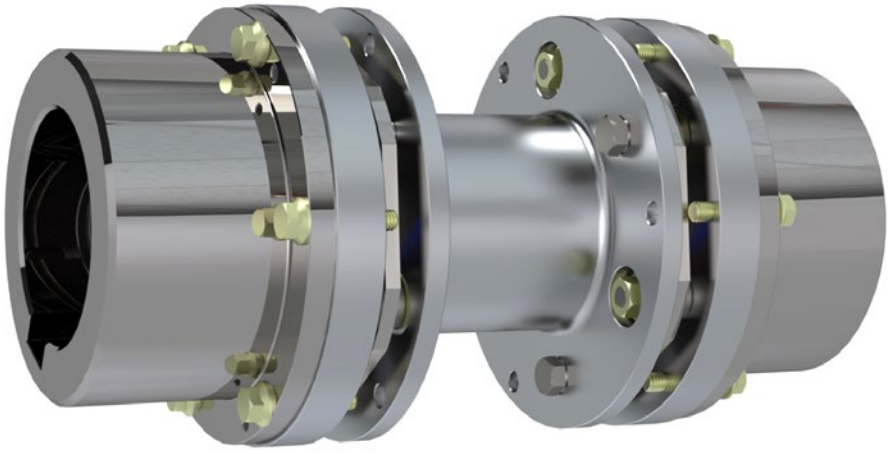

Figure 1 — Thomas Series 71 Coupling

1. General Information

1.1. To ensure you have the most up-to-date version of this manual CP3-015 (previously 538-230), please visit Rexnord.com under resources > documentation.

1.2. Rexnord Thomas Couplings are designed to provide a mechanical connection between the rotating shafts of mechanical equipment, using a flexible disc to accommodate inherent misalignment while transmitting the power and torque between the connected shafts.

1.3. These instructions are intended to help you to install and maintain your Rexnord Thomas Spacer Type Series 71 Coupling. Please read these instructions prior to installing the coupling, and prior to maintenance of the coupling and connected equipment. Keep these instructions near the coupling installation and available for review by maintenance personnel. For special engineered couplings, Rexnord may provide an engineering drawing containing installation instructions that take precedence over this document.

1.5. Symbol descriptions:

- STOP — Danger of injury to persons.
- Damages on the machine possible.
- Pointing to important items.
- Hints concerning explosion protection.

2. Safety and Advice Hints

DANGER!

2.1. Safety should be a primary concern in all aspects of coupling installation, operation, and maintenance.

2.2. Do not make contact with the coupling when it is rotating and/or in operation.

2.3. Because of the possible danger to person(s) or property from accidents which may result from improper use or installation of these products, it is extremely important to follow the proper selection, installation, maintenance and operational procedures.

2.4. All personnel involved in the installation, service, operation, maintenance, and repair of this coupling and the connected equipment must read, understand, and comply with these Installation and Maintenance instructions.

PRECAUTION!

For this coupling to meet the ATEX requirements, you must precisely follow these installation and maintenance instructions, and the supplement form 0005-08-49-01. This supplement outlines the ATEX requirements. If the operator does not follow these instructions, the coupling will immediately be considered non-conforming to ATEX.

2.5. All rotating power transmission products are potentially dangerous and can cause serious injury. They must be properly guarded in compliance with OSHA, ANSI, ATEX, European machine safety standards and other local standards. It is the responsibility of the user to provide proper guarding.

2.6. The coupling should be stored in a dry corrosion protected environment, free from external loads (for example by stacking) to prevent damage which may cause a hazard when the coupling is put into service.

2.7. For ATEX requirements the guard must have a minimum of 12.7 mm (1/2 inch) radial clearance to the coupling outside diameter "A" (see **Figure 3** and **Table 4**) and allow for proper ventilation.

2.8. Make sure to disengage the electrical power and any other sources of potential energy before you perform work on the coupling.

2.9. All conductive parts of the equipment should be connected in such a way that hazardous electrical potential differences cannot occur. In case insulated metal parts could be charged thus becoming a potential ignition source, earth connections must be provided.

2.10. Proper lockout-tag out procedures must be followed to safeguard against unintentional starting of the equipment. Ensure electrical power and any other sources of potential energy are disengaged before you perform any work on the coupling.

2.11. Packaging material can generate electrostatic charges. It may then become an explosive hazard. It must be removed from the coupling outside any hazardous areas.

2.12. All work on the coupling must be performed when the coupling is at rest with no load.

2.13. Do not start or jog the motor, engine, or drive system without securing the coupling components. If the equipment is started with only a hub attached, the hub must be properly mounted and ready for operation, with the key and set screw (if included) fastened. When the full coupling assembly is started, all fasteners and hardware must be completely and properly secured. Do not run the coupling with loose fasteners.

2.14. Use explosive environment appropriate tools only, for more information see DIN EN 1127-1:2008:02, Annex A.

2.15. The coupling may only be used in accordance with the technical data provided in the Thomas Disc coupling catalog. Customer modifications and alterations to the coupling are not permissible.

***CAUTION:** Air driven wrenches for assembly are not permitted to avoid the potential of excessive speed and heat buildup that may lead to thread damage during assembly.*

2.16. All spare parts for service or replacement must originate from or be approved by Rexnord Industries, LLC.

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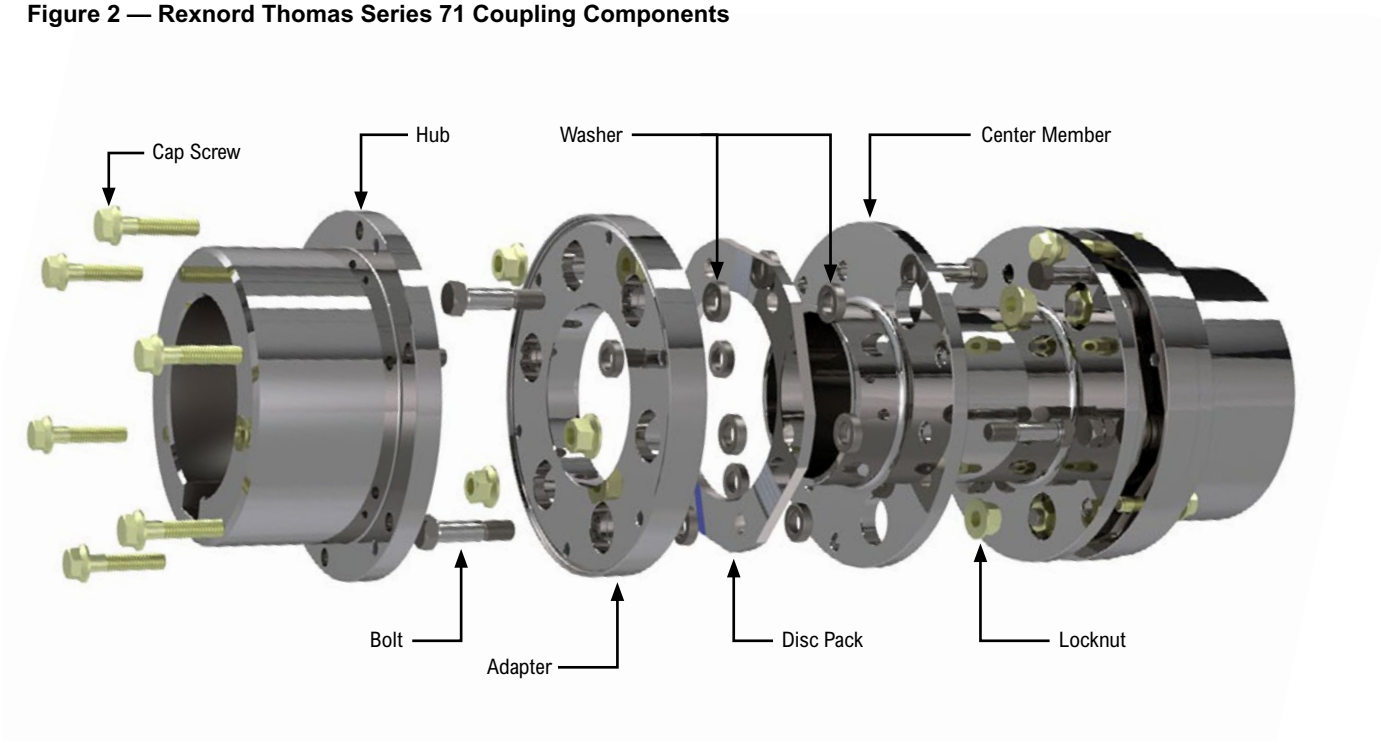
3. Components and Material Numbers

Figure 2 — Rexnord Thomas Series 71 Coupling Components



Thomas Series 71 couplings are delivered from the factory with a fully assembled center member consisting of a center spool, two adapters, disc packs, bolts, washers and locknuts that have already been tightened at the factory to the torque specified in **Table 6**. The center member assembly is ready for field installation and it is recommended that you do not disassemble it unless you are replacing the disc packs. Cap screws will need to be installed and tightened during installation to the torque value specified in **Table 4**.

Figure 3 — Rexnord Thomas Series 71 Cross Sectional View of Components

This view shows all three styles of hubs that are available to suit specific requirements. A standard configuration includes only two hubs.

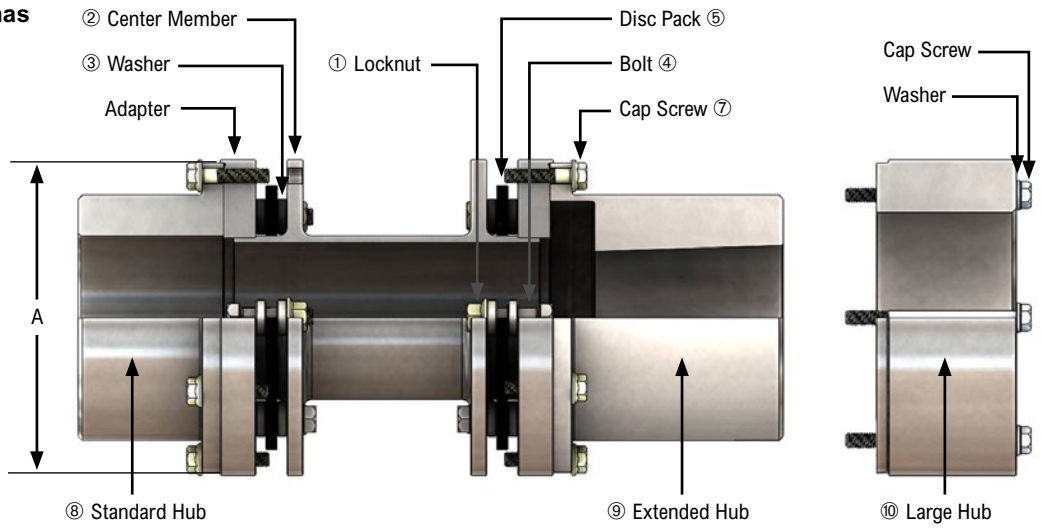


TABLE 1 — Part Numbers and Quantity Required

Size of Series 71 Coupling	Hubs			Center Member ② (1 per Coupling)				Stainless Disc Pack ⑤ 2 per	Repair Kits — Contain Bolts, Locknuts, Washers, and Cap Screws ***				
	Standard ⑧	Extended ⑨	Large**** ⑩	"C" Dimension		"C" Dimension			Parts Kit	Bolts ④	Locknuts ①	Washers ③	Cap Screws ⑦
	Part No.	Part No.	Part No.	Part No.	Inch	Part No.	mm	Part No.	Part No.	Qty	Qty	Qty	Qty
150	10010310	10010309	10010311	10010298 10010299 10010300	3.50 4.38 5.00	10015420 10015421 10015423	100 140 180	10034953	FULL 10148297 HALF 10758093	8 4	8 4	16 8	8 4
175	10015299	10017945	10010201	10026753 10017954 10115349 10018025	3.50 4.38 4.00 5.00	10015418 10015426 10015428	100 180 250	10102012	FULL 10148297 HALF 10758093	8 4	8 4	16 8	8 4
225	10010503	10018017	10010202	10010078 10010737 10014013 10014156	3.50 5.00 5.50 7.00	10122035 10015429 10015432 10015431	140 180 250 300	10106441	FULL 10034530 HALF 10758094	12 6	12 6	24 12	6 3
300	10016249	10010505	10010203	10014476 10014814 10015238	5.00 5.50 7.00	10015430 10010775	180 250	10138875	FULL 10076873 HALF 10758095	12 6	12 6	24 12	12 6
350	10010175	10010171	10010302	10010176 10010177 10010170	5.00 5.50 7.00	10015427 10010776	180 250	10031090	FULL 10031124 HALF 10758106	12 6	12 6	24 12	12 6
375	10014146	10013986	10010204	10016013 10026796 10017955	5.00 5.50 7.00	10010781 10015425	180 250	10148308	FULL 10091054 HALF 10758107	12 6	12 6	24 12	12 6
412	10010504	10014147	10015246	10018026	7.00	10015424	250	10082345	FULL 10098489 HALF 10758108	12 6	12 6	24 12	12 6
462	10014802	10014458	10111644	10014157 10010083 10014815	7.00 7.50 8.00	10109707	250	10106442	FULL 10102018 HALF 10758109	12 6	12 6	24 12	12 6
512	10013985	10014803	10403024	10016014 10010085	7.00 8.00	10015422	250	10138876	FULL 10106424 HALF 10758110	12 6	12 6	24 12	12 6
562	10014457	10015231	10120272	10010087	8.00	10117005	…	10099370	FULL 10136289 HALF 10758111	12 6	12* 68	24 12	12 6
600	10015230	10010089	…	10010090	8.00	…	…	10148309	FULL 10138739 HALF 10758112	12 6	12* 6*	24 12	12 6
712	10034182	…	…	10135177	9.38	…	…	10015593	FULL 10138707 HALF 10758113	16 8	16* 8*	32 16	16** 8**
800	10034185	…	…	10109455	10.88	…	…	10014429	FULL 10114519 HALF 10758114	16 8	16* 8*	32 16	16** 8**
875	10034187	…	…	10109667	12.00	…	…	10017974	FULL … HALF	16 8	16* 8*	32 16	16** 8**
1038	10034189	…	…	…	14.00	…	…	10014797	FULL … HALF	16 8	16* 8*	32 16	16** 8**

* These locknuts are cadmium plated.

** Cap screws are provided to compress the disc packs during assembly, per **Table 1A**

*** Repair Kits are available in **FULL** and **HALF** kits. **FULL** kits contain hardware for one complete coupling. **HALF** kits contain hardware for one side of a coupling.

**** Adapter hardware (cap screws + washers) are included with the Large Block Hub part numbers listed.

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TABLE 1A — Cap Screws for Disc Pack Compression Only

Coupling Size	Part	Quantity	Description
712	10034407	8	5/16-18 UNC X 2.00 Lg. HHCS
800	10039063	8	3/8-16 UNC X 2.50 Lg. HHCS
875	10039063	8	3/8-16 UNC X 2.50 Lg. HHCS
1038	10039064	8	1/2-13 UNC X 3.00 Lg. HHCS

4. Hub Mounting

STOP ***DANGER!***

Be sure to disengage the electrical power and any other sources of potential energy and ensure there is no stored energy before you perform work on the hub and coupling assembly.

⚠ ***CAUTION:*** *When disc type couplings are installed on "sleeve bearing" motor drives, some precautions are necessary.*

It is important that the coupling be installed as close to its free state (neutral) axial position as possible and that the motor shaft is on its "magnetic center" (normally defined by a scribed line on the shaft).

Disc type couplings, with their flexing element(s) comprised of multiple laminated discs or sheets, will act as a spring in the axial direction (exhibiting non-linear restoring forces) and serve to hold the motor rotor on magnetic center during operation and away from the motor's internal thrust stops.

The coupling span ordered for the equipment must consider the motor rotor as being positioned on its magnetic center, and the installation must coincide with this.

4.1. Examine the coupling assembly to insure there is no visible damage from shipment or handling.

4.2. Clean the hub bores and equipment shafts using lint free cloth. Remove any nicks or burrs present.

4.3. When assembled, the key(s) should have a close side-to-side fit in the keyway in the hub and shaft, with a slight clearance over the top of the key.

4.4. Remove the cap screws connecting the hubs to the adapters and remove both hubs.

⚠ ***CAUTION:*** *When heating hubs is required, an oven is preferred and an open flame is not recommended. If flame heating is considered mandatory, it is important to provide uniform heating to avoid distortion and excessive temperatures. A thermal stick applied to the hub surface will help determine the hub temperature.*

STOP ***DANGER!*** *Touching hot hubs causes burns. Wear safety gloves rated for the hub temperature to avoid direct contact with hot surfaces.*

5. Straight Bore with Clearance/Slip Fit

5.1. Install the key(s) in the shaft.

5.2. Check to be sure that the set screw(s) in the hub does not protrude into the keyway or the bore. Remove or back out the set screw to provide clearance during assembly.

5.3. Slide the hub up the shaft to the desired axial position.

5.4. If used; assemble and tighten the set screw(s) using a calibrated torque wrench to the values shown in **Table 2**.

TABLE 2 — Set Screw Tightening Torque

Set Screw Size		1/4-20	1/4-28	5/16-18	5/16-24	3/8-16	3/8-24	1/2-13	1/2-20
Hex Head Key Size		1/8	1/8	5/32	5/32	3/16	3/16	1/4	1/4
Tightening Torque	**(Nm)**	7	9	15	16	27	31	68	75
	(lb-in)	66	76	132	144	240	276	600	660

Set Screw Size		M6	M8	M10	M12	M16	1/4	3/8
Hex Head Key Size		3	4	5	6	8	1/8"	3/16"
Tightening Torque	**(Nm)**	6	12	25	50	100	8	25
	(lb-in)	55	110	220	440	880	70	220

☞ **ATTENTION!** Never use two set screws with one on top of the other in the same tapped hole.

6. Straight Bore with Interference Fit

6.1. Accurately measure the bore and shaft diameters to assure proper fit.

6.2. Install the key(s) in the shaft.

6.3. Heat the hub in an oven until the bore is sufficiently larger than the shaft.

6.4. 275°F (135°C) is usually sufficient for carbon steel hubs. Do not exceed 400°F (205°C).

6.5. Higher temperatures may be required for higher interference fit levels where alloy steel hubs may be encountered. A general rule to consider is that for every 160°F increase in temperature, steel will expand 0.001 inch for every inch of shaft diameter (or .029mm/ 100°C). When calculating temperatures, also consider additional expansion to provide additional clearance and allow for a loss of heat and subsequent shrinkage during the handling process.

6.6. With the hub expanded, install it quickly on the shaft to the desired axial position. A pre-set axial stop device can be helpful.

6.7. When possible the hub should be mounted flush to the end of the shaft at final position. It is recommended to maintain minimum of 1:1 ration of hub length engagement to shaft diameter, contact Rexnord if this must be reduced as additional interference may be required.

7. Taper Bore

7.1. Check for acceptable contact pattern between the hub and the shaft.

7.2. Put the hub on the shaft, keeping the keyways (if existing) aligned.

7.3. Lightly tap the face of the hub with a soft mallet. The resultant position will provide a starting point for the hub axial draw up.

7.4. Use a depth micrometer to measure the distance from the shaft end to the hub face, as shown in **Figure 4**. Record the dimension.

7.5. Mount a dial indicator to read axial hub advancement, as shown in **Figure 5**. Alternatively, the indicator can be positioned to contact the end of the hub. Set the indicator to “zero”.

7.6. Remove the hub and install the key(s) in the shaft.

7.7. Heat the hub in an oven until the bore is sufficiently larger than the shaft.

7.8. 275°F (135°C) is usually sufficient for carbon steel hubs. Do not exceed 400°F (205°C).

7.9. Higher temperatures may be required for higher interference fit levels where alloy steel hubs may be encountered. A general rule to consider is that for every 160°F increase in temperature, steel will expand 0.001 inch for every inch of shaft diameter (or 0.029 mm/100°C). When calculating temperatures, also consider additional expansion to provide clearance and allow for a loss of heat and subsequent shrinkage during the handling process.

7.10. With the hub expanded, install it quickly on the shaft to the “zero” set point. Continue to advance the hub up the taper to the desired axial position, as defined by Rexnord’s customer. Use the indicator as a guide only. A pre-set axial stop device can be helpful.

7.11. Inspect the assembly to verify that the hub is properly positioned. Consult Rexnord if necessary.

7.12. Install any hub axial retention device (if any) in accordance with the equipment manufacturer’s specifications.

Figure 4 — Shaft end to hub face measurement example.

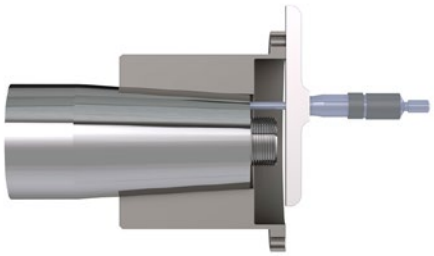

Figure 5 — Dial indicator placement for axial draw measurement example.

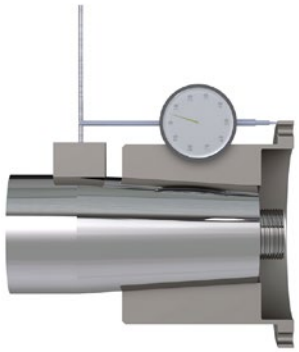

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TABLE 3 — Installation Alignment Values

Series 71 Coupling Size	"A" Dimension		"C" Dimension		Recommended Installation Limits ****							
					Maximum Coupling Parallel Misalignment				Angular Misalignment Between Hubs Maximum		Axial Hub Gap Tolerance from "C" Dimension +/-	
					Parallel Alignment Total Indictor Reading (TIR) *		Parallel Offset "P" **					
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
150	3.95	100.3	3.50	88.9	0.0042	0.11	0.0021	0.05	0.007	0.18	0.025	0.64
			4.38	111.3	0.0053	0.13	0.0026	0.07				
			5.00	127.0	0.0060	0.15	0.0030	0.08				
			5.51	140.0	0.0066	0.17	0.0033	0.08				
175	4.16	105.7	3.50	88.9	0.0042	0.11	0.0021	0.05	0.008	0.20	0.035	0.89
			4.38	111.3	0.0053	0.13	0.0026	0.07				
			5.00	127.0	0.0060	0.15	0.0030	0.08				
			5.51	140.0	0.0066	0.17	0.0033	0.08				
225	4.94	125.5	3.50	88.9	0.0042	0.11	0.0021	0.05	0.01	0.25	0.038	0.95
			5.00	127.0	0.0060	0.15	0.0030	0.08				
			5.50	139.7	0.0066	0.17	0.0033	0.08				
			5.51	140.0	0.0066	0.17	0.0033	0.08				
			7.00	177.8	0.0084	0.21	0.0042	0.11				
			7.09	180.0	0.0085	0.22	0.0043	0.11				
			9.84	250.0	0.0118	0.30	0.0059	0.15				
300	5.97	151.6	5.00	127.0	0.0060	0.15	0.0030	0.08	0.012	0.30	0.043	1.08
			5.50	139.7	0.0066	0.17	0.0033	0.08				
			7.00	177.8	0.0084	0.21	0.0042	0.11				
			7.09	180.0	0.0085	0.22	0.0043	0.11				
			9.84	250.0	0.0118	0.30	0.0059	0.15				
350	6.75	171.5	5.00	127.0	0.0060	0.15	0.0030	0.08	0.014	0.36	0.045	1.14
			5.50	139.7	0.0066	0.17	0.0033	0.08				
			7.00	177.8	0.0084	0.21	0.0042	0.11				
			7.09	180.0	0.0085	0.22	0.0043	0.11				
			9.84	250.0	0.0118	0.30	0.0059	0.15				
375	7.62	193.5	5.00	127.0	0.0060	0.15	0.0030	0.08	0.015	0.38	0.048	1.21
			5.50	139.7	0.0066	0.17	0.0033	0.08				
			7.00	177.8	0.0084	0.21	0.0042	0.11				
			7.09	180.0	0.0085	0.22	0.0043	0.11				
			9.84	250.0	0.0118	0.30	0.0059	0.15				
412	8.00	203.2	7.00	177.8	0.0084	0.21	0.0042	0.11	0.016	0.41	0.055	1.40
			9.84	250.0	0.0118	0.30	0.0059	0.15				
462	9.00	228.6	7.00	177.8	0.0084	0.21	0.0042	0.11	0.018	0.46	0.060	1.52
			7.50	190.5	0.0090	0.23	0.0045	0.11				
			8.00	203.2	0.0096	0.24	0.0048	0.12				
			9.84	250.0	0.0118	0.30	0.0059	0.15				
512	10.03	254.8	7.00	177.8	0.0084	0.21	0.0042	0.11	0.02	0.51	0.065	1.65
			8.00	203.2	0.0096	0.24	0.0048	0.12				
			9.84	250.0	0.0118	0.30	0.0059	0.15				
562	10.97	278.6	8.00	203.2	0.0096	0.24	0.0048	0.12	0.022	0.56	0.073	1.84
600	11.72	297.7	8.00	203.2	0.0096	0.24	0.0048	0.12	0.024	0.61	0.080	2.03
712	13.88	352.6	9.38	238.3	0.0113	0.29	0.0056	0.14	0.028	0.71	0.041	1.04
800	15.56	395.2	10.88	276.4	0.0131	0.33	0.0065	0.17	0.031	0.79	0.046	1.17
875	17.12	434.8	12.00	304.8	0.0144	0.37	0.0072	0.18	0.034	0.86	0.051	1.30
1038	19.75	501.7	14.00	355.6	0.0168	0.43	0.0084	0.21	0.039	0.99	0.058	1.46

* Parallel misalignment measured by rotating the hubs with a dial indicator on the outside hub diameter will result in a maximum Total-Indicated-Reading of 0.0012 inch per inch of "C" dimension (or 0.0012 mm per mm of "C" dimension). For non-standard "C" dimensions, multiply "C" x 0.0012 to calculate the TIR.

** Parallel offset "P" is equivalent to one-half of the TIR measurement using dial indicators.

*** Subtract Measurement Y from Measurement X to obtain Angular Misalignment dimension.

**** During installation and/or operation, do not exceed the maximum misalignment capacity of 1/2°per disc pack for sizes 150 to 600 and 1/3° for sizes 712 to 1038.

Refer to Rexnord Bulletin 538-214 "Coupling Alignment Fundamentals" for more details regarding alignment methods and procedures.

8. Shaft Alignment

☞ **ATTENTION!** Soft Foot — The equipment must rest flat on its base. If one or more feet of the machine are shorter, longer, or angled in some way to prevent uniform contact (a condition commonly known as “soft foot”) it must now be corrected.

☞ **ATTENTION!** To improve the life of the coupling, the shafts must be aligned to minimize distortion of the flexing elements. Shaft alignment is required in the axial, parallel, and angular directions, with each of these values not to exceed the recommended ratings for the coupling and the alignment values shown in **Table 3**. Shaft alignment can be measured using various established methods, including Laser Alignment, Reverse Dial Indicator, and Rim and Face. Refer to Rexnord bulletin 538-214 “Coupling Alignment Fundamentals” for additional instructions regarding shaft alignment.

8.1. Move the connected equipment to achieve acceptable alignment. When well aligned, the disc packs will be centered and approximately parallel to their mating flange faces and the flexing elements will have little visible waviness when viewed from the side.

☞ **ATTENTION!** As a guide, the maximum and minimum values for dimension “N” shown in **Figure 11** are given in **Table 5**. These dimensions are suggested for initial installation. Additional capacity is available to compensate for thermal and structural equipment movement. Maximum axial capacity values for these couplings are also given in **Table 3**.

8.2. **Table 3** shows installation limits for Angular and Parallel alignment and axial alignment.

8.3. The “Angular Alignment Total Indicator Reading” value is the maximum difference between the measurements (X-Y) taken at opposite ends of the hub flange, as shown in **Figure 8**.

8.4. The “Parallel Alignment” value (P) is the offset between the centers of the hubs, as shown in **Figure 6**.

8.5. When parallel offset is measured by rotating the hubs in unison with a dial indicator on the outside diameter, as shown in **Figure 7** the total indicated reading (TIR) should be divided by (2) to calculate P.

8.6. It should be noted that parallel offset measured on the hub surfaces includes misalignment of the equipment shafting plus any variation (TIR) in the hubs. This may be helpful to consider during problem solving for alignment difficulties.

8.7. These dimensions are suggested for initial installation. Additional capacity is available to compensate for thermal and structural equipment movement.

Figure 6 — Parallel Offset Misalignment

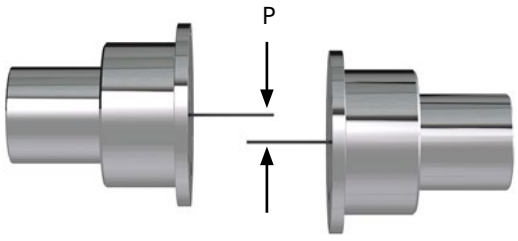


Figure 7 — Parallel Offset (TIR) Measurement

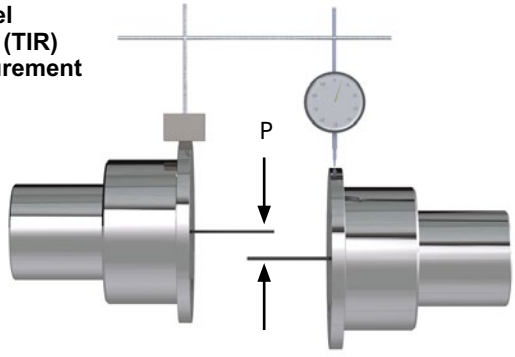
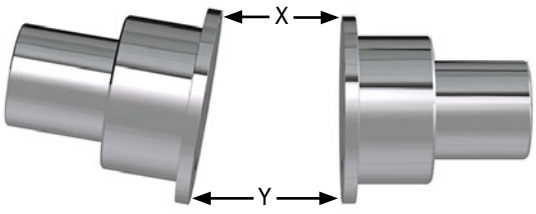


Figure 8 — Angular Misalignment



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9. Final Assembly

☞ **ATTENTION:** Series 71 couplings are delivered from the factory with a fully assembled center member subassembly with locknuts tightened at the factory to the torque specified in **Table 6**. The center member subassembly is ready for field installation, and we recommend that you do not disassemble it (unless you are replacing the disc packs).

9.1. Verify that the hubs have been mounted to provide the correct "C" dimension shown in **Figure 9** and defined in **Table 1**.

☞ **ATTENTION!** The "C" dimension is the distance measured between the faces of the two hub flanges. Note that the "C" dimension does not include the narrow extended length of material that provides the pilot on the outside diameter of the hub.

9.2. The free length of the center member subassembly (including the two end adapter pilot protrusions) will be greater than the dimension "C". Due to the hub-to-adapter piloting feature, the center member subassembly must be compressed to allow it to be slipped between the two end hubs.

9.3. On sizes 150 through 600, use the cap screws (provided in the coupling hubs) to compress the center member subassembly by inserting them through the holes in the flanges of the center spool and threading them into the adapter tapped holes as shown in **Figure 10**. On sizes 712 through 1038, cap screws (as defined in **Table 1A**) are provided to compress the center member subassembly, but they are NOT used to fasten the center member subassembly to the end hubs.

⚠ ***CAUTION!*** *Tighten the cap screws equally to compress both ends only enough to allow the center member subassembly to fit between the mounted hubs. (Do not tighten more than necessary to provide clearance for assembly or damage to the disc packs may occur.*

Figure 9 – 'C' Dimension Measurement

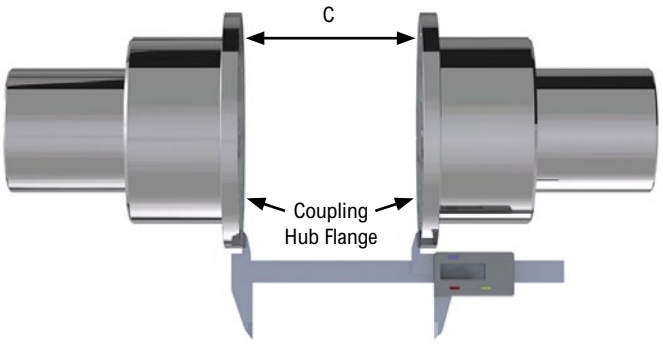
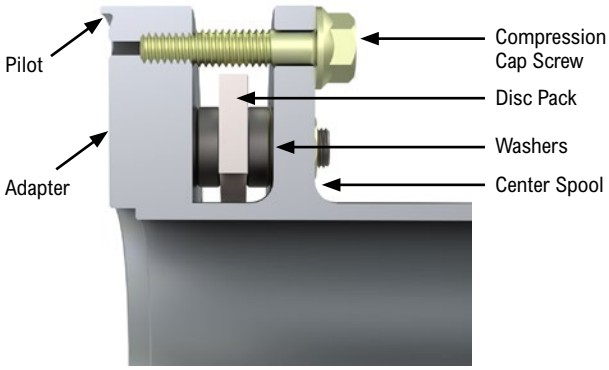


Figure 10 — Compression Positioning



9.4. Make sure that the adapter and the hub flange face and pilots are free from foreign material, nicks and burrs to allow for proper pilot seating.

9.5. Place the compressed center member between the coupling hubs, lining up the tapped holes in the adapter with the cap screw clearance holes in the hub. If the coupling was assembly balanced, also align any match marks.

9.6. Remove the center member compression cap screws, allowing the hub pilots to make contact with the outside diameter of the adapter.

☞ **ATTENTION! All bolts and cap screw threads must be lubricated prior to assembly. A clean motor oil is recommended. Do not use lubricants containing molybdenum disulfide or greases, alternate lubrication compounds will effect the required tightening torque and damage to the bolting hardware can occur with the prescribed torque value.**

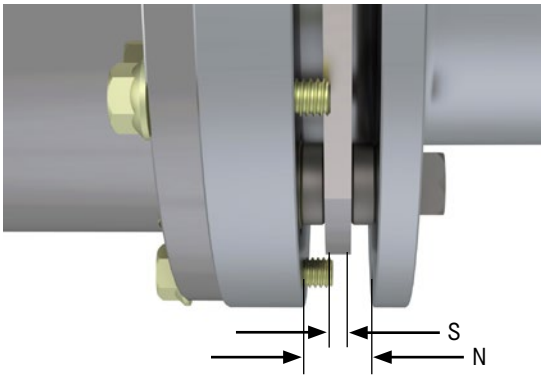
9.7. Lubricate the cap screw threads and insert the cap screws through the hub flange clearance holes and into the mating threaded holes in the adapter.

9.8. Tighten each cap screw to the torque as listed in **Table 4**.

9.9. As an assembly and alignment check, measure the distance "N" between the flanges of the adapter and the center spool at each end, as shown in **Figure 11**. Dimension "N" should be measured at four (4) positions equally spaced around the circumference of the disc pack gap (at top, bottom, and side positions) at each end of the coupling.

- Calculate the "$N_{average}$" value at each end by adding the measurements and dividing by 4.
- $N_{average}$ = (N1 + N2 + N3 + N4) /4
- $N_{average}$ should be between the minimum and maximum values shown in **Table 5**.
- If the $N_{average}$ value is outside of these specifications, use a more precise measurement method to verify an acceptable gap, by first measuring the thickness of the disc pack "S" as shown in **Figure 11**. The discs should be tightly compressed during the measurement. Calculate "G" by subtracting "S" from $N_{average}$
  - G = $N_{average}$ – S
  - G should be between the minimum and maximum values shown in **Table 5** for allowable G values.
- Calculate the Angular Misalignment at each end by subtracting the smallest (minimum) N value from the largest (maximum) N value. The Angular Misalignment should be less than the maximum value shown in **Table 5**.
  - Angular Misalignment = ($N_{maximum}$ – $N_{minimum}$)

Figure 11 — Alignment Confirmation Values



9.10. If the "N average", and "G" values are outside of these specifications, or the angular misalignment exceeds the maximum capacity, it is suggested that the alignment is rechecked and improved. Dimensional measurements should also be made to verify the set up is accurate.

9.11. For further help with the installation or alignment consult Rexnord.

TABLE 4 — Cap Screw Tightening Torque

Series 71 Coupling Size	"A" Dimension		Cap Screw			
			Thread Size	Torque		Wrench Size Inch
	inch	mm	inch	Ft-Lb*	Nm	
150	3.95	100.3	1/4-20 UNC	(108)*	12	3/8
175	4.16	105.7	1/4-20 UNC	(108)*	12	3/8
225	4.94	125.5	1/4-20 UNC	(108)*	12	3/8
300	5.97	151.6	1/4-20 UNC	(108)*	12	3/8
350	6.75	171.5	5/16-18 UNC	18	24	1/2
375	7.62	193.5	5/16-18 UNC	18	24	1/2
412	8.00	203.2	5/16-18 UNC	18	24	1/2
462	9.00	228.6	3/8-16 UNC	33	45	9/16
512	10.03	254.8	7/16-14 UNC	52	71	5/8
562	10.97	278.6	1/2-13 UNC	80	108	3/4
600	11.72	297.7	1/2-13 UNC	80	108	3/4
712	13.88	352.6	5/8-18 UNF	95	129	15/16
800	15.56	395.2	3/4-16 UNF	165	224	1-1/8
875	17.12	434.8	7/8-14-UNF	270	366	1-5/16
1038	19.75	501.7	7/8-14-UNF	270	366	1-5/16

* Torque values shown in parenthesis are defined in (In-lb). Otherwise use Ft-lb.

1. These torque values are for cap screws with oil lubricated threads.
2. Air driven wrenches for fastener assembly are not permitted (heat build up may lead to thread damage during the assembly).

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TABLE 5 — Alignment Check Values

Series 71 Coupling Size	"A" Dimension		Dimension "N" Allowable Range for "N average" *				Maximum Allowable Coupling Angular Misalignment at Each End (N maximum)-(N minimum) **		Precision Alignment Check Allowable Range for G=(N average)-S ***			
			Min	Max	Min	Max	Maximum Capacity		Min	Max	Min	Max
	inch	mm	inch	inch	mm	mm	inch	mm	inch	inch	mm	mm
150	3.95	100.3	0.466	0.491	11.84	12.47	0.034	0.88	0.362	0.387	9.19	9.83
175	4.16	105.7	0.476	0.511	12.09	12.98	0.036	0.92	0.357	0.392	9.07	9.96
225	4.94	125.5	0.460	0.497	11.68	12.62	0.043	1.10	0.355	0.393	9.02	9.98
300	5.97	151.6	0.575	0.618	14.61	15.70	0.052	1.32	0.416	0.459	10.57	11.66
350	6.75	171.5	0.648	0.693	16.46	17.60	0.059	1.50	0.415	0.460	10.54	11.68
375	7.62	193.5	0.664	0.712	16.87	18.08	0.066	1.69	0.414	0.461	10.52	11.71
412	8.00	203.2	0.821	0.876	20.85	22.25	0.070	1.77	0.535	0.590	13.59	14.99
462	9.00	228.6	0.891	0.951	22.63	24.16	0.079	1.99	0.533	0.593	13.54	15.06
512	10.03	254.8	0.897	0.962	22.78	24.43	0.088	2.22	0.468	0.533	11.89	13.54
562	10.97	278.6	0.983	1.055	24.97	26.80	0.096	2.43	0.464	0.536	11.79	13.61
600	11.72	297.7	1.173	1.253	29.79	31.83	0.102	2.60	0.582	0.662	14.78	16.81
712	13.88	352.6	0.753	0.794	19.13	20.17	0.081	2.05	0.292	0.333	7.42	8.46
800	15.56	395.2	0.890	0.936	22.61	23.77	0.091	2.30	0.353	0.399	8.97	10.13
875	17.12	434.8	0.959	1.010	24.36	25.65	0.100	2.53	0.351	0.402	8.92	10.21
1038	19.75	501.7	1.171	1.228	29.74	31.19	0.115	2.92	0.471	0.529	11.96	13.44

* "N average" is the average of four dimensions measuring the gap at four positions equally spaced around the circumference of the disc pack (at the top, bottom, and side positions, or otherwise stated as 0°, 90°, 180°, and 270°).

** At each end, subtract the minimum N measurement from the maximum N measurement. The calculated value allows the maximum angular misalignment capacity at each end, 1/2° for sizes 150 to 600 and 1/3° for sizes 712 to 1038.

*** G = (N average) - S, where S = measured thickness of stack of disc pack laminates (when tightly compressed).

10. Disc Pack Replacement

10.1. If it becomes necessary to replace the disc packs, it can be done as follows.

☞ **ATTENTION!** The Series 71 center member subassemblies have their locknuts factory tightened. On center member subassemblies where the spacer length is short and wrench access is limited, special wrenches are used to tighten the locknuts. Consult Rexnord for assistance in obtaining these special wrenches.

10.2. Remove the center member subassembly by removing all cap screws, compressing the center member subassembly (using the cap screws as defined in the final assembly procedure) and dropping it out from between the hubs. There are jacking screw tapped holes in each end hub to disengage the pilots between the hubs and adapters.

10.3. Remove all locknuts, bolts, washers, and disc packs. Special wrenches may be required.

10.4. Clean the two adapters and the center spool, removing any nicks and burrs. See **Figure 9**.

10.5. Install the new disc packs to the adapters first.

☞ **ATTENTION!** Match marks (if applied at assembly balance) must be in-line to maintain balance integrity.

10.6. Insert the bolts through the adapter bolt holes and disc pack assembly.

10.7. Make sure to keep the disc packs flat and parallel to the mating flange while installing the bolts through the adapter, washer, disc pack and washer.

10.8. Make sure all of the parts engage the body diameter of the bolt at assembly.

10.9. The last bolt installed may be tight and require light tapping, with a small soft faced mallet, on the head of the bolt to engage the bolt through the disc pack assembly at the center member.

Figure 12 — 4 Bolt Pattern 150 and 175 sizes

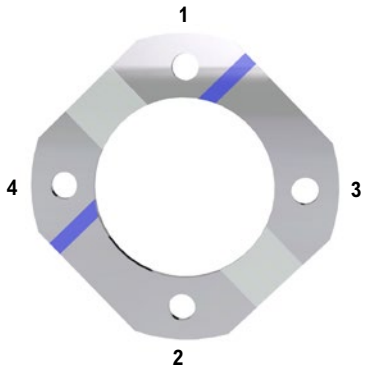


Figure 13 — 6 Bolt Pattern 225 through 600 sizes

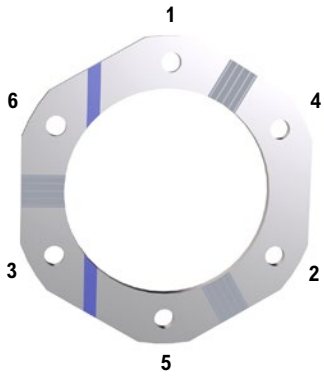
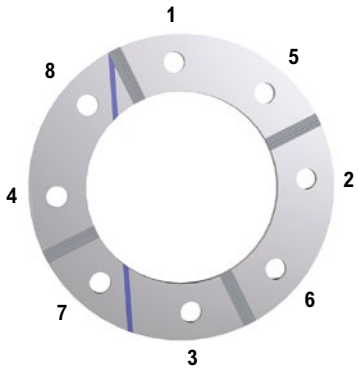


Figure 14 — 8 Bolt Pattern 712 through 1038 sizes



ATTENTION! All bolt threads must be lubricated prior to assembly. A clean motor oil is recommended. Do not use lubricants containing molybdenum disulfide or greases.

10.10. Slightly tighten all locknuts using an alternating progressive pattern, as shown in **Figures 12, 13** and **14**, making sure the pack is not distorted and all the bolts are fully seated.

10.11. Tighten each locknut to the appropriate torque value as shown in **Table 6**, using an incremental torque in a progressive alternating pattern.

10.12. Proceed to install the center member subassembly as outlined in Section 9.0, Final Assembly.

10.13. When possible, it is recommended that all locknuts have their tightening torque checked after several hours of initial operation.

10.14. For spare replacement parts, see **Table 1**.

TABLE 6 — Locknut Tightening Torques

Series 71 Coupling Size	"A" Dimension		Locknut			
			Thread Size	Torque		Wrench Size Inch
	inch	mm	inch	Ft-Lb**	Nm	
150	3.59	100.3	1/4-28 UNF	(156)**	18	7/16
175	4.16	105.7	1/4-28 UNF	(156)**	18	7/16
225	4.94	125.5	1/4-28 UNF	(156)**	18	7/16
300	5.97	151.6	5/16-24 UNF	25	34	1/2
350	6.75	171.5	3/8-24 UNF	34	46	9/16
375	7.62	193.5	7/16-20 UNF	60	81	5/8
412	8.00	203.2	1/2-20 UNF	95	129	3/4
462	9.00	228.6	9/16-18 UNF	130	176	7/8
512	10.03	254.8	5/8-18 UNF	175	237	15/16
562	10.97	278.6	3/4-16 UNF	190*	258*	1-1/4
600	11.72	297.7	3/4-16 UNF	190*	258*	1-1/4
712	13.88	352.6	3/4-16 UNF	190*	258*	1-1/4
800	15.56	395.2	7/8-14 UNF	255*	346*	1-7/16
875	17.12	434.8	1-14 UNS	335*	454*	1-5/8
1038	19.75	501.7	1-1/8-12 UNF	425*	576*	1-13/16

* These locknuts are cadmium plated (for steel). Do not use any lubricant other than clean motor oil.

** Torque values shown in parenthesis are defined in (in-lb). Otherwise use (ft-lb).

1. These torque values are approximate for steel bolts with threads lubricated with clean motor oil. The locknuts are prevailing torque type and some resistance will be felt. If thread galling is suspected, immediately stop and contact Rexnord.
2. Bolts should be held stationary while the locknuts are tightened to the values shown. Do not tighten the fastener by rotating the bolt.
3. The use of Stainless Steel bolts and locknuts requires the tightening torque to be reduced to 60% of the values shown. Stainless steel bolt and locknut threads must also be liberally coated with molybdenum disulfide grease (do not use motor oil).
4. Air driven wrenches for fastener assembly are not permitted (heat build up may lead to thread damage during assembly).

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