



**BUREAU
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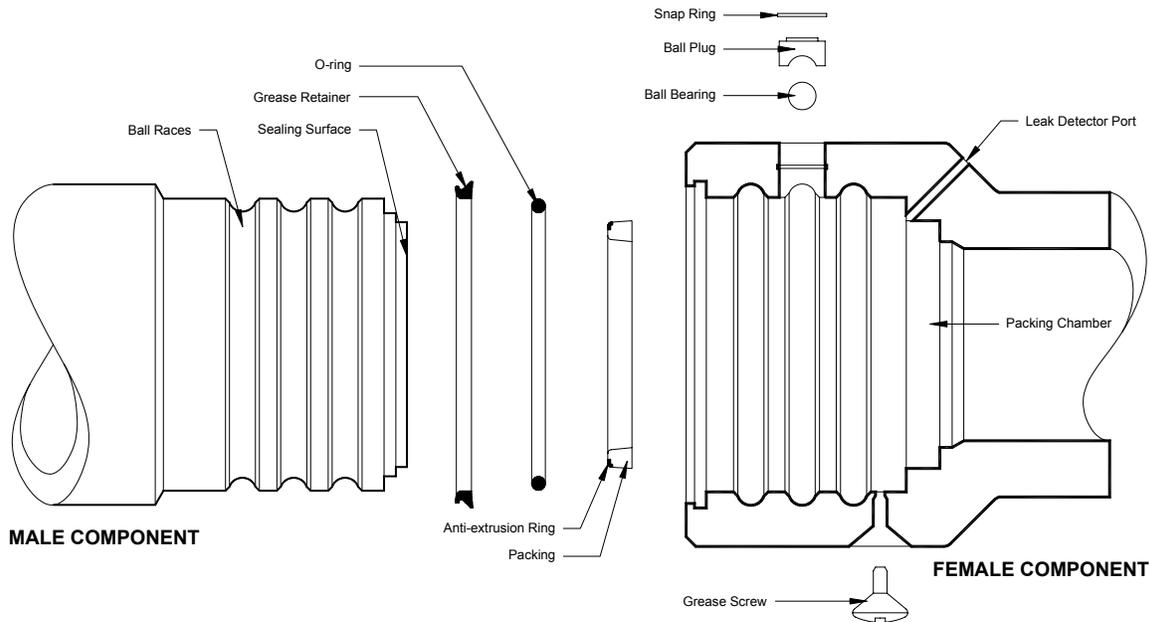


Swivel Joints, L.P.



**ISO 9001
CERTIFIED**

XHP Tri-Race Swivel Repacking Instructions



Tools: Truarc Pliers, awl or similar pointed tool, screwdriver, vise, pipe wrench

DISASSEMBLY:

1. Remove ball plug snap rings using Truarc pliers.
2. Remove ball plugs using awl.
3. Secure female component in vise with ball plug hole positioned over a suitable container for holding ball bearings.
4. Rotate male component, using a pipe wrench if necessary. Ball bearings should drop in container.

(Note: It may be necessary to thin hardened lubricant with solvent)

5. Separate male and female components after all ball bearings have been removed. Use caution with all machined surfaces.

CAUTION: Don not damage machined surfaces when separating components. Protect sealing surfaces at all times.

6. Carefully remove old packing from female packing chamber with screwdriver.
CAUTION: Use extreme care in removing old packing to prevent damage to sealing surfaces.
7. Remove o-ring from female component.
8. Remove grease retainer from male component.
9. Clean all components with petroleum solvents.
10. Inspect all parts for excessive wear, corrosion or other damage.
 - a. Inspect ball races for dents and grooves.
 - b. Check male and female components for excessive wear or corrosion on ball surfaces.
 - c. Carefully inspect the bore surfaces of all components for evidence of excessive wear or corrosion.

WARNING: Replace all parts for which visual, ultrasonic, or other inspection means indicate wall section wear or thinning in elbows or straight sections. Such damage will result in severely reduced pressure and structural capacity. Replace all parts that show evidence of damage in the ball race areas, packing chambers, or other critical areas.

11. Sealing surfaces must be completely smooth. Remove all scratches or pitting by polishing with a mild abrasive.
12. Re-clean all parts after polishing to remove all particles and abrasives.

ASSEMBLY:

1. Apply a thin coat of lubricant to ball races, sealing surfaces and new packing and o-ring.
CAUTION: Make sure correct lubricant is used for intended service conditions.
2. Install new packing in female component and o-ring as required.
CAUTION: Anti-extrusion ring must face outward, toward ball race.
3. Place grease retainer on male component and position at extreme end of machined surface so that it is clear of female end when re-assembled.
CAUTION: Grease retainer lip must face away from ball races.
4. Secure female component in vise with ball plug holes facing up.
5. Insert male component into female component carefully. Do not move or cut new packing inside female component.
6. Look down through ball plug hole to align ball races.
7. Drop balls into races, rotating male component, and adding balls until both ball races are filled with the proper number of balls.
CAUTION: Count the number of balls inserted into each ball race to assure that the correct number of balls are installed. Incorrect number of balls will cause binding or excessive wear and will also reduce pressure and structural capability.
8. Install grease retainer into groove in female component using screwdriver. Be certain the lip on ID of retainer faces outward when installed.
9. Insert ball plugs.
10. Insert ball plug snap rings.
11. Lubricate bearings as follows:
 - a. Remove lube fitting plug and install grease fitting.
 - b. Use small, hand held grease gun to force a *small* amount of lubricant through fitting.
 - c. Rotate male component 90 degrees and add more grease.
 - d. Repeat step "c" two more times, lubricating after each quarter turn.
 - e. Check smoothness of rotation to find any tight spots or restrictions.
CAUTION: Excessive lubrication can cause swivel to bind, distort anti-extrusion ring and displace packing. Use only enough lube to achieve smooth rotation.
12. Remove grease fitting and reinstall grease screw.