Example of test report

Summary report

REPORT TEST TMV

GIUSSANI srl - Via Dei Crederi, 411 Fara Gera D'Adda (BG) ITALY — Pag. 2/2

Data of the lot

Client :	Giussani	Line :	test		
Category :	test	Model :	test		
Lot :	10 2009	Of :	02/10/2009	Quantity :	100

Station 1

Results :

Quantity executed	9
Quantity OK	7
Quantity cancelled	0
Quantity KO	2

Cancelled detail :

Test limit for Maximum/Minimum temperature control	0
Test limit for cold water failure	0
Start-up limits hot failure conytrol	0

KO detail :

Maximum temperature		0
Minimum temperature		0
Shut OFF cold water test	Water collected during T3	1
	Temperature mix deviation between T1/T5	2
Shut OFF hot water test	Water collected during T3	1
	Temperature mix deviation between T1/T5	1

Notes:

Start date : 02/10/2009 - 08.22 — Operator : Super Password
End date :
Time in operation : 1:56:23 (Hours) — Signature : _____

Software Aq2TB® developed by GIUSSANI s.r.l. Via dei Crederi, 411 - 24045 Fara Gera D'Adda (BG) - Tel. 0363-399019 - Fax 0363-398725

Single-piece report

REPORT TEST TMV

GIUSSANI srl - Via Dei Crederi, 411 Fara Gera D'Adda (BG) ITALY

Data of the lot

Client :	Giussani	Line :	test		
Category :	test	Model :	test		
Lot :	10 2009	Of :	02/10/2009	Quantity :	100

Station 1

Component data :
Test progress number: 0008
Serial number:

Test settings : ---

Results :

Description	Unit	Read value	Results
Test limit for Maximum/Minimum temperature control			
Maximum temperature	°C	51,63	OK
Minimum temperature	°C	22,41	OK
Shut OFF cold water test			
Start-up limits			
Temperature mix start	°C	38,33	
Water collected during T3	ml	40	OK
Temperature mix deviation between T1/T5	°C	-0,91	
Shut OFF hot water test			
Start-up limits			
Temperature mix start	°C	38,01	
Water collected during T3	ml	9	OK
Temperature mix deviation between T1/T5	°C	1,14	
Final result			OK

Notes:

Date of test : 02/10/2009 — Operator : Super Password
Test duration : 1:02 (Minutes) — Signature : _____

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Summary table

REPORT TEST TMV

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Data of the lot

Client :	Giussani	Line :	test	Lot :	10 2009		
Category :	test	Model :	test	Of :	02/10/2009	Quantity	100

Tested pieces list — Station 1

Test progress number	Serial number	Maximum temperature (°C)	Minimum temperature (°C)	Shut OFF cold water test: Water collected during T3 (ml)	Shut OFF cold water test: Temp deviation T1/T5 (°C)	Shut OFF hot water test: Water collected during T3 (ml)	Shut OFF hot water test: Temp deviation T1/T5 (°C)	Results
0001		-	-	-	-	-	-	OK
0002		54,64	20,84	41	-0,46	14	0,60	OK
0003		51,44	24,42	44	-0,84	16	0,85	OK
0004		43,38	22,48	44	-0,83	15	0,95	OK
0005		50,65	23,17	43	-1,20	12	0,64	OK
0006		50,65	23,17	43	-1,20	12	0,64	OK
0007		41,23	23,68	43	-3,89	16	-0,40	KO
0008		51,63	22,41	40	-0,91	9	1,14	OK
0009		41,28	29,03	565	-0,93	789	-0,93	KO

After each test it is possible to create a summary report containing the results of tests carried out with the details of any KO generated.
It is also possible to show the start-up limits, the execution parameters, the times and the limits of acceptance of the test.
The report includes the list of messages generated during the test and a summary of tests in tabular format with the details of the significant values generated for each piece and the overall outcome.
It is also possible to generate, for each single piece tested, a detailed test report with a summary of all results.

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ISO 9001
CERT. N°9115

Software for thermostatic mixers tests

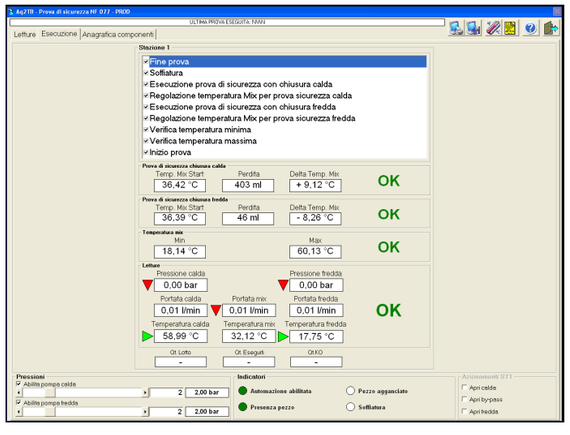
AQ2TB-M-PROD-NF

Software for final testing of thermostatic cartridges and wall or flush mounting thermostatic mixing valves

Main advantages of using the AQ2tb software for testing thermostatic mixing valves

- Complete, quick and driven test procedure.
- High productivity: 40-50 pieces/hour.
- Certain parameters and test conditions, modified only by the system administrator.
- Automatic sequence consisting of coupling piece, start testing, safety check, blowing and release piece with continuous monitoring of test parameters.
- Measure of data detected at each step of the sequence with immediate evaluation of the results.
- Storage of single step data and final evaluation of the device under test.
- It is possible to manage the test in batches of production which can be interrupted, closed or resumed.
- Final report with summary data of the batch under test, summary table of each piece with final evaluation and data regarding the times of test.

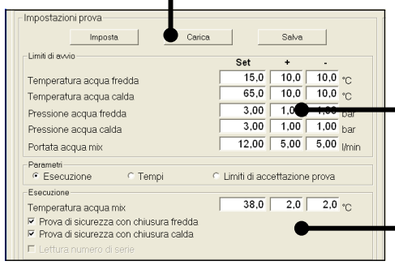
Method of test execution



The system administrator sets the parameters of the test, starting conditions, enables the steps of the sequence and save the code of the test, which can be personalized by customer or by product type.
The operator chooses the code of the component and begin the test sequence.
During the test, the software displays the measures of temperature, pressure and flow-rate in real-time and shows by means of green or red arrows, if they fall within the tolerance band set.
It is also shown the step-by-step testing sequence and the operator is advised of any faults of the component under test.
At the end of the test, the software saves the main data of the component and compile the final report.

Working windows

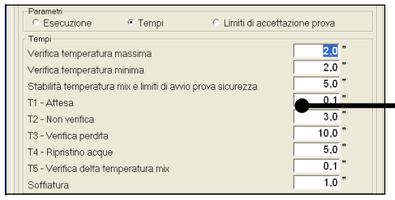
Setting of test parameters



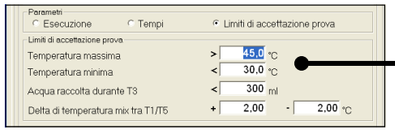
It is possible to customize each tests going to change all the main operating parameters.
These parameters can be saved and reloaded afterwards.

The start-up limits define the ranges of temperature, pressure and flow within which allow the execution of the test.
For each parameter, it is possible to choose the set-point and upper and lower limits of acceptance.

In the "EXECUTION" module it is possible to set the test temperature and the tolerance of the mixed water and choose if perform the safety test with hot and/or cold water failure.

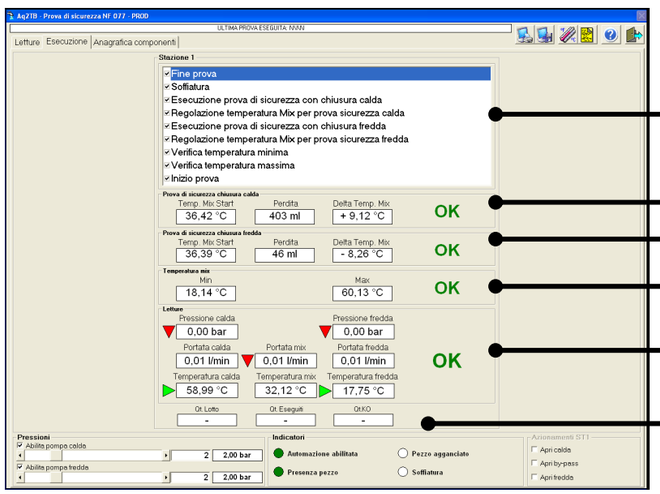


In the "TIMES" module it is possible to set the duration of the phases of the test cycle; for example, it is possible to define the waiting time for check the temperature stability, the time for loss evaluation, the time for blowing, etc. ...



In the "TEST ACCEPTANCE TIMITS" module are set all the parameters that must be satisfied to consider the test successfully executed.

Window of test execution



List of steps that constitute the test: the step currently running is highlighted by the blue bar, the steps already carried out are shown with the check mark.

Hot water failure test.

Cold water failure test.

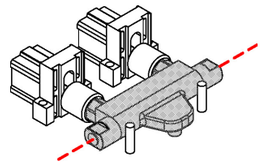
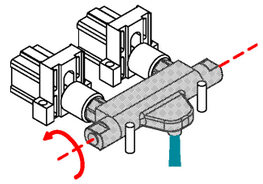
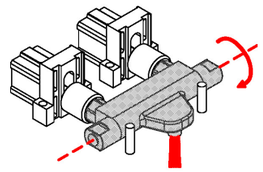
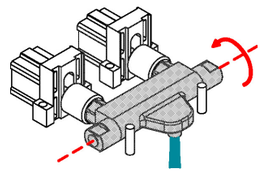
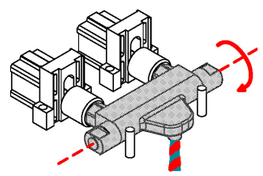
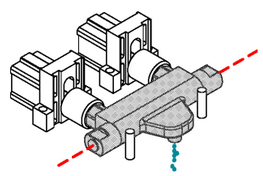
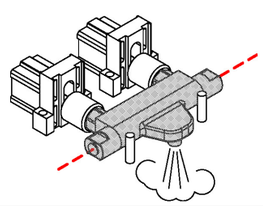
Evaluation of maximum, minimum and mixed water temperature.

Readings of main physical quantities, and indication of consistency with the parameters set.

Summary of the outcomes of the tests executed: number of pieces tested and number of pieces discarded.

Execution of the test

Test cycle aided by the operator

1		Positioning of the thermostatic mixer on the appropriate clamping device and closure of the safety barrier (or safety light curtain).
2		Automatic opening of the hot and cold water supply valves and checking if the test conditions are within the start-up parameters. The operator adjusts the flow rate up to the value of the test. (about 12 L/min).
3		The operator rotates the temperature control device in the full hot position until the mechanical stop, the system verifies that the outlet water temperature exceeds the limit set, stores the data and enables the next step.
4		The operator rotates the temperature control device in the full cold position until the mechanical stop, the system verifies that the outlet water temperature is below the limit set, stores the data and enables the next step.
5		The operator rotates the temperature control device in the mixed position, the system verifies that the outlet water temperature is in the range of acceptance and controls its stability if the parameters are correct.
6		The system stores the mixed temperature value and then perform the hot and/or cold water failure test, it measures the quantity of water lost, it reopens hot and/or cold water, checks the stability of the temperature and, after the stabilization time, evaluates the final ΔT.
7		The system starts the blowing that occurs with hot air from the hot side and cold air from the cold side to maintain the thermostatic cartridge in the mixed position. At the end of the blowing, the system discharges the residual pressure, uncouples the device under test and saves the results.