Pro-Series Windshield Repair Kits

INSTRUCTIONS

KIT1001, KIT1500A, KIT1500J, KIT1500M

KIT1500A

APPRENTICE KIT INCLUDES:

1. CARRYING CASE
2. CONNECTOR HOSE
3. REPAIR FIXTURE
4. QUAD RINGS, 3/16" ID
5. RESIN CHAMBER, SMALL
6. MYLAR® SHEETS
7. RAZOR BLADES
8. SUPPLY BOX
9. PUMP W/ GAUGE (PMP2003 SHOWN)
10. PIT POLISH
11. PIT FILLER
12. UV LAMP (LMP2001 SHOWN)
13. INSPECTION MIRROR
14. REPAIR RESINS
15. CARBIDE PROBE
16. BREAK CLEANING BRUSH

(SEE PAGE 10 FOR OTHER KITS)

Preparing to Use the Kit

NOTE: This kit is intended for use in compliance with the ANSI/NWRA/ROLAGS 001 Standard. Users should be trained in all relevant industry and regulatory standards applicable in their region before attempting to repair windshields.

1. Park the vehicle in shade, if possible. Otherwise, shade the repair area with an appropriate sun screen (such as KIT1044 [fig. 1], sold separately), to prevent premature curing of Repair Resin.

Figure 1

2. Suitable glass temperatures for performing a repair are 40° – 85° F (5° – 30° C). Verify that the glass is not too hot or too cold before starting.

3. Protect the vehicle from resin (see Caution 1) and tool damage using an appropriate cover (such as HDW5523 [fig. 2], sold separately).

Figure 2

CAUTION

CAUTION 1: If resin contacts the paint, do not wipe it off; cure the resin with the UV Lamp (see "Curing the Resin") and carefully peel it off.

Wear appropriate personal protective equipment and follow trade association guidelines.

4. Test the UV Lamp. It may not produce a strong beam, even in low-light conditions. However, at least a slight glow should be visible on either side of the lamp when attached. If not, see step 5 under "Curing the Resin".

5. Clean the glass by spraying isopropyl alcohol on a soft cloth and wiping the repair area. Do not spray directly on the break (see Note 1).

Figure 3

NOTE 1: If moisture is present, dry the break with a moisture evaporator (such as TLS5000 [fig. 3], sold separately).

6. Remove loose glass fragments and dirt from the impact point, using the Carbide Probe and/or Break Cleaning Brush.

About the Repair Fixture

The Repair Fixture has a Vacuum Cup with a Plunger that, when pumped, securely attaches the fixture to the windshield. Two knobs enable you to adjust the Yoke and Support Leg precisely, in order to position the Resin Chamber as needed to repair the break (see Note 2).

1. TOP KNOB
2. YOKE
3. RELEASE TAB
4. RED LINE INDICATOR
5. PLUNGER
6. VACUUM CUP
7. FOOT
8. HEEL
9. TOE
10. CHAMBER OPENING
11. SUPPORT LEG
12. SIDE KNOB

NOTE 2: If the repair area is angled ≥ 80°, the optional Vertical Repair Adapter FIX2003 (fig. 4) is needed to perform the repair successfully.

Figure 4

Setting Up the Fixture

1. Unscrew the Resin Chamber and remove it from the Foot (see Note 3).

NOTE 3: When the small chamber (fig. 5) is removed, its bushing should stay in the foot.

Figure 5

2. Loosen the Top Knob, slide the Yoke outward (in direction of Support Leg), and rotate the yoke as needed to prevent the leg from interfering with the Plunger. Then lightly tighten the top knob.

3. Loosen the Side Knob and slide the leg up or down as needed to position the foot parallel to the face of the Vacuum Cup and about 1/2” (1.3 cm) above it. Then lightly tighten the side knob.

4. Position the Repair Fixture on the windshield so that the Chamber Opening is over the break and you have optimal access to the fixture during the repair. Then hold the fixture firmly against the glass and pump the plunger until the Red Line Indicator disappears.

5. After the vacuum cup is securely attached, loosen the side knob and position the foot so that the Heel is no farther than 1/16" (1.6 mm) above the glass (see Note 4), while the Toe rests directly on the glass (fig. 6). While holding the leg in this position, firmly tighten the side knob (see Caution 2).

NOTE 4: The grip of a Razor Blade makes a good gauge for measuring the desired heel distance from the glass (fig. 7).

CAUTION

CAUTION 2: If the leg moves when the resin chamber is installed, this can cause the seal to leak during the repair.

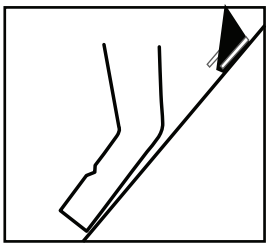

Figure 6

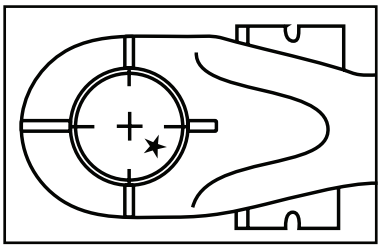

Figure 7

6. Loosen the top knob and reposition the foot so the impact point of the break is centered in the opening (fig. 8) (see Note 5). Then firmly tighten the top knob.

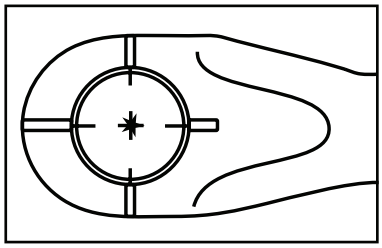

Figure 8

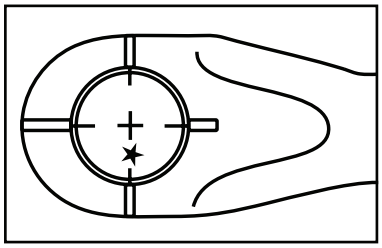

Figure 9

7. Position the Inspection Mirror inside the windshield as needed to inspect the fixture setup and monitor repair progress from outside the vehicle.

Figure 10

NOTE 5: If the impact point is larger than the inside diameter of a 3/16" Quad Ring, you may need to use the optional Large Resin Chamber FIX2005 (fig. 10). If so, position the foot so the impact point is slightly below the center of the opening before tightening the knob (fig 9).

Applying the Resin

1. Choose the best Repair Resin for the application (fig. 11), based on the type of break (see Caution 3 and Note 6):
   - Crack Filler (LIQ2070) works well on most types of breaks, including those with tight cracks.
   - Extreme II (LIQ2060) is our thinnest resin, providing better flow for filling the most difficult breaks or working in cool temperatures.

NOTE: Only use resins in a well-ventilated area, and avoid contact with skin and eyes (see Additional Safety Information).

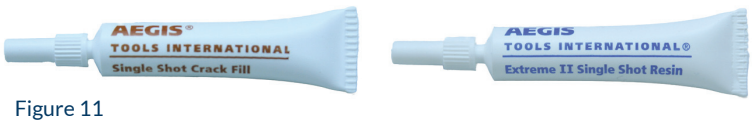

Figure 11

CAUTION

CAUTION 3: Do not combine different resins; contamination will occur.

NOTE 6: Check the expiration date on the resin bag. Do not use any expired resin.

2. Remove the Quad Ring from the Resin Chamber and inspect both components for dirt or resin buildup. Clean them as needed (see “Cleaning the Components”). Make sure the quad ring is dry before proceeding.

3. Remove a tube from the resin bag and remove the cap. Then cut the tip off the tube, install the dispensing needle, and coat both sides of the quad ring with resin. This will help the ring remain sealed to the glass during the repair. Reinsert the quad ring in the resin chamber with dimples facing inward.

4. Screw the resin chamber into the Foot until you feel the quad ring contact the glass. Then tighten the chamber another 1/2 turn. Make sure the foot remains parallel to the glass and the Red Line Indicator on the Plunger stays hidden. If not, readjust the Repair Fixture and /or pump the plunger as needed (see Caution 4).

CAUTION

CAUTION 4: An effective seal is critical: If the quad ring is too loose, leaks can result during the pressure or vacuum cycles; if the ring is too tight, this can cause the break to expand, or pinch off cracks and prevent them from being filled.

5. Dispense resin into the bottom of the chamber, to avoid bubbles. Use enough resin to cover the impact point completely (see Note 7). If needed, adjust the repair fixture so that the impact point is positioned in the lower half of the chamber opening but still inside the quad ring. Avoid applying too much resin, since it can be drawn into the Connector Hose during the vacuum cycle (see Caution 5).

NOTE 7: Monitor the resin level throughout the repair. Add resin only when needed.

CAUTION

CAUTION 5: Resin can damage the vacuum cup and greatly reduce its service life.

First Pressure Cycle

NOTE: The first pressure cycle enables you to make sure there is a clear pathway for Repair Resin to flow into the break.

1. Attach the ends of the Connector Hose to the Resin Chamber and the Pump (fig. 12): Pull back the sleeve of each connector socket and push the socket firmly onto the corresponding fitting. Give the hose a gentle tug, to make sure the sockets stay securely in place.

Figure 12

2. Prepare the pump for a pressure cycle by sliding the knurled collar *toward the pump body* (fig .13) (see Note 8).

Figure 13

PRESSURE

NOTE 8: The pressure scale reads clockwise while the vacuum scale reads counter-clockwise.

3. Use the pump to gradually apply 10 – 20 psi (0.7 – 1.4 bar) of pressure, as you monitor the Gauge (see Cautions 6 and 7).

CAUTION 6: Adequate pressure levels are reached in less than 1 pump stroke, so monitor the Gauge carefully and increase pressure slowly.

CAUTION 7: If the break begins to increase:

a. Release pressure immediately.
b. Re-evaluate the break; it may not be repairable.
c. Place the vacuum cup in the direction the break is moving, to prevent further spreading.
d. Slowly reapply pressure at a lower level.

4. Maintain pressure for 1 minute or less — just long enough to confirm Repair Resin is flowing into the break. If it is not, check whether the Quad Ring is covering the impact point and readjust the Repair Fixture as needed. If the resin pathway is blocked, drill an opening as directed under "Repairing a Crack".

Vacuum Cycle

1. Prepare the Pump for a vacuum cycle by sliding the knurled collar *away from the pump body* (fig. 14).

2. Pump 4 to 6 times, to create vacuum that will draw trapped air out of the break. The Gauge should indicate 15" – 25" Hg (-0.50 – -0.85 bar), though readings can vary due to atmospheric pressure. Maintain the vacuum cycle for 5 to 10 minutes. In the case of longer cracks or larger combination or star breaks, extending the cycle could be beneficial, if time allows (see Note 9).

Figure 14

VACUUM

NOTE 9: If you see bubbles coming from the inside edge of the Quad Ring, the seal is leaking. If the red line is showing, pump the plunger until the line is hidden again. Otherwise, tighten the Resin Chamber an additional 1/4 turn.

3. At the end of the vacuum cycle, apply 2 more quick pump strokes, to remove any remaining air in the chamber.

Second Pressure Cycle

1. Prepare the Pump for the second pressure cycle by sliding the knurled collar *toward the pump body.*

2. Gradually apply 20 – 30 psi (1.4 – 2.0 bar) of pressure, as you monitor the Gauge. Bullseye breaks generally require less pressure (see Caution 8 and Note 10).

CAUTION

CAUTION 8: Greater pressure increases the risk of losing the seal, causing the break to expand, or causing the windshield to delaminate. Do not exceed 35 psi (2.4 bar).

3. Maintain pressure until the break fills with Repair Resin. This may take 5 minutes or slightly longer. If the resin level gets low enough to expose the impact point, add just enough resin to cover it. Re-establish vacuum for 1 to 2 minutes and resume the pressure cycle.

NOTE 10: If the Quad Ring expands, disconnect the Connector Hose. Then reconnect it and slowly reapply pressure at a lower level.

4. When you inspect the repair, any remaining air within the break will appear as black spots. If such spots are visible, release the pressure and turn the Resin Chamber counter-clockwise 1/2 turn. This releases stress on the glass while retaining resin in the chamber over the break. Capillary action should then fill the remaining areas of the break. If it is not completely filled after 10 minutes, repeat the vacuum and pressure cycles.

Curing the Resin

1. Disconnect the Connector Hose from the Repair Fixture. Otherwise, Repair Resin will spray out during step 2.
2. Gently move the Resin Chamber up and away from the break, loosening knobs as needed.
3. Quickly place a Mylar® Sheet over the break, to contain the resin.
4. Pull a tab on the Vacuum Cup to remove the fixture from the glass.
5. Turn on the UV Lamp (fig. 5, option LMP2007 shown) and place it over the break for 1 to 7 minutes, depending on the lamp used. Cured resin is hard, with a light surface film; uncured resin is wet to the touch (see Caution 9 and Notes 11, 12 and 13).

Figure 15

CAUTION

CAUTION 9: Wear eye protection when using a UV lamp. Excessive exposure can cause permanent eye damage.

NOTE 11: Larger Mylar® sheets (HDW3010, sold separately) can be used, as well.

NOTE 12: Curing times vary, depending on the model of UV lamp used.

NOTE 13: If the UV lamp does not appear to be working, consult the lamp instructions, when applicable. In the case of LMP2001, replace the batteries or, if the resin still does not cure, replace the bulb (LMP5000).

Finishing the Repair

1. Lift a corner of the Mylar® Sheet in order to gently peel it away, using a Razor Blade if needed.
2. Remove excess Repair Resin by holding a razor blade perpendicular to the glass and applying smooth, fast strokes, without lifting the blade off the surface.
3. Remove the Inspection Mirror.
4. Clean the repair area with isopropyl alcohol and a soft cloth. If needed, finish the surface as directed in "Filling and Polishing a Pit".

Filling and Polishing a Pit

1. Apply a drop of Pit Filler on the windshield just above the pit, allowing it to flow slowly into the pit without trapping any air. Apply a Mylar® Sheet to prevent the filler from flowing down the glass. Make sure the pit is filled completely.
2. Cure the pit filler with the UV Lamp. Then remove the Mylar® sheet, as previously directed. Curing takes takes 1-7 minutes, depending on the UV Lamp used.
3. If needed, remove excess pit filler with a Razor Blade as previously directed.
4. Polish the surface with Pit Polish and a soft cloth or a buffing wheel (such as DRL2025 [fig. 16] sold separately).

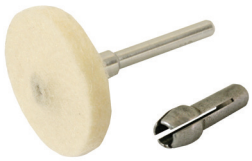

Figure 16

Repairing a Crack

Certain cracks require drilling a pathway to inject the Repair Resin (see Caution 10). In such cases, we recommend using a Hi-Speed Rotary Tool (such as option PWR5070 [fig. 17] or PWR5400, sold separately) and a Carbide Bur (such as option DRL2021 [fig. 18], or DRL2031, sold separately).

For cracks shorter than 2" (<5 cm), drill a small hole in the center, making sure it intersects with the crack.

For cracks 2" to 6" (5 cm to 15 cm), up to three holes may be required: one at each end and a third in the center, if the crack is not completely filled from the ends.

CAUTION

CAUTION 10: Do not drill into the plastic interlayer between the glass layers.

Figure 17

Figure 18

For cracks longer than 6" (>15cm), AEGIS recommends using the Long Crack Repair Kit (KIT1036), sold separately.

Follow the repair procedures previously described. Set up the Repair Fixture to place the Resin Chamber over each drilled opening. Apply 25 – 35 psi (1.7 – 2.4 bar) during the second pressure cycle. Observe the crack from an angle, so you can see the Repair Resin filling the void. Cover the crack with Mylar® Sheets (or extra-large sheets HDW3010 [fig. 19], sold separately) as the break fills, to prevent air from re-entering the crack.

Figure 19

Cleaning the Components

1. Remove the Resin Chamber from the Repair Fixture. Clean off any Repair Resin with isopropyl alcohol and an appropriate brush (such as optional Chamber Cleaning Brush FIX2004 [fig. 20]). Then wipe it clean with a lint-free cloth.

NOTE: Clean components daily or more often, as needed.

Figure 20

2. Remove the Quad Ring and use a cloth dampened with isopropyl alcohol to remove any resin. Gently rub and pat it dry.

Figure 21

3. Use isopropyl alcohol to remove resin from the Chamber Opening, Foot and other components of the repair fixture, as well as the Connector Hose. If needed, use an appropriate brush (such as optional Hose Cleaning Brush HOS2001 [fig. 21]). Then wipe them clean with a lint-free cloth.

4. Use soapy water and a clean, lint-free cloth to clean the face of the Vacuum Cup. Make sure the felt filter stays in place.

Tips for Best Results

- Inexperienced personnel should perform practice repairs on a used windshield before repairing a customer's vehicle. Their technique and results should improve with each attempt.
- Do not use lubricants on Quad Rings, as contamination of the resin may result.
- Larger breaks usually require longer vacuum and pressure cycles.

Additional Safety Information

- Read all Repair Resin labels and Safety Data Sheets provided.
- If resin gets on your skin, wash thoroughly with soap and water.
- If resin gets in your eyes, flush them with water for 15 minutes and seek medical attention immediately.
- If you swallow any resin, drink 2 glasses of water and seek medical attention immediately.

Parts and Supplies

PART NO.	DESCRIPTION
28502	PLUNGER LUBRICANT
60024	FELT FILTER (FOR VACUUM CUP)
49386T	6” VACUUM PAD
90111	PLUNGER (FOR VACUUM CUP)
DRL2021	CARBIDE BUR (10 QTY)
DRL2025	BUFFING WHEEL
DRL2031	CROSS-CUT TAPERED BUR
FIX2003	VERTICAL REPAIR LEG WITH CHAMBERS
FIX2004	CHAMBER CLEANING BRUSH
FIX2005	RESIN CHAMBER, LARGE (WITH THREE 3/8” QUAD RINGS)
FIX2006	RESIN CHAMBER, SMALL (WITH TWO 3/16” QUAD RINGS)
HDW3000	MYLAR® SHEET, 1-1/4” SQUARE (100 QTY)
HDW3010	MYLAR® SHEET, 2.362” X 1” SQUARE (100 QTY)
HDW5015	PENLIGHT
HDW5040	CARBIDE PROBE
HDW5042	BREAK CLEANING BRUSH
HDW5410	RAZOR BLADES (100 QTY)
HDW5523	FENDER COVER
HOS2000	CONNECTOR HOSE, 3’ LENGTH
HOS2001	HOSE CLEANING BRUSH
KIT1044	UV SUN SCREEN
LIQ2022	PIT FILLER RESIN
LIQ2030	PIT POLISH
LIQ2060	EXTREME II RESIN, 1-ML TUBES (25 QTY)
LIQ2070	CRACK FILLER RESIN, 1-ML TUBES (25 QTY)
LMP5000	UV LIGHT BULB (FOR LMP2001)
MIR2000	INSPECTION MIRROR
PMP4013	PUMP REPAIR KIT
PWR5070	HI-SPEED ROTARY TOOL WITH ACCESSORIES, DREMEL®
PWR5400	HI-SPEED ROTARY TOOL WITH ACCESSORIES, MINI
SBX2010	3/8” ID QUAD RINGS (5 QTY)
SBX2016	3/16” ID QUAD RINGS (5 QTY)
TLS5000	MOISTURE EVAPORATOR

KIT1500J
Journeyman Kit includes :

- APPRENTICE KIT*
- RESIN CHAMBER, LARGE
- UV LAMP (LMP2007)

KIT1500M
Master Kit includes:

- JOURNEYMAN KIT*
- VERTICAL REPAIR ADAPTER
- HI-SPEED ROTARY TOOL W/ ACCESSORIES
- UV LAMP (LMP2008)

KIT1001
Standard Kit includes:

- MASTER KIT*
- CHAMBER CLEANING BRUSH
- HOSE CLEANING BRUSH
- CARBIDE BUR (10 QTY)
- PUMP W/ GAUGE (PMP2002)
- QUAD RINGS, 3/8” ID (3 QTY)
- PENLIGHT

* except for upgrades, as noted

LIMITED WARRANTY

AEGIS Tools International® products are warranted to be free from defects in manufacturing or materials for 1 year from the date of purchase. Read the Warranty Return Form at aegistools.com for important details about the warranty.

If a problem develops during the warranty period, follow the instructions below to obtain warranty service. If inspection shows that the product has a defect, AEGIS will repair or replace the product without charge.

To Obtain Warranty Service or Repair Service

For customers in the U.S. and Canada: Go to the Warranty page at aegistools.com and click the applicable link. Alternatively, you may contact AEGIS Tools International (see contact information).

For customers in all other localities: Contact AEGIS Tools International (see contact information) or your dealer for assistance.

CONTACT INFORMATION

AEGIS Tools International, Inc.
908 West Main St.
Laurel, MT 59044 USA
Email: contactus@wpg.com
Phone: (1) 800-548-7341 or (1) 406-628-8231
www.AegisTools.com

AEGIS TOOLS INTERNATIONAL® by WOOD'S POWR-GRIP WPG.com

AEGIS TOOLS INTERNATIONAL® by WOOD'S POWR-GRIP WPG.com

AEGIS TOOLS BY WOOD'S POWR-GRIP CO., INC. | WWW.AEGISTOOLS.COM