

INSTALLATION INSTRUCTIONS

Original Issue Date: 4/01

Model: 6VSG, 8.5/11RMY, 8.5/12RES, 14RES/RESL, and 14RESA/RESAL

Market: Residential/Commercial

Subject: Carburetor Heater Kits GM19462-KP1-QS, GM19462-S, GM19462-KP3-QS, and GM19462-KP4-QS

Introduction

The carburetor heater warms the carburetor for improved engine starting when the ambient temperature falls below 2°C (35°F).

Note: The heater requires a continuous source of AC power. See Figure 1 for the power supply voltage required.

For 120 volt kits, plug the carburetor heater into a 120 VAC receptacle. On 6VSG and 14 kW generator sets, plug the heater into the receptacle provided in the engine compartment. Verify that AC power is connected to the generator set as described in the generator set Installation Manual. The circuit must be backed up by the generator set to provide power at all times.

240 volt kits use a 3-pin power connector. 14 kW generator sets built after 10/9/2013 with serial numbers SGM327VFJ or later have a knockout in the bulkhead

for the 240 VAC power connector. Refer to the Installation Procedure for instructions to connect power.

Install the heater between the engine air cleaner and the carburetor. Read the entire installation procedure and compare the kit parts with the parts list at the end of this publication before beginning installation. Perform the steps in the order shown.

Figure 2 shows the carburetor heater and Figure 3 shows the installed carburetor heater assembly.

Kit Number	GM19462-KP1-QS GM19462-S GM19462-KP4-QS	GM19462-KP3-QS
Voltage	120 VAC	240 VAC
Thermostat ON	4 ± 3°C (40 ± 5°F)	
Thermostat OFF	16 ± 3°C (60 ± 5°F)	

Figure 1 Heater Specifications

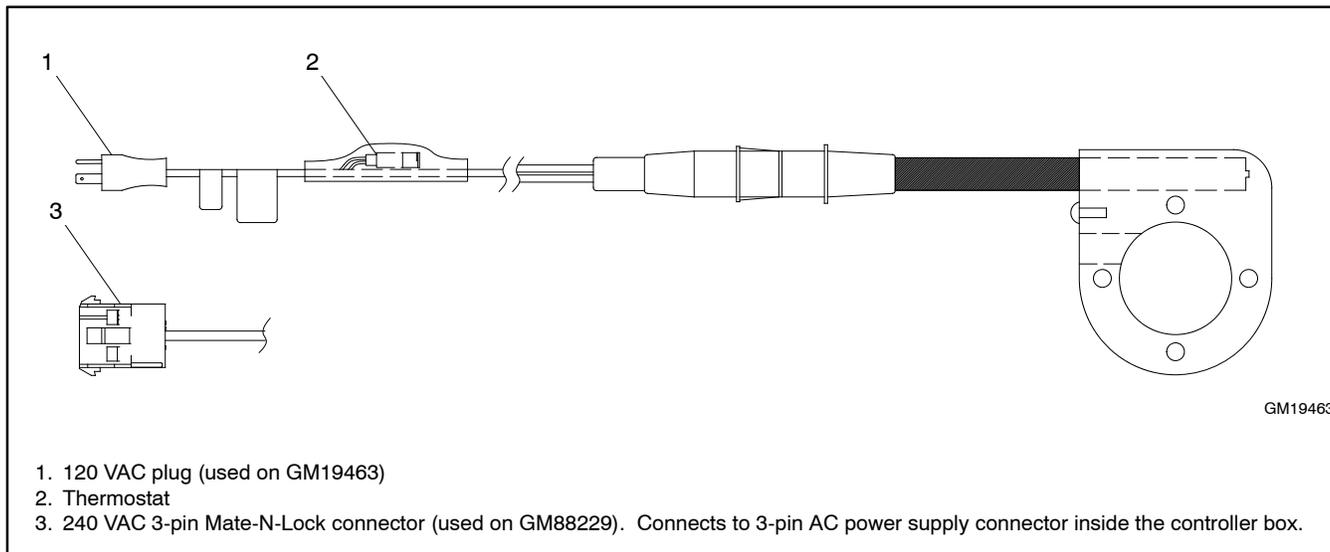


Figure 2 Carburetor Heater with Thermostat and Power Connectors

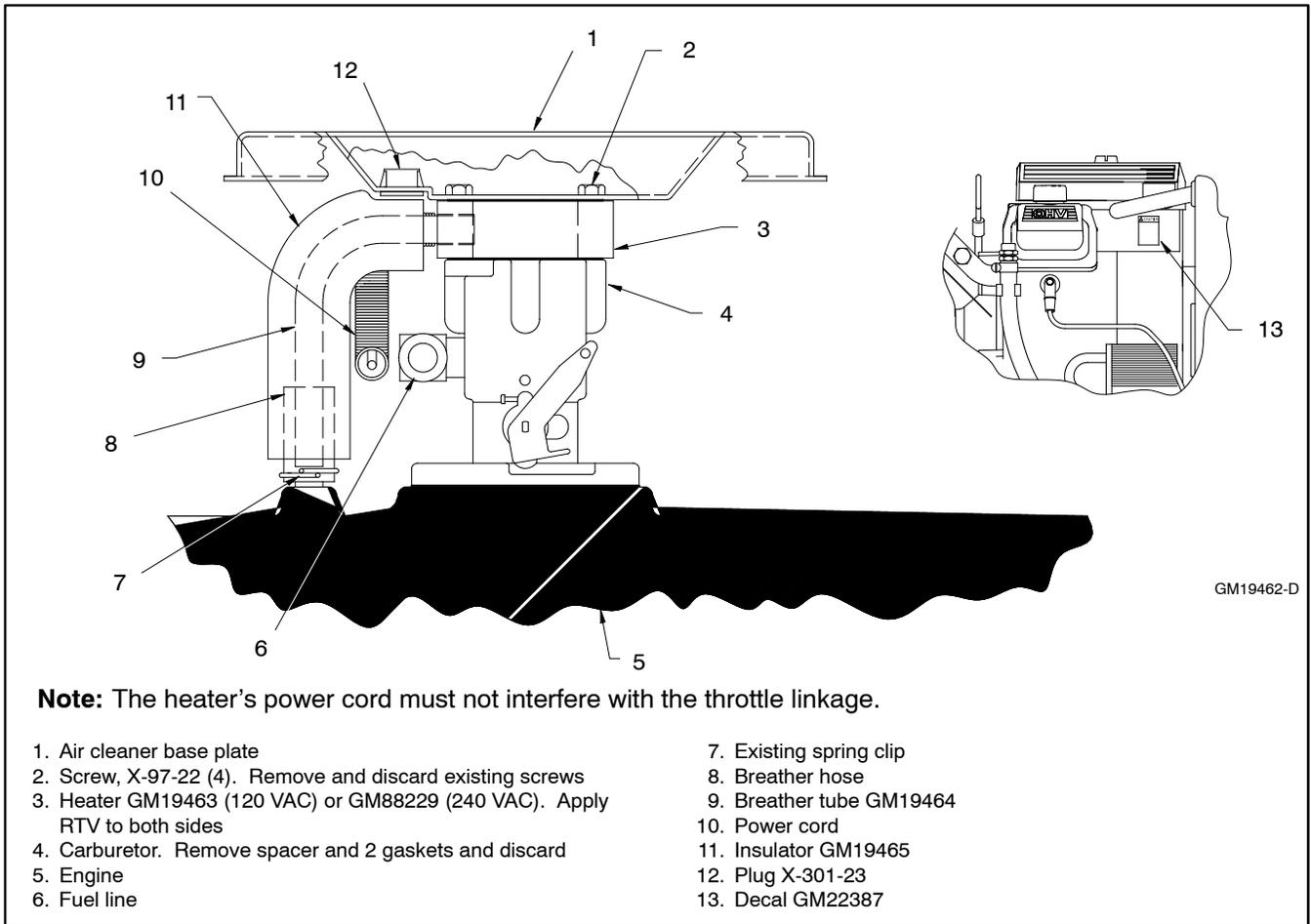


Figure 3 Carburetor Heater Assembly

Safety Precautions

Observe the following safety precautions while installing the kit.

WARNING



**Accidental starting.
Can cause severe injury or death.**

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.

Disabling the generator set. Accidental starting can cause severe injury or death. Before working on the generator set or connected equipment, disable the generator set as follows: (1) Move the generator set master switch to the OFF position. (2) Disconnect the power to the battery charger. (3) Remove the battery cables, negative (-) lead first. Reconnect the negative (-) lead last when reconnecting the battery. Follow these precautions to prevent starting of the generator set by an automatic transfer switch, remote start/stop switch, or engine start command from a remote computer.

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) Press the generator set off/reset button to shut down the generator set. (2) Disconnect the power to the battery charger, if equipped. (3) 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.

DANGER



**Hazardous voltage.
Will cause severe injury or death.**

Disconnect all power sources before opening the enclosure.

CAUTION



Hot surfaces.

Servicing the engine heater. Hot parts can cause minor personal injury or property damage. Install the heater before connecting it to power. Operating the heater before installation can cause burns and component damage. Disconnect power to the heater and allow it to cool before servicing the heater or nearby parts.

Installation Procedure

Note: Some generator set models covered in this document are equipped with a 3-position (Run/Off-Reset/Auto) generator set master switch. Others include Run, Auto, and Off pushbuttons on the controller. Move the generator set master switch or press the controller pushbutton as applicable when instructed in the following procedure.

1. Remove the generator set from service.

- 1.1 Place the generator set master switch in the OFF position or press OFF on the generator set controller.
- 1.2 Disconnect the AC power to the battery charger by opening the circuit breaker in the main distribution panel.
- 1.3 Disconnect the generator set engine starting battery(ies), negative (-) lead first.
- 1.4 Open or remove the enclosure roof and panels as needed to gain full access to the engine air cleaner.

2. Remove the air cleaner assembly. See Figure 4.

- 2.1 Loosen the air cleaner cover retaining knob and remove the cover.
- 2.2 Remove the wing nut and the element cover.
- 2.3 Remove the air cleaner element and foam precleaner.
- 2.4 Remove the four screws that attach the air cleaner bracket and base to the carburetor assembly. Remove the bracket and base.

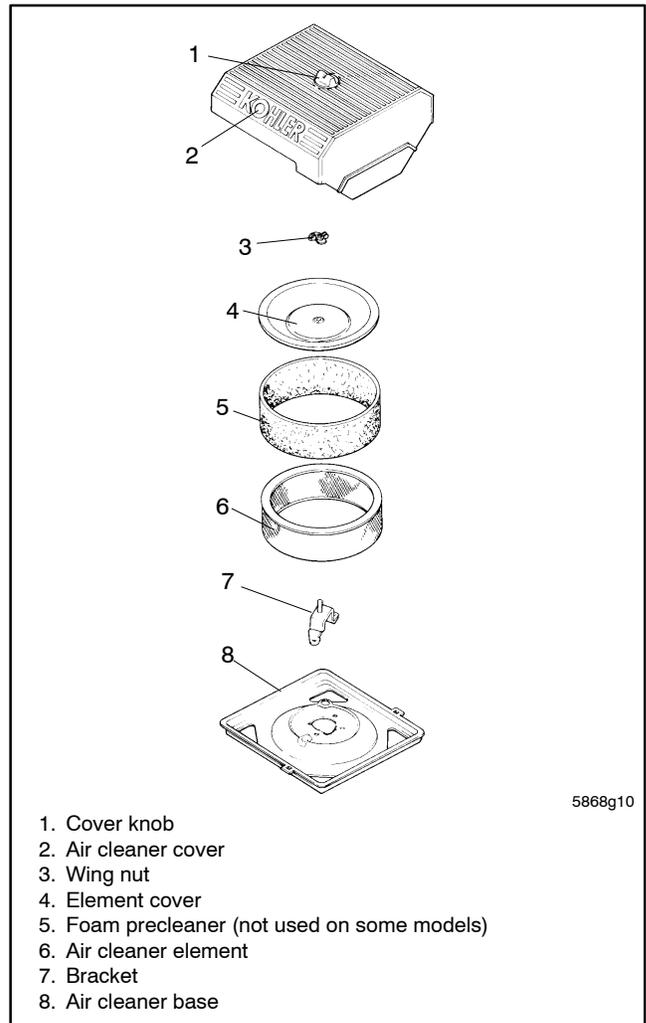


Figure 4 Air Cleaner Components

3. Prepare to install the heater.

- 3.1 Remove and discard the air cleaner spacer and two gaskets. See Figure 5.
- 3.2 Remove the rubber crankcase breather hose. Save the clamp to reuse later. See Figure 5.

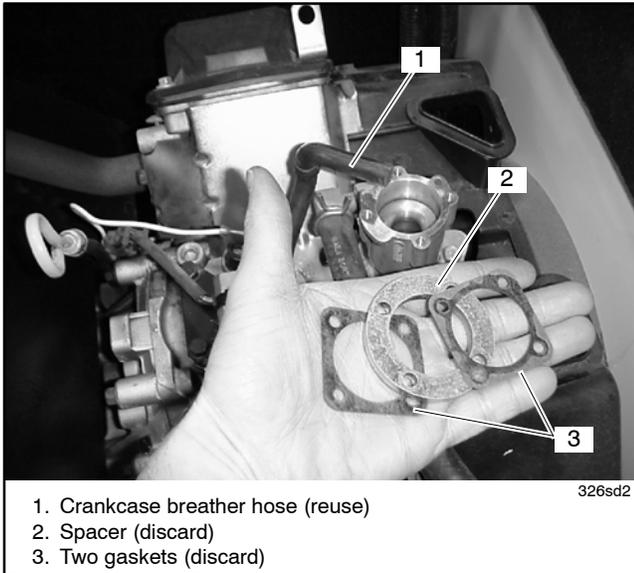


Figure 5 Crankcase Breather Hose, Air Cleaner Spacer, and Gaskets

4. Assemble the heater parts.

- 4.1 Apply RTV sealant to the end of the copper breather tube, GM19464 (included in the kit), and insert it into the drilled hole in the heater, GM19463. See Figure 6. Press the breather tube approximately 0.4 inches into the heater plate so that the end of the breather tube is flush with the inside diameter but does not extend into the large opening of the heater.
- 4.2 Place the heater on the carburetor without a gasket and adjust the angle of the breather tube to line up with the breather nipple on the engine crankcase. See Figure 7.

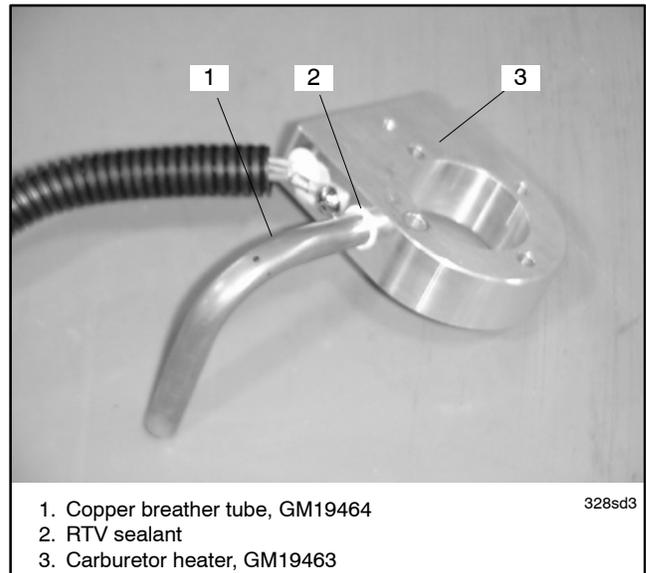


Figure 6 Heater with Copper Breather Tube

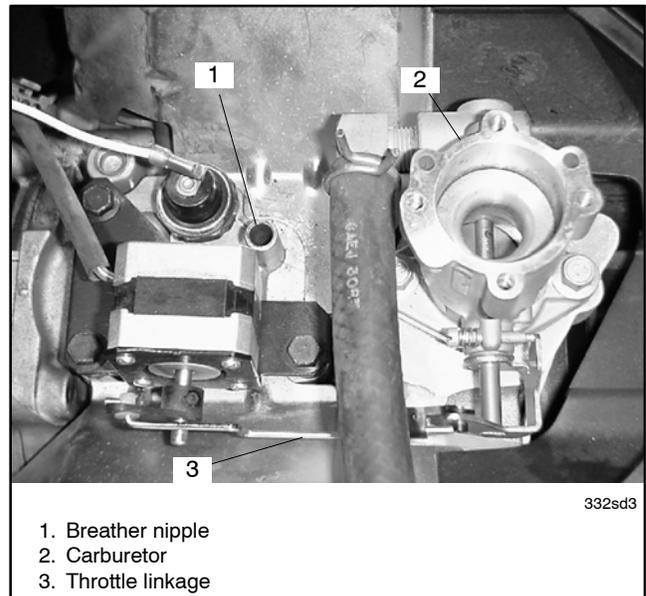


Figure 7 Engine Crankcase Breather Nipple

- 4.3 Install the breather insulation, GM19465, over the copper breather tube. See Figure 8.
- 4.4 Cut off the rubber breather hose two inches from the engine end. See Figure 9.
- 4.5 Slide the clamp removed in step 3.2 onto the 2-inch section of hose.

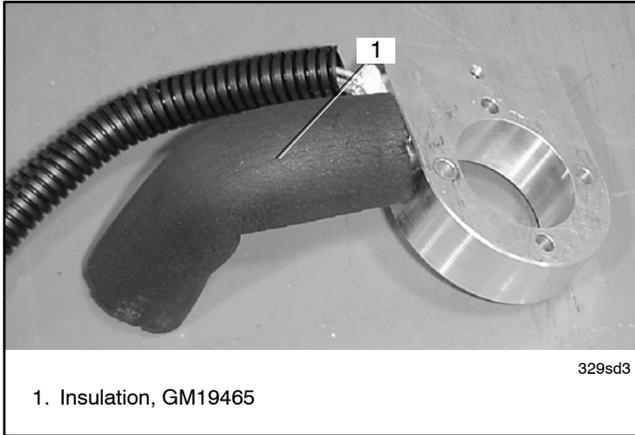


Figure 8 Breather Tube Insulation

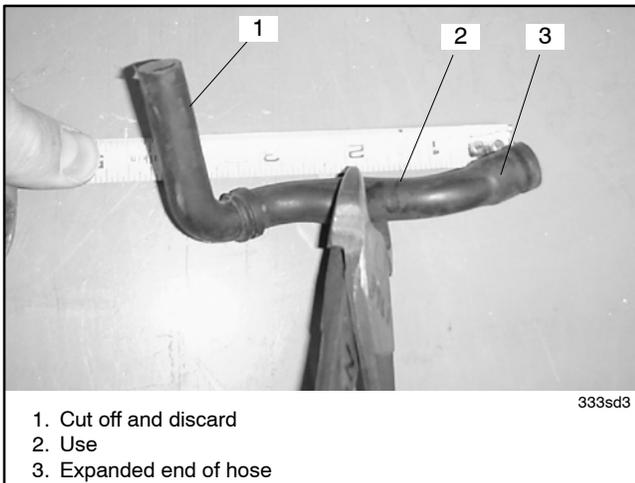


Figure 9 Cutting Off the Rubber Breather Hose

- 4.6 Slip the 2-inch length of breather hose onto the end of the copper tube. Insert the copper tube into the small end of the hose until the end of the copper tube reaches the expanded diameter of the hose. See Figure 10.

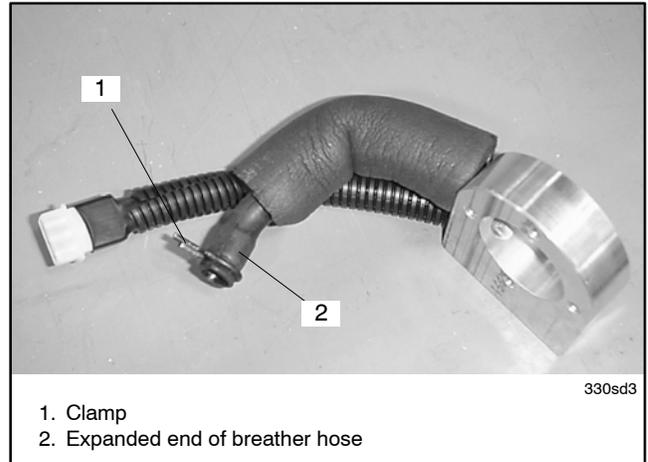


Figure 10 Breather Hose and Clamp

5. Install the heater.

- 5.1 Apply a thin layer of RTV to both sealing surfaces of the heater. See Figure 11.
- 5.2 Place the heater on the carburetor. Do not use a gasket.
- 5.3 For the Model 8.5/11RMY, route the power cord along the fuel line. See Figure 12.

For the Model 8.5/12/14RES, route the power cord to the starter side of the engine and attach it to the lifting eye using cable tie X-468-1.

Note: Use cable ties to secure the heater power cord. Make sure that the power cord does not interfere with the free operation of the throttle linkage.

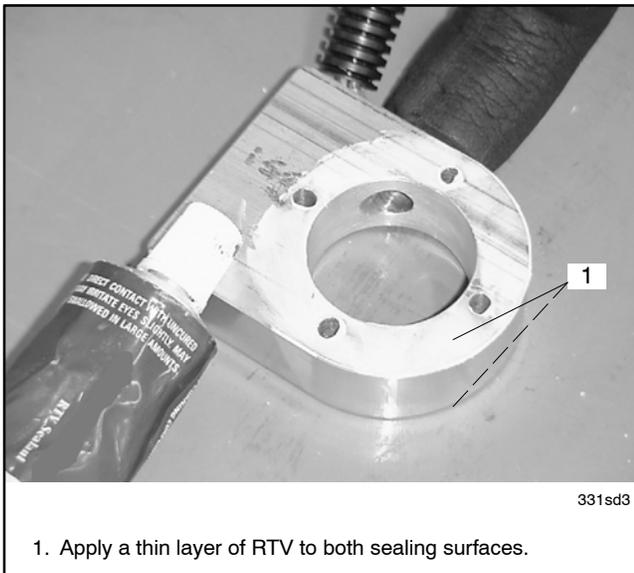


Figure 11 RTV Sealant

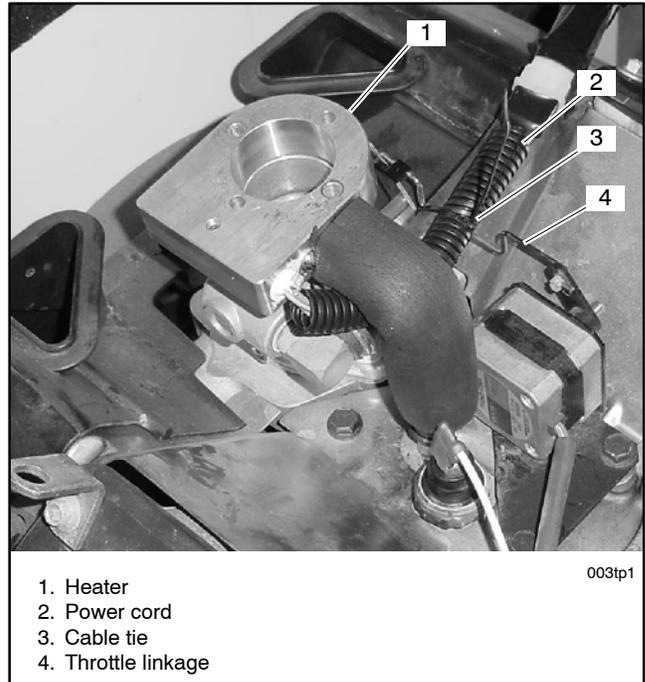


Figure 12 Heater Location
(Model 8.5/11 RMY shown)

- 5.4 Use the clamp removed in step 3.2 to attach the breather tube to the nipple on the engine crankcase. See Figure 13.

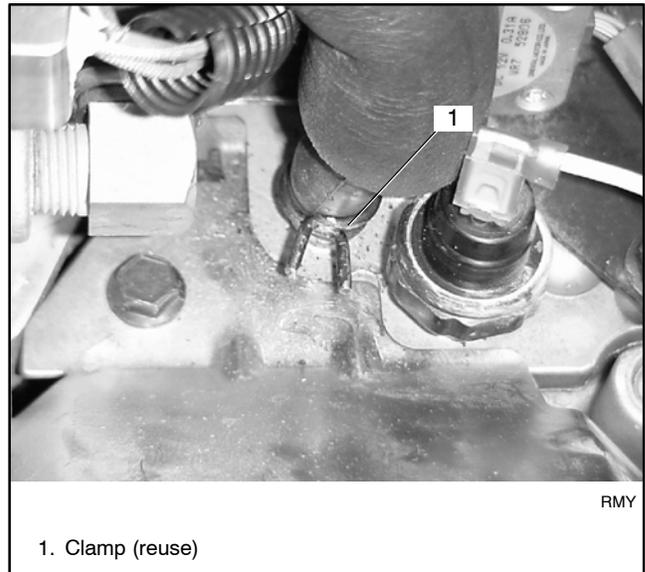


Figure 13 Breather Hose Clamp
(Model 8.5/11RMY shown)

6. Reinstall the air cleaner.

- 6.1 Plug the breather access hole in the air cleaner base plate with plug X-301-23. Insert the plug from the bottom of the base plate. See Figure 14.
- 6.2 Place the air cleaner base on the heater and align the holes.
- 6.3 Place the air cleaner bracket on the air cleaner base. Attach the air cleaner base, bracket, and heater to the carburetor using the four screws, X-97-22. See Figure 15.
- 6.4 Reinstall the air cleaner element and covers. See Figure 4.
- 6.5 Attach decal GM22387 as shown in Figure 3.

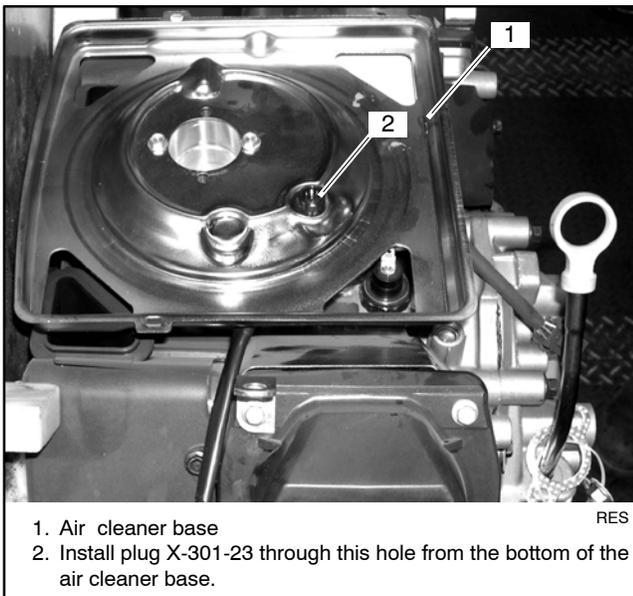


Figure 14 Air Cleaner Base with Plug

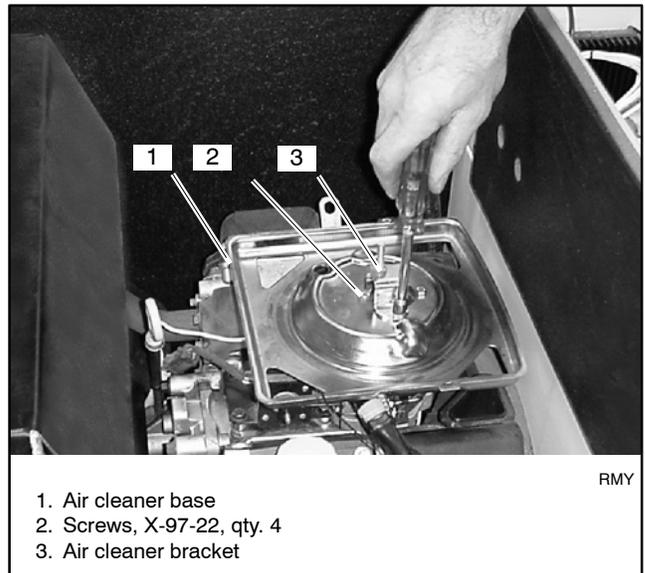


Figure 15 Air Cleaner Bracket and Screws

7. Route the heater power cord.

For 240 volt kits, go to step 7.5.

120 Volt Kits:

7.1 Route the heater's power cord as described below. Make sure that the power cord does not interfere with the engine's throttle linkage.

- Models 8.5/11RMY: see Figure 16.
 - Model 6VSG: route the heater cord to the 120 VAC receptacle in the engine compartment. See Figure 17. Use cable tie X-468-1 to attach the cord to the engine's lifting eye.
 - Models 8.5RES and 12RES: see Figure 17. Use cable tie X-468-1 to attach the cord to the engine's lifting eye.
 - For Model 14RES, see Figure 18. Replace the plastic plug with bushing X-634-16. Route the heater cord through the opening.
- Note:** Bushing X-634-16 is used only on model 14RES generator sets.
- For Model 14RESA, route the heater cord to the 120 VAC receptacle in the engine compartment. See Figure 19. Use cable tie X-468-1 to attach the cord to the engine's lifting eye.

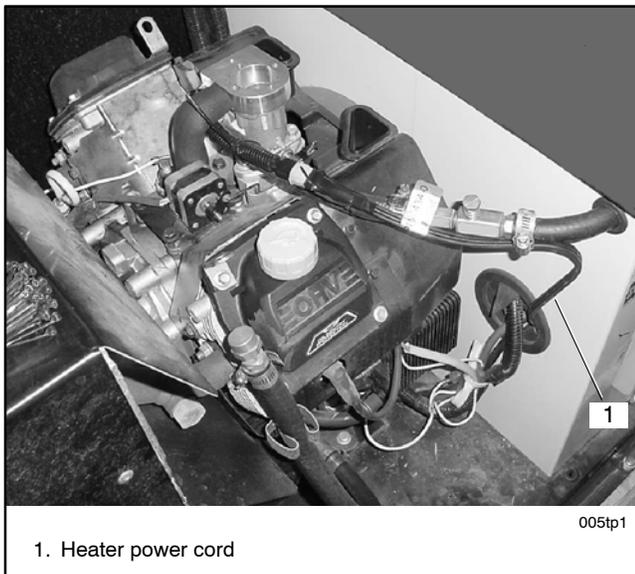


Figure 16 Routing the Power Cord, 8.5/11RMY

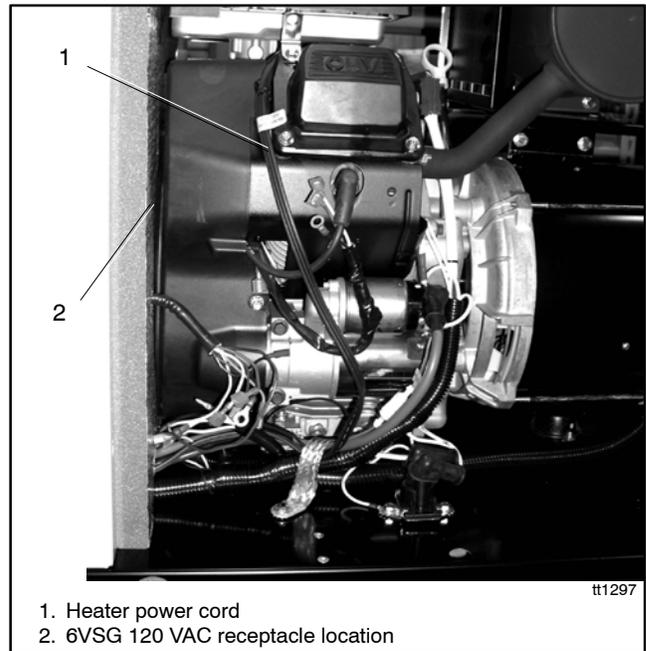


Figure 17 Heater Power Cord, 6VSG and 8.5/12RES

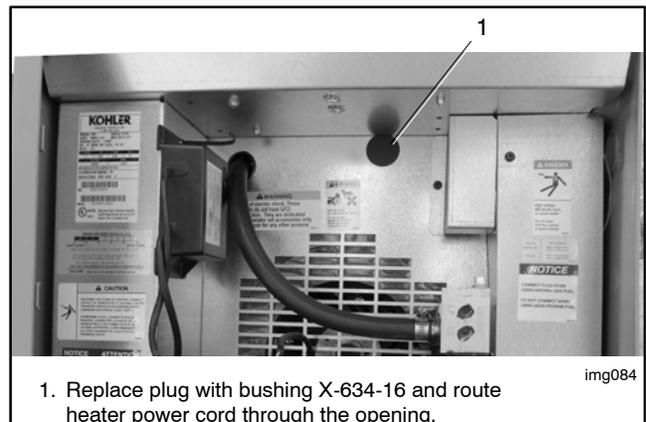


Figure 18 14RES Air Intake End

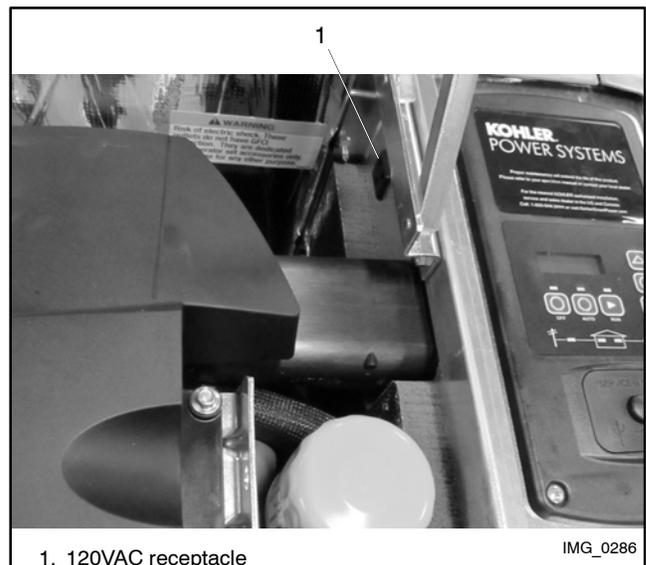


Figure 19 14RESA 120 VAC Receptacle

- 7.2 Plug the carburetor heater into a receptacle that has continuous 120 VAC power (load side of an automatic transfer switch). On Models 6VSG and 14RESA, plug the heater into the receptacle in the engine compartment. See Figure 17 and Figure 19.
- 7.3 Kit GM19462-KP4-QS includes a 3-way extension cord GM95628. If multiple AC accessories are installed on the generator set, use the 3-way cord to connect them to one AC receptacle. Gather the excess cord and secure with a cable tie. See Figure 20.
- 7.4 Go to step 8.

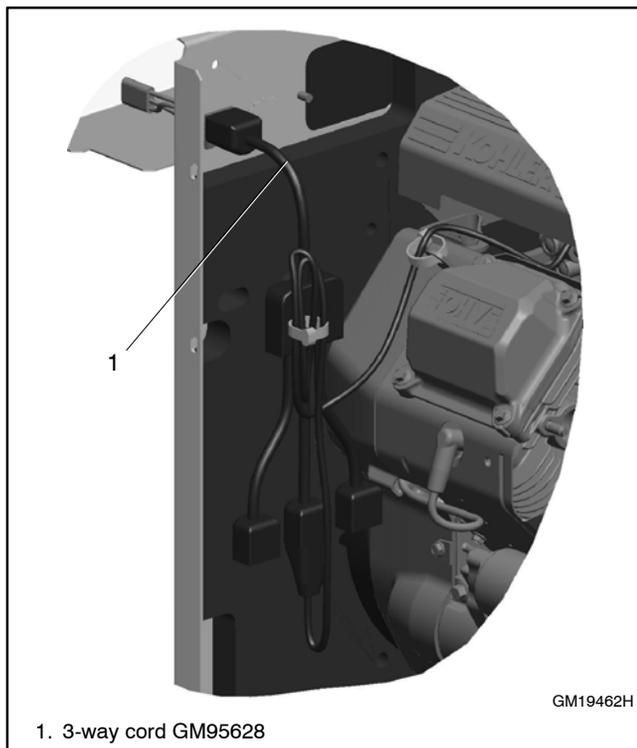


Figure 20 3-Way Cord GM95628 (included with kit GM19462-KP4-QS)

240 Volt Kits (14/20RESA/L):

- 7.5 Remove two screws securing the controller in place. Carefully lift the controller and set it aside.
- 7.6 Generator sets built after 10/9/2013 with serial numbers SGM327VFJ or later include a knockout for the power connector in the bulkhead. See Figure 21. Remove the knockout for the power cord connector.
- 7.7 Route the carburetor heater power cord to the knockout location. Make sure that the power cord does not interfere with the engine's throttle linkage.
- 7.8 Insert the Mate-N-Lock connector on the carburetor heater's power cord into the knockout opening and verify that it snaps into place. See Figure 2 for an illustration of the connector. Use cable tie X-468-1 to attach the cord to the engine's lifting eye.

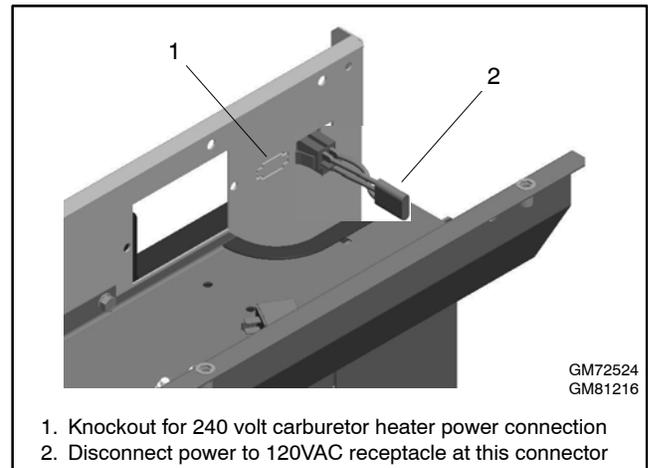


Figure 21 240 Volt Power Connection Location (controller and mounting plate removed for illustration)

- 7.9 Inside the controller junction box, locate the harness connected to the power receptacle. See Figure 21. Disconnect the harness at the 3-pin connector.
- 7.10 Connect the 3-pin power supply connector to the carburetor heater power cord connector in the bulkhead.
- 7.11 Re-install the controller and secure with two screws.

8. Restore the generator set to service.

- 8.1 Check that the generator set master switch is in the OFF position (if equipped).
- 8.2 Reconnect the generator set engine starting battery, negative (-) lead last.
- 8.3 Reconnect the AC power to the battery charger by closing the circuit breaker in the main distribution panel.
- 8.4 For automatic generator set operation, move the generator set master switch to the AUTO position or press AUTO on the generator set controller, as applicable.
- 8.5 Replace and secure the enclosure panels and roof.

Parts Lists

120 Volt Carburetor Heater Kit

Kits: GM19462-KP1-QS and GM19462-S		
Qty.	Description	Part Number
1	Heater, inlet 37W 120V	GM19463
1	Tube, breather (.375 in. OD) copper	GM19464
1	Insulator, breather line	GM19465
1	Decal	GM22387
1	Installation Instructions	TT-1297
1	Plug, button	X-301-23
2	Cable	X-468-1
1	Bushing, 1.312 x 1.50 in.	X-634-16
4	Screw, hex head	X-97-22

120 Volt Carburetor Heater Kit

Kits: GM19462-KP4-QS		
Qty.	Description	Part Number
1	Heater, inlet 37W 120V	GM19463
1	Tube, breather (.375 in. OD) copper	GM19464
1	Insulator, breather line	GM19465
1	Decal	GM22387
1	Cord, 3-way extension	GM95628
1	Installation Instructions	TT-1297
1	Plug, button	X-301-23
2	Cable tie	X-468-1
1	Bushing, 1.312 x 1.50 in.	X-634-16
4	Screw, hex head	X-97-22

240 Volt Carburetor Heater Kit

Kits: GM19462-KP3-QS		
Qty.	Description	Part Number
1	Tube, breather (.375" O.D.) copper	GM19464
1	Insulator, breather line	GM19465
1	Decal, Caution Hot Carburetor Heater	GM22387
1	Heater, plate 37W/240V	GM88229
1	Installation Instructions	TT-1297
1	Plug, button	X-301-23
2	Cable tie	X-468-1
1	Bushing, 1.312 x 1.50 in. NPT	X-634-16
4	Screw, hex head	X-97-22

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