
INSTALLATION INSTRUCTIONS

Original Issue Date: **10/09**

Model: **230-2800 kW**

Market: **Industrial**

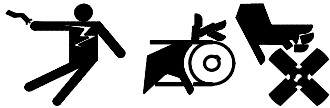
Subject: **Battery Rack and Cable Kits (Required for IBC Seismic Certification)
GM69535-KP2, GM69535-KP3, GM69537-KP1, and GM69539-KP1**

Introduction

The battery rack and cables kit provides a safe and convenient means of securing generator set batteries to a location near the generator set skid. These kits are required for IBC Seismic Certification. Battery cables supplied in the kit connect the batteries to the generator set. Observe the following safety precautions while installing the 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



Sulfuric acid in batteries.
Can cause severe injury or death.

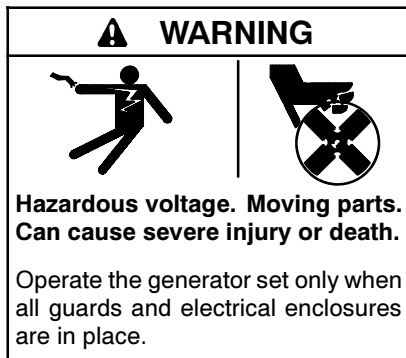
Wear protective goggles and clothing. Battery acid may cause blindness and burn skin.

⚠ WARNING
<p>Explosion. Can cause severe injury or death. Relays in the battery charger cause arcs or sparks.</p> <p>Locate the battery in a well-ventilated area. Isolate the battery charger from explosive fumes.</p>



Battery electrolyte is a diluted sulfuric acid. Battery acid can cause severe injury or death. Battery acid can cause blindness and burn skin. Always wear splashproof safety goggles, rubber gloves, and boots when servicing the battery. Do not open a sealed battery or mutilate the battery case. If battery acid splashes in the eyes or on the skin, immediately flush the affected area for 15 minutes with large quantities of clean water. Seek immediate medical aid in the case of eye contact. Never add acid to a battery after placing the battery in service, as this may result in hazardous spattering of battery acid.

Battery gases. Explosion can cause severe injury or death. Battery gases can cause an explosion. Do not smoke or permit flames or sparks to occur near a battery at any time, particularly when it is charging. Do not dispose of a battery in a fire. To prevent burns and sparks that could cause an explosion, avoid touching the battery terminals with tools or other metal objects. Remove all jewelry before servicing the equipment. Discharge static electricity from your body before touching batteries by first touching a grounded metal surface away from the battery. To avoid sparks, do not disturb the battery charger connections while the battery is charging. Always turn the battery charger off before disconnecting the battery connections. Ventilate the compartments containing batteries to prevent accumulation of explosive gases.



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 all jewelry before servicing the equipment.

Requirements for Installation

Mounting slab for battery rack must be made of 4000 psi concrete and a minimum of 102 mm (4 in.) thick. All mounting holes in slab must be a minimum of 111 mm (4 3/8 in.) from slab edge. Refer to the generator set ADV for additional mounting requirements.

Select 3/8 in. dia. Hilti TZ concrete anchor bolts with a 51 mm (2 in.) minimum anchor embedment length. Install anchors in all holes provided.

Installation

Refer to the respective drawing for installation. See Figure 1, Figure 2, or Figure 3.

- 1.1 Place generator set master switch in OFF position.
- 1.2 Disconnect power to battery charger, if equipped.
- 1.3 Disconnect generator set engine starting batteries, negative (-) lead first if previously connected.
- 1.4 Select battery rack location near generator set. Battery cable length limits location options.
- 1.5 Attach battery rack GM69536, GM69538, or GM69540 to concrete pad. Concrete slab and

mounting hardware must conform to Requirements for Installation.

- 1.6 Place batteries (not supplied) in battery rack. Use respective drawing to determine battery location based on polarity.
- 1.7 Install U-channel (X-6047-36, X-6047-7, or X-6047-11) on battery clamp (GM22355, 354058, or 274570). Place battery clamp on batteries with U-channel resting on top of batteries.
- 1.8 Secure battery clamp with three angle bolts (324590 or 286316), plain washers (X-25-85), and nuts (X-101-14). Do not over-tighten the nuts.
- 1.9 Repeat steps 1.7 and 1.8 for the second set of hardware.
- 1.10 Install black battery cable(s) (X-545-71) as shown in the respective drawing.
- 1.11 Check that generator set master switch is in OFF position.
- 1.12 Connect red battery cable (X-545-17, X-545-107 or X-545-79) to positive (+) terminal of battery.
- 1.13 Install the starter terminal boot (GM20743) over the positive (+) cable ring terminal by splitting the tube portion of the boot with a cutting blade. Secure the starter terminal boot to the battery cable using a cable tie (X-468-2) and trim excess end. Isolate the ring terminal to prevent contact with metal surfaces including battery posts.
- 1.14 Connect red battery cable (X-545-17, X-545-107 or X-545-79) to positive (+) terminal of generator set starter solenoid.
- 1.15 Install battery lug boots (GM20744, GM20748, and/or GM20988) to each battery post and secure with a cable tie (X-468-2).
- 1.16 Connect black battery cable (X-545-18 or X-545-80) to negative (-) connection of engine starter motor.
- 1.17 With surface clean and dry, apply warning decal (273780) on the generator set skid rail in a highly visible position (GM69535-KP2, GM69535-KP3, and GM69537-KP1 kits).

With GM69539-KP1 kit, place warning decal (273780) in location shown in Figure 3.
- 1.18 Connect black battery cable (X-545-18, X-545-106, or X-545-80) to negative (-) connection of battery(ies).
- 1.19 Reconnect power to battery charger, if equipped.

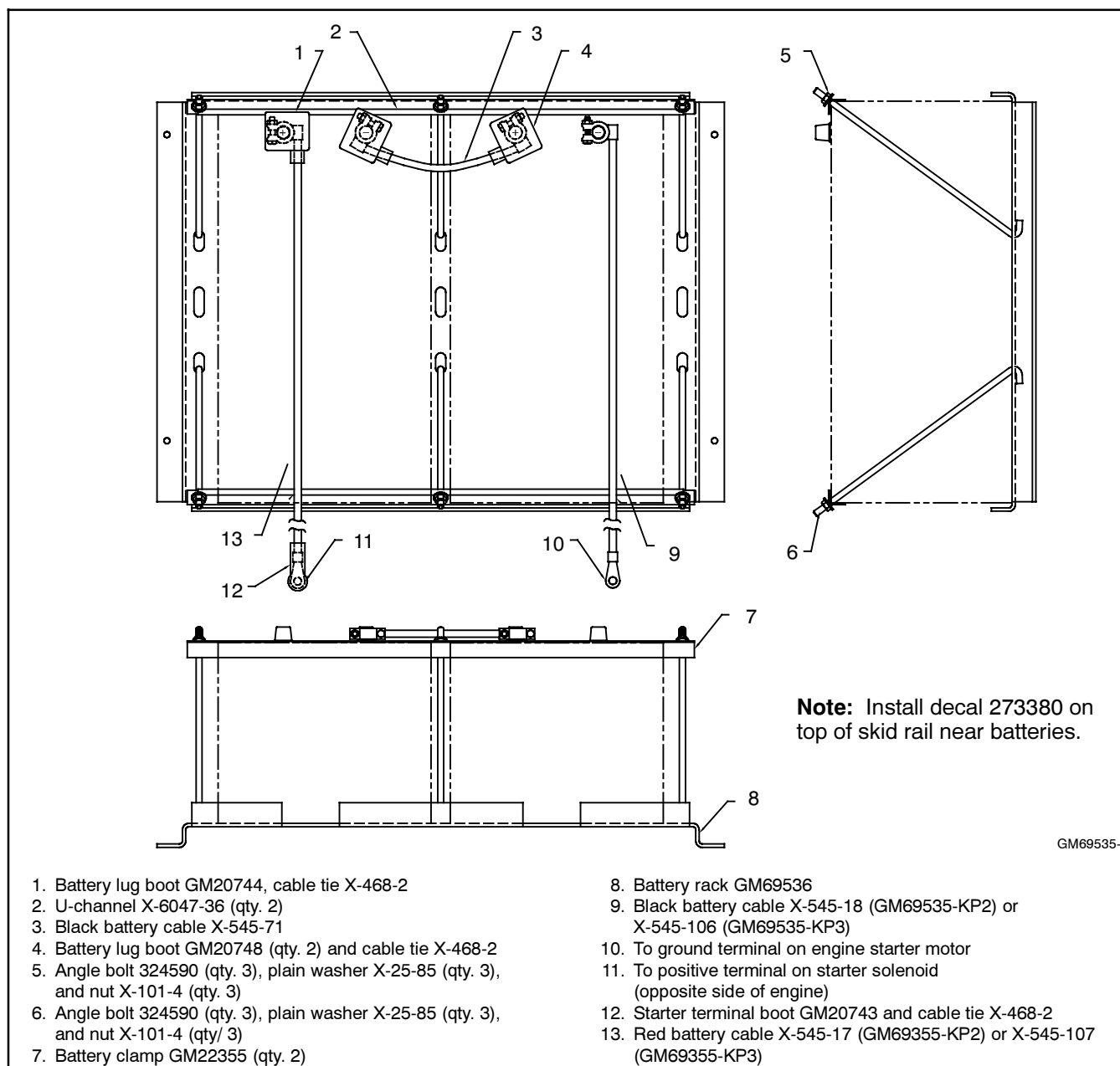


Figure 1 Battery Rack and Cables Installation Kits GM69535-KP2 and GM69535-KP3

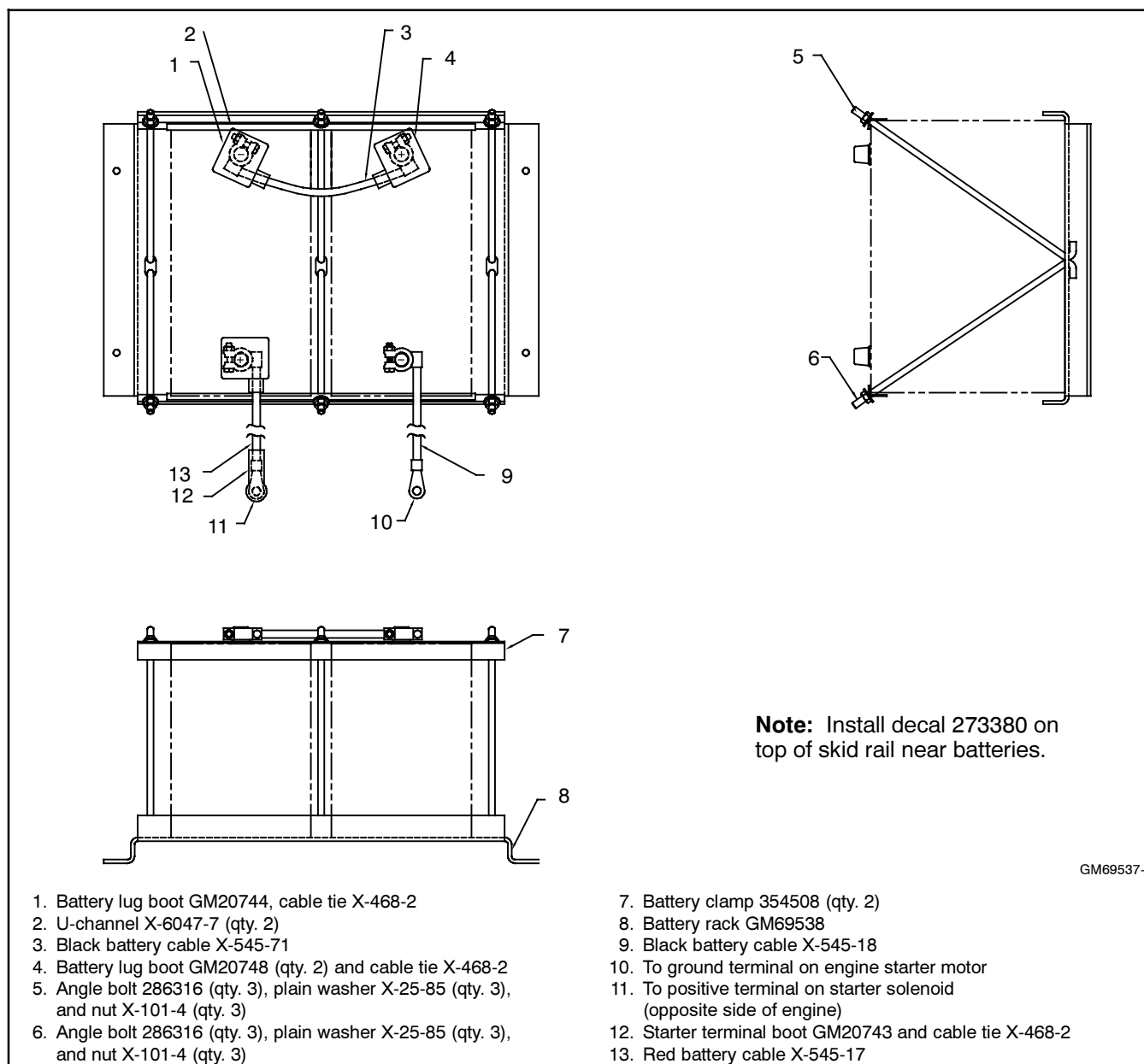
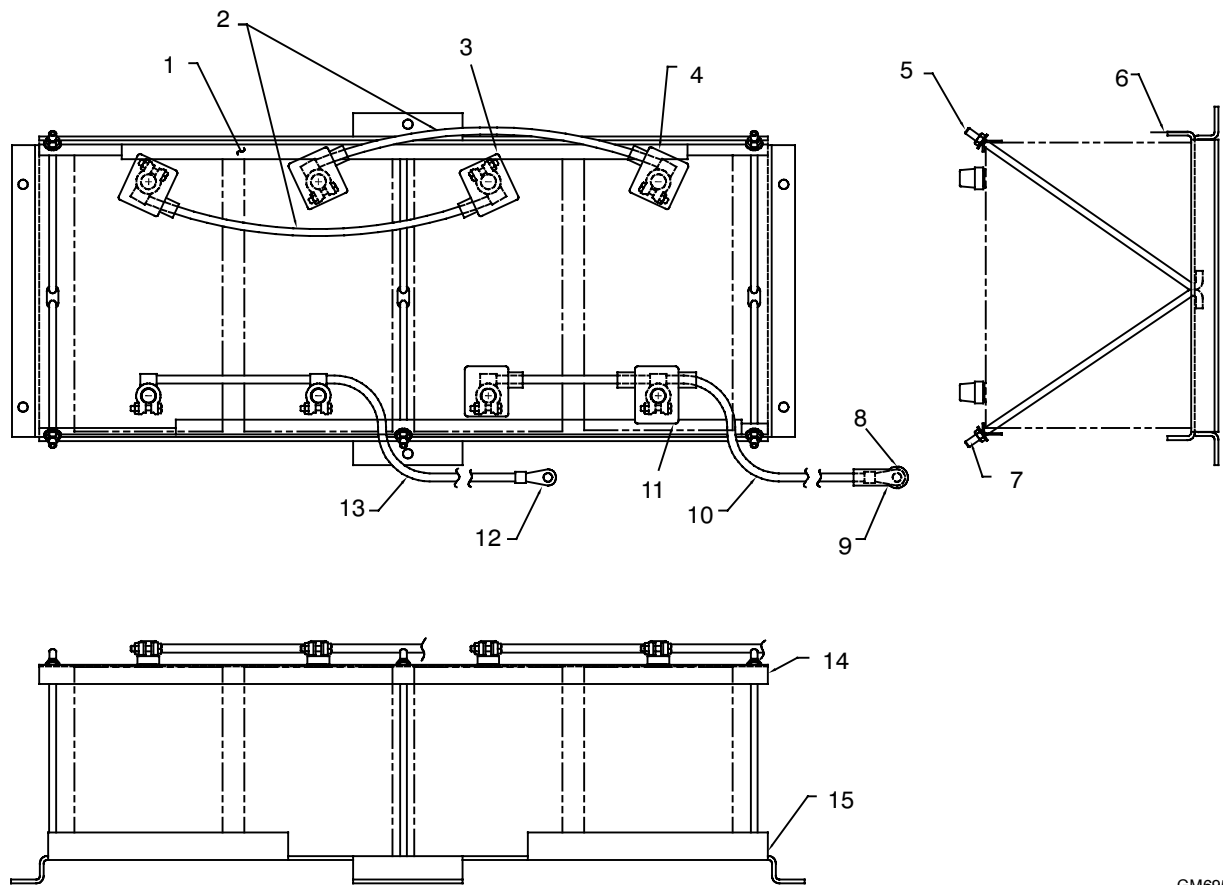


Figure 2 Battery Rack and Cables Installation Kit GM69537-KP1



GM69539-

- | | |
|---|--|
| 1. U-channel X-6047-11 (qty. 2) | 8. Starter boot terminal GM20743 and cable tie X-468-2 |
| 2. Black battery cable X-545-71 (qty. 2) | 9. To positive terminal on starter solenoid |
| 3. Battery lug boot GM20748 (qty. 3) and cable tie X-468-2 | 10. Red battery cable X-545-79 |
| 4. Battery lug boot GM20744 (qty. 2) and cable tie X-468-2 (qty. 2) | 11. Battery lug boot GM20988 and cable tie X-468-2 |
| 5. Angle bolt 286316 (qty. 3), nut X-25-85 (qty. 3), and nut X-101-4 (qty. 3) | 12. To ground terminal on engine starter motor |
| 6. Decal 273380 | 13. Black battery cable X-545-80 |
| 7. Angle bolt 286316 (qty. 3), nut X-25-85 (qty. 3), and nut X-101-4 (qty. 3) | 14. Battery clamp 274570 (qty. 2) |
| | 15. Battery rack GM69540 |

Figure 3 Battery Rack and Cables Installation Kit GM69539-KP1

Parts List

Battery Rack and Cables Kits

Parts List						
Kits: GM69535-KP2, GM69535-KP3, GM69537-KP1, and GM69539-KP1			Unique Parts			
Qty.	Description	Common Parts	GM69535-KP2	GM69353-KP3	GM69537-KP1	GM69539-KP1
6	Washer, plain	X-25-85				
6	Nut	X-101-4				
1	Cable, battery, black, 16 in.		X-545-71	X-545-71	X-545-71	
2	Cable, battery, black, 16 in.					X-545-71
1	Cable, battery, black, 50 in.		X-545-18		X-545-18	
1	Cable, battery, red, 50 in.		X-545-17		X-545-17	
1	Cable, battery, red, 66 in.					X-545-79
1	Cable, battery, black, 66 in.					X-545-80
1	Cable, battery, black 80 in.			X-545-106		
1	Cable, battery, red 80 in.			X-545-107		
2	Channel, U		X-6047-36	X-6047-36	X-6047-7	X-6047-11
1	Boot, starter terminal	GM20743				
1	Boot, battery lug (left entry)		GM20744	GM20744	GM20744	
2	Boot, battery lug (left entry)					GM20744
2	Boot, battery lug (right entry)		GM20748	GM20748	GM20748	
3	Boot, battery lug (right entry)					GM20748
3	Boot, battery lug (left/right entry)					GM20988
1	Decal, warning	273780				
2	Clamp, battery		GM22355	GM22355	354058	274570
6	Bolt, angle		324590	324590	286316	286316
1	Rack, battery		GM69536	GM69536	GM69538	GM69540
4	Tie, cable		X-468-2	X-468-2	X-468-2	
6	Tie, cable					X-468-2