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 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 or governmental 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 be of the open mesh design.*

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 tightening, disc pack replacement, and part numbers.
3. **General Information** — The coupling as received may or may not have the hub attached to the adapter and disc pack as an 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.

   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 the hub bores and shafts. Remove any nicks or burrs. If the 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 a 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 the 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 an 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 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 desired axial position. A pre-set axial stop device can be helpful.

   C. **Straight Bore Slip Fit** — 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 with 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.

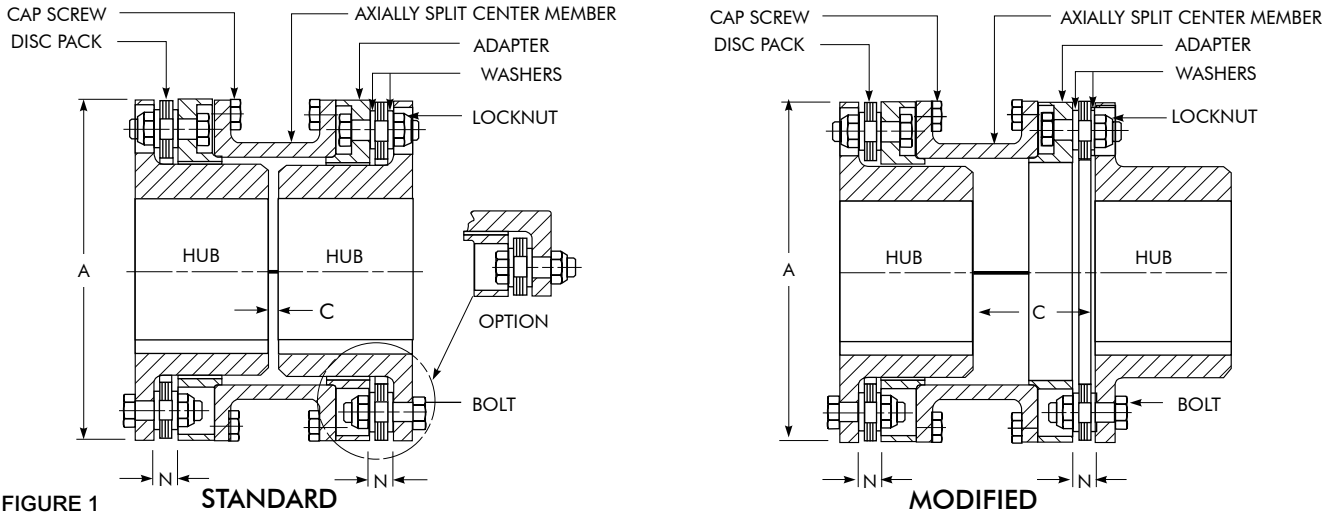


FIGURE 1

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 pre-set axial stop device can be helpful. Check the final results with a depth micrometer. Install the hub shaft end retention device to hold the hub in place.

5. **Shaft Alignment** — Move equipment into place. If the hubs were mounted without the disc pack/adapter assemblies installed, install the assemblies per Section 6-A through D before moving the equipment into place for alignment.
   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 flat 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 length adjustments by removing or adding individual discs.

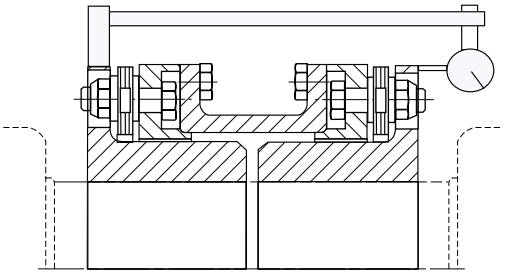


FIGURE 2

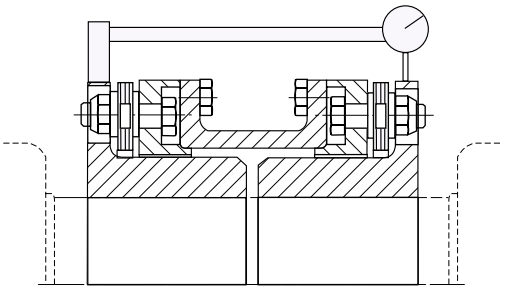


FIGURE 3

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 hub flange diameter. See Chart (A).

Chart A — Suggested Maximum Misalignment Values

COUPLING SIZE	Total Indicator Reading (T.I.R.)	
	Angular	Parallel
125	.004	.003
162	.004	.003
200	.005	.003
225	.006	.004
262	.007	.004
312	.008	.005
350	.009	.005
375	.010	.006
425	.011	.006
450	.011	.007
500	.013	.008
550	.014	.008
600	.016	.009
700	.018	.011
750	.020	.012
800	.022	.013
850	.023	.014
925	.025	.016

   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.

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

Rexnord Industries, LLC, 5555 S. Moorland Rd., New Berlin, WI 53151-7953
Telephone: 262-796-4060 Fax: 262-796-4064
e-mail: info@rexnord.com web: www.rexnord.com

FIGURE 4

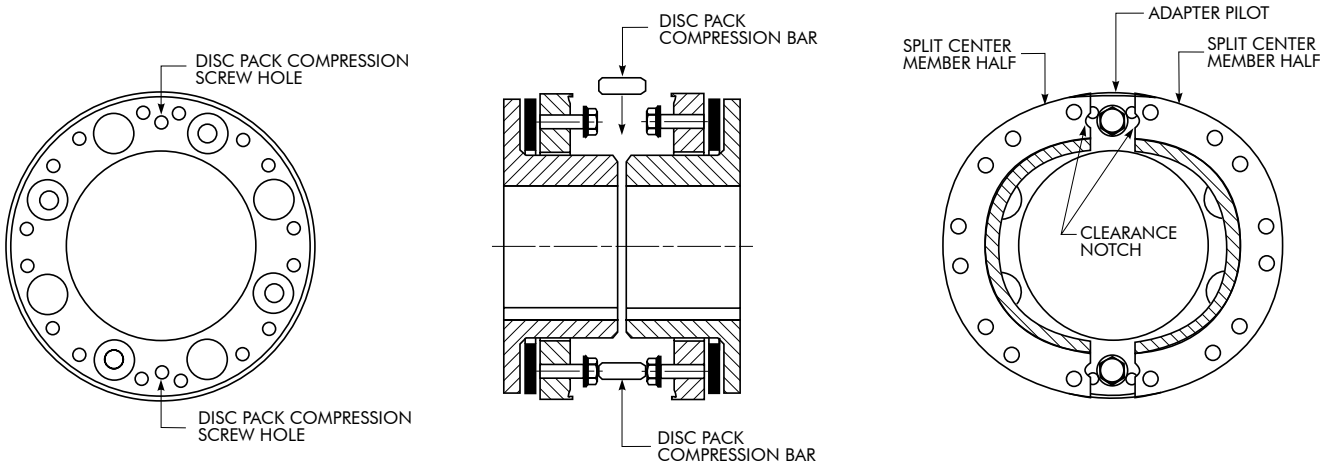


TABLE 1 — Tightening Torques ★ & Dimensions

COUPLING SIZE	A (in.)	C (in.)	C One Hub Out (in.)	C Both Hubs Out (in.)	N (in.)		Axial Capacity (in)	Locknut			Cap Screw		
								Thread Size ‡	Torque		Thread Size	Torque	
					Min	Max			ft-lb	Nm		ft-lb	Nm
125	3.81	.12	1.75	3.38	.27	.28	± .036	1/4-28	156 (lb-in)	18	1/4-28	10	14
162	4.47	.12	1.77	3.42	.29	.30	± .036	1/4-28	156 (lb-in)	18	1/4-28	10	14
200	5.56	.12	1.96	3.80	.37	.38	± .036	5/16-24	25	34	1/4-28	10	14
225	5.88	.12	2.03	3.94	.37	.38	± .036	5/16-24	25	34	1/4-28	10	14
262	6.88	.19	2.42	4.65	.48	.49	± .043	3/8-24	30 ✱	41 ✱	5/16-24	20	27
312	7.84	.19	2.62	5.05	.51	.52	± .051	7/16-20	40 ✱	54 ✱	5/16-24	20	27
350	8.78	.25	3.06	5.87	.54	.55	± .056	1/2-20	95	129	3/8-24	37	50
375	9.72	.25	3.26	6.27	.60	.61	± .062	9/16-18	130	176	3/8-24	37	50
425	10.50	.25	3.61	6.97	.63	.64	± .067	5/8-18	175	237	7/16-20	58	79
450	11.31	.31	4.15	7.99	.73	.75	± .072	11/16-16	150 ✱	203 ✱	7/16-20	58	79
500	12.88	.31	4.32	8.33	.79	.81	± .082	3/4-16	190 ✱	258 ✱	1/2-20	90	122
550	14.44	.38	4.87	9.36	.92	.94	± .092	7/8-14	255 ✱	346 ✱	5/8-18	180	244
600	16.00	.38	5.40	10.42	.99	1.01	± .102	1-14	335 ✱	454 ✱	5/8-18	180	244
700	18.25	.38	6.22	12.06	1.20	1.23	± .115	1 1/8-12	425 ✱	576 ✱	3/4-16	315	427
750	19.81	.50	7.00	13.50	1.26	1.29	± .125	1 1/4-12	560 ✱	759 ✱	3/4-16	315	427
800	21.50	.50	7.37	14.24	1.33	1.36	± .136	1 3/8-12	740 ✱	1003 ✱	3/4-16	315	427
850	23.00	.56	7.97	15.38	1.42	1.45	± .144	1 1/2-12	950 ✱	1288 ✱	7/8-14	415	563
925	25.00	.62	8.91	17.20	1.51	1.55	± .156	1 5/8-12	1350 ✱	2441 ✱	1-12	600	814

★ 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 the Factory. Modification will be necessary for stainless steel. For stainless steel the tightening torque must be reduced to 60% of the values shown. Stainless steel bolt and locknut threads must also be liberally coated with molybdenum disulfide grease.

‡ Bolts should be held from rotating while the locknuts are torqued to the values shown.

✱ These locknuts are cad plated. Do not use any lubricants other than clean oil noted in Section 6-B or 7-E. Consult Factory 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

pack/ adapter assemblies installed, install as follows.

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

Install the bolts through the hub bolt holes.

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

Add a washer to each bolt. **The beveled side of the washer must always be against the disc pack.** See Figure 1.

Add the remaining beveled washers making sure all parts pilot on the body ground area of the bolt. Install a locknut on each bolt and slightly tighten each locknut.

C. Now fully tighten all disc pack locknuts evenly and in an incremental and alternating fashion 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. To install the two split center member halves, the disc packs need to be compressed so that the center member halves clear the adapter pilots.

The cap screws that attach the split center member to the adapters can be used for compressing the disc packs. The adapters have two tapped holes that are used for compressing the disc pack. See Figure 4. Install a cap screw in each of these holes until the end of the cap screw just begins to protrude through the adapter. **Do not tighten the cap screws against the disc packs.**

NOTE: Sizes 850 and 925 have a separate washer under the head. It is not necessary to use the washer when these cap screws are used for compressing the disc packs.

Place a piece of bar or other solid material between the two facing cap screws heads. Table 2 has recommendations for the size of bar to use. Begin loosening the cap screws equally so that the cap screw heads abut against the compression bar. As the cap screws are turned in a loosening direction, the heads will work against each other and the compression bar, and the disc packs will compress.

Compress the disc packs just enough so that the center members halves fit between the adapter pilots. Position the center member halves so that the clearance notches fit around the disc pack compression screws (see Figure 4) 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 line up.

Fit the center member halves into the pilot of one of the adapters and line up the bolt holes with the tapped holes in the adapter.

TABLE 2 — Recommended Bar Size for Installing & Removing Center Member

COUPLING SIZE	Compression Bar Size
125	Ø.31 x .69 Lg.
162	Ø.31 x .69 Lg.
200	Ø.31 x .75 Lg.
225	Ø.31 x .88 Lg.
262	Ø.44 x 1.00 Lg.
312	Ø.44 x 1.06 Lg.
350	Ø.50 x 1.38 Lg.
375	Ø.50 x 1.31 Lg.
425	Ø.56 x 1.50 Lg.
450	Ø.56 x 2.06 Lg.
500	Ø.69 x 1.75 Lg.
550	Ø.88 x 1.75 Lg.
600	Ø.88 x 2.25 Lg.
700	Ø1.06 x 2.50 Lg.
750	Ø1.06 x 3.38 Lg.
800	Ø1.06 x 3.50 Lg.
850 ✱	Ø1.25 x 4.25 Lg.
925 ✱	Ø1.44 x 5.00 Lg.

✱ Bar length recommendations is without the washer under the cap screw head.

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

F. Install the cap screws into the holes of this center member flange and adapter. Make sure the center member halves are seated into the adapter pilot and turn the cap screws until they seat on the flange face. Do not tighten the cap screws at this time as the center member flanges may not be fully seated in the adapter. See Figure 5.

Begin turning the compression cap screws in a tightening direction which will relax the disc packs back to their neutral location. As the disc packs expand, guide the other side of the center member halves into their adapter pilot. Install cap screws into the holes of this center member flange and adapter. Make sure the center member halves are seated into the adapter pilot and turn the cap screws until they seat on the flange face. Do not tighten the cap screws at this time as the center member flanges may not be fully seated in the adapter.

Remove the disc pack compression cap screws and install them into the flange bolt holes. Using a torque wrench tighten all cap screws to the values shown in Table 1.

It is recommended that all locknuts and cap screws be checked and re-tightened after several hours of initial operation.

G. For further help with the installation or alignment, consult the Factory.

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 compress the disc packs as explained in section 6E. Remove the two center member halves from the assembly. See Figures 4 and 5.

Rexnord Industries, LLC, 5555 S. Moorland Rd., New Berlin, WI 53151-7953
Telephone: 262-796-4060 Fax: 262-796-4064
e-mail: info@rexnord.com web: www.rexnord.com

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 6.

D. The disc pack is now free to be removed through the axial gap between the two hubs ("C" dimension spacing), see Figure 6. 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.

FIGURE 5

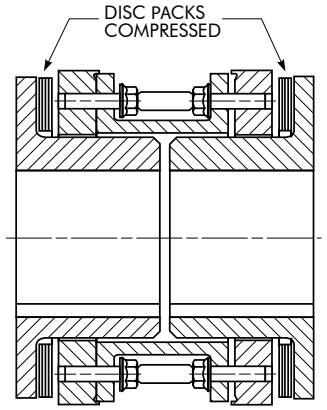
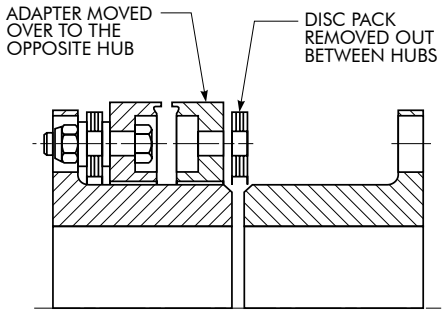


FIGURE 6



E. Slide the new disc pack through the hub gap. Install the bolts through the hub bolt holes.

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

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 beveled 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 beveled washers making sure all the parts pilot on the body ground part of the bolt. Now add the locknuts. Do not tighten at this time.

F. Slide the adapter back into position. Install the bolts through the adapter bolt holes. Add a washer to each bolt. The beveled 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 beveled washers making sure all the parts pilot on the body ground area of the bolt. Install a locknut on each bolt and slightly tighten each locknut.

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 as outlined in Section 6 E through G.

J. Recheck the alignment of the coupling correcting as required.

8. **Replacement Parts** — See Table 3.

TABLE 3 — Part Numbers & Quantity Required

COUPLING SIZE	Disc Pack		Center Member Assembly (Stainless Disc Packs)	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
125	310618	2	587562	916087	8	916504	8	212706	16	586161	12
162	310663	2	587563	916087	12	916504	12	212706	24	586161	16
200	710665	2	587564	116088	12	316505	12	712610	24	586161	24
225	610984	2	587565	116088	16	316505	16	712610	32	586161	32
262	210985	2	587566	316089	16	565214 ✱	16	014762	32	586162	32
312	210957	2	587567	516090	16	565215 ✱	16	017142	32	586162	32
350	010952	2	587568	716091	16	516508	16	019099	32	586163	32
375	610943	2	587569	916092	16	916509	16	019101	32	586163	32
425	010986	2	587570	116093	16	316510	16	019102	32	586164	32
450	410987	2	587571	316094	16	716511 ✱	16	516100	32	586164	32
500	620735	2	587572	516095	16	116512 ✱	16	711460	32	586165	32
550	310962	2	587573	716096	16	039125 ✱	16	311750	32	586167	32
600	910959	2	587574	916097	16	020253 ✱	16	612127	32	586167	32
700	420803	2	587575	116098	16	020254 ✱	16	511413	32	586168	32
750	921021	2	587576	316099	16	020255 ✱	16	111803	32	586168	32
800	220851	2	587577	616200	16	020256 ✱	16	911800	32	586168	32
850	020793	2	587578	816201	16	035069 ✱	16	611402	32	587216 ●	32
925	020958	2	587579	016202	16	568940 ✱	16	812176	32	019500 ●	32

✱ These locknuts are cadmium plated.
● These sizes require a separate washer with each cap screw.
Size 850 washer is part number 587215. Size 925 washer is part number 587223.

Rexnord Industries, LLC, 5555 S. Moorland Rd., New Berlin, WI 53151-7953
Telephone: 262-796-4060 Fax: 262-796-4064
e-mail: info@rexnord.com web: www.rexnord.com