

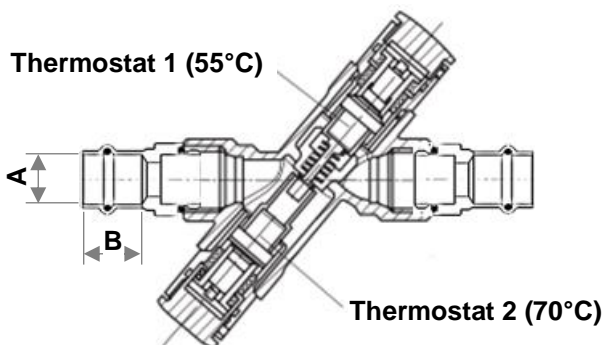
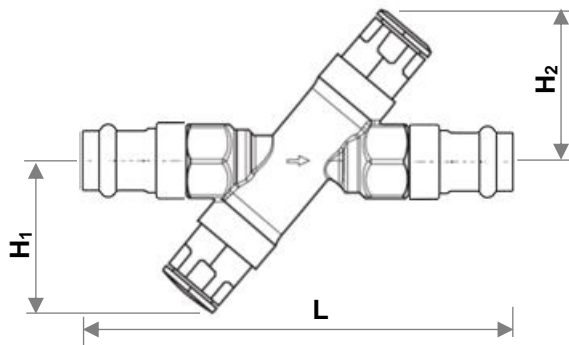


# HERZ Pressfit Thermal Balancing Valve

## Circuit Temperature Controller (CTC) DZR with automatic thermal pasteurisation

Data sheet for C 4011 1x, Issue 0521

### Dimensions



Order Nr.	DN	A [mm]	B [mm]	L [mm]	H <sub>1</sub> [mm]	H <sub>2</sub> [mm]
C 4011 11	15	15	24	155	55	56
C 4011 12	20	22	24	176	51	54

### Material and construction

Body:	DZR Brass CC752S
Machined components:	DZR Brass CW626N, Brass CW617N
seals:	EPDM
Seats and springs:	Stainless steel
Pressfit ends:	Conex >B< Press, red brass (gunmetal) acc. to EN 1982, CC 449K

### Operating data

Max. operating pressure:	10 bar
Max. operating temperature:	80°C

**Function**

The HERZ Circuit Temperature Controller is a thermostatically operated proportional controller, requiring no auxiliary energy, for pumped return domestic hot water systems. The return temperature from each circuit is controlled to induce flow to other areas.

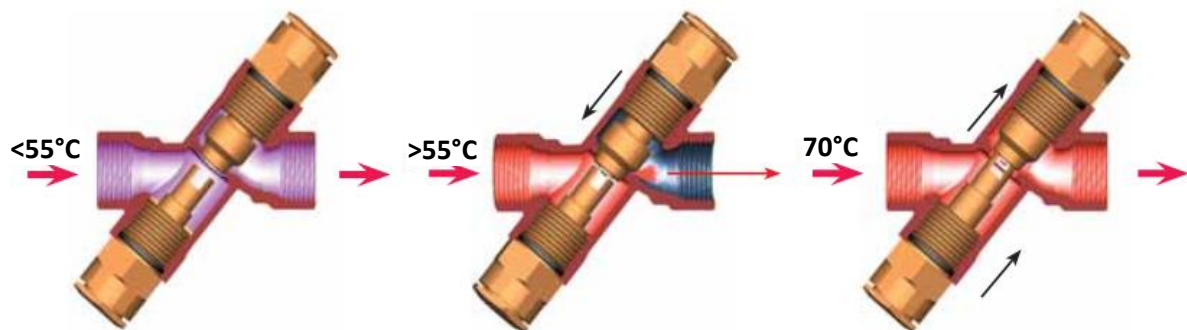
The water volume is limited to the minimum required to guarantee a constant return temperature and thus circulation losses are reduced.

The valve also allows the system to be pasteurised by raising the boiler outlet temperature as it then allows increased flow to maintain the higher temperature.

As the medium temperature increases the primary thermostatic element in the valve closes down until it reaches the set temperature of 55°C when the valve is closed, except for a small bleed path to maintain the temperature. As the medium temperature reduces, the valve opens to allow the higher flows until the set temperature is reached.

During pasteurisation the boiler outlet temperature is raised above 70 degrees and the second thermostatic element then pushes the first element back allowing the valve to open fully giving full flow to maintain the higher temperature to pasteurise and clean the system. After the required period the return temperature is reduced to normal and the valve returns to its normal operation.

According to the graph the valve has a leakage bleed flow of 0.65 l/min at 10 kPa DP.

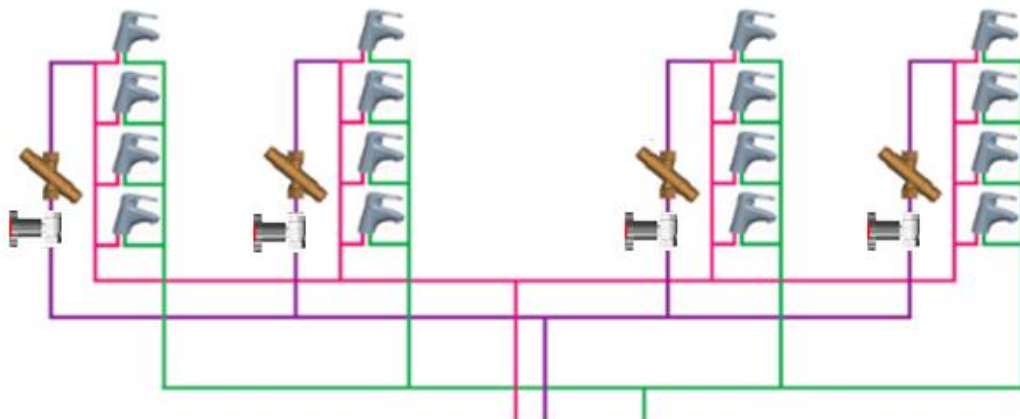


Normal operation below 55°C valve fully open

Temperature higher than 55°C thermostat 1 is closed to a bleed

For pasteurisation at over 70°C thermostat 2 fully opens the valve

**Application example**



### **Pressfit connection**

Conex >B< Press connections fitted to Herz valves benefit from patented 'leak before press' O-ring technology which indicates if a joint has not been pressed. The O-ring contains two in-built water pathways that allow water to pass through and create a noticeable leak when the system is tested at low pressure (0.1 to 6.0 bar). Any un-pressed joints can easily be identified during the test phase and pressed, saving valuable time and money. There is no need to drain down as the pressing operation can be carried out while the water is still in the system.

>B< Press fittings are installed using a press tool with a compatible press jaw. Jaws are sized to match the fitting required. When force is exerted through the press tool the jaw closes to make a permanent joint.

The >B< Press design has the advantage of a 3-point press profile; comprising of two mechanical presses on either side of the bead, and one press on the O-ring bead. The EPDM O-ring compresses to form a permanent leakproof joint.

>B< Press red brass fittings maintain earth continuity without the need for additional continuity straps.

>B< Press red brass fittings can be used on hard, half-hard and soft copper tube to EN 1057, Stainless Steel tubes to EN10312 and Carbon Steel tubes to EN10305.

Please note that Carbon Steel is susceptible to Galvanic Corrosion due to the coating and the normal precautions need to be applied.

Red Brass on Carbon Steel is also more susceptible to Bi-Metallic corrosion.

It is recommended that all pipework jointing connections are made un-pressed within a contained section to avoid disturbing any valve connection joints during construction. Once a section is completed, all connection joints should be pressed together in one operation.

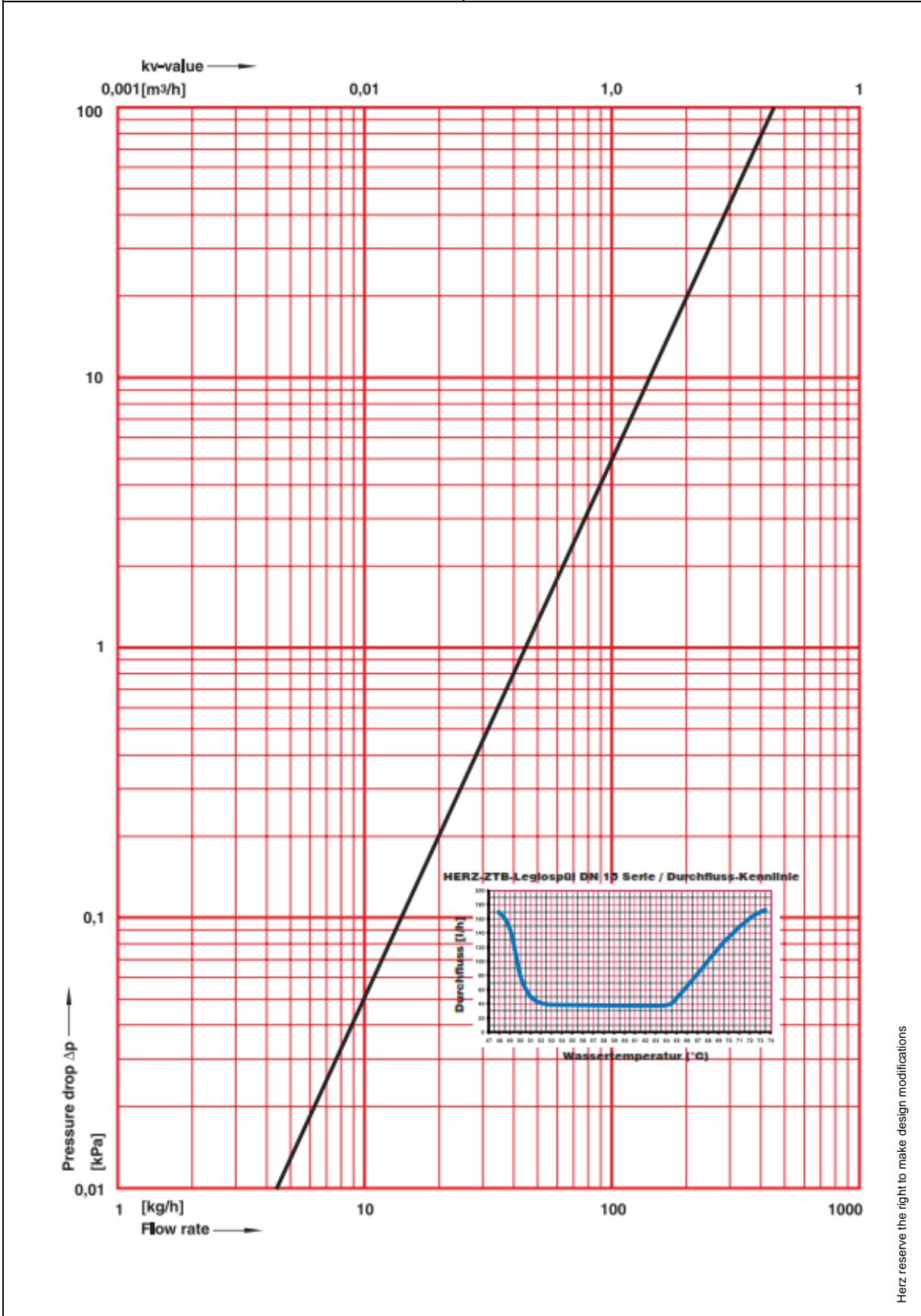
### **Maintenance instruction**

The HERZ CTC valve is factory preset with no manual adjustment or commissioning required and does not require any special maintenance.

### **Disposal instruction**

The disposal of HERZ CTC valves must not endanger the health or the environment. National legal regulations for proper disposal of the HERZ CTC valves have to be followed.

HERZ standard diagram	HERZ CTC
Order Nr.: C 4011 1x	Dim. DN 15 & DN 20



Herz reserve the right to make design modifications

## >B< Press fittings Installation instructions

### Compatible Press Tools

12 to 35mm Compact machines			
Manufacturer	Press machine	Press jaws	Jaw profile
Rothenberger	Romax compact	Rothenberger - Compact	SV
	Romax compact TT	Rothenberger - Compact	SV
Rems	Mini Press ACC	Rems - Mini	V
Klauke	MAP1/MAP2L/MAP215	Klauke - SBM	KSP4
	MAP219/MAP2L19	Klauke - SBMX	KSP4
Novopress	ACO102/ACO103	NovoPress - V-PB1	V
Milwaukee	M12	Milwaukee - J12	V
Hilti	NPR 019 IE-A22	Hilti - NPR PM V	V
Ridgid	RP 200/210/240/241	Ridgid - Compact Series	V
Conel	PM 1	Conel - V-PB1	V
Viega	Pico	Viega Pico	PT2

12 to 54mm Standard 32kN machines			
Manufacturer	Press machine	Press jaws	Jaw profile
Rothenberger	Romax 3000/4000	Rothenberger - Standard*	SV
Rems	Power-Press/ Akku-Press	Rems - Standard*	V
Novopress	ECO/ACO202/203	NovoPress - V-PB2*	V**
Conel	PM 2	Conel - V-PB2*	V
Klauke	UAP2/UAP3L/UAP332	Klauke - Standard SB**	KSP4
Ridgid	RP 320/330/340	Ridgid - Standard Series	V
Hilti	NPR 019 IE-A22	Hilti - NPR PS V*	V
Milwaukee	M18	Milwaukee - J18*	V**
Viega	Pressgun 5/6	Viega Standard*	PT2

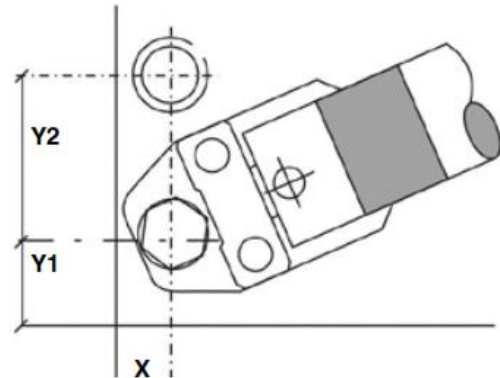
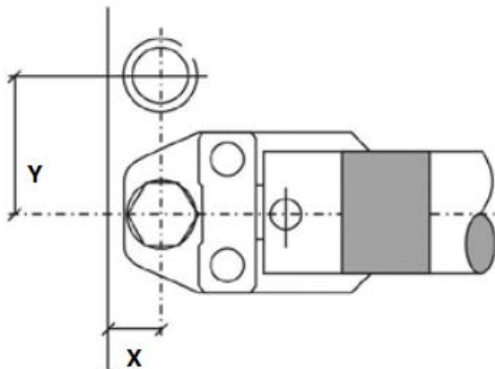
\* Press Jaw only – not press slings, collars, chains or rings

\*\* Novopress & Milwaukee jaws with the  marking only

For inter tool compatibility please refer back to the manufacturer

**Space required for the pressing process**

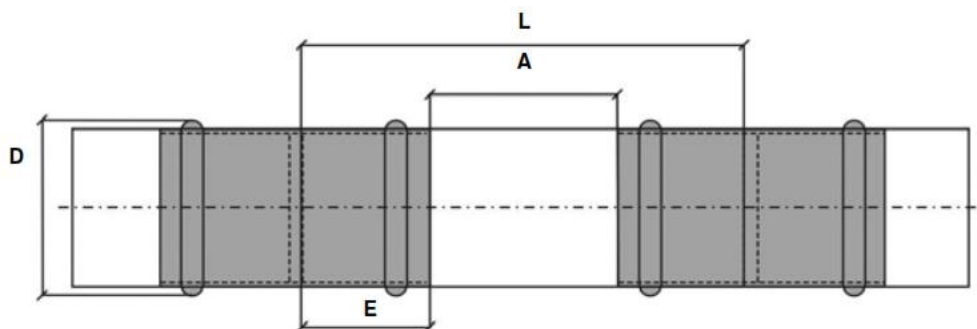
The following minimum clearances are required from structural components to allow operation of tool for press fitting.



Space required for the pressing process between fittings		
External tube	X	Y
Size mm	mm	mm
15	26	53
22	26	54
28	33	69
35	33	73
42	75	115
54	85	120

Space required for the pressing process between fittings			
External tube	X	Y1	Y2
Size mm	mm	mm	mm
15	31	45	73
22	31	45	76
28	38	55	80
35	38	55	85
42	75	75	115
54	85	85	140

**Insertion depth and minimum distances between pressings**



Size	External – Ø pressing bead	Min distance	Min tube length	Insertion depth
Size mm	D - mm	A - mm	L - mm	E - mm
15	22.6	10	54	22
22	31	20	66	23
28	37	20	68	24
35	44	25	77	26
42	53.4	30	102	36
54	65.4	35	115	40

Due to reforming of the tube profile when pressed, it is advised that a minimum distance is allowed between each fitting.

**Minimum distance for press fittings from an existing brazed joint**

To ensure proper sealing of both the brazed and pressed joints, the following minimum distances must be maintained between the joints.

Minimum distance from a brazed joint	
Tube size	mm
15	5
22	5
28	5
35	10
42	15
54	20

**Minimum brazing distance to an existing pressed fitting**

Caution: Brazing or soldering near to >B< Press joints should be avoided as this may cause the seal to degrade due to heat transfer. The table below states the minimum distance away from the press joint which is acceptable to braze. If this distance cannot be maintained then adequate precautions must be taken such as fabricating the brazed section prior to assembly with the press fittings, wrapping in a wet rag or applying a hot block, to prevent heat transfer to the press fitting during brazing.

Minimum distance brazing	
Tube size	mm
15	450
22	600
28	700
35	900
42	1200
54	1500

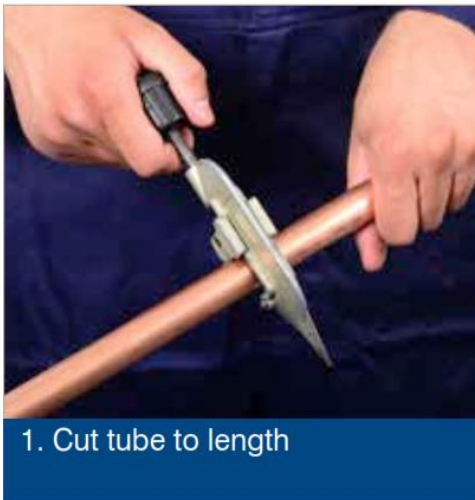
**Minimum brazing distance to an existing pressed fitting**

>B< Press fittings can be used on hard, half-hard and soft copper tube to EN 1057 with the wall thicknesses stated below.

Tube O/D	Tube wall thickness (mm)					
	Copper - R220		Copper - R250		Copper - R290	
15	1.0	–	0.7	1.0	1.0	–
22	1.0	1.2	0.9	1.1	1.0	1.5
28	–	–	0.9	1.2	1.0	1.5
35	–	–	1.2	–	1.0	1.5
42	–	–	1.2	–	1.0	1.5
54	–	–	1.2	–	1.2	2.0

>B< Press red brass fittings can also be used to connect stainless steel tube in accordance with EN 10312 parts 1 and 2 and Carbon Steel tubes to EN10305.

☑ >B< Press installation process

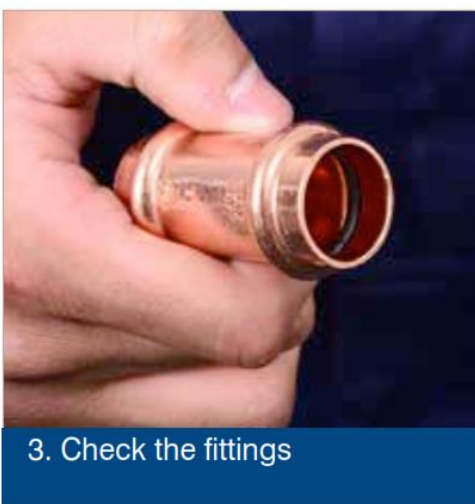


- Use a rotary tube cutter
- Ensure that the tube is cut square
- Check that the tube has retained its shape and is damage free



- Deburr the tube both internally and externally.
- Where possible angle the tube downwards to prevent filings entering the tube.
- Make sure the internal and external surfaces of the tube ends are smooth and free from burrs or sharp edges.

Caution: Please ensure that the tube surface is free from any deep scores or scratches



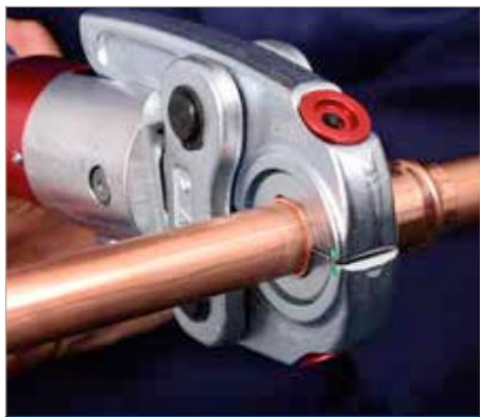
- Check the fitting is the correct size for the tube.
- Check the O-rings are present and correctly seated.
- Additional >B< Press lubricant (silicon oil) may be used to aid tube insertion.





4. Assemble and mark the insertion depth

- The tube must be fully inserted into the fitting until it reaches the tube stop.
- To reduce the risk of dislodging the O-ring, rotate the tube (if possible) while slipping it into the fitting.
- Mark the insertion depth on the tube.
- Prior to pressing ensure the tube has not moved out from the fitting socket.



5. Complete the joint with the press tool

- Ensure pipework is correctly aligned prior to pressing.
- Ensure the correct size jaw is inserted into the tool.
- The jaws must be placed squarely on the fitting, locating the groove on the bead.
- The bead on the fitting should fit centrally in the groove of the jaw.
- Depress and hold the start button on the press tool to complete the pressing cycle.
- Pressing is complete when the jaws are fully closed.
- Complete the press cycle once only – do not re-press.



6. Mark the completed joint

- Mark the completed joint after pressing.
- This enables joints to be inspected easily before testing.