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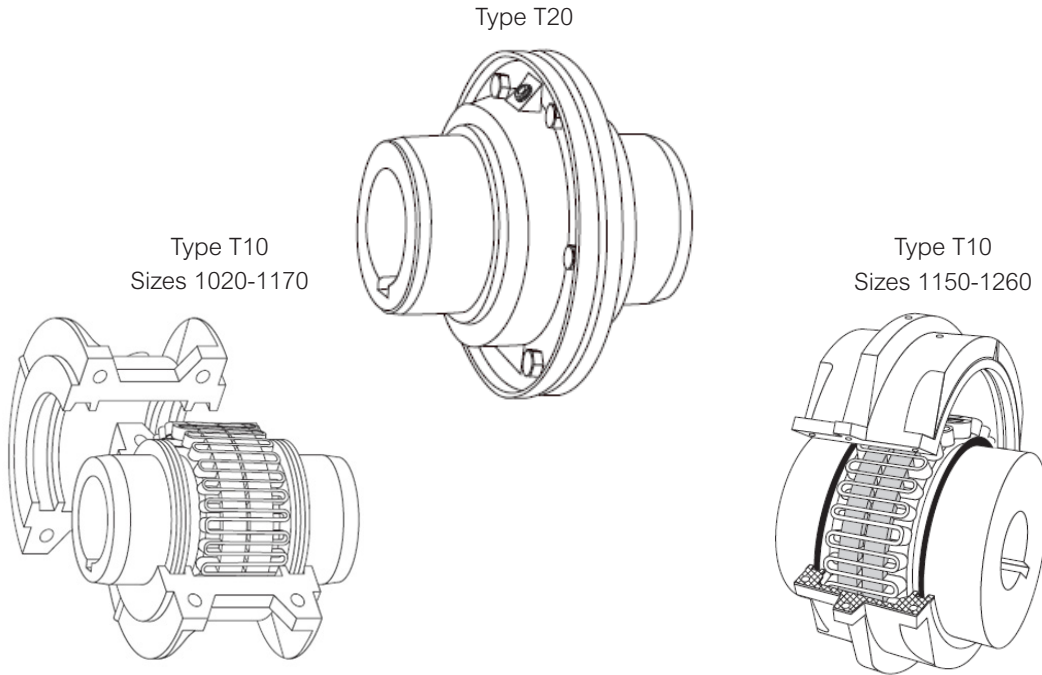






Figure 1 - Steelflex T10 & T20 coupling range

## 1. General Information

- 1.1. Falk Steelflex Couplings are designed to provide a mechanical connection between the rotating shafts of mechanical equipment, using a grid spring to accommodate inherent misalignment while transmitting the power and torque between the connected shaft.
- 1.2. These instructions are intended to help you to install and maintain your Falk Steelflex 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



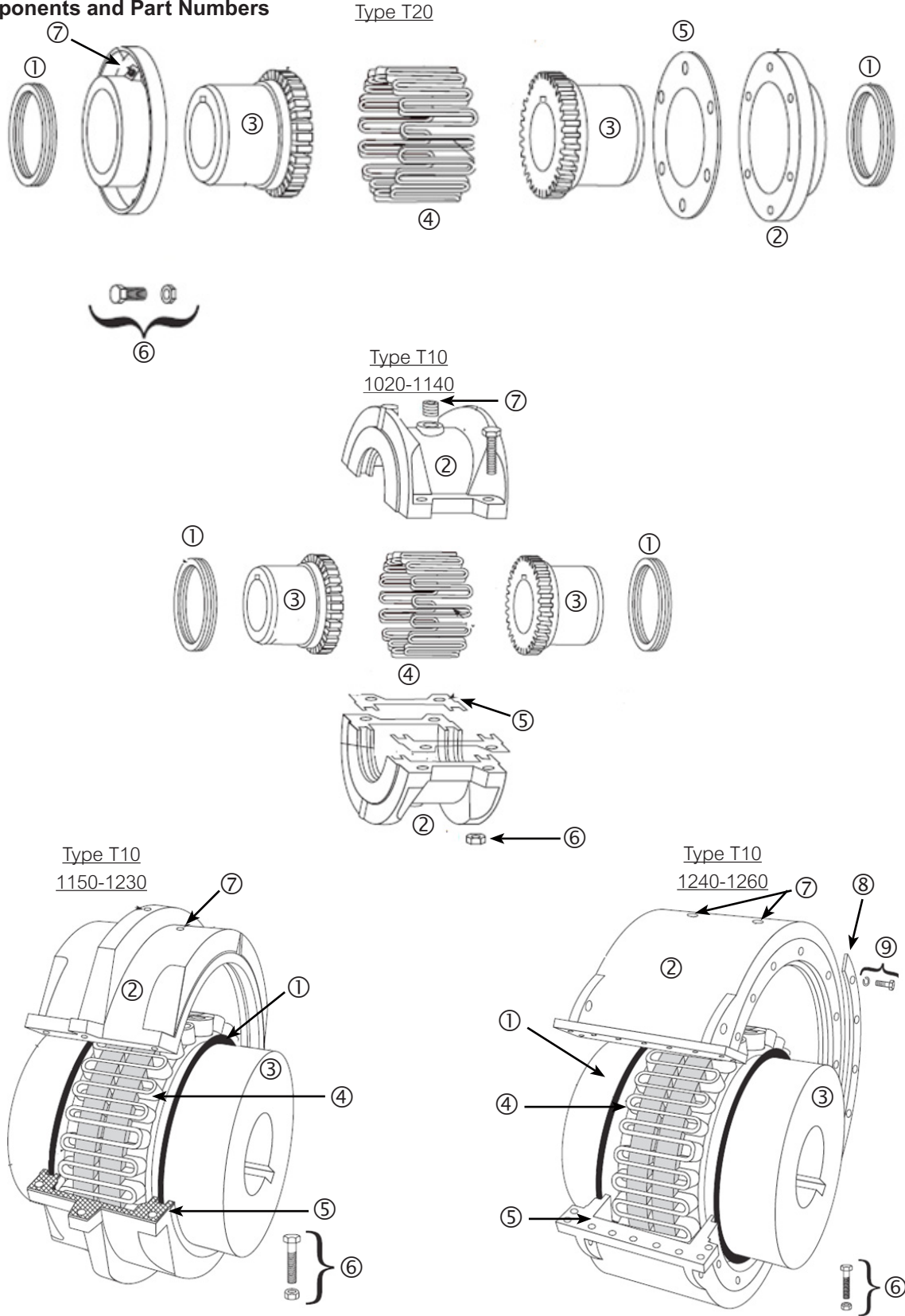
- 2.1. Safety should be a primary concern in all aspects of coupling installation, operation, and maintenance.
- 2.2. Do not make contact with the coupling when it is rotating and/or in operation.
- 2.3. Because of the possible danger to person(s) or property from accidents which may result from improper 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.



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. 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. Make sure to disengage the electrical power and any other sources of potential energy before you perform work on the coupling.
- 2.8. Proper lockout-tag out procedures must be followed to safeguard against unintentional starting of the equipment.
- 2.9. All work on the coupling must be performed when the coupling is at rest with no load.
- 2.10. 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.
- 2.11. The coupling may only be used in accordance with the technical data provided in the Falk Steelflex coupling catalog. Customer modifications and alterations to the coupling are not permissible.
- 2.12. All spare parts for service or replacement must originate from or be approved by Rexnord Industries, LLC.

**3. Components and Part Numbers**



**Figure 2 - Falk Steelflex Coupling Components**

Table 1 – Falk Steelflex Coupling Component part numbers

Description	Style	Part	1020T	1030T	1040T	1050T	1060T	1070T	1080T	1090T	1100T	1110T	1120T	1130T	1140T
Seal Kit	T10	1 & 5	0776650	0776651	0776652	0776653	0776654	0776655	0776708	0776709	0707189	0707190	0707191	0707192	0707193
Seal Kit	T20	1 & 5	0706752	0706753	0706754	0706755	0706756	0706757	0706758	0706759	0706760	0706761	0706762	0706763	0706764
Cover Assembly	T10	1, 2, 5, 6, 7	0775804	0775805	0775806	0775810	0775811	0775812	0776214	0776215	0776216	0776217	0776218	0776219	0776220
Cover Assembly	T20	1, 2, 5, 6, 7	0706739	0706740	0706741	0706742	0706743	0706744	0706745	0706746	0706747	0706748	0706749	0706750	0706751
Hub	T10 & T20	3	0246652	0246653	0246654	0246655	0246656	0246657	0246658	0246659	0246660	0246661	0246662	0246663	0246664
Grid	T10 & T20	4	0762810	0762811	0762812	0762813	0762814	0758250	0758251	0758252	0758253	0758254	0758255	0758256	0758257
Fastener Set	T10	6	0775798	0775798	0775798	0775800	0775800	0775800	0776194	0776194	0776196	0776196	0776221	0776221	0776221
Fastener Set	T20	6	0707045	0707046	0707046	0707047	0707047	0707047	0707048	0707048	0707049	0707049	0707050	0707051	0707052

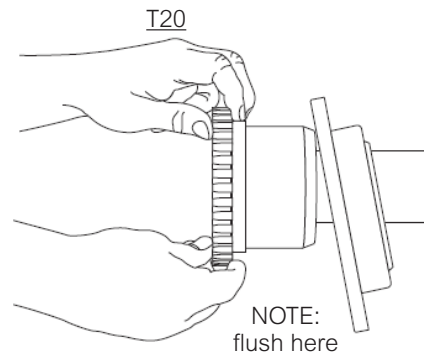
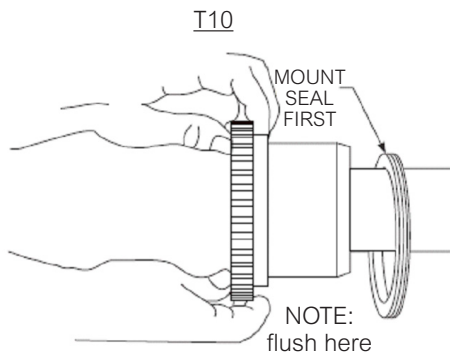
Description	Style	Part	1150T	1160T	1170T	1180T	1190T	1200T	1210T	1220T	1230T	1240T	1250T	1260T
Seal Kit	T10	1 & 5	0725614	0725615	0725616	0725617	0725618	0725619	0725732	0725733	0725734			
Seal Kit	T20	1 & 5	0725620	0725621	0725622									
Cover Assembly	T10	1, 2, 5, 6, 7, 8, 9	0767950	0767951	0767952	0767953	0767954	0767955	0427516	0427517	0427518	0422233	0422234	0422235
Cover Assembly	T20	1, 2, 5, 6, 7	0706752	0706753	0706754									
Hub	T10 & T20	3	0333090	0333091	0333092	0333093	0333094	0333095	0334246	0334247	0334248	0334249	0334250	0334251
Grid	T10 & T20	4	0758258	0758259	0758260	0758261	0758262	0758263	0758264	0758265	0758266	0758267	0758268	0758269
Fastener Set	T10	6	0744116	0744116	0744117	0744117	0744118	0744119	0744120	0744121	0744121			
Fastener Set	T20	6	0744122	0744122	0744123									

#### 4. Mount Seals (Cover T20) & Hubs



**Be sure to disengage the electrical power and any other sources of potential 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 the hub and shaft, with a slight clearance over the top of the key.
- 4.4. Place the seal rings and ½ cover for T20 on shafts **before mounting** hubs.



**CAUTION:** When heating hubs is required, 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 applied to the hub surface will help determine the hub temperature.

**DANGER!**

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

#### 5. Straight Bore with Clearance/Slip Fit

- 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 or the bore. Remove or back out 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.

Table 2 - Set Screw Tightening Torque

Screw Size	M6	M8	M10	M12	M16	1/4"	3/8"	
Hex Head Key Size	M3	M4	M5	M6	M8	1/8"	3/16"	
Tightening torque	Nm	6	12	25	50	100	8	25
	lb-in	55	110	220	440	880	70	220

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

## 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.
- 6.4. 275°F (135°C) is usually sufficient for carbon steel hubs. Do not exceed 400°F (205°C).
- 6.5. With the hub expanded, install it quickly on the shaft to the desired axial position. A pre-set axial stop device can be helpful.

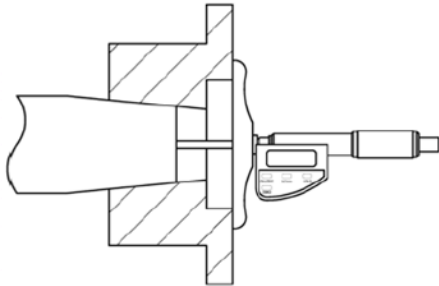


Figure 3 - Shaft end to hub face measurement example.

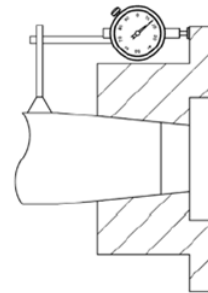


Figure 4 - Dial indicator placement for axial draw measurement example.

## 7. Taper Bore

- 7.1. Check for acceptable contact pattern between the hub and the shaft.
- 7.2. Put the hub on the shaft, keeping the keyways (if existing) aligned.
- 7.3. 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.
- 7.4. Use a depth micrometer to measure the distance from the shaft end to the hub face, as shown in Figure 3. Record the dimension.
- 7.5. Mount a dial indicator to read axial hub advancement, as shown in Figure 4. Alternatively, the indicator can be positioned to contact the end of the hub. Set the indicator to "zero".
- 7.6. Remove the hub and install the key(s) in the shaft.
- 7.7. Heat the hub in an oven until the bore is sufficiently larger than the shaft.
- 7.8. 350°F (177°C) is usually sufficient for carbon steel hubs. Do not exceed 500°F (260°C).
- 7.9. 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 of shaft diameter (or 0.029 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.
- 7.10. 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 Rexnord's customer. Use the indicator as a guide only. A pre-set axial stop device can be helpful.
- 7.11. Inspect the assembly to verify that the hub is properly positioned. Consult Rexnord if necessary.
- 7.12. Install any hub axial retention device (if any) in accordance with the equipment manufacturer's specifications.

## 8. 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 deflection of the flexing grids. 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 Tables 4 and 5. 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.

### 8.1. Close gap coupled couplings

Use an inside micrometer or a spacer bar equal in thickness as shown below at 90° intervals to measure the distance between hubs to gap specified in Table 3.

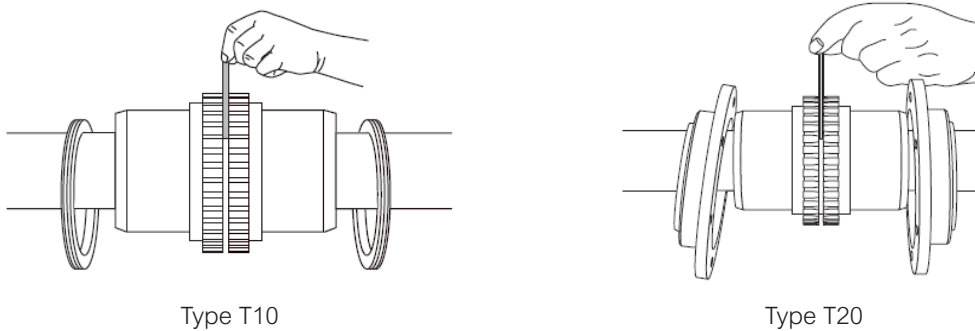


Table 3 - Gap Dimension

GAP +/- 10%	1020T - 1090T	1100T - 1110T	1120T - 1200T	1210T - 1260T
Inch	0.125	0.188	0.250	0.500
mm	3	5	6	13

8.2. 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 5.

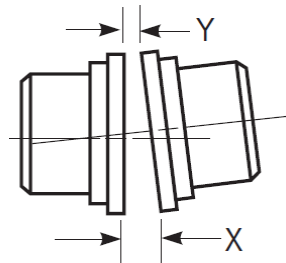


Figure 5 - Angular misalignment

Table 4 - Maximum angular misalignment value

Angular	Size	1020T	1030T	1040T	1050T	1060T	1070T	1080T	1090T	1100T	1110T	1120T	1130T	1140T
X-Y	Inch	0.003	0.003	0.003	0.004	0.005	0.005	0.006	0.007	0.008	0.009	0.01	0.012	0.013
	mm	0.08	0.08	0.08	0.10	0.13	0.13	0.15	0.18	0.20	0.23	0.25	0.30	0.33
Angular	Size	1150T	1160T	1170T	1180T	1190T	1200T	1210T	1220T	1230T	1240T	1250T	1260T	
X-Y	Inch	0.016	0.018	0.020	0.022	0.024	0.027	0.029	0.032	0.035	0.038	0.042	0.046	
	mm	0.406	0.457	0.508	0.559	0.610	0.686	0.737	0.813	0.889	0.965	1.070	1.170	

8.3. The “Parallel Misalignment” value (P) is the offset between the centers of the hubs, as shown in Figure 6.

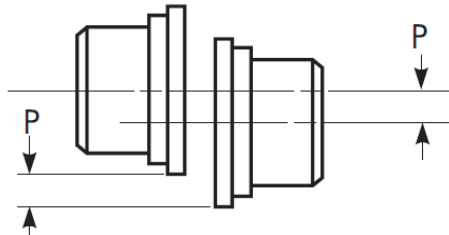


Figure 6 - Parallel misalignment

Table 5 - Maximum difference P

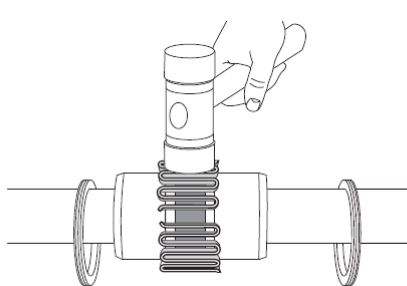
Parallel Offset	Size	1020T	1030T	1040T	1050T	1060T	1070T	1080T	1090T	1100T	1110T	1120T	1130T	1140T
P	Inch	0.006	0.006	0.006	0.008	0.008	0.008	0.008	0.008	0.010	0.010	0.011	0.011	0.011
	mm	0.150	0.150	0.150	0.200	0.200	0.200	0.200	0.200	0.250	0.250	0.280	0.280	0.280

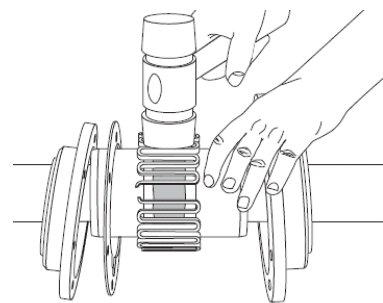
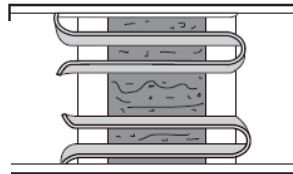
Parallel Offset	Size	1150T	1160T	1170T	1180T	1190T	1200T	1210T	1220T	1230T	1240T	1250T	1260T
P	Inch	0.012	0.012	0.012	0.015	0.015	0.015	0.018	0.018	0.019	0.019	0.020	0.020
	mm	0.305	0.305	0.305	0.381	0.381	0.381	0.457	0.457	0.483	0.483	0.508	0.508

## 9. Coupling Grid installation

9.1. For T20 insert gasket between hubs. Pack gap and grooves with specified lubricant before inserting grid. When grids are furnished in two or more segments, install them so that all cut ends face each other (as detailed in the picture below); this will assure correct grid contact with non-rotating pins in cover halves. Spread the grid slightly to pass over the coupling teeth and seat with a soft mallet



Type T10



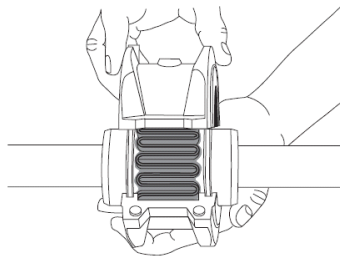
Type T20

## 10. Cover assembly

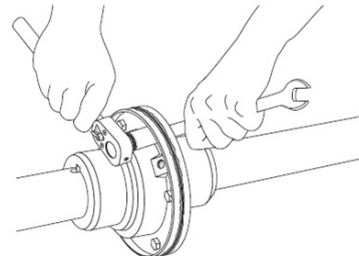
10.1. Pack the spaces between and around the grid with as much lubricant as possible and wipe off excess flush with top of grid.

**T10:** Position seals on hubs to line up with grooves in cover. Position gaskets on flange of lower cover half and assemble covers so that the match marks are on the same side. If shafts are not level (horizontal) or coupling is to be used vertically, assemble cover halves with the lug and match.

**T20:** Slide cover halves with seals onto hubs and position with lube holes 180° apart (90° apart for Sizes 1150 thru 1170). Line up cover and gasket bolt holes and secure with fasteners; tighten to torque specified in Table 6



Type T10



Type T20

Table 6 - Cover fastener tightening torque

Cover Fastener Tightening	Size	1020T	1030T	1040T	1050T	1060T	1070T	1080T	1090T	1100T	1110T	1120T	1130T	1140T
T10	lb-in	100	100	100	200	200	200	200	200	312	312	650	650	650
	Nm	11.3	11.3	11.3	22.6	22.6	22.6	22.6	22.6	35.0	35.0	73.4	73.4	73.4
T20	lb-in	100	100	100	200	200	200	200	200	260	260	260	650	650
	Nm	11.3	11.3	11.3	22.6	22.6	22.6	22.6	22.6	29.4	29.4	29.4	73.4	73.4

Cover Fastener Tightening	Size	1150T	1160T	1170T	1180T	1190T	1200T	1210T	1220T	1230T	1240T	1250T	1260T
T10	lb-in	650	650	1300	1300	1300	2300	2300	3580	3580	5350	5350	5350
	Nm	73.4	73.4	146.9	146.9	146.9	259.9	259.9	404.5	404.5	604.5	604.5	604.5
T20	lb-in	650	1300	1300									
	Nm	73.4	146.9	146.9									

10.2. Operating limits for Steelflex Couplings

Table 7 - Angular Operation limits

Angular	Size	1020T	1030T	1040T	1050T	1060T	1070T	1080T	1090T	1100T	1110T	1120T	1130T	1140T
X-Y	Inch	0.010	0.012	0.013	0.016	0.018	0.020	0.024	0.028	0.033	0.036	0.040	0.047	0.053
	mm	0.25	0.30	0.33	0.41	0.46	0.51	0.61	0.71	0.84	0.91	1.02	1.19	1.35

Angular	Size	1150T	1160T	1170T	1180T	1190T	1200T	1210T	1220T	1230T	1240T	1250T	1260T
X-Y	Inch	0.062	0.070	0.079	0.089	0.097	0.107	0.118	0.129	0.142	0.154	0.169	0.183
	mm	1.57	1.79	2.01	2.26	2.46	2.72	3.00	3.28	3.61	3.91	4.29	4.64

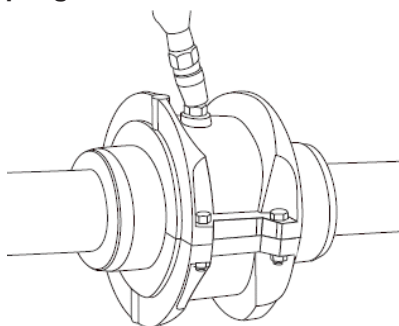
Table 8 - Parallel Operation limits

Parallel Offset	Size	1020T	1030T	1040T	1050T	1060T	1070T	1080T	1090T	1100T	1110T	1120T	1130T	1140T
P	Inch	0.012	0.012	0.012	0.016	0.016	0.016	0.016	0.016	0.02	0.02	0.022	0.022	0.022
	mm	0.300	0.300	0.300	0.410	0.410	0.410	0.410	0.410	0.510	0.510	0.560	0.560	0.560

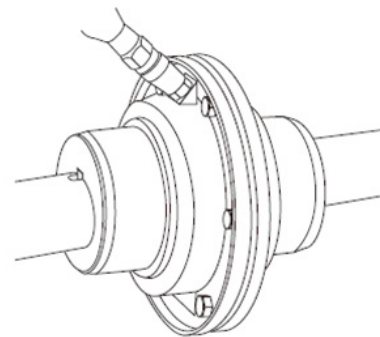
  

Parallel Offset	Size	1150T	1160T	1170T	1180T	1190T	1200T	1210T	1220T	1230T	1240T	1250T	1260T
P	Inch	0.024	0.024	0.024	0.030	0.030	0.030	0.036	0.036	0.038	0.038	0.040	0.040
	mm	0.610	0.610	0.610	0.762	0.762	0.762	0.914	0.914	0.965	0.965	1.020	1.020

11. Coupling lubrication



Type T10



Type T20

LTG Coupling grease

The High centrifugal forces encountered in couplings separate the base oil and thickener of general purpose greases. Heavy thickener, which has no lubrication qualities, accumulates in the grid – groove area of Steelflex couplings resulting in premature hub or grid failure unless periodic lubrication cycles are maintained.



Falk Long Term Grease (LTG) was developed specifically for couplings. It resists separation of the oil and thickener. The consistency of Falk LTG changes with operating conditions. Working of the lubricant under actual service conditions causes it to become semifluid while the grease near the seals will set to a heavier grade, helping to prevent leakage. LTG is highly resistant to separation, easily out performing all other lubricants tested. The resistance to separation allows the lubricant to be used for relatively long periods of time.

Steelflex couplings initially lubricated with LTG will not require re-lubrication until the connected equipment is stopped for servicing. If a coupling leaks grease, or is exposed to extreme environments, more frequent lubrication may be required.

**USDA APPROVAL**

LTG has the United States Department of Agriculture Food Safety & Inspection Service approval for applications where there is no possibility of contact with edible products. (H-2 ratings)

If Falk LTG grease is not used in coupling use an NLGI EP #2 type grease specific for couplings with rust and oxidation inhibitors that do not corrode steel or swell or deteriorate synthetic seals. This applies for general applications where the coupling will operate in ambient temperatures of -18° C to 66°C (0°F to 150°F).

Consult a local lubricant representative for available products in your area with the required weight and lubricant standard requirements as listed below.

- 11.1. Lubricate coupling with correct amount of lubricant specified on table 9.

Table 9: Lubrication amount

Lube Weight	Size	1020T	1030T	1040T	1050T	1060T	1070T	1080T	1090T	1100T	1110T	1120T	1130T	1140T
T10/T20	lb	0.06	0.09	0.12	0.15	0.19	0.25	0.38	0.56	0.94	1.10	1.60	2.00	2.50
	kg	0.03	0.04	0.05	0.07	0.09	0.11	0.17	0.25	0.43	0.51	0.74	0.91	1.14
Lube Weight	Size	1150T	1160T	1170T	1180T	1190T	1200T	1210T	1220T	1230T	1240T	1250T	1260T	
T10/T20	lb	4.3	6.2	7.7	8.3	9.7	12.4	23.2	35.4	53.0	74.5	110.5	148.1	
	kg	1.95	2.81	3.49	3.76	4.40	5.62	10.5	16.1	24.0	33.8	50.1	67.2	

If coupling leaks grease, is exposed to extreme temperatures, excessive moisture or experiences frequent reversals or axial movements; more frequent lubrication may be required.

**CAUTION: Remove grease fitting and make certain all plugs are inserted after lubricating.**

**12. ANNUAL MAINTENANCE**

- 12.1. For extreme or unusual operating conditions, check coupling more frequently.
- 12.2. Check coupling alignment per steps on page 6. If the maximum operating misalignment values are exceeded, realign the coupling to the recommended installation limits. See Table 4, 5, 7 and 8 for installation and operating alignment limits.
- 12.3. Check tightening torques of all fasteners.
- 12.4. Inspect seal ring and gasket to determine if replacement is required. If leaking grease, replace.
- 12.5. When connected equipment is serviced, disassemble the coupling and inspect for wear. Replace worn parts. Clean grease from coupling and repack with new grease. Install coupling using new gasket as instructed in this manual.

**Periodic Lubrication**

The required frequency of lubrication is directly related to the type of lubricant chosen, and the operating conditions. Steelflex couplings lubricated with common industrial lubricants, such as those shown in Table 9, should be relubed annually. The use of Falk Long Term Grease (LTG) will allow relube intervals to be extended to beyond five years. When relubing, remove both lube plugs and insert lube fitting. Fill with recommended lubricant until an excess appears at the opposite hole.