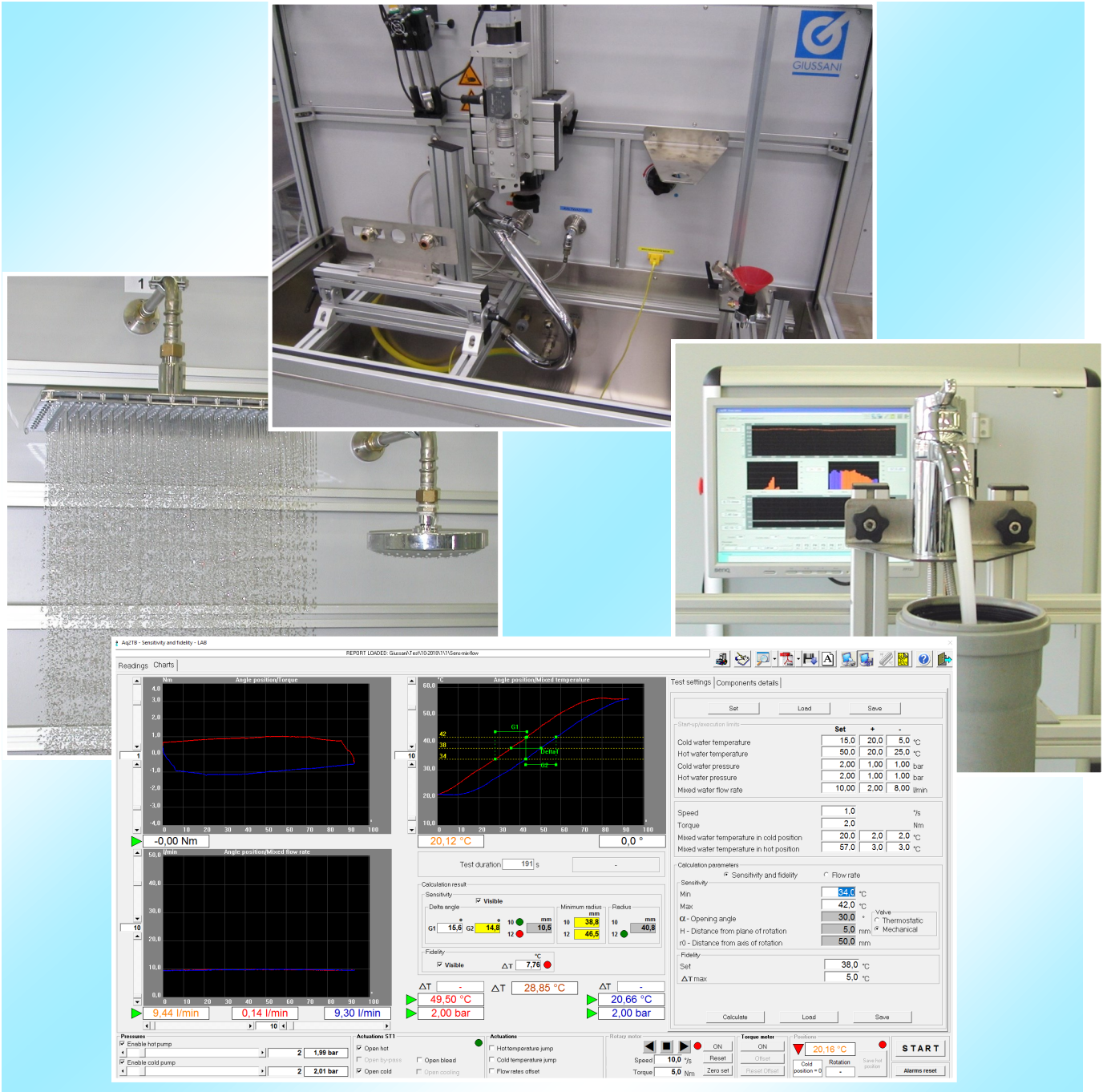




# Sanitary taps test benches



Giussani, founded in 1947, started his activity by manufacturing thermometers and electronic devices, then the necessity of calibrating and testing its own products forced Giussani to internally develop testing systems acquiring a specific know how.

This second activity during the years became the most important.

The company has been developing and producing more than 500 test benches for simulation and measuring temperature, pressure and electronic signals by producing more and more complex and advanced models.

30 years ago Giussani started the production of the first test bench for sanitary taps, during the last years the Company installed more than 350 test benches in the World.

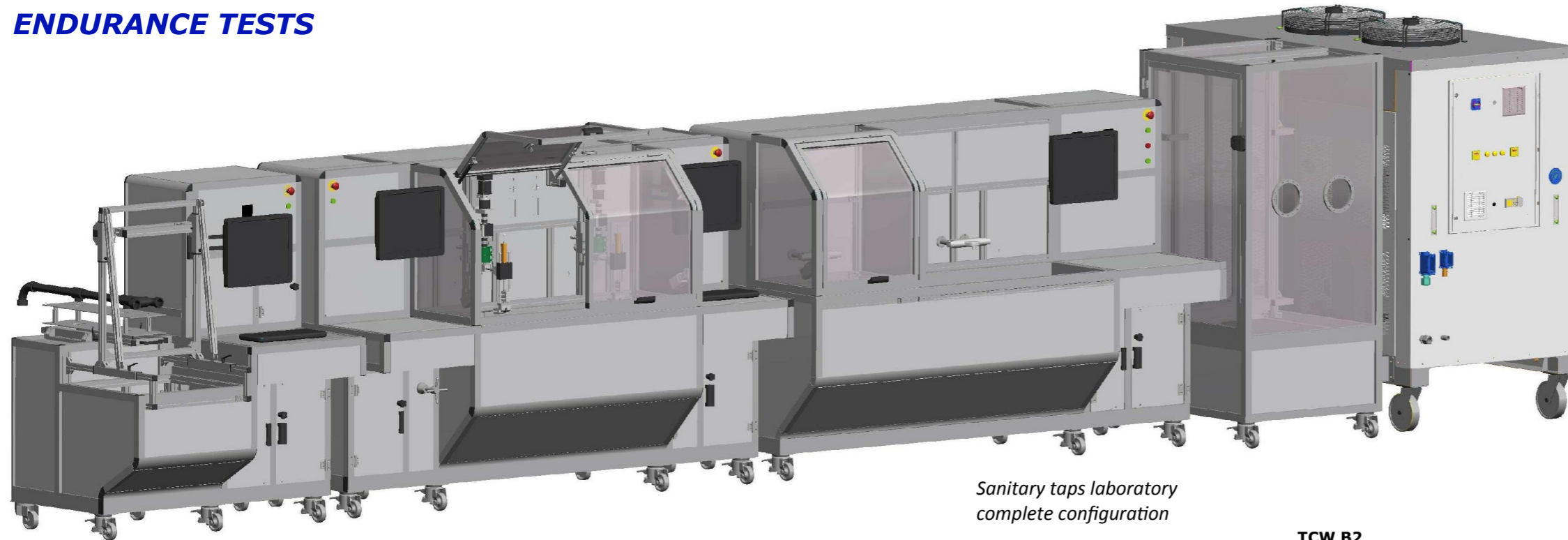
Giussani currently manufactures a complete line of hydraulic test benches to measure the performance and to test the endurance of many components: sanitary taps, showers and accessories, fittings, valves, pipes, heat exchangers etc..

Please feel free to contact us for further information and in case you have special requirements.

# HYDRAULIC TEST BENCHES FOR SANITARY TAPWARE

## PERFORMANCE TESTS

## ENDURANCE TESTS



Sanitary taps laboratory complete configuration

### BP-RUMORE

Measurement of the noise produced by taps or hydraulic appliance used in the water distribution.

- Flow-rate 50 L/min with adjustable pressure 0,1– 8 bar.
- test rig designed in compliance with the ISO EN 3822.
- Measurement of noise by hydrophone installed inside the test rig.
- Work station is integrated with dedicated software.
- Hydraulic resistances kit available.

### Dimension:

1500 x 1500 x (h) 1800 mm.

### BPR-2L-VM-SWG

Test bench with two independent stations adapt to perform endurance test on sanitary tapware and thermostatic mixers, flow-rate 50+50 L/min with adjustable pressure 0,1 - 10 bar.

### TEST PERFORMED

Endurance test of:

- Single lever mixers.
- Swivel spouts.
- Single taps, progressive and diverter cartridges.
- Diverters.
- Shower mechanisms and multi-way selectors.
- Thermostatic mixers.

Dimension: 3000 x 1100 x (h) 1800 mm.

### BPR-1L-VM-SWG

Test bench for endurance test with one station.  
Dimension: 2400 x 1100 x (h) 1800 mm.

### BPR-SWG5010

Test bench to carry-out performance test of single taps, mechanical mixers, thermostatic mixers, showers, etc...

Flow-rate 50+50 L/min with adjustable pressure 0,1- 10 bar.

### TESTS PERFORMED

- Measurement of flow rate, pressure and temperature.
- Measurement of safety characteristics.
- Measurement of regulating characteristics.

### Additional equipment and applications

**OPZ-C-TM** Handling device for fidelity and sensitivity tests with torque and force measurement.

**OPZ-HP** Additional test station for water static pressure and hammer test range 1-100 bar.

**Base model** - Dimension: 2400 x 1100 x (h) 1800 mm.

**Bench with additional test station** - Dimension: 2900 x 1100 x (h) 1800 mm.

**OPZ-SHOWER** Cabinet for testing showers and shower columns connected to the main bench.

### TCW B2

#### Hot & Cold water generator

Special equipment to supply with cold and hot water the hydraulic test benches with recovery water.

- Capacity: two tanks of 300+300 litres for hot and cold water.
- Heating power: 24 kW.
- Hot water temperature: 40÷90 °C.
- Cooling power: 23 kW.
- Cold water temperature: 5÷25 °C.
- Flow rate in continuous mode: 12+12 L/min of water at 65±1 °C and 15±1 °C.

Dimension: 2300 x 1200 x (h) 2050 mm.

### BPR-OPZ-HCR

Device to collect the water drained from the bench to the **Hot & Cold water**

The test benches GIUSSANI have been designed to verify the performance and endurance with static and dynamic conditions and measure the stability, response time, sensibility, leakage, etc.. on:

- Traditional and ceramic taps.
- Single-control mixers.
- Thermostatic mixers.
- Automatic shut off valves.
- Showers.
- Shower columns.
- Flexible hoses.
- Accessories.

The benches have been conceived to operate in compliance with the most important international Standards: EN, NF, KIWA, ASME, CSA, etc...

The benches are equipped with work-station with 23" LCD screen, electronic acquisition card in order to allow the real-time analysis and recording all test parameters, each test can be stored together with the most significant graphs, each bench includes colour laser printer, two hard disk, UPS power supply and back-up on external unit; the standard software package includes the acquisition device to read 16 channels at high frequency adjustable from 300 to 1000 Hz and the COMBILAB+ software for multipurpose applications. The main software can be completed with the SW applications to carry-out the tests which can be added with optional devices installed on the bench.

The basic unit BPR-SWG can be integrated or completed with:

### EXAMPLES OF OPTIONAL EQUIPMENTS AND APPLICATIONS

- BPR-OPZ-D08 hydraulic test rig according to D08 Standard.
- BPR-OPZ-DELTA pressure loss measurement with external press take-off.
- BPR-OPZ-DIGM digital manometer for very low pressure tests.
- BPR-OPZ-C-TM sensitivity and fidelity tests.
- BPR-OPZ-HP equipment for hammer tests and static pressure tests.
- BPR-OPZ-TP equipment for automatic production tests.
- BPR-OPZ-HAMTEST equipment for water hammer measure (EN 15091).
- BPR-OPZ-Q-FLEX equipment for flexible hoses flow-rate tests.

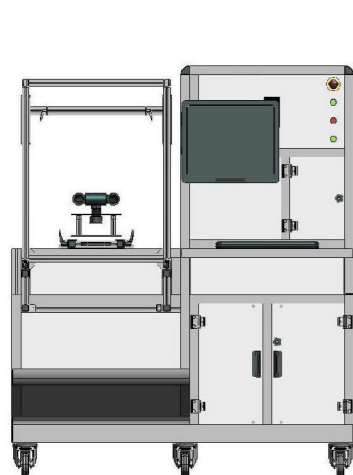
### ADDITIONAL EXTERNAL EQUIPMENT AND ACCESSORIES

- BT400 with protection cover for static pressure tests.
- BPR-OPZ-SHOWER external cabinet for showers and shower columns.

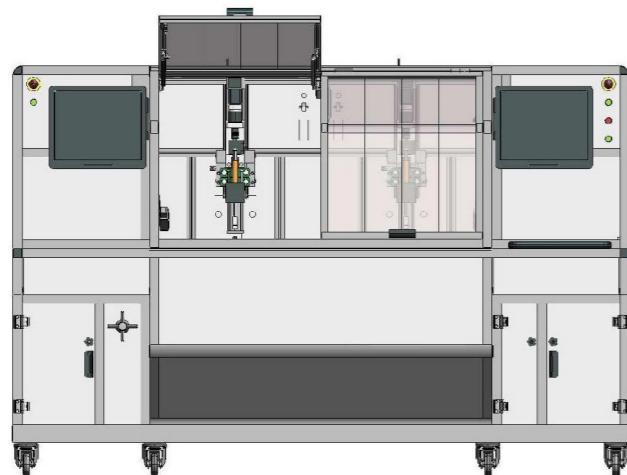
### ADDITIONAL TEST BENCHES

- BPR-1L-VM-SWG endurance test bench at 1 station for testing single taps, mechanical mixers, thermostatic valves, swivels spouts, diverters and showers.
- BPR-SWG-1C-5010 hydraulic bench for flow rate and static pressure tests with cold water.

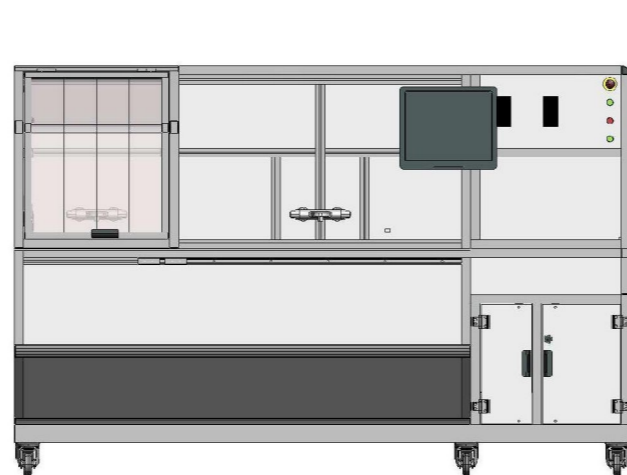
Examples of tests for Sanitary tapware	
TEST DESCRIPTION	TEST BENCH MODELS
<b>Leaktightness &amp; pressure resistance:</b>	
Obturator - body - diverter	BPR-SWG5010 + OPZ-HP or BT400
<b>Performance:</b>	
Flow rate	BPR-SWG5010
Sensitivity & hysteresis	BPR-SWG5010 + OPZ-C-TM
Temperature stability	BPR-SWG5010
Cold supply failure (EN, NF, CSA, D08)	BPR-SWG5010
Supply pressure and temperature variation	BPR-SWG5010
Temperature override stop	BPR-SWG5010
<b>Mechanical endurance of:</b>	
Single lever mixers	BPR-2L-VM-SWG
On-off control devices	BPR-2L-VM-SWG + OPZ-LR
Diverters	BPR-2L-VM-SWG + OPZ-LD
Swivel spouts	BPR-2L-VM-SWG + OPZ-LBM
Thermal elements	BPR-2L-VM-SWG + OPZ-LCT
<b>Acoustic characteristics:</b>	
Determination of acoustic group	BP-RUMORE



BP-RUMORE



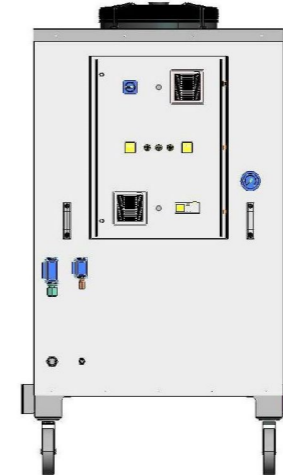
BPR-2L-VM-SWG



BPR-SWG5010 + opz-HP



opz-SHOWER



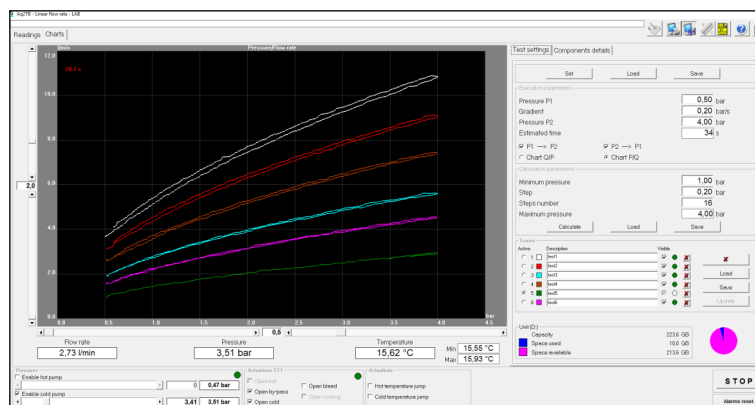
TCW B2 water generator



# Executable tests

## FLOW RATE TESTS

- Flow rate tests with automatic linear increase of pressure and multi layer graphs.
- Flow rate tests with automatic step increase of pressure.
- Measure of differential pressure and Kv coefficient calculation.

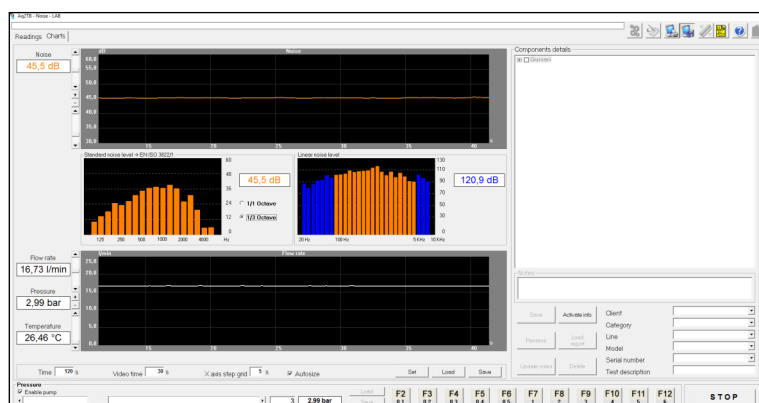
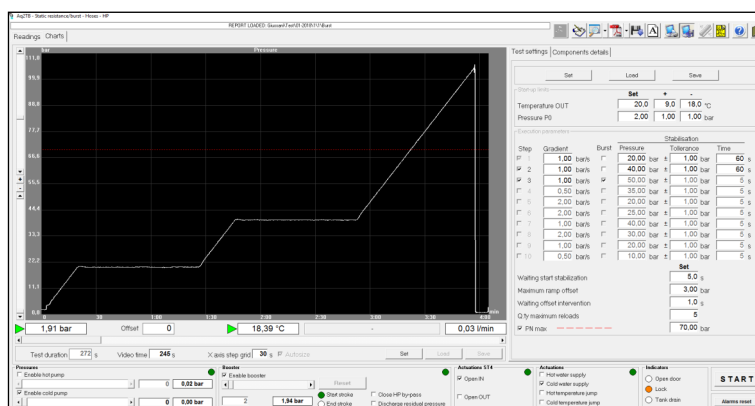


## THERMOSTATIC MIXERS TESTS

- Tests of mixed water temperature stability with variation of supply temperature, pressure and flow rate.
- Cold water failure tests.
- Sensitivity and fidelity tests.

## STATIC & PULSING PRESSURE TESTS

- Static and burst pressure tests with maximum pressure up to 1000 bar.
- Cycling pressure tests and water hammer tests (maximum frequency: 1 Hz, maximum pressure: 100 bar).



## OTHER TESTS

- Acoustic test.
- Endurance tests on single lever mixers, swivel spouts, diverters, showers mechanism, thermostatic mixers, etc...
- Thermal cycle test.
- Thermal shock test.
- Resistance to flexing test.
- Tensile strength test.



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ISO 9001  
CERT. N°9115

