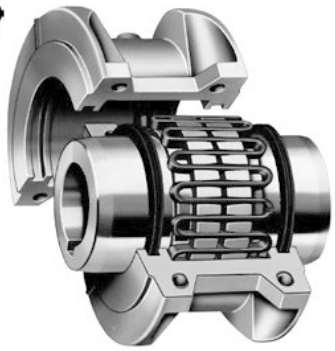

Type T10

Type T20

Type T31

Figure 1 — Falk Steelflex Grid Couplings

1. General Information

1.1. Falk Steelflex Grid Couplings are lubricated couplings with seals and gaskets. For the longest operating lifecycle possible, Steelflex couplings require periodic maintenance. Periodic maintenance includes seal and gasket replacement, the removal of old contaminated grease and the addition of new LTG grease.

1.2. These instructions are intended to help you as a generalized procedure for recommended maintenance on the coupling. If your facility has existing maintenance procedures, they should be adhered to while this document may provide additional recommendations. Please read these instructions 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 or maintenance details 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:

STOP Danger of injury to persons.

⚠ Damages on the machine possible.

☞ Pointing to important items.

Ex Hints concerning explosion protection.

Required Equipment

In addition to standard mechanic's tools, the following is required for coupling installation or removal:

- A suitable mechanical or hydraulic puller as detailed below with an adjusting assembly and a crosshead leg assembly (SAE Grade 8 studs required)
  - Small couplings — bore range of 2" to 9" and a weight range of 8 to 400 lb., 10 ton minimum capacity puller assembly
  - Large couplings — bores over 9" and weights over 400 lb., 50 ton minimum capacity hydraulic puller assembly with the required stroke and a hand pump or electric powered pump
- Puller plate
- Two rosebud torches
- Hot work permit (pursuant to your company policy)
- Metal slings
- Heat resistant gloves
- Fire extinguisher
- Travel indicator

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. 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 RTS 0004-08-70. 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. 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.

2.7. The coupling should be stored in a dry corrosion protected environment and free from external loads (for example by stacking) to prevent damage which may cause a hazard when the coupling is put into service.

2.8. Make sure to disengage the electrical power and any other sources of potential energy before you perform work on the coupling. Proper lockout-tag out procedures must be followed to safeguard against unintentional starting of the equipment.

2.9. All conductive parts of the equipment should be connected in such a way that hazardous electrical potential differences cannot occur. Earth connections must be provided in case insulated metal parts are charged, thus becoming a potential ignition source.

2.10. All work on the coupling must be performed when the coupling is at rest with no load.

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 Rexnord Falk Coupling catalog. 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.

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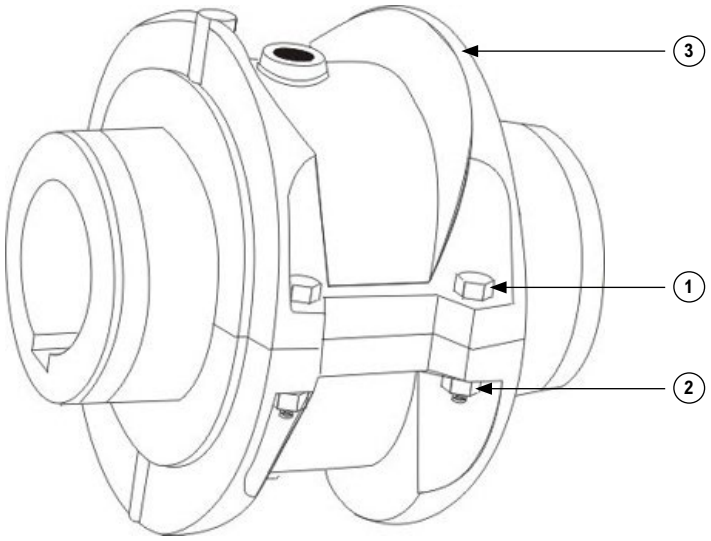
3. Coupling Disassembly

Figure 2 — Grid coupling



3.1. Make sure driven equipment is properly locked out in accordance with your companies health and safety guidelines.

3.2. Loosen and remove all bolts and locknuts (1) and (2) connecting the cover halves together.

3.2. Save all removed hardware components as they will be needed for coupling reassembly purposes. Do not discard unless damage is present or they are intended to be replaced.

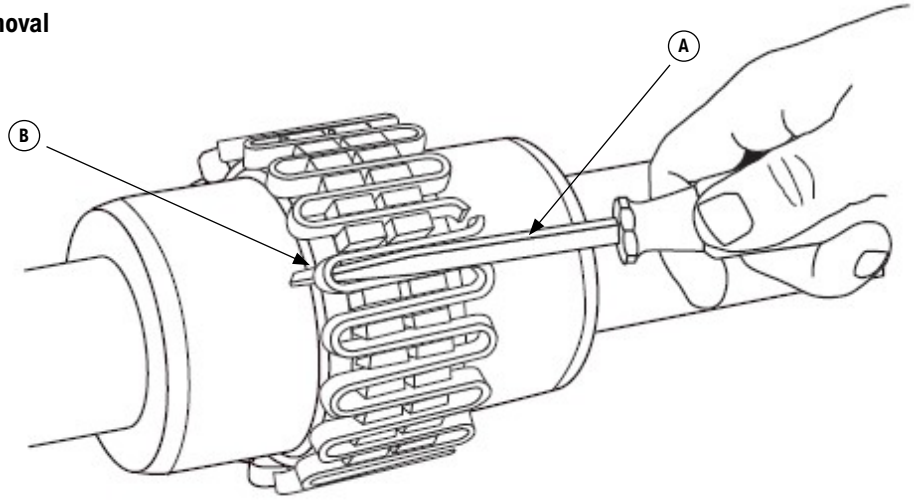
3.3. Remove the cover halves radially (3) for a T10 style or slide the cover out of position axially for a T20 style to expose the hubs, grid segments, seals and gaskets.

3.4. The grease seals will remain on the hubs when the T10 style cover halves are removed, the seal will remain with the cover of a T20 style. Move the seal to a clear position behind the mounted coupling hub.

3.5. The grid segments (B) from the mounted hubs, as shown in **Figure 3** below, can be more easily removed with the use of a small round rod or screwdriver (A) that will conveniently fit into the open loop ends. Begin at the open end of the grid section and insert the rod or screwdriver into the loop end, using the adjacent teeth as a fulcrum to pry the grid out radially in gradual stages.

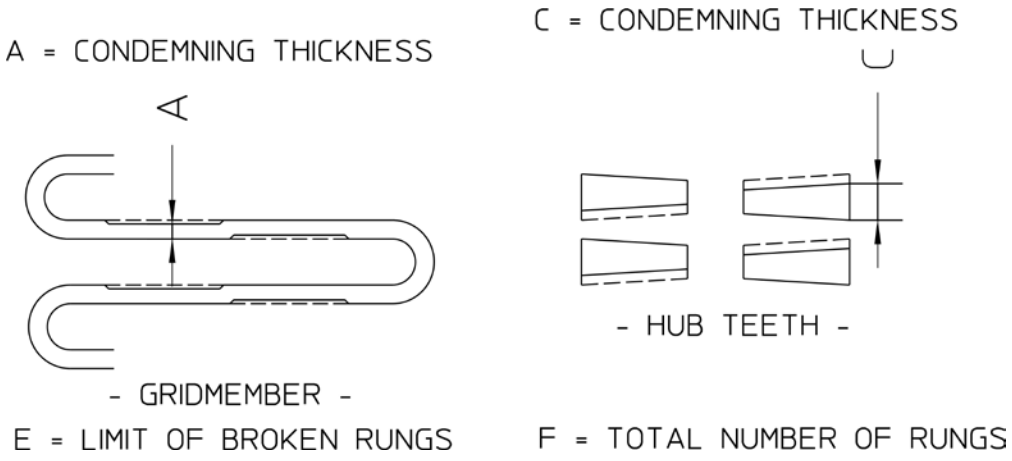
Use care to not damage the grid if intended for reuse.

Figure 3 — Grid removal



3.6. Any tooth wear or grid rung failure is an indication of system problems and should be corrected immediately.

3.7. The details below and as shown in **Table 1** can be used as a reference guide to formulate an opinion as to the degree of wear that exists. Typical wear patterns are as shown on grid member and hub teeth.



NOTE: *Measurements of A and C are to be made at the top of the tapered grid or tooth (thickest section) where there is evidence reduced thickness, typically at the point of contact from grid member to tooth.*

Table 1 — T Wear Measurements

Coupling Size	Dimension - Inches			
	A	C	E	F
1020T	0.066	0.120	6	28
1030T	0.066	0.154	6	28
1040T	0.066	0.148	6	32
1050T	0.094	0.166	6	32
1060T	0.094	0.169	7	36
1070T	0.094	0.199	7	36
1080T	0.124	0.239	7	36
1090T	0.124	0.292	7	36
1100T	0.160	0.329	7	36
1110T	0.160	0.322	8	40
1120T	0.200	0.343	8	40
1130T	0.200	0.325	10	48
1140T	0.200	0.354	10	52
1150T	0.215	0.399	11	54
1160T	0.215	0.408	12	60
1170T	0.215	0.444	13	64
1180T	0.256	0.493	13	64
1190T	0.256	0.559	13	64
1200T	0.256	0.654	13	64
1210T	0.368	0.650	13	64
1220T	0.368	0.749	13	64
1230T	0.424	0.890	12	60
1240T	0.424	1.004	12	60
1250T	0.488	1.087	12	60
1260T	0.488	1.222	12	60

NOTE: *Both grid and tooth stresses are increased by 56% at thinned conditions*

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4. Hub Removal

For technical assistance and suggested procedures on hub removal please reference Rexnord document 458-830 Hub Installation Removal.

☞ ***NOTE:*** *Any time a coupling hub is required to be removed and replaced it is highly recommended to record the actual position of the existing hub on the shaft relative to the shaft end. This will more easily facilitate the ability to properly achieve the hub gap distance required by the coupling as related to the specific distance between shaft ends.*

☞ ***NOTE:*** *The correct hub gap distance is critical to the grid coupling operation to ensure there is sufficient ability for the grid to flex about the hub teeth from torque transmission and unavoidable misalignment in both the horizontal and vertical planes.*

5. Hub Installation

For technical assistance and suggested procedures on hub installation please reference the Rexnord Coupling Installation and Maintenance manual that was supplied with your coupling and/or the Engineering drawing provided if special instructions were included.

Additional details can be located in the Rexnord Document 458-830 Falk Couplings, All Types, Install and Removal of Interference Fit Hubs if the coupling size is over 1100T or an interference fit has been applied.

6. Grid & Cover Installation

The coupling installation and maintenance manual supplied with the coupling will provide the recommendation of various types of lubricating grease, **Table 2** will provide a quick reference regarding the volume of lubricating grease required by each coupling size.

☞ ***NOTE:*** *Rexnord highly recommends Falk Long Term Grease (LTG) for use in grid couplings due to its superior lubricating characteristics and low centrifuge properties, the use of LTG in these couplings will extend the interval for required reapplication of lubrication to over 5 years.*

6.1. Lightly coat the cover seal with grease before positioning on the shaft which MUST be done prior to mounting the hub.

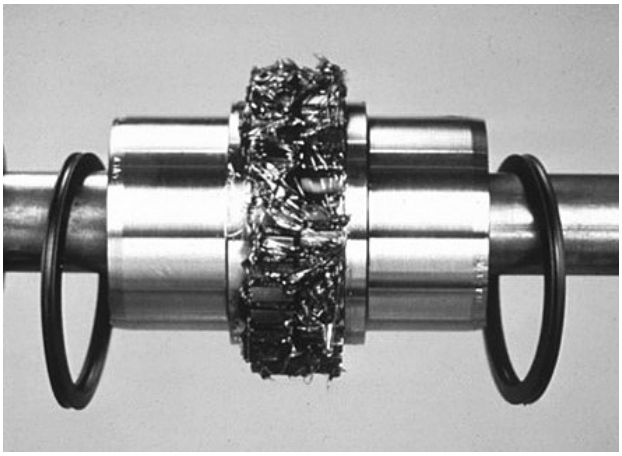
6.2. Mount the hubs to the equipment shafts in accordance with the procedures relayed in the coupling installation and maintenance manual provided with the coupling at the time of supply.

6.3. Seal keyways to prevent leakage of the lubricating grease.

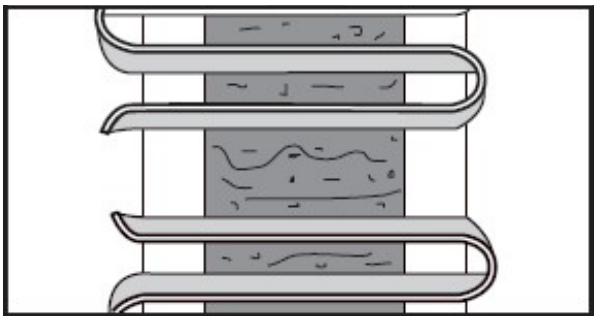
6.4. Check coupling alignment as per the installation and maintenance manual supplied with the coupling to the recommended installation limits by the coupling size and style.

6.5. Ensure the 'HUB GAP' distance is set correctly for the coupling size being installed, see **Table 2**.

6.6. Pack the gap and hub teeth grooves with specified lubricant prior to inserting the grid into position.

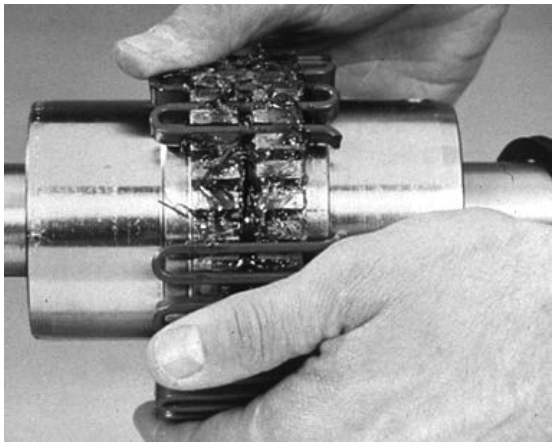


6.7. When grids are furnished in two or more segments, install them so that all cut ends extend in the same direction (as detailed in the exploded view picture below).

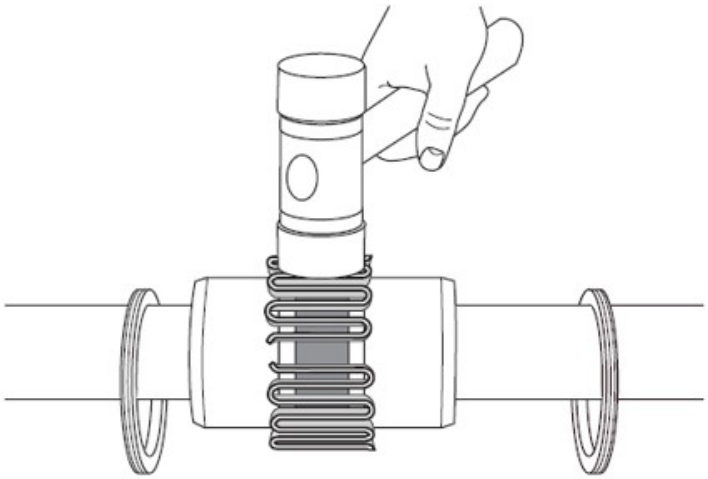


This will assure correct grid contact with non-rotating pin in the cover half's.

6.8. Spread the grid slightly to pass over the coupling hub teeth and position in alignment with the teeth openings, as shown in the below image. The grids can initially be positioned into the openings by hand pressure.



6.9. Seat the grid into the teeth gaps with a soft mallet as shown in the below image. The top of the grid should be basically flush with the top surface of the hub teeth.



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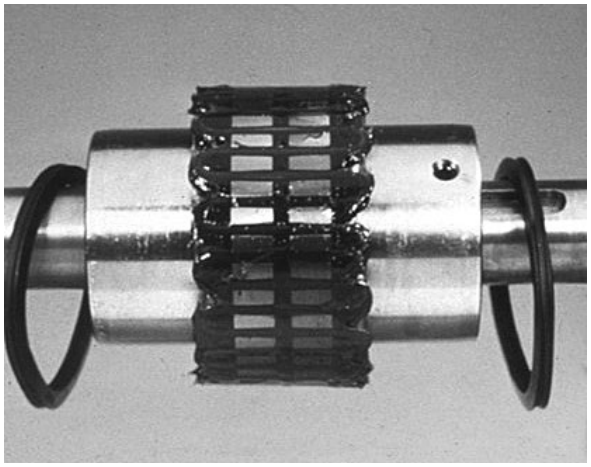
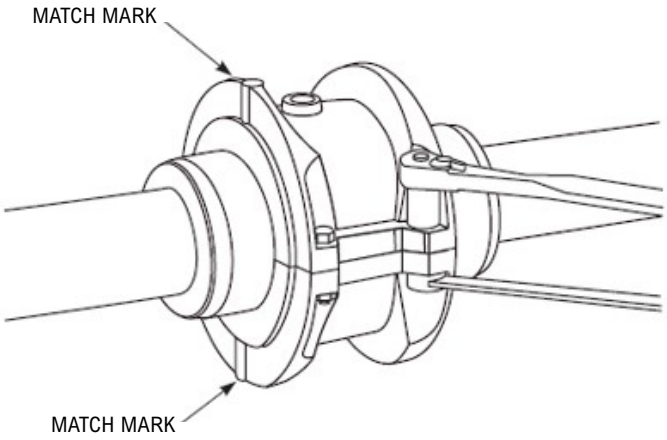
6.10. Pack the spaces between and around the grid with as much lubricating grease as possible and wipe of excess flush with top of grid as shown in the below image.

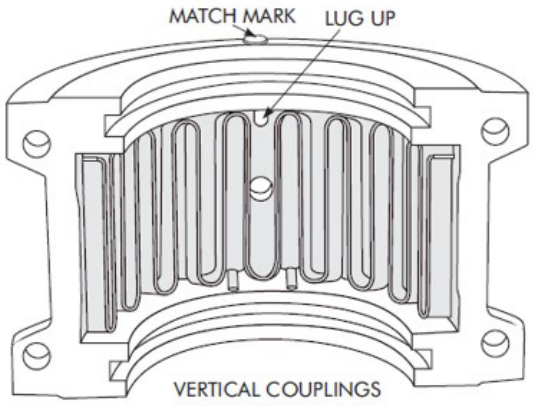


6.11. Ensure there are no nicks, burrs or heavy rust present on the hub barrel before positioning the cover seal into place, if there are any present they should be removed to protect the seal.

6.12. Apply a light amount of lubrication to the hub barrel and position the seal into place where it will align with the grooves in the cover halves.

6.13. Position gaskets on flange of lower cover half and assemble cover halves over the coupling, ensure the matchmarks are on the same end of the cover as shown in the below left image. If the equipment shafts are not level (horizontal) or the coupling is being used in a vertical position, assemble the cover halves with the lug and matchmark on the top side as shown in the right side image below.





6.14. Push the gaskets in until they stop against the seals and secure the cover halves together with the fasteners provided. Tighten to the specified torque value in **Table 2**.

☞ ***NOTE:*** *Ensure gaskets stay in position during tightening of fasteners.*

6.15. Install lube hole pipe plugs before operation, DO NOT operate coupling with lube hole grease fittings installed in the cover halves.

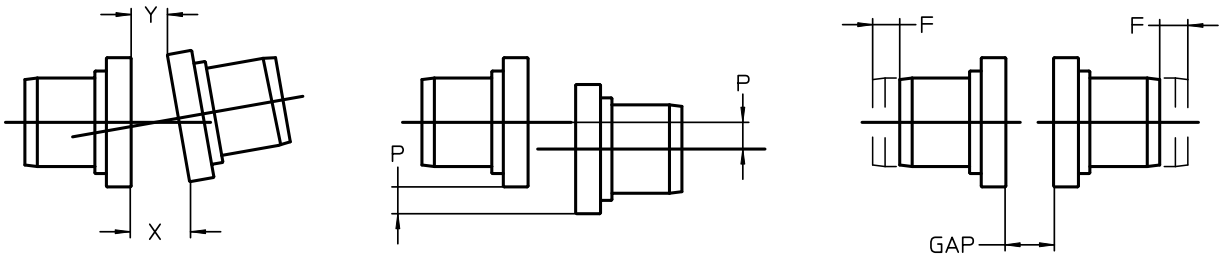


Table 2 — Misalignment & End Float

SIZE	Installation Limits						Operating Limits						Cover Fastener Tightening Torque Values Inch or Metric Series Fasteners		Allow Speed (rpm)	Lube Wt	
	Parallel Offset-P		Angular (x-y)		Hub Gap ± 10%		Parallel Offset-P		Angular (x-y)		End Float Physical Limit (Min) 2 x F						
	Max Inch	Max mm	Max Inch	Max mm	Inch	mm	Max Inch	Max mm	Max Inch	Max mm	Inch	mm	(lb-in)	(Nm)		lb	kg
1020T	.006	0,15	.003	0,08	.125	3	.012	0,30	.010	0,25	.210	5,33	100	11,3	4500	.06	0,03
1030T	.006	0,15	.003	0,08	.125	3	.012	0,30	.012	0,30	.198	5,03	100	11,3	4500	.09	0,04
1040T	.006	0,15	.003	0,08	.125	3	.012	0,30	.013	0,33	.211	5,36	100	11,3	4500	.12	0,05
1050T	.008	0,20	.004	0,10	.125	3	.016	0,41	.016	0,41	.212	5,38	200	22,6	4500	.15	0,07
1060T	.008	0,20	.005	0,13	.125	3	.016	0,41	.018	0,46	.258	6,55	200	22,6	4350	.19	0,09
1070T	.008	0,20	.005	0,13	.125	3	.016	0,41	.020	0,51	.259	6,58	200	22,6	4125	.25	0,11
1080T	.008	0,20	.006	0,15	.125	3	.016	0,41	.024	0,61	.288	7,32	200	22,6	3600	.38	0,17
1090T	.008	0,20	.007	0,18	.125	3	.016	0,41	.028	0,71	.286	7,26	200	22,6	3600	.56	0,25
1100T	.010	0,25	.008	0,20	.188	5	.020	0,51	.033	0,84	.429	10,90	312	35	2440	.94	0,43
1110T	.010	0,25	.009	0,23	.188	5	.020	0,51	.036	0,91	.429	10,90	312	35	2250	1.1	0,51
1120T	.011	0,28	.010	0,25	.250	6	.022	0,56	.040	1,02	.556	14,12	650	73	2025	1.6	0,74
1130T	.011	0,28	.012	0,30	.250	6	.022	0,56	.047	1,19	.551	14,00	650	73	1800	2.0	0,91
1140T	.011	0,28	.013	0,33	.250	6	.022	0,56	.053	1,35	.571	14,50	650	73	1650	2.5	1,14

7. Annual Maintenance

For extreme or unusual operating conditions check coupling with more frequency and update your preventative maintenance procedures accordingly.

7.1. Check coupling alignment as relayed in the installation and maintenance manual or supplied on the engineering drawing supplied with your coupling. If operating misalignment values are exceeded, realign to the recommended installation limits for your specific coupling.

7.2. Visually inspect coupling for signs of leakage of lubricating grease from failed seals, failed gaskets, installed grease fittings or adjacent to keyways.

7.3. Visually inspect for failed or missing bolting hardware connecting the cover halves. Replace hardware as needed, refer to the installation manual or engineering drawing supplied with the coupling for specific part numbers required.

7.4. Disassemble the coupling and examine for failed grid segments and hub teeth or worn components, replace worn parts. Clean existing grease from coupling and repack with new grease.

7.5. If coupling was lubricated with general purpose grease it will require a re-lubrication at every annual inspection procedure.

7.6. If lubricating grease was identified as leaking from the coupling at step 6.2. replace seal, gasket or sealing medium at keyway as necessary. If grease fitting was identified as remaining installed at operation replace with a grease plug after re-lubrication procedure is completed.

7.7. If coupling is exposed to extreme temperatures, excessive moisture or frequent reversals more frequent lubrication may be needed. If these are identified as a potential cause of failure, update your preventative maintenance procedures to accommodate the increased frequency of re-lubrication.

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Rexnord Grid Coupling Documents

Documentation including installation and maintenance manuals, hub installation and removal procedures, Material Safety Data Sheets and white papers can be retrieved at the following website location.

https://www.rexnord.com/resources/process-motion-control/documentation

458-830 Falk Couplings, All Types, Install and Removal of Interference Fit Hubs
458-832 Falk Couplings, Install and Removal of Mill Motor Hubs
458-834 Falk Couplings, Alignment Using a Dial Indicator
458-836 Balanced Couplings Installation
427-108 Coupling Steel Hub boring, keyseating, setscrews and puller bolt holes
428-313 Steelflex, Type T31 & T35, Sizes 150-200, 1150-1200, Supplement
427-820 Falk Steelflex Grid Couplings Type T Misalignment and End Float
428-110 Falk Steelflex Type T10, Sizes 20-140, 1020-1140 Grid Couplings
428-112 Falk Steelflex Type T10, Sizes 150-260, 1150-1260 Grid Couplings
428-210 Falk Steelflex Type T20, Sizes 20-170, 1020-1070 Grid Couplings
428-311 Falk Steelflex Type T31, Sizes 20-140, 1020-1140 Grid Couplings
428-312 Falk Steelflex Type T35, Sizes 20-140, 1020-1140 Grid Couplings
428-362 Falk Steelflex Type T10, G82, Sizes 110-200, 1110-1200 Grid Couplings
428-110 Falk Steelflex Type T41, T42-2, T44, T44-2 Grid Couplings
428-411 Falk Steelflex Type T41-2, T44-2, Sizes 30-80, 1030-1080 Grid Couplings Spring Adjustment Charts
428-414 Falk Steelflex Type T41, T44, Sizes 20-50, 1020-1050 Grid Couplings Spring Adjustment Charts
428-418 Falk Steelflex Type T41, T44, Sizes 60-90, 1060-1090 Grid Couplings Spring Adjustment Charts
428-422 Falk Steelflex Type T41, T44, Sizes 100-130, 1100-1130 Grid Couplings Spring Adjustment Charts
428-510 Falk Steelflex Type T50, T70, Sizes 1030-1200 Grid Couplings
428-610 Falk Steelflex Type T61, Sizes 20-160 Grid Couplings
428-614 Falk Steelflex Type T63, Sizes 20-160 Grid Couplings
428-820 Falk Steelflex, Type T10, 20, Sizes 20-260, 1030-1260 Grid Couplings Limited End Float Install
438-110 Falk Steelflex Type F, Sizes 3-190 Grid Couplings
438-112 Falk Steelflex Type F, Sizes 200-300 Grid Couplings
438-820 Falk Steelflex Type F, Sizes 3-300 Grid Couplings

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