



TOWABLE WINDSHIELD (FRONT CAP)

OEM INSTALLATION MANUAL

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Introduction

This document outlines the common procedures for replacing motorized and 5th Wheel cap, or travel trailer cap, single and split windshields.

Note: Images used in this document are for reference only when assembling, installing and/or operating this product. Actual appearance of provided and/or purchased parts and assemblies may differ.

Additional information about this product can be obtained from Ici1.com/support or by downloading the free LippertNOW app. The app is available on Apple App Store® for iPhone® and iPad® and also on Google Play™ for Android™ users. Apple App Store®, iPhone®, and iPad® are registered trademarks of Apple Inc. Google Play™ and Android™ are trademarks of Google Inc.

Safety

Read and understand all instructions before installing or operating this product. Adhere to all safety labels.

This manual provides general instructions. Many variables can change the circumstances of the instructions, i.e., the degree of difficulty, operation and ability of the individual performing the instructions. This manual cannot begin to plot out instructions for every possibility, but provides the general instructions, as necessary, for effectively interfacing with the device, product or system. Failure to correctly follow the provided instructions may result in death, serious personal injury, severe product and/or property damage, including voiding of the LCI limited warranty.

WARNING

The “WARNING” symbol above is a sign that a procedure has a safety risk involved and may cause death or serious personal injury if not performed safely and within the parameters set forth in this manual.

WARNING

BETAPRIME™ 5504G is a hazardous material that is flammable and acutely toxic. BETAPRIME™ 5504G can cause irritation to unprotected skin, eyes and lungs. Use appropriate personal protective equipment (PPE), such as chemical resistant gloves, eye and splash protection. Only use BETAPRIME™ 5504G in well-ventilated areas. Keep container tightly closed. Do NOT store or place container near heat, sparks, open flames or hot surfaces.

WARNING

BETASEAL™ EXPRESS is a hazardous urethane adhesive that can cause irritation to sensitive, unprotected skin and organs. Use appropriate personal protective equipment (PPE), such as chemical resistant gloves, eye and splash protection. Only use BETASEAL™ EXPRESS in well-ventilated areas.

WARNING

BETASEAL™ U-428 Plus is a hazardous urethane adhesive that can cause irritation to sensitive, unprotected skin and organs. Use appropriate personal protective equipment (PPE), such as chemical resistant gloves, eye and splash protection. Only use BETASEAL™ U-428 Plus in well-ventilated areas.

WARNING

BETASEAL™ U-400 HMNC is a hazardous urethane adhesive that can cause irritation to sensitive, unprotected skin and organs. Use appropriate personal protective equipment (PPE), such as chemical resistant gloves, eye and splash protection. Only use BETASEAL™ U-400 HMNC in well-ventilated areas.

CAUTION

The “CAUTION” symbol above is a sign that a safety risk is involved and may cause personal injury and/or product or property damage if not safely adhered to and within the parameters set forth in this manual.

CAUTION

BETACLEAN™ GC-800 is a non-hazardous chemical cleaner and lubricant that can cause irritation to sensitive, unprotected skin and organs. Use appropriate personal protective equipment (PPE), such as chemical resistant gloves, eye and splash protection. Only use Betaclean GC-800 in well-ventilated areas.

CAUTION

Sikaflex®-295 UV is a non-hazardous urethane adhesive that can cause irritation to sensitive, unprotected skin and organs. Use appropriate personal protective equipment (PPE), such as chemical resistant gloves, eye and splash protection. Only use Sikaflex-295 UV in well-ventilated areas.

Urethane Procedure - Front Cap Windshield

Resources Required

- 1 - 2 persons, depending on task
- Nitrile gloves
- Sharp cutting tool
- Install stick
- SCRUBS In-a-Bucket® hand cleaner towels
- Lint-free wipes
- Setting blocks
- Painters tape
- Pin-striping tape (optional)
- Suction cups
- BETACLEAN™ GC-800 Glass Cleaner/Cut-Out Lubricant
- BETAPRIME™ 5504G All-in-One Primer
 - Single Application Primer 5504G (2 minute cure time)
 - All-in-One Primer 5504G (2 minute cure time)
- Urethane
 - BETASEAL™ EXPRESS (2 to 4 minutes working time [Flash Time] depending on temperature and humidity)
 - BETASEAL™ U-400 HMNC (4 to 6 minutes working time [Flash Time] depending on temperature and humidity)
 - BETASEAL™ U-428 Plus (6 to 8 minutes working time [Flash Time] depending on temperature and humidity)
 - Sikaflex®-295 UV adhesive and sealant (6 to 8 minutes working time [Flash Time] depending on temperature and humidity)

Preparation of Front Cap Windshield

Prepare the windshield first before prepping the cap. This will allow time for the primer to cure, which is approximately two minutes. Prepare the new windshield for installation as follows:

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1. While wearing nitrile gloves, apply BETACLEAN GC-800 Glass Cleaner/Cut-Out Lubricant to the inside of the windshield glass areas (Fig. 1) that will be primed.

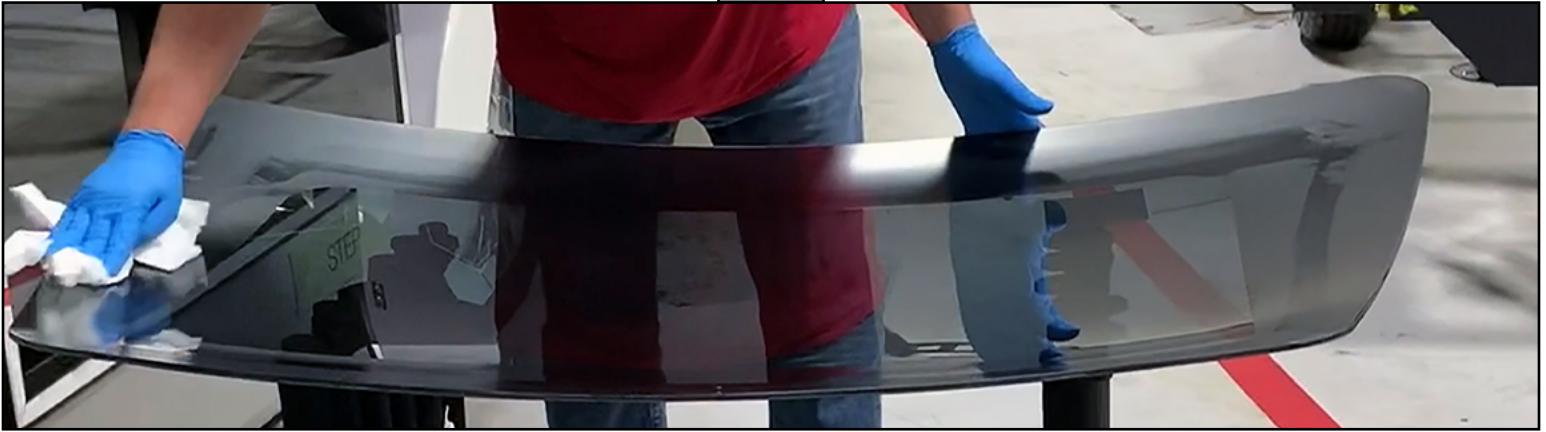
Note: The cleaner will remove any impurities that might affect urethane application and adhesion.

Fig. 1



2. Use lint-free wipes to wipe up the cleaner (Fig. 2) from the prepped areas.

Fig. 2

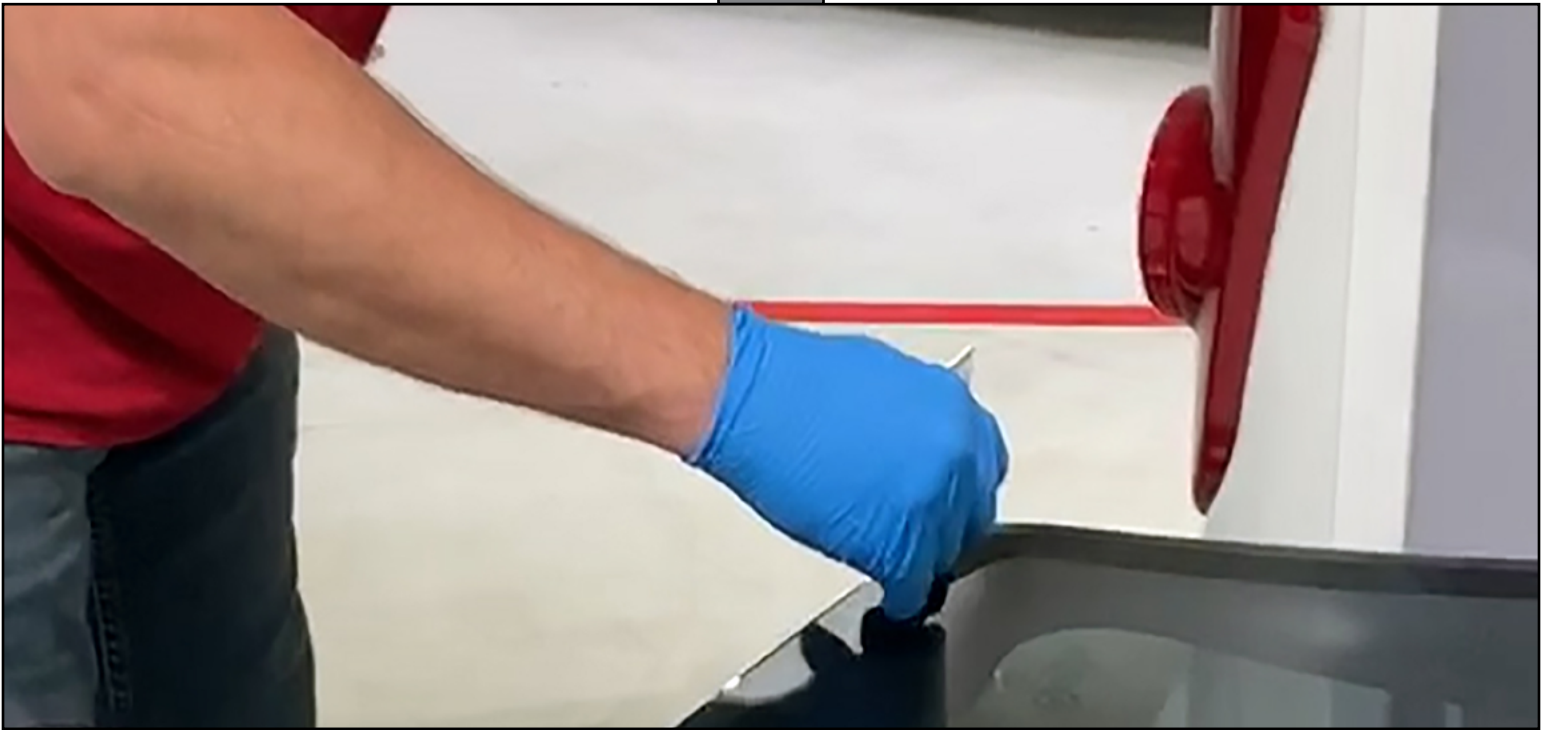


⚠ WARNING

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3. Shake the BETAPRIME Single Application Primer 5504G for approximately 30 seconds to reconstitute the mixture before applying to the windshield.
4. Apply a continuous layer of Primer 5504G 1/8"-1/4" from the outer edge of the windshield (Fig. 3).

Fig. 3



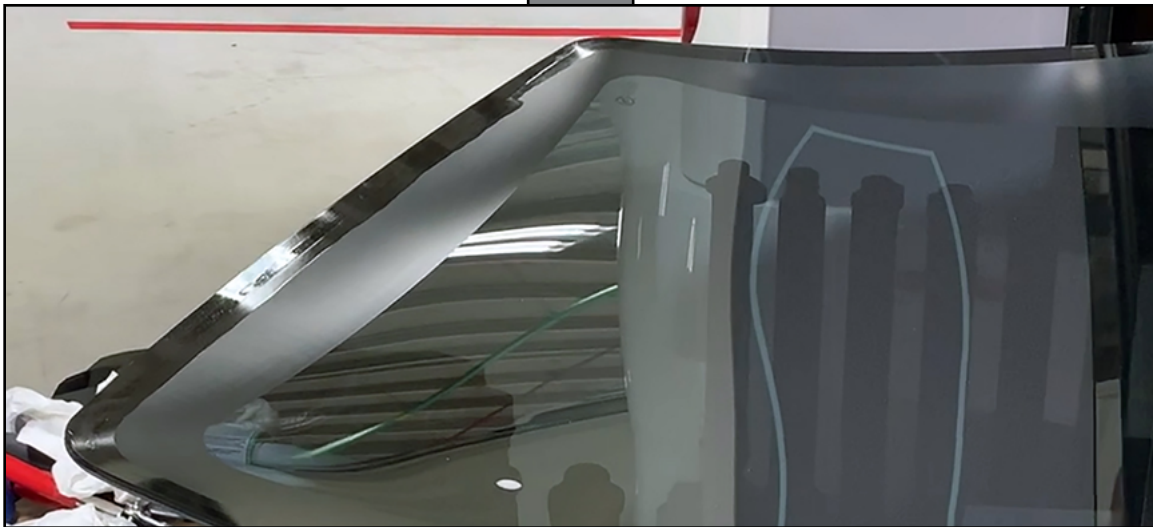
5. Repeat primer application to fill in the gap between the edge of the windshield and the first layer of primer (Fig. 4).

Fig. 4



6. The two primer applications will provide a consistent, one-inch wide area (Fig. 5) for urethane application.

Fig. 5



Preparation Front Cap

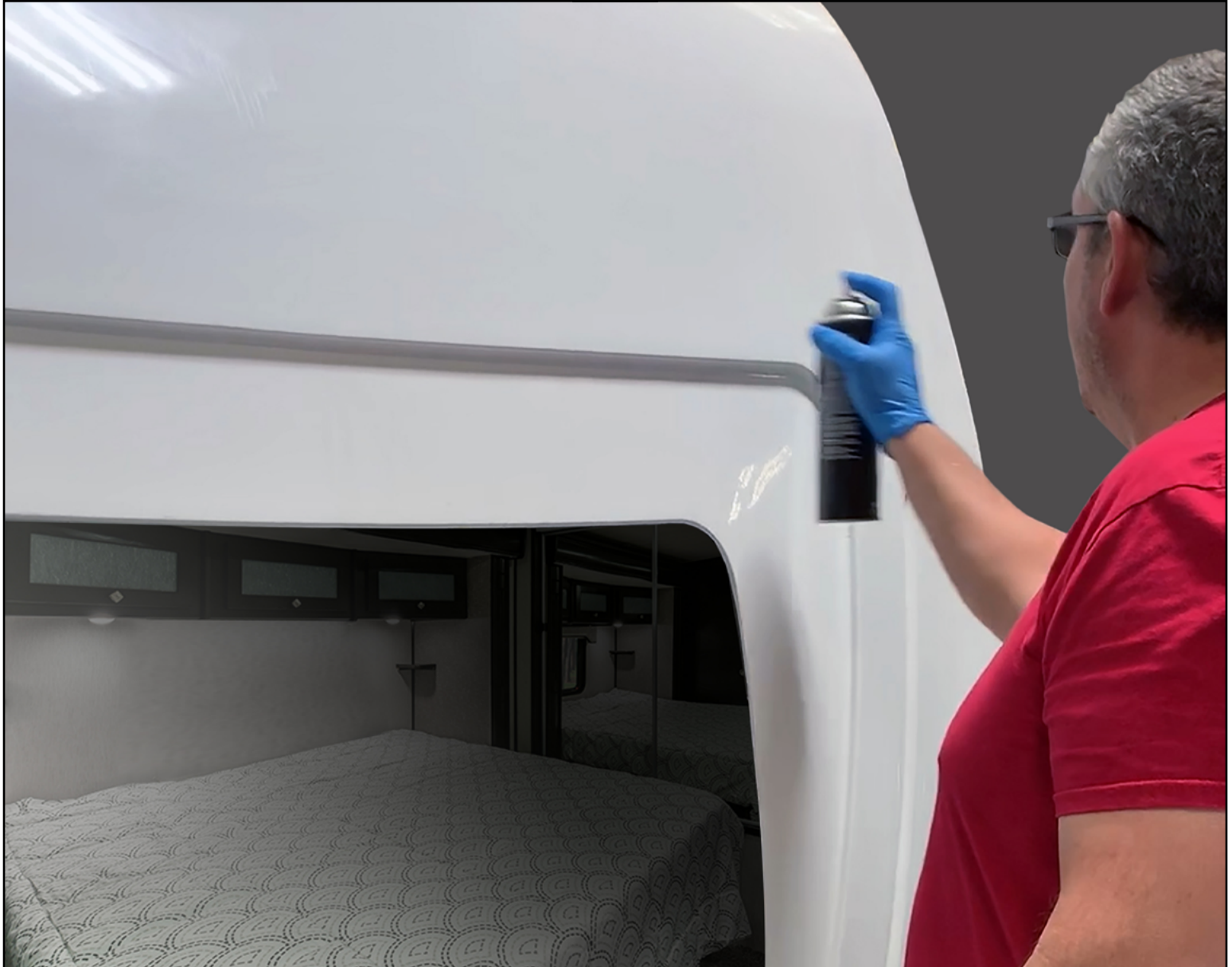
Prepare the cap's front windshield mounting area for windshield installation as follows:

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1. While wearing nitrile gloves, apply GC-800 Glass Cleaner/Cut-Out Lubricant to the cap window opening (Fig. 6) to remove any impurities that might negatively affect urethane adhesive installation.

Fig. 6



2. Prepare areas that will be primed.
3. Wipe up GC-800 Glass Cleaner/Cut-Out Lubricant from prepped areas with lint-free wipes (Fig. 7).

Fig. 7



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4. Shake the Single Application Primer 5504G for approximately 30 seconds to reconstitute the mixture before applying to cap.
5. Apply a continuous layer of Primer GC 5504G 1/8"-1/4" from the inner edge of the cap's windshield recess (Fig. 8).
6. Allow Primer to cure for approximately two minutes.

Fig. 8



7. Cut tip of urethane tube at an angle (Fig. 9) that will accommodate ease of urethane application.

Fig. 9



8. Cut a V-shape notch (Fig. 10) into the longer portion of the previous angle-cut on the urethane tube nozzle.

Fig. 10



9. Puncture the sealed end of the urethane tube to open it.

Note: Always start with a full tube of urethane.

10. Install prepped nozzle onto the opened end of the urethane tube.

Installation of Front Cap Windshield

Urethane adhesive BETASEAL EXPRESS or BETASEAL U-428 Plus may be used to install the windshield to the cap. Since both urethane adhesives share the same safety labels, use the safety label for BETASEAL EXPRESS throughout the remainder of this procedure.

⚠ WARNING

BETASEAL™ EXPRESS is a hazardous urethane adhesive that can cause irritation to sensitive, unprotected skin and organs. Use appropriate personal protective equipment (PPE), such as chemical resistant gloves, eye and splash protection. Only use BETASEAL™ EXPRESS in well-ventilated areas.

1. Apply a test bead of BETASEAL EXPRESS or BETASEAL U-428 Plus urethane adhesive onto a disposable piece of material (Fig. 11) so the equipment can be operationally verified and the urethane bead can be inspected for acceptable shape (Fig. 12) and integrity.

Fig. 11



Fig. 12



2. After windshield and cap have been prepped, strategically place enough painter's tape around the cap's window mounting area (Fig. 13) to assist with the windshield installation and adhesive curing process.

Note: The amount of tape used depends on the size, weight and shape of the window being installed.

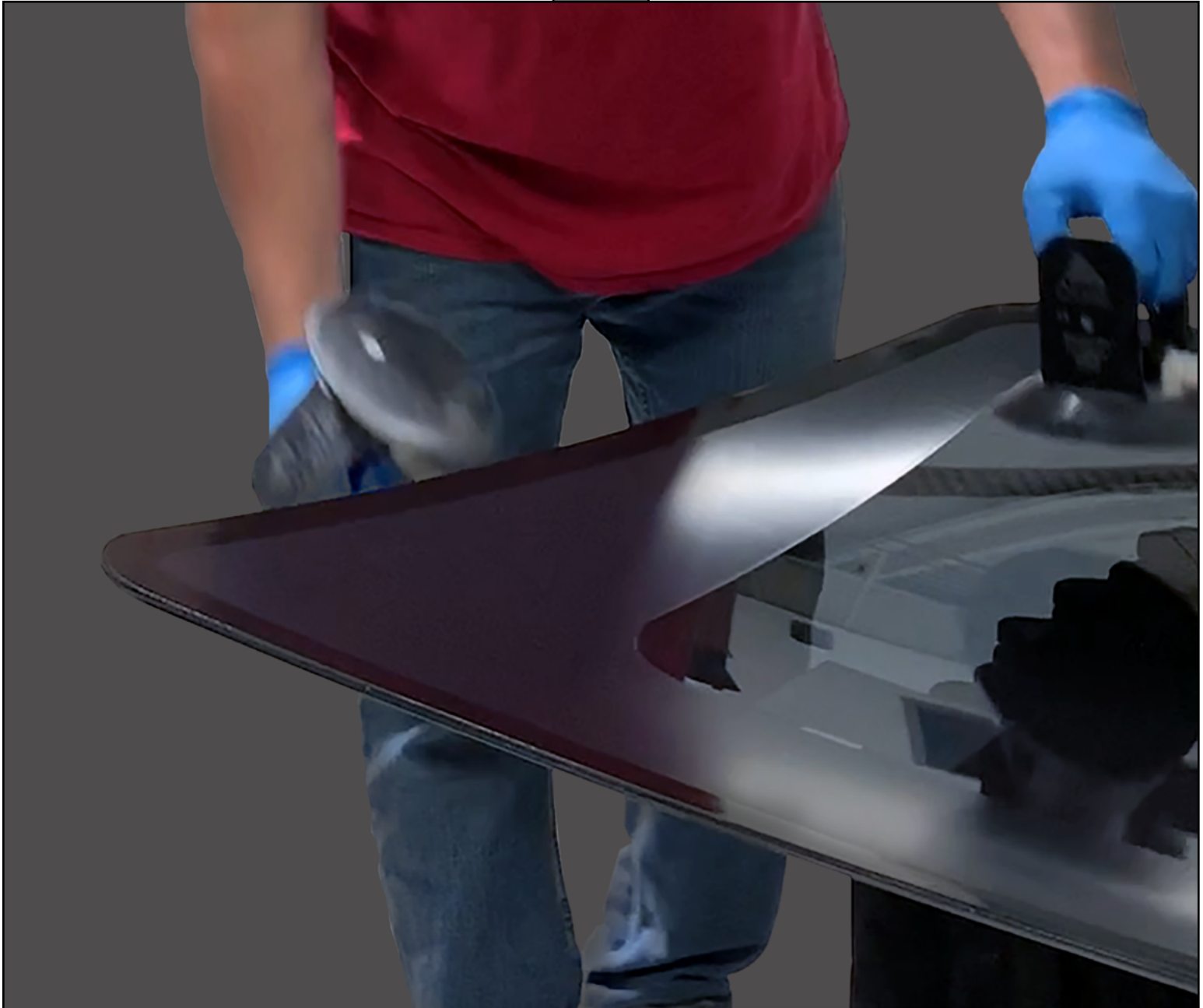
Fig. 13



3. Adhere suction cups to outside of window (Fig. 14) prior to applying urethane sealant to window mounting recess on cap.

Note: Urethane sealant has a short tack-time, which is why it's important to have the window ready for immediate installation after urethane sealant application.

Fig. 14

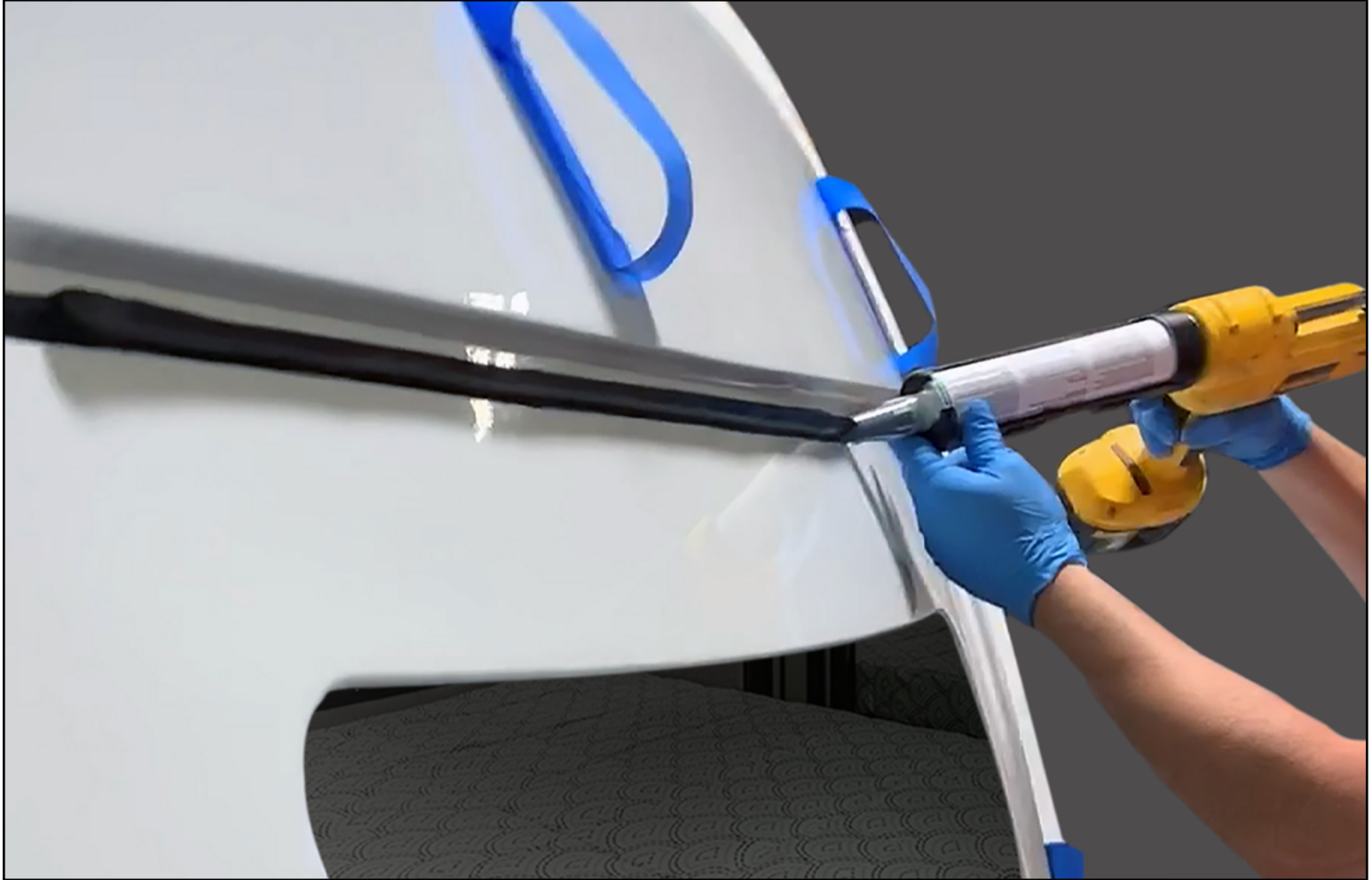


⚠️ WARNING

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4. Starting at the top of the cap's window recess, apply either BETASEAL EXPRESS or BETASEAL U-428 Plus urethane adhesive along the top of the cap's window recess and on top of the previously applied layer of primer (Fig. 15).

Fig. 15



5. When switching out an empty tube of urethane adhesive, make sure to dovetail the nozzle of the new tube into the previous urethane bead (Fig. 16) so a continuous bead is maintained to ensure proper sealing.

Fig. 16



6. Retrieve prepped windshield by using the suction cups (Fig. 17).

Fig. 17



7. Begin windshield installation by aligning the top of the windshield with the cap's window mounting recess (Fig. 18), then rolling it inward while lowering the bottom of the window.

Fig. 18



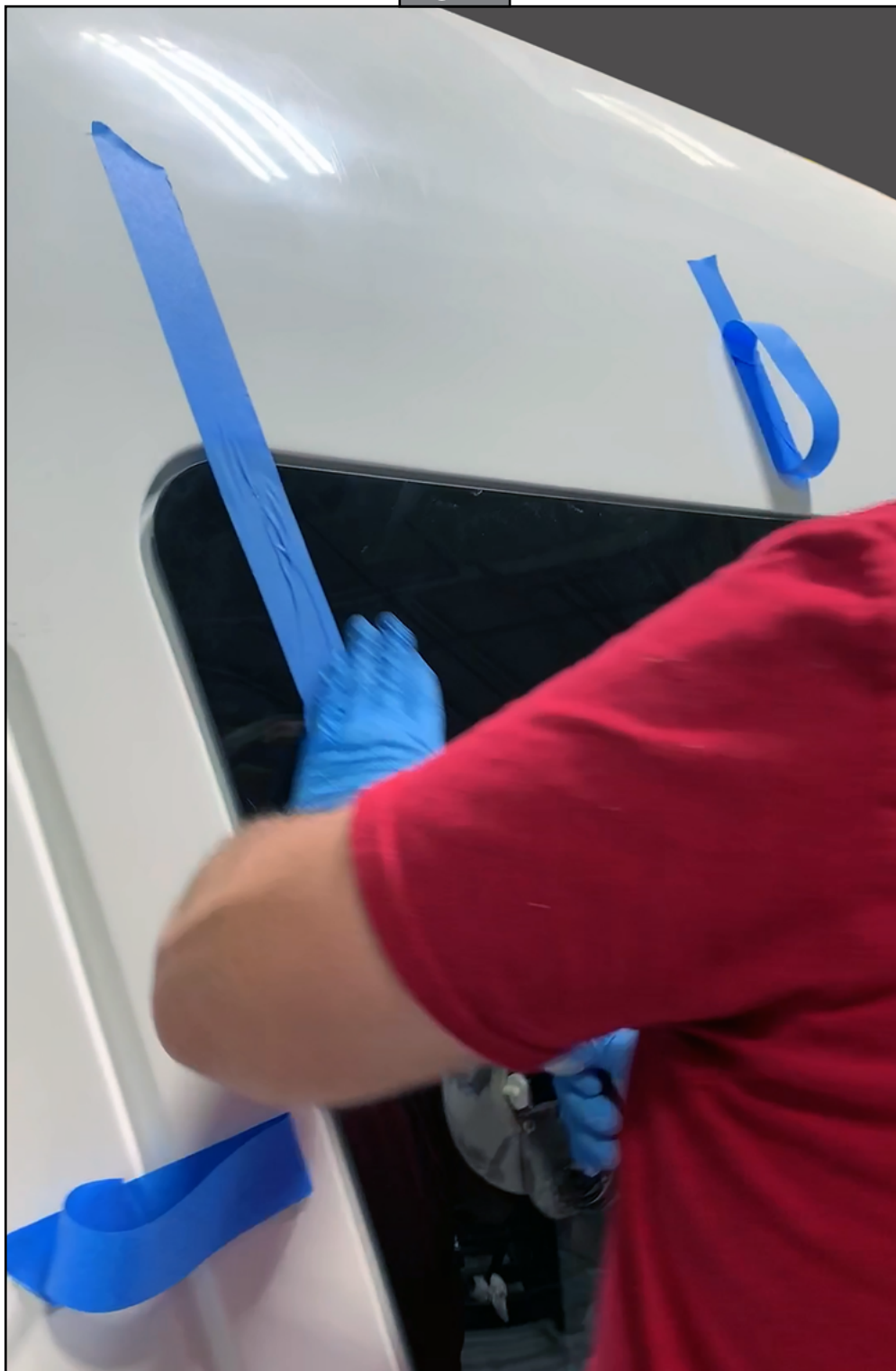
8. Adjust the windshield's alignment to make sure an even gap between the windshield and the cap's window mounting recess is maintained all around the windshield's edge (Fig. 19).

Fig. 19



9. While holding the window in-place with the suction cups, begin pulling the painter's tape onto the windshield (Fig. 20) to secure the window's placement during the urethane curing process.
10. If necessary, realign window by releasing tape from the window, gently adjust window, then reapply tape.

Fig. 20



11. Install setting blocks (shims) along the window's bottom gap (Fig. 21) to prevent shifting during the urethane curing process.
12. Allow urethane to cure for eight hours.

Fig. 21



Post-cure Clean-up

1. After urethane has cured, remove tape, setting blocks and suction cups from cap and windshield (Fig.22).

Fig. 22



2. Remove any excess adhesive that is in the gap between the windshield and the cap (Fig. 23). The gap must be clean for the application of the sealant.

Fig. 23



3. Normal post-urethane cured clean-up:
 - A. Use a sharp cutting tool to slice into the cured urethane along the windshield's edge (Fig. 23).
 - B. Peel excess urethane off of the cap.
4. Time-sensitive uncured urethane clean-up:
 - A. Spray area with GC-800 Cleaner (Fig. 24).

⚠ CAUTION

BETACLEAN™ GC-800 is a non-hazardous chemical cleaner and lubricant that can cause irritation to sensitive, unprotected skin and organs. Use appropriate personal protective equipment (PPE), such as chemical resistant gloves, eye and splash protection. Only use Betaclean GC-800 in well-ventilated areas.

Fig. 24



- B. Use an install stick as a scraper to remove excess urethane (Fig. 25).

Fig. 25



- C. Wipe stick clean with a lint-free cloth (Fig. 26), then repeat process until all excess urethane is removed.

Fig. 26



- D. If necessary, use a SCRUBS (Fig. 27) and GC-800 Cleaner to remove the remainder of the excess urethane.

Fig. 27



⚠ CAUTION

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5. After all excess urethane has been removed, use GC 800 Cleaner and lint-free wipes to clean-up the area (Fig. 28).

Fig. 28



Applying Sealant

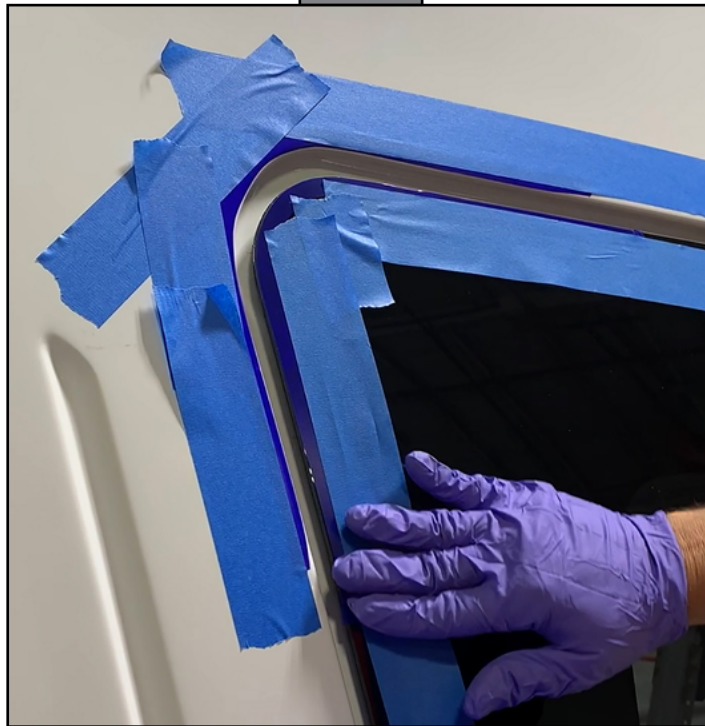
1. Prepare windshield for sealant by making sure cap and windshield surface areas around the gap are free of any tape residue or body oils.
2. Apply narrow, pin-striping tape (Fig. 29) around the corners of the cap and windshield. The narrow tape will make it easier to manipulate the tape around the curved corners, making a good foundational mask.

Fig. 29



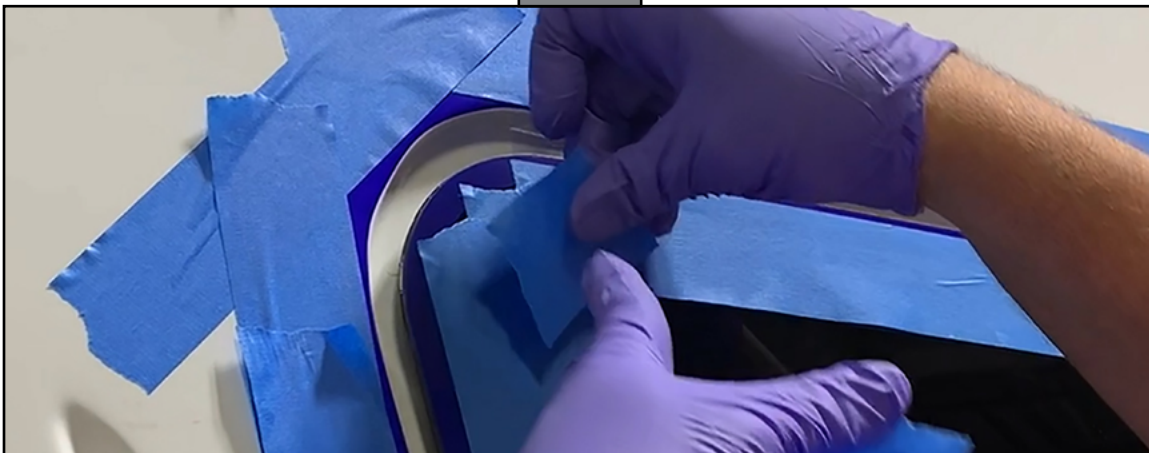
3. Apply the wider painter's tape (Fig. 30) on top of the pin-striping tape to extend the width of the mask.

Fig. 30



4. Apply enough painter's tape to make sure no gaps exist where the windshield glass may be exposed (Fig. 31).

Fig. 31



5. Continue to create a section of mask around the windshield and cap as sealant is applied.

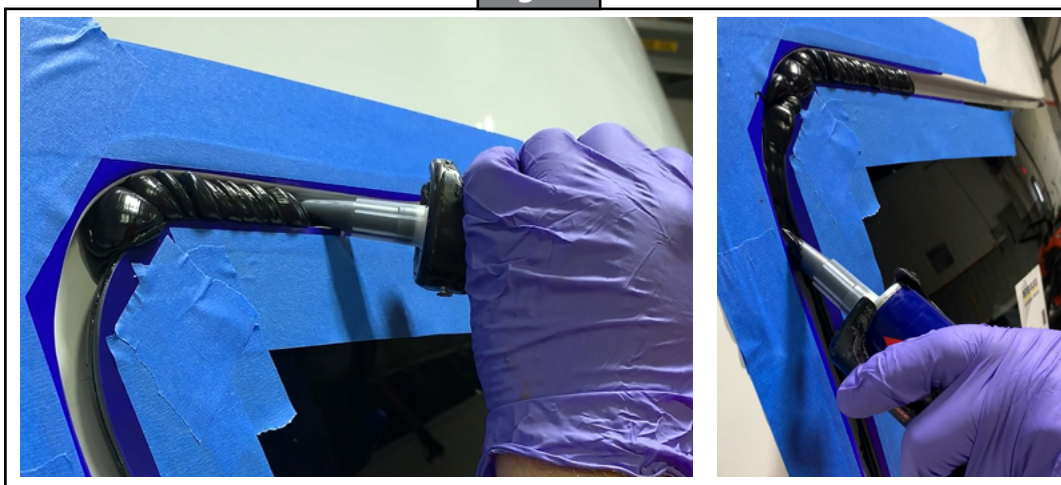
Note: Do not mask the entire area at once or the short tack-time of the sealant will create stringy peaks when the tape is removed.

⚠ CAUTION

Sikaflex®-295 UV is a non-hazardous urethane adhesive that can cause irritation to sensitive, unprotected skin and organs. Use appropriate personal protective equipment (PPE), such as chemical resistant gloves, eye and splash protection. Only use Sikaflex-295 UV in well-ventilated areas.

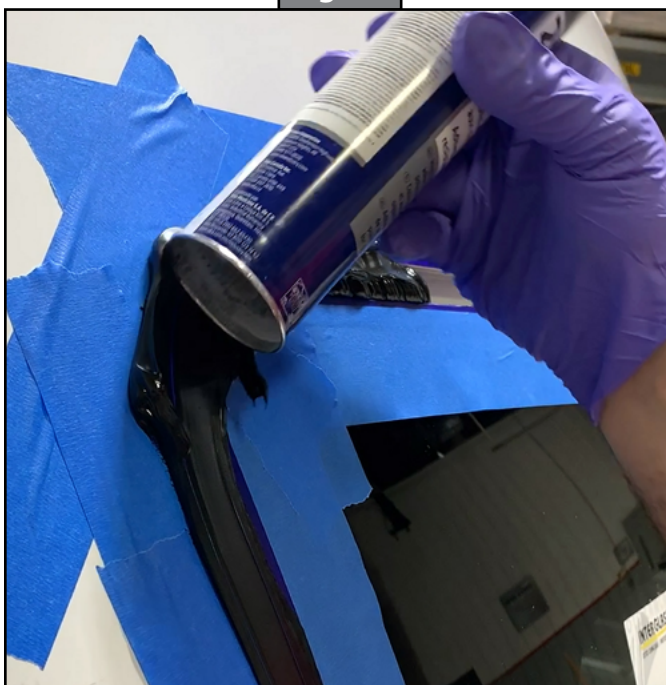
6. Use Sikaflex-295 UV adhesive/sealant to fill the gap between the windshield and the cap.
7. Slowly fill entire gap area until sealant bulges out beyond the outer surface of the gap (Fig. 32).

Fig. 32



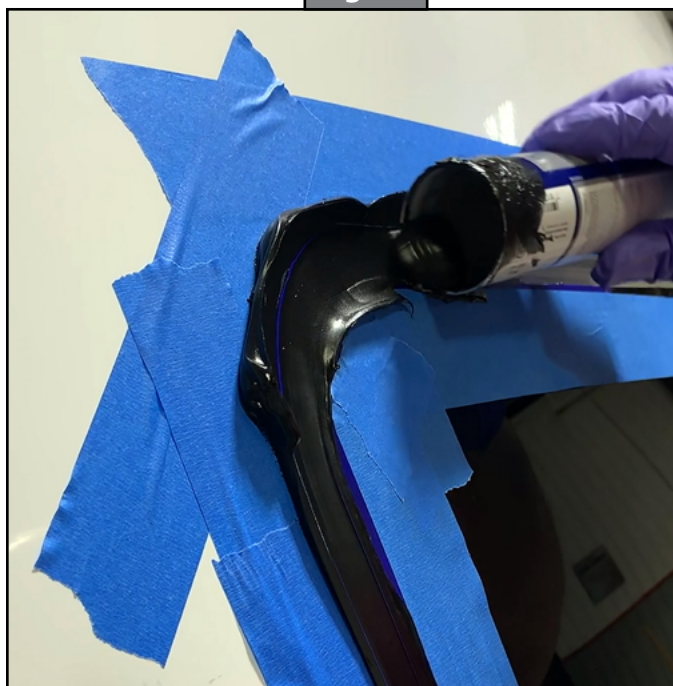
8. Drag the bottom rim of the sealant tube over the sealant as an applicator (Fig. 33) in a left-to-right direction to press sealant into the gap, removing air pockets and filling in the crevice under the windshield's edge.

Fig. 33



9. With a lint-free wipe, clean accumulated sealant from the bottom rim of the tube. Apply sealant tube as an applicator in a right-to-left direction (Fig. 34) along the gap to ensure sealant completely fills the gap and excess sealant is removed.

Fig. 34



10. Begin removing tape from the cap and windshield (Fig. 35). Pull tape directly outward and at an angle (Fig. 36) to create a clean edge along the sealant-filled gap (Fig. 37).

Fig. 35

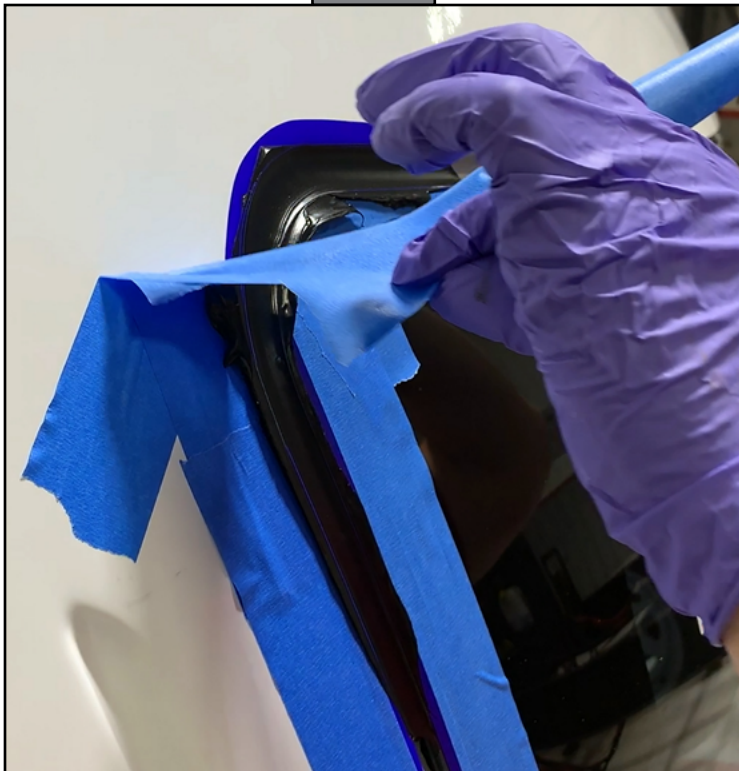


Fig. 36



Fig. 37



11. Apply tape for the next section of sealant as outlined in steps 1-5.

CAUTION

Sikaflex®-295 UV is a non-hazardous urethane adhesive that can cause irritation to sensitive, unprotected skin and organs. Use appropriate personal protective equipment (PPE), such as chemical resistant gloves, eye and splash protection. Only use Sikaflex-295 UV in well-ventilated areas.

12. Apply Sikaflex-295 UV adhesive/sealant to fill the gap as outlined in steps 7-10.
13. Repeat steps 2-12 until the entire gap has been sealed.
14. Do not drive or tow unit for 12 hours

Gasket Procedure

Resources Required

- 1 - 2 persons, depending on task
- BETACLEAN™ GC-800 Glass Cleaner/Cut-Out Lubricant
- BETAPRIME™ 5504G All-in-One Primer
 - Single Application Primer 5504G (2 minute cure time)
 - All-in-One Primer 5504G (2 minute cure time)
- Urethane
 - BETASEAL™ U-428 Plus (6 to 8 minutes working time [Flash Time] depending on temperature and humidity)
 - Sikaflex®-295 UV adhesive and sealant (6 to 8 minutes working time [Flash Time] depending on temperature and humidity)
- Nitrile Gloves
- Putty Stick
- Suction Cups

Preparation

CAUTION

BETACLEAN™ GC-800 is a non-hazardous chemical cleaner and lubricant that can cause irritation to sensitive, unprotected skin and organs. Use appropriate personal protective equipment (PPE), such as chemical resistant gloves, eye and splash protection. Only use Betaclean GC-800 in well-ventilated areas.

1. Clean out all urethane with BETACLEAN GC-800 Glass Cleaner/Cut-Out Lubricant.
2. Wipe the mounting area clean with lint-free wipes.
3. Spray it down with GC-800 for lubrication.

Installation of T-gasket with Urethane

The T-Gasket has 2-sided tape (Fig. 38) for adhering to the cap fiberglass body and windshield glass. The "T" portion of the gasket is inserted between the windshield and the cap.

Fig. 38



⚠ WARNING

BETASEAL™ U-428 Plus is a hazardous urethane adhesive that can cause irritation to sensitive, unprotected skin and organs. Use appropriate personal protective equipment (PPE), such as chemical resistant gloves, eye and splash protection. Only use BETASEAL™ U-428 Plus in well-ventilated areas.

1. Inject BETASEAL U-428 Plus into the gap between the glass and cap (Fig. 39), taking care not to let adhesive overflow onto the windshield or cap surface.

Fig. 39



2. The 2-sided tape, when removed from the gasket (Fig. 40), leaves the sticky portion of the gasket to adhere to the windshield and cap (Fig. 41). If adhesive is on the glass or cap, the gasket will not stick.

Fig. 40

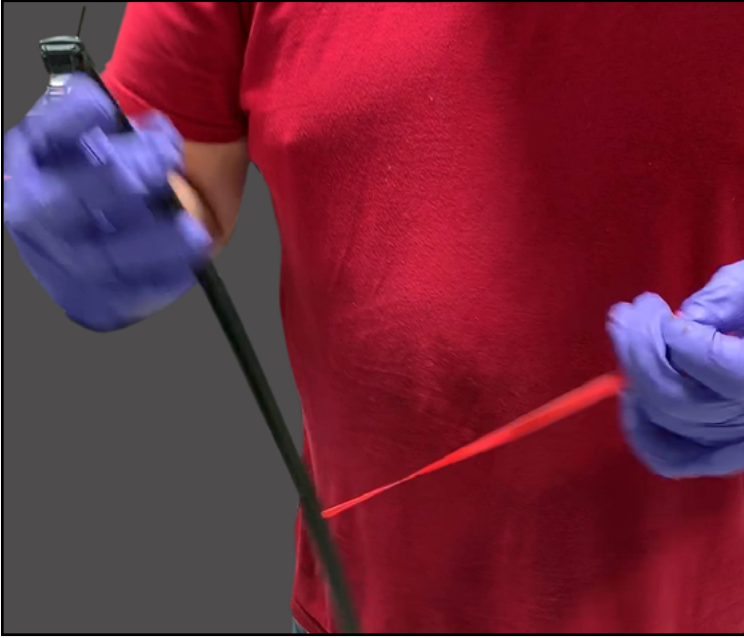
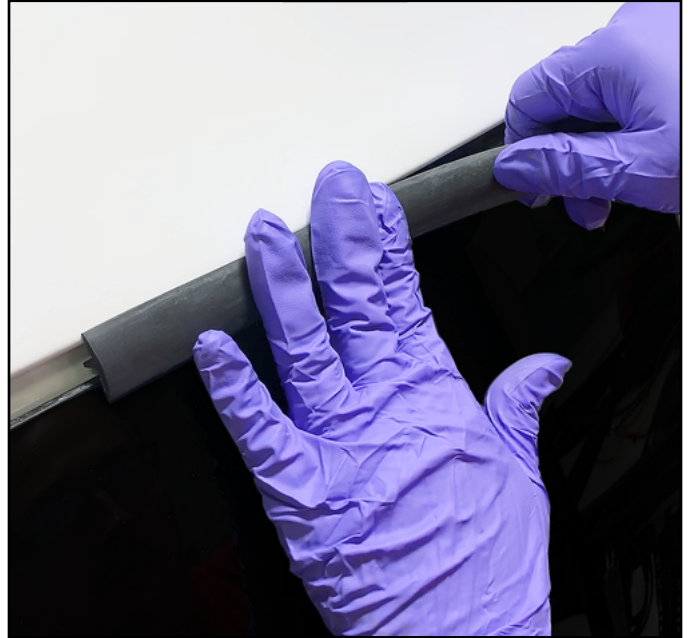


Fig. 41



3. Only the "T" of the gasket (Fig. 42) should plunge into the adhesive.

Fig. 42



4. When installing the gasket around the windshield's corners (Fig. 43), apply a pulling motion to stretch the gasket (Fig. 44) enough to prevent wrinkling of the gasket around the corner (Fig. 45).

Note: Wrinkles (Fig. 45) create air gaps, which prevent a good seal of the gasket to the unit.

Fig. 43



Fig. 44



Fig. 45

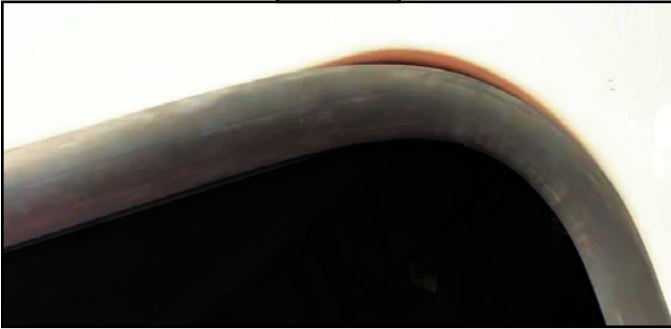
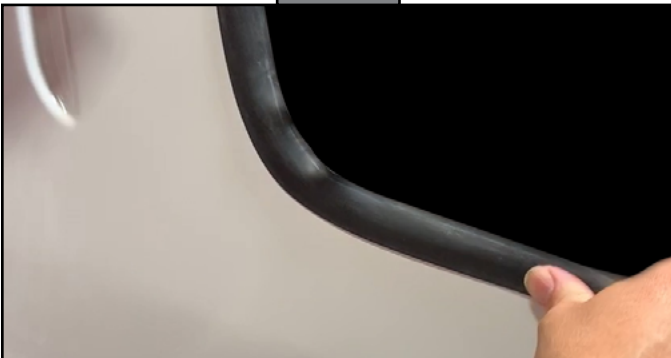


Fig. 46



5. If necessary, after the entire gasket has been installed, a small roller can be run over the gasket to ensure it is completely seated into the adhesive and on the windshield and cap.

⚠ CAUTION

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6. If necessary use a SCRUBS and GC-800 Cleaner (Fig. 47) to remove any excess adhesive from the windshield or cap.

Fig. 47



Installation of Snap-on gasket with T-molding

The Snap-on Gasket interlocks with the T-molding (Figs. 48 and 49). The T-molding has 2-sided tape for adhering to the cap fiberglass body and windshield glass.

Fig. 48



Fig. 49



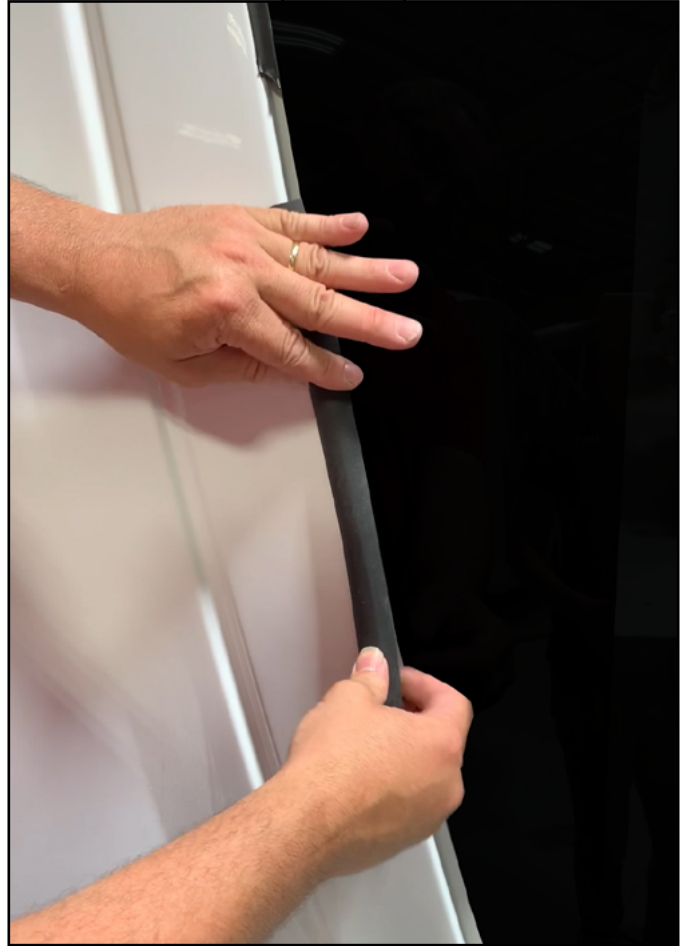
After following the instructions in the Installation of T-gasket with Urethane section, do as follows:

1. Pull the 2-sided tape from the T-gasket.
2. Insert the T-molding between the windshield and the cap (Fig. 50), making sure the adhesive on the molding adheres to the fiberglass cap and windshield glass.
3. The "T" portion of the snap-on gasket is then pressed into the slot of the T-molding (Fig. 51).

Fig. 50



Fig. 51



Front Cap Window Procedure

To install a single window, do as follows:

1. Set window into bottom of gasket.
2. Slide window down into side of gasket.
3. Use putty stick to work gasket over window starting at the top and working the way down to the side.

WARNING

BETASEAL™ U-428 Plus is a hazardous urethane adhesive that can cause irritation to sensitive, unprotected skin and organs. Use appropriate personal protective equipment (PPE), such as chemical resistant gloves, eye and splash protection. Only use BETASEAL™ U-428 Plus in well-ventilated areas.

4. Put U-428 in between gasket and window.
5. Replace zip lock strip in gasket.
6. U-428 will squeeze out of gasket.

CAUTION

BETACLEAN™ GC-800 is a non-hazardous chemical cleaner and lubricant that can cause irritation to sensitive, unprotected skin and organs. Use appropriate personal protective equipment (PPE), such as chemical resistant gloves, eye and splash protection. Only use Betaclean GC-800 in well-ventilated areas.

7. Spray GC-800 to clean off excess U-428.

To install a split window, do as follows:

1. Set window into bottom of gasket 1 inch from center.
2. Slide window into center gasket.
3. Use putty stick to work gasket over window starting at the top and working the way down to the side.
4. Repeat process on other window.
5. Put U-428 in between gasket and window.
6. Replace zip lock strip in gasket.
7. U-428 will squeeze out of gasket.
8. Spray GC-800 to clean off excess U-428.

Notes

[illegible]



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