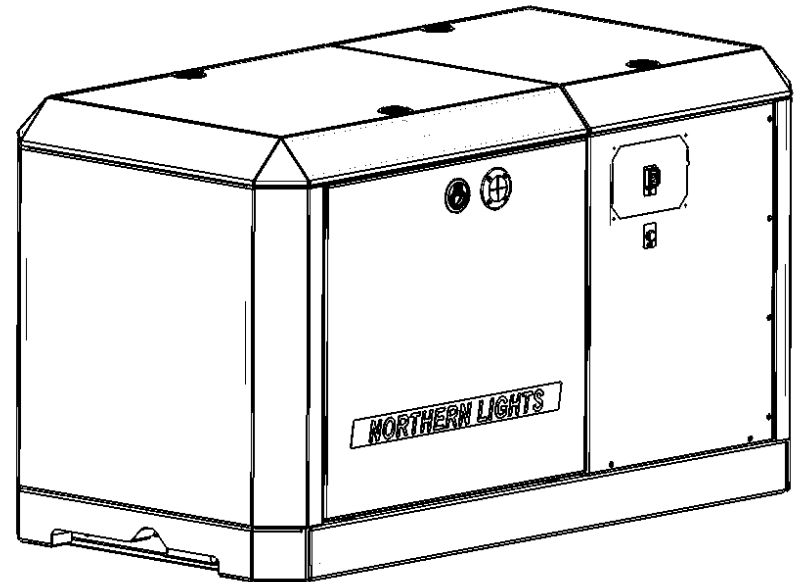
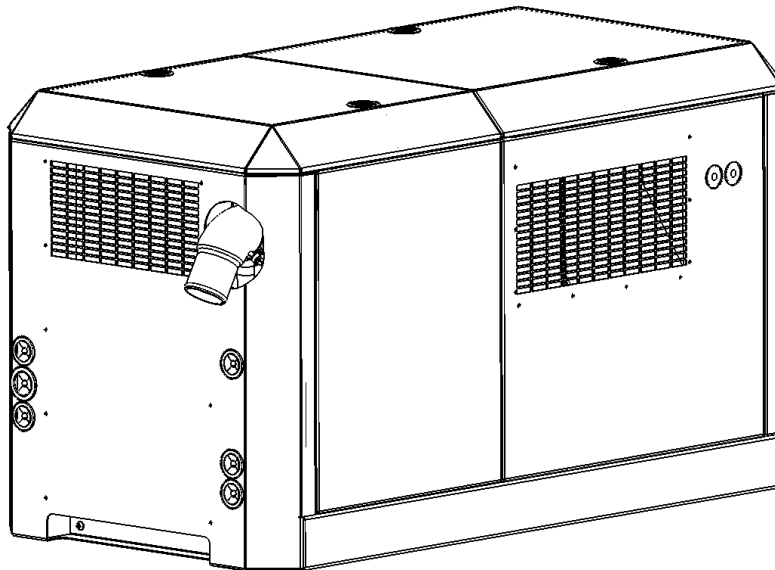




# M944W3F

## GEM Series Sound Enclosure Assembly Instructions



**Northern Lights**

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Seattle, WA 98107

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LIT NO.: L830 5/21

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## M944W3F GEM Sound Enclosure

ITEM #	DESCRIPTION	NLI P/N	QTY	NOTES
1.	Rear panel assembly	00-71242	1	
2.	Service side valence assembly	00-71232	1	
3.	Non-service side valence assembly	00-71234	1	
4.	Front valence assembly	00-71239	1	
5.	Service side aft panel assembly	00-71233	1	
6.	Non-service side aft panel assembly	00-71236	1	
7.	Non-service side fwd panel assembly	06-71211	1	
8.	Front panel assembly	06-71201	1	
9.	Seal bar assembly	06-71271	1	
10.	Service side fwd panel assembly	06-71208	1	
11.	Top aft panel assembly	06-71238	1	
12.	Top fwd panel assembly	06-71203	1	
13.	Sound shield wire harness	22-71227	1	
14.	M8 button head screw	12-00118	4	
15.	5/16 lock washer	15-09204	4	
16.	1-1/4" ID grommet	00-70146	2	
17.	1/4-20 socket head capscrew	12-12002	8	
18.	1/4" flat washer	15-00101	8	
19.	1/4" lock washer	15-00141	8	

### SPECIFICATIONS

#### Enclosure:

Length (OA)	56.0 in (1422 mm)
Width	28.7 in (729 mm)
Height	32.0 in (813 mm)
Assembled height on base frame:	32.0 in (813 mm)
Assembled weight w/o sub-base (est):	91 lbs (41.3 kg)

Prior to assembly, inspect all components for damage. Report any damage to the shipping company. Check the packing list in the back of this manual to be sure all parts are included.

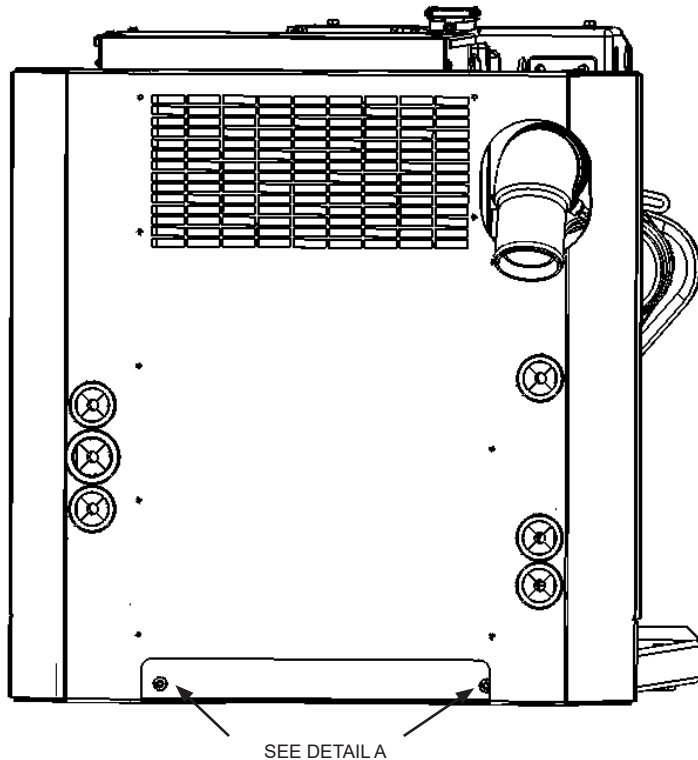
*Note: The generator set features a single point lifting eye. However, the generator may still possess original factory lifting points, which will need to be loosened and rotated down, until they are below the highest point on the engine. Be sure to retighten those bolts before moving on.*

Select a mounting location in accordance with the guidelines in the IM100 Installation Manual. The generator set must typically be mounted on a rigid, flat surface above a strong structure, such as vessel's stringers, to minimize vibration transference to the hull.

Note that the generator set is designed for single service side. When viewed from the rear, the left hand side is the service side, and should be exposed for easy maintenance access.

Install the generator set in the vessel as near to a level attitude as possible. Ensure that the enclosure's right hand side and rear at the recommended distances (6 inches recommended, 4 inches minimum) from the vessel's bulkheads.

AVOID POSITIONING THE ENCLOSURE INTO CORNERS WITH OVERHEAD BLOCKED TO REDUCE CHANCE OF INTAKE/EXHAUST AIR RECIRCULATION OUTSIDE THE SHIELD



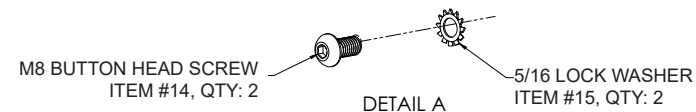
#### STEP 1

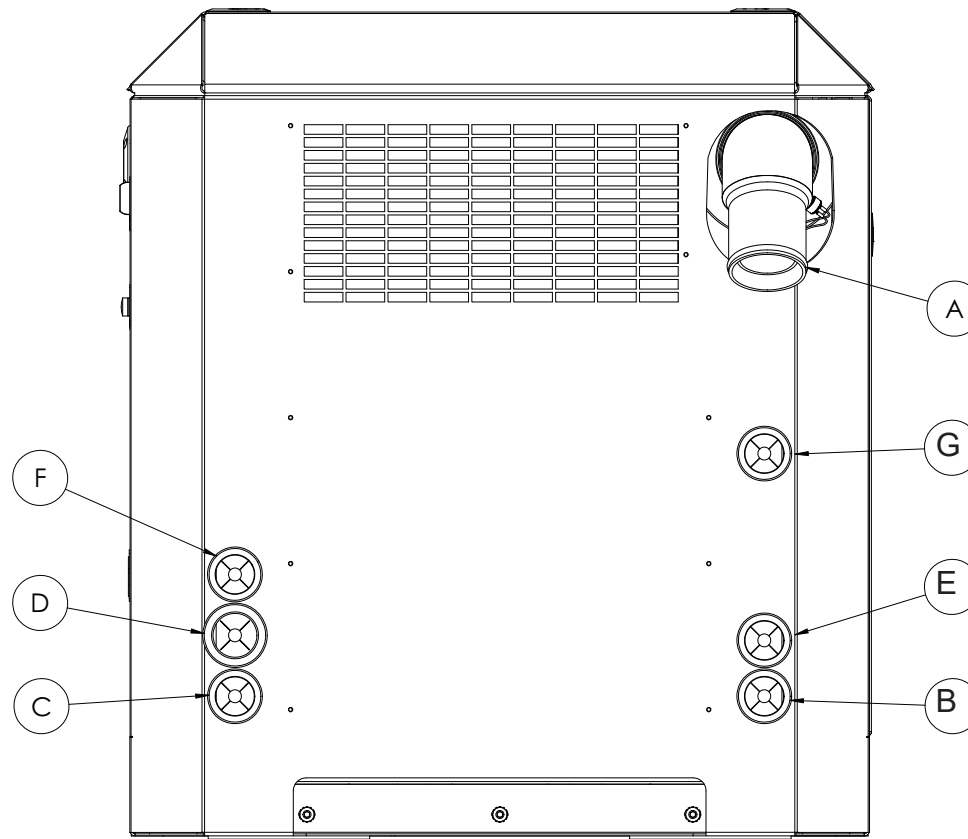
INSTALL REAR PANEL ASSY (ITEM #1)

- MOUNT REAR PANEL TO THE BASE FRAME WITH M8 BUTTON HEAD SCREW AND 5/16 LOCK WASHER. USE 5mm HEX WRENCH AND TIGHTEN WITH HAND TOOLS ONLY.

#### NOTES:

- FOR GENERATOR CONNECTION TO THE VESSEL, SEE PAGE 3





## GENERATOR CONNECTIONS

Install connections for exhaust, AC power leads, DC control panel leads, battery and water inlet through holes in the rear panel as shown and described below:

A- Connect the exhaust elbow of the diesel engine to the exhaust system of the vessel.

B- Connect the sea water pump to the vessel's water inlet. Pass a 3/4" ID hose from the vessel's sea water strainer through hole B to the sea water pump inlet fitting.

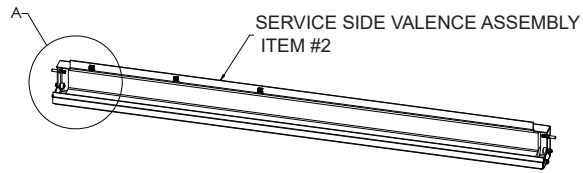
C- Connect the vessel's fuel supply and fuel return to the generator set through hole C. Fuel connections are located at the fuel manifold on the base frame of the generator's left hand side. Size will be 1/4" NPT or 5/16" JIC-37T depending on year of manufacture. Use Coast Guard-approved rubber hose only.

D- Connect the DC control panel harness to the genset engine harness plug through hole D.

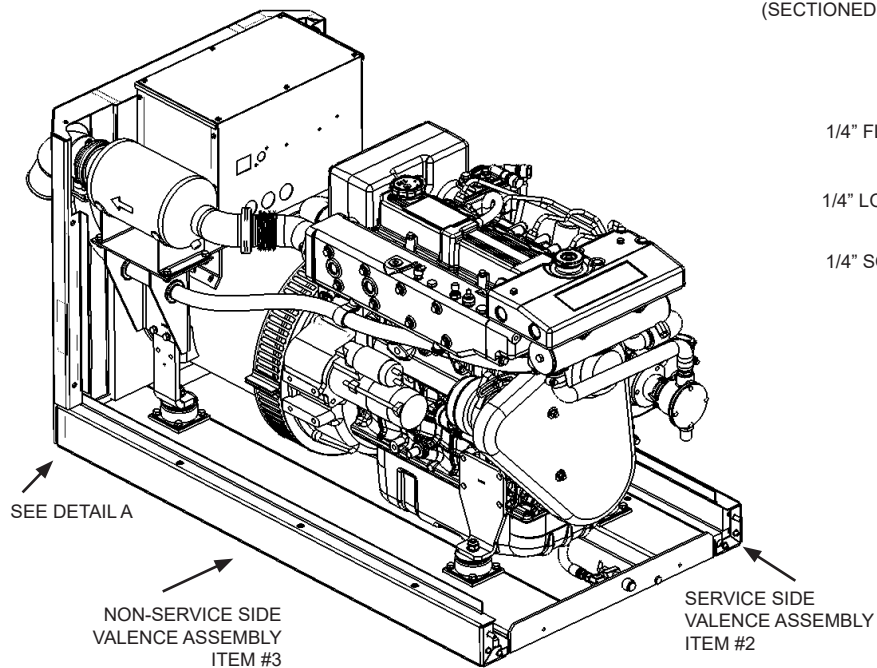
E- Connect the 12 volt battery leads to the generator set through hole E.

F- Connect the AC output leads from the generator junction box to the vessel's power distribution panel through hole F.

G- "OPTIONAL" This port is used for water outlet in KEEL COOLED applications.

**STEP 2.**

INSTALL SIDE VALENCE ASSEMBLY (ITEM #2 & #3).  
INSERT GUIDE PIN TO THE CORRESPONDING HOLE IN REAR PANEL. HAND START THE 1/4-20 SOCKET HEAD SCREWS, LOCK WASHER AND FLAT WASHER (ITEM# 17, 18, 19) AND TIGHTEN TO SECURE THE SIDE VALENCES TO THE REAR PANEL USING A 3/16" ALLEN WRENCH.

**DETAIL A**

SIDE VALENCE  
(SECTIONED FOR CLARITY)

GUIDE PIN

GUIDE PIN HOLE

1/4" FLAT WASHER

1/4" LOCK WASHER

1/4" SOCKET HEAD  
CAP SCREW

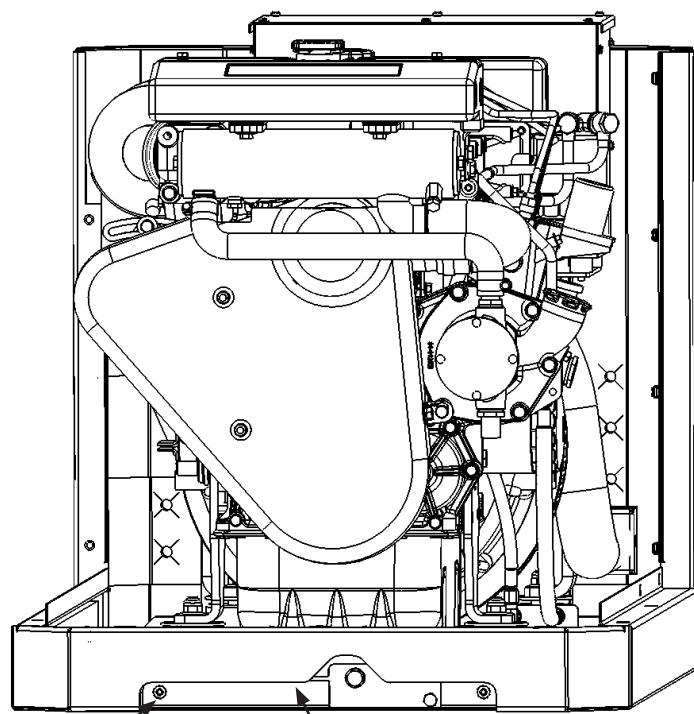
TAPPED HOLES

**STEP 3.**

INSTALL FRONT VALENCE (ITEM #4).

1. INSERT GUIDE PIN TO THE CORRESPONDING HOLE IN THE FRONT VALENCE. HAND START THE 1/4-20 SOCKET HEAD SCREWS, LOCK WASHER AND FLAT WASHER (ITEM# 17, 18, 19) AND TIGHTEN TO SECURE THE SIDE VALENCE TO THE FRONT VALENCE USING A 3/16" ALLEN WRENCH.

2. SECURE FRONT VALENCE TO THE BASE FRAME WITH M8 BUTTON HEAD SCREW AND 5/16 LOCK WASHER. USE 5MM HEX WRENCH AND TIGHTEN WITH HAND TOOLS ONLY.



SEE DETAIL B

FRONT VALENCE ASSEMBLY  
ITEM #4

5/16 LOCK WASHER  
ITEM #15, QTY. 2

M8 BUTTON HEAD SCREW  
ITEM #14, QTY. 2



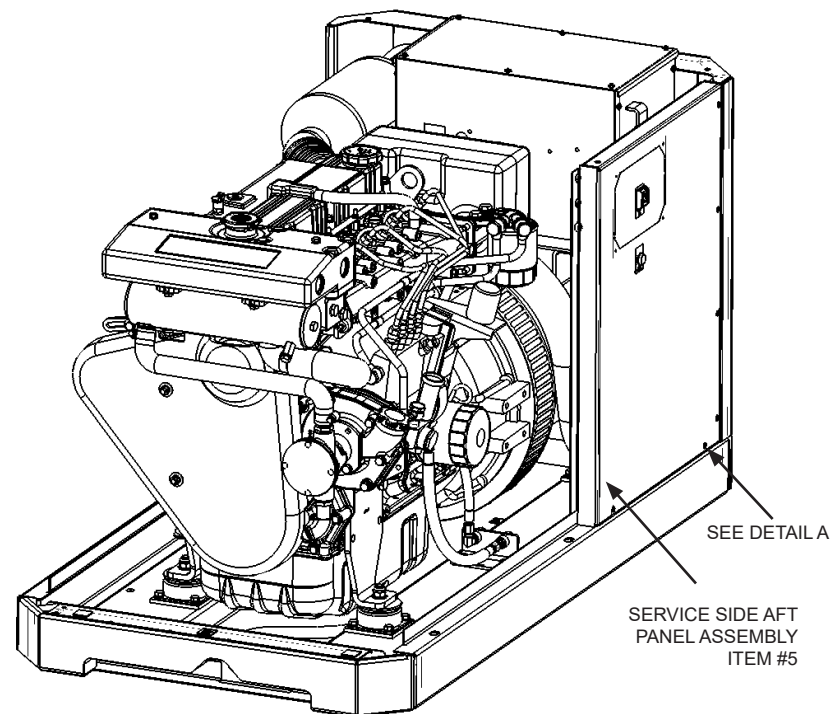
DETAIL B

**STEP 4.**

INSTALL SERVICE SIDE AFT PANEL ASSEMBLY (ITEM #5).  
FINGER START CAPTIVE SCREWS TO THE CORRESPONDING  
CAGED NUTS IN SERVICE SIDE VALENCE AND REAR PANEL.  
HAND TIGHTEN WITH PHILLIPS SCREWDRIVER.  
DO NOT OVER-TIGHTEN

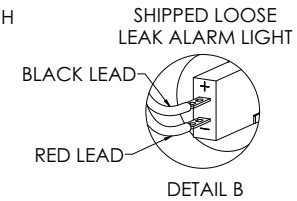
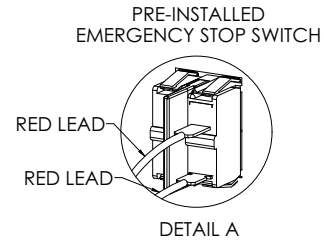
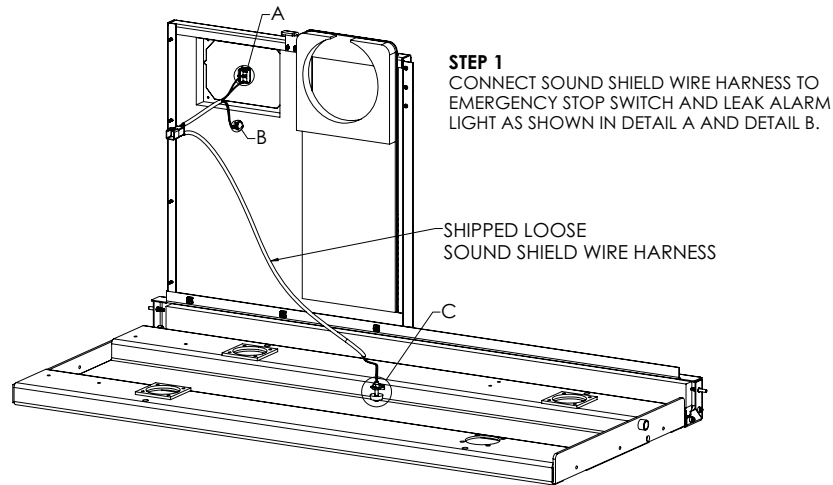
## NOTES:

- FOR SOUND SHIELD WIRE HARNESS INSTALLATION, SEE  
PAGE 8



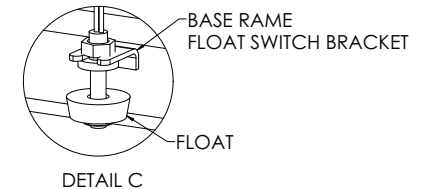


## SOUND SHIELD WIRE HARNESS INSTALLATION

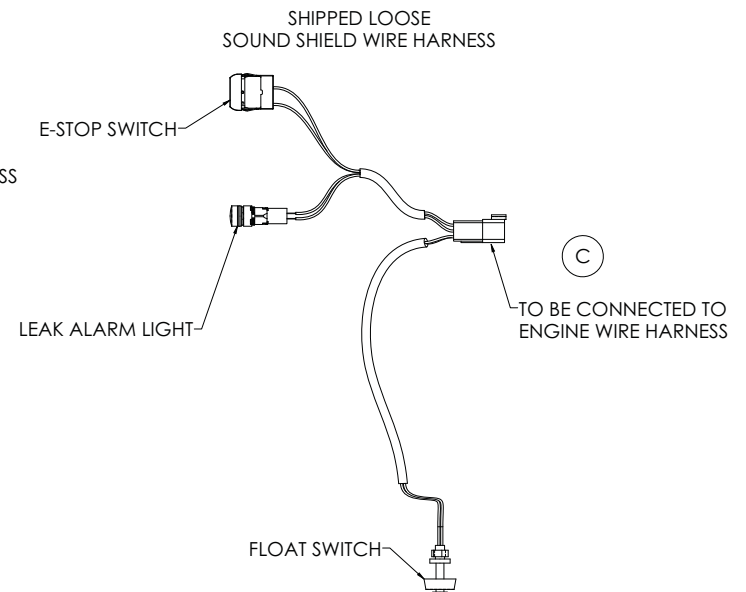
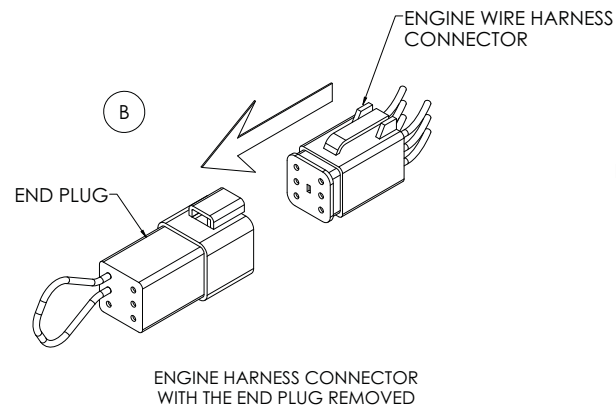
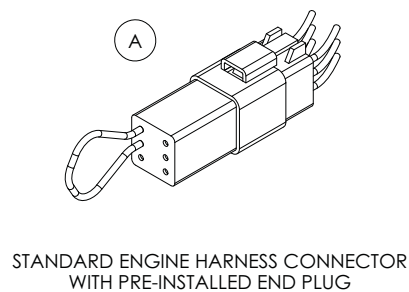


NOTES:  
LEAK ALARM LIGHT WILL NOT OPERATE IF POLARITY IS SWITCHED.  
APPEARANCE MAY VARY.

**STEP 2**  
INSTALL FLOAT SWITCH TO THE CORRESPONDING BRACKET ON THE BASE FRAME. BE SURE TO CHECK THE LEAK ALARM LIGHT BY LIFTING UP THE FLOAT AFTER GENERATOR SET IS CONNECTED TO STARTER BATTERY.



**STEP 3**  
A. LOCATE AND IDENTIFY THE ENGINE WIRE HARNESS.  
B. REMOVE THE ENGINE WIRE HARNESS END PLUG.  
C. CONNECT SOUND SHIELD WIRE HARNESS TO THE ENGINE WIRE HARNESS.

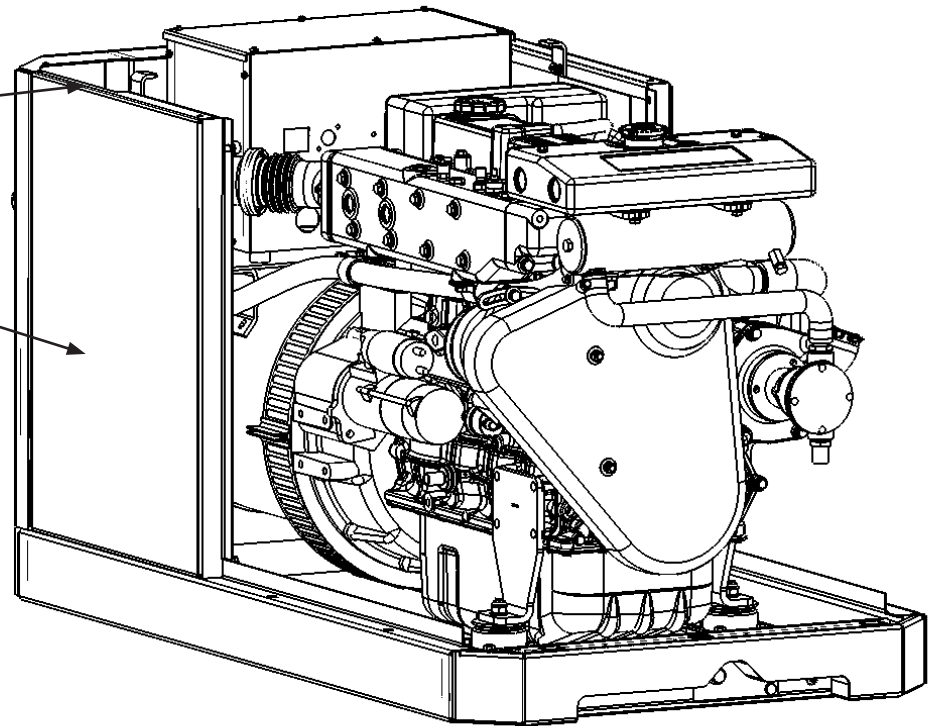


**STEP 5.**

INSTALL NON-SERVICE SIDE AFT PANEL ASSEMBLY (ITEM # 6). INSERT THE GUIDE PINS TO THE CORRESPONDING HOLES IN REAR PANEL. USE THE SCREW RODS TO RETAIN SIDE VALENCES TO REAR PANEL. APPLY DOWNWARD PRESSURE AS TURNING THE SCREW ROD WHEEL TO ENGAGE CAPTIVE NUTS INSIDE THE LOWER VALENCE.

SEE DETAIL A FOR  
INSTALLATION VIEWS

NON-SERVICE SIDE  
AFT PANEL ASSEMBLY  
ITEM #6

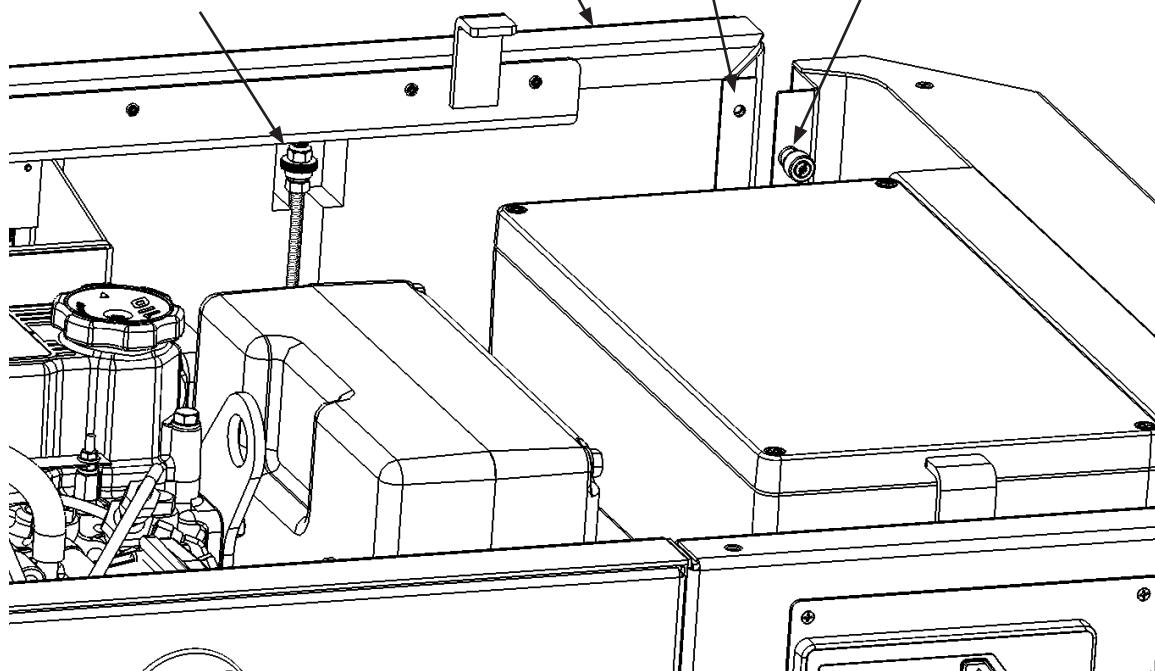
**DETAIL A**

RIGHT SIDE PANEL ASSEMBLY  
ITEM #6

THREAD RECEPTACLE

CAPTIVE SCREW

SCREW ROD THUMBWHEEL



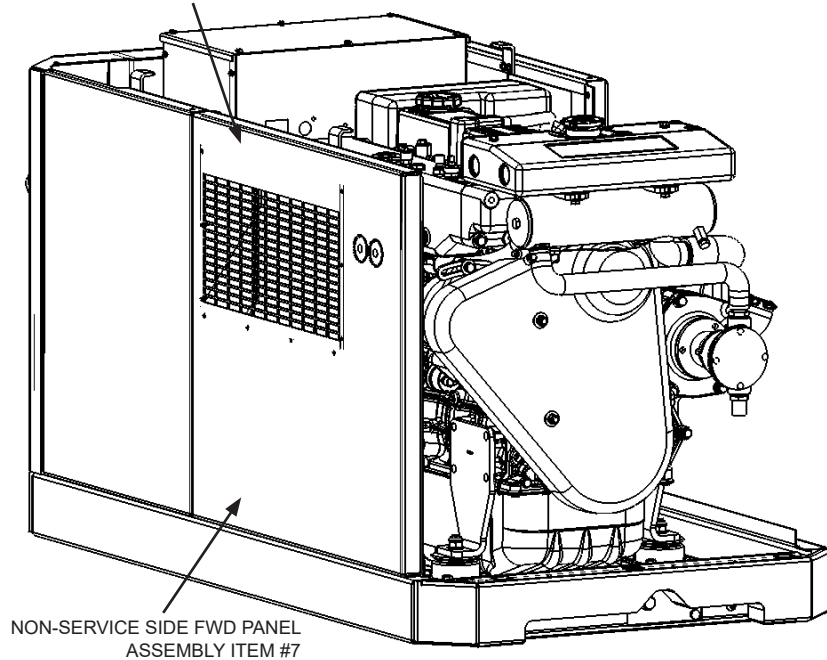
TO INSTALL RIGHT SIDE AFT PANEL,  
POSITION THE PANEL INTO PLACE  
ALIGNING THE CAPTIVE SCREW  
NEAR THE TOP FLANGE WITH THE  
THREADED RECEPTACLE ON THE  
REAR PANEL. HAND TIGHTEN TO  
SECURE.

### STEP 6.

INSTALL NON-SERVICE SIDE FWD PANEL ASSEMBLY (ITEM # 7).

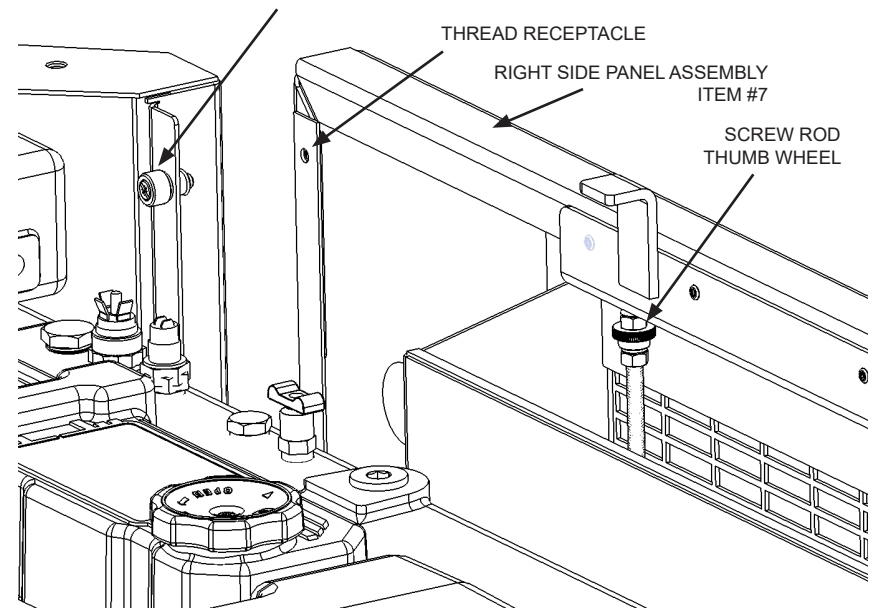
1. USE CAPTIVE THUMB SCREW TO SECURE THE NON-SERVICE SIDE FWD PANEL TO NON-SERVICE SIDE AFT PANEL.
2. USE SCREW ROD TO RETAIN NON-SERVICE SIDE FWD PANEL TO THE SIDE VALENCE. APPLY DOWNWARD PRESSURE WHILE TURNING SCREW ROD WHEEL TO ENGAGE THE CAPTIVE NUTS INSIDE THE LOWER VALENCE.

SEE DETAILS A AND B FOR INSTALLATION VIEWS

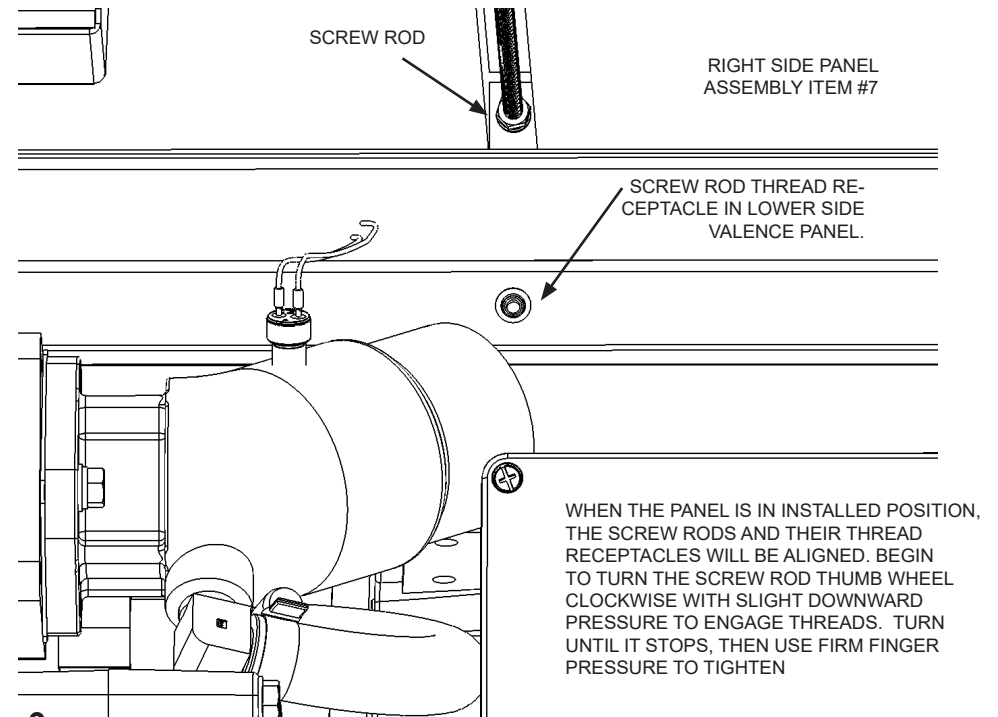


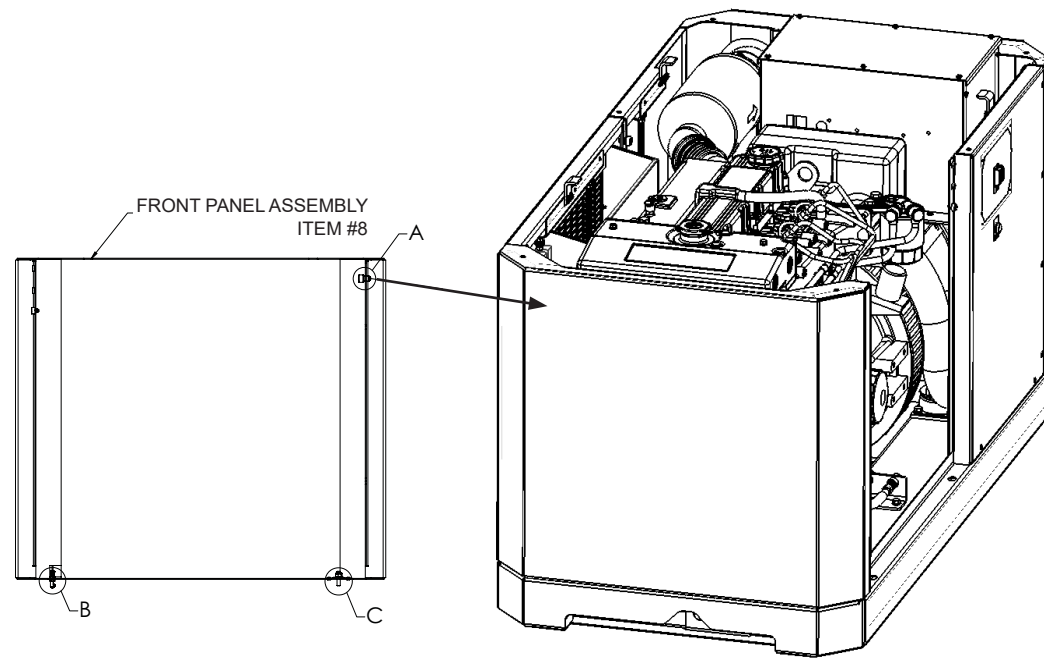
DETAIL A

CAPTIVE SCREW IN FRONT PANEL (REFERENCE ONLY)  
ENGAGE ONLY AFTER FRONT PANEL IS INSTALLED



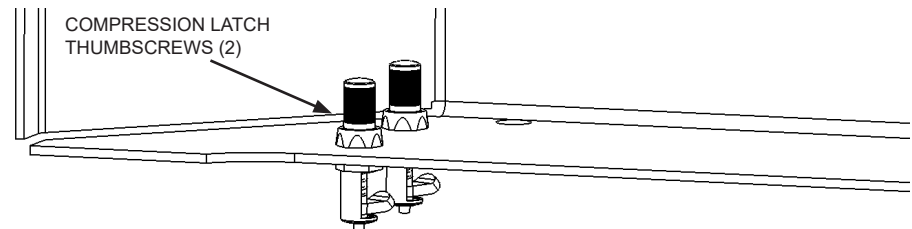
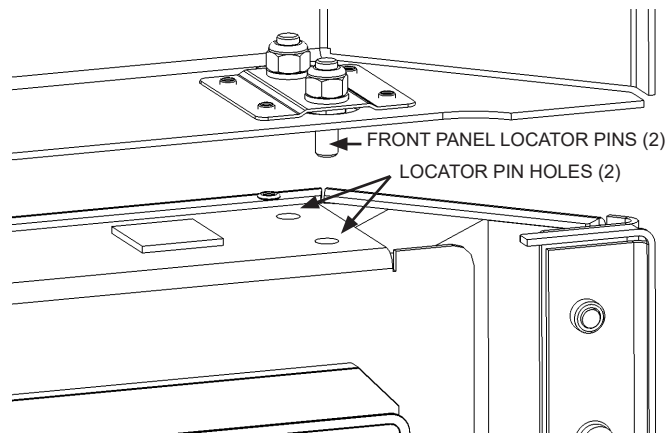
DETAIL B



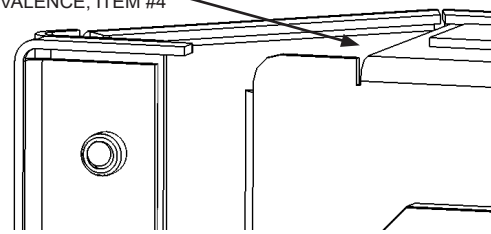
**STEP 7.**

INSTALL FRONT PANEL ASSEMBLY (ITEM #8)

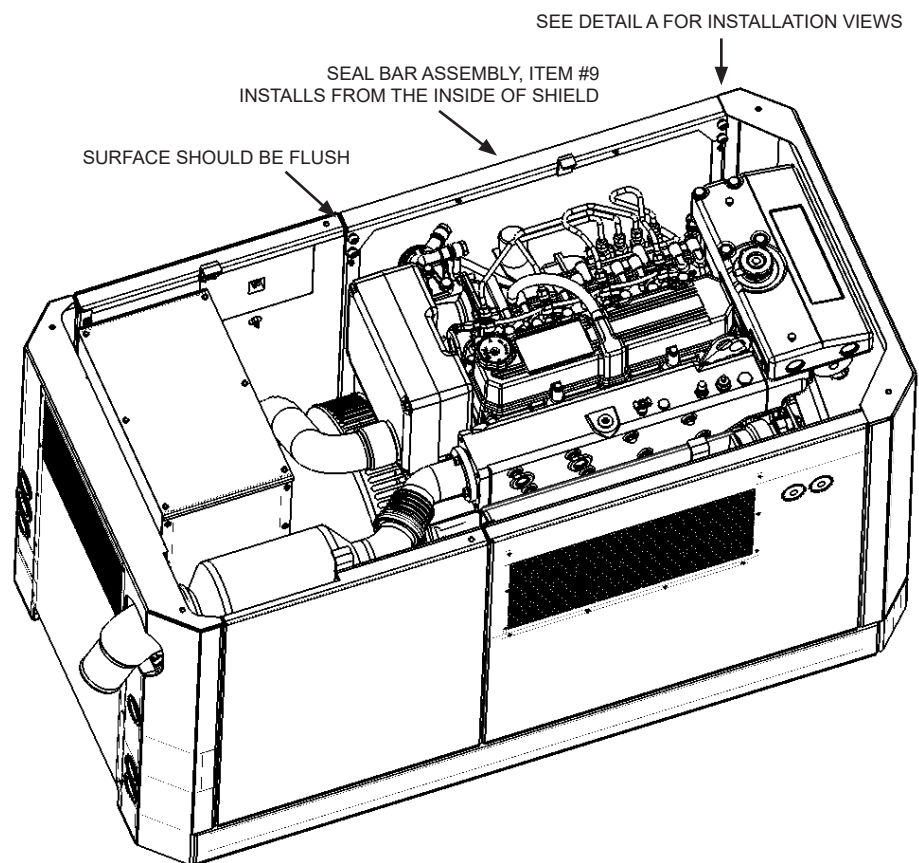
1. BEFORE PLACING FRONT PANEL INTO POSITION, ROTATE THUMB SCREW LATCH IN COUNTER-CLOCKWISE DIRECTION AND INSERT THE GUIDE PINS TO THE CORRESPONDING HOLES ON FRONT VALENCE.
2. ROTATE THUMB SCREW LATCH IN CLOCKWISE DIRECTION TO ENGAGE, AND TWIST WITH FIRM PRESSURE TO SECURE.
3. USE CAPTIVE THUMB SCREW TO RETAIN FRONT PANEL TO NON-SERVICE SIDE FWD PANEL. DO NOT OVERTIGHTEN.

**DETAIL B****DETAIL A**

PAWL CATCH AREA IN LOWER FRONT VALENCE, ITEM #4



TO SECURE THE FRONT PANEL TO THE LOWER FRONT VALENCE, FIRST ENSURE BOTH THUMBSCREWS ARE FULLY ROTATED COUNTER-CLOCKWISE UNTIL STOP. PAWLS WILL BE POINTING TO FRONT. WHEN FRONT PANEL IS SEATED, TURN THE THUMBSCREWS CLOCKWISE UNTIL TIGHT. PAWL WILL ROTATE TO THE RIGHT AND CAPTURE THE EDGE OF THE FRONT LOWER VALENCE. SNUG TO HAND TIGHT.



**STEP 8.**

INSTALL SEAL BAR ASSEMBLY (ITEM #9).  
LOCATE SEAL BAR TO CORRESPONDING HOLES ON  
FRONT PANEL AND SERVICE SIDE AFT PANEL. SECURE  
WITH CAPTIVE THUMB SCREW. DO NOT OVER-  
TIGHTEN.

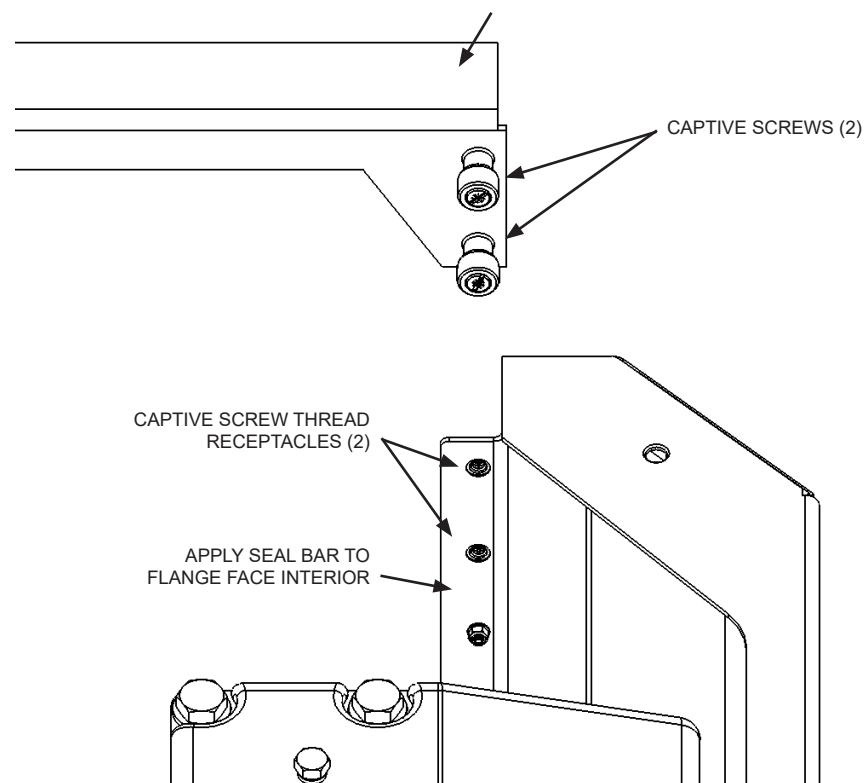
DETAIL A

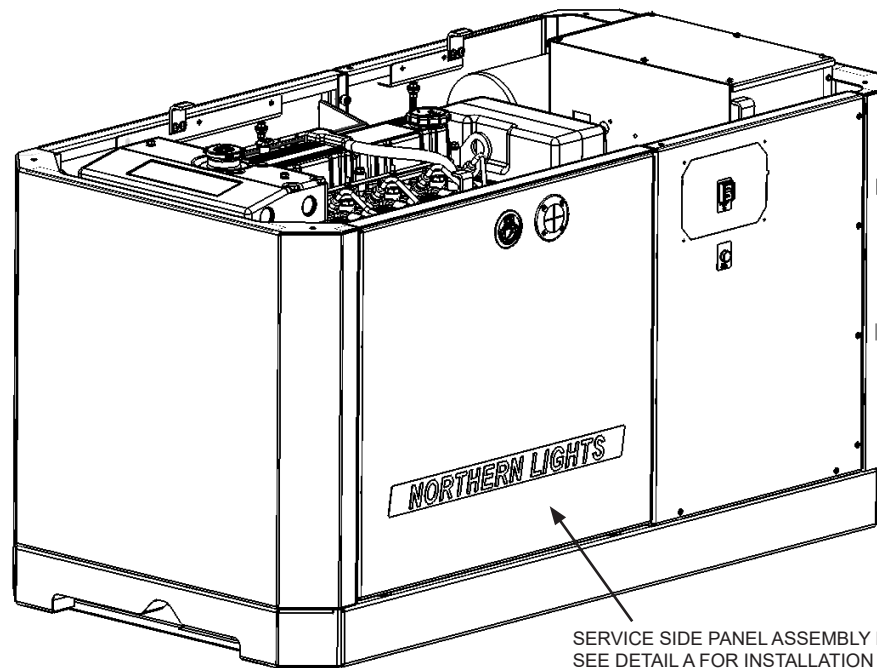
SERVICE SIDE SEAL BAR ASSEMBLY, ITEM #9

CAPTIVE SCREWS (2)

CAPTIVE SCREW THREAD  
RECEPTACLES (2)

APPLY SEAL BAR TO  
FLANGE FACE INTERIOR





SERVICE SIDE PANEL ASSEMBLY ITEM #10  
SEE DETAIL A FOR INSTALLATION VIEWS

#### STEP 9.

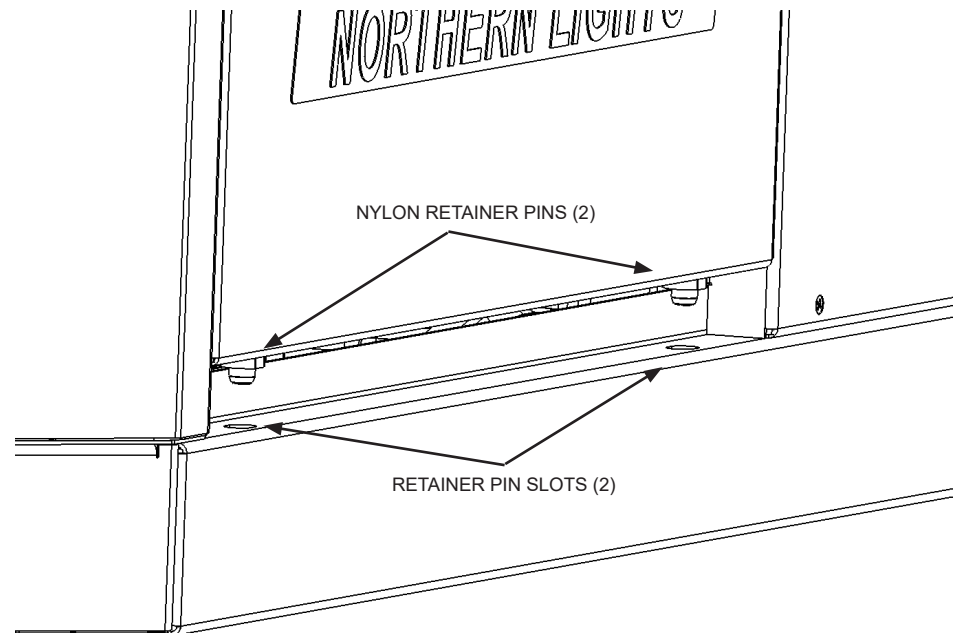
INSTALL SERVICE SIDE FWD PANEL ASSEMBLY  
(ITEM #10).

GUIDE NYLON RETAINERS INTO THE CORRESPONDING  
SLOTS ON LOWER VALENCE. RETAIN IN PLACE BY  
TURNING LATCH TO CLOSED POSITION.

#### NOTES:

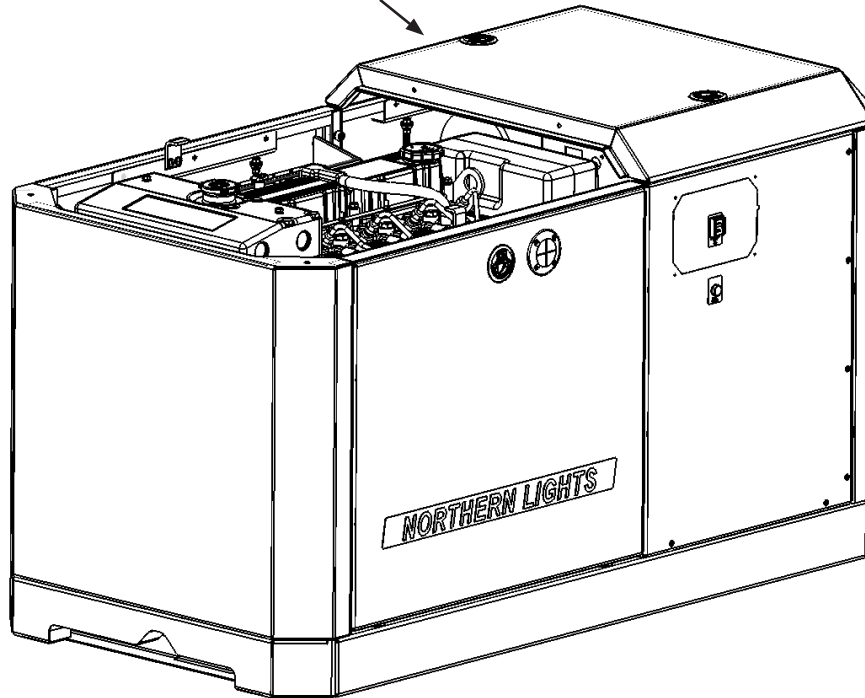
OPEN LATCHES BY LIFTING LEVER AND TWISTING  
ONE-HALF TURN BEFORE MOUNTING TO SOUND  
SHIELD. RING LATCHES ARE FACTORY PRE-SET,  
BUT MAY REQUIRE MINOR ADJUSTMENT. SEE LATCH  
ATTACHMENT (PAGE 12) FOR MORE DETAILS.

DETAIL A

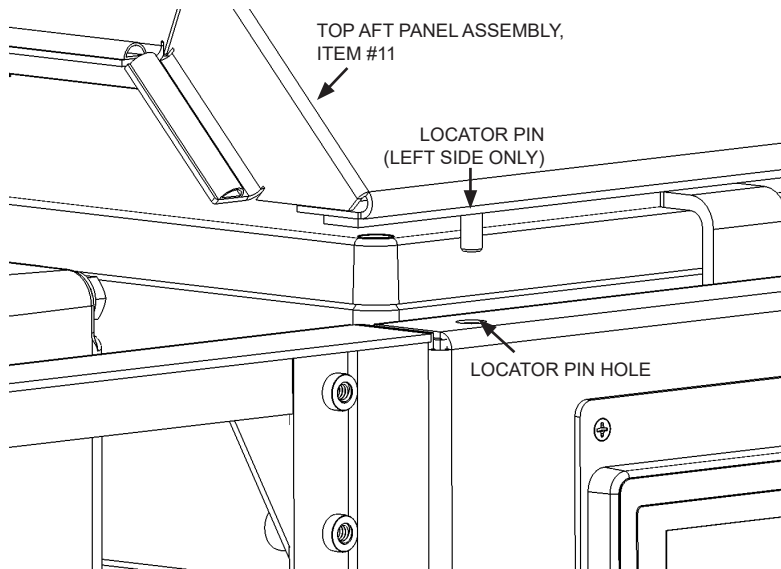


SEE DETAIL A AND B FOR INSTALLATION VIEWS

TOP AFT PANEL ASSEMBLY, ITEM #11



DETAIL B



# **STEP 10.**

INSTALL TOP AFT & FWD PANEL ASSY (ITEMS #11 & #12).

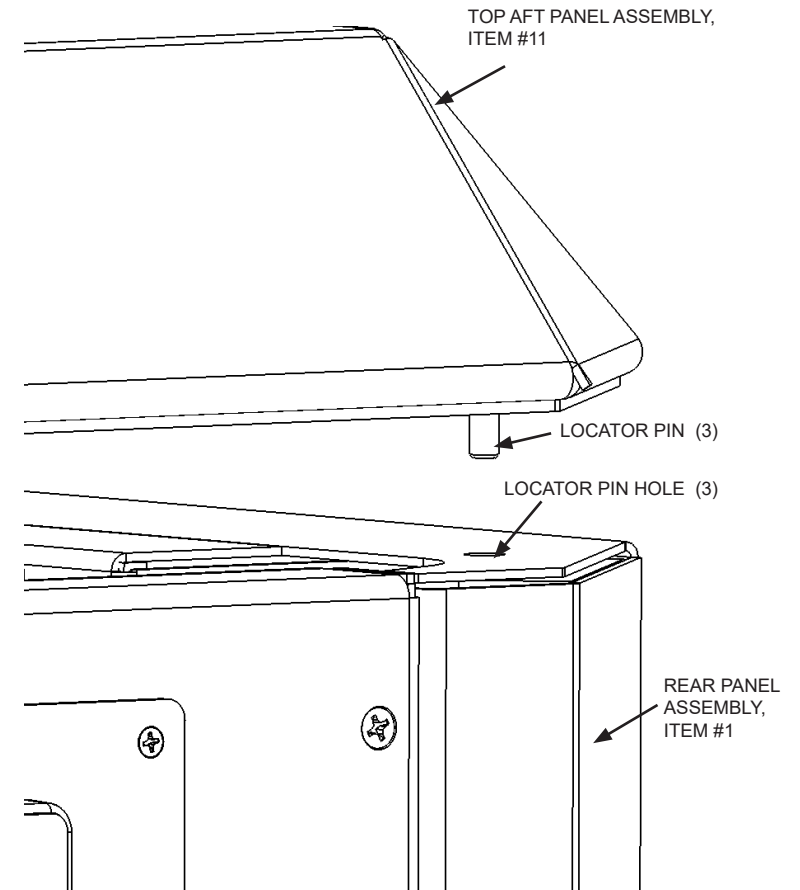
1. GUIDE THE PINS ON TOP AFT PANEL TO THE CORRESPONDING HOLES ON REAR AND SIDE PANELS. RETAIN IN PLACE BY TURNING LATCH TO CLOSED POSITION.

2. GUIDE THE PINS AT THE AFT END OF THE TOP FORWARD PANEL ASSEMBLY INTO THE CORRESPONDING HOLES IN THE TOP AFT PANEL. ALIGN GUIDE PINS AT THE FRONT END INTO THE CORRESPONDING HOLES ON THE TOP OF THE FRONT PANEL.

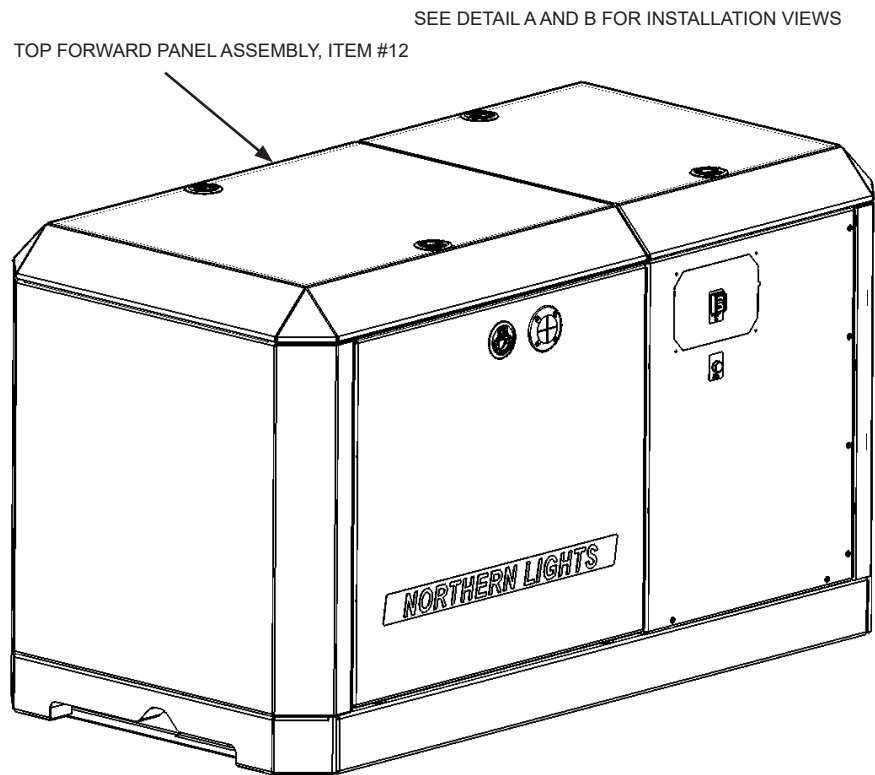
## **NOTES:**

OPEN LATCHES BY LIFTING LEVER AND TWISTING ONE-HALF TURN BEFORE MOUNTING TO SOUND SHIELD. RING LATCHES ARE FACTORY PRE-SET, BUT MAY REQUIRE MINOR ADJUSTMENT. SEE LATCH ATTACHMENT (PAGE 16) FOR MORE DETAILS.

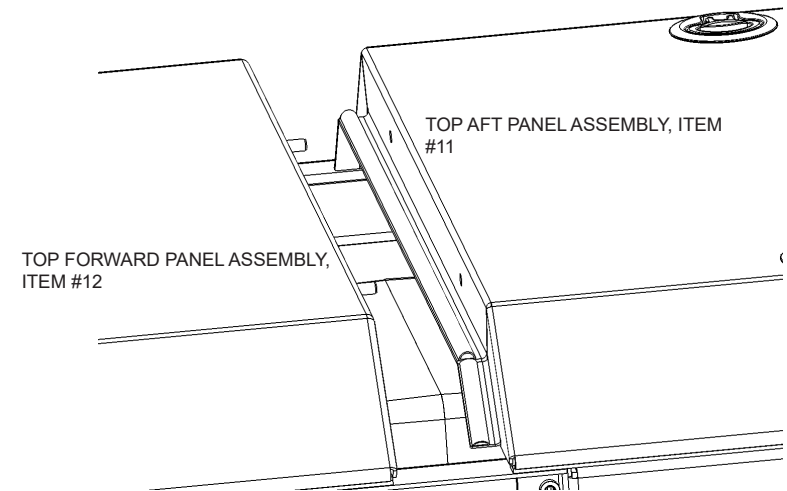
DETAIL A



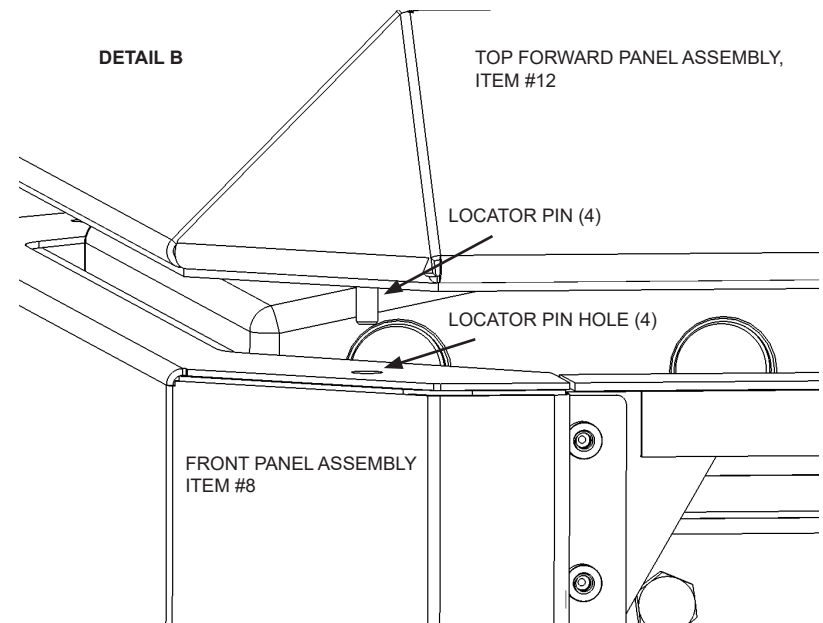
## STEP 10 (continued)



DETAIL A



DETAIL B





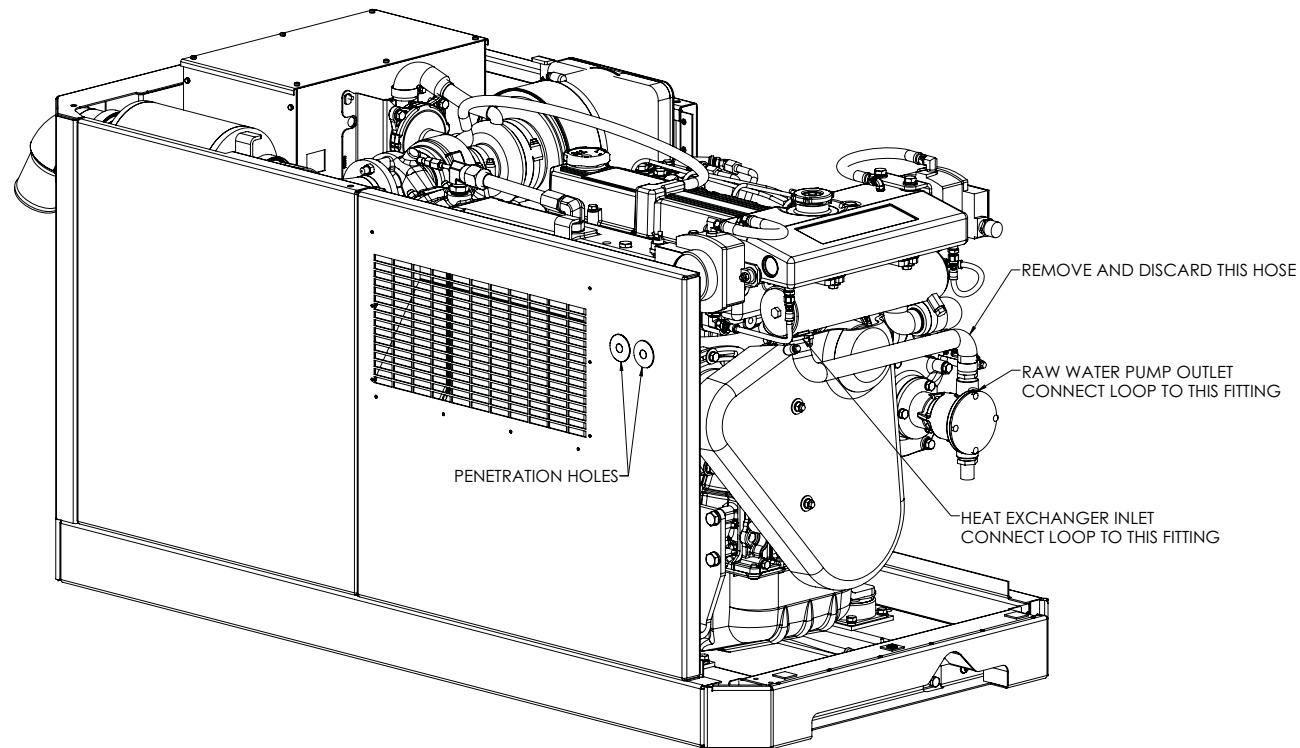
## FOR APPLICATIONS WITH A SIPHON BREAK

Reference the plumbing diagram in the mounting and exhaust sections of the IM1000 installation manual.

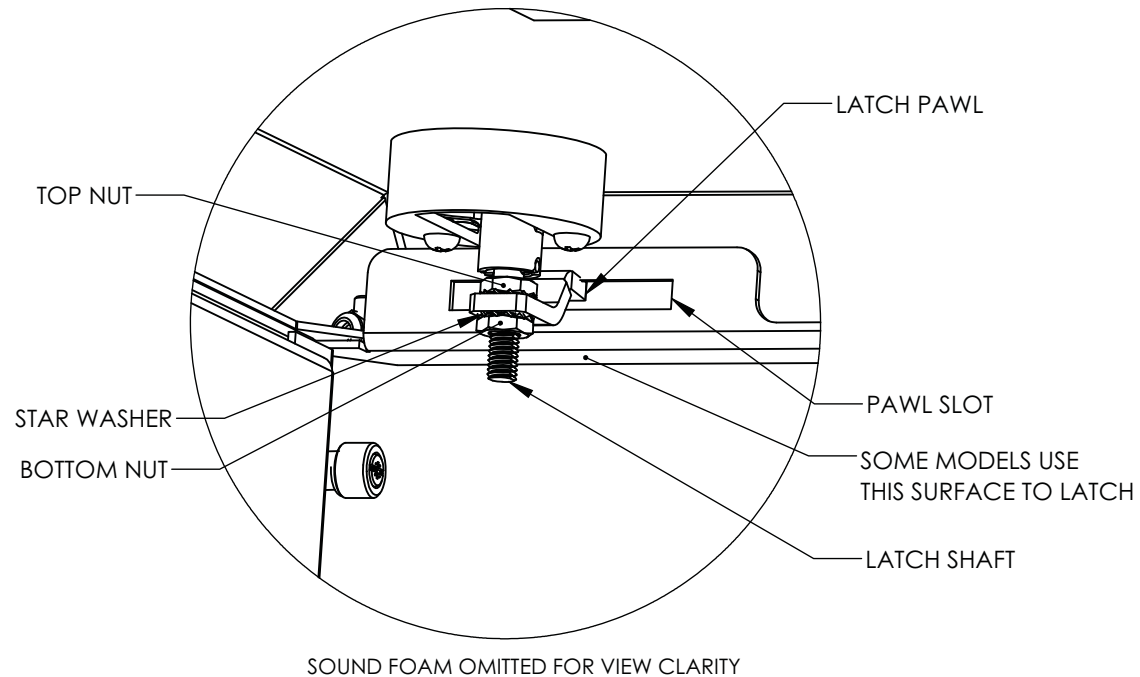
Remove the white plastic hole plugs by pushing them out from the inside and replace with the two rubber grommets provided (ITEM#18).

*GENERATOR SETS WITH WET EXHAUST THAT ARE INSTALLED NEAR OR BELOW THE VESSEL'S WATER LINE MUST USE A SIPHON BREAK TO PREVENT BACKFLOW OF WATER INTO THE ENGINE. THIS BACKFLOW CAN RUIN AN ENGINE AND POSSIBLY SINK THE VESSEL.*

1. Disconnect the hose from seawater pump output. Install two lengths of 3/4" hose. The hoses must be of adequate length to allow mounting of a siphon break, a minimum of 12 inches above the vessel's loaded water line.
2. Pass the hoses through the provided penetration holes.
3. For more information, see the "Exhaust" section of the IM1000. Installation Manual is included with the generator set.



## RING LATCH GRIP ADJUSTMENT INSTRUCTIONS



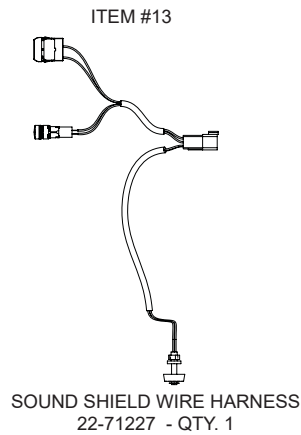
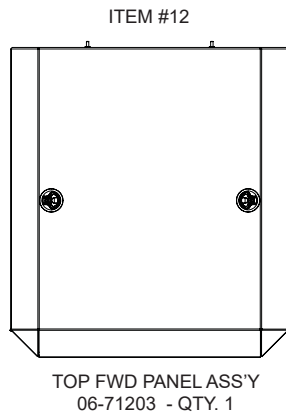
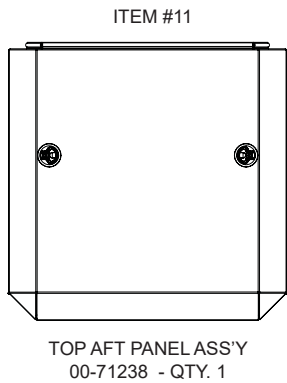
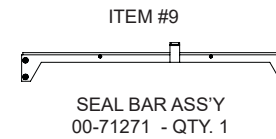
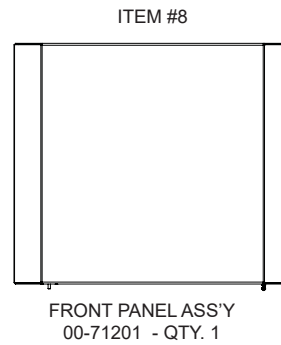
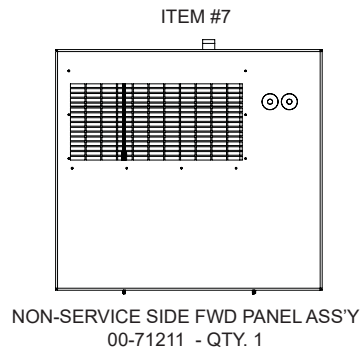
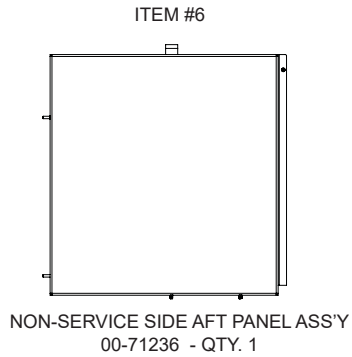
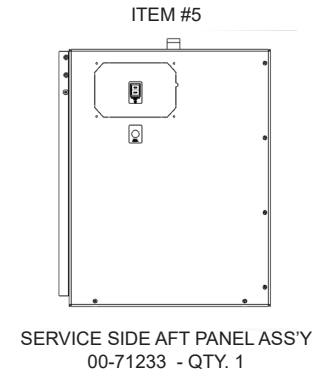
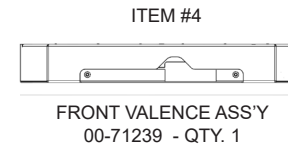
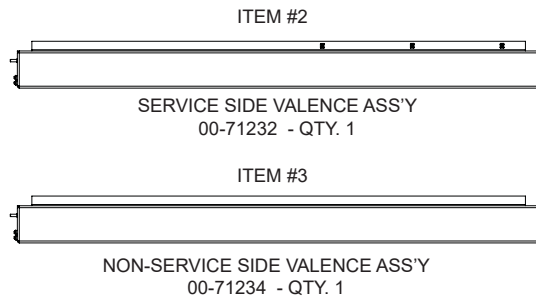
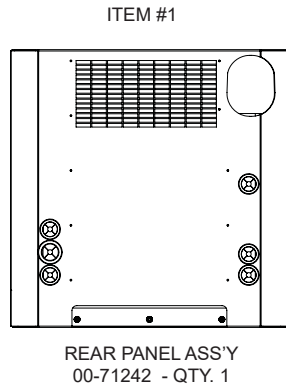
ALL LATCHES ARE PRE-ADJUSTED FROM FACTORY. IN THE EVENT A LATCH REQUIRES ADJUSTMENT, FOLLOW THESE STEPS:

1. NOTE THE INTERFERENCE, OR REASON WHY THE LATCH PAWL WILL NOT ENGAGE THE PAWL SLOT. IF PAWL HITS SLOT BRACKET OR SHELF IT MUST BE MOVED TO ALLOW PAWL TO ROTATE INSIDE SLOT.
2. LATCH PAWL SHOULD OPERATE WITHIN SLOT FREELY WHEN LATCH HANDLE ROTATES ON REMOVAL.
3. WITH LATCH IN CLOSED POSITION, (LATCH PAWL POINTING TOWARDS SLOT, LOOSEN THE BOTTOM NUT. TURN TOP NUT TO CHANGE POSITION OF PAWL AND THEN RE-TIGHTEN THE BOTTOM NUT. ENSURE THE NUT IS FULLY TIGHT BEFORE OPERATING THE LATCH.
4. AN IDEAL LATCH CONDITION IS WHEN THE PAWL SWINGS INTO POSITION ON CLOSING, PULLS UP AND ENGAGES THE TOP OF THE SLOT WITH INCREASING RESISTANCE. WHEN THE LATCH RING IS FULLY DEPRESSED THERE SHOULD BE FIRM COMPRESSION OF PANEL PERIMETER SEAL.
5. IF YOU CAN LIFT UP A CORNER OF THE TOP PANEL AND SEE A SPACE, THE LATCH IS NOT TIGHT ENOUGH.

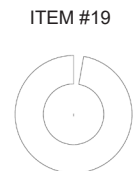
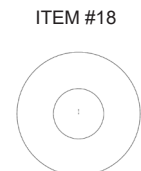
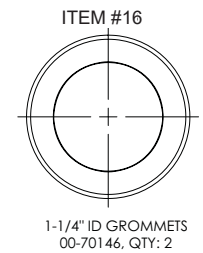
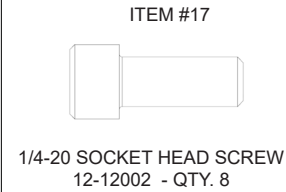
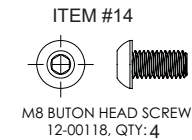


# PACKING LIST

18



ITEMS BELOW ARE ENLARGED FOR DETAIL (NOT TO SCALE)



Packed By : \_\_\_\_\_

Date : \_\_\_\_\_