

## How to Use This Manual

The following instructions and recommendations apply to standard Falk Model PRT backstops, Sizes 20, 60 & 65, when mounted on UltraMax Drive Sizes 2100 thru 2130F and M2100 thru M2130F.

The backstop's performance and life depend largely upon how they are installed and serviced. Drawings are representative of this series of backstops and may not agree in detail with all backstop sizes.

When requesting information specify the M.O. number, backstop size, part number, maximum running rpm, torque rating and date stamped on the backstop nameplate.

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

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

### Warranty

Rexnord Industries, LLC (the "Company") warrants that Ultramax gear drives (I) conform to Company's published specifications, and (II) are free from defects of material for three years from the date of shipment.

Company does not warrant any non-Company branded products or components (manufacturer's warranty applies) or any defects in , damage to, or failure of products caused by: (I) dynamic vibrations imposed by the drive system in which such products are installed unless the nature of such vibrations has been defined and accepted in writing by Company as a condition of operation; (II) failure to provide suitable installation environment; (III) use for purposes other than those for which designed, or other abuse or misuse; (IV) unauthorized attachments, modifications or disassembly, or (V) mishandling during shipping.

### Safety Codes & General Precautions

**WARNING:** Consult applicable local and national safety codes for proper guarding of rotating members. Lock out power source and remove all external loads from drive before servicing drive or accessories.

## Application Requirements

**BACKSTOP APPLICATION** — The backstop is designed to operate during overrunning within a speed range of 0 to 1800 rpm. The backstop can operate successfully on slope mounted applications up to a maximum shaft axis tilt of  $\pm 6^\circ$  from horizontal without shaft modifications; refer to the Factory for other mountings.

**WARNING** — DO NOT use Falk PRT type backstop in tandem. Refer to Factory for all applications involving the need for two or more backstops in one system.

DO NOT use backstops for systems that are designed for the handling of people such as elevators, man lifts, ski tows, and ski lifts.

DO NOT use the backstop as a substitute for a brake.

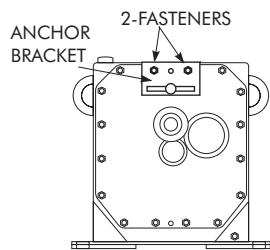
**TABLE 1 — Anchor Bracket Tightening Torques (w/o Shaft Fan)  $\pm 5\%$**

DRIVE SIZE	Fastener Size	SAE Grade	Torque (lb-Ft)	Torque (Nm)
2100-2110	.625-11	5	134	182
2120-2130	.750-10	5	242	328

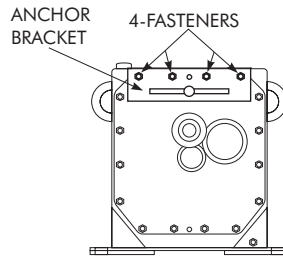
### Installation — Drives Without Shaft Fans

**CAUTION:** Refer to direction of rotation arrow on backstop. Before installation make sure that the direction of rotation is correct. To change the backstop over running direction, rotate the backstop 180° end for end on shaft. For some backstop/drive combinations, it will be necessary to have the torque arm mounted on the outside of the backstop due to interference with the anchor bracket. Follow specific instructions found in Manual 568-810 shipped with the backstop. Check backstop size on nameplate and make certain it is correct.

1. If installing external backstop on drive not previously supplied with a backstop, a special - long high speed shaft is required. Refer to drive assembly/disassembly instructions for installation of high speed shaft.

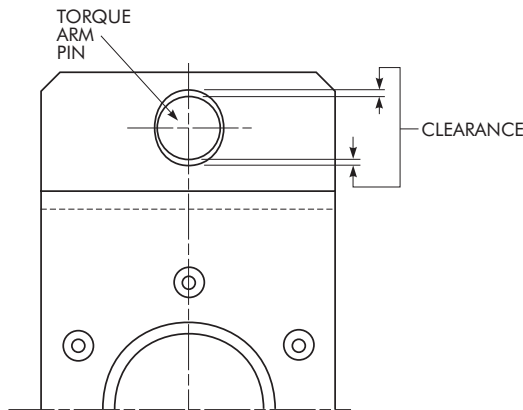


**FIGURE 1**  
 Sizes 2100- 2130  
 with #20 PRT Backstops  
 without shaft fans

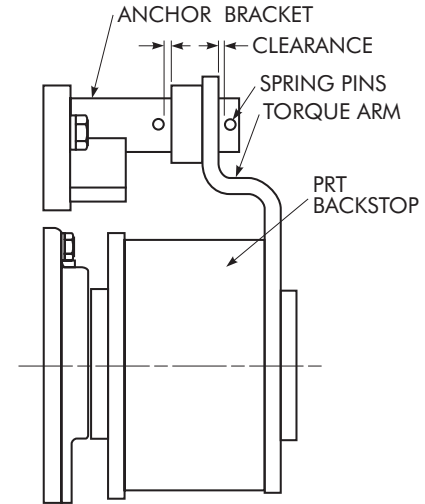


**FIGURE 2**  
 Sizes 2100- 2130 with  
 #60 or 65 PRT Backstops  
 without shaft fans

2. Install anchor bracket if necessary by removing the appropriate high speed head fasteners to allow anchor bracket to be centered above the high speed shaft (see Figures 1 & 2 ). Mount anchor bracket and insert the longer fasteners and lock washers that were supplied with the backstop kit. Tighten fasteners to values shown in Table 1.
3. Clean the backstop bore and the shaft on which the backstop will be mounted. Make sure the short key is clean and completely seated in the shaft.
4. Align the hub keyway with the shaft key and slide backstop onto shaft and anchor bracket torque arm pin. The backstop must slip onto shaft. DO NOT hammer backstop onto shaft. There should be clearance between the backstop anchor lug and torque arm pin as shown in Figure 3. Position the backstop axially to allow clearance for the extreme float limits of the shaft, Figure 4.

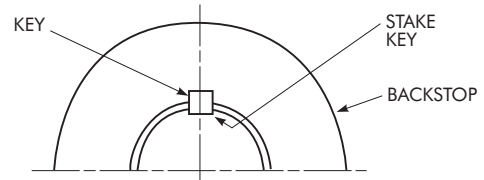


**FIGURE 3**



**FIGURE 4**

5. Install spring pins to hold backstop onto torque arm pin.
6. Check free, or overrunning, and locked rotation of backstop. If satisfactory, stake key (inch series) to through hardened shaft, Figure 5, or use an anaerobic thread sealant such as Loctite 242 if shaft is carburized.



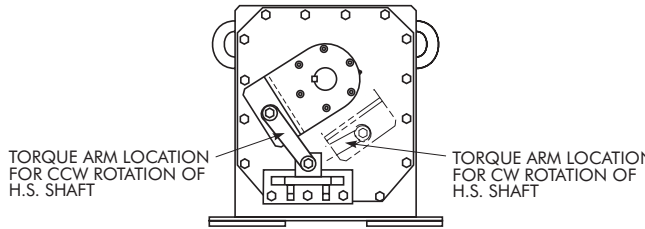
**FIGURE 5**

### Installation — Drives with Shaft Fans

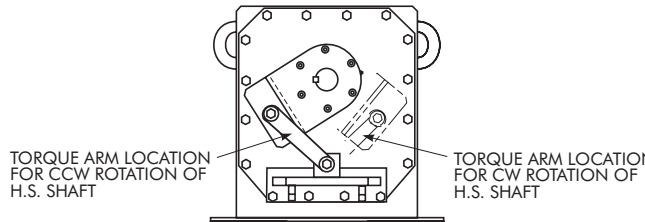
**CAUTION:** Refer to direction of rotation arrow on backstop. Before installation make sure that the direction of rotation is correct. To change the backstop over running direction, rotate the backstop 180° end for end on shaft. For some backstop/drive combinations, it will be necessary to have the torque arm mounted on the outside of the backstop due to interference with the anchor bracket. Follow specific instructions found in Manual 568-810 shipped with the backstop. Check backstop size on nameplate and make certain it is correct.

1. If installing external backstop on drive not previously supplied with a backstop, a special - long high speed shaft is required. Refer to drive assembly/disassembly instructions for installation of high speed shaft.
2. Install anchor bracket if necessary by removing the appropriate high speed head fasteners as shown in Figures 6 & 7. Mount anchor bracket and insert the longer fasteners and lock washers that were supplied with the backstop kit. Tighten fasteners to torque values shown in Table 2.

**WARNING:** To meet OSHA requirements, double reduction drives require a shaft sleeve between the fan guard and backstop (see Figure 8).



**FIGURE 6**  
All Drives with #20 PRT backstop & 2100F2 with #60 PRT backstop

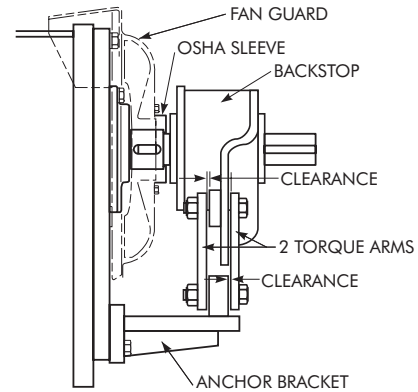


**FIGURE 7**  
2110F2, 2120F2, & 2130F2 with #60 or 65 PRT backstop

**TABLE 2 — Anchor Bracket Tightening Torque (with Shaft Fan) ±5%**

DRIVE SIZE	Fastener Size	SAE Grade	Torque (lb-Ft)	Torque (Nm)
2100-2110 F2 w/ #60 BACKSTOP	.625-11	8	190	257
2100-2110 F2 & F3 w/ #20 BACKSTOP	.625-11	5	134	182
2120-2130 F2 w/ #60 or 65 BACKSTOP	.750-10	8	345	467
2120-2130 F2 & F3 w/ #20 BACKSTOP	.750-10	5	242	328

5. Attach torque arms to the anchor bracket. Tighten locknut until there is zero clearance between the torque arms and the anchor bracket lug. Then back off locknut one and one-half turns. Lay torque arms to the left side for CCW high speed shaft rotation, or to the right side for CW shaft rotation (see Figures 6 & 7).
6. Clean the backstop bore and the shaft on which the backstop will be mounted. Make sure the shaft key is clean and completely seated in the shaft.
7. Align the hub keyway with the shaft key and slide backstop onto shaft. The backstop must slip onto shaft. DO NOT hammer backstop onto shaft.
8. Insert bushing into backstop lug and fasten backstop to the torque arms. Tighten the locknut until there is zero clearance between the torque arms and the bushing, then back off 60°.
9. Position backstop axially on the shaft to allow for equal clearance at the torque arm as shown in Figure 8.
10. Check free and locked rotation of backstop. If satisfactory, stake key (inch series) to through hardened shaft, Figure 5, or use an anaerobic thread sealant such as Loctite 242 if shaft is carburized.



**FIGURE 8**

### Maintenance

Refer to Manual 568-810 shipped with each backstop for proper maintenance schedule and lubrication intervals.

The backstops do have grease-purged cavities which minimize the entry of taconite and other abrasive dusts into the backstop. When PRT backstops are furnished assembled to an UltraMax drive, the grease-purge cavity will be filled with NLGI #2 bearing grease, unless specifically ordered otherwise.

**WARNING:** If application is in the food or drug industry where grease could contaminate the product, the backstop should be ordered special — lubricated with a grease that meets USDA “HI” classification.

To make use of this feature, pump NLGI #2 (worked penetration at 60 strokes, 265-295) bearing grease into the seal housing cavity through the grease fitting. Periodically (monthly) depending upon the frequency and degree of contamination, purge contaminated grease from by pumping fresh bearing grease through the cover or torque arm until it flows out along the shaft. It is important to rotate the shaft while greasing cavity to prevent excessive pressure. Wipe off purged grease.

### Service and Removal

**WARNING:** DO NOT attempt to service or remove backstops before locking out power source and removing load. Replace damaged backstops with a new Falk tested backstop.

**Backstop should be removed from the shaft by applying force to the hub of the backstop only.**