

## Helical Shaft Mount Speed Reducers

# HSM

Includes belt drive guide for easy selection

Quick reference HSM/SMSR interchangeability chart



*Less weight,  
more torque.  
It's all in the  
gears.*

**NEW  
IMPROVED  
400%  
MORE GRIP**



*50 years of  
experience.  
1,000,000+  
units shipped.  
Warranty  
rate less than  
0.01%.*

**HSM Shaft Mounted Speed Reducer  
Featuring Keyless Taper-Grip® Bushing**

The Sumitomo Helical Shaft Mounted (HSM) Speed Reducer provides a convenient installation and removal method for speed reduction by mounting directly on the drive shaft. The Taper-Grip® bushing provides simple keyless mounting and easy removal.

**1. Output Hubs**

Output hubs are available with Taper Grip® or parallel bore, in metric or imperial. A wide choice of output bore diameters is available. Alternative bores not listed can be considered.

**2. Oilseals**

Oilseals are metal reinforced double lipped gaiter spring type as standard and taconite seals are available for harsh environments.

**3. Shaft End Caps**

The rubberised shaft end caps are self sealing to standard ISO housing dimensions.

**4. Plugs**

The plugs are supplied with an integral sealing washer. The casing is machined for an excellent sealing surface.

**5. Shafts**

Shafts are machined from alloy steels and are precision ground on journals, gear seating and extensions. Tolerance and keyways conform to ISO standards.

**6. Case Design**

The gear case is manufactured from grey cast iron, precision bored and dowelled to ensure accurate assembly. There are thirteen case sizes available.

**7. Torque Arm**

The torque arm can be mounted on the casing using one of the two dedicated casing points, thus avoiding the need to remove any case half fixings. The turnbuckle design allows for quick and easy adjustment of the belt system.

**8. Backstops (anti run-back device)**

Available on all units as an add-on option.

**9. Bearings**

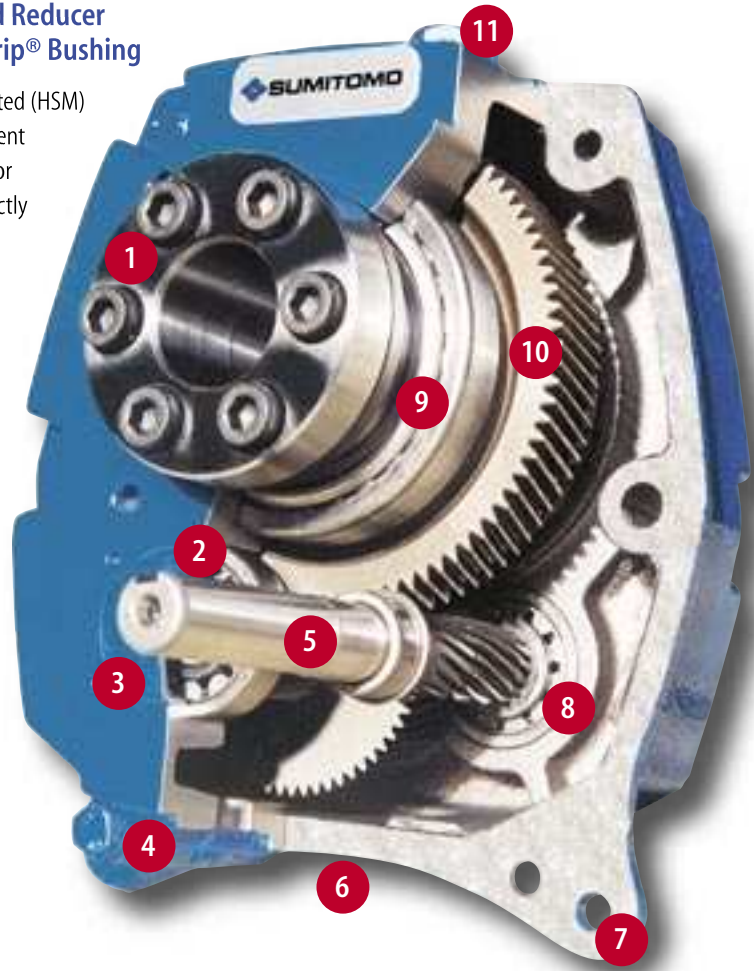
The bearings used conform to the ISO dimension plan and are available world wide. The high speed and intermediary shafts are designed with roller bearings. The low speed shaft has deep groove ball bearings, with taper roller bearings as an option.

**10. Gears**

The gears are helical designed to DIN/ISO and AGMA standards with a 25° pressure angle, 14° helix. They are manufactured from alloy steel, gas carburised and hardened, shaved and honed (profile ground on selected sizes). They are available in three standard ratios - 5, 13, and 20:1.

**11. Breather Plug**

The breather plug is supplied with an integral sealing washer and built-in non-return valve.



### SMSR in Australia and New Zealand

The traditional Shaft Mount Speed Reducer (SMSR) has been an integral part of many and varied industry power transmission requirements.

For over 45 years, our SMSR has been the market leader for this style of reducer and is the industry standard in many Australian applications.

In 1997, Sumitomo Heavy Industries (SHI) purchased the SMSR manufacturing facility at Marfleet in Hull, England from Fenner PLC.

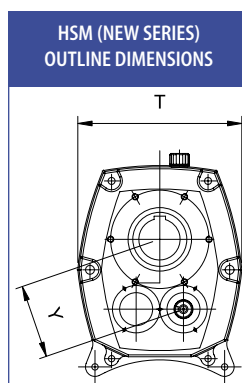
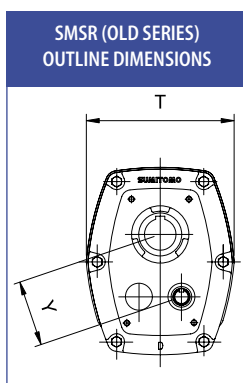
**PARTS STILL AVAILABLE FOR OLD SERIES SMSR**

### History

- 1954 Manufacture starts in Marfleet, under license, 2 ratios, AGMA specification product.
- 1964 New generation introduced, same design, but now 3 ratios.
- 1974 New range launched, to Fenner design, with ratios as today. Helical gears used on most sizes.
- 1975 Product re-rating to UK Standard BS436.
- 1979 Helical gears used on sizes 415, 507, 608.
- 1980's Periodic re-rating based on market experience.
- 1989 Taper-Grip® bush introduced as a standard alternative to parallel keyed bores.
- 1994 Last re-rating, increase of 5%
- 1997 UK manufacturing facility purchased from Fenner PLC by Sumitomo Heavy Industries Ltd.
- 2000 New ratings introduced for SMSR. Taper-Grip® bush completely redesigned.
- 2002 New improved Helical Shaft Mount (HSM) introduced.

**Interchange with SMSR.**  
*Replace old with the new.*

### Quick Reference HSM/SMSR Interchangeability Chart Outline Dimensions & Torque



SIZE V TORQUE COMPARISON								
Size	SMSR			HSM			BUSH Ø	
	Y	T	Torque Nm	Size	Y	T		Torque Nm
				015	70	160	277	20 - 30
B	79	186	277	103	79	186	519	30 - 40
C	95	218	468	107	95	218	813	38 - 50
D	116	258	783	115	116	258	1276	42 - 55
E	133	278	1194	203	133	278	1870	50 - 65
F	150	317	1831	207	150	317	3235	60 - 75
G	166	365	2970	215	166	365	4645	65 - 85
H	200	434	4680	307	200	434	7139	80 - 100
J	266	542	7449	315	266	542	9706	90 - 120
S	282	568	10505	407	282	568	12778	100 - 125
K	297	643	13943	415	297	643	18120	100 - 125
L	345	770	21965	507	345	770	25254	115 - 150
M	396	800	38296	608	396	880	44051	150 - 190

## Gearbox Selection Procedure

### a) Service Factor

From the table below, determine the service factor that best suits your application.

Type of Load on Driven Machine	Operational Hours Per Day		
	Under 10	10 - 16	Over 16
Uniform	1.0	1.12	1.25
Moderate	1.25	1.4	1.6
Heavy Shock	1.6	1.8	2.0

*For detailed application specific service factors, refer to catalogue 999337.*

### b) Design Power

Using the selected service factor figure, multiply the absorbed power (kW) by the service factor figure. This will determine the design power (kW).

*Note: Use installed motor power (kW) if absorbed power is not known.*

### c) Unit Selection

Using the value determined from step b above, refer to the rating tables (upper and lower right of this page) to select the correct size of the unit.

*Note: The choice of single or double reduction gearbox will be determined by the final output speed you require. The normal operating speeds for each of the gearboxes may be observed in the power rating tables.*

#### Additional information:

*Gear units are momentarily capable of transmitting twice (2x) the rated capacity on start or during operation. For applications where momentary loads exceed a peak of 200% overload, the motor power used in the selection tables may be obtained by dividing the peak power by two.*

## Power Ratings [kW] 20:1 and 13:1

Output rpm	015	103	107
10	0.29	0.54	0.85
12	0.36	0.67	1.04
14	0.42	0.79	1.24
16	0.47	0.91	1.43
18	0.53	1.04	1.62
20	0.59	1.16	1.82
22	0.63	1.28	2.01
24	0.69	1.41	2.20
26	0.75	1.53	2.39
28	0.81	1.65	2.59
30	0.86	1.78	2.78
32	0.92	1.90	2.97
34	0.98	2.02	3.17
38	1.10	2.15	3.36
40	1.16	2.27	3.55
42	1.20	2.39	3.74
46	1.30	2.51	3.94
50	1.42	2.64	4.13
52	1.47	2.76	4.32
54	1.52	2.88	4.52
58	1.64	3.01	4.71
62	1.76	3.13	4.90
66	1.86	3.25	5.09
70	1.96	3.38	5.29
74	2.06	3.50	5.48
78	2.15	3.72	5.83
80	2.23	3.95	6.18
85	2.34	4.17	6.54
90	2.48	4.40	6.89
95	2.61	4.62	7.24
100	2.73	4.62	7.24
Torque at 10rpm [Nm]	277	519	812

115	203	207	215	307	
1.34	1.96	3.39	4.86	7.5	
1.64	2.40	4.16	5.97	9.2	
1.94	2.84	4.92	7.07	10.9	
2.24	3.29	5.69	8.17	12.6	
2.55	3.73	6.46	9.27	14.2	
2.85	4.18	7.22	10.37	15.9	
3.15	4.62	7.99	11.47	17.6	
3.46	5.06	8.76	12.57	19.3	
3.76	5.51	9.53	13.68	21.0	
4.06	5.95	10.29	14.78	22.7	
4.36	6.39	11.06	15.88	24.4	
4.67	6.84	11.83	16.98	26.1	
4.97	7.28	12.59	18.08	27.8	
5.27	7.72	13.36	19.18	29.5	
5.57	8.17	14.13	20.29	31.2	
5.88	8.61	14.90	21.39	32.9	
6.18	9.05	15.66	22.49	34.6	
6.48	9.50	16.43	23.59	36.3	
6.78	9.94	17.20	24.69	37.9	
7.09	10.38	17.96	25.79	39.6	
7.39	10.83	18.73	26.89	41.3	
7.69	11.27	19.50	28.00	43.0	
7.99	11.71	20.27	29.10	44.7	
8.30	12.16	21.03	30.20	46.4	
8.60	12.60	21.80	31.30	48.1	
9.15	13.41	23.20	33.31	51.2	
9.70	14.22	24.60	35.32	54.3	
10.26	15.03	26.00	37.33	57.4	
10.81	15.84	27.40	39.34	60.5	
11.36	16.64	28.80	41.35	63.5	
11.36	16.64	28.80	41.35	60.9	
Torque at 10rpm [Nm]	1276	1870	3235	4645	7139

315	407	415	507	608	
10.2	13.4	19.0	26.4	46.1	
12.5	16.4	22.5	31.4	54.9	
14.8	19.4	25.9	36.3	63.5	
17.1	22.5	29.3	41.3	72.1	
19.4	25.5	32.6	46.1	80.5	
21.7	28.5	35.9	51.0	88.9	
24.0	31.6	39.2	55.7	97.1	
26.3	34.6	42.3	60.4	105.3	
28.6	37.6	45.6	65.1	113.0	
30.9	40.7	48.7	69.7	120.6	
33.2	43.7	51.7	74.4	128.0	
35.5	46.7	54.9	78.8	135.2	
37.8	49.7	57.9	83.4	142.5	
40.1	52.8	63.7	92.5	157.0	
42.4	55.8	66.6	96.8	164.2	
44.7	58.8	69.2	101.1	171.5	
47.0	61.9	74.3	109.4	186.0	
49.3	64.9	79.0	117.5	199.2	
51.6	67.9	81.5	120.8	206.5	
53.9	71.0	83.8	125.6	213.7	
56.2	74.0	88.5	132.8	225.8	
58.5	77.0	93.0	140.1	237.9	
60.8	80.0	97.5	147.3	248.7	
63.1	83.1	102.0	154.6	259.6	
65.4	86.1	104.1	157.0	270.5	
69.6	91.6	110.4	167.8	280.1	
73.8	97.2	112.6	154.9	246.5	
78.0	102.7	106.0	140.1	222.3	
82.2	108.2	99.4	125.3	198.0	
86.4	113.6	94.2	118.7	186.8	
86.4	106.5	89.0	112.1	175.6	
Torque at 10rpm [Nm]	9706	12778	18120	25254	44051

#### Notes

- Indicates power ratings are governed by thermal limitations. Please consult for effect on using cooling fans.
- Indicates the limit of recommended output speed for 20:1 and 25:1 reducers

## Power Ratings [kW] 5:1

Output rpm	015	103	107
100	2.68	4.62	7.24
110	2.87	4.84	7.58
120	3.13	5.05	7.91
130	3.36	5.27	8.25
140	3.56	5.49	8.59
150	3.62	5.70	8.93
160	3.73	5.92	9.27
170	3.83	6.13	9.60
180	3.94	6.35	9.94
190	4.04	6.57	10.28
200	4.20	6.78	10.62
210	4.31	7.00	10.95
220	4.41	7.21	11.29
230	4.53	7.43	11.63
240	4.66	7.64	11.97
250	4.78	7.86	12.31
260	4.89	8.08	12.64
270	5.04	8.29	12.98
280	5.20	8.51	13.32
290	5.36	8.72	13.66
300	5.46	8.94	13.99
310	5.62	9.15	14.33
320	5.78	9.37	14.67
330	5.88	9.59	15.01
340	6.09	9.80	15.35
350	6.30	10.02	15.68
360	6.41	10.23	16.02
370	6.62	10.45	16.36
380	6.72	10.66	16.70
390	6.93	10.88	17.04
400	7.14	11.10	17.37
Torque at 100rpm [Nm]	256	442	691

115	203	207	215	307	
11.36	16.64	28.80	41.3	63.5	
11.89	17.42	30.14	43.3	66.5	
12.42	18.20	31.48	45.2	69.5	
12.95	18.97	32.83	47.1	72.4	
13.48	19.75	34.17	49.1	75.4	
14.01	20.53	35.52	51.0	78.4	
14.54	21.30	36.86	52.9	81.3	
15.07	22.08	38.20	54.9	84.3	
15.60	22.86	39.55	56.8	87.3	
16.13	23.63	40.89	58.7	90.2	
16.66	24.41	42.24	60.6	93.2	
17.19	25.19	43.58	62.6	96.2	
17.72	25.96	44.92	64.5	99.1	
18.25	26.74	46.27	66.4	102.1	
18.78	27.52	47.61	68.4	105.0	
19.31	28.29	48.95	70.3	108.0	
19.84	29.07	50.30	72.2	111.0	
20.37	29.85	51.64	74.1	113.9	
20.90	30.62	52.99	76.1	115.9	
21.43	31.40	54.33	78.0	113.5	
21.96	32.18	55.67	79.9	111.8	
22.49	32.95	57.02	81.9	106.9	
23.02	33.73	58.36	83.8	106.0	
23.55	34.51	59.70	83.7	101.6	
24.08	35.29	61.05	83.4	101.6	
24.61	36.06	62.39	80.2	97.6	
25.14	36.84	63.74	80.4	97.6	
25.67	37.62	65.08	77.4	94.0	
26.20	38.39	64.00	74.6	91.3	
26.73	39.17	64.50	75.2	91.3	
27.26	39.95	62.30	72.6	88.2	
Torque at 100rpm [Nm]	1085	1589	2750	3949	6068

315	407	
86.4	113.7	
90.4	119.0	
94.5	124.3	
98.5	129.7	
102.5	135.0	
106.5	140.3	
110.6	145.6	
114.6	150.9	
118.6	156.2	
122.7	161.5	
126.7	166.8	
130.7	172.1	
134.8	177.4	
138.8	182.7	
142.8	188.0	
146.9	193.3	
150.9	195.5	
154.9	189.0	
159.0	184.0	
160.2	180.3	
157.9	177.6	
150.9	169.8	
149.6	168.3	
143.4	161.3	
143.1	160.9	
137.8	155.0	
137.8	155.0	
132.7	149.3	
127.9	145.0	
128.9	145.0	
124.5	140.1	
Torque at 100rpm [Nm]	8250	10862

#### Notes

- Indicates power ratings are governed by thermal limitations. Please consult for effect on using cooling fans.

Tables based on 4 pole motor speeds, 1460 rpm

**Belt Selection Guide**

From the previous pages you have selected the unit size and ratio that best suits your application.

**1. Unit Size**

Now select from the table, "Unit Size", that which matches the chosen unit.

**2. Nominal Output Speed**

Read down the column "Nominal Output Speed" of the chosen unit, until you reach the desired output rpm.

*Note: This should fall into the area of ratio of the unit you have selected.*

**3. Additional Requirements**

Once the rpm has been found, simply read off the information to determine the following:

- Pulley Ratio
- Pulley Pitch Ømm - Motor
- Pulley Pitch Ømm - Gearbox
- Number/Type of Belts

**Example:**

After determining that Unit Size D - 107, Ratio 13:1 is needed for a particular installation, we need to select belts and pulleys to give a final rpm of 74.

Select the table "UNIT SIZE D - 107". Read down the "NOMINAL OUTPUT SPEED" column until you find "74". You will note the following information is determined:

- Pulley Ratio 1.36
- Pulley Pitch Ømm - Motor 118mm
- Pulley Pitch Ømm - Gearbox 160mm
- Number/Type Of Belts 2 x SPZ

1 UNIT SIZE D - 107				
NOMINAL OUTPUT SPEED	PULLEY RATIO	PULLEY PITCH ØMM - MOTOR	PULLEY PITCH ØMM - GEARBOX	NUMBER/TYP E OF BELTS
10	6.67	60	400	1XPZ
71	1.43	112	160	2XPZ
74	1.36	118	160	2SPZ

UNIT SIZE B - 015				
NOMINAL OUTPUT SPEED	PULLEY RATIO	PULLEY PITCH ØMM - MOTOR	PULLEY PITCH ØMM - GEARBOX	NUMBER/TYP E OF BELTS
10	7.14	56	400	1XPZ
12	5.97	67	400	1SPZ
14	5.00	63	315	1SPZ
16	4.44	71	315	1SPZ
18	3.94	80	315	1SPZ
20	3.57	56	200	1XPZ
22	3.21	56	180	1XPZ
24	3.00	60	180	1XPZ
26	2.78	90	250	1SPZ
28	2.54	63	160	1SPZ
30	2.36	56	132	1XPZ
32	2.22	63	140	1SPZ
34	2.10	63	132	1SPZ
38	1.87	67	125	1SPZ
40	1.78	63	112	1XPZ
42	1.70	56	95	2XPZ
46	1.56	90	140	1SPZ
50	1.43	112	160	1SPZ
52	1.39	90	125	1SPZ
54	1.33	75	100	1SPZ
58	1.24	95	118	1SPZ
62	1.16	140	160	1SPZ
66	1.64	63	67	2SPZ
66	1.64	85	40	1SPZ
70	1.55	85	132	1SPZ
74	1.46	90	132	1SPZ
78	1.39	90	125	1SPZ
80	1.35	63	85	2XPZ
85	1.28	125	160	1SPZ
90	1.20	75	90	2SPZ
100	1.08	90	100	1XPA
100	2.83	112	315	1SPZ
110	2.57	95	250	1XPA
120	2.36	106	250	1XPZ
130	2.18	112	250	1XPZ
140	2.02	125	250	1SPZ
150	1.88	85	160	2SPZ
160	1.74	85	150	2XPA
170	1.67	75	125	3SPZ
180	1.57	75	118	3SPZ
190	1.49	95	140	2SPZ
200	1.42	106	150	1XPA
210	1.35	112	150	1XPA
220	1.29	140	180	1SPA
230	1.23	132	160	1SPA
240	1.18	95	112	2SPZ
250	1.13	160	180	1XPZ
260	1.09	140	150	1SPA
270	1.05	95	100	2SPA
280	1.01	112	112	2SPZ
300	1.06	140	132	1XPA
310	1.11	200	180	1XPZ
320	1.14	150	132	1XPA
330	1.18	100	85	3SPZ
340	1.20	150	125	1XPA
350	1.24	118	95	2XPA
360	1.27	400	315	1XPZ
370	1.31	236*	180*	1SPB
380	1.36	160	118	1XPA
390	1.39	250	180	1SPZ
400	1.41	315	224	1SPA

UNIT SIZE C - 103				
NOMINAL OUTPUT SPEED	PULLEY RATIO	PULLEY PITCH ØMM - MOTOR	PULLEY PITCH ØMM - GEARBOX	NUMBER/TYP E OF BELTS
10	7.04	71	500*	1SPZ
12	5.63	71	400	1SPZ
14	5.00	80	400	1SPZ
15	4.44	71	315	1SPZ
17	3.94	80	315	1SPZ
20	3.50	90	315	1SPZ
22	3.13	80	250	1SPZ
24	2.94	85	250	1SPZ
26	2.69	67	180	1SPZ
28	2.40	75	180	1XPZ
30	2.25	71	160	1XPZ
32	2.13	75	160	1XPZ
34	2.00	80	160	1XPZ
38	1.80	100	180	1SPA
40	1.70	106	180	1SPZ
42	1.65	85	140	1XPZ
46	1.50	100	150	1SPA
50	1.36	118	160	1XPZ
52	1.32	106	140	1XPZ
54	1.29	140	180	1XPZ
58	1.18	100	118	1XPA
62	1.11	90	100	2SPZ
66	1.56	90	140	2SPZ
70	1.47	85	125	2SPZ
74	1.39	95	132	2SPZ
78	1.32	106	140	1XPA
80	1.28	125	160	1SPZ
85	1.21	140	170	1XPZ
90	1.14	140	160	2SPZ
95	1.07	75	80	2XPZ
100	1.00	100	100	2SPZ
101	2.86	140	400	1SPA
114	2.52	125	315	1XPA
121	2.39	132	315	1XPA
129	2.23	112	250	2SPZ
144	2.00	140	280	1XPA
152	1.90	118	224	2SPA
161	1.79	140	250	1XPA
171	1.68	95	160	3SPZ
183	1.58	200	315	1XPZ
193	1.49	150	224	2SPA
202	1.43	112	160	2SPZ
211	1.36	132	180	2SPZ
224	1.29	140	180	2SPZ
230	1.25	160	200	2XPZ
244	1.18	100	118	3XPZ
252	1.14	140	160	2SPZ
259	1.11	180	200	1SPA
273	1.06	125	132	2SPZ
288	1.00	140	140	2SPA
303	1.05	100	95	2SPA
310	1.08	140	130	3SPZ
324	1.13	180	160	2SPZ
329	1.14	140	160	3SPA
339	1.18	200	170	2SPA
349	1.21	160	132	2SPA
360	1.25	140	112	3SPZ
369	1.28	180	140	2XPZ
380	1.32	150	112	2XPA
391	1.36	180	132	2XPA
400	1.39	140	100	3XPA

UNIT SIZE D - 107				
NOMINAL OUTPUT SPEED	PULLEY RATIO	PULLEY PITCH ØMM - MOTOR	PULLEY PITCH ØMM - GEARBOX	NUMBER/TYP E OF BELTS
10	6.67	60	400	1XPZ
12	5.63	71	400	1SPZ
14	4.70	67	315	1SPZ
16	4.20	75	315	1SPZ
18	3.71	85	315	1SPZ
20	3.29	85	280	1SPZ
22	3.11	90	280	1SPA
24	2.78	90	250	1SPZ
26	2.54	63	160	2XPZ
28	2.39	67	160	2SPZ
30	2.24	100	224	1XPA
32	2.11	95	200	1XPA
34	1.97	160	315	1SPZ
38	1.76	75	132	2XPZ
40	1.68	95	160	2SPZ
42	1.60	125	200	1XPZ
46	1.47	90	132	2SPZ
50	1.34	112	150	2SPA
52	1.29	140	180	1XPZ
54	1.24	95	118	2SPZ
58	1.14	140	160	1SPA
62	1.07	140	150	1XPA
66	1.52	132	200	1SPA
71	1.43	112	160	2XPZ
74	1.36	118	160	2SPZ
78	1.29	140	180	1XPA
80	1.25	112	140	2XPZ
85	1.19	118	140	2SPZ
90	1.12	125	140	2SPZ
95	1.06	132	140	2SPZ
100	1.00	125	125	2XPZ
108	2.52	125	315	2XPZ
114	2.39	132	315	2SPZ
120	2.25	140	315	2SPZ
130	2.11	112	236	2XPB
140	1.90	118	224	2XPA
150	1.80	118	212	2XPB
160	1.69	118	200	3XPZ
170	1.60	125	200	3SPZ
180	1.52	132	200	3SPZ
190	1.43	140	200	3SPZ
200	1.36	132	180	2XPA
210	1.29	140	180	2SPA
220	1.21	132	160	3SPZ
230	1.18	112	132	4XPZ
240	1.12	112	125	4XPZ
250	1.07	140	150	3SPA
260	1.05	112	118	4XPZ
270	1.00	140	140	3XPZ
285	1.05	100	95	4XPA
290	1.07	160	150	2XPA
300	1.11	200	180	2XPZ
310	1.14	160	140	3SPZ
320	1.18	132	112	4XPZ
330	1.21	160	132	3SPA
340	1.25	250	200	2XPZ
350	1.29	180	140	3XPZ
360	1.32	140	106	5SPZ
370	1.36	190	140	2XPB
380	1.40	140	100	4XPA
390	1.44	180	125	3XPA
400	1.47	250	170	2XPB

\* Pulley only available in 2 groove.

Additional information may be obtained from your Sumitomo Drive Technologies' representative.

Belt selections based on premium brand only.



Tables based on 4 pole motor speeds, 1460 rpm

UNIT SIZE E - 115				
NOMINAL OUTPUT SPEED	PULLEY RATIO	PULLEY PITCH ØMM - MOTOR	PULLEY PITCH ØMM - GEARBOX	NUMBER/TYPE OF BELTS
10	7.04	71	500	2SPZ
12	5.97	67	400	2SPZ
14	5.00	80	400	2SPZ
16	4.44	90	40	1XPZ
18	4.00	100	400	2SPZ
20	3.50	90	315	2SPZ
22	3.15	100	315	2SPZ
24	2.94	85	250	2XPZ
26	2.67	75	200	2XPZ
28	2.50	80	200	3SPZ
30	2.32	85	200	2SPZ
32	2.22	90	200	2XPZ
34	2.09	67	140	4XPZ
38	1.87	150	280	1SPA
40	1.75	80	140	3XPZ
42	1.68	95	160	3SPZ
46	1.52	132	200	2SPZ
50	1.42	106	150	2XPA
52	1.36	118	160	3SPZ
54	1.29	140	180	2XPZ
58	1.21	132	160	2XPZ
62	1.14	132	150	2SPA
66	1.61	112	180	3SPZ
70	1.52	132	200	3XPZ
74	1.43	112	160	3XPZ
78	1.36	118	160	3SPZ
80	1.32	100	132	3XPA
85	1.25	100	125	4XPZ
90	1.18	106	125	4XPZ
95	1.11	106	118	4XPZ
100	1.06	132	140	3XPZ
101	2.86	140	400	3SPZ
114	2.52	125	315	4SPZ
121	2.39	132	315	3XPZ
129	2.23	112	250	5XPA
144	2.00	125	250	5SPA
152	1.90	118	224	4SPA
161	1.79	140	250	3SPA
171	1.69	140	236	2XPB
183	1.58	200	315	3XPZ
193	1.49	150	224	3SPA
202	1.43	112	160	4XPA
211	1.36	132	180	4SPA
224	1.29	140	180	3XPA
230	1.25	200	250	2XPA
244	1.18	190	224	2XPB
252	1.14	140	160	4SPA
259	1.11	180	200	2XPB
273	1.06	125	132	5SPA
288	1.00	160	160	3XPA
303	1.05	200	190	2XPB
310	1.08	140	132	4XPA
324	1.13	180	160	3XPA
329	1.14	160	140	4XPA
342	1.19	140	118	5XPA
349	1.21	160	132	4XPA
360	1.25	140	112	6XPA
370	1.29	180	140	4XPA
386	1.34	150	112	6XPA
393	1.36	180	132	5XPA
403	1.40	224	160	3XPA

UNIT SIZE F - 203				
NOMINAL OUTPUT SPEED	PULLEY RATIO	PULLEY PITCH ØMM - MOTOR	PULLEY PITCH ØMM - GEARBOX	NUMBER/TYPE OF BELTS
10	7.00	90	630*	1SPA
12	5.97	67	400	2SPZ
14	5.00	100	500*	1SPA
16	4.44	90	400	2SPZ
18	3.94	80	315	2SPZ
20	3.57	112	400	1XPA
22	3.20	125	400	1SPA
24	2.94	85	250	3SPZ
26	2.67	150	400	1SPA
28	2.50	160	400	1SPA
30	2.35	85	200	3XPZ
32	2.22	90	200	3SPZ
33	2.11	95	200	3SPZ
37	1.88	85	160	4SPZ
40	1.75	180	315	1XPA
42	1.67	150	250	2SPA
46	1.53	118	180	3SPZ
48	1.47	95	140	4XPZ
50	1.40	100	140	4SPZ
52	1.36	118	160	3XPZ
55	1.29	140	180	3SPZ
63	1.14	112	125	4SPZ
66	1.07	150	160	2XPA
70	1.52	132	200	4SPZ
74	1.43	140	200	2XPB
78	1.36	118	160	4SPA
80	1.32	170	224	2SPB
85	1.24	180	224	2SPA
90	1.18	170	200	2SPB
95	1.11	180	200	3SPZ
100	1.06	132	140	5SPZ
102	2.81	160	450	2SPB
109	2.63	190	500	2SPB
121	2.39	132	315	5SPZ
128	2.25	140	315	4SPA
144	2.00	125	250	4SPA
152	1.89	132	250	5XPZ
161	1.79	140	250	5SPZ
172	1.67	212	355	2SPB
183	1.58	200	315	4SPZ
193	1.49	150	224	4SPA
202	1.43	140	200	4XPA
212	1.36	140	190	4SPB
224	1.29	140	180	4SPB
231	1.24	180	224	3XPA
243	1.19	236	280	2XPB
252	1.14	140	160	5XPA
259	1.11	180	200	3SPB
272	1.06	236	250	2XPB
288	1.00	315	315	2XPA
303	1.05	200	190	3XPB
309	1.07	150	140	5XPA
323	1.12	224	200	3XPA
329	1.14	160	140	5XPA
342	1.19	280	236	2XPB
358	1.24	236	190	3SPB
365	1.27	355	280	2XPB
384	1.33	315	236	2XPB
405	1.41	315	224	3XPA

UNIT SIZE G - 207				
NOMINAL OUTPUT SPEED	PULLEY RATIO	PULLEY PITCH ØMM - MOTOR	PULLEY PITCH ØMM - GEARBOX	NUMBER/TYPE OF BELTS
10	7.00	90	630	2SPA
12	5.94	106	630	2SPA
14	5.00	100	500	2SPA
16	4.44	90	400	3SPZ
18	4.00	100	400	2XPA
20	3.57	112	400	2SPA
22	3.20	125	400	2SPA
24	2.94	85	250	4XPZ
26	2.67	118	315	3SPZ
28	2.50	160	400	3XPZ
30	2.36	106	250	3XPA
32	2.23	112	250	3SPA
34	2.10	150	315	2SPA
38	1.87	150	280	2XPA
40	1.75	160	280	2XPA
42	1.67	150	250	3SPA
46	1.52	132	200	4XPZ
48	1.48	160	236	2XPB
50	1.40	200	280	2XPA
52	1.36	118	160	4XPA
55	1.29	140	180	4SPA
63	1.11	180	200	4XPZ
66	1.07	150	160	4XPA
70	1.52	132	200	5SPA
74	1.43	140	200	4SPA
78	1.36	140	190	4SPB
80	1.32	212	280	2SPB
85	1.24	180	224	3SPB
90	1.18	180	212	3XPB
95	1.11	180	200	3XPB
100	1.06	200	212	3XPB
102	2.81	160	450	4SPB
109	2.63	190	500	3SPB
122	2.37	190	450	3SPB
130	2.22	160	355	4SPB
144	2.00	200	400	5XPZ
153	1.89	212	400	3SPB
162	1.78	200	355	3XPB
172	1.67	212	355	3SPB
183	1.58	200	315	4SPA
191	1.50	236	355	3XPB
202	1.43	280	400	3XPA
212	1.36	140	190	6XPB
220	1.31	180	236	5SPB
230	1.25	224	280	4XPA
243	1.19	236	280	3XPB
256	1.13	280	315	3XPB
259	1.11	450	500	2XPB
273	1.06	212	224	4XPB
288	1.00	315	315	3XPA
303	1.05	236	224	4XPB
309	1.07	300	280	2XPC
323	1.12	224	200	4XPB
326	1.13	300	265	3XPC
340	1.18	236	200	4XPB
358	1.24	236	190	5SPB

UNIT SIZE H - 215				
NOMINAL OUTPUT SPEED	PULLEY RATIO	PULLEY PITCH ØMM - MOTOR	PULLEY PITCH ØMM - GEARBOX	NUMBER/TYPE OF BELTS
10	7.00	90	630	3SPA
12	5.94	106	630	3SPA
14	5.04	125	630	2SPA
16	4.44	90	400	4SPZ
18	4.00	100	400	3SPA
20	3.57	140	500	2XPA
22	3.20	125	400	2XPB
24	2.97	106	315	4SPA
26	2.67	150	400	2XPA
28	2.50	160	400	2XPA
30	2.35	170	400	2SPB
32	2.23	112	250	4XPA
34	2.10	150	315	3SPA
38	1.85	170	315	2XPB
40	1.75	160	280	3SPA
42	1.67	150	250	4SPA
46	1.52	132	200	5SPA
48	1.48	160	236	3SPB
50	1.40	200	280	3XPA
52	1.36	118	160	6XPA
55	1.29	140	180	5SPA
60	1.18	180	212	3XPB
63	1.12	200	224	3XPA
66	1.06	200	212	3XPB
70	1.50	236	355	2XPB
74	1.43	280	400	3XPA
78	1.36	140	190	6SPB
80	1.32	212	280	3SPB
85	1.24	180	224	5SPA
90	1.18	190	224	4SPB
95	1.11	212	236	3XPB
100	1.06	200	212	4XPB
101	2.81	224	630	3SPB
108	2.63	190	500	4SPB
120	2.37	190	450	4XPB
128	2.23	224	500	4XPA
143	2.00	200	400	5SPA
151	1.89	212	400	4SPB
160	1.79	224	400	5SPA
172	1.66	190	315	5SPB
180	1.58	224	355	4SPB
190	1.50	236	355	4XPB
200	1.43	280	400	3XPB
213	1.34	224	300	4SPC
218	1.31	180	236	6SPB
228	1.25	224	280	6SPA
240	1.19	236	280	5XPB
253	1.13	315	355	3XPB
257	1.11	450	500	3XPB
269	1.06	236	250	5XPB
285	1.00	280	280	4XPB
301	1.05	236	224	6XPB
306	1.07	300	280	3XPC
321	1.13	315	280	4XPB
323	1.13	425	375	3XPC
339	1.19	280	236	5XPB

UNIT SIZE J - 307				
NOMINAL OUTPUT SPEED	PULLEY RATIO	PULLEY PITCH ØMM - MOTOR	PULLEY PITCH ØMM - GEARBOX	NUMBER/TYPE OF BELTS
10	7.00	90	630	4SPA
12	5.94	106	630	3SPA
14	5.00	100	500	4SPA
16	4.50	140	630	2SPB
18	3.94	160	630	2SPA
20	3.57	140	500	3SPA
22	3.20	125	400	4SPA
24	2.95	190	560	2SPB
26	2.67	150	400	3XPA
28	2.50	160	400	400
30	2.36	212	500	2SPB
32	2.22	180	400	3SPA
34	2.10	150	315	4XPA
38	1.87	190	355	3SPB
40	1.75	180	315	4SPA
42	1.66	190	315	3SPB
46	1.50	200	300	3SPC
50	1.41	224	315	3XPA
52	1.33	236	315	3SPB
54	1.31	180	236	4SPB
58	1.21	140	170	6XPB
62	1.13	315	355	2SPB
67	1.06	212	224	4SPB
67	1.58	200	315	5

Tables based on 4 pole motor speeds, 1460 rpm

UNIT SIZE S - 315				
NOMINAL OUTPUT SPEED	PULLEY RATIO	PULLEY PITCH ØMM - MOTOR	PULLEY PITCH ØMM - GEARBOX	NUMBER/TYPE OF BELTS
10	7.14	112	800	3XPB
12	5.94	106	630	4SPA
14	5.00	160	800	3SPB
16	4.50	140	630	3SPA
18	3.94	160	630	
20	3.57	140	500	3XPB
22	3.20	125	400	5SPA
24	2.97	212	630	2SPB
26	2.67	150	400	4XPA
28	2.50	160	400	4SPB
30	2.36	212	500	3SPB
32	2.22	180	400	4SPA
34	2.09	170	355	5SPB
38	1.87	190	355	4SPB
40	1.75	180	315	5SPA
42	1.67	212	355	4SPB
46	1.50	236	355	3SPC
50	1.41	224	315	4XPA
52	1.32	212	280	4XPB
54	1.31	180	236	5XPB
58	1.20	250	300	3SPC
63	1.13	265	300	3SPC
67	1.06	212	224	5SPB
67	1.58	200	315	5SPB
70	1.50	236	355	4XPB
74	1.43	280	400	5XPA
78	1.35	315	425	3SPC
80	1.32	212	280	5XPB
85	1.24	190	236	8SPB
90	1.19	236	280	5SPB
95	1.12	250	280	6XPA
100	1.06	236	250	5XPB
100	2.86	280	800	5SPB
110	2.63	190	500	8SPB
120	2.38	265	630	4SPC
130	2.22	450	1000	3SPB
140	2.01	236	475	4XPC
150	1.91	236	450	6XPB
160	1.79	280	500	6SPB
170	1.68	375	630	3SPC
180	1.59	315	500	5SPB
190	1.50	300	450	5SPC
200	1.43	280	400	6XPB
210	1.35	315	425	5SPC
220	1.32	425	560	3SPC
230	1.25	425	530	3SPC
240	1.19	315	375	5SPC
250	1.13	375	425	4SPC
260	1.11	450	500	4XPB
270	1.06	265	280	8SPC
290	1.00	355	355	6XPB
300	1.05	375	355	4XPC
310	1.07	400	375	4SPC
320	1.12	375	335	5SPC
330	1.18	500	425	3XPC
340	1.19	375	315	5SPC
350	1.24	236	190	8XPB
360	1.26	315	250	6SPC
370	1.31	236	180	8XPB
380	1.33	315	236	6XPB
390	1.35	425	315	3XPC
400	1.40	280	200	8SPB

UNIT SIZE T - 407				
NOMINAL OUTPUT SPEED	PULLEY RATIO	PULLEY PITCH ØMM - MOTOR	PULLEY PITCH ØMM - GEARBOX	NUMBER/TYPE OF BELTS
10	7.14	140	1000	3SPB
12	5.71	140	800	3SPB
14	5.04	125	630	4SPA
16	4.50	140	630	4SPA
18	3.94	160	630	3SPB
20	3.50	180	630	3SPB
22	3.15	200	630	4SPA
24	2.97	212	630	3SPB
26	2.67	236	630	3SPB
28	2.50	200	500	3XPB
30	2.36	212	500	3XPB
32	2.22	180	400	5XPA
34	2.09	170	355	6SPB
38	1.87	190	355	5SPB
40	1.79	224	400	5SPA
42	1.67	212	355	4XPB
46	1.52	280	425	3SPC
50	1.41	224	315	6SPA
52	1.33	236	315	5XPB
54	1.31	180	236	6XPB
58	1.24	190	236	6XPB
63	1.13	265	300	4SPC
67	1.06	236	250	5XPB
67	1.58	200	315	6XPB
70	1.50	236	355	5XPB
74	1.43	280	400	6XPA
78	1.35	315	425	3XPC
80	1.32	425	560	3SPC
85	1.25	400	500	5SPA
90	1.18	425	500	3SPC
95	1.11	212	236	8XPB
100	1.06	355	375	3SPC
100	3.11	180	560	8XPB
110	2.81	224	630	8SPB
120	2.54	315	800	5XPB
130	2.37	236	560	8SPB
140	2.22	450	1000	4XPB
150	2.01	236	475	5XPC
160	1.91	236	450	8XPB
170	1.78	450	800	5SPB
180	1.68	375	630	4SPC
190	1.61	280	450	8SPB
200	1.51	315	475	4XPC
210	1.48	425	630	4SPC
220	1.42	335	475	5SPC
230	1.33	375	500	5SPC
240	1.27	315	400	8SPB
250	1.24	450	560	5XPB
260	1.18	475	560	3XPC
270	1.13	375	425	5SPC
280	1.11	450	500	3XPC
290	1.06	335	355	6SPC
310	1.00	355	355	6XPB
320	1.05	315	300	6SPC
330	1.07	400	375	4SPC
340	1.11	500	450	4XPB
350	1.13	425	375	3XPC
360	1.18	250	212	8XPB
370	1.20	450	375	3XPC
380	1.24	236	190	8XPB
390	1.27	355	280	6XPB
400	1.32	250	190	8XPB

UNIT SIZE K - 415				
NOMINAL OUTPUT SPEED	PULLEY RATIO	PULLEY PITCH ØMM - MOTOR	PULLEY PITCH ØMM - GEARBOX	NUMBER/TYPE OF BELTS
10	7.14	140	1000	4SPB
12	6.06	132	800	4XPB
14	5.00	160	800	3SPB
16	4.44	180	800	3SPB
18	3.94	160	630	4SPB
20	3.57	224	800	3SPB
22	3.29	170	560	4SPB
24	2.94	170	500	4XPB
26	2.81	224	630	3SPB
28	2.52	250	630	3SPB
30	2.36	212	500	4SPB
32	2.23	224	500	5SPA
34	2.12	236	500	4SPB
38	1.89	212	400	5SPB
40	1.79	224	400	6SPA
42	1.69	236	400	4XPB
46	1.58	300	475	3SPC
50	1.50	250	375	4SPC
52	1.40	400	560	3SPB
54	1.33	236	315	5XPB
58	1.25	400	500	3SPB
62	1.75	180	315	8SPB
65	1.67	300	500	4SPC
70	1.56	180	280	8XPB
74	1.47	190	280	8SPB
78	1.40	400	560	4SPB
80	1.35	315	425	4SPC
85	1.27	236	300	6SPC
90	1.20	250	300	5SPC
95	1.13	265	300	4SPC
100	1.07	280	300	4SPC

UNIT SIZE L - 507				
NOMINAL OUTPUT SPEED	PULLEY RATIO	PULLEY PITCH ØMM - MOTOR	PULLEY PITCH ØMM - GEARBOX	NUMBER/TYPE OF BELTS
10	7.14	140	1000	5SPB
12	6.25	160	1000	4SPB
14	5.26	190	1000	4SPB
16	4.46	224	1000	3SPB
18	4.00	200	800	4SPB
20	3.77	212	800	4SPB
22	3.32	190	630	5SPB
24	3.02	265	800	3SPC
26	2.81	224	630	6SPA
28	2.64	212	560	5SPB
30	2.50	224	560	5SPB
32	2.25	355	800	3SPB
34	2.13	375	800	3SPC
38	1.91	236	450	5SPB
40	1.87	300	560	4SPC
42	1.77	300	530	4SPC
46	1.60	250	400	6SPB
50	1.48	425	630	3SPC
52	1.42	265	375	4XPC
54	1.35	315	425	4SPC
58	1.87	300	560	5SPC
62	1.77	300	530	5SPC
65	1.67	300	500	5SPC
70	1.58	400	630	5SPB
74	1.48	425	630	3XPC
78	1.40	450	630	5SPB
80	1.35	315	425	5SPC
85	1.27	315	400	6SPB
90	1.20	250	300	6SPC
95	1.13	375	425	3SPC
100	1.07	280	300	5SPC

UNIT SIZE M - 608				
NOMINAL OUTPUT SPEED	PULLEY RATIO	PULLEY PITCH ØMM - MOTOR	PULLEY PITCH ØMM - GEARBOX	NUMBER/TYPE OF BELTS
10	7.14	140	1000	6XPB
12	6.25	200	1250	5SPC
14	5.36	236	1250	4SPC
16	4.72	212	1000	6SPB
18	4.24	236	1000	6SPB
20	3.77	265	1000	4SPC
22	3.37	236	800	6SPC
24	3.17	315	1000	5SPB
26	2.86	280	800	6SPB
28	2.54	315	800	6SPB
30	2.52	250	630	6SPC
32	2.35	425	1000	3SPC
34	2.25	280	630	4XPC
38	2.00	315	630	5SPC
40	1.88	335	630	5SPC
42	1.78	450	800	5SPB
46	1.60	500	800	5SPB
50	1.49	335	500	6SPC
52	1.42	335	475	6SPC
54	2.11	475	1000	4SPC
58	1.91	250	475	8XPC
62	1.79	265	475	8XPC
65	1.68	475	800	5SPC
70	1.60	500	800	5SPC
74	1.51	530	800	4XPC
78	1.42	335	475	8SPC
80	1.40	400	560	8SPB
85	1.27	355	450	8SPB
90	1.24	450	560	4SPC
95	1.18	475	560	4SPC
100	1.12	500	560	5SPB

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Contact your local Sumitomo Drive Technologies office for details on backstops and Taper-Grip® bushing.

Belt selections based on premium brand only.