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# APX REMOTE DISPLAY PANEL INSTALLATION INSTRUCTIONS

FOR MODELS 2100, 2500, 7300, 7500, 8100, 8500, AND 8600

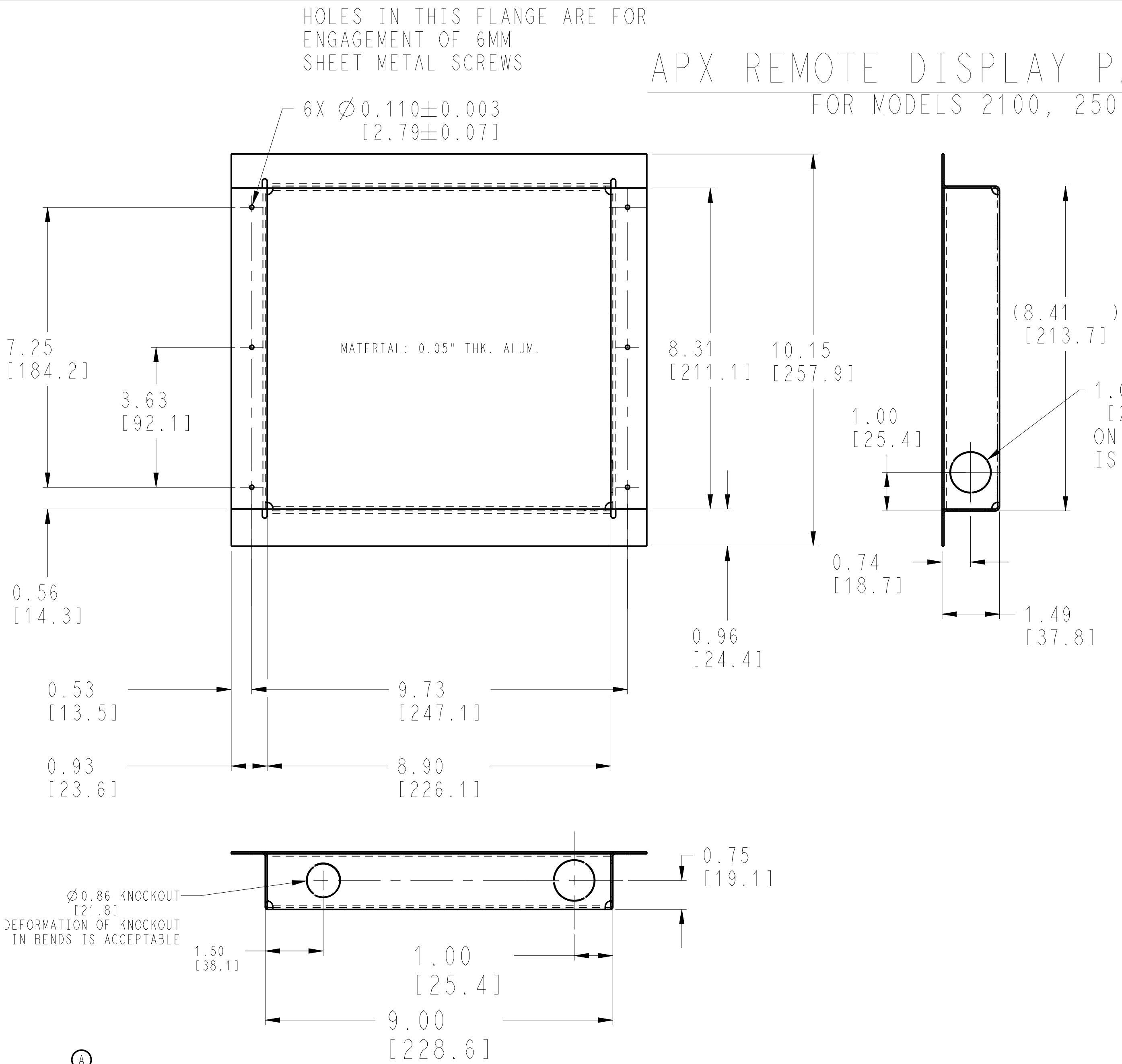


FIGURE 1 - FLUSH MOUNT REMOTE PANEL MOUNTING PATTERN

## PANEL INSTALLATION:

1.0 PREPARATION; READ THIS ENTIRE NOTE BEFORE PROCEEDING - THE APX REMOTE PANEL CAN BE INSTALLED EITHER INSIDE OR OUTSIDE THE TRAILER. SELECT LOCATION FOR MOUNTING AND PREPARE THE SURFACE PER THE DIMENSIONS ABOVE. FOR TRAILER MANUFACTURER PREPARATION, FOR THE FLUSH MOUNT TYPE THERE IS ALSO A REAR PROTECTIVE COVER AVAILABLE FOR INSTALLATION BEFORE THE REMOTE PANEL IS INSTALLED (SEE FIGURE 3).



### CAUTION

WHEN USING THE SHEETMETAL REAR COVER, CUT THE OPENING IN THE TRAILER WALL AS CLOSE TO THE DIMENSIONS REQUIRED AS POSSIBLE, OPENINGS THAT ARE TOO LARGE CAN CAUSE INADEQUATE WALL MATERIAL FOR THE PANEL MOUNTING SCREWS OR SEALING IT TO THE WALL. INSTALLATIONS NOT USING THE SHEETMETAL POCKET SHOWN HERE: AN OPENING SLIGHTLY SHORTER IN HEIGHT CAN BE USED. FOR BEST FIT AND PROPER SEALING ACROSS THE TOP OF THE REMOTE PANEL, USE THE REMOTE PANEL AS A TEMPLATE BY LOCATING IT IN THE CUT OPENING AS HIGH AS IT WILL GO, THEN MARKING THROUGH THE MOUNTING HOLES ONTO THE WALL FOR DRILLING.

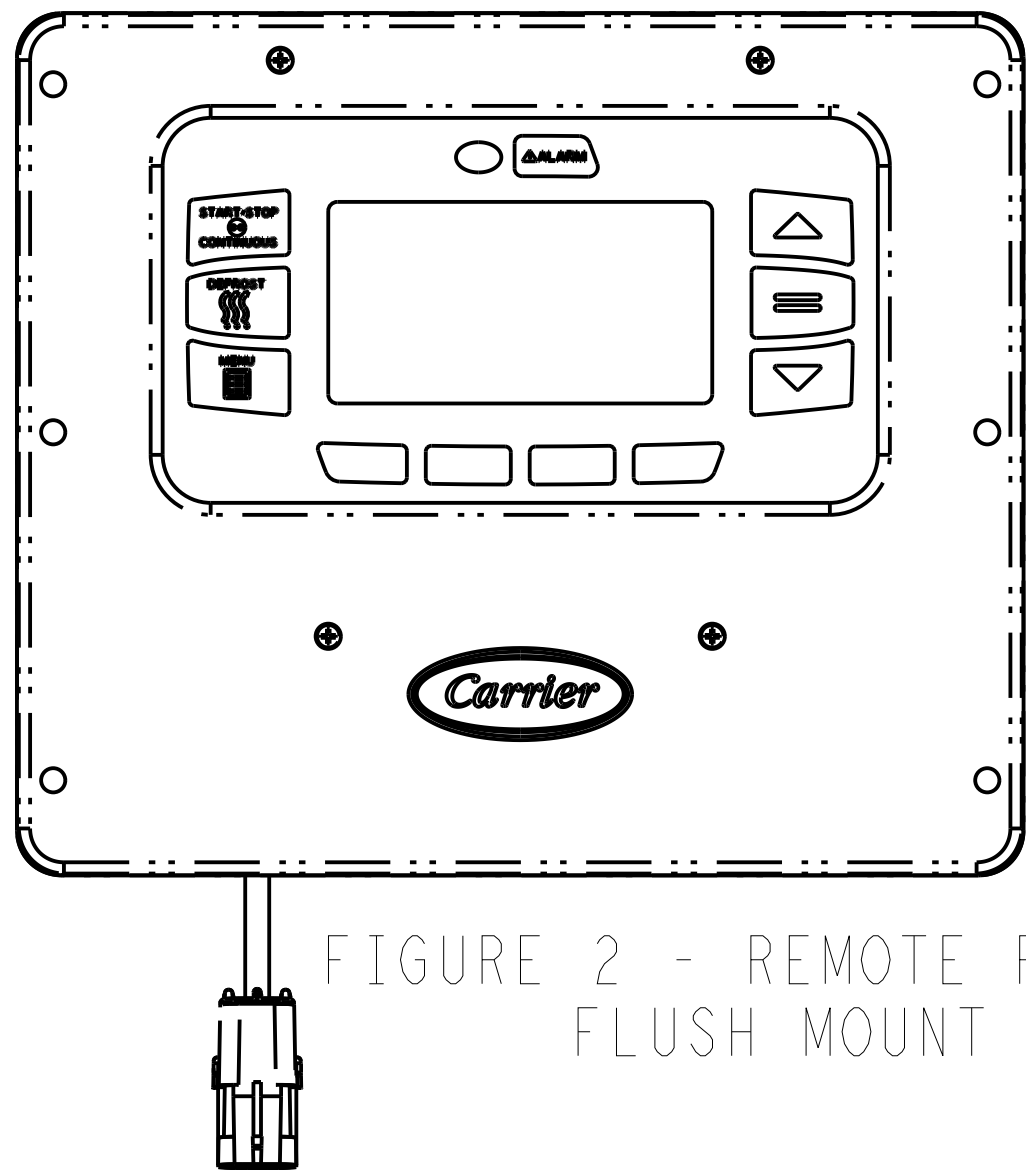


FIGURE 2 - REMOTE PANEL,  
FLUSH MOUNT

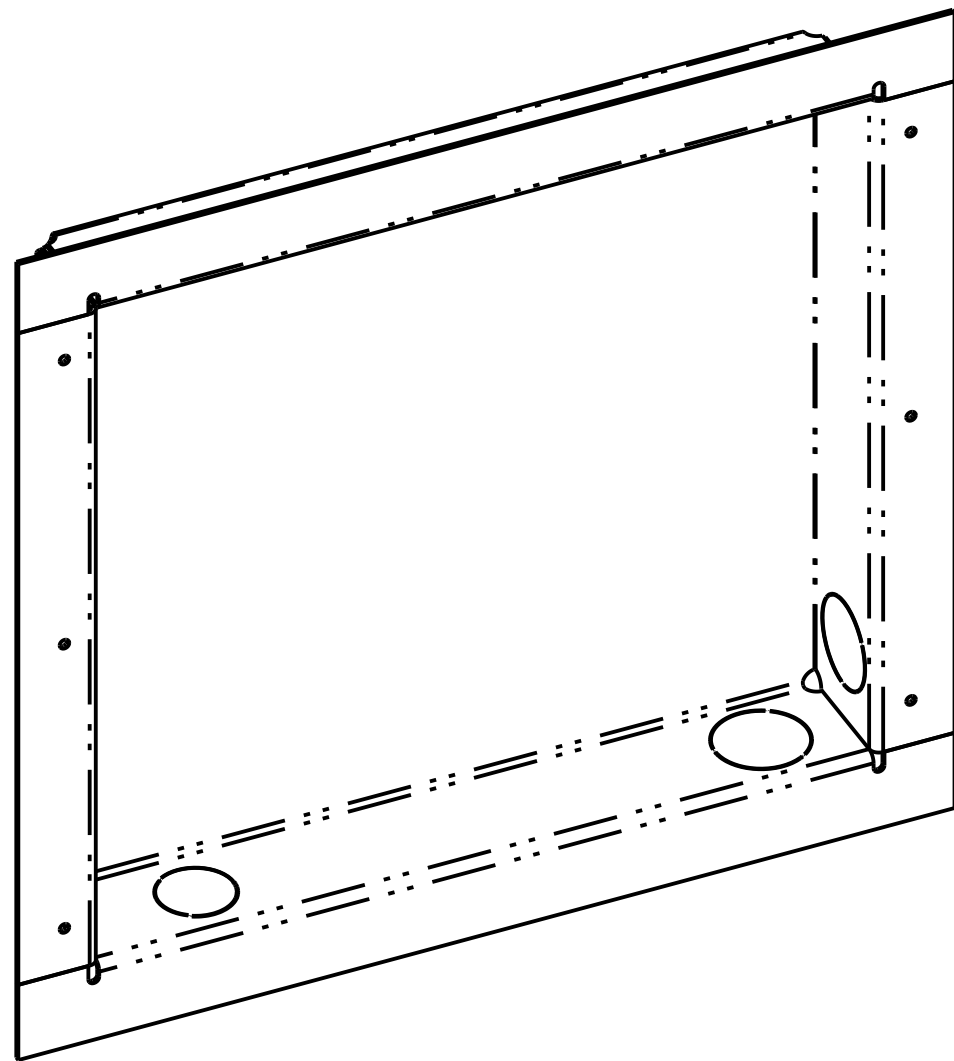


FIGURE 3 - REAR PROTECTIVE COVER  
(PART NO. 68-17569)  
OPTIONAL, ORDERED SEPARATELY  
(TYPICALLY INSTALLED BY TRAILER OEM)

- 2.0 DRAIN TUBE - ROUTE A 1/2" PVC DRAIN TUBE FROM THE BOTTOM OF THE REMOTE PANEL CUT-OUT AREA DOWN OUT OF THE BOTTOM OF THE TRAILER. IF THE SHEETMETAL POCKET (CTD P/N 86-05098-00) IS USED INSIDE THE WALL, A 0.86" DIA. KNOCKOUT IS PROVIDED IN THE LOWER LEFT BOTTOM OF THE POCKET FOR A 1/2" CONDUIT FITTING & NUT. THE FITTING THREADED LENGTH INTO THE POCKET SHOULD BE SHORTENED TO ASSURE REASONABLE WATER DRAINAGE.



### CAUTION

DO NOT TIE WRAP OR SECURE WIRING OR CABLES TO FUEL LINES OR HIGH VOLTAGE WIRING (VECTOR MODELS). FIRE OR ELECTRICAL SHOCK CAN OCCUR.



### CAUTION

WHEN INSTALLING CABLE BETWEEN REEFER UNIT AND REMOTE PANEL, ROUTE IN CONDUIT, OR SECURE CABLE WITH TIE WRAPS, ETC. TO AVOID CHAFING, PINCH POINTS, AND ROAD DEBRIS. ALWAYS USE RUBBER GROMMETS TO PROTECT BARE CABLES THROUGH METAL HOLES.



### CAUTION

DO NOT ROUTE THE CABLE THROUGH THE EVAPORATOR POD EITHER BY DRILLING OR DISRUPTING THE WIRING GROMMET THROUGH THE POD. THE WIRING CONSISTS OF BOTH HIGH AND LOW VOLTAGE WIRING, WHICH IS UNPROTECTED WITHIN THE GROMMET TO ASSURE SEALING AROUND THE WIRES. FIRE OR ELECTRICAL SHOCK CAN OCCUR.

- 3.0 CONDUIT ROUTING - THE CABLE IS 0.50" DIA, USE 1/2" CONDUIT OR LARGER. ROUTE IT FROM EITHER THE BOTTOM OR SIDE OF THE REMOTE PANEL CUT-OUT AREA ALONG INSIDE THE TRAILER WALL (TRAILER OEM) TO AND THROUGH THE FRONT WALL OF THE TRAILER OR OUT THE BOTTOM AND UNDER THE TRAILER TO THE FRONT WALL. THE REMOTE PANEL CONNECTOR AT THE UNIT IS AT THE LOWER ROADSIDE, BEHIND THE MAIN DISPLAY (SEE FIGURE 4). IF THE SHEETMETAL POCKET IS USED INSIDE THE WALL, TWO 1.06" DIA. KNOCKOUTS ARE PROVIDED IN THE LOWER RIGHT SIDE AND BOTTOM OF THE POCKET FOR A 3/4" CONDUIT, FITTING AND NUT.
- 4.0 CABLE ROUTING - ONE END OF THE CABLE HAS 2 - 2-PIN CONNECTORS, THOSE CONNECTORS MUST BE AT THE REEFER UNIT END OF THE CABLE. SO ROUTE THE CABLE BLUNT END FROM TRAILER FRONT FACE TO THE REMOTE PANEL OPENING.
- 5.0 CUT THE CABLE TO LENGTH WITH 1 FOOT OR SO EXTRA. STRIP THE CABLE CASING BACK SO THAT THE (4) WIRES MARKINGS ARE VISIBLE. NOTE THAT THE CABLE CONTAINS 2 TWISTED PAIRS, BOTH CONTAINING A BLACK AND A WHITE WIRE, SO FOLLOW THE MARKINGS ON THE WIRES AND TAKE CARE NOT TO MIX UP THE WIRES WHILE TERMINATING. FOLLOWING THE WIRE CHART ON SHEET 2, TERMINATE THE WIRES AND INSTALL THE 4-PIN CONNECTOR.

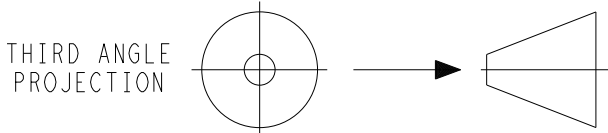


### CAUTION

REMOTE PANEL MUST BE INSTALLED USING A QUALITY SEALANT BETWEEN IT AND THE TRAILER WALL TO ASSURE NO MOISTURE CAN PENETRATE INTO THE WALL CAVITY.

- 6.0 LAY THE REMOTE PANEL DOWN ON A FLAT SURFACE, FACE DOWN. APPLY A BEAD OF QUALITY SILICONE SEALANT (SIKAFLEX 221 IS RECOMMENDED) AROUND THE PERIPHERY OF THE BACK OF THE FACE PLATE AND MOUNTING HOLES. FOR SEALING TO WALL.
- 7.0 CONNECT THE CABLE CONNECTOR TO THE REMOTE PANEL CONNECTOR, AND INSTALL THE PANEL INTO THE TRAILER WALL; THE REMOTE PANEL SHOULD BE SECURED IN ITS MOUNTED POSITION WITH (6) 6MM SELF TAPPING STAINLESS STEEL SCREWS.
- 8.0 ONCE INSTALLED, CLEAN AROUND PERIPHERY OF THE REMOTE PANEL TO REMOVE ANY EXCESS SEALANT, WHILE ASSURING THE EDGE SEAM TO THE MOUNTING SURFACE IS SEALED COMPLETELY AROUND THE PANEL EDGES.

B	REVISED SPEC. 2.0 TO REQUIRE DRAIN TUBE. SEE SHT 2.	12/18/13	PJS			72N0172P13
A	COMPLETE REDESIGN OF KIT AND INSTRUCTIONS.	12/10/13	PJS			72N0145P13
-	INITIAL RELEASE.	23 SEP 2013	LT-NM			72N0129P13
SYM	REVISION RECORD	DATE	BY	ENGR.	M.E.	NPCA NO.



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TITLE

INSTALLATION INSTRUCTION  
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SHEET INDEX	REV	<b>B</b>	B	A
	SHEET	1	2	3

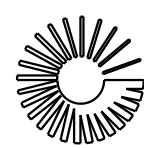
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SHEET 1 of 3

REV

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EXTENSION CABLE CONNECTIONS:

CABLE CONNECTIONS: PANEL END		
4-PIN CONN.	COLOR/MARKING	DESCR.
A	BLK1	CAN--
B	WHT1	CAN+
C	BLK2	PWR--
D	WHT2	PWR+

CABLE CONNECTIONS: REFER UNIT END		
2; 2-PIN CONNS	COLOR/MARKING	DESCR.
3RPA	BLK1	CAN--
3RPB	WHT1	CAN+
6RPA	BLK2	PWR--
6RPB	WHT2	PWR+

COMM MODULE INSTALLATION:

**⚠ CAUTION**  
DO NOT TIE WRAP OR SECURE WIRING OR CABLES TO FUEL LINES OR HIGH  
VOLTAGE WIRING. FIRE OR ELECTRICAL SHOCK CAN OCCUR.

- 1.0 ASSURE UNIT SROS SWITCH IS OFF AND DISCONNECT NEGATIVE BATTERY  
CABLE BEFORE PROCEEDING.
- 2.0 INSTALL THE COMM MODULE TO THE 2 STUDS ON ITS BRACKET USING THE  
WASHERS & LOCKNUTS PROVIDED. TORQUE TO 40 IN-LB.
- 3.0 UNPLUG ALL CONNECTORS FROM THE SVM (OR SMV) STEPPER MODULE.  
THEN REMOVE THE 3 SCREWS MOUNTING THE MODULE & MOVE THE MODULE  
AWAY FROM ITS MOUNTING BRACKET.
- 4.0 LOCATE THE COMM MODULE BRACKET MOUNTING FLANGE BEHIND THE  
SVM AT THE SVM MOUNTING LOCATION SO THE COMM BRACKET IS  
SANDWICHED BEHIND THE SMV, AND REINSTALL THE SVM USING THE  
3 LONGER M6 SCREWS (PROVIDED). TORQUE THE 3 SVM SCREWS TO 80 IN-LB.

NOTE: REINSTALLING THE SCREWS, ESPECIALLY THE TOP ONE, CAN BE DIFFICULT.  
SOME TIPS: INSTALL THE BOTTOM SCREWS FIRST. USE A LONG EXTENSION  
TO START THE TOP SCREW. REMOVE THE DISPLAY MODULE FOR MORE ACCESS.

- 5.0 REINSTALL THE 35 PIN CONNECTOR(S) TO THE SVM, BUT THE 8-PIN  
1SVM CONNECTOR NOW GETS INSTALLED INSTEAD INTO THE COMM MODULE AT  
THE 1CM CONNECTION.
- 6.0 INSTALL THE ADHESIVE TAG (LABEL) INCLUDED IN THE KIT AROUND THE  
WIRE BUNDLE TO THE 8-PIN CONNECTOR NOW INSTALLED AT "1CM" 3-4 IN. BACK  
FROM THE CONNECTOR.

**⚠ CAUTION**  
WHEN INSTALLING WIRING BETWEEN REEFER UNIT AND REMOTE PANEL, ROUTE  
AND SECURE CABLE AND HARNESSING TO AVOID CHAFING, PINCH POINTS, AND  
ROAD DEBRIS. ALWAYS USE RUBBER GROMMETS TO PROTECT BARE CABLE  
THROUGH HOLES IN METAL .

- 7.0 INSTALL THE COMM MODULE SPLITTER HARNESS AS SHOWN IN FIGURE 5,  
BY PLUGGING ITS 14-PIN CONNECTOR INTO THE COMM MODULE AT 2CM,  
AND ITS 8-PIN CONNECTOR INTO THE SVM MODULE.
- 8.0 MAKE CABLE CONNECTIONS TO THE REFER UNIT IN THE ORDER PRESENTED HERE, SEE FIG. 6.
- 8.1 LOCATE THE 1RP CONNECTOR ON THE ENGINE HARNESS AND INSTALL IT TO ITS MATE  
ON THE REMOTE PANEL CABLE. SAVE THE CAP FROM THE ENGINE HARNESS CONNECTOR  
FOR POSSIBLE REUSE. IF THE 1RP CONNECTOR IS NOT AVAILABLE ON THE ENGINE HARNESS,  
YOU SHOULD HAVE RECEIVED ADDITIONAL KIT 76-00869 TO PROVIDE THIS CONNECTION.
- 8.2 INSTALL THE REMAINING 2 PIN CONNECTOR ON THE REMOTE PANEL CABLE TO ITS MATE  
ON THE COMM MODULE SPLITTER HARNESS.
- 8.3 IF THERE IS A SECOND 2 PIN CONNECTOR REMAINING ON THE SPLITTER HARNESS UNUSED,  
EITHER INSTALL THE CAP REMOVED FROM THE ENGINE HARNESS, OR CUT THE CONNECTOR  
OFF AND USE HEAT SHRINK TUBING TO SEAL THE ENDS OF THE (2) WIRES.
- 9.0 NOTE: VERIFY ALL WIRE CONNECTIONS BEFORE RE-CONNECTING NEGATIVE BATTERY CABLE.  
FAILURE TO CONNECT WIRES CORRECTLY MAY CAUSE DAMAGE TO THE REMOTE PANEL,  
COMM MODULE OR OTHER COMPONENTS.

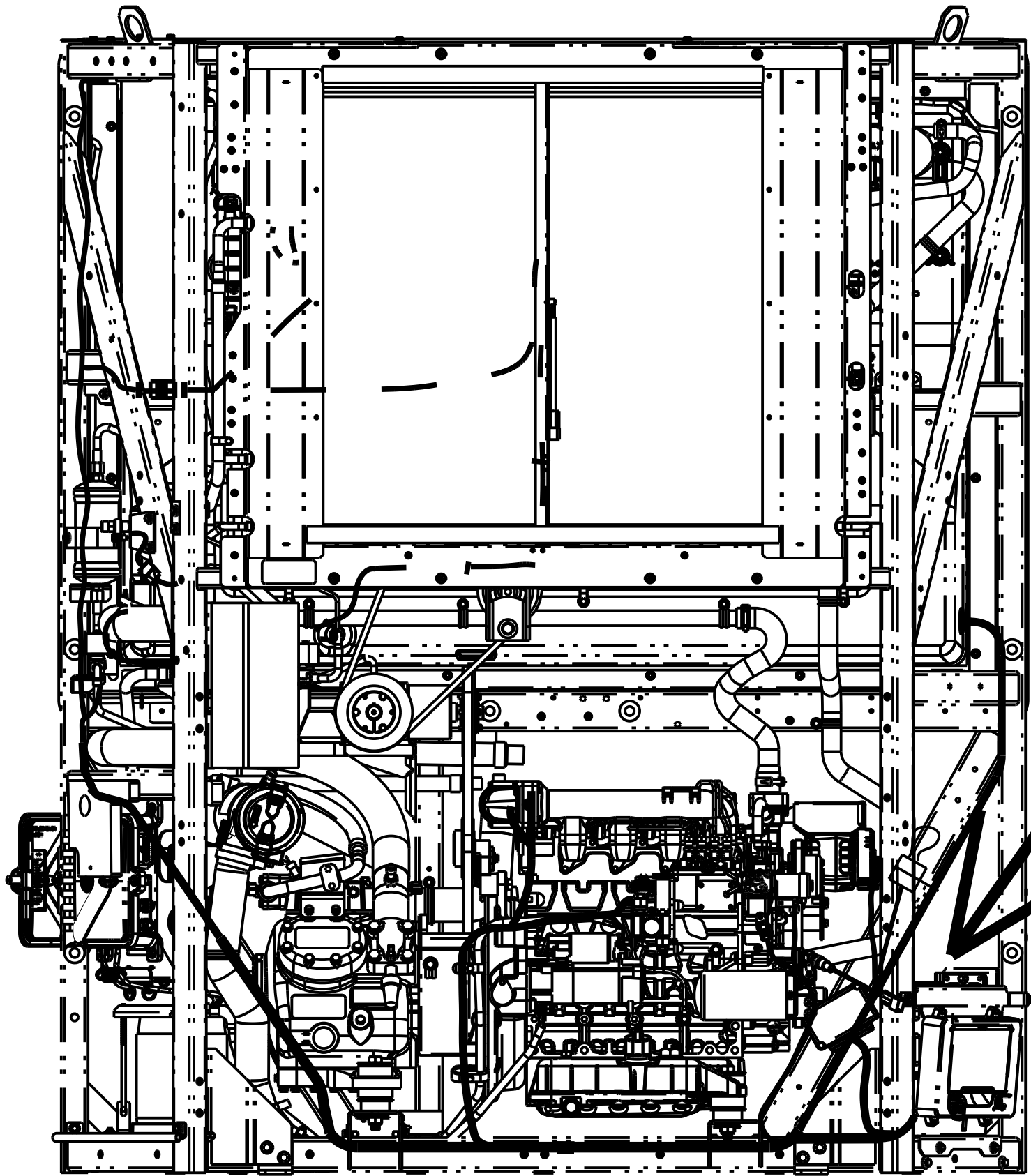
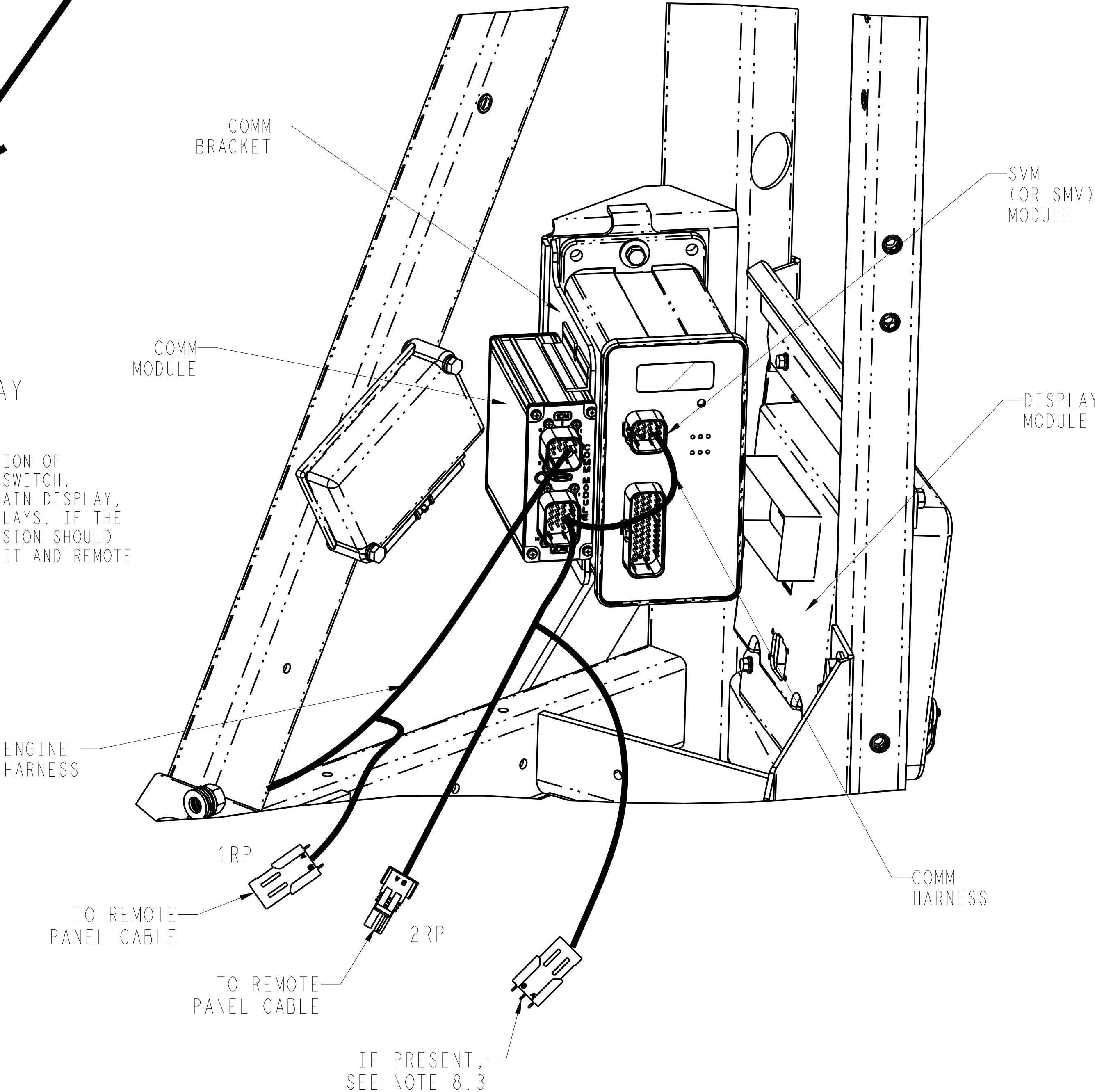


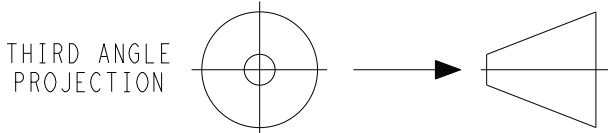
FIGURE 4 - LOCATION OF REMOTE PANEL  
CONNECTION IN REEFER UNIT BEHIND DISPLAY

- 10.0 RE-CONNECT NEGATIVE BATTERY TERMINAL AND TEST OPERATION OF  
THE REMOTE PANEL BY TURNING ON THE REEFER UNIT SROS SWITCH.  
THE REMOTE PANEL SHOULD ILLUMINATE ALONG WITH THE MAIN DISPLAY,  
AND THE UNIT ENGINE SHOULD START AFTER THE NORMAL DELAYS. IF THE  
UNIT WILL NOT START, THE CURRENT SYSTEM SOFTWARE VERSION SHOULD  
BE LOADED (WITH THE REMOTE PANEL CONNECTED). THE UNIT AND REMOTE  
PANEL SHOULD THEN OPERATE NORMALLY.

FIGURE 5 - COMM MODULE INSTALLED IN UNIT



B	REVISED SPECS.: ..SVM MODULE.. TO ..SVM.. (WORD MODULE IS NOT REQUIRED. PART OF ACRONYM.)	1/28/14	PJS			72N0172P13
A	COMPLETE REDESIGN OF KIT AND INSTRUCTIONS.	12/10/13	PJS			72N0145P13
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SHEET 2 OF

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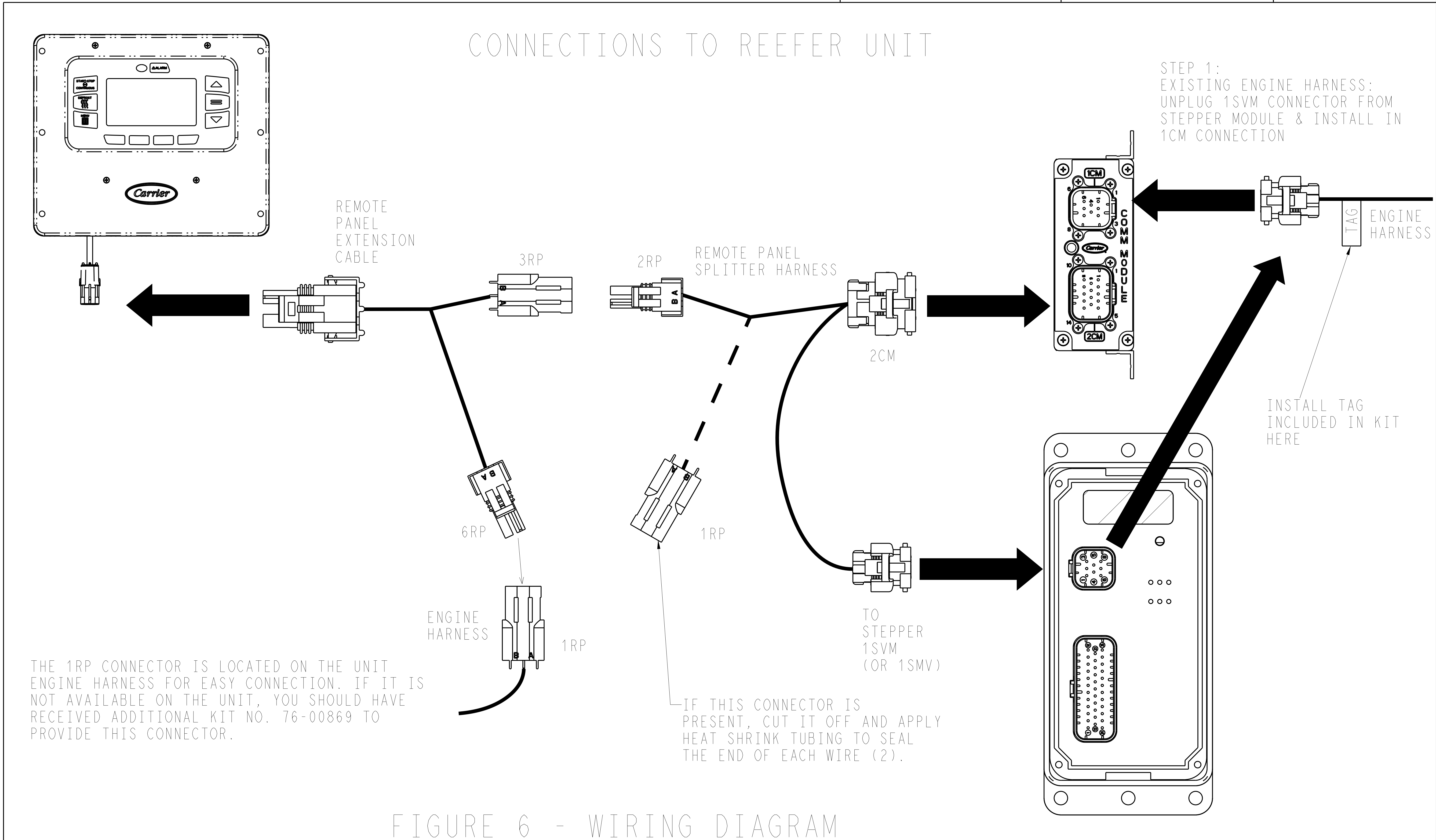
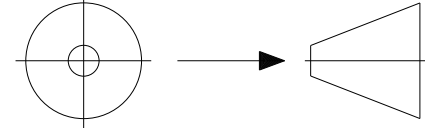


FIGURE 6 - WIRING DIAGRAM

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