM & Neoprene	1.2	14.0	21.0	41.0	725	81.91	2,769	1.625	42	5,250
7H	Hytrel	4.6	55.0	82.0	164.0	2,875	324.83	20,000	1.625	42	5,250
8	EPDM & Neoprene	1.8	22.0	32.0	65.0	1,135	128.24	4,335	1.938	49	4,500
8H	Hytrel	7.2	86.0	129.0	259.0	4,530	511.82	30,000	1.938	49	4,500
9	EPDM & Neoprene	2.9	34.0	51.0	103.0	1,800	203.37	6,875	2.375	60	3,750
9H	Hytrel	11.4	137.0	206.0	411.0	7,200	813.49	47,500	2.375	60	3,750
10	EPDM & Neoprene	4.6	55.0	82.0	164.0	2,875	324.83	10,980	2.750	70	3,600
10H	Hytrel	18.0	216.0	324.0	648.0	11,350	1 282.38	100,000	2.750	70	3,600
11	EPDM & Neoprene	7.2	86.0	129.0	259.0	4,530	511.82	17,300	3.375	86	3,600
11H	Hytrel	28.6	343.0	514.0	1,028.0	18,000	2 033.73	12,500	3.375	86	3,600
12	EPDM & Neoprene	11.4	137.0	206.0	—	7,200	813.49	27,500	3.875	99	2,800
12H	Hytrel	50.0	600.0	900.0	—	31,500	3 559.03	225,000	3.875	99	2,800
13	EPDM & Neoprene	18.0	216.0	324.0	—	11,350	1 282.38	43,350	4.500	114	2,400
13H	Hytrel	75.0	900.0	1,350.0	—	47,268	5 340.57	368,900	4.500	114	2,400
14	EPDM & Neoprene	28.6	343.0	514.0	—	18,000	2 033.73	68,755	5.000	127	2,200
14H	Hytrel	115.0	1,380.0	2,070.0	—	72,480	8 189.15	593,250	5.000	127	2,200
16	EPDM	75.0	900.0	—	—	47,250	5 338.54	180,480	5.500	140	1,500

Notes:
- 1 indicates: Values shown are for an ambient temperature of 75° F (24° C).
- Coupling ratings are based on sleeve material regardless of flange design.

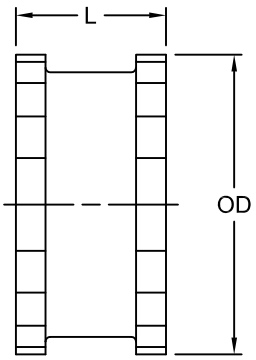
S-Flex Sleeve Types

S-Flex Sleeves

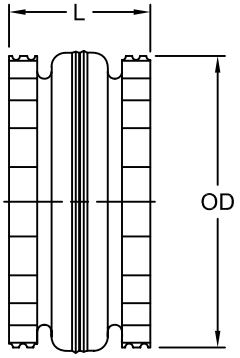
- Flexible sleeves for Lovejoy S-Flex couplings are available in three materials (EPDM, Neoprene, and Hytrel®) and in three basic designs: one piece solid, one-piece split, or two piece

JE, JN, JES and JNS Types

- JE and JN Type sleeves feature a one-piece solid design
- JES and JNS Type sleeves feature a one-piece split design
- JE and JES Type sleeves are molded in EPDM material
- JN and JNS Type sleeves are molded in Neoprene material



JE, JN, JES and JNS Types



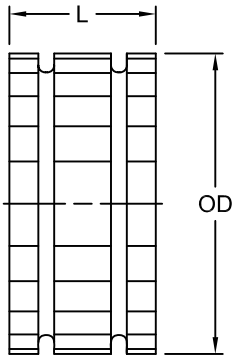
E and N Types

E and N Types

- E and N Type sleeves feature a two-piece design with retaining ring
- E Type sleeves are made from EPDM material and are available in sizes 5-16
- N Type sleeves are made from Neoprene material and are available in sizes 5-14
- Two piece sleeves are ideal for applications where small shaft separations inhibit the installation of a one piece sleeve

H and HS Types

- H and HS Type sleeves are designed for high torque applications, transmitting about 4 times as much power as an equivalent EPDM or Neoprene sleeve
- Hytrel sleeves are available in a one-piece solid (H) or two-piece split (HS) construction
- Hytrel sleeves can be used only with S or SC flanges and can not be used with J or B flanges
- Hytrel sleeves should not be used as direct replacements for EPDM or Neoprene applications
- H and HS Type sleeves are available for sizes 6-14 (sizes 13 and 14 are available in HS only)



H and HS Types

Sleeve Dimensional Data

	L	OD		L	OD		L	OD	
	Types JE, JES, JN & JNS EPDM & Neoprene			Types E & N EPDM & Neoprene			Types H & HS Hytrel		
Size	in	in	Weight lbs	in	in	Weight lbs	in	in	Weight lbs
3	1.00	1.88	0.06	—	—	—	—	—	—
4	1.25	2.31	0.10	—	—	—	—	—	—
5	1.56	2.94	0.20	1.56	2.94	0.25	—	—	—
6	1.88	3.75	0.40	1.88	3.75	0.49	1.88	3.75	0.44
7	2.19	4.34	0.62	2.19	4.34	0.77	2.19	4.34	0.69
8	2.50	5.06	1.13	2.50	5.06	1.40	2.50	5.06	1.40
9	3.00	6.00	1.46	3.00	6.00	2.00	3.00	6.00	1.80
10	3.44	7.06	2.32	3.44	7.06	3.20	3.44	7.06	2.90
11	—	—	—	4.00	8.19	5.10	4.00	8.19	4.50
12	—	—	—	4.69	9.56	8.10	4.69	8.56	7.30
13	—	—	—	5.50	11.19	13.00	5.50	11.19	11.80
14	—	—	—	6.50	13.09	21.10	6.50	13.09	19.30
16	—	—	—	8.75	17.91	45.30	—	—	—

Note: ■ See page SF-12 for Performance Data.

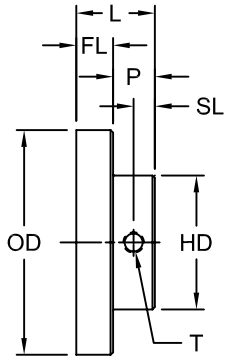
J Type Flanges and J Type Couplings

J Type Flanges

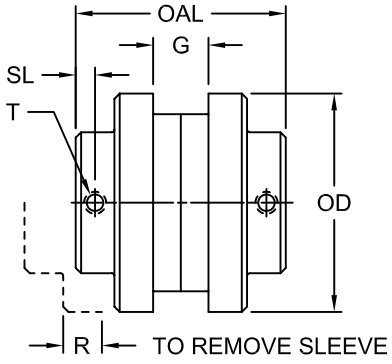
- The J Type flanges in sizes 3J and 4J are made from die cast of high strength zinc alloy (tensile strength of 41,000 psi) and are furnished bore-to-size
- Size 5J is provided in either zinc alloy or cast iron depending on the bore size
- Size 6J is made from cast iron
- J flanges are compatible with EPDM or Neoprene sleeves
- Each flange has a keyway and two set screws (one set screw over the key and one at 90° to the keyway)

J Type Coupling

- Complete S-Flex couplings, with J Type flanges described above, are normally supplied with the one-piece JE sleeve or the one-piece split JES sleeve
  An optional JN (Neoprene, one-piece) sleeve or the one-piece split JNS sleeve
- Sizes 5J and 6J couplings are also available with E and N two piece sleeves



J Type Flange



J Type Coupling

J Type Dimensional Data

Size	Max Bore with Standard Keyway	L	FL	P	SL	OD	T	HD	OAL	G[1]	R	Weight	
												Flange	Coupling
		in	in	in	in	in	in	in	in	in	in	lbs	lbs
3J	0.875	0.81	0.38	0.44	0.25	2.062	1/4-20	1.50	2.00	0.44	0.56	0.30	0.68
4J	1.000	0.88	0.44	0.44	0.25	2.460	1/4-20	1.63	2.38	0.63	0.75	0.40	0.89
5J	1.125	1.06	0.59	0.47	0.29	3.250	1/4-20	1.88	2.88	0.75	0.97	1.10	2.40
6J	1.375	1.31	0.78	0.53	0.29	4.000	5/16-18	2.50	3.50	0.88	1.09	1.90	4.36

Notes:
- 1 indicates: Spacing between shafts should be greater than 1/8 inch and less than OAL minus the sum of the two bore dimensions.
- See page SF-12 for Performance Data.

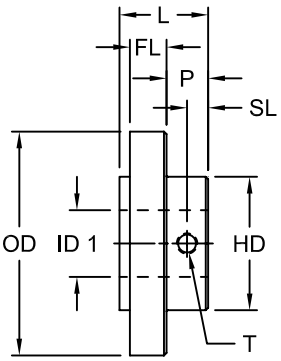
S Type Flanges and S Type Couplings

S Type Flanges

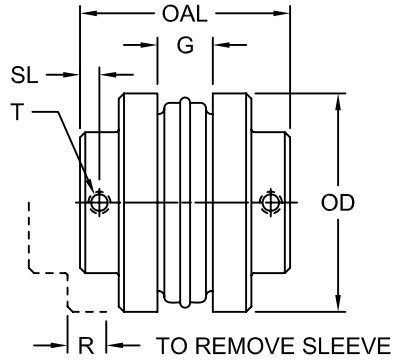
- S flanges are made of high strength cast iron and are bored-to-size for a slip fit on standard shafts
- S flanges are easy to install, are readily available from stock in a wide range of popular bore sizes, and are supplied with two set screws at 90°

S Type Couplings

- S Type couplings, normally supplied with the two-piece E sleeve, can be used with any JE, JN, N, H, or HS sleeves



S Type Flange



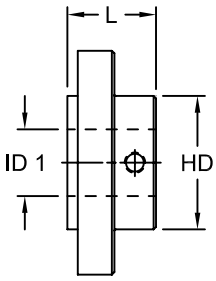
S Type Coupling

SF

S Type Dimensional Data

Size	ID1 Max Bore Standard Keyway in	ID1 Max Bore Shallow Keyway in	L in	FL in	P in	SL in	OD in	T in	HD in	OAL in	G in	R in	Weight Flange lbs
5S	1.188	1.250	1.34	0.59	0.45	0.29	3.250	1/4-20	1.88	2.81	0.75	0.97	1.1
6S	1.438	1.500	1.64	0.78	0.53	0.29	4.000	5/16-18	2.50	3.50	0.88	1.09	1.9
	—	1.750	1.64	0.78	0.53	—	4.000	—	2.50	3.50	0.88	1.09	1.8
7S	1.625	1.875	1.84	0.80	0.67	0.35	4.625	3/8-16	2.81	3.94	1.00	1.31	2.6
8S	1.938	2.250	2.10	0.88	0.75	0.38	5.450	3/8-16	3.25	4.39	1.13	1.50	4.4
	—	2.375	1.94	0.88	1.03	—	5.450	—	3.25	4.95	1.13	1.50	3.7
9S	2.375	2.500	2.41	1.03	0.78	0.41	6.350	1/2-13	3.63	5.06	1.44	1.75	6.5
	—	2.875	2.28	1.03	1.25	—	6.350	—	4.13	6.00	1.44	1.75	6.2
10S	2.750	3.125	2.70	1.22	0.81	0.41	7.500	1/2-13	4.38	5.69	1.63	2.00	10.5
	—	3.375	2.70	1.22	0.81	—	7.500	—	4.75	5.69	1.63	2.00	9.8
11S	3.375	3.625	3.44	1.50	1.13	0.56	8.625	1/2-13	5.25	7.13	1.88	2.38	16.6
	—	3.875	3.06	1.50	1.56	—	8.625	—	5.63	8.00	1.88	2.38	16.4
12S	2.875	—	4.00	1.69	1.28	0.63	10.000	1/2-13	4.88	8.25	2.31	2.69	27.5
	3.875	3.938	4.00	1.69	1.28	—	10.000	—	5.75	8.25	2.31	2.69	26.6
13S	4.500	—	4.38	1.97	1.31	0.81	11.750	5/8-11	6.75	9.25	2.69	3.06	45.0
14S	5.000	—	4.50	2.25	1.06	0.62	13.875	5/8-11	7.50	9.88	3.25	3.50	69.0
16S	5.500	6.000	6.00	2.75	2.00	1.00	18.875	5/8-11	8.00	14.50	4.75	4.25	125.0

Notes:
- Spacing between shafts should be greater than 1/8 inch and less than OAL minus the sum of the two bore dimensions.
- See page SF-12 for Performance Data.
- The sizes with two dimensions listed indicate measurements for standard flanges (1st Line) and modified spacer flanges (2nd Line). See page SF-20.
- To determine shaft separation (BSE), use the formula BSE=OAL–(2xL).





S Type



S Type with E Sleeve

S Type Shallow Keyway Dimensional Data

Size	L	ID1		HD	Shallow Keyway Dimensions								
		Max Bore Standard Keyway	Max Bore Shallow Keyway		Bore	Keyway	Key	Bore	Keyway	Key	Bore	Keyway	Key
	in	in	in	in	in	in	in	in	in	in	in	in	in
5S	1.34	1.188	1.250	1.88	1.25	.25 x .06	.25 x .19 x 1.38	—	—	—	—	—	—
6S	1.63	1.438	1.500	2.50	1.50	.38 x .13	.38 x .31 x 1.5	—	—	—	—	—	—
	1.31	—	1.750	2.50	1.56-1.63	.38 x .13	.38 x .31 x 1.31	1.69-1.75	.38 x .06	.38 x .25 x 1.25	—	—	—
7S	1.84	1.625	1.875	2.81	1.69-1.75	.38 x .13	.38 x .31 x 1.81	1.81-1.88	.5 x .13	.5 x .38 x 1.81	—	—	—
8S	2.09	1.938	2.250	3.25	2-2.25	.5 x .19	.5 x .44 x 2.06	—	—	—	—	—	—
	1.94	—	2.375	3.25	—	—	—	2.31-2.38	.63 x .13	.63 x .44 x 1.88	—	—	—
9S	2.41	2.375	2.500	3.63	2.44-2.5	.63 x .19	.63 x .5 x 2.38	—	—	—	—	—	—
	2.28	—	2.875	4.13	—	—	—	2.56-2.75	.63 x .19	.63 x .5 x 2.25	2.81-2.88	.75 x .13	.75 x .5 x 2.25
10S	2.72	2.750	3.125	4.38	2.81-3.13	.75 x .13	.75 x .5 x 2.75	—	—	—	—	—	—
	2.69	—	3.375	4.75	—	—	—	3.18-3.25	.75 x .13	.75 x .5 x 2.63	3.31-3.38	.88 x .19	.88 x .63 x 2.63
11S	3.44	3.375	3.625	5.25	3.44-3.63	.88 x .19	.88 x .63 x 3.44	—	—	—	—	—	—
	3.06	—	3.875	5.63	—	—	—	3.69-3.75	.88 x .19	.88 x .63 x .3	3.88	1 x .25	1 x .75 x 3
12S	4.00	2.875	—	4.88	—	—	—	—	—	—	—	—	—
	4.00	3.875	3.938	5.75	3.94	1 x .13	1 x .63 x 4	—	—	—	—	—	—
13S	4.38	4.500	—	6.75	—	—	—	—	—	—	—	—	—
14S	4.50	5.000	—	7.50	—	—	—	—	—	—	—	—	—
16S	6.00	5.500	6.000	8.00	5.56-6	1.5 x .25	1.5 x 1 x 6	—	—	—	—	—	—

Notes: ■ Some large bore S Type flanges are supplied with shallow keyways as standard. Rectangular keystock is provided for stock bores only.
■ See page SF-12 for Performance Data.

B Type Flanges For Use With Bushings

B Type Flange

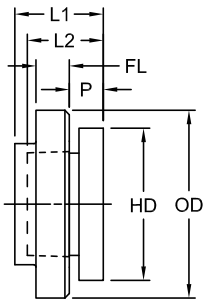
- Model B (bushed) flanges are made of the same high-strength cast iron as the S flanges
- B flanges are designed to accommodate the industry standard bushing for easy installation and removal
- B flanges are available in sizes 6 through 16

Couplings

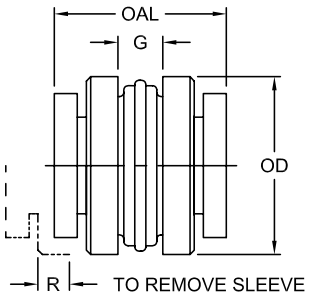
- S-Flex couplings with B flanges (for use with bushings) are normally supplied with the two-piece E sleeve
- The B style flanges can be used with any of the sleeves pictured on SF-5, with the exception of the Hytrel® sleeve
- B flanges can be used in combination with S Type flanges

Bushings

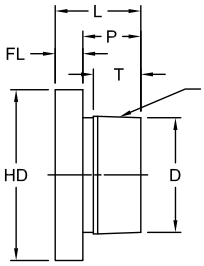
- Bushings have a split design that allow for a compression fit for secure mounting of the flange to the shaft without set screws
- The bushing's clamp like fit creates a one-piece assembly to eliminate wobble, vibration, and fretting corrosion
- Slightly oversized or undersized shafts can be accommodated with the same secure grip
- The design prevents potentially hazardous key drift on applications subject to pulsation or vibration
- B flanges are bored to accept a bushing accommodating many bore sizes, thus reducing inventory and increasing coupling versatility
- Bushing bore availability can be found in current Lovejoy list price books or from your Customer Service Representative

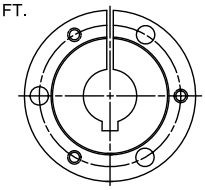


B Type Flange



B Type Coupling





Bushing

B Type Flange and Coupling Dimensional Data

Size	Flange UPC Number	Bushing Required	L1 in	L2 in	FL in	P in	OD in	HD in	OAL in	G in	R Max in	Approx Bore in	Flange Weight lbs
6B	36369	JA	1.53	1.00	0.78	0.44	4.000	2.00	3.31	0.88	1.09	1.19	1.3
7B	36371	JA	1.59	1.00	0.78	0.44	4.625	2.00	3.44	1.00	1.31	1.19	1.9
8B	36373	SH	1.84	1.25	0.91	0.50	5.450	2.69	3.94	1.13	1.50	1.63	2.9
9B	36375	SD	2.19	1.81	1.03	0.56	6.350	3.19	4.63	1.44	1.75	1.94	4.8
10B	35421	SK	1.84	1.88	1.22	0.63	7.500	3.88	5.31	1.63	2.00	2.50	7.8
11B	35432	SF	2.13	2.00	1.50	0.63	8.625	4.63	6.13	1.88	2.38	2.75	12.0
12B	36408	E	2.69	2.63	1.69	0.88	10.000	6.00	7.44	2.31	2.69	3.44	18.0
13B	35444	F	3.69	3.63	1.97	1.00	11.750	6.63	8.63	2.69	3.00	3.94	31.2
14B	35447	F	3.69	3.63	2.25	1.00	13.875	6.63	9.75	3.25	3.50	3.94	51.4
16B	35449	J	4.75	4.50	2.75	1.19	18.875	7.25	12.63	4.75	4.25	4.50	120.0

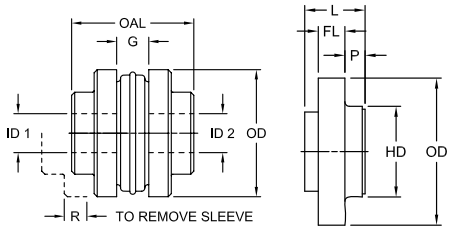
Note: ■ 1 indicates: Spacing between shafts should be greater than 1/8 inch and less than G. Spacing between internal face of flange should be OAL – (2 x L1).

Bushing Dimensional Data

Size	L in	P in	FL in	T in	HD in	D in	ID1 - ID2 Min Bore in	ID1 - ID2 Max Bore Std Keyway in	ID1 - ID2 Max Bore Shallow Keyway2 in	Number & Size of Cap Screws Req Qty	Number & Size of Cap Screws Req Size	Cap Screw Torque ft-lb	Weight lbs
JA	1.00	0.69	0.31	0.56	2.00	1.375	0.50	1.00	1.19	3	#10 - 1	5	0.8
SH	1.25	0.88	0.38	0.81	2.68	1.871	0.50	1.38	1.63	3	1/4 - 1-3/8	9	0.9
SD	1.81	1.38	0.44	1.25	3.18	2.187	0.50	1.63	1.94	3	1/4 - 1-13/16	9	1.6
SK	1.87	1.38	0.50	1.25	3.88	2.812	0.50	2.13	2.50	3	5/16 - 2	15	2.8
SF	2.00	1.50	0.50	1.25	4.63	3.125	0.50	2.31	2.81	3	3/8 - 2	30	3.9
E	2.63	1.88	0.75	1.63	6.00	3.834	0.88	2.88	3.50	3	1/2 - 2-3/4	60	8.5
F	3.63	2.81	0.81	2.50	6.63	4.438	1.00	3.25	3.94	3	9/16 - 3-5/8	75	13.9
J	4.50	3.50	1.00	3.19	7.25	5.148	1.44	3.75	4.50	3	5/8 - 4-1/2	135	21.6

Notes:
- F and J bushings are not available from Lovejoy. F bushings are available commercially in a bore range of 1 inch to 4 inches, J bushings in a range of 1-7/8 inches to 4-1/2 inches.
- Rectangular keys are furnished at no charge when shallow keyway is necessary.
- See page SF-12 for Performance Data.

T Type Flanges For Use With Taper-Lock® Bushings



TF Type Flanges

- Model TF flanges are made from the same high-strength cast iron as the S flanges, but are designed to accommodate the international standard Taper Lock bushing for easy installation and removal
- TF Type flanges allow for mounting the bushing on the front (hub) side of the flange
- TF flanges are available in sizes 6 through 16 and can be used with any style of sleeve as pictured on page SF-5

TR Type Flanges

- TR flanges are similar to the TF style, but allow for the Taper Lock Bushing to be mounted and removed from the reverse or serration side of the flange
- The limited torque ratings of the Taper Lock Bushings allow TR flanges to only be used with EPDM or Neoprene sleeves
- Different bushing sizes are used, so they have different maximum bores than the TF flanges
- Sizes 6 through 16 are available

Taper-Lock Bushings

- The industry standard taper lock bushing is a split design allowing a compression fit of the flange to the shaft without set screws
- The simple design makes the installation and removal easy while the 8° taper grips tight and provides excellent concentricity
- A Reduced level of inventory can be achieved due to the many other power transmission components that use Taper Lock Bushings such as: sheaves, sprockets, and pulleys
- Lovejoy does not offer the Taper-Lock Bushings themselves as these are widely available from other manufacturers

Note: ■ Be sure to determine if the bushing being used has either UNC threads (60°) or British Standard Whitworth B.S.W. threads (55°). In the U.S.A. the UNC type is predominant for both inch and metric bores. Outside of the U.S.A. it is most common to see B.S.W., especially on metric bores.

Taper Dimensional Data (Front Mount)

Size	UNC Flange UPC Number	BSW Flange UPC Number	OAL	G	ID1 - ID2 Max Bore		R	OD	L	FL	P	HD	Bushing Screw Size	Flange Weight	Bushing Required*
			in	in	in	mm	in	in	in	in	in	in	in	lbs	
6TF	62265	62263	4.00	0.88	1.25	31	1.09	4.00	1.56	0.78	0.78	2.81	3/8 -16	1.8	1215/1210
7TF	62269	62267	3.94	1.00	1.25	31	1.31	4.62	1.84	0.78	0.69	2.81	3/8 -16	2.6	1215/1210
8TF	62273	62271	5.00	1.13	1.62	42	1.50	5.45	1.94	0.91	1.03	3.25	3/8 -16	3.7	1615/1610
9TF	62277	62275	6.00	1.44	2.00	50	1.75	6.35	2.28	1.03	1.25	4.13	7/16 - 14	6.2	2012
10TF	62281	62279	7.00	1.63	2.50	64	2.00	7.50	2.69	1.22	1.47	4.75	1/2 - 13	9.8	2517
11TF	62285	62283	8.00	1.88	2.50	64	2.38	8.63	3.06	1.50	1.56	5.63	1/2 - 13	16.4	2517
12TF	62289	62287	8.25	2.31	3.00	76	2.69	10.00	4.00	1.69	1.28	5.75	5/8 - 11	26.6	3030
13TF	62293	62294	9.25	2.69	3.00	76	3.06	11.75	4.38	1.97	1.31	6.75	5/8 - 11	45.0	3030
14TF	62297	62295	9.88	3.25	3.94	100	3.50	13.88	4.50	2.25	1.06	7.50	1/2 - 13	69.0	3535
16TF	62301	62299	14.50	4.75	4.44	112	4.25	18.88	6.00	2.75	2.00	8.00	5/8 - 11	125.0	4040

Taper Dimensional Data (Rear Mount)

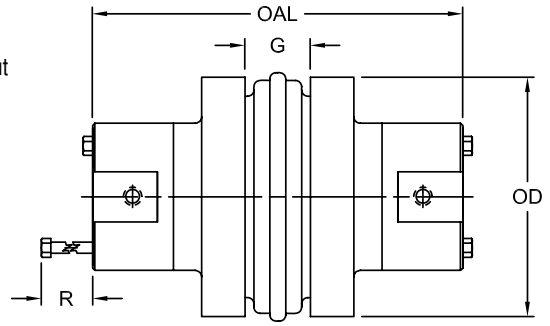
Size	UNC Flange UPC Number	BSW Flange UPC Number	OAL	G	ID1 - ID2 Max Bore		R	OD	L	FL	P	HD	Bushing Screw Size	Flange Weight	Bushing Required*
			in	in	in	mm	in	in	in	in	in	in	in	lbs	
6TR	62266	62264	4.00	0.88	1.00	25	1.09	4.00	1.56	0.78	0.78	2.81	1/4 - 20	1.8	1008
7TR	62270	62268	3.94	1.00	1.12	28	1.31	4.62	1.84	0.78	0.69	2.81	1/4 - 20	2.6	1108
8TR	62274	62272	5.00	1.13	1.25	31	1.50	5.45	1.94	0.91	1.03	3.25	3/8 - 16	3.7	1215/1210
9TR	62278	62276	6.00	1.44	1.62	42	1.75	6.35	2.28	1.03	1.25	4.13	3/8 - 16	6.2	1615/1610
10TR	62282	62280	7.00	1.63	1.62	42	2.00	7.50	2.69	1.22	1.47	4.75	3/8 - 16	9.8	1615/1610
11TR	62286	62284	8.00	1.88	2.50	64	2.38	8.63	3.06	1.50	1.56	5.63	1/2 - 13	16.4	2525
12TR	62290	62288	8.25	2.31	2.50	64	2.69	10.00	4.00	1.69	1.28	5.75	1/2 - 13	26.6	2517
13TR	62294	62292	9.25	2.69	3.00	76	3.06	11.75	4.38	1.97	1.31	6.75	5/8 - 11	45.0	3030
14TR	62298	62296	9.88	3.25	3.00	76	3.50	13.88	4.50	2.25	1.06	7.50	5/8 - 11	69.0	3030
16TR	62302	62300	14.50	4.75	4.44	112	4.25	18.88	6.00	2.75	2.00	8.00	5/8 - 11	125.0	4040

Notes:
- All above data refers to both standard UNC and British Standard Whitworth B.S.W. threads. Flanges are not supplied with screws.
- * indicates that use of a 1210 or 1610 bushing reduces the reserve factor between bushing torque rating and that of the coupling.
- Taper-Lock® is a registered trademark of Reliance Electric Industrial Company in the United States and Canada. It is a registered trademark of JH Fenner and Co. in the United Kingdom.
- See page SF-12 for Performance Data.

SC Type Spacer Couplings

SC Type Spacer Couplings

- Specifically designed for the pump industry, this coupling accommodates industry standard as well as special pump/motor separation
- This shaft separation facilitates easy pump repair of pump packing, bearings, and seals without disturbing pump or motor mounting and alignment
- The SC Type coupling consists of two flanges, a sleeve and two shaft hubs



Quick Coupling Removal

- The center drop out section consists of two flanges and the flexible sleeve
- The flange is bolted to the shaft hub with four hex head cap screws
- The center drop out section can be removed by removing the hex head cap screws
- Flats on each hub provides a convenient grip for a wrench in order to facilitate loosening of the screws and, if desired, turning of the pump/motor shafts
- Once the hub is removed from the pump shaft, maintenance on the pump can be done without disturbing equipment alignment

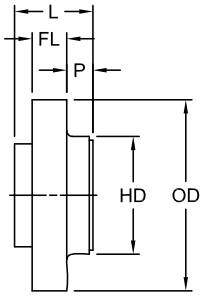
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SC Type (Spacer) Dimensional Data

Size	For Required Shaft Separation in	Use Flange Number	Use Hub Number	OAL[2] in	G in	R in	OD in	Weight Complete Coupling[2] lbs
5SC	3.50	5SC35	5SCH	5.63	0.75	0.56	3.250	4.5
6SC	3.50	6SC35	6SCH	5.88	0.88	0.75	4.000	7.3
	4.38	6SC44	6SCH	6.75	0.88	0.75	4.000	8.1
	5.00	6SC50	6SCH	7.38	0.88	0.75	4.000	8.7
7SC	3.50	7SC35	7SCH	6.38	1.00	0.63	4.625	9.9
	4.38	7SC44	7SCH	7.25	1.00	0.63	4.625	10.8
	5.00	7SC50	7SCH	7.88	1.00	0.63	4.625	11.4
8SC	3.50	8SC35	8SCH	6.88	1.13	0.81	5.450	15.2
	3.50	8SC35-10	10SCH[1]	8.13	1.13	0.81	5.450	23.2
	4.38	8SC44	8SCH	7.75	1.13	0.81	5.450	16.4
	5.00	8SC50	8SCH	8.38	1.13	0.81	5.450	17.4
	5.00	8SC50-10	10SCH[1]	9.63	1.13	1.19	5.450	27.2
9SC	3.50	9SC35	9SCH[1]	7.50	1.44	1.06	6.350	18.6
	5.00	9SC450	9SCH[1]	8.88	1.44	1.06	6.350	23.2
	5.00	9SC50-11	11SCH[1]	10.38	1.44	1.19	6.350	40.4
	7.00	9SC70-11	11SCH[1]	12.38	1.44	1.19	6.350	48.2
	7.75	9SC78-11	11SCH[1]	13.13	1.44	1.19	6.350	51.0
10SC	4.75	10SC48	10SCH[1]	9.38	1.63	1.19	7.500	37.6
	5.00	10SC50	10SCH[1]	9.63	1.63	1.19	7.500	38.4
	7.00	10SC70-13	13SCH[1]	13.63	1.63	1.88	7.500	72.0
	7.75	10SC78-13	13SCH[1]	14.38	1.63	1.88	7.500	76.0
	10.00	10SC100-13	13SCH[1]	16.63	1.63	1.88	7.500	88.0
11SC	4.75	11SC48	11SCH[1]	10.31	1.88	1.19	8.625	54.5
	5.00	11SC50	11SCH[1]	10.38	1.88	1.19	8.625	54.7
	7.00	11SC70-14	14SCH	14.63	1.88	2.00	8.625	86.1
	7.75	11SC78-14	14SCH	15.38	1.88	2.00	8.625	90.3
	10.00	11SC100-14	14SCH	17.63	1.88	2.00	8.625	102.7
12SC	7.00	12SC70	12SCH[1]	12.88	2.31	1.50	10.000	88.1
	7.00	12SC70-14	14SCH	14.63	2.31	2.00	10.000	99.1
	7.75	12SC78	12SCH[1]	13.63	2.31	1.50	10.000	91.9
	7.75	12SC78-14	14SCH	15.38	2.31	2.00	10.000	103.3
13SC	7.75	13SC78	13SCH[1]	14.38	2.69	1.88	11.750	129.6
14SC	7.75	14SC78	14SCH	15.38	3.25	2.00	13.875	179.9

Notes :
- 1 indicates: SC Hubs are available in: SC= Standard Length SCHS= Short Length.
- 2 indicates: OAL dimension and weight will vary if one or two short (HS) hubs are used.
- See page SF-12 for Performance Data.



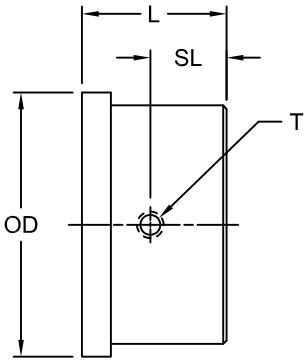


SC Type (Spacer) Flange Dimensional Data

Size	Flange Number	For Required Shaft Separation[1]	SC Hub Number	L in	FL in	P in	OD in	HD in	Weight Each Flange lbs
5SC	5SC35	3.50	5SCH	1.69	0.59	0.80	3.250	2.00	1.3
6SC	6SC35	3.50	6SCH	1.63	0.72	0.59	4.000	2.50	2.0
	6SC44	4.38	6SCH	2.06	0.72	1.03	4.000	2.50	2.4
	6SC50	5.00	6SCH	2.38	0.72	1.34	4.000	2.50	2.7
7SC	7SC35	3.50	7SCH	1.63	0.78	0.47	4.625	2.81	2.5
	7SC44	4.38	7SCH	2.06	0.78	0.91	4.625	2.81	3.0
	7SC50	5.00	7SCH	2.38	0.78	1.22	4.625	2.81	3.3
8SC	8SC35	3.50	8SCH	1.63	0.91	0.28	5.450	3.25	3.7
	8SC35-10	3.50	10SCH(HS)	1.63	0.91	0.28	5.450	4.38	3.5
	8SC44	4.38	8SCH	2.06	0.91	0.72	5.450	3.25	4.3
	8SC50	5.00	8SCH	2.38	0.91	1.03	5.450	3.25	4.8
	8SC50-10	5.00	10SCH(HS)	2.38	0.91	1.03	5.450	4.38	5.5
9SC	9SC35	3.50	9SCH(HS)	1.69	1.03	0.06	6.350	3.63	4.1
	9SC44	4.38	9SCH(HS)	2.06	1.03	0.44	6.350	3.63	5.9
	9SC450	5.00	9SCH(HS)	2.38	1.03	0.75	6.350	3.63	6.4
	9SC50-11	5.00	11SCH(HS)	2.38	1.03	0.75	6.350	5.25	7.0
	9SC70-11	7.00	11SCH(HS)	2.38	1.03	1.75	6.350	5.25	10.9
	9SC78-11	7.75	11SCH(HS)	3.75	1.03	2.13	6.350	5.25	12.3
10SC	10SC48	4.75	10SCH(HS)	2.25	1.22	0.34	7.500	4.38	9.8
	10SC50	5.00	10SCH(HS)	2.38	1.22	0.47	7.500	4.38	10.2
	10SC70-13	7.00	13SCH(HS)	3.38	1.22	1.47	7.500	6.13	14.5
	10SC78-13	7.75	13SCH(HS)	3.75	1.22	1.84	7.500	6.13	16.5
	10SC100-13	10.00	13SCH(HS)	4.88	1.22	2.97	7.500	6.13	22.5
11SC	11SC48	4.75	11SCH(HS)	1.50	1.50	0.03	8.625	5.25	12.5
	11SC50	5.00	11SCH(HS)	1.56	1.50	0.06	8.625	5.25	12.6
	11SC70-14	7.00	14SCH	2.56	1.50	1.06	8.625	6.50	16.3
	11SC78-14	7.75	14SCH	2.94	1.50	1.44	8.625	6.50	18.4
	11SC100-14	10.00	14SCH	4.06	1.50	2.56	8.625	6.50	24.6
12SC	12SC70	7.00	12SCH(HS)	2.47	1.69	0.66	10.000	5.75	23.4
	12SC70-14	7.00	14SCH	2.47	1.69	0.66	10.000	6.50	21.3
	12SC78	7.75	12SCH(HS)	2.84	1.69	1.03	10.000	5.75	25.3
	12SC78-14	7.75	14SCH	2.84	1.69	1.03	10.000	6.50	23.4
	12SC100-14	10.00	14SCH	3.97	1.69	2.16	10.000	6.50	29.6
13SC	13SC78	7.75	13SCH(HS)	3.25	1.97	0.56	11.750	6.13	38.4
14SC	14SC78	7.75	14SCH	2.72	2.25	0.03	13.875	6.50	55.2

Notes:
- 1 indicates: Flanges can be mixed to form different shaft separations.
- Metric Flanges and hubs are also available. Consult Lovejoy Engineering for specific information.
- See page SF-12 for Performance Data.





SC Type (Spacer) Hub Dimensional Data

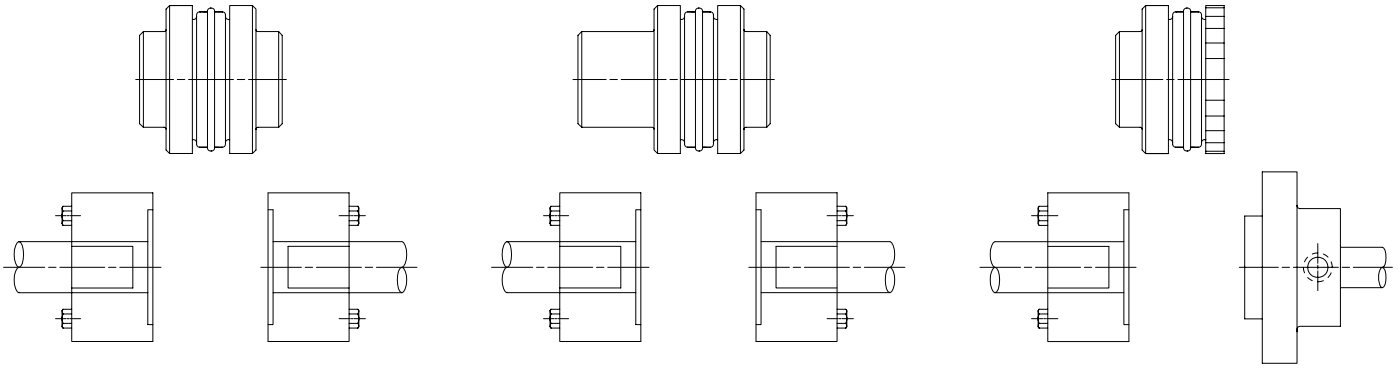
Size	Hub Number[1]	ID1 - ID2 Max Bore Standard Keyway in	L in	SL in	OD in	T in	Number & Size of Cap Screws Req Qty	Number & Size of Cap Screws Req Size	Weight Hub lbs
5SC	5SCH	1.125	1.09	0.54	2.00	5/16 - 18	4	#10 - 1-1/2	0.8
6SC	6SCH	1.375	1.22	0.61	2.50	5/16 - 18	4	1/4 - 1-3/4	1.4
7SC	7SCH	1.625	1.47	0.71	2.81	5/16 - 18	4	1/4 - 1-7/8	2.0
8SC	8SCH	1.875	1.72	0.66	3.25	3/8 - 16	4	5/16 - 2-1/4	3.2
	10SCH	2.375	2.34	0.63	4.38	1/2 - 13	4	7/16 - 3-1/4	7.4
	10SCHS	1.625	1.66	0.63	4.38	1/2 - 13	4	7/16 - 2-1/2	5.5
9SC	9SCH	2.125	1.97	1.17	3.63	3/8 - 16	4	3/8 - 2-3/4	4.2
	9SCHS	1.500	1.53	0.63	3.63	3/8 - 16	4	5/8 - 4-1/2	3.7
	11SCH	2.875	2.72	1.36	5.25	1/2 - 13	4	1/2 - 3-1/2	12.2
	11SCHS	1.875	1.91	0.75	5.25	1/2 - 13	4	1/2 - 2-3/4	9.3
10SC	10SCH	2.375	2.34	1.17	4.38	1/2 - 13	4	7/16 - 3-1/4	7.4
	10SCHS	1.625	1.66	0.63	4.38	1/2 - 13	4	7/16 - 2-1/2	5.5
	13SCH	3.375	3.34	1.65	6.13	3/4 - 10	4	5/8 - 4-3/4	19.9
	13SCHS	2.500	2.47	1.24	6.13	3/4 - 10	4	5/8 - 3-1/2	16.0
11SC	11SCH	2.875	2.72	1.36	5.25	1/2 - 13	4	1/2 - 3-1/2	12.2
	11SCHS	1.875	1.91	0.75	5.25	1/2 - 13	4	1/2 - 2-3/4	9.3
	14SCH	3.875	3.84	1.92	6.50	3/4 - 10	4	5/8 - 5	24.2
12SC	12SCH	2.875	2.97	1.44	5.75	5/8 -11	4	5/8 - 4	16.6
	12SCHS	2.500	2.53	1.12	5.75	5/8 -11	4	5/8 - 3-1/2	14.1
	14SCH	3.875	3.84	1.92	6.50	3/4 - 10	4	5/8 - 5	24.2
13SC	13SCH	3.375	3.34	1.65	6.13	3/4 - 10	4	5/8 - 4-3/4	19.9
	13SCHS	2.500	2.47	1.24	6.13	3/4 - 10	4	5/8 - 3-1/2	16.0
14SC	14SCH	3.875	3.38	1.92	6.50	3/4 - 10	4	5/8 - 5	24.2

Notes: ■ 1 indicates: SCH = Standard length SCHS = Short length.
■ See page SF-12 for Performance Data.

SC Type (Spacer)

- SC (Spacer) Type couplings are available with the most popular shaft separation distances
- Non standard shaft separations can be achieved by combining different spacer flanges
- The “Standard” column illustrates separations available using identical lengths
- The “Combination” column illustrates combined flanges of different separations
- The “Semi-Spacer” column illustrates combinations of SC (Spacer) flanges and standard S flanges





Standard **Combination** **Semi-Spacer**

Type SC (Spacer) Dimensional Data

Standard

Spacing	Use Flanges
3-1/2	(2)–SC35
4-3/8	(2)–SC44
5	(2)–SC50
7	(2)–SC70
7-3/4	(2)–SC78
10	(2)–SC100

Combination

Spacing	Use Flanges[1]
3-15/16	SC35 & SC44
4-1/4	SC35 & SC50
5-1/4	SC35 & SC70
5-5/8	SC35 & SC78
5-11/16	SC44 & SC70
6	SC50 & SC70
6-1/16	SC44 & SC78
6-7/16	SC50 & SC78
6-3/4	SC35 & SC100[2]
7-3/16	SC44 & SC100[2]
7-7/16	SC70 & SC78
7-1/2	SC50 & SC100
8-1/2	SC70 & SC100
8-15/16	SC78 & SC100

Semi-Spacer

Spacing	Use Flanges[1]
1-7/8	S & SC35
2-5/16	S & SC44
2-5/8	S & SC50
3-5/8	S & SC70
4	S & SC78
5-1/8	S & SC100

Notes:
- 1 indicates: Check for flange availability of coupling size.
- 2 indicates: Non stock.
- See page SF-12 for Performance Data.

where the world turns for Lovejoy® Coupling Solutions

Specialty Products

In This Section:

- Deltaflex
- Uniflex
- Saga
- Rigid Sleeve
- Shaft Collars











SP

Specialty Products

Safety Warning

When using Lovejoy products, you must follow these instructions and take the following precautions. Failure to do so may cause the power transmission product to break and parts to be thrown with sufficient force to cause severe injury or death.

Refer to this Lovejoy Catalog for proper selection, sizing, horsepower, torque range, and speed range of power transmission products, including elastomeric elements for couplings. Follow the installation instructions included with the product, and in the individual product catalogs for proper installation of power transmission products. Do not exceed catalog ratings.

During start up and operation of power transmission product, avoid sudden shock loads. Coupling assembly should operate quietly and smoothly. If coupling assembly vibrates or makes beating sound, shut down immediately, and recheck alignment. Shortly after initial operation and periodically thereafter, where applicable, inspect coupling assembly for: alignment, wear of elastomeric element, bolt torques, and flexing elements for signs of fatigue. Do not operate coupling assembly if alignment is improper, or where applicable, if elastomeric element is damaged, or worn to less than 75% of its original thickness.

Do not use any of these power transmission products for elevators, man lifts, or other devices that carry people. If the power transmission product fails, the lift device could fall resulting in severe injury or death.

For all power transmission products, you must install suitable guards in accordance with OSHA and American Society of Mechanical Engineers Standards. Do not start power transmission product before suitable guards are in place. Failure to properly guard these products may result in severe injury or death from personnel contacting moving parts or from parts being thrown from assembly in the event the power transmission product fails.

If you have any questions, contact the Lovejoy Engineering Department at 1-630-852-0500.

Specialty Products

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Deltaflex

The patented Deltaflex series of couplings offer maximum misalignment capabilities with negligible reactionary load, for longer equipment life. This all-metal flex-link coupling requires no lubrication or other maintenance. Typical applications include: compressors, pumps, fans, positioning devices, indexing tables, mixers, papermill roll drives, drive line shafts, turbine drives, wind tunnels, cooling towers, and single bearing generator drives.



Deltaflex

Uniflex

This single piece coupling series solves a variety of application concerns, including high misalignment, space limitations, high temperature and exceptionally low backlash/windup. Typical applications include textile equipment, printing and binding registration, robotics/positioning, conveyors, carton folding and gluing equipment, machine tools, centrifugal pumps, agricultural machinery, blowers and winding machines.



Uniflex

Saga

The Saga series of couplings offer lower torsional stiffness than any other rubber-in-compression coupling. There is no equal for high shock start/stop applications such as many piston-driven devices, compressors, violent pounding, or crushing units.



Saga

Rigid Sleeve

Our Rigid Sleeve couplings are suitable for use in joining any two shafts when flexibility is not required. Consisting of a one piece sleeve, the coupling slips onto the ends of the two shafts and is held in place by two set screws. This coupling is best suited for light to medium-duty applications.



Rigid Sleeve

Shaft Collars

A shaft collar limits the range of travel allowed along the shaft by motor bases, machine tools, and other such items. The precision-machined collars offer ease of installation and the best possible holding strength.



Shaft Collars

WARNING

You must refer to page SP-2 (Page 302) for Important Safety Instructions and Precautions for the selection and use of these products. Failure to follow the instructions and precautions can result in severe injury or death.

Deltaflex Coupling Design

The Deltaflex coupling is the real solution to installation, misalignment, and performance problems. Conventional couplings – even when carefully aligned to the manufacturer's specifications – cannot match the low level of vibration, moment of inertia, and additional cushion for future misalignment of a visually aligned Deltaflex coupling.

In addition, the Deltaflex coupling gives longer life to equipment shaft bearings. That means longer operating time and reduced maintenance cost. The Deltaflex can handle greater shaft misalignment without generating heavy reaction loads on the equipment shaft bearings.

A properly applied and installed Deltaflex coupling offers more equipment protection compared to conventional couplings.

Features

- Maximum misalignment capabilities, with negligible reactionary load, for longer equipment bearing life. (see illustrations A, B and C)
- Operates as smoothly when misaligned as when perfectly aligned
- No lubrication and no maintenance required
- Equipment can be visually aligned. No special tools are required, which saves on installation time and cost
- Eliminates premature equipment bearing and seal failure resulting from misalignment forces. This means greater equipment productivity
- Torsionally stiff coupling with no backlash means it is capable of high speed applications, within catalog ratings
- Provides long-term performance and economy
- Available in 5 basic sizes, from 10HP to 900HP
- Standard all-metal and stainless steel versions are both available from stock. Many configurations are available, including shaft-to-shaft, spacer, floating shaft, and special assemblies



Type 1 Deltaflex

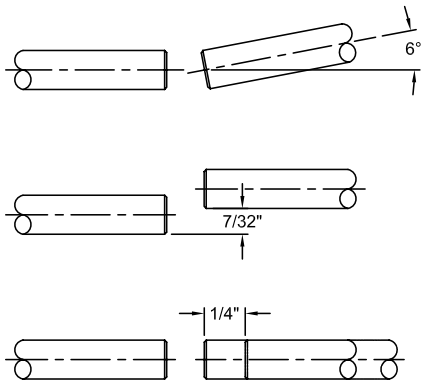


Illustration A
Misalignment Capability (Size 60 Illustrated)

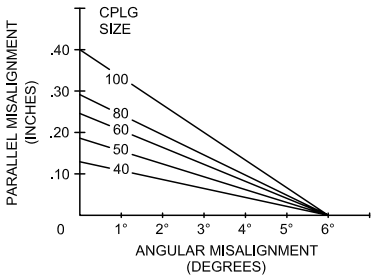


Illustration B
Standard Series

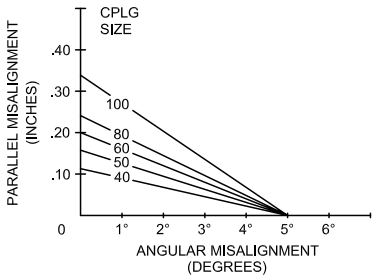


Illustration C
HT Series

Note: ■ Illustrations B and C assume no axial displacement.

SP

Deltaflex Coupling Design

As graphs A and B clearly illustrate, radial load placed on the shaft bearings of the connected equipment by conventional couplings can substantially reduce bearing life and induce detrimental vibration. If the misaligned coupling creates a radial load – as can be the case with conventional couplings – then nearly 75% of B-10 bearing design life is sacrificed. By using the Deltaflex coupling, B-10 life remains close to 100% of design life, even at maximum misalignment.

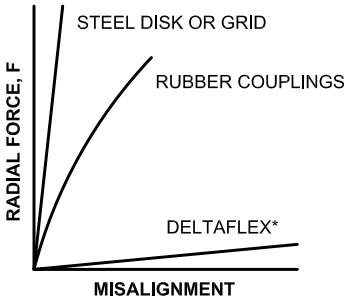
Because the Deltaflex coupling is designed for infinite fatigue life at maximum angular misalignment – at rated torque – inadvertent misalignment caused by temperature expansion, equipment frame flexing, foundation movement, environment, etc. will not shorten the life of the coupling or life of the connected equipment.

Patented Design Concept***

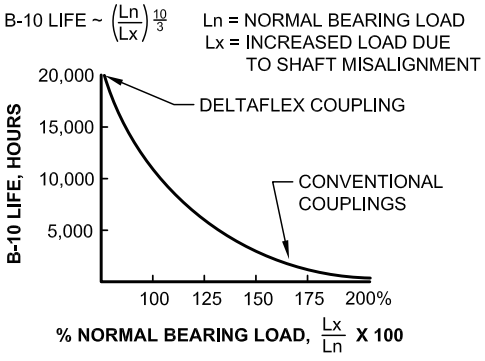
The concept of the Deltaflex coupling and its misalignment capabilities can be illustrated best when compared to conventional coupling design (see Graphs C and D). Most conventional couplings' torque and misalignment capabilities are dependent upon a single flexing member. Soft elastomers are limited by the compressive or tensile strengths of the material. Misalignment is a function and limitation of the material properties and method of connection to the hubs.

While other all-metal flexible couplings share the advantage of high torque transmission and better temperature and corrosion resistance, they are typically limited to less than 1/2° angular with less than 0.005 inch parallel misalignment. Approaching or exceeding these limits will exert undesired radial loads and vibration on the connected equipment.

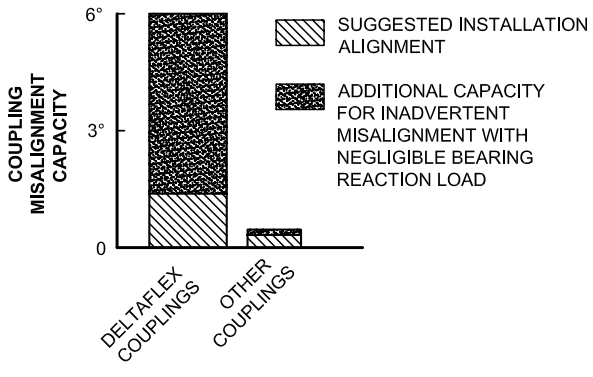
Note: ■ *** U.S. Patent Number: 4033144.



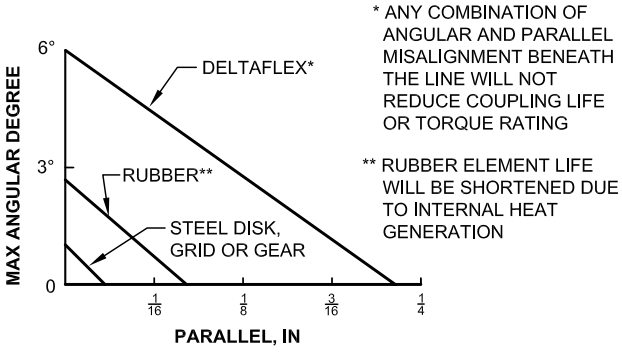
Graph A



Graph B



Graph C



(See illustrations B & C on the previous page for specific sizes)

Graph D

Deltaflex Coupling Design

The Deltaflex Difference

In contrast to most conventional coupling designs (see illustration D), the patented Deltaflex coupling is typically arranged in this manner: a hub, a flex-link at each end of a torque sleeve, and a hub (see illustration E). While most conventional coupling designs use a central flexing element, the Deltaflex uses two, making it a double engaging coupling. The patented concept, along with the method of connecting the hubs to the flexible links, permits the tremendous misalignment capabilities without exerting harmful radial loads.



Deltaflex

The Deltaflex coupling consists of four major components: two delta hubs, an inner flange, and an outer flange. The flex-links, as well as the delta mounting plates, are integral to each flange and are factory assembled. The hub is field-assembled to the flange with three axial cap screws. The two flanges are fastened together radially as the two coupling halves are joined to make a complete coupling.

In understanding the design of the Deltaflex it is important to note that the inner and outer flanges, once firmly fastened together with three cap screws, become a rigid "torque sleeve." The flex links at each end of the torque sleeve accommodate the misalignment generated by the equipment shaft hubs.

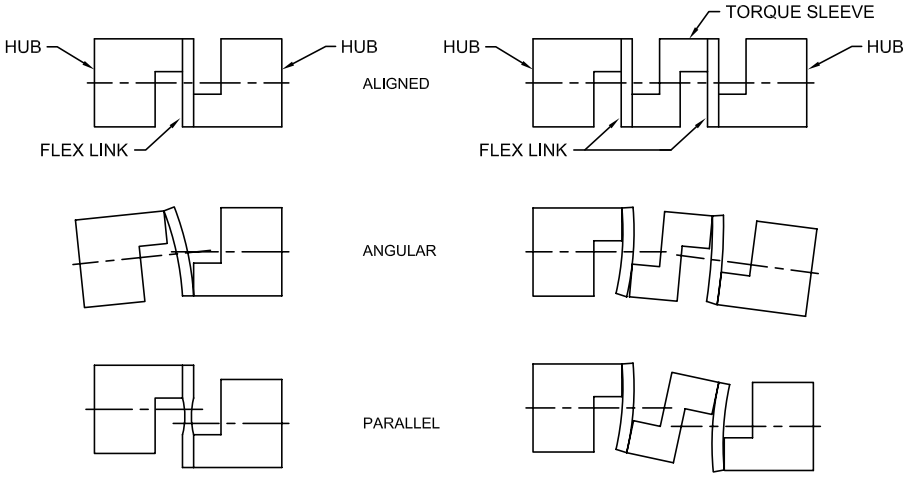


Illustration D
Conventional Coupling

Illustration E
Deltaflex Coupling

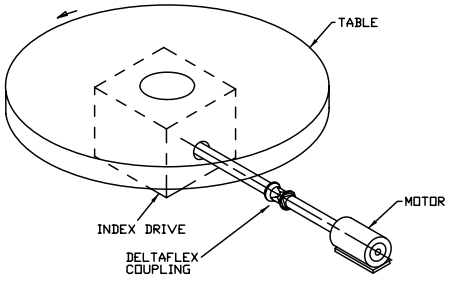
Typical Deltaflex Applications

Use Deltaflex couplings to simplify installation and minimize fabrication costs of structural frames. With the large misalignment capability of Deltaflex, extremely close tolerances will be unnecessary. Typical applications include: compressors, pumps, fans, mixers (vertical and horizontal), turbine drives, wind tunnels, and single bearing generator drives. Some other applications include:

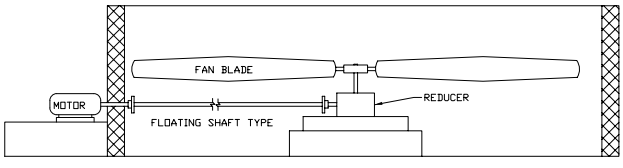
Drive-Line – Connecting long shaft lines with Deltaflex takes advantage of angular and parallel misalignment capabilities. Permits ease of installation and reduces radial bearing loads to a minimum.

Indexing Table or Work Positioning Drive – Takes advantage of zero backlash, instant response and constant velocity. Coupling may be between drive motor and gear reduction or on output side of reducer.

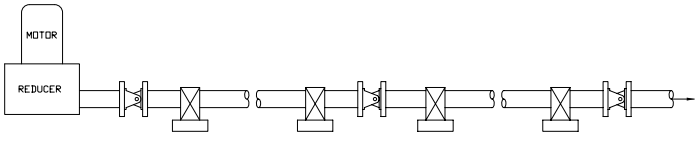
Cooling Tower Drive – The Deltaflex floating shaft coupling permits greater ease of installation with its generous axial misalignment capabilities. Also available in stainless steel.



Indexing Table



Cooling Tower Drive



Drive-Line

Deltaflex Coupling Types

The unique design, misalignment capability and simple installation methods make Deltaflex easily adaptable to special applications. Contact Lovejoy Engineering for assistance.

Type 1

Shaft to Shaft – Hubs Mounted Internally

This is the standard arrangement for most shaft to shaft applications. There are five basic coupling sizes in all types, each with a Standard and a High Torque (HT) Series. Both the Standard and the HT Series are dimensionally interchangeable.



Type 1 Arrangement

Type 2

Shaft to Shaft – Hubs Mounted Externally

This arrangement is similar to Type 1 in that all components are the same, except the delta hubs are mounted outside the flanges.



Type 2 Arrangement

Type 2A

Shaft to Shaft – One Hub Mounted Externally,

This arrangement uses the same components as the Type 2, but with one hub mounted on the inside of the flange and one hub mounted on the outside.



Type 2A Arrangement

Type 3

Spacer Type

This arrangement is specifically designed for the pump industry. It is available in a variety of industry standard shaft separations. The shaft center spacer drops out to facilitate easier maintenance of pump parts without disturbing the alignment of pump and motor.



Type 3 Arrangement

Type 4

Floating Shaft Type

Type 4 coupling components are the same as Type 3, except that the floating shaft design uses a longer spacer tube to span distances up to 12 feet. Deltaflex floating shaft couplings are light weight, dynamically balanced (as required) and corrosion resistant, which makes them ideal for applications in cooling towers and petrochemical service.



Type 4 Arrangement

SP

Steps In Selecting A Deltaflex Coupling

Step 1: Determine the proper service factor (SF) for the application. This may involve 2 steps:

A. Driven equipment service factor (SFa): Using the Application Service Factors Chart 1 (page SP-10) select the service factor which best corresponds to your application. If the application is not listed in Chart 1, use Chart 2.

B. When using Chart 1, add the following service factors (SFb) to the values in Chart 1 as required. Add 0.5 for above average torque load variations or start/stop conditions of not more than once per hour. Add 1.0 for reversing loads, start/stop conditions more than once per hour, severe torque load variations or high inertia starting conditions.

The additional service factor is added to the Chart 1 service factors to obtain the total service factor.

$$SF = SFa + SFb$$

Step 2: Calculate the equivalent HP/100 RPM.

$$\text{HP/100 RPM} = \frac{\text{HP*} \times 100 \times SF}{\text{RPM*}}$$

* HP and RPM of prime mover.

Step 3: Select the Deltaflex size.

Method 1: From the Deltaflex HP and Torque Ratings Chart 3 (page SP-11) select the smallest coupling which is rated equal to or higher than the calculated HP/100 RPM.

Method 2: For couplings driven by standard electric motors, you can multiply the HP of the motor by the service factor (SF) and then refer to the electric motor driven chart for selection.

Step 4: Determine the type of Deltaflex needed, e.g., Type 1, Type 2, etc.

Step 5: Check limiting conditions.

A. Check to be sure that the coupling's Peak Overload Torque Rating is sufficient to accommodate the maximum torque to be transmitted, such as the starting and stall torques of the motor, braking torques and cyclic peak torques, if any. If starting or braking cycles are frequent, the brake torque should be checked against the maximum continuous torque rating of the coupling.

$$T = Tp \times SF$$

T = Maximum torque transmitted
Tp = Brake torque, starting torque or peak torque
SF = Service Factor (determined previously)

B. Check the maximum hub bore. If bore size is too large, the next larger size Deltaflex can be specified.

C. Check other dimensions such as the limits on shaft separation, hub spacings, space required for the coupling, etc.

D. Check maximum speed. If operating speed exceeds 60% of listed maximum speed, the coupling should be dynamically balanced.

Step 6. Ordering Information.

A. Quantity, size, style of couplings.
B. Bore and Keyway sizes.
C. Dynamic balancing specification, if required.
D. Additional non-standard data.
1) Custom mounting dimensions
2) Between shaft ends (BE) dimension for spacer and floating shaft types
3) Maximum operating speed for floating shaft couplings

Selection Examples

A centrifugal fan requires 20 HP, 1,150 RPM motor, direct coupled from the motor to the fan. The motor frame is 286T (1.875 inch shaft) and the fan shaft is 1.625 inches.

Step 1: Using the Application Service Factors Chart 1 (page SP-10), the driven equipment service factor for a centrifugal fan is 1.5 = SFa. The load is uniform and the driver is smooth, therefore SFb is 0.

The total service factor SF is 1.5 + 0 = 1.5

Step 2: $$\text{HP/100 RPM} = \frac{20 \times 100 \times 1.5}{1{,}150} = 2.6 \text{ HP/100 RPM}$$

Using the Deltaflex HP and torque ratings Chart 3 (page SP-11), under the column of HP/100RPM, the smallest coupling you can select is #50 which is rated for 3.0 HP/100 RPM.

NOTE: You can also find the coupling size by multiplying SF x 20:

SF x 20 = 1.5 x 20 = 30 HP

In Chart 3 (page SP-11) for motor drives the coupling to select is, again, #50 under 1,150 RPM motors. The size is rated at 34 HP @ 1,150 RPM.

Step 3: In this case, the maximum bore for size #50 coupling is 1.875 inches; therefore, the selection size stands.

Step 4: Since this is a shaft-to-shaft application, you will be using the standard Deltaflex coupling Type 1. Determine if any other selection factors apply as described in steps 4 and 5 of the selection guide.

Floating Shaft Type Coupling Selection Example

Using the preceding data, assume that the shaft spacing from end of shaft to end of shaft is 36 inches. A floating shaft coupling is then required. The 36 inch is specified as BE (Between Ends) = 36 inches.

Refer to the Type 3 and 4 Chart (page SP-14) to find the overall length of the coupling; add dimension 2 x LTB to BE.

For a size #50 type 3, the overall length will be 36 inches + 2 x 1.69 = 39.38. Note that the length of the spacer tube assembly will be 36 inches - 2R = 36 - 1.62 = 34.38.

This is the amount of space, or dropout section, between the fixed portions of the coupling.

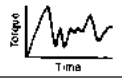
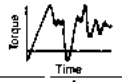
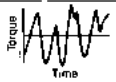
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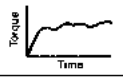
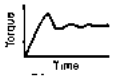
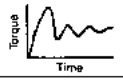
Application Service Factors — *Chart 1*

Agitators	
Liquids	2.0
Variable Density	3.0
Blowers	
Centrifugal	1.5
Lobe	2.0
Vane	2.0
Car Dumpers	3.0
Car Pullers	2.0
Clay Working Machinery	2.5
Compressors	
Centrifugal	1.5
Lobe, Vane, Screw	2.0
Reciprocating—	
Multi-cylinder	Not Recommended
Conveyors—Uniformly Loaded Or Fed	2.0
Conveyors—Heavy Duty	
Not Uniformly Fed	2.5
Conveyors—Vibratory	3.5
Cranes and Hoists	Not Recommended
Crushers	4.0
Extruders	
Plastic	2.0
Metal	2.5
Fans	
Centrifugal	1.5
Axial	1.5
Mine Ventilation	3.5
Cooling Towers	3.0
Light Duty Blowers & Fans	1.5
Feeders	
Light Duty	1.5
Heavy Duty	2.5
Food Industry	
Cereal Cooker	1.5
Dough Mixer	2.5
Meat Grinder	2.5
Can Filling Machine	1.5
Bottling	1.5
Generators	
Non-Welding	2.5
Welding	4.0
Hammer Mills	4.0
Lumber Industry	
Barkers—Drum Type	4.0
Edgar Feed	3.0
Live Rolls	3.0
Log Haul—Incline	3.0
Log Haul—Well Type	3.0
Planer Feed Chains	3.0
Planer Floor Chains	3.0
Planer Tilting Hoist	3.0
Slab Conveyor	2.5
Sorting Table	2.5
Trimmer Feed	3.0
Machine Tools	
Bending Roll	3.0
Punch Press—Gear Driven	3.0
Tapping Machines	4.0
Auxiliary Drives	2.5
Metal Mills	
Draw Bench—Carriage	3.5
Draw Bench—Main Drive	3.5
Forming Machines	3.5
Slitters	3.0
Table Conveyors	
Non-Reversing	3.5
Reversing	4.0
Wire Drawing & Flattening Machine	3.0
Wire Winding Machine	3.0
Mills, Rotary Type	
Ball	3.5
Cement Kilns	3.0
Dryers & Coolers	3.0
Kilns	3.0
Pebble	3.0
Rod	3.0
Tumbling Barrels	3.0
Mixers	
Concrete Mixers	3.0
Drum Type	3.0
Oil Industry	
Chillers	2.5
Oil Well Pumping	3.0
Rotary Kilns	3.0
Paper Mills	
Barker Auxiliaries, Hydraulic	4.0
Barker Mechanical	4.0
Barker Drum (Spur Gear Only)	4.0
Beater & Pulper	3.0
Bleacher	2.5
Calenders	3.0
Cylinders	3.0
Dryers	3.0
Jordans	3.0
Log Haul	3.0
Presses	3.0
Suction Roll	3.0
Washers and Thickeners	2.5
Winders	3.0
Printing Presses	2.5
Pumps	
Centrifugal	
General Duty (Liquid)	1.5
Boiler Feed	1.5
Slurry (Sewage, etc.)	2.5
Dredge	3.0
Reciprocating	
Double Acting	Not Recommended
Single Acting	Not Recommended
Rotary—Gear, Lobe, Vane	2.0
Rubber Industry	
Mixer—Banbury	4.0
Rubber Calender	3.0
Rubber Mill (2 or more)	3.5
Sheeter	3.0
Tire Building Machines	3.5
Tubers and Strainers	3.0
Screens	
Rotary—Stone or Gravel	2.5
Traveling Water Intake	2.5
Vibratory	3.5
Sewage Disposal Equipment	2.5
Textile Industry	
Batchers	2.5
Calenders	3.0
Card Machines	2.5
Dry Cans	3.0
Dryers	2.5
Dyeing Machinery	2.5
Looms	2.5
Mangles	2.5
Soapers	2.5
Spinners	2.5
Windlass	3.0

Notes: ■ Typical Service Factors Electric Motor and Turbine Driven Equipment.
■ If people are transported, Lovejoy does not recommend and will not warranty the use of the coupling.

Service Factors for Driven Equipment Load Classifications — *Chart 2*

Load Characteristics	Service Factors
 Shock loads and above average torque load variations, or start/stop applications of up to once per hour.	3.0
 Heavy shock loads reversing or start/stop applications of more than once per hour or high inertia starting loads.	4.0
 Heavy reversing torque loads. NOT RECOMMENDED BECAUSE OF LOAD CARRYING METHOD IN FLEXIBLE LINKS	NR

Load Characteristics	Service Factors
 Relatively low inertia, smooth continuous torque load.	1.5
 Torque load varies during operation of the equipment.	2.0
 Above average torque load variations during operation of the equipment.	2.5

* Torque load reversal can exist without reversing rotation and can be caused by overrunning the load with inertia or shifting of the load. Consult Lovejoy Engineering.

Note: ■ * indicates: Torque load reversal can exist without reversing rotation and can be caused by overrunning the load with inertia or shifting of the load. Consult Lovejoy Engineering.

Deltaflex HP and Torque Ratings

Chart 3

Size	Max Bore				Maximum Continuous Torque		Peak Overload Torque		HP/100 RPM	HP Rating[1] @ Standard Motor RPM			
	Delta Hub		Round Hub										
	in	mm	in	mm	in-lbs	Nm	in-lbs	Nm	HP	875	1,150	1,750	3,500
40	1.38	35	1.63	42	750	84	1,125	127	1.2	10.5	13.8	21.0	42
40HT	1.38	35	1.63	42	1,260	142	1,890	213	2.0	17.5	23.0	35.0	70
50	1.88	50	2.25	58	1,900	214	2,850	322	3.0	26.2	34.0	52.4	105
50HT	1.88	50	2.25	58	2,835	320	4,235	478	4.5	39.0	52.0	78.0	156
60	2.50	66	3.00	81	4,100	463	6,150	695	6.5	57.0	75.0	114.0	228
60HT	2.50	66	3.00	81	6,000	678	9,000	1 017	9.5	83.0	109.0	166.0	332
80	3.38	93	4.00	110	9,500	1 073	14,250	1 610	15.0	131.0	173.0	262.0	524
80HT	3.38	93	4.00	110	15,000	1 695	22,500	2 542	23.8	208.0	274.0	416.0	832
100	4.25	114	5.00	136	22,900	2 587	34,500	3 898	36.3	317.0	418.0	634.0	1,268
100HT	4.25	114	5.00	136	33,000	3 728	49,500	5 593	52.4	458.0	603.0	916.0	1,832

Note: ■ 1 indicates: The HP ratings listed are for drives with a Service Factor of 1.0. Refer to Chart 1 (page SP-10) for Application Service Factors. Further, the ratings are based on prime movers such as electric motors or turbines.

$$HP/100RPM = \frac{HP \times 100}{RPM}$$

$$T(Torque) = \frac{HP \times 63{,}025}{RPM}$$

$$HP = \frac{Tx\ RPM}{63{,}025}$$

Note: ■ Internal Combustion Engines: Deltaflex couplings are not recommended for direct connection to internal combustion engine drives.

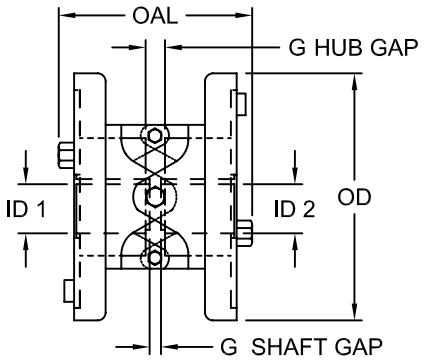
SP

Type 1

Shaft to Shaft – Hubs Mounted Internally

This is the standard arrangement for most shaft to shaft applications. There are five basic coupling sizes in all types, each with a Standard and a High Torque (HT) Series. Both the Standard and the HT Series are dimensionally interchangeable.

Type 1 features the standard inner and outer flanges and delta hubs, which are triangular in shape to accommodate the delta flex-link pattern. The standard flanges are stamped steel, while the flex links in all Deltaflex couplings are precipitation-hardened (PH 17-7) stainless steel. Delta hubs are ductile iron, zinc clear dichromate-plated and available from stock in a variety of bore sizes. Every Deltaflex hub is standard with two set screws at 120°. Hub to flange (axial) and flange to flange (radial) hardware is SAE Grade 5. Stainless steel flanges with standard ductile iron delta hubs are available from stock as an option. Delta style hubs are not available in stainless steel.



Deltaflex Type 1 Dimensional Data

Size	OAL	G Hub Gap	ID1 - ID2 Max Bore		ID1 - ID2 Min RSB[1]		G Shaft Gap	OD	HP/100 RPM	Max Continuous Torque		Peak Overload Torque[2]		Angular[3]	Parallel[3]	Axial Freedom[4]	Moment of Inertia WR²	Max
	in	in	in	mm	in	mm	in	in	HP	in-lbs	Nm	in-lbs	Nm				lbs-in²	RPM[5]
40	3.51	0.29	1.375	35	0.438	11	0.12	4.38	1.2	750	85	1,125	127	6°	0.12	0.09	5.4	8,000
40HT	3.54	0.32	1.375	35	0.438	11	0.12	4.38	2.0	1,260	142	1,890	214	5°	0.12	0.09	5.4	8,000
50	4.83	0.71	1.875	48	0.438	11	0.18	6.18	3.0	1,900	215	2,850	322	6°	0.18	0.12	30.1	6,000
50HT	4.87	0.75	1.875	48	0.438	11	0.18	6.18	4.5	2,835	320	4,235	479	5°	0.15	0.12	30.1	6,000
60	6.22	1.23	2.500	64	0.750	19	0.18	7.25	6.5	4,100	463	6,150	695	6°	0.24	0.15	64.3	5,000
60HT	6.26	1.27	2.500	64	0.750	19	0.18	7.25	9.5	6,000	678	9,000	1 017	5°	0.21	0.15	64.3	5,000
80	7.52	1.02	3.375	86	1.375	35	0.25	9.62	15.0	9,500	1 074	14,250	1 610	6°	0.29	0.18	297.0	4,000
80HT	7.57	1.07	3.375	86	1.375	35	0.25	9.62	23.8	15,000	1 695	22,500	2 543	5°	0.25	0.18	297.0	4,000
100	9.74	0.58	4.250	108	1.750	44	0.31	12.75	36.3	22,900	2 588	34,500	3 899	6°	0.40	0.25	884.0	3,000
100HT	9.82	0.66	4.250	108	1.750	44	0.31	12.75	52.4	33,000	3 729	49,500	5 594	5°	0.35	0.25	884.0	3,000

Notes:
- 1 indicates: RSB hubs are furnished with two set screws at 120°, no keyway.
- 2 indicates: Peak Overload Torque = Torque that can be applied for short periods, such as shock loads, start up, etc.
- 3 indicates: See illustrations B & C on page SP-5 for combined maximum misalignment.
- 4 indicates: Axial Freedom is provided only for the purpose of system expansion or due to temperature changes or shaft flotation (such as with sleeve bearing motors).
- 5 indicates: Balancing is not required below 60% of maximum RPM.

Type 2

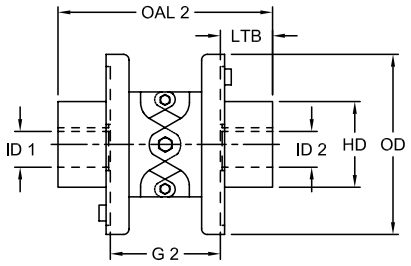
Shaft to Shaft – Hubs Mounted Externally

This arrangement is similar to Type 1 in that all components are the same, except the delta hubs are mounted outside the flanges. An optional version of the Type 2 uses round hubs mounted externally on both ends or on one end to accommodate larger bore requirements. Type 2 is available as a stock option with stainless steel flanges and stainless steel round hubs. Delta style hubs are not available in stainless steel.

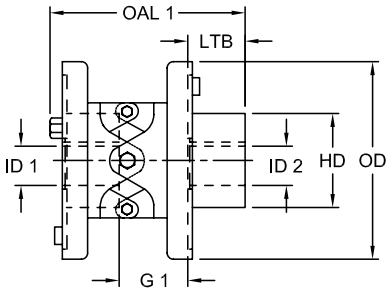
Type 2A

Shaft to Shaft – One Hub Mounted Externally, One Hub Mounted Internally

One hub is mounted on the inside of the flange and one hub is mounted on the outside. Round hubs cannot be mounted on the inside of the coupling. Type 2A is available as a stock option with stainless steel flanges. The internal hub would be ductile iron, while the external hub would be a stainless steel round hub. Delta hubs are not available in stainless steel.



Type 2



Type 2A

Deltaflex Type 2 and 2A Dimensional Data

Size	OAL1[1] in	OAL2[2] in	LTB in	ID1 - ID2 Max Bore Delta Hub in	mm	Max Bore Round Hub in	mm	Min Bore[1] Delta Hub in	mm	G1[3] in	G2[3] in	OD in	HD in	HP/100 RPM HP	Max Cont Torque in-lbs	Nm	Peak Overlaod Torque in-lbs	Nm	Max RPM
40	4.51	5.51	1.23	1.375	35	1.625	41	0.438	11	1.67	3.05	4.38	2.56	1.2	750	85	1,125	127	8,000
40HT	4.54	5.54	1.23	1.375	35	1.625	41	0.438	11	1.70	3.08	4.38	2.56	2.0	1,260	142	1,890	214	8,000
50	6.10	7.37	1.57	1.875	48	2.250	57	0.438	11	2.47	4.23	6.18	3.56	3.0	1,900	215	2,850	322	6,000
50HT	6.14	7.41	1.57	1.875	48	2.250	57	0.438	11	2.51	4.27	6.18	3.56	4.5	2,835	320	4,235	479	6,000
60	7.77	9.33	1.90	2.500	64	3.000	76	0.750	19	3.38	5.53	7.25	4.50	6.5	4,100	463	6,250	706	5,000
60HT	7.82	9.37	1.90	2.500	64	3.000	76	0.750	19	3.42	5.57	7.25	4.50	9.5	6,000	678	9,000	1 017	5,000
80	9.58	11.64	2.53	3.375	86	4.000	102	1.375	35	3.80	6.58	9.62	5.88	15.0	9,500	1 074	14,250	1 610	4,000
80HT	9.63	11.69	2.53	3.375	86	4.000	102	1.375	35	3.85	6.63	9.62	5.88	23.8	15,000	1 695	22,500	2 543	4,000
100	12.91	16.08	3.75	4.250	108	5.000	127	1.750	44	4.58	8.58	12.75	7.25	36.3	22,900	2 588	34,500	3 899	3,000
100HT	12.99	16.16	3.75	4.250	108	5.000	127	1.750	44	4.66	8.66	12.75	7.25	52.4	33,000	3 729	49,500	5 594	3,000

Notes:
- 1 indicates: Minimum Bore hubs are furnished with two set screws at 120°, no keyway.
- 2 indicates: OAL1 is overall length with one hub mounted externally; OAL2 is with both hubs mounted externally.
- 3 indicates: G1 is hub gap with one hub mounted externally; G2 is with both hubs mounted externally.
- For misalignment capabilities, see illustrations B and C on page SP-5, or Type 1 data on previous page. See page SP-11 for Performance Data.

SP

Specialty Products
Deltaflex Type 3 and 4
Dimensional Data

Type 3
Spacer Type

This arrangement is specifically designed for the pump industry and is available in a variety of industry standard shaft separations. The shaft center spacer drops out to facilitate easier maintenance of pump parts without disturbing the alignment of pump and motor. Spacer type couplings utilize either standard delta hubs or optional round hubs. The center member of the Deltaflex is captured by the construction of the spacer flanges for greater safety. Standard spacer drop out lengths are available to accommodate shaft separations of 3.50, 4.38, 5, 7, 10, 12 and 15 inches. Special spacer lengths and stainless steel spacer couplings are available as an option.

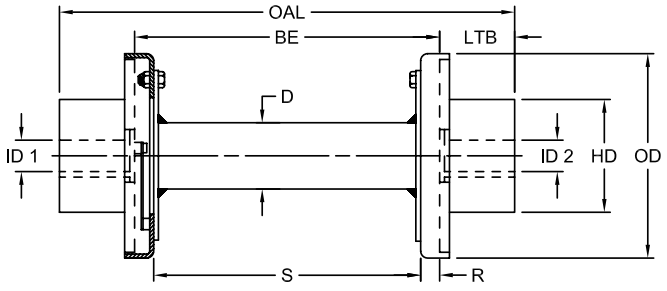
Type 4
Floating Shaft Type

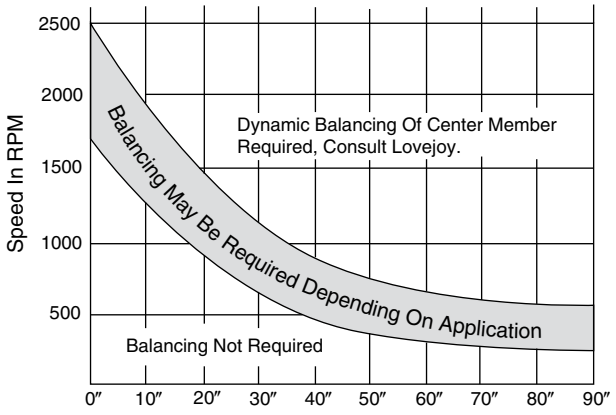
The Type 4 coupling components are identical to Type 3, except the floating shaft design uses a longer spacer tube to span distances up to 12 feet. Deltaflex floating shaft couplings are lightweight, dynamically balanced (as required) and corrosion resistant. The center member of the Deltaflex is captured by the construction of the spacer flanges for greater safety. Floating shaft couplings are also available in stainless steel. See next page for dimensions.

Deltaflex Floating Shaft Maximum Parallel Misalignment

Size	Dimensions in Inches at Max Span @ RPM 1750
40	2.50
40HT	2.00
50	3.00
50HT	2.50
60	3.25
60HT	3.00
80	4.00
80HT	3.50
100	4.25
100HT	4.00

Type 3 and 4 – Spacer and Floating Shaft





Floating Shaft Couplings Balancing Requirements

Deltaflex Type 3 and 4 Dimensional Data

Size	OAL in	BE in	LTB[4] in	D in	ID1 - ID2 Min Bore[1] Delta Hub in	mm	Max Bore Delta Hub in	mm	Max Bore Round Hub in	mm	S[3] in	R in	OD in	HD in	HP/100 RPM HP	Max Cont Torque in-lbs	Nm	Peak Overload Torque in-lbs	Nm
40	See Type 3 on SP-15	See Type 3 on SP-15	1.34	1.50	0.438	11	1.375	35	1.625	41	See Type 3 on SP-15	0.50	4.38	2.56	1.2	750	85	1,125	127
40HT			1.34	1.50	0.438	11	1.375	35	1.625	41		0.50	4.38	2.56	2.0	1,260	142	1,890	213
50			1.68	2.00	0.438	11	1.875	48	2.250	57		0.81	6.18	3.56	3.0	1,900	215	2,850	322
50HT			1.68	2.00	0.438	11	1.875	48	2.250	57		0.81	6.18	3.56	4.5	2,835	320	4,235	478
60			2.03	2.62	0.750	19	2.500	64	3.000	76		0.94	7.25	4.50	6.5	4,100	463	6,250	695
60HT			2.03	2.62	0.750	19	2.500	64	3.000	76		0.94	7.25	4.50	9.5	6,000	678	9,000	1 017
80			2.66	3.50	1.375	35	3.375	86	4.000	102		1.00	9.62	5.88	15.0	9,500	1 074	14,250	1 610
80HT			2.66	3.50	1.375	35	3.375	86	4.000	102		1.00	9.62	5.88	23.8	15,000	1 695	22,500	2 543
100			3.88	4.38	1.750	44	4.250	108	5.000	127		1.25	12.75	7.25	36.3	22,900	2 588	34,500	3 899
100HT			3.88	4.38	1.750	44	4.250	108	5.000	127		1.25	12.75	7.25	52.4	33,000	3 729	49,500	5 594

Notes:
- 1 indicates: Minimum bore hubs are furnished with 2 set screws at 120°, no keyway.
- 3 indicates: S is the Spacer drop out or floating shaft length, S = BE-2(R).
- 4 indicates: LTB is the length through the hub bore. OAL is the overall length, OAL = BE + 2(LTB).
- BE is the distance between the ends of equipment shafts—please supply this dimension when placing orders, BE = OAL-2 (LTB), BE = S + 2 (R), BE < 18 inch = Spacer coupling (Type 3); BE > 18 inch = Floating Shaft coupling (Type 4).

Deltaflex Type 3 Additional Dimensional Data

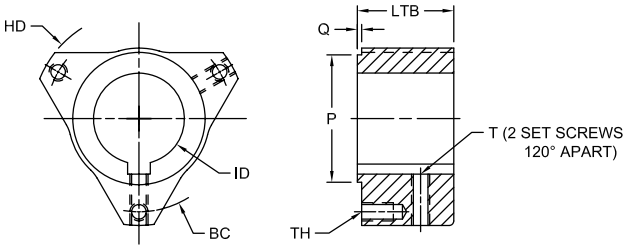
Size	OAL		BE		S	
	in	mm	in	mm	in	mm
40/40HT	6.16	156	3.50	89	2.50	64
	7.03	179	4.38	111	3.38	86
	7.66	194	5.00	127	4.00	102
50/50HT	7.72	196	4.38	111	2.75	70
	8.34	212	5.00	127	3.38	86
	10.34	263	7.00	178	5.38	137
60/60HT	9.06	230	5.00	127	3.12	82
	11.06	281	7.00	178	5.12	130
	14.06	357	10.00	254	8.12	206
80/80HT	15.31	389	10.00	254	8.16	207
	17.31	440	12.00	305	10.16	258
100/100HT	19.75	502	12.00	305	9.50	241
	22.75	578	15.00	381	12.50	318

Deltaflex Type 4 Floating Shaft Coupling Maximum Span-Inch

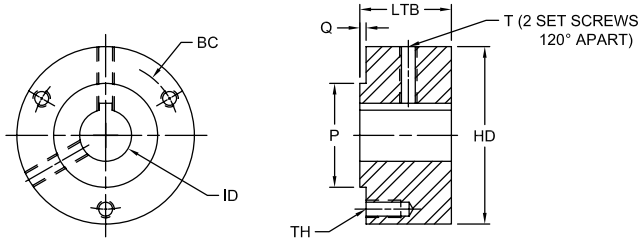
Size	Max Span-BE		
	1750 RPM	1150 RPM	875 RPM
40/40HT	60	76	88
50/50HT	70	88	102
60/60HT	80	100	114
80/80HT	94	115	140
100/100HT	104	120	150

Note: ■ Consult Lovejoy Engineering for other RPM/Span applications.

SP



Delta Hub



Round Hub

Deltaflex Delta and Round Hub Dimensional Data

Size	HD	ID						BC	LTB	Q	P	T	TH
		Min Bore[1] Delta Hub		Max Bore Delta Hub		Max Bore Round Hub						Set Screw	Axial Cap Screw Tap
	in	in	mm	in	mm	in	mm	in	in	in	in	in	in
40/40HT	2.56	0.438	11	1.375	35	1.625	41	2.12	1.34	0.09	1.498/1.500	1/4-20	1/4-20 x .62
50/50HT	3.56	0.438	11	1.875	48	2.250	57	3.08	1.68	0.09	1.998/2.000	1/4-20*	5/16- 18 x .75
60/60HT	4.50	0.750	19	2.500	64	3.000	76	3.88	2.03	0.12	2.623/2.625	3/8-16	3/8- 16 x .88
80/80HT	5.88	1.375	35	3.375	86	4.000	102	5.12	2.66	0.12	3.498/3.500	1/2-13	1/2- 13 x 1.00
100/100HT	7.25	1.750	44	4.250	108	5.000	127	6.32	3.88	0.12	4.373/4.375	1/2-13	5/8- 11 x 1.50

Notes:
- * indicates: In some bore sizes the tap is 5/8-18.
- Maximum bores are provided with standard keyway. RSB hubs do not have a keyway. Both Delta hubs and Round hubs are provided with two set screws at 120°.

Deltaflex Standard Bore Availability Chart

Size	0.438	0.625	0.750	0.875	1.000	1.125	1.250	1.375	1.500	1.625	1.750	1.875	2.000
40/40HT	D	S	S	S	S	S	S	S	R	R	N/A	N/A	N/A
50/50HT	D	S	S	S	S	S	S	S	S	S	S	S	R
60/60HT	N/A	N/A	D	S	S	S	S	S	S	S	S	S	S
80/80HT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	D	N/A	S	S	S	S
100/100HT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	D	S	S

Size	2.125	2.250	2.375	2.500	2.625	2.750	2.875	3.000	3.125	3.250	3.375	3.500
50/50HT	R	R	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
60/60HT	S	S	S	S	R	R	R	R	N/A	N/A	N/A	N/A
80/80HT	S	S	S	S	S	S	S	S	S	S	S	S
100/100HT	S	S	S	S	S	S	S	S	S	S	S	S

Size	3.625	3.750	3.875	4.000	4.125	4.250	4.375	4.500	4.625	4.750	4.875	5.000
80/80HT	R	R	R	R	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
100/100HT	S	S	S	S	S	S	R	R	R	R	R	R

Notes:
- S indicates: Standard hub, finished bores available from stock, two set screws @ 120° and standard keyway.
- R indicates: Round hub, finished bores available from stock, two set screws @ 120° and standard keyway.
- D indicates: Delta hubs, rough stock bores available from stock, two set screws @ 120°, no keyway.
- N/A indicates: Not Available.

Uniflex Coupling Design

Flexible Spring Type Coupling with Exclusive Triple Wound Spring Design

The Uniflex Coupling is an all steel, single piece coupling that solves a variety of application concerns including: high misalignment, space limitations, high temperature, and exceptionally low backlash/windup. The unique flexing center of the Uniflex consists of three opposingly wound square wire springs for forward or reverse operation. Two steel hubs are then brazed to the steel spring pack to create a durable one-piece flexible coupling.

Features

- This designed flexibility compensates for high degrees of shaft misalignment (up to 4.5° angular, up to .045 inches parallel)
- The one piece Uniflex is simple to install – nothing to replace, no wearing parts, and no lubrication needed
- The compact design provides a coupling that is smaller and lighter than most couplings of comparable torque ratings. It is also well suited for applications with inaccessible mounting locations
- All metal design means that the Uniflex can be used in applications where severe environmental concerns are a factor. Standard couplings withstand temperatures to 250° F (due to soldering); special designs to 600° F (stainless steel w/electron beam weld)
- The Uniflex is unaffected by oil, grease, dirt and most industrial chemicals



Uniflex Triple Spring Coupling

Uniflex Coupling Types

Four styles of Uniflex couplings are available: shaft-to-shaft, drop out, flange-to-flange and flange-to-shaft.

U Type

This is a durable one-piece flexible coupling for general purpose shaft-to- shaft applications. It is the basis for all Uniflex coupling types.



U Type

RRU Type

This design offers “quick disconnect” for drop out requirements. It can also accomodate a slightly larger shaft diameter than the standard U Type.



RRU Type

UF Type

This flange-to-flange type is designed to connect flange mounted equipment to another flange while compensating for misalignment. It is also the center drop out section of the RRU Type.



UF Type

UFH Type

A flange-to-shaft configuration, this couples flange mounted equipment to a shaft with all the benefits of Uniflex versatility. The stock flange plate is the same as used on the UF Type.



UFH Type

SP

Uniflex Coupling Selection Process

Once it is determined that the unique features of Uniflex meet your application, selection of the proper coupling depends on three factors: torque transmission, bore requirements, and RPM. When selecting a Uniflex coupling, the torque capability shown as maximum must not be exceeded. Nominal torque adjusted by an application service factor, start up torque, braking torque and any cyclic shock or peak torques inherent in the application must be considered.

Steps In Selecting A Uniflex Coupling

Step 1: Determine the Uniflex type or configuration from page SP-17.

Step 2: Calculate the nominal torque as T or nominal HP/100RPM

$$T\ (\text{in-lbs}) = \frac{(HP^* \times 63{,}025)}{RPM^*} \qquad HP/100RPM = \frac{HP^* \times 100}{RPM^*}$$

$$T\ (\text{Nm}) = \frac{(KW^* \times 9{,}550)}{RPM}$$

Note: ■ *Usually HP (KW) & RPM of prime mover, if the coupling is to be attached to the prime mover or if no speed or torque devices are between the driver and driven equipment.

Step 3: Determine the application service factor from page JW-8. Multiply the nominal torque by the application service factor to determine the total required torque.

Step 4: Select the size.

Step 5: Check to be sure the peak torque or maximum torque from starting, braking or cyclic peaks does not exceed the coupling maximum capability. For applications involving frequent starts and stops, refer to Lovejoy Engineering. NOTE: Diesel and gasoline engine drives usually require special considerations. Refer to Lovejoy Engineering.

Step 6: a. Check the coupling maximum bore capability versus the shaft to be used. If necessary, pick a larger size coupling to get the needed bore capacity.

b. Check the maximum speed.

c. Check any limiting dimensions.

Selection Example

A rolling device operates at 6,000 RPM and requires 15 HP. The driving shaft is 1.250 inches diameter and the roll shaft is 1.125 inches diameter. Select the proper U type shaft-to-shaft coupling. Occasional emergency stops impose 675 in-lbs of torque, otherwise the operation has no cyclic loading. Start up torque is 1/3 of emergency stopping torque. Rolls of various types typically have a 1.5 - 2.0 application service factor. Determine the nominal torque or HP/100RPM:

Step 1: $T = \frac{15 \times 63{,}025}{6{,}000} = 158$ in-lbs

$HP/100\ RPM = \frac{15 \times 100}{6{,}000} = 0.25$ HP/100 RPM

Step 2: Determine the Total Rated Torque:
Tr = 158 x 2.0 = 316 in-lbs

Maximum stopping torque = 675 in-lbs
Start up torque = 225 in-lbs

The U-125 coupling meets all the above requirements with the key item as the maximum stopping torque.

Step 3: The U-125 has a maximum bore capability of 1.250 inches, which covers the application driver shaft of the same size. The roll shaft is 1.125 inches, which is less than maximum.

Note: ■ Uniflex maximum bore sizes includes a standard keyway allowance.

SP

Uniflex Performance Data

Size	Wind Up At Max Torque[1]	Misalignment Capability								
		Max Angular Offset	Max Parallel Offset		Max Recommended End Play		Max Torque		HP/100	Max Speed
			in	mm	in	mm	in-lbs	Nm	RPM	RPM
18 Reg	1.80°	3.0°	0.008	0.20	0.010	0.25	18	2.0	0.03	30,000
25 Reg	1.80°	4.5°	0.011	0.28	0.020	0.51	34	3.8	0.05	30,000
37 Reg	1.78°	4.5°	0.014	0.36	0.020	0.51	39	4.4	0.06	30,000
50 Reg	1.82°	4.5°	0.021	0.53	0.035	0.89	82	9.3	0.13	30,000
62 Reg	0.85°	3.0°	0.019	0.48	0.035	0.89	126	14.2	0.20	20,000
75 Reg	1.82°	4.5°	0.028	0.71	0.040	1.02	175	19.8	0.28	20,000
87 Reg	1.68°	4.5°	0.035	0.89	0.040	1.02	346	39.1	0.55	10,000
100 Reg	1.03°	3.0°	0.030	0.76	0.040	1.02	565	63.8	0.90	6,000
125 Reg	1.85°	4.5°	0.044	1.12	0.040	1.02	755	85.3	1.21	6,000
137 Reg	1.85°	3.0°	0.035	0.89	0.040	1.02	1,260	142.4	2.02	6,000
150 Reg	0.85°	3.0°	0.041	1.04	0.040	1.02	1,890	213.5	3.02	3,000
25 Short	1.07°	3.0°	0.007	0.18	0.015	0.38	34	3.8	0.05	30,000
37 Short	1.09°	3.0°	0.009	0.23	0.015	0.38	39	4.4	0.06	30,000
50 Short	1.05°	3.0°	0.014	0.36	0.010	0.25	82	9.3	0.13	30,000
62 Short	0.85°	3.0°	0.019	0.48	0.020	0.51	126	14.2	0.20	20,000
75 Short	1.12°	3.0°	0.019	0.48	0.020	0.51	175	19.8	0.28	20,000
87 Short	1.17°	3.0°	0.024	0.61	0.020	0.51	346	39.1	0.55	10,000
100 Short	1.03°	3.0°	0.030	0.76	0.020	0.51	565	63.8	0.90	6,000
125 Short	1.22°	3.0°	0.030	0.76	0.020	0.51	755	85.3	1.21	6,000
137 Short	1.35°	3.0°	0.035	0.89	0.020	0.51	1,260	142.4	2.02	6,000
150 Short	0.85°	3.0°	0.041	1.04	0.020	0.51	1,890	213.5	3.03	3,000

Note: ■ 1 indicates: Total backlash is approximately 1/3 of windup at maximum torque – consult Lovejoy Engineering for more information.

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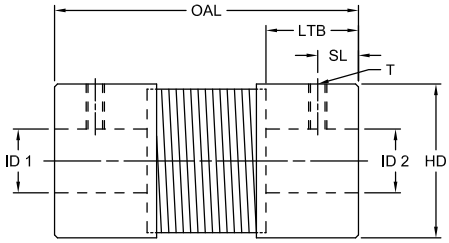
U Type Shaft-to-Shaft

The U Type is the basis for all Uniflex couplings. It is a shaft-to-shaft flexible coupling with a simple one piece design, making it ideal for indexing, robotic or positioning applications. The U Type consists of a triple-wound flexible steel spring brazed to a steel hub at each end. This all steel design ensures optimum equipment protection in severe environments and/or high temperature applications.

Regular and short versions are available for most sizes to accommodate different overall length requirements. Special hub or bore modifications are also possible. These units can be supplied with either pin holes or with keyways and set screws. Lovejoy does not recommend the reboring of uniflex couplings by customers due to potential damage to the brazed joint.



U-Type



Uniflex U Type Dimensional Data

Size	OAL[1] Reg in	OAL[1] Short in	LTB Reg in	LTB Short in	SL Pin Location Reg in	SL Pin Location Short in	Pin Size in	T Set Screw Per Hub Qty	T Set Screw Per Hub Size	ID1 - ID2 Min Bore in	ID1 - ID2 Min Bore mm	ID1 - ID2 Max Bore in	ID1 - ID2 Max Bore mm	HD in	Weight lbs	Weight kg
U-18	1.00	—	0.31	—	0.16	—	3/32	1	6-32	0.125	3	0.250	6	0.61	0.09	0.04
U-25	1.50	1.00	0.38	0.32	0.16	0.16	3/32	1	6-32	0.125	3	0.313	8	0.73	0.10	0.05
U-37	2.06	1.65	0.52	0.52	0.25	0.25	3/32	1	10-24	0.250	6	0.375	10	0.86	0.27	0.12
U-50	2.50	1.82	0.64	0.50	0.31	0.31	1/8	1	1/4-20	0.313	8	0.500	13	1.04	0.36	0.16
U-62	2.72	2.28	0.84	0.62	0.38	0.38	1/8	1	1/4-20	0.313	8	0.625	16	1.42	0.78	0.35
U-75	3.31	2.72	0.84	0.84	0.41	0.41	1/8	1	1/4-20	0.375	10	0.750	19	1.42	0.82	0.37
U-87	3.50	2.91	0.84	0.84	0.44	0.44	3/16	1	1/4-20	0.438	11	0.875	22	1.73	1.40	0.63
U-100	4.12	3.56	1.29	1.00	0.56	0.56	5/16	1	1/4-20	0.438	11	1.000	25	2.11	2.60	1.18
U-125	4.88	3.75	1.28	1.10	0.62	0.62	5/16	1	3/8-16	0.625	16	1.250	32	2.17	2.74	1.24
U-137	5.25	4.12	1.58	1.01	0.69	0.69	3/8	1	3/8-16	0.625	16	1.375	35	2.54	4.00	1.81
U-150	6.28	5.00	1.88	1.72	0.81	0.81	3/8	1	3/8-16	0.750	19	1.500	38	2.98	8.00	3.63

Note: ■ 1 indicates: OAL Tolerance ± 1/8 inch.

Uniflex U Type - Stainless Steel Dimensional Data

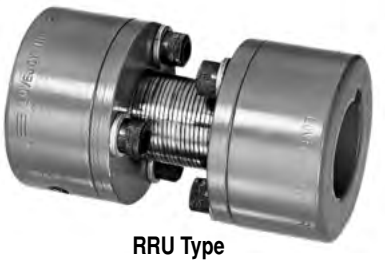
Size	OAL[1] Reg in	OAL[1] Short in	LTB Reg in	LTB Short in	SL Pin Location Reg in	SL Pin Location Short in	Pin Size in	T Set Screw Per Hub Qty	T Set Screw Per Hub Size	ID1 - ID2 Max Bore in	ID1 - ID2 Max Bore mm	HD in	Weight lbs	Weight kg
U-18	0.95	—	0.31	—	0.16	—	3/32	1	6-32	0.250	6	0.60	0.09	0.04
U-25	—	0.97	—	0.41	—	0.16	3/32	1	6-32	0.313	8	0.62	0.10	0.05
U-37	—	1.68	—	0.68	—	0.25	3/32	1	10-24	0.313	8	0.75	0.27	0.12
U-50	—	1.80	—	0.58	—	0.31	1/8	1	¼-20	0.375	10	0.94	0.36	0.16
U-62	2.65	2.27	0.96	0.77	0.38	0.38	1/8	1	¼-20	0.500	13	1.25	0.78	0.35
U-75	—	2.65	—	0.96	—	0.41	1/8	1	¼-20	0.500	13	1.25	0.82	0.37
U-87	—	2.94	—	0.99	—	0.44	3/16	1	¼-20	0.750	19	1.69	1.40	0.63
U-100	4.09	3.55	1.41	1.13	0.56	0.56	5/16	1	¼-20	1.000	25	1.94	2.60	1.18
U-125	—	3.99	—	1.25	—	0.62	5/16	1	⅜-16	1.000	25	1.97	2.74	1.24

Note: ■ 1 indicates: OAL Tolerance ± 1/8 inch.

RRU Type – Dropout Style

The RRU Type Uniflex coupling is designed for fast, easy installation and removal without disrupting the connected shafts. This is ideal when servicing impellers, bearings and seals.

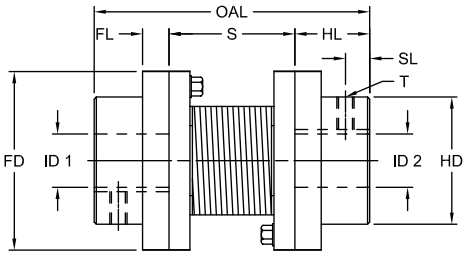
The design consists of two steel hubs fastened with cap screws to a Uniflex double flange coupling (UF Type). The RRU is easily disassembled by simply removing the cap screws and sliding out the UF center spring section.

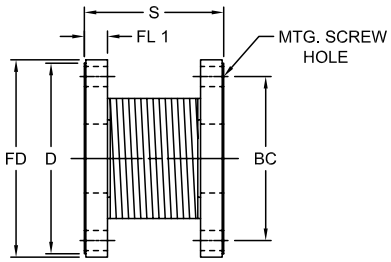


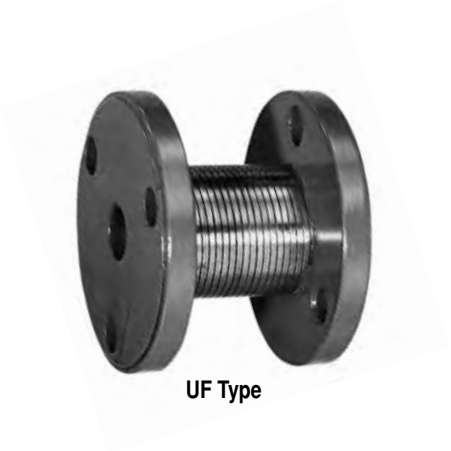
RRU Type

UF Type – Flange-to-Flange

This coupling is actually the center dropout section of the RRU Type, but it can be purchased separately for direct flange-to-flange mounting of the driving unit to the driven. The UF Type coupling compensates for high misalignment to protect connected equipment, yet it is also well-suited for applications which require negligible backlash or windup and reliability under high temperature conditions. Stock flange sizes are shown in the Dimensional Data table below, but other sizes can be provided to meet special mounting requirements.







UF Type

SP

Uniflex RRU and UF Type Dimensional Data

Size	HD	ID1 - ID2 Min Bore		ID1 - ID2 Max Bore		HL	FL	FL1	OAL[1]	D	FD	SL Pin Location	Pin Size	S[2]	BC	UF Type Mounting Screw[3]		RRU Type Set Screw Per Hub	
	in	in	mm	in	mm	in	in	in	in	in	in	in	in	in	in	Qty	Size	Qty	Size
RRU-50	2.00	0.375	10	1.000	25	1.00	—	0.25	3.52	1.88	2.00	0.50	1/8	1.56	1.50	3	1/4-20	1	1/4-20
RRU-75	2.50	0.375	10	1.250	32	1.25	—	0.38	4.27	2.38	2.50	0.62	1/8	1.81	2.00	3	1/4-20	1	1/4-20
RRU-87	2.87	0.438	11	1.375	35	1.38	—	0.38	4.84	2.75	2.88	0.69	3/16	2.12	2.25	3	1/4-20	1	1/4-20
RRU-100	2.31	0.438	11	1.375	35	1.38	0.50	0.38	4.90	3.12	3.25	0.44	5/16	2.18	2.68	3	5/16-18	1	1/4-20
RRU-125	2.75	0.625	16	1.625	41	1.62	0.50	0.50	5.84	3.56	3.68	0.56	5/16	2.62	3.12	3	5/16-18	1	3/8-16
RRU-137	3.25	0.625	16	1.875	48	1.88	0.50	0.50	6.53	4.25	4.38	0.69	3/8	2.81	3.75	3	3/8-16	1	3/8-16
RRU-150	3.75	0.750	19	2.125	54	2.12	0.62	0.50	7.66	5.00	5.38	0.82	3/8	3.44	4.38	4	3/8-16	1	3/8-16

Notes:
- 1 indicates: OAL Tolerance ± .19 inch.
- 2 indicates: UF Center Drop out Length Tolerance ± .12 inch.
- 3 indicates: Screws not supplied for UF.
- When ordering specify prefix RRU or UF; dimensions remain the same for either.
- See page SP-19 for Performance Data.

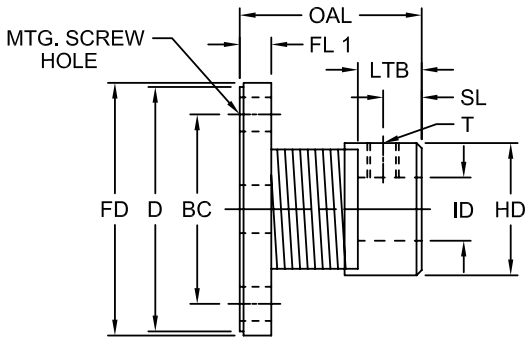
UFH Type – Flange-to-Shaft

The one-piece UFH Type coupling is similar to the U Type, except that one hub is replaced by a flange plate. Stock flange sizes are shown in the Dimensional Data table below but other sizes can be made to order. As with the other Uniflex styles, this coupling compensates for high degrees of angular and parallel misalignment with very little backlash or windup and is reliable in harsh or severe environments.

Regular and short versions are available for each size to accommodate different overall length requirements. For increased versatility, the hub can be modified with a tapered, spline, hex or square bore. The standard hub is furnished with either a pre-drilled pin hole or with a keyway and set screw. Specify when ordering.



UFH Type



Uniflex UFH Type Dimensional Data

Size	OAL[1] Reg in	OAL[1] Short in	FL[1] in	LTB Reg in	LTB Short in	SL Pin Location in	Pin Size in	T Set Screw Qty	T Set Screw Size	ID Min Bore in	ID Min Bore mm	ID Max Bore in	ID Max Bore mm	HD in	FD in	D in	BC in	Mounting Screw[2] Qty	Mounting Screw[2] Size
UFH-50	2.03	1.50	0.25	0.64	0.50	0.31	1/8	1	1/4-20	0.313	8	0.500	13	1.04	2.00	1.88	1.50	3	1/4-20
UFH-75	2.58	2.00	0.38	0.84	0.84	0.41	1/8	1	1/4-20	0.375	10	0.750	19	1.42	2.50	2.88	2.00	3	1/4-20
UFH-87	2.82	2.25	0.38	0.84	0.84	0.44	3/16	1	1/4-20	0.438	11	0.875	22	1.73	2.88	2.75	2.25	3	1/4-20
UFH-100	3.14	2.88	0.38	1.29	1.00	0.56	5/16	1	1/4-20	0.438	11	1.000	25	2.11	3.25	3.12	2.68	3	5/16-18
UFH-125	3.75	2.82	0.50	1.28	1.10	0.62	5/16	1	3/8-16	0.625	16	1.250	32	2.17	3.68	3.56	3.12	3	5/16-18
UFH-137	4.03	3.46	0.50	1.58	1.02	0.69	3/8	1	3/8-16	0.625	16	1.375	35	2.54	4.38	4.25	3.75	3	3/8-16
UFH-150	4.86	3.75	0.63	1.88	1.72	0.81	3/8	1	3/8-16	0.750	19	1.500	38	2.98	5.38	5.00	4.38	4	3/8-16

Notes:
- 1 indicates: OAL Tolerance ± .12 inch.
- 2 indicates: Screws not supplied.
- See page SP-19 for Performance Data.

Saga Coupling Design

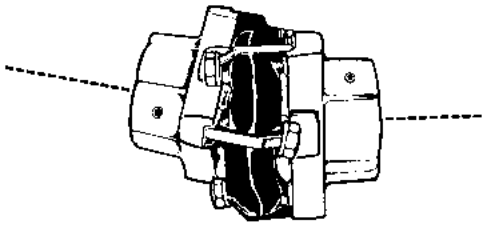
Elastomeric Pre-compression Type

Saga is a general purpose, torsionally soft coupling with high tolerance to all forms of misalignment. The design features hexagonal or octagonal rubber donut-shaped elements with metal inserts positioned at each apex during the vulcanization process. These metal inserts carry actual bolts which fix the element to tines on cast, cylindrical hubs. Embedded inserts also have tines which connect with mating surfaces on hubs so that axial bolts can be easily torqued during assembly without twisting the rubber beyond the limits of its elasticity. The rubber between each apex is precompressed, so it is much more durable to the stresses arising from the various forms of misalignment and torsional vibrations.

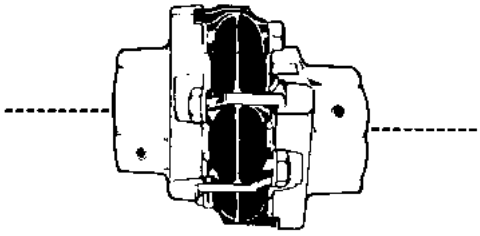
While the Saga coupling is normally associated with shaft-to-shaft applications, adaptations for flange and flywheel mountings can be made. In addition, a floating shaft version for use in lieu of a universal joint drive shaft with separate torsional coupling is available. Its elements can also be stacked in series for use in applications with extreme transient or permanent parallel misalignment, or where torsional dynamics demand an extremely soft element for proper damping and/or vibratory decoupling. The rubber's stiffness of 60 as measured against Shore A by durometer, covers the majority of such situations.



Saga Type



Angular Offset (Exaggerated)



Parallel Offset (Exaggerated)

Features

- No end thrust in misalignment position
- Absorbs misalignment and shock
- No axial reaction force to damage or accelerate wear in system bearings
- Accepts constant angular misalignment of up to 3°
- Parallel tolerance of 0.060 (1.5mm), while reaction force remains low
- Lateral softness without complication, or sacrifice of performance or durability
- Natural rubber can operate in temperatures from -60° to 200° F (-51° to 93° C)

Note: ■ For applications requiring simultaneous angular and parallel misalignment, consult Lovejoy Engineering to ensure that heat generated from all three forms of stress do not exceed the coupling's ability to dissipate heat.

Steps In Selecting A Saga Coupling

Step 1: Establish torque or HP rating of the driver and operating and maximum RPM (for electric motors, these are essentially the same).

Step 2: Determine the horsepower 100 RPM:

$$\frac{\text{HP} \times 100}{\text{RPM}} = \text{HP per 100 RPM}$$

or establish driver torque at operating RPM.

Step 3: Using the Application Service Factor table (page JW-8) multiply torque or HP/100 RPM by the factor. Using the result, select a coupling from the Performance Data chart (page SP-24). The coupling's rating must be equal to or greater than adjusted HP/100 RPM or torque.

Step 4: Compare the maximum driver RPM to the Performance Data chart on page SP-24 to insure that the coupling's speed limit is not exceeded.

Step 5: Finally, determine shaft diameters of both driving and driven equipment and check them against maximum bore diameters from the Dimensional Data chart on page SP-24 to ensure that these values are not exceeded.

SP

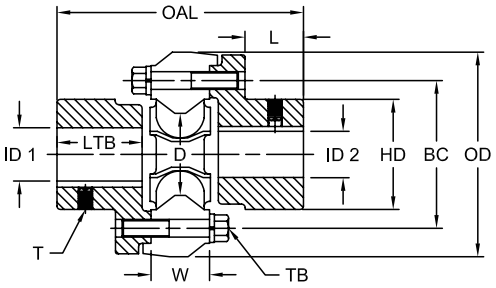
Saga Performance Data

Size	HP/100 RPM for 1.0 Service Factor	Rated Torque for 1.0 SF in-lbs	Rated Torque for 1.0 SF Nm	Max Shock Load in-lbs	Max Shock Load Nm	Dynamic Torsional Stiffness in-lbs/Deg	Dynamic Torsional Stiffness in-lbs/Rad	Specific Torsional Stiffness	Max Speed RPM[1]	Approx Weight lbs	Approx Weight kg	Moment of Intertia WR² lb in²
S-11	0.56	350	40	1,000	113	47	2,693	7.69	10,000	4.75	2.2	3.0
S-13	0.95	600	68	1,800	203	67	3,839	6.40	8,400	6.50	2.9	6.6
S-15	1.59	1,000	113	3,000	339	120	6,875	6.88	7,000	10.00	4.5	14.3
S-18	3.17	2,000	226	6,000	678	200	11,459	5.73	5,600	17.00	7.7	40.0
S-22	4.76	3,000	339	9,000	1 017	400	22,918	7.64	5,000	31.00	14.1	102.0
S-26	7.93	5,000	565	15,000	1 695	590	33,805	6.76	4,000	46.00	20.9	234.0
S-30	11.11	7,000	791	21,000	2 373	800	45,837	6.55	3,500	64.00	29.0	384.0
S-34	19.04	12,000	1 356	36,000	4 067	2,000	114,592	9.55	2,800	122.00	55.3	832.0
S-40	31.73	20,000	2 260	60,000	6 779	3,500	200,535	10.03	2,200	175.00	79.4	1,200.0

Note: ■ 1 indicates: For higher speeds, balancing may be necessary.

Saga Bolt Torque Data

Size	Bolt Grade No 5 Size	Recommended Torque Wet ft-lb	Wet Nm	Dry ft-lb	Dry Nm
S-11	5/16 - 18 x 1-3/4	13	18	17	23
S-13	3/8 - 16 x 2	23	31	30	41
S-15	3/8 - 16 x 2-1/2	23	31	30	41
S-18	1/2 - 13 x 3	55	75	75	102
S-22	5/8 - 11 x 3-1/4	110	149	150	203
S-26	3/4 - 10 x 4	200	271	260	353
S-30	3/4 - 10 x 4-1/2	200	271	260	353
S-34	3/4 - 10 x 4-1/2	200	271	260	353
S-40	1 - 8 x 5-1/2	480	651	640	868



SP

Saga Dimensional Data

Size	OAL in	L in	LTB in	D in	ID1 - ID2 Rough Stock Bore[2] in	ID1 - ID2 Rough Stock Bore[2] mm	ID1 - ID2 Max Bore in	ID1 - ID2 Max Bore mm	T Set Screw in	TB Bolt Grade No 5 Qty	TB Bolt Grade No 5 Size	W in	OD in	BC in	HD in
S-11	4.56	1.13	1.50	1.38	0.625	16	1.188	30	5/16-18	6	5/16 - 18 x 1-3/4	1.06	3.56	2.56	1.84
S-13	5.22	1.31	1.75	1.63	0.750	19	1.375	35	5/16-18	6	3/8 - 16 x 2	1.22	4.28	3.06	2.25
S-15	6.41	1.63	2.13	2.00	0.875	22	1.875	48	3/8-16	6	3/8 - 16 x 2-1/2	1.53	5.09	3.69	2.88
S-18	7.44	1.81	2.50	2.33	1.000	25	2.225	57	1/2-13	6	1/2 - 13 x 3	1.81	6.28	4.56	3.44
S-22	8.69	2.06	3.00	2.75	1.000	25	2.500	64	1/2-13	6	5/8 - 11 x 3-1/4	2.06	7.31	5.20	3.88
S-26	9.88	2.25	3.38	3.25	1.500	38	2.875	73	1/2-13	6	3/4 - 10 x 4	2.38	8.63	6.20	4.59
S-30	11.38	2.75	3.88	3.63	1.625	41	3.375	86	5/8-11	6	3/4 - 10 x 4-1/2	2.63	9.63	6.94	5.31
S-34	12.66	3.44	4.34	4.75	2.125	54	4.000	102	5/8-11	8	3/4 - 10 x 4-1/2	2.95	11.09	8.25	6.25
S-40	14.81	3.88	5.00	6.00	2.250	57	4.750	121	5/8-11	8	1 - 8 x 5-1/2	3.56	13.38	10.00	7.50

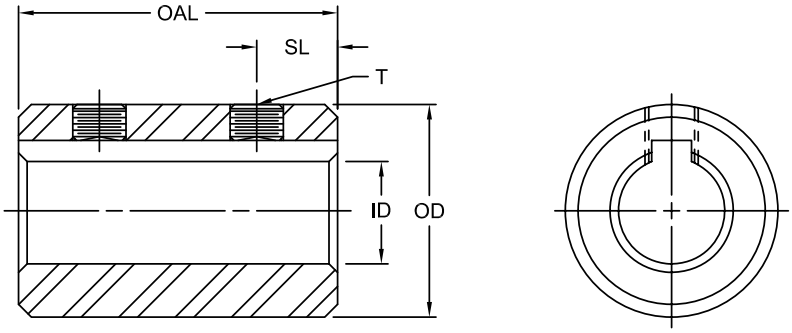
Notes: ■ 2 indicates: Standard bores available by 1/16 inch increments.
■ Some metric sizes also available as standard.

Rigid Sleeve Couplings

Lovejoy Rigid Sleeve couplings fit the standards of the industry. These couplings, the simplest type, provide a fixed union between two shafts which are precisely aligned. They are suitable for use in joining any two shafts when flexibility is not required, shaft alignment is maintained and proper bearing support is provided. Bore tolerances are -.000/+.002.



Rigid Sleeve



Rigid Sleeve Dimensional Data

Size	UPC Number	OAL in	SL in	T Bolt in	OD in	ID Max Bore in	ID Max Bore mm
SC-250	14322	0.75	0.19	8-32 x 1/8	0.50	0.250*	6
SC-312	14324	1.00	0.25	8-32 x 1/8	0.62	0.313*	8
SC-375	14326	1.00	0.25	10-24 x 3/16	0.75	0.375*	10
SC-500	14330	1.50	0.38	1/4-20 x 3/16	1.00	0.500	13
SC-625	14332	2.00	0.50	5/16-18 x 1/4	1.25	0.625	16
SC-750	14335	2.00	0.50	5/16-18 x 5/16	1.50	0.750	19
SC-875	14338	2.00	0.50	5/16-18 x 5/16	1.75	0.875	22
SC-1000	14343	3.00	0.75	3/8-16 x 3/8	2.00	1.000	25
SC-1125	14346	3.00	0.75	3/8-16 x 3/8	2.12	1.125	29
SC-1250	14349	4.00	1.00	3/8-16 x 3/8	2.25	1.250	32
SC-1375	14352	4.50	1.00	3/8-16 x 3/8	2.50	1.375	35

Notes:
- * indicates: These sizes do not have keyways.
- When referencing the Lovejoy UPC number in this table, include 685144 as a prefix to the number shown.

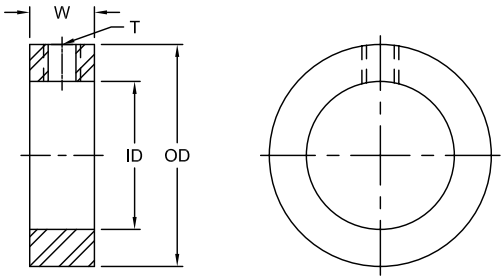
SP

Shaft Collars

Zinc Plated and Stainless Steel

Lovejoy shaft collars are precision machined for the best possible fit. Standard steel collars are made from highest quality cold finished steel bar stock and zinc plated for corrosion resistance and outstanding appearance. Stainless steel collars are made from type 303 stainless and include a stainless steel set screw. All Lovejoy shaft collars use socket cup point set screws for ease of installation and best possible holding strength. Made in USA.





Shaft Collar - Zinc and Stainless Dimensional Data

Size	UPC Number Zinc Plated	UPC Number Stainless	W in	T Set Screw in	OD in	ID Bore[2] in
LSC-2	17507	17557	1/4	6-32 x 1/8	3/8	1/8
LSC-3	17508	17559	1/4	8-32 x 1/8	7/16	3/16
LSC-4	17509	15761	5/16	10-24 x 1/8	1/2	1/4
LSC-5	17510	17563	5/16	10-32 x 3/16	5/8	5/16
LSC-6	17511	17565	3/8	1/4-20 x 3/16	3/4	3/8
LSC-7	17512	17567	7/16	1/4-20 x 1/4	7/8	7/16
LSC-8	17513	17569	7/16	1/4-20 x 1/4	1	1/2
LSC-9	17514	17571	7/16	1/4-20 x 1/4	1	9/16
LSC-10	17515	17573	1/2	5/16- 18 x 1/4	1-1/8	5/8
LSC-11	17516	17575	9/16	5/16-18 x 1/4	1-1/4	11/16
LSC-12	17517	17577	9/16	5/16-18 x 1/4	1-1/4	3/4
LSC-13	17518	17579	9/16	5/16-18 x 1/4	1-1/4	13/16
LSC-14	17519	17581	9/16	5/16-18 x 5/16	1-1/2	7/8
LSC-15	17520	17583	9/16	5/16-24 x 1/4	1-1/2	15/16
LSC-16	17521	17585	5/8	5/16-24 x 1/4	1-1/2	1
LSC-17	17522	17587	5/8	5/16-18 x 5/16	1-3/4	1-1/16
LSC-18	17523	17589	5/8	5/16-18 x 5/16	1-3/4	1-1/8
LSC-19	17524	17591	11/16	3/8-16 x 3/8	2	1-3/16
LSC-20	17525	17593	11/16	3/8-16 x 3/8	2	1-1/4
LSC-21	17526	17595	11/16	3/8-16 x 3/8	2-1/8	1-5/16
LSC-22	17527	17597	3/4	3/8-16 x 3/8	2-1/8	1-3/8
LSC-23	17528	17599	3/4	3/8-16 x 3/8	2-1/4	1-7/16
LSC-24	17529	17601	3/4	3/8-16 x 3/8	2-1/4	1-1/2
LSC-25	17530	17603	13/16	3/8-16 x 3/8	2-1/2	1-9/16
LSC-26	17531	17605	13/16	3/8-16 x 3/8	2-1/2	1-5/8
LSC-27	17532	17607	13/16	3/8-16 x 3/8	2-1/2	1-11/16
LSC-28	17533	17609	7/8	1/2-13 x 1/2	2-5/8	1-3/4
LSC-29	17534	17611	7/8	1/2-13 x 1/2	2-3/4	1-13/16
LSC-30	17535	17613	7/8	1/2-13 x 1/2	2-3/4	1-7/8
LSC-31	17536	17615	7/8	1/2-13 x 1/2	3	1-15/16
LSC-32	17537	17617	7/8	1/2-13 x 1/2	3	2
LSC-33	17538	—	7/8	1/2-13 x 1/2	3	2-1/16
LSC-34	17539	17621	7/8	1/2-13 x 1/2	3	2-1/8
LSC-35	17540	—	15/16	1/2-13 x 1/2	3-1/4	2-3/16
LSC-36	17541	17625	15/16	1/2-13 x 1/2	3-1/4	2-1/4
LSC-37	17542	—	15/16	1/2-13 x 1/2	3-1/4	2-5/16
LSC-38	17543	17629	15/16	1/2-13 x 1/2	3-1/4	2-3/8
LSC-39	17544	—	1	1/2-13 x 1/2	3-1/2	2-7/16
LSC-40	17545	17633	1	1/2-13 x 1/2	3-1/2	2-1/2
LSC-41	17546	—	1	1/2-13 x 1/2	3-3/4	2-9/16
LSC-42	17547	—	1-1/8	1/2-13 x 1/2	4	2-5/8
LSC-43	17548	—	1-1/8	1/2-13 x 1/2	4	2-11/16
LSC-44	17549	—	1-1/8	1/2-13 x 1/2	4	2-3/4
LSC-45	17550	—	1-1/8	1/2-13 x 1/2	4	2-13/16
LSC-46	17551	—	1-1/8	1/2-13 x 1/2	4	2-7/8
LSC-47	17552	—	1-1/8	1/2-13 x 1/2	4	2-15/16
LSC-48	17553	—	1-1/8	1/2-13 x 1/2	4	3

Notes:
- Bore Tolerance LSC-2 through LSC-16,+.003-.000 Bore Tolerance LSC-17 through LSC-48,+.003-.001.
- When referencing the Lovejoy UPC number in this table, include 685144 as a prefix to the number shown.

Shaft Collars

One-Piece

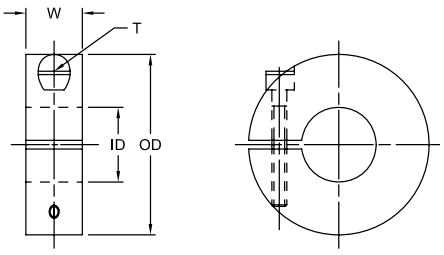
Lovejoy One-Piece split shaft collars are designed to fully engage the shaft without marring or causing other shaft damage. Collars are made from the highest quality bar stock steel and are black oxide finished for corrosion resistance and outstanding appearance. All Lovejoy shaft collars use socket cup point set screws for ease of installation and best possible holding strength.

Features

- Equally effective on both hard and soft shafts
- Made of 12L14 Mild Steel
- Hex Socket, Cup Point, 3A Thread Screws
- Made in the U.S.A.
- Tolerances:

  Bore Diameter - +.003, -.000 in
  Outside Diameter - +.000, -.015 in
  Width - + .015 in





One-Piece Split Shaft Collar

Shaft Collar - One Piece Dimensional Data

Size	UPC Number	W in	T Clamp Screw	OD in	ID Bore in
SC1-2	63200	5/16	4-40 x 3/8	11/16	1/8
SC1-3	63201	5/16	4-40 x 3/8	11/16	3/16
SC1-4	63202	5/16	4-40 x 3/8	11/16	1/4
SC1-5	63203	5/16	4-40 x 3/8	11/16	5/16
SC1-6	63204	3/8	6-32 x 3/8	7/8	3/8
SC1-7	63205	3/8	6-32 x 3/8	15/16	7/16
SC1-8	63206	3/8	6-32 x 3/8	1-1/8	1/2
SC1-9	63207	13/32	8-32 x 1/2	1-5/16	9/16
SC1-10	63208	7/16	10-32 x 1/2	1-5/16	5/8
SC1-11	63209	1/2	10-32 x 1/2	1-1/2	11/16
SC1-12	63210	1/2	1/4-28 x 5/8	1-1/2	3/4
SC1-13	63211	1/2	1/4-28 x 5/8	1-5/8	13/16
SC1-14	63212	1/2	1/4-28 x 5/8	1-5/8	7/8
SC1-15	63213	1/2	1/4-28 x 5/8	1-3/4	15/16
SC1-16	63214	1/2	1/4-28 x 5/8	1-3/4	1
SC1-17	63215	1/2	1/4-28 x 5/8	1-7/8	1-1/16
SC1-18	63216	1/2	1/4-28 x 3/4	1-7/8	1-1/8
SC1-19	63217	1/2	1/4-28 x 3/4	2-1/16	1-3/16
SC1-20	63218	1/2	1/4-28 x 3/4	2-1/16	1-1/4
SC1-21	63219	9/16	1/4-28 x 3/4	2-1/4	1-5/16
SC1-22	63220	9/16	1/4-28 x 3/4	2-1/4	1-3/8
SC1-23	63221	9/16	1/4-28 x 3/4	2-1/4	1-7/16
SC1-24	63222	9/16	1/4-28 x 3/4	2-3/8	1-1/2
SC1-25	63223	9/16	1/4-28 x 3/4	2-3/8	1-9/16
SC1-26	63224	11/16	5/16-24 x 1	2-5/8	1-5/8
SC1-27	63225	11/16	5/16-24 x 1	2-3/4	1-11/16
SC1-28	63226	11/16	5/16-24 x 1	2-3/4	1-3/4
SC1-30	63227	11/16	5/16-24 x 1	2-7/8	1-7/8
SC1-31	63228	5/8	5/16-24 x 1	3	1-15/16
SC1-32	63229	11/16	5/16-24 x 1	3	2
SC1-34	63230	3/4	5/16-24 x 1	3-1/4	2-1/8
SC1-35	63231	3/4	5/16-24 x 1	3-1/4	2-3/16
SC1-36	63232	3/4	5/16-24 x 1	3-1/4	2-1/4
SC1-38	63233	3/4	5/16-24 x 1	3-1/2	2-3/8
SC1-39	63234	3/4	5/16-24 x 1	3-1/2	2-7/16
SC1-40	63235	7/8	3/8-24 x 1-1/4	3-3/4	2-1/2
SC1-42	63236	7/8	3/8-24 x 1-1/4	3-7/8	2-5/8
SC1-43	63237	7/8	3/8-24 x 1-1/4	4	2-11/16
SC1-44	63238	7/8	3/8-24 x 1-1/4	4	2-3/4
SC1-46	63239	7/8	3/8-24 x 1-1/4	4-1/4	2-7/8
SC1-47	63240	7/8	3/8-24 x 1-1/4	4-1/4	2-15/16
SC1-48	63241	7/8	3/8-24 x 1-1/4	4-1/4	3

Note: ■ When referencing the Lovejoy UPC number in this table, include 685144 as a prefix to the number shown.

SP

Shaft Collars

Two-Piece

Lovejoy Two-Piece split shaft collars are designed to fully engage the shaft without marring or causing other shaft damage. Two piece collars are easily installed without the need for major disassembly, saving both man-hours and machine downtime.

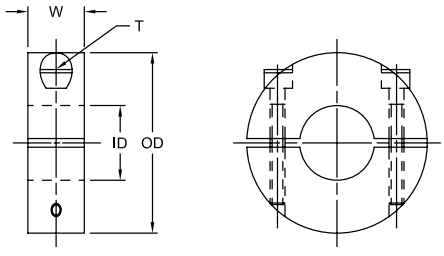
Collars are made from the highest quality bar stock steel and black oxide finished for corrosion resistance and outstanding appearance. All Lovejoy shaft collars use socket cup point set screws for ease of installation and best possible holding strength. Contact customer service for price and availability.

Features

- Equally effective on both hard and soft shafts
- Made of 12L14 Mild Steel
- Hex Socket, Cup Point, 3A Thread Screws
- Made in the U.S.A.
- Tolerances:

  Bore Diameter - +.003, -.000 in
  Outside Diameter - +.000, -.015 in
  Width - + .015 in





Two-Piece Split Shaft Collar

Shaft Collar - Two Piece Dimensional Data

Size	UPC Number	W in	T Clamp Screw	OD in	ID Bore in
SC2-2	63200	5/16	4-40 x 3/8	11/16	1/8
SC2-3	63201	5/16	4-40 x 3/8	11/16	3/16
SC2-4	63202	5/16	4-40 x 3/8	11/16	1/4
SC2-5	63203	5/16	4-40 x 3/8	11/16	5/16
SC2-6	63204	3/8	6-32 x 3/8	7/8	3/8
SC2-7	63205	3/8	6-32 x 3/8	15/16	7/16
SC2-8	63206	3/8	6-32 x 3/8	1-1/8	1/2
SC2-9	63207	13/32	8-32 x 1/2	1-5/16	9/16
SC2-10	63208	7/16	10-32 x 1/2	1-5/16	5/8
SC2-11	63209	1/2	10-32 x 1/2	1-1/2	11/16
SC2-12	63210	1/2	1/4-28 x 5/8	1-1/2	3/4
SC2-13	63211	1/2	1/4-28 x 5/8	1-5/8	13/16
SC2-14	63212	1/2	1/4-28 x 5/8	1-5/8	7/8
SC2-15	63213	1/2	1/4-28 x 5/8	1-3/4	15/16
SC2-16	63214	1/2	1/4-28 x 5/8	1-3/4	1
SC2-17	63215	1/2	1/4-28 x 5/8	1-7/8	1-1/16
SC2-18	63216	1/2	1/4-28 x 3/4	1-7/8	1-1/8
SC2-19	63217	1/2	1/4-28 x 3/4	2-1/16	1-3/16
SC2-20	63218	1/2	1/4-28 x 3/4	2-1/16	1-1/4
SC2-21	63219	9/16	1/4-28 x 3/4	2-1/4	1-5/16
SC2-22	63220	9/16	1/4-28 x 3/4	2-1/4	1-3/8
SC2-23	63221	9/16	1/4-28 x 3/4	2-1/4	1-7/16
SC2-24	63222	9/16	1/4-28 x 3/4	2-3/8	1-1/2
SC2-25	63223	9/16	1/4-28 x 3/4	2-3/8	1-9/16
SC2-26	63224	11/16	5/16-24 x 1	2-5/8	1-5/8
SC2-27	63225	11/16	5/16-24 x 1	2-3/4	1-11/16
SC2-28	63226	11/16	5/16-24 x 1	2-3/4	1-3/4
SC2-30	63227	11/16	5/16-24 x 1	2-7/8	1-7/8
SC2-31	63228	5/8	5/16-24 x 1	3	1-15/16
SC2-32	63229	11/16	5/16-24 x 1	3	2
SC2-34	63230	3/4	5/16-24 x 1	3-1/4	2-1/8
SC2-35	63231	3/4	5/16-24 x 1	3-1/4	2-3/16
SC2-36	63232	3/4	5/16-24 x 1	3-1/4	2-1/4
SC2-38	63233	3/4	5/16-24 x 1	3-1/2	2-3/8
SC2-39	63234	3/4	5/16-24 x 1	3-1/2	2-7/16
SC2-40	63235	7/8	3/8-24 x 1-1/4	3-3/4	2-1/2
SC2-42	63236	7/8	3/8-24 x 1-1/4	3-7/8	2-5/8
SC2-43	63237	7/8	3/8-24 x 1-1/4	4	2-11/16
SC2-44	63238	7/8	3/8-24 x 1-1/4	4	2-3/4
SC2-46	63239	7/8	3/8-24 x 1-1/4	4-1/4	2-7/8
SC2-47	63240	7/8	3/8-24 x 1-1/4	4-1/4	2-15/16
SC2-48	63241	7/8	3/8-24 x 1-1/4	4-1/4	3

Note: ■ When referencing the Lovejoy UPC number in this table, include 685144 as a prefix to the number shown.

where the world turns for

Lovejoy®

Coupling Solutions

Torsional

In This Section:

- Selection Process
- L-LOC Clamping Feature
- LF Series
- LVK Series
- LV Series
- LM Series
- LK Series
- Pump Mounting Plates
- Pump Mounting Housings



Torsional

Safety Warning

When using Lovejoy products, you must follow these instructions and take the following precautions. Failure to do so may cause the power transmission product to break and parts to be thrown with sufficient force to cause severe injury or death.

Refer to this Lovejoy Catalog for proper selection, sizing, horsepower, torque range, and speed range of power transmission products, including elastomeric elements for couplings. Follow the installation instructions included with the product, and in the individual product catalogs for proper installation of power transmission products. Do not exceed catalog ratings.

During start up and operation of power transmission product, avoid sudden shock loads. Coupling assembly should operate quietly and smoothly. If coupling assembly vibrates or makes beating sound, shut down immediately, and recheck alignment. Shortly after initial operation and periodically thereafter, where applicable, inspect coupling assembly for: alignment, wear of elastomeric element, bolt torques, and flexing elements for signs of fatigue. Do not operate coupling assembly if alignment is improper, or where applicable, if elastomeric element is damaged or worn to less than 75% of its original thickness.

Do not use any of these power transmission products for elevators, man lifts, or other devices that carry people. If the power transmission product fails, the lift device could fall resulting in severe injury or death.

For all power transmission products, you must install suitable guards in accordance with OSHA and American Society of Mechanical Engineers Standards. Do not start power transmission product before suitable guards are in place. Failure to properly guard these products may result in severe injury or death from personnel contacting moving parts or from parts being thrown from assembly in the event the power transmission product fails.

If you have any questions, contact the Lovejoy Engineering Department at 1-630-852-0500.

Torsional

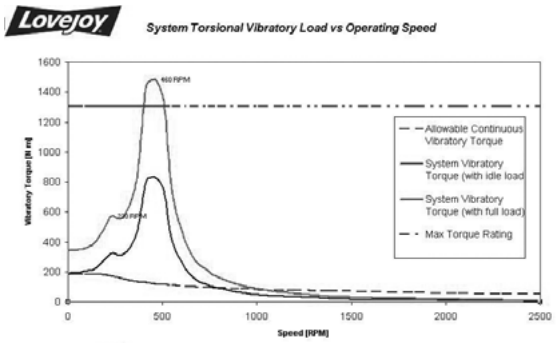
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Torsional Couplings

Lovejoy offers a wide range of torsional couplings engineered to solve torsional vibration problems found in diesel engine driven equipment and other applications where torsional vibrations are prevalent. These include all internal combustion engines, reciprocating pumps and compressors, as well as variable frequency drives (VFD).

Lovejoy torsional coupling are designed to dampen torsional vibrations and tune, or adjust the system's critical speeds away from the application's operating range. With the proper information (see Torsional Worksheet on page T-10) Lovejoy engineers can perform a Torsional Vibration Analysis, or TVA for your application to assist in the selection of a torsional coupling. See sample TVA in the graph to the right.



Lovejoy Torsional Coupling Product Overview

LF Series

The unique and highly versatile design of the elastomeric element makes the LF Series the most versatile product in Lovejoy's line of torsional coupling products. It is available in high temperature rubber (HTR), Hytrel®, or Zytel®. The element can be easily mounted in a number of configurations depending on the application. The element is connected axially to a flanged hub, flywheel adapter plate, or flywheel on the engine side using axial screws or special "S" bolts designed for blind assembly. The element is also connected to a cylindrical hub on the driven equipment side using radial screws. This unique design is remarkably simple, highly effective and provides users of LF torsional couplings with unmatched performance. It is recommended that coupling selections should be verified with a Torsional Vibration Analysis of the system (see page T-10).



Configuration: Flange to shaft, shaft to shaft, and floating shaft applications
Application: The LF coupling is ideal for coupling engines to pumps, compressors, generators, fans, blowers, and other industrial driven equipment connecting to either the engine flywheel or a power take-off (PTO).
Nominal torque range (T_{KN}): up to 26,500 in-lb (3000 Nm)
Max angular misalignment (K_w): HTR up to 3°, Hytrel® and Zytel® see table on page T-17
Max parallel misalignment (K_R): HTR up to 0.08 inches (2 mm), Hytrel® and Zytel® see table on page T-17
Axial end float (K_a): HTR up to 0.2 inches (5 mm), Hytrel® and Zytel® see table on page T-17
Element material: HTR, Neoprene, Hytrel® or Zytel®

LVK Series

The LVK Series torsional couplings accommodate configurations where internal combustion engines are connected to a variety of driven equipment, while protecting the equipment from potentially damaging torsional vibrations by tuning engine critical speeds away from the application operating speed. It is recommended that coupling selections should be verified with a Torsional Vibration Analysis of the system (see page T-10).



Configuration: The LVK Style couplings are designed for mounting on standard SAE J620 flywheels. The element is bonded to the flywheel mounting plate and the unique 'star' shaped LK Style hub housing. The mating hub mounts onto the equipment shaft and slides into an interlocking position during installation for a blind assembly.
Application: The LVK coupling is ideal for coupling engines to pumps, compressors, generators, fans, blowers and other equipment requiring a direct interface via the engine flywheel.
Nominal torque range (T_{KN}): up to 5,800 in-lb (655 Nm)
Max angular, parallel, and axial misalignment: based on SAE design parameters
Element material: High Temperature Rubber (HTR) or EPDM

WARNING
You must refer to page T-2 (Page 260) for Important Safety Instructions and Precautions for the selection and use of these products. Failure to follow the instructions and precautions can result in severe injury or death.

WARNING
Do not use anaerobic adhesives with any Torsional components.

LV Series



The LV Series torsional couplings provide an inexpensive and economical alternative for the agricultural and off-highway industrial equipment market. The standard configuration is used for connecting internal combustion engines to a variety of driven equipment through a specially designed plate manufactured which can support universal joint drive shaft systems. It protects the equipment from potentially damaging torsional vibrations by tuning engine critical speeds away from the application operating speed. It is highly recommended that coupling selections should be verified with a Torsional Vibration Analysis of the system (see page T-10).

Configuration: The LV Series couplings are designed for mounting on standard SAE J620 flywheels with the element bonded to the mounting plate. The face plate is specially designed to interface with flange mounted universal joints popular in the agricultural deep well pump markets.

Application: Any diesel engine driven equipment, flange interfaces, and universal joint driveshaft driven equipment.

Nominal torque range (T_{KN}): up to 10,820 in-lb (1223 Nm)
Max angular, parallel, and axial misalignment: based on SAE design parameters
Element material: High Temperature Rubber (HTR) or EPDM

LM Series



The Lovejoy LM Series torsional couplings are designed specifically for diesel driven applications where the couplings are flywheel mounted. The LM coupling is popular in small to large equipment configurations where it is necessary to protect the equipment from potentially damaging torsional vibrations. This is accomplished by tuning engine critical speeds away from the application operating speed. It is highly recommended that coupling selections should be verified with a Torsional Vibration Analysis of the system (see page T-10).

Configuration: Drive rings are designed for many SAE J620 flywheel sizes and mount directly on the flywheel. The element and center hub mount on the driven equipment shaft and easily slide into the drive ring. This coupling is excellent for normal or blind installations.

Application: Any diesel driven equipment that includes generator sets (2 bearing), hydraulic pumps (single or multiple in parallel or series configurations), locomotive applications, centrifugal pumps, compressors, fans, blowers, and more.

Nominal torque range (T_{KN}): up to 33,600 in-lb (3800 Nm)
Max angular, parallel, and axial misalignment: based on SAE design parameters
Element material: HTR, EPDM or Silicone

LK Series

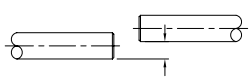


The LK Series coupling is a simple two-piece design consisting of an flywheel or flange mounted element and an interlocking hub. The couplings are designed for use with diesel engine driven hydraulic pump systems which are plate mounted directly to SAE flywheel housings. The couplings are torsionally stiff enabling hydraulic pumps and similar equipment with low mass or inertia to operate below critical speeds. The torsionally stiff LK Series coupling tunes the engine critical speed away from the operating range. A Torsional Vibration Analysis is typically not necessary for the LK Style couplings because the LK Series is torsionally stiff and puts the critical speed above the normal operating range.

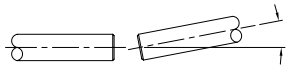
Configuration: The LK Series coupling consists of a flywheel mounted element, or an adapter plate mounted universal element, and a star shaped hub. The hub is mounted on the driven equipment and its design is excellent for blind installations.

Application: The LK coupling's design is excellent for virtually all diesel engine driven hydraulic systems in the low to mid power range.

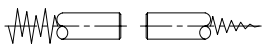
Nominal torque range (T_{KN}): up to 21,240 in-lb (2400 Nm)
Max angular, parallel, and axial misalignment: based on SAE design parameters
Element material: Zytel®



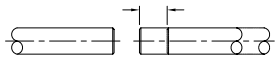
Parallel Misalignment



Angular Misalignment



Torsional Misalignment



Axial Misalignment

Torsional
Engine Application Selection Process

When correctly sized, the Lovejoy Torsional Coupling will effectively dampen vibration and tune critical frequencies out of the operating range of systems driven by diesel, gasoline, or natural gas reciprocating engines. Some coupling selections can be verified using a Torsional Vibration Analysis performed by Lovejoy Engineering (see worksheet page T-10).

Misapplication of the coupling in an engine application will frequently lead to coupling failure or system damage. Lovejoy strongly recommends that you contact Technical Support for assistance in selecting a coupling.

Please complete the information worksheet on page T-10 and fax it to 800-446-0878
or access "Engineering Assistance" on-line at www.lovejoy-inc.com

Use the following steps in conjunction with the technical data and dimensional tables contained in the following sections to make the preliminary coupling selection for internal combustion engine applications.

Step 1: Coupling Selection

Select the torsional coupling model that best suits your drive arrangement.

Step 2: Application Torque

Select a coupling size with a nominal torque rating (T_{KN}) greater or equal to the application torque (T_{LN}) calculated with the following equation:

$$T_{KN} \geq T_{LN} \bullet S_t$$

Provided T_{LN} **(in-lb) = HP • 63025 / RPM**
or
T_{LN} **(Nm) = HP • 9555 / RPM**

S_t is the temperature factor for the nominal torque found in Figure 1 (page T-9) for HTR. This number will be at least 1.6 or 1.7 (for typical ambient temperature of at least 140° to 160° F inside the flywheel housing).

Step 3: SAE Flywheel Size

Select the appropriate SAE J620 flange size to match your flywheel.

Step 4: Shaft Dimensions

Make sure the maximum bore capacity of the coupling will accommodate the dimensions of your drive shaft. Coupling hub length can usually be shortened if necessary to fit into tight space envelope.

Important:

Final selection of coupling size requires verification by torsional vibration analysis. This analysis will identify the location of the critical speeds and confirm the absence of excessive steady-state and peak resonance conditions over the normal operating cycle of the equipment.

Step 5: Peak Torque Pulses

The magnitude of the maximum torque pulses that occur during operation (T_{max}) at all operating temperatures must not exceed the maximum torque rating of the coupling (T_{Kmax}). These are short duration transient pulses that result from start-up, shock, or acceleration through a system resonance to reach operating speed. By definition, these pulses may occur over the life of the coupling 10^5 times in one direction of rotation, or 5 X 10^4 times reversing.

$$T_{Kmax} \geq T_{max} \bullet S_t$$

Step 6: Critical Speeds Due to Resonance

Select coupling stiffness so the system does not run at high resonance as well as the normal running and idle speeds are not at or near critical speeds.

Critical speeds are related to the system natural frequency and the number of pulses or excitations generated per revolution i (order). For analysis, if possible, reduce the application to a 2-mass system and apply the following equations:

$$n_R = \frac{60}{2\pi \bullet i} \sqrt{C_{Tdyn} \bullet \frac{J_A + J_L}{J_A \bullet J_L}}$$

Where:

n_R = critical resonance speed of the system (RPM)

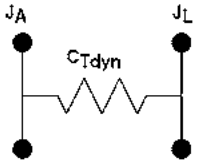
C_{Tdyn} = dynamic torsional stiffness of the coupling (lb-in/rad)

J_A = mass moment of inertia for the drive side (lb-in-sec^2)

J_L = mass moment of inertia for the load side (lb-in-sec^2)

i = number of oscillations generated per revolution

The coupling will be modeled as the spring controlling torsional oscillations of the engine and flywheel on one side and the driven equipment on the other:



Use the dynamic torsional stiffness values (C_{Tdyn}) from the Performance Data tables which can be found in representative coupling section. Mass moment of inertia values may be obtained from the respective engine and equipment manufactures.

Note: ■ System steady-state operating speeds should be 1.5 to 2 times the major critical speed for safe, low-resonance operation.

Step 7: Allowable Continuous Vibratory Torque

The amplitude of the continuously oscillating (vibratory) torque generated in the system must not exceed the coupling's rating (T_{KW}) at a particular steady-state frequency (RPM) and temperature. This torque is superimposed on (co-exists with) the basic load (T_{LN}).

$$T_{KW} > T_W \bullet S_t \bullet S_f \bullet V$$

Where:

T_{KW} = Coupling rating for continuously oscillating torque at 10Hz

S_f = Frequency factor that relates the operating frequency to the coupling's 10Hz rating (see Figure 2 on page T-9)

S_t = Temperature factor (for HTR only)

V = Amplifing factor outside the resonance. Substitute V_r for V with run-through of resonance application (see Figure 3 on page T-9)

T_w = Generating torque

Operating Frequency **f (Hz)**	≤ **10**	>10
Frequency Factor S_f	1	$\sqrt{f / 10}$

The magnitude of the continuously oscillating torque generated in the system (T_W) is dependent on an amplifying factor (**V**) based on the system steady-state operating speed **n** relative to the resonance speed n_R:

$$V \approx \frac{1}{\left| 1-(n/n_R)^2 \right|}$$

Step 8: Dimensional & Alignment Considerations

Refer to the Performance Data tables, figures, and dimension tables to make certain final coupling selection meets application constraints for the working envelope (O.C., length, bore dimensions, etc.), maximum speed limitations and allowable misalignment.

Torsional
Industrial Application Selection Process

While the Torsional coupler was developed to solve the unique problems associated with the torsional vibration in equipment driven by internal combustion engines, the coupling works equally well in general industrial applications. For these electric motor-powered and other non-engine applications, use the following simple selection procedure (Refer to page T-6 for engine-driven applications).

Misapplication of the coupling in an engine application will frequently lead to coupling failure or system damage. Lovejoy strongly recommends that you contact Technical Support for assistance in selecting a coupling.

Please complete the information worksheet on page T-10 and fax it to 800-446-0878
or access "Engineering Assistance" on-line at www.lovejoy-inc.com

Use the following steps in conjunction with the technical data and dimensional tables contained in the following sections to make the preliminary coupling selection for industrial applications.

Step 1: Coupling Selection

Select the torsional coupling model that best suits your drive arrangement.

Step 2: Choose Element Material

Most common used is the HTR (High Temperature Rubber) element is used because of the high flexibility. This feature provides benefits of vibration and shock damping, noise silencing, and a high tolerance for misalignment.

When required, the Zytel® element provides a torsionally rigid connection yet is still flexible in terms of accommodating small angular misalignment as well. Use of the floating-shaft Model 6 version will allow for parallel misalignment as well. The Zytel® material is also chemical resistant.

Please note that the optional Hytrel® element requires almost perfect alignment which is unlikely in most applications and is not recommended, except when used as intended on a flange mounted hydraulic pump to an engine flywheel.

Step 3: Determine Service Factor

Choose a representative application Service Factor (SF) from the chart on page T-9.

Step 4: Calculate Nominal Torque Requirement, T_{KN}

Use the actual torque or horsepower requirement for the driven equipment if known. Otherwise, use the rated motor horsepower.

$$T_{KN\ (in\text{-}lb)} \geq HP \bullet SF \bullet 63025 / RPM$$

Step 5: Other Considerations

Refer to the Performance Data tables, figures, and dimension tables to make certain final coupling selection meets application constraints for envelope (O.D., length, bore dimensions, etc.) and maximum speed limitations.

Example:

Find a LF coupling for a 15 hp centrifugal pump running at 1,750 RPM.

Model 2 – Most common for shaft-to-shaft applications.

Model 2/S – For shaft-to-shaft applications that require free end-float or quick, blind "plug-in" assembly.

Model 1 or 1/S – or connecting a shaft to a flange or flywheel.

Model 6 – floating shaft applications (see pages T-22 through T-25).

SF = 1.0 (from Application Service Factor (SF) on page T-9)

T_{KN} = (15hp•1.0•63025) / 1,750 RPM = 540 in-lb

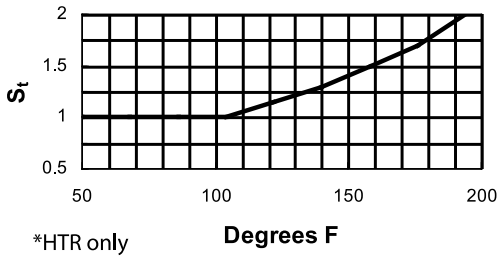
» use a LF8 torsional coupler or larger

Application Service Factors

Agitators	1.0
Beaters	1.5
Blowers	1.0-1.25
Can filling machinery	1.0
Car dumpers	2.5
Car pullers	1.5
Compressors (screw)	1.0
Compressors (reciprocating)	Consult Lovejoy
Conveyors	1.0-2.5
Love Roll, Shaker & Recip.	3.0
Conveyors (heavy duty)	1.25-2.5
Cranes & Hoists[1]	2.0
Crushers	3.0
Dredges	1.5-2.0
Elevators	1.0
Fans	1.0-1.5
Feeders	1.0
Reciprocating	2.5
Generators:	
Not Welding	1.0
Welding	2.0
Hoist	1.5
Hammer mills	2.0
Kilns	1.5
Laundry washers:	
Reversing	2.0
Line shafting	1.5
Lumber machinery	2.0
Machine tools	1.5-2.0
Metal forming machinery	1.5-2.5
Mills, rotary type	2.0
Mixers	1.5-1.8
Paper mill equipment	1.2-2.0
Pumps:	
Centrifugal	1.0
Gear, Rotary or Vane	1.25
Reciprocating 1 Cyl.	2.0
Or double acting	
2 Cyl. Single Acting	2.0
2 Cyl. Double Acting	1.75
3 or more Cyl.	1.5
Rubber machinery	2.0-2.5
Stokers	1.0
Textile machinery	1.2
Windlass	2.0
Woodworking machinery	1.0

Note: ■ 1 indicates: If people are transported, Lovejoy does not recommend and will not warranty the use of the coupling.

Figure 1: Temperature Factor*, S_t (HTR)



*HTR only

Figure 2: Frequency Factor

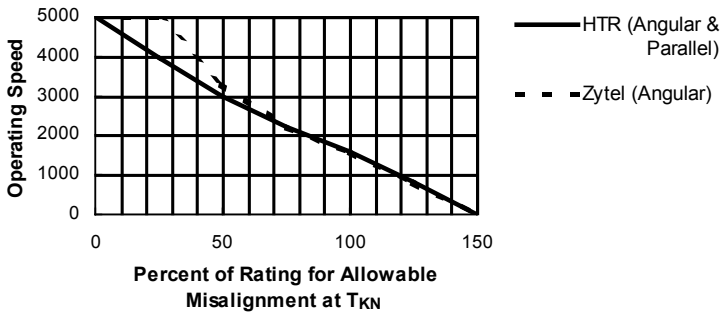
Operating Frequency **f (Hz)**	≤ 10	> 10
Frequency Factor S_f	1	$\sqrt{f/10}$

Figure 3: Resonance Factor V_r

Coupling Element	V_r	Ψ
HTR 50 Shore	10	0.6
HTR 60 Shore	8	0.78
Hytrel®	–	0.5
Zytel®	–	0.4

Note: ■ HTR is High Temperature Rubber.

Figure 4: Permissible Misalignment vs. Speed



Chemical Resistance Chart

Oils & Hydraulic Fluids	Hytrel®	Zytel®
Automatic Transmissions	A	A
Fluid Type A & F	A	A
Hydraulic Fluid	A	A
Phosphate Ester	A	A
Lube Oil	A	A

Solvents & Fuels	Hytrel®	Zytel®
Gasoline	A	A
Nujol, JP4 Kerosene	A	A
Halocarbons, Freon	A	A
Trichlorethylene	C	C
Carbon Tetrachloride	B	A

Acids & Bases	Hytrel®	Zytel®
Sulfuric Acid (20%)	A	C
Hydrochloric Acid (20%)	B	C
Potassium or Sodium Hydroxide (20%)	—	—
—	A	B
—	—	—

Miscellaneous	Hytrel®	Zytel®
Ethylene Glycol*	A	A,B
Steam	B	B
Liquid Ammonia	—	A
—	—	—
—	—	—

Notes: ■ Avoid contact with hydrocarbon base lubricants or use of any anaerobic adhesives.
■ A indicates: Little or no effect.
■ B indicates: Moderate effect.
■ C indicates: Severe effect.

Coupling Selection Worksheet for Internal Combustion Engines (diesel, gas, natural gas)

For assistance in selecting a Torsional coupling for your internal combustion engine application, please complete the entire worksheet and fax it to 800-446-0878 or send via email to appleng@lovejoy-inc.com. Direct questions to 630-852-0500.

Customer Information

Date: _____

Company Name: _____ Contact Name: _____

Phone Number: _____ email address: _____

Fax Number: _____ Anticipated Order Quantity / Annual Usage: _____

Brief Description of Application: _____

_____

Engine Information

Engine Manufacturer: _____

Engine Model: _____

Number of Cylinders: _____ Displacement: _____

Rated Horsepower: _____

@ Rated Speed: _____

Operating Speed (Constant): _____ Idle Speed: _____

PTO Shaft or Output Shaft Diameter: _____

Type:

❑ Diesel

❑ Gasoline

❑ Natural Gas

❑ Other: _____

❑ 2-Stroke ❑ 4-Stroke

Piston configuration

❑ In-Line

❑ Vee ❑ Vee-angle: _____

SAE (J620D)
Flywheel Size: _____
6-1/2,7-1/2,8,10,11-1/2,14,16,etc
(Attach Drawing if non standard)

SAE (J617C)
Flywheel Housing Size: _____
6, 5, 4, 3, 2 or 1

Driven Equipment

❑ Hydraulic Pump

❑ Water Pump

❑ Compressor Type: _____
(Screw, Reciprocating, Lobe Etc)

❑ Generator / Alternator

❑ Other: _____

Ambient Operating Temperature: _____ °F / °C

Shaft Diameter or Spline details

_____

_____

Type of Equipment Mounting

❑ Flange mount to engine pilot

❑ Independent of engine

Driven From:

❑ Flywheel

❑ Front / Side PTO

❑ Other (Explain)

_____

_____

Mass Moment of Inertia (J or WR^2)

The following must be provided for Torsional Vibration Analysis.
Please include type of units (J or WR^2)

Engine Inertia: _____

Flywheel Inertia: _____

Add sketch or Mass Elastic Diagram if necessary

Driven Equipment Inertia(s): 1._____ 2._____ 3._____ 4._____

Return completed worksheet to Lovejoy Technical Support at email: appleng@lovejoy-inc.com or Fax to 800-446-0878

Lovejoy's L-LOC Spline Clamping Feature

Spline shaft wear, profile distortion, and fretting corrosion all are major concerns in spline shaft applications such as hydraulic pumps. We are pleased to state that Lovejoy has a solution. It's called the L-LOC.

It is common knowledge that typical manufacturing tolerances between spline shafts and mating coupling hubs create some unavoidable play or backlash. This backlash is defined as the minor movement between the shaft and hub, typically resulting in wear. This tolerance related movement and wear is often further compounded by misalignment and hammering forces common in power transmission. As a result, fretting wear and profile distortion can occur, even when shafts are manufactured with high quality hardened steel using tight tolerances. If not checked, abnormal stresses on seals, bearings, and other engine or pump components can occur. The results are costly 'down time'. A great deal of money is spent each year on maintenance caused by this premature wear and equipment failure.

The ideal solution to spline distortion and wear is to eliminate the backlash or clearance related to mating tolerances and assembly misalignment. There are many solutions available, but most are expensive, time consuming, and often unsuccessful causing additional damage.

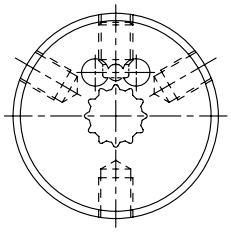
Lovejoy coupling hubs with the L-LOC spline clamping feature have proven themselves successful by eliminating the backlash, clearance issues, and damage caused by the hammering effects of vibration, including torsional vibration. The result is longer lasting spline profiles in both shafts and couplings that decrease costly downtime.

The L-LOC feature is a remarkably simple, yet effective design, consisting of a unique 'dog bone' shaped slot that is placed slightly above and parallel to the spline bore. When these set screws are tightened, the hub becomes firmly locked in place, gripping the full diameter of the spline shaft and the set screws never come in contact with the spline. As a result, users will never see dents, gouges, or burrs on the shaft from mounting the hub. While in use the hub and shaft virtually become a single entity, yet when the set screws are loosened, the L-LOC releases its grip and the hub can be easily removed from the spline shaft.



Features

- L-LOC eliminates premature spline shaft maintenance or replacement
- Reduces potentially damaging stress on equipment components
- Quick and easy to assemble and/or removal
- Improves the effectiveness of the connection between the hub and shaft
- Helps reduce equipment noise often related to couplings



Spline Identification and Selection

There are hundreds of combinations of splines used in industry today and, while Lovejoy does not stock all of these splines, many are maintained in inventory while a large variety can be quickly machined for your specific needs.

When identifying splines, it is important to know what Industry Standard the spline falls under such as ANSI B92.1A (SAE J744) or DIN5480. Manuals and data sheets provided by most original equipment manufacturers contain the necessary spine data for users to identify and order a hub with the proper spline.

Lovejoy's Customer Service and Technical Support teams can help pick out couplings or hubs containing most splines, but certain information will need to be provided prior to making the proper selection.

SAE Standard Involute splines are the most common spline in use in the United States and many are represented in the ANSI chart shown on the right. Information required to identify most ANSI (SAE) splines contains the number of teeth, the diametral pitch, and the major spline diameter. Lovejoy's ANSI splines are machined to meet the ANSI standard Class-5 fit.

When specifying DIN-5480 splines, it is necessary to provide the number of teeth, the major diameter in mm, and the DIN Module number, usually in format:
DIN 5480 x Major Dia x Module x Pressure angle (usually 30*) x number of teeth.
Lovejoy's DIN-5480 splines are machined to meet the DIN standard 9H fit.

DIN-5482 metric splines, JIS splines, and SAE J499 parallel side splines, can be quoted based on individual applications.

SAE Splines ANSI B92.1A (SAE J744)

SAE Code Size	Number of Teeth	Diametral Pitch (DP)	Major Diameter in
A-A	9	20/40	0.500
A	9	16/32	0.625
—	11	16/32	0.750
B	13	16/32	0.875
B-B	15	16/32	1.000
C	14	12/24	1.250
—	21	16/32	1.375
C-C	17	12/24	1.500
—	23	16/32	1.500
D	13	8/16	1.750
E	13	8/16	1.750
—	20	12/24	1.750
—	27	16/32	1.750
F	15	8/16	2.000

Note: ■ Please contact Lovejoy Technical Support regarding additional spline sizes not included in this chart.

LF Series Torsional Coupling



The LF Series coupling is designed with a unique and highly versatile elastomeric element. These can be easily integrated into a variety of coupling configurations to meet several application needs. LF Style elements are available in a variety of materials to match the necessary coupling dampening characteristics for tuning the systems critical speed away from the application operating speed. The element can be connected axially to a flywheel adapter plate or flanged hub and radially to a cylindrical center hub using the appropriate bolts. Axial bolt styles include either socket head bolts with a special dry adhesive, or S-Style bolts, which are similar to dowel pins (seen picture below). The radial bolts are used to connect the element to the cylindrical hub. This unique design is remarkably simple, highly effective and gives the LF torsional coupling unmatched performance capabilities. The coupling selection should be verified with a Torsional Vibration Analysis (TVA) of the system. The information required to perform a TVA can be found in the Coupling Selection Worksheet on page T-10.

Features

- Wide range of standard designs and materials
- Application versatility
- Shaft to shaft or flywheel to shaft designs
- Designed to accommodate substantial shock loads, vibration, and misalignment
- Low moment of inertia
- Electrically insulating
- No lubrication, maintenance free
- Unique air-flow cooling design
- Different element stiffness values allow for torsional tuning of applications with diesel engines
- Economic design allows for cost effective solutions for torsional applications
- Proven L-LOC spline-clamping hub virtually eliminates spline shaft profile wear and "fretting"
- Oil, heat, and corrosion resistant elements (Hytrel®, Zytel®)
- When used with S-bolts, the coupling can accommodate some end float.
- S-bolts accommodate applications requiring "blind" assembly
- Model 6 unique spacer designs span gaps between equipment in excess of the normal equipment separation
- Model 6 design available with bearings for high speeds and large amounts of equipment separation

T



Standard **S-Style**

Lovejoy's LF product line supports both standard style elements (above left) and the S-Style elements (above right). The standard style elements bolt to the cylindrical (center) hub and the flywheel, flywheel adapter, or flange hub. The S-Style utilizes bolts which look like dowel pins and are designed for "blind" installations, where the axial bolts may not be accessible for tightening during the installation process. One application would be inside a bell housing when all the components are assembled and the bolts cannot be reached. The S-Style bolts also accommodate a small amount of end float when necessary to prevent unnecessary axial stress on the element. When looking to replace elements, please note the difference in the axial holes. The standard elements have stepped holes to accommodate the cap screws (above left) which are used to mount the element. The S-Style elements have straight holes (above right) to accommodate the S-Style pins.

Further installation instructions can be found at www.lovejoy-inc.com in the Technical Resources section.

LF Series Torsional Elements

The focus of any coupling is the flexible elements, or the "working component". The element must effectively absorb the shock loads, misalignment forces, and torsional vibrations, under a variety of environmental conditions. The following materials are used to accommodate the different conditions and environments where the couplings are used.

High Temperature Rubber (HTR)

There are two different rubber element materials available, High Temperature Rubber (HTR) and Neoprene (CR). Both elements are torsionally soft and are placed into compression during assembly. Rubber under compression can carry up to 5 times the amount of torque as non-compressed elements. The elements effectively accommodate shock, misalignment, and vibration plus minimize harmful radial and axial forces on the connected equipment. Neoprene (CR) is used in environments that are hostile to High Temperature Rubber (HTR).

Available Durometer Hardness :	50, 60 (Shore A scale)
Operating Temperature Range:	HTR: -40° to 194° F
	CR: -40° to 175° F
Maximum Angular Misalignment:	Up to 3°



HTR

Hytrel®

Elements made of DuPont's Hytrel® elastomer compound are torsionally much stiffer than natural rubber (20 times stiffer) and were developed for combustion engine / hydraulic pump applications. Hytrel® elements have 20% greater torque capacity as compared to rubber elements. The torsionally stiff Hytrel® element moves the harmful vibration resonance frequency above the operating RPM range. The element design also reduces harmful radial and axial reactionary forces.

Operating Temperature Range:	-60° to 250° F
Maximum Angular Misalignment:	0.25°



Hytrel®

Zytel®

Elements made of DuPont's highly stressable Zytel® elastomeric compound have excellent chemical compatibility and corrosion resistance. The element composition is 3-times stiffer then Hytrel® elements. Zytel® elements exhibit less than 1° wind up at normal torque and zero backlash. Most suited for applications where heat, moisture, high torque / high speed, and corrosion resistance are critical factors in the coupling selection.

Operating Temperature Range:	-40° to 300° F
Maximum Angular Misalignment:	1°

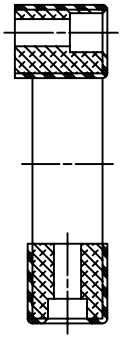


Zytel®

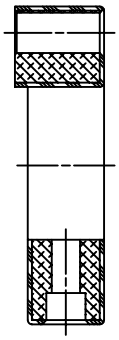
The following are standard LF Series torsional coupling models. The simple, unique design permits a wide range of models from common components to meet each application requirement.

Base Element

The heart of the LF Series coupling is the flexible base element. This element allows the customer to make their own shaft hubs from steel bar stock or use existing hubs. Ideal for quick prototype testing, retrofit and high volume applications.



Standard
Base Element

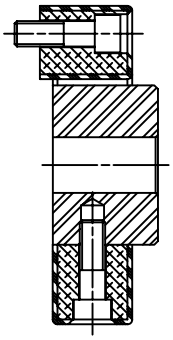


S-Style
Base Element

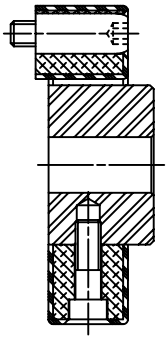
Model 1 and 1/S

Consists of the flexible base element with a simple steel cylindrical hub.

The 1/S is shown with the S-Style axial screw (similar to a dowel) for quick blind assembly of the drive package. The same combinations available in Model 1 are also available in the Model 1/S.



Model 1



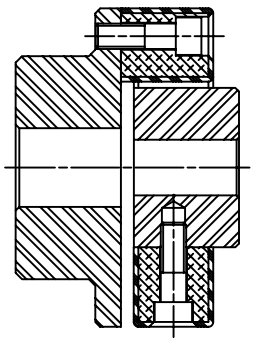
Model 1/S

T

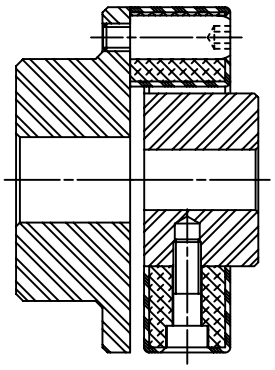
Model 2 and 2/S

Provides a complete shaft-to-shaft coupling in a range of sizes for all industrial power transmission applications. It is similar to Model 1 shown above, except a flanged hub is added to make the shaft to shaft connection.

Model 2/S allows the drive package to be “blind” connected. As with all S-Style models, axial end float of equipment shafts can be accommodated without harmful push-pull force.



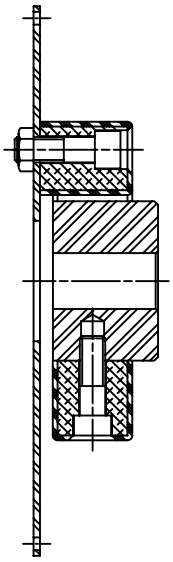
Model 2



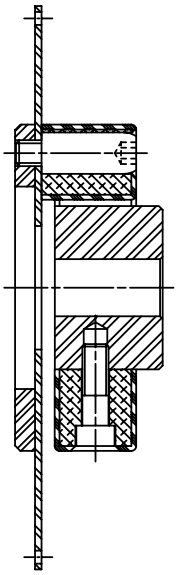
Model 2/S

Model 3 and 3/S

A Model 1 or 1/S with the addition of an engine mounting plate becomes a Model 3 or 3/S. It is available in standard SAE flywheel sizes as well as made-to-order sizes. The standard cylindrical hub is available in a variety of ANSI (SAE), DIN, JIS, and agricultural spline bores for hydraulic pumps and other applications. Various standard flexible element materials are available for specific torsional, misalignment and environmental requirements.



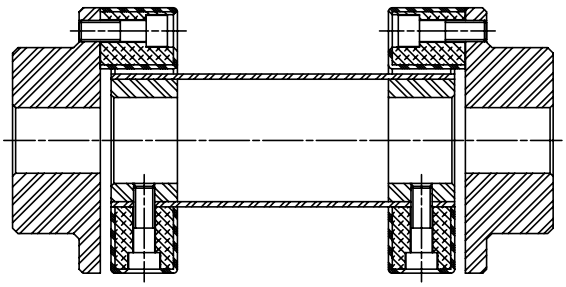
Model 3



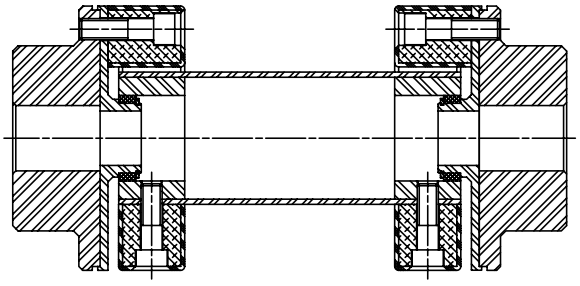
Model 3/S

Model 6, 6/S and 6B

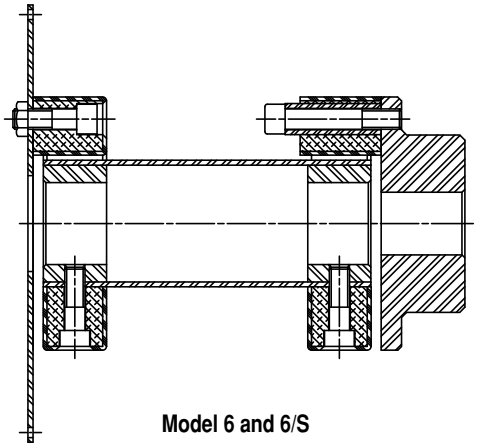
The Model 6 is available with floating shafts at customer specified assembly lengths, with special corrosion and heat resistant elements and materials. This model surpasses all other floating shaft designs in assembly, simplicity and reliability. Model 6/S accommodates free endplay without harmful push-pull reaction forces. Model 6/B is a highly elastic floating shaft coupling with accurate, maintenance free centering flanges for applications with long spans and high misalignment and or speed requirements.



Model 6



Model 6B



Model 6 and 6/S



LF Series Performance Data

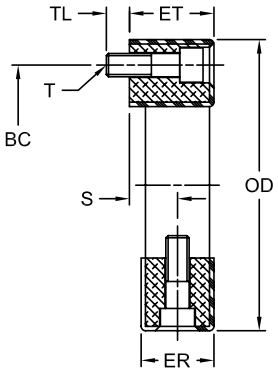
Size	Element Material	Nominal Torque T_{KN}		Maximum Torque T_{Kmax}		Max Speed N_{max}	Allowable Continuous Vibratory Trq T_{KW}		Dynamic Torsional Stiffness C_{Tdyn}							
									Rubber 60 Shore (Standard)		Rubber 50 Shore (Optional)		Hytrel®1		Zytel®	
		in-lb	Nm	in-lb	Nm	RPM	in-lb	Nm	in-lb/rad	Nm/rad	in-lb/rad	Nm/rad	in-lb/rad	Nm/rad	in-lb/rad	Nm/rad
LF1	HTR	90	10	200	25	10,000	44	5	1,240	140	800	90	—	—	—	—
LF2	HTR	180	20	530	60	8,000	89	10	2,570	290	1,600	180	—	—	—	—
	Zytel®	265	30	530	60	10,000	N/A	N/A	—	—	—	—	—	—	55,150	6 230
LF4	HTR	440	50	1,100	125	7,000	180	20	7,500	850	4,870	550	—	—	—	—
LF8	HTR	885	100	2,480	280	6,500	355	40	13,300	1 500	7,970	900	—	—	—	—
	Zytel®	1,060	120	2,480	280	7,000	N/A	N/A	—	—	—	—	—	—	414,370	46 820
LF12	HTR	1,240	140	3,190	360	6,500	440	50	38,900	4 400	23,900	2 700	—	—	—	—
LF16	HTR	1,770	200	4,960	560	6,000	710	80	30,100	3 400	17,700	2 000	—	—	—	—
	Hytrel®	1,770	200	4,960	560	5,500	N/A	N/A	—	—	—	—	320,000	36 000	—	—
	Zytel®	2,120	240	4,960	560	6,000	N/A	N/A	—	—	—	—	—	—	654,800	74 000
LF22	HTR	2,430	275	6,640	750	6,000	885	100	79,600	9 000	54,000	6 100	—	—	—	—
LF25	HTR	2,790	315	7,740	875	5,000	1,100	125	39,800	4 500	4,800	2 800	—	—	—	—
LF28	HTR	3,700	420	10,600	1 200	5,000	1,330	150	106,200	12 000	66,400	7 500	—	—	—	—
LF30	HTR	4,400	500	12,400	1 400	4,000	1,770	200	69,000	7 800	42,500	4 800	—	—	—	—
	Hytrel®	4,400	500	12,400	1 400	4,000	N/A	N/A	—	—	—	—	780,000	88 000	—	—
LF50	HTR	6,200	700	18,600	2 100	4,000	2,650	300	168,100	19 000	106,200	12 000	—	—	—	—
	Hytrel®	7,100	800	17,700	2 000	4,000	N/A	N/A	—	—	—	—	2,300,000	262 000	—	—
LF80	HTR	7,960	900	18,600	2 100	4,000	2,830	320	221,200	25 000	141,600	16 000	—	—	—	—
LF90	HTR	9,700	1 100	27,900	3 150	3,600	3,980	450	141,600	16 000	92,900	10 500	—	—	—	—
LF140	HTR	15,000	1 700	43,400	4 900	3,600	6,200	700	354,000	40 000	234,500	26 500	—	—	—	—
LF250	HTR	26,500	3 000	77,400	8 750	3,000	11,000	1 250	592,900	67 000	380,500	43 000	—	—	—	—

Notes:
- 1 indicates: For Hytrel, dynamic torsional stiffness values are non-linear with respect to torque. Value given is for 100% of nominal torque.
- N/A indicates: Not Applicable.
- HTR is High Temperature Rubber.

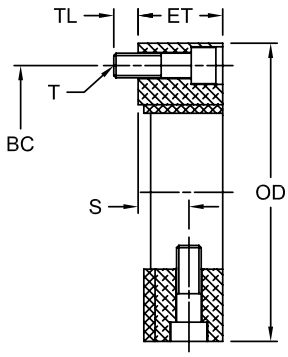
LF Series Performance Data *Continued*

Size	Element Material	Max Allowable Misalignment*							Wind Up (angle of twist)		Static Stiffness					
		Angular ΔK_w	Parellel ΔK_r		Axial (End Float) Standard ΔK_a		Axial (End Float) S-Style**		at Nominal Torque	at Maximum Torque	Axial C_a		Radial C_r		Angular C_w	
		Degrees	in	mm	in	mm	in	mm	Degrees	Degrees	lb/in	N/mm	lb/in	N/mm	in-lb/deg	Nm/deg
LF1	HTR	3.00	0.060	1.5	+/-0.08	+/-2	+0.18 / -0.08	+4.6 / -2	6	17.0	220	38	860	150	2.66	0.3
LF2	HTR	3.00	0.060	1.5	+/-0.12	+/-3	+0.12 / -0.12	+3 / -3	6	17.0	130	22	860	150	2.66	0.3
	Zytel®	1.00	0.004	0.1	+/-0.02	+/-0.5	+0.12 / -0.02	+3 / -0.5	—	—	—	—	—	—	—	—
LF4	HTR	3.00	0.060	1.5	+/-0.12	+/-3	+0.17 / -0.12	+4.3 / -3	5	12.0	430	75	2,860	500	21.30	2.4
LF8	HTR	3.00	0.080	2.0	+/-0.16	+/-4	+0.20 / -0.16	+5 / -4	5	14.0	430	75	2,860	500	31.90	3.6
	Zytel®	1.00	0.004	0.1	+/-0.02	+/-0.5	+0.20 /-0.02	+5 / -0.5	—	—	—	—	—	—	—	—
LF12	HTR	2.00	0.080	2.0	+/-0.12	+/-3	+0.20 /-0.16	+5 / -4	3	7.5	1,430	250	5,710	1 000	80.00	9.0
LF16	HTR	3.00	0.080	2.0	+/-0.20	+/-5	+0.23 / -0.20	+5.8 / -5	5	14.0	570	100	2,860	500	44.00	5.0
	Hytrel®	0.25	0.000	0.0	+0.12 / -0.08	+3 / -2	N/A	N/A	—	—	—	—	—	—	—	—
	Zytel®	1.00	0.004	0.1	+/-0.02	+/-0.5	+0.23 /-0.02	+5.8 / -0.5	—	—	—	—	—	—	—	—
LF22	HTR	2.00	0.080	2.0	+/-0.12	+/-3	+0.23 /-0.20	+5.8 / -5	3	7.5	2,860	500	7,420	1 300	106.00	12.0
LF25	HTR	3.00	0.080	2.0	+/-0.20	+/-5	+0.26 / -0.20	+6.6 / -5	5	14.0	800	140	3,400	600	62.00	7.0
LF28	HTR	2.00	0.080	2.0	+/-0.12	+/-3	+0.26 / -0.20	+6.6 / -5	3	7.5	3,140	550	8,000	1 400	150.00	17.0
LF30	HTR	3.00	0.080	2.0	+/-0.20	+/-5	+0.26 / -0.20	+6.6 / -5	5	14.0	1,090	190	4,280	750	80.00	9.0
	Hytrel®	0.25	0.000	0.0	+0.12 / -0.08	+3 / -2	N/A	N/A	—	—	—	—	—	—	—	—
LF50	HTR	3.00	0.080	2.0	+/-0.20	+/-5	+0.26 / -0.20	+6.6 / -5	3	7.5	3,700	650	12,600	2 200	230.00	26.0
	Hytrel®	0.25	0.000	0.0	+0.12 / -0.08	+3 / -2	N/A	N/A	—	—	—	—	—	—	—	—
LF80	HTR	2.00	0.060	1.5	+/-0.20	+/-5	+0.26 / -0.12	+6.6 / -3	3	7.5	4,850	850	16,600	2 900	300.00	34.0
LF90	HTR	3.00	0.080	2.0	+/-0.20	+/-5	+0.34 / -0.20	+8.6 / -5	5	14.0	1,260	220	5,700	1 000	150.00	17.0
LF140	HTR	2.00	0.080	2.0	+/-0.20	+/-5	+0.34 / -0.20	+8.6 / -5	3	7.5	3,700	650	13,100	2 300	336.00	38.0
LF250	HTR	2.00	0.080	2.0	+/-0.20	+/-5	+0.40 / -0.20	+10 / -5	3	7.5	6,570	1 150	23,400	4 100	600.00	68.0

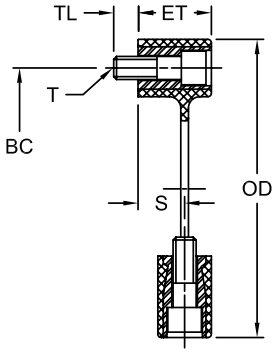
Notes:
- * indicates: Angular and parallel misalignment values are dependent on speed, and for rubber elements, should be adjusted according to figure 4 on page T-9. Hytrel® elements are only for applications where the driven component is piloted to the driver for SAE and DIN established alignments (i.e. Hydraulic pump flange-mounted to engine flywheel housing).
- ** indicates: The "S-Style" design is not constrained axially and allows the hubs to move apart without creating axial force on the connected equipment.
- N/A indicates: Not Applicable.
- Hytrel® elements are only for applications where the driven component is piloted to the driver for essentially perfect alignment (hydraulic pump flange-mounted to engine housing).
- Special length S-Style fastener sleeves can further increase the allowable end float.
- HTR is High Temperature Rubber.



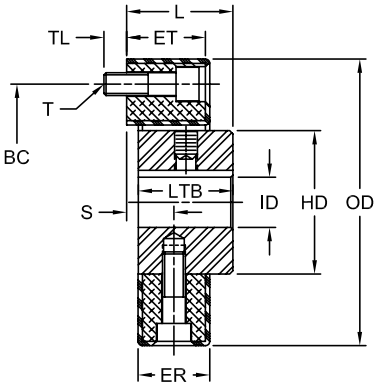
Base Element (HTR)



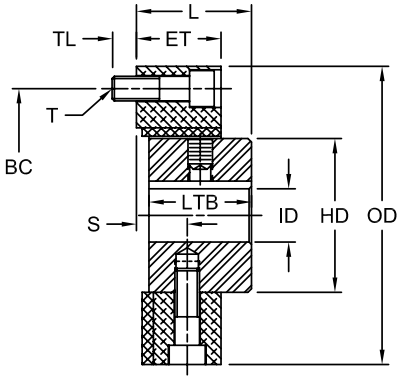
Base Element (Hytrel®)



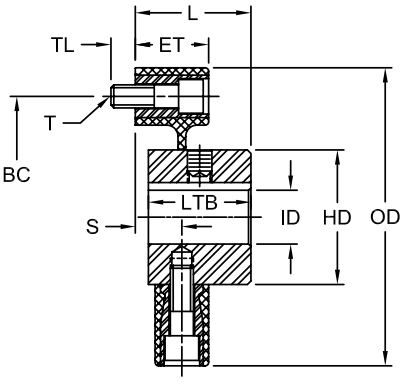
Base Element (Zytrel®)



Model 1 (HTR)



Model 1 (Hytrel®)



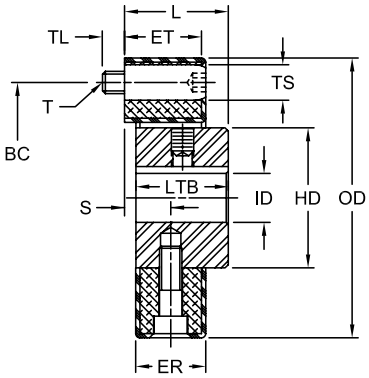
Model 1 (Zytel®)

LF Series Base Element and Model 1 Dimensional Data

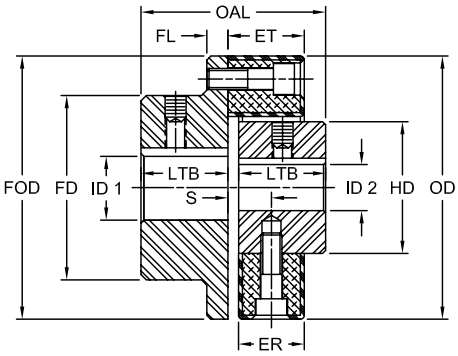
Size	ID 1 (Cylindrical Hub) Min Bore in		ID 1 (Cylindrical Hub) Max Bore in		ID 2 (Flange Hub) Min Bore in		ID 2 (Flange Hub) Max Bore in		OD HTR in		OD Hytrel® in		OD Zytel® in		FOD in	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
LF1	0.31	8	0.63	19	0.31	8	0.88	25	2.20	56	—	—	—	—	2.20	56
LF2	0.44	10	0.88	26	0.50	12	1.38	38	3.35	85	—	—	3.48	32	3.35	85
LF4	0.47	12	1.00	30	0.63	15	1.75	45	3.94	100	—	—	—	—	3.94	100
LF8	0.50	12	1.38	38	0.75	18	2.00	55	4.72	120	—	—	4.92	45	4.72	120
LF12	0.50	12	1.38	38	0.75	18	2.00	55	4.80	122	—	—	—	—	4.72	120
LF16	0.63	15	1.63	48	0.81	20	2.63	70	5.91	150	6.10	155	6.10	53	5.91	150
LF22	0.63	15	1.63	48	0.81	20	2.63	70	5.91	150	—	—	—	—	5.91	150
LF25	0.63	15	2.13	55	0.81	20	2.75	85	6.69	170	7.17	182	—	—	6.69	170
LF28	0.63	15	2.13	55	0.81	20	2.75	85	6.69	170	—	—	—	—	6.69	170
LF30	0.81	20	2.44	65	1.00	25	3.75	100	7.87	200	8.07	205	—	—	7.87	200
LF50	0.81	20	2.44	65	1.00	25	3.75	100	7.87	200	8.07	205	—	—	7.87	200
LF80	0.81	20	2.44	65	1.00	25	3.75	100	8.07	205	—	—	—	—	7.87	200
LF90	1.19	30	3.35	85	1.19	30	4.25	110	10.24	260	—	—	—	—	10.24	260
LF140	1.19	30	3.35	85	1.19	30	4.25	110	10.24	260	—	—	—	—	10.24	260
LF250	1.63	40	4.25	105	1.63	40	5.00	130	13.38	340	—	—	—	—	13.38	340

Size	ET HTR in	ET HTR mm	ET Hytrel® in	ET Hytrel® mm	ET Zytel® in	ET Zytel® mm	OAL in	OAL mm	L HTR in	L HTR mm	L Hytrel® in	L Hytrel® mm	L Zytel® in	L Zytel® mm
LF1	0.94	24	—	—	—	—	1.97	50.0	1.02	26	—	—	—	—
LF2	0.94	24	—	—	0.94	32	2.36	60.0	1.26	32	—	—	1.26	32.0
LF4	1.10	28	—	—	—	—	2.52	64.0	1.34	34	—	—	—	—
LF8	1.26	32	—	—	1.18	45	3.46	88.0	1.81	46	—	—	1.77	45.0
LF12	1.26	32	—	—	—	—	3.46	88.0	1.81	46	—	—	—	—
LF16	1.65	42	1.69	58	1.38	53	4.17	106.0	2.20	56	2.28	58	2.08	53.0
LF22	1.65	42	—	—	—	—	4.17	106.0	2.20	56	—	—	—	—
LF25	1.81	46	1.85	62	—	—	4.57	116.0	2.40	61	2.44	62	—	—
LF28	1.81	46	—	—	—	—	4.57	116.0	2.40	61	—	—	—	—
LF30	2.28	56	2.28	76	—	—	5.51	140.0	2.91	74	2.99	76	—	—
LF50	2.28	56	2.28	76	—	—	5.51	140.0	2.91	74	2.99	76	—	—
LF80	2.56	65	—	—	—	—	5.51	141.5	2.97	76	—	—	—	—
LF90	2.76	70	—	—	—	—	6.61	168.0	3.46	88	—	—	—	—
LF140	2.76	70	—	—	—	—	6.61	168.0	3.46	88	—	—	—	—
LF250	3.34	84	—	—	—	—	8.18	208.0	4.25	108	—	—	—	—

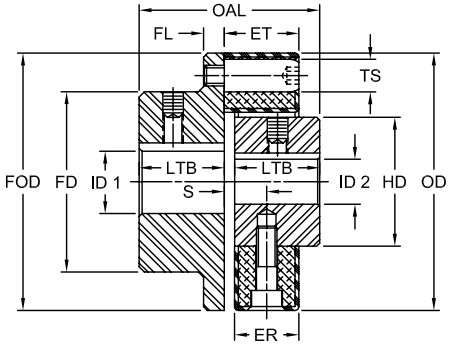
Note: ■ HTR is High Temperature Rubber.



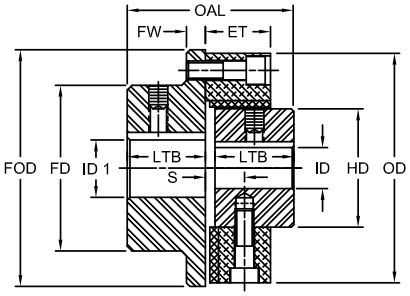
Model 1S (HTR)



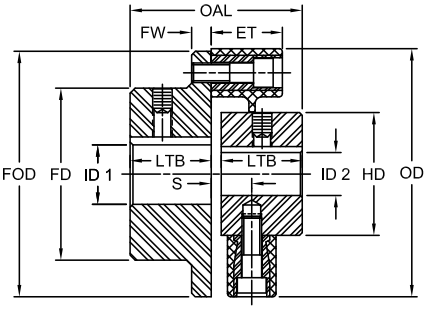
Model 2 (HTR)



Model 2/S (HTR)



Model 2 (Hytrel®)

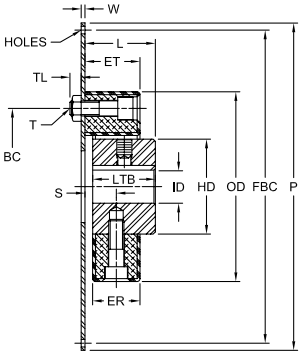


Model 2 (Zytel®)

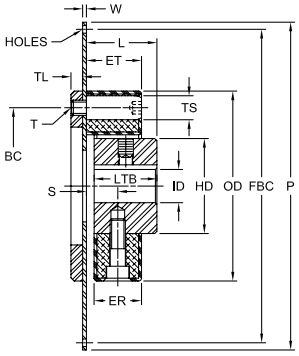
LF Series Base Element and Model 1 Dimensional Data *Continued*

Size	LTB in	LTB mm	HD in	HD mm	FD in	FD mm	FW in	FW mm	BE in	BE mm	S* (+/-0.11) (+/-3) in	S* (+/-0.11) (+/-3) mm	ER** in	ER** mm	R in	R mm	BC in	BC mm	Axial Hole and Division	T	TS HTR in	TS HTR mm	TS Zytel® in	TS Zytel® mm	TL in	TL mm
LF1	0.94	24	1.18	30	1.44	36	0.27	7	0.08	2	—	—	0.87	22	0.43	11.0	1.73	44	2@180°	M6	0.39	10	—	—	0.28	7
LF2	1.10	28	1.57	40	2.17	55	0.31	8	0.16	4	—	—	0.79	20	0.39	10.0	2.68	68	2@180°	M8	0.55	14	0.59	15	0.31	8
LF4	1.18	30	1.77	45	2.56	65	0.31	8	0.16	4	—	—	0.94	24	0.47	12.0	3.15	80	3@120°	M8	0.55	14	—	—	0.31	8
LF8	1.65	42	2.36	60	3.15	80	0.39	10	0.16	4	—	—	1.10	28	0.55	14.0	3.94	100	3@120°	M10	0.67	17	0.75	19	0.39	10
LF12	1.65	42	2.36	60	3.15	80	0.39	10	0.16	4	—	—	1.10	28	0.55	14.0	3.94	100	4@ 90°	M11	0.67	17	—	—	0.39	10
LF16	1.97	50	2.76	70	3.94	100	0.47	12	0.24	6	1.02	26	1.42	36	0.71	18.0	4.92	125	3@120°	M12	0.75	19	0.86	22	0.47	12
LF22	1.97	50	2.76	70	3.94	100	0.47	12	0.24	6	—	—	1.42	36	0.71	18.0	4.92	125	4@ 90°	M12	0.75	19	—	—	0.47	12
LF25	2.16	55	3.35	85	4.53	115	0.55	14	0.24	6	1.06	27	1.57	40	0.79	20.0	5.51	140	3@120°	M14	0.86	22	—	—	0.55	14
LF28	2.16	55	3.35	85	4.53	115	0.55	14	0.24	6	—	—	1.57	40	0.79	20.0	5.51	140	4@ 90°	M14	0.86	22	—	—	0.55	14
LF30	2.60	66	3.94	100	5.51	140	0.63	16	0.31	8	1.38	35	1.97	50	0.98	25.0	6.50	165	3@120°	M16	0.98	25	—	—	0.63	16
LF50	2.60	66	3.94	100	5.51	140	0.63	16	0.31	8	1.38	35	1.99	50	0.98	25.0	6.50	165	4@ 90°	M16	0.98	25	—	—	0.63	16
LF80	2.60	66	3.94	100	5.51	140	0.63	16	0.31	8	—	—	2.40	61	1.20	30.5	6.50	165	4@ 90°	M16	0.98	25	—	—	0.63	16
LF90	3.15	80	4.92	125	6.30	160	0.75	19	0.31	8	—	—	2.44	62	1.22	31.0	8.46	215	3@120°	M20	1.26	32	—	—	0.79	20
LF140	3.15	80	4.92	125	6.30	160	0.75	19	0.31	8	—	—	2.44	62	1.22	31.0	8.46	215	4@ 90°	M20	1.26	32	—	—	0.79	20
LF250	3.94	100	6.30	160	7.68	195	0.75	19	0.31	8	—	—	3.03	77	0.89	22.5	11.02	280	4@ 90°	M20	1.26	32	—	—	0.79	20

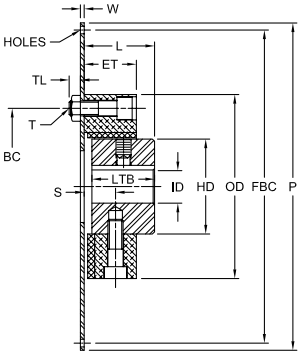
Notes:
- * indicates: Dimenstion S for Hytrel® only.
- ** indicates: Dimension ER for HTR (rubber) only.
- Dimensions for basic Models 1, 2, 3 and 6.
- HTR is High Temperature Rubber.



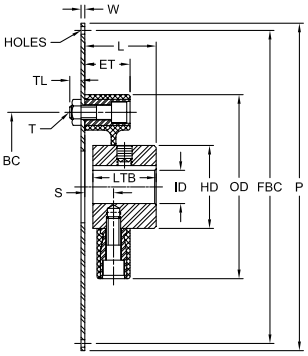
Model 3 (HTR)



Model 3/S (HTR)



Model 3 (Hytrel®)



Model 3 and 3/S (Zytel®)

LF Series Flywheel Models 3 and 3/S Dimensional Data

Size	ID				OD						ET						TL		L						W	
	Min		Max		HTR		Hytrel®		Zytel®		HTR		Hytrel®		Zytel®				HTR		Hytrel®		Zytel®			
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
LF1	0.31	8	0.63	19	2.20	56	—	—	—	—	0.94	24	—	—	—	—	0.28	7	1.02	26.0	—	—	—	—	—	—
LF2	0.44	10	0.88	26	3.35	85	—	—	3.48	88	0.94	24	—	—	0.94	24	0.31	8	1.26	32.0	—	—	1.26	32	—	—
LF4	0.47	12	1.00	30	3.94	100	—	—	—	—	1.10	28	—	—	—	—	0.31	8	1.34	34.0	—	—	—	—	—	—
LF8	0.50	12	1.38	38	4.72	120	—	—	4.92	125	1.26	32	—	—	1.18	30	0.39	10	1.81	46.0	—	—	1.77	45	0.19	5
LF12	0.50	12	1.38	38	4.80	122	—	—	—	—	1.26	32	—	—	—	—	0.39	10	1.81	46.0	—	—	—	—	0.19	5
LF16	0.63	15	1.63	48	5.91	150	6.10	155	6.10	155	1.65	42	1.69	43	1.38	36	0.47	12	2.20	56.0	2.28	58	2.08	53	0.19	5
LF22	0.63	15	1.63	48	5.91	150	—	—	—	—	1.65	42	—	—	—	—	0.47	12	2.20	56.0	—	—	—	—	0.19	5
LF25	0.63	15	2.13	55	6.69	170	—	—	—	—	1.81	46	—	—	—	—	0.55	14	2.40	61.0	—	—	—	—	0.19	5
LF28	0.63	15	2.13	55	6.69	170	—	—	—	—	1.81	46	—	—	—	—	0.55	14	2.40	61.0	—	—	—	—	0.19	5
LF30	0.81	20	2.44	65	7.87	200	8.07	205	—	—	2.28	58	2.28	58	—	—	0.63	16	2.91	74.0	2.99	76	—	—	0.19	5
LF50	0.81	20	2.44	65	7.87	200	8.07	250	—	—	2.28	58	2.28	58	—	—	0.46	12	2.91	74.0	2.99	76	—	—	0.19	5
LF80	0.81	20	2.44	65	8.07	205	—	—	—	—	2.56	65	—	—	—	—	0.63	16	2.97	75.5	—	—	—	—	0.19	5
LF90	1.19	30	3.35	85	10.24	260	—	—	—	—	2.76	70	—	—	—	—	0.79	20	3.46	88.0	—	—	—	—	0.19	5
LF140	1.19	30	3.35	85	10.24	260	—	—	—	—	2.76	70	—	—	—	—	0.79	20	3.46	88.0	—	—	—	—	0.19	5
LF250	1.63	40	4.25	105	13.38	340	—	—	—	—	3.34	85	—	—	—	—	0.79	20	4.25	108.0	—	—	—	—	0.50	13

Notes: ■ * indicates: Dimension ER for HTR (rubber) only.
■ HTR is High Temperature Rubber.

Typical Flywheel Housing Combinations

SAE J620D Flywheel Size	LF Series Size	LK Series Size	SAE J617C Flywheel Housing 6	5	4	3	2	1
6.5	8 thru 28	100	▲	▲				
7.5	8 thru 28	100	●	●				
8	8 thru 30	100			▲			
10	8 thru 140	100, 125			●	▲	▲	
11.5	16 thru 140	100, 125, 150, 150D				●	●	▲
14	28 thru 250	150, UNIV						●
18	250	UNIV						●

Notes: ▲ indicates: Preferred combinations.
● indicates: Optional sizes available.

LF Series Flywheel Models 3/S Dimensional Data

SAE Flywheel Size	P Pilot Diameter in	P Pilot Diameter mm	FBC Bolt Circle Diameter in	FBC Bolt Circle Diameter mm	Thru Holes Nominal Qty	Thru Holes Nominal Dia	LF Coupling Size for SAE Flywheel Sizes HTR Model 3 & 3/S	Hytrel® Model 3	Zytel® Model 3
6.5	8.499	215.90	7.875	200.02	6	0.31	8, 16	8, 16	8, 16
7.5	9.499	241.30	8.750	222.25	8	0.31	8, 16	8, 16	8, 16
8	10.374	263.52	9.625	244.47	6	0.41	16, 25	6, 30	16, 25, 30
10	12.374	314.32	11.625	295.27	8	0.41	25, 30, 50, 90	30, 50	25, 30
11.5	13.874	352.42	13.125	333.37	8	0.41	30, 50, 90, 140, 250	50, 140, 250	30
14	18.374	466.72	17.250	438.15	8	0.53	90, 140, 250	140	N/A
16	20.374	517.50	19.250	488.95	8	0.53	250	250	N/A

Notes: ■ SAE J620 Flywheel dimensions.
■ N/A indicates: Not Applicable.
■ HTR is High Temperature Rubber.

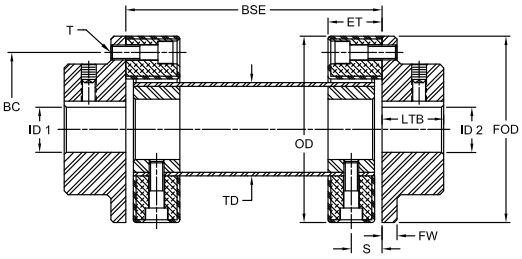
LF Series Flywheel Models 3 and 3/S Dimensional Data *Continued*

Size	LTB in	LTB mm	BE in	BE mm	S* (±0.11) (+/-3) in	S* (±0.11) (+/-3) mm	ER* in	ER* mm	R in	R mm	HD in	HD mm	BC in	BC mm	Axial Hole and Division	T	TS HTR in	TS HTR mm	TS Zytel® in	TS Zytel® mm
LF1	0.94	24	0.08	2	—	—	0.87	22	0.43	11.0	1.18	30	1.73	44	2@180°	M6	0.39	10	—	—
LF2	1.10	28	0.16	4	—	—	0.79	20	0.39	10.0	1.57	40	2.68	68	2@180°	M8	0.55	14	0.59	15
LF4	1.18	30	0.16	4	—	—	0.94	24	0.47	12.0	1.77	45	3.15	80	3@120°	M8	0.55	14	—	—
LF8	1.65	42	0.16	4	—	—	1.10	28	0.55	14.0	2.36	60	3.94	100	3@120°	M10	0.67	17	0.75	19
LF12	1.65	42	0.16	4	—	—	1.10	28	0.55	14.0	2.36	60	3.94	100	4@ 90°	M11	0.67	17	—	—
LF16	1.97	50	0.24	6	1.02	26	1.42	36	0.71	18.0	2.76	70	4.92	125	3@120°	M12	0.75	19	0.86	22
LF22	1.97	50	0.24	6	—	—	1.42	36	0.71	18.0	2.76	70	4.92	125	4@ 90°	M12	0.75	19	—	—
LF25	2.16	55	0.24	6	1.06	27	1.57	40	0.79	20.0	3.35	85	5.51	140	3@120°	M14	0.86	22	—	—
LF28	2.16	55	0.24	6	—	—	1.57	40	0.79	20.0	3.35	85	5.51	140	4@ 90°	M14	0.86	22	—	—
LF30	2.60	66	0.31	8	1.38	35	1.97	50	0.98	25.0	3.94	100	6.50	165	3@120°	M16	0.98	25	—	—
LF50	2.60	66	0.31	8	1.38	35	1.97	50	0.98	25.0	3.94	100	6.50	165	4@ 90°	M16	0.98	25	—	—
LF80	2.60	66	0.16	4	—	—	2.40	61	1.20	30.5	3.94	100	6.50	165	4@ 90°	M16	0.98	25	—	—
LF90	3.15	80	0.31	8	—	—	2.44	62	1.22	31.0	4.92	125	8.46	215	3@120°	M20	1.26	32	—	—
LF140	3.15	80	0.31	8	—	—	2.44	62	1.22	31.0	4.92	125	8.46	215	4@ 90°	M20	1.26	32	—	—
LF250	3.94	100	0.31	8	—	—	3.03	77	0.89 2.15	22.5 54.5	6.30	160	11.02	280	4@ 90°	M20	1.26	32	—	—

Notes: ■ * indicates: Hytrel® only.
■ HTR is High Temperature Rubber.

Model 6 and 6/S (Rubber Base Elements HTR and CR)

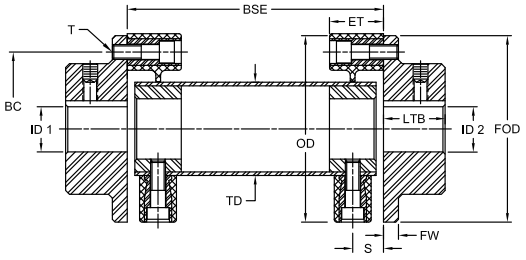
This model compensates for considerable axial, radial and angular misalignment. The rubber elements torsionally soft. Lengths are made to customer requirements. S-Style axial mounting screws allow the hubs to have free end float without exerting axial loads on the connected equipment, while allowing for quick assembly.



Model 6 (HTR)

Model 6 and 6/S (Zytel® Elements)

Elements made of DuPont's super-tough, corrosion resistant Zytel® are torsionally stiff without backlash, with less than 1° windup. Large spans, equal to all-metal couplings, can be accommodated without internal support bearings when lightweight Zytel® are used. Hubs, hardware and tubes are available in stainless steel or with plating and corrosion resistant coatings. S-Style, axial mounting screws allow for free end-float without harmful reactionary forces.



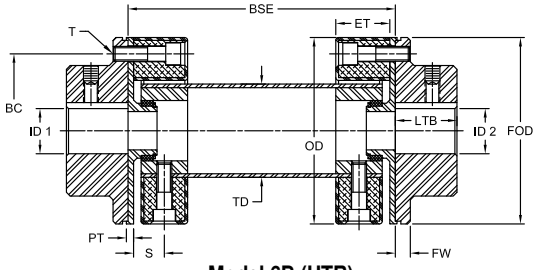
Model 6 (Zytel®)

Model 6B (HTR Elements)

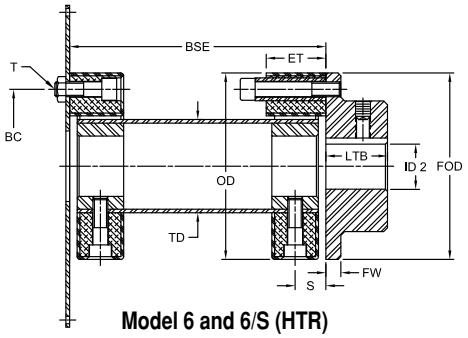
Similar to Model 6 except the center shaft is supported by internal maintenance free bearing material. This allows greater equipment separation and high speeds, as well as high angular misalignment, which can be obtained with rubber elements.

The drawing at the lower left shows one of the many special designs available. A standard flywheel adapter plate (see model 3) is used to couple to a diesel engine flywheel. The flanged hub on the other end is supplied with extra long S-Style connecting screws (Notice the element is reversed from its normal direction). This arrangement permits extensive axial movement (free end float) of the drive package.

One of the many features of the Model 6 is the center floating shaft can be radially removed without displacing the coupled machines. Flexible elements may be pre-assembled to the center segment and then final assembled to the hubs quickly, with little hardware.



Model 6B (HTR)



Model 6 and 6/S (HTR)

LF Series Models 6, 6/S and 6/B Dimensional Data

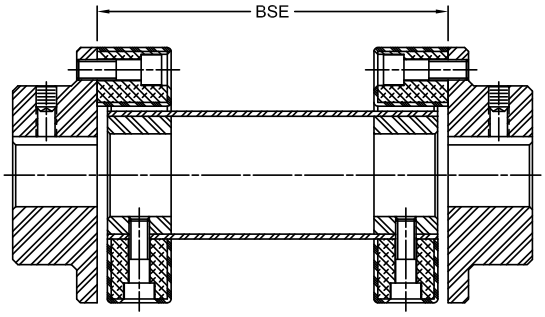
Size	Nominal Torque HTR in-lb	Nominal Torque HTR Nm	Nominal Torque Zytel® in-lb	Nominal Torque Zytel® Nm	ID1 - ID2 Min Bore in	ID1 - ID2 Min Bore mm	ID1 - ID2 Max Bore in	ID1 - ID2 Max Bore mm	OD Element HTR in	OD Element HTR mm	OD Element Zytel® in	OD Element Zytel® mm	BC in	BC mm	Axial Hole and Division
LF1	90	10	—	—	0.31	8	0.88	25	2.20	56	—	—	1.73	44	2@180°
LF2	180	20	265	30	0.50	12	1.38	38	3.35	85	3.48	88	2.68	68	2@180°
LF4	440	50	—	—	0.63	15	1.75	45	3.94	100	—	—	3.15	80	3@120°
LF8	885	100	1,060	120	0.75	18	2.00	55	4.72	120	4.92	125	3.94	100	3@120°
LF12	1,240	140	—	—	0.75	18	2.00	55	4.80	122	—	—	3.94	100	4@ 90°
LF16	1,770	200	2,120	240	0.81	20	2.63	70	5.91	150	6.1	155	4.92	125	3@120°
LF22	2,430	275	—	—	0.81	20	2.63	70	5.91	150	—	—	4.92	125	4@ 90°
LF25	2,790	315	—	—	0.81	20	2.75	85	6.69	170	—	—	5.51	140	3@120°
LF28	3,700	420	—	—	0.81	20	2.75	85	6.69	170	—	—	5.51	140	4@ 90°
LF30	4,425	500	—	—	1.00	25	3.75	100	7.87	200	—	—	6.50	165	3@120°
LF50	6,195	700	—	—	1.00	25	3.75	100	7.87	200	—	—	6.50	165	4@ 90°
LF80	7,960	900	—	—	1.00	25	3.75	100	8.07	205	—	—	6.50	165	4@ 90°
LF90	9,735	1 100	—	—	1.19	30	4.25	110	10.24	260	—	—	8.46	215	3@120°
LF140	15,000	1 700	—	—	1.19	30	4.25	110	10.24	260	—	—	8.46	215	4@ 90°
LF250	26,500	3 000	—	—	1.63	40	5.00	130	13.38	340	—	—	11.02	280	4@ 90°

Note: ■ Refer to Speed and Length Performance Data table (page T-24) for maximum and minimum values.

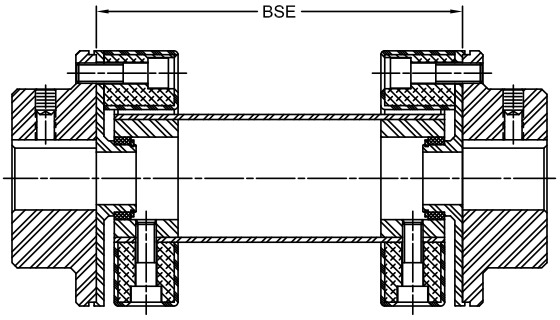
LF Series Models 6, 6/S and 6/B Dimensional Data *Continued*

Size	FOD Flange in	FOD Flange mm	LTB Hub in	LTB Hub mm	BSE Span	S in	S mm	PT in	PT mm	FW in	FW mm	TD in	TD mm	ET HTR in	ET HTR mm	ET Zytel® in	ET Zytel® mm
LF1	2.20	56	0.94	24	*	0.51	13	0.20	5	0.28	7	1.18	30	0.94	24	—	—
LF2	3.35	85	1.10	28	*	0.55	14	0.20	5	0.31	8	1.62	40	0.94	24	0.94	24
LF4	3.94	100	1.18	30	*	0.63	16	0.20	5	0.31	8	1.81	45	1.10	28	—	—
LF8	4.72	120	1.65	42	*	0.71	18	0.20	5	0.39	10	2.38	60	1.26	32	1.18	30
LF12	4.80	120	1.65	42	*	0.71	18	0.20	5	0.39	10	2.38	60	1.26	32	—	—
LF16	5.91	150	1.97	50	*	0.94	24	0.20	5	0.47	12	2.75	70	1.65	42	1.38	36
LF22	5.91	150	1.97	50	*	0.94	24	0.20	5	0.47	12	2.75	70	1.65	42	—	—
LF25	6.69	170	2.16	55	*	1.02	26	0.20	5	0.55	14	3.38	85	1.81	46	—	—
LF28	6.69	170	2.16	55	*	1.02	26	0.20	5	0.55	14	3.38	85	1.81	46	—	—
LF30	7.87	200	2.60	66	*	1.30	33	0.20	5	0.63	16	4.00	100	2.28	58	—	—
LF50	7.87	200	2.60	66	*	1.30	33	0.20	5	0.63	16	4.00	100	2.28	58	—	—
LF80	8.07	200	2.60	80	*	1.36	35	0.20	5	0.63	16	4.00	100	2.56	65	—	—
LF90	10.24	260	3.15	80	*	1.54	39	0.20	5	0.75	19	5.00	125	2.76	70	—	—
LF140	10.24	260	3.15	100	*	1.54	39	0.20	5	0.75	19	5.00	125	2.76	70	—	—
LF250	13.38	340	3.94	125	*	1.81	46	0.39	10	0.75	19	6.25	160	3.35	85	—	—

Notes: ■ * indicates: Contact Lovejoy Technical Support when specifying shaft separation.
■ Refer to Speed and Length Performance Data table (page T-24) for maximum and minimum values.



Model 6



Model 6B

LF Series Models 6 and 6/B Speed and Length Performance Data

Size	Maximum Speed (short length only)			BSE Minimum Length (all versions)		BSE Maximum Length @ 1750 RPM					
	HTR		Zytel®			HTR				Zytel®	
	Model 6 RPM	Model 6B RPM	Model 6 RPM	in	mm	Model 6 in	Model 6 mm	Model 6B in	Model 6B mm	Model 6 in	Model 6 mm
LF1	1,500	6,000	—	3.10	79	45	1140	52	1320	—	—
LF2	1,500	6,000	10,000	3.10	79	52	1320	58	1475	58	1475
LF4	2,900	6,000	—	3.61	92	59	1500	62	1575	—	—
LF8	2,900	6,000	7,000	4.17	106	64	1625	72	1830	72	1830
LF12	2,900	6,000	—	4.17	106	64	1625	72	1830	—	—
LF16	2,900	6,000	6,000	5.42	138	65	1650	77	1955	77	1955
LF22	2,900	6,000	—	5.42	138	65	1650	77	1955	—	—
LF25	2,900	5,000	—	5.98	152	58	1475	84	2130	—	—
LF28	2,900	5,000	—	5.98	152	58	1475	84	2130	—	—
LF30	2,900	4,000	—	7.47	190	59	1500	91	2310	—	—
LF50	2,500	4,000	—	7.47	190	83	2100	91	2310	—	—
LF80	2,500	4,000	—	7.47	190	83	2100	91	2310	—	—
LF90	1,500	3,600	—	9.03	230	34	865	99	2515	—	—
LF140	1,500	3,600	—	9.03	230	73	1855	99	2515	—	—
LF250	1,500	3,000	—	10.80	274	86	2185	117	2970	—	—

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*LF Series Model 6 (HTR) Maximum Length "BSE" at Various Speeds - Dimensional Data**

Speed (RPM) →	Maximum Span Length "BSE"																	
	500		600		720		750		900		1000		1200		1500		1800	
Size	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
LF1	94	2390	86	2185	78	1980	76	1930	69	1750	65	1650	58	1470	51	1300	45	1140
LF2	109	2770	99	2515	89	2260	88	2235	79	2000	74	1880	66	1680	57	1450	52	1320
LF4	116	2950	106	2690	96	2440	94	2390	86	2190	81	2060	73	1850	64	1630	59	1500
LF8	134	3400	121	3070	110	2795	107	3720	97	2460	91	2370	81	2060	70	1780	64	1630
LF12	134	3400	121	3070	110	2795	107	2720	97	2460	91	2370	81	2060	70	1780	64	1630
LF16	144	3660	129	2375	117	2970	114	2900	103	2610	96	2440	85	2160	72	1830	65	1650
LF22	144	3660	129	3275	117	2970	114	2900	103	2610	96	2440	85	2160	72	1930	65	1650
LF25	154	3970	138	3505	123	3125	120	3050	106	2690	98	2490	83	2110	64	1630	58	1470
LF28	154	3970	138	3505	123	3125	120	3050	106	2690	98	2490	83	2110	64	1630	58	1470
LF30	168	4270	151	3835	134	3400	131	3330	115	2920	106	2690	90	2290	68	1730	59	1500
LF50	173	4395	157	3990	143	3630	139	3530	126	3200	119	3020	106	2670	92	2340	83	2100
LF80	173	4395	157	3990	143	3630	139	3530	126	3200	119	3020	106	2690	92	2340	83	2100
LF90	177	4495	155	3940	134	3400	130	3300	107	2720	94	2390	69	1750	38	965	34	860
LF140	187	4750	169	4290	151	3835	147	3730	130	3300	121	3070	104	2640	83	2100	73	1860
LF250	211	5360	190	4830	171	4340	167	4240	148	3760	137	3480	118	3000	94	2390	86	2190

Notes: ■ * indicates: Longer span length for given speed is possible with model 6B.
■ Please consult Lovejoy Technical Support for maximum span for higher speeds.

*LF Series Model 6 (Zytrel®) Maximum Length "BSE" at Various Speeds - Dimensional Data**

Speed (RPM) →	LF Series Model 6 with (Zytrel®) Maximum Span Length "BSE"																	
	500		600		720		750		900		1000		1200		1500		1800	
Size	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
LF2X	110	2794	101	2565	92	2337	90	2286	82	2083	82	2083	71	1803	64	1626	58	1473
LF8X	136	3454	124	3150	113	2870	110	2794	101	2565	101	2565	87	2210	78	1981	72	1829
LF16X	147	3734	134	3404	122	3099	120	3048	109	2769	109	2769	94	2388	84	2134	72	1829

Note: ■ * indicates: Maximum span length is based on tube deflection and a critical speed 1.5 times above operating speed.

T

LF Series Weight and Mass Moment of Inertia for Couplings with HTR Elements

	Weights*										Inertia**									
	Base Element		Model 1		Model 1/S		Model 2		Model 2/S		Base Element		Model 1		Model 1/S		Model 2		Model 2/S	
Size	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb-in²	kg-cm²	lb-in²	kg-cm²	lb-in²	kg-cm²	lb-in²	kg-cm²	lb-in²	kg-cm²
LF1	0.13	0.06	0.46	0.21	0.53	0.24	1.04	0.47	1.08	0.49	0.12	0.35	0.26	0.75	0.29	0.86	0.55	1.60	0.58	1.70
LF2	0.33	0.15	1.01	0.46	1.08	0.49	2.34	1.06	2.40	1.09	0.43	1.25	0.85	2.5	1.13	3.3	2.5	7.3	2.8	8.1
LF4	0.46	0.21	2.89	1.31	1.54	0.70	5.09	2.31	3.75	1.70	1.13	3.30	1.71	5.0	2.22	6.5	3.9	11.3	4.4	12.8
LF8	0.71	0.32	2.98	1.35	3.17	1.44	7.61	3.45	7.80	3.54	2.39	7.0	5.13	15.0	6.36	18.6	14.0	41.0	15.2	44.6
LF12	0.77	0.35	3.20	1.45	3.44	1.56	7.83	3.55	8.07	3.66	2.87	8.4	6.22	18.2	6.83	20.0	15.1	44.2	15.8	46.1
LF16	1.43	0.65	5.03	2.28	5.14	2.33	13.58	6.16	13.69	6.21	8.00	23.4	14.5	42.5	16.8	49.1	40.6	118.8	42.9	125.4
LF22	1.54	0.70	5.56	2.52	5.78	2.62	14.15	6.42	14.59	6.62	9.09	26.6	17.2	50.4	24.0	70.2	43.2	126.5	50.0	146.3
LF25	1.85	0.84	7.91	3.59	8.31	3.77	20.53	9.31	20.92	9.49	17.2	50.2	31.0	90.7	35.1	102.7	73.5	215.0	77.6	227.0
LF28	2.09	0.95	8.36	3.79	8.93	4.05	20.97	9.51	21.52	9.76	19.0	55.6	35.0	102.4	38.7	113.2	84.7	247.8	88.3	258.5
LF30	3.15	1.43	12.48	5.66	13.27	6.02	33.53	15.21	34.33	15.57	34.9	102.0	68.3	200.0	75.3	220.4	186.4	545.5	193.4	565.9
LF50	3.53	1.60	13.32	6.04	14.33	6.50	34.39	15.60	35.38	16.05	35.5	104.0	70.1	205.0	86.6	253.4	188.1	550.5	204.7	598.9
LF80	4.63	2.10	15.10	6.85	15.98	7.25	36.60	16.60	37.48	17.00	45.0	131.8	82.1	240.3	90.2	263.9	200.1	585.5	208.1	609.1
LF90	7.28	3.30	25.46	11.55	26.96	12.23	63.21	28.67	64.71	29.35	153.8	450.0	224.7	657.5	259.4	759.2	557.0	1630.1	591.8	1731.8
LF140	8.05	3.65	27.18	12.33	29.15	13.22	64.93	29.45	66.93	30.36	195.5	573.0	263.1	770.0	298.3	873.0	595.5	1742.6	630.7	1845.6
LF250	15.65	7.10	41.84	18.98	44.11	20.01	97.93	44.42	100.18	45.44	599.4	1754.0	821.5	2404.0	864.2	2529.0	1798.8	5264.0	18471.5	5389.0

Notes:
- * To obtain Weight of Model-3:
  1. Select weight of flywheel plate (from chart below labeled SAE Flywheel Adapter Plates)
  2. Select weight of Model 1 or 1/S coupling (from chart above)
  3. Add flywheel plate and coupling weight together
- ** To obtain Inertia of Model-3:
  1. Select inertia of flywheel plate (from chart below labeled SAE Flywheel Adapter Plates)
  2. Select inertia of Model 1 or 1/S coupling (from chart above)
  3. Add flywheel plate and coupling inertia together

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LF Series Weight and Mass Moment of Inertia for Couplings with Hytrel® Elements

	Weight						Inertia					
	Model 1		Model 2		Hytrel®		Model 1		Model 2		Hytrel®	
Size	lb	kg	lb	kg	lb	kg	lb-in²	kg-cm²	lb-in²	kg-cm²	lb-in²	kg-cm²
LF16	5.07	2.30	10.58	4.80	–	–	17.7	206.6	43.7	512.0	–	–
LF30	11.46	5.20	29.32	13.30	14.33	6.50	68.4	800.7	186.5	2183.2	150.3	1759.4 (SAE10)
LF50	12.35	5.60	30.20	13.70	15.43	7.00	80.5	942.3	198.7	2326.0	197.4	2310.8 (SAE 11.5)

LF Series Weight and Mass Moment of Inertia for Couplings with Zytel® Elements

	Weight						Inertia					
	Base Element		Model 1/1S		Model 2/2S		Base Element		Model 1/1S		Model 2/2S	
Size	lb	kg	lb	kg	lb	kg	lb-in²	kg-cm²	lb-in²	kg-cm²	lb-in²	kg-cm²
LF2X	0.2	0.1	0.9	0.4	2.2	1.0	17.7	206.6	43.7	512.0	–	–
LF8X	0.6	0.3	3.3	1.5	7.7	3.5	68.4	800.7	186.5	2183.2	150.3	1759.4 (SAE10)
LF16X	1.0	0.5	4.6	2.1	13.1	5.9	80.5	942.3	198.7	2326.0	197.4	2310.8 (SAE 11.5)

SAE Flywheel Adapter Plates (3/16" thick)

SAE Flywheel Size (J620)	Weight		Inertia	
	lb	kg	lb-in²	kg-cm²
6.5	2.6	1.2	26	76
7.5	3.4	1.5	42	123
8	4.1	1.9	60	176
10	6.0	2.7	122	357
11.5	7.7	3.5	193	565
14	12.8	5.8	589	1724

LF Series Floating-Shaft – Models 6 and 6B

The following guidelines cover additional considerations unique to the floating-shaft versions of the LF coupling. Use them together with the selection information for engine applications or general applications found on pages T-6 through T-8.

Step 1: Torque Capacity
Values for normal torque T_{KN}, maximum torque T_{Kmax}, and continuous vibratory torque T_{Kw} remain the same and are found in the table of Performance Data on page 16 and 23.

Step 2: Stiffness Values and Wind-Up
Since 2 torsional rubber elements are used together in series, values from the Performance Data table on page 16 and 17 for dynamic torsional stiffness C_{Tdyn}, static angular stiffness C_w and static axial stiffness C_a, should be multiplied by 1/2. Values for wind-up should be multiplied by 2.

Step 3: Misalignment
Performance Data table values for allowable axial misalignment are doubled for the standard element design. Values for the S-Style version will be the same but can be increased by use of special-length sleeves (consult Lovejoy Technical Support).

Angular misalignment will be equal at both ends and should be kept within the limits given in the Performance Data table. Allowable parallel misalignment is related to the angular misalignment and the distance between shaft ends (BSE). It is calculated by applying one of the following equations:

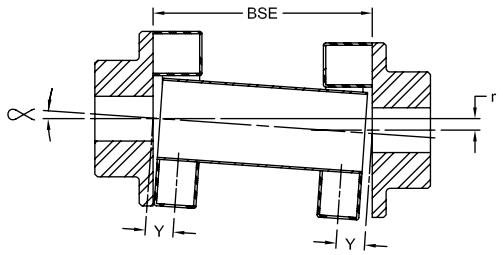
Model 6: $r=(L-2Y)\tan(\propto)$

Model 6B: $r=[(L-2(Y+BT)]\tan(\propto)$

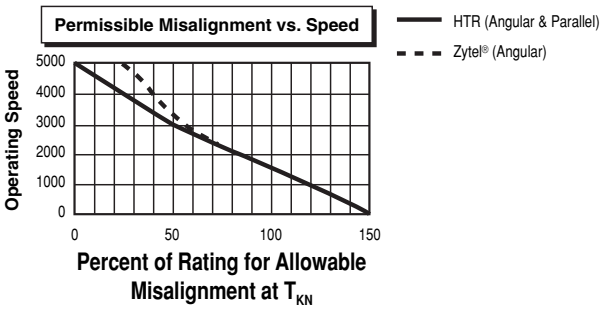
$\propto$ = angular misalignment (degrees)

r = parallel misalignment inches (mm)

and BSE,Y, and BT inches (mm) are from the dimension table.



The angular and parallel misalignment values are dependent on speed.



Step 4: Selecting Model 6 or Model 6B (HTR only)
The basic model 6 is suitable for most short or medium length spans (distance between shaft ends). Longer spans and higher speeds will require the bearing-supported floating shaft feature of Model 6B. Regardless of length, some applications will require the Model 6B design based on speed alone. Use the Maximum Speed and Length table to guide your choice or consult Lovejoy Technical Support for assistance.

LVK Series

The LVK Series is designed for direct coupled equipment. The LVK Series coupling is highly torsionally compliant, allowing the engine to drive a large inertia load safely away from damaging torsional resonance or critical speeds. The coupling selection should be verified with a Torsional Vibration Analysis of the system (see page T-10).



Element Features

- 50 & 60 Durometer (Shore A scale) available
- -40° to 194° F temperature range
- Available in SAE J620 6.5 through 14 Flywheel sizes (some metric sizes available upon request)
- Blind assembly, no lubrication
- Material available in HTR and EPDM

Hub Features

- High quality powdered-metal construction
- Splined hubs available with L-LOC clamping system
- Engagement Dogs are slightly crowned to avoid edge pressure due to misalignment
- Available in bore with keyway and spline connections

Typical Applications

Compressors, centrifugal pumps, hydraulic pumps and generator sets.

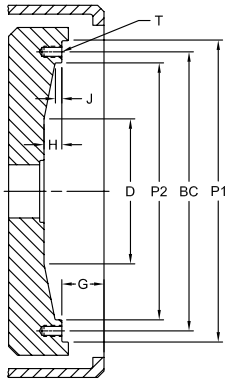
LVK Series Performance Data

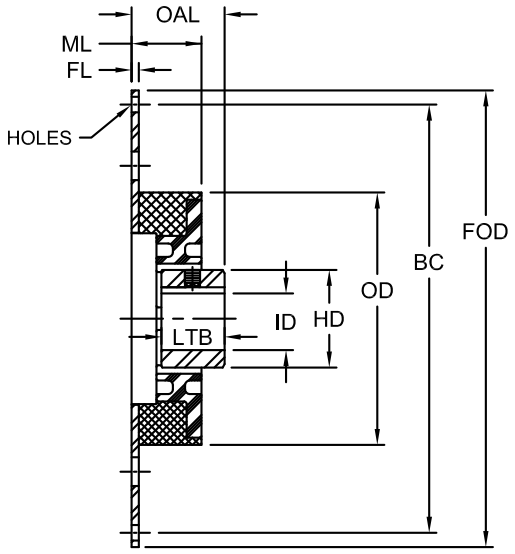
Size	SAE Flywheel Size	Hardness Shore A scale	Power at 2100 RPM HP	Power at 2100 RPM kW	Nominal Torque T_{KN} in-lbs	Nominal Torque T_{KN} Nm	Maximum Torque T_{Kmax} in-lb	Maximum Torque T_{Kmax} Nm	Continuous Vibratory Torque T_W in-lb	Continuous Vibratory Torque T_W Nm	Dynamic Stiffness C_{Tdyn} in-lbs/rad	Dynamic Stiffness C_{Tdyn} Nm
LVK25	7.5, 8	50	62	46	1,875	212	4,500	508	750	85	12,586	1 422
	10, 11.5	60	90	67	2,700	305	5,750	650	1,080	122	21,658	2 447
LVK30	8, 10	50	98	73	2,945	333	7,089	801	1,180	133	18,201	2 056
	11.5	60	142	106	4,250	480	10,825	1 223	1,700	192	21,970	2 482
LVK35	10, 11.5	50	136	101	4,075	460	9,781	1 105	1,630	184	25,820	2 917
	14	60	193	144	5,800	655	14,500	1 638	2,320	262	31,167	3 521

T

SAE J620 Flywheel Dimensional Data

Nominal Clutch (flywheel) Size	P1 in	P1 mm	BC in	BC mm	P2 in	P2 mm	J in	J mm	H in	H mm	G in	G mm	D in	D mm	T Tapped Holes Qty	T Tapped Holes Size
6.5	8.500	215.90	7.875	200.02	7.25	184.2	0.38	9.7	0.50	12.7	1.19	30.2	5.00	127.0	6	5/16-18
7.5	9.500	241.30	8.750	222.25	8.12	206.4	0.50	12.7	0.50	12.7	1.19	30.2	—	—	8	5/16-18
8	10.375	263.52	9.625	244.48	8.88	225.6	0.50	12.7	0.50	12.7	2.44	62.0	—	—	6	3/8-16
10	12.375	314.32	11.625	295.28	10.88	276.4	0.50	12.7	0.62	15.7	2.12	53.8	7.75	196.9	8	3/8-16
11.5	13.875	352.42	13.125	333.38	12.38	314.5	0.88	22.4	1.12	28.4	1.56	39.6	8.00	203.2	8	3/8-16
14	18.375	466.72	17.250	438.15	16.12	409.4	0.88	22.4	1.12	28.4	1.00	25.4	8.75	222.2	8	1/2-13
16	20.375	517.52	19.250	488.95	18.12	460.2	0.88	22.4	1.12	28.4	0.62	15.7	10.00	254.0	8	1/2-13
18	22.500	571.50	21.375	542.92	19.62	498.3	1.25	31.8	1.25	31.8	0.62	15.7	—	—	6	5/8-11
21	26.500	673.10	25.250	641.35	23.00	584.2	1.25	31.8	1.25	31.8	0.00	0.0	—	—	12	5/8-11
24	28.875	733.43	27.250	692.15	25.38	644.7	1.25	31.8	1.25	31.8	0.00	0.0	—	—	12	3/4-10





LVK Series - SAE J620 Flywheel Application Dimensional Data

Size		FOD		BC				FL		ML		OAL		OD		HD		LTB*		ID			
		Flange Dimensions								Element Dimensions						Hub Dimensions				Min Bore		Max Bore	
	SAE Flywheel Size					Number / Dia of Holes		Flange Thickness		Mounting Length				Element		Hubstar							
		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
LVK25	6.5	8.50	215.9	7.875	200.0	6 x 0.33	6 x 8.5	0.19	4.8	1.83	46.50	–	–	6.90	175.3	2.56	65	—	—	9/16	15	1-9/16	40
	7.5	9.50	241.3	8.750	222.3	8 x 3.30	8 x 8.5					2.17	55					1.26	32				
	8	10.38	263.5	9.625	244.5	6 x 0.41	6 x 10.5					2.68	68					1.89	48				
	10	12.38	314.3	11.625	295.3	6 x 0.41	8 x 10.5					3.00	76					2.20	56				
	11.5	13.88	352.4	13.125	333.4	8 x 0.41	8 x 10.5					–	–					–	–				
LVK30	8	10.38	263.5	9.625	244.5	6 x 0.41	6 x 10.5	0.19	4.8	2.13	54.10	2.72	69	8.10	205.7	3.35	85	1.97	42	13/16	20	2-1/8	55
	10	12.38	314.3	11.625	295.3	8 x 0.41	8 x 10.5					2.95	75					1.89	48				
	11.5	13.88	352.4	13.125	333.4	8 x 0.41	8 x 10.5																
LVK35	11.5	13.88	352.4	13.125	333.4	8 x 0.41	8 x 10.5	0.19	4.8	2.20	55.88	2.80	71	8.65	219.7	3.35	85	1.97	42	13/16	20	2-1/8	55
	14	18.38	466.7	17.250	438.2	8 x 0.50	8 x 12.7					3.03	77					1.89	48				

Note: ■ * indicates: Shorter or longer hub lengths available upon request.

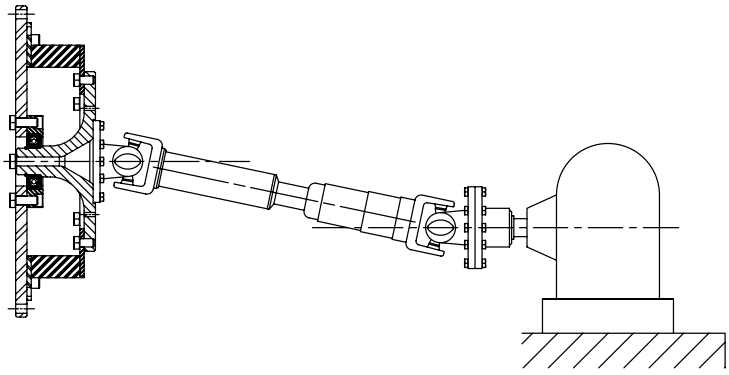
LV Series

The LV Series coupling is designed and built for diesel engine driven equipment such as agricultural and offroad equipment using universal joint drive shafts. The LV Series is ideal for universal joint driven equipment applications as well as other arrangements. The LV Series couplings are highly torsionally compliant, allowing the engine to drive a large inertia load safely away from damaging torsional resonance and critical speeds. The coupling selection should be verified with a Torsional Vibration Analysis of the system (see page T-10).



Element Features:

- 50 & 60 Durometer (Shore A scale) available
- - 40° to 194° F temperature range
- Available in SAE J620 6.5 through 14 flywheel sizes and varies in metric sizes
- Blind assembly, no lubrication
- Material available in HTR and EPDM



Optional Hub Features:

- LVC Style hub available for straight and spline bores upon request
- Splined hubs available with L-LOC clamping system

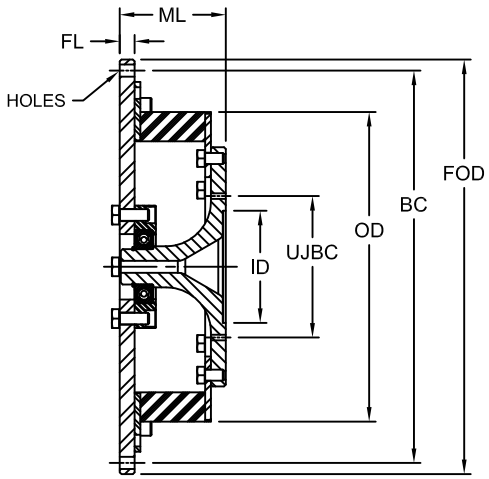
Typical Applications

LVC style is excellent for adapting the LV coupling to applications with generators, reciprocation pumps and compressors, screw compressors, and other equipment driven directly off an SAE flywheel.

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LV Series Performance Data

Size	SAE Flywheel Size	Hardness Shore A scale	Power at 2000 RPM HP	Power at 2000 RPM kW	Nominal Torque T_{KN} in-lbs	Nominal Torque T_{KN} Nm	Maximum Torque T_{Kmax} in-lb	Maximum Torque T_{Kmax} Nm	Continuous Vibratory Torque T_W in-lb	Continuous Vibratory Torque T_W Nm	Dynamic Torsional Stiffness C_{Tdyn} in-lb/rad	Dynamic Torsional Stiffness C_{Tdyn} Nm/rad
LV200	10, 11.5, 14	50	177	132	5,578	630	16,815	1 900	1,395	158	726	82
		60										
LV250	10, 11.5, 14	50	238	178	7,500	847	21,596	2 440	1,875	212	871	98
		60										
LV350	10, 11.5, 14	50	343	256	10,820	1 223	31,860	3 600	2,705	306	1,417	160
		60										



LV Series - SAE J620 Flywheel Application Dimensional Data

	Flange Dimensions										U-Joint Adapter Plate						
	SAE Flywheel Size	FOD		BC		Number / Dia of Holes		FL Flange Thickness		ML Mounting Length		U-Joint Adapter Model	UJBC Bolt Circle Dia		Number of Holes	Thread Size	ID Pilot ID 0.100 Inch	Pilot Depth 2.54 mm
Size		in	mm	in	mm	in	mm	in	mm	in	mm	Number	in	mm		UNF	in	mm
LV200	10	12.375	314.3	11.625	295.3	8 x 0.41	8 x 10.5	0.50	12.7	3.55	90.2	—	—	—	—	—	—	—
	11.5	13.875	352.4	13.125	333.4	8 x 0.41	8 x 10.5					31	3.125	79.4	4	3/8-24 UNF 2B	2.375	60.4
	14	18.375	466.7	17.250	438.2	8 x 0.50	8 x 12.7					35/41	3.750	95.3	4	7/16-20 UNF 2B	2.750	69.9
LV250	10	12.375	314.3	11.625	295.3	8 x 0.41	8 x 10.5	0.50	12.7	3.55	90.2	35/41	3.750	95.3	4	7/16-20 UNF 2B	2.750	69.9
	11.5	13.875	352.4	13.125	333.4	8 x 0.41	8 x 10.5					48/55	4.750	120.7	4	1/2-20 UNF 2B	3.750	95.3
	14	18.375	466.7	17.250	438.2	8 x 0.50	8 x 12.7					61	6.125	155.6	8	3/8-24 UNF 2B	6.625	168.3
LV350	10	12.375	314.3	11.625	295.3	8 x 0.41	8 x 10.5	0.50	12.7	3.55	90.2	61	6.125	155.6	8	3/8-24 UNF 2B	6.625	168.3
	11.5	13.875	352.4	13.125	333.4	8 x 0.41	8 x 10.5					71	7.250	184.2	8	3/8-24 UNF 2B	7.750	196.9
	14	18.375	466.7	17.250	438.2	8 x 0.50	8 x 12.7					—	—	—	—	—	—	—

LM Series

The LM Series torsional couplings are designed specifically for diesel engine driven equipment. The LM couplings are highly torsionally compliant, allowing the engine to drive a relatively small inertia load safely from damaging torsional resonance over a wide speed range from low idle RPM to full engine speed. This task is accomplished by shifting the critical speeds far enough below the idle speed allowing full use of the entire working speed range of the engine with very few limitations. These engineered couplings affect an attenuated level of stress throughout the whole drive train by reducing vibratory torque to a very low level. The coupling selection should be verified with a Torsional Vibration Analysis of the system.



Materials

Elastomeric Element

- Temperature-resistant natural rubber available in a variety of Shore A scale hardness to suite individual application requirements
- -49° to 200° F operating temperature range
- Silicone element available for high ambient temperatures
- EPDM available for chemical resistant
- -49° to 250° F operating temperature range

Outer Ring

- High-grade cast aluminum alloy

Inner Hub

- Steel with minimum tensile strength of 85,000 psi (600 N/mm^2)
- Available in bore with keyway and spline connections
- Taper-Loc spline hubs available
- Splines with L-LOC available

Typical Applications

- Splitter-gear multiple pump drives
- Generator sets (2-bearing)
- Locomotives
- Hydraulic pumps
- Centrifugal pumps
- Compressors

Range of Sizes

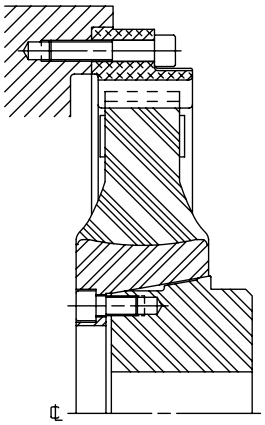
- 8 sizes ranging from nominal torques of 2,210 to 33,600 in-lb (250 to 3800 Nm)
- SAE J620 Flywheel sizes available from 6 through 18
- 3 coupling design types

LM Torsional Coupling Design Types

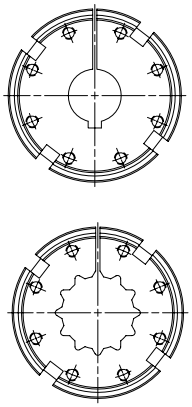
Type SB
Sizes 240 to 2400

The driven inner hub consists of two pieces: the vulcanized steel ring and the inner tapered hub. These two parts are bolted together and the torque is transmitted by the friction force created by the axial bolts, drawing the tapered hub into the mating taper in the element.

This is a long tapered fit, but can easily disassembled if the coupling has to be removed. The vulcanized steel ring creates a very high inward pressure acting on the inner driven tapered hub. To utilize this pressure, the driven hub is slotted in an axial direction. This compresses the driven hub and driven shaft. This clamping effect can be used equally well on cylindrical shafts with keys or splined shafts.



Type SB

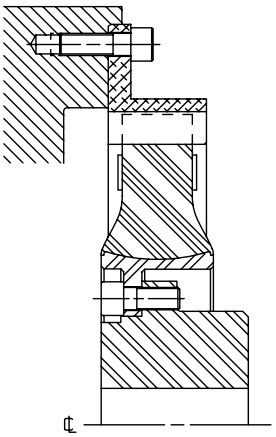


Tapered Locking Hubs

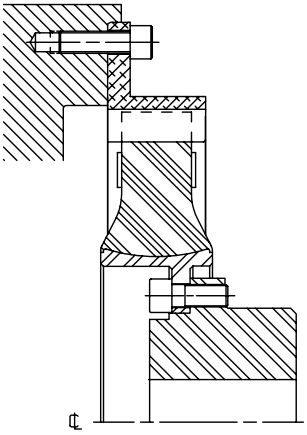
Type SC
Sizes 2800 to 3500

An inner ring made of spheroidal cast iron is vulcanized into the elastomeric element. This flange is bolted to the inner tapered hub. Depending upon the arrangement of the elastomeric element, two different lengths are possible utilizing the same components.

Standard Configuration: **SCA**
Reversed Element: **SCB**
(extended mounting length)



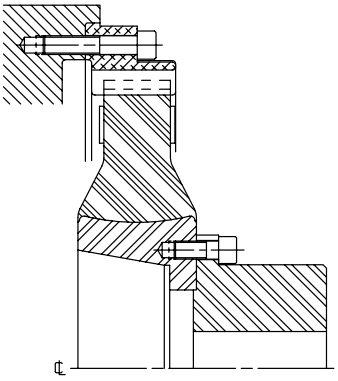
Type SCA



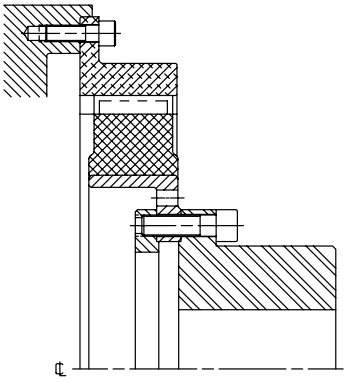
Type SCB

Types SBE and SCE
Special Radial Assembly / Disassembly Types
(Drop-Out Types) All Sizes

The elastomeric element can be changed quickly and easily without disturbing the coupling shaft, provided the flywheel housing does not protrude too much. These versions can be particularly advantageous on larger sizes, especially if the hub is interference fit.



Type SBE



Type SCE

Special Types

In addition to the standard types shown here, many special types have been developed. Please contact Lovejoy Technical Support for more information.

LM Series - SB, SCA and SCB (HTR) Performance Data

Size	Hardness (Durometer) Shore A scale	Nominal Torque Rating T_{KN}		Max Torque Rating T_{Kmax}		Continuous* Vibratory Torque T_{KW}		Allowable Power Loss P_{KV}	Dynamic** Torsional Stiffness C_{Tdyn}		Flange Size for J620 Flywheel	Max Speed N_{max}	Mass Moment of Inertia			
													Primary*** J_1		Secondary J_2	
		in-lb	Nm	in-lb	Nm	in-lb	Nm	Watts	in-lb/rad	Nm/rad		RPM	lb-in²	kg-m²	lb-in²	kg-m²
LM240	50	2,210	250	4,430	500	885	100	37	8,190	925	8	4,000	17.77	0.021	3.25	0.004
	60	2,660	300	5,310	600	1,060	120		12,400	1 400	10	3,600	26.74	0.031	3.25	0.004
	70	3,100	350	6,640	750	1,240	140		19,900	2 250	—	—	—	—	—	—
LM400	50	3,540	400	7,080	800	1,420	160	62	14,200	1 600	10	3,600	0.04	0.037	0.01	0.011
	60	4,430	500	8,850	1 000	1,770	200		22,100	2 500	11.5					
	70	4,870	550	9,740	1 100	1,950	220		35,400	4 000	14					
LM800	50	6,200	700	12,400	1 400	2,480	280	105	24,800	2 800	10	3,600	51.17	0.060	25.29	0.030
	60	7,520	850	15,000	1 700	3,000	340		37,200	4 200	11.5	3,500	62.53	0.073	25.29	0.030
	70	8,400	950	17,700	2 000	3,360	380		60,200	6 800	14	3,000	117.70	0.138	25.29	0.030
LM1200	50	8,850	1 000	17,700	2 000	3,540	400	150	39,800	4 500	11.5	3,500	65.61	0.077	38.95	0.046
	60	10,600	1 200	21,200	2 400	4,250	480		61,900	7 000	14	3,000	12.23	0.014	38.95	0.046
	70	11,500	1 300	26,600	3 000	4,600	520		104,000	11 700	—	—	—	—	—	—
LM1600	50	12,800	1 450	26,700	2 900	5,130	580	220	53,100	6 000	11.5	3,200	191.40	0.224	66.63	0.078
	60	15,900	1 800	31,900	3 600	6,370	720		79,600	9 000	14	3,000	168.30	0.020	66.63	0.078
											16	2,500	234.10	0.274	66.63	0.078
	70	17,700	2 000	35,400	4 000	7,080	800		133,000	15 000	18	2,300	329.30	0.386	66.63	0.078
LM2400	50	17,700	2 000	35,400	4 000	7,080	800	300	88,500	1 000	14	3,000	182.00	0.213	130.70	0.153
	60	22,100	2 500	44,300	5 000	8,850	1 000		133,000	15 000	16	2,500	247.70	0.290	130.70	0.153
	70	24,800	2 800	53,100	6 000	9,910	1 120		221,000	25 000	18	2,300	343.00	0.402	130.70	0.153
LM2800	50	24,800	2 800	53,100	6 000	9,910	1 120	360	221,000	25 000	14	3,000	242.30	0.284	192.80	0.226
	60	26,600	3 000	66,400	7 500	10,600	1 200		332,000	37 500	16	2,500	269.80	0.316	192.80	0.226
	70	28,300	3 200	70,800	8 000	11,300	1 280		558,000	63 000	18	2,300	364.90	0.427	192.80	0.226
LM3500	50	28,300	3 200	57,500	6 500	11,300	1 280	450	142,000	16 000	14	3,000	242.30	0.284	196.10	0.230
	60	31,000	3 500	70,800	8 000	12,400	1 400		212,000	24 000	16	2,500	374.90	0.439	196.10	0.230
	70	33,600	3 800	75,200	8 500	13,500	1 520		336,000	38 000	18	2,300	501.70	0.587	196.10	0.230

Notes:
- * indicates: At 10 Hz.
- ** indicates: Constant value for natural rubber.
- *** indicates: Flywheel side of the coupling.

Resonance Factor V_R
Relative Damping Factor Ψ

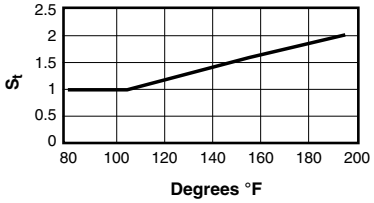
High Temperature Rubber (HTR)		
f in Hz	V_r	Ψ
35-40	12.0	0.52
50	6.0	1.05
60	5.7	1.10
70	5.5	1.15

Frequency Factor S_f

f in H_z	≤10	≥10
Sf	1	$\sqrt{f/10}$

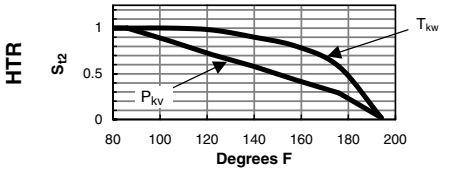
Silicone Temperature Factor S_t

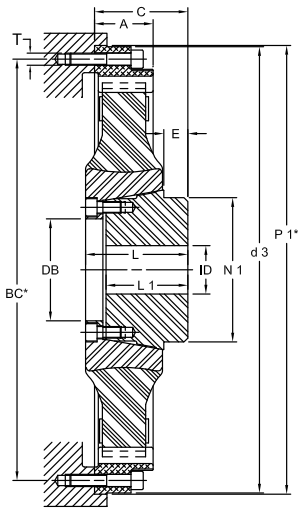
$T_{KN} \geq T_{LN} \bullet S_t$



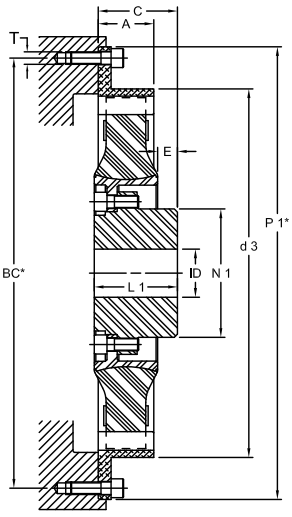
Temperature Factor S_{t2} for Cont. Vibr. Torque T_{kw} and Allowable Power Loss P_{kv}

$P_v < P_{kv} * S_{t2}$
$T_w < T_{kw} * S_{t2} * (1/S_f)$

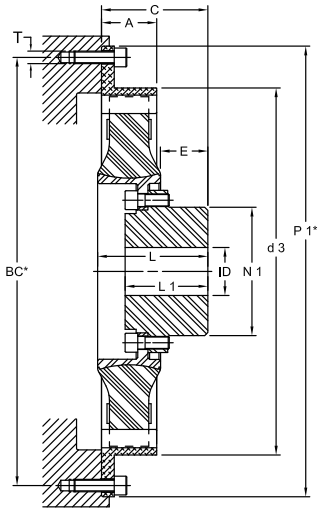




240 – 2400 SB



2800 – 3500 SCA



2800 – 3500 SCB

Note: ■ * indicates: SAE J620 Flywheel Dimensional Data can be found on page T-41.

LM Series - SB, SCA and SCB (HTR) Dimensional Data

Size		SAE J620	A		C**		ID Min Bore		ID Max Bore		d3		DB		E		L		L1		N1		Weight	
			in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
240 SB	Tapered	8	1.81	46	2.95 ± 0.35	75 ± 9	0.59	15	1.97	50	10.31	262	1.97	50	1.06	27	2.95	75	2.36	60	2.87	73	2.77	6.1
		10	1.81	46	2.95 ± 0.35	75 ± 9	0.59	15	1.97	50	8.86	225	1.97	50	1.06	27	2.95	75	2.36	60	2.87	73	2.95	6.5
400 SB		10	1.77	45	2.95 ± 0.28	75 ± 7	0.79	20	2.36	60	12.32	313	2.40	61	0.98	25	3.15	80	2.56	65	3.54	90	3.90	8.6
800 SB		10	1.97	50	3.22 ± 0.08	82 ± 2	0.79	20	2.76	70	12.44	316	2.80	71	0.71	18	3.31	84	2.60	66	4.21	107	5.03	11.1
		11.5	1.54	39	2.80 ± 0.12	71 ± 3	0.79	20	2.76	70	13.82	351	2.80	71	0.71	18	3.31	84	2.60	66	4.21	107	4.58	10.1
		14	1.81	46	2.91 ± 0.24	74 ± 6	0.79	20	2.76	70	12.52	318	2.80	71	0.71	18	3.31	84	2.60	66	4.21	107	5.22	11.5
1200 SB		11.5	1.54	39	2.56 ± 0.16	65 ± 4	0.79	20	2.76	70	13.82	351	2.80	71	0.71	18	3.31	84	2.60	66	4.21	107	6.58	14.5
		14	1.81	46	2.91 ± 0.24	74 ± 6	0.79	20	2.76	70	13.82	351	2.80	71	0.71	18	3.31	84	2.60	66	4.21	107	7.44	16.4
1600 SB		14	2.40	61	3.82 ± 0.43	97 ± 11	1.18	30	4.13	105	18.31	465	4.17	106	1.02	26	4.17	106	3.35	85	5.91	150	10.21	22.5
		16	2.40	61	3.82 ± 0.43	97 ± 11	1.18	30	4.13	105	16.42	417	4.17	106	1.02	26	4.17	106	3.35	85	5.91	150	10.80	23.8
		18	2.40	61	3.82 ± 0.43	97 ± 11	1.18	30	4.13	105	16.42	417	4.17	106	1.02	26	4.17	106	3.35	85	5.91	150	11.48	25.3
2400 SB		14	2.40	61	3.82 ± 0.24	97 ± 6	1.18	30	4.13	105	18.31	465	4.17	106	1.02	26	4.17	106	3.35	85	5.91	150	14.11	31.1
		16	2.40	61	3.82 ± 0.24	97 ± 6	1.18	30	4.13	105	16.42	417	4.17	106	1.02	26	4.17	106	3.35	85	5.91	150	14.70	32.4
		18	2.40	61	3.82 ± 0.24	97 ± 6	1.18	30	4.13	105	16.42	417	4.17	106	1.02	26	4.17	106	3.35	85	5.91	150	15.38	33.9
2800 SCA	Bolted	14	2.40	61	3.66 ± 0.16	93 ± 4	1.38	35	4.33	110	18.31	465	—	—	1.34	34	—	—	4.13	105	6.38	162	14.29	31.5
		16	2.40	61	3.66 ± 0.16	93 ± 4	1.38	35	4.33	110	16.42	417	—	—	1.34	34	—	—	4.13	105	6.38	162	14.88	32.8
		18	2.40	61	3.66 ± 0.16	93 ± 4	1.38	35	4.33	110	16.42	417	—	—	1.34	34	—	—	4.13	105	6.38	162	15.56	34.3
2800 SCB		14	2.40	61	5.31 ± 0.16	135 ± 4	1.38	35	4.33	110	18.31	465	—	—	2.99	76	5.16	131	4.13	105	6.38	162	14.29	31.5
		16	2.40	61	5.31 ± 0.16	135 ± 4	1.38	35	4.33	110	16.42	417	—	—	2.99	76	5.16	131	4.13	105	6.38	162	14.88	32.8
		18	2.40	61	5.31 ± 0.16	135 ± 4	1.38	35	4.33	110	16.42	417	—	—	2.99	76	4.96	126	4.13	105	6.38	162	15.56	34.3
3500 SCA		14	2.76	70	3.94 ± 0.31	100 ± 8	1.38	35	4.33	110	18.31	465	—	—	0.98	25	—	—	4.13	105	6.38	162	15.38	33.9
		16	2.76	70	3.94 ± 0.31	100 ± 8	1.38	35	4.33	110	18.31	465	—	—	0.98	25	—	—	4.13	105	6.38	162	16.60	36.6
		18	2.76	70	3.94 ± 0.31	100 ± 8	1.38	35	4.33	110	18.31	465	—	—	0.98	25	—	—	4.13	105	6.38	162	17.46	38.5
3500 SCB		14	2.76	70	5.31 ± 0.31	135 ± 8	0.24	6	4.33	110	18.31	465	—	—	2.36	60	5.51	140	4.13	105	6.38	162	15.38	33.9
		16	2.76	70	5.31 ± 0.31	135 ± 8	1.38	35	4.33	110	18.31	465	—	—	2.36	60	5.51	140	4.13	105	6.38	162	16.60	36.6
		18	2.76	70	5.31 ± 0.31	135 ± 8	1.38	35	4.33	110	18.31	465	—	—	2.36	60	5.51	140	4.13	105	6.38	162	17.46	38.5

Note: ■ ** indicates: At 10 Hz.

LM Series - SBE and SCE (HTR) Performance Data

Size	Hardness (Durometer) Shore A scale	Nominal Torque Rating T_{KN} in-lb	Nominal Torque Rating T_{KN} Nm	Max Torque Rating T_{Kmax} in-lb	Max Torque Rating T_{Kmax} Nm	Continuous* Vibratory Torque T_{KW} in-lb	Continuous* Vibratory Torque T_{KW} Nm	Allowable Power Loss P_{KV} Watts	Dynamic** Torsional Stiffness C_{Tdyn} in-lb/rad	Dynamic** Torsional Stiffness C_{Tdyn} Nm/rad	Flange Size for J620 Flywheel	Max Speed N_{max} RPM	Mass Moment of Inertia Primary*** J_1 lb-in²	Mass Moment of Inertia Primary*** J_1 kg-m²	Mass Moment of Inertia Secondary J_2 lb-in²	Mass Moment of Inertia Secondary J_2 kg-m²
LM240	50	2,210	250	4,430	500	885	100	37	8,190	925	8	4,000	17.77	0.021	3.25	0.004
	60	2,660	300	5,310	600	1,060	120		12,400	1 400	10	3,600	26.74	0.031	3.25	0.004
	70	3,100	350	6,640	750	1,240	140		19,900	2 250	—	—	—	—	—	—
LM400	50	3,540	400	7,080	800	1,420	160	62	14,200	1 600	10	3,600	0.04	0.037	0.01	0.011
	60	4,430	500	8,850	1 000	1,770	200		22,100	2 500	11.5					
	70	4,870	550	9,740	1 100	1,950	220		35,400	4 000	14					
LM800	50	6,200	700	12,400	1 400	2,480	280	105	24,800	2 800	10	3,600	51.17	0.060	25.29	0.030
	60	7,520	850	15,000	1 700	3,000	340		37,200	4 200	11.5	3,500	62.53	0.073	25.29	0.030
	70	8,400	950	17,700	2 000	3,360	380		60,200	6 800	14	3,000	117.70	0.138	25.29	0.030
LM1200	50	8,850	1 000	17,700	2 000	3,540	400	150	39,800	4 500	11.5	3,500	65.61	0.077	38.95	0.046
	60	10,600	1 200	21,200	2 400	4,250	480		61,900	7 000	14	3,000	12.23	0.014	38.95	0.046
	70	11,500	1 300	26,600	3 000	4,600	520		104,000	11 700	—	—	—	—	—	—
LM1600	50	12,800	1 450	26,700	2 900	5,130	580	220	53,100	6 000	11.5	3,200	191.40	0.224	66.63	0.078
	60	15,900	1 800	31,900	3 600	6,370	720		79,600	9 000	14	3,000	168.30	0.020	66.63	0.078
											16	2,500	234.10	0.274	66.63	0.078
	70	17,700	2 000	35,400	4 000	7,080	800		133,000	15 000	18	2,300	329.30	0.386	66.63	0.078
LM2400	50	17,700	2 000	35,400	4 000	7,080	800	300	88,500	1 000	14	3,000	182.00	0.213	130.70	0.153
	60	22,100	2 500	44,300	5 000	8,850	1 000		133,000	15 000	16	2,500	247.70	0.290	130.70	0.153
	70	24,800	2 800	53,100	6 000	9,910	1 120		221,000	25 000	18	2,300	343.00	0.402	130.70	0.153
LM2800	50	24,800	2 800	53,100	6 000	9,910	1 120	360	221,000	25 000	14	3,000	242.30	0.284	192.80	0.226
	60	26,600	3 000	66,400	7 500	10,600	1 200		332,000	37 500	16	2,500	269.80	0.316	192.80	0.226
	70	28,300	3 200	70,800	8 000	11,300	1 280		558,000	63 000	18	2,300	364.90	0.427	192.80	0.226
LM3500	50	28,300	3 200	57,500	6 500	11,300	1 280	450	142,000	16 000	14	3,000	242.30	0.284	196.10	0.230
	60	31,000	3 500	70,800	8 000	12,400	1 400		212,000	24 000	16	2,500	374.90	0.439	196.10	0.230
	70	33,600	3 800	75,200	8 500	13,500	1 520		336,000	38 000	18	2,300	501.70	0.587	196.10	0.230

Notes:
- * indicates: At 10 Hz.
- ** indicates: Constant value for natural rubber.
- *** indicates: Flywheel side of the coupling.

Resonance Factor V_R
Relative Damping Factor Ψ

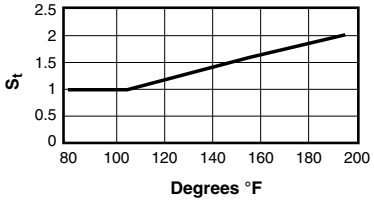
High Temperature Rubber (HTR)		
f in Hz	V_r	Ψ
35-40	12.0	0.52
50	6.0	1.05
60	5.7	1.10
70	5.5	1.15

Frequency Factor S_f

f in H_z	≤10	≥10
Sf	1	$\sqrt{f/10}$

Silicone Temperature Factor S_t

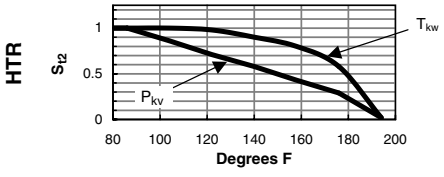
$T_{KN} \geq T_{LN} \bullet S_t$

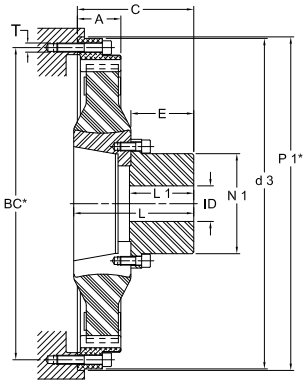


Temperature Factor S_{t2} for Cont. Vib. Torque T_{kw} and Allowable Power Loss P_{kv}

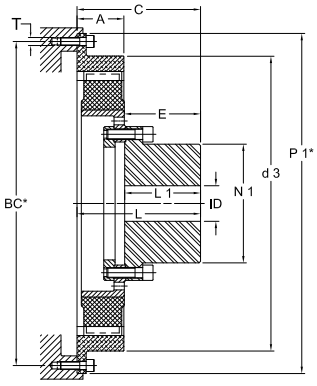
$P_v < P_{kv} * S_{t2}$

$T_w < T_{kw} * S_{t2} * (1/S_f)$

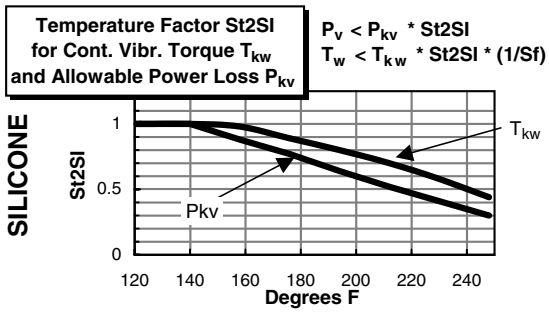




2800 - 3500 SBE



2800 - 3500 SCE



Note: ■ * indicates: SAE J620 Flywheel Dimensional Data can be found on page T-41.

LM Series - SBE and SCE (HTR) Radial Dimensional Data

Size	SAE J620	A in	A mm	C** in			C** mm			ID Min Bore in	ID Min Bore mm	ID Max Bore in	ID Max Bore mm	d3 in	d3 mm	E in	E mm	L in	L mm	L1 in	L1 mm	N1 in	N1 mm	Weight lb	Weight kg
240 SBE	8	1.81	46	4.45	±	0.08	113	±	2	0.59	15	1.77	45	10.31	262	2.28	58	4.17	106	2.36	60	2.60	66	2.18	4.8
	10	1.81	46	4.45	±	0.08	113	±	2	0.59	15	1.77	45	8.86	225	2.28	58	4.17	106	2.36	60	2.60	66	2.36	5.2
400 SBE	10	1.77	45	4.61	±	0.08	117	±	2	0.79	20	2.17	55	12.32	313	2.48	63	4.65	118	2.56	65	3.35	85	3.45	7.6
800 SBE	11.5	1.54	39	4.61	±	0.08	117	±	2	0.79	20	2.56	65	13.82	351	2.52	64	5.12	130	2.60	66	3.94	100	5.03	11.1
	14	1.81	46	4.69	±	0.08	119	±	2	0.79	20	2.56	65	12.52	318	2.52	64	5.12	130	2.60	66	3.94	100	6.35	14.0
1200 SBE	11.5	1.54	39	4.45	±	0.08	113	±	2	0.79	20	2.56	65	13.82	351	2.52	64	5.12	130	2.60	66	3.94	100	6.89	15.2
	14	1.81	46	4.72	±	0.08	120	±	2	0.79	20	2.56	65	13.82	351	2.52	64	5.12	130	2.60	66	3.94	100	8.30	18.3
1600 SBE	14	2.40	61	6.61	±	0.08	168	±	2	1.18	30	3.94	100	18.31	465	3.46	88	6.61	168	3.54	90	5.51	140	11.43	25.2
	16	2.40	61	6.61	±	0.08	168	±	2	1.18	30	3.94	100	16.42	417	3.46	88	6.61	168	3.54	90	5.51	140	12.02	26.5
	18	2.40	61	6.61	±	0.08	168	±	2	1.18	30	3.94	100	16.42	417	3.46	88	6.61	168	3.54	90	5.51	140	12.70	28.0
2400 SBE	14	2.40	61	6.42	±	0.08	163	±	2	1.18	30	3.94	100	18.31	465	3.46	88	6.61	168	3.54	90	5.51	140	14.83	32.7
	16	2.40	61	6.42	±	0.08	163	±	2	1.18	30	3.94	100	16.42	417	3.46	88	6.61	168	3.54	90	5.51	140	15.42	34.0
	18	2.40	61	6.42	±	0.08	163	±	2	1.18	30	3.94	100	16.42	417	3.46	88	6.61	168	3.54	90	5.51	140	16.10	35.5
2800 SCE	14	2.40	61	6.46	±	0.08	164	±	2	1.38	35	4.13	105	18.31	465	4.06	103	6.22	158	4.13	105	6.06	154	14.65	32.3
	16	2.40	61	6.46	±	0.08	164	±	2	1.38	35	4.13	105	16.42	417	4.06	103	6.22	158	4.13	105	6.06	154	15.24	33.6
	18	2.40	61	6.46	±	0.08	164	±	2	1.38	35	4.13	105	16.42	417	4.06	103	6.22	158	4.13	105	6.06	154	15.92	35.1
3500 SCE	14	2.76	70	7.28	±	0.08	185	±	2	0.24	6	4.13	105	18.31	465	4.06	103	7.20	183	4.13	105	6.06	154	16.92	37.3
	16	2.76	70	7.28	±	0.08	185	±	2	1.38	35	4.13	105	18.31	465	4.06	103	7.20	183	4.13	105	6.06	154	18.14	40.0
	18	2.76	70	7.28	±	0.08	185	±	2	1.38	35	4.13	105	18.31	465	4.06	103	7.20	126	4.13	105	6.06	154	19.01	41.9

Note: ■ ** indicates: The rubber element can be positioned closer to or farther from the flywheel within the limits shown for this dimension, while maintaining full engagement with the outer drive ring. Hub length L1 is adjustable as well with corresponding changes to mounting length dimension C.

LM Series - Silicone (50 shore A) Performance Data

Size	Nominal Torque Rating T_{KN} in-lb	Nm	*Max Torque1 T_{Kmax1} in-lb	Nm	**Max Torque2 T_{Kmax2} in-lb	Nm	Continuous Vibratory Torque T_{KW} in-lb	Nm	Allowable Power Loss P_{KV} HP	Watts	Dynamic Torsional Stiffness*** C_{Tdyn} 10% T_{KN} in-lb/rad	Nm/rad	25% T_{KN} in-lb/rad	Nm/rad	50% T_{KN} in-lb/rad	Nm/rad	75% T_{KN} in-lb/rad	Nm/rad	100% T_{KN} in-lb/rad	Nm/rad	Relative Damping Ψ
LM800	6,200	700	9,290	1 050	12,400	1 400	2,480	280	0.14	105	19,500	2 200	21,200	2 400	24,800	2 800	31,000	3 500	40,700	4 600	
LM1200	8,850	1 000	13,300	1 500	17,700	2 000	3,540	400	0.20	150	31,900	3 600	34,500	3 900	39,800	4 500	49,600	5 600	65,500	7 400	
LM1600	12,800	1 450	19,500	2 200	25,700	2 900	5,100	580	0.30	220	42,500	4 800	46,000	5 200	53,100	6 000	66,400	7 500	87,600	9 900	1.15
LM2400	17,700	2 000	26,600	3 000	35,400	4 000	7,080	800	0.40	300	70,800	8 000	77,000	8 700	88,500	10 000	111,000	12 500	146,000	16 500	
LM2800	24,800	2 800	37,200	4 200	49,600	5 600	9,910	1 120	0.48	360	186,000	21 000	20,400	2 300	221,000	25 000	288,000	32 500	376,000	42 500	
LM3500	28,300	3 200	42,500	4 800	56,600	6 400	11,300	1 280	0.60	450	113,000	12 800	123,000	13 900	142,000	16 000	177,000	20 000	235,000	26 500	

Notes: ■ * indicates: T_{max1} is the maximum accelerating value for transient torque spikes during the normal work cycle, for example, form accelerating through a resonance during starting and stopping or clutching.

■ ** indicates: T_{max2} represents the absolute maximum peak torque allowable during rare occasions such as during a short circuit of a gen-set or incorrect synchronization.

■ *** indicates: The silicone material creates a progressive stiffness characteristic dependent on load. These values have the tolerance of ± 15%.

The LK Series coupling is a simple two-piece design consisting of an element and hub. The couplings are designed to be used with engine driven, flange mounted, hydraulic pump systems. The couplings are "torsionally stiff" enabling hydraulic pumps and similar equipment with low mass or inertia to operate below critical speeds. The "torsionally stiff" LK Series coupling raises the critical speed above the operating range providing a system free of harmful torsional vibrations. The LK Series is ideal for hydrostatic drives on construction equipment, cranes, forklifts, excavators, vibratory rollers, tractors, etc. Virtually all engine driven hydraulic systems in the low to mid power range can use the LK Series coupling.



Element Features

- Fiberglass reinforced polyamide construction
- Impact and oil resistant
- –40° to 320° F temperature range
- SAE J620 flywheel sizes 6.5 through 14 and various metric sizes
- Universal element can be mounted to and adapter plate
- Blind assembly, no lubrication

Hub Features

- High quality powdered-metal construction
- Splined hubs available with L-LOC clamping system
- Engagement "dogs" are slightly crowned to avoid edge pressure when slight misalignment occurs
- Available in bore with keyway and spline connections

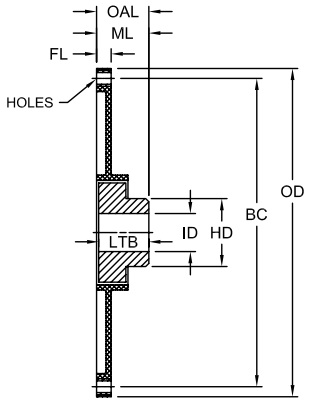
Typical Applications

Applications where a hydraulic pump is directly connected to the engine such as wheel loaders, hydraulic excavators, vibration rollers, fork lift trucks, concrete cutters, compact loaders, asphalt finishers and mobile cranes.

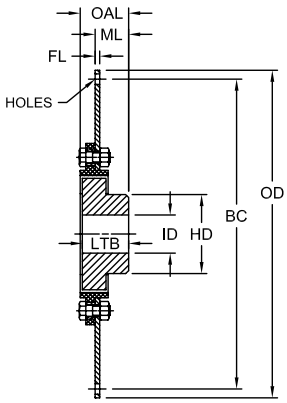
T

LK Series Performance Data

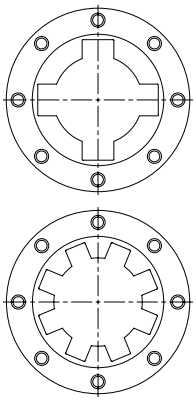
Size	SAE Flywheel Size	Nominal Torque T_{KN}		Maxium Torque T_{Kmax}		Maximum Speed	Dynamic Torsional Stiffness C_{Tdyn}								Relative Damping
							$0.25T_{KN}$		$0.50T_{KN}$		$0.75T_{KN}$		$1.00T_{KN}$		
		in-lb	Nm	in-lb	Nm	RPM	lb-in/rad	kNm/rad	lb-in/rad	kNm/rad	lb-in/rad	kNm/rad	lb-in/rad	kNm/rad	Ψ
LK80	—	1,080	125	2,880	330	6,000	Consult Lovejoy								
LK100	6.5, 7.5, 8, 10	3,540	400	7,080	800	5,000	490	55	550	62	800	90	1,060	120	
LK125	10, 11.5	7,080	800	14,160	1 600	4,500	1,370	155	1,590	180	2,800	315	4,070	460	0.4
LK150	11.5, 14	10,620	1 200	26,400	3 000	4,000	2,300	260	2,480	280	3,700	420	7,950	900	
LK150D	14	21,240	2 400	58,200	6 000	4,000	4,600	520	4,960	560	7,400	840	15,900	1 800	



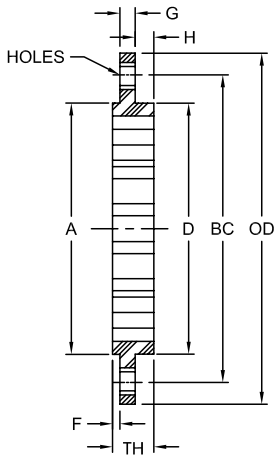
1-Piece Flange



2-Piece Flange
Universal + Plate



4, 6 and 8 Dog Patterns
Dependent on Size



LK Series - SAE J620 Flywheel Application Dimensional Data

Size	Nominal Torque Rating in-lb	Nm	ID Min Bore in	mm	ID Max Bore in	mm	SAE Flywheel Size	Flange Style	OD in	mm	BC in	mm	Number & Dia of Holes in	mm	FL Flange Thickness in	mm	HD Hubstar Dimensions in	mm	LTB* in	mm	OAL Assembly Dimensions in	mm	ML Mounting Length in	mm
LK100	3,540	400	0.563	15	1.563	40	6.5	1-PIECE	8.500	215.9	7.875	200.0	6 x 0.33	6 x 8.5	0.55	14	2.56	65	—	—	—	—	—	—
							7.5	1-PIECE	9.500	241.3	8.750	222.3	8 x 0.33		0.55	14			1.26	32	1.34	34	0.906 ± 0.118	23+/-3
							8	1-PIECE	10.375	263.5	9.625	244.5	6 x 0.41	6 x 10.5	0.55	14			2.20	56	2.28	58	2.284 ± 0.118	58+/-3
							10	1-PIECE	12.375	314.3	11.625	295.3	8 x 0.41		0.55	14			1.89	48	1.97	50	1.969 ± 0.118	50+/-3
																			—	—	—	—	—	—
LK125	7,080	800	0.813	20	2.125	55	10	1-PIECE	12.375	314.3	11.625	295.3	8 x 0.41	8 x 10.5	0.79	20	3.35	85	1.89	48	1.97	50	1.969 ± 0.118	50+/-3
							11.5	1-PIECE	13.875	352.4	13.125	333.4	8 x 0.41		0.19	20			1.97	42	2.05	46	1.417 ± 0.118	36+/-3
LK150	10,260	1 200	1.000	25	2.750	70	11.5	1-PIECE	13.875	352.4	3.125	333.4	8 x 0.41		0.79	20	4.33	110	2.09	53	2.09	53	1.299 ± 0.118	33+/-1
							14	2-PIECE	18.375	466.7	17.250	438.2	8 x 0.50	8 x 12.7	0.19	5			2.09	53	2.09	53	0.984 ± 0.118	25+/-1
LK150D	21,240	2 400	1.188	30	2.750	70	14	**	18.375	466.7	17.250	438.2	8 x 0.50		0.19	5	4.33	110	2.05	52	2.13	54	0.984 ± 0.118	25+/-1

Notes: ■ * indicates: Other shorter or longer hub lengths available for special requirements.
■ ** indicates: LK 150D uses 2 Zytel® elements in parallel with 1 steel plate.

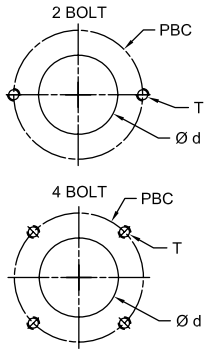
LK Series Universal Elements Dimensional Data

Size	G in	mm	H in	mm	TH in	mm	E in	mm	OD in	mm	BC in	mm	D in	mm	A Pilot in	mm	Number of Holes	S Hole Diameter in	mm
LK80-6-106	0.55	14.0	0.38	9.7	0.19	4.8	1.12	2.84	5.910	150	5.118	130	3.600	91.4	4.173	106	5	0.33	8.4
LK80-6-135	0.39	9.9	0.61	15.5	*	*	1.00	25.4	5.315	135	3.937	100	3.629	92.2	5.315	135	3	0.41	10.4
LK100-165	0.39	10.0	0.79	20.0	0.16	4.0	1.34	34.0	6.850	174	5.591	142	4.921	125.0	4.921	125	3	0.49	12.5
LK100-072	0.39	10.0	0.79	20.0	0.16	4.0	1.34	34.0	7.870	200	6.496	165	4.330	110.0	2.835	72	3	0.65	16.5
LK125-195	0.39	10.0	0.55	14.0	0.24	6.0	1.18	30.0	7.680	195	6.496	165	5.315	135.0	5.135	135	6	0.49	12.5
LK150-230	0.39	10.0	0.47	12.0	0.20	5.0	1.06	27.0	9.060	230	7.874	200	6.500	165.0	6.496	165	8	0.49	12.5

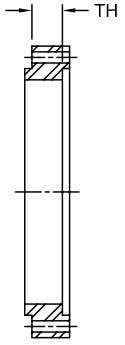
Notes: ■ * indicates: LK80-6-135 pilots on the O.D.
■ Dimensions for universal elements (for non-SAE flywheels, etc.).

Spacer Rings

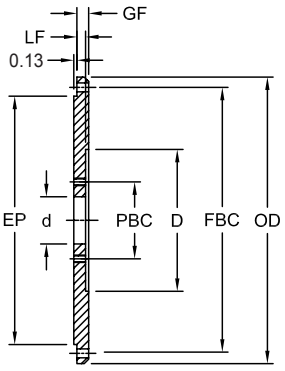
Spacer rings are available for all SAE bell housing sizes (1,2,3,4,5,6). The rings provide additional space standoff from the engine flywheel housing and the pump mounting spacer plate. The spacer ring will provide the necessary area between the flywheel and the pump for the proper torsional coupling. When ordering spacer rings, specify the SAE bell housing size and required thickness.



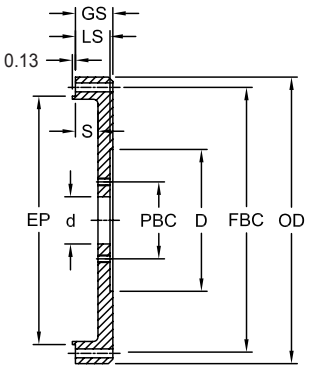
Pump Flange



Spacer Ring



Pump Mounting Plate



Unitized Spacer Ring and Pump Mounting Plate

Pump Mounting Plates - SAE J744 Dimensional Data

Flywheel Housing SAE J617C Size	GF Pump Mounting Plate		LF Pump Mounting Plate		GS LS S Spacer Plate	TH* Spacer Ring Minimum Thickness		OD		FBC Bolt Circle		EP Pilot Diameter	
	in	mm	in	mm		in	mm	in	mm	in	mm	in	mm
1	0.88	22.4	0.75	19.1	Based on customer request	0.88	23	21.75	552	20.875	530.2	20.125	511.2
2	0.88	22.4	0.75	19.1				19.25	489	18.375	466.7	17.625	447.7
3	0.50	12.7	0.44	11.2		0.63	16	17.75	451	16.875	428.6	16.125	409.6
4	0.50	12.7	0.44	11.2				15.88	403	15.000	381.0	14.250	362.0
5	0.50	12.7	0.44	11.2				14.00	356	13.125	333.4	12.375	314.3
6	0.50	12.7	0.44	11.2				12.13	308	11.250	285.8	10.500	266.7

Notes: ■ * indicates: Minimum thickness specified in chart. Total thickness is based on customer request.
■ For use with hydraulic pumps having standard SAE mountings and spline shafts.

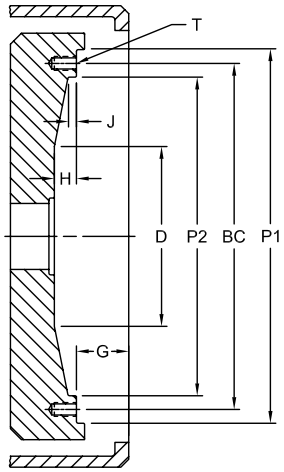
Hydraulic Pump Mounting - SAE J744 Dimensional Data

Pump Mounting Flange	2 Bolt Design d Pilot Dia		PBC Bolt Circle		D Pump Face Dia		T Thread Size	4 Bolt Design d Pilot Dia		PBC Bolt Circle		D Pump Face Dia		T Thread Size
	in	mm	in	mm	in	mm	in	in	mm	in	mm	in	mm	in
A-A	2.00	50.80	3.25	82.6	7	177.80	5/16-18	—	—	—	—	—	—	—
A	3.25	82.55	4.18	106.4	7	177.80	3/8-16	—	—	—	—	—	—	—
B & B-B	4.00	101.60	5.75	146.0	8	203.20	1/2-13	4.00	101.60	5.00	127.00	8	203.20	1/2-13
C & C-C	5.00	127.00	7.12	181.0	10	254.00	5/8-11	5.00	127.00	6.38	162.05	10	254.00	1/2-13
D	6.00	152.40	9.00	228.6	14	355.60	3/4-10	6.00	152.40	9.00	228.60	14	355.60	3/4-10
E	6.50	165.10	12.50	317.5	16	406.40	1-8	6.50	165.10	12.50	317.50	16	406.40	3/4-10
F	7.00	177.80	13.78	350.0	18	457.20	1-8	7.00	177.80	13.87	352.30	18	457.20	1-8

Note: ■ 6 bolt universal pump mounting design is available and is typical standard design.

Features

- Available in flat and spacer types
- SAE housing sizes 1 to 6
- SAE hydraulic pump size A to D
- DIN hydraulic pump pilot and bolt patterns also available
- Provides easy mounting to engine flywheel housing



Pump Mounting Plates - SAE J620 Flywheel Dimensional Data

Nominal Clutch (flywheel) Size	P1		BC		P2		J		H		G		D		T Tapped Holes	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	Qty	Size
6.5	8.500	215.90	7.875	200.03	7.25	184.2	0.38	9.7	0.50	0.5	1.19	30.2	5.00	127.0	6	5/16-18
7.5	9.500	241.30	8.750	222.25	8.13	206.4	0.50	12.7	0.50	0.5	1.19	30.2	—	—	8	5/16-18
8	10.375	263.53	9.625	244.48	8.88	225.4	0.50	12.7	0.50	0.5	2.44	62.0	—	—	6	3/8-16
10	12.375	314.33	11.625	295.28	10.88	276.2	0.50	12.7	0.62	0.6	2.12	53.8	7.75	196.9	8	3/8-16
11.5	13.875	352.43	13.125	333.38	12.38	314.3	0.88	22.4	1.12	1.1	1.56	39.6	8.00	203.2	8	3/8-16
14	18.375	466.73	17.250	438.15	16.13	409.6	0.88	22.4	1.12	1.1	1.00	25.4	8.00	203.2	8	1/2-13
16	20.375	517.53	19.250	488.95	18.13	460.4	0.88	22.4	1.12	1.1	0.62	15.7	75.00	1905.0	8	1/2-13
18	22.500	571.50	21.375	542.93	19.63	498.5	1.25	31.8	1.25	1.3	0.62	15.7	10.00	254.0	6	5/8-11
21	26.500	673.10	25.250	641.35	23.00	684.2	1.15	29.2	1.25	1.3	—	—	—	—	12	5/8-11
24	28.875	733.43	27.250	692.15	25.38	644.5	1.25	31.8	1.25	1.3	—	—	—	—	12	3/4-10

Typical Flywheel Housing Combinations

SAE J620D Flywheel Size	LF Series	LK Series	SAE J617C Flywheel Housing					
	Size	Size	6	5	4	3	2	1
6.5	8 thru 28	100	▲	▲				
7.5	8 thru 28	100	●	●				
8	8 thru 30	100			▲			
10	8 thru 140	100, 125			●	▲	▲	
11.5	16 thru 140	100, 125, 150, 150D				●	●	▲
14	28 thru 250	150, UNIV						●
18	250	UNIV						●

Notes: ▲ indicates: Preferred combinations.
● indicates: Optoinal sizes available.

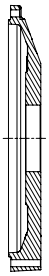
Pump Mounting Housings

Pump mounting housings are required to mount pumps on engines that do not have an SAE flywheel housing. Lovejoy offers pump mounting housings for the following engines. All are available with SAE pump mounting pilots and bolt patterns. Custom mounting pilots and bolt patterns available upon request. Housings are made of high strength Aluminum, designed to support the weight of the hydraulic pump without the need for a rear pump support mount. The LK80 and LK100 are available to match the flywheel options for the various engines and can be paired with the appropriate housing to provide a complete kit.

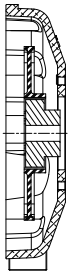




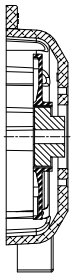
Cummins® B3.3
Shown with LK100



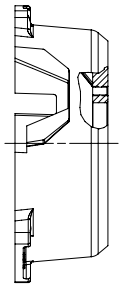
Deutz® FL1001



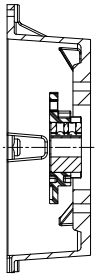
Ford® VSG 413
Shown with LK100



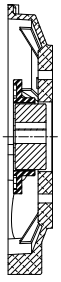
Ford® LRG 425
Shown with LK100



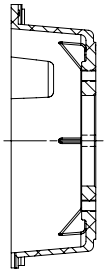
Kubota® Super Mini



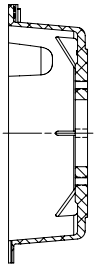
Kubota® Super 05
Shown with LK80



Kubota® Super 03
Shown with LK100



Perkins® 103-10
Shown with LK100



Perkins® 104-22
Shown with LK100

Universal Joints

In This Section:

- D Type
- HD Type
- D Type Stainless
- NB (Needle Bearing) Type
- LOJ Type
- DD and DDX Type
- Universal Joint Boots



Universal Joints

Safety Warning

When using Lovejoy products, you must follow these instructions and take the following precautions. Failure to do so may cause the power transmission product to break and parts to be thrown with sufficient force to cause severe injury or death.

Refer to this Lovejoy Catalog for proper selection, sizing, horsepower, torque range, and speed range of power transmission products, including elastomeric elements for couplings. Follow the installation instructions included with the product, and in the individual product catalogs for proper installation of power transmission products. Do not exceed catalog ratings.

During start up and operation of power transmission product, avoid sudden shock loads. Coupling assembly should operate quietly and smoothly. If coupling assembly vibrates or makes beating sound, shut down immediately, and recheck alignment. Shortly after initial operation and periodically thereafter, where applicable, inspect coupling assembly for: alignment, wear of elastomeric element, bolt torques, and flexing elements for signs of fatigue. Do not operate coupling assembly if alignment is improper, or where applicable, if elastomeric element is damaged, or worn to less than 75% of its original thickness.

Do not use any of these power transmission products for elevators, man lifts, or other devices that carry people. If the power transmission product fails, the lift device could fall resulting in severe injury or death.

For all power transmission products, you must install suitable guards in accordance with OSHA and American Society of Mechanical Engineers Standards. Do not start power transmission product before suitable guards are in place. Failure to properly guard these products may result in severe injury or death from personnel contacting moving parts or from parts being thrown from assembly in the event the power transmission product fails.

If you have any questions, contact the Lovejoy Engineering Department at 1-630-852-0500.

Universal Joints

Table of Contents

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Application Service Factors > Selection Data	334	UJ-6
D, HD and NB Type Running Curves > Selection Data	335	UJ-7
D and HD Type > Dimensional Data	336	UJ-8
D 303 Stainless and NB Type > Dimensional Data	337	UJ-9
DD and DDX Type > Dimensional Data	338	UJ-10
LOJ and JR-4 Types / Boots > Dimensional Data	339	UJ-11

Lovejoy Pin & Block and Needle Bearing Industrial Universal Joints

Lovejoy has been manufacturing industrial universal joints for over 45 years. Our industrial universal joint product line is well established and provides you with a wide range of standard and specialized products. The shape of the yoke is a special feature which results in exceptionally high strength, yet allows full, free movement of the joint. This accounts for the high horsepower capacity at high speeds.



D Type

Features

- Industry standard
- Stainless steel and needle bearing available
- 13 sizes
- Pin & Block design
- Boot retaining grooves standard



HD Type

D Type

- Standard pin and block design
- Ideal for applications up to 25° of angular misalignment and speeds up to 1,750 RPM



D Stainless

HD Type

- The HD Type universal joint has induction hardened yoke ears provide longer life than standard D Type

D303 Stainless

- D Type universal joint is made from 303 stainless material
- Ideal for corrosive atmosphere or where sanitation requirements are a factor



Needle Bearing Type

NB (Needle bearing) Type

- Designed with high quality, pre-lubricated, and sealed needle bearings
- Ideal for applications up to 25° of angular misalignment and speeds up to 6,000 RPM

LOJ and JR-4

- Offset pin design ideal for use on hand operated, low torque drives
- Capable for operating angles up to 45° of angular misalignment



LOJ Type

DD and DDX Types

- Designed with two Lovejoy D Type universal joints and a center connecting shaft
- DD and DDX Type universal joints are tailored to your specific application requirements

Universal Joint Boots

- The life of a universal joint can be extended substantially if booted
- Wear areas of the universal joint are protected from dirt and contaminants, while lubrication is retained



DD and DDX Type



Universal Joint Boot

WARNING

You must refer to page UJ-2 (Page 330) for Important Safety Instructions and Precautions for the selection and use of these products. Failure to follow the instructions and precautions can result in severe injury or death.

Pin & Block Type Selection Process

List of Charts provided for Selection:

- Chart 1 – Application Service Factors (page UJ-6)
- Running Curves (page UJ-7)

Steps In Selecting A Universal Joint

Determine the correct universal joint size by working out the following calculations:

Step 1: Multiply revolutions per minute (RPM) by working angle.

Step 2: Determine the nominal torque of your application by using the following formulas:

$$\text{in-lbs} = \frac{\text{HP} \times 63025}{\text{RPM}}$$

$$\text{Nominal torque} = \text{Nm} = \frac{\text{KW} \times 9550}{\text{RPM}}$$

Step 3: Multiply the calculated torque by the desired Application Service Factor from Chart 1 on page UJ-6.

Step 4: Refer to the Running Curves on page UJ-7 that apply to the desired universal joint. For DD and DDX universal joints, use the curve that matches the universal joint being used. The required universal joint size can be determined by establishing the point of intersection of the RPM x Working Angle figure on the horizontal scale and the service factor torque of on the vertical scale. Size is stated against the curve immediately above this point.

Note: ■ Lubrication is required for optimal wear – boots and lubricant extend universal joint life.

Selection Example

A universal joint is needed to transmit a torque load of 180 in-lbs operating at 1,750 RPM. The working angle required is 5°, and the service factor is 2.

Step 1: RPM x Working Angle = 1,750 x 5 = 8,750

Step 2: Nominal Torque = 180 in-lbs

Step 3: Service Factor x Torque = 2.0 x 180 = 360

Step 4: Find the point of the intersection of 360 in-lbs on the torque scale (vertical) and 8,750 on the RPM x Working Angle scale (horizontal), and the curve immediately above that point will indicate the correct universal joint size. The proper universal joint size is D-13 or HD-13 for longer life.

Universal Joint Specification Chart

Universal Joint Type	Universal Joint Size	Max Angle Offset	Max Bore No Keyway Round		Max Square/ Hex Hole[3]		Max	Static Breaking* Torque	
			in	mm	in	mm	RPM	in-lbs	Nm
D-Type	D-1 to D-14	25°	2.00	50	1.38	35	1,750	65,400	7 389
HD-Type	D-1 to D-14	25°	2.00	50	1.38	35	1,750	65,400	7 389
D Stainless	D4, 6, 8, 10, 12	25°	1.19	30	1.00	25	1,750	10,400	1 175
Needle Bearing	D6, 8, 10, 12	25°	1.19	30	1.00	25	6,000	10,500	1 186
LOJ	LOJ6, 8, 10	45°	See Data	—	See Data	—	—	3,480	393
LOJ JR-4	JR-4	45°	See Data	—	See Data	—	—	180	20
Multi-spindle	D-1 to D-14	25°	2.00	50	1.38	35	1,750	65,400	7 389

Notes:
- ■ *** indicates: This is not a recommended operating torque.**
- ■ 3 indicates: Square and hex bores are measured across the flats.
- ■ Operation of all universal joints is determined by the angle/speed combinations of the application. Consult Lovejoy Engineering for specific limitations and recommendations.
- ■ Applications that fall outside the limitations of these tables should be referred Lovejoy Engineering for assistance.

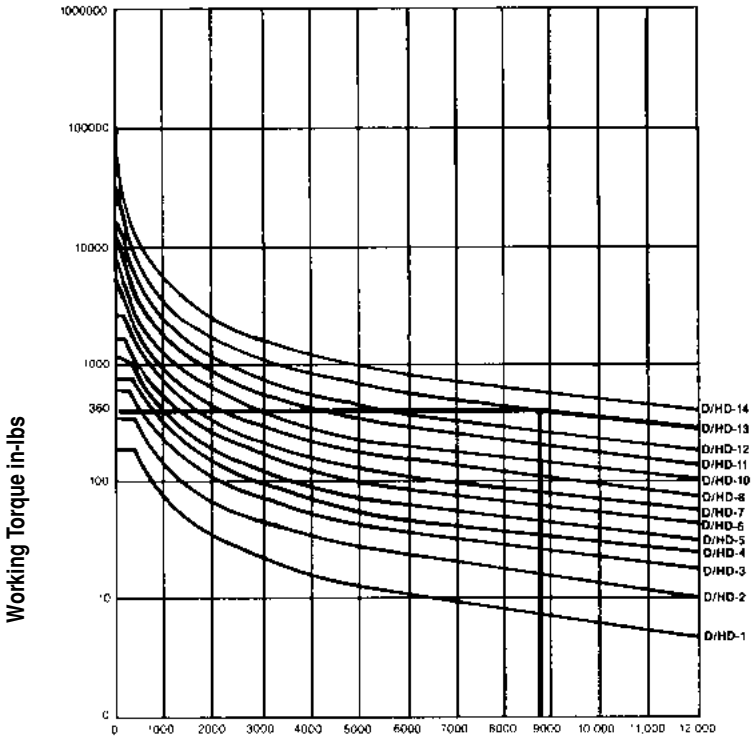
Application Service Factors — *Chart 1*

Agitators	
Pure Liquids	1.25
Liquids Variable	1.25
Barge Puller	2.00
Beaters	1.50
Blowers	
Centrifugal	1.25
Lobe	1.50
Vane	1.50
Can Filling Machinery	1.25
Car Dumpers	2.50
Car Pullers	1.50
Compressors	
Centrifugal	1.25
Lobe	1.50
Reciprocating	not recommended
Conveyors, Uniformly loaded or fed	
Assembly	1.25
Belt	1.25
Screw	1.25
Bucket	1.25
Live roll, shaker, and reciprocating	3.00
Conveyors (Heavy Duty), Not uniformly fed	
Assembly	1.20
Belt	1.20
Oven	1.20
Reciprocating	2.50
Screw	1.20
Shaker	3.00
Cranes & Hoists[1]	
Main Hoists	2.00
Reversing	2.00
Skip	2.00
Trolley Drive	2.00
Bridge Drive	2.00
Slope	2.00
Crushers	
Ore	3.00
Stone	3.00
Dredges	
Cable Reels	2.00
Conveyors	1.50
Cutter Head Drives	2.50
Maneuvering Winches	1.50
Pumps	1.50
Evaporators	
Consult Factory	1.25
Fans	
Centrifugal	1.25
Cooling Towers	2.00
Forced Draft	1.50
Induced Draft w/o Damper Control	2.00
Propellor	1.50
Induced Draft w/Damper Control	1.25
Feeders	
Belt	1.25
Screw	1.25
Reciprocating	2.50
Generators	
Not Welding	1.25
Welding	2.00
Hoist	1.50
Hammer Mills	2.00
Kilns	1.50
Laundry Washers	
Reversing	2.00
Line Shafting	
Any Processing Mach	1.50
Lumber Machinery	
Barkers	2.00
Edger Feed	2.00
Live Rolls	2.00
Planer	2.00
Slab Conveyor	2.00
Machine Tools	
Bending Roll	2.00
Plate Planer	2.00
Punch Press Gear Driven	2.00
Tapping Machinery	2.00
Other	
Main Drive	1.50
Aux. Drives	1.25
Metal Forming Machines	
Draw Bench Carriage	2.00
Draw Bench Main Drive	2.00
Extruder	2.00
Forming Machinery	2.00
Slitters	1.50
Table Conveyors	
Non-reversing	2.50
Reversing	2.50
Wire Drawing	2.00
Wire Winding	1.50
Coilers	1.50
Mills, Rotary Type	
Ball	2.00
Cement Kilns	2.00
Dryers, Coolers	2.00
Kilns	2.00
Pebble	2.00
Rolling	2.00
Tube	2.00
Tumbling	1.50
Mixers	
Concrete, Continous	1.75
Muller	1.50
Paper Mills	
Agitators (Mixers)	1.25
Barker, Mechanical	2.00
"Barking" Drum Spur Gear	2.50
Beater & Pulper	2.00
Calenders	1.50
Converting Machines	1.25
Conveyors	1.25
Dresses	2.00
Dryers	1.50
Jordans	2.00
Log Haul	2.00
Reel	1.25
Super Calenders	1.50
Winder	1.25
Printing Presses	1.50
Pug Mill	1.75
Pumps	
Centrifugal	1.25
Gear, Rotary, or Vane	1.25
Reciprocating	
1 cyl. single or double acting	2.00
2 cyl. single acting	2.00
2 cyl. double acting	1.75
3 or more cyl.	1.50
Rubber Machinery	
Mixer	2.50
Rubber Calender	2.00
Screens	
Air Washing	1.25
Rotary Stone or Gravel	1.50
Vibrating	2.50
Water	1.25
Grizzly	2.00
Shredders	1.50
Steering Gear	not recommended
Stokers	1.25
Textile Machinery	
Dryers	1.25
Dyeing Mach.	1.25
Tumbling Barrel	1.75
Windlass	2.00
Woodworking Machinery	1.50

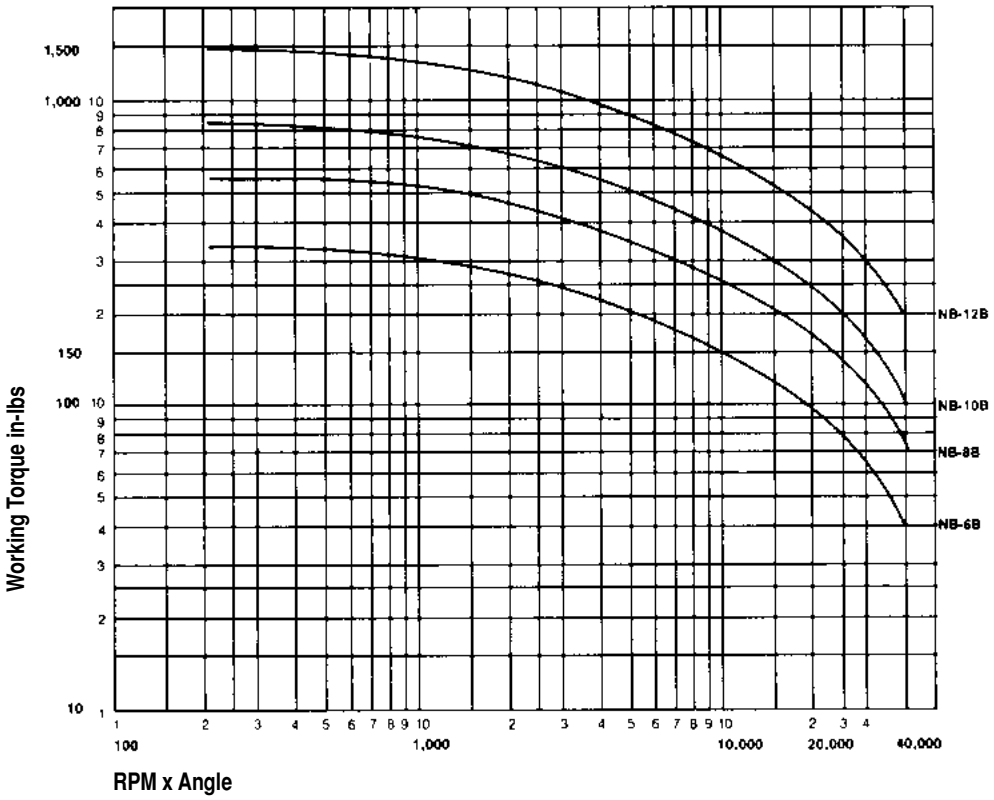
Notes:
- 1 indicates: If people are transported, Lovejoy does not recommend and will not warranty the use of the coupling.
- The values contained in the table should be used as a general guide.
- For above average shock loads or start/stop conditions of not more than once per hour, add .5 to the table value.
- Universal joints are not recommended for internal combustion engine applications.
- For severe shock loads or reversing loads, or start/stop conditions of more than once per hour, add 1 to the table value.

Running Curves

D and HD Type



NB Type



D Type

- Standard industrial type universal joint with pin & block design
- The D Type is ideal for applications with angles up to 25° and speeds of up to 1,750 RPM
- Available in your choice of round, hex, splined, or keyway bore
- Boot retaining grooves are standard. See page UJ-11 for selection of on-site replaceable universal joint boots
- Lubrication is required for optimal wear – boots and lubricant extend universal joint life



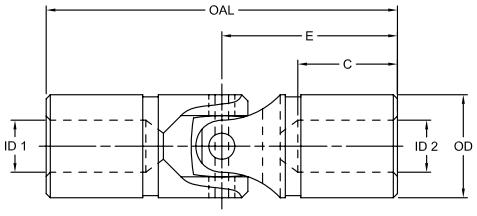
D Type

HD Type

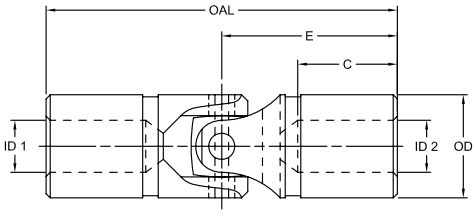
- The HD Type universal joint has induction hardened yoke ears provide longer life than standard D Type
- The hardened yokes are matched fitted with the universal components
- HDD and HDDX drive line assemblies can also be provided to increase life of your drive line or drive shaft
- Available in your choice of round, hex, splined, or keyway bore
- Boot retaining grooves are standard. See page UJ-11 for selection of on-site replaceable universal joint boots
- Lubrication is required for optimal wear – boots and lubricant extend universal joint life



HD Type



D Type



HD Type

D and HD Type Dimensional Data

Size		OAL	E	C	Std	ID1 - ID2						OD	Static*		Weight	
			Main Pin	Bore	Bore	Max Bore No Keyway		Max Bore with Keyway		Max Square/ Hex Hole[3]			Breaking Torque		Solid	Bored
Solid	Bored	in	Height in	Depth in	in	in	mm	in	mm	in	mm	in	in-lb	Nm	lbs	lbs
D-1	D-1B	1.75	.88	.56	.19	.25	6	–	–	.19	4	.38	110	12	.05	.04
D-2	D-2B	2.00	1.00	.62	.25	.38	9	–	–	.25	6	.50	378	42	.10	.08
D-3	D-3B	2.25	1.12	.68	.31	.50	12	–	–	.31	8	.62	540	61	.17	.15
D-4	D-4B	2.68	1.34	.88	.38	.62	15	.44	11	.38	9	.75	768	86	.30	.25
D-5	D-5B	3.00	1.50	.88	.44	.69	17	.50	12	.44	11	.88	1,176	132	.45	.37
D-6	D-6B	3.38	1.68	1.00	.50	.75	19	.56	13	.50	12	1.00	1,560	176	.65	.55
D-7	D-7B	3.50	1.75	1.00	.56	.88	22	.62	15	.56	14	1.12	2,880	325	.85	.71
D-8	D-8B	3.75	1.88	1.06	.62	1.00	25	.75	18	.62	15	1.25	5,220	589	1.11	.94
D-10	D-10B	4.25	2.12	1.18	.75	1.12	28	.88	21	.75	19	1.50	7,920	895	1.80	1.50
D-11	D-11B	5.00	2.50	1.38	.88	1.25	31	1.00	25	.88	22	1.75	10,680	1 206	3.00	2.50
D-12	D-12B	5.44	2.72	1.50	1.00	1.50	38	1.19	30	1.00	25	2.00	15,600	1 762	4.20	3.50
D-13	D-13B	7.00	3.50	2.00	1.25	1.75	44	1.50	39	1.12	28	2.50	33,120	3 742	8.50	7.20
D-14	D-14B	9.06	4.53	2.75	1.50	2.00	50	1.81	48	1.38	35	3.00	65,400	7 389	16.00	13.00

Notes:
- *** indicates: This is not a recommended operating torque.**
- 3 indicates: Square and hex bores are measured across the flats.
- Operation of all universal joints is determined by the angle/speed combinations of the application. Consult Lovejoy Engineering for specific limitations and recommendations.
- Applications that fall outside the limitations of these tables should be referred to Lovejoy Engineering for assistance.

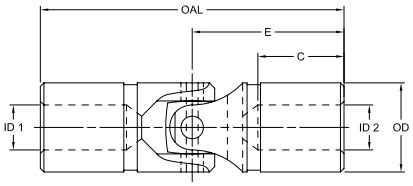
Universal Joints
D 303 Stainless and NB Type
Dimensional Data

D Type 303 Stainless

- Made from 303 stainless steel
- Ideal for applications with exposure to corrosive chemicals, corrosive atmosphere, or sanitation requirements are a factor
- Available in sizes: 4, 6, 8, 10 and 12 (Other sizes are quantity dependent)
- Available in your choice of round, hex, splined, or keyway bore
- Boot retaining grooves are standard. See page UJ-11 for selection of on-site replaceable universal joint boots
- Lubrication is required for optimal wear – boots and lubricant extend universal joint life
- Contact Lovejoy Engineering if you have specific questions or requirements



D-SS Type



D Type 303 Stainless Dimensional Data

Size		OAL	E	C	Std	ID1 - ID2						OD	Static*		Weight	
			Main Pin	Bore	Bore	Max Bore No Keyway		Max Bore with Keyway		Max Square/ Hex Hole[3]			Breaking Torque			
Solid	Bored	in	Height in	Depth in	in	in	mm	in	mm	in	mm	in	in-lb	Nm	Solid lbs	Bored lbs
D-4SS	D-4SSB	2.68	1.34	.88	.38	.62	15	.44	11	.38	9	.75	512	58	.30	.25
D-6SS	D-6SSB	3.38	1.68	1.00	.50	.75	19	.56	13	.50	12	1.00	1,040	117	.62	.55
D-8SS	D-8SSB	3.75	1.88	1.06	.62	1.00	25	.75	18	.62	15	1.25	3,480	393	1.11	.94
D-10SS	D-10SSB	4.25	2.12	1.18	.75	1.12	28	.88	21	.75	19	1.50	5,280	597	1.80	1.50
D-12SS	D-12SSB	5.44	2.72	1.50	1.00	1.50	38	1.19	30	.88	22	2.00	10,400	1 175	4.20	3.50

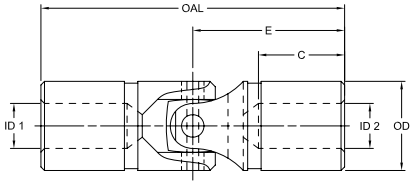
Notes:
- *** indicates: This is not recommended operating torque.**
- 3 indicates: Square and hex bore measured across the flats.
- Keyways, set screws, pin holes, or bores other than standard available at additional charge.
- Maximum operating angle for transmission of power is 25°.
- Applications that fall outside the limitations of these tables should be referred to Lovejoy Engineering for assistance.

Needle Bearing (NB) Type

- Designed with high quality, pre-lubricated, and sealed needle bearings
- Ideal for applications up to 25° of angular misalignment and speeds up to 6,000 RPM
- Available in sizes: 6, 8, 10 and 12 (Other sizes are quantity dependent) with your choice of round, hex, splined, or keyway bores
- Boot retaining grooves are standard. See page UJ-11 for selection of on-site replaceable universal joint boots
- Lubrication is required for optimal wear – boots and lubricant extend universal joint life



NB Type



Needle Bearing Type Dimensional Data

Size		OAL	E	C	Std	ID1 - ID2						OD	Static*		Weight
			Main Pin	Bore	Bore	Max Bore No Keyway		Max Bore with Keyway		Max Square/ Hex Hole[3]			Breaking Torque		
Solid	Bored	in	Height in	Depth in	in	in	mm	in	mm	in	mm	in	in-lb	Nm	Solid lbs
NB-6	NB-6B	3.38	1.68	1.00	.50	.75	19	.56	13	.50	12	1.00	1,150	130	.53
NB-8	NB-8B	3.75	1.88	1.06	.62	1.00	25	.75	18	.62	15	1.25	2,500	282	.91
NB-10	NB-10B	4.25	2.12	1.18	.75	1.12	28	.88	21	.75	19	1.50	4,400	497	1.50
NB-12	NB-12B	5.44	2.72	1.50	1.00	1.50	38	1.19	30	1.00	25	2.00	10,500	1 186	3.40

Notes:
- *** indicates: This is not recommended operating torque.**
- 3 indicates: Square and hex bore measured across the flats.
- Maximum operating angle for transmission of power is 25°.
- For greater angular operation, use double universal joint. Join two universal joints back to back and connect with a short shaft. Attach universal joints to shaft by drilling and pinning.
- Swing Diameter is the maximum diameter over bearings, clearance must be allowed.

Universal Joints
DD and DDX Type
Dimensional Data

Double Joint Arrangement

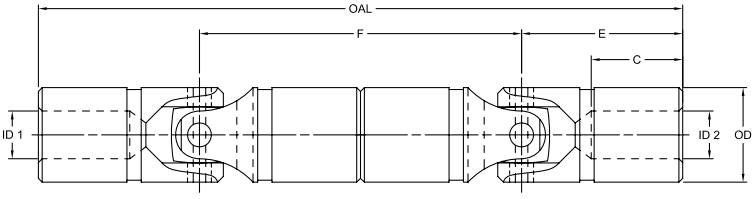
- Designed with two Lovejoy D Type universal joints and a center connecting shaft
- DD and DDX Type universal joints are tailored to your specific application requirements
- This configuration compensates for both parallel misalignment and shaft separation
- Round, hex, splined, or keyway bores are supplied per your requirements
- Boot retaining grooves are standard. See page UJ-11 for selection of on-site replaceable universal joint boots
- Lubrication is required for optimal wear – boots and lubricant extend universal joint life



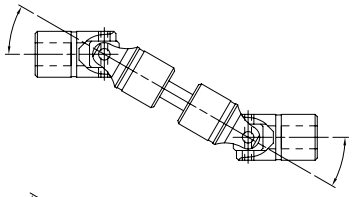
DD Type



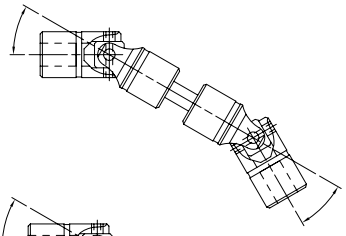
DDX Type



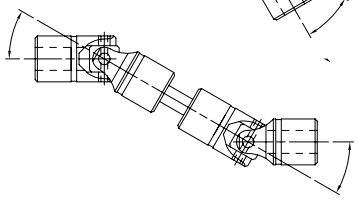
Correct Assembly
Yoke ears are aligned and angles are equal



Correct Assembly
Yoke ears are aligned and angles are equal



Incorrect Assembly
Yoke ears are not in alignment



DD and DDX Type Dimensional Data

Size		OAL	F		E	C		ID1 - ID2				OD			Weight
			Std	Min	Main Pin Height	Bore Depth	Std Bore	Max Bore No Keyway		Max Square/ Hex Hole[3]			Static* Breaking Torque		Solid
Solid	Bored	in	in	in	in	in	in	in	mm	in	mm	in	in-lb	Nm	lbs
DD-1	DD-1B	3.50	1.75	1.18	0.88	0.56	0.19	0.25	6	0.19	4	0.38	110	12.4	0.09
DD-2	DD-2B	4.00	2.00	1.38	1.00	0.62	0.25	0.38	9	0.25	6	0.50	378	42.7	0.18
DD-3	DD-3B	4.50	2.25	1.56	1.12	0.68	0.31	0.50	12	0.31	7	0.62	540	61.0	0.32
DD-4	DD-4B	5.38	2.68	1.81	1.34	0.88	0.38	0.62	15	0.38	9	0.75	768	86.8	0.55
DD-5	DD-5B	6.00	3.00	2.12	1.50	0.88	0.44	0.69	17	0.44	11	0.88	1,176	133.0	0.82
DD-6	DD-6B	6.75	3.38	2.38	1.68	1.00	0.50	0.75	19	0.50	12	1.00	1,560	176.0	1.20
DD-7	DD-7B	7.00	3.50	2.50	1.75	1.00	0.56	0.88	22	0.56	14	1.12	2,880	325.0	1.56
DD-8	DD-8B	7.50	3.75	2.68	1.88	1.06	0.62	1.00	25	0.62	15	1.25	5,220	590.0	2.05
DD-10	DD-10B	8.50	4.25	3.06	2.12	1.18	0.75	1.12	28	0.75	19	1.50	7,920	895.0	3.30
DD-11	DD-11B	10.00	5.00	3.62	2.50	1.38	0.88	1.25	31	0.81	20	1.75	10,680	1 207.0	5.50
DD-12	DD-12B	10.88	5.44	3.94	2.72	1.50	1.00	1.50	38	0.88	22	2.00	15,600	1 762.0	7.70
DD-13	DD-13B	14.00	7.00	5.00	3.50	2.00	1.25	1.75	44	1.12	28	2.50	33,120	3 742.0	15.70
DD-14	DD-14B	18.12	9.06	6.31	4.53	2.75	1.50	2.00	50	1.38	35	3.00	65,400	7 389.0	29.00

Notes:
- *** indicates: This is not recommended operating torque.**
- 3 indicates: Square and hex bore measured across the flats.
- Bores other than shown are available at additional charge.
- Shorter centers upon request.
- For universal joint boot dimensions, see page UJ-11.

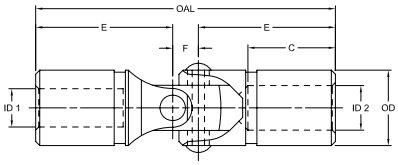
Universal Joints
LOJ and JR-4 Types, Boots
Dimensional Data

LOJ and JR-4 Types

- Offset pin design ideal for use on hand operated, low torque drives
- Capable for operating angles up to 45° of angular misalignment
- Application examples: remote control linkages, snow blowers, packaging machinery, awning devices, etc.
- The LOJ available with round, hex, splined, or keyway bores
- The JR-4 is made of tough Zytel® material, so it will not rust and no lubrication needed
- The JR-4 withstands oils, gasoline, salts, and temperatures from -40° to 225° F
- The JR-4 is available in .38 inch bore only



LOJ Type



LOJ - JR-4

LOJ Type Dimensional Data

Size		OAL	F	E	C	Std	ID1 - ID2				OD	Pin	Static*		Weight	
				Main Pin Height	Bore Depth	Bore	Max Bore No Keyway		Max Bore with Keyway			OD	Breaking Torque			
Solid	Bored	in	in	in	in	in	in	mm	in	mm	in	in	in-lb	Nm	Solid lbs	Bored lbs
LOJ-6	LOJ-6B	2.94	0.25	1.35	0.75	0.50	0.62	15	0.44	11	0.75	0.88	840	95	0.30	0.25
LOJ-8	LOJ-8B	3.68	0.31	1.69	0.91	0.62	0.75	19	0.56	14	1.00	1.12	1,500	169	0.65	0.55
LOJ-10	LOJ-10B	3.75	0.38	1.69	1.00	0.75	1.00	25	0.75	19	1.25	1.44	3,480	393	1.11	0.94

Notes: ■ *** indicates: This is not a recommended operating torque.**
■ Maximum operating angle 45° for hand-operated applications.

JR-4 Type Dimensional Data

Size	OAL	F	E	C	ID1 - ID2	OD	Pin	Static*	
			Main Pin Height	Bore Depth	Std Bore		OD	Breaking Torque	
	in	in	in	in	in	in	in	in-lb	Nm
JR-4	3	0.31	1.69	0.62	0.38	0.68	1.18	160	20

Notes: ■ *** indicates: This is not a recommended operating torque.**
■ Maximum operating angle 45° for hand-operated applications.

Universal Joint Boots

- Protects the universal joint from dirt and contaminants, while lubrication is retained
- Lovejoy on-site replacement boots ensure proper lubrication for up to five times longer universal joint life
- Installation and replacement is fast and easy, so your machine can be back in operation in minutes
- Lovejoy universal joints D, D SS, DD, DDX, HD, and NB come pre-grooved
- Use the larger type diameter Upper Type boots when possible and smaller diameter Lower Type boots when space is restricted
- Standard boots are packaged two to a bag

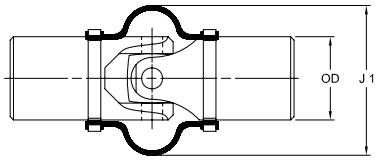
Boot Dimensional Data

Size	OD in	J1 Upper in	J2 Lower in
D-1	0.38	0.72	0.62
D-2	0.50	0.91	0.75
D-3	0.62	1.09	0.94
D-4	0.75	1.34	1.06
D-5	0.88	1.50	1.25
D-6	1.00	1.75	1.38
D-7	1.12	2.03	1.50
D-8	1.25	2.03	1.68
D-10	1.50	2.56	1.94
D-11	1.75	–	2.18
D-12	2.00	–	2.59
D-13	2.50	–	3.25
D-14	3.00	–	4.25

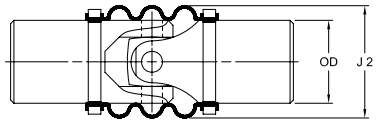


Universal Joint Boots

Note: ■ Boot sizes D-11 through D-14 have 3-hump design similar to Lower Type Boot (L). Not shown.



Upper Type Boot (U)



Lower Type Boot (L)