

APPLICATION	REGULATOR ASSEMBLY KIT	PUBLICATION NO.
V-TWIN Dry Gas Engines GX630R VXC GX630R VXC2 GX690R VXC GX690R VXC2	T202ANL-630-2 (GX630)	PII54297
	T202ANL-690-2 (GX690)	ISSUE DATE August 2011

FOLLOW THESE INSTRUCTIONS CAREFULLY

Proper installation is essential for safe, reliable operation.

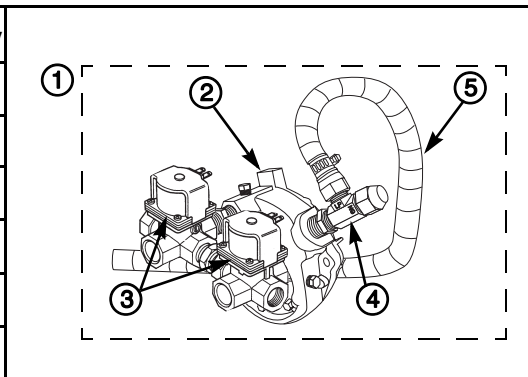
This fuel system must be installed in accordance with all applicable laws and regulations for your area, and should be performed by a qualified propane/natural gas professional.

NOTICE

Failing to follow these instructions when installing this certified regulator assembly kit in non-road equipment violates federal law (40 CFR 1068.105(b)), subjecting you to fines or other penalties as described in the Clean Air Act. Installer must meet the requirements of §1054.112 and 40 CFR part 1060.

PARTS LIST

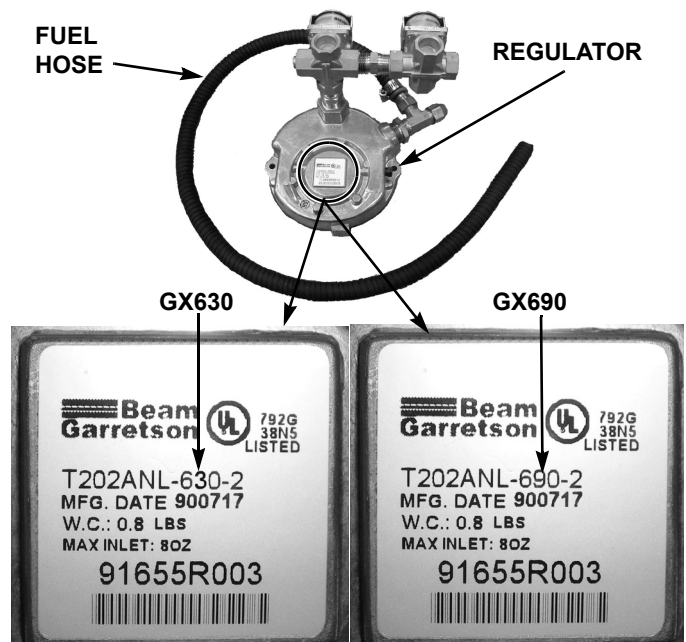
Ref.	Description	Quantity
①	Regulator Assembly Kit	1
Included in the kit:		
②	Regulator Assembly	1
③	Solenoid Valve	2
④	T-joint Assembly	1
⑤	Fuel Hose	1



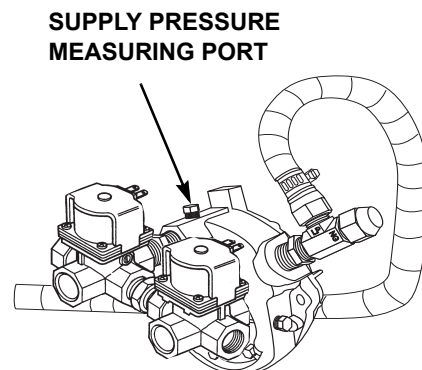
INSTALLATION

The Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) emission regulations require engines to meet specific exhaust emission limits. To comply with those regulations, the engine must meet the following fuel system requirements:

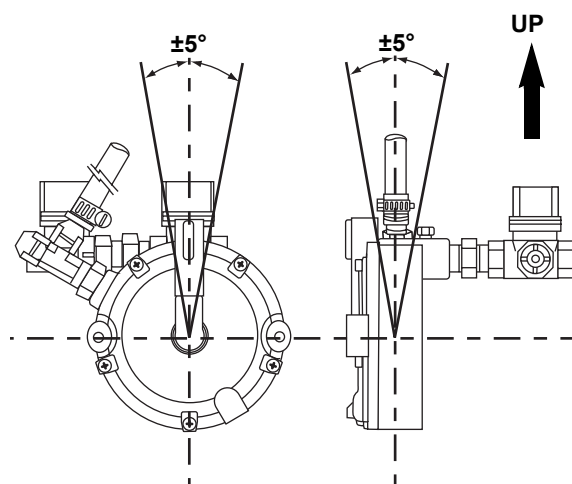
- The two dual fuel kits are specific to the certified engine model type. The label on the back of the regulator identifies the part number and the specific engine model.
- Honda has obtained CARB and EPA approval to use this specific regulator assembly kit.
- Use the fuel hose supplied with this kit. The fuel hose length must be 30 ~ 40 inches (76.2 ~ 101.6 cm).



- The regulator is dual fuel and can be set up to run on either propane (LPG) or natural gas (NG).
 - If LPG is used, it must have a propane composition of at least 95%.
 - If natural gas is used, it must have a methane composition of 90% (CARB/EPA standard gas).
 - No other fuel such as kerosene or gasoline can be used with these engines.
- The following supply pressures can be used as standard:
 - LPG: 0.4 psi (2.8 kPa)
 - NG: 0.3 psi (2.3 kPa)
- The regulator for LPG/NG engine is designed for low-pressure service. The maximum supply pressure should be set at 0.5 psi (3.45 kPa) (when the engine is stopped).
- Confirm that the supply pressure under maximum-load running conditions is at least 0.2 psi (1.2 kPa). If it is below that pressure, use either a larger diameter hose or a shorter hose.
- Install the engine on a horizontal surface and ensure it is not tilted more than 20° in any direction.



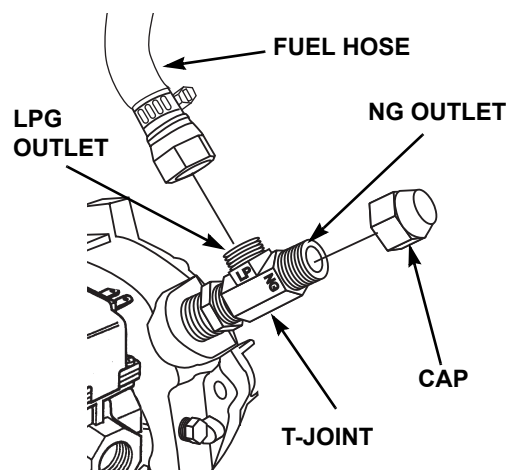
1. Install the regulator in a location where it will not be directly affected by engine vibration. The regulator must not be mounted to the engine.
2. Install the regulator in the orientation as shown. The regulator must not exceed $\pm 5^\circ$ in any direction from vertical.



3. Set up the regulator for its intended gas usage (LPG or NG). Fuel selection is performed at the T-joint.
4. Connect and tighten the fuel hose fitting to the proper outlet.

TORQUE: 4.5 ~ 5.6 N•m (40 ~ 50 in•lb)
5. Install the cap to plug the T-joint outlet that is not used.

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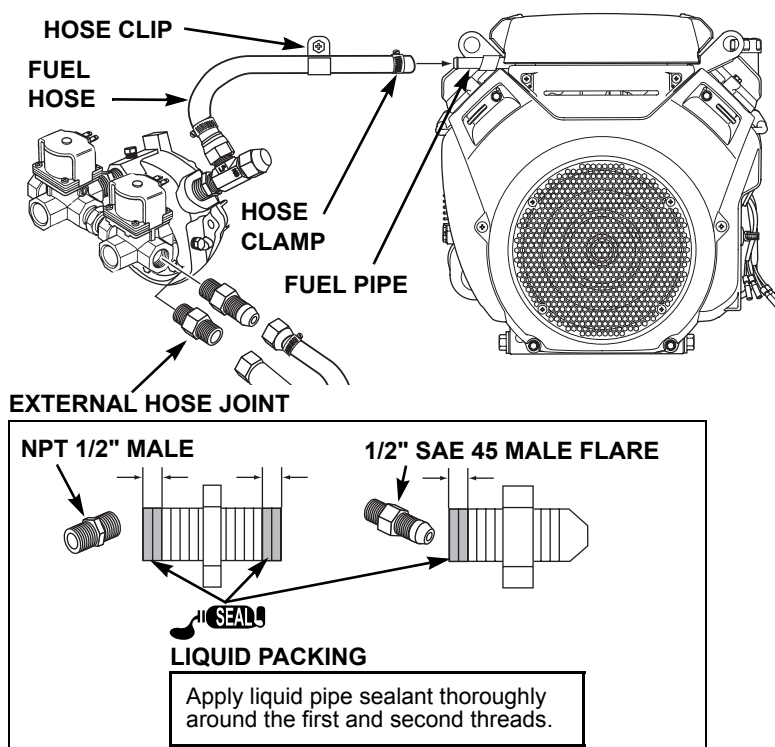


6. Secure the fuel hose to the engine fuel pipe with a hose clamp.
7. Secure the fuel hose with hose clips as necessary.
8. Connect an external hose joint to the solenoid valve inlet side.
 - NPT 1/2 inch male for NG usage
 - 1/2" SAE 45 male flare for LPG usage

TORQUE: 15 ~ 29 N·m (11 ~ 22 ft·lb)

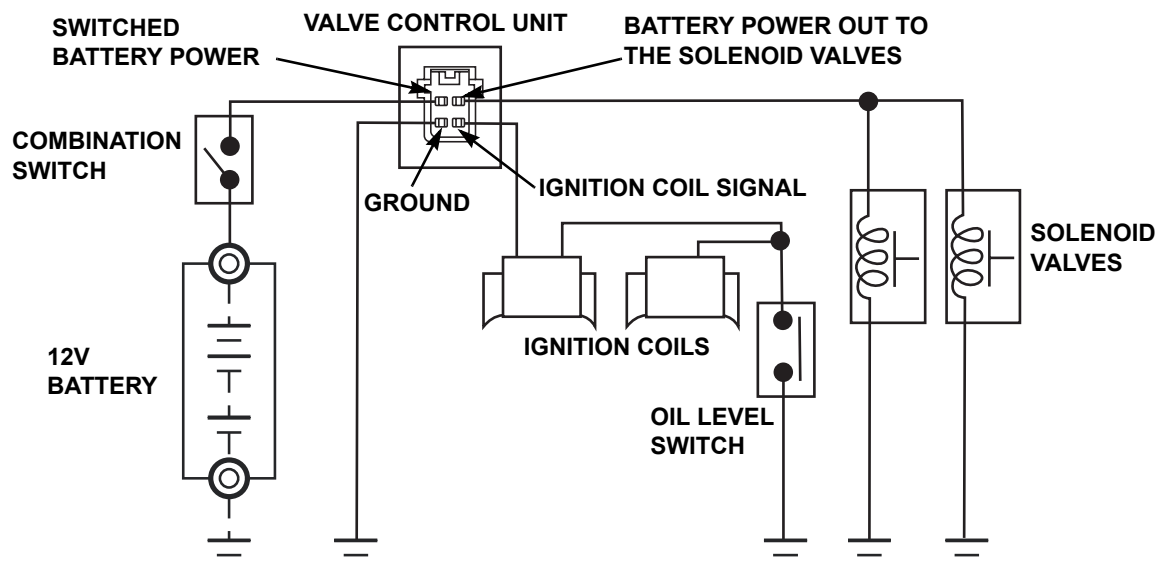
Apply liquid pipe sealant to the threaded part of the external hose joint. Do not use teflon tape; it might break loose and restrict the filter.

Recommended liquid pipe sealants:
HERME SEAL G-2, John Crane®,
Loctite® Pipe Sealant #592, or
Pipetite® Stick.



9. Make electrical connections to the solenoid valves and the valve control unit (supplied with the engine) as shown.

The valve control unit (fuel lock-off safety system) reads combination switch position, starter operation, and engine rpm. Based on these conditions, it supplies power to the solenoid valves to supply gas to the regulator.



10. After all of the connections are made, check for gas leaks.
 - Turn the combination switch to the ON position.
 - Apply soapy water to each connection point and check for gas leakage.

The valve control unit will close the solenoid valves after 4 seconds. Turn the combination switch OFF, and then ON again until all of the connections have been checked for gas leaks.

SYSTEM FUNCTION

- When the combination switch is turned to the RUN position, battery power is supplied to the solenoid valves via the valve control unit, and gas can now flow to the regulator. When the combination switch is turned to the OFF position, battery power is no longer supplied to the solenoid valves and the solenoid valves close, stopping gas flow to the regulator.
- If the combination switch is left in the ON position and the engine is not started, battery power to the solenoid valves is cut off after about 4 seconds, thereby stopping the gas flow to the regulator (timer function).
- When the combination switch is turned to the START position (starter is engaged), battery power is supplied to the solenoid valves from the valve control unit. The solenoid valves are activated, allowing gas to flow to the regulator.
- When the engine is started and the engine speed is above 100 ~ 200 rpm, ignition primary voltage will signal the valve control unit to keep battery power supplied to the solenoid valves (rpm detection). The valve control unit will keep the solenoid valves open until the combination switch is turned off, the Oil Alert[®] system grounds the ignition coil, or the engine rpm drops below 100 ~ 200 rpm.

The Oil Alert[®] system will indirectly close the solenoid valves when it grounds the ignition primary circuit, thereby stopping the rpm signal to the valve control unit.

- If the engine stalls while it is in operation, the ignition coil primary voltage signal is not supplied to the valve control unit (rpm detection), and the gas supply is cut off to the engine.
- The solenoid valves only permit gas flow to the regulator. No gas will flow through the regulator unless there is airflow through the mixer venturis.

