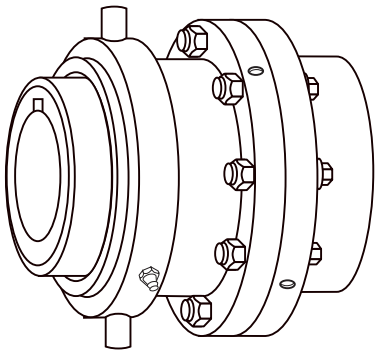
How To Use This Manual

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

Table of Contents

Type G72



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

INTRODUCTION

This manual applies to standard Falk Type G72 disconnect couplings with exposed bolts. For couplings furnished with special features, refer to assembly drawing furnished with coupling for proper assembly arrangement and any additional installation or maintenance requirements. Type G72 couplings are recommended for horizontal application only. For vertical applications, refer to the Factory.

Use Type G72 couplings for applications requiring a quick connect and disconnect function. Changeover must be performed under NO LOAD, STANDSTILL condition. Also covered in this manual is the optional hand operated shifter mechanism, used to shift and secure the proper position of the sleeve assembly. A shifting lever assembly drawing is required for assembly and should be found packaged with the lever components.

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

Sleeves have 1/8 NPT lube holes for Sizes 1010G thru 1035G and 1/4 NPT for Sizes 1040G thru 1070G. Use a standard grease gun and lube fittings. Shifting collars have 1/8 NPT lube fittings.

LUBRICATION

Adequate lubrication is essential for satisfactory operation. 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 every six months. If coupling leaks grease, is exposed to extreme temperatures, excessive moisture, experiences frequent reversals or axial movements; 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).

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 tooth mesh area of gear couplings resulting in premature mesh 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 #1/2 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.

Gear couplings initially lubricated with Falk Long Term Grease (LTG) will not require re-lubrication for up to three years.

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

CAUTION: Do not use LTG in bearings. Do not use LTG for low speed applications. Refer to Table 3 for coupling speed range of LTG grease.

Specifications — Falk LTG

The values shown are typical and slight variations are permissible.

AMBIENT TEMPERATURE RANGE — –20°F (–29°C) to 250°F (121°C). Minimum Pump = 20°F (–7°C)

MINIMUM BASE OIL VISCOSITY — 3300SSU (715cSt) @ 100°F (38°C).

THICKENER — Lithium soap/polymer.

CENTRIFUGE SEPARATION CHARACTERISTICS — ASTM #D4425-84 (Centrifuge Test) — K36 = 2/24 max., very high resistance to centrifuging.

NLGI GRADE (ASTM D–217) — 1/2.

CONSISTENCY (ASTM D–217) – 60 stroke worked penetration value in the range of 315 to 360 measured @ 77°F (25°C).

MINIMUM DROPPING POINT — 350°F (177°C) minimum.

MINIMUM TIMKEN EP O.K. LOAD — 40 lbs. (18 kg)

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

Packaging

14 oz (0,4 kg) CARTRIDGES — For use in standard grease guns.

CASE LOTS OF ten 14 oz (0,4 kg) or sixty 14 oz CARTRIDGES.

35 lb (16 kg) PAIL — Ideal for larger size couplings or many smaller sizes.

120 lb (54 kg) KEG & 400 lb (181 kg) DRUM — For plants with central storage areas. A pump with a pressurized follower plate is required for dispensing grease.

General Purpose Grease

Bi-annual Lubrication — The following specifications and lubricants for general purpose grease apply to gear couplings that are lubricated bi-annually and operate within ambient temperatures of –30°F (–34°C) to 200°F (93°C). For temperatures beyond this range, refer to the Factory. For normal service, use a NLGI #1 extreme pressure (EP) grease EXCEPT when the coupling speed is less than the minimum specified in Table 3, Page 6. At these lower speeds, use a NLGI #0 extreme pressure (EP) grease. When one or more gear couplings in an application require NLGI #0 grease, the same grease may be used in all of the couplings. DO NOT use cup grease.

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

Lubricants listed in Tables 1 and 2 on Pages 2 and 3 are typical products only and should not be construed as exclusive recommendations.

Specifications — General Purpose Coupling Lubricants

The values shown are typical and slight variations are permissible.

DROPPING POINT — 300°F (149°C) or higher.

CONSISTENCY — See Tables 1 or 2 on Pages 2 and 3.

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 with EP additives..

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

CLEAN — Free from foreign inclusions.

TABLE 1 — NLGI #1 EP Grease

Coupling speed range . . . . . See Table 3
Temperature range . . . . . –30°F to +200°F (–34°C to 93°C)
Worked penetration at 77°F (25°C) 310-340
Dropping point . . . . . 300°F (149°C) or higher
Texture . . . . . Smooth or fibrous
Minimum Timken EP O.K. load . . . . . 30 lbs. (14 kg)
Does not corrode steel or swell or deteriorate synthetic seals.

Manufacturer	Lubricant ★
Amoco Oil Co.	Rykon Grease 1 EP
BP Oil Co.	Energrease LS-EP1
Chevron U.S.A. Inc.	Dura-Lith EP1
Citgo Petroleum Corp.	Premium Lithium Grease EP 1
Conoco Inc.	EP Conolith Grease #1
Exxon Company, U.S.A.	Lidok EP 1
Imperial Oil Limited	Ronek EP 1
Kendall Refining Co.	Lithium Grease L-416
Keystone Div. Pennwalt Corp.	Zeniplex #1
Lyondell Lubricants	Litholine Complex EP1
Mobil Oil Corp.	Mobilux EP 1
Petro-Canada Products	Multipurpose EP1
Phillips 66 Co.	Philube Blue EP
Shell Oil Co.	Alvania EP Grease #1
Shell Canada Ltd.	Alvania Grease EP1
Sun Oil Co.	Sun Prestige 741 EP
Texaco Lubricants	Multifak EP 1
Unocal 76 (East & West)	Unoba EP1

★ Lubricants listed may not be suitable for use in the food processing industry; check with lube manufacturer for approved lubricants.

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TABLE 2 — NLGI #0 EP Grease

Coupling speed range . . . . . See Table 3
Temperature range . . . . . –30°F to +200°F (–34°C to +93°C)
Worked penetration at 77°F (25°C) 355-385
Dropping point . . . . . 300°F (149°C) or higher
Texture . . . . . Smooth or fibrous
Minimum Timken EP O.K. load . . . . . 30 lbs. (14 kg)
Does not corrode steel or swell or deteriorate synthetic seals.

Manufacturer	Lubricant ★
Amoco Oil Company	Rykon Premium Grease 0 EP
BP Oil Co.	Energrease LS-EPO
Chevron U.S.A. Inc.	Dura-Lith Grease EPO
Citgo Petroleum Corp.	Premium Lithium Grease EP 0
Conoco Inc.	EP Conolith Grease # 0
Exxon Company, U.S. A.	Lidok EP 0
Kendall Refining Co.	Lithium Grease L-406
Keystone Div. Pennwalt Corp.	Zeniplex #0
Mobil Oil Company	Mobilux EP 0
Petro-Canada Products	Multipurpose Lotemp EP Grease
Shell Oil Company	Alvania EP Grease RO
Shell Canada Ltd.	Alvania Grease EPW
Sun Oil Co.	Sun Prestige 740 EP
Texaco Lubricants	Multifak EP O
Union 76 (East & West)	Unoba EPO

★ Lubricants listed may not be suitable for use in the food processing industry; check with lube manufacturer for approved lubricants.

INSTALLATION

Only standard mechanics tools, torque wrenches, dial indicator and feeler gauges are required to install gear couplings. Clean all parts using a non-flammable solvent. Check hubs, shafts, and keyways for burrs. DO NOT heat clearance fit hubs. Use a lubricant that meets the specifications on Pages 2 and 3. Pack sleeve teeth with grease and lightly coat seals with grease BEFORE assembly. The required amount of grease is listed in Table 3, Page 6. Make certain flange fasteners are tightened to the required torque listed in Table 3, Page 6.

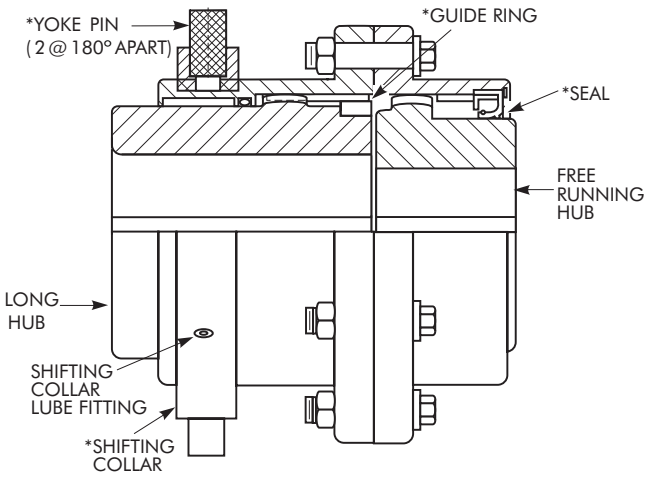
Interference Fit Hubs — Unless otherwise specified, gear couplings are furnished for an interference fit without setscrew. Heat hubs to a maximum 275°F(135°C) using an oven, torch, induction heater or an oil bath.

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°F(135°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°F(177°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.

Maximize Performance & 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.



✱ Indicates components pre-assembled by Falk.

1 — Determine Correct Sleeve & Hub Assembly

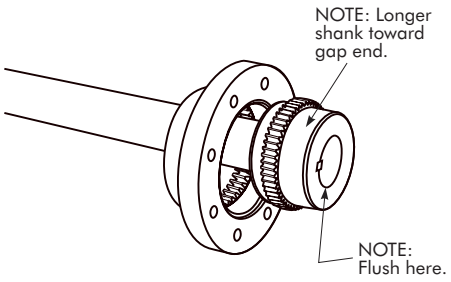
Coupling sleeves must be assembled with proper mating hub as illustrated above.

2 — Mount Flanged Sleeve, Seal & Hubs

Place the flanged sleeve WITH seal ring on the shaft BEFORE mounting the hubs.

IMPORTANT: Mount hubs as shown above with SHORT shank toward gap.

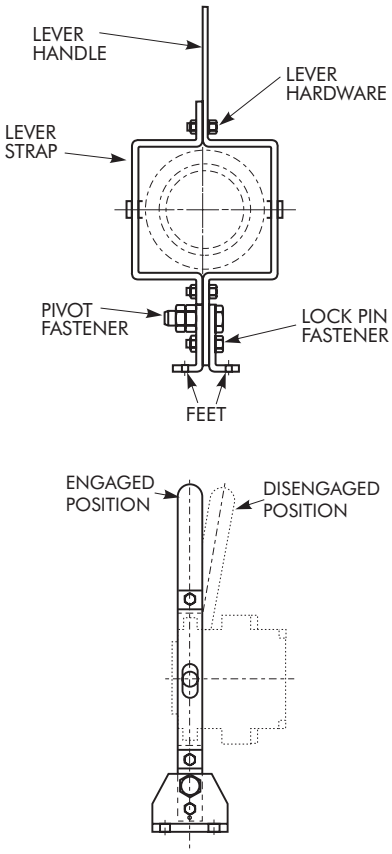
Mount hubs so that each face is flush with the end of its shaft. Allow hubs to cool before proceeding. Seal keyways to prevent leakage. Insert setscrews (if required) and tighten.



3 — Lubricate Shifting Collar

Lube shifting collar thru lube fitting in collar using Dow Corning (Molykote) BR2-PLUS or equivalent. Lube and rotate collar around sleeve to distribute grease. Continue to add lube until an excess forms around sleeve groove surfaces.

NOTE: If coupling was not supplied with an optional shifting lever, assemble shifting lever (furnished by others) as required, and proceed to Step 5.



TYPICAL SHIFTING LEVER ASSEMBLY. DESIGNS MAY VARY.

4 — Assemble Factory Supplied Shifter Lever

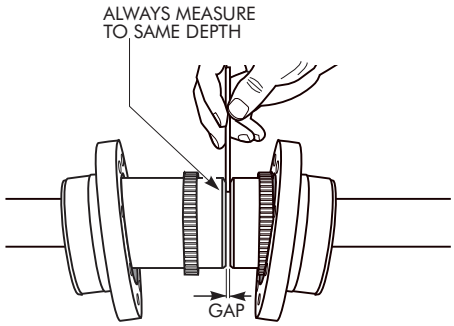
Use the assembly drawing packaged with lever along with the following instructions. Assemble lever handle to feet with pivot fastener. Tighten pivot fastener so lever can freely pivot inside of feet. Position lever handle at right angle to feet and install lock pin fastener thru lined-up holes, and tighten. Assemble lever handle and strap around coupling so shifter yoke pins are positioned thru lever slots. Line up edges of lever strap and handle; then tighten lever hardware.

Locate lever in proper position in relation to long hub. Refer to shifter lever assembly drawing for dimensions. Shifter lever must also be positioned so that shifter yoke pin diameters are parallel to lever slot faces, with equal clearance around shifting collar. Fasten lever to foundation on structure. (Foundation fasteners are not normally furnished with lever.) Remove lever lock pin fastener and slide sleeve back from coupling gap.

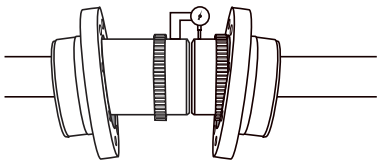
5 — Gap and Angular Alignment

Position equipment in approximate alignment with approximate gap specified in Table 3, Page 6.

Use a spacer bar equal in thickness to gap specified in Table 3. Insert bar, as shown above right 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

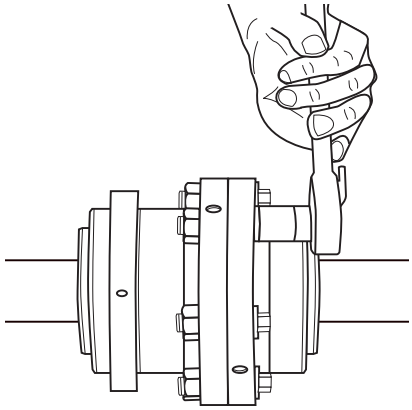


exceed the INSTALLATION ANGULAR limit specified in Table 3.



6 — Offset Alignment

Attach a dial indicator to the hub most easily rotated. Rotate hub with dial indicator one complete turn while indicating barrel diameter of other hub. The total indicator reading DIVIDED by two must not exceed the INSTALLATION OFFSET limit specified in Table 3, Page 6. Tighten all foundation bolts and repeat Steps 5 and 6. Realign coupling if necessary. Grease the hub teeth.



7 — Insert Gasket and Join Flanged Sleeves

Insert gasket between flanges. Position flanged sleeves with lube holes at about 90° and draw flanged sleeves into position. Use only the fasteners furnished with the coupling. IMPORTANT: Tighten fasteners to torques specified in Table 3 on Page 6.

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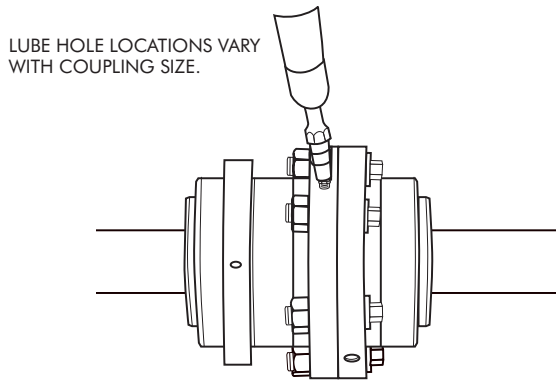
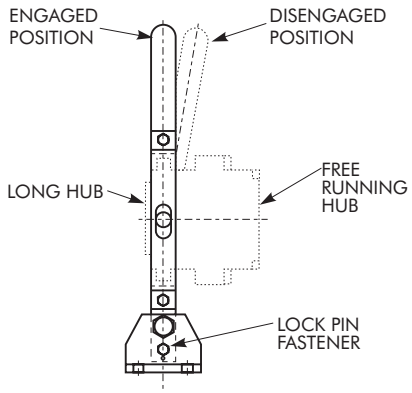
8 — Lubricate Coupling



Remove all lube plugs and pump recommended grease into the coupling until an excess flows through an open lube hole and then plug that hole. Continue this procedure until lubricant has flowed through last open lube hole. Remove lube fitting and lube plug. Shift coupling sleeves back and forth thru full travel to purge excess grease from coupling. Some indexing of connecting shafts may be necessary to align coupling teeth for meshing. Insert all lube plugs before operating.



9 — To Engage Coupling:

With coupling at rest and lock pin fastener removed, slide sleeve toward long hub to engage coupling. When engaging, some indexing of connecting shafts may be necessary to align coupling teeth for meshing. Excessive force to slide coupling sleeve may indicate poor coupling alignment, coupling tooth mismatch, improper coupling gap or incorrect assembly of coupling or shifter lever. Correct problem before operating coupling. Lock sleeve assembly into engaged position with shifting lever lock pin fastener.

10 — To Disengage Coupling:

With coupling at rest and all external loads removed from drive, remove shifting lever lock pin fastener, slide sleeve toward free running hub to disengage coupling. Lock sleeve assembly into disengaged position using lock pin fastener.

MAINTENANCE

Frequency of lubricating shifting collar varies with service duty of coupling. Lubricate as required per Step 3, Page 3.

BI-ANNUAL MAINTENANCE

Re-lubricate coupling if using general purpose greases. If coupling leaks grease, is exposed to extreme temperatures, excessive moisture or frequent reversals, frequent lubrication may be required.

ANNUAL MAINTENANCE

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

1. Check alignment per Steps 5 and 6, Page 4. If the maximum operating misalignment values are exceeded, realign the coupling to the recommended installation values. See Table 3, Page 6 for installation and maximum operating misalignment.
2. Check tightening torques of all fasteners.
3. Inspect seal ring and gasket to determine if replacement is required.
4. Re-lubricate coupling if using general purpose grease.

Table 3 — Installation & Alignment Data ★

SIZE			1010	1015	1020	1025	1030	1035	1040	1045	1050	1055	1060	1070
DIMENSIONS — INCHES														
Gap-Hub Separation		G±10%	.125	.125	.125	.188	.188	.250	.250	.312	.312	.312	.312	.375
Installation Limits		Offset Max	.002	.002	.002	.003	.003	.004	.005	.005	.006	.007	.008	.008
		Angular Max	.006	.007	.009	.011	.013	.015	.018	.020	.022	.024	.026	.031
Operating Limits †		Offset Max	.005	.007	.009	.012	.014	.017	.020	.020	.026	.027	.032	.033
		Angular Max	.024	.030	.036	.045	.052	.061	.072	.081	.087	.096	.105	.122
Coupling Speed Range (rpm)	Falk LTG or NLGI #1 Grease	Min ‡	1030	700	550	460	380	330	290	250	230	210	190	160
		Allow	4200	3200	2450	2000	1650	1530	1200	1060	950	860	830	680
Grease-lb	G72		.07	.12	.20	.38	.60	.90	1.50	1.70	3.00	3.70	5.25	7.20
Flange Bolt Wrench Size			.250	.375	.500	.625	.625	.750	.750	.750	.875	.875	.875	1.000
Flange Bolt Torque lb-in			108	372	900	1800	1800	3000	3000	3000	3000	3000	3000	3000
DIMENSIONS — MILLIMETERS														
Gap-Hub Separation		G±10%	3,18	3,18	3,18	4,78	4,78	6,35	6,35	7,92	7,92	7,92	7,92	9,53
Installation Limits		Offset Max	0,05	0,05	0,05	0,08	0,08	0,10	0,13	0,13	0,15	0,18	0,20	0,20
		Angular Max	0,15	0,18	0,23	0,28	0,33	0,38	0,46	0,51	0,56	0,61	0,66	0,79
Operating Limits †		Offset Max	0,13	0,18	0,23	0,30	0,36	0,43	0,51	0,51	0,66	0,69	0,81	0,84
		Angular Max	0,61	0,76	0,91	1,14	1,32	1,55	1,83	2,06	2,21	2,44	2,67	3,10
Coupling Speed Range (rpm)	Falk LTG or NLGI #1 Grease	Min ‡	1030	700	550	460	380	330	290	250	230	210	190	160
		Allow	4200	3200	2450	2000	1650	1530	1200	1060	950	860	830	680
Grease-kg	G72		0,0318	0,0544	0,0907	0,172	0,272	0,408	0,680	0,771	1,36	1,68	2,38	3,27
Flange Bolt Wrench Size			6,35	9,53	12,70	15,88	15,88	19,05	19,05	19,05	22,23	22,23	22,23	25,40
Flange Bolt Torque Nm			12,2	42,0	102	203	203	339	339	339	339	339	339	339

★ Refer to Selection Guide for maximum bores and Engineering 427-108 for reboring instructions.

† Flexible couplings are designed to accommodate changes in operating conditions. Coupling life expectancy between initial alignment and maximum operating limits is a function of load, speed and lubrication. Limits shown are extremes and should not be combined. Application requirements in excess of $^{3}/_{4}^{\circ}$ misalignment per flex-half coupling should be referred to the Factory for review.

‡ Couplings with NLGI #0 grease may be operated at any speed between zero and the allowable shown.

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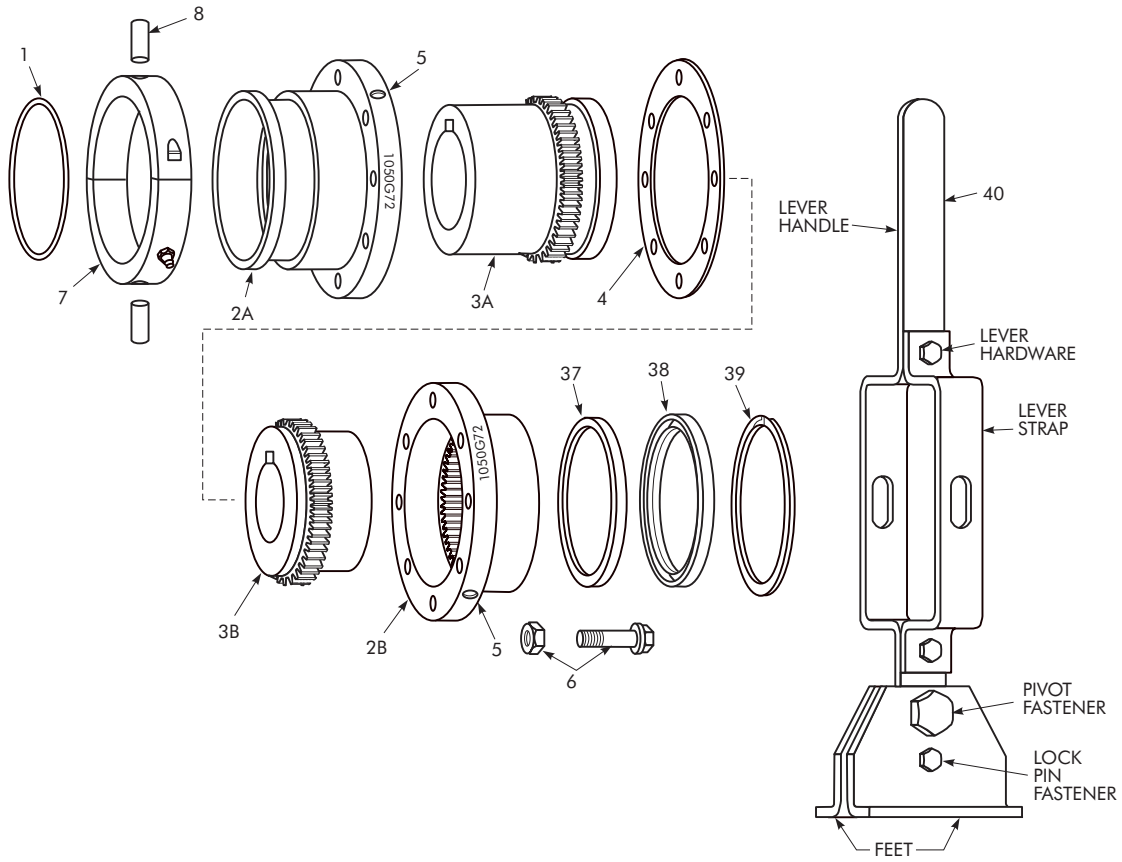
PARTS IDENTIFICATION

All coupling parts have identifying size and part numbers as illustrated below.

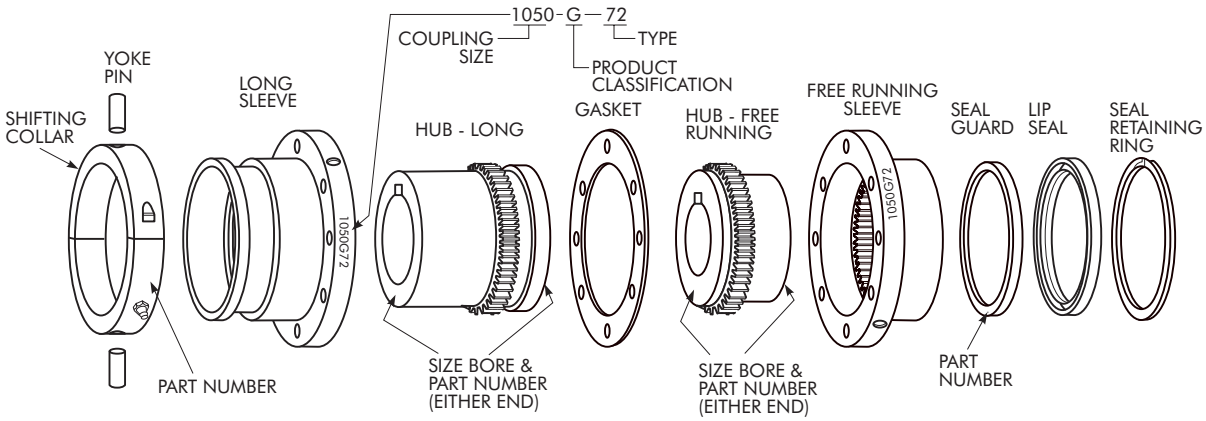
When ordering parts, always SPECIFY SIZE, TYPE, HUB BORE, KEYWAY, and PART NUMBER found on each item.



PART IDENTIFICATION

1. Seal Ring
2A. Sleeve – Long
2B. Sleeve – Free Running
3A. Hub – Long
3B. Hub – Free Running
4. Gasket
5. Lube Plug
6. Fasteners
7. Shifting Collar
8. Yoke Pin (2 @ 180° apart)
37. Seal Guard (Size 1070 only)
38. Lip Seal
39. Seal Retaining Ring (not required for Sizes 1010, 1020 & 1070)
40. Shifting Lever (not available by components)

PART NUMBER LOCATION



ORDER INFORMATION

1. Identify part(s) required by name on Page 7.
2. Furnish the following information.

   EXAMPLE:

   Coupling Size: 1050
   Coupling Type: G72
   Hub — Long
   Bore: 6.750
   Keyway: 1.750 x .750
   Hub — Free Running
   Bore: 7.000
   Keyway: 1.750 x .750
   Shifting Lever
3. Price parts from appropriate price list and discount sheet.

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