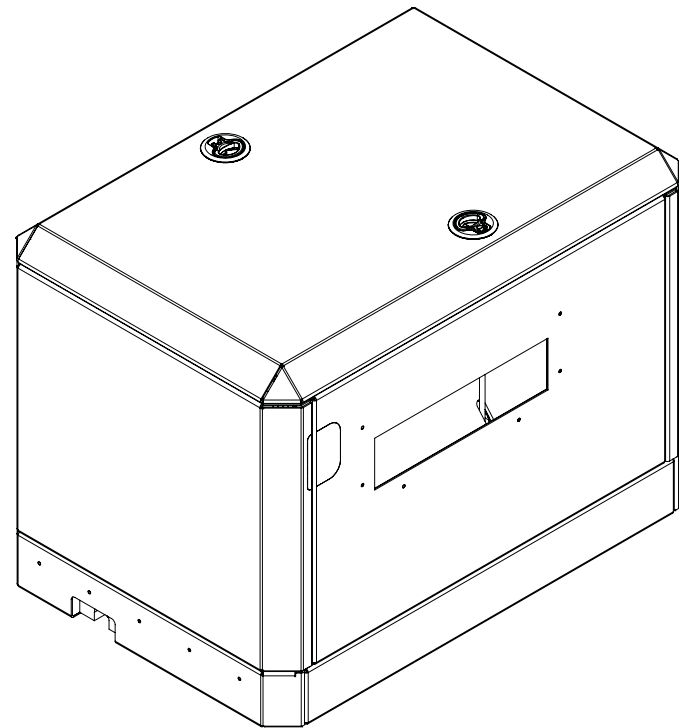
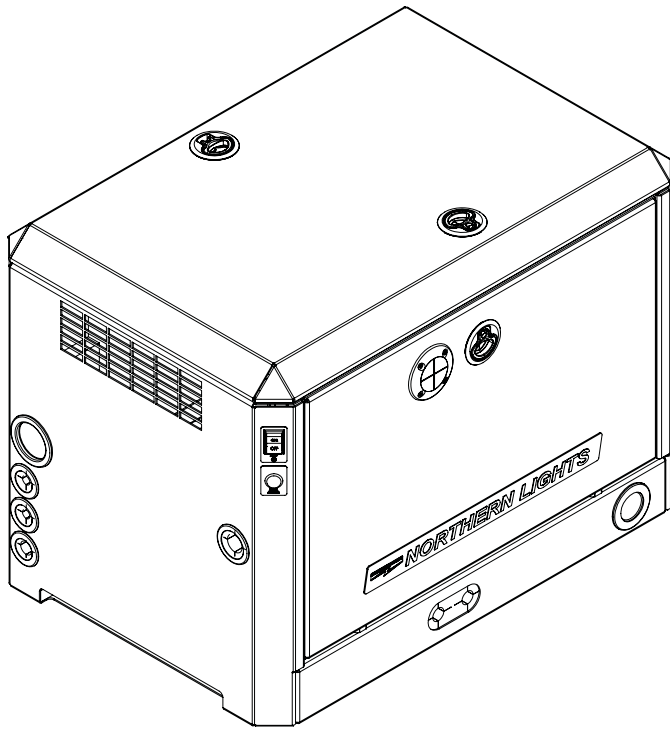




# M673LD3 / M673L3

## GEM Series Sound Enclosure

### Assembly Instructions



**Northern Lights**  
4420 14th Avenue NW  
Seattle, WA 98107  
Tel: (206) 789-3880  
Fax: (206) 782-5455

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## M673L3/LD3 GEM Sound Enclosure

ITEM #	DESCRIPTION	ADE P/N	QTY	NOTES
1.	Junction box bridge cover assembly	06-78029	1	
2.	Rear panel assembly	06-08024	1	
3.	Non-service side valence assembly	06-08012	1	
4.	Service side valence assembly	06-08023	1	
5.	Front lower valence assembly	06-08014	1	
6.	Non-service side panel assembly	06-08013	1	
7.	Front panel assembly	06-08016	1	
8.	Seal bar assembly	06-08029	1	
9.	Top panel assembly	06-08028	1	
10.	Service side panel assembly	06-78010	1	
11.	Sound shield wire harness	22-72026	1	
12.	M8 x 12 18-8, S/S button head screw	12-70013	2	
13.	M8 x 20 18-8, S/S hex head capscrew	12-00776	2	
14.	M8 flatwasher, S/S	15-11000	2	
15.	M8 lockwasher, S/S	15-00705	4	
16.	Grommet edging	44-70034	15"	
17.	Front lower valence cut-out insert sound foam	55-08003	1	

### SPECIFICATIONS

#### Enclosure:

Length (OA)	28.5 in (724 mm)
Width	19.6 in (498 mm)
Height	21.0 in (533 mm)
Assembled weight (shield only)	34 lbs (15.4 kg)
Assembled weight (with generator set)	405 lbs (184 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.

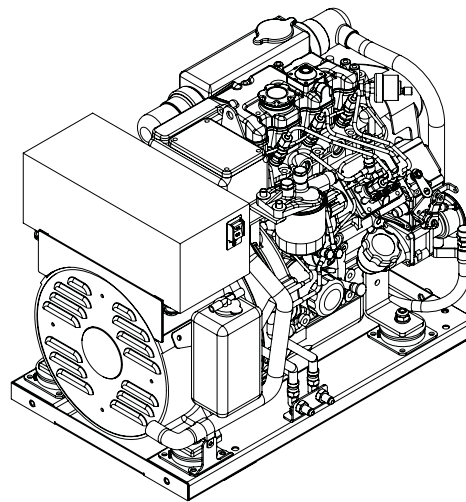
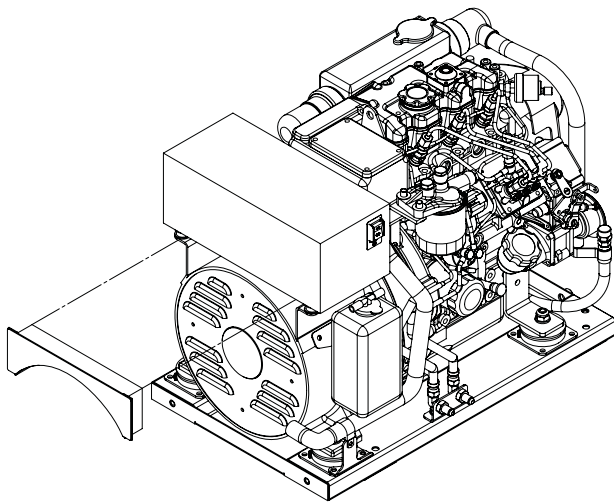
*Note: The generator set features a single point lifting eye. However, the generator may still possess original factory lifting points, which will need to be loosened and rotated down, until they are below the highest point on the engine. Be sure to retighten those bolts before moving on.*

Select a mounting location in accordance with the guidelines in the IM1000 Installation Manual. The generator set must typically be mounted on a rigid, flat surface above a strong structure, such as the vessel's stringers, to minimize vibration transference to the hull.

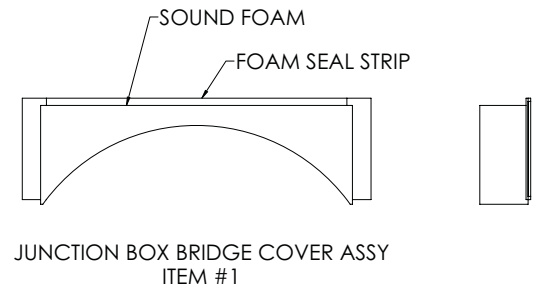
Note that the generator set is designed for single side service. When viewed from the rear, the right hand side is the service side and should be exposed for easy maintenance access.

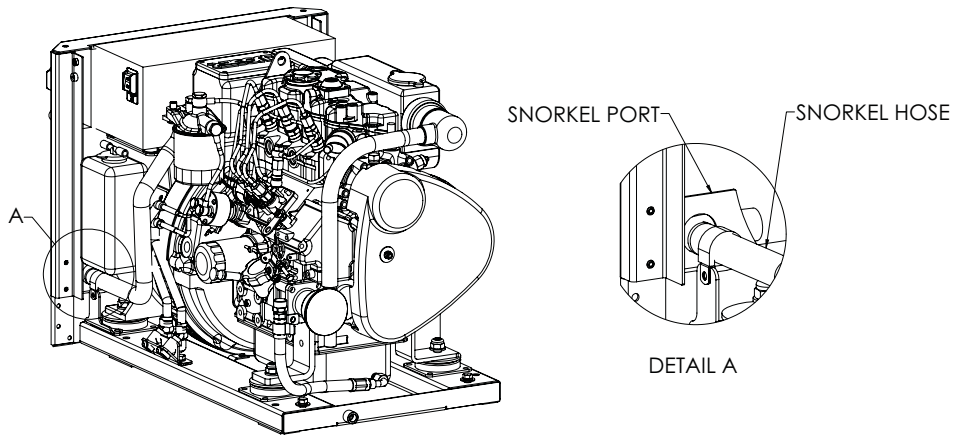
Install the generator set in the vessel as near to a level attitude as possible. Ensure that the enclosure's left hand side and rear at the recommended distances (6 inches recommended, 4 inches minimum) from the vessel's bulkheads.

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



**STEP 1.**  
INSTALL BRIDGE COVER (ITEM #1) SO IT IS  
PRESSED FIRMLY AGAINST JUNCTION BOX  
AND HELD IN PLACE BY SOUND FOAM



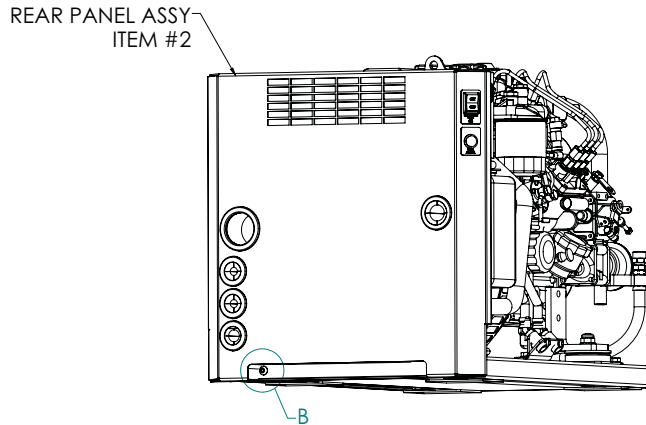


**STEP 2.**

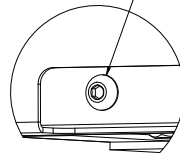
VERIFY THAT SNORKEL HOSE ALIGNS WITH SNORKEL HOSE PORT.  
FEED HOSE UNTIL THE BEND IS THROUGH THE SNORKEL PORT.

You may encounter some resistance as the rear panel comes into contact with the air intake snorkel hose. Note that the rear panel has a small hole in the vicinity of the intake snorkel (Snorkel port.) Guide this hose so that it is inserted within the panel hole, ensuring that the hose will install without adjustment at the retaining clamp.

When making the intake air hose connection, it is important to ensure that the hose is not kinked or bent in such a way as to restrict the engine's intake airflow. The arrangement is designed to allow the hose to follow it's natural path when properly installed into the rear panel. Some adjustment is possible by loosening either bolt of the snorkel hose's supporting bracket. Be sure to retighten any loosened bolts.



M8 BUTTON HEAD SCREW  
ITEM #12, QTY: 2  
M8 LOCK WASHER  
ITEM #15, QTY: 2



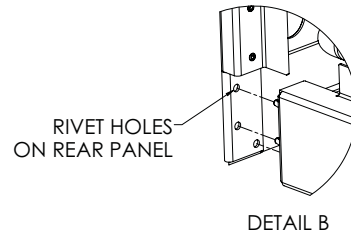
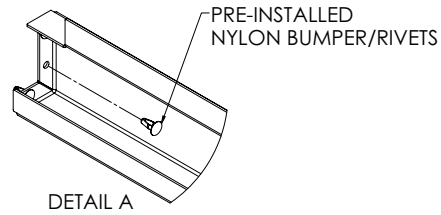
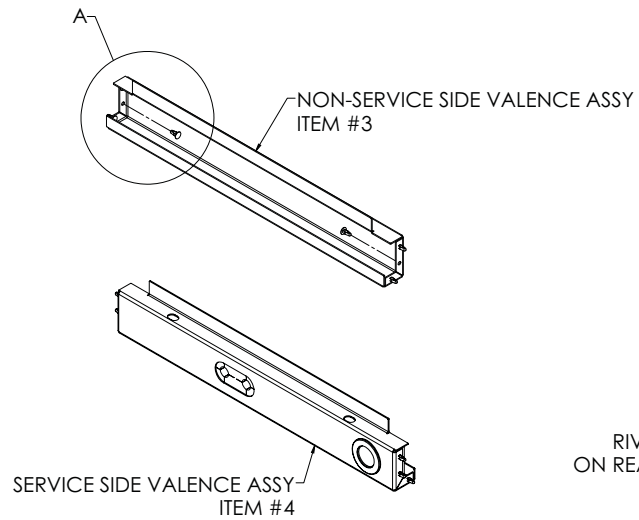
DETAIL B  
SCALE 1 : 1

**STEP 3.**

INSTALL REAR PANEL ASSY (ITEM #2).  
MOUNT REAR PANEL TO THE BASE FRAME WITH M8 BUTTON HEAD SCREW (ITEM #12) AND M8 LOCK WASHER (ITEM #15). USE 5mm HEX WERNCH AND TIGHTEN WITH HAND TOOLS ONLY.

NOTES:

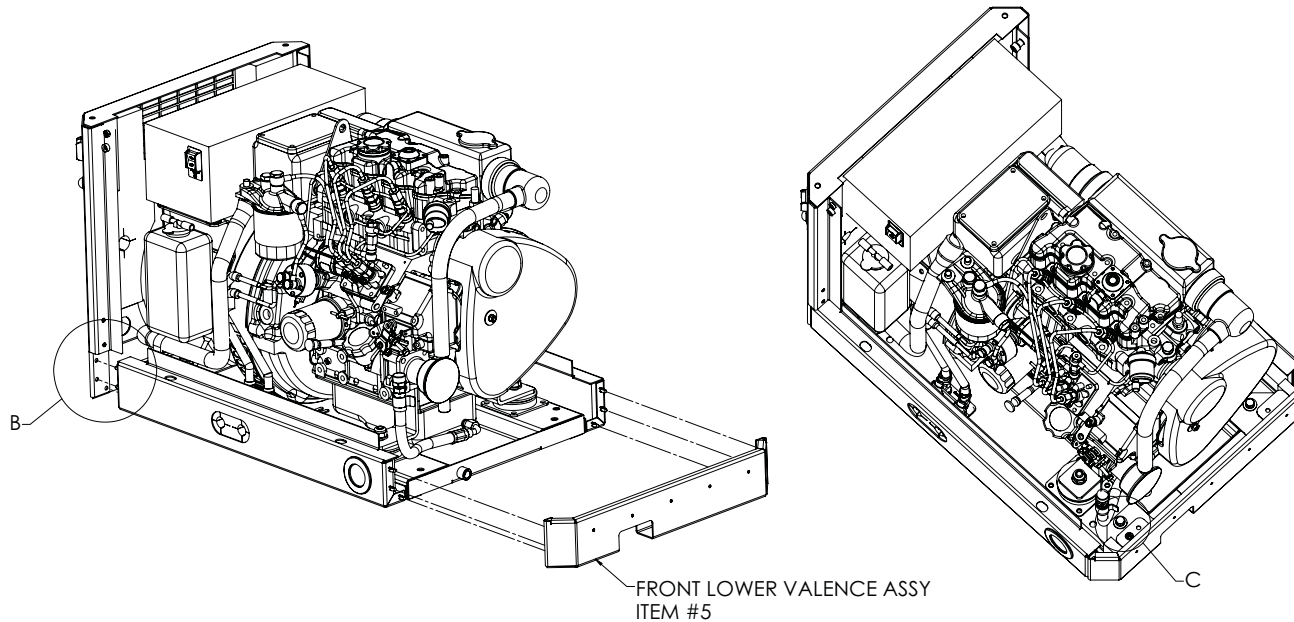
- FOR GENERATOR CONNECTION TO THE VESSEL, SEE PAGE 9.
- FOR SOUND SHIELD WIRE HARNESS INSTALLATION, SEE PAGE 10.



**STEP 4.**

INSTALL LOWER SIDE VALENCES (ITEM #3 & #4).  
GUIDE PRE-INSTALLED NYLON BUMPER/RIVETS  
INTO CORRESPONDING HOLES IN REAR PANEL.  
PUSH FIRMLY TO SNAP INTO PLACE.

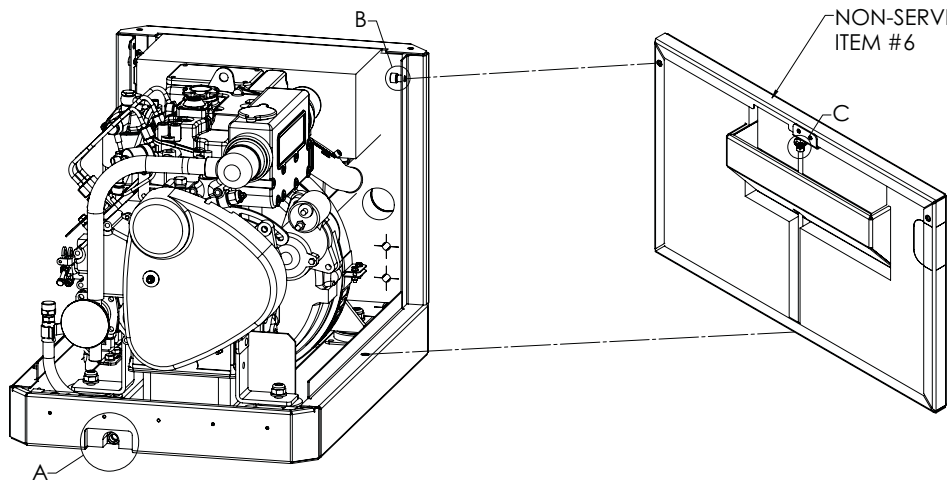
NOTES:  
IF NYLON RIVETS DISPLACE, USE A LONG  
SCREWDRIVER WITH WIDE FLAT BLADE AGAINST  
RIVET HEAD AND PUSH BACK INTO POSITION.



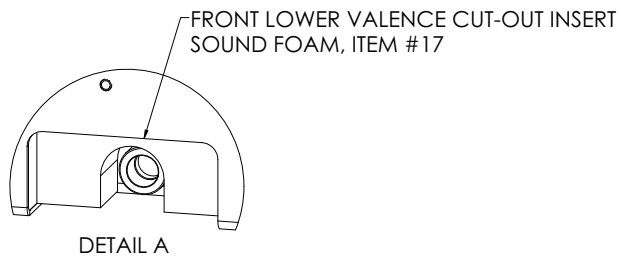
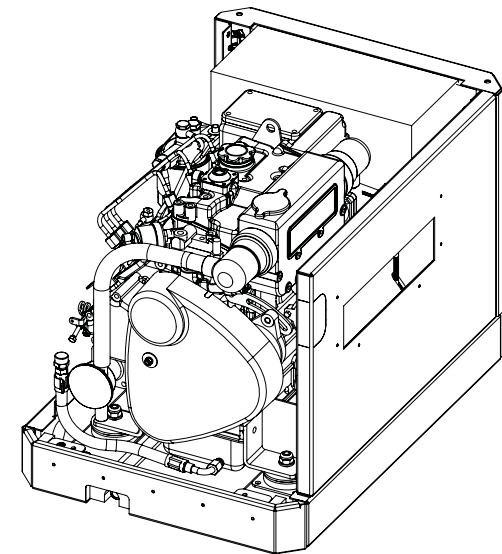
**STEP 5.**

INSTALL FRONT LOWER VALENCE (ITEM #5).  
ALIGN NYLON RIVETS IN BOTH LOWER SIDE VALENCES TO  
CORRESPONDING HOLES IN FRONT LOWER VALENCE  
AND PUSH TOGETHER. SECURE WITH M8 HEX CAPSCREW  
(ITEM #13), M8 LOCKWASHER (ITEM #15) AND M8 FLAT  
WASHER (ITEM #14) TO THE TOP OF THE BASE FRAME.

M8 HEX CAPSCREW, ITEM #13, QTY: 2  
M8 FLATWASHER AND LOCK WASHER  
ITEM #14 & #15, QTY: 2 EACH

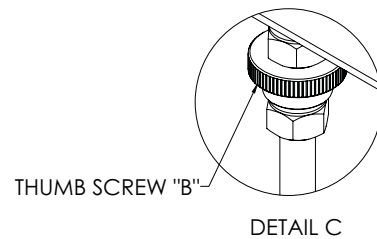
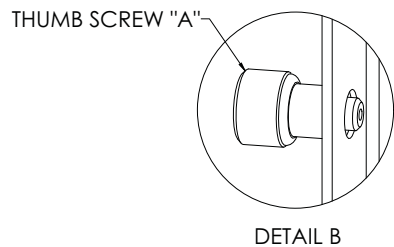


NON-SERVICE SIDE PANEL ASSY  
ITEM #6



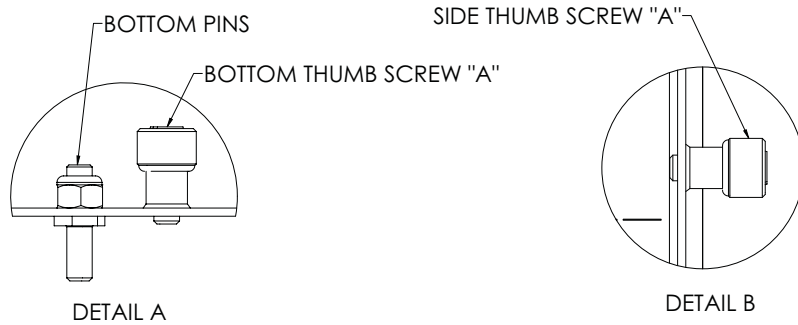
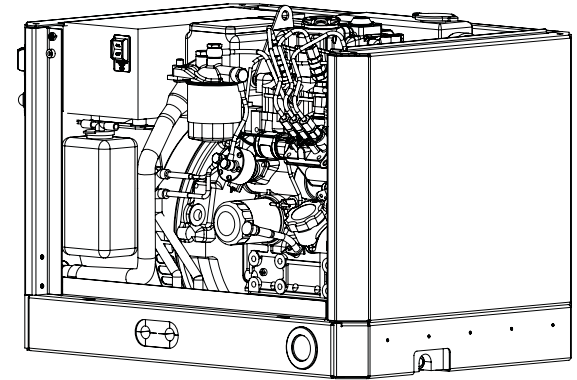
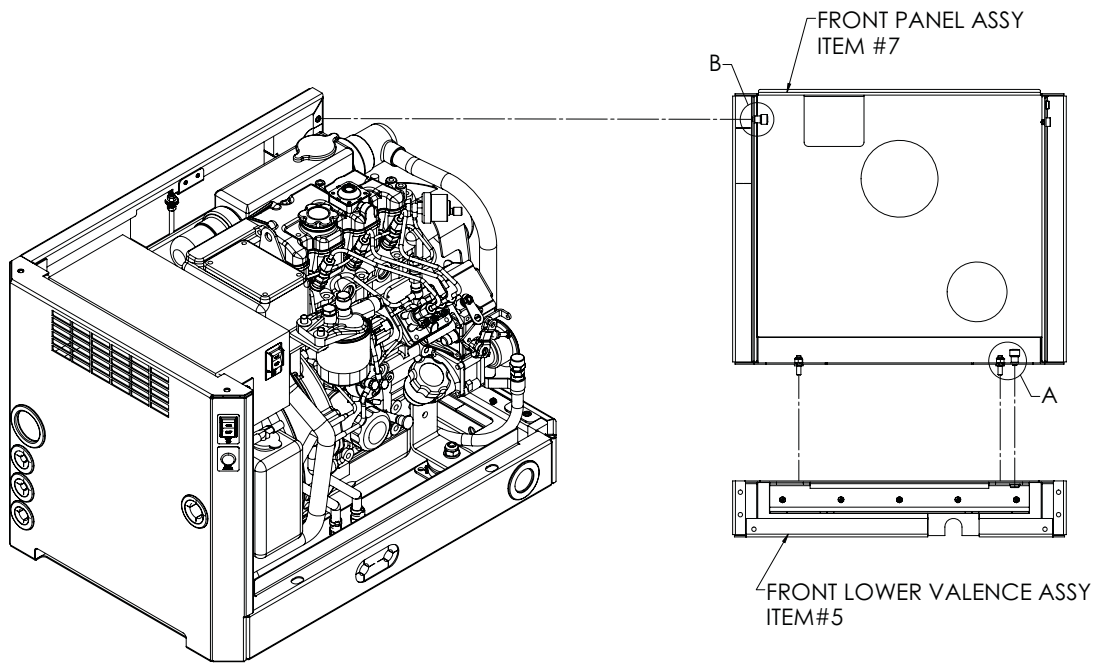
**STEP 6.**

INSTALL FRONT LOWER VALENCE CUT-OUT INSERT SOUND FOAM (ITEM#17). PEEL OFF THE ADHESIVE BACKING PAPER ON THE SOUND FOAM, AND ATTACH SOUND FOAM TO THE BASE FRAME BY PUSHING IT THROUGH THE CORRESPONDING HOLE IN FRONT LOWER VALENCE.



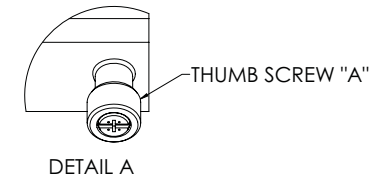
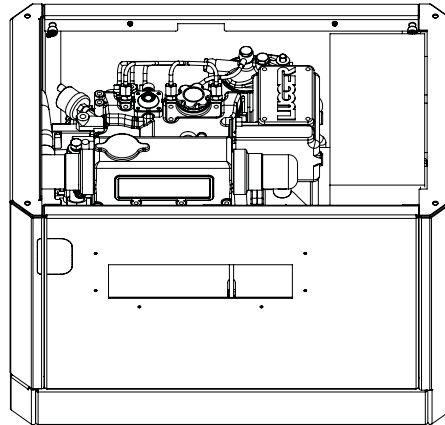
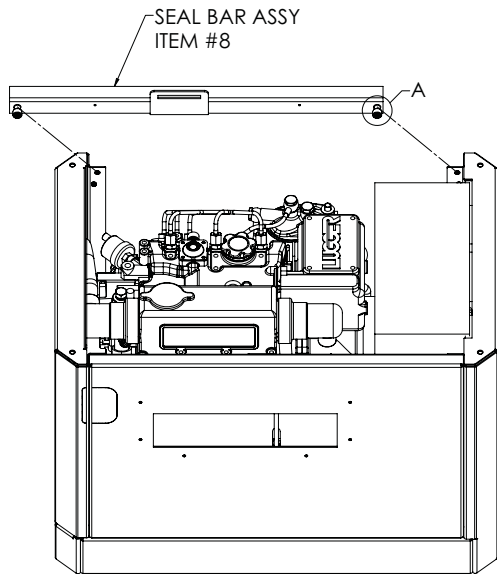
**STEP 7.**

INSTALL NON-SERVICE SIDE PANEL (ITEM #6). NON-SERVICE SIDE PANEL ATTACHES TO REAR PANEL AND LOWER VALENCE WITH THUMBS "A" AND "B". WITH PANEL IN PLACE, USE THUMB SCREW "A" TO RETAIN SIDE PANEL, APPLY DOWNWARD PRESSURE AS YOU TURN THUMB SCREW "B" TO ENGAGE THE CAPTIVE NUTS INSIDE THE LOWER VALENCE.



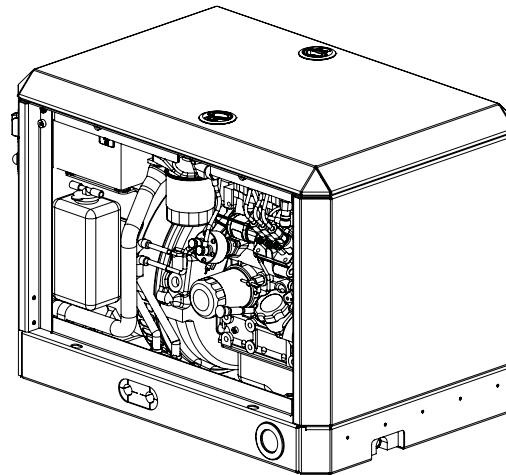
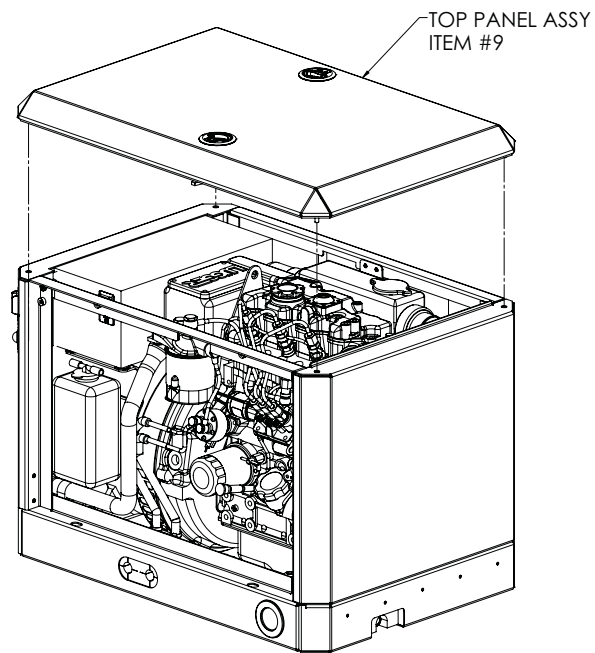
**STEP 8.**  
 INSTALL FRONT PANEL ASSEMBLY (ITEM #7).  
 POSITION FRONT PANEL ON TOP OF FRONT LOWER VALENCE. NOTE  
 THE PINS IN THE BOTTOM OF THE FRONT PANEL ALIGN TO HOLES IN THE  
 LOWER VALENCE. ENGAGE AND SECURE WITH THUMB SCREW "A" ON  
 THE SIDE AND ON THE BOTTOM.





**STEP 9.**

INSTALL SEAL BAR ASSEMBLY (ITEM #8).  
LOCATE BAR TO CORRESPONDING HOLES AND  
SECURE WITH THUMB SCREW "A". HAND TIGHTEN FIRM  
AND DO NOT USE TOOLS.

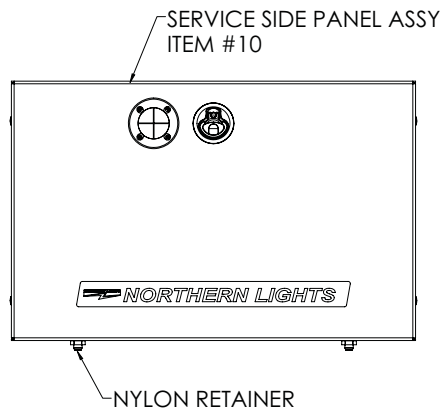
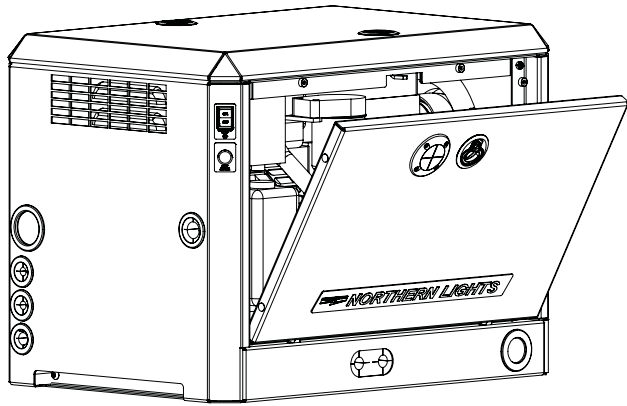


**STEP 10.**

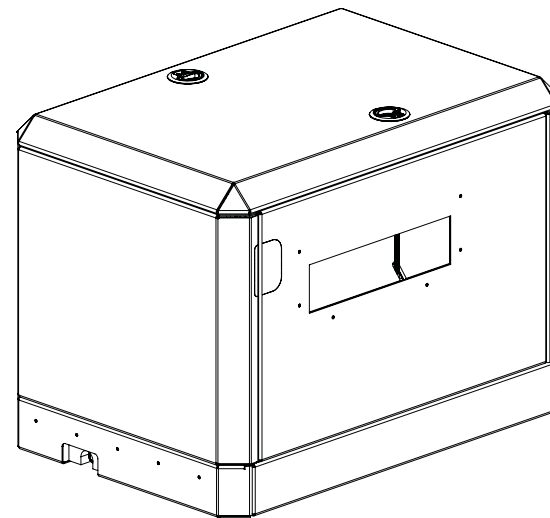
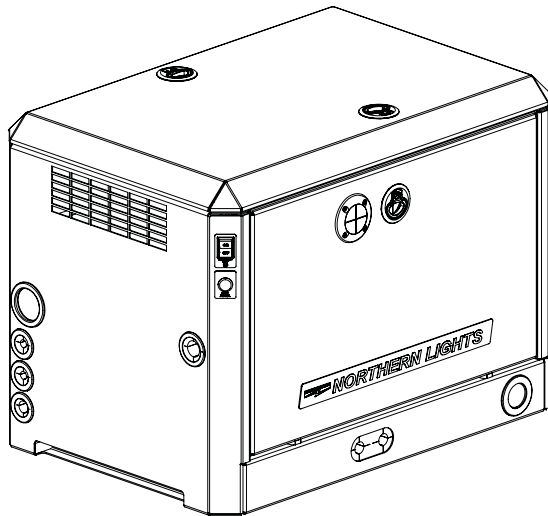
INSTALL THE TOP PANEL ASSEMBLY (ITEM #9).  
NOTE THAT THE PANEL HAS LOCATING PINS PRE-INSTALLED.  
ALIGN THESE WITH THE CORRESPONDING HOLES ON THE  
TOP OF THE FRONT AND REAR PANEL ASSMBLIES.

**NOTES:**

OPEN LATCHES BY TURNING THE LEVER 90° BEFORE MOUNTING  
TO SOUND SHIELD. THE RING LATCHES ARE FACTORY PRE-SET  
BUT OCCASIONALLY REQUIRE SOME ADJUSTMENT. SEE LATCH  
ADJUSTMENT SECTION (PAGE 12) FOR DETAIL.



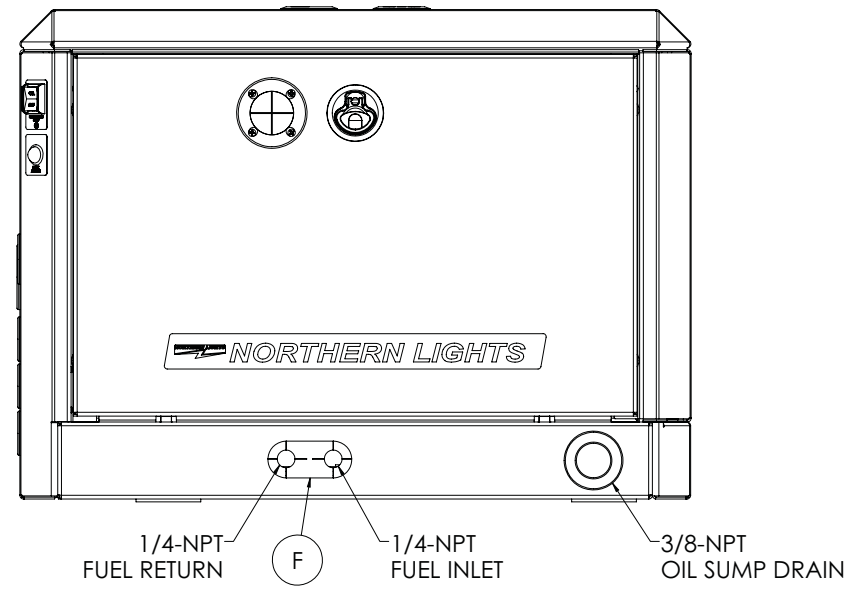
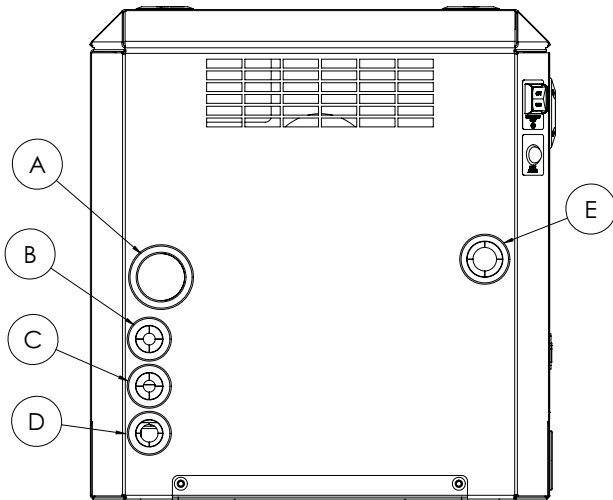
**STEP 11.**  
INSTALL THE SERVICE SIDE PANEL ASSY (ITEM #10).  
GUIDE THE NYLON RETAINER INTO THE CORRESPONDING  
SLOTS ON LOWER VALENCE.



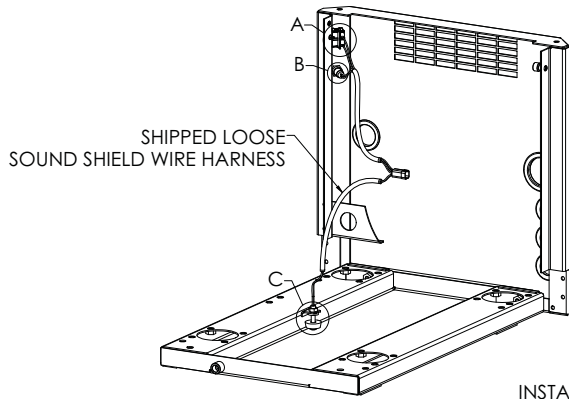
## GENERATOR CONNECTIONS

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

- A. Connect the generator set 1-1/2" exhaust outlet to the exhaust system of the vessel through hole A.
- B. Connect the AC output leads from the generator set to the vessel's power distribution panel through hole B.
- C. Connect the battery leads to the generator set through hole C.
- D. Connect the sea water pump to the vessel's water inlet. Push a 3/4" hose from the vessel's sea water strainer through hole D to the sea water pump inlet fitting.
- E. Connect the DC control harness to the engine harness plug. Pass the harness and plug through hole E.
- F. Connect the vessel's fuel lines using Coast Guard approved rubber fuel hoses to the fuel manifold located on the service side valence (Section F). The forward fitting is 1/4-NPT fuel suction and the aft fitting is 1/4-NPT fuel return.

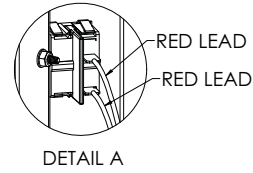


## SOUND SHIELD WIRE HARNESS INSTALLATION

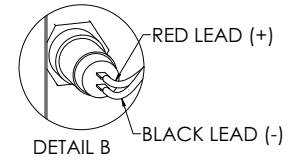


**STEP 1.**  
CONNECT SOUND SHIELD WIRE HARNESS TO EMERGENCY STOP SWITCH AND LEAK ALARM LIGHT AS SHOWN IN DETAIL A AND DETAIL B.

PRE-INSTALLED EMERGENCY STOP SWITCH

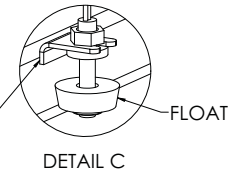


PRE-INSTALLED LEAK ALARM LIGHT



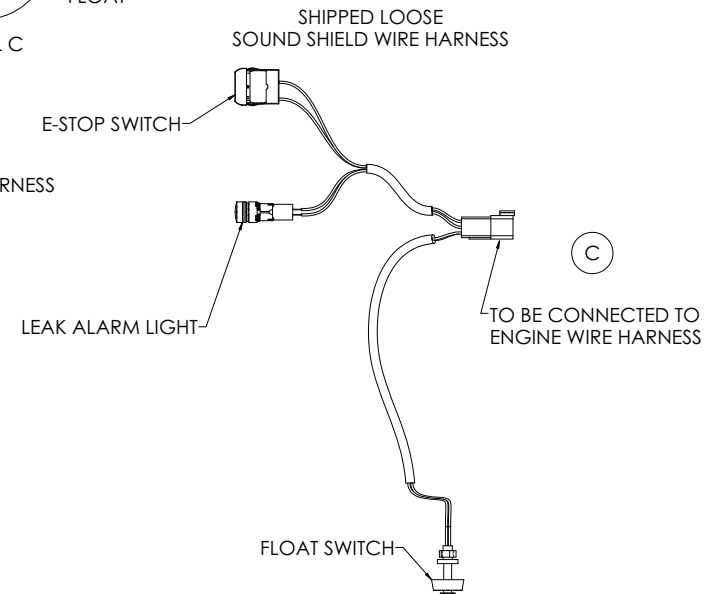
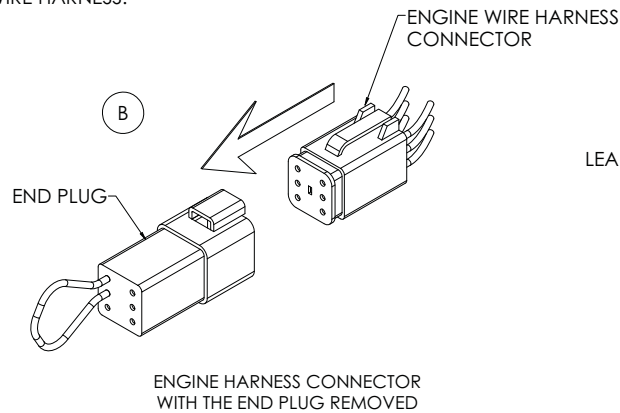
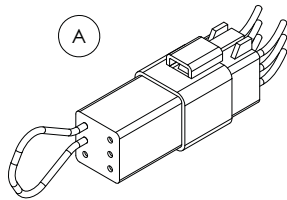
**STEP 2.**  
INSTALL FLOAT SWITCH TO THE CORRESPONDING BRACKET ON THE BASE FRAME. BE SURE TO CHECK THE LEAK ALARM LIGHT BY LIFTING UP THE FLOAT AFTER GENERATOR SET IS CONNECTED TO STARTER BATTERY

FLOAT SWITCH



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

**STEP 3.**  
A. LOCATE AND IDENTIFY THE ENGINE WIRE HARNESS.  
B. REMOVE THE ENGINE WIRE HARNESS PLUG, AND  
C. CONNECT E-STOP /LEAK HARNESS TO THE ENGINE WIRE HARNESS.



**FOR APPLICATIONS WITH A SIPHON BREAK:**

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

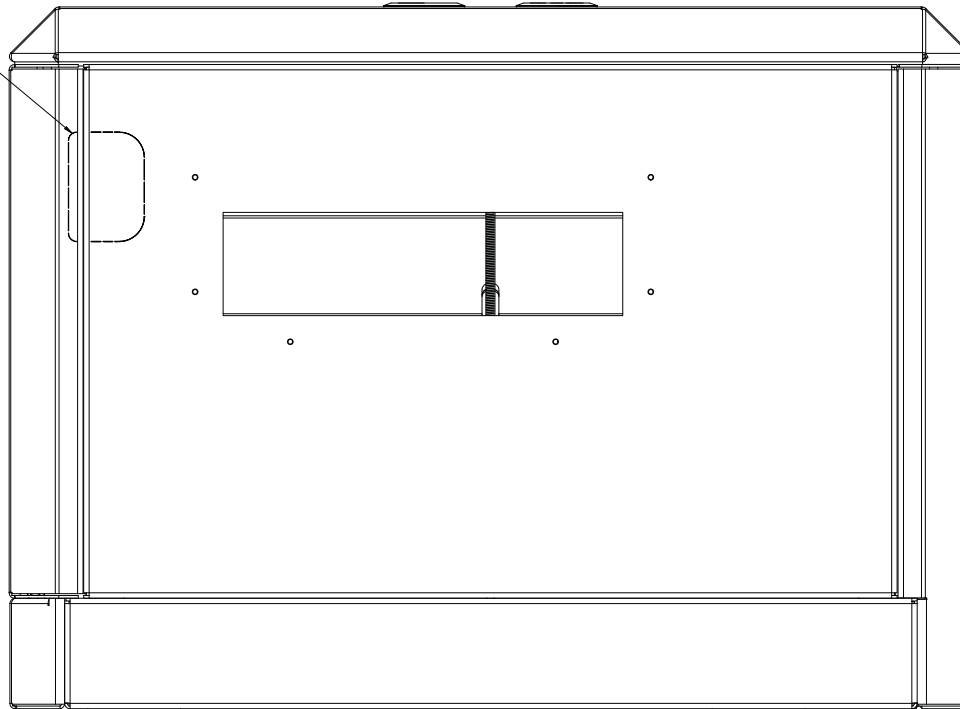
Knock-out the marked section as shown below prior to installing Non-Service Side Panel Assy (ITEM #6) and Front Panel Assy (ITEM #7) . Install the Grommet Edging (ITEM #16) on the knocked out perimeter.

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

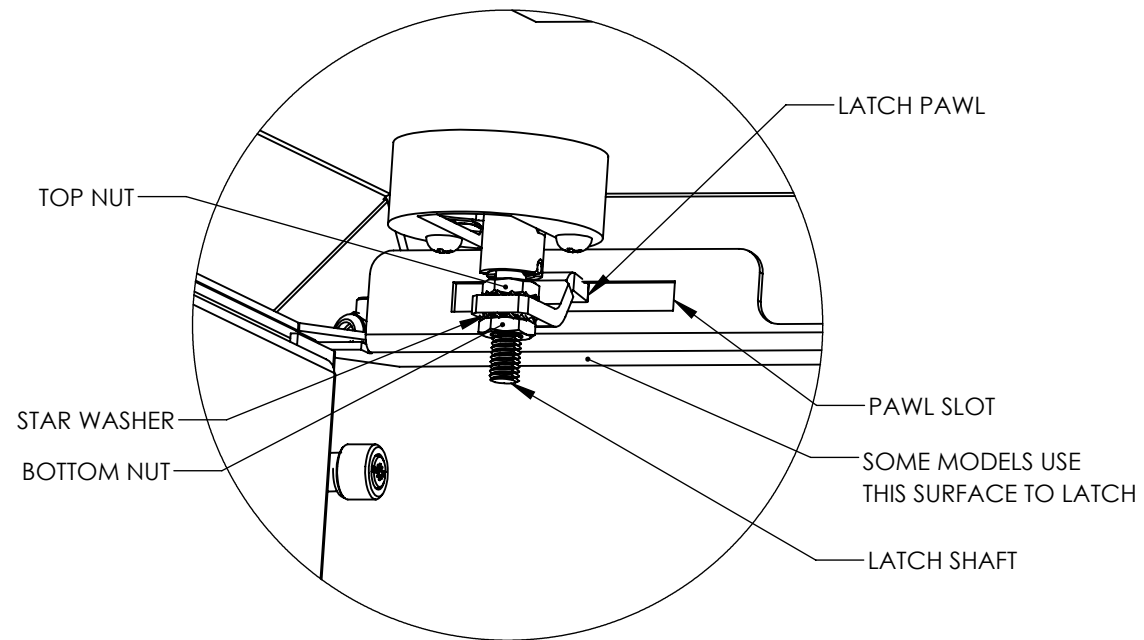
1. Disconnect the hose from seawater pump output and from the rubber elbow on the expansion tank. Install two lengths of 3/4" hose.
2. Pass the seawater pump output hose through the knock-out section. The hose from expansion tank must be located below the other hose in the same knock-out section.
3. For more information, see the "Exhaust" section og the IM 1000. Installation manual is included with the generator set.

Start the generator set and run under load to check for leaks of fuel, water, or exhaust gas.

KNOCK-OUT SECTION  
FOR VENTED LOOP OPTION



## RING LATCH GRIP ADJUSTMENT INSTRUCTIONS



SOUND FOAM OMITTED FOR VIEW CLARITY

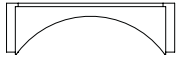
ALL LATCHES ARE PRE-ADJUSTED FROM FACTORY. IN THE EVENT A LATCH REQUIRES ADJUSTMENT, FOLLOW THESE STEPS:

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.



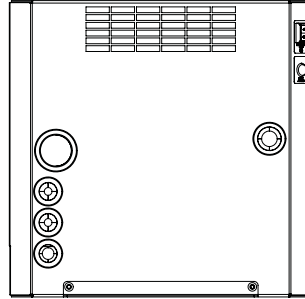
# PACKING LIST

ITEM #1



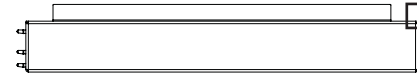
- JUNCTION BRIDGE COVER ASSY  
06-78029, QTY: 1

ITEM #2



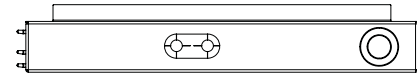
- REAR PANEL ASSY  
06-08024, QTY: 1

ITEM #3



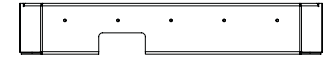
- NON-SERVICE SIDE VALENCE ASSY  
06-08012, QTY: 1

ITEM #4



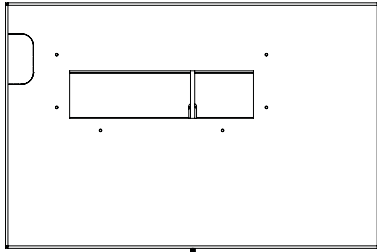
- SERVICE SIDE VALENCE ASSY  
06-08023, QTY: 1

ITEM #5



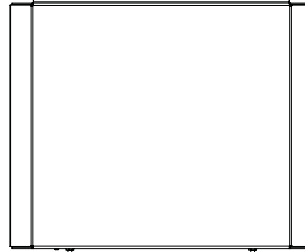
- FRONT LOWER VALENCE ASSY  
06-08014, QTY: 1

ITEM #6



- NON-SERVICE SIDE PANEL ASSY  
06-08013, QTY: 1

ITEM #7



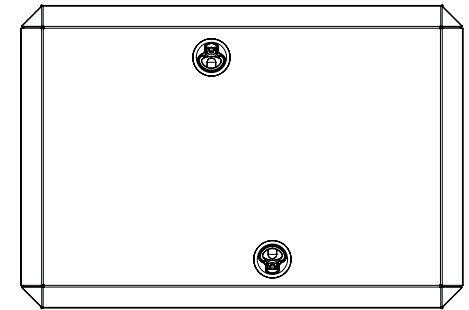
- FRONT PANEL ASSY  
06-08016, QTY: 1

ITEM #8



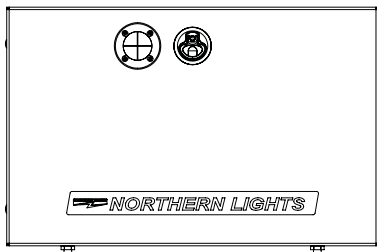
- SEAL BAR ASSY  
06-08029, QTY: 1

ITEM #9



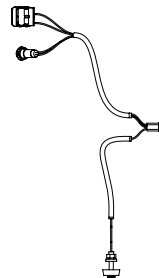
- TOP PANEL ASSY  
06-08028, QTY: 1

ITEM #10



- SERVICE SIDE PANEL ASSY  
06-78010, QTY: 1

ITEM #11



- SOUND SHIELD WIRE HARNESS  
22-72026, QTY: 1

ITEMS IN THIS BOX ARE ENLARGED FOR DETAIL

ITEM #12



- M8 BUTTON HEAD SCREW  
12-70013, QTY: 2

ITEM #13



- M8 HEX CAPSCREW  
12-00776, QTY: 2

ITEM #16



- VENTED LOOP GROMMET EDGING  
44-70034, QTY: 15"

ITEM #14



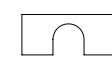
- M8 FLATWASHER  
15-11000, QTY: 2

ITEM #15



- M8 LOCK WASHER  
15-00705, QTY: 4

ITEM #17



- FRONT LOWER VALENCE  
CUT-OUT INSERT SOUND FOAM  
55-08003, QTY: 1

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

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