

# Lovejoy / Sier-Bath

Flex / Rigid Coupling

Size FFR 1 thru FFR 7

## Introduction

**Carefully follow the instructions in this manual for optimum performance and trouble free service.**

This manual applies to standard Flex /Rigid type couplings. The Flex / Rigid couplings are recommended for horizontal applications only. For vertical applications please consult with Lovejoy application Engineering.

## Installation & Alignment Instructions

All parts must be clean and free of any foreign materials before attempting assembly, use a non-flammable solvent. All Parts should be examined for any damage during shipping and handling. Measurements should be taken to verify correctness of parts to meet application requirements, such as, hub and shaft fits, shaft separation, etc. Check hubs, shafts and keyways for burrs.

**1)** Install keys in respective shafts. Keys should fit shaft keyseat with a tight fit on the sides and slight clearance over the key. Coat the shafts with an anti-galling lubricant. Insure that seals and pipe plugs are in place in the gear sleeve. Lubricate around sleeve gear teeth and seal surface and place over respective shaft **before mounting hubs**. Protect shaft on which sleeve

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

*Warning: Lockout starting switch of prime mover and remove all external loads form drive before installing or servicing coupling.*

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will rest during hub installation.

**2)** Determine the mounting arrangement of the proper mating rigid hub as illustrated in figure 1. Heat hubs in either an oil bath or oven until bores are larger than shaft diameter. Mount so that the end of each hub is flush with the end of the shaft as illustrated in figure 1. Allow hubs to cool before proceeding.

**WARNING: If an oil bath is used, the oil must have a flash point of 350 F 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.**

**3)** Although the shafts may be perfectly aligned at installation they should be realigned after mounting of coupling. Position equipment in the approximate alignment with the approximate "G" dimension found on Chart 1. Align coupling using the instrument method as described below.

**4) Angular Alignment** – Using an inside micrometer, **take readings at four points 90° apart**. Adjust machines until all four readings are identical. The difference in maximum and minimum measurements must not exceed the **installation angular** limits specified in chart 1.

**5) Parallel Offset Alignment** – The dial indicator method is recommended for this procedure. Attach the dial indicator base to one hub and set the dial indicator needle in contact with the outside diameter of opposite hub. Rotate hub on which the indicator is mounted 360°, **taking indicator readings at four points 90° apart**. Adjust machines until all four readings are identical. The difference in maximum and minimum measurements must not exceed the **installation-offset** limits specified in chart 1. Relocate the indicator dial base to the opposite hub and repeat the procedure. Tighten all foundation bolts and repeat step 5 and 6. Realign coupling if necessary.

**Warning: Before installing couplings, make certain that foundations of equipment to be connected meet manufacturer's requirement. Check for "soft foot". The use of stainless steel shims is recommended.**

**6)** Coat hub teeth and body as well as inside of sleeve with coupling grease. Slide the sleeve onto its respective hub, making sure that the gear teeth mesh properly. Apply light dots of oil to one side of the gasket. Install gasket between the sleeve flanges, align the boltholes and press the side with oil against flange. Move sleeves together, with lube plugs 90° apart. Install bolts and locknuts, tightening alternately and evenly to recommended torque in chart 1. Remove the two lube plugs in each sleeve and fill coupling with the recommended amount of coupling grease indicated in Chart 1. Replace lube plugs and tighten securely.

### Maintenance

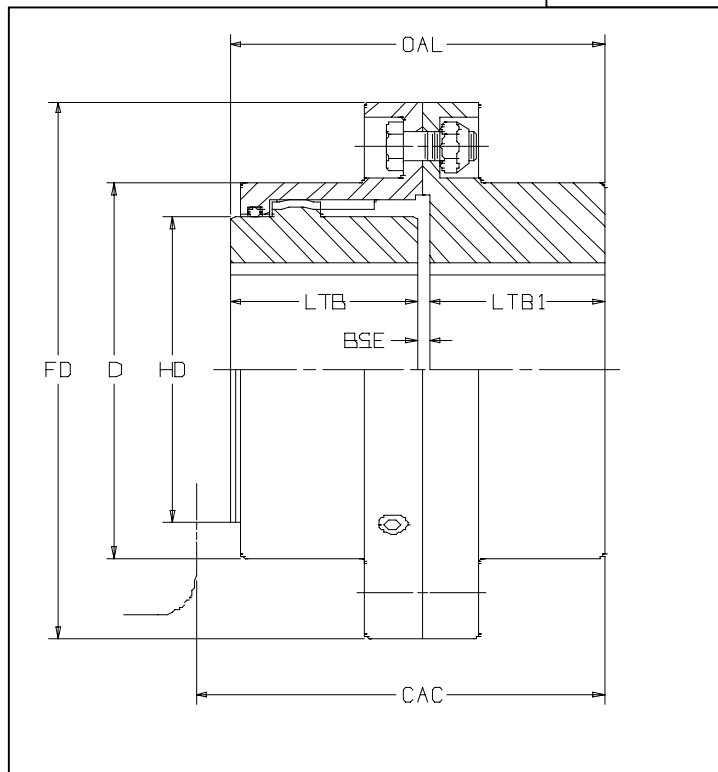
Following an initial break-in period of about 3 million revolutions (80 hr. @ 600 rpm) it is recommended that all parts be visually inspect for any cracks or breaks.

Any parts showing signs of wear or damage should be replaced. These parts are available for purchase by referencing the coupling UPC number, size, type and bolting style. Hub and sleeve should be replaced as half coupling whenever possible.

Check alignment per steps 4 and 5. If maximum operating misalignment values are exceeded, realign the coupling to the recommended installation values found in chart 1.

Item	
1	Rigid Hub
2	Gasket
3	Hex Head Cap Screw
4	PT Nut

**FIGURE 1**



**CHART 1**

Size		F1	F1.5	F2	F2.5	F3	F3.5	F4	F4.5	F5	F5.5	F6	F7
"G" hub Separation		0.125	0.125	0.125	0.19	0.19	0.25	0.25	0.312	0.312	0.312	0.312	0.375
Installation Limits	Offset MAX	0.002	0.002	0.002	0.003	0.003	0.004	0.005	0.005	0.006	0.007	0.008	0.008
	Angular MAX	0.006	0.007	0.009	0.011	0.013	0.015	0.018	0.02	0.022	0.024	0.026	0.031
Operating Limits	Offset MAX	0.005	0.007	0.009	0.012	0.014	0.017	0.02	0.02	0.026	0.027	0.032	0.033
	Angular MAX	0.024	0.03	0.036	0.045	0.052	0.061	0.072	0.081	0.087	0.096	0.105	0.122
Max Speed		6000	5500	5000	4400	4000	3500	3000	2700	2500	2200	2100	2000
Lube capacity	Weight	2 oz	4 oz	5.8 oz	10.5 oz	1 lb	1.25 lb	2 lb	3.5 lb	4.5 lb	6.5 lb	7.25 lb	9.25 lb
	Volume	1/8 pt	1/4 pt	3/8 pt	3/4 pt	1-1/8 pt	1-1/2 pt	1-7/8 pt	2 qt	2.5 qt	3.5 qt	1 gal	1-1/4 gal
Tightening Torque in-lb.		130	425	940	1750	1750	2650	2650	2650	3650	3650	3650	4850