

PPCH-G-G pressure controller, Leak test procedure

FLUKE®

Calibration

This procedure is intended for users or other authorized personnel trained on operation of PPCH-G pressure controllers

Purpose

This document instructs how to leak check a PPCH-G-G pressure controller/calibrator and report the results to the Pressure Technical Support team at Fluke Calibration.

Notes

Refer to the PPCH-G-G Operation and Maintenance Manual for detailed setup and use instructions. Refer to Figure 6 in the manual for a schematic of the PPCH-G-G.

Assuming this is PPCH-G-G A70M (70 MPa ~ 10000 psi)

1. Drive air supply pressure to PPCH-G must be 75 to 120 psi
2. PPCH-G must have a steady supply of high pressure gas to its SUPPLY port. Is it stable throughout operation? If using GB-H booster it can be read on its "HIGH PRESSURE" gauge.
 - a. This pressure is typically supplied by gas booster GB-H. Drive air supply pressure to GB-H must be stable throughout operation. Is it stable when pressure is going from VENT to maximum pressure? How stable? Does it drop at all when viewed on the supply pressure gauge? If using GB-H booster it can be read on its "BOOSTER DRIVE" gauge.
3. Remove any fittings and tubing from the TEST port and plug the TEST port with a plug and gland
4. Leak check in static mode.
 - a. [SETUP], <6control>, <2mode>, <2static>
 - b. Wait 5 minutes for thermal effects from TPCU to dissipate
 - c. Set Pressure of 7000 psi
 - d. Wait 5 minutes
 - e. Press [ESC] button twice to ensure control is off.
 - f. What is pressure? (psi)
 - g. What is pressure Rate of change? (psi/sec), and is it stable?
 - h. Wait another minute or so for "Rate of change" to stabilize. What is pressure and Rate of change? Did Rate of change stabilize?
5. Repeat steps 4c. to 4h. with setpoints of 4000, 6000, 9000, 2000, 8500 and 7000 psi. Record all data!
6. For each test, leak rate must be less than 0.002% per sec. (20ppm/sec). Leak rate is calculated by: (Rate of change, in psi/sec) divided by (pressure, in psi)
7. If results are good we might suggest to reset the valve configuration to the factory settings and then try some setpoints in dynamic mode. Reset like this; [Special], <Internal>, <Config>, <Valves>, <factory>.

- a. Then change to standard dynamic mode like this; [SETUP], <6control>, <2mode>, <1dynamic>, <standard>
 - b. Wait 5 minutes for thermal effects from TPCU to stabilize, then try some setpoints.
8. If leak test fails send results and we will decide on next actions based on whether leak rate is positive, negative or intermittent.
- a. Negative leak rate could be caused by leaking VENT valve or leaking OUTLET (down) valve. VENT valve is fixed by replacing VENT valve seat.
 - b. Positive leak rate is most likely caused by leaking INLET (up) valve. UP or DOWN valves can only be repaired at a Fluke Calibration Service Center.

What is the model, serial number and embedded software (firmware) version? Model is in a format like PPCH-G-100M A100M/A20M and is shown on the front and back panels. Serial number is shown on the product label on the back panel and by pressing and holding the [ESC] button. Firmware version is shown at power-up or you can press and hold the [ESC] button to view it. It will be in a format similar to v1.01j

Send leak test results and other requested information (model, serial number, firmware version, etc.) to pressuresupport@flukecal.com

End