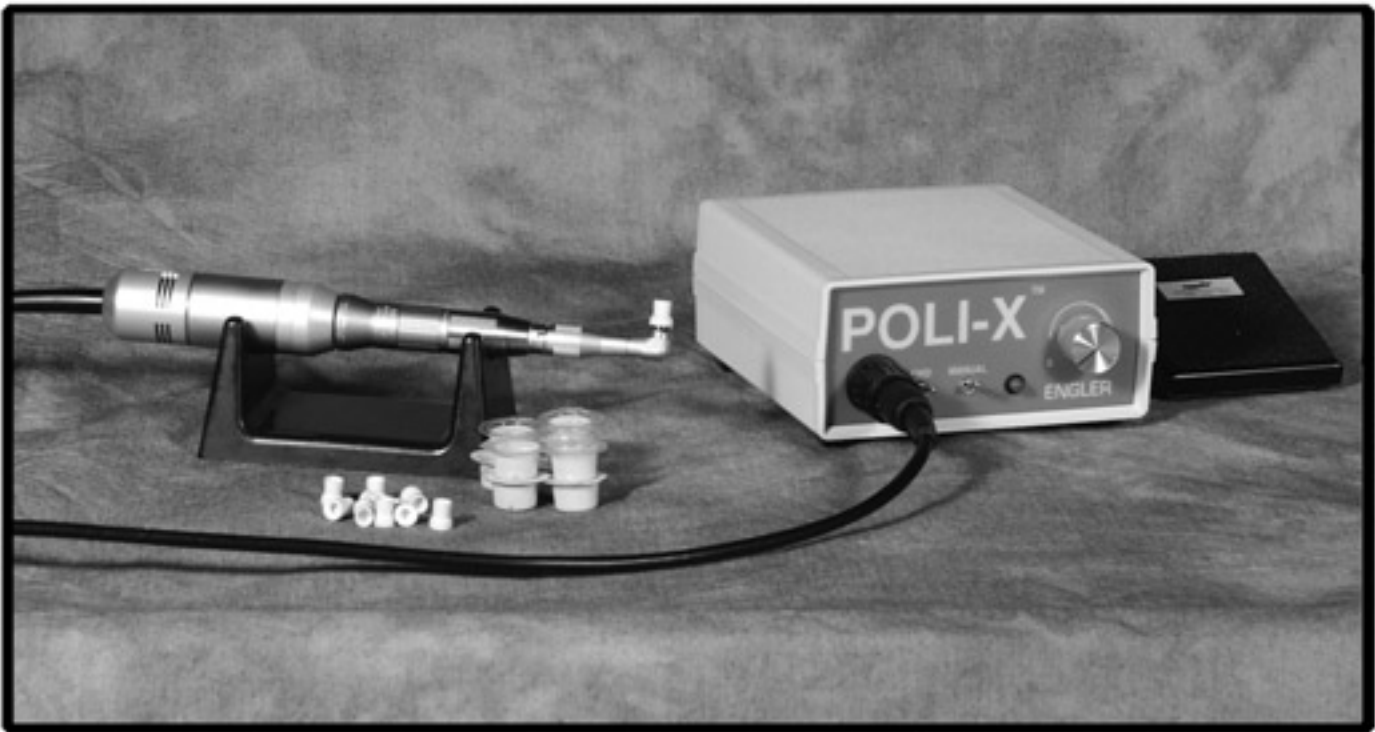




POLI-X

Ultrasonic Dental Polisher



Instruction Manual

1099 East 47th Street - Hialeah, Florida 33013 USA

Tel: (305) 688-8581 - Fax (305) 685-7671

Web site: www.englerusa.com - Email: info@englerusa.com

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Introduction

Thank you for purchasing an Engler POLI-X Dental Polisher.

The design of the Engler Engineering Corporation POLI-X dental polisher combines the latest in integrated circuit technology, to insure a reliable polishing device.

Your new POLI-X operates by converting standard line voltage to a variable Direct Current (D.C.) voltage. This voltage is manually adjustable between 2.5 and 27 volts giving you an extended range of operational speed. This allows you to accomplish a wide variety of procedures.

With optional attachments available from Engler this POLI-X can also be used for cutting, drilling, grinding, sectioning and finishing. These items are listed towards the end of this manual

To insure proper operation and a long trouble-free life, the POLI-X requires regular maintenance. This can be easily accomplished by following the instructions included in this manual.

PLEASE READ CAREFULLY

We make every effort to verify that all parts for the unit, along with optional accessories shipped from our location, are included in your order. It is imperative that you inspect the package and if you find any pieces missing or damaged, please notify us immediately.

Engler Engineering Corporation will not be held liable for any damage incurred while using this unit in any manner for which it was not intended. Thank you for purchasing an Engler POLI-X Dental Polisher.

If you have any questions or comments, please contact:

Engler Engineering Corporation
1099 East 47 Street
Hialeah, Florida 33013

800-445-8581 - 305-688-8581 - FAX 305-685-7671

TECHNICAL DATA:

I. POLISHER:

Input Voltage:	120	240 VAC
Input Frequency:	50/60 Hz.	50/60 Hz.
Power Control:	Variable Voltage Style	
Output Voltage:	3 – 30 VDC	
Output Current	5 Amperes (max)	

II. MICROMOTOR

Velocity Range:	300-35,000 RPM
Style:	Sealed Bearing
Brush Design:	Fully Replaceable Brushes

III. STRAIGHT HANDPIECE:

Maximum Drive Velocity:	30,000 RPM
Style:	Sealed Bearing Twist Lock Collet

VI. PROPHY ANGLE:

Recommended Drive Velocity:	5,000 - 6,000 RPM
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VII. DIMENSIONS:

CHASSIS:

Length:	5 1/4 in. (13.3 cm)
Width:	5 in. (12.7 cm)
Height:	2 1/2 in. (6.35 cm)

NET WEIGHT: 2 1/2 Lbs. (1.1 Kg.)

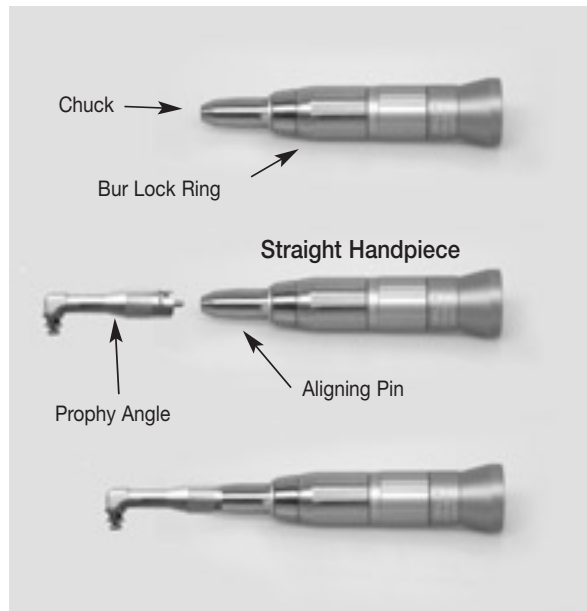
SHIPPING WEIGHT: 4.5 Lbs. (2.1 Kg.)

Before installing or operating your new POLI-X, please read and follow all of the instructions and suggestions. They have been written to assist you in maintaining your unit properly

IMPORTANT: The POLI-X must be connected to a grounded electrical outlet.

POLISHER INSTALLATION:

1. Plug the Micromotor into the front of the control box. This is done by inserting the male connector at the end of the Micromotor cable, into the female receptacle on the front panel of the unit and rotating the locking collar clockwise.
2. Slide the Straight Handpiece down over the top of the Micromotor, until it snaps into place.
3. Line up the notch of the Prophy Angle with the Aligning Pin on the Straight Handpiece, and then push the shaft of the Prophy Angle into the chuck of the Straight Handpiece.
4. Rotate the Lock Ring counter-clockwise, until it clicks and locks the prophy angle in place.



5. Place a disposable rubber polishing cup on the end of the Prophy Angle by snapping it on. The Prophy Angle is now secured and ready for operation.
6. Rotate the selector knob on the front of unit to forward operation.

NOTE: When using the polisher the RED LED indicator should be on.

NOTE: It is suggested to use a low to mid range speed setting for polishing.

SAFETY INFORMATION:

Note: For your safety Never turn the Bur Lock Ring while the Handpiece is in operation.

OPERATIONAL SUGGESTIONS:

1. **Never reverse the direction of the Micromotor while it is in operation.** Possible damage to the unit may occur. Always let the Micromotor come to a complete stop before reversing directions.
2. **Do not drop** the Micromotor, Handpiece or Prophy Angle on the floor or other hard surface as the shock may cause malfunction.
3. **Do Not lock or run** the Micromotor / Straight Handpiece Assembly without a Prophy Angle, Cutting Disk, Contra Angle, or test shaft installed. Doing so could damage the Straight Handpiece and / or Micromotor.
4. When installing the Prophy Angle or other accessory, make sure that the Bur Lock Ring is rotated fully in the unlock position, otherwise the accessory can not be installed and the Straight Handpiece will not operate.
5. Do Not change the selector switch on the front of the control box between Forward and Reverse rapidly. Always allow a second between the two selections.
6. As this is a precision instrument, always return it to Engler Engineering Corporation for repair.

Important: When installing any accessory make sure that the marker lines up EXACTLY. If you can not put the accessory into the Straight Handpiece, rotate the two halves as you may have it in the locked position.

POLISHER OPERATION:

1. Dampen the rubber cup and place a small amount of polishing paste on it.
2. Rotate the POWER control to the minimum setting.
3. Depress the footswitch and the rubber cup will begin to rotate. The speed of rotation may be adjusted to your desired level by readjusting the POWER control.



IMPORTANT: The Prophy Angle is only rated to rotational speeds of 5,000 RPM - therefore, in order to prevent premature failure of the angle keep the unit set in the Prophy range whenever the Prophy angle is attached to the Straight Handpiece.

4. High speed settings may throw the polishing paste off of the rubber cup. Always start with a low speed and then adjust to a higher speed as required.
5. Place the end of the angle into the patients' mouth and gently apply the rubber cup to the surface of the tooth with a circular motion. Do not allow the rubber cup to remain stationary on one area for an extended period of time.

MICROMOTOR MAINTENANCE:

The Micromotor is capable of rotational speeds up to 35,000 RPM for use in cutting, sectioning and drilling. It contains sealed bearings and does not require any lubrication. The Micromotor has cooling vents located at the back of its body, **DO NOT** allow water, oil, or any other substance to enter these vents. Failure to keep debris out of the Micromotor will shorten the lifespan of the unit and may cause permanent damage.

IMPORTANT:

1. **NEVER** change the direction of the Micromotor while it is in operation. **ALWAYS** wait until it has come to a full stop.



STRAIGHT HANDPIECE MAINTENANCE:

LUBRICATION-

It is recommended to use the 8 ounce spray lubricant with nozzle as shown in the accessories section (page 20) of this manual to maintain proper cleaning and oiling of your Straight Handpiece. The less recommended method is to use the enclosed lubricant. Place 1 drop of oil in the chuck hole. (See drawings below.) Wipe any excess oil off before placing the Straight Handpiece on the Micromotor.

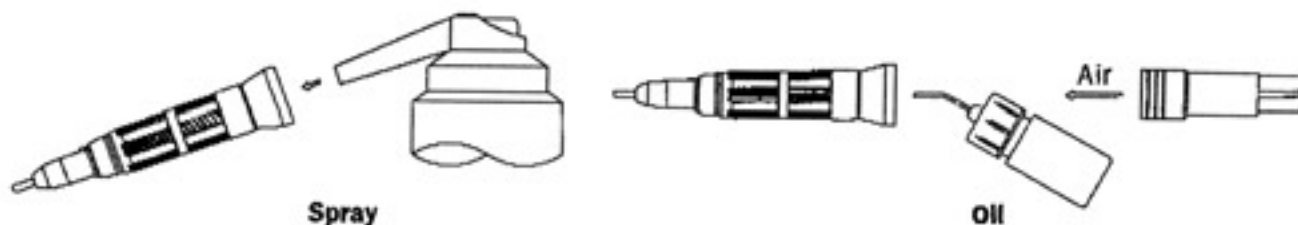
Do not lubricate the Handpiece while it is on the Micromotor.

Lubrication of the Straight Handpiece is required at least once a week.

Lubrication by spray lubricant:

1. Make sure that the Straight Handpiece is in the unlocked position prior to lubricating.
2. Install the E-Type nozzle by pushing it onto the top of the spray can. To lubricate, insert the E-Type nozzle into the bottom of the Handpiece. Holding the two together tightly, with can in the upright position, push spray button for 2 to 3 seconds.

NOTE: If spray time is too short oil may not be propelled into all areas of the Handpiece.



CLEANING and STERILIZATION OF HANDPIECE.

Cleaning:

1. Wipe the Handpiece clean with an alcohol-soaked soft tissue.
2. Never clean the Handpiece with boiling water, chemical solutions, ultrasonic cleaner, or with wire brushes.

Sterilization:

1. Autoclaving is recommended for the Engler, Straight Handpiece.
2. Clean the Handpiece as described above.
3. Lubricate the Handpiece as described in the lubrication section of this manual.
4. Place the Handpiece in an autoclaving pouch and seal it in accordance with the instructions on the pouch.
5. Autoclave the Handpiece for no longer than 20 minutes at 121 C (250 F), or 15 min. at 132 C (270 F).

Keep the straight Handpiece away from water vapor or mist that may settle and cause premature damage to the bearings.

IMPORTANT: If you experience problems during operation, call our repair department. DO NOT attempt to repair the straight Handpiece. Removing any screws will shift the internal springs and may cause permanent damage to the unit and will void your warranty.

POLISHER MAINTENANCE:

PROPHY ANGLE:

The Propy Angle is a precision engineered dental device. All of the gears and shaft assemblies are made of high grade stainless steel, which if cleaned and lubricated correctly will provide long, trouble-free service.

Daily Cleaning and Lubrication:

1. Remove Propy Angle from Straight Handpiece.
2. Remove used rubber cup.
3. Follow the supplied instructions that were included in the package with the Propy Angle.

NOTE: Do not use a Q-Tip or any item with loose fibers.

4. Wipe off all excess oil.
5. Confirm that the gears are meshing properly and turning smoothly by rotating the shaft at the base with your fingers. The shaft should turn easily rotating the head cap.
6. Place a new rubber cup onto the angle.
7. Slide the Propy Angle down over the Straight Handpiece and lock it in place.

IMPORTANT: For a long dependable life, the Propy Angle should be lubricated daily, if possible after each treatment. Keep hair away from Propy cup and head cap.

SUGGESTION: To keep hair from getting tangled in the angle, we recommend using a gentle adhesive tape around the lips, keeping hair in place away from treatment area.

POLISHER TROUBLESHOOTING:

NO POWER:

1. “ON” LED indicator does not light up:
 - A. The unit is not plugged in to a power outlet: verify that the unit is plugged in.
 - B. Power Outlet not active: try another outlet. Also check the electrical panel to verify circuit is on.
 - C. Contact Engler Engineering Corporation.
2. “ON” LED indicator lights up polisher not functioning:
 - A. Micromotor not plugged in: plug micromotor in.
 - B. Short in Micromotor or its cord: Contact Engler Engineering Corporation for instructions.

HOT HANDPIECE:

1. Handpiece not lubricated properly: Lubricate as shown on page 8.
2. Bearings in straight handpiece are becoming worn, causing drag. Contact Engler Engineering Corporation.

HOT MICROMOTOR:

1. Straight handpiece causing drag, lubricate correctly.
2. Worn brushes in micromotor, Contact Engler Engineering Corporation.
3. Oil inside micromotor, return to Engler Engineering Corporation.

INTERMITTENT OPERATION:

1. Unit polishes and then stops:
 - A. Damaged micromotor cord: contact Engler Engineering Corporation.
 - B. Possible malfunction in control box. Contact Engler Engineering.

MISCELLANEOUS:

1. If the micromotor speed does not vary (runs high speed only): return the complete POLI-X to Engler Engineering Corporation.
2. If the prophy cup “flies off” the prophy angle: micromotor is rotating in the wrong direction, change direction by rotating the selector on the front of the unit to the opposite direction.
3. Straight handpiece rotates on the micromotor:
 - A. Prophy angle or Contra angle is binding. Remove angle, clean and oil. Try again. If rotation continues, call Engler Engineering for technical assistance.
 - B. Straight handpiece not properly locked.

POLI-X Dental Accessories

A number of optional handpieces and attachments are available for the POLi-X unit. 1:1 handpieces, reduction handpieces, friction grip or latch type contra angles, prophy angle, 2.35 mm shaft diamond cutting disc, 1.60 mm shaft diamond and carbide bur kits, prophy paste and snap-on rubber cups.

AUTOCLAVABLE: All handpieces, metal accessory angles, metal discs and burs are autoclavable. **** Please note Micromotor is D.C.****

Optional Accessory MAINTENANCE FOR THE FRICTION GRIP CONTRA ANGLE



P-A3 F.G. Contra angle for handpiece

Part A

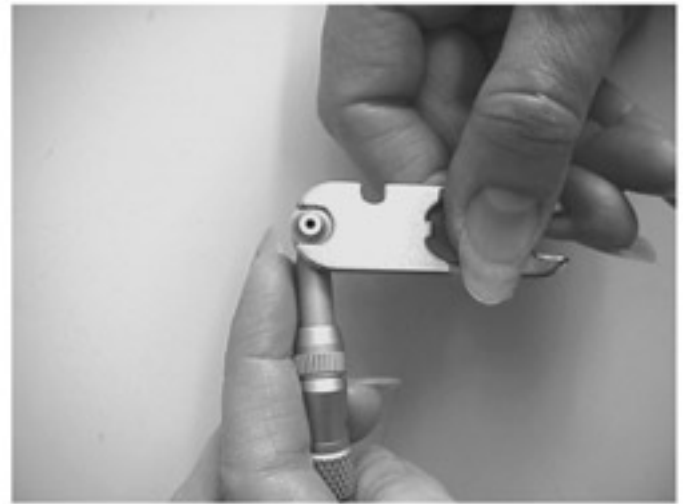
1. Hold the contra angle in one hand and the special wrench in the other.
2. Position the “U” cutout on the wrench, which corresponds to the correct head cap size, over the head cap. Note the wrench only fits on to the flats of the head cap.
3. Rotate wrench in a clockwise direction until head cap is loose.
4. Unscrew the head cap with your fingers, and put aside to be cleaned with alcohol.
5. Pull the collet assembly from the contra angle’s head .

6. Clean the collet assembly with alcohol and lubricate with Vaseline or oil.
7. Put the collet assembly back into the head making sure the long part of the collets assembly is first into the head, and that the crown on the collect assembly mates with the crown in the head.
8. Replace head cap, turning counterclockwise secure with finger tight pressure: note do not use the wrench to tighten the cap.

Part B

1. Locate the nut approximately one inch from the head located on the elbow.
2. Unscrew counterclockwise, and separate the head from the main body.
3. Remove the shaft that is located in either the main body or the head.
4. Clean the shaft with alcohol, then lubricate with a light film of oil making sure that a drop of oil is placed in the hole that is in the middle of the shaft. Apply a dab of vaseline on both ends (crowns) for lubrication.
5. Replace the shaft into the main body (short end first).
6. Fit the head onto the long end of the shaft, making sure that the teeth on the head locates with the teeth of the main body at the correct angle for the desired operation.
7. Secure the nut using only finger pressure.

CONTRA ANGLE



LOOSEN CLOCKWISE AS SHOWN AND KEEP TURNING WITH FINGERS UNTIL HEAD CAP COMES OFF.



FIG A

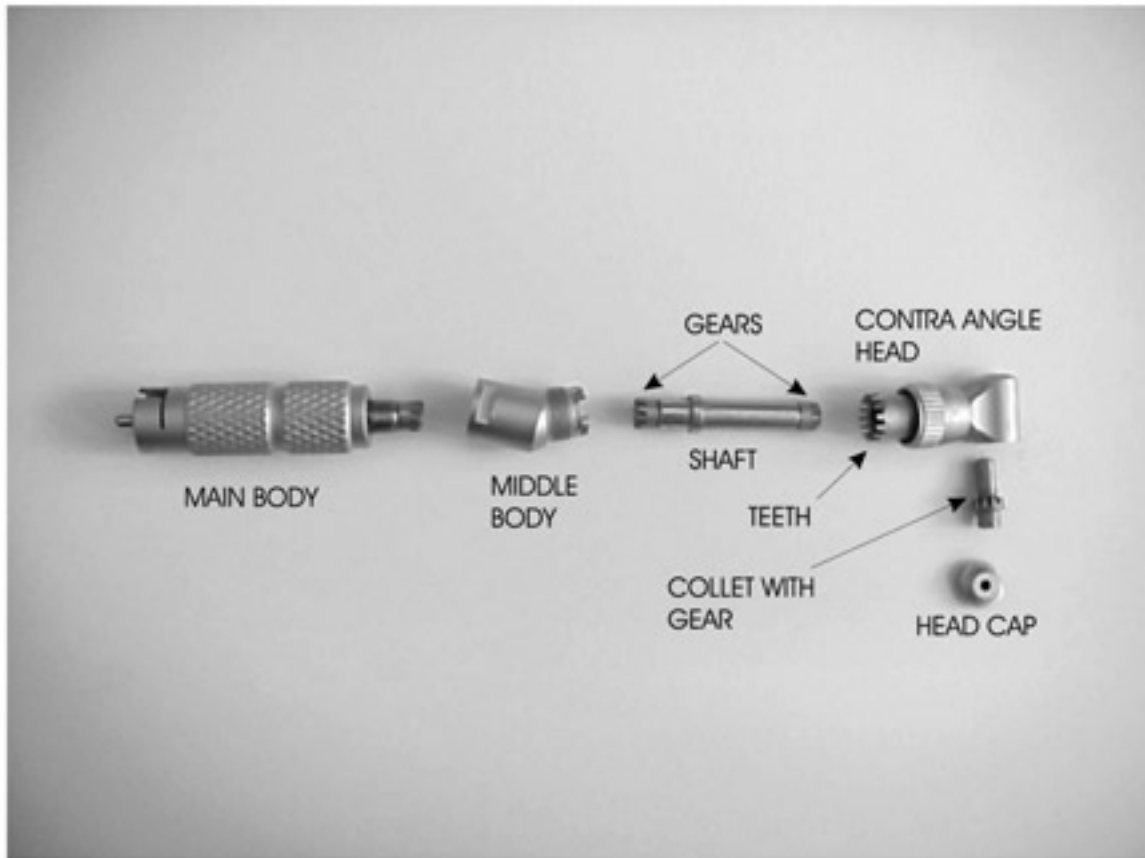


FIG B

TO SEPARATE MIDDLE BODY FROM MAIN BODY POSITION THE WRENCHES AS SHOWN. TURN WRENCH IN FIGURE B COUNTER CLOCKWISE (DO NOT MOVE LOWER WRENCH.)

DISASSEMBLE ALL PARTS AS SHOWN . WASH ALL PARTS IN A BOWL WITH WATER AND A LITTLE SOAP. RINSE WELL AND DRY THOROUGHLY WITH A LINT FREE CLOTH. LUBRICATE ALL GEARS WITH VASELINE PETROLEUM JELLY (NOT K-Y) AND REASSEMBLE.

CONTRA ANGLE



TO REMOVE BUR: PUSH PIN INTO CONTRA ANGLE HEAD, UNTIL BUR FALLS OUT.

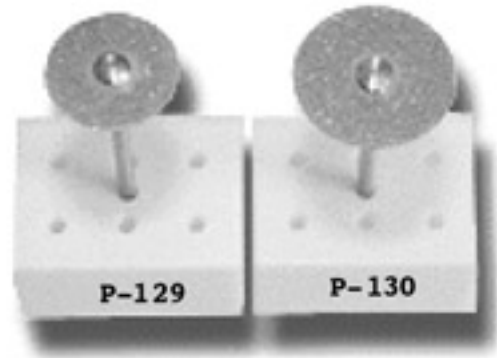


TO INSTALL BUR: INSERT BUR INTO HEAD CAP, USE RUBBER END OF TOOL TO PUSH BUR INTO THE CONTRA ANGLE HEAD.

DIAMOND DISC OPERATING INSTRUCTIONS:

The diamond disc is an extremely powerful and versatile tool which may be used for dental and other surgical procedures.

P-129 Diamond cutting disc 18 MM dia.
P-130 Diamond cutting disc 22 MM dia.
Both disc's have a 2.35 mm post diameter



WARNING !!!

Keep the cutting disc away from any surface you DO NOT wish to cut. The disc operates at a very high speed and it is extremely sharp. The disc will cut through Skin, Bone, and Tooth surfaces with no resistance. Keep fingers away from disc at all times.

NOTE: To prevent thermal damage to the surface being cut, it is highly recommended that you irrigate the area being cut with water during the procedure.

Always wear protective eye or face protection when using the cutting disc.

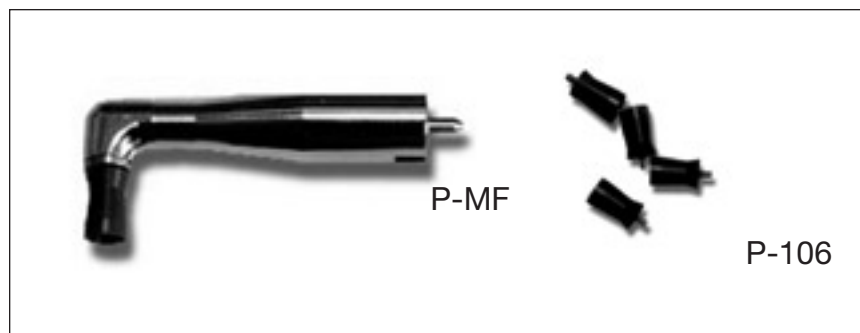
1. Place the cutting disc into the straight handpiece. This can be done by performing the following:
 - A. Hold the straight handpiece in one hand, and rotate the movable collar so that the dot on the collar lines up with the marker on the straight handpiece.
 - B. If there is another tool in the straight handpiece, remove it at this time.
 - C. Fully insert the shaft of the disc into the chuck of the straight handpiece.
 - D. Rotate the movable collar so that the dot on the collar lines up with the dot on the straight handpiece.

2. Place the selector switch on the front of unit to micromotor forward operation.

Important: Do Not run the Micromotor/Straight Handpiece Assembly without a Prophy Angle, Cutting Disk, Contra Angle or other accessory installed. Doing so could damage the Straight Handpiece and/or Micromotor.

3. Adjust "POWER" control to a medium to high setting.
4. To activate, depress footswitch.

Optional Accessories CARE FOR YOUR MAINTENANCE-FREE ANGLE



P-MF Maintenance free prophy angle
P-106 screw on rubber cups 144/pkt

STERILIZATION PROCEDURES: After each prophy...

- A. Remove rubber cup.
- B. Rinse abrasive paste from head area with water.
- C. Thoroughly clean the outside of angle with disinfectant.
- D. Autoclave angle - not more than 275°F (135°C)
- E. After sterilization cycle is complete, install a new disposable rubber cup and attach angle to handpiece. You are now ready for your next prophy.

CAUTIONS AND WARNINGS:

- A. Do not attempt to disassemble.
- B. DO NOT SUBMERGE IN LIQUIDS, INCLUDING ULTRASONIC SOLUTIONS.
- C. Do not heat over 275°F (135°C).
- D. Use only Engler Care Free Prophy Rubber Cups. Other brands will not properly seal the angle, causing premature wear and voiding the warranty.
- E. Use 1 year and dispose of properly.

YOUR CARE-FREE ANGLE IS WARRANTED AGAINST DEFECTS IN MATERIAL AND WORKMANSHIP FOR 6 MONTHS. A COPY OF OUR INVOICE OR PICKING TICKET WILL BE REQUIRED AS PROOF OF PURCHASE.

WARRANTY IS VOID IF:

- A. Engler Care-Free rubber cups are not used exclusively.
- B. Sterilization procedure is not followed properly.
- C. The angle has been submerged in any liquid.
- D. The angle has been damaged or abused.
- E. Damaged due to use at high speed.

**If you have any questions or concerns, please call us.
ENGLER ENGINEERING CORP
800-445-8581**

Optional Dental Accessories



P-131 Carbide Burs - Kit of 6
P-132 Diamond Burs - Kit of 7



P112 Polishing paste (8 oz. jar)



P-105 Snap on rubber cups 144/pkt
P-110 polishing paste (200 cups)

Optional Oiling Accessory Spray Lubricant with E-Type Nozzle for all Engler Polishing Straight Handpieces

8.8 Oz / 355 ML



8.8 Oz. / 355 ML # P-02

To Order call:



**At 1-800-445-8581
or 305-688-8581**

**If you have any questions or concerns, please call us.
ENGLER ENGINEERING CORP
800-445-8581.**

WARRANTY INFORMATION

It is imperative that when calling Engler Engineering regarding the operation of your unit, that you have the serial number available for quick reference.

The POLI-X polisher with attachments, is warranted to be free from material and manufacturing defects to the original consumer / purchaser for a period as specified below.

The POLI-X control box is warranted for a period of six (6) years from date of purchase.

The micromotor is warranted for a period of one (1) year from date of purchase.

The polishing straight handpiece is warranted for a period of one year from date of purchase.

Prophy and Contra angles, burs and cutting discs are warranted for a period of thirty (30) days from date of purchase.

All warranties are void if the items have been damaged due to negligence, improper use, failure to lubricate, removed parts, or opening the control unit.

PLEASE NOTE:

Whenever returning any products for evaluation and / or repair, we strongly suggest you send in the complete unit with all attachments so that a correct evaluation can be made.

You can mail all comments, suggestions and questions to us at the following address and number:

Engler Engineering Corp.
1099 East 47 Street
Hialeah, FL 33013

If you wish to fax to us, please use 305-685-7671.

For your convenience, the following names are listed for your correspondence:

President	Eva Engler
VP Sales & Marketing	Steven Menaged
Operations Manager	Joel Katz
Customer Service	Raya Engler
Cust. Service/Repair	Harvey Meinstein

RETURN FOR EVALUATION / REPAIR FORM

PLEASE PHOTOCOPY AND INCLUDE A COMPLETED COPY WHENEVER SENDING UNITS IN TO US FOR EVALUATION AND / OR REPAIR.

CLINIC PHONE NUMBER: _____ FAX # _____

CLINIC NAME: _____

Contact person: _____

Shipping Address: _____

City: _____ State: _____ Zip: _____

Item being sent: _____

Please describe what is happening or why you are sending in this unit:

When returning items to us, we would prefer you send the complete unit so that a proper evaluation can be made.

It is suggested that you ship all returns to us by Federal Express, UPS or DHL. If using US Mail, it is suggested that you track and insure the package.

Address all returns as follows:

**ENGLER ENGINEERING CORP.
REPAIR DEPARTMENT
1099 EAST 47 STREET
HIALEAH, FL 33013**