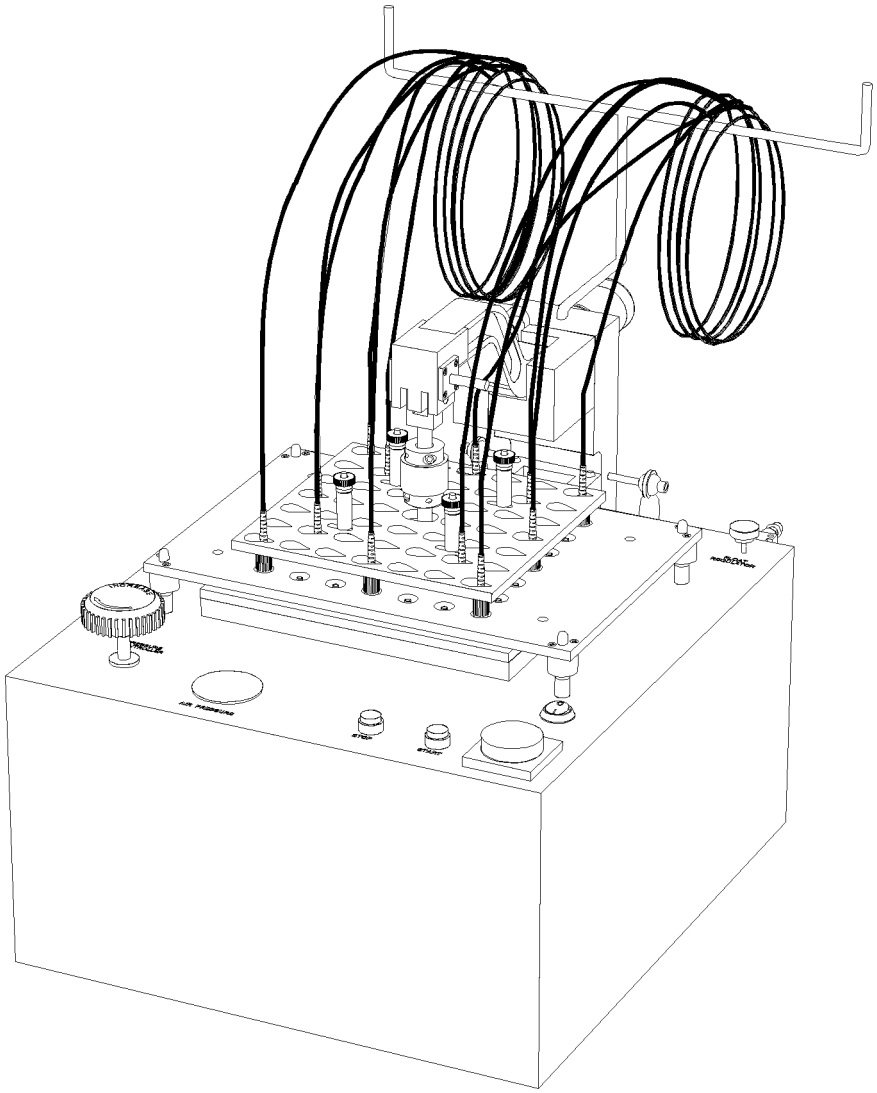
MCP 48

MASS CONNECTOR POLISHER

INSTRUCTION MANUAL



Instructions for using and polishing with the:

UNI 48

NANOMETER TECHNOLOGIES

MCP48
MASS CONNECTOR POLISHER

INSTRUCTION MANUAL - UNI 48 (Universal Polishing Fixture)

Document Number RE:48A3-UNI

Please address any questions, comments and suggestions to:

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September 3rd, 2013

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Before using the MCP48 please make sure that all of the following items are present.

Standard Parts List

Base Polisher
Cable Tree
Resilient Rubber Pad
Power Cord
Final Polishing Pad
Water Bottle (8oz)
Base Plate
High Pressure Air Hose
Instruction Set
Material Safety Sheet

Consumables are listed below

PART	PART CODE	REMARKS
Cutting Disk	SC880150N-8	Change After Every 3-6 Uses (For Cutting Angles)
Polishing Film 6uM	DS88060N-8	Change After Every 10-15 Uses
Polishing Film 3uM	DS88030N-8	Change After Every 10-15 Uses
Polishing Film 1uM	DS88010N-8	Change After Every 10-15 Uses
Final Polishing Film	863XW-8	Change After Every Use (One Use Only)

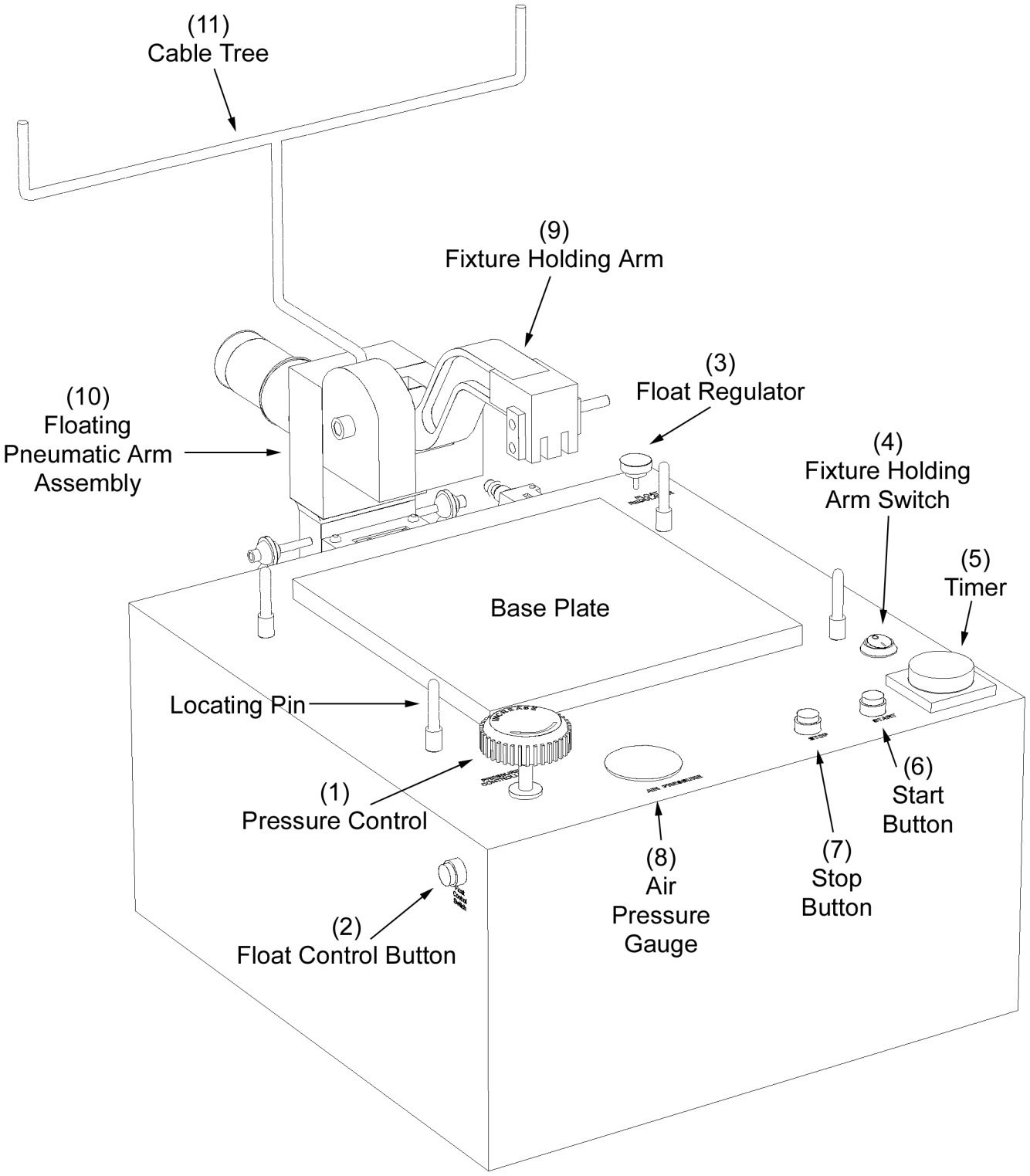
All consumables and connectors can be bought separately.

Recommended Consumables:

Epoxy: TRA-CON BAF-123
Connectors Nanometer Technologies
Films 3M Series Polishing Films

MCP 48

Front View



1. PRESSURE CONTROL (pg. 4.0) – Controls polishing pressure
(To decrease pressure, lower pressure by 4-5lbs and slowly increase pressure to desired level.)

2. FLOAT CONTROL BUTTON (pg 4.2) – Press to set Float Regulator (Disables up pressure)

3. FLOAT REGULATOR (pg 4.2) – Sets the Fixture Arm, Fixture Plate, and weight of cables to equal zero lbs. (Needs to be reset prior to every load)

4. FIXTURE HOLDING ARM SWITCH (pg 4.1 – 4.9) – Operates the lowering and raising of Fixture Plate.

5. TIMER (pg 4.3 – 4.9) – Sets the length of the polishing time

6. START BUTTON (pg 4.3 – 4.9) – Starts the polishing by automatically lowering the Floating Pneumatic Arm Assembly and begins figure 8 pattern movement of the Base Plate.

7. STOP BUTTON – Interrupts and stops the polishing.

8. AIR PRESURE GAUGE (pg 4.0) – Shows the level of polishing pressure.

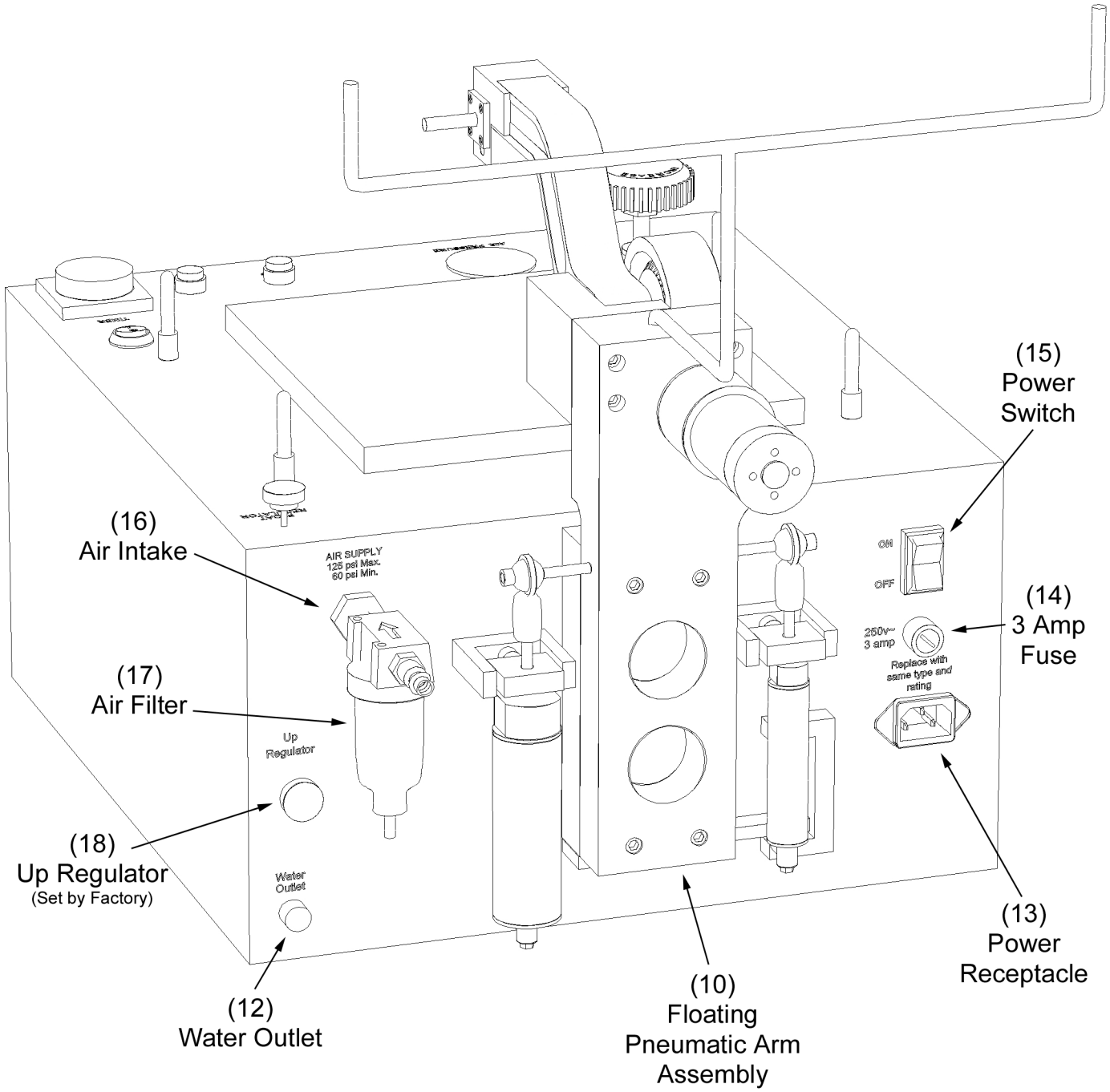
9. FIXTURE HOLDING ARM – Holds the Fixture Plate to the Floating Pneumatic Arm Assembly

10. FLOATING PNEUMATIC ARM ASSEMBLY – Applies pressure to the Fixture Plate

11. CABLE TREE (pg 2.2)– Holds the fiber cables.

MCP 48

Back View



12. WATER OUTLET – Allows collected water to drain out the back of the MCP 48.
(water collects in a tray beneath the base plate inside the MCP 48)

13. POWER RECEPTACLE (pg 2.2) – Place to plug in Power Cord
(120VAC / or other specified voltage)

14. 3 AMP SLO-BLO FUSE – If fuse is blown, replace with similar value fuse.

15. POWER SWITCH (pg 2.2) – Switch to turn on MCP 48.

16. AIR INTAKE (pg 2.2) – Compressed air inlet. (air source pressure: 80-125psi)

17. AIR FILTER (pg 1.4)– Needs to be checked on a regular basis.

18. UP REGULATOR – Sets main upward pressure for the Floating Pneumatic Arm Assembly.
(This is set by the factory prior to shipping)

USERS NOTES
MCP48 Mass Connector Polisher

In this chapter, important notes for the user are given. Please read them carefully before using the MCP48.

PRECAUTIONS FOR USING THE MCP48

To protect the MCP48 and use it correctly, please pay attention to the following notes:

- Do not leave the MCP48 outdoors, or where excessive water might damage it.
- Do not subject the MCP48 to undue vibrations or drop it.
- Do not touch the operation panel or the switches with wet hands.
- The MCP48 is heavy (about 27kg (59 lbs.), so place it on a sturdy table.
- Do not touch the moving parts during use.
- Do not drop fixture plates.
- Do not hit or bump fixture plates while suspended from the Fixture Holding Arm. This can cause permanent damage to the fixture plate itself.
- **Do not leave fixture plates hanging on the Fixture Arm Holder longer than it takes to clean and change films.**
- Do not reuse lint free wipes. This can cause cross-contamination to the polishing process.
- **IMPORTANT - Make sure the compressed air is clean and dry before connecting to MCP Polisher.**
- Check the Air Filter for water build-up on a regular basis. If water has built-up, loosen the plug and let the excess water drain. If the Filter needs changing, contact Nanometer Technologies for replacement parts.

PREPARATION

In addition to the Mass Production Polisher and its accessories, please prepare the following items:

1. Lint Free Wipes
2. Fine Mist Spray Bottle with Distilled Water

Polishing Tips For MCP48

- Use Spray Bottle for applying distilled water.
- Use a very small amount of distilled water for adhering the film to the Rubber Pad, and the Rubber Pad to the Base Plate.
- Always clean film, ferrules, and Rubber Pad before and after each step using distilled water and a lint-free optical wipe. (This will help eliminate cross contamination)
- Use enough distilled water to cover film for polishing. (Do not over apply)

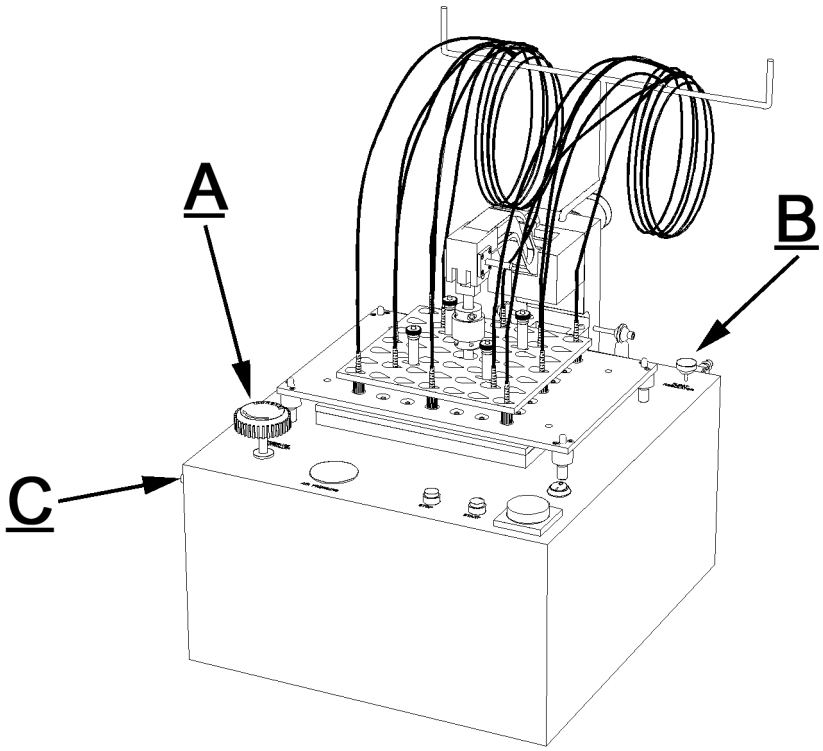
Setting Air Pressure

- To increase the pressure, turn the Pressure Control Knob clockwise.
- To decrease the pressure, lower 4-5lbs below desired setting and begin again.

FIXTURE PLATES
Cleaning And Maintenance

- Polishing plate must be kept clean to eliminate cross contamination.
- Wipe plate clean after each step during polishing procedure using lint-free wipes and distilled water.
- Completely clean plate with distilled water and non-abrasive pipe cleaners.
  (Warm or hot water is recomended)
- Blow-dry if compressed air is available.
- **Do not drop fixture plate as this can cause serious damage. Do not hit the fixture plate while suspended from pneumatic arm or leave suspended for longer than necessary.**

The Shipping Box that the MCP 48 comes in contains Re-Packaging instructions. These instructions are important and can be found on one of the upper inside box flaps.



MCP48 Operational Description

The MCP48 is a pneumatically controlled polishing system; there are 2 major parts to the pneumatic system of the MCP48.

1. The Pneumatic Cam System or PCS, the MCP48 uses pneumatic air cylinders to apply pressure to rotating cams that create the Figure 8 polishing pattern. These air cylinders apply a constant force to the cams to keep the cam face against cam follower (x/y stages) this technology is taken from the Formula 1 racing world and has been used on many Formula 1 engines in the past.
2. The pneumatic pressure regulation system, this system accurately controls the polishing pressure to the polishing fixture , the are 3 main functions to this system.

   A. The Polishing Force/Down Regulator. This part applies the polishing force to the polishing fixture.

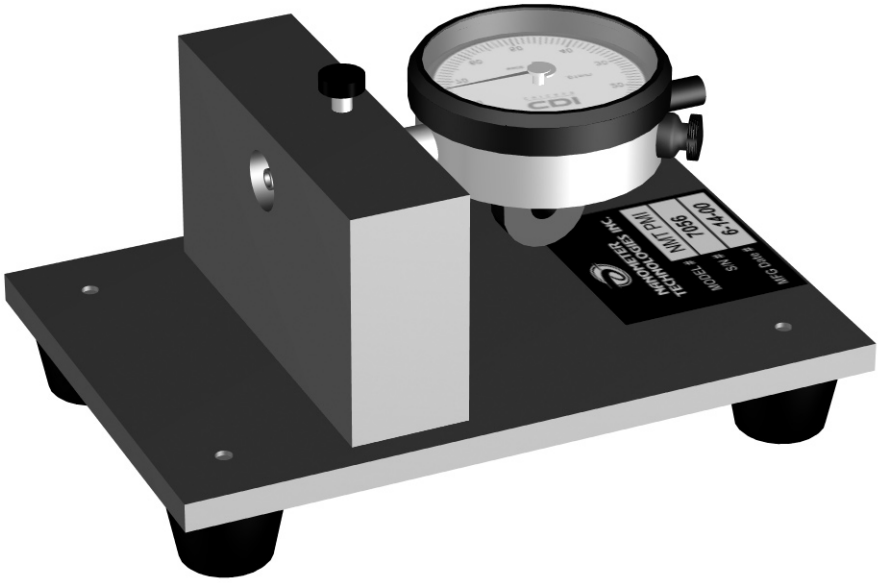
   B. The Up Pressure Regulator. This part of the system forces the entire Floating Pneumatic Arm Assembly and polishing plate to go to the UP position in the non-operation mode (polisher is not polishing)

   C. The Float Regulator. This is the heart of the MCP48 polishing control system. The float regulator offsets the weight of the fixture arm and polishing fixture/cables. Setting the Float Regulator effectively makes the assembly weight to zero. The float can be set by pressing the float button on the side of the MCP48 polisher and adjusting the Float

Connector Preparation

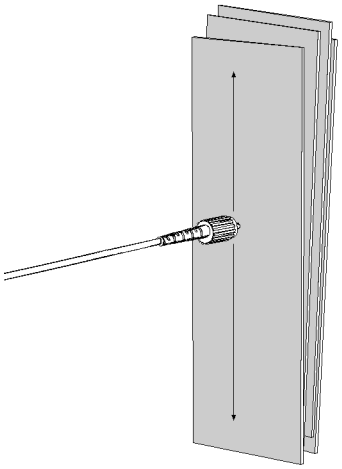
IMPORTANT!

It is very important for connectors (ferrules) to be the same length. This can be accomplished by batch measuring the connectors (ferrules) prior to termination. Use the PMI-1 from Nanometer Technologies or any Ferrule Measuring Device to complete this task.



This procedure is for "Tent" or Air Polishing your connectors. If you already have a procedure for Tent Polishing your connectors that works good for you, we recommend staying with your original process.

Step 1 - "Tent" or Air Polishing

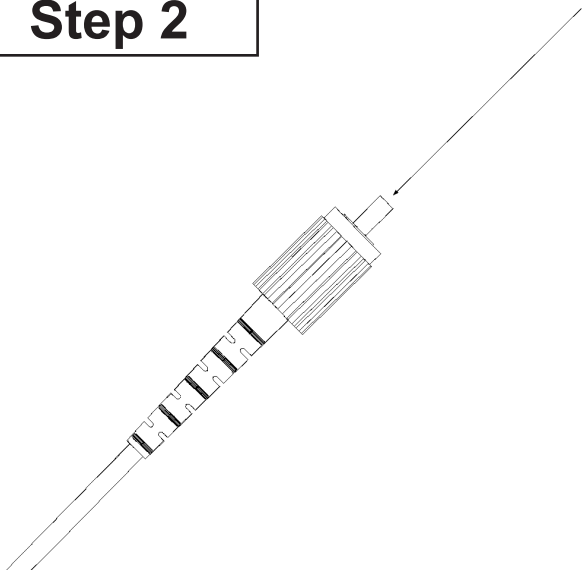


After cleaving the ferrule, "Tent" or Air Polish the connector to remove the excess fiber stub. Take 3-5 pieces of 15 micron silicon caribide film and layer together. Hold the connectors at a 90 degree angle to the film. Begin moving the film back and forth across the ferrule tip.

NOTE: If the connector has a small epoxy bead, continue this process until the epoxy bead has been removed.

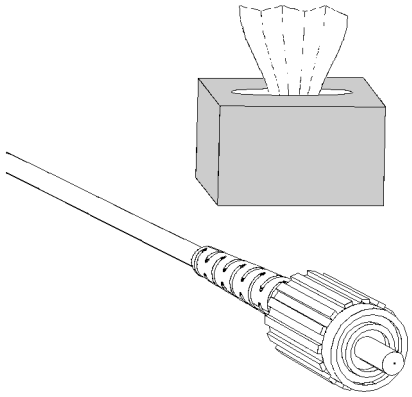
Connector Preparation

Step 2



After "Tent" or Air Polishing, press on the ferrule tip to make sure the epoxy bead has not glued the ferrule tip to the connector housing.

Step 3

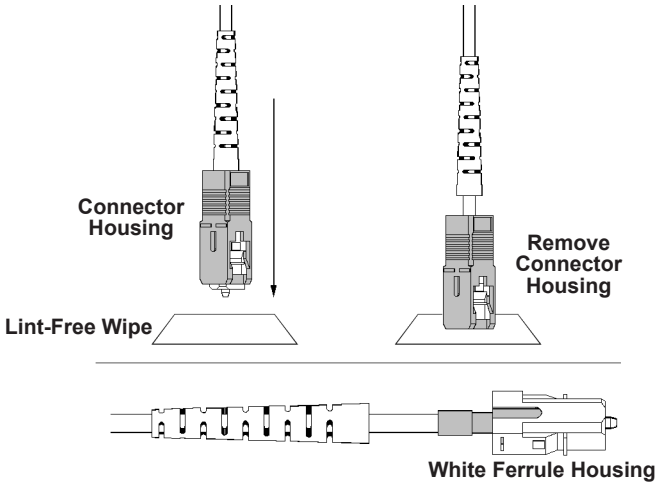


Clean the ferrule end face using a clean lint-free optical wipe.

Inspect the fiber end face to make sure that the fiber is not cracked into the ferrule face. Use an Inspection Scope or Interferometer to accomplish this task.

Cracks and breaks on the ferrule face are caused by bad cleaving.

Important Note: SC Connectors (This does not apply to SC/APC Connectors)



It is important that the SC Connector is polished prior to assembly. Make sure the outer housing is off and boots are pulled back.

If the connector is already put together, place a lint-free wipe on a hard clean surface. Grip the Connector Housing and push down on the hard surface. This will remove the Blue Outer Shell from the White Ferrule Housing. Pull back the Connector Boot to allow more of the Slider plate surface area to hold the connecter in place.

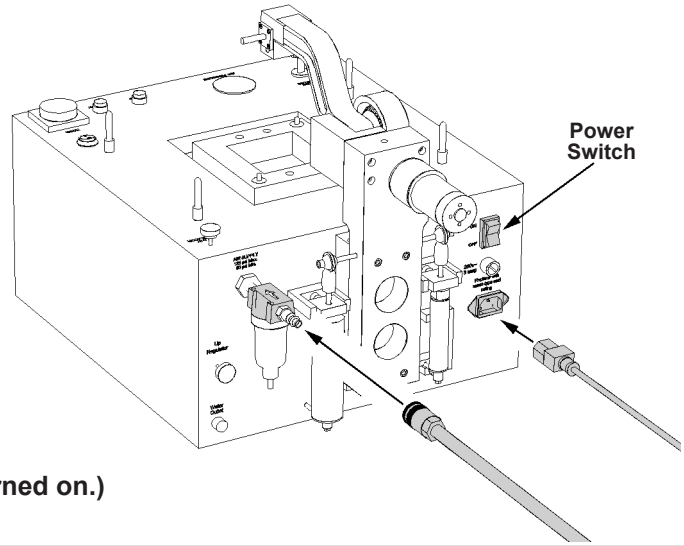
Machine Setup Instructions

Step 1

1. Plug in Power Cord into the back of the MCP 48.

Before plugging in air hose, make sure your continuous air source pressure does not exceed 125 PSI. Pressure over 125 PSI will damage internal components. Your air source pressure should be between 80PSI and 125PSI.

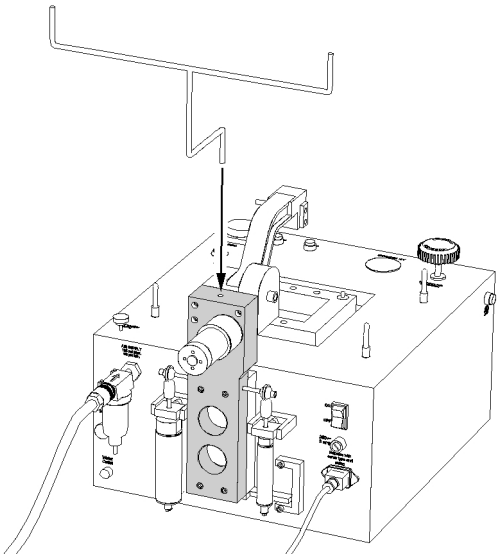
Plug Power Cord into your power source (with surge protection). Plug Air Hose into a continuous air source (Air Compressor, ect).



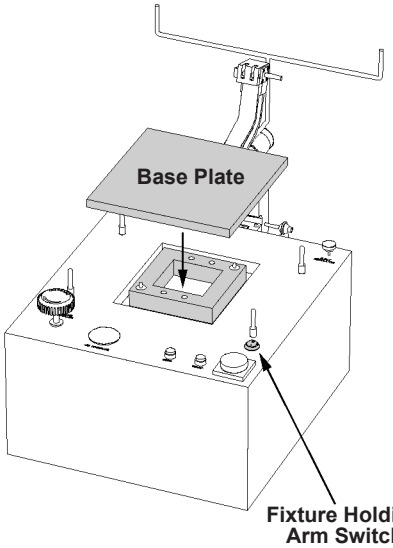
(Pneumatic Arm Assembly may rise when the power is turned on.)

Step 2

2. Insert the Cable Tree into the top of the Pneumatic Arm.

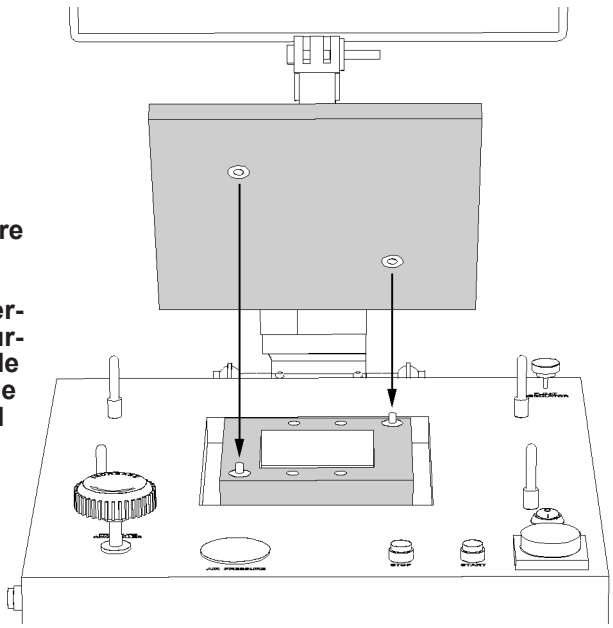


Step 3



3. Press the Fixture Holding Arm Switch to raise the Fixture Holding Arm.

Set the Base Plate on the Interface Plate. Make sure both surfaces are clean. Use the guide holes on the Base Plate to line up with the nose pins located on the Interface Plate.

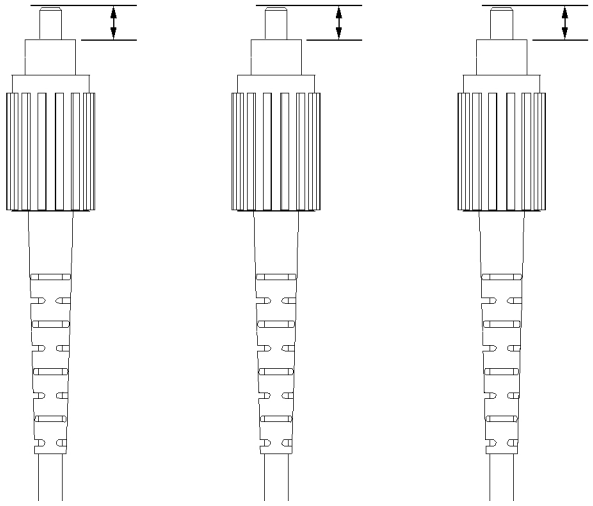


UNI-48 Fixture Setup Instructions

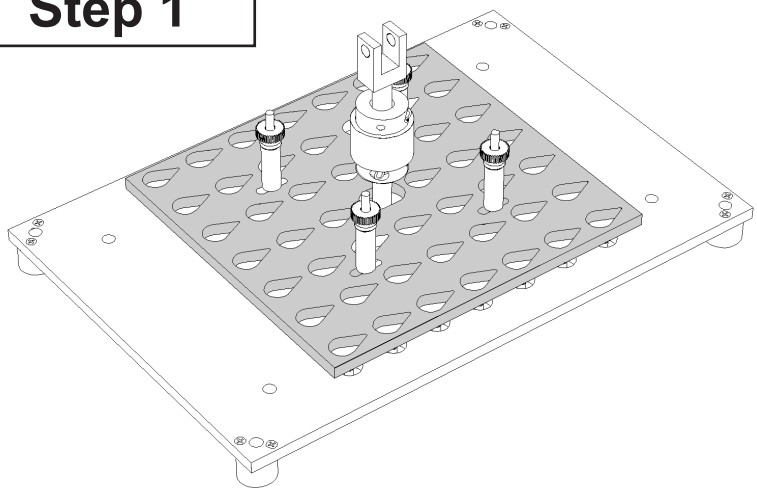
IMPORTANT NOTE:
Even Length Ferrules

It is important that all connectors have even length ferrules before being inserted into the UNI-48 Fixture Plate. All connectors need to be sorted into matching length groups prior to termination.

Uneven length ferrules will greatly affect the polishing process.



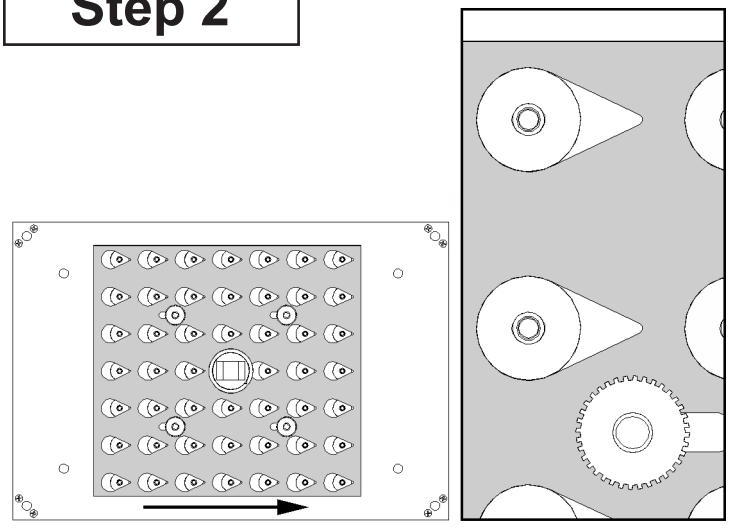
Step 1



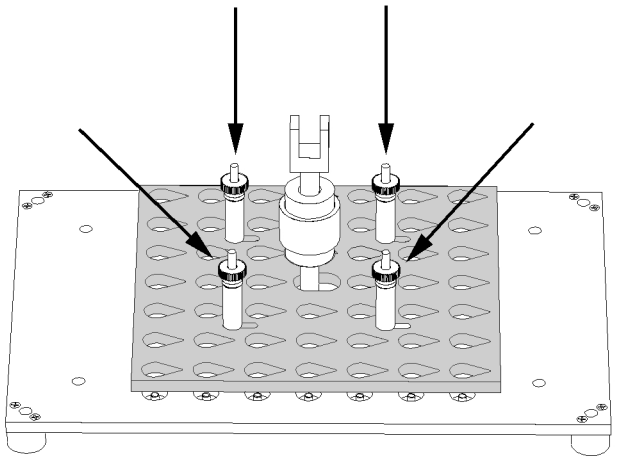
1. Make sure the UNI-48 Fixture Plate is free of particles and UPS-1 polishing solution.

This will ensure a clean polish of your connectors and will avoid cross-contamination from previous polishings.

Step 2



2. Loosen the nuts that hold down Locking Plate and slide it until the large end of the tear drop holes line up with the holes on the Polishing Fixture.



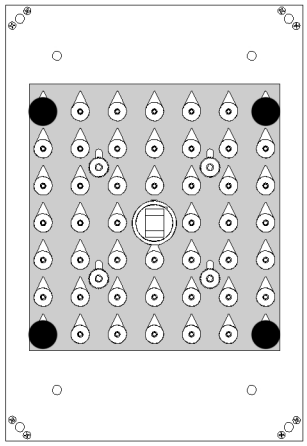
Tighten down the Locking Plate now, as this will make it easier to insert your connectors.

The Fixture Plate is now ready to be loaded with the connectors.

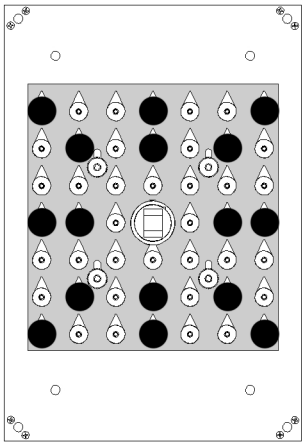
UNI-48 Fixture Setup Instructions

IMPORTANT NOTE: Symmetrical Spacing

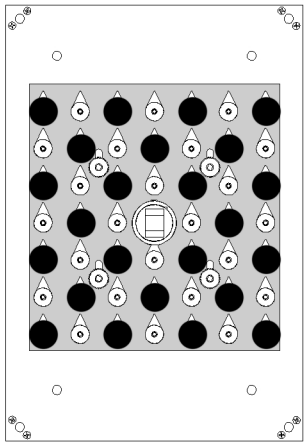
If the Polishing Fixture is being loaded with less than 48 connectors, it is important the connectors be placed in symmetrical pattern. This will keep the Polishing Fixture surface level over the base plate during the polishing procedure. Load outside holes first, spacing evenly.



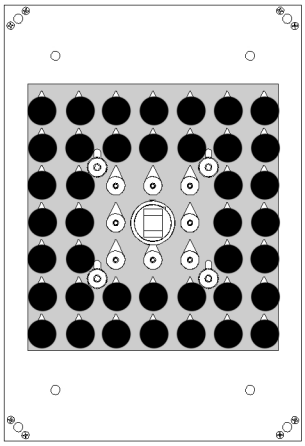
4 Connectors



16 Connectors



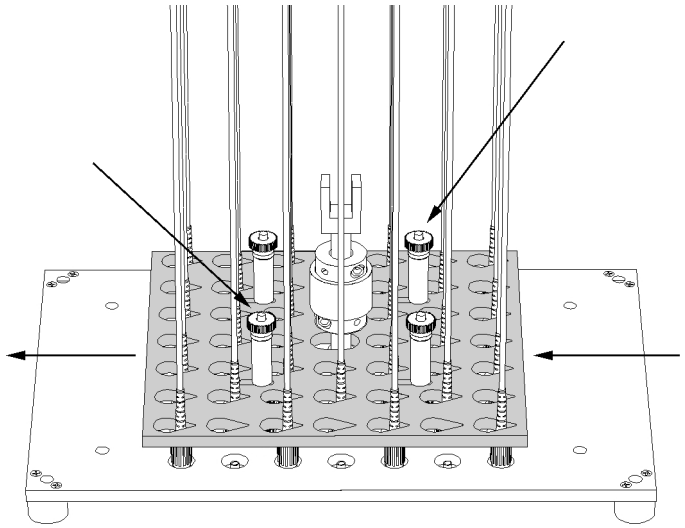
24 Connectors



40 Connectors

Step 3

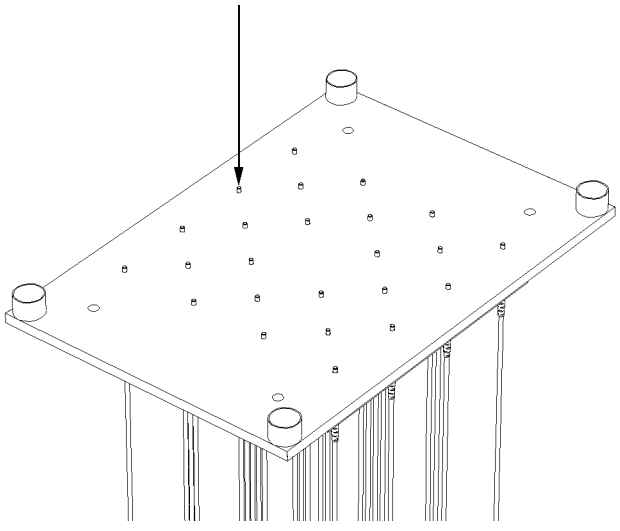
3. Loosen the Locking Plate and slide it over the connectors. Once the Locking Plate is in place, tighten nuts diagonally.



Step 4

4. Lift up plate and press on the ferrules, checking to make sure the connectors have spring action and none are locked in place. Ferrules that stick are a sign of an unclean plate or epoxy on the side of ferrule.

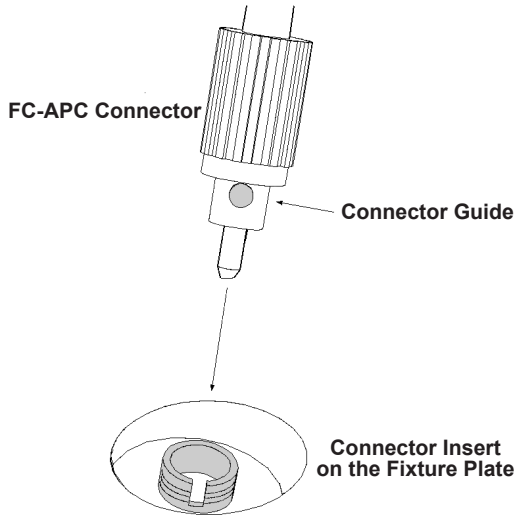
Use high quality connectors and ferrules whenever possible. This will reduce the number of failures per polishing cycle.



APC Fixture Setup Instructions

FC/APC Connectors

Use the same basic guidelines for loading the UNI-48 Fixture Plate. The instructions to the right are used for loading the FC/APC connector into the FC/APC Fixture Plate.

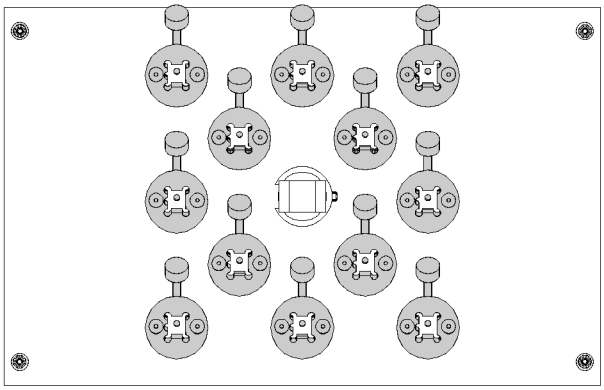


Insert the FC/APC Connectors into the Fixture Plate. Make sure the guide on the Connector is aligned with the slot on the Fixture Plate.

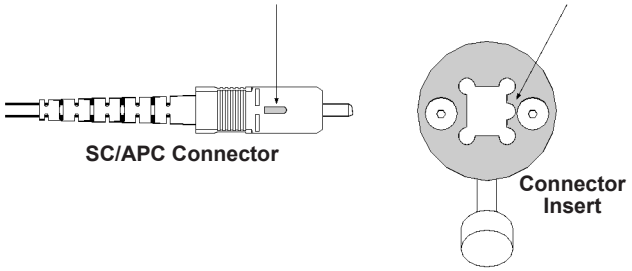
Screw and tighten the Connectors to the Fixture Plate.

SC/APC Connectors

Use the same basic guidelines for loading the UNI-48 Fixture Plate. The instructions to the right are used for loading the SC/APC connector into the SC/APC Fixture Plate.



Loosen the screws enough to insert the connectors.



Insert the SC/APC connectors into the Fixture Plate. Note that the guide on the top of the connector slides into a slot located in the Connector Insert of the Fixture Plate. Make sure the connector has been pushed to the bottom of the Connector Insert.

Re-tighten the screws that will hold the connectors.

APC Polishing Procedure

USE THESE SETTINGS
FOR GENERAL APC FIXTURE POLISHING

Pressure Settings for APC-48 Fixture Plate

4-6 connectors = 1-2 PSI
7-10 connectors = 2-4 PSI
11-15 connectors = 4-6 PSI
16-21 connectors = 6-8 PSI
22-26 connectors = 8-10 PSI
27-31 connectors = 10-12 PSI
32-38 connectors = 12-14 PSI

The exact amount of pressure is determined by connector quality composition and desired final radius.

- Higher PSI will produce a smaller radius
- Lower PSI will produce a larger radius

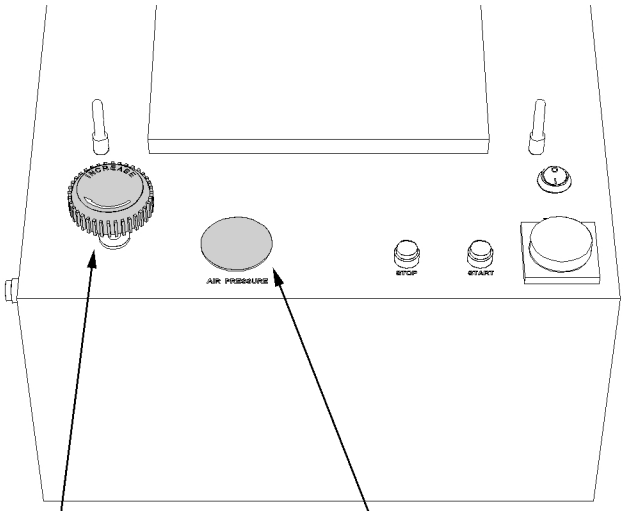
APC-FIXTURE POLISHING TIMES
with 60 Durameter Rubber Pad

	PAPER	TIME	
STEP 1	15 Um Silicon Carbide	15-30 Sec	Epoxy Removal
STEP 2	6 Um Diamond	2 Min	Coarse Film
STEP 3	3 Um Diamond	1.5 Min	Medium Coarse Film
STEP 4	1 Um Diamond	1 Min	Fine film
STEP 5	Final Film (863xw-8)	1min 40 Sec	Final Film (Single Mode Only)

FOR POLISHING CORNING APC CONNECTORS,
SEE PAGE 5.1 FOR INSTRUCTIONS

UNI Polishing Procedure

Step 1



1. Set the air pressure.

To increase the pressure, turn the Pressure Control Knob clockwise.

(If you need to lower the pressure settings, reduce the air pressure 4 to 5lbs below your desired pressure level and slowly increase pressure.)

Use the guide below to set the air pressure according to the number of connectors that are being polished.

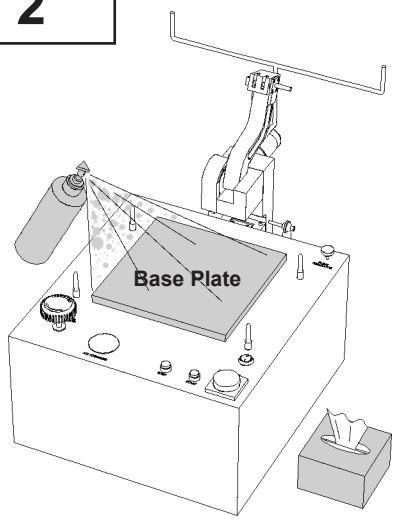
Pressure VS Connector Quantity

4-6 connectors = 1-2 PSI
7-10 connectors = 2-4 PSI
11-15 connectors = 4-6 PSI
16-21 connectors = 6-8 PSI
22-26 connectors = 8-10 PSI
27-31 connectors = 10-12 PSI
32-37 connectors = 12-14 PSI
38-42 connectors = 14-16 PSI
43-48 connectors = 16-18 PSI

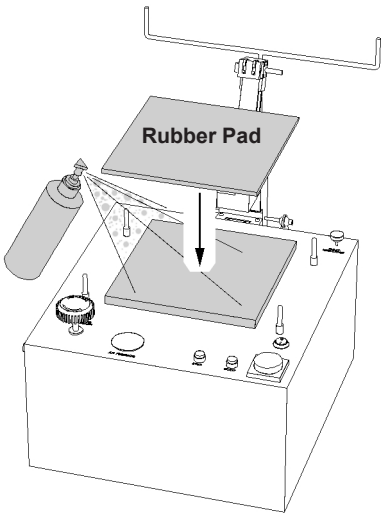
The exact amount of pressure is determined by connector quality composition and desired final radius.

- Higher PSI will produce a smaller radius
- Lower PSI will produce a larger radius

Step 2



2a. Make sure the surface of the Base Plate is clean. Spray a small amount of distilled water onto the top of the Base Plate. Use a Lint-Free Optic Wipe to clean the surface.



2b. Spray a very small amount of distilled water onto the surface of the Base Plate.

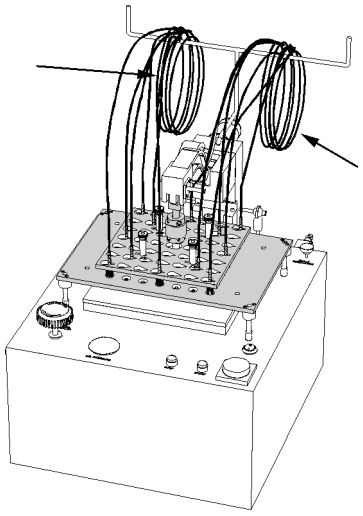
Place the Rubber Pad onto the Base Plate and slide the Rubber Pad around until it grips the surface.

Using too much water will cause the Rubber Pad to slide around on the Base Plate.

UNI Polishing Procedure

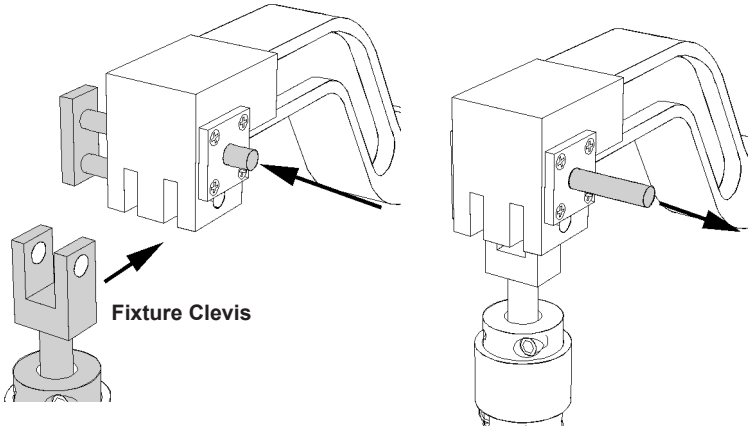
Step 3

3. Set the Fixture Plate on the 4 Locating Pins that surround the Base Plate. Place the fiber optic cables on each side of the Cable Tree. Press the Fixture Holding Arm Switch to lower the Fixture Holding Arm. Attach the fixture plate to the Fixture Holding Arm.



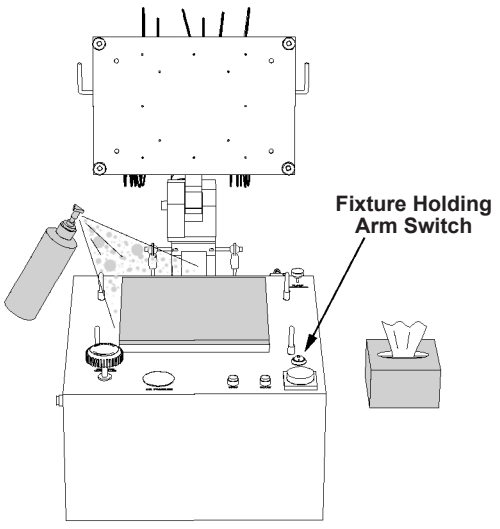
Step 4

When attaching the fixture plate, press and hold the push pin and insert the Fixture Clevis. Once inserted, release the push pin to lock the fixture plate to the Fixture Holding Arm.



Step 5

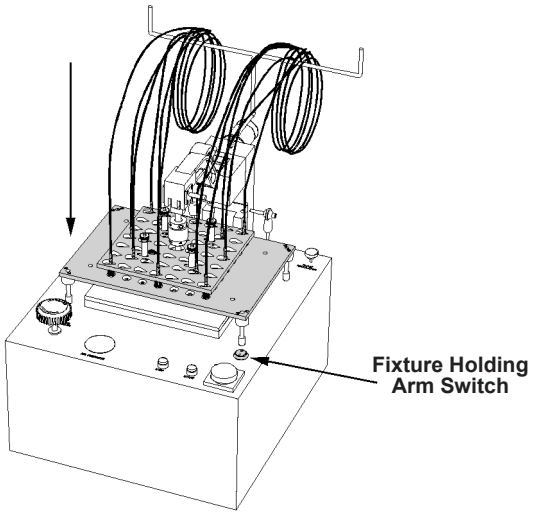
5. Press the Fixture Holding Arm Switch to raise the fixture plate and expose the Rubber Pad. Spray distilled water onto the Rubber Pad and clean using lint-free optical wipes.

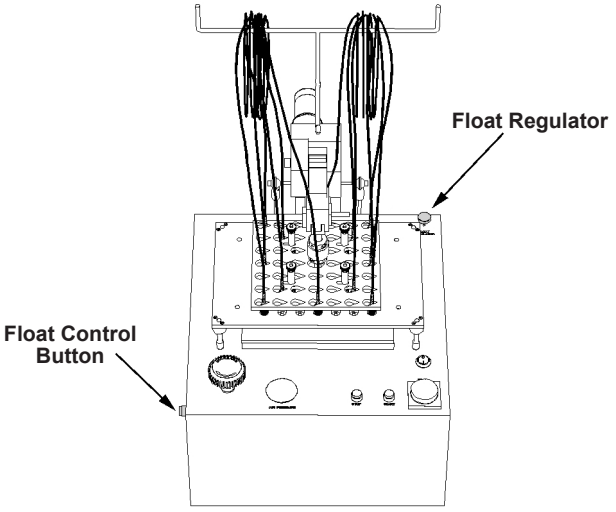


UNI Polishing Procedure

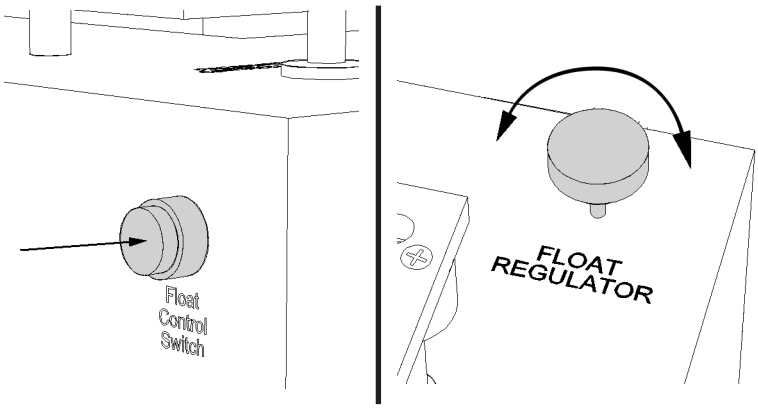
Step 6 - Setting the Float Control

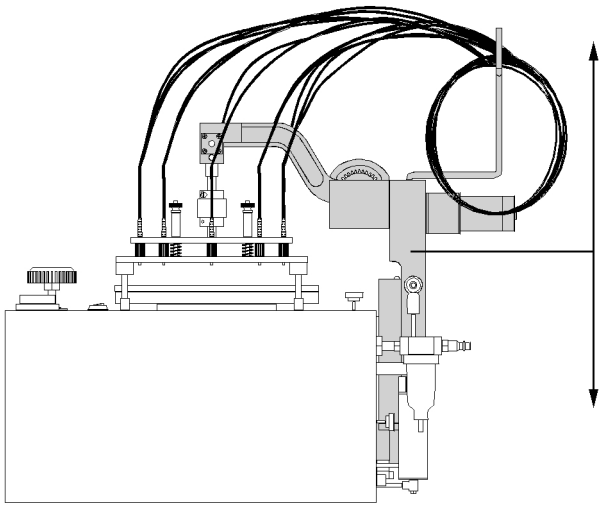
6a. Lower the fixture plate using the Fixture Holding Arm Switch.





6b. Using the Float Control Button located on the left side of the MCP 48 & the Float Regulator Knob located on the top right corner, adjust the float pressure to zero weight (0 lbs)





To accomplish this: Turn the Float Regulator clockwise until it stops. The Pneumatic Arm Assembly may rise and stop as well. Press the Float Control Button and slowly begin turning the Float Regulator counter-clockwise. When the Pneumatic Arm Assembly slowly begins to fall, turn the Float Regulator slightly clockwise (1/8 to 1/4 turn) to stop the arm assembly from falling. Release the Float Control Button.

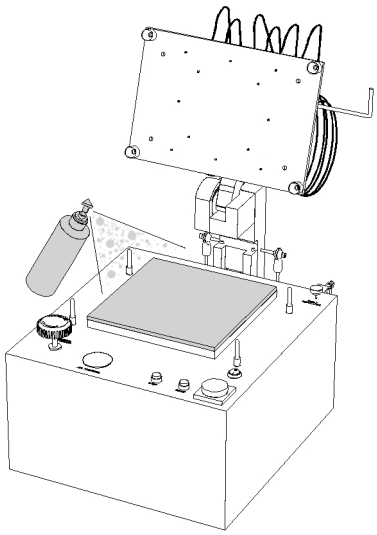
When the Float Control Button is pressed and the Pneumatic Arm shows no movement, the float pressure is set to zero weight.

NOTE: The float pressure is set properly when the Float Control Button is pressed and the Pneumatic arm can be positioned anywhere on it's axis without movement.

UNI Polishing Procedure

Step 7 - Single and Multi-mode Epoxy removal

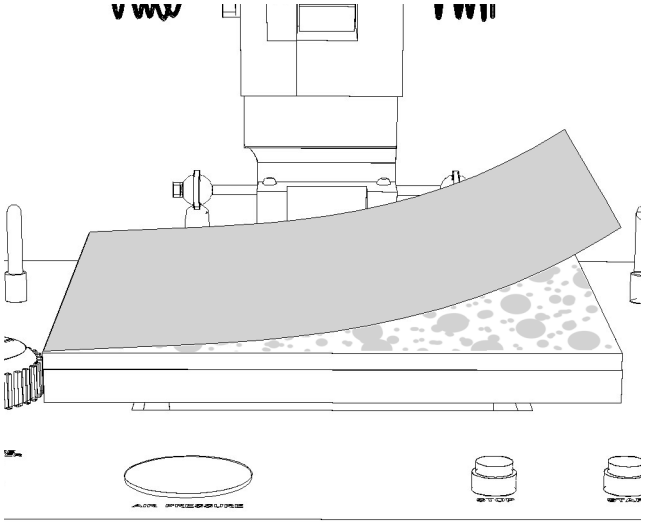
(***Use this procedure only if the connectors need the epoxy bead removed***)



7a. Raise the fixture plate.

Apply a very small amount of distilled water to the rubber surface using the spray bottle.

Using too much water will cause the film to slide around on the Rubber Pad.



7b. Place the 15 um silicon carbide film with the smooth shiny side down on the rubber pad.

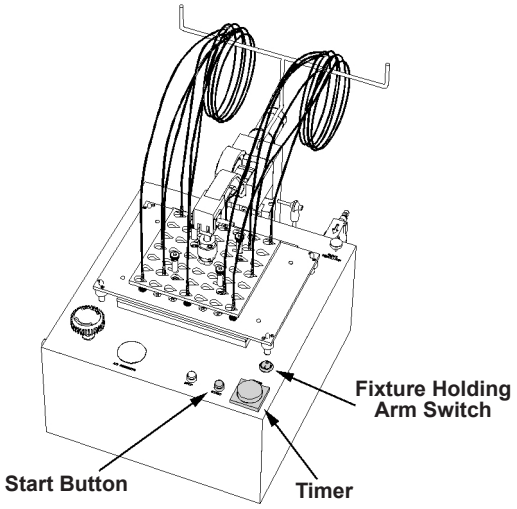
Start by placing the edge of the film on the edge of the Rubber Pad. Slowly roll the film across the Rubber Pad to avoid creating large air bubbles.

Spray distilled water onto the surface of the film. Use a clean lint-free wipe to press out any existing large air bubbles while cleaning the film at the same time.

Spray distilled water onto the surface of the film again. Make sure the surface of the film is completely covered with distilled water.

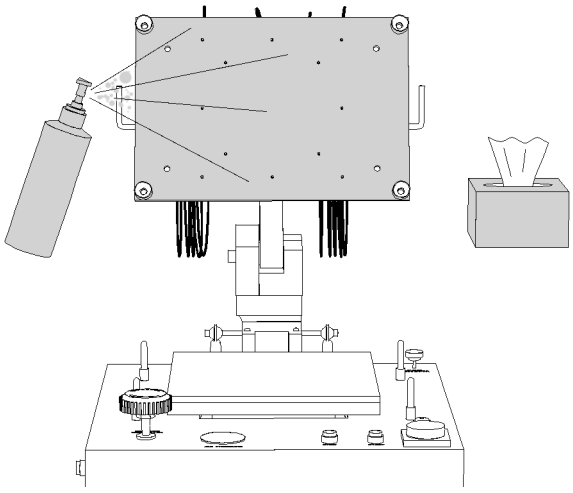
7c. Press the Fixture Holding Arm Switch and lower the fixture plate.

Set the timer to 15 seconds, press the Green Button. Time is determined by size of epoxy bead; additional time may be necessary due to size of epoxy bead itself.



UNI Polishing Procedure

Step 7 - continued



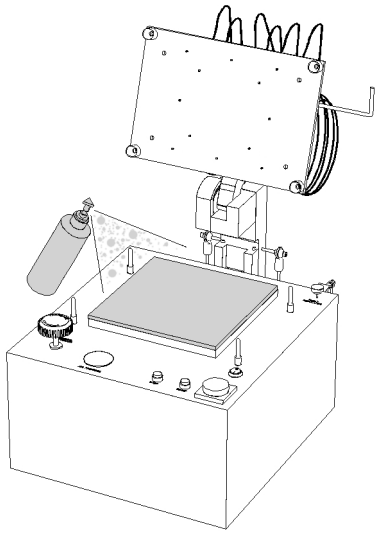
7d. After polishing has finished press the Fixture Holding Arm Switch and raise the fixture plate.

Visually inspect ferrule tips for any remaining epoxy; polish for an additional 15 seconds if any epoxy is visible.

Thoroughly clean the bottom surface of the plate, the ferrules, and the surface of the polishing film with distilled water and clean lint free wipes after each use to avoid cross contamination. Throw away lint free wipes after each use.

Remove the film.

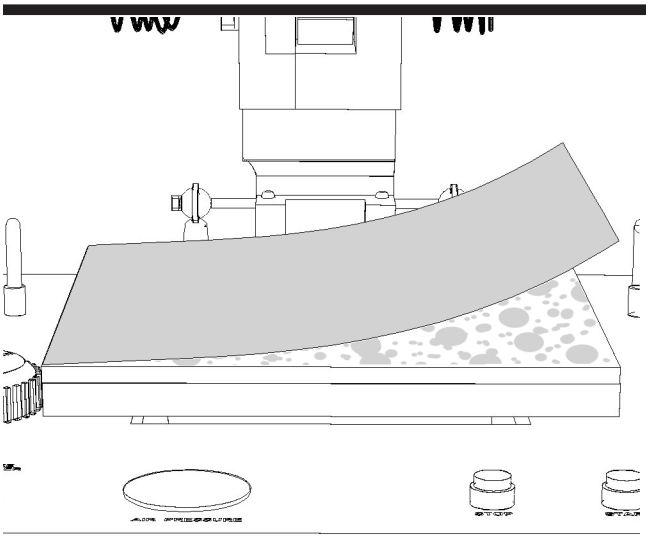
Step 8 - Coarse Lapping Film



(If you are continuing from step 7d, the Rubber Pad should still contain enough water on the surface to keep the film in place.)

8a. Apply a very small amount of distilled water to the rubber surface using the spray bottle.

Using too much water will cause the film to slide around on the Rubber Pad.



8b. Place the 6 um Diamond film with the smooth shiny side down on the rubber pad.

Start by placing the edge of the film on the edge of the Rubber Pad. Slowly roll the film across the Rubber Pad to avoid creating large air bubbles.

Spray distilled water onto the surface of the film. Use a clean lint-free wipe to press out any existing large air bubbles while cleaning the film at the same time.

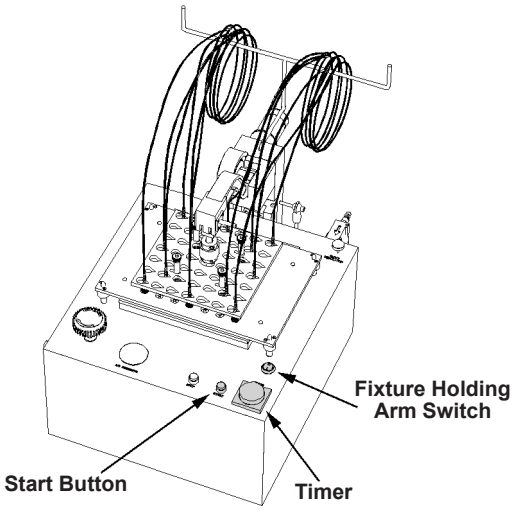
Spray distilled water onto the surface of the film again. Make sure the surface of the film is completely covered with distilled water.

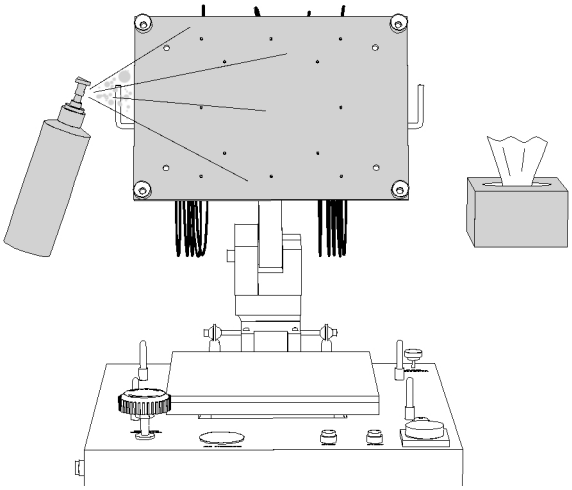
UNI Polishing Procedure

Step 8 - continued

8c. Press the Fixture Holding Arm Switch and lower the fixture plate.

Set the timer to 1 minute and press the Green Start Button.





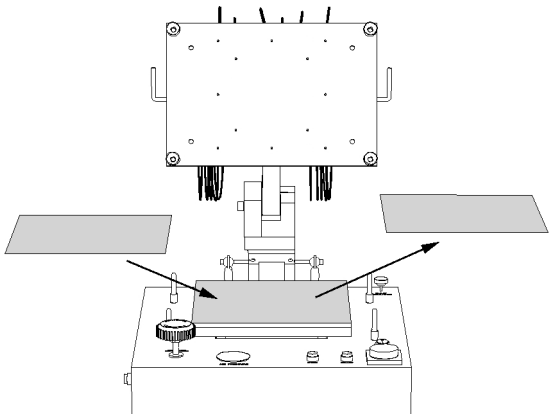
8d. After polishing has finished press the Fixture Holding Arm Switch and raise the fixture plate.

Thoroughly clean the bottom surface of the plate, the ferrules, and the surface of the polishing film with distilled water and clean lint free wipes after each use to avoid cross contamination. Throw away lint free wipes after each use.

Step 9 - Medium Coarse Lapping Film

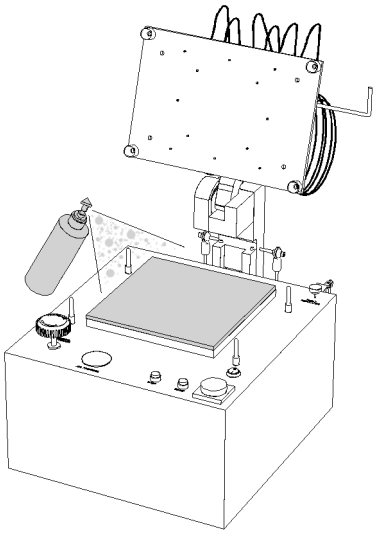
9a. Replace the 6 um Diamond Film with the 3 um Diamond Film.

The Rubber Pad should still have enough water on it to keep the film in place.



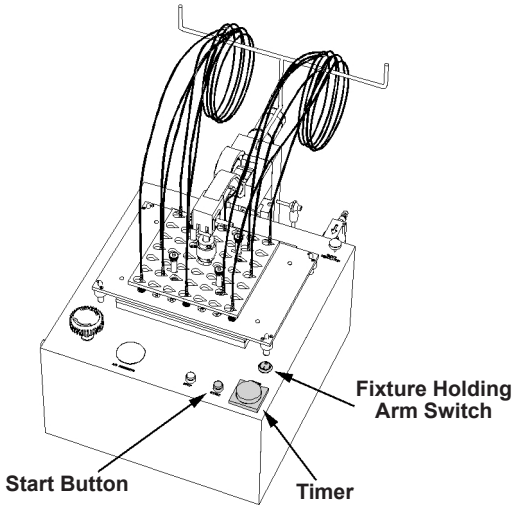
UNI Polishing Procedure

Step 9 - continued



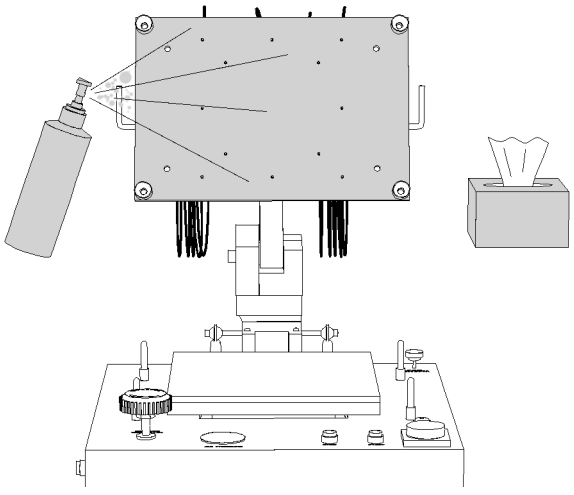
9b. Spray distilled water onto the surface of the film and wipe clean using lint-free wipes. This procedure will ensure a clean working surface and remove any large air bubbles.

Again spray distilled water on the film completely covering the surface.



9c. Press the Fixture Holding Arm Switch and lower the fixture plate.

Set the timer to 1 minute and press the Green Start Button.

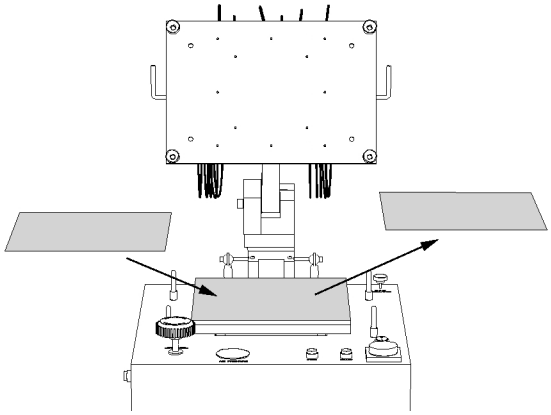


9d. After polishing has finished press the Fixture Holding Arm Switch and raise the fixture plate.

Thoroughly clean the bottom surface of the plate, the ferrules, and the surface of the polishing film with distilled water and clean lint free wipes after each use to avoid cross contamination. Throw away lint free wipes after each use.

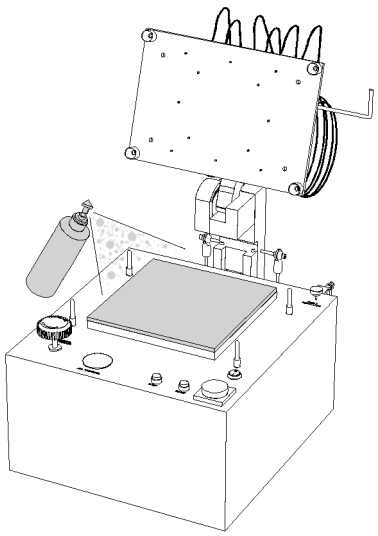
UNI Polishing Procedure

Step 10 Fine Lapping Film



10a. Replace the 3 um Diamond Film with the 1 um Diamond Film.

The Rubber Pad should still have enough water on it to keep the film in place.

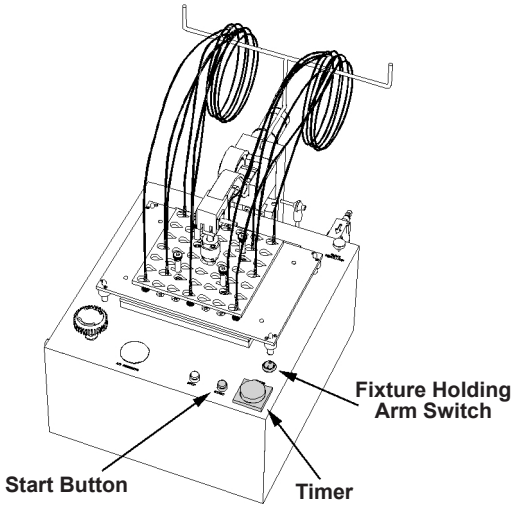


10b. Spray distilled water onto the surface of the film and wipe clean using lint-free wipes. This procedure will ensure a clean working surface and remove any large air bubbles.

Again spray distilled water on the film completely covering the surface.

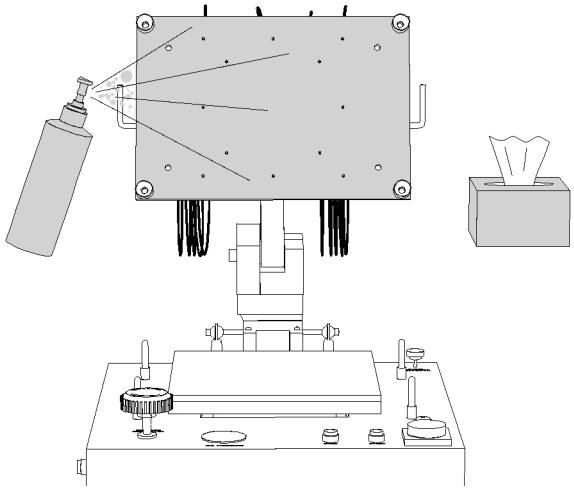
10c. Press the Fixture Holding Arm Switch and lower the fixture plate.

Set the timer to 1 minute and press the Green Start Button.



UNI Polishing Procedure

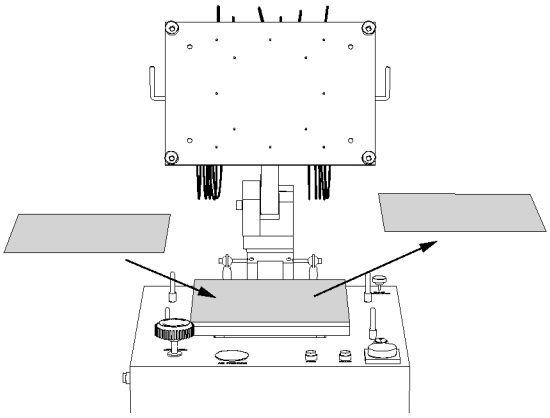
Step 10 - continued



10d. After polishing has finished press the Fixture Holding Arm Switch and raise the fixture plate.

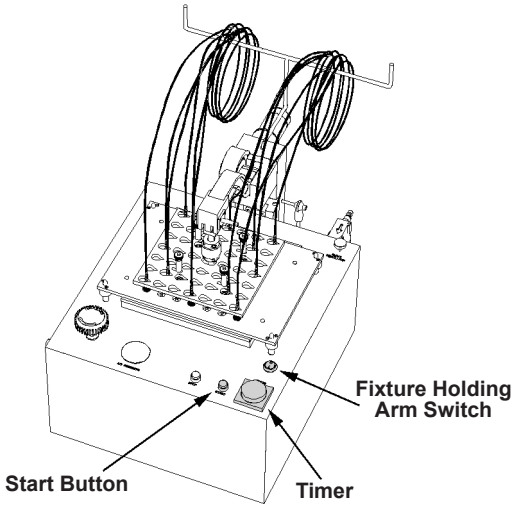
Thoroughly clean the bottom surface of the plate, the ferrules, and the surface of the polishing film with distilled water and clean lint free wipes after each use to avoid cross contamination. Throw away lint free wipes after each use.

Step 11



11a. Replace the 1 um Diamond Film with the Final Polishing Film.

The Rubber Pad should still have enough water on it to keep the polishing pad in place.

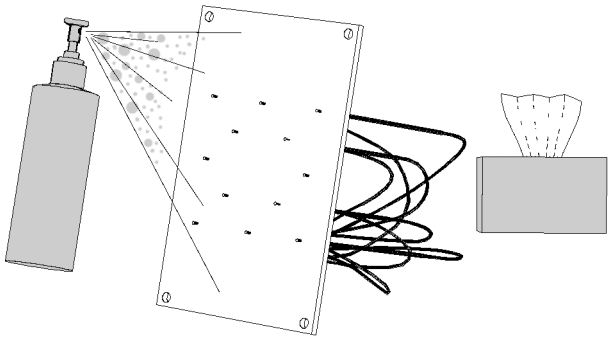


11b. Press the Fixture Holding Arm Switch and lower the fixture plate.

Set the timer to 1minute 45 seconds and press the Green Start Button.

UNI Polishing Procedure

Step 12



12. When the MCP 48 has finished the Final Polishing Cycle, remove the fixture plate from the Fixture Holding Arm.

Pick up and thoroughly clean the surface of the Fixture plate and Ferrules.

Once the cleaning is finished, the connectors are ready to be removed and tested.

NOTES:

Pressure Settings for UNI-48 Fixture Plate

4-6 connectors = 1-2 PSI
7-10 connectors = 2-4 PSI
11-15 connectors = 4-6 PSI
16-21 connectors = 6-8 PSI
22-26 connectors = 8-10 PSI
27-31 connectors = 10-12 PSI
32-37 connectors = 12-14 PSI
38-42 connectors = 14-16 PSI
42-48 connectors = 16-18 PSI

The exact amount of pressure is determined by connector quality composition and desired final radius.

- Higher PSI will produce a smaller radius
- Lower PSI will produce a larger radius

UNI-FIXTURE POLISHING TIMES

	PAPER	TIME	
STEP 1	**15 Um Silicon Carbide**	**15-30 Sec**	**Epoxy Removal**
STEP 2	**6 Um Diamond**	**1 Min**	**Coarse Film**
STEP 3	**3 Um Diamond**	**1 Min**	**Medium Coarse Film**
STEP 4	**1 Um Diamond**	**1 Min**	**Fine film**
STEP 5	**Final Film**	**1min 45 Sec**	**Final Film (Single Mode Only)**

Pressure Settings for APC-48 Fixture Plate

4-6 connectors = 1-2 PSI
7-10 connectors = 2-4 PSI
11-15 connectors = 4-6 PSI
16-21 connectors = 6-8 PSI
22-26 connectors = 8-10 PSI
27-31 connectors = 10-12 PSI
32-38 connectors = 12-14 PSI

The exact amount of pressure is determined by connector quality composition and desired final radius.

- Higher PSI will produce a smaller radius
- Lower PSI will produce a larger radius

APC-FIXTURE POLISHING TIMES with 60 Durameter Rubber Pad

	PAPER	TIME	
STEP 1	**15 Um Silicon Carbide**	**15-30 Sec**	**Epoxy Removal**
STEP 2	**6 Um Diamond**	**2 Min**	**Coarse Film**
STEP 3	**3 Um Diamond**	**1.5 Min**	**Medium Coarse Film**
STEP 4	**1 Um Diamond**	**1 Min**	**Fine film**
STEP 5	**Final Film (863xw-8)**	**1min 40 Sec**	**Final Film (Single Mode Only)**

Pressure Settings for APC-48 Fixture Plate with Corning SC/APC Connectors

24 connectors = 9 PSI
38 connectors = 11 PSI

The exact amount of pressure is determined by connector quality composition and desired final radius.

- Higher PSI will produce a smaller radius
- Lower PSI will produce a larger radius

60 Durameter Rubber Pad

	PAPER	TIME	
STEP 1	15 Um Silicon Carbide	15-30 Sec	Epoxy Removal
STEP 2	6 Um Diamond	15 sec	Coarse Film
STEP 3	3 Um Diamond	15 sec	Medium Coarse Film
STEP 4	1 Um Diamond	30 sec	Fine film
STEP 5	Final Film (863xw-8)	1min 40 Sec	Final Film (Single Mode Only)

Pressure Settings for APC-48 Fixture Plate with Corning FC/APC Connectors

24 connectors = 8 PSI
38 connectors = 10 PSI

The exact amount of pressure is determined by connector quality composition and desired final radius.

- Higher PSI will produce a smaller radius
- Lower PSI will produce a larger radius

80 Durameter Rubber Pad

	PAPER	TIME	
STEP 1	15 Um Silicon Carbide	15-30 Sec	Epoxy Removal
STEP 2	6 Um Diamond	15 sec	Coarse Film
STEP 3	3 Um Diamond	15 sec	Medium Coarse Film
STEP 4	1 Um Diamond	15 sec	Fine film
STEP 5	Final Film (863xw-8)	1min 40 Sec	Final Film (Single Mode Only)

Maintenance for Mcp12, 24, 48 Polishers

Recommended yearly service
After warranty has expired.

1. Check for wobble between interface and base plate; make sure no rust has accumulated between the bullet nose pin on the interface plate and the liner inserted into the base plate, clean of any debris on both parts and recheck.

2. Systems with air (Mcp24 & 48) need to be checked out with a soapy water test (small paint brush and a container of soapy water), all hose fitting internally and externally, (should have no air bubbles) clean pull down cylinder shaft once a month, also check to see if you hear any leaks from the cylinder.

3. Internal and external stages need to be checked for lubrication, we recommend water proof grease lightly applied to the rails on the stages, also check the stages to make sure they are not rocking from side to side. If they have a rocking motion they may need to be replaced.

4. Bearings in all pulleys and rods should be checked; they should have very little rocking motion and be smooth with no grinding.

5. Belt wear and tension, should not have more then 1/8” of play, and no threads coming out of belt. There should be very little or no belt dust, if there is re-alignment may be needed. Contact the factory.

TROUBLE SHOOTING

MACHINE POLISHING OF FIBER OPTIC CONNECTORS

SYMPTOM	CAUSE / SOLUTION
Pits in all Connectors	Polish time too short on 3-1Um film
Pits in 1-3 Connectors or Small and Large Radius	Short Ferrules, protrusion tolerance bad. Tolerance +/-.001", 25 Um
Excess Scratching	Increase Final Polish, Bad Final Pad Contamination
Not Enough Undercut, Bad Back Reflection	Increase Final Polish Time
Too Much Undercut	Decrease Final Polish Time, Repolish With 1 uM then back to Final
Bad Back Reflection	Test Reference Cable

Bellcore Spec's

Radius of Curvature	7mm - 30 mm [optimum 12-15mm]
Apex Offset	Less than 50Um
Undercut/Protrusion	+/- 50nm [objective-30-45nm]

Limited Warranty

Nanometer Technologies products shall be free of defects in material and workmanship for a period of 1 year from the date of purchase.

Nanometer Technologies fixture plates shall be free of defects in material and workmanship for a period of 90 days from the date of purchase.

In the event of a defect in materials or workmanship, we will either replace or repair without charge (not including shipping costs) at our option any part which in our judgment shows evidence of such defect within 1 year (90 days for fixture plates) from the date of purchase. ***This warranty does not apply to misuse, abuse, tampered, altered items, overuse of water or UPS solution, dropping the fixture plate, or hitting the fixture plate while suspended from pneumatic arm.*** At the end of the warranty period Nanometer Technologies shall be under no further obligation expressed or implied. This warranty is in lieu of any other warranty, under no circumstances will Nanometer Technologies be liable for any loss, damage, expense or consequential damages of any kind arising in connection with the use or inability to use Nanometer Technologies products.

Warranty will be voided if tamper seals are broken on any product or unit is opened by any person not authorized by Nanometer Technologies without prior permission.

NOTES:

NOTES:

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