

Ironflex® Couplings



Power

Transmission

Solution for

General

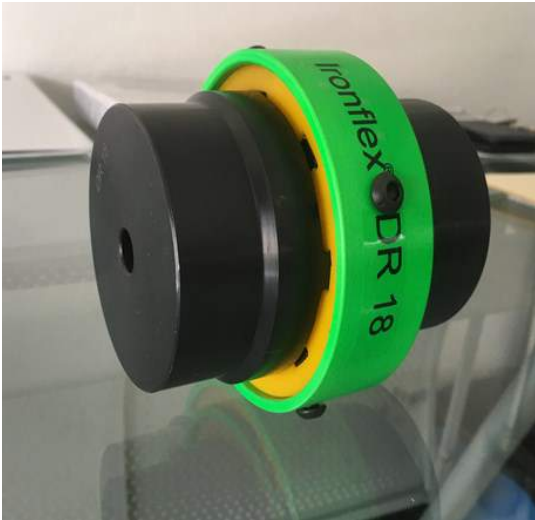
Industries

FLEXELEMENT

Power Transmission Solution

Elastomeric Coupling Innovation

Flexelement introduce a new series elastomeric couplings to compression and shear, designed to comply with DIN/ISO and ANSI standards, the elastic element is manufactured in high density polyurethane at different hardness and temperature ranges.



COUPLING DESIGNS:

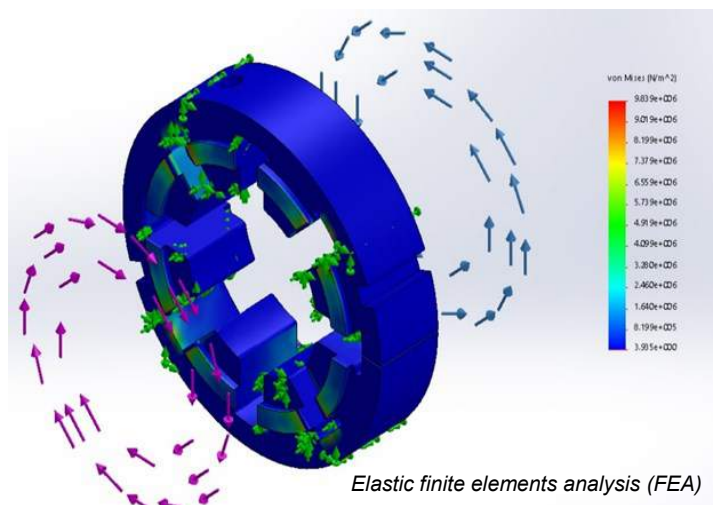
- ◆ Torque Range: 402,675 lbs-in (45,500 Nm).
- ◆ Bore Capacity: 8.5" (216 mm)
- ◆ Low maintenance / non lubrication
- ◆ Temperature range: -30 oC to +140 oC
- ◆ Anticorrosive protection: phosphate and black epoxy
- ◆ Standard hardness: 95 shore A and 60 shore D.

ELASTIC ELEMENT

- ⇒ The split elastic element has been developed through the use of finite element analysis (FEA) and tested under the most extreme conditions.
- ⇒ The lateral band allows to compensate for greater capacities of axial displacement, extending the useful life.
- ⇒ The inverted radius facilitates assembly and disassembly while offering greater damping to compression efforts, reducing vibration levels.

FEATURES AND ADVANTAGES:

- ◆ The basic ironflex design consists of two pieces of steel hubs, a polyurethane insert and a cover.
- ◆ You can replace the polyurethane insert without the need to remove equipment in just a few minutes.
- ◆ **DR Series** fail safe design due to the tooth in compression (continues to function after the elastomer fails).
- ◆ **DF Series** disconnects the transmission in case of torsional overload, there's no metal-to-metal contact between opposing hubs
- ◆ The cover are supplied in steel and polyurethane with graphite reinforcement.
- ◆ Only 4 oppressors guarantee the hoop's clamping even at high speeds and torques.
- ◆ Replaces many common gears, grids and elastomers couplings used in high and low torque applications.
- ◆ Balanced inherently from precision machining for high speed applications.
- ◆ Can be used in any horizontal or vertical position without the need modifications.



Compression Split Elastomer

flexible couplings technology

Coupling Selection

Step 1: Select the correct Service Factor from Table bellow.

The total Service factor (SF) will be:

$$S.F. = F1 \times F2$$

Step 2: Determine the nominal torque (Tn).

$$Nm (Tn) = HP \times 7160 \times S.F. / RPM \quad \text{or}$$

$$lbs\text{-in} (Tn) = HP \times 63025 \times S.F. / RPM$$

Step 3: Select a coupling with a Nominal Torque that is equal or greater than the Selection Torque.

Step 4: Verify the coupling max bore is larger than or equal to the required Bore size.

Step 5: Verify that the coupling distance Between Shaft End (BSE) of your application.

Load Classification and Service Factors for Flexible Couplings AGMA 922-A96

Service Factor F1

Agitators	
Pure liquids	1.00
Liquids and solids	1.25
Liquids -- variable density	1.25
Blowers	
Centrifugal	1.00
Lobe	1.50
Vane	1.25
Compressors	
Centrifugal	1.25
Lobe	1.50
Reciprocating -- multi--cylind	2.00
Conveyors -- uniformly loaded c	1.50
Elevators	
Bucket	1.75
Centrifugal discharge	1.50
Freight	2.00
Gravity discharge	1.50
Fans	
Centrifugal	1.00
Cooling towers	2.00
Forced draft	1.50
Induced draft without dampen	2.00
Food industry	
Beet slicer	1.75
Cereal cooker	1.25
Dough mixer	1.25
Meat grinders	1.75
Bottling, can filling machine	1.00

Metal mills	
Draw bench -- carriage	2.00
Draw bench -- main drive	2.00
Forming machines	2.00
Slitters	1.50
Table conveyors	
Non--reversing	2.25
Reversing	2.50
Wire drawing & flattening ma	2.00
Wire winding machine	1.75
Mills, rotary type	2.25
Paper mills	
Barker auxiliaries, hydraulic	2.00
Barker, mechanical	2.00
Barking drum (spur gear only)	2.25
Beater & pulper	1.75
Bleacher	1.00
Calenders	2.00
Converting machines, except	1.50
Couch	1.75
Cutters, platers	2.00
Cylinders	1.75
Dryers	1.75
Felt stretcher	1.25
Felt whipper	2.00
Jordans	1.75
Log haul	2.00
Presses	2.00
Reel	1.50

Stock chests	1.75
Suction roll	1.50
Printing presses	1.50
Pumps	
Centrifugal general Duty	1.00
Boiler Feed	1.50
Slurry	2.00
Dredge	2.00
Reciprocating double acting	2.00
Reciprocating Single acting	
1 or 2 cylinders	2.25
3 or more cylinders	1.75
Rotary -- gear, lobe, vane	1.50

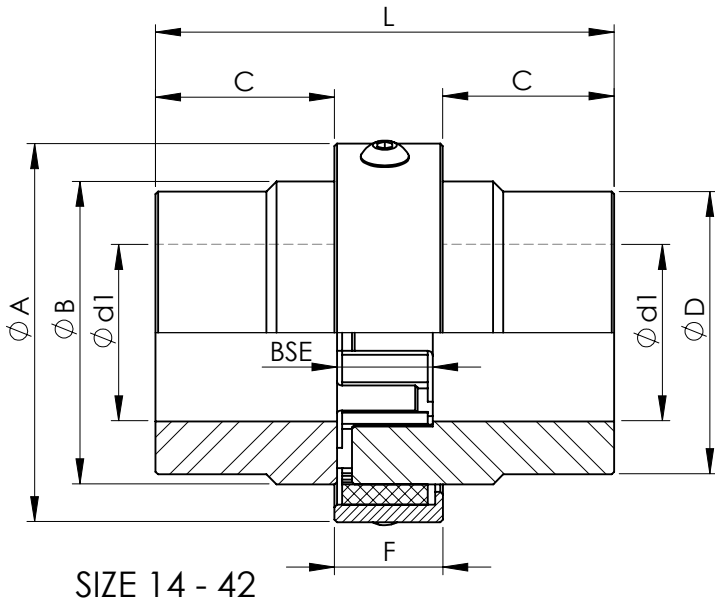
Service factor F2

Steam Turbines	1.00
Electrical Motor (SDL)*	1.50
Gearbox	1.50
INTERNAL COMBUSTION ENGINES	
1 - 3 Cilindres	2.00
4 - 6 cilindres	1.50
8 or more Cilindres	1.00

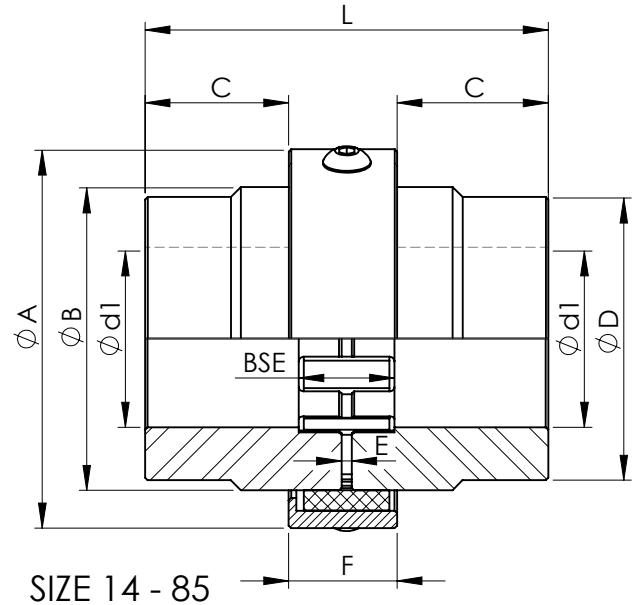
* Start Direct on Line

Standard Couplings Non-Spacer
flexible couplings technology

DR Series



DF Series

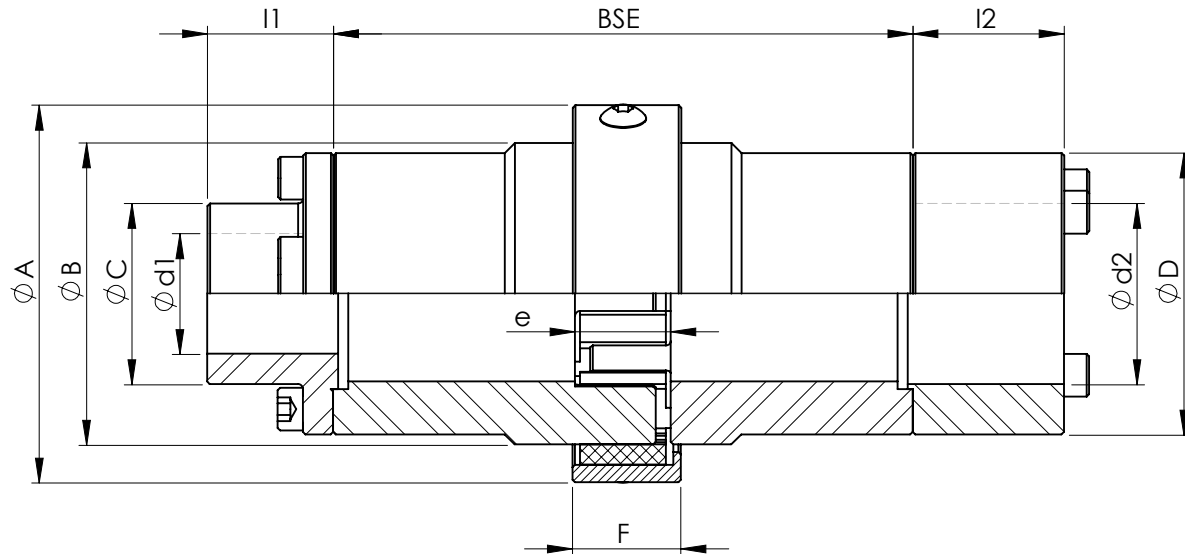


Couplings Series	Nominal Torque 95 ShA	Max. Bore SQ. KEY (d1)	Maximum Speed	A	B	C	D	E	F	L	BSE	Max. Misalignment			Wt
												Axial	Ang.	Radial	
SIZE	Nm lbs-in	mm in	RPM	mm in	mm in	mm in	mm in	mm in	mm in	mm in	mm in	mm in	deg	mm in	Kgs lbs
14	75.0 664	35 1.375	4600	78 3.07	60 2.36	36 1.41	56 2.20	2 0.08	25 0.98	91 3.58	19 0.75	0.4 0.01	1.0	0.5 0.01	1.18 2.60
16	125.0 1,106	42 1.625	4300	99 3.90	73 2.87	40 1.57	69 2.72	2 0.08	29 1.14	102 4.01	22 0.86	0.5 0.01	1.0	0.5 0.01	2.0 4.40
18	215.0 1,903	48 1.875	4300	114 4.49	83 3.27	41 1.61	77 3.03	3 0.12	36 1.41	110 4.33	28 1.10	0.5 0.01	0.7	0.6 0.02	2.7 5.94
23	432.0 3,828	60 2.375	4200	145 5.71	110 4.33	55 2.16	102 4.01	3 0.12	41 1.61	141 5.55	31 1.22	0.6 0.02	0.7	0.8 0.03	6.3 13.89
28	897.0 7,938	73 2.875	4200	178 7.01	137 5.39	68 2.67	120 4.72	3.5 0.14	54 2.13	179 7.04	43 1.70	0.7 0.02	0.7	1.1 0.04	10.5 23.15
33	1,774.0 15,700	86 3.375	3800	209 8.23	162 6.38	70 2.76	140 5.51	3.5 0.14	64 2.51	191 7.52	51 2.01	0.8 0.03	0.7	1.5 0.05	15.1 33.29
42	4,760.0 42,126	108 4.250	3400	250 9.84	210 8.27	82 3.23	173 6.81	4 0.16	64 2.51	224 8.88	60 2.36	1.0 0.03	0.7	1.6 0.06	36.0 79.36
51	8,649.0 76,544	130 5.125	2800	290 11.41	244 9.61	104 4.09	220 8.66	4 0.16	70 2.75	274 10.79	66 2.60	1.3 0.05	0.7	2.0 0.07	62.5 137.7
60	13,750.0 121,688	152 6.000	2200	340 13.39	286 11.26	123 4.84	260 10.24	4.5 0.18	88 3.46	326 12.83	80 3.15	1.3 0.05	0.5	2.0 0.07	100.5 221.6
71	23,669.0 209,471	181 7.125	1800	402 15.83	340 13.39	148 5.82	310 12.20	4.5 0.18	102 4.02	387 15.23	91 3.58	1.5 0.05	0.5	2.0 0.07	174.7 385.1
85	45,500.0 402,267	216 8.500	1600	528 20.79	452 17.80	186 7.32	375 14.76	6 0.24	114 4.49	476 18.74	104 4.09	1.5 0.05	0.5	2.0 0.07	309.7 682.7

- (1). Coupling assembly weight is based on maximum bore hubs.
- (2). Maximum Inch Bore listed is for a standard square key.
- (3). The standard flex element is polyurethane 95 Shore A (yellow color) and 60 Shore D (red color).
- (4). The standard hubs are in Steel, for other material consult to factory.
- (5). It's supplied as standard polyurethane rings for sizes 14 to 33 and steel for sizes 42 to 85.
- (6). All dimensions are subject to change according to the factory.

Standard Couplings-With Short Spacer
flexible couplings technology

DRX Series

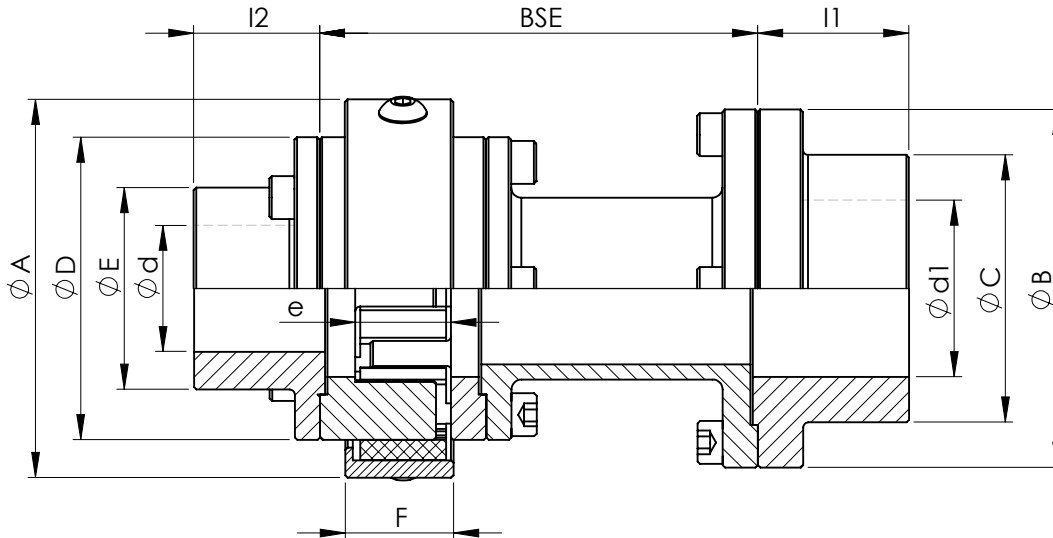


Couplings Series	Nominal Torque 95 ShA	Max. Bore (d1)	Max. Bore (d2)	Maximun Speed	A	B	C	D	F	e	l1	l2	BSE Standard
SIZE	Nm lbs-in	mm in	mm in	RPM	mm in	mm in	mm in	mm in	mm in	mm in	mm in	mm in	mm in
14	75.0 664	24 0.938	36 1.412	4600	78 3.07	60 2.36	36 1.42	56 2.20	25 0.98	19 0.75	25 0.98	30 1.18	89 3.5
16	125.0 1,106	32 1.250	44 1.750	4300	99 3.66	73 2.87	49 1.93	69 2.72	29 1.14	22 0.86	30 1.18	30 1.18	100 3.5
18	215.0 1,903	35 1.375	51 2.000	4300	114 4.49	83 3.27	53 2.09	77 3.03	36 1.42	28 1.10	36 1.42	40 1.57	100 3.5
23	432.0 3,828	48 1.875	61 2.412	4200	145 5.71	110 4.33	76 2.99	101 3.97	41 1.61	31 1.22	40 1.57	40 1.57	100, 120, 140 3.5, 5.0, 7.0
28	897.0 7,938	60 2.375	79 3.125	4200	178 7.01	137 5.39	90 3.54	120 4.72	54 2.13	43 1.70	60 2.36	60 2.36	120, 140, 160 3.5, 5.0, 7.0
33	1,774.0 15,700	73 2.875	92 3.625	3800	209 8.23	162 6.38	110 4.33	141 5.55	64 2.51	51 2.01	65 2.56	65 2.55	120, 140, 180 5.0, 7.0
42	4,760.0 42,126	102 4.000	124 4.875	3400	250 9.84	210 8.27	152 5.98	190 7.48	64 2.51	60 2.36	80 3.15	90 3.54	140, 180, 200 5.0, 7.0
51	8,649.0 76,544	127 5.000	155 6.125	2800	290 11.42	244 9.61	194 7.63	234 9.21	70 2.76	66 2.60	100 3.93	110 4.33	140, 180, 200, 250 5.0, 7.0, 9.0
60	13,750.0 121,688	149 5.875	177 7.125	2200	340 13.39	286 11.26	225 8.88	276 10.86	88 3.46	80 3.15	120 4.72	130 5.12	180, 200, 250, 300 7.0, 9.0
71	23,669.0 209,471	177 7.000	215 8.500	1800	402 15.83	340 13.39	267 10.51	326 12.83	99 3.89	91 3.58	130 5.12	150 5.90	200, 250, 300, 350 7.0, 9.0

- (1). The standard BSE complies with the ANSI and DIN 740 standards, for other BSE consult to factory.
- (2). The DRX series is supplied for size 14 to 42 and DFX series for size 14 to 71.
- (3). Max. Bore listed is for standard square key.

Standard Couplings-With Large Spacer
flexible couplings technology

DRS Series



Couplings Series	Nominal Torque 95 ShA	Standard Hub Max. Bore (d)	Standard Hub Max. Bore (d1)	SPEED	A	B	C	D	E	F	I1	I2	Gap		BSE Standard
													e min.	e max.	
SIZE	Nm lbs-in	mm in	mm in	RPM	mm in	mm in	mm in	mm in	mm in	mm in	mm in	mm in	mm in	mm in	mm in
14	75.0 664	25 1.000	35 1.375	4600	78 3.07	71 2.80	53 2.08	60 2.36	40 1.57	25 0.98	30 1.18	25 0.98	19.0 0.75	20.0 0.79	120, 140 5.0
16	125.0 1,106	35 1.375	44 1.750	4300	99 3.90	85 3.35	67 2.64	73 2.87	53 2.09	29 1.14	35 1.38	35 1.38	22.0 0.87	24.0 0.94	120, 140, 180 5.0, 7.0
18	215.0 1,903	41 1.625	51 2.000	4300	114 4.49	97 3.82	78 3.07	83 3.27	61 2.40	36 1.42	40 1.57	40 1.57	28.0 1.10	29.0 1.14	120, 140, 180 5.0, 7.0
23	432.0 3,828	57 2.250	67 2.650	4200	145 5.71	124 4.88	102 4.01	110 4.33	86 3.39	41 1.61	45 1.77	45 1.77	31.0 1.22	32.0 1.26	140, 180, 200 5.0, 7.0, 9.0
28	897.0 7,938	70 2.750	79 3.125	4200	178 7.01	148 5.82	120 4.72	137 5.39	107 4.21	54 2.13	60 2.36	60 2.36	43.0 1.70	46.0 1.81	140, 180, 200 5.0, 7.0, 9.0
33	1,774.0 15,700	86 3.375	92 3.625	3800	209 8.23	175 6.88	142 5.59	162 6.38	126 4.96	64 2.51	70 2.75	70 2.75	51.0 2.01	53.0 2.09	140, 180, 200 5.0, 7.0, 9.0
42	4,760.0 42,126	108 4.250	111 4.375	3400	250 9.84	210 8.27	168 6.61	210 8.27	162 6.37	64 2.51	90 3.54	90 3.54	60.0 2.36	63.0 2.48	180, 200, 250 7.0, 9.0, 12.0
51	8,649.0 76,544	133 5.250	133 5.250	2800	290 11.41	244 9.61	202 7.95	244 9.61	200 7.87	70 2.75	110 4.33	110 4.33	66.0 2.60	68.0 2.68	250, 300, 350 9.0, 12.0, 14.0
60	13,750.0 121,688	152 6.000	156 6.125	2200	340 13.39	286 11.26	235 9.25	286 11.26	230 9.06	88 3.46	120 4.72	120 4.72	80.0 3.15	83.0 3.27	250, 300, 350, 450 10.0, 12.0, 14.0
71	23,669.0 209,471	184 7.250	184 7.250	1800	402 15.83	340 13.39	280 11.02	340 13.39	280 11.02	99 3.89	140 5.51	140 5.51	91.0 3.58	94.0 3.70	300, 350, 450 12.0, 14.0, 18.0

- (1). For large hub dimensions and other BSE consult to factory.
- (2). The DRS series is supplied for size 14 to 42 and DFS series for size 14 to 71.
- (3). Max. Bore listed is for standard square key.

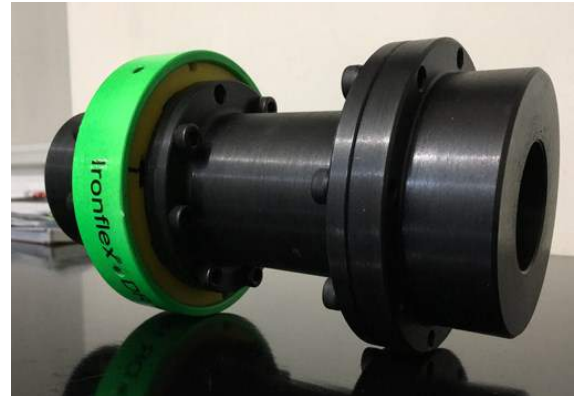
Practical solutions with spacer couplings



DRK Transmission Unit



DRX Short Spacer



DRS/DRF Large Spacer

Spacer design

- ◆ The DRX / DRK series it is ideal for applications with short DBSE.
- ◆ Complies with the requirements of ANSI and DIN 740.
- ◆ The use of large and short hubs allows adapting different shaft diameters.
- ◆ It allows to absorb axial, radial and angular misalignments.
- ◆ Free of lubrication and maintenance
- ◆ The DRS / DRF series is ideal for large distance between shaft.
- ◆ The couplings are supplied with black epoxy and phosphate coatings.
- ◆ For other special designs consult the factory.

Ironflex® couplings stand up to harsh environments and operate efficiently in applications including:

- Electric Motor to gearbox (low torque/ high speed) and (high torque/low speed).
- Electric Motor to pumps.
- Steam turbine to gearbox or pumps.

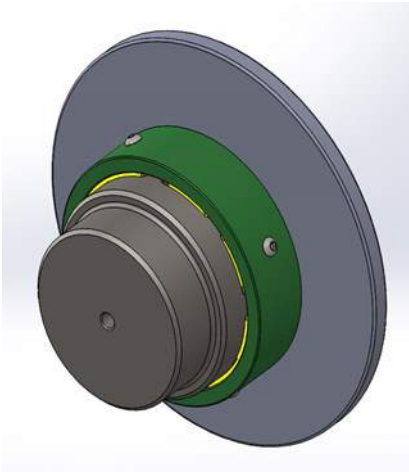


Heavy duty service for screw pump

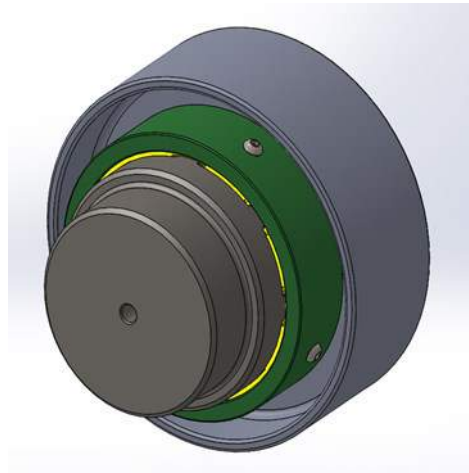


Centrifugal pump for general service

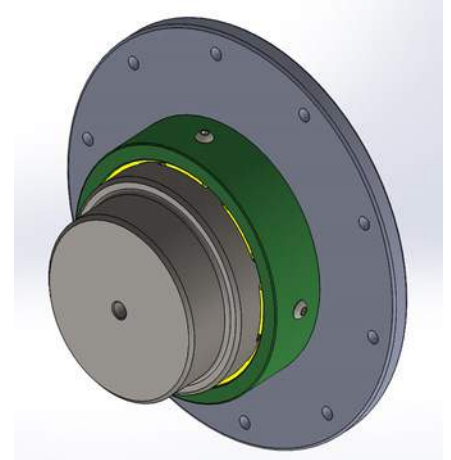
Options for other Applications



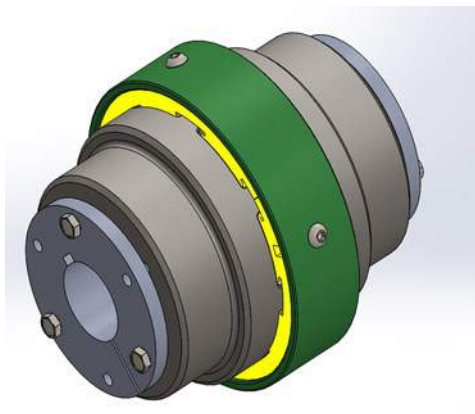
Brake Disc



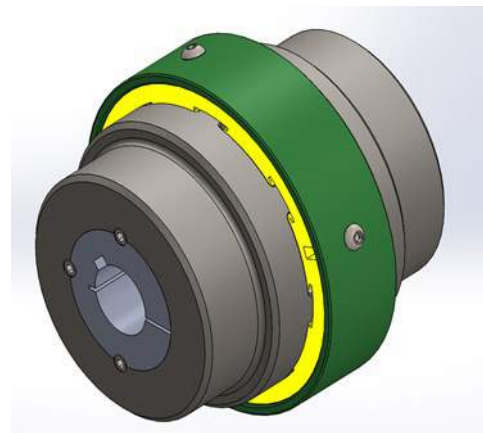
Brake Pulley



Steering Wheel



QD Bushed



Taper-Lock® Bushed

Ironflex®

FLEXELEMENT

Power Transmission Solution

Flexelement Transmission Co.
Power Transmission Innovation
www.flexelementt.com

