LACO TECHNOLOGIES

GAS CHARGE MANIFOLD

User Manual

Description

The LACO Gas Charge Manifold offers manual tracer gas control in a variety of leak testing applications. LACO offers three manual gas charge manifolds shown below. Manifolds come pre-leak tested and ready to use.

GAS CHARGE MANIFOLD ASSEMBLIES		
P/N	Maximum Pressure (psig)	Pressure Relief Valve rating (psig)
LMGC-60	60	75
LMGC-100	100	110
LMGC-150	150	175

Manifold assemblies include the following features:

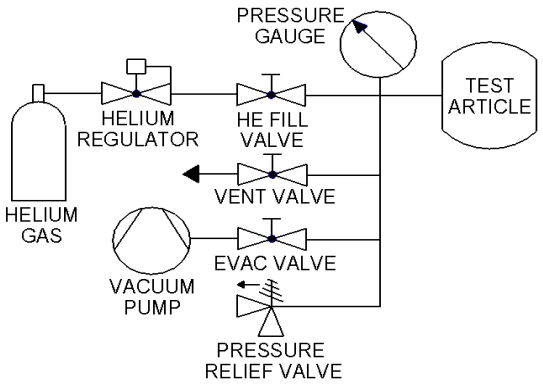
- Helium fill valve with 1/4” tube inlet (includes 3’ of tubing)
- Vent valve with1/4” tube outlet (includes 3’ of tubing)
- Evacuation valve with KF16 connection
- Pressure gauge (0-150 psi with manual setpoint adjustment)
- Pressure relief valve
- 3’ section of 3/8” tubing to connect to test object or chamber

Safety

WARNING:

- Do not pressurize above ratings noted in Description setting
- Only use as directed

Installation



1. Customer is responsible for providing tracer gas source, regulator, and connection. Regulator part number LHREG01 from LACO can be used on compressed gas bottles. See Maintenance and Accessories section.
2. Install regulator onto helium gas bottle and install gas line from regulator to helium fill valve inlet. Ensure gas line material is rated for gas pressure.
3. Set helium regulator to desired test pressure (2-3 psi above setpoint), but do not pressurize above maximum rating.
4. Run Vent Line. Ensure helium is vented away from test area. LACO provides a 3-foot section of 1/4" OD tubing.
5. Connect vacuum pump to evacuation valve connection. This step is optional but recommended for most applications.
6. Install test line from manifold outlet to test object or test chamber. LACO provides a 3-foot section of 3/8" OD tubing. Possible connection fittings are listed in Maintenance and Accessories section.

Operation

Gas charge manifolds can work in the following leak test applications:

Leak Test Method	Leak Test Type	Charge Condition
Vacuum	Inside-Out	Charge test part before placing in chamber or charge during leak test inside chamber
Vacuum	Bombing test method	Pre-charge parts in bombing / pressure vessel and then leak test
Vacuum	Outside-In	Charge portable reservoir helium spray probe
Sniff	Sniff	Charge test object before or during test
Sniff	Accumulation	Charge test object before or during test
Cal Leak	Any	Charge reservoir calibrated leak standard.

1. Turn on vacuum pump. Open evacuation valve. Ensure test part is fully evacuated. This ensures gas charge concentration mix is close 100% (or whatever quality of gas was purchased by customer).
2. Close evacuation valve and then turn off pump.
3. Open helium (He) fill valve (per table above) and charge test object to desired pressure. Close helium fill valve.
4. Ensure test pressure is stable.
5. Once leak test or charge process is complete open vent valve and wait for test object to fully vent. Close vent valve.

Maintenance and Accessories

It is recommended that the user verify the effectiveness of the pressure relief valve every 6 months by adjusting regulator knob to a pressure 5 psig over rating. Replace the pressure relief valve if defective.

GAS CHARGE MANIFOLD ACCESSORES AND SPARE PARTS	
P/N	DESCRIPTION
LHREG01	Regulator, CGA580 connection, 0-100 psi output, 1/4" tube
LMSA6036	Comp. Ftg. Adapter, 1/4” mNPT Inline X 3/8" tube, brass
LMSA5309	Comp. Ftg. Adapter, 1/4" mNPT Elbow X 3/8" tube, brass
LMSA0584	Ferrule, Nylon, 3/8"
LMSA0527	Tubing, Polyurethane, 1/4" OD, black
LMSA0533	Tubing, Polyurethane, 3/8” OD, black
LMSA6082	Pressure relief valve, 175 psig
LMSA6083	Pressure relief valve, 75 psig
LMSA6132	Pressure relief valve, 110 psig
LMSA8084	Ball valve, 1/8” npt, male x female
LMSA6064	Pressure gauge, 150 psi
LMSA115855-W	3.5 CFM wet Rotary Vane Vacuum Pump Assembly (includes 3’ vacuum hose)
LVOEZUNO6	Pre-measured EZ Premium vacuum pump oil for UNO6 pump
LGL915	Oil Mist Eliminator (OME) filter
LMSA115855-D	1.1 CFM Dry Membrane Vacuum Pump Assembly (includes 3’ vacuum hose)
PF109149	MVP-030 Membrane pump repair kit
PFP0995941	Diaphragm Key