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PART NO.	U.S. ECCN	MODEL DESCRIPTION
98-03292-00	EAR99	LOW FUEL SENSOR (22" DIAMETER TANK)
98-03292-01	EAR99	LOW FUEL SENSOR (36.5" DIAMETER TANK)
98-03292-02	EAR99	LOW FUEL SENSOR (17.6" RECTANGULAR TANK)

## FUEL SENSOR INSTALLATION PROCEDURE

### ⚠ CAUTION

- 1.0 ON NEW INSTALLATIONS, THE FOCUS TUBE SHOULD BE INSERTED INTO TANK BEFORE MOUNTING TANK. FUEL TANK MAY BE MOUNTED OR NOT FOR THE REST OF THIS PROCEDURE. WHEN MOUNTING THE TANK, IT SHOULD BE MOUNTED WITH THE SENSOR FLANGE LEVEL AT THE TOP TO WITHIN A HALF BUBBLE OF LEVEL USING A 24 INCH LEVEL (SEE BELOW). THE TRAILER SHOULD BE LEVEL DURING THIS PROCEDURE.

NOTE: DO NOT USE FILL TUBE AS A GUIDE. THE SENSOR FLANGE MAY NOT BE ALIGNED TO THE FILL TUBE.



LEVEL



HALF BUBBLE

- 2.0 REMOVE THE EXISTING CAP AND GASKET ON THE FUEL TANK AND INSTALL NEW GASKET, FOCUS TUBE, GASKET AND SENSOR USING THE STAINLESS STEEL WASHERS AND BOLTS PROVIDED. BOLT TORQUE IS 15 IN-LBS, NOT TO EXCEED 18-IN-LBS. 20 IN-LBS WILL CAUSE DAMAGE TO THE SENSOR.

### ⚠ CAUTION

SENSOR GASKET THRU HOLES ARE NOT SYMMETRICAL. THERE IS A INDEXING HOLE AND DIMPLE ON THE GASKET THAT AID IN THE ALIGNMENT OF THE GASKET AND SENSOR. THE INDEXING THRU HOLE ALIGNS WITH WITH THE SENSOR WIRES AND THE DIMPLE SHOULD FACE AWAY FROM THE SENSOR TOWARDS THE TANK MOUNTING FLANGE. SEE SENSOR GASKET ORIENTATION VIEW ON SHEET 2.

KEEP FOREIGN MATERIAL OFF OF THE FACE OF THE SENSOR THAT IS PLACED INSIDE OF THE TANK FLANGE.

- 3.0 CONNECT THE CABLE (ITEM 4) TO THE FUEL LEVEL SENSOR (ITEM 1). ROUTE THE CABLE FROM THE FUEL LEVEL SENSOR TO THE ENGINE HARNESS CONNECTION (LOCATED BEHIND THE CONTROL BOX) ON THE UNIT. FUEL LINES TO BE ROUTED SEPARATELY.
- WITHOUT CUTTING INTERIOR FOIL, STRIP OUTER JACKET ON CABLE ABOUT 6". CAREFULLY TRIM OFF FOIL AND BARE CONDUCTOR LEAVING ABOUT 0.25" EXPOSED, THEN USING SOLDER SLEEVE TERMINAL (ITEM 30) ATTACH GROUND WIRE(ITEM 35) TO EXPOSED FOIL AND BARE CONDUCTOR WITH HEAT GUN. APPLY HEAT UNTIL SOLDER RING INSIDE SLEEVE MELTS AND FUSES WIRE, BARE CONDUCTOR AND SHIELD.

SLIDE WIRE SEALS (ITEM 46 PURPLE) ONTO CABLE WIRES AND INSTALL MALE TERMINALS (ITEM 49) ONTO THE WIRES. INSERT THE RED WIRE INTO CAVITY A, BLACK WIRE INTO CAVITY B AND THE WHITE WIRE INTO CAVITY C OF THE CONNECTOR (ITEM 42).

LOCATE HARNESS WIRES FL5A, FL5B AND FL5C. SLIDE THE WIRE SEALS (ITEM 45 GREEN, OR PURPLE ON VECTOR OR APX) ONTO THE THREE WIRES AND INSTALL THE FEMALE TERMINALS (ITEM 47) ONTO FL5B AND FL5C. INSERT FL5B INTO CAVITY B AND FL5C INTO CAVITY C OF OF CONNECTOR (ITEM 40).

ADVANCE MICROPROCESSOR:  
TAKE WIRE FL5A AND CUT 6" OFF END AND SET 6" PIECE ASIDE. PASS END STILL CONNECTED TO THE ENGINE HARNESS THROUGH THE CAVITY OF FUSE HOLDER (ITEM 55) AND INSTALL TERMINAL (ITEM 65). THEN PULL WIRE BACK TO SEAT TERMINAL IN FUSE HOLDER.

J	UPDATED SHEET INDEX. SEE SHEET 3 FOR CHANGES PER ECN 72N0274P19	LT-SN				RC	16 SEP 2019
H	UPDATED FLS CONNECTOR, TERMINAL & SEAL PER ECN 72N0290P18, UPDATED SHEET INDEX, SEE SHEET 3.	LT-SN				ZMG	15 APR 2019
G	UPDATED SHEET INDEX. SEE SHEET 2 FOR CHANGES PER ECN 72N0220P13.					ZMG	28 OCT 2013
F	UPDATED NOTES 3.0, 4.0 & SETUP CHART FOR APX. ADDED ADVANCE ONLY TO NOTE 3 FOR FUSE HOLDER & ADDED NOTE FOR APX FUSE. ADDED SHEET 3 PER ECN 72N0220P13.					ZMG	11 MAR 2013
SYM	REVISION RECORD	ENGRG.	DATE	APPLICATION ENGRG.	DATE	REVISED BY	DATE

SUPERSIDES

98-03238

TITLE

## SEE SEPARATE PARTS LIST

INSTALLATION INSTRUCTIONS  
FUEL LEVEL SENSOR OPTION

SHEET INDEX	REV	J	G	J
	SHT	1	2	3
DRAWING NO.	98-03292	REV	J	
	SHT 1 of 3			

PART CLASSIFICATION: US SEE DWMT

SLIP WIRE SEAL (ITEM 45 GREEN, OR PURPLE ON VECTOR) ONTO 6" PIECE OF WIRE, INSTALL FEMALE TERMINAL (ITEM 47) AND INSERT INTO CAVITY A OF CONNECTOR (ITEM 40). PASS THE OPPOSITE END THROUGH THE CAVITY OF FUSE HOLDER (ITEM 55) AND INSTALL TERMINAL (ITEM 65). THEN PULL WIRE BACK TO SEAT TERMINAL IN FUSE HOLDER.

INSTALL FUSE (ITEM 60) AND FUSE HOLDER CAP (ITEM 56)

ATTACH THE SHIELD GROUND RING TERMINAL (ITEM 35) TO THE GROUND TERMINAL JUST BELOW ENGINE OR UNDER THE CONTROL BOX.

APX MICROPROCESSOR:

INSTALL 5A FUSE (ITEM 59) IN POWER CONTROL MODULE (PCM) SLOT F8 (FLS PWR).

- 4.0 FUEL SENSOR SETTINGS:

ADVANCE MICROPROCESSOR:

FUEL LEVEL SENSOR MUST BE ENABLED IN THE MICRO CONFIGURATION LIST. (SEE SERVICE MANUAL). SELECT 0.25V - 4.75V SENSOR. FOR ALARM ONLY, LEAVE FUEL TANK SIZE "OFF". FOR LOW FUEL SHUTDOWN, SELECT TANK SIZE (IF ACTUAL TANK SIZE IS NOT LISTED, CHOOSE CLOSEST VALUE). TURN SENSOR ON IN THE DATA RECORDER EITHER VIA LAPTOP OR CONFIGURATION CARD. THE FUEL SENSOR SHOULD BE SET TO SNAPSHOT IN THE DATA LOGGER.

APX MICROPROCESSOR:

FUEL LEVEL SENSOR MUST BE ENABLED IN THE MICRO CONFIGURATION LIST. (SEE SERVICE MANUAL). FOR "ALARM ONLY", LEAVE LOW FUEL TO "ALARM ONLY". FOR LOW FUEL SHUTDOWN, SELECT "UNIT SHUTDOWN". TURN SENSOR ON IN THE DATA RECORDER EITHER VIA LAPTOP OR CONFIGURATION CARD. THE FUEL SENSOR SHOULD BE SET TO SNAPSHOT IN THE DATA LOGGER.

### ⚠ CAUTION

DO NOT TY-WRAP THE FUEL LEVEL SENSOR HARNESS TO THE FUEL LINES.  
FUEL LINES TO BE ROUTED SEPARATELY.

MAKE CERTAIN TO RESPECT FUEL SENSOR POLARITY. MARK THE WIRES TO MAKE SURE THE BLACK WIRE FROM THE FUEL LEVEL SENSOR IS CONNECTED TO THE WIRE LABELED "FL5B". MAKE SURE THE YELLOW WIRE IS CONNECTED TO THE WIRE LABELED "FL5C". MAKE SURE THE RED WIRE FROM THE FUEL SENSOR IS CONNECTED TO THE WIRE LABELED "FL5A". REVERSAL OF THESE WIRES WILL CAUSE INCORRECT READINGS OF THE FUEL LEVEL AND POSSIBLE DAMAGE TO THE SENSOR.

## ADDITIONAL NOTES

THERE IS A 90-240 SECOND DELAY IN THE SENSOR'S RESPONSE TO THE FUEL LEVEL TO AVOID THE EFFECTS OF FUEL SLOSHING. WHEN APPROXIMATELY 15% OF THE FUEL IS REMAINING, THE APPROPRIATE LOW FUEL ALARM WILL ACTIVATE ON THE UNIT MESSAGE CENTER. WHEN THE TANK IS LESS 10% FULL, THE ALARM AND SHUT DOWN WILL ACTIVATE IF SO CONFIGURED.

BE SURE TO TURN THE SENSOR ON TO SNAPSHOT LOGGING USING REEFER MANAGER'S DATA RECORDER SETUP.

ADVANCE MICROPROCESSOR SETUP - CONFIGURATIONS	
FUEL SENSOR	0.25 - 4.75 VDC
FUEL TANK SIZE	OFF (ALARM ONLY) 30,50,75,100,120 GAL. (ALARM & SHUTDOWN)
ADVANCE DATA RECORDER SETUP - SENSORS	
FUEL LEVEL SENSOR	SNAPSHOT LOGGING

APX MICROPROCESSOR SETUP - CONFIGURATIONS	
FUEL SENSOR	YES
LOW FUEL	ALARM ONLY UNIT SHUTDOWN
APX DATA RECORDER SETUP - SENSORS	
FUEL LEVEL SENSOR	SNAPSHOT LOGGING

DRAWING CLASSIFICATION: US EAB08

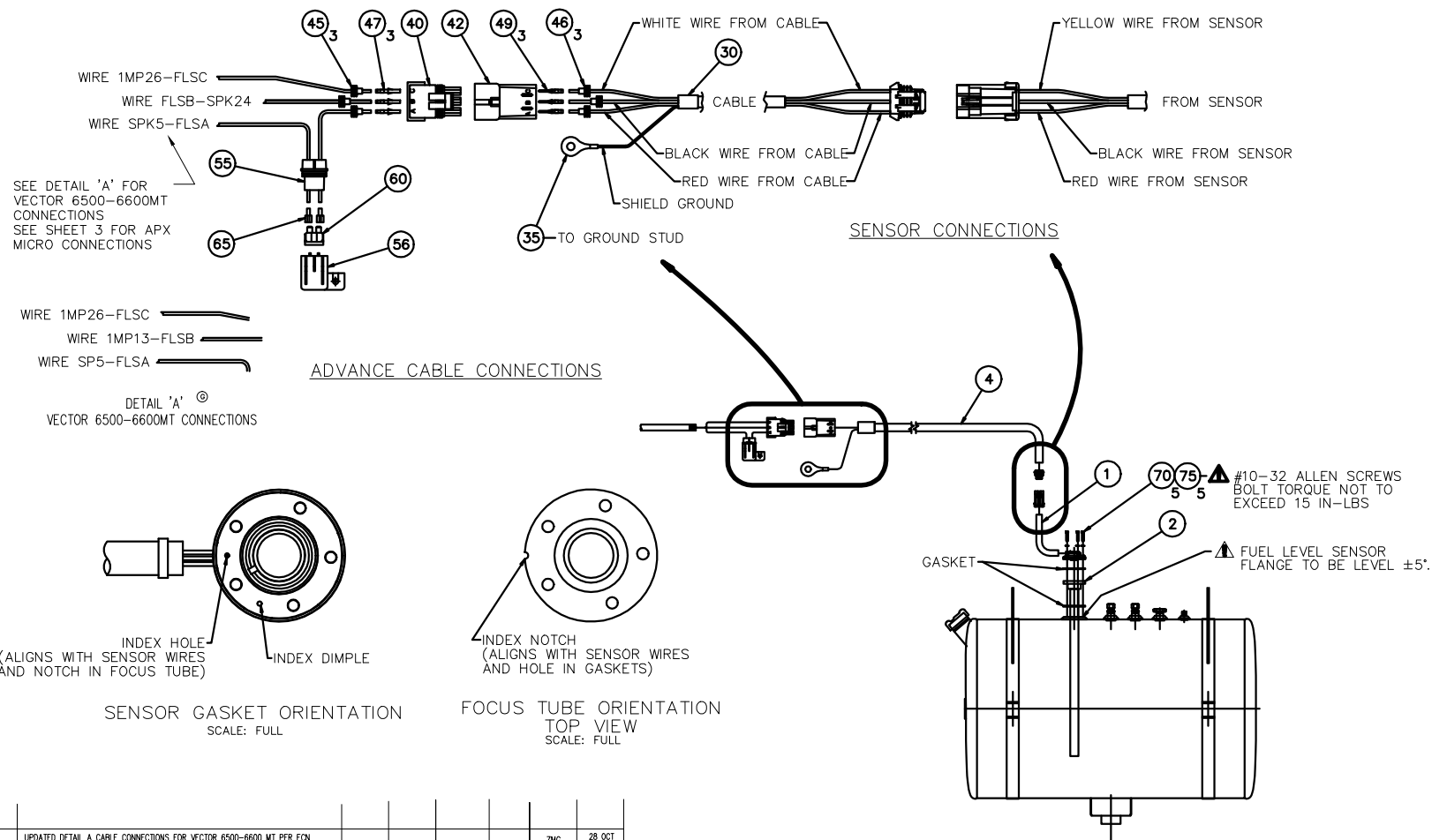


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SYM	REVISION RECORD	ENGRG.	DATE	APPLICATION ENGRG.	DATE	REVISED BY	DATE
G	UPDATED DETAIL A CABLE CONNECTIONS FOR VECTOR 6500-6600 MT PER ECN 72N00220P13					ZMG	28 OCT 2013
F	REMOVED APX FROM CABLE CONNECTIONS AND REVISED NOTE TO SEE SHEET 3 FOR APX MICRO CONNECTIONS PER ECN 72N00220P13					ZMG	11 MAR 2013
E	ADDED APX MICRO CONNECTIONS PER ECN 72N00267P11					ZMG	06 SEP 2011
C	ADDED VECTOR 6500-6600MT CONNECTIONS PER ECN 72N0450P09					RS	15 JAN 2010

SUPERSEDES 98-03238

TITLE

INSTALLATION INSTRUCTIONS  
FUEL LEVEL SENSOR OPTION

DRAWING NO.  
98-03292  
SHT 20F

REV  
G

PART CLASSIFICATION: US SEE CHART

DRAWING CLASSIFICATION: US EAPR

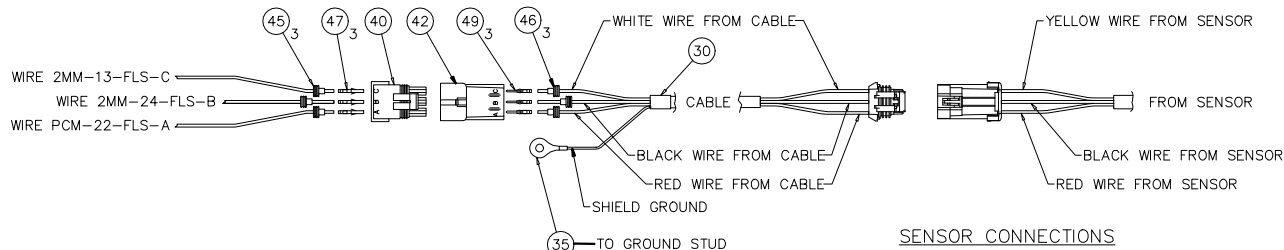


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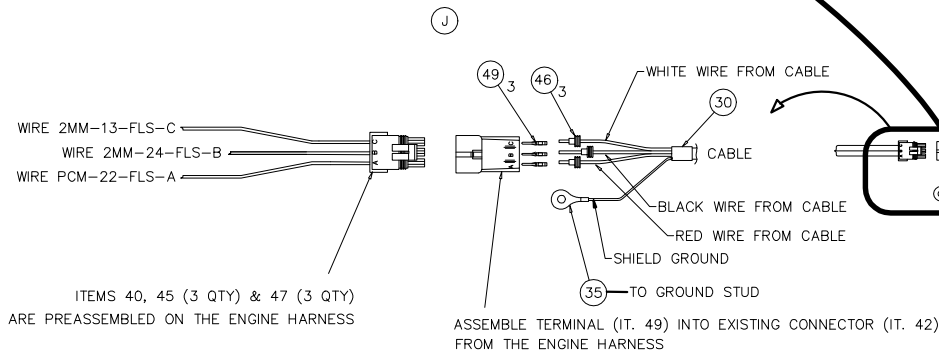
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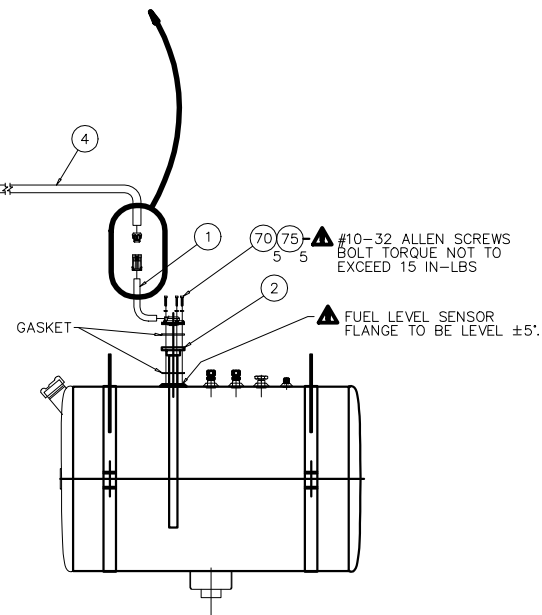


FOR UNITS WITHOUT FLS CONNECTOR PRE-ASSEMBLED ON HARNESS:



FOR UNITS WITH FLS CONNECTOR PRE-ASSEMBLED ON HARNESS:

### APX CABLE CONNECTIONS



SYM	REVISION RECORD	ENGRD.	DATE	APPLICATION ENGRD.	DATE	REVISED BY	DATE
J	UPDATED NOTE AT TWO PLACES PER EON 72N0274P19.	LT-SN				RC	16 SEP 2019
H	ADDED *FOR UNITS WITH FLS CONNECTOR PRE-ASSEMBLED ON HARNESS * VIEW PER EON 72N0290P18.	LT-SN				RC	15 APR 2019
F	NEW SHEET PER EON 72N0220P13					ZMG	11 MAR 2013

SUPERSEDES 98-03238

TITLE

INSTALLATION INSTRUCTIONS  
FUEL LEVEL SENSOR OPTION

DRAWING NO.  
98-03292  
SHT 3 OF 3

REV

PART CLASSIFICATION: US SEE CHART

DRAWING CLASSIFICATION: US E4899