# BPI
## BENCHES FOR HYDRAULIC HIGH-PRESSURE TESTS

## SPECIFICATION

The BPI series test benches have been designed to carry out static/burst tests or life (pulsing) tests on fittings, multilayer tubes, flexible tubes, plastic tubes, valves, heat exchanger and many others hydraulic components by readings and measuring the hydraulic characteristics in real operative conditions.
The benches are designed to simulate pressure variation with possibility to adjust the pressure value up to the max range. A booster (air/water) increases the pressure; the hydraulic plant is supplied from the external water supply line.

## APPLICATIONS

A) TEST WITH STATIC PRESSURE
The internal booster keeps the pressure constant also at presence of few water leakages. It is possible to adjust the pressure continuously by a pressure regulator and read the value on digital manometer.

B) TEST WITH IMPULSIVE PRESSURE
Water hammer test cycles carried out with adjustable pressure by booster within the range from starting pressure to max pressure. Max frequency 1 Hz.

| | BPI 100 | BPI 250 | BPI 600 |
|---|---|---|---|
| Operative range – static tests<br>(with 6 bar of pneumatic air supply) | 100 bar | 245 bar | 600 bar |
| Maximum pressure – static tests<br>(with 9 bar of pneumatic air supply) | 140 bar | 350 bar | 700 bar |
| Pulsing pressure tests | 100 bar | 200 bar | 300 bar |

## TEST EXECUTION

The test chamber is provided with one inlet and one outlet: it is possible to perform the test in different ways according the kind of component under test:

- If the component under test is provided with only one inlet (pressure switches, pressure transducers, etc..) connect it directly to the supply line of the bench.
- If the component is equipped with inlets and outlets (example: flexible piping, heat exchangers, radiators, etc....) connect it directly to the bench and keep open the outlet, allow the water to fill completely the component and, subsequently, close the outlet of the component with a valve or a plug (nut) and start the test.

At the end of the filling operation the component under test can be subjected to static pressure to verify the seal and the burst pressure or cycles of alternating pressure between the pressure of starting pressurization and the maximum pressure. The pressure is adjusted by acting on the pneumatic regulator that supply the booster.

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**NOTE:** if the internal geometry of the piece makes it difficult to completely evacuate the air, we suggest to immerge the piece in a tank filled with water in order to allow, as much as possible, the drain of internal air and then connect it to the pressure outlet.

## MAIN COMPONENTS

- Useful testing area approx. 450 x 650 x (h) 500 mm with dedicated outlets in frontal position for burst and water hammer tests. The testing area is provided with a stainless-steel tank for the recovery of the water with overflow and drain tubes. The drain is provided with closure valve and level switch in order to stop the test in case of failure of the components.
- Pressure intensifier (booster) with ratio suitable to generate the required pressure equipped with magnetic limit switches.
  Models available:
  **MOD BPI 100** ratio 1:17 max. volume each stroke **140 cc**
  **MOD BPI 250** ratio 1:41 max. volume each stroke **98 cc**
  **MOD BPI 600** ratio 1:100 max. volume each stroke **62 cc**
- Water supply from external network (minimum pressurization pressure).
- Digital reading pressure gauge connected to a high dynamic response pressure transducer for the measure of the pressure in the hydraulic circuit and equipped with peak memory function.
- Pressure regulator with double-stage filter unit.
- PLC for test sequence control, cycles counting and alarms & safety procedures management.
- N° 2 wall sockets 3/4” M for inlet and outlet.
- N° 1 pneumatic ball valve and safety check valve for the water supply line.
- N° 1 pneumatic ball valve and safety check valve for the water drain line.
- Safety door made of profiled aluminium bar with double polycarbonate protection and safety lock device operatives during the tests.

## EXTERNAL SUPPLIES (to provide)

- Electrical supply 230 V - 1 ph. + N + ground (50 Hz).
- Power 0,5 kW.
- Pneumatic supply 6÷9 bar 600 NL/min.
- Water drain tube DN 20 mm.
- Water supply ambient temperature.
- Dimension ~ 1400 x 1150 x (h) 1600 mm.
- Weight ~ 250 kg.

**TRANSDUCER INSTALLED – (model: BPI 250):**

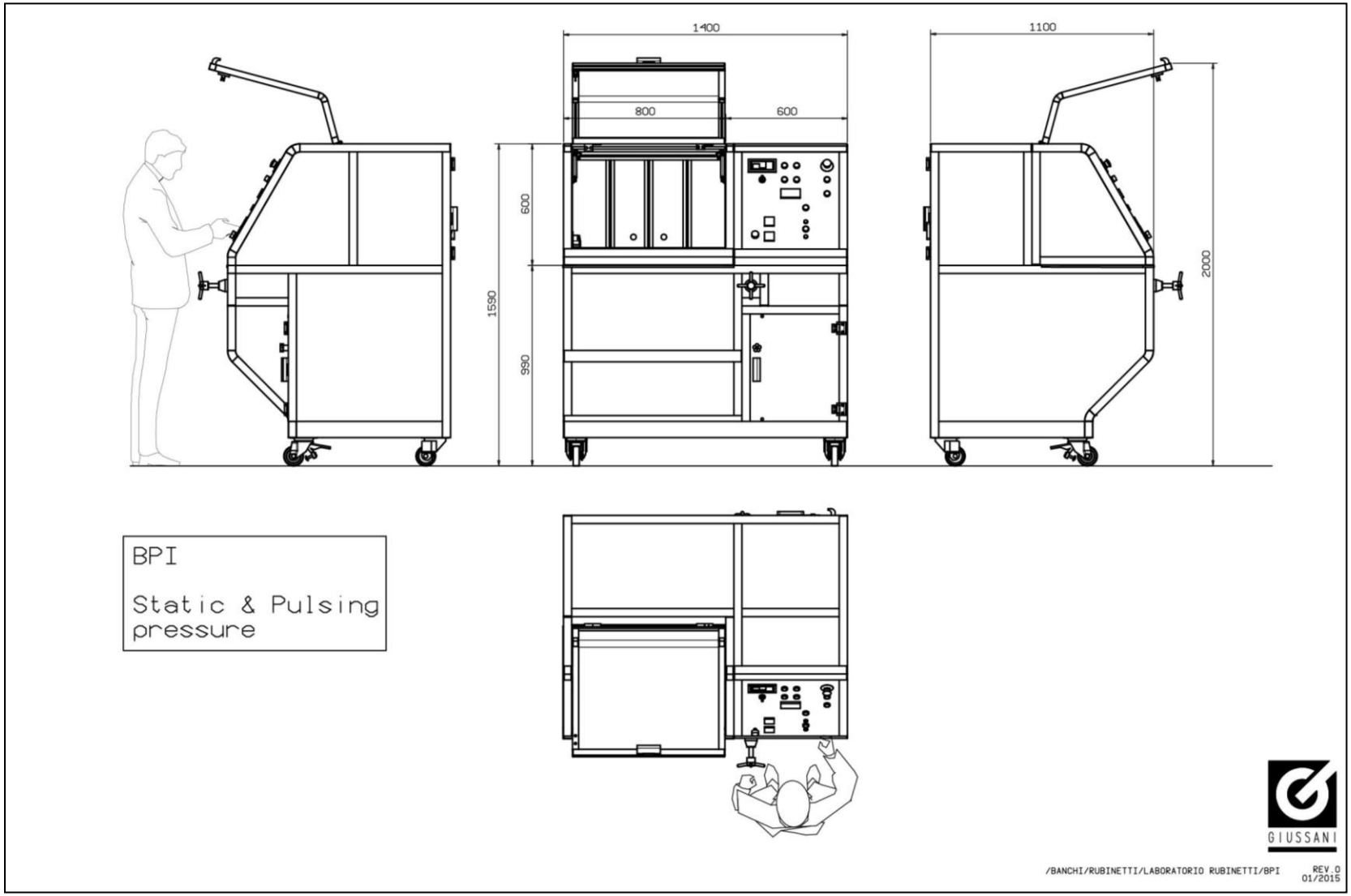
| | |
|---|---|
| PRESSURE: | operative range 0-500 bar.<br>accuracy ±0,10% of the full-scale value. |
| Digital reader: | accuracy ±0,20% of full-scale value.<br>resolution 0,1 bar. |

**IMPORTANT:**

**The measuring equipment assembled on the bench is equipped with an inspection report relative to the operational fields and performed according to the ISO 9001 standards, with reference to the ACCREDIA (Italian Calibration Service) primary samples.**

**The test bench is provided with a final test report of electrical safety according to standard CEI EN 60204-1 and CE declaration of conformity.**

## EXAMPLE PICTURES:



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## PRESSURE TEST BENCH FOR STATIC AND HAMMER TESTS

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/BANCHI/RUBINETTI/LABORATORIO RUBINETTI/BPI REV.0 01/2015

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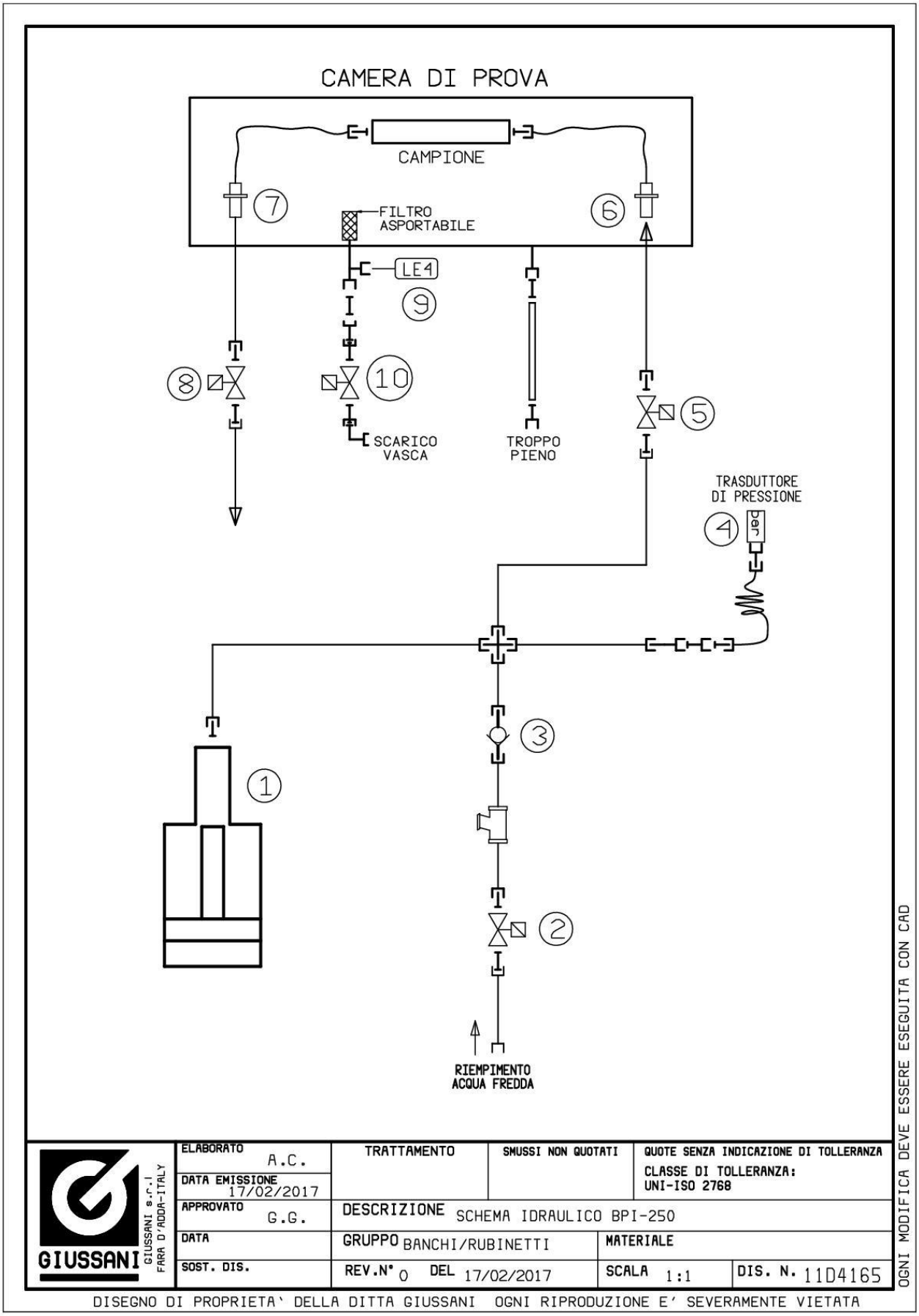
CAMERA DI PROVA
CAMPIONE
FILTRO ASPORTABILE
LE4
SCARICO VASCA
TROPPO PIENO
TRASDUTTORE DI PRESSIONE
ber
RIEMPIMENTO ACQUA FREDDA
1
2
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9
10
GIUSSANI
GIUSSANI s.r.l. FARA D'ADDA-ITALY
ELABORATO A.C.
DATA EMISSIONE 17/02/2017
APPROVATO G.G.
DATA
SOST. DIS.
TRATTAMENTO
SMUSSI NON QUOTATI
QUOTE SENZA INDICAZIONE DI TOLLERANZA
CLASSE DI TOLLERANZA: UNI-ISO 2768
DESCRIZIONE SCHEMA IDRAULICO BPI-250
GRUPPO BANCHI/RUBINETTI
MATERIALE
REV.N° 0 DEL 17/02/2017
SCALA 1:1
DIS. N. 11D4165
OGNI MODIFICA DEVE ESSERE ESEGUITA CON CAD
DISEGNO DI PROPRIETA' DELLA DITTA GIUSSANI OGNI RIPRODUZIONE E' SEVERAMENTE VIETATA