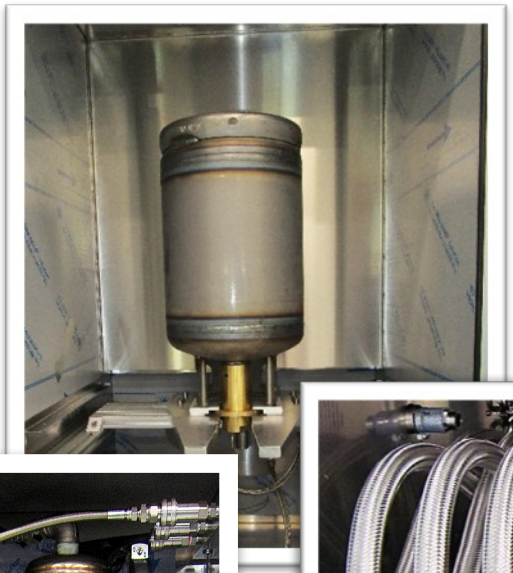
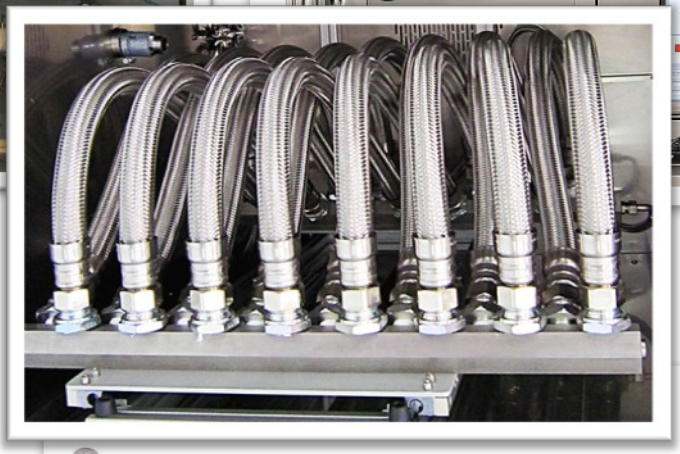
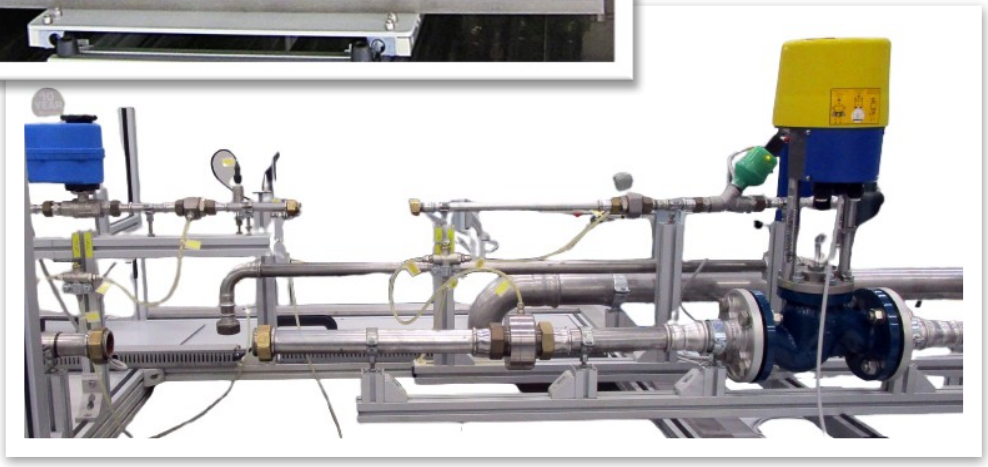
# HYDRAULIC TEST BENCHES











**600 bar**

maximum pressure of the BPI series

**110 °C**

maximum temperature of the thermostatic test chamber

**< 1 minute**

temperature changeover in thermal cycle tests

**3 lines**

independent measuring lines on flow rate benches

Hydraulic test benches are designed to measure the performance and endurance characteristics of hydraulic components, simulating their use under both real and extreme conditions to characterize them and define their performance and endurance limits.

They generate static and impulse pressure with hot or cold water and a temperature-controlled test chamber, so that tests are carried out in accordance with the main industry standards. Optional features also allow flow rate, thermal cycle and pipe traction tests.

## APPLICATIONS

**Hydraulic tests on:**

- braided flexible hoses, plastic pipes, multilayer pipes, pipe-fitting assemblies;
- metal and plastic fittings, hydraulic couplings, quick couplings;
- pressure reducers, heat exchangers, tanks and hydraulic components;
- endurance tests with ball valve actuation.

## THE RANGE

**BPI · BPF200-SIC-HT-HC · BPF-AT-HCT-BP:** static and pulsing pressure, water hammer, ageing

**BPF-T-3000 · BPV-3T:** pressure, thermal cycles, flow rate, valve life

**BPF-Q300-8 · BPF-Q300-12 · BPF-Q600-6:** flow rate tests

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TESTING EXPERTISE

# Test benches
## static/pulsing pressure, water hammer, aging

### BPI
**STATIC AND PULSING PRESSURE TEST BENCHES**

Our basic models for static and pulsing hydraulic pressure tests on hydraulic components in general and sanitary fittings, in accordance with industry standards. No computer: all functions and controls are operated manually. The system can be pressurized at mains pressure with an external cold or hot water supply and is set up for static tests or for pulsing pressure and water hammer cycles.

- BPI-100, basic version: up to 100 bar with 6 bar compressed air supply.
- Versions available up to 250, 400 and 600 bar.





### BPF200-SIC-HT-HC
**HOSE TEST BENCH**

For measuring the hydraulic characteristics of flexible hoses and accessories under real operating conditions, with water temperature control (amb. ÷ 90 °C) and test chamber temperature control (amb. ÷ 110 °C). Maximum pressure 200 bar, impulse pressure up to 100 bar.

**Available tests**

- constant pressure leak and burst tests with hot or cold water;
- ageing;
- pulsing pressure with hot or cold water;
- cyclic pressure with hot or cold water, with or without water circulation.

**Available versions**

Horizontal test chamber from 800 to 1,600 mm long or vertical chamber up to 1,600 mm high, heated by forced air up to 110 °C.

Both versions can be fitted with an optional vacuum system for correct water filling, even of components with internal cavities or complex shapes.





### BPF-AT-HCT-BP
**HOSE AGEING TEST BENCH**

For ageing tests on flexible hoses according to EN 13618, with thermostatic chamber up to 110 °C.

- pump pressure adjustable up to 20 bar;
- maximum static pressure with booster up to 50 bar;
- temperature-controlled water tank up to 90 °C;
- double pull-out rack to connect up to 16+16 hoses under test.

# Test benches
## static/pulsing pressure, thermal cycles, flow rate, valve endurance

**BPF-T:** versatile multifunction test benches for multilayer pipes and pipe-fitting assemblies, for product validation with functional and endurance tests.

**BPV:** designed for thermal cycle tests on multilayer pipes and pipe-fitting assemblies, with a test chamber sized according to EN 12293, EN ISO 19893, DVGW W 534, ISO 15875-5 and ISO 21003-5.

## BPF-T-3000
### PIPES, HOSES AND FITTINGS TEST BENCH

For measuring hydraulic characteristics under real operating conditions and for life tests on flexible hoses, rigid pipes, multilayer pipes and fittings.

**Available tests**

- hydraulic burst;
- constant pressure leak tightness;
- water hammer resistance and pulsing pressure;
- thermal cycles;
- flow rate;
- life tests on ball valves and taps.





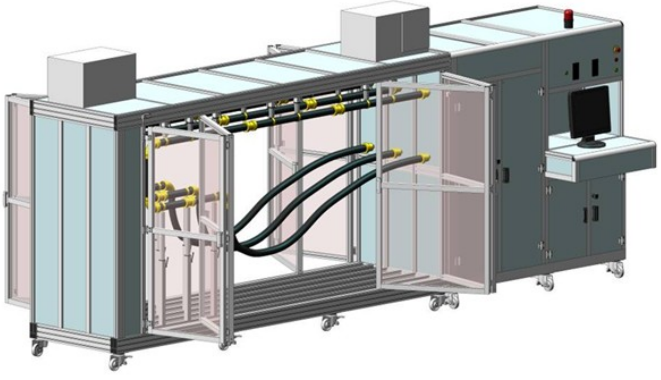
## BPV-3T
### THERMAL CYCLE TEST BENCH

| | |
|---|---|
| Independent test stations | **3** |
| Total nominal flow rate | **65 L/min at 12 bar** |
| Total maximum flow rate | **100 L/min at 12 bar** |
| Delivery pressure | **approx. 1-15 bar** |
| Cold water temperature* | **10-25 °C** |
| Hot water temperature* | **40-92 °C** |

- test pressure adjustable 1÷15 bar with 2 inverter-controlled pumps with feedback;
- independent flow control valves on each station;
- real-time measurement of temperature and pressure difference between inlet and outlet of each station;
- temperature changeover at the pipe inlet in less than 1 minute.

## OPTIONAL FEATURES

- Conditioning units, to prevent heat dispersion from raising the temperature inside the test area.
- Traction devices to tension the pipes before testing and adjust the axial load; they can also measure fitting pull-out force with hot and cold water circulating.



*Thermal cycle test bench with conditioning units*

## WATER SUPPLY UNITS

External units supplying thermal cycle benches with cold (10-25 °C) and hot (40-95 °C) water at the required flow rates:

| | |
|---|---|
| TCW B2 / CCW B2 | **power 37 kW** |
| TCW E0 / CCW E0 | **power 72 kW** |

** temperatures supplied by the external water supply units*

# Flow rate test benches

BPF-Q hydraulic benches perform flow rate tests on hydraulic components, with dedicated software applications for each type of component:

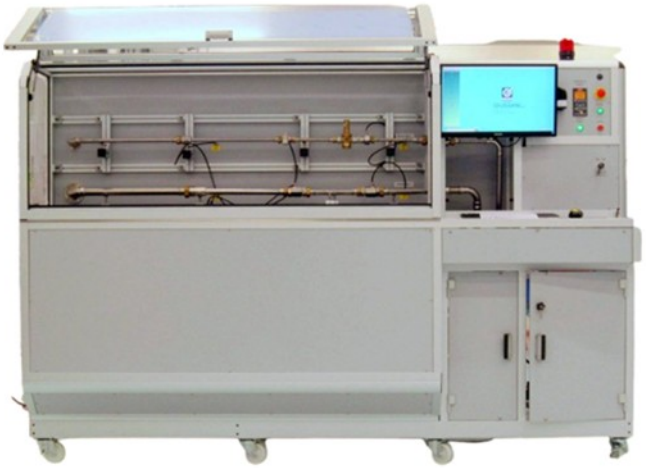
- flow rate with linear pressure increase and decrease;
- Kv and Cv coefficient calculation;
- outlet pressure of pressure reducers as flow rate varies;
- flow rate as pressure loss varies.

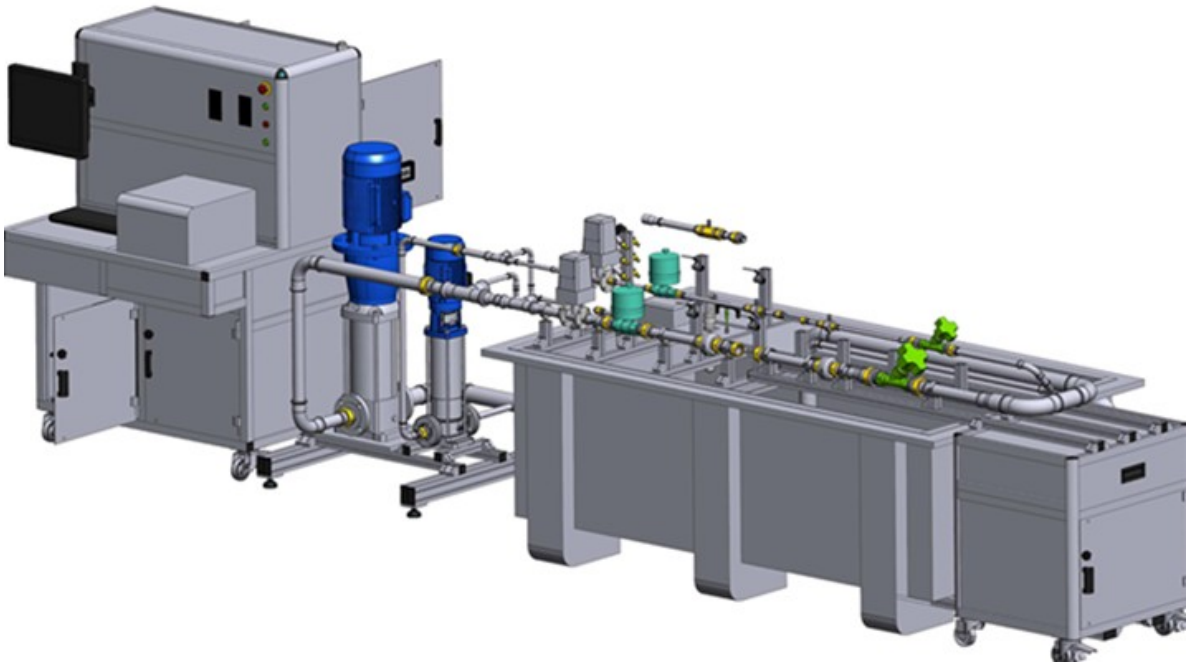
## BPF-Q300-8 / BPF-Q300-12

### FLOW RATE TEST BENCHES

Two measuring lines and 1600 mm long test compartment.

- standard DN 10 mm circuit: flow rate 2÷47 L/min;
- standard DN 25 mm circuit: flow rate 10÷295 L/min;
- adjustable delivery pressure 0.2÷8 bar (BPF-Q300-8) or 0.2÷12 bar (BPF-Q300-12);
- water supply from mains, cold water;
- internal storage tank of approx. 200 liters.





## BPF-Q600-6

### HIGH FLOW RATE TEST BENCH

Power unit and acquisition system in a separate structure, 2,000-liter cold water storage tank. Version with two tandem supply pumps and up to three independent measuring lines.

| | |
|---|---|
| Standard DN 10 mm circuit | **2÷47 L/min** |
| Standard DN 25 mm circuit | **10÷295 L/min** |
| Standard DN 40 mm circuit | **25÷754 L/min** |
| Max. flow rate with two pumps | **700 L/min** |
| Delivery pressure | **0.2÷8 bar** |
| Max. pressure at 300 L/min (1 pump) | **6 bar** |
| Max. pressure at 600 L/min (2 pumps) | **6 bar** |
| Max. pressure at 750 L/min (2 pumps) | **4.5 bar** |
| Water supply | **cold mains water** |

**CERTIFICATION:**
All instruments are supplied with final testing, stability and accuracy report traceable to Accredia standards.

TESTING EXPERTISE

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