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**3M Aerospace**

# Paint Defect Repair Manual



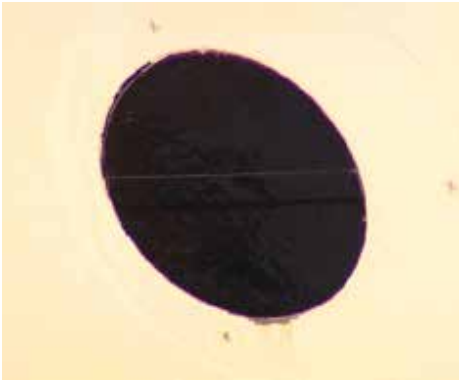
# 3M Paint Defect Repair Process

3M has developed a step-by-step paint defect repair process for 16 common paint defects. Utilizing this system and the 3M products listed produces exceptional, repeatable results in a minimum of time.

The **3M Paint Defect Repair Process** is great for seasoned professionals or employees with minimal experience. Refer to Product Labels and Safety Data Sheets for health and safety information before using these products. For additional health and safety information, call 1-800-364-3577 or (651) 737-6501 or visit [3M.com/Aerospace](http://3M.com/Aerospace).

- Chips
- Orange Peel
- Craters Deep
- Craters Shallow
- Pinholes
- Scratches
- Thinner Pop
- Rag Marks
- Overspray
- Adhesion & Peeling
- Dirt
- Trash & Lint
- Gravitational Defects
- Eyebrow Rivets
- Stripe Edges
- Skydrol™ Aviation Hydraulic Fluid

# Defect Type – Chips



## Causation for Chips:

- Caused by personnel contacting the edges of painted surfaces.
- The movement of flight surfaces, opening of access panels, doors, etc.
- Contacting the aircraft with access stands, test equipment, tools, etc.

For small chips located on a pronounced surface edge perform the standard touch up procedure in Process Step 1. Larger chips in high visibility areas will be repainted per the blow-in method, Process Step 3 and buffed per Process Step 5.

## Read all steps in the process before starting.

*Note: Any small touch-up in high visibility areas will need to be sanded smooth and buffed using the sand method in Process Step (4) and the buff method in Process Step 5, starting on Step F. For large, highly visible defects repair with the sand/fill Process Step 2, repaint per the blow-in method Process Step (3) and buff per Process Step 5 as required.*

### Standard Paint Touch-Up, Process Step 1

- Obtain the paint from the original batch number used.
- Place the paint on the shaker and shake for a minimum of five minutes.
- Mix the paint to the manufacturer's specification.
- Mix the paint as follows, paint, catalyst and reducer per the manufacturer's instructions.
- Pour paint into a small portable container.
- Mark the cup to indicate that the paint is catalyzed.
- Select a clean touch-up brush of appropriate size to perform the task.
- Ensure paint color match.

*Note: Do not allow the paint to exceed the edges of the chipped area, no globbing of paint allowed!*

- Apply matching paint in the center of the affected area working towards the edges of the chip, use steady consistent strokes.
- Apply paint coats as many times as required to achieve a flush surface that compliments the surrounding area.
- Thoroughly clean up the work area.

### Sand and Fill, Process Step 2

- Clean with water or approved solvent and a paper towel.\*

*Note: Keep the sanding area as limited as possible.*

- Sand lightly with 3M™ Hookit™ Gold Disc 216U, P320 grit sandpaper. Try to avoid sanding through the primer and exposing bare metal (3M™ Non-Vacuum Random Orbital Sander, 3/16" at 35-40 PSI).

- Lightly abrade by hand with Scotch-Brite™ General Purpose Hand Pad 7447 to eliminate gloss in low areas of the defect.
- Clean with water or approved solvent and a paper towel.\*

*Note: The surface will need to be chemically treated with 3M™ Surface Pre-Treatment AC-131 or an approved chromated primer adhesion promoter. If sanding exposes bare aluminum a surface pretreatment will have to be applied before applying aircraft primer.*

- Apply 3M™ Surface Pre-Treatment AC-131 or approved chromated primer adhesion promoter to any aluminum exposed by the sanding process.
- Apply an approved primer to the area treated in step E above.

*Note: Mix 3M™ Advanced Finishing Putty per 3M recommendations of 2% hardener per filler by weight. Using too much hardener may cause staining on white paint. Do not mix the product on a piece of cardboard, cardboard absorbs Styrene in the product and makes it less effective. Spread product out thinly and over a wide area pulling in one direction and then another with a squeegee. Spreading out the product reduces pinholes, traps less air and provides more work time.*

- Mix and apply a thin layer of 3M™ Advanced Finishing Putty to defect area using a yellow squeegee. Push down on the outside edge of squeegee with 1 finger on each side to leave a thin amount of filler at the edge of the defect and a high spot of filler in the center for sanding. Insure the void is filled and putty covers an area just outside defect area.

*Note: Allow 3M™ Advanced Finishing Putty to dry for 15 minutes before sanding.*

- Re-apply the 3M™ Dry Guide Coat to highlight the defect area.
- Sand with 3M™ Hookit™ Gold Disc 216U, P320 grit sandpaper until outline of defect is seen but leave an area of .001-.002 (in thickness) of filler outlining the defect area (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 35-40 PSI).
- Clean with approved solvent and a paper towel.\*

*\*Note: When using solvents, extinguish all ignition sources,*

including pilot lights and follow manufacturer's precautions and directions for use.

### Blow-In Method, Process Step 3

- A. To insure proper paint adhesion; Sand approximately 3-6" beyond the P320 scratches created above in Process Step 2, I, with 3M™ Hookit™ Finishing Film Grade P800 abrasive (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- B. To enhance adhesion on the blend edge; dampen the surface approximately 3-6" outside the area sanded in A above. Dampen the 3M™ Trizact™ Hookit™ Foam Disc Grade P3000 and sand the area until a white slurry appears, using a North/South and East/West pattern (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- C. Obtain the paint from the original batch number used.
- D. Place the paint on the shaker and shake for a minimum of five minutes.
- E. Mix the paint to the manufacturer's specification.
- F. Thin the paint as follows, paint, catalyst and reducer per manufacturer's instructions.

**Note: On multiple coat applications it is necessary to extend the wet line of each coverage ring fractionally past the last coat to prevent developing an excessive build-up of paint on the edges bordering the blend transition area. Apply enough paint to ensure adequate coverage exists in the event sanding is required.**

- G. Establish paint coverage by employing the necessary number of coats.
- H. Divide the remaining paint into 2 containers.
- I. Mix the container of remaining paint per the manufacturer's directions.

**Note: The finer the atomization of paint particles into the blend transition area, the more optimal the end results will be.**

- J. Carefully develop a blend edge by spraying from the coverage wet edge outwards. Ensure that where the last coverage ring and the blend edge meet that "burn in" doesn't change the paint texture.
- K. Allow an adequate amount of time for the paint to cure, 24 hours if possible.
- L. Thoroughly clean up the work area.

### High Visibility Area Sanding, Process Step 4

- A. Clean with water or approved solvent and a paper towel.\*
- B. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500. Sand the area with 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad installed to highlight the defect(s). Then remove the 3M™ Soft Interface Pad and sand with the 3M™ Clean Sanding Painter's Back Up Pad until the defect(s) are removed. Once large defect(s) are removed put the 3M™ Soft Interface Pad back on with a 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500 and sand until the orange peel is removed. (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- C. Clean with water or approved solvent and a paper towel.\*
- D. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ Foam Disc Grade P 3000

with a spray bottle. Sand the defect area using the 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad until a white slurry appears, using a North/South and East/West pattern. When the white slurry appears, sand the defect area to insure 200% coverage (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).

- E. Clean with water or approved solvent and a paper towel.\*
- F. Use the 3M™ SUN GUN™ II Light Kit to evaluate for scratches. If scratches still exist repeat steps D and E above.

### Buffing Repair, Process Step 5

#### 5A. Buffing process for High Visibility areas.

- A. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500. Sand the area with 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad installed to highlight the defect(s). Then remove the 3M™ Soft Interface Pad and sand with the 3M™ Clean Sanding Painter's Back Up Pad until the defect(s) are removed. Once large defect(s) are removed put the 3M™ Soft Interface Pad back on with a 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500 and sand until the orange peel is removed. (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- B. Clean with water or approved solvent and a paper towel.\*
- C. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ Foam Disc Grade P 3000 with a spray bottle. Sand the defect area using the 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad until a white slurry appears, using a North/South and East/West pattern. When the white slurry appears, sand the defect area to insure 200% coverage (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- D. Clean with water or approved solvent and a paper towel.\*
- E. Use the 3M™ SUN GUN™ II Light Kit to evaluate the defect area. If scratches still exist repeat steps C and D above.
- F. Buff the defect area with 3M™ Perfect-It™ Rubbing Compound. Use a buffer, 3M™ Quick Release Adapter and 3M™ Perfect-It™ Wool Compounding Pad or 3M™ Perfect-It™ Low Linting Wool Pad. Use medium pressure to start, approximately 5 lbs and then reduce pressure to almost no pressure as you finish (Electric Buffer at 1400-1800 RPM).
- G. Clean with water or approved solvent and a paper towel.\*
- H. Use the 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches. If scratches still exist repeat steps F and G.
- I. Remove swirl marks using 3M™ Perfect-It™ Machine Polish and 3M™ Perfect-It™ Foam Polishing Pad (use 3M™ Quick Release Adapter for mounting). Polish using medium pressure on 2-3 passes over the defect area or until all the compounding swirls are removed. Finish with two passes using light downward pressure over the defect area (Electric Buffer at 1400-1800 RPM).
- J. Remove excess 3M™ Perfect-It™ Machine Polish from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Auto Detailing Cloth, Yellow, insuring surging (sewn edges) do not rub the skin. Surging

may leave a rag mark that is not removable using the final compounding step.

- K. Use the 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches. If scratches still exist, repeat steps I and J.
- L. Swirl (Halo) Elimination: Buff the defect repair area with 3M™ Perfect-It™ Ultrafine Machine Polish, using 3M™ Quick Release Adapter, and 3M™ Perfect-It™ Ultrafine Foam Polishing Pad. Apply enough 3M™ Perfect-It™ Ultrafine Machine Polish to insure a wet continuous film exists on the panel during the entire procedure.

**Note: When using solvents, extinguish all ignition sources, including pilot lights and follow manufacturer's precautions and directions for use.**

**Note: It will take a fair amount of product to initially wet the pad, there after add small amounts of product to keep the surface wet. Buff at 1400-1800 RPM and insure 200% coverage using medium pressure to start and light pressure to finish. Utilize a North/South and East/West pattern for your buffing pattern (Electric Buffer at 1400-1800 RPM).**

- M. Remove excess 3M™ Perfect-It™ Ultrafine Machine Polish compound from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Blue, insuring surging, (sewn edges), do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
- N. Use 3M™ SUN GUN™ II Light Kit to evaluate defect area, (Halo effect). If scratches still exist repeat steps L and M above.
- O. Thoroughly clean up the work area.

## **5B. Buffing process for lower visibility areas.**

- A. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500. Sand the area with 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad installed to highlight the defect(s). Then remove the 3M™ Soft Interface Pad and sand with the 3M™ Clean Sanding Painter's Back Up Pad until the defect(s) are removed. Once large defect(s) are removed put the 3M™ Soft Interface Pad back on with a 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500 and sand until the orange peel is removed. (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- B. Clean with water or approved solvent and a paper towel.\*
- C. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ Foam Disc Grade P3000 disc with a spray bottle. Sand the defect area using the 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad until a white slurry appears, using a North/South and East/West pattern. When the white slurry appears, sand the defect area to insure 200% coverage (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- D. Clean with water or approved solvent and a paper towel.\*

- E. Use the 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches. If scratches still exist repeat steps C and D.
- F. Buff the defect area with 3M™ Perfect-It™ Rubbing Compound. Use a buffer, 3M™ Quick Release Adapter and 3M™ Perfect-It™ Wool Compounding Pad or 3M™ Perfect-It™ Low Linting Wool Pad. Use medium pressure to start, approximately 5 lbs, then reduce pressure to almost no pressure as you finish (Electric Buffer at 1400-1800 RPM).
- G. Clean with water or approved solvent and a paper towel.\*
- H. Remove swirl marks using 3M™ Perfect-It™ Machine Polish and 3M™ Perfect-It™ Foam Polishing Pad (use 3M™ Quick Release Adapter for mounting). Polish using medium pressure on 2-3 passes over the defect area or until all the compounding swirls are removed. Finish with two passes using light downward pressure over the defect area (Electric Buffer at 1400-1800 RPM).
- I. Remove excess 3M™ Perfect-It™ Machine Polish from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Yellow, insuring surging (sewn edges) do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
- J. Use 3M™ SUN GUN™ II Light Kit to evaluate defect area for scratches. If scratches still exist repeat steps H and I above.
- K. Thoroughly clean up the work area.

**\*Note: When using solvents, extinguish all ignition sources, including pilot lights and follow manufacturer's precautions and directions for use.**

# Defect Type – Orange Peel



For defects outside the limit, repair by area per Process Step 1, sanding, and Process Step 2 for buffing.

## Causation for Orange Peel:

- Paint droplet size is too large and or paint atomization is incomplete.
- Primer surface is rough.
- Improper use of paint thinner, too little thinner increases orange peel, too much thinner causes sags. In warmer weather use of slower thinner is recommended.
- Applying the first coat of paint too thin, 1 mil or less typically leads to orange peel.
- Using paint at the end of the pot life will have a short wet edge and heavy orange peel.
- Waiting too long between the application of the first paint coat and the second increases orange peel, however, if you do not wait until the first coat tacks up runs may occur.

## Read all steps in the process before starting.

### Sanding Repair, Process Step 1

- A. Clean with water or approved solvent and a paper towel.\*
- B. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500. Sand the area with 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad installed to highlight the defect(s). Then remove the 3M™ Soft Interface Pad and sand with the 3M™ Clean Sanding Painter's Back Up Pad until the defect(s) are removed. Once large defect(s) are removed put the 3M™ Soft Interface Pad back on with a 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500 and sand until the orange peel is removed. (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- C. Clean with water or approved solvent and a paper towel.\*
- D. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ P 3000 disc with a spray bottle. Sand the defect area using the 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad until a white slurry appears, using a North/South and East/West pattern. When the white slurry appears, sand the defect area to insure 200% coverage (3M™ Non-Vacuum Random Orbital Sander, 5/16" with 40-50 PSI).
- E. Clean with water or approved solvent and a paper towel.\*

### Buffing Repair, Process Step 2

#### 2A. Buffing process for High Visibility areas.

- A. Buff the defect area with 3M™ Perfect-It™ Rubbing Compound. Use a buffer, 3M™ Quick Release Adapter, and 3M™ Hookit™ Wool Buffing Pad. Use medium pressure to start, approximately 5 lbs and then reduce pressure to almost no pressure as you finish (Electric Buffer at 1400-1800 RPM).
- B. Clean with water or approved solvent and a paper towel.\*
- C. Use the 3M™ SUN GUN™ II Light Kit to evaluate the defect area. If scratches still exist repeat steps A and B above.
- D. Remove swirl marks using 3M™ Perfect-It™ Machine Polish and 3M™ Perfect-It™ Foam Polishing Pad (use 3M™ Quick Release Adapter for mounting). Polish using medium pressure on 2-3 passes over the defect area or until all the compounding swirls are removed. Finish with two passes using light downward pressure over the defect area (Electric Buffer at 1400-1800 RPM).
- E. Remove excess 3M™ Perfect-It™ Machine Polish from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Yellow, insuring surging (sewn edges) do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
- F. Use the 3M™ SUN GUN™ II Light Kit to evaluate the defect. If scratches still exist repeat steps D and E.
- G. Swirl (Halo) Elimination: Buff the defect repair area with 3M™ Perfect-It™ Ultrafine Machine Polish, using 3M™ Quick Release Adapter, and 3M™ Perfect-It™ Ultrafine Foam Polishing Pad. Apply enough 3M™ Perfect-It™ Ultrafine Machine Polish to insure a wet continuous film exists on the panel during the entire procedure.

**Note: It will take a fair amount of the product to initially wet the pad, there after add small amounts of product to keep the surface wet. Buff at 1400-1800 RPM and insure 200% coverage using medium pressure to start and light pressure to finish. Utilize a North/South and East/West pattern for your buffing.**

- H. Remove excess 3M™ Perfect-It™ Ultrafine Machine Polish compound from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Blue, insuring surging, (sewn edges), do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
- I. Use the M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches, (Halo effect). If scratches still exist repeat steps G and H above.

## **2B. Buffing process for Standard Visibility areas.**

- A. Buff the defect area with 3M™ Perfect-It™ Rubbing Compound. Use a buffer, 3M™ Quick Release Adapter and 3M™ Perfect-It™ Wool Compounding Pad or 3M™ Perfect-It™ Low Linting Wool Pad. Use medium pressure to start, approximately 5 lbs and then reduce pressure to almost no pressure as you finish (Electric Buffer at 1400-1800 RPM).
- B. Clean with water or approved solvent and a paper towel.\*
- C. Remove swirl marks using 3M™ Perfect-It™ Machine Polish and 3M™ Perfect-It™ Foam Polishing Pad (use 3M™ Quick Release Adapter for mounting). Polish using medium pressure on 2-3 passes over the defect area or until all the compounding swirls are removed. Finish with two passes using light downward pressure over the defect area (Electric Buffer at 1400-1800 RPM).
- D. Remove excess 3M™ Perfect-It™ Machine Polish from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Yellow, insuring surging (sewn edges) do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
- E. Use the 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches, (Halo effect). If scratches still exist repeat steps C and D above.
- F. Thoroughly clean up the work area.

**\*Note: When using solvents, extinguish all ignition sources, including pilot lights and follow manufacturer's precautions and directions for use.**

# Defect Type – Pinholes



## Causation for Pinholes:

- Pinholes are caused by outgassing from primers or paints that cure too rapidly.
- Air bubble voids in sealant or fillers exposed in the paint prep process, usually from sanding.

For defects outside the limit, repair per Process Step 1, apply guidecoat, sand, and fill if required and Process Step 2, repaint per the blow-in method and Process Step 3, buffing repair.

## Read all steps in the process before starting.

### Apply Guidecoat, Sand and Fill, Process Step 1

- A. Clean with water or approved solvent and a paper towel.\*
- B. Apply a small amount of 3M™ Dry Guide Coat to highlight the defect area.

**Note:** Keep the sanding area as limited as possible.

- C. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500. Sand the area with 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad installed to highlight the defect(s). Then remove the 3M™ Soft Interface Pad and sand with the 3M™ Clean Sanding Painter's Back Up Pad until the defect(s) are removed. Once large defect(s) are removed put the 3M™ Soft Interface Pad back on with a 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500 and sand until the orange peel is removed. (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).

**Note:** If sanding removes the pinhole proceed to Buffing Repair Process Step 3A (C) or 3B (C) as applicable. If sanding to remove a Pinhole breaks through the paint you will need to accomplish filling steps, D-P, Process Step 2 Paint Blow-In and Buffing Repair Process Step 3A or 3B if required.

- D. Sand lightly with 3M™ Hookit™ Gold Disc 216U, P320 grit sandpaper. Sand only until defect is removed and painted surface is smooth (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 35-40 PSI).
- E. Clean with water or approved solvent and a paper towel.\*
- F. Lightly abrade by hand with Scotch-Brite™ General Purpose Hand Pad 7447 to eliminate gloss in low areas of the defect.
- G. Clean with water or approved solvent and a paper towel.\*

**Note:** The surface will need to be chemically treated with 3M™ Surface Pre-Treatment AC-131 or an approved chromated primer adhesion promoter and primer if the sanding exposed bare aluminum.

- H. Apply 3M™ Surface Pre-Treatment AC-131 or approved chromated primer adhesion promoter to any aluminum exposed by the sanding process.
- I. Apply an approved primer to the area treated in step H above.
- J. Lightly abrade by hand with Scotch-Brite™ General Purpose Hand Pad 7447 to eliminate gloss in low areas of the defect.
- K. Clean with water or approved solvent and a paper towel.\*

**Note:** Mix 3M™ Advanced Finishing Putty per 3M recommendations of 2% hardener per filler by weight. Using too much hardener may cause staining on white paint. Do not mix the product on a piece of cardboard, cardboard absorbs Styrene in the product and makes it less effective. Spread product out thinly and over a wide area pulling in one direction and then another with a squeegee. Spreading out the product reduces pinholes, traps less air and provides more work time.

- L. Mix and apply a thin layer of 3M™ Advanced Finishing Putty to defect area using a yellow squeegee. Push down on the outside edge of squeegee with 1 finger on each side to leave a thin amount of filler at the edge of the defect and a high spot of filler in the center for sanding. Insure the void is filled and putty covers an area just outside defect area.

**Note:** Allow 3M™ Advanced Finishing Putty to dry for 15 minutes before sanding.

- M. Re-apply the 3M™ Dry Guide Coat to highlight the defect area.
- N. Sand with 3M™ Hookit™ Gold Disc 216U, P320 grit sandpaper until outline of defect is seen but leave an area of .001-.002 (in thickness) of filler outlining the defect area (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 35-40 PSI).
- O. Clean with approved solvent and a paper towel.\*
- P. Thoroughly clean up the work area.



## Blow-In Method, Process Step 2

- A. To insure proper paint adhesion; Sand approximately 3-6" beyond the P320 scratches created above in Process Step 2, I, with 3M™ Hookit™ Finishing Film Grade P800 abrasive (3M™ Non-Vacuum Random Orbital Sander, 3/16" at 40-50 PSI).
- B. To enhance adhesion on the blend edge; dampen the surface approximately 3-6" outside the area sanded in A above. Dampen the 3M™ Trizact™ Hookit™ Foam Disc, P3000 disc and sand the area until a white slurry appears, using a North/South and East/West pattern (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- C. Obtain the paint from the original batch number used.
- D. Place the paint on the shaker and shake for a minimum of five minutes.
- E. Mix the paint to manufacturer's specification.
- F. Thin the paint per the manufacturer's instructions.
- G. Mix well with a clean stir stick.

**\*Note: When using solvents, extinguish all ignition sources, including pilot lights and follow manufacturer's precautions and directions for use.**

**Note: On multiple coat applications it is necessary to extend the wet line of each coverage ring fractionally past the last coat to prevent developing an excessive build-up of paint on the edges bordering the blend transition area. Apply enough paint to ensure adequate coverage exists in the event sanding is required.**

- H. Establish paint coverage by employing the necessary number of coats.
- I. Divide the remaining paint into 2 containers.
- J. Mix 1 container of the remaining paint per the manufacturer's instructions.

**Note: The finer the atomization of paint particles into the blend transition area, the more optimal the end results will be.**

- K. Carefully develop a blend edge by spraying from the coverage wet edge outwards. Ensure that where the last coverage ring and the blend edge meet that "burn in" doesn't change the paint texture.
- L. Allow an adequate amount of time for the paint to cure, 24 hours if possible.

## Buffing Repair, Process Step 3

### 3A. Buffing Process for High Visibility areas.

- A. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500. Sand the area with 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad installed to highlight the defect(s). Then remove the 3M™ Soft Interface Pad and sand with the 3M™ Clean Sanding Painter's Back Up Pad until the defect(s) are removed. Once large defect(s) are removed put the 3M™ Soft Interface Pad back on with a 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500 and sand until the orange peel is removed. (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- B. Clean with water or approved solvent and a paper towel.\*

- C. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ Foam Disc P 3000 disc with a spray bottle. Sand the defect area using the 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad until a white slurry appears, using a North/South and East/West pattern. When the white slurry appears, sand the defect area to insure 200% coverage (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- D. Clean with water or approved solvent and a paper towel.\*
- E. Buff the defect area with 3M™ Perfect-It™ Rubbing Compound. Use an electric buffer, 3M™ Quick Release Adapter and 3M™ Perfect-It™ Wool Compounding Pad or 3M™ Perfect-It™ Low Linting Wool Pad. Use medium pressure to start, approximately 5 lbs and then reduce pressure to almost no pressure as you finish (Electric Buffer at 1400-1800 RPM).
- F. Clean with water or approved solvent and a paper towel.\*
- G. Use the 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches. If scratches still exist repeat steps E and F above.
- H. Remove swirl marks using 3M™ Perfect-It™ Machine Polish and 3M™ Perfect-It™ Foam Polishing Pad (use 3M™ Quick Release Adapter for mounting). Polish using medium pressure on 2-3 passes over the defect area or until all the compounding swirls are removed. Finish with two passes using light downward pressure over the defect area (Electric Buffer at 1400-1800 RPM).
- I. Remove excess 3M™ Perfect-It™ Machine Polish from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Yellow, insuring surging (sewn edges) do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
- J. Use the 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches, (Halo effect). If scratches still exist repeat steps H and I above.
- K. Swirl (Halo) Elimination: Buff defect repair area with 3M™ Perfect-It™ Ultrafine Machine Polish, using 3M™ Quick Release Adapter, and 3M™ Perfect-It™ Ultrafine Foam Polishing Pad. Apply enough 3M™ Perfect-It™ Ultrafine Machine Polish to insure a wet continuous film exists on the panel during the entire procedure.

**Note: It will take a fair amount of product to initially wet the pad, there after add small amounts of product to keep the surface wet. Buff at 1400-1800 RPM and insure 200% coverage using medium pressure to start and light pressure to finish. Utilize a North/South and East/West pattern for your buffing pattern (Electric Buffer at 1400-1800 RPM).**

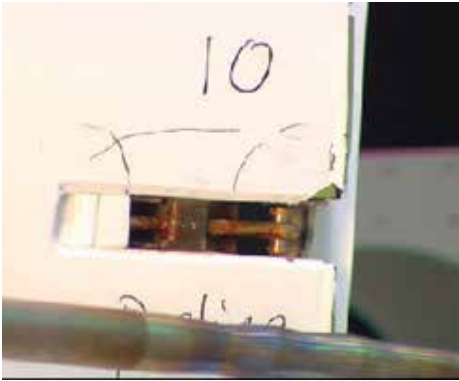
- L. Remove excess 3M™ Perfect-It™ Ultrafine Machine Polish compound from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Yellow, insuring surging, (sewn edges), do not rub the skin. Surging may leave a rag mark.
- M. Use the 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches, (Halo effect). If scratches still exist repeat steps K and L above.
- N. Thoroughly clean up the work area.

### 3B. Buffing Process for Standard Visibility areas.

- A. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500. Sand the area with 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad installed to highlight the defect(s). Then remove the 3M™ Soft Interface Pad and sand with the 3M™ Clean Sanding Painter's Back Up Pad until the defect(s) are removed. Once large defect(s) are removed put the 3M™ Soft Interface Pad back on with a 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500 and sand until the orange peel is removed. (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- B. Clean with water or approved solvent and a paper towel.\*
- C. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ Foam Disc P 3000 disc with a spray bottle. Sand the defect area using the 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad until a white slurry appears, using a North/South and East/West pattern. When the white slurry appears, sand the defect area to insure 200% coverage (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- D. Clean with water or approved solvent and a paper towel.\*
- E. Buff the defect area with 3M™ Perfect-It™ Rubbing Compound. Use an electric buffer, 3M™ Quick Release Adapter and 3M™ Perfect-It™ Wool Compounding Pad or 3M™ Perfect-It™ Low Linting Wool Pad. Use medium pressure to start, approximately 5 lbs and then reduce pressure to almost no pressure as you finish (Electric Buffer at 1400-1800 RPM).
- F. Clean with water or approved solvent and a paper towel.\*
- G. Use the 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches. If scratches still exist repeat steps E and F above.
- H. Remove swirl marks using 3M™ Perfect-It™ Machine Polish and 3M™ Perfect-It™ Foam Polishing Pad (use 3M™ Quick Release Adapter for mounting). Polish using medium pressure on 2-3 passes over the defect area or until all the compounding swirls are removed. Finish with two passes using light downward pressure over the defect area (Electric Buffer at 1400-1800 RPM).
- I. Remove excess 3M™ Perfect-It™ Machine Polish from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Yellow, insuring surging (sewn edges) do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
- J. Use the 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches. If scratches still exist repeat steps H and I above.
- K. Thoroughly clean up the work area.

***\*Note: When using solvents, extinguish all ignition sources, including pilot lights and follow manufacturer's precautions and directions for use.***

# Defect Type – Adhesion/Peeling



## Causation for Adhesion and Peeling:

- These defects are caused by substrate surface contamination from silicone, hydraulic fluid, engine oil, etc.
- Some of the sources for these contaminants are: dirty substrates, oil and or water in the compressed air lines, wrong lubricant used in the spray gun, sanding dust, or a dirty filter in the air line.

For adhesion failures (peeling) repair per Process Step 2, sand, prime and fill, and Process Step 3, repaint using the blow-in method and Process Step 4 buffing repair as required.

## Read all steps in the process before starting.

### Adhesion/Peeling Test, Process Step 1

- A. Ensure you are wearing safety glasses, gloves, etc.
- B. Direct the air of an air blower at the edges of the peeling paint at 120 PSI.
- C. Continue circulating the air pressure around the peeled area until the peeling ceases.
- D. Clean up all peeled paint from the surrounding area.

### Sand and Fill, Process Step 2

- A. Clean with water or approved solvent and a paper towel.\*
  - B. Apply a small amount of 3M™ Dry Guide Coat to highlight the defect area.
- Note: Keep the sanding area as limited as possible.**
- C. Sand lightly with 3M™ Hookit™ Gold Disc 216U, P320 grit sandpaper. Try to avoid sanding through the primer and exposing bare metal (3M™ Non-Vacuum Random Orbital Sander, 3/16" 35-40 PSI).
  - D. Lightly abrade by hand with Scotch-Brite™ General Purpose Hand Pad 7447 to eliminate gloss in low areas of the defect.
  - E. Clean with water or approved solvent and a paper towel.\*

**Note: The surface will need to be chemically treated with 3M™ Surface Pre-Treatment AC-131 or an approved chromated primer adhesion promoter and primer if the sanding exposed bare aluminum.**

- F. Apply 3M™ Surface Pre-Treatment AC-131 or approved chromated primer adhesion promoter to any aluminum exposed by the sanding process.
- G. Apply an approved primer to the area treated in step F above.
- H. Lightly abrade the surface of the primer with Scotch-Brite™ General Purpose Hand Pad 7447 before applying the 3M™ Advanced Finishing Putty.

- I. Clean with water or approved solvent and a paper towel.\*

**Note: Mix 3M™ Advanced Finishing Putty per 3M recommendations of 2% hardener per filler by weight. Using too much hardener may cause staining on white paint. Do not mix the product on a piece of cardboard, cardboard absorbs Styrene in the product and makes it less effective. Spread the product out thinly and over a wide area pulling in one direction and then another with a squeegee. Spreading out the product reduces pinholes, traps less air and provides more work time.**

- J. Mix and apply a thin layer of 3M™ Advanced Finishing Putty to defect area using a yellow squeegee. Push down on the outside edge of squeegee with 1 finger on each side to leave a thin amount of filler at the edge of the defect and a high spot of filler in the center for sanding. Insure void is filled and putty covers an area just outside defect area.

**Note: Allow 3M™ Advanced Finishing Putty to dry for 15 minutes before sanding.**

- K. Re-apply 3M™ Dry Guide Coat to highlight the defect area.
- L. Sand with 3M™ Hookit™ Gold Disc 216U, P320 grit sandpaper until outline of defect is seen but leave an area of .001-.002 (in thickness) of filler outlining the defect area (3M™ Non-Vacuum Random Orbital Sander, 5/16" 35-40 PSI).
- M. Clean with approved solvent and a paper towel.\*
- N. Complete the blow-in method, process step 3.

### Blow-In Method, Process Step 3

- A. To insure proper paint adhesion; Sand approximately 3-6" beyond the P320 scratches created above in Process Step 2, L, with 3M™ Hookit™ Finishing Film Grade P800 abrasive (3M™ Non-Vacuum Random Orbital Sander, 3/16" 40-50 PSI).
- B. To enhance adhesion on the blend edge; dampen the surface approximately 3-6" outside the area sanded in A above. Dampen the 3M™ Trizact™ Hookit™ Foam Disc P3000 disc and sand the area until a white slurry appears, using a North/South and East/West pattern (3M™ Non-Vacuum Random Orbital Sander, 5/16 40-50 PSI).

- C. Obtain the paint from the original batch number used.
- D. Place the paint on the shaker and shake for a minimum of five minutes.
- E. Mix the paint to the manufacturer's specification.
- F. Thin the paint per the manufacturer's specification.
- G. Mix well with a clean stir stick.

**\*Note: When using solvents, extinguish all ignition sources, including pilot lights and follow manufacturer's precautions and directions for use.**

**Note: On multiple coat applications it is necessary to extend the wet line of each coverage ring fractionally past the last coat to prevent developing an excessive build-up of paint on the edges bordering the blend transition area. Apply enough paint to ensure adequate coverage exists in the event sanding is required.**

- H. Establish paint coverage by employing the necessary number of coats.
- I. Divide the remaining paint into 2 containers.
- J. Mix 1 container of the remaining paint with reducer per the manufacturer's instructions.

**Note: The finer the atomization of paint particles into the blend transition area, the more optimal the end results will be.**

- K. Carefully develop a blend edge by spraying from the coverage wet edge outwards. Insure that where the last coverage ring and the blend edge meet that "burn in" doesn't change the paint texture.
- L. Allow an adequate amount of time for the paint to cure, 24 hours if possible.

## Buffing Repair, Process Step 4

### 4A. Buffing Process for High Visibility areas.

- A. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500. Sand the area with 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad installed to highlight the defect(s). Then remove the 3M™ Soft Interface Pad and sand with the 3M™ Clean Sanding Painter's Back Up Pad until the defect(s) are removed. Once large defect(s) are removed put the 3M™ Soft Interface Pad back on with a 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500 and sand until the orange peel is removed. (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- B. Clean with water or approved solvent and a paper towel.\*
- C. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ Foam Disc P 3000 disc with a spray bottle. Sand the defect area using the 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad until a white slurry appears, using a North/South and East/West pattern. When the white slurry appears, sand the defect area to insure 200% coverage (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- D. Clean with water or approved solvent and a paper towel.\*

- E. Buff the defect area with 3M™ Perfect-It™ Rubbing Compound. Use a buffer, 3M™ Quick Release Adapter and 3M™ Perfect-It™ Wool Compounding Pad or 3M™ Perfect-It™ Low Linting Wool Pad. Use medium pressure to start, approximately 5 lbs and then reduce pressure to almost no pressure as you finish (Electric Buffer at 1400-1800 RPM).
- F. Clean with water or approved solvent and a paper towel.\*
- G. Use 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches. If scratches still exist repeat steps E and F above.
- H. Remove swirl marks using 3M™ Perfect-It™ Machine Polish and 3M™ Perfect-It™ Foam Polishing Pad (use 3M™ Quick Release Adapter for mounting). Polish using medium pressure on 2-3 passes over the defect area or until all the compounding swirls are removed. Finish with two passes using light downward pressure over the defect area (Electric Buffer at 1400-1800 RPM).
- I. Remove excess 3M™ Perfect-It™ Machine Polish from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Yellow insuring surging (sewn edges) do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
- J. Use 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches. If scratches still exist repeat steps H and I above.
- K. Swirl (Halo) Elimination: Buff defect repair area with 3M™ Perfect-It™ Ultrafine Machine Polish, using 3M™ Quick Release Adapter, and 3M™ Perfect-It™ Ultrafine Foam Polishing Pad. Apply enough 3M™ Perfect-It™ Ultrafine Machine Polish to insure a wet continuous film exists on the panel during the entire procedure.

**Note: It will take a fair amount of product to initially wet the pad, there after, add small amounts of product to keep the surface wet. Buff at 1400-1800 RPM and insure 200% coverage using medium pressure to start and light pressure to finish. Utilize a North/South and East/West pattern for your buffing (Electric Buffer at 1400-1800 RPM).**

- L. Remove excess 3M™ Perfect-It™ Ultrafine Machine Polish compound from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Yellow, insuring surging, (sewn edges), do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
- M. Use the 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches, (Halo Effect). If scratches still exist repeat steps K and L above.
- N. Thoroughly clean up the work area.

#### **4B. Buffing Process for Standard Visibility areas.**

- A. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500. Sand the area with 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad installed to highlight the defect(s). Then remove the 3M™ Soft Interface Pad and sand with the 3M™ Clean Sanding Painter's Back Up Pad until the defect(s) are removed. Once large defect(s) are removed put the 3M™ Soft Interface Pad back on with a 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500 and sand until the orange peel is removed. (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- B. Clean with water or approved solvent and a paper towel.\*
- C. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ P 3000 disc with a spray bottle. Sand the defect area using the 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad until a white slurry appears, using a North/South and East/West pattern. When the white slurry appears, sand the defect area to insure 200% coverage (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- D. Clean with water or approved solvent and a paper towel.\*
- E. Buff the defect area with 3M™ Perfect-It™ Rubbing Compound. Use a buffer, 3M™ Quick Release Adapter and 3M™ Perfect-It™ Wool Compounding Pad or 3M™ Perfect-It™ Low Linting Wool Pad. Use medium pressure to start, approximately 5 lbs and then reduce pressure to almost no pressure as you finish (Electric Buffer at 1400-1800 RPM).
- F. Clean with water or approved solvent and a paper towel.\*
- G. Remove swirl marks using 3M™ Perfect-It™ Machine Polish and 3M™ Perfect-It™ Foam Polishing Pad (use 3M™ Quick Release Adapter for mounting). Polish using medium pressure on 2-3 passes over the defect area or until all the compounding swirls are removed. Finish with two passes using light downward pressure over the defect area (Electric Buffer at 1400-1800 RPM).
- H. Remove excess 3M™ Perfect-It™ Machine Polish from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Yellow, insuring surging (sewn edges) do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
- I. Use 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches. If scratches still exist, repeat steps G and H above.
- J. Thoroughly clean up the work area.

***\*Note: When using solvents, extinguish all ignition sources, including pilot lights and follow manufacturer's precautions and directions for use.***

# Defect Type – Dirt/Trash & Lint



## Causation for Dirt/Trash:

Naturally occurring, dirt, trash and lint accumulate on equipment overhead, on the floor and in the air. The dirt eventually falls on the aircraft or in some cases is moved around by spray guns or air currents in the hangar. Dirt contaminants might also be on the aircraft before it's painted.

For defects outside the limit, repair per process Step 1, apply guidecoat and sand and Process Step 2 buff.

**Read all steps in the process before starting.**

### Apply Guidecoat and Sand, Process Step 1

- A. Clean with water or approved solvent and a paper towel.\*
- B. Apply a small amount of 3M™ Dry Guide Coat to highlight the defect area.
- C. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500. Sand the area with 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad installed to highlight the defect(s). Then remove the 3M™ Soft Interface Pad and sand with the 3M™ Clean Sanding Painter's Back Up Pad until the defect(s) are removed. Once large defect(s) are removed put the 3M™ Soft Interface Pad back on with a 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500 and sand until the orange peel is removed. (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- D. Clean with water or approved solvent and a paper towel.\*
- E. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ P 3000 disc with a spray bottle. Sand the defect area using the 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad until a white slurry appears, using a North/South and East/West pattern. When the white slurry appears, sand the defect area to insure 200% coverage (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- F. Clean with water or approved solvent and a paper towel.\*

### Buffing Repair, Process Step 2

#### 2A. Buffing Process for High Visibility areas.

- A. Buff the defect area with 3M™ Perfect-It™ Rubbing Compound. Use a buffer, 3M™ Quick Release Adapter and 3M™ Perfect-It™ Wool Compounding Pad or 3M™ Perfect-It™ Low Linting Wool Pad. Use medium pressure to start, approximately 5 lbs and then reduce pressure to almost no pressure as you finish (Electric Buffer at 1400-1800 RPM).
- B. Clean with water or approved solvent and a paper towel.\*
- C. Use 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches. If scratches still exist repeat steps A and B above.
- D. Remove swirl marks using 3M™ Perfect-It™ Machine Polish and 3M™ Perfect-It™ Foam Polishing Pad (use 3M™ Quick Release Adapter for mounting). Polish using medium pressure on 2-3 passes over the defect area or until all the compounding swirls are removed. Finish with two passes using light downward pressure over the defect area (Electric Buffer at 1400-1800 RPM).
- E. Remove excess 3M™ Perfect-It™ Machine Polish from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Yellow insuring surging (sewn edges) do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
- F. Use 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches. If scratches still exist repeat steps D and E above.
- G. Swirl (Halo) Elimination: Buff defect repair area with 3M™ Perfect-It™ Ultrafine Machine Polish, using 3M™ Quick Release Adapter, and 3M™ Perfect-It™ Ultrafine Foam Polishing Pad. Apply enough 3M™ Perfect-It™ Ultrafine Machine Polish to insure a wet continuous film exists on the panel during the entire procedure.

**\*Note: When using solvents, extinguish all ignition sources, including pilot lights and follow manufacturer's precautions and directions for use.**

- H. Remove excess 3M™ Perfect-It™ Ultrafine Machine Polish compound from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Blue, insuring surging, (sewn edges), do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
- I. Use the 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches, (Halo Effect). If scratches still exist repeat steps G and H above.
- J. Thoroughly clean up the work area.

## **2B. Buffing Process for Standard Visibility areas.**

- A. Buff the defect area with 3M™ Perfect-It™ Rubbing Compound. Use a buffer, 3M™ Quick Release Adapter and 3M™ Perfect-It™ Wool Compounding Pad or 3M™ Perfect-It™ Low Linting Wool Pad. Use medium pressure to start, approximately 5 lbs and then reduce pressure to almost no pressure as you finish (Electric Buffer at 1400-1800 RPM).
- B. Clean with water or approved solvent and a paper towel.\*
- C. Remove swirl marks using 3M™ Perfect-It™ Machine Polish and 3M™ Perfect-It™ Foam Polishing Pad (use 3M™ Quick Release Adapter for mounting). Polish using medium pressure on 2-3 passes over the defect area or until all the compounding swirls are removed. Finish with two passes using light downward pressure over the defect area (Electric Buffer at 1400-1800 RPM).
- D. Remove excess 3M™ Perfect-It™ Machine Polish from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Yellow insuring surging (sewn edges) do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
- E. Use 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches. If scratches still exist, repeat steps C and D above.
- F. Thoroughly clean up the work area.

***\*Note: When using solvents, extinguish all ignition sources, including pilot lights and follow manufacturer's precautions and directions for use.***

# Defect Type – Gravitational Defects (Runs and Sags)



## Causation:

- Sags are typically caused by using too much thinner.
- Applying the second coat of paint before the first tacks up.
- Applying too much paint in film thickness.
- High fluid pressure from the spray gun in excess of 12 ounces per minute.

Repair defects per process Step 1 using the sanding block method, sand per Process Step 2, buff, per Process Step 4. When the sanding in Process Step 2 results in discoloration or paint break through, sand and fill per Process Step 5, then repaint using the blow-in method in Process Step 3 and then buff per Process Step 4.

## Read all steps in the process before starting.

### Sanding Block Method, Process Step 1

- A. Clean with water or approved solvent and a paper towel.\*
- B. Rub a 400 grit sanding block parallel to and centered over the run. Try to keep the sanding block from abrading the surface around the run you're removing.
- C. Sand until the run is level with the surrounding paint.
- D. Sand per process step 2.

### Sand, Process Step 2

**Note:** Ensure sander is held flat against the defect when sanding.

- A. Clean with water or approved solvent and a paper towel.\*
- B. Apply a small amount of 3M™ Dry Guide Coat to highlight the defect area.
- C. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500. Sand the area with 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad installed to highlight the defect(s). Then remove the 3M™ Soft Interface Pad and sand with the 3M™ Clean Sanding Painter's Back Up Pad until the defect(s) are removed. Once large defect(s) are removed put the 3M™ Soft Interface Pad back on with a 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500 and sand until the orange peel is removed. (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- D. Clean with water or approved solvent and a paper towel.\*

**Note:** If sanding removes the run complete steps E, F and G and then proceed to Buffing Repair Process Step 4, start on step E. If sanding to remove the run breaks through the paint on or around the run you will need to accomplish, Process Step 5, Sand and Fill, Process Step 3, repaint using the Blow-In method and Buffing Repair Process Step 4.

- E. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ P 3000 disc with a spray bottle. Sand the defect area using the 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad until a white slurry appears, using a North/South and East/West pattern. When the white slurry appears, sand the defect area to ensure 200% coverage (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- F. Clean with water or approved solvent and a paper towel.\*
- G. Thoroughly clean up the work area.

### Blow-In Method, Process Step 3

- A. To insure proper paint adhesion; Sand approximately 3-6" beyond the P320 scratches created above in Process Step 5, L, with 3M™ Hookit™ Finishing Film Grade P800 abrasive (3M™ Non-Vacuum Random Orbital Sander, 3/16" at 40-50 PSI).
- B. To enhance adhesion on the blend edge; dampen the surface approximately 3-6" outside the area sanded in A above. Dampen the 3M™ Trizact™ Hookit™ Foam Disc P3000 disc and sand the area until a white slurry appears, using a North/South and East/West pattern (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- C. Obtain the paint from the original batch number used.
- D. Place the paint on the shaker and shake for a minimum of five minutes.
- E. Mix the paint to the manufacturer's specification.
- F. Mix the paint, catalyst and thinner per manufacturer's instructions.
- G. Mix well with a clean stir stick.

**Note:** On multiple coat applications it is necessary to extend the wet line of each coverage ring fractionally past the last coat to prevent developing an excessive build-up of paint on the edges bordering the blend transition area. Apply enough paint to ensure adequate coverage exists in the event sanding is required.



- H. Establish paint coverage by employing the necessary number of coats.
- I. Divide the remaining paint into 2 containers.
- J. Mix 1 container of the remaining paint with reducer per manufacturer's instructions.

**Note: The finer the atomization of paint particles into the blend transition area, the more optimal the end results will be.**

- K. Carefully develop a blend edge by spraying from the coverage wet edge outwards. Ensure that where the last coverage ring and the blend edge meet that "burn in" doesn't change the paint texture.
- L. Allow an adequate amount of time for the paint to cure, 24 hours if possible.
- M. Thoroughly clean up the work area.

## Buffing Repair, Process Step 4

### 4A. Buffing Process for High Visibility areas.

- A. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500. Sand the area with 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad installed to highlight the defect(s). Then remove the 3M™ Soft Interface Pad and sand with the 3M™ Clean Sanding Painter's Back Up Pad until the defect(s) are removed. Once large defect(s) are removed put the 3M™ Soft Interface Pad back on with a 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500 and sand until the orange peel is removed. (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- B. Clean with water or approved solvent and a paper towel.\*
- C. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ P 3000 disc with a spray bottle. Sand the defect area using the 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad until a white slurry appears, using a North/South and East/West pattern. When the white slurry appears, sand the defect area to insure 200% coverage (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- D. Clean with water or approved solvent and a paper towel.\*
- E. Buff the defect area with 3M™ Perfect-It™ Rubbing Compound. Use a buffer, 3M™ Quick Release Adapter and 3M™ Perfect-It™ Wool Compounding Pad or 3M™ Perfect-It™ Low Linting Wool Pad. Use medium pressure to start, approximately 5 lbs and then reduce pressure to almost no pressure as you finish (Electric Buffer at 1400-1800 RPM).
- F. Clean with water or approved solvent and a paper towel.\*
- G. Use 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches. If scratches still exist repeat steps E and F above.
- H. Remove swirl marks using 3M™ Perfect-It™ Machine Polish and 3M™ Perfect-It™ Foam Polishing Pad (use 3M™ Quick Release Adapter for mounting). Polish using medium pressure on 2-3 passes over the defect area or until all the compounding swirls are removed. Finish with two passes using light downward pressure over the defect area (Electric Buffer at 1400-1800 RPM).

- I. Remove excess 3M™ Perfect-It™ Machine Polish from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Yellow, insuring surging (sewn edges) do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
- J. Swirl (Halo) Elimination: Buff defect repair area with 3M™ Perfect-It™ Ultrafine Machine Polish, using 3M™ Quick Release Adapter, and 3M™ Perfect-It™ Ultrafine Foam Polishing Pad. Apply enough 3M™ Perfect-It™ Ultrafine Machine Polish to insure a wet continuous film exists on the panel during the entire procedure.

**Note: it will take a fair amount of product to initially wet the pad, there after, add small amounts of product to keep the surface wet. Buff at 1400-1800 RPM and insure 200% coverage using medium pressure to start and light pressure to finish. Utilize a North/South and East/West pattern for your buffing pattern. (Electric Buffer at 1400-1800 RPM)**

- K. Remove excess 3M™ Perfect-It™ Ultrafine Machine Polish compound from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Blue, insuring surging, (sewn edges), do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
- L. Use 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches, (Halo effect). If scratches still exist repeat steps J and K above.
- M. Thoroughly clean up the work area.

### 4B. Buffing process for Standard Visibility areas.

- A. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500. Sand the area with 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad installed to highlight the defect(s). Then remove the 3M™ Soft Interface Pad and sand with the 3M™ Clean Sanding Painter's Back Up Pad until the defect(s) are removed. Once large defect(s) are removed put the 3M™ Soft Interface Pad back on with a 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500 and sand until the orange peel is removed. (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- B. Clean with water or approved solvent and a paper towel.\*
- C. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ P3000 disc with a spray bottle. Sand the defect area using the 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad until a white slurry appears, using a North/South and East/West pattern. When the white slurry appears, sand the defect area to insure 200% coverage (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- D. Clean with water or approved solvent and a paper towel.\*
- E. Buff the defect area with 3M™ Perfect-It™ Rubbing Compound. Use a buffer, 3M™ Quick Release Adapter and 3M™ Perfect-It™ Wool Compounding Pad or 3M™ Perfect-It™ Low Linting Wool Pad. Use medium pressure to start, approximately 5 lbs and then reduce pressure to almost no pressure as you finish (Electric Buffer at 1400-1800 RPM).

- F. Clean with water or approved solvent and a paper towel.\*
- G. Use 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches. If scratches still exist repeat steps E and F above.
- H. Remove swirl marks using 3M™ Perfect-It™ Machine Polish and 3M™ Perfect-It™ Foam Polishing Pad (use 3M™ Quick Release Adapter for mounting). Polish using medium pressure on 2-3 passes over the defect area or until all the compounding swirls are removed. Finish with two passes using light downward pressure over the defect area (Electric Buffer at 1400-1800 RPM).
- I. Remove excess 3M™ Perfect-It™ Machine Polish from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Yellow insuring surging (sewn edges) do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
- J. Use 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches. If scratches still exist repeat steps H and I above.
- K. Thoroughly clean up the work area.

## Sand and Fill, Process Step 5

- A. Clean with water or approved solvent and a paper towel.\*
  - B. Apply a small amount of 3M™ Dry Guide Coat to highlight the defect area.
- Note: Keep the sanding area as limited as possible.**
- C. Sand lightly with 3M™ Hookit™ Gold Disc 216U, P320 grit sandpaper. Try to avoid sanding through the primer and exposing bare metal (3M™ Non-Vacuum Random Orbital Sander, 3/16" at 35-40 PSI).
  - D. Lightly abrade by hand with Scotch-Brite™ General Purpose Hand Pad 7447 to eliminate gloss in low areas of the defect.
  - E. Clean with water or approved solvent and a paper towel.\*

**Note: The surface will need to be chemically treated with 3M™ Surface Pre-Treatment AC-131 or an approved chromated primer adhesion promoter and primer if the sanding exposed bare aluminum.**

- F. Apply 3M™ Surface Pre-Treatment AC-131 or approved chromated primer adhesion promoter to any aluminum exposed by the sanding process.
- G. Apply an approved primer to the area treated in step F above.
- H. Lightly abrade the surface of the primer with Scotch-Brite™ General Purpose Hand Pad 7447 before applying the 3M™ Advanced Finishing Putty.
- I. Clean with approved solvent and a paper towel.\*

**Note: Mix 3M™ Advanced Finishing Putty per 3M recommendations of 2% hardener per filler by weight. Using too much hardener may cause staining on white paint. Do not mix the product on a piece of cardboard, cardboard absorbs Styrene in the product and makes it less effective. Spread the product out thinly and over a wide area pulling in one direction and then another with a squeegee. Spreading out the product reduces pinholes, traps less air and provides more work time.**

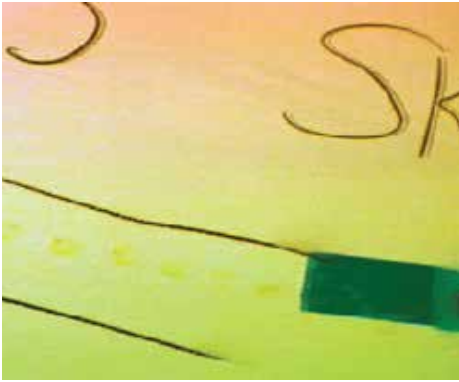
Mix and apply a thin layer of 3M™ Advanced Finishing Putty to defect area using a yellow squeegee. Push down on the outside edge of squeegee with 1 finger on each side to leave a thin amount of filler at the edge of the defect and a high spot of filler in the center for sanding. Insure void is filled and putty covers an area just outside defect area.

**Note: Allow 3M™ Advanced Finishing Putty to dry for 15 minutes before sanding.**

- J. Re-apply 3M™ Dry Guide Coat to highlight the defect area.
- K. Sand with 3M™ Hookit™ Gold Disc 216U, P320 grit sandpaper until outline of defect is seen but leave an area of .001-.002 (in thickness) of filler outlining the defect area (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 35-40 PSI).
- L. Clean with water or approved solvent and a paper towel.\*
- M. Thoroughly clean up the work area.

**\*Note: When using solvents, extinguish all ignition sources, including pilot lights and follow manufacturer's precautions and directions for use.**

# Defect Type – Skydrol™ Aviation Hydraulic Fluid



## Causation for Skydrol™ Aviation Hydraulic Fluid Defects:

- Skydrol™ Aviation Hydraulic Fluid is very damaging to the aircraft paint surface.
- Leaks that expose the painted aircraft to Skydrol™ Aviation Hydraulic Fluid® will cause paint damage.

Common defects and their repairs are, blistered rivets/swollen paint, Process Step 1, fish eye repair, Process Step 2. Re-paint per the blow-in method, Process Step 3 and buffing, Process Step 4.

## Read all steps in the process before starting.

### Blistered Rivets/Swollen Paint, Process Step 1

- A. Scrape off blistered paint with an approved plastic scraper.
- B. Clean with water or approved solvent and a paper towel.\*
- C. Apply a small amount of 3M™ Dry Guide Coat to highlight the defect area.

**Note: Keep the sanding area as limited as possible.**

- D. Sand lightly with 3M™ Hookit™ 216U, P320 grit sandpaper. Try to avoid sanding through the primer and exposing bare metal.
- E. Lightly abrade by hand with Scotch-Brite™ General Purpose Hand Pad 7447 to eliminate gloss in low areas of the defect.
- F. Clean with water or approved solvent and a paper towel.\*

**Note: The surface will need to be chemically treated with 3M™ Surface Pre-Treatment AC-131 or an approved chromated primer adhesion promoter and primer if the sanding exposed bare aluminum.**

- G. Apply 3M™ Surface Pre-Treatment AC-131 or approved chromated primer adhesion promoter to any aluminum exposed by the sanding process.
- H. Apply an approved primer to the area sanded in step D above.
- I. Lightly abrade the surface of the primer with Scotch-Brite™ General Purpose Hand Pad 7447 before applying the 3M™ Advanced Finishing Putty.
- J. Clean with water or approved solvent and a paper towel.\*

**Note: Mix 3M™ Advanced Finishing Putty per 3M recommendations of 2% hardener per filler by weight. Using too much hardener may cause staining on white paint. Do not mix the product on a piece of cardboard, cardboard absorbs Styrene in the product and makes it less effective. Spread the product out thinly and over a wide area pulling in one direction and then another with a squeegee. Spreading out the product reduces pinholes, traps less air and provides more work time.**

- K. Mix and apply a thin layer of 3M™ Advanced Finishing Putty to defect area using a yellow squeegee. Push down on the outside edge of squeegee with 1 finger on each side to leave a thin amount of filler at the edge of the defect and a high spot of filler in the center for sanding. Insure void is filled and putty covers an area just outside defect area.

**Note: Allow 3M™ Advanced Finishing Putty to dry for 15 minutes before sanding.**

- L. Re-apply 3M™ Dry Guide Coat to highlight the defect area.
- M. Sand with 3M™ Hookit™ Gold Disc 216U, P320 grit sandpaper until outline of defect is seen but leave an area of .001-.002 (in thickness) of filler outlining the defect area (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 35-40 PSI).
- N. Clean with approved solvent and a paper towel.\*

**Note: The surface will need to be treated with an approved primer before completing the repaint process using the Blow-in method in Process Step 3.**

- O. Apply an approved primer to the area sanded in step M above.

### Fish Eye Repair, Process Step 2

- A. Clean with water or approved solvent and a paper towel.\*
- B. Apply a small amount of 3M™ Dry Guide Coat to highlight the defect area.

**Note: Keep the sanding area as limited as possible.**

- C. Sand lightly with 3M™ Hookit™ Gold Disc 216U, P320 grit sandpaper. Try to avoid sanding through the primer and exposing bare metal (3M™ Non-Vacuum Random Orbital Sander, 3/16" at 35-40 PSI).
- D. Lightly abrade by hand with Scotch-Brite™ General Purpose Hard Pad 7447 to eliminate gloss in low areas of the defect.
- E. Clean with water or approved solvent and a paper towel.\*

**Note: The surface will need to be chemically treated with 3M™ Surface Pre-Treatment AC-131 or an approved chromated primer adhesion promoter and primer if the sanding exposed bare aluminum.**

- F. Apply 3M™ Surface Pre-Treatment AC-131 or approved chromated primer adhesion promoter to any aluminum exposed by the sanding process.
- G. Apply an approved primer to the area sanded in step C above.
- H. Lightly abrade the surface of the primer with Scotch-Brite™ General Purpose Hand Pad 7447 before applying the 3M™ Advanced Finishing Putty.
- I. Clean with water or approved solvent and a paper towel.\*

**Note: Mix 3M™ Advanced Finishing Putty per 3M recommendations of 2% hardener per filler by weight. Using too much hardener may cause staining on white paint. Do not mix the product on a piece of cardboard, cardboard absorbs Styrene in the product and makes it less effective. Spread the product out thinly and over a wide area pulling in one direction and then another with a squeegee. Spreading out the product reduces pinholes, traps less air and provides more work time.**

- J. Mix and apply a thin layer of 3M™ Advanced Finishing Putty to defect area using a yellow squeegee. Push down on the outside edge of squeegee with 1 finger on each side to leave a thin amount of filler at the edge of the defect and a high spot of filler in the center for sanding. Insure void is filled and putty covers an area just outside defect area.

**Note: Allow 3M™ Advanced Finishing Putty to dry for 15 minutes before sanding.**

- K. Re-apply 3M™ Dry Guide Coat to highlight the defect area.
- L. Sand with 3M™ Hookit™ Gold Disc 216U, P320 grit sandpaper until outline of defect is seen but leave an area of .001-.002 (in thickness) of filler outlining the defect area (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 35-40 PSI).
- M. Clean with water or approved solvent and a paper towel.\*
- N. Thoroughly clean up the work area.

### Blow-In Method, Process Step 3

- A. To insure proper paint adhesion; Sand approximately 3-6" beyond the P320 scratches created above in Process Step 2, L, with 3M™ Hookit™ Finishing Film Grade P800 abrasive (3M™ Non-Vacuum Random Orbital Sander, 3/16" at 40-50 PSI).

- B. To enhance adhesion on the blend edge; dampen the surface approximately 3-6" outside the area sanded in A above. Dampen the 3M™ Trizact™ P3000 disc and sand the area until a white slurry appears, using a North/South and East/West pattern (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- C. Obtain the paint from the original batch number used.
- D. Place the paint on the shaker and shake for a minimum of five minutes.
- E. Mix the paint per the manufacturer's instructions.
- F. Mix well with a clean stir stick.

**Note: On multiple coat applications it is necessary to extend the wet line of each coverage ring fractionally past the last coat to prevent developing an excessive build-up of paint on the edges bordering the blend transition area. Apply enough paint to ensure adequate coverage exists in the event sanding is required.**

- G. Establish paint coverage by employing the necessary number of coats.
- H. Divide the remaining paint into 2 containers.
- I. Mix 1 container of the remaining paint with reducer per the manufacturer's instructions.

**Note: The finer the atomization of paint particles into the blend transition area, the more optimal the end results will be.**

### 3A. Buffing Process for High Visibility areas.

- A. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500. Sand the area with 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad installed to highlight the defect(s). Then remove the 3M™ Soft Interface Pad and sand with the 3M™ Clean Sanding Painter's Back Up Pad until the defect(s) are removed. Once large defect(s) are removed put the 3M™ Soft Interface Pad back on with a 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500 and sand until the orange peel is removed. (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- B. Clean with water or approved solvent and a paper towel.\*
- C. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ P 3000 disc with a spray bottle. Sand the defect area using the 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad until a white slurry appears, using a North/South and East/West pattern. When the white slurry appears, sand the defect area to insure 200% coverage (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- D. Clean with water or approved solvent and a paper towel.\*
- E. Buff the defect area with 3M™ Perfect-It™ Rubbing Compound. Use a buffer, 3M™ Quick Release Adapter and 3M™ Perfect-It™ Wool Compounding Pad or 3M™ Perfect-It™ Low Linting Wool Pad. Use medium pressure to start, approximately 5 lbs and then reduce pressure to almost no pressure as you finish (Electric Buffer at 1400-1800 RPM).
- F. Clean with water or approved solvent and a paper towel.\*

- G. Use 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches. If scratches still exist repeat steps E and F above.
  - H. Remove swirl marks using 3M™ Perfect-It™ Machine Polish and 3M™ Perfect-It™ Foam Polishing Pad (use 3M™ Quick Release Adapter for mounting). Polish using medium pressure on 2-3 passes over the defect area or until all the compounding swirls are removed. Finish with two passes using light downward pressure over the defect area (Electric Buffer at 1400-1800 RPM).
  - I. Remove excess 3M™ Perfect-It™ Machine Polish from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Yellow insuring surging (sewn edges) do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
  - J. Swirl (Halo) Elimination: Buff defect repair area with 3M™ Perfect-It™ Ultrafine Machine Polish, using 3M™ Quick Release Adapter, and 3M™ Perfect-It™ Ultrafine Foam Polishing Pad. Apply enough 3M™ Perfect-It™ Ultrafine Machine Polish to insure a wet continuous film exists on the panel during the entire procedure.
- Note: it will take a fair amount of product to initially wet the pad, there after add small amounts of product to keep the surface wet. Buff at 1400-1800 RPM and insure 200% coverage using medium pressure to start and light pressure to finish. Utilize a North/South and East/West pattern for your buffing pattern (Electric Buffer at 1400-1800 RPM).**
- K. Remove excess 3M™ Perfect-It™ Ultrafine Machine Polish compound from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Blue insuring surging, (sewn edges), do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
  - L. Use 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches, (Halo effect). If scratches still exist repeat steps J and K above.
  - M. Thoroughly clean up the work area.
- B. Clean with water or approved solvent and a paper towel.\*
  - C. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ P 3000 disc with a spray bottle. Sand the defect area using the 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad until a white slurry appears, using a North/South and East/West pattern. When the white slurry appears, sand the defect area to insure 200% coverage (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
  - D. Clean with water or approved solvent and a paper towel.\*
  - E. Buff the defect area with 3M™ Perfect-It™ Rubbing Compound. Use a buffer, 3M™ Quick Release Adapter and 3M™ Perfect-It™ Wool Compounding Pad or 3M™ Perfect-It™ Low Linting Wool Pad. Use medium pressure to start, approximately 5 lbs and then reduce pressure to almost no pressure as you finish (Electric Buffer at 1400-1800 RPM).
  - F. Clean with water or approved solvent and a paper towel.\*
  - G. Use 3M™ SUN GUN™ II Light Kit to evaluate defect area for scratches. If scratches still exist repeat steps E and F above.
  - H. Remove swirl marks using 3M™ Perfect-It™ Machine Polish and 3M™ Perfect-It™ Foam Polishing Pad (use 3M™ Quick Release Adapter for mounting). Polish using medium pressure on 2-3 passes over the defect area or until all the compounding swirls are removed. Finish with two passes using light downward pressure over the defect area (Electric Buffer at 1400-1800 RPM).
  - I. Remove excess 3M™ Perfect-It™ Machine Polish from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Yellow insuring surging (sewn edges) do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
  - J. Use 3M™ SUN GUN™ II Light Kit to evaluate defect area for scratches. If scratches still exist repeat steps H and I above.
  - K. Thoroughly clean up the work area.

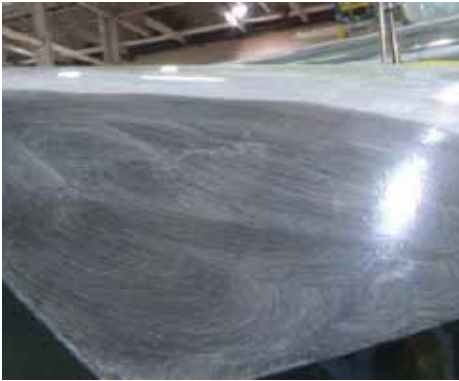
### **3B. Buffing Process for Standard Visibility areas.**

- A. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500. Sand the area with 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad installed to highlight the defect(s). Then remove the 3M™ Soft Interface Pad and sand with the 3M™ Clean Sanding Painter's Back Up Pad until the defect(s) are removed. Once large defect(s) are removed put the 3M™ Soft Interface Pad back on with a 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500 and sand until the orange peel is removed. (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).

**\*Note: When using solvents, extinguish all ignition sources, including pilot lights and follow manufacturer's precautions and directions for use.**

**\*Note: When using solvents, extinguish all ignition sources, including pilot lights and follow manufacturer's precautions and directions for use.**

# Defect Type – Rag Marks



## Causation for Rag Marks:

- These are caused by rubbing the painted surface too hard, using a rag with hard fibers in it or by using a rag with contaminants in it.

For defects outside the limit, repair by buffing, Process Step 1.

## Read all steps in the process before starting.

*Note: If the defect is discovered after polishing with Perfect-IT 3000 3M™ Perfect-It™ Ultrafine Machine Polish, re-polish with 3M™ Perfect-It™ Ultrafine Machine Polish; if the defect is discovered before compounding use 3M™ Perfect-It™ Machine Polish and 3M™ Perfect-It™ Ultrafine Machine Polish as required.*

### Buffing Repair, Process Step 1

#### 1A. Buffing process for High Visibility areas.

- A. Use the 33M™ SUN GUN™ II Light Kit to evaluate the scratched area.
- B. Remove swirl marks using 3M™ Perfect-It™ Machine Polish and 3M™ Perfect-It™ Foam Polishing Pad (use 3M™ Quick Release Adapter for mounting). Polish using medium pressure on 2-3 passes over the defect area or until all the compounding swirls are removed. Finish with two passes using light downward pressure over the defect area (Electric Buffer at 1400-1800 RPM).
- C. Remove excess 3M™ Perfect-It™ Machine Polish from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Yellow, insuring surging (sewn edges) do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
- D. Use 33M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches. If scratches still exist repeat steps B and C above.

*Note: the Halo effect will most likely still be seen in dark colors.*

- E. Swirl (Halo) Elimination: Buff defect repair area with 3M™ Perfect-It™ Ultrafine Machine Polish, using 3M™ Quick Release Adapter, and 3M™ Perfect-It™ Ultrafine Foam Polishing Pad. Apply enough 3M™ Perfect-It™ Ultrafine Machine Polish to insure a wet continuous film exists on the panel during the entire procedure.

*Note: It will take a fair amount of product to initially wet the pad, there after add small amounts of product to keep the surface wet. Buff at 1400-1800 RPM and insure 200% coverage using medium pressure to start and light pressure to finish. Utilize a North/South and East/West pattern for your buffing (Electric Buffer at 1400-1800 RPM).*

- F. Remove excess 3M™ Perfect-It™ Ultrafine Machine Polish compound from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Yellow, insuring surging, (sewn edges), do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
- G. Use the 33M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches, (Halo effect). If scratches still exist repeat steps E and F above.
- H. Thoroughly clean up the work area.

#### 1B. Buffing process for Standard Visibility areas.

- A. Remove swirl marks using 3M™ Perfect-It™ Machine Polish and 3M™ Perfect-It™ Foam Polishing Pad (use 3M™ Quick Release Adapter for mounting). Polish using medium pressure on 2-3 passes over the defect area or until all the compounding swirls are removed. Finish with two passes using light downward pressure over the defect area (Electric Buffer at 1400-1800 RPM).
- B. Remove excess 3M™ Perfect-It™ Machine Polish from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Yellow, insuring surging (sewn edges) do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
- C. Use the 33M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches. If scratches still exist repeat step A and B above.

*Note: the Halo effect will most likely still be seen in dark colors.*

- D. Thoroughly clean up the work area.

*\*Note: When using solvents, extinguish all ignition sources, including pilot lights and follow manufacturer's precautions and directions for use.*

# Defect Type – Overspray



## Causation for Overspray:

- Incomplete or insufficient masking is the most likely cause of overspray.

Repair per Process Step 1, 3M™ Perfect-It™ III Cleaner Clay or Process Step 2, buffing, sanding if required and buffing.

## Read all steps in the process before starting.

### Remove With Cleaner Clay, Process Step 1

- A. Clean with water or approved solvent and a paper towel.\*
- B. Fill a bucket with clean water and soap.
- C. Dip the 3M™ Perfect-It™ III Cleaner Clay in the soap bucket. Place the cleaner clay block on the painted surface and move the block back and forth across the overspray area using the clay block. When the surface of the block touching the aircraft becomes contaminated with overspray pieces; knead or cut off the surface to expose new, clean, surface area.

### Sand and Buffing, Process Step 2

- A. Remove overspray using 3M™ Perfect-It™ Machine Polish and 3M™ Perfect-It™ Foam Polishing Pad (use 3M™ Quick Release Adapter for mounting). Polish using medium pressure on 2-3 passes over defect area. Finish with two passes using light downward pressure over the defect area (Electric Buffer at 1400-1800 RPM).
  - B. Remove excess 3M™ Perfect-It™ Machine Polish from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Yellow, insuring surging (sewn edges) do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
  - C. Overspray removed? Yes, job complete. No, continue with steps D, E, F.
- Note: On blacks or very dark colors you may need to use 3M™ Perfect-It™ Ultrafine Machine Polish, step 2A- Steps E, F, and G below to remove the swirl mark scratches.**
- D. Buff the defect area with 3M™ Perfect-It™ Rubbing Compound. Use a buffer, 3M™ Quick Release Adapter and 3M™ Perfect-It™ Wool Compounding Pad or 3M™ Perfect-It™ Low Linting Wool Pad. Use medium pressure to start, approximately 5 lbs and then reduce pressure to almost no pressure as you finish (Electric Buffer at 1400-1800 RPM).

- E. Clean with water or approved solvent and a paper towel.\*
- F. Overspray removed? Yes, repeat steps A and B above. No, continue overspray removal process with step G below.
- G. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ P 3000 disc with a spray bottle. Sand the defect area using the 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad until a white slurry appears, using a North/South and East/West pattern. When the white slurry appears, sand the defect area to insure 200% coverage (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- H. Clean with water or approved solvent and a paper towel.\*
- I. Overspray removed? Yes, repeat steps D, E, A and B and in that order. No, continue overspray removal process with step J below.
- J. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500. Sand the area with 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad installed to highlight the defect(s). Then remove the 3M™ Soft Interface Pad and sand with the 3M™ Clean Sanding Painter's Back Up Pad until the defect(s) are removed. Once large defect(s) are removed put the 3M™ Soft Interface Pad back on with a 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500 and sand until the orange peel is removed. (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- K. Clean with water or approved solvent and a paper towel.\*
- L. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ P 3000 disc with a spray bottle. Sand the defect area using the 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad until a white slurry appears, using a North/South and East/West pattern. When the white slurry appears, sand the defect area to insure 200% coverage (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- M. Clean with water or approved solvent and a paper towel.\*

## 2A Buffing process for High Visibility Areas.

- A. Buff the defect area with 3M™ Perfect-It™ Rubbing Compound. Use a buffer, 3M™ Quick Release Adapter and 3M™ Perfect-It™ Wool Compounding Pad or 3M™ Perfect-It™ Low Linting Wool Pad. Use medium pressure to start, approximately 5 lbs and then reduce pressure to almost no pressure as you finish (Electric Buffer at 1400-1800 RPM).
- B. Clean with water or approved solvent and a paper towel.\*
- C. Use the 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches. If scratches still exist repeat steps A and B above.
- D. Remove swirl marks using 3M™ Perfect-It™ Machine Polish and 3M™ Perfect-It™ Foam Polishing Pad (use 3M™ Quick Release Adapter for mounting). Polish using medium pressure on 2-3 passes over the defect area or until all the compounding swirls are removed. Finish with two passes using light downward pressure over the defect area (Electric Buffer at 1400-1800 RPM).
- E. Remove excess 3M™ Perfect-It™ Machine Polish from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Yellow insuring surging (sewn edges) do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.

***\*Note: When using solvents, extinguish all ignition sources, including pilot lights and follow manufacturer's precautions and directions for use.***

- F. Use the 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches. If scratches still exist repeat steps C and D above.
- G. Swirl (Halo) Elimination: Buff defect repair area with 3M™ Perfect-It™ Ultrafine Machine Polish, using 3M™ Quick Release Adapter, and 3M™ Perfect-It™ Ultrafine Foam Polishing Pad. Apply enough 3M™ Perfect-It™ Ultrafine Machine Polish to insure a wet continuous film exists on the panel during the entire procedure.

***Note: It will take a fair amount of product to initially wet the pad, there after add small amounts of product to keep the surface wet. Buff at 1400-1800 RPM and insure 200% coverage using medium pressure to start and light pressure to finish. Utilize a North/South and East/West pattern for your buffing.(Electric Buffer at 1400-1800 RPM)***

- H. Remove excess 3M™ Perfect-It™ Ultrafine Machine Polish compound from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Blue insuring surging, (sewn edges), do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
- I. Use the 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches, (Halo effect). If scratches still exist repeat steps G and H above.
- J. Thoroughly clean up the work area.

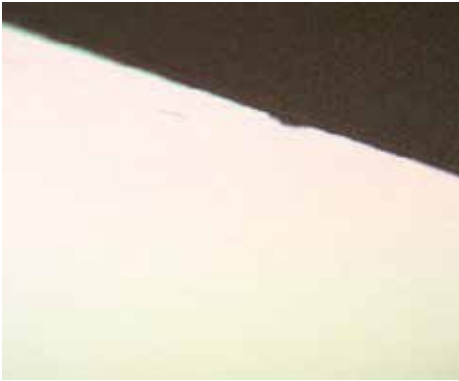
## 2B. Buffing Process for Standard Visibility areas.

- A. Buff the defect area with 3M™ Perfect-It™ Rubbing Compound. Use a buffer, 3M™ Quick Release Adapter and 3M™ Perfect-It™ Wool Compounding Pad or 3M™ Perfect-It™ Low Linting Wool Pad. Use medium pressure to start, approximately 5 lbs and then reduce pressure to almost no pressure as you finish (Electric Buffer at 1400-1800 RPM).
- B. Clean with water or approved solvent and a paper towel.\*
- C. Use the 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches. If scratches still exist repeat steps A and B above.
- D. Remove swirl marks using 3M™ Perfect-It™ Machine Polish and 3M™ Perfect-It™ Foam Polishing Pad (use 3M™ Quick Release Adapter for mounting). Polish using medium pressure on 2-3 passes over the defect area or until all the compounding swirls are removed. Finish with two passes using light downward pressure over the defect area (Electric Buffer at 1400-1800 RPM).
- E. Remove excess 3M™ Perfect-It™ Machine Polish from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Yellow insuring surging (sewn edges) do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
- F. Use the 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches. If scratches still exist repeat steps D and E above.
- G. Thoroughly clean up the work area.

***\*Note: When using solvents, extinguish all ignition sources, including pilot lights and follow manufacturer's precautions and directions for use.***



# Defect Type – Stripe Edges



## Causation for Stripe Edge Defects:

- These are typically caused by removing the masking tape too early after painting.
- Removing the masking products after the paint has cured too much may also introduce defects.

Repair stripe-lines per Process Step 1, demask, trim, clean and if gouged, utilize Process Step 2 for gouge repair.

## Read all steps in the process before starting.

*Note: An effective procedure for removing stripe line masking materials is the best way to avoid introducing defects that will require additional process steps to repair. A proactive and recommended procedure to reduce defects on stripe lines is to de-mask the stripes while the paint is tacky, but not wet. Follow the De-mask, Trim and Clean procedure in Process Step 1 for best results. A typical defect introduced during the de-mask process is stripe line gouging. This defect is repaired in Gouge Repair, Process Step 2. For all other defects found after the de-mask process, refer to the appropriate defect repair section.*

### De Mask, Trim and Clean, Process Step 1

- A. Pull stripe-line masking tape upwards and away at a slight angle.
- B. Attach a piece of 320 grit sandpaper to a metal can lid. Sharpen the tongue depressor by moving it back and forth across the abrasive at approximately a 22 degree angle and on both sides of the tongue depressor. Make sure the depressor has a nice sharp and uniform edge.
- C. With a tongue depressor or other non-metal object trim or remove residual paint to leave an even, contoured edge on the stripe.
- D. Inspect area for gouges. If gouges exist in the stripe line, repair per process step 2. For standard defect repairs refer to the applicable section that covers the existing defect type.
- E. Thoroughly clean up the work area.

### Gouge Repair, Process Step 2

- A. Obtain the paint from the original batch number used.
- B. Mix the paint to the manufacturer's specification.
- C. Mix the paint per manufacturer's instructions, paint, catalyst and reducer.
- D. Pour the paint in to small portable container.
- E. Mark the container to indicate that the paint is catalyzed.
- F. Select a clean touch up brush of appropriate size.
- G. Apply matching paint in the center of the affected area working towards the edge of the tape lines. Use steady and consistent strokes.
- H. Apply as many paint coats as required to achieve a flush surface that blends in with surrounding area.
- I. Thoroughly clean up the work area.

*\*Note: When using solvents, extinguish all ignition sources, including pilot lights and follow manufacturer's precautions and directions for use.*

# Defect Type – Eyebrow Rivets



## Causation for Eyebrow Rivets:

- This is typically caused by aircraft manufacturing. When the rivet was installed during production it was overbucked thus causing a depression in the aircraft skin surface.
- This may also be caused by over countersinking the skin before fastener installation. When these defects are painted they leave a depression on the skin surface.
- An inadequate filler and sanding procedure may also cause defects.

For defects that exceed limits, repair per Process Step 1 sand and fill, repaint per Process Step 2 using the blow-in method and Process Step 3 buffing.

## Read all steps in the process before starting.

### Sand and Fill Eyebrow Rivet, Process Step 1

- A. Clean with water or approved solvent and a paper towel.\*
- B. Apply a small amount of 3M™ Dry Guide Coat to highlight the defect area.  
**Note: Keep the sanding area as limited as possible.**
- C. Sand lightly with 3M™ Hookit™ Gold Disc 216U, P320 grit sandpaper. Try to avoid sanding through the primer and exposing bare metal (3M\*Note: When using solvents, extinguish all ignition sources, including pilot lights and follow manufacturer's precautions and directions for use. Non- Vacuum Random Orbital Sander, 3/16" at 35-40 PSI).
- D. Lightly abrade by hand with Scotch-Brite™ General Purpose Hand Pad 7447 to eliminate gloss in low areas of the defect.
- E. Clean with water or approved solvent and a paper towel.\*

**Note: The surface will need to be chemically treated with 3M™ Surface Pre-Treatment AC-131 or an approved chromated primer adhesion promoter and primer if the sanding exposed bare aluminum.**

- F. Apply 3M™ Surface Pre-Treatment AC-131 or approved chromated primer adhesion promoter to any aluminum exposed by the sanding process.
- G. Apply an approved primer to the area treated in step F above.
- H. Lightly abrade the surface of the primer with Scotch-Brite™ General Purpose Hand Pad 7447 before applying the 3M™ Advanced Finishing Putty.
- I. Clean with water or approved solvent and a paper towel.\*

**Note: Mix 3M™ Advanced Finishing Putty per 3M recommendations of 2% hardener per filler by weight. Using too much hardener may cause staining on white paint. Do not mix the product on a piece of**

**cardboard, cardboard absorbs Styrene in the product and makes it less effective. Spread the product out thinly and over a wide area pulling in one direction and then another with a squeegee. Spreading out the product reduces pinholes, traps less air and provides more work time.**

- J. Mix and apply a thin layer of 3M™ Advanced Finishing Putty to defect area using a yellow squeegee. Push down on the outside edge of squeegee with 1 finger on each side to leave a thin amount of filler at the edge of the defect and a high spot of filler in the center for sanding. Insure void is filled and putty covers an area just outside defect area.  
**Note: Allow 3M™ Advanced Finishing Putty to dry for 15 minutes before sanding.**
- K. Re-apply 3M™ Dry Guide Coat to highlight the defect area.
- L. Sand with 3M™ Hookit™ Gold Disc 216U, P320 grit sandpaper until outline of defect is seen but leave an area of .001-.002 (in thickness) of filler outlining the defect area (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 35-40 PSI).
- M. Clean with approved solvent and a paper towel.\*
- N. Thoroughly clean up the work area.

### Blow-In Method, Process Step 2

- A. To insure proper paint adhesion; Sand approximately 3-6" beyond the P320 scratches created above in Process Step 1, L, with 3M™ Hookit™ Finishing Film Grade P800 abrasive (3M™ Non-Vacuum Random Orbital Sander, 3/16" at 40-50 PSI).
- B. To enhance adhesion on the blend edge; dampen the surface approximately 3-6" outside the area sanded in A above. Dampen the 3M™ Trizact™ P3000 disc and sand the area until a white slurry appears, using a North/South and East/West pattern (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- C. Mask the area surrounding the repaint area to extend out 3 feet in diameter.
- D. Obtain the paint from the original batch number used.
- E. Place the paint on the shaker and shake for a minimum of five minutes.

- F. Mix the paint to the manufacturer's specification.
- G. Thin the paint, catalyst and reducer per manufacturer's instructions.
- H. Mix well with a clean stir stick.

**Note: On multiple coat applications it is necessary to extend the wet line of each coverage ring fractionally past the last coat to prevent developing an excessive build-up of paint on the edges bordering the blend transition area. Apply enough paint to ensure adequate coverage exists in the event sanding is required.**

- I. Establish paint coverage by employing the necessary number of coats.
- J. Divide the remaining paint into 2 containers.
- K. Mix 1 container of remaining paint with reducer per the manufacturer's instructions.

**Note: The finer the atomization of paint particles into the blend transition area, the more optimal the end results will be.**

- L. Carefully develop a blend edge by spraying from the coverage wet edge outwards. Ensure that where the last coverage ring and the blend edge meet that "burn in" doesn't change the paint texture.
- M. Allow an adequate amount of time for the paint to cure, 24 hours if possible.

### Buffing Repair, Process Step 3

#### 3A. Buffing process for Standard Visibility areas.

- A. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500. Sand the area with 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad installed to highlight the defect(s). Then remove the 3M™ Soft Interface Pad and sand with the 3M™ Clean Sanding Painter's Back Up Pad until the defect(s) are removed. Once large defect(s) are removed put the 3M™ Soft Interface Pad back on with a 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500 and sand until the orange peel is removed. (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- B. Clean with water or approved solvent and a paper towel.\*
- C. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ P 3000 disc with a spray bottle. Sand the defect area using the 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad until a white slurry appears, using a North/South and East/West pattern. When the white slurry appears, sand the defect area to insure 200% coverage (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- D. Clean with water or approved solvent and a paper towel.\*
- E. Buff the defect area with 3M™ Perfect-It™ Rubbing Compound. Use a buffer, 3M™ Quick Release Adapter and 3M™ Perfect-It™ Wool Compounding Pad or 3M™ Perfect-It™ Low Linting Wool Pad. Use medium pressure to start, approximately 5 lbs and then reduce pressure to almost no pressure as you finish (Electric Buffer at 1400-1800 RPM).
- F. Remove excess 3M™ Perfect-It™ 3000 Extra Cut Rubbing Compound with 3M™ Perfect-It Clean and Shine, water or approved solvent and paper towel.

- G. Use 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches. If scratches still exist repeat steps E and F above.
- H. Remove swirl marks using 3M™ Perfect-It™ Machine Polish and 3M™ Perfect-It™ Foam Polishing Pad (use 3M™ Quick Release Adapter for mounting). Polish using medium pressure on 2-3 passes over the defect area or until all the compounding swirls are removed. Finish with two passes using light downward pressure over the defect area.
- I. Remove excess 3M™ Perfect-It™ Machine Polish from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Yellow insuring surging (sewn edges) do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
- J. Swirl (Halo) Elimination: Buff defect repair area with 3M™ Perfect-It™ Ultrafine Machine Polish, using 3M™ Quick Release Adapter, and 3M™ Perfect-It™ Ultrafine Foam Polishing Pad. Apply enough 3M™ Perfect-It™ Ultrafine Machine Polish to insure a wet continuous film exists on the panel during the entire procedure.

**Note: It will take a fair amount of product to initially wet the pad, there after add small amounts of product to keep the surface wet. Buff at 1400-1800 RPM and insure 200% coverage using medium pressure to start and light pressure to finish. Utilize a North/South and East/West pattern for your buffing pattern (Electric Buffer at 1400-1800 RPM).**

- K. Remove excess 3M™ Perfect-It™ Ultrafine Machine Polish compound from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Blue, insuring surging, (sewn edges), do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
- L. Use 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches, (Halo effect). If scratches still exist repeat steps J and K above.
- M. Thoroughly clean up the work area.

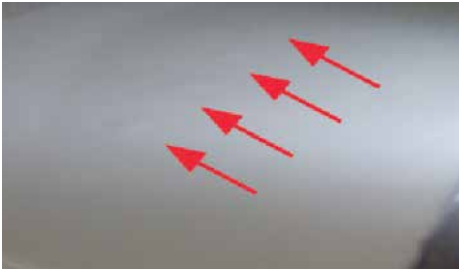
#### 3B. Buffing process for Standard Visibility areas.

- A. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500. Sand the area with 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad installed to highlight the defect(s). Then remove the 3M™ Soft Interface Pad and sand with the 3M™ Clean Sanding Painter's Back Up Pad until the defect(s) are removed. Once large defect(s) are removed put the 3M™ Soft Interface Pad back on with a 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500 and sand until the orange peel is removed. (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- B. Clean with water or approved solvent and a paper towel.\*
- C. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ P 3000 disc with a spray bottle. Sand the defect area using the 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad until a white slurry appears, using a North/South and East/West pattern. When the white slurry appears, sand the defect area to ensure 200% coverage (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).

- D. Clean with water or approved solvent and a paper towel.\*
- E. Buff the defect area with 3M™ Perfect-It™ Rubbing Compound. Use a buffer, 3M™ Quick Release Adapter and approximately 5 lbs and then reduce pressure to almost no pressure as you finish (Electric Buffer at 1400-1800 RPM).
- F. Remove excess 3M™ Perfect-It™ 3000 Extra Cut Rubbing Compound with 3M™ 3M™ Perfect-It Clean and Shine, water or approved solven and paper towel.
- G. Remove swirl marks using 3M™ Perfect-It™ Machine Polish and 3M™ Perfect-It™ Foam Polishing Pad (use 3M™ Quick Release Adapter for mounting). Polish using medium pressure on 2-3 passes over the defect area or until all the compounding swirls are removed. Finish with two passes using light downward pressure over the defect area (Electric Buffer at 1400-1800 RPM).
- H. Remove excess 3M™ Perfect-It™ Machine Polish from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Yellow, insuring surging (sewn edges) do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
- I. Use 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches. If scratches still exist repeat steps G and H above.
- J. Thoroughly clean up the work area.

***\*Note: When using solvents, extinguish all ignition sources, including pilot lights and follow manufacturer's precautions and directions for use.***

# Defect Type – Thinner Pop/ Micro Blisters (Blushing)



## Causation for Thinner Pop/Micro Blistering:

- This may occur because of curing at high temperatures.
- When the dry film thickness exceeds 4.0 mils.
- When using airless or assisted airless or at the end of the paints pot life.

For defects outside the limit, repair per Process Step 1, apply guidecoat, sand, and fill and Process Step 2, repaint using the blow-in method and buffing per Process Step 3.

## Read all steps in the process before starting.

### Apply Guidecoat, Sand, and Fill, Process Step 1

- A. Clean with water or approved solvent and a paper towel.\*
- B. Apply a small amount of 3M™ Dry Guide Coat to highlight the defect area.

**Note:** Keep the sanding area as limited as possible.

- C. Sand lightly with 3M™ Hookit™ Gold Disc 216U, P320 grit sandpaper. Try to avoid sanding through the primer and exposing bare metal (3M™ Non-Vacuum Random Orbital Sander, 3/16" 35-40 PSI).
- D. Lightly abrade by hand with Scotch-Brite™ General Purpose Hand Pad 7447 to eliminate gloss in low areas of the defect.
- E. Clean with water or approved solvent and a paper towel.

**Note:** The surface will need to be chemically treated with 3M™ Surface Pre-Treatment AC-131 or an approved chromated primer adhesion promoter and primer if the sanding exposed bare aluminum.

- F. Apply 3M™ Surface Pre-Treatment AC-131 or approved chromated primer adhesion promoter to any aluminum exposed by the sanding process.
- G. Apply an approved primer to the area treated in step F above.
- H. Lightly abrade the surface of the primer with Scotch-Brite™ General Purpose Hand Pad 7447 before applying the 3M™ Advanced Finishing Putty.
- I. Clean with water or approved solvent and a paper towel.\*

**Note:** Mix 3M™ Advanced Finishing Putty per 3M recommendations of 2% hardener per filler by weight. Using too much hardener may cause staining on white paint. Do not mix the product on a piece of cardboard, cardboard absorbs Styrene in the product and makes it less effective. Spread the product out thinly and over a wide area pulling in one direction and then another with a squeegee. Spreading out the product reduces pinholes, traps less air and provides more work time.

- J. Mix and apply a thin layer of 3M™ Advanced Finishing Putty to defect area using a yellow squeegee. Push down on the outside edge of squeegee with 1 finger on each side to leave a thin amount of filler at the edge of the defect and a high spot of filler in the center for sanding. Insure void is filled and putty covers an area just outside defect area.
- K. Re-apply 3M™ Dry Guide Coat to highlight the defect area.
- L. Sand with 3M™ Hookit™ Gold Disc 216U, P320 grit sandpaper until outline of defect is seen but leave an area of .001-.002 (in thickness) of filler outlining the defect area (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 35-40 PSI).
- M. Clean with approved solvent and a paper towel.\*
- N. Thoroughly clean up the work area.

**Note:** Allow 3M™ Advanced Finishing Putty to dry for 15 minutes before sanding.

### Blow-In Method, Process Step 2

- A. To insure proper paint adhesion; Sand approximately 3-6" beyond the P320 scratches created above in Process Step 1, L, with 3M™ Hookit™ Finishing Film Grade P800 abrasive (3M™ Non-Vacuum Random Orbital Sander, 3/16" 40-50 PSI).
- B. To enhance adhesion on the blend edge; dampen the surface approximately 3-6" outside the area sanded in A above. Dampen the 3M™ Trizact™ P3000 disc and sand the area until a white slurry appears, using a North/South and East/West pattern (3M™ Non-Vacuum Random Orbital Sander, 5/16" 35-40 PSI).
- C. Obtain the paint from the original batch number used.
- D. Place the paint on the shaker and shake for a minimum of five minutes.
- E. Mix the paint to the manufacturer's specification.
- F. Thin the paint per the manufacturer's instructions.
- G. Mix well with a clean stir stick.

**Note: On multiple coat applications it is necessary to extend the wet line of each coverage ring fractionally past the last coat to prevent developing an excessive build-up of paint on the edges bordering the blend transition area. Apply enough paint to ensure adequate coverage exists in the event sanding is required.**

- H. Establish paint coverage by employing the necessary number of coats.
- I. Divide the remaining paint into 2 containers.
- J. Mix 1 container with reducer per manufacturer's instructions.

**Note: The finer the atomization of paint particles into the blend transition area, the more optimal the end result will be.**

- K. Carefully develop a blend edge by spraying from the coverage wet edge outwards. Ensure that where the last coverage ring and the blend edge meet that "burn in" doesn't change the paint texture.
- L. Allow an adequate amount of time for the paint to cure, 24 hours if possible.

### Buffing Repair, Process Step 3

#### 3A. Buffing process for High Visibility areas.

- A. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500. Sand the area with 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad installed to highlight the defect(s). Then remove the 3M™ Soft Interface Pad and sand with the 3M™ Clean Sanding Painter's Back Up Pad until the defect(s) are removed. Once large defect(s) are removed put the 3M™ Soft Interface Pad back on with a 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500 and sand until the orange peel is removed. (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- B. Clean with water or approved solvent and a paper towel.\*
- C. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ P 3000 disc with a spray bottle. Sand the defect area using the 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad until a white slurry appears, using a North/South and East/West pattern. When the white slurry appears, sand the defect area to insure 200% coverage (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- D. Clean with water or approved solvent and a paper towel.\*
- E. Buff the defect area with 3M™ Perfect-It™ Rubbing Compound. Use an electric buffer, 3M™ Quick Release Adapter and 3M™ Perfect-It™ Wool Compounding Pad or 3M™ Perfect-It™ Low Linting Wool Pad. Use medium pressure to start, approximately 5 lbs and then reduce pressure to almost no pressure as you finish (Electric Buffer at 1400-1800 RPM).
- F. Remove excess 3M™ Perfect-It™ 3000 Extra Cut Rubbing Compound with 3M™ 3M™ Perfect-It Clean and Shine, water or approved solvent and paper towel.
- G. Use the 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches. If scratches still exist repeat steps E and F above.

- H. Remove swirl marks using 3M™ Perfect-It™ Machine Polish and 3M™ Perfect-It™ Foam Polishing Pad (use 3M™ Quick Release Adapter for mounting). Polish using medium pressure on 2-3 passes over the defect area or until all the compounding swirls are removed. Finish with two passes using light downward pressure over the defect area (Electric Buffer at 1400-1800 RPM).
- I. Remove excess 3M™ Perfect-It™ Machine Polish from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Yellow insuring surging (sewn edges) do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
- J. Use the 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches. If scratches still exist repeat steps C and D above.
- K. Swirl (Halo) Elimination: Buff the defect repair area with 3M™ Perfect-It™ Ultrafine Machine Polish, using 3M™ Quick Release Adapter, and 3M™ Perfect-It™ Ultrafine Foam Polishing Pad. Apply enough 3M™ Perfect-It™ Ultrafine Machine Polish to insure a wet continuous film exists on the panel during the entire procedure.

**Note: It will take a fair amount of product to initially wet the pad, there after add small amounts of product to keep the surface wet. Buff at 1400-1800 RPM and insure 200% coverage using medium pressure to start and light pressure to finish. Utilize a North/South and East/West pattern for your buffing (Electric Buffer at 1400-1800 RPM).**

- L. Remove excess 3M™ Perfect-It™ Ultrafine Machine Polish compound from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Blue insuring surging, (sewn edges), do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
- M. Use the 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches, (Halo effect). If scratches still exist repeat steps K and L above.
- N. Thoroughly clean up the work area.

#### 3B. Buffing process for Standard Visibility areas.

- A. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500. Sand the area with 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad installed to highlight the defect(s). Then remove the 3M™ Soft Interface Pad and sand with the 3M™ Clean Sanding Painter's Back Up Pad until the defect(s) are removed. Once large defect(s) are removed put the 3M™ Soft Interface Pad back on with a 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500 and sand until the orange peel is removed. (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- B. Clean with water or approved solvent and a paper towel.\*

- C. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ P 3000 disc with a spray bottle. Sand the defect area using the 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad until a white slurry appears, using a North/South and East/West pattern. When the white slurry appears, sand the defect area to insure 200% coverage (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- D. Clean with water or approved solvent and a paper towel.\*
- E. Buff the defect area with 3M™ Perfect-It™ Rubbing Compound. Use wool pad. Use medium pressure to start, approximately 5 lbs and then reduce pressure to almost no pressure as you finish (Electric Buffer at 1400-1800 RPM).
- F. Remove excess 3M™ Perfect-It™ 3000 Extra Cut Rubbing Compound with 3M™ 3M™ Perfect-It Clean and Shine, water or approved solvent and paper towel.
- G. Remove swirl marks using 3M™ Perfect-It™ Machine Polish and 3M™ Perfect-It™ Foam Polishing Pad (use 3M™ Quick Release Adapter for mounting). Polish using medium pressure on 2-3 passes over the defect area or until all the compounding swirls are removed. Finish with two passes using light downward pressure over the defect area (Electric Buffer @ 1400-1800 RPM).
- H. Remove excess 3M™ Perfect-It™ Machine Polish from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Yellow insuring surging (sewn edges) do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
- I. Use the 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches. If scratches still exist repeat steps G and H above.
- J. Thoroughly clean up the work area.

***\*Note: When using solvents, extinguish all ignition sources, including pilot lights and follow manufacturer's precautions and directions for use.***

# Defect Type – Gloss



## Causation for Gloss defects:

- Spraying too dry.
- Using paint at the end of the pot life.
- Excessive orange peel will produce low gloss readings.

Dry paint will not achieve the desired gloss level. This discrepancy utilizes the same repair as gloss defects. For defects outside the limit, repair by area per Process Step 1, sanding, and Process Step 2 for buffing.

## Read all steps in the process before starting.

### Sanding Repair, Process Step 1

- A. Clean with water or approved solvent and a paper towel.\*
- B. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500. Sand the area with 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad installed to highlight the defect(s). Then remove the 3M™ Soft Interface Pad and sand with the 3M™ Clean Sanding Painter's Back Up Pad until the defect(s) are removed. Once large defect(s) are removed put the 3M™ Soft Interface Pad back on with a 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500 and sand until the orange peel is removed. (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- C. Clean with water or approved solvent and a paper towel.\*
- D. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ P 3000 disc with a spray bottle. Sand the defect area using the 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad until a white slurry appears, using a North/South and East/West pattern. When the white slurry appears, sand the defect area to insure 200% coverage (3M™ Non-Vacuum Random Orbital Sander, 5/16" with 40-50 PSI).
- E. Clean with water or approved solvent and a paper towel.\*

### Buffing Repair, Process Step 2

#### 2A. Buffing process for High Visibility Areas.

- A. Buff the defect area with 3M™ Perfect-It™ Rubbing Compound. Use a buffer, 3M™ Quick Release Adapter and 3M™ Perfect-It™ Wool Compounding Pad or 3M™ Perfect-It™ Low Linting Wool Pad. Use medium pressure to start, approximately 5 lbs and then reduce pressure to almost no pressure as you finish (Electric Buffer at 1400-1800 RPM).
- B. Clean with water or approved solvent and a paper towel.\*
- C. Use the 3M™ SUN GUN™ II Light Kit to evaluate the defect area. If scratches still exist repeat steps A and B above.
- D. Remove swirl marks using 3M™ Perfect-It™ Machine Polish and 3M™ Perfect-It™ Foam Polishing Pad (use 3M™ Quick Release Adapter for mounting). Polish using medium pressure on 2-3 passes over the defect area or until all the compounding swirls are removed. Finish with two passes using light downward pressure over the defect area (Electric Buffer at 1400-1800 RPM).
- E. Remove excess 3M™ Perfect-It™ Machine Polish from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Yellow, insuring surging, (sewn edges), do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
- F. Use 3M™ SUN GUN™ II Light Kit to evaluate defect area for scratches, (Halo effect). If scratches still exist repeat steps D and E above.
- G. Swirl (Halo) Elimination: Buff the defect repair area with 3M™ Perfect-It™ Ultrafine Machine Polish, using 3M™ Quick Release Adapter, and 3M™ Perfect-It™ Ultrafine Foam Polishing Pad. Apply enough 3M™ Perfect-It™ Ultrafine Machine Polish to insure a wet continuous film exists on the panel during the entire procedure.

**Note: It will take a fair amount of the product to initially wet the pad, there after add small amounts of the product to keep the surface wet. Buff at 1400-1800 RPM and insure 200% coverage using medium pressure to start and light pressure to finish. Utilize a North/South and East/West pattern for your buffing (Electric Buffer at 1400-1800 RPM).**



- H. Remove excess 3M™ Perfect-It™ Ultrafine Machine Polish compound from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Blue, insuring surging, (sewn edges), do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
- I. Use the 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches, (Halo effect). If scratches still exist repeat steps G and H above.
- J. Thoroughly clean up the work area.

## **2B. Buffing process for Standard Visibility Areas.**

- A. Buff the defect area with 3M™ Perfect-It™ Rubbing Compound. Use a buffer, 3M™ Quick Release Adapter and 3M™ Perfect-It™ Wool Compounding Pad or 3M™ Perfect-It™ Low Linting Wool Pad. Use medium pressure to start, approximately 5 lbs and then reduce pressure to almost no pressure as you finish (Electric Buffer at 1400-1800 RPM).
- B. Clean with water or approved solvent and a paper towel.\*
- C. Remove swirl marks using 3M™ Perfect-It™ Machine Polish and 3M™ Perfect-It™ Foam Polishing Pad (use 3M™ Quick Release Adapter for mounting). Polish using medium pressure on 2-3 passes over the defect area or until all the compounding swirls are removed. Finish with two passes using light downward pressure over the defect area (Electric Buffer at 1400-1800 RPM).

***\*Note: When using solvents, extinguish all ignition sources, including pilot lights and follow manufacturer's precautions and directions for use.***

- D. Remove excess 3M™ Perfect-It™ Machine Polish from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Yellow insuring surging, (sewn edges), do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
- E. Use the 3M™ SUN GUN™ II Light Kit to evaluate the defect area. If scratches still exist repeat steps C and D above.
- F. Thoroughly clean up the work area.

# Defect Type – Deep Craters



## Causation for Deep Craters:

- Craters are caused by substrate surface contamination from silicone, hydraulic fluid, engine oil, etc.
- Some of the sources for these contaminants are: dirty substrates, oil and or water in the compressed air lines, wrong lubricant used in the spray gun, sanding dust, or a dirty filter in the air line.

For defects outside the limits, repair per Process Step 1, sand and fill, Process Step 2, repaint per the blow-in method and Process Step 3 buffing.

## Read all steps in the process before starting.

### Sand and Fill, Process Step 1

- A. Clean with water or approved solvent and a paper towel.\*
  - B. Apply a small amount of 3M™ Dry Guide Coat to highlight the defect area.
- Note: Keep the sanding area as limited as possible.**
- C. Sand lightly with 3M™ Hookit™ Gold Disc 216U, P320 grit sandpaper. Try to avoid sanding through the primer and exposing bare metal (3M™ Non-Vacuum Random Orbital Sander, 3/16" at 35-40 PSI).
  - D. Lightly abrade by hand with Scotch-Brite™ General Purpose Hard Pad 7447 to eliminate gloss in the low areas of the defect.
  - E. Clean with water or approved solvent and a paper towel.\*

**Note: The surface will need to be chemically treated with 3M™ Surface Pre-Treatment AC-131 or an approved chromated primer adhesion promoter and primer if the sanding exposed bare aluminum.**

- F. Apply 3M™ Surface Pre-Treatment AC-131 or approved chromated primer adhesion promoter to any aluminum exposed by the sanding process.
- G. Apply an approved primer to the area treated in step F above.
- H. Lightly abrade the surface of the primer with 3M™ Scotch-Brite™ before applying the 3M™ Advanced Finishing Putty.
- I. Clean with water or approved solvent and a paper towel.\*

**Note: Mix 3M™ Advanced Finishing Putty per 3M recommendations of 2% hardener per filler by weight. Using too much hardener may cause staining on white paint. Do not mix the product on a piece of cardboard, cardboard absorbs Styrene in the product and makes it less effective. Spread the product out thinly and over a wide area pulling in one direction and then another with a squeegee. Spreading out the product reduces pinholes, traps less air and provides more work time.**

- J. Mix and apply a thin layer of 3M™ Advanced Finishing Putty to the defect area using a yellow squeegee. Push down on the outside edge of squeegee with 1 finger on each side to leave a thin amount of filler at the edge of the defect and a high spot of filler in the center for sanding. Insure the void is filled and the putty covers an area just outside defect area.

**Note: Allow 3M™ Advanced Finishing Putty to dry for 15 minutes before sanding.**

- K. Re-apply 3M™ Dry Guide Coat to highlight the defect area.
- L. Sand with 3M™ Hookit™ Gold Disc 216U, P320 grit sandpaper until the outline of the defect is seen but leave an area of .001-.002 (in thickness) of filler outlining the defect area (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 35-40 PSI).
- M. Clean with approved solvent and a paper towel.\*

### Blow-In Method, Process Step 2

- A. To insure proper paint adhesion; Sand approximately 3-6" beyond the P320 scratches created above in Process Step 1, L, with 3M™ Hookit™ Finishing Film Grade P800 abrasive (3M™ Non-Vacuum Random Orbital Sander, 3/16" 40-50 PSI).
- B. To enhance adhesion on the blend edge; dampen the surface approximately 3-6" outside the area sanded in Step A above. Dampen the 3M™ Trizact™ P3000 disc and sand the area until a white slurry appears, using a North/South and East/West pattern (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- C. Obtain the paint from the original batch number used.
- D. Place the paint on the shaker and shake for a minimum of five minutes.
- E. Mix the paint to the manufacturer's specification.
- F. Thin the paint per manufacturer's instructions.
- G. Mix well with a clean stir stick.

**Note: On multiple coat applications it is necessary to extend the wet line of each coverage ring fractionally past the last coat to prevent developing an excessive build-up of paint on the edges bordering the blend transition area. Apply enough paint to ensure adequate coverage exists in the event sanding is required.**

- H. Establish paint coverage by employing the necessary number of coats.
- I. Divide the remaining paint into 2 containers.
- J. Mix 1 container of remaining paint with reducer per manufacturer's instructions.

**Note: The finer the atomization of paint particles into the blend transition area, the more optimal the end results will be.**

- K. Carefully develop a blend edge by spraying from the coverage wet edge outwards. Ensure that where the last coverage ring and the blend edge meet that "burn in" doesn't change the paint texture.
- L. Allow an adequate amount of time for the paint to cure, 24 hours if possible.

**\*Note: When using solvents, extinguish all ignition sources, including pilot lights and follow manufacturer's precautions**

### Buffing Repair, Process Step 3

#### 3A. Buffing process for High Visibility Areas.

- A. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500. Sand the area with the 3M™ Hookit™ Soft Interface Pad installed to highlight the defect(s). Then remove the interface pad and sand until the defect(s) are removed. Once large defect(s) are removed put the interface pad back on with a 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500 and sand until the orange peel is removed. (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- B. Clean with water or approved solvent and a paper towel.\*
- C. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ P 3000 disc with a spray bottle. Sand the defect area using the 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad until a white slurry appears, using a North/South and East/West pattern. When the white slurry appears, sand the defect area to insure 200% coverage (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- D. Clean with water or approved solvent and a paper towel.\*
- E. Use the 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches. If scratches still exist repeat steps C and D above.
- F. Buff the defect area with 3M™ Perfect-It™ Rubbing Compound. Use a buffer, 3M™ Quick Release Adapter and 3M™ Perfect-It™ Wool Compounding Pad or 3M™ Perfect-It™ Low Linting Wool Pad. Use medium pressure to start, approximately 5 lbs and then reduce pressure to almost no pressure as you finish (Electric Buffer at 1400-1800 RPM).

- G. Clean with water or approved solvent and a paper towel.\*
- H. Use the 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches. If scratches still exist repeat steps F and G above.
- I. Remove swirl marks using 3M™ Perfect-It™ Machine Polish and 3M™ Perfect-It™ Foam Polishing Pad (use 3M™ Quick Release Adapter for mounting). Polish using medium pressure on 2-3 passes over the defect area or until all the compounding swirls are removed. Finish with two passes using light downward pressure over the defect area (Electric Buffer at 1400-1800 RPM).
- J. Remove excess 3M™ Perfect-It™ Machine Polish from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Yellow insuring surging (sewn edges) do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
- K. Use the 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches, (Halo effect). If scratches still exist repeat steps I and J above.
- L. Swirl (Halo) Elimination: Buff defect repair area with 3M™ Perfect-It™ Ultrafine Machine Polish, using 3M™ Quick Release Adapter, and 3M™ Perfect-It™ Ultrafine Foam Polishing Pad. Apply enough 3M™ Perfect-It™ Ultrafine Machine Polish to insure a wet continuous film exists on the panel during the entire procedure.

**Note: It will take a fair amount of product to initially wet the pad, there after add small amounts of product to keep the surface wet. Buff at 1400-1800 RPM and insure 200% coverage using medium pressure to start and light pressure to finish. Utilize a North/South and East/West pattern for your buffing (Electric Buffer at 1400-1800 RPM).**

- M. Remove excess 3M™ Perfect-It™ Ultrafine Machine Polish compound from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Blue insuring surging, (sewn edges), do not rub the skin. Surging may leave a rag mark.
- N. Use the 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches, (Halo effect). If scratches still exist repeat steps L and M above.
- O. Thoroughly clean up the work area.

#### 3B. Buffing process for Standard Visibility areas.

- A. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500. Sand the area with 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad installed to highlight the defect(s). Then remove the interface pad and sand until the defect(s) are removed. Once large defect(s) are removed put the 3M™ Soft Interface Pad back on with a 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500 and sand until the orange peel is removed. (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- B. Clean with water or approved solvent and a paper towel.\*

- C. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ P 3000 disc with a spray bottle. Sand the defect area using the 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad until a white slurry appears, using a North/South and East/West pattern. When the white slurry appears, sand the defect area to insure 200% coverage (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- D. Clean with water or approved solvent and a paper towel.\*
- E. Buff the defect area with 3M™ Perfect-It™ Rubbing Compound. Use a buffer, 3M™ Quick Release Adapter and 3M™ Perfect-It™ Wool Compounding Pad or 3M™ Perfect-It™ Low Linting Wool Pad. Use medium pressure to start, approximately 5 lbs and then reduce pressure to almost no pressure as you finish (Electric Buffer at 1400-1800 RPM).
- F. Clean with water or approved solvent and a paper towel.\*
- G. Use the 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches. If scratches still exist repeat steps E and F above.
- H. Remove swirl marks using 3M™ Perfect-It™ Machine Polish and 3M™ Perfect-It™ Foam Polishing Pad (use 3M™ Quick Release Adapter for mounting). Polish using medium pressure on 2-3 passes over the defect area or until all the compounding swirls are removed. Finish with two passes using light downward pressure over the defect area (Electric Buffer at 1400-1800 RPM).
- I. Remove excess 3M™ Perfect-It™ Machine Polish from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Yellow insuring surging (sewn edges) do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
- J. Use the 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches. If scratches still exist repeat steps H and I above.
- K. Thoroughly clean up the work area.

***\*Note: When using solvents, extinguish all ignition sources, including pilot lights and follow manufacturer's precautions and directions for use.***

# Defect Type – Shallow Craters



## Causation for Shallow Craters:

- Craters are caused by substrate surface contamination from silicone, hydraulic fluid, engine oil, etc.
- Some of the sources for these contaminants are: dirty substrates, oil and or water in the compressed air lines, wrong lubricant used in the spray gun, sanding dust, dust, or a dirty filter in the air line.

For defects outside the limit, repair per Process Step 1, sanding and Process Step 2 buffing.

## Read all steps in the process before starting.

### Sanding, Process Step 1

- A. Clean with water or approved solvent and a paper towel.\*
- B. Apply a small amount of 3M™ Dry Guide Coat to highlight the defect area.
- C. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500. Sand the area with 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad installed to highlight the defect(s). Then remove the interface pad and sand until the defect(s) are removed. Once large defect(s) are removed put the 3M™ Soft Interface Pad back on with a 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500 and sand until the orange peel is removed. (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- D. Clean with water or approved solvent and a paper towel.\*
- E. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ P 3000 disc with a spray bottle. Sand the defect area using the 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad until a white slurry appears, using a North/South and East/West pattern. When the white slurry appears, sand the defect area to insure 200% coverage (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).

### Buffing Repair, Process Step 2

#### 2A. Buffing Process for High Visibility Areas.

- A. Buff the defect area with 3M™ Perfect-It™ Rubbing Compound. Use a buffer, 3M™ Quick Release Adapter and 3M™ Perfect-It™ Wool Compounding Pad or 3M™ Perfect-It™ Low Linting Wool Pad. Use medium pressure to start, approximately 5 lbs and then reduce pressure to almost no pressure as you finish (Electric Buffer at 1400-1800 RPM).
- B. Clean with water or approved solvent and a paper towel.\*
- C. Use the 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches. If scratches still exist repeat steps A and B above.
- D. Remove swirl marks using 3M™ Perfect-It™ Machine Polish and 3M™ Perfect-It™ Foam Polishing Pad (use 3M™ Quick Release Adapter for mounting). Polish using medium pressure on 2-3 passes over the defect area or until all the compounding swirls are removed. Finish with two passes using light downward pressure over the defect area (Electric Buffer at 1400-1800 RPM).
- E. Remove excess 3M™ Perfect-It™ Machine Polish from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Yellow insuring surging (sewn edges) do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
- F. Swirl (Halo) Elimination: Buff defect repair area with 3M™ Perfect-It™ Ultrafine Machine Polish, using 3M™ Quick Release Adapter, and 3M™ Perfect-It™ Ultrafine Foam Polishing Pad. Apply enough 3M™ Perfect-It™ Ultrafine Machine Polish to insure a wet continuous film exists on the panel during the entire procedure.  
*Note: It will take a fair amount of product to initially wet the pad, there after add small amounts of product to keep the surface wet. Buff at 1400-1800 RPM and insure 200% coverage using medium pressure to start and light pressure to finish. Utilize a North/South and East/West pattern for your buffing (Electric Buffer at 1400-1800 RPM).*
- G. Remove excess 3M™ Perfect-It™ Ultrafine Machine Polish compound from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Blue insuring surging, (sewn edges), do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
- H. Use the 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches, (Halo effect). If scratches still exist repeat steps F and G above.
- I. Thoroughly clean up the work area.

## **2B. Buffing process for Standard Visibility Areas.**

- A. Buff the defect area with 3M™ Perfect-It™ Rubbing Compound. Use a buffer, 3M™ Quick Release Adapter and 3M™ Perfect-It™ Wool Compounding Pad or 3M™ Perfect-It™ Low Linting Wool Pad. Use medium pressure to start, approximately 5 lbs and then reduce pressure to almost no pressure as you finish (Electric Buffer at 1400-1800 RPM).
- B. Clean with water or approved solvent and a paper towel.\*
- C. Use the 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches. If scratches still exist repeat steps A and B above.
- D. Remove swirl marks using 3M™ Perfect-It™ Machine Polish and 3M™ Perfect-It™ Foam Polishing Pad (use 3M™ Quick Release Adapter for mounting). Polish using medium pressure on 2-3 passes over the defect area or until all the compounding swirls are removed. Finish with two passes using light downward pressure over the defect area (Electric Buffer at 1400-1800 RPM).
- E. Remove excess 3M™ Perfect-It™ Machine Polish from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Yellow insuring surging (sewn edges) do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
- F. Use the 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches. If scratches still exist repeat steps D and E above.
- G. Thoroughly clean up the work area.

***\*Note: When using solvents, extinguish all ignition sources, including pilot lights and follow manufacturer's precautions***

# Defect Type – Scratches



## Causation for Scratches:

- Scratches are typically caused by personnel or equipment.
- Personnel may scratch the aircraft by contacting the aircraft with tools, belts, work area stands, etc.

Repair scratches per Process Step 1, sand, fill if required and Process Step 2 blow-in and Process Step 3 buffing.

## Read all steps in the process before starting.

### Sand, Fill If Required, Process Step 1

- A. Clean with water or approved solvent and a paper towel.\*
- B. Apply a small amount of 3M™ Dry Guide Coat to highlight the defect area.
- C. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500. Sand the area with the 3M™ Hookit™ Soft Interface Pad installed to highlight the defect(s). Then remove the interface pad and sand until the defect(s) are removed. Once large defect(s) are removed put the interface pad back on with a 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500 and sand until the orange peel is removed. (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- D. Clean with water or approved solvent and a paper towel.\*

**Note: If sanding removes the scratch complete step E and F then proceed to Buffing Repair Process Step 3. If sanding to remove a scratch breaks through the paint you will need to accomplish filling steps, G-Q, Process Step 2 Paint Blow-In and Buffing Repair Process Step 3.**

- E. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ P 3000 disc with a spray bottle. Sand the defect area using the 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft Interface Pad until a white slurry appears, using a North/South and East/West pattern. When the white slurry appears, sand the defect area to ensure 200% coverage (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- F. Clean with water or approved solvent and a paper towel.\*
- G. Sand lightly with 3M™ Hookit™ Gold Disc 216U, P320 grit sandpaper. Try to avoid sanding through the primer and exposing bare metal (3M™ Non-Vacuum Random Orbital Sander, 3/16" at 35-40 PSI).
- H. Lightly abrade by hand with Scotch-Brite™ General Purpose Hand Pad 7447 to eliminate gloss in low areas of the defect.
- I. Clean with water or approved solvent and a paper towel.\*

**Note: The surface will need to be chemically treated with 3M™ Surface Pre-Treatment AC-131 or an approved chromated primer adhesion promoter and primer if the sanding exposed bare aluminum.**

- J. Apply 3M™ Surface Pre-Treatment AC-131 or approved chromated primer adhesion promoter to any aluminum exposed by the sanding process.
- K. Apply an approved primer to the area.
- L. Lightly abrade the surface of the primer with Scotch-Brite™ General Purpose Hand Pad 7447 before applying the 3M™ Advanced Finishing Putty.
- M. Clean with water or approved solvent and a paper towel.\*

**Note: Mix 3M™ Advanced Finishing Putty per 3M recommendations of 2% hardener per filler by weight. Using too much hardener may cause staining on white paint. Do not mix the product on a piece of cardboard, cardboard absorbs Styrene in the product and makes it less effective. Spread the product out thinly and over a wide area pulling in one direction and then another with a squeegee. Spreading out the product reduces pinholes, traps less air and provides more work time.**

- N. Mix and apply a thin layer of 3M™ Advanced Finishing Putty to the defect area using a yellow squeegee. Push down on the outside edge of squeegee with 1 finger on each side to leave a thin amount of filler at the edge of the defect and a high spot of filler in the center for sanding. Insure void is filled and putty covers an area just outside defect area.

**Note: Allow 3M™ Advanced Finishing Putty to dry for 15 minutes before sanding.**

- O. Re-apply 3M™ Dry Guide Coat to highlight the defect area.
- P. Sand with 3M™ Hookit™ Gold Disc 216U, P320 grit sandpaper until outline of defect is seen but leave an area of .001-.002 (in thickness) of filler outlining the defect area (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 35-40 PSI).
- Q. Clean with water or approved solvent and a paper towel.\*

**\*Note: When using solvents, extinguish all ignition sources, including pilot lights and follow manufacturer's precautions and directions for use.**

## Blow-In Method, Process Step 2

- A. To insure proper paint adhesion; Sand approximately 3-6" beyond the P320 scratches created above in Process Step 1, P, with 3M™ Hookit™ Finishing Film Grade P800 abrasive (3M™ Non-Vacuum Random Orbital Sander, 3/16" at 40-50 PSI).
- B. Clean with paper towels and water.
- C. To enhance adhesion on the blend edge; dampen the surface approximately 3-6" outside the area sanded in A above. Dampen the 3M™ Trizact™ P3000 disc and sand the area until a white slurry appears, using a North/South and East/West pattern (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- D. Obtain the paint from the original batch number used.
- E. Place the paint on the shaker and shake for a minimum of five minutes.
- F. Mix the paint to the manufacturer's specification.
- G. Thin the paint per the manufacturer's instructions.
- H. Mix well with a clean stir stick.

**Note: On multiple coat applications it is necessary to extend the wet line of each coverage ring fractionally past the last coat to prevent developing an excessive build-up of paint on the edges bordering the blend transition area. Apply enough paint to ensure adequate coverage exists in the event sanding is required.**

- I. Establish paint coverage by employing the necessary number of coats.
- J. Divide the remaining paint into 2 containers.
- K. Mix 1 container of the remaining paint with reducer per the manufacturer's instructions.

**Note: The finer the atomization of paint particles into the blend transition area, the more optimal the end results will be.**

- L. Carefully develop a blend edge by spraying from the coverage wet edge outwards. Ensure that where the last coverage ring and the blend edge meet that "burn in" doesn't change the paint texture.
- M. Allow an adequate amount of time for the paint to cure, 24 hours if possible.
- N. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500. Sand the area with the 3M™ Hookit™ Soft Interface Pad installed to highlight the defect(s). Then remove the interface pad and sand until the defect(s) are removed. Once large defect(s) are removed put the interface pad back on with a 3M™ Trizact™ Hookit™ Clear Coat Sanding Disc-P1500 and sand until the orange peel is removed. (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).
- O. Clean with water or approved solvent and a paper towel.\*
- P. Dampen the surface of the defect area and the 3M™ Trizact™ Hookit™ P 3000 disc with a spray bottle. Sand the defect area using the 3M™ Clean Sanding Painter's Back Up Pad and the 3M™ Soft

Interface Pad until a white slurry appears, using a North/South and East/West pattern. When the white slurry appears, sand the defect area to insure 200% coverage (3M™ Non-Vacuum Random Orbital Sander, 5/16" at 40-50 PSI).

- Q. Clean with water or approved solvent and a paper towel.\*

## Buffing Repair, Process Step 3

### 3A. Buffing process for High Visibility Areas.

- A. Buff the defect area with 3M™ Perfect-It™ Rubbing Compound. Use an electric buffer, 3M™ Quick Release Adapter and wool pad. Use medium pressure to start, approximately 5 lbs and then reduce pressure to almost no pressure as you finish (Electric Buffer at 1400-1800 RPM).
- B. Clean with water or approved solvent and a paper towel.\*
- C. Use the 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches. If scratches still exist repeat steps A and B above.
- D. Remove swirl marks using 3M™ Perfect-It™ Machine Polish and 3M™ Perfect-It™ Foam Polishing Pad (use 3M™ Quick Release Adapter for mounting). Polish using medium pressure on 2-3 passes over the defect area or until all the compounding swirls are removed. Finish with two passes using light downward pressure over the defect area (Electric Buffer at 1400-1800 RPM).
- E. Remove excess 3M™ Perfect-It™ Machine Polish from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Yellow, insuring surging (sewn edges) do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
- F. Use the 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches. If scratches still exist repeat steps D and E above.
- G. Swirl (Halo) Elimination: Buff defect repair area with 3M™ Perfect-It™ Ultrafine Machine Polish, using 3M™ Quick Release Adapter, and 3M™ Perfect-It™ Ultrafine Foam Polishing Pad. Apply enough 3M™ Perfect-It™ Ultrafine Machine Polish to insure a wet continuous film exists on the panel during the entire procedure.

**Note: It will take a fair amount of product to initially wet the pad, there after add small amounts of product to keep the surface wet. Buff at 1400-1800 RPM and insure 200% coverage using medium pressure to start and light pressure to finish. Utilize a North/South and East/West pattern for your buffing pattern (Electric Buffer at 1400-1800 RPM).**

- H. Remove excess 3M™ Perfect-It™ Ultrafine Machine Polish compound from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Blue, insuring surging, (sewn edges), do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.



- I. Use 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches, (Halo effect). If scratches still exist repeat steps G and H above.
- J. Thoroughly clean up the work area.

### **3B. Buffing process for Standard Visibility areas.**

- A. Buff the defect area with 3M™ Perfect-It™ Rubbing Compound. Use a buffer, 3M™ Quick Release Adapter and 3M™ Perfect-It™ Wool Compounding Pad or 3M™ Perfect-It™ Low Linting Wool Pad. Use medium pressure to start, approximately 5 lbs and then reduce pressure to almost no pressure as you finish (Electric Buffer at 1400-1800 RPM).
- B. Clean with water or approved solvent and a paper towel.\*
- C. Use the 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches. If scratches still exist repeat steps A and B above.
- D. Remove swirl marks using 3M™ Perfect-It™ Machine Polish and 3M™ Perfect-It™ Foam Polishing Pad (use 3M™ Quick Release Adapter for mounting). Polish using medium pressure on 2-3 passes over the defect area or until all the compounding swirls are removed. Finish with two passes using light downward pressure over the defect area (Electric Buffer at 1400-1800 RPM).
- E. Remove excess 3M™ Perfect-It™ Machine Polish from the polished and surrounding area. Use a folded 3M™ Perfect-It™ Detailing Cloth, Yellow, insuring surging (sewn edges) do not rub the skin. Surging may leave a rag mark that is not removable using the final compounding step.
- F. Use the 3M™ SUN GUN™ II Light Kit to evaluate the defect area for scratches. If scratches still exist repeat steps D and E above.
- G. Thoroughly clean up the work area.

***\*Note: When using solvents, extinguish all ignition sources, including pilot lights and follow manufacturer's precautions and directions for use.***

## Product

Material Name	Company	Part Number
3M™ Perfect-It Clean and Shine	3M	06084
3M™ Hookit™ Clean Sanding Painters Back Up Pad	3M	05551
3M™ Advanced Finishing Putty	3M	05821
3M™ Dry Guide Coat	3M	05861
3M™ Dry Guide Coat Cartridge, Refill	3M	05860
3M™ Perfect-It™ Rubbing Compound	3M	06085
3M™ Perfect-It™ Wool Buffing Pad	3M	05753
3M™ Perfect-It™ Low Linting Wool Pad	3M	33279
3M™ Perfect-It™ Machine Polish	3M	06064
3M™ Perfect-It™ Foam Polishing Pad	3M	05707
3M™ Perfect-It™ Detailing Cloth, Yellow	3M	06017
3M™ Perfect-It™ Ultrafine Machine Polish	3M	06068
3M™ Perfect-It™ Ultrafine Foam Polishing Pad	3M	05708
3M™ Perfect-It™ III Auto Detailing Cloth, Light Blue	3M	06020
3M™ Perfect-It™ III Cleaner Clay	3M	38070
3M™ Surface Pre-Treatment AC-131	3M	Various

Abrasives	3" Part Number	6" Part Number
3M™ Hookit™ Gold Disc, 216U-P320A	00914	00975
3M™ Trizact™ Hookit™ Foam Disc P3000	02087	02085
3M™ Hookit™ Finishing Film Disc P800	00910	00970
3M™ Hookit™ Soft Interface Pad	05771	05777
3M™ Trizact™ Hookit™ Clear Coat Sanding Disc P1500	02094	02088
	Company	Part Number
Scotch-Brite™ General Purpose Hand Pad	3M	07447
Sanding Block - 400 Grit		

Tools	Part Number
3M™ Non-Vacuum Random Orbital Sander, 5/16"	20324
3M™ Non-Vacuum Random Orbital Sander, 3/16"	20325
3M™ SUN GUN™ II Light Kit	16400
3M™ Conditioning Brush (for wool pads)	05761
3M™ Spreader Assortment, Yellow	05844
3M™ Quick Release Adapter	05752

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