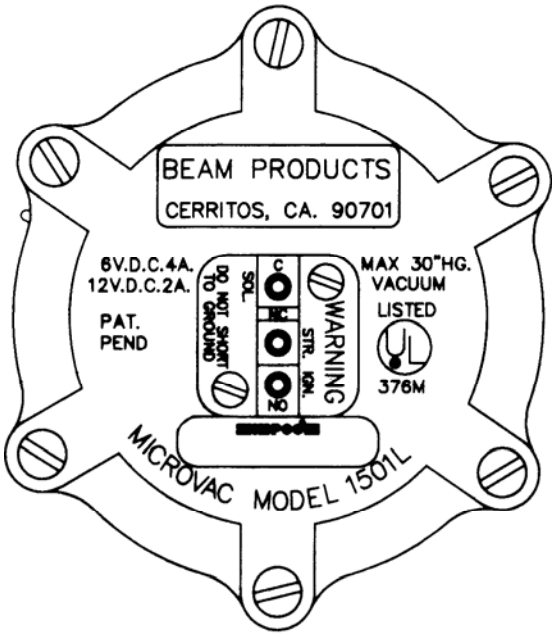
1501-PA VACUUM SAFETY SWITCH KIT
INSTALLATION INSTRUCTIONS



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 plugged 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 unplugged 1/8" hex pipe nipple. Apply Loctite® 567 or equivalent thread sealant on this and all other thread connections. See illustration B.

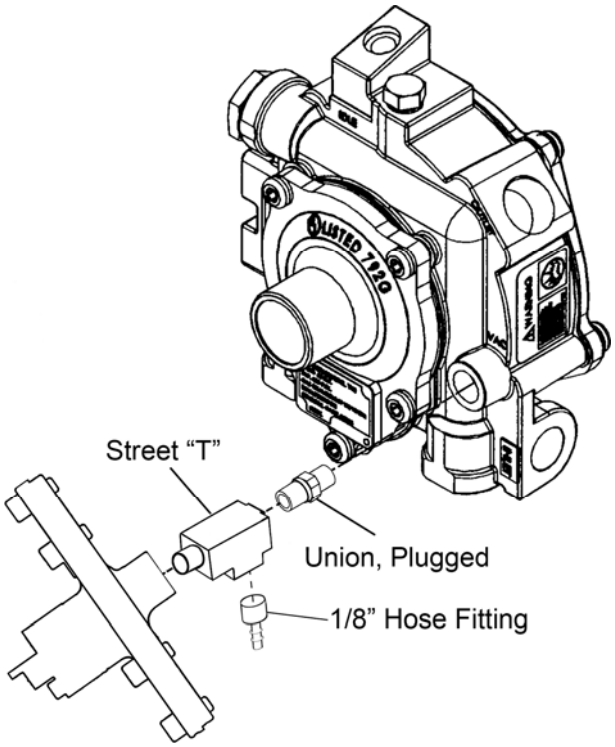


Illustration A: Installation without Connection to Manifold Vacuum

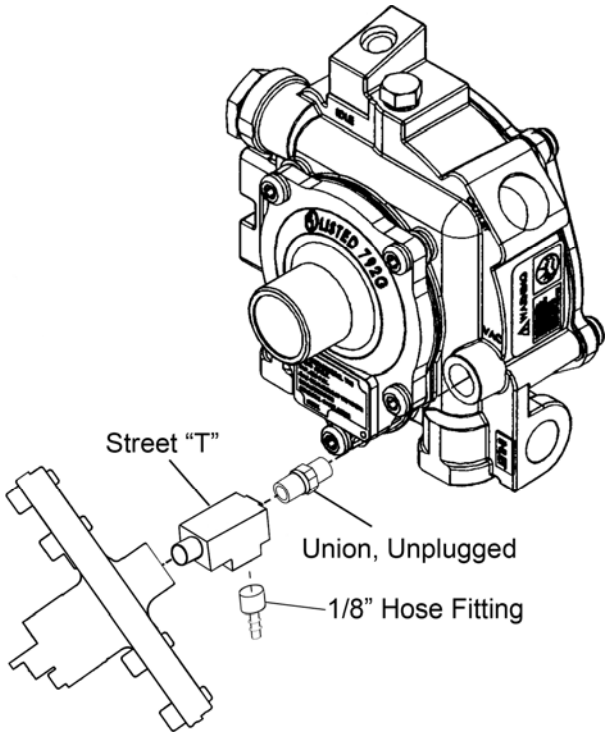


Illustration B: Installation using Connection to Manifold Vacuum

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

a. Power adjustment is in for lean and out for 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. Idle mixture is out for lean and in for rich.

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.

INSTALLERS
LPG INSTALLATIONS IN THE UNITED STATES MUST BE DONE IN ACCORDANCE WITH FEDERAL STATE OR LOCAL LAW, WHICHEVER IS APPLICABLE AND NATIONAL FIRE PROTECTION ASSOCIATION PAMPHLET #58, STANDARD FOR STORAGE AND HANDLING OF LIQUEFIED PETROLEUM GASES TO THE EXTENT THESE STANDARDS ARE NOT IN VIOLATION WITH FEDERAL, STATE OR LOCAL LAW.

IN CANADA
REFER TO CAN/CGA PROPANE INSTALLATION CODES.

CNG INSTALLATIONS IN THE UNITED STATES
MUST RE DONE IN ACCORDANCE WITH FEDERAL STATE OR LOCAL LAW AND NATIONAL FIRE PROTECTION ASSOCIATION PAMPHLET #52, COMPRESSED NATURAL GAS (CNG) VEHICULAR FUEL SYSTEMS TO THE EXTENT THESE STANDARDS ARE NOT IN VIOLATION WITH FEDERAL, STATE OR LOCAL LAW.

IN CANADA
REFER TO CAN/CGA CNG INSTALLATION CODES.

LPG AND/OR NATURAL GAS INSTALLATIONS ON STATIONARY ENGINES
MUST RE DONE IN ACCORDANCE WITH FEDERAL, STATE OR LOCAL LAW AND NATIONAL FIRE PROTECTION ASSOCIATION PAMPHLET #37, STATIONARY COMBUSTION ENGINES AND GAS TURBINE ENGINES, TO THE EXTENT THESE STANDARDS ARE NOT IN VIOLATION WITH FEDERAL, STATE OR LOCAL LAW. FAILURE TO ABIDE BY THE ABOVE WILL VOID ANY IMPCO WARRANTY ON THE PRODUCTS AND MAY CAUSE SERIES INJURY OR PROPERTY DAMAGE.

DUE TO THE INHERENT DANGER OF GASEOUS FUELS THE IMPCO PRODUCTS SHOULD NOT BE INSTALLED OR USED BY PERSONS NOT KNOWLEDGEABLE OF THE HAZARDS ASSOCIATED WITH THE USE OF GASEOUS FUELS.