Introduction

The following instructions apply to Falk Model PRT backstop, Sizes 10, 20, 60, and 65. These backstops replace the Falk Pawl (B1F) backstops.

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 horizontal to vertical without modification.

To prevent damage to backstops due to incorrect motor shaft rotation at start up, couplings are NOT assembled when drives are furnished with backstops. After completing the electrical connection, check motor and drive shaft rotations. Then complete alignment and assembly of coupling.

WARNING: DO NOT use Falk roller ramp type backstops (PRT, NRT) in tandem. Refer to the Factory 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, manlifts, ski tows, and ski lifts.

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

Warranty

Rexnord Industries, LLC (the "Company") warrants that Drive One 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. ★

★ Warranty extends for 3 years from date of shipment. Does not apply to Falk Omnibox®, Fluid Couplings, Renew®, and spare parts. Warranty applies to Steelflex® and Lifelign® couplings with the use of Falk Long Term Grease.

Description

APPLICATION — The backstop utilizes a precision roller ramp designed to prevent reverse rotation in applications such as inclined conveyors, bucket elevators, fans, rotary pumps, and kilns. These installation and maintenance instructions were developed for this specific product line only.

OPERATING TEMPERATURES — Enclosure of the backstop may cause overheating. Provide adequate ventilation. Backstop operating temperatures, at maximum overrunning speed, may reach 200°F (93°C). Determine the effect of this temperature on the driven equipment and provide adequate cooling if necessary. The 60 & 65 PRT backstops may operate slightly over 200°F for the first two weeks of operation. Do not be alarmed during this period unless the backstop fails to cool down to around 160°F (71°C) [with 70°F (21°C) ambient] after this period of time. Consult Falk if unit fails to cool down.

If a backstop operates in the sun at ambient temperatures over 100°F (38°C), then special measures should be taken to protect the backstop from solar heating. This protection can consist of a canopy over the backstop or reflective paint on the backstop. If neither is possible, a cooling device such as a fan may be required to prevent the sump temperature from exceeding the allowable maximum of 230°F(110°C).

EXPLOSIVE ATMOSPHERES — The purchaser is responsible for taking adequate precautions to prevent spark generation in explosive atmospheres. Consideration should be given to avoid spark generation that may occur when the torque arm strikes the pin.

Pre-Installation Check

1. SHAFT SIZE — Check backstop bore and shaft diameters for correct size. The standard hub is designed for a close locational clearance (slip) fit onto the shaft.
2. KEY — The keys are clearance fitted, full length, and must not be tight in order to avoid distortion of the hub. NOTE: Key to be furnished by user.
3. ROTATION
   a) An arrow stamped on both ends of the backstop hub (inner member) indicates the direction that the hub rotates freely (overrunning direction). Also, an arrow located on outside diameter indicates "free shaft rotation direction". Check backstop for proper rotation direction by rotating hub by hand.
   b) To change the backstop overrunning direction, rotate the backstop 180° end for end on shaft and, if required, exchange torque arm and end cover plate end for end.

BACKSTOP SIZE	End Cover & Torque Arm Fasteners (Button Head Cap Screws ★)	Seating Torque For End Cover & Torque Arm Bolts ft-lb (Nm)
10PRT	M8 x 1.25 x 20 mm (8)	18 to 21 (26)
20PRT	M10 x 1.50 x 25 mm (12)	33 to 37 (47)
60PRT	M12 x 1.75 x 25 mm (12)	59 to 62 (82)
65PRT	M12 x 1.75 x 30 mm (16)	59 to 62 (82)

★ Grade 12.9 or better.

4. OPERATING SPEED — The maximum speed for all PRT backstops is 1800 RPM.

Installation

1. Lock out power source and remove external load from system.
2. Clean the backstop bore, key, keyway, and gearbox shaft where the backstop will be mounted.

   CAUTION: Before installing backstop, check direction of shaft free rotation and required rotation of motor. A rotation arrow on each end of the backstop hub indicates the backstop over-running (free rotation) direction. Check backstop's rotation direction by rotating hub by hand.
3. Apply a thin coat of anti-sieze compound or light machine oil onto shaft. Slide backstop onto shaft and torque arm pin. The backstop must "slip" onto shaft. DO NOT hammer backstop onto shaft. Allow clearance between mounting hole and torque arm pin, Figure 1. Allow clearance at torque arm pin for extreme float limits of the shaft, Figure 2. Install key after aligning keyways.

Figure 1

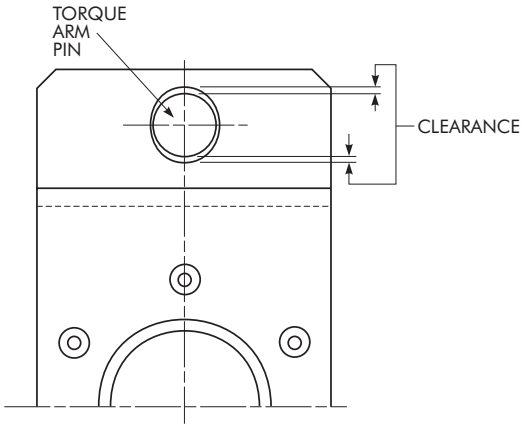
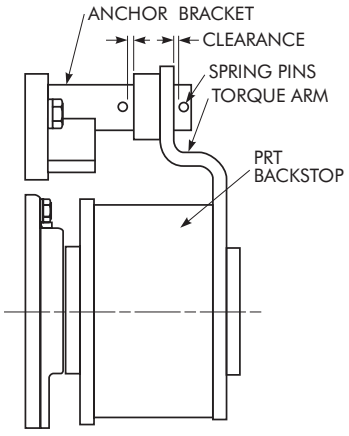
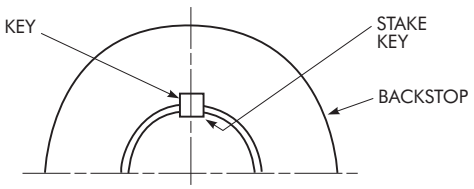


Figure 2



4. Install spring pin or other locking device to hold backstop onto the torque arm pin.
5. Check free and locked rotation of backstop. If satisfactory, the key is to be staked to shaft, Figure 3, or use an anaerobic thread sealant if shaft is carburized.

Figure 3



6. **BACKSTOP MECHANISM — The backstop is shipped from the Factory "ready for operation" with the required amount of grease in the roller ramp mechanism chamber.** ***WARNING: Do not add any additional grease. Adding additional grease could cause the backstop to slip.***
7. When the backstop is shipped from the Factory, the grease purge cavities will be packed with grease, unless otherwise specified.
8. To validate warranty, fill in complete information required on nameplates and install nameplates to the outside of the torque arm with drive screws supplied.

Maintenance

WARNING: *Should this backstop not function properly, DO NOT attempt to repair it, order a replacement from the Factory. Remove load before removing backstop. See "removal" below.*

The backstop is shipped from the Factory fully greased. The grease is Lubriplate SFL-1, which is a synthetic food grade grease, USDA H-1 rating. Do not add any additional grease to the backstop.

Removal

WARNING: Should this backstop not function properly, do not attempt to repair it. Order a replacement from the Factory. Remove load before removing backstop.

1. To remove the backstop, a steel split ring/collar should be used. Pulling or hammering on torque arm or end cover may damage internal components.
2. The split ring should have an inside diameter just slightly larger than the gearbox shaft diameter. The outside diameter of the split ring needs to be small enough to reach the inner member of the backstop that is keyed onto the shaft.
3. The ring's width need only be long enough to protrude beyond the end cover or torque arm faces. For all size backstops, 3/4 inch (20mm) is adequate.

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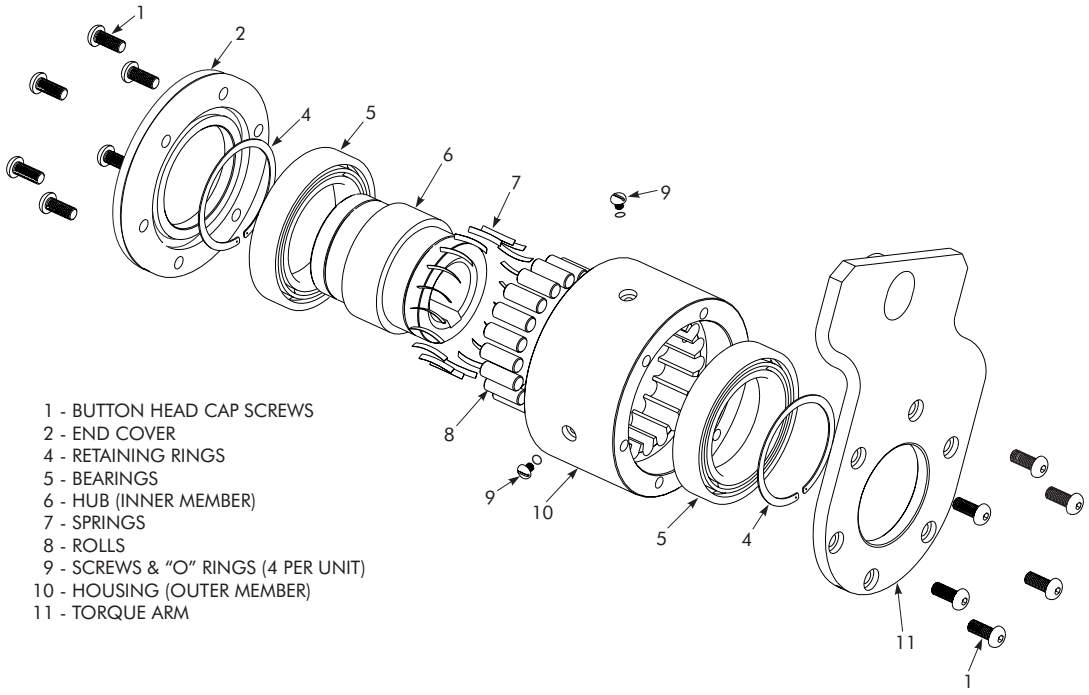

1 - BUTTON HEAD CAP SCREWS
2 - END COVER
4 - RETAINING RINGS
5 - BEARINGS
6 - HUB (INNER MEMBER)
7 - SPRINGS
8 - ROLLS
9 - SCREWS & "O" RINGS (4 PER UNIT)
10 - HOUSING (OUTER MEMBER)
11 - TORQUE ARM