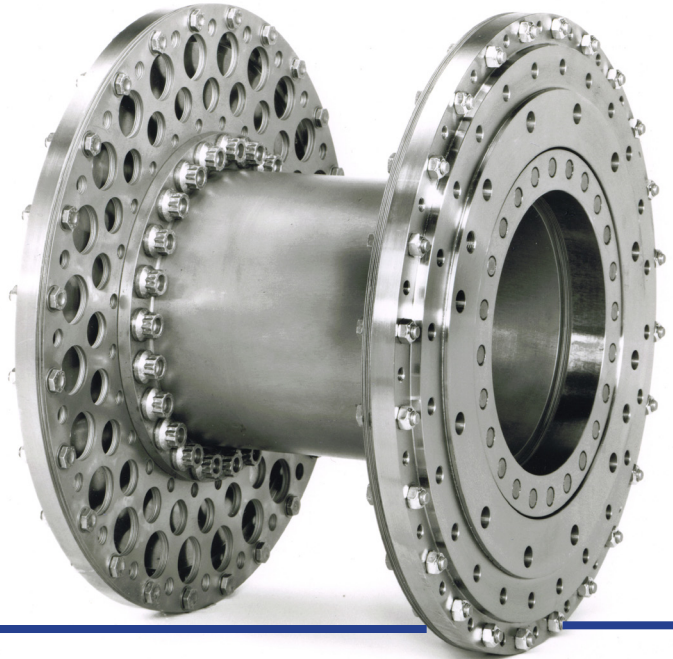


Coupling Corporation of America

FLEXXOR™ COUPLING

**Exclusive
Holed Diaphragm
Design Sets the
Standard for
Coupling Flexibility**

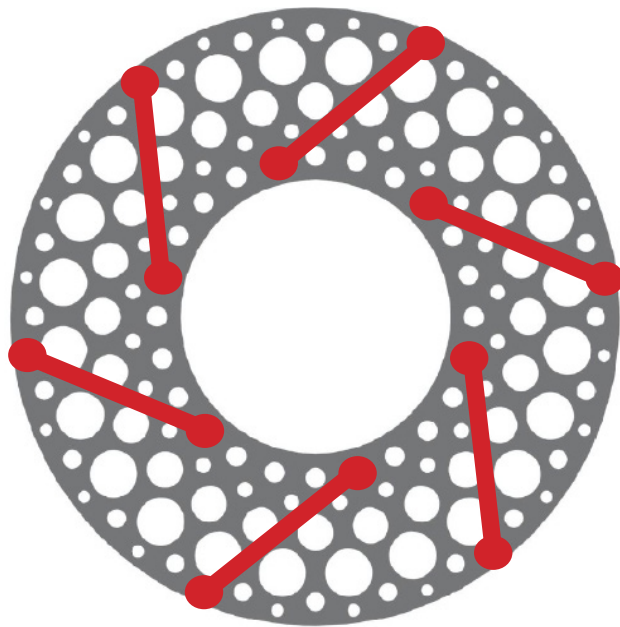


The FLEXXOR Coupling has been keeping machinery running since 1968. The FLEXXOR has consistently been the most flexible and durable coupling on the market. Its unique holed diaphragm design allows for high misalignment, while still transmitting the highest torque values.

The FLEXXOR is designed to provide extreme flexibility in high-speed and high-torque applications. The angular and axial spring rates are far lower than any other coupling in the industry.

Ideal Applications

- Steam Turbines
- Pumps
- Centrifugal Compressors
- Gas Turbines
- Aircraft Applications
- API 671 Applications
- Reciprocating Equipment
- Test Stands
- Transportation Equipment
- Industrial Machinery



The FLEXXOR diaphragm works like a bicycle wheel. Tension in the “spokes” transmits the torque from inside to outside. The thin, hole-filled diaphragm flexes easily to accept angular and axial misalignment.

Dimensions and Engineering Data

Size	Torque Configuration	Max Continuous Torque	Max HP per 1000 RPM	Max RPM	Axial Travel (± in)*2		Axial Spring Rate	Angular Deflection (± Deg)*2		Angular Spring Rate	A Outer Diameter (in)		B Max Bore	Min. Dist. Btwn. shaft ends (in)*4	C Hub Length (in)*4
		(in-lbs)*1			Std	Max	(lb/0.001 in)*3	Std	Max	(in-lb/deg)*3	Min	Max	(in)*4		
40	Min	144	2	120,000	0.012	0.029	0.05	0.3	0.5	3	1.5	1.8	1.0	0.8	0.5
	Max	240	4				0.08			3					
50	Min	300	5	90,586	0.014	0.034	0.06	0.3	0.5	3	2.0	2.4	1.1	1.0	0.8
	Max	500	10				0.12			6					
80	Min	1,182	19	59,664	0.020	0.048	0.08	0.3	0.5	5	3.1	3.4	1.3	1.5	1.3
	Max	1,970	37				0.15			9					
100	Min	2,475	39	46,784	0.028	0.067	0.11	0.3	0.5	12	3.6	4.4	1.4	2.1	1.9
	Max	4,125	78				0.21			24					
125	Min	4,869	77	38,389	0.036	0.086	0.26	0.3	0.5	27	4.5	5.3	1.9	3.0	2.5
	Max	8,115	155				0.53			54					
162	Min	10,620	168	29,233	0.050	0.120	0.28	0.3	0.5	56	5.9	7.0	4.0	3.7	3.2
	Max	17,700	336				0.56			111					
200	Min	19,710	312	23,756	0.060	0.144	0.34	0.3	0.5	105	7.3	8.5	5.1	4.0	3.4
	Max	32,850	624				0.68			210					
250	Min	39,060	619	19,067	0.072	0.173	0.42	0.3	0.5	168	9.2	10.9	5.6	4.5	4.2
	Max	65,100	1,238				0.85			336					
312	Min	75,690	1,200	15,125	0.090	0.216	0.64	0.3	0.5	345	11.5	13.4	6.5	6.0	5.5
	Max	126,150	2,400				1.28			690					
400	Min	159,300	2,528	11,848	0.116	0.278	0.77	0.3	0.5	705	14.7	17.2	8.1	8.0	7.0
	Max	318,600	5,055				1.53			1,410					
500	Min	310,500	4,935	9,580	0.146	0.350	0.90	0.3	0.5	1,380	18.5	21.4	8.8	9.5	9.0
	Max	621,000	9,870				1.80			2,760					
562	Min	471,744	7,485	8,480	0.169	0.406	0.95	0.3	0.5	1,062	21.8	24.0	10.0	11.0	10.0
	Max	786,240	12,475				1.90			1,770					
630	Min	624,600	9,911	7,590	0.180	0.432	0.69	0.3	0.5	2,565	23.1	26.9	11.0	12.0	10.3
	Max	1,041,000	16,518				1.38			4,275					
800	Min	1,242,000	19,707	5,960	0.232	0.557	0.94	0.3	0.5	4,824	29.2	34.1	14.0	13.0	12.0
	Max	2,484,000	39,414				1.90			9,648					
1000	Min	2,463,000	39,084	4,700	0.280	0.672	1.20	0.3	0.5	7,250	39.2	43.5	18.0	17.0	16.0
	Max	4,926,000	78,169				2.40			14,500					
1250	Min	4,812,000	76,356	3,850	0.360	0.864	1.30	0.3	0.5	10,450	49.3	56.3	22.0	20.0	19.0
	Max	9,624,000	152,713				2.50			19,800					

Note: For weight and inertia information, contact CCA

*1 Peak torque values are 2 times Max Continuous Torque

Each size can be configured for higher/lower torque

*2 C config. listed - for CC config. double all values

*3 C config. listed - for CC config. all values are half

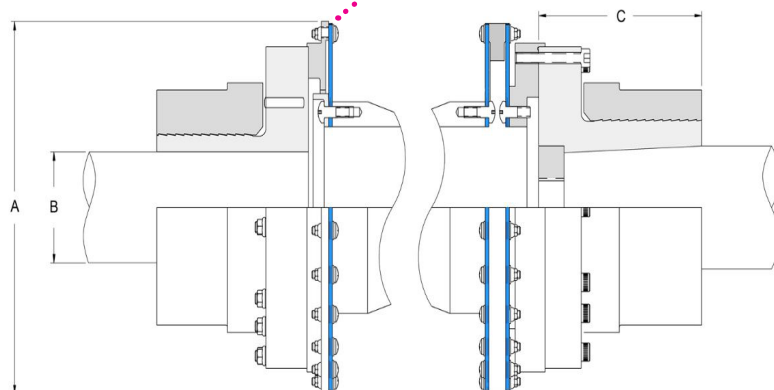
*4 For custom dimensions, contact CCA

Materials

- Hubs - 4000 series or equivalent alloy steel heat treated to 130,000 PSI UTS minimum.
- Hub Rings, sleeves - 1018, 1026 carbon steel or 4000 series alloy. Diaphragms - 17-7 PH, 301 full hard.
- Bolts - AISI 4140, 4340, 6150, 8740 alloy steel heat treated to grade 8 min. Locknuts - Grade C min.
- Special materials available such as Stainless, Inconel, Beryllium copper, Titanium, Monel.

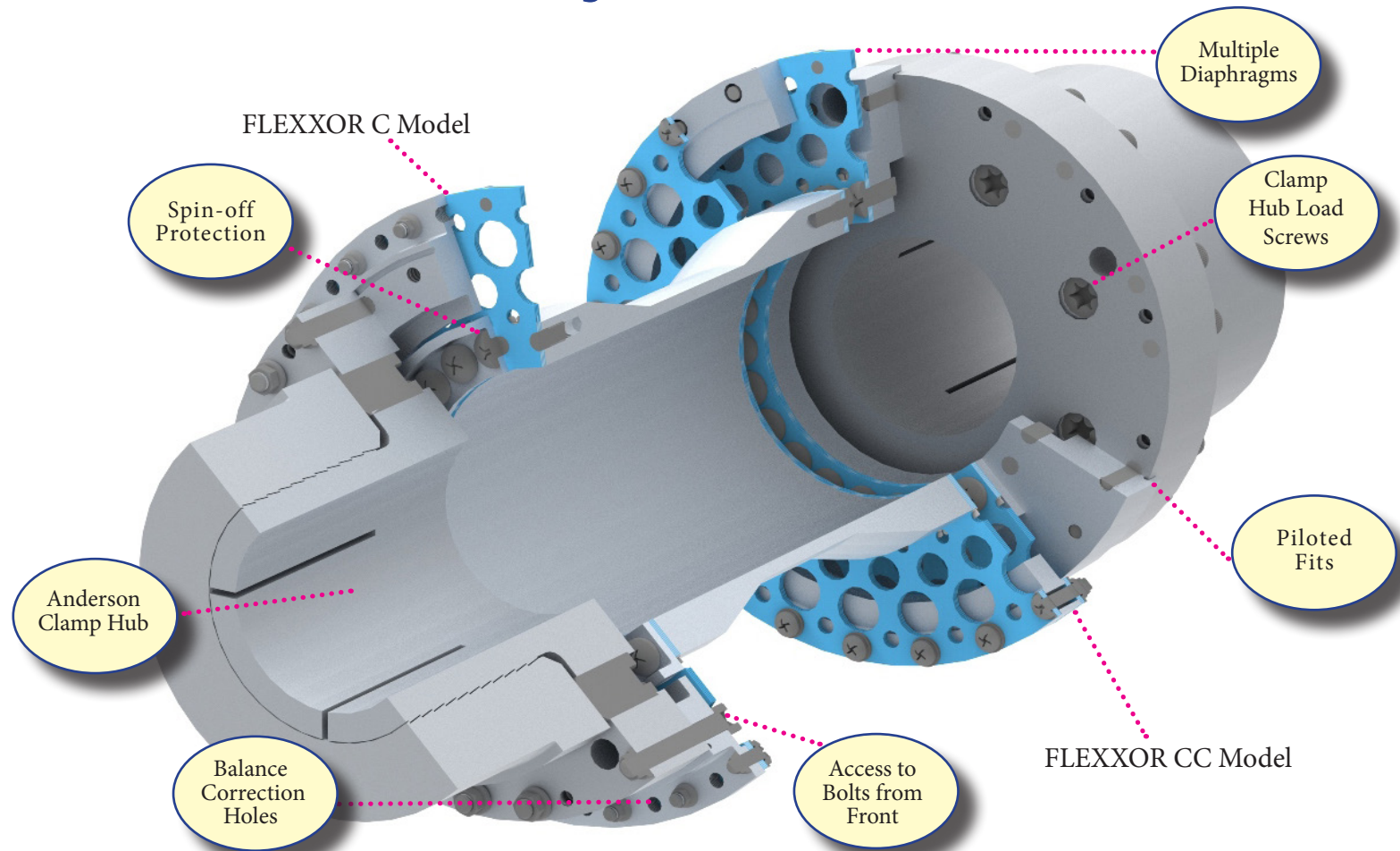
ALWAYS USE A COUPLING GUARD

The FLEXXOR C model consists of a single set of diaphragms at each end of either a tubular, quill shaft or solid spacer.



CC FLEXXORS use two sets of diaphragms at each end of the spacer. Therefore, CC models have twice the axial travel and 1/2 the spring rate of C models.

Anatomy of a FLEXXOR



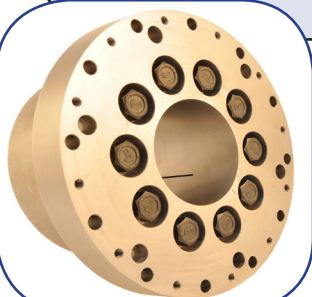
Unmatched Benefits of FLEXXOR

Feature

- Multiple paths of torque transmission share the load
- No lubrication or maintenance required
- Very low spring rates
- No loose parts
- Dynamically balanced
- Internal spin-off protection
- Easy hub adjustment for flange to flange spacing
- Spacer or reduced moment designs

Value to User

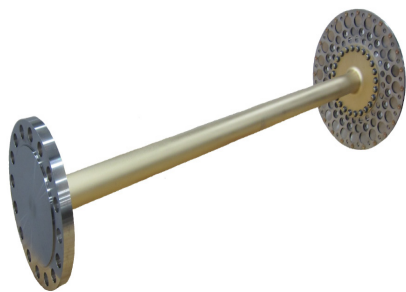
- Scratch or other damage to a diaphragm will not destroy coupling
- Reduces maintenance costs
- Low force on shafts, bearings, and seals for longer system life
- Continual balance
- No coupling related vibrations
- Safe failure mode in case of machine malfunction
- Faster installation and no hot work permits required. No shims required
- Outstanding application flexibility



FLEXXOR couplings come standard with Anderson Clamp Hubs for a strong shaft connection with no keys, heat, or hydraulic hubs. Anderson Clamp Hubs can be used on straight and tapered shafts for easy retrofitting.

**See our Anderson Clamp Hub brochure for more details.
Other hub styles are also available.**

Unique **FLEXXOR** Applications

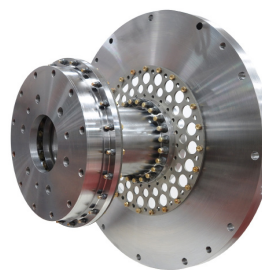
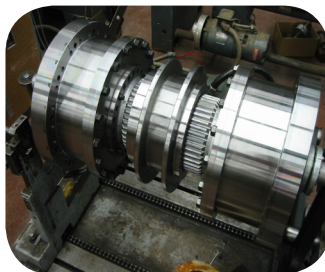


Torsionally Soft Coupling

FLEXXORS can be designed with a quill shaft to lower the torsional spring rate and drastically reduce torsional vibrations

Disengaging Coupling

A device that normally carries torque, but can be easily shifted to allow both sides to spin freely



Flywheel Coupling

FLEXXORS can attach to a standard or custom flywheel

Torque Limiting Coupling

The FLEXXOR can be designed to stop transmitting torque at a set limit by use of either shear pins or a spring-loaded breaker-system



Installation and Removal

Factory assembled elements simplify installation of FLEXXOR couplings. Light interference spigoted fits ensure repeatable positions.

Anderson Clamp Hubs are self-centering and provide easy repeatable installation and easy removal. Shim-ming is not necessary for correct flange-to-flange face measurements because the Anderson Clamp Hub can be axially positioned very easily. Push off holes and field balance correction holes are standard on high performance FLEXXOR couplings.

Installation procedures and dimensional drawings are supplied with all couplings. Pre-stretch and/or special alignment procedures are provided as needed.

ALWAYS USE A COUPLING GUARD

Balancing

Balancing is incorporated into the design and manufacture of FLEXXOR couplings. Parts are tightly assembled. Piloted/spigot fits are light interference for repeatable assembly. There are no loose parts so FLEXXOR couplings maintain balance. Bolts are delivered in sets and are weight balanced on high speed or API applications.

For API or special applications, any of the balance procedures are available and are jointly agreed upon by CCA and the customer. CCA minimizes tooling weight for the most effective balance. In addition, CCA can use its proprietary balancing setup to accurately simulate rotating equipment.

Major components are match-marked after assembly and balanced when appropriate. Field balance correction holes are standard on most high speed and high performance FLEXXOR couplings



Size 500 FLEXXOR for a centrifugal compressor on the balancing stand



Coupling Corporation of America

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www.couplingcorp.com



Size 50 FLEXXOR for a 60,000 RPM test stand