

TECHNICAL SECTION

Application Information

To assist customers in selecting the most appropriate flexible drive system in particular applications, PIC Design has included an Application Guide along with a Flexible Drive System Comparison Chart.

The Application Guide assists in determining the drive system suitable for your application. If your specific applications are not listed, use ones which are most similar.

The Comparison Chart will enable users to choose the drive system that will best suit a particular application. The features of these drive systems are listed so that the drive system selected will provide the most economical, maintenance-free and longest life for a particular application.

No-Slip Series belts fulfill the need for the most accurate and smoothest running drive system, while the **E*P*S Series** provides an economical solution to positive power transmission. **No-Slide timing belts** offer higher load capacities, run on no-flange pulleys, offer quiet operation, and can be used in smaller areas. **Miniature chains** offer a positive drive system for heavier duty applications, while **Round Belts** are most suitable for low-load applications not requiring positioning accuracy.

Users are encouraged to request advice or answers to questions not covered here — please don't hesitate to consult PIC Design directly.

Application Guide

	Flexible Drive Systems				
	No-Slip Belts	No-Slide Belts	Timing Belts	Chain	Round
CNC Positioning Devices	X	X	X		
Magnification & Focusing Adjustment Devices	X				
Laser Alignment Mechanisms	X				
Gear Boxes	X	X	X	X	
Paper Feeds		X	X		X
Household Appliances		X	X		X
Centrifuges		X	X		
Encoders — High Resolution Std. Resolution	X X	X	X		
Plotters	X				
Plating Room Equipment	X	X	X		X
High Speed Printers		X	X		
Manual Positioning Mechanisms	X	X	X	X	X
Power Tools, Sanders, etc.		X	X		
Machinery Drives		X	X	X	X
Advertising Displays	X	X	X	X	X
Stepper Motor Drives	X	X	X		
Business Machines	X	X	X	X	X
Audio & Visual Equipment	X	X	X	X	X

Flexible Drive System Feature Comparison

Drive Type	No-Slip	No-Slide	E*P*S (Timing)		E*P*S HTD®	Chain	Round
Catalog Series and Pitch	F, F32 - 32DP, F24C - .1309CP, FR - .1475CP, FL, FM, F20TS - 20DP, F25C - .250CP	F8B-40DP (.0816CP), F20B-.200CP, F37B-.375CP	EPS-A-.080CP, EPS-D-.200CP, EPS-J-.375CP	EPS-A-.080CP, EPS-D-.200CP, EPS-C-.0816CP (40DP)	EPS-F-3mm, EPS-G-5mm	EL-.1475CP EL25-.250CP	AF2-1/16" Thick AF3-3/32" Thick AF4-1/8 " Thick AF5-3/16" Thick AF6-1/4 " Thick
Body Material	Polyurethane	Polyurethane	Neoprene	Polyurethane	Neoprene	Stainless Steel	Polyurethane
Reinforcement	Stainless Steel or Aramid Fiber	Stainless Steel or Aramid Fiber	Fiber Glass	Polyester Fiber	Fiber Glass	—	None
Drive Both Sides of Belt	Yes ¹	No	No	No	No	Yes	Yes
Right Angle Drive	FS & FA ²	No	No	No	No	No	Yes
Resistance to Oils and Chemicals	Stainless Steel - Excellent Aramid - Good	Stainless Steel - Excellent Aramid - Good	Good	No	No	No	Yes
Pulley to Pulley ³ Misalignment	Single Core — up to 5° Double Core — up to 1/10°	Up to 1/10°	Up to 1/4°	Up to 1/4°	Up to 1/4°	No	Yes
Pulley Tooth Form	32DP — Involute 20DP, 24DP, .1475CP, .250CP — Precision Sprocket	Trapezoidal	Trapezoidal	Trapezoidal	HTD® Curvilinear	Precision Sprocket	Radius Groove
Abrasion Resistance	Excellent	Excellent	Good	Excellent	Good	Good	Excellent
Pulleys Mesh With Standard Spur Gears	32DP — Yes 20DP, 24DP — Option Available .1475CP, .250CP — No	No	No	No	No	No	No
Ability to Withstand Shock Loads	Fair	Fair	Limited	Good	Fair	Limited	Excellent
Temperature (°F)	-65 to +180 ⁴	-65 to +180 ⁴	-30 to +185	-65 to +180	-30 to +185	—	-40 to +180

Notes: **Note ¹** Driving stainless steel reinforced belts on both sides, results in a reduction of belt life due to reverse bending.

Note ² Twisting of the belt may cause the belt to wear excessively and reduce belt life. Shafts at right angles require a center distance at least 5 1/2 times the larger pulley diameter.

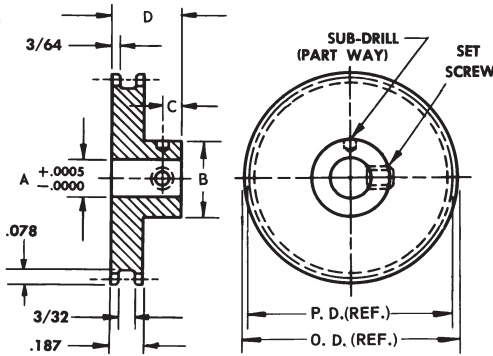
Note ³ Misalignment of pulleys will cause abrasive wear on the belt and reduce belt life.

Note ⁴ Practical operating temperatures are -10°F to +140°F.

NO-SLIP PULLEYS

32DP, .0982CP — For FA, FS & F32BS18 No-Slip Single Core Drive Belts

PIN HUB



Dimen.	Bore				
	1/8	3/16	1/4	4 mm	6 mm
A	.1248	.1873	.2498	.1573	.2360
B	.312	.375	.500	.375	.500
C	.09	.11	.12	.11	.12
D	.375	.406	.437	.406	.437
Set Screw	#2-56	#4-40	#6-32	M2 x .4	M3 x .5

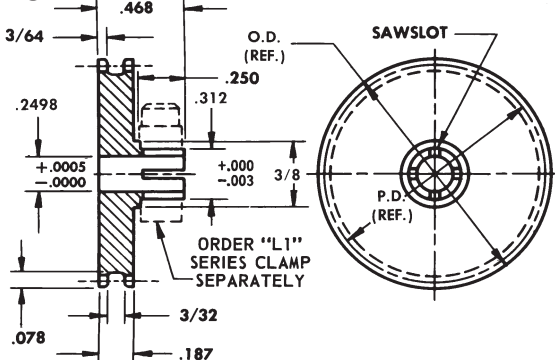
Material: 303 Stainless Steel
2024-T4 Aluminum (Anodized before cutting)

Geared Pulley Data			Stainless Steel Bore Size / Part Number					Aluminum Bore Size / Part Number				
No. Teeth	P.D.	O.D.	.1248	.1873	.2498	4mm	6mm	.1248	.1873	.2498	4mm	6mm
14 *	.4375	.500	FC1-14	—	—	—	—	FC2-14	—	—	—	—
15 *	.4687	.531	FC1-15	FC3-15	—	MGP1-15	—	FC2-15	FC4-15	—	MGP2-15	—
16	.5000	.563	FC1-16	FC3-16	—	MGP1-16	—	FC2-16	FC4-16	—	MGP2-16	—
18	.5625	.625	FC1-18	FC3-18	—	MGP1-18	—	FC2-18	FC4-18	—	MGP2-18	—
20	.6250	.688	FC1-20	FC3-20	FC5-20	MGP1-20	MGP3-20	FC2-20	FC4-20	FC6-20	MGP2-20	MGP4-20
22	.6875	.750	FC1-22	FC3-22	FC5-22	MGP1-22	MGP3-22	FC2-22	FC4-22	FC6-22	MGP2-22	MGP4-22
24	.7500	.813	FC1-24	FC3-24	FC5-24	MGP1-24	MGP3-24	FC2-24	FC4-24	FC6-24	MGP2-24	MGP4-24
26	.8125	.875	FC1-26	FC3-26	FC5-26	MGP1-26	MGP3-26	FC2-26	FC4-26	FC6-26	MGP2-26	MGP4-26
28	.8750	.938	FC1-28	FC3-28	FC5-28	MGP1-28	MGP3-28	FC2-28	FC4-28	FC6-28	MGP2-28	MGP4-28
30	.9375	1.000	FC1-30	FC3-30	FC5-30	MGP1-30	MGP3-30	FC2-30	FC4-30	FC6-30	MGP2-30	MGP4-30
32	1.0000	1.063	FC1-32	FC3-32	FC5-32	MGP1-32	MGP3-32	FC2-32	FC4-32	FC6-32	MGP2-32	MGP4-32
36	1.1250	1.188	FC1-36	FC3-36	FC5-36	MGP1-36	MGP3-36	FC2-36	FC4-36	FC6-36	MGP2-36	MGP4-36
40	1.2500	1.313	FC1-40	FC3-40	FC5-40	MGP1-40	MGP3-40	FC2-40	FC4-40	FC6-40	MGP2-40	MGP4-40
48	1.5000	1.563	FC1-48	FC3-48	FC5-48	MGP1-48	MGP3-48	FC2-48	FC4-48	FC6-48	MGP2-48	MGP4-48
56	1.7500	1.813	FC1-56	FC3-56	FC5-56	MGP1-56	MGP3-56	FC2-56	FC4-56	FC6-56	MGP2-56	MGP4-56
64	2.0000	2.063	FC1-64	FC3-64	FC5-64	MGP1-64	MGP3-64	FC2-64	FC4-64	FC6-64	MGP2-64	MGP4-64
72	2.2500	2.313	FC1-72	FC3-72	FC5-72	MGP1-72	MGP3-72	FC2-72	FC4-72	FC6-72	MGP2-72	MGP4-72
80	2.5000	2.563	—	FC3-80	FC5-80	MGP1-80	MGP3-80	—	FC4-80	FC6-80	MGP2-80	MGP4-80
88	2.7500	2.813	—	FC3-88	FC5-88	MGP1-88	MGP3-88	—	FC4-88	FC6-88	MGP2-88	MGP4-88
96	3.0000	3.063	—	FC3-96	FC5-96	MGP1-96	MGP3-96	—	FC4-96	FC6-96	MGP2-96	MGP4-96
112	3.5000	3.563	—	FC3-112	FC5-112	MGP1-112	MGP3-112	—	FC4-112	FC6-112	MGP2-112	MGP4-112
128	4.0000	4.063	—	FC3-128	FC5-128	MGP1-128	MGP3-128	—	FC4-128	FC6-128	MGP2-128	MGP4-128

* Recommended for use as an idler only

See Note Below.

SPLIT HUB



Note:

Other Size Bores Available, Consult Factory.
For unlisted number of teeth, specify the number of teeth desired as the last figure in the part number.
EXAMPLE: For a 52-tooth stainless steel pulley, specify Part Number: FD5-52.
For number of teeth above or below listed sizes, consult factory.

Pulley Data			Stainless Steel .2498 Bore Part No.	Aluminum .2498 Bore Part No.
No. Teeth	P.D.	O.D.		
14 *	.4375	.500	FD5-14	FD6-14
15 *	.4687	.531	FD5-15	FD6-15
16	.5000	.563	FD5-16	FD6-16
18	.5625	.625	FD5-18	FD6-18
20	.6250	.688	FD5-20	FD6-20
22	.6875	.750	FD5-22	FD6-22
24	.7500	.813	FD5-24	FD6-24
26	.8125	.875	FD5-26	FD6-26
28	.8750	.938	FD5-28	FD6-28
30	.9375	1.000	FD5-30	FD6-30
32	1.0000	1.063	FD5-32	FD6-32
36	1.1250	1.188	FD5-36	FD6-36
40	1.2500	1.313	FD5-40	FD6-40
48	1.5000	1.563	FD5-48	FD6-48
56	1.7500	1.813	FD5-56	FD6-56
64	2.0000	2.063	FD5-64	FD6-64
72	2.2500	2.313	FD5-72	FD6-72

* Recommended for use as an idler only