

PRIMO

Installation instruction

2015-08-12

1.1 To consider

All pipes are supplied in exact lengths as set out on the drawing, except pipes to corners that must be cut.

Hoses in the valve assembly are marked with blue (cooling) and red (heating).

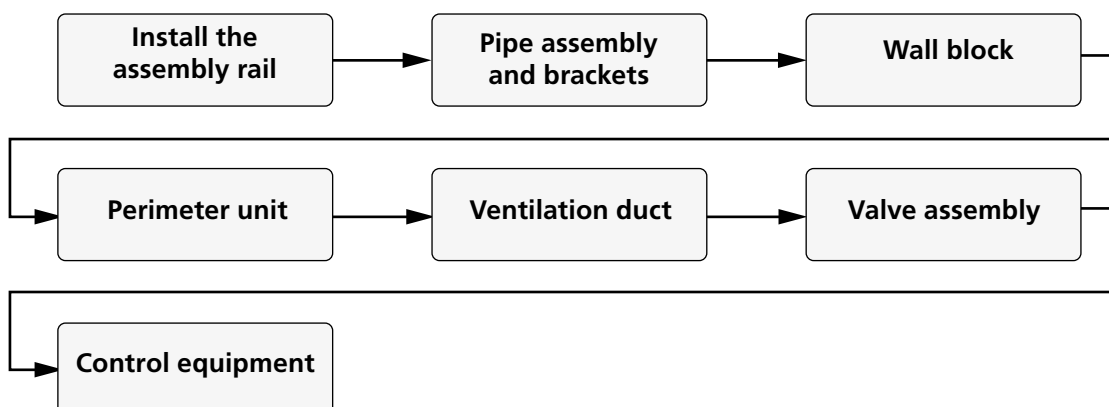
As the system will be exposed to a high water pressure it is important that C pipe brackets, which are the first and final brackets in the installation, are well anchored.

The spacing between the two pipe brackets must not exceed 1200 mm.

1.2 Description of component parts

All components are described in detail in 6 Components..

1.3 Recommended sequence for installation



1.4 Tools and materials

Recommended tools:

- Drilling machine
- Measurement tape
- Spirit level
- Screwdriver
- Narrow jawed adjustable spanner
- Slip-joint pliers

Material not supplied by Swegon:

- Screw, max. 8 mm and possible plug for securing mounting brackets to a wall.
- Jointing paste is recommended for lubricating compression ring couplings (for example, Locher paste or Unipac).

2 Installation instruction Primo

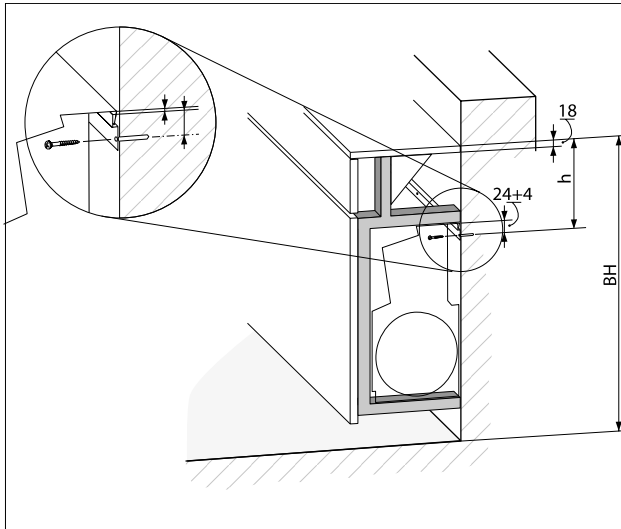
2.1 Measurements

This installation instruction is based on an assembly procedure from right to left. This is because it is an advantage to start the installation from the right-hand side.

In order for the Primo ventilation system and the PrimoFront casing to be assembled correctly it is important that all parts are horizontal, at the right height and in the right place.

Use the drawing to calculate where the assembly rail should start and finish..

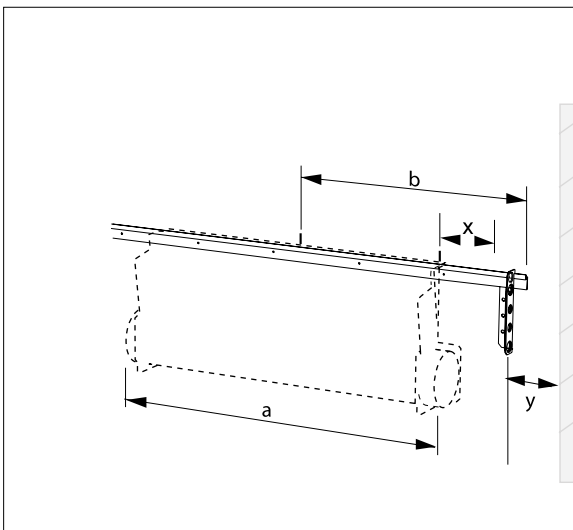
2.1.1 Calculate the start and finish of the mounting rail.



BH = breast height
h = measurement from the breast height to the centre the assembly rail's fixing screws

The type of electrical trunking	h mm
Classic, standard (195 mm)	232
Classic, Inka	206
Flip, standard (195 mm)	272
Integral, standard (135 mm)	262
Integral, standard (165 mm)	232
Integral, standard (195 mm)	262
Flip, standard (165 mm)	232
- (no electrical trunking)	46

1. Mark off the breast height for PrimoFront. Make sure the breast height is horizontal for the entire assembly.
2. Mark off the height for the assembly rail's fixing screws as shown in the figure above.
Start with the breast height and deduct the h mm as set out in the table in the figure above.



Unit length (a)	Valve assembly (x)	b mm
600	300	530
600	500	730
600	700	930
800	300	630
800	500	830
800	700	1030
1000	300	730
1000	500	930
1000	700	1130
1300	300	880
1300	500	1080
1300	700	1280
1600	300	1030
1600	500	1230
1600	700	1430

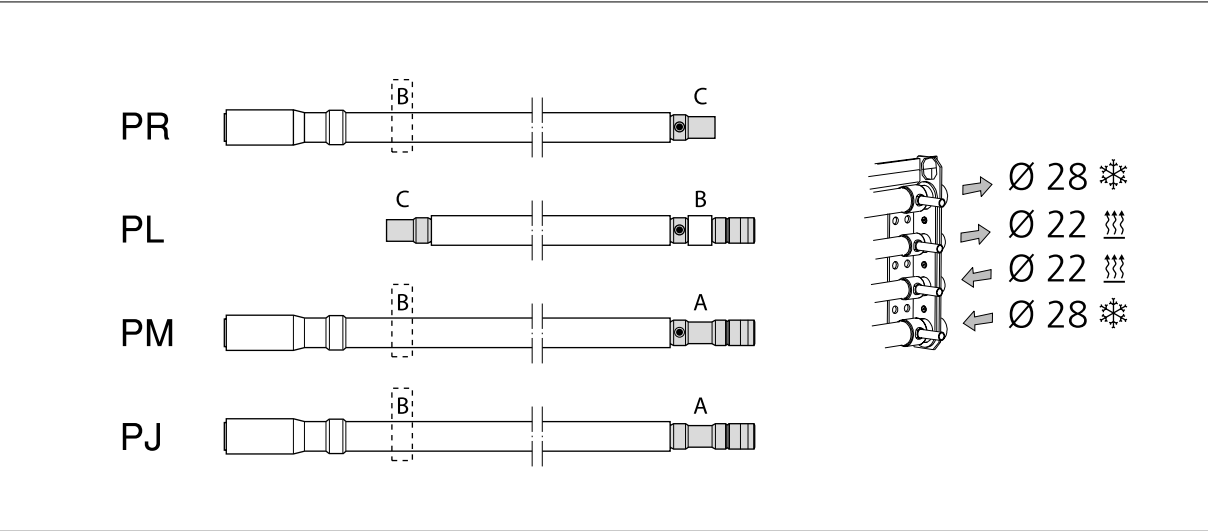
3. Mark off where the assembly rail starts and finishes.
Start from the centre of the perimeter unit's outlet sleeve and add the b-measurement as set out in the table in the figure above. The b-measurement concerns the perimeter unit's length and the length of the hoses.
The y-measurement by the connection must not be less than 100 mm. By the termination: Y-measurement min 150 mm..

2.2 Mounting rail

Fit the mounting rail without any spaces according to the measurements. Cut the mounting rails as required and fit using suitable screws and raw plugs if necessary. It is important that the mounting rail is horizontal.

2.3 Description of the pipe assembly and pipe brackets

2.3.1 Pipe assembly - PR, PL, PM and PJ



2.3.2 Pipe brackets - A, B and C

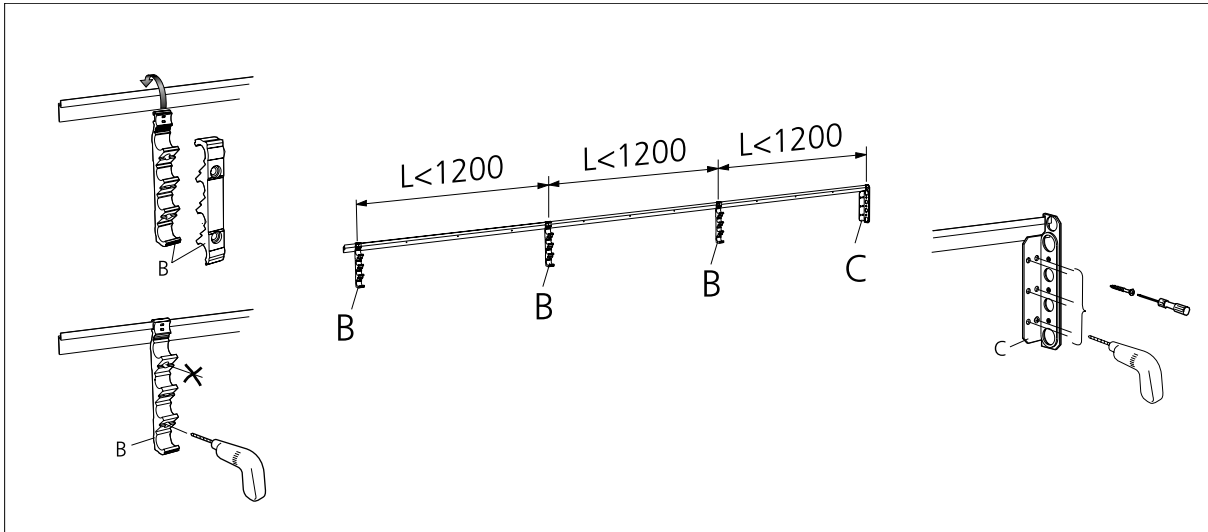
Cable ties are used to secure the conduits in the appropriate sockets in all pipe brackets. Fit the cable ties before the brackets are hooked onto the assembly rail..

Type	Function	Assembly
A	locking	Placed on the non-insulated part of the pipe (PM and PJ). Fitted with 2 screws (max. 8 mm) and raw plugs if necessary
B	supporting	Placed on the insulated part of the pipe (all pipe assemblies). Place the B-brackets with a maximum c-c spacing of 1200 mm from right to left as set out in the assembly procedure. The outermost B-bracket is positioned at different distances from the pipe end for the different pipe assemblies and should be located a bit from the end of the pipe so that the installation does not become too rigid. Fitted using 1 screw and 2 screws on corner installations, (max.Ø8 mm) and raw plugs if necessary.
C	termination	Pipe bracket C is positioned as the first and last bracket in the assembly (PR and PL). It must be well anchored to withstand a load of 4 kN. Fitted with 6 screws (max. 8 mm) and raw plugs if necessary.

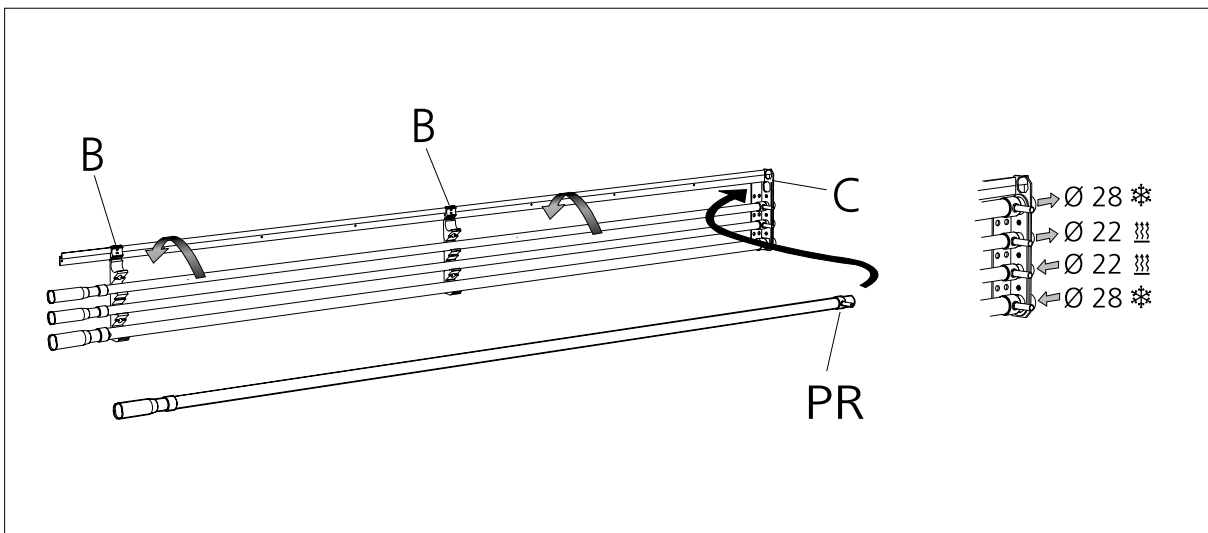
The spacing between the two pipe brackets must not exceed 1200 mm. Each pipe assembly includes the necessary number of supportive pipe brackets. The number depends on the pipe lengths: -

- with pipe lengths up to 2400 mm, 1 x B pipe bracket is supplied per pipe assembly.
- with pipe lengths between 2401-3600 mm, 2 x B pipe brackets are supplied per pipe assembly.
- with pipe lengths between 3601-4000 mm, 3 x B pipe brackets are supplied per pipe assembly

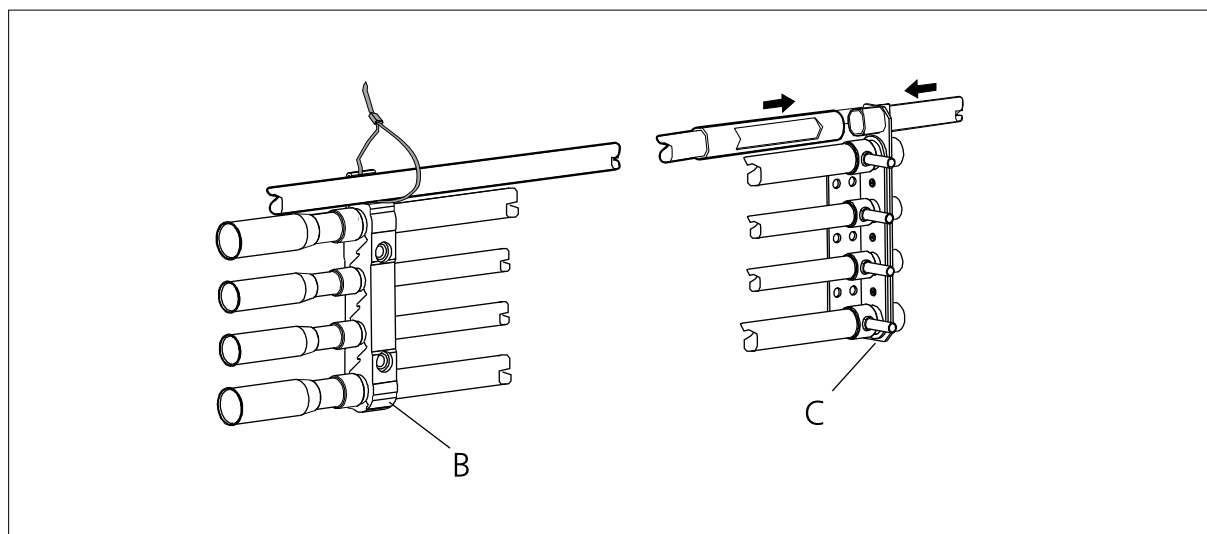
2.4 Assembling the right connection pipe – PR



1. Hook the C pipe bracket onto the assembly rail.
2. Place the B-brackets with a c-c spacing of 1200 mm from right to left
3. Mark out all the screw holes in the C pipe bracket and the lower screw hole in B pipe bracket.
4. Hook on the pipe brackets.
5. Drill (and plug if necessary).
6. Fit the cable ties intended for the conduit in the pipe brackets.
7. Hook the pipe brackets on the assembly rail.
8. Screw on the C bracket. It is important that they are well anchored.

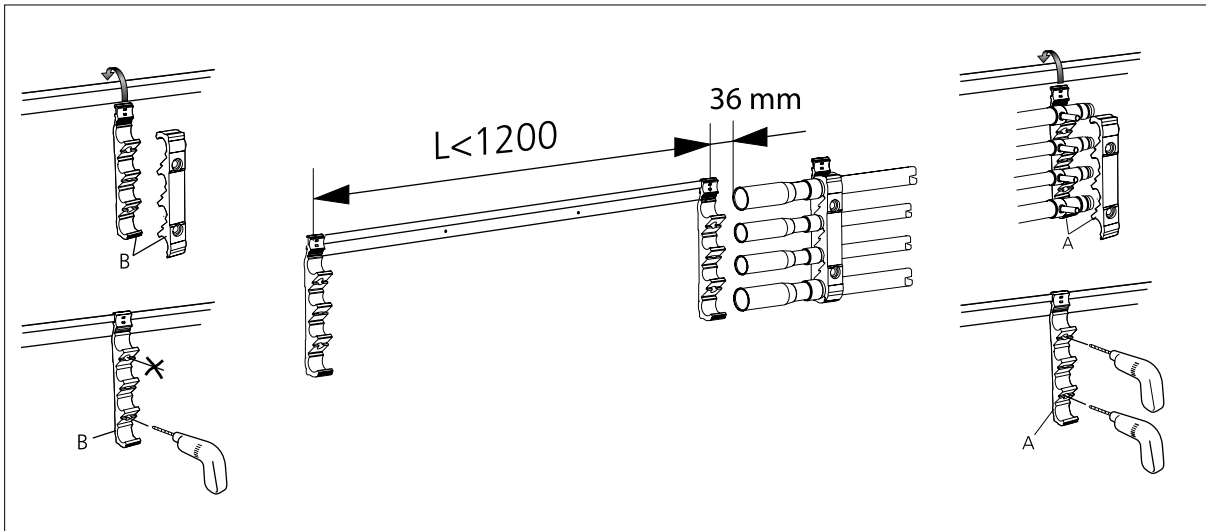


9. Position the four pipes. Start with the lowermost pipe.
10. Snap on the outer pipe bracket half on the B pipe bracket and screw together.

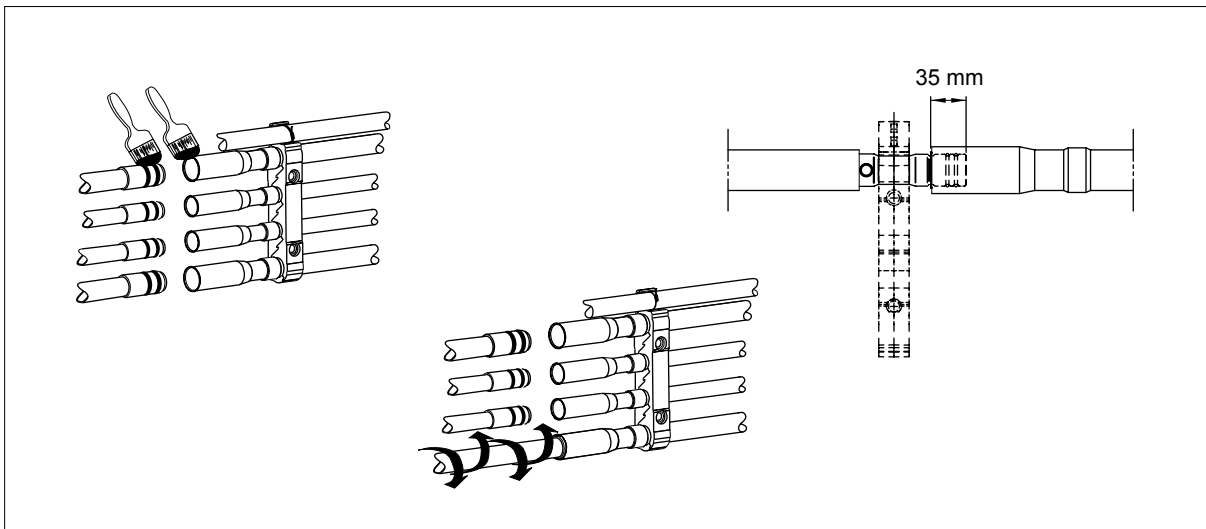


11. Fit the conduit for the control cable using cable ties in all pipe brackets, except the C bracket where the pipe is threaded through the appropriate hole.

2.5 Assemble the centre connection pipe – PM

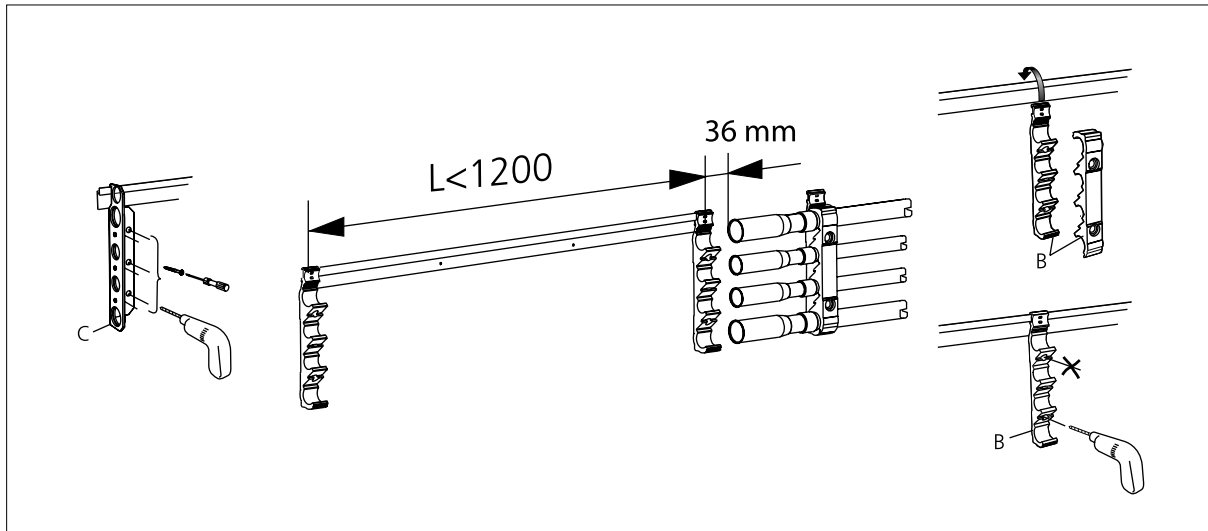


1. Hook the A pipe bracket onto the assembly rail. The centre of the A pipe bracket should be positioned 36 mm from the assembled pipe end.
2. Place the B-brackets with a c-c spacing of 1200 mm from right to left.
3. Mark out both screw holes in the A pipe bracket and the lower screw hole in B pipe bracket.
4. Hook on the pipe brackets.
5. Drill (and plug if necessary).
6. Fit the cable ties intended for the conduit in the pipe brackets.
7. Hook on the pipe bracket again.



8. Connect the pipes (start with the lowermost pipe):
 - Brush the O-ring coupling and the pipe end with the supplied silicone grease.
 - Position the pipe.
 - Insert the pipe with a twisting movement.
 - Insert the pipe's O-ring section up until the groove (35 mm), see the figure above.
9. Snap on the outer halves of the pipe brackets and screw together.
10. Fit the conduit for the control cable with cable ties on all pipe brackets.

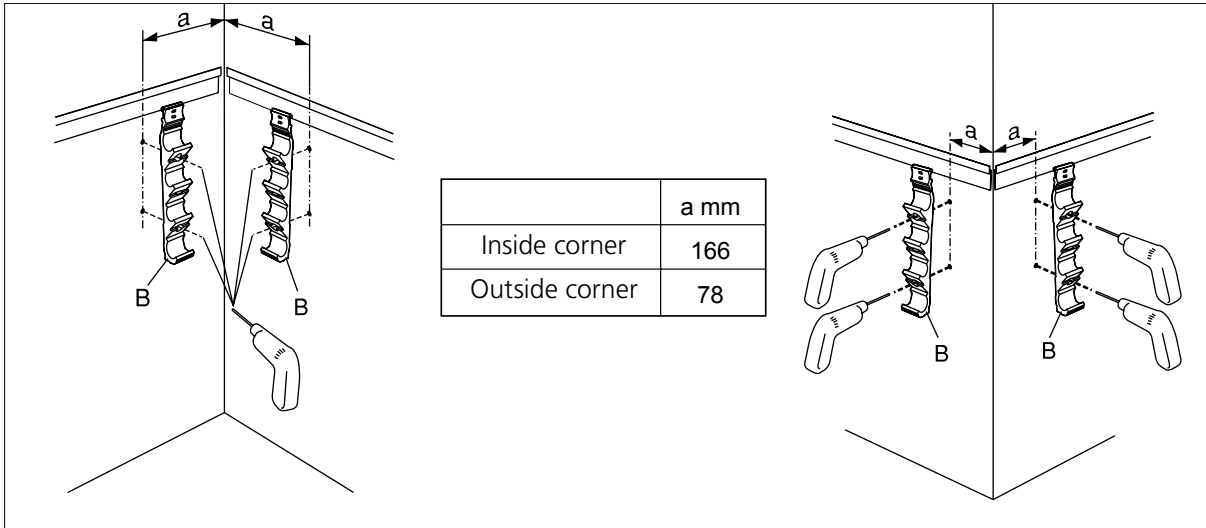
2.6 Assembling the left connection pipe - PL



1. Hook the B pipe bracket onto the assembly rail. The centre of the B pipe bracket should be positioned 36 mm from the assembled pipe end.
2. Position the other B-brackets equally spaced with max. c-c spacing 1200 mm.
3. Mark out the lower screw hole in the B pipe bracket.
4. Hook on the pipe brackets.
5. Drill (and plug if necessary).
6. Fit the cable ties intended for the conduit in the pipe brackets.
7. Hook on the pipe bracket again.
8. Position the four pipes. Start with the lowermost pipe.
9. Snap on the outer half on the B pipe bracket and screw together.
10. Thread the C pipe bracket on the pipes.
11. Mark off the hole pattern, unhook the C-bracket, drill and plug if necessary.
12. Screw on the C bracket. It is important that they are well anchored.
13. Fit the conduit for the control cable using cable ties in all pipe brackets, except the C bracket where the pipe is threaded through the appropriate hole.

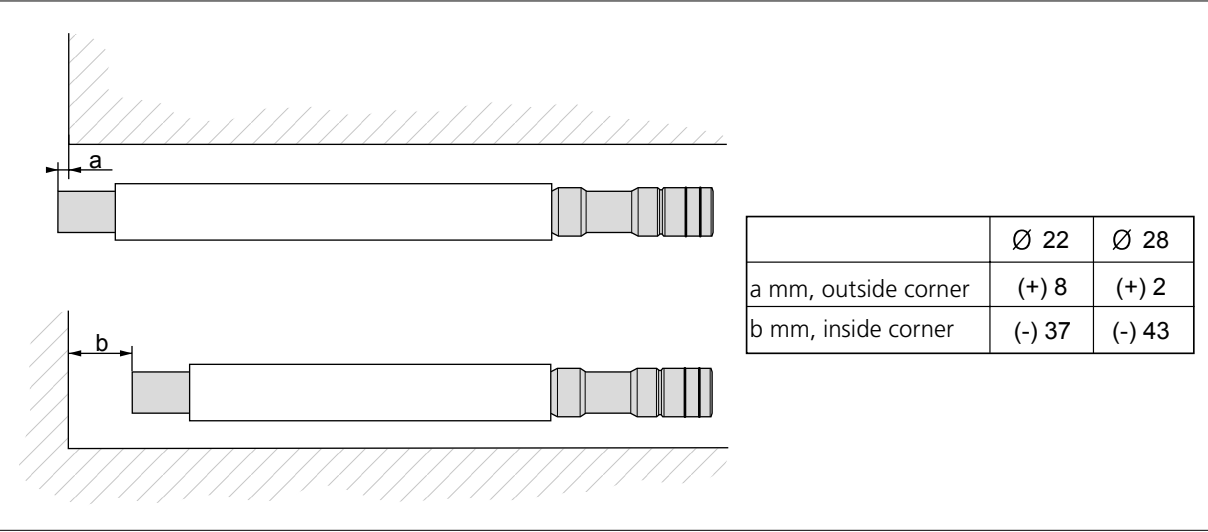
2.7 Assembling the corner assembly - PC

2.7.1 Pipe brackets in the corner



1. Hook the B pipe bracket onto the assembly rail, a mm from the corner.
2. Mark out both screw holes on pipe brackets.
3. Hook on the pipe brackets.
4. Drill (and plug if necessary).
5. Fit the cable ties intended for the conduit in the pipe brackets.
6. Hook on the pipe bracket again.

2.7.2 Calculate the pipe length

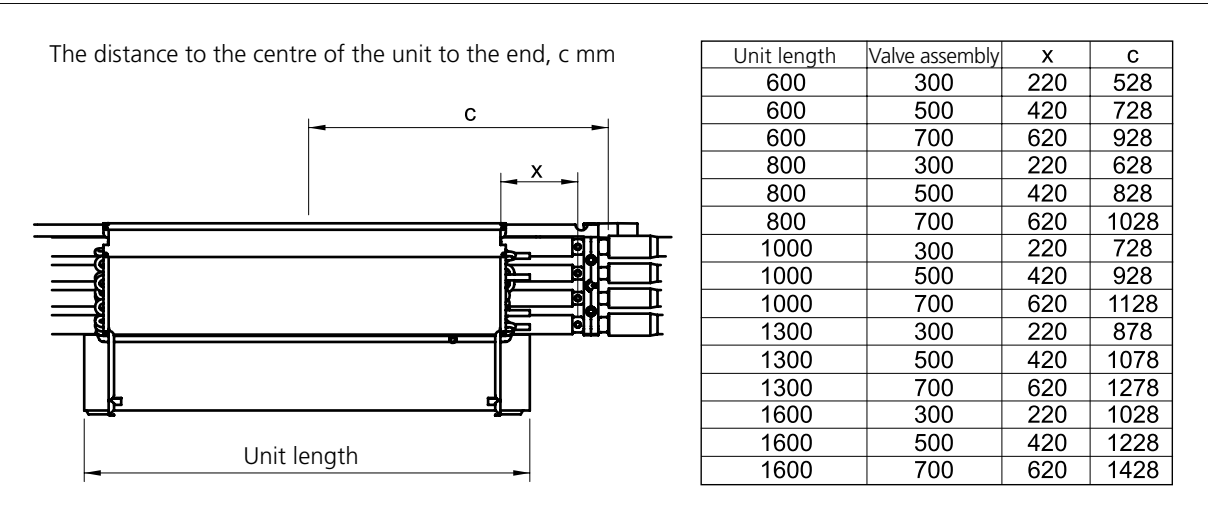


Outside corner:

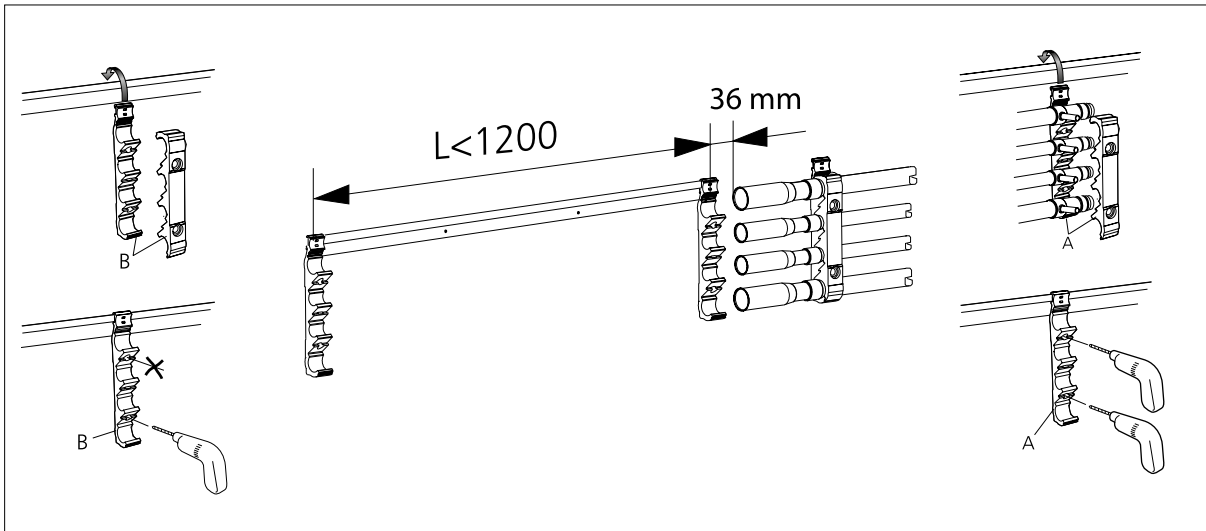
- supply pipe: Measure the distance from the previous pipe end to the corner. Add a mm as set out in the table in the figure above, and 35 mm to compensate for the insert in the previous pipe.
- return pipe: Measure the distance from the centre of the next perimeter unit to the corner. Add the a mm distance as set out in the table in the figure above and deduct the c mm measurement as set out in the table in the figure below.

Inside corner:

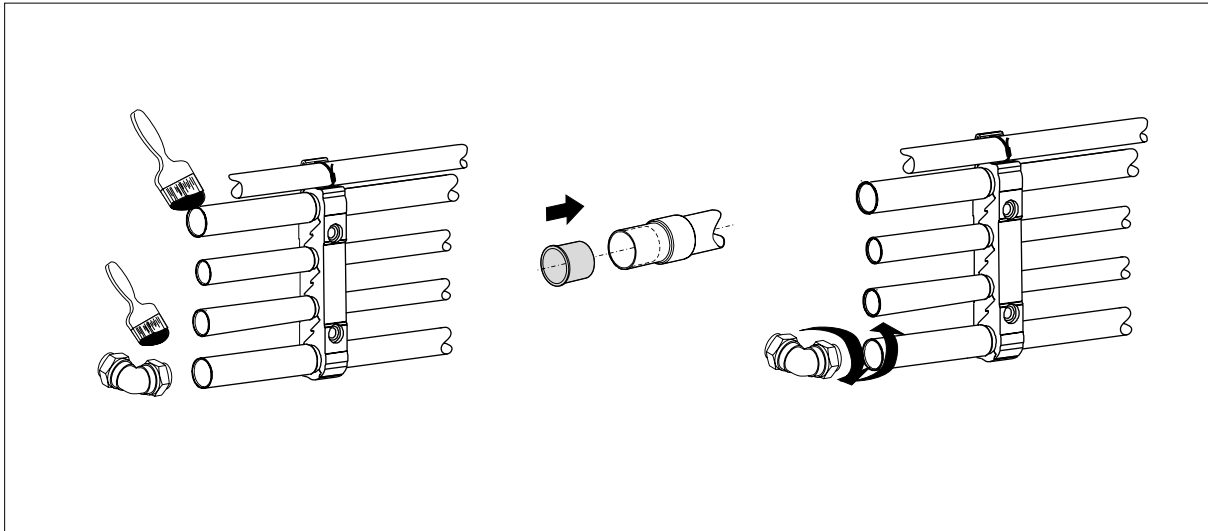
- supply pipe: Measure the distance from the end of the pipe end to the corner. Deduct the b mm measurement according to the table in the figure above, and then add 35 mm to compensate for the insert in the previous pipe.
- return pipe: Measure the distance from the centre of the next perimeter unit to the corner. Deduct the b mm measurement according to the table in the figure above and c mm measurement according to the table in the figure below..



2.7.3 Assembling the connection pipe to the corner



1. Fit the pipe brackets:
 - Position the A-bracket 36 mm from the end of the installed pipes.
 - Position the B-brackets equally spaced with max. c-c spacing 1200 mm.
 - Mark out both screw holes in the A pipe bracket and the lowermost screw hole in B pipe bracket.
 - Hook on the pipe brackets.
 - Drill (and plug if necessary).
 - Fit the cable ties intended for the conduit in the pipe brackets.
 - Hook on the pipe bracket again..

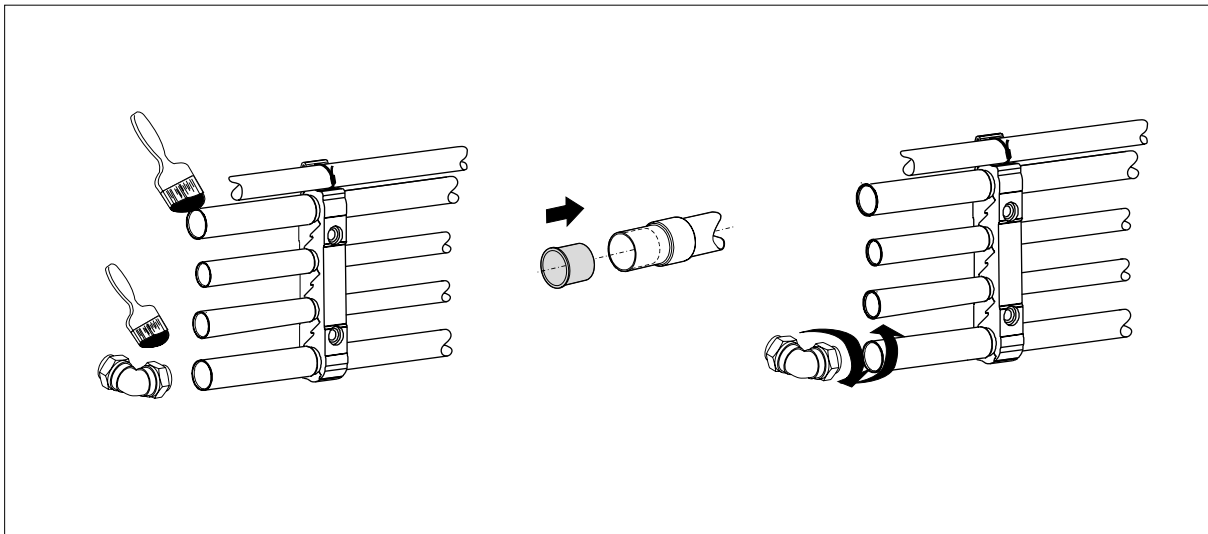


2. Connect the elbow couplings on the pipes (start with the lowermost pipe):
 - Insert the support sleeve.
 - Brush the pipe end and the elbow coupling's compression ring with jointing paste (recommendation).
 - Tighten the compression ring coupling: Remember any branch to the valve assembly should be directed 90° out from the wall.
 - Heating pipe (22 mm): tighten by hand first, then a full turn with a spanner.
 - Cooling pipe (28 mm): tighten by hand first, then a full turn with a spanner.
3. Connect the pipes (start with the lowermost pipe):
 - Brush the O-ring coupling and the pipe end with the supplied silicone grease.
 - Position the pipe.
 - Twist on the pipe.
4. When all pipes to the corner have been installed the outer pipe bracket halves are fitted and screwed together.

2.7.4 Assembling the connection pipe from the corner

1. Fit the pipe brackets:

- Position the B-brackets with c-c spacing 1200 mm from the B-bracket in the corner.
- Mark out the lower screw hole in the B pipe bracket.
- Hook on the pipe brackets.
- Drill (and plug if necessary).
- Fit the cable ties intended for the conduit in the pipe brackets.
- Hook on the pipe bracket again.

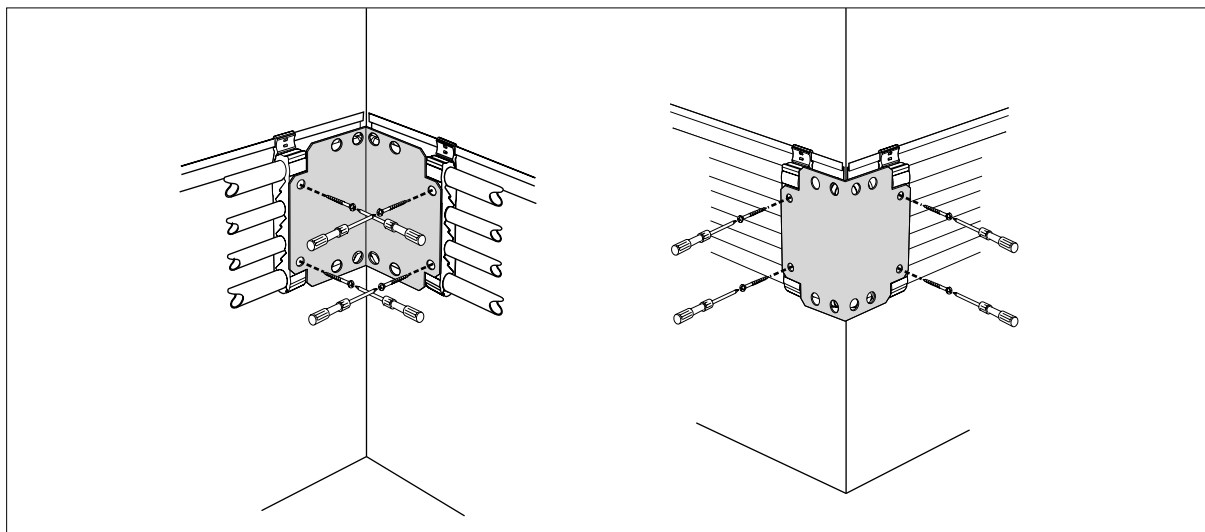


2. Connect the elbow couplings (start with the lowermost pipe):

- Insert the support sleeve.
- Brush the pipe end and elbow coupling's compression ring with jointing paste (recommendation).
- Position the pipe
- Insert the pipes in the elbow couplings with a twisting movement.
- Tighten the compression ring coupling:
- Heating pipe (22 mm): tighten by hand first, then a full turn with a spanner.
- Cooling pipe (28 mm): tighten by hand first, then a full turn with a spanner.

3. Once all the pipes from the corner have been installed, fit the outer pipe brackets and screw together.

2.7.5 Assembling the reinforcement plate in corner

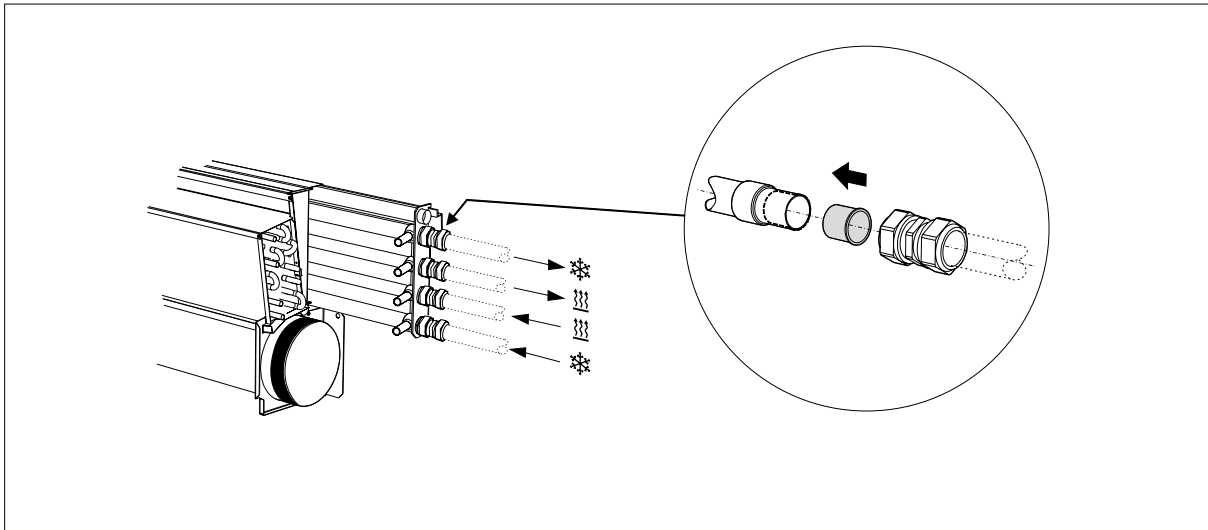


2.7.6 Fit the conduit

1. Fit the conduit for the control cable with cable ties on all pipe brackets.

2.8 Assembling the compression ring couplings to connect - CI and CS

The water connection can be made on both the right and left-hand sides of the installation.



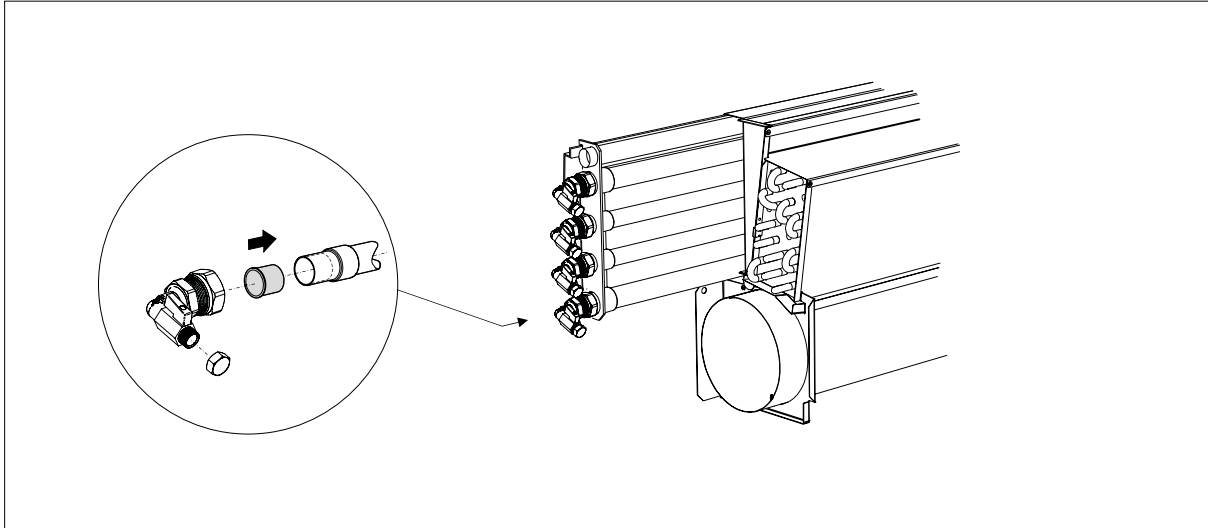
Start with the lowermost pipe.

1. Install in the support sleeve.
2. Brush the compression ring coupling and the pipe end with jointing paste (recommendation).
3. Fit the compression ring coupling on the pipes with a twisting movement (start with the lowermost pipe).
4. Tighten the compression ring coupling:
 - Heating pipe (22 mm): tighten by hand first, then a full turn with a spanner.
 - Cooling pipe (28 mm): tighten by hand first, then a full turn with a spanner.
5. Secure the metal cover on the ventilation duct with vulcanising tape. It is important that the tape is applied without air pockets or folds as they might result in leakage..

Mount the end covers according to Instruction 2.10.2

2.9 Assembling the shut-off valves - CE and CS

The shut-off valves can be fitted on either the right or left-hand sides of the installation.

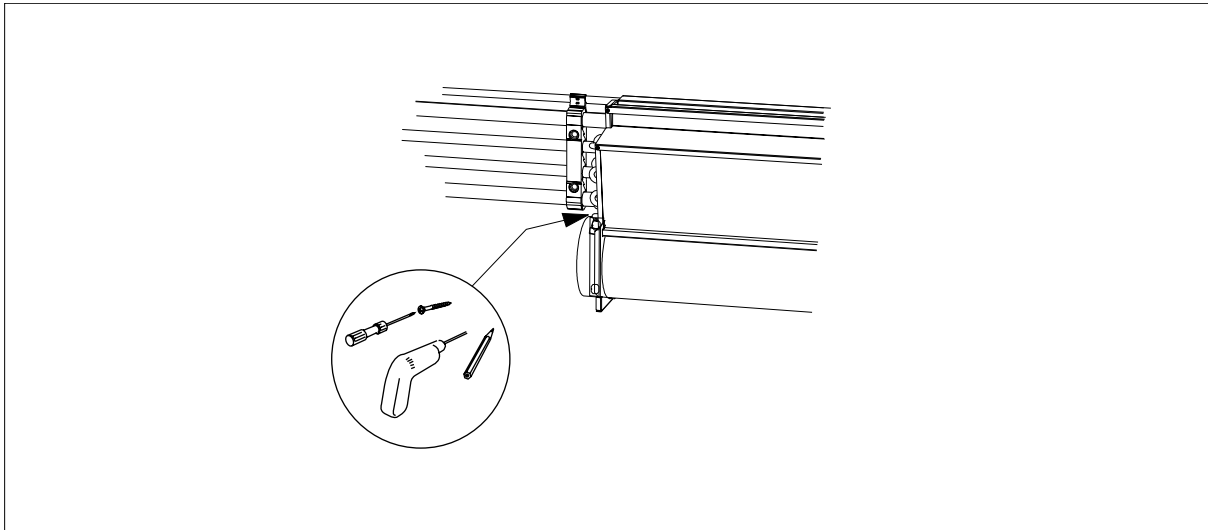


Start with the lowermost pipe.

1. Install in the support sleeve.
2. Brush the shut-off valve's compression ring coupling and the pipe end with jointing paste (recommendation).
3. Fit the compression ring coupling on the pipes with a twisting movement.
4. Tighten the compression ring coupling:
 - Heating pipe (22 mm): tighten by hand first, then a full turn with a spanner.
 - Cooling pipe (28 mm): tighten by hand first, then a full turn with a spanner.
5. Tighten the shut-off valve nut:
 - Tighten by hand first, then one and a half turn with a spanner.

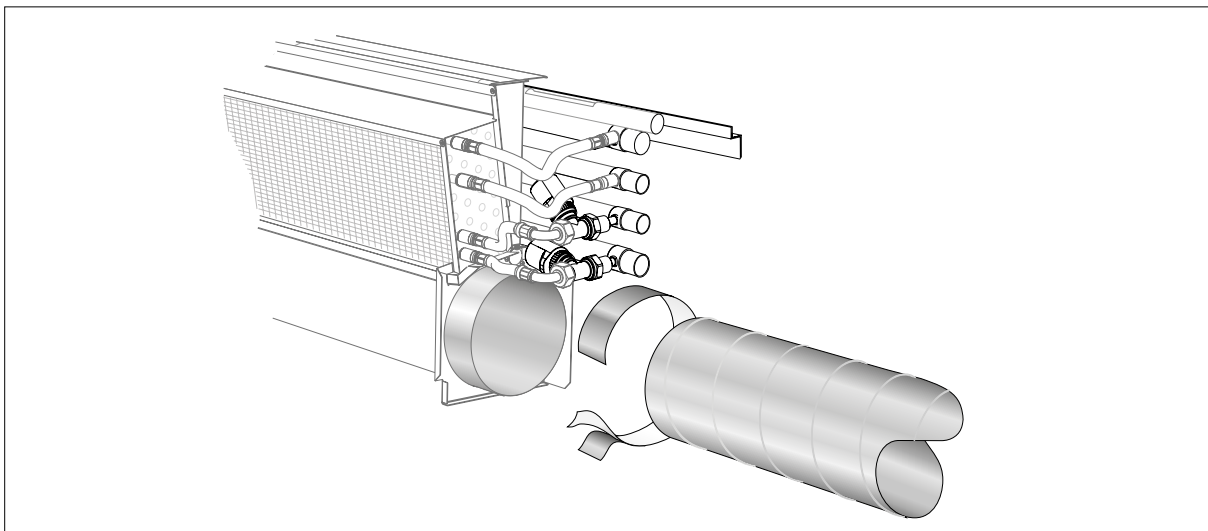
Mount the end covers according to Instruction 2.10.2

2.10 Assembling the perimeter unit



1. Hang on the perimeter unit.
2. Mark out the position of the screw on the left-hand side of the perimeter wall.
3. Drill (and plug if necessary).
4. Secure the perimeter unit with the screw..

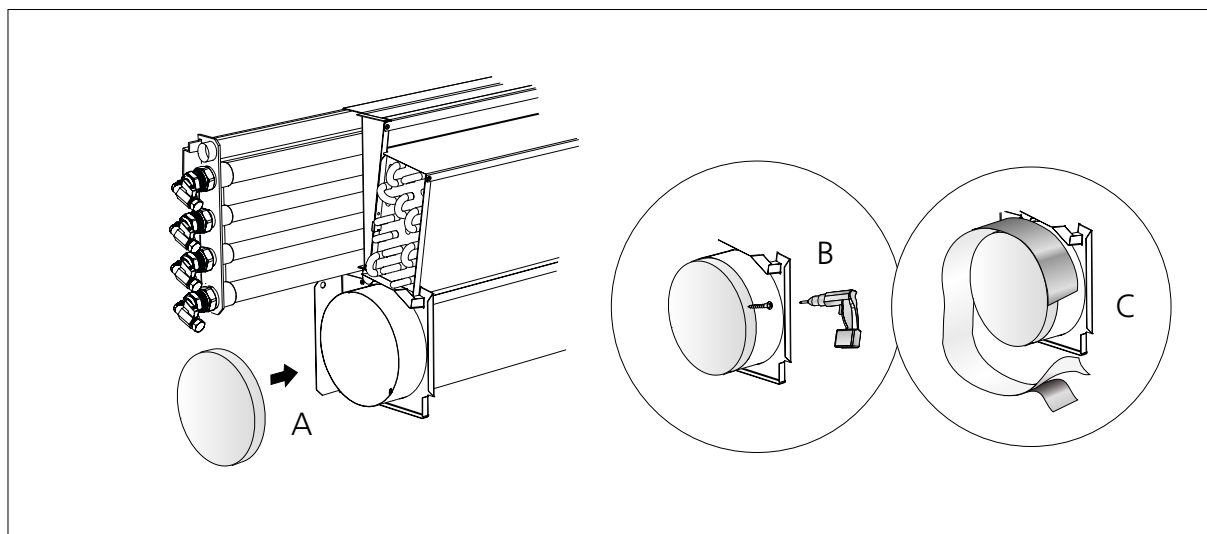
2.10.1 Assemble the ventilation duct



When the ventilation duct needs to run through the wall, the wall block must be fitted before the ventilation duct is installed.

1. Deburr possible sharp edges and install the ventilation duct with 25 mm overlap between the perimeter climate system units.
2. Slightly stretch the sealing tape and wrap it around, centred over the joint. The surface of the joint must be clean and dry having a temperature over +5° to ensure a proper seal. It is important to affix the tape without air bubbles or folds which otherwise could cause leakage.

2.10.2 To install end covers

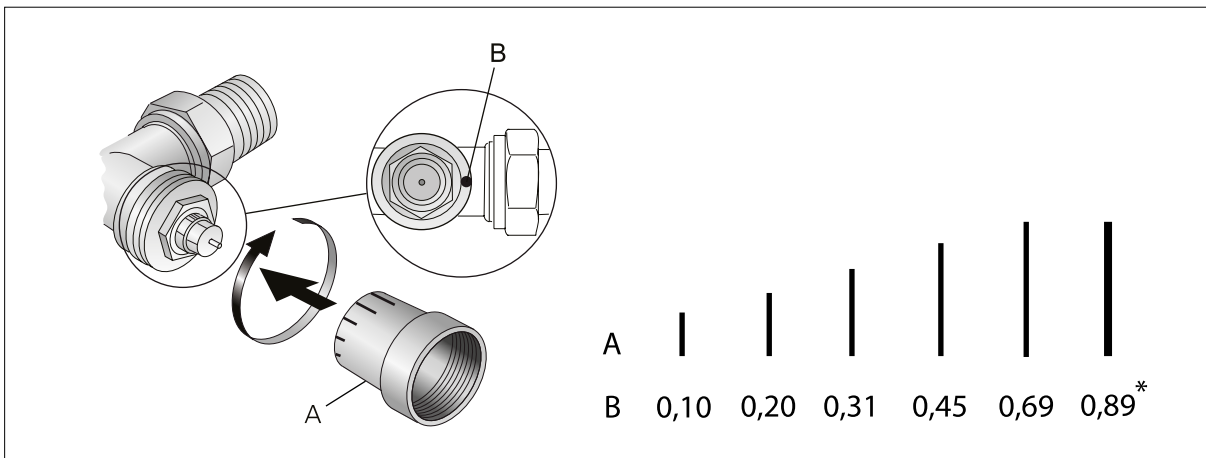
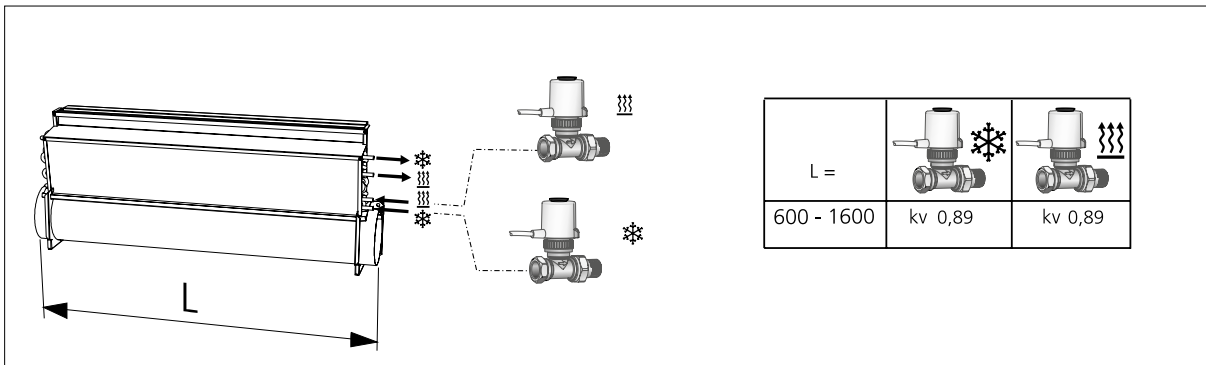
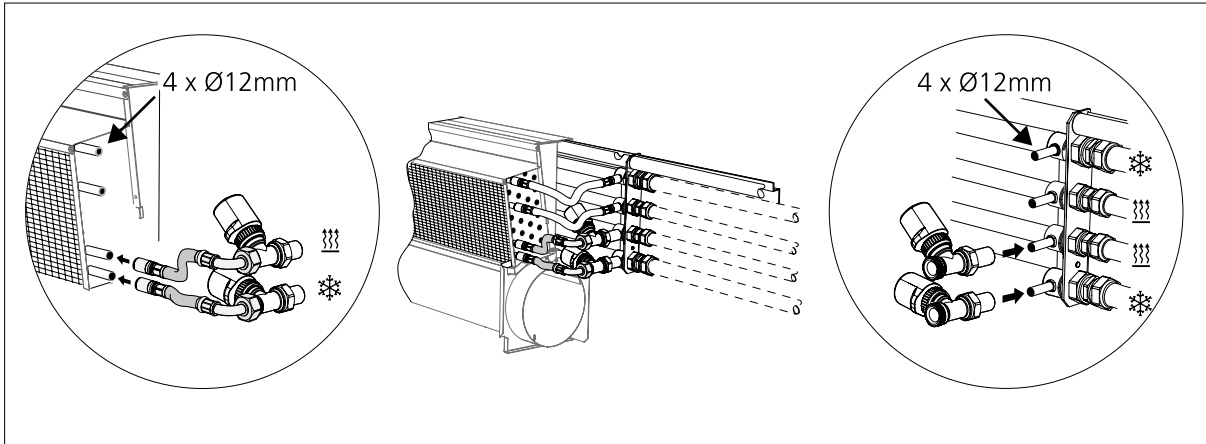


1. Place the end covers in the bottom against the duct and secure them with two screws.
2. Slightly stretch the tape and wrap it around, centred over the joint. The surface of the joint must be clean and dry having a temperature over $+5^{\circ}$ to ensure a proper seal. It is important to affix the tape without air bubbles or folds which otherwise could cause leakage.

2.11 Assembling the valve assembly

The hoses are marked blue (cooling) and red (heating). Be careful to connect the cooling and heating supply hoses to the correct connections.

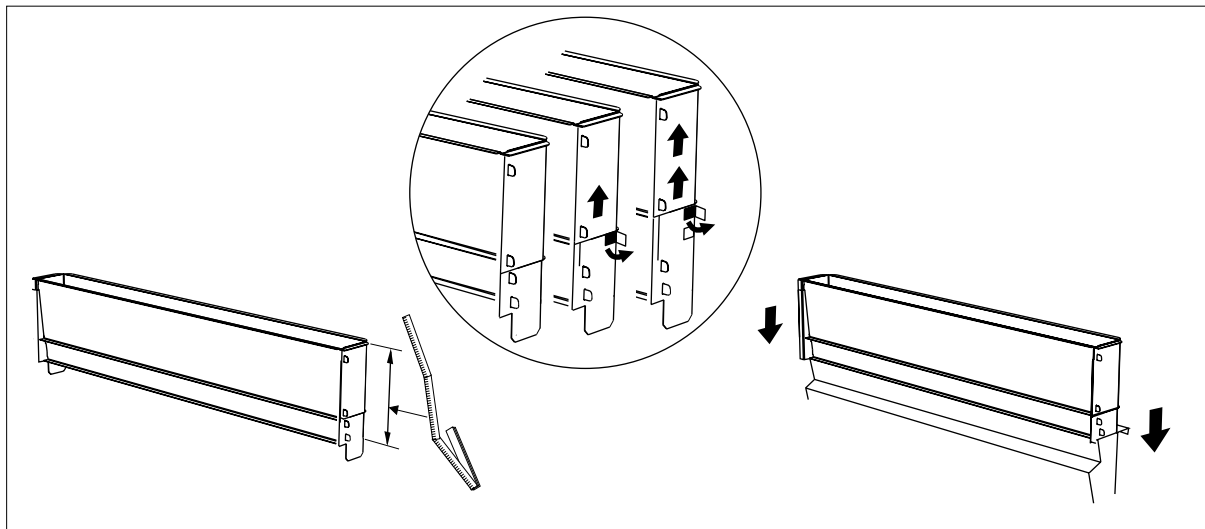
The valve assembly is supplied with or without control equipment..



1. Brush all connections with the supplied silicone grease.
2. Start fitting the hoses from the bottom. Connect hoses to the perimeter unit first and then to the branch pipe. If a branch pipe different to Swegon's standard is used, Please get in touch with Swegon regarding the design!
3. Place the connection card on the outlet sleeve. This will make it easy to reach through the grille.
 - Fit the protective housing A over the valve.
 - Turn the protective housing until the desired reference mark is centred with mark B on the valve

A = Reference mark, B = K_v -value; * = Factory setting

2.12 Assembling the outlet sleeve



1. Measure the distance from the edge of the perimeter wall up to the bench top (18 mm under the breast height).
2. Adjust the height of the outlet sleeve.
3. Turn the outlet nozzle so that the straight edge faces against the wall.
4. Press the outlet sleeve into the perimeter unit..

3 Checks

3.1 Venting

Vent one circuit at a time, start with the cooling circuit and then vent the heating circuit.

1. Ensure that all valves in the circuit on all perimeter units are fully open (close them using the regulator for one minute).
2. Unscrew the end plug and nut.
3. Connect the air purging hose on the shut-off valve.
4. Place the venting hose in a drain when the supply and return are to be vented individually or connect to the return line when both are to be vented simultaneously.
5. Open the shut-off valves on the circuit's supply and return.
6. Flush the circuit at full water pressure. Fill the circuit and flush again for a few minutes.
7. Shut off the water.
8. Close the shut-off valve.
9. Remove the connection hose and screw in the end nut again.
10. Tighten the shut-off valve nut:

- Tighten by hand first, then one and a half turn with a spanner.

3.2 Leakage test

Recommended max. pressure: 900 kPa.

Leakage testing is performed using a pressure pump, which is connected to the connection or termination on one circuit at a time, cooling circuit or heating circuit.

The minimum recommended pressure time is 90 minutes.

A soapy water solution can be sprayed on the connections to make it easier to locate any leakage.

1. Ensure that all valves on the circuits on all perimeter units are fully open.
2. Open the inlet and return shut-off valves of the coil circuit, unscrew and remove the end nut.
3. Pressure test at 1.5 times the dimensioned working pressure, max. 900 kPa. Allow the pressure to act during the whole test.
4. Check all connections to see where there might be any leakage.
5. Release the pressure.
6. Close the shut-off valve, remove the connection hose and screw in the end nut again.
7. Tighten the shut-off valve nut:

- Tighten by hand first, then one and a half turn with a spanner

3.3 LUNA control equipment

See separate instructions.

6 Components

6.1 Primo

6.1.1 PRIMO d T-MR-2400, assembly rail

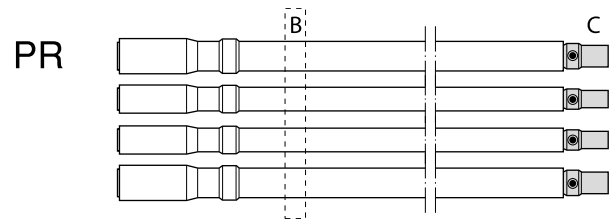
Length 2400 mm. Cut as needed.



6.1.2 PRIMO d T-PR, pipe assembly right

Supplied in exact lengths as set out on the drawing (300-4000 mm)..

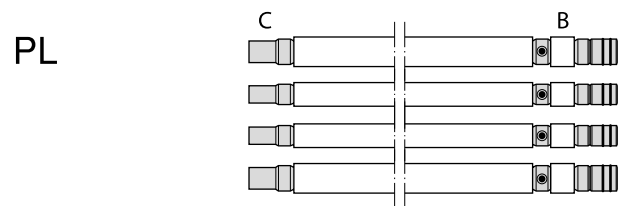
- 2 x insulated pipes (22 mm)
- 2 x insulated pipes (28 mm)
- 1 x conduit for wiring
- 1-3 x B pipe brackets (supporting)
- 1 x C pipe bracket (aluminium)
- 1 x cable tie per pipe bracket



6.1.3 PRIMO d T-PL, pipe assembly left

Supplied in exact lengths as set out on the drawing (300-4000 mm)..

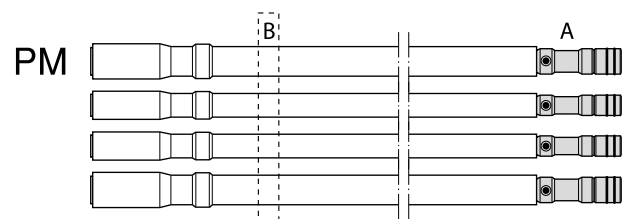
- 2 x insulated pipes (22 mm)
- 2 x insulated pipes (28 mm)
- 1 x conduit for wiring
- 1-3 x B pipe brackets (supporting)
- 1 x C pipe bracket (aluminium)
- 1 x cable tie per pipe bracket



6.1.4 PRIMO d T-PM, pipe assembly centre

Supplied in exact lengths as set out on the drawing (300-4000 mm).

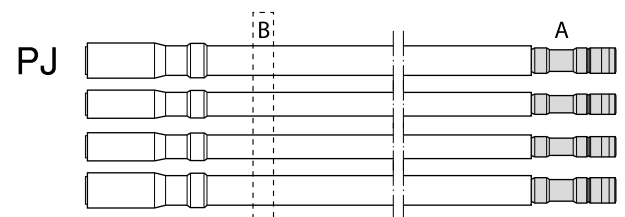
- 2 x insulated pipes (Ø 22 mm)
- 2 x insulated pipes (Ø 28 mm)
- 1 x conduit for wiring
- 1 A pipe bracket (locking)
- 1-3 x B pipe brackets (supporting)
- 1 x cable tie per pipe bracket



6.1.5 PRIMO d T-PJ, pipe assembly extension pipe

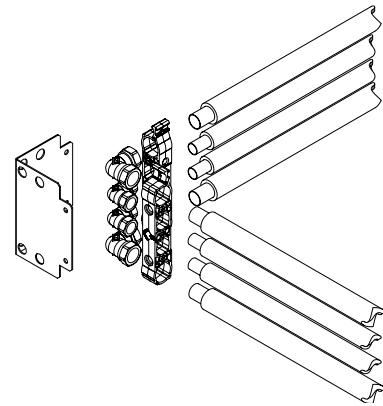
Supplied in exact lengths as set out on the drawing (300-4000 mm).

- 2 x insulated pipes (22 mm)
- 2 x insulated pipes (28 mm)
- 1 x conduit for wiring
- 1 A pipe bracket (locking)
- 1-3 x B pipe brackets (supporting)
- 1 x cable tie per pipe bracket



6.1.6 PRIMO d T-PC-90, corner assembly 90 degrees

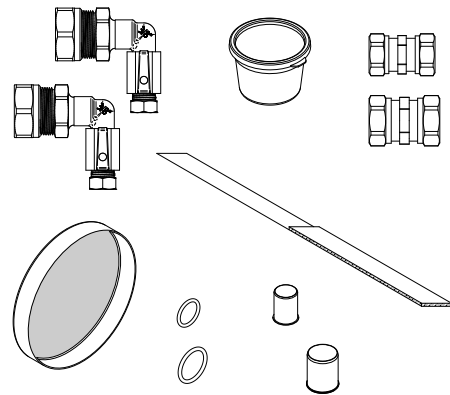
- 2 x elbow couplings, compression ring (22 mm)
- 2 x elbow couplings, compression ring (28 mm)
- 4 x support sleeves (22 mm)
- 4 x support sleeves (28 mm)
- 1 x reinforcement plate
- 2 x B pipe brackets (supporting)
- 1 x cable tie per pipe bracket



6.1.7 PRIMO d T-CS, connection/termination assembly complete

Pipe diameter 125 mm, 160 mm or 200 mm.

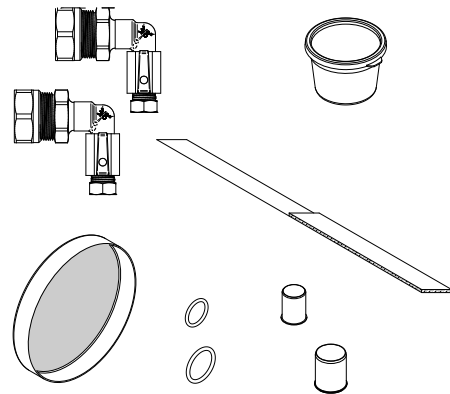
- Silicone grease
- 1 x vulcanising tape, spare
- 2 x shut-off valve complete (22 mm)
- 2 x shut-off valve complete (28 mm)
- 1 x metal cover (125 mm, 160 mm, 200 mm)
- 2 x O-ring (22 mm), spare
- 2 x O-ring (28 mm), spare
- 2 x compression ring couplings (22 mm)
- 2 x compression ring couplings (28 mm)
- 4 x support sleeve (22 mm)
- 4 x support sleeve (28 mm)



6.1.8 PRIMO d T-CE, termination assembly

Pipe diameter 125 mm, 160 mm or 200 mm.

- Silicone grease
- 1 x vulcanising tape, spare
- 2 x shut-off valve complete (22 mm)
- 2 x shut-off valve complete (28 mm)
- 1 x metal cover for the ventilation duct (125 mm, 160 mm, 200)
- 2 x O-ring (22 mm), spare
- 2 x O-ring (28 mm), spare
- 2 x support sleeve (22 mm)
- 2 x support sleeve (28 mm)

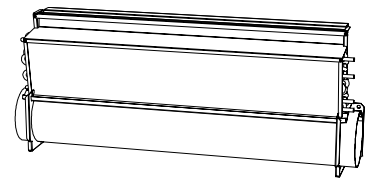


6.1.9 PRIMO Primo perimeter unit

Length: 600 mm, 800 mm, 1000 mm, 1300 mm and 1600 mm.

Dimensions:

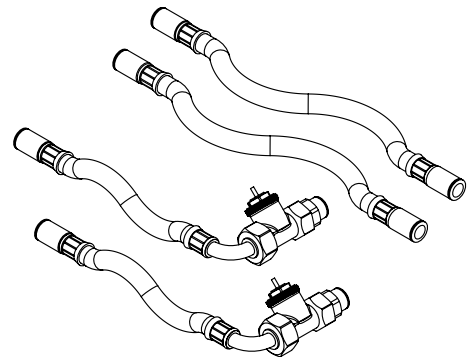
- 125 mm, height 365-565 mm, depth: 183 mm
- 160 mm, height 400-600 mm, depth: 183 mm
- 200 mm, height 450-650 mm, depth: 220 mm
- 2 x sealing tape



6.1.10 PRIMO d T-VS B, valve assembly (without LUNA)

Hose length: 300 mm, 500 mm or 700 mm.

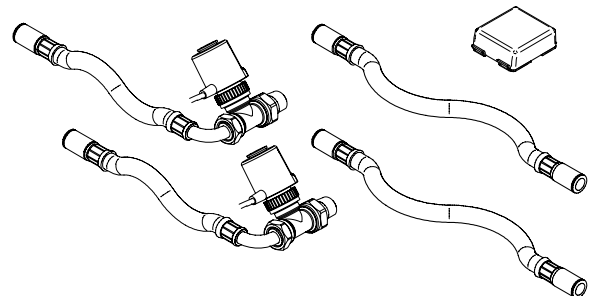
- 2 x hose
- 2 x hose fitted on valve



6.1.11 PRIMO d T-VS C, valve assembly (with LUNA)

Hose length: 300 mm, 500 mm or 700 mm.

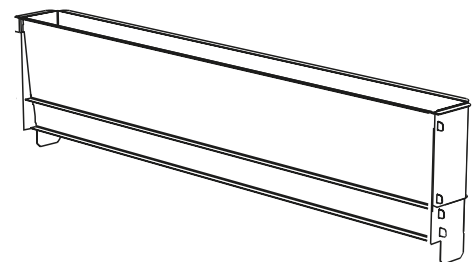
- 2 x hose
- 2 x hose and actuator fitted to valve
- 1 x connection card
(The controller must be ordered separately.)



6.1.12 PRIMO d T-OE, outlet sleeve

Adjustable height 150-200 mm.

Length: 600, 800, 1000, 1300, 1600



6.1.13 PRIMO d T-WB-F wall panel

Dimensions: 125, 160, 200, etc.

