3M Science. Applied to Life.™

Standard Operating Proceedures

For Collision Repair

3M Automotive Aftermarket Division 2025

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Personal Safety

• Respiratory Protection • Hearing Protection • Face Protection • Reusable Workwear • Safety Gloves

Safety First! Always select appropriate personal protective equipment - eyewear, gloves, hearing and respiratory protection for your job and workplace.

Host Panel Preparation

- Remove remaining weld nuggets and adhesive material from the host panel with a grade 60 - 80 file belt or grinding disc. Prep remaining mating flanges on the host panel with a non-woven belt or disc.


3M™ Scotch-Brite™ File Belts Coarse


3M™ Cubitron II 80 grade file belt


3M™ Scotch-Brite™ Roloc Disc Coarse


3M™ Pistol Grip Disc Sander


3M™ File Belt Tool

Cleaning of the surface

- Using an appropriate VOC compliant degreaser, clean the replacement panel mating flange areas.

Replacement Panel Preparation

- Remove E-coat from the replacement panel mating flange areas using a non-woven belt or disc based on access.


3M™ Scotch-Brite™ File Belts Coarse


3M™ Scotch-Brite™ Roloc Disc Coarse


3M™ Pistol Grip Disc Sander

Cleaning of the surface

- Using an appropriate VOC compliant degreaser, clean the replacement panel mating flange areas.

Corrosion Protection

- Apply weld-thru coating to all areas on the host panel and replacement panel that require welding operations. Weld-thru coating should not be used on areas that will be bonded or weld-bonded.
- Two layers are recommended to obtain the right coating thickness for optimum corrosion protection.
- Drying time: 10 - 20 minutes


3M™ Weld Thru II Primer

Calibration of a new cartridge

- Insert the the selected adhesive cartridge into a suitable application gun.
- Before attaching the mixer to the cartridge, squeeze out a small amount of material until both components are equally extruded.
- Attach the mixing nozzle and discard the first 2-4 cm (1-2") of extruded material, to remove any improperly mixed material.
- Note: The previous step is only necessary when using a new cartridge.


3M™ Impact Resistant Structural Adhesive 200 mL


3M™ Manual Cartridge Applicator, 08571, 200 mL


3M™ Performance Pneumatic Applicator, 09930, 200 mL

Pre-Assembly NVH Replacement

- If vehicle construction necessitates, apply NVH material or foams at original locations as required.


3M™ NVH Dampening Material, 200 mL

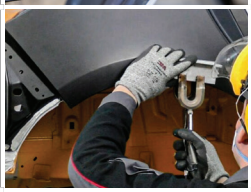

3M™ Flexible Foam, 200 mL


3M™ Rigid Pillar Foam, 200 mL

Application

- Apply a bead of adhesive to the mating flange areas on the host panel and replacement panel. Use a brush or spreader to ensure coverage of all bare metal areas.
- Apply an additional bead of adhesive to the host panel mating flange area to ensure proper bond line thickness and ensure all voids are filled.

Install Replacement Panel



- Install the replacement panel to the vehicle. Fitment adjustments should be made by sliding the part vs. lifting and reapplying. Once satisfied with fitment, clamp in place.
- Apply required welds on rear vertical seams, cosmetic joints, or where otherwise recommended by the repair procedure from the vehicle manufacturer.
- Note: Follow recommended adhesive clamp times flisted on the adhesive cartridge.

Always follow OEM Repair Procedures

Adhesive Cleanup

- Tool excess adhesive squeeze-out from the repair area prior to curing to seal the repair.
- Note: Avoid grinding to remove excess adhesive as this will expose bare metal, increasing your chances of corrosion.

Post-Assembly Foam Replacement

- Apply foams at original locations as required.
- Note: Follow recommended internal corrosion protection processes prior to vehicle final assembly.


3M™ NVH Dampening Material, 200 mL


3M™ Flexible Foam, 200 mL


3M™ Rigid Pillar Foam, 200 mL


3M™ Manual Cartridge Applicator, 08571, 200 mL


3M™ Performance Pneumatic Applicator, 09930, 200 mL

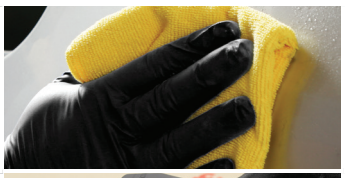
Always follow OEM procedures. For ordering information, contact your 3M Sales Representative or your preferred distributor.

Steel Panel Replacement Process

Personal Safety • Respiratory Protection • Hearing Protection • Face Protection • Reusable Workwear • Safety Gloves

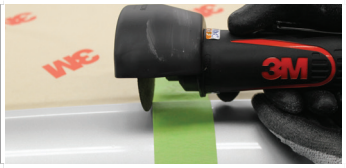
Safety First! Always select appropriate personal protective equipment - eyewear, gloves, hearing and respiratory protection for your job and workplace.

Pre- Cleaning



- Degrease the surface using paint company or other recommended VOC compliant water-based and solvent-based products. Always follow the manufacturer's instructions for surface cleaning instructions.

Panel Cutting



- Identify the OEM recommended sectioning location, scribe or mark with tape on the vehicle. Trim the repair area using your preferred cut-off wheel. Use a grade 36 or 60 filebelt in hard-to-reach areas to cut the exterior panel while avoiding damage to the interior panel.

3M™ Cut-Off Wheel Tool

3M™ Cubitron™ II Cut-Off Wheel

Sealer / Coating Removal

- Use a clean and strip disc to remove seam sealer and coatings from large easy-to-access areas. Use a non-woven belt to remove coatings and seam sealers in hard-to-reach areas and along pinch weld flanges to expose spot weld locations.

3M™ Pistol Grip Disc Sander

3M™ File Belt Sander

Scotch-Brite™ Roloc™+ Clean and Strip XT Pro Disc

Spot Weld Removal

- Using a grade 60 or 80 abrasive belt, grind spot welds to remove the weld from the outer panel. Note outer panel thickness.

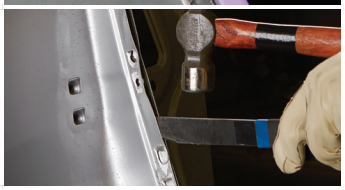
  Note: When grinding outer panel only grind the top panel and limit cutting into the host/inner panel. Use belt thickness as a gauge — stop grinding when the back of the belt is flush with the outer panel. An 80-grade belt can be used to remove welds from thinner steels.

Scotch-Brite™ Roloc™+ Clean and Strip XT Pro Extra Cut Disc

Scotch-Brite™ Durable Flex Belt, CRS

3M™ Cubitron™ II File Belt, grade 60+ and grade 80+

Panel Separation



- Separate outer panel from the interior panel.

  Note: DO NOT force separation in areas where the weld isn't completely removed; go back to step 4 and finish weld removal before continuing.

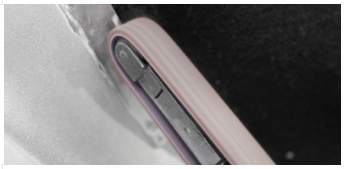
Surface Preparation

- Using an 80-grade abrasive belt, remove the remaining weld nugget from the interior panel.

3M™ File Belt Sander

3M™ Cubitron™ II File Belt, grade 80+

Surface Preparation



- Clean and prep remaining mating flanges on the host and the replacement panel with a coarse non-woven belt where necessary. Clean and apply weld-thru primer to all areas requiring welding to ensure proper corrosion protection.

3M™ File Belt Sander

Scotch-Brite™ Durable Flex Belt, CRS

3M™ Weld Thru II Primer

Mig Plug Weld Dressing

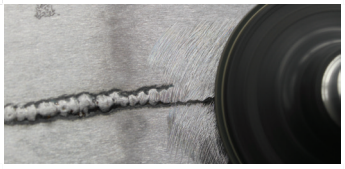
- Use a 80-grade abrasive belt to dress replacement MIG welds. Grind weld.

  Note: Use caution to avoid damage to adjacent areas.

3M™ File Belt Sander

3M™ Cubitron™ II File Belt, grade 80+

Continuous Weld Dressing



- Use a 3 in. 60-grade grinding disc to dress continuous MIG welds at the sectioning joint. Grind weld.

  Note: Use caution to limit the amount of grinding done to adjacent areas.

3M™ Pistol Grip Disc Sander

3M™ Cubitron™ II Roloc™ Fibre Disc, grade 60+, 3 in

Weld Cleaning

- Use a non-woven belt to clean the weld site in preparation for subsequent operations.

3M™ File Belt Sander

Scotch-Brite™ Durable Flex Belt, CRS

Always follow OEM procedures. For ordering information, contact your 3M Sales Representative or your preferred distributor.

Personal Safety

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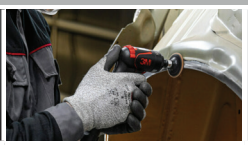
Host Panel Preparation



- Remove remaining weld nuggets and adhesive material from the host panel with a grade 60 - 80 file belt or grinding disc. Prep remaining mating flanges on the host panel with a non-woven belt or disc.


3M™ Scotch-Brite™ Coarse File Belts


3M™ Pistol Grip Disc Sander


3M™ Scotch-Brite™ Coarse Roloc Disc


3M™ File Belt Tool


3M™ Cubitron™ II 80 File Belts

Cleaning of the surface

- Using an appropriate VOC compliant degreaser, clean the replacement panel mating flange areas.

Replacement Panel Preparation

- Remove E-coat from the replacement panel mating flange areas using a non-woven belt or disc based on access.


3M™ Scotch-Brite™ Coarse File Belts


3M™ Pistol Grip Disc Sander


3M™ Scotch-Brite™ Coarse Roloc Disc


3M™ File Belt Tool

Cleaning of the surface

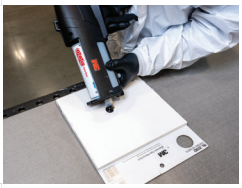
- Using an appropriate VOC compliant degreaser, clean the replacement panel mating flange areas.

Corrosion Protection

- Apply weld-thru coating to all areas on the host panel and replacement panel that require welding operations. Weld-thru coating should not be used on areas that will be bonded or weld-bonded.
- Two layers are recommended to obtain the right coating thickness for optimum corrosion protection
- Drying time: 10 - 20 minutes


3M™ Weld Thru II

Calibration of a new cartridge



- Insert the the selected adhesive cartridge into a suitable application gun
- Before attaching the mixing nozzle to the cartridge, squeeze out a small amount of material until both components are equally extruded. The cartridge is now equalized.
- Attach the mixing nozzle and discard the first 2-4 cm (1-2") of extruded material, to remove any improperly mixed material.


3M™ Panel Bonding and Structural Adhesives


3M™ Manual Cartridge Applicator, 08571, 200 mL


3M™ Performance Pneumatic Applicator, 09930, 200 mL

Pre-Assembly NVH Replacement

- If vehicle construction necessitates, apply NVH material or foams at original locations as required.


3M™ NVH Dampening Material, 200 mL

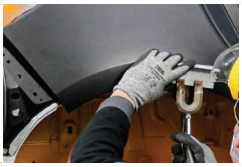

3M™ Flexible Foam, 200 mL


3M™ Rigid Pillar Foam, 200 mL

Application

- Apply a bead of adhesive to the mating flange areas on the host panel and replacement panel. Use a brush or spreader to ensure coverage of all bare metal areas.
- Apply an additional bead of adhesive to the host panel mating flange area to ensure proper bond line thickness and ensure all voids are filled.

Install Replacement Panel



- Install the replacement panel to the vehicle. Fitment adjustments should be made by sliding the part vs. lifting and reapplying. Once satisfied with fitment, clamp in place.
- Apply required welds on rear vertical seams, cosmetic joints, or where otherwise recommended in the OEM repair procedure.
- Note: Follow recommended adhesive clamp times listed on the adhesive cartridge.


Always follow OEM Repair Procedures

Adhesive Clean Up

- Tool excessive adhesive squeeze-out from the flange joint prior to curing to seal the repair.
- Clean any uncured adhesive from unwanted areas using a VOC compliant cleaner.
- Note: Avoid grinding to remove excess adhesive as this will expose bare metal, increasing your chances of corrosion

Post-Assembly Foam Replacement

- Apply foams at original locations as required.
- Note: Follow recommended internal corrosion protection processes prior to vehicle final assembly.


3M™ NVH Dampening Material, 200 mL


3M™ Flexible Foam, 200 mL


3M™ Rigid Pillar Foam, 200 mL


3M™ Manual Cartridge Applicator, 08571, 200 mL


3M™ Pneumatic Applicator for 200ml Duopack Cartridge

Always follow OEM procedures. For ordering information, contact your 3M Sales Representative or your preferred distributor.

Personal Safety

• Respiratory Protection • Hearing Protection • Face Protection • Reusable Workwear • Safety Gloves

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Cleaning the surface

- Degrease the surface using paint company or other recommended VOC-compliant water-based and solvent-based products. Always follow the manufacturer's instructions for surface cleaning instructions.

Sanding the repair area

- Remove paint 2 - 3 inches (50 - 75mm) beyond the repair to prepare the surface for body filler application using a 80 - 120 grit abrasive disc affixed to a dual action sander.
- To remove paint from hard to reach or deep portions of the damaged area, consider using grade 80 grinding discs or grade 80 file belt.

3M™ Cubitron™ II Hookit™ Clean Sanding Abrasive Disc

3M™ Scotch-Brite™ Roloc Disc

3M™ Cubitron™ II 80 File Belts

Fine sanding of the surface & feather edges

- Refine previous sanding scratches using a 180 - 320 grade abrasive disc.
- Clean with a VOC-Compliant cleaner and a dry lint free cloth. Apply cleaner to the towel NOT the substrate. Wipe on wet, turn cloth over and dry thoroughly.

3M™ Precision Random Orbital Sander, 150 mm (6 in)

3M™ Electric Random Orbital Sander

3M™ Pistol Grip Disc Sander

3M™ File Belt Tool

Body filler application

- 3M recommends application of epoxy primer prior to applying filler. Follow the paint manufacturer's recommendations for applying filler over epoxy primers.
- Apply a thin tight coat using firm pressure to ensure maximum adhesion being sure to "wet out" the surface completely. Apply additional filler in layers, building up the damaged area higher than the surrounding surface. Maximum filler thickness should not exceed 1/4 inch / 6mm. Allow curing time of 20 minutes.
- Apply body filler to the repair area, avoiding surrounding paintwork
- Note: Avoid application of solvents & body filler over feathered layers of paint to avoid repair mapping. Always follow OEM recommendations.

3M™ Platinum™ Select Body Filler

3M™ Disposable Paper Mixing Board

3M™ Spreaders

Body filler shaping

- Using an appropriately sized hand block, shape sand using grade 80 - 120 sanding sheets.
- Highlight sand scratches and high & low spots using guide coat.
- For best results and the most-efficient process, always use dust extraction

3M™ Hookit™ Hand Block

3M™ Cubitron™ II Hookit™ Clean Sanding Sheet Roll

3M™ Dry Guide Coat

Scratch refinement

- Refine the sand scratches from the previous shaping step using grade 150 - 180 sanding discs.
- Continue to use guide coat to highlight sand scratches and surface imperfections.

3M™ Cubitron™ II Hookit™ Clean Sanding Abrasive Disc

3M™ Platinum™ Plus Finishing Glaze

3M™ Dry Guide Coat

Repair feather edge

- Complete the final refinement of coarse grade scratches within the repair area and around the feather edge perimeter using a grade 320 abrasive disc.
- It is advisable to work with a soft interface pad when sanding curved areas.
- Continue to use guide coat to highlight sand scratches and surface imperfections.

3M™ Cubitron™ II Hookit™ Clean Sanding Abrasive Disc

3M™ Interface-Pad

Prime and block

- Use guide coat to highlight the texture of the primer.
- Using an appropriately sized hand block and a grade 320 abrasive sheet, level primer-surfacer texture paying attention to body lines, high & low spots, and sand scratches.
- For best results and the most efficient process always use dust extraction.

3M™ Hookit™ Hand Block

3M™ Cubitron™ II Hookit™ Clean Sanding Sheet Roll

3M™ Dry Guide Coat

Edge Sanding

- Sand edges and hard-to-reach areas using abrasive hand sheets grade, 800-1000.

3M™ Hookit™ Flexible Abrasive Sheets P800-P1000

Scratch refinement

- Use guide coat to highlight the surface of the primer. Remove all directional hand-sanding scratches from previous steps using a grade 400 - 500 abrasive disc attached to a dual-action sander equipped with a soft interface pad.
- Using your dust extraction system and a white non-woven disc attached to a DA sander to de-dust / clean all surface areas.

3M™ Cubitron™ II Hookit™ Clean Sanding Abrasive Disc

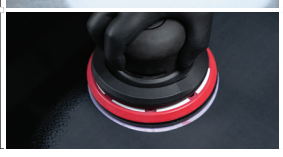
3M™ Precision Random Orbital Sander, 150 mm (6 in)

3M™ Electric Random Orbital Sander

3M™ Interface-Pad

3M™ Dry Guide Coat

Blend Prep



- Level & de-gloss adjacent areas of the OEM clear coat using a grade 800 - 1000 paper abrasive disc on a dual action sander equipped with a soft interface pad.

3M™ Cubitron™ II Hookit™ Clean Sanding Abrasive Disc

3M™ Interface-Pad

Always follow OEM procedures. For ordering information, contact your 3M Sales Representative or your preferred distributor.

Personal Safety • Respiratory Protection • Hearing Protection • Face Protection • Reusable Workwear • Safety Gloves

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Pre- Cleaning

- Degrease the surface using paint company or other recommended VOC compliant water-based and solvent-based products. Always follow the manufacturer's instructions for surface cleaning instructions.

Initial Prep Sand

- Grind the broken tab using a 60-grade or coarse non-woven file belt, creating a tapered edge. Using a 3 in. / 75mm DA sander, sand the repair area with an 80-grade abrasive disc to refine 60-grade sand scratches and remove any melted plastic.

3M™ File Belt Sander

3M™ Cubitron™ II File Belt, grade 60+,

3M™ Cubitron™ II Hookit™ Clean Sanding Abrasive Disc, 3 in. / 75mm, grade 80+,

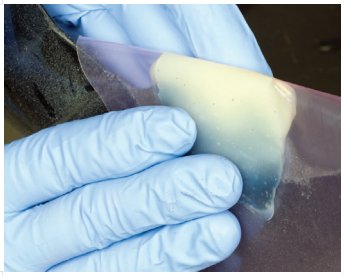
Prepare the Tab

- Drill 1/8 in. / 3mm pinning holes in the damaged area 1/4 in. / 6mm from tapered edge and 1/4 in. / 6mm apart. Apply aerosol adhesion promoter, allowing it to dry for 10 minutes.

  Note: Avoid over-applying adhesion promoter. Doing so may cause the adhesive bond to fail. Apply one light coat over a sanded surface and allow to dry for 10 minutes. If the repair surface becomes contaminated or if the adhesive is not applied within 30 minutes, re-sand the surface and apply fresh adhesion promoter.

3M™ Polyolefin Adhesion Promoter, 12 oz. / 354ml aerosol

Mix and Apply Super-Fast Repair Material



- Cut contour film 3 times the length of the tab. Mix and apply repair material to the contour sheet and apply to the damaged tab, shaping as you work. Allow to cure for 5 – 10 minutes. Remove contour film. Note: Do not force removal of the contour film.

3M™ Plastic Contour Sheet, 5 in. (127mm) x 12 ft (3.6m)

3M™ Super Fast Repair Adhesive, 200mL

3M™ Performance Manual Applicator, 200mL

Rough Shape Damaged Tab

- Rough shape the repaired tab area with a 60-grade file belt. Using a 3-inch / 75mm DA sander, sand the repair area with an 80-grade abrasive disc to restore the original tab dimensions. Re-drill mounting holes as necessary.

3M™ File Belt Sander

3M™ Cubitron™ II File Belt, grade 60+,

3M™ Cubitron™ II Hookit™ Clean Sanding Abrasive Disc, 3 in. / 75mm, grade 80+

Final Sand and Inspect

- Using a 3-inch / 75mm DA sander, finish sand the repair area and the surrounding area using a 180-grade abrasive disc. Blow off the repair area and inspect for quality.

3M™ Cubitron™ II Hookit™ Clean Sanding Abrasive Disc, 3 in. / 75mm, grade 180+

Always follow OEM procedures. For ordering information, contact your 3M Sales Representative or your preferred distributor.

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Pre- Cleaning

- Degrease the surface using paint company or other recommended VOC-compliant water-based and solvent-based products. Always follow the manufacturer's instructions for surface cleaning instructions.

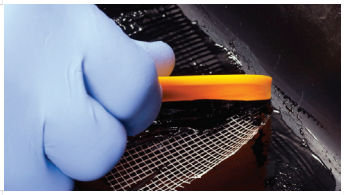
Prepare for Reinforcement Material

- Apply a heavy duty tape, or multiple layers of masking tape to the front side of the repair to align and secure the damage while the back-side reinforcement is being completed.
- On the back side, use a DA with an 80-grade abrasive disc to sand at least two inches beyond the damaged area where the reinforcement patch will be applied. Blow off with clean, dry air and apply adhesion promoter, allowing to dry for 5-10 minutes.

3M™ Polyolefin Adhesion Promoter, 12 oz. (354ml) aerosol

3M™ Cubitron™ II Hookit™ Clean Sanding Abrasive Disc, 3 in., grade 80+,

Apply Reinforcement Material



- Apply a thin, tight coat of semi-rigid plastic repair material. Follow the tight coat with alternating layers of repair material and reinforcement patch material over the damaged area, starting with the repair material. Allow a dry time of 15 minutes at 24°C (75°F).

3M™ Semi-Rigid Plastic Repair Material, 200mL cartridge

3M™ Reinforcement Patch, 5 in. x 12 ft. roll

Tapering the Front Side

- Remove the aluminum tape. Grind the front damage using a 60-grade or coarse non-woven file belt at a low speed to create a gradual "dish out" area 3 inches / 75mm wide and deep enough to expose a 1/4-inch / 6mm wide strip of the black adhesive through the center of the damage.

3M™ File Belt Sander

3M™ Cubitron™ II File Belt, grade 60+,

Preparing the Repair Area

- Use a 3 inch / 75mm DA with 80-grade abrasive disc to create a smooth transition into the dished area. Remove any melted plastic and create a fuzzy surface for the adhesive. No shiny plastic areas should remain. Abrade with 180-grade around the dished-out area where the adhesive will eventually be featheredged.

3M™ Cubitron™ II Hookit™ Clean Sanding Abrasive Disc, 3 in. / 75mm, grade 80+, 180+

Mix and Apply Flexible Filler

- Blow off the front side repair area with clean dry air. Apply aerosol adhesion promoter[1]
- Mix and apply flexible repair material with an initial "tight coat" immediately followed by additional coats to fill in all low areas. Allow 15 minutes to cure at 24°C (75°F).

  Note: Avoid over-applying adhesion promoter. Doing so may cause the adhesive bond to fail. Apply one light coat over a sanded surface and allow to dry for 5 minutes. If the repair surface becomes contaminated or if the adhesive is not applied within 30 minutes, re-sand the surface and apply fresh adhesion promoter.

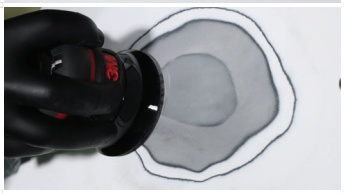
3M™ Polyolefin Adhesion Promoter, 12 oz. (354ml) aerosol

3M™ EZ Sand Multi-Purpose Repair Material, 200mL, 600mL DMS

3M™ Performance Manual Applicator, 200mL

3M™ Dynamic Mixing Applicator — Pneumatic

Sand Flexible Filler

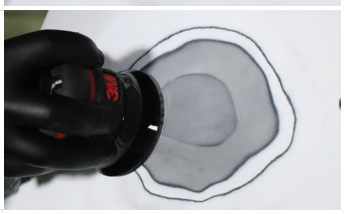


- Use a DA sander to rough shape the adhesive with an 80-grade disc. Block sand the repair area with 180-grade sheet to finish shaping and featheredging the repair.

3M™ Cubitron™ II Hookit™ Clean Sanding Abrasive Disc, 3 in. / 75mm, grade 80+,

3M™ Cubitron™ II Hookit™ Clean Sanding Sheet Roll, 70mm x 12m / 2 3/4" x 40' grade 180+,

Final Sand and Inspect



- Use a DA sander to finish sand the repair area using a 320-grade abrasive disc. Blow off and inspect the repair quality.

3M™ Cubitron™ II Hookit™ Clean Sanding Abrasive Disc, 3 in. / 75mm, grade 320+

Always follow OEM procedures. For ordering information, contact your 3M Sales Representative or your preferred distributor.

Personal Safety

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Cleaning of the surface

- Degrease the surface using paint company or other recommended VOC-compliant water-based and solvent-based products. Always follow the manufacturer's instructions for surface cleaning instructions

Covering the vehicle

- Outline the area to be refinished using appropriate surface protection products and techniques to seal the non-repair area from paint and overspray.
- In a single-panel repair, back mask using wide-width masking tape.
- In a multi-panel repair, use foam masking tape and specialty tapes to soften the paint edge.

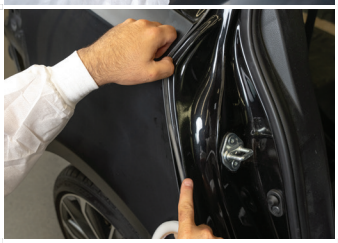
3M™ Soft Edge Foam Masking Tape

3M™ Trim Masking Tape

3M™ Scotch® Masking Tape 233+

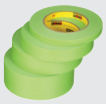
3M™ Smooth Transition Tape

Jamb Masking - Specialty Tapes



- Apply 3M™ Smooth Transition Tape, or folded tape in the jamb, leaving a tab available for easy removal after sealer application.
- When properly applied, the tape cannot be felt when running your hand parallel to the panel – but can be felt when running your hand at a 45 degree angle across the jamb.
- Note: Two strips of 3M™ Smooth Transition Tape may be used in situations to further soften the transition of coatings.
- Note: Follow Smooth Transition Tape with additional foam tape or paper to fully seal the jamb from overspray.

3M™ Smooth Transition Tape



3M™ Scotch® Masking Tape 233+

Jamb Masking - Specialty Tapes

- Apply foam masking tape to jamb areas on vehicles requiring panel to panel refinishing.
- Position the foam tape to seal the jamb opening, keeping the adhesive away from the paint edge.
- Note, Foam tapes are "stretch to release" products. To apply, press the tape firmly into place, avoiding stretching when applying. To remove, stretch the foam tape parallel to the work surface. This will help prevent adhesive residue.

3M™ Soft Edge Foam Masking Tape PLUS 21mm x 49m

3M™ Soft Edge Foam Masking Tape 13mm x 50m

3M™ Soft Edge Foam Masking Tape 19mm x 35m

Surface Protection

- Cover the vehicle with plastic sheeting before painting to avoid surface contamination.
- Cut the masking film around the repair area in preparation for primer and paint application. Affix the overspray protection film with masking tape.
- Always apply plastic sheeting to a dry surface and ensure the logo and "paint this side up" message is legible once unfolded.
- Carefully trim and remove plastic sheeting from areas intended for refinishing and over tape to seal the edges of the plastic sheeting.

3M™ Overspray Protective Sheeting

Final Masking Before Painting

- Degrease the surface using paint company or other recommended VOC-compliant water-based and solvent-based products. Always follow the manufacturer's instructions for surface cleaning instructions.
- Complete any remaining critical edge masking of parts like rubber windshield gaskets and moldings that are not easily removed as part of the repair / refinish process.

3M™ Fine Line Masking Tapes 471

3M™ Trim Masking Tape

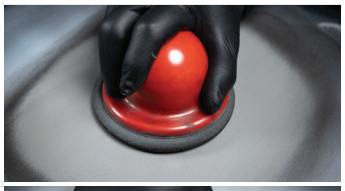
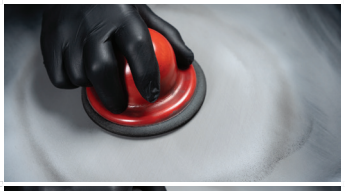
De-masking

- Removal of the masking tapes and film are best done when the car has just left the oven and is still warm.
- Always remove masking tape by pulling in an angle approximately 45 degrees to the surface.
- Tip: Using premium masking tapes have a lower tendency to leave adhesive residue, tear, or sliver

Always follow OEM procedures. For ordering information, contact your 3M Sales Representative or your preferred distributor.

Personal Safety • Respiratory Protection • Hearing Protection • Face Protection • Reusable Workwear • Safety Gloves

Safety First! Always select appropriate personal protective equipment - eyewear, gloves, hearing and respiratory protection for your job and workplace.

Featheredge		• Refine the sand scratches from the previous shaping step using an abrasive disc 150 - 180 grades. Continue to use guide coat to highlight sand scratches and surface imperfections.	 3M™ Cubitron™ II Hookit™ Clean Sanding Abrasive Disc, 6 in. / 150mm, grade 180+  3M™ Dry Guide Coat, 50 gram applicator kit
Final Sand and Inspect		• Complete the final refinement of coarse-grade scratches within the repair area and around the feather edge perimeter using 240 - 320 grade abrasive discs. It is advisable to work with a soft interface pad when sanding curved areas. Continue to use guide coat to highlight sand scratches and surface imperfections.	 3M™ Cubitron™ II Hookit™ Clean Sanding Abrasive Disc, 6 in. / 150mm, grade 320+  3M™ Dry Guide Coat, 50 gram applicator kit
Mask for Primer		• Mask the repair area as necessary. Refer to Primer Masking SOP for specific recommendations.	
Apply Primer		• Apply primer to the repair area following your paint manufacturer's recommendations. Allow to cure.	 3M™ Performance Spray Gun
Apply Dry Guide Coat		• Use guide coat to highlight the texture of the primer.	 3M™ Dry Guide Coat, 50 gram applicator kit
Hand Block Repair		• Using an appropriately sized hand block and 320-grade sanding sheets, level primer-surfacer texture paying attention to body lines, high & low spots, and sand scratches. For best results and the most efficient process always use dust extraction.	 3M™ Cubitron™ II Hookit™ Clean Sanding Sheet Roll, 70mm x 12m (2 3/4" x 40'), grade 320+,  3M™ Hookit™ Dust Extraction Flexible Sanding Block
Reapply Dry Guide Coat		• Use guide coat to highlight the surface of the primer	 3M™ Dry Guide Coat, 50 gram applicator kit
DA Sand Primer		• Remove all directional hand-sanding scratches from previous steps using 400 - 500 abrasive discs attached to a dual-action sander equipped with a soft interface pad.	 3M™ Cubitron™ II Hookit™ Clean Sanding Abrasive Disc, 6 in. / 150mm, grade 400+
Clean the Repair Area		• Degrease the surface using paint company or other recommended VOC-compliant water-based and solvent-based products. Always follow the manufacturer's instructions for surface cleaning instructions.	

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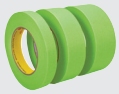
Prepare vehicle

- Vehicle is roughly masked prior to this point in the repair process

3M™ Soft Edge Foam Masking Tape

3M™ Scotch® Transition Tape

3M™ Overspray Protective Sheeting



3M™ Scotch® Masking Tape 233+

Cleaning of the surface

- Degrease the surface using paint company or other recommended VOC-compliant water-based and solvent-based products. Always follow the manufacturer's instructions for surface cleaning instructions.
- Remove surface particulates prior to primer application with a tack cloth

3M™ Dynatron™ Tack Cloth

Mixing of the primer

- To reduce the chance of overmixing, match the appropriate sized cup/liner to your repair.

3M™ PPS™ Series 2.0 Spray Cup System Kit / Large 850ml, Standard 650ml / Midi 400ml, Mini 200ml

Setting up the 3M™ Performance Spray Gun

- To install a new or clean atomizing head, pull the trigger back.
- Confirm the locking collar is in the "+" configuration
- Select the appropriate atomizing head for the repair. With trigger pulled, slide the atomizing head over the fluid needle and push towards the spray gun body.
- Secure the atomizing head by rotating the retainer ring clockwise to the stop, ensuring the retainer ring tabs are locked in the "X" configuration.
- HVLP max inlet pressure is 1.38bar (20psi). Fine Finish Operating Pressure is 2.0bar (29psi).

3M™ Performance Spray Gun

3M™ Performance Gravity HVLP Atomising Heads, 1.2, 1.3, 1.4, 1.6, 1.8, 2.0mm

3M™ Performance Gravity Fine Finish Atomising Heads 1.2, 1.3, 1.4

Apply Primer Surfacer

- Apply the primer surfacer using an "outside-in" method of application, with the first coat being the largest, and successive coats using less space.
- When needed, invert spray gun and linered spray cup to purge air and enable upside down application for edges, rocker panels and wheel arches.
- Always follow paint company recommendations for primer surfacer application technique, flash time, and film thicknesses.

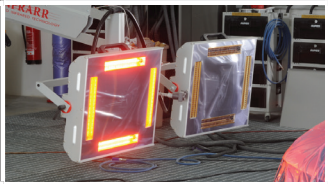
3M™ PPS™ Series 2.0 Midi, 400 ml / 3M™ PPS™ Series 2.0 Mini 200 ml

Cleaning 3M™ Performance Spray Gun

- When finished spraying, disconnect the air line, invert the spray gun, pull the trigger and gently tap the lid and liner on a surface to help break surface tension of liquid and allow it to flow back into the liner.
- After draining the coating, remove the cup and discard.
- Note: Consult paint or solvent Safety Data Sheets (SDS) in addition to local regulations or authorities for proper disposal.
- Before spray gun disassembly, flush appropriate cleaning solvent through the paint passageways of the gun body.
- If using the 3M™ Performance Spray Gun, rotate the locking collar counter clockwise, pull the trigger, and pull the atomizing head away from the gun body. If required, clean the nozzle off the spray gun.
- Clean the needle with solvent and a suitable lint free cloth.
- Replace the clean nozzle onto the clean spray gun for storage.

3M™ High Power Spray Gun Cleaner

Forced drying



- If forced drying is used, please follow recommendations of your paint and equipment manufacturers.

Always follow OEM procedures. For ordering information, contact your 3M Sales Representative or your preferred distributor.

Personal Safety • Respiratory Protection • Hearing Protection • Face Protection • Reusable Workwear • Safety Gloves

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Surface Prep

- Cover all bare metal areas with a quality urethane or epoxy two-part primer. Allow to cure per manufacturers recommendations. Scuff primer in seam sealer application areas using a non-woven hand pad. Blow off with clean, dry air.

  3M suggests that all seam sealers be applied over a quality urethane or epoxy two-part primer.

  Be sure to use the seam sealer that meets your performance needs and meets OEM recommendations.

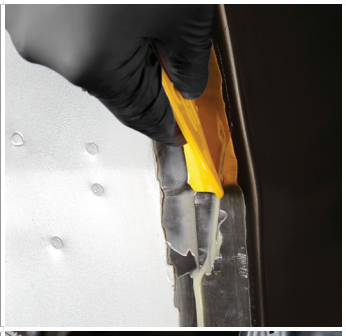
3M™ Scotch-Brite™ Hand Pad

Clean

- Degrease the surface using paint company or other recommended VOC compliant water-based and solvent-based products. Always follow the manufacturer's instructions for surface cleaning instructions.

  DO NOT spray or saturate seams with cleaner.

Tight Coat



- Apply thin bead of sealer to the desired joint. Tool sealer into seam ensuring proper sealing of the joint prior to creating the desired appearance or texture.

3M™ Urethane Seam Sealer (various colors & packages available)
3M™ MSP Seam Sealer (various colors & packages available)
3M™ Two-Part Seam Sealers (Various colors and viscosities available)

OEM Replication

- Apply seam sealer over the prepared seam using the appropriate tool to recreate the OEM appearance.

  NOTE: It is common to use unique tools, spreaders and brushes in combination with these applicator tips in order to creatively recreate the OEM look.

3M™ Performance Pneumatic Applicator with Regulator

3M™ Flexible Package Applicator

3M™ Single Cartridge Applicator Gun with Regulator

OEM Replication

- Use the air supply kit and appropriate sprayable tip to apply liquid applied sound deadening (LASD) to match existing OEM seam sealer textures.

  NOTE: Before applying on a vehicle, adjust pattern and texture on a disposable sheet or panel. Start by opening the valve on the air supply kit and test the pattern to ensure it matches the desired pattern.

3M™ OEM Match Tips and Air Supply Kit
3M™ OEM Match Sprayable 1K Tip 33991
3M™ OEM Match Sprayable 2K Tip 33996
3M™ OEM Match Wing Nozzle 1K Tip 33992
3M™ OEM Match Wing Nozzle 2K Tip 33997
3M™ OEM Match Wide Stream 1K Tip 33993
3M™ OEM Match Wide Stream 2K Tip 33998
3M™ OEM Match Ripple Tip 1K Tip 33994
3M™ OEM Match Adjustable Ripple Tip 33995

3M™ OEM Match Air Supply Kit 33999

Always follow OEM procedures. For ordering information, contact your 3M Sales Representative or your preferred distributor.

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Prerequisite for best results & quality

- Apply booth protection material in order to keep a clean environment in the spray booth.
- Use appropriate supplied air or organic vapor & charcoal respiratory protection equipment as per your facilities safety assessment.
- Wear clean protective coveralls to protect the operator and get a cleaner job.


3M™ Protective Coverall 4535


3M™ Dirt Trap Protection Material


3M™ Protective cut resistant glove

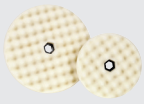

3M™ Professional Series Half Facepiece Paint Spray Packout


3M™ Versaflo™ Powered Air Purifying Respirator Painters Kit

Match Color

- If needed for an optimal color match, restore the original surface condition using a rotary polisher and rubbing compound or a random orbital system.
- If you are using the latest spectrophotometer technology, it is recommended to do an additional polishing step to ensure a perfect finish.
- Tip: The creation of a personal color library will make life easier for you in the future as you can reuse your own sprayout cards


3M™ Perfect-It™ Rubbing Compound

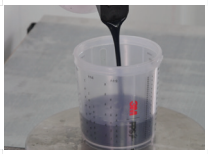

3M™ Perfect-It™ Foam Compounding Pad


3M™ Perfect-It™ Quick Connect Adaptor


3M™ Perfect-It™ Random Orbital Compound


3M™ Perfect-It™ Random Orbital Foam Compounding Pad

Mixing of coatings



- To reduce the chance of overmixing, match the appropriate sized cup/liner to your repair.


3M™ PPS™ Series 2.0 Spray Cup System Kit / Large 850ml, Standard 650ml / Midi 400ml, Mini 200ml


3M™ PPS™ Lid & Liner Dispensers

Setting up the 3M™ Performance Spray Gun

- To install a new or clean atomizing head, pull the trigger back.
- Confirm the locking collar is in the "+" configuration.
- Select the appropriate atomizing head for the repair. With trigger pulled, slide the atomizing head over the fluid needle and push towards the spray gun body.
- Secure the atomizing head by rotating the retainer ring clockwise to the stop, ensuring the retainer ring tabs are locked in the "X" configuration.
- HVLP max inlet pressure 1.38bar (20psi) Fine Finish Operating Pressure 2.0bar (29psi)


3M™ Performance Spray Gun

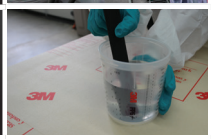

3M™ Performance Gravity HVLP Atomising Heads , 1.2, 1.3, 1.4, 1.6, 1.8, 2.0mm


3M™ Performance Gravity Fine Finish Atomising Heads 1.2, 1.3, 1.4mm

Coating Application

- Degrease the surface using paint company or other recommended VOC-compliant water-based and solvent-based products. Always follow the manufacturer's instructions for surface cleaning instructions.
- Remove surface particulates prior to paint or basecoat application with a tack cloth.
- Always follow paint company recommendations regarding the base coat application process.
- When finished spraying, disconnect the air line, invert the spray gun, pull the trigger and gently tap the lid and liner on a surface to help break surface tension of liquid and allow it to flow back into the liner.

Mixing of clear coat



- Different sizes of disposable cups are available for the most common size repairs in your shop.
- Note: Modern clear coat technology should be mixed on demand, due to short pot life! Select the right size spray cups for your needs, reducing the chance of over-applying or wasting clear coat.

Clear Coat Application

- Always follow paint company recommendations regarding clear coat application process & coating thickness.
- Disposable cup systems reduce cleaning work considerably and lowers your solvent consumption.
- Tip: Consult paint or solvent Safety Data Sheets (SDS) in addition to local regulations or authorities for safe use and proper disposal.


3M™ PPS™ Series 2.0 Spray Cup System

Cleaning 3M™ Performance Spray Gun

- After draining the coating, remove the cup and discard.
- Note: Consult paint or solvent Safety Data Sheets (SDS) in addition to local regulations or authorities for proper disposal.
- Before spray gun disassembly, flush appropriate cleaning solvent through the paint passageways of the gun body.
- If using the 3M™ Performance Spray Gun, rotate the locking collar counter clockwise, pull the trigger, and pull the atomizing head away from the gun body. If required, clean the nozzle off the spray gun.
- Clean the needle with solvent and a suitable lint free cloth.
- Replace the clean nozzle onto the clean spray gun for storage.


3M™ High Power Spray Gun Cleaner

Forced drying

- If forced drying is used, please follow recommendations of your paint and equipment manufacturers.

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Personal Safety

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Sanding Spot defects (dust nibs)

- Denib with grade 1500-2000 abrasive discs on a 3" / 75mm random orbital sander.

3M™ Hookit™ Purple Finishing Film Abrasives Discs, 3" / 75mm

3M™ Precision Random Orbital Sander, 75 mm (3 in)

- Refine scratches with grade 3000 foam abrasive disc on a 3" / 75mm random orbital sander. Complete this step damp with water and sand each area 4-6 passes
- **OPTIONAL** - Refine scratches with grade 8000 foam abrasive disc on a 3" / 75mm random orbital sander. Complete this step damp with water and sand each area 4-6 passes.

3M™ Trizact™ Hookit™ Foam Disc 3000, 3" / 75mm

3M™ Trizact™ Hookit™ Foam Disc 8000, 3" / 75mm

Sanding Area defects (orange peel, runs)

- Sand the area with grade 1500 - 2000 abrasive discs on a 6" / 150mm random orbital sander.

3M™ Hookit™ Purple Finishing Film Abrasives Discs, 6" / 150mm

3M™ Precision Random Orbital Sander, 150 mm (6 in)

3M™ Electric Random Orbital Sander

3M™ Interface Pad

- Refine scratches with grade 3000 foam abrasive disc on a 6" / 150mm random orbital sander. Complete this step damp with water and sand each area 4-6 passes
- **OPTIONAL** - Refine scratches with grade 8000 foam abrasive disc on a 6" / 150mm random orbital sander. Complete this step damp with water and sand each area 4-6 passes.

3M™ Trizact™ Hookit™ Foam Disc 3000, 6" / 150mm

3M™ Trizact™ Hookit™ Foam 8000, 6" / 150mm

1 polishing step – removal of the sanding scratches

- Add a small amount of finishing material onto the vehicle surface.
- Using medium pressure on a rotary polisher, polish the surface in an overlapping pattern at 1200-2000 RPM.
- Keep the pad as flat as possible to avoid excessive swirls and maintain control of the polisher. Reduce pressure towards the end of this step to refine the finish and enable an easy cleanup.
- Note: The coating hardness and temperature will likely require RPM and pressure adjustments for best results.

3M™ Perfect-It™ 1-Step Finishing Material

3M™ Perfect-It™ Quick Connect Adaptor

3M™ Perfect-It™ 1-Step Foam Pad 8" / 200mm Quick Connect (other sizes exist)

3M™ Microfiber Cloth

Finish Inspection

- If sanding scratches from the previous polishing step are still visible after cleaning and inspecting the surface, repeat the previous polishing step until all scratches are removed.

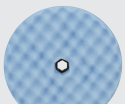
3M™ Inspection Spray

2nd polishing step – removal of micro swirls

OPTIONAL STEP

- For critical colors (very dark or black) - remove the swirl marks / holograms with ultrafine machine polish used with a blue polishing pad.
- Polish with reduced speed – moving in an overlapping pattern covering the whole area.
- Wipe residual polish away with a clean and dry detailing cloth.
- Tip: Always keep the polishing foam wet (using polish), as this delivers a more even coat of polish on the surface and will prevent the generation of the micro scratches from a dry pad.

3M™ Perfect-It™ Ultrafine Machine Polish



3M™ Perfect-it™ Ultrafine Quick Connect Machine Polishing Pad, 8" / 200mm (other sizes available)

3M™ Microfiber Cloth

Always follow OEM procedures. For ordering information, contact your 3M Sales Representative or your preferred distributor.

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Sanding Spot defects (like dust nibs)

- Denib with grade 1500-2000 abrasive discs on a 3" / 75mm random orbital sander.

3M™ Hookit™ Purple Finishing Film Abrasives Discs, 3" / 75mm

3M™ Precision Random Orbital Sander, 75 mm (3 in)

- Refine scratches with grade 3000 foam abrasive disc on a 3" / 75mm random orbital sander. Complete this step damp with water and sand each area 4-6 passes.
- **OPTIONAL** - Refine scratches with grade 8000 foam abrasive disc on a 3" / 75mm random orbital sander. Complete this step damp with water and sand each area 4-6 passes.

3M™ Trizact™ Hookit™ Foam Disc 3000, 3" / 75mm

3M™ Trizact™ Hookit™ Foam Disc 8000, 3" / 75mm

Sanding Area defects (orange peel, runners)

- Sand the area with grade 1500 - 2000 abrasive discs on a 6" / 150mm random orbital sander.

3M™ Hookit™ Purple Finishing Film Abrasives Discs, 6" / 150mm

3M™ Precision Random Orbital Sander, 150 mm (6 in)

3M™ Electric Random Orbital Sander

3M™ Interface Pad

- Refine scratches with grade 3000 foam abrasive disc on a 6" / 150mm random orbital sander. Complete this step damp with water and sand each area 4-6 passes
- **OPTIONAL** - Refine scratches with grade 8000 foam abrasive disc on a 6" / 150mm random orbital sander. Complete this step damp with water and sand each area 4-6 passes.

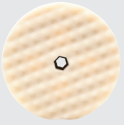
3M™ Trizact™ Hookit™ Foam Disc 3000, 6" / 150mm

3M™ Trizact™ Hookit™ Foam 8000, 6" / 150mm

Sand Scratch Removal

- Add a small amount of rubbing compound onto the vehicle surface.
- Using medium pressure on a rotary polisher, compound the surface in an overlapping pattern at 1200-2000 RPM.
- Keep the pad as flat as possible to avoid excessive swirls and maintain control of the polisher. Reduce pressure towards the end of this step to refine the finish and enable an easy cleanup.
- Note: The coating hardness and temperature will likely require RPM and pressure adjustments for best results.

3M™ Perfect-It™ Rubbing Compound



3M™ Perfect-It™ Compounding Foam Pad 8" / 200mm (other style / sizes exist)

3M™ Perfect-It™ Compounding Wool Pad, 9" / 230mm (other style / sizes exist)

3M™ Perfect-It™ Quick Connect Adaptor

Finish Inspection

- If sanding scratches from the previous compounding step are still visible after cleaning and inspecting the surface, repeat the previous compounding step until all scratches are removed.

3M™ Inspection Spray

Polishing step – removal of compounding-swirls

- Add a small amount of machine polish onto the vehicle surface.
- Using medium pressure on a rotary polisher, polish the surface in an overlapping pattern at 1200-2000 RPM.
- Keep the pad as flat as possible to avoid excessive swirls and maintain control of the polisher. Reduce pressure towards the end of this step to refine the finish and enable an easy cleanup.
- Wipe off any excess polish and inspect the area - most colors are now defect free.

3M™ Perfect-It™ Machine Polish

3M™ Gray foam pad

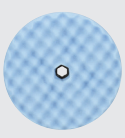
3M™ Microfiber Cloth

Final polishing step – removal of micro-swirls

OPTIONAL STEP

- For critical colors (very dark or black) - remove the swirl marks / holograms with ultrafine machine polish used with a fine polishing pad.
- Polish with reduced speed – moving in an overlapping pattern covering the whole area
- Wipe residual polish away with a clean and dry detailing cloth.
- Tip: Always keep the polishing foam wet (using polish), as this delivers a more even coat of polish on the surface and will prevent the generation of the micro scratches from a dry pad

3M™ Perfect-It™ Ultrafine Machine Polish



3M™ Perfect-It™ Ultrafine Machine Polishing Pad

3M™ Microfiber Cloth

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Sanding Spot defects (dust nibs)

- Denib with grade 1500-2000 abrasive discs on a 3" / 75mm random orbital sander.

3M™ Hookit™ Purple Finishing Film Abrasives Discs, 3" / 75mm

3M™ Precision Random Orbital Sander, 75 mm (3 in)

- Refine scratches with grade 3000 foam abrasive disc on a 3" / 75mm random orbital sander. Complete this step damp with water and sand each area 4-6 passes
- **OPTIONAL** - Refine scratches with grade 8000 foam abrasive disc on a 3" / 75mm random orbital sander. Complete this step damp with water and sand each area 4-6 passes.

3M™ Trizact™ Hookit™ Foam Disc 3000, 3" / 75mm

3M™ Trizact™ Hookit™ Foam Disc 8000, 3" / 75mm

Sanding Area defects (orange peel, runs)

- Sand the area with grade 1500 - 2000 abrasive discs on a 6" / 150mm random orbital sander.

3M™ Hookit™ Purple Finishing Film Abrasives Discs, 6" / 150mm

3M™ Precision Random Orbital Sander, 150 mm (6 in)

3M™ Electric Random Orbital Sander

3M™ Interface Pad

- Refine scratches with grade 3000 foam abrasive disc on a 6" / 150mm random orbital sander. Complete this step damp with water and sand each area 4-6 passes
- **OPTIONAL** - Refine scratches with grade 8000 foam abrasive disc on a 6" / 150mm random orbital sander. Complete this step damp with water and sand each area 4-6 passes.

3M™ Trizact™ Hookit™ Foam Disc 3000, 6" / 150mm

3M™ Trizact™ Hookit™ Foam 8000, 6" / 150mm

Compound

- Break in a new pad by applying compound in a circular motion using the cap from the bottle to help spread a small amount of compound throughout the pad. Start at speed setting 1 for a few seconds to ensure the pad is loaded evenly with compound before starting the task.
- Set the pad flat on the surface and start at speed setting 4 to spread compound, increasing speed as needed. Apply medium down pressure while moving the tool in a north/south, east/west, pattern to remove scratches/defects.
- For best results, compound within a 2 ft x 2 ft area to ensure adequate scratch/defect removal.
- Use a microfiber cloth to remove the residual film from the surface. If scratches/defects remain, apply 4 drops of compound to the dampened pad and continue compounding.
- To ensure all sand scratches have been completely removed, inspect the surface by spraying with inspection spray and wipe with a clean microfiber cloth.
- Note: Clean pads often with a conditioning brush for optimal performance.

3M™ Perfect-It™ Random Orbital Coarse Wool Compounding Pad, 5" / 130 mm (additional sizes and styles available)

3M™ Perfect-It™ Random Orbital Compound

3M™ Conditioning Brush

3M™ Perfect-It™ Random Orbital Polisher, 15 mm (21mm tool also available)

3M™ Inspection Spray

3M™ Microfiber Cloth

Polish

- Break in a new pad by applying polish in a circular motion using the cap from the bottle to help spread a small amount of polish throughout the pad. Start at speed setting 1 for a few seconds to ensure the pad is loaded evenly with polish before starting the task.
- Set the pad flat on the surface and start at speed setting 4 to spread polish. Reduce speed as necessary. Apply minimal down pressure in a north/south, east/west, crosshatch pattern to remove swirls/defects.
- Polish small areas at time. Approximately a 2 ft x 2 ft area is recommended to ensure adequate swirl/defect removal.
- Use a microfiber cloth to remove the residual film from the surface. If swirls/defects remain, apply 4 drops of polish to the pad and continue polishing.

3M™ Perfect-It™ Random Orbital Polish

3M™ Perfect-It™ Random Orbital Polishing Pad 5" / 130 mm (6" also available for 21mm machine)

3M™ Perfect-It™ Random Orbital Polisher, 15 mm (21mm tool also available)

3M™ Microfiber Cloth

3M™ Conditioning Brush

Always follow OEM procedures. For ordering information, contact your 3M Sales Representative or your preferred distributor.

Personal Safety • Respiratory Protection • Hearing Protection • Face Protection • Reusable Workwear • Safety Gloves

Safety First! Always select appropriate personal protective equipment - eyewear, gloves, hearing and respiratory protection for your job and workplace.

Pre- Cleaning		• Degrease the surface using paint company or other recommended VOC-compliant water-based and solvent-based products. Always follow the manufacturer's instructions for surface cleaning instructions.
Shake Aerosol		• Agitate the aerosol can thoroughly — one minute of shaking is required to mix the components prior to use. Attach the desired accessory extension and actuator if needed to access the areas inside the panel enclosure.
Application with Standard Actuator		• If applying to new panels prior to installation, use the standard actuator. Spray up to three (3) coats to ensure full coverage and maximize protection
Mark Extension Wand		• If using the 360° accessory wand, mark the extension about 2 cm (1") from the end as a reference. This will help reduce overspray as you remove the wand from the cavity during application
Insert Wand into Panel opening		• Insert the wand to the farthest point. Begin spraying as you remove the wand until the reference mark comes into view. Repeat up to three (3) times to ensure complete coverage and maximize corrosion protection.
Clean Accessory Nozzle		• After application, invert the can and clear the material from the accessory wand and nozzle by depressing the actuator. To help prevent a buildup of cavity wax inside the wand or actuator, attach the actuator to a can of high power spray gun cleaner and rinse clean.
Remove Excess Cavity Wax		• Re-assemble the associated parts and wipe off any excess cavity wax using a VOC compliant surface cleaner.

3M™ Cavity Wax Plus

3M™ Cavity Wax Plus Applicator Wand Kit

3M™ High Power Spray Gun Cleaner

Always follow OEM procedures. For ordering information, contact your 3M Sales Representative or your preferred distributor.

Aluminum Repair Procedures Frequently Asked Questions

Questions and Answers

1	**Do I need special sandpaper?** No. You don't need special sandpaper, but you do need dedicated sandpaper to avoid cross-contamination between steel and aluminum surfaces. Commonly accepted repair practices for steel repairs will translate to aluminum specific repairs. Traditional 3M Abrasives are well suited for aluminum repairs, but abrasives and tools previously used on steel must be kept away from aluminum repair areas and vice versa.
2	**What adhesives do we use?** Commonly accepted repair practices and products for steel repairs will translate to aluminum specific repairs. 3M Adhesives will work on aluminum, but it's always a good idea to follow OEM repair recommendations for preferred products and processes.
3	**What seam sealers are best?** Commonly accepted repair practices and products for steel repairs will translate to aluminum specific repairs.
4	**Are the 3M body fillers and glazes going to stick?** Yes. 3M premium body fillers and glazes are applicable to aluminum repairs.
5	**Do I need to take special care to help maintain proper air quality within the work area?** Yes. Follow all OSHA guidelines and use approved vacuum system for your specific requirements when repairing aluminum.
6	**How long can bare aluminum be exposed before corrosion begins?** Oxidation will begin once aluminum is exposed to atmosphere. Oxidation should be removed throughout the repair by re-abrading and cleaning the surface after each hour of exposure.
7	**Do 3M panel bonding adhesives still retain lifetime warranties with aluminum?** Yes, provided all proper procedures are followed.
8	**Do I need special air tools?** It is highly recommended to use separate air tools dedicated to aluminum repairs OR tools that have been thoroughly cleaned with compressed air to remove any steel particles. Use caution not to cross contaminate work surfaces.
9	**Do I need special tools or clamps?** Yes. Use separate hand tools designed for aluminum repairs (e.g., hammers, dolleys, clamps, files, drill bits, saw blades, etc.). These tools are usually either non-metallic, or have a highly polished surface to ensure that steel particles will not transfer while being used.
10	**What aluminum welder do you recommend?** Welder technology has improved greatly in the last few years for aluminum. There are many great models, but it's best that you explore models that meet OEM recommendations for the types of vehicles that you work on.
11	**Can 3M coatings be applied direct to aluminum (e.g., 3M™ No Cleanup Rocker Gard™ Coating, undercoating, etc.)?** Commonly accepted repair practices and products for steel repairs will translate to aluminum specific repairs. Direct to metal coatings may be applied as such.
12	**Can I use the same piece of abrasive on steel and aluminum substrates?** No. It is very important to use a new piece of abrasive and thoroughly clean tools or use separate tools when going between work surfaces to avoid cross contamination of work surfaces. Contamination of one substrate from another causes galvanic corrosion and will eventually lead to paint failure.

Visit 3MCollision.com for more SOPs and videos

	Corrosion Prevention and Protection	Surface Preparation	Metal Working
Personal Protective Equipment	Wear latex, nitrile or fabric gloves dedicated to aluminum repair to prevent surface contamination from skin contact. See #1 below. **Please note that you need to read and understand each product label and SDS for important health and safety information regarding PPE. This section relates only to not cross-contaminating surfaces, not to the full PPE gear required for each type of repair.**		
Shop Environment	Use segregated repair areas for aluminum repairs according to OEM recommendation and follow all OSHA guidelines.		
Hand Tools	Use separate hand tools designed for aluminum repairs (e.g., hammers, dolleys, clamps, files, drill bits, saw blades, etc.).		
	Heat Usage: Heat is recommended when straightening aluminum to avoid over stretching and cracking of the panel. Aluminum has a much lower melting point than steel and care must be taken to avoid permanent damage. Generally, a propane torch is sufficient to reach the 400°F area. It's best to follow OEM recommendations for specific temperatures.		
Pneumatic Tools	Use air tools dedicated to aluminum repairs OR tools that have been thoroughly cleaned with compressed air to remove any steel particles. See #2 below.		
Abrasives	Use separate piece of abrasive on dissimilar substrates. See #2 below.	Do not use grinding or sanding abrasives coarser than grade 80.	
Adhesives	Apply and spread adhesives to cover all prepared metal surfaces. Use wipes dedicated to aluminum substrates. Ensure proper squeeze out and tooling of squeeze out to cover all metal surfaces.	Prepare bonding surfaces using grade 80 abrasive or equivalent Scotch-Brite™ abrasive grade. See #4 below.	Use caution when heating the panel near bonded joints. See #5 below.
	Heat Usage: Replace: Use heat to de-bond observing OEM temperature limits. **Repair:** Use caution when applying heat near bonded joints to avoid bond failures. See #3 below.		
Sealers	Follow standard surface preparation procedures. Use wipes dedicated to aluminum substrates. Apply 3M™ Cavity Wax Plus to panel interior prior to final assembly.	Follow product use recommendations for DTM or non-DTM seam sealers.	—
Coatings	Follow standard surface preparation procedures. Use wipes dedicated to aluminum substrates. Apply 3M™ Cavity Wax Plus to panel interior prior to final assembly.	Remove loose debris, abrade and properly clean prior to coating application.	Apply 3M™ Cavity Wax Plus to panel interior prior to final assembly.
Filler & Glaze	Follow standard surface preparation procedures. Use wipes dedicated to aluminum substrates. Apply filler or glaze within 1 hour. See #4 below.	Prepare surface using grade 80 abrasive or equivalent Scotch-Brite graded abrasives. See #4 below.	
Visit 3MCollision.com for more SOPs and videos			

Note: Statements and recommendations within this matrix should be considered general practices. Follow specific OEM recommendations, when they exist.

1	2	3	4	5
Skin contact with open substrates can leave contamination that leads to corrosion.	Cleaning tools thoroughly and using separate abrasive will help prevent the possibility of galvanic corrosion caused by incidental contact of dissimilar metals.	To de-bond 3M™ Panel Bonding Adhesive, panel must be heated to above 400°F.	Oxidation forms immediately on exposed aluminum. Accumulated oxidation is detrimental to bond strength. After 1 hour of exposure, re-abrade aluminum surface to maximize bond strength.	Panel bond adhesive degradation begins at 300°F or higher. Use caution and heat indicators to monitor panel temperature when applying heat near bonded joints.

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