

Shaft Mounted Speed Reducers



Features

- Includes complete torque arm assembly
- Fully interchangeable with other manufacturers
- Production line manufacturing guarantees tolerances and consistent quality.
- Gears produced on German manufactured hobbing centres to achieve the highest quality helical gear components.
 - Pinions; 8620 steel
 - Gears; 20MnCr5 steel
- All gears are ground
- Final heat treatment includes gas carburising to a depth of 1mm then grinding to DIN class 6.
- Castings crack tested
- All units test run for 30 minutes prior to final quality control checks
- Full traceability guaranteed with unique Challenge serial number.
- Backstops also available
- Held ex-stock in most Challenge warehouse locations

SMSR Selection

Shaft Mounted Speed Reducer selection procedure

1] Service Factor.

From table 1 on page 293, select the service factor that is appropriate for the application

2] Design Power.

Multiply the absorbed power of the driven machine by the service factor, from step 1) to obtain the design power.

If the absorbed power is not known, use the motor power

3] SMSR gear unit size selection.

Refer to the power rating tables on pages 295 and 296 then read down the left hand vertical column to the required output speed. (interpolate if the exact speed is not listed).

Read horizontally across on the speed line until a power equal to or in excess of the design power, from step 2), is reached.

Read vertically to the top of the column to obtain the correct size of SMSR unit.

The ratio of the chosen unit is determined by the required output speed.

Go to page 306 in order to check the chosen SMSR will fit the driven machine shaft.

Wedge belt drive selection procedure.

Two methods are used for the belt drive selection.

One for 1440 rev/min electric motors and secondly for all other speeds.

1440 rev/min electric motor speed.

a] Output speed.

Refer to the Wedge belt drive selection pages (pages 298 to 305) for the chosen gear unit size. Read down the left hand column headed 'output speed' until a speed equal to or near to that required is found.

b] Pulley pitch diameters.

Read across from the chosen output speed to obtain the pulley diameters for the motor shaft and SMSR input shaft

On smaller size gear units, it may well be that single belt drives are recommended. If, on such drives, two belts are preferred, special attention must be made to belt tensioning.

If in any doubt, please contact CHALLENGE.

c] Centre distance.

Refer to page x in order to calculate the correct belt length for the required centre distance

Other prime mover speeds

a] SMSR unit input shaft speed.

Multiply the chosen SMSR gear unit output speed by its exact speed ratio to obtain the SMSR gear unit input shaft speed.

The exact gear ratio of the chosen SMSR can be found at the bottom of the SMSR dimension table on page 295.

b] Selection of Wedge belt drive.

The correct Wedge belt can be design by referring to the selection procedure on page 140.

Shaft Mounted Speed Reducer selection example

Select a CHALLENGE Shaft Mounted Speed Reducer to drive a rotary kiln which absorbs 0.95 kW when running at 20 rev/min for upto 8 hours/day.

The prime mover is a 1.1 kW, 1440 rev/min electric motor with a star-delta starter and a 24 mm shaft.

The kiln has a 50 mm shaft and 450 mm drive centres are required.

1] Service Factor.

From table 1 on page 293, the chosen service factor is 1.25.

2] Design Power.

Using the kiln absorbed power of 0.95 kW, the design power is :-

$$0.95 \times 1.25 = 1.19 \text{ kW}$$

3] SMSR gear unit size selection.

From the SMSR power rating table on page 297, a size D13 or D20 will transmit 1.58 kW at 20 rev/min which is excess of the required 1.19 kW from step 2).

A size D20 rather than a D13 is chosen as it will utilize a more economically priced Wedge belt drive.

On checking the hub sizes on page 306, it is seen that the D20 has a 50 mm standard hub bore which matches the kiln shaft of 50 mm.

Wedge belt drive selection procedure.

As the motor speed is 1440 rev/min, the following selection method is used :-

1440 rev/min electric motor speed.

a] Output speed.

Refer to the drive selection page 300 for SMSR size 'D' units. Read down the left hand column to required output speed of 20 rev/min.

b] Pulley pitch diameters.

Read across from the chosen output speed to obtain the prime mover and SMSR input shaft pulley diameters. The electric motor to be fitted with a 71 x 1 SPZ pulley and the SMSR input shaft with a 250 x 1 SPZ

c] Centre distance.

Refer to page 140 and by using the appropriate formulae, an SPZ1420 will give a centre distance of 449 mm.

Drive Specification.

SMSR size: D20 with a standard hub bore of 50 mm

Motor pulley: 71 x 1 SPZ with taper bush size 1108 bored 24 mm

SMSR input shaft pulley: 250 x 1 SPZ with taper bush 2012 bored 25 mm

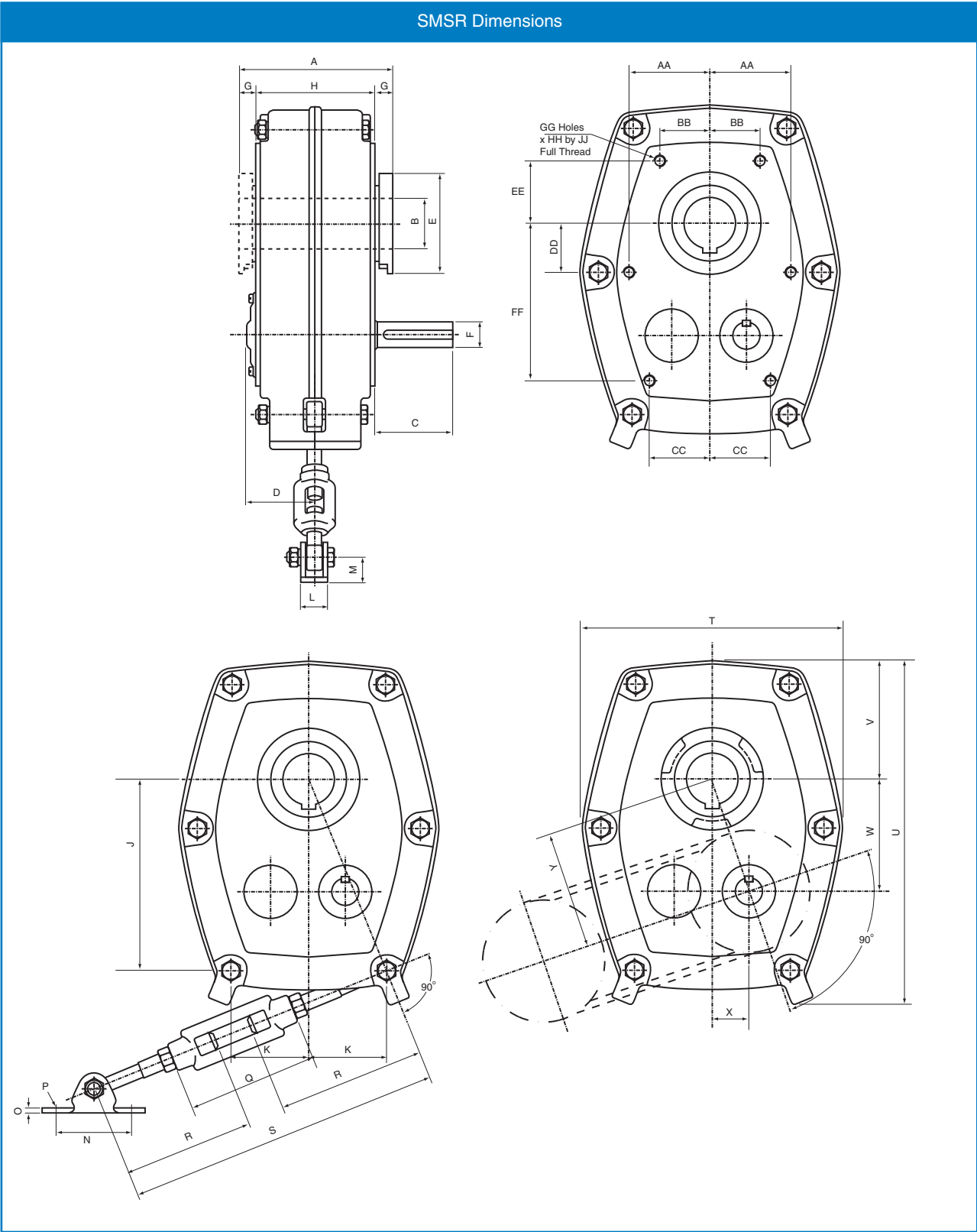
An SPZ1420 Wedge belt gives a centre distance of 449 mm.

SMSR Selection

Table 1, Service Factors

Type of driven machine	Number of hours per day running		
	under 10	10 - 16	over 16
Uniformly loaded applications Agitators and mixers - uniform density, centrifugal blowers, belt conveyors and elevators, non-reversing laundry machines, line shafts, centrifugal and rotary pumps, wire drawing machines	1.00	1.12	1.25
Moderate shock load applications Agitators and mixers – variable density, conveyors – medium duty, cranes, feeders – pulsating loads, hoists, kiln, other laundry machinery, lifts, piston pumps with 3 or more cylinders, paper making machinery, rubber mixers and calenders, rotary screens, textile machinery	1.25	1.40	1.60
Heavy duty machinery Brick making machinery, heavy duty conveyors, crushers, reciprocating feeders, hammer mills, piston pumps with 1 or 2 cylinders, rubber masticators, vibrating machines	1.60	1.80	2.00

Shaft Mounted Speed Reducer



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SMSR Dimensions

		SMSR Dimensions							
		B	C	D	E	F	G	H	J
A		134	142	152	170	189	212	242	257
B		30	40	50	55	65	75	85	100
Output hub key		8 x 7	12 x 8	14 x 9	16 x 10	18 x 11	20 x 12	22 x 14	28 x 16
C		63	72	77	85	90	105	116	135
D		59	65	68	76	87	110	115	119
E		80	90	100	115	130	145	170	200
F		19	22	25	28	32	42	48	55
Input shaft keyway		6x3.5x50	6x3.5x59	8x4x63	8x4x70	10x5x70	12x5x90	14x5.5x100	16x6x100
G		15	17	17	20	20	20	26	30
H		104	108	118	130	149	172	190	197
J		131	156	88	222	242	277	330	424
K		55	59	76	90	98	110	88	102
L		24	24	28	28	34	34	70	70
M		20	20	24	24	30	30	50	50
N		65	65	75	75	100	100	120	120
O		5	5	5	5	6	6	18	18
P		10	10	12	12	16	16	16	16
Q		200	200	216	216	216	216	222	222
R		300	300	350	350	375	375	375	375
S	Min	600	600	700	700	750	750	750	750
	Max	750	750	850	850	900	900	900	900
T		186	218	258	278	317	365	434	542
U		241	282	338	386	419	475	550	700
V		81	96	117	129	143	162	195	254
W		75	90	110	125	141	156	189	255
X		25	31	37	43	50	56	62	75
Y		79	95	116	133	150	166	200	266
AA		53	--	--	90	100	115	150	200
BB		34	40	50	57	67	74	64	74
CC		--	44	59	57	76	86	79	-
DD		33	40	48	61	64	74	81	98
EE		41	52	61	62	76	87	122	164
FF		--	132	155	188	197	224	281	330
GG		4	4	4	6	6	6	6	5
HH		M8	M10	M12	M12	M16	M16	M20	M20
JJ		15	15	17	18	19	24	29	32
Mass - kg		22	25	26	52	70	110	168	256
Exact Gear Ratios									
Nominal Ratios	5:1	5.050	5.050	5.047	5.047	5.047	5.047	5.047	5.047
	13:1	13.984	13.596	13.589	13.589	13.589	13.589	13.589	13.589
	20:1	20.466	20.456	20.456	20.456	20.456	20.456	20.456	20.456

Shaft Mounted Speed Reducer

SMSR Power Rating Table kW (Ratio 5:1)

Output rev/min	SMSR Size							
	B5	C5	D5	E5	F5	G5	H5	J5
100	2.68	4.20	6.62	10.29	15.12	25.20	36.20	62.20
110	2.87	4.62	7.08	11.03	16.07	27.60	38.90	67.20
120	3.13	5.04	7.46	11.76	17.01	29.90	41.40	72.50
130	3.36	5.31	7.77	12.34	17.85	31.50	43.40	76.70
140	3.56	5.54	8.11	12.71	18.59	32.60	45.20	79.20
150	3.62	5.78	8.30	13.13	19.22	33.60	47.30	81.90
160	3.73	5.88	8.51	13.55	19.95	34.70	48.30	85.10
170	3.83	5.90	8.72	13.76	20.37	35.10	49.90	88.20
180	3.94	6.09	8.93	14.18	21.00	35.70	51.50	90.30
190	4.04	6.30	9.14	14.49	21.53	36.80	52.50	93.50
200	4.20	6.49	9.45	14.91	22.05	37.80	53.60	96.60
210	4.31	6.53	9.66	15.23	22.47	38.50	54.60	98.70
220	4.41	6.72	9.87	15.75	23.10	39.30	56.20	101.90
230	4.53	6.87	10.06	16.07	23.63	40.00	57.30	104.00
240	4.66	7.04	10.29	16.49	24.26	41.10	58.80	107.10
250	4.78	7.14	10.71	16.80	25.04	42.10	60.40	109.20
260	4.89	7.35	10.92	17.01	25.41	43.10	61.30	111.30
270	5.04	7.46	11.13	17.85	26.25	44.10	63.00	113.40
280	5.20	7.56	11.55	18.38	26.78	45.20	64.10	115.50
290	5.36	7.77	11.76	18.90	27.41	46.20	65.10	116.60
300	5.46	7.98	12.08	19.43	27.83	47.40	66.20	118.70
310	5.62	8.17	12.34	19.95	28.67	48.60	67.70	122.90
320	5.78	8.30	12.60	20.27	29.61	49.40	69.40	123.90
330	5.88	8.51	13.02	20.90	30.35	50.90	70.90	125.00
340	6.09	8.72	13.44	21.11	31.08	52.30	71.60	125.50
350	6.30	8.82	13.76	21.84	31.71	53.30	73.50	126.00
360	6.41	9.03	14.18	22.26	32.60	54.60	74.60	128.10
370	6.62	9.24	14.44	22.79	33.60	55.70	75.60	129.20
380	6.72	9.45	14.70	23.10	34.49	56.70	77.70	130.20
390	6.93	9.56	15.23	23.52	35.07	58.80	79.80	131.30
400	7.14	9.66	15.65	24.57	35.91	59.90	81.90	134.20
Torque (Nm) @ 10 rev/min	256	401	632	983	1444	2407	3457	5940

Shaft Mounted Speed Reducer

SMSR Power Rating Table kW (Ratio 13:1 & 20:1)

Output rev/min	SMSR Size							
	B13/B20	C13/C20	D13/D20	E13/E20	F13/F20	G13/G20	H13/H20	J13/J20
10	0.29	0.49	0.82	1.25	1.97	3.11	4.90	7.80
12	0.36	0.58	0.96	1.48	2.45	3.71	5.90	9.20
14	0.42	0.67	1.11	1.73	2.71	4.30	6.80	10.70
16	0.47	0.77	1.27	1.97	3.09	4.89	7.70	12.10
18	0.53	0.86	1.41	2.20	3.44	5.48	8.70	13.60
20	0.59	0.96	1.58	2.43	3.82	6.08	9.50	15.10
22	0.63	1.04	1.73	2.67	4.18	6.63	10.40	16.40
24	0.69	1.13	1.86	2.89	4.55	7.22	11.30	17.90
26	0.75	1.22	2.02	3.13	4.91	7.79	12.10	19.30
28	0.81	1.32	2.18	3.36	5.27	8.35	13.10	20.60
30	0.86	1.41	2.32	3.58	5.63	8.92	13.90	22.50
32	0.92	1.50	2.47	3.81	5.98	9.49	14.80	23.60
34	0.98	1.60	2.63	4.04	6.34	10.04	15.70	25.10
38	1.10	1.79	2.91	4.48	7.05	11.12	17.40	27.60
40	1.16	1.87	3.07	4.71	7.41	11.87	18.20	29.00
42	1.20	1.96	3.19	4.92	7.75	12.39	19.30	30.10
46	1.30	2.13	3.48	5.37	8.28	13.65	21.10	32.60
50	1.42	2.30	3.78	5.81	9.07	14.60	22.80	35.00
52	1.47	2.37	4.00	6.03	9.14	15.23	23.40	35.60
54	1.52	2.47	4.14	6.23	9.42	15.86	24.40	36.30
58	1.64	2.61	4.43	6.66	10.02	16.80	25.80	38.00
62	1.76	2.77	4.71	7.23	10.61	17.96	27.50	40.20
66	1.86	2.94	5.01	7.68	11.24	19.01	29.70	42.50
70	1.96	3.07	5.13	8.11	11.76	20.16	30.60	44.70
74	2.06	3.18	5.42	8.54	12.39	21.11	32.00	47.00
78	2.15	3.32	5.70	8.97	12.92	22.26	33.60	49.20
80	2.23	3.39	5.81	9.19	13.23	22.47	34.30	50.20
85	2.34	3.58	6.14	9.71	13.97	23.31	36.20	52.80
90	2.48	3.79	6.49	10.24	14.60	24.57	37.90	55.30
95	2.61	4.00	6.81	10.50	15.44	25.83	39.00	58.00
100	2.73	4.19	7.15	11.03	16.17	27.09	40.70	60.50
105	2.85	4.41	7.48	11.55	17.01			
110	2.98	4.62	7.81					
115	3.11							
Torque (Nm) @ 10 rev/min	277	468	783	1194	1881	2970	4680	7449

Note: The wavy line ~~~~~ indicates maximum output speed for 20:1 ratio units, for speeds above this limit use a 5:1 or 13:1 ratio units.

Shaft Mounted Speed Reducer

Wedge Belt Drives for 1440 rev/min Electric Motors

B 5:1

Output rev/min	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
51	5.63	71	400	1SPZ*
57	5.00	80	400	1SPZ*
64	4.44	90	400	1SPZ*
71	4.00	100	400	1SPZ*
80	3.57	112	400	1SPZ*
86	3.32	95	315	1SPZ*
91	3.15	100	315	1SPZ*
97	2.94	85	250	2SPZ
101	2.82	71	200	2SPZ
107	2.67	75	200	2SPZ
113	2.54	71	180	2SPZ
119	2.40	75	180	2SPZ
128	2.23	112	250	1SPZ*
134	2.13	75	160	2SPZ
137	2.09	67	140	3SPZ
145	1.97	71	140	3SPZ
151	1.89	106	200	1SPA*
160	1.79	112	200	1SPA*
168	1.70	106	180	1SPA*
171	1.67	67	112	3SPZ
177	1.61	112	180	2SPZ
181	1.58	71	112	3SPZ
187	1.53	118	180	1SPA*
190	1.50	100	150	2SPA
200	1.43	112	160	1SPA*
205	1.39	90	125	2SPZ
210	1.36	118	160	1SPA*
216	1.32	106	140	2SPA
222	1.29	140	180	1SPZ*
228	1.25	112	140	1SPA*
235	1.21	132	160	1SPA*
242	1.18	95	112	2SPZ
250	1.14	140	160	1SPA*
256	1.12	112	125	1SPA*
266	1.07	140	150	1SPA*
270	1.06	90	95	3SPZ
285	1.00	100	100	2SPZ
302	1.06	90	85	3SPZ
306	1.07	150	140	1SPA*
319	1.12	140	125	1SPA*
324	1.14	150	132	1SPA*
336	1.18	100	85	3SPZ
342	1.20	180	150	1SPA*
355	1.24	112	90	3SPZ
362	1.27	150	118	1SPZ*
365	1.28	160	125	2SPZ
376	1.32	112	85	3SPZ
380	1.33	200	150	1SPA*
387	1.36	160	118	2SPA
396	1.39	125	90	3SPZ

B 13:1

Output rev/min	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
17	5.97	67	400	1SPZ*
22	4.70	67	315	1SPZ*
24	4.20	75	315	1SPZ*
28	3.73	67	250	1SPZ*
31	3.33	75	250	1SPZ*
34	2.99	67	200	1SPZ*
36	2.82	71	200	1SPZ*
38	2.69	67	180	1SPZ*
41	2.54	71	180	1SPZ*
43	2.39	67	160	1SPZ*
46	2.25	71	160	1SPZ*
48	2.13	75	160	1SPZ*
51	2.00	80	160	1SPZ*
55	1.88	85	160	1SPZ*
59	1.75	80	140	1SPZ*
62	1.65	85	140	1SPZ*
64	1.60	100	160	1SPZ*
66	1.56	90	140	1SPZ*
70	1.47	85	125	1SPZ*
74	1.39	90	125	1SPZ*
78	1.32	95	125	1SPZ*
82	1.25	100	125	1SPZ*
86	1.20	71	85	2SPZ
91	1.13	71	80	2SPZ
97	1.06	100	106	1SPA*
103	1.00	106	106	1SPA*
109	1.06	112	106	1SPA*
115	1.12	125	112	1SPZ*
117	1.13	85	75	2SPZ
121	1.18	125	106	1SPA*
123	1.20	90	75	2SPZ
125	1.21	160	132	1SPA*
129	1.25	140	112	1SPZ*
130	1.27	95	75	2SPZ
132	1.29	180	140	1SPA*
136	1.32	140	106	1SPA*
140	1.36	180	132	1SPA*
143	1.39	125	90	2SPZ
146	1.42	150	106	1SPA*
148	1.44	180	125	1SPA*
151	1.47	125	85	2SPZ
154	1.49	112	75	2SPZ
155	1.51	160	106	1SPA*
157	1.53	180	118	1SPA*
161	1.56	125	80	2SPZ
165	1.61	180	112	1SPA*
170	1.65	140	85	2SPZ
172	1.67	125	75	2SPZ
175	1.70	180	106	1SPA*
180	1.75	140	80	2SPZ

B 20:1

Output rev/min	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
10	6.67	75	500	2SPZ
11	6.25	80	500	2SPZ
12	5.97	67	400	1SPZ*
13	5.26	95	500	2SPZ
14	5.00	80	400	1SPZ*
15	4.70	67	315	1SPZ*
16	4.20	75	315	1SPZ*
17	3.94	80	315	1SPZ*
18	3.73	67	250	1SPZ*
19	3.57	112	400	1SPZ*
20	3.52	71	250	1SPZ*
21	3.33	75	250	1SPZ*
22	3.12	80	250	1SPZ*
23	2.99	67	200	1SPZ*
24	2.82	71	200	1SPZ*
25	2.78	90	250	1SPZ*
26	2.69	67	180	1SPZ*
27	2.54	71	180	1SPZ*
29	2.39	67	160	1SPZ*
30	2.25	71	160	1SPZ*
32	2.13	75	160	1SPZ*
33	2.09	67	140	1SPZ*
34	2.00	80	160	1SPZ*
35	1.97	71	140	1SPZ*
37	1.87	67	125	1SPZ*
39	1.76	71	125	1SPZ*
40	1.70	106	180	1SPA
41	1.67	67	112	1SPZ*
43	1.58	71	112	1SPZ*
44	1.56	90	140	1SPZ*
45	1.53	118	180	1SPA
46	1.49	67	100	1SPZ*
47	1.47	85	125	1SPZ*
48	1.42	67	95	1SPZ*
49	1.39	90	125	1SPZ*
50	1.36	132	180	1SPA
51	1.34	71	95	1SPZ*
52	1.32	85	112	1SPZ*
54	1.27	71	90	1SPZ*
55	1.24	90	112	1SPZ*
57	1.20	75	90	1SPZ*
58	1.18	85	100	1SPZ*
61	1.13	75	85	1SPZ*
62	1.11	90	100	1SPZ*
64	1.07	140	150	1SPA
65	1.06	80	85	1SPZ*
69	1.00	80	80	1SPZ*
72	1.05	100	95	1SPZ*
73	1.07	80	75	2SPZ
76	1.11	100	90	1SPZ*

* Single belt drives can be used however two belts can be used without overloading the bearings.

Shaft Mounted Speed Reducer

Wedge Belt Drives for 1440 rev/min Electric Motors

C 5:1

Output rev/min	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
51	5.63	71	400	2SPZ
61	4.70	67	315	2SPZ
64	4.44	71	315	2SPZ
71	4.00	100	400	1SPA*
76	3.77	106	400	1SPA*
80	3.57	112	400	1SPZ*
86	3.33	75	250	3SPZ
89	3.20	125	400	1SPZ*
94	3.03	132	400	1SPA*
100	2.86	140	400	1SPZ*
107	2.67	118	315	1SPA*
113	2.52	125	315	1SPA*
120	2.39	132	315	1SPA*
127	2.25	80	180	3SPZ
134	2.13	75	160	3SPZ
143	2.00	100	200	2SPZ
151	1.89	132	250	1SPA*
160	1.79	140	250	1SPA*
168	1.70	106	180	2SPA
171	1.67	150	250	1SPA*
177	1.61	112	180	2SPZ
178	1.60	125	200	1SPA
187	1.53	118	180	2SPA
190	1.50	100	150	2SPA
200	1.43	140	200	1SPA*
205	1.39	90	125	3SPZ
209	1.36	132	180	2SPA
214	1.33	150	200	1SPA*
222	1.29	140	180	2SPZ
223	1.28	125	160	1SPA
235	1.21	132	160	2SPA
242	1.18	106	125	2SPA
250	1.14	140	160	2SPZ
254	1.12	80	90	4SPZ
257	1.11	180	200	1SPA*
269	1.06	118	125	2SPA
285	1.00	100	100	3SPZ
300	1.05	118	112	2SPA
306	1.07	150	140	2SPA
317	1.11	200	180	1SPA*
326	1.14	160	140	2SPZ
336	1.18	100	85	4SPZ
338	1.19	140	118	2SPA
342	1.20	150	125	2SPA
355	1.24	112	90	4SPZ
363	1.27	150	118	2SPA
367	1.29	180	140	2SPZ
375	1.32	125	95	3SPZ
387	1.36	160	118	2SPA
396	1.39	250	180	1SPA*

C 13:1

Output rev/min	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
18	5.97	67	400	1SPZ*
21	5.00	80	400	1SPZ*
25	4.20	75	315	1SPZ*
27	3.94	80	315	1SPZ*
30	3.52	71	250	1SPZ*
34	3.12	80	250	1SPZ*
36	2.94	85	250	1SPZ*
38	2.78	90	250	1SPZ*
40	2.63	95	250	1SPZ*
42	2.50	100	250	1SPZ*
44	2.39	67	160	2SPZ
48	2.22	90	200	1SPZ*
50	2.11	95	200	1SPZ*
53	2.00	100	200	1SPZ*
57	1.87	75	140	2SPZ
59	1.79	112	200	1SPZ*
63	1.67	75	125	2SPZ
66	1.61	112	180	1SPZ*
70	1.51	106	160	1SPA*
73	1.44	125	180	1SPZ*
76	1.40	80	112	2SPZ
80	1.32	85	112	2SPZ
83	1.27	118	150	1SPA*
85	1.24	90	112	2SPZ
87	1.21	132	160	1SPA*
89	1.19	118	140	1SPA*
93	1.14	132	150	1SPA*
95	1.11	90	100	2SPZ
100	1.06	125	132	1SPA*
106	1.00	95	95	2SPZ
112	1.06	132	125	1SPA*
119	1.12	140	125	1SPA*
125	1.18	112	95	2SPZ
127	1.20	90	75	3SPZ
132	1.24	112	90	2SPZ
134	1.27	95	75	3SPZ
136	1.29	180	140	1SPA*
139	1.32	125	95	2SPZ
141	1.33	100	75	3SPZ
144	1.36	180	132	1SPA*
147	1.39	125	90	2SPZ
152	1.44	180	125	1SPA*
156	1.47	140	95	2SPZ
158	1.49	112	75	3SPZ
161	1.53	180	118	1SPA*
165	1.56	140	90	2SPZ
169	1.60	200	125	1SPA*
174	1.65	140	85	3SPZ
176	1.67	125	75	3SPZ
179	1.69	200	118	1SPA*

C 20:1

Output rev/min	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
10	7.04	71	500	2SPZ
11	6.25	80	500	2SPZ
12	5.97	67	400	1SPZ*
13	5.63	71	400	1SPZ*
15	4.70	67	315	1SPZ*
16	4.44	71	315	1SPZ*
17	4.20	75	315	1SPZ*
18	3.94	80	315	1SPZ*
19	3.73	67	250	1SPZ*
20	3.52	71	250	1SPZ*
21	3.33	75	250	1SPZ*
22	3.20	125	400	1SPZ*
23	3.12	80	250	1SPZ*
24	2.99	67	200	1SPZ*
25	2.82	71	200	1SPZ*
26	2.69	67	180	1SPZ*
28	2.54	71	180	1SPZ*
30	2.39	67	160	1SPZ*
31	2.25	71	160	1SPZ*
33	2.13	75	160	1SPZ*
34	2.09	67	140	2SPZ
36	1.97	71	140	1SPZ*
37	1.89	95	180	1SPZ*
38	1.87	75	140	1SPZ*
40	1.75	80	140	1SPZ*
41	1.70	106	180	1SPA
42	1.68	95	160	1SPZ*
43	1.65	85	140	1SPZ*
44	1.60	100	160	1SPZ*
45	1.56	80	125	1SPZ*
46	1.53	118	180	1SPA
47	1.50	100	150	1SPA
48	1.47	85	125	1SPZ*
49	1.44	125	180	1SPZ*
50	1.42	67	95	2SPZ
51	1.39	90	125	1SPZ*
52	1.34	67	90	2SPZ
53	1.33	75	100	2SPZ
54	1.32	95	125	1SPZ*
55	1.28	125	160	1SPZ*
56	1.27	67	85	2SPZ
57	1.24	90	112	1SPZ*
59	1.19	67	80	2SPZ
60	1.18	95	112	1SPZ*
62	1.14	140	160	1SPZ
63	1.12	67	75	2SPZ
66	1.07	75	80	2SPZ
67	1.06	71	75	2SPZ
70	1.00	100	100	1SPA
74	1.05	100	95	2SPZ

* Single belt drives can be used however two belts can be used without overloading the bearings.

Shaft Mounted Speed Reducer

Wedge Belt Drives for 1440 rev/min Electric Motors

D 5:1

Output rev/min	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
51	5.62	112	630	1SPA*
54	5.26	95	500	2SPZ
60	4.77	132	630	1SPA*
64	4.46	112	500	1SPA*
67	4.24	118	500	1SPA*
75	3.79	132	500	1SPA*
82	3.50	90	315	3SPZ
86	3.32	95	315	3SPZ
91	3.15	100	315	2SPA
101	2.81	112	315	2SPZ
107	2.67	150	400	1SPA*
113	2.52	125	315	2SPZ
120	2.39	132	315	2SPA
128	2.23	112	250	2SPA
135	2.12	118	250	2SPA
143	2.00	100	200	3SPZ
151	1.89	106	200	3SPA
159	1.80	100	180	3SPZ
163	1.75	180	315	1SPA*
171	1.67	150	250	2SPA
178	1.61	112	180	3SPZ
181	1.57	200	315	1SPA*
187	1.53	118	180	2SPA
190	1.50	100	150	3SPA
200	1.43	112	160	3SPZ
204	1.40	100	140	3SPA
209	1.36	132	180	2SPA
216	1.32	106	140	3SPA
222	1.29	140	180	2SPA
228	1.25	112	140	3SPZ
235	1.21	132	160	2SPA
242	1.18	106	125	3SPA
250	1.14	140	160	2SPA
255	1.12	100	112	4SPZ
266	1.07	140	150	2SPA
269	1.06	118	125	3SPA
285	1.00	140	140	2SPA
301	1.05	118	112	3SPA
306	1.07	150	140	2SPA
317	1.11	100	90	5SPZ
324	1.14	150	132	3SPA
337	1.18	200	170	2SPB
342	1.20	180	150	2SPA
346	1.21	160	132	3SPA
356	1.25	250	200	1SPA*
365	1.28	160	125	3SPZ
375	1.32	125	95	5SPZ
380	1.33	200	150	2SPA
387	1.36	160	118	3SPA
396	1.39	125	90	5SPZ

D 13:1

Output rev/min	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
11	9.40	67	630	3SPZ
14	7.46	67	500	2SPZ
18	5.97	67	400	2SPZ
19	5.63	71	400	1SPZ*
21	5.00	80	400	1SPZ*
22	4.71	85	400	1SPZ*
25	4.21	95	400	1SPZ*
26	4.00	100	400	1SPZ*
28	3.73	67	250	2SPZ
30	3.50	90	315	1SPZ*
34	3.15	100	315	1SPZ*
36	2.97	106	315	1SPA*
38	2.82	71	200	2SPZ
40	2.67	75	200	2SPZ
42	2.50	100	250	1SPA*
44	2.40	75	180	2SPZ
47	2.25	80	180	2SPZ
50	2.12	85	180	2SPZ
53	2.00	90	180	2SPZ
56	1.89	95	180	2SPZ
60	1.78	90	160	2SPZ
63	1.68	95	160	2SPZ
64	1.65	85	140	3SPZ
66	1.60	125	200	1SPA*
70	1.52	132	200	1SPA*
71	1.50	100	150	2SPA
72	1.47	85	125	3SPZ
74	1.43	140	200	1SPA*
76	1.39	90	125	3SPZ
79	1.33	150	200	1SPA*
80	1.32	85	112	3SPZ
82	1.29	140	180	1SPA*
85	1.25	112	140	2SPZ
88	1.20	150	180	1SPA*
90	1.18	85	100	4SPZ
92	1.14	140	160	2SPZ
94	1.12	160	180	1SPA*
100	1.06	100	106	3SPA
101	1.05	112	118	2SPA
106	1.00	100	100	3SPZ
112	1.05	118	112	2SPA
118	1.11	200	180	1SPA*
120	1.14	150	132	2SPA
125	1.18	132	112	2SPA
127	1.20	150	125	2SPA
128	1.21	160	132	2SPA
132	1.25	200	160	1SPA*
135	1.27	150	118	2SPA
136	1.29	180	140	2SPA
139	1.32	125	95	3SPZ

D 20:1

Output rev/min	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
10	7.04	71	500	2SPZ
11	6.25	80	500	2SPZ
12	5.97	67	400	1SPZ*
13	5.63	71	400	1SPZ*
14	5.00	80	400	1SPZ*
15	4.70	67	315	1SPZ*
16	4.44	71	315	1SPZ*
17	4.20	75	315	1SPZ*
18	3.94	80	315	1SPZ*
19	3.73	67	250	1SPZ*
20	3.52	71	250	1SPZ*
21	3.33	75	250	1SPZ*
22	3.20	125	400	1SPZ*
23	3.12	80	250	1SPZ*
24	2.94	85	250	1SPZ*
25	2.78	90	250	1SPZ*
26	2.69	67	180	2SPZ
27	2.63	95	250	1SPZ*
28	2.50	100	250	1SPZ*
30	2.35	85	200	1SPZ*
32	2.22	90	200	1SPZ*
33	2.13	75	160	2SPZ
34	2.09	67	140	2SPZ
35	2.00	100	200	1SPZ*
37	1.89	95	180	1SPZ*
38	1.87	67	125	2SPZ
39	1.80	100	180	1SPZ*
40	1.75	80	140	2SPZ
41	1.70	106	180	1SPA*
42	1.67	75	125	2SPZ
44	1.61	112	180	1SPZ*
45	1.58	71	112	2SPZ
46	1.53	118	180	1SPA*
47	1.49	75	112	2SPZ
49	1.44	125	180	1SPZ*
50	1.40	80	112	2SPZ
51	1.39	90	125	2SPZ
52	1.34	67	90	3SPZ
53	1.32	106	140	1SPA*
55	1.28	125	160	1SPZ*
56	1.27	67	85	3SPZ
58	1.21	132	160	1SPA*
59	1.20	125	150	1SPA*
60	1.18	85	100	2SPZ
62	1.14	140	160	1SPZ*
63	1.11	90	100	2SPZ
66	1.07	140	150	1SPA
67	1.06	90	95	2SPZ
70	1.00	125	125	1SPA
74	1.06	132	125	1SPA

* Single belt drives can be used however two belts can be used without overloading the bearings.

Shaft Mounted Speed Reducer

Wedge Belt Drives for 1440 rev/min Electric Motors

E 5:1

Output rev/min	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
51	5.56	90	500	3SPZ
54	5.26	95	500	3SPZ
60	4.77	132	630	2SPA
63	4.50	140	630	1SPA*
68	4.20	150	630	1SPA*
73	3.94	160	630	1SPA*
80	3.57	112	400	2SPA
84	3.39	118	400	2SPA
89	3.20	125	400	2SPA
96	2.97	106	315	3SPA
101	2.81	112	315	3SPZ
107	2.67	150	400	2SPA
113	2.52	125	315	3SPZ
120	2.39	132	315	2SPA
127	2.25	140	315	2SPA
136	2.11	95	200	5SPZ
143	2.00	100	200	4SPA
151	1.89	95	180	5SPZ
160	1.79	112	200	4SPZ
168	1.70	106	180	4SPA
173	1.65	170	280	2SPB
178	1.60	125	200	3SPA
183	1.56	160	250	2SPA
189	1.51	106	160	4SPA
198	1.44	125	180	4SPZ
204	1.40	160	224	2SPB
209	1.36	132	180	3SPA
214	1.33	150	200	3SPA
223	1.28	125	160	3SPA
228	1.25	200	250	2SPA
235	1.21	132	160	3SPA
240	1.19	118	140	4SPA
250	1.14	140	160	4SPZ
254	1.12	160	180	2SPB
257	1.11	180	200	2SPA
266	1.07	140	150	3SPA
270	1.06	125	132	4SPA
285	1.00	125	125	5SPZ
301	1.05	118	112	5SPA
304	1.07	160	150	3SPA
317	1.11	200	180	2SPA
324	1.14	150	132	4SPA
336	1.18	200	170	2SPB
342	1.20	180	150	2SPA
356	1.25	212	170	2SPB
365	1.28	160	125	5SPZ
376	1.32	224	170	2SPB
380	1.33	200	150	3SPA
387	1.36	160	118	4SPA
396	1.39	250	180	2SPA

E 13:1

Output rev/min	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
11	9.40	67	630	3SPZ
13	8.40	75	630	3SPZ
14	7.46	67	500	2SPZ
16	6.67	75	500	2SPZ
18	5.97	67	400	2SPZ
19	5.63	71	400	2SPZ
21	5.00	100	500	1SPA*
24	4.44	71	315	2SPZ
25	4.20	75	315	2SPZ
26	4.00	100	400	1SPA*
28	3.77	106	400	1SPA*
31	3.39	118	400	1SPA*
33	3.20	125	400	1SPA*
35	3.03	132	400	1SPA*
36	2.94	85	250	2SPZ
38	2.78	90	250	2SPZ
40	2.63	95	250	2SPZ
42	2.52	125	315	1SPA*
44	2.39	132	315	1SPA*
45	2.35	85	200	3SPZ
47	2.25	80	180	3SPZ
50	2.12	85	180	3SPZ
53	2.00	100	200	2SPA
55	1.89	95	180	3SPZ
56	1.89	106	200	2SPA
59	1.79	112	200	2SPA
60	1.75	180	315	1SPA*
62	1.70	106	180	2SPA
65	1.61	112	180	2SPA
66	1.60	100	160	3SPZ
69	1.53	118	180	2SPA
71	1.50	100	150	3SPA
73	1.44	125	180	2SPA
74	1.43	140	200	2SPZ
76	1.39	180	250	1SPA*
78	1.36	132	180	2SPA
79	1.34	112	150	3SPA
80	1.32	100	132	3SPA
82	1.29	140	180	2SPA
83	1.28	125	160	2SPA
85	1.25	200	250	1SPA*
87	1.21	132	160	2SPA
89	1.18	112	132	3SPA
90	1.18	170	200	2SPB
93	1.14	140	160	2SPA
95	1.12	125	140	3SPZ
99	1.07	140	150	2SPA
100	1.06	100	106	4SPA
101	1.05	95	100	5SPZ
106	1.00	112	112	4SPZ

E 20:1

Output rev/min	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
10	7.04	71	500	2SPZ
11	6.25	80	500	2SPZ
12	5.97	67	400	1SPZ*
13	5.63	71	400	1SPZ*
14	5.00	80	400	1SPZ*
15	4.71	85	400	1SPZ*
16	4.44	90	400	1SPZ*
17	4.21	95	400	1SPZ*
18	4.00	100	400	1SPZ*
19	3.71	85	315	1SPZ*
20	3.52	71	250	2SPZ
21	3.32	95	315	1SPZ*
22	3.15	100	315	1SPZ*
23	3.12	80	250	2SPZ
24	2.99	67	200	2SPZ
25	2.82	71	200	2SPZ
26	2.67	75	200	2SPZ
28	2.54	71	180	2SPZ
29	2.40	75	180	2SPZ
30	2.35	85	200	2SPZ
31	2.25	80	180	2SPZ
33	2.13	75	160	3SPZ
34	2.09	67	140	3SPZ
35	2.00	80	160	2SPZ
37	1.88	85	160	2SPZ
38	1.87	67	125	3SPZ
39	1.79	112	200	1SPA*
40	1.75	180	315	1SPA*
42	1.69	118	200	1SPA*
43	1.65	85	140	3SPZ
44	1.60	125	200	1SPA*
45	1.56	160	250	1SPA*
46	1.53	118	180	2SPA
47	1.52	132	200	1SPA*
48	1.47	95	140	2SPZ
49	1.44	125	180	1SPA*
50	1.40	100	140	2SPZ
52	1.36	132	180	1SPA*
53	1.33	150	200	1SPA*
54	1.32	95	125	3SPZ
55	1.27	118	150	2SPA
56	1.25	100	125	2SPA
58	1.21	132	160	2SPA
59	1.20	150	180	1SPA*
60	1.18	106	125	2SPA
62	1.14	140	160	2SPZ
63	1.11	90	100	3SPZ
66	1.07	140	150	2SPA
67	1.06	106	112	2SPA
70	1.00	160	160	1SPA*

* Single belt drives can be used however two belts can be used without overloading the bearings.

Shaft Mounted Speed Reducer

Wedge Belt Drives for 1440 rev/min Electric Motors

F 5:1

Output rev/min	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
50	5.71	140	800	3SPZ
57	5.00	100	500	3SPA
61	4.72	106	500	3SPA
68	4.21	95	400	5SPZ
73	3.94	160	630	2SPA
77	3.71	170	630	2SPB
82	3.50	180	630	2SPB
86	3.32	95	315	6SPZ
91	3.15	100	315	5SPZ
97	2.94	170	500	2SPB
103	2.78	180	500	2SPA
108	2.63	190	500	2SPB
113	2.52	125	315	4SPZ
121	2.35	170	400	2SPB
127	2.25	140	315	4SPZ
135	2.12	118	250	4SPA
143	2.00	125	250	5SPZ
151	1.89	132	250	4SPA
160	1.79	140	250	5SPZ
168	1.69	118	200	5SPA
173	1.65	170	280	2SPB
178	1.60	125	200	4SPA
181	1.56	160	250	2SPB
187	1.53	118	180	5SPA
192	1.49	212	315	2SPB
200	1.43	140	200	5SPZ
205	1.39	180	250	2SPB
215	1.32	160	212	3SPB
222	1.29	140	180	4SPA
226	1.26	250	315	2SPB
235	1.21	132	160	5SPA
242	1.18	190	224	2SPB
250	1.14	140	160	6SPZ
255	1.12	200	224	2SPB
267	1.07	150	160	4SPA
271	1.05	224	236	2SPB
285	1.00	224	224	2SPB
301	1.06	224	212	2SPB
304	1.07	160	150	4SPA
317	1.11	200	180	3SPA
324	1.14	150	132	5SPA
336	1.18	200	170	3SPB
342	1.20	180	150	4SPA
356	1.25	212	170	3SPB
360	1.26	315	250	2SPB
365	1.28	160	125	6SPA
376	1.32	224	170	3SPB
380	1.33	200	150	4SPA
387	1.36	160	118	6SPA
396	1.39	250	180	3SPA

F 13:1

Output rev/min	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
10	10.67	75	800	3SPZ
11	9.40	67	630	3SPZ
13	8.40	75	630	3SPZ
14	7.46	67	500	2SPZ
15	7.04	71	500	2SPZ
17	6.30	100	630	1SPA*
19	5.62	112	630	1SPA*
21	5.04	125	630	1SPA*
24	4.44	90	400	2SPZ
25	4.24	118	500	1SPA*
26	4.00	125	500	1SPA*
28	3.79	132	500	1SPA*
30	3.57	140	500	1SPA*
32	3.33	150	500	1SPA*
34	3.15	100	315	2SPA
36	2.97	106	315	2SPA
38	2.81	112	315	2SPA
39	2.67	118	315	2SPA
40	2.63	190	500	2SPB
42	2.50	100	250	3SPZ
45	2.36	106	250	3SPA
47	2.25	140	315	2SPZ
48	2.22	180	400	1SPA*
50	2.12	118	250	2SPA
53	2.00	100	200	3SPA
55	1.89	132	250	2SPA
56	1.89	106	200	3SPA
58	1.80	100	180	4SPZ
60	1.75	180	315	2SPA
63	1.68	95	160	5SPZ
66	1.61	112	180	3SPA
68	1.56	160	250	2SPA
69	1.53	118	180	3SPA
71	1.50	100	150	4SPA
74	1.44	125	180	4SPZ
76	1.40	100	140	5SPZ
78	1.36	132	180	3SPA
80	1.32	160	212	2SPB
81	1.32	170	224	2SPB
83	1.28	125	160	3SPA
85	1.25	160	200	2SPA
88	1.21	132	160	3SPA
89	1.19	118	140	4SPA
90	1.18	170	200	2SPB
93	1.14	132	150	3SPA
95	1.12	118	132	4SPA
99	1.06	160	170	2SPB
100	1.06	118	125	4SPA
106	1.00	140	140	4SPZ
112	1.06	170	160	2SPB

F 20:1

Output rev/min	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
10	7.04	71	500	2SPZ
11	6.67	75	500	2SPZ
12	5.97	67	400	2SPZ
13	5.63	71	400	2SPZ
14	5.00	80	400	2SPZ
15	4.70	67	315	2SPZ
16	4.44	71	315	2SPZ
17	4.20	75	315	2SPZ
18	4.00	100	400	1SPA*
19	3.77	106	400	1SPA*
20	3.57	112	400	1SPA*
21	3.39	118	400	1SPA*
22	3.20	125	400	1SPZ*
23	3.03	132	400	1SPA*
24	2.94	85	250	2SPZ
25	2.86	140	400	1SPZ*
26	2.67	118	315	1SPA*
27	2.63"	95	250	2SPZ
28	2.50	80	200	3SPZ
29	2.40	75	180	3SPZ
30	2.39	132	315	1SPA*
31	2.25	80	180	3SPZ
33	2.17	85	180	3SPZ
35	2.00	100	200	2SPA
36	1.97	160	315	1SPA*
37	1.88	85	160	3SPZ
39	1.79	112	200	2SPZ
40	1.75	80	140	4SPZ
42	1.70	106	180	2SPA
43	1.65	85	140	4SPZ
44	1.60	125	200	2SPZ
45	1.56	160	250	1SPA*
46	1.53	118	180	2SPA
47	1.50	100	150	3SPA
48	1.48	160	236	2SPB
49	1.43	112	160	2SPA
50	1.40	100	140	3SPZ
51	1.39	180	250	1SPA*
52	1.36	118	160	2SPA
53	1.32	100	132	3SPA
55	1.29	140	180	2SPZ
56	1.25	100	125	3SPA
58	1.21	132	160	2SPA
59	1.20	125	150	2SPA
60	1.18	106	125	3SPA
62	1.14	132	150	2SPA
63	1.11	106	118	3SPA
66	1.06	132	140	2SPA
67	1.05	112	118	3SPA
70	1.00	200	200	2SPA

* Single belt drives can be used however two belts can be used without overloading the bearings.

Shaft Mounted Speed Reducer

Wedge Belt Drives for 1440 rev/min Electric Motors

G 5:1

Output rev/min	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
51	5.62	112	630	3SPA
54	5.26	95	500	5SPZ
60	4.77	132	630	3SPA
63	4.50	140	630	4SPZ
67	4.24	118	500	4SPA
71	4.00	125	500	5SPZ
77	3.71	170	630	2SPB
84	3.39	118	400	5SPA
89	3.20	125	400	6SPZ
94	3.03	132	400	4SPA
101	2.81	224	630	2SPB
107	2.67	150	400	4SPA
114	2.50	160	400	2SPB
121	2.36	212	500	2SPB
127	2.25	140	315	5SPA
136	2.10	150	315	5SPA
143	2.00	200	400	3SPA
151	1.89	212	400	3SPB
160	1.79	140	250	6SPA
163	1.75	180	315	3SPB
168	1.69	236	400	2SPB
172	1.66	190	315	3SPB
178	1.60	250	400	2SPB
183	1.56	180	280	3SPB
190	1.50	236	355	3SPB
192	1.49	212	315	3SPB
200	1.43	140	200	6SPA
206	1.39	170	236	4SPB
214	1.33	150	200	6SPA
225	1.27	280	355	2SPB
228	1.25	200	250	3SPB
238	1.20	250	300	3SPC
242	1.18	200	236	3SPB
252	1.13	265	300	3SPC
256	1.11	212	236	3SPB
266	1.07	280	300	3SPC
270	1.06	212	224	3SPB
285	1.00	224	224	3SPB
301	1.05	236	224	3SPB
306	1.07	300	280	3SPC
317	1.11	200	180	4SPB
322	1.13	355	315	2SPB
336	1.18	200	170	5SPB
341	1.20	335	280	3SPC
355	1.24	224	180	4SPB
359	1.26	315	250	2SPB
374	1.31	236	180	4SPB
381	1.33	315	236	3SPB
396	1.39	250	180	5SPA
399	1.40	224	160	5SPB

G 13:1

Output rev/min	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
11	9.40	67	630	3SPZ
12	8.87	71	630	3SPZ
13	8.40	75	630	3SPZ
14	7.41	85	630	3SPZ
15	7.04	71	500	3SPZ
16	6.63	95	630	3SPZ
17	6.30	100	630	2SPA
18	5.88	85	500	3SPZ
19	5.62	112	630	3SPZ
20	5.26	95	500	3SPZ
21	5.00	80	400	3SPZ
22	4.77	132	630	2SPA
23	4.72	106	500	2SPA
24	4.46	112	500	2SPZ
25	4.21	95	400	3SPZ
27	4.00	125	500	2SPZ
28	3.77	106	400	2SPA
30	3.57	140	500	2SPZ
31	3.39	118	400	2SPA
33	3.20	125	400	2SPA
34	3.15	100	315	3SPA
36	2.97	106	315	3SPA
38	2.81	112	315	3SPZ
40	2.63	95	250	5SPZ
42	2.50	100	250	4SPZ
44	2.39	132	315	2SPA
45	2.36	106	250	3SPA
47	2.25	140	315	2SPA
50	2.11	95	200	5SPZ
53	2.00	100	200	4SPA
56	1.89	132	250	3SPA
57	1.85	170	315	2SPB
59	1.79	140	250	4SPZ
61	1.75	180	315	2SPA
63	1.69	118	200	4SPA
64	1.65	170	280	2SPB
66	1.60	125	200	5SPZ
70	1.53	118	180	4SPA
72	1.48	160	236	2SPB
74	1.43	140	200	3SPA
76	1.39	170	236	2SPB
80	1.33	150	200	3SPA
83	1.27	118	150	5SPA
85	1.24	180	224	2SPB
87	1.21	132	160	4SPA
90	1.18	180	212	2SPB
93	1.14	140	160	4SPA
95	1.11	180	200	3SPA
100	1.06	212	224	2SPB

G 20:1

Output rev/min	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
10	7.04	71	500	2SPZ
11	6.25	80	500	2SPZ
12	5.97	67	400	3SPZ
13	5.33	75	400	3SPZ
14	5.00	80	400	2SPZ
15	4.71	85	400	2SPZ
16	4.44	90	400	2SPZ
17	4.21	95	400	2SPZ
18	4.00	100	400	2SPZ
19	3.71	85	315	3SPZ
20	3.57	112	400	2SPZ
21	3.33	150	500	2SPA
22	3.20	125	400	2SPZ
23	3.03	132	400	2SPA
24	2.94	85	250	3SPZ
25	2.78	90	250	3SPZ
26	2.67	150	400	1SPA*
27	2.63	95	250	3SPZ
28	2.52	125	315-	2SPZ
30	2.36	106	250	3SPA
31	2.25	140	315	2SPZ
32	2.23	112	250	2SPA
33	2.12	118	250	2SPA
34	2.10	150	315	2SPA
35	2.00	100	200	3SPA
36	1.97	160	315	2SPA
37	1.89	95	180	4SPZ
39	1.80	100	180	4SPZ
40	1.75	180	315	2SPA
41	1.70	106	180	3SPA
42	1.67	150	250	2SPA
44	1.60	125	200	3SPZ
45	1.56	160	250	2SPA
47	1.50	100	150	4SPA
48	1.47	95	140	5SPZ
49	1.43	112	160	4SPZ
50	1.40	100	140	4SPA
51	1.39	180	250	2SPA
52	1.36	118	160	3SPA
53	1.33	150	200	2SPA
55	1.28	125	160	3SPA
56	1.25	160	200	2SPA
58	1.21	132	160	3SPA
59	1.20	125	150	3SPA
60	1.18	170	200	2SPB
62	1.14	132	150	3SPA
63	1.11	180	200	2SPA
66	1.07	140	150	3SPA
67	1.05	190	200	2SPB
70	1.00	180	180	2SPB

* Single belt drives can be used however two belts can be used without overloading the bearings.

Shaft Mounted Speed Reducer

Wedge Belt Drives for 1440 rev/min Electric Motors

H 5:1

Output rev/min	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
50	5.71	140	800	5SPZ
54	5.26	190	1000	3SPB
60	4.77	132	630	5SPA
63	4.50	140	630	4SPA
71	4.00	200	800	3SPA
82	3.50	180	630	3SPA
86	3.32	190	630	3SPB
91	3.15	200	630	3SPA
96	2.97	212	630	3SPB
101	2.81	224	630	3SPB
107	2.67	150	400	6SPA
113	2.52	250	630	2SPB
121	2.35	170	400	4SPB
127	2.25	280	630	2SPB
136	2.11	190	400	4SPB
142	2.01	236	475	3SPC
145	1.97	160	315	6SPA
150	1.91	236	450	3SPC
160	1.79	224	400	3SPB
163	1.75	180	315	4SPB
168	1.69	236	400	3SPB
172	1.66	190	315	4SPB
178	1.60	265	425	3SPC
181	1.57	200	315	5SPA
188	1.52	280	425	3SPC
192	1.49	212	315	4SPB
200	1.43	280	400	3SPB
211	1.35	315	425	3SPC
216	1.32	212	280	4SPB
225	1.27	315	400	2SPB
228	1.25	224	280	3SPC
238	1.20	250	300	3SPC
242	1.18	212	250	4SPB
252	1.13	265	300	3SPC
256	1.11	212	236	5SPB
266	1.07	280	300	3SPC
271	1.05	224	236	4SPB
285	1.00	200	200	5SPB
300	1.05	315	300	3SPC
306	1.07	300	280	3SPC
317	1.11	200	180	6SPB
323	1.13	300	265	3SPB
336	1.18	212	180	6SPB
341	1.20	335	280	3SPC
357	1.25	250	200	6SPA
362	1.27	355	280	3SPB
375	1.32	250	190	5SPB
381	1.33	315	236	3SPC
396	1.39	250	180	6SPB
399	1.40	280	200	5SPB

H 13:1

Output rev/min	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
10	10.67	75	800	3SPZ
11	9.41	85	800	3SPZ
12	8.89	90	800	3SPZ
13	8.42	95	800	3SPZ
14	7.87	80	630	3SPZ
16	6.63	95	630	3SPZ
18	5.94	106	630	2SPA
19	5.62	112	630	2SPA
21	5.00	100	500	3SPA
23	4.72	106	500	3SPA
25	4.21	95	400	5SPZ
27	4.00	100	400	4SPZ
28	3.77	106	400	4SPA
30	3.57	140	500	2SPA
32	3.33	150	500	2SPA
34	3.15	100	315	5SPZ
35	3.03	132	400	3SPA
37	2.86	140	400	4SPZ
38	2.78	180	500	2SPA
40	2.67	118	315	4SPA
42	2.50	160	400	2SPB
44	2.39	132	315	4SPA
45	2.35	170	400	2SPB
47	2.25	140	315	5SPZ
48	2.22	180	400	2SPB
50	2.10	150	315	3SPA
51	2.09	170	355	2SPB
54	1.97	160	315	2SPB
56	1.89	132	250	4SPA
57	1.87	190	355	2SPB
59	1.79	140	250	4SPA
61	1.75	180	315	2SPB
64	1.66	190	315	2SPB
66	1.60	250	400	2SPB
68	1.56	160	250	3SPB
72	1.48	160	236	3SPB
74	1.43	140	200	5SPA
76	1.39	180	250	3SPB
79	1.33	236	315	2SPB
80	1.33	150	200	5SPA
82	1.29	140	180	5SPA
85	1.25	224	280	2SPB
90	1.18	180	212	3SPB
95	1.11	180	200	4SPA
100	1.06	212	224	3SPB

H 20:1

Output rev/min	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
10	7.04	71	500	3SPZ
11	6.63	95	630	3SPZ
12	5.88	85	500	3SPZ
13	5.56	90	500	3SPZ
14	5.04	125	630	2SPA
15	4.71	85	400	3SPZ
16	4.44	90	400	3SPZ
17	4.24	118	500	2SPA
18	4.00	125	500	2SPZ
19	3.77	106	400	3SPA
20	3.57	112	400	2SPA
21	3.39	118	400	2SPA
22	3.20	125	400	2SPA
23	3.03	132	400	2SPA
24	2.97	106	315	3SPA
25	2.86	140	400	2SPA
26	2.67	150	400	2SPA
27	2.63	95	250	5SPZ
28	2.52	125	315	4SPZ
30	2.36	106	250	4SPA
31	2.25	140	315	3SPZ
32	2.23	112	250	4SPZ
33	2.12	118	250	3SPA
34	2.10	150	315	2SPA
35	2.00	125	250	3SPA
36	1.97	160	315	2SPA
37	1.89	132	250	3SPA
38	1.85	170	315	2SPB
39	1.79	140	250	4SPZ
40	1.75	180	315	2SPA
41	1.70	106	180	5SPA
42	1.69	118	200	4SPA
44	1.60	125	200	5SPZ
45	1.57	200	315	2SPA
47	1.52	132	200	4SPA
48	1.47	170	250	2SPB
49	1.44	125	180	4SPA
51	1.39	170	236	2SPB
52	1.36	132	180	4SPA
53	1.33	150	200	3SPA
54	1.31	180	236	2SPB
55	1.27	118	150	5SPA
57	1.24	180	224	2SPB
59	1.20	125	150	5SPA
60	1.18	190	224	2SPB

Shaft Mounted Speed Reducer

Wedge Belt Drives for 1440 rev/min Electric Motors

J 5:1

Output rev/min	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
51	5.56	180	1000	3SPB
54	5.26	190	1000	3SPB
57	5.00	160	800	4SPB
61	4.71	170	800	4SPB
63	4.50	140	630	6SPA
68	4.21	190	800	4SPB
71	4.00	200	800	5SPA
76	3.77	212	800	4SPB
80	3.57	224	800	3SPB
84	3.39	236	800	3SPB
89	3.20	250	800	3SPB
96	2.97	212	630	4SPB
100	2.86	280	800	3SPB
107	2.67	236	630	4SPB
112	2.54	315	800	3SPB
120	2.38	265	630	3SPC
127	2.24	250	560	3SPC
134	2.13	375	800	3SPC
143	2.00	250	500	4SPB
150	1.90	250	475	3SPC
159	1.79	265	475	3SPC
168	1.70	280	475	3SPC
171	1.67	300	500	3SPC
178	1.60	265	425	3SPC
181	1.57	400	630	3SPC
189	1.51	315	475	3SPC
201	1.42	250	355	4SPC
203	1.41	355	500	3SPC
211	1.35	315	425	3SPC
215	1.32	400	530	3SPC
225	1.27	315	400	4SPB
228	1.25	300	375	3SPC
238	1.20	375	450	3SPC
241	1.18	300	355	3SPC
252	1.13	265	300	4SPC
255	1.12	335	375	3SPC
266	1.07	280	300	4SPC
269	1.06	335	355	3SPC
285	1.00	280	280	4SPC
300	1.05	315	300	4SPC
302	1.06	355	335	3SPC
306	1.07	300	280	4SPC
319	1.12	375	335	3SPC
338	1.18	355	300	4SPC
341	1.19	400	335	3SPC
357	1.25	375	300	4SPC
360	1.26	315	250	5SPC
362	1.27	400	315	3SPC
381	1.33	315	236	5SPC
382	1.34	355	265	4SPC

J 13:1

Output rev/min	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
11	10.00	100	1000	3SPA
12	8.89	90	800	4SPZ
13	8.00	100	800	3SPA
14	7.55	106	800	3SPA
15	7.14	112	800	3SPA
16	6.63	95	630	5SPZ
17	6.40	125	800	3SPZ
18	5.94	106	630	4SPA
19	5.62	112	630	3SPA
21	5.04	125	630	4SPZ
22	4.77	132	630	3SPA
23	4.72	106	500	4SPA
24	4.50	140	630	4SPZ
25	4.24	118	500	4SPA
27	3.94	160	630	2SPB
29	3.71	170	630	2SPB
30	3.57	140	150	4SPA
32	3.33	150	500	3SPA
34	3.12	160	500	3SPA
35	3.03	132	400	4SPA
37	2.86	140	400	4SPA
38	2.78	180	500	3SPA
40	2.63	190	500	2SPB
42	2.50	160	400	3SPB
44	2.39	132	315	5SPA
45	2.36	212	500	2SPB
47	2.25	355	800	3SPB
48	2.22	180	400	3SPB
50	2.12	224	475	3SPC
51	2.09	170	355	3SPB
53	2.00	200	400	3SPA
54	1.97	160	315	4SPB
56	1.90	224	425	3SPC
57	1.87	190	355	3SPB
59	1.79	140	250	6SPA
61	1.75	180	315	4SPA
64	1.66	190	315	3SPB
67	1.57	200	315	4SPA
68	1.56	180	280	4SPB
71	1.49	212	315	3SPB
72	1.47	170	250	5SPB
74	1.43	280	400	2SPB
76	1.39	180	250	5SPA
79	1.33	236	315	3SPB
81	1.32	190	250	4SPB
83	1.27	315	400	2SPB
85	1.24	190	236	4SPB
89	1.19	236	280	3SPB
95	1.12	250	280	3SPB
100	1.06	212	224	4SPB

J 20:1

Output rev/min	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
10	7.00	90	630	3SPZ
11	6.30	100	630	3SPZ
12	5.94	106	630	3SPA
13	5.62	112	630	3SPZ
14	5.00	100	500	3SPA
15	4.72	106	500	3SPA
16	4.50	140	630	2SPA
17	4.21	95	400	5SPZ
18	4.00	100	400	4SPA
19	3.77	106	400	4SPA
20	3.57	140	500	3SPZ
21	3.39	118	400	3SPA
22	3.20	125	400	3SPA
23	3.03	132	400	3SPA
24	2.94	170	500	2SPB
25	2.78	180	500	2SPA
26	2.67	118	315	4SPA
27	2.63	190	500	2SPB
28	2.52	125	315	5SPZ
30	2.35	170	400	2SPB
31	2.25	140	315	5SPZ
32	2.22	180	400	2SPB
33	2.12	118	250	5SPA
34	2.09	170	355	3SPB
35	2.01	236	475	3SPC
36	1.97	160	315	3SPA
37	1.91	236	450	3SPC
38	1.87	190	355	2SPB
39	1.79	140	250	4SPA
40	1.75	180	315	3SPA
41	1.70	250	425	3SPC
42	1.67	150	250	4SPA
43	1.65	170	280	3SPB
44	1.60	125	200	6SPA
45	1.57	200	315	3SPA
47	1.49	212	315	2SPB
48	1.47	190	280	3SPB
49	1.43	140	200	5SPA
51	1.39	170	236	3SPB
53	1.33	150	200	5SPA
54	1.31	180	236	3SPB
55	1.29	140	180	6SPA
56	1.25	200	250	4SPA
57	1.24	190	236	3SPB
59	1.19	160	190	4SPB
60	1.18	200	236	3SPB
63	1.12	160	180	5SPA
66	1.06	236	250	3SPB
67	1.06	170	180	4SPB
70	1.00	280	280	2SPB

Shaft Mounted Speed Reducer

Output Hubs

Standard hub bores are machined to F7 limits and a h7 tolerance is recommended for the shaft.

Keyways for both shaft and hub should be to BS 4235.

The shaft keyway should be machined to suit the standard key size below regardless of the hub bore diameter.

Hub Bores

SMSR Size	Standard Hub Bore		Alternative Hub Bore		
	Hub Bore	Bush Bores	Upper	Lower	Bush Bores
B	30	25	40	-	32, 35
C	40	30, 32, 35	50	30	38, 42, 45
D	50	38, 40, 42, 45	55	40	
E	55	42, 45, 50	65	50	60
F	65	50, 55, 60	75	55	70
G	75	60, 65, 70	85	65	80
H	85	70, 75, 80	100	75	90, 95
J	100	90, 95	120	85	110

Keyway

Shaft ø	Key
30	8 x 7
32	10 x 8
35	10 x 8
38	10 x 8
40	12 x 8
42	12 x 8
45	14 x 9
50	14 x 9
55	16 x 10
60	18 x 11
65	18 x 11
70	20 x 12
75	20 x 12
80	22 x 14
85	22 x 14
90	25 x 14
95	25 x 14
100	28 x 16
110	28 x 16
120	32 x 18

Shaft Mounted Speed Reducer

Lubrication

Units are supplied without oil and should be filled before running with a recommended lubricant to the correct level dependant on the mounting position.

Initial Lubrication

Remove the taper plugs from the filler/breather and level positions as shown in the diagram.

Fill until the lubricant overflows the oil level aperture. Replace the level taper plug. **Fit the filler/breather plug (supplied loose).**

Synthetic Lubricants

Certain approved synthetic lubricants are suitable for use in gear units - consult your lubricant supplier

Recommended oil change periods

The first change should be after 2500 hours and thereafter every 8000 hours of running or two years.

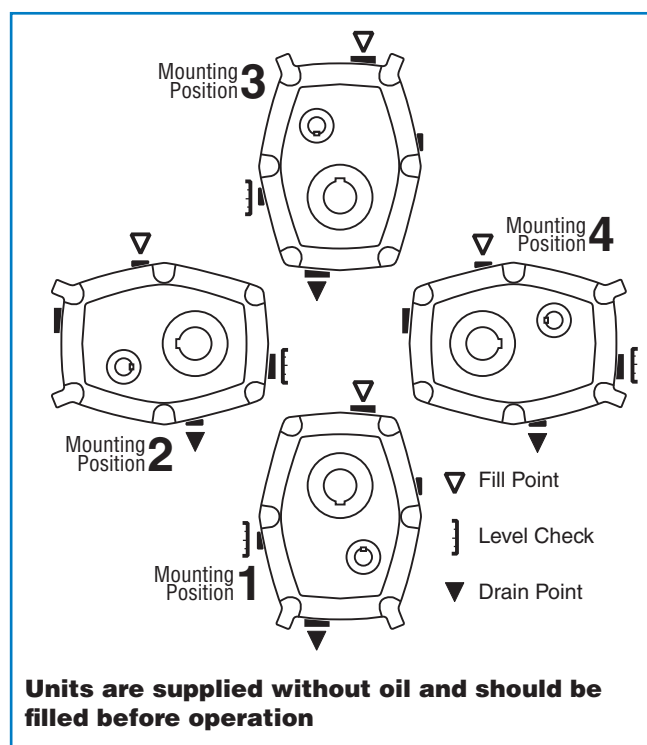
If the temperature exceeds 70°C, then oil changes should be every 6 months.

If the application is subject to frequent stops/starts, oil changes should be more frequent.

It is also recommended that the breather plug should be changed with every oil change.

Lubrication Capacity

SMSR Size	Capacity (Litres)							
	5:1				13:1 & 20:1			
	Mounting Position				Mounting Position			
	1	2	3	4	1	2	3	4
B	0.4	0.4	0.4	0.5	0.3	0.5	0.4	0.5
C	0.6	0.7	0.6	0.8	0.5	0.7	0.6	0.7
D	1.0	1.4	1.2	1.5	0.8	1.5	1.2	1.3
E	1.9	2.0	1.8	1.9	1.7	2.0	1.8	1.6
F	2.6	2.5	2.5	2.6	2.3	2.5	2.5	2.5
G	3.3	4.1	3.3	4.6	3.0	4.3	3.4	3.9
H	4.8	7.1	5.0	7.1	4.5	7.0	5.0	6.8
J	9.3	16.0	12.0	16.0	7.5	14.0	11.0	13.0

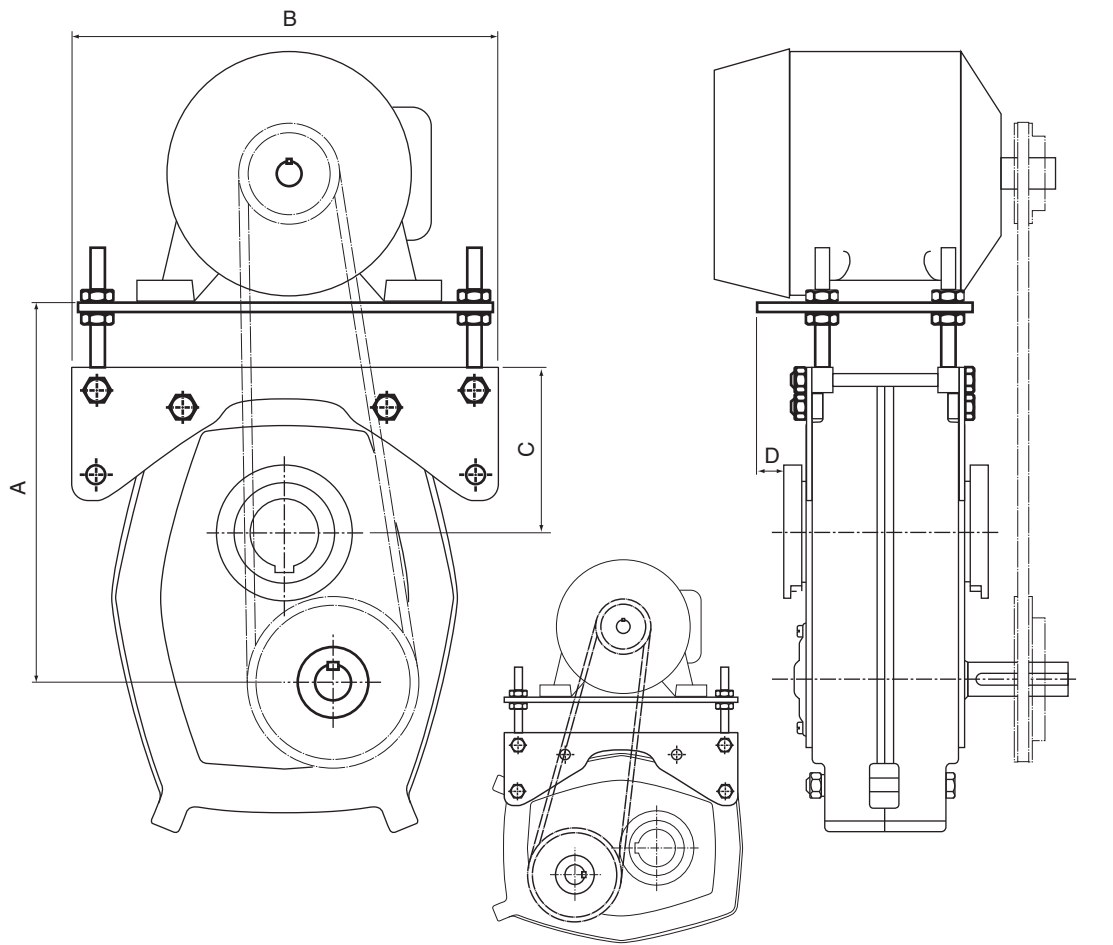


Mineral Oil ISO Viscosity Grade

Unit Ratio	5:1				13:1 & 20:1				
Output rev/min	0 - 100	101 - 200	201 - 400		0 - 20	21 - 50		51 - 120	
SMSR Size	BCDEFGHJ	BCDEFGHJ	BC	DEFGHJ	BCDEFGHJ	BCD	EFGHJ	BCD	EFGHJ
Amb Temp °C	BCDEFGHJ	BCDEFGHJ	BC	DEFGHJ	BCDEFGHJ	BCD	EFGHJ	BCD	EFGHJ
-10 to +5	100	100	100	68	150	150	150	100	100
+6 to +25	460	320	320	220	680	680	460	460	320
+26 to +40	800	680	380	460	800	800	800	680	460

Shaft Mounted Speed Reducer

Motor Mount Dimensions



Motor Mount Dimensions (mm)

Size	A		B	C	D	Accommodates Metric Motor Frame Size
	Min	Max				
B	185	240	244	88	55	63 71 80a 80b 90S 90L
C	214	267	262	102	86	63 71 80L 90S 90L 100L
D	252	307	294	122	78	71 80 90S 90L 100La 100Lb 112M
E	292	345	304	144	63	80 90S 90L 100L 112M
F	319	391	333	150	110	80 90S 100La 100Lb 112M 132S 132M
G	357	427	376	173	200	90S 90L 100L 112M 132S 132M 160M 160L
H	427	495	440	208	204	90L 100L 112M 132S 132M 160M 160L 180M 180L
J	563	646	480	269	215	100L 112M 132S 132M 160M 160L 180M 180L 200L

It is recommended that larger frame size motors than those listed for a particular size the SMSR should be mounted independently.

‘A Max’ this distance must include belt tensioning allowances.

‘A Min’ this distance must include belt fitting allowances.

NOTE: Guards are not supplied as part of standard assembly.

Shaft Mounted Speed Reducer

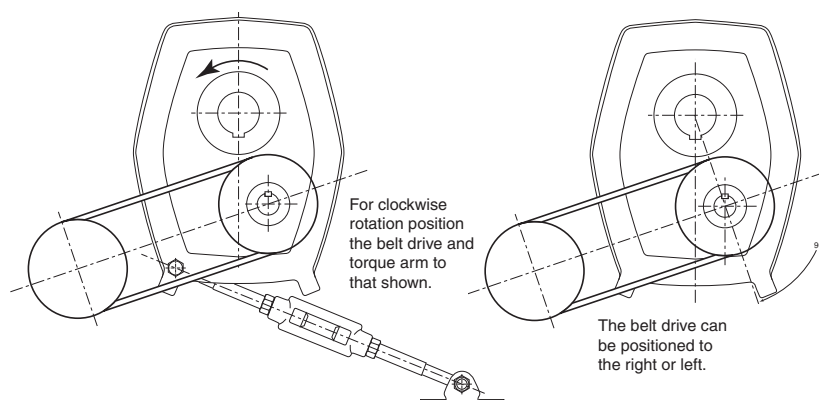
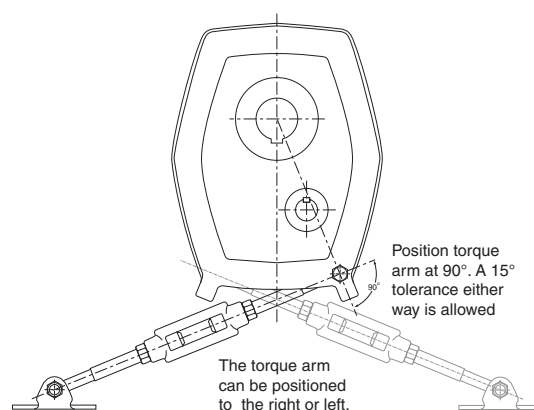
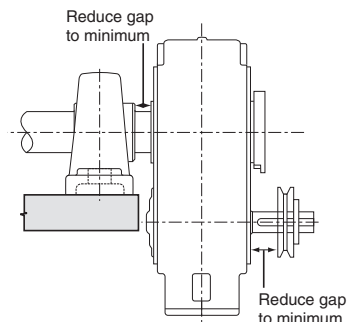
SMSR Installation

Satisfactory performance depends on correct installation, lubrication and maintenance. Therefore it is important that the instructions in the installation leaflet are followed carefully.

1. Prepare driven shaft by removing key and ensuring surface is clean, smooth and free from burrs. Coat shaft with "Anti Seize Compound".
2. Align reducer hub and shaft keyway then gently slide the reducer on to the driven shaft. Mount the reducer as close to driven shaft bearing as possible to reduce the overhung load. If possible the end of the driven shaft should be level with the outer edge of reducer output hub.
3. Fit the drive key to protrude at least one third way into length of hub keyway and flush with outer edge of reducer hub.
4. The hub clamp can now be tightened.

The Challenge SMSR creates little, if any, axial load on the shaft necessitating only light clamping to locate the unit on to the driven shaft.

5. Install pulley on gearbox input shaft as close to the reducer as possible. Failure to do this will cause excessive loads in the input shaft bearings and could cause their premature failure.
6. Install motor and belt drive with the belt pull at approximately 90° to the centre line between driven and input shafts. This will permit tensioning of the belt drive with the torque arm. The torque arm itself should work in tension. If output hub runs anti-clockwise, the torque arm should be positioned to the right.
7. Install torque-arm fulcrum on a rigid support so that the torque arm will be at approximately right angles to the centre line through the driven shaft and the torque-arm case bolt.
8. Make sure there is sufficient take up in the turn-buckle for belt tension adjustment.



Shaft Mounted Speed Reducer

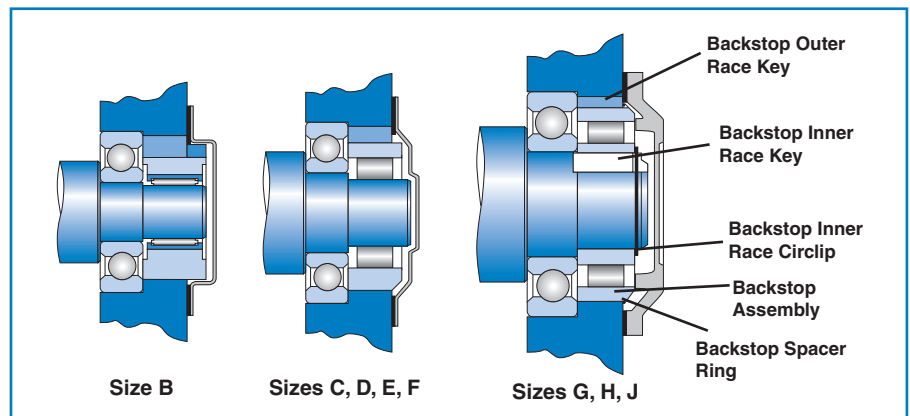
Back Stop Installation

These simple kits prevent reversal of the reducer and are ideal for applications such as conveyors or elevators to stop load slide back.

It is crucial that the correct installation procedure is carried out to ensure safe operation.

Installation Procedure.

- 1) Drain oil from reducer or lower to a level below backstop cover on gear casing.
- 2) Disconnect the drive to input shaft leaving it free to rotate, also remove backstop cover from the other side of the unit.
- 3) Fit outer bush first without key. Tap the bush into place using either a mallet or hard rubber hammer. The bush must be inserted parallel to the bore in the casing. Tap the bush in until flange just comes in to contact with the gear casing.
- 4) Check that keyways are aligned. Fit key and tap in until flush with or just below face of reducer.
- 5) Sizes "G" and above have an inner bush which should be fitted in a similar fashion to the outer bush. The outer edge of the bush should just clear the circlip groove on the extended input shaft. Fit the keys and then the circlip to retain bush.
- 6) Fit the backstop into the space between the outer bush and shaft / inner bush.
NEVER FORCE THE BACKSTOP, FIT BY HAND ONLY
The backstop elements should be angled in the direction of free rotation.
The backstop can be fitted either way to accommodate the direction required.
Check that free rotation is achieved in the correct direction by rotating the input shaft. Rotation in the opposite direction should not be possible.
- 7) Replace backstop cover with gasket or sealant and refill the reducer with lubricant to the correct level.



Shaft Mounted Speed Reducer

Maintenance Parts

Description	B	C	D	E	F	G	H	J
Case R H	SMR-B6002	SMR-C6002	SMR-D6002	SMR-E6002	SMR-F6002	SMR-G6002	SMR-H6002	SMR-J6002
Case L H	SMR-B6003	SMR-C6003	SMR-D6003	SMR-E6003	SMR-F6003	SMR-G6003	SMR-H6003	SMR-J6003
Hollow Dowel	SMR-B7004	SMR-C7004	SMR-D7004	SMR-E7004	SMR-F7004	SMR-G7004	SMR-H7004	SMR-J7004
Input Shaft & Pinion (13:1)	SMR-B6108	SMR-C6100	SMR-D6100	SMR-E6109	SMR-F6100	SMR-G6100	SMR-H6100	SMR-J6100
Input Shaft & Pinion (20:1)	SMR-B6118	SMR-C6110	SMR-D6110	SMR-E6119	SMR-F6110	SMR-G6110	SMR-H6110	SMR-J6110
Input Shaft & Pinion (5:1) B.Stop	SMR-B6128	SMR-C6120	SMR-D6120	SMR-E6128	SMR-F6120	SMR-G6120	SMR-H6120	SMR-J6120
Input Shaft & Pinion (5:1) No B.Stop	SMR-B6129	SMR-C6129	SMR-D6129	SMR-E6129	SMR-F6129	SMR-G6129	SMR-H6129	SMR-J6129
Back Stop Cover	SMR-B7012	SMR-C7012	SMR-D7012	SMR-E7012	SMR-F6012	SMR-G6012	SMR-H6012	SMR-J6012
Back Stop Cover Gasket	SMR-B7013	SMR-C7013	SMR-D7013	SMR-E7013	SMR-F7013	SMR-G7013	SMR-H7013	SMR-J7013
1st Reduction Gear (13:1) only	SMR-B6101	SMR-C6101	SMR-D6101	SMR-E6101	SMR-F6101	SMR-G6101	SMR-H6101	SMR-J6101
1st Reduction Gear (20:1) only	SMR-B6111	SMR-C6111	SMR-D6111	SMR-E6111	SMR-F6111	SMR-G6111	SMR-H6111	SMR-J6111
1st Reduction Gear Key	SMR-B7021	SMR-C7021	SMR-D7021	SMR-E7021	SMR-F7021	SMR-G7021	SMR-H7021	SMR-J7021
Intermediate Pinion (13:1 & 20:1)	SMR-B6022	SMR-C6022	SMR-D6022	SMR-E6022	SMR-F6022	SMR-G6022-1	SMR-H6022	SMR-J6022
Intermediate Pinion Distance Piece	SMR-B6023	SMR-C6023	SMR-D6023	SMR-E6023	SMR-F6023	SMR-G6023	SMR-H6023	SMR-J6023
Intermediate Cover	SMR-B7025	SMR-C7025	SMR-D7025	SMR-E7025	SMR-F7025	SMR-G7025	SMR-H7025	SMR-J7025
2nd Reduction Gear	SMR-B6026	SMR-C6026	SMR-D6026	SMR-E6026	SMR-F6026	SMR-G6026	SMR-H6026-1	SMR-J6026
2nd Reduction Gear Key	SMR-B6027	SMR-C6027	SMR-D6027	SMR-E6027	SMR-F6027	SMR-G6027	SMR-H6027	SMR-J6027
Output Hub	SMR-B6105	SMR-C6105	SMR-D6105	SMR-E6105	SMR-F6105	SMR-G6105	SMR-H6105	SMR-J6105
Output Hub(Alternative Metric Bore)	SMR-B6106	SMR-C6106	SMR-D6106	SMR-E6106	SMR-F6106	SMR-G6106	SMR-H6106	SMR-J6106
Output Hub Spacer	SMR-B6030	SMR-C6030	SMR-D6030	SMR-E6030	SMR-F6030	SMR-G6030	SMR-H6030	SMR-J6030-1
Output Hub Collor	SMR-B6031	SMR-C6031	SMR-D6031	SMR-E6031	SMR-F6031	SMR-G6031	SMR-H6031	SMR-J6031
Torque-Arm Rod End	SMR-B7041	SMR-C7041	SMR-D7041	SMR-E7041	SMR-F7041	SMR-G7041	SMR-H7041	SMR-J7041
Torque-Arm Extension	SMR-B7043	SMR-C7043	SMR-D7043	SMR-E7043	SMR-F7043	SMR-G7043	SMR-H7043	SMR-J7043
Turn-buckle	SMR-B7045	SMR-C7045	SMR-D7045	SMR-E7045	SMR-F7045	SMR-G7045	SMR-H7045	SMR-J7045
Fulcrum	SMR-B6046	SMR-C6046	SMR-D6046	SMR-E6046	SMR-F6046	SMR-G6046	SMR-H6046	SMR-J6046
Input Shaft Spacer	SMR-B6050	SMR-C6050	SMR-D6050	SMR-E6050	SMR-F6050	SMR-G6050	SMR-H6050	SMR-J6050
Case Bolt	SMR-B943702	SMR-C943830	SMR-D943831	SMR-E943840	SMR-F943850	SMR-G943851	SMR-H943841	SMR-J943842
Case Nut	SMR-B943810	SMR-C943811-1	SMR-D943811	SMR-E943812-1	SMR-F943813-1	SMR-G943813-1	SMR-H943812	SMR-J943812
Case Plain Washer	SMR-B943820	SMR-C943821	SMR-D943821	SMR-E943822	SMR-F943823	SMR-G943823	SMR-H943822	SMR-J943822
Case Lock washer	SMR-B943870	SMR-C943871	SMR-D943871	SMR-E943872	SMR-F943873	SMR-G943873	SMR-H943872	SMR-J943872
Input Shaft Oil Seal	SMR-B946043	SMR-C946301	SMR-D946302	SMR-E946443	SMR-F946303	SMR-G946304	SMR-H946305	SMR-J946022
Back Stop Cover Screw	SMR-B943480	SMR-C943480	SMR-D943490	SMR-E943490	SMR-F943490	SMR-G943690	SMR-H943690	SMR-J943690
Back Stop Cover Lockwasher	SMR-B943686	SMR-C943686	SMR-D943687	SMR-E943687	SMR-F943687	SMR-G943680	SMR-H943680	SMR-J943680
Torque-Arm Case Bolt							SMR-H943852	SMR-J943853
Torque-Arm Case Bolt Nut							SMR-H943813-1	SMR-J943813-1
Output Hub Circlip	SMR-B944187	SMR-C944188	SMR-D944189	SMR-E944190	SMR-F944191	SMR-G944192		
Torque-Arm Case Bolt LockWasher							SMR-H943864	SMR-J943864
Collar Screw (Std) Over Key	SMR-B942614-1	SMR-C942700-1	SMR-D942700-1	SMR-E942711-1	SMR-F942711	SMR-G942711-1	SMR-H942721-1	SMR-J942722-1
Collar Screw (Std) Over Shaft	SMR-B942615	SMR-C942701	SMR-D942701-1	SMR-E942712	SMR-F942713	SMR-G942713	SMR-H942724	SMR-J942724
Collar Screw (Alt) Over Key	SMR-B942614-2	SMR-C942700-2	SMR-D942700-2	SMR-E942710	SMR-F942710	SMR-G942711-2	SMR-H942721-2	SMR-J942721
Collar Screw (Alt) Over Shaft	SMR-B942614-3	SMR-C942700-3	SMR-D942701-2	SMR-E942711-2	SMR-F942712	SMR-G942712	SMR-H942722	SMR-J942722-2
Output Hub Oilseal	SMR-B946306	SMR-C946307	SMR-D946308	SMR-E946309	SMR-F946310	SMR-G946311	SMR-H946312	SMR-J946313
Pipe Plug	SMR-B942395	SMR-C942395	SMR-D942395	SMR-E942395	SMR-F942395	SMR-G942396	SMR-H942396	SMR-J942396
Breather Plug	SMR-B946097	SMR-C946097	SMR-D946097	SMR-E946097	SMR-F946097	SMR-G946098	SMR-H946098	SMR-J946098
Rod End Locknut	SMR-B943812	SMR-C943812	SMR-D943813	SMR-E943813	SMR-F943815	SMR-G943815	SMR-H943816	SMR-J943816
Extension Locknut	SMR-B943790	SMR-C943790	SMR-D943791	SMR-E943791	SMR-F943792	SMR-G943792	SMR-H943793	SMR-J943793
Fulcrum Bolt	SMR-B943832	SMR-C943832	SMR-D943843	SMR-E943843	SMR-F943854	SMR-G943854	SMR-H943855	SMR-J943855
Fulcrum Bolt Nut	SMR-B943811	SMR-C943811-2	SMR-D943812	SMR-E943812-2	SMR-F943813-2	SMR-G943813-2	SMR-H943813-2	SMR-J943813-2
Fulcrum Bolt Lockwasher	SMR-B943682	SMR-C943682	SMR-D943683	SMR-E943683	SMR-F943684	SMR-G943684	SMR-H943684	SMR-J943684
Back Stop	SMR-B-B.Stop	SMR-C-B.Stop	SMR-D-B.Stop	SMR-E-B.Stop	SMR-F-B.Stop	SMR-G-B.Stop	SMR-H-B.Stop	SMR-J-B.Stop
Input Shaft Bearing-Shaft Side	SMR-BNJ204EC	SMR-CNJ205EC	SMR-DNJ206EC	SMR-ENJ306EC	SMR-FNJ307EC	SMR-GNJ309EC	SMR-HNJ310EC	SMR-JNJ312EC
Input Shaft Bearing-B.Stop Side	SMR-B6303	SMR-C6205	SMR-D6206	SMR-E6306	SMR-F6307	SMR-G6309	SMR-H6310	SMR-J6312
Intermediate Bearing (13:1, 20:1)	SMR-B6303	SMR-C6205	SMR-D6206	SMR-E6306	SMR-F6307	SMR-G6309	SMR-H6310	SMR-J6312
Output Hub Bearing	SMR-B6011	SMR-C6013	SMR-D6015	SMR-E6017	SMR-F6020	SMR-G6022	SMR-H6026	SMR-J6030

