



Fenner Drives Pulleys, Sprockets and Idlers

Fenner Industrial Motion is the industry leader in molded composite solutions for industrial power transmission and material handling applications. Fenner Drives composite products are used where dependability counts most.

- High-strength glass reinforced composite idlers and pulleys are available in a wide range of sizes for flat, round and V-belts.
- Our composite products are a lightweight, corrosion resistant alternative to steel, aluminum and cast iron.

Fenner Drives has a strong history in the following Markets:

- Data Centers
- Distribution Centers
- Livestock Farming
- Fitness
- HVAC
- Packaging
- Tile



Fenner Drives Engineering Data

Almost all Fenner Drives Pulleys use precision 6203-2RS chrome-alloy steel radial ball bearings (exceptions are noted). These bearings meet all ABEC-1 standards. Our bearings utilize two rubber wiping seals to keep the grease in and contaminants out. See chart for standard load ratings.

Bearing Properties	
Type	6203-2RS
Seals	Rubber Wiping
Fit	ABEC-1 "C4" Internal Clearance
Lubrication	Mobil Polyrex EM or equivalent NLGI No. 2 (30% +/- 5% Fill)
Service Temperature	-20° – 350°F (-30° – 180°C)
Basic Dynamic Load	2150 lbs. (9563N)

Bearings are also available in stainless steel, with trash seals and shields.

6203 Radial Load Ratings											
Speed (RPM)	33	100	200	300	500	1000	1500	1800	2500	3600	5000
Load (lbs)	2141	1480	1175	1026	866	687	601	565	507	449	402
Load (N)	9523	6583	5226	4566	3852	3058	2672	2514	2254	1996	1789

Load Ratings based on 500 HR minimum L₁₀ life.

Bearing Life

How long a bearing will last in an application depends on two variables: first, the bearing's physical properties (material, design, method of manufacture); and second, the conditions of operation (load, speed, temperature, lubrication). Although it is not possible to predict the exact life of a bearing, the designer can calculate the "L10 Life" of a bearing. L10 is the life, in hours or revolutions, that 90% of a group of bearings will complete or exceed. The equations for calculating L10 life are:

Material Properties

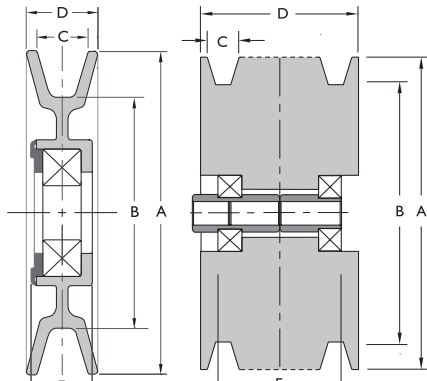
Fenner Industrial Motion uses engineering composites, which ensure the highest level of performance and consistent strength. Our standard material is 33% glass reinforced nylon 6/6. The combination of high strength, temperature resistance and abrasion resistance makes nylon a versatile engineering thermoplastic.

- Revolutions: $L_{10} = \left(\frac{C}{P}\right)^3 \times 10^6$
- Hours: $L_{10} = \left(\frac{C}{P}\right)^3 \times \frac{16667}{N}$
- Where:
 L₁₀ = Rating Life
 C = Basic Dynamic Capacity
 P = Radial Load in lbs.
 N = Speed in RPM

33% GLASS-REINFORCED NYLON 6/6, dry as molded		
PROPERTY	ASTM CODE	VALUE
Tensile Strength at Break	D638	20,000 psi
Flexural Modulus	D790	1,300,000 psi
Heat Deflection Temp @ 264 psi	D648	480°F (249°C)
Continuous Service Temp. (Min. – Max.)	N/A	32° to 225°F (0° to 107°C)
Izod Impact Strength (notched 1/8")	D256	1.3 to 1.8 ft.-lb/in. of notch

Data listed was generated using molded specimens tested under standard conditions. Many of the mechanical properties can be influenced by processing conditions, environmental factors and the application of stress. Therefore, this data characterizes typical production material, and should not be used either to establish specification limits or alone as the basis for engineering design.

Fenner Drives V Belt Idlers

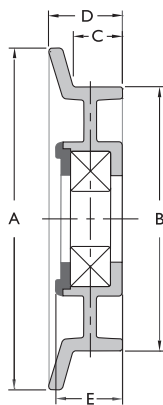


Type 1 V Belt Idler

Type 2 V Belt Idler

Part Number	Type	Grooves	Dimensions (inches)					Belt Size	Bearing Type	Bore Sizes
			A	B	C	D	E			
VA3001†	1	1	3.0	2.0	0.5	0.7	0.81	A	6203-2RS	17mm
VA3002	1	1	3.0	1.84	0.63	0.78	0.81	B	6203-2RS	17mm
VA4001	1	1	3.98	2.99	0.5	0.7	0.81	A	6203-2RS	17mm
VA4002	1	1	4.0	2.84	0.64	0.86	0.81	B	6203-2RS	17mm
VA5001	1	1	5.04	3.84	0.65	0.8	0.82	B	6203-2RS	17mm
VA6001	1	1	6.03	5.12	0.5	0.72	0.81	A	6203-2RS	17mm
VA6250†	1	1	6.25	5.0	0.61	0.95	0.72	A/B	6203-2RS	17mm
VA7501	1	1	7.5	6.6	0.54	0.72	0.75	A	6203-2RS	17mm
V2B6280	2	2	6.28	5.18	0.64	1.72	1.85	B/5V	6203-2RS	.510/.520
V3B6280	2	3	6.28	5.18	0.64	2.44	2.58	B/5V	6203-2RS	.510/.520
V4B6280	2	4	6.28	5.18	0.64	3.16	3.33	B/5V	6203-2RS	.510/.520

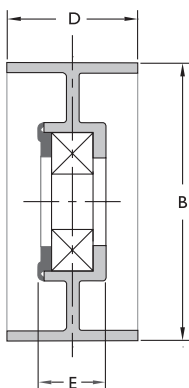
Fenner Drives V Belt Idlers, Single Flange



Single Flange Idler

Part Number	Dimensions (inches)					Belt Size	Bearing Type	Bore Sizes
	A	B	C	D	E			
VA3600	3.6	2.84	0.59	0.84	0.8	B	6203-2RS	17mm
VA4130*	4.13	3.23	0.58	0.86	0.81	B	6203-2RS	17mm

Fenner Drives Flat Belt Idlers, Flangeless



Flat Belt Idler - Flangeless

Part Number	Type	Crown	Dimensions (inches)					Belt Size	Bearing Type	Bore Size
			A	B	C	D	E			
FA2009†	1	No	—	2.0	—	1.0	0.47	13/16"	6203-2RS	17mm
FA2010†	1	No	—	1.98	—	0.75	0.47	5/8"	6203-2DD	17mm
FA2700†	1	No	—	2.71	—	1.05	0.67	7/8"	6203-2RS	17mm
FA2900*	1	Yes	—	2.91	—	1.22	0.76	1"	6203-2RS	17mm
FA3003*	1	No	—	2.96	—	1.09	0.76	29/32"	6203-2RS	17mm
FA3250†	1	No	—	3.2	—	1.01	0.67	13/16"	6203-2DD	17mm
FA4502	1	No	—	4.5	—	1.21	0.82	1"	6203-2RS	17mm
FX0002*‡	1	Yes	—	2.33	—	1.39	—	11/8"	6205-2RS	1"

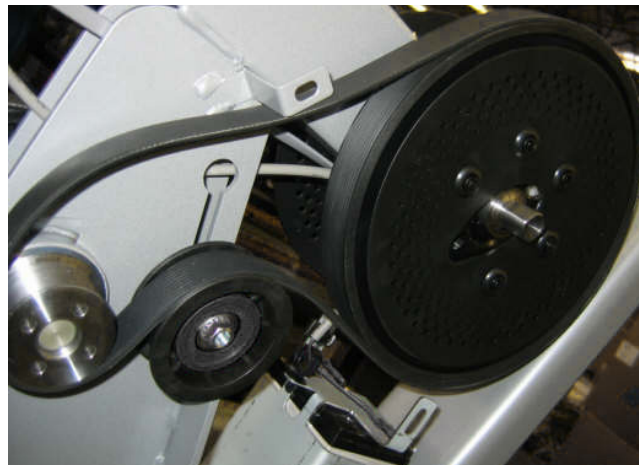
* Consult factory for minimum orders and lead times

† Insertion molded bearing

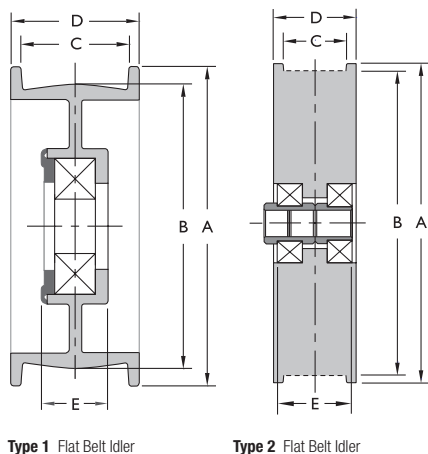
‡ Special 1" bore bearing with extended inner-race

See pg. 15 for mounting adapters

Fenner Drives Pulleys & Idlers



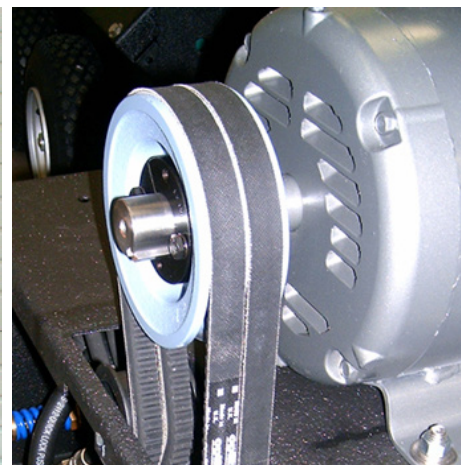
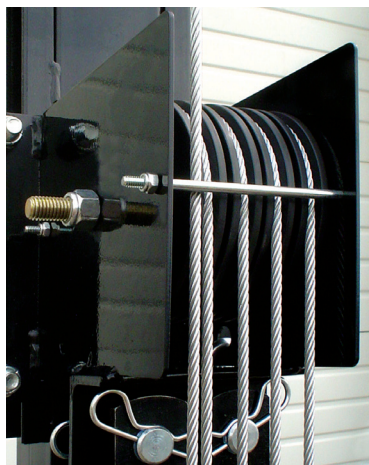
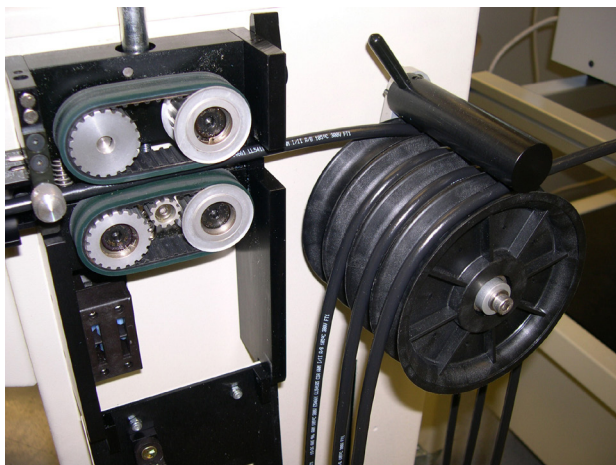
Fenner Drives Flat Belt Idlers, 2 Flange



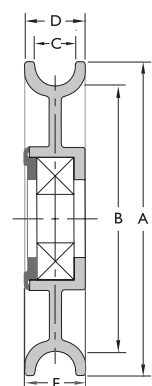
Part Number	Type	Crown	Dimensions (inches)					Belt Size	Bearing Type	Bore Size
			A	B	C	D	E			
FA1870	1	No	1.87	1.53	0.51	0.69	-	1/2"	6202-2RS	15mm
FA2001†	1	Yes	2.07	1.88	1.37	1.54	0.47	1 1/8"	6203-2RS	17mm
FA2002†	1	Yes	2.35	1.99	0.98	1.15	0.47	7/8"	6203-2RS	17mm
FA2003	1	No	2.76	1.94	0.82	1.15	0.75	5/8"	6203-2RS	17mm
FA2501†	1	No	2.48	1.97	1.55	1.85	0.72	11/4"	6203-2RS	17mm
FA2750†	1	Yes	2.75	1.97	1.09	1.4	0.67	29/32"	6203-2RS	17mm
FA2751	1	Yes	2.75	2.52	1	1.22	0.8	13/16"	6203-2RS	17mm
FA3002	1	Yes	3	2.5	1.02	1.31	0.76	7/8"	6203-2RS	17mm
FA3251†	1	Yes	3.24	2.97	1.04	1.2	0.67	7/8"	6203-2DD	17mm
FA3301†	1	Yes	3.38	2.97	1.38	1.67	0.78	11/8"	6203-2RS	17mm
FA3501	1	Yes	3.5	3	0.77	1.09	0.76	5/8"	6203-2RS	17mm
FA3502	1	Yes	3.5	3	1	1.22	0.76	13/16"	6203-2RS	17mm
FA3504	1	Yes	3.48	2.98	0.69	0.9	0.76	1/2"	6203-2RS	17mm
FA3750†	1	Yes	3.75	2.96	1.09	1.38	0.67	29/32"	6203-2RS	17mm
FA3751†	1	Yes	3.8	3.25	1.03	1.24	0.67	7/8"	6203-2RS	17mm
FA4501	1	Yes	4.5	4	1.09	1.39	0.76	29/32"	6203-2RS	17mm
FA4750†	1	Yes	4.75	3.96	1.09	1.38	0.67	29/32"	6203-2RS	17mm
FA5501†	1	Yes	5.56	5.03	1.02	1.29	0.72	7/8"	6203-2RS	17mm
FX0001‡	1	Yes	2.75	2.37	1.07	1.39	—	29/32"	6205-2RS	1"
F1B6280	2	No	6.28	6	1.22	1.63	1.63	1"	6203-2RS	.510/.520
F2B6280	2	No	6.28	6	2.1	2.5	2.5	2"	6203-2RS	.510/.520
F3B6280	2	No	6.28	6	2.91	3.31	3.31	2 3/4"	6203-2RS	.510/.520
F4B6280	2	No	6.28	6	3.85	4.25	4.25	3 3/4"	6203-2RS	.510/.520

* Consult factory for minimum orders and lead times

See pg. 15 for mounting adapters



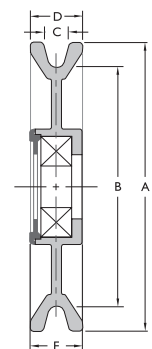
Fenner Drives Round Belt Idlers



Round Belt Idler

Part Number	Dimensions (inches)					Radius	Maximum Belt Size	Bearing Type	Bore Sizes
	A	B	C	D	E				
RA2130	2.13	1.7	0.34	0.50	0.50	0.17	5/16"	6203-2RS	15mm
RA3001	3.05	2.45	0.4	0.61	0.81	0.19	3/8"	6203-2RS	17mm
RA3002	3.05	2.45	0.42	0.61	0.63	0.21	13/32"	6203-2RS	17mm
RA3501	3.5	2.75	0.53	0.76	0.76	0.26	1/2"	6203-2RS	17mm
RA3502	3.5	2.75	0.44	0.76	0.76	0.19	3/8"	6203-2RS	17mm
RA4101	4.12	3.5	0.53	0.68	0.72	0.26	1/2"	6203-2RS	17mm
RA4801	4.8	4	0.53	1	0.77	0.28	1/2"	6203-2RS	17mm
RA4802	4.82	4	0.73	1.06	0.77	0.36	11/16"	6203-2RS	17mm
RA5502†	5.38	4.62	0.38	0.56	0.7	0.19	3/8"	6203-2RS	17mm
SMALL SERIES									
RA1850†	1.84	1.39	0.4	0.63	0.63	0.16	5/16"	6902-2RS	15mm
RA2540	2.54	1.9	0.44	0.63	0.63	0.16	5/16"	6902-2RS	15mm

Fenner Drives Cable Pulleys

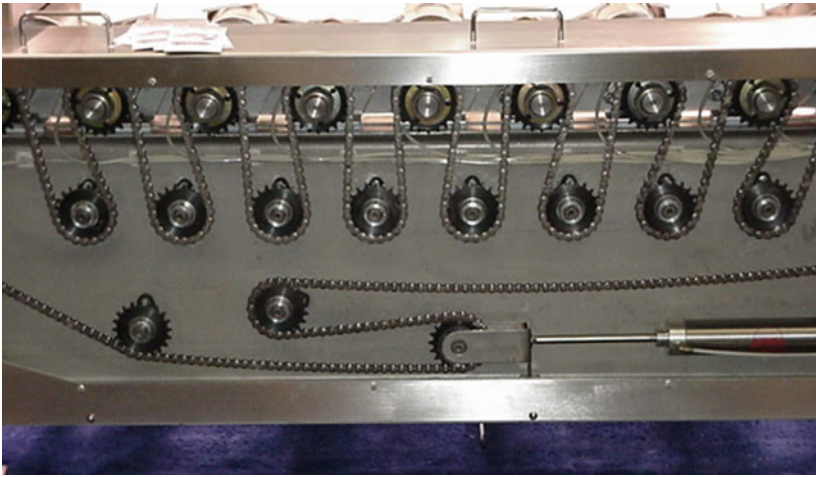


Cable Pulley

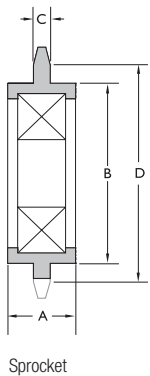
Part Number	Dimensions (inches)					Maximum Cable Size	Bearing Type	Bore Size
	A	B	C	D	E			
RA2701	2.75	2.43	0.23	0.54	0.82	5/32"	6203-2RS	17mm
RA3503†	3.55	2.73	0.39	0.8	0.77	1/4"	6203-2RS	17mm
RA3504	3.5	2.81	0.31	0.65	0.77	7/32"	6203-2RS	17mm
RA4501†	4.46	3.74	0.38	0.86	0.77	1/4"	6203-2RS	17mm
RA4502†	4.46	3.74	0.38	0.86	0.77	3/16"	6203-2RS	17mm
RA5001	5	4.31	0.31	0.65	0.73	3/16"	6203-2RS	17mm
RA5501†	5.5	4.86	0.22	0.53	0.6	5/32"	6203-2RS	17mm
RA6001	6	5.2	0.4	0.8	0.8	1/4"	6203-2RS	17mm

* Consult factory for minimum orders and lead times

See pg. 15 for mounting adapters

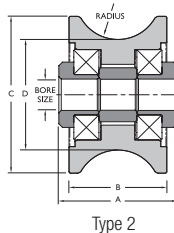
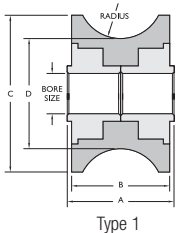


Fenner Drives Sprockets



Part Number	Chain #	# Teeth	Nominal O.D. (in)	Pitch Diameter (in)	Dimensions (inches)			Bearing Type	Bore Size
					A	B	C		
CS3502†	35	19	2.48	2.28	0.67	1.78	0.164	6203-2RS	17mm
CS4002†	40	17	2.98	2.72	0.67	1.78	0.279	6203-2RS	17mm
CS4003†	40	17	2.98	2.72	0.67	1.78	0.279	6203-2RS-10	5/8"
CS4006*†	40	17	2.98	2.72	0.67	1.78	0.279	6203-2RS-12	3/4"
CS5002†	50	15	3.34	3.01	0.67	1.78	0.343	6203-2RS	17mm
CS5004†	50	15	3.34	3.01	0.67	1.78	0.343	6203-2RS-10	5/8"
CS5005*†	50	15	3.34	3.01	0.67	1.78	0.343	6203-2RS-12	3/4"
CS6002†	60	13	3.52	3.14	0.67	1.78	0.449	6203-2RS	17mm
CS6003†	60	13	3.52	3.14	0.67	1.78	0.449	6203-2RS-10	5/8"
CS6004†	60	13	3.52	3.14	0.67	1.78	0.449	6203-2RS-12	3/4"
CS8002†	80	12	4.39	3.86	0.67	1.78	0.58	6203-2RS	17mm
CS8003*†	80	12	4.39	3.86	0.67	1.78	0.58	6203-2RS-10	5/8"
CS8004†	80	12	4.39	3.86	0.67	1.78	0.58	6203-2RS-12	3/4"

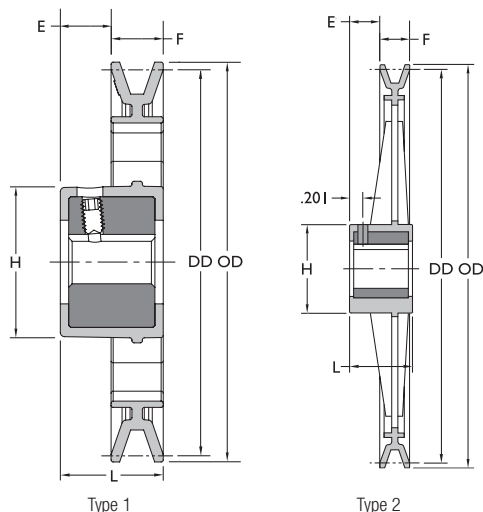
Fenner Drives Carriage Rollers



Part Number	Type	Dimensions (inches)				Radius	Bore Sizes
		A	B	C	D		
RA2002	1	1.36	1.2	1.95	1.37	0.53"	1/2"
RA2004	1	1.48	1.2	1.95	1.37	0.53"	1/2"
RX0219	2	1.48	1.2	1.95	1.38	0.53"	3/8"

- * Consult factory for minimum orders and lead times
- † Insertion molded bearing
- ‡ Special I" bore bearing with extended inner-race

Fenner Drives DriveN Pulleys



Base Part Number	Dimensions (inches)					Belt Size	Diameter (inches)		Number Spokes	Spoke Style
	Type	E	F	H	L		Outside	Datum		
AFD44*	1	0.79	0.74	2.17	1.53	A/4L	4.25	4	—	—
AFD49	1	0.79	0.74	2.17	1.53	A/4L	4.75	4.5	4	I-Beam
AFD59	1	0.79	0.74	2.17	1.53	A/4L	5.75	5.5	4	I-Beam
AFD74	1	0.79	0.74	2.17	1.53	A/4L	7.25	7	4	I-Beam
AFD84	2	0.76	0.75	2.22	1.6	A/4L	8.25	8	6	Cross
AFD94	2	0.76	0.75	2.22	1.6	A/4L	9.25	9	6	Cross
AFD104	2	0.76	0.75	2.22	1.6	A/4L	10.25	10	6	Cross
AFD112	2	0.76	0.75	2.22	1.6	A/4L	10.98	10.73	6	Cross
AFD124	2	0.76	0.75	2.22	1.6	A/4L	12.25	12	6	I-Beam

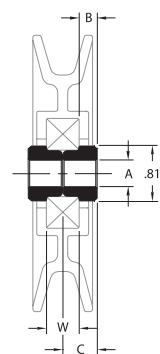
Shaft Size	Keyseat
5/8", 3/4"	3/16" x 3/32"
1"	1/4" x 1/8"

Part Number Ordering Guide

Base Part Number	+	Shaft Size	=	Complete Part Number
AFD44		5/8"		AFD4458
AFD94		1"		AFD94100

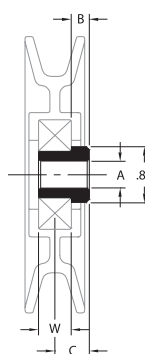
Many idlers are, or can be, made into a driven pulley with a 5/8" or 3/4" bore. Please contact Fenner Industrial Motion for minimum order quantities, pricing, and availability.

Clevis Adapters



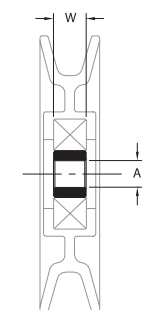
Part Number	Dimensions (inches)			
	A	B	W	C
CB0001	.385 / .395	0.26	0.472	0.5
CB0002	.385 / .395	0.51	0.472	0.75
CB0003	.385 / .395	0.76	0.472	1
CB0004	.510 / .520	0.26	0.472	0.5
CB0005	.510 / .520	0.51	0.472	0.75
CB0006	.510 / .520	0.76	0.472	1
CB0015	.314 / .324	0.08	0.472	0.32
CB0016	.385 / .395	0.17	0.472	0.41
CB0020	.314 / .324	0.1	0.472	0.34
CB0023	.394 / .399	0.64	0.472	0.87
CB0036	.385 / .395	0.7	0.472	0.94
CB0058	.385 / .395	0.33	0.472	0.57
CB0100	.397 / .407	0.26	0.472	0.5

Shoulder Adapters



Part Number	Dimensions (inches)			
	A	B	W	C
SB0001	.385 / .395	0.26	0.472	0.5
SB0002	.385 / .395	0.51	0.472	0.75
SB0003	.385 / .395	0.76	0.472	1
SB0004	.510 / .520	0.26	0.472	0.5
SB0005	.510 / .520	0.51	0.472	0.75
SB0006	.510 / .520	0.76	0.472	1
SB0013	.385 / .395	0.15	0.472	0.38
SB0018	.385 / .395	0.4	0.472	0.64
SB0020	.385 / .395	0.59	0.472	0.83
SB0032	.385 / .395	0.56	0.472	0.8
SB0033	.385 / .395	0.95	0.472	1.19
SB0052	.385 / .395	0.71	0.472	0.95
SB0090	.255 / .265	0.31	0.472	0.55

Bore Reducing Adapters



Part Number	Dimensions (inches)	
	A	W
RB0001	.385 / .395	0.472
RB0002	.510 / .520	0.472
RB0071	.474 / .486	0.472

Mounting adapters are for use with PoweMax products and are not sold individually. Consult factory for min orders and lead times.

* Consult factory for minimum orders and lead times
 † Insertion molded bearing
 ‡ Special 1" bore bearing with extended inner-race