MPC1™ Manually Operated Precision Pressure Controller

PURPOSE / APPLICATIONS

MPC1 provides a compact and easy to use system for manually setting and adjusting of pressure between vacuum and 1 000 psi (7 MPa) or 3 000 psi (20 MPa) in systems where precise pressure control is required (a two channel system is also available, see the MPC1-D brochure).

MPC1 is very well suited for use as the pressure controlling mechanism in calibration and testing systems using a digital or analog pressure indicator as the reference. It is also ideal for working with gas operated piston gauges and is the standard choice for manual pressure control up to 20 MPa (3 000 psi) in DHI PG7000 high accuracy gas operated piston gauge systems.

DESCRIPTION

To use MPC1, a pressure supply is connected to the supply port and a vacuum pump (if pressures well under atmosphere are needed) is connected to the vacuum port. The system into which pressures are to be controlled is connected to the test port. Inlet and outlet metering valves are used to admit or exhaust gas for coarse pressure control. The exhaust can be connected to either the vent port or the vacuum source by operating the three way valve on the front panel. Fine pressure control is accomplished using a high precision vernier with an equalization valve so that turning effort is minimal at all pressures.

Filters on the supply, vent and test lines protect the system from outside contamination. The large displacement of the vernier allows pressures below atmosphere (vacuum) to be achieved without a vacuum pump (the level of vacuum obtainable depends on the size of the test volume). A front panel analog gauge indicates the pressure in the system.

DH Instruments
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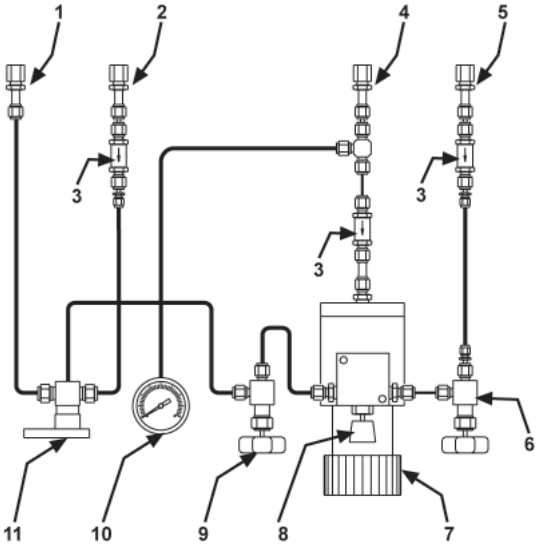
NOTE: See MPC1-D brochure for information on a two channel manual pressure controller.

MPC1™ Manually Operated Precision Pressure Controller

PNEUMATIC SCHEMATIC



1. Vacuum connection (1/8 in. NPT F)
2. Vent connection (1/8 in. NPT F)
3. Filter
4. Test connection (1/8 in. NPT F)
5. Gas supply connection (1/8 in. NPT F)
6. Inlet valve
7. Variable volume
8. Variable volume equalization valve
9. Outlet valve
10. Gauge 7 or 20 MPa (1 000 or 3 000 psi)
11. Outlet selection valve

SPECIFICATIONS

	MPC1-1000	MPC1-3000
Pressure Range:	Vacuum to 7 MPa (1 000 psi)	Vacuum to 20 MPa (3 000 psi)
Total Displacement of Variable Volume:	57 cc (3.5 cu. in.)	41 cc (2.5 cu. in.)
Displacement of Variable Volume per Rotation:	1.8 cc (0.1 cu. in.)	0.7 cc (0.04 cu.in.)
Filters:	0.5 micron	0.5 micron
Pressure Connections (Supply, Test, Vent, Vacuum):	1/8 in. NPT female	1/8 in. NPT female
Pressure Supply:	Equal to or greater than the maximum pressure desired.	
Vacuum Supply:	Equal to or greater than the maximum vacuum desired. Vacuum pressures near atmosphere can be achieved without a vacuum supply to approximately -50 kPa (-7.5 psia, -15 in. Hg) in a test volume of 15 cc (3.5 cu. in.) and reducing proportionally as test volume increases.	
Dimensions:	320 mm W x 128 mm H x 370 mm D (12.6 in. x 5.0 in. x 14.6 in.)	
Weight:	6 kg (13 lb.)	6 kg (13 lb.)

ORDERING INFORMATION

	Product Designation	Part Number	Ordering Description
MPC1			
	MPC1-1000	401067	Manually operated gas pressure controller complete with user's manual.
	MPC1-3000	401210	Manually operated gas pressure controller complete with user's manual.
OPTIONS			
	PK-7000-PPC/MPC	400985	Interconnections kit for connecting the MPC1 to a reference measuring device having an 1/8 in. NPT F connection and including a quick connecting head on stand with 1/8 in. NPT F and AN4 F connectors for connection to a device under test. Suitable for use with **DHI** RPM reference pressure monitors and PG7601 or PG7102 piston gauges.
	Kit, Rack Mount	401154	Rack mount kit (2U).
	VA-PPC/MPC-REF, 110V	400922	Vacuum pump package using “fast vac” pump (includes NO 3-way solenoid valve).
	VA-PPC/MPC-REF, 220V	401160	Vacuum pump package using “fast vac” pump (includes NO 3-way solenoid valve).

See the MPC1-D brochure for information on a two channel manual pressure controller.

DH Instruments, a Fluke Company
4765 East Beautiful Lane
Phoenix, AZ 85044-5318
USA

DH Instruments
A Fluke Company

Tel 602.431.9100
Fax 602.431.9559
dhi@dhinstruments.com
www.dhinstruments.com

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