



## 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](http://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:** 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 Neoprene) 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.

**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 are 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.

### Shaft & Component Preparation:

Before installing the hubs, ensure that shafts have been cleaned and are free of dirt, grease, and burrs. 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.

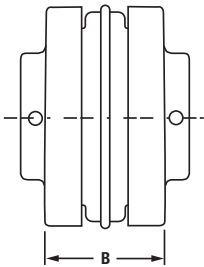
**NOTE:** If the coupling employs two piece design with wire ring, be sure to slide the wire ring onto a shaft before installing the flanges.

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.

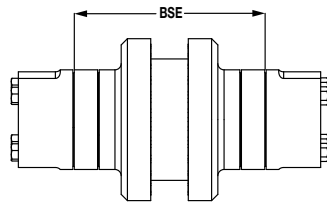
## Spacer (Type SC) Installation:

- Slide each spacer hub onto to its corresponding shaft.
- 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.
- Position the shafts to the desired "BSE" dimension (Figure 2).
- 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.
- Secure the flanges to the hubs using the bolts provided. Bolt torque values shown in Table 2.
- 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.



**Figure 1 - B Dimension**

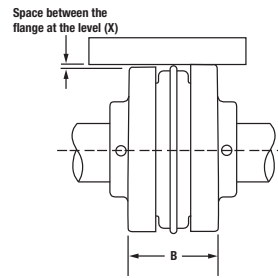


**Figure 2 - BSE Dimension**

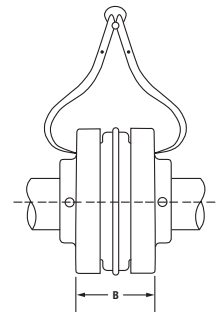
**NOTE:** Check the parallel offset by laying a straight edge across the OD of the flanges (Figure 3) in four places 90° apart without rotating the coupling. If the gap between the flange and straight edge exceeds the value shown under "Parallel" in Table 1, realign the shafts.

**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.

- 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.



**Figure 3 - Parallel Measurement**



**Figure 4 - Angular Measurement**

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

Sleeve Size	Maximum RPM	EPDM & Neoprene Elements (E, JE, JES, JN, JNS)						Hytrel Elements (H, HS) ②					
		Parallel (see Figure 3)		Angular		"B" ④		Parallel ④		Angular		"B" ④	
		in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
3	9200	.010	0.25	.035	0.89	1.188	30.18	-	-	-	-	-	-
4	7600	.010	0.25	.043	1.09	1.500	38.10	-	-	-	-	-	-
5	7600	.015	0.38	.056	1.42	1.938	49.23	-	-	-	-	-	-
6	6000	.015	0.38	.070	1.78	2.437 ③	61.91 ③	.010	0.25	.016	0.41	2.437	61.91
7	5250	.020	0.51	.081	2.06	2.563	65.10	.012	0.30	.020	0.51	2.563	65.10
8	4500	.020	0.51	.094	2.39	2.938	74.63	.015	0.38	.025	0.64	2.938	74.63
9	3750	.025	0.64	.109	2.77	3.500	88.90	.017	0.43	.028	0.71	3.500	88.90
10	3600	.025	0.64	.128	3.25	4.063	103.20	.020	0.51	.032	0.81	4.063	103.20
11	3600	.032	0.81	.151	3.84	4.875	123.83	.022	0.56	.037	0.94	4.875	123.83
12	2800	.032	0.81	.175	4.45	5.688	144.48	.025	0.64	.042	1.07	5.688	144.48
13	2400	.040	1.02	.195	4.95	6.625	168.28	.030	0.76	.050	1.27	6.625	168.28
14	2200	.045	1.14	.242	6.15	7.750	196.85	.035	0.89	.060	1.52	7.750	196.85
16	1500	.062	1.57	.330	8.38	10.250	260.35	-	-	-	-	-	-

**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.

Table 2 - Cap Screw Torque Values

Coupling Size	TYPE B		TYPE SC*			
	3 Hex Head Cap Screws		4 Hex Head Cap Screws Flange to Hub		4 Metric Hex Head Cap Screws Flange to Hub	
	ft.-lbs.	Nm	ft.-lbs.	Nm	ft.-lbs.	Nm
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	-	-	4	5	25	34
6	5	7	9	12	35	48
7	5	7	9	12	64	87
8	9	12	18	24	64	87
9	9	12	31	42	102	138
10	15	20	60	81	148	200
11	30	41	75	102	148	200
12	60	81	150	203	274	372
13	75	102	150	203	429	581
14	75	102	150	203	-	-
16	135	183	150	203	-	-

\*Torque values apply to hub size when different than flange size.

Table 3 - Set Screw Torque Values

Coupling Size	Bore Range	Set Screw Size	Allen Wrench Size	Torque (ft.-lbs)	Torque (N-m)	Coupling Size	Bore Range	Set Screw Size	Allen Wrench Size	Torque (ft.-lbs)	Torque (N-m)
5	1/2 - 1-1/4	1/4-20	1/8	7	9	11	1-1/2 - 1-3/4	5/16-18	5/32	14	19
6	5/8 - 1-1/4	1/4-20	1/8	7	9		1-7/8 - 3-3/8	1/2-13	1/4	52	70
	1-5/16 - 1-7/8	5/16-18	5/32	14	19	12	1-7/8 - 3-15/16	1/2-13	1/4	52	70
7	5/8 - 1-1/4	1/4-20	1/8	7	9	13	2 - 2-3/4	1/2-13	1/4	52	70
	1-5/16 - 1-7/8	5/16-18	5/32	14	19		2-7/8 - 3-1/4	5/8-11	5/16	110	150
8	3/4 - 1-1/4	1/4-20	1/8	7	9		3-5/16 - 4-1/2	3/4-10	3/8	200	271
	1-5/16 - 2-3/8	5/16-18	5/32	14	19	14	2 - 2-3/4	1/2-13	1/4	52	70
9	7/8 - 1-1/4	1/4-20	1/8	7	9		2-7/8 - 3-1/4	5/8-11	5/16	110	150
	1-5/16 - 1-3/4	5/16-18	5/32	14	19		3-5/16 - 4-1/2	3/4-10	3/8	200	271
	1-7/8 - 2-7/8	3/8-16	3/16	24	32		4-1/2 - 5	7/8-9	7/16	433	587
10	1-1/8 - 1-5/16	1/4-20	1/8	7	9	16	2 - 2-3/4	1/2-13	1/4	52	70
	1-3/8 - 1-3/4	5/16-18	5/32	14	19		2-7/8 - 3-1/4	5/8-11	5/16	110	150
	1-7/8 - 3-3/8	1/2-13	1/4	52	70		3-5/16 - 4-1/2	3/4-10	3/8	200	271
4-1/2 - 6							7/8-9	7/16	433	587	

**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
- II 2GD
- Ex h IIC T5 Gb
- Ex h IIIC T100°C Db
- Tamb -30° 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** 

Product identification (brand and  
catalogue number/part number):

**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°**

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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

ATEX

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

EN ISO 80079-36:2016

Explosive atmospheres –  
Part 36: Non-electrical equipment for explosive atmospheres –  
Basic method and requirements (ISO 80079-36:2016)

EN ISO 80079-37:2016

Explosive atmospheres- Part 37 Non – electrical type of protection constructional safety “c”, control of ignition sources “h”; liquid immersion “k” (ISO80079-37 :2016)

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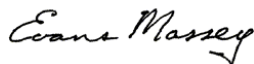
Notified Body:

CSA Group Netherlands B.V.  
Utrechtseweg 310 (B42)  
6812AR ARNHEM  
Netherlands

Certificate: SIRA 04ATEX9358

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Supplier:  
Signature



Authorised Representative:  
Signature



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

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

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