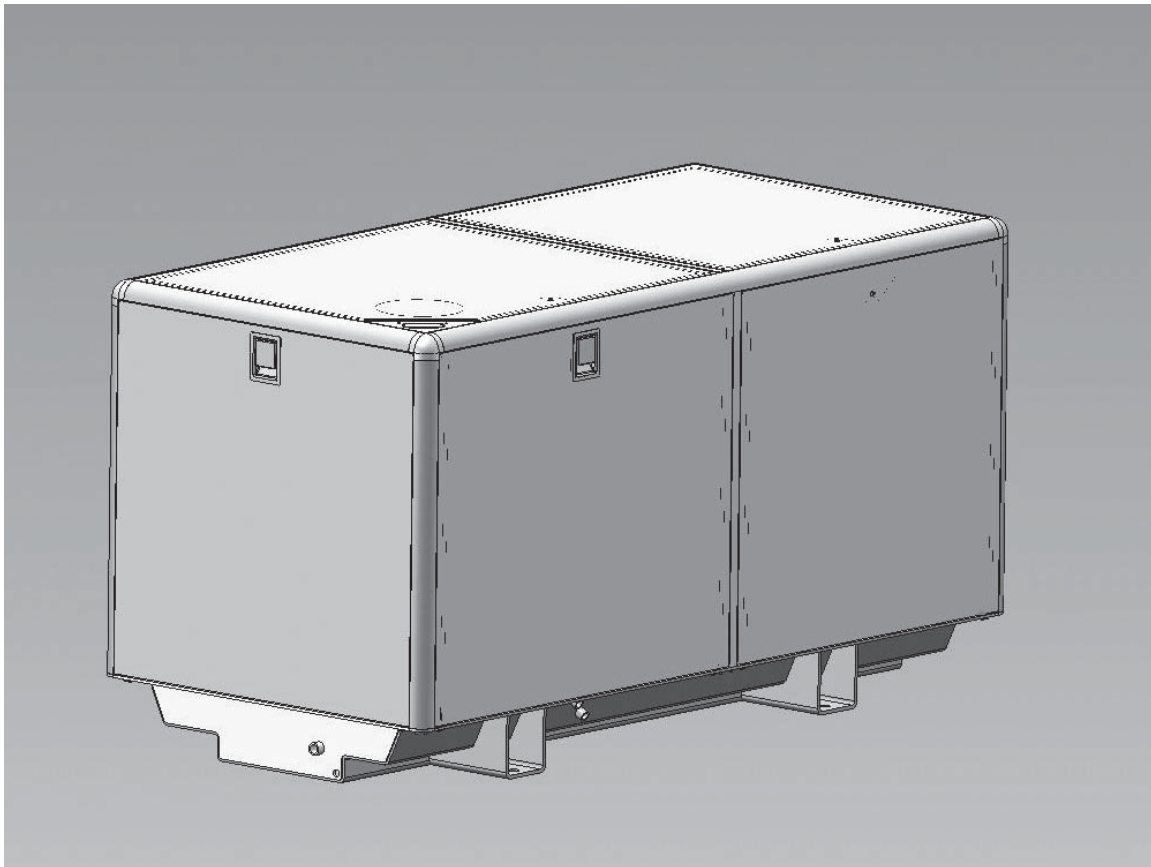




**NORTHERN LIGHTS**

# M944T

## Soundshield Assembly Instructions



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# M944T Soundshield

ITEM #	DESCRIPTION	ADE P/N	QTY	NOTES
1.	Extrusion, vertical	05-71234	4	
2.	Extrusion, horizontal, sides	05-71237	2	
3.	Extrusion, horizontal, ends	05-71236	2	
4.	Center post, top	05-71239	1	
5.	Center post, vertical	05-71238	2	
6.	Corner casting	05-70001	4	
7.	Bolting assembly	00-75714	24	
8.	Tie bracket	23-78701	2	
9.	Rear panel assembly	05-71262	1	
10.	Front panel assembly	05-71257	1	
11.	LH side panel forward assembly	05-71241	1	no vent box
12.	LH side panel aft assembly	05-71249	1	
13.	RH side panel forward assembly	05-71246	1	with vent box
14.	RH side panel aft assembly	05-71253	1	
15.	Top panel forward assembly	05-71267	1	
16.	Top panel aft assembly	05-71271	1	
17.	Penetration panel assembly	05-71274	1	
18.	#10 screw s/s x 5/8" long	12-05401	12	
19.	Flatwasher #10 s/s USS	15-70002	12	
20.	Hex nut, nylock #10-32 s/s	14-00032	12	
21.	Toe bracket	21-71206	4	
22.	Hex nut, nylock 1/4-20 USS	14-00113	4	
23.	Flatwasher, USS 1/4"	15-00101	4	
24.	Lower intake spacer block	55-71248	1	
25.	Foam intake duct	55-71242	1	
26.	Catch bracket	23-71208	2	
27.	Slide bracket	23-71207	4	
28.	Continuous Grommet	44-70002	7.5"	
29.	Sound Foam, Base Foot Plug	55-71251	4	

## SPECIFICATIONS

### Enclosure:

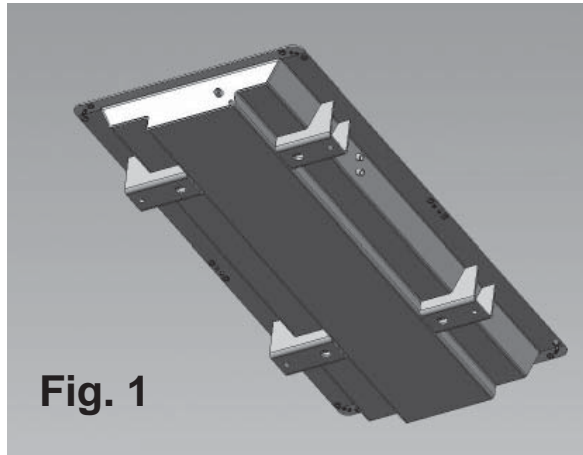
Length (OA)	60 in (1524 mm)
Width	29 in (737 mm)
Height	32 in (813 mm)
Assembled Height (on sub-base):	32 in (813 mm)
Assembled Weight (est) (w/o sub-base):	140 lbs (64 kg)

1

Prior to assembly, inspect all of the components for damage, and report any damage to shipping company. Check the packing list to be sure all parts have been included in the package.

2

Select a mounting location in accordance with the guideline in the IM1000 Installation Manual (supplied with the generator set). 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. The M944T Generator set has an integrated genset mounting skid and sound shield base. The sub base mounting is accessed externally, inside of the four pockets. See figure 1.

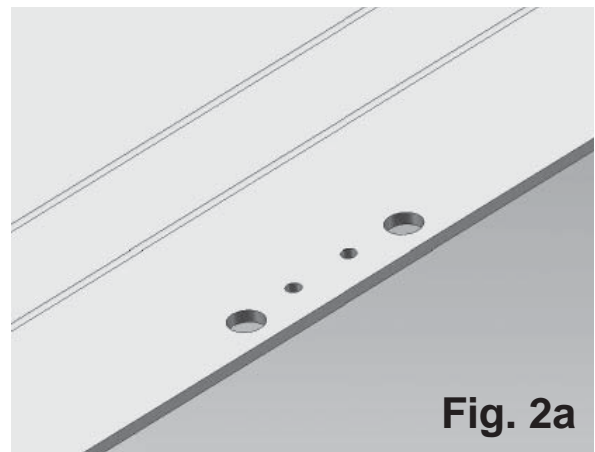
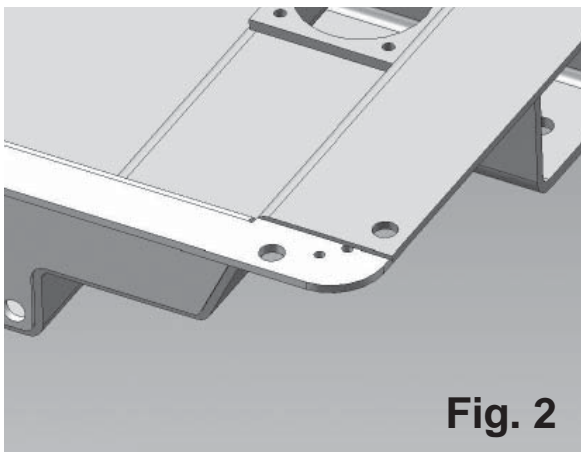


Note that the generator set is designed for single side service. When viewed from the rear, the left hand side is the service side and should be exposed for easy access for maintenance.

**Important: Your sound shield requires ventilation space for proper operation! Ensure your M944T installation has a minimum of 6 inches (152mm) of clearance between the shield's intake grille (rear panel) and air outlet grille (RH side) to any bulkhead. Allow for at least 6 inches of overhead clearance as well. The space ensures good access for panel removal and prevents overheating conditions.**

3

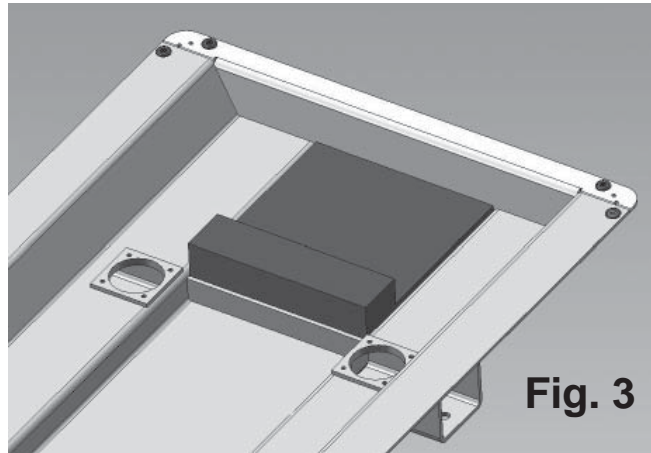
Observe on the Genset's sub-base perimeter, a series of large and small holes. See figure 2 and 2a.



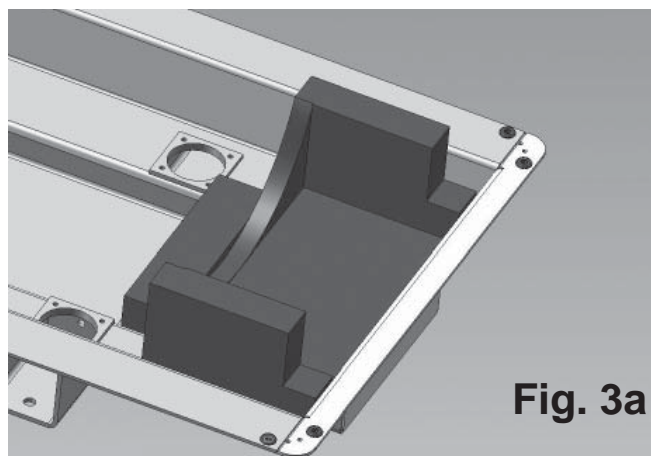
These are the sound shield panel retention holes, and enclosure frame anchoring holes, respectively.

**4**

Next, install the lower intake spacer block (Item 24) into the pan below the generator, pushing it firmly into place with the high end towards the front of the unit. See figure 3, (generator omitted for clarity)



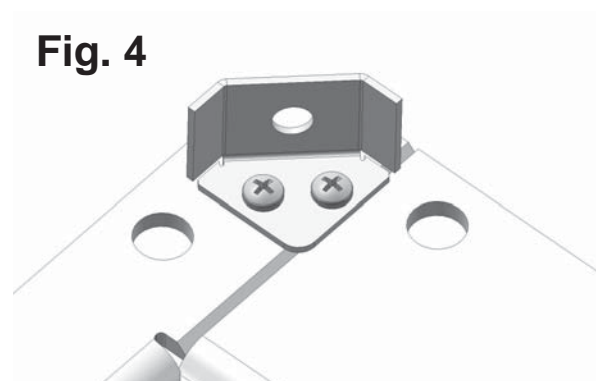
Then add the foam intake duct (Item 25) so that the open end faces the rear of the shield. See figure 3a.



Push the foam intake box back against the rear of the sub base wall to complete its installation.

**5**

Now install toe brackets (Item 21) to all four corners using machine screws (Item 18), along with flatwashers (Item 19) and hex nylocks (Item 20) underneath the sub base perimeter flange. Engage firmly but do not fully tighten at this time. See figure 4.



6

Using bolting assemblies (Item 7) install the four vertical corner extrusions (Item 1) to the toe brackets (Item 21). Tighten bolting assemblies just enough to check movement. See figure 5.

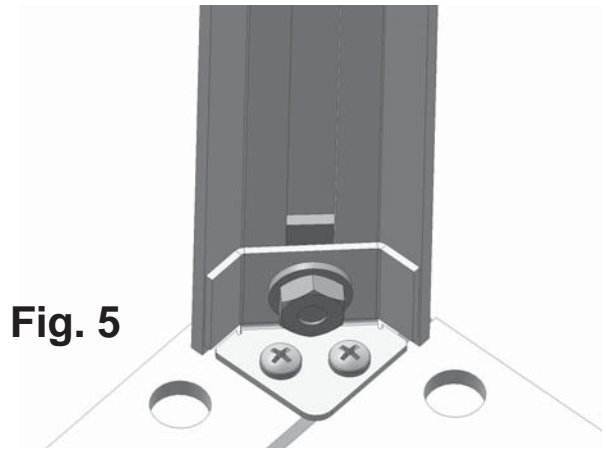


Fig. 5

7

Take the pre-assembled enclosure frame top (Items 2, 3, 4, 6, 7, 8, 15, 16, 17, 22, 23, 26, and 27) and note the available lower leg on each of the corner castings (Item 6).

*Temporarily remove the top panel assemblies (Item 15 and 16) at this time to facilitate installation of top frame.*

Install a bolting assembly (Item 7) to each of these legs. With assistance, raise and position the top frame assembly over the four vertical extrusions (Item 1) inserting the square head of the bolting assembly (Item 7) into the top of each vertical extrusion. Ensure the small triangular panel (Item 17) is at the left hand side forward position. See figure 6 and 6a.

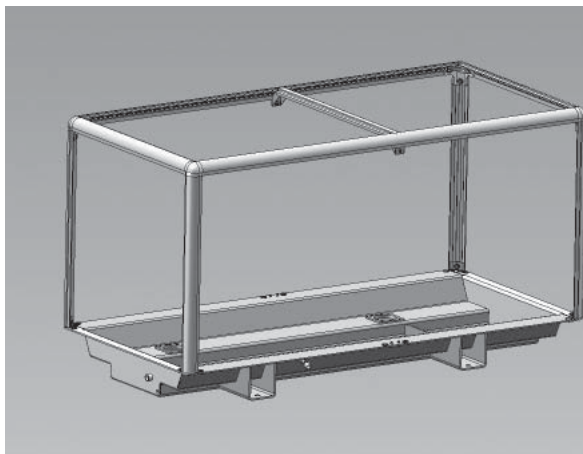


Fig. 6

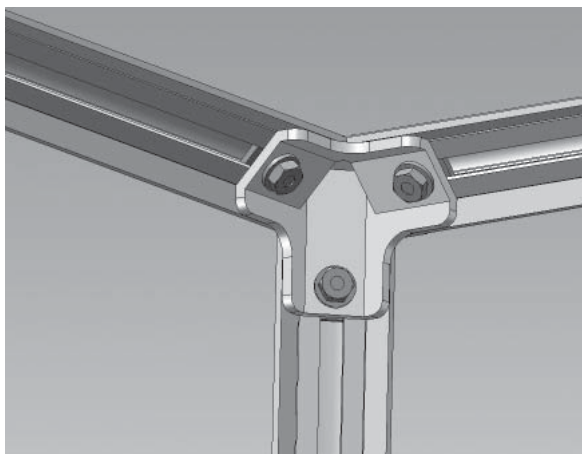
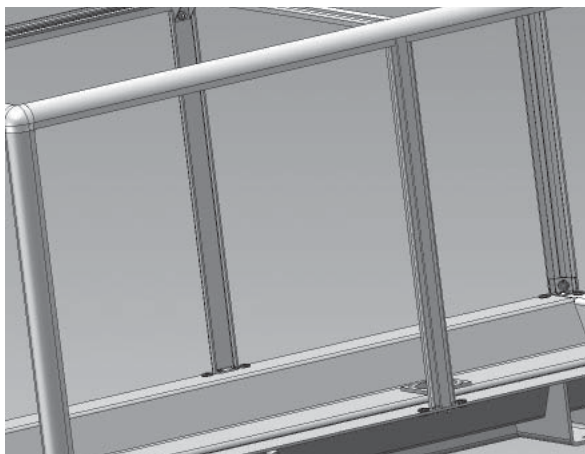
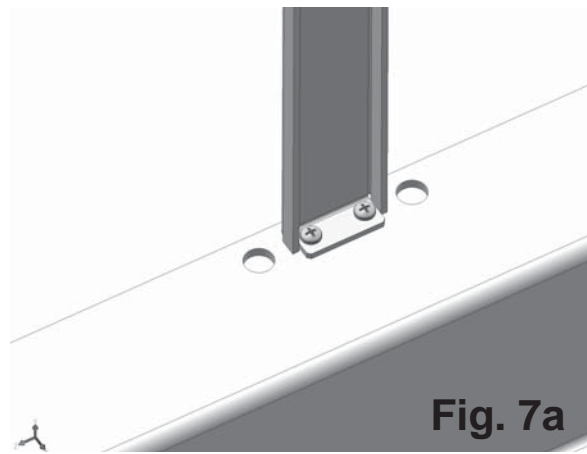


Fig. 6a

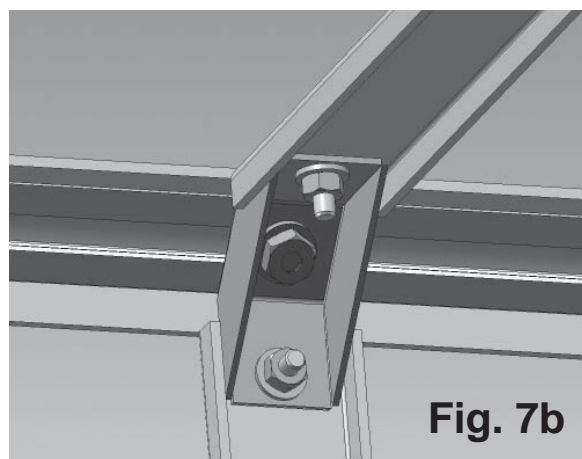
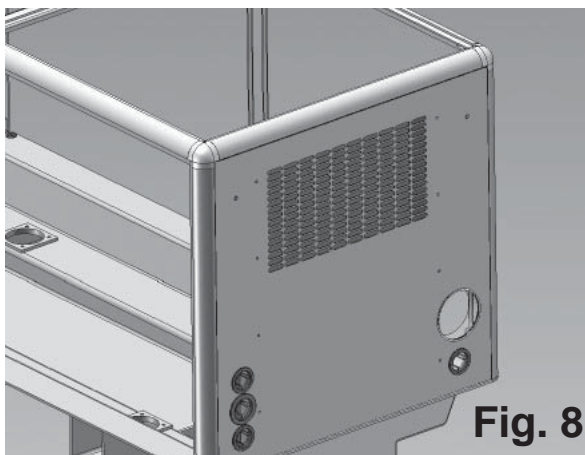
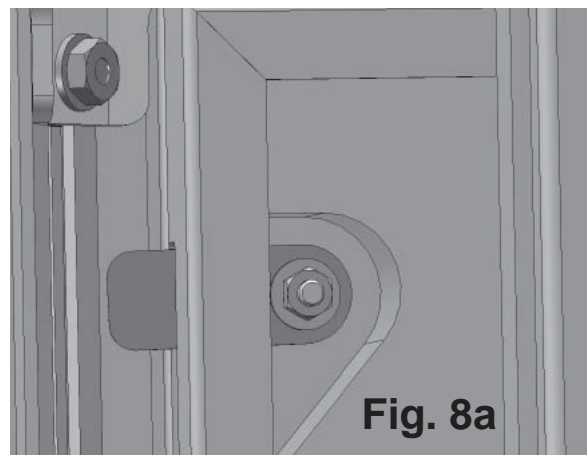
**8**

Once all four corners of the enclosure top frame assembly have been secured, now you can mount the side vertical center posts (Item 5) to the sub-base using machine screws, flatwashers, and nylock nuts (Items 18, 19, and 20). See figure 7 and 7a.

**Fig. 7****Fig. 7a**

Locate the stud near the top interior face of the vertical center post and feed through the hole in pre-assembled center post tie bracket, (Item 8). Secure with flatwasher and nylock, (Items 22 and 23). See figure 7b.

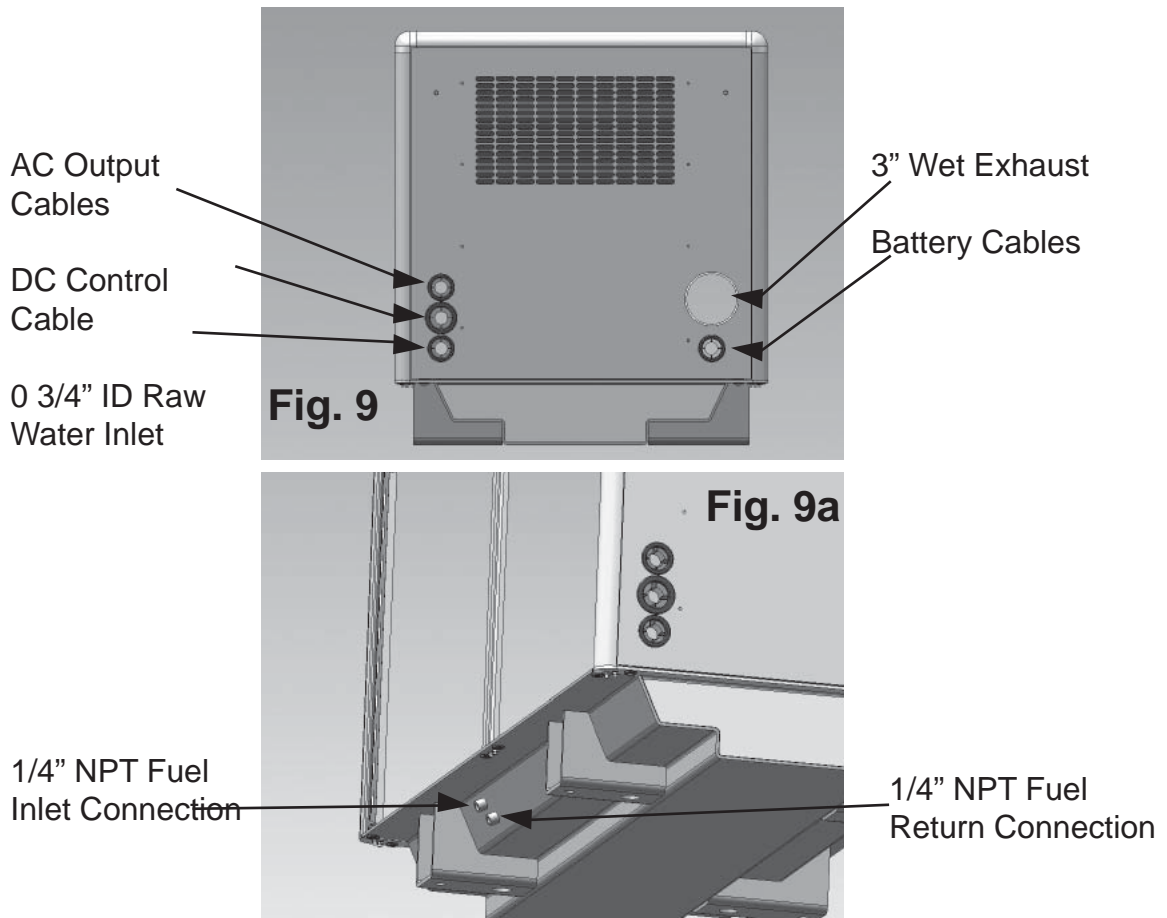
Do not tighten fully until remaining panels can be installed and frame squared.

**Fig. 7b****9****Fig. 8****Fig. 8a**

After the basic frame is complete, install the rear panel assembly (Item 9) to the rear of the enclosure frame and secure using the pre-installed panel retainer brackets. Ensure that the panel is properly fitted into the back of the frame, with the panel surface to extrusion being flush. Take the panel retainer clip and rotate it until it is directly on top of the extrusion flange and then tighten down the 1/4-20 nylock nut so the retainer effectively clamps the panel against the extrusion flange. See figure 8 & 8a.

Install connections for exhaust, AC power leads, DC control panel leads, battery, and water through holes in the rear panel as shown in the drawing (Figure 9 and 9a) and as described below:

- a. Connect the exhaust elbow of the diesel engine to the exhaust system of the vessel. Pass the three inch exhaust hose through the opening provided in the right lower section of the rear panel.
- b. Connect the sea water pump to the vessel's water inlet. Pass a 3/4" hose from the vessel's sea water strainer, through the lower hole at the bottom left of the rear panel to the sea water pump inlet fitting.
- c. Connect the vessel's fuel supply, and fuel return to the generator set using Coast Guard approved rubber fuel hoses. Fuel connections are 1/4" NPT located under the sub-base flange, LH side of the shield. See figure 9a.
- d. Connect the DC control harness to the engine harness plug. Pass the harness and plug through the middle hole on the left side of the rear panel.
- e. Connect the 12 volt battery leads to the generator set using the second hole at the bottom right side of the rear panel.
- f. Connect the AC output leads from the generator to the vessel's power distribution panel. Pass the two leads through the top hole from the bottom left side of the rear panel.

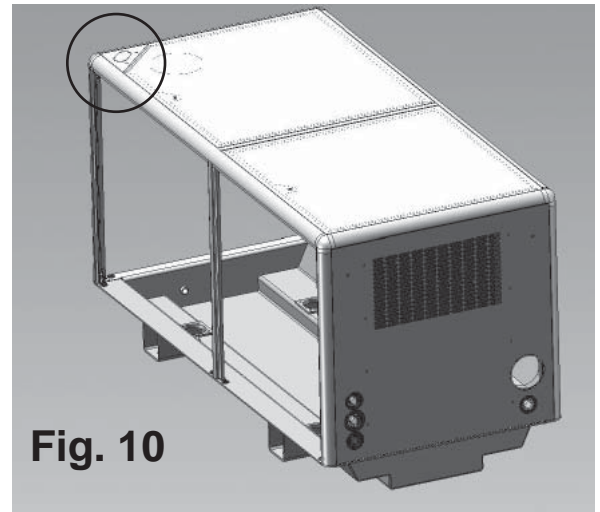




**11**

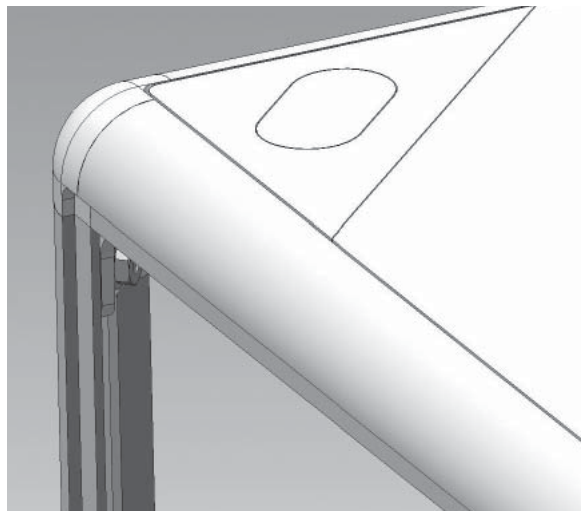
Note the pre-installed penetration plate in the top of forward left corner of the enclosure frame top. See figure 10.

Refer to the IM1000 Installation manual for the plumbing diagram in the mounting and exhaust section. Read on to step 11.

**Fig. 10****12**

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. The penetration plate facilitates the siphon break installation as follows:

- a. Disconnect the hose from the seawater pump output and from the inlet to the heat exchanger. Replace the single hose with two lengths of 3/4" hose. The siphon break panel must be knocked out before you can make the hose connections. See Figure 10a. Install the continuous grommet (Item 28) to the opened slot.
- b. Connect the end of one hose from the outlet on the top of the seawater pump and the other end to one hose barb of the siphon break. Connect the second hose from the other barb of the siphon break and the other end to the sea water inlet hose barb of the heat exchanger. These hoses must be of adequate length to allow you to mount the siphon break a minimum of 12 inches above the vessel's loaded waterline.
- c. For more information, see the "Exhaust" section of the IM-1000 Installation Manual included with the generator set.

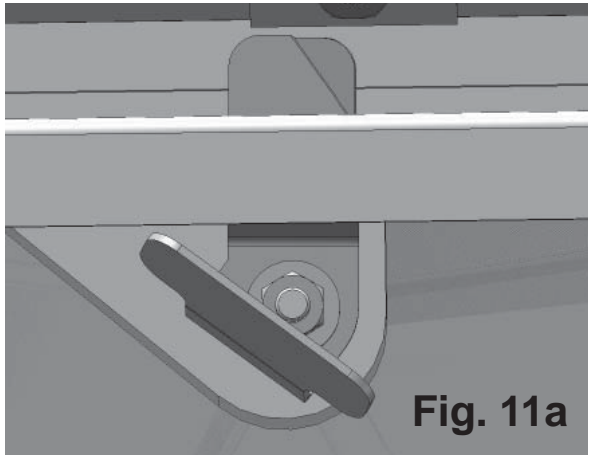
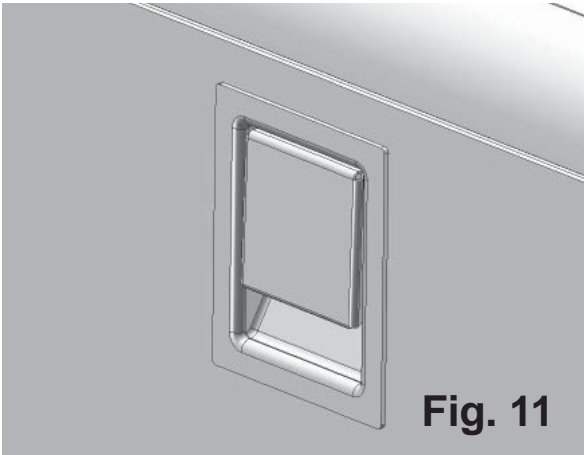
**Fig. 10a****13**

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

# 14

You may now install the remaining cover panels. Note that the front (Item 10) and left hand forward side (Item 11) are the only panels that are externally actuated by means of a paddle latch. The rest are internally latched by a manual lever.

See figure 11 and 11a.



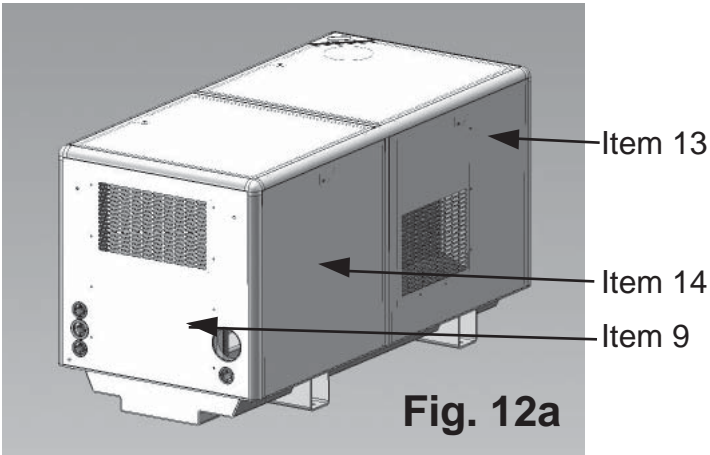
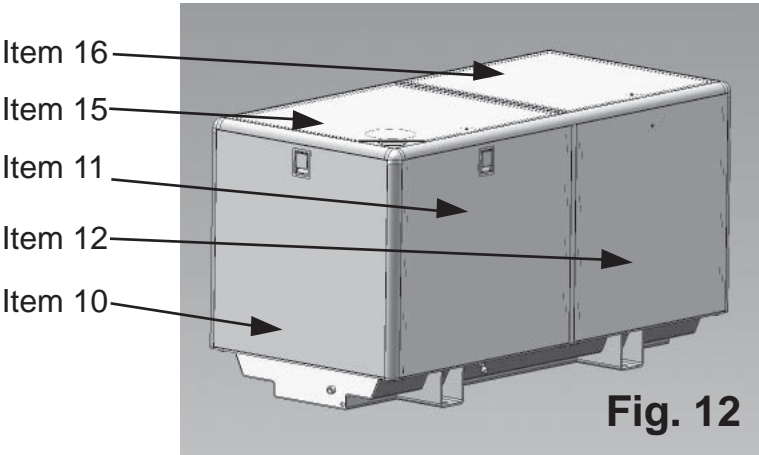
First, install the right hand side forward (Item 13) panel by reaching over the top of the unit and pull the panel toward you by grasping the manual lever and twist right to lock. Repeat this operation to the right hand aft (Item 14) panel as well.

Now, Install the left hand aft side (Item 12) panel by pushing against it and reaching over the top of the frame and twist the lever to your left to secure it.

Next position the top aft (Item 16) panel and slide it across the top of the frame, allowing it to ride up on to the slide brackets. As it drops it will engage the catch, at which point you may drop your end down on the frame. Reach around from the side to access the top panel manual latch and twist clockwise to engage while slightly pushing down on the top panel.

Repeat operation with the top forward (Item 15) panel, accessing the lever from beneath.

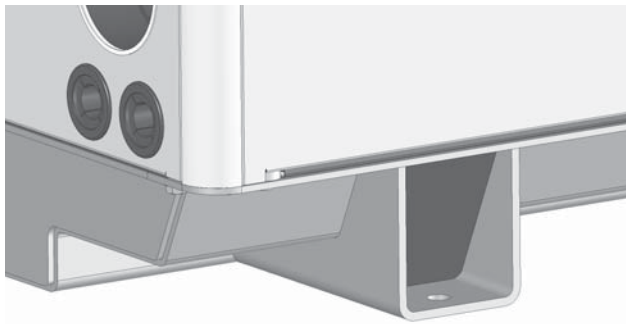
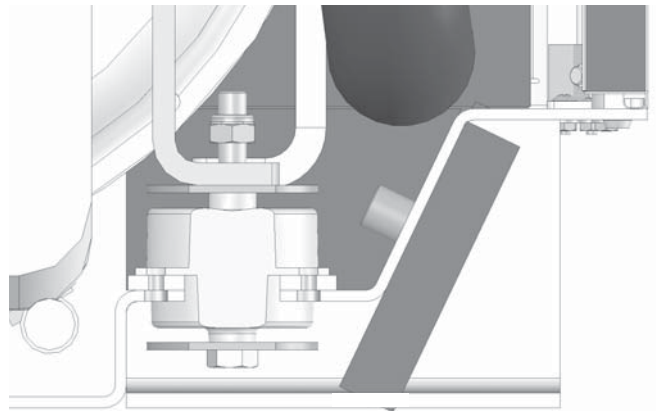
Finally, install the front (Item 10) and left hand forward (Item 11) panels, closing them with a swift firm push. See figure 12 and 12a.



As you install the panels, observe that there should be a minimum clearance of approximately .09" around the panel perimeter (except at the bottom of the side panels). You may adjust for this by loosening any number of corner bolting assemblies until fit is satisfactory. Tighten all connections when done.

**15**

Finally, note the Genset base pan has four mounting feet 'pockets'. Take foam block (item 29) but do not remove the backing paper at this time, and insert it into each mounting foot pocket as shown in FIG 12b. See how the upper portion of the block lays against the angled surface of the base pan. The foam part will compress slightly when inside the foot pocket as it provides a noise seal from the engine mounts. After you note how the foam block is going to fit, withdraw it and remove only the top half of the backing paper to expose the adhesive layer. Then pinching the block at the top outer corner reinstall it and press firmly against the contact area to ensure good adhesion. SEE FIG 12c.

**Fig. 12b****Fig. 12c**

# M944T Soundshield Packing List

ITEM #	DESCRIPTION	ADE P/N	QTY	NOTES	PACKED
1	Extrusion, vertical	05-71234	4	loose	<input type="checkbox"/>
5	Center post, vertical	05-71238	2	loose	<input type="checkbox"/>
9	Rear panel assembly	05-71262	1	assembled	<input type="checkbox"/>
	Enclosure top, assembled. Consists of the following parts:		1		<input type="checkbox"/>
2	Extrusion, horizontal, sides	05-71237	2	assembled	–
3	Extrusion, horizontal, ends	05-71236	2	assembled	–
4	Center post, top	05-71239	1	assembled	–
6	Corner casting	05-70001	4	installed	–
7	Bolting assembly	00-75714	14	installed	–
17	Penetration panel assembly	05-71274	1	installed	–
23	1/4" Flatwasher	15-00101	2	installed	–
22	Hex nut, nylock 1/4-20	14-00113	2	installed	–
15	Top panel forward assembly	05-71267	1	assembled	–
16	Top panel aft assembly	05-71271	1	assembled	–
8	Tie bracket	23-78701	2	installed	<input type="checkbox"/>
27	Slide bracket	23-71207	4	installed	<input type="checkbox"/>
26	Catch bracket	23-71208	2	installed	<input type="checkbox"/>
10	Front panel assembly	05-71257	1	assembled	<input type="checkbox"/>
11	LH side panel forward assembly	05-71241	1	assembled	<input type="checkbox"/>
12	LH side panel aft assembly	05-71249	1	assembled	<input type="checkbox"/>
13	RH side panel forward assembly	05-71246	1	assembled	<input type="checkbox"/>
14	RH side panel aft assembly	05-71253	1	assembled	<input type="checkbox"/>
7	Bolting assembly	00-75714	8	loose (bagged)	<input type="checkbox"/>
18	#10 screws s/s x 5/8" long	12-05401	12	loose (bagged)	<input type="checkbox"/>
21	Toe bracket	23-71206	4	loose (bagged)	<input type="checkbox"/>
28	Continuous grommet	44-70002	7.5"	loose(bagged)	<input type="checkbox"/>
22	Hex net, nylock 1/4-20	14-00113	2	loose(bagged)	<input type="checkbox"/>
20	#10-32 Nylock	14-00032	12	loose(bagged)	<input type="checkbox"/>
19	#10 Flatwasher	15-70002	12	loose(bagged)	<input type="checkbox"/>
24	Lower duct support	55-71242	1	loose	<input type="checkbox"/>
25	Lower intake duct	55-71248	1	loose	<input type="checkbox"/>
23	1/4" Flatwasher s/s	15-00101	2	loose(bagged)	<input type="checkbox"/>
28	Base Foot Plug	55-71251	4	loose	<input type="checkbox"/>

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

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