

Model no. 1770

Temperature cycling test unit

According to EN 12239 | ISO 10508 | DVGW W 534 | DVGW W 542 | DVGW W 543

Description

The temperature cycling tester is designed to determine the resistance and stability of thermoplastic pipework and pipework connections consisting of stiff or flexible parts when subjected to alternating thermal shock. This applies to pipework systems intended to be used for conveying hot and cold pressurized water.

Simple and safe operation

- Automatic test progressions with programmable cycle numbers and time lapses, temperatures, etc.
- Comfortable handling and clearly arranged visualization by means of computerized control system
- Tensioning device complete with load cell and measurement instrumentation for the tensile pre-loading
- Diagonally arranged test specimens support frame for better accessibility

Reliable test results

- Option of flow volume setting by individual test line (Also adjustable as optional)
- Micro processor-controlled, self-learning pressure adjustment with automatic failure detection
- Consistent test temperature due to large water storage tanks. High adjustment accuracy of pressure and flow rate
- Flow rate measurement and recording (optional)

Lasting efficiency

- First-class machinery components provide high operative availability, long service life and low running costs
- Energy-saving circulation and pressure pumps
- Hot and cold water tanks each with its own, independent circulation and pressure pumps

State-of-the-art technology

- Interface to IptDataLogging®
- Simultaneous testing of different test pipe assemblies



Features Model no. 1770 Temperature cycling test unit

Supply unit (1)

Pressure range	bar
Temperature range cold cycle	°C
Temperature range hot cycle	°C
Temperature accuracy in specimen	°C
Adjustment accuracy temperature controller	°C
Pressure measurement accuracy	%
Pressure accuracy in specimen	
Flow rate accuracy	%
Cycle time	min
Max. number of cycles each test	
Nominal capacity hot water tank	l
Nominal capacity cold water tank	l
Tank class	
Pumps delivery rate at 10 bar	m³/h
Pumps delivery rate at 16 bar	m³/h
Max. total cross section at 16 bar/0,5 m/s	mm²
Max. total cross section at 10 bar/0,5 m/s	mm²
Plate heat exchanger for connection to external water cooling supply	
External cooling unit	
Controls at unit by means	
Computerized control system in network	
Compatible with IptDataLogging®	
Permissible operating ambient temperature	°C
Max. relative air humidity	
Noise emission	dB (A)
Power supply voltage	
CE compliance	

V1770-0001	V1770-0004
4 - 16	4 - 10
15 - 30	15 - 30
50 - 95	50 - 95
at 95 °C ±1,5 °K, at 20 °C ±4 °K	at 95 °C ±1,5 °K, at 20 °C ±4 °K
± 0,2	± 0,2
0,25 % of the terminal value of the pressure sensor	0,25 % of the terminal value of the pressure sensor
+0,2/-0,1 bar at 10 bar +0,3/-0,15 bar at 15 bar	+0,2/-0,1 bar at 10 bar
± 5%	± 5%
3 ... 9.999	3 ... 9.999
99.999	99.999
700	700
700	700
unpressurized	unpressurized
17	6
12	-
6.400	-
9.500	3.300
●	●
○	○
of 10,4" TFT touch panel	of 10,4" TFT touch panel
○	○
from version 5.x	from version 5.x
+5 up to +25	+5 up to +25
70 %, noncondensing	70 %, noncondensing
< 70	< 70
230/400 V, 50 Hz (customized voltages available on request)	230/400 V, 50 Hz (customized voltages available on request)
●	●

● inclusive ○ available/optional □ selectable - not available

Features Model no. 1770 Temperature cycling test unit

Intermediate frame (2)

Max. number of test lines

Set up options

V1770-0005	V1770-0006
6	6
A	B

inclusive
 available/optional
 selectable
 not available

Features Model no. 1770 Temperature cycling test unit

Test chamber (3)

Max. number of test lines

4-panels, see-through shockproof polycarbonate sliding doors on both sides

Door locking safety switch during hot cycle

Failure detection sensors

Warning lamp

Integrated tensioning device

Connection for external steam exhauster

Force measurement cell 500 N for tensioning device

Force measurement cell 2.000 N for tensioning device

Force measurement cell 5.000 N for tensioning device

Force measurement cell 10.000 N for tensioning device

Multitask measurement gauge for force measurement cell

Diagonal specimen support frame

Fastening clamps for specimen support frame

V1770-0030
6
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inclusive
 available/optional
 selectable
 not available

Features Model no. 1770 Temperature cycling test unit

Test assembly lines

Specimen connections size inflow / backflow

Manual flow rate setting

- Ball valve at upper inflow with temperature and pressure gauging
- Manual adjustment valve at bottom backflow with temperature and pressure gauging

Powered flow rate adjustment

- Ball valve at upper inflow with temperature and pressure gauging
- 1x powered adjustment valve at bottom backflow with temperature and pressure gauging

Powered flow rate adjustment (increased flow rate)

- Ball valve at upper inflow with temperature and pressure gauging
- 2x powered adjustment valve at bottom backflow with temperature and pressure gauging

Electrical flowmeter 2-295 l/min. 0,5% FS (full scale)

Electrical flowmeter 11-145 l/min. 2,5% FS (full scale)

Electrical flowmeter 6-80 l/min. 2,5% FS (full scale)

	V1770-0011	V1770-0021	V1770-0012	V1770-0013	V1770-0022
Specimen connections size inflow / backflow	G 1 ¼"	G 3/4"	G 1 ¼"	G 1 ½"	G 3/4"
Manual flow rate setting	●	●	-	-	-
Powered flow rate adjustment	-	-	●	-	●
Powered flow rate adjustment (increased flow rate)	-	-	-	●	-
Electrical flowmeter 2-295 l/min. 0,5% FS (full scale)	○	-	○	○	-
Electrical flowmeter 11-145 l/min. 2,5% FS (full scale)	○	-	○	○	-
Electrical flowmeter 6-80 l/min. 2,5% FS (full scale)	-	○	-	-	○

● inclusive ○ available/optional □ selectable - not available

Test assembly lines

Specimen connections size inflow / backflow

Powered pressure and flow rate adjustment

- 1x powered adjustment valve at upper inflow with temperature and pressure gauging
- 1x powered adjustment valve at bottom backflow with temperature and pressure gauging

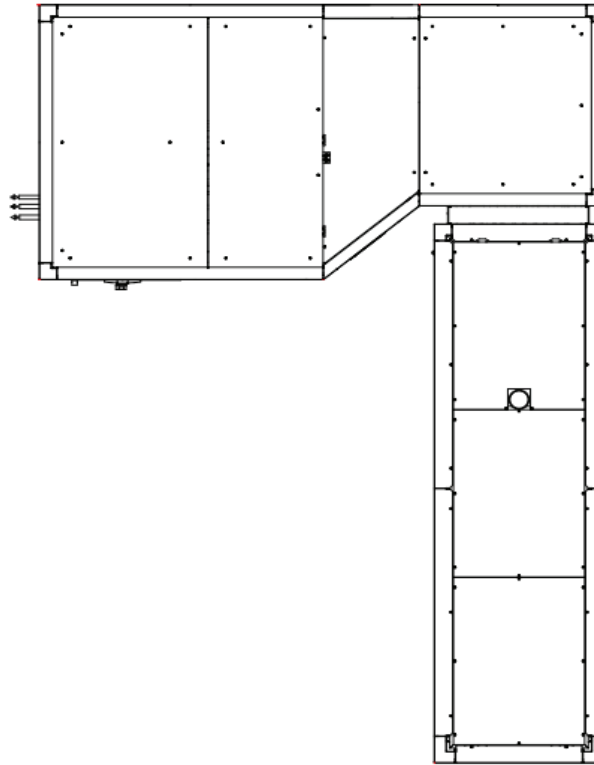
Powered pressure and flow rate adjustment

- 2x powered adjustment valve at upper inflow with temperature and pressure gauging
- 2x powered adjustment valve at bottom backflow with temperature and pressure gauging

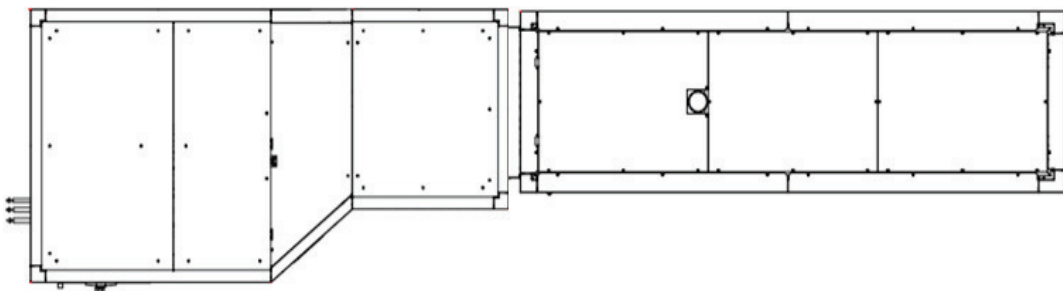
	V1770-0016	V1770-0017	V1770-0018		
Specimen connections size inflow / backflow	G 1 ¼"	G 1 ½"	G 3/4"		
Powered pressure and flow rate adjustment	●	-	●		
Powered pressure and flow rate adjustment	-	●	-		

● inclusive ○ available/optional □ selectable - not available

➤ **Set up options** Model no. 1770 Temperature cycling test unit



Set up option A
(Cornered set up)



Set up option B
(in-line set up)