CirCon

Application

CirCon is a control valve designed for domestic hot water installations with circulation.

The valve automatically controls the temperature of water in circulation pipes. Thus the thermal balance is ensured throughout the domestic hot water system.

The valve is adjusted on a scale to a desired temperature in a range between 37°C and 65°C.

CirCon is constructed in stainless steel AISI 316 for all parts in connection with water, to secure the highest resistance against corrosion.

Benefits

- CirCon is constructed in stainless steel AISI 316 for all parts in connection with water
- Insulation supplied as standard for increased energy efficiency
- The thermostatic element is out of contact with the circulating water, and its dry location prevents scale problems
- Each valve is calibrated individually
- Approved according to the British WRAS standards.
- The thermostatic element can be disassembled without closing the water. Hereby the valve can be exercised
- Built in magnifying glass to make reading of pre-setting easier

Features

- The setting of the valves is stepless between 37°C and 65°C with an accuracy of +/- 2°C
- Available in DN15 Female/Female and DN20 Female/Female and Male/Male
- Factory pre-setting 52.5°C

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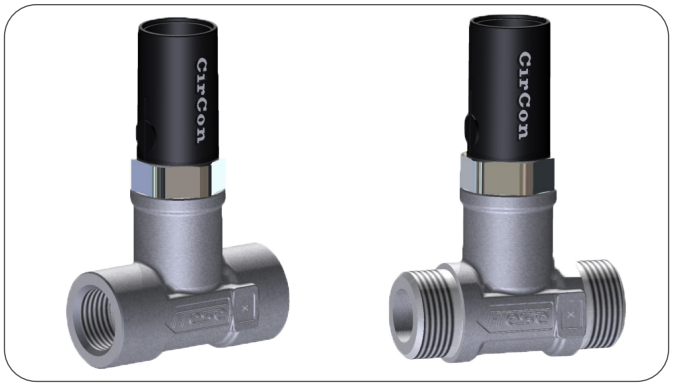
Thermal Control

CirCon controls the temperature of the water that circulates through the valve.

Example:

If the valve is set to a temperature of 50°C, and the temperature of the circulating water is under 50°C, the valve opens. If the temperature is over 50°C, the valve closes.



CirCon with scale Female/Female & Male/Male

Setting the Valve

Temperature setting between 37°C and 65°C.

Remove the cap, and the temperature is easily set e.g. by a screwdriver as shown here.

Temperature and KV-values

The opening KV-value is depending on the difference between setting temperature and water temperature.

Differential temperature between pre-adjustment temperature and temperature of the circulating water ΔT	KV-value [m³/h]
0 °C	0
1 °C	0.11
2 °C	0.22
3 °C	0.33
4 °C	0.44
5 °C	0.55
6 °C	0.66
7 °C	0.77
8 °C	0.88
9 °C	0.99
10 °C	1.10

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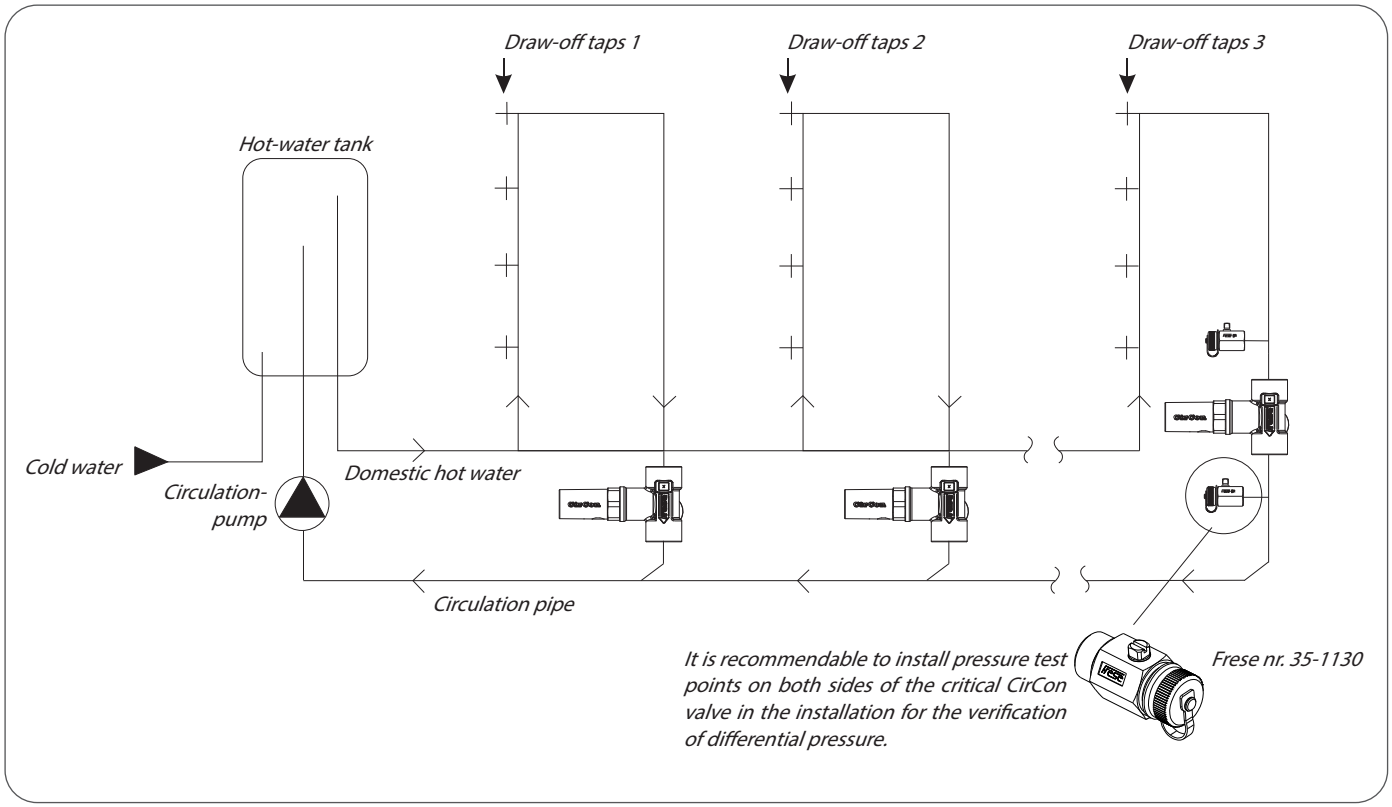
Application Example



Dimensioning Example

CirCon is dimensioned on the basis of the thermal loss in the circuit, in which it is located.

An example of dimensioning CirCon and the overall quantity of water for the circulating pump is described in the following.

In an installation with 4 floors and basement a circulation line is dimensioned.

The following parameters should be known for the calculation of the flow rate:

Length of pipe: 30 meters

Total length of pipe controlled by CirCon.

Thermal loss: 9 W/meter pipe

Thermal loss from a 27 mm external diameter pipe with 30 mm insulation and a difference of 40°C between room temperature and temperature of the water.

Δ temperature differential: 5°C

Temperature in hot-water tank 55°C. CirCon was set to 50°C on the scale.

The flow rate through CirCon can be calculated from the following formula:

$$Q = \frac{(30\ m \times 9\ w/m) \times 0.86}{5°C} = 46\ l/h$$

The total quantity of water from 3 delivery pipes to the circulating pump is approx. 138 l/h (3 x 46 l/h).

The Kv-value of CirCon at 46 l/h and a differential pressure of 10 kPa across the valve can be found from the following formula:

$$Kv = \frac{Q}{\sqrt{\Delta p}} = \left(\frac{46}{\sqrt{10}} \right) / 100 = 0.15$$

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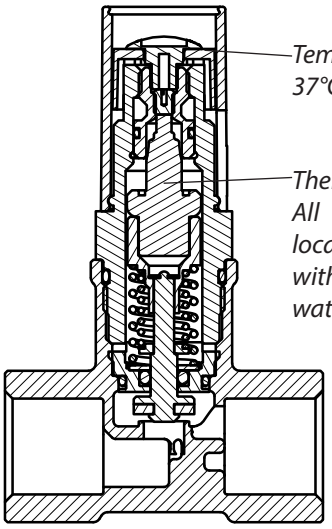
Technical Data

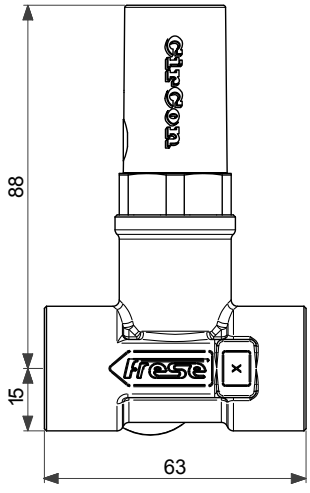
Valve body:	Stainless steel AISI 316
O-rings:	EPDM
Springs:	Stainless steel AISI 304
Element:	Wax
Plastic parts:	POM, ABS, PC
Insulation jacket:	EPP (Max 80°C)
Temperature range:	37°C - 65°C
Accuracy:	+/- 2°C < 100 kPa Dp
P-band:	10°C (Xp = 10K)
Max. Kv-value:	1.10 (m^3/h)
Recommended DP:	3 - 10 kPa
Max. DP:	100 kPa
Pressure range:	PN10
Approvals:	WRAS



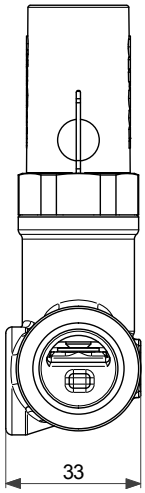
CirCon Female/Female section drawing

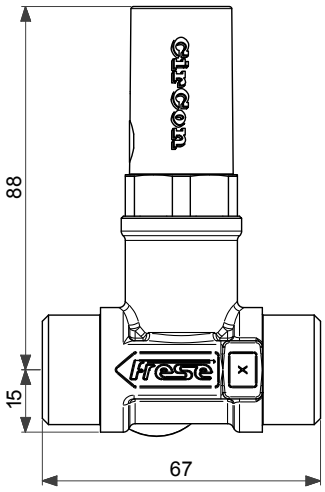
Product Programme

Frese no.	Dimension	Weight [kg]
47-2820	DN15 Female/Female	0.43
47-2821	DN20 Female/Female	0.37
47-2822	DN20 Male/Male	0.43



Female/Female





Male/Male

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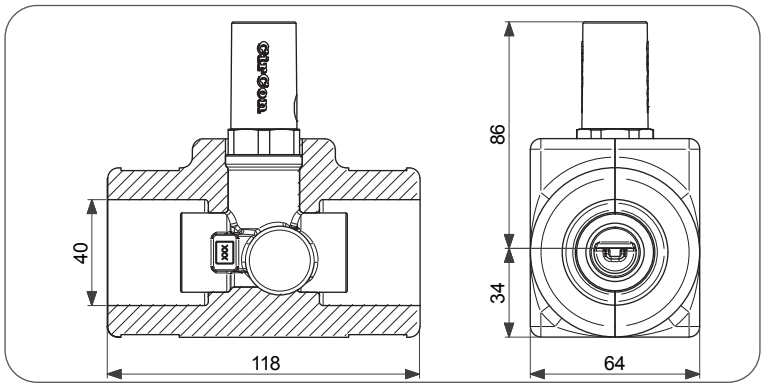
Insulation jacket

Frese no.	Type	Weight [kg]
38-0856	Insulation jacket DN15/20	0.03



Dimensions incl. insulation

CirCon valves are delivered as standard with insulation for increased energy efficiency.

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