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" (See Figure 1) 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 —** The coupling, as received, may or may not be assembled. If assembled, the locknuts are not fully tightened. Examine the parts to assure there is no visible damage. If the coupling is assembled, remove the bolts, locknuts, and washers that attach the hubs to the disc packs. Remove both hubs. Leave the disc packs attached to the center member assembly.
4. **Hub Mounting**

   A. General. Clean the hub bores and shafts. Remove any nicks or burrs. If the bore is tapered, check for a 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 —** Install the key(s) in the shaft. If the hub is an interference fit, heat the hub in oil bath or oven until the bore is sufficiently larger than the shaft. 350ºF 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 set screws one on top of the other.

   D. **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.

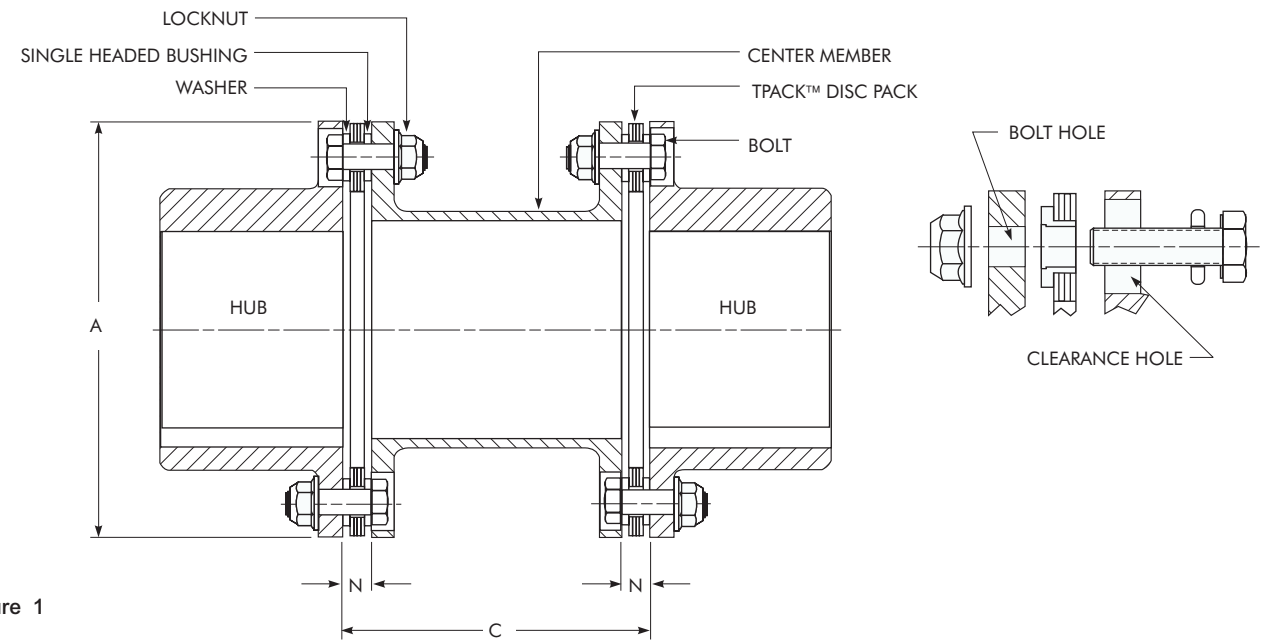

Figure 1

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. Refer to the assembly drawing and the connected equipment installation procedures for specific axial spacing requirements.

NOTE: The disc pack is designed to an optimal thickness and is not to be used for axial 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.

NOTE: C=2N+Center Member Length.

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 the values shown in Table 1.

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.

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 alignment tolerances. However, close alignment at installation will provide longer service with smoother operation.

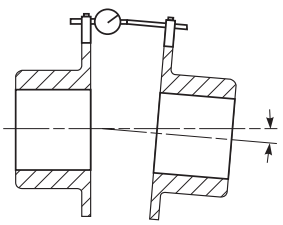

FIGURE 2

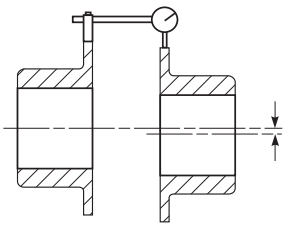

FIGURE 3

6. **Final Assembly —** With the coupling in good alignment, the bolts should easily fit through the holes in the flanges and the disc packs.

NOTE: All bolt threads should be lubricated. A clean motor oil is recommended. Also, see Footnote ★ below Table 1.

A. If the coupling arrived assembled, the disc packs are still attached to the center member assembly. Remove the disc packs from the center member.

B. With the hubs mounted and the span length "C" set, proceed to put the center member into place between the two hubs. Care should be taken when handling the center member as the tube can be damaged. Support the center member at both ends on wood blocks, with nylon straps from a hoist, or some other convenient way. It may help to support the end not being worked on with bolts through the spool flange bolt holes. This will hold the parts in line at that end.

C. Now install the disc pack. Rotate the hub or center member so that the hub bolt holes line up with the center member flange clearance holes. If the coupling was assembly balanced, also align the match marks. Start a bolt through a loose washer. **The radius side of the washer must always be against the disc pack.** Hold the disc pack in one hand and slip it down between the two flanges so that the bushing heads in the pack line up with the bolt holes in the flanges as shown n Figure 1. Slide the bolt and washer through the clearance hole in one flange, into the bushing, and through the bolt hole of the opposite flange. Make sure all parts pilot on the body ground area of the bolt. Install a locknut onto the bolt, but do not tighten it at this time.

Now pivot the pack around until it lines up the bushing heads with the rest of the bolt holes. Place a loose washer on each remaining bolt and install the bolts through the clearance holes, into the bushings, and through the bolt holes. The last bolt may be tight and require some light tapping on the head of the bolt to work it through the disc pack. Install a locknut on each bolt. The locknuts can be slightly tightened at this time. The disc pack, when installed, should look centered and parallel with the mating flanges.

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D. Now proceed to the other end of the coupling. Remove the support bolts, if used, and support the center member in one of the other ways. Using paragraph "6. C" above install the second disc pack.

E. Make the final coupling alignment check at this time.

F. Fully tighten the locknuts evenly and in an incremental and alternating fashion. See Table 1 for torque values.

NOTE: With the coupling in good alignment, the bolts should easily fit through the holes in the flanges and the disc pack.

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

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

7. **Disc Pack Replacement —** If it becomes necessary to replace the disc pack, it can be done as follows:

NOTE: Sizes 225 through 750 use the Tpack™ unitized disc pack. The Tpack™ disc pack will replace the original Thomas round, non-unitized disc pack without modification to the coupling. Be sure to use the washers that are supplied with the Tpack™ replacement kit.

A. At one end of the coupling remove all locknuts Support the center member at this end. Back out and remove the bolts and loose washers. It may be necessary to tap ends of the bolts with a soft hammer to start them out. Slide the pack out while supporting the center member at this end.

B. Now disassemble the other end per "7. A" above, being sure to support the center member when taking out the last bolt. Remove the center member.

TABLE 1 — Locknut Tightening Torques, Dimension "N" Limits and Suggested Maximum Alignment Values

COUPLING SIZE	"A" Diameter Inch	Dimension "N" Inch		Axial Capacity Inch	Locknut			Alignment Total Indicator Reading	
					Thread Size	Torque			
		Min	Max			Ft-Lb (In-Lb)	Nm	(Angular) Inch	Parallel Inch
225	5.69	.37	.38	± .036	5/16 - 24	25	34	.006	.001 inch per inch of axial length between flex elements
262	6.63	.48	.49	± .043	3/8 - 24	34	46	.007	
312	7.81	.51	.52	± .051	7/16 - 20	60	81	.008	
350	8.69	.54	.55	± .056	1/2 - 20	95	129	.009	
375	9.69	.60	.61	± .062	9/16 - 18	130	176	.010	
425	10.50	.63	.64	± .067	5/8 - 18	175	237	.011	
450	11.31	.73	.75	± .072	11/16 –16	150★	203★	.012	
500	12.88	.79	.81	± .082	3/4 –16	190★	258★	.012	
550	14.44	.92	.94	± .092	7/8 –14	255★	346★	.014	
600	16.00	.99	1.01	± .102	1-14	335★	454★	.016	
700	18.25	1.20	1.23	± .115	1-1/8-12	425★	576★	.018	
750	19.81	1.26	1.29	± .125	1-1/4-12	560★	759★	.020	

NOTE:
1. These torque values are approximate for steel bolts with lubricated threads. The locknuts are prevailing torque type and some resistance will be felt. If galling is suspected, immediately stop and contact Rexnord. Modification will be necessary for stainless steel. For stainless steel, the tightened torque must be reduced to 60% of the values shown. Stainless steel bolt and locknut threads must also be liberally coasted with molybdenum disulfide grease.
2. **Bolts should be held from rotating while the locknuts are tightened to the values shown.**

★ These locknuts are cadmium plated. Do not use any lubricants other than clean oil noted in Section 6. Consult Rexnord if unsure.

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

C. Replace parts as necessary. If an original Thomas round, non-unitized disc pack is being replaced, discard the washers that were removed with the bolts in Section 7.A on previous page. Recheck alignment per Section 5. Reassemble per Section 6.

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

TABLE 2 — Part Numbers and Quantity Required

CPLG SIZE	Hub (Rough Bore) Qty = 2	Center Member Qty = 1		Tpack™ Disc Pack Two per Coupling		Tpack™ Disc Pack Joint Hardware					
				Tomaloy	Stainless	Bolts		Locknuts		Washers	
	Part No.	Part No.	Dim. "C"	Part No.	Part No.	Part No.	Qty	Part No.	Qty	Part No.	Qty
225	434408	587513 587514	5 7	586056	586070	116088	16	316505	16	712610	16
262	634409	587515 587516	5 7	586058	586071	564586	16	564214★	16	311399	16
312	834410	587517 587519	5-1/2 7	585913	586072	564588	16	564215★	16	011674	16
350	034411	587520 587521	6 7	586059	586076	716091	16	516508	16	911767	16
375	234412	587522	7	586060	586077	916092	16	916509	16	311677	16
425	434413	587535	7	586062	586078	116093	16	316510	16	711850	16
450	634414	587538 587541	7 8	586063	586080	316094	16	716511★	16	516100	16
500	834415	587544	9	586065	586081	516095	16	116512★	16	711460	16
550	034416	587548	10	586066	586082	716096	16	039125★	16	311750	16
600	234417	587551	10	586067	586083	916097	16	020253★	16	612127	16
700	434418	587554	11	586068	586084	116098	16	020254★	16	511413	16
750	663126	587557	11	586069	586085	316099	16	020255★	16	111803	16

★ These locknuts are cadmium plated.

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