

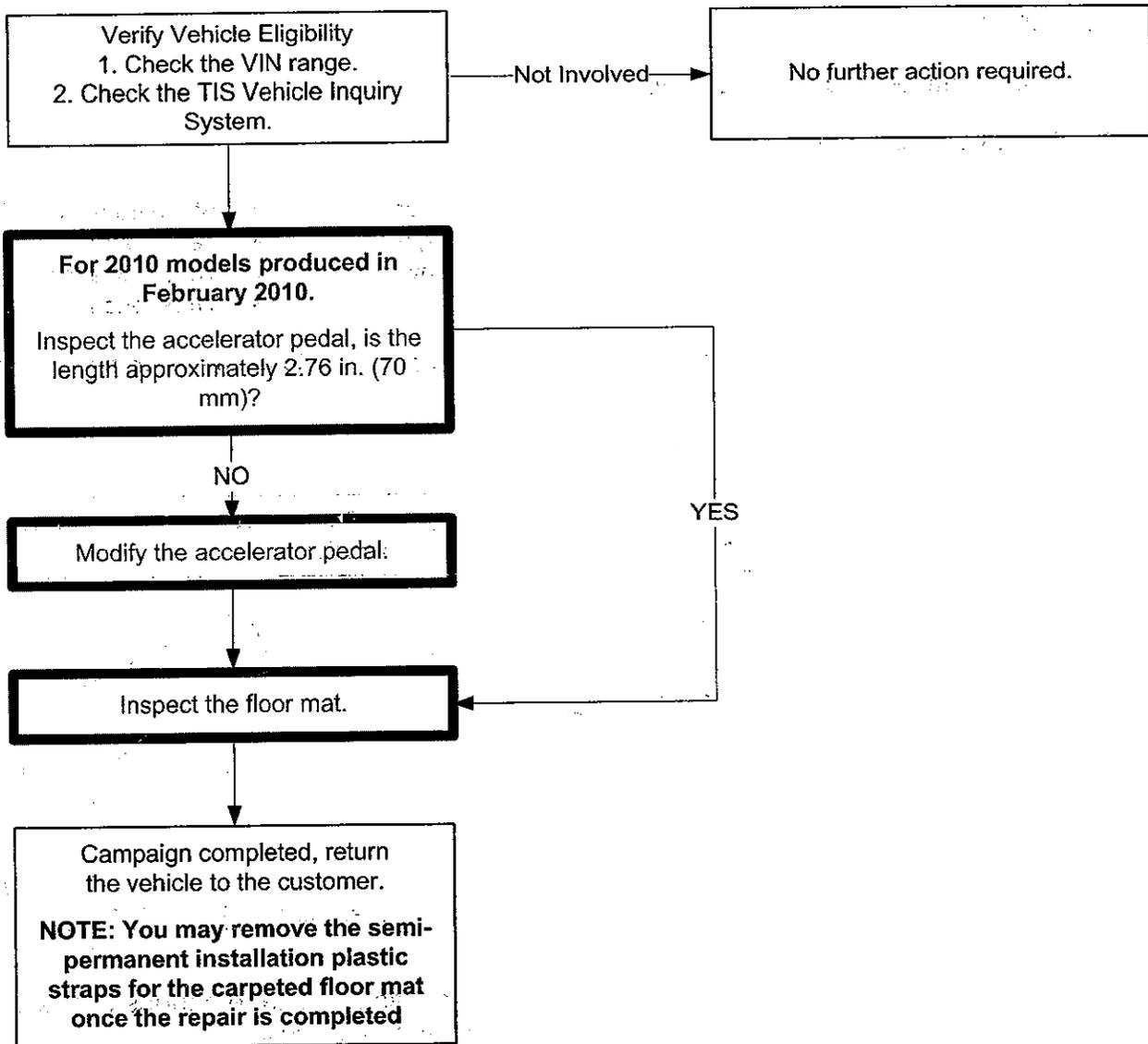
**TECHNICAL INSTRUCTIONS**  
**FOR**  
**SAFETY RECALL 90L PHASE 4**  
**ACCELERATOR PEDAL MODIFICATION**  
**2008 – 2010 MODEL YEAR HIGHLANDER HYBRID**  
***REVISED MARCH 24, 2010***

**TECHNICAL INSTRUCTION REVISION NOTICE:**

- **March 24, 2010:**
  - Work Procedure section D, steps 2 "INSPECT THE FLOOR CARPET" was removed as it does not apply to Highlander Hybrid.
  - Work Procedure section D, steps 3e was removed as the rubber pad confirmation does not apply to Highlander Hybrid.
  - Please note the steps in Work Procedure section D have been renumbered due to the removal of the two items above.

**Previous versions of this Technical Instruction should be discarded.**

## I. OPERATION FLOW CHART



## II. IDENTIFICATION OF AFFECTED VEHICLES

### A. AFFECTED VIN RANGE

| MODEL                | WMI | MY   | VDS   | RANGE             |
|----------------------|-----|------|-------|-------------------|
| HIGHLANDER<br>HYBRID | JTE | 2008 | EW41A | 2000108 – 2025890 |
|                      |     |      | EW44A | 2000110 – 2025892 |
|                      |     | 2009 | EW41A | 2025893 – 2037770 |
|                      |     |      | EW44A | 2025894 – 2037778 |
|                      |     | 2010 | BW3EH | 2037781 – 2043676 |
|                      |     |      | JW3EH | 2037352 – 2043677 |

#### NOTE:

- Check the TIS Vehicle Inquiry System to confirm the VIN is involved in this SSC, and that the campaign has not already been completed prior to dealer shipment or by another dealer.
- TMS warranty will not reimburse dealers for repairs conducted on vehicles that are not affected or were completed by another dealer.

### III. PREPARATION

#### A. PARTS

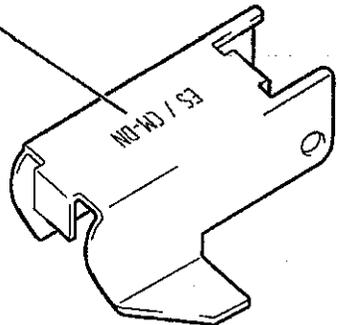
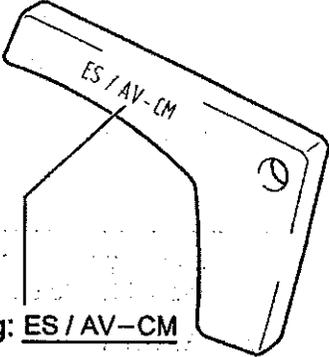
No parts are required for this activity.

#### B. TOOLS & EQUIPMENT

- Dust mask
- Hack saw
- Hand file
- Orbital sander \*
- Protective eyewear
- Protective work gloves
- Reciprocating Saw \*
- Scribe
- Standard hand tools
- Techstream
- Torque wrench
- Workbench with vise

\* One orbital sander and one reciprocating saw were provided to each dealership during Phase 1 of this Safety Recall.

#### C. ACCELERATOR PEDAL TEMPLATE & GAUGE

| <b>Cutting Template (Color: Silver) **</b><br>Application: DENSO Accelerator Pedal  | <b>Shape Gauge (Color: Silver) **</b><br>Application: All Accelerator Pedals  |
|---|---|
| <p>Stamping : <u>ES / CM-DN</u></p>                     |  <p>Stamping: <u>ES / AV-CM</u></p> |
| <p><b>NOTE:</b> When dealers receive additional templates and shape gauges of this design, they will no longer contain the stampings.</p> |   |

\*\* One DENSO cutting template and one shape gauge were provided to each dealership during phase 1 (Camry Denso) of this Safety Recall.

#### D. MATERIALS

- Bubble wrap
- Masking tape
- Sandpaper 400 grit
- Shop cloth

### IV. BACKGROUND

In early October, Toyota announced it will initiate a Safety Recall Campaign (Special Service Campaign) for potential floor mat interference with the accelerator pedal. The condition involves the potential for an unsecured or incompatible driver's floor mat to interfere with the accelerator pedal and cause it to get stuck in the wide open position.

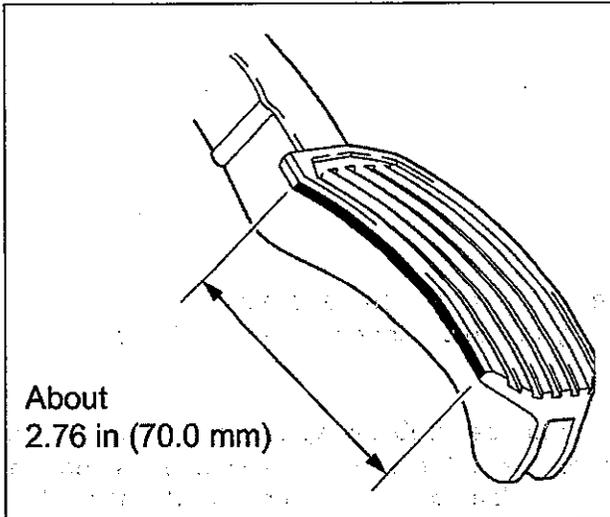
- The accelerator pedal will be modified to reduce the risk of an unsecured or incompatible floor mat from interfering with the accelerator pedal.
- Vehicles equipped with the optional genuine Toyota All Weather Floor Mats (AWFM) will be inspected to determine if the AWFM set is of an older design. If it is, the older design AWFM for the driver and the front passenger will be replaced with newly designed ones.

## V. WORK PROCEDURE

### A. PRELIMINARY INSPECTION FOR 2010 MODELS ONLY



The following inspection procedure is to determine if some 2010 models produced in February 2010 may have had a remedy applied to the accelerator pedal by the factory.



#### 1. INSPECT THE ACCELERATOR PEDAL ASSEMBLY

- a) Inspect the accelerator pedal length, is it approximately 2.76 in. (70 mm)?

##### YES

- The accelerator pedal has been remedied.
- Proceed to section E, step 3 "INSPECT THE FLOOR MAT".

##### NO

- The accelerator pedal requires modification proceed to the next step to begin the process.

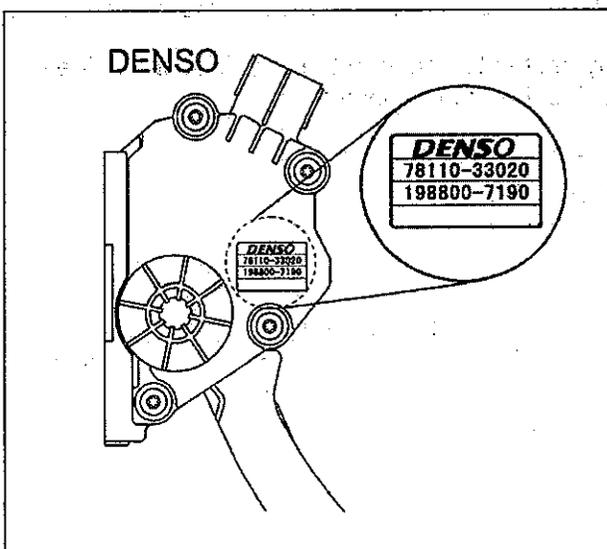
### B. REMOVE THE ACCELERATOR PEDAL



#### ACCELERATOR PEDAL HANDLING NOTES:

- DO NOT drop
- DO NOT reuse an accelerator pedal that has been dropped
- Avoid vibration and shock
- DO NOT place the sensor portion of the pedal in a vise
- Cover and uncover the sensor while in the vehicle to prevent damage and debris from entering

[CLICK HERE TO WATCH THE VIDEO BEFORE BEGINNING THE WORK PROCEDURE](#)



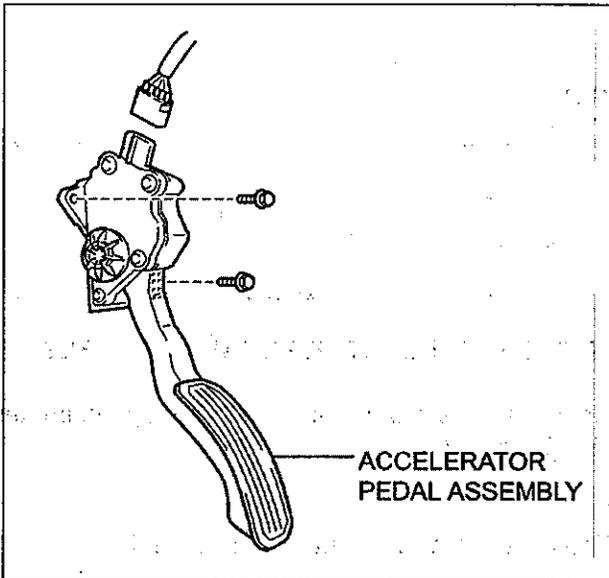
#### 1. IDENTIFY AND REMOVE THE DENSO ACCELERATOR PEDAL ASSEMBLY

[Click here to watch the video to supplement this step](#)

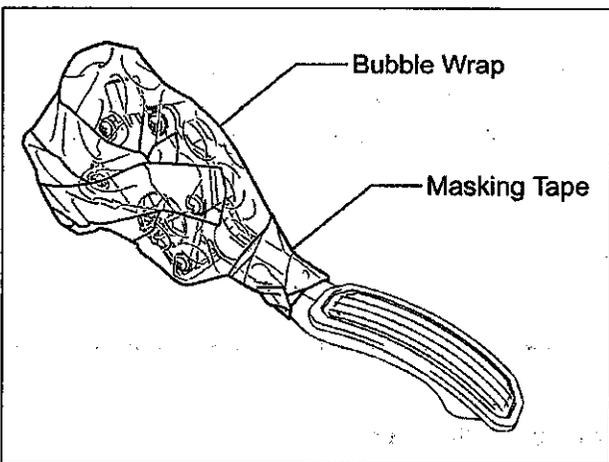
- a) Verify the vehicle has a Denso accelerator pedal assembly by identifying the manufacturing imprint as illustrated here.
- b) If the pedal is manufactured by Denso continue following the instructions.
- c) If the pedal is manufactured by CTS, DO NOT CONTINUE WITH THESE INSTRUCTIONS.

##### NOTE

Modifications should only be performed on Denso pedals.



- d) Record radio station presets.
- e) Disconnect the negative battery cable and wait 90 seconds.
- f) Disconnect the accelerator pedal electrical connector.
- g) Remove the 2 bolts.

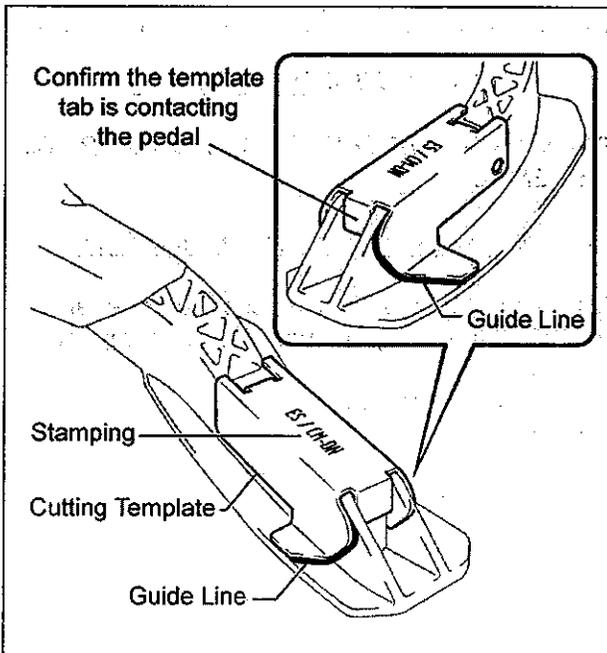


- h) While still inside the vehicle, use bubble wrap and masking tape to cover and protect the sensor.

**NOTE:**

- Be sure to use bubble wrap to protect the sensor.
- Be sure to seal the bubble wrap with masking tape to prevent damage to the sensor, and cutting debris from entering the pedal's movable lock.
- **DO NOT** reuse the bubble wrap.

**C. CUT THE DENSO ACCELERATOR PEDAL**



**1. MARK THE AREA TO BE CUT**  
**-DENSO ONLY-**

[Click here to watch the video to supplement steps \(1-2\)](#)

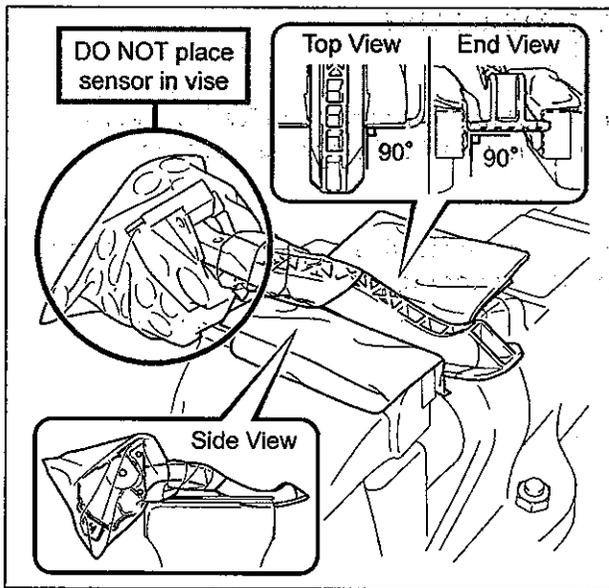
- a) Firmly set the template to the pedal. Scribe guide lines to outline the area to be cut.

**Cutting Template:**

- Color: Silver
- Stamping: ES / CM-DN

**NOTE:**

- **DO NOT** mark the area beyond the template.
- Use a flat tip screwdriver if a scribe is not available.
- Make sure to use the correct cutting template by verifying the color and stamping.
- Never cut or sand the pedal while the template is on the pedal.

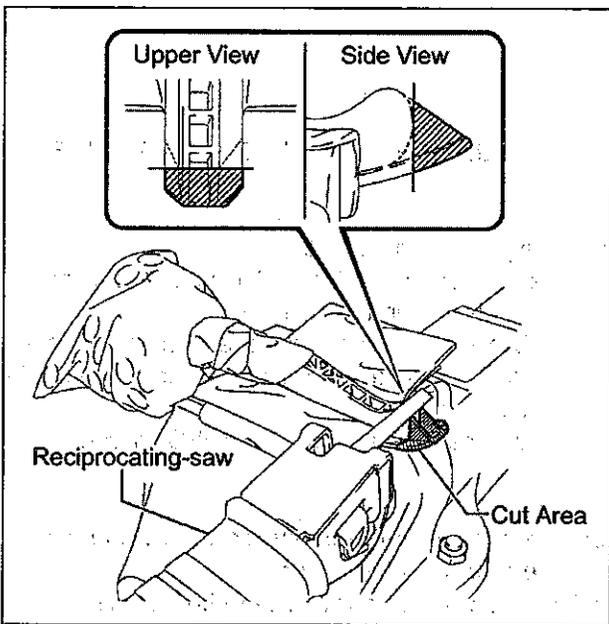


## 2. SECURE THE ACCELERATOR PEDAL ASSEMBLY - DENSO ONLY -

- a) Set the pedal in the vise at a right angle using a shop cloth while avoiding the sensor portion.

### NOTE:

- DO NOT place the sensor in the vise to avoid damage.
- Firmly secure the pedal to prevent it from moving.
- DO NOT over tighten the vise.



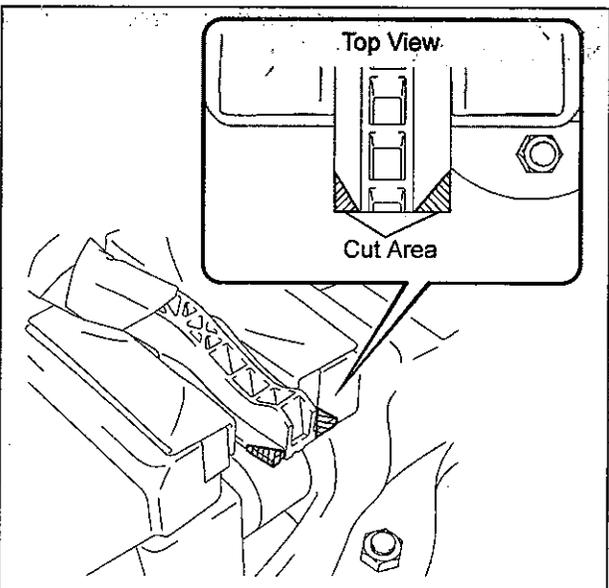
## 3. CUT THE ACCELERATOR PEDAL - DENSO ONLY -

[Click here to watch the video to supplement steps \(3-6\)](#)

- a) Using a reciprocating saw, cut the lower section of the pedal.

### NOTE:

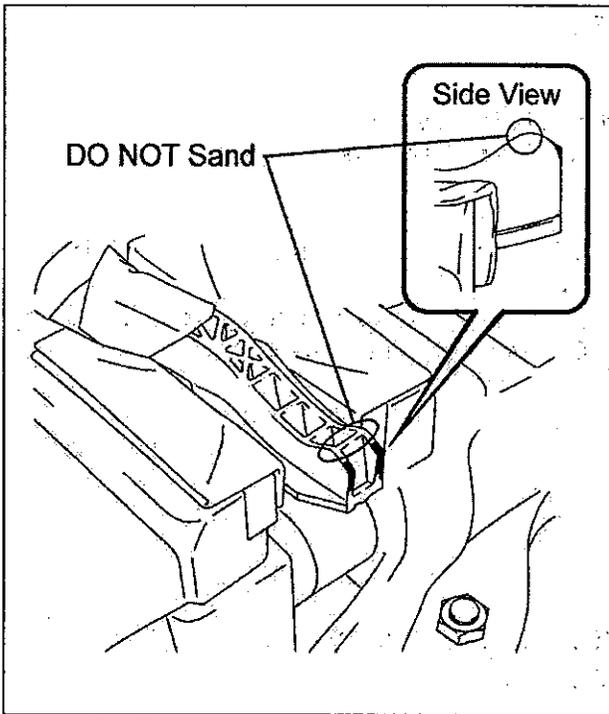
- Always wear protective eyewear, gloves, and dust mask when cutting.
- The cut must be straight and clean.
- Apply consistent pressure during cutting.
- Do not stop while cutting.



- b) Using a reciprocating saw, cut the corners of the pedal.

### NOTE:

- Always wear protective eyewear, gloves, and dust mask when cutting.
- Each cut must be straight and clean.
- Apply consistent pressure during cutting.
- Do not stop while cutting.

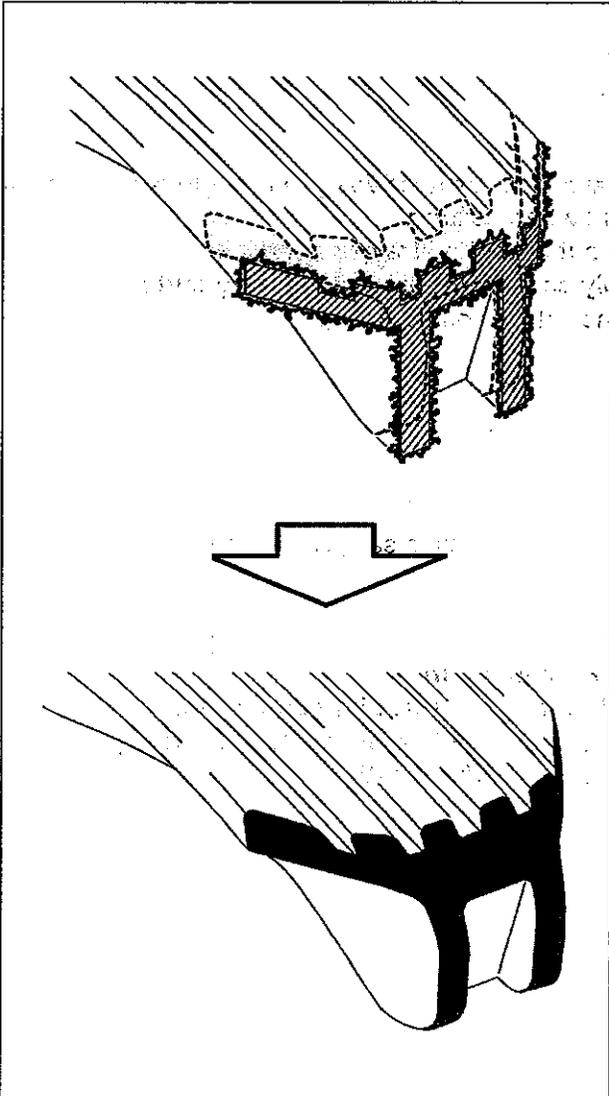


4. **SAND THE RADIUS LINE**  
**-DENSO ONLY-**

- a) Using an orbital sander, sand the radius line which was scribed and remove the sharp edges and burrs.

**NOTE:**

- Always wear protective eyewear, gloves, and dust mask when sanding.
- DO NOT sand the back of the pedal arm.

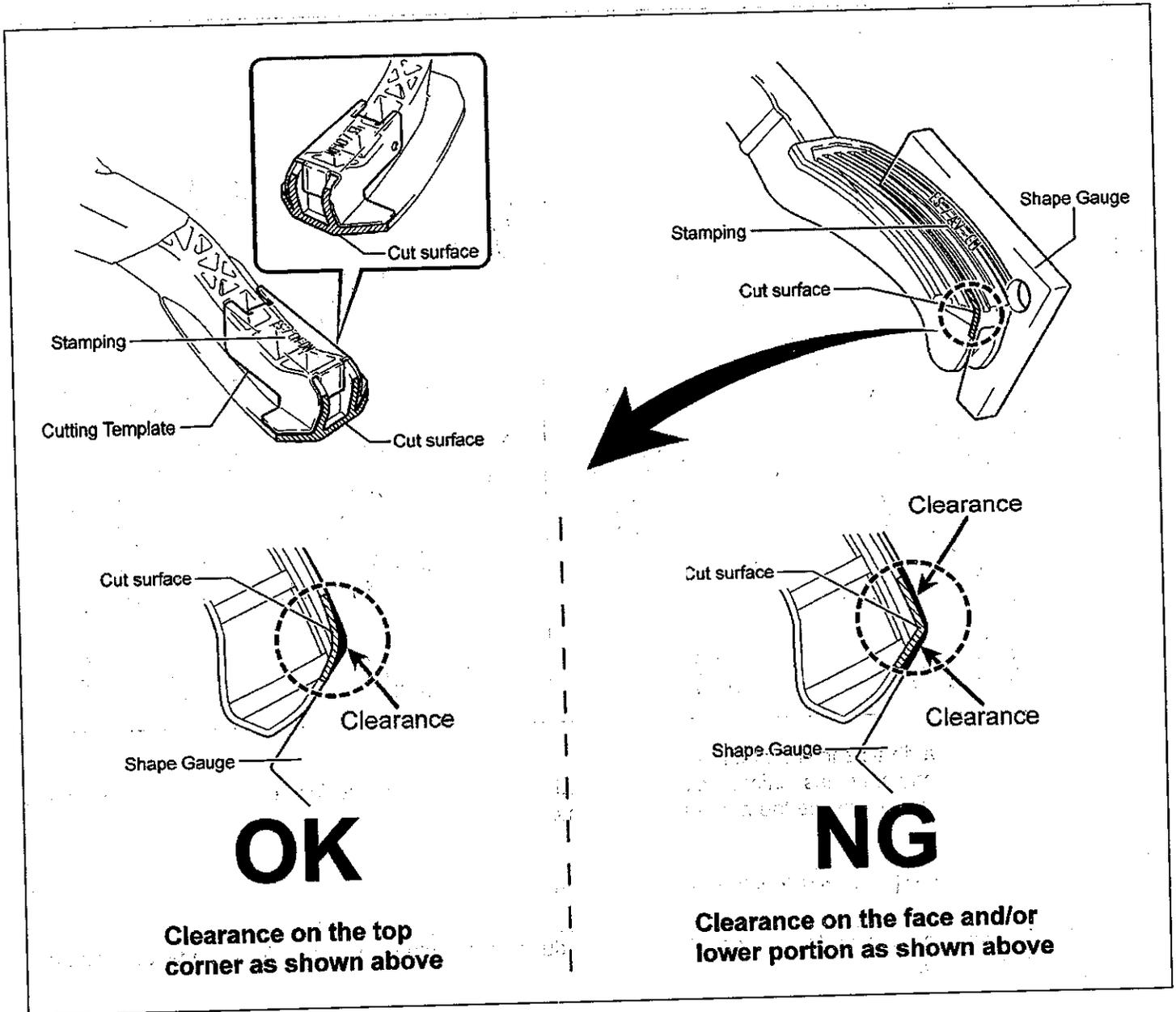


5. **REMOVE ALL BURRS FROM THE CUTTING SURFACE**  
**-DENSO ONLY-**

- a) Remove the pedal from the vise.  
 b) Turn the pedal over and set the pedal in the vise using a shop cloth while avoiding the sensor.  
 c) Using an orbital sander and file, remove all burrs from the cutting surface. The cut edges along the foot pad should be rounded and not square.  
 d) Finish the cut surface and all edges with 400 grit sandpaper.

**NOTE:**

- Always wear protective eyewear, gloves, and dust mask when sanding or filing.
- DO NOT place the sensor in the vise to avoid damage.
- Firmly secure the pedal to prevent it from moving.
- DO NOT over tighten the vise.



**6. CHECK THE SHAPE OF THE PEDAL**  
**- DENSO ONLY -**

a) Using the correct cutting template and shape gauge, check the shape of the pedal.

**Cutting Template**

Color: Silver,  
 Stamping: ES / CM-DN

**Shape Gauge** (Same as CTS Gauge)

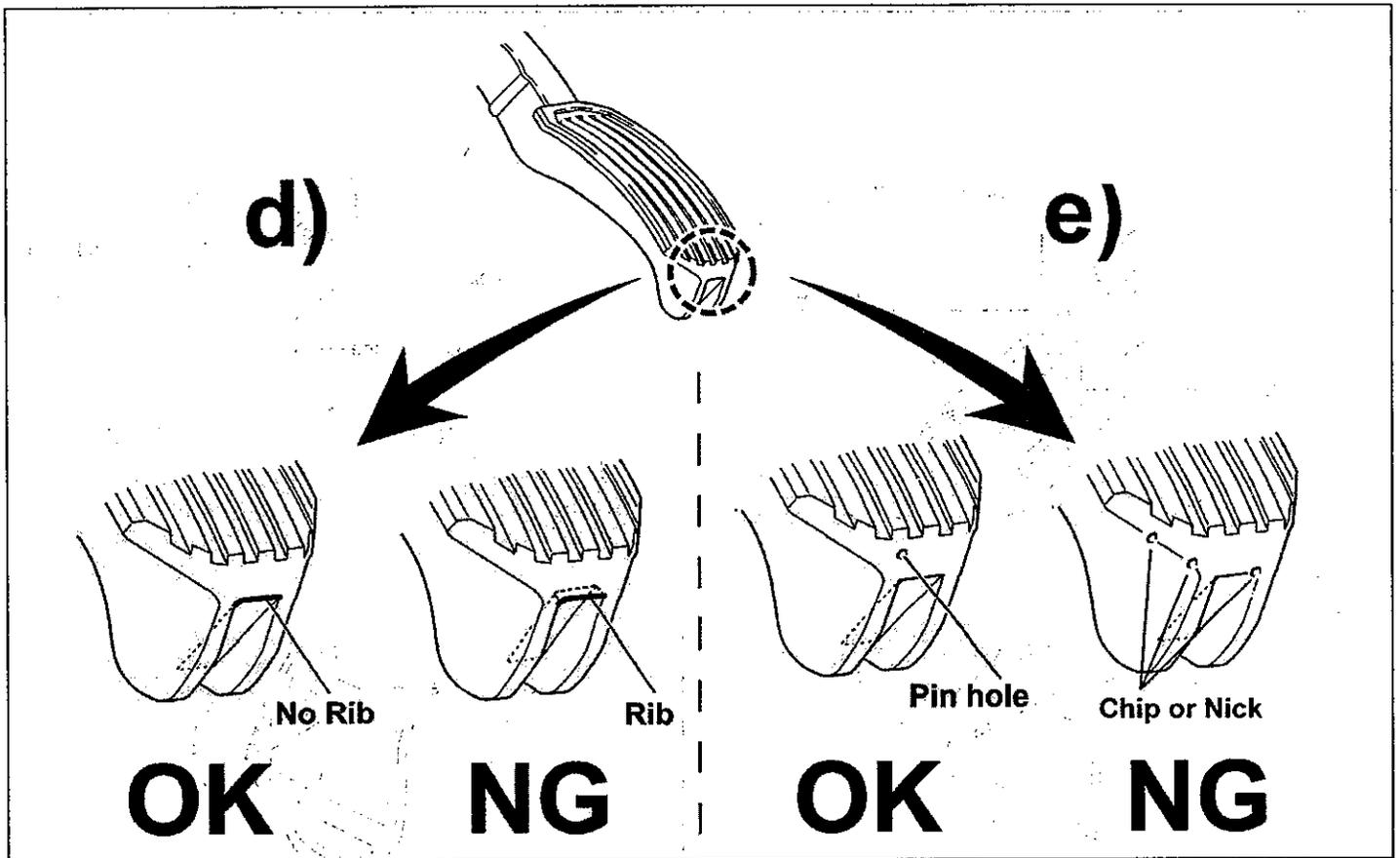
Color: Silver  
 Stamping: ES / AV-CM

b) If the shape does NOT match the template and or gauge, continue filing.

c) If the shape matches the template and gauge, touch the cut surface with your hand to verify it is smooth and free of burrs.

**NOTE:**

- Always wear protective eyewear, gloves, and dust mask when sanding or filing.
- A tolerance of -1.0 mm is permissible between the final cut surface and the template.



d) Check for a rib as shown. If there is a rib, file it until it is gone.

e) Check for any pin holes, chips, nicks or sharp edges on the finished surface edge. If there are any chips, nicks or sharp edges file them to make them smooth.

**NOTE:**

The key point of judgment is a "smooth pedal surface".

f) If a "smooth pedal surface" cannot be achieved due to a pinhole / cavity, repair the pedal utilizing the steps below.

**Materials Needed:**

- KBS Coatings - NuMetal® Epoxy Putty (Black)

Contact: 1-888-531-4527

Website: [www.kbs-coatings.com/KBS-NuMetal-Epoxy-Putty\\_p\\_9-19.html](http://www.kbs-coatings.com/KBS-NuMetal-Epoxy-Putty_p_9-19.html)

**OR**

- Milliput® Black Epoxy Putty

Website: [www.milliput.com/home.htm](http://www.milliput.com/home.htm)

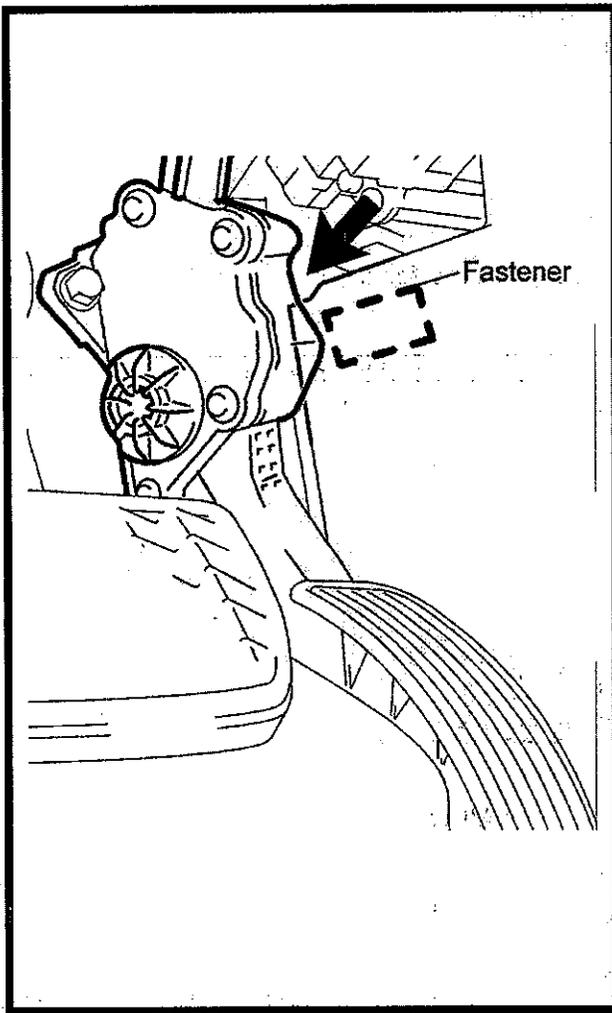
**Repair Instructions:**

- **Make sure to follow all manufacturer directions and cautions when using the Epoxy Putty.**
- Fill in the pin hole/cavity with the Epoxy Putty, and then smooth it out with a wet finger as outlined in the instructions included with the putty.

**Notes:**

- Make sure to use black Epoxy Putty, both brands listed above are offered in that color.
- Milliput® Black Epoxy Putty is from a UK supplier, and may be difficult to locate in the US. If you should encounter this, please utilize KBS Coatings - NuMetal® Epoxy Putty (Black) that is locally supplied and easier to locate.

## D. REINSTALL THE ACCELERATOR PEDAL ASSEMBLY



### 1. REINSTALL THE ACCELERATOR PEDAL ASSEMBLY

- a) Remove and discard the masking tape and bubble wrap from the accelerator pedal assembly, while it is inside the vehicle.
- b) Reinstall the pedal with the 2 bolts and torque to specification.

**Torque Specification: 5.4 Nm (55 kgf cm, 48 in. lbf)**

- c) Reconnect the accelerator pedal connector.



Carefully take the time to properly perform Step 1d below. It is necessary to correctly complete this step so the pedal does not get caught by the floor carpet during operation.

- d) Confirm the floor carpet is secured by the fastener and the corner of the carpet is behind the accelerator pedal assembly as shown.
- e) Reconnect the negative battery cable.
- f) Set the clock and radio station presets.
- g) Reinitialize the vehicle system(s) as outlined in the repair manual on TIS for the vehicle you are working on.

#### NOTE

- **DO NOT** reuse the bubble wrap.
- For additional information on accelerator pedal installation, please refer to TIS.

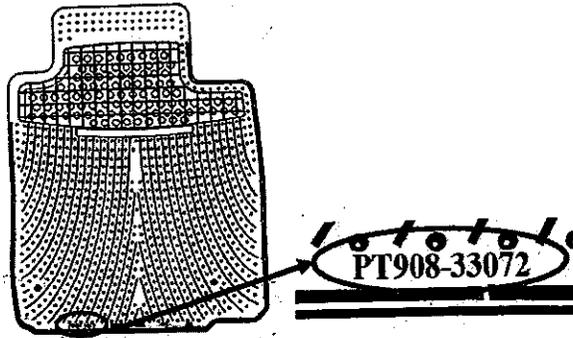
## 2. INSPECT THE FLOOR MAT

- a) Inspect the carpet and floor mat and clean them as appropriate.
- b) Confirm the correct floor mat for this model is secured with the retaining hooks (clips).
  - If the grommets in the floor for the vehicle are in poor condition, refer to the appropriate TSB and repair the grommets.

### NOTE:

- If a Recalled All Weather Floor Mat (AWFM) has been identified, remove the AWFM from the vehicle and **CUT THE RECALLED AWFM SO THAT IT CANNOT BE REUSED.**
- You may remove the semi-permanent installation plastic straps for the carpeted floor mat once the repair is completed.

Locate the ten digit floor mat part number on the bottom of the back side of the mat as illustrated below. PLEASE NOTE, the floor mat part numbers are 12 digits but only the first ten are shown.



### For Carpeted Floor Mats:

Utilizing the ten digit part number and the chart below, confirm the vehicle has the correct carpeted floor mat.

| Part Number    | Model             | Type   | 08 | 09 | 10 | Color      |
|----------------|-------------------|--------|----|----|----|------------|
| PT919-48081-22 | Highlander Hybrid | Carpet | x  | x  | x  | Ash        |
| PT919-48081-41 | Highlander Hybrid | Carpet | x  | x  | x  | Sand Beige |
| PT919-48082-11 | Highlander Hybrid | Carpet | x  | x  | x  | Black      |
| PT919-48082-22 | Highlander Hybrid | Carpet | x  | x  | x  | Ash        |
| PT919-48082-41 | Highlander Hybrid | Carpet | x  | x  | x  | Sand Beige |

### For All Weather Floor Mats (AWFM):

Utilizing the ten digit part number and the chart below, confirm the vehicle has the newly designed AWFM.

| Part Number    | Model             | Type        | 08 | 09 | 10 | Color |
|----------------|-------------------|-------------|----|----|----|-------|
| PT908-48H0W-02 | Highlander Hybrid | All Weather | x  | x  | x  | Black |

### NOTE:

The part numbers listed above are for the 2 piece (driver & front passenger) campaign set ONLY.

**DO NOT** use the recalled AWFM listed below. These AWFM must be removed from the vehicle and recovered by the dealer.

| Part Number    | Model             | Type        | 08 | 09 | 10 | Color |
|----------------|-------------------|-------------|----|----|----|-------|
| PT908-48088-22 | Highlander Hybrid | All Weather | x  | x  | x  | Black |

All recalled AWFM will be placed on Warranty Parts Recovery, and dealers will be required to return them to TMS. AWFM that are not returned will result in the claim being debited.

- c) Confirm the pedal does not get caught on the floor or floor mat during operation.
- d) Confirm the pedal operates properly.

### 3. INSPECT THE ACCELERATOR PEDAL ASSEMBLY OPERATION

- a) Connect Techstream to the DLC3.
- b) Enter the following menus: Powertrain / Hybrid Control / Data List.
- c) Check the values by referring to the table below.

| Tester Display          | Measurement Display:                    | Normal Condition                              |
|-------------------------|---|---|
| Accel Sens. No.1 Volt % | Accelerator pedal position sensor No. 1 | Accelerator Pedal Released: 8% - 28%          |
|                         |   | Accelerator Pedal Fully Depressed: 62% - 92%  |
| Accel Sens. No.2 Volt % | Accelerator pedal position sensor No. 2 | Accelerator Pedal Released: 20% - 44%         |
|                         |   | Accelerator Pedal Fully Depressed: 78% - 100% |

**NOTE:**

There are two sets of Accel Sensor Out No. 1 & No. 2 parameters. Select ALL DATA (A to Z) on the pull down menu at the bottom of the screen when searching for the correct parameter set.

### 4. CHECK FOR DTC CODES

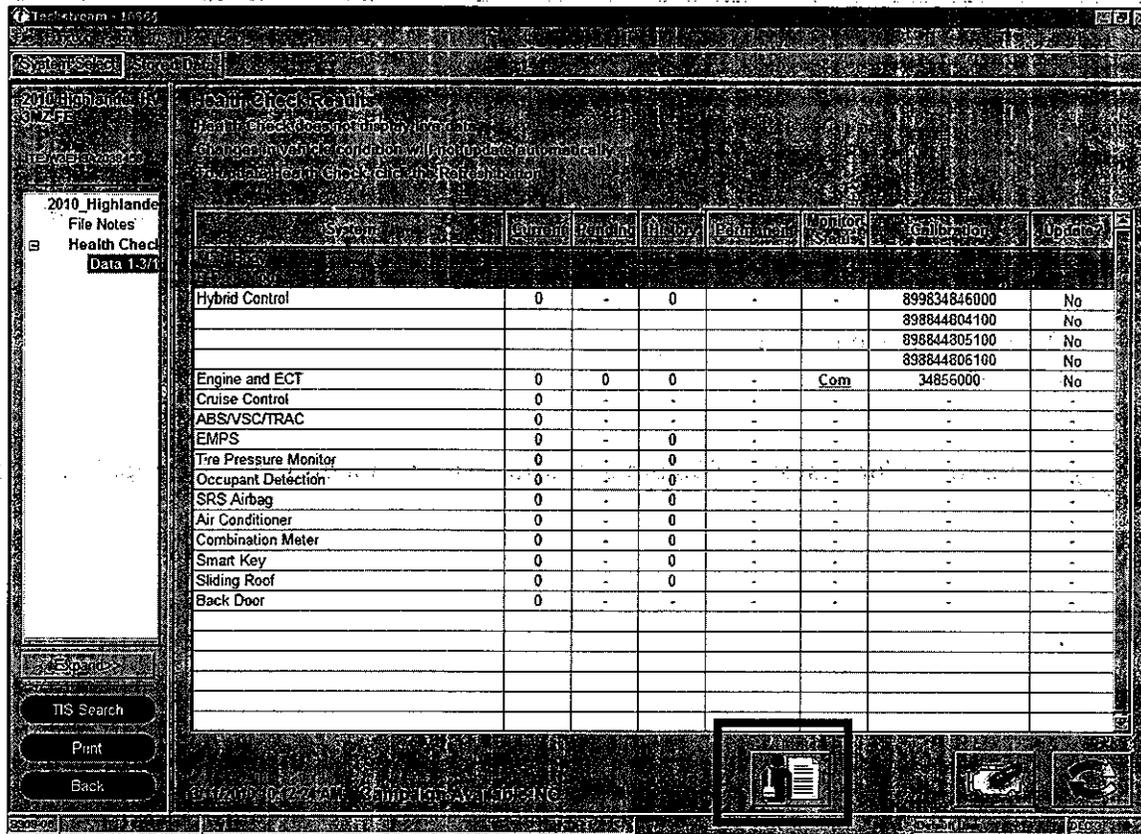
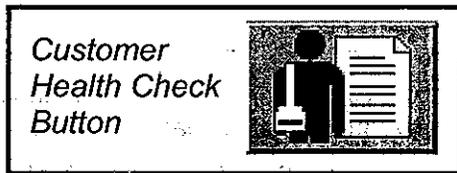
- a) Connect the Techstream to the DLC3.
- b) Check for DTC codes.

**NOTE:**

If any Pending, Current, and/or History DTCs are set, troubleshoot according to the repair manual.

## 5. PRINT CUSTOMER HEALTH CHECK REPORT

- a) From the Health Check Results screen select the Customer Health Check Report button (TIS will launch when button is pressed).



- b) Log in to TIS.  
 c) Input Vehicle Mileage and Repair Order number.  
 d) Check the "Performed" radio button for the 90L campaign and any other campaigns completed during this service event.  
 e) Select the Report button.

A screenshot of a 'Diagnostic Report' form. At the top left are the Toyota and Lexus logos. The title 'Diagnostic Report' is on the top right. Below the logos is the section 'Vehicle Information' with fields for 'Mileage: 7787' and 'Repair Order: 77888'. A paragraph of text asks if any campaigns are outstanding. Below this, the '90L' campaign is listed with a radio button selected for 'Performed' and another for 'Not Performed'. A 'Report' button is at the bottom.

**Diagnostic Report**

**Vehicle Information**

Mileage: 7787

Repair Order: 77888

Our systems show the following campaigns are outstanding. Have any of these campaigns been completed? (Check for SSC door label if unsure.)

90L  Performed  Not Performed

f) Confirm Customer Health Check Report information is correct.

|  |                               | <h1>Diagnostic Report</h1> |           |
|---|-------------------------------|----------------------------|-----------|
| <h2>Vehicle Information</h2>  |                               |                            |           |
| <b>Vehicle:</b> 2010 Highlander HV<br><b>Repair Order:</b> 77888                  | <b>VIN:</b> JTEJW3EH9A2038458 | <b>Mileage:</b> 7787       |           |
| <h2>Health Check Summary</h2>   |                               |                            |           |
| Checkpoints   | Status                        | Comments                   |           |
| Powertrain Systems  | All systems OK                |                            |           |
| Chassis Systems   | All systems OK                |                            |           |
| Electrical Systems  | All systems OK                |                            |           |
| Network Systems   | All systems OK                |                            |           |
| Service Campaigns   | No Action Required            | 901                        | Performed |
| <small>Performed: 3/11/10, 10:12 AM</small>                                       |                               |                            |           |

g) Print Customer Health Check Report from TIS.

h) Sign and provide to the customer.

**6. TEST DRIVE THE VEHICLE AND INSPECT FOR ANY PROBLEMS**

**VI. APPENDIX**

**A. RECALLED PARTS DISPOSAL**

As required by Federal Regulations, please make sure all recalled parts (original parts) removed from the vehicle are disposed of in a manner in which they will not be reused, ***unless requested for parts recovery return.***