



Impact Handpiece

CLEANING & CONDITIONING

Recommended for: Monarch, 901 & Magnum handpieces

INTRODUCTION

To keep an impact handpiece running properly, cleaning is required. There are two types of cleaning: **BASIC CLEANING OF THE BORE AND PISTON** and **DEEP CLEANING AND CONDITIONING**. The handpiece should be cleaned after several years of use, if the air supply becomes contaminated, or if foreign matter or dirt enter the handpiece. Cleaning will extend the life of the handpiece and continue to give top quality results. The instructions below will walk you through the necessary procedures to clean an impact handpiece. If you would prefer GRS factory help on deep cleaning and conditioning, we can do it for you.

HANDPIECE DISASSEMBLY

To disassemble without marring or damaging, insert a QC holder with a graver into the GRS impact handpiece. Use a crescent wrench or pliers to grip the graver (FIG. 1) and turn it counterclockwise to loosen the chuck retainer. After loosening, turn the chuck retainer out with your finger (FIG. 2). As you pull the chuck out, the spring and piston will follow. Loosen the locking ring and remove it (FIG. 3). Grip the knob and turn the handpiece body counterclockwise until it is out of the knob body (FIG. 4). With the handpiece disassembled, clean the parts according to the instructions. Make sure the holes in the handpiece body are clear from dirt and debris. **DO NOT** get moisture in the air hose. If this happens, you will need to clear and dry it before reassembly.

Before reassembly, make sure everything is completely dry. **DO NOT** oil the inside of the handpiece. **NO** lubricant is required. Lubricant will actually decrease performance.

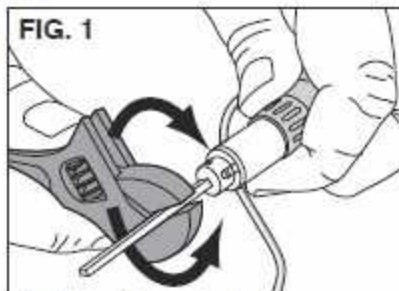
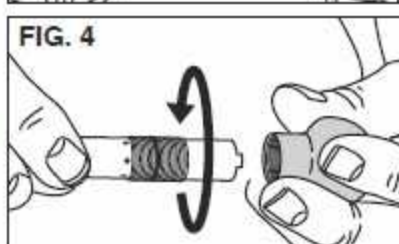
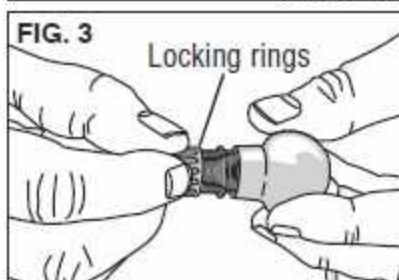
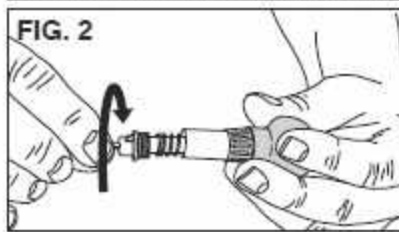


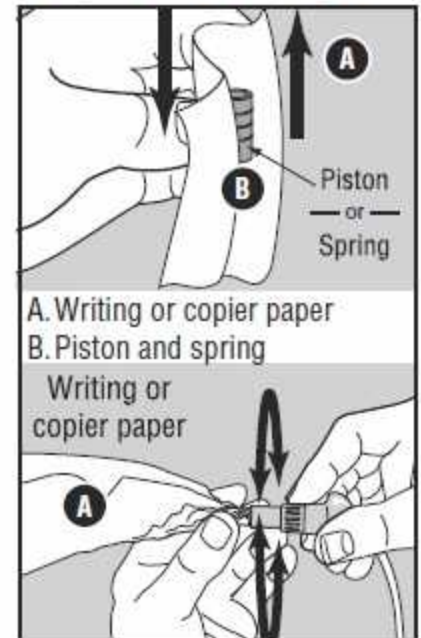
FIG. 1
Tighten: Turn clockwise
Loosen: Turn counter-clockwise



BASIC CLEANING OF THE BORE AND PISTON

If operation becomes sluggish, erratic, or fails, cleaning is indicated. This is the proper way to clean a handpiece.

Remove piston and spring from the handpiece. Take each, one at a time, and place in a sheet of **WRITING** or **COPIER** paper (DO NOT USE paper towel, tissue, or newsprint). Holding it between your fingers, buff and polish off any dirt or residue. Fold the paper and use the edge to clean between the piston grooves and the spaces in the spring.



To clean the inside of the handpiece, take **WRITING** or **COPIER** paper and twist it to a point. Insert the paper point into the handpiece and rotate paper and handpiece against each other.

IMPORTANT NOTE: DO NOT OIL OR LUBRICATE PISTON, SPRING OR BORE.

NOTE: Occasionally apply a very small amount of light grease to each O-ring. Do not allow grease to contact the piston or bore.

DEEP CLEANING AND CONDITIONING

Step 1: Handpiece Disassembly



Completely disassemble the handpiece. The two main components you will be servicing are the barrel, which has a precision bore for the piston, and the piston itself.



Step 2: Making a Polishing Mandrel

You need to make a simple polishing tool for reconditioning the stainless steel bore. This has two parts: a wooden dowel and a piece of clean medium weight cloth (a scrap from an old shirt, bed sheet, etc. works fine). Cut the cloth into a piece about 4" x 8". Select a wood dowel about 6" long with a diameter that easily fits into the handpiece you will be cleaning. As a general guide, use 1/4" diameter maximum for a Monarch handpiece, 5/16" diameter maximum for a 901 handpiece, and 3/8" diameter maximum for a Magnum handpiece. Slit the dowel lengthwise with most any saw; the slit should be slightly less than 4" long.

Line the dowel up with the center of the cloth and slide the cloth into the slit.



Step 3: Charging the Polishing Mandrel

Roll the dowel clockwise (the same direction as tightening a screw) until the cloth is fully wrapped around the dowel. Now insert the rolled up cloth and dowel inside the handpiece barrel to test its fit. It should turn easily by hand without being too tight. If it is too tight, cut some cloth off or use a smaller diameter dowel. Once you are happy with the fit, charge the outside of the cloth with a fine paste abrasive such as Simichrome Polish, Flitz, or something similar (these items can be found at most hardware stores). This type of product usually comes in a tube and is sold for fine metal polishing. Rub the polish into the cloth until it mostly disappears.

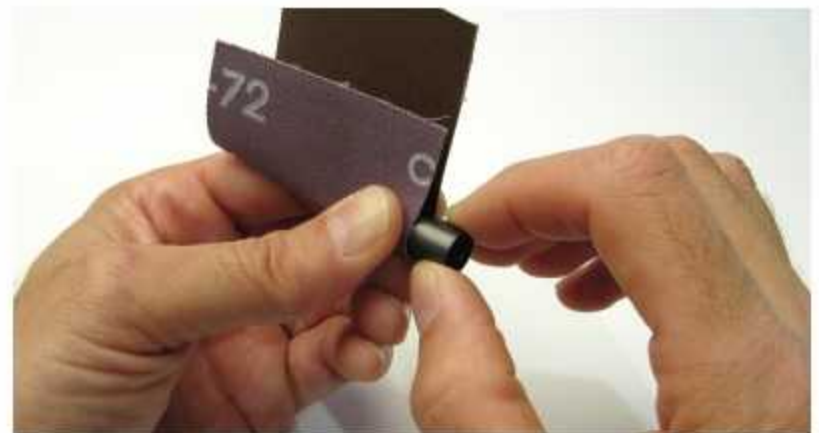


Step 4: Using the Polishing Mandrel

Mount the polishing dowel with charged cloth in a hand drill. Insert the polisher through the barrel bore and start the drill. Be sure it turns the cloth clockwise so it stays wrapped up on the dowel. A fairly high speed can be used. Work the dowel in and out, applying moderate pressure between the handpiece barrel and the polishing cloth. Turn the barrel occasionally to insure all of the bore is polished. Usually about 30 seconds is all that is needed to debur, polish, and condition most barrels.

Step 5: Cleaning Barrel After Polishing

After polishing the barrel, clean it in solvent (paint thinner or other cleaning solvent) and then wash it with soap and hot water. Dry the barrel thoroughly. If compressed air is available, use it to blow the barrel dry and clean.



Step 6: Piston Cleaning & Conditioning

NOTE: This step is for new version composite polymer pistons only. Do not use this step if you have an older coated piston as damage will occur (see "HOW TO IDENTIFY YOUR 901 PISTON" on last page). Make sure your hands are clean. If your handpiece uses a new version composite, self-lubricating piston (not a spray coating), an excellent way to clean and condition it is using polishing paper or fine crocus cloth. This is NOT the same as "fine" grit sandpaper; if you must use sandpaper, use 1000 grit or finer. Wrap the polishing paper/crocus cloth around the piston and rotate the piston by hand several times. Turn the piston around and repeat this on the other end of the piston. Wipe the piston carefully with clean, dry paper.

If your handpiece uses a coated piston, use a piece of clean white paper to do this cleaning and conditioning.



Step 7: Checking the Piston & Barrel Fit

Insert the clean piston into the clean, dry barrel. Cover each end partially (don't block off all the air) with your fingers and tilt the barrel left and right up to 30° from horizontal. The piston should slide freely and hit both of your fingers as you tilt the barrel back and forth. If it does not slide freely, the barrel and/or piston needs further cleaning and conditioning until it passes this test.

Step 8: Reassembly

There is an O-ring inside the knob that can make getting the handpiece body somewhat difficult to install when reassembling. If so, use a very small amount of light grease around the OUTSIDE of the handpiece body (see I. below) between the threads and the end to make this easier. Do not allow the grease to contact the piston or bore. Clean all dirt and oil off the remaining parts including the spring and receiver. Reassemble the handpiece using clean, dry hands. Now test the handpiece in operation. It should work wonderfully.

ADJUSTING THE HANDPIECE

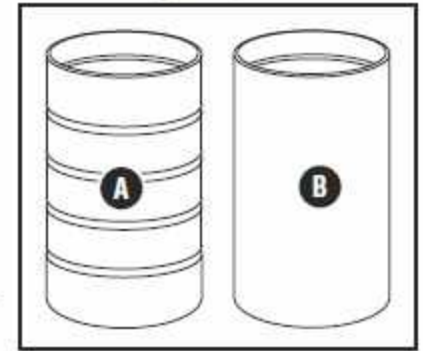
With the locking ring slightly loose, you are able to turn the handpiece body and knob independently. Position the Quick Change holder with the graver "point" down. Rotate the knob until the hose position is comfortable, then tighten the locking ring.

You can also extend the length of the handpiece a little by unscrewing the knob and body even more. NOTE: By extending the length you may notice a slight reduction in power depending on the type of work you are doing.

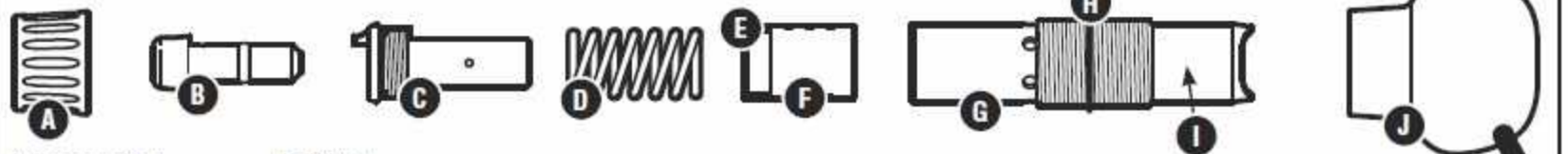
HOW TO IDENTIFY YOUR 901 PISTON

A. Original design with coated stainless steel piston. Note the four small grooves around the outside of piston. Use only paper to clean this type of piston, NOT any abrasive including crocus cloth or fine sandpaper.

B. Newer composite polymer self-lubricating Piston. This may be cleaned and polished using fine crocus cloth or polishing paper.



BASIC CONSTRUCTION FOR MONARCH, 901, AND MAGNUM HANDPIECES



- | | |
|--------------------------|--|
| A. Locking Nut | F. Piston |
| B. QC Holder | G. Handpiece body |
| C. Chuck Receiver | H. O-ring |
| D. Spring | I. Apply a <u>very light</u> film of grease to facilitate reassembly |
| E. Hollow end for spring | J. Handpiece Knob |