

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *RUHLE / Electronic Systems / FOCI IPM-12* at our website: *Click HERE*

I-PM-A-12 Polishing Machine

Operating Manual

Version 4,02-2000



FOCI Fiber Optic Communications, Inc.
No.18, Prosperity Rd. II, Science-Based Industrial Park
Hsinchu, Taiwan R.O.C.
TEL:886-3-5-770099
FAX:886-3-5799766
E-mail: Sales@mailsrv.foci.com.tw
Website: http://www.foci.com.tw

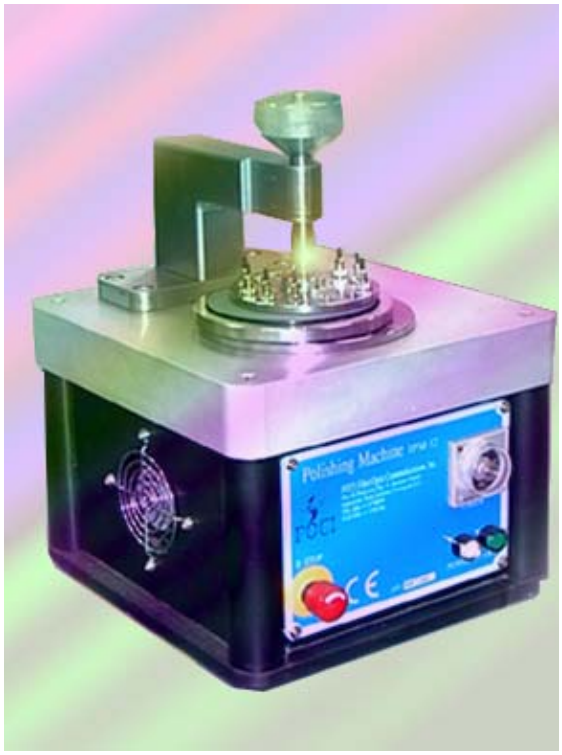
Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

CONTENTS:

1. Features 3
   - 1.1 Performance Specifications 4
   - 1.2 General Specifications 4
   - 1.3 Environmental Specifications 4
   - 1.4 Safety 4
   - 1.5 Standard Accessories 5
   - 1.6 Optional Accessories 6
   - 1.7 Warranty 7
2. Part Names 8
3. Preparation 11
   - 3.1 Polishing Films 11
   - 3.2 Polishing Fluid 11
   - 3.3 Polishing Pads 12
   - 3.4 Polishing Holder 12
4. Polishing Steps 13
   - 4.1 Main Power “On” 13
   - 4.2 Connector Mounting 13
   - 4.3 Polishing Pad Mounting 14
   - 4.4 Polishing Holder Placement 14
   - 4.5 Polishing 15
5. Polishing Parameters 16
6. Tips For Better Polishing Performance 19
7. Polishing End-Face Performance 20
8. Maintenance 21
9. Trouble Shooting 22
10. Electrical Parts 23
11. Repair Procedures 24

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

UNIVERSAL FIBER OPTIC CONNECTOR POLISHER



The FOCI I-PM polishing machines were specifically designed to consistently provide excellent polishing quality for optical fiber connector ferrules, ease of use, and low maintenance. It's rugged construction and high quality parts guarantee you have purchased a machine that will give you many years of trouble-free usage.

1.0 FEATURES

- ✓ **CONVEX POLISHING**
- ✓ **ANGLED POLISHING**
- ✓ **FC, SC, ST, APC, ASC ,FDDI, AND D4 POLISHING**
- ✓ **6~12 CONNECTORS POLISHING FOR 4.33" POLISHING DISK**
- ✓ **6-18 CONNECTORS POLISHING FOR 5" POLISHING DISK**
- ✓ **BACK-REFLECTION BETTER THAN -50 dB (FOR PC POLISHING)**
- ✓ **BACK-REFLECTION BETTER THAN -65 dB (FOR APC POLISHING)**

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

1.1 PERFORMANCE SPECIFICATIONS

ITEM	CURVATURE(mm)	OFFSET(um)	UNDERCUT(um)	BACKREFLECTION(dB)
FC	10~25	<50	<+-0.05	<-50
SC	10~25	<50	<+-0.05	<-50
ST	10~25	<50	<+-0.05	<-50
FC/APC	5~15	<50	<+-0.05	<-65
SC/APC	5~15	<50	<+-0.05	<-65

1.2 GENERAL SPECIFICATIONS

Physical dimensions	280X267X207mm (without fiber holder or dust cover attached)
Weight	30kg
Power supply	110V, 50/60 Hz **or** 220V,50/60 Hz **Please specify power supply when ordering**
Power consumption	300W

1.3 ENVIRONMENTAL SPECIFICATION

Operating Temperature	10~40°Celsius

1.4 SAFETY

- **Operate the machine on a strong and stable table. Ensure that no vibration of the table occurs.**
- **Ensure the machine is connected to a power supply of the correct voltage and grounded.**
- **Turn off the power when the machine is not in use.**
- **Contact FOCI for all technical assistance. The I-PM-A-12 polishing machine contains no user-serviceable parts. Do not disassemble this instrument except as described in the maintenance section of this manual. Never insert foreign objects into the machine.**
- **Never touch the rotating table while it is in operation.**
- **Wear protective gloves, and follow the manufacturer's instructions when handling the lubricant.**

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

- **Wear appropriate clothes. Loose-fitting clothing may get caught in the rotating parts of the polishing machine.**
- **For fear of electrocution do not operate or store the polishing machine in water.**
- **Use only the type of fuse recommended in this manual. Disconnect the polishing machine from the power supply before replacing the fuse.**

1.5 STANDARD ACCESSORIES

No.	**Part name**	**Part code**	**Q'ty**	**Remark 4"**	**Remark 5"**
1	Basic machine	I-PM-A-12	1	4.33" standard	5.33" standard
2	Polishing holder	T-PH-12-FC-FA	1	FC 4" standard	FC 5" standard
3	Polishing pad	T-PP-70-4	6	70h,Φ112mm	70h,Φ128mm
4	Polishing film adhesive removal	P-PF-AR-4-FA	50	Gray, Φ110mm **Use once only**	Gray, Φ128mm **Use once only**
5	Polishing film Rough polishing	P-PF-DR-4-FA	5	Pink, Φ110mm **Use 10 times only**	Pink, Φ128mm **Use 10 times only**
6	Polishing film medium polishing	P-PF-DM-4-FA	5	Green, Φ110mm **Use 10 times only**	Green, Φ128mm **Use 10 times only**
7	Polishing film final polishing	P-PF-DF-4-FA	5	White, Φ110mm **Use 10 times only**	White, Φ128mm **Use 10 times only**
8	Polishing film buffing polishing	P-PF-AF-4-FA	50	Yellow, Φ110mm **Use once only**	Yellow, Φ128mm **Use once only**
9	Polishing film UPC polishing (-55dB)	P-PF-FF-4-FA	5	Purple, Φ110mm **Use once only**	Purple, Φ128mm **Use once only**
10	Polishing fluid	P-PL-100	1	100ml	100ml
11	Power cord	-	1		
12	Fuse	-	1		
13	Operating manual	-	1		

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

1.6 OPTIONAL ACCESSORIES

Item	Product code	Remark
5” turntable	T-PP-00-5 	Polishing plate for 18 connectors
FC polishing holder	T-PH-12-FC-FA	12 connector FC polishing
FC polishing holder	T-PH-18-FC-FA	18 connector FC polishing (for 5” disk only) 
SC polishing holder 	T-PH-10-SC-FA 	10 connector SC polishing 
SC polishing holder	T-PH-14-SC-FA	14 connector SC polishing (for 5” disk only)
ST polishing holder 	T-PH-12-ST-FA	12 connector ST polishing 
APC polishing holder	T-PH-12-AP-FA 	FC/APC 8 degree polishing 

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

D4 polishing holder	T-PH-12-D4-FA	D4 FERRULE polishing
ASC polishing holder	T-PH-10-AS-FA	10 connector SC/APC 8° polishing
ASC polishing holder	T-PH-14-AS-FA	14 connector SC/APC 8° polishing (for 5" disk only)
Ferrule only holder 	T-PH-12-FR-FA	FDDI, FC, ST & SC ferrule polishing
Ferrule only holder	T-PH-12-F8-FA	FC/APC ferrule only 8° polishing
Custom holders are available – contact FOCI Marketing Department.		

1.7 WARRANTY

All products manufactured by FOCI Fiber Optic Communications Inc. are guaranteed to be free from defect in material and workmanship for a period of one (1) year from the date of shipment. During the warranty FOCI will repair, or replace at its discretion, any product or parts thereof of FOCI, where such products or parts thereof, upon inspection by FOCI, and in the sole opinion of FOCI, are determined to be defective in workmanship or material. FOCI reserves the right to issue a credit note for any defective product or parts thereof, as determined by FOCI, as an alternative to the repair or replacement of such defective product or parts thereof. This warranty shall extend to all products and parts thereof which have proved defective through normal use, but this warranty shall not cover any products or parts thereof that have been subjected to conditions exceeding the applicable specifications or ratings for such products or parts thereof, or to such products or parts thereof which have been disassembled, modified or otherwise abused.

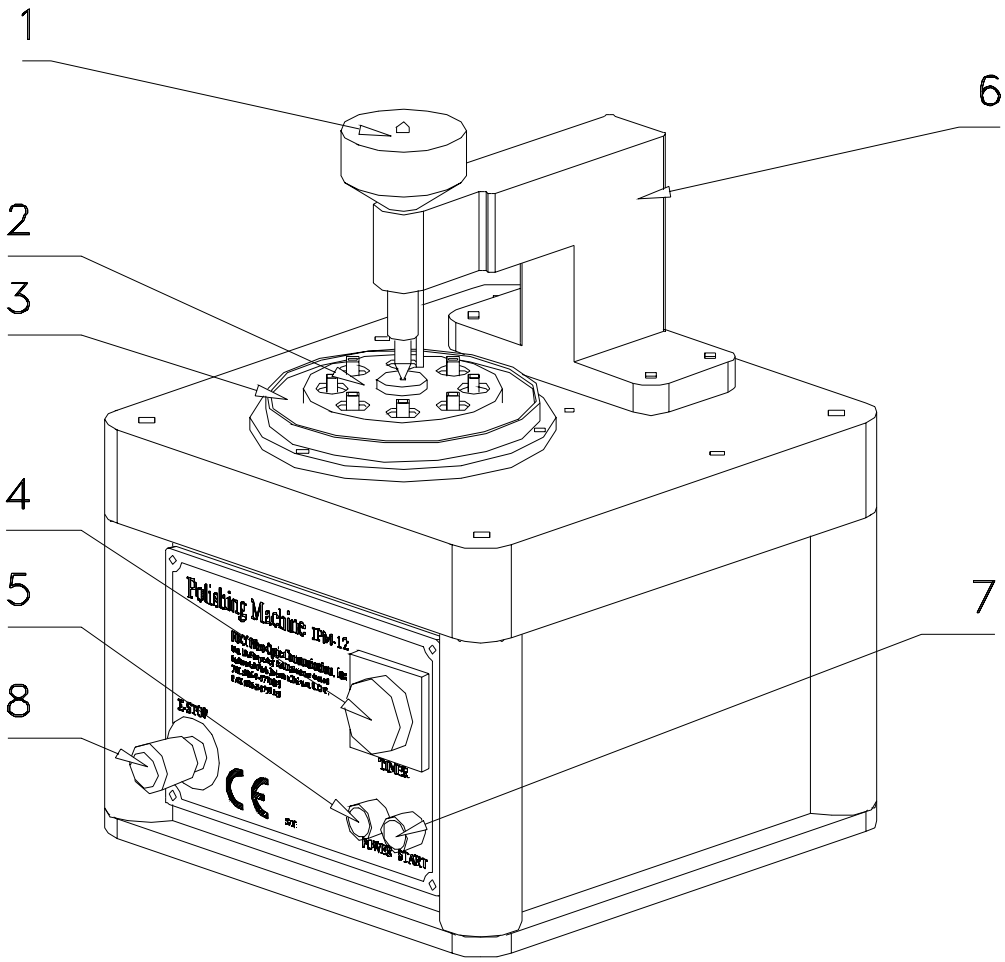
The remedies provided for above are the Purchaser's sole and exclusive remedies. FOCI shall not be liable to a Purchaser, or any other third parties, for installation and removal costs, or for any other special, consequential or indirect damage or damages, including without limitation the loss of production or profit arising from any cause whatsoever, even if FOCI has been advised of the possibility of such omissions, or conduct of FOCI or its employees. The liability of FOCI is expressly limited to the replacement or correction of defective products or parts thereof, or to the issuance of a credit note for the purchase price of such products or parts thereof. This warranty is in lieu of all other warranties expressed or implied including, without limitation, any implied warranties of merchantability or fitness for a particular purpose.

Claimants must notify FOCI in writing, of any warranty claim no later than 30 days after the expiration of the warranty period. All claims made under this warranty must be submitted by the Purchaser, and no claim will be accepted from any third party. All claims for shortage of products ordered, or incorrect charges must be lodged with FOCI within 14 days of receipt of product by the Purchaser.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

2. PART NAMES

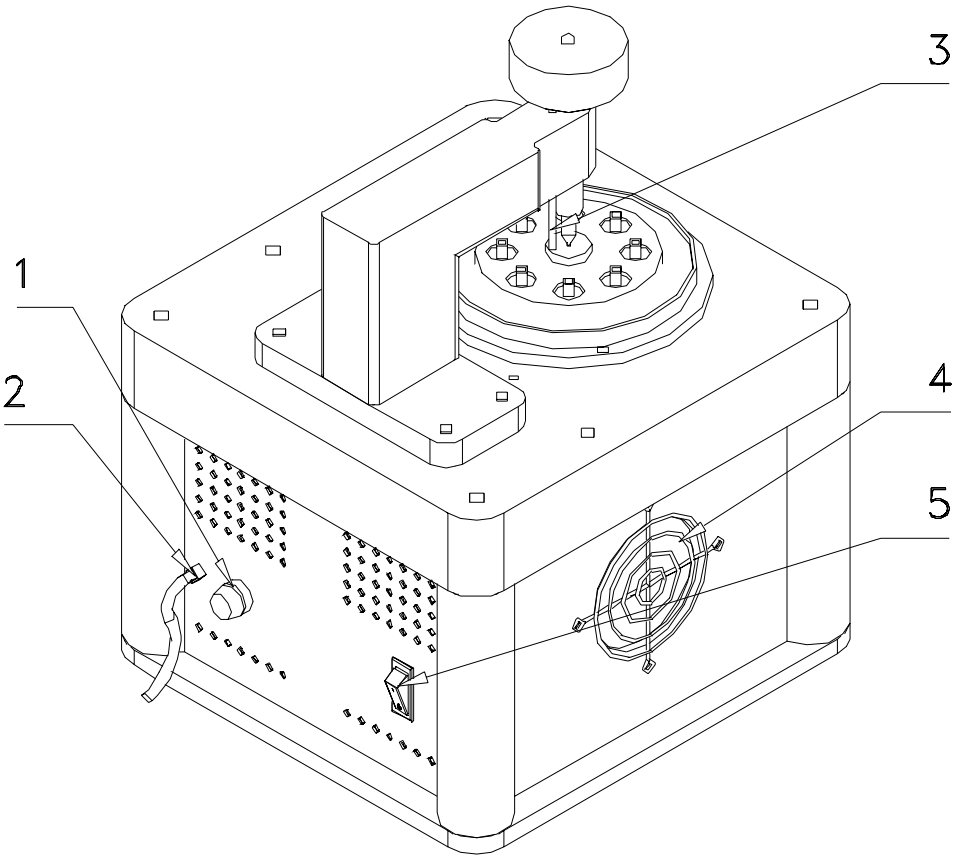
(1) Front view



Item	Description	Function
1	Pressure rod	Pressure control
2	Polishing holder	Connector holder
3	Turn table	Polishing motion
4	Timer	Time control
5	Power light	Power indicator on/off
6	Holder arm	Support center piece
7	On/off switch	Turn machine on/off
8	EMO button	Emergency off switch

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

(2) Rear view

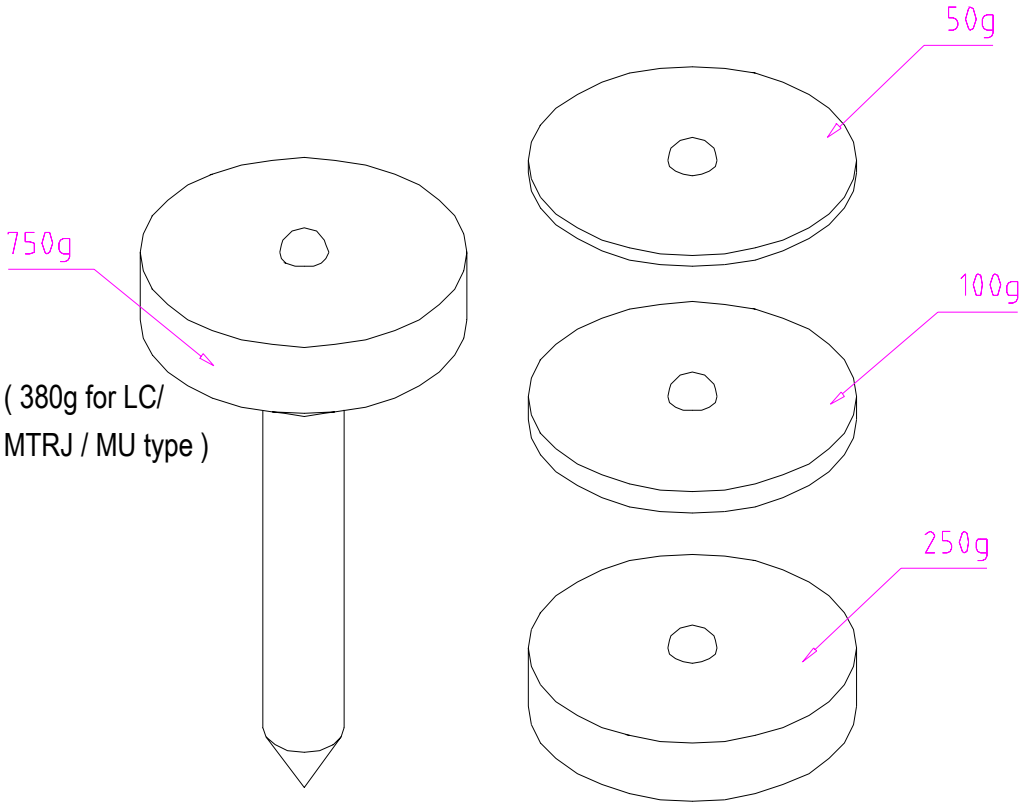


Item	Description
1	Fuse holder
2	Power receptacle
3	Guide pin
4	Cooling fan
5	Power switch

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

(3) Pressure rod

Under normal polishing conditions only the pressure rod is required. If the ferrules are not convex after the first polishing stage, it may be necessary to re-polish using more pressure. In this case, start with the smallest possible pressure increment weight, if that is still insufficient, the 2nd or 3rd may be attempted.



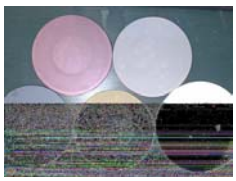
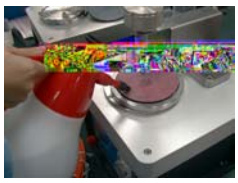
Item	Weight(g)	Q'ty	Description (thickness)
1	50	1	2.3mm
2	100	1	4.7mm
3	250	1	12.0mm
4	750	1	Pressure rod

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

3. PREPARTION

Requirements:

- **Distilled water in pressurized spray bottles**
- **Cleaning paper or air-gun**
- **Industrial alcohol**
- **Polishing films**
- **Rubber pads**
- **Polishing fluid**



3.1 Polishing films

You have been supplied with 6 rubber polishing pads, one for each type of polishing film (including UPC polishing). This is truly a revolutionary timesaving feature that vastly reduces polishing time and cleaning.

Before commencing polishing, affix each type of polishing film to the smooth side of a rubber pad. Just press down with your thumb in the center of the pad and use a piece of lint-free paper to lightly rub the polishing surface of the polishing film, ensuring that any air-bubbles or irregularities are smoothed out before polishing. It is not necessary to use any adhesive to attach the polishing film to the rubber pads.

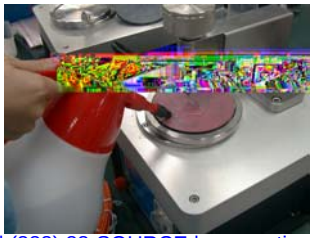


- Use distilled water only for cleaning polishing films. **Never use alcohol to clean polishing films, their lifespan will be greatly reduced should you do so.**
- Do not touch the abrasive side of the polishing films with bare hands.

3.2 Polishing fluid



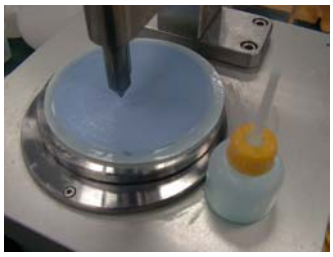
- Step 1 is a dry polishing stage. Do not use any form of lubrication.



- Steps 2~4 use distilled water ONLY as lubricant.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

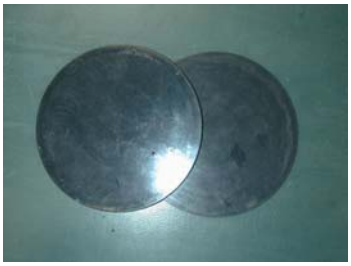
- You have been supplied with a bottle of P-PL-100 polishing fluid. This is **ONLY to be used for the final polishing step 5!**





- **Do not allow bare skin or eyes to come into contact with the polishing fluid.**

3.3 Polishing pads



- Replace rubber polishing pads every 6 months.
- Use the rubber polishing pads for convex polishing. Angled polishing requires optional extra diamond bond.
- Do not use acetone or any chemical solvents to clean the polishing pads.

3.4 Polishing Holder

- Clean the polishing holder using distilled water or ultrasonic vibration (if available) both before and after use.





Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

4. POLISHING STEPS

4.1 Main Power “ON”

- Turn the polishing machine on using the switch at the rear of the machine.

4.2 Connector Mounting



- Clean the polishing holder thoroughly before use to ensure that the ferrules are seated properly during polishing.
- Hold the appropriate polishing holder in one hand while using the other hand to insert the connector ferrules one-by-one into the holes of the polishing holder.
- Ensure that the key of the coupling ring is inserted into the key slot of the polishing holder jig.
- Screw the coupling nut onto the jig.



- Each connector must be held firmly in place on the polishing holder.
- Use a piece of P-PF-AR-4-FA polishing film to rub lightly across the ferrule heads in the polishing holder to break off any protruding fibers.

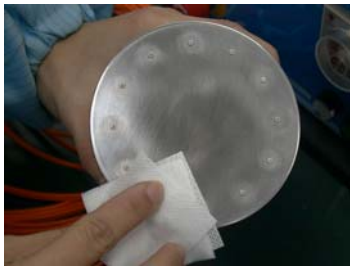


Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

❖ Wash the ferrules using distilled water spray.



❖ Clean and dry each connector ferrule and the underside of the polishing holder with lint-free tissue and alcohol or an air gun (if available).





4.3 Polishing pad mounting

❖ Ensure that the surfaces of the polishing pad and the turntable are clean, then place the polishing pad (with P-PF-AR-FA polishing film) on the turntable.

❖ Ensure that the pad fits perfectly into the grooved inner circumference of the turntable and that the polishing film is centered perfectly on the polishing pad and adheres smoothly.





4.4 Polishing holder placement

❖ Holding the polishing holder with connectors in one hand, lift up the pressure rod with the other hand.

❖ Slide the polishing holder onto the polishing pad.



Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

❖ Ensure that the guide pin is inserted into the guide pin slot of the polishing holder.



❖ Lower the pressure rod ensuring that the pointed head of the shaft fits perfectly into the central hub of the polishing holder.



4.5 Polishing



❖ Turn the timer dial to set the timer to the required setting.

❖ Push the “Start” button to start polishing.



❖ Polish the ferrules according to the required stages and suggested times outlined in 4.2 below ensuring that you wash and dry the ferrules carefully after each stage.

❖ In case of emergency, press the EMO emergency stop button to stop the turntable.

❖ Let the turntable come to a complete stop before removing the holder from the turntable.

❖ After all the stages have been completed, unscrew the coupling nuts and remove the connectors from the polishing holder then use microscope and testing equipment to check end-faces and specifications. See 5 for details.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

- **Do not use acetone or alcohol to clean the rubber polishing pads**
- **It is VERY IMPORTANT to clean the ferrule ends with distilled water and dry with lint-free tissue and alcohol AFTER EACH POLISHING STAGE.**
- **Clean the polishing films with distilled water and lint-free paper after each stage. Never use alcohol to clean the polishing films!**
- **Never allow water to remain on the surface of the supporting ring or the base plate.**
- **Do not apply more than 2ml of water on each polishing pad.**
- **Immediately wipe away any water that spills over the edge of the turntable.**

5. POLISHING PARAMETERS

The following polishing information is provided for reference purposes only. Adjustments may be necessary depending on many variables. Some experimentation and trial & error may be necessary to determine the optimum polishing procedure.

(I) Convex PC polishing using pre-radius ferrule

Single-mode			
Film	**Time(min)**	**Pressure(g)**	**Polishing lubricant**
AR	0.5~0.7(0.6)	750~850(750)	None
DR	0.8~1.2(1)	750~850(750)	Distilled water
DM	0.8~1.2(1)	750~850(750)	Distilled water
DF	0.3~0.5(0.3)	750~850(750)	Distilled water
AF	0.6~0.8(0.7)	750~850(750)	Polishing fluid

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Single-mode (UPC polish)			
Film	**Time(min)**	**Pressure(g)**	**Polishing fluid**
AR	0.5~0.7(0.6)	750~850(750)	None
DR	0.8~1.2(1)	750~850(750)	Distilled water
DM	0.8~1.2(1)	750~850(750)	Distilled water
DF	0.3~0.5(0.3)	750~850(750)	Distilled water
AF	0.6~0.8(0.7)	750~850(750)	Distilled water
FF	0.6~0.8(0.7)	750~850(750)	Polishing fluid

Multi-mode			
Film	**Time(min)**	**Pressure(g)**	**Polishing fluid**
AR	0.5~0.7(0.6)	750~850(750)	None
DR	0.8~1.2(1)	750~850(750)	Distilled water
DM	0.8~1.2(1)	750~850(750)	Distilled water
DF	0.3~0.5(0.3)	750~850(750)	Distilled water

(II) Convex PC polishing using non pre-radius ferrule

Single-mode			
Film	**Time(min)**	**Pressure(g)**	**Polishing fluid**
AR	0.5~1.0(0.8)	750~850(750)	None
AR	0.5~0.7(0.6)	750~850(750)	None
DR	0.8~1.2(1)	750~850(750)	Distilled water
DM	0.8~1.2(1)	750~850(750)	Distilled water
DF	0.3~0.5(0.3)	750~850(750)	Distilled water
AF	0.6~0.8(0.7)	750~850(750)	Polishing fluid

Single-mode (UPC polishing)			
Film	**Time(min)**	**Pressure(g)**	**Polishing fluid**
AR	0.5~1.0(0.8)	750~850(750)	None
AR	0.5~0.7(0.6)	750~850(750)	None
DR	0.8~1.2(1)	750~850(750)	Distilled water
DM	0.8~1.2(1)	750~850(750)	Distilled water
DF	0.3~0.5(0.3)	750~850(750)	Distilled water
AF	0.6~0.8(0.7)	750~850(750)	Distilled water
FF	0.6~0.8(0.7)	750~850(750)	Polishing fluid

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Multi-mode			
Film	**Time(min)**	**Pressure(g)**	**Polishing fluid**
AR	0.5~1.0(0.8)	750~850(750)	None
AR	0.5~0.7(0.6)	750~850(750)	None
DR	0.8~1.2(1)	750~850(750)	Distilled water
DM	0.8~1.2(1)	750~850(750)	Distilled water
DF	0.3~0.5(0.3)	750~850(750)	Distilled water

(III) Convex APC polishing using pre-angled ferrule

Film	**Time(min)**	**Pressure(g)**	**Polishing fluid**
AR	0.5~0.9(0.7)	750~850(750)	None
DR	0.5~0.8(0.7)	750~850(750)	Distilled water
DM	0.5~0.8(0.7)	750~850(750)	Distilled water
DF	0.5~0.8(0.7)	750~850(750)	Distilled water
AF	0.3~0.7(0.5)	750~850(750)	Polishing fluid

(IV) Convex APC polishing using conical type non pre-angled ferrule

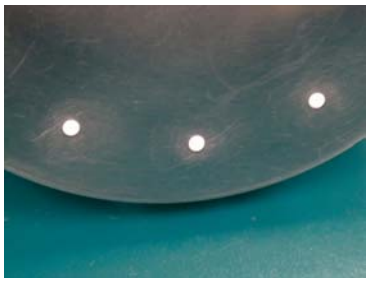
Film	**Time(min)**	**Pressure(g)**	**Polishing fluid**
Diamond bond	1.0~1.2(1.0)	750~1000(750)	Distilled water
Diamond bond	1.0~1.2 (1.0)	750~1000(750)	Distilled water
AR	0.5~0.9(0.7)	750~850(750)	None
DR	0.5~0.8(0.7)	750~850(750)	Distilled water
DM	0.5~0.8(0.7)	750~850(750)	Distilled water
DF	0.5~0.8(0.7)	750~850(750)	Distilled water
AF	0.3~0.7(0.5)	750~850(750)	Polishing fluid

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

6. TIPS FOR BETTER POLISHING PERFORMANCE

- After the first polishing stage check to see if all the epoxy has been removed. All ferrule heads should be white. Any with brick-red coloring have not been polished sufficiently.

Correct polish

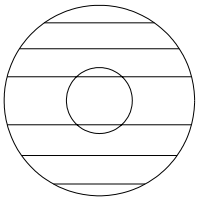




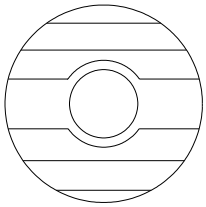
Insufficient polishing

- Check to see if the relevant connector has been correctly inserted into the polishing holder, reinsert it, then use a piece of polishing film to hand polish the relevant ferrule until there is no more epoxy visible.

- The ferrules may also be inspected after the convex forming step with a 20X magnifying lupe using a narrow or slated light source.



Complete formation

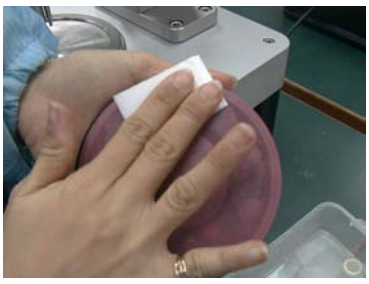


Incomplete formation

A series of parallel lines appear across the surface of the connector endface. When the convex shape is completely formed, these parallel lines appear as uniform curved lines. When formation is incomplete and a portion of the surface remains flat, the lines appear distorted. Should the convex shape be incompletely formed, continue polishing until it is formed.

- Clean each polishing pad and film after each usage with water and cleaning paper. **Never use alcohol to clean polishing film or rubber pad!**





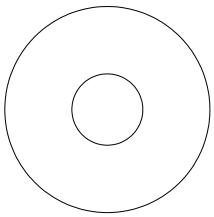
- Clean each ferrule with cleaning paper and alcohol before testing.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

- ❖ When using P-PF-FF film for the first time ensure that enough polishing fluid is used to wet the entire surface of the polishing film. For each subsequent use 3 drops of polishing fluid should be sufficient.
- ❖ If you interrupt the polishing procedure for longer than 60 minutes while using the P-PF-FF ensure that you wet the polishing film with water. If not, the film will have become hardened and will be damaged.

7. POLISHING END-FACE PERFORMANCE

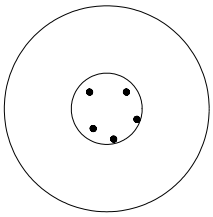
Use a microscope to examine the ferrule and determine the quality of the polish.



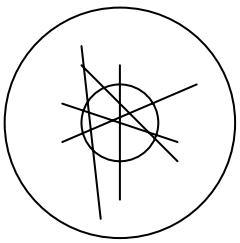
Correct finish

A well polished face is smooth and free of defects whereas a poorly polished endface is pitted or scratched.

Pitting indicates that the duration of rough or medium polishing was not long enough. To correct this, repeat medium and final polishing.



Pitting

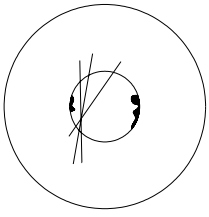


Fine scratches

Fine scratches may result if the medium polish film is scratched, if there are abrasive particles on the film, or if there is dust under the film. To remove these scratches, repeat medium and final polishing, using new films.

Removing large nicks or other defects on the surface of the connector ferrule requires complete repolishing.

Nicks and large defects



Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

8. MAINTENANCE

- **Clean the machine before and after use.**
- **Replace rubber polishing pads every 6 months.**
- **Disconnect power cord before removing and replacing turntable.**
- **Clean any water droplets out of grease, and replace grease every month.**



(1) Take out the pressure rod.

(2) Lift the turntable off its base and inspect its underside of wear, damage or moisture. Moisture indicates that excess water has penetrated the polishing machine. This can lead to premature bearing failure that will damage the gears and sliding surfaces, even if these are well-lubricated. Also water will mix with the lubricating grease and form a thick, corrosive emulsion that places excess strain on the motors.

(3) Check for any water droplets in the motor grease, remove by wiping with tissue paper.

(4) Clean any grease around the edge of the motor area

(5) Thoroughly clean the bottom of the turntable with tissue paper only. Do not use any chemical solvents.





(6) Inspect the eccentric drive rings for smooth rotation

(7) Inspect the surface of the supporting ring for wear or damage.

(8) Add new grease to motor if necessary.

(9) Carefully put the turntable back over the motor ensuring that the 3 nodes of the motors are inserted into the holes on the turntable.



Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

- ❖ Follow these operational and maintenance instructions carefully to keep all sliding surfaces clean and lubricated. Because grease becomes dirty and breaks down with time and use, relubricate the following parts regularly, ensuring that all surfaces are thoroughly clean and dry before applying new grease:
  - the underside of the turntable
  - the supporting ring
  - the gear assembly
- ❖ **Replace pressure rod every 12 months.**

9. TROUBLE SHOOTING

Problem	Possible cause	Remedy
Ferrule can't be inserted into hole of polishing holder.	Excess epoxy on sides of ferrule.	Use razor to gently shave off excess epoxy.
A grinding sound is heard when machine is in operation	Insufficient lubrication	Clean gear assembly and add new grease.
Pressure rod cannot be removed or inserted smoothly	Insufficient lubrication or dust in holder	Clean rod and arm hole and add a little grease.
Connector ends appear to be corrugated.	Rubber pad is worn or damaged.	Replace rubber pad.
Rubber pad thickness is not uniform.	Rubber pad does not fit correctly on the turntable.	Replace rubber pad.
Ferrule end face offset is larger than 50	Polishing holder is damaged or arm alignment is off.	Replace polishing holder or call FOCI technician to adjust alignment.
Polishing holder vibrates during usage.	Pressure rod head is worn.	Replace pressure rod.
Noisy operation	Water has entered bearings under the turntable and rusted.	Replace turntable. Clean and change grease regularly to prevent this situation.
The guide pin does not align with the slot on the polishing holder or appears to be tilted.	Guide pin is either bent or tilted.	Remove arm and return to FOCI for replacement.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

10. ELECTRICAL PARTS

Symbol	Name	Specifications	Remark
MC1 FUSE POWER START	Metal receptacle Fuse holder Power switch Push button switch	AC 220V, 3A AC 220V, 5A AC 110V, 5A / AC 220V, 5A AC 110V, 5A / AC 220V, 5A	
TIMER	Timer switch	Source AC 100-120 V ,50/60Hz AC 200-240 V ,50/60Hz Contact 5A 250VAC	0.5 0-0.1-0.2-0.3-0.4-0.5 1.0 0-0.2-0.4-0.6-0.8-1.0 5.0 0-1-2-3-4-5 10. 0-2-4-6-8-10
FAN	Cooling fan	AC 100-120V, 0.1A 50/60HZ AC 200-240V, 0.05A 50/60Hz	80mmX80mmX25mm
MH	Oriental drive motor	AC 100-120V, 1.4A 50/60Hz 60W AC 200-240V, 0.7A 50/60Hz 60W	
MT	Drive motor	AC 100-120V, 0.6A 50/60Hz 25W AC 200-240V, 0.3A 50/60Hz 25W	
RELAY	Relay	Source AC 100-120 V AC 200-220 V Contact 10A 240VAC	

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

11. REPAIR PROCEDURES

Defective products or parts thereof shall be returned to FOCI at the address shown on the front of this manual. All products or parts thereof which have been returned to FOCI, but which are found to meet all previously applicable specifications for such products or parts thereof, shall be subject to an examination charge of not less and $100.00 US. All products or parts thereof which are returned to FOCI and which are not accompanied by an itemized statement of defects shall be returned to the Purchaser at the Purchaser's expanse, and no evaluation of such product or part shall be carried out.

FOCI will only accept returns for which an approved Return Material Authorization (RMA) has been issued.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP