

NISSAN DIESEL AMERICA, INC.

TECHNICAL BULLETIN FS-08

DATE: NOVEMBER 7, 2005
MODEL YEAR: 2005 AND AFTER
ENGINE MODEL: J08E-TE
CHASSIS MODEL: UD1800HD ~ UD3300
BULLETIN NUMBER: FS-08
FILE IN THE FUEL SECTION OF THE TECHNICAL BULLETIN BINDER

MALONE DUAL FUEL TANK KIT WITH TRANSFER PUMP
INSTALLATION INSTRUCTIONS AND TROUBLE SHOOTING GUIDE

PURPOSE

The attached Installation Instructions and Troubleshooting Guide have been developed for the Malone dual fuel tank kit with transfer pump for 2005 model year and after medium duty trucks.

These instructions do not apply to the dual draw / dual return systems.

INSTALLATION GUIDE

It is recommended that the installation guide be reviewed carefully by the installer prior to the kit installation to assure proper operation of the dual fuel tank system and transfer pump. Retain this guide in the service shop as reference information.

TROUBLE SHOOTING GUIDE

Consult the troubleshooting guide to diagnose and test complaints of improper operation of the dual fuel tank system and transfer pump. Retain this guide in the service shop as reference information.

Table with 2 rows and 4 columns. Row 1: THE INFORMATION CONTAINED IN THIS BULLETIN SHOULD NOT BE INTERPRETED AS THE BASIS FOR WARRANTY CLAIMS. Row 2: FOR THE INDICATED PERSONNEL BELOW, PLEASE READ, INITIAL, AND ROUTE TO THE FOLLOWING: X SERVICE MANAGER, X WARRANTY MANAGER, X SERVICE TECHNICIANS INITIAL BELOW: X PARTS MANAGER, X SHOP FOREMAN

**MALONE SPECIALTY INC.**

7788 Metric Dr., Mentor, Ohio 44060
 (440) 255-4200 Fax (440) 255-0458
 E-Mail malonemail@malonespecialtyinc.com

Accessory Installation Instructions**Description:**

UD 33 & 50 Gal. Dual Fuel Tank
 Transfer Pump Installation Kit

Models:
16" & 22"
Dia Tanks

Year:
2005
& Up

Date:
6/16/05

Revision: D3

NDA P/N:
 MLKD33G2
 MLKD50G2

Page:
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Part Information:

Part Number	Item Number	Qty	Description
16 or 20KBKT	2	2	16" or 20" K-Bracket
16 or 20KSTRAP-A	3	1	16" or 20" K-Strap Assembly
Contact NDA	4	1	16" or 20" Tank Sender
TANK GASKET	5	1	Tank Gasket
2302B053	6	1	Fuel Tank Cap
UDDT-CAP	7	1	Return Cap
P61457S	8	1	Nissan Fuel Pump
COV-2915	9	1	Fuel Pump Clamp
5321K16	10	4	Hose Clamp
COV-1611	11	2	Hose Clamp
55061020MFLS	12	3	Serrated Bolt, 6 x 1.0mm, 20mm long
560610FLS	13	3	Flange Nut, 6 x 1.0mm
30R7-06	14	12 ft.	3/8" I.D. Hose
UDDT-WH1	15	1	Interconnection Harness
UDDT-WH2	16	1	Oil Pressure Harness
UDDT-WH3	17	1	Power Harness
UDDT-WH4	18	1	Chassis Harness
EPS-OPS	19	1	Oil Pressure Switch
17141543-FSP	20	1	14mm Banjo Bolt to Female Metric
BOFP1418	21	1	14mm Banjo to Female Pipe
1614	22	2	Copper Seal, 14mm
EGM100-SP	23	1	Sealing Putty
2867-26012	24	1	Grommet
GRM1581375	25	1	Grommet
GWT-800UD	26	25	Tie Straps
ALZ-M-3/4	27	6 ft.	3/4" Loom
HBMP900606	28	1	Hose Barb to NPT
521010BK	29	.5 mt	Black Nylon Tubing, 10 x 1.0
UDKBHP	30	1	K-Bracket Hardware, 8 ea-Nuts, Bolts, Flat Washer
DECAL	31	1	"Diesel Fuel Only" Decal
LABEL-AT	32	1	"Auxiliary Tank" Label
LABEL-MT	33	1	"Main Tank" Label
DECAL-TP	34	1	Transfer Pump Filling Instruction Label
550812525FL	35	1	Serrated Bolt, 8 x 1.25 mm, 25 mm long
5608125SFL	36	1	Flange Nut, 8 x 1.25mm

WARNING

This kit contains no Item #1



This kit contains all the hardware, fittings, and other material necessary to properly and safely install the accessory you purchased. **DO NOT SUBSTITUTE ANY HARDWARE, FITTINGS, OR OTHER MATERIALS FOR THOSE SUPPLIED IN THIS KIT. SUBSTITUTIONS MAY CAUSE RISK OF PERSONAL INJURY;** damage to the accessory kit you are installing; and damage to the vehicle or device you are installing the accessory kit on. Any substitution of the materials supplied in this kit without written authorization from Malone Specialty Inc. will void all warranties, expressed or implied.

OVERVIEW

The transfer pump system is designed to transfer fuel from the auxiliary fuel tank to the main fuel tank, via a transfer pump installed on the vehicle cross member. The fuel transfer pump will only transfer fuel when the engine is running. A safety feature (enable) is incorporated into the circuitry. The enable signal (ground) is sent to the pump via an oil pressure switch installed on the right rear side of the engine. When the engine is running and oil pressure rises the oil pressure switch closes sending a ground signal to the pump.



SYSTEM OPERATION

If the main tank falls one inch (1") below the auxiliary tank, the pump activates and remains on until the primary tank is one inch (1") above the auxiliary tank. The fuel gauge level reading is a combination of the total fuel available from both tanks. The main tank fuel sender is sending a signal directly to the main fuel gauge.

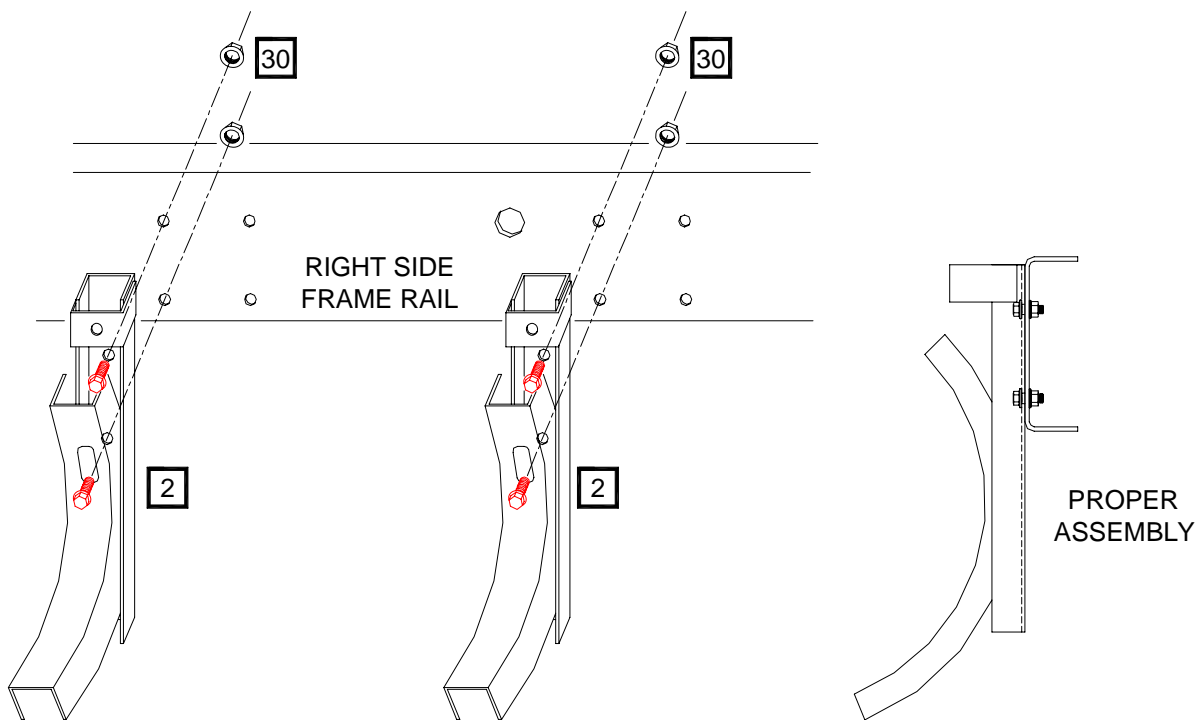


NOTES

Before beginning installation, refer to Figure 9 for general system layout. Familiarize yourself with the system components and check that you have all items required to complete the assembly.

Installation of Auxiliary Tank K-Brackets

- Mount front and rear K-Brackets (Item #2) to the right frame rail using existing frame holes with bolts, nuts and washers (Item #30). Torque to 44 ft. lbs. See figure 1.



Installation of Auxiliary Tank and Hardware

- Mount Tank (not supplied with the kit) to K-Brackets (Item #2) using tank strap assembly (Item #3). Position tank so fill spout is facing outward and away from frame and the top of the sender opening is horizontal to the top of the frame. Left tank strap will be to the left of sender opening and right tank strap will be to the right of supply and return ports. Center fill spout between straps. Tighten strap bolts evenly top and bottom to 27ft. Lbs. See Figure 2.

- Mount sender unit (Item #4) and sender gasket (Item #5) by removing the existing round 5 holed cover from the new auxiliary fuel tank. Discard this cover and the gasket and keep the five hex head screws. Install gasket on sender and carefully install the sender float into the tank and work the sender all the way into the tank until the sender cap is seated onto the tank sender plat. **Care must be taken to not bend or damage the sender.** Align the sender, sender gasket and the tank sender plate holes and secure using the hex head screws removed from the tank cover. For ease of installation, the notch on the gasket will face toward the 3 o'clock position and the sender harness will face toward the 10 o'clock position as shown in Figure 2.

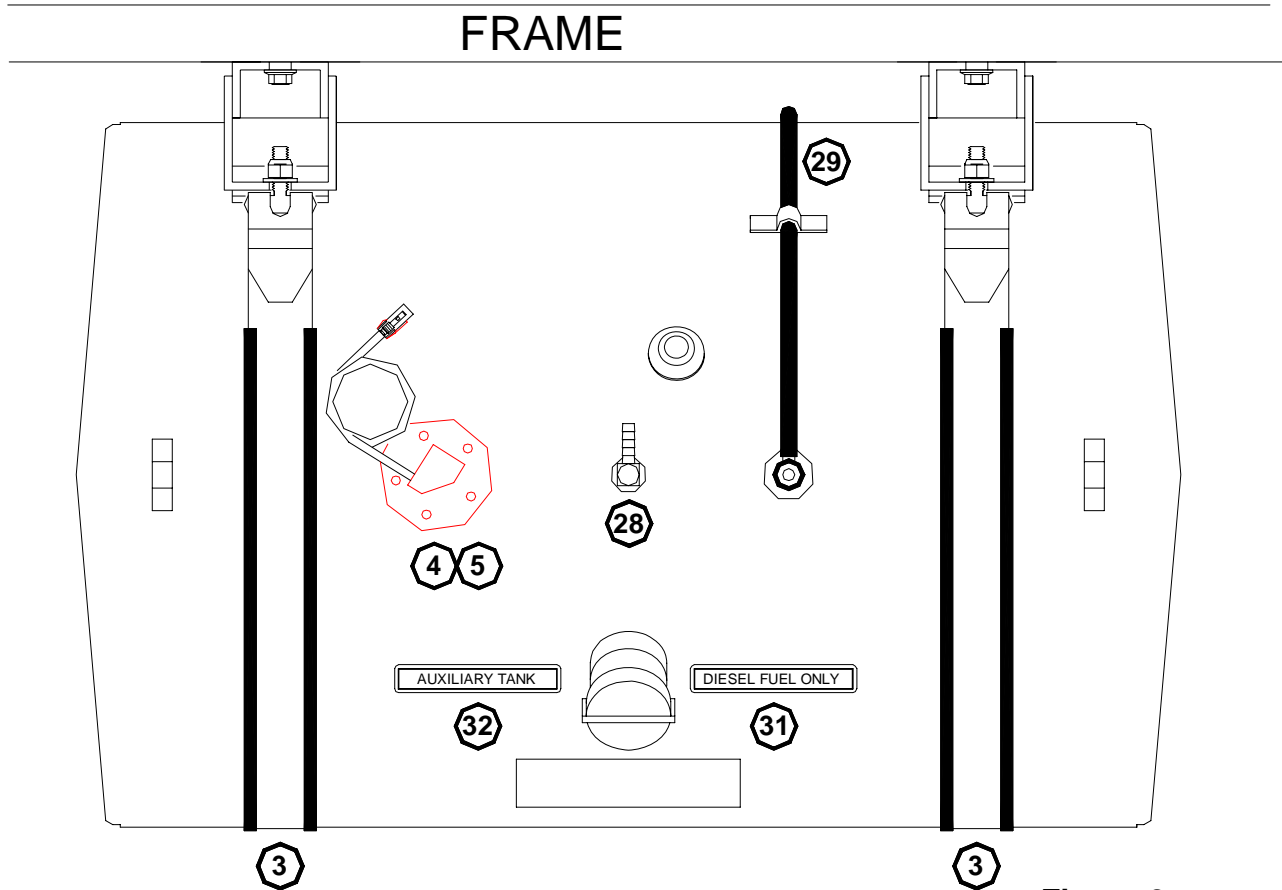


Figure 2

NOTE

Proper installation of the sender unit is critical to the proper operation of the system. Improper installation may cause the sender to hit internal fuel tank tube(s) or the side of the tank. **THE SENDER WILL ONLY FIT ONE WAY. DO NOT ATTEMPT TO MODIFY THE SENDER OR THE TANK SENDER PLATE.**

- Remove the supply plug from the top of the auxiliary tank and install the fuel supply fitting (Item #28). Orient the barb toward the frame rail.
- Install plastic overflow tube (Item #29) onto the auxiliary tank.
- Install "DIESEL FUEL ONLY" label (Item #31) to the right of the fill spout.
- Install "AUXILIARY TANK" label (Item #32) to the left of the fill spout.

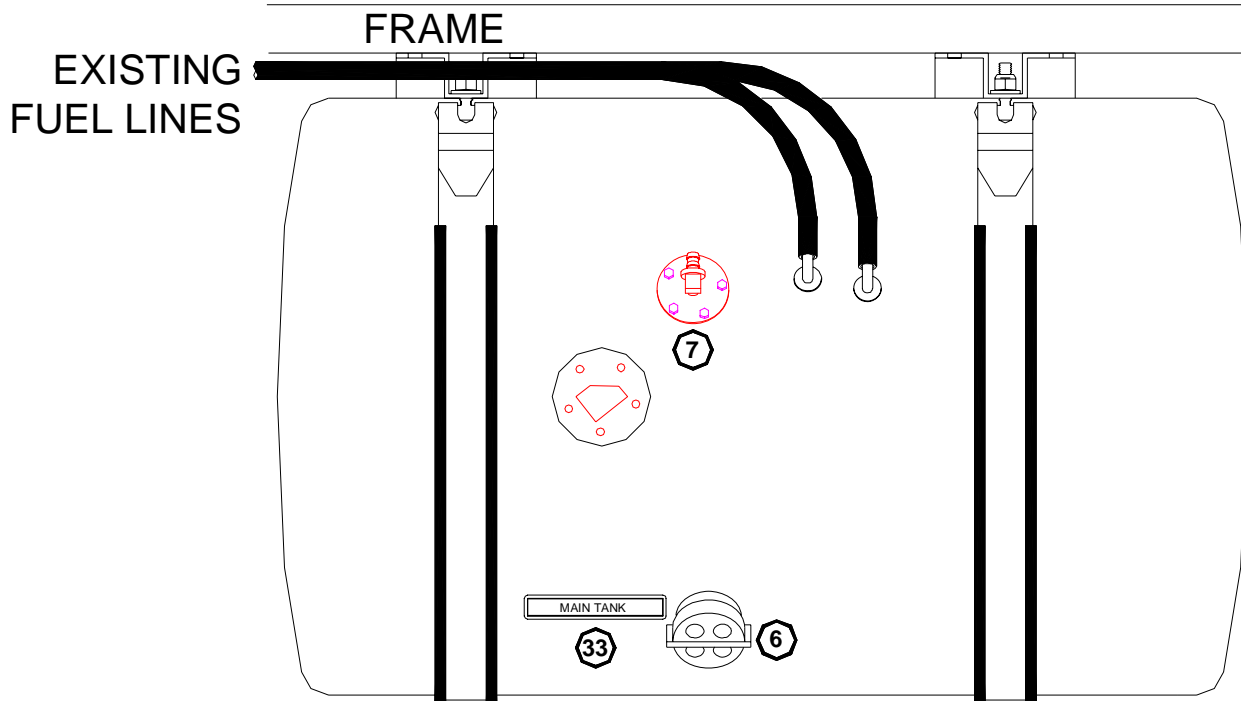


Figure 3

Installation of the Main Tank Hardware

- At the main tank (Left side frame rail), remove the existing round 5 holed cover and gasket from the tank. Discard this cover and the gasket and save the five pan head screws. Install the new round 5 holed cover with fitting and gasket (Item #7) in its place. Secure the cover to the tank with the five hex head screws. Orient the barb toward the frame rail.
- Remove the existing fuel cap and chain and discard. Install the new fuel cap with chain (Item #6).

IMPORTANT

The new cap (Item #6) provides the tank with pressure releasing plugs in case of an internal tank fire. Do not install or operate this kit without replacing the existing fuel cap with the one provided with this kit.

- Install "MAIN TANK" label (Item #33) to the left of the fill spout.

Installation of Transfer Pump

- On a cross-member between the two tanks, mount the transfer pump (Item #8) using any cross-member hole, fuel pump clamp (item #9) and hardware (Items #35 & 36). The pump should be mounted as close to the auxiliary tank as possible. Make sure the outlet of the pump is facing towards the main tank as shown in figure 4.

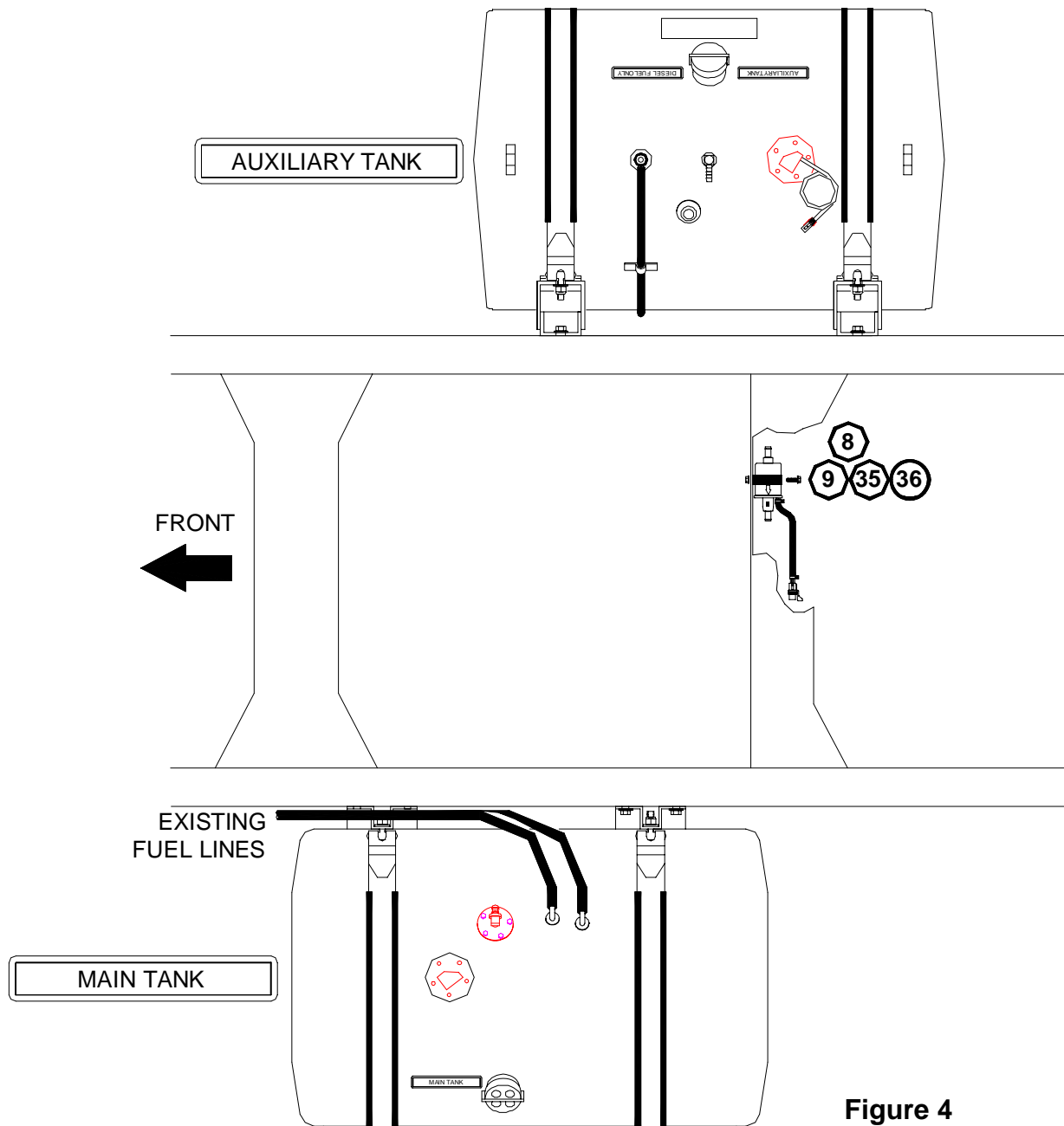


Figure 4

Fuel Hose Installation (See Figures 4 & 5)

- At the auxiliary tank, install a frame grommet (Item #25) onto the 1 5/8" frame hole.
- Place a clamp (Item #10) on the end of a piece of hose and install hose onto the hose barb fitting (Item #28) installed on the AUXILIARY tank. Push the hose onto the fitting until it is completely seated. Secure hose to fitting with hose clamp.
- Take the other end of this hose and route it through the rubber frame grommet (Item #25) and to the **INLET** side of the transfer pump (Item #8). Measure the hose length required to clamp to the pump and cut the hose. Install the hose onto the barb of the pump and secure hose to pump with clamp (Item #10).
- At the MAIN tank, place a clamp (Item #10) on the end of a piece of hose and install hose onto the hose barb fitting (Item #7). Push the hose onto the fitting until it is completely seated. Secure hose to fitting with hose clamp.
- Take the other end of this hose and route it through the existing rubber frame grommet and to the OUTLET side of the transfer pump (Item #8). Measure the hose length required to clamp to the pump and cut the hose. Install the hose onto the barb of the pump and secure hose to pump with clamp (Item #10)

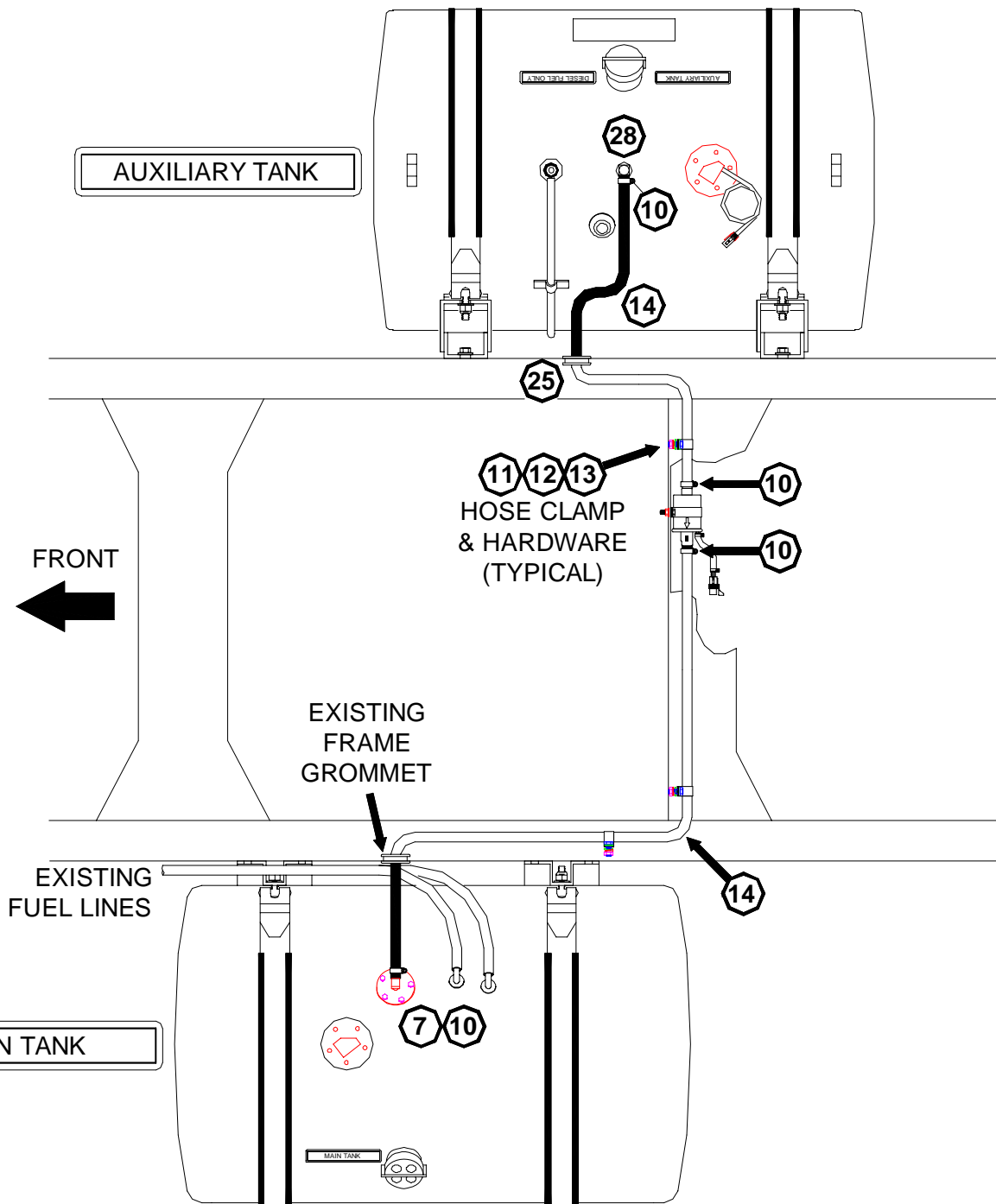


Figure 5

Oil Pressure Switch & Wire Harness Installation

- Locate original oil pressure switch on the right rear side of the engine block. See Figure 6.
- Disconnect the harness connected to the switch and remove the switch.
- Install the straight adaptor (Item #21) and the copper seal (Item #22) into the port where the original pressure switch was located. Tighten the fitting properly. Ensuring that the oil pressure switch adaptor (Item #20) has the o-ring, snap ring, retaining ring and lock nut installed on the fitting. Install the oil pressure switch adaptor (Item #20) into the straight adaptor (Item #21) and orient branch of the fitting to the 1 o'clock position as shown in Figure 7. When orientation is correct, tighten the lock nut to complete installation of the adaptor.
- Install the original oil pressure switch and the new oil pressure switch (Item #19) into adaptor (Item #20). Tighten both switches securely.

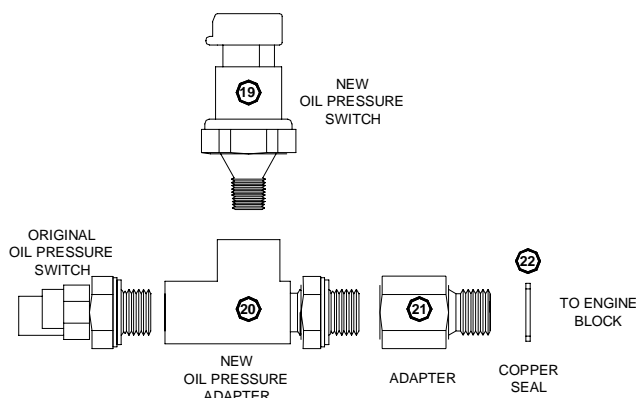


Figure 6

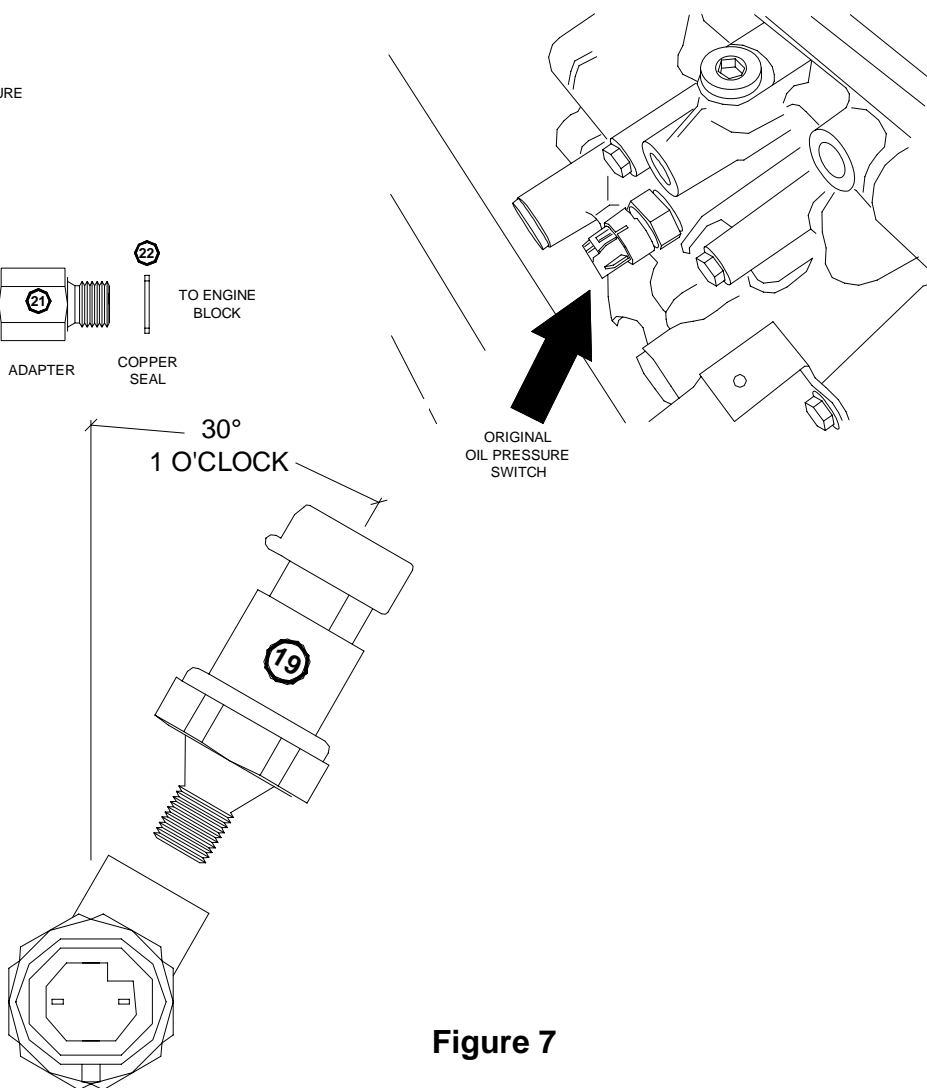


Figure 7

Wire Harness and Electrical Connections (See Figure 9)

- Inside the vehicle cab under the dash near the steering column locate the main harness from the ignition key switch with the black connector and carefully disconnect. Interconnect the power harness (Item #17) connectors in between the key harness and the cab harness. (See Figure 9, Note 1)
- Remove the cover that seals the hole directly behind the brake pedal.
- From under the hood panel, insert power harness (Item #17) red wire connector, the green wire ring terminal and fuse block through the hole directly behind the brake pedal. Install enough of the harness to make connections inside the cab. See Figure 8.

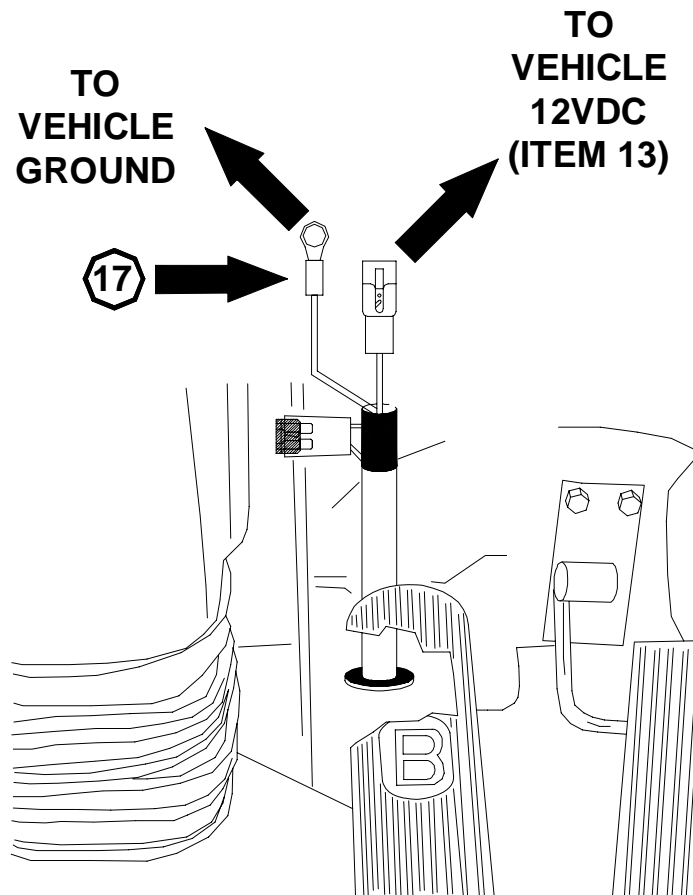


Figure 8

Inside the cab make the following connections:

- Connect the single red wire connector from the power harness (Item #17) to one of the single red wire connectors located on the interconnection harness (Item #16). See Figure 9, Note 2.

- Route the green wire ring terminal to left side kick panel and connect to the vehicle ground bolt. See Figure 9, Note 3.
- This completes the 12V cab connections. Route and secure the harnesses inside the cab using tie strap (Item #26) make sure the harnesses are not at pinch points, are away from heat producing equipment and are not hanging into the cab.
- Route the excess power harness (Item #17) through the hole and install the grommet onto the harness and install the grommet securely onto the vehicle cab floor hole. Seal the hole with the putty (Item #23)
- Route the remaining power harness from the main crossbar in front of the radiator towards the passenger side frame rail. Continue to route the harness inside the passenger side frame rail towards the rear of the trucks.
- At a location near the oil pressure switches installed earlier, connect the two green single wire connectors located on the power harness to the oil pressure harness (Item #16). See Figure 9, Note 4
- Connect the two-position oil pressure harness (GREEN and BLACK wire) (Item #16) connector to the new oil pressure switch (Item #19), Note 5A. Make sure the connector is securely mated to the switch. Connect the original oil pressure harness to the existing oil pressure switch. Make sure the connector is securely mated to the switch. See Figure 9, Note 5B.
- Continue routing the power harness to the rear of the vehicle towards the auxiliary tank. Connect the end of the power harness to the chassis harness (Item #18). Make sure the connectors are securely mated. Continue routing the chassis harness to a location near the auxiliary tank. See Figure 9, Note 6.
- At the auxiliary tank, route the sender harness through the frame grommet (Item #25) and connect this two pin connector to the two pin connector on the chassis harness (YELLOW and BLACK wire). Make sure the connectors are securely mated. See Figure 9, Note 7.
- Continue routing the chassis harness toward the cross-member that mounts the transfer pump. At the transfer pump, connect the 5-pinned connector on the chassis harness to the transfer pump connector. Make sure the connectors are securely mated. See Figure 9, Note 8.

- Continue routing the end of the chassis harness toward the main tank. At the main tank follow the sender harness through the frame to the existing vehicle harness. Disconnect the 2-pinned (YELLOW and BLACK wire) sender connector from the existing vehicle harness. See Figure 9, Note 9.
- Finally, connect the (2) two pinned (BLACK and YELLOW/Red) of the chassis harness (Item #18) to the main tank sender harness and the existing vehicle harness. Make sure the connectors are securely mated. See Figure 9, Note 10.
- This completes the electrical wire harness connections.
- Follow the chassis harness and power harness back and secure the harnesses to the frame with tie straps (Item #26). Make sure the harnesses are not at pinch points, are away from heat producing equipment and are not hanging outside the frame rail.
- Secure hose to frame rail as required with clamps and hardware (Items #11, 12 & 13). See Figure 9, Note 11.
- Protect all hose outside of the frame rail with plastic loom (Item #27). Cut loom to hose length and secure with tie straps (Item #26)
- Peel and stick the system instruction label (Item #34) on the driver side interior door. See Figure 9, Note 12.

System Test

With Fuel: The auxiliary tank must be filled to a level at least 2” above main tank. When done, with the engine running, the transfer pump will activate and remain on until the main tank is 1” above the auxiliary tank.

Port Installation Without Fuel: With the engine running, the transfer pump will activate when you slowly lift the auxiliary tank sending unit float. Place one hand on the transfer pump and lift the float to confirm pump operates.

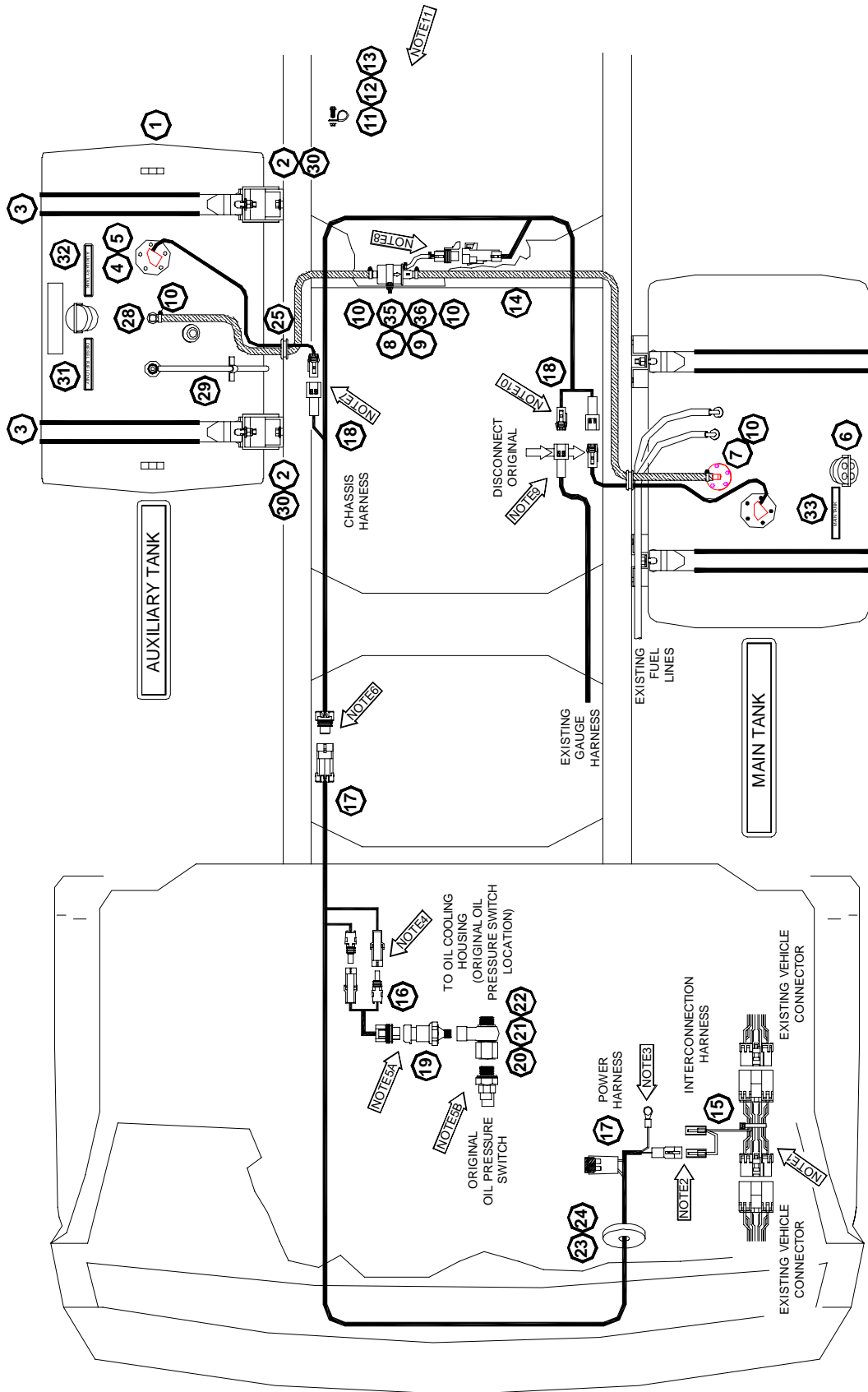


FIGURE 9

TROUBLE SHOOTING GUIDE

**UD Trucks
Dual Fuel Tank Kit
with Transfer Pump
NDA Part # MLKD33G2, MLKD50G2,
2005 MY and Later**

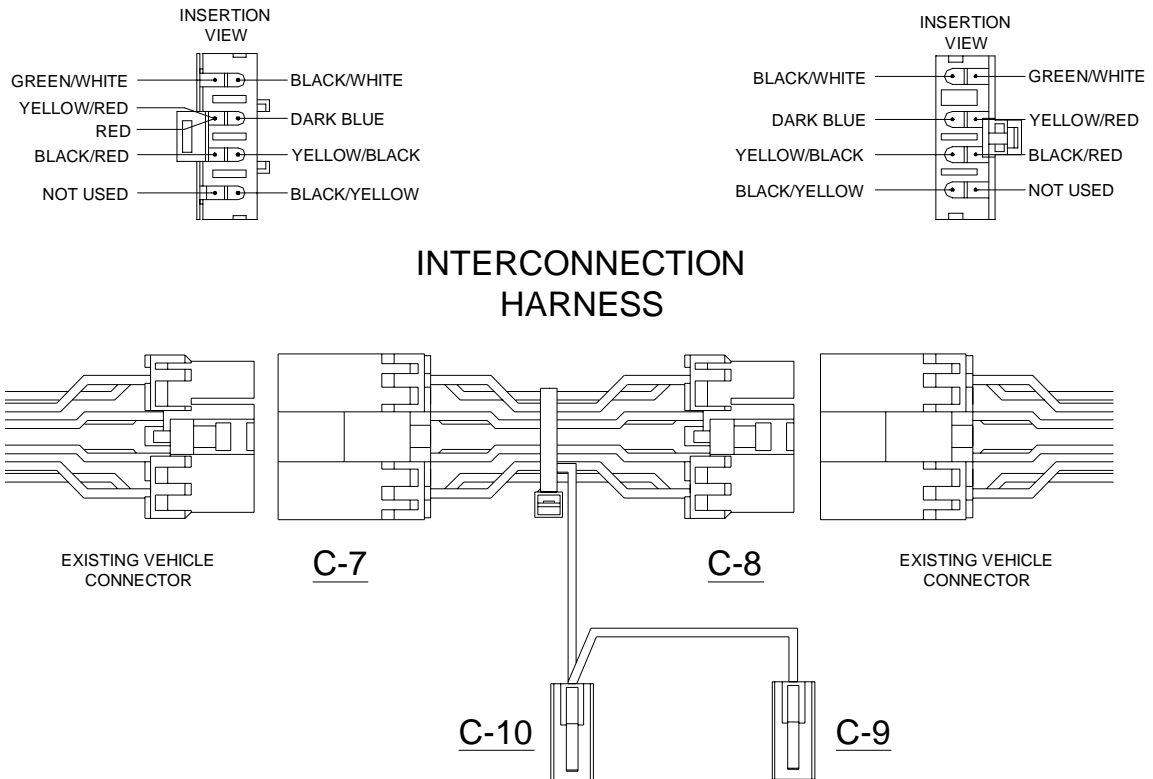
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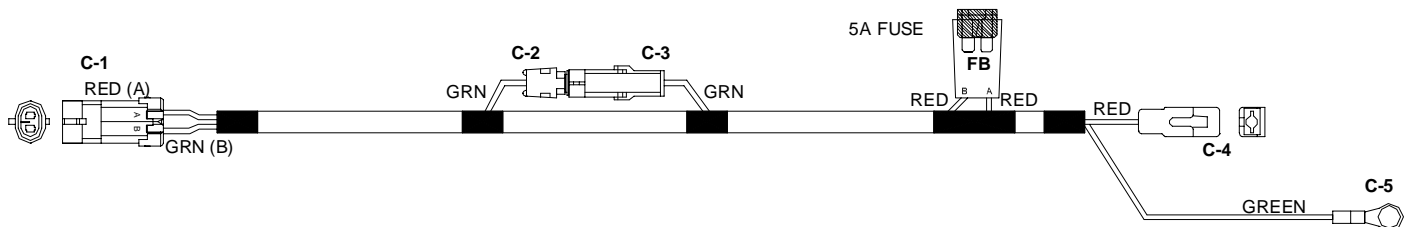
TROUBLE SHOOTING GUIDE

Verify system +12v power source

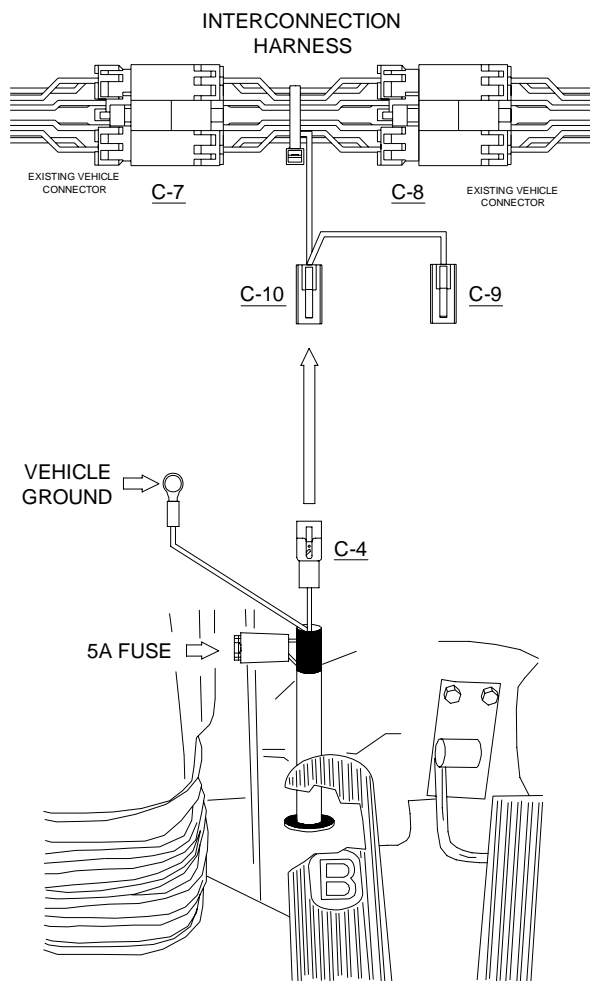
Transfer pump power is supplied via an interconnection harness (C-7, C-8) located on the bottom right of the steering column. One of two spare connectors (C-9 or C-10) supply power to the RED wire of the power harness (C-4).



The voltage (+12 volts) is protected by a 5 Amp fuse via a RED wire (C-4) to (C-1) to (C-12) to the transfer pump (C-11). The fuse (5 Amp) is located approximately 4" from the C-4 connector.



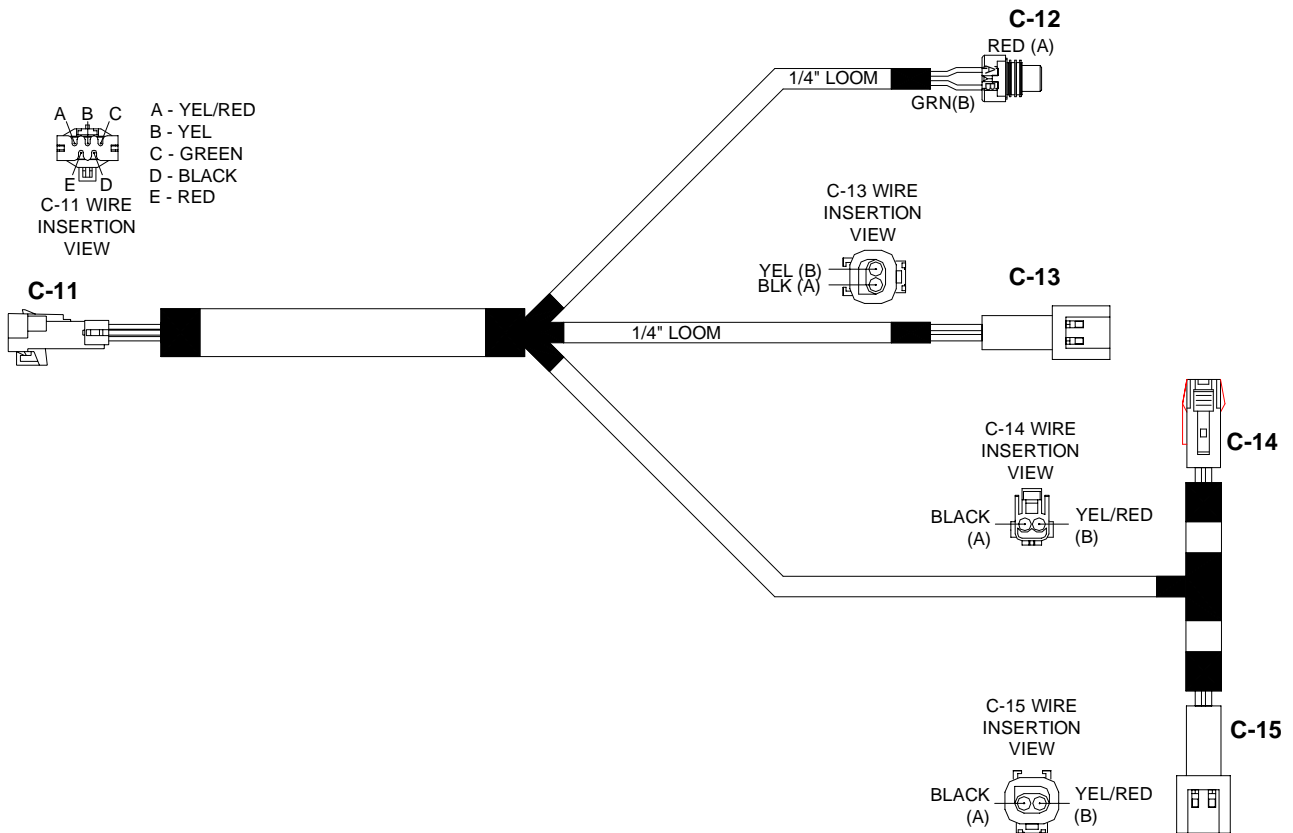
TROUBLE SHOOTING GUIDE



TROUBLE SHOOTING GUIDE

Verify system ground source

The ground is supplied to the transfer pump via a chassis harness (C-14, C-15) installed between the main fuel sender and its mating harness located near the inside of the left frame rail near MAIN tank. Disconnect the connector (C-11). Using an ohmmeter, check for continuity to ground on connector (C-11, Pin D) (BLACK wire) of the fuel transfer chassis harness. If continuity to ground, go to the next step. If no continuity to ground, disconnect connector (C-15), and using the opposite mating connector (Vehicle Chassis Harness) check for continuity to ground on the BLACK wire. If grounded, then repair BLACK wire between connector (C-11 and C-14 and C-15) appropriately. If the vehicle chassis harness is not grounded, refer to the UD Service Manual for the ground distribution.



TROUBLE SHOOTING GUIDE

Check Voltage Supply (Ignition Only)

Make sure the power interconnection harness on the bottom of the steering column is connected properly (C-7, C-8). Make sure the connections of the transfer pump power connector C-4 is connected properly to the output spare connectors (C-9 or C-10).

Using a voltmeter, disconnect the fuel transfer pump connector (C-11) from the pump and turn the ignition key to the ON position and check the voltage on the RED wire from the transfer pump harness (C-11, Pin E). If there is no voltage, verify if +12 volts are present on the spare connectors (C-9 or C-10) of the interconnection harness. If there is no voltage, check the interconnection harness at the bottom of the steering column (YELLOW/red stripe wire) (C-7, C-8), if still no voltage, then refer to the UD Service Manual for the Ignition Troubleshooting. If you have voltage, then repair appropriately the RED wire from the interconnection to the spare connector (C-9 or C-10).

If you have voltage, check for voltage on the transfer pump harness fuse Pin A (5 Amp max.). The fuse is located approximately 4" from the (C-4) connector. If you have voltage on Pin A check Pin B, if no voltage check for blown fuse. If blown verify RED wire for cut or short circuit from the fuse to the connector (C-1, Pin A), then from (C-1, Pin A) to (C-12, Pin A). Then from (C-12, Pin A) to the pump connector (C-11, Pin E) located on the left frame rail approximately 3' from the main tank. Repair as needed. **(DO NOT INCREASE THE FUSE AMPERAGE.)** If voltage is present at the fuse holder Pin B, then verify if voltage is present on (C-11, Pin E) of the transfer pump harness connector. If you have voltage, and you have a good ground on (C-11, Pin D), then change the transfer pump. If you don't have any voltage on (C-11, Pin E), then check the RED wire from the fuse holder Pin B to (C-11, Pin E) of the transfer pump harness connector for cut or broken wire and repair appropriately.

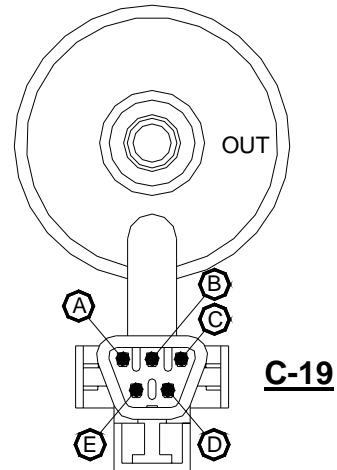
TROUBLE SHOOTING GUIDE

WIRING INFORMATION	
PIN	DESCRIPTION
'A'	MAIN TANK SENDER SIGNAL
'B'	AUXILIARY TANK SENDER SIGNAL
'C'	ENABLE SIGNAL
'D'	GROUND
'E'	IGNITION 12V

How to Verify the Enable of the Transfer Pump Safety.

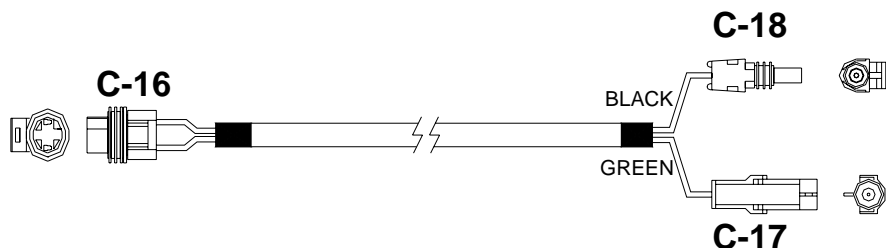
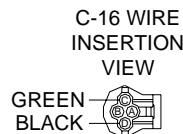
NOTE:

The enable safety feature of the fuel transfer pump is activated by an oil pressure switch (normally open) installed on the engine block. The enable wire (GREEN) is grounded inside the cab area.



From there the harness is routed through the floor near the left kick panel, to the left frame rail. From the front frame rail all the way to the fuel transfer pump. Note: Two connectors (for the oil pressure switch harness) are located inside the left frame rail across from the transmission bell housing. These two connectors are connected to the oil pressure switch harness.

The GREEN wire from the fuel transfer pump connector (C-19, Pin C) is connected to the connector (C-11, Pin C), then from connector (C-11, Pin C) to (C-12, Pin B). Then from (C-12, Pin B) to (C-1, Pin B), then from (C-1, Pin B) to (C-2). Then from (C-2) to (C-17). Then (C-17) to (C-16, Pin C). Then from (C-16, Pin D) to (C-18). Then from (C-18) to (C-3). Then from (C-3) to (C-5) ring terminal to vehicle chassis ground, located under the left side of the dash panel near the sidekick panel. Make sure that you have a reliable ground and that all connectors are fully connected prior testing the enable feature.



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Using an ohmmeter, disconnect the chassis harness connector (C-11) from the fuel transfer pump connector (C-19). With the engine OFF, and the ignition key in the OFF position, connect the ohmmeter between the vehicle ground and the GREEN wire from connector (C-11, Pin C). If you have continuity to ground, verify GREEN wire for short to ground and repair appropriately. If you do not have continuity to ground, start engine, connect the ohmmeter between the vehicle ground and the GREEN wire connector (C-11, Pin C). You should have continuity to ground. If not, change the oil pressure switch. The oil pressure switch is located on the right rear of the engine block, close to the exhaust manifold. The oil pressure switch has a protective heat shield that must be reinstalled after any repair or testing.

NOTE: The oil pressure switch must be removed and installed with a oil pressure switch socket. If a proper socket is not used, then the oil pressure switch may not work properly and its longevity could be shortened considerably.

The Fuel Gauge is Not Working

NOTE: The fuel transfer pump system only interconnects between the main sender and the vehicle harness.

- Make sure the connectors (C-14 and C-15) are connected properly to the sender harness and the vehicle harness properly. Turn the ignition to the ON position and check if fuel gauge is functioning properly. If not, go to the next step.
- Turn OFF the ignition key. Disconnect connector (C-14 and C-15) and re-connect the main sender harness to the vehicle harness. Turn the ignition to the ON position and check if fuel gauge is functioning properly. If OK, go to the next step. If not, refer to the UD Service Manual under the fuel gauge section.
- Check for broken wires between connector (C-14 and C-15), repair wire appropriately. Then re-connect interconnection (C-14 and C-15) between the main harness sender and the vehicle harness properly. Turn the ignition to the ON position and the fuel gauge should function properly.

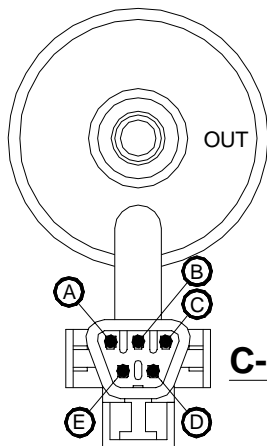
TROUBLE SHOOTING GUIDE

How to Verify the Fuel Tank Senders

For the Auxiliary tank sender – Disconnect connector (C-13), On the C-13 **MATING** connector, verify the resistance of the Auxiliary tank sender. Pin A (BLACK wire) & Pin B (YELLOW/RED) and measure the resistance and verify against chart below. If the resistance is different from the table or not working properly, change defective **AUXILIARY** tank sender.

For the main tank sender – Disconnect the connector (C-15), On the C-15 **MATING** connector, verify the resistance of the Main tank sender. Pin A (BLACK wire) & Pin B (YELLOW/RED) and measure the resistance and verify against chart below. If the resistance is different from the table or not working properly, change defective **MAIN** tank sender.

WIRING INFORMATION	
PIN	DESCRIPTION
'A'	MAIN TANK SENDER SIGNAL
'B'	AUXILIARY TANK SENDER SIGNAL
'C'	ENABLE SIGNAL
'D'	GROUND
'E'	IGNITION 12V

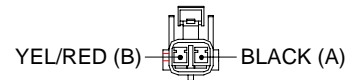


C-19

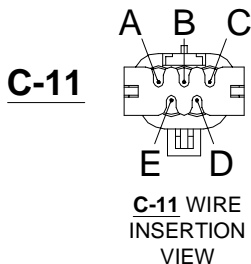
- A - WHITE
- B - BROWN
- C - GREEN
- D - BLACK
- E - RED

CHECKING MAIN AND AUXILIARY SENDERS

C-13 & C15 MATING CONNECTOR (TO AUX AND MAIN TANK SENDERS)



FLOAT POSITION	RESISTANCE VALUE (Ω)
FULL	.6 \pm .5
1/2	50 \pm 2.5
EMPTY	150 \pm 3



C-11

- A - YELLOW/RED
- B - YELLOW
- C - GREEN
- D - BLACK
- E - RED

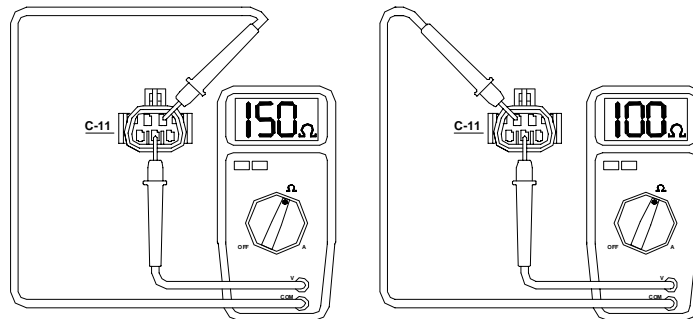
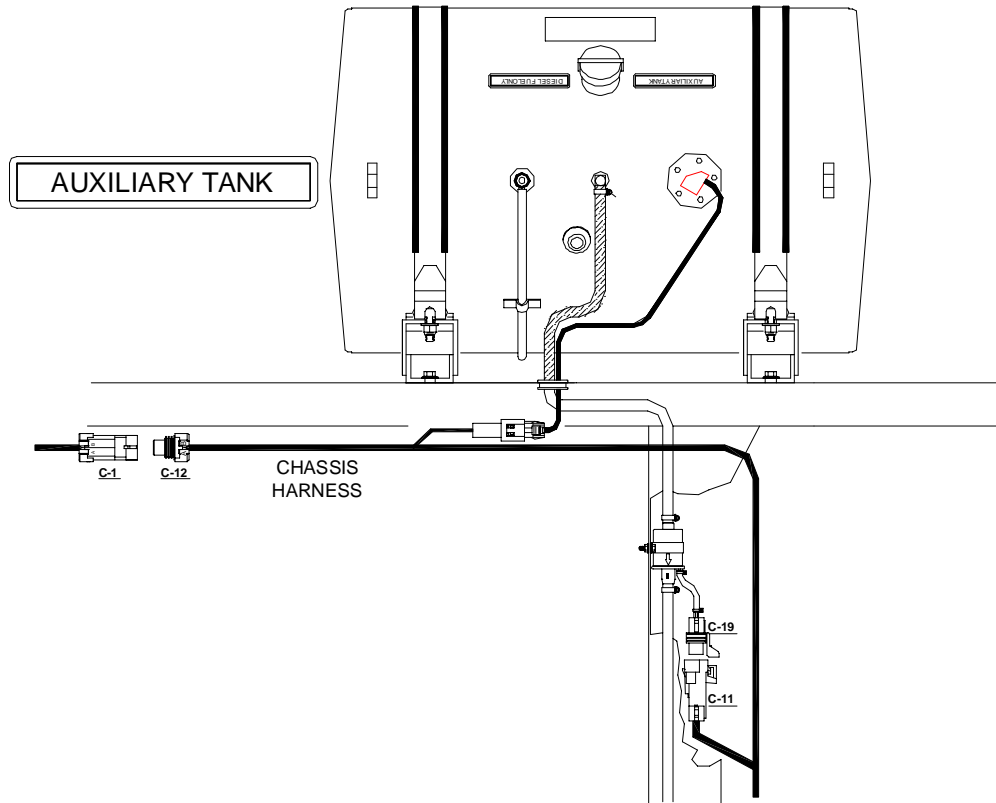
C-11 WIRE INSERTION VIEW

Verify C-11 & C-19 wire colors are as shown in Diagram above.

TROUBLE SHOOTING GUIDE

Verification of the Auxiliary Fuel Tank Sender Harness Pull-up Resistor

1. DISCONNECT POWER HARNESS CONNECTOR (C-1) FROM CHASSIS HARNESS CONNECTOR (C-12) AS SHOWN BELOW.
2. DISCONNECT THE PUMP CONNECTOR (C-19) FROM THE CHASSIS HARNESS CONNECTOR (C-11) AS SHOWN BELOW.



3. SET MULTI-METER TO READ RESISTANCE (OHMS).
4. USING PROBES, MEASURE RESISTANCE BETWEEN PINS ON (C-11) CHASSIS HARNESS AS SHOWN ABOVE. (NOT C-19 PUMP CONNECTOR).
5. READING SHOULD BE 150 OHMS (± 2) AND 100 OHMS (± 2) AS SHOWN.
6. READINGS OTHER THAN 150 OHMS (± 1) & 100 OHMS (± 1) INDICATE DEFECTIVE HARNESS PULL RESISTANCE. REPLACE CHASSIS HARNESS.

TROUBLE SHOOTING GUIDE

How to Verify the Fuel Transfer Pump



IMPORTANT

If all the prior tests have been completed satisfactorily and the fuel gauge shows less than a full tank then this test can be preformed. This test cannot be done with the main tank showing full.

With the main tank fuel showing less than full, disconnect the main fuel connection between the interconnection harness (C-14) and the main fuel sender. Use a jumper wire and connect the BLACK wire and the YELLOW/RED wire from connector (C-14).

Start the engine, then verify if the transfer pump is pumping fuel into the main tank. If pumping, the transfer pump is working. If not pumping then change defective pump. If the transfer pump is pumping, disconnect the jumper wire and reconnect to the main tank sender and the transfer pump should not pump fuel, if the level in the main tank is above the level in the auxiliary tank. If the level of the main tank is below the level in the auxiliary tank, the pump will continue to transfer fuel until level in the main tank is higher then the level in the auxiliary tank.

TROUBLE SHOOTING GUIDE

