

## Universal Magnetic Base Cleanup

The universal magnetic base has a single knob that tightens all the swivels and joints. Loosen the knob and you have free motion of all adjustments. Tighten the knob and all the joints are locked into place.



Disassembly of the universal magnetic base is not difficult, but there are quite a few parts to the arm assembly.

The silver parts of the arm assembly are chrome plated. Chrome plating provides fairly good corrosion protection so there should be little damage to these parts.

The black parts of the arm assembly have a black oxide finish. Black oxide is simply a tight, dark oxide of iron that provides minimal corrosion protection. Many of these parts will exhibit rusty areas. It is these parts that will require the most work to clean and protect from further oxidation.

Black oxide finish is created by submerging the parts in a hot bath of salts. This environment quickly causes a tight coating of iron oxide to form. Because the

salts are so corrosive, if the parts are not thoroughly cleaned after the black oxide finish is formed, secondary oxidation (rust) will quickly form. This might be the cause of the rust on these magnetic bases.

### *Tools Required*

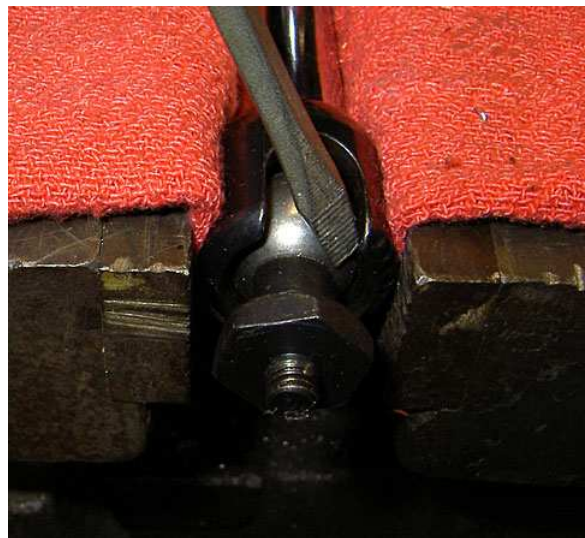
You will need the following tools to mount the long stock support.

- Small flat blade screwdriver
- Lightweight ball peen or other hammer
- Needle nose pliers
- Snap ring pliers
- Bench vise
- 14 mm end wrench
- Scotch Brite or very fine sandpaper

### *Procedure*

Follow these steps to disassemble the magnetic base.

1. Using the 14 mm end wrench, remove the arm assembly from the base magnet.
2. Remove the knob from the center joint in the arm assembly. Take the two arms apart, noting the order in which the parts of the joint are assembled.
3. Using the small flat blade screwdriver and hammer, tap the retaining ring around and out of one of the sockets. Remove the pin from inside the arm.
4. Repeat for the other socket.



5. Slide the socket up the arm. Using snap ring pliers, the small screwdriver and needle nose pliers, remove the retaining ring. Slide the socket off the arm.
6. Repeat for the other arm.
7. The arms are now disassembled. You should have the parts shown in the photo below.



8. Use Scotch Brite or very fine sandpaper to remove the rust from all the black parts. Clean the parts thoroughly with hot soapy water to ensure that none of the oxidizing salt solution is present. When dry, paint with semi-gloss black paint.
9. Reassemble the arm assembly in the reverse order from disassembly. Be sure to put the angled ends of the pins toward the center joint.
10. Oil all the moving parts with light protective oil such as Starrett Tool and Instrument Oil, or Starrett M1 Lubricant.

## Dial Indicator Lubrication

Many of the dial indicators in these kits are in good shape. Some need lubrication to make them work freely. A very few are frozen and unusable.

Remove the four Phillips screws to remove the back cover. This will expose the mechanism of the dial indicator.



To lubricate the mechanism, place a drop of Starrett Tool and Instrument Oil or other very light oil on a piece of metal. Don't use your can of WD-40. The residue it leaves will ruin the indicator in a few months.

Use a toothpick to transfer oil to the axles and gears in the dial indicator mechanism. Put a little oil on the plunger above and below the mechanism.

Replace the back cover.

