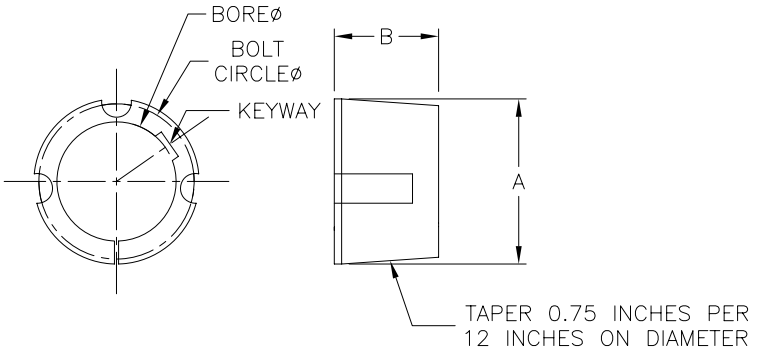
Synchronous Drive Components

Taper-Lock®* Style Bushings



Taper-Lock® Bushings												
Part Number	Price	Weight (lb)	Series	Torque Capacity (lb·in)	Bore Size (in)		Keyway (in)	Nominal Dimensions (in)			Mounting Screws		Material*
					Nominal	Max. with Shallow Keyseat		A	B	D (Bolt Circle)	#	Size	
TL-1108-0500	$25.00	0.4	1108	1300	0.500		1/8	1.511	0.875	1.453	2	1/4 x 1/2	S
TL-1108-0625	$22.00	0.3	1108	1300	0.625		3/16	1.511	0.875	1.453	2	1/4 x 1/2	S
TL-1108-0750	Retired	0.3	1108	1300	0.750		3/16	1.511	0.875	1.453	2	1/4 x 1/2	S
TL-1108-0875	$22.00	0.3	1108	1300	0.875		3/16	1.511	0.875	1.453	2	1/4 x 1/2	S
TL-1108-1000	$22.00	0.2	1108	1300	1.00		1/4	1.511	0.875	1.453	2	1/4 x 1/2	S
TL-1210-0625	$25.50	0.6	1210	3600	0.625		3/16	1.875	1.0	1.750	2	3/8 x 5/8	S
TL-1210-0750	$25.50	0.5	1210	3600	0.750		3/16	1.875	1.0	1.750	2	3/8 x 5/8	S
TL-1210-0875	$25.50	0.6	1210	3600	0.875		3/16	1.875	1.0	1.750	2	3/8 x 5/8	S
TL-1210-1000	$25.50	0.4	1210	3600	1.000	1.25	1/4	1.875	1.0	1.750	2	3/8 x 5/8	S
TL-1210-1125	$25.50	0.4	1210	3600	1.125		1/4	1.875	1.0	1.750	2	3/8 x 5/8	S
TL-1610-0625	$27.50	0.9	1610	4300	0.625		3/16	2.250	1.0	2.125	2	3/8 x 5/8	S
TL-1610-0750	$27.50	0.9	1610	4300	0.750		3/16	2.250	1.0	2.125	2	3/8 x 5/8	S
TL-1610-0875	Retired	0.9	1610	4300	0.875		3/16	2.250	1.0	2.125	2	3/8 x 5/8	S
TL-1610-1000	$27.50	0.8	1610	4300	1.000		1/4	2.250	1.0	2.125	2	3/8 x 5/8	S
TL-1610-1125	$27.50	0.8	1610	4300	1.125		1/4	2.250	1.0	2.125	2	3/8 x 5/8	S
TL-1610-1250	$27.50	0.7	1610	4300	1.250		1/4	2.250	1.0	2.125	2	3/8 x 5/8	S
TL-1610-1375	$27.50	0.6	1610	4300	1.375		5/16	2.250	1.0	2.125	2	3/8 x 5/8	S
TL-2012-0750	$38.50	1.8	2012	7150	0.750		3/16	2.750	1.250	2.625	2	7/16 x 7/8	S
TL-2012-0875	$38.50	1.7	2012	7150	0.875		3/16	2.750	1.250	2.625	2	7/16 x 7/8	S
TL-2012-1000	$38.50	1.6	2012	7150	1.000		1/4	2.750	1.250	2.625	2	7/16 x 7/8	S
TL-2012-1125	$38.50	1.5	2012	7150	1.125	2	1/4	2.750	1.250	2.625	2	7/16 x 7/8	S
TL-2012-1250	$38.50	1.5	2012	7150	1.250		1/4	2.750	1.250	2.625	2	7/16 x 7/8	S
TL-2012-1375	$38.50	1.4	2012	7150	1.375		5/16	2.750	1.250	2.625	2	7/16 x 7/8	S
TL-2517-0875	$62.00	3.8	2517	11600	0.875		3/16	3.375	1.750	3.250	2	1/2 x 1	S
TL-2517-1000	$62.00	3.7	2517	11600	1.000		1/4	3.375	1.750	3.250	2	1/2 x 1	S
TL-2517-1125	$62.00	3.5	2517	11600	1.125	2.5	1/4	3.375	1.750	3.250	2	1/2 x 1	S
TL-2517-1250	$62.00	3.4	2517	11600	1.250		1/4	3.375	1.750	3.250	2	1/2 x 1	S
TL-2517-1375	$62.00	3.3	2517	11600	1.375		5/16	3.375	1.750	3.250	2	1/2 x 1	S

"Taper-Lock" is a registered trademark of Reliance Electric.
*** S = Steel**
Note: Stock bore sizes shown. Bushings may be re-bored up the maximum size listed. Maximum bores may require a shallow keyway and rectangular key

Synchronous Drive Components

Timing (Toothed) Belts

SureMotion timing belts are an excellent choice for many industrial applications. Several pitches and widths are available to cover a wide range of power transmission requirements.

- Neoprene with fiberglass reinforcement
- Polyurethane with polyester reinforcement (MXL pitch only)
- MXL (Mini Xtra Light) pitch = 0.080"
- XL (Xtra Light) pitch = 0.200"
- L (Light) pitch = 0.375"
- Range from 30 - 160 teeth
- 0.25, 0.375, 0.50 and 1.0-inch widths
- Timing belts start at $3.50 (60XL025NG)

Timing Pulleys

Both aluminum and steel pulleys (sprockets) are available with a smooth bore and setscrew. Steel pulleys also available to fit Taper-Lock or QD style drive bushings. Bushings sold separately.

- Aluminum, steel , cast iron, or ductile iron
- MXL pitch = 0.080" with 1/4" width
- XL pitch = 0.200" with 1/4 or 3/8 inch width
- L pitch = .375" with 1/2 or 1 inch width
- Plain bores and TL or QD type bore
- Timing pulleys start at $12.50 (APB10XL025BF-250)

Tapered Drive Bushings

Bushings allow the connection of pulleys to different sized shafts.

- TL (Taper-Lock) and QD (quick detach) types are available
- Steel
- Sandard bore sizes from 0.50 to 1.375 inch
- Taper-Lock® bushings start at $25.00 (TL-1108-0500)
- QD® style bushings start at $20.50 (QD-JA-0500)

Synchronous Drive Components

Product Overview

Timing Pulleys

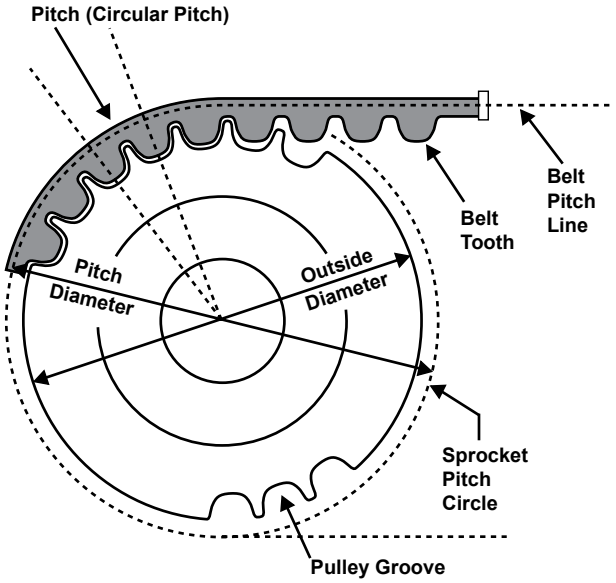
Bushings

Timing Belts

Timing pulleys, bushings, and belts allow you to change speed and torque while connecting mechanically rotating components.

- Select pulley sizes in order to accomplish the speed or torque change that you need.
- Bushings allow you to connect the same pulleys to different sized shafts, or vice versa.
- Synchronous drive belts and pulleys utilize teeth to prevent slippage and unwanted speed variations.

Note: For pulley speeds in excess of 6,000 RPM, pulleys should be dynamically balanced.



Drive Component Selection

1. Determine required torque (ft·lbs) and rpm of driven shaft.
2. Determine design horsepower:

$$DHP = \frac{T \cdot N \cdot sf}{5{,}252}$$

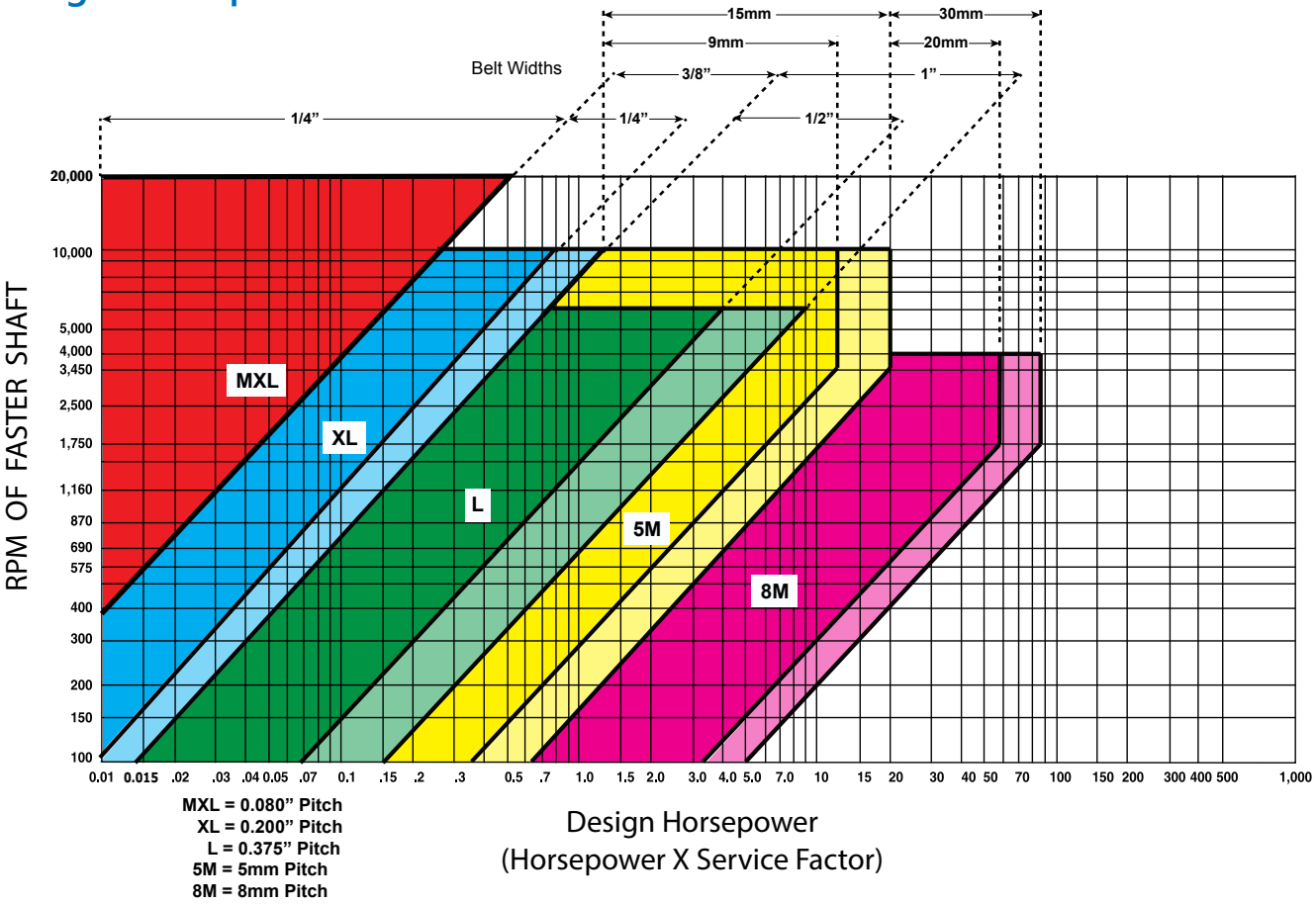
Where: T = torque (ft·lb)
N = rpm
sf = service factor per table

Service Factors			
Machine Type	***<8hr per day***	***8-16 hr per day***	***Continuous***
Smooth Running	1.0	1.2	1.4
Light Shock Loads	1.3	1.5	1.7
Heavy Shock Loads	1.7	1.9	2.1

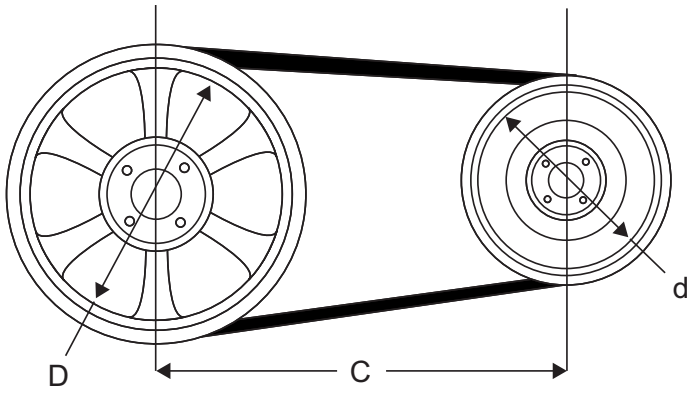
3. Determine Pitch (MXL XL or L) and belt width required by reading Design Horsepower Chart.
4. Select driver and driven pulleys to match desired speed or torque change.
5. Determine belt length per belt length calculation.

Note: AutomationDirect provides an online configuration tool to assist with pulley and belt sizing. See: www.automationdirect.com/selectors/beltandpulley

Design Horsepower Chart



Drive Component Selection Continued



Belt Length Calculations

$$L = 2C + 1.57\,(D + d) + \frac{(D-d)^2}{4C}$$

Where:

L = Length of belt at pitch line (in inches)
C = Center distance (in inches)
D = Pitch diameter (in inches) of large sprocket
d = Pitch diameter (in inches) of small sprocket