



**IMPORTANT SERVICE
INFORMATION FOR:**

- ✓ SERVICE MANAGER
- ✓ SERVICE ADVISOR
- ✓ TECHNICIAN
- ✓ PARTS DEPARTMENT
- ✓ WARRANTY PERSONNEL

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GROUP:
FUEL AND EXHAUST

TRAX II DUAL FUEL TANK CONTROL MODULE AND WIRING HARNESS REPLACEMENT

AFFECTED VEHICLES

- 2008-2018MY Isuzu N-Series Diesel Vehicles Equipped with RPO IK9 TRAX II Dual Fuel Tank Systems

CONDITION

The Dual Fuel Tank Control Module and wiring harness assembly previously supplied by AIPDN as replacement parts for the TRAX II Dual Fuel Tank Option are no longer available. If either one of these components requires replacement the entire system must be converted to a new TRAX 3 configuration.

This bulletin provides the installation procedure and the replacement part numbers for the parts needed for the conversion to the TRAX 3 configuration. For repairs that are still covered by the manufacturer warranty, claim submission information is also provided.

To confirm installation is completed correctly and the system is operating normally, perform the system test at the end of this bulletin using special tool number EN-53585 TRAX 3 Auxiliary Fuel System Diagnostic Module.

SERVICE PROCEDURE

I. Preparation

1. Disconnect both the negative (-) and the (+) positive battery cables.
2. Remove the front grille: disengage the five (5) clips by sliding the tabs, remove the Phillips screw, then grasp the grille on the lower corner edges and pull outward to remove. (See Figure 1.)

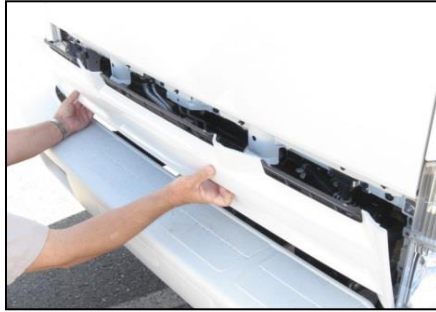


Figure 1

3. Remove the two (2) clips from the lower dash panel, remove the panel. (See Figure 2.)



Figure 2

4. Remove the side panel by removing the one (1) T-25 torx from the inside edge of the panel and the one (1) support clip from the outer side panel. (See Figure 3.)

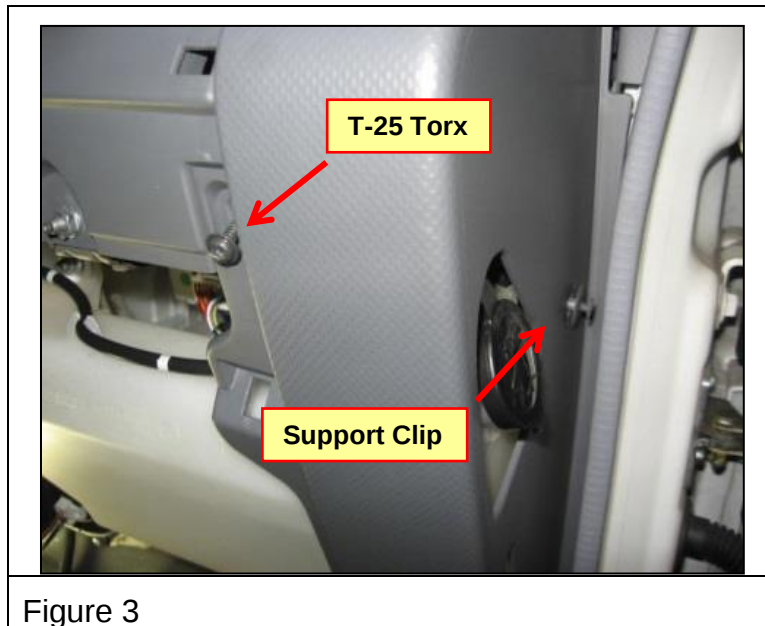


Figure 3

5. Remove the two (2) 12 mm bolts and the one (1) 12 mm nut securing the windshield washer reservoir. (See Figure 4.)



Figure 4

6. Remove the electrical connector from the back side of reservoir, then remove the reservoir and place it to the side.

II. Removing the Trax II System

1. Remove the Trax II module and bracket assembly. (See Figures 5 and 6.)



Figure 5

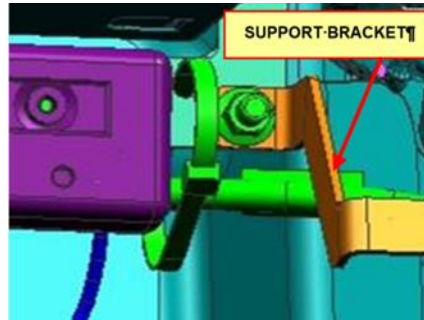


Figure 6

2. Remove the support bracket and relay mounting nut and bolt. Place the bracket and relay in a safe place, as these will be reused for the retrofit. (See Figure 7.)

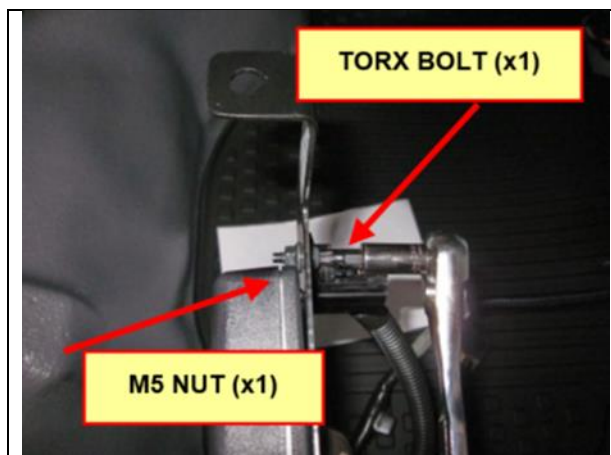


Figure 7

3. Loosen the Butyl tape where the Dual Fuel Tank (DFT) harness passes through the cab and separate the plug from the cab. (See Figure 8.)



Figure 8

4. Pull the harness through the hole to remove it from the cab.
5. Starting from the front of the vehicle, cut and remove all the tie straps that secure the DFT harness along the entire frame rail. (See Figure 9.)

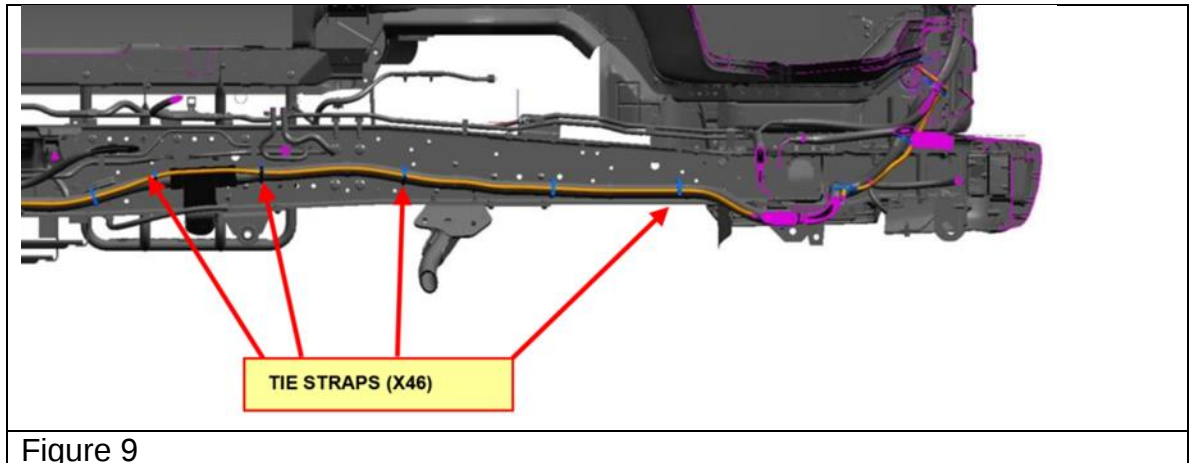


Figure 9

6. Disconnect the harness connectors at the Auxiliary fuel tank and Auxiliary Fuel Pump. Cut and remove any remaining tie straps and loosen the harness. (See Figures 10 and 11.)

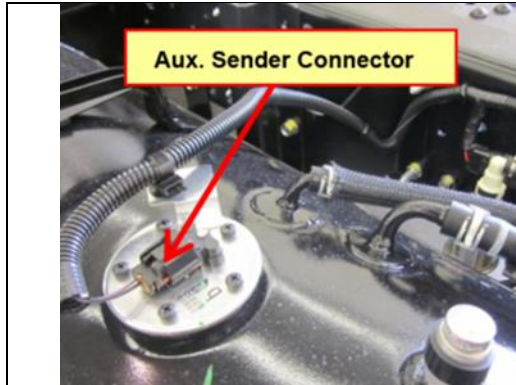


Figure 10

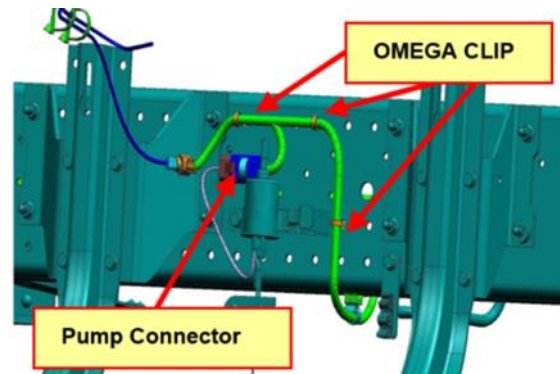


Figure 11

7. Disconnect the Power Take Off (PTO) and Main Fuel Tank connectors. Remove all the tie straps from the Main Fuel Tank section of the harness. (See Figures 12 and 13.)

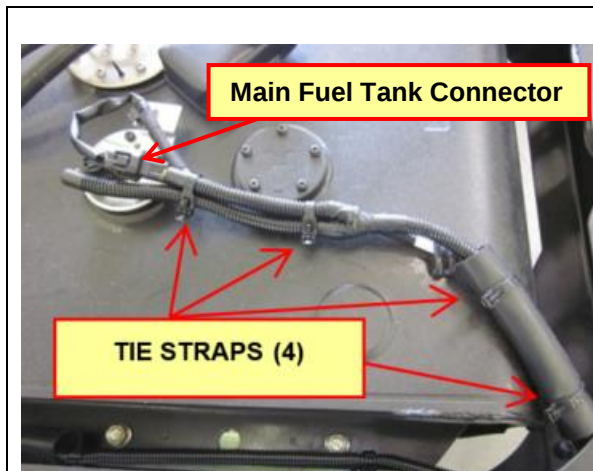


Figure 12

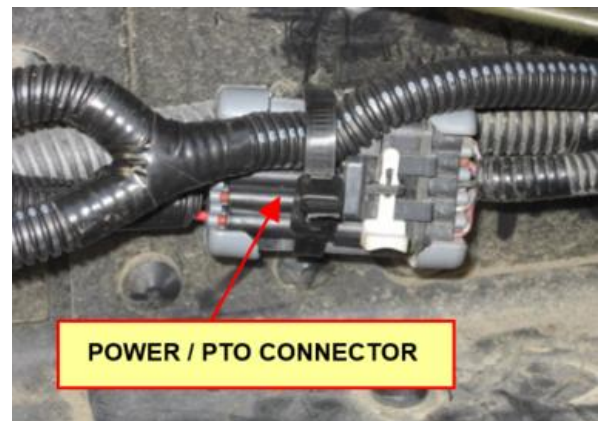


Figure 13

8. Remove the Trax 2 harness assembly.

III. Beginning of Harness Connections

1. Remove the Fuel Pump Relay from the DFT harness. Place the relay in the glove compartment. The relay will be re-installed with the module in Section VI. (See Figure 14.)

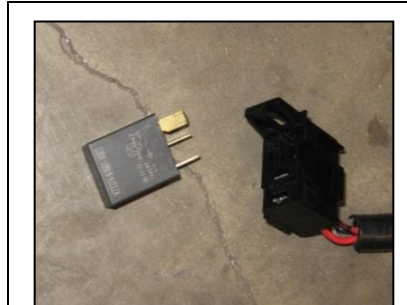


Figure 14

2. Position the front half of the new DFT harness towards the front of the vehicle and the rear half towards the rear. Route the new DFT harness through the left side frame rail opening (second cross-member). (See Figure 15.)

NOTE: The new DFT harness is routed in the same manner as the old TRAX II harness was routed.



Figure 15

3. Attach the frame clip to DFT the harness tie-strap. (See Figure 16.)



Figure 16

4. Attach the clip to the frame, to the right of the previously installed fuel pump connector bracket. Secure the DFT harness with the tie-strap. (See Figure 17.)

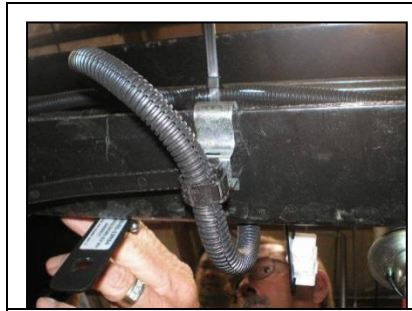


Figure 17

5. Attach the DFT harness (in front of the fuel pump Y-split) to the chassis harness with one (1) tie-strap (See Figure 18) directly above the previously installed frame clip.



Figure 18

6. At the third cross-member, remove the tape, white locking tab, and cover (discard the tape and cover) of the PTO connector (the larger connector). (See Figure 19.)

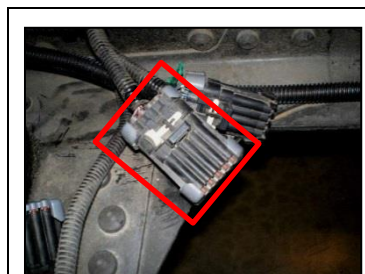


Figure 19

7. Attach the DFT harness connector to the PTO connector. (See Figure 20.) **The White Locking Tab Must Be Re-installed!**



Figure 20

8. Secure the PTO connector to the chassis harness at the rear of the cross-member with one (1) tie-strap. (See Figure 21.)

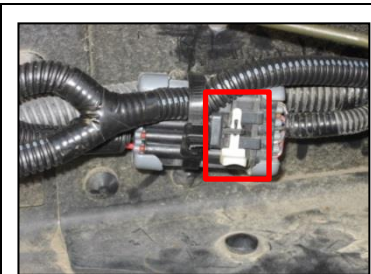


Figure 21

IV. FRONT TRAX 3 HARNESS INSTALLATION

1. Route the front section of the DFT harness adjacent to the main chassis harness in the frame rail, from the fuel pump towards the front axle. (See Figure 22.)

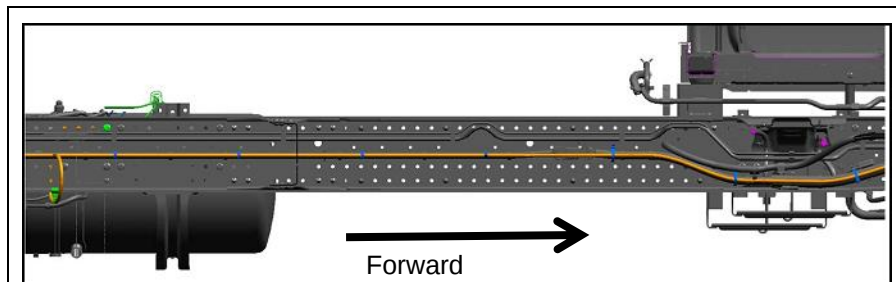
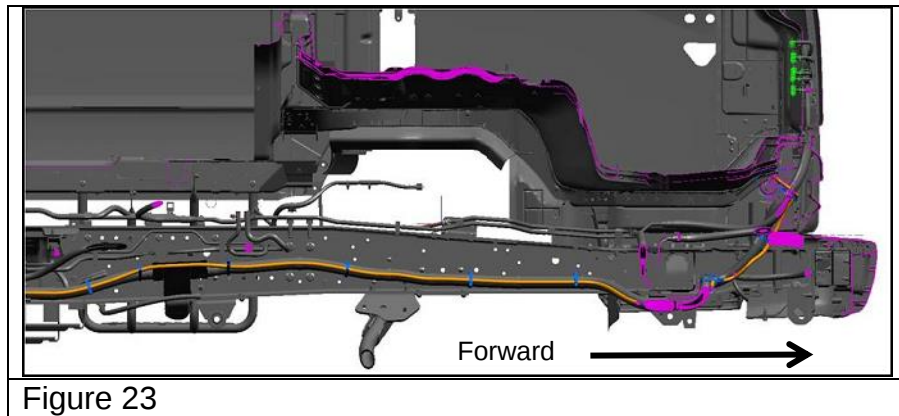
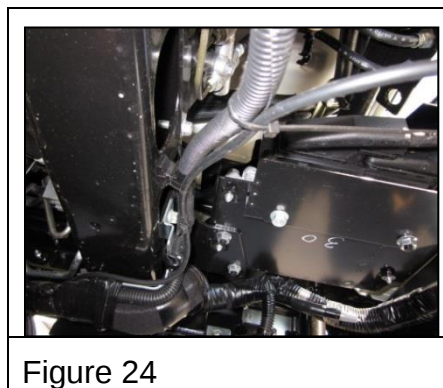


Figure 22

2. Continue routing the front section of the harness adjacent to the main chassis harness in the frame rail, over the front axle, to the front of the cab. (See Figure 23.)



3. Route the DFT harness along the main chassis harness - past the radiator, over the sway bar, then to the right of the DEF Control Module (DEFCM) bracket and finally, out to the front of the vehicle. (See Figure 24.)



4. Using a utility knife cut two (2) diagonal slits in the middle section of the new cab plug. (See Figure 25.)



5. Push the DFT harness through the opening made in the plug from the slotted side. (See Figure 26.)



Figure 26

NOTE: Ensure the harness enters through the slotted side and comes out through the curved side.

6. Route the harness through the hole, up into the cab. Do not install plug at this time. (See Figure 27.)

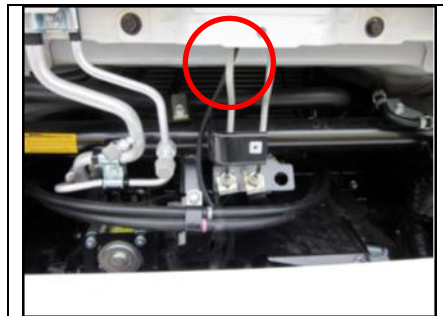


Figure 27

7. Pull approximately 30 inches of the harness into the cab to allow for the module installation. (See Figure 28.) Ensure the DFT harness is routed behind the HVAC floor brackets.



Figure 28

NOTE: 30 inches is approximately from the center cab floor hole to the Mimamori Unit (MMU) bracket assembly.

8. Cut a lower case “†” shape into the butyl seal. (See Figure 29.)



Figure 29

9. Secure the plug into the hole. The side with the slots should be facing downward when installed. (See Figure 30.)



Figure 30

10. Install the butyl seal over the cab plug and around the harness. Ensure the butyl seal makes a tight, waterproof seal. (See Figure 31.)



Figure 31

11. Tilt the cab in accordance with the directions in the applicable Workshop Manual (WSM), make sure the tilt support locks in place and install the safety pin.
12. Secure the DFT harness with two (2) tie-straps onto the torsion bar. (See Figure 32.)

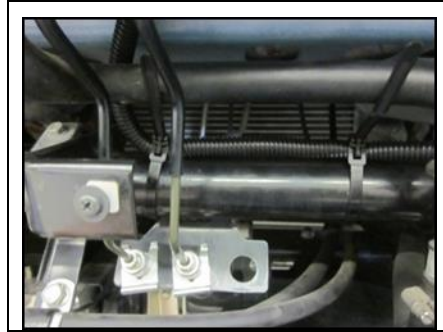


Figure 32

NOTE: Following the procedure set forth in the applicable WSM, tilt and close (lower), then open and raise the cab several times in order to ensure there is sufficient slack in the DFT harness after it has been secured to the torsion bar. Remove the tie-straps and adjust the DFT harness as necessary to provide sufficient slack.

13. Proceeding from the torsion bar, use four (4) tie straps to secure the DFT harness to the main chassis harness. Route the DFT harness on the right of the main chassis harness and behind the DEFCM bracket as indicated in Figure 33.

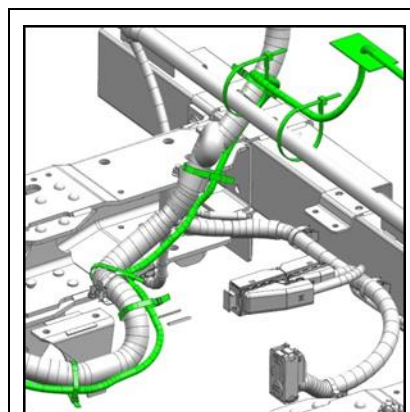


Figure 33

14. Pull the excess DFT harness from the front of cab towards the rear of the vehicle. Using five (5) tie straps, secure the excess DFT harness to the chassis harness at the frame rail under the cab area. (See Figures 34, 35, and 36.)
 - One (1) at the radiator

- One (1) before the axle
- One (1) after the axle
- One (1) before the chassis harness junction
- One (1) after the chassis harness junction.

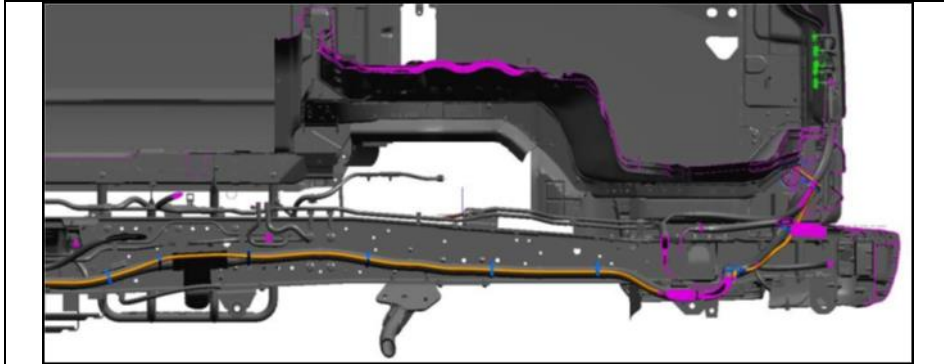


Figure 34



Figure 35



Figure 36

15. Continue routing the DFT harness towards the rear and secure it to the chassis harness with four (4) tie straps at the four (4) locations (before the batteries) specified in Figure 37.

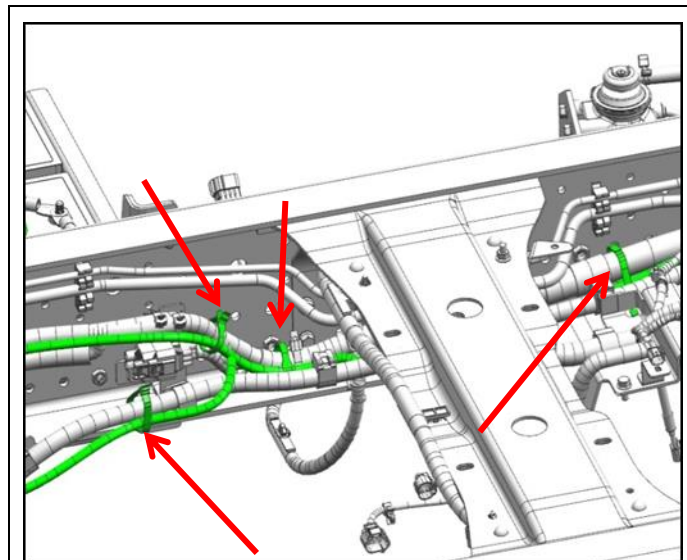


Figure 37

NOTE: On 150" Wheel Base (WB) vehicles, a small loop will need to be placed in the battery branch leads.

NOTE: Do not secure remaining front harness until after rear harness has been installed.

V. REAR TRAX 3 HARNESS INSTALLATION

1. From the PTO connector, route the rear section of the DFT harness adjacent to the chassis harness in the frame rail inside of the fuel lines, under the brake lines and then upwards to the fuel sender. (See Figure 38.)

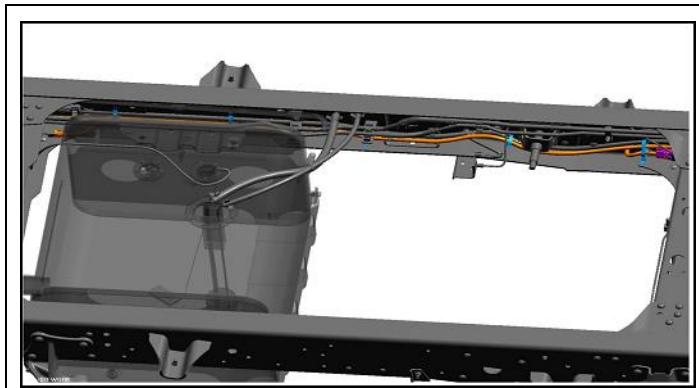


Figure 38

2. Disconnect the primary fuel sender harness connector and re-connect it to the DFT harness, then connect the DFT harness connector to the primary fuel sender. (See Figure 39.)

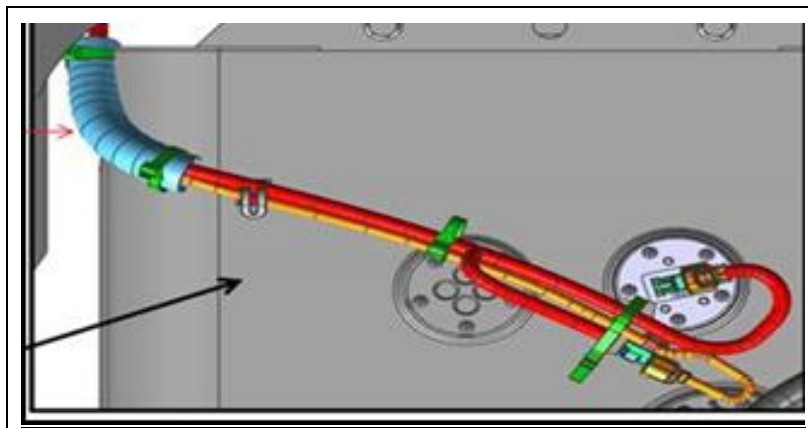


Figure 39

3. Wrap one of the sleeves around both the primary & the DFT harnesses.
4. Install four (4) tie-straps around sleeve and both the primary & the DFT harnesses as shown in Figure 40.



Figure 40

5. Pull any excess harness towards the front of the vehicle. Secure the DFT harness to the chassis harness with three (3) tie-straps, between the in-rail tank and cross-member. (See Figure 41.)

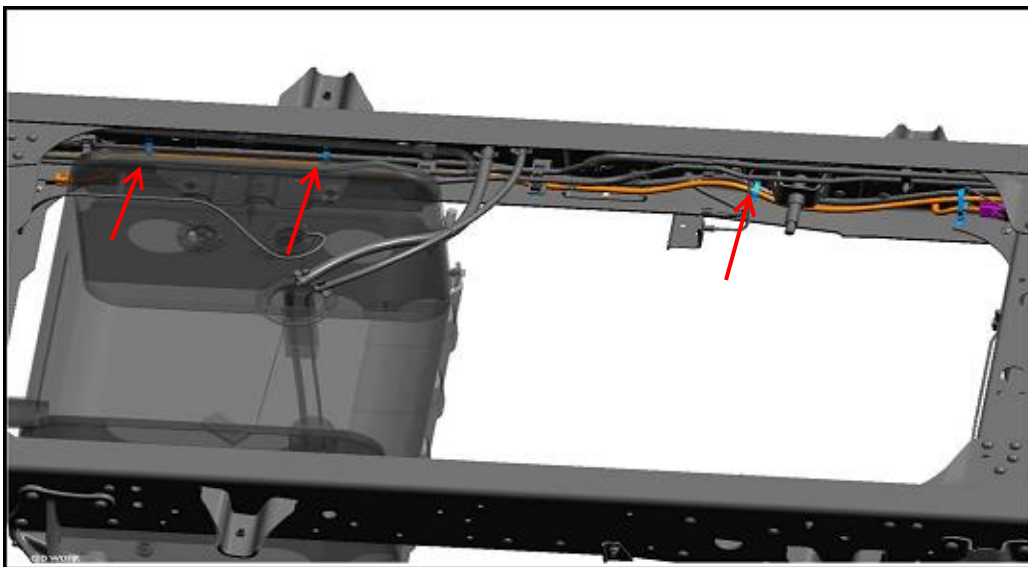


Figure 41

6. Continue to route the harness from the rear of the vehicle towards the auxiliary tank.
7. Secure the DFT harness, between cross-members, with three (3) tie-straps. Depending on WB, the excess harness should be bundled at approximately the rear

edge of the battery and secured with two (2) tie straps. (See Figure 42.)

Bundle excess harness as follows:

- 150" WB ~ 62" of harness
- 176" WB ~ 36" of harness

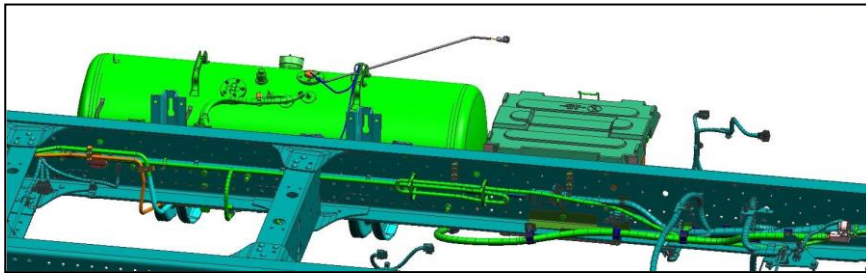


Figure 42

8. Complete the DFT harness installation by securing the harness with one tie-strap before and a second tie strap after the connector as shown in Figure 43.

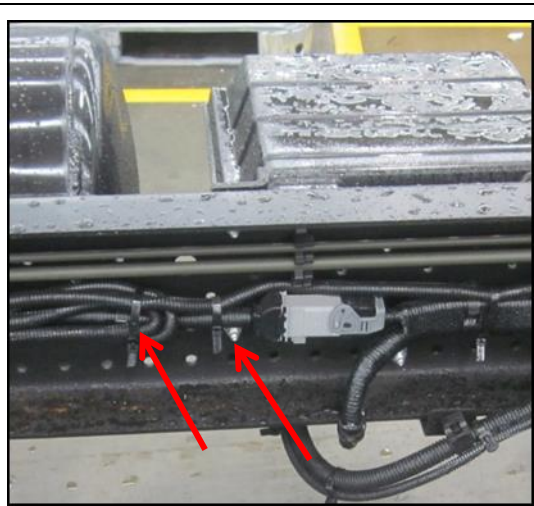


Figure 43

9. Wrap the other sleeve around both the vehicle harness and the DFT harness, over the bump-stop bracket and secure with two (2) tie-straps. (See Figure 44.)

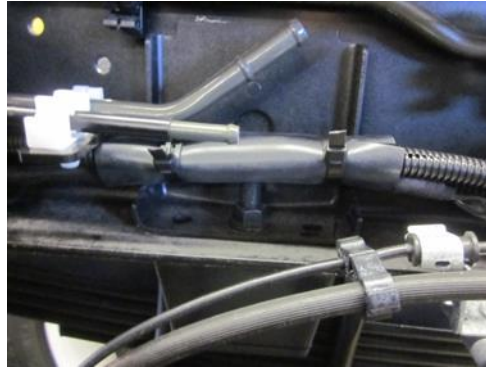


Figure 44

10. Connect the fuel pump/auxiliary tank sending unit harness connector to the fuel pump connector. (See Figure 45.)

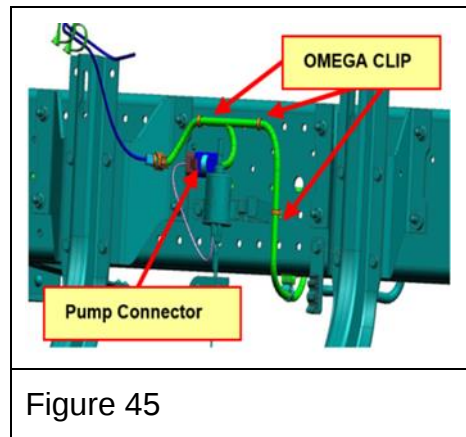


Figure 45

11. Secure the fuel pump/harness connectors and the DFT harness to the frame using omega clips. (See Figure 45.)
12. Connect the DFT harness to the auxiliary sending unit. Then secure the sending unit harness to the auxiliary tank with the square head tie-strap. (See Figure 46.)

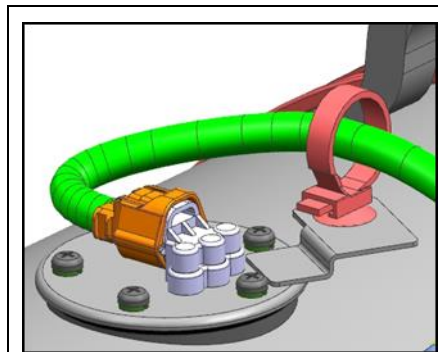
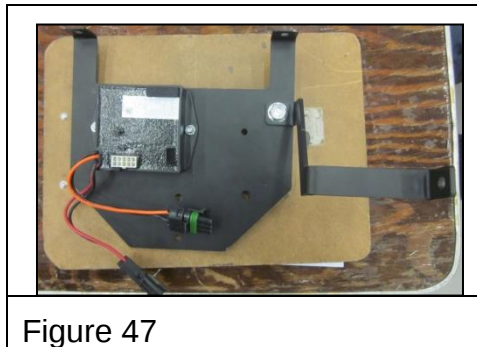


Figure 46

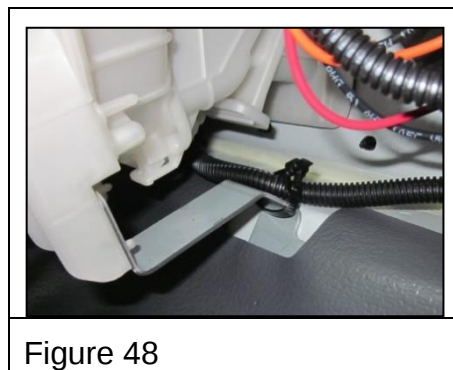
VI. MODULE ASSEMBLY AND HARNESS CONNECTIONS

NOTE: PERFORM A SYSTEM TEST USING THE EN-53585 TRAX 3 AUXILIARY FUEL SYSTEM DIAGNOSTIC MODULE BEFORE MOUNTING AND SECURING THE MODULE COMPONENTS AND WIRING.

1. Figure 47 shows the module support bracket to module assembly connector retainer holes and relay mounting hole.



2. Ensure the DFT harness is routed behind all the HVAC brackets. (See Figure 48.)



NOTE: Do not insert the power lead connector retainers at this time.

3. Take the relay that was placed in the glove compartment in Section III above and insert it into the connector on the DFT harness.
4. Insert the white connector into the module and connect the two power leads. Place the assembly in the passenger foot well for testing. (See Figure 49.)

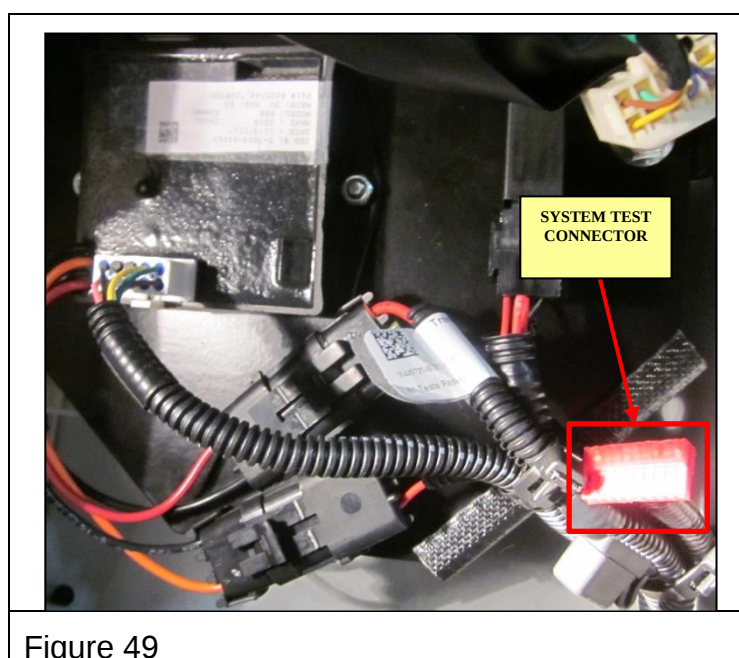


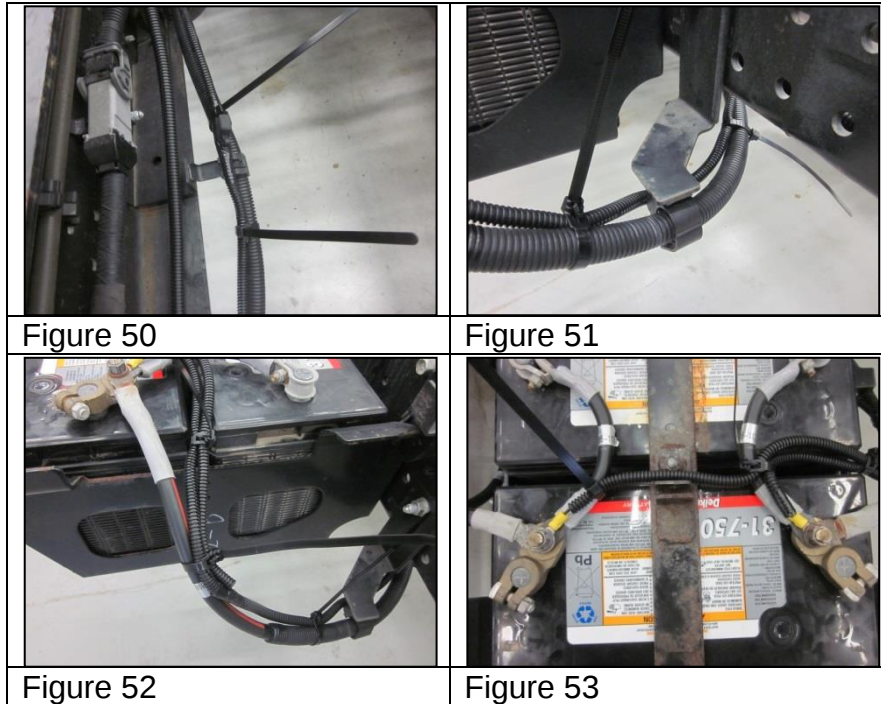
Figure 49

NOTE: Do not mount the module assembly at this time.

NOTE: Do not insert power lead connector retainers at this time.

VII. BATTERY CONNECTION

1. Beginning from where the DFT harness is split off near the batteries, route the DFT harness with the power and ground cables along the positive battery cable toward the batteries. Secure the DFT harness with up to six (6) tie-straps to the edge of the batteries as shown in Figures 50 - 53. (Routing is shown using a vehicle equipped with top post batteries.)



NOTE: For 150" WB with top post batteries, move the battery cable bracket one (1) hole down and ensure the battery cable does not contact the tank.

2. Connect the battery cables and ring terminals. Tighten to 15 Nm (10 ft/lb).
3. Secure the power leads to the battery cables with tie-straps as shown in Figure 53.

VIII. SYSTEM TEST

1. Carefully insert the red test connector about halfway (DO NOT FULLY INSERT) into the cavity on the backside of the display (Special Tool EN-53585 TRAX 3 Auxiliary Fuel System Diagnostic Module).

NOTE: Pins in display cavity are delicate, be careful when inserting test connector.

Turn the ignition key to the "On" position (leave the engine off). Verify that the module power lights are illuminated. (See Figure 54.) In about one (1) minute "SYS – OK" will appear on the screen. On the lower front of the display housing depress the LH button one (1) time to access the DTC screen. (See Figure 55.)



Figure 54



Figure 55

2. DTCs should read "OK". (See Figure 56.)

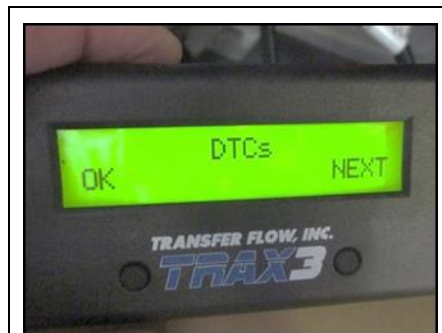


Figure 56

3. From the DTC Screen, press the RH button four (4) times to access the "Transfer Test" screen. (See Figure 57.)



Figure 57

4. At Transfer Test Screen, press the LH button one (1) time to access Transfer Test. Immediately depress the LH button again to "START" Transfer Test. (See Figure 58.)



5. With the Transfer Test Running, verify the fuel pump operation by listening for an audible sound from the pump, or by placing a hand on the pump to feel for a vibration. (See Figure 59.)



6. Once the fuel pump operation is verified, turn the ignition key to the “Off” position to exit test mode and shut down the system. Remove the key from the ignition.

NOTE: Refer to the applicable WSM in the event that the System Test does not function properly at any point.

7. Disconnect and remove the display (Special Tool EN-53585 TRAX 3 Auxiliary Fuel System Diagnostic Module) from the vehicle.

IX. MODULE INSTALLATION AND RE-ASSEMBLY

1.
 - a. Remove the two (2) 12 mm nuts closest to firewall from the MMU bracket. (See Figure 61.)

- b. **Vehicles equipped with a Remote Keyless Entry (RKE) system only:** remove both the MMU support bracket **and** brace (Discard the Bracket, Brace, and Hardware). (See Figure 62.)
- c. **Vehicles *not* equipped with an RKE:** remove the MMU support bracket. (See Figure 62.)

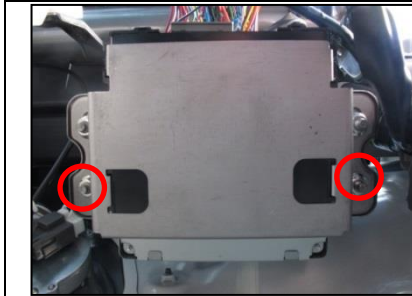


Figure 61

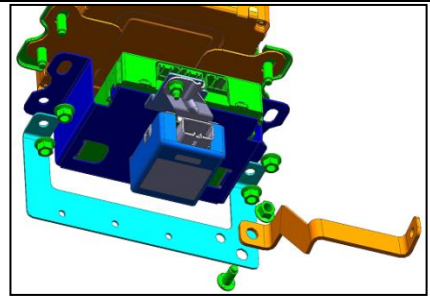


Figure 62

- 2. Put the edge guard on the lower right edge of the DFT module assembly. Fasten the relay connector of the DFT harness to the right front side of the module assembly with the T-25 Torx bolt/nut. Firmly tighten by hand. (See Figure 63.)

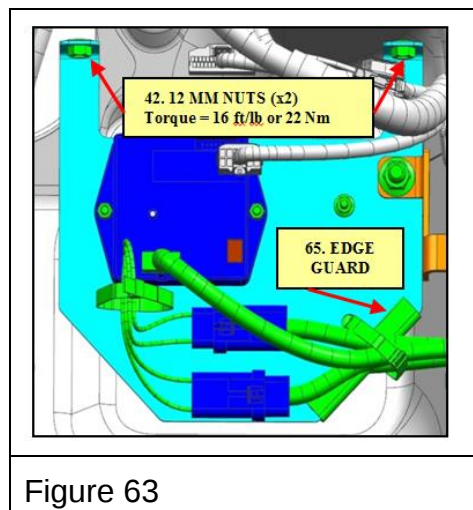
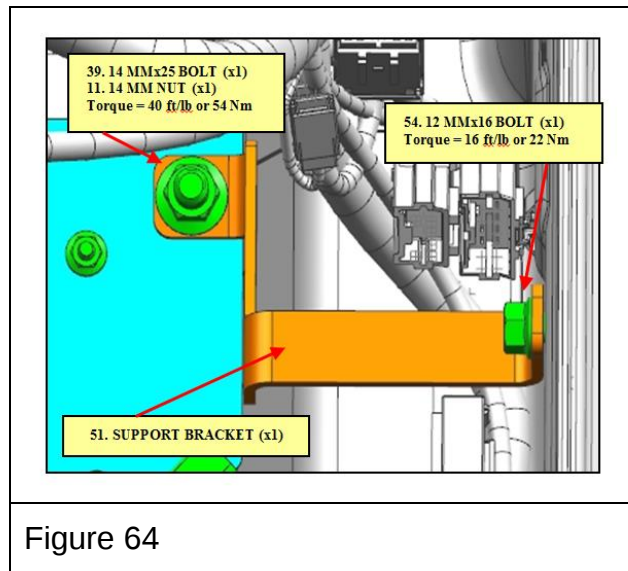
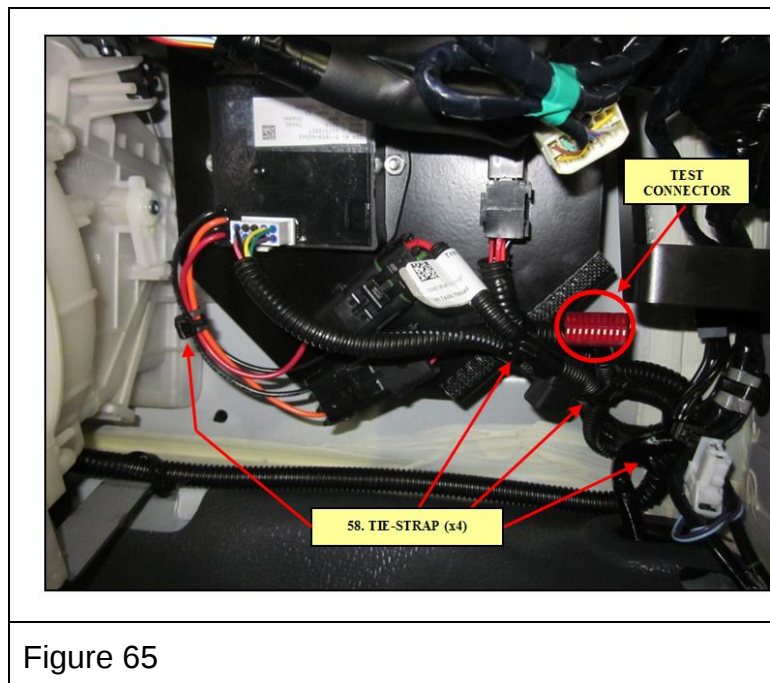


Figure 63

- 3. Install the module assembly where the MMU bracket was removed using the two (2) nuts. Torque the nuts to 22 Nm (16 ft/lb). (See Figure 63.)
- 4. Install the module support bracket to the module assembly with one (1) 14 mm x 25 bolt/nut. Secure the support bracket to the cab body panel using a 12 mm x 16 bolt. (See Figure 64.) Torque the nuts/bolts as follows: 12 mm - 22 Nm (16 ft/lb), 14 mm - 54 Nm (40 ft/lb)



5. Position the DFT harness into the right-hand corner of the firewall. Secure the module connectors by inserting the retainers into the holes below the module. Secure the module connector wires with one (1) tie-strap and the DFT harness to the IP harness with three (3) additional tie-straps at locations shown in Figure 65.



NOTE: Ensure the red test connector is positioned to the front of the gathered wires.

6. Attach the connector and re-install the windshield washer reservoir. (See Figure 66.)



Figure 66

7. Re-install the dash panels. (See Figure 67.)



Figure 67

PARTS INFORMATION

Isuzu Part Number	Description	Qty
8-98394-731-0	MODULE & BRACKET	1
8-98000-506-1	CLIP; FRAME TO DFT BATT PWR WIRE	1
8-98394-735-0	HARNESS ASM	1
5-09707-030-1	TIE STRAP	46
8-97096-753-0	SEAL; CABLE	1
8-98002-170-1	TIE STRAP; SQUARE HEAD	1
9-65731-229-0	MODULE; EDGE GUARD	1
1-09369-006-1	SLEEVE	2
8-98029-219-1	Cable PTO Plug	1

WARRANTY INFORMATION

For vehicles repaired under warranty, use:

Labor Operation Code	Description	Labor Time
R9526	Control Module Retrofit – TRAX II	1.5