

## How To Use This Manual

This manual provides detailed instructions on maintenance, lubrication, installation, and parts identification. Use the table of contents below to locate required information.

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**CAREFULLY FOLLOW THE INSTRUCTIONS IN THIS MANUAL FOR OPTIMUM PERFORMANCE AND TROUBLE FREE SERVICE.**

## INTRODUCTION

This manual applies to Sizes 1150T thru 1260T and 150T thru 260T Falk Steelflex Tapered Grid Couplings. Unless otherwise stated, information for Sizes 1150T thru 1260T applies to Sizes 150T thru 260T respectively, e.g. 1150T = 150T, 1260T = 260T, etc. These couplings are designed to operate in either the horizontal or vertical position without modification.

The performance and life of the couplings depend largely upon how you install and service them. Carefully follow the instructions in this manual for optimum performance and trouble free service.

**CAUTION:** Consult applicable local and national safety codes for proper guarding of rotating members. Observe all safety rules when installing or servicing couplings.

**WARNING:** Lockout starting switch of prime mover and remove all external loads from drive before installing or servicing couplings.

## LUBE FITTINGS

Cover halves have 3/8 NPT lube holes. Use a standard grease gun and lube fitting as instructed on Page 4.

## LIMITED END FLOAT

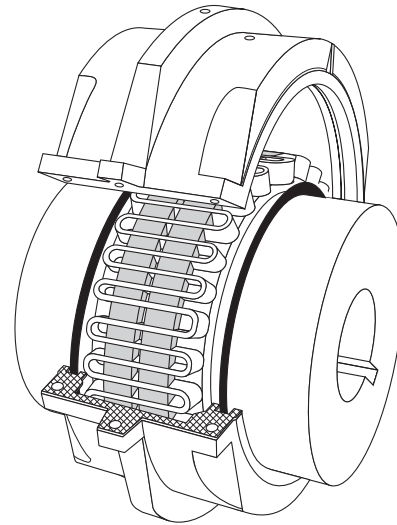
When electric motors, generators, engines, compressors and other machines are fitted with sleeve or straight roller bearings, limited axial end float kits are recommended for protecting the bearings. Falk Steelflex couplings are easily modified to limit end float; refer to Manual 428-820 for instructions.

## LUBRICATION

Adequate lubrication is essential for satisfactory operation. Page 2 provides a list of typical lubricants and specifications for general purpose and long term greases. Because of its superior lubricating characteristics and low centrifuge properties, Falk Long Term Grease (LTG) is highly recommended.

The use of general purpose grease requires re-lubrication of the coupling at least annually.

## TYPE T10 STEELFLEX COUPLING



## Long Term Grease (LTG)

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. As manufactured it is an NLGI #½ grade. 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, is exposed to extreme temperatures, excessive moisture, or experiences frequent reversals, more frequent lubrication may be required.

Although LTG grease is compatible with most other coupling greases, the mixing of greases may dilute the benefits of LTG.

## 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).

**CAUTION:** Do not use LTG in bearings.

### Specifications — Falk LTG

The values shown are typical and slight variations are permissible.

AMBIENT TEMPERATURE RANGE —  $-20^{\circ}\text{F}$  ( $-29^{\circ}\text{C}$ ) to  $250^{\circ}\text{F}$  ( $121^{\circ}\text{C}$ ). Min. Pump =  $20^{\circ}\text{F}$  ( $-7^{\circ}\text{C}$ ).

MINIMUM BASE OIL VISCOSITY — 3300SSU (715cST) @  $100^{\circ}\text{F}$  ( $38^{\circ}\text{C}$ ).

THICKENER — Lithium & soap/polymer.

CENTRIFUGE SEPARATION CHARACTERISTICS — ASTM #D4425 (Centrifuge Test) —  $K36 = 2/24$  max., very high resistance to centrifuging.

NLGI GRADE (ASTM D-217) —  $\frac{1}{2}$

CONSISTENCY (ASTM D-217) — 60 stroke worked penetration value in the range of 315 to 360 measured at  $77^{\circ}\text{F}$  ( $25^{\circ}\text{C}$ ).

MINIMUM DROPPING POINT —  $350^{\circ}\text{F}$  ( $177^{\circ}\text{C}$ ) minimum.

MINIMUM TIMKEN O.K. LOAD — 40 lb.

ADDITIVES — Rust and oxidation inhibitors that do not corrode steel or swell or deteriorate synthetic seals.

### Packaging

14 oz. (0,4 kg ) CARTRIDGES — Individual or case lots of 10 or 30.

35 lb. (16 kg )PAIL, 120 lb. (54 kg ) KEG & 400 lb. (181 kg) DRUMS.

### General Purpose Grease

Annual Lubrication — The following specifications and lubricants for general purpose grease apply to Falk Steelflex couplings that are lubricated annually and operate within ambient temperatures of  $0^{\circ}\text{F}$  to  $150^{\circ}\text{F}$  ( $-18^{\circ}\text{C}$  to  $66^{\circ}\text{C}$ ). For temperatures beyond this range, consult the Factory.

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

### Specifications — General Purpose Coupling Lubricants

The values shown are typical and slight variations are permissible.

DROPPING POINT —  $300^{\circ}\text{F}$  ( $149^{\circ}\text{C}$ ) or higher.

CONSISTENCY — NLGI No. 2 with 60 stroke worked penetration value in the range of 250 to 300.

SEPARATION AND RESISTANCE — Low oil separation rate and high resistance to separation from centrifuging.

LIQUID CONSTITUENT — Possess good lubricating properties ... equivalent to a high quality, well refined petroleum oil.

INACTIVE — Must not corrode steel or cause swelling or deterioration of synthetic seals.

CLEAN — Free from foreign inclusions.

## INSTALLATION OF TYPE T10 STEELFLEX TAPERED GRID COUPLINGS

### Installation

Only standard mechanics tools, wrenches, a straight edge and feeler gauges are required to install Falk Steelflex couplings. Clean all parts using a non-flammable solvent. Check hubs, shafts and keyways for burrs.

INTERFERENCE FIT HUBS — Furnished without setscrews. Heat hubs to a maximum of  $275^{\circ}\text{F}$  ( $135^{\circ}\text{C}$ ) using an oven, torch, induction heater or an oil bath. To prevent damage DO NOT heat hubs beyond a maximum temperature of  $400^{\circ}\text{F}$  ( $205^{\circ}\text{C}$ ).

When an oxy-acetylene or blow torch is used, use an excess acetylene mixture. Mark hubs near the center of their length in several places on hub body with a temperature sensitive crayon,  $275^{\circ}\text{F}$  ( $135^{\circ}\text{C}$ ) melt temperature. Direct flame towards hub bore using constant motion to avoid overheating an area.

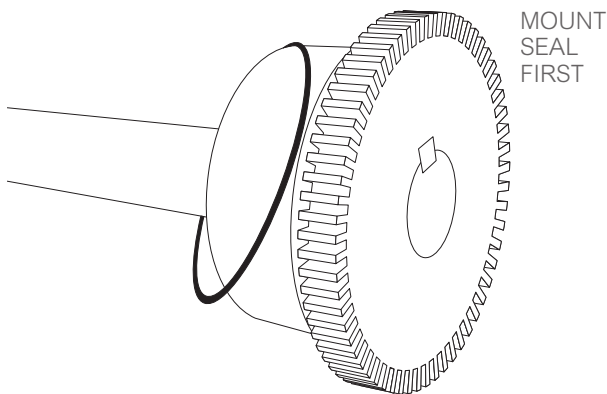
**WARNING:** *If an oil bath is used, the oil must have a flash point of  $350^{\circ}\text{F}$  ( $177^{\circ}\text{C}$ ) or higher. Do not rest hubs on the bottom of the container. Do not use an open flame in a combustible atmosphere or near combustible materials. Heat hubs as instructed above. Mount hubs as quickly as possible with hub flange face flush with shaft end. Allow hubs to cool before proceeding. Insert setscrews (if required) and tighten.*

## Maximize Performance And Life

The performance and life of couplings depend largely upon how you install and maintain them. Before installing couplings, make certain that foundations of equipment to be connected meet manufacturers' requirements. Check for soft foot. The use of stainless steel shims is recommended. Measuring misalignment and positioning equipment within alignment tolerances is simplified with an alignment computer. These calculations can also be done graphically or mathematically.

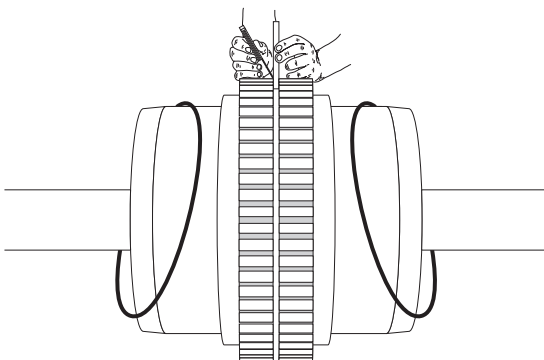
Alignment is shown using spacer bar and straight edge. This practice has proven to be adequate for many industrial applications. However, for superior final alignment, the use of dial indicators (see Manual 458-834 for instructions), lasers, alignment computers or graphical analysis is recommended.

### 1— Mount Seals And Hubs



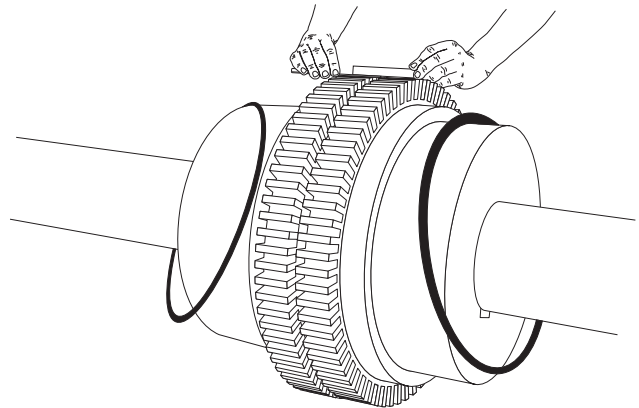
Lock out starting switch of prime mover. Clean all metal parts using a non-flammable solvent. Lightly coat seals with grease and place on shafts BEFORE mounting hubs. Heat hubs as previously instructed. Seal keyways to prevent leakage. Mount hubs on their respective shafts so the hub face is flush with the end of its shaft unless otherwise indicated.

### 2 — Gap and Angular Alignment



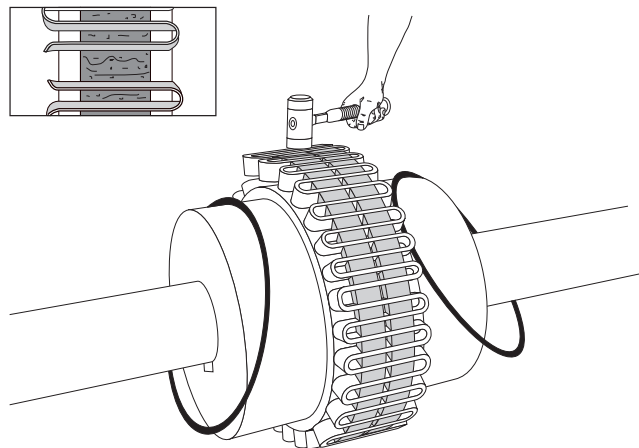
Use a spacer bar equal in thickness to the gap specified in Table 1, Page 5. Insert bar as shown above, to same depth at 90° intervals and measure clearance between bar and hub face with feelers. The difference in minimum and maximum measurements must not exceed the ANGULAR INSTALLATION limits specified in Table 1.

### 3 — Offset Alignment



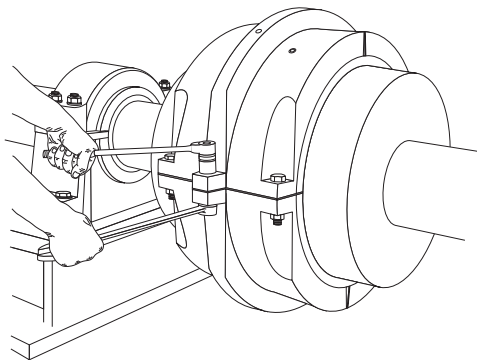
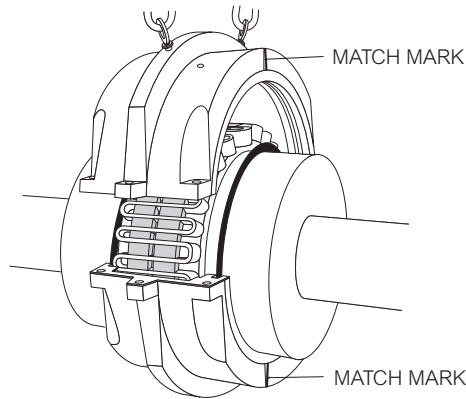
Align so that a straight edge rests squarely (or within the limits specified in Table 1) on both hubs as shown above and also at 90° intervals. Check with feelers. The clearance must not exceed the PARALLEL OFFSET installation limits specified in Table 1. Tighten all foundation bolts and repeat Steps 2 and 3. Realign coupling if necessary. NOTE: Use a dial indicator for more accurate alignment.

### 4 — Insert Grid

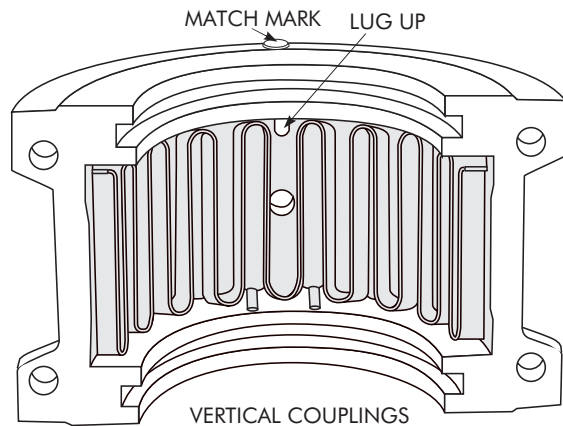


Pack gap and grooves with specified lubricant before inserting grid. When grids are furnished in two or more segments, install them so that all cut ends extend in the same direction (as detailed in the exploded view picture above); this will assure correct grid contact with non-rotating pin in cover halves. Spread the grid slightly to pass over the coupling teeth and seat with a soft mallet.

### 5 — Pack With Grease And Assemble Covers



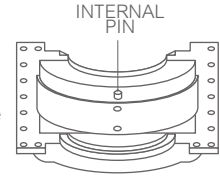
Pack the spaces between and around the grid with as much lubricant as possible and wipe off excess flush with top of grid. Position seals on hubs to line up with grooves in cover. Move lower cover half into position and block-up in place.



**Sizes 1150 thru 1230** — Position gaskets on flange split and assemble upper cover half with the match mark on the same side as the lower half (see above). If shafts are not level (horizontal) or coupling is to be used vertically, assemble cover halves with the lug and match mark UP or on the high side.

Push gaskets in until they stop against the seals and secure cover halves with fasteners, tighten to torque specified in Table 1. Make sure gaskets stay in position during tightening of fasteners. **CAUTION:** Make certain lube plugs are installed before operating.

**Sizes 1240 thru 1260** — Check all flange faces for burrs and coat either half with Permatex #2 or equivalent. Assemble cover half with the internal pin (see drawing at right) on the same side as the lower half. Secure cover with fasteners and tighten to torque specified in Table 1. Assemble split seal retainers so the split is 90° from the cover split. Secure with fasteners.



**CAUTION:** Make certain lube plugs are installed before operating.

### ANNUAL MAINTENANCE

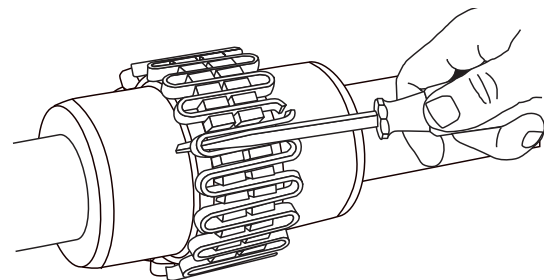
For extreme or unusual operating conditions, check coupling more frequently.

1. Check alignment per steps on Page 3. If the maximum operating misalignment limits are exceeded, realign the coupling to the recommended installation limits. See Table 1 for installation and operating alignment limits.
2. Check tightening torques of all fasteners.
3. Inspect seal ring and gasket to determine if replacement is required. If leaking grease, replace.
4. 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 general purpose coupling greases, 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. **CAUTION:** Make certain all plugs have been inserted after lubricating.

### Coupling Disassembly And Grid Removal



Whenever it is necessary to disconnect the coupling, remove the cover halves and grid. A round rod or screwdriver that will conveniently fit into the open loop ends of the grid is required. Begin at the open end of the grid section and insert the rod or screwdriver into the loop ends. Use the teeth adjacent to each loop as a fulcrum and pry the grid out radially in even, gradual stages, proceeding alternately from side to side.

## TYPE T COUPLING INSTALLATION & ALIGNMENT DATA

Maximum life and minimum maintenance for the coupling and connected machinery will result if couplings are accurately aligned. Coupling life expectancy between initial alignment and maximum operating limits is a function of load, speed and lubrication.

Values may be combined for an installation or operating condition.

Example: 1180T max. operating misalignment is .030" parallel plus .089" angular.

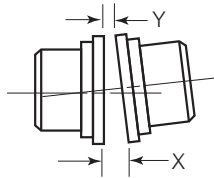
NOTE: For applications requiring greater misalignment, refer application details to the Factory.

Angular misalignment is dimension X minus Y as illustrated below.

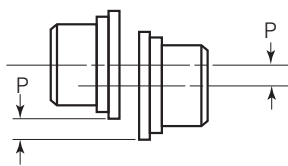
Parallel misalignment is distance P between the hub center lines as illustrated below.

End float (with zero angular and parallel misalignment) is the axial movement of the hubs(s) within the cover(s) measured from "O" gap.

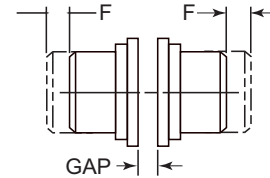
ANGULAR MISALIGNMENT



PARALLEL OFFSET MISALIGNMENT



END FLOAT



**TABLE 1 — Misalignment and End Float**

CPLG SIZE	Installation Limits						Operating Limits						Cover Fastener Torque Values	Allow Speed (rpm)	Lube Wt		
	Parallel Offset-P		Angular (x-y)		Normal 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
1150T	.012	.305	.016	.406	.250	6	.024	.610	.062	1.57	.620	15.7	650	73.4	1500	4.3	1.95
1160T	.012	.305	.018	.457	.250	6	.024	.610	.070	1.79	.640	16.3	650	73.4	1350	6.2	2.81
1170T	.012	.305	.020	.508	.250	6	.024	.610	.079	2.01	.617	15.7	1300	146.9	1225	7.7	3.49
1180T	.015	.381	.022	.559	.250	6	.030	.762	.089	2.26	.717	18.2	1300	146.9	1100	8.3	3.76
1190T	.015	.381	.024	.610	.250	6	.030	.762	.097	2.46	.620	15.7	1300	146.9	1050	9.7	4.40
1200T	.015	.381	.027	.686	.250	6	.030	.762	.107	2.72	.620	15.7	2300	259.9	900	12.4	5.62
1210T	.018	.457	.029	.737	.500	13	.036	.914	.118	3.00	1.02	25.9	2300	259.9	820	23.2	10.5
1220T	.018	.457	.032	.813	.500	13	.036	.914	.129	3.28	1.15	29.2	3580	404.5	730	35.4	16.1
1230T	.019	.483	.035	.889	.500	13	.038	.965	.142	3.61	1.12	28.4	3580	404.5	680	53.0	24.0
1240T	.019	.483	.038	.965	.500	13	.038	.965	.154	3.91	1.12	28.4	5350	604.5	630	74.5	33.8
1250T	.020	.508	.042	1.07	.500	13	.040	1.02	.169	4.29	1.12	28.4	5350	604.5	580	110.5	50.1
1260T	.020	.508	.046	1.17	.500	13	.040	1.02	.183	4.64	1.01	25.7	5350	604.5	540	148.1	67.2

### PARTS IDENTIFICATION

All coupling parts have identifying part numbers as shown below. Parts 3 and 4 (Hubs and Grids), are the same for both Type T10 and T20 couplings. All other coupling parts are unique to Type T10. When ordering parts, always SPECIFY SIZE and TYPE shown on the COVER.

### PARTS INTERCHANGEABILITY

Parts are interchangeable between Sizes 20T and 1020T, 30T, and 1030T, etc. except as noted.

GRIDS — Size 1150T thru 1260T Steelflex couplings use blue grids. Older models, 150T thru 260T, use orange grids.

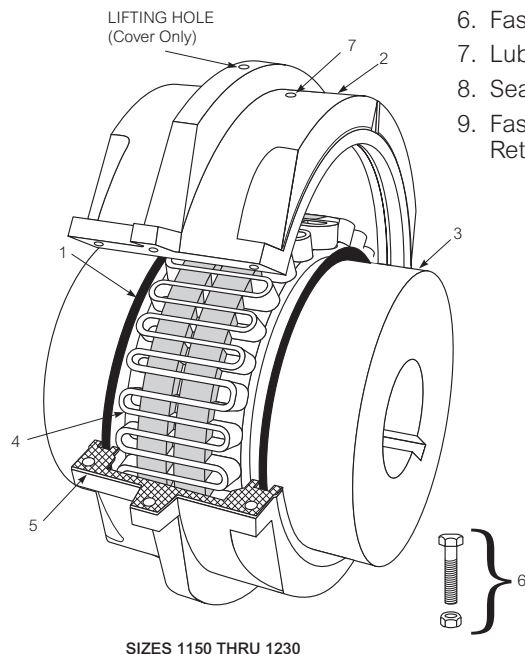
**CAUTION:** Blue grids may be used in all applications, but DO NOT substitute orange grids for blue.

**CAUTION:** DO NOT mix cover halves of different designs.

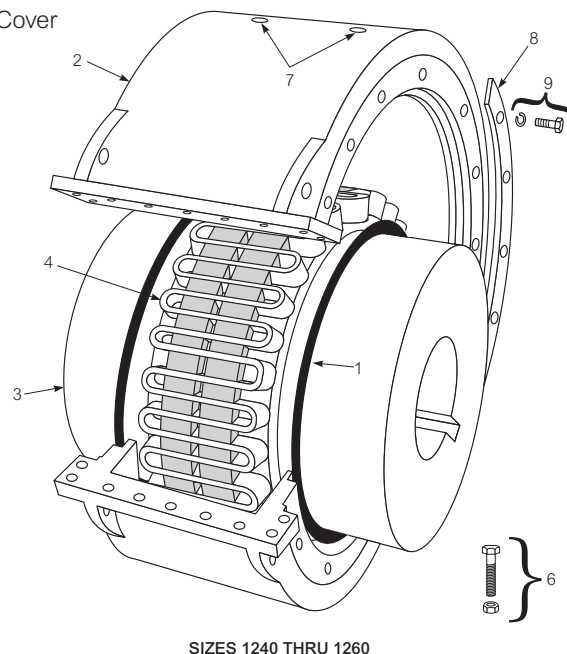
**WARNING:** Mixing grid coupling components from different manufacturers may cause premature failure and personal or property damage from flying debris.

### PART NUMBERS

1. Seal (T10)
2. Cover (T10)
3. Hub (Specify bore and keyway)
4. Grid
5. Gasket (T10)
6. Fasteners (T10) — Cover
7. Lube Plug
8. Seal Retainer
9. Fasteners, Seal Retainer (T10)



SIZES 1150 THRU 1230



SIZES 1240 THRU 1260

### ORDER INFORMATION

1. Identify part(s) required by name above.
2. Furnish the following information.

**EXAMPLE:**

**Coupling Size: 1150**  
**Coupling Type: T10**  
**Bore: 7.500**  
**Keyway: 1.75 x .75**  
**Bore: 8.000**  
**Keyway: 2.00 x .75**

3. Contact your Rexnord Distributor or Rexnord for price and availability.