

## INSTALLATION INSTRUCTIONS

Original Issue Date: 8/11

Model: **8-12RESV/RESVL, 17/18RES/RESL, 20RES/RESL, 20RESA/RESAL, 20RESB, 20RESC/RESCL and 20RESD**

Market: **Residential/Commercial**

Subject: **Carburetor Heater Kits GM57969-KP1-QS, GM57969-S, GM57969-KP3-QS, GM57969-KP4-QS, and GM57969-KP5-QS**

### Introduction

The carburetor heater kit is recommended for improved cold starting in locations where the ambient temperature drops below 0°C (32°F). The carburetor heater prevents condensation and carburetor icing.

See Figure 1 to identify the kit number for your generator set. See Figure 3 for an illustration of the 120 VAC and 240 VAC carburetor heaters.

**Note:** The heater requires a continuous source of AC power. See Figure 2 for the power supply voltage required.

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. Refer to the Installation Procedure for instructions to connect 120 VAC or 240 VAC power as required.

For 17/18/20 kW models using kit GM57969-KP1-QS and other 120 VAC accessories, the installer may need to provide another 120 VAC receptacle.

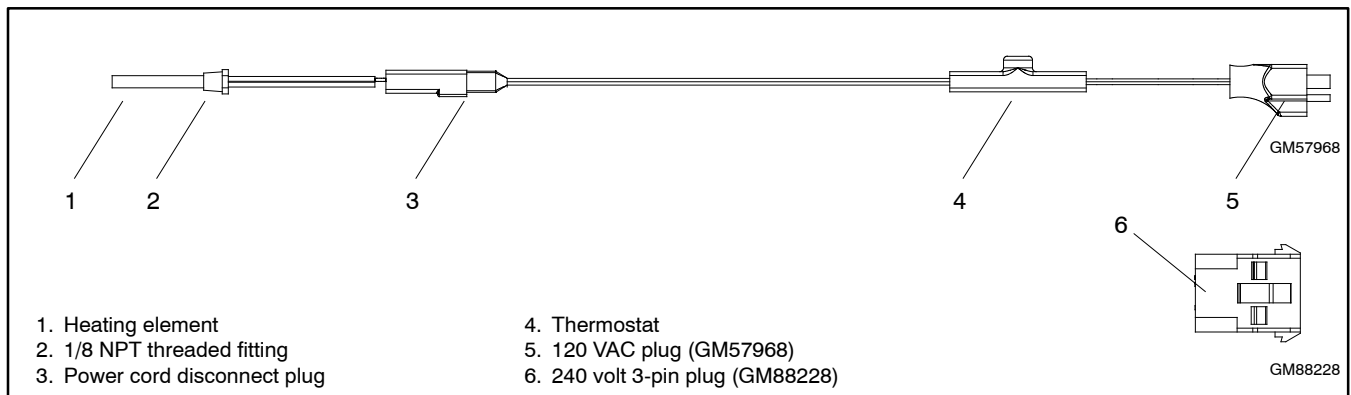
Read the entire installation procedure and compare the kit parts with the parts list at the end of this publication before beginning installation. Perform the steps in the order shown.

Kit Number	Generator Models
GM57969-S GM57969-KP1-QS GM57969-KP3-QS	17/18/20RES/RESL 20RESA/RESAL 20RESB 20RESC/RESCL 20RESD
GM57969-KP4-QS GM57969-KP5-QS	8-12RESV/RESVL 20RESA/RESAL 20RESB 20RESC/RESCL 20RESD

**Figure 1** Kit Application

Kit Number	GM57969-KP1-QS GM57969-S GM57969-KP4-QS GM57969-KP5-QS	GM57969-KP3-QS
Voltage	120 VAC	240 VAC
Thermostat ON	4 ± 4°C (40 ± 7°F)	
Thermostat OFF	16 ± 3°C (60 ± 5°F)	

**Figure 2** Heater Specifications



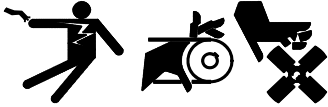
**Figure 3** Carburetor Heater

## Safety Precautions

Observe the following safety precautions while installing the kit.

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**⚠ 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.

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**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.

<b>⚠ DANGER</b>

<b>Hazardous voltage. Will cause severe injury or death.</b>
Disconnect all power sources before opening the enclosure.

<b>⚠ CAUTION</b>

<b>Hot surfaces.</b>

**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, 17/18/20 kW Models

For Models 8/10/12RESV/RESVL, go to page 6.

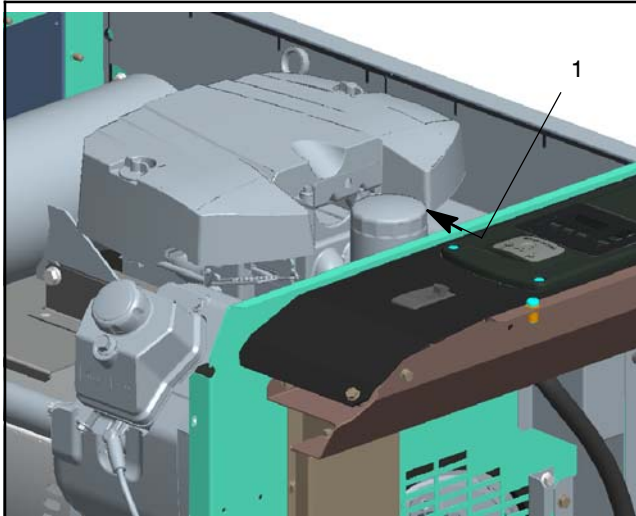
**Note:** GM57969-KP4-QS kits: Adapter GM91361 and extension cord GM91360 are not used on 17/18/20 kW generator sets. These parts can be discarded.

**Note:** GM57969-KP5-QS kits: Adapter GM91361 is not used on 17/18/20 kW generator sets. The adapter can be discarded.

1. Open the enclosure roof. Locate the generator set controller and the engine air cleaner.
2. Turn off the generator set:
  - a. 17/18RES/RESL: Move the generator set master switch to the OFF position.
  - b. 20RES/RESL: Press the OFF button on the generator set controller and remove fuse F3 from the RDC/DC controller.
  - c. 20RESA/AL/B/C/CL/D: Press the OFF button on the generator set controller.
3. Disconnect the AC power to the generator set by opening the circuit breaker in the distribution panel.
4. Disconnect the generator set engine starting battery(ies), negative (-) lead first.
5. Check the generator set nameplate for the model and specification numbers, and see the table in Figure 4. Then refer to Figure 5 or Figure 6 to identify the location for your carburetor heater. The carburetor heater fits into a threaded opening on the carburetor, below the engine air cleaner.
6. If easier access to the carburetor heater location is needed, remove the air cleaner cover.
7. On carburetor heater GM57968 or GM88228, disconnect the heating element from the power cord at the plug connector. See Figure 3.
8. Insert the heating element into the threaded opening on the engine and tighten. See Figure 5 or Figure 6 as applicable for your generator set.
9. Reconnect the power cord to the heater.

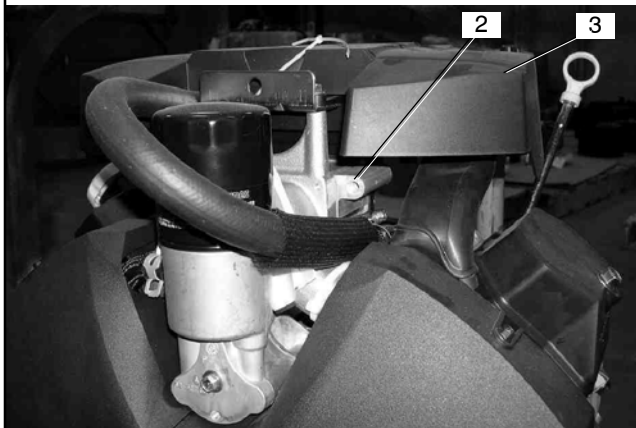
Model	Specification Number	Heater Location
17/18RES 17/18RESL 20RES 20RESL	All	Figure 5
20RESA 20RESAL	GM80978-GA1 - GA6	Figure 5
	GM80978-GA7 and up	Figure 6
20RESB 20RESC 20RESCL 20RESD	All	Figure 6

**Figure 4** Heater Location Guide, 17/18/20 kW Models



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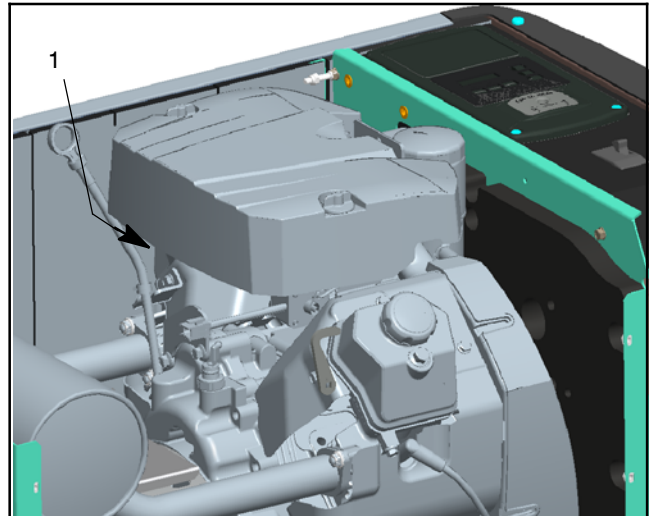
Detail view (bulkhead removed for illustration only):



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1. Carburetor heater location under air cleaner
2. Threaded boss for carburetor heater
3. Air cleaner (remove cover if necessary)

**Figure 5** Carburetor Heater Location 1 (see Figure 4 for applicable models and specification numbers)



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Detail view:



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1. Carburetor heater location under air cleaner. Insert from the back of the generator set.
2. Carburetor heater

**Figure 6** Carburetor Heater Location 2 (see Figure 4 for applicable models and specification numbers)

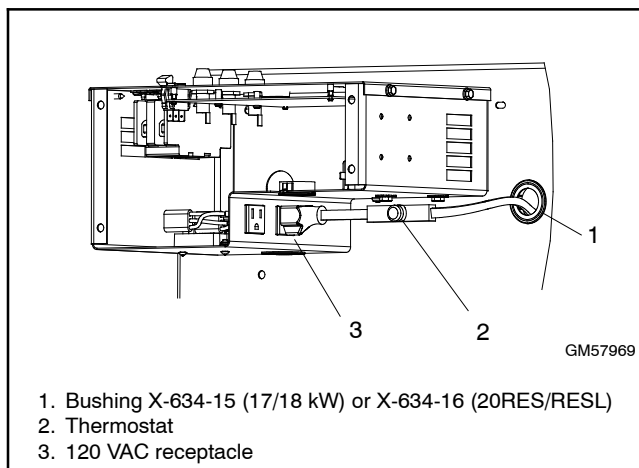
The power cord routing and connection vary for different models.

- For Models 17/18RES/RESL and 20RES/RESL, go to step 10.
- For 120 volt Models 20RESA/AL/B/C/CL/D, go to step 11.
- For 240 volt Models 14/20RESA and 20RESC (heater kit GM57969-KP3-QS), go to step 12.

After the power cord is connected, go to step 13.

**10. For Models 17/18RES/RESL and 20RES/RESL, route and connect the power cord as described below:**

- a. Remove the air intake end panel to access the receptacles below the controller. If all receptacles are used for other accessories, the installer will need to provide another 120 VAC receptacle.
- b. Remove and discard the existing plug from the opening in the bulkhead. See Figure 7.
- c. Install bushing X-634-15 (models 17/18RES/RESL) or X-634-16 (model 20RES/RESL) in the opening.
- d. Thread the heater's power cord through the opening in the bulkhead. Route the power cord to avoid contact with hot parts. See Figure 7.
- e. Plug the power cord into one of the receptacles under the controller or the receptacle provided by the installer. See Figure 7.
- f. Go to step 13.



**Figure 7** Heater Cord with Thermostat, 17/18 kW and Model 20RES/RESL

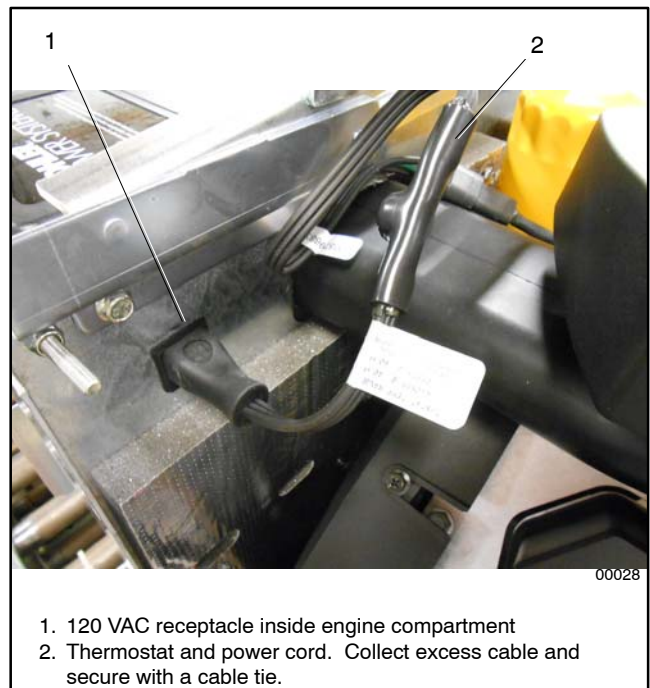
**11. For 120 Volt Model 20RESA/AL/B/C/CL/D, route and connect the power cord as described below:**

**Note:** Bushings X-634-15 and X-634-16 are not used for these models.

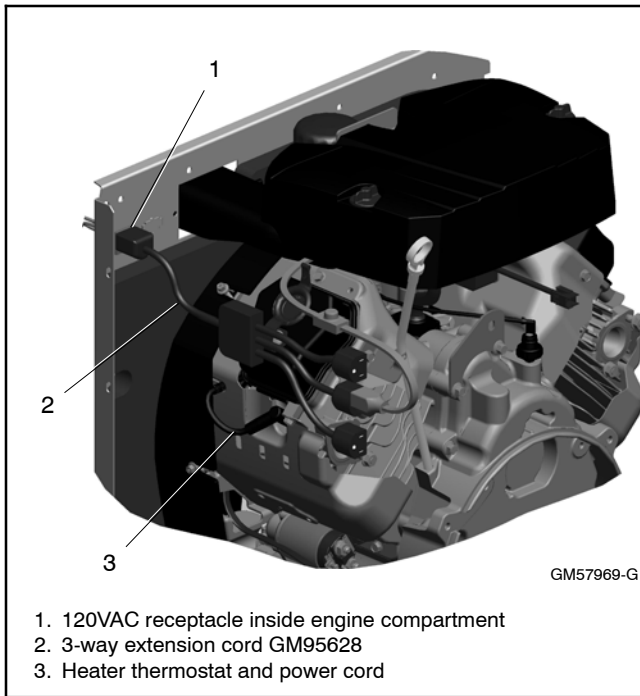
- a. Route the power cord to avoid contact with hot parts.
- b. Plug the power cord into the receptacle provided inside the engine compartment. See Figure 8.

**Note:** If multiple AC accessories are installed, use 3-way extension cord GM95628 (included with kit GM57969-KP5-QS). See Figure 9.

- c. Collect the excess cable and secure with a cable tie.
- d. Go to step 13.

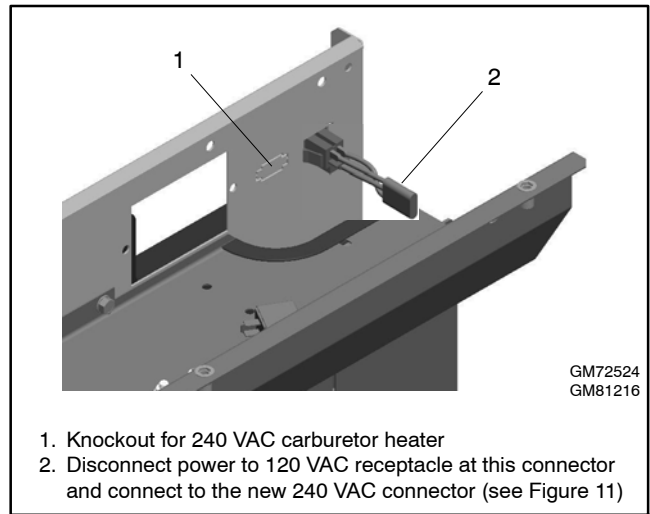


**Figure 8** 120 VAC Heater Cord with Thermostat, Model 20RESA/AL/B/C/CL

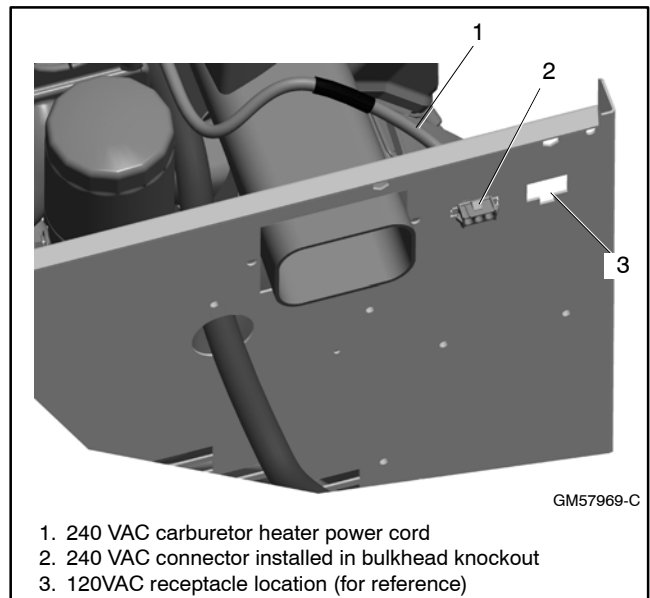


**Figure 9** 3-Way Extension Cord for Multiple 120VAC Accessories

12. **For 240 volt models 14/20RESA and 20RESC, route and connect the power cord as described below.** Generator sets built after 10/9/2013 with serial numbers SGM327VFJ or later have a knockout in the bulkhead for the power connector.
  - a. Remove two screws securing the controller and carefully lift the controller to access the connections below. Do not disconnect the controller.
  - b. Remove the knockout in the bulkhead shown in Figure 10.
  - c. Route the carburetor heater's power cord to avoid contact with hot parts and insert the power cord plug into the opening as shown in Figure 11.
  - d. Inside the controller box, locate the harness connected to the 120 VAC power receptacle. See Figure 10. Disconnect the harness at the 3-pin connector.
  - e. Connect the 3-pin power supply connector to the new 240 VAC connector in the bulkhead.
  - f. Go to step 13.

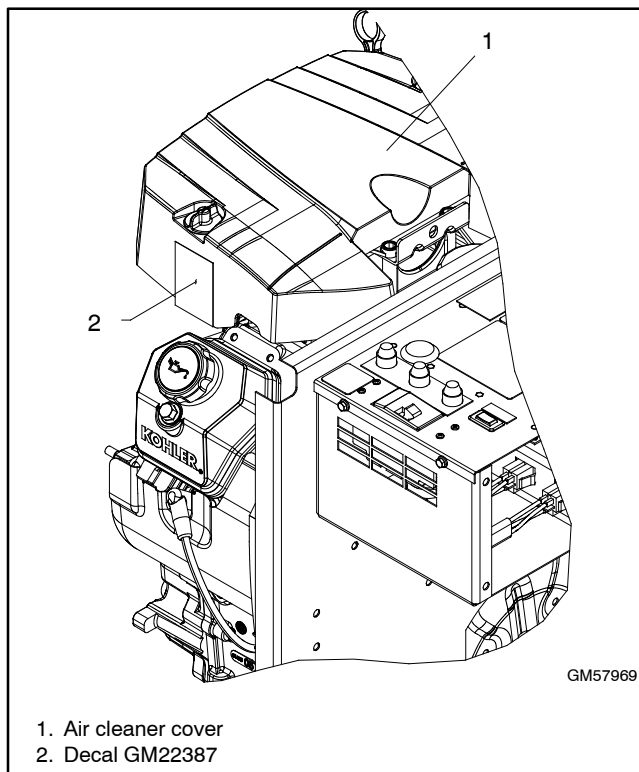


**Figure 10** Disconnect 120 VAC Receptacle (inside controller junction box)



**Figure 11** 240 Volt Power Cord Connector

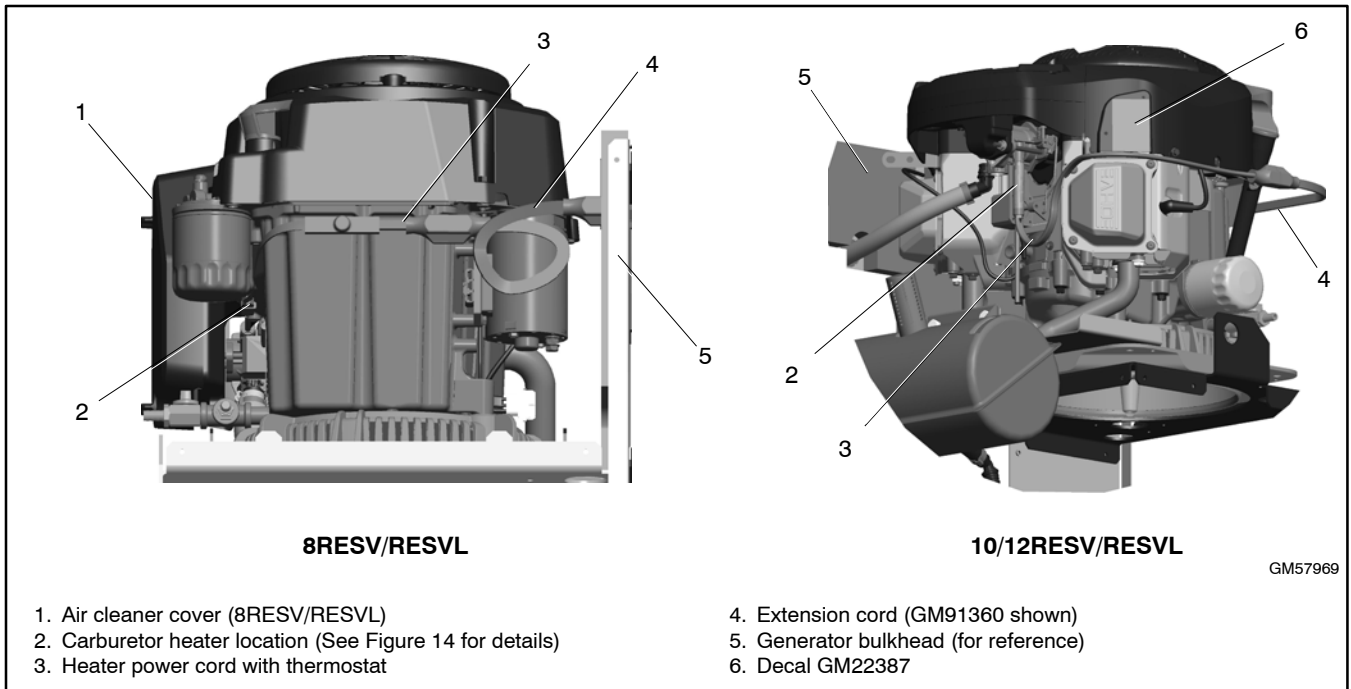
13. Replace the air cleaner cover if it was removed.
14. Affix decal GM22387 onto the air cleaner cover as shown in Figure 12.
15. Check that the generator set master switch is in the OFF position (models 17/18).
16. Reconnect the generator set engine starting battery, negative (-) lead last.
17. Reconnect the AC power to the generator set by closing the circuit breaker in the distribution panel.
18. 20RES/RESL: Reinstall controller fuse F3.
19. For standby operation, move the generator set master switch to the AUTO position, or press the AUTO button on the generator set controller.
20. Reinstall the enclosure panel(s), and close and lock the roof.



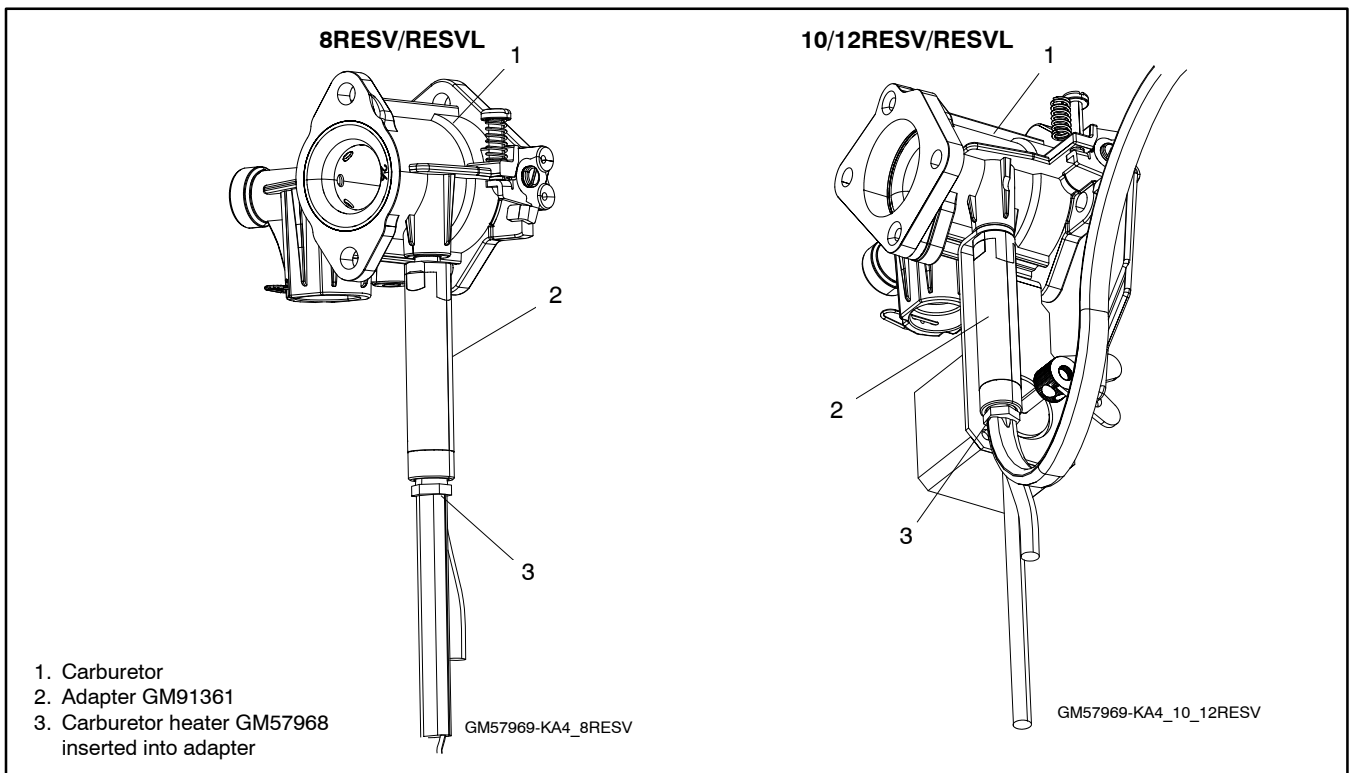
**Figure 12** Decal Location on Air Cleaner Cover

## Installation Procedure, Models 8-12RESV/RESVL

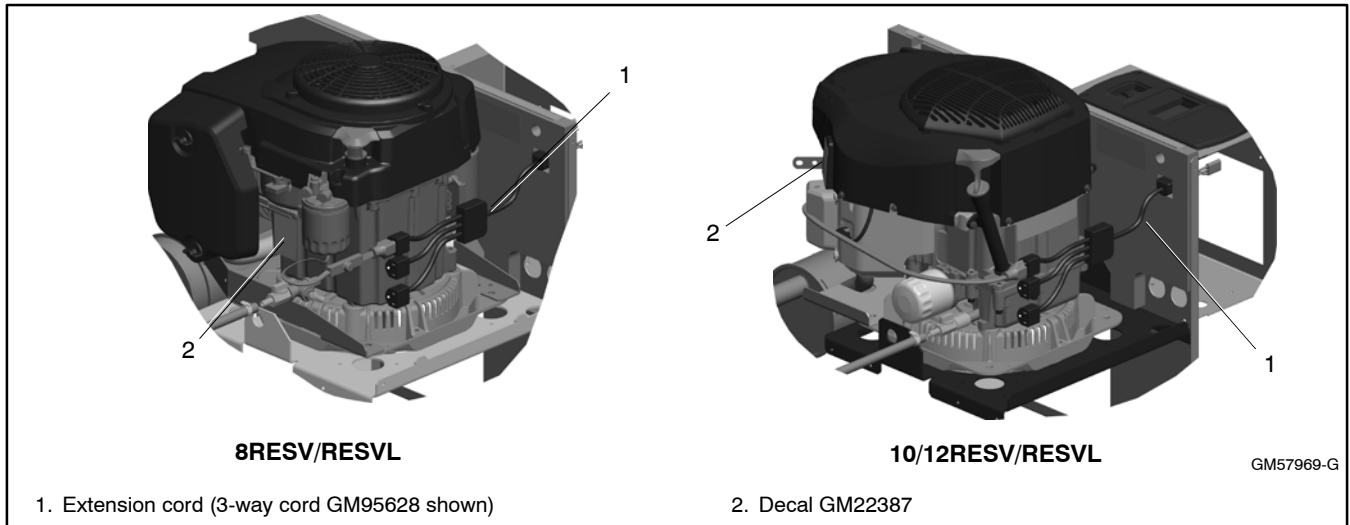
1. Open the enclosure roof.
2. Press the OFF button on the generator set controller.
3. Disconnect the AC power to the generator set by opening the circuit breaker in the distribution panel.
4. Disconnect the generator set engine starting battery(ies), negative (-) lead first.
5. See Figure 13 for the location of the carburetor heater. Remove the louvered side panel of the generator enclosure for access to the carburetor, if necessary. On the 8RESV/RESVL, remove the air cleaner cover, if necessary.
6. Remove and discard the M8 bolt from the carburetor at the location where the heater assembly will be installed. See Figure 14.
7. Thread adapter GM91361 into the M8 hole.
8. Insert carburetor heater GM57968 into the adapter and tighten.
9. Connect extension cord GM91360 (provided with kit GM57969-KP4-QS) or 3-way extension cord GM95628 (provided with kit GM57969-KP5-QS) to the heater cord.
10. Route the cord to the AC receptacle as shown in Figure 15. Use cable ties to secure the cord away from the throttle linkage and exhaust system.
11. Plug the cord into the AC receptacle on the generator bulkhead.
12. Affix decal GM22387 onto the air cleaner cover as shown in Figure 13 or Figure 15.
13. Reconnect the generator set engine starting battery, negative (-) lead last.
14. Reconnect the AC power to the generator set by closing the circuit breaker in the distribution panel.
15. For standby operation, press the AUTO button on the generator set controller.
16. Reinstall the enclosure panel(s), and close and lock the roof.



**Figure 13** Carburetor Heater Location, 8-12RESV/RESVL (kit GM57969-KP4-QS shown)



**Figure 14** Installation Details, 8-12RESV/RESVL



**Figure 15** Extension Cord Routing, 8-12RESV/RESVL (kit GM57969-KP5-QS shown)

## Parts List

### Heater, Carburetor, 120 Volt, 17/18/20 kW Residential

Kit: GM57969-KP1-QS and-S		
Qty.	Description	Part Number
1	Decal, Caution Hot Carburetor Heater	GM22387
1	Heater, Carburetor	GM57968
1	Instruction, Installation	TT-1482
1	Bushing, 1.000 x 1.375 in. NPT	X-634-15
1	Bushing, 1.312 x 1.50 in. NPT	X-634-16

### Heater, Carburetor, 40 W 120 Volt, 8-12 and 20 kW Residential

Kit: GM57969-KP4-QS		
Qty.	Description	Part Number
1	Decal, Caution Hot Carburetor Heater	GM22387
1	Heater, Carburetor	GM57968
1	Cord, Extension	GM91360
1	Adapter, Carb Heater	GM91361
1	Instruction, Installation	TT-1482

### Heater, Carburetor, 240 Volt, 20 kW Residential

Kit: GM57969-KP3-QS		
Qty.	Description	Part Number
1	Decal, Caution Hot Carburetor Heater	GM22387
1	Heater, Carburetor	GM88228
1	Instruction, Installation	TT-1482

### Heater, Carburetor, 40 W 120 Volt, 8-12 and 20 kW Residential

Kit: GM57969-KP5-QS		
Qty.	Description	Part Number
1	Decal, Caution Hot Carburetor Heater	GM22387
1	Heater, Carburetor	GM57968
1	Adapter, Carb Heater	GM91361
1	Cord, 3 Way Extension	GM95628
1	Instruction, Installation	TT-1482

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