

SAMIFLEX

ELASTIC COUPLINGS



SAMIFLEX ELASTOMERIC COUPLINGS

Now there's a new solution to one of the most costly and troublesome problems facing maintenance personnel - coupling failure and the expensive down time associated with fixing it.



Only four parts to the Samiflex Coupling

The two identical hubs (items A & B) are manufactured in cast iron, cast steel or aluminium alloy and incorporate four, six or eight teeth, depending on size rating of the coupling. A precision cast and machined polyurethane insert (item C) fits between the hubs and is split axially so fitting and removal can be achieved without moving hubs. The holding ring, manufactured in steel, polyamide or bronze (item D) is fitted over the insert securing both insert and ring between hubs. The coupling requires no bolts or nuts.

Assembly & Disassembly

Once hubs (A) and (B) and holding ring (D) have been installed and aligned on the shafts the coupling hubs will not have to be moved again during the life of the equipment. The elastic insert (C) can then be installed between the parallel slots formed by the hub teeth.

With the insert in position, slide the retaining ring (D) into position over the polyurethane insert. Centrifugal force will expand the insert under operation ensuring a tight, secure fit inside the retaining ring.

Removing and replacing the coupling insert is very simple and requires no special tools. By removing the retaining ring, the insert can be quickly and easily removed and replaced without the need to undo screws, bolts or other fasteners.

Features and Benefits

- Coupling inserts are removable without the need to remove either driving or driven equipment.
- Change out of coupling insert is faster than any other coupling.
- No lubrication or maintenance is required over the life of the insert.
- The polyurethane insert can be supplied in a variety of hardnesses to optimize torque capacity and dampening.
- Polyurethane insert is very resistant to chemical attack.
- Standard inserts can handle large temperature range from -40 to 180 °F.
- High temperature inserts are available up to 300 °F.
- Hubs can be rotated independently during motor test.
- No metal to metal contact.
- Large bore to torque capacity.
- Vertical operation is possible using a standard coupling.
- Retaining rings provided with locking screws as standard.

SAMIFLEX THE ELASTIC INSERT

The Samiflex elastic insert is manufactured from a special blend of polyurethane compound designed to best meet the demanding characteristics of a high performance elastic coupling.

Samiflex elastic inserts are offered in three styles of compound and five hardness ratings allowing the most appropriate insert to be selected for the application.

The standard elastic insert is supplied at 95 shore and is a yellow color. High performance inserts type HD and HDT are colored ochre and red respectively and enable Samiflex torque ratings to be increased by 40% (consult factory).

Insert	Ref.	Hardness	Color	Temp. Rating	
Standard	STD	80 Shore A	Clear	-40 / 180 F	
		90 Shore A	Blue		
		95 Shore A	Yellow		
High Temp.	HT	95 Shore A	Orange	-40 / 300 F	
High Performance	HD	97 Shore A	Ochre	-40 / 180 F	
		HDT	97 Shore A	Red	-40 / 300 F
		HR	65 Shore D	Green	-40 / 300 F



Coupling Selection

Method

Data required for Coupling Selection.

- Application details (for service factor)
- Horsepower and rpm of the driver.
- Shaft details of the driving and driven equipment.

- (1) Determine the service factor (SF) from the application and classification lists noted below.
- (2) Calculate the maximum HP/100 rpm rating:
 $HP/100 \text{ rpm} = (HP \times 100 \times SF) / \text{rpm}$
 Select the coupling which has a higher max rating.
- (3) Compare the maximum rpm capacity & bore requirements to the catalog limits for the coupling selected.

Example

Driver: Water Turbine (100 HP at 1800 rpm)
 Driven equipment: Screw Compressor
 Turbine Bore: 2.38" Compressor Bore: 2.00"
 Distance Between Shaft Ends: 5"

Service Factor for the Water Turbine & Screw Compressor: SF = 2

$$HP/100 \text{ rpm} = (100 \text{ HP} \times 100 \times 2) / 1800$$

$$HP/100 \text{ rpm} = 11.1$$

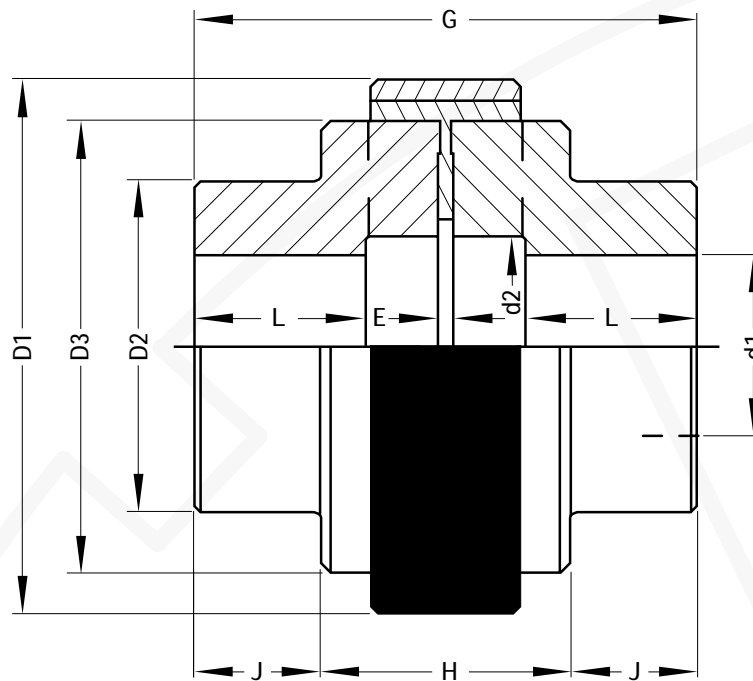
Coupling selection based on max rating: A4B
 Coupling Bore Capacity: $2 \frac{7}{8}$ (SP)
 Maximum Speed for the A4B is 3275 rpm unbalanced.
 DBSE for the A4B Type SP is 5"
 The A4B Type SP is acceptable in this application.

Service Factors - SF

Load Characteristics	Electric Motor, Steam Turbine, Gas Turbine	Steam Engine, Water Turbine, 8 Cyl. Recip. Engine	6 Cyl. Recip. Engine	4 Cyl. Recip. Engine
Constant Torque eg. Centrifugal pumps, compressors & blowers, light duty agitators and fans.	1.0	1.5	2.0	2.5
Slight Fluctuations eg. Slurry pumps, Screw compressors, Lobe and Vane Blowers.	1.5	2.0	2.5	3.0
Moderate Fluctuations and/or Slight Shock Loads Double acting pumps, Recip. Comp.	2.0	2.5	3.0	3.5
Large Fluctuations and/or Moderate Shock Loads 1 or 2 Cylinder Recip.pumps.	2.5	3.0	3.5	4.0
Shock Loads or Light Torque Reversals Slitters, Rod Mill, Hot Mill	3.0	3.5	4.0	Consult Factory
Heavy Shock Loads or Large Torque Reversals Feed Rolls, Reversing Mills	Consult Factory	Consult Factory	Consult Factory	Consult Factory

- (1) Use a minimum Service Factor of 1.25 when driving through a gearbox or using a direct on-line electric motor.
- (2) Consult Autogard when using a reciprocating engine with fewer than 4 cylinders.
- (3) Service Factors provided are for reference only. Customer experience may dictate the selection of different service factors.

SAMIFLEX COUPLING TYPE A



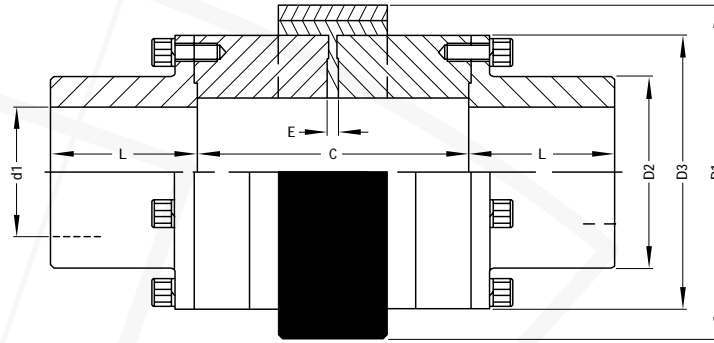
Technical Details and Dimensions

Coupling Type		A00	A0	A1	A2	A3B	A4B	A45	A5B	A55	A6	A7	A8	A9	A10	A11
Style STD Insert	Maximum HP per 100 rpm	0.34	0.80	1.5	4.0	8.0	16.0	28.3	40.4	52.5	64.6	129	242	403	646	786
	Max. Cont. Torque in-lbs	214.0	504.0	945	2,532	5,040	10,080	17,830	25,452	33,075	40,700	81,145	152,460	253,890	406,980	495,180
Style HD Insert	Maximum HP per 100 rpm	-----	-----	2.0	5.3	10.4	21.7	36.6	53.0	68.6	87.7	156	294	468	755	1056
	Max. Cont. Torque in-lbs	-----	-----	1,260	3,340	6,550	13,670	23,060	33,390	43,220	55,250	98,280	185,220	294,840	475,650	665,280
Technical data	Max. Speed - Unbal.	9100	8200	7250	5440	4200	3275	2800	2600	2350	2200	1900	1600	1350	1100	1100
	Max. Speed - Bal.	10000	9000	8000	6500	4800	3600	3100	2900	2600	2500	2200	1850	1600	1250	1250
	Moment of Inertia (Lb-in ²)	-----	-----	4.1	17.1	41	171	350	530	940	1,494	2,820	7,946	16,918	41,013	54,684
Displacement values	Weight (Lbs)	0.7	1.8	3.7	8.6	15	29	42	57	79	110	154	309	474	772	903
	Axial Tolerance (in)	+0.012	+0.012	+0.02	+0.02	+0.03	+0.03	+0.04	+0.04	+0.04	+0.04	+0.04	+0.06	+0.06	+0.08	+0.08
	Radial / Parallel (in)	0.02	0.02	0.04	0.04	0.04	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.078	0.078	0.078
	Angular Tolerance	2°	2°	2°	2°	2°	1.3°	1.3°	1.3°	1.3°	1.3°	1°	1°	1°	1°	1°

Coupling Type		A00	A0	A1	A2	A3B	A4B	A45	A5B	A55	A6	A7	A8	A9	A10	A11
Dimensions (in)	Max. Bore d1	7/8	1-3/8	1-5/8	2-1/8	2-3/4	3-3/4	3-1/4	4-1/2	4	4-1/2	5-1/2	6-1/8	7-1/2	9	9
	Pilot Bore	0.16	0.31	0.55	0.67	0.75	0.94	0.98	1.14	1.18	1.54	1.89	2.48	2.87	3.78	3.78
	D1	1.73	2.56	3.27	4.37	5.67	7.17	7.95	8.86	9.84	10.43	12.05	14.29	16.73	20.59	19.80
	D2	1.38	2.05	2.56	3.15	4.13	5.31	4.92	6.30	6.10	7.09	8.07	9.53	11.02	12.99	13.78
	D3	1.38	2.05	2.56	3.39	4.57	5.91	6.69	7.48	8.46	9.17	10.51	12.83	15.16	19.02	18.03
	d2	0.87	1.26	1.54	1.77	2.05	2.76	3.54	3.50	4.53	4.41	5.31	6.18	7.40	8.58	8.50
	G	2.01	2.87	3.58	5.00	6.14	7.09	7.80	8.50	9.69	10.24	12.20	15.04	16.54	18.98	20.16
	L	0.75	1.10	1.34	1.85	2.20	2.48	2.76	3.03	3.54	3.74	4.57	5.79	6.38	7.40	7.48
	Standard "DBSE"	0.51	0.67	0.91	1.30	1.73	2.13	2.28	2.44	2.60	2.76	3.07	3.46	3.74	4.17	5.20
	Dist. Between Hubs "E"	0.06	0.06	0.06	0.10	0.10	0.14	0.14	0.14	0.14	0.14	0.16	0.20	0.20	0.24	0.24
	H	-----	-----	-----	2.17	2.56	3.35	3.66	3.98	4.29	4.69	5.28	6.06	6.38	7.56	8.50
	J	-----	-----	-----	1.42	1.77	1.85	2.05	2.24	2.68	2.76	3.46	4.49	5.08	5.71	5.83

- (1) STD inserts will be supplied as standard unless specified. High Torque (HD) Inserts can be supplied upon request.
- (2) Maximum speeds are based on Cast Iron Hubs. Higher speeds may be attained using Ductile iron or Steel Hubs - Consult Engineering
- (3) Distance Between Shaft ends (DBSE) is based on the shafts mating flush with the end of the hub face. Shorter or longer shaft separations may be obtained by overhanging the shaft or hub.
- (4) Weights and Inertia's are based on solid hubs.
- (5) Max bore for steel hubs - A45=4; A55=4-3/4; A6=5; A7=6.

SAMIFLEX SPACER COUPLING - TYPE DO



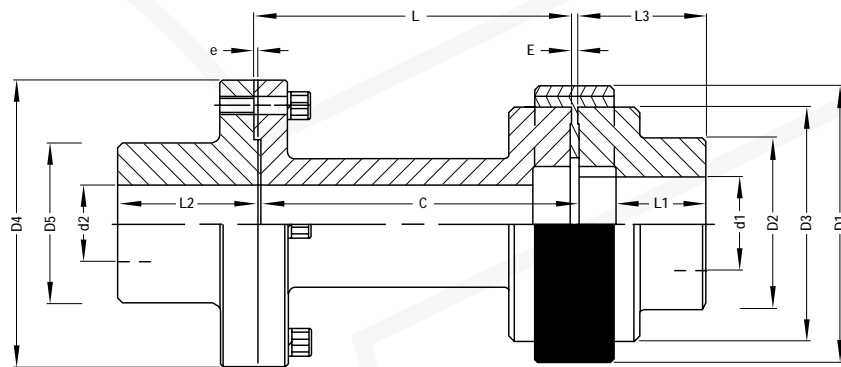
Coupling Size	HP per 100 RPM STD Insert	Max Bore (d1)	Max RPM	Dimensions (inches)				
				D1	D2	D3	L	C (D.B.S.E.) (min / max)
10A2D	1.4	1-3/16	4100	4.37	3.15	3.39	1.38	3.25 / 6.75
20A2D	1.5	1-3/8	4100	4.37	3.38	3.39	1.63	3.25 / 6.75
30A3D	3.3	1-5/8	4100	5.67	3.69	4.57	1.75	3.25 / 10.0
40A3D	4.1	2-1/8	3600	5.67	4.44	4.57	2.38	3.75 / 10.0
50A4D	7.6	2-3/8	3600	7.17	4.94	5.91	2.63	4.00 / 10.0
60A4D	13.3	2-7/8	3600	7.17	5.69	5.91	3.00	4.00 / 10.0
70A4.5D	21	3-1/8	3600	7.95	6.00	6.69	3.50	4.00 / 10.0
80A5D	35	3-1/2	3600	8.86	7.00	7.48	3.88	5.00 / 12.63
90A6D	56	4	3600	10.43	8.25	9.17	4.50	6.50 / 12.75

Note - The Samiflex Drop Out Spacer (Type Do) is interchangeable with many competitive Drop-out couplings including Falk T Series and Kop-Flex Type SP - Consult Autogard.

Large boss shaft hubs can be provided upon request - consult Autogard.

Shaft Separation shown above refer to the use of standard stock hubs. Non standard DBSE's can be supplied upon request.

SAMIFLEX SPACER COUPLING - TYPE SP



Coupling Size	Max Range		Max RPM	Dimensions (inches)									C	
	d1	d2		D1	D3	D4	D5	L1	L2	L3	e	inches	mm	
A0-SP	1-3/8	1-5/8	5500	2.56	2.06	3.62	2.64	1.10	1.46	1.74	0.06	3-1/2		
A1-SP	1-5/8	1-5/8	5500	3.27	2.56	3.94	2.64	1.34	1.77	1.75	0.08	3-1/2	100, 120, 140	
A2-SP	2-1/8	1-7/8	5000	4.37	3.39	4.72	3.27	1.85	2.44	2.45	0.08	3-1/2, 5	100, 120, 140	
A3B-SP	2-3/4	2-1/2	4500	5.67	4.57	5.51	4.21	2.20	2.99	3.00	0.10	3-1/2, 5	100, 120, 140	
A4B-SP	3-3/4	3-5/16	3500	7.17	5.91	7.01	5.51	2.48	3.46	3.46	0.10	5, 7	120, 140, 180	
A45-SP	3-1/4	3-1/2	3100	7.95	6.69	7.87	5.91	2.76	3.82	3.82	0.10	5, 7	120, 140, 180	
A5B-SP	4-1/2	4-5/16	2900	8.86	7.48	8.86	7.05	3.03	4.17	4.17	0.10	5, 7	140, 180, 200, 250	
A55-SP	4	4-5/16	2600	9.84	8.46	9.65	7.09	3.54	4.76	4.76	0.12	7	140, 180, 200, 250	
A6-SP	4-1/2	4-11/16	2500	10.43	9.17	10.43	7.80	3.74	5.04	5.03	0.12	7	180, 200, 250, 280	
A7-SP	5-1/2	5-1/16	2200	12.05	11.51	11.42	9.06	4.57	6.02	6.02	0.12	7	180, 200, 250, 280	

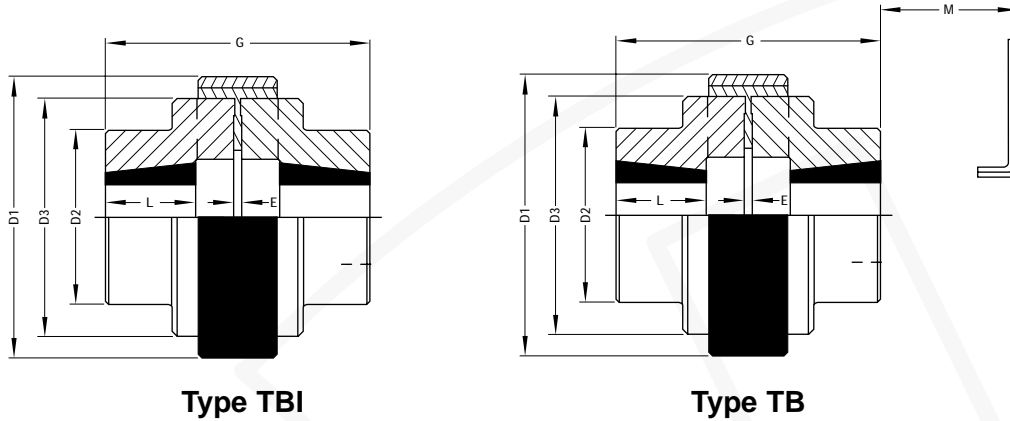
Notes:

(1) L = C - 1mm

(2) Refer to Page 3 for dimensions D2 and E.

(3) Flange hubs are always supplied with big boss hubs, taper bush hubs are supplied with standard hubs only.

SAMIFLEX COUPLING FOR TAPER BUSH

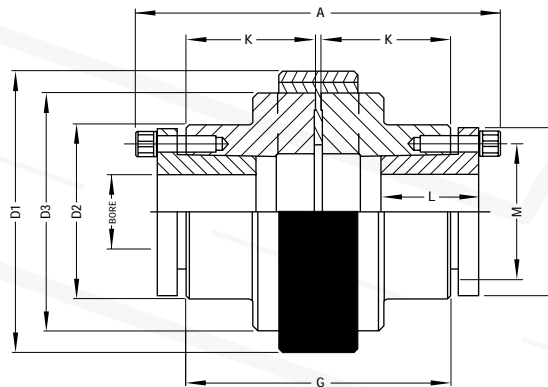


Samiflex Coupling Bored to Suit Taper Lock Bushings

Coupling Size	Taper Bush	Bore Range		Dimensions (inches)							
		min.	max.	L	G	E	D1	D2	D3	M	
A1 -TB/TBI	1108	1/2	1-1/8	1.06	3.03	0.06	3.27	2.56	2.56	1.14	
A2 -TB/TBI	1210	1/2	1-1/4	1.26	3.82	0.10	4.37	3.15	3.39	1.50	
A3 -TB/TBI	1610	1/2	1-5/8	1.26	4.21	0.10	5.67	3.35	4.57	1.50	
A4 -TB/TBI	2012	1/2	2	1.50	5.12	0.14	7.17	4.33	5.91	1.65	
A45 -TB/TBI	2517	1/2	2-1/2	1.97	6.22	0.14	7.95	4.92	6.69	1.97	
A5B -TB/TBI	3020	7/8	3	2.20	6.81	0.14	8.86	6.30	7.48	2.17	
A6 -TB	3535	1-3/16	3-15/16	3.74	10.20	0.14	10.43	7.09	9.17	2.64	
A7 -TB	4545	1-15/16	4-15/16	4.72	12.52	0.16	12.05	8.07	10.51	2.76	

Notes:

- (1) Refer to bushing manufacturer for recommended torque capacity.
- (2) Taper bush hubs are available in cast iron only.
- (3) Taper bushings can be provided on the type SP



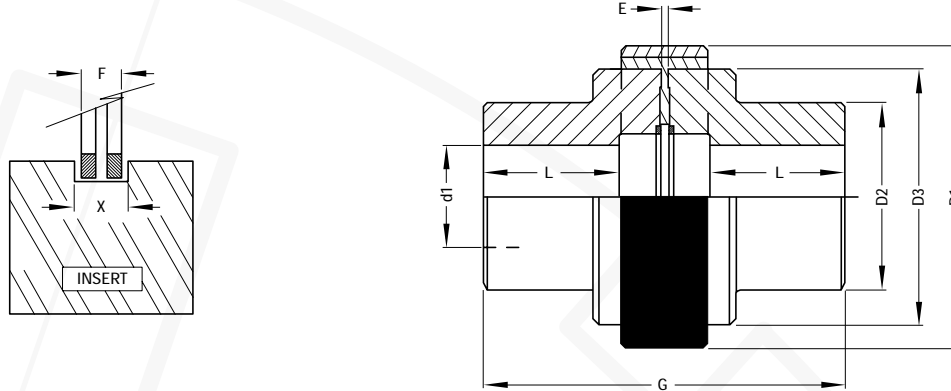
Samiflex Coupling Bored to Suit QD Bushings

Coupling Size	Taper Bush	Bore Range		Dimensions (inches)								
		min.	max.	D1	D2	D3	A	G	K	L	M	N
A1 - QD	JA	1/2	1-1/4	3.27	2.56	2.56	4.18	2.36	1.15	1.00	1.66	2.00
A2 - QD	SH	1/2	1-11/16	4.37	3.15	3.39	5.40	3.59	1.75	1.31	2.25	2.69
A3 - QD	SD	1/2	2	5.67	3.35	4.57	6.97	5.10	2.50	1.81	2.69	3.19
A4 - QD	SK	1/2	2-5/8	7.17	4.33	5.91	7.35	5.10	2.48	1.94	3.31	3.91
A45 - QD	SF	1/2	2-15/16	7.95	4.92	6.69	7.60	5.10	2.48	2.06	3.88	4.63
A5B - QD	E	7/8	3-1/2	8.86	6.30	7.48	11.70	8.46	4.16	2.75	5.00	6.00
A5.5 - QD	E	1-3/16	3-1/2	10.43	7.09	9.17	11.80	8.52	4.19	2.75	5.00	6.00
A6 - QD	F	1-3/16	4	12.05	8.07	10.51	12.60	8.84	4.35	3.75	5.63	6.63
A7 - QD	J	1-15/16	4-1/2	12.05	8.07	10.51	14.50	10.20	5.00	4.63	6.25	7.25

Notes:

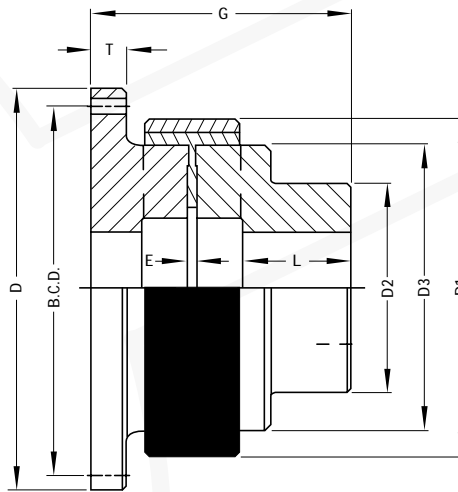
- (1) Refer to bushing manufacturer for recommended torque capacity.
- (2) QD Bushings are available in 1/16" increments starting from the minimum bore and going to the maximum bore as shown.
- (3) Samiflex can also be supplied to suit Browning Bushing - consult Autogard.
- (4) Browning Bushings and QD Bushings are registered trademarks of Emerson Electric Co.
- (5) QD Style hubs are available in cast iron only.

SAMIFLEX LIMITED END FLOAT COUPLING - TYPE FX



Coupling Size	Max Bore (d1)	Dimensions (inches)									Axial Float
		D1	D2	D3	D.B.S.E.	E	G	L	F	X	
A4B FX	2-3/4	7.17	5.31	5.91	2.13	0.14	7.09	2.48	0.45	0.49	0.04
A45 FX	2-15/16	7.95	4.92	6.69	2.28	0.14	7.80	2.76	0.45	0.49	0.04
A5B FX	4-1/2	8.86	6.30	7.48	2.44	0.14	8.50	3.03	0.57	0.63	0.06
A55 FX	3-11/16	9.84	6.10	8.46	2.60	0.14	9.69	3.54	0.57	0.63	0.06
A6 FX	4-5/16	10.43	7.09	9.17	2.76	0.14	10.24	3.74	0.73	0.81	0.08
A7 FX	5-1/16	12.05	8.07	10.51	3.07	0.16	12.20	4.57	0.73	0.81	0.08
A8 FX	5-7/8	14.29	9.53	12.83	3.46	0.20	15.04	5.79	0.83	0.94	0.12
A9 FX	7	16.73	11.02	15.16	3.78	0.20	16.54	6.38	0.83	0.94	0.12
A10 FX	8-1/4	20.59	12.99	19.02	4.17	0.24	18.98	7.40	0.87	1.02	0.16

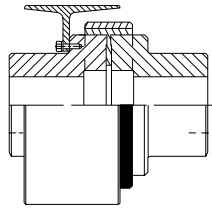
SAMIFLEX COUPLING FOR SAE FLYWHEEL ARRANGEMENTS



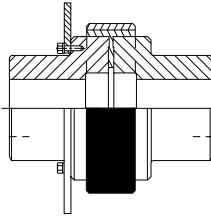
Coupling Size	Max Bore	SAE J620 Number	Dimensions (inches)						
			D1	D2	D3	E	G	L	T
A2 EB-SAE	2-1/8	6-1/2", 7-1/2", 8"	4.37	3.15	3.39	0.10	3.94	1.81	0.47
A3B EB-SAE	2-3/4	7-1/2", 8", 10"	5.67	4.13	4.57	0.10	4.88	2.20	0.59
A4B EB-SAE	3-3/4	8", 10", 11-1/2"	7.17	5.31	5.91	0.14	5.67	2.48	0.67
A5B EB-SAE	4-1/2	10", 11-1/2", 14"	8.86	6.30	7.48	0.14	6.61	2.99	0.79
A6 EB-SAE	4-1/2	11-1/2", 14", 16"	10.43	7.09	9.21	0.14	7.72	3.70	0.87
A7 EB-SAE	5-1/2	14", 16", 18"	12.05	8.07	10.51	0.16	9.02	4.53	0.98
A8 EB-SAE	6-1/8	16", 18", 21"	14.29	9.45	12.83	0.20	11.02	5.75	1.18

Notes:
 (1) For standard flywheel dimensions (D, B.C.D. and hole sizes) - Consult Autogard
 (2) Flywheels are available in non-standard sizes - Consult Autogard.

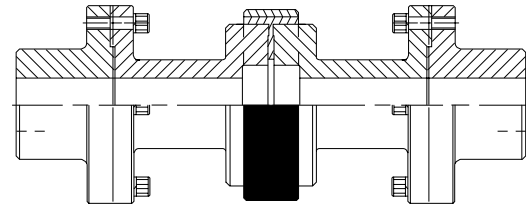
OTHER SAMIFLEX ELASTIC COUPLINGS



Brake Wheel Coupling - Type PF

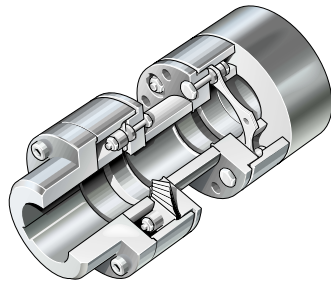


Brake Disc Coupling - Type DF



Spacer Coupling - Type DL

OTHER PRODUCTS



Autoflex - Membrane Couplings



Autogard - Torque Limiters



Monitorq - Torque Sensors