FLUKE®

Calibration

OPG1-30000™

Hydraulic Pressure Generator/Controller

Technical Data



Features

- On-demand pressure up to 200 MPa (30 000 psi)
- High resolution pressure adjustment with pushbutton adjustment
- Effortless operation
- Self-contained design with compact 30 cm x 54 cm (12 in x 21 in) footprint
- Half-turn metering valves cannot be overtightened
- No "end of stroke" variable volume limitations
- High quality, long life construction
- Advanced ergonomics
- Applicable in both piston gauge and transfer standard based test and calibration systems

OPG1-30000 provides an alternative for generating and adjusting high liquid pressures in calibration and test systems. This compact and easy to use system provides just the right balance between the simplicity and reliabilty of manual operation and the convenience of automated features. OPG1 is a compact and easy to use system for generating and adjusting pressures between zero and 200 MPa (30 000 psi) with on-demand high pressure supply and pushbutton, precision pressure control. Time consuming and tiresome manual pumping and/or screw press operation are completely eliminated. OPG1 is the ideal solution in a variety of applications where high pressure generation and precision control are required including piston gauge and transfer standard based calibration and test systems.

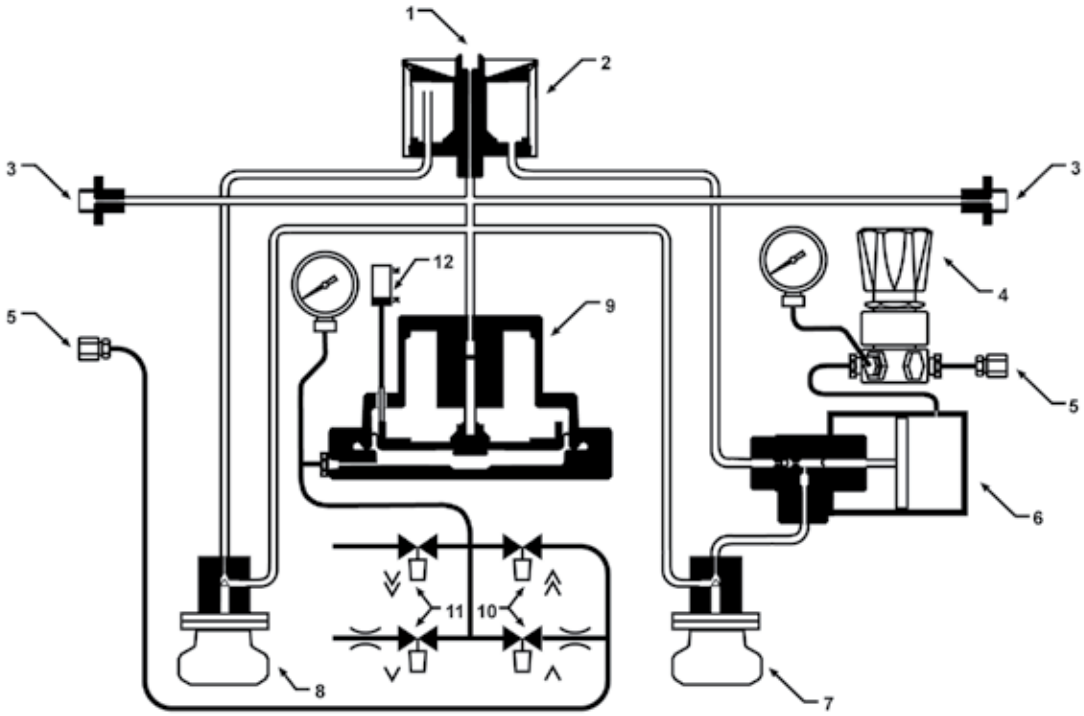
OPG1 is the standard pressure generation and control component in a DHI PG7302 high accuracy piston gauge system.

A pneumatically driven hydraulic pump provides continous high pressure oil supply to the high pressure inlet valve. The pump output pressure is set to the desired level using the front panel drive pressure regulator and indicator. The high pressure inlet valve admits high pressure fluid from the pump for rough ascending pressure control and the high pressure outlet valve returns the fluid to the reservoir to decrease pressure. The high pressure valves are specially designed spring loaded metering valves that operate in a half-turn and cannot be overtightened.

Fine pressure adjustment is achieved using a pneumatically driven variable volume. Rather than being activated by rotational force like a screw press, the variable volume is pneumatically activated through a diaphragm. Push button momentary valves adjust the air pressure on the diaphragm providing both effort free micro adjustment and very rapid piston movement as needed. The physical efforts and "end of stroke" operational problems of conventional screw presses are completely eliminated. The variable volume piston position is indicated on the front panel.

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Pneumatic schematic



1. Upper test connection
2. Reservoir and test instrument drain
3. Side test connections
4. Pump air drive regulator
5. Drive air connections
6. Pneumatically driven hydraulic pump
7. High pressure inlet valve
8. High pressure exhaust valve
9. Pneumatically driven variable volume (PDVV)
10. PDVV up fast/slow push button valves
11. PDVV down fast/slow push button valves
12. VV piston position indicator

Specifications

Pressure range	0 MPa to 200 MPa (30 000 psi)
Operating test fluid	Di-2 Ethyl Hexyl Sebacate (synthetic oil) (inquire about alternate fluids)
Test connections	DH500 (gland and collar type for coned and left hand threaded tube, equivalent to AE F250C, HIP HF4, etc.)
Drive air connection	1/4 in. NPT F
Pump drive air	Max. desired hydraulic pressure/400, 350 slm (12 scfm), non-continuous flow
PDVV drive air	70 MPa (10 000 psi) operation: 550 kPa (80 psi) 140 MPa (20 000 psi) operation: 700 kPa (100 psi) 200 MPa (30 000 psi) operation: 850 kPa (120 psi)
Reservoir capacity	200 cc (12 cu in)
Weight (with fluid)	27 kg (60 lb)
Dimensions (W x H x D)	30 cm x 30 cm x 53.5 cm (11.75 in x 11.75 in x 21.0 in)

Ordering information

Model
OPG1-30000 Hydraulic Pressure Generator/Controller

Includes: 1 qt. Di-2 Ethyl Hexyl Sebacate (synthetic oil), external tubing/adaptors for connection to a DHI PG7302 or RPM4, manual

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Fluke Calibration
PO Box 9090, Everett, WA 98206 U.S.A.

Fluke Europe B.V.
PO Box 1186, 5602 BD
Eindhoven, The Netherlands

For more information call:
In the U.S.A. (800) 443-5853 or
Fax (425) 446-5116
In Europe/M-East/Africa +31 (0) 40 2675 200 or
Fax +31 (0) 40 2675 222
In Canada (800)-36-FLUKE or
Fax (905) 890-6866
From other countries +1 (425) 446-5500 or
Fax +1 (425) 446-5116
Web access: http://www.fluke.com

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