



# Final Polish of Fiber Optic Connectors using 3M™ Lapping Films 863X and 863XW on Seikoh Giken SFP-550 Polishing Machines

Technical Application Bulletin

October, 2005

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## General Information

The 3M™ Lapping Films 863X and 863XW used in the final step of fiber optic connector polishing are designed to provide scratch-free, defect-free surfaces while producing optimal fiber height to meet Telcordia GR-326 standards.

The techniques used when handling and setting up these films can greatly affect the performance of the 3M Lapping Films. Described within are steps to achieve the best possible final polish results.

*Cleanliness is important.* The work area, the cleaning between steps, the condition of the fixture, the type of water and the type of tissue can all affect the performance and life of 3M Lapping Films.

The process steps prior to the final polishing film can also affect the quality of your results. A good practice is to use either 0.5 micron or 1 micron 3M™ Diamond Lapping Film in the step prior to final polish with 3M Lapping Film 863X or 863XW. Be certain to use enough time in this diamond step so that the scratch pattern is smooth and uniform.

3M Lapping Films 863X or 863XW can be used multiple times. The number of uses will be dependent on your particular process, equipment, connector types and procedures. These instructions are a guide to help you achieve better results with the higher first pass yields, using 3M Lapping Film for your final polish.



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### Step-by-step Instructions for Machine Preparation and Set-up for Final Polish

1. Prepare the rubber back-up pad. Spray pad with de-ionized or distilled water and wipe surface with low lint tissue, leaving surface damp enough to hold the lapping film.



**Note:** The rubber back-up pad should be in good condition, with no scratches, gouges or foreign material on the surface. Additional cleaning or replacement may be necessary.

2. Place 3M™ Lapping Film on the rubber back-up pad surface. Center the film on the rubber back-up pad. The water tension should hold the film in place.





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### Step-by-step Instructions for Machine Preparation and Set-up for Final Polish *(continued)*

3. Spray the film, for cleaning, with de-ionized or distilled water. One or two pumps from a spray bottle is adequate for this step.



4. Wipe the surface of the 3M™ Lapping Film with a clean tissue. The goal here is to remove the air bubbles, smooth out the film and clean the surface of the film. The film should be wiped until almost completely dry and laying flat. This photo shows the film well adhered to the back-up pad, laying smooth and clean.



5. Blow the surface of the film completely dry with clean air or nitrogen to help remove any particulates that may have settled on the film. Apply de-ionized or distilled water. Using about 3 pumps of the spray bottle or enough to cover the surface of the film.



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### Step-by-step Instructions for Machine Preparation and Set-up for Final Polish (continued)

6. Lower the fixture, gently, taking care to not gouge the film. Do not clamp the corners of the fixture for the final polish step. Let the fixture float with just the weight of the fixture, or by adding additional weight to the center of the fixture as seen Photo 7.



After the cycle, carefully lift the fixture, to minimize scoring of the film. The film can be wiped dry, and placed in an area for the next use.

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### Optional Adjustments

1. Additional weight can be added to the center of the fixture to improve the final polish results. One or two kilograms additional weight is optimal.



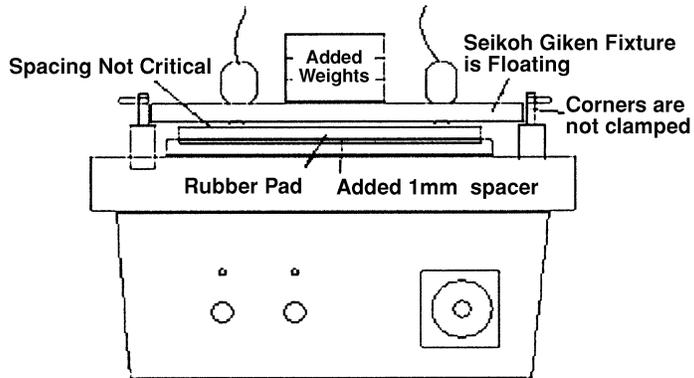


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## Optional Adjustments (continued)

- Adding a spacer under the rubber back-up pad, of approximately 1 mm, raises the abrasive so that the fixture floats above the corner collars, and provides uniform pressure with excellent results. This diagram shows important features of the weighted configuration.

**Seikoh Giken Weighted Configuration**



## For Additional Information

To request additional product information or to arrange for sales assistance, call toll free 1-800-251-8634. Address correspondence to: 3M Electronics Markets Materials Division, Building 21-1W-10, 900 Bush Avenue, St. Paul, MN 55144-1000. Our fax number is 651-778-4244 or 1-877-369-2923. In Canada, phone: 1-800-634-3577. In Puerto Rico, phone: 1-787-750-3000. In Mexico, phone: 52-70-04-00.

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