



The Most Widely Used Lapping Film in the World

Polishing Instructions for the Seikoh Giken SFP-560

for Pre-Domed or Pre-Angled
Zirconia Ferrule Connectors





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Fiber Optic Center is the industry leader in cost effective, high performance polishing processes for volume assembly production. Achieving consistent results that meet the demanding technical specifications for high speed high data rate systems requires the optimization of many factors throughout the termination and testing process.

These Factors Include

- suitable single mode fiber
- suitable epoxy
- proper mixing, application & curing of epoxy
- connector quality & tolerances
- machine & fixture quality pressure & time of polishing at each step
- lapping film quality & consistency
- lapping film grit sizes & materials
- polishing solutions
- calibration & quality of test instruments, reference cables
- adapter quality & tolerances
- test methods & conditions
- overall cleanliness
- specific cleaning procedures

General Instructions

When used with the SFP-560 and the materials listed below, the UPC and APC polishing processes requires between 5-10 minutes for up to 20 or 32 2.5 mm connectors or up to 24 or 40 1.25 mm connectors:

1. Prior to loading connectors into the polishing fixture, perform a quick de-nubbing or air polish to remove the sharp edges from the fiber and to get the fiber flush with the epoxy. Ten to 15 small circles should be enough, but will vary according to cleave length.
2. Use 80 durometer rubber pads for 2.5mm ferruled connectors, p/n PR5X-500-80, and 85 or 90 durometer rubber pads for the 1.25mm ferruled connectors, PR5X-500-85 or 90. Use a separate rubber pad for each step. Using the correct rubber pad will help create the correct Radius of Curvature.
3. Clean rubber pads with at least 99% pure isopropyl alcohol and lint free wipes. ITW Chemtronics 6704 Econowipes or CleanTex 604 lint free wipes are recommended to insure no contamination occurs during the cleaning process.
4. Use a minimal amount of distilled water to adhere lapping films to rubber pads. Make sure air bubbles are kept to minimum, and no debris is trapped between the film and rubber pad. A piece of double sided tape can be used to help keep lapping film on the pads.
5. Between each polishing step flush out connector end-faces, work-holder surface, lapping film surface, bottom of rubber pad, surface rubber pad rests on with de-ionized water. Then wipe with lint-free wipe, and blast with compressed or canned air, p/n ES1217. Proper cleaning will help insure a scratch, pit or defect free end-face.
6. Refer to tables below for recommended process. Please note processes are for pre-angled and pre-domed connectors.

Expected Technical Specifications

SM UPC Back-Reflection¹	-55dB or Less	SM/MM Insertion Loss¹	0.2dB or Less	Radius of Curvature	7-25mm
MM UPC Back-Reflection¹	-35dB or Less	Fiber Height Telcordia	GR-326v3		
SM APC Back-Reflection¹	-70dB or Less	Apex Offset	50um or Less		



2.5mm Process - Table 1.1

Polishing Step	Color / Material / Grit Size	Pressure ¹ /Pad	Time	Fluid	Usage ²	Part Number
Epoxy Removal ³	Purple-Grey / Silicon Carbide / 16µm	PR5X-500-80	15-30 sec.	Deionized Water	1-5	SC16F503N100
Rough Polish	Blue / Diamond / 9µm	PR5X-500-80	20 sec.	Deionized Water	10-30	D9KF503N1
Medium Polish	Lavender / Diamond / 1µm	PR5X-500-80	40 sec.	Deionized Water	20-30	D1KT503N1
Final Polish	White / Ultimas-U SiO ₂ / Sub-Micron	PR5X-500-80	40 sec.	Deionized Water	5	ULT02605503N100
Cleaning ⁴	Brown / Flocked Pile / None	PR5X-500-80	15-20 sec	Deionized Water	10	ABR60NC502N1

1.25mm Process - Table 1.2

Polishing Step	Color / Material / Grit Size	Pressure ¹ /Pad	Time	Fluid	Usage ²	Part Number
Epoxy Removal ³	Purple-Grey / Silicon Carbide / 16µm	PR5X-500-90	10 sec.	Deionized Water	1-5	SC16F503N100
Rough Polish	Pink / Diamond / 3µm	PR5X-500-90	20 sec.	Deionized Water	10-30	D3AT503N1
Medium Polish	Lavender / Diamond / 1µm	PR5X-500-90	40 sec.	Deionized Water	20-30	D1KT503N1
Final Polish	White / Ultimas-U SiO ₂ / Sub-Micron	PR5X-500-90	40 sec.	Deionized Water	5	ULT02605503N100
Cleaning ⁴	Brown / Flocked Pile / None	PR5X-500-90	15-20 sec	Deionized Water	10	ABR60NC502N1

Final Polish Film Options

As a leader in single mode polishing, FOC always looks for process improvements. Most innovations occur at the final step. Some other final polish options are as follows:

Final Polish Options - Table 2

Polishing Step	Color / Material / Grit Size	Pressure ¹ /Pad	Time	Fluid	Usage ²	Part Number
Final Polish	White / Ultimas-P SiO ₂ / Sub-Micron	PR5X-500-80 (for 2.5 mm) PR5X-500-90 (for 1.25 mm)	60-90 sec.	Deionized Water	5	ULT026FH503N100
Final Polish	Translucent / SiO ₂ / Sub-Micron	PR5X-500-80 (for 2.5 mm) PR5X-500-90 (for 1.25 mm)	60-90 sec.	Deionized Water	5	XF5D
Final Polish	Translucent / SiO ₂ /Sub-Micron	PR5X-500-80 (for 2.5 mm) PR5X-500-90 (for 1.25 mm)	60-90 sec.	Deionized Water	2	FOS-22
Final Polish	Translucent / SiO ₂ /Sub-Micron	PR5X-500-80 (for 2.5 mm) PR5X-500-90 (for 1.25 mm)	60-90 sec.	Deionized Water	1	FOS-01

¹ Pressure is controlled by the thickness of the rubber pad and does not have to be adjusted when polishing differing numbers of connectors.

² Usage estimates are conservative, and may vary. Flushing out lapping film with generous amounts of distilled water will increase the life of the film.

³ Pressure and time will vary. For large epoxy beads time may be longer than indicated. Consider starting with no clamps closed. After about 10-15 seconds close two diagonal clamps, and then after another 10-15 seconds, close the remaining two. Some follow this procedure with small epoxy beads after just a few seconds. Object is to remove epoxy and stop as soon as it's gone from all connectors.

⁴ Optional cleaning step.