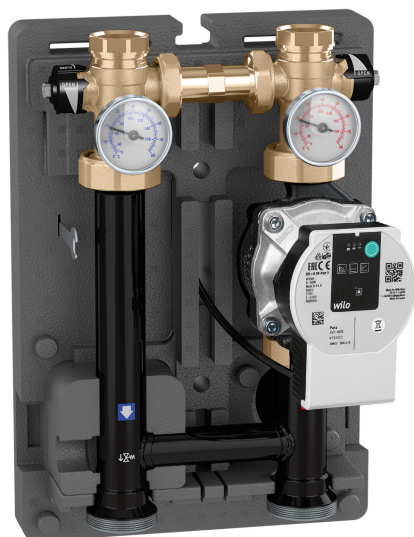


# Direct supply unit for heating and air-conditioning systems



## 165 series



### Function

The direct supply unit performs the function of supplying the circuits of heating systems at high temperature or air-conditioning systems. Complete with high efficiency electronic pump, flow and return temperature gauges on secondary circuit, secondary circuit shut-off valves, pre-formed shell insulation suitable for heating and cooling. The unit is reversible: in fact, the flow direction can be inverted from right to left, depending on installation requirements. This unit can be coupled to the SEPCOLL 559 series separator/distribution manifold and on 550 series manifolds with 125 mm centre distance connections.



### Product range

Code 165640HE3 Direct regulating unit for heating and air-conditioning systems. With PARA 25/7 pump. Centre distance 125 mm DN size 25 (1")  
Code 165641HE4 Direct regulating unit for heating and air-conditioning systems. With PARA 25/9 pump. Centre distance 125 mm DN size 25 (1")

### Technical specifications

#### Materials

##### Connection pipes

Material: Fe 360 steel

##### Check valve

Body: brass EN 12164 CW614N  
Obturator: PPAG40

##### Shut-off valves

Body: brass EN 12165 CW617N

#### Performance

Medium: water, glycol solutions  
Max. percentage of glycol: 30 %  
Maximum working pressure: 1000 kPa (10 bar)  
Minimum working pressure: 80 kPa (0,8 bar)  
Primary inlet working temperature range: 5-100 °C

Connections: - system side: 1" F (ISO 228-1)  
- boiler side: 1 1/2" M (ISO 228-1)  
- connection centre distance: 125 mm

#### Insulation

Material: EPP  
Thickness: 20 mm  
Thermal conductivity: - at 10°C 0.037 W/(m·K)  
Density: 45 kg/m<sup>3</sup>  
Working temperature range: -5-120 °C  
Reaction to fire (UL 94): class HBF

#### Pump

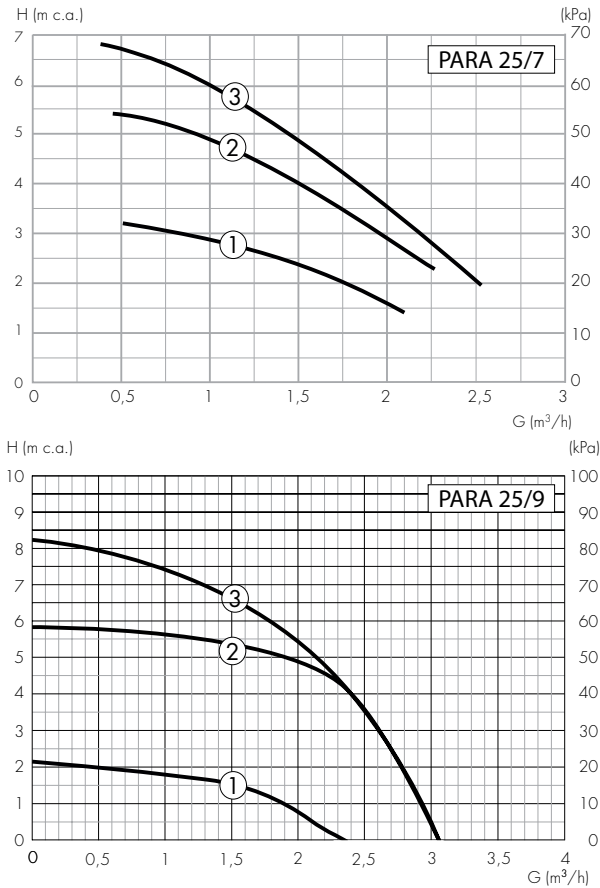
High efficiency pump:  
- code 165640HE3 WILO PARA 25/7  
- code 165641HE4 WILO PARA 25/9  
Body: cast iron  
Electric supply: 230 V - 50/60 Hz  
Max. ambient humidity/temperature: see specific instruction sheet  
Protection class: IPX4D  
Pump centre distance: 130 mm  
Pump connections: 1 1/2" (ISO 228-1) with nut

#### Temperature gauges

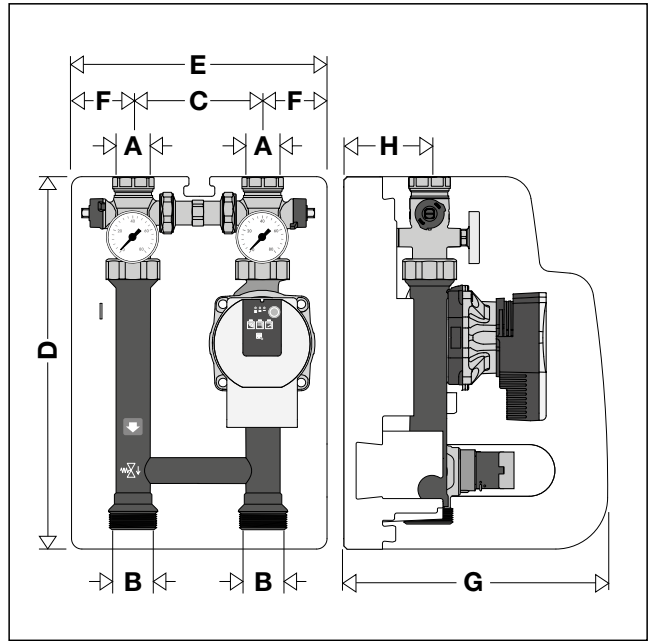
Double scale: 0-80 °C (32-176 °F)

### Head available at the regulating unit connections

Tests carried out with constant pressure control.



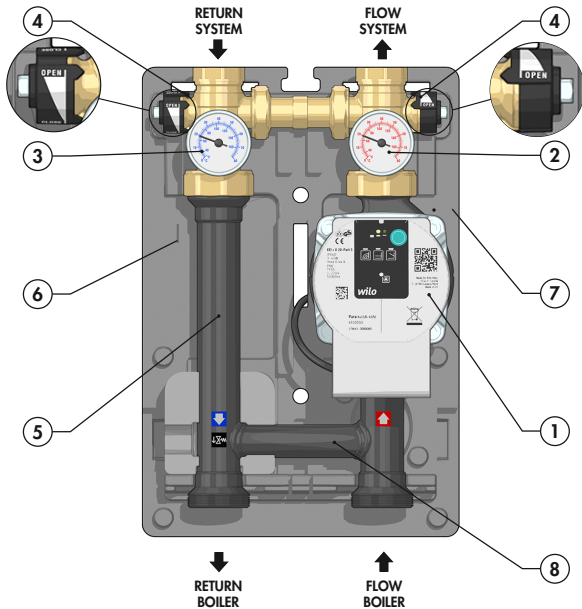
### Dimensions



Code	A	B	C	D	E	F	G	H	Mass (kg)
165640HE3	1"	1 1/2"	125	360	247	61	255	80	6.5
165641HE3	1"	1 1/2"	125	360	247	61	255	80	8.4

### Note:

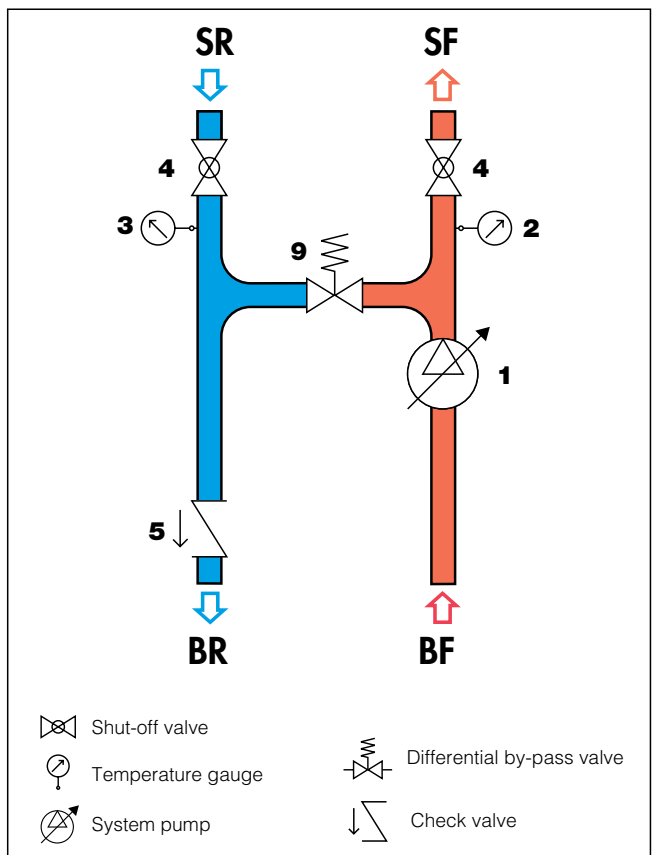
The pumps can operate with constant or proportional pressure control, which adapts the performance to the system requirements. For further details, see the installation instruction sheet of the pump supplied in the package.



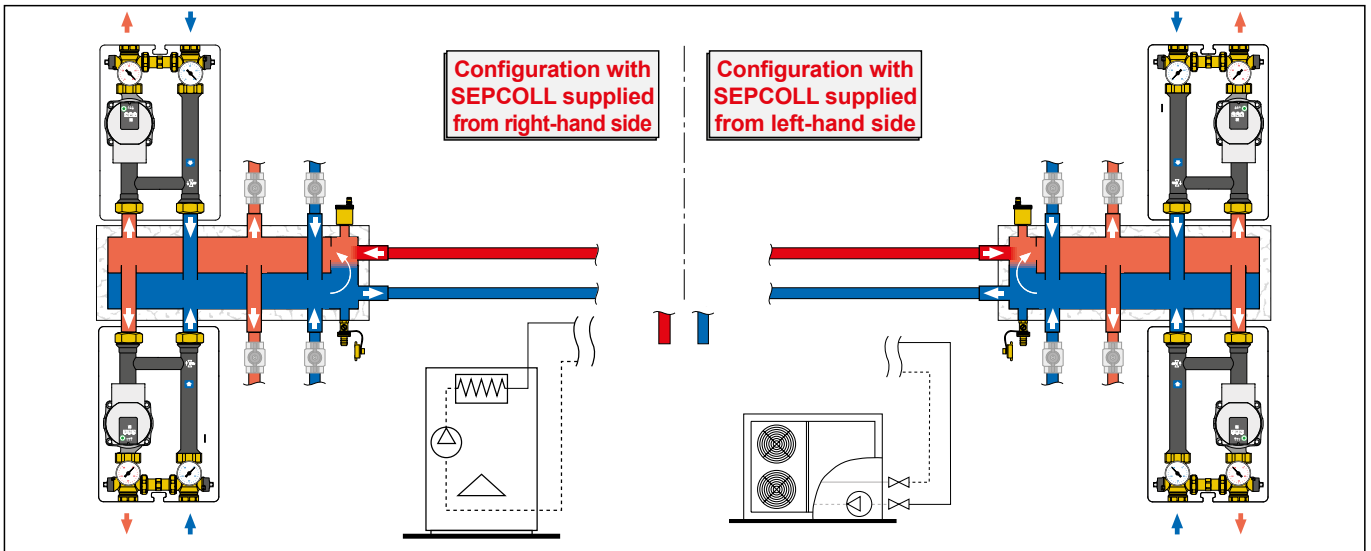
### Characteristic components

- 1 WILO PARA 25/7 and PARA 25/9 high-efficiency pump
- 2 Flow temperature gauge
- 3 Return temperature gauge
- 4 Shut-off valves on secondary circuit
- 5 Connection pipe (with check valve)
- 6 Operating wrench for shut-off valves on secondary circuit
- 7 Insulation
- 8 Structural element (spacer)
- 9 Optional differential by-bass (see leaflet 01237)

### Hydraulic diagram



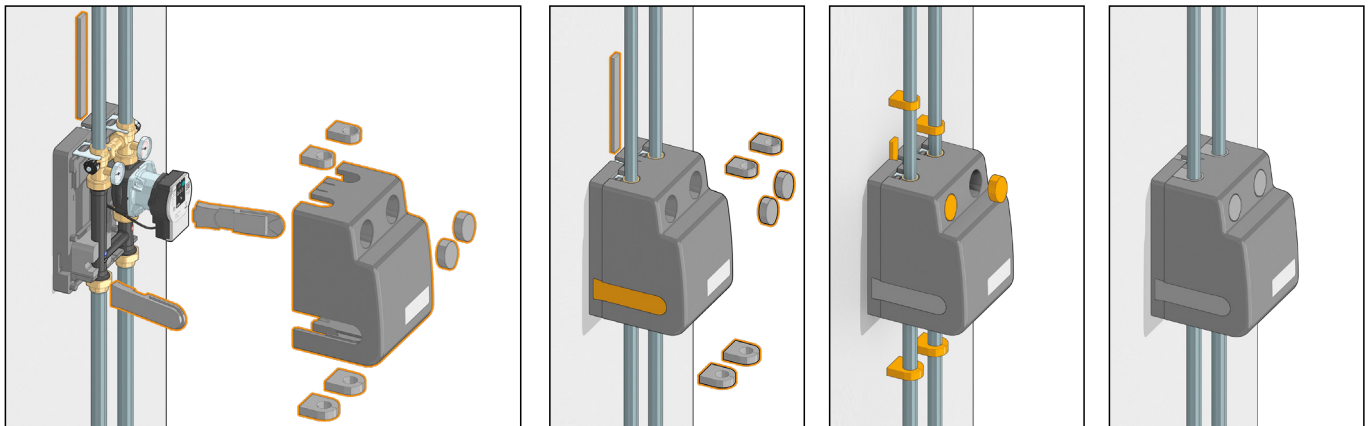
## Installation



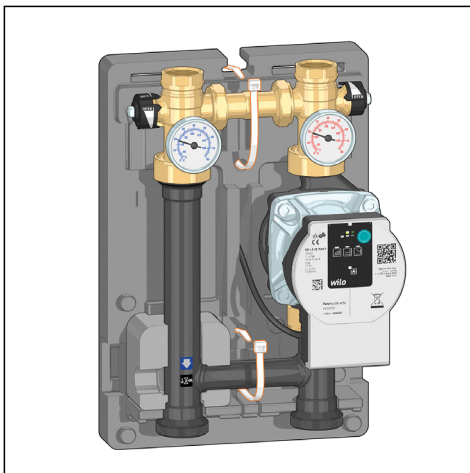
## Construction details

### Pre-formed shell insulation

The insulation allows use on heating and cooling systems. It is equipped with special inserts that allow improving the insulation and minimizing condensation build-up.



**Note:** if the maximum medium flow temperature is greater than 60 °C, the two circular front caps have to be removed to prevent the circulator from overheating.



When fitting the rear shell to the assembly, it is recommended to use two ties, as shown in the figure, to ensure that the insulation adheres perfectly to the pipes and to minimize the likelihood of condensation build-up.

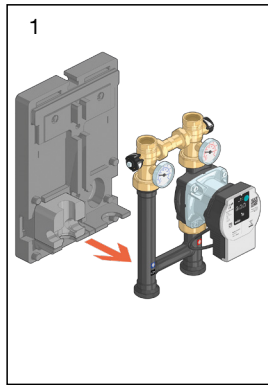
## Right hand-left hand reversibility

The unit is assembled in the factory with right-hand side upward flow (equivalent to left-hand side downward flow). If necessary, the flow direction can be reversed. For this reason, the nuts on the unit are not fully tightened in the factory, making it easier to carry out this procedure if required.

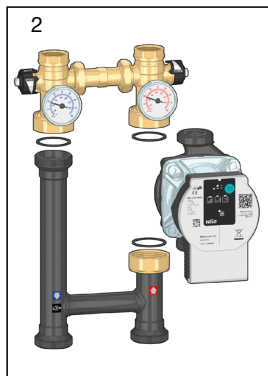
**We recommend always checking that the nuts have been fully tightened during installation.**

To make the exchange, proceed as follows:

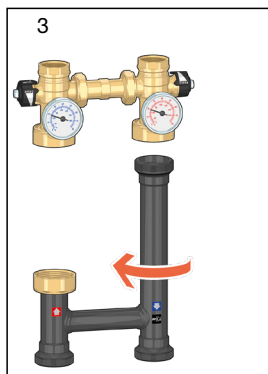
1. Remove the insulation. The front and rear shells are easy to remove as they are slightly interlocked with each other.



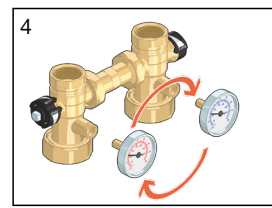
2. Completely unscrew the captive nuts (using suitable spanners) located under the flow and return shut-off valves. Remove the pump.



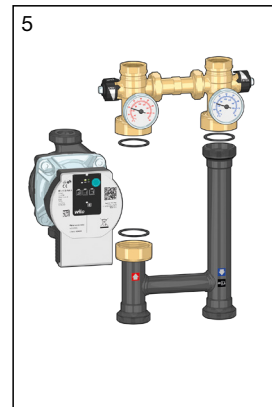
3. Position the connecting pipe on the right-hand side, rotating it on its axis by 180°.



4. Invert the flow and return temperature gauges.

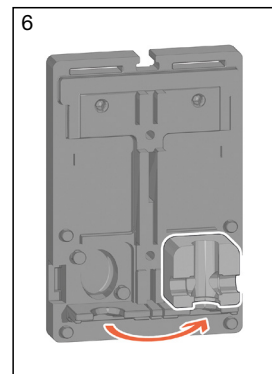


5. Assemble the unit as shown in the figure and fully tightening the captive nuts, taking care to position the seals correctly.

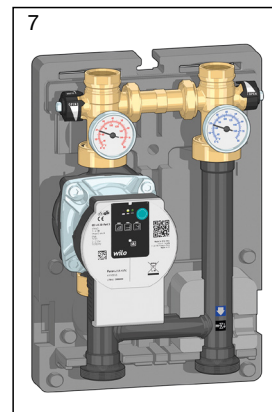


6. Move the square spacer and fit it on the right-hand side.

**Note:** The central notch in the insulation can be used to house the circulator electrical wiring cables.



7. Assemble the insulation.



**Accessories**



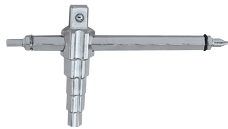
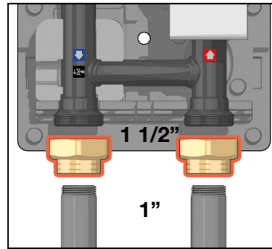
**165006**  
 Pair of eccentric tailpieces.  
 Centre distance: 105-145 mm.  
 Connections:  
 1 1/2" F with captive nut x 1" F.



**165002**  
 Female union with captive nut, complete with seal.  
 Connections: 1 1/2" F with captive nut x 1" F.

**Installation example**

The union with captive nut allows installation of the 165 series unit on any 1" M pipe.



**3871**  
 Universal key.  
 Can be used for unions from 3/8" to 1".

Code

**387127**

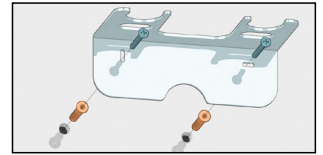
**Mounting bracket**



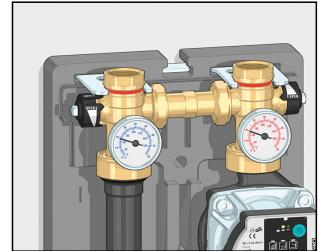
**165001**  
 Mounting bracket.  
 In stainless steel.

**Bracket installation**

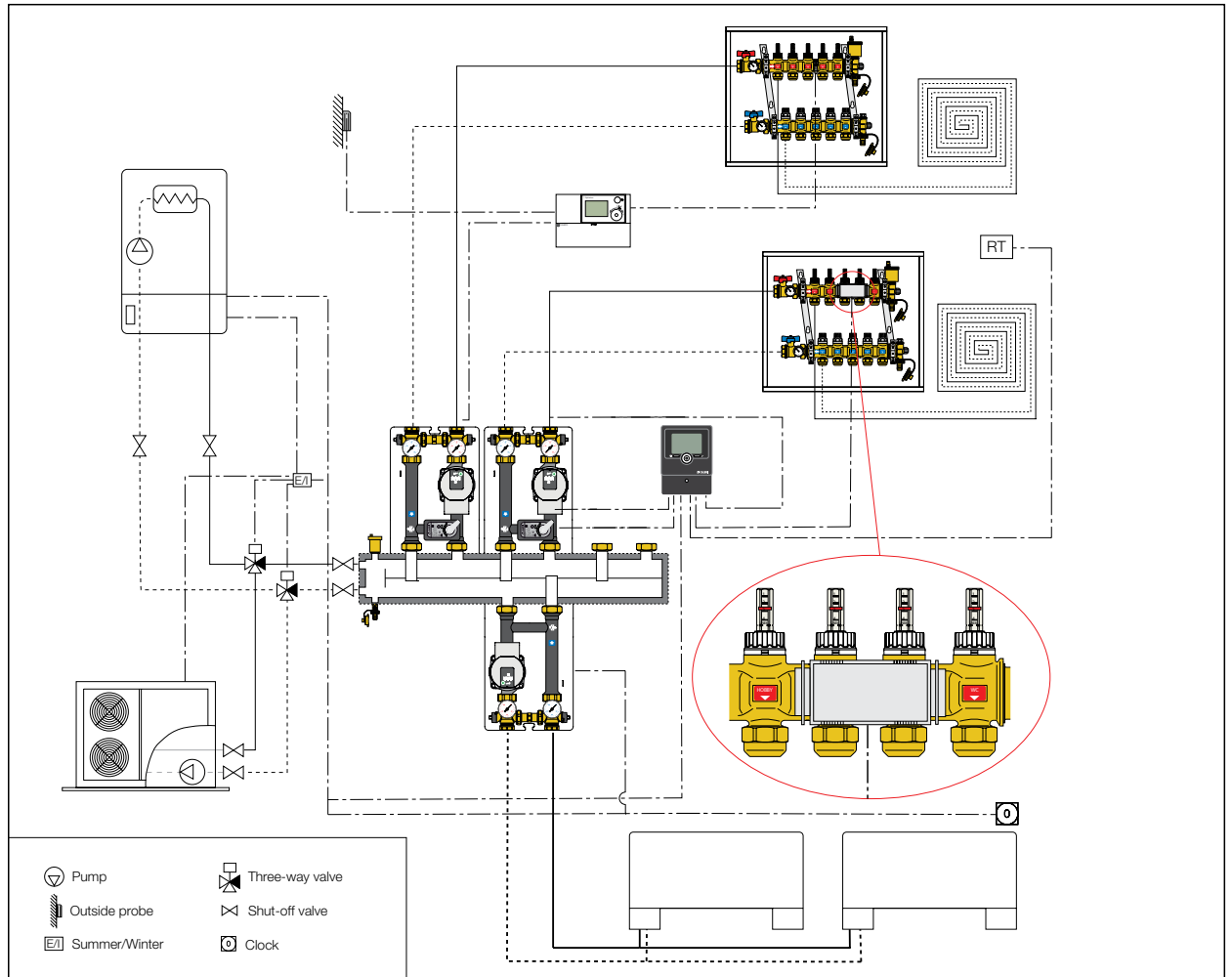
The mounting bracket for wall installation must be secured using wall anchors, using the corresponding holes on the base.

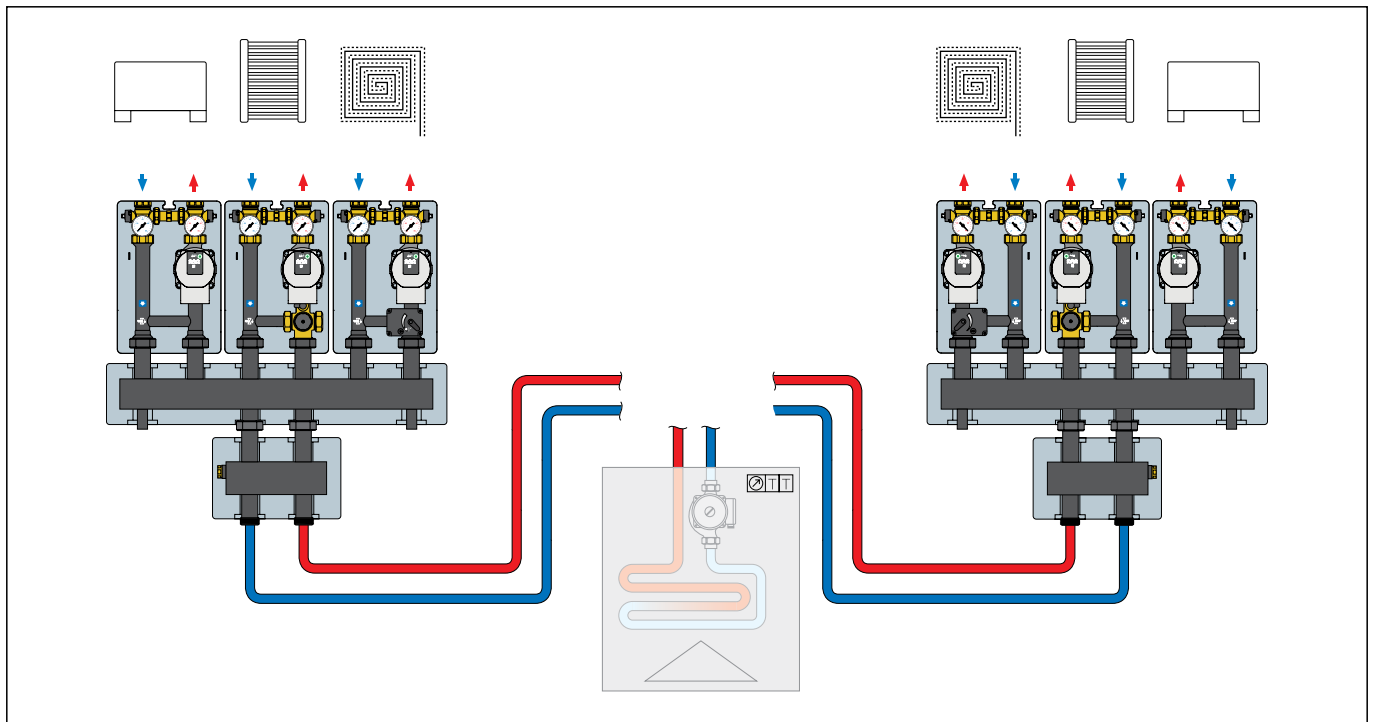


The unit should be applied to the bracket, using the corresponding seats under the hexagonal part of the shut-off valves.



**Application diagrams**





## SPECIFICATION SUMMARY

### 165 series

Direct supply unit for heating and air-conditioning systems. Right-left swappable. Connections to primary circuit 1 1/2" M (ISO 228-1). Connections to secondary circuit 1" F (ISO 228-1). Connection centre distance 125 mm. Primary inlet working temperature range: 5–100 °C. Maximum working pressure 1000 kPa (10 bar). Minimum working pressure 80 kPa (0,80 bar). Complete with: PARA 25/7 (PARA 25/9) high-efficiency pump, protection class IPX4D, dual-scale temperature gauges 0–80 °C (32–176°F), secondary circuit shut-off valves. Connection pipe in Fe 360 steel. Check valve with brass body, obturator in PPAG40. With pre-formed shell insulation in EPP for heating and air-conditioning systems.

### Code 165002

Female union with captive nut, complete with seal. Connections 1 1/2" F captive nut x 1" F (ISO 228-1).

### Code 165006

Pair of eccentric tailpieces. Connections 1 1/2" F captive nut x 1" F (ISO 228-1). Centre distance 105–145 mm.

### Code 165001

Stainless steel mounting bracket.

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