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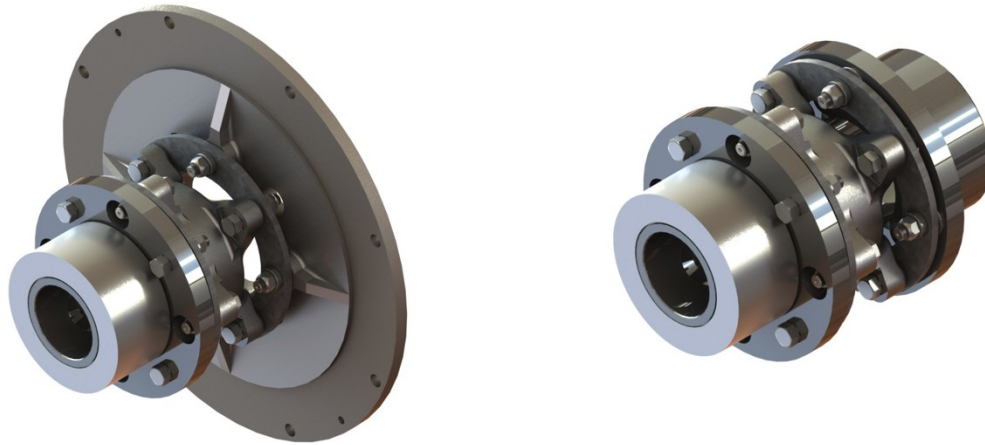






Figure 1 - Thomas CMR and AMR Couplings

1. General Information

- 1.1 Thomas CMR and AMR Couplings are designed to provide a mechanical connection between the rotating shafts of mechanical equipment, using flexible disc elements to accommodate inherent misalignment while transmitting the power and torque between the connected shafts or flywheel.
- 1.2 These instructions are intended to help you install and maintain your Thomas CMR and AMR couplings. Please read these instructions prior to installing the coupling, and prior to maintenance on 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.
- 1.3 Rexnord owns the copyright of this material. These Installation and Maintenance instructions may not be reproduced in whole or in part for competitive purposes.
- 1.4 Symbol descriptions:
 -  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. Installation should be carried out by skilled personnel only. 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. The Installation and Maintenance instructions and assembly drawing, if provided, must be at hand at the installation site.

**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 in) radial clearance to the coupling outside diameter and allow for proper ventilation.
- 2.8. 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.
- 2.9. Make sure to disengage the electrical power and any other sources of potential energy before performing work on the coupling.
 - 2.9.1. Proper lockout-tag out procedures must be followed to safeguard against unintentional starting of the equipment.
 - 2.9.2. Do not make contact with the coupling when it is rotating and/or in operation.
 - 2.9.3. All work on the coupling must be performed when the coupling is at rest under no load.
- 2.10. Packaging material can generate electrostatic charges. It may then become an explosive hazard. It must be removed from the coupling outside any hazardous areas.
- 2.11. 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.
- 2.12. Use explosive environment appropriate tools only, for more information see DIN EN 1127-1:2008:02, Annex A.
- 2.13. The coupling may only be used in accordance with the technical data provided in the Thomas catalog for the Type CMR and AMR couplings. Customer modifications and alterations to the coupling are not permissible.
- 2.14. All spare parts for service or replacement must originate from or be approved by Rexnord.



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.

3. Components and Part Numbers

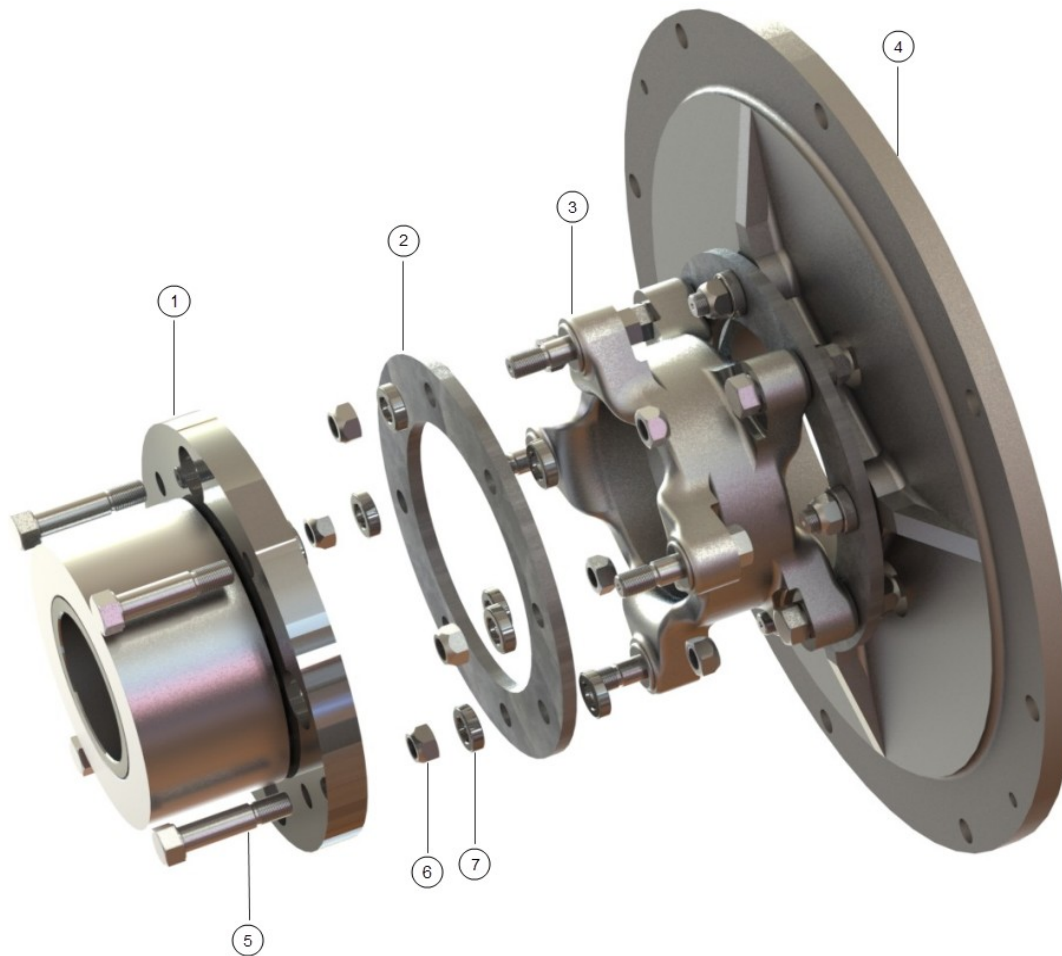


Figure 2 - Thomas Series CMR Coupling Components (AMR Couplings use a Hub at each end, with no Flywheel Adapter)



Note: Coupling component numbers above correspond to the component numbers in the column headers of Table 1.

Thomas CMR and AMR couplings may be delivered from the factory assembled (for shipment only) or not 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 locknuts, bolts and washers that attach the hub(s) to the disc packs. Remove the hub(s). Leave the disc packs attached to the center ring and the flywheel adapter (when used). Prior to operation the disc pack locknuts (Item 6) will be tightened to the specifications shown in Table 5.

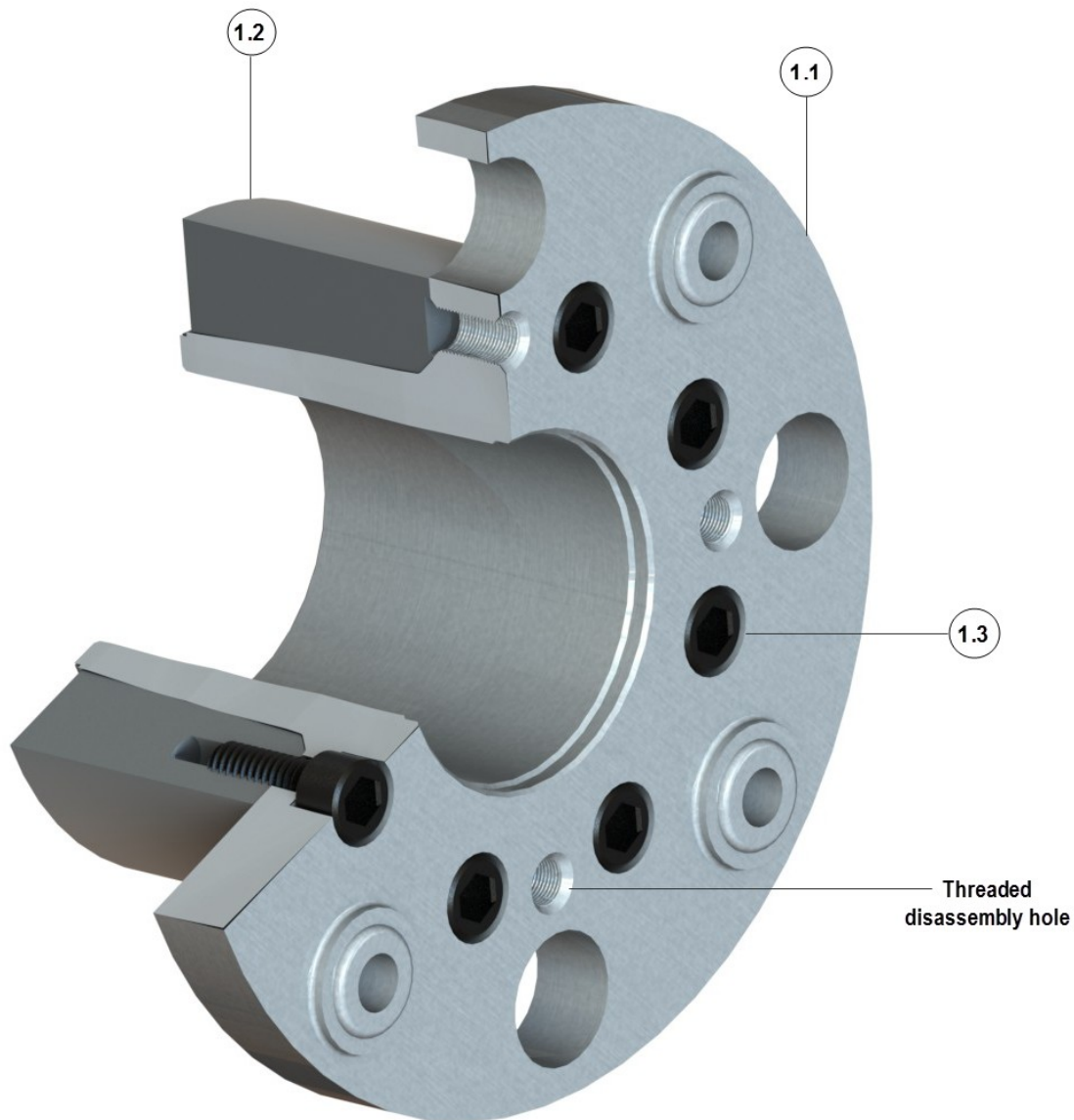


Figure 3- NHR hub subassembly and components.

Thomas NHR hub subassembly will be delivered from the factory assembled, locknuts are not fully tightened and bore to shaft fit will be in clearance. Prior to operation the NHR cap-screws (Item 1.3) will be tightened to the specifications shown in Table 3.

Table 1 Part Numbers and Quantity Required													
Size of AMR/CMR	Flywheel	Hub Rough Bored	1 NHR Hub Rough Bored	Center Ring (1 per Coupling)	Disc Pack (2 per Coupling)		Parts Kits contain all Bolts, Locknuts, and Washers for one complete coupling.				NHR Assembly (1 assembly)		
					Tomaloy	Stainless	Parts Kit**	Bolts	Locknuts	Washers	Hub	Outer Ring	Capscrews
Coupling	Adapter	SAP Material No. (Legacy Part No.)	SAP Material No. (N/A)	SAP Material No. (Legacy Part No.)	SAP Material No. (Legacy Part No.)	SAP Material No. (Legacy Part No.)	SAP Material No. (Legacy Part No.)	Quantity	Quantity	Quantity	Quantity	Quantity	Quantity
162	One per Coupling, Made to Customer's Specifications.	10017913 (811410)	10291705 N/A	40008306 (811050)	10016208 (710663)	10014425 (310663)	10035220 (021396)	12	12	12	1	1	8
200		10014454 (322058)	10291706 N/A	10028064 (120959)	10014078 (210665)	10016209 (710665)	10035221 (021397)	12	12	12	1	1	8
225		10015594 (622050)	10291707 N/A	10028065 (320960)	10014100 (210984)	10182843 (610984)	10035222 (021398)	16	16	16	1	1	8
262		10014453 (322047)	10291708 N/A	40008304 (720826)	10010196 (010985)	10182842 (210985)	10035223 (021399)	16	16	16	1	1	8
312		10028101 (021395)	10291709 N/A	10016242 (720752)	10010195 (010957)	10182841 (210957)	10035224 (021400)	16	16	16	1	1	8
350		10016244 (721392)	10291710 N/A	10028067 (820897)	10017911 (810952)	10010194 (010952)	10035225 (021401)	16	16	16	1	1	8
375		10017999 (921797)	10291711 N/A	10028068 (921373)	10014771 (410943)	10128534 (610943)	10035226 (021402)	16	16	16	1	1	8
425		10014141 (221838)	10291712 N/A	40008297 (321377)	10017912 (810986)	10010197 (010986)	10035227 (021403)	16	16	16	1	1	8
450		10028269 (122088)	10291713 N/A	10013927 (121376)	10014102 (210987)	10014773 (410987)	10035230 (021404)	16	16*	16	1	1	8
500		10014452 (321936)	10291714 N/A	40008308 (920941)	10014796 (420735)	10015593 (620735)	10035231 (021405)	16	16*	16	1	1	8
550		10010326 (021647)	10291715 N/A	40008309 (930642)	10012485 (110962)	10014429 (310962)	10035232 (021406)	16	16*	16	1	1	8
600		10013924 (120943)	10291716 N/A	40008311 (937205)	10016214 (710959)	10017974 (910959)	10035233 (021407)	16	16*	16	1	1	8
700		10146543 (820881)	10291717 N/A	40008307 (830400)	10010509 (031285)	10014797 (420803)	10035234 (021408)	16	16*	16	1	1	8
750		10102022 (421020)	10291718 N/A	10082374 (130597)	10016243 (721021)	10017998 (921021)	10035235 (021409)	16	16*	16	1	1	8
800		10106427 (520890)	10291719 N/A	10100700 (330562)	10010510 (031286)	10014140 (220851)	10044126 (036954)	16	16*	16	1	1	8
850		10137569 (630459)	10291720 N/A	10102038 (430458)	10017937 (820793)	10010322 (020793)	10044127 (036955)	16	16*	16	1	1	8
925		10038850 (030123)	10291721 N/A	10030305 (002232)	10010511 (031287)	10010323 (020958)	- -	16	16*	16	1	1	8
1000		N/A (002216)	N/A N/A	N/A (002220)	Not Available	10138853 (721034)	- -	16	16	16	1	1	8
1100		N/A (002222)	N/A N/A	N/A (002226)		10102023 (421151)	- -	16	16	16	1	1	8
1200		N/A (002235)	N/A N/A	N/A (002240)		10106429 (521630)	10121594 (603591)	16	16	16	1	1	8
1300		N/A (008671)	N/A N/A	N/A (015963)		10101962 411734	- -	16	16	16	1	1	8

* These locknuts are cadmium plated.

**Use this kit when replacing original Thomas round, conventional disc packs (non-Tpack). For more information on the benefits of the Tpack replacement option, contact Rexnord.


4. Hub Mounting



DANGER!

Be sure to disengage the electrical power and any other sources of energy before you perform work on the hub and coupling assembly.

- 4.1 Examine the coupling assembly to insure there is no visible damage.
- 4.2 Clean the hub bores and shafts using lint free cloth. Remove any nicks or burrs.
- 4.3 When assembled, the key(s) should have a close side-to-side fit in the keyway in both the hub and shaft, with a slight clearance over the top of the key.


 **Caution:** When heating hubs is required, use of 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 temperature. A thermal stick (crayon marker) applied to the hub surface will help determine the hub temperature.



DANGER!

**Touching hot hubs causes burns and blistering.
Wear safety gloves to avoid contact with hot surfaces.**

5. Straight Bore with Clearance/Slip Fit

 **Caution:** Clearance/Slip Fits are not recommended for use with AMR/CMR couplings when the application includes reversing torque loads, in which AMR/CMR couplings are generally applied.

- 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 and/or the bore. If needed, loosen the set screw to provide clearance during assembly.
- 5.3 Slide the hub up the shaft to the desired axial position.
- 5.4 Assemble and tighten the set screw(s) using a calibrated torque wrench to the values shown in Table 2 below.

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

Table 2 – Set Screw Tightening Torque


Set Screw Thread Size				Internal Hex Size		Set Screw Thread Size				Internal Hex Size
Inch	In-lb	ft-lb	Nm	inch		Inch	In-lb	ft-lb	Nm	inch
1/4-20	66	6	7	1/8		3/8-16	240	20	27	3/16
1/4-28	76	6	9	1/8		3/8-24	276	23	31	3/16
5/16-18	132	11	15	5/32		1/2-13	600	50	68	1/4
5/16-24	144	12	16	5/32		1/2-20	660	55	75	1/4

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.
 - 6.3.1. 350°F (177°C) is usually sufficient for carbon steel hubs. Do not exceed 500°F (260°C).
 - 6.3.2. 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 .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.
- 6.4. With the hub expanded, install it quickly on the shaft to the desired axial position. A pre-set axial stop device can be helpful.

7. Straight Bore for NHR Hub


- 7.1. The NHR is shipped preassembled with 4 extra cap screws in the disassembly holes.
 - 7.1.1. Remove the 4 extra cap screws and save them for disassembly purposes.
- 7.2. Accurately measure the bore and shaft diameters to assure proper fit.
- 7.3. Clean the shaft and hub bore with a solvent and let dry before installation.

 Note: The torque ratings were developed using a coefficient of friction of 0.15 between the hub and shaft.

- 7.4. Slide the hub onto the shaft.


 **Caution: The shaft must engage the hub at a minimum distance defined from the hub taper end to the hub inner flange face. Failure to do so may result in damage to the shaft and hub.**


- 7.5. Tighten fasteners in a circular pattern starting at 20% of the final fastener torque value listed in Table 3 and increase the fastener torque by 20% increments after each lap until 100% is reached.

 Note: After each incremental lap the initial fastener tightened will likely be loose until the "Gap" has fully closed.

 **Caution: Do not use a star pattern for tightening the fasteners as this may cause damage to the hub.**

- 7.6. Check the gap using a simple visual inspection or a feeler gage to determine if it has fully closed.
 - 7.6.1. If there is still a gap then continue to tighten the fasteners in a circular pattern using the same 100% fastener torque value until the gap has closed.

 Note: After the gap has fully closed all fasteners should be noticeably more rigid when the 100% fasteners torque is applied.

 Note: The NHR hub relies upon both lubricity and surface finish, components to be mounted should be machined to achieve a surface finish of between 60 and 25 µIN RMS. A surface finish outside this range could result in a reduction of the load carrying capacity of the connection, lubricity between the hub and the outer ring is likewise critically important as it directly affects the coefficient of friction.

- 7.7. Use 2 Wedge blocks of wood between the ring face and a fixed surface.
- 7.8. Use the threaded disassembly holes in the NHR hub flange to evenly push the ring, which will then pull the hub off the shaft, use 4 holes and equally distribute the force between them.

Table 3 – NHR Cap Screw Tightening Torque

Cap Screw Thread Size				Cap Screw Thread Size			
Inch	In-lb	ft-lb	Nm	Inch	In-lb	ft-lb	Nm
1/4-20	120	10	14	3/4-10	3,300	275	373
5/16-18	240	20	27	7/8-9	5,280	440	597
3/8-16	420	35	47	1-8	7,920	660	895
7/16-14	684	57	77	1" 1/8-7	11,220	935	1,268
1/2-13	1,056	88	119	1" 1/4-7	15,840	1,320	1,790
5/8-11	2,052	171	232	1" 3/8-6	21,120	1,760	2,386

8. Taper Bore

- 8.1. Check for acceptable contact pattern between the hub and the shaft.
- 8.2. Put the hub on the shaft, keeping the keyways (if existing) aligned.
- 8.3. 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.
- 8.4. Use a depth micrometer to measure the distance from the shaft end to the hub face, as shown in Figure 4. Record the dimension.

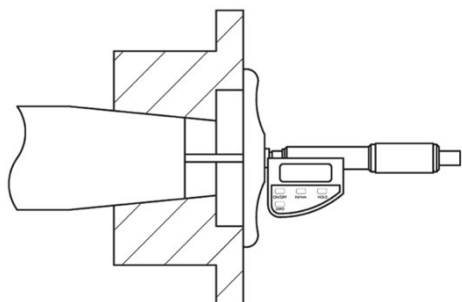


Figure 4 – Shaft end to hub face measurement example.

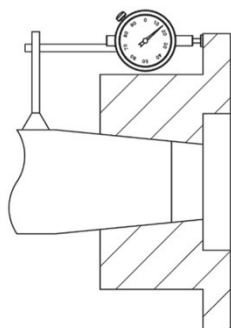



Figure 5 – Dial indicator placement for axial draw measurement example.


- 8.5. 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”.
- 8.6. Remove the hub and install the key(s) in the shaft.
- 8.7. Heat the hub in an oven until the bore is sufficiently larger than the shaft.

- 8.7.1. 350°F (177°C) is usually sufficient for carbon steel hubs. Do not exceed 500°F (260°C).
- 8.7.2. 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 .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.
- 8.8. 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 the customer. Use the indicator as a guide only. A pre-set axial stop device can be helpful.
- 8.9. Inspect the assembly to verify that the hub is properly positioned. Consult Rexnord if necessary.
- 8.10. Install any hub axial retention device (if any) in accordance with the equipment manufacturer’s specifications.

9. Shaft Alignment

- 9.1. Move the equipment into place.

 **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 deflection 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 installation limits shown in Table 4. 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 instructions regarding shaft alignment.

- 9.2. Move the connected equipment to achieve acceptable alignment. When properly 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.
- 9.3. Table 4 shows recommended installation limits for Parallel, Angular, and Axial alignment.
- 9.4. The “Parallel Misalignment” value (P) is the offset between the centers of the hubs, as shown in Figure 6.
- 9.5. When Parallel Offset is measured by rotating the hubs with dial indicators as shown in Figure 7, the total indicated reading (TIR) should be divided by 2 to calculate “P”.
- 9.6. It should be noted that parallel offset measured on the hub surfaces includes misalignment of the equipment shafting plus any variation (TIR) in the hub bore indicating surface. This may be helpful to consider during problem solving for alignment difficulties.
- 9.7. The “Angular Misalignment” value is the maximum difference between the measurements X and Y taken at opposite ends of the hub flanges, as shown in Figure 8.

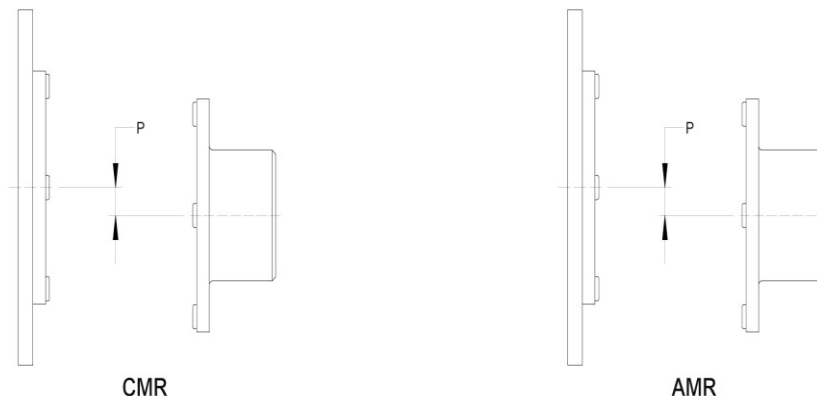


Figure 6 – Parallel Misalignment “P”

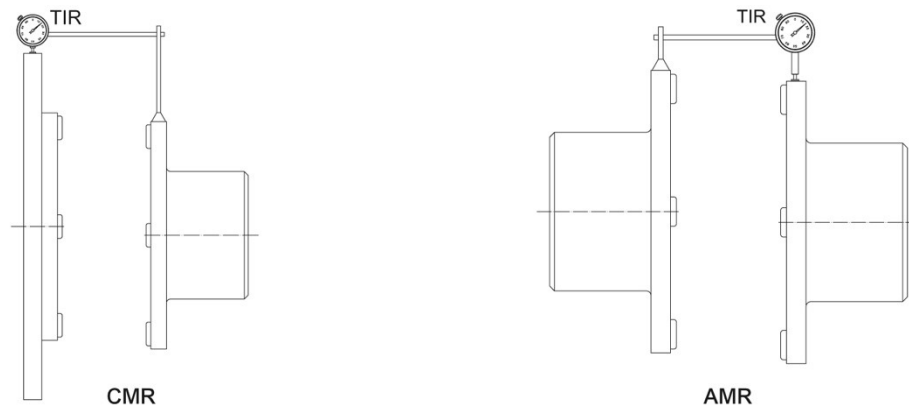


Figure 7 – Parallel Misalignment “TIR” (Total Indicated Reading)

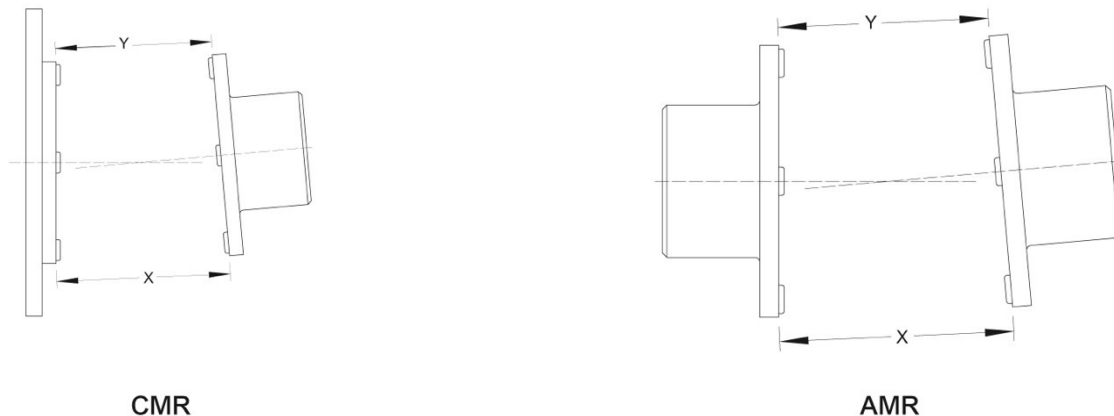


Figure 8 – Angular Misalignment “X-Y”

ATTENTION! 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 more misalignment than the tolerances shown in Table 4. However, close alignment at installation will provide longer service with smoother operation.

Table 4 – Installation Alignment Values

Thomas AMR/CMR Coupling	Hub Flange Diameter CMR = "D" AMR = "A"		"C" Dimension				Recommended Installation Limits ****										Axial Hub Gap Tolerance From "C" Dimension +/-	
							Maximum Coupling Parallel Misalignment Maximum Measurement Between Hubs Defined in one of two ways				Angular Misalignment Between Hubs Maximum (X-Y) ***							
CMR		AMR		Parallel Alignment Total Indicator Reading (TIR)*		Parallel Offset "P" **		AMR		CMR								
Size	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm				
162	4.56	115.8	3.32	84.3	2.64	67.1	0.005	0.13	0.0025	0.06	0.009	0.23	.002 inch per inch of "A" Diameter	.002 mm per mm of "A" Diameter	0.000	0.00		
200	5.75	146.1	3.87	98.3	2.99	75.9	0.006	0.15	0.0030	0.08	0.011	0.28			0.000	0.00		
225	6.00	152.4	3.87	98.3	2.99	75.9	0.006	0.15	0.0030	0.08	0.012	0.30			0.000	0.00		
262	6.88	174.8	4.47	113.5	3.51	89.2	0.007	0.18	0.0035	0.09	0.014	0.36			0.000	0.00		
312	8.12	206.2	5.34	135.6	4.14	105.2	0.008	0.20	0.0040	0.10	0.016	0.41			0.000	0.00		
350	9.12	231.6	5.89	149.6	4.58	116.3	0.009	0.23	0.0045	0.11	0.018	0.46			0.000	0.00		
375	10.06	255.5	6.62	168.1	5.18	131.6	0.010	0.25	0.0050	0.13	0.020	0.51			0.000	0.00		
425	11.00	279.4	7.18	182.4	5.55	141.0	0.011	0.28	0.0055	0.14	0.022	0.56			0.000	0.00		
450	11.88	301.8	7.68	195.1	5.93	150.6	0.012	0.30	0.0060	0.15	0.024	0.61			0.000	0.00		
500	13.44	341.4	8.75	222.3	6.81	173.0	0.014	0.36	0.0070	0.18	0.027	0.69			0.000	0.00		
550	15.00	381.0	9.89	251.2	7.70	195.6	0.015	0.38	0.0075	0.19	0.030	0.76			0.000	0.00		
600	16.75	425.5	10.89	276.6	8.45	214.6	0.017	0.43	0.0085	0.22	0.033	0.84			0.000	0.00		
700	18.94	481.1	12.48	317.0	9.66	245.4	0.019	0.48	0.0095	0.24	0.038	0.97			0.000	0.00		
750	20.62	523.7	13.54	343.9	10.54	267.7	0.021	0.53	0.0105	0.27	0.041	1.04			0.000	0.00		
800	22.38	568.5	14.74	374.4	11.36	288.5	0.023	0.58	0.0115	0.29	0.045	1.14			0.000	0.00		
850	23.75	603.3	15.86	402.8	12.18	309.4	0.024	0.61	0.0120	0.30	0.047	1.19			0.000	0.00		
925	25.75	654.1	17.24	437.9	13.25	336.6	0.026	0.66	0.0130	0.33	0.051	1.30			0.000	0.00		
1000	28.25	717.6	18.57	471.7	14.51	368.6	0.029	0.74	0.0145	0.37	0.056	1.42			0.000	0.00		
1100	30.25	768.4	19.95	506.7	15.51	394.0	0.031	0.79	0.0155	0.39	0.060	1.52			0.000	0.00		
1200	33.38	847.9	21.58	548.1	17.06	433.3	0.034	0.86	0.0170	0.43	0.067	1.70			0.000	0.00		
1300	36.00	914.4	23.31	592.1	18.31	465.1	0.036	0.91	0.0180	0.46	0.073	1.85			0.000	0.00		

* Parallel misalignment measured by rotating the hubs with a dial indicator on the outside hub diameter.

** 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 1/3" per disc pack.

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

10. Final Assembly



**When handling the coupling, components may sometimes slip and fall.
To prevent loss of fingers or injury avoid inserting fingers into any fastener holes.**

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, unless otherwise noted (see Table 5, Footnote 3 regarding stainless fasteners).

ATTENTION! With the coupling in good alignment, the bolts should fit through the holes in the flanges and the disc packs. See Figure 1.

ATTENTION! On sizes 850 through 1300 the Superbolt® may be used. If used, refer to Table 4C for tightening torque values.

ATTENTION! On sizes larger than 925 a saw-cut nut may be provided. Tighten each locknut to the appropriate torque value shown in Table 5, then see Table 4B for appropriate set screw tightening torque values.

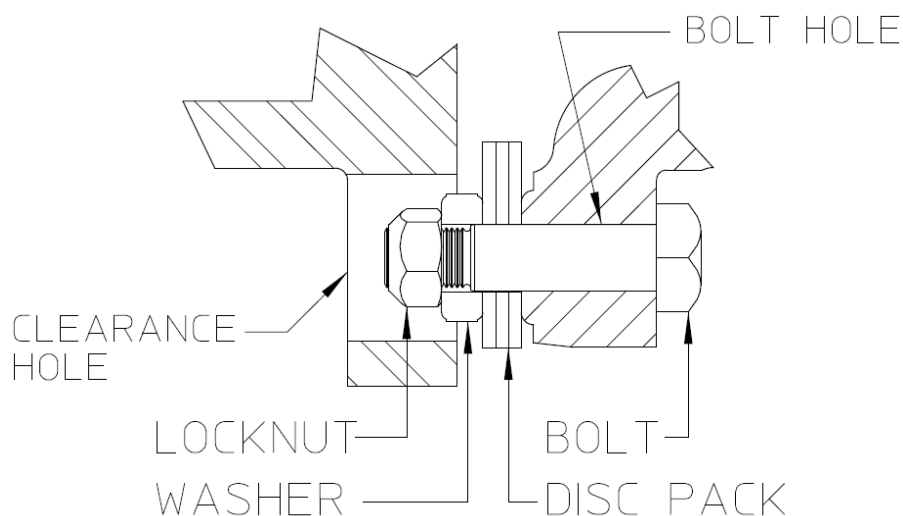


Figure 9 – AMR/CMR Bolted Joint

10.1. CMR – when the flywheel adapter is used with one hub

- 10.1.1. If the coupling arrived assembled (for shipment only), the disc packs, center ring, and flywheel adapter are still attached. Remove the locknuts, washers and bolts that attach the disc packs. Remove the locknuts and disc packs from the center ring, but do not remove the bolts.
- 10.1.2. Place the center ring on a workbench.
- 10.1.3. If the coupling is not preassembled, install the bolts through the bolt holes in the radial extensions in the center ring at both ends.
- 10.1.4. Slide a disc pack over the bolts on the end that will mate to the flywheel adapter. Add the washers. See Figure 9.
- 10.1.5. Lubricate the bolt threads with clean motor oil. Install the locknuts, and slightly tighten them using an alternating progressive pattern making sure the disc pack is not distorted and all the bolts are fully seated. Tighten each locknut to the appropriate torque value shown in Table 4, using an incremental torque in a progressive alternating pattern.
- 10.1.6. Make sure that the bolts in the other end of the center ring do not fall out before mounting the flywheel adapter.
- 10.1.7. Mount the flywheel adapter to the disc pack, by inserting the bolts through the holes in the back side of the flywheel adapter. Seat the bolt heads in the slots provided and then install the bolts through the remaining disc pack holes.

Table 5 - Locknut Tightening Torques

Coupling Size	Hub Flange Diameter CMR = "D" AMR = "A"		Tightening Torque for Steel Locknut (For Stainless Steel see Note 3)				Bolt Head
			Thread Size	Torque		Wrench Hex Size Inch	Wrench Hex Size Inch
				Ft-lb (In-lb)	Nm		
162	4.56	115.8	1/4-28 UNF	(156)	18	7/16	7/16
200	5.75	146.1	5/16-24 UNF	25	34	1/2	1/2
225	6.00	152.4	5/16-24 UNF	25	34	1/2	1/2
262	6.88	174.8	3/8-24 UNF	34	46	9/16	9/16
312	8.12	206.2	7/16-20 UNF	60	81	11/16	5/8
350	9.12	231.6	1/2-20 UNF	95	129	3/4	13/16
375	10.56	268.2	9/16-18 UNF	130	176	7/8	15/16
425	11.00	279.4	5/8-18UNF	175	237	15/16	1-1/16
450	11.88	301.8	11/16-16 UNF	150*	203*	1-1/8	1-1/8
500	13.44	341.4	3/4-16 UNF	190*	258*	1-1/4	1-1/4
550	15.00	381.0	7/8-14 UNF	225*	346*	1-7/16	1-7/16
600	16.75	425.5	1-14 UNS	335*	454*	1-5/8	1-5/8
700	18.94	481.1	1-1/8-12 UNF	425*	576*	1-13/16	1-13/16
750	20.62	523.7	1-1/4-12 UNF	560*	759*	2	2
800	22.38	568.5	1-3/8-12 UNF	740*	1003*	2-3/16	2-3/16
850	23.75	603.3	1-1/2-12 UNF	950*	1288*	2-3/8	2-3/8
925	25.75	654.1	1-5/8-12 UNF	1350*	1830*	2-5/8	2-5/8
1000	28.25	717.6	1-3/4-12 UNF	2350	3187	2-3/4	2-3/4
1100	30.25	768.4	1-7/8-12 UNF	3000	4088	2-15/16	2-15/16
1200	33.38	847.9	2-1/8-8 UNF	4000	5424	3-3/8	3-3/8
1300	36.00	914.4	2-1/8-8 UNF	4000	5424	3-3/8	3-3/8

Note:

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

1. These torque values are approximate for 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).

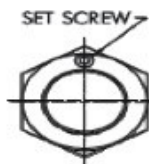



Table 4B
Locknut Set Screw

Thread Size (IN)	Torque	
	In-lb	Nm
3/8-16	150	17
3/8-16	150	17
3/8-16	150	17
1/2-13	300	34
1/2-13	300	34

Table 4C – Superbolt "Jackbolt" Tightening Torque

Coupling Size	Thread Size	Superbolt Nut	Torque	
			In-lb	Nm
850	1.500-12	MT-150-12/w	32	43
925	1.625-12	MT-162-12/w	38	52
1000	1.750-12	MT-175-12/w	53	72
1100	1.875-12	MT-187-12/w	71	95
1200	2.125-8	MT-212-12/w	83	113
1300	2.125-8	MT-212-12/w	83	113

- 10.1.8. Add the washers. Lubricate the bolt threads with clean motor oil. Install the locknuts, and slightly tighten them using an alternating progressive pattern making sure the disc pack is not distorted and all the bolts are fully seated. Tighten each locknut to the appropriate torque value shown in Table 5, using an incremental torque in a progressive alternating pattern.
- 10.1.9. The disc pack, when installed, should look flat and parallel with the mating adapter and the center ring bosses (located around the bolt holes on the radial extensions of the center ring).
- 10.1.10. With the hub mounted and the "C" length set per the allowable dimension and tolerance range shown in Table 4, put the subassembly (flywheel adapter, disc pack, and center ring) into place between the equipment flywheel and hub.
- 10.1.11. Push the end of the bolts on the hub end, so that they do not extend beyond the bosses on the face of the center ring. This will provide clearance during assembly.
- 10.1.12. Bolt the adapter to the flywheel in the manner prescribed by the manufacturer.
- 10.1.13. Prepare to install the remaining disc pack by rotating the hub or center ring so that the hub bolt holes are centered between the radial extensions from the center ring.


 **ATTENTION!** It may help with the installation of the second disc pack to compress the disc pack on the flywheel adapter side. Use clamps to squeeze the center ring toward the flywheel adapter or a pry bar on the first end to push the center ring toward the flywheel adapter.

- 10.1.14. Install the remaining disc pack between the center ring and hub.
- 10.1.15. Align the disc pack with the bolt holes in the radial extensions of the center ring.

- 10.1.16. Push the bolts in the center ring through the disc pack and the clearance holes in the hub. It may be helpful to align and push one bolt first, and then pivot the disc pack to align and push the other bolts.
- 10.1.17. Insert one bolt through each of the bolt holes in the hub. Push the bolts in the hub through the disc. Add a washer to each bolt.
- 10.1.18. Remove any clamps or pry bars used to compress the disc pack assembly.
- 10.1.19. Lubricate the threads on all bolts with clean motor oil.
- 10.1.20. Install locknuts onto the bolts and slightly tighten all locknuts using an alternating progressive pattern making sure the disc pack is not distorted and all the bolts are fully seated.
- 10.1.21. Make the final coupling alignment check at this time.
- 10.1.22. Tighten all locknuts to the appropriate torque value shown in Table 5, using an incremental torque in a progressive alternating pattern.
- 10.1.23. It is recommended that all locknuts have their tightening torque checked after several hours of operation, per Table 5.

10.2 AMR – When two hubs are used

- 10.2.1 If the coupling arrived assembled, the disc packs are still attached to the center ring. Remove the locknuts and disc packs from the center ring, but do not remove the bolts.
- 10.2.2 Push the end of the bolts, so that they do not extend beyond the bosses on the face of the center ring. This will provide clearance during assembly.
- 10.2.3 With the hubs mounted and the span length “C” set, position the center ring between the two hubs. Care should be taken when handling the center ring.
- 10.2.4 Support the center ring on wood blocks, with nylon straps from a hoist, or some other convenient way. It may help to support the end that is not being worked on, by pushing the bolts through the center ring bolt holes and into the hub flange bolt holes. This will hold the parts in line at that end.
- 10.2.5 Rotate the hub or center ring so that the hub bolt holes are centered between the bolt holes in the radial extensions from the center ring. (This will position the clearance holes in the hub with the radial extension and bolt holes of the center ring.)
- 10.2.6 Install the bolts into the bolt holes in the radial extensions of the center ring, if not already installed from above step. To provide clearance during assembly, the bolt threads should not extend beyond the bosses on the face of the center ring.
- 10.2.7 Slide a disc pack between the center ring and the hub so that one hole in the disc pack lines up with bolt hole in the center ring.
- 10.2.8 Push the bolts through the bolt holes in the center ring, through the disc pack, and the clearance hole in the hub. It may be helpful to align and push one bolt first, and then pivot the disc pack to align and push the other bolts.
- 10.2.9 Insert bolts through each of the bolt holes in the hub and through the disc pack. Add the washers. Lubricate the threads on all of the bolts with clean motor oil.
- 10.2.10 Install locknuts onto the bolts and slightly tighten all locknuts using an alternating progressive pattern making sure the disc pack is not distorted and all the bolts are fully seated.
- 10.2.11 Tighten all locknuts to the appropriate torque value shown in Table 5, using an incremental torque in a progressive alternating pattern.
- 10.2.12 Proceed to the other end to install the remaining disc pack. Support the center ring and retract the support bolts, if used.
- 10.2.13 Rotate the hub or center ring so that the hub bolt holes are centered between the bolt holes in the radial extensions from the center ring. (This will position the clearance holes in the hub with the radial extension and bolt holes of the center ring.)

 **ATTENTION!** It may help with the installation of the second disc pack to compress the first installed pack using clamps to squeeze the center ring toward the first pack and hub flange, or use a pry bar on the first end to push the center ring toward the hub flange.

- 10.2.14 Install the remaining disc pack between the center ring and hub.
- 10.2.15 Align the disc pack with the bolt holes in the radial extensions of the center ring.
- 10.2.16 Push the bolts in the center ring through the disc pack and the clearance holes in the hub. It may be helpful to align and push one bolt first, and then pivot the disc pack to align the other bolts.
- 10.2.17 Install the bolts into the bolt holes in the hub and through the disc pack. Add a washer to each bolt.
- 10.2.18 Remove any clamps or pry bars, if they were used to compress the disc pack assembly.
- 10.2.19 Lubricate the threads on all of the bolts with clean motor oil.
- 10.2.20 Install locknuts onto the bolts and slightly tighten all locknuts using an alternating progressive pattern making sure the disc pack is not distorted and all the bolts are fully seated.
- 10.2.21 Make the final coupling alignment check at this time.
- 10.2.22 Tighten all locknuts to the appropriate torque value shown in Table 5, using an incremental torque in a progressive alternating pattern.
- 10.2.23 It is recommended that all locknuts have their tightening torque checked after several hours of operation, per Table 5.
- 10.2.24 For further help with the installation or alignment, consult Rexnord.

11. Disc Pack Replacement

- 11.1. If it becomes necessary to replace the disc packs, it can be done as follows.
- 11.2. Support the center ring at the hub end of the coupling. Remove all locknuts on this end.
- 11.3. Back out and remove all but one bolt. It may be necessary to tap the ends of the bolts with a soft hammer to start them out.
- 11.4. Pivot the disc pack to move it from the center of the coupling assembly.
- 11.5. Remove the last bolt and slide the disc pack out.

11.6. For the CMR Coupling

- 11.6.1. Remove the bolts that hold the flywheel adapter to the flywheel. Be sure to support the center ring assembly when taking out the last bolts.
- 11.6.2. Remove the adapter, disc pack, and center ring assembly and put it on a bench.
- 11.6.3. Remove all the locknuts, washers, and bolts that hold the center ring to the disc pack. Remove the center ring.
- 11.6.4. Remove the remainder of the locknuts, washers, and bolts.
- 11.6.5. Replace parts as necessary. Recheck alignment using the procedure defined in Section 8.0, Shaft Alignment.
- 11.6.6. Reassemble using the procedure described in Section 9.0, Final Assembly.

11.7. For the AMR Coupling

- 11.7.1. Disassemble the other end, by repeating the disassembly procedure at the beginning of this section.

- 11.7.2. Be sure to support the center ring when taking out the last bolts.
- 11.7.3. Remove the center ring.
- 11.7.4. Replace parts as necessary. Recheck alignment using the procedure defined in Section 8.0, Shaft Alignment.
- 11.7.5. Reassemble using the procedure described in Section 9.0, Final Assembly.
- 11.7.6. It is recommended that all locknuts have their tightening torque checked after several hours of operation, per Table 5.
- 11.7.7. For spare replacement part numbers, see Table 1.

**DANGER!**

**Be sure to disengage the electrical power and any other sources of energy
before you perform work on the hub and coupling assembly.**

- 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, unless otherwise noted (see Table 5, Footnote 3 regarding stainless fasteners).
- ATTENTION!** With the coupling in good alignment, the bolts should fit through the holes in the flanges and the disc packs. See Figure 1.
- ATTENTION!** On sizes 850 through 1300 the Superbolt may be used. If used, refer to Table 4C for tightening torque values.