We provide motors, generators and mechanical power transmission products, services and expertise to improve customers’ processes and optimize the total cost of ownership over the total life cycle of our products, and beyond.
The Dodge® coupling family

Uniquely engineered to dampen vibration, accommodate shaft misalignment, and eliminate unexpected downtime.

Dodge has manufactured couplings for over 100 years and has earned a reputation for developing innovative products that lower customers’ total cost of ownership.

The Dodge coupling product line can offer a solution to almost any customer need. Whether the need is an elastomeric or metallic design, Dodge can provide a coupling with the potential to increase torque capacity, accommodate shaft misalignment, extend life, and put an end to unexpected downtime.

Combining Dodge coupling products with the overall ABB, Baldor, and Dodge product lines, customers can order complete system packages containing a variety of designs, sizes, and options. The large product offering allows pump, conveyor, and fan users to have a drive, motor, coupling, gearbox, bearings, and conveyor pulley from the same manufacturer. This ability to provide a single source system design with the product breadth and depth of Dodge is an advantage shared with no other manufacturer in the marketplace.
Elastomeric, tire style

Dodge Para-Flex flanges

FBX – Finished bore flange
The ductile iron FBX flanges are factory assembled and utilize a setscrew locking mechanism to insure a quick, easy installation.

BBS – Bored-to-size flange
The BBS steel flange assemblies are finished bore designs. By utilizing steel, this flange is the perfect choice for the highest shock load and vibration applications.

TL - Taper-Lock flange
(standard and metric designs)
The cast iron TL flange design uses Taper-Lock bushings, which allow for easy installation and removal with minimal shaft damage, reducing maintenance time and costs. Additionally, the metric Para-Flex flanges offer metric hardware for all sizes.

Pre-assembled spacer flange
The factory-assembled spacer center assembly drops in and drops out for easy installation and removal, accommodating a wide range of between-shaft-end lengths for greater versatility.

Dodge Para-Flex coupling metric and imperial ratings*

<table>
<thead>
<tr>
<th>Coupling style</th>
<th>Size range</th>
<th>Max torque*</th>
<th>Power per 100 RPM*</th>
<th>Max speed*</th>
<th>Max bore*</th>
<th>Misalignment capability (Angular)</th>
<th>Misalignment capability (Parallel)</th>
<th>Misalignment capability (End-Float)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PXFBX</td>
<td>PX40 – PX120</td>
<td>1,424</td>
<td>14</td>
<td>20</td>
<td>4,500</td>
<td>102</td>
<td>3.75</td>
</tr>
<tr>
<td></td>
<td>PXMTL</td>
<td>PX40 – PX240</td>
<td>17,078</td>
<td>151,200</td>
<td>179.04</td>
<td>240</td>
<td>4,500</td>
<td>127</td>
</tr>
<tr>
<td></td>
<td>PXTL</td>
<td>PX40 – PX320</td>
<td>51,180</td>
<td>453,000</td>
<td>535</td>
<td>718</td>
<td>4,500</td>
<td>203</td>
</tr>
<tr>
<td></td>
<td>PXBBS</td>
<td>PX40 – PX320</td>
<td>51,180</td>
<td>453,000</td>
<td>535</td>
<td>718</td>
<td>4,500</td>
<td>285</td>
</tr>
</tbody>
</table>

*Listed values represent the range of the entire product line. Ratings listed are the maximum ratings for the largest coupling size. Ratings are dependent upon coupling size. See Dodge engineering catalog and appropriate selection methods during sizing or contact application engineering for assistance.

FBX – Finished bore flange
FBX

BBS – Bored-to-size flange
BBS

TL - Taper-Lock flange
TL

Pre-assembled spacer flange
Pre-assembled spacer center assembly
Elastomeric, tire style

Dodge Para-Flex elements

Superior design provides advantages over other rubber or polyurethane elements
Dodge Para-Flex elements are manufactured with reinforcing fabric tension cords that transmit much of the torque during operation. The uniform and centered bead in the foot of the tyre element prevents it from pulling out during operation. Additionally, the tyre element is reinforced at the split to reduce fatigue and extend life.

Industry leading misalignment capabilities
Dodge Para-Flex elements provide accommodation of shaft misalignment during installation, running-time, and replacement better than other elastomeric elements. With an industry-leading combined 4° angular, 3.17 mm (1/8 in.) parallel, and 7.93 mm (5/16 in.) end-float capability, Para-Flex couplings will perform in difficult applications and reduce valuable time needed for installation and maintenance.

Static conductive
The Dodge Para-Flex natural rubber element is static conductive which provides an insurance policy for customers’ equipment. The static conductivity allows current to safely pass from an ungrounded system component to a grounded system component. Allowing current to safely pass through the natural rubber element prevents the possibility of arcing during operation.

Large installed base
With over 50 years of history and development, Dodge Para-Flex elements have the experience of providing reliable solutions in a wide range of industries and applications. Dodge Para-Flex couplings carry an industry-leading 5-Year Limited Warranty.

Fabric centered throughout rubber increases tyre life.

Centered bead prevents tyre element from pulling out of flange.

Tyre element is reinforced at the split to reduce fatigue and extend life.

Torsionally soft rubber protects connected equipment
The flexible design of the Dodge Para-Flex element is crucial in preventing damage to connected equipment in harsh-running environments. The torsional softness is instrumental in damping vibrations and absorbing shock loads to the system.

Ex

Dodge coupling family | Motors and Generators | ABB
Elastomeric, sleeve style

Dodge D-Flex couplings

**Three-way flexing action handles shock, vibration, and misalignment**

The Dodge D-Flex™ coupling features molded, non-lubricated, interchangeable elastomeric sleeves of EPDM, Neoprene, or Hytrel. Its three-way flexing action accommodates torsional, angular, and parallel misalignment, as well as axial end float.

**Type S coupling**

The Type S coupling features high strength cast-iron flanges, that are bored to size for a clearance fit, and balanced to AGMA Class 9 Standards, resulting in smooth operation for pumping applications. With one setscrew over the keyway and the other at 65°, D-Flex S flanges provide optimum shaft attachment. Type S couplings are offered with EPDM, Neoprene, or Hytrel sleeves.

**Type SC coupling**

Dynamically balanced to AGMA Class 9 Standards, the Type SC spacer coupling accommodates a wide range of shaft spacing. It features a drop-out center assembly for easy equipment maintenance. Additionally, shaft hubs include hub flats for ease of alignment during installation, and are available in either rough stock bore or clearance fit finished bore.

**Pump drive package**

The Dodge D-Flex coupling is very popular in pumping applications due to the five-piece spacer design’s ease of installation and change out. ABB, Baldor Electric, and Dodge can package together the controls, drives, motors, and couplings needed for common pumping applications.

---

**Dodge D-Flex coupling metric and imperial ratings**

<table>
<thead>
<tr>
<th>Coupling style</th>
<th>Size range</th>
<th>Max torque* (N-m)</th>
<th>Power per 100 RPM*</th>
<th>Max speed*</th>
<th>Max bore* (mm)</th>
<th>Misalignment capability (Angular)</th>
<th>Misalignment capability (Parallel)</th>
<th>Misalignment capability (End-Float)</th>
</tr>
</thead>
<tbody>
<tr>
<td>D-Flex S Flange with EPDM or Neoprene Sleeve</td>
<td>SS-16S</td>
<td>5,338</td>
<td>47,250</td>
<td>55</td>
<td>7,600</td>
<td>1°</td>
<td>0.25-1.574</td>
<td>0.010-0.662</td>
</tr>
<tr>
<td>D-Flex S Flange with Hytrel Sleeve</td>
<td>6S-16S</td>
<td>8,189</td>
<td>72,480</td>
<td>85</td>
<td>6,000</td>
<td>25°</td>
<td>0.254-0.889</td>
<td>0.010-0.035</td>
</tr>
</tbody>
</table>

*Listed values represent the range of the entire product line. Ratings listed are the maximum ratings for the largest coupling size. Ratings are dependent upon coupling size. See Dodge engineering catalog and appropriate selection methods during sizing or contact application engineering for assistance.
Elastomeric, sleeve style

Dodge D-Flex couplings

Dodge D-Flex type S coupling

Dodge D-Flex type SC spacer coupling
Metallic, gear style

Dodge Gear couplings

The most power-dense coupling Dodge offers
Engineered for improved operation, the Dodge gear coupling is manufactured with high-quality forged steel for longer service life, and features high torque capability for efficient downsizing.

Excellent torque/speed ratings
Capable of transmitting high torque high speeds, the Dodge Gear coupling is designed with two flanged sleeves that are bolted together. Each sleeve contains internal gear teeth that transmit torque when meshed with each hub’s external gear teeth.

Superior sealing system
Machined flanges offer improved sealing and the coupling’s reliable O-ring seal design provides an effective barrier against contaminants.Unlike competitive gear couplings, which use paper gaskets that could become dry or damaged over time, sealing compound is included with every Dodge Gear coupling.

Versatile design
The Dodge Gear coupling’s versatile, modular system design is half-for-half interchangeable with competitive AGMA gear couplings.

Largest bore capacity in industry
In most sizes, the Dodge Gear coupling also offers the largest bore capacity in the industry. It’s well suited for reversing applications and can be combined with any Dodge speed reducer to achieve a tailored package for maximum results.

Custom capabilities
The Dodge gear coupling product line has cataloged sizes up to AGMA size 9.0; however, manufacturing capabilities also allow for designs requiring:
- Large sizes up to size 30 (rated at 5.34 million N-m with a 1050 mm bore)
- Shrouded bolt
- Spacer couplings
- Floating shaft designs
- Limited end float (LEF)
- Slide gear
- Shear pin
- Metal Labyrinth seal
- Made-to-order (MTO) custom designs

Dodge Gear coupling metric and imperial ratings*

<table>
<thead>
<tr>
<th>Coupling style</th>
<th>Size range</th>
<th>Max torque* N-m</th>
<th>Max torque* In-lbs</th>
<th>Max torque* kW/100</th>
<th>Max torque* HP/100</th>
<th>Max speed*</th>
<th>Max speed* RPM</th>
<th>Max speed*</th>
<th>Max bore</th>
<th>Misalignment capability (Angular)</th>
<th>Misalignment capability (Parallel)</th>
<th>Misalignment capability (End-Float)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gear (Standard)</td>
<td>1.0 - 9.0</td>
<td>206,400</td>
<td>1,827,000</td>
<td>2161</td>
<td>2999</td>
<td>6,000/9,000**</td>
<td>340</td>
<td>12.5</td>
<td>340</td>
<td>Size 1.0-5.0 – 1.5° ang. Misalign. per gear mesh</td>
<td>Size 6.0-9.0 – 0.75° ang. Misalign. per gear mesh</td>
<td></td>
</tr>
<tr>
<td>Gear (Made-To-Order)</td>
<td>8.0 - 30.0</td>
<td>5,340,000</td>
<td>47,269,000</td>
<td>59916</td>
<td>75000</td>
<td>1,900/2,850**</td>
<td>1050</td>
<td>42.00</td>
<td>1050</td>
<td>Consult Dodge Engineering for misalignment detail.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Listed values represent the range of the entire product line. Ratings listed are the maximum ratings for the largest coupling size. Ratings are dependent upon coupling size. See Dodge engineering catalog and appropriate selection methods during sizing or contact application engineering for assistance.

**Balanced
Metallic, gear style

Dodge Gear couplings

Dodge gear coupling

Dodge spacer gear coupling

Dodge floating shaft gear coupling
Metallic, grid style

Dodge Grid-Lign couplings

Compact in size, yet high in torque capability
Dodge Grid-Lign couplings are available in a variety of sizes, in both standard and spacer styles. Every coupling features two steel shaft hubs, a tapered grid element, two seals and a cover assembly. Its versatile design allows for a motor or reducer output speed connection, and its speed capability ranges up to 6,000 RPM dependant on size. Dodge Grid-Lign is also available in both T31 and T35 spacer designs up to size 1200T. This spacer offering can be used as a spacer coupling, or mounted to a brake disc or drum.

Flexible tapered element
The Dodge Grid-Lign coupling’s tapered grid element is engineered with high-strength, spring steel that is quenched and tempered. This feature helps isolate vibration and cushions shock loads. In addition, it allows uniform contact during light, normal, and shock-loading conditions for long machine life.

High torque capability
Torque capabilities on the Dodge Grid-Lign coupling range up to 800,000 N·m (7 million lb-in) dependant on size. Whether it is overland conveyors or underground mines, the high torque ratings allow for customers to specify a Grid-Lign coupling in the largest conveyor applications.

Dodge Grid-Lign coupling metric and imperial ratings*

<table>
<thead>
<tr>
<th>Coupling style</th>
<th>Size range</th>
<th>Max torque* N·m</th>
<th>Power per 100 RPM* kW/100</th>
<th>Max speed* RPM</th>
<th>Max bore mm</th>
<th>Misalignment capability (Angular) °</th>
<th>Misalignment capability (Parallel) mm</th>
<th>Misalignment capability (End-Float) mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grid-Lign</td>
<td>1020T – 1200T</td>
<td>186,417</td>
<td>1,650,000</td>
<td>2618</td>
<td>6,000</td>
<td>360 13.00 0.5'</td>
<td>0.304 0.012 9.525</td>
<td>0.375</td>
</tr>
<tr>
<td>Straight Bore</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grid-Lign</td>
<td>150 – 480</td>
<td>800,000</td>
<td>7,080,585</td>
<td>8376</td>
<td>11234</td>
<td>320 555 21.85 Consult Dodge Engineering for misalignment detail.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S-Series</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Listed values represent the range of the entire product line. Ratings listed are the maximum ratings for the largest coupling size. Ratings are dependent upon coupling size. See Dodge engineering catalog and appropriate selection methods during sizing or contact application engineering for assistance.
Metallic, grid style

Dodge Grid-Lign couplings

System package design
Dodge Grid-Lign couplings are commonly used in conveyor, pump, and fan applications across a variety of industries including mining, aggregate, power generation, oil & gas, steel, and pulp & paper.

The wide breadth and depth of the ABB, Baldor Electric, and Dodge product lines provide users a single source for all electrical and mechanical power transmission products (i.e. controls, drives, motor, coupling, reducer, bearings, and conveyor pulleys). As seen in Figure 1, ABB or Baldor Electric motors, Dodge couplings, and Dodge reducers can easily be combined into one system package.

Custom system engineering capabilities
Baldor-Reliance and Dodge have been designing custom engineered conveyor drive systems for decades. Combining the ABB, Baldor-Reliance, and Dodge product lines into one package allows users to receive a complete, custom designed drive system for bulk material handling applications that include controls, drives, motors, gearing, couplings, bearings, conveyor pulleys, and drive components from a single source. As seen in Figure 2 below, complex packaged drive systems for conveying applications are an absolute core competency of Dodge engineering. Mining, aggregate, power generation, oil & gas, steel, pulp & paper, and general industrial users can all benefit from depending on Dodge as a trusted engineering source for all their design needs.

Figure 1
Dodge Grid-Lign spacer coupling mounted between a Baldor-Reliance motor and a Dodge MagnaGear reducer

Figure 2
Baldor•Reliance and Dodge engineered system package

Baldor•Reliance 3000HP (2237kW) motor
Dodge Grid-Lign 1130T35 coupling with brake disc
Dodge Grid-Lign S300T20 coupling with custom spacer and brake disc
Metallic, disc style

Dodge Disc couplings

Engineered for longer life, improved reliability
The Dodge Disc Coupling offers industry leading torque capacity and misalignment capability, resulting in longer life and improved reliability. In addition to the high torque and misalignment capabilities, the Dodge Disc Coupling also provides features for customers to save money by downsizing with a large hub option, and prevent unexpected downtime costs with strobe light inspection.

Disc couplings have become the preferred design for pumping and compressor applications used in the chemical, oil and gas industry due to their high torque, speed, misalignment, and maintenance-free features. The advantages of the disc style coupling have also driven the API 610 specification, which can be met by all Dodge Disc Couplings. Additionally, Dodge Disc Couplings meeting API 671 requirements are available upon request.

Pumping system packages
The Dodge Disc coupling can be specified into any API 610 or API 671 pumping application due to its wide range of capabilities. ABB drives, ABB motors, and Baldor•Reliance motors have become the standard in the oil and gas industry due to their reliability and long life. Now oil and gas users can realize the same reliability and long life by packaging Dodge Disc couplings, ABB or Baldor•Reliance motors, and ABB drives, into one complete pump driver system.

Dodge Disc coupling metric and imperial ratings*

<table>
<thead>
<tr>
<th>Coupling style</th>
<th>Size range</th>
<th>Max torque*</th>
<th>Power per 100 RPM*</th>
<th>Max speed*</th>
<th>Max bore</th>
<th>Misalignment capability (Angular)</th>
<th>Misalignment capability (Parallel)</th>
<th>Misalignment capability (End-Float)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disc (Standard)</td>
<td>94-310</td>
<td>20,000</td>
<td>177,000</td>
<td>209</td>
<td>280</td>
<td>9,100/22,700**</td>
<td>200</td>
<td>7.88</td>
</tr>
<tr>
<td>Disc (Made-to-Order)</td>
<td>333-702</td>
<td>259,000</td>
<td>2,292,000</td>
<td>2712</td>
<td>3636</td>
<td>1,360/3,400**</td>
<td>385</td>
<td>15.25</td>
</tr>
</tbody>
</table>

*Tomb -30°C to +50°C II 2 GD e 100°C (T5) Sira 14 ATEX 6060X

DODGE COUPLINGS MFG. BY BALDOR ELECTRIC COMPANY GREENVILLE SC/FT. SMITH AR USA

Sizes 94-210

*Tomb -30°C to +65°C II 2 GD e 135°C (T4) Sira 14 ATEX 6060X

DODGE COUPLINGS MFG. BY BALDOR ELECTRIC COMPANY GREENVILLE SC/FT. SMITH AR USA

Sizes 236-310

*Listed values represent the range of the entire product line. Ratings listed are the maximum ratings for the largest coupling size. Ratings are dependent upon coupling size. See Dodge engineering catalog and appropriate selection methods during sizing or contact application engineering for assistance.

**Balanced

Note (1): Anti-corrosive options including Black Oxide, Electroless Nickel, and Stainless Steel are available upon request.

Note (2): Anti-sparking options available upon request.
Metallic, disc style

Dodge Disc couplings

**Competitor disc geometry**

Many disc coupling competitors utilize the disc geometry seen below which features a scalloped outside diameter and circular inside diameter. As seen in Figure 3, this single scalloped design unevenly distributes material along the “axis of bolt center”, which negatively impacts the torque ratings and the misalignment capability of the disc. Figure 3 shows large peak stress areas (shown in red) are created around the bolt holes and along the outside diameter of each leg between bolts, resulting in lower torque ratings. Additionally, the uneven distribution of material along the “axis of bolt center” drastically reduces misalignment capability during operation.

**Figure 3**
Competitor disc geometry - single scalloped design

**Dodge disc geometry**

The Dodge Disc coupling utilizes the newest generation of disc geometry, a dual scalloped design, which offers an even distribution of material along the “axis of bolt center”. Figure 4 shows a drastically reduced number of high stress areas within the disc limited to only a small area around the bolt hole. Also, the peak stress shown in the Dodge Disc geometry is 13% less than the competitor’s geometry, resulting in an average of double the torque capacity. Additionally, an even distribution of material along the “axis of bolt center” maximizes misalignment capability and offers up to three times the misalignment of the leading competitor. Industry leading torque ratings and misalignment capability will ultimately lead to longer coupling life, improved reliability, and reduced unexpected downtime.

**Figure 4**
Dodge disc geometry - dual scalloped design
Mechanical soft starts

Dodge Fluid couplings

Dodge Fluid coupling operation
Dodge Fluid couplings are fixed fill mechanical soft start devices which utilize hydrokinetic energy to transmit torque via a system of impellers. The input impeller functions similar to a centrifugal pump and hydraulic turbine. When the input drive moves, it transmits kinetic energy to the oil which is distributed in the housing and transmits torque by engaging the outer impeller.

The Dodge Fluid coupling allows the driver to start under “no load”, resulting in a smooth start up and reduction of amp draw from the motor. Since there is no physical connection inside the housing, the Dodge Fluid coupling has built-in overload protection and inherent torsional vibration absorption. Additionally, load balancing is possible with the use of asynchronous motors, instead of custom motors, since the Fluid couplings automatically adjust to load speed.

Product line overview
Dodge Fluid couplings can accommodate applications up to 1360 HP at 1750 RPM and 1840 KW at 1450 RPM dependent on size. In addition to the standard housing configuration available, Dodge Fluid couplings also offer single and double delay fill options for longer start up times. Shaft attachment options include:

- Direct Coupled with Dodge gear coupling hubs (KCM)
- Belt driven (KSD)
- Direct coupled with a flexible Para-Flex element and flange (KCP)

Package system solutions
Dodge Fluid couplings are most commonly used on remote location conveyor drive applications in the mining, aggregate, cement, and power generation industries where electronic controls and drives are difficult to power, program, and maintain. The Dodge System-1 group provides the service of packaging Dodge Fluid couplings into a complete, single source conveyor drive system using Baldor Electric motors, Dodge Magnagears, Dodge bearings, and Dodge conveyor pulleys.