

INSTALLATION INSTRUCTIONS

Original Issue Date: **9/90**
 Model: **400-2800 kW**
 Market: **Industrial**
 Subject: **Vibration Spring Isolator Kits**

Introduction

Kit Number	Illustration
PA-274640, PA-274640-SD	Figure 4
PA-292868, PA-292868-SD	Figure 5
PA-292869, PA-292869-SD	Figure 6
PA-347688, PA-347688-SD	Figure 7
PA-361262, PA-361262-SD	Figure 4
PA-361273, PA-361273-SD	Figure 8
PA-361282, PA-361282-SD	Figure 6
PA-361591, PA-361591-SD	Figure 9
GM10981-KP1, GM10981-KP1S	Figure 4
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GM30329-KP1, GM30329-KP1S	Figure 10
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GM31805-KP1, GM31805-KP1S	Figure 4
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GM39768-KP1	Figure 4
GM39769-KP1	Figure 4
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GM39772-KP1	Figure 7
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GM39775-KP1	Figure 6

Figure 1 Kit Numbers and Illustrations

Install the vibration spring isolators under the generator set skid to isolate generator set vibration from the mounting surface. Install the vibration spring isolators according to the following procedure. Observe the following safety precautions when installing the vibration spring isolator kit.

Safety Precautions

⚠ 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.

⚠ WARNING



Unbalanced weight.
Improper lifting can cause severe injury or death and equipment damage.

Do not use lifting eyes.
 Lift the generator set using lifting bars inserted through the lifting holes on the skid.

Special Tools and Equipment

The following items are needed when mounting the generator set on a concrete mounting base. Spring isolators have 11.2 mm (7/16 in.) dia. holes for mounting to base.

- Hammer drill
- Hammer drill bit sized for the concrete anchors
- Concrete anchors and hardware for mounting spring isolators to concrete base.

If the mounting base is not concrete, the installation technician must determine the necessary tools and equipment.

Installation Procedure

1. Remove the generator set from service.

- 1.1 Place the generator set master switch in the OFF/RESET position.
- 1.2 Disconnect the power to the battery charger, if equipped.
- 1.3 Disconnect the power to the block heater, if equipped.
- 1.4 Disconnect the generator set engine starting battery(ies), negative (-) lead first.

2. Prepare the generator set and kit components.

- 2.1 Loosen the spring isolator mount side screws to allow movement of the side plates and rubber bumpers. If necessary, remove the side plates for full vertical motion.
- 2.2 Raise the generator set enough to align the mounting holes of the spring isolator mount with the corresponding holes in the generator set skid. Use Figure 1 to determine the respective mounting location illustration based on the kit number.
- 2.3 Remove the leveling bolt from each spring isolator.

3. Install the kit components to the generator set skid.

- 3.1 Install the beveled washer on the required leveling bolts. See Figure 2 for the beveled washer installation locations.

- 3.2 Oil the threads of each leveling bolt to ease the adjustment procedure.
- 3.3 Install each isolator by inserting the leveling bolt through the hole in the generator set skid and threading the bolt into the top of the isolator casting. Turn each leveling bolt clockwise twice (720°) to secure the leveling bolt to the spring isolator mount.
- 3.4 Lower the generator set onto the spring isolators keeping the isolators parallel with the generator set skid.

Kit No.	Beveled Washer Location
PA-274640, PA-274640-SD	All four spring isolators
PA-292868, PA-292868-SD	All six spring isolators
PA-292869, PA-292869-SD	All eight spring isolators
PA-347688, PA-347688-SD	Front (radiator end) four spring isolators
PA-361262, PA-361262-SD	Not used
PA-361273, PA-361273-SD	Front (radiator end) two spring isolators
PA-361282, PA-361282-SD	Front (radiator end) two spring isolators
PA-361591, PA-361591-SD	Front (radiator end) two spring isolators
GM10981-KP1, GM10981-KP1S	Not used
GM11407-KP1	All eight spring isolators
GM30329-KP1, GM30329-KP1S	Front (radiator end) four spring isolators
GM30329-KP2, GM30329-KP2S	Front (radiator end) four spring isolators
GM31805-KP1, GM31805-KP1S	All four spring isolators
GM39767-KP1	Front (radiator end) four spring isolators
GM39767-KP2	Front (radiator end) four spring isolators
GM39768-KP1	Front (radiator end) four spring isolators
GM39769-KP1	Front (radiator end) four spring isolators
GM39770-KP1	All six spring isolators
GM39771-KP1	All eight spring isolators
GM39772-KP1	Front (radiator end) four spring isolators
GM39773-KP1	Not used
GM39774-KP1	Front (radiator end) two spring isolators
GM39775-KP1	Front (radiator end) two spring isolators

Figure 2 Beveled Washer Installation Locations

4. Adjust the spring isolators and attaching the vibration isolators to the mounting base.

- 4.1 Turn the leveling bolts clockwise until the generator set raises and floats on the vibration spring isolators. Raise the generator set by adjusting isolators in 6 mm (1/4 in.) increments.
- 4.2 Adjust the spring isolators until the top castings rise approximately 6-10 mm (1/4-3/8 in.) above the bottom casting.
- 4.3 Adjust all isolators to the same height. Adjust any isolator that is shorter than the others in the set by backing out the leveling bolt until it is the same height as the other isolators.
- 4.4 Level the generator set. Turn the leveling bolt clockwise on the lowest isolator(s) until the generator set is level. If an isolator requires more than 13 mm (1/2 in.) adjustment, remove the isolator and insert spacers (washers) between the isolator and the generator set skid. The generator set floats on the vibration spring isolator after completing the leveling process.
- 4.5 Install and/or finger tighten the side screws and plates. Adjust each plate equally until restricting the horizontal movement of the generator set to the desired degree. Do not overtighten the side plates. Overtightening the side plates decreases the vibration isolation.
- 4.6 Attach the vibration spring isolators to the mounting base using the 11.2 mm (7/16 in.) holes in the isolator's bottom casting. Mounting hardware is not supplied in the kit. See Figure 3.
- 4.7 **Generator sets with 2-bearing alternators only.** Perform the generator installation and alignment procedure as outlined in SB-560.

5. Restore the generator set to service.

- 5.1 Check that the generator set master switch is in the OFF position.
- 5.2 Reconnect the generator set engine starting battery, negative (-) lead last.
- 5.3 Reconnect power to the battery charger, if equipped.
- 5.4 Reconnect the power to the block heater, if equipped.

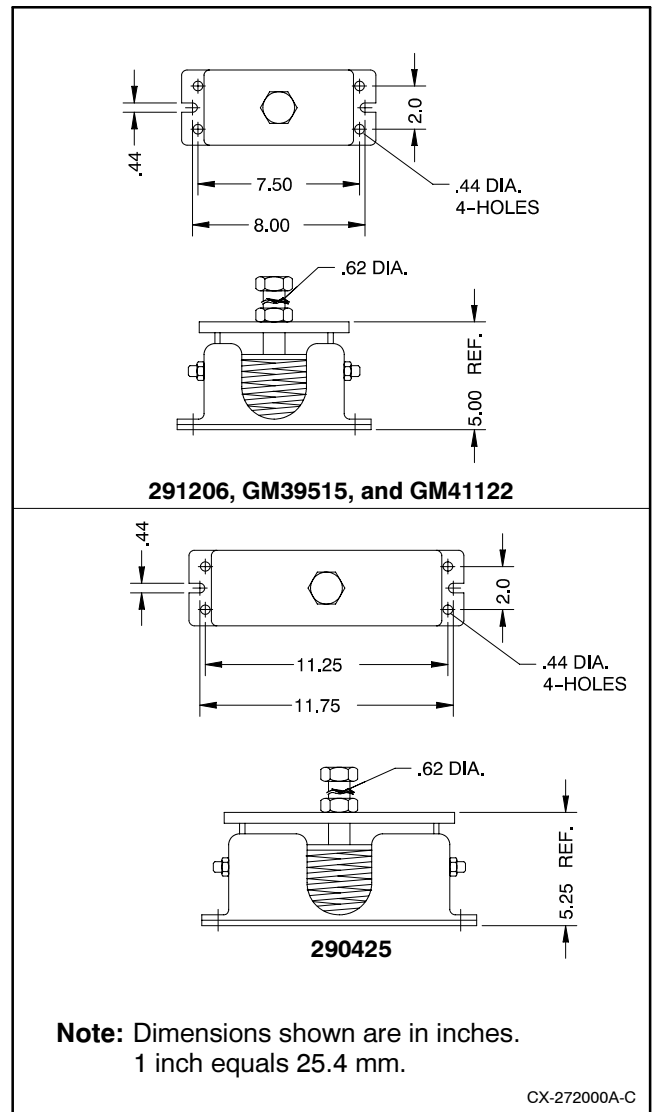
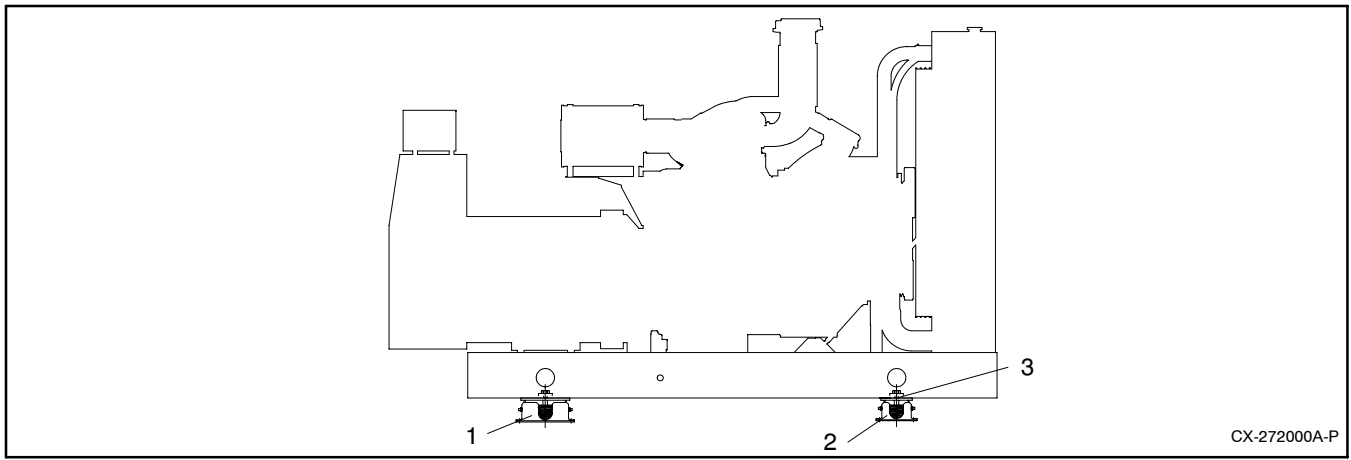
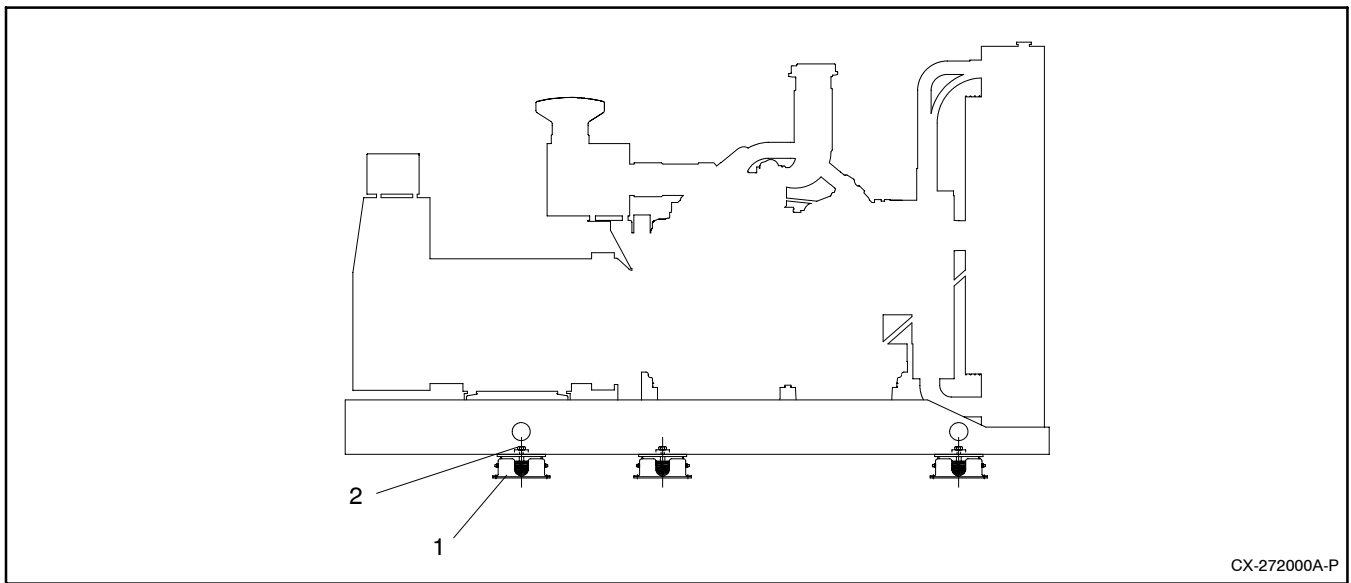


Figure 3 Vibration Spring Isolators



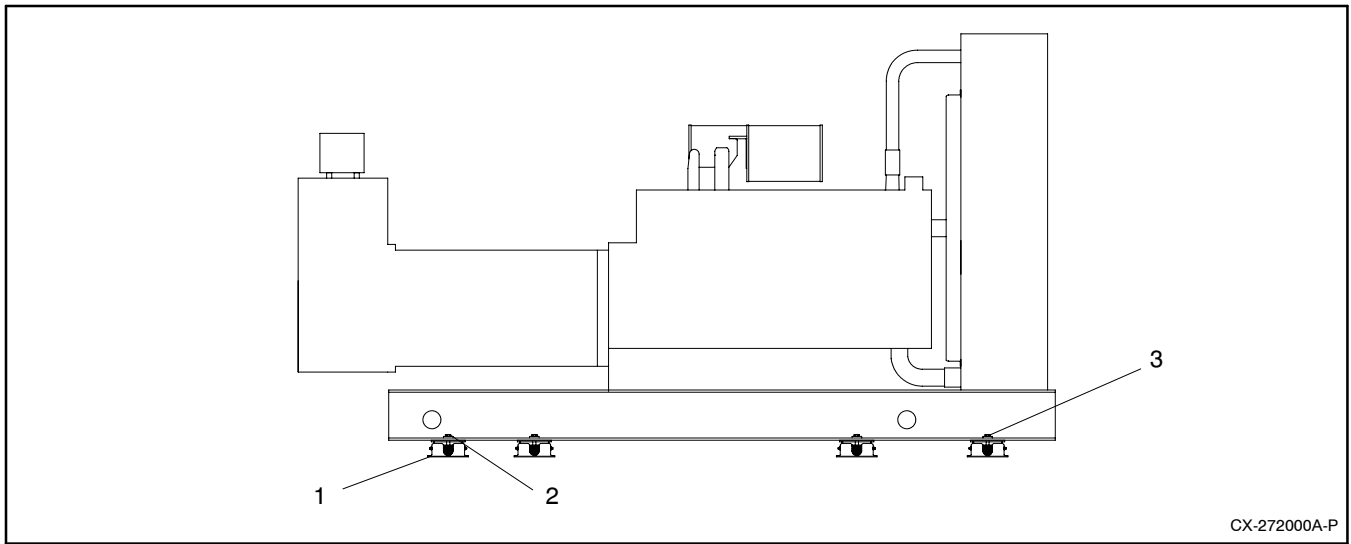
Item	Description	PA-247640, PA-247640-SD	PA-361262, PA-361262-SD	GM10981-KP1, -KP1S	GM31805-KP1, -KP1S
1	Vibration Damper	290425 (qty. 2)	290425 (qty. 2)	GM41122 (qty. 2)	290425 (qty. 2)
2	Vibration Damper	GM41122 (qty. 2)	290945 (qty. 2)	GM41122 (qty. 2)	290425 (qty. 2)
3	Beveled Washer	X-6011-3 (qty. 4)	—	—	X-6011-3 (qty. 4)
Item	Description	GM39768-KP1	GM39769-KP1	GM39773-KP1	
1	Vibration Damper	GM39515 (qty. 2)	GM39515 (qty. 2)	GM39515 (qty. 2)	
2	Vibration Damper	GM39515 (qty. 2)	GM41122 (qty. 2)	GM39515 (qty. 2)	
3	Beveled Washer	X-6011-3 (qty. 4)	X-6011-3 (qty. 4)	—	

Figure 4 Vibration Spring Isolator Installation



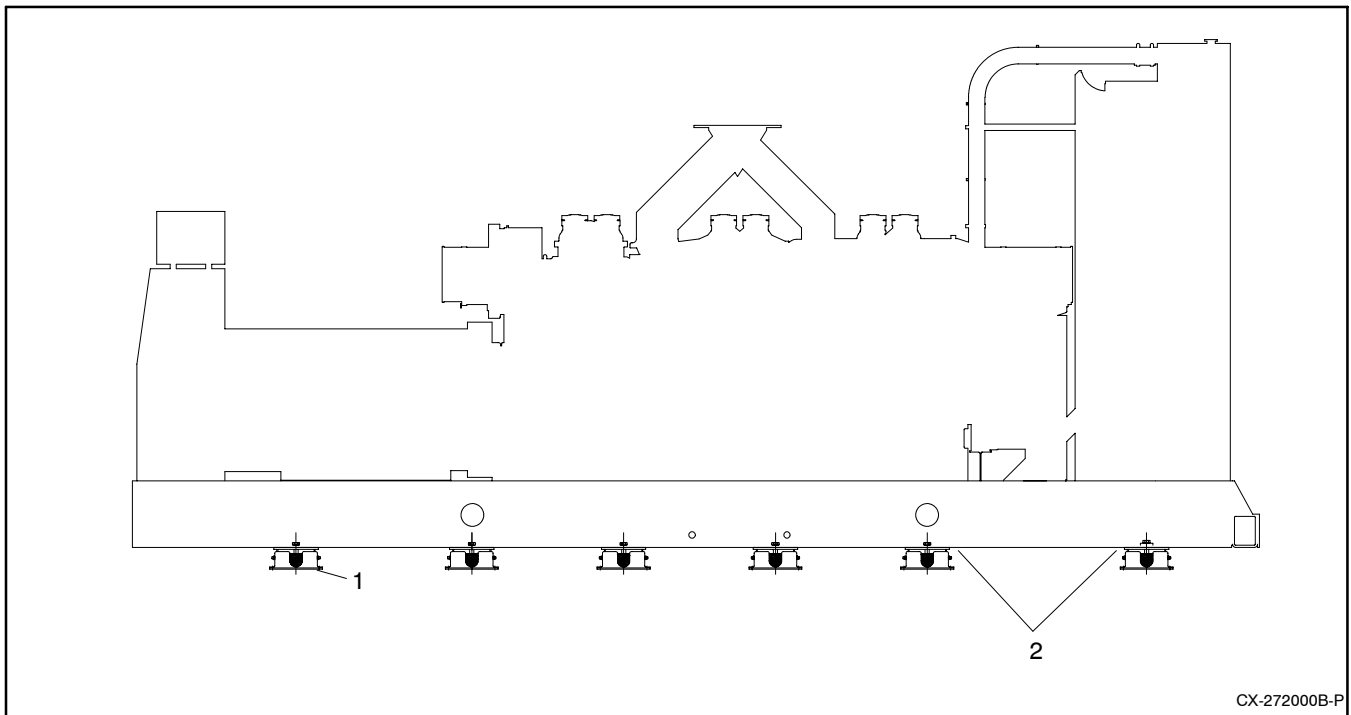
Item	Description	PA-292868, PA-292868-SD	GM39770-KP1
1	Vibration Damper	290425 (qty. 6)	GM39515 (qty. 6)
2	Beveled Washer	X-6011-3 (qty. 6)	X-6011-3 (qty. 6)

Figure 5 Vibration Spring Isolator Installation



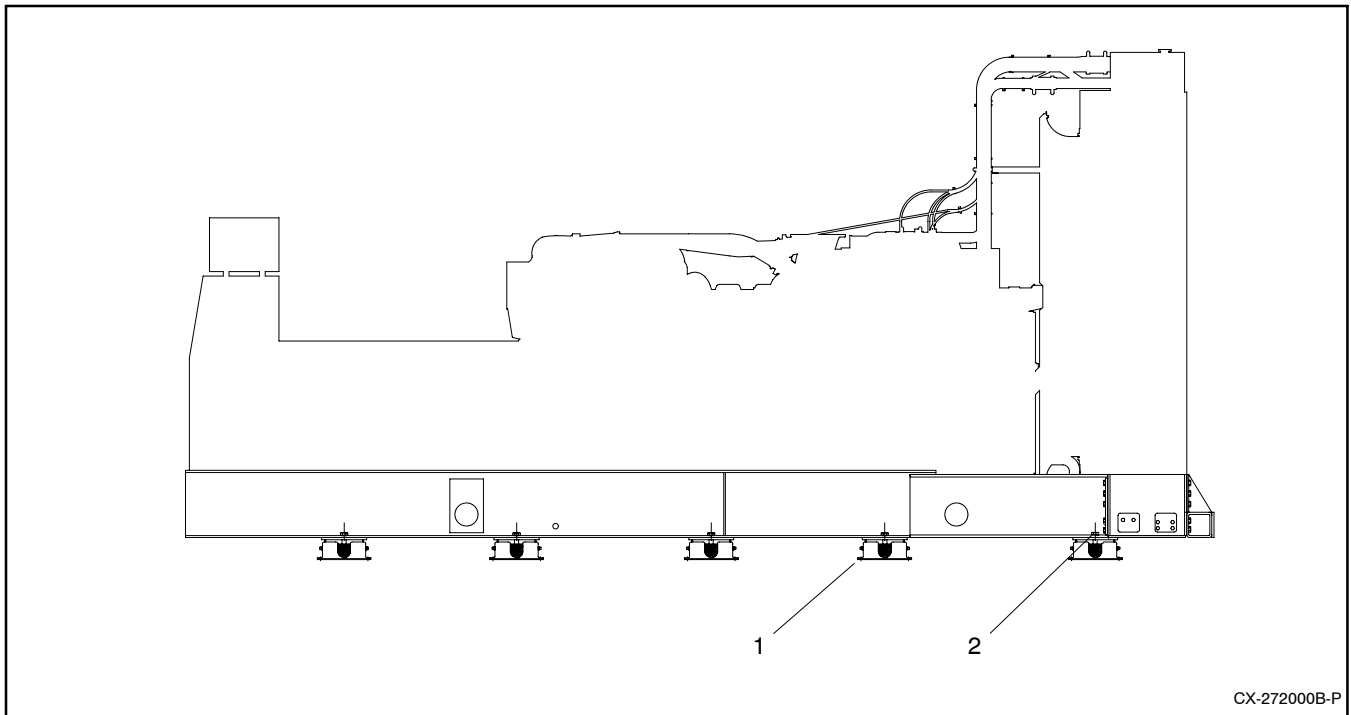
Item	Description	PA-292869, PA-292869-SD	PA-361282, PA-361282-SD	GM11407-KP1	GM39771-KP1	GM39775-KP1
1	Vibration Damper	290425 (qty. 8)	290425 (qty. 8)	GM41122 (qty. 8)	GM39515 (qty. 8)	GM39515 (qty. 8)
2	Beveled Washer	X-6011-3 (qty. 8)	—	X-6011-3 (qty. 8)	X-6011-3 (qty. 8)	—
3	Beveled Washer	—	X-6011-3 (qty. 2) (front 2 mounts only)	—	—	X-6011-3 (qty. 2) (front 2 mounts only)

Figure 6 Vibration Spring Isolator Installation



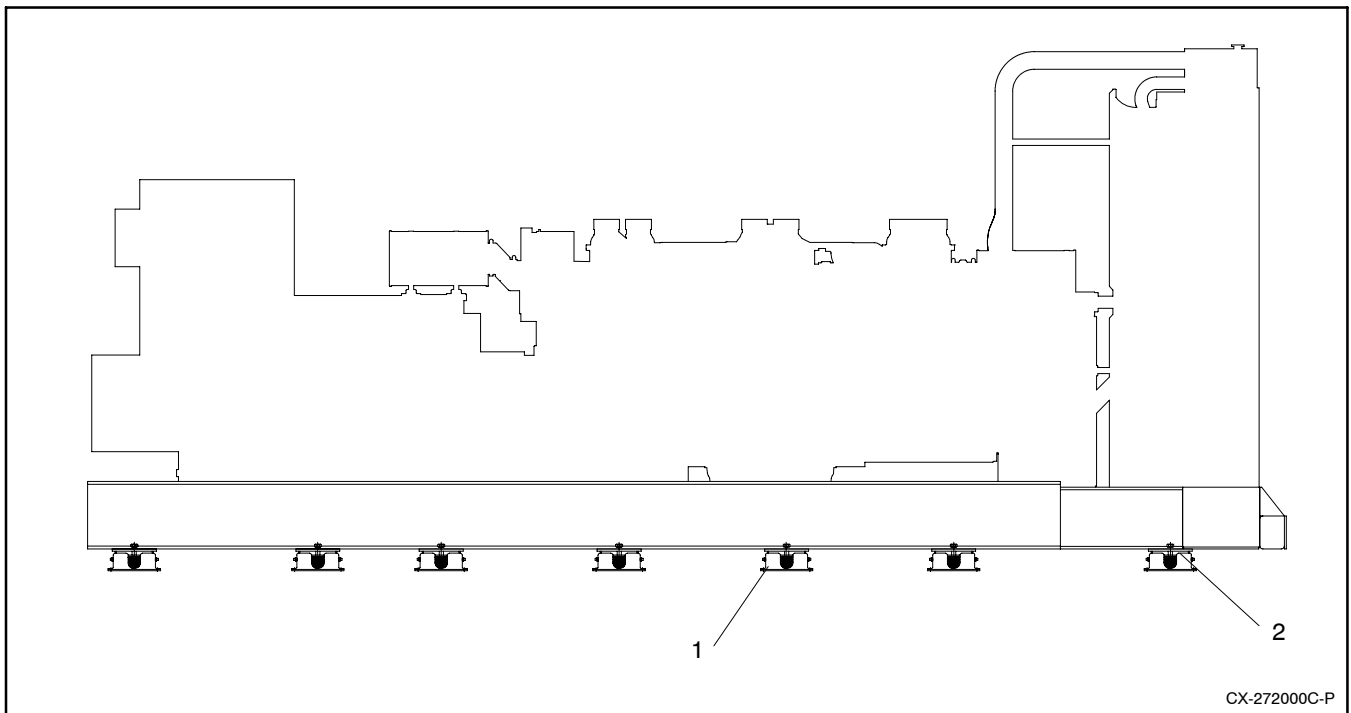
Item	Description	PA-347688, PA-347688-SD	GM39772-KP1
1	Vibration Damper	290425 (qty. 12)	GM39515 (qty. 12)
2	Beveled Washer	X-6011-3 (qty. 4) (front 4 mounts only)	X-6011-3 (qty. 4) (front 4 mounts only)

Figure 7 Vibration Spring Isolator Installation



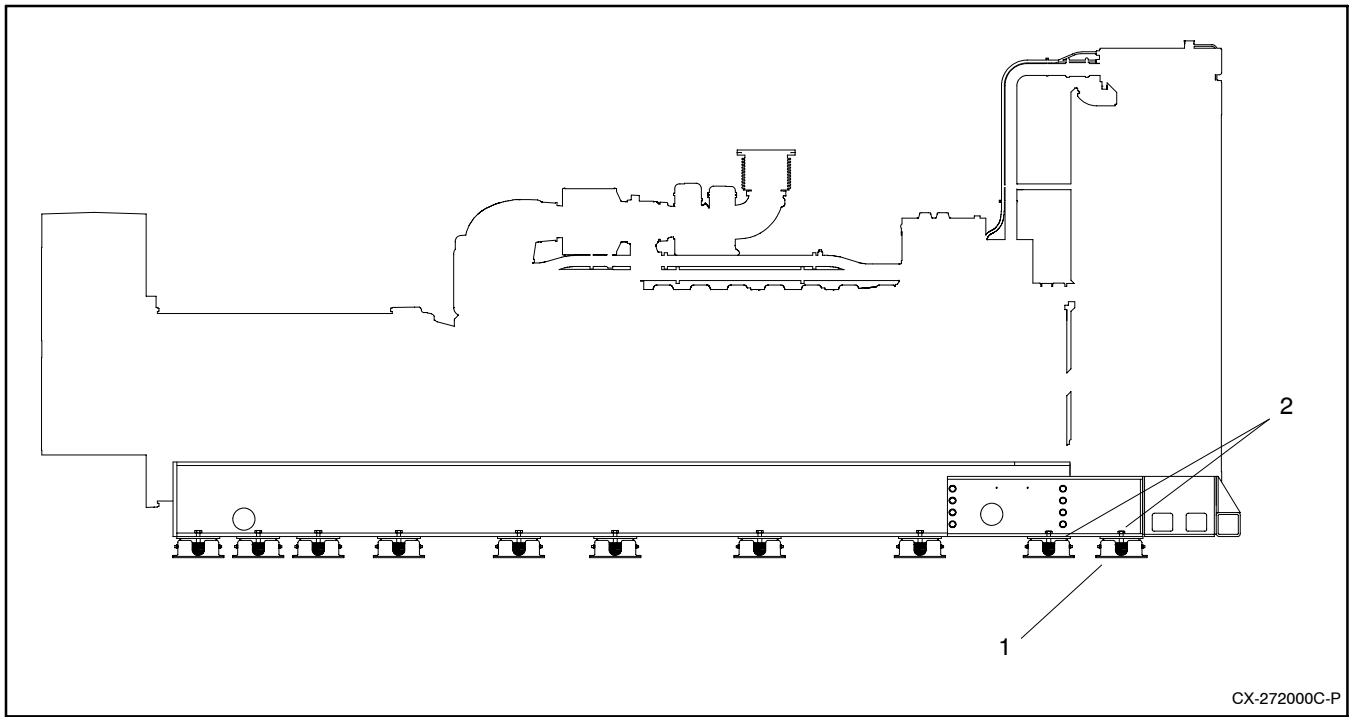
Item	Description	PA-361273, PA-361273-SD	GM39774-KP1
1	Vibration Damper	290425 (qty. 10)	GM39515 (qty. 10)
2	Beveled Washer	X-6011-3 (qty. 2) (front 2 mounts only)	X-6011-3 (qty. 2) (front 2 mounts only)

Figure 8 Vibration Spring Isolator Installation



Item	Description	PA-361591, PA-361591-SD
1	Vibration Damper	290425 (qty. 14)
2	Beveled Washer	X-6011-3 (qty. 2) (front 2 mounts only)

Figure 9 Vibration Spring Isolator Installation



Item	Description	GM30329-KP1, -KP1S	GM30329-KP2, -KP2S	GM39767-KP1	GM39767-KP2
1	Vibration Damper	290425 (qty. 20)	290425 (qty. 22)	GM39515 (qty. 20)	GM39515 (qty. 22)
2	Beveled Washer	X-6011-3 (qty. 4) (front 4 mounts only)	X-6011-3 (qty. 4) (front 4 mounts only)	X-6011-3 (qty. 4) (front 4 mounts only)	X-6011-3 (qty. 4) (front 4 mounts only)

Figure 10 Vibration Spring Isolator Installation

Parts List

Description	PA-247640, PA-247640-SD	PA-361262, PA-361262-SD	GM10981-KP1, -KP1S	GM31805-KP1, -KP1S
Vibration Damper	290425 (qty. 2)	290425 (qty. 2)	GM41122 (qty. 2)	290425 (qty. 2)
Vibration Damper	GM41122 (qty. 2)	290945 (qty. 2)	GM41122 (qty. 2)	290425 (qty. 2)
Beveled Washer	X-6011-3 (qty. 4)	—	—	X-6011-3 (qty. 4)

Description	PA-292868, PA-292868-SD	PA-292869, PA-292869-SD	PA-361282, PA-361282-SD	GM11407-KP1
Vibration Damper	290425 (qty. 6)	290425 (qty. 8)	290425 (qty. 8)	GM41122 (qty. 8)
Beveled Washer	X-6011-3 (qty. 6)	X-6011-3 (qty. 8)	X-6011-3 (qty. 2)	X-6011-3 (qty. 8)

Description	PA-347688, PA-347688-SD	PA-361273, PA-361273-SD	PA-361591 PA-361591-SD	GM30329-KP1, -KP1S
Vibration Damper	290425 (qty. 12)	290425 (qty. 10)	290425 (qty. 14)	290425 (qty. 20)
Beveled Washer	X-6011-3 (qty. 4)	X-6011-3 (qty. 2)	X-6011-3 (qty. 2)	X-6011-3 (qty. 4)

Description	GM30329-KP2, -KP2S	GM39767-KP1	GM39767-KP2	GM39768-KP1
Vibration Damper	290425 (qty. 22)	GM39515 (qty. 20)	GM39515 (qty. 22)	GM39515 (qty. 4)
Beveled Washer	X-6011-3 (qty. 4)	X-6011-3 (qty. 4)	X-6011-3 (qty. 4)	X-6011-3 (qty. 4)

Description	GM39769-KP1	GM39770-KP1	GM39771-KP1	GM39772-KP1
Vibration Damper	GM39515 (qty. 2)	GM39515 (qty. 6)	GM39515 (qty. 8)	GM39515 (qty. 12)
Vibration Damper	GM41122 (qty. 2)	—	—	—
Beveled Washer	X-6011-3 (qty. 4)	X-6011-3 (qty. 6)	X-6011-3 (qty. 8)	X-6011-3 (qty. 4)

Description	GM39773-KP1	GM39774-KP1	GM39775-KP1
Vibration Damper	GM39515 (qty. 4)	GM39515 (qty. 10)	GM39515 (qty. 8)
Beveled Washer	—	X-6011-3 (qty. 2)	X-6011-3 (qty. 2)