



## VAPORIZER KIT INSTALLATION INSTRUCTIONS

The following instructions give a general outline on installation procedures for converting small engines over to run liquid propane. These instructions are kept brief for simplicity and we recommend that the installation should be done by a service personnel. Please be aware of the safety regulations as outlined in the National Fire Protection Association pamphlets 58, 37 and 5050. There may be additional government recommendations and safety rules in your locality which must be met with those listed above.

**\*\*\*IMPORTANT\*\*\***

**Equipment must be installed, operated and maintained in accordance with federal, state and local codes. The installation in most states must also comply with NFPA 54 and NFPA 58 standards. Only personnel trained in the proper procedures, codes, standards and regulations of the LP-Gas industry shall install and service this equipment.**

**IF THIS IS NOT POSSIBLE, THE KIT CAN BE RETURNED FOR A FULL REFUND**

**REMEMBER SAFETY FIRST!**  
**IF YOU HAVE ANY QUESTIONS, PLEASE CONTACT**  
**US FIRST**

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## ADAPTER INSTALLATION

Although a generic explanation, the installation is similar on most engines.

1. Remove the air cleaner assembly.
2. Install the adapter between the carburetor and airbox (re-use the stock gasket). This may bolt extensions or replacement studs.
3. The new gasket will sit between the adapter and the airbox.
4. Install vapor hose onto the barb coming out of the venturi
5. Re-install the air cleaner assembly

The venturi adapter will push the air cleaner out on average 1-1/4". On some engines, the crankcase ventilation hose may be too short. If an extension tube is not included in the kit, you will need to provide your own. This can not be plugged.

Sometimes the frame design on the generator will not allow the air cleaner assembly to be re-installed, in this case the frame will need to be modified.

Example photo of an adapter installed (yours may look different)



## VAPORIZER INSTALLATION

Assemble the line that runs from the forklift tank to this vaporizer. The 11A17 is an air heated vaporizer, this will allow the ambient engine heat to vaporize the liquid propane coming from a forklift tank. This needs to be mounted close to the exhaust or engine to stay warm. Sometimes a generic black bracket is supplied for this. If you have the AFC-151/121 solenoid (or ball valve) with ¼" NPT threads, the solenoid will screw into the **INLET** of this regulator. One wire to ground, one wire to 12v when running, polarity doesn't matter. See below

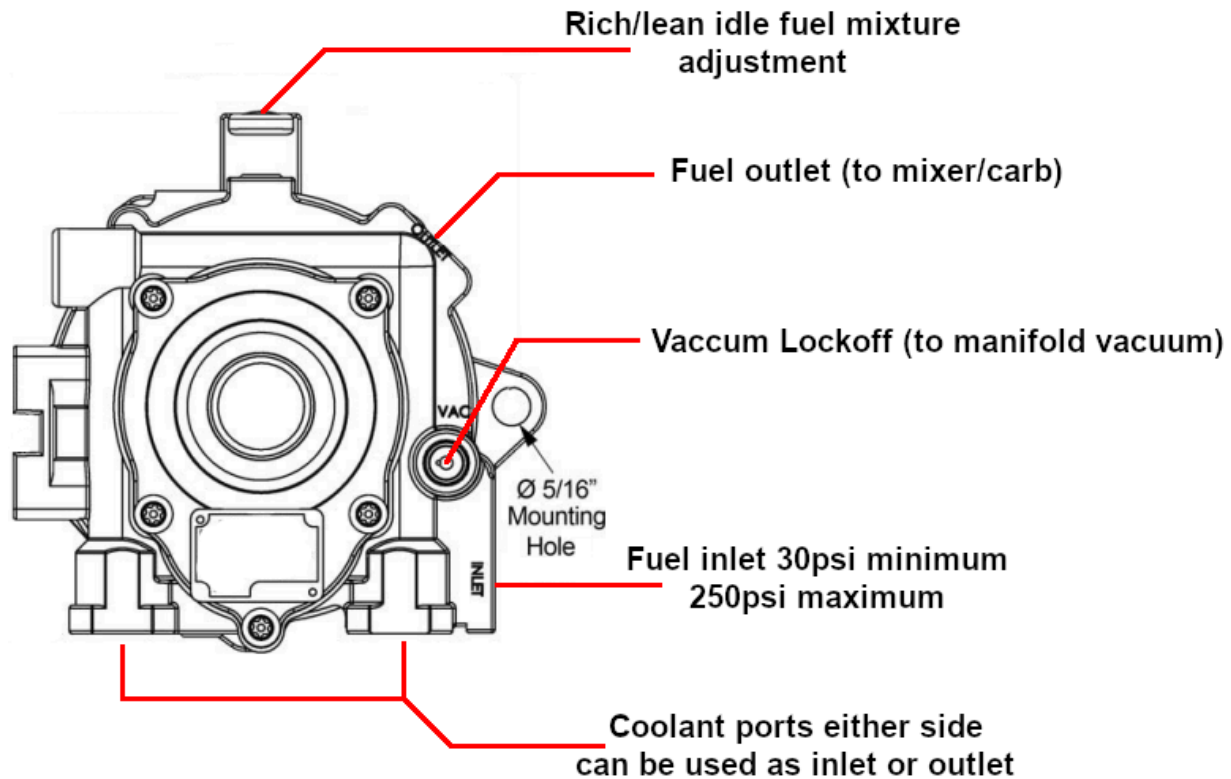


If you have the AFC-161 with the ⅜" NPT threads, install this on the **OUTLET** of the vaporizer with supplied adapter. One wire to ground, one wire to 12v when running, polarity doesn't matter. See below.

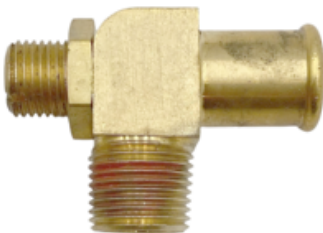


## REGULATOR INSTALLATION

The T60 is the fuel controller for the system. It takes the vapor propane from the 11A17 vaporizer and controls the feed into the venturi based on engine load. This regulator needs to be mounted within 36" of the venturi adapter. Sometimes a silver bracket is supplied to help with this. You will need access to this regulator. See diagram below.



You will not use the coolant ports, you can leave them open or plug them. You will not use the vacuum lockoff as the kit uses a 12v solenoid or ball valve lockoff, this will come plugged, leave the plug in. A high pressure line will run from the 11a17 to the inlet of the T60 regulator. On the outlet of the T60 the load block will be installed.(see below for picture of load block)



The same fuel line from step 4 of the adapter installation will connect to this load block, secure with hose clamps.

## **FIRST START INSTRUCTIONS**

These are basic first start instructions.. Every engine is different and will require specific tuning before the engine runs correctly. If you have any additional questions, you can contact us for help. Please make sure all fittings are assembled with the included alternative fuel rated tape and leak tested before continuing.

1. Make sure the gasoline supply is in the OFF position (or tank is empty) and the engine choke should be in the RUN position for adapter kits, never use the choke with adapter kits. If your engine has an electrical ON/OFF switch, flip it to the ON position.
  2. Unscrew the adjustment on the load block completely until it comes out. Re-install 2-3 turns.
  3. Turn your alternative fuel supply on, make sure 12v is supplied to the solenoid (or if you are using a ball valve make sure it is in the open position.) Press the primer button for one second or less. This primer button, if included will be on the back side of the T60 regulator.
  4. Attempt to start the engine. If the engine does not start, you may need to adjust the load block in or out and re-prime if necessary (this step may need to be repeated several times to get the engine to run well enough to proceed to the next step.
  5. Once the engine is running, put a full, or near full load on the engine. Turn the load block clockwise (lean) until the engine begins to lose power, then turn the load block counter-clockwise (rich) to where the engine runs best, lock the jam nut.
  6. If the engine has the ability to idle down, let the engine slow down to an idle. Adjust the idle adjustment mixture on the T60 (see previous diagram) to where it runs best. Clockwise is rich, counterclockwise is lean.
- Following these steps the engine should run well under full load or no load. If you have problems starting or running, the load block may need adjustment.

## DUAL FUEL OPERATION

The adapter method normally allows the use of alternative fuels OR gasoline. To run your engine on an alternative fuel, simply turn off the gasoline supply. If your unit does not have a petcock or a way to turn off the gasoline supply you may need to install one. Turn the valve to the off position and run the engine until gasoline in the carburetor is depleted. Now you can run on alternative fuel. If you want to run on gasoline, turn off the alternative fuel supply and turn the gasoline supply back on. **Some engines do not run well on gasoline after the adapter is installed due to the modified air flow. Older gasoline carburetors have adjustments to compensate for this, most newer carburetors unfortunately do not. If your carburetor does not have the adjustments and it runs poorly on gasoline, it may be necessary to remove the adapter to run on gasoline.**

## GENERIC LAYOUT

A VERY generic layout is shown below, this can be considerably different depending on your exact installation and engine type.

