

INSTRUCTIONS FOR USE

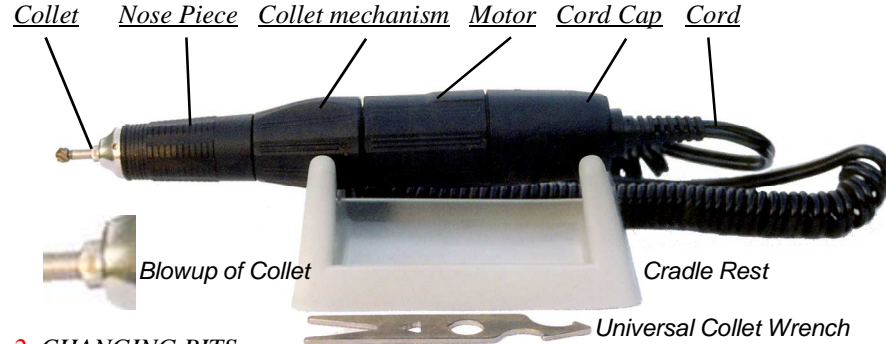
Please follow these safety rules when using the Optima 2 Plus or Ultima

- A. *Wear Eye Protection! It takes only one small piece of flying debris to cause serious eye injury.*
- B. *Keep this and all power tools out of the reach of children.*
- C. *Wear a dust mask, or use a dust collector, approved for the type of material you are grinding. Many materials can be dangerous to breathe when they are ground into small particles.*

INSTRUCTIONS

1. HANDPIECE SECTION OUTLINE:

The handpiece is divided into six sections. From Front to rear they are: Collet, Nose Piece, Collet "Release/Secure" mechanism, motor, and cord cap. The collet mechanism has an "R <----> S" embossed on it. Keep these different "sections" in mind when reading the rest of these instructions. **DO NOT TRY TO REMOVE THE "NOSE PIECE" SECTION OF THE HANDPIECE!**



2. CHANGING BITS:

To Release a bit, hold the handpiece motor section, and turn the Secure/Release section toward the "R" about 1/4 turn, until it locks open (you should hear a distinctive "click"), and exchange bits. Then turn the collet/release section back in the "S" direction to Secure the bit. Be sure that your bits are clean, dry, rust, and dirt free before inserting into collet, to ensure clean operation of collets. **NEVER** turn the collet/release section while the unit is in operation! **Do Not** use oversized bits. If it does not fit into the collet, do not use it!

3. COLLET EXTRACTION AND INSTALLATION:

To extract a collet from your handpiece, twist the collet/release section toward "R" about 1/4 turn, until it locks into place. Use the triangular hole in the collet wrench to unscrew the collet counterclockwise (always keep a bit, or "blank bit" of the proper size, in the collet while doing this to prevent damage to the collet). Select another collet, ensuring that its threads are clean and dirt free, insert into collet hole, put a bit or blank shank into collet, and screw it in clockwise by hand. Tighten with collet wrench until you feel some resistance, twist the collet/release section toward "S" (Secure bit) again before operating. You should tighten collets fully with collet wrench, or your handpiece may not operate properly. Do not over tighten, as you can strip the collet threads or even break the collet.

4. TO REVERSE DIRECTION:

When changing the handpiece rotational direction, let the tool stop rotating **COMPLETELY** (switch in center, knob at low or off position) before switching it to other direction. This will prolong the life of your motor handpiece tool greatly.

5. TO TURN OFF MACHINE:

Rotate the speed control dial fully counterclockwise until you hear a click, and the green light is off. Or, on the Ultima, turn the Burn/Grind switch to the center position.

6. TO CHANGE BRUSHES (Or to check them)

Check brushes periodically (every 3~6 months), as they should be replaced at or before they reach 2 mm in thickness to the brush spring. Unscrew the cord cap. On either side of the black plastic assembly on the back, you will see indentations with copper colored strips with a silver colored solder ball on it, being held in by a small Phillips head screw. Use a small Phillips head screw driver to remove those screws (don't loose them), and remove each brush. Do one side at a time, so that you know how it is reassembled. Take note of how each brush is worn (direction of cupped wear), and be sure to reinsert used brushes exactly the same way they were prior to extraction. When finished, screw the cord cap back on. When installing new brushes, place the handpiece onto the cradle rest, and run the handpiece in forward, reverse, and then forward again at high speed for at least 30 minutes in each direction; to "break in" the brushes before using the handpiece again. Always be sure that the motor comes to a complete stop, and that your speed control dial is set to low before reversing motor direction.

7. The Optima 2 Handpiece uses precision ball bearings.

DO NOT OIL THEM OR THE COLLETS!, as that will ruin the special lubricant in them, and cause them to quickly fail (doing that will also void your warranty!) **DO NOT** use compressed air, a vacuum cleaner, or even blowing air harshly by using your mouth; to clean out/off the handpiece or collet hole, as this will drive dust into the bearings, and blow the oil out of them. Use a clean cloth instead.

8. NOTE:

The Optima 2 and Ultima power supplies include a built-in resettable circuit breaker that will cut off power to the handpiece if it is over worked or abused for 5 seconds or more. If this happens, turn off the machine (see #5) for 30 to 60 seconds, and then turn it back on. Go easier on the tool if this happens!

WARRANTY: The Optima 2 Plus handpiece and cord is warranted against manufacturing defects for 2 years from date of purchase (copy of proof of purchase date, or receipt required), not including brush wear (a consumable) or operator misuse. The Optima 2 Plus power supply is warranted against Manufacturer defects for life. If any repairs are needed, they will be performed quickly right here at PJL Enterprises. Please call before sending it in for repair so that we can diagnose the problem. Sometimes you don't need to ship the whole unit, which could save you some money. You should contact PJL about repair diagnostics, after which you'll be given a recommendation on what to ship, and how to ship it for fastest service possible. **DISASSEMBLY OF THE NOSE PIECE, OR POWER SUPPLY, WILL VOID YOUR WARRANTY!** The collets, brushes, and cord are the **ONLY** user serviceable parts.

Micro Motor Trouble shooting

Handpiece does not work, or makes a strange noise, after changing collets.

Usually this means that you either did not screw the collet all of the way in, or that you still have the "Release/Secure" collet mechanism in the "Release" mode. The collet needs to be screwed all the way in for the shaft to rotate freely. Do not over tighten, as you may strip the collet threads on the collet when tightening it down with the wrench (use your fingers to start it). If your collet is in all the way, you should be able to freely rotate the bit, collet, and shaft assembly by rotating the bit with your fingers. If only the bit rotates, and the collet and shaft do not, then you do not have the Secure/Release mechanism in the proper position (turn it toward the S).

The handpiece was working, but now it stopped.

Check to see that the indicator light on the power supply is on. If not, your unit may have become unplugged, or a circuit breaker may have tripped. Check that the handpiece coil cord is fully plugged in, and that there are no breaks or cuts in the cord. Check to see that your "Forward / Reverse" switch is not in the center off position, and that your On/Off speed control knob is turned to "1" or higher.

Otherwise, you may have been working the handpiece a bit too hard and tripped the unit's internal circuit breaker, and you need to shut the main control off for at least 30 seconds (See #5 in main instructions). If this happens a lot, you may need to use smaller diameter bit heads (larger bit head = more torque required). This tool is meant for doing fine detail work, not roughing out large amounts of material with large bits (5/16" sized bit head or smaller is recommended).

If you are using a proper bit size, and not using excessive force when carving, but you are running the unit at lower RPMs for an extended period of time? Then the heat sink may be over heating, and that may have caused the motor protection circuit to trip. You can prevent that from happening, by putting the power supply near the intake of your dust collector, or some place where the heat sink has enough air flowing over it to cool it properly (The back panel of the power supply unit also serves as the voltage regulator heat sink)

If all else fails!

Then give us a call, and we'll try to diagnose or fix any problems that you may be having with your Optima 2 Plus unit. Many times it does not have to be sent in, if it can be diagnosed over the phone, and you may be able to repair it yourself with our help.

Warranty/Repair Contact Information

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The Optima 2 Plus Micro Motor Tool

By PJL Enterprises



The Optima 2 Plus Power supply with 45,000 RPM Handpiece



The Optima 2 Plus "Standard" 35,000 RPM Handpiece

*Read all of these instructions
carefully before using*