
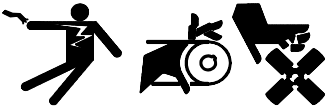




**INSTALLATION INSTRUCTIONS**

Original Issue Date: 10/99  
 Model: 8EOZ/6.5EFOZ  
 Market: Marine  
 Subject: Sound Shield Kit PA-359479


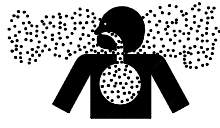
The sound shield quiets operation of generator sets used in marine applications. When installing the sound shield, follow the general guidelines and observe the safety precautions listed below.

 <b>WARNING</b>

<p><b>Accidental starting.</b>  <b>Can cause severe injury or death.</b></p> <p>Disconnect the battery cables before working on the generator set. Remove the negative (-) lead first when disconnecting the battery. Reconnect the negative (-) lead last when reconnecting the battery.</p>


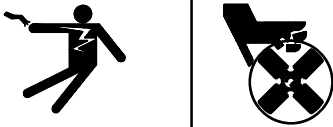
**Disabling the generator set. Accidental starting can cause severe injury or death.** Before working on the generator set or equipment connected to the set, disable the generator set as follows: (1) Disconnect the power to the battery charger, if equipped. (2) Remove the battery cables, negative (-) lead first. Reconnect the negative (-) lead last when reconnecting the battery. Follow these precautions to prevent the starting of the generator set by the remote start/stop switch.

 <b>WARNING</b>

<p><b>Fire.</b>  <b>Can cause severe injury or death.</b></p> <p>Do not smoke or permit flames or sparks near fuels or the fuel system.</p>

**Servicing the fuel system. A flash fire can cause severe injury or death.** Do not smoke or permit flames or sparks near the carburetor, fuel line, fuel filter, fuel pump, or other potential sources of spilled fuels or fuel vapors. Catch fuels in an approved container when removing the fuel line or carburetor.

 <b>WARNING</b>

<p><b>Carbon monoxide.</b>  <b>Can cause severe nausea, fainting, or death.</b></p> <p>The exhaust system must be leakproof and routinely inspected.</p>

**Operating the generator set. Carbon monoxide can cause severe nausea, fainting, or death.** Carbon monoxide is an odorless, colorless, tasteless, nonirritating gas that can cause death if inhaled for even a short time. Use the following precautions when installing and operating the generator set. Do not install the exhaust outlet where exhaust can be drawn in through portholes, vents, or air conditioners. If the generator set exhaust discharge outlet is near the waterline, water could enter the exhaust discharge outlet and close or restrict the flow of exhaust. Never operate the generator set without a functioning carbon monoxide detector. Be especially careful if operating the generator set when moored or anchored under calm conditions because gases may accumulate. If operating the generator set dockside, moor the craft so that the exhaust discharges on the lee side (the side sheltered from the wind). Always be aware of others, making sure your exhaust is directed away from other boats and buildings. Avoid overloading the craft.

 <b>WARNING</b>

<p><b>Hazardous voltage. Moving rotor.</b>  <b>Can cause severe injury or death.</b></p> <p>Operate the generator set only when all guards and electrical enclosures are in place.</p>

**Short circuits. Hazardous voltage/current can cause severe injury or death.** Short circuits can cause bodily injury and/or equipment damage. Do not contact electrical connections with tools or jewelry while making adjustments or repairs. Remove wristwatch, rings, and jewelry before servicing the equipment.

## Installation

### Remove the Generator Set from Service

1. Place the generator set start/stop switch in the STOP position.
2. Disconnect the generator set engine starting battery, the negative (-) lead first.

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#### NOTE

Before installing the sound shield, disconnect and route the battery leads through the holes provided in the end bracket duct.

#### NOTE

Apply pipe sealant to the male threads of all components before installation.

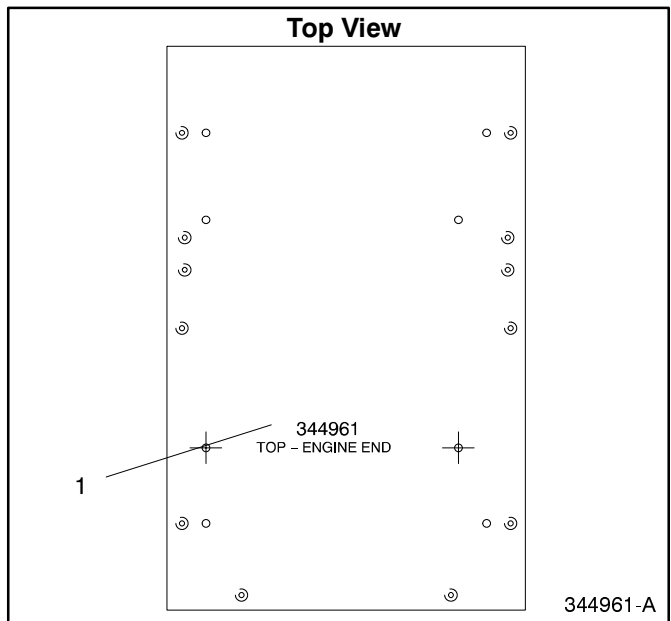
3. Refer to the assembly drawings in Figure 2 and Figure 3 to identify kit components and their relative positions. Refer to the generator operation or service manuals for items not shown.
4. Remove the controller cover and disconnect the following:
  - 22-pin connector (P4)

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#### NOTE

Output leads can be connected in various positions for different volt configurations. Mark leads 1, 2, 3, and 4 for reconnection.

- Generator output leads 1, 2, 3, and 4
  - Neutral stud (L0)
  - Remove the bolt to disconnect the ground strap
5. Position the generator set onto the sound shield base (344961) and secure with 4 screws (X-6238-2) and 4 washers (X-25-37). See Figure 1.
  6. Remove the belt guard (344878), brackets (344893, 344894, and 344897), grommets (X-284-39 qty. 3), and wing screws (229330 qty. 3). Refer to the parts catalog for location and identification.
  7. Remove the controller. Save the mounting hardware to remount the controller onto the roof of the sound shield. Discard the 4 controller mounts.
  8. Remove the end bracket louvered panel (225545). Save the mounting hardware and louvered panel.



1. Engine end

**Figure 1. Sound Shield Base Mounting Position**

### End Bracket Duct Installation

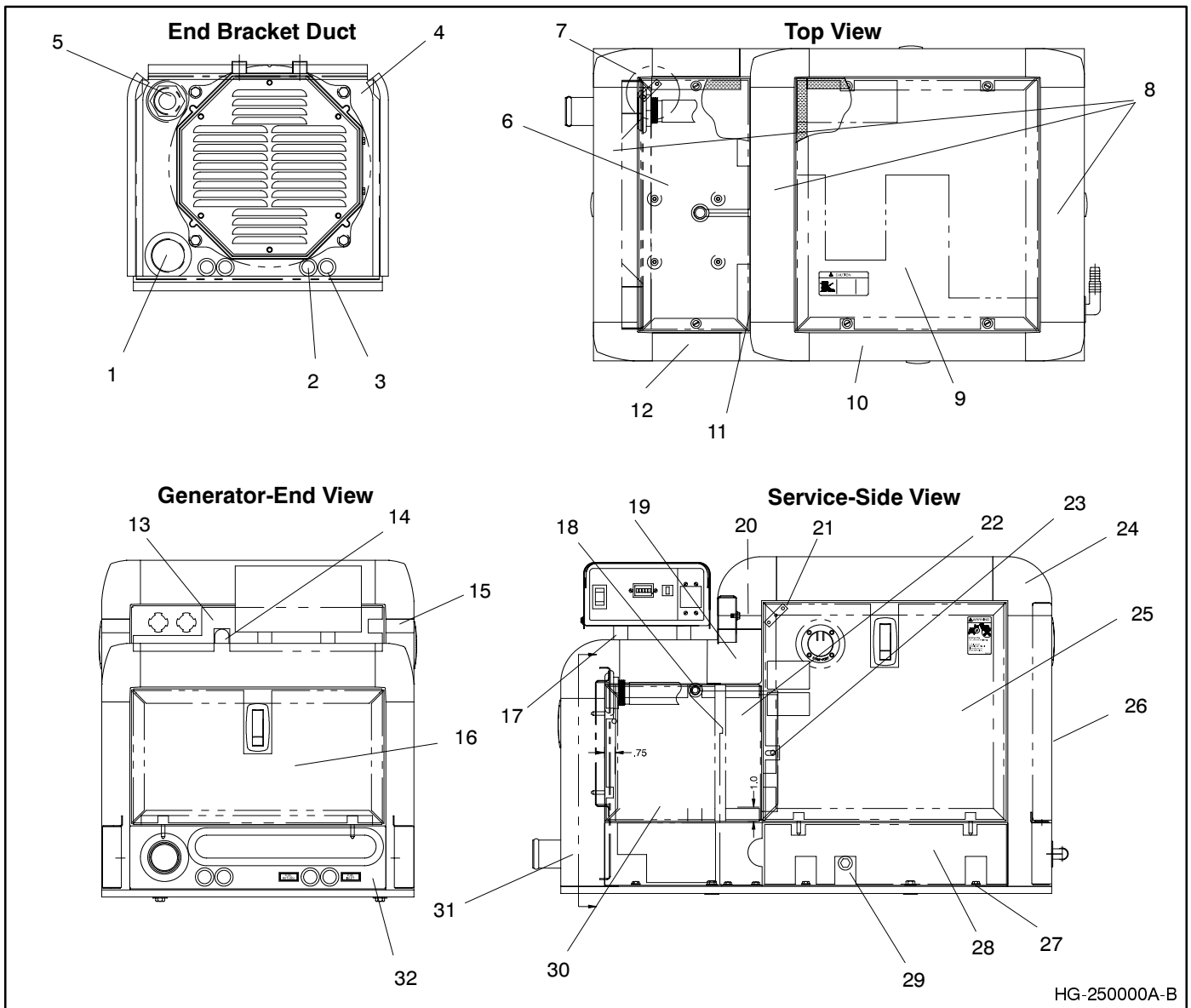
9. Position the end bracket duct (359527) onto the end bracket.
10. Position the preheater duct (359547) onto the hose connector on the end bracket duct (359527) at the position shown in Figure 2, securing with a hose clamp (X-426-8).
11. Route the preheater duct to the air cleaner inlet and secure with a hose clamp (X-426-8).
12. Place the end bracket louvered panel onto the end bracket duct using the existing hardware to secure.

### Exhaust Connection

13. Connect the hose (153417) onto the exhaust elbow, securing with 2 hose clamps (X-426-16).
14. Connect the exhaust tube (229889) onto the hose installed in step 13. Secure with 2 hose clamps (X-426-16).
15. Connect the hose (153417) onto the exhaust tube. Secure with 2 hose clamps (X-426-16).
16. Connect the exhaust tube (344694) onto the hose installed in step 15 and secure with 2 hose clamps (X-426-16).
17. Position the exhaust tube outlet through the opening in the end bracket duct. See Figure 2.

### Fuel Connections

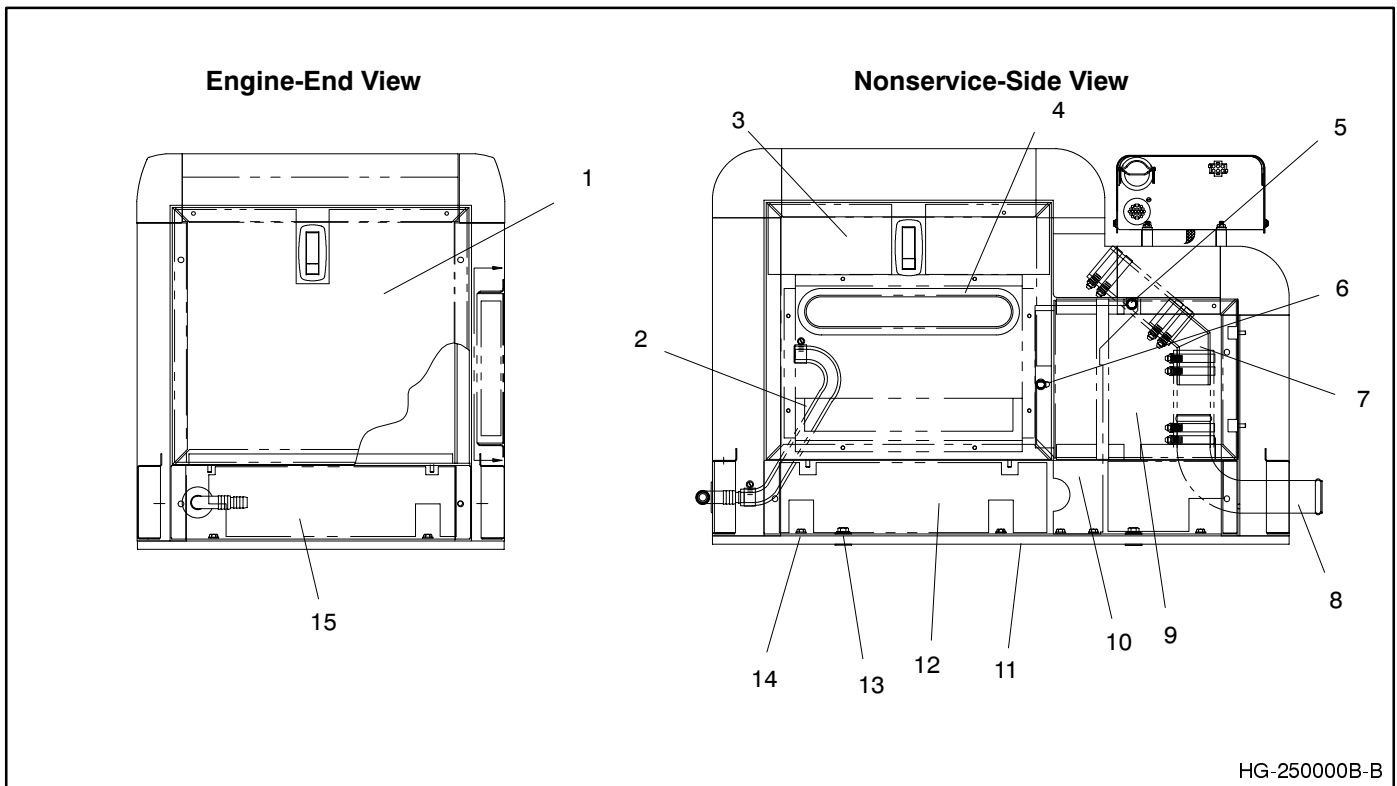
18. Route the fuel inlet line through the end bracket duct's right hole. See Figure 2.
19. Route the fuel return line through the end bracket duct's left hole. See Figure 2.



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1. Exhaust opening
2. Fuel return opening
3. Fuel inlet opening
4. End bracket duct (359527)
5. Preheater duct (359547) and hose clamp (X-426-8)
6. Roof (359538), washer (222889 qty. 2), and screw (X-73-33 qty. 2).  
See Figure 6.
7. Corner rail bracket. See Figure 7, View A
8. Rail (344940 qty. 3)
9. Roof (359542), washer (222889 qty. 4), and screw (X-73-33 qty. 4).  
See Figure 6.
10. Rail (344938 qty. 2) and speed clip (297596 qty. 4)
11. PVC foam seal (19010 08118 qty. 1.5 ft.)
12. Rail (344682 qty. 2) and speed clip (297596 qty. 2)
13. Door (359514), screw (X-465-24 qty. 2), and washer (X-25-142 qty. 2)
14. Opening for routing the engine wiring harness out of the sound shield
15. Rail (344937 qty. 2)
16. Door (359515)
17. Controller mounts (246267 qty. 4)
18. Speed clip (X-6220-1), screw (X-465-24), and washer (X-25-142).  
Place the speed clip on the rail.
19. Inside connector R.H. (359328) and inside connector L.H. (359329). See Figure 7.
20. Hose clamp (X-426-8). Route the preheater duct to the air cleaner inlet.
21. Corner rail bracket. See Figure 7, View B
22. Support (359022), screw (X-465-24 qty. 2), and washer (X-25-142 qty. 2)
23. Speed clip (297596), screw (X-465-24), and washer (X-25-142).  
Place the speed clip on the support bracket.
24. Outside connector (344137 qty. 6)
25. Door (359523)
26. Rail (344939 qty. 2), screw (X-465-24 qty. 4), and washer (X-25-142 qty. 4)
27. Screw (X-465-24 qty. 3) and washer (X-25-142 qty. 3)
28. Rail (363512)
29. Opening for routing the oil drain hose
30. Panel (359535)
31. Rail (359016 qty. 2), speed clip (297596 qty. 2), screw (X-465-24 qty. 4), and washer (X-25-142 qty. 4)
32. Rail (363523), screw (X-465-24 qty. 2), and washer (X-25-142 qty. 2)

**Figure 2. Sound Shield**



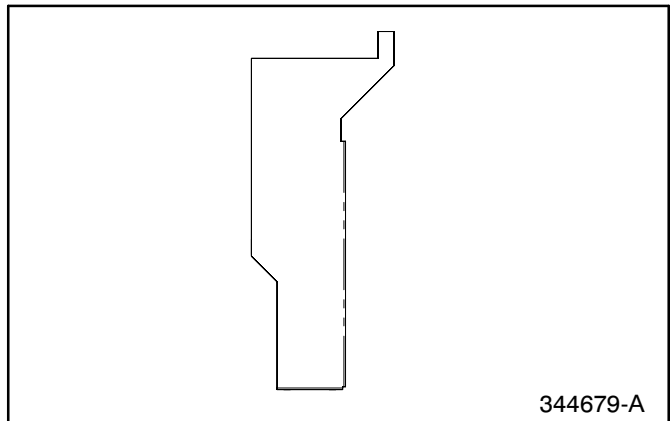
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| <ul style="list-style-type: none"> <li>1. Door (359513)</li> <li>2. Molded hose (229259) and hose clamp (X-426-3 qty. 2)</li> <li>3. Door (359519)</li> <li>4. U-channel grommet (X-6047-22)</li> <li>5. Screw (X-465-24), washer (X-25-142), and speed clip (X-6220-1)</li> <li>6. Screw (X-465-24), washer (X-25-142), and speed clip (297596)</li> <li>7. Exhaust tube (229889), hose (153417 qty. 2), and hose clamp (X-426-16 qty. 8)</li> <li>8. Exhaust tube (344694).</li> </ul> | <ul style="list-style-type: none"> <li>9. Panel (359534)</li> <li>10. Support (359023), screw (X-465-24 qty. 2), and washer (X-25-142 qty. 2)</li> <li>11. Base (344961)</li> <li>12. Rail (363519)</li> <li>13. Screw (X-6238-2 qty. 4) and washer (X-25-37 qty. 4)</li> <li>14. Screw (X-465-24 qty. 3) and washer (X-25-142 qty. 3)</li> <li>15. Rail (363516), screw (X-465-24 qty. 2), and washer (X-25-142 qty. 2)</li> </ul> |
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**Figure 3. Sound Shield**

**Support Installation**

- 20. Position the sound shield support (359022) onto the base (service side of unit) using 2 screws (X-465-24) and 2 washers (X-25-142) to secure. See Figure 2 and Figure 4.
- 21. Position the sound shield support (359023) onto the base (nonservice side of unit) using 2 screws (X-465-24) and 2 washers (X-25-142) to secure. See Figure 3 and Figure 4.
- 22. Place a speed clip (297596) onto each support (359022 and 359023). See Figure 2 and Figure 3 for locations.



**Figure 4. Support Identification (Typical)**

## Seawater Pump Connection

23. Connect the hose (229259) to the seawater pump inlet. Secure with a hose clamp (X-426-3).

## Rail Installation

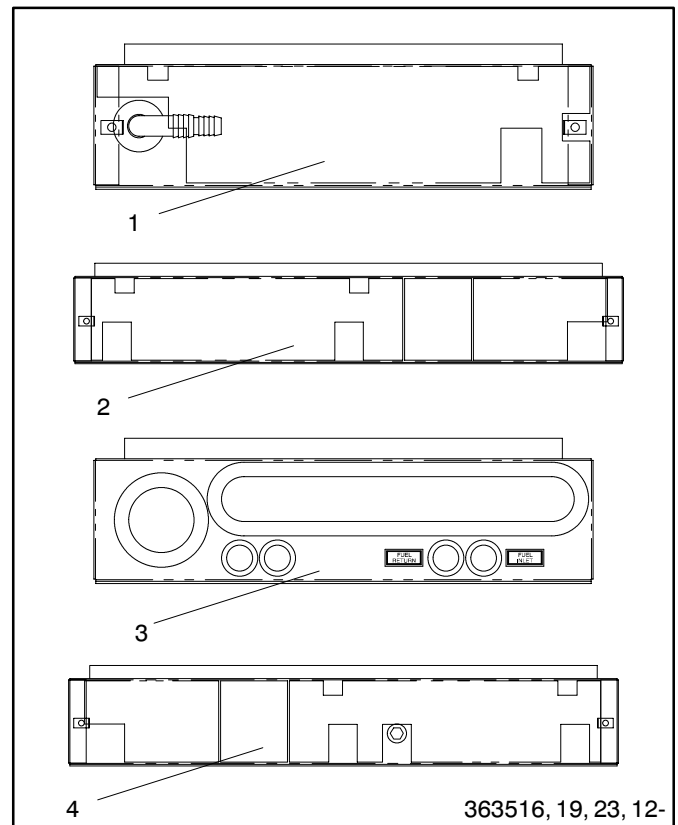
### NOTE

See the back of each extruded rail for its part number.

24. Assemble the rails (363512, 363516, 363519, and 363523) onto the base. See Figure 5 for rail identification. Use 10 screws (X-465-24) and washers (X-25-142) to secure.
25. Route the oil drain hose to the opening in the rail (363512). Cut the hose to fit.
26. Route the seawater pump hose to the connector in the rail (363516) securing with a hose clamp (X-426-3). See Figure 3 for location.
27. Route the exhaust tube, fuel inlet line, fuel return line, and battery cables through the openings in the rail (363523). See Figure 2 for locations.

### NOTE

The exhaust tube should protrude from the back of the sound enclosure by approx. 2 inches.



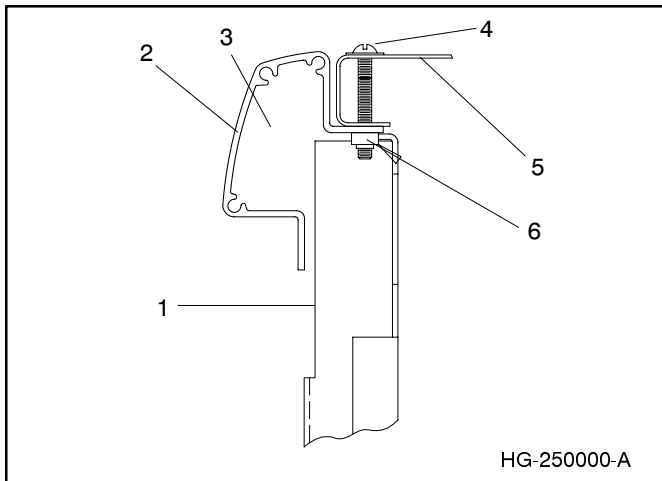
1. Engine-end rail (363516)
2. Nonservice-side rail (363519)
3. Generator-end rail (363523)
4. Service-side rail (363512)

**Figure 5. Rail Identification**

28. Install the 2 rails (359016) onto the corners of the rail (363523) on the generator end. Use the speed clips (297596 qty. 2), screws (X-465-24 qty. 4), and washers (X-25-142 qty. 4) to secure.
29. Install the 2 rails (344939) onto the corners of the rail (363516) on the engine end. Use screws (X-465-24 qty. 4) and washers (X-25-142 qty. 4) to secure.

## Insulation Installation

30. Cut the insulation (359584) to length and insert in all of the extruded rails. Refer to the parts list for extruded rail lengths. See Figure 6.



1. Sound shield support
2. Sound shield extruded rail
3. Acoustic insulation (359584 qty. 3)
4. Screw
5. Roof
6. Position speed clip as shown

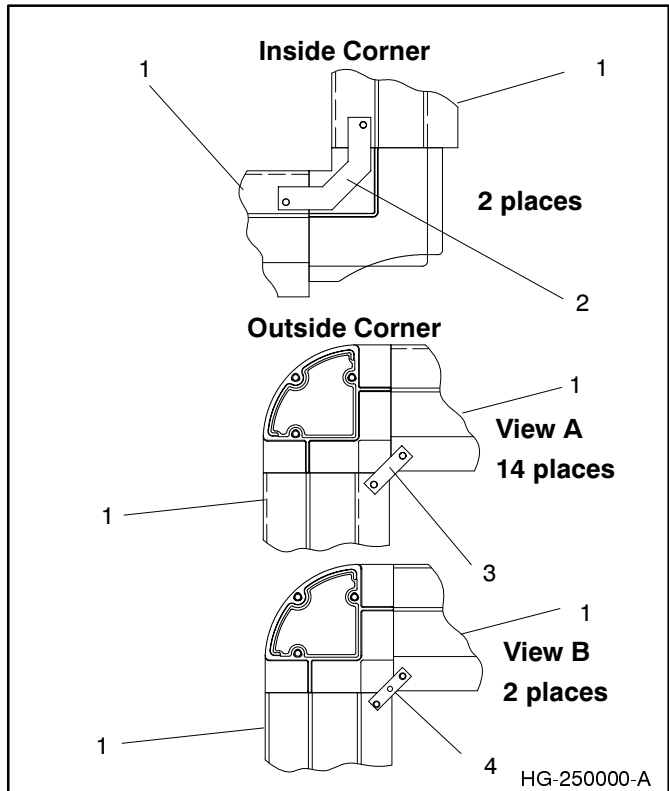
**Figure 6. Speed Clip Position**

## Rail and Corner Connector Installation

31. Construct the remaining framework of the sound shield, see Figure 6 for speed clip position:

- Rails (344940 qty. 3). See Figure 2, item 8.
- Rails (344938 qty. 2) and speed clips (297596 qty. 4). See Figure 2, item 10.
- Rails (344682 qty. 2) and speed clips (297596 qty. 2). See Figure 2, item 12.
- Rails (344937 qty. 2). See Figure 2, item 15.
- Outside corner connectors (344137 qty. 6). See Figure 2, item 24.
- Inside corner connectors (359328 qty. 1). See Figure 2, item 19.
- Inside corner connectors (359329 qty. 1). See Figure 2, item 19.

32. Attach the corner rail brackets (344949) to secure the inside corner connectors (359328 and 359329) using 2 pop rivets (X-781-14). See Figure 7.
33. Attach the brackets (344948) to secure the outside corner connectors (344137) using 2 pop rivets (X-781-14). See Figure 7, View B and Figure 2, item 24.
34. Attach the brackets (344635) to secure the outside corner connectors (344137) using 2 pop rivets (X-781-14). See Figure 7, View A and Figure 2, item 7.



1. Rail
2. Corner rail bracket (344949) and pop rivet (X-781-14 qty. 2)
3. Corner rail bracket (344635) and pop rivet (X-781-14 qty. 2)
4. Corner rail bracket (344948) and pop rivet (X-781-14 qty. 2)

**Figure 7. Corner Rail Bracket Installation**

### Door Installation

35. Route the engine wiring harness out of the sound shield door (359514) opening. See Figure 2, item 14.
36. Position the door (359514) using 2 screws (X-465-24) and 2 washers (X-25-142) as shown in Figure 2. See Figure 8 for the door identification.

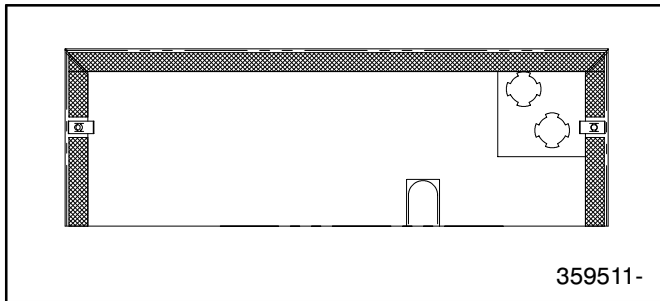


Figure 8. Door Identification

### Roof Installation

37. Position the roof (359538) using 2 washers (222889) and 2 screws (X-73-33) as shown in Figure 6. See Figure 9 for the generator roof identification.

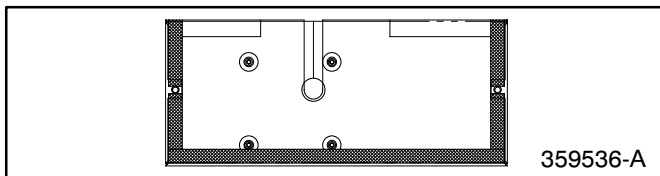


Figure 9. Generator Roof Identification

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#### NOTE

Route the generator leads (connectors) up through the hole in the roof.

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38. Install the foam seal (19010 08118) along the seam where the roof (359538) and the door (359514) meet.

39. Install the roof (359542) using 4 washers (222889) and 4 screws (X-73-33) as shown in Figure 6. See Figure 10 for the engine roof identification.

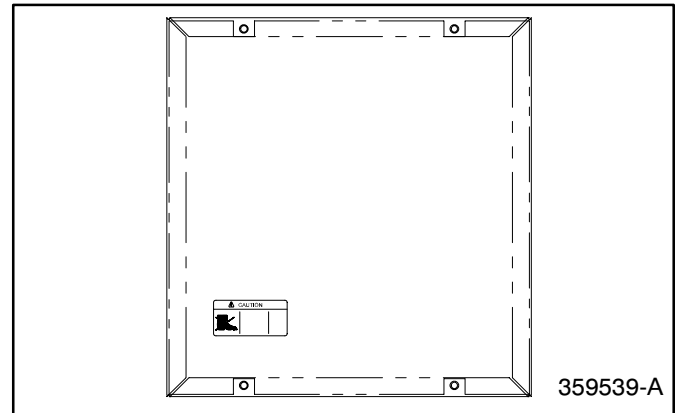


Figure 10. Engine Roof Identification

### Panel Installation

40. Install the panels (359534 and 359535) as shown in Figure 2 and Figure 3, placing a speed clip (X-6220-1) on each rail and securing with a screw (X-465-24) and a washer (X-25-142). Use a screw (X-465-24) and washer (X-25-142) to secure each panel to the support. See Figure 11 for the panel identification.

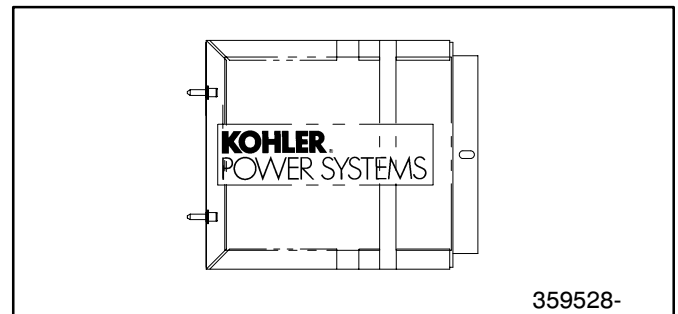


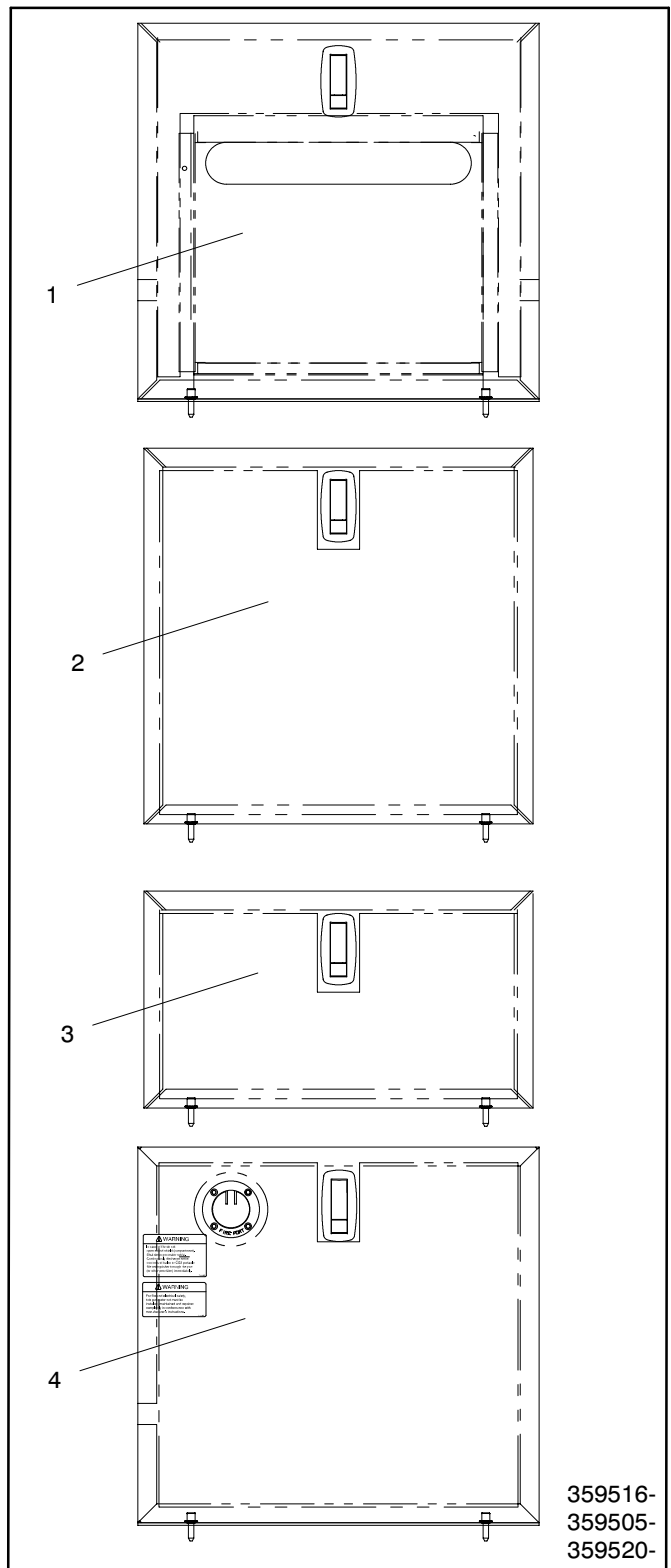
Figure 11. Panel Identification

## Door Installation

41. Install the U-channel grommet (X-6047-22) in the door (359519).
42. Align the pins to the holes in the rail and install the door (359519) on the nonservice side of the unit. See Figure 3 and Figure 12.
43. Align the pins to the holes in the rail and install the door (359513) on the engine end of the unit. See Figure 3 and Figure 12.
44. Align the pins to the holes in the rail and install the door (359515) on the generator end of the unit. See Figure 2 and Figure 12.
45. Align the pins to the holes in the rail and install the door (359523) on the service side of the unit. See Figure 2 and Figure 12.

## Restore the Generator Set to Service

46. Reconnect the leads that were disconnected in step 4. Position the controller on the mounts (246267 qty. 4) and secure on the roof using the existing hardware.
47. Check that the generator set start/stop switch is in the STOP position.
48. Reconnect the generator set engine starting battery, the negative (-) lead last.



1. Nonservice-side door (359519)
2. Engine-end door (359513)
3. Generator-end door (359515)
4. Service-side door (359523)

**Figure 12. Door Identification**

## Sound Shield

Parts List		
Kit: PA-359479		
Qty.	Description	Part Number
28	Washer (0.281 x 0.625 x 0.065)	X-25-142
4	Washer, plain (0.406 x 0.812 x 0.065)	X-25-37
8	Clamp, hose (2.75 x 1.81)	X-426-16
2	Clamp, hose (1.06 x 0.56)	X-426-3
2	Clamp, hose (1.75 x 0.81)	X-426-8
28	Screw, hex cap (1/4-20)	X-465-24
1	Channel, U grommet (30.00 in.)	X-6047-22
2	Clip, speed	X-6220-1
4	Screw, hardened (3/8-16 x 0.62)	X-6238-2
6	Screw, PHM (1/4-20)	X-73-33
36	Rivet, pop	X-781-14
2	Hose	153417
1	Foam, PVC seal tape (1.5 ft.)	19010 08118
6	Washer, fiber	222889
1	Hose, molded	229259
1	Tube, exhaust	229889
4	Mount, controller	246267
10	Clip, speed	297596
6	Connector, outside corner	344137
14	Bracket, corner rail (outside)	344635
2	Extruded rail (6.25 in.)	344682
1	Tube, exhaust	344694
2	Extruded rail (0.98 in.)	344937
2	Extruded rail (15.44 in.)	344938
2	Extruded rail (19.31 in.)	344939
3	Extruded rail (16.75 in.)	344940
2	Bracket, corner rail (outside)	344948
2	Bracket, corner rail (inside)	344949
1	Base	344961
1	Connector, inside	359328
1	Connector, inside	359329
2	Extruded rail (13.40 in.)	359016
1	Support (service side)	359022
1	Support (nonservice side)	359023
1	Door (engine end)	359513
1	Door	359514
1	Door (generator end)	359515
1	Door (nonservice side)	359519
1	Door (service side)	359523
1	Duct, end bracket	359527
1	Panel (nonservice side)	359534
1	Panel (service side)	359535
1	Roof (generator)	359538
1	Roof (engine)	359542
1	Duct, preheater	359547
3	Insulation, acoustic	359584
1	Rail (service side)	363512
1	Rail (engine end)	363516
1	Rail (nonservice side)	363519
1	Rail (generator end)	363523