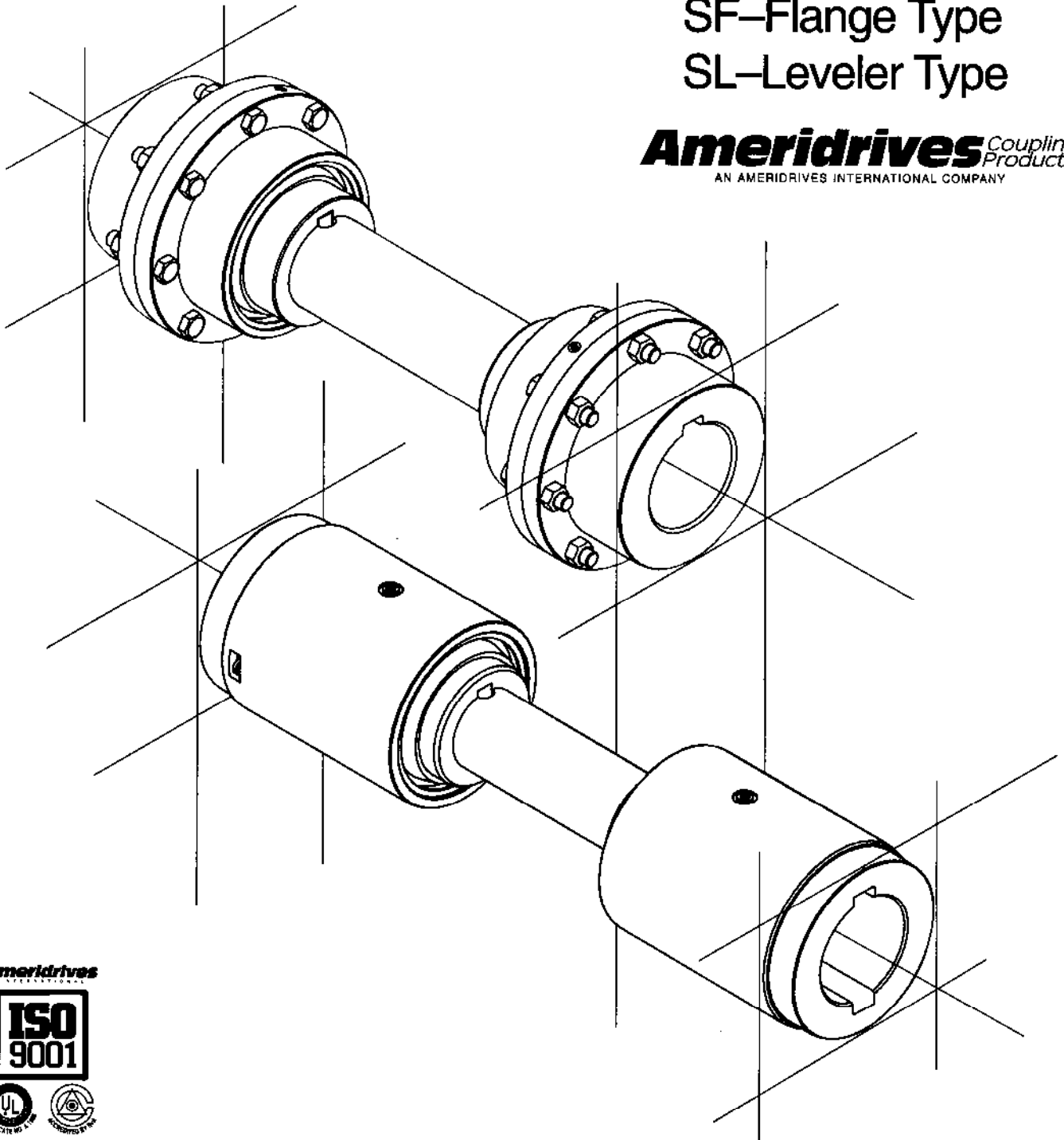


Amerigear[®]

High Misalignment
Gear Couplings
SF—Flange Type
SL—Leveler Type

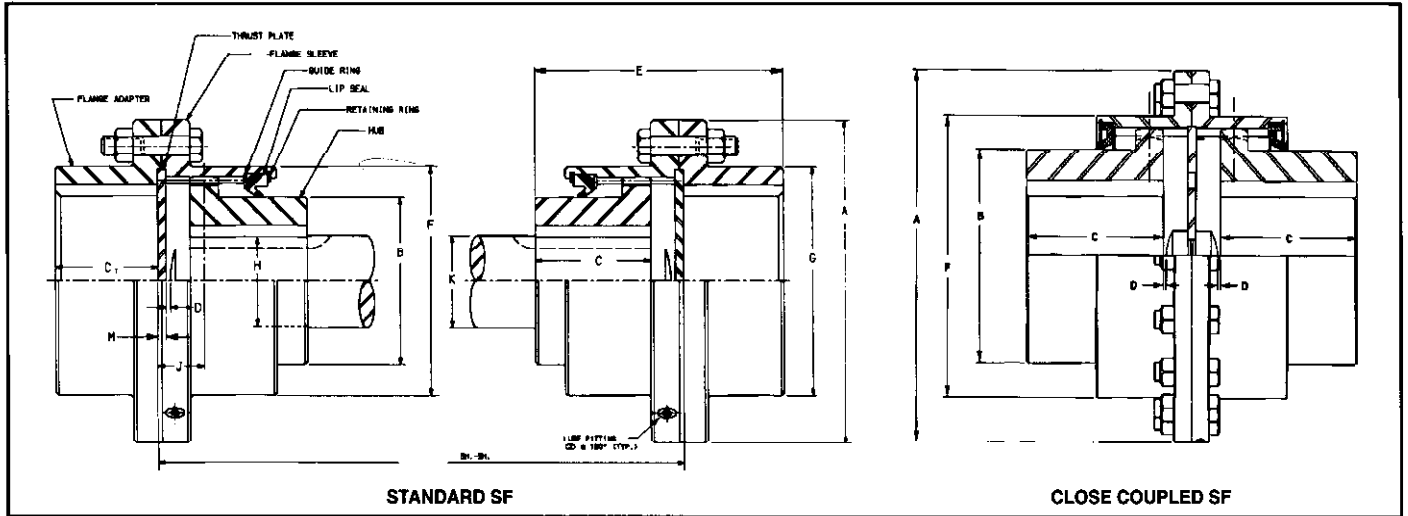
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SF (Flange Type) Engineering Data



Application
 The SF Spindle is for medium torque applications where high misalignment capacity is required. It is used on applications where equipment is not subjected to frequent disconnecting of drive components. Typical applications

include auxiliary equipment such as pinch rolls, tension bridles, continuous casting equipment, plastic and rubber calendars, rotary side guides, paper mills, as well as electrolytic cleaning, pickle and galvanizing lines.

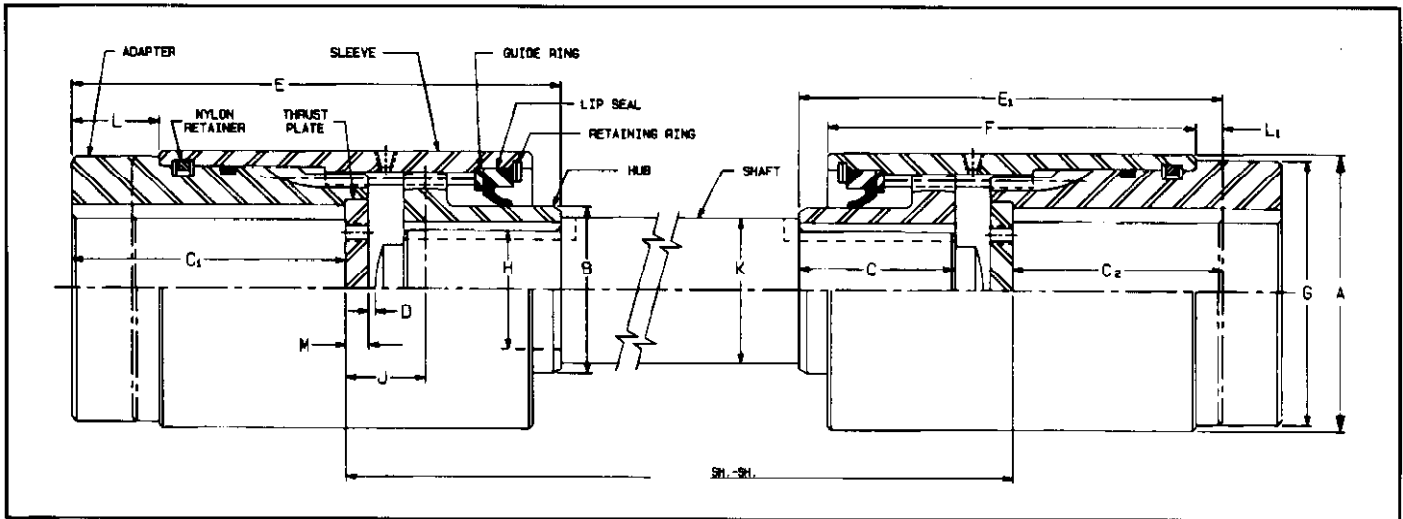
Description
 The Amerigear Series SF Flexible Spindle is similar to a tandem arrangement using flange-type couplings (Series F) except the gearing will accommodate higher misalignment. The gear teeth are heat treated to provide higher torque ratings and special molded high angle lip type seals are used. Close coupled SF spindles are also available.

Size	Adapter Bore and Keyway Data				Dimensions												
	Square Key		Reduced Key		A	B	C	C ₁	D	E	F	G	H	J	K	M	
	Max. Bore	Keyway	Max. Bore	Keyway													
3.56	1 $\frac{1}{4}$	$\frac{3}{8}$ x $\frac{3}{16}$	1 $\frac{1}{4}$	$\frac{3}{8}$ x $\frac{1}{8}$	3 $\frac{1}{16}$	1 $\frac{1}{8}$	1 $\frac{1}{8}$	1 $\frac{1}{8}$	$\frac{1}{16}$	3 $\frac{3}{32}$	2 $\frac{1}{8}$	2 $\frac{1}{16}$	1	$\frac{1}{16}$	1 $\frac{1}{8}$	$\frac{1}{4}$	
4.00	2	$\frac{1}{2}$ x $\frac{1}{4}$	2 $\frac{1}{2}$	$\frac{1}{2}$ x $\frac{3}{16}$	4	1 $\frac{1}{8}$	1 $\frac{1}{16}$	1 $\frac{1}{16}$	$\frac{1}{16}$	3 $\frac{1}{16}$	3	3	1 $\frac{1}{4}$	$\frac{3}{4}$	1 $\frac{1}{8}$	$\frac{1}{4}$	
6.00	2 $\frac{1}{16}$	$\frac{5}{8}$ x $\frac{3}{16}$	2 $\frac{1}{2}$	$\frac{5}{8}$ x $\frac{1}{32}$	6	2 $\frac{1}{8}$	1 $\frac{1}{16}$	1 $\frac{1}{4}$	$\frac{1}{8}$	4 $\frac{1}{16}$	3 $\frac{3}{8}$	3 $\frac{3}{8}$	1 $\frac{1}{4}$	1	1 $\frac{1}{8}$	$\frac{1}{4}$	
7.00	3 $\frac{1}{4}$	$\frac{7}{8}$ x $\frac{1}{8}$	3 $\frac{1}{2}$	$\frac{7}{8}$ x $\frac{3}{16}$	7	3 $\frac{1}{8}$	2 $\frac{1}{16}$	2 $\frac{1}{4}$	$\frac{1}{8}$	5 $\frac{1}{2}$	5	4 $\frac{1}{8}$	2 $\frac{1}{2}$	1 $\frac{1}{8}$	2 $\frac{1}{4}$	$\frac{1}{4}$	
8.38	4	1 x $\frac{1}{2}$	4 $\frac{1}{4}$	1 x $\frac{1}{8}$	8 $\frac{1}{8}$	4 $\frac{1}{8}$	3 $\frac{3}{32}$	2 $\frac{9}{16}$	$\frac{1}{8}$	6 $\frac{1}{32}$	6	5 $\frac{1}{4}$	2 $\frac{1}{2}$	1 $\frac{1}{2}$	3	$\frac{3}{8}$	
9.44	4 $\frac{1}{2}$	1 $\frac{1}{2}$ x $\frac{3}{8}$	5	1 $\frac{1}{4}$ x $\frac{1}{16}$	9 $\frac{1}{16}$	5 $\frac{1}{8}$	3 $\frac{1}{32}$	3 $\frac{3}{8}$	$\frac{1}{8}$	7 $\frac{1}{32}$	7	6 $\frac{1}{16}$	3 $\frac{1}{2}$	1 $\frac{1}{2}$	3 $\frac{1}{2}$	$\frac{3}{8}$	
11.00	5 $\frac{1}{2}$	1 $\frac{1}{2}$ x $\frac{3}{8}$	5 $\frac{3}{4}$	1 $\frac{1}{4}$ x $\frac{3}{16}$	11	5 $\frac{1}{8}$	4 $\frac{1}{16}$	3 $\frac{1}{8}$	$\frac{1}{8}$	9 $\frac{1}{16}$	8	7 $\frac{1}{4}$	3 $\frac{1}{4}$	1 $\frac{1}{4}$	4	$\frac{3}{8}$	
12.50	6 $\frac{1}{2}$	1 $\frac{1}{2}$ x $\frac{3}{4}$	6 $\frac{1}{4}$	1 $\frac{1}{4}$ x $\frac{1}{2}$	12 $\frac{1}{2}$	6 $\frac{1}{4}$	4 $\frac{1}{8}$	4 $\frac{1}{8}$	$\frac{1}{8}$	10 $\frac{1}{16}$	9 $\frac{1}{16}$	9 $\frac{1}{16}$	4 $\frac{1}{8}$	1 $\frac{1}{8}$	4 $\frac{1}{2}$	$\frac{1}{2}$	
13.62	6 $\frac{3}{4}$	1 $\frac{1}{2}$ x $\frac{3}{4}$	7 $\frac{1}{4}$	1 $\frac{1}{4}$ x $\frac{3}{8}$	13 $\frac{3}{8}$	7 $\frac{1}{4}$	5 $\frac{1}{16}$	4 $\frac{1}{2}$	$\frac{1}{8}$	11 $\frac{1}{16}$	10 $\frac{1}{8}$	10 $\frac{1}{16}$	4 $\frac{1}{16}$	2 $\frac{1}{16}$	5 $\frac{1}{8}$	$\frac{1}{2}$	
15.31	7 $\frac{1}{2}$	1 $\frac{1}{4}$ x $\frac{7}{8}$	8 $\frac{1}{4}$	1 $\frac{1}{4}$ x $\frac{3}{8}$	15 $\frac{5}{16}$	8 $\frac{1}{2}$	6 $\frac{1}{32}$	5 $\frac{1}{16}$	$\frac{3}{16}$	13 $\frac{3}{32}$	11 $\frac{1}{8}$	11 $\frac{1}{8}$	5 $\frac{1}{16}$	2 $\frac{1}{4}$	5 $\frac{1}{4}$	$\frac{1}{2}$	
16.56	8 $\frac{1}{2}$	2 x 1	9 $\frac{1}{4}$	2 x $\frac{3}{4}$	16 $\frac{1}{16}$	9	6 $\frac{1}{8}$	6 $\frac{1}{16}$	$\frac{3}{16}$	14 $\frac{1}{2}$	12 $\frac{1}{2}$	12 $\frac{1}{2}$	5 $\frac{1}{16}$	2 $\frac{1}{16}$	6 $\frac{1}{4}$	$\frac{1}{2}$	
18.00	9 $\frac{1}{2}$	2 x 1	9 $\frac{3}{4}$	2 x $\frac{3}{4}$	18	10	7 $\frac{1}{32}$	7 $\frac{1}{32}$	$\frac{3}{16}$	16 $\frac{1}{16}$	13 $\frac{1}{2}$	13 $\frac{1}{2}$	6 $\frac{1}{16}$	2 $\frac{1}{16}$	7	$\frac{1}{2}$	
20.75	10 $\frac{1}{2}$	2 $\frac{1}{2}$ x 1 $\frac{1}{4}$	11 $\frac{1}{4}$	2 $\frac{1}{2}$ x $\frac{1}{4}$	20 $\frac{1}{4}$	12	8 $\frac{1}{16}$	8 $\frac{1}{16}$	$\frac{3}{16}$	19 $\frac{1}{16}$	15 $\frac{1}{2}$	15 $\frac{1}{2}$	6 $\frac{1}{16}$	2 $\frac{1}{16}$	7 $\frac{1}{2}$	$\frac{1}{2}$	

Dimensions in inches.

Flexible Spindles

SL (Leveler Type) Engineering Data



Application

The SL Spindle is for medium torque applications where high misalignment capacity is required and where equipment must be disconnected quickly and/or frequently. Typical applications include drivers for auxiliary equipment such as levelers, uncoilers, side trimmers, tension

and payoff reels, run-out tables, pinch rolls, brush rolls, bridles, flatteners, and scale breakers.

SL Spindles can also be used on applications where shaft center-to-center spacing is minimal and where diameters are limited.

Description

The Amerigear Series SL Flexible Spindle is designed to deliver maximum torque in a limited space at relatively high misalignments. The quick disconnect sleeve design permits rapid and easy installation or removal of the spindle without removing the drive or drive equipment. The gear sleeves are positively secured to the adapter with a nylon retaining ring design.

Size	Adapter Bore and Keyway Data				Dimensions														Dimensions With Minimum Length Adapter		
	Square Key		Reduced Key		A	B	C	C ₁	D	E	F	G	H	J	K	L	M	C ₂	E ₁	L ₁	
	Max. Bore	Keyway	Max. Bore	Keyway																	
2.62	1 ¹ / ₁₆	3/8 x 3/16	1 ¹ / ₁₆	3/8 x 1/8	2 ³ / ₁₆	1 ¹ / ₈	1 ¹ / ₈	1 ¹ / ₁₆	1/8	3 ⁷ / ₃₂	3 ¹ / ₁₆	2 ¹ / ₁₆	1	1 ¹ / ₁₆	1 ¹ / ₈	3/32	1/4	1 ¹ / ₁₆	3 ⁷ / ₃₂	3/32	
3.00	1 ¹ / ₈	3/8 x 3/16	1 ¹ / ₁₆	1/2 x 3/16	3	1 ¹ / ₈	1 ¹ / ₁₆	2 ¹ / ₁₆	1/8	4 ¹ / ₂	3 ¹ / ₁₆	2 ¹ / ₁₆	1 ¹ / ₄	3/8	1 ¹ / ₈	3/16	1/4	2 ¹ / ₁₆	4 ¹ / ₂	3/16	
4.00	2 ¹ / ₁₆	1/2 x 1/4	2 ¹ / ₁₆	5/8 x 1/4	4	2 ¹ / ₈	1 ¹ / ₁₆	3	1/8	5 ¹ / ₁₆	4 ¹ / ₂	3 ¹ / ₈	1 ¹ / ₄	1	1 ¹ / ₈	1 ¹ / ₁₆	1/4	2 ¹ / ₈	5 ¹ / ₁₆	3/16	
5.00	3	3/4 x 3/8	3 ¹ / ₈	3/4 x 1/4	5	3 ¹ / ₈	2 ¹ / ₁₆	3 ³ / ₈	1/8	7 ¹ / ₈	5 ¹ / ₂	4 ¹ / ₈	2 ¹ / ₈	1 ¹ / ₈	2 ¹ / ₄	1	1/4	3 ¹ / ₁₆	6 ¹ / ₁₆	3/16	
6.00	3 ¹ / ₁₆	7/8 x 7/16	3 ¹ / ₈	1/2 x 3/16	6	4 ¹ / ₈	3 ¹ / ₃₂	4 ¹ / ₂	1/8	8 ¹ / ₃₂	6 ¹ / ₈	5 ¹ / ₈	2 ¹ / ₈	1 ¹ / ₂	3	1 ¹ / ₄	3/8	3 ¹ / ₈	7 ¹ / ₃₂	3/8	
7.00	4 ¹ / ₁₆	1 x 1/2	4 ¹ / ₁₆	1 x 3/8	7	5 ¹ / ₈	3 ¹ / ₃₂	5 ¹ / ₈	1/8	9 ¹ / ₃₂	6 ¹ / ₄	6 ¹ / ₈	3 ¹ / ₈	1 ¹ / ₂	3 ¹ / ₂	1 ¹ / ₈	3/8	3 ¹ / ₁₆	8 ¹ / ₃₂	1/8	
8.00	4 ¹ / ₈	1 ¹ / ₄ x 3/8	5 ¹ / ₁₆	1 ¹ / ₄ x 7/16	8	5 ¹ / ₈	4 ¹ / ₁₆	6 ¹ / ₂	1/8	11 ¹ / ₁₆	7 ¹ / ₁₆	7 ¹ / ₈	3 ¹ / ₈	1 ¹ / ₄	4	2 ¹ / ₁₆	3/8	4 ¹ / ₂	9 ¹ / ₁₆	3/16	
9.00	5 ¹ / ₂	1 ¹ / ₄ x 3/4	5 ¹ / ₄	1 ¹ / ₂ x 1/2	9	6 ¹ / ₂	4 ¹ / ₄	7 ¹ / ₈	1/8	13 ¹ / ₁₆	8 ¹ / ₈	8 ¹ / ₈	4 ¹ / ₁₆	1 ¹ / ₈	4 ¹ / ₈	3	1/2	4 ¹ / ₄	10 ¹ / ₁₆	3/8	
10.00	6 ¹ / ₄	1 ¹ / ₂ x 3/4	6 ¹ / ₂	1 ¹ / ₂ x 1/2	10	7 ¹ / ₄	5 ¹ / ₈	8 ¹ / ₈	1/8	14 ¹ / ₈	9 ¹ / ₄	9 ¹ / ₈	4 ¹ / ₁₆	2 ¹ / ₈	5 ¹ / ₈	3 ¹ / ₁₆	1/2	5 ¹ / ₁₆	12 ¹ / ₁₆	3/8	
11.62	7	1 ¹ / ₄ x 7/8	7 ¹ / ₂	1 ³ / ₄ x 3/8	11 ¹ / ₈	8 ¹ / ₂	6 ¹ / ₃₂	9 ¹ / ₈	1/8	18 ¹ / ₃₂	10 ¹ / ₄	11 ¹ / ₈	5 ¹ / ₁₆	2 ¹ / ₄	6 ¹ / ₄	4 ¹ / ₁₆	1/2	5 ¹ / ₁₆	13 ¹ / ₃₂	3/16	
12.62	7 ¹ / ₄	2 x 1	8 ¹ / ₄	2 x 3/4	12 ¹ / ₈	9	6 ¹ / ₈	10 ¹ / ₄	3/16	18 ¹ / ₁₆	11	12 ¹ / ₈	5 ¹ / ₁₆	2 ¹ / ₈	6 ¹ / ₄	4 ¹ / ₁₆	1/2	6 ¹ / ₁₆	14 ¹ / ₂	3/8	
14.00	8 ¹ / ₂	2 x 1	8 ¹ / ₁₆	2 x 3/4	14	10	7 ¹ / ₃₂	11 ¹ / ₄	3/16	20 ¹ / ₃₂	12 ¹ / ₄	13 ¹ / ₈	6 ¹ / ₁₆	2 ¹ / ₁₆	7	4 ¹ / ₈	1/2	7 ¹ / ₈	16 ¹ / ₃₂	3/8	
15.75	10	2 ¹ / ₂ x 1 ¹ / ₄	10 ¹ / ₄	2 ¹ / ₂ x 1/2	15 ¹ / ₄	12	8 ¹ / ₁₆	13 ¹ / ₂	3/8	24 ¹ / ₄	13 ¹ / ₂	15 ¹ / ₂	6 ¹ / ₁₆	2 ¹ / ₁₆	7 ¹ / ₂	6 ¹ / ₁₆	1/2	8 ¹ / ₂	19 ¹ / ₄	1 ¹ / ₁₆	

NOTE: Adapter engagement length is variable from Std. C₁ to minimum length C₂.

Dimensions in inches.

SL and SF Spindles

General Guide for Size and Material Selection

Spindle selection

Step 1 - Calculate selection torque (Ts) including appropriate service factor.

$$T_s = \frac{(H.P. \times 63,025)}{RPM} \times S.F.$$

Step 2 - Select Spindle size (O.D.) and type from table below.

Step 3 - Check adapter bore with equipment shafts

Step 4 - Find torque capacity of chosen size from the charts below. Be sure to look in the proper column which corresponds to the full load operating angle of the spindle. Compare torque capacity to the calculated selection torque (Ts). Torque capacity must be greater than Ts. If Ts is greater than the torque capacity, select larger spindle or alternative material.

Load	Driven Equipment	Service Factors	
		Continuous, Non-Reversing Motors & Turbines	Reversing D.C. Motors & Reciprocating Engines
Medium Shock	Pumps, Lumber Machinery, Paper Mill Equipment, Bar & Rod Mills, Cold Mills & Auxiliary Equipment	1.25	1.5
Heavy Shock	Presses, Mixers, Crane Drives, Mining Equipment, Hot Roll Mills, Runout Tables & Feed Roll Drives	1.75	2.75

AISI-1045 Induction Hardened								
Spindle Size†		Torque Capacity (In.-Lb. x 10 ³) For Misalignments Indicated						
SL	SF	1°	1.5°	2°	3°	4°	5°	6°
2.62	3.56	4.5	3.8	3.2	2.3	1.8	1.4	0.9
3.00	4.00	7.9	6.6	5.5	4.0	3.2	2.4	1.6
4.00	6.00	19.1	16.0	13.4	9.6	7.6	5.7	3.8
5.00	7.00	38.4	32.3	26.9	19.2	15.4	11.5	7.7
6.00	8.38	64.8	54.4	45.4	32.4	25.9	19.4	13.0
7.00	9.44	113.1	95.0	79.2	56.6	45.2	33.9	22.0
8.00	11.00	176.8	148.5	123.8	88.4	70.7	53.0	35.4
9.00	12.50	264.6	222.3	185.2	132.3	105.8	79.4	52.9
10.00	13.62	380.6	319.7	266.4	190.3	152.2	114.2	76.1
11.62	15.31	639.6	537.3	447.7	319.8	255.8	191.9	127.9
12.62	16.56	855.6	718.7	598.9	427.8	342.2	256.7	171.1
14.00	18.00	1,218.5	1,023.5	853.0	609.3	487.4	365.6	243.7
15.75	20.75	1,679.2	1,410.5	1,175.4	839.6	671.7	503.8	335.8

†Dimensions in inches.

AISI-4140 Induction Hardened								
Spindle Size†		Torque Capacity (In.-Lb. x 10 ³) For Misalignments Indicated						
SL	SF	1°	1.5°	2°	3°	4°	5°	6°
2.62	3.56	6.8	5.7	4.7	3.4	2.7	2.0	1.4
3.00	4.00	11.9	10.0	8.3	5.9	4.7	3.6	2.4
4.00	6.00	28.7	24.1	20.1	14.3	11.5	8.6	5.7
5.00	7.00	57.6	48.4	40.3	28.8	23.0	17.3	11.5
6.00	8.38	97.2	81.6	68.0	48.6	38.9	29.2	19.4
7.00	9.44	169.7	142.5	118.8	84.8	67.9	50.9	33.9
8.00	11.00	265.2	222.8	185.6	132.6	106.1	79.6	53.0
9.00	12.50	396.9	333.4	277.8	198.5	158.8	119.1	79.4
10.00	13.62	570.9	479.6	399.6	285.5	228.4	171.3	114.2
11.62	15.31	1,212.0	1,018.1	848.4	606.0	484.8	363.6	242.4
12.62	16.56	1,621.4	1,361.9	1,135.0	810.7	648.5	486.4	324.3
14.00	18.00	2,291.9	1,925.2	1,604.3	1,146.0	916.8	687.6	458.4
15.75	20.75	3,128.8	2,628.2	2,190.2	1,564.4	1,251.5	938.6	625.8

†Dimensions in inches.

Note: Table reflects full load angle torque capability.

Above couplings have ±6° angular misalignment capacity per gear mesh.

SL and SF spindles are furnished with medium carbon steel shafts. In some cases where torque levels are high, heat treated alloy steel shafts may be required.

Consult factory for verification of your selection.

Consult the factory for special designs, if required.

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