



Maintenance of Holding Fixtures Contents

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II. Maintenance of Holding Fixtures

A. **Corrosion** must not be allowed to occur on a Rotational Holding Fixture. Closely inspect any fixture that has been in an area of dampness, high humidity or a corrosive atmosphere. Especially inspect the inside of tubes that are not plated or coated with paint. Bearing surfaces should also be carefully checked. If necessary, use additional lubricant to inhibit corrosion on bearings.

B. **Lubrication** can be critical to the proper operation of any bearing surface.

1. **Gearbox Gears** on the smaller Gearboxes (standard gearboxes for 200 thru 700 series holding fixtures) are supplied with 1 or 2 quarts of Mobil SHC 634 Lubricant (except clean room gearboxes which are supplied with Mobilith SHC 007 Lubricant). The user must fill the Gearbox with the Mobil SHC 634. Do not use other Lubricants that may contain sulfur or chlorine, which are corrosive to bronze gears. The gearbox should not need to be re-lubricated unless a leak occurs.

Gearbox Gears on the larger Gearboxes (optional gearboxes for 600 & 700 series holding fixtures as well as all gearboxes for 800 Series and larger holding fixtures) are lubricated with Mobil Mobilith SHC 007. These Gearboxes are sealed and pressure checked and for non-motorized units under normal usage will not need to be re-lubricated. Motorized units will need to be re-lubricated at a frequency that depends on usage (probably between yearly and every 3 years).



2. **Trunnion Bearings** are grease lubricated. Frequency of lubrication will vary with usage (probably between monthly and yearly). Use a heavy duty bearing grease such as NLGI Grade 2 to 2.5 (Sta-Lube SL3131).

3. **Gearbox Bearings** on the smaller Gearboxes (standard gearboxes for 200 through 700 series holding fixtures) are lubricated with Mobil SHC 634. The gearbox should not need to be re-lubricated unless a leak occurs.

Gearbox Bearings on the larger Gearboxes (optional gearboxes for 600 & 700 series holding fixtures as well as all gearboxes for 800 Series and larger holding fixtures) are lubricated with Mobil Mobilith SHC 007. These Gearboxes are sealed and pressure checked and non-motorized units under normal usage will not need to be re-lubricated. Motorized units will need to be relubricated at a frequency that depends on usage (probably between yearly and every 3 years).

C. **Bleeding Hydraulic Synchronized Risers** should not normally be required except after a repair has been finished on the hydraulic system. The bleed down process is accomplished with a bleed kit using Castrol Hyspin AW S-15 hydraulic oil and should be accomplished as follows:

1. Attach the 2 or 4 hydraulic lines (depending on the style of Pump) to the Pump. Put the free ends (cylinder ends) of the 2 or 4 lines in a bottle of hydraulic oil. Using the Pump, slowly force oil out of the free ends of the lines (turn pump crank clockwise in the "raise" direction) until no bubbles are coming out. **Do Not Retract the Pump.**
2. Disconnect the 2 or 4 lines from the Pump and put all the free ends in a bottle of hydraulic oil.



3. Turn the Pump up-side-down so that the ports are “up” and retract the Pump to the end of its stroke. Using the squeeze bottle in the bleed kit, inject hydraulic oil into each port of the Pump until both or all 4 Pump cylinders are completely full.

4. Reattach the 2 or 4 hydraulic lines to the Pump.

5. Attach a short bleed line to a Riser Cylinder with the free end in a bottle of hydraulic oil. Manually pull on the cylinder rod so that as the cylinder retracts, it sucks hydraulic oil into the cylinder.

6. With the Riser cylinder port “up” and the free end of the bleed line still in the hydraulic oil, compress the cylinder and slowly push the oil out of the cylinder until no bubbles appear. (This may have to be repeated several times.)

7. Repeat step 6 one more time, but compress the cylinder until only 1 inch of travel is left, then reattach the hydraulic line from the Pump.

8. Repeat steps 5, 6. & 7. For the remaining Riser cylinder(s).

9. With the Rotational Holding Fixture hydraulic system now completely plumbed, but with the rotational Gearbox removed, try the Pump. The two Risers should move within 1 turn of the pump handle. If not, there is still trapped air in the system and the affected circuit must be rebled.

10. To get the Risers to fully retract, first lower the Risers as far as the Pump will allow. Then loosen only one fitting per End Frame and slowly force hydraulic oil out until the Riser is about 1/8 inch from lowest position. Tighten fittings. Repeat for other End Frame



11. Retry the Pump. The Risers should move equally (allow about 1/8 inch maximum difference). The Risers should lower to within about 1/8 inch of lowest possible position. If not, bleed more hydraulic oil from the higher Riser.

NOTE: The two risers will not synchronize much better than 1/8" when not loaded (empty fixture). As the load is increased, synchronization will also be better.