

Installation Instructions Manual For

DODGE®

Para-Flex® Couplings

I) FLANGE INSTALLATION

Two-Piece Flange Styles

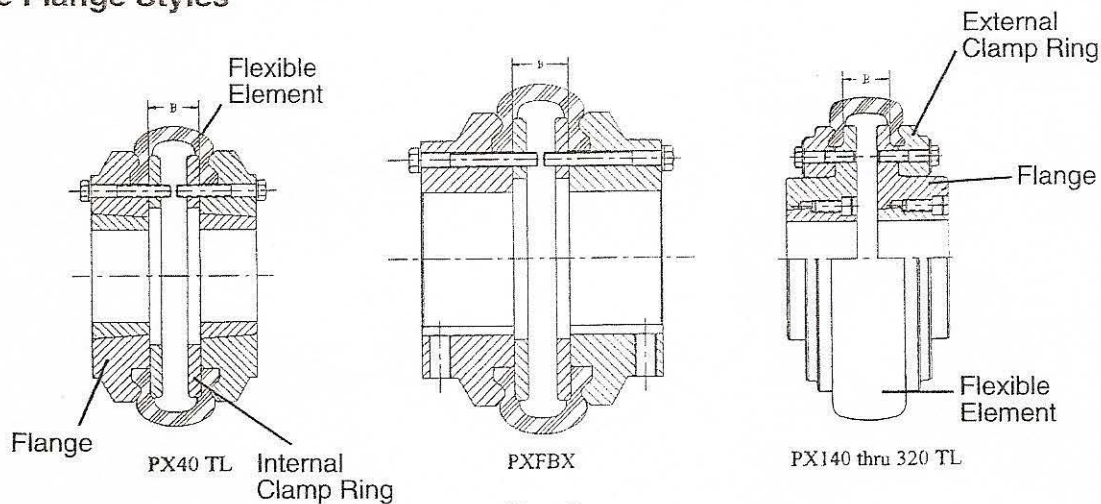


Figure 1

Install in the following sequence:

1. For the TAPER-LOCK® flange, install bushing in the flange per Steps 1 thru 3 in the instructions (No. 499737) packed with the bushing.
2. Check the axial float of the shafts. Position the shafts at the mid-point of the float. Where **Limited End Float** is required or **Sleeve Bearings** are used, consult DODGE for application assistance.
3. Referring to Figure 1 and Table 1, observe the "B" dimension for the coupling size being installed. Mount and position the flanges on the shafts so that dimension "B" is achieved when the shafts are in their final position. For the TAPER-LOCK flange, secure the flange assembly to the shaft per Steps 4 and 5 in the bushing instructions. For the clearance fit straight bore (FBX) flange, tighten the set screws to values listed in Table 2. Align flanges

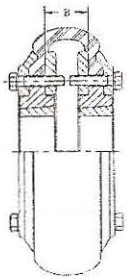
using precision equipment such as dial indicators or laser equipment. If precision equipment is not available, scales, straight edges, and calipers can be used as less accurate means of alignment. If using a scale or calipers, refer to Figure 3 and check the angular misalignment by measuring dimension "B" at four places 90° apart. Adjust the equipment until the four measurements do not vary more than value "C" in Table 1. If using a straight edge, check the parallel offset by laying the straight edge across the outside diameter of the flanges in four places 90° apart. The gap between the flange and straight edge should not exceed 1/32". To achieve maximum coupling performance, align the coupling as accurately as possible during initial installation.

4. Remove any anti-rust lubricants or oil from the grooved side of the clamp rings. Loosen but do not remove clamp ring screws until only one or two threads are engaged and proceed to Section II for element installation.

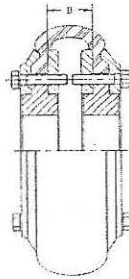
WARNING: Because of the possible danger to person(s) or property from accidents which may result from the improper use of products, it is important that correct procedures be followed. Products must be used in accordance with the engineering information specified in the catalog. Proper installation, 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 Rockwell Automation nor are the responsibility of Rockwell Automation. 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.

I) FLANGE INSTALLATION

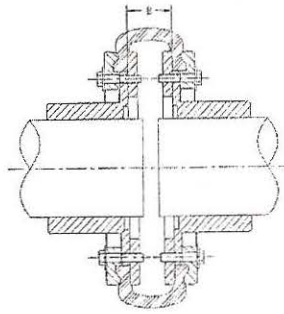
Three-Piece Flange Styles



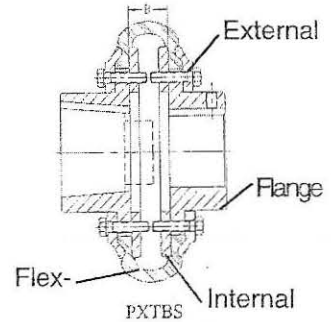
PX50-120 TL



PXFBS



PXBBS



PXTBS

Figure 2

Install in the following sequence:

1. Disassemble the clamp rings from the flanges. Place the external clamp rings on the shafts with the grooved side facing the shaft end.
2. For the TAPER-LOCK flange, install the bushing in the flange per Steps 1 thru 3 in the instructions (No. 499737) packed with the bushing.
3. Check the axial float of the shafts. Position the shafts at the mid-point of the float. Where **Limited End Float** is required or **Sleeve Bearings** are used, consult DODGE for application assistance.
4. Referring to Figure 2 and Table 1, observe the "B" dimension for the coupling size being installed. Mount and position the flanges on the shafts so that dimension "B" is achieved when the shafts are in their final position. For the TAPER-LOCK flange, secure the flange assembly to the shaft per Steps 4 and 5 in the bushing instructions. For the clearance fit straight bore (FBS and BS) flange, tighten the set screws

to values listed in Table 2. For the interference fit straight bore (BS) flange, press or shrink flange to shaft. For the taper bore flange (TS), tighten shaft nut as required. Align flanges using precision equipment such as dial indicators or laser equipment. If precision equipment is not available, scales, straight edges, and calipers can be used as less accurate means of alignment. If using a scale or calipers, refer to Figure 3 and check the angular misalignment by measuring dimension "B" at four places 90° apart. Adjust the equipment until the four measurements do not vary more than value "C" in Table 1. If using a straight edge, check the parallel offset by laying the straight edge across the outside diameter of the flanges in four places 90° apart. The gap between the flange and straight edge should not exceed 1/32". To achieve maximum coupling performance, align the coupling as accurately as possible during initial installation.

5. Remove any anti-rust lubricants or oil from the element side of the clamp rings. Assemble clamp rings on the flanges engaging only one or two threads and proceed to Section II for element installation.

TABLE 1

Coupling Size	Clamp Ring Screw Wrench Torque (lb*in)		Distance Between Flanges B (in)	Total Difference See Figure 8 (below) C (in)
	Flange Style Two-Piece	Flange Style Three-Piece		
PX40	130	130	49/64	1/64
PX50	130	130	31/32	1/64
PX60	290	290	1-9/32	1/64
PX70	290	290	1-1/2	1/64
PX80	290	290	1-1/2	1/64
PX90	480	480	1-17/32	1/32
PX100	480	480	1-23/32	1/32
PX110	480	480	1-9/16	1/32
PX120	1080	1080	1-3/4	1/32
PX140	1080	1080	2-1/16	1/32
PX160	2160	1150	2-11/16	1/16
PX200	2160	2400	3-5/16	1/16
PX240	3600	4020	3-29/32	1/16
PX280	4320	6600	4-7/32	1/16
PX320	4320	6600	4-1/2	1/16

TABLE 2

Set Screw Size	#0	#1	#2	#3	#4	#5	#6	#8	#10	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4	7/8	1
Installation Torque (lb*in)	1.0	1.8	1.8	5	5	10	10	20	36	87	165	290	430	620	620	1325	2400	5200	7200

Note: Verify set screw size prior to tightening.

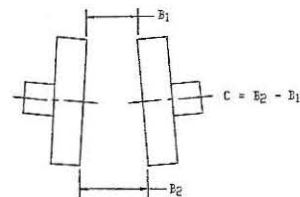
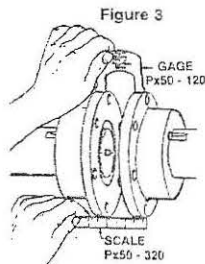


Figure 8

Note: Gages not supplied for PX40 and PX140 thru PX320. Gages should not be used for alignment purposes.

II) FLEXIBLE ELEMENT INSTALLATION

Install in the following sequence:

1. Clean flange mounting area as well as flexible element seats with a solvent, such as Xylene (Xylol), to remove grease, oil, wax, and dirt from surfaces. A diluted soapy water solution may be applied to aid with element installation.
2. Wrap flexible element around flanges as shown in Figure 4. Make sure beads of element are fully worked down upon the seats. To ensure proper seating, rap around the tire's outside diameter with a small mallet until split is closed. Make sure element is evenly centered on the flanges.
3. Hold split of flexible element closed as shown in Figure 5. Tighten (finger tight) one or two screws 180° from split. Using both hands, knead the tire pulling it toward the split. Hold split closed and tighten (finger tight) next

two screws farthest from the split. Repeat the procedure on all remaining clamp ring screws. Use a torque wrench to tighten each clamp ring screw in succession to the torque specified in Table 1. Using a torque wrench, re-check all clamp ring screw torque values before coupling operation.

4. **Optional Procedure:** Hold split of flexible element closed as shown in Figure 5. Tighten (finger tight) one or two screws 180° from split. Using both hands, knead the tire pulling it toward the split. Hold split closed and tighten (finger tight) next two screws in a star or cross pattern as shown in Figure 6. Repeat the procedure on all remaining clamp ring screws. Use a torque wrench to tighten each screw to the torque specified in Table 1. Using a torque wrench, re-check all clamp ring screw torque values before coupling operation.

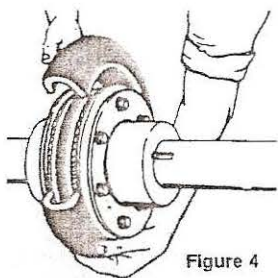


Figure 4

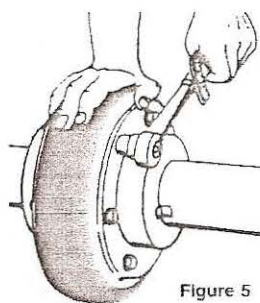


Figure 5

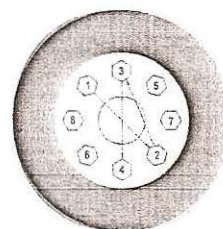


Figure 6

WARNING: The metal components of the coupling that clamp the flexible element will operate properly only if the screws are tightened properly. Tightening one screw to full torque before proceeding to the next screw may cause excessive clamp ring or flange deflection. To prevent clamp ring and flange deflection, the screws must be evenly and gradually tightened to full torque.

III) FLEXIBLE ELEMENT REPLACEMENT

Loosen all clamp ring screws. Grasp one end of flexible element at the split and peel off the flanges. Clean clamping parts with a solvent, such as Xylene (Xylol), to remove grease, oil, wax, and dirt from surfaces. Check to see that only one or two threads of each clamp ring screw are engaged. Re-align flanges and install new flexible

element according to Section I & II. When replacing clamp ring screws and washers, use only SAE Grade 8 or ISO Class 10.9 screws and hardened washers.

IV) FLOATING SHAFT COUPLING INSTALLATION

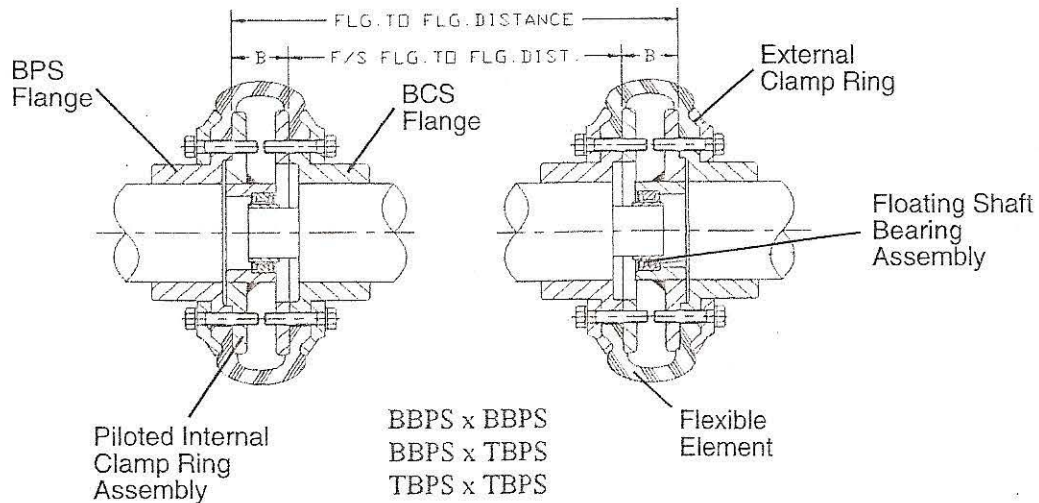


Figure 7

Install in the following sequence:

1. Disassemble the clamp rings from the flanges. Place the external clamp rings on the shafts with the grooved side facing the shaft end.
2. Check the axial float of the shafts. Position the shafts at the mid-point of the float. Where **Limited End Float** is required or **Sleeve Bearings** are used, consult DODGE for application assistance.
3. Referring to Figure 7 and Table 1, observe the "B" dimension for the coupling size being installed. Mount and position the flanges on the shafts so that dimension "B" is achieved when the shafts are in their final position. Where flanges contain set screws, tighten to values listed in Table 2.
4. Remove any anti-rust lubricants or oil from the grooved side of the clamp rings. Assemble internal and external clamp rings to floating shaft flanges and snug up clamp ring screws. Slip internal piloted clamp rings onto the turned down portion of floating shaft. Hub projection on clamp ring should be toward floating shaft as shown in Figure 7.
5. Position and support floating shaft assembly between driving and driven flanges. Make sure clamp ring pilot is seated in flange counterbore. Assemble external clamp rings to flange with screws. Tighten screws sufficiently to prevent movement between the parts.
6. Align flanges using precision equipment such as dial indicators or laser equipment. If precision equipment is not available, scales, straight edges, and calipers can be used as less accurate means of alignment. If using a scale or calipers, refer to Figure 3 and check the angular misalignment by measuring dimension "B" at four places 90° apart. Adjust the equipment until the four measurements do not vary more than value "C" in Table 1. Repeat the procedure at both ends of the coupling. To achieve maximum coupling performance, align the coupling as accurately as possible during initial installation.
7. Loosen clamp ring screws and proceed to Section II for element installation.

www.rockwellautomation.com www.ptplace.com www.dodge-pt.com www.reliance.com www.ptplace.com

Corporate Headquarters

Rockwell Automation, 777 East Wisconsin Avenue, Suite 1400, Milwaukee, WI, 53202-5302 USA, Tel: (1) 414.212.5200, Fax: (1) 414.212.5201

Headquarters for Dodge and Reliance Electric Products

Americas: Rockwell Automation, 6040 Ponders Court, Greenville, SC 29615-4617 USA, Tel: (1) 864.297.4800, Fax: (1) 864.281.2433
 Europe/Middle East/Africa: Rockwell Automation, Brühlstraße 22, D-74834 Elztal-Dallau, Germany, Tel: (49) 6261 9410, Fax: (49) 6261 17741
 Asia Pacific: Rockwell Automation, 55 Newton Road, #11-01/02 Revenue House, Singapore 307987, Tel: (65) 6356-9077, Fax: (65) 6356-9011

Headquarters for Allen-Bradley Products, Rockwell Software Products and Global Manufacturing Solutions

Americas: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204-2496 USA, Tel: (1) 414.382.2000, Fax: (1) 414.382.4444
 Europe/Middle East/Africa: Rockwell Automation SA/NV, Vorstlaan/Boulevard du Souverain 36, 1170 Brussels, Belgium, Tel: (32) 2 663 0600, Fax: (32) 2 663 0640
 Asia Pacific: Rockwell Automation, 27/F Citicorp Centre, 18 Whitfield Road, Causeway Bay, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846

