LIGHT DAMAGE REMOVAL KIT
FINISHING PROCEDURES

A. REQUIRED LEVEL OF SKILL:

- For use on non-pressurized aircraft: No specific training is required.
- For use on pressurized aircraft: Use should be restricted to licensed mechanics.

B. TOOLS REQUIRED:

1. (1) Random orbital sander.
2. (1) Angle Polisher, (Rated at approx. 2500 RPM), with 4.75 inch diameter Hook Back-Up pad.
3. (1) Compressed Air - 120 pounds per square inch.
4. (1) Spray bottle - approximately 10 ounce capacity. (For clean water).

B. LIST OF CONTENTS:

1. (2) 1500 Micro-Mesh 5" Discs
2. (2) 2400 Micro-Mesh 5" Discs
3. (2) 3600 Micro-Mesh 5" Discs
4. (1) Back-Up Pad, 4.75 inch diameter
5. (1) TufBuf polishing pad
6. (1) White sponge pad
7. (8 ounce) Micro-Gloss
8. (8 ounce) Anti-Static Cream
9. (2) Flannel Cloths
10. (1) Kit Parts Reorder Form
11. (1) Instructions

C. PREPARING FOR THE BEST RESULTS:

1. To avoid scratching plastic surfaces, do not wear watches, rings, or bracelets. Long fingernails should be covered with gloves.
2. Always keep the work surface and restoral materials clean as contamination can cause scratches.
3. Work with adequate light. Set a bright light on the side opposite your restoral side. For better viewing on non-transparent surfaces, place the light at an angle.
4. Read the restoral instructions carefully and review the kit contents before starting.

D. BEGINNING THE PROCESS:

1. Spray the surface with water. Using the random orbital sander with soft back-up pad provided, begin with the 1500 Micro-Mesh. Cover the entire surface of the transparency with long, sweeping motions. At regular intervals, change the directions of sweep to perpendicular of the previous motion. The damage is removed when all that can be seen is the pattern left by the Micro-Mesh. This process should take approximately 3-5 minutes per square foot. If after this amount of time the damage remains, it may be necessary to remove it using our Heavy Damage Removal Kit.
2. Change to 2400 Micro-Mesh and repeat to remove the 1500 scratches. Always be sure to keep the surface wet when working with the Micro-Mesh discs.
3. Change to 3600 Micro-Mesh and repeat the above process to remove the 2400 scratches.

4. Attach the TufBuf polishing pad to the right angle polisher. Wet the surface with water. Apply approximately 1 tablespoon of Micro-Gloss and buff for 2-4 minutes.
5. Attach the white foam sponge pad and repeat Step 4. Rinse the surface off with water. Wipe clean with a dry flannel cloth. All fine scratches should be gone. If not, repeat the buffing process.
6. Apply Anti-Static sparingly to the surface, using a clean, dry, flannel cloth. Polish surface by hand to remove the static charge that has built up during the process. Clean sponge, TufBuf, and flannel cloths with mild detergent and rinse for future use.

E. BENEFITS OF MAINTAINING TRANSPARENCIES:

Pilots and passengers alike need and appreciate the clear and undistorted view that a well maintained transparency provides. Comfort, enjoyment, but more importantly - SAFETY, are all requirements today! The smallest of scratches can lead to crazing. By keeping transparencies smooth and optically clear, through regular maintenance, crazing can be avoided.

Quality Restoral Kits to Fit Every Need

Let your local Micro-Surface Distributor help you select the proper kit to fill your special needs. Kits for both manual and mechanical methods are available. Our Applications Lab is also available to assist you with any technical questions. (1-800-225-3006)

HOW TO ACHIEVE THE BEST FINISH USING MICRO-MESH®

The polishing of surfaces can be very exacting. Success or failure depends on the technician's knowledge of, and his ability to follow, an established sequence.

MICRO-MESH® Can be Used With an Electric or Pneumatic Random Orbital Sander. Keep sanders to no more than 3500 rpms. Do not use with high speed die grinders or vibratory sanders. Ripples and swirls are typically caused by sanding with an uneven motion, tilting the sander, or working in one spot too long. For best results, sand smoothly with even, sweeping motions.

Pressure Should be Light. Remember the cushioned abrasive cuts with the abrasive crystal tips. The sharp cutting edges are floating on a resilient matrix. Extreme pressure pushes the tips back into the matrix rendering them ineffective and resulting in surface smearing, burning, and possible orange peel and distortion. If using a random orbital sander, polishing steps may require a soft back up pad between the MICRO-MESH® disc and the sander head.

KEEP EVERYTHING YOU USE CLEAN. This includes equipment, sandpapers, MICRO-MESH®, and all wiping materials. A minor scratch here or there is not a crisis situation, but picking up a piece of metal or other contaminate from the top of a work area can be a disaster. Watch where you set things down.

Acceptable Cleaning and Maintenance Materials:
100 % cotton flannel
Genuine chamois, not synthetic or imitation
Biodegradable liquid detergent
MICRO-MESH® Anti-Static cream
MICRO-GLOSS® polish and cleaner
WinBRIGHT Spray plastic cleaner
Bug Blaster Spray bug remover

Unacceptable Cleaning and Maintenance Materials:
Paper towels or other paper products
Shop towels or synthetic fiber fabrics
Commercial window cleaners
Any product containing ammonia or solvents or alcohol

Clean the Work Surface between each step, especially in cracks and crevices. Flush surface several times with clean water to remove dust and dirt before touching it with anything. Clean abraded particles from the work piece by rinsing and then dry and inspect.

Inspect the Work Piece between steps with a bright light to ensure you are removing the previous scratch pattern before continuing on.

Keep the Abrasives Clean. Keeping them clean will improve performance and extend life.

To Avoid Scratching the Surface, do not wear watches, rings, or bracelets. Long fingernails should be covered with gloves.

For Superficial and Light Surface Damage, use MICRO-GLOSS® liquid abrasive following the directions on the label of the bottle.

For Deep Damage and Crazing, you will be required to remove the damage firstly with sandpaper and then restore the surface to its original state using MICRO-MESH®. After damage is removed by using sandpaper in a succession of steps from coarse to fine, ie: 120 grit, 220 grit, 400 grit wet/dry, then begin the MICRO-MESH® series with MICRO-MESH® 1500 and proceed through the series to 12000 or until the original surface is matched.

Use a Straight-line Crossing Pattern. Do not use a circular pattern except in the final hand buffing or anti-static operations. When using a random orbital sander, use sweeping motions from left to right for one grit, then change the pattern to an up and down motion on the next.

Using MICRO-MESH® with Water and a few drops of detergent will generally result in a less effort having to be used and a slightly better finish. Only use enough water to provide lubricity to the surface, but not so much that poor contact is made with the work piece.

DO NOT wear out one of the meshes by trying to make it do too much work on your first step. If your estimated damage is not readily removed, go immediately to the next coarser mesh. Removing the initial damage with the sandpaper series will take up 85% of the restoral time. The MICRO-MESH series and the buffing procedures will take as little as 15% of the time. **DO NOT** skip steps in either the sandpaper or the MICRO-MESH® series.

Work an area slightly larger with each step to blend. Working one small area on a highly curved section could create flat spots or distortion.

Tools to Use With Our Mechanical Kits

WE DO NOT INCLUDE POWER TOOLS WITH OUR KITS

For our "mechanical" kits: Heavy Damage Removal Kit, Light Damage Removal Kit, Maintenance Kit, Polycarbonate Kit, Leading Edge Kit, Clearseas Acrylic Kit and Clearseas Vinyl Kit, you will need power tools that are not sold with our kits. Not including tools allows us to keep the price of the kits to a minimum.

TOOLS FOR SANDING

For best results, we suggest using a RANDOM ORBITAL sander for the sanding portion of the process. The exception to this rule is when using our Leading Edge Kit - for this kit, you will only use a rotary polishing buffer.

RANDOM ORBITAL sanders are also know as DUAL ACTION sanders. The sanding head spins in a random pattern making blending easier. These are also referred to as "finishing" sanders.

The random orbital that you choose to use needs to be rated at approximately 10000 RPMs and needs to have variable speed options. You will actually adjust the sander down in speed, approximately half way or until you can easily control it with one hand. You will need the 10000 RPMs for power, but the lower variable speed for control as you work.

TOOLS FOR BUFFING

The buffing portion of the restoral process is performed using a right angle polisher. This is also known as a rotary buffer. This is the same type of buffer you would use on your automobile to buff the clear coat paint. The pad spins in a stationary orbit.

The buffer that you choose to use should be rated at approximately 2500 RPMs. It is important to keep in this range so that you have enough power to do the job, but not so high of RPMs that you would generate a great deal of heat. It is easier to generate heat with a polisher than with a sander. Heat generation can cause distortion, orange peel, and burning. This is why it is important to always use lubrication, preferably water, when possible.

Unlike with the sanding portion of the process, for most jobs, the standard back-up pad that comes with your buffer will be sufficient to do the job. If you're working on a particularly soft material or are having problems reaching a high gloss finish, then attach an interface pad onto your standard backup pad to give yourself the necessary added cushioning. Most industrial supply stores will carry inexpensive, 5" interface pads. Remember to purchase one that is "Loop to Hook" meaning, the loop on one side of the interface pad connects to the hook facing of your standard buffer and the hook side of the interface will be what you attach your loop backed polishing pads to.

Right Angle Polisher with polishing pads.

All of our kits are supplied with accessories to fit 5" tools. All the Micro- Mesh discs and polishing pads are supplied with LOOP backing so you can get the most value from each kit. All discs and pads can be washed and used over and over.

Sanders and buffers are available as both pneumatic (air) and electric. ****We always caution people when using electric tools on wet surfaces.**

BACKUP PADS

Your sander and/or buffer come with a standard "backup pad" when you purchase it. This back-up pad is what you attach the Micro-Mesh sanding disc or polishing pad to. The back-up pad is sometimes referred to as a "backing plate" or "sanding pad", depending on who you speak with. We refer to it as a "backup pad." This pad is made of foam and has either a "hook" surface or "smooth" surface on which to apply the sanding discs or polishing pads. If you have a back-up pad with "hook" you will need to attach LOOP backed sanding discs. If you have a back-up pad with a "smooth" face, you would attach PSA (pressure sensitive adhesive)backed discs.

The foam in the backup pad on most sanders and buffers that come standard on your tool are usually medium to hard in density. Our mechanical kits all feature our specially made extra soft back-up pad. This back-up pad will easily conform to curvatures and allow you to

polish your part to a high gloss finish. The harder the backup pad the more in contact you will be with the part you are finishing and provide a coarser cutting action. This is not what you need when polishing softer material to a high gloss finish. The softer the back-up pad, the easier it will polish.

The back-up pad included with our kit has a male shank with a 5/16" x 24 thread count. There are many good sanders on the market today that will fit this back-up pad. We do not recommend one sander over another.

When and IF to Use a Cordless Drill

If you're uncomfortable using power tools or do not have access to air or electricity hook-up, you can use a cordless drill for both the sanding and buffing portions of our restoral process, with satisfactory results.

The exception to this rule would be when using our HEAVY DAMAGE REMOVAL KIT. Any sanding done coarser than with our MICRO-MESH 1500 requires that you use a random orbital sander. A cordless drill simply does not have the power you need for coarse sanding.

We recommend that you have a cordless drill that is completely charged and an extra battery set to go prior to beginning your work. We also caution that when in use, keep the drill parrallel to the workpiece at all times and adjust the speed so that the drill provides a smooth action. Any "skipping" or "jumping" on the work piece will cause "chatter" marks.

*The Light Damage Removal, Maintenace and Clearseas Vinyl and Acrylic kits are available with a special, extra soft back-up pad that is on a mandrell that will fit into your cordless drill. This is provided in the kit. You will have to choose the Light Damage Removal DRILL Kit in order to get this back-up pad. If you order the Light Damage Removal Kit - you will receive a back-up pad for a random orbital sander. The same is true for the Maintenance Kit. Make sure and look at the back-up pad in the picture of the kit you are purchasing to make sure you're getting the correct one.*Â