

Introduction

The following instructions apply to INSTALLATION ONLY of internal backstops in horizontal drives, Sizes 4107 thru 4215 single and double reduction and Size 4307 & 4315 double reduction.

CAUTION: If backstop is to be replaced, the high speed shaft must also be replaced. Refer to instructions regarding high speed shaft replacement. (See Owners Manual 378-101, 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, 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 378-101, 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 may be 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

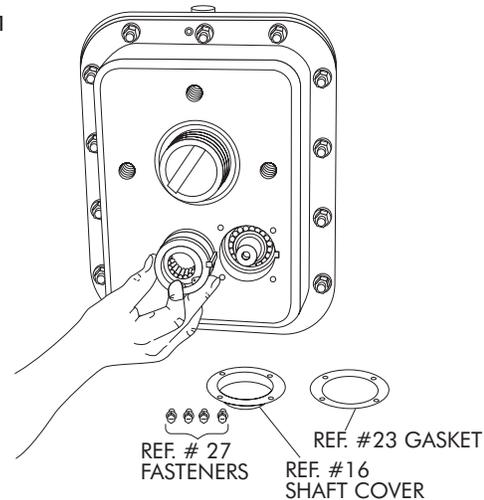
DO NOT use the backstop for indexing applications. The backstop is designed to prevent reverse rotation five times or less in eight hours, with one minute or more in overrunning direction between backstopping load applications. If backstopping operations are more frequent, or the time between operations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

Installation

1. Drain oil from drive.

If a backstop is being added to an existing drive, remove fasteners Ref. #27, gasket Ref. #23 and end cover Ref. #16, Figure 1.

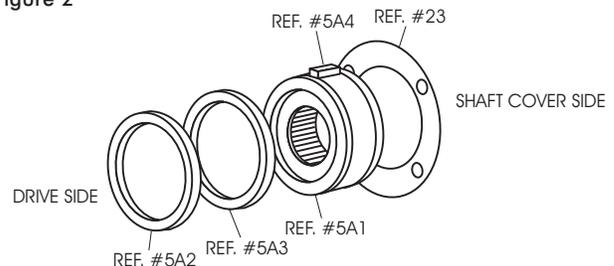
Figure 1



If a backstop is being replaced, for Sizes 4107 and 4115, remove fasteners Ref. #27, end cover Ref. #16, gasket Ref. #23, backstop Ref. #5A1 and spacer Ref. #5A3 (where necessary). For Sizes 4203 thru 4315, remove fasteners Ref. #27, end cover Ref. #16, gasket(s) Ref. #23, backstop Ref. #5A1, spacer Ref. #35A3 (all sizes) and cover spacer Ref. #17 (Size 4207 only). (See Owners Manual 378-101, Section II for complete parts list.)

2. Remove backstop Ref. #5A1 from the kit and wipe off any excess lubricant.
3. **SIZE 4107** — Assemble retaining ring 5A2 into one of the grooves on the backstop O.D., Figure 2.

Figure 2



4. **SIZE 4115J25** — Assemble retaining ring 5A2 into one of the grooves on the backstop O.D. and slide spacer Ref. #5A3 into position as illustrated in Figure 2.
5. **SIZES 4203 THRU 4315** — Insert spacer Ref. #5A3 into exposed housing bore. This spacer will fit between bearing cup and backstop. (Retaining ring supplied with backstop kit is used as spacer for Size 4207.)

6. **ALL SIZES** — 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 Figure 2. Align the key with the keyway in the exposed housing bore 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, reposition the retaining ring and spacer (where required) and reinsert it into the bore as instructed above.

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 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.

7. **SIZES 4107 THRU 4115** — Reinstall the cover Ref. #16 and spacer Ref. #17 (where applicable) using a new gasket Ref. #23 from the backstop kit of shim-gasket kit Ref. #100, (See Owners Manual 378-101, Section III, Table 17). Cross tighten fasteners to 3 lb-ft (4 Nm) torque.
8. **SIZES 4203 & 4215 THRU 4315** — If the backstop is being added to an existing drive, discard the original end cover Ref. #16 and fasteners Ref. #27 and replace with the end cover, fasteners and gasket included with the backstop kit. When a backstop is being replaced, use a new gasket Ref. #23 from the shim-gasket kit Ref. #100.

NOTE: Position gasket and spacer so that the drain back hole is open. Blocking the drainback hole will not allow oil to lubricate backstop sufficiently and could lead to premature wear, resulting in backstop or drive failure. Cross tighten the fasteners to 8 lb-ft (11 Nm) torque.

9. **SIZE 4207** — If the backstop is being added to an existing drive, install spacer Ref. #17 (spacer with drain back hole) between housing and original end cover Ref. #16, using gaskets Ref. #23 supplied with backstop kit. A gasket must be installed on both sides of spacer. When a backstop is being replaced, use two new gaskets, Ref. #23 from the shim-gasket kit Ref. #100.

NOTE: Position gasket and spacer so that the drain back hole is open. Blocking the drainback hole will not allow oil to lubricate backstop sufficiently and could lead to premature wear, resulting in backstop or drive failure. Cross tighten the fasteners to 8 lb-ft (11 Nm) torque.

10. 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 3). Fill to oil level specified in Owners Manual 378-101, Section I, with oil level specified in Appendix A. Check motor for correct rotation before completing connection to drive.

Figure 3

