How To Use This Manual

This manual applies to standard Falk Types HF41 & 42 couplings.

This manual provides detailed instructions on installation, maintenance and parts identification. Use the following Table of Contents to locate required information.

Table of Contents

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

Introduction

Type HF couplings are designed for horizontal operation. Refer to the Factory for coupling operation other than horizontal. The Type HF41 coupling is designed for mounting on the driving shaft and the Type HF42 coupling is designed for mounting on the driven shaft. Internal construction of these couplings are different and their mounting positions are NOT interchangeable.

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.

It is recommended that final alignment be checked using either an alignment computer or graphical analysis. Both methods allow the incorporation of "cold offsets", which will compensate for shaft position changes due to thermal growth.

WARNING: Lock out power source and remove external loads from unit before servicing unit or accessories.

When opening the drain or filler plug of a warm or hot fluid coupling, place a rag over the drain or filler plug hole and loosen the plug slowly to relieve any internal pressure.

Consult applicable local and national safety codes for proper guarding of rotating members. Guard must not restrict free flow of air, but the portion of the guard in line with fusible plugs must be solid construction.

DO NOT PAINT fluid coupling. Painting will reduce fluid coupling thermal heat dissipation characteristics.

Driven equipment must be level.

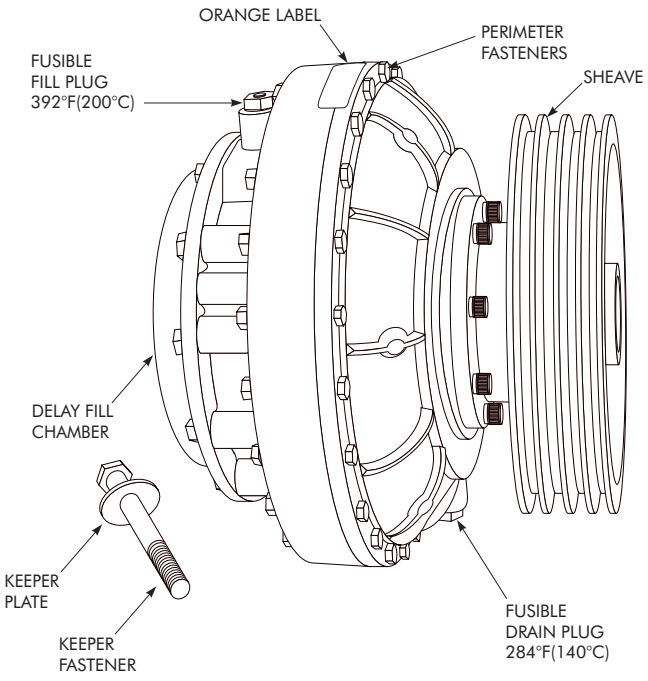


Figure 1

Identification:

Size and Type are stamped on coupling perimeter. Refer to the Factory for replacement parts.

Fluids

The following specifications and fluids listed in Table 1 apply to Rexnord fluid couplings. Refer to Factory for use of fire resistant fluids. NOTE: Fluids listed are typical products ONLY and should not be construed as exclusive recommendations.

ISO Viscosity Grade — 46

Viscosity at 104°F(40°C) — 46 cSt (215 SSU)

Viscosity Index — 105

Pour Point — Must be 5°F(3°C) lower than minimum starting temperature.

Flash Point — 400°F(204°C)

Specific Gravity — 0.87

Antioxidant and Anti-foaming Additives

TABLE 1 — Fluids & Operating Temperatures

Manufacturer	Operating Temperature Greater Than:		
	20°F (–7°C)	–20°F (–29°C)	–50°F (–46°C)
Amoco Oil Co.	American Ind. Oil 46	American Ind. Oil 46	...
Exxon Co., USA	Teresstic 46	...	...
Gulf Oil Corp.	Harmony 46	...	...
Mobil Oil Corp.	DTE Medium	Mobilfluid 423	SHC 624
Shell Oil Co.	Tellus 46	...	...
Texaco Inc.	Rando 46	Rando 46	...
Texaco Canada	Regal R&O 46	...	...
Union Oil Co. of CA	Unax VG 46	Unax VG 46	...

Annual Maintenance

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

Check fluid annually or more often if it is subject to overheating. Overheated fluid which becomes dark in color and gives off a burnt odor, must be changed. Fluid suppliers can test coupling fluid samples periodically and recommend economical change periods based on the rate of degradation. Continuous operating temperature must not exceed 212°F(100°C).

Lifting

Sling between coupling and sheave using a complete wrap as shown in Figure 2.

CAUTION: Depending upon sheave size the balance will change. Ensure proper balance before lifting.

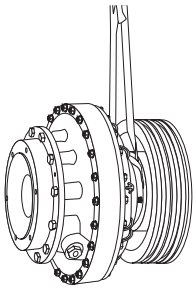


Figure 2

Installation

Only standard mechanics tools, torque wrenches, feeler gauges, straight edges and a bevel protractor with spirit level or Rexnord Angle Finder are required to install Rexnord fluid couplings.

1. Drill and Tap Shaft

A. Lock out starting switch of prime mover.

B. Drill and tap shaft on which the coupling is to be mounted. Tapped hole must be centered and parallel with the shaft centerline per the following:

Size 480: .875"-9UNC x 1.5" minimum full thread depth

Size 584: 1.000"-8UNC x 1.5" minimum full thread depth

2. Install Coupling

NOTE: Make certain belts will pass over coupling. If not; place them on sheave before assembling.

A. Check for nicks or burrs in coupling bore.

B. Check fit of key in keyways and secure in shaft keyway.

C. Coat shaft with an anti-seize compound.

D. Install spacer in coupling bore and position coupling bore and keyway in alignment with shaft, Figure 3.

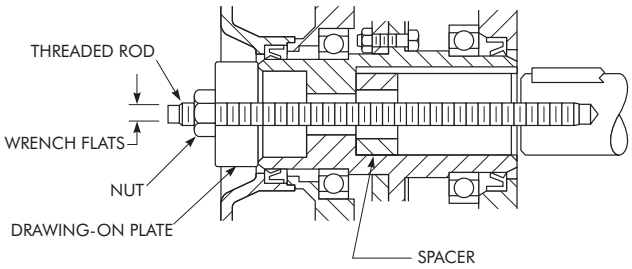


Figure 3

E. Insert threaded rod through coupling bore and thread into tapped hole in shaft, Figure 3.

F. Assemble drawing on plate and nut on threaded rod. Tighten nut while holding threaded rod at wrench flats until seated against spacer.

G. Remove threaded rod and insert keeper plate and fastener with lockwasher, Figure 4. Carefully thread into tapped hole in shaft and tighten to torque specified in Table 2.

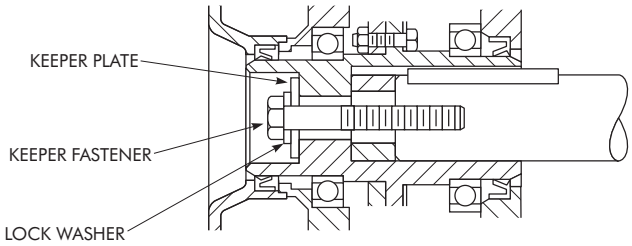


Figure 4

TABLE 2 — Tightening Torques, Threaded Rod & Drawing on Plate (Dimensions – Inches)

Cplg. Size	Keeper Plate Fastener		Threaded Rod * Dia x Length (Min)	Drawing On Plate OD (Max) x ID x Thickness (Min)
	Size	Torque (lb-ft)		
480	.875-9UNC	120	.875-9UNC x 23	3.938 x 1.000 x 3.000
584	1.000-8UNC	180	1.000-8UNC x 25	4.410 x 1.125 x 3.000

Rexnord Industries, LLC, Coupling Group
5555 South Moorland Road, New Berlin, WI 53151-7953 USA Telephone: 262-796-4060
Fax: 262-796-4064 e-mail: info@rexnord.com web: www.rexnord.com

CAUTION: Make certain there is enough clearance between sheave fasteners and driving or driven equipment, Figure 5.

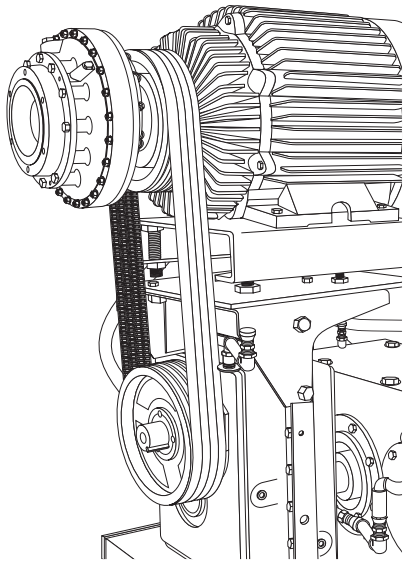


Figure 5

3. Sheave Connection

A. Mount couplings and sheaves as close to unit or motor housing as possible to avoid undue bearing load or shaft deflection.

B. Align sheaves square and parallel by placing a straight edge across the face of the sheaves, Figure 6.

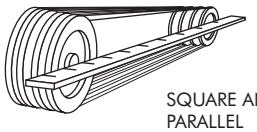


Figure 6

C. Adjust belt tension. The ideal tension is the lowest tension at which the belt will not slip under peak load conditions. Check the belt tension frequently during the first 24 to 48 hours of run-in operation. Over tightening belts will shorten belt and bearing life. Keep kelts free from foreign material which may cause slippage. Inspect the V-belt drive periodically; retension the belts if they are slipping.

4. Fill Fluid Coupling

A. Rotate fluid coupling until fill plug is on top and remove it, (Both fill and drain plugs have metric threads). The fill plug is on the opposite side of the sheave in the fluid coupling, See Figure 1, Page 1.

CAUTION: DO NOT fill coupling through drain hole.

B. Fill with the required amount of fluid shown on the orange label on the fluid coupling perimeter. Fluid must meet the specifications listed on Page 1. Do not remove the fluid fill label, refer to the Factory if label is missing.

C. Before reinstalling fill plug, check fill angle as described in the following step.

5. Check Fill Angle

A. Refer to fluid fill label described in the previous step for required fill angle.

B. Using a bevel protractor with spirit level, set the protractor for the required fill angle and place it on flat boss of filler hole as shown in Figure 7.

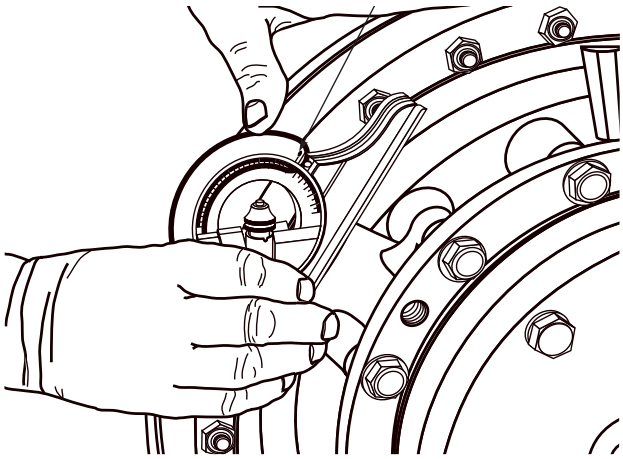


Figure 7

C. Slowly rotate fluid coupling until bubble in spirit level is centered, Figure 8. Fluid must appear at the lip of the hole. Add or drain fluid until level is correct. Figure 9 shows fill angle range.

D. Reinstall fill plug with seal ring and tighten to 33 lb-ft.

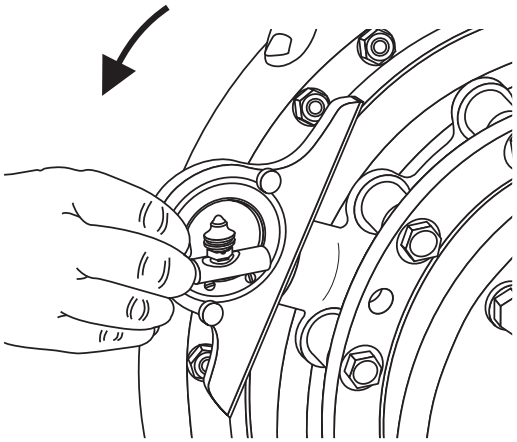


Figure 8

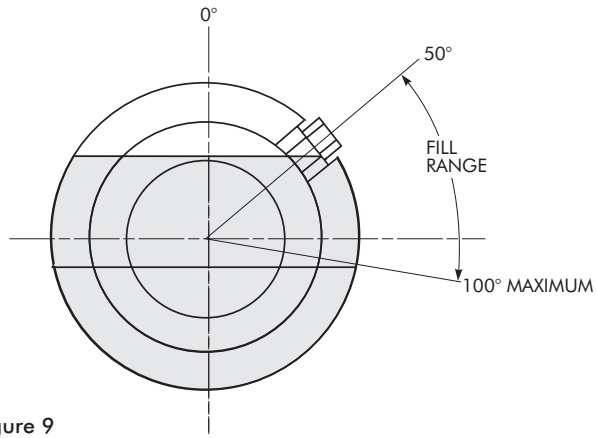


Figure 9

6. Fusible Plugs

A. Fusible plugs in the fill or drain holes have solder cores that melt at the temperatures shown in Figure 1, Page 1. One extra 284°F(140°C) plug is furnished with each coupling.

B. If solder in fusible plug melts due to overheating from stalling or overloading, refer to Table 3, Page 5 and correct the cause of overheating.

CAUTION: DO NOT replace fusible plugs with solid plugs. Use of solid plugs can result in coupling failure from overheating unless used in conjunction with a thermal trip switch. Refer to the Factory for thermal trip switch feature.

C. Replace fusible plugs as instructed in Step 5D.

D. Refill coupling with clean fluid as instructed in Steps 4 & 5.

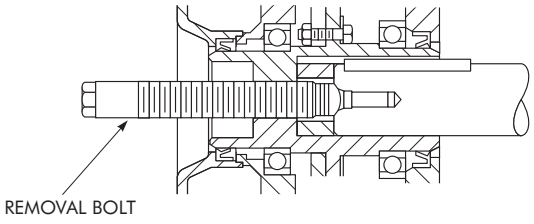
7. Coupling Removal

A. Remove belts and support coupling with a sling as shown in Figure 2, Page 2.

B. Remove keeper fastener, washer and plate.

C Coat threads of removal bolt, Figure 10, with oil. Thread bolt into coupling bore until contact is made with the shaft. Tighten bolt and strike head of bolt sharply with a hammer to break coupling loose. Continue to tighten bolt until coupling is removed from shaft.

NOTE: Refer to the Factory for special removal bolt.



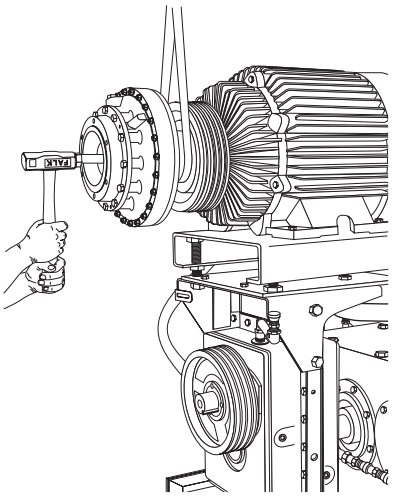


Figure 10

Rexnord Industries, LLC, Coupling Group
5555 South Moorland Road, New Berlin, WI 53151-7953 USA Telephone: 262-796-4060
Fax: 262-796-4064 e-mail: info@rexnord.com web: www.rexnord.com

TABLE 3 — Startup and Trouble Shooting

Problem	Possible Cause	Solution
Driven shaft fails to reach specified speed.	Drive motor defective or incorrectly connected.	Check motor connection, speed, amperage draw and power draw.
	Driven machine jammed.	Check driven machine and remove jam.
	Power consumption exceeds coupling capacity at specified fill angle.	★
	Coupling over or under filled.	Re-check fill angle per Step 5.
	Coupling leaking.	Correct source of leakage and re-check fill angle per Step 5.
Fusible plugs melt.	Coupling under filled.	Re-check fill angle per Step 5.
	Coupling leaking.	Correct source of leakage and re-check fill angle per Step 5.
	Driven machine jammed.	Check driven machine and remove jam.
	Power consumption exceeds coupling capacity at specified fill angle.	★
Coupling vibration exceeds acceptable limits.	Incorrect shaft couling alignment.	Re-align per instructions in shaft coupling service manual.
	Incorrect shaft coupling alignment due to thermal growth.	Check "HOT" alignment and adjust to compensate for thermal growth.
	Worn shaft coupling parts.	Correct cause of wear and replace worn parts.
	Loose foundation, shaft coupling or adapter fasteners.	Check and tighten fasteners accordingly.
	Damaged fluid coupling bearing.	Return fluid coupling to Factory for bearing replacement.

★ Increase fluid fill by decreasing fill angle in 5° increments to a minimum of 50°. If drive shaft still does not reach specified speed, consult the Factory.

TABLE 4 — Drive Data Records

Equipment Identification . . . . . .

Motor/Brake Hp . . . . . @ . . . . . Input RPM . . . . . .

Fluid Coupling Size . . . . . .

Fill Angle . . . . . Degrees. Fill Volume. . . . . Fl. Oz.

Falk Master Order Number . . . . . Date Installed . . . . . .

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