

Under-Floor Housing Kits 403-3670 and 541-0938

GENERAL INFORMATION

This kit is designed for use in recreational vehicles only and must not be installed in any type of commercial vehicle.

⚠️WARNING *Recreational vehicle Under-Floor Housing kits must not be used on commercial vehicles. In such applications, the kit may fail to secure the genset due to higher “G” forces, resulting in severe personal injury, death, and/or equipment damage.*

The installer of this kit must be qualified to perform electrical and mechanical installations. Review all of the instructions and warnings before starting the installation.

⚠️WARNING *Incorrect installation, service, or parts replacement can result in severe personal injury, death, and/or equipment damage. Service personnel must be qualified to perform electrical and mechanical component installations.*

A full scale template (539-1535-01 for Kit 403-3670 or 539-4815 for Kit 541-0938) for locating and marking the mounting holes can be obtained from an Onan Parts Center.

With an under-floor installation, a special housing is used to suspend the genset from the underside of the vehicle (see Figure 1). The housing is fastened to a support frame that is built into the vehicle framework. The housing must be mounted near the exterior of the vehicle. Service access to the genset should be provided through a door located in the exterior of the coach.

The support structure must be designed to support the weight of the genset in a dynamic environment. Each unique application should be evaluated and

designed to provide an adequate genset support structure.

⚠️WARNING *Failure to provide an adequate support structure can result in the genset falling from the vehicle, which can result in severe personal injury, death, and/or equipment damage. Carefully follow installation instructions and provide an adequate support structure. Use specified hardware and tighten all screws and nuts to the recommended torque settings.*

Carefully follow these important design parameters when developing the support structure for the under-floor housing kit.

- The dynamic conditions imposed on the under-floor kit should not exceed cyclic vertical forces of ± 516 lb (± 3 g-force) and cyclic horizontal forces of ± 172 lb (± 1 g-force).
- The mounting surface of the vehicle support structure must be flat and it must be able to support the housing in such a way that mounting fasteners, when properly torqued, do not imbed or compress the mounting surface.
- All fasteners used in the under-floor housing kit must be properly torqued according to the installation instructions.

It is the responsibility of the vehicle manufacturer and the installer to provide a structurally-sound frame, and to provide mounting hardware (3/8-16 grade 5 bolts and nuts) to attach this kit.

Install this kit in accordance with NFPA 501C/ANSI 119.2 and all applicable code requirements. Refer to the genset Installation Manual for information on connecting the genset to the vehicle systems, for additional under-floor installation recommendations, and for important safety precautions and code requirements.

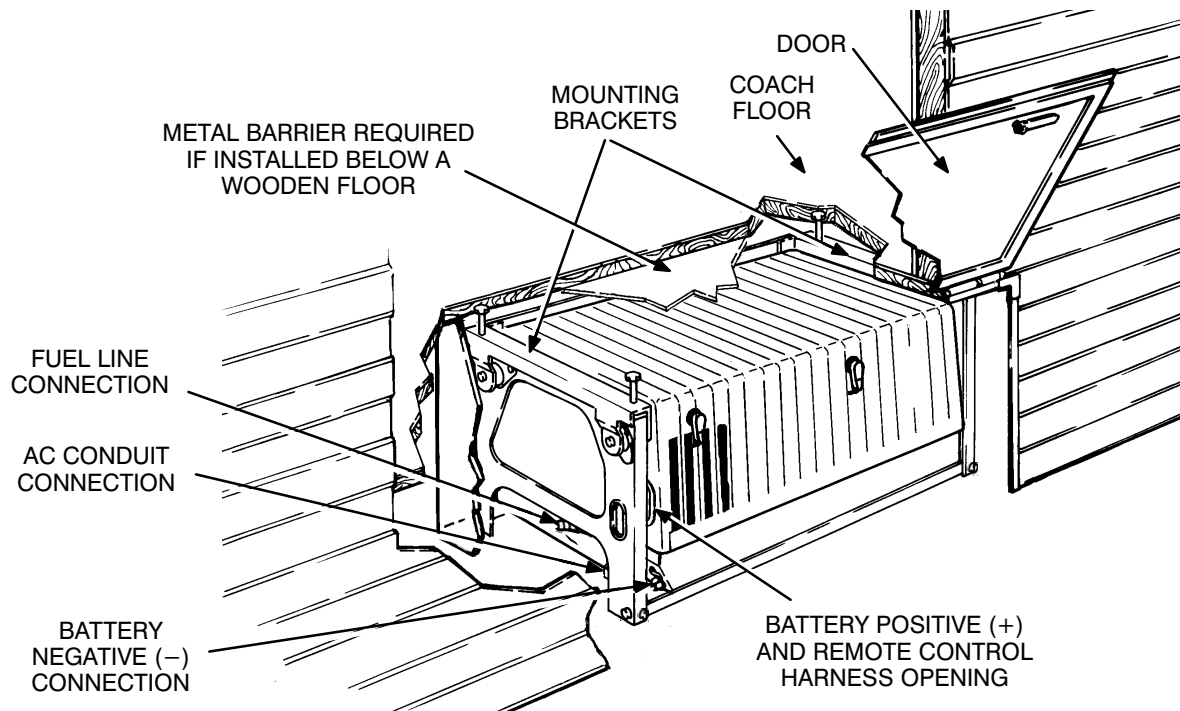


FIGURE 1. TYPICAL UNDER-FLOOR INSTALLATION

INSTALLATION

The vehicle must be parked on a level surface. Carefully follow each step and refer to Figure 1.

If the genset will be installed below a wooden floor, a metal barrier must be installed between the wooden floor and the genset. Use 26-gauge (0.0217 inch) painted or galvanized sheet metal or a material of comparable strength and fire resistance (see NFPA 501C/ANSI 119.2, NFPA 70).

⚠️WARNING *Fire presents the hazard of severe personal injury or death. Install a metal barrier between the genset and any wooden or flammable parts of the vehicle.*

1. Put the vehicle in the park position, lock the brakes, and remove the ignition key. Make sure no one moves the vehicle while performing this procedure.

⚠️WARNING *Dropping the genset can cause severe personal injury or death. Keep hands and feet clear during installation. Use an adequate lifting device to support the weight of the genset (172 lb). Make sure no one moves the vehicle during installation.*

2. Disconnect shore power (public utility power) from the vehicle.

⚠️WARNING *Electrical shock can cause severe personal injury or death. Check voltage at vehicle junction box to be sure power has been disconnected before proceeding.*

3. Lay out kit location to avoid interference between the kit components and the vehicle fuel and electrical lines. Refer to Figure 2 for mounting hole size and locations. Also refer to the Installation Manual for electrical, fuel and exhaust connection procedures.

⚠️WARNING *Exhaust gas is poisonous and can cause severe personal injury or death. Make sure the compartment floor is vapor tight, seal all holes or openings with a silicone/rubber based sealant to prevent exhaust gas from entering the vehicle coach.*

- Refer to Figure 2 for a typical support frame design for mounting the under-floor housing (usually made with steel angle iron or steel tubing).

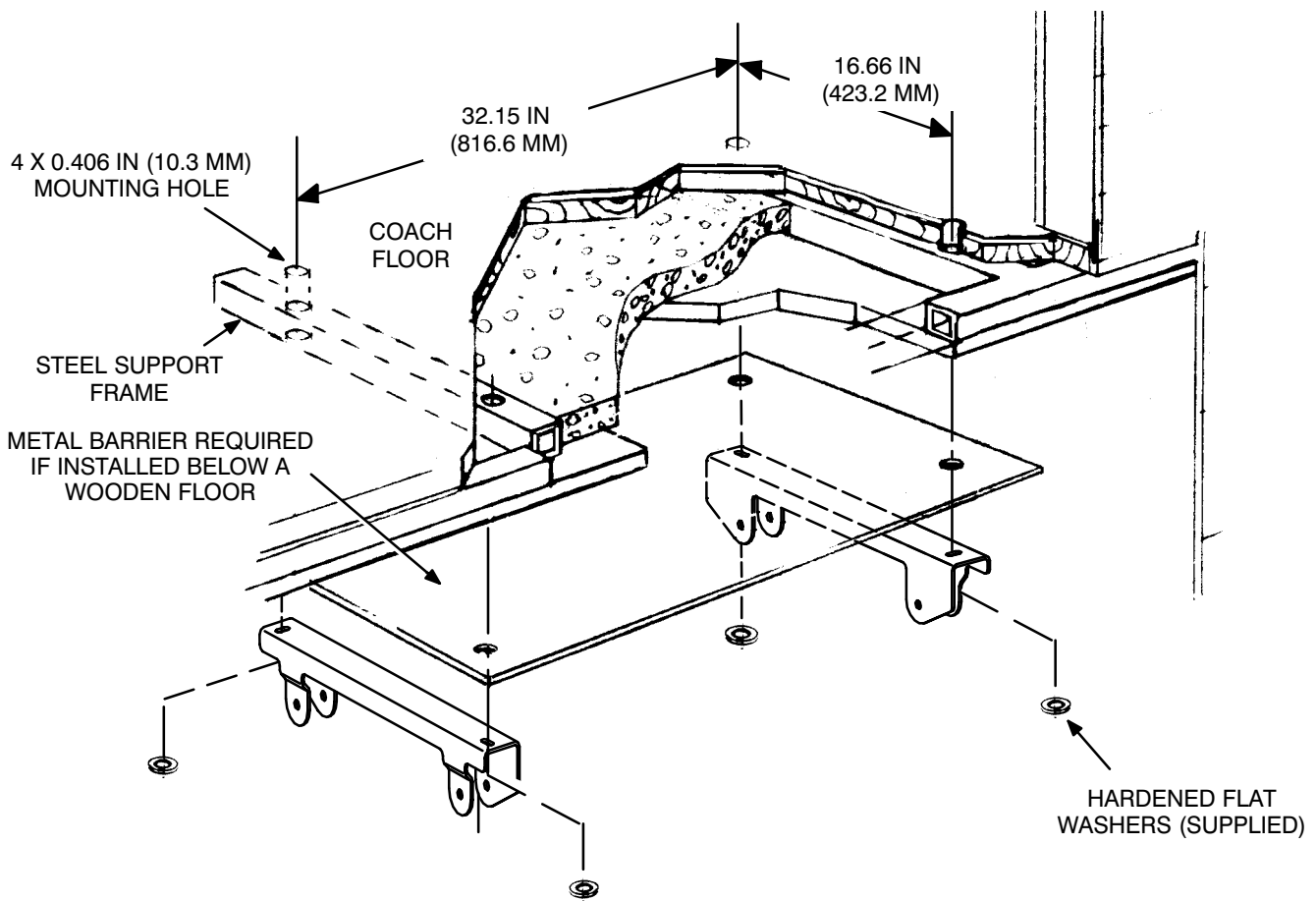
⚠WARNING *Fuel and electrical systems present the hazard of severe personal injury or death if damaged. Be careful when drilling into the vehicle support structure to avoid hitting the fuel tank, fuel lines, or electrical lines.*

- Mark and drill holes in the support frame for mounting the compartment housing according

to the details in Figure 2 and the template (template available separately). Be careful to avoid hitting fuel or electrical lines when drilling into the support structure.

- Prepare to mount the rails to the mounting holes in the bottom of the genset (Figure 3). Raise the genset, place 2x4's lengthwise under the genset and lower genset onto the 2x4's.

The front rail limits access to the ground terminal. If possible, preassemble the genset ground lead or install rail mounting bolts finger tight for removal during electrical connections.



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FIGURE 2. TYPICAL SUPPORT FRAME AND MOUNTING HOLE PATTERN

7. Install the the rails to the front and back of the genset with six 5/16-18 x 3/4 inch bolts and hardened flat washers. Torque mounting bolts to 18 ft lb (24.4 N•m).
8. Assemble the rear panel to the side panel assemblies with four 5/16-18 x 0.5 lock head bolts and 5/16-18 lock nuts. Torque mounting bolts to 18 ft lb (24.4 N•m).

⚠WARNING *Failure to install the housing components properly can result in severe personal injury, death, and/or equipment damage. Carefully follow instructions and provide an adequate support structure. Mount housing components so that mounting surfaces are flush with the mounting surface of the support structure. Use specified hardware and tighten all screws to the recommended torque settings.*

Note: The following procedure mounts the rear and side panel assembly to the vehicle support structure before installing the genset. If desired, the rear and side panel assembly can be mounted to the genset and rail assembly (step 10) and the complete assembly can then be mounted to the vehicle support structure (step 9).

9. Bolt the assembled rear and side panels to the vehicle support frame. The housing panel mounting surfaces must mount flush and be in continuous contact with the support frame mounting surface. Do not use shims, washers, or spacers between the mounting surfaces or fatigue and breakage of kit components can occur.

Use four 3/8-16 bolts (grade 5) supplied by installer due to length variations between vehicle support frame systems. Use the enclosed hardened flat washers with each mounting bolt

on the outside of the side panels. Tighten mounting bolts to 35 ft lb (47 N•m).

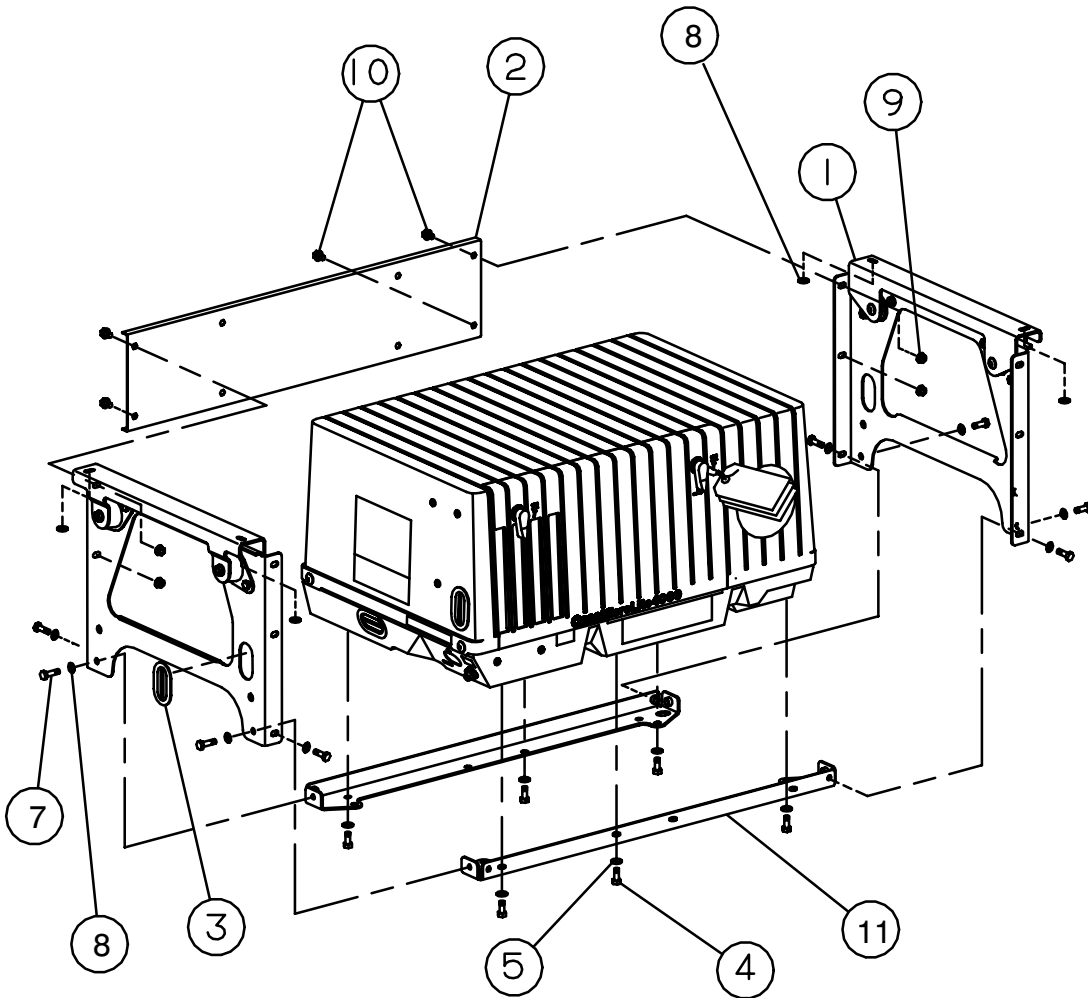
⚠WARNING *Dropping the genset can result in severe personal injury or death. Keep hands and feet clear during installation. Use an adequate lifting device to support the weight of the genset when lifting and lowering the set.*

10. Place the genset on a floor jack or forklift. Raise the set and assemble the side panels to the rails. Use two 3/8-16 x 3/4 inch bolts and 3/4 inch hardened flat washers at each corner. Torque mounting bolts to 35 ft lb (47 N•m).
11. Make electrical, fuel and exhaust connections (refer to Installation Manual). To prevent accidental starting, DO NOT connect the battery negative (-) ground cable TO THE BATTERY until the installation is complete.

⚠WARNING *Exhaust gas is poisonous and can cause severe personal injury or death. Follow the procedures and warnings contained in the genset Installation Manual Exhaust System section.*

12. Inspect the entire installation to be certain that all fasteners are properly tightened and the electrical and fuel system is properly connected. Make sure that the fuel or electrical lines are not pinched, chafing or run near sharp, abrasive or hot surfaces. Check to see that the exhaust system is properly installed. Refer to the Installation manual for additional installation checks and important safety precautions.

Place these instructions with the Operator's manual inside the vehicle for future reference and important safety precautions.



REF.	DESCRIPTION	REF.	DESCRIPTION
1.	SIDE PANEL ASSEMBLY	7.	SCREW - HHC (3/8 - 16 X 0.75)
2.	BACK PANEL	8.	FLAT WASHER (3/8 HARDENED)
3.	GROMMET	9.	NUT - HEX LK (5/16 - 18)
4.	SCREW - HHC (5/16 - 18 X 0.75)	10.	SCREW - HH LK FLG (5/16 - 18 X 0.5)
5.	FLAT WASHER (5/16 - HARDENED)	11.	RAIL

FIGURE 3. UNDER-FLOOR HOUSING KIT