



ATEX: In order for this coupling to meet the ATEX requirements, it is mandatory to precisely follow these installation instructions along with the included supplement form 0005-08-49-01. This supplement outlines the ATEX requirements. If the operator does not

adhere to these instructions, conformity is immediately invalidated.

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

All rotating power transmission products are potentially dangerous and can cause serious injury. They must be properly guarded in compliance with OSHA, ANSI, and any other local standards for the speeds and applications in which they are used. It is the responsibility of the user to provide proper guarding.

For ATEX requirements the guard must have a minimum of ½ inch (12.7 mm) radial clearance to the coupling major diameter "A" and allow for good ventilation.

1. **Purpose** — These instructions are intended to help you to install, align, and maintain your THOMAS coupling.
2. **Scope** — Covered here will be general information, hub mounting, alignment, assembly, locknut torque, disc pack replacement, and part numbers.
3. **General Information:**
 - A. The coupling as received may or may not have the hub attached to the adapter and disc pack assembly. If the hub is attached, it is not necessary to disassemble for hub mounting on the shaft. The locknuts are not fully tightened. Examine the assembly to assure there is no visible damage.
 - B. Remove the cap screws that attach the axially split center member to the adapter plates and remove the split center member.
4. **Hub Mounting:**
 - A. **General** — One of the pieces of equipment (driver or

driven) must be moved sufficiently out of the way to allow for hub installation. The hub, adapter, disc pack, and hardware can be mounted on the shaft as one unit.

Final locknut tightening is done later. See Section 6. Clean hub bores and shafts. Remove any nicks or burrs. If bore is tapered, check for good contact pattern. If the bore is straight, measure the bore and shaft diameters to assure proper fit. The key(s) should have a snug side-to-side fit with a small clearance over the top, and the corners must be chamfered.

B. Straight Bore.

NOTE: With straight bore only and using the modified arrangement, the shaft can protrude through the hub or hubs to achieve the desired "C" dimension (distance between shaft ends) provided the shaft keyway is long enough to fully engage hub bore. This will not affect the performance of the coupling.

Install the key(s) in the shaft. If the hub is an interference fit, heat the hub in oil bath or oven until bore is sufficiently larger than the shaft. 350°F is usually sufficient. An open flame is not recommended. However, if flame heating is necessary use a very large rose bud tip to give even heat distribution.

A thermal heat stick will help determine hub temperature. **DO NOT SPOT HEAT THE HUB OR DISTORTION MAY OCCUR.** With the hub expanded slide it quickly up the shaft to the desired axial position. A pre-set axial stop device can be helpful.

- C. **Straight Bore Slip Fit** — Install the key(s) in the shaft. Install the set screw(s) in the hub making sure they do not protrude into the keyway or the bore. Now slide the hub up the shaft to the desired axial position. The set screw(s) which hold the hub in place are tightened using a torque wrench, to the values shown in table 1A.

NOTE: Never use two setscrews one on top of the other.

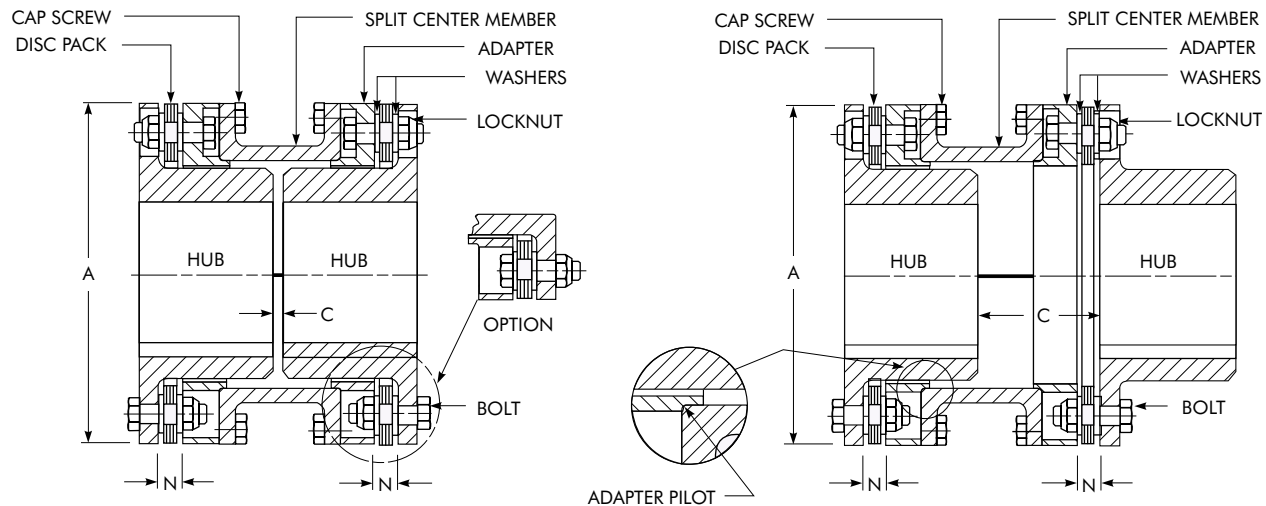


Figure 1

STANDARD

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D. **Taper Bore** — Taper Bore. Put the hub on the shaft without the key(s) in place. Lightly tap the hub on the shaft with a soft hammer. This will assure a metal-to-metal fit between shaft and hub. This is the starting point for the axial draw. Record the position between shaft end and hub face with a depth micrometer. Mount a dial indicator to read axial hub movement. Set the indicator to “0”. Remove the hub and install the key(s). Heat the hub in an oil bath or oven until the bore is sufficiently larger than the shaft. 350°F is usually sufficient. An open flame is not recommended. However, if flame heating is necessary, use a very large rose bud tip to give even heat distribution. A thermal heat stick will help determine the hub temperature. **DO NOT SPOT HEAT THE HUB OR DISTORTION MAY OCCUR.** With the hub expanded, slide it quickly up the shaft to the “0” set point. Continue to advance the hub up the taper to the desired axial position. Use the indicator as a guide only. A preset axial stop device can be helpful. Check the final results with a depth micrometer. Install the hub retention device to hold the hub in place.

- 5. **Shaft Alignment** — Move equipment into place.
- A. **Soft Foot** — The equipment must sit flat on its base. Any soft foot must now be corrected.
- B. **Axial Spacing** — The axial spacing of the shafts should be positioned so that the disc packs (flexing elements) are not distorted when the equipment is running under normal operating conditions. This means there is a minimal amount of waviness in the disc pack when viewed from the side. This will result in a flexing element that is centered and parallel to its mating flange faces. Move the connected equipment to accomplish the above.

NOTE: The disc pack is designed to an optimal thickness and is not to be used for axial length adjustments by removing or adding individual discs.

As a guide, maximum and minimum values for dimension “N” are given. These dimensions are suggested for initial installation. Additional capacity is available to compensate for thermal and structural movement. Maximum axial capacity values for these couplings are also given. See Table 1 and Figure 1.

- C. **Laser Alignment is an Option** — If not available proceed with dial indicator method.
- D. **Angular Alignment** — Rigidly mount a dial indicator on one hub or shaft, reading the face of the other hub flange, as shown in Figure 2. Rotate both shafts together making sure the shaft axial spacing remains constant. Adjust the equipment by shimming and/or moving so that the indicator reading is within .001 inch per inch of coupling flange diameter. See Chart (A).
- E. **Parallel Offset** — Rigidly mount a dial indicator on one hub or shaft, reading the other hub flange outside diameter, as shown in Figure 3. Compensate for indicator set-up sag. Rotate both shafts together. Adjust the equipment by shimming and/or moving so that the indicator reading is within .001 inch per inch of the axial length between flex elements. See Chart (A).

NOTE: If the driver or driven equipment

alignment tolerances are more stringent than our recommendations, the driver or driven equipment tolerances should be used. Also be sure to compensate for thermal movement in the equipment. The coupling is capable of approximately four times above shaft misalignment tolerances. However, close alignment at installation will provide longer service with smoother operation.

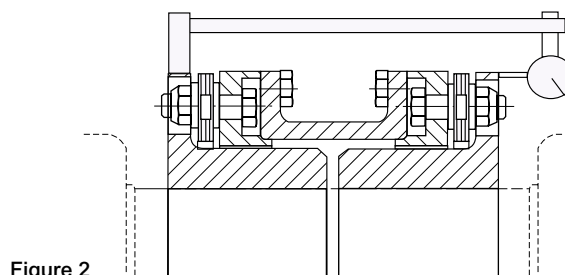


Figure 2

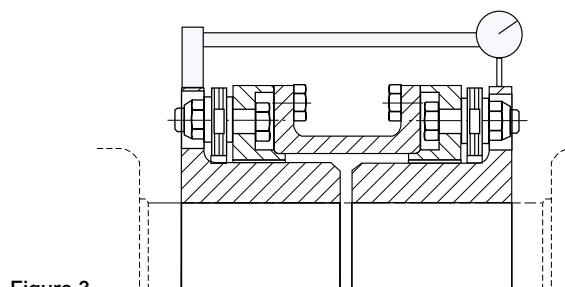


Figure 3

CHART A — Suggested Maximum Alignment Values

COUPLING SIZE	Total Indicator Reading (T.I.R.)	
	Angular	Parallel
162	.004	.003
200	.005	.004
225	.006	.004
262	.007	.005
312	.008	.005
350	.009	.006
375	.010	.007
425	.011	.008
450	.012	.009
500	.013	.010
550	.014	.011
600	.016	.012
700	.018	.013

- 6. **Final Assembly:**
 - A. If this coupling has been factory balanced, the hub flange will be match marked to the adapter. Recheck to assure the marks line up.
 - B. If the coupling hubs were mounted without the disc pack/adapter assemblies installed, install as follows. Install the bolts through the hub bolt holes.

NOTE: If there is not enough room axially behind the hub, bolts can be installed from the opposite direction. See Figure 1 option.

Add a washer to each bolt. **The radius side of the washer should always be against the disc pack.** Now position the disc pack/adaptor sub assembly onto the bolts. See Figure 1. Add the remaining radius washers making sure all parts pilot on the body ground part of the bolt. Now add the locknuts and slightly tighten the locknuts.

NOTE: All bolt threads should be lubricated. A clean motor oil is recommended.

- C. Now fully tighten all the disc pack locknuts using the torque values shown in Table 1.
- D. Slide the equipment back into alignment, setting the axial spacing “C” per table 1. “C” is a reference dimension only. Due to the stack up in axial dimensional tolerances the final axial positioning should be set by the procedure outlined in Section 5-B.
- E. Install the two split center member halves. Position them between the adapters making sure the bolt holes line up with the tapped holes in the adapter and the number stamped on each half of the flange O.D. are the same and line up with each other. If the coupling has been balanced, make sure the match marks all line up. See Figure 1 and Figure 4.

NOTE: With the coupling in good alignment, the cap screws will fit through the holes easily.

- F. Install all the cap screws, leaving them loose. Now assist in this operation. **Pilot seating is important.** Using a torque wrench tighten all the cap screws to the values shown in table 1.

It is recommended that all the locknuts be retightened after several hours of initial operation when ever possible.

- G. For further help with the installation or alignment, consult Rexnord application engineering.

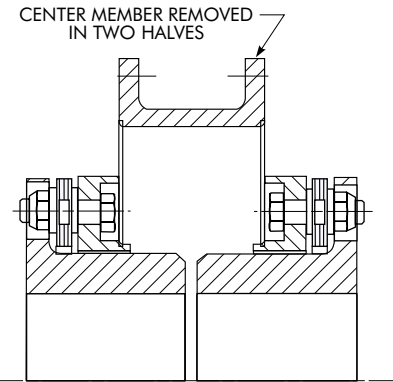


Figure 4

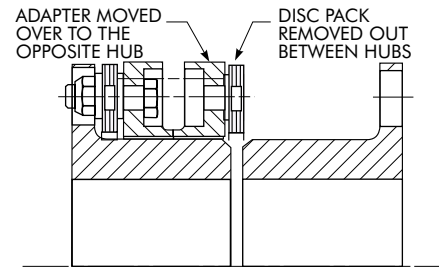


Figure 5

TABLE 1 — Locknut Tightening Torques, Dimension “N” Limits

COUPLING SIZE	“A” Dia Inch	“C” Dim Inch	“C” Dim One Hubs Out Max Inch	“C” Dim Both Hubs Out Max Inch	Dim “N” Inch		Axial Capacity Inch	Disc Pack Locknut			Center Member Cap Screws		
					Min	Max		Thread Size	Torque		Thread Size	Torque	
									Ft-Lb (In-Lb)	Nm		Ft-Lb (In-Lb)	Nm
162	4.34	.12	1.77	3.42	.30	.31	± .036	1/4 - 28	(156)	18	1/4 - 20	(54)	6
200	5.44	.12	1.97	3.80	.37	.38	± .036	5/16 - 24	25	34	1/4 - 20	(54)	6
225	5.69	.12	2.03	3.94	.37	.38	± .036	5/16 - 24	25	34	1/4 - 20	(54)	6
262	6.62	.19	2.42	4.65	.48	.49	± .043	3/8 - 24	30	41	5/16 - 18	(126)	14
312	7.81	.19	2.62	5.05	.51	.52	± .051	7/16 - 20	40	54	1/4 - 20	(108)	12
350	8.69	.25	3.06	5.87	.55	.56	± .056	1/2 - 20	95	129	1/4 - 20	(108)	12
375	9.69	.25	3.27	6.27	.60	.61	± .062	9/16 - 18	130	176	5/16 - 18	18	24
425	10.50	.25	3.61	6.97	.63	.64	± .067	5/8 - 18	175	237	5/16 - 18	18	24
450	11.31	.31	4.16	7.99	.72	.74	± .072	11/16 - 16	150★	203★	3/8 - 16	33	45
500	12.88	.31	4.27	8.21	.79	.81	± .082	3/4 - 16	190★	258★	3/8 - 16	33	45
550	14.44	.38	4.81	9.24	.92	.94	± .092	7/8 - 14	255★	346★	7/16 - 14	52	71
600	16.00	.38	5.39	10.42	.99	1.02	± .102	1 - 14	335★	454★	1/2 - 13	80	108
700	18.25	.38	6.22	12.06	1.20	1.23	± .115	1 1/8 - 12	425★	576★	1/2 - 13	80	108

NOTE:

1. These torque values are approximate for steel bolts with lubricated threads. Modification will be necessary for stainless steel. For stainless steel, the tightened torque must be reduced to 60% of the values shown. Bolt and locknut threads must also be liberally coated with molybdenum disulfide grease.
2. **Bolts should be held from rotating while the locknuts are tightened to the values shown.**
3. For zinc plated cap screws and locknuts, torque must be increase by a factor of 1.3.

★ These locknuts are cad plated.

TABLE 1A — Set Screw Tightening Torque

Setscrew Thread Size	Torque in-lb	Torque ft-lb	Torque Nm
1/4-20	66	6	7
1/4-28	76	6	9
5/16-18	132	11	15
5/16-24	144	12	16
3/8-16	240	20	27
3/8-24	276	23	31
1/2-13	600	50	68
1/2-20	660	55	75



7. **Disc Pack Replacement** — If it becomes necessary to replace the disc pack, it can be done without moving the equipment.

- A. Remove the cap screws and then remove the two center member halves from the assembly. See Figure 4.
- B. Remove the locknuts, bolts, and washer from one end.
- C. Slide the adapter axially out of the way letting it rest on the other end hub. See Figure 5.
- D. The disc pack is now free to be removed through the axial gap between the two hubs (“C” dimension spacing), see Figure 5. If there is not enough room between the hubs for the total disc pack, the disc pack may be taken out and replaced one single disc laminate at a time provided the orientation is maintained on reassembly.
- E. Slide the new disc pack through the hub gap. Install the bolts through the hub bolt holes.

NOTE: If bolts need to be replaced and there is not enough room axially behind the hub, new bolts can be installed from the opposite direction. See Figure 1 option.

Add a washer to each bolt. The radius side of the washer should always be against the disc pack. Now position the disc pack onto the bolts. See Figure 1. Add the remaining radius washers making sure all parts pilot on the body ground part of the bolt. Now add the locknuts. Do not tighten at this time.

NOTE: All bolt threads should be lubricated. A clean motor oil is recommended.

- F. Slide the adapter back into position. Install the bolts through the adapter bolt holes. Add a washer to each bolt. The radius side of the washer should always be against the disc pack. Now position this assembly so that the bolts go through the disc pack, making sure the match marks, when used, line up. See Figure 1. Add the remaining radius washers making sure all parts pilot on the body ground part of the bolt. Now add the locknuts and slightly tighten the locknuts.
- G. Using a torque wrench, fully tighten the locknuts to the torque value as shown on Table 1.

NOTE: If there is not enough room axially to tighten the locknuts that hold the disc pack to the adapter, it may be necessary to unbolt the disc pack from the hubs and slide the adapter/disc pack assembly axially. Now tighten these locknuts first, then complete the coupling assembly.

- H. Rework the other end if required as per Section 7, B through G.
- I. Install the two split center member halves. Position them between the adapters making sure the bolt holes line up with the tapped holes in the adapter, and the numbers stamped on each half of the flange O.D. are the same and line up with each other. If the coupling has been balanced, make sure the match marks all line up. See Figures 1 and 4.
- J. Install the cap screws, and using a torque wrench tighten them to the value as shown in Table 1A.
- K. Recheck the alignment of the coupling correcting as required.

8. **For Replacement Parts** — See Table 2.

TABLE 2 — Part Numbers and Quantity Required

COUPLING SIZE	Disc Pack		Center Member Assembly Stainless Disc Packs Part No.	Disc Pack Joint Hardware						Center Member Cap Screws	
				Bolts		Locknuts		Washers			
	Part No.	Qty		Part No.	Qty	Part No.	Qty	Part No.	Qty	Part No.	Qty
162	310663	2	6788151	916087	12	916504	12	212706	24	009561	16
200	710665	2	6788152	116088	12	316505	12	712610	24	009561	24
225	610984	2	6788153	116088	16	316505	16	712610	24	009561	32
262	210985	2	6788154	316089	16	566214*	16	014762	32	008110	32
312	210957	2	6788155	516090	16	565215*	16	017142	32	021605	32
350	010952	2	6788156	716091	16	516508	16	019099	32	021605	32
375	610943	2	6788157	916092	16	916509	16	019101	32	021606	32
425	010986	2	6788158	116093	16	316510	16	019102	32	021606	32
450	410987	2	6788159	316094	16	716511*	16	516100	32	021607	32
500	620735	2	6788160	516095	16	116512*	16	711460	32	021607	32
550	310962	2	6788161	716096	16	039125*	16	311750	32	020790	32
600	910959	2	6788162	916097	16	020253*	16	612127	32	021608	32
700	420803	2	6788163	116098	16	020254*	16	511413	32	021608	32

NOTE: Refer to Figure 1 for arrangement drawing.

★ These locknuts are cad plated.