D-Flex Couplings Installation Instructions

These instructions must be read thoroughly before installation or operation. This instruction manual was accurate at the time of printing. Please see baldor.com for updated instruction manuals.

Note! The manufacturer of these products, Baldor Electric Company, became ABB Motors and Mechanical Inc. on March 1, 2018. Nameplates, Declaration of Conformity and other collateral material may contain the company name of Baldor Electric Company and the brand names of Baldor-Dodge and Baldor-Reliance until such time as all materials have been updated to reflect our new corporate identity.

WARNING: Because of the possible danger to person(s) or property from accidents which may result from the improper use of products, it is important that correct procedures be followed. Products must be used in accordance with the engineering information specified in the catalog. Proper installation, maintenance and operation procedures must be observed. The instructions in the instruction manuals must be followed. Inspections should be made as necessary to assure safe operation under prevailing conditions. Proper guards and other suitable safety devices or procedures as may be desirable or as may be specified in safety codes should be provided, and are neither provided by ABB nor the responsibility of ABB. This unit and its associated equipment must be installed, adjusted and maintained by qualified personnel who are familiar with the construction and operation of all equipment in the system and the potential hazards involved. When risk to persons or property may be involved, a holding device must be an integral part of the driven equipment beyond the speed reducer output shaft.

WARNING: To ensure the drive is not unexpectedly started, turn off and lock-out or tag power source before proceeding. Failure to observe these precautions could result in bodily injury.

WARNING: All products over 25 kg (55 lbs) are noted on the shipping package. Proper lifting practices are required for these products.

This manual encompasses the standard sizes and types of the Dodge D-Flex® coupling. Determine the size and type from the markings on the components. Remove all components from their boxes, and loosely assemble the coupling on a convenient surface. (Do not attempt to install the wire ring on two-piece sleeves at this time.) Also check maximum RPM values in Table 1 against operating speed. All rubber sleeves (EPDM and Neopreene) have the same ratings for a given size and may be used interchangeably. However because rubber and Hytrel sleeves have significantly different ratings, they should never be used interchangeably.

NOTE: For spacer assemblies, center adapter is torqued and match marked to spacer flange. If bolt position is modified, contact Mechanical Power Transmission Support.

Shaft & Component Preparation:

Before installing the hubs, ensure that shafts have been cleaned and are free of dirt, grease, and burs. Verify that keys fit shafts properly and remove any protective coatings from the bores or mating surfaces.

Close-Coupled Finished Bore (Types S & J) Installation

1. Slide one coupling flange onto each shaft.
   
   NOTE: If the coupling employs two piece design with wire ring, be sure to slide the wire ring onto a shaft before installing the flanges.
   
2. Secure one flange to the shaft with the set screws. Set screw torque values shown in Table 3. Leave the other flange loose.
   
3. Seat the element into the secured flange.
   
4. Slide the loose flange on the shaft until the element is completely seated in the teeth of each flange. Position flange to dimension “B” (Figure 1) as shown in Table 1.
   
5. If the coupling employs the two piece element with wire ring, force the ring into its groove in the center of the sleeve.

Close-Coupled QD Bushed (Type B) Installation:

1. Slide one coupling flange onto each shaft.
   
   NOTE: If the coupling employs two piece design with wire ring, be sure to slide the wire ring onto a shaft before installing the flanges.
   
2. Secure one flange to the shaft with the QD bushing. Install QD bushings per Dodge instruction manual MN4049. Leave the other flange loose.
   
3. Seat the element into the secured flange.
4. Slide the loose flange on the shaft until the element is completely seated in the teeth of each flange. Position flange to dimension “B” (Figure 1) as shown in Table 1.
5. If the coupling employs the two piece element with wire ring, force the ring into its grooves in the center of the sleeve.
**Spacer (Type SC) Installation:**

1. Slide each spacer hub onto its corresponding shaft.
2. Secure each hub with set screws so that the machined face of the hub is flush with the end of the shaft. Set screw torque values shown in Table 3.
3. Position the shafts to the desired “BSE” dimension (Figure 2).
4. Compress the center assembly and slide it into place between the two hubs.
   - The center assembly is comprised of two flanges and the element.
   - The center assembly should be mechanically retained by the machined piloted hubs.
5. Secure the flanges to the hubs using the bolts provided. Bolt torque values shown in Table 2.
6. If the coupling employs the two piece element with wire ring, force the ring into its grooves in the center of the sleeve.

Different coupling elements require different degrees of alignment precision. Locate the alignment values for your sleeve size and type in Table 1.

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**NOTE:** Check the parallel offset by laying a straight edge across the OD of the flanges (Figure 3) in four places 90° apart without rotating the coupling. If the gap between the flange and straight edge exceeds the value shown under “Parallel” in Table 1, realign the shafts.

**NOTE:** Check angular alignment by measuring dimension “B” (Figure 4) at four places 90° apart without rotating the coupling. Adjust the equipment until the four measurements do not vary more than the value given under “Angular” in Table 1. If a correction is necessary, recheck the parallel alignment after the correction is made.

7. Install coupling guards per OSHA or applicable requirements. Guarding should be designed so that coupling element will be contained within the guard in the event that the coupling sleeve is thrown from the coupling assembly.

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**Table 1 - Maximum RPM and Allowable Misalignment**

<table>
<thead>
<tr>
<th>Sleeve Size</th>
<th>Maximum RPM</th>
<th>EPDM &amp; Neoprene Elements (E, JE, JES, JN, JNS)</th>
<th>Hytrel Elements (H, HS)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Parallel (see Figure 3)</td>
<td>Angular</td>
<td>“B” ④</td>
</tr>
<tr>
<td>in.</td>
<td>mm</td>
<td>in.</td>
<td>mm</td>
</tr>
<tr>
<td>3</td>
<td>9200</td>
<td>.010</td>
<td>.25</td>
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<tr>
<td>4</td>
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<td>5</td>
<td>6000</td>
<td>.015</td>
<td>.38</td>
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<td>6</td>
<td>5250</td>
<td>.020</td>
<td>.51</td>
</tr>
<tr>
<td>8</td>
<td>4500</td>
<td>.020</td>
<td>.51</td>
</tr>
<tr>
<td>9</td>
<td>3750</td>
<td>.025</td>
<td>.64</td>
</tr>
<tr>
<td>10</td>
<td>3600</td>
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<td>.81</td>
</tr>
<tr>
<td>12</td>
<td>2800</td>
<td>.032</td>
<td>.81</td>
</tr>
<tr>
<td>13</td>
<td>2400</td>
<td>.040</td>
<td>1.02</td>
</tr>
<tr>
<td>14</td>
<td>2200</td>
<td>.045</td>
<td>1.14</td>
</tr>
<tr>
<td>16</td>
<td>1500</td>
<td>.062</td>
<td>1.57</td>
</tr>
</tbody>
</table>

**NOTE:**
① Values shown above apply if the actual torque transmitted is more than one-fourth the coupling rating. For lesser torque, reduce the above values by one-half.
② Hytrel (type H and HS) elements should not be used as direct replacements for EPDM (type E, JE & JES) or Neoprene (type N, JN & JNS) elements.
③ B-Value when using 6J flanges is 2.125.
④ To ease assembly of type SC spacer couplings add one-sixteenth inch to the “B” dimension.
ATEX Approved D-FLEX Couplings

These instructions do not cover all details or variations in equipment nor provide every possible contingency or hazard to be met in connection with installation, operation, and maintenance. Should further information be desired, or should particular problems arise which are not covered in this manual, the matter should be referred to your local ABB representative.

Dodge D-Flex couplings (EPDM and Neoprene elements) are manufactured under the guidelines of the ATEX directive 2014/34/EU. Dodge D-Flex couplings with Hytrel elements are not ATEX certified. Hytrel elements are easily identified by their orange color.

Dodge D-Flex couplings (EPDM and Neoprene elements) are suitable for ATEX category 2 and M2, Group II and I for gas and dust environments and are also suitable for ATEX category 3 for all gas or dust environments with ignition temperatures higher than T5 = 100°C.

An adhesive label indicating ATEX certification will be attached to the product and will contain the following, or similar, information:

- I M2
- Ex h I Mb
- Il 2GD
- Ex h IIIC T5 Gb
- Ex h IIIC T100°C Db
- Tamb -30°C to +50°C
- SIRA 04 ATEX9358
- Dodge Coupling

MFG by ABB Motors and Mechanical Inc.
5711 R.S. Boreham Jr. St., Ft. Smith, AR 72901 USA

WARNING: These couplings are designed to operate with surface temperatures below 100°C when properly installed and selected. Excessive temperatures greater than 80°C is a result of an abnormal operating condition caused by:

1. Improper installation - refer to installation manual for proper procedures
2. Excessive misalignment - re-align coupling / shafts
3. Failure of the coupling element - replace elastomeric element
4. Excessive speed - re-evaluate application and selection
5. Excessive vibration - determine source, re-evaluate application

If applied in a Division 1 or Zone 1 environment, the excessive temperature may cause ignition of hazardous materials.

In hazardous environments, Dodge elastomeric couplings should not be considered as fail safe or “break-away” power transmission devices. Overloads imposed to these devices could cause irreparable damage, shall be considered an explosive hazard, could create projectiles, and/or could cause torque transmission interruptions. The coupling shall be sized and used to the stated torque capabilities of the unit as published in the Dodge PT Components Engineering Catalog. Any assistance needed in selection shall be referred to an ABB representative.
EU Declaration of Conformity

The undersigned, representing the following supplier and the following authorized representative-

ABB Motors and Mechanical Inc.
5711 R. S. Boreham, Jr. Street
Fort Smith, Arkansas 72901 USA

ABB Automation Products GmbH
Oberhausener Straße 33
40472 Ratingen, Germany

This declaration is issued under the sole responsibility of the manufacturer. herewith declare that the Products

**Couplings**

**Dodge Paraflex, Dodge D-Flex**

**Group I M2 Ex h I Mb**

**Group II 2GD Ex h IIC T5 Gb Ex h IIIC T100°C Db**

**Tamb -30°C to + 50°C**

are in conformity with the provisions of the following EC Directive(s) when installed in accordance with the installation instructions contained in the product documentation:

- [2014/34/EU](new.abb.com/mechanical-power-transmission) ATEX

and that the standards and/or technical specifications referenced below have been applied:

<table>
<thead>
<tr>
<th>Standard Number</th>
<th>Title</th>
</tr>
</thead>
</table>

**Notified Body:**
CSA Group Netherlands B.V.
Utrechtseweg 310 (B42)
6812AR ARNHEM
Netherlands

**Certificate:** SIRA 04ATEX9358

**Supplier:**
L. Evans Massey
Position: Manager Standards and Certification
Date: 10 September 2019 Greenville, SC USA

**Authorised Representative:**
Michael Klein
Position: Regional Sales and Marketing Manager Central Europe
Date: 10 September 2019 Ratingen, Germany

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Fort Smith, AR 72901
Ph: 1.479.646.4711

Mechanical Power Transmission Support
Ph: 1.864.297.4800

new.abb.com/mechanical-power-transmission
baldor.com

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