

COUPLINGS

PT COMPONENTS

COUPLINGS FOR PUMPS

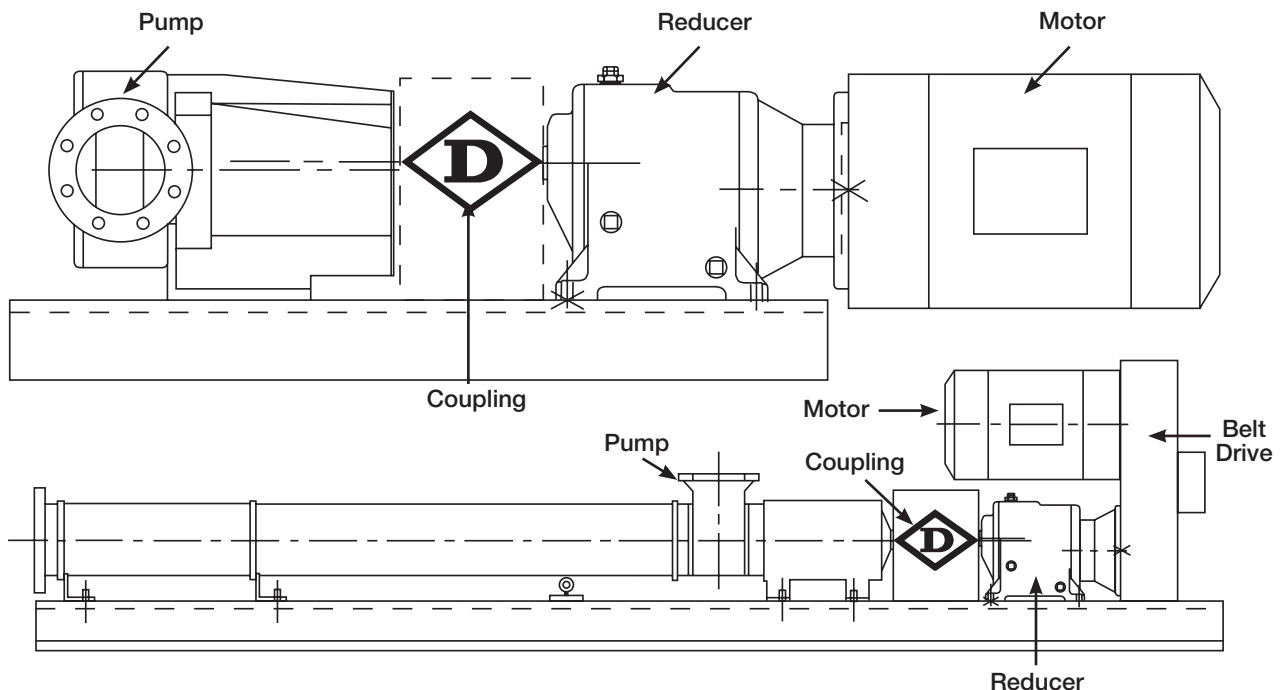
DODGE offers a broad range of couplings specifically engineered for today's varied pump applications. DODGE PARA-FLEX, D-FLEX, and GRID-LIGN couplings offer a superior solution for a wide variety of pumps, including centrifugal and positive displacement applications, among others.



PARA-FLEX GFB

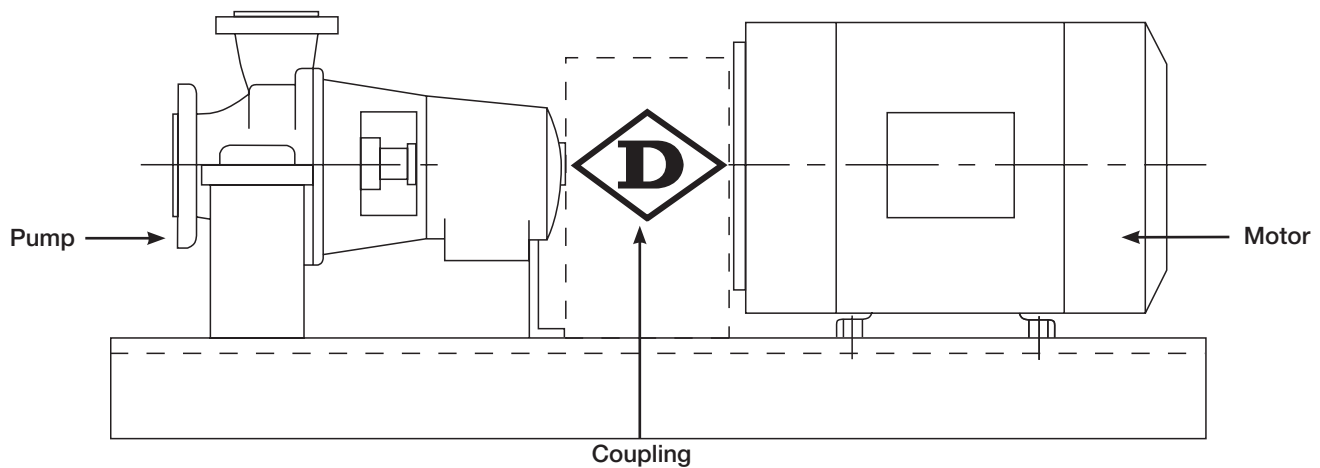
CENTRIFUGAL PUMPS

- **Definition**
 - Constant pressure, steady flow
- **Typical Materials**
 - Water or constant viscosity liquids
- **Driver Equipment**
 - Typically electric motors
- **Design**
 - Spacer couplings are used primarily in centrifugal pump applications. These couplings are designed for motor-pump installations where easy access to pump bearings, seals, and impellers is required without moving the connected units
- **Input RPM**
 - Typically reduced from motor speeds
- **Flow**
 - Steady
- **Starting Conditions**
 - Low pressure, low loads
- **Sizing**
 - The low starting loads require a 1.0 – 1.25 service factor when sizing couplings



POSITIVE DISPLACEMENT PUMPS

- **Definition**
 - Varying pressure, constant flow
- **Typical Materials**
 - gases, petroleum, slurries, food products, semi-solids, varying viscosity liquids
- **Driver Equipment**
 - Typically electric motors
- **Input RPM**
 - Typically reduced from motor speeds
- **Design**
 - Standard couplings are commonly used with motor reducer packages
- **Speed**
 - Operating speeds may also be achieved by using belt drives and adjustable speed drives
- **Flow**
 - Steady
- **Starting Conditions**
 - Medium pressure, medium loads
- **Positive Displacement Pump Types (Rotary)**
 - Screw; Lobe; Vane; Gear; Circumferential Piston; Flexible Tube (Peristaltic)
- **Sizing**
 - The medium starting loads require a 1.5 service factor when sizing couplings



DODGE COUPLINGS

PARA-FLEX

The pump industry's only elastomeric coupling with a five year limited warranty

- Reinforced elements for longer life
- Natural rubber or Neoprene type element materials
- Superior shock load and vibration dampening
- Highest misalignment capability of any coupling
- Preassembled flanges mechanically clamp to reinforced element
- Preassembled spacer center assembly
- Stocked semi-finished centers available for non-standard lengths
- Spacer lengths up to 16"



D-FLEX

The industry standard elastomeric sleeve coupling for centrifugal pumps

- Most economical coupling for applications below 50 HP
- Offered with EPDM, Neoprene, or Hytrel sleeve materials
- Type S and SC flanges balanced to AGMA Class 9 standards
- Spacer lengths up to 10"



GRID-LIGN

The pump coupling that's compact in size, yet power dense for higher torque applications

- Versatile design allows for both high speed (motor) and low speed (reducer output) connections
- Features compact steel construction
- High speed capability
- Spacer lengths up to 16"
- Half spacer design for shorter lengths
- Lowest coupling weight in 10 HP applications and above



PARA-FLEX

Element Size	Max Bore Standard				Max Bore Spacer			Max RPM	Natural Rubber & Neoprene	
	Straight Bore			Bushed	Straight Bore		Bushed		HP/100	Torque (in-lb)
	FBX	FBS	BBS	TL	FBX	FBS	TL			
40	1-7/16	1-3/8	-	1	1-7/16	-	1	4500	.68	429
50	1-7/8	1-13/16	-	1-1/8	1-7/8	-	1-1/4	4500	1.43	900
60	2-3/16	2-3/16	1-1/2	1-7/16	2-3/16	1-15/16	1-11/16	4000	2.86	1800
70	2-3/8	2-11/16	2-1/8	1-11/16	2-3/8	1-7/8	2-1/8	3600	3.49	2200
80	2-7/8	2-7/8	2-9/16	2-1/8	3-3/8	2-1/8	2-11/16	3100	5.72	3605
90	3-3/8	-	2-3/4	2-11/16	3-3/8	2-1/8	2-11/16	2800	7.15	4502
100	3-3/8	-	3-1/4	2-11/16	3-3/4	2-1/2	2-11/16	2600	8.58	5402
110	3-3/4	-	3-15/16	2-11/16	3-3/4	2-1/2	2-11/16	2300	12.30	7750
120	3-3/4	-	4	3-1/4	3-3/4	2-1/2	3-1/4	2100	20.00	12605
140	-	-	4-1/2	3-15/16	-	-	3-15/16	1840	44.00	27590
160	-	-	6	4-7/16	-	-	4-7/16	1560	60.00	37800
200	-	-	6-3/4	4-15/16	-	-	4-15/16	1300	131.00	82500
240	-	-	7-1/2	5	-	-	-	1080	240.00	151200
280	-	-	9	7	-	-	-	910	480.00	302200
320	-	-	11	8	-	-	-	810	719.00	453000



PARA-FLEX G-SERIES

Element Size	Max Bore			Max RPM	Natural Rubber & Neoprene	
	GFB	GTL	GT		HP/100	Torque (in-lb)
50	1-7/8	1-1/4	1-7/16	4500	2.00	1260
60	2-3/4	2-1/8	2-1/4	4000	3.72	2340
80	3-1/2	2-11/16	3	3100	7.15	4502
100	4-1/2	3-1/4	-	2600	8.58	6250

D-FLEX

Element Size	Max Bore				Max RPM	EPDM & Neoprene		Hytel	
	Straight Bore			Bushed		HP/100	Rated Torque (in-lb)	HP/100	Torque (in-lb)
	STD Type J	STD Type S	Spacer Type SC	Type B					
3	7/8	-	-	-	9200	0.10	60	-	-
4	1	-	-	-	7600	0.19	120	-	-
5	1-1/8	1-1/4	1-1/8	-	7600	0.38	240	-	-
6	1-3/8	1-7/8	1-3/8	1-3/16	6000	0.71	450	2.90	1,800
7	-	1-7/8	1-5/8	1-3/16	5250	1.20	725	4.60	2,875
8	-	2-3/8	1-7/8	1-5/8	4500	1.80	1,135	7.20	4,530
9	-	2-7/8	2-1/8	1-15/16	3750	2.80	1,800	11.40	7,200
10	-	3-3/8	2-3/8	2-1/2	3600	4.60	2,875	18.00	11,350
11	-	3-7/8	2-7/8	2-13/16	3600	7.20	4,530	28.60	18,000
12	-	3-15/16	2-7/8	3-1/2	2800	11.40	7,200	50.00	31,500
13	-	4-1/2	3-3/8	3-15/16	2400	18.00	11,350	75.00	47,268
14	-	5	3-7/8	3-15/16	2200	28.60	18,000	115.00	72,480
16	-	6	-	4-1/2	1500	75.00	47,250	-	-



GRID-LIGN

Coupling Size	Max Bore		Max RPM			Rated Torque Finished Bore	
	Straight Bore		Standard		Spacer	HP/100	(in-lb)
	STD	Spacer	T10	T20	T31		
1020T	1-3/16	1-7/16	4500	6000	3600	0.67	464
1030T	1-7/16	1-3/4	4500	6000	3600	1.90	1,320
1040T	1-3/4	2-1/4	4500	6000	3600	3.20	2,200
1050T	2	2-1/2	4500	6000	3600	5.60	3,850
1060T	2-1/4	3-1/8	4350	6000	3600	8.70	6,050
1070T	2-11/16	3-1/4	4125	5500	3600	13.00	8,800
1080T	3-1/4	3-3/4	3600	4750	3600	26.00	18,150
1090T	3-3/4	4-1/4	3600	4000	3600	48.00	33,000
1100T	4-1/4	5	2440	3250	-	80.00	55,550
1110T	4-5/8	5-7/8	2250	3000	-	120.00	82,500
1120T	5-3/8	-	2025	-	-	175.00	121,000
1130T	6-1/2	-	1800	-	-	254.00	176,000
1140T	7-1/4	-	1650	-	-	365.00	253,000
1150T	8	-	1500	-	-	558.51	352,000
1160T	9	-	1350	-	-	785.40	495,000
1170T	10	-	1225	-	-	1047.20	660,000
1180T	11	-	1100	-	-	1451.80	915,000
1190T	12	-	1050	-	-	1919.87	1,210,000
1200T	13	-	900	-	-	2618.00	1,650,000



DODGE COUPLINGS COMPARISON CHART



	PARA-FLEX	D-FLEX	GRID-LIGN	
Misalignment	Best (Grey)	Best (Grey)	Worst (Red)	Better alignment provides longer life and lowers the reaction forces imposed on bearings. In all situations, misalignment should be minimized as much as possible.
Temperature Range	Best (White)	Best (Grey)	Best (White)	Rubber seals and elastomeric elements are generally the most heat limited coupling component. Also, most nonsynthetic lubricants should not be used much above 220° F.
Torque-Bore Capability	Best (Grey)	Best (Grey)	Best (Grey)	This relationship describes torque and bore capabilities relative to the physical size of the coupling. This consideration may be important if the coupling must operate in a limited space.
Speed Capability	Best (White)	Best (Grey)	Best (Grey)	As the diameter of a coupling increases, its speed capability decreases due to centrifugal forces exerted on materials. Further, couplings with all machined parts can operate at higher speeds.
Torsionally Soft	Best (Grey)	Best (Grey)	Best (White)	Generally allows application wind-up to cushion shock loads and vibration. "Torsionally Soft" couplings help protect motor and reducer from shock loads in the driven equipment.
Installation Cost	Best (Grey)	Best (Grey)	Best (White)	Account of initial installation cost including equipment requirements, difficulty, alignment time and manpower.
Ease of Maintenance	Best (Grey)	Best (Grey)	Best (White)	Based on frequency and difficulty of routine parts or coupling replacement, lubrication or other scheduled maintenance.
Repair Cost	Best (Grey)	Best (Grey)	Worst (Red)	Based on cost and difficulty of replacement of a failing or failed coupling.

DODGE PUMP COUPLINGS SELECTION

Pump Service Factors	D-FLEX	PARA-FLEX	GRID-LIGN
Centrifugal	1.25	1.0	1.0
Positive Displacement (other than reciprocating)	1.5	1.5	1.25

TORQUE CALCULATION

$$\text{HP/100 Method: } \text{HP/100} = \frac{\text{Motor HP} \times 100 \times \text{Service Factor}}{\text{Coupling RPM}}$$

$$\text{Torque Method: } \text{Torque (in-lb)} = \frac{63025 \times \text{HP} \times \text{Service Factor}}{\text{Coupling RPM}}$$



World Headquarters

P.O. Box 2400, Fort Smith, AR 72902-2400 U.S.A., Ph: (1) 479.646.4711, Fax (1) 479.648.5792, International Fax (1) 479.648.5895

Baldor - Dodge

6040 Ponders Court, Greenville, SC 29615-4617 U.S.A., Ph: (1) 864.297.4800, Fax: (1) 864.281.2433

www.baldor.com