

# 1501-PA VACUUM SAFETY SWITCH KIT INSTALLATION INSTRUCTIONS



The Beam/Garretson Model 1501-L

- 1.The 1501 Vacuum Switch Kit is intended for use with Beam/Garretson regulators.
- 2. The 1501 Vacuum Switch requires manifold vacuum to operate properly. Check to see if a satisfactory vacuum connection is already available at the base of the gasoline carburetor or in the intake manifold. Note that most Beam/Garretson Carburetors have a 10-32 thread or an 1/8" pipe opening for this vacuum connection. If one is not available, use the included10-32 thread x 1/8" hose fitting can be installed in the Carburetor, below the throttle valve.
  - a. To install the fitting on the carburetor, remove and prepare to drill and tap it for the necessary vacuum connection in the area between the throttle valve and the manifold flange.
  - b. Select an area of the carburetor where the metal is strong enough to support a 10-32 thread. Be sure the 10-32 hose fitting will not interfere with the throttle.
  - c. Carefully drill the carburetor with a #21 drill. Tap this hole using a 10-32 thread tap.

Remove any metal chips and install the 10-32 thread by 3/16" hose fitting.

3. Select a 1/8" female pipe opening to mount the 1501 vacuum switch. Some engines have 1/8" pipe openings in the intake manifold, but if one is not available close to the Carburetor, the 1/8" vacuum connector at the Beam/Garretson regulator can be used:

# For Regulators without built-in Lock Offs:

The vacuum port can be used as a mount or place of attachment by installing the <u>plugged</u> 1/8" hex pipe nipple (note that one end of this nipple is plugged). Apply Loctite® 567 or equivalent thread sealant on this and all other thread connections. See illustration A.

## For Regulators with built-in Lock Offs:

Remove the plug in the union by drilling or using a center punch (use care not to damage the threads). Install the <u>unplugged</u> 1/8" hex pipe nipple. Apply Loctite® 567 or equivalent thread sealant on this and all other thread connections. See illustration B.





# Street "T" Union, Unplugged 1/8" Hose Fitting

# Illustration A: Installation without Connection to Manifold Vacuum

- a. The 1/8" street "T" is installed next, so the vacuum switch can be installed on the male end of the 1/8" street "T."
- b. Install the vacuum switch and the 1/8" hose x 1/8" pipe hose fitting.
- 4. Install the 1/8" NPT vacuum hose fitting and hose between the fitting and the one connection at the carburetor or manifold. Cut the hose to correct length for a proper fit.
- 5. Review the wiring instructions (refer to the instructions enclosed with the Kit).
- 6. The Switch is now ready to operate. When the starter is engaged, the starter circuit will open the fuel solenoid to supply starting fuel requirements.
- 7. Beam/Garretson idle fuel mixture adjustments are preset at the factory to allow the engine to start. If more fuel is required, screw the mixture adjustment in about 1/4 turn at a time until the correct amount of fuel is being released.
- 8. When the engine starts, allow a few minutes to

# Illustration B: Installation using Connection to Manifold Vacuum

warm up before adjusting the main power adjustment at the Carburetor or Carburetor Adapter.

- a. <u>Power adjustment is in for lean and out for</u> rich.
- b. When the engine has warmed up, load the engine and adjust the power screw for smooth running performance.
- 9. For Beam/Garretson regulators that provide for an idle adjustment, slow the engine to an idle speed and adjust the idle mixture at the regulator for a smooth idle.
  - a. The idle mixture adjustment is the opposite of the power adjustment. <u>Idle mixture is out for lean and in for rich.</u>
  - b. Turn the idle mixture screw a small amount at a time. After each turn, speed up the engine and return to idle until you have a smooth idle. This will give you the correct starting mixture. Final fuel mixtures (CO%) must be set to specific OEM instructions for indoor use.



# WARNING:

# IMPROPER INSTALLATION OR USE OF THIS PRODUCT MAY CAUSE SERIOUS INJURY AND/OR PROPERTY DAMAGE.

## SERVICE TECHNICIANS AND USERS

SHOULD CAREFULLY READ AND ABIDE BY THE PROVISIONS SET FORTH IN NATIONAL FIRE PROTECTION ASSOCIATION PAMPHLET #37 FOR STATIONARY ENGINES, #52 FOR CNG VEHICULAR FUEL SYSTEMS OR #58 FOR LPG SYSTEMS.

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### IN CANADA

REFER TO CAN/CGA PROPANE INSTALLATION CODES.

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