

# MPC1-D™ Manually Operated Pressure Controller for Differential Pressure

## PURPOSE / APPLICATIONS

MPC1-D provides a compact and easy to use system for manually setting and adjusting pressures between atmosphere and 1 000 psi (7 MPa) or 3 000 psi (21 MPa) in systems where precise pressure control is required. MPC1-D is a two channel configuration designed specifically for use in setting and adjusting differential pressures, particularly differential pressures at elevated line pressures (a single channel system is also available, see the MPC1 brochure).

MPC1-D is very well suited for use as the pressure controlling mechanism in calibration and testing systems using a differential digital indicator as the reference or any time two channel pressure control, with bypass capability, is needed. It is also ideal for working with gas operated piston gauges and is the standard choice for pressure control in a **DHI**



PG7102 dual piston gauge high line differential pressure system.

## DESCRIPTION

To use MPC1-D, a pressure supply equal to the maximum desired test pressure is connected to the supply port. There are two test ports (high and low) for the low and high side of the differential system into which pressure is to be controlled. A zero displacement valve allows the high side to be isolated from the low side or the two sides to be connected together (bypassed).

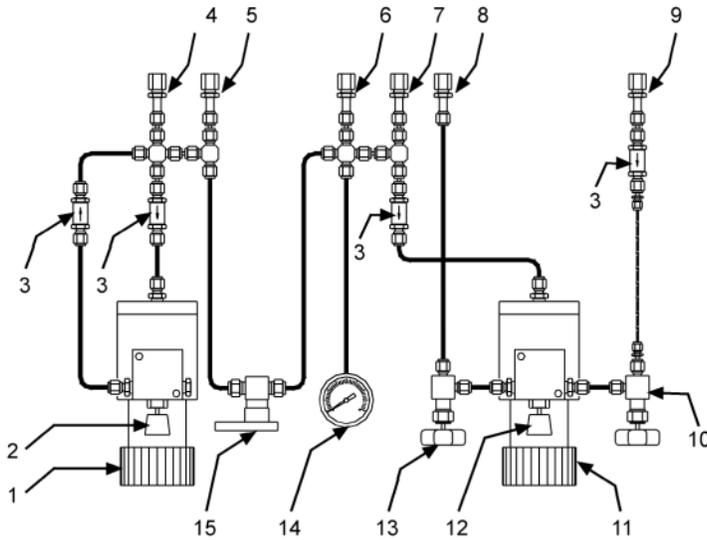
Fine pressure control of each side independently is accomplished using two high precision verniers with equalization valves so that turning effort is minimal at all pressures. Inlet and outlet metering valves are used to admit or exhaust gas for coarse pressure adjustment. With the bypass valve open, the inlet and outlet valves affect the high and low sides simultaneously. Filters on the supply and test connections protect MPC1-D control components from outside contamination. A front panel analog gauge gives a permanent display of the pressure in the high side of the system.



**Calibration Solutions  
for Pressure  
and Flow™**

*NOTE: See MPC1 brochure for information on a single channel manual pressure controller.*

### PNEUMATIC SCHEMATIC



1. Variable volume (lo side)
2. Variable volume equalization valve (lo side)
3. Filter
4. Lo ref connection (1/8 in. NPT F)
5. Lo test connection (1/8 in. NPT F)
6. Hi test connection (1/8 in. NPT F)
7. Hi ref connection (1/8 in. NPT F)
8. Vent connection (1/8 in. NPT F)
9. Gas supply connection (1/8 in. NPT F)
10. Inlet valve
11. Variable volume (hi side)
12. Variable volume equalization valve (hi side)
13. Vent valve
14. Gauge (1 000 or 3 000 psi)
15. Lo side/Hi side bypass valve

### SPECIFICATIONS

	<u>MPC1-D-1000</u>	<u>MPC1-D-3000</u>
<b>Pressure Range:</b>	Atmosphere to 1 000 psi (7 MPa)	Atmosphere to 3 000 psi (21 MPa)
<b>Total Displacement of Variable Volume:</b>	57 cc (3.5 cu. in.)	41 cc (2.5 cu. in.)
<b>Displacement of Variable Volume per Rotation:</b>	1.8 cc (0.1 cu. in.)	0.7 cc (0.04 cu. in.)
<b>Filters:</b>	0.5 micron	0.5 micron
<b>Pressure Connections (Supply, Vent, Test Hi, Test Lo, Vent Hi, Vent Lo):</b>	1/8 in. NPT female	1/8 in. NPT female
<b>Pressure Supply:</b>	Equal to or greater than the maximum pressure desired.	
<b>Dimension:</b>	320 mm W x 172 mm H x 370 mm D (12.6 in. x 6.8 in. x 14.6 in.)	320 mm W x 172 mm H x 370 mm D (12.6 in. x 6.8 in. x 14.6 in.)
<b>Weight:</b>	9.5 kg (25 lb.)	9.5 kg (25 lb.)

### ORDERING INFORMATION

<u>Product Designation</u>	<u>Part Number</u>	<u>Description</u>
<b>MPC1</b>		
MPC1-D-1000	401646	Dual channel, manually operated gas pressure controller complete with user's manual.
MPC1-D-3000	401647	Dual channel, manually operated gas pressure controller complete with user's manual.
<b>OPTIONS / ACCESSORIES</b>		
PK-7100-MPCD-DIF	401645	Interconnections kit for connecting the MPC1 to a two channel reference measuring device having 1/8 in. NPT F connections and including two quick connecting heads on stands with 1/8 in. NPT F and AN4 F connectors for connection to a device under test. Suitable for use with <b>DHI</b> RPM reference pressure monitors and PG7601™ and/or PG7102™ piston gauges.
Kit, Rack Mount	400200	Standard 19 in. rack mount kit (2U) for PPC1/MPC1-D.

*See the MPC1 brochure for information on a single channel manual pressure controller.*

MPC1, MPC1-D, PG7601, PG7102, PPC1 and RPM are trademarks, registered and otherwise, of **DH Instruments, Inc.**

Due to a policy of continual product improvement, all product specifications, descriptions and features are subject to change without notice.

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