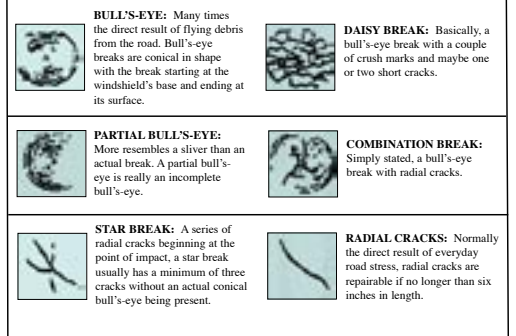


1. Platform
2. Injector
3. Injector vacuum port
4. Piston screw cap
5. Stainless steel piston rod
6. Center adjusting knob
7. Suction cup
8. Suction cup lifting tab

Before you use the Klear-Vu™ windshield repair system read this Instruction Manual and Material Safety Data Sheets.

The Klear-Vu™ windshield repair system contains the following items:

- 1 High-impact carrying case
- 1 Injector assembly
- 1 Platform mounting assembly
- 1 UV light
- 1 Evacuating vacuum pump
- 1 Carbide tip scribe
- 1 Bottle UV repair resin
- 1 Tube UV pit resin
- 5 Razor blades
- 1 Tub cup mounting lubricant
- 75 Injector piston tip seals
- 4 Injector cylinder O-rings
- 1 Roll UV curing tape



This instruction manual contains three (3) sections with easy-to-follow steps for repairing the six most common breaks that occur in windshields.

Section 1: Bull's-eyes, Star, Daisy, & Combination Breaks

Section 2: Radial Cracks

Section 3: Windshield Pits

SECTION 1

Bull's-eyes, Star Breaks, Daisy Breaks and Combination Breaks.

CAUTION: Read the material safety data sheets in this manual before attempting any repairs. Always wear your safety glasses when working with the KlearVu™ windshield repair system.

1. Do not attempt to repair a break that has fluid such as water in it. If the break has fluid in it, clean break with rubbing alcohol and allow to dry in the sun until all alcohol and fluid has evaporated from the break. Entire break area must be completely dry before proceeding.
2. Probe the break at the point of impact on the windshield with the carbide scribe. Remove just the loose glass from the break. Do not dig out the broken glass. If the break is not connected to the point of impact, apply slight pressure directly to the point of impact with the carbide scribe point. (CAUTION: Do not use excessive pressure as it could enlarge the break). This will connect the break to the point of impact. Under most conditions the break will visibly change with little pressure applied. This will help the repair resin flow more easily by opening the break.
3. Clean around the break with dust-free paper or a cloth towel, being careful to clean away from the break at all times. Do not use any liquid.
4. Remove the black piston cap and stainless steel piston rod from the injector. Install an O-ring in the bottom of the injector. The O-ring must be replaced after ten (10) uses due to wear from repair resin and pressure.
5. Unscrew the center adjusting knob until it is being held on by just a couple of threads on the bolt coming from the suction cup. Put a small amount of suction cup mounting lubricant on the outside edges of the suction cup. Place the platform with the injector on the windshield. Place the injector over the center point of break impact.
6. Turn the suction cup until the lifting tab can easily be held with your hand. Do not place it over a crack in the windshield because it will lose its vacuum and allow the platform to come loose. Grasp the adjusting center knob with one hand. Grasp the suction cup lifting tab with your other hand. Push down on the adjusting knob and lift up on the suction cup, lifting tab until the suction cup bottoms out on the windshield. Release the suction cup, lifting tab first, then release the pressure off the center adjusting knob. If the injector is not centered over the point of impact, you can move the cup while on the windshield with pressure applied to the side of the suction cup for proper alignment. If this does not work, remove and repeat step. Injector alignment can be determined by looking down through the injector or from inside the vehicle.
7. Screw down the adjusting knob until it comes in contact with the platform. Then continue to turn the adjusting knob 1/4 to 1/2 turn more.

8. Install the hand pump vacuum hose to the injector vacuum port.
9. If you are working in the direct sunlight, the whole windshield must be shaded during the rest of the repair or move the vehicle into a shaded area out of direct sunlight. In almost all cases it is easier to work in the shade because there is less chance of the resin hardening before you finish the repair.
10. Install the piston tip seal on the tip of the stainless steel piston rod. Do not use this seal for more than one repair. The piston tip seal will start to deteriorate from the repair resin after a couple of hours which could affect the sealing in the cylinder or it may come off the piston rod inside the cylinder.
11. Place four to five drops of Kleer-Vu™ repair resin into the injector. More drops may be required for large breaks. Insert the piston into the injector until the black piston screw cap comes in contact with top of injector.
12. Now pull a vacuum using the hand vacuum pump attached to the injector. Maintain at least twenty inches of vacuum for one to two minutes. From inside the vehicle you will be able to see the air being pulled out of the break under vacuum.
13. Release the vacuum at the valve on the hand pump. To start the pressure cycle, slowly screw down the black piston screw cap onto the injector. The injector will start to lift off the windshield or some repair resin will come out from under the o-ring in the bottom of the injector. When this happens, stop. Leave the repair under pressure for about five minutes. From inside the vehicle watch the repair resin fill the break.
14. Unscrew the black piston cap from injector until piston cap rests on injector and piston seal is still in cylinder.
15. Repeat steps 12, 13 and 14 a minimum of two more times. On some hard-to-repair breaks you might have to repeat steps 12, 13 and 14 more than three times.
16. On last pressure cycle (step 13) uncover windshield (if covered) after about two minutes of pressure being applied to repair. Expose repair to direct sunlight or place UV light (use suction cup mounting lubricant) on the inside of windshield directly under repair. Do this for approximately three minutes in direct sunlight or five minutes with UV light.
17. Disconnect the vacuum hose from hand pump at the injector vacuum port.
18. Place the 2.5-inch-square plastic sheet below the injector. Unscrew the piston screw cap off the injector but do not remove from injector. Now unscrew the platform adjusting knob to release the platform-hold-down pressure. Do not remove adjusting knob. Rotate the platform, moving the injector away from the repair. As you do this, place plastic sheet over the repair.
19. Remove platform assembly from windshield by lifting up on the suction cup lifting tab.
20. Continue to expose the repair to direct sunlight for approximately five minutes or until repair resin is hard. If you are using the UV light place it over the top of the repair for approximately five minutes or until repair resin is hard.
21. Remove the plastic sheet from the repair. When the repair resin is hard the plastic sheet should make a tearing sound during removal.
22. Place a razor blade above the repair at a 45-degree angle to the windshield. In a slow, slicing action, remove the excess repair resin from the windshield.
23. If you have a small pit in the repair, continue on to the pit repair section. If no pits are present, go to step 24.
24. Clean the windshield. Your repair is finished.
25. If resin begins to congeal or build up inside the injector, clean with a cotton swab dipped in rubbing alcohol. This does not have to be done with every repair. Never insert sharp objects into injector.
26. Remove piston tip seal from piston rod and screw piston back into the injector for storage in repair case. Discard the piston tip seal.

SECTION 2

Repairing of Radial Cracks

CAUTION: Read the material safety data sheets in this manual before attempting any repairs. Always wear your safety glasses when working with the Kleer-Vu™ windshield repair system.

1. You must do this repair inside or in the shade.
2. The break must be completely dry.
3. Clean break with a dry, dust-free paper or cloth towel, working away from the break.
4. Place a bottle of repair resin just above the break. Flow the repair resin onto the windshield just above the break. It should start to fill up as you work your way across the top of the break. Work as fast as possible doing this part of the repair. From inside the vehicle you will be able to see what parts of the break have filled and what have not. In the parts that have not filled, apply more repair resin above the unfilled area. From inside the vehicle, place one finger at the unfilled break point and apply slight pressure. This will help open the break and enable repair resin to flow into the break. Pressure is generally only needed for thirty to sixty seconds.

CAUTION: Do not use too much pressure as it could enlarge the crack. The idea is to get as much repair resin into the break as fast as you can. It is not possible to completely fill the break because the repair resin is not being put into the break under pressure and vacuum.

6. Cover the repair completely with pieces of UV tape.
7. Expose repair to direct sunlight or place a UV light over the top of repair for about ten minutes or until hardened.
8. Remove the UV tape after hardening.
9. Remove excess repair resin from the repair, working your razor blade at a 45-degree angle to the windshield in a slow, slicing action.
10. Spray clean the windshield. Your repair is finished.

SECTION 3

How To Use Pit Resin

CAUTION: Read the material safety data sheets in this manual before attempting any repairs. Always wear your safety glasses when working with the Kleer-Vu™ windshield repair system.

1. This repair is done best in direct sunlight.
2. Make sure the pit is clean and free of dirt and fluid.
3. Place one drop of pit resin in the pit and immediately cover it with a 2.5-inch-square plastic sheet. Using your finger, push down on the plastic sheet directly over the pit. Then remove your finger. This displaces the excess pit resin from the pit to give you a nice smooth repair.
4. Expose the repair to direct sunlight or place a UV light over the top of the repair for about five minutes.
5. When pit resin has hardened, remove plastic sheet. It should make a tearing sound during removal if fully hardened.
6. Place a razor blade above the repair at a 45-degree angle to the windshield. In a slow, slicing action, remove the excess pit resin from the windshield.
7. Spray clean the windshield. Your repair is finished.

MATERIAL SAFETY DATA SHEET - Windshield repair resin

GENERAL DESCRIPTION

Product Name: Professional Glass Repair. **Appearance:** Adhesive-Non-yellow. **Chemical Name:** Methacrylate Adhesive. **Product Type:** UV Curing Adhesive

I INGREDIENTS

Hazardous Ingredients: Acrylic Acid*. **% by Weight:** 10-15

*Acrylic Acid has been shown to cause tumors in experimental animals on high dose ingestion, and adverse liver and blood effects on skin contact. In light of the low concentration of these components in the product it is our best technical judgment that normal use of this product poses no such hazard. These statements are present only to comply with OSHA Regulations.

II CHEMICAL AND PHYSICAL PROPERTIES

Vapor Pressure: <5mm Vapor. **Density:** Unknown. **Solubility in Water:** Low. **Boiling Point:** >300 deg. F. **Appearance:** Clear Water White Fluorescent Liquid. **Specific Gravity:** 1.036. **Odor:** Sharp. **pH:** Does not apply

III HEALTH HAZARD DATA

Symptoms of Overexposure: May cause dermatitis on prolonged contact in sensitive individuals. **Toxicity:** Skin and eye irritant. Estimated oral LD50 more than 5000mg/kg.. Estimated dermal LD50 more than 2000mg/kg.. **Signs and Symptoms of Exposure:** Vapors irritate eyes, nose, throat. Liquid is a skin and eye irritant.

Emergency Treatment Procedures

Eye Irritation: Flush at least 15 minutes with water. Obtain medical attention immediately. **Inhalation:** Remove to fresh air. If symptoms persist, obtain medical attention. **Ingestion:** Low toxicity. Do not induce vomiting. Give 1-2 glasses of water or milk and get immediate medical attention. **Skin Contact:** Wash thoroughly w/soap and water. **Skin:** Impermeable gloves **Personal Protection:** Eyes, safety glasses or goggles required **Ventilation:** Must be adequate to avoid exceeding TLV.

IV FLAMMABILITY AND EXPLOSIVE PROPERTIES

Flash Point: 193 deg. F. Explosive Limits (% by volume in air). **Extinguishing Media:** CO2. Foam. Dry Chemical. **Unusual Fire or Explosion Hazards:** Hazardous products formed by fire or thermal decomposition. Traces of toxic fluorides may be formed at flame temperature. **Method:** TCC. **Lower:** DNA%. **Upper:** DNA%. **Compressed Gases Name:** None. **Pressure at Room Temperature:** DNA

V REACTIVITY DATA

Stability: Stable. **Hazardous Polymerization:** May Not Occur. **Incompatibility:** None. **Hazardous Decomposition Products (Non-Thermal):** None

VI SPILL OR LEAK PROCEDURES

Spill or Leak: **Large Spill:** Dike area to prevent spreading. Absorb material with vermiculite, sand or other inert absorbing material. Place in closed container. **Disposal:** Landfill or incinerate following EPA and local regulations.

VII STORAGE, HANDLING AND SHIPPING

Storage: Store below 110 deg. F to preserve shelf life. Avoid unnecessary exposure to light before use. **Handling:** Avoid prolonged skin contact. Keep away from eyes. Avoid prolonged breathing of fumes. **Shipping Regulations:** **Proper Shipping:** DOT Acrylic Acid. Inhibited. Solution RQ. **IATA:** Acrylic Acid. Inhibited. Solution

MATERIAL SAFETY DATA SHEET - Windshield Repair Resin (Pit Resin)

GENERAL DESCRIPTION

Product Name: Pit Resin. **Chemical Name:** Methacrylate Adhesive

I INGREDIENTS

Hazardous Ingredients: Acrylic Acid*. **% by Weight:** Less than 7

*Acrylic Acid has been shown to cause tumors in experimental animals on high dose ingestion, and adverse liver and blood effects on skin contact. In light of the low concentration of these components in the product it is our best technical judgment that normal use of this product poses no such hazard.

II CHEMICAL AND PHYSICAL PROPERTIES

Vapor Pressure: Less than 10mm @ 75 deg. F. **Vapor Density:** Unknown. **Solubility in Water:** Slight. **Boiling Point:** Greater than 300 deg. F. **Appearance:** Clear. **Specific Gravity:** 1.02. **Odor:** Pleasant. **pH:** N/A

III HEALTH HAZARD DATA

Symptoms of Overexposure: May cause dermatitis on prolonged contact in sensitive individuals.

Emergency Treatment Procedures

Eye Irritation: Flush at least 15 minutes with water. Obtain medical attention. **Inhalation:** Remove to fresh air. If symptoms persist, obtain medical attention. **Ingestion:** Low toxicity. Do not induce vomiting. Get immediate medical attention. **Skin Contact:** Wash thoroughly with soap and water.

IV FLAMMABILITY AND EXPLOSIVE PROPERTIES

Flash Point: Greater than 200 deg. F. Explosive Limits (% by volume in air). **Extinguishing Media:** CO2. Foam. Dry Chemical. **Unusual Fire or Explosion Hazards:** Toxic fumes may be evolved upon exposure to heat or open flame. **Method:** TCC. **Lower:** DNA. **Upper:** DNA

V REACTIVITY DATA

Stability: Stable. **Hazardous Polymerization:** May Not Occur. **Incompatibility:** None

VI SPILL OR LEAK PROCEDURES

Spill or Leak: **Large Spill:** Dike area to prevent spreading. Absorb material with vermiculite, sand or other inert absorbing material. Place in closed container. **Disposal:** Landfill or incinerate following EPA and local regulations

VII STORAGE, HANDLING AND SHIPPING

Storage: Store below 110 deg. F to preserve shelf life. Protect from light. **Handling:** Avoid prolonged skin contact. Keep away from eyes. **Shipping:** **DOT:** Not Applicable. **IATA:** Not Applicable