

SGI VAPORIZER/REGULATOR

REPAIR KIT INSTRUCTIONS

- Wear safety glasses.
- LPG can cause an explosion. Do not permit any sparks or open flames in the work area.
- Always use MANUFACTURER APPROVED parts when making repairs. Replacement parts must meet or exceed the specifications of the original equipment manufacturer.
- DISCONNECT BATTERY CABLE NEGATIVE TERMINAL before doing any maintenance or repair.
- Always fasten a DO NOT OPERATE tag to unit when making repairs, or if the unit needs repairs.
- Compressed air can move particles so that they cause injury to the user or to other personnel. Make sure that the path of the compressed air is away from all personnel. Wear protective goggles or a face shield to prevent injury to the eyes.
- Cleaning solvents can be flammable and toxic and can cause skin irritation. When using cleaning solvents, always follow the solvent manufacturer's recommended safety precautions.
- Wash the body & top cover parts with a solvent which is safe for fluorosilicone & nitrile seals. Use compressed air to dry the parts. Do not use compressed air on the diaphragms.
- Inspect all parts of vaporizer including gasket surfaces of body and top cover for damage and wear. All parts that are damaged, cracked, or worn should be discarded and replaced.

IMPORTANT: READ THIS BEFORE REPAIRING VAPORIZER



DANGER

AN IMPROPERLY REPAIRED UNIT CAN RESULT IN DEATH OR SERIOUS INJURY. REPAIR MUST ONLY BE DONE BY QUALIFIED TECHNICIANS.

This repair kit is intended to replace vaporizer parts which may have become worn or damaged by exposure to contaminated fuels. It is critical that the repair be done by a qualified technician and that during the repair the technician evaluates the condition of the original components of the vaporizer which are to be reused and is confident that their reuse will result in a properly functioning vaporizer.

One of the vaporizer's functions is to contain the LPG in the fuel system. Liquid or vapor LPG must not escape to the atmosphere nor enter the cooling system of the engine. The pressure and leak tests at the end of this procedure are intended to assure such leakage does not occur and **MUST** be done to confirm the proper functioning of this part.

If there is any doubt regarding the condition of the reused parts or the results of the final tests the repaired unit should not be used and a new one fitted in its place.

It is strongly recommended that the inlet and outlet filters and o-rings be replaced during this service (ask service representative for the appropriate service parts).

REPAIR KIT PART NUMBERS

Part #	Description
A7-182	REPAIR KIT, SGI REGULATOR

Beginning in December 2018, these kits were sold with unassembled diaphragm components, requiring trained technicians to manually rivet the assembly as part of rebuilding the regulator.

Although we have received no complaints from the field, we are concerned that the technicians may not use suitable tools/process to rivet the diaphragm assembly, resulting in a sub-standard quality joint that could lead to failure of the regulator or to possible fuel leaks. In order to ensure a consistent assembly in field, we have determined that the diaphragm should be assembled at our facility, following the same closely controlled process used for our newly assembled regulators.

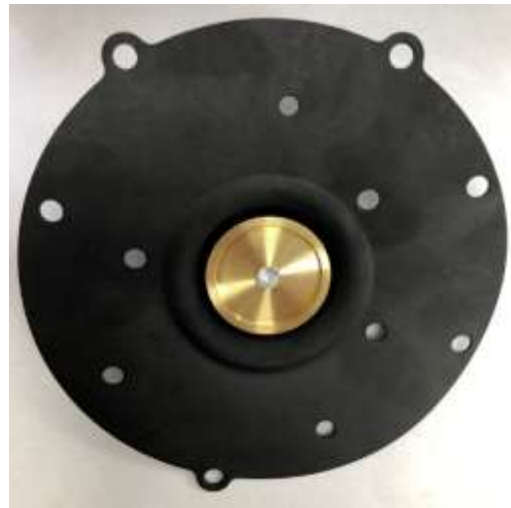
Safety is our top priority and we are committed to provide the highest quality. We are kindly asking your cooperation to perform the following:

- For all prior assemblies, please confirm with your qualified technician that the diaphragm assembly process has been performed correctly.
- If you have kits that have not been assembled, please return them to the company that you purchased them from. They will supply replacement kits at no cost.

We also want to take this opportunity to remind you that IMPCO requires any technician that is intending to repair our products to be certified, properly trained and to follow closely our repair instructions. We apologize for the inconvenience and thank you for your collaboration on this matter.

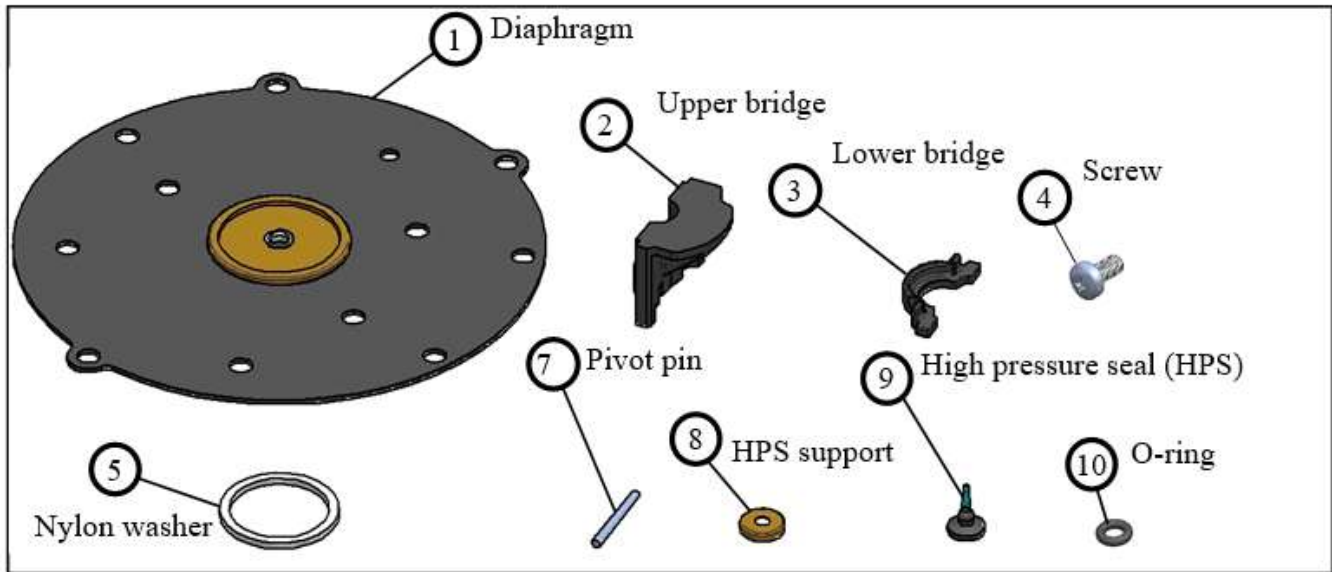


Example:
Diaphragm unassembled (Return to IMPCO)



Example:
Diaphragm Assembled by IMPCO which has an letter "R" Stamped on plate

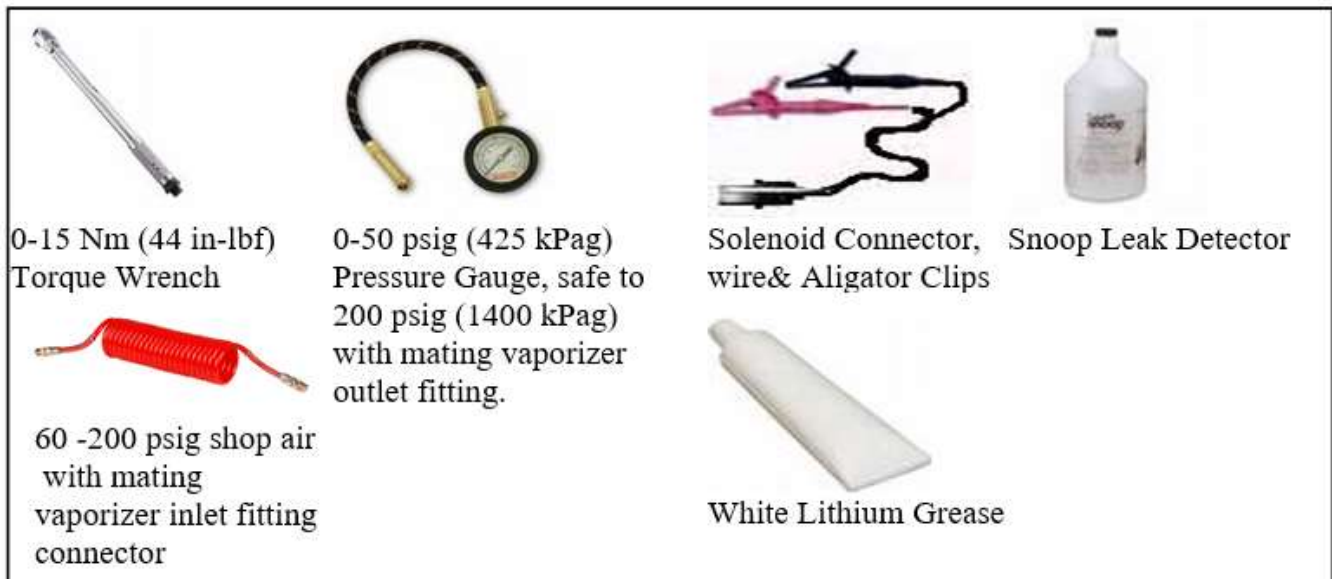
A) Contents - IMPCO Vaporizer Rebuild Kit:



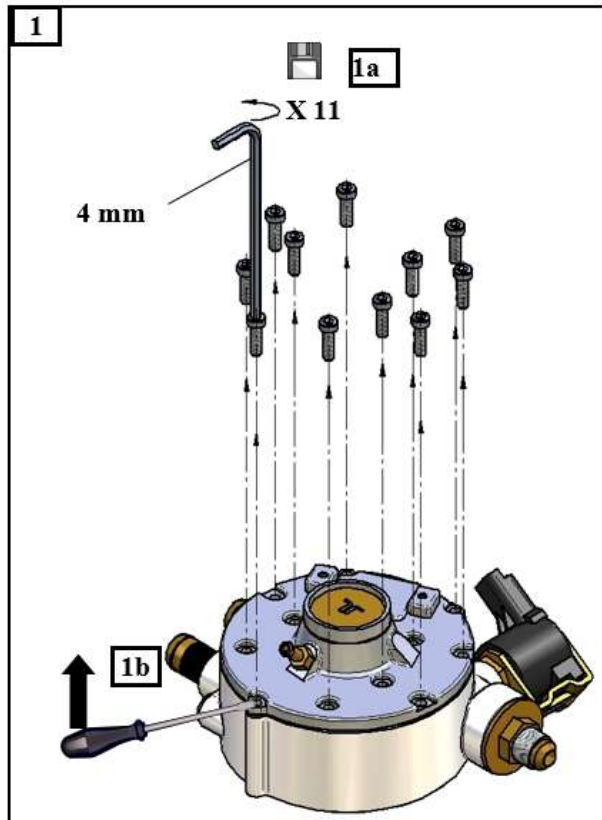
B) Symbols:



C) Required Tools:

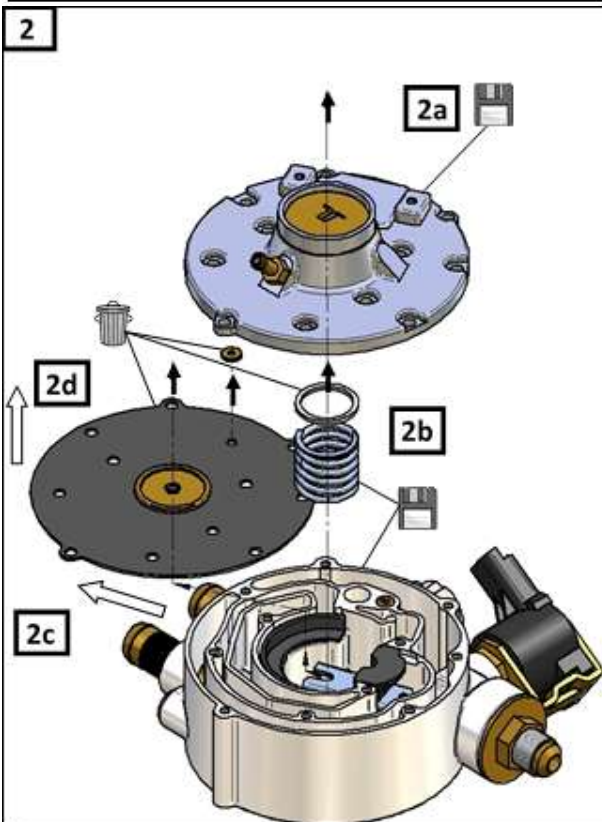


D) Rebuild Steps:



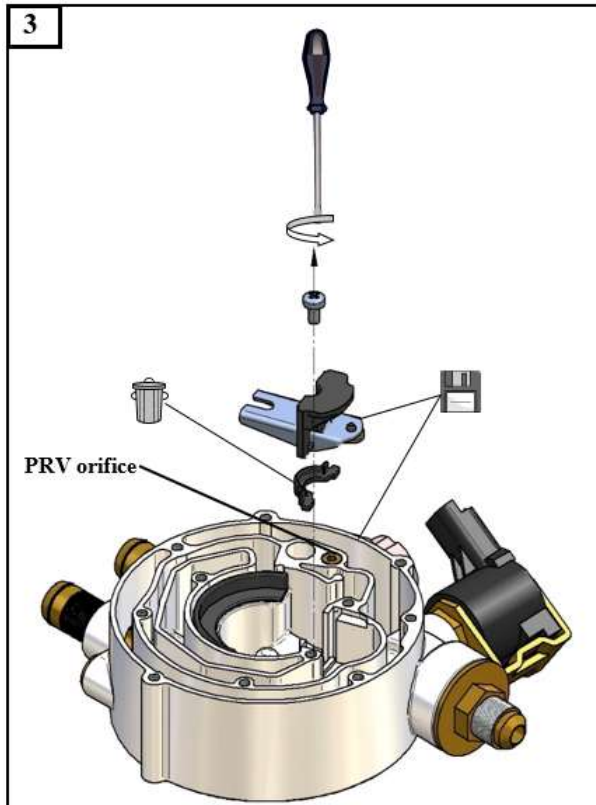
NOTICE

When removing the top cover take care not to scratch or damage the top cover or body surfaces that create the diaphragm seal. Any prying should be done carefully at the protruding screw bosses.



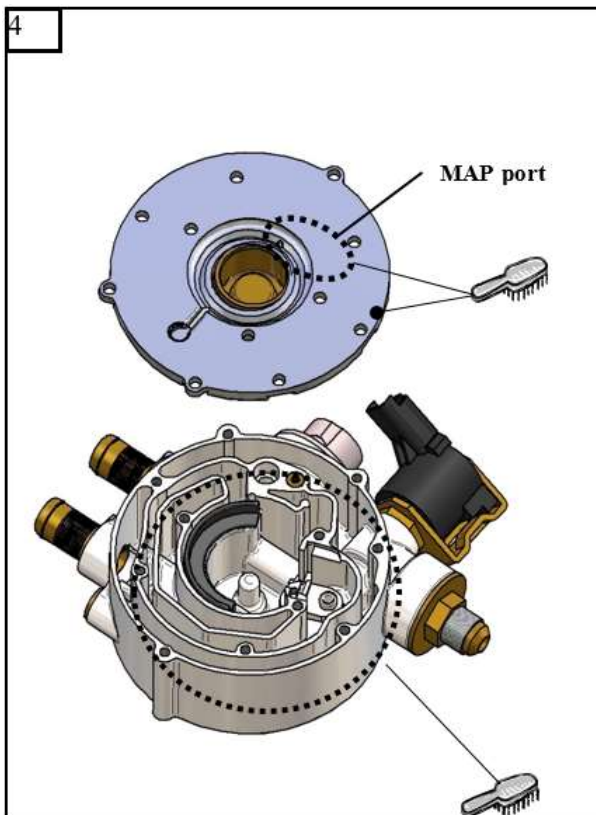
NOTICE

When removing the above parts dirt & debris may fall into the vaporizer body. Be sure to clean out all such debris to prevent subsequent fuel or coolant contamination



NOTICE

When removing the lever assembly take care not damage the high pressure seal seat on the body.



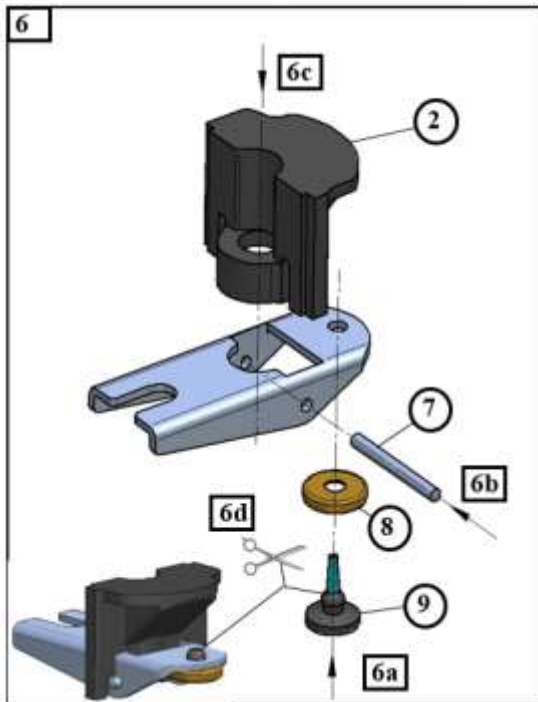
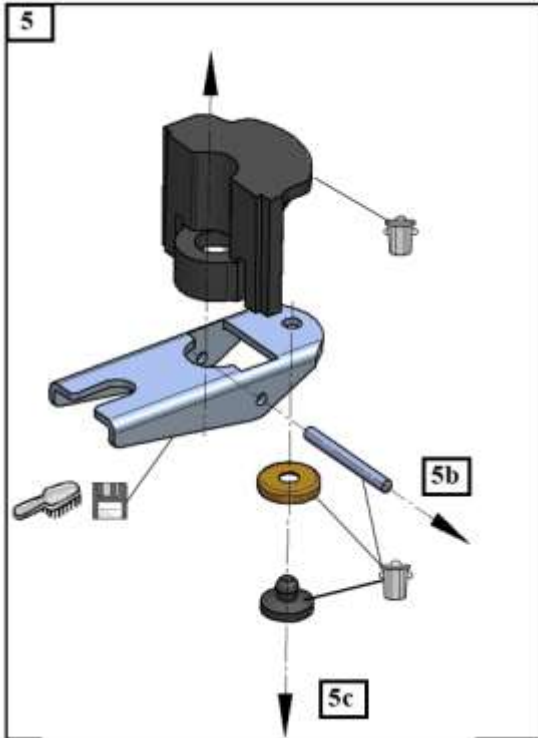
NOTICE

After removal of the lever assembly during cleaning of the body be sure to blow out any debris which may have fallen into the PRV orifice.

IMPORTANT

When cleaning the top cover and body take care not to scratch or gouge the metal surfaces that form the seal with the diaphragm. If there is corrosion or pitting of the body or top cover (as seen in the photograph below) a proper seal will not be achieved. If this is the case do not continue with the repair. The vaporizer must be replaced. Be sure the MAP port is free from debris or blockage.



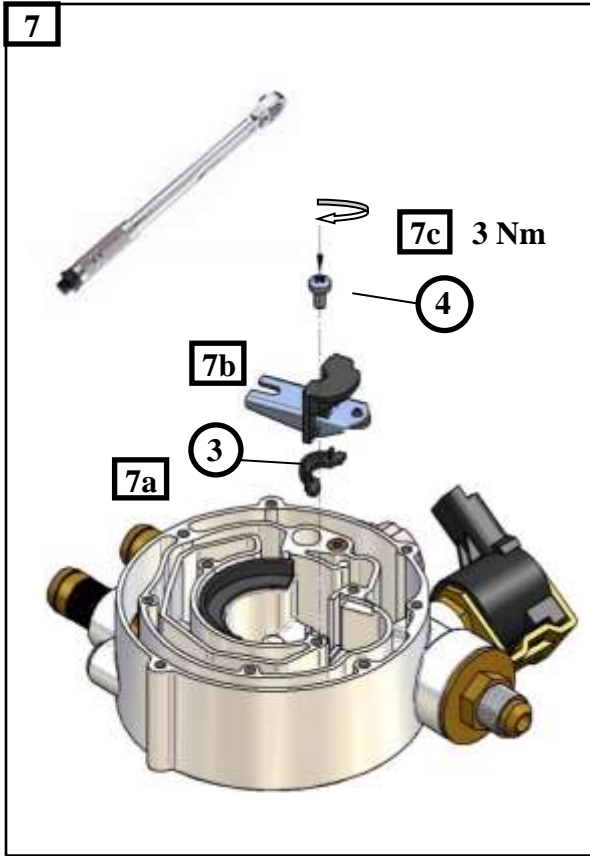


NOTICE

When cutting the excess of the insertion tail [6d] of the high pressure seal (9) be sure not to cut off any of the seal retention bulb or nick or cut the seal surface.

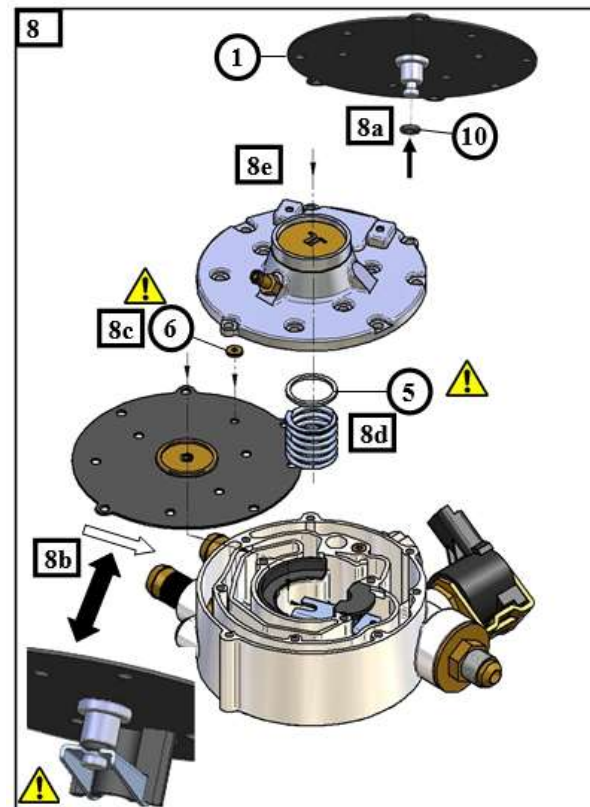
NOTICE

When assembling lever assembly take care not to tear or damage upper bridge as this may degrade the vaporizers performance



NOTICE

When installing the lower bridge seal (3) be sure it is installed with the ridge facing upwards.

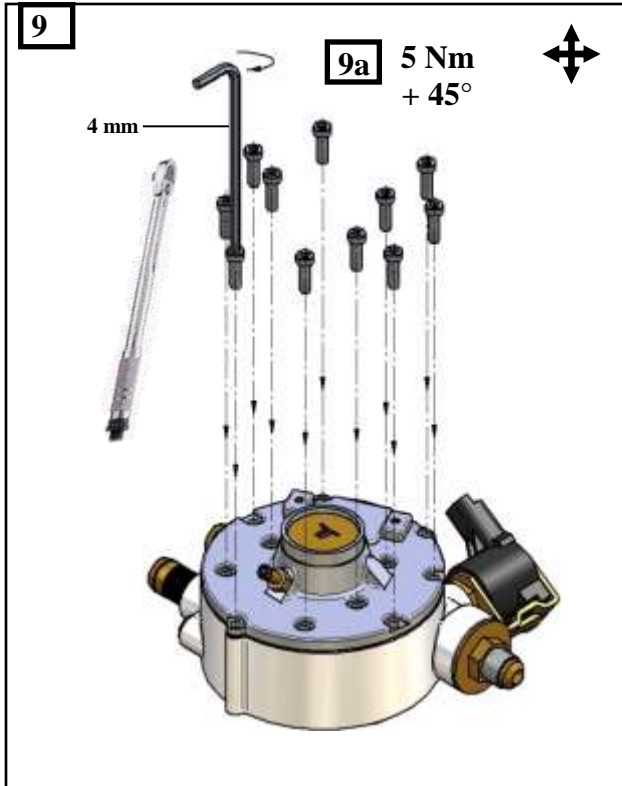


NOTICE

When installing the nylon washer (5), a small amount of white lithium grease may be used to hold the part in place during the assembly of the top cover.

IMPORTANT

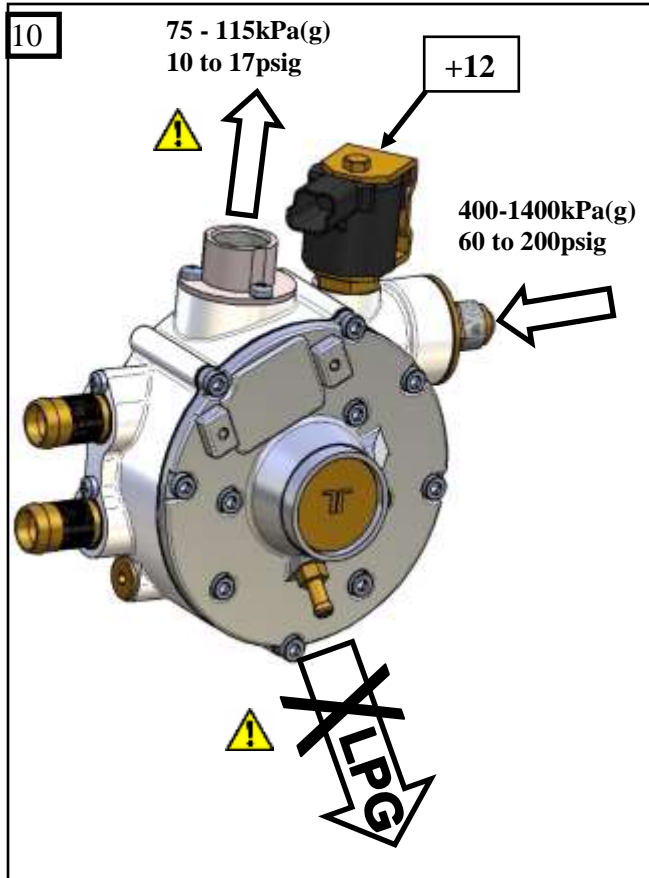
The high pressure seal lever **MUST** be inserted into the diaphragm stem BELOW the O-Ring as shown [8b].



IMPORTANT

Torque the top cover screws to 5 Nm alternating from one side to the other in a cross pattern. Once all 11 screws have been torqued, repeat the tightening pattern turning each screw in a further 1/8 of a turn. Re-torque all 11 screws to 5 Nm after 2 hours of operation.

Insufficient torque will result in leakage of LPG to the environment or into the coolant system of the engine. Over torque may cause thread damage or breakage of top cover screw tangs resulting in leakage of LPG to the environment or into the coolant system of the engine.



PRESSURE & LEAK TEST

1. After assembly attach the hose & pressure gauge to the outlet port with a gauge capable of reading from 0 to 50 psig (425kPag).
CAUTION: the gauge must be capable of withstanding 200 psig (1400kPag).
2. Connect a shop air pressure source using the inlet fitting connection. The pressure source must be a minimum of 60 to a maximum of 200 psig (400 to 1400kPag).
3. Connect jumper cable to lock off solenoid mating connector. Then make a direct connection to a 12 volt source (battery) using the alligator clips. DO NOT use the vehicle vaporizer connection as the power only remains live for 2 seconds after key on unless the engine is running.
4. Check the pressure reading on the outlet pressure gauge and confirm it is in the acceptable range (see figure on the left)

CRITICAL

- A. Leak testing should not be done until the proper outlet pressure has been confirmed to be present.
- B. All areas of the diaphragm seal must be checked for leaks with Snoop while the vaporizer is pressurized with air. Leaks to the coolant system MUST also be checked for by filling the coolant passages with water and watching for bubbles or creating a Snoop film over both coolant barbs and watching for leakage.
- C. Alternatively, insert the entire unit into a bucket of water to check for leaks. Continue to next step only if no leaks are found. If unit leaks do not use, replace with new vaporizer. Be sure there is no leakage out of the MAP barb of the unit.

ON VEHICLE CHECK

- If the vaporizer has met all the preceding requirements it should then be installed on the engine with all the proper connections made. After installation apply fuel by slowly opening the LPG tank valve and turning the ignition key to on.
- Check for leaks with Snoop at all connections and joints.
- Start engine and allow to idle. Using the PC Service Tool, monitor the Fuel Absolute Pressure (FAP) at idle. It should be 75 to 100 kPa above manifold absolute pressure, (roughly between 115 and 145 kPaa [17 and 21 psia]). Operate engine until normal coolant temperatures are achieved (75 to 90 degrees C) (165 to 195 degrees F).
- Recheck for leaks with Snoop at all connections and joints.