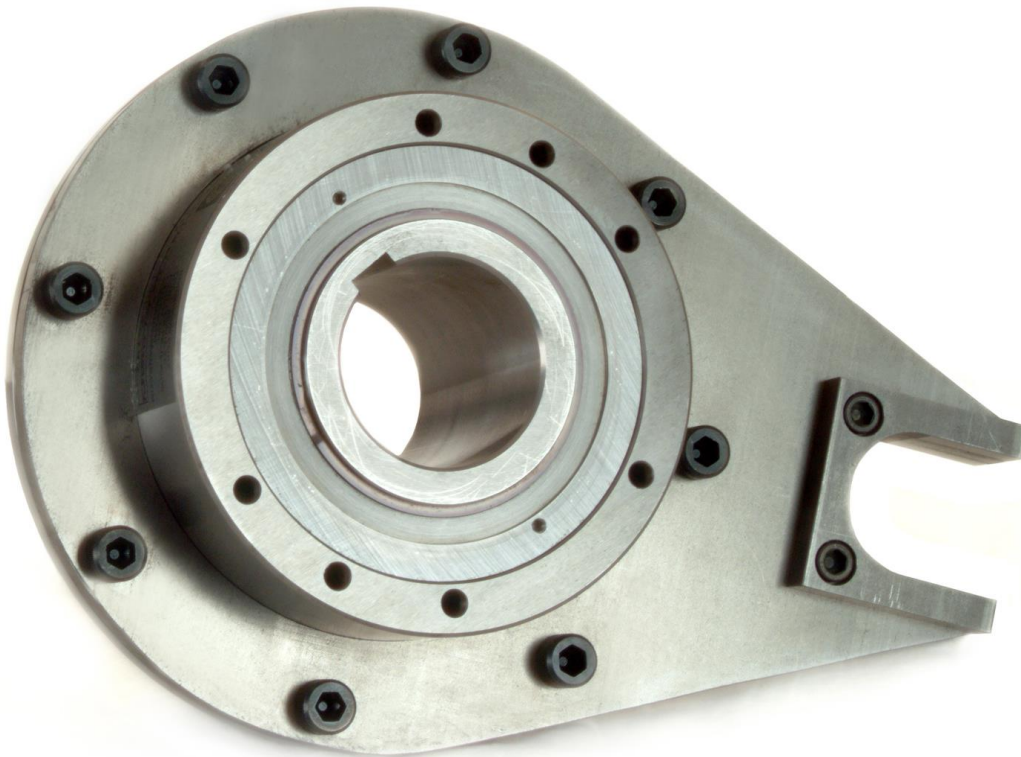


RINGSPANN® CORPORATION

Power Transmission

**Installation and Operating Instruction for
Complete FRXF/FRXG Freewheel Backstops
With Slotted Torque Arm**

E 08.777e



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RINGSPANN	Installation and Operating Instruction for Complete FRXF/FRXG Backstops			E 08.777e	
Date: 10/26/2015	Revision : 02 – E101417	By: WASP	Checked By: DIVD	Number of Pages: 7	Page: 2

Important

- Please read these instructions carefully before installing and operating the product. Your particular attention is drawn to the notes on safety.
- These installation and operating instructions are valid on condition that the product meets the selection criteria for its proper use. Selection and design of the product is not the subject of these installation and operating instructions.
- Disregarding or misinterpreting installation and operating instructions invalidate any product liability or warranty by RINGSPANN CORPORATION. The same applies if the product is taken apart or changed.
- The installation and operating instructions should be kept in a safe place and should accompany the product if it is passed on to others – either on its own or as part of a machine – to make it accessible to the user.

Safety Notice

- Installation and operation of this product should only be carried out by skilled personnel.
- Repairs may only be carried out by the manufacturer or accredited RINGSPANN CORPORATION agents.
- If a malfunction occurs, the product, or the machine into which it is installed, should be stopped immediately and either RINGSPANN CORPORATION or an accredited RINGSPANN CORPORATION agent should be informed.
- Switch off the power supply before commencing work on electrical components.
- Rotating machine components must be protected by the purchaser.
- Supplies abroad are subject to the safety laws prevailing in those countries.

Warranty

RINGSPANN CORPORATION “seller” agrees to repair or replace (at its sole option), defective materials or workmanship for a period of one year from the date of delivery. Seller must be notified of such a defect within a reasonable time after discovery (not to exceed thirty (30) days), and the defective product must be delivered, prepaid to the seller’s factory with evidence that, it has been properly installed, maintained and operated in accordance with the seller’s instructions. Seller’s limited warranty excludes remedy for damage or defect caused by abuse; failure to resist corrosion or erosion from any corrosive agent or fluid, due to deposits of foreign material from any fluid; modifications not executed by Seller; improper installation or operation; defects or failures arising out of, in any way related to, or as a result either direct or indirect, of the Buyer’s failure to properly advise Seller of all normal and special operating conditions, known to or suspected by Buyer, when Seller is manufacturing the Equipment for a specific operation; or normal wear and tear under usage. This remedy is exclusive and is given in lieu of any warranty of merchantability, fitness, for a particular purpose or any other warranty, whether express or implied. Seller shall not be liable for consequential damages (including but not limited to, loss of use, lost profits, business interruption and the like), incidental damages, indirect damages, whether the claim for such damage is based upon warranty, contract, tort, strict liability or any other theory of recovery.

Backstop Rebuilding Service

RINGSPANN CORPORATION backstops are precision devices manufactured under careful controls to meet manufacturing standards. When reconditioning is required, backstops should be returned to RINGSPANN CORPORATION for service.



CAUTION!

Disassembly and repair of RINGSPANN CORPORATION backstops in the field is not recommended and will void any warranty.

RINGSPANN	Installation and Operating Instruction for Complete FRXF/ FRXG Backstops			E 08.777e	
Date: 10/26/2015	Revision : 02 – E101417	By: WASP	Checked By: DIVD	Number of Pages: 7	Page: 3

Introduction


RINGSPANN CORPORATION FRXF/FRXG Freewheel Backstops are precision built safety devices designed to protect inclined conveyors or vertical elevators from the dangers of gravity accelerated reverse runaway.

To be assured of reliable protection and the longest possible service life, it is important that the following recommendations be observed for the installation, lubrication, and maintenance of RINGSPANN CORPORATION backstops.


As soon as the unit has been received, examine it carefully and report any damage to the Transit Company and RINGSPANN CORPORATION immediately.

All tags and bulletins attached to the unit should be carefully read before placing the unit in operation and then filed for future reference.

All units are shipped from factory with lubrication

	<p>WARNING! Failure to follow these instructions may result in product damage, equipment damage, and serious or fatal injury to personnel.</p>
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Pre-installation Check

	<p>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. 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 revolving parts and possible pinch points.</p>
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Operate the backstop within its capacities and follow installation and lubrication instructions in this manual. Damage may occur to the backstop if:

- **It remains inoperative under full load for extended periods of time.**
- **If the shaft was accidentally rotated in the wrong direction of rotation at start-up.**

If either has occurred the backstop may have been damaged and should be returned to RINGSPANN CORPORATION for inspection.

General Instructions

SHAFT REQUIREMENTS

The recommended shaft finish should be 125 micro inch or finer finish and tolerance of +.0000" to -.0010"

KEYS & KEYWAYS — Keys should be "*side-fitted*", "*full length when possible*", and must not be excessively tight to avoid distortion of the inner race.

BACKSTOP MOUNTING POSITIONS — The torque arm adapter can be mounted on either face of the freewheel clutch for attachment of the torque arm. The pin utilized with the torque arm must go through the arm, but also allow the arm to move around the pin. Do not restrict torque arm movement by welding or rigidly securing the torque arm to any supporting structure and prevent accumulation of any foreign material or ice around torque arm and pin which could restrict free movement of the torque arm. The backstop rotational axis can be from horizontal to vertical for all applications and the torque arm is capable of being mounted at any desired angle.

TORQUE ARM PIN — The torque arm pin must be designed to resist the reaction force from operation at backstop peak torque.

RINGSPANN	Installation and Operating Instruction for Complete FRXF/FRXG Backstops			E 08.777e	
Date: 10/26/2015	Revision : 02 – E101417	By: WASP	Checked By: DIVD	Number of Pages: 7	Page: 4

Installation



ATTENTION!

Before securing into place, check for proper rotation. As the clutch is symmetrical, in determining the proper direction of free rotation, orientate the clutch to match the directional arrows marked **“FREE”** on either face of the inner race and then verify by spinning the backstop by hand.

Backstop Mounting Fit onto the SHAFT

- Backstop bores are finished to size for an **“easy push fit”** on a shaft that is straight and not tapered.
- Shafts should be smooth and free of burrs.
- Coat the shaft with an anti-seizing agent or light oil for easy mounting and future removal of the backstop.
- Push the backstop onto the shaft.
 - Taking care to push only on the face of the inner race.
 - This eliminates undue abuse on the bearings within the backstop during installation. The backstop should never be forced on shaft.
- Rotate outer race by hand verifying proper rotation.



DO NOT FORCE BACKSTOP ONTO SHAFT!

Evidence of damage during assembly caused by disregard of these instructions is readily traceable and RINGSPANN CORPORATION will not be held responsible for failure of such affected part or parts.

Key and Key-seat

- Install the key provided into the keyway. (If necessary, the key may be **“field-dressed”** for proper fit).
- Key should be **“side-fitted”**. (For adequate top of key clearance, the straight keyway in the backstop has been made slightly deeper than standard.)
- Overall length of the key should not exceed the length of the inner race.



WARNING!

DO NOT use Tapered Keys, Keys Must Be Straight.

Rotation

- The freewheel backstop is symmetrical, which allows it to be mounted for the desired direction of free shaft rotation.
- Check to make certain that the arrow, marked **“Free”**, on the backstop inner race face is in the same direction as the desired free shaft rotation.



WARNING!

Rotating equipment is potentially dangerous and should be properly guarded. The user should comply with all applicable safety codes to guard rotating equipment.

Operation

FRXF/FRXG freewheel backstop operation is intended for speeds above lift off speed up to the backstop maximum speed

- **FRXF/FRXG 550 – Lift off speed 700 rpm, maximum operational speed 4000 rpm**
- **FRXF/FRXG 700 – Lift off speed 350 rpm, maximum operational speed 3600 rpm**
- **FRXF/FRXG 775 – Lift off speed 320 rpm, maximum operational speed 2100 rpm**
- **FRXF/FRXG 800 – Lift off speed 250 rpm, maximum operational speed 1800 rpm**

RINGSPANN	Installation and Operating Instruction for Complete FRXF/ FRXG Backstops			E 08.777e	
Date: 10/26/2015	Revision : 02 – E101417	By: WASP	Checked By: DIVD	Number of Pages: 7	Page: 5

The FRXF/FRXG design allows for the sprags to operate without rubbing wear during normal operation thereby eliminating the need for additional lubrication in the sprag cavity. The freewheel backstop bearings are sealed and do not require additional lubrication. The freewheel backstop has a grease barrier between the metal grease labyrinth and the bearings to add as additional protection for the bearing seals. Maintenance **MUST** be performed utilizing the grease ports to ensure contamination does not prevent for the proper function of the clutch backstop over an extended period of time.

Grease Seal Maintenance

Grease seal maintenance should not be performed while equipment is in operation.

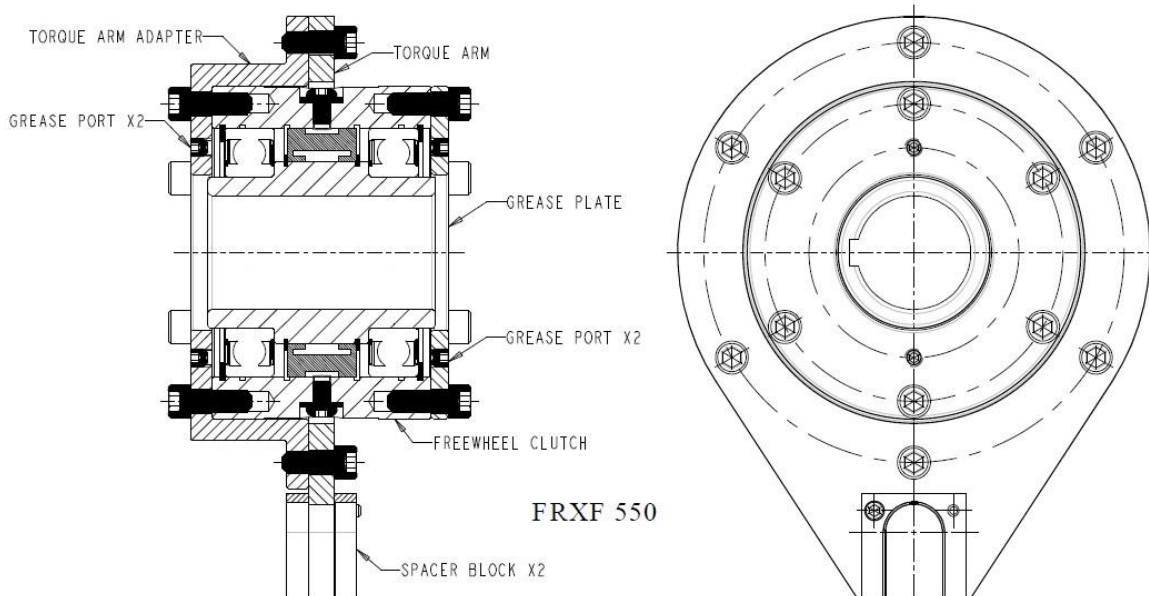
At least every 3 months, purge the grease seals from the (4) access ports with Mobilgrease XHP 221 or equivalent.

Grease Lubrication & Flushing Procedure

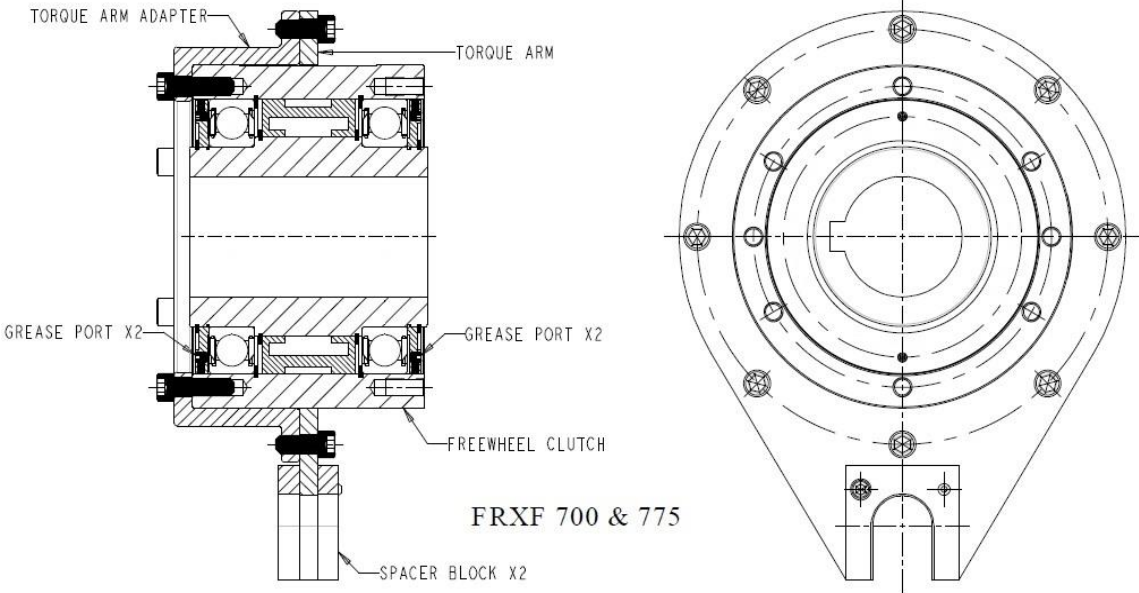
- Remove all (4) set screws in the grease ports. **(Seen below in FRXF/FRXG 550 & FRXF/FRXG 700 & 775)**
- Using a hand grease gun, add clean grease into one of the grease ports per side until all **“dirty”** grease is purged from the opposite port.
- Resume operation of backstop without the set screws installed to allow any excess grease to purge from the cavity.
- Set screws may be reinstalled after one hour of operation or until the excess grease purge stops, whichever comes first.

Note: *Under severe working conditions, it may be necessary to purge the grease seals more frequently.*

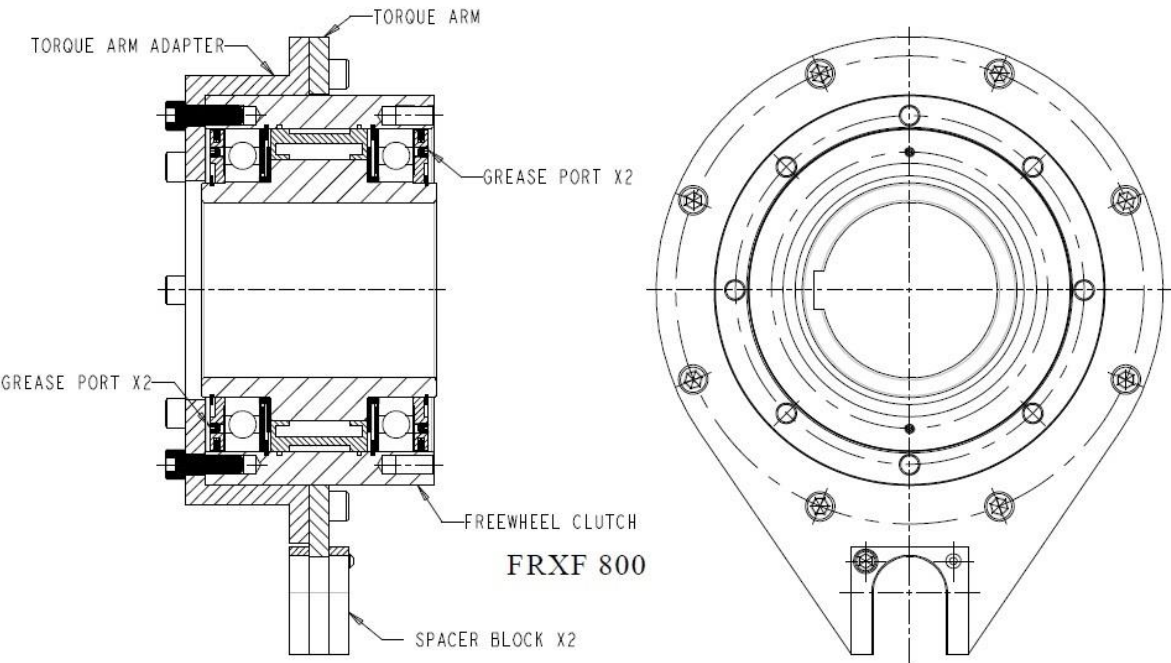
FRXF/FRXG Freewheel Backstop



FRXF/FRXG Freewheel Backstop



FRXF/FRXG Freewheel Backstop



RINGSPANN	Installation and Operating Instruction for Complete FRXF/ FRXG Backstops			E 08.777e	
Date: 10/26/2015	Revision : 02 – E101417	By: WASP	Checked By: DIVD	Number of Pages: 7	Page: 7

Grease Seal Maintenance (continued)

Grease seal maintenance should not be performed while equipment is in operation.

At least every 3 months, purge the grease seals from the (4) access ports with Mobilgrease XHP 221 or equivalent.

Grease Lubrication & Flushing Procedure (continued)

- Remove the (2) set screws in the grease access ports opposite the **“Torque Arm Adapter”**.
- Using a hand grease gun, add clean grease into one of the grease ports until all **“dirty”** grease is purged from the opposite port.
- Remove the (8) bolts securing the **“Torque Arm Adapter”** to the **“Freewheel Clutch”**.
- Remove the (2) set screws in the grease access ports on same side as **“Torque Arm Adapter”**.
- Using a hand grease gun, add clean grease into one of the grease ports until all **“dirty”** grease is purged from the opposite port.
- Rotate the **“Freewheel Clutch”** on the shaft **“BY HAND”** to allow access grease to purge.
- Once grease stops purging, reinstall the set screws and **“Torque Arm Adapter”** to the **“Freewheel Clutch”**.

Note: *Under severe working conditions, it may be necessary to purge the grease seals more frequently.*



WARNING!

The use of lubricants in backstop assemblies, other than shown, can compromise proper function that may cause personal injury or property damage and will automatically void any warranty.



WARNING!

RINGSPANN CORPORATION is not responsible for any lubrication changes made by others after the backstop leaves the RINGSPANN CORPORATION factory.