

10. Make an entry in the helicopter logbook and historical service records indicating compliance with Part II of this Technical Bulletin.

PART III: Repair of the SLS-030-910-115 / -115FM restraint assembly

1. If the restraint assembly is not installed on the helicopter, go to step 4.
2. Prepare the helicopter for maintenance.
3. Remove the restraint assembly from the helicopter (DMC-505-A-63-30-01-00A-520A-A).
4. Prepare the restraint assembly and tooling for the bearing replacement.
 - a. Remove the two 11-14277P bearings from the lower restraint assembly (BHT-ALL-SPM, Chapter 9, Paragraph 9-5) as follows:

CAUTION

Do not cut the roll staked lip completely to avoid damaging the lower restraint bearing bore and staking chamfer.

CAUTION

Ensure the support tools only contact the lower restraint assembly flat surfaces, otherwise the lower restraint assembly may be damaged.

- (1) Use the previously modified bearing cutting tool P/N RKC4101-14DP or alternate to carefully cut part of the roll staked lip, near its base, on the upper side of the 11-14277P bearing before pressing the bearing out of the lower restraint assembly.
 - (2) Use work aids to support each side of the bearing while cutting the lip and pressing the bearing out of the lower restraint assembly.
- b. Thoroughly clean the lower restraint assembly bearing bores with a clean cheesecloth (C-486) moistened with Acetone (C-316) or MEK (C-309).
 - c. Inspect the lower restraint assembly bearing bores and surrounding areas for any damage that may have occurred while removing the bearings 11-14277P. If any damage is found, contact Bell Product Support Engineering (productsupport@bellflight.com) for damage limits.
 - d. Install the two new 11-14277P bearings in the lower restraint assembly. Install one bearing at a time as follows:

CAUTION

Extreme care must be exercised to avoid any contamination of bearing during all phases of handling and installation.

-NOTE-

Bore dimensions must be measured at a minimum of 4 locations and at different heights to determine the maximum dimension.

- (1) Measure the bearing bores of the lower restraint assembly. The maximum allowable bore diameter is 1.5638 inch (39.72 mm). If any of the bore diameter measurements are beyond the acceptable limits go to step (2). If all bore diameter measurements are within acceptable limits go to step (3).
- (2) Contact Product Support Engineering (productsupport@bellflight.com) for a possible expanded repair, providing the following information:
 - (a) In the subject line of the e-mail, include the restraint assembly part number and serial number and the Technical Bulletin number.
 - (b) Complete the structural repair request form found in the General Information Letter GEN-22-154 and attach it to the e-mail.
- (3) If the maximum bore diameter measured is at or below 1.5628 inch (39.695 mm) go to step (4). If the maximum bore diameter measured is above 1.5628 inch (39.695 mm) but below the maximum allowable bore diameter of 1.5638 inch (39.72 mm) go to step (5).

-NOTE-

Anaerobic sealant primer (C-320, Loctite 7471/Grade T) cure time is 30 minutes. Anaerobic sealant primer (C-320, Loctite 7649/Grade N) cure time is 6 hours. Loctite 7471/Grade T can be used as an alternate to Loctite 7649/Grade N.

- (4) Thoroughly clean the two 11-14277P bearings with a clean cheesecloth (C-486) moistened with Acetone (C-316) or MEK (C-309). Apply anaerobic sealant primer (C-320, Loctite 7649/Grade N) to the outside diameter of the bearing and to the mating bore of the restraint assembly. Wait two to three minutes. Apply the anaerobic sealant (C-320, Loctite 089/Grade AA) to the surfaces where the anaerobic sealant primer was applied. Avoid excessive application of sealant. Go to step (6).

- (5) Thoroughly clean the two 11-14277P bearings with a clean cheesecloth (C-486) moistened with Acetone (C-316) or MEK (C-309). Apply anaerobic sealant primer (C-320, Loctite 7649/Grade N) to the outside diameter of the bearing and to the mating bore of the restraint assembly. Wait two to three minutes. Apply anaerobic sealant (C-320, Loctite 635) to the surfaces where the anaerobic sealant primer was applied. Avoid excessive application of sealant.

CAUTION

During bearing installation, make sure pressure is only applied to the outer race. Do not apply pressure to the inner race or spherical ball of the bearing or damage may occur.

- (6) While the anaerobic sealant is wet, press the new bearing into the restraint assembly with the bearing removal and installation tool.

-NOTE-

The bearing can only be installed one way since one side of the bearing is manufactured with a shoulder (Figure 2, sheet 2 of 2). The shoulder side of the bearing must be installed against the chamfer in the bottom side of the bearing bore on the bottom side of the restraint assembly.

- (a) The bearing must be pressed into the restraint until the shoulder of the bearing is completely seated on the restraint before being roll staked. Bearing staking should be done on the upper side of the restraint assembly.
- (7) Install the RST1017 roll staking tool in a hand-fed drill press. Set the spindle to a speed of 200 to 350 RPM.

CAUTION

Do not let the bearing overheat during staking (spinning). If it becomes uncomfortable to hold the bearing with bare hands, the bearing is damaged and must be replaced.

- (8) After the press drill is started, roll stake the non-staked upper end of the bearing.

-NOTE-

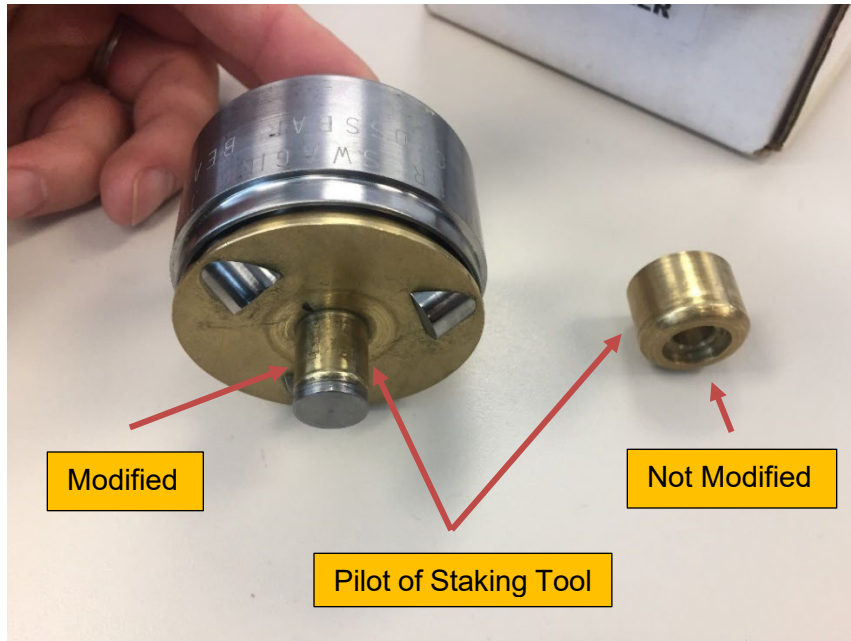
The maximum gap allowed between the lip of the bearing and the chamfer of the hole after staking the bearing is 0.005 inch (0.127 mm) (Figure 4). To reduce the possibility of axial bearing displacement when performing the proof load after staking the bearing, the gap should be as close as possible to 0.000 inch (0.000 mm).

- (a) Carefully apply a small quantity of oil to the area of staking and to the staking rollers immediately prior to staking. Do not let any oil go in the areas of the bearing where Loctite was applied, including the bearing bore chamfer.
 - (b) Apply a steady pressure to the lever of the drill press in 10-second intervals. This will allow rollers to flow the metal out and move the outer race lip of the bearing onto the chamfer of the part.
 - (c) Clean any excess sealant and remove oil completely with a clean cheesecloth (C-486) moistened with dry-cleaning solvent (C-304).
- (9) Examine the bearing for correct installation as follows:
- (a) Make sure the gap between the chamfer of the lower restraint and the staked (rolled) lip of the bearing outer race is between 0.000 inch (0.000 mm) and 0.005 inch (0.127 mm) (Figure 4). As required, stake the bearing again to achieve a 0.000 inch and 0.005 inch bearing stake lip gap.
 - (b) Make sure there is no axial movement or looseness of the bearing outer race in the bore of the lower restraint.
 - (c) Wait 24 hours to allow the sealant to cure prior to proceed with the proof load (step (10)).
- (10) Proof load the bearing (both sides), after staking and primer has fully cured, to 1000 lbs +100 lbs / -0 lbs (453.59 kg + 45.36 kg / - 0 kg). Load uniformly (360 degree) about and normal to (+/- 5 degree) lateral surface of outer race. Proof load the staked side of the bearing first. No permanent axial bearing displacement is allowed.
- (11) Examine the bearing for smooth rotation and do a check of the no load rotational breakaway torque as follows:

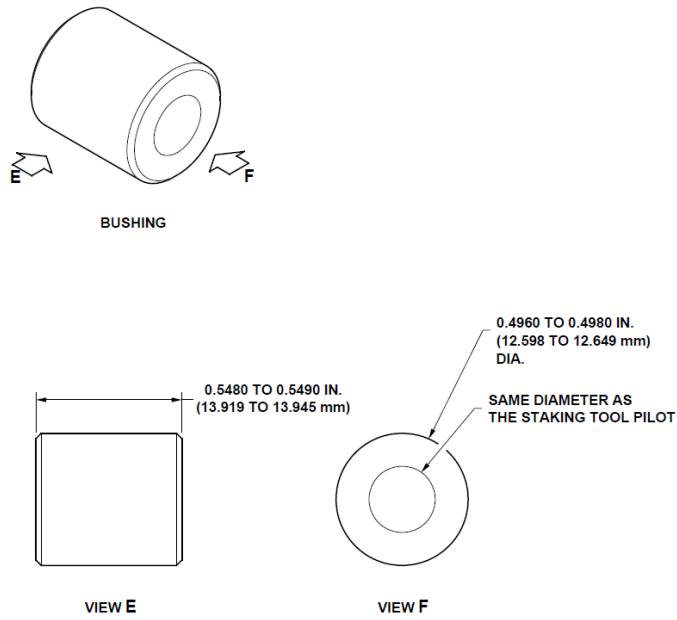
-NOTE-

Bearing shall be rotated by hand a minimum of six revolutions in the "X" axis direction, before the breakaway torque is measured.

- (a) Secure a bolt to the bearing inner race with nuts and washers. Measure the force required to rotate the bearing in the "X" axis with a dial indicator type torque wrench (Figure 3). Torque shall be 0.5 to 16 in-lbs (0.056 to 1.808 Nm).
 - (12) Following inspection, put a witness mark across the bearing outer race to lower restraint assembly at one location on each side of the bearing with torque seal lacquer (C-049) or alternate.
 - (13) Touch up area around staking groove with epoxy polyamide primer (C-204) to ensure no base metal is exposed.
5. If the restraint assembly was not removed from the helicopter as instructed in Step 3, go to step 7.
 6. Install the restraint assembly on the helicopter (DMC-505-A-63-30-01-00A-720A-A and DMC-505-A-63-21-02-00A-720A-A).
 7. Make an entry in the helicopter logbook and historical service records indicating compliance with this Technical Bulletin.

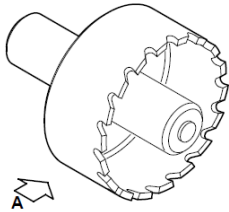


Staking Tool

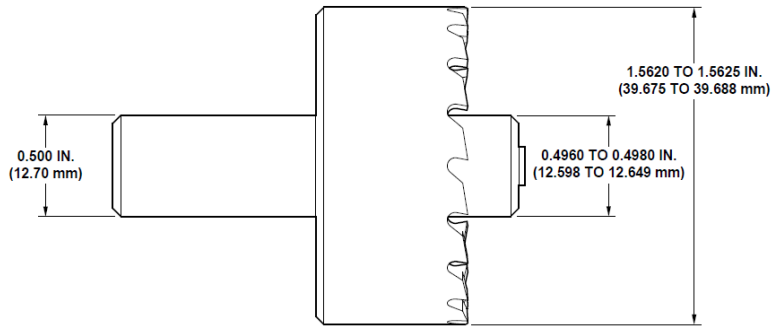


Staking Tool Bushing

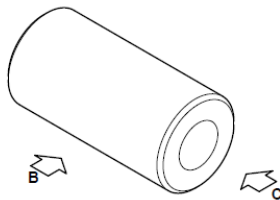
FIGURE 1 – Bearing Staking and Removal Tools Modification (Sheet 1 of 3)



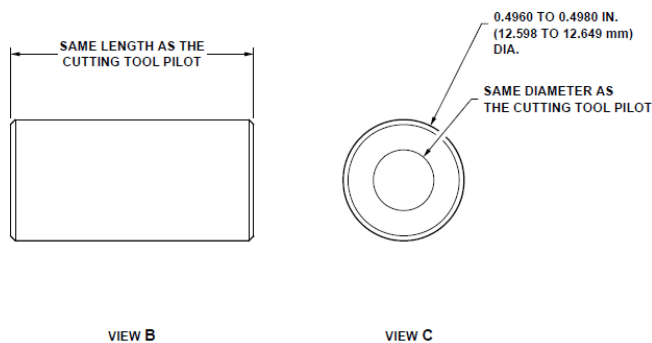
CUTTING TOOL
(RKC4101-14DP OR ALTERNATE)



Cutting Tool



BUSHING

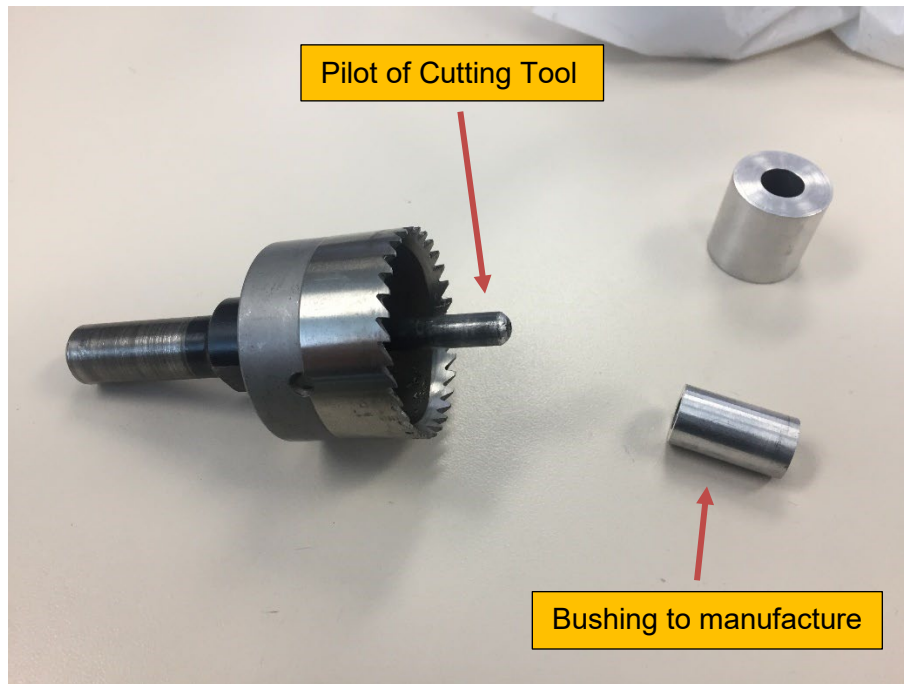


VIEW B

VIEW C

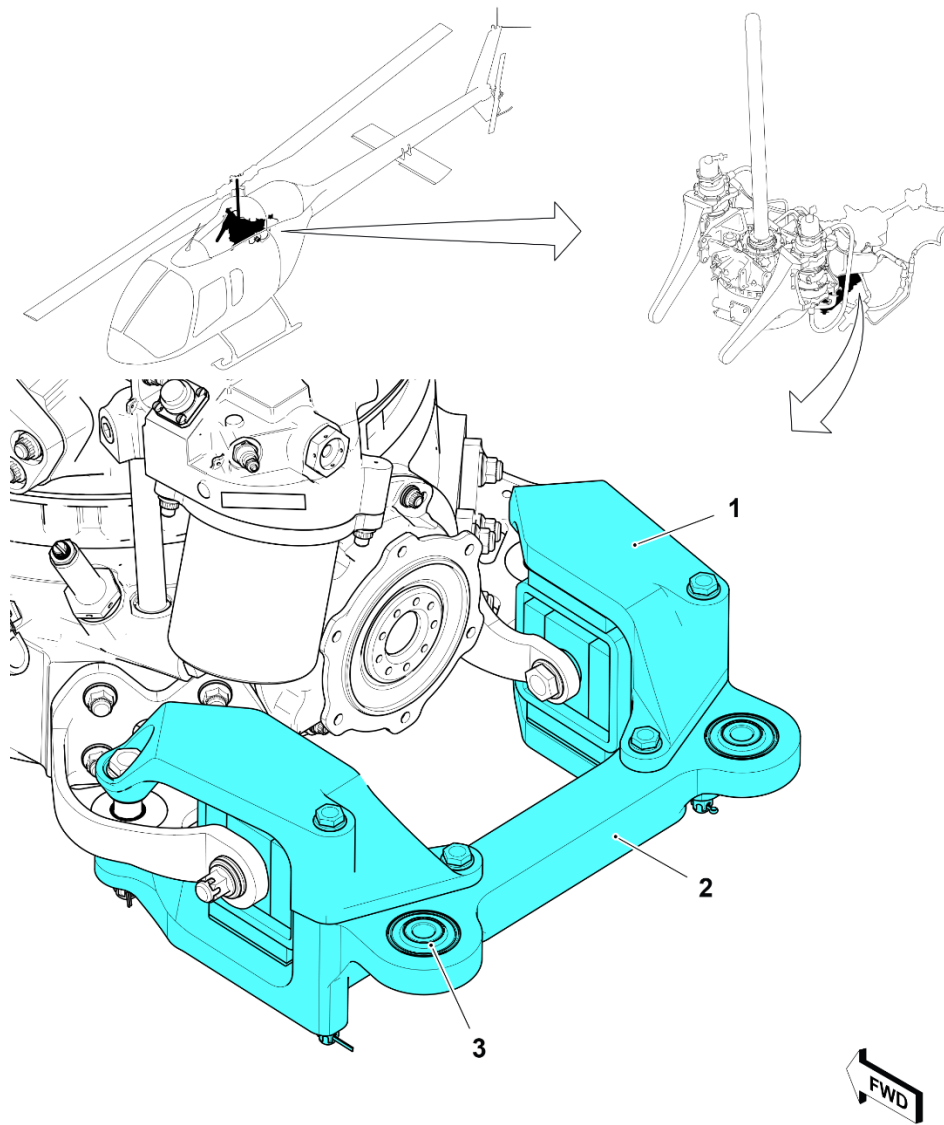
Cutting Tool Bushing

FIGURE 1 – Bearing Staking and Removal Tools (Sheet 2 of 3)



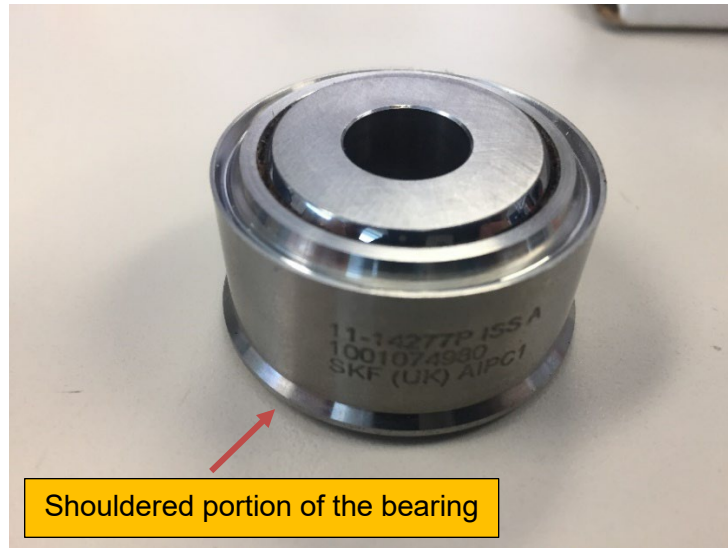
Alternate Commercial Cutting Tool with Bushing

FIGURE 1 – Bearing Staking and Removal Tools (Sheet 3 of 3)

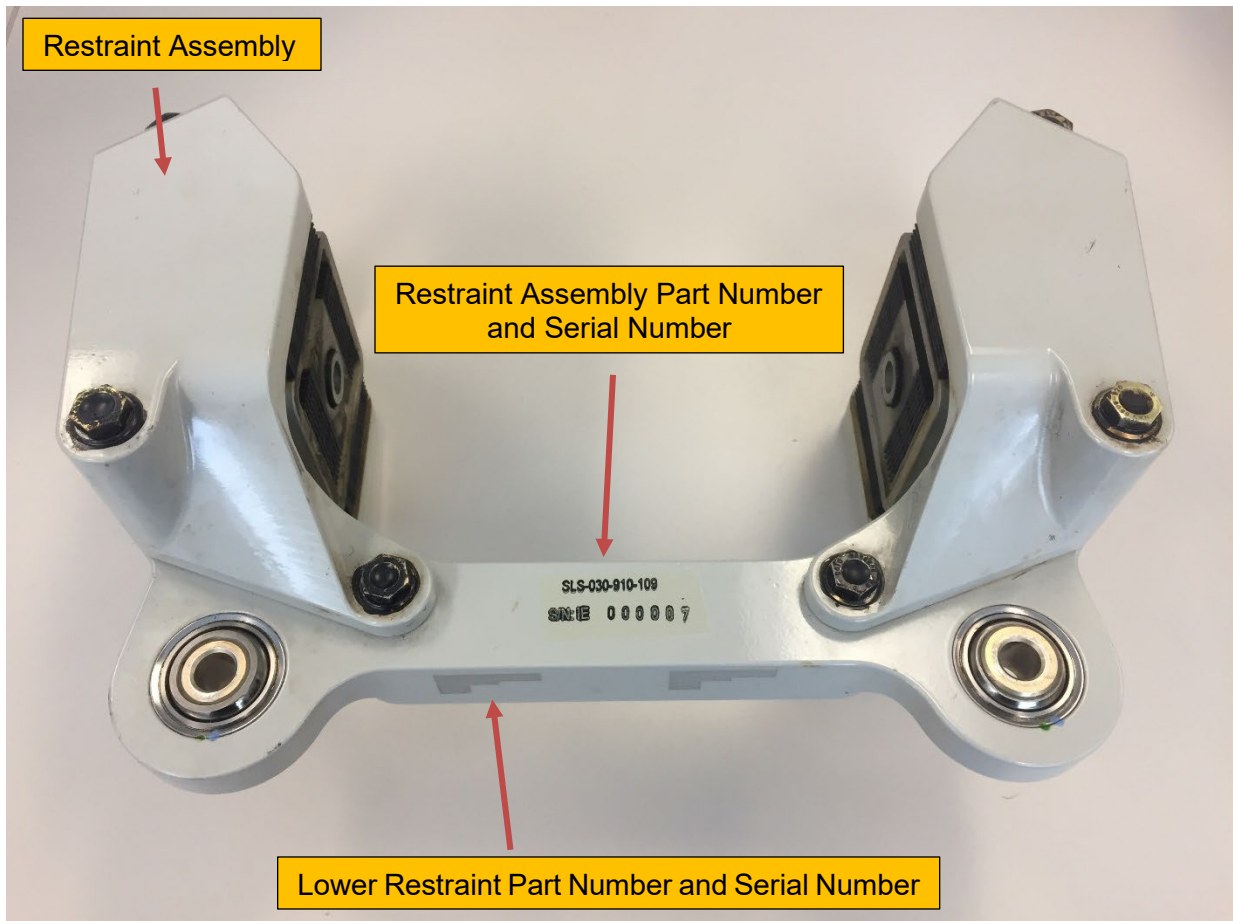


- 1. Restraint Assembly
- 2. Lower Restraint Assembly
- 3. Bearing

FIGURE 2 – Restraint Assembly and Bearing (Sheet 1 of 2)

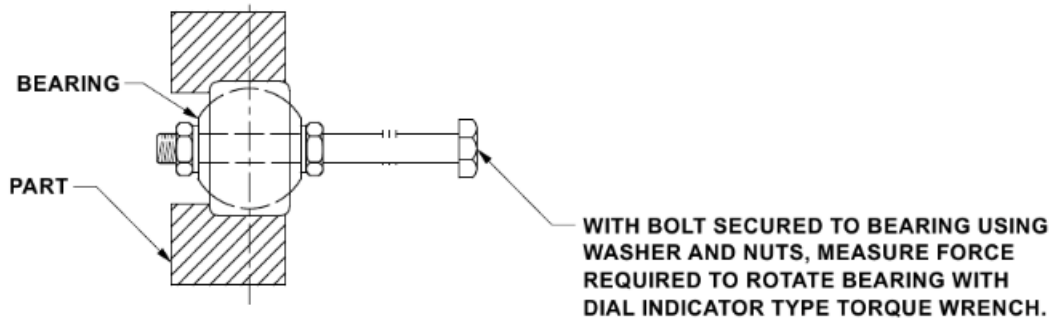


Bearing Part Number 11-14277P

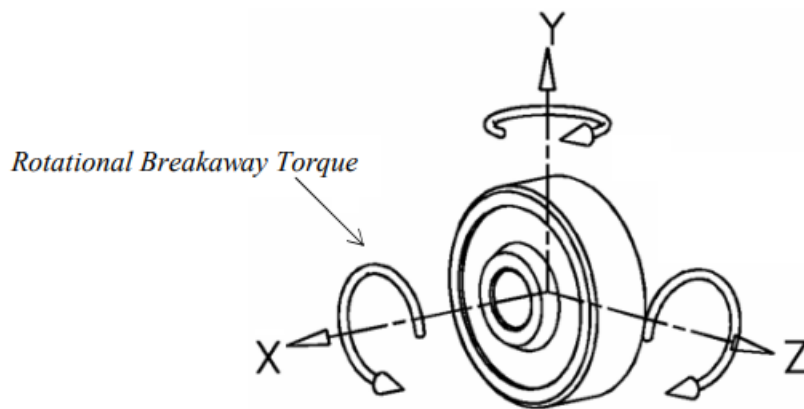


Restraint Assembly

FIGURE 2 – Restraint Assembly and Bearing (Sheet 2 of 2)



No Load Rotational Breakaway Torque



Axis of Rotation

FIGURE 3 – Bearing No Load Rotational Breakaway Torque Check

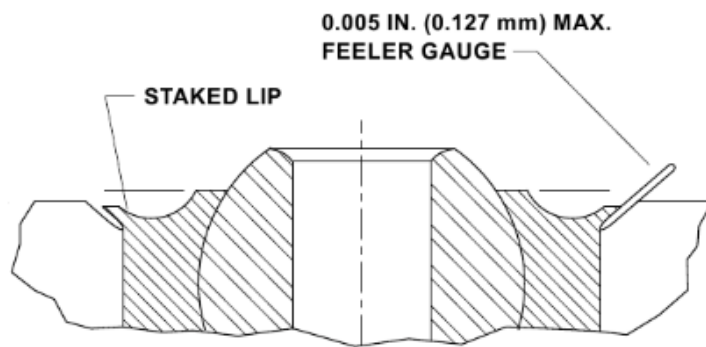


FIGURE 4 – Roll Staking Bearings