

## Sizes 5407 and 5415

### Introduction

The following instructions apply to INSTALLATION ONLY of internal backstops in horizontal drives, Sizes 5407 and 5415 double reduction.

**WARNING:** If backstop is to be replaced, the high speed shaft must also be replaced. Refer to instructions regarding high speed shaft replacement in Owners Manual 378-206, Section III.

Remove all external loads from system before servicing drive or accessories, and lock out starting switch of prime mover.

### Lubricant

**PETROLEUM BASED LUBRICANTS** — Use R & O type lubricants which do not contain anti-wear (AW) additives if the drive is equipped with an internal backstop.

**CAUTION:** Do not use EP lubricants or lubricants with anti-wear additives or lubricant formulations including sulfur, phosphorus, chlorine, lead derivatives, graphite or molybdenum disulfides in drives equipped with internal backstops. Refer to Owners Manual 378-206, Appendix A, for proper selection of petroleum based lubricants. Use of an improper lubricant will contribute to premature wear or malfunction of the backstop.

**SYNTHETIC LUBRICANTS** — Synthetic lubricants of the polyalphaolefin type maybe used in drives with internal backstops.

Before installing backstop, check direction of free rotation (overrunning) indicated by the arrow etched on each side of the backstop.

### Backstop Application

Backstops are designed to prevent reverse rotation or backrun without backlash in applications such as conveyors, bucket elevators, fans, rotary pumps and kilns. Backstops are not approved for use on systems that are designed for handling of people such as elevators, manlifts, ski tows and ski lifts. DO NOT use a backstop as a substitute for a brake.

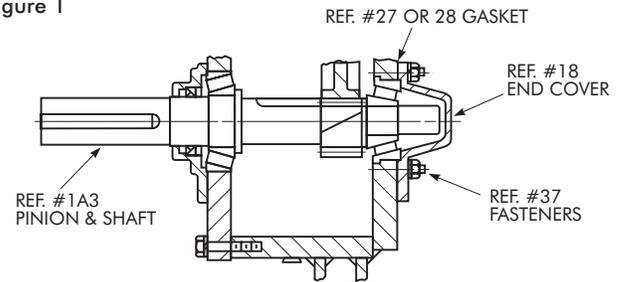
### Indexing

DO NOT use the backstop for indexing applications. The backstop is designed to prevent reverse rotation five times or less in eight hours, with one minute or more in overrunning direction between backstopping load applications. If backstopping operations are more frequent, or the time between operations is less than one minute, the backstop is classified as an indexing device and must be referred to the Factory.

### Installation

1. Drain oil from the drive. If a backstop is being added to an existing drive, for Size 5415, remove and discard the original end cover, Ref. #18; fasteners, Ref. #37; and gasket, Figure 1. For Size 5407, remove and discard the original end cover, Ref. #18; gasket and four short studs. Install longer studs, Ref. #38, provided with the kit. The hex nuts removed from original shaft cover assembly will be required for reassembly.

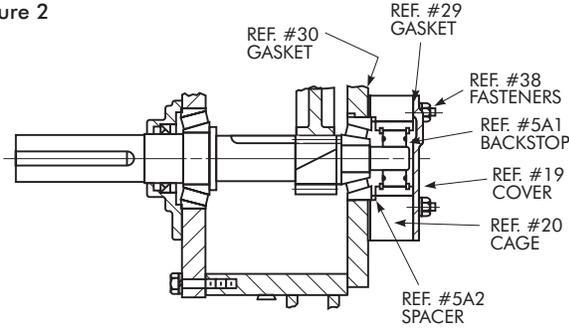
Figure 1



**NOTE:** For Sizes 5407 and 5415, axial float measurement must be within the following range: .001 Preload to .001 Float.

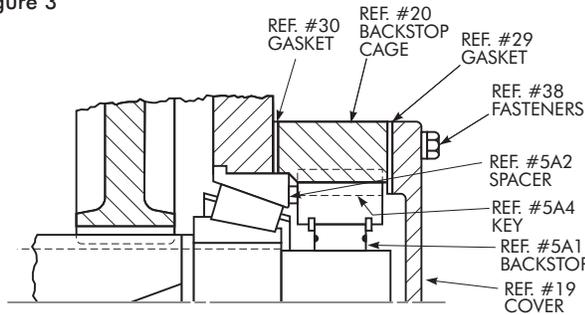
2. If existing backstop is being replaced for Sizes 5407 and 5415J14, remove cover, Ref. #19; backstop, Ref. #5A1; spacer, Ref. #5A2; and gasket from backstop cage. For Size 5415J25, remove cover, Ref. #19; gasket and backstop cage, Ref. #20, from housing. Remove two (2) retaining rings from bore of backstop cage. Remove backstop, Ref #5A1, from cage. For all drive sizes, note direction of rotation of high speed shaft for proper reassembly. Refer to Owners Manual 378-206, Section II for shaft and backstop inspection.
3. Remove backstop, Ref. #5A1, from the kit and wipe off excess lubricant.
4. **SIZE 5407 (FIGURE 2)** — Assemble backstop cage, Ref. #20, onto studs using one new .015" (.381 mm) shim-gasket, Ref. #30, against the housing. Slide the spacer, Ref. #5A2, into the backstop cage up against the bearing cup. Apply oil to the O.D. of the high speed shaft backstop journal and the sprags inside of the backstop. Insert key Ref #5A4 into backstop keyway. Align the key with the keyway in the backstop cage and carefully slide the backstop into the bore while slowly rotating the high speed shaft. The shaft will only rotate in one direction. DO NOT FORCE OR HAMMER; this may damage the shaft or misalign the sprags.  
Check operation of backstop by turning high speed shaft in required direction of rotation by hand. If the shaft does not rotate in the required direction, remove backstop, reverse it and reinsert it into bore as instructed above. Proceed to Step 9.

Figure 2



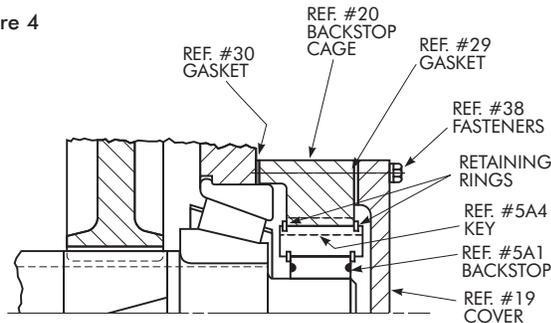
5. **SIZE 5415** — Install dowel into cage.
6. **SIZE 5415J14 (FIGURE 3)** — Apply oil to the O.D. of the high speed shaft backstop journal and the sprags inside of the backstop. Insert key, Ref #5A4, into backstop keyway. Align the key with the keyway in the backstop cage and carefully slide the backstop into cage, allowing the backstop to protrude 0.25" (6.4 mm). Coat spacer with grease to assist in holding the spacer against the backstop for assembly and slide into housing side of cage. This spacer will fit between bearing cup and backstop.

Figure 3



7. **SIZE 5415J25 (FIGURE 4)** — Install one (1) retaining ring in groove on backstop. Apply oil to the O.D. of the high speed shaft backstop journal and the sprags inside of the backstop. Insert key, Ref #5A4, into backstop keyway. Align the key with the keyway in the backstop cage and carefully slide the backstop into cage. Install second retaining ring on backstop to hold it in the cage.

Figure 4



8. **SIZE 5415 (ALL TYPES)** — Place one new .015" (.381 mm) shim-gasket, Ref. #30, against housing. **NOTE:** Position gaskets, Ref. #30 and spacer, Ref. #5A2, so that the drain back hole is open. Blocking the drain back hole will not allow oil to lubricate backstop sufficiently and could lead to premature wear, resulting in backstop or drive failure. Carefully install the backstop/cage assembly on the oiled shaft extension while slowly rotating the high speed shaft. The shaft will only rotate in one direction. **DO NOT FORCE OR HAMMER;** this may damage the shaft or misalign the sprags.

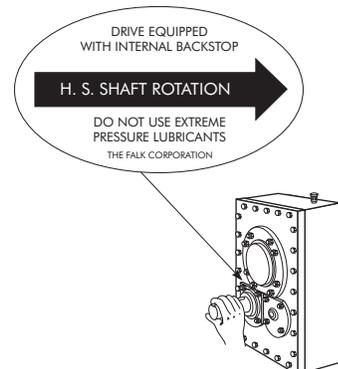
Check operation of backstop by turning high speed shaft in required direction of rotation by hand. If the shaft does not rotate in the required direction, remove backstop, reverse it and reinstall as instructed in preceding steps.

9. Rotate high speed shaft in the required direction of rotation and then reverse the rotation to lock up the backstop. Observe the position of the sprags. All Sprags must be engaged and lay in the same relative position around the shaft. If the sprags are not uniformly positioned, lightly tap the backstop cage to centralize all the sprags around the shaft and cage. If sprags cannot be uniformly positioned in this manner, remove the backstop and run a finger around the sprags in the overrunning direction. Reinstall backstop as instructed in the preceding steps.

Check the position of the sprags several times by overrunning and locking the sprags. If all sprags move uniformly, hold the backstop in the locked position and proceed to the next assembly step.

10. Install backstop cover, shim-gasket and fasteners, Ref. #19, 29 & 38. **NOTE:** Position gaskets, Ref. #30, and spacer, Ref. #5A2, so that the drain back hole is open. Blocking the drain back hole will not allow oil to lubricate backstop sufficiently and could lead to premature wear, resulting in backstop or drive failure. Cross-tighten fasteners to 70 lb-ft (95 Nm) for Size 5407, and 28 lb-ft (38 Nm) for Size 5415.
11. Clean housing surface for rotation and warning labels. Affix the rotation indicator next to high speed shaft extension to indicate the free direction of rotation, Figure 5. Fill drive to oil level specified in Owners Manual 378-206, Section I, with oil specified in Appendix A. Check motor for correct rotation before completing connection to drive.

Figure 5



## Backstop Installation — Sizes 5507 & 5608

### Introduction

The following instructions apply to INSTALLATION ONLY of self-contained, sprag type backstop, externally mounted on the high speed shaft of a horizontally mounted Sizes 5507 and 5608 double reduction drives. This backstop is sold only as an accessory for new or existing Rexnord drives. Do not use for any other application without written approval from Rexnord.

Backstops must not be dismantled or repaired. Backstops are non-serviceable components. Replace damaged backstops with new backstops from Rexnord.

Remove all external loads from system before servicing drive or accessories and lock out starting switch of prime mover.

### Backstop Application

Backstops are designed to prevent reverse rotation or backrun without backlash in applications such as conveyors, bucket elevators, fans, rotary pumps and kilns. Backstops are not approved for use on systems that are designed for handling of people such as elevators, manlifts, ski tows and ski lifts. DO NOT use a backstop as a substitute for a brake.

### Indexing

DO NOT use the backstop for indexing applications. The backstop is designed to prevent reverse rotation five times or less in eight hours, with one minute or more in overrunning direction between backstopping load applications. If backstopping operations are more frequent, or the time between operations is less than one minute, the backstop is classified as an indexing device and must be referred to the Factory.

**WARNING:** The backstop and normal associated equipment (shaft, pulleys, etc.) involve moving parts; therefore, consult local, state, OSHA and ANSI safety codes for proper guarding of rotating members and possible pinch points.

If Backstop slippage occurs, DO NOT operate. Install a new backstop before resuming operation.

### Lubricant (Grease – Backstops P/N 2924040 & 2924041)

NOTE: Unless specified otherwise, the backstop is furnished filled with grease suitable for operation in an ambient temperature range of -20°F to +125°F (-29°C to +52°C).

Consult Rexnord for lubrication recommendations when ambient temperatures are higher than 125°F (52°C), or when drives are operating in extremely humid, chemical, or dust laden atmospheres.

**CAUTION:** Do not use greases with molybdenum disulfide or other EP additives in external backstops. Use of an improper grease will contribute to premature wear or malfunction of the backstop.

Relubricate the backstop every 3 months (2 weeks in severe operating conditions). To relubricate, select and clean one grease fitting and pump grease into the backstop until fresh grease appears at both seals. Refer to manufacturer's service manual (supplied with drive) for detailed maintenance instructions and recommended lubricants.

### Lubricant (Synthetic Oil – Backstops P/N 2921858 and 2921859)

**WARNING:** Air vent must be installed before operating drive.

NOTE: Unless specified otherwise, the backstop is furnished filled with synthetic oil suitable for operation in an ambient temperature range of -55°F to +120°F (-48°C to +49°C).

Consult Rexnord for lubrication recommendations when ambient temperatures are higher than 120°F (49°C), or when drives are operating in extremely humid, chemical, or dust laden atmospheres.

**CAUTION:** Do not use lubricant with molybdenum disulfide or other EP additives in external backstops. Use of an improper lubricant will contribute to premature wear or malfunction of the backstop.

Relubricate the backstop every 6 months. Refer to manufacturer's service manual (supplied with drive) for detailed maintenance instructions and recommended lubricants.

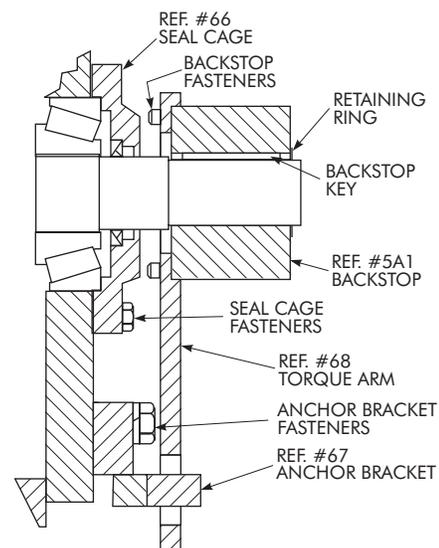
### Installation

1. Clean the backstop bore and the shaft on which the backstop will be mounted. Remove and clean shaft key and set aside.

**CAUTION:** Refer to direction of rotation arrow on backstop. Before installation, make certain that the direction of rotation is correct. Check backstop size on nameplate and make certain it is correct.

2. Attach anchor bracket, Ref. #67, to housing using fasteners provided with kit, Figure 6. Tighten fasteners to 245 lb-ft (332 Nm).
3. Secure backstop, Ref. #5A1, to torque arm, Ref. #68, using fasteners provided with kit, Figure 6. Tighten fasteners to 18 lb-ft (24 Nm). Note: Backstop will fit inside counterbore of torque arm.

Figure 6



4. Install backstop key into keyway on backstop shaft extension.
5. Align key with keyway in bore of backstop and slide backstop/torque arm assembly onto shaft. Apply pressure to end face of the backstop inner race only. Pressure applied to the outer race could preload the backstop bearings, resulting in a premature failure.  
The backstop must slip onto shaft. **DO NOT FORCE OR HAMMER** backstop on shaft. Allow for clearance between tab on anchor bracket and hole in torque arm so that the tab can pass through the hole, Figure 7.
6. Install retaining ring on backstop shaft extension to hold backstop assembly on shaft. **NOTE:** Clearance between backstop and retaining ring allows for backstop assembly to float axially on shaft.

7. Check free and locked rotation of backstop by turning the high speed shaft in required direction of rotation by hand. If the shaft does not rotate in the required direction, remove backstop assembly from shaft, disassemble backstop, Ref. #5A1, from torque arm, Ref. #68, and reverse backstop. Reassemble backstop assembly as instructed in preceding steps.
8. Clean housing surface for rotation and warning labels. Affix the rotation indicator next to high speed shaft extension to indicate the free direction of rotation, as in Figure 8. Check motor for correct rotation before completing connection to drive.

Figure 7

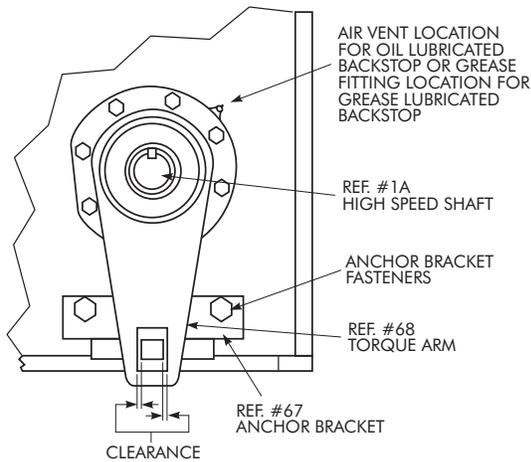


Figure 8

