1. This manual applies to all Jeep models: 2/4 door & Hard/Soft Top

2. Before testing the vehicle, perform a review of the top system. Make sure all the latches are engaged, none of the top seals are puckered or distorted, the door seals are installed correctly, the tops are not out of alignment, etc.

3. Each leak area can have multiple root causes, as noted in the diagnosis tree. It is important to water test each repair before starting the next.

4. If a leak cannot be reproduced, it is due to the period of time the vehicle is under wet conditions. Some leaks may take hours before leaking.

5. If a leak cannot be reproduced, apply all the repairs to the applicable areas as noted in the diagnosis road map.

6. When the door is open, there is water run off from the roof that can soak the carpet. Be sure to explain to the customer that this cannot be fixed. This is an unfortunate condition with this type of vehicle, similar to convertibles.

7. It is important to understand where the leak ENDS up when diagnosing the vehicle. Where the leak ends up, does not always explain where the leak originates. Refer to the diagnosis tree when determining which repairs to perform.

8. This repair procedure does NOT cover every possible water leak on the Jeep Wrangler. The issues identified in this document are the major leaks that show up in the field.

9. Generally, a car wash is the preferred method to diagnose a vehicle.

10. If a hose is required, place on the top of the vehicle facing forward making sure water is getting to all areas. Do NOT directly spray in the area of question. This can create a “false” leak that cannot be fixed.

11. This manual is not intended to be a service manual. The content identifies the major areas of water leaks, the critical characteristics of each area and how to repair them.
I. Diagnosis Road Map

II. General Notes

III. Water leak on Door Trim or Instrument Panel
   a) Repair procedure for Windshield Header Seal 1-2
   b) Repair procedure for Door Fits 3
   c) Repair procedure for A-pillar mucket/foam 4-5

IV. Water leak on Instrument Panel/Console Center
   a) Repair procedure for Freedom Panel Seal 6-11
   b) Repair procedure for Freedom Panel latches 11

V. Water leak at B-plr
   a) Repair procedure for Hard Top Seal 12-14
   b) Repair procedure for B-pillar Mucket 15-16

VI. Water leak on front carpet
   a) Repair procedure for rear wheel flare hole 17-18
   b) Repair procedure for cowl side leaks 19-20

VII. Appendix
   a) Foam Kit 21
   b) Replacement part numbers 22
Windshield Header Seal Repair Procedure

AREA OF LEAK:

- This repair procedure is applicable when water is evident on the:
  - Door trim panel
  - Instrument panel (a-pillar)

STEP 1:  Remove Header Seal

- Figure 1

STEP 2:  Remove/Clean Surface

- Remove all butyl and tape residue
- A rubber wheel bit can be used
- Clean surface with 3M adhesive cleaner
- Alcohol wipe entire surface and allow to dry

Figure 1

Figure 2
**Windshield Header Seal Repair Procedure**

**STEP 3: Install Butyl**

- NOTE: This operation is only applicable for vehicles built before 6/1/2008. Vehicles built after this date, should already have sealer present in this area.

- Install 4mm butyl (68027813AA) as shown (Figure 4)

- Make sure to fill in all holes, wrinkles and step offs to allow for a smooth surface to bond the tape/butyl from the new seal

- NOTE: Excessive amount of butyl can cause transition voids/leaks. Make sure to smooth out butyl.

**STEP 4: Install Seal**

- Locate and install new seal, Pt #: 55397454AE

- Remove release tape and pressurize seal firmly in contact with header sheet metal to smooth out adhesive tape and butyl, starting at the ends and working toward the center. A small roller or firm finger pressure should be used to insure the tape is adhered completely from side to side, THIS STEP IS CRITICAL

Door Fit Repair Procedure

AREA OF LEAK:

- This repair procedure is applicable when water is evident on the:
  - Door trim panel
  - Instrument panel (a-pillar)

STEP 1: Door Gap Checks

- Measure door gaps
- The specifications are as follows:
  - The gap spec. is 5.0 +/- 2.0 mm
  - The flush spec. is 0.0 +/- 2.0 mm
- If the door fit is not to spec, proceed to Step 2

STEP 2: Adjust Doors

- Adjust the door gap and flushness as described in DealerConnect> TechCONNECT under: Service info> 23 – Body> Body Structure> Gap and Flush> Specifications Service Manual

STEP 3: Replace Door Primary Seal

- If the doors are adjusted, the door seal must be replaced
- Part #: 55395274/5AN
**AREA OF LEAK:**

- This repair procedure is applicable when water is evident on the:
  - Door Trim Panel

**STEP 1: Header Mucket**

- NOTE: This issue/repair applies to both hard and soft top vehicles
- Inspect the header seal mucket for the seal rolled under the freedom panel or side rail. (Figure 8)
- If the seal is folded under, remove the freedom panel or side rail and re-install making sure not to distort the mucket (Figure 9)
STEP 2: **A-Pillar Foam**

- **NOTE:** This issue/repair applies to both hard and soft top vehicles

- Inspect the freedom panel or side rail for damaged/missing foam (Figure 10)

- If the foam is damaged or missing, replace the foam using the foam kit (68026937AB)

**STEP 2: Foam Installation**

- Install the foam to the freedom panel as shown in Figure 12

- The foam installation is similar for the soft top rail
B-Pillar Mucket/Foam Seal Repair

**AREA OF LEAK:**

- This repair procedure is applicable when water is evident on the:
  - Instrument panel (Center)
  - Console / Shifter

**RIGHT HAND FREEDOM PANEL**

**STEP 1: Seal Removal**

- Remove seal on Right panel

**STEP 2: Tape and Butyl Removal**

- Remove tape and butyl residue from panel
- A rubber wheel bit can be used
- Clean Seal Surface with: 3M General Purpose Adhesive Cleaner or Kent Products Acrysol, (if available) and allow to dry completely
- Wipe seal surface with alcohol and allow to dry completely.
**STEP 3: Butyl Installation**

- Place right hand freedom panel upside down on a covered surface to prevent scratching
- Apply 4 mm diameter Butyl, Pt # 68027813AA, to Rear Notch (Figure 17)
  - Note: Follow groove between panels and push butyl firmly in place
- Apply 4 mm diameter Butyl, Pt # 68027813AA, to Front Notch (Figure 18)
  - Note: Follow groove between panels and push butyl firmly in place
STEP 4: Seal Installation

- Keep freedom panel upside down for the initial installation of the seal
- Remove tape liner from seal

NOTE: Secure the end molds first, then finish with the middle of the seal

Rear Seal Mold

- Align REAR edge of NEW seal, Pt # 55397095AG to Right Freedom Panel Notch.
- Compress butyl by installing seal in direction of arrows (Figure 20)
- Note: No gap between installed seal and outer edge of freedom panels. (Figure 20)

Front Seal Mold

- Align FRONT edge of NEW seal, Pt # 55397095AG to Right Freedom Panel Notch
- Compress butyl by installing seal in direction of arrows (Figure 21)
- Note: No gap between installed seal and outer edge of freedom panels. (Figure 21)
STEP 5:  **Pressurize Seal**

- Flip panel back over to complete the seal installation.
- Locate seal cross car against the middle rib in the freedom panel and pressurize starting at the ends and working toward the center.
- A small roller or firm finger pressure should be used to insure the seal tape is adhered from front to rear, **THIS STEP IS CRITICAL**

**Note:**

This photo is for reference only. Panel was cut to show rib.

STEP 6:  **Install foam at Front**

- Install GREY 30 X 75 mm Foam from kit (68026937AB) along trim lines of flame tip (Figure 24).
- **NOTE:** Make sure foam covers butyl completely.

**Note:**

This photo is for reference only. Panel was cut to show rib.
STEP 7: Install foam at Rear

- Install BLACK 30 X 75 mm Foam from kit (68026937AB) along trim lines of flame tip (Figure 25)
- NOTE: Make sure foam covers butyl completely

LEFT HAND FREEDOM PANEL

STEP 8: Install butyl at Rear

- Place Left hand freedom panel upside down on a covered surface to prevent scratching
- Add 4mm diameter butyl, (68027813AA) to rear inboard corner groove (Figure 27)
- Note: Push butyl firmly into groove between panels until flush
STEP 9: Install foam at Rear

- Add 30 X 75 mm Black Foam from Kit (68026937AB) to cover butyl (Figure 28)

- NOTE: Make sure foam covers butyl completely

STEP 10: Install front latches

- NOTE: This applies to both Right and Left panels

- If the vehicle MDH is prior to 12/07/07, replace the front latches with part number 68004562AB (Figure 29)
**AREA OF LEAK:**

- This repair procedure is applicable when water is evident on the:
  - B-pillar roll bar
  - B-pillar trim
  - Freedom panel screw holes

**NOTE:** Water that enters anywhere along the hard top seal can travel over to the B-pillar and leak from the hard top

**STEP 1: Inspect Hard Top Seal**

- Inspect for any gaps between the seal and hard top (Figure 30,31)
B-Pillar Mucket/Foam Seal Repair

**STEP 1:** Inspect Hard Top Seal (cont.)

- Inspect the end molds for poor installation (Figure 32)

- Inspect underneath the seal for any skips with the tape/butyl along the entire seal (Figure 34 & 35).

![Figure 32 Bad Gap](image1)

![Figure 33 Good Gap](image2)

![Figure 34 Tape Skip](image3)

![Figure 35](image4)
**STEP 2: Replace Hard Top Seal**

- If there are multiple skips or the leak cannot be stopped, replace seal.
- Remove all tape/butyl and clean with alcohol prior to installation
- A rubber wheel bit can be used to remove the tape
- Pre-apply butyl (68027813AA) on hard top prior to installing the seal (Figure 36)
- It is critical that end molds are installed correctly and sufficient pressure is applied to wet out the butyl/tape (Figure 36)

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**Figure 36**

- Apply butyl as shown

**Figure 37**

- 2mm underflush
- Pressurize
B-Pillar Mucket/Foam Seal Repair

AREA OF LEAK:

- This repair procedure is applicable when water is evident on the:
  - B-plr trim or seat

NOTE: This repair applies to 4 door hard top or soft top models

STEP 1: Inspect mucket detail

- Inspect the mucket for a rolled under condition (Figure 38)
- Inspect the mucket for a missing drain hole

STEP 2: Replace the mucket detail

- If either of these conditions exist, replace the mucket detail (Part #: 55395708/9AE)
- Reinstall the panel or side rail making sure not to distort the mucket

Figure 38
Figure 39
B-Pillar Mucket/Foam Seal Repair

STEP 3: Inspect Freedom Panel for damaged or missing foam

- If the foam is damaged or missing, replace the foam using the foam kit (68026937AB)

STEP 4: Add additional foam to freedom panel

- Add a piece of foam to the freedom panel as shown in Figure 41. This foam can be created by cutting the 30 x 75mm GREY foam in half from the foam kit (68026937AB)

- Figure 41

NOTE: This foam is in addition to the foam that is already on the panel
Rear Wheel Flare Hole Repair

**AREA OF LEAK:**
- This repair procedure is applicable when water is evident on the:
  - Front floor (wet carpet)
  - Under seat

**NOTE:** This leak can be diagnosed by applying a hose to the upper rear flare and inspecting for water traveling along the floor to the front

**STEP 1:** Remove Rear Flare

**STEP 2:** Replace/Install Patch

**Hole:** 1

**NOTE:** Vehicles built prior to 5/28/08 will require this repair
- Inspect the body for missing or misaligned tape over the hole as seen in Figure 43
  - Add/Replace a tape patch over the hole

**Hole:** 2

**NOTE:** Vehicles built prior to 5/01/09 will require this repair
- Inspect the body for missing or misaligned tape over the hole as seen in Figure 43
  - Add/Replace a tape patch over the hole

Figure 42

Figure 43
Hole: 3

NOTE: Vehicles built prior to 7/22/08 will require this repair

- Cut the BLACK 30 x 75 foam from the foam kit (68026937AB) in half and apply over this hole (Figure 45)

- Make sure the foam does not extend past the flare trim line (appearance issue)

- Re-install flare
Cowl Side Panel Repair

**AREA OF LEAK:**

- This repair procedure is applicable when water is evident on the:
  - Front floor (wet carpet)

**NOTE:** These leaks can be diagnosed by applying a hose in the cowl panel (Figure 47).
Cowl Side Panel Repair

Condition 1: Mastic patches/Plugs

   Repair 1: Replace patch/plug

Condition 2: Check strap bracket

   Repair 2: Remove bracket and apply a butyl to holes

Condition 3: Seam sealer skips

   Repair 3: Apply clear sealer (part #: 04467708) to skip

Condition 4: Scuff trim foam damaged/missing

   Repair 4: Replace trim clips

Condition 5: Antenna grommet not seated

   Repair 5: Re-install grommet

Figure 48
Appendix

Foam Kit: 68026937AB

- A/B-Pillar Foam  
  - Used on Pages (5,16,)

- 30 mm x 75mm BLACK Foam  
  - Used on Pages (10,11)

- 30 mm x 75mm GREY Foam  
  - Used on Pages (9,16)
Jeep Wrangler
Replacement Parts List

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<tr>
<th>Part #</th>
<th>Part Name</th>
<th>Page(s)</th>
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<td>Butyl</td>
<td>2,7,10,14</td>
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<tr>
<td>04467708</td>
<td>Clear Sealer</td>
<td>20</td>
</tr>
<tr>
<td>68026937AB</td>
<td>Foam Kit</td>
<td>5,9-11,16</td>
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<td>55397454AE</td>
<td>Windshield Header Seal</td>
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</tr>
<tr>
<td>55395274/5AN</td>
<td>Front Door Primary Seal</td>
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<td>B-Pillar Muctet</td>
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<td>Freedom Panel Seal</td>
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