





**Type XTSRGA  
Sizes 996-4178****Figure 1 – Thomas XTSRGA Coupling Range 996 to 4178 sizes****1. General Information**

- 1.1. 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.
- 1.2. These instructions are intended to help you to install and maintain your Rexnord Thomas 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.
- 1.3. Rexnord Industries, LLC 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**

- 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**

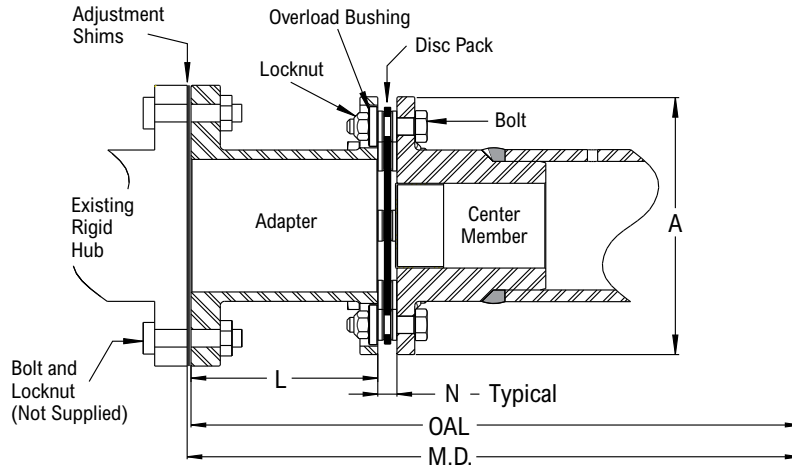
For this coupling to meet the ATEX requirements, you must precisely follow these installation and maintenance instructions, and the supplement form 0005-08-49-01. This supplement outlines the ATEX requirements. If the operator does not follow these instructions, the coupling will immediately be considered 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 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.
- 2.16. All spare parts for service or replacement must originate from or be approved by Rexnord Industries, LLC.

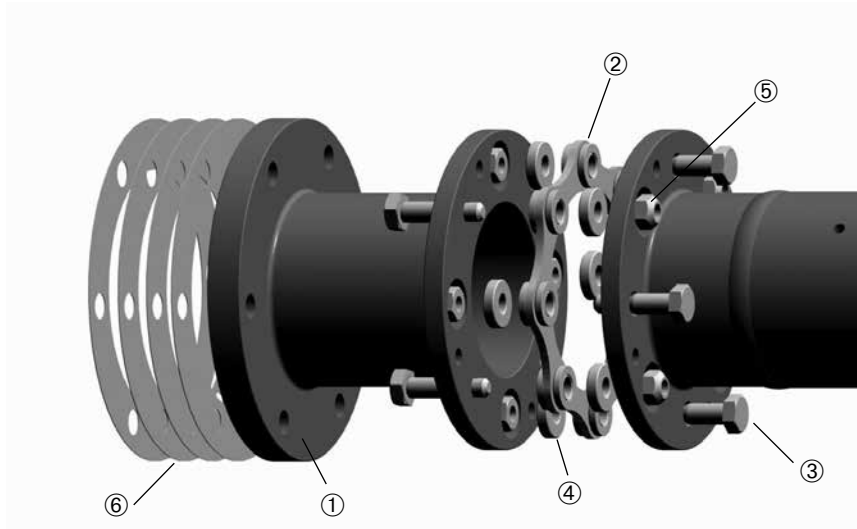
## Coupling Diagrams



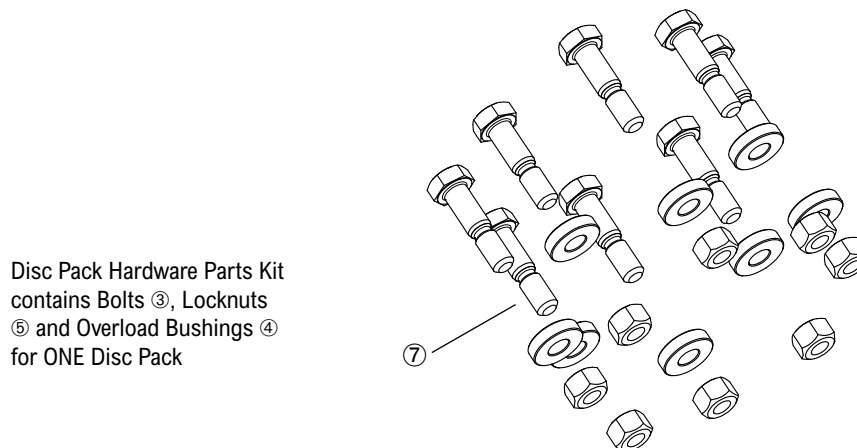
**Figure 2 – Thomas XTSRGA Coupling**



**Figure 3 – Axial adjustment shim location**



**Figure 4 – Rexnord Thomas XTSRGA Series Coupling Components exploded view**



Disc Pack Hardware Parts Kit contains Bolts ③, Locknuts ⑤ and Overload Bushings ④ for ONE Disc Pack

### 3. General Information

- 3.1. The coupling is designed to mate with existing rigid half gear coupling hubs (either exposed bolt or shrouded bolt design gear couplings).
- 3.2. The coupling, as received, is assembled and factory tightened to the torque value as shown in Table 1.
- 3.3. Examine the assembly to ensure there is no visible damage that might have been caused by shipping and handling.
- 3.4. No disassembly is needed to install this coupling.

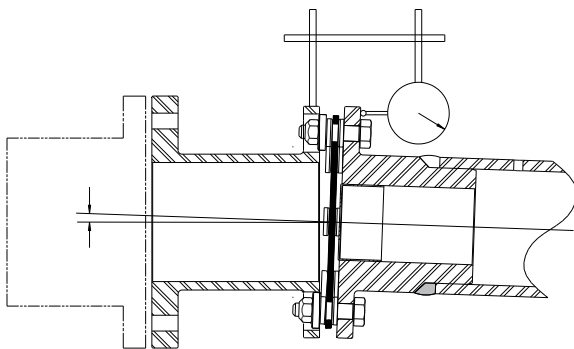


High temperature applications where thermal expansion could be beyond couplings axial limits, measure gap between rigid hubs hot and again when installing coupling. It may be necessary to Pre-stretch the coupling accordingly when installing.

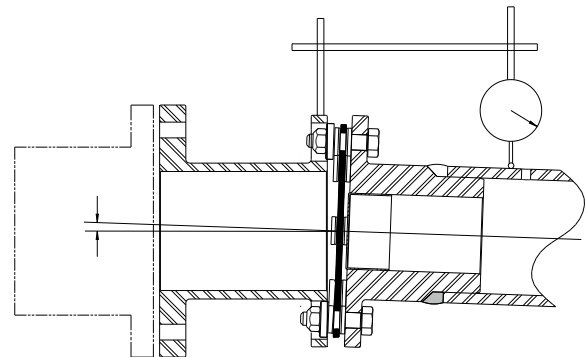


#### **DANGER!**

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



**Figure 5**



**Figure 6**

### 4. 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 1. Shaft alignment can be measured using various established methods, including Laser Alignment, Reverse Dial Indicator, and Rim and Face.

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.

- 4.1.  Axial Spacing — The axial spacing of the disc coupling is more critical than with the gear coupling as the gear coupling will center itself.
- 4.1.1. When installing the assembly, monitor the 'N' dimension and shim between the rigid hubs and the XTSRGA spool adapters as shown in Figure 3.
  - 4.1.2. When measuring the 'N' dimension, the use of a Vernier caliper can be helpful. Measure this 'N' gap at 12:00, 3:00, 6:00 and 9:00 o'clock. The average reading should be used.
  - 4.1.3. Add or remove axial shims as necessary until the 'N' dimension is within the recommended limits as shown in Table 1.
  - 4.1.4. If further adjustment is required to meet the 'N' dimension, repositioning of the rigid hubs may be required.
- 4.2.  Angular Alignment — As the XTSRGA coupling is usually quite long, it is suggested to use the 'Across the disc pack' procedure to correct the angular misalignment at each end. See Figures 5 and 6 above in order to use this procedure, the coupling must be fully installed. See section 5, Final Assembly.
- 4.3. The method shown in Figure 6 is preferred because axial movement of the shafts during the alignment process does not affect the results (if the method shown in Figure 5 is chosen proceed to step 4.4.).
- 4.3.1. Rigidly mount a dial indicator on the adapter, reading out at the center member section flange.
  - 4.3.2. Ensure you compensate for indicator sag.
  - 4.3.3. Rotate the assembly. Adjust the equipment by shimming and/or moving at the equipment mount points so that the indicator readings are .002 inch per inch of the flange diameter.
  - 4.3.4. Repeat steps 4.3.1. thru 4.3.3. at both ends until the coupling is aligned. This procedure will correct the shaft angular and shaft parallel offset misalignments.
  - 4.3.5. Proceed to step 5 below.
- 4.4. If the method shown in Figure 5 is chosen care must be used in regards to axial movement during this process.
- 4.4.1. Rigidly mount a dial indicator on the adapter, reading out on the center member tube a convenient distance "X".
  - 4.4.2. Ensure you compensate for indicator sag.
  - 4.4.3. Rotate the assembly. Adjust the equipment by shimming and/or moving at the equipment mount points so that the indicator readings are .002 inch per inch of distance "X", (center of flex joint to position on center member tube where the readings are taken).
  - 4.4.4. Repeat steps 4.4.1. thru 4.4.3. at both ends until the coupling is aligned. This procedure will correct the shaft angular and shaft parallel offset misalignments.



**ATTENTION!** If the driver or driven equipment alignment specification is tighter than these recommendations, the specification should be used. Also, be sure to compensate for thermal movement in the equipment. The coupling is capable of approximately three times the above tolerances. However, close alignment at installation will provide longer service life with smoother operation.

## 5. Final Assembly

- 5.1. The coupling, as received, has all the disc pack bolt locknuts factory tightened to the value shown in Table 1 and should not be disassembled.
- 5.2. Measure the DBSE (Distance Between Shaft Ends) and the coupling OAL (Overall Length) to determine the amount of axial adjustment shims required. Divide the total shim quantity needed between both ends. See Figure 1.
- 5.3. Position the coupling assembly between the two existing rigid hubs. Install two bolts on each end to hold the coupling assembly in place.



**ATTENTION!** This hardware is supplied by others or reused from the existing coupling if in acceptable condition.

- 5.4. Take the quantity of Axial Adjustment shims for one end as determined in step 5.2. above and slip them between the flanges sliding a third bolt through one flange, one of the bolt holes in the shims, and through the other flange.
- 5.5. Install a locknut to this bolt at finger tightened only.

- 5.6. Support the coupling assembly at this end, then remove the two previously inserted support bolts.
- 5.7. Rotate the installed shims into position until the bolt holes are aligned with the flange bolt holes. Insert the remaining bolts that connect the coupling adapter to the existing rigid equipment side hub.
- 5.8. Install the locknuts and slightly tighten to prevent bolts falling out of the assembly. **DO NOT TIGHTEN AT THIS POINT.**
- 5.9. Repeat steps 5.4. through 5.8. for the other end of the coupling assembly.



**Note:** 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.

- 5.10. Tighten all locknuts and bolts to the manufacturers recommendations on the relevant gear coupling installation instructions (this value is not supplied by Rexnord).

## 6. Disc Pack Replacement

If disc pack replacement becomes necessary it can be completed using the following steps:

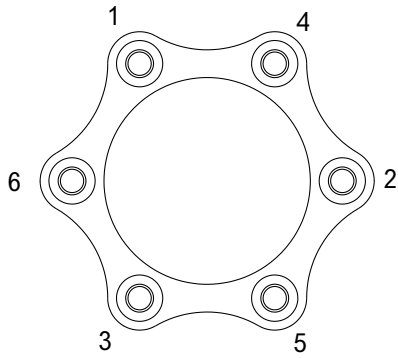
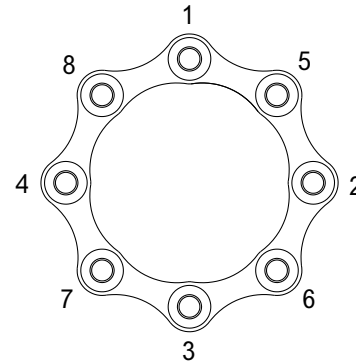
- 6.1. Remove the total center member assembly, including the adapters, by unbolting at the existing rigid hubs. Take the assembly to your repair shop.
- 6.2. It may be easier to have the coupling in a vertical position if you can do so safely, while maintaining compliance to your internal safety procedures.
- 6.3. At one end of the coupling, remove all of the locknuts connecting the disc pack to the center member flange and the adapter flange.
- 6.4. Back out and remove all but one bolt at the positions the locknuts were removed above. It may be necessary to lightly tap the ends of the bolt with a soft hammer to start them out.
- 6.5. Remove the adapter from the assembly.
- 6.6. Remove the last bolt and the unitized disc pack assembly from the coupling assembly.
- 6.7. Now install the replacement disc pack assembly, if required, to the adapter. Pass a bolt through a small diameter bolt hole from the center of the adapter.
- 6.8. Install the disc pack assembly over the bolt, add an overload bushing, lubricate the bolt threads and install a locknut finger tight only. Do not fully tighten the locknut at this time.



**Note:** 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.

- 6.9. Install the remaining three bolts, overload bushings and locknuts in the same manner as step 6.8. above.
- 6.10. If the center member is in a vertical position, lay it down to a horizontal position for ease of continued reassembly.
- 6.11. Insert four bolts into the center member flange, from the inside, passing through the smaller diameter bolt holes.
- 6.12. Rotate the adapter or the center member so the protruding bolts are aligned with the larger clearance holes on the adapter.
- 6.13. Slide the adapter and disc pack, assembled above, over the four bolts and into approximate position axially.
- 6.14. Install four overload bushings over the bolts where they have passed through the disc pack assembly, one on each bolt only.
- 6.15. Lubricate the threads of the bolt with clean motor oil and install the locknuts, tighten slightly to prevent falling off. Do not fully tighten the locknuts at this time.
- 6.16. Repeat steps 6.3. through 6.15. on the other end of the coupling.
- 6.17. With the coupling in a horizontal position the disc packs should appear flat and parallel with the mating flanges of the adapter and center spacer.
- 6.18. Fully tighten the locknuts to the torque value as shown in Table 1, maintain the 'N' gap distance while applying the torque, using an incremental torque in a progressive alternating pattern as shown in Figures 7 and 8. Only tighten the locknut, **DO NOT** turn the bolt.
- 6.19. Return the assembly back to the unit it was removed from and reinstall as per section 5 above.
- 6.20. It is suggested that the alignment be rechecked and corrected if necessary as per section 5 above. It is recommended that all locknuts be retightened after several hours of initial operation.

For further help with the installation, alignment, or maintenance consult Rexnord Industries.


**Figure 7 — 996 size**

**Figure 8 — 1088 thru 4178 sizes**
**TABLE 1 — Flexjoint Locknut Tightening Torques, Dimension “N” Limits, and Suggested Maximum Alignment Values**

Coupling Size	“A”		Dimension “N”				Axial Capacity		Thread Size	Torque		Alignment Total Indicator Reading		
	Diameter (in)	Diameter (mm)	Min (in)	Max (in)	Min (mm)	Max (mm)	(in)	(mm)		Ft-Lb	Nm	Angular (in)	Angular (mm)	Parallel
996	5.08	129	0.37	0.39	9.3	9.9	± .070	± 1.8	M8	18	24	0.007	0.18	.002" per inch of X Dimension (.002 mm per mm of X Dimension)
1088	5.51	140	0.4	0.42	10.1	10.7	± .051	± 1.3	M8	19	26	0.005	0.13	
1298	6.54	166	0.5	0.52	12.6	13.3	± .061	± 1.6	M10	39	53	0.006	0.15	
1548	7.76	197	0.57	0.59	14.4	15.1	± .073	± 1.8	M12	66	90	0.008	0.20	
1698	8.58	218	0.61	0.64	15.4	16.2	± .080	± 2.0	M14	110	150	0.008	0.20	
1928	9.65	245	0.66	0.69	16.7	17.4	± .091	± 2.3	M16	162	220	0.009	0.23	
2068	10.39	264	0.71	0.74	18.0	18.8	± .097	± 2.5	M18	236	320	0.010	0.25	
2278	11.46	291	0.74	0.77	18.8	19.5	± .107	± 2.7	M20	266	360	0.011	0.28	
2468	12.32	313	0.79	0.82	20.1	20.8	± .116	± 3.0	M22	384	520	0.012	0.3	
2698	13.5	343	0.91	0.94	23.0	23.9	± .127	± 3.2	M24	575	780	0.013	0.33	
2888	14.61	371	0.97	1.01	24.7	25.4	± .136	± 3.5	M27	885	1200	0.014	0.36	
3058	15.55	395	0.97	1.01	24.7	25.6	± .144	± 3.7	M27	885	1200	0.015	0.38	
3358	16.81	427	1.06	1.09	27.0	27.7	± .158	± 4.0	M30	1200	1600	0.017	0.43	
3668	18.35	466	1.18	1.21	29.9	30.8	± .173	± 4.4	M33	1500	2000	0.018	0.46	
3908	19.29	490	1.18	1.21	29.9	30.8	± .185	± 4.7	M33	1500	2000	0.019	0.48	
4178	20.63	524	1.25	1.3	31.9	33.0	± .197	± 5.0	M36	2100	2800	0.020	0.51	

Note: These torque values are approximate for steel bolts with lubricated threads.

**TABLE 2 — Part Numbers and Quantity Required**

Coupling Size	② Disc Pack (Two Per Coupling)	⑦ Disc Pack Hardware Kit ♦	Disc Pack Hardware Parts Kit (Bolts, Locknuts, and Overload Bushings) for one Disc Pack		
	Part No.	Part No.	③ Bolts Quantity	⑤ Locknuts Quantity	④ Bushings Quantity
996	1000093	10001563	6	6	6
1088	1000094	10001564	8	8	8
1298	1000095	10001565	8	8	8
1548	1000096	10001566	8	8	8
1698	1000097	10001567	8	8	8
1928	1000098	10001568	8	8	8
2068	1000099	10001569	8	8	8
2278	1000100	10001570	8	8	8
2468	1000101	10001571	8	8	8
2698	1000102	10001572	8	8	8
2888	1000103	10001573	8	8	8
3058	1000104	10001574	8	8	8
3358	1000105	10001575	8	8	8
3668	1000106	10001576	8	8	8
3908	1000107	10001577	8	8	8
4178	1000108	10001578	8	8	8

♦ Parts Kit consists of bolts, overload bushings, and locknuts for one disc pack (two sets required per coupling).

**TABLE 3 — Exposed Bolting Adapters and Axial Shim Part Numbers**

XTSRGA Coupling	① Exposed Bolt Spool Adapters by Size											
	#1-1/2 (1015)	#2 (1020)	#2-1/2 (1025)	#3 (1030)	#3-1/2 (1035)	#4 (1040)	#4-1/2 (1045)	#5 (1050)	#5-1/2	1055	#6 (1060)	#7 (1070)
996	10658946											
1088	10656613	10656616										
1298		10656618	10656620									
1548			10656622	10656624								
1698				10656628	10656630							
1928				10656632	10656636	10656638						
2068					10656640	10656642	10656644					
2278						10656657	10656663	10656665				
2468						10656667	10656669	10656671	10656676	10656678		
2698							10656680	10656682	10656944	10656945	10656957	
2888								10656958	10656960	10656961	10656963	10656964
3058								10656967	10656969	10656971	10656974	10656975
3358									10658935	10658966	10658968	10658969
3668												10658947
3908												10658948
4178												10658949
⑥ Axial Shims	10010772	10010448	10010449	10010453	10010456	10010457	10010458	10037339	10037340	10037340	10037341	10038223

**TABLE 4 — Shrouded Bolting Adapters and Axial Shim Part Numbers**

XTSRGA Coupling	① Shrouded Bolt Spool Adapters by Size											
	#1-1/2 (1015)	#2 (1020)	#2-1/2 (1025)	#3 (1030)	#3-1/2 (1035)	#4 (1040)	#4-1/2 (1045)	#5 (1050)	#5-1/2	1055	#6 (1060)	#7 (1070)
996												
1088		10656617										
1298		10656619	10656621									
1548			10656623	10656626								
1698				10656629	10656631							
1928				10656634	10656637	10656639						
2068					10656641	10656643	10656656					
2278						10656662	10656664	10656666				
2468						10656668	10656670	10656672		10656679		
2698							10656681	10656683		10656956		
2888								10656959		10656962		
3058								10656968		10656972		
3358										10658967		
3668												
3908												
4178												
⑥ Axial Shims		10010450	10010478	10010454	10010455	10010479	10010480	10037565	10032415	10032415		