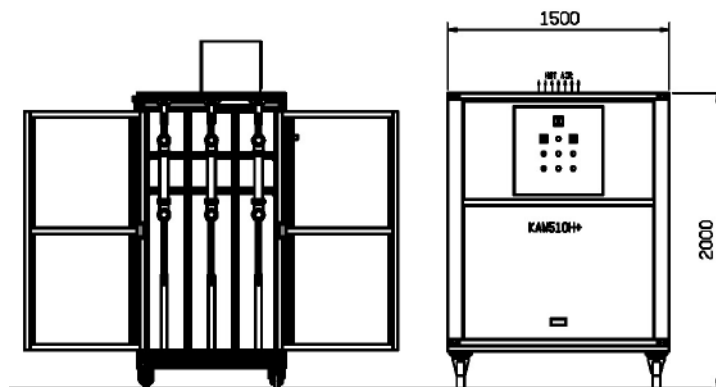
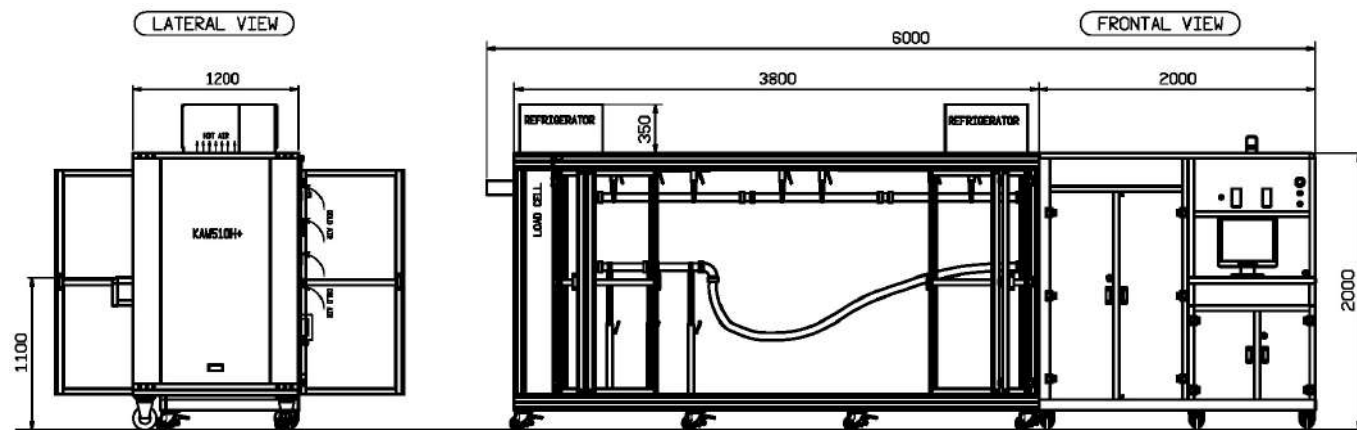


TECHNICAL CHARACTERISTICS

GENERAL FEATURES:

- Supporting structural frame made of aluminium and laminated panels.
- Recovery tank made by stainless steel measuring 15/10 mm with drain in the rear area.
- Slide guide for holder anticorrosive made for fixing the samples under test.
- Assembly on rotating wheels provided with parking brakes.
- Internal network for the supply of hot and cold water, made with thermally insulated stainless steel piping, adequate to supply at the maximum nominal flow.
- Valves installed on hydraulic plant with pneumatic actuators.
- Ball valves piloted to trap individual stations during supply and drain.
- Double-stage filter unit.
- Separation between hydraulic plant zone and regulation/control area.
- The bench consists of three components joined and connected at installation.
- P.C. Pentium, DVD burner, 3,5" floppy unit, network card, 16 channels acquisition card and power supply by 500 W UPS.
- Two internal HDD and one external HDD USB.
- LCD monitor 19" with adjustable support, wireless keyboard and optical mouse.
- Windows XP Professional 32 bit operating system.
- AQ2TB dedicated software for thermal cycle tests.



TECHNICAL DATA

INSTRUMENTS OF MEASURE:

Temperature:	Acc. $\pm 0,3$ °C - Resolution 0,1 °C
Pressure:	Acc. $\pm 0,1\%$ f.s.v. - Resol. 0,01 bar
Flow rate:	Acc. $\pm 0,25\%$ reading

EXTERNAL SUPPLY:

Cold water:	20 L/min max.
Pneumatic supply:	6 ÷ 10 bar
Power supply:	400 V - 50 Hz (3 phases)
Electric power:	58 kW (with KAW510H+)
Bench size:	6000 x 1350 x 2400 (h) mm
KAW510H+ size:	1500 x 1200 x 2000 (h) mm
Total weight:	~ 1600 kg



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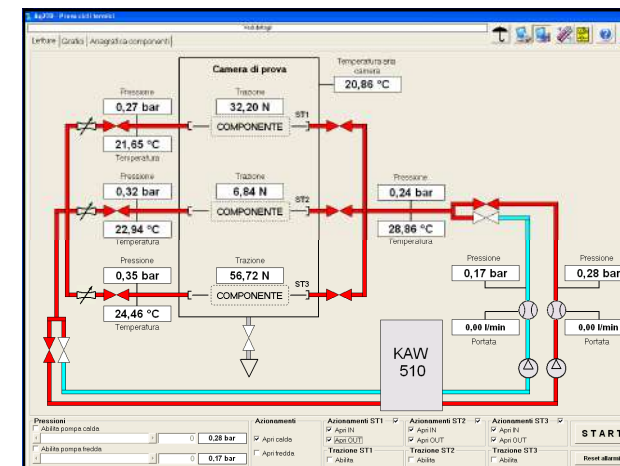


A QUESTION OF CALIBRATION

DBPV50-E-07/10

BPV-T50-3-SWG

THERMAL CYCLES TEST BENCH



OPERATING RANGES

Pressure:	1 ÷ 12 bar
Hot water:	95 \pm 2 °C
Cold water:	20 \pm 5 °C
Flow rate:	50 L/min
Maximum flow rate:	65 L/min
Temperature exchange:	Less than 1 minute



Applications:

Thermal cycles testing of pipes, connections and PE-X pipes in accordance with the international standards:

EN 12293	DVGW-W534
ISO 1587-5	ISO-21003-5
SI 5433-5	AS/NZS 4020

BPV-T50-3-SWG

THERMAL CYCLES TEST BENCH

SOFTWARE FOR DATA ACQUISITION AND TEST MANAGEMENT:

Thermal cycles test bench software, with a multi-channel data acquisition system, applications for password, language and messages management. Automatic or semi-automatic bench calibration and testing system.

- Start-up panel with password, languages and units of measure management and access to service functions and bench calibration.
- Entry of data test with information relating to the customer, category, model, etc. Save, load and delete test functions available.
- Setting of start-up limits, test parameters and operating range.
- A reading panel with interactive synoptic plant: colour change on intercepted lines, opening and closing displayed valves, pumps piloting, real-time indication of each significant measure.
- Control panel for test in execution (Fig. 3) divided into three stations, indicating general test parameters (hot temperature, cold temperature, input pressure, total capacity, pump pressure and water output temperature) acquired in real-time with sampling frequency of 500 Hz per channel.
- Indication of the number of cycles executed and eventual anomalies. Possibility to add notes during the testing.
- All the video screens can be printed with annotations and customer logo.
- Help on-line with all the main operating instructions.
- Each test generates a final report in English or in Italian with details of the test, data acquisition graphs, final data, a representative screen shot and customer logo.
- List of start-up, interruption and alarm messages.

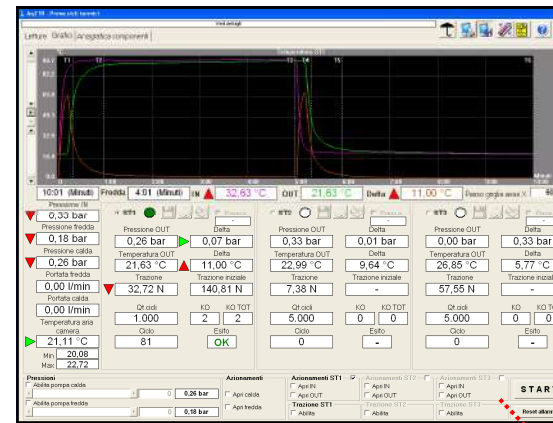


Fig. 3

APPLICATIONS:

BPV-T series test benches are suitable to execute thermal cycle tests in accordance with the EN 12293 and equivalent Standards on multi-layer piping assemblies, PE-X pipe and fittings. The test chamber is made in aluminium profiles with sliding doors equipped with shielded glass to protect the operator from possible pipe breakage. Inside the chamber there is a rack with adjustable supports for mounting test piping, they can be placed in continuous traction with a tensioning device equipped with load cell.

A recovery tank with a level sensor is positioned at the bottom of the chamber to stop the test in case of pipe breakage.

The chamber is accessible from both sides, making it possible to install up to three test stations.

The bench makes it possible to operate with 3 test stations simultaneously, using specific independent parameters for each station and a common thermal cycle.

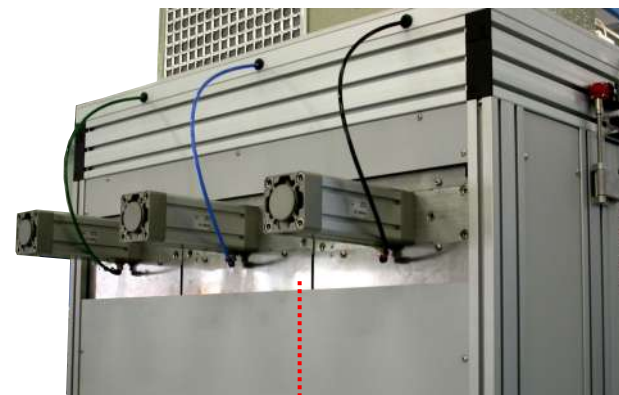


Fig. 1

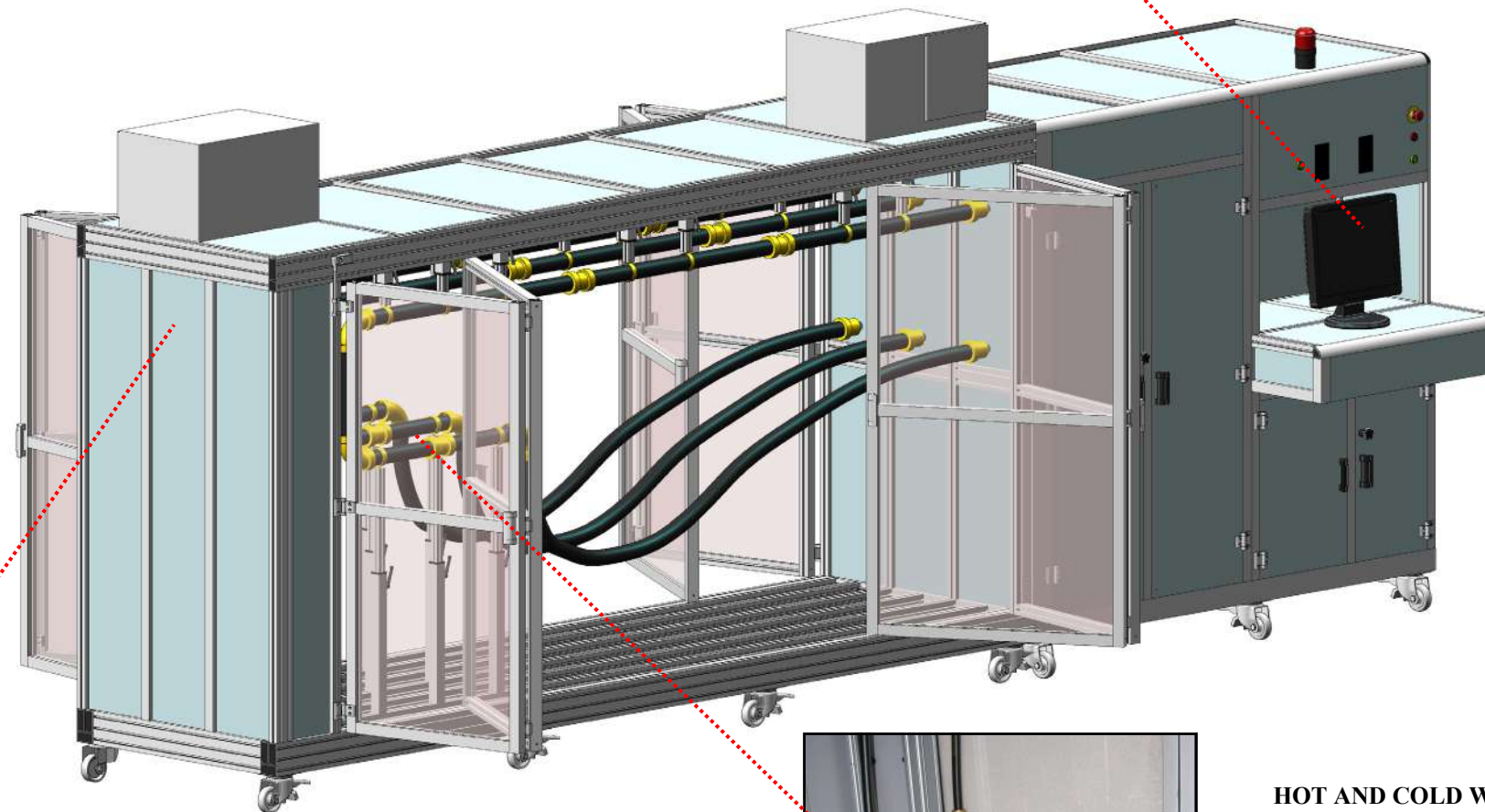


Fig. 4

TEST CHAMBER:

Made by aluminium profiles, support frame mounted on wheels that make it easy to move in case of maintenance, easy assembly of testing pipes thanks to the possibility to position the brackets on aluminium profiles with telescopic guides that slide vertically.

Easy access to the test area is granted by the step-on grid. The test rack provides the possibility of installing three test pipes connected to the supply and drain collector (Fig. 2).

Connection to test bench and recovery units with rigid piping that is suitable for the foreseen test flow-rate and pressure. Internal area with a stainless steel recovery tank that collects the water if there are leaks in pipes and conveys water to a sensor that signals the problem and interrupts the test.

Folding safety doors with an aluminium frame and front guard in tempered glass.

The test station is equipped with an EXTERNAL CONDITIONING UNIT to avoid that thermal dispersion increases the temperature in the test area.

Traction device with a 3000 N load cell to place pipes in traction before starting the test and to adjust axial load force (Fig. 1).

The traction testing device can also be used to detect pull out force of the fittings when hot and cold water are circulating.



Fig. 2

HOT AND COLD WATER GENERATOR:

A generator of hot/cold water supplies the pipes under test thanks to two multistage pumps controlled by inverters; drain water is recovered in closed circuit in accumulation tanks (about 280 L each) allowing:

- a complete recovery of water used for testing;
- a quick response to temperature changes and constancy of water supply temperature, ensuring repeatability and precision of the tests;
- flexible use with the possibility to change rapidly the working temperatures whether rising or falling with slopes greater than 1 °C/min;
- reduced start-up transition: the plant is operative in an hour, with a initial water temperature of 25 °C;
- Immediate installation, without the need for any masonry, gas supply or exhaust fumes.

The closed circuit production of hot and cold water is obtained using the KAW510H+ unit.