

IronHorse® Cast-Iron Worm Gearboxes

Cast-Iron Model Overview



**IronHorse Cast-Iron
Right-Hand Shaft
Worm Gearbox**



**IronHorse Cast-Iron
Left-Hand Shaft
Worm Gearbox**



**IronHorse Cast-Iron
Dual Shaft
Worm Gearbox**



**IronHorse Cast-Iron
Hollow Bore
Worm Gearbox**

Gearbox Overview

Gearboxes, also known as enclosed gear drives or speed reducers, are mechanical drive components that can control a load at a reduced fixed ratio of the motor speed. The output torque is also increased by the same ratio, while the horsepower remains the same (less efficiency losses.) For example, a 10:1 ratio gearbox outputs approximately the same motor output horsepower, motor speed divided by 10, and motor torque multiplied by 10.

Worm gearboxes contain a worm (gear type) on the input shaft, and a mating gear on the output shaft. Worm gearboxes also change the drive direction by 90°.

IronHorse worm gearboxes are manufactured in an ISO9001 certified plant by one of the leading gearbox manufacturers in the world today. Only the highest quality materials are tested, certified, and used in the manufacturing process. Strict adherence to and compliance with the toughest international and U.S. testing standards and manufacturing procedures assure you the highest quality products.

As seen above, our cast-iron gearboxes are offered with right-hand, left-hand and dual (both right and left) output shafts, and with hollow-bore outputs (all the way through from one side to the other). We also offer optional gearbox mounting bases for ease of installation.

Features

- C flange input; dual shaft, right-hand shaft, left-hand shaft or hollow-bore output
- Cast iron one-piece housing
- 1045 carbon steel shaft
- AIBC3 (aluminum bronze casting) main gear; much harder than the typical phosphor bronze
- Shaft sleeves protect all shafts
- One-piece output shaft hub secures output shaft bearing
- Double bearing sets on both shaft ends
- Heavy duty bearings on the output shaft
- Interior channel guides oil to directly and constantly lube bearings
- All units filled with Mobil synthetic oil*
- Double-lipped embedded oil seals to prevent leakage
- Special anti-rust primer inside and outside the gearbox
- Special black natural dry paint
- Universally interchangeable compact design ensures easy OEM replacement
- Multiple mounting orientation options (see user manual for allowed mounting orientations)
- Radiused mounting holes
- Optional mounting plates available
- One year warranty

Applications

- Use with electric motors for reducing output speed, increasing torque, changing drive direction, or running two loads from one motor.
- Use for conveyors, packaging machines, rotary tables, etc.



NOTE: Units manufactured with first 4 serial numbers up to 2108 filled with Mobil SHC634 synthetic oil. Units manufactured with first 4 serial numbers from 2109 are filled with SHC632 synthetic oil.

IronHorse® Cast-Iron Worm Gearboxes

Specifications

IronHorse Cast-Iron Worm Gearbox Specifications																					
Part Number *	Price	Nominal Ratio	Actual Ratio	Output RPM @ 1750 RPM Input	Nominal Motor HP ¹ @ 1800 RPM	NEMA Motor Frame	Output Type ²	Center Distance ³ (in)	Overhung Load ⁴ (lb)	Thrust Load ⁵ (lb)	Efficiency (%)	Approx Weight (lb)	Maximum Ratings @ 1750 RPM Input *						Maximum Backlash (arc-minute)		
													Mechanical ⁶			Thermal ⁷					
													Input Power (hp)	Output Power (hp)	Output Torque (lb-in)	Input Power (hp)	Output Power (hp)	Output Torque (lb-in)			
WG-175-005-D	\$219.00	5:1	5.25:1	350	1.5	56C	D	1.75	650	550	93	23	2.83	2.62	499	2.28	2.11	402	20		
WG-175-005-H	\$269.00					56C	H					23									
WG-175-005-R	\$219.00					56C	L					22									
WG-175-005-L	\$218.00					56C	R					22									
WG-175-010-D	\$219.00	10:1	10.33:1	175	1	56C	D				88	23	1.57	1.38	515	1.36	1.19	445			
WG-175-010-H	\$269.00					56C	H					23									
WG-175-010-R	\$219.00					56C	L					22									
WG-175-010-L	\$218.00					56C	R					22									
WG-175-015-D	\$219.00	15:1	14.5:1	117	0.75	56C	D				85	23	1.24	1.06	554	1.13	0.96	506			
WG-175-015-H	\$269.00					56C	H					23									
WG-175-015-R	\$219.00					56C	L					22									
WG-175-015-L	\$218.00					56C	R					22									
WG-175-020-D	\$219.00	20:1	19.5:1	88	0.75	56C	D				83	23	1.02	0.85	596	0.98	0.81	572			
WG-175-020-H	\$269.00					56C	H					23									
WG-175-020-R	\$219.00					56C	L					22									
WG-175-020-L	\$218.00					56C	R					22									
WG-175-040-D	\$219.00	40:1	40:1	44	0.33	56C	D				62	23	0.74	0.49	714	0.59	0.39	558			
WG-175-040-H	\$286.00					56C	H					23									
WG-175-040-R	\$219.00					56C	L					22									
WG-175-040-L	\$218.00					56C	R					22									
WG-175-060-D	\$219.00	60:1	60:1	29	0.25	56C	D				52	23	0.38	0.20	469	0.38	0.2	469			
WG-175-060-H	\$286.00					56C	H					23									
WG-175-060-R	\$219.00					56C	L					22									
WG-175-060-L	\$218.00					56C	R					22									

- 1) Nominal Motor HP is the highest hp 1800 rpm motor to be used with the gearbox under conditions of 1.0 service factor. Gearbox input power capacity decreases as motor speed decreases and as service factor increases.
- 2) Output Type: D = Dual Shaft; H = Hollow Bore; R = Right-Hand Shaft; L = Left-Hand Shaft
- 3) The Center Distance is the distance between the centerlines of the input and output shafts.
- 4) Overhung Load ratings are for forces perpendicular to the output shaft and located at the shaft midpoint, such as from a gear, pulley, or sprocket with a belt or chain. Divide OHL ratings by the applicable OHL K factors shown separately in the Selection Factors tables. OHL ratings should also be divided by applicable service factors.
- 5) Thrust Load ratings are for forces along the axis of the output shaft, usually encountered in vertical-drive applications from agitators, mixers, fans, blowers, etc.
- 6) Maximum Mechanical Ratings are limits based on strength and durability of gearbox components; applicable when operating time is short and stopped time is greater than or equal to operating time. These ratings are applicable for 1.0 service factor loads, and may require modification depending upon characteristics of the applicable driven loads. Refer to the "Service Factors" table for more information.
- 7) Maximum Thermal Ratings are limits for gearbox continuous use without overheating.
- * Maximum Input Speed is 2500 rpm.

IronHorse® Cast-Iron Worm Gearboxes

Specifications (continued)

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Part Number *	Price	Nominal Ratio	Actual Ratio	Output RPM @ 1750 RPM Input	Nominal Motor HP ¹ @ 1800 RPM	NEMA Motor Frame	Output Type ²	Center Distance ³ (in)	Overhung Load ⁴ (lb)	Thrust Load ⁵ (lb)	Efficiency (%)	Approx Weight (lb)	Maximum Ratings @ 1750 RPM Input *						Maximum Backlash (arc-minute)	
													Mechanical ⁶			Thermal ⁷				
													Input Power (hp)	Output Power (hp)	Output Torque (lb-in)	Input Power (hp)	Output Power (hp)	Output Torque (lb-in)		
WG-206-005-D	\$277.00	5:1	5.75:1	350	2	56C	D	2.06	700	750	92	28	3.62	3.33	685	2.57	2.36	486	17	
WG-206-005-H	\$345.00					56C	H					28								
WG-206-005-R	\$277.00					56C	L					27								
WG-206-005-L	\$275.00					56C	R					27								
WG-206-010-D	\$277.00	10:1	10.33:1	175	1.5	56C	D				90	28	2.77	2.50	935	2.10	1.89	708		
WG-206-010-H	\$345.00					56C	H					28								
WG-206-010-R	\$277.00					56C	L					27								
WG-206-010-L	\$275.00					56C	R					27								
WG-206-015-D	\$277.00	15:1	15.5:1	117	1	56C	D				85	28	2.09	1.78	1002	1.40	1.20	673		
WG-206-015-H	\$345.00					56C	H					28								
WG-206-015-R	\$277.00					56C	L					27								
WG-206-015-L	\$275.00					56C	R					27								
WG-206-020-D	\$262.00	20:1	19.5:1	88	1	56C	D				82	28	1.57	1.29	914	1.17	0.96	681		
WG-206-020-H	\$345.00					56C	H					28								
WG-206-020-R	\$277.00					56C	L					27								
WG-206-020-L	\$277.00					56C	R					27								
WG-206-040-D	\$264.00	40:1	40:1	44	0.5	56C	D	2.06	700	750	71	28	1.09	0.77	1120	0.71	0.50	726	17	
WG-206-040-H	\$345.00					56C	H					28								
WG-206-040-R	\$277.00					56C	L					27								
WG-206-040-L	\$277.00					56C	R					27								
WG-206-060-D	\$262.00	60:1	60:1	29	0.33	56C	D				58	28	0.60	0.35	750	0.48	0.28	606		
WG-206-060-H	\$345.00					56C	H					28								
WG-206-060-R	\$277.00					56C	L					27								
WG-206-060-L	\$277.00					56C	R					27								

1) Nominal Motor HP is the highest hp 1800 rpm motor to be used with the gearbox under conditions of 1.0 service factor. Gearbox input power capacity decreases as motor speed decreases and as service factor increases.

2) Output Type: D = Dual Shaft; H = Hollow Bore; R = Right-Hand Shaft; L = Left-Hand Shaft

3) The Center Distance is the distance between the centerlines of the input and output shafts.

4) Overhung Load ratings are for forces perpendicular to the output shaft and located at the shaft midpoint, such as from a gear, pulley, or sprocket with a belt or chain. Divide OHL ratings by the applicable OHL K factors shown separately in the Selection Factors tables. OHL ratings should also be divided by applicable service factors.

5) Thrust Load ratings are for forces along the axis of the output shaft, usually encountered in vertical-drive applications from agitators, mixers, fans, blowers, etc.

6) Maximum Mechanical Ratings are limits based on strength and durability of gearbox components; applicable when operating time is short and stopped time is greater than or equal to operating time. These ratings are applicable for 1.0 service factor loads, and may require modification depending upon characteristics of the applicable driven loads. Refer to the "Service Factors" table for more information.

7) Maximum Thermal Ratings are limits for gearbox continuous use without overheating.

* Maximum Input Speed is 2500 rpm.

IronHorse® Cast-Iron Worm Gearboxes

Specifications (continued)

IronHorse Cast-Iron Worm Gearbox Specifications																			
Part Number *	Price	Nominal Ratio	Actual Ratio	Output RPM @ 1750 RPM Input	Nominal Motor HP ¹ @ 1800 RPM	NEMA Motor Frame	Output Type ²	Center Distance ³ (in)	Overhung Load ⁴ (lb)	Thrust Load ⁵ (lb)	Efficiency (%)	Approx Weight (lb)	Maximum Ratings @ 1750 RPM Input *						Maximum Backlash (arc-minute)
													Mechanical ⁶			Thermal ⁷			
													Input Power (hp)	Output Power (hp)	Output Torque (lb-in)	Input Power (hp)	Output Power (hp)	Output Torque (lb-in)	
WG-237-005-D	\$315.00	5:1	5.25:1	350	3	56C	D	2.37	900	900	93	38	4.57	4.24	798	3.56	3.31	630	17
WG-237-005-H	\$395.00					56C	H					36							
WG-237-005-R	\$333.00					56C	L					37							
WG-237-005-L	\$333.00					56C	R					37							
WG-237-010-D	\$315.00	10:1	10.33:1	175	1.5	56C	D	2.37	900	900	89	38	3.47	3.09	1158	2.24	1.99	746	
WG-237-010-H	\$395.00					56C	H					36							
WG-237-010-R	\$333.00					56C	L					37							
WG-237-010-L	\$330.00					56C	R					37							
WG-237-015-D	\$315.00	15:1	15.5:1	117	1	56C	D	2.37	900	900	84	38	2.64	2.22	1249	1.55	1.30	732	
WG-237-015-H	\$395.00					56C	H					36							
WG-237-015-R	\$333.00					56C	L					37							
WG-237-015-L	\$330.00					56C	R					37							
WG-237-020-D	\$315.00	20:1	20:1	88	1	56C	D	2.37	900	900	82	38	2.06	1.69	1195	1.36	1.12	791	
WG-237-020-H	\$395.00					56C	H					36							
WG-237-020-R	\$333.00					56C	L					37							
WG-237-020-L	\$330.00					56C	R					37							
WG-237-040-D	\$315.00	40:1	40:1	44	0.5	56C	D	2.37	900	900	71	38	1.45	1.02	1483	0.83	0.58	845	
WG-237-040-H	\$395.00					56C	H					36							
WG-237-040-R	\$333.00					56C	L					37							
WG-237-040-L	\$330.00					56C	R					37							
WG-237-060-D	\$315.00	60:1	60:1	29	0.5	56C	D	2.37	900	900	61	38	0.86	0.53	1149	0.63	0.39	844	
WG-237-060-H	\$395.00					56C	H					36							
WG-237-060-R	\$333.00					56C	L					37							
WG-237-060-L	\$330.00					56C	R					37							
WG-262-005-D	\$337.00	5:1	5.25:1	350	3	182TC	D	2.62	1000	1000	93	57	5.24	4.86	924	4.32	4.00	761	17
WG-262-005-H	\$486.00					182TC	H					58							
WG-262-005-R	\$360.00					182TC	L					56							
WG-262-005-L	\$354.00					182TC	R					56							
WG-262-010-D	\$337.00	10:1	10.67:1	175	2	182TC	D	2.62	1000	1000	90	57	4.17	3.74	1445	3.06	2.75	1061	
WG-262-010-H	\$486.00					182TC	H					57							
WG-262-010-R	\$360.00					182TC	L					56							
WG-262-010-L	\$354.00					182TC	R					56							

1) Nominal Motor HP is the highest hp 1800 rpm motor to be used with the gearbox under conditions of 1.0 service factor. Gearbox input power capacity decreases as motor speed decreases and as service factor increases.

2) Output Type: D = Dual Shaft; H = Hollow Bore; R = Right-Hand Shaft; L = Left-Hand Shaft

3) The Center Distance is the distance between the centerlines of the input and output shafts.

4) Overhung Load ratings are for forces perpendicular to the output shaft and located at the shaft midpoint, such as from a gear, pulley, or sprocket with a belt or chain. Divide OHL ratings by the applicable OHL K factors shown separately in the Selection Factors tables. OHL ratings should also be divided by applicable service factors.

5) Thrust Load ratings are for forces along the axis of the output shaft, usually encountered in vertical-drive applications from agitators, mixers, fans, blowers, etc.

6) Maximum Mechanical Ratings are limits based on strength and durability of gearbox components; applicable when operating time is short and stopped time is greater than or equal to operating time. These ratings are applicable for 1.0 service factor loads, and may require modification depending upon characteristics of the applicable driven loads. Refer to the "Service Factors" table for more information.

7) Maximum Thermal Ratings are limits for gearbox continuous use without overheating.

* Maximum Input Speed is 2500 rpm.

IronHorse® Cast-Iron Worm Gearboxes

Specifications (continued)

IronHorse Cast-Iron Worm Gearbox Specifications																																									
Part Number *	Price	Nominal Ratio	Actual Ratio	Output RPM @ 1750 RPM Input	Nominal Motor HP ¹ @ 1800 RPM	NEMA Motor Frame	Output Type ²	Center Distance ³ (in)	Overhung Load ⁴ (lb)	Thrust Load ⁵ (lb)	Efficiency (%)	Approx Weight (lb)	Maximum Ratings @ 1750 RPM Input *						Maximum Backlash (arc-minute)																						
													Mechanical ⁶			Thermal ⁷																									
													Input Power (hp)	Output Power (hp)	Output Torque (lb-in)	Input Power (hp)	Output Power (hp)	Output Torque (lb-in)																							
WG-262-015-D	\$337.00	15:1	15.5:1	117	2	56C	D	2.62	1000	1000	87	50	3.22	2.81	1577	2.47	2.16	1212	17																						
WG-262-015-H	\$486.00					56C	H													2.62	1000	1000	83	50	2.67	2.21	1563	1.84	1.53	1078											
WG-262-015-R	\$360.00					56C	L																								2.62	1000	1000	72	50	1.85	1.32	1919	1.11	0.80	1153
WG-262-015-L	\$354.00					56C	R																																		
WG-262-020-D	\$337.00	56C	D	2.62	1000	1000	66	51	1.16	0.77	1670	0.94	0.62	1346																											
WG-262-020-H	\$486.00	56C	H												2.62	1000	1000	66		49	1.16	0.77	1670	0.94	0.62	1346															
WG-262-020-R	\$360.00	56C	L																								2.62	1000	1000	66	49	1.16	0.77	1670	0.94	0.62	1346				
WG-262-020-L	\$354.00	56C	R																																			2.62	1000	1000	66
WG-262-040-D	\$337.00	56C	D	2.62	1000	1000	66	49	1.16	0.77	1670	0.94	0.62	1346																											
WG-262-040-H	\$486.00	56C	H												2.62	1000	1000	66		49	1.16	0.77	1670	0.94	0.62	1346															
WG-262-040-R	\$360.00	56C	L																								2.62	1000	1000	66	49	1.16	0.77	1670	0.94	0.62	1346				
WG-262-040-L	\$354.00	56C	R																																			2.62	1000	1000	66
WG-262-060-D	\$337.00	56C	D	2.62	1000	1000	66	49	1.16	0.77	1670	0.94	0.62	1346																											
WG-262-060-H	\$486.00	56C	H												2.62	1000	1000	66		49	1.16	0.77	1670	0.94	0.62	1346															
WG-262-060-R	\$360.00	56C	L																								2.62	1000	1000	66	49	1.16	0.77	1670	0.94	0.62	1346				
WG-262-060-L	\$354.00	56C	R																																			2.62	1000	1000	66

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3) The Center Distance is the distance between the centerlines of the input and output shafts.

4) Overhung Load ratings are for forces perpendicular to the output shaft and located at the shaft midpoint, such as from a gear, pulley, or sprocket with a belt or chain. Divide OHL ratings by the applicable OHL K factors shown separately in the Selection Factors tables. OHL ratings should also be divided by applicable service factors.

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6) Maximum Mechanical Ratings are limits based on strength and durability of gearbox components; applicable when operating time is short and stopped time is greater than or equal to operating time. These ratings are applicable for 1.0 service factor loads, and may require modification depending upon characteristics of the applicable driven loads. Refer to the "Service Factors" table for more information.

7) Maximum Thermal Ratings are limits for gearbox continuous use without overheating.

* Maximum Input Speed is 2500 rpm.

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Specifications (continued)

IronHorse Cast-Iron Worm Gearbox Specifications																				
Part Number *	Price	Nominal Ratio	Actual Ratio	Output RPM @ 1750 RPM Input	Nominal Motor HP ¹ @ 1800 RPM	NEMA Motor Frame	Output Type ²	Center Distance ³ (in)	Overhung Load ⁴ (lb)	Thrust Load ⁵ (lb)	Efficiency (%)	Approx Weight (lb)	Maximum Ratings @ 1750 RPM Input *						Maximum Backlash (arc-minute)	
													Mechanical ⁶			Thermal ⁷				
													Input Power (hp)	Output Power (hp)	Output Torque (lb-in)	Input Power (hp)	Output Power (hp)	Output Torque (lb-in)		
WG-325-010-DC	\$531.00	10:1	10.33:1	169	5	182/4TC	D	3.25	1200	1100	90	91	7.19	6.46	2419	4.63	4.16	1558	15	
WG-325-010-HC	\$696.00					182/4TC	H													90
WG-325-010-LC	\$531.00					182/4TC	L													90
WG-325-010-RC	\$531.00					182/4TC	R													90
WG-325-015-DC	\$531.00	15:1	15.5:1	113	5	182/4TC	D	3.25	1200	1100	85	91	5.45	4.65	2611	3.19	2.72	1527		
WG-325-015-HC	\$696.00					182/4TC	H													90
WG-325-015-LC	\$531.00					182/4TC	L													90
WG-325-015-RC	\$531.00					182/4TC	R													90
WG-325-020-DC	\$531.00	20:1	19.5:1	90	3	182TC	D	3.25	1200	1100	86	91	4.74	4.07	2875	3.31	2.85	2011		
WG-325-020-HC	\$696.00					182TC	H													90
WG-325-020-LC	\$531.00					182TC	L													90
WG-325-020-RC	\$531.00					182TC	R													90
WG-325-030-DA	\$531.00	30:1	30:1	58	2	56C	D	3.25	1200	1100	77	88	3.66	2.80	3045	2.00	1.53	1661		
WG-325-030-DB	\$531.00			90		145TC	D					88								
WG-325-030-HA	\$696.00			58		56C	H					87								
WG-325-030-HB	\$696.00					145TC	H					87								
WG-325-030-LA	\$531.00					56C	L					87								
WG-325-030-LB	\$531.00					145TC	L					87								
WG-325-030-LC	\$531.00			3		182TC	L					87								
WG-325-030-RA	\$531.00			2		56C	R					87								
WG-325-030-RB	\$531.00					145TC	R					87								
WG-325-030-RC	\$531.00			3		182TC	R					87								

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Specifications (continued)

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													Mechanical ⁶			Thermal ⁷			
													Input Power (hp)	Output Power (hp)	Output Torque (lb-in)	Input Power (hp)	Output Power (hp)	Output Torque (lb-in)	
WG-325-040-DA	\$531.00	40:1	40:1	44	2	56C	D	3.25	1200	1100	76	88	3.35	2.55	3692	1.96	1.49	2156	15
WG-325-040-DB	\$531.00					145TC	D					88							
WG-325-040-HA	\$696.00					56C	H					87							
WG-325-040-HB	\$696.00					145TC	H					87							
WG-325-040-LA	\$531.00					56C	L					87							
WG-325-040-LB	\$531.00					145TC	L					87							
WG-325-040-RA	\$531.00					56C	R					87							
WG-325-040-RB	\$531.00					145TC	R					87							
WG-325-060-DA	\$531.00	60:1	60:1	29	2	56C	D	3.25	1200	1100	71	88	2.03	1.44	3127	1.61	1.14	2476	
WG-325-060-DB	\$531.00					145TC	D					88							
WG-325-060-HA	\$696.00					56C	H					87							
WG-325-060-HB	\$696.00					145TC	H					87							
WG-325-060-LA	\$531.00					56C	L					87							
WG-325-060-LB	\$531.00					145TC	L					87							
WG-325-060-RA	\$531.00					56C	R					87							
WG-325-060-RB	\$531.00					145TC	R					87							

1) Nominal Motor HP is the highest hp 1800 rpm motor to be used with the gearbox under conditions of 1.0 service factor. Gearbox input power capacity decreases as motor speed decreases and as service factor increases.

2) Output Type: D = Dual Shaft; H = Hollow Bore; R = Right-Hand Shaft; L = Left-Hand Shaft

3) The Center Distance is the distance between the centerlines of the input and output shafts.

4) Overhung Load ratings are for forces perpendicular to the output shaft and located at the shaft midpoint, such as from a gear, pulley, or sprocket with a belt or chain. Divide OHL ratings by the applicable OHL K factors shown separately in the Selection Factors tables. OHL ratings should also be divided by applicable service factors.

5) Thrust Load ratings are for forces along the axis of the output shaft, usually encountered in vertical-drive applications from agitators, mixers, fans, blowers, etc.

6) Maximum Mechanical Ratings are limits based on strength and durability of gearbox components; applicable when operating time is short and stopped time is greater than or equal to operating time. These ratings are applicable for 1.0 service factor loads, and may require modification depending upon characteristics of the applicable driven loads. Refer to the "Service Factors" table for more information.

7) Maximum Thermal Ratings are limits for gearbox continuous use without overheating.

* Maximum Input Speed is 2500 rpm.

Gearbox Selection Factors

Overhung Load K Factors for Various Drive Types	
Chain & Sprocket	1.00
Gear	1.25
V-belt	1.50
Flat Belt	2.50
Variable Pitch Belt	3.50

Divide gearbox OHL ratings by the applicable OHL K factors.

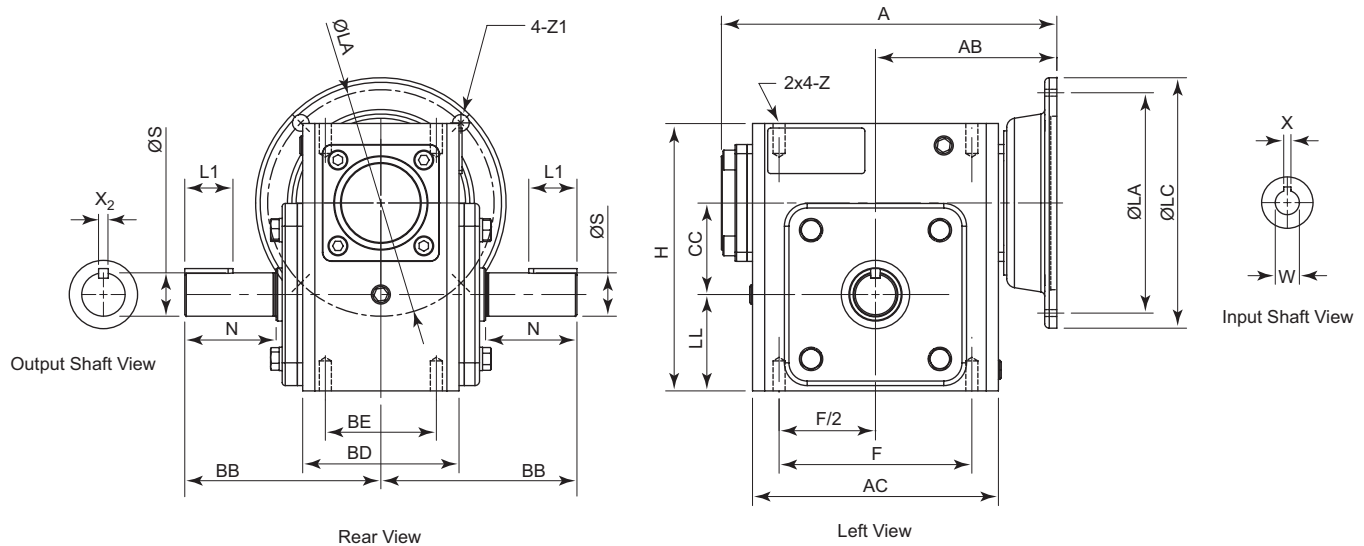
Service Factors for Selecting Gearboxes (when used with electric motors)				
Service Continuity (per day)	Load Characteristics			
	Uniform	Moderate Shock*	Heavy Shock*	Extreme Shock*
Occasional 1/2 hour	1.00	1.00	1.00	1.25
Less than 3 hours	1.00	1.00	1.25	1.50
3-10 hours	1.00	1.25	1.50	1.75
More than 10 hours	1.25	1.50	1.75	2.00

* Shock results from sudden increases in the torque demand of the load, such as: sudden stopping, restarting, and/or reversing; significantly heavy loads dropped onto a moving conveyor; impact loads such as punch press operations.

Depending upon the load characteristics, divide the gearbox HP, Overhung Load, and Maximum Mechanical Capacity ratings by the applicable service factor.

IronHorse® Cast-Iron Worm Gearboxes

Gearbox Dimensions – Cast-Iron Solid-Shaft Output Gearboxes



Dimensions (inches) – IronHorse Cast-Iron Worm Gearboxes – Solid-Shaft Outputs

Part Number	Frame	A	AB	AC	BB	BD	BE	CC	F	H	LL	Z (UNC)	Flange			Input Shaft		Output Shaft											
													LA	LC	Z1	W	X	L1	N	S	X ₂								
WG-175-xxx-D/L/R	56C	7.29	4.035	5.06	4.311	3.56	2.75	1.75	4.188	5.75	2.062	5/16-18	5.875	6.496	0.433	5/8	3/16	1	1.781	7/8	3/16								
WG-206-xxx-D/L/R		7.95	4.37	5.75	4.69	3.82	2.88	2.062	5	6.38	2.281	1.25						2.09	1	1.25	2.37	2	2.626	1-1/8	1/4				
WG-237-xxx-D/L/R		8.71	4.705	6.38	5.087	4.06	2.88	2.375	5	6.94	2.5	1.25						2.37											
WG-262-005-D/L/R	182TC	10.57	6.24	7.17	5.63	4.69	3.375	2.625	6.375	8	2.938	3/8-16	7.25	9	0.551	1-1/8	1/4	2	2.626	1-1/8	1/4								
WG-262-010-D/L/R	56C	9.41	5.059										5.875	6.496	0.433	5/8	3/16												
WG-262-015-D/L/R													5.875	6.496	0.433	5/8	3/16												
WG-262-020-D/L/R																													
WG-262-040-D/L/R																													
WG-262-060-D/L/R																													
WG-325-010-xC	182/4TC	12.60	7.24	9.02	7.06	5.75	4.00	3.25	7.50	9.38	3.50	7/16-14	7.25	9.00	0.55	1-1/8	1/4	2.44	3.25	1-3/8	5/16								
WG-325-015-xC																													
WG-325-020-xC	182TC	11.42	6.06										5.875	6.50	0.41	5/8	3/16												
WG-325-030-xA	56C												7/8	3/16															
WG-325-030-xB	145TC	7.25	9.00										0.55		1-1/8	1/4	5.875					6.50	0.41	5/8	3/16				
WG-325-030-xC	182TC	11.42	6.06										7/8																
WG-325-040-xA	56C												5/8																
WG-325-040-xB	145TC												7/8																
WG-325-060-xA	56C												7/8																
WG-325-060-xB	145TC																												

Dual-shaft output gearboxes have BB, L1, N, S, X₂ dimensions on both sides.

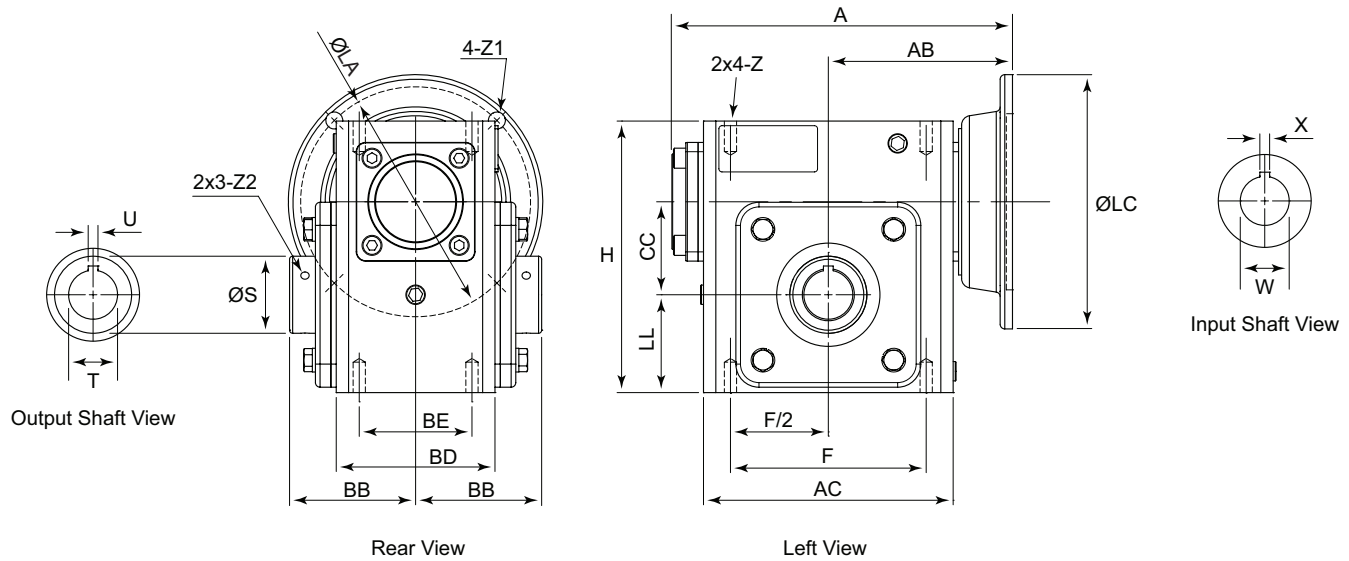
Left-hand shaft gearboxes have output shafts only on the left side, as viewed looking into the input shaft (dimensions BB, L1, N, S, X₂).

Right-hand shaft gearboxes have output shafts only on the right side, as viewed looking into the input shaft (dimensions BB, L1, N, S, X₂).

See our website: www.AutomationDirect.com for complete engineering drawings.

IronHorse® Cast-Iron Worm Gearboxes

Gearbox Dimensions – Cast-Iron Hollow-Bore Output Gearboxes



Dimensions (inches) – IronHorse Cast-Iron Worm Gearboxes – Hollow-Bore Outputs

Part Number	Frame	A	AB	AC	BB	BD	BE	CC	F	H	LL	Z (UNC)	Flange			Input Shaft		Output Bore			
													LA	LC	Z1	W	X	S	T	U	Z2 (UNF)
WG-175-xxx-H	56C	7.28	4.035	5.059	3.091	3.563	2.750	1.75	4.188	5.75	2.062	3/8-16	5.875	6.496	0.433	5/8	3/16	1.575	1.0	1/4	#10-32
WG-206-xxx-H		7.95	4.370	5.748	3.219	3.819	2.880	2.062	5.000	6.375	2.281							1.772	1.125		
WG-237-xxx-H		8.68	4.705	6.378	3.220	4.055	2.880	2.375	5.000	6.937	2.500							1.969	1.250		
WG-262-005-H	182TC	10.59	6.240	7.165	3.500	4.685	3.375	2.625	6.375	8.000	2.938	3/8-16	7.25	9.000	0.551	1-1/8	1/4	2.362	1.437	3/8	1/4-28
WG-262-010-H																					
WG-262-015-H																					
WG-262-020-H	56C	9.41	5.059	7.165	3.500	4.685	3.375	2.625	6.375	8.000	2.938	3/8-16	5.875	6.496	0.433	5/8	3/16	2.362	1.437	3/8	1/4-28
WG-262-040-H																					
WG-262-060-H																					
WG-325-010-HC	182/4TC	12.60	7.24	9.02	4.38	5.75	4.00	3.25	7.50	9.38	3.50	7/16-14	7.25	9.00	0.55	1.125	1/4	2.76	1.938	1/2	5/16-24
WG-325-015-HC																					
WG-325-020-HC																					
WG-325-030-HA	56C	11.42	6.06	9.02	4.38	5.75	4.00	3.25	7.50	9.38	3.50	7/16-14	5.875	6.50	0.41	0.625	3/16	2.76	1.938	1/2	5/16-24
WG-325-030-HB	145TC																				
WG-325-040-HA	56C																				
WG-325-040-HB	145TC																				
WG-325-060-HA	56C																				
WG-325-060-HB	145TC																				

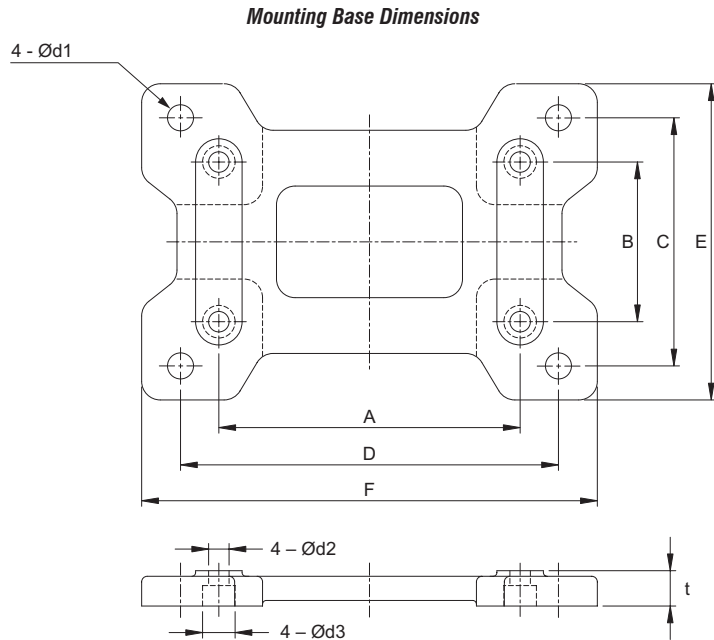
See our website: www.AutomationDirect.com for complete engineering drawings.

IronHorse® Cast-Iron Worm Gearboxes

Accessories – Mounting Base



IronHorse Worm Gearbox Mounting Base



IronHorse Cast-Iron Worm Gearbox Mounting Bases													
Part Number	Price	Fits Gearbox Numbers	Approx Weight (lb)	Dimensions (in)									
				A	B	C	D	E	F	t	d1	d2	d3
WG-175-BASE	\$21.00	WG-175-xxx-x	4.0	4.19	2.76	4.50	5.75	5.69	7.00	0.69	0.43	0.35	0.55
WG-206-BASE	\$25.50	WG-206-xxx-x	4.8	5.00	2.88	4.69	6.38	5.91	7.76	0.72	0.47	0.43	0.69
WG-237-BASE	\$28.50	WG-237-xxx-x	6.2	5.00	2.88	4.88	7.06	6.22	8.50	0.75	0.47	0.43	0.69
WG-262-BASE	\$34.00	WG-262-xxx-x	7.5	6.38	3.38	5.25	8.00	6.69	9.65	0.75	0.55	0.43	0.69
WG-325-BASE	\$48.50	WG-325-xxx-xx	12	7.50	4.00	6.13	9.50	7.66	11.19	0.88	0.50	0.47	0.71

See our website: www.AutomationDirect.com for complete engineering drawings.

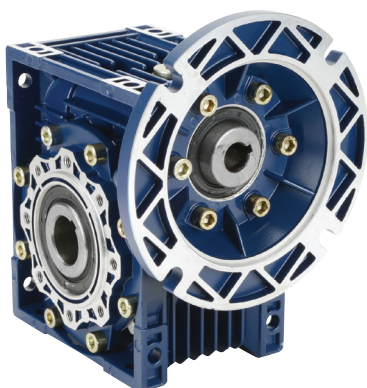
Cast-Iron Worm Gearbox Cross Reference

IronHorse Cast-Iron Worm Gearbox Cross Reference *										
AutomationDirect IronHorse™	WG-175-xxx-		WG-206-xxx-		WG-237-xxx-		WG-262-xxx-		WG-325-xxx-	
	D/L/R	H	D/L/R	H	D/L/R	H	D/L/R	H	D/L/R	H
Alling Lander	17UF	17YF	20UF	20YF	23UF	23YF	26UF	26YF	32UF	32YF
Baldor	F918	HF918	F921	HF921	F924	HF924	F926	HF926	F932	HF932
Boston	F718	HF718	F721	HF721	F724	HF724	F726	HF726	F732	HF732
Browning-Raider	Q175	QH175	Q206	QH206	Q237	QH237	Q262	QH262	Q325	QH325
Dodge-Tigear	Q175	—	Q200	—	—	—	Q262	—	—	—
Falk-Omnibox	1175WBM	1175WBQM	1206WBM	1206WBQM	1238WBM	1238WBQM	1262WBM	1262WBQM	1325WBM	1325WBQM
Grove (new)	BMQ218	HMQ218	BMQ220	HMQ220	BMQ224	HMQ224	BMQ226	HMQ226	BMQ232	HMQ232
Grove (old)	BMQ1175	HMQ1175	BMQ1206	HMQ1206	BWQ1238	HMQ1238	BMQ1262	HMQ1262	BMQ1325	HMQ1325
Leeson	BMQ618	HMQ618	BMQ621	HMQ621	BMQ624	HMQ624	BMQ626	HMQ626	BMQ632	HMQ632
Morse Raider	718F	718SF	721F	721SF	724F	724SF	726F	726SF	732F	732SF
Ohio Gear	BMQ2175	SM2175MQ	BMQ2206	SM2206MQ	BMQ2238	SM2238MQ	BMQ2262	SM2262MQ	BMQ2325	SM2325MQ

* IronHorse Series Gear Drives are designed to be functionally interchangeable with these and many other manufacturer's drives. This chart is intended to be a guide only. Customers should compare the appropriate manufacturer's specifications for exact details regarding ratings and dimensions.

IronHorse® Aluminum Worm Gearboxes

Aluminum Model Overview



**IronHorse Aluminum Hollow Bore
Worm Gearbox**



**IronHorse Aluminum Worm Gearbox
Accessories**

Gearbox Overview

Gearboxes, also known as enclosed gear drives or speed reducers, are mechanical drive components that can control a load at a reduced fixed ratio of the motor speed. The output torque is also increased by the same ratio, while the horsepower remains the same (less efficiency losses.) For example, a 10:1 ratio gearbox outputs approximately the same motor output horsepower, motor speed divided by 10, and motor torque multiplied by 10.

Worm gearboxes contain a worm (gear type) on the input shaft, and a mating gear on the output shaft. Worm gearboxes also change the drive direction by 90°.

IronHorse worm gearboxes are manufactured in an ISO9001 certified plant by one of the leading gearbox manufacturers in the world today. Only the highest quality materials are tested, certified, and used in the manufacturing process.

Strict adherence to and compliance with the toughest international and U.S. testing standards and manufacturing procedures assure you the highest quality products.

Aluminum gearboxes feature hollow-bore outputs (hollow all the way through from one side to the other). These gearboxes also utilize C-face mounting interfaces for trouble-free connections to C-face motors. We also offer optional single and double output shafts, output flanges, torque arms, and output covers.

Features

- 10:1 to 100:1 ratios
- Box sizes 30 to 75 mm
- Aluminum alloy housing for lightweight design
- Hardened worm shaft for increased durability
- Two bearings on input and output shafts
- NEMA motor input flanges
- All units filled with Mobil synthetic oil*
- No vent plug or breather needed; maintenance-free reducer
- Double lip oil seals prevent leakage
- Multiple mounting holes for all angle mounts
- Epoxy paint applied to inside and outside of reducer to protect against corrosion
- Hollow output bores with available plug-in output shafts
- Multiple mounting orientation options (see user manual for allowed mounting orientations)
- Single and Double Output Shaft material: S45C
- Single and Double Output Shaft Hardness: HBS220~260

Applications

- Use with electric motors for reducing output speed, increasing torque, changing drive direction, or running two loads from one motor.
- Use for conveyors, packaging machines, rotary tables, etc.



NOTE: Units manufactured with first 4 serial numbers up to 2108 filled with Mobil SHC634 synthetic oil. Units manufactured with first 4 serial numbers from 2109 are filled with SHC632 synthetic oil.

IronHorse[®] Aluminum Worm Gearboxes

Specifications

IronHorse Aluminum Worm Gearbox Specifications – 30, 40, 50, & 63 mm Frames																
Part Number	Price	Nominal / Actual Ratio	Output RPM @ 1750 RPM Input	Nominal Motor HP ¹ @1800 rpm	NEMA Motor Frame	Output Type ²	Center Distance ³ (mm)	Overhung Load ⁴ (lb)	Output Shaft Thrust Load (lb)	Efficiency (%)	Approx Weight (lb)	Maximum Ratings @ 1750 RPM Input			Maximum Input Speed (rpm)	Maximum Backlash (arc-minute)
												Mechanical ⁵				
												Input Power (hp)	Output Power (hp)	Output Torque (lb-in)		
WGA-30M-010-H1	\$130.00	10:1	175	0.5	56C	H	30	142	31	80	3	0.54	0.43	150	2,000	28.8
WGA-30M-020-H1	\$130.00	20:1	88	0.25				179	40	72		0.30	0.22	150		28.2
WGA-30M-030-H1	\$130.00	30:1	58	0.25				205	45	62		0.25	0.16	177		28.8
WGA-30M-040-H1	\$130.00	40:1	44	0.2				225	50	55		0.19	0.10	150		28.2
WGA-30M-060-H1	\$130.00	60:1	29	0.12				259	54	46		0.12	0.06	142		25.8
WGA-40M-010-H1	\$163.00	10:1	175	1	56C	H	40	279	60	83	5	1.15	0.95	354	2,000	24.0
WGA-40M-020-H1	\$163.00	20:1	88	0.5				350	76	78		0.61	0.48	345		
WGA-40M-030-H1	\$163.00	30:1	58	0.5				403	87	68		0.53	0.36	389		
WGA-40M-040-H1	\$163.00	40:1	44	0.33				441	96	65		0.39	0.25	363		
WGA-40M-060-H1	\$163.00	60:1	29	0.25				507	110	56		0.25	0.14	319		21.6
WGA-40M-080-H1	\$163.00	80:1	22	0.12	556	121	50	0.19	0.10	283						
WGA-40M-100-H1	\$163.00	100:1	17.5	0.12	595	130	47	0.15	0.07	257						
WGA-50M-010-H1	\$223.00	10:1	175	2	56C	H	50	406	83	84	8	2.06	1.73	628	2,000	19.2
WGA-50M-020-H1	\$223.00	20:1	88	1				510	104	78		1.13	0.88	646		17.4
WGA-50M-030-H1	\$223.00	30:1	58	0.75				586	120	70		0.95	0.67	734		19.2
WGA-50M-040-H1	\$223.00	40:1	44	0.75				643	132	65		0.70	0.46	664		17.4
WGA-50M-060-H1	\$223.00	60:1	29	0.33				739	151	57		0.46	0.26	602		16.2
WGA-50M-080-H1	\$223.00	80:1	22	0.33	810	166	50	0.38	0.19	566						
WGA-50M-100-H1	\$223.00	100:1	17.5	0.25	866	179	46	0.28	0.13	487						
WGA-63M-010-H1	\$287.00	10:1	175	3	56C	H	63	510	108	86	13	3.67	3.16	1141	2,000	17.4
WGA-63M-010-H2	\$287.00	10:1	175	3	145TC			510	108	86		3.67	3.16	1141		
WGA-63M-020-H1	\$287.00	20:1	88	2	56C			641	137	80		2.04	1.63	1186		16.2
WGA-63M-020-H2	\$287.00	20:1	88	2	145TC			641	137	80		2.04	1.63	1186		
WGA-63M-030-H1	\$287.00	30:1	58	1.5	56C			736	156	73		1.76	1.28	1416	17.4	
WGA-63M-040-H1	\$287.00	40:1	44	1				807	172	70		1.26	0.88	1274	16.2	
WGA-63M-060-H1	\$287.00	60:1	29	0.75				928	197	59		0.86	0.51	1141	13.8	
WGA-63M-080-H1	\$287.00	80:1	22	0.5				1017	217	53		0.67	0.36	1071		
WGA-63M-100-H1	\$287.00	100:1	18	0.5				1088	234	48		0.57	0.27	1035		

1) Nominal Motor HP is the highest HP 1800 rpm motor to be used with the gearbox under conditions of 1.0 service factor. Gearbox input power capacity decreases as motor speed decreases and as service factor increases.

2) Output Type: H = Hollow Bore.

3) The Center Distance is the distance between the centerlines of the input and output shafts/bore; serves as the gearbox frame size.

4) Overhung Load ratings are for forces perpendicular to the output shaft and located at the shaft midpoint, such as from a gear, pulley, or sprocket with a belt or chain. Divide OHL ratings by the applicable OHL K factors shown separately in the Selection Factors tables. OHL ratings should also be divided by applicable service factors.

5) Maximum Mechanical Ratings are limits based on strength and durability of gearbox components; applicable when operating time is short and stopped time is greater than or equal to operating time. These ratings are applicable for 1.0 service factor loads, and may require modification depending upon characteristics of the applicable driven loads. Refer to the "Service Factors" table for more information.

IronHorse® Aluminum Worm Gearboxes

IronHorse Aluminum Worm Gearbox Specifications – 75 mm Frames																
Part Number	Price	Nominal / Actual Ratio	Output RPM @ 1750 RPM Input	Nominal Motor HP ¹ @1800 rpm	NEMA Motor Frame	Output Type ²	Center Distance ³ (mm)	Overhung Load ⁴ (lb)	Output Shaft Thrust Load (lb)	Efficiency (%)	Approx Weight (lb)	Maximum Ratings @ 1750 RPM Input			Maximum Input Speed (rpm)	Maximum Backlash (arc-minute)
												Mechanical ⁵				
												Input Power (hp)	Output Power (hp)	Output Torque (lb-in)		
WGA-75M-010-H1	\$418.00	10:1	175	5	56C	H	75	604	128	86	19	5.44	4.68	1717	2,000	16.2
WGA-75M-010-H2	\$418.00	10:1	175	5	145TC			604	128	86		5.44	4.68	1717		
WGA-75M-010-H3	\$418.00	10:1	175	5	182/4TC			604	128	86		5.44	4.68	1717		
WGA-75M-020-H1	\$418.00	20:1	88	3	56C			759	161	79		3.14	2.48	1849		
WGA-75M-020-H2	\$418.00	20:1	88	3	145TC			759	161	79		3.14	2.48	1849	2,000	14.4
WGA-75M-030-H1	\$418.00	30:1	58	2	56C			873	185	72		2.48	1.79	2026		
WGA-75M-040-H1	\$418.00	40:1	44	1.5				957	203	68		1.88	1.28	1947		12.6
WGA-75M-060-H1	\$418.00	60:1	29	1				1099	232	62		1.26	0.78	1770		
WGA-75M-080-H1	\$418.00	80:1	22	0.75				1205	256	58		0.97	0.56	1672		
WGA-75M-100-H1	\$418.00	100:1	18	0.75				1289	276	52		0.80	0.42	1593		

- 1) Nominal Motor HP is the highest HP 1800 rpm motor to be used with the gearbox under conditions of 1.0 service factor. Gearbox input power capacity decreases as motor speed decreases and as service factor increases.
- 2) Output Type: H = Hollow Bore.
- 3) The Center Distance is the distance between the centerlines of the input and output shafts/bores; serves as the gearbox frame size.
- 4) Overhung Load ratings are for forces perpendicular to the output shaft and located at the shaft midpoint, such as from a gear, pulley, or sprocket with a belt or chain. Divide OHL ratings by the applicable OHL K factors shown separately in the Selection Factors tables. OHL ratings should also be divided by applicable service factors.
- 5) Maximum Mechanical Ratings are limits based on strength and durability of gearbox components; applicable when operating time is short and stopped time is greater than or equal to operating time. These ratings are applicable for 1.0 service factor loads, and may require modification depending upon characteristics of the applicable driven loads. Refer to the "Service Factors" table for more information.

Gearbox Selection Factors

Overhung Load K Factors for Various Drive Types	
Chain & Sprocket	1.00
Gear	1.25
V-belt	1.50
Flat Belt	2.50
Variable Pitch Belt	3.50

Divide gearbox OHL ratings by the applicable OHL K factors.

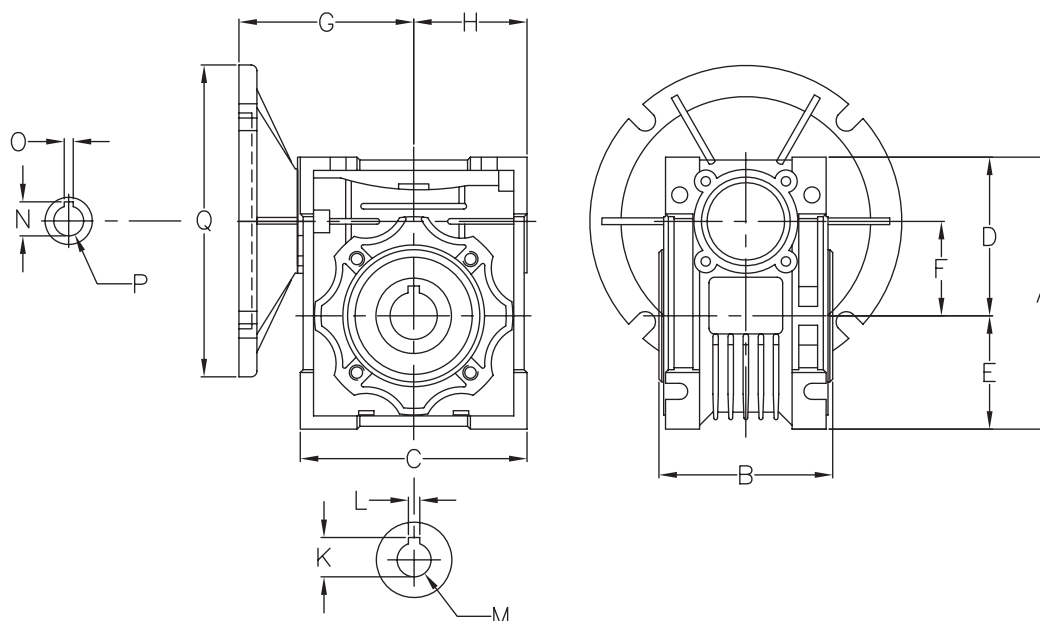
Service Factors for Selecting Gearboxes (when used with electric motors)				
Service Continuity (per day)	Load Characteristics			
	Uniform	Moderate Shock*	Heavy Shock*	Extreme Shock*
Occasional 1/2 hour	1.00	1.00	1.00	1.25
Less than 3 hours	1.00	1.00	1.25	1.50
3-10 hours	1.00	1.25	1.50	1.75
More than 10 hours	1.25	1.50	1.75	2.00

* Shock results from sudden increases in the torque demand of the load, such as: sudden stopping, restarting, and/or reversing; significantly heavy loads dropped onto a moving conveyor; impact loads such as punch press operations.

Depending upon the load characteristics, divide the gearbox HP, Overhung Load, and Maximum Mechanical Capacity ratings by the applicable service factor.

IronHorse® Aluminum Worm Gearboxes

Specifications (continued)



Dimensions (inches) – IronHorse Aluminum Worm Gearboxes															
Part Number	NEMA Motor Face	A	B	C	D	E	F	G	H	Output Bore			Input Shaft		
										K	L	ØM	N	O	ØP
WGA-30M-xxx-H1	56C	3.82	2.48	3.15	2.24	1.57	1.18	3.19	1.57	0.720	0.187	0.625	0.73	0.19	0.625
WGA-40M-xxx-H1		4.78	3.07	3.94	2.81	1.97	1.57	3.18	1.97	0.840	0.187	0.750	0.71	0.19	0.625
WGA-50M-xxx-H1		5.67	3.62	4.72	3.31	2.36	1.97	3.58	2.36	1.110	0.250	1.000	0.71	0.19	0.625
WGA-63M-xxx-H1		6.87	4.42	5.69	4.00	2.87	2.48	4.06	2.84	1.250	0.250	1.125	0.71	0.19	0.625
WGA-63M-xxx-H2	145TC	6.87	4.42	5.69	4.00	2.87	2.48	4.06	2.84	1.250	0.250	1.125	0.97	0.19	0.875
WGA-75M-xxx-H1	56C	8.07	4.72	6.77	4.69	3.39	2.95	4.68	3.39	1.375	0.250	1.250	0.71	0.19	0.625
WGA-75M-xxx-H2	145TC	8.07	4.72	6.77	4.69	3.39	2.95	4.68	3.39	1.375	0.250	1.250	1.24	0.25	1.125
WGA-75M-xxx-H3	182/4TC	8.07	4.72	6.77	4.69	3.39	2.95	4.68	3.39	1.375	0.250	1.250	1.24	0.25	1.125

See our website: www.AutomationDirect.com for complete engineering drawings.

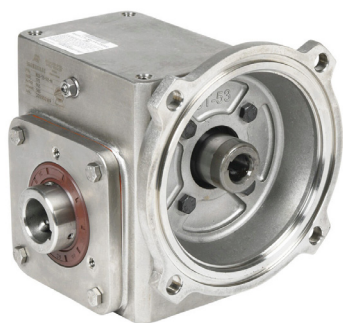
IronHorse® Aluminum Worm Gearboxes

Accessories

IronHorse Aluminum Worm Gearbox Accessories			
Part Number	Price	Description	Typical Photo
<u>WGA-30M-ACC1</u>	\$12.00	Output flange, for aluminum WGA-30M series gearboxes. Includes (4) mounting screws.	
<u>WGA-40M-ACC1</u>	\$13.00	Output flange, for aluminum WGA-40M series gearboxes. Includes (4) mounting screws.	
<u>WGA-50M-ACC1</u>	\$14.50	Output flange, for aluminum WGA-50M series gearboxes. Includes (4) mounting screws.	
<u>WGA-63M-ACC1</u>	\$18.50	Output flange, for aluminum WGA-63M series gearboxes. Includes (8) mounting screws.	
<u>WGA-75M-ACC1</u>	\$28.50	Output flange, for aluminum WGA-75M series gearboxes. Includes (8) mounting screws.	
<u>WGA-30M-ACC2</u>	\$15.50	Torque arm, for aluminum WGA-30M series gearboxes. Includes (4) mounting screws.	
<u>WGA-40M-ACC2</u>	\$17.50	Torque arm, for aluminum WGA-40M series gearboxes. Includes (4) mounting screws.	
<u>WGA-50M-ACC2</u>	\$18.50	Torque arm, for aluminum WGA-50M series gearboxes. Includes (4) mounting screws.	
<u>WGA-63M-ACC2</u>	\$29.50	Torque arm, for aluminum WGA-63M series gearboxes. Includes (8) mounting screws.	
<u>WGA-75M-ACC2</u>	\$51.00	Torque arm, for aluminum WGA-75M series gearboxes. Includes (8) mounting screws.	
<u>WGA-30M-ACC3</u>	\$15.50	Single output shaft, Ø0.625 in, for aluminum WGA-30M series gearboxes. Includes (3) keys, (1) spacer, and (1) retaining ring.	
<u>WGA-40M-ACC3</u>	\$17.50	Single output shaft, Ø0.75 in, for aluminum WGA-40M series gearboxes. Includes (3) keys, (1) spacer, and (1) retaining ring.	
<u>WGA-50M-ACC3</u>	\$21.00	Single output shaft, Ø1.0 in, for aluminum WGA-50M series gearboxes. Includes (3) keys, (1) spacer, and (1) retaining ring.	
<u>WGA-63M-ACC3</u>	\$27.50	Single output shaft, Ø1.125 in, for aluminum WGA-63M series gearboxes. Includes (3) keys, (1) spacer, and (1) retaining ring.	
<u>WGA-75M-ACC3</u>	\$36.50	Single output shaft, Ø1.25 in, for aluminum WGA-75M series gearboxes. Includes (3) keys, (1) spacer, and (1) retaining ring.	
<u>WGA-30M-ACC4</u>	\$21.00	Double output shaft, Ø0.625 in, for aluminum WGA-30M series gearboxes. Includes (4) keys, (2) spacers, and (2) retaining rings.	
<u>WGA-40M-ACC4</u>	\$24.00	Double output shaft, Ø0.75 in, for aluminum WGA-40M series gearboxes. Includes (4) keys, (2) spacers, and (2) retaining rings.	
<u>WGA-50M-ACC4</u>	\$27.50	Double output shaft, Ø1.0 in, for aluminum WGA-50M series gearboxes. Includes (4) keys, (2) spacers, and (2) retaining rings.	
<u>WGA-63M-ACC4</u>	\$37.50	Double output shaft, Ø1.125 in, for aluminum WGA-63M series gearboxes. Includes (4) keys, (2) spacers, and (2) retaining rings.	
<u>WGA-75M-ACC4</u>	\$46.00	Double output shaft, Ø1.25 in, for aluminum WGA-75M series gearboxes. Includes (4) keys, (2) spacers, and (2) retaining rings.	
<u>WGA-30M-ACC5</u>	\$6.50	Output cover, for aluminum WGA-30M series gearboxes. Includes (4) mounting screws.	
<u>WGA-40M-ACC5</u>	\$6.50	Output cover, for aluminum WGA-40M series gearboxes. Includes (4) mounting screws.	
<u>WGA-50M-ACC5</u>	\$12.00	Output cover, for aluminum WGA-50M series gearboxes. Includes (4) mounting screws.	
<u>WGA-63M-ACC5</u>	\$12.00	Output cover, for aluminum WGA-63M series gearboxes. Includes (4) mounting screws.	
<u>WGA-75M-ACC5</u>	\$12.00	Output cover, for aluminum WGA-75M series gearboxes. Includes (4) mounting screws.	



IronHorse® Stainless Steel Worm Gearboxes



**IronHorse 304 Stainless Steel
Hollow Bore
Worm Gearbox**



Features

- Available ratios – 5:1 to 60:1
- Available housing sizes – 1 3/4" to 2 5/8" (center distance)
- BEAG (formerly BISSC) certified (Bakery Equipment Assessment Group)
- IP69K rated
- Housing, covers, & flange – 304 stainless steel
- External surfaces – polished smooth
- Nameplate – laser etched
- Breather vent – sealed internal bladder functions as a breather vent
- Input flange – includes O-ring to prevent moisture intrusion
- Input quill – 15CrMo4 with carburizing heat treatment
- Worm wheel – CuSn12Ni2 bronze alloy with high efficiency tooth profile
- Output seals – double lipped, VITON
- Top mounting holes – removable plastic plugs installed
- Side mounting holes – removable silicone plugs installed
- Lubrication – prefilled* with Mobil CIBUS 460 H1 food grade lubricant
- Performance – equivalent to other major brands
- Includes – 1 O-Ring and 2 stainless steel keys
- Warranty – 1 year



*NOTE: Prefilled for mounting position 'A'. Other mounting positions may require addition or subtraction of oil. Please refer to the User Manual for proper oil volume for each mounting position.

Gearbox Overview

Gearboxes, also known as enclosed gear drives or speed reducers, are mechanical drive components that can control a load at a reduced fixed ratio of the motor speed. The output torque is also increased by the same ratio, while the horsepower remains the same (less efficiency losses.) For example, a 10:1 ratio gearbox outputs approximately the same motor output horsepower, motor speed divided by 10, and motor torque multiplied by 10.

Worm gearboxes contain a worm (gear type) on the input shaft, and a mating gear on the output shaft. Worm gearboxes also change the drive direction by 90°.

IronHorse worm gearboxes are manufactured in an ISO9001 certified plant by one of the leading gearbox manufacturers in the world today. Only the highest quality materials are tested, certified, and used in the manufacturing process. Strict adherence to and compliance with the toughest international and U.S. testing standards and manufacturing procedures assure you the highest quality products.

The IronHorse® Stainless Steel (WGSS) series of heavy duty, right angle worm gear reducers offer exceptional value for applications where food-grade or corrosion resistant equipment is required. These BEAG (formerly BISSC) Certified reducers offer IP69K Protection for close-range high pressure, high temperature spray downs. We also offer optional gearbox accessories.

Applications

- Use with electric motors for reducing output speed, increasing torque, changing drive direction, or running two loads from one motor.
- Use for conveyors, packaging machines, rotary tables, etc.



**Dual Output Shaft Accessories
WGSS-175-DS**



**Single Output Shaft Accessories
WGSS-175-S**



**Output Cover Accessories
WGSS-175-OC**



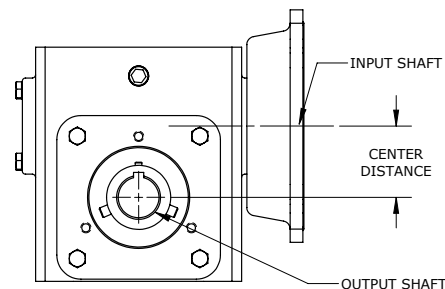
**Output Flange Accessories
WGSS-175-OF**



**Output Bore Accessories
WGSS-175-158-OB**



IronHorse® Stainless Steel Worm Gearboxes



IronHorse Stainless Steel Worm Gearbox Specifications																			
Part Number	Price	Nominal Ratio	Actual Ratio	Output RPM @ 1750 RPM Input	Nominal Motor HP ¹ @ 1800 RPM	NEMA Motor Frame	Center Distance (in)	Overhung Load ² (lb)	Thrust Load ³ (lb)	Efficiency (%)	Approx Weight (lb)	Maximum Ratings @ 1750 RPM Input						Maximum Backlash (arc-minute)	Drawing Links
												Mechanical ⁴			Thermal ⁵				
												Input Power (hp)	Output Power (hp)	Output Torque (lb-in)	Input Power (hp)	Output Power (hp)	Output Torque (lb-in)		
WGSS-175-005-HA	\$1,052.00	5:1	5.25:1	350	2.36	56C	1 3/4	650	550	93.2	16	2.36	2.2	416	1.99	1.85	350	20	PDF
WGSS-175-010-HA	\$982.00	10:1	10:1	175	1.52					90.5		1.52	1.38	495	1.43	1.3	467		PDF
WGSS-175-015-HA	\$982.00	15:1	15:1	116	1.09					85.9		1.09	0.94	506	0.96	0.83	448		PDF
WGSS-175-020-HA	\$982.00	20:1	20.5:1	87	0.85					84		0.85	0.71	527	0.85	0.71	514		PDF
WGSS-175-030-HA	\$982.00	30:1	30:1	58	0.65					75.8		0.65	0.49	532	0.56	0.43	460		PDF
WGSS-175-040-HA	\$982.00	40:1	40:1	44	0.57					72.9		0.57	0.42	599	0.5	0.37	527		PDF
WGSS-175-050-HA	\$982.00	50:1	50:1	35	0.44					71.7		0.44	0.32	568	0.44	0.32	568		PDF
WGSS-175-060-HA	\$982.00	60:1	60:1	29	0.31					68.3		0.31	0.21	457	0.31	0.21	457		PDF
WGSS-206-005-HA	\$1,076.00	5:1	5.25:1	350	3.62	56C	2 1/16	700	750	93.5	22	3.62	3.38	640	3.04	2.84	538	17	PDF
WGSS-206-010-HA	\$1,076.00	10:1	10:1	175	2.47					89.8		2.47	2.22	799	1.94	1.74	627		PDF
WGSS-206-015-HA	\$1,076.00	15:1	15:1	116	1.8					87.4		1.8	1.57	850	1.57	1.37	741		PDF
WGSS-206-020-HA	\$1,076.00	20:1	20.5:1	87	1.48					83		1.48	1.23	907	1.16	0.97	713		PDF
WGSS-206-030-HA	\$1,076.00	30:1	30:1	58	0.95					78.1		0.95	0.74	802	0.9	0.71	762		PDF
WGSS-206-040-HA	\$1,076.00	40:1	40:1	44	0.76					70.7		0.76	0.54	774	0.67	0.48	687		PDF
WGSS-206-050-HA	\$1,076.00	50:1	50:1	35	0.6					71.4		0.6	0.43	771	0.6	0.43	771		PDF
WGSS-206-060-HA	\$1,076.00	60:1	60:1	29	0.52					69.2		0.52	0.36	777	0.52	0.36	777		PDF
WGSS-237-005-HA	\$1,402.00	5:1	5.25:1	350	4.32	56C	2 3/8	900	900	93.9	28	4.32	4.06	767	3.91	3.67	693	17	PDF
WGSS-237-010-HA	\$1,309.00	10:1	10:1	175	3.23					90.7		3.23	2.93	1055	2.56	2.32	837		PDF
WGSS-237-015-HA	\$1,309.00	15:1	15:1	116	2.36					86.9		2.36	2.05	1108	1.82	1.58	854		PDF
WGSS-237-020-HA	\$1,309.00	20:1	20.5:1	87	2.01					83.8		2.01	1.68	1243	1.47	1.23	910		PDF
WGSS-237-030-HA	\$1,309.00	30:1	30:1	58	1.33					76.9		1.33	1.02	1105	1.03	0.79	857		PDF
WGSS-237-040-HA	\$1,309.00	40:1	40:1	44	1.07					75		1.07	0.8	1156	0.95	0.71	1029		PDF
WGSS-237-050-HA	\$1,309.00	50:1	50:1	35	0.87					70.9		0.87	0.62	1111	0.82	0.58	1045		PDF
WGSS-237-060-HA	\$1,309.00	60:1	60:1	29	0.71					65.7		0.71	0.47	1008	0.69	0.46	986		PDF

1. Nominal Motor HP is the highest hp 1800 rpm motor to be used with the gearbox under conditions of 1.0 service factor. Gearbox input power capacity decreases as motor speed decreases and as service factor increases.

2. Overhung Load (OHL) ratings are for forces perpendicular to the output shaft and located at the shaft midpoint, such as from a gear, pulley, or sprocket with a belt or chain. Divide OHL ratings by the applicable OHL K factors shown separately in the Selection Factors tables. OHL ratings should also be divided by applicable service factors.

3. Thrust Load ratings are for forces along the axis of the output shaft, usually encountered in vertical-drive applications from agitators, mixers, fans, blowers, etc.

4. Maximum Mechanical Ratings are limits based on strength and durability of gearbox components; applicable when operating time is short and stopped time is greater than or equal to operating time. These ratings are applicable for 1.0 service factor loads, and may require modification depending upon characteristics of the applicable driven loads. Refer to the "Service Factors" table for more information.

5. Maximum Thermal Ratings are limits for gearbox continuous use without overheating.



IronHorse® Stainless Steel Worm Gearboxes

IronHorse Stainless Steel Worm Gearbox Specifications

Part Number	Price	Nominal Ratio	Actual Ratio	Output RPM @ 1750 RPM Input	Nominal Motor HP ¹ @ 1800 RPM	NEMA Motor Frame	Center Distance (in)	Overhung Load ² (lb)	Thrust Load ³ (lb)	Efficiency (%)	Approx Weight (lb)	Maximum Ratings @ 1750 RPM Input						Maximum Backlash (arc-minute)	Drawing Links				
												Mechanical ⁴			Thermal ⁵								
												Input Power (hp)	Output Power (hp)	Output Torque (lb-in)	Input Power (hp)	Output Power (hp)	Output Torque (lb-in)						
WGSS-262-005-HB	\$1,824.00	5:1	5.25:1	350	5.24	145TC	2 5/8	1000	1000	94.2	39	5.24	4.94	933	5.17	4.87	920	17	PDF				
WGSS-262-010-HB	\$1,706.00	10:1	10:1	175	3.96					91.2		3.96	3.61	1301	3.41	3.11	1119		PDF				
WGSS-262-015-HB	\$1,706.00	15:1	15:1	116	2.96					88.5		2.96	2.62	1415	2.61	2.31	1246		PDF				
WGSS-262-020-HA	\$1,706.00	20:1	20.5:1	87	2.36	56C				84.5		2.36	1.99	1472	1.93	1.63	1206		PDF				
WGSS-262-020-HB	\$1,706.00					145TC				2.36		1.99	1472	1.93	1.63	1206	PDF						
WGSS-262-030-HA	\$1,706.00	30:1	30:1	58	1.68	56C				79.7		1.68	1.34	1446	1.48	1.18	1271		PDF				
WGSS-262-030-HB	\$1,706.00					145TC						1.68	1.34	1446	1.48	1.18	1271		PDF				
WGSS-262-040-HA	\$1,706.00	40:1	40:1	44	1.33	56C								75.9		1.33	1.01		1454	1.24	0.94	1360	PDF
WGSS-262-050-HA	\$1,706.00	50:1	50:1	35	1.08									73.2		1.08	0.79		1423	1.08	0.79	1423	PDF
WGSS-262-060-HA	\$1,706.00	60:1	60:1	29	0.89									66.5		0.89	0.59		1279	0.89	0.59	1279	PDF

1. Nominal Motor HP is the highest hp 1800 rpm motor to be used with the gearbox under conditions of 1.0 service factor. Gearbox input power capacity decreases as motor speed decreases and as service factor increases.

2. Overhung Load (OHL) ratings are for forces perpendicular to the output shaft and located at the shaft midpoint, such as from a gear, pulley, or sprocket with a belt or chain. Divide OHL ratings by the applicable OHL K factors shown separately in the Selection Factors tables. OHL ratings should also be divided by applicable service factors.

3. Thrust Load ratings are for forces along the axis of the output shaft, usually encountered in vertical-drive applications from agitators, mixers, fans, blowers, etc.

4. Maximum Mechanical Ratings are limits based on strength and durability of gearbox components; applicable when operating time is short and stopped time is greater than or equal to operating time. These ratings are applicable for 1.0 service factor loads, and may require modification depending upon characteristics of the applicable driven loads. Refer to the "Service Factors" table for more information.

5. Maximum Thermal Ratings are limits for gearbox continuous use without overheating.

Gearbox Selection Factors

Overhung Load K Factors for Various Drive Types	
Chain & Sprocket	1.00
Gear	1.25
V-belt	1.50
Flat Belt	2.50
Variable Pitch Belt	3.50

Divide gearbox OHL ratings by the applicable OHL K factors.

Service Factors for Selecting Gearboxes (when used with electric motors)				
Service Continuity (per day)	Load Characteristics			
	Uniform	Moderate Shock*	Heavy Shock*	Extreme Shock*
Occasional 1/2 hour	1.00	1.00	1.00	1.25
Less than 3 hours	1.00	1.00	1.25	1.50
3-10 hours	1.00	1.25	1.50	1.75
More than 10 hours	1.25	1.50	1.75	2.00

* Shock results from sudden increases in the torque demand of the load, such as: sudden stopping, restarting, and/or reversing; significantly heavy loads dropped onto a moving conveyor; impact loads such as punch press operations. Depending upon the load characteristics, divide the gearbox HP, Overhung Load, and Maximum Mechanical Capacity ratings by the applicable service factor.

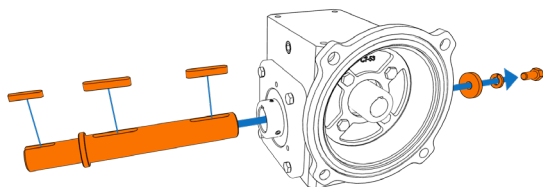
Gearbox Mounting Orientations					
Horizontal Input Shaft				Vertical Input Shaft	
A	B	C	D	E	F
		NOT ALLOWED			NOT ALLOWED



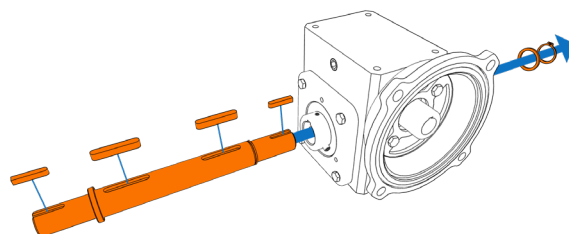
IronHorse® Stainless Steel Worm Gearbox Accessories

IronHorse Stainless Steel Worm Gearbox Output Shaft Kits						
Part Number	Price	Fits	Output Shaft Type	Output Shaft Diameter	Typical Photo	Drawing Links
<u>WGSS-175-S</u>	\$79.00	WGSS-175 series gearboxes	Single	0.875"		<u>PDF</u>
<u>WGSS-206-S</u>	\$85.00	WGSS-206 series gearboxes		1"		<u>PDF</u>
<u>WGSS-237-S</u>	\$103.00	WGSS-237 series gearboxes		1.125"		<u>PDF</u>
<u>WGSS-262-S</u>	\$117.00	WGSS-262 series gearboxes		1.25"		<u>PDF</u>
<u>WGSS-262-S-1125</u>	\$117.00	WGSS-262 series gearboxes		1.125"		<u>PDF</u>
<u>WGSS-175-DS</u>	\$108.00	WGSS-175 series gearboxes	Double	0.875"		<u>PDF</u>
<u>WGSS-206-DS</u>	\$117.00	WGSS-206 series gearboxes		1"		<u>PDF</u>
<u>WGSS-237-DS</u>	\$145.00	WGSS-237 series gearboxes		1.125"		<u>PDF</u>
<u>WGSS-262-DS</u>	\$159.00	WGSS-262 series gearboxes		1.25"		<u>PDF</u>
<u>WGSS-262-DS-1125</u>	\$159.00	WGSS-262 series gearboxes		1.125"		<u>PDF</u>

Shafts are Stainless Steel. Kit includes Stainless Steel Keys and components.



Single Shaft



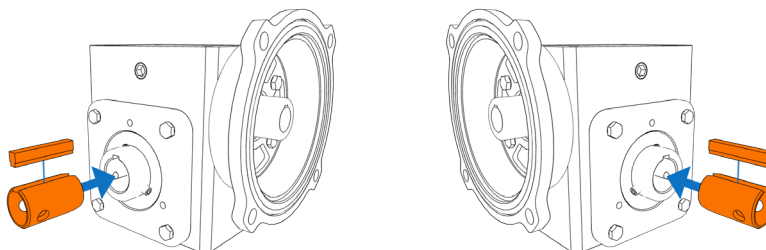
Dual Shaft



IronHorse® Stainless Steel Worm Gearbox Accessories

IronHorse Stainless Steel Worm Gearbox Output Bushing Kits					
Part Number	Price	Fits	Bushing Internal Diameter	Typical Photo	Drawing Links
<u>WGSS-175-11116-OB</u>	\$79.00	WGSS-175 series gearboxes	11/16"		PDF
<u>WGSS-175-134-OB</u>	\$79.00	WGSS-175 series gearboxes	3/4"		PDF
<u>WGSS-175-158-OB</u>	\$79.00	WGSS-175 series gearboxes	5/8"		PDF
<u>WGSS-175-178-OB</u>	\$79.00	WGSS-175 series gearboxes	7/8"		PDF
<u>WGSS-206-237-114-OB</u>	\$94.00	WGSS-206 and WGSS-237 series gearboxes	1-1/4"		PDF
<u>WGSS-206-237-118-OB</u>	\$94.00	WGSS-206 and WGSS-237 series gearboxes	1-1/8"		PDF
<u>WGSS-206-237-1316-OB</u>	\$94.00	WGSS-206 and WGSS-237 series gearboxes	1-3/16"		PDF
<u>WGSS-206-237-1-OB</u>	\$94.00	WGSS-206 and WGSS-237 series gearboxes	1"		PDF
<u>WGSS-262-112-OB</u>	\$122.00	WGSS-262 series gearboxes	1-1/2"		PDF
<u>WGSS-262-114-OB</u>	\$122.00	WGSS-262 series gearboxes	1-1/4"		PDF
<u>WGSS-262-118-OB</u>	\$122.00	WGSS-262 series gearboxes	1-1/8"		PDF
<u>WGSS-262-1316-OB</u>	\$122.00	WGSS-262 series gearboxes	1-3/16"		PDF
<u>WGSS-262-1716-OB</u>	\$122.00	WGSS-262 series gearboxes	1-7/16"		PDF
<u>WGSS-262-1-OB</u>	\$122.00	WGSS-262 series gearboxes	1"		PDF

Bushings are Stainless Steel. Kit includes Stainless Steel Keys and components.

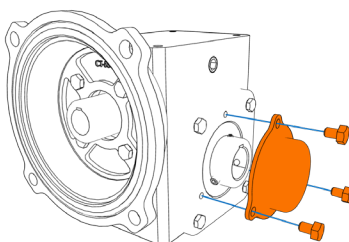




IronHorse® Stainless Steel Worm Gearbox Accessories

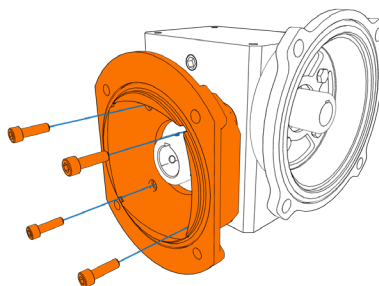
IronHorse Stainless Steel Worm Gearbox Output Covers				
Part Number	Price	Fits	Typical Photo	Drawing Links
<u>WGSS-175-OC</u>	\$6.00	WGSS-175 series gearboxes		<u>PDF</u>
<u>WGSS-206-OC</u>	\$6.00	WGSS-206 series gearboxes		<u>PDF</u>
<u>WGSS-237-OC</u>	\$6.00	WGSS-237 series gearboxes		<u>PDF</u>
<u>WGSS-262-OC</u>	\$6.00	WGSS-262 series gearboxes		<u>PDF</u>

Output Covers are Plastic. Kit includes Stainless Steel fasteners



IronHorse Stainless Steel Worm Gearbox Output Flanges				
Part Number	Price	Fits	Typical Photo	Drawing Links
<u>WGSS-175-OF</u>	\$191.00	WGSS-175 series gearboxes		<u>PDF</u>
<u>WGSS-206-OF</u>	\$272.00	WGSS-206 series gearboxes		<u>PDF</u>
<u>WGSS-237-OF</u>	\$309.00	WGSS-237 series gearboxes		<u>PDF</u>
<u>WGSS-262-OF</u>	\$346.00	WGSS-262 series gearboxes		<u>PDF</u>

Flanges are Stainless Steel. Kit includes Stainless Steel fasteners and 1 O-ring



*NOTE: For detailed assembly instructions, see product manual

IronHorse® Worm Gearboxes

Gearbox Selection

Gearbox Selection Steps

- 1) Determine the torque and speed required for the load.
- 2) Determine the overall speed ratio of motor speed to load speed.
- 3) Determine the gearbox ratio as well as any reduction outside the gearbox (pulleys, gears, etc.).
- 4) Determine the applicable service factor and overhung load K factor.
- 5) Determine the gearbox real output torque required, and select a gearbox with a higher Maximum Thermal output Torque rating (for WG cast-iron gearboxes; not applicable for WGA aluminum gearboxes).
- 6) Determine the gearbox design output torque required (torque with service factor applied), and select a gearbox with a higher Maximum Mechanical Output Torque rating. (Gearbox must also meet requirement #5.)
- 7) Determine the required sizes of pulleys, gears, etc., and determine the overhung load force. Select a gearbox with a higher Overhung Load rating. (Gearbox must also meet requirements #5 & #6.)
- 8) Confirm that the selected gearbox meets the applicable system requirements.
- 9) Select a compatible motor.

Gearbox Selection Example (Refer to the specifications tables for gearbox specifications, service factors, and K factors.)

A conveyor will run 10 hours/day with moderate shock loading. The conveyor will be driven by a V-belt and needs to be driven at approximately 20 rpm. The motor to be used will have a nominal speed of 1800 rpm (1725 rpm actual speed). The conveyor will require 2700 in-lb of torque.

- 1) Required **torque** = 2700 in-lb; required **speed** = 20 rpm.
- 2) Determine the **overall speed ratio** of motor speed to load speed:
Overall speed ratio = motor speed / load speed = 1725 / 20 = 86.25 [about 86:1]
- 3) Determine **pulley ratios** at available **gearbox ratios**:
 Gearbox ratio = (overall speed ratio) / (pulley ratio)
 Pulley ratio = (overall speed ratio) / (gearbox ratio)
 For 5:1 gearbox: pulley ratio = 86.25 / 5 = 17.25 [17.25" pulley ratio is prohibitively large]
 For 10:1 gearbox: pulley ratio = 86.25 / 10 = 8.63
 For 15:1 gearbox: pulley ratio = 86.25 / 15 = 5.75
 For 20:1 gearbox: pulley ratio = 86.25 / 20 = 4.31
 For 30:1 gearbox: pulley ratio = 86.25 / 30 = 2.88
 For 40:1 gearbox: pulley ratio = 86.25 / 40 = 2.16
 For 60:1 gearbox: pulley ratio = 86.25 / 60 = 1.44
 Pulley ratio = (conveyor pulley diameter) / (gearbox pulley diameter)
- 4) Determine **service factor (SF)** and **overhung load factor (K)** from applicable tables:
 SF = 1.25 due to moderate shock loading and 3-10 hours/day operation
 K = 1.5 due to V-belt
- 5) Use specifications table to select gearbox with **Maximum Thermal* Torque rating > required real torque**:
 Gearbox required real torque = (final torque) / (pulley ratio)
 For 10:1 gearbox: (2700 in-lb) / 8.63 = 312.86 in-lb; use WG-175-x or larger
 For 15:1 gearbox: (2700 in-lb) / 5.75 = 469.57 in-lb; use WG-175-x or larger
 For 20:1 gearbox: (2700 in-lb) / 4.31 = 626.45 in-lb; use WG-206-x or larger
 For 30:1 gearbox: (2700 in-lb) / 2.88 = 937.50 in-lb; use WG-325-x or WGA-63M*
 For 40:1 gearbox: (2700 in-lb) / 2.16 = 1250.0 in-lb; use WG-325-x
 For 60:1 gearbox: (2700 in-lb) / 1.44 = 1875.0 in-lb; use WG-325-x
 * Aluminum gearboxes do not have thermal ratings; use mechanical ratings.
- 6) Use specifications table to select gearbox with **Maximum Mechanical Torque rating > required design torque**:
 Gearbox required design torque = (real gearbox torque)(service factor)
 For 10:1 gearbox: (312.86 in-lb)(1.25) = 391.08 in-lb; use WG-175-x or larger
 For 15:1 gearbox: (469.57 in-lb)(1.25) = 586.96 in-lb; use WG-206-x or larger
 For 20:1 gearbox: (626.45 in-lb)(1.25) = 782.56 in-lb; use WG-206-x or larger
 For 30:1 gearbox: (937.50 in-lb)(1.25) = 1171.88 in-lb; use WG-325-x or WGA-63M or larger
 For 40:1 gearbox: (1250.0 in-lb)(1.25) = 1562.50 in-lb; use WG-325-x
 For 60:1 gearbox: (1875.0 in-lb)(1.25) = 2343.75 in-lb; use WG-325-x

(continued on next page)

IronHorse® Worm Gearboxes

Gearbox Selection Example (continued)

(Refer to the specifications tables for gearbox specifications, service factors, and K factors.)

[Load requirements: Conveyor to run 10 hours/day; moderate shock loading; driven by V-belt @ approx 20 rpm; requires 2700 in-lb of torque. Motor speed 1725 rpm (1800 rpm nominal).]

7) Use the gearbox overhung load ratings from the specifications table to determine the minimum allowable pulley diameters.

Select gearbox with **Overhung Load rating > overhung load force**:

Gearbox required OHL rating = (gearbox real torque)(K)(SF)/(gearbox pulley diameter / 2)

Minimum gearbox pulley diameter = (T)(K)(SF)(2)/(OHL rating)

Conveyor pulley diameter = (gearbox pulley diameter)(pulley ratio)

For 10:1, WG-175-010-x gearbox:

Minimum gearbox pulley diameter = (312.86 in-lb)(1.5)(1.25)(2)/(650 lb) = 1.8" [use 2"]

Conveyor pulley diameter = (2")(8.63) = ~~17.26"~~ **[17.26" pulley size is prohibitively large]**

Determine pulley sizes and OHL for next larger gearbox ratio.

For 15:1, WG-206-015-x gearbox:

Minimum gearbox pulley diameter = (469.57 in-lb)(1.5)(1.25)(2)/(700 lb) = 2.5" [use 2.5"]

Conveyor pulley diameter = (2.5")(5.75) = 14.38" [use 14.4"]

Select **WG-206-015-x gearbox, 2.5" gearbox pulley, and 14.4" conveyor pulley.**

For 20:1, WG-206-020-x gearbox:

N/A – larger ratio of same frame size GB is same price, yet provides lower efficiency and power characteristics

For 30:1, WGA-63M-030-H1 gearbox:

Minimum gearbox pulley diameter = (937.50 in-lb)(1.5)(1.25)(2)/(736 lb) = 4.78" [use 5"]

Conveyor pulley diameter = (5")(2.88) = 14.40" [use 14.4"]

N/A – WGA-63M & WG-325 gearboxes costs more than WG-206

For 40:1, N/A – WG-325-xxx gearboxes cost more than WG-206 at any ratio

For 60:1, N/A – WG-325-xxx gearboxes cost more than WG-206 at any ratio

8) **Check results** against original speed and torque requirements:

a) Conveyor speed = (motor speed) / (gearbox ratio)(pulley ratio) = (1725 rpm) / (15)(14.4"/2.5") = 20 rpm

b) Maximum real torque available at conveyor = (gearbox thermal torque)(pulley ratio) = (673 in-lb)(14.4"/2.5") = 3876 in-lb

c) Maximum design torque available at conveyor = (gearbox mechanical torque)(pulley ratio) / (service factor)

= (1002 in-lb)(14.4"/2.5") / 1.25 = 4617 in-lb

The speed is correct as required, and both maximum torque values are greater than the 2700 in-lb required by the load.

9) **Select a motor** and check torque transmitted to the load:

From the gearbox spec tables, WG-206-015-x efficiency = 85%.

maximum thermal input power = 1.40 hp

maximum mechanical input power @ 1.0 SF = 2.09 hp

maximum mechanical input power @ 1.25 SF = (rated max mechanical input power) / (SF) = 2.09 hp / 1.25 = 1.67 hp

maximum allowable motor power = 1.40 hp; select nominal 1hp motor

Select **1hp motor**, and check for adequate torque at the load:

Torque = Power / Speed

[conversion factor: (1hp) = (63,025 in-lb-rpm)]

Torque load = (63,025 in-lb-rpm / hp)(gearbox input hp)(gearbox efficiency) / (motor rpm / (gearbox ratio)(pulley ratio))

= (63,025)(1)(0.85) / (1725 / (15/1)(14.4/2.5)) = ~~2683 in-lb~~ **[insufficient torque at load]**

This torque value is less than the 2700 in-lb required by the load.

So, select and check the next larger nominal motor size, which is 1-1/2 hp.

Since the 206 frame size 15 ratio gearboxes do not meet the 1-1/2 hp thermal rating, choose the WG-237-015-x gearbox.

Select **1-1/2 hp motor and WG-237-015-x gearbox**, and check for adequate torque:

WG-237-015-x gearbox efficiency = 84%

maximum thermal input power = 1.55 hp

maximum mechanical input power @ 1.25 SF = 2.64 hp / 1.25 = 2.11 hp

maximum allowable motor power = 1.55 hp; select nominal 1-1/2 hp motor

gearbox ratio is still 15:1, and OHL rating is increased to 900 lb, so the previous pulley calculations [step 7] remain sufficient

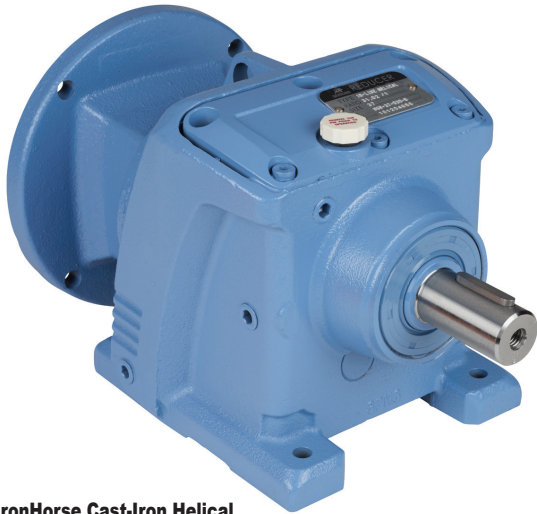
[smaller pulleys can be calculated and selected for this gearbox, if desired]

Tload = (63,025 in-lb-rpm/hp) (1.5hp) (84%) / (1725 rpm / (15/1)(14.4/2.5)) = 3977 in-lb > 2700 in-lb; sufficient torque at load

Final gearbox and motor selection: 1-1/2 hp motor WG-237-015-x gearbox

IronHorse® Cast-Iron Helical Gearboxes

Helical Gearbox Overview



IronHorse Cast-Iron Helical Gearbox

Gearbox Overview

Gearboxes, also known as enclosed gear drives or speed reducers, are mechanical drive components that can control a load at a reduced fixed ratio of the motor speed. The output torque is also increased by the same ratio, while the horsepower remains the same (less efficiency losses). For example, a 10:1 ratio gearbox outputs approximately the same motor output horsepower, but motor speed is divided by 10 and motor torque is multiplied by 10.

Helical gearboxes use helical gears to provide quiet startup and smooth operation.

IronHorse helical gearboxes are manufactured in an ISO9001- certified plant by one of the leading and most internationally acclaimed gearbox manufacturers in the world today. Only the highest quality materials are tested, certified, and used in the manufacturing process. Strict adherence to and compliance with the toughest international and U.S. testing standards and manufacturing procedures assures you the highest quality products.

We offer straight-through helical gearboxes with cast-iron frames. The output shaft is parallel to the input. Our gearboxes utilize C-face mounting interfaces for C-face motors.

Features

- C-face and TC-face input; inline, parallel output
- FC-20 cast iron one-piece housing
- 1045 carbon steel shaft
- Heat-treated and ground high strength steel gears, AGMA Class 10
- Shaft sleeves protect all shafts
- Heavy duty bearings on the output shaft
- Interior channel guides oil to directly and constantly lube bearings
- Double-lipped embedded oil seals to prevent leakage
- Universally interchangeable compact design ensures easy OEM replacement
- Mountable in most directions
- Two-year warranty

Applications

- Use with electric motors for reducing output speed, increasing torque.
- Use for conveyors, packaging machines, rotary tables, etc.

IronHorse® Cast-Iron Helical Gearboxes

Specifications

IronHorse Cast-Iron Helical Gearbox Specifications (continued from previous page)																		
Part Number	Price	Box Size	Nominal Ratio	Actual Ratio	Output RPM @ 1750 rpm Input	Nominal HP @ 1.0 Service Factor ¹	NEMA Motor Frame	Output Shaft Diameter (in)	Input Power (hp)	Output Torque (lb-in)	OHL (lbs) ²	Stages	Efficiency (%)	Approx Weight (lb)				
HGR-37-005-A	\$527.00	37	5:1	4.88	359	1.0	56C	1	1.00	160	465	2	96	32				
HGR-37-005-B	\$527.00					2.0	145TC		2.00	330	440							
HGR-37-010-A	\$527.00		10:1	10.02	175	1.0	56C		1.00	340	575							
HGR-37-010-B	\$527.00					2.0	145TC		2.00	670	530							
HGR-37-015-A	\$527.00		15:1	15.75	111	1.0	56C		1.00	530	650	3						
HGR-37-015-B	\$527.00			14.08	124	2.0	145TC		2.00	950	580							
HGR-37-020-A	\$527.00		20:1	19.95	88	1.0	56C		1.00	670	690	2						
HGR-37-020-B	\$527.00					2.0	145TC		2.00	1350	630							
HGR-37-030-A	\$527.00		30:1	31.02	56	1.5	56C		1.00	1010	760	3	94					
HGR-37-030-B	\$527.00					2.0	145TC		2.00	2020	700							
HGR-37-040-A	\$527.00		40:1	40.08	44	1.0	56C		1.00	1310	800							
HGR-37-060-A	\$527.00		60:1	60.84	29	1.0			0.82	1770	705							
HGR-47-005-B	\$606.00		47	5:1	4.85	361	2.0		145TC	1-1/4	2.00	330	670		2	96	45	
HGR-47-005-C	\$606.00						5.0		182/4TC		3.00	490	645				51	
HGR-47-010-C	\$606.00	10:1		11.27	155	3.0	1140	820				45						
HGR-47-015-C	\$606.00	15:1		15.18	115	3.0	1520	880	51									
HGR-47-020-B	\$606.00	20:1		18.37	95	2.0	145TC	2.00	1240		975	3	94	45				
HGR-47-020-C	\$606.00			19.18	91	3.0	182TC	3.00	1860		910			51				
HGR-47-030-B	\$606.00	30:1		31.83	55	2.0	145TC	2.00	2080		1070			3	94		45	
HGR-47-030-C	\$606.00					3.0	182/4TC	3.00	3120		1005						51	
HGR-47-040-A	\$606.00	40:1		41.51	42	1.0	56C	1.00	1360		1215	2	96	45				
HGR-47-060-A	\$606.00	60:1		63.37	28	1.0			2070		1215							
HGR-67-005-B	\$862.00	67	5:1	5.23	335	2.0	145TC	1-3/8	2.00	350	770	2	96	63				
HGR-67-005-C	\$862.00					5.0	182/4TC		5.00	880	710			69				
HGR-67-010-C	\$862.00		10:1	9.90	177	5.0				1670	845			63				
HGR-67-015-B	\$862.00		15:1	15.41	114	2.0	145TC		2.00	1040	1060			3	94	63		
HGR-67-015-C	\$862.00					3.0	182TC		3.00	1560	1020	69						
HGR-67-020-C	\$862.00		20:1	21.33	82	5.0			2160	1100	2.00	1880				1220	3	94
HGR-67-030-B	\$862.00		30:1	28.77	61	2.0	145TC		2690	1320								
HGR-67-040-B	\$862.00		40:1	41.22	42	2.0			56C	1.00	2060	1630		2	96	82		
HGR-67-060-A	\$862.00		60:1	63.07	28	1.0	5.0			800	800							
HGR-77-005-C	\$1,010.00	77	5:1	4.78	366	5.0	182/4TC	1-5/8	5.00	800	800	2	96	82				
HGR-77-005-D	\$1,010.00					7.5	213/5TC		7.50	1210	765			93				
HGR-77-010-D	\$1,010.00		10:1	10.91	160	7.5			2760	935	3			94	82			
HGR-77-020-C	\$1,010.00		20:1	23.31	75	5.0	182/4TC		3.00	2350						1300		
HGR-77-030-C	\$1,010.00		30:1	31.97	55	5.0			3130	1370								
HGR-77-040-C	\$1,010.00		40:1	39.31	45	3.0	3850		1420									
HGR-77-060-B	\$1,010.00		60:1	57.73	30	2.0	145TC		2.00	3770	1710	76						

- 1) Nominal Motor HP is the highest HP 1800 rpm motor to be used with the gearbox under conditions of 1.0 service factor. Gearbox input power capacity decreases as motor speed decreases and as service factor increases.
- 2) OHL = Overhung Load ratings are for forces perpendicular to the output shaft and located at the shaft midpoint, such as from a gear, pulley, or sprocket with a belt or chain. Divide OHL ratings by the applicable OHL K factors shown separately in the Selection Factors tables. OHL ratings should also be divided by applicable service factors.
- 3) Maximum Mechanical Ratings are limits based on strength and durability of gearbox components; applicable when operating time is short and stopped time is greater than or equal to operating time. These ratings are applicable for 1.0 service factor loads, and may require modification depending upon characteristics of the applicable driven loads. Refer to the "Service Factors" table for more information.

IronHorse® Cast-Iron Helical Gearboxes

Specifications

IronHorse Cast-Iron Helical Gearbox Specifications (continued from previous page)

Part Number	Price	Box Size	Nominal Ratio	Actual Ratio	Output RPM @ 1750 rpm Input	Nominal HP @ 1.0 Service Factor ¹	NEMA Motor Frame	Output Shaft Diameter (in)	Input Power (hp)	Output Torque (lb-in)	OHL (lbs) ²	Stages	Efficiency (%)	Approx Weight (lb)
HGR-87-005-D	\$1,603.00	87	5:1	4.73	370	10.0	213/5TC	2-1/8	10.00	1590	1790	2	96	163
HGR-87-005-E	\$1,603.00					20.0	254/6TC		15.00	2390	1730			169
HGR-87-010-D	\$1,603.00		10:1	10.66	164	10.0	213/5TC		10.00	3590	2260			163
HGR-87-015-D	\$1,603.00		15:1	15.29	114	10.0			7.50	3860	2570			
HGR-87-020-C	\$1,603.00		20:1	20.06	87	5.0	182/4TC		5.00	3280	2840	3	94	156
HGR-87-020-D	\$1,603.00					10.0	213/5TC		7.50	4910	2710			163
HGR-87-030-C	\$1,603.00		30:1	31.73	55	5.0	182/4TC		5.00	5180	3200			156
HGR-87-040-C	\$1,603.00		40:1	38.20	46	5.0				6240	3420			
HGR-87-060-B	\$1,603.00		60:1	61.54	28	2.0	145TC		2.00	4070	3790			150
HGR-87-060-C	\$1,603.00					5.0	182TC		3.00	6030	3790			156

- 1) Nominal Motor HP is the highest HP 1800 rpm motor to be used with the gearbox under conditions of 1.0 service factor. Gearbox input power capacity decreases as motor speed decreases and as service factor increases.
- 2) OHL = Overhung Load ratings are for forces perpendicular to the output shaft and located at the shaft midpoint, such as from a gear, pulley, or sprocket with a belt or chain. Divide OHL ratings by the applicable OHL K factors shown separately in the Selection Factors tables. OHL ratings should also be divided by applicable service factors.
- 3) Maximum Mechanical Ratings are limits based on strength and durability of gearbox components; applicable when operating time is short and stopped time is greater than or equal to operating time. These ratings are applicable for 1.0 service factor loads, and may require modification depending upon characteristics of the applicable driven loads. Refer to the "Service Factors" table for more information.

Accessories

IronHorse Cast-Iron Helical Gearbox Accessories

Part Number	Price	Description	For Use With:
HBR-3777V	\$5.00	Breather plug; replacement; for use with HBR & HGR gearboxes sizes 37 thru 77	HB(G)R-37-xx through HB(G)R-77-xx
HBR-8797V	\$7.50	Breather plug; replacement; for use with HBR & HGR gearboxes size 87	HB(G)R-87-xx

Gearbox Selection Factors

Overhung Load K Factors for Various Drive Types

Chain & Sprocket	1.00
Gear	1.25
V-belt	1.50
Flat Belt	2.50
Variable Pitch Belt	3.50

Divide gearbox OHL ratings by the applicable OHL K factors.

Service Factors for Selecting Gearboxes (when used with electric motors)

Service Continuity (per day)	Load Characteristics			
	Uniform	Moderate Shock*	Heavy Shock*	Extreme Shock*
Occasional 1/2 hour	1.00	1.00	1.00	1.25
Less than 3 hours	1.00	1.00	1.25	1.50
3-10 hours	1.00	1.25	1.50	1.75
More than 10 hours	1.25	1.50	1.75	2.00

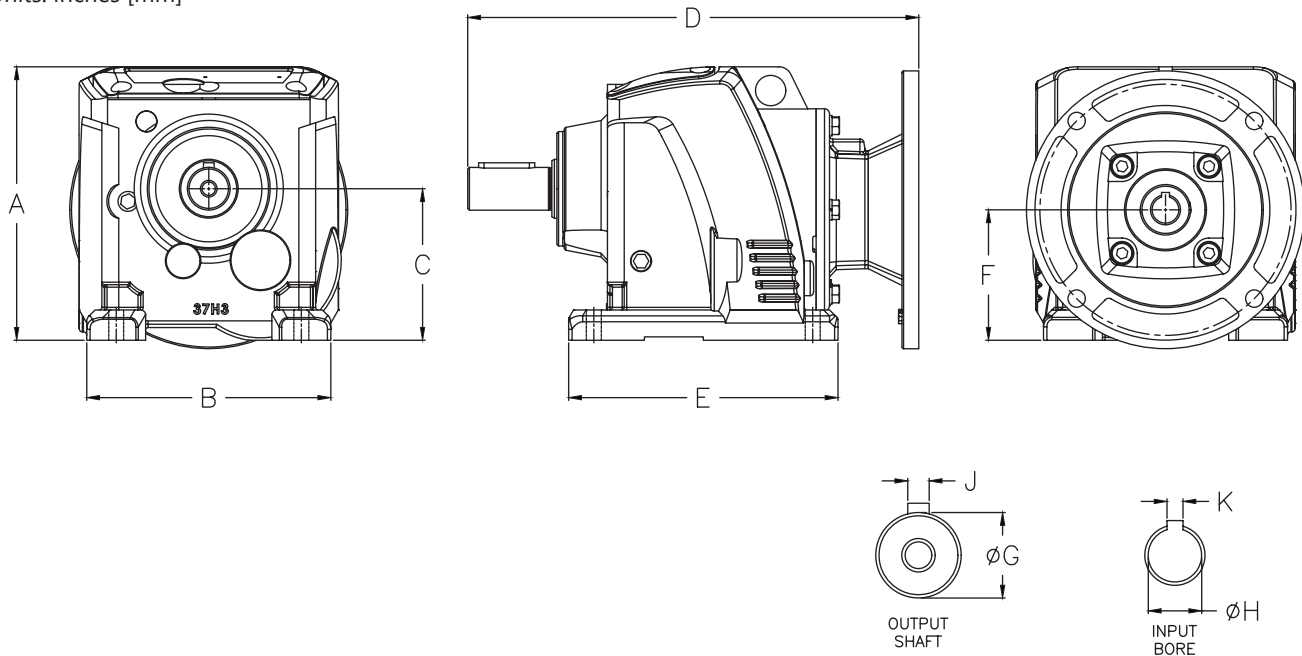
* Shock results from sudden increases in the torque demand of the load, such as: sudden stopping, restarting, and/or reversing; significantly heavy loads dropped onto a moving conveyor; impact loads such as punch press operations.

Depending upon the load characteristics, divide the gearbox HP, Overhung Load, and Maximum Mechanical Capacity ratings by the applicable service factor.

IronHorse® Cast-Iron Helical Gearboxes

Dimensions

Units: inches [mm]

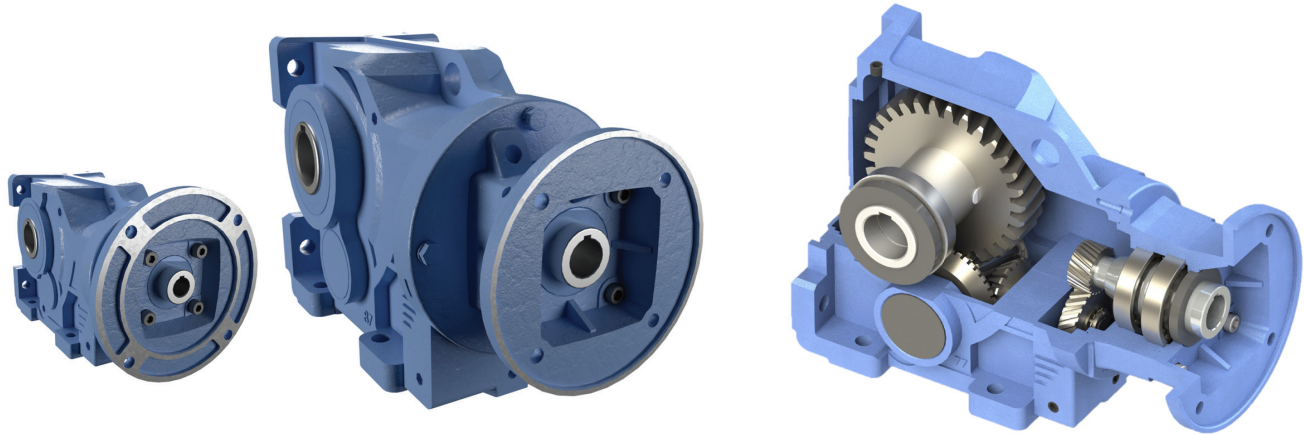


Dimensions – inches [mm] – IronHorse Cast-Iron Helical Gearboxes											
Part Number	Frame	A	B	C	D	E	F	G	H	J	K
HGR-37-xxx-A	56C	6.40 [162.5]	5.71 [145.0]	3.54 [90.0]	10.55 [268.0]	6.30 [160.0]	3.05 [77.5]	1.00 [25.4]	0.63 [15.9]	0.25 [6.4]	0.19 [4.8]
HGR-47-xxx-A		8.25 [209.5]	6.69 [170.0]	4.53 [115.0]	11.63 [295.4]	7.68 [195.0]	3.98 [101.0]	1.25 [31.8]		0.31 [7.9]	
HGR-67-xxx-A		8.89 [226.0]	8.27 [210.0]	5.12 [130.0]	13.13 [333.5]	9.25 [235.0]	4.45 [113.0]	1.38 [34.9]		0.38 [9.7]	
HGR-37-xxx-B	145TC	6.40 [162.5]	5.71 [145.0]	3.54 [90.0]	10.94 [278.0]	6.30 [160.0]	3.05 [77.5]	1.00 [25.4]	0.88 [22.2]	0.25 [6.4]	
HGR-47-xxx-B		8.25 [209.5]	6.69 [170.0]	4.53 [115.0]	12.03 [305.5]	7.68 [195.0]	3.98 [101.0]	1.25 [31.8]		0.31 [7.9]	
HGR-67-xxx-B		8.89 [226.0]	8.27 [210.0]	5.12 [130.0]	13.52 [343.5]	9.25 [235.0]	4.45 [113.0]	1.38 [34.9]		0.50 [12.7]	
HGR-77-xxx-B		10.04 [255.0]	9.06 [230.0]	5.51 [140.0]	14.23 [361.5]	9.65 [245.0]	6.38 [162.0]	1.63 [41.4]		0.38 [9.7]	
HGR-87-xxx-B		12.99 [330.0]	11.42 [290.0]	7.09 [180.0]	17.20 [437.0]	12.20 [310.0]	8.05 [204.5]	2.13 [54.1]		0.50 [12.7]	
HGR-47-xxx-C	182/4TC*	8.25 [209.5]	6.69 [170.0]	4.53 [115.0]	12.76 [324.0]	7.68 [195.0]	3.98 [101.0]	1.25 [31.8]	1.13 [28.7]	0.25 [6.4]	0.25 [6.4]
HGR-67-xxx-C		8.89 [226.0]	8.27 [210.0]	5.12 [130.0]	14.25 [362.0]	9.25 [235.0]	4.45 [113.0]	1.38 [34.9]		0.31 [7.9]	
HGR-77-xxx-C		10.04 [255.0]	9.06 [230.0]	5.51 [140.0]	14.96 [380.0]	9.65 [245.0]	6.38 [162.0]	1.63 [41.4]		0.38 [9.7]	
HGR-87-xxx-C		12.99 [330.0]	11.42 [290.0]	7.09 [180.0]	17.32 [440.0]	12.20 [310.0]	8.05 [204.5]	2.13 [54.1]		0.50 [12.7]	
HGR-77-xxx-D	213/5TC	10.04 [255.0]	9.06 [230.0]	5.51 [140.0]	17.22 [437.5]	9.65 [245.0]	6.38 [162.0]	1.63 [41.4]	1.38 [35.0]	0.38 [9.7]	0.31 [7.9]
HGR-87-xxx-D		12.99 [330.0]	11.42 [290.0]	7.09 [180.0]	19.59 [497.5]	12.20 [310.0]	8.05 [204.5]	2.13 [54.1]		0.50 [12.7]	
HGR-87-xxx-E	254/6TC	12.99 [330.0]	11.42 [290.0]	7.09 [180.0]	20.57 [522.5]	12.20 [310.0]	8.05 [204.5]	2.13 [54.1]	1.63 [41.4]	0.50 [12.7]	0.38 [9.7]

*Note: 184TC motor frame sizes where applicable. See gearbox specifications for more information.
See our website: www.AutomationDirect.com for complete engineering drawings.

IronHorse® Cast-Iron Helical Bevel Gearboxes

Helical Bevel Gearbox Overview



IronHorse Cast-Iron Helical Bevel Gearboxes

Gearbox Overview

Gearboxes, also known as enclosed gear drives or speed reducers, are mechanical drive components that can control a load at a reduced fixed ratio of the motor speed. The output torque is also increased by the same ratio, while the horsepower remains the same (less efficiency loss). For example, a 10:1 ratio gearbox outputs approximately the same motor output horsepower, but motor speed is divided by 10 and motor torque is multiplied by 10.

Helical bevel gearboxes use helical gears to provide quiet startup and smooth operation.

IronHorse helical bevel gearboxes are manufactured in an ISO9001-certified plant by one of the leading and most internationally acclaimed gearbox manufacturers in the world today. Only the highest quality materials are tested, certified, and used in the manufacturing process. Strict adherence to and compliance with the toughest international and U.S. testing standards and manufacturing procedures guarantees you the highest quality products.

We offer helical bevel gearboxes with cast-iron frames. The hollow-bore output accepts double or single shafts which are perpendicular to the input. Our gearboxes utilize C-face mounting interfaces for C-face motors.

Features

- C-face and TC-face input; bevel, perpendicular output
- Universally interchangeable compact design ensures easy OEM replacement
- Flexible installation: 6 mounting positions
- FCD45 cast-iron one-piece housing
- 20CrMO alloy steel pinion and gears
- AGMA 11 & 12 rated, SCM415 pinion gears
- Gears supported by generously-sized precision ball and tapered bearings
- Double-lipped embedded oil seals to prevent leakage
- Two-year warranty

Applications

- Use with electric motors for reducing output speed, increasing torque.
- Use for conveyors, packaging machines, rotary tables, etc.

IronHorse® Cast-Iron Helical Bevel Gearboxes

Specifications

IronHorse Cast-Iron Helical Bevel Gearbox Specifications													
Part Number	PriceCode	Box Size	Nominal Ratio	Actual Ratio	Output RPM @ 1750 RPM Input	NEMA Motor Frame**	Max Input Power (hp) 1) 3)	Max Output Torque (lb-in) 3)	Max OHL (lbs) 2) 3)	Efficiency (%)	BackMash (Arc Minutes)	Approx Weight (lb)	Drawing Links
HBR-37-010-A	\$1,336.00	37	10	11.09	158	56C	4.33	1,565	520	91	45	32	PDF
HBR-37-010-B	\$1,336.00		10	11.09	158	143/5TC	4.33	1,565	510			37	PDF
HBR-37-025-A	\$1,336.00		25	23.10	76	56C	2.20	1,659	635			32	PDF
HBR-37-025-B	\$1,336.00		25	23.10	76	143/5TC	2.20	1,659	610			37	PDF
HBR-37-040-A	\$1,336.00		40	37.97	46	56C	1.43	1,770	735			32	PDF
HBR-37-040-B	\$1,336.00		40	37.97	46	143TC	1.43	1,770	705			37	PDF
HBR-37-060-A	\$1,336.00		60	59.67	29	56C	0.91	1,770	815			32	PDF
HBR-47-010-A	\$1,463.00	47	10	9.95	176	56C	6.46	2,097	620	91	36	46	PDF
HBR-47-010-B	\$1,463.00		10	9.95	176	143/5TC	6.46	2,097	580			51	PDF
HBR-47-010-C	\$1,463.00		10	9.95	176	182/4TC	6.46	2,097	550			57	PDF
HBR-47-020-B	\$1,463.00		20	20.65	85	143/5TC	3.97	2,675	690			51	PDF
HBR-47-020-C	\$1,463.00		20	20.65	85	182TC	3.97	2,675	610			57	PDF
HBR-47-040-A	\$1,463.00		40	41.36	42	56C	2.50	3,372	945			46	PDF
HBR-47-040-B	\$1,463.00		40	41.36	42	143/5TC	2.50	3,372	905			51	PDF
HBR-47-060-A	\$1,463.00		60	58.99	30	56C	1.84	3,540	1030			46	PDF
HBR-47-060-B	\$1,463.00		60	58.99	30	143TC	1.84	3,540	980			51	PDF
HBR-47-085-A	\$1,463.00		85	86.89	20	56C	1.42	3,540	1110			46	PDF
HBR-67-010-B *	\$1,828.00	67	10	9.66	181	143/5TC	12.06	3,800	1500	91	33	73	PDF
HBR-67-010-C *	\$1,828.00		10	9.66	181	182/4TC	12.06	3,800	1410			80	PDF
HBR-67-020-B *	\$1,828.00		20	22.18	79	143/5TC	6.26	4,530	1760			73	PDF
HBR-67-020-C *	\$1,828.00		20	22.18	79	182/4TC	6.26	4,530	1570			80	PDF
HBR-67-040-A *	\$1,828.00		40	37.98	46	56C	4.62	5,730	2140			69	PDF
HBR-67-040-B *	\$1,828.00		40	37.98	46	143/5TC	4.62	5,730	2140			73	PDF
HBR-67-040-C *	\$1,828.00		40	37.98	46	182TC	4.62	5,730	1510			80	PDF
HBR-67-065-A *	\$1,828.00		65	64.97	27	56C	2.95	6,260	2140			69	PDF
HBR-67-065-B *	\$1,828.00		65	64.97	27	143/5TC	2.95	6,260	2140			73	PDF
HBR-67-085-A *	\$1,828.00		85	84.10	21	56C	2.46	6,760	2140			69	PDF
HBR-67-085-B *	\$1,828.00		85	84.10	21	143/5TC	2.46	6,760	2140			73	PDF
HBR-67-120-A *	\$1,828.00		120	118.14	15	56C	1.88	7,260	2140			69	PDF
HBR-67-120-B *	\$1,828.00		120	118.14	15	143TC	1.88	7,260	2140			73	PDF

* Due to size and/or weight restrictions, gearboxes HBR-67-xxx-x through HBR-87-xxx-x must ship via Freight.

** Although physical mounting to other motors is possible, please use only the motors as specified in this table.

- 1) Max Input Power is the highest HP 1800 rpm motor to be used with the gearbox under conditions of 1.0 service factor. Gearbox input power capacity decreases as motor speed decreases and as service factor increases.
- 2) OHL= Overhung Load ratings are for forces perpendicular to the output shaft and located at the shaft midpoint, such as from a gear, pulley, or sprocket with a belt or chain. Divide OHL ratings by the applicable OHL K factors shown separately in the Selection Factors tables. OHL ratings should also be divided by applicable service factors.
- 3) Maximum Mechanical Ratings are limits based on the strength and durability of gearbox components; applicable when operating time is short and stopped time is greater than or equal to operating time. These ratings are applicable for 1.0 service factor loads and may require modification depending upon characteristics of the applicable driven loads. Refer to the "Service Factors" table for more information.

IronHorse® Cast-Iron Helical Bevel Gearboxes

Specifications (continued)

IronHorse Cast-Iron Helical Bevel Gearbox Specifications													
Part Number	Price Code	Box Size	Nominal Ratio	Actual Ratio	Output RPM @ 1750 RPM Input	NEMA Motor Frame**	Max Input Power (hp) 1) 3)	Max Output Torque (lb-in) 3)	Max OHL (lbs) 2) 3)	Efficiency (%)	Backlash (Arc Minutes)	Approx Weight (lb)	Drawing Links
HBR-77-010-C *	\$2,778.00	77	10	9.96	176	182/4TC	24.02	7,800	1860	91	29	132	PDF
HBR-77-010-D *	\$2,778.00		10	9.96	176	213/5TC	24.02	7,800	1690			148	PDF
HBR-77-020-C *	\$2,778.00		20	20.24	86	182/4TC	14.78	9,765	2080			132	PDF
HBR-77-020-D *	\$2,778.00		20	20.24	86	213/5TC	14.78	9,765	1740			148	PDF
HBR-77-040-C *	\$2,778.00		40	39.76	44	182/4TC	9.21	11,955	2050			132	PDF
HBR-77-040-D *	\$2,778.00		40	39.76	44	213TC	9.21	11,955	1390			148	PDF
HBR-77-060-C *	\$2,778.00		60	57.05	31	182/4TC	7.16	13,325	1860			132	PDF
HBR-77-080-B *	\$2,778.00		80	78.07	22	143/5TC	5.38	13,710	3080			128	PDF
HBR-77-080-C *	\$2,778.00		80	78.07	22	182TC	5.38	13,710	2570			132	PDF
HBR-77-120-B *	\$2,778.00		120	122.94	14	143TC	3.42	12,480	3090			128	PDF
HBR-87-020-D *	\$4,327.00	87	20	20.90	84	213/5TC	25.88	17,650	2780	91	25	230	PDF
HBR-87-020-E *	\$4,327.00		20	20.90	84	254/6TC	25.88	17,650	1940			257	PDF
HBR-87-040-C *	\$4,327.00		40	43.31	40	182/4TC	14.76	20,870	3450			208	PDF
HBR-87-040-D *	\$4,327.00		40	43.31	40	213/5TC	14.76	20,870	2930			230	PDF
HBR-87-060-C *	\$4,327.00		60	61.42	28	182/4TC	11.11	22,270	3510			208	PDF
HBR-87-060-D *	\$4,327.00		60	61.42	28	213/5TC	11.11	22,270	2780			230	PDF
HBR-87-080-C *	\$4,327.00		80	82.86	21	182/4TC	8.72	23,570	4260			208	PDF
HBR-87-120-C *	\$4,327.00		120	117.56	15	182TC	6.23	23,900	4370			208	PDF

* Due to size and/or weight restrictions, gearboxes HBR-67-xxx-x through HBR-87-xxx-x must ship via Freight.

** Although physical mounting to other motors is possible, please use only the motors as specified in this table.

- 1) Max Input Power is the highest HP 1800 rpm motor to be used with the gearbox under conditions of 1.0 service factor. Gearbox input power capacity decreases as motor speed decreases and as service factor increases.
- 2) OHL= Overhung Load ratings are for forces perpendicular to the output shaft and located at the shaft midpoint, such as from a gear, pulley, or sprocket with a belt or chain. Divide OHL ratings by the applicable OHL K factors shown separately in the Selection Factors tables. OHL ratings should also be divided by applicable service factors.
- 3) Maximum Mechanical Ratings are limits based on the strength and durability of gearbox components; applicable when operating time is short and stopped time is greater than or equal to operating time. These ratings are applicable for 1.0 service factor loads and may require modification depending upon characteristics of the applicable driven loads. Refer to the "Service Factors" table for more information.

Gearbox Selection Factors

Overhung Load K Factors for Various Drive Types	
Chain & Sprocket	1.00
Gear	1.25
V-belt	1.50
Flat Belt	2.50
Variable Pitch Belt	3.50

Divide gearbox OHL ratings by the applicable OHL K factors.

Service Factors for Selecting Gearboxes (when used with electric motors)

Service Continuity (per day)	Load Characteristics			
	Uniform	Moderate Shock*	Heavy Shock*	Extreme Shock*
Occasional 1/2 hour	1.00	1.00	1.00	1.25
Less than 3 hours	1.00	1.00	1.25	1.50
3-10 hours	1.00	1.25	1.50	1.75
More than 10 hours	1.25	1.50	1.75	2.00

* Shock results from sudden increases in the torque demand of the load, such as: sudden stopping, restarting, and/or reversing; significantly heavy loads dropped onto a moving conveyor; impact loads such as punch press operations.

Depending upon the load characteristics, divide the gearbox HP, Overhung Load, and Maximum Mechanical Capacity ratings by the applicable service factor.



NOTE: For more detailed information regarding service factors and gearbox selection, please refer to our HBR Gearbox User Manual which is available for free download from our website at www.AutomationDirect.com.

IronHorse® Cast-Iron Helical Bevel

Helical Bevel Gearbox Accessories

Gearboxes



HBR-37-DS
Double Output Shaft



HBR-37-S
Single Output Shaft



HBR-3777V
Breather Plug



HBR-8797V
Breather Plug

IronHorse Cast-Iron Helical Bevel Gearbox Accessories

Part Number	Price	Description	Drawing Links
<u>HBR-37-DS</u>	\$56.00	IronHorse gearbox double output shaft, 1in. For use with HBR-37 series gearboxes. (4) keys, (1) spacer and (1) retaining ring included.	<u>PDF</u>
<u>HBR-37-S</u>	\$29.00	IronHorse gearbox single output shaft, 1in. For use with HBR-37 series gearboxes. (3) keys, (1) end plate, (1) lock washer and (1) bolt included.	<u>PDF</u>
<u>HBR-47-DS</u>	\$82.00	IronHorse gearbox double output shaft, 1.25in. For use with HBR-47 series gearboxes. (4) keys, (1) spacer and (1) retaining ring included.	<u>PDF</u>
<u>HBR-47-S</u>	\$41.00	IronHorse gearbox single output shaft, 1.25in. For use with HBR-47 series gearboxes. (3) keys, (1) end plate, (1) lock washer and (1) bolt included.	<u>PDF</u>
<u>HBR-67-DS</u>	\$176.00	IronHorse gearbox double output shaft, 1.5in. For use with HBR-67 series gearboxes. (4) keys, (1) spacer and (1) retaining ring included.	<u>PDF</u>
<u>HBR-67-S</u>	\$87.00	IronHorse gearbox single output shaft, 1.5in. For use with HBR-67 series gearboxes. (3) keys, (1) end plate, (1) lock washer and (1) bolt included.	<u>PDF</u>
<u>HBR-77-DS</u>	\$228.00	IronHorse gearbox double output shaft, 2in. For use with HBR-77 series gearboxes. (4) keys, (1) spacer and (1) retaining ring included.	<u>PDF</u>
<u>HBR-77-S</u>	\$114.00	IronHorse gearbox single output shaft, 2in. For use with HBR-77 series gearboxes. (3) keys, (1) end plate, (1) lock washer and (1) bolt included.	<u>PDF</u>
<u>HBR-87-DS</u>	\$350.00	IronHorse gearbox double output shaft, 2.375in. For use with HBR-87 series gearboxes. (4) keys, (1) spacer and (1) retaining ring included.	<u>PDF</u>
<u>HBR-87-S</u>	\$173.00	IronHorse gearbox single output shaft, 2.375in. For use with HBR-87 series gearboxes. (3) keys, (1) end plate, (1) lock washer and (1) bolt included.	<u>PDF</u>
<u>HBR-3777V</u>	\$5.00	IronHorse breather plug, replacement. For use with size 37 through 77 HGR- and HBR-series gearboxes.	N/A
<u>HBR-8797V</u>	\$7.50	IronHorse breather plug, replacement. For use with size 87 and larger HGR- and HBR-series gearboxes.	N/A



Drive Couplings

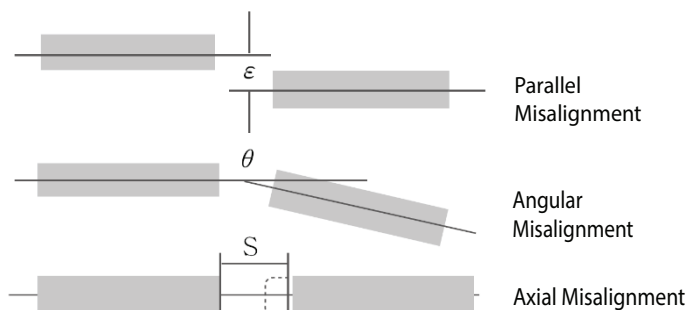
Overview

Rotating shaft-driven mechanical components are commonly used in all forms of machinery that perform the various processes and functions of modern industry. Perfect alignment of shafts and rotating components is desired, but it is nearly impossible to build a real-world machine in which adjacent shaft ends align perfectly. Adjacent shafts can be misaligned in 3 orientations, angular, parallel and axial, see figure below. Misalignment will place stresses on shafts and related parts of the assembly such as bearings, which can result in early failure of both.

Drive couplings can be used to compensate for shaft misalignment, whether the misalignment is an intentional or an unintentional part of the design. When designing or modifying a system, there are essential factors to consider for choosing the correct couplings for the application.



Some degree of Parallel, Angular, or Axial misalignment between shafts is almost unavoidable. Compensation for Shaft Misalignment is the most important feature of Couplings.



(Refer to the specification tables herein for the particular specifications of each type of drive coupling.)

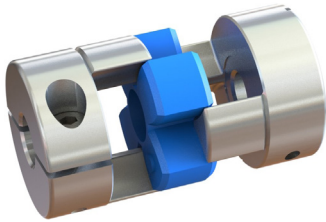
- **RPM:** For higher rpm applications, choose Jaw/Sleeve, High Gain, or Radial Beam-Style Servo couplings. For lower rpm, consider Oldham couplings.
- **Torque:** Consider the torque requirements of the application, and the torque specifications of the different drive coupling types. peak torque generally occurs at start-up, operating torque at steady-state operation, and reversing or braking torque during rapid acceleration or deceleration or direction changes.
- **Backlash:** Backlash is a measurement of the positional accuracy of the coupling, which is important for reversing and/or motion control applications. Zero backlash is ultimately desirable, but more expensive than necessary for low-precision applications.
- **Precision:** for high-precision applications, choose High Gain or Radial Beam- Style Servo. For applications requiring less precision, consider Jaw/ Sleeve couplings.

Coupling Type Comparisons				
Coupling Type	SJC Series Jaw / Spider	SOH Series Oldham Hub/Disc	SRB Series Radial Beam	SHR Series High Gain
Representative Photo				
Mounting Method	Clamp	Clamp	Clamp	Clamp
Backlash Free	Good	Yes	Yes	Yes
Electrical Isolation	Good	Good	No	No
Vibration Absorption	Good	Good	No	Excellent
Jaw/Hub/Body Material	High Strength Aluminum Alloy with Anodized Finish	High Strength Aluminum Alloy with Anodized Finish	Aluminum 7075-T6 with Anodized Finish	High Strength Aluminum Alloy with Anodized Finish
Spider/Disc/Core Material	TPU (Thermoplastic Polyurethane) or Hytrel ®	POM (Polyacetal)	Aluminum 7075-T6	HNBR (Hydrogenated acrylonitrile butadiene rubber)
Permissible Operating Temperature	-20°C to 120°C	-20°C to 80°C	-30°C to 100°C	-20°C to 80°C



Drive Couplings

SJC Series Jaw/Spider Clamp- Style Coupling



Features

- Clamp Style Hub
- Most Commonly specified coupling type
- Wide bore selection
- Wide Torque Range
- High axial misalignment range
- Cost effective
- Fail-safe operation
- Electrical Isolation
- Spider available in three different degrees of durometers, stiffness, and torque ratings
- Jaw material: High Strength Aluminum Alloy
- Spider materials: Hytrel® or TPU (thermoplastic polyurethane)

Applications

- General Applications
- High Speed Applications
- Applications with high axial misalignment
- Applications in which inertia is NOT a factor

To create a coupling to meet your specific needs:

- Select 2 Jaws with desired Bores, of the same SJC Size
- Select 1 Spider with the desired performance specification, of the same SJC Size
- Verify Actual Torque ratings based Temperature Correction Factor (TF)

SJC Series Coupling Jaws							
Part Number	Price	Size	Bore, B1 or B2	Max RPM	Clamp - Screw		Drawing Links
					Type	Fastening Torque (N·m)	
SJC-14C-3	\$10.50	14	3mm	22,000	SHCS M2-0.4 × 6mm	0.5	PDF
SJC-14C-4			4mm				PDF
SJC-14C-5			5mm				PDF
SJC-14C-6			6mm				PDF
SJC-14C-4.76			3/16in				PDF
SJC-14C-6.35			1/4in				PDF
SJC-20C-4	\$11.50	20	4mm	15,000	SHCS M2.6-0.45 × 8mm	1.0	PDF
SJC-20C-5			5mm				PDF
SJC-20C-6			6mm				PDF
SJC-20C-8			8mm				PDF
SJC-20C-10			10mm				PDF
SJC-20C-6.35			1/4in				PDF
SJC-20C-7.93			5/16in				PDF
SJC-20C-9.525			3/8in				PDF



Drive Couplings

SJC Series Jaw/Spider Clamp- Style Coupling

SJC Series Coupling Jaws							
Part Number	Price	Size	Bore, B1 or B2	Max RPM	Clamp - Screw		Drawing Links
					Type	Fastening Torque (N-m)	
SJC-25C-5	\$12.50	25	5mm	13,000	SHCS M3-0.5 × 10mm	1.7	PDF
SJC-25C-6			6mm				PDF
SJC-25C-6.35			1/4in				PDF
SJC-25C-8			8mm				PDF
SJC-25C-10			10mm				PDF
SJC-25C-14			14mm				PDF
SJCA-30C-5	\$13.50	30	5mm	10,000	SHCS M4-0.7 × 12mm	3.5	PDF
SJCA-30C-6			6mm				PDF
SJCA-30C-6.35			1/4in				PDF
SJCA-30C-8			8mm				PDF
SJCA-30C-10			10mm				PDF
SJCA-30C-12			12mm				PDF
SJCA-30C-14			14mm				PDF
SJCA-30C-7.93			5/16in				PDF
SJCA-30C-9.525			3/8in				PDF
SJCA-30C-12.7			1/2in				PDF
SJCA-30C-15.875			5/8in				PDF
SJCB-40C-8	\$18.50	40	8mm	8,500	SHCS M5-0.8 × 16mm	8.0	PDF
SJCB-40C-10			10mm				PDF
SJCB-40C-12			12mm				PDF
SJCB-40C-14			14mm				PDF
SJCB-40C-16			16mm				PDF
SJCB-40C-19			19mm				PDF
SJCB-40C-22			22mm				PDF
SJCB-40C-9.525			3/8in				PDF
SJCB-40C-12.7			1/2in				PDF
SJCB-40C-15.875			5/8in				PDF
SJC-55C-16	\$29.00	55	16mm	6,500	SHCS M6-1.0 × 20mm	13.0	PDF
SJC-55C-19			19mm				PDF
SJC-55C-22			22mm				PDF
SJC-55C-24			24mm				PDF
SJC-55C-25			25mm				PDF
SJC-55C-30			30mm				PDF
SJC-55C-15.875			5/8in				PDF
SJC-55C-19.05			3/4in				PDF
SJC-55C-22.225			7/8in				PDF
SJC-55C-25.4			1in				PDF



Drive Couplings

SJC Series Jaw/Spider Clamp- Style Coupling

SJC Series Coupling Jaws							
Part Number	Price	Size	Bore, B1 or B2	Max RPM	Clamp - Screw		Drawing Links
					Type	Fastening Torque (N·m)	
SJC-65C-19	\$43.50	65	19mm	5,500	SHCS M8-1.25 ×30mm	30.0	PDF
SJC-65C-20			20mm				PDF
SJC-65C-25			25mm				PDF
SJC-65C-30			30mm				PDF
SJC-65C-32			32mm				PDF
SJC-65C-35			35mm				PDF
SJC-65C-19.05			3/4in				PDF
SJC-65C-22.225			7/8in				PDF
SJC-65C-25.4			1in				PDF
SJC-80C-32	\$71.00	80	32mm	4,500	SHCS M10-1.5 × 30mm	50.0	PDF
SJC-80C-35			35mm				PDF
SJC-80C-40			40mm				PDF
SJC-80C-42			42mm				PDF
SJC-80C-28.575			1-1/8in				PDF
SJC-80C-31.75			1-1/4in				PDF
SJC-100C-30	\$104.00	100	30mm	3,500	SHCS M12-1.75 × 40mm	90.0	PDF
SJC-100C-32			32mm				PDF
SJC-100C-35			35mm				PDF
SJC-100C-40			40mm				PDF
SJC-100C-45			45mm				PDF
SJC-100C-50			50mm				PDF
SJC-100C-55			55mm				PDF
SJC-100C-60			60mm				PDF

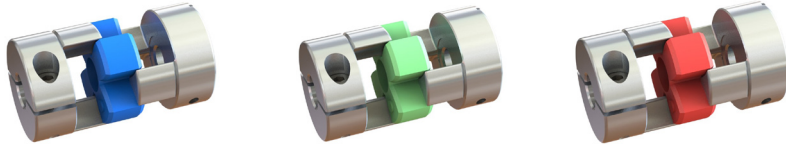


Drive Couplings

SJC Series Jaw/Spider Clamp- Style Coupling

Select the performance characteristics by selecting a SJC Spider.

Simply changing the Spider material type will provide different performance ratings, even after in-use testing, without needing to change the Jaws.



Spider Material

Sleeve	Material	Color	Rated Temperature Range
SJC-xx-BL-SLEEVE	TPU	Blue	-20°C to 70°C
SJC-xx-GR-SLEEVE	Hytrel®	Green	-20°C to 120°C
SJC-xx-RD-SLEEVE	Hytrel®	Red	

TPU = Thermoplastic Polyurethane

Hytrel® = DuPont Product

SJC Series Coupling Spiders

Part Number	Price	Size	Material	Durometer	Torque (Nm)		Torsional Stiffness (N·m/rad)	Max Misalignment		
					*Rated	*Max.		Parallel (mm)	Axial (mm)	Angular
<u>SJC-14-BL-SLEEVE</u>	\$5.25	14	TPU	98A	2 N·m	4.0	22	0.050	-0.2 ~ +0.6	1.0°
<u>SJC-14-GR-SLEEVE</u>			Hytrel	98A	2 N·m	4.0	25	0.050		
<u>SJC-14-RD-SLEEVE</u>			Hytrel	63D	2.5 N·m	5.0	34	0.030		
<u>SJC-20-BL-SLEEVE</u>	\$6.25	20	TPU	98A	4 N·m	8.0	50	0.070	-0.3 ~ +0.8	
<u>SJC-20-GR-SLEEVE</u>			Hytrel	98A	4 N·m	8.0	60	0.070		
<u>SJC-20-RD-SLEEVE</u>			Hytrel	63D	6 N·m	12.0	74	0.050		
<u>SJC-25-BL-SLEEVE</u>	\$6.25	25	TPU	98A	9 N·m	18.0	220	0.070	-0.4 ~ +1.0	
<u>SJC-25-GR-SLEEVE</u>			Hytrel	98A	9 N·m	18.0	260	0.070		
<u>SJC-25-RD-SLEEVE</u>			Hytrel	63D	12 N·m	24.0	300	0.050		
<u>SJC-30-BL-SLEEVE</u>	\$6.25	30	TPU	98A	12 N·m	24.0	170	0.080	-0.5 ~ +1.2	
<u>SJC-30-GR-SLEEVE</u>			Hytrel	98A	12 N·m	24.0	200	0.080		
<u>SJC-30-RD-SLEEVE</u>			Hytrel	63D	16 N·m	32.0	220	0.060		
<u>SJC-40-BL-SLEEVE</u>	\$8.25	40	TPU	98A	17 N·m	34.0	1,500	0.060	-0.5 ~ +1.4	
<u>SJC-40-GR-SLEEVE</u>			Hytrel	98A	17 N·m	34.0	1,600	0.060		
<u>SJC-40-RD-SLEEVE</u>			Hytrel	63D	21 N·m	42.0	1,750	0.040		
<u>SJC-55-BL-SLEEVE</u>	\$9.25	55	TPU	98A	60 N·m	120.0	3,000	0.090	-0.6 ~ +1.5	
<u>SJC-55-GR-SLEEVE</u>			Hytrel	98A	60 N·m	120.0	4,500	0.090		
<u>SJC-55-RD-SLEEVE</u>			Hytrel	63D	75 N·m	150.0	6,000	0.060		
<u>SJC-65-BL-SLEEVE</u>	\$12.50	65	TPU	98A	150 N·m	300.0	6,500	0.100	-0.6 ~ +2.0	
<u>SJC-65-GR-SLEEVE</u>			Hytrel	98A	150 N·m	300.0	8,500	0.100		
<u>SJC-65-RD-SLEEVE</u>			Hytrel	63D	180 N·m	360.0	10,000	0.080		
<u>SJC-80-BL-SLEEVE</u>	\$18.50	80	TPU	98A	300 N·m	600.0	8,000	0.100		
<u>SJC-80-GR-SLEEVE</u>			Hytrel	98A	300 N·m	600.0	12,000	0.100		
<u>SJC-80-RD-SLEEVE</u>			Hytrel	63D	380 N·m	760.0	14,000	0.080		
<u>SJC-100-BL-SLEEVE</u>	\$18.50	100	TPU	98A	500 N·m	1000.0	24,000	0.150		
<u>SJC-100-GR-SLEEVE</u>			Hytrel	98A	500 N·m	1000.0	30,000	0.150		
<u>SJC-100-RD-SLEEVE</u>			Hytrel	63D	600 N·m	1200.0	40,000	0.100		

*Rated & Max Torques values are based on complete SJC assembly with maximum Bore sizes and Temperature Correction Factor (TF) =1



Drive Couplings

SJC Series Jaw/Spider Clamp- Style Coupling

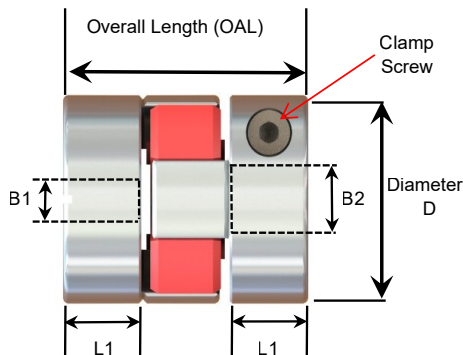
Temperature Correction Factor (TF)

The Rated and Max Torque values are affected by Temperature due to the polymers used in the Spider. Use the Temperature Correction Factor (TF) to determine the Actual Rated and Max Torques in expected operating conditions.

Actual Spider Rated Torque= Spider Rated Torque x TF

Actual Spider Max Torque= Spider Maximum Torque x TF

Temperature Correction Factor	
Operating Temperature	TF
-20°C to 30°C	1.00
30°C to 40°C	0.80
40°C to 60°C	0.70
60°C to 120°C	0.55



** SJC Series Dimensions and Mass					
Series Size	Diameter D, (mm)	Overall Length OAL, (mm)	***Shaft Mount, L1 (mm)	*Mass (g)	*Moment of Inertia (kg-m2)
14	14	22	7	6	1.60E-07
20	20	30	10	19	1.10E-06
25	25	31.3	10	25	2.40E-06
30	30	35.3	11.3	50	6.20E-06
40	40	66	25	160	3.90E-05
55	55	78.3	30.3	330	1.60E-04
65	65	90.3	35.3	560	3.80E-04
80	80	114.2	45.2	1,050	1.00E-03
100	104	140.2	56.2	2,550	4.60E-03

* Mass & Moment of inertia based on complete assembly with max bore B1 & B2.

** B1 & B2 are the Bore sizes for the selected SJC Jaw.

***L1 is the mounting distance from the shaft END.



Drive Couplings

SOH Series Oldham Clamp-Style Coupling



Features

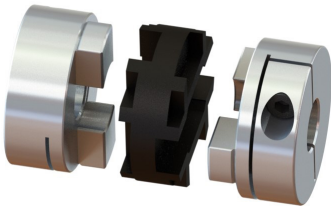
- Clamp Style Hub
- High Parallel misalignment range
- Zero Backlash
- Wide bore selection
- Wide Torque Range
- Electrical Isolation
- Hub material: High Strength Aluminum Alloy
- Disc material: POM (Polyacetal)
- Wide operating temperature range (-20°C to 80°C)

Applications

- General Applications
- Applications with high axial misalignment

To create a coupling to meet your specific needs:

- Select 2 Hubs with desired Bores, of the same SOH Size
- Select 1 Disc, of the same SOH Size
- Verify Actual Torque ratings based on Temperature Correction Factor (TF)
- Coupling assemblies are designed for a press fit to achieve zero backlash. An auger press is recommended for assembly.



SOH Series Coupling Hubs							
Part Number*	Price	Size	Bore, B1 or B2	Max RPM	Clamp Screw		Drawing Links
					Type	Fastening Torque(N·m)	
SOH-16C-4	\$10.50	16	4mm	13,000	SHCS M2.6-0.45 x 8mm	1.0	PDF
SOH-16C-4.76			3/16in				PDF
SOH-16C-5			5mm				PDF
SOH-16C-6			6mm				PDF
SOH-20C-5	\$11.50	20	5mm	11,000	SHCS M2.6-0.45 x 10mm	1.0	PDF
SOH-20C-6			6mm				PDF
SOH-20C-6.35			1/4in				PDF
SOH-20C-7.93			5/16in				PDF
SOH-20C-8			8mm				PDF
SOH-20C-9.525			3/8in				PDF
SOH-20C-10			10mm				PDF



Drive Couplings

SOH Series Oldham Clamp-Style Coupling

SOH Series Coupling Hubs							
Part Number*	Price	Size	Bore, B1 or B2	Max RPM	Clamp Screw		Drawing Links
					Type	Fastening Torque(N·m)	
SOH-25C-6	\$12.50	25	6mm	10,000	SHCS M3-0.5 x 10mm	1.7	PDF
SOH-25C-6.35			1/4in				PDF
SOH-25C-8			8mm				PDF
SOH-25C-9.525			3/8in				PDF
SOH-25C-10			10mm				PDF
SOH-25C-12			12mm				PDF
SOH-32C-8	\$15.50	32	8mm	9,000	SHCS M4-0.7 x 12mm	3.5	PDF
SOH-32C-9.525			3/8in				PDF
SOH-32C-10			10mm				PDF
SOH-32C-12			12mm				PDF
SOH-32C-14			14mm				PDF
SOH-32C-12.7			1/2in				PDF
SOH-43C-12	\$25.00	43	12mm	8,000	SHCS M5-0.8 x 16mm	8.0	PDF
SOH-43C-12.7			1/2in				PDF
SOH-43C-14			14mm				PDF
SOH-43C-15.875			5/8in				PDF
SOH-43C-16			16mm				PDF
SOH-43C-19			19mm				PDF
SOH-57C-15.875	\$41.50	57	5/8in	6,000	SHCS M6-1.0 x 20mm	13.0	PDF
SOH-57C-16			16mm				PDF
SOH-57C-19			19mm				PDF
SOH-57C-19.05			3/4in				PDF
SOH-57C-22			22mm				PDF
SOH-57C-22.225			7/8in				PDF
SOH-57C-24	\$52.00	70	24mm	4,500	SHCS M8-1.25 x 30mm	30.0	PDF
SOHM-70C-19.05			3/4in				PDF
SOHM-70C-20			20mm				PDF
SOHM-70C-22.225			7/8in				PDF
SOHM-70C-25			25mm				PDF
SOHM-70C-25.4			1in				PDF
SOHM-70C-28.575			1-1/8in				PDF
SOHM-70C-30			30mm				PDF
SOHM-70C-31.75			1-1/4in				PDF
SOHM-70C-35			35mm				PDF



Drive Couplings

SOH Series Oldham Clamp-Style Coupling



SOH Series Coupling DISC										
Part Number*	Price	Size	Material	Torque (Nm)		Torsional Stiffness (N-m/rad)	Max Misalignment			Drawing Links
				*Rated	*Max		Parallel (mm)	Axial (mm)	Angular	
SOH-16-DISC	\$3.00	16	Polyacetal (black)	1	2	65	1	0.10	1.5 degrees	PDF
SOH-20-DISC	\$3.75	20		1.5	3	120	1.5			PDF
SOH-25-DISC		25		2.5	5	200	2			PDF
SOH-32-DISC		32		7	14	620	2.5	0.15		PDF
SOH-43-DISC	\$7.25	43		12.5	25	1,200	3			PDF
SOH-57-DISC	\$7.25	57		34	68	2,600	3.5	0.20		PDF
SOH-70-DISC		70		60	120	5,000				PDF

*Rated & Max Torques values are based on complete SOH assembly with maximum Bore sizes and Temperature Correction Factor (TF) =1

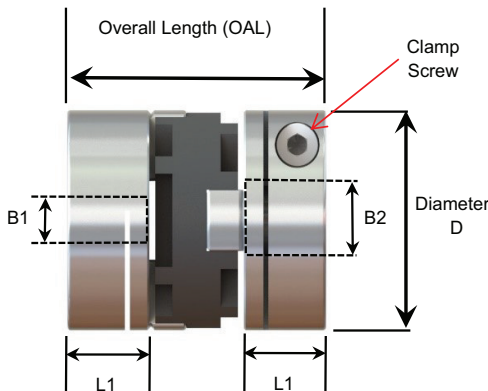
Temperature Correction Factor (TF)

The Rated and Max Torque values are affected by Temperature due to the polymer used in the Disc. Use the Temperature Correction Factor (TF) to determine the Actual Rated and Max Torques in expected operating conditions.

Actual Disc Rated Torque= Disc Rated Torque x TF

Actual Disc Max Torque= Disc Maximum Torque x TF

Temperature Correction Factor	
Operating Temperature	TF
-20°C to 30°C	1.00
30°C to 40°C	0.80
40°C to 60°C	0.70
60°C to 120°C	0.55



**SOH Series Dimensions and Mass					
Series Size	Diameter, D (mm)	Overall Length, OAL (mm)	***Shaft Mount, L1 (mm)	*Mass (g)	*Moment of Inertia (kg-m ²)
16	16	23.9	7.7	8.5	3.10E-07
20	20	25.7	8	14.2	8.20E-07
25	25.5	32	10.2	29.3	2.70E-06
32	32	44.7	14.4	59.6	9.20E-06
43	43	52	16.5	127	3.40E-05
57	57	76.2	26.9	329	1.60E-04
70	73	75.5	25	547	4.50E-04

* Mass & Moment of inertia based on complete assembly with max bore B1 & B2.

** B1 & B2 are the Bore sizes for the selected SOH Jaw.

***L1 is the mounting distance from the shaft END.



Drive Couplings

SRB Series Radial Beam Clamp-Style Coupling



Features

- Zero backlash
- Clamp Style Hub
- Wide bore selection
- Wide Torque Range
- Cost effective
- Material of Construction: 7075-T6 aluminum alloy
- Wide operating temperature range (-30°C to 100°C)
- No Temperature Correction Factor required

Applications

- Servo, stepping, and encoder Applications
- High Speed Applications

To create a coupling to meet your specific needs:

- Select Radial Beam Coupling with desired Bore sizes, B1 and B2

SRB Series Radial Beam Coupling											
Part Number	Price	Size	Bore, B1 x B2	Max RPM	Torque (N·m)		Torsional Stiffness (N·m/rad)	Max Misalignment			Drawing Links
					*Rated	*Max		Parallel (mm)	Axial (mm)	Angular	
SRB-16C-4-4	\$25.00	16	4 x 4mm	27,000	0.4 N·m	0.8	75	0.150	± 0.3	2.5°	PDF
SRB-16C-4-5			4 x 5mm								PDF
SRB-16C-4-6			4 x 6mm								PDF
SRB-16C-5-5			5 x 5mm								PDF
SRB-16C-5-6			5 x 6mm								PDF
SRB-16C-6-6			6 x 6mm								PDF
SRB-19C-5-5		19	5 x 5mm	20,000	0.6 N·m	1.2	150				PDF
SRB-19C-5-6			5 x 6mm								PDF
SRB-19C-5-6.35			5 x 6.35mm (1/4in)								PDF
SRB-19C-5-8			5 x 8mm								PDF
SRB-19C-6-6			6 x 6mm								PDF
SRB-19C-6-6.35			6 x 6.35mm (1/4in)								PDF
SRB-19C-6-8			6 x 8mm								PDF
SRB-19C-6.35-6.35			6.35 (1/4in) x 6.35mm (1/4in)								PDF
SRB-19C-6.35-8			6.35 (1/4in) x 8mm								PDF
SRB-19C-8-8			8 x 8mm								PDF
SRB-22C-5-5	\$27.00	22	5 x 5mm	18,000	1 N·m	2.0	200	± 0.4	PDF		
SRB-22C-5-6			5 x 6mm						PDF		
SRB-22C-5-6.35			5 x 6.35mm (1/4in)						PDF		
SRB-22C-5-8			5 x 8mm						PDF		
SRB-22C-5-9.525			5 x 9.525mm (3/8in)						PDF		
SRB-22C-5-10			5 x 10mm						PDF		
SRB-22C-6-6			6 x 6mm						PDF		
SRB-22C-6-6.35			6 x 6.35mm (1/4in)						PDF		
SRB-22C-6-8			6 x 8mm						PDF		

*Rated & Max Torque based on maximum Bore sizes B1 & B2.



Drive Couplings

SRB Series Radial Beam Clamp-Style Coupling

SRB Series Radial Beam Coupling											
Part Number	Price	Size	Bore, B1 x B2	Max RPM	Torque (N·m)		Torsional Stiffness (N·m/rad)	Max Misalignment			Drawing Links
					*Rated	*Max		Parallel (mm)	Axial (mm)	Angular	
SRB-22C-6-9.525	\$27.00	22	6 x 9.525mm (3/8in)	18,000	1 N·m	2.0	200	0.150			PDF
SRB-22C-6-10			6 x 10mm								PDF
SRB-22C-6.35-6.35			6.35 (1/4in) x 6.35mm (1/4in)								PDF
SRB-22C-6.35-8			6.35 (1/4in) x 8mm								PDF
SRB-22C-6.35-9.525			6.35 (1/4in) x 9.525mm (3/8in)								PDF
SRB-22C-6.35-10			6.35 (1/4in) x 10mm								PDF
SRB-22C-8-8			8 x 8mm								PDF
SRB-22C-8-9.525			8 x 9.525mm (3/8in)								PDF
SRB-22C-8-10			8 x 10mm								PDF
SRB-22C-9.525-9.525			9.525 (3/8in) x 9.525mm (3/8in)								PDF
SRB-22C-9.525-10			9.525 (3/8in) x 10mm								PDF
SRB-22C-10-10			10 x 10mm								PDF
SRB-26C-6-6	\$32.00	26	6 x 6mm	17,000	2 N·m	4.0	340	0.200	± 0.4	2.5°	PDF
SRB-26C-6-6.35			6 x 6.35mm (1/4in)								PDF
SRB-26C-6-8			6 x 8mm								PDF
SRB-26C-6-9.525			6 x 9.525mm (3/8in)								PDF
SRB-26C-6-10			6 x 10mm								PDF
SRB-26C-6-12			6 x 12mm								PDF
SRB-26C-6.35-6.35			6.35 (1/4in) x 6.35mm (1/4in)								PDF
SRB-26C-6.35-8			6.35 (1/4in) x 8mm								PDF
SRB-26C-6.35-9.525			6.35 (1/4in) x 9.525mm (3/8in)								PDF
SRB-26C-6.35-10			6.35 (1/4in) x 10mm								PDF
SRB-26C-6.35-12			6.35 (1/4in) x 12mm								PDF
SRB-26C-8-8			8 x 8mm								PDF
SRB-26C-8-9.525			8 x 9.525mm (3/8in)								PDF
SRB-26C-8-10			8 x 10mm								PDF
SRB-26C-8-12			8 x 12mm								PDF
SRB-26C-9.525-9.525			9.525 (3/8in) x 9.525mm (3/8in)								PDF
SRB-26C-9.525-10			9.525 (3/8in) x 10mm								PDF
SRB-26C-9.525-12			9.525 (3/8in) x 12mm								PDF
SRB-26C-10-10			10 x 10mm								PDF
SRB-26C-10-12			10 x 12mm								PDF
SRB-26C-12-12			12 x 12mm								PDF

*Rated & Max Torque based on maximum Bore sizes B1 & B2.



Drive Couplings

SRB Series Radial Beam Clamp-Style Coupling

SRB Series Radial Beam Coupling											
Part Number	Price	Size	Bore, B1 x B2	Max RPM	Torque (N·m)		Torsional Stiffness (N·m/rad)	Max Misalignment			Drawing Links
					*Rated	*Max		Parallel (mm)	Axial (mm)	Angular	
SRBA-32C-8-8	\$38.50	32	8 x 8mm	14,000	3.8 N·m	7.6	450	0.200	± 0.4	2.5°	PDF
SRBA-32C-8-9.525			8 x 9.525mm (3/8in)								PDF
SRBA-32C-8-10			8 x 10mm								PDF
SRBA-32C-8-12			8 x 12mm								PDF
SRBA-32C-8-14			8 x 14mm								PDF
SRBA-32C-9.525-9.525			9.525 (3/8in) x 9.525mm (3/8in)								PDF
SRBA-32C-9.525-10			9.525 (3/8in) x 10mm								PDF
SRBA-32C-9.525-12			9.525 (3/8in) x 12mm								PDF
SRBA-32C-9.525-14			9.525 (3/8in) x 14mm								PDF
SRBA-32C-10-10			10 x 10mm								PDF
SRBA-32C-10-12			10 x 12mm								PDF
SRBA-32C-10-14			10 x 14mm								PDF
SRBA-39C-10-10	\$68.00	39	10 x 10mm	10,000	7 N·m	14.0	640	0.250	± 0.4	2.5°	PDF
SRBA-39C-10-12			10 x 12mm								PDF
SRBA-39C-10-14			10 x 14mm								PDF
SRBA-39C-10-16			10 x 16mm								PDF
SRBA-39C-10-18			10 x 18mm								PDF
SRBA-39C-10-19			10 x 19mm								PDF

**Rated & Max Torque based on maximum Bore sizes B1 & B2.



Drive Couplings

SRB Series Radial Beam Clamp-Style Coupling

SRB Series Radial Beam Coupling											
Part Number	Price	Size	Bore, B1 x B2	Max RPM	Torque (N·m)		Torsional Stiffness (N·m/rad)	Max Misalignment			Drawing Links
					*Rated	*Max		Parallel (mm)	Axial (mm)	Angular	
SRBA-39C-12-12	\$68.00	39	12 x 12mm	10,000	7 N·m	14.0	640		± 0.4		PDF
SRBA-39C-12-14			12 x 14mm								PDF
SRBA-39C-12-16			12 x 16mm								PDF
SRBA-39C-12-18			12 x 18mm								PDF
SRBA-39C-12-19			12 x 19mm								PDF
SRBA-39C-14-14			14 x 14mm								PDF
SRBA-39C-14-16			14 x 16mm								PDF
SRBA-39C-14-18			14 x 18mm								PDF
SRBA-39C-14-19			14 x 19mm								PDF
SRBA-39C-16-16			16 x 16mm								PDF
SRBA-39C-16-18			16 x 18mm								PDF
SRBA-39C-16-19			16 x 19mm								PDF
SRBA-39C-18-18			18 x 18mm								PDF
SRBA-39C-18-19			18 x 19mm								PDF
SRBA-39C-19-19			19 x 19mm								PDF
SRBA-49C-12-12	\$113.00	49	12 x 12mm	10,000	15 N·m	30.0	1500	0.250	± 0.5	2.5°	PDF
SRBA-49C-12-14			12 x 14mm								PDF
SRBA-49C-12-16			12 x 16mm								PDF
SRBA-49C-12-18			12 x 18mm								PDF
SRBA-49C-12-19			12 x 19mm								PDF
SRBA-49C-12-20			12 x 20mm								PDF
SRBA-49C-14-14			14 x 14mm								PDF
SRBA-49C-14-16			14 x 16mm								PDF
SRBA-49C-14-18			14 x 18mm								PDF
SRBA-49C-14-19			14 x 19mm								PDF
SRBA-49C-14-20			14 x 20mm								PDF
SRBA-49C-16-16			16 x 16mm								PDF
SRBA-49C-16-18			16 x 18mm								PDF
SRBA-49C-16-19			16 x 19mm								PDF
SRBA-49C-16-20			16 x 20mm								PDF
SRBA-49C-18-18			18 x 18mm								PDF
SRBA-49C-18-19			18 x 19mm								PDF
SRBA-49C-18-20			18 x 20mm								PDF
SRBA-49C-19-19			19 x 19mm								PDF
SRBA-49C-19-20			19 x 20mm								PDF
SRBA-49C-20-20			20 x 20mm								PDF

*Rated & Max Torque based on maximum Bore sizes B1 & B2.



Drive Couplings

SRB Series Radial Beam Clamp-Style Coupling

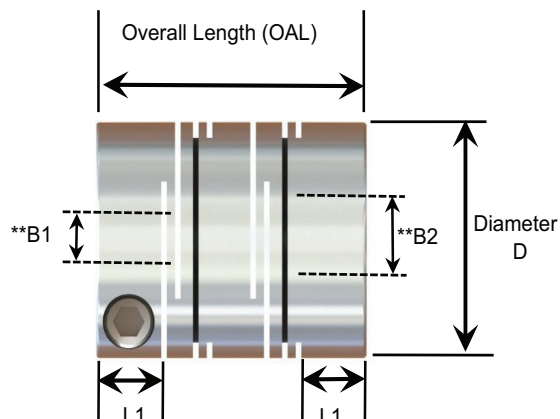
SRB Series Radial Beam Coupling											
Part Number	Price	Size	Bore, B1 x B2	Max RPM	Torque (N·m)		Torsional Stiffness (N·m/rad)	Max Misalignment			Drawing Links
					*Rated	*Max		Parallel (mm)	Axial (mm)	Angular	
SRBA-60C-16-16	\$135.00	60	16 x 16mm	7,000	30 N·m	60.0	2500	0.250	±0.5	2.5°	PDF
SRBA-60C-16-18			16 x 18mm								PDF
SRBA-60C-16-19			16 x 19mm								PDF
SRBA-60C-16-20			16 x 20mm								PDF
SRBA-60C-16-22			16 x 22mm								PDF
SRBA-60C-16-24			16 x 24mm								PDF
SRBA-60C-18-18			18 x 18mm								PDF
SRBA-60C-18-19			18 x 19mm								PDF
SRBA-60C-18-20			18 x 20mm								PDF
SRBA-60C-18-22			18 x 22mm								PDF
SRBA-60C-18-24			18 x 24mm								PDF
SRBA-60C-19-19			19 x 19mm								PDF
SRBA-60C-19-20			19 x 20mm								PDF
SRBA-60C-19-22			19 x 22mm								PDF
SRBA-60C-19-24			19 x 24mm								PDF
SRBA-60C-20-20			20 x 20mm								PDF
SRBA-60C-20-22			20 x 22mm								PDF
SRBA-60C-20-24			20 x 24mm								PDF
SRBA-60C-22-22			22 x 22mm								PDF
SRBA-60C-22-24			22 x 24mm								PDF
SRBA-60C-24-24			24 x 24mm								PDF

*Rated & Max Torque based on maximum Bore sizes B1 & B2.



Drive Couplings

SRB Series Radial Beam Clamp-Style Coupling



SRB Series Dimensions and Mass

Size	Diameter, D (mm)	Overall Length OAL, (mm)	***L1 (mm)	*Mass (g)	*Moment of Inertia (kg-m ²)	Clamp Screw	
						Type	Fastening Torque (N-m)
16	16	21.5	6.1	8.2	3.10E-07	SHCS M2.6-0.45 x 8mm	1.0
19	19.1	23	6.2	12	6.40E-07		
22	22.2	26.5	7.2	17.9	1.40E-06	SHCS M3-0.5 x 10mm	1.7
26	26.2	31.5	7.5	29.9	3.20E-06		
32	31.8	39	9.4	54.9	8.60E-06	SHCS M4-0.7 x 12mm	3.5
39	39	43	10.7	87.8	2.10E-05	SHCS M5-0.8 x 16mm	8.0
49	49	63.5	15.1	236	8.40E-05	SHCS M6-1.0 x 20mm	13.0
60	60	76.2	19	407	2.20E-04	SHCS M8-1.25 x 25mm	30.0

* Mass & Moment of inertia based on complete assembly with max bore B1 & B2.

**B1 & B2 are the Bore sizes for the selected SRB Coupling.

***L1 is the mounting distance from the shaft END.



Drive Couplings

SHR Series High Gain Clamp-Style Coupling

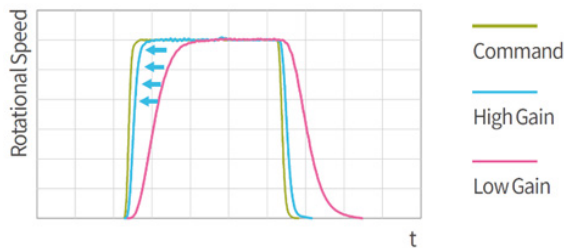


Features

- Clamp Style Hub
- Increased Control Gain (High Gain)
- Vibration Absorption
- Backlash Free
- Wide bore selection
- Wide Torque Range
- High durability
- Electrical Isolation
- Hub material: High Strength Aluminum Alloy
- Core material: HNBR (Hydrogenated acrylonitrile butadiene rubber)
- Wide operating temperature range (-20°C to 80°C)

Applications

- Servo and Stepper
- High speed positioning applications
- High precision applications
- Ideal for use with SureServo2 motors with high frequency response



To create a coupling to meet your specific needs:

- Select High Gain Coupling with desired Bore sizes, B1 and B2
- Verify Actual Torque ratings based on Temperature Correction Factor (TF).

SHR Series High Gain Coupling												
Part Number	Price	Size	Bore, B1 x B2	Max Rpm	Torque (N·m)		Torsional Stiffness (N·m/rad)	Max Misalignment			Drawing Links	
					*Rated	*Max		Parallel (mm)	Axial (mm)	Angular		
SHR-18C-4-8	\$44.50	18	4 x 8mm	33,000	1.9 N·m	3.8	84	0.150	± 0.2	1.5°	PDF	
SHR-18C-5-8			5 x 8mm								PDF	
SHR-18C-6-8			6 x 8mm								PDF	
SHR-18C-6.35-8			6.35 (1/4in) x 8mm								PDF	
SHR-18C-8-8			8 x 8mm								PDF	
SHR-24C-8-8	\$47.00	24	8 x 8mm	25,000	3.5 N·m	7.0	132	0.150			PDF	
SHR-24C-8-10			8 x 10mm								PDF	
SHR-24C-8-12			8 x 12mm								PDF	
SHR-29C-8-8	\$51.00	29	8 x 8mm	21,000	5.7 N·m	11.4	209	0.200			± 0.3	PDF
SHR-29C-8-10			8 x 10mm									PDF
SHR-29C-8-12			8 x 12mm						PDF			
SHR-29C-8-14			8 x 14mm						PDF			
SHR-29C-10-14			10 x 14mm						PDF			
SHR-29C-12-14			12 x 14mm						PDF			
SHR-29C-14-14			14 x 14mm						PDF			

*Rated & Max Torques values are based on maximum Bore sizes B1 & B2 and Temperature Correction Factor (TF) =1



Drive Couplings

SHR High Gain Clamp-Style Coupling

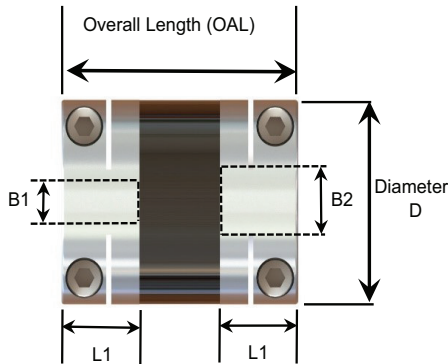
SHR Series High Gain Coupling											
Part Number	Price	Size	Bore, B1 x B2	Max Rpm	Torque (N·m)		Torsional Stiffness (N·m/rad)	Max Misalignment			Drawing Links
					*Rated	*Max		Parallel (mm)	Axial (mm)	Angular	
SHR-38C-14-14	\$60.00	38	14 x 14mm	16,000	12 N·m	24.0	479	0.200	± 0.3	1.5°	PDF
SHR-38C-14-16			14 x 16mm								PDF
SHR-38C-14-18			14 x 18mm								PDF
SHR-38C-14-19			14 x 19mm								PDF
SHR-38C-14-20			14 x 20mm								PDF
SHR-38C-19-19			19 x 19mm								PDF
SHR-38C-19-20			19 x 20mm								PDF
SHR-43C-14-14	\$68.00	43	14 x 14mm	14,000	16 N·m	32.0	610	0.200			PDF
SHR-43C-14-16			14 x 16mm								PDF
SHR-43C-14-18			14 x 18mm								PDF
SHR-43C-14-19			14 x 19mm								PDF
SHR-43C-14-20			14 x 20mm								PDF
SHR-43C-14-22			14 x 22mm								PDF
SHR-43C-19-19			19 x 19mm								PDF
SHR-43C-19-20			19 x 20mm								PDF
SHR-43C-19-22			19 x 22mm								PDF
SHR-43C-22-22			22 x 22mm								PDF
SHR-55C-14-14	\$88.00	55	14 x 14mm	11,000	31.5 N·m	63.0	1430	0.200			PDF
SHR-55C-14-16			14 x 16mm								PDF
SHR-55C-14-18			14 x 18mm								PDF
SHR-55C-14-19			14 x 19mm								PDF
SHR-55C-14-20			14 x 20mm						PDF		
SHR-55C-14-22			14 x 22mm						PDF		
SHR-55C-14-24			14 x 24mm						PDF		
SHR-55C-14-25			14 x 25mm						PDF		
SHR-55C-19-19			19 x 19mm						PDF		
SHR-55C-19-20			19 x 20mm						PDF		
SHR-55C-19-22			19 x 22mm						PDF		
SHR-55C-19-24			19 x 24mm						PDF		
SHR-55C-19-25			19 x 25mm						PDF		
SHR-55C-22-22			22 x 22mm						PDF		
SHR-55C-22-24			22 x 24mm						PDF		
SHR-55C-22-25			22 x 25mm						PDF		
SHR-55C-24-24			24 x 24mm						PDF		
SHR-55C-24-25	24 x 25mm	PDF									
SHR-55C-25-25	25 x 25mm	PDF									

*Rated & Max Torques values are based on maximum Bore sizes B1 & B2 and Temperature Correction Factor (TF) =1



Drive Couplings

SHR Series High Gain Clamp-Style Coupling



**SHR Series Dimensions and Mass							
Size	Diameter, D (mm)	Overall Length, OAL (mm)	***Shaft Mount, L1 (mm)	*Mass (g)	*Moment of Inertia (kg-m ²)	Clamp Screw	
						Type	Fastening Torque (N-m)
18	17.8	25.5	8	11	4.90E-07	SHCS M2-0.4 x 6mm	0.6
24	23.8	31.2	9.6	22	1.90E-06	SHCS M2.6-0.45 x 8mm	1.1
29	28.8	35	11	34	4.40E-06	SHCS M3-0.5 x 10mm	1.8
38	37.8	47	15.5	78	1.80E-05	SHCS M4-0.7 x 14mm	3.7
43	42.8	48	15.5	115	3.20E-05	SHCS M4-0.7 x 14mm	3.7
55	54.8	59	19.5	250	1.10E-04	SHCS M5-0.8 x 20mm	8.5

* Mass & Moment of inertia based on complete assembly with max bore B1 & B2.

**B1 & B2 are the Bore sizes for the selected SHR Coupling.

***L1 is the mounting distance from the shaft END.

Temperature Correction Factor (TF)

The Rated and Max Torque values are affected by Temperature due to the polymer of the Core. Use the Temperature Correction Factor (TF) to determine the Actual Rated and Max Torques in expected operating conditions.

Actual Rated Torque= Rated Torque x TF

Actual Max Torque= Maximum Torque x TF

Temperature Correction Factor	
Operating Temperature	TF
-20°C to 30°C	1.00
30°C to 40°C	0.80
40°C to 60°C	0.70
60°C to 120°C	0.55

Drive Couplings Overview

Rotating shaft-driven mechanical components are commonly used in all forms of machinery that perform the various processes and functions of modern industry. Perfect alignment of shafts and rotating components is desired, but it is nearly impossible to build a real-world machine in which adjacent shaft ends align perfectly.

Adjacent shafts can be misaligned in 3 orientations, angular, parallel and axial, see figure below. Misalignment will place stresses on shafts and related parts of the assembly such as bearings, which can result in early failure of both.

Drive couplings can be used to compensate for shaft misalignment, whether the misalignment is an intentional or an unintentional part of the design. When designing or modifying a system, there are essential factors to consider for choosing the correct couplings for the application.



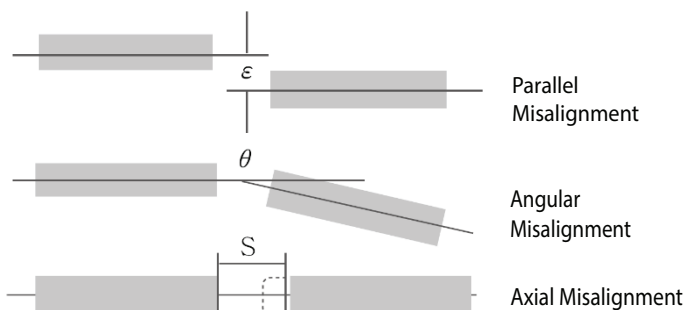
Design/Selection Factors:

(Refer to the specification tables herein for the particular specifications of each type of drive coupling.)

- **RPM:** For higher rpm applications, choose Jaw/Spider or Beam-Style Servo couplings. For lower rpm, consider Double-Loop or Oldham couplings.
- **Torque:** Consider the torque requirements of the application, and the torque specifications of the different drive coupling types. peak torque generally occurs at start-up, operating torque at steady-state operation, and reversing or braking torque during rapid acceleration or deceleration or direction changes.
- **Backlash:** Backlash is a measurement of the positional accuracy of the coupling, which is important for reversing and/or motion control applications. Zero backlash is ultimately desirable, but more expensive than necessary for low-precision applications.

For high-precision applications, choose Beam-Style Servo or Oldham couplings. For applications requiring less precision, consider Jaw/Spider or Double-Loop couplings.

- **Misalignment:** Some degree of angular, axial, or radial misalignment/displacement between shafts is almost unavoidable. Drive couplings can compensate for this misalignment.



Coupling Type Comparisons				
Coupling Type	Jaw / Spider	Double Loop	Oldham	Beam-Style Servo
Representative Photo				
Purpose	most common	light duty	general purpose	high performance & torque
Hub Material	aluminum	stainless steel	aluminum	416 stainless steel
Center Material	polyurethane	Hytre TM	Delrin TM	420 stainless steel
Mounting Method	clamp	set screw	clamp	set screw
Electrical Isolation	yes	yes	yes	no
Backlash	varies	varies	zero	zero
Misalignment Capacity	++ (axial)	+++	++	+
Breakable "Mechanical Fuse"	no (fail safe)	no	yes	no
Relative Price	\$\$	\$\$	\$	\$\$\$



Drive Couplings

Jaw/Spider Clamp-Style Couplings



Features

- Most commonly specified coupling type
- Aluminum hubs available with different bore diameters in same coupling
- Polyurethane center "spiders" available in different durometers for different degrees of shock and vibration reduction
- Fail-safe operation
- Electrical isolation
- Wide torque range
- High axial misalignment range
- Cost effective
- Wide operating temperature range: -40 to 100 °C (-40 to 212 °F)

Applications

- General applications
- High-speed applications
- Applications with high axial misalignment
- Applications in which inertia is NOT a factor

Jaw / Spider Aluminum Clamp-Style Drive Coupling Hubs*															
Part Number*	Price	Size (mm)	Bore	Max RPM	Torque	Torsional Stiffness	Max Misalignment			Weight (lb)					
							Parallel (in [mm])	Axial (in [mm])	Angular						
DC-JAC14-03	\$14.00	14	3/16in	27,280	The torque and torsional stiffness of the assembly varies depending upon which center "spider" is used. Refer to the "Jaw / Spider Drive Coupling Spiders" table(pagePTR-52) for torque and torsional stiffness specifications.		0.002 [0.05]	0.030 [0.76]	1.0°	0.039					
DC-JAC14-05M	\$14.00		5mm												
DC-JAC14-06M	\$14.00		6mm												
DC-JAC14-04	\$14.00		1/4in												
DC-JAC20-04	\$17.00	20	1/4in	19,040						0.058					
DC-JAC20-05	\$17.75		5/16in												
DC-JAC30-05	\$26.00	30	5/16in	12,720						0.070					
DC-JAC30-08M	\$25.50		8mm												
DC-JAC30-06	\$26.00		3/8in												
DC-JAC30-10M	\$26.00		10mm												
DC-JAC30-12M	\$26.00		12mm												
DC-JAC30-08	\$26.00	40	1/2in	11,200						0.145					
DC-JAC40-08M	\$30.00		8mm												
DC-JAC40-06	\$30.25		3/8in												
DC-JAC40-10M	\$30.25		10mm												
DC-JAC40-12M	\$30.25		12mm												
DC-JAC40-08	\$30.50		1/2in												
DC-JAC40-14M	\$30.25		14mm												
DC-JAC40-10	\$30.25		5/8in												
DC-JAC40-16M	\$30.00	55	16mm	8,480						0.383					
DC-JAC40-12	\$30.50		3/4in												
DC-JAC55-10	\$35.00		5/8in												
DC-JAC55-19M	\$30.50		19mm												
DC-JAC55-12	\$35.50	65	3/4in	6,800						0.683					
DC-JAC55-22M	\$35.00		22mm												
DC-JAC55-14	\$35.50		7/8in												
DC-JAC65-20	\$57.00	65	1-1/4in							0.9°	0.683				
DC-JAC65-32M	\$57.00		32mm												

* A complete jaw/spider coupling assembly consists of two hubs and one spider, each of the same "size" and each purchased separately. The two hubs can be of different "bore" diameters, if needed for the application.



Drive Couplings

Jaw/Spider Clamp-Style Coupling Spiders

Jaw / Spider Drive Coupling Spiders*								
Part Number*	Price	Size	Durometer	Color	Torque (lb-in [N-m])			Torsional Stiffness (lb-in/rad [Nm/rad])
					Rated	Max	Reversing**	
DC-JS14-80A	\$8.00	14	80A	blue	6 [0.7]	12 [1.4]	2 [0.2]	71 [8]
DC-JS14-92A	\$8.00		92A	white	11 [1.2]	21 [2.4]		124 [14]
DC-JS14-98A	\$8.00		98A	red	18 [2.0]	35 [4.0]		195 [22]
DC-JS20-80A	\$11.25	20	80A	blue	16 [1.8]	32 [3.6]	4 [0.5]	142 [16]
DC-JS20-92A	\$12.00		92A	white	27 [3.1]	53 [6.0]		257 [29]
DC-JS20-98A	\$11.50		98A	red	44 [5.0]	89 [10.1]		487 [55]
DC-JS30-80A	\$13.00	30	80A	blue	35 [4.0]	71 [8.0]	9 [1.0]	407 [46]
DC-JS30-92A	\$13.25		92A	white	66 [7.5]	133 [15.0]		646 [73]
DC-JS30-98A	\$13.25		98A	red	111 [12.5]	221 [25.0]		1151 [130]
DC-JS40-80A	\$14.50	40	80A	blue	43 [4.9]	86 [9.7]	11 [1.2]	3363 [380]
DC-JS40-92A	\$14.50		92A	white	88 [9.9]	177 [20.0]		5045 [570]
DC-JS40-98A	\$14.50		98A	red	150 [16.9]	300 [33.9]		10621 [1200]
DC-JS55-80A	\$16.00	55	80A	blue	151 [17.1]	301 [34.0]	39 [4.4]	12391 [1400]
DC-JS55-92A	\$16.00		92A	white	310 [35.0]	620 [70.1]		14161 [1600]
DC-JS55-98A	\$16.00		98A	red	530 [59.9]	1060 [119.8]		23012 [2600]
DC-JS65-80A	\$20.50	65	80A	blue	407 [46.0]	814 [92.0]	106 [12.0]	24782 [2800]
DC-JS65-92A	\$20.50		92A	white	840 [94.9]	1680 [189.8]		26552 [3000]
DC-JS65-98A	\$20.50		98A	red	1415 [159.9]	2830 [319.7]		43369 [4900]

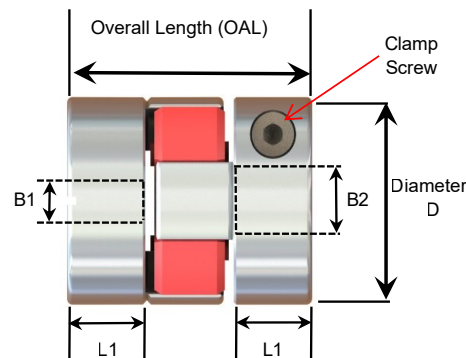


* A complete jaw/spider coupling assembly consists of two hubs and one spider, each of the same "size" and each purchased separately. The two hubs can be of different "bore" diameters, if needed for the application.

** Reversing Torque is the rapid reversal of rotation and has a lower value to account for stopping inertia and driving in the opposite rotation. For slow direction reversals, Nominal Torque applies.

Dimensions (in [mm])

Jaw / Spider Drive Coupling Hub Bore Dimensions		
Hubs	Sizes	ØB
DC-JACxx-03	14	3/16 in
DC-JACxx-05M	14	5mm
DC-JACxx-06M	14	6mm
DC-JACxx-04	14, 20	1/4 in
DC-JACxx-05	20, 30	5/16 in
DC-JACxx-08M	30, 40	8mm
DC-JACxx-06	30, 40	3/8 in
DC-JACxx-10M	30, 40	10mm
DC-JACxx-12M	30, 40	12mm
DC-JACxx-08	30, 40	1/2 in
DC-JACxx-14M	40	14mm
DC-JACxx-10	40, 55	5/8 in
DC-JACxx-16M	40	16mm
DC-JACxx-12	40, 55	3/4 in
DC-JACxx-19M	55	19mm
DC-JACxx-22M	55	22mm
DC-JACxx-14	55	7/8 in
DC-JACxx-20	65	1-1/4 in
DC-JACxx-32M	65	32mm



Jaw / Spider Aluminum Clamp-Style Drive Coupling Assembly Dimensions*

Size	Components	Clamp Screw	L1	OAL	D
			in [mm]		
14	(2) DC-JAC14-xxx + (1) DC-JS14-xxx	#4-40	0.28 [7.1]	0.86 [21.8]	0.55 [14.0]
20	(2) DC-JAC20-xxx + (1) DC-JS20-xxx	#5-40	0.39 [9.9]	1.20 [30.5]	0.78 [19.8]
30	(2) DC-JAC30-xxx + (1) DC-JS30-xxx	#6-32	0.43 [10.9]	1.35 [34.3]	1.18 [30.0]
40	(2) DC-JAC40-xxx + (1) DC-JS40-xxx	#10-24	0.98 [24.9]	2.55 [64.8]	1.57 [39.9]
55	(2) DC-JAC55-xxx + (1) DC-JS55-xxx	1/4-20	1.16 [29.5]	2.97 [75.4]	2.17 [55.1]
65	(2) DC-JAC65-xxx + (1) DC-JS65-xxx	5/16-18	1.40 [35.6]	3.53 [89.7]	2.55 [64.8]

* Assembly dimensions are for any (2) hubs + (1) spider of the same "size" as assembled. B1 & B2 are the Bore sizes for the selected DC-JACxx Jaw/Hub.

See our website: www.AutomationDirect.com for complete Engineering drawings.



Drive Couplings

Double Loop Couplings

Features

- High torsional rigidity
- One-piece design
- Hubs made of series 300 stainless steel
- Double loop made of DuPont Hytrel™
- Corrosion protection
- Outstanding resistance to acids, alkalis, solvents, oils, grease, ozone
- Wide operating temperature range: -40 to 100 °C (-40 to 212 °F)
- Electrical isolation
- Damping of shock and vibration
- Speeds up to 3,000rpm

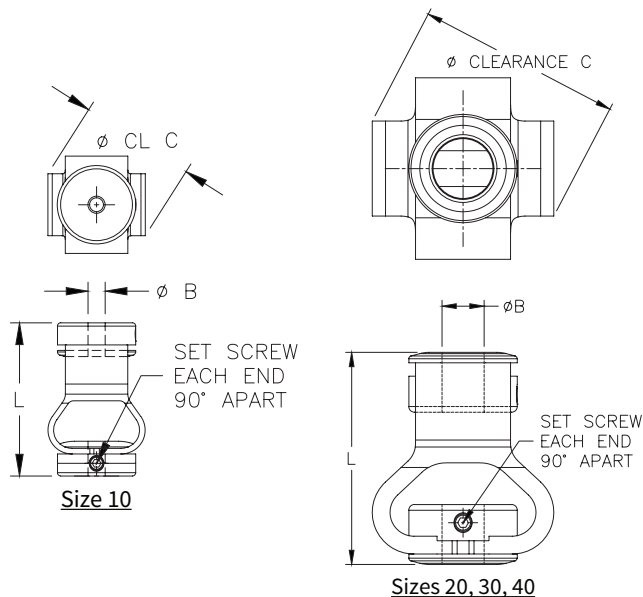
Applications

- Light-duty applications
- Medium-speed applications
- Applications in which inertia is NOT a factor



Double Loop Stainless Steel Drive Couplings									
Part Number	Price	Size	Bore	Max rpm	Max Torque @ Max Displacement ([lb-in] N·m)	Max Misalignment			Weight (lb)
						Radial ([in] mm)	Axial ([in] mm)	Angular (°)	
DC-DLSS10-02	\$44.00	10	1/8 in	3,000	[4.4] 0.5	[0.10] 2.6	[0.18] 4.5	10	0.06
DC-DLSS10-03	\$44.00		3/16 in						
DC-DLSS10-06M	\$44.00		6mm						
DC-DLSS10-04	\$44.00		1/4 in						
DC-DLSS10-05	\$43.00		5/16 in						
DC-DLSS10-08M	\$42.00		8mm						
DC-DLSS20-04	\$49.00	20	1/4 in		[15.9] 1.8	[0.13] 3.2	[0.30] 7.5	15	0.20
DC-DLSS20-05	\$49.00		5/16 in						
DC-DLSS20-08M	\$49.00		8mm						
DC-DLSS20-06	\$49.00		3/8 in						
DC-DLSS20-12M	\$49.00		12mm						
DC-DLSS20-08	\$49.00		1/2 in						
DC-DLSS30-12M	\$55.00	30	12mm		[44.3] 5.0	[0.13] 3.2	[0.33] 8.5	15	0.27
DC-DLSS30-08	\$55.00		1/2 in						
DC-DLSS30-14M	\$55.00		14mm						
DC-DLSS30-10	\$55.00		5/8 in						
DC-DLSS40-08	\$60.50	40	1/2 in		[88.5] 10.0	[0.43] 11.0	[0.43] 11.0	15	0.30
DC-DLSS40-14M	\$60.50		14mm						
DC-DLSS40-10	\$60.50		5/8 in						
DC-DLSS40-16M	\$60.50		16mm						

Dimensions (in [mm])

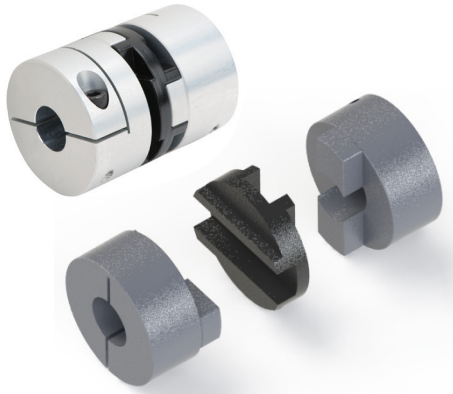


Double Loop Stainless Steel Drive Coupling Dimensions					
Part Number	Size	Set Screw	ØB	ØC	L
(in [mm])					
DC-DLSS10-02	10	M3	1/8 in	1.06 [26.9]	
DC-DLSS10-03			3/16 in		
DC-DLSS10-06M			6mm		
DC-DLSS10-04			1/4 in		
DC-DLSS10-05			5/16 in		
DC-DLSS10-08M			8mm		
DC-DLSS20-04	20	M4	1/4 in	1.89 [48.0]	
DC-DLSS20-05			5/16 in		
DC-DLSS20-08M			8mm		
DC-DLSS20-06			3/8 in		
DC-DLSS20-12M			12mm		
DC-DLSS20-08			1/2 in		
DC-DLSS30-12M	30	M5	12mm	2.13 [54.1]	2.17 [55.1]
DC-DLSS30-08			1/2 in		
DC-DLSS30-14M			14mm		
DC-DLSS30-10			5/8 in		
DC-DLSS40-08	40	M6	1/2 in	2.20 [55.9]	2.20 [55.9]
DC-DLSS40-14M			14mm		
DC-DLSS40-10			5/8 in		
DC-DLSS40-16M			16mm		

See our website: www.AutomationDirect.com for complete Engineering drawings.

Suremotion Drive Couplings

Oldham Drive Couplings



Features

- Large radial misalignment capability
- Hubs made of aluminum 2011 T8
- Center discs made of Delrin™
- Mechanical 'fuse' prevents damage to other components in over-torque conditions
- Zero backlash
- Corrosion-resistant
- Non-magnetic
- Operating temperature range: -20 to 60 °C (-4 to 140 °F)

- Electrical isolation
- Absorbs shock and isolates vibration
- Dampens resonance
- Speeds up to 3,000rpm
- Low inertia

Applications

- General-purpose applications
- Medium-speed applications

Oldham Aluminum Clamp-Style Drive Coupling Hubs*

Oldham Aluminum Clamp-Style Drive Coupling Hubs*											
Part Number*	Price	Size	Bore	Max rpm	Torque (lb-in [N·m])		Max Offset			Moment of Inertia (lb-in·s ² x10 ⁻⁵)	Weight (lb)
					Peak	Static Break	Radial (in [mm])	Axial (in [mm])	Angular (°)		
DC-DAC19-05M	\$19.50	19	5mm	3,000	15 [1.7]	71 [8.0]	0.016 [0.41]	0.004 [0.1]	1.5	0.518	0.032
DC-DAC19-04	\$19.50		1/4 in								0.032
DC-DAC19-08M	\$19.50		8mm								0.033
DC-DAC25-04	\$26.50	25	1/4 in		35 [4.0]	115 [13.0]			0.004 [0.1]	2.23	0.055
DC-DAC25-08M	\$26.50		8mm								0.054
DC-DAC25-06	\$26.50		3/8 in								0.050
DC-DAC25-10M	\$26.50		10mm								0.050
DC-DAC25-12M	\$26.50		12mm					0.051			
DC-DAC33-06	\$38.00	33	3/8 in		80 [9.0]	465 [52.5]		0.006 [0.15]	10.0	0.097	
DC-DAC33-10M	\$28.00		10mm							0.095	
DC-DAC33-12M	\$38.00		12mm							0.095	
DC-DAC33-08	\$38.00		1/2 in							0.093	
DC-DAC33-14M	\$37.50		14mm							0.091	
DC-DAC33-10	\$30.00		5/8 in							0.088	
DC-DAC33-16M	\$18.50		16mm							0.087	
DC-DAC41-08	\$41.50	41	1/2 in		150 [16.9]	500 [56.5]		0.006 [0.15]	3	28.1	0.186
DC-DAC41-14M	\$42.00		14mm								0.181
DC-DAC41-10	\$41.75		5/8 in								0.177
DC-DAC41-16M	\$42.00		16mm								0.172
DC-DAC41-19M	\$42.00		19mm								0.168
DC-DAC41-12	\$42.00		3/4 in								0.163
DC-DAC50-08	\$86.00	50	1/2 in		265 [29.9]	840 [94.9]		0.020 [0.51]	0.008 [0.2]	66.7	0.260
DC-DAC50-14M	\$86.00		14mm								0.255
DC-DAC50-10	\$86.00		5/8 in								0.249
DC-DAC50-16M	\$86.00		16mm								0.244
DC-DAC50-19M	\$86.00		19mm								0.238
DC-DAC50-12	\$86.00		3/4 in								0.233
DC-DAC50-16	\$86.00		1in								0.227
DC-DAC57-10	\$94.00	57	5/8 in		390 [44.1]	1325 [149.7]		0.008 [0.2]	109.7	0.457	
DC-DAC57-16M	\$94.00		16mm							0.439	
DC-DAC57-19M	\$94.00		19mm							0.422	
DC-DAC57-12	\$94.00		3/4 in							0.404	
DC-DAC57-16	\$94.00		1in							0.386	

* A complete Oldham coupling assembly consists of two hubs and one torque disc, each of the same "size" and each purchased separately. The two hubs can be of different "bore" diameters, if needed for the application.

Suremotion Drive Couplings

Oldham Drive Couplings

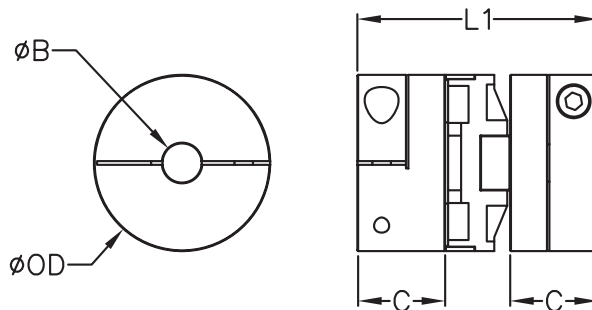


Oldham Aluminum Clamp-Style Drive Coupling Torque Discs*

Part Number *	Price	Size	Color
DC-DDS19	\$2.25	19	black
DC-DDS25	\$4.75	25	
DC-DDS33	\$8.00	33	
DC-DDS41	\$10.00	41	
DC-DDS50	\$23.00	50	
DC-DDS57	\$32.00	57	

* A complete Oldham coupling assembly consists of two hubs and one torque disc, each of the same "size" and each purchased separately. The two hubs can be of different "bore" diameters, if needed for the application.

Dimensions (in [mm])



Oldham Aluminum Drive Coupling Hub Bore Dimensions		
Hubs	Sizes	ØB
DC-DACxx-05M	19	5mm
DC-DACxx-04	19, 25	1/4 in
DC-DACxx-08M	19, 25	8mm
DC-DACxx-06	25, 33	3/8 in
DC-DACxx-10M	25, 33	10mm
DC-DACxx-12M	25, 33	12mm
DC-DACxx-08	33, 41, 50	1/2 in
DC-DACxx-14M	33, 41, 50	14mm
DC-DACxx-10	33, 41, 50, 57	5/8 in
DC-DACxx-16M	33, 41, 50, 57	16mm
DC-DACxx-12	41, 50, 57	3/4 in
DC-DACxx-19M	41, 50, 57	19mm
DC-DACxx-16	50, 57	1in

Oldham Aluminum Clamp-Style Drive Coupling Assembly Dimensions*

Size	Components	Cap Screw	C	L1**	ØOD
			(in [mm])		
19	(2) DC-DAC19-xxx + (1) DC-DDS19	#4-40	0.37 [9.4]	1.02 [25.9]	0.75 [19.1]
25	(2) DC-DAC25-xxx + (1) DC-DDS25	M3	0.46 [11.7]	1.28 [32.5]	1.00 [25.4]
33**	(2) DC-DAC33-xxx + (1) DC-DDS33	M4	0.59 [15.0]	1.89 [48.0]	1.31 [33.3]
41	(2) DC-DAC41-xxx + (1) DC-DDS41	M4	0.70 [17.8]	2.00 [50.8]	1.63 [41.4]
50	(2) DC-DAC50-xxx + (1) DC-DDS50	M5	0.81 [20.6]	2.35 [59.7]	1.97 [50.0]
57	(2) DC-DAC57-xxx + (1) DC-DDS57	M6	1.12 [28.4]	3.07 [78.0]	2.25 [57.2]

* Assembly dimensions are for any (2) hubs + (1) torque disc of the same "size" as assembled. Among components of the same "size," the only dimension that varies is the hub bore diameter (ØB), which is shown separately.

** When DC-DAC33-08 is used with another DC-DAC33-xx bore size, L1 = 45. When 2 DC-DAC33-08 are used together, L1 = 42

See our website: www.AutomationDirect.com for complete Engineering drawings.

Suremotion Drive Couplings

Beam-Style Servo Stainless Steel Set-Screw Couplings



Features

- Flexibility of bellows coupling plus torsional stiffness and strength of disc coupling
- Hubs made of 416 stainless steel
- Flex beams made of 420 stainless steel
- Zero backlash
- Corrosion-resistant
- Bore reducers available to fit a wide variety of bore combinations
- Very wide operating temperature range:
for 24/7 applications:
-73 to 191 °C (-100 to 375 °F)
for intermittent applications (<8hr):
-73 to 232 °C (-100 to 450 °F)

- Speeds up to 10,000rpm
- Torque up to 300 lb-in

Applications

- High performance applications
- High-speed applications
- High-torque applications

Beam-Style Servo Stainless Steel* Set-Screw Drive Coupling Hubs											
Part Number	Price	Size	Bore**	Max rpm	Torsional Stiffness (lb-in/°)	Max Torque (lb-in [N-m])	Max Misalignment			Moment of Inertia (lb-in-s ² x10 ⁻⁵)	Weight (oz)
							Radial (in [mm])	Axial (in [mm])	Angular (°)		
DC-SBS19-0404	\$165.00	19	1/4 in	10,000	11	12 [1.4]	0.010 [0.25]	0.020 [0.51]	7	0.86	0.84
DC-SBS25-0808	\$204.00	25	1/2 in	7,500	27	24 [2.7]	0.015 [0.38]	0.025 [0.64]		3.75	1.60
DC-SBS32-1010	\$225.00	32	5/8 in		51	48 [5.4]		0.030 [0.76]		11.1	2.45
DC-SBS38-1212	\$258.00	38	3/4 in		89	75 [8.5]	0.020 [0.51]	0.040 [1.02]		28.2	4.94
DC-SBS44-1414	\$441.00	44	7/8 in	5,000	135	135 [15.3]		0.050 [1.27]		59.2	7.59
DC-SBS51-1616	\$515.00	51	1 in	3,750	205	180 [20.3]	0.025 [0.64]	0.060 [1.52]		115	11.26
DC-SBS63-2020	\$592.00	63	1-1/4 in		395	300 [33.9]				349	18.67

* Hubs are 416 stainless; flex beams are 420 stainless.

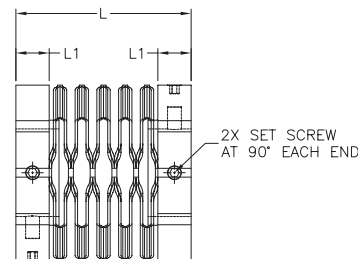
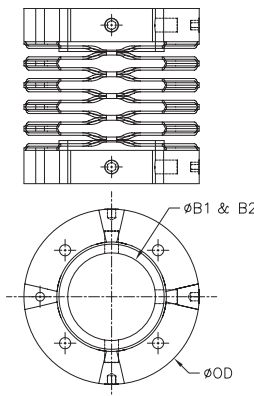
** Bore Reducers can be purchased separately from AutomationDirect and installed in DC-SBSxx-xxxx hubs if different bore sizes are needed.
(See page tPTR-57 for Bore Reducers.)

Dimensions (in [mm])

Beam-Style Servo Stainless Steel Drive Coupling Dimensions						
Size	Set Screw	L	L1	ØB1*	ØB2*	ØOD
(in [mm])						
19	M3x0.5	0.75 [19.1]	0.240 [6.10]	0.250 [6.35]	0.75 [19.1]	
25		1.00 [25.4]	0.345 [8.76]	0.500 [12.70]	1.00 [25.4]	
32	M5x0.8	1.25 [31.6]	0.386 [9.80]	0.625 [15.88]	1.25 [31.6]	
38		1.50 [38.1]	0.505 [12.83]	0.750 [19.05]	1.50 [38.1]	
44		1.75 [44.5]	0.550 [13.97]	0.875 [22.23]	1.75 [44.5]	
51		2.00 [50.8]	0.555 [14.10]	1.000 [25.40]	2.00 [50.8]	
63	M6x1.0	2.50 [63.5]	0.615 [15.62]	1.250 [31.75]	2.50 [63.5]	

* Use bore reducers for additional bore sizes and bore combinations.

See our website: www.AutomationDirect.com for complete Engineering drawings.





Drive Couplings

Accessories – Bore Reducers



Features

- For use in all SureMotion drive coupling hubs to reduce bore size
- Split-collar design with 2 set screw flats will not mark shaft
- 25% greater holding power than standard split collar
- Hardened stainless steel

Bore Reducers – Stainless Steel Clamping Type						
Part Number	Price	Outside Diameter		Inside Diameter		Length
		Nominal	Actual	Nominal	Actual	
DC-BRS04-02	\$27.50	1/4 in	0.250 in	1/8 in	0.125 in	0.221 in
DC-BRS04-04M	\$27.50			4mm	4mm	
DC-BRS04-03	\$27.50			3/16 in	0.1875 in	
DC-BRS04-05M	\$27.50			5mm	5mm	
DC-BRS08-06M	\$36.00	1/2 in	0.500 in	6mm	6mm	0.449 in
DC-BRS08-04	\$36.00			1/4 in	0.25 in	
DC-BRS08-05	\$37.00			5/16 in	0.3125 in	
DC-BRS08-08M	\$36.00			8mm	8mm	
DC-BRS08-06	\$37.00			3/8 in	0.375 in	
DC-BRS08-10M	\$37.00	5/8 in	0.625 in	10mm	10mm	0.460 in
DC-BRS10-10M	\$42.05			10mm	10mm	
DC-BRS10-07	\$42.05			7/16 in	0.4375 in	
DC-BRS10-12M	\$42.05			12mm	12mm	
DC-BRS10-08	\$42.05			1/2 in	0.5 in	
DC-BRS10-14M	\$42.05			14mm	14mm	
DC-BRS10-09	\$42.05	3/4 in	0.750 in	9/16 in	0.5625 in	0.646 in
DC-BRS12-06	\$50.00			3/8 in	0.375 in	
DC-BRS12-12M	\$50.00			12mm	12mm	
DC-BRS12-08	\$50.00			1/2 in	0.5 in	
DC-BRS12-10	\$50.00			5/8 in	0.625 in	
DC-BRS12-16M	\$50.00			16mm	16mm	
DC-BRS12-11	\$50.00	7/8 in	0.875 in	11/16 in	0.6875 in	0.755 in
DC-BRS14-14M	\$54.00			14mm	14mm	
DC-BRS14-10	\$54.00			5/8 in	0.625 in	
DC-BRS14-16M	\$54.00			16mm	16mm	
DC-BRS14-11	\$54.00			11/16 in	0.6875 in	
DC-BRS14-18M	\$54.00			18mm	18mm	
DC-BRS14-12	\$54.00	1 in	1.000 in	3/4 in	0.75 in	0.773 in
DC-BRS16-10	\$54.00			5/8 in	0.625 in	
DC-BRS16-18M	\$55.00			18mm	18mm	
DC-BRS16-12	\$33.00			3/4 in	0.75 in	
DC-BRS16-20M	\$33.00			20mm	20mm	
DC-BRS16-13	\$55.00			13/16 in	0.8125 in	
DC-BRS16-14	\$55.00	1-1/4 in	1.250 in	7/8 in	0.875 in	0.793 in
DC-BRS20-22M	\$56.00			22mm	22mm	
DC-BRS20-24M	\$56.00			24mm	24mm	
DC-BRS20-25M	\$56.00			25mm	25mm	
DC-BRS20-16	\$56.00			1 in	1.0 in	
DC-BRS20-17	\$56.00			1-1/16 in	1.0625 in	
DC-BRS20-18	\$56.00			1-1/8 in	1.125 in	



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
- Standard 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)

"Taper-Lock" is a registered trademark of Reliance Electric
"QD" is a registered trademark of Emerson Electric

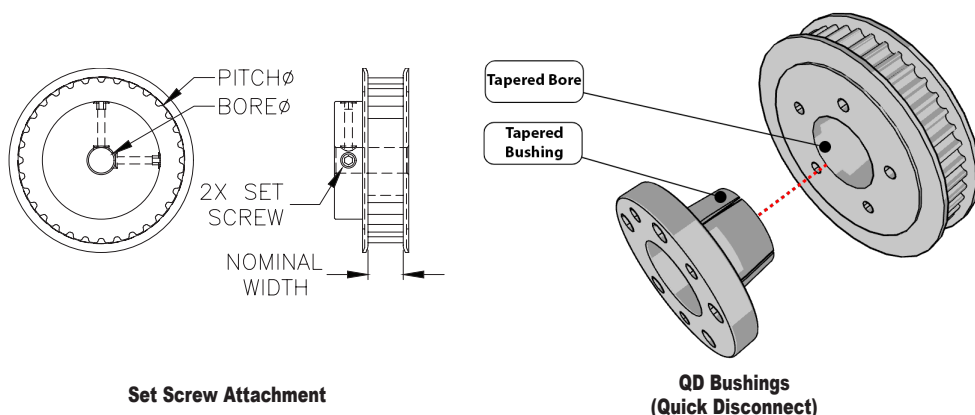




Synchronous Drive Components

Product Overview

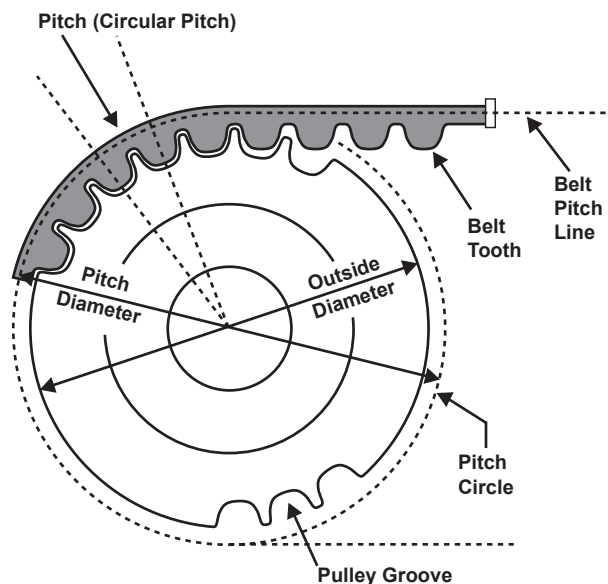
Timing pulleys are offered in several pitches, MXL, XL, L, and 5M and use two attachment styles, set screw and quick disconnect (QD) bushings, shown on the right.



Timing pulleys 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.
- 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):

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

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

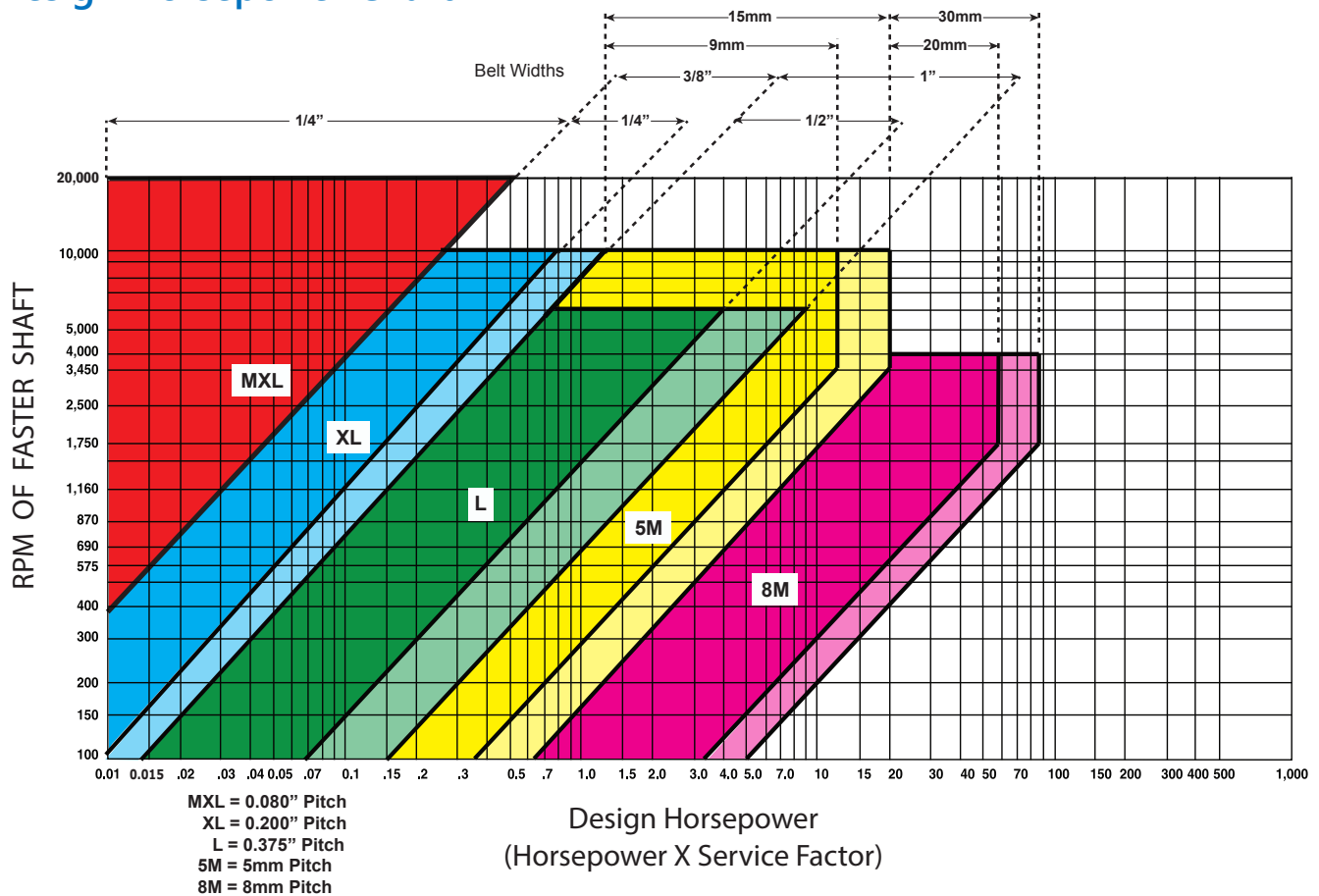
3. Determine Pitch (MXL, XL, L, or 5M) and belt width required by reading Design Horsepower Chart.
4. Select driver and driven pulleys to match desired speed or torque change.
5. Determine belt length per belt length calculation.

Note: AutomationDirect provides an online configuration tool to assist with pulley and belt sizing.

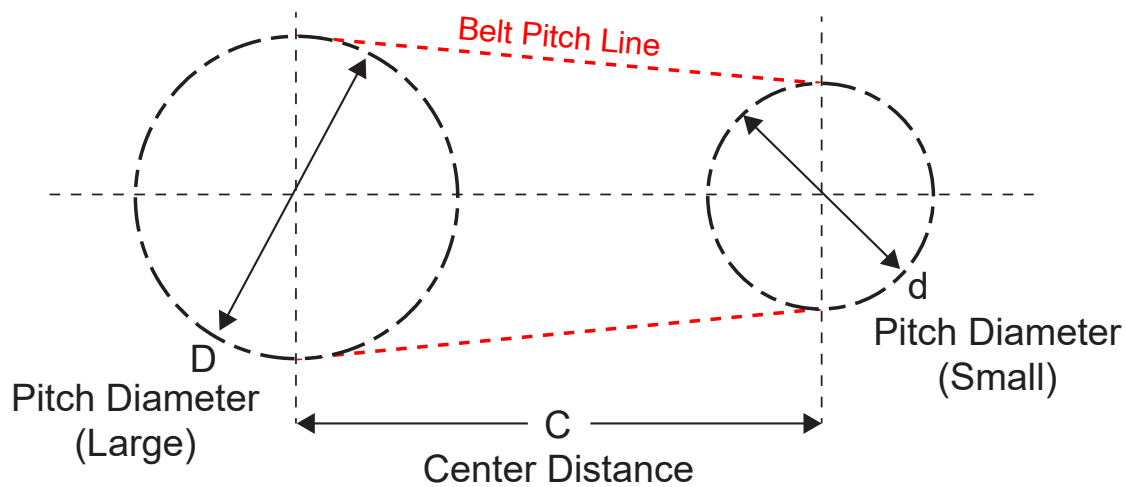
See: www.automationdirect.com/selectors/beltandpulley

Synchronous Drive Components

Design Horsepower Chart



Drive Component Selection Continued



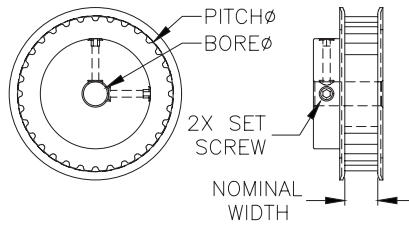
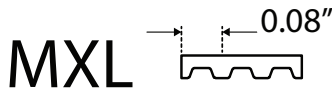
$$\text{Belt Length, } L = 2C + \frac{\pi(D + d)}{2} + \frac{(D - d)^2}{4C}$$



Timing Pulleys

MXL Timing Pulley Features

- Pitch: 0.08in
- Tooth Profile: Trapezoidal
- Attachment: Smooth bore with set screws
- Pulley Material: Aluminum with hard anodize finish



A14-MXL025-B0125

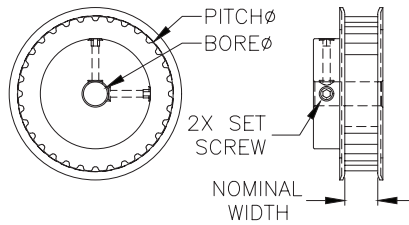
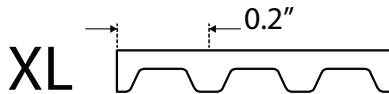
MXL Timing Pulley								
Part Number	Price	# Teeth	Bore Diameter	Nominal Width	Flange (Y/N)	Pitch Diameter	Material	Drawing Link
A14-MXL025-B0125	\$20.00	14	1/8in	1/4in	Yes	0.357in [9.07mm]	Aluminum with anodize finish	PDF
A15-MXL025-B0188	\$20.00	15	3/16in			0.382in [9.7mm]		PDF
A16-MXL025-B0188	\$20.00	16				0.407in [10.34mm]		PDF
A18-MXL025-B0250	\$20.25	18	1/4in			0.458in [11.63mm]		PDF
A20-MXL025-B0250	\$20.50	20				0.509in [12.93mm]		PDF
A21-MXL025-B0188	\$19.00	21	3/16in			0.535in [13.59mm]		PDF
A21-MXL025-B0250	\$21.00		1/4in					PDF
A22-MXL025-B0188	\$19.00	22	3/16in			0.56in [14.22mm]		PDF
A30-MXL025-B0250	\$20.50	30	1/4in		No	0.764in [19.41mm]		PDF
A32-MXL025-B0250	\$21.00	32				0.815in [20.7mm]		PDF
A36-MXL025-B0250	\$21.50	36				0.917in [23.29mm]		PDF
A40-MXL025-B0250	\$23.00	40				1.019in [25.88mm]		PDF
A60-MXL025-B0250	\$27.00	60				1.528in [38.81mm]		PDF
A60NF-MXL025-B0250	\$24.00							PDF
A72NF-MXL025-B0250	\$27.25	72				1.833in [46.56mm]		PDF



Timing Pulleys

XL Timing Pulley Features

- Pitch: 1/5in
- Tooth Profile: Trapezoidal
- Attachment: Smooth bore with set screws
- Pulley Material: Aluminum with hard anodize finish



A10-XL025-B0250

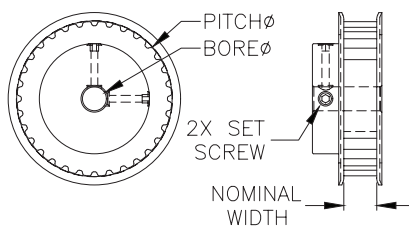
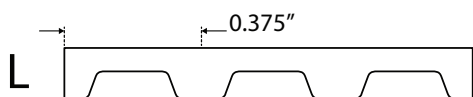
XL Timing Pulley								
Part Number	Price	# Teeth	Bore Diameter	Nominal Width	Flange (Y/N)	Pitch Diameter	Material	Drawing Link
A10-XL025-B0250	\$17.25	10	1/4in	1/4in	Yes	0.637in [16.18mm]	Aluminum with anodize finish	PDF
A15-XL025-B0250	\$19.00	15				0.955in [24.26mm]		PDF
A16-XL025-B0250	\$19.50	16				1.019in [25.88mm]		PDF
A18-XL025-B0250	\$20.00	18				1.146in [29.11mm]		PDF
A20-XL025-B0250	\$21.00	20				1.273in [32.33mm]		PDF
A30-XL025-B0250	\$26.00	30				1.91in [48.51mm]		PDF
A10NH-XL037-0250	\$17.50	10	1/4in	3/8in	Yes	0.637in [16.18mm]	Aluminum with anodize finish	PDF
A10-XL037-B0250	\$18.00							PDF
A12NH-XL037-0250	\$18.00	12				0.764in [19.41mm]		PDF
A12-XL037-B0250	\$18.50							PDF
A14NH-XL037-0250	\$18.50	14				0.891in [22.63mm]		PDF
A14-XL037-B0250	\$19.00							PDF
A15NH-XL037-0250	\$19.25	15				0.955in [24.26mm]		PDF
A16NH-XL037-0250	\$20.00	16				1.019in [25.88mm]		PDF
A16-XL037-B0250	\$20.00							PDF
A18NH-XL037-0250	\$20.00	18				1.146in [29.11mm]		PDF
A18-XL037-B0250	\$20.25							PDF
A19-XL037-B0250	\$21.00	19				1.21in [30.73mm]		PDF
A20NH-XL037-0250	\$21.00	20				1.273in [32.33mm]		PDF
A20-XL037-B0250	\$22.00							PDF
A21-XL037-B0250	\$22.00	21				1.337in [33.96mm]		PDF
A22NH-XL037-0250	\$23.50	22				1.401in [35.59mm]		PDF
A22-XL037-B0250	\$24.25							PDF
A24NH-XL037-0250	\$24.00	24				1.528in [38.81mm]		PDF
A24-XL037-B0250	\$24.50							PDF
A26-XL037-B0250	\$26.00	26				1.655in [42.04mm]		PDF
A28-XL037-B0250	\$28.50	28				1.783in [45.29mm]		PDF
A30NH-XL037-0250	\$27.25	30				1.91in [48.51mm]		PDF
A30-XL037-B0250	\$29.00							PDF
A32NF-XL037-B0312	\$23.50	32	5/16in		No	2.037in [51.74mm]		PDF
A32NH-XL037-0250	\$28.25		1/4in		Yes			PDF
A32-XL037-B0312	\$30.50							PDF
A36NF-XL037-B0312	\$26.00	36	5/16in		No	2.292in [58.22mm]		PDF
A40NF-XL037-B0312	\$31.00	40				2.546in [64.67mm]		PDF
A42NF-XL037-B0312	\$31.50	42				2.674in [67.92mm]		PDF
A44NF-XL037-B0312	\$34.00	44				2.801in [71.15mm]		PDF
A48NF-XL037-B0312	\$37.00	48				3.056in [77.62mm]		PDF
A60NF-XL037-B0375	\$50.00	60	3.82in [97.03mm]			PDF		
A72NF-XL037-B0375	\$66.00	72	4.584in [116.43mm]			PDF		



Timing Pulleys

L Timing Pulley Features

- Pitch: 3/8in
- Tooth Profile: Trapezoidal
- Attachment: Smooth bore with set screws
- Pulley Material: Aluminum with hard anodize finish



A10-L050-B-0375

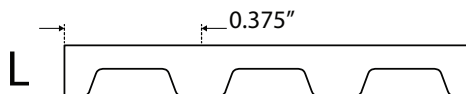
L Timing Pulley								
Part Number	Price	# Teeth	Bore Diameter	Nominal Width	Flange (Y/N)	Pitch Diameter	Material	Drawing Link
<u>A10-L050-B-0375</u>	\$27.00	10	3/8in	1/2in	Yes	1.194in [30.33mm]	Aluminum with anodize finish	<u>PDF</u>
<u>A12-L050-B-0375</u>	\$29.50	12				1.432in [36.37mm]		<u>PDF</u>
<u>A13-L050-B-0375</u>	\$30.00	13				1.552in [39.42mm]		<u>PDF</u>



Timing Pulleys

L Timing Pulley Features

- Pitch: 3/8in
- Tooth Profile: Trapezoidal
- Attachment: Quick Disconnect (QD) style bushing
- Pulley Material: Aluminum with hard anodize finish



A14-L050-SPBO-0375

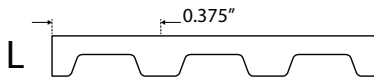
L Timing Pulley								
Part Number	Price	# Teeth	Bore Diameter	Nominal Width	Flange (Y/N)	Pitch Diameter	Material	Drawing Link
A14-L050-SPBO-0375	\$48.50	14	3/8in	1/2in	Yes	1.671in [42.44mm]	Aluminum with anodize finish	PDF
A14-L050-SPBO-0500	\$48.50		1/2in					PDF
A15-L050-SPBO-0375	\$50.00	15	3/8in			1.79in [45.47mm]		PDF
A15-L050-SPBO-0500	\$50.00		1/2in					PDF
A16-L050-SPBO-0500	\$52.00	16	1/2in			1.91in [48.51mm]		PDF
A16-L050-SPBO-0625	\$52.00		5/8in					PDF
A17-L050-SPBO-0500	\$53.00	17	1/2in			2.029in [51.54mm]		PDF
A17-L050-SPBO-0625	\$53.00		5/8in					PDF
A18-L050-SPBO-0500	\$54.00	18	1/2in			2.149in [54.58mm]		PDF
A18-L050-SPBO-0625	\$54.00		5/8in					PDF
A20-L050-SPBO-0500	\$60.00	20	1/2in			2.387in [60.63mm]		PDF
A20-L050-SPBO-0625	\$60.00		5/8in					PDF
A20-L050-SPBO-0750	\$60.00	21	3/4in			2.507in [63.68mm]		PDF
A21-L050-SPBO-0500	\$60.00		1/2in					PDF
A21-L050-SPBO-0625	\$60.00		5/8in					PDF
A21-L050-SPBO-0750	\$60.00	22	3/4in			2.626in [66.7mm]		PDF
A22-L050-SPBO-0500	\$64.00		1/2in					PDF
A22-L050-SPBO-0625	\$64.00		5/8in					PDF
A22-L050-SPBO-0750	\$64.00		3/4in					PDF
A22-L050-SPBO-0875	\$64.00	24	7/8in			2.865in [72.77mm]		PDF
A22-L050-SPBO-1000	\$64.00		1in					PDF
A24-L050-SPBO-0500	\$71.00	26	1/2in			3.104in [78.84mm]		PDF
A24-L050-SPBO-0625	\$71.00		5/8in					PDF
A24-L050-SPBO-0750	\$71.00		3/4in					PDF
A24-L050-SPBO-0875	\$71.00		7/8in					PDF
A24-L050-SPBO-1000	\$71.00	30	1in			3.581in [90.96mm]		PDF
A26-L050-SPBO-0500	\$74.00		1/2in					PDF
A26-L050-SPBO-0625	\$74.00		5/8in					PDF
A26-L050-SPBO-0750	\$74.00		3/4in					PDF
A26-L050-SPBO-0875	\$74.00	32	7/8in			3.82in [97.03mm]		PDF
A26-L050-SPBO-1000	\$74.00		1in					PDF
A30-L050-SPBO-0500	\$91.00	30	1/2in			3.581in [90.96mm]		PDF
A30-L050-SPBO-0625	\$91.00		5/8in					PDF
A30-L050-SPBO-0750	\$91.00		3/4in					PDF
A30-L050-SPBO-0875	\$91.00		7/8in					PDF
A30-L050-SPBO-1000	\$91.00		1in					PDF
A30-L050-SPBO-1125	\$91.00	32	1-1/8in			3.82in [97.03mm]		PDF
A32-L050-SPBO-0500	\$93.00		1/2in					PDF
A32-L050-SPBO-0625	\$93.00		5/8in					PDF
A32-L050-SPBO-0750	\$93.00		3/4in					PDF
A32-L050-SPBO-0875	\$93.00		7/8in					PDF
A32-L050-SPBO-1000	\$93.00		1in					PDF
A32-L050-SPBO-1125	\$93.00		1-1/8in					PDF



Timing Pulleys

L Timing Pulley Features

- Pitch: 3/8in
- Tooth Profile: Trapezoidal
- Attachment: Quick Disconnect (QD) style bushing
- Pulley Material: Aluminum with hard anodize finish



A14-L100-SPBO-0375

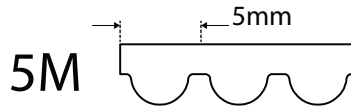
L Timing Pulley								
Part Number	Price	# Teeth	Bore Diameter	Nominal Width	Flange (Y/N)	Pitch Diameter	Material	Drawing Link
A14-L100-SPBO-0375	\$52.50	14	3/8in	1in	Yes	1.671in [42.44mm]	Aluminum with anodize finish	PDF
A16-L100-SPBO-0500	\$58.00	16	1/2in			1.91in [48.51mm]		PDF
A16-L100-SPBO-0625	\$58.00		5/8in			PDF		
A18-L100-SPBO-0500	\$61.00	18	1/2in			2.149in [54.58mm]		PDF
A18-L100-SPBO-0625	\$61.00		5/8in			PDF		
A20-L100-SPBO-0500	\$69.50	20	1/2in			2.387in [60.63mm]		PDF
A20-L100-SPBO-0625	\$69.50		5/8in			PDF		
A20-L100-SPBO-0750	\$69.50		3/4in			PDF		
A22-L100-SPBO-0625	\$75.00	22	5/8in			2.626in [66.7mm]		PDF
A22-L100-SPBO-0750	\$75.00		3/4in			PDF		
A22-L100-SPBO-0875	\$75.00		7/8in			PDF		
A22-L100-SPBO-1000	\$75.00		1in			PDF		
A24-L100-SPBO-0625	\$79.50	24	5/8in			2.865in [72.77mm]		PDF
A24-L100-SPBO-0750	\$79.50		3/4in			PDF		
A24-L100-SPBO-0875	\$79.50		7/8in			PDF		
A24-L100-SPBO-1000	\$79.50		1in			PDF		
A26-L100-SPBO-0625	\$84.50	26	5/8in			3.104in [78.84mm]		PDF
A26-L100-SPBO-0750	\$84.50		3/4in			PDF		
A26-L100-SPBO-0875	\$84.50		7/8in			PDF		
A26-L100-SPBO-1000	\$84.50		1in			PDF		
A28-L100-SPBO-0625	\$94.00	28	5/8in			3.342in [84.89mm]		PDF
A28-L100-SPBO-0750	\$94.00		3/4in			PDF		
A28-L100-SPBO-0875	\$94.00		7/8in			PDF		
A28-L100-SPBO-1000	\$94.00		1in			PDF		
A28-L100-SPBO-1125	\$94.00		1-1/8in			PDF		
A28-L100-SPBO-1250	\$94.00	30	1-1/4in			3.581in [90.96mm]		PDF
A30-L100-SPBO-0625	\$106.00		5/8in			PDF		
A30-L100-SPBO-0750	\$106.00		3/4in			PDF		
A30-L100-SPBO-0875	\$106.00		7/8in			PDF		
A30-L100-SPBO-1000	\$106.00		1in			PDF		
A30-L100-SPBO-1125	\$106.00		1-1/8in			PDF		
A30-L100-SPBO-1250	\$106.00	32	1-1/4in			3.82in [97.03mm]		PDF
A32-L100-SPBO-0625	\$109.00		5/8in			PDF		
A32-L100-SPBO-0750	\$109.00		3/4in			PDF		
A32-L100-SPBO-0875	\$109.00		7/8in			PDF		
A32-L100-SPBO-1000	\$109.00		1in			PDF		
A32-L100-SPBO-1125	\$109.00		1-1/8in			PDF		
A32-L100-SPBO-1250	\$109.00	36	1-1/4in			4.297in [109.14mm]		PDF
A36-L100-SPBO-0625	\$127.00		5/8in			PDF		
A36-L100-SPBO-0750	\$127.00		3/4in			PDF		
A36-L100-SPBO-0875	\$127.00		7/8in			PDF		
A36-L100-SPBO-1000	\$127.00		1in			PDF		
A36-L100-SPBO-1125	\$127.00		1-1/8in			PDF		
A36-L100-SPBO-1250	\$127.00	40	1-1/4in			4.775in [121.29mm]		PDF
A40-L100-SPBO-0625	\$159.00		5/8in			PDF		
A40-L100-SPBO-0750	\$159.00		3/4in			PDF		
A40-L100-SPBO-0875	\$159.00		7/8in			PDF		
A40-L100-SPBO-1000	\$159.00		1in			PDF		
A40-L100-SPBO-1125	\$159.00		1-1/8in			PDF		
A40-L100-SPBO-1250	\$159.00		1-1/4in			PDF		



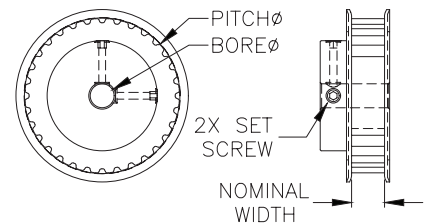
Timing Pulleys

5M Timing Pulley Features

- Pitch: 5mm
- Tooth Profile: Curvilinear
- Attachment: Smooth bore with set screws
- Pulley Material: Aluminum with hard anodize finish



A20-5M15-SS-0625



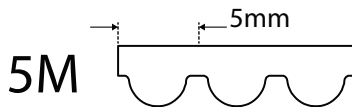
5M Timing Pulley								
Part Number	Price	# Teeth	Bore Diameter	Nominal Width	Flange (Y/N)	Pitch Diameter	Material	Drawing Link
A20-5M10-SS-0625	\$46.50	20	5/8in	9mm	Yes	1.253in [31.83mm]	Aluminum with anodize finish	PDF
A22-5M10-SS-0625	\$39.00	22				1.379in [35.03mm]		PDF
A22-5M10-SS-0750	\$39.00		3/4in			PDF		
A24-5M10-SS-0625	\$39.00	24	5/8in			1.504in [38.2mm]		PDF
A24-5M10-SS-0750	\$39.00		3/4in					PDF
A24-5M10-SS-0875	\$39.00		7/8in					PDF
A25-5M10-SS-0625	\$39.50	25	5/8in			1.566in [39.78mm]		PDF
A25-5M10-SS-0750	\$40.00		3/4in					PDF
A25-5M10-SS-0875	\$40.00		7/8in					PDF
A28-5M10-SS-0625	\$41.50	28	5/8in			1.754in [44.55mm]		PDF
A28-5M10-SS-0750	\$41.50		3/4in					PDF
A28-5M10-SS-0875	\$41.50		7/8in					PDF
A30-5M10-SS-0625	\$45.00	30	5/8in			1.88in [47.75mm]		PDF
A30-5M10-SS-0750	\$45.00		3/4in					PDF
A30-5M10-SS-0875	\$45.00		7/8in					PDF
A32-5M10-SS-0750	\$47.00	32	3/4in			2.005in [50.93mm]		PDF
A32-5M10-SS-0875	\$47.00		7/8in					PDF
A36-5M10-SS-0750	\$51.00	36	3/4in			2.256in [57.3mm]		PDF
A36-5M10-SS-0875	\$51.00		7/8in					PDF
A40-5M10-SS-0750	\$57.00	40	3/4in			2.506in [63.65mm]		PDF
A40-5M10-SS-0875	\$57.00		7/8in					PDF
A42-5M10-SS-0750	\$61.00	42	3/4in			2.632in [66.85mm]		PDF
A42-5M10-SS-0875	\$61.00		7/8in					PDF
A20-5M15-SS-0625	\$48.00	20	5/8in	15mm	Yes	1.253in [31.83mm]	Aluminum with anodize finish	PDF
A22-5M15-SS-0625	\$52.00	22				1.379in [35.03mm]		PDF
A24-5M15-SS-0625	\$52.00	24	1.504in [38.2mm]			PDF		
A24-5M15-SS-0875	\$52.00		7/8in			PDF		
A25-5M15-SS-0625	\$52.50	25	5/8in			1.566in [39.78mm]		PDF
A25-5M15-SS-0875	\$52.50		7/8in					PDF
A28-5M15-SS-0625	\$56.00	28	5/8in			1.754in [44.55mm]		PDF
A28-5M15-SS-0875	\$56.00		7/8in					PDF
A30-5M15-SS-0625	\$61.00	30	5/8in			1.88in [47.75mm]		PDF
A30-5M15-SS-0875	\$61.00		7/8in					PDF
A30-5M15-SS-1125	\$61.00		1-1/8in					PDF
A32-5M15-SS-0875	\$65.00	32	7/8in			2.005in [50.93mm]		PDF
A32-5M15-SS-1125	\$65.00		1-1/8in					PDF
A36-5M15-SS-0875	\$71.00	36	7/8in			2.256in [57.3mm]		PDF
A36-5M15-SS-1125	\$71.00		1-1/8in					PDF
A40-5M15-SS-0875	\$80.00	40	7/8in			2.506in [63.65mm]		PDF
A40-5M15-SS-1125	\$80.00		1-1/8in					PDF
A42-5M15-SS-0875	\$84.50	42	7/8in			2.632in [66.85mm]		PDF
A42-5M15-SS-1125	\$84.50		PDF					
A44-5M15-SS-1125	\$89.00	44	1-1/8in			2.757in [70.03mm]		PDF
A48-5M15-SS-1125	\$94.00	48				3.008in [76.4mm]		PDF



Timing Pulleys

5M Timing Pulley Features

- Pitch: 5mm
- Tooth Profile: Curvilinear
- Attachment: Quick Disconnect (QD) style bushing
- Pulley Material: Aluminum with hard anodize finish



A32-5M10-SPBO-0625

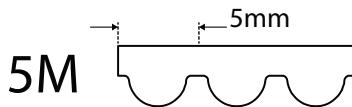
5M Timing Pulley								
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A32-5M10-SPBO-0625	\$76.50	32	5/8in	9mm	Yes	2.005in [50.93mm]	Aluminum with anodize finish	PDF
A36-5M10-SPBO-0625	\$62.00	36				2.256in [57.3mm]		PDF
A40-5M10-SPBO-0625	\$66.00	40				2.506in [63.65mm]		PDF
A42-5M10-SPBO-0625	\$70.50	42				2.632in [66.85mm]		PDF
A44-5M10-SPBO-0625	\$73.00	44	3/4in			2.757in [70.03mm]		PDF
A44-5M10-SPBO-0750	\$73.00							PDF
A44-5M10-SPBO-0875	\$73.00							PDF
A48-5M10-SPBO-0625	\$77.00	48	5/8in			3.008in [76.4mm]		PDF
A48-5M10-SPBO-0750	\$77.00		3/4in					PDF
A48-5M10-SPBO-0875	\$77.00		7/8in					PDF
A60-5M10-SPBO-0625	\$94.00	60	5/8in			3.76in [95.5mm]		PDF
A60-5M10-SPBO-0750	\$94.00		3/4in					PDF
A60-5M10-SPBO-0875	\$94.00		7/8in					PDF
A72-5M10-SPBO-0625	\$112.00	72	5/8in			4.511in [114.58mm]		PDF
A72-5M10-SPBO-0750	\$111.00		3/4in					PDF
A72-5M10-SPBO-0875	\$112.00		7/8in					PDF
A84-5M10-SPBO-0625	\$147.00	84	5/8in			5.263in [133.68mm]		PDF
A84-5M10-SPBO-0750	\$146.00		3/4in					PDF
A84-5M10-SPBO-0875	\$147.00		7/8in					PDF
A96-5M10-SPBO-0625	\$187.00	96	5/8in			6.015in [152.78mm]		PDF
A96-5M10-SPBO-0750	\$186.00		3/4in					PDF
A96-5M10-SPBO-0875	\$187.00		7/8in					PDF
A120-5M10-SPBO-0625	\$251.00	120	5/8in			7.519in [190.98mm]		PDF
A120-5M10-SPBO-0750	\$250.00		3/4in					PDF
A120-5M10-SPBO-0875	\$251.00		7/8in					PDF



Timing Pulleys

5M Timing Pulley Features

- Pitch: 5mm
- Tooth Profile: Curvilinear
- Attachment: Quick Disconnect (QD) style bushing
- Pulley Material: Aluminum with hard anodize finish



A32-5M15-SPBO-0625

5M Timing Pulley								
Part Number	Price	# Teeth	Bore Diameter	Nominal Width	Flange (Y/N)	Pitch Diameter	Material	Drawing Link
A32-5M15-SPBO-0625	\$87.00	32	5/8in	15mm	Yes	2.005in [50.93mm]	Aluminum with anodize finish	PDF
A36-5M15-SPBO-0625	\$90.00	36				2.256in [57.3mm]		PDF
A40-5M15-SPBO-0625	\$99.00	40				2.506in [63.65mm]		PDF
A42-5M15-SPBO-0625	\$102.00	42				2.632in [66.85mm]		PDF
A44-5M15-SPBO-0625	\$108.00	44	7/8in			2.757in [70.03mm]		PDF
A44-5M15-SPBO-0875	\$108.00							PDF
A48-5M15-SPBO-0625	\$115.00	48	5/8in			3.008in [76.4mm]		PDF
A48-5M15-SPBO-0875	\$115.00		7/8in					PDF
A60-5M15-SPBO-0625	\$141.00	60	5/8in			3.76in [95.5mm]		PDF
A60-5M15-SPBO-0875	\$141.00		7/8in					PDF
A60-5M15-SPBO-1125	\$141.00		1-1/8in					PDF
A72-5M15-SPBO-0625	\$170.00	72	5/8in			4.511in [114.58mm]		PDF
A72-5M15-SPBO-0875	\$170.00		7/8in					PDF
A72-5M15-SPBO-1125	\$170.00		1-1/8in					PDF
A84-5M15-SPBO-0625	\$217.00	84	5/8in			5.263in [133.68mm]		PDF
A84-5M15-SPBO-0875	\$217.00		7/8in					PDF
A84-5M15-SPBO-1125	\$217.00		1-1/8in					PDF
A96-5M15-SPBO-0625	\$276.00	96	5/8in			6.015in [152.78mm]		PDF
A96-5M15-SPBO-0875	\$276.00		7/8in					PDF
A96-5M15-SPBO-1125	\$276.00		1-1/8in					PDF
A120-5M15-SPBO-0625	\$372.00	120	5/8in			7.519in [190.98mm]		PDF
A120-5M15-SPBO-0875	\$372.00		7/8in					PDF
A120-5M15-SPBO-1125	\$372.00		1-1/8in					PDF



Synchronous Drive Components

Product Overview



Timing Pulleys



Bushings

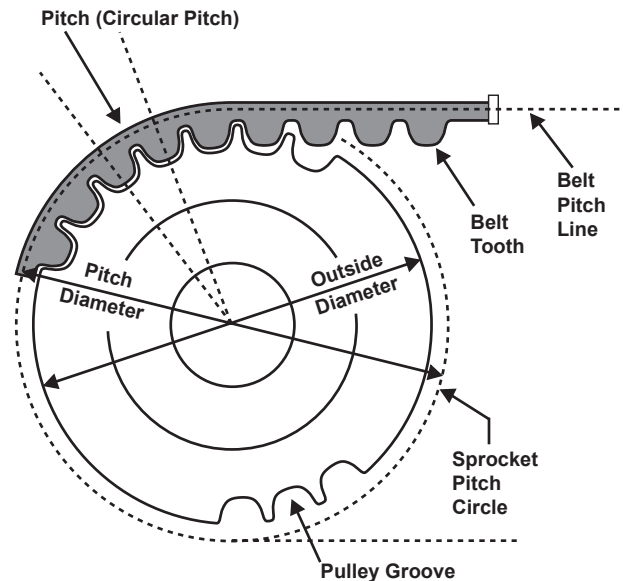


Timing Belts

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:

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

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.

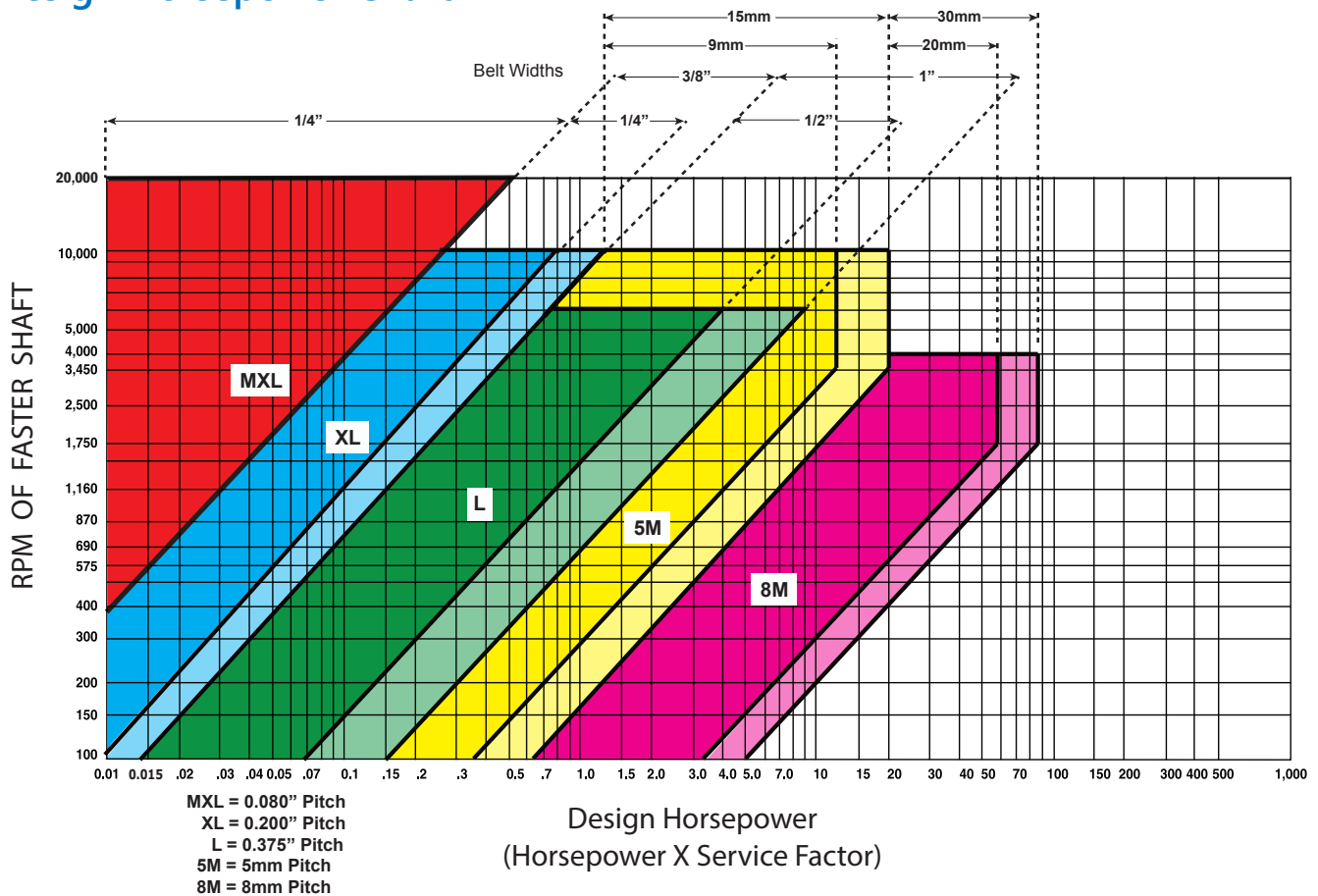
Note: AutomationDirect provides an online configuration tool to assist with pulley and belt sizing.

See: www.automationdirect.com/selectors/beltandpulley

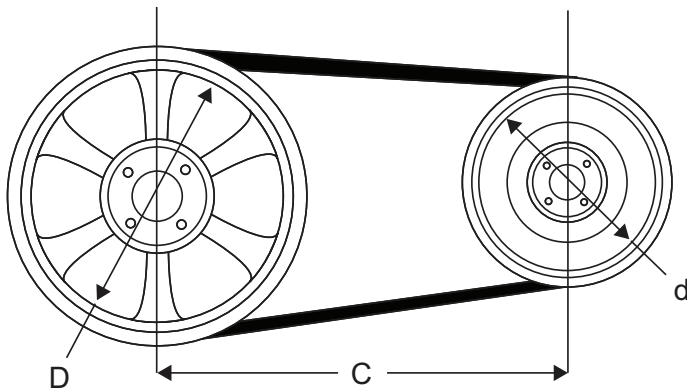


Synchronous Drive Components

Design Horsepower Chart



Drive Component Selection Continued



Belt Length Calculations

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

Where:

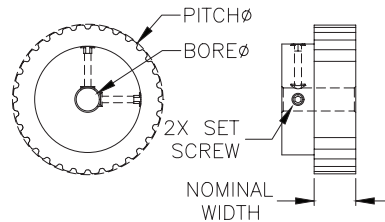
- L = Length of belt at pitch line (in inches)
- C = Center distance (in inches)
- D = Pitch diameter (in inches) of large sprocket
- d = Pitch diameter (in inches) of small sprocket



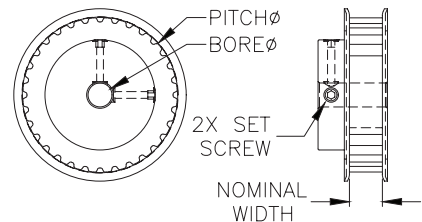
Synchronous Drive Components

MXL Synchronous Timing Belt Pulleys

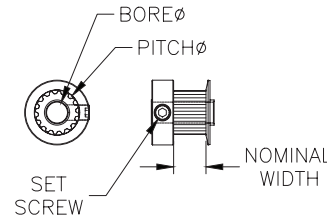
Also referred to as sprockets, SureMotion MXL timing pulleys have a 0.080 inch pitch and 1/4 inch width. Aluminum pulleys are available with a smooth bore and setscrews.



**MXL Pulley with Hub,
No Flange**



**MXL Pulley with Hub
and Flange**



**MXL Pulley with Oversize
Hub and Flange**

Timing Belt Pulleys – Pitch Designation MXL; Plain Bore (With Hub)

Part Number	Price	Weight (lb)	# Grooves (Teeth)	Nominal Width (in)	Flange (Y/N)	Pitch (in)	Pitch Diameter (in)	Bore Diameter	Material*	Part Number	Price	Weight (lb)	# Grooves (Teeth)	Nominal Width (in)	Flange (Y/N)	Pitch (in)	Pitch Diameter (in)	Bore Diameter	Material*
APB10MXL025CF-125	\$15.00	0.1	10	0.25	Y	0.08	0.255	0.125	Al	APB28MXL025BF-250	\$17.50	0.1	28	0.25	Y	0.08	0.713	0.25	Al
APB11MXL025CF-125	\$14.50	0.1	11	0.25	Y	0.08	0.280	0.125	Al	APB30MXL025BF-250	\$19.00	0.1	30	0.25	Y	0.08	0.764	0.25	Al
APB12MXL025CF-125	\$15.00	0.1	12	0.25	Y	0.08	0.306	0.125	Al	APB32MXL025BF-250	\$19.00	0.1	32	0.25	Y	0.08	0.815	0.25	Al
APB14MXL025CF-125	\$16.00	0.1	14	0.25	Y	0.08	0.357	0.125	Al	APB36MXL025BF-250	\$19.00	0.1	36	0.25	Y	0.08	0.917	0.25	Al
APB15MXL025CF-188	\$16.00	0.1	15	0.25	Y	0.08	0.382	0.1875	Al	APB40MXL025BF-250	\$21.50	0.1	40	0.25	Y	0.08	1.019	0.25	Al
APB16MXL025CF-188	\$17.00	0.1	16	0.25	Y	0.08	0.407	0.1875	Al	APB42MXL025BF-250	\$23.00	0.1	42	0.25	Y	0.08	1.070	0.25	Al
APB18MXL025BF-188	\$17.00	0.1	18	0.25	Y	0.08	0.458	0.1875	Al	APB44MXL025BF-250	\$23.00	0.1	44	0.25	Y	0.08	1.120	0.25	Al
APB18MXL025CF-250	Retired	0.1	18	0.25	Y	0.08	0.458	0.25	Al	APB48MXL025BF-250	\$27.00	0.1	48	0.25	Y	0.08	1.222	0.25	Al
APB20MXL025BF-188	\$17.00	0.1	20	0.25	Y	0.08	0.509	0.1875	Al	APB60MXL025BF-250	Retired	0.1	60	0.25	Y	0.08	1.528	0.25	Al
APB20MXL025CF-250	\$17.50	0.1	20	0.25	Y	0.08	0.509	0.25	Al	APB60MXL025B-250	\$30.00	0.1	60	0.25	N	0.08	1.528	0.25	Al
APB21MXL025BF-188	\$17.00	0.1	21	0.25	Y	0.08	0.535	0.1875	Al	APB72MXL025B-250	\$32.00	0.1	72	0.25	N	0.08	1.833	0.25	Al
APB21MXL025CF-250	\$17.50	0.1	21	0.25	Y	0.08	0.535	0.25	Al	APB80MXL025B-312	\$38.50	0.1	80	0.25	N	0.08	2.037	0.3125	Al
APB22MXL025BF-188	\$17.00	0.1	22	0.25	Y	0.08	0.560	0.1875	Al	APB90MXL025B-312	\$43.50	0.1	90	0.25	N	0.08	2.292	0.3125	Al
APB22MXL025CF-250	Retired	0.1	22	0.25	Y	0.08	0.560	0.25	Al	APB100MXL025B-312	\$49.50	0.1	100	0.25	N	0.08	2.546	0.3125	Al
APB24MXL025BF-250	\$17.50	0.1	24	0.25	Y	0.08	0.611	0.25	Al	APB120MXL025B-375	\$57.00	0.1	120	0.25	N	0.08	3.056	0.375	Al
APB25MXL025BF-250	\$17.50	0.1	25	0.25	Y	0.08	0.637	0.25	Al										

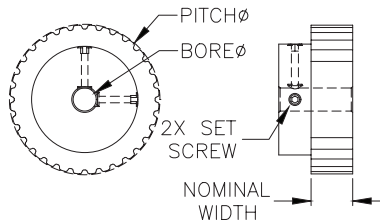
* Al = Aluminum with clear anodized finish; S = Steel



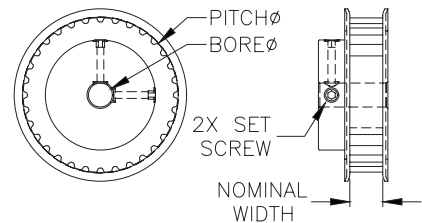
Synchronous Drive Components

XL Synchronous Timing Belt Pulleys

Also referred to as sprockets, SureMotion XL timing pulleys have a 1/5 inch pitch and 1/4 or 3/8 inch width. Both aluminum and steel pulleys are available with a smooth bore and setscrews.



XL Pulley with Hub, No Flange



XL Pulley with Hub and Flange

Timing Belt Pulleys – Pitch Designation XL; Plain Bore (With Hub)

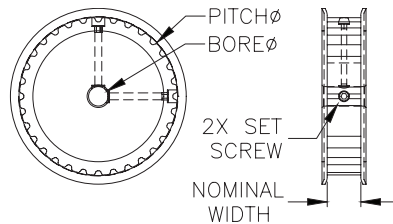
Part Number	Price	Weight (lb)	# Grooves (Teeth)	Nominal Width (in)	Flange (Y/N)	Pitch (in)	Pitch Diameter (in)	Bore Diameter	Max Bore Diameter	Material*	Part Number	Price	Weight (lb)	# Grooves (Teeth)	Nominal Width (in)	Flange (Y/N)	Pitch (in)	Pitch Diameter (in)	Bore Diameter	Max Bore Diameter	Material*
APB10XL025BF-250	\$12.50	0.1	10	0.25	Y	0.20	0.637	0.25	0.25	Al	APB18XL037BF-250	\$17.50	0.1	18	0.375	Y	0.20	1.146	0.25	0.5625	Al
APB11XL025BF-250	\$14.50	0.1	11	0.25	Y	0.20	0.700	0.25	0.25	Al	APB19XL037BF-250	\$17.50	0.1	19	0.375	Y	0.20	1.210	0.25	0.5625	Al
APB12XL025BF-250	Retired	0.1	12	0.25	Y	0.20	0.764	0.25	0.3125	Al	APB20XL037BF-250	\$17.50	0.1	20	0.375	Y	0.20	1.273	0.25	0.6875	Al
APB13XL025BF-250	\$13.50	0.1	13	0.25	Y	0.20	0.828	0.25	0.3125	Al	APB21XL037BF-250	\$21.50	0.1	21	0.375	Y	0.20	1.337	0.25	0.6875	Al
APB14XL025BF-250	\$15.00	0.1	14	0.25	Y	0.20	0.891	0.25	0.375	Al	APB22XL037BF-250	\$23.00	0.1	22	0.375	Y	0.20	1.401	0.25	0.75	Al
APB15XL025BF-250	\$17.50	0.1	15	0.25	Y	0.20	0.955	0.25	0.4375	Al	APB23XL037BF-250	\$24.00	0.1	23	0.375	Y	0.20	1.464	0.25	0.75	Al
APB16XL025BF-250	\$17.50	0.1	16	0.25	Y	0.20	1.019	0.25	0.5	Al	APB24XL037BF-250	\$25.00	0.1	24	0.375	Y	0.20	1.528	0.25	0.8125	Al
APB18XL025BF-250	\$17.00	0.1	18	0.25	Y	0.20	1.146	0.25	0.5625	Al	APB25XL037BF-250	\$27.00	0.1	25	0.375	Y	0.20	1.592	0.25	0.8125	Al
APB20XL025BF-250	\$17.50	0.1	20	0.25	Y	0.20	1.273	0.25	0.6875	Al	APB26XL037BF-250	\$27.00	0.1	26	0.375	Y	0.20	1.655	0.25	0.8125	Al
APB21XL025BF-250	\$20.50	0.1	21	0.25	Y	0.20	1.337	0.25	0.6875	Al	APB28XL037BF-250	\$27.50	0.2	28	0.375	Y	0.20	1.783	0.25	0.9375	Al
APB22XL025BF-250	\$21.50	0.1	22	0.25	Y	0.20	1.401	0.25	0.75	Al	APB30XL037BF-250	\$30.50	0.2	30	0.375	Y	0.20	1.910	0.25	1.0625	Al
APB24XL025BF-250	\$23.00	0.1	24	0.25	Y	0.20	1.528	0.25	0.8125	Al	APB32XL037BF-312	\$30.50	0.2	32	0.375	Y	0.20	2.037	0.312	1.1875	Al
APB26XL025BF-250	\$25.00	0.1	26	0.25	Y	0.20	1.655	0.25	0.8125	Al	APB32XL037B-312	\$32.50	0.2	32	0.375	N	0.20	2.037	0.312	1.1875	Al
APB28XL025BF-250	\$27.50	0.1	28	0.25	Y	0.20	1.783	0.25	0.9375	Al	APB36XL037B-312	\$38.50	0.3	36	0.375	N	0.20	2.292	0.312	1.1875	Al
APB30XL025BF-250	\$30.50	0.2	30	0.25	Y	0.20	1.910	0.25	1.0625	Al	APB40XL037B-312	\$40.50	0.4	40	0.375	N	0.20	2.546	0.312	1.1875	Al
APB10XL037BF-250	Retired	0.1	10	0.375	Y	0.20	0.637	0.25	0.25	Al	APB42XL037B-312	\$41.00	0.4	42	0.375	N	0.20	2.674	0.312	1.1875	Al
APB11XL037BF-250	\$13.00	0.1	11	0.375	Y	0.20	0.700	0.25	0.25	Al	APB44XL037B-312	\$45.50	0.4	44	0.375	N	0.20	2.801	0.312	1.1875	Al
APB12XL037BF-250	\$13.50	0.1	12	0.375	Y	0.20	0.764	0.25	0.3125	Al	APB48XL037B-312	\$48.00	0.5	48	0.375	N	0.20	3.056	0.312	1.1875	Al
APB13XL037BF-250	\$14.50	0.1	13	0.375	Y	0.20	0.828	0.25	0.3125	Al	APB60XL037B-375	\$54.00	0.6	60	0.375	N	0.20	3.820	0.375	1.1875	Al
APB14XL037BF-250	\$15.00	0.1	14	0.375	Y	0.20	0.891	0.25	0.375	Al	APB72XL037B-375	\$59.00	0.9	72	0.375	N	0.20	4.584	0.375	1.1875	Al
APB15XL037BF-250	\$15.50	0.1	15	0.375	Y	0.20	0.955	0.25	0.4375	Al	SPB28XL037BF-250	\$32.50	0.5	28	0.375	Y	0.20	1.783	0.25	0.9375	S
APB16XL037BF-250	\$17.00	0.1	16	0.375	Y	0.20	1.019	0.25	0.5	Al	SPB30XL037BF-312	Retired	0.6	30	0.375	Y	0.20	1.910	0.312	1.0625	S
APB17XL037BF-250	\$17.50	0.1	17	0.375	Y	0.20	1.082	0.25	0.5	Al											

* Al = Aluminum with clear anodized finish; S = Steel



Synchronous Drive Components

XL Synchronous Timing Belt Pulleys Continued



**XL Pulley Hubless,
With Flange**

Timing Belt Pulleys – Pitch Designation XL; Hubless

Part Number	Price	Weight (lb)	# Grooves (Teeth)	Nominal Width (in)	Flange (Y/N)	Pitch (in)	Pitch Diameter (in)	Bore Diameter	Max Bore Diameter	Material*	Part Number	Price	Weight (lb)	# Grooves (Teeth)	Nominal Width (in)	Flange (Y/N)	Pitch (in)	Pitch Diameter (in)	Bore Diameter	Max Bore Diameter	Material*
APB10XL037AF-250	\$14.50	0.1	10	0.375	Y	0.20	0.637	0.25	0.25	Al	APB20XL037AF-250	\$20.50	0.1	20	0.375	Y	0.20	1.273	0.25	0.6875	Al
APB11XL037AF-250	\$14.50	0.1	11	0.375	Y	0.20	0.700	0.25	0.25	Al	APB21XL037AF-250	\$21.50	0.1	21	0.375	Y	0.20	1.337	0.25	0.6875	Al
APB12XL037AF-250	\$14.50	0.1	12	0.375	Y	0.20	0.764	0.25	0.3125	Al	APB22XL037AF-250	\$23.00	0.1	22	0.375	Y	0.20	1.401	0.25	0.75	Al
APB14XL037AF-250	\$17.50	0.1	14	0.375	Y	0.20	0.891	0.25	0.375	Al	APB24XL037AF-250	\$24.00	0.1	24	0.375	Y	0.20	1.528	0.25	0.8125	Al
APB15XL037AF-250	\$17.50	0.1	15	0.375	Y	0.20	0.955	0.25	0.4375	Al	APB28XL037AF-250	\$27.50	0.1	28	0.375	Y	0.20	1.783	0.25	0.9375	Al
APB16XL037AF-250	\$17.50	0.1	16	0.375	Y	0.20	1.019	0.25	0.5	Al	APB30XL037AF-250	\$30.50	0.2	30	0.375	Y	0.20	1.910	0.25	1.0625	Al
APB18XL037AF-250	\$19.00	0.1	18	0.375	Y	0.20	1.146	0.25	0.5625	Al	APB32XL037AF-250	Retired	0.2	32	0.375	Y	0.20	2.037	0.25	1.1875	Al

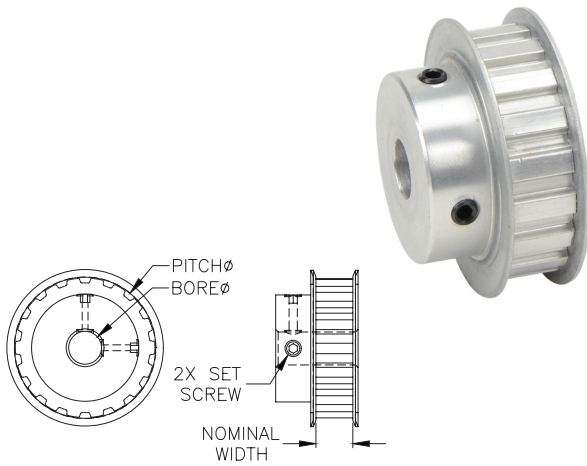
* Al = Aluminum with clear anodized finish; S = Steel



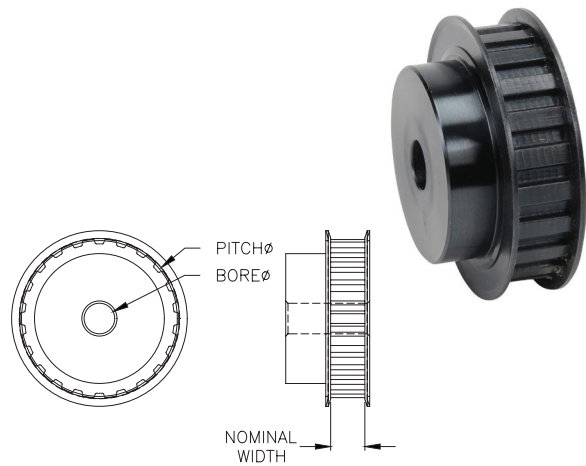
Synchronous Drive Components

L Synchronous Timing Belt Pulleys

Also referred to as sprockets, SureMotion L timing pulleys have a 3/8 inch pitch and 1/2 or 1 inch width. Aluminum pulleys are available with a smooth bore and setscrews. Steel plain bore pulleys require machining by the end user for desired shaft mounting (i.e. bore, keyway, setscrews). Steel pulleys also available to fit Taper-Lock or QD style drive bushings. Bushings sold separately.



L Pulley with Hub, Flange, and Setscrews



L Pulley with Hub, Flange, No Setscrews

Timing Belt Pulleys – Pitch Designation L; Plain Bore (With Hub)

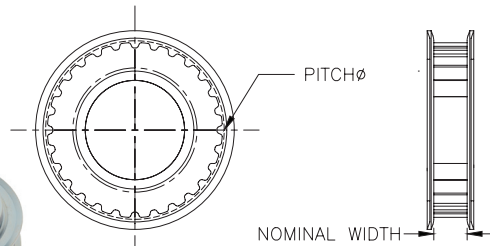
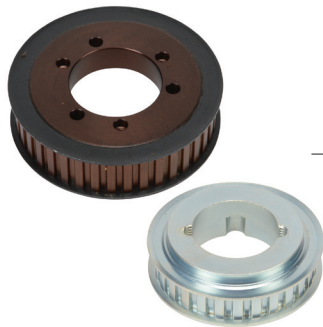
Part Number	Price	Weight (lb)	# Grooves (Teeth)	Nominal Width (in)	Flange (Y/N)	Pitch (in)	Pitch Diameter (in)	Bore Diameter	Max Bore Diameter	Material *	Part Number	Price	Weight (lb)	# Grooves (Teeth)	Nominal Width (in)	Flange (Y/N)	Pitch (in)	Pitch Diameter (in)	Bore Diameter	Max Bore Diameter	Material *
APB10L050BF-375	\$25.00	0.1	10	0.50	Y	0.375	1.194	0.375	0.5625	Al	SPB30L050BF-500	\$77.00	2.4	30	0.50	Y	0.375	3.581	0.50	1.625	S
APB12L050BF-375	\$27.50	0.2	12	0.50	Y	0.375	1.432	0.375	0.8125	Al	SPB32L050BF-500	\$78.00	2.8	32	0.50	Y	0.375	3.820	0.50	1.875	S
APB13L050BF-375	\$30.00	0.2	13	0.50	Y	0.375	1.552	0.375	0.8125	Al	SPB36L050BF-500	\$84.00	4.0	36	0.50	Y	0.375	4.297	0.50	1.875	S
APB14L050BF-375	Retired	0.2	14	0.50	Y	0.375	1.671	0.375	0.875	Al	SPB40L050BF-500	\$96.00	4.7	40	0.50	Y	0.375	4.775	0.50	1.875	S
APB15L050BF-375	\$37.00	0.3	15	0.50	Y	0.375	1.790	0.375	0.9375	Al	SPB14L100BF-375	\$34.00	0.8	14	1.0	Y	0.375	1.671	0.375	0.875	S
APB16L050BF-500	Retired	0.3	16	0.50	Y	0.375	1.910	0.50	1.125	Al	SPB16L100BF-500	\$39.50	1.1	16	1.0	Y	0.375	1.910	0.50	1.125	S
APB17L050BF-500	\$39.50	0.3	17	0.50	Y	0.375	2.029	0.50	1.125	Al	SPB18L100BF-500	\$50.00	1.4	18	1.0	Y	0.375	2.149	0.50	1.1875	S
APB18L050BF-500	\$40.50	0.4	18	0.50	Y	0.375	2.149	0.50	1.1875	Al	SPB20L100BF-500	\$57.00	1.7	20	1.0	Y	0.375	2.387	0.50	1.1875	S
APB19L050BF-500	Retired	0.4	19	0.50	Y	0.375	2.268	0.50	1.1875	Al	SPB22L100BF-625	\$64.00	2.1	22	1.0	Y	0.375	2.626	0.625	1.5	S
APB20L050BF-500	\$54.00	0.5	20	0.50	Y	0.375	2.387	0.50	1.25	Al	SPB24L100BF-625	\$68.00	2.4	24	1.0	Y	0.375	2.865	0.625	1.625	S
APB21L050BF-500	\$59.00	0.5	21	0.50	Y	0.375	2.507	0.50	1.3125	Al	SPB26L100BF-625	\$77.00	2.8	26	1.0	Y	0.375	3.104	0.625	1.625	S
APB22L050BF-500	\$64.00	0.6	22	0.50	Y	0.375	2.626	0.50	1.5	Al	SPB28L100BF-625	\$78.00	3.3	28	1.0	Y	0.375	3.342	0.625	1.875	S
APB24L050BF-500	\$79.00	0.7	24	0.50	Y	0.375	2.865	0.50	1.625	Al	SPB30L100BF-625	\$91.00	3.8	30	1.0	Y	0.375	3.581	0.625	1.875	S
SPB22L050BF-500	Retired	1.5	22	0.50	Y	0.375	2.626	0.50	1.5	S	SPB32L100BF-625	\$107.00	4.5	32	1.0	Y	0.375	3.820	0.625	1.875	S
SPB24L050BF-500	\$57.00	1.7	24	0.50	Y	0.375	2.865	0.50	1.625	S	SPB36L100BF-625	\$123.00	5.7	36	1.0	Y	0.375	4.297	0.625	1.875	S
SPB26L050BF-500	\$59.00	1.9	26	0.50	Y	0.375	3.104	0.50	1.625	S	SPB40L100BF-625	\$139.00	6.8	40	1.0	Y	0.375	4.775	0.625	1.875	S
SPB28L050BF-500	\$68.00	2.1	28	0.50	Y	0.375	3.342	0.50	1.625	S											

* Al = Aluminum with clear anodized finish; S = Steel



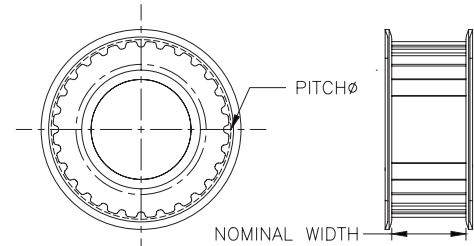
Synchronous Drive Components

L Synchronous Timing Belt Pulleys



QD bushing required per table below

SQD Pulley



TL bushing required per table below

STL Pulley

Timing Belt Pulleys – Pitch Designation L; Plain Bore (Without Hub)

Part Number	Price	Weight (lb)	# Grooves (Teeth)	Nominal Width (in)	Flange (Y/N)	Pitch (in)	Pitch Diameter (in)	*QD Type Bushing Required	Material**	Part Number	Price	Weight (lb)	# Grooves (Teeth)	Nominal Width (in)	Flange (Y/N)	Pitch (in)	Pitch Diameter (in)	*Taper-Lock Bushing Required	Material**
SQD20L050AF-JA	\$54.00	0.6	20	0.50	Y	0.375	2.387	JA	S	STL20L050AF-1108	Retired	0.6	20	0.50	Y	0.375	2.387	1108	S
SQD20L100AF-JA	\$62.00	1.0	20	1.0	Y	0.375	2.387	JA	S	STL20L100AF-1108	\$78.00	0.8	20	1.0	Y	0.375	2.387	1108	S
SQD22L050AF-JA	\$56.00	0.8	22	0.50	Y	0.375	2.626	JA	S	STL22L050AF-1108	\$77.00	0.8	22	0.50	Y	0.375	2.626	1108	S
SQD22L100AF-JA	\$65.00	1.0	22	1.0	Y	0.375	2.626	JA	S	STL22L100AF-1108	\$82.00	1.2	22	1.0	Y	0.375	2.626	1108	S
SQD24L050AF-SH	\$56.00	0.6	24	0.50	Y	0.375	2.865	SH	S	STL24L050AF-1210	\$81.00	0.8	24	0.50	Y	0.375	2.865	1210	S
SQD24L100AF-SH	\$68.00	1.0	24	1.0	Y	0.375	2.865	SH	S	STL24L100AF-1210	\$85.00	1.1	24	1.0	Y	0.375	2.865	1210	S
SQD26L050AF-SH	\$57.00	0.9	26	0.50	Y	0.375	3.104	SH	S	STL26L050AF-1210	\$84.00	1.1	26	0.50	Y	0.375	3.104	1210	S
SQD26L100AF-SH	\$68.00	1.4	26	1.0	Y	0.375	3.104	SH	S	STL26L100AF-1210	\$98.00	1.4	26	1.0	Y	0.375	3.104	1210	S
SQD28L050AF-SH	\$60.00	1.1	28	0.50	Y	0.375	3.342	SH	DI	STL28L050AF-1210	\$87.00	1.5	28	0.50	Y	0.375	3.342	1210	DI
SQD28L100AF-SH	\$73.00	1.8	28	1.0	Y	0.375	3.342	SH	DI	STL28L100AF-1610	\$109.00	1.4	28	1.0	Y	0.375	3.342	1610	DI
SQD30L050AF-SDS	\$65.00	1.1	30	0.50	Y	0.375	3.581	SDS	DI	STL30L050AF-1610	\$91.00	1.3	30	0.50	Y	0.375	3.581	1610	DI
SQD30L100AF-SDS	\$78.00	1.9	30	1.0	Y	0.375	3.581	SDS	DI	STL30L100AF-1610	Retired	1.9	30	1.0	Y	0.375	3.581	1610	DI
SQD32L050AF-SDS	\$65.00	1.4	32	0.50	Y	0.375	3.820	SDS	DI	STL32L050AF-1610	\$96.00	1.7	32	0.50	Y	0.375	3.820	1610	DI
SQD32L100AF-SDS	\$84.00	2.3	32	1.0	Y	0.375	3.820	SDS	DI	STL32L100AF-1610	\$145.00	2.4	32	1.0	Y	0.375	3.820	1610	DI
SQD36L050AF-SDS	\$112.00	2.0	36	0.50	Y	0.375	4.297	SDS	DI	STL36L050AF-1610	\$125.00	2.3	36	0.50	Y	0.375	4.297	1610	DI
SQD36L100AF-SDS	\$129.00	2.6	36	1.0	Y	0.375	4.297	SDS	DI	STL36L100AF-1610	Retired	3.4	36	1.0	Y	0.375	4.297	1610	DI
SQD40L050AF-SDS	\$142.00	2.7	40	0.50	Y	0.375	4.775	SDS	DI	STL40L050AF-2012	\$148.00	3.2	40	0.50	Y	0.375	4.775	2012	DI
SQD40L100AF-SDS	\$148.00	3.5	40	1.0	Y	0.375	4.775	SDS	DI	STL40L100AF-2012	\$156.00	3.8	40	1.0	Y	0.375	4.775	2012	DI
SQD44L050AF-SDS	\$129.00	3.4	44	0.50	Y	0.375	5.252	SDS	DI	STL48L050AF-2012	\$180.00	5.5	48	0.50	Y	0.375	5.730	2012	DI
SQD44L100AF-SDS	\$149.00	4.3	44	1.0	Y	0.375	5.252	SDS	DI	STL48L100AF-2012	\$192.00	6.4	48	1.0	Y	0.375	5.730	2012	DI
SQD48L050AF-SDS	\$148.00	4.2	48	0.50	Y	0.375	5.730	SDS	DI	STL60L050AF-2012	\$260.00	6.4	60	0.50	N	0.375	7.162	2012	CI
SQD48L100AF-SDS	\$156.00	5.1	48	1.0	Y	0.375	5.730	SDS	DI	STL60L100AF-2012	Retired	11	60	1.0	N	0.375	7.162	2012	CI
SQD60L050AF-SD ***	\$153.00	5.5	60	0.50	Y	0.375	7.162	SD	CI	STL72L050AF-2012	\$268.00	8.9	72	0.50	N	0.375	8.594	2012	CI
SQD60L100AF-SD ***	\$159.00	6.6	60	1.0	Y	0.375	7.162	SD	CI	STL72L100AF-2012	\$306.00	12.0	72	1.0	N	0.375	8.594	2012	CI
SQD72L050AF-SD ***	\$156.00	8.5	72	0.50	Y	0.375	8.594	SD	CI	STL84L050AF-2517	\$292.00	16.1	84	0.50	N	0.375	10.027	2517	CI
SQD72L100AF-SD ***	\$173.00	7.3	72	1.0	Y	0.375	8.594	SD	CI	STL84L100AF-2517	\$331.00	12.2	84	1.0	N	0.375	10.027	2517	CI
SQD84L050AF-SD ***	Retired	11.9	84	0.50	Y	0.375	10.027	SD	CI										
SQD84L100AF-SD ***	\$170.00	9.4	84	1.0	Y	0.375	10.027	SD	CI										

* "QD" is a registered trademark of Emerson Electric, "Taper-Lock" (TL) is a registered trademark of Reliance Electric.

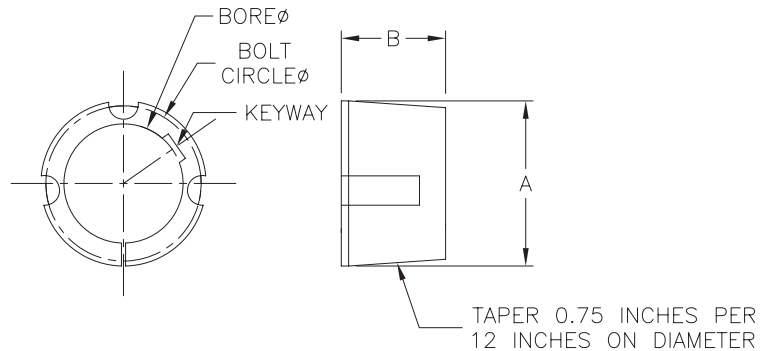
** S = Steel; DI = Ductile Iron; CI = Cast Iron

*** SQDxxxxxAF-SD pulleys do not have flanges.



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	1.25	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	Retired	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		1/4	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	2	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	Retired	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		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	2.5	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		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.

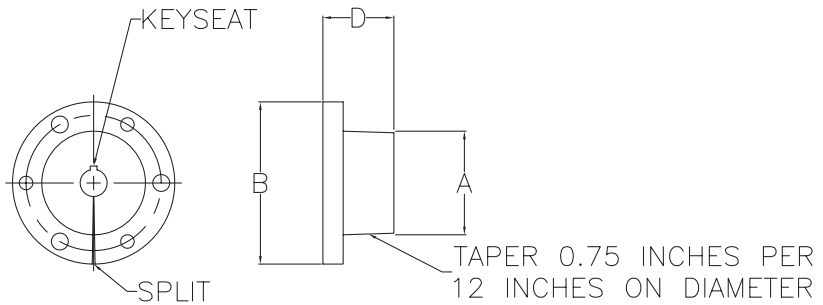
* S = Steel

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

QD®* Style Bushings



QD® Bushings														
Part Number	Price	Weight (lb)	Series	Torque Capacity (lb-in)	Bore Size (in)		Keyway (in)	Dimensions (in)			Bolt Circle (in)	Cap Screws		Material*
					Nominal	Max. with Shallow Keyseat		A	B	D		#	Size	
QD-JA-0500	\$20.50	0.5	JA	1750	0.500	1-1/4	1/8	1.375	2.0	1.0	1.6563	3	#10 x 1	S
QD-JA-0625	\$19.00	0.5		1750	0.625	1-1/4	3/16	1.375	2.0	1.0	1.6563	3	#10 x 1	S
QD-JA-0750	\$19.00	0.4		1750	0.750	1-1/4	3/16	1.375	2.0	1.0	1.6563	3	#10 x 1	S
QD-JA-0875	\$19.00	0.4		1750	0.875	1-1/4	3/16	1.375	2.0	1.0	1.6563	3	#10 x 1	S
QD-SH-0500	\$27.50	1.3	SH	3500	0.500	1-5/8	1/8	1.871	2.6875	1.25	2.25	3	1/4 x 1-3/8	S
QD-SH-0625	\$27.50	1.2		3500	0.625	1-5/8	3/16	1.871	2.6875	1.25	2.25	3	1/4 x 1-3/8	S
QD-SH-0750	\$27.50	1.2		3500	0.750	1-5/8	3/16	1.871	2.6875	1.25	2.25	3	1/4 x 1-3/8	S
QD-SH-0875	\$27.50	1.2		3500	0.875	1-5/8	3/16	1.871	2.6875	1.25	2.25	3	1/4 x 1-3/8	S
QD-SH-1000	\$27.50	1.1		3500	1.000	1-5/8	1/4	1.871	2.6875	1.25	2.25	3	1/4 x 1-3/8	S
QD-SDS-0625	Retired	1.8	SDS	5000	0.625	1-15/16	3/16	2.1875	3.1875	1.3125	2.6875	3	1/4 x 1-3/8	S
QD-SDS-0750	\$34.00	1.8		5000	0.750	1-15/16	3/16	2.1875	3.1875	1.3125	2.6875	3	1/4 x 1-3/8	S
QD-SDS-0875	\$34.00	1.8		5000	0.875	1-15/16	3/16	2.1875	3.1875	1.3125	2.6875	3	1/4 x 1-3/8	S
QD-SDS-1000	\$34.00	1.6		5000	1.000	1-15/16	1/4	2.1875	3.1875	1.3125	2.6875	3	1/4 x 1-3/8	S
QD-SDS-1125	\$34.00	1.5		5000	1.125	1-15/16	1/4	2.1875	3.1875	1.3125	2.6875	3	1/4 x 1-3/8	S
QD-SD-0750	\$39.50	2.2	SD	5000	0.750	1-15/16	3/16	2.1875	3.1875	1.8125	2.6875	3	1/4 x 1-7/8	S
QD-SD-0875	\$39.50	2.1		5000	0.875	1-15/16	3/16	2.1875	3.1875	1.8125	2.6875	3	1/4 x 1-7/8	S
QD-SD-1000	\$39.50	2.0		5000	1.000	1-15/16	1/4	2.1875	3.1875	1.8125	2.6875	3	1/4 x 1-7/8	S
QD-SD-1125	\$39.50	1.9		5000	1.125	1-15/16	1/4	2.1875	3.1875	1.8125	2.6875	3	1/4 x 1-7/8	S
QD-SD-1250	\$39.50	1.8		5000	1.250	1-15/16	1/4	2.1875	3.1875	1.8125	2.6875	3	1/4 x 1-7/8	S

*QD® is a registered trademark of Emerson Electric.

* S = Steel

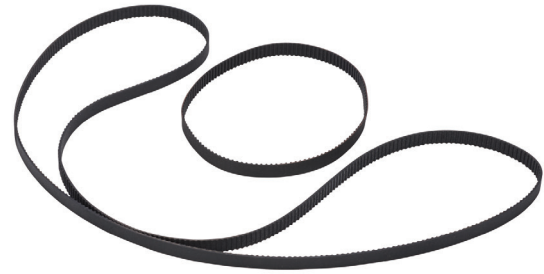
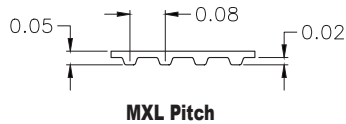
Note: Stock bore sizes shown. Bushings may be re-bored up the maximum size listed. Maximum bores may require a shallow keyway and rectangular key.



Synchronous Drive Belts (MXL)

Synchronous Drive Timing Belts Neoprene with Fiberglass Reinforcement

SureMotion timing belts are an excellent choice for many industrial applications. Belts are neoprene with fiberglass reinforcement. Neoprene belts have excellent resilience and are flame resistant.



xxMXL025NG Tensile Rating: 103 lbf [458 N]

Neoprene with Fiberglass Reinforcement Timing Belts															
<i>Part Number</i>	<i>Price Per 3pc Pkg</i>	<i>Weight (lb)</i>	<i># Teeth</i>	<i>Pitch Designation</i>	<i>Pitch (in)</i>	<i>Circumference (in)</i>	<i>Width (in)</i>	<i>External ID</i>	<i>listprice</i>	<i>Weight (lb)</i>	<i># Teeth</i>	<i>Pitch Designation</i>	<i>Pitch (in)</i>	<i>Circumference (in)</i>	<i>Width (in)</i>
36MXL025NG	\$12.50	0.1	36	MXL	0.08	2.88	0.25	85MXL025NG	\$13.00	0.1	85	MXL	0.08	6.80	0.25
40MXL025NG	\$12.50	0.1	40	MXL	0.08	3.20	0.25	87MXL025NG	\$13.00	0.1	87	MXL	0.08	6.96	0.25
42MXL025NG	\$12.50	0.1	42	MXL	0.08	3.36	0.25	88MXL025NG	\$13.50	0.1	88	MXL	0.08	7.04	0.25
44MXL025NG	\$12.50	0.1	44	MXL	0.08	3.52	0.25	90MXL025NG	\$13.50	0.1	90	MXL	0.08	7.20	0.25
45MXL025NG	\$12.50	0.1	45	MXL	0.08	3.60	0.25	91MXL025NG	\$13.50	0.1	91	MXL	0.08	7.28	0.25
47MXL025NG	\$12.50	0.1	47	MXL	0.08	3.76	0.25	95MXL025NG	\$13.50	0.1	95	MXL	0.08	7.60	0.25
48MXL025NG	\$12.50	0.1	48	MXL	0.08	3.84	0.25	98MXL025NG	\$13.50	0.1	98	MXL	0.08	7.84	0.25
50MXL025NG	\$12.50	0.1	50	MXL	0.08	4.00	0.25	100MXL025NG	\$13.50	0.1	100	MXL	0.08	8.00	0.25
52MXL025NG	\$12.50	0.1	52	MXL	0.08	4.16	0.25	101MXL025NG	\$13.50	0.1	101	MXL	0.08	8.08	0.25
53MXL025NG	\$12.50	0.1	53	MXL	0.08	4.24	0.25	104MXL025NG	\$13.50	0.1	104	MXL	0.08	8.32	0.25
54MXL025NG	\$12.50	0.1	54	MXL	0.08	4.32	0.25	106MXL025NG	\$13.50	0.1	106	MXL	0.08	8.48	0.25
55MXL025NG	\$12.50	0.1	55	MXL	0.08	4.40	0.25	112MXL025NG	\$13.50	0.1	112	MXL	0.08	8.96	0.25
56MXL025NG	\$12.50	0.1	56	MXL	0.08	4.48	0.25	115MXL025NG	\$14.50	0.1	115	MXL	0.08	9.20	0.25
57MXL025NG	\$12.50	0.1	57	MXL	0.08	4.56	0.25	120MXL025NG	\$14.50	0.1	120	MXL	0.08	9.60	0.25
58MXL025NG	\$12.50	0.1	58	MXL	0.08	4.64	0.25	122MXL025NG	\$14.50	0.1	122	MXL	0.08	9.76	0.25
59MXL025NG	\$12.50	0.1	59	MXL	0.08	4.72	0.25	124MXL025NG	\$14.50	0.1	124	MXL	0.08	9.92	0.25
60MXL025NG	\$12.50	0.1	60	MXL	0.08	4.80	0.25	130MXL025NG	\$14.50	0.1	130	MXL	0.08	10.40	0.25
61MXL025NG	\$12.50	0.1	61	MXL	0.08	4.88	0.25	132MXL025NG	\$14.50	0.1	132	MXL	0.08	10.56	0.25
62MXL025NG	\$12.50	0.1	62	MXL	0.08	4.96	0.25	134MXL025NG	\$14.50	0.1	134	MXL	0.08	10.72	0.25
63MXL025NG	\$13.00	0.1	63	MXL	0.08	5.04	0.25	136MXL025NG	\$17.00	0.1	136	MXL	0.08	10.88	0.25
64MXL025NG	\$13.00	0.1	64	MXL	0.08	5.12	0.25	140MXL025NG	\$15.00	0.1	140	MXL	0.08	11.20	0.25
65MXL025NG	\$13.00	0.1	65	MXL	0.08	5.20	0.25	146MXL025NG	\$15.00	0.1	146	MXL	0.08	11.68	0.25
67MXL025NG	\$13.00	0.1	67	MXL	0.08	5.36	0.25	150MXL025NG	\$15.00	0.1	150	MXL	0.08	12.00	0.25
68MXL025NG	\$13.00	0.1	68	MXL	0.08	5.44	0.25	156MXL025NG	\$19.00	0.1	156	MXL	0.08	12.48	0.25
69MXL025NG	\$13.00	0.1	69	MXL	0.08	5.52	0.25	160MXL025NG	\$15.00	0.1	160	MXL	0.08	12.80	0.25
70MXL025NG	\$13.00	0.1	70	MXL	0.08	5.60	0.25	166MXL025NG	\$15.00	0.1	166	MXL	0.08	13.28	0.25
72MXL025NG	\$13.00	0.1	72	MXL	0.08	5.76	0.25	170MXL025NG	\$15.00	0.1	170	MXL	0.08	13.60	0.25
74MXL025NG	\$13.00	0.1	74	MXL	0.08	5.92	0.25	177MXL025NG	\$19.00	0.1	177	MXL	0.08	14.16	0.25
75MXL025NG	\$13.00	0.1	75	MXL	0.08	6.00	0.25	180MXL025NG	\$17.00	0.1	180	MXL	0.08	14.40	0.25
76MXL025NG	\$13.00	0.1	76	MXL	0.08	6.08	0.25	184MXL025NG	\$17.00	0.1	184	MXL	0.08	14.72	0.25
80MXL025NG	\$13.00	0.1	80	MXL	0.08	6.40	0.25	192MXL025NG	\$17.00	0.1	192	MXL	0.08	15.36	0.25
81MXL025NG	\$13.00	0.1	81	MXL	0.08	6.48	0.25	195MXL025NG	\$17.00	0.1	195	MXL	0.08	15.60	0.25
82MXL025NG	\$13.00	0.1	82	MXL	0.08	6.56	0.25	200MXL025NG	\$17.00	0.1	200	MXL	0.08	16.00	0.25
84MXL025NG	\$13.00	0.1	84	MXL	0.08	6.72	0.25								



Synchronous Drive Belts (MXL)

Synchronous Drive Timing Belts Neoprene with Fiberglass Reinforcement

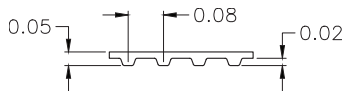
Neoprene with Fiberglass Reinforcement Timing Belts															
Part Number	Price Per 3pc Pkg	Weight (lb)	# Teeth	Pitch Designation	Pitch (in)	Circumference (in)	Width (in)	Part Number	Price Per 3pc Pkg	Weight (lb)	# Teeth	Pitch Designation	Pitch (in)	Circumference (in)	Width (in)
<u>208MXL025NG</u>	\$17.00	0.1	208	MXL	0.08	16.64	0.25	<u>310MXL025NG</u>	\$21.50	0.1	310	MXL	0.08	24.80	0.25
<u>212MXL025NG</u>	\$17.00	0.1	212	MXL	0.08	16.96	0.25	<u>320MXL025NG</u>	\$21.50	0.1	320	MXL	0.08	25.60	0.25
<u>220MXL025NG</u>	\$17.50	0.1	220	MXL	0.08	17.60	0.25	<u>330MXL025NG</u>	\$21.50	0.1	330	MXL	0.08	26.40	0.25
<u>224MXL025NG</u>	\$17.50	0.1	224	MXL	0.08	17.92	0.25	<u>343MXL025NG</u>	\$22.00	0.1	343	MXL	0.08	27.44	0.25
<u>230MXL025NG</u>	\$17.50	0.1	230	MXL	0.08	18.40	0.25	<u>355MXL025NG</u>	\$22.00	0.1	355	MXL	0.08	28.40	0.25
<u>236MXL025NG</u>	\$22.00	0.1	236	MXL	0.08	18.88	0.25	<u>372MXL025NG</u>	\$23.50	0.1	372	MXL	0.08	29.76	0.25
<u>240MXL025NG</u>	\$19.00	0.1	240	MXL	0.08	19.20	0.25	<u>390MXL025NG</u>	\$24.00	0.1	390	MXL	0.08	31.20	0.25
<u>250MXL025NG</u>	\$19.00	0.1	250	MXL	0.08	20.00	0.25	<u>400MXL025NG</u>	\$24.00	0.1	400	MXL	0.08	32.00	0.25
<u>260MXL025NG</u>	\$19.00	0.1	260	MXL	0.08	20.80	0.25	<u>440MXL025NG</u>	\$25.00	0.1	440	MXL	0.08	35.20	0.25
<u>280MXL025NG</u>	\$20.50	0.1	280	MXL	0.08	22.40	0.25	<u>480MXL025NG</u>	\$25.50	0.1	480	MXL	0.08	38.40	0.25
<u>300MXL025NG</u>	\$21.50	0.1	300	MXL	0.08	24.00	0.25	<u>500MXL025NG</u>	\$27.00	0.1	500	MXL	0.08	40.00	0.25



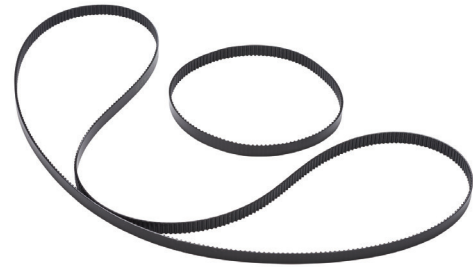
Synchronous Drive Belts (MXL)

Synchronous Drive Timing Belts Urethane with Polyester Reinforcement

SureMotion timing belts are an excellent choice for many industrial applications. Belts are urethane with polyester reinforcement. Urethane belts have excellent wear resistance as well as oil and ozone resistance.



MXL Pitch



xxMXL025PP Tensile Rating: 80 lbf [356 N]

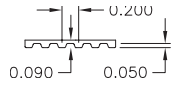
Urethane with Polyester Reinforcement Timing Belts															
Part Number	Price Per 3pc Pkg	Weight (lb)	# Teeth	Pitch Designation	Pitch (in)	Circumference (in)	Width (in)	Part Number	Price Per 3pc Pkg	Weight (lb)	# Teeth	Pitch Designation	Pitch (in)	Circumference (in)	Width (in)
36MXL025PP	\$23.50	0.1	36	MXL	0.08	2.88	0.25	106MXL025PP	\$23.50	0.1	106	MXL	0.08	8.48	0.25
40MXL025PP	\$23.50	0.1	40	MXL	0.08	3.20	0.25	112MXL025PP	\$24.00	0.1	112	MXL	0.08	8.96	0.25
45MXL025PP	\$22.00	0.1	45	MXL	0.08	3.60	0.25	115MXL025PP	\$21.50	0.1	115	MXL	0.08	9.20	0.25
48MXL025PP	\$17.50	0.1	48	MXL	0.08	3.84	0.25	120MXL025PP	\$21.50	0.1	120	MXL	0.08	9.60	0.25
50MXL025PP	\$17.50	0.1	50	MXL	0.08	4.00	0.25	122MXL025PP	\$21.50	0.1	122	MXL	0.08	9.76	0.25
52MXL025PP	\$22.00	0.1	52	MXL	0.08	4.16	0.25	130MXL025PP	\$21.50	0.1	130	MXL	0.08	10.40	0.25
54MXL025PP	\$17.50	0.1	54	MXL	0.08	4.32	0.25	132MXL025PP	\$22.00	0.1	132	MXL	0.08	10.56	0.25
55MXL025PP	\$17.50	0.1	55	MXL	0.08	4.40	0.25	140MXL025PP	\$22.00	0.1	140	MXL	0.08	11.20	0.25
56MXL025PP	\$22.00	0.1	56	MXL	0.08	4.48	0.25	150MXL025PP	\$22.00	0.1	150	MXL	0.08	12.00	0.25
58MXL025PP	\$22.00	0.1	58	MXL	0.08	4.64	0.25	156MXL025PP	\$27.50	0.1	156	MXL	0.08	12.48	0.25
59MXL025PP	\$22.00	0.1	59	MXL	0.08	4.72	0.25	160MXL025PP	\$23.50	0.1	160	MXL	0.08	12.80	0.25
60MXL025PP	\$17.50	0.1	60	MXL	0.08	4.80	0.25	170MXL025PP	\$23.50	0.1	170	MXL	0.08	13.60	0.25
61MXL025PP	\$22.00	0.1	61	MXL	0.08	4.88	0.25	180MXL025PP	\$24.00	0.1	180	MXL	0.08	14.40	0.25
62MXL025PP	\$22.00	0.1	62	MXL	0.08	4.96	0.25	184MXL025PP	\$17.50	0.1	184	MXL	0.08	14.72	0.25
64MXL025PP	\$17.50	0.1	64	MXL	0.08	5.12	0.25	195MXL025PP	\$25.00	0.1	195	MXL	0.08	15.60	0.25
65MXL025PP	\$17.50	0.1	65	MXL	0.08	5.20	0.25	200MXL025PP	\$25.00	0.1	200	MXL	0.08	16.00	0.25
68MXL025PP	\$22.00	0.1	68	MXL	0.08	5.44	0.25	212MXL025PP	\$17.50	0.1	212	MXL	0.08	16.96	0.25
70MXL025PP	\$17.50	0.1	70	MXL	0.08	5.60	0.25	220MXL025PP	\$45.00	0.1	220	MXL	0.08	17.60	0.25
75MXL025PP	\$17.50	0.1	75	MXL	0.08	6.00	0.25	230MXL025PP	\$25.00	0.1	230	MXL	0.08	18.40	0.25
76MXL025PP	\$17.50	0.1	76	MXL	0.08	6.08	0.25	236MXL025PP	\$35.00	0.2	236	MXL	0.08	18.88	0.25
80MXL025PP	\$17.50	0.1	80	MXL	0.08	6.40	0.25	240MXL025PP	\$35.00	0.1	240	MXL	0.08	19.20	0.25
81MXL025PP	\$25.50	0.1	81	MXL	0.08	6.48	0.25	250MXL025PP	\$17.50	0.2	250	MXL	0.08	20.00	0.25
82MXL025PP	\$17.50	0.1	82	MXL	0.08	6.56	0.25	260MXL025PP	\$49.50	0.1	260	MXL	0.08	20.80	0.25
84MXL025PP	\$23.50	0.1	84	MXL	0.08	6.72	0.25	280MXL025PP	\$35.00	0.2	280	MXL	0.08	22.40	0.25
85MXL025PP	\$19.00	0.1	85	MXL	0.08	6.80	0.25	300MXL025PP	\$37.00	0.1	300	MXL	0.08	24.00	0.25
87MXL025PP	\$19.00	0.1	87	MXL	0.08	6.96	0.25	310MXL025PP	\$49.50	0.2	310	MXL	0.08	24.80	0.25
88MXL025PP	\$19.00	0.1	88	MXL	0.08	7.04	0.25	320MXL025PP	\$49.50	0.1	320	MXL	0.08	25.60	0.25
90MXL025PP	\$19.00	0.1	90	MXL	0.08	7.20	0.25	330MXL025PP	\$49.50	0.2	330	MXL	0.08	26.40	0.25
91MXL025PP	\$19.00	0.1	91	MXL	0.08	7.28	0.25	390MXL025PP	\$27.00	0.1	390	MXL	0.08	31.20	0.25
95MXL025PP	\$19.00	0.1	95	MXL	0.08	7.60	0.25	400MXL025PP	\$42.00	0.2	400	MXL	0.08	32.00	0.25
100MXL025PP	\$19.00	0.1	100	MXL	0.08	8.00	0.25								



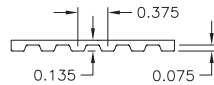
Synchronous Drive Belts (XL and L)

Synchronous Drive Timing Belts Neoprene with Fiberglass Reinforcement

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. Belts are neoprene with fiberglass reinforcement. Neoprene belts have excellent resiliences and are flame resistant.



XL Pitch



L Pitch

xxXL025NG Tensile Rating: 226 lbf [1005 N]
xxXL037NG Tensile Rating: 338 lbf [1503 N]
xxxL050NG Tensile Rating: 500 lbf [2224 N]
xxxL100NG Tensile Rating: 1000 lbf [4448 N]



Neoprene with Fiberglass Reinforcement Timing Belts															
<i>Part Number</i>	<i>Price</i>	<i>Weight (lb)</i>	<i># Teeth</i>	<i>Pitch Designation</i>	<i>Pitch (in)</i>	<i>Circumference (in)</i>	<i>Width (in)</i>	<i>External ID</i>	<i>Price</i>	<i>Weight (lb)</i>	<i># Teeth</i>	<i>Pitch Designation</i>	<i>Pitch (in)</i>	<i>Circumference (in)</i>	<i>Width (in)</i>
60XL025NG	\$3.50	0.1	30	XL	0.200	6	0.25	150L050NG	\$10.00	0.1	40	L	0.375	15	0.50
60XL037NG	\$5.00	0.1	30	XL	0.200	6	0.375	150L100NG	\$19.00	0.1	40	L	0.375	15	1.0
70XL037NG	\$5.00	0.1	35	XL	0.200	7	0.375	187L050NG	\$11.00	0.1	50	L	0.375	18.75	0.50
80XL025NG	\$4.00	0.1	40	XL	0.200	8	0.25	187L100NG	\$21.50	0.1	50	L	0.375	18.75	1.0
80XL037NG	\$5.00	0.1	40	XL	0.200	8	0.375	210L050NG	\$11.50	0.1	56	L	0.375	21	0.50
90XL025NG	\$4.00	0.1	45	XL	0.200	9	0.25	210L100NG	\$23.50	0.1	56	L	0.375	21	1.0
90XL037NG	\$5.75	0.1	45	XL	0.200	9	0.375	225L050NG	\$12.00	0.1	60	L	0.375	22.5	0.50
100XL025NG	\$4.00	0.1	50	XL	0.200	10	0.25	225L100NG	\$23.50	0.1	60	L	0.375	22.5	1.0
100XL037NG	\$5.00	0.1	50	XL	0.200	10	0.375	240L050NG	\$12.50	0.1	64	L	0.375	24	0.50
110XL025NG	\$4.00	0.1	55	XL	0.200	11	0.25	240L100NG	\$25.00	0.1	64	L	0.375	24	1.0
110XL037NG	\$5.00	0.1	55	XL	0.200	11	0.375	244L100NG	\$25.00	0.1	65	L	0.375	24.375	1.0
120XL037NG	\$6.75	0.1	60	XL	0.200	12	0.375	255L050NG	\$13.00	0.1	68	L	0.375	25.5	0.50
130XL025NG	\$4.25	0.1	65	XL	0.200	13	0.25	255L100NG	\$25.00	0.1	68	L	0.375	25.5	1.0
130XL037NG	\$6.75	0.1	65	XL	0.200	13	0.375	270L050NG	\$13.00	0.1	72	L	0.375	27	0.50
140XL025NG	\$4.25	0.1	70	XL	0.200	14	0.25	270L100NG	\$27.00	0.1	72	L	0.375	27	1.0
140XL037NG	\$6.75	0.1	70	XL	0.200	14	0.375	285L050NG	\$13.50	0.1	76	L	0.375	28.5	0.50
150XL025NG	\$4.25	0.1	75	XL	0.200	15	0.25	300L050NG	\$14.50	0.1	80	L	0.375	30	0.50
150XL037NG	\$6.75	0.1	75	XL	0.200	15	0.375	300L100NG	\$27.50	0.1	80	L	0.375	30	1.0
160XL025NG	\$4.25	0.1	80	XL	0.200	16	0.25	322L050NG	\$14.50	0.1	86	L	0.375	32.25	0.50
160XL037NG	\$7.25	0.1	80	XL	0.200	16	0.375	322L100NG	\$30.00	0.2	86	L	0.375	32.25	1.0
170XL025NG	\$4.50	0.1	85	XL	0.200	17	0.25	345L050NG	\$15.00	0.1	92	L	0.375	34.5	0.50
170XL037NG	\$7.25	0.1	85	XL	0.200	17	0.375	345L100NG	\$31.00	0.2	92	L	0.375	34.5	1.0
180XL037NG	\$7.25	0.1	90	XL	0.200	18	0.375	367L050NG	\$16.00	0.1	98	L	0.375	36.75	0.50
190XL025NG	\$4.50	0.1	95	XL	0.200	19	0.25	367L100NG	\$33.50	0.2	98	L	0.375	36.75	1.0
190XL037NG	\$7.50	0.1	95	XL	0.200	19	0.375	390L050NG	\$17.00	0.1	104	L	0.375	39	0.50
200XL025NG	\$4.50	0.1	100	XL	0.200	20	0.25	390L100NG	\$35.00	0.2	104	L	0.375	39	1.0
200XL037NG	\$7.50	0.1	100	XL	0.200	20	0.375	420L050NG	\$17.50	0.1	112	L	0.375	42	0.50
210XL037NG	\$7.50	0.1	105	XL	0.200	21	0.375	420L100NG	\$37.50	0.2	112	L	0.375	42	1.0
220XL037NG	\$8.00	0.1	110	XL	0.200	22	0.375	450L050NG	\$19.00	0.1	120	L	0.375	45	0.50
230XL025NG	\$5.00	0.1	115	XL	0.200	23	0.25	450L100NG	\$38.50	0.2	120	L	0.375	45	1.0
230XL037NG	\$7.75	0.1	115	XL	0.200	23	0.375	480L050NG	\$20.50	0.1	128	L	0.375	48	0.50
240XL037NG	\$7.75	0.1	120	XL	0.200	24	0.375	480L100NG	\$39.50	0.2	128	L	0.375	48	1.0
250XL025NG	\$5.00	0.1	125	XL	0.200	25	0.25	510L050NG	\$21.50	0.1	136	L	0.375	51	0.50
250XL037NG	\$8.50	0.1	125	XL	0.200	25	0.375	510L100NG	\$41.00	0.2	136	L	0.375	51	1.0
260XL025NG	\$5.00	0.1	130	XL	0.200	26	0.25	540L050NG	\$22.00	0.1	144	L	0.375	54	0.50
260XL037NG	\$8.50	0.1	130	XL	0.200	26	0.375	540L100NG	\$42.50	0.3	144	L	0.375	54	1.0
124L050NG	\$8.50	0.1	33	L	0.375	12.375	0.50	600L050NG	\$24.00	0.2	160	L	0.375	60	0.50
124L100NG	\$17.00	0.1	33	L	0.375	13.375	1.0	600L100NG	\$47.00	0.3	160	L	0.375	60	1.0



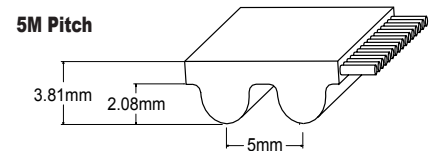
High Torque Drive Belts (5M)

High-Torque Drive Belts (5M Pitch)

Neoprene with Fiberglass Reinforcement

SureMotion High-Torque Drive belts are an excellent choice for drives requiring premium efficiency or synchronous operation and higher power capacity than trapezoidal timing belts. Use them on conveyors, industrial equipment, machine tools, hand power tools, and agricultural equipment where high power density is needed.

- Curvilinear tooth profile (compatible with HTD®)
- Compound: Chloroprene Belt Body, heat and ozone resistant; high tooth shear resistance
- Cord: Fiberglass Tensile Cord; high dimensional stability and maximum flexibility
- Tooth Cover: Nylon Tooth Cover; durability and wear resistance; increased power capacity
- Conforms to ARPM standard IP-27
- Temperature Range: -13°F/+185° (-25°C/+85°C)



xxx-5M-09-NG Tensile Rating: 645 lbf [2869 N]

xxx-5M-15-NG Tensile Rating: 1076 lbf [4786 N]

High Torque Drive Belts (5M)							
Part Number	Price	Weight (lb)	# Teeth	Pitch Designation	Pitch (mm)	Circumference (mm)	Width (mm)
<u>180-5M-09-NG</u>	\$9.50	0.03	36	5M	5	180	9
<u>200-5M-09-NG</u>	\$10.00	0.03	40			200	
<u>225-5M-09-NG</u>	\$10.00	0.04	45			225	
<u>240-5M-09-NG</u>	\$10.50	0.04	48			240	
<u>275-5M-09-NG</u>	\$11.00	0.05	55			275	
<u>300-5M-09-NG</u>	\$11.50	0.05	60			300	
<u>325-5M-09-NG</u>	\$11.50	0.05	65			325	
<u>350-5M-09-NG</u>	\$12.00	0.05	70			350	
<u>375-5M-09-NG</u>	\$12.00	0.05	75			375	
<u>400-5M-09-NG</u>	\$12.50	0.05	80			400	
<u>425-5M-09-NG</u>	\$13.00	0.05	85			425	
<u>450-5M-09-NG</u>	\$13.00	0.05	90			450	
<u>465-5M-09-NG</u>	\$16.00	0.05	93			465	
<u>180-5M-15-NG</u>	\$13.50	0.05	36			180	15
<u>200-5M-15-NG</u>	\$14.50	0.05	40			200	
<u>225-5M-15-NG</u>	\$14.50	0.05	45			225	
<u>240-5M-15-NG</u>	\$15.00	0.05	48			240	
<u>275-5M-15-NG</u>	\$17.00	0.05	55			275	
<u>300-5M-15-NG</u>	\$17.00	0.05	60			300	
<u>325-5M-15-NG</u>	\$17.50	0.05	65			325	
<u>350-5M-15-NG</u>	\$18.50	0.05	70			350	
<u>375-5M-15-NG</u>	\$19.00	0.05	75			375	
<u>400-5M-15-NG</u>	\$19.00	0.05	80			400	
<u>425-5M-15-NG</u>	\$20.50	0.05	85			425	
<u>450-5M-15-NG</u>	\$21.50	0.05	90			450	
<u>465-5M-15-NG</u>	\$25.00	0.05	93			465	



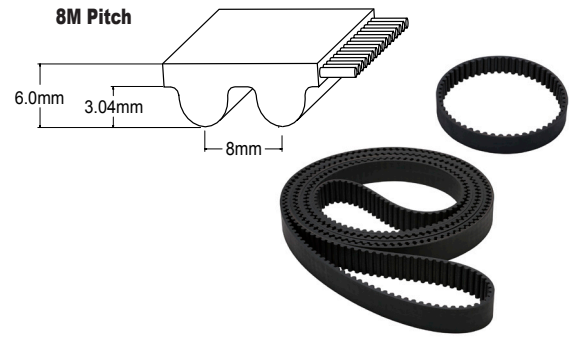
High Torque Drive Belts (8M)

High Torque Drive Belts (8M Pitch)

Neoprene with Fiberglass Reinforcement

SureMotion High-Torque Drive belts are an excellent choice for drives requiring premium efficiency or synchronous operation and higher power capacity than trapezoidal timing belts. Use them on conveyors, industrial equipment, machine tools, hand power tools, and agricultural equipment where high power density is needed.

- Curvilinear tooth profile (compatible with HTD®)
- Compound: Chloroprene Belt Body, heat and ozone resistant; high tooth shear resistance
- Cord: Fiberglass Tensile Cord; high dimensional stability and maximum flexibility
- Tooth Cover: Nylon Tooth Cover; durability and wear resistance; increased power capacity
- Conforms to ARPM standard IP-27
- Temperature Range: -13°F/+185° (-25°C/+85°C)



xxx-8M-20-NG Tensile Rating: 2023 lbf [8998 N]
xxx-8M-30-NG Tensile Rating: 3035 lbf [13500 N]

High Torque Drive Belts (8M)															
Part Number	Price	Weight (lb)	# Teeth	Pitch Designation	Pitch (mm)	Circumference (mm)	Width (mm)	Part Number	Price	Weight (lb)	# Teeth	Pitch Designation	Pitch (mm)	Circumference (mm)	Width (mm)
440-8M-20-NG	\$33.50	0.15	55	8M	8	440	20	440-8M-30-NG	\$47.00	0.2	55	8M	8	440	30
480-8M-20-NG	\$33.50	0.15	60			480		480-8M-30-NG	\$47.00	0.2	60			480	
520-8M-20-NG	\$39.00	0.15	65			520		520-8M-30-NG	\$54.00	0.2	65			520	
560-8M-20-NG	\$37.50	0.15	70			560		560-8M-30-NG	\$50.00	0.25	70			560	
600-8M-20-NG	\$39.00	0.15	75			600		600-8M-30-NG	\$54.00	0.25	75			600	
640-8M-20-NG	\$39.00	0.15	80			640		640-8M-30-NG	\$57.00	0.25	80			640	
720-8M-20-NG	\$42.00	0.2	90			720		720-8M-30-NG	\$60.00	0.3	90			720	
800-8M-20-NG	\$45.50	0.25	100			800		800-8M-30-NG	\$65.00	0.35	100			800	
840-8M-20-NG	\$47.00	0.25	105			840		840-8M-30-NG	\$66.00	0.35	105			840	
880-8M-20-NG	\$49.00	0.25	110			880		880-8M-30-NG	\$70.00	0.35	110			880	
920-8M-20-NG	\$49.00	0.25	115			920		920-8M-30-NG	\$70.00	0.4	115			920	
960-8M-20-NG	\$50.00	0.3	120			960		960-8M-30-NG	\$73.00	0.45	120			960	
1040-8M-20-NG	\$54.00	0.3	130			1040		1040-8M-30-NG	\$79.00	0.45	130			1040	
1064-8M-20-NG	\$54.00	0.3	133			1064		1064-8M-30-NG	\$79.00	0.4	133			1064	
1120-8M-20-NG	\$58.00	0.3	140			1120		1120-8M-30-NG	\$82.00	0.45	140			1120	
1160-8M-20-NG	\$58.00	0.35	145			1160		1160-8M-30-NG	\$84.00	0.5	145			1160	
1200-8M-20-NG	\$60.00	0.35	150			1200		1200-8M-30-NG	\$87.00	0.5	150			1200	
1224-8M-20-NG	\$62.00	0.35	153			1224		1224-8M-30-NG	\$87.00	0.55	153			1224	
1280-8M-20-NG	\$63.00	0.35	160			1280		1280-8M-30-NG	\$91.00	0.5	160			1280	
1440-8M-20-NG	\$68.00	0.35	180			1440		1440-8M-30-NG	\$99.00	0.6	180			1440	
1512-8M-20-NG	\$70.00	0.45	189			1512		1512-8M-30-NG	\$101.00	0.65	189			1512	
1584-8M-20-NG	\$75.00	0.4	198			1584		1584-8M-30-NG	\$108.00	0.6	198			1584	
1600-8M-20-NG	\$75.00	0.45	200			1600		1600-8M-30-NG	\$108.00	0.65	200			1600	
1760-8M-20-NG	\$81.00	0.45	220			1760		1760-8M-30-NG	\$118.00	0.7	220			1760	
1800-8M-20-NG	\$82.00	0.45	225			1800		1800-8M-30-NG	\$119.00	0.7	225			1800	
2000-8M-20-NG	\$90.00	0.55	250			2000		2000-8M-30-NG	\$131.00	0.75	250			2000	
2200-8M-20-NG	\$98.00	0.65	275			2200		2200-8M-30-NG	\$142.00	1	275			2200	
2400-8M-20-NG	\$105.00	0.7	300			2400		2400-8M-30-NG	\$155.00	0.95	300			2400	
2600-8M-20-NG	\$114.00	0.75	325			2600		2600-8M-30-NG	\$165.00	1.15	325			2600	
2800-8M-20-NG	\$122.00	0.85	350			2800		2800-8M-30-NG	\$176.00	1.25	350			2800	
3280-8M-20-NG	\$139.00	0.8	410			3280		3280-8M-30-NG	\$198.00	1.4	410			3280	
3600-8M-20-NG	\$155.00	1.15	450			3600		3600-8M-30-NG	\$219.00	1.6	450			3600	
4400-8M-20-NG	\$183.00	1.3	550			4400		4400-8M-30-NG	\$261.00	2	550			4400	