

# TECHNICAL SERVICE BULLETIN

## 11MY-15MY CONVENTIONAL CRACKED HOOD REPAIR

### OVERVIEW

Reinforcement brackets and fiberglass repair methods have been made available to address hood crack concerns. In the event a subject vehicle experiences cracking of the hood near the hinges, this repair procedure should be used to address this condition. While these repair methods may be effective at repairing a hood that was damaged from impact, impact damage repair is not warrantable. Hoods should be inspected for damage prior to performing this procedure.

**NOTE:** This procedure is provided as technical information and is not an authorization for a warranty repair.

### SUBJECT VEHICLES

2011MY – 2015MY Hino Conventional Trucks

### BEFORE YOU BEGIN:

- Read and understand all instructions and procedures before you begin the work.
- Read and follow all WARNINGS and NOTICES set forth in this publication. These alerts help to avoid damage to components, serious personal injury, or both.
- Park the vehicle on a flat, level and solid surface.
- Place the gear shift lever in "Neutral" or "Park".
- Apply the parking brake firmly and confirm parking brake activation.
- Turn off the engine and remove the key from the ignition switch.
- Always wear safety glasses or goggles to protect your eyes.
- A dust mask must be worn when sanding or grinding fiberglass material.
- Place wheel chocks in front of and behind all the wheels to prevent the vehicle from moving.

### PARTS

| PART NUMBER | DESCRIPTION                  | QUANTITY  |
|-------------|------------------------------|-----------|
| 53415E0020  | REINFORCEMENT, HOOD HINGE LH | 1         |
| 53416E0020  | REINFORCEMENT, HOOD HINGE RH | 1         |
| 53321E0070  | REINFORCEMENT, HOOD          | 2         |
| SZ10910070  | BOLT                         | 8         |
| PIT194      | PLEXUS MA830GB ADHESIVE*     | 2         |
| P30018      | PLEXUS 50ML CARTRIDGE GUN**  | 1         |
| P3353       | PLEXUS MIXING NOZZLE         | 2         |
|             | EPOXY BASED FIBERGLASS RESIN | As Needed |
|             | 7.5 OUNCE FIBERGLASS CLOTH   | As Needed |

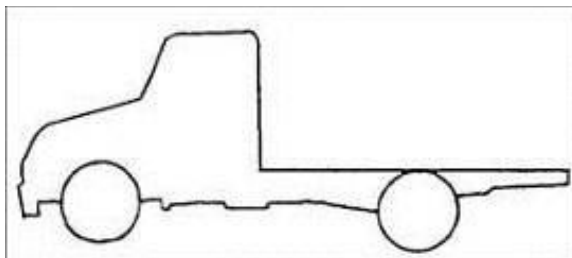
\* One 50ml tube of adhesive can repair one side (LH or RH) of the hood.

\*\* This cartridge gun is considered a general tool and should not be submitted for warranty reimbursement.

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### VEHICLE PREPARATION:

1. Park the vehicle on level ground.



2. Confirm the engine is stopped, the ignition switch in the off (LOCK) position and the key is removed.



3. Apply the parking brake.



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4. Chock the front wheels.



### REPAIR PROCEDURE

1. The following photographs are examples of cracking that you may see around the hinge plate or grille opening that can be repaired.



2. Following the cab section of the Chassis Workshop Manual, remove the grille from the hood. Retain the grille for reassembly.

**NOTICE:** Use only hand tools when removing the hood grille to prevent damage.



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**3.** Following the cab section of the Chassis Workshop Manual, remove the hood from the vehicle and place in the work area. Position upside down to access the hinge areas. Ensure the hood surface is protected from damage.

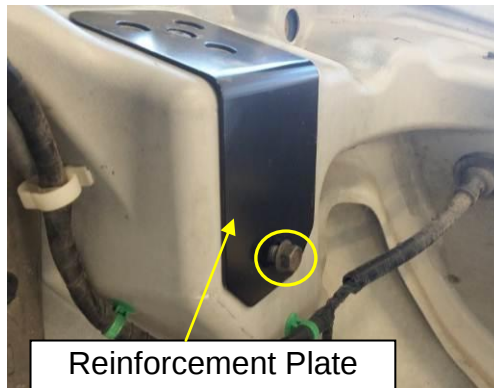
**WARNING:** Never work under the hood unless the hood is properly supported. Serious personal injury can occur.



**4.** Remove the hinges from the hood by removing the three retaining bolts on each side. Discard the old retaining bolts and retain the hinges for reassembly.



**5.** Remove the old hinge reinforcement plates from the hood by removing the bolts from each side. Discard the old retaining bolts and old hinge reinforcement plates.



**6.** Drill out the rivets holding the hinge backing plates in place. The backing plates will be reused. The rivets are being removed to allow the new reinforcements to sit flush against the hood.



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7. Inspect the area around the hood hinges and grille opening for stress cracks. These will need to be repaired prior to installing the hood reinforcements.



8. Before beginning the repair procedure, clean the area around any cracks using surface prep solvent to remove any contaminants.

**NOTICE:** Failure to remove contaminants prior to grinding and sanding the material can affect adhesion.



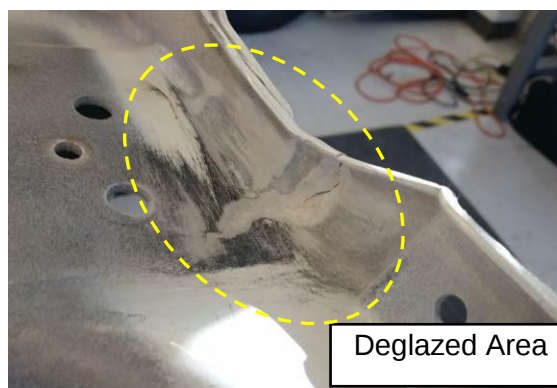
9. Working from the inside of the hood, using an angle grinder or die grinder, chamfer the hood material on both sides of the crack. If the material is splintered and loose, remove as much of this loose material as possible to ensure a solid surface for bonding the new fiberglass. Refer to the examples in the photographs below.

**WARNING: ALWAYS** wear eye protection, a face mask, gloves and protective clothing when grinding, drilling, and sanding fiberglass, epoxy resin and adhesive materials. Fiberglass materials may cause mouth, nose, throat, skin and eye irritation. Epoxy resin and adhesive materials may cause skin irritation and eye irritation.

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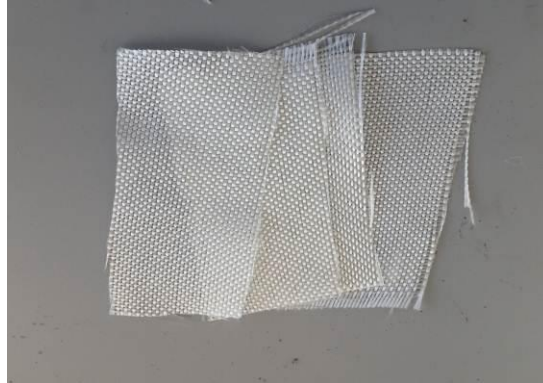


**10.** Using 80 grit sandpaper, deglaze the area surrounding the crack. This area should extend at least two inches beyond the crack on all sides, if possible. Remove sanding dust with a clean lint free rag.



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**11.** Cut four layers of fiberglass cloth to fit the area to be repaired. The fiberglass cloth should extend at least two inches beyond the damaged area on all sides, if possible.



**12. Always** read the manufacturer's instructions and warnings in mixing the fiberglass resin. Before positioning the first layer of fiberglass cloth, apply a coat of the mixed resin, using a brush.



**13.** Ensure no air pockets are present under the first fiberglass cloth before applying additional resin and the next piece of fiberglass cloth. Repeat this process for each layer. Ensure resin is applied over the fourth and final layer. Allow the resin to cure. Repeat steps 7-13 for any remaining cracks.



**14.** Once the fiberglass has cured, trim or sand the excess as needed. Ensure the new hood hinge reinforcement plates will fit properly over any repaired areas. Drill out any mounting holes that may have been covered.



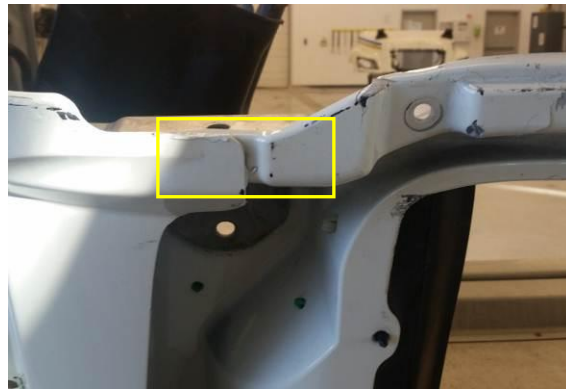
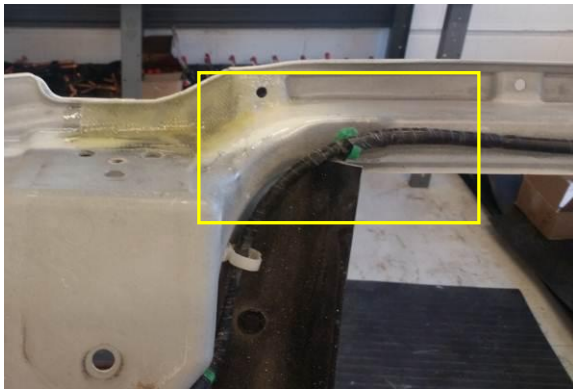
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fiberglass, epoxy resin and adhesive materials. Fiberglass materials may cause mouth, nose, throat, skin and eye irritation. Epoxy resin and adhesive materials may cause skin irritation and eye irritation.

**15.** Using surface prep solvent, wipe the highlighted areas of the hood on both driver and passenger sides to remove any contaminants.

**NOTICE:** Failure to remove contaminants can affect reinforcement bracket adhesion.



**16.** Using 80 grit sandpaper, deglaze the areas of the hood that were cleaned with solvent in step 15. Remove sanding dust with a clean lint free rag.

**WARNING: ALWAYS** wear eye protection, a face mask, gloves and protective clothing when grinding, drilling, and sanding fiberglass, epoxy resin and adhesive materials. Fiberglass materials may cause mouth, nose, throat, skin and eye irritation. Epoxy resin and adhesive materials may cause skin irritation and eye irritation.



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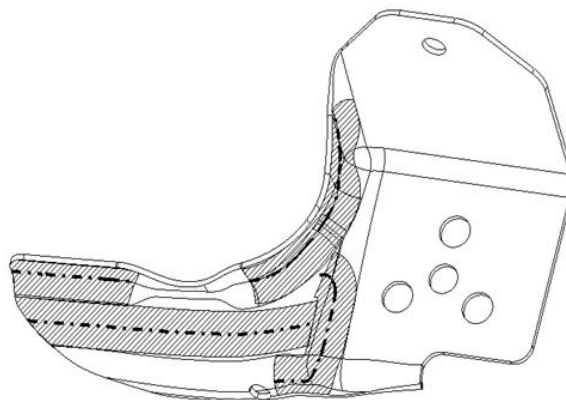
**17.** Wipe the mating surface of the new hood reinforcements using surface prep solvent.



**18.** Prepare the (PIT194) MA830GB (50ml) adhesive and nozzle, new reinforcements, hood hinges, and new bolts. This adhesive is fast curing. Working time is 4 to 6 minutes. The adhesive will cure in the mixing nozzle, requiring that the reinforcements be installed one side at a time. Have a torque wrench set to 32 lb-ft (43Nm) ready.



**19.** The highlighted portions in the illustration to the right shows where the adhesive is to be applied on the hinge reinforcements. For appropriate adhesion, 25 grams of adhesive must be applied to each bracket. This will equate to approximately two tablespoons of adhesive per bracket. Trim the mixing nozzle to ¼ inch to allow a sufficient bead of adhesive to be applied.

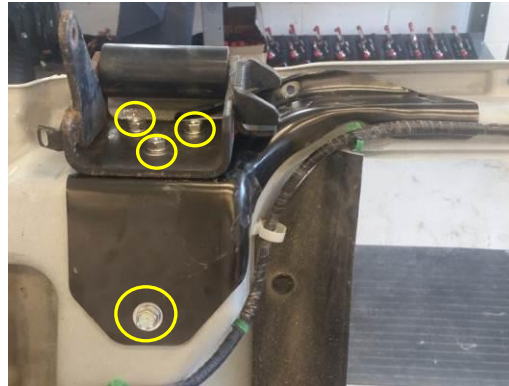


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**20.** Begin dispensing the (PIT194) MA830GB adhesive. Ensure the adhesive is mixing in the nozzle into an even gray color. Dispense adhesive onto scrap cardboard first to ensure consistency. On the first use, it may be necessary to dispense more adhesive than expected. After this point, do not allow the adhesive to rest more than four minutes or it will cure in the mixing nozzle.



**21.** Apply adhesive to the driver side reinforcement as indicated in step 19. Position the driver side reinforcement on the hood along with the hood hinges and tighten the four new module bolts to the specified torque. Repeat this step for the passenger side reinforcement.



**Specified Torque:** 32 lb-ft(43 Nm)

**22.** Without pausing, proceed to apply adhesive to the small rectangular reinforcements. These do not have a specific orientation with regard to the location of the hole. Position the reinforcement on the driver side on the hood and allow curing. Refer to the photograph to the right for location. Next install the passenger side reinforcement.



**NOTICE:** The adhesive should be left undisturbed for a minimum of 20 minutes before proceeding with hood reinstallation.

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**23.** Following the Cab section of the Chassis Workshop Manual, reinstall the hood on the vehicle.

**WARNING:** Never work under the hood unless the hood is properly supported. Serious personal injury can occur.



**24.** Following the Cab section of the Chassis Workshop Manual, reinstall the grille to the hood.

**NOTICE:** Only use hand tools when installing the grille and ensure the fasteners are torqued to the specification listed on the grille label. If a new hood grille is being installed, please reference **SB-14-020**.



### FINAL INSPECTION PROCEDURE:

- To complete this Technical Service Bulletin, review the bulletin and confirm the following:
  - Any cracks in the hood material have been repaired
  - All four reinforcements are installed properly
  - All fasteners are tightened to the specified torque.
  - Hood latches are engaged.



A Toyota Group Company

|               |                 |
|---------------|-----------------|
| Group:        | 61-Cab and Body |
| Bulletin No.: | SB-15-019       |
| Issue Date:   | 06-17-2015      |

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**NOTE:** This repair may be eligible for reimbursement if a product failure was experienced within the time and mileage limits of the applicable warranty coverage. Reimbursement is obtained via normal claim handling process.

### CLAIM APPLICATION:

- a) Labor Charge:
  - Reinforcement Install: 2.1 Hours
  - Crack Repair: 0.6 Hours Per Crack
- b) Warranty Code: 71299
- c) Trouble Code: 51
- d) Operation Code: 71250AOT
- e) Part Number: 53310-E0115

**NOTICE:** One 50ml tube of adhesive can repair one side (LH or RH) of the hood.

**NOTICE:** This cartridge gun is considered a general tool and should not be submitted for warranty reimbursement.

### REFERENCE:

ITW Plexus Adhesives – [www.itwplexus.com](http://www.itwplexus.com)

US Composites Fiberglass – [www.uscomposites.com](http://www.uscomposites.com)