BELT

RADIANT BASEBOARD, CEILING AND FALSE CEILING SYSTEM.

USER AND INSTALLATION MANUAL
MI3749_01 MORE BELT

RBM MORE
the wellbeing

WARNING

This manual contains technical installation instructions. As far as installation is concerned, compliance with the requirements of technical regulations and current laws is required.

Pursuant to current legislation, the systems must be designed by qualified professionals; installation and maintenance must be performed by skilled personnel, in compliance with the regulations in force and as required by the manufacturer.

The manufacturer shall not be held liable, and will invalidate the product warranty, in the event of any damage resulting from improper installation, including failure to adhere to the instructions provided in the relevant manuals.

When receiving the goods, check for any damage caused by transport or poor handling of the equipment and, if necessary, immediately forward a complaint to the shipping company.

During installation, do not place any objects onto the finishing casing and radiant profiles, which could cause scratches and/or deformations.

The BELT system must be installed indoors; strictly avoid exposing the components making up the heating system to direct sunlight.

Before installation, provide ceiling thermal insulation.

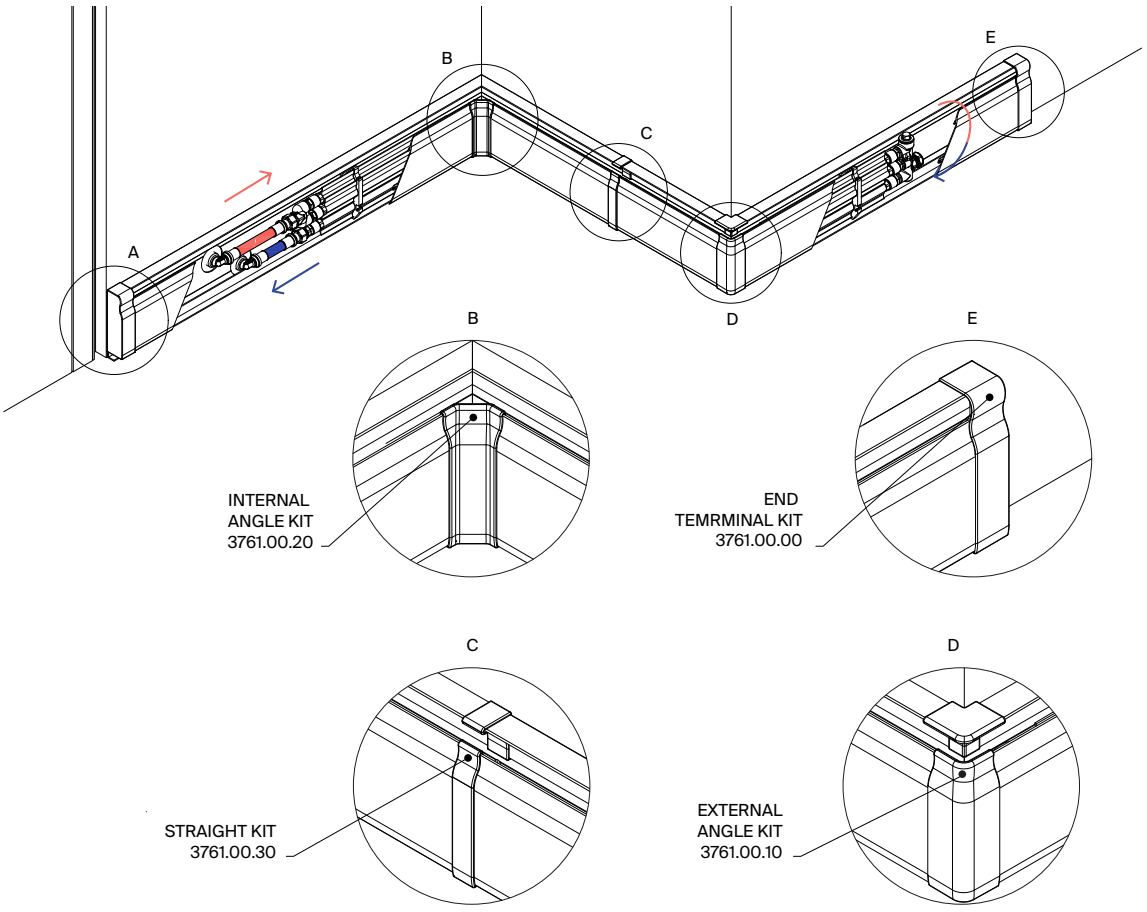
BELT HEATING BASEBOARD INSTALLATION

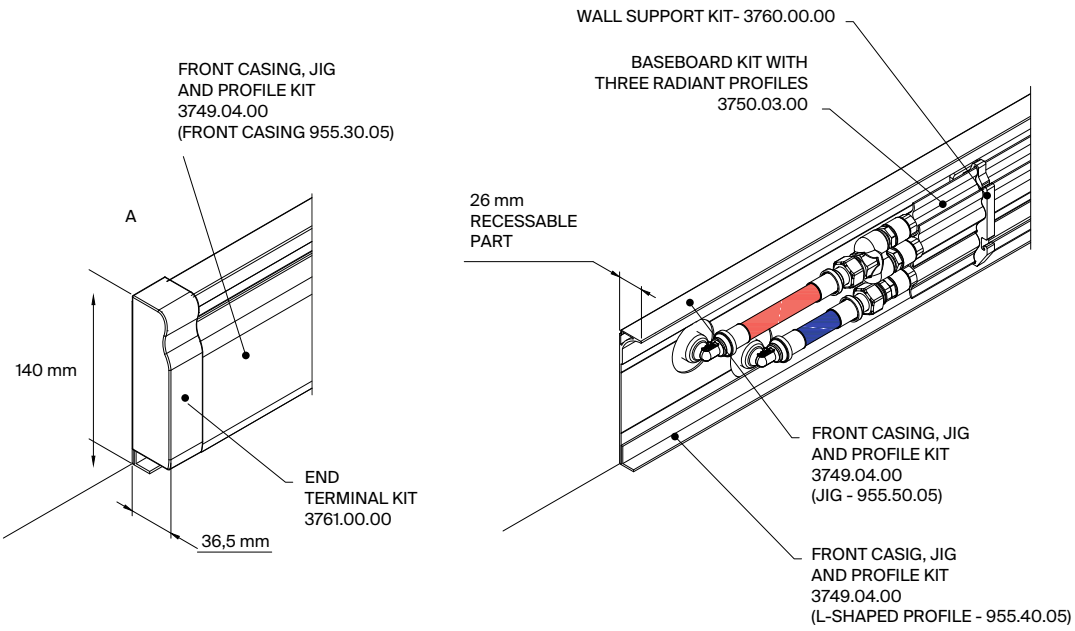
BASEBOARD (EXTERNAL WALL)

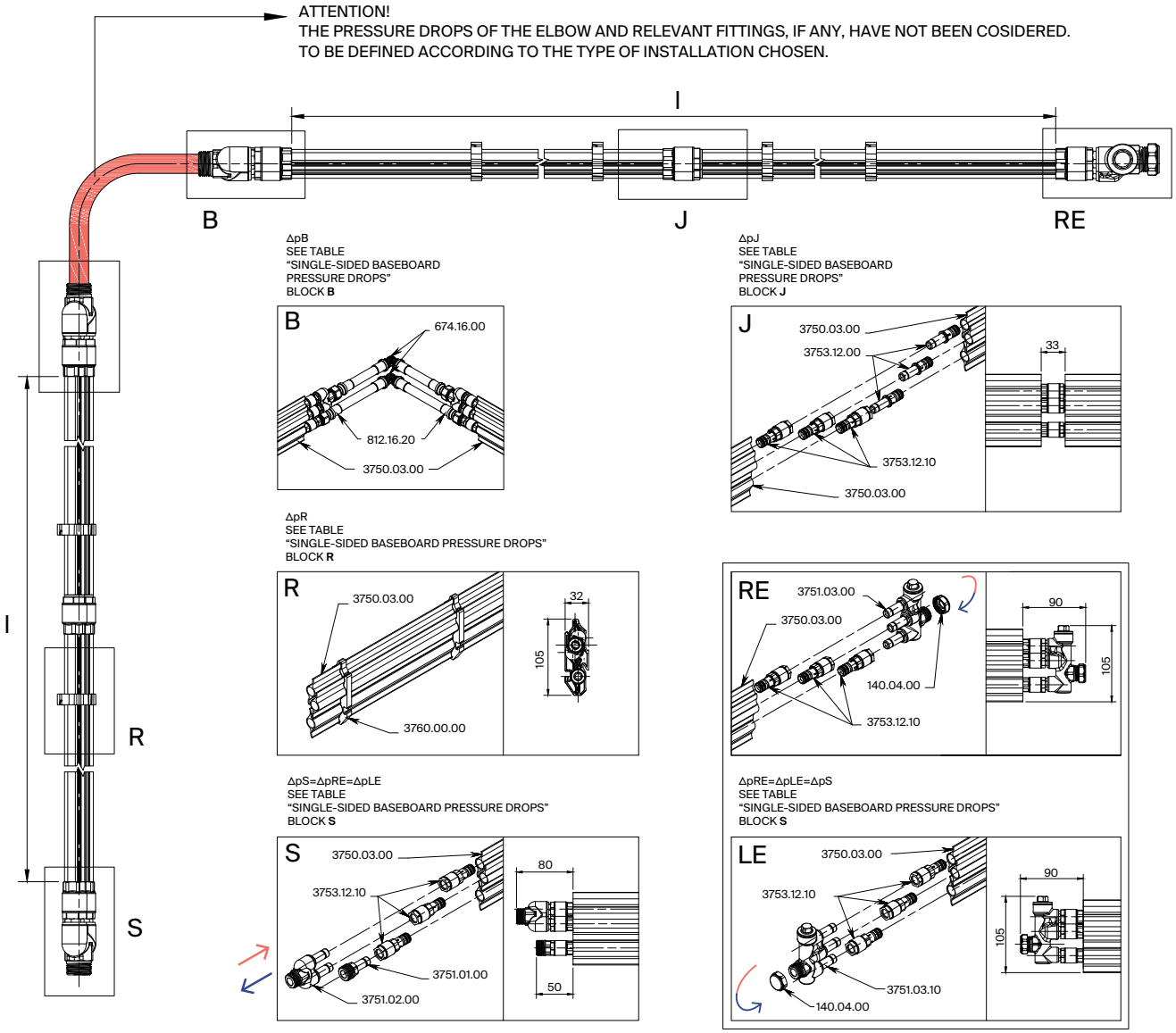
BASEBORAD (HALF RECESSED)

SINGLE-SIDED BASEBOARD INSTALLATION

The heat transfer pipes are close to each other in single-sided intallation; the delivery pipe is connected to the system through a two-way manifold that feeds two radiant profiles. After crossing any joints and elbows, if provided for in the design, the system ends with a three-way manifold; this makes it possible to bypass the two supply pipes in the retrun pipe, made up of a single radiant profile. A suitably connected one-way manifold provides a return way to the system.







$$\Delta p = \Delta pS + \Delta pB \times nB + \Delta pJ \times nJ + \Delta pR \times l + (\Delta pRE = \Delta pLE)$$

• BLOCK S: Connection to the system
3750.03.00 kit with 3 radiant profiles L= 3500 mm
3753.12.10 M-F fitting for radiant/profile manifold connection
3751.01.00 return manifold
3751.02.00 delivery manifold

• BLOCK J: Intermediate joint
3750.03.00 kit with 3 radiant profiles L= 3500 mm
3753.12.00 M-M fitting for connection
3753.12.10 M-F fitting for radiant/profile manifold connection

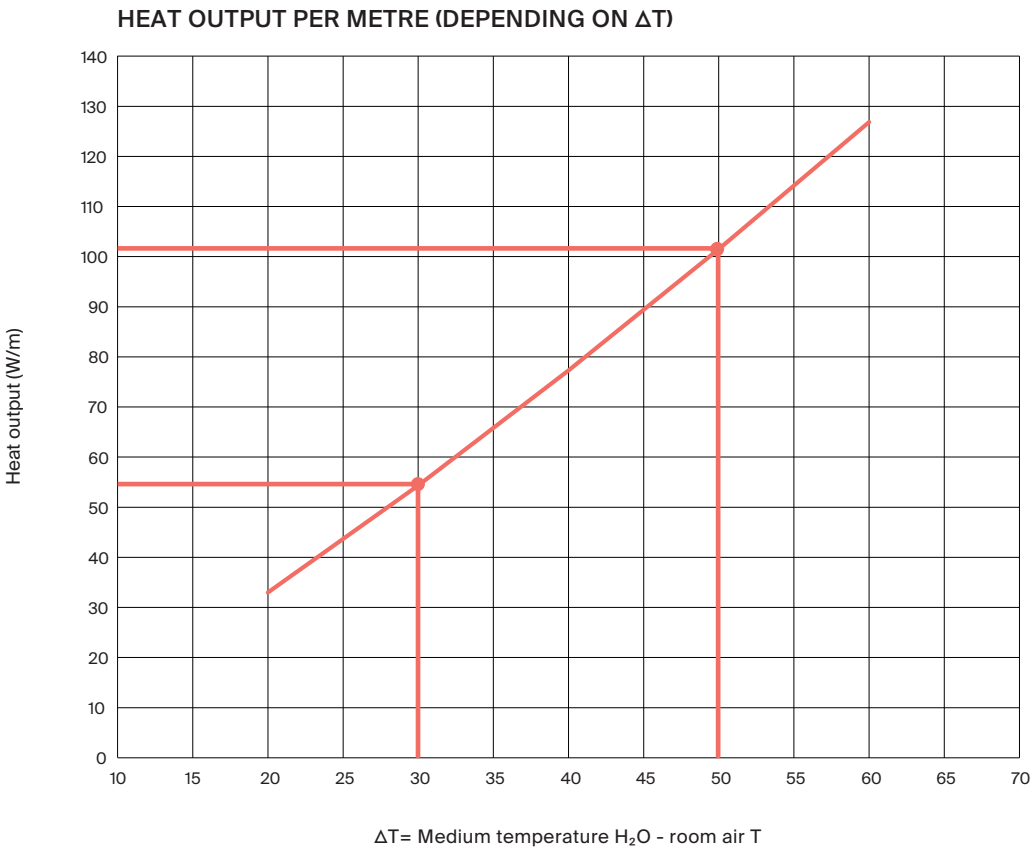
• BLOCK LE: Left-hand installation terminal (LH)
3750.03.00 kit with 3 radiant profiles L= 3500 mm
3753.12.10 M-F fitting for radiant/profile manifold connection
3751.03.10 LH deflection manifold 3
140.04.00 end of line plug G1/2"

• BLOCK RE: Right-hand installation terminal (RH)
3750.03.00 kit with 3 radiant profiles L= 3500 mm
3751.03.00 RH deflection manifold 3
140.04.00 end of line plug G 1/2"
3753.12.10 M-F fitting for radiant/profile manifold connection

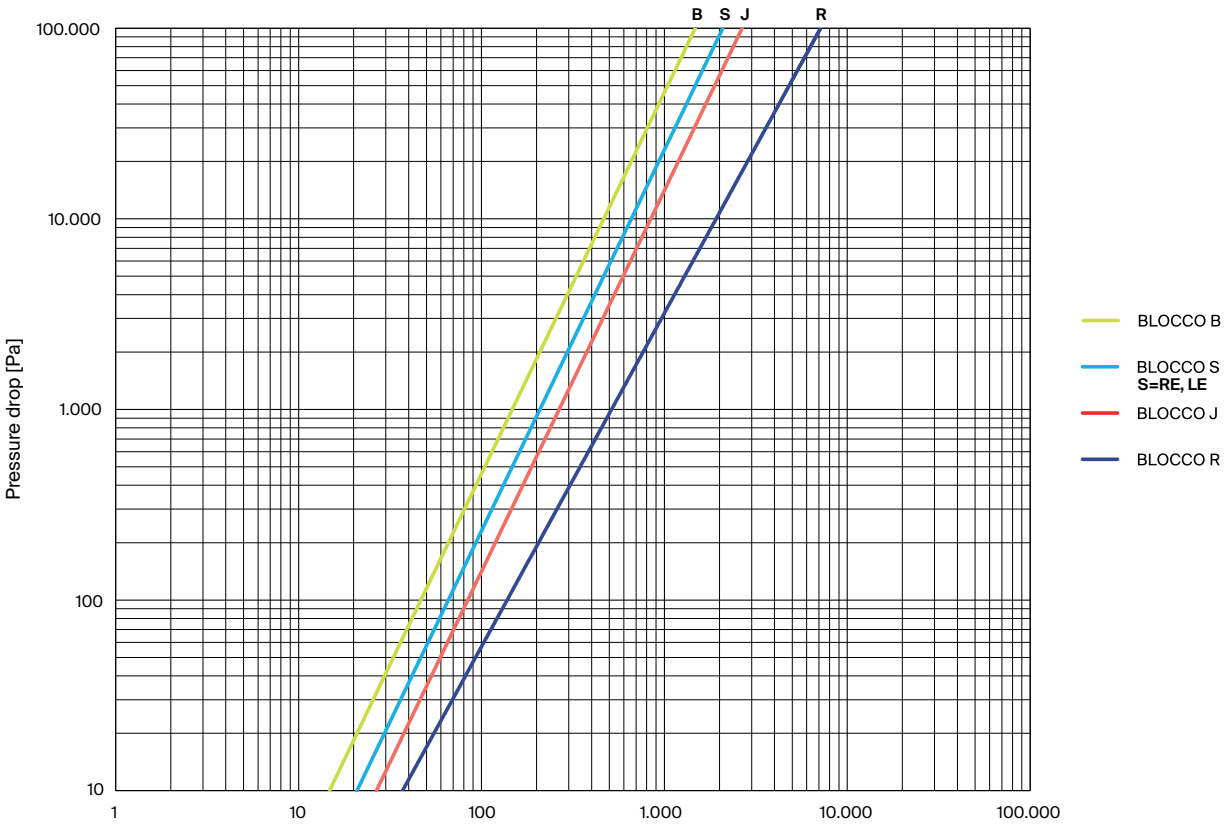
• BLOCK B: Curved angle joint
3750.03.00 kit with 3 radiant profiles L= 3500 mm
674.16.00 angle fitting
812.16.20 straight fitting
(Use multilayer pipes RBM TITAFIX 16x2)

• BLOCCO R: Radiant profiles
3750.03.00 kit with 3 radiant profiles L= 3500 mm
3760.00.00 wall support kit

HEAT OUTPUT / SINGLE-SIDED BASEBOARD - HEATING

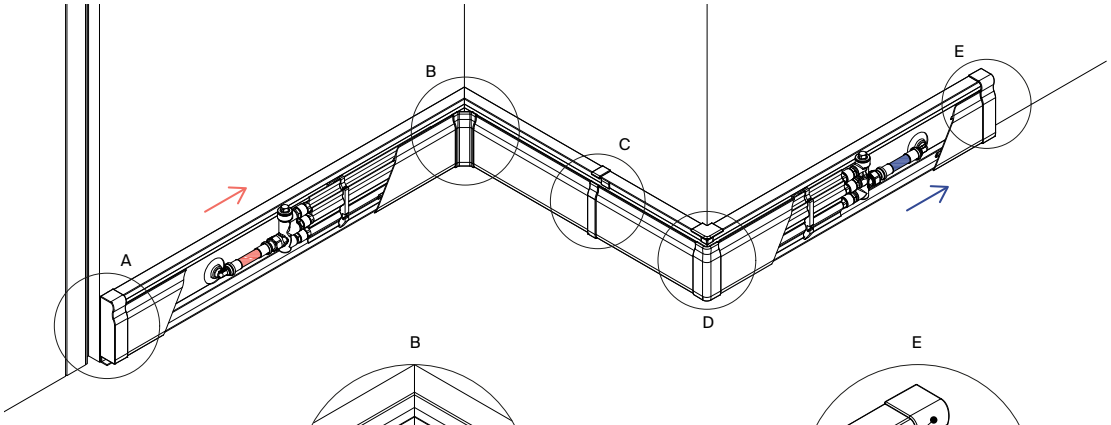


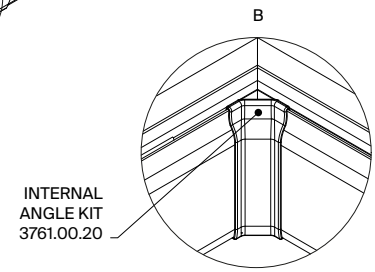
PRESSURE DROPS / SINGLE-SIDED BASEBOARD

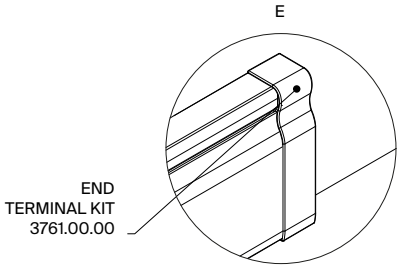


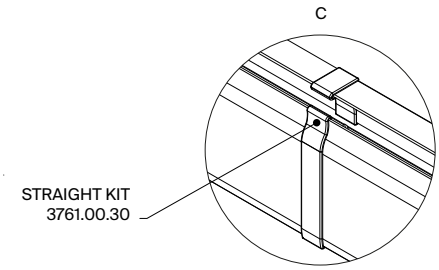
DOUBLE-SIDED BASEBOARD INSTALLATION

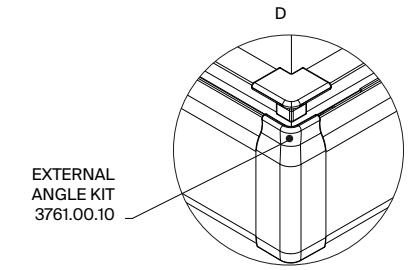
The heat transfer pipes are apart from each other in double-sided installation; the delivery pipe is connected to the system through a three-way manifold that feeds the radiant profiles. After crossing any joints and elbows, if provided for in the design, the system ends with a three-way manifold suitably connected to the return pipe.

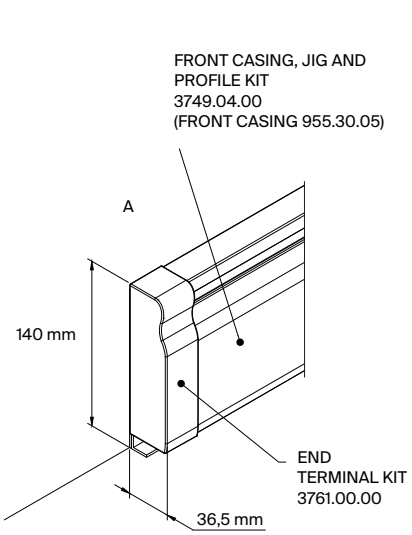


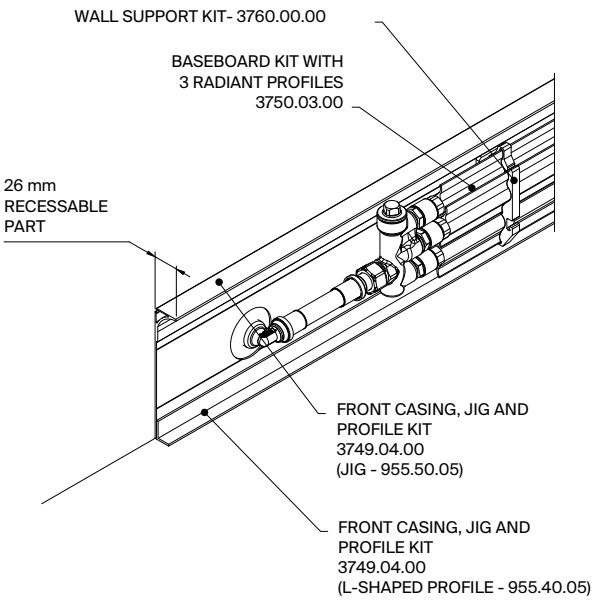


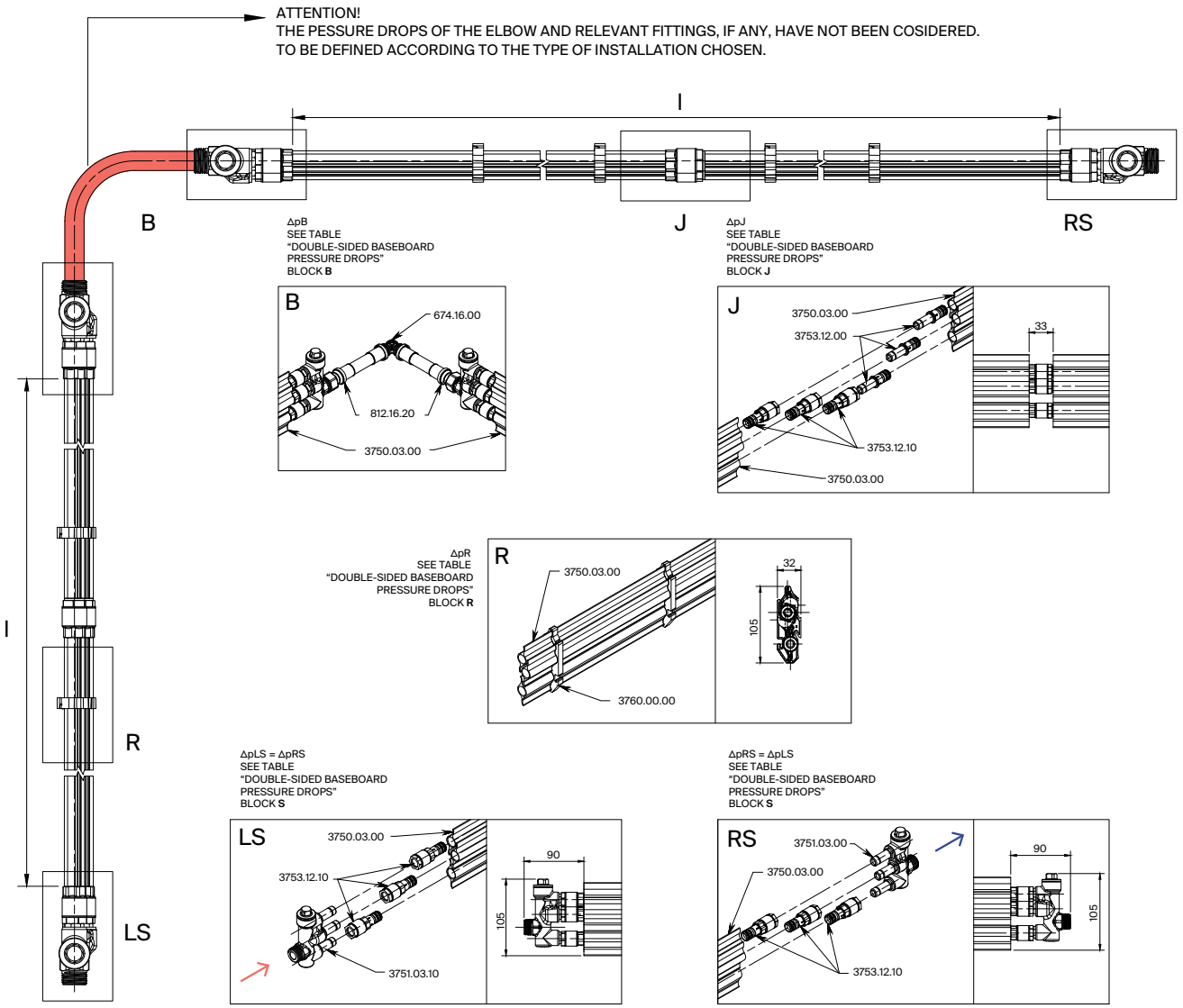












REVERSIBLE HEAT TRANSFER PIPES

$$\Delta p = \Delta pLS + \Delta pR \times l + \Delta pB \times nB + \Delta pJ \times nJ + \Delta pRS$$

• BLOCK LS: Connection to the system (LH)
3750.03.00 kit with 3 radiant profiles L= 3500 mm
3753.12.10 M-F fitting for radiant/profile manifold connection
3751.03.10 LH return manifold 3

• BLOCK J: Intermediate joint
3750.03.00 kit with 3 radiant profiles L= 3500 mm
140.04.00 end of line plug G1/2"
3753.12.10 M-F fitting for radiant/profile manifold connection
3753.12.00 M-M fitting for connection

• BLOCK R: Radiant profiles
3750.03.00 kit with 3 radiant profiles L= 3500 mm
3760.00.00 wall support kit

• BLOCK RS: Connection to the system (RH)
3750.03.00 kit with 3 radiant profiles L= 3500 mm
3751.03.00 RH deflection manifold 3
140.04.00 end of line plug G 1/2"
3753.12.10 M-F fitting for radiant/profile manifold connection

• BLOCK B: Curved angle joint
3750.03.00 kit with 3 radiant profiles L= 3500 mm
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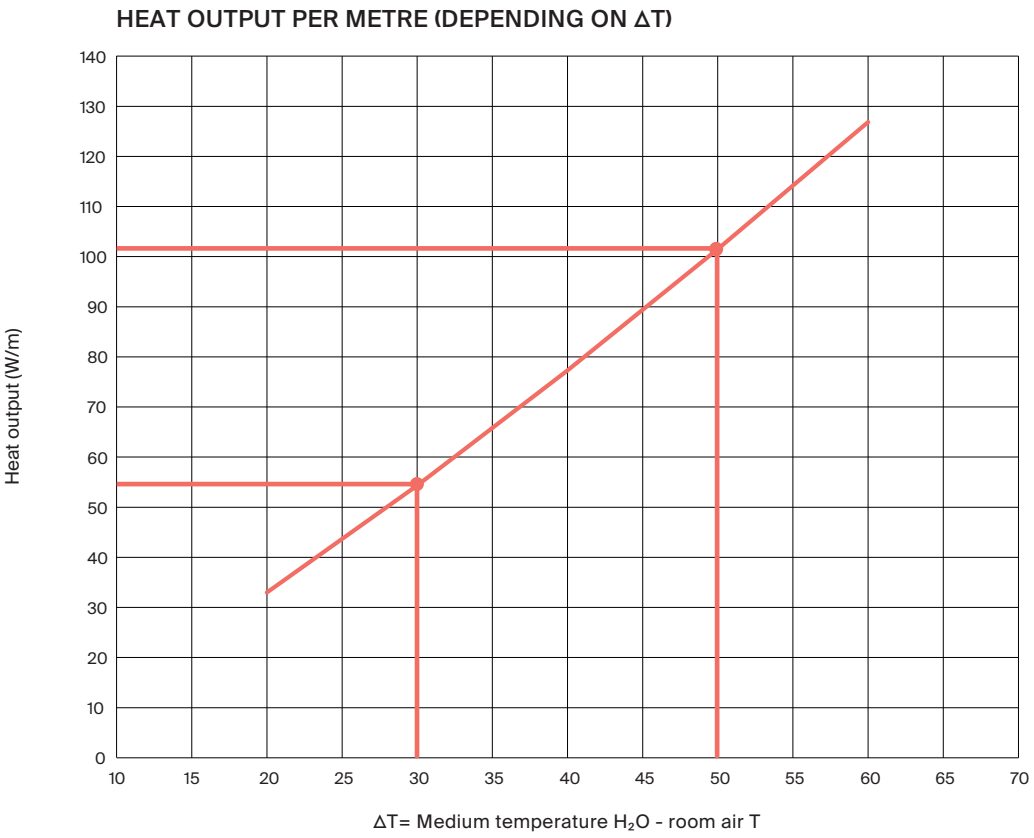
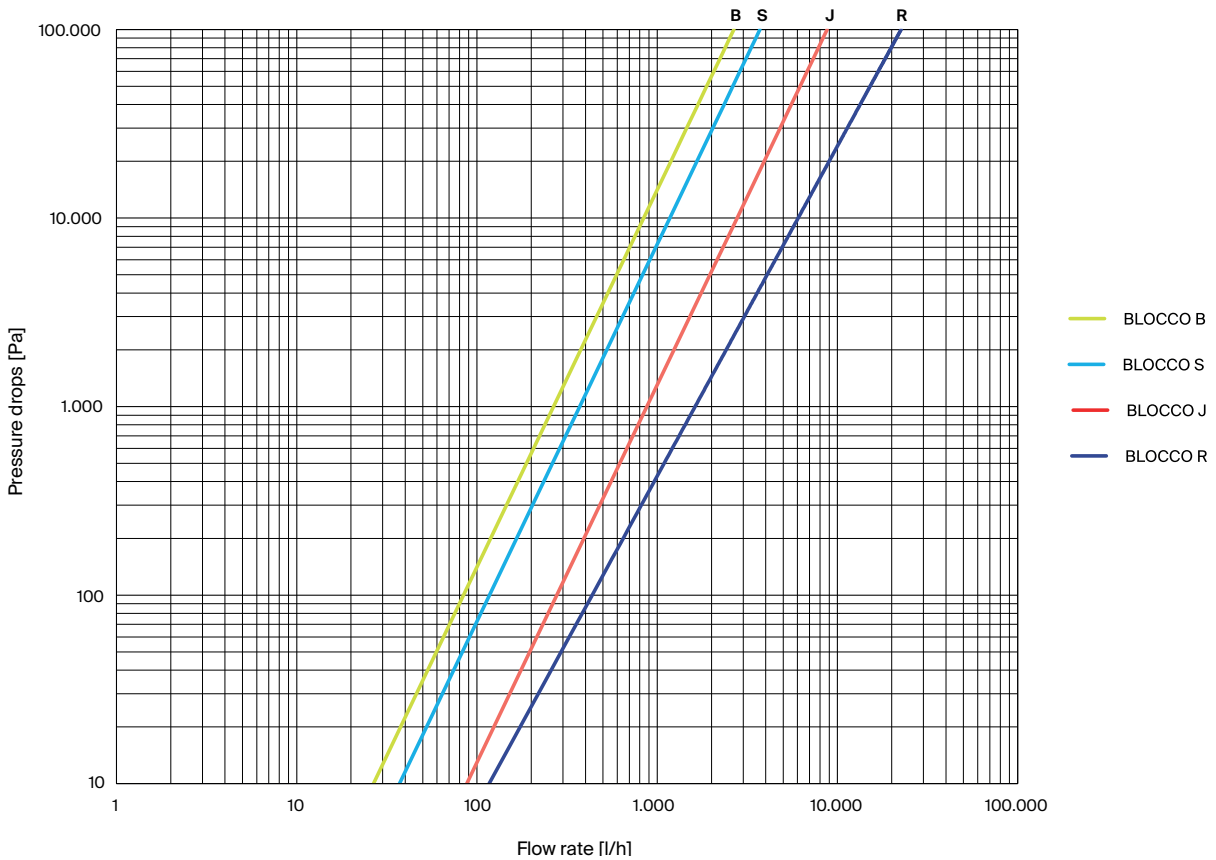
812.16.20 straight fitting
(Use multilayer pipes RBM TITAFIX 16x2)

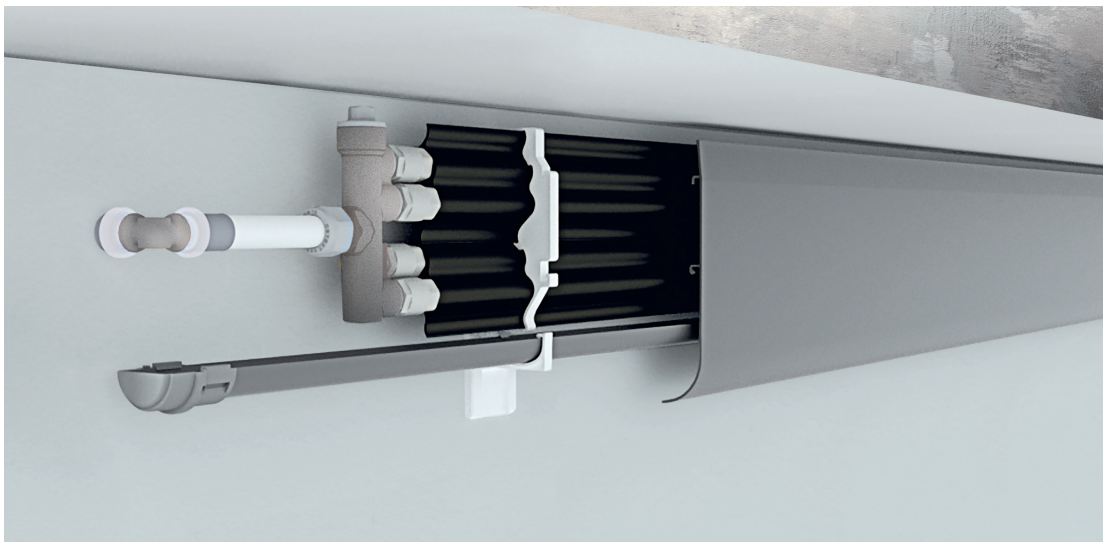
HEAT OUTPUT / DOUBLE-SIDED BASEBOARD - HEATING



PRESSURE DROPS / DOUBLE-SIDED BASEBOARD

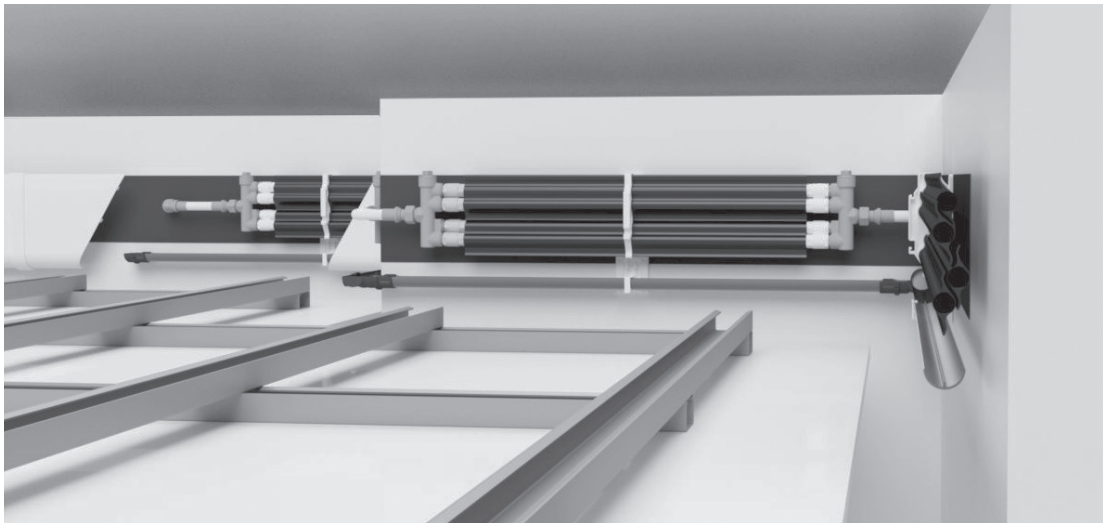


BELT HEATING AND COOLING
CEILING/FALSE CEILING INSTALLATION



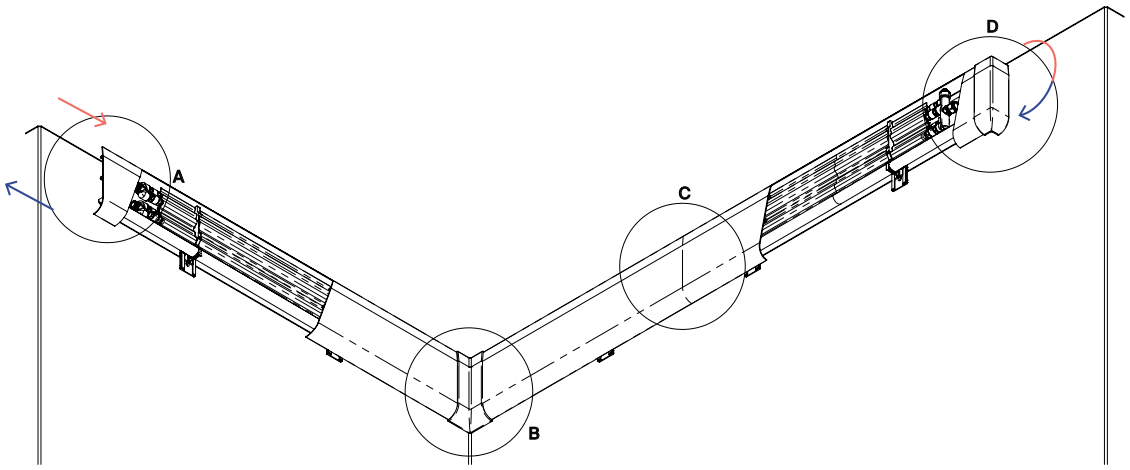
CEILING

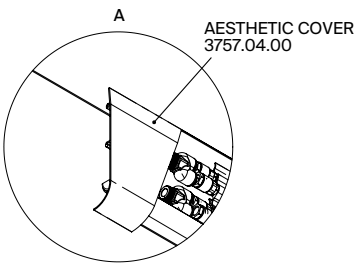
FALSE CEILING

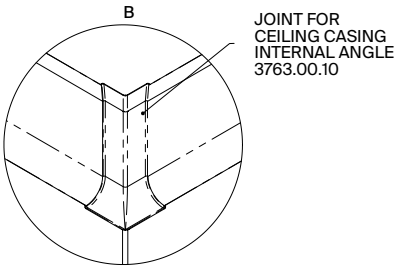


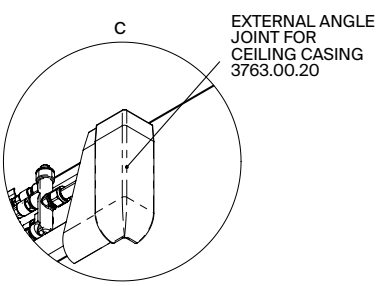
HEATING AND COOLING CEILING/FALSE CEILING INSTALLATION - SINGLE-SIDED

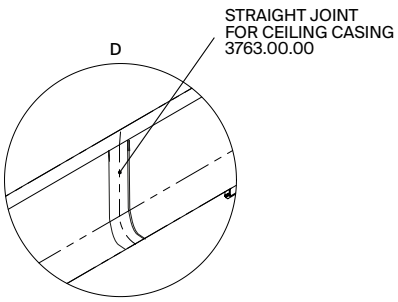
The heat transfer pipes are close to each other in single-sided installation; the delivery pipe is connected to the system through a two-way manifold that feeds two radiant profiles. After crossing any joints and elbows, if provided for in the design, the system ends with a four-way manifold; this makes it possible to bypass the two supply pipes in the return pipe, made up of a two radiant profile. A suitably connected two -way manifold provides a return way to the system. An ad hoc condensate collecting system (duct and specific fittings) needs to be connected to the drain network by interposing suitable siphons (siphons and drains not supplied) in the cooling version only.

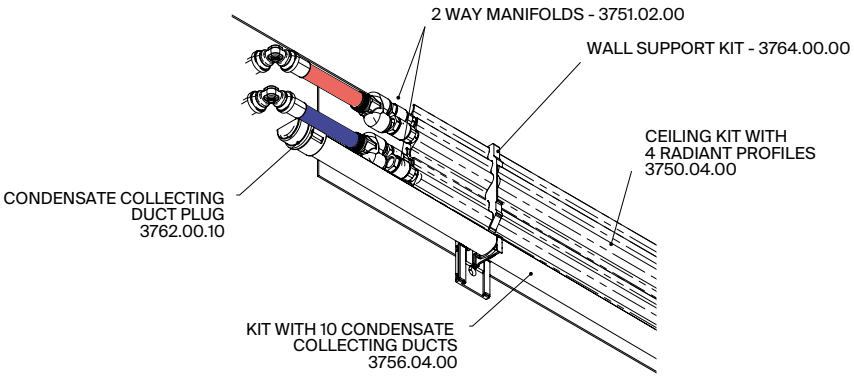


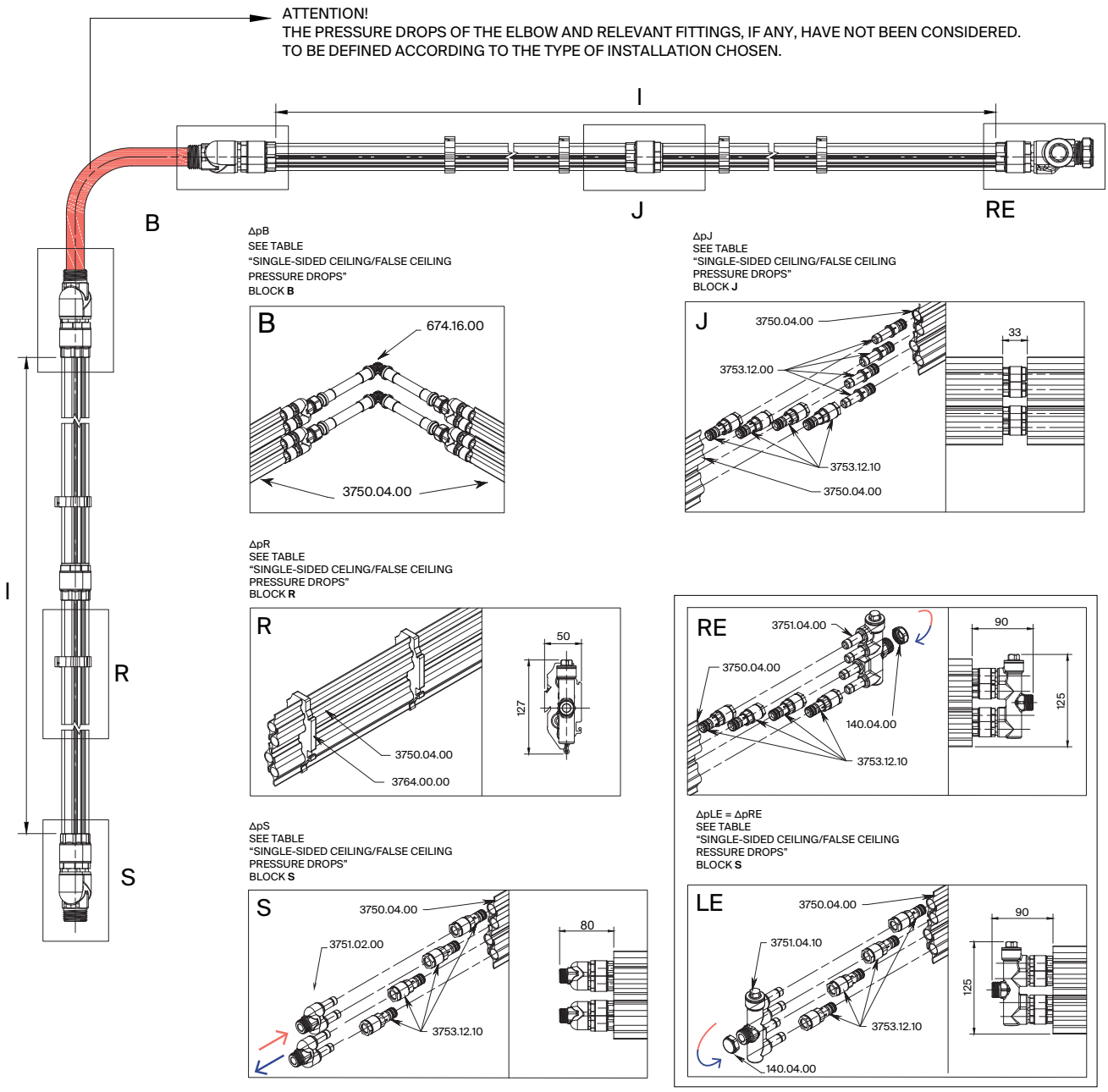












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3751.02.00 return manifold
3751.02.00 delivery manifold

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3753.12.00 M-M fitting for connection
3753.12.10 M-F fitting for radiant/profile manifold connection

• BLOCK LE: Left-hand installation terminal (LH)
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3753.12.10 M-F fitting for radiant/profile manifold connection
3751.04.10 LH return manifold 4
140.04.00 end of line plug G1/2"

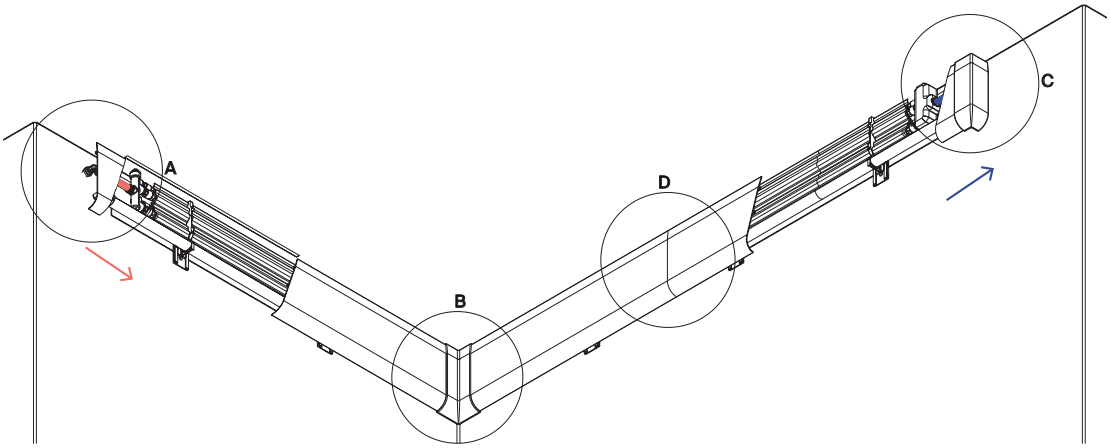
• BLOCK RE: Right-hand installation terminal (RH)
3750.04.00 kit with 4 radiant profiles L= 3500 mm
3751.04.00 RH return manifold 4
140.04.00 end of line plug G 1/2"
3753.12.10 M-F fitting for radiant-profile manifold connection

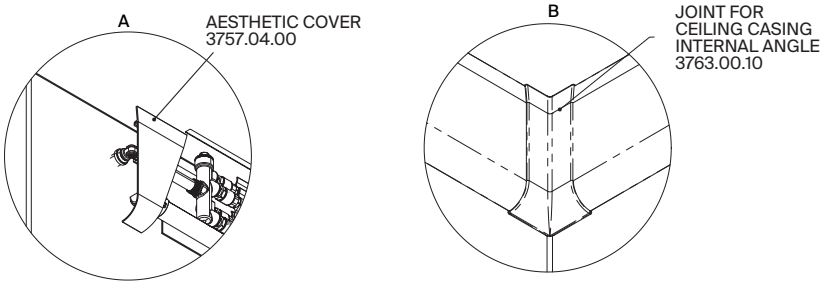
• BLOCK B: Curved angle joint
3750.04.00 kit with 4 radiant profiles L= 3500 mm
674.16.00 angle fitting
812.16.20 straight fitting
(Use multilayer pipes RBM TITAFIX 16x2)

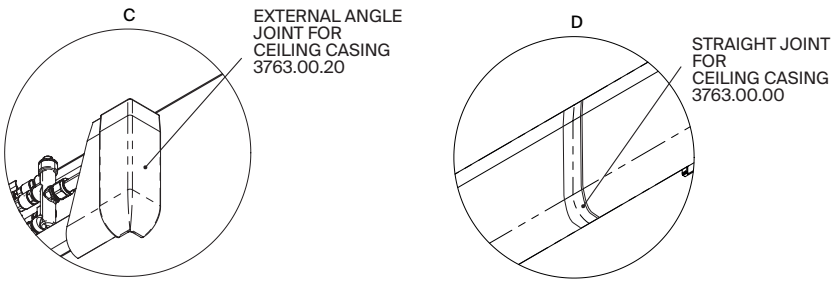
• BLOCK R: Radiant profiles
3750.04.00 kit with 4 radiant profiles L= 3500 mm
3760.00.00 wall support kit

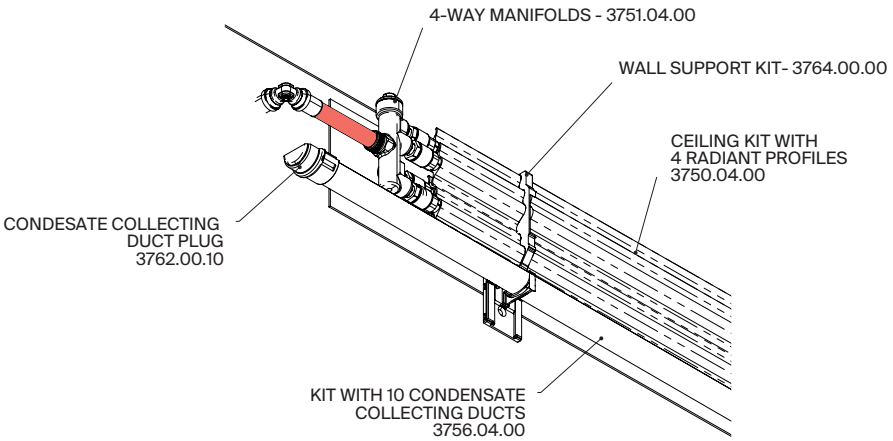
HEATING AND COOLING CEILING/FALSE CEILING INSTALLATION - DOUBLE-SIDED

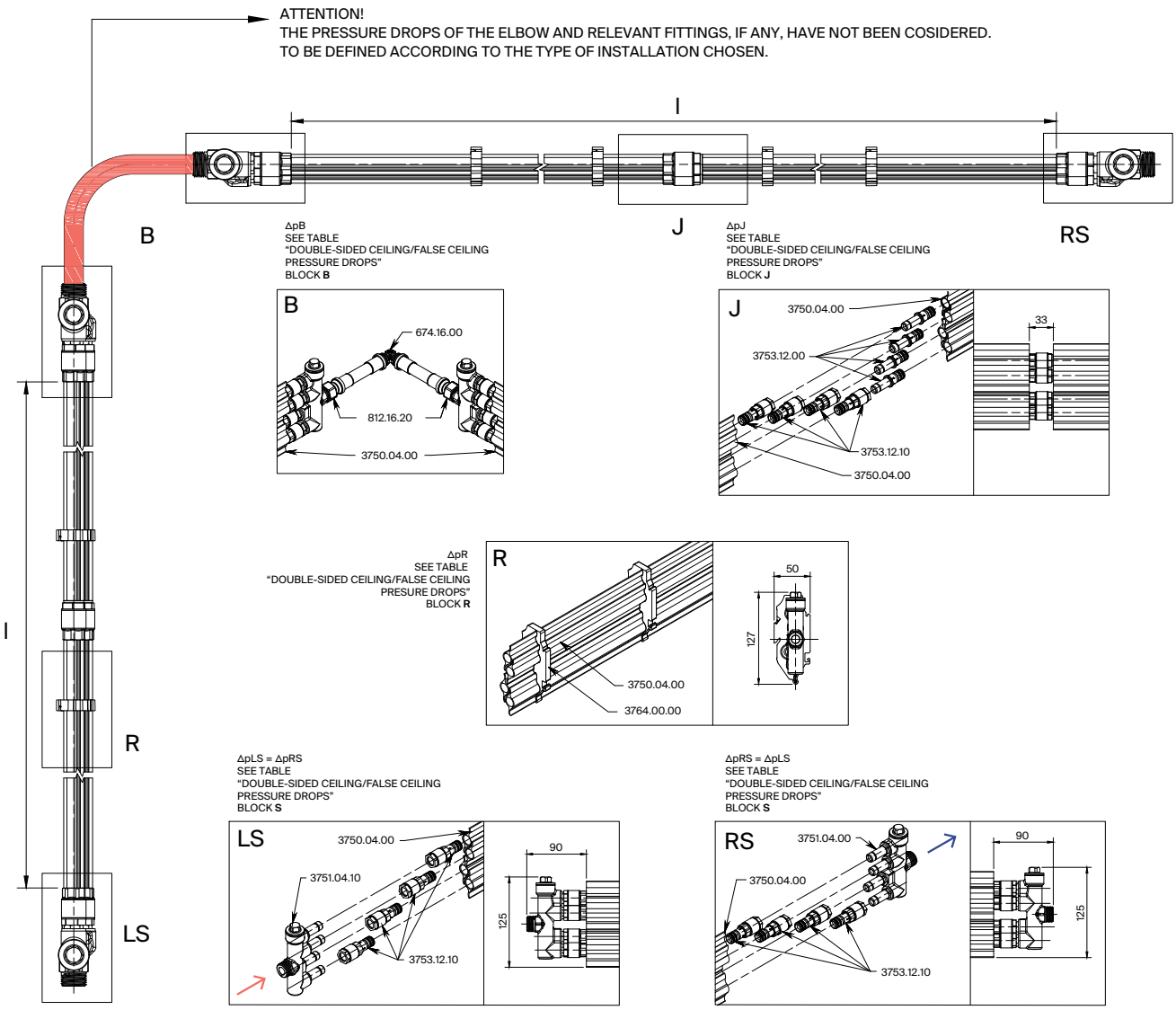
The heat transfer pipes are apart from each other in double-sided installation; the delivery pipe is connected to the system through a four-way manifold that feeds the radiant profiles. After crossing any junctions and elbows, if provided for in the design, the system ends with a four-way manifold suitably connected to the return pipe. An ad hoc condensate collecting system (duct and specific fittings) needs to be connected to the drain network by interposing suitable siphons (siphons and drains not supplied) in the cooling version only.











REVERSIBLE HEAT TRANSFER PIPES

$$\Delta p = \Delta pLS + \Delta pR \times l + \Delta pB \times nB + \Delta pJ \times nJ + \Delta pRS$$

• BLOCK LS: Connection to the system (LH)
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• BLOCK R: Radiant profiles
3750.04.00 kit with 4 radiant profiles L= 3500 mm
3764.00.00 wall support kit

• BLOCK RS: Connection to the system (RH)
3750.04.00 kit with 4 radiant profiles L= 3500 mm
3751.04.00 RH return manifold 4
3753.12.10 M-F fitting for radiant/profile manifold connection

• BLOCK B: Curved angle joint
3750.04.00 kit with 4 radiant profiles L= 3500 mm
674.16.00 angle fitting
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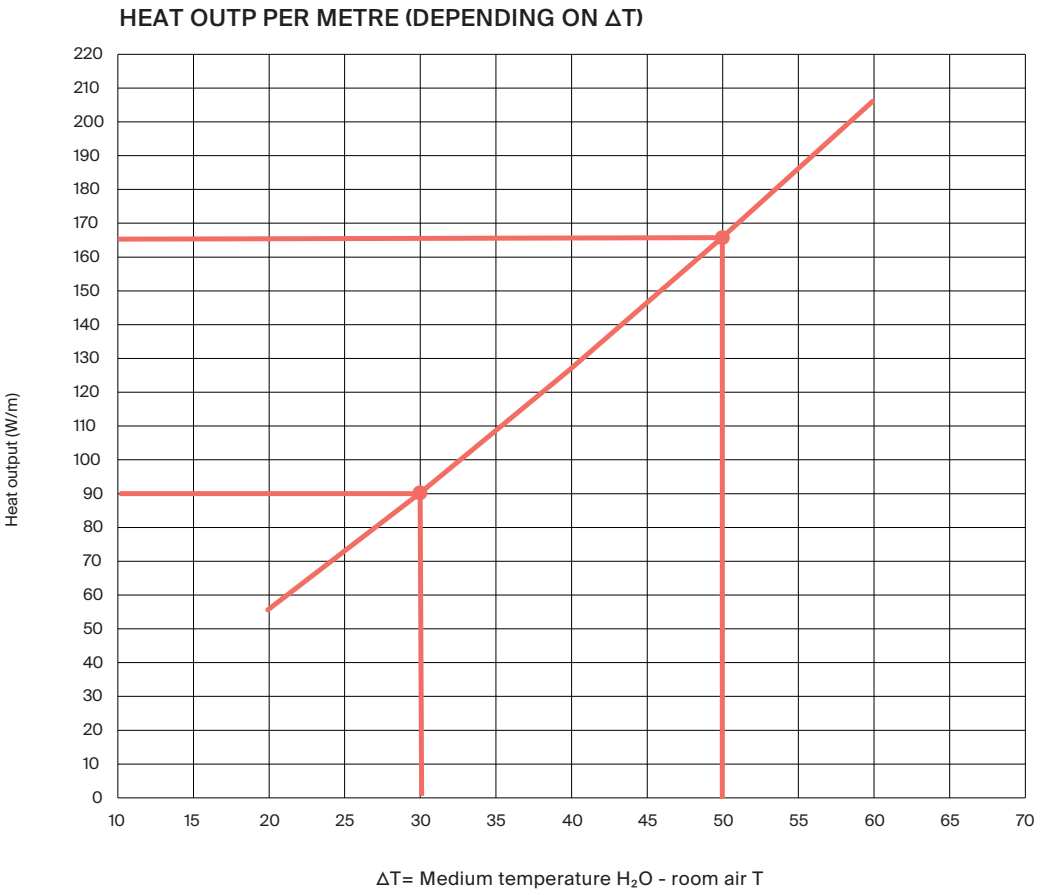
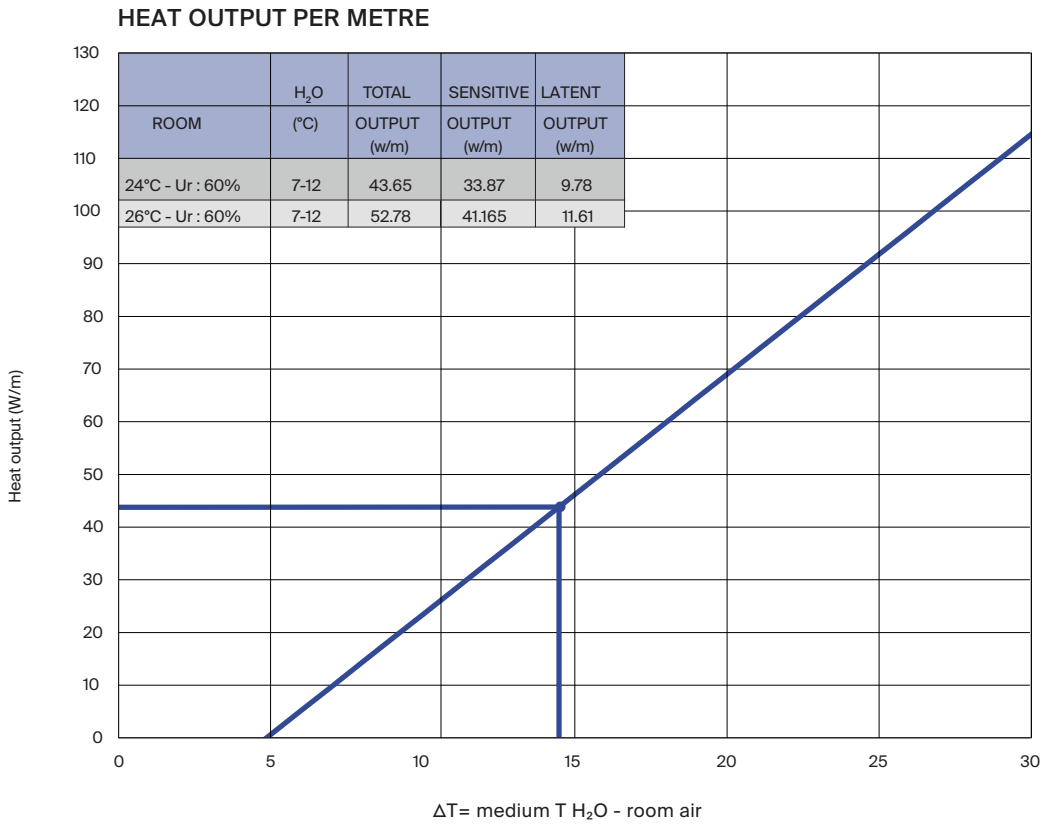
HEAT OUTPUT / CEILING - HEATING

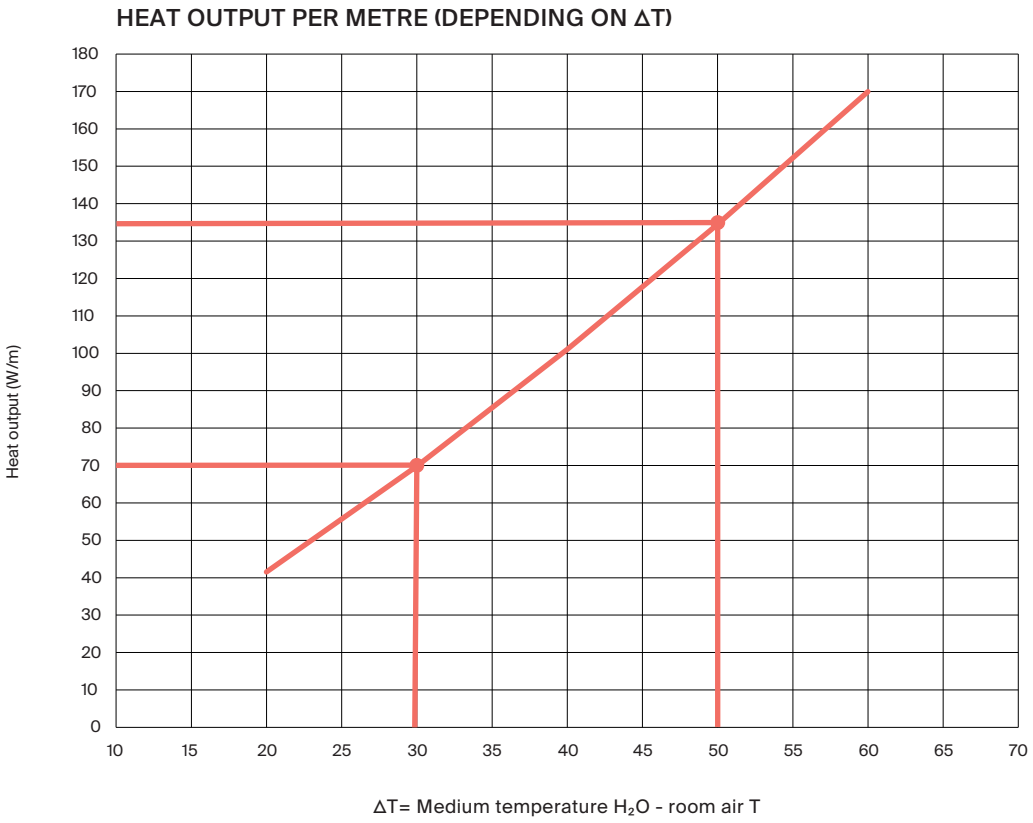


HEAT OUTPUT / CEILING - COOLING

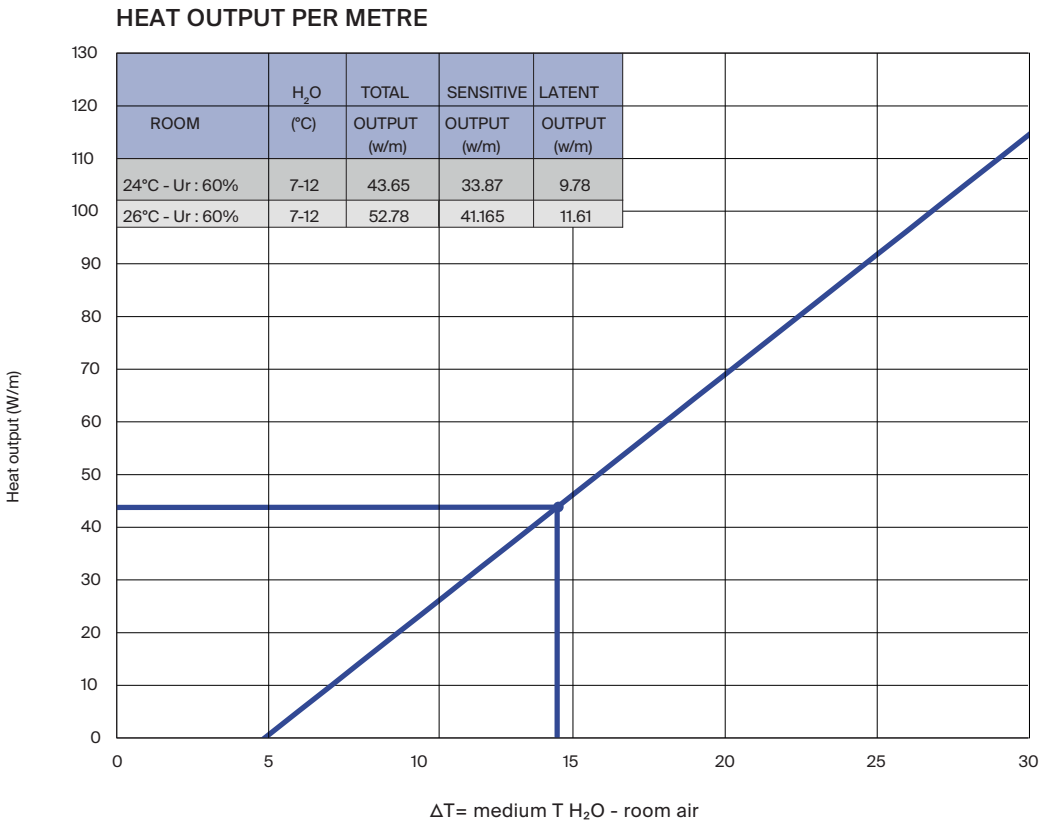


ROOM	H_2O (°C)	TOTAL OUTPUT (w/m)	SENSITIVE OUTPUT (w/m)	LATENT OUTPUT (w/m)
24°C - Ur : 60%	7-12	43.65	33.87	9.78
26°C - Ur : 60%	7-12	52.78	41.165	11.61

HEAT OUTPUT /FALSE CEILING - HEATING



HEAT OUTPUT / FALSE CEILING - COOLING



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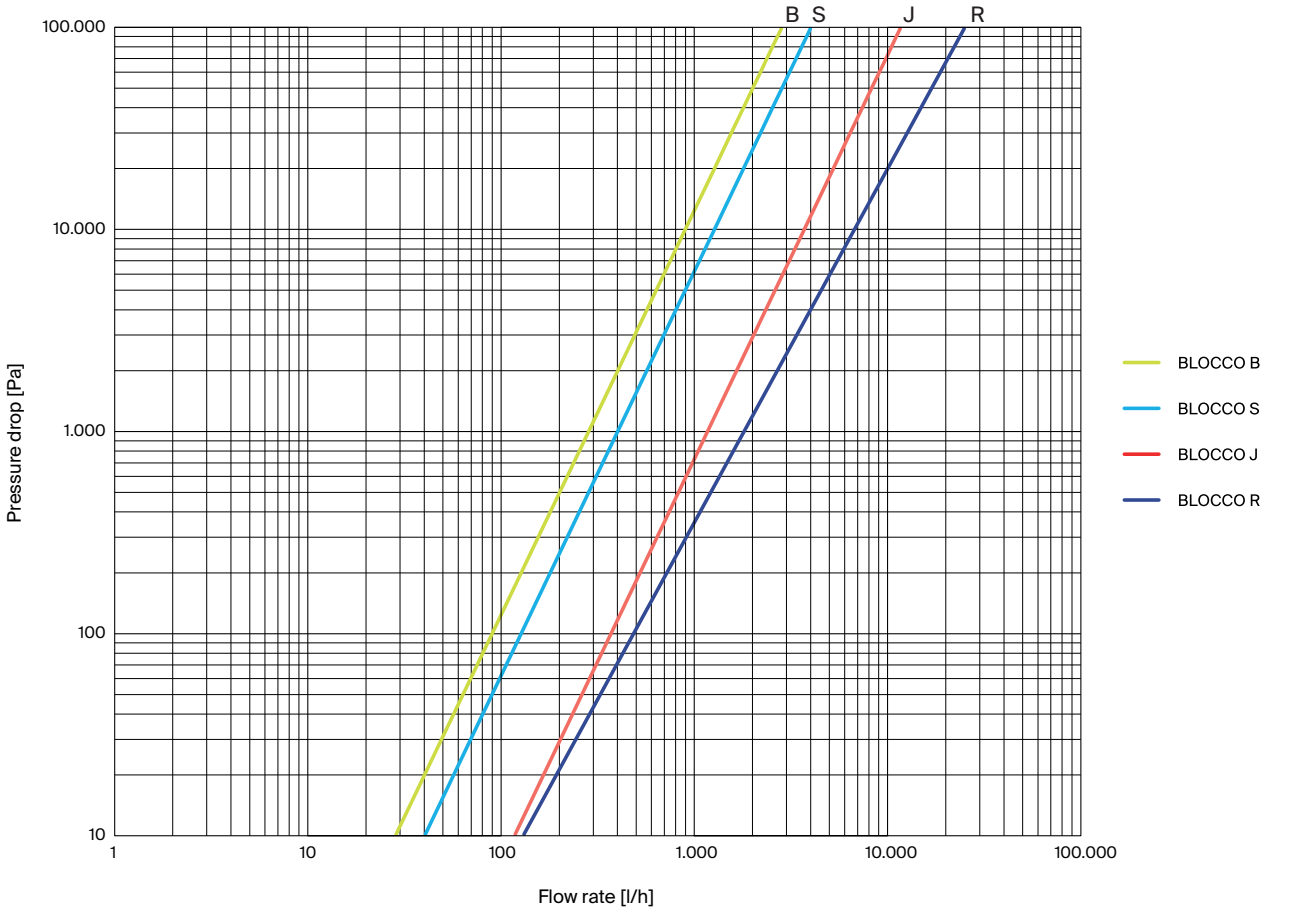
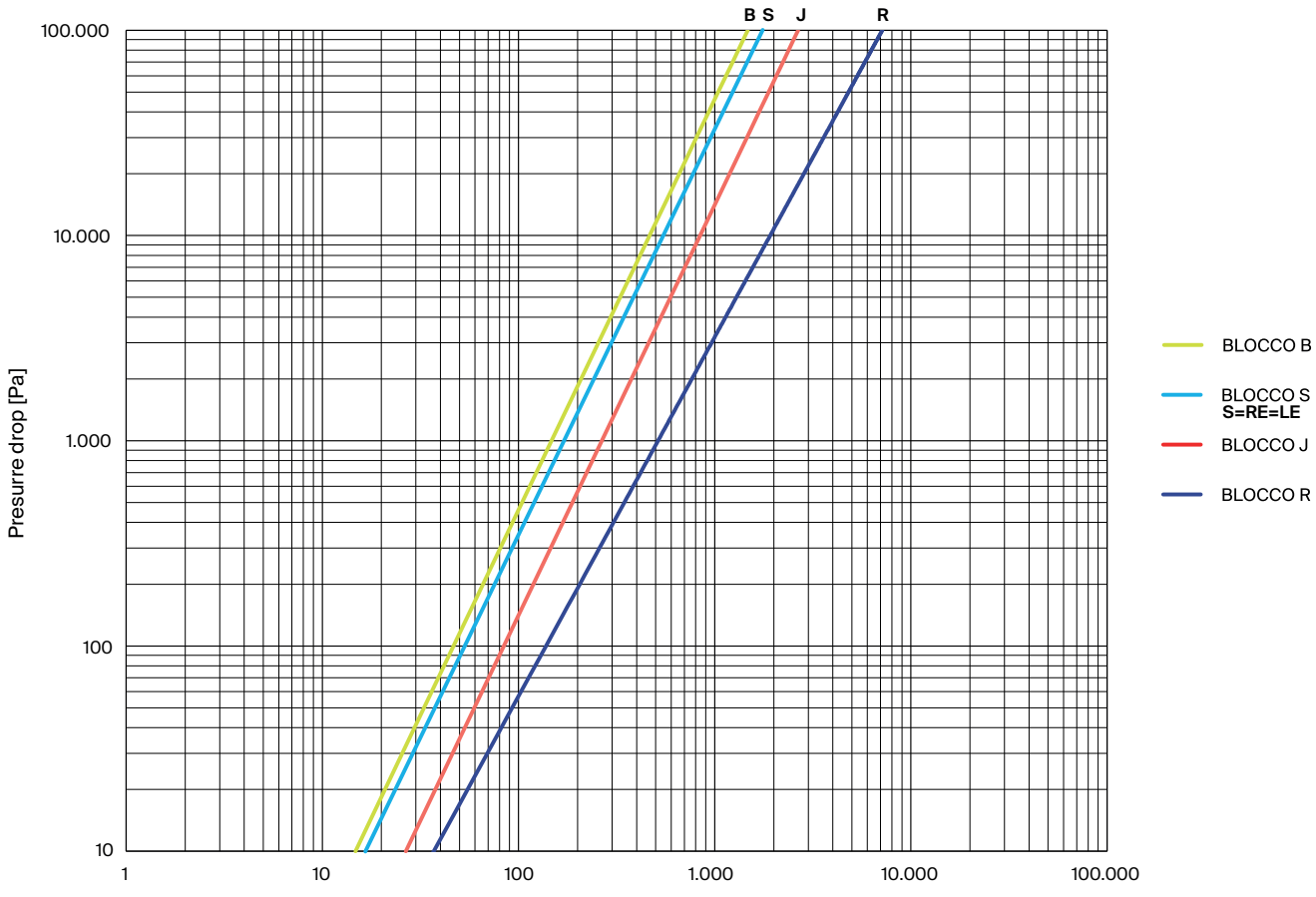
PRESSURE DROPS - CEILING AND FALSE CEILING/ DOUBLE-SIDED



PRESSURE DROPS - CEILING AND FALSE CEILING/ SINGLE-SIDED

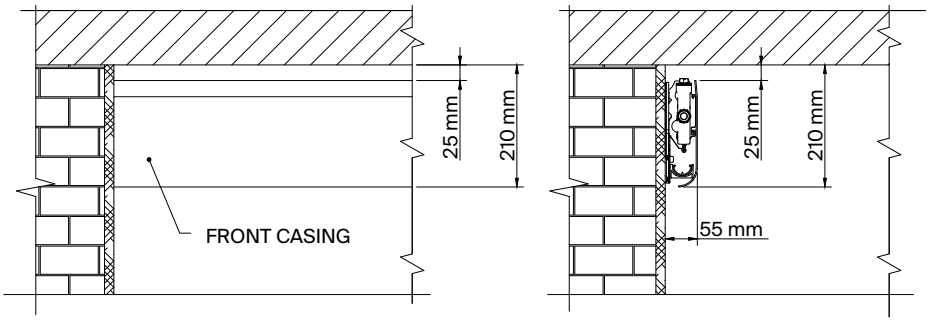


OVERALL DIMENSIONS
CEILING/FALSE CEILING INSTALLATION

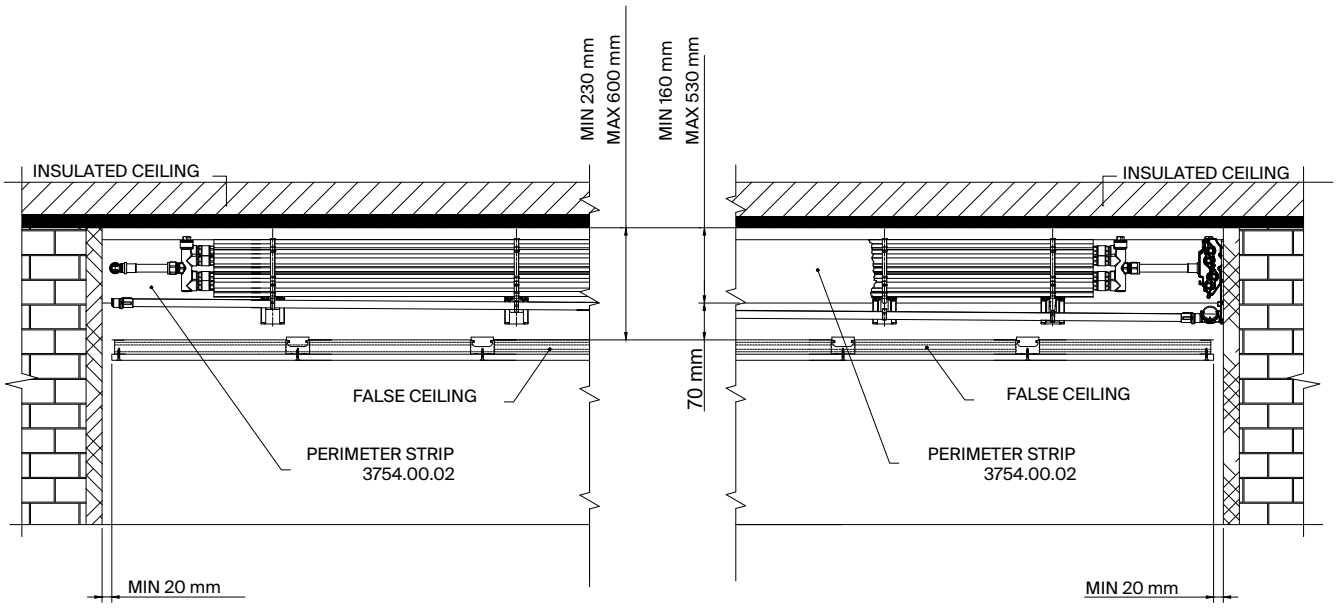
INSTALLATION CAN BE DONE AS FOLLOWS:

- **in the ceiling**, where the casing size is equal to the system overall dimensions. To ensure proper operation, it is necessary to maintain a distance from the ceiling to the edge of the casing greater than or equal to 25 mm.
- **in the false ceiling**, where no front casing needs to be applied; the false ceiling must be fitted after the system, and no clearance or obstruction should prevent proper air circulation between the suspended floor and the structure. A distance of about 70 mm must be maintained between the lower edge of the perimeter insulating strip (a reference for the system and the first item to be installed) and the plasterboard sheet. In this case, a free opening of at least 20 mm must be provided (see drawing below) throughout the perimeter of the room, between the false ceiling plasterboard and the wall, to properly operate the system especially in summer, when it is running in cooling mode.

CEILING



FALSE CEILING



⚠ **ATTENTION!**
DO NOT PLACE THE INSULATION INSIDE THE FALSE CEILING AND IN CONTACT WITH THE BELT SYSTEM.

* Values referred to the lower profile of the perimeter strip

DIMENSIONAL FEATURES

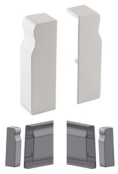
	Baseboard system	Ceiling system	False-ceiling system
Number of overlapping aluminium profiles	3	4	4
System's rough overall dimensions (hxp)	140 x 36.5 mm	210 x 55 mm	min. 210 x 55 mm
Water content (l)	0.462 l/m	0.615 l/m	0.615 l/m
Piping internal diameter	14 mm	14 mm	14 mm

TECHNICAL FEATURES

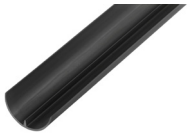
	Baseboard system	Ceiling system	False-ceiling system
PNI	6	6	6
Maximum operating pressure (bar) *	6 bar	6 bar	6 bar
Maximum operating temperature (°C) *	70° C	70° C	70° C

* The maximum operating temperature and pressure specified refer only to the manifold + profile + fittings assembly which the Belt system consists of. The actual values to be considered are those relating to all system components.

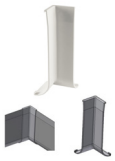
BELT BASEBOARD PRODUCTS TABLE

	Series	Description
	3749	**Front casing, jig and profile kit** Recessed profile: 140x2x4000 mm L-shaped profile: 15x20x4000 mm Casing: 107x1.5x4000 mm Material: aluminium alloy (EN-AW6060) White painting (RAL9010)
	3750.A	**Baseboard kit with three radiant profiles** Length 3500 mm Internal diameter 14 mm EN-AW 6060 extruded aluminium with black stainless steel galvanic treatment
	3760	**Wall support kit (bracket and support)** Made of polymer PA6-20% F.V V2
	3751.A	**1-2-3 way manifolds made of nickel-plated brass (CW617N)** Connection 1/2” M
	3753	**Straight fitting for MM/MF radiant profile connection** PPSU quick coupling, MM/MF, outer diameter 14 mm, internal diameter 8 mm. Double o-ring 3x11 mm made of EPDM Perox
	3761.A	**End terminal (right- and left-hand) kit** Made of ABS V0, white colour (RAL9010) + additive for UV stabilisation
	3761.B	**External angle kit (top and bottom)** Made of ABS V0, white colour (RAL9010) + additive for UV stabilisation
	3761.C	**Internal angle kit (top and bottom)** Made of ABS V0, white colour (RAL9010) + additive for UV stabilisation
	3761.D	**Straight kit (top and bottom)** Made of ABS V0, white colour (RAL9010) + additive for UV stabilisation

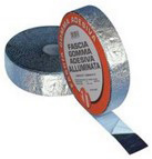
BELT CEILING/FALSE CEILING PRODUCTS TABLE

	Serie	Descrizione
	3757	**Copertura estetica in ABS** **Colore: Bianco, verniciabile in cantiere.** Lunghezza 4000 mm **/ Solo per impianto a soffitto**
	3750.B	**False ceiling kit with 4 radiant profiles** Lenght 3500 mm Internal diameter 14 mm EN-AW 6060 extruded aluminium with black stainless steel galvanic treatment
	3764	**Wall support kit (bracket and support)** Made of polymer PA6-20% F.V. V2, natural colour
	3756	**Kit with 10 PVC condensate collecting ducts** Lenght 4000 mm
	3762.A	**Condensate collecting duct intermediate sleeve** Polymer joining sleeve PA66-25% F.V. V0, black (MP239) with gasket for sealing on the condensate collecting duct
	3762.B	**Condensate collecting duct plug** Polymer duct plug PA66-25% F.V. V0, black (MP239) with gasket for sealing on the condensate collecting duct
	3762.C	**Condensate collecting duct multi-functional fitting** Polymer multi-functional fitting PA66-25% F.V. V0, black (MP239) with gasket for sealing on the condensate collecting duct
	3751.A 3751.B	**2-way manifolds made of nickel-plated brass (CW617N)** Connection 1/2” M **4-way manifolds made of nickel-plated brass (CW617N)** Connection 1/2” M
	3752	**Thermal insulation for 4-way manifold (dx and sx)** Half shells made of expanded polyethylene with anti-scratch film coating. Density 33 kg/m3. Fire behaviour Class 1. Use temperature -40 °C - +90°C
	3753	**Straight fitting for MM/MF radiant profile connection** PPSU quick coupling, MM/MF, outer diameter 14 mm, internal diameter 8 mm. Double o-ring 3x11 mm made of EPDM Perox
	3763.A	**Straight joint for ceiling casing** ABS V0 sleeve for joining casing profiles, aesthetic design, white colour (RAL9010) + additive for UV stabilisation

BELT CEILING/FALSE CEILING PRODUCTS TABLE

	Serie	Descrizione
	3763.B	**Internal angle joint for ceiling casing** ABS V0 internal angle for joining casing profiles, aesthetic design, white colour (RAL9010) + additive for UV stabilisation
	3763.C	**External angle joint for ceiling casing** ABS V0 external angle for joining casing profiles, aesthetic design, white colour (RAL9010) + additive for UV stabilisation

BELT ACCESSORIES TABLE

 G ½”	140	**Blind side cap G 1/2” F**
	3754	**Adhesive polyethylene perimeter strip** 130x3 mm (hxp) Roll lenght: 20 m
	3755	**Reflective strip made of aluminised adhesive rubber** 50x3 mm (hxp) Roll lenght: 22 m **FOR BASEBOARD SYSTEMS ONLY**
	3767.A	**Battery-operated press set for blanking**
	3767.B	**Flaring tool**
	735	**Fitting for polyethylene pipe, flat seat**
	812	**Press fitting for multilayer pipe - rotary nut - gas thread flat seal**

INSTALLATION - GENERAL INFO

The BELT system must be installed in accordance with the requirements of UNI (*) regulations as well as of the legislation and technical standards in force in the country of installation and, in any case, always in keeping with common sense principles and workmanlike technique. The system must be installed in such a way as to make it possible to perform maintenance work and to remove or replace the product.
In compliance with the law provisions in force, heating systems must be subjected to regular maintenance and energy efficiency checks.

SYSTEM WATER LOAD CHARACTERISTICS AND SPECIFICATIONS

When first installing the system, it is necessary to preliminarily clean it. In order to ensure the proper operation of the emission system, after each cleaning operation and water change, check the system liquid for clear appearance and lack of visible impurities, and make sure that the characteristics of the water comply with the requirements of the UNI 8065:2019 standard (*).
Pay special attention to the acidity of the water: 7.0 < pH < 8.5 in order to limit any corrosion effects of aluminium.

In case of aggressive, ferruginous or hard filling water, use treated water to prevent scale build-up, corrosion and damage to the system.
Bear in mind that even a small amount of impurities in the water could impair the efficiency of the system. To avoid freezing in the pipes, if risk conditions are detected, check whether the heat source can provide suitable automatic anti-freeze cycles.
The addition of glycol is not recommended, as it adversely affects the performance of the heat emission and generation system.
Should it, however, be necessary to use glycol, correct dosage and maintenance are recommended. For the compatibility of the system components with water conditioning substances, contact the manufacturer thereof, if no specific prescriptions are provided in this manual.
For specifications, please refer to:
UNI 8065 - 2019 (*) standard: Water treatment in winter and summer air conditioning systems, for production of domestic hot water and solar thermal systems
Before making hydraulic connections, the following should be checked:
the system was cleaned
there are no impurities in the system water
compatible components are used to avoid corrosive effects

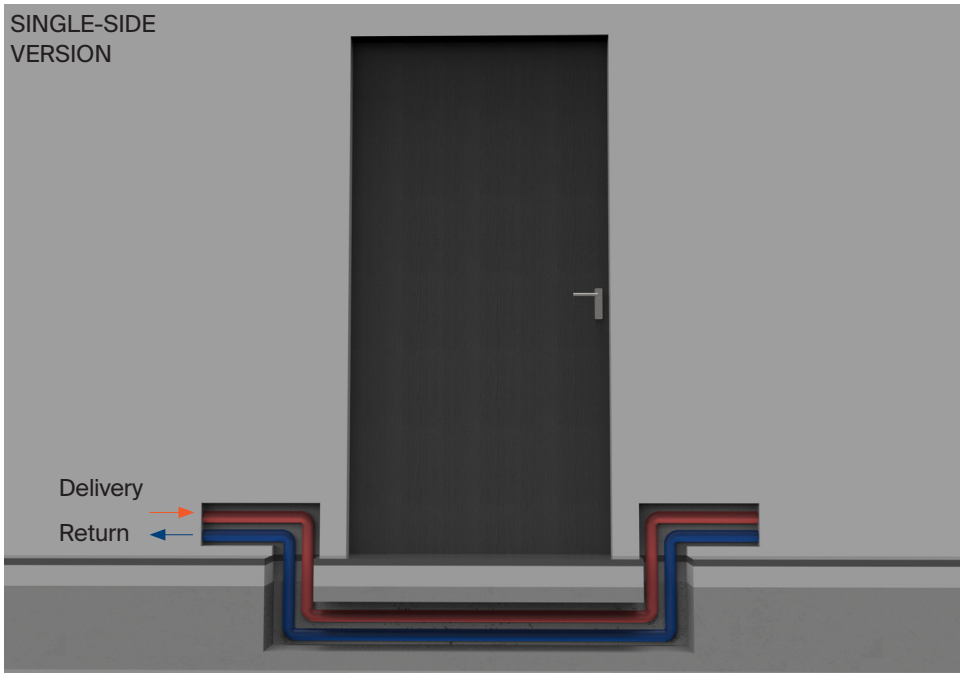
(*) always refer to the technical regulations in force in the country of installation, if these are more restrictive.

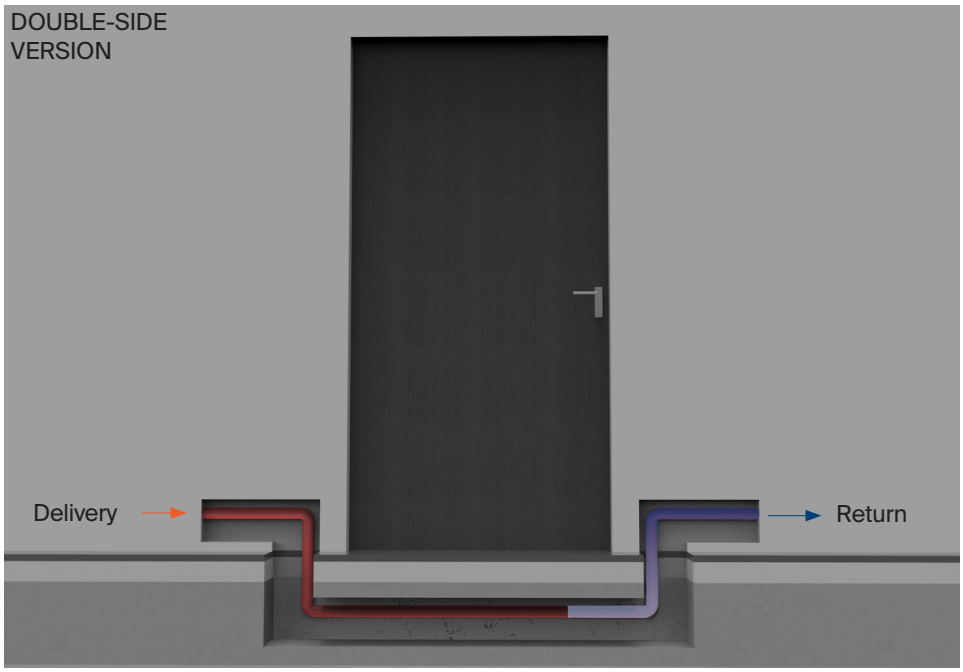
GUIDE TO INSTALLING THE KILMA BELT BASEBOARD SYSTEM MASONRY

- Check the system and assess whether it is single- or double-sided.
- Remove any existing baseboards, nails or glue.
- Carefully clean the surfaces.

⚠ ATTENTION!
CHECK FOR ANY IN-FLOOR HYDRAULIC PIPES OR ELECTRICAL CHANNELS, AS THIS AREA WILL BE DRILLED TO SECURE THE BELT SYSTEM.

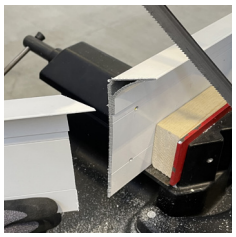
- Arrange the delivery and return pipes.
- Create any tracks for multilayer pipes at doors or crossings; in order to avoid design style issues, provide for wall - and not floor - heat transfer pipe outlets.





MOUNTING STRUCTURE INSTALLATIONIT IS ADVISABLE TO INSTALL THE BELT BASEBOARD SYSTEM AFTER HAVING COMPLETELY LAID THE FLOOR.

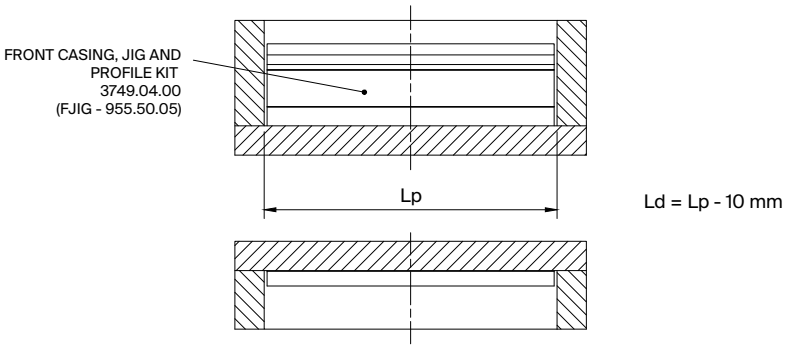
1



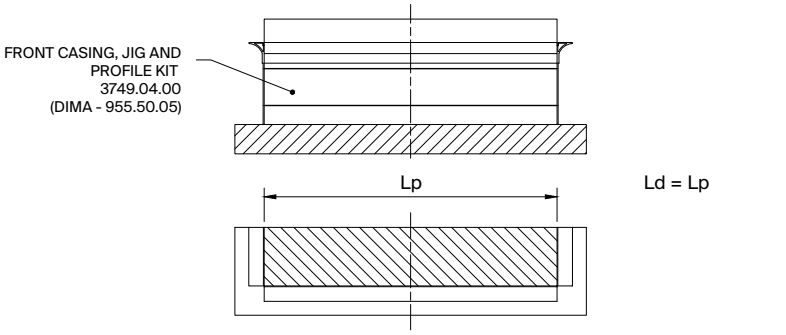
Cut the jig and L-shaped profile to size; the length shall include the associated plastic aesthetic parts to be assembled. **Pre-assembling the components is recommended in order to determine the overall dimensions and the subsequent cutting.**
If there are internal angles, round them off to simplify assembly.

Lp = Wall lenght
Ld = Lenght of jig 955.50.05

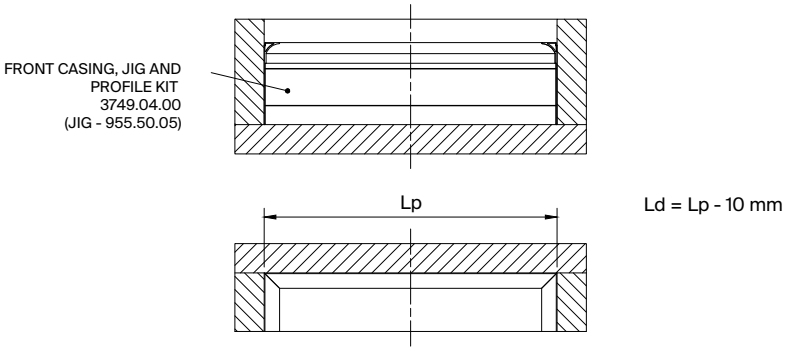
SINGLE SECTION VERSION



EXTERNAL ANGLE VERSION



INTERNAL ANGLE VERSION



2

DRILLING THE JIG code 955.50.05

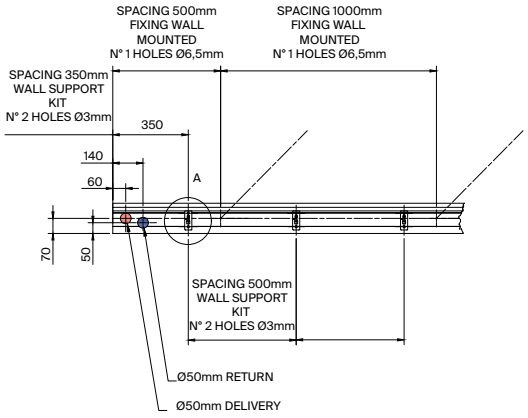
a) Drill Ø 3 mm holes for the wall supports, code 3760.00.00.
Starting at 350 mm with 500 mm spacing is recommended.

b) Drill 0 6.5 mm holes for wall mounting; starting at 500 mm with 1000 mm spacing is recommended.

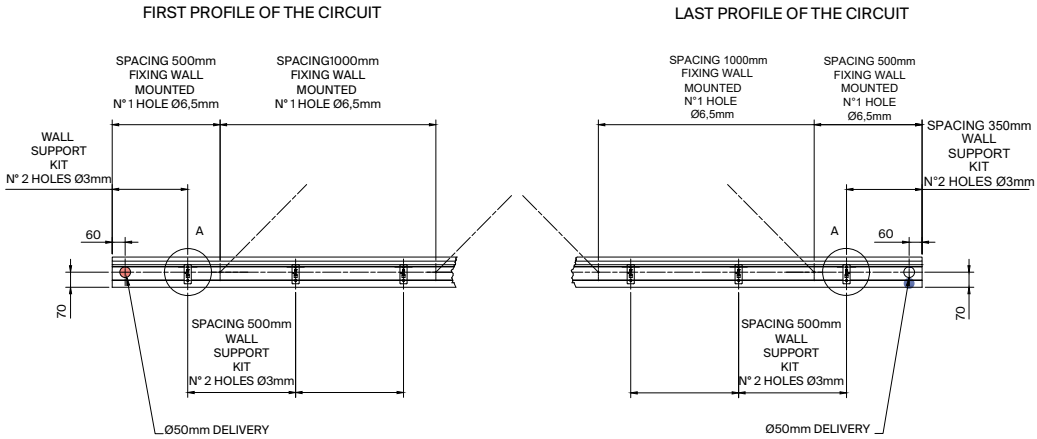
c) Drill holes for delivery and return fixtures..

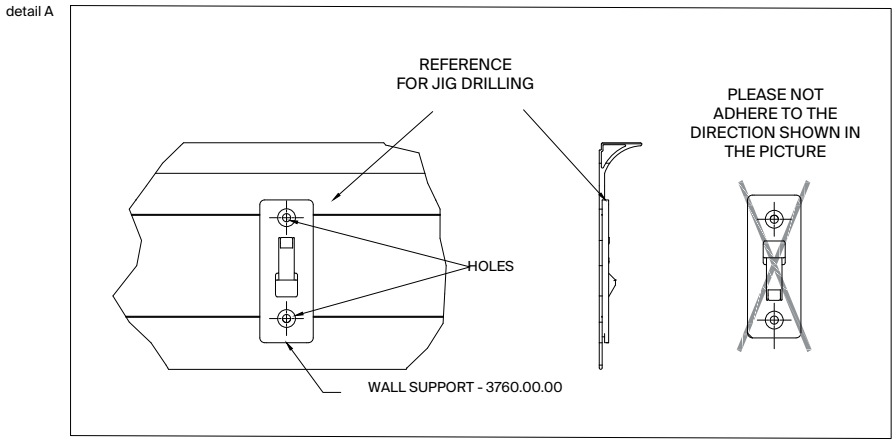
Image B

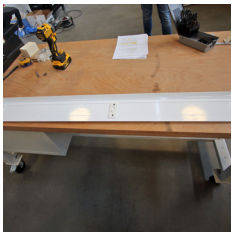
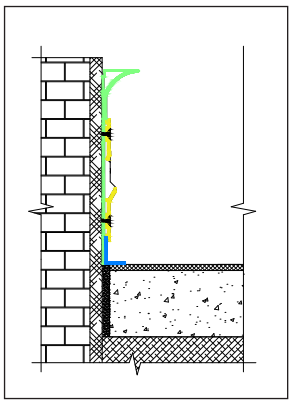
SINGLE-SIDED VERSION



DOUBLE-SIDED VERSION





3	 	Fasten the wall supports to the jig by means of self-tapping screws Ø5x10 mm. Use the wall supports to lock the L-shaped profile to the floor. Remove the protruding screws from the back of the jig with a grinder.
4		Apply the perimeter insulating strip, code 3754.00.02 onto the back of the jig, along the whole length of the profile.
5		Position the L-shaped profiles on the floor adhering to the jig. The L-shaped profile must be wedged between the jig and the plastic wall support.
6		Fixing the mounting structure with screws or fischer bolts Ø 6.5 mm where the previously made holes are (see step 2). ⚠ ATTENTION! CHECK FOR ANY IN-FLOOR HYDRAULIC PIPES OR ELECTRICAL CHANNELS, AS THIS AREA WILL BE DRILLED TO SECURE THE KILMA BELT SYSTEM.

RADIANT PROFILES PREPARATION

⚠ ATTENTION!
Do not use manual or free-hand tools but only tools with guides. Work in clean conditions.
It is better to prepare the material on the bench and then install it on site

1

⚠ ATTENTION!
Cut the radiant profiles with a cutter; the length of the profiles must be the same as even slight differences could prevent assembly.

2

Flare each profile with the RBM flaring tool code 3767.00.32.
Remove any burrs or shavings.

3

Insert all the profiles into the support bracket, code 3760.00.00. The number of brackets must be equal to that of the previously mounted wall supports.

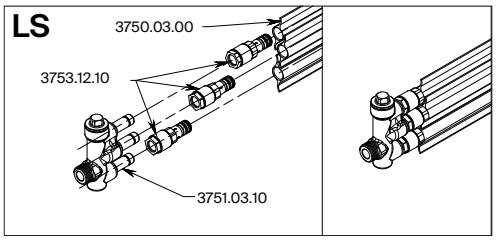
⚠ ATTENTION!
Operation to be performed before the next blanking step.

RADIANT PROFILES PREPARATION

⚠ ATTENTION!
ALWAYS lubricate all gaskets!

Use only a non-aggressive silicone lubricant, specific for elastomers.

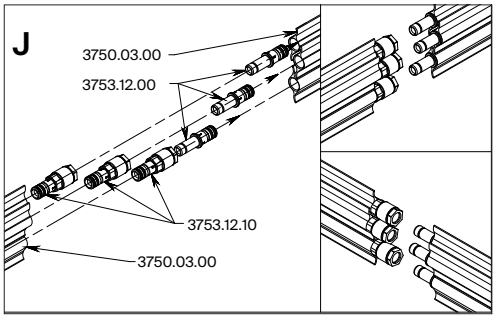
1



RADIANT PROFILES COUPLING
PROFILES/MANIFOLD COUPLING

MF FITTINGS ASSEMBLY
Bring the straight fittings (code 3753.12.10) in contact for MF radiant profile connection, at the ends of the profiles where the manifolds will be subsequently provided.

2

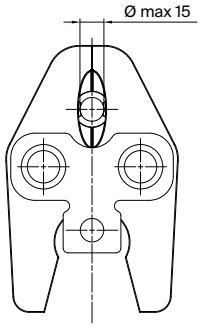


PROFILES COUPLING

MM - MF FITTINGS ASSEMBLY
At the joint, prepare the straight fittings (code 3753.12.10) for the connection of the MF radiant profile on one side of the profiles, and those (code 3753.12.00) for the connection of the MM radiant profile on the other side.

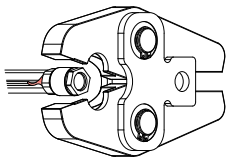
BLANKING

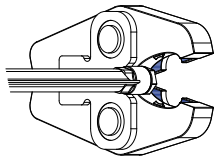
1

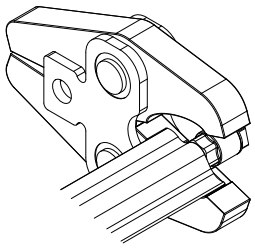


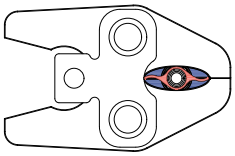
⚠ ATTENTION!
Monitor the clamp for wear. Maximum span with the clamp closed NOT exceeding 15 mm.

2









⚠ ATTENTION!
Operation to be performed with the radiant profiles already fitted in the support brackets.

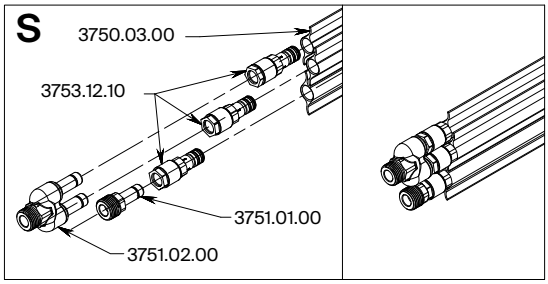
Stagger the radiant profiles to get enough space for using appropriate clamps.

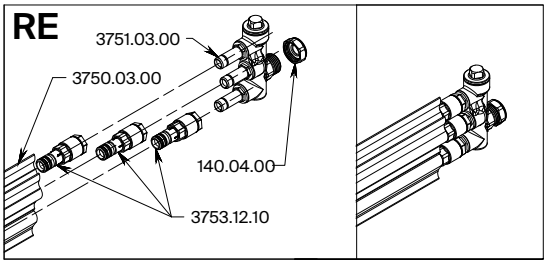
Bring the fitting in contact with the profile.
Position the radiant profiles into the elliptical seat.
Make sure that the profile is in contact with the clamp reference plane.
Keep the press running until it is completely closed and then reopened.

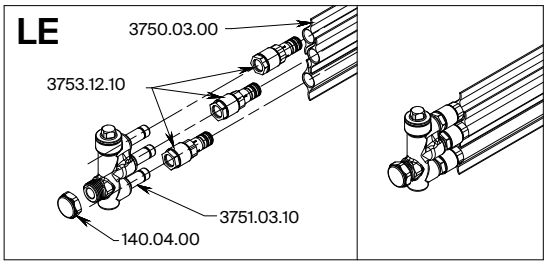
MANIFOLDS AND JOINTS ASSEMBLY

⚠ ATTENTION!
ALWAYS lubricate the coupling area!
Use only a non-aggressive silicone lubricant, specific for elastomers.

SINGLE-SIDE INSTALLATION





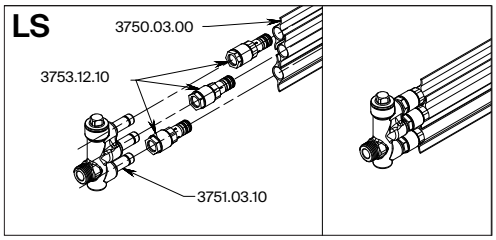


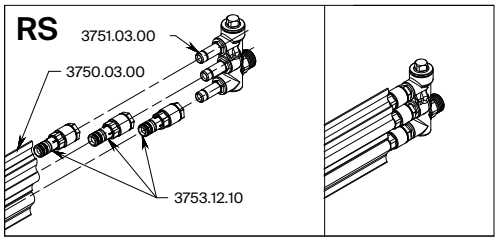
When close to starting, connect the 2-way delivery manifold to the upper profiles and the 1-way return manifold to the lower profile.
Insert the manifolds until engaged.

⚠ ATTENTION
At the end point, provide a 3-way manifold (right- or left-hand version as required), suitably capped with a G 1/2" plug.

The manifolds are equipped with a G 1/2" M thread with flat seal for connecting the system to the hydraulic equipment.

DOUBLE-SIDE INSTALLATION

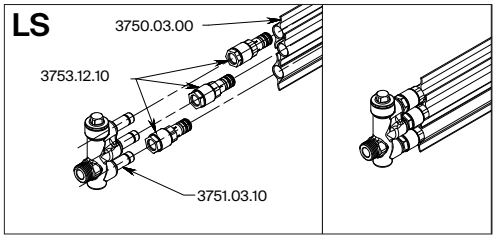


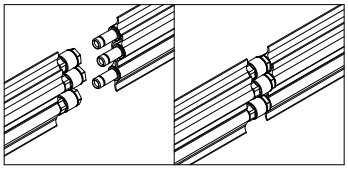


Connect the three-way manifolds to the ends of the modules, until engaged. The double-sided installation will always provide a right-hand manifold, code 3751.03.00, and a left-hand one, code 3751.03.10.

The manifolds are equipped with a G1/2" M thread with flat seal for connecting the system to the hydraulic equipment.

JOINT ASSEMBLY





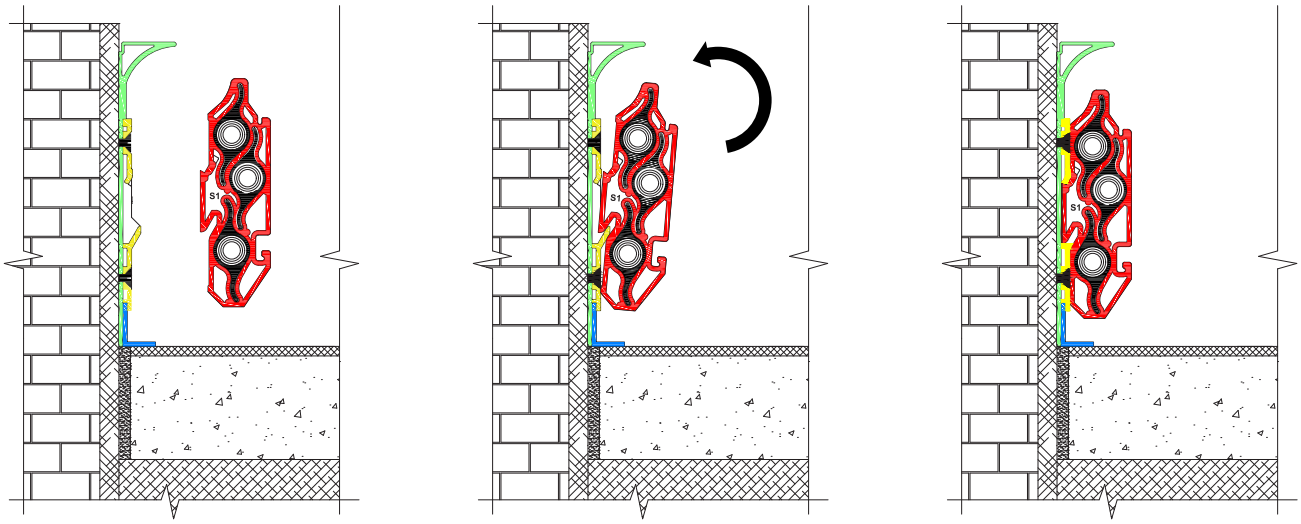
Connect the MM and MF straight fittings, previously assembled and blanked, until engaged.

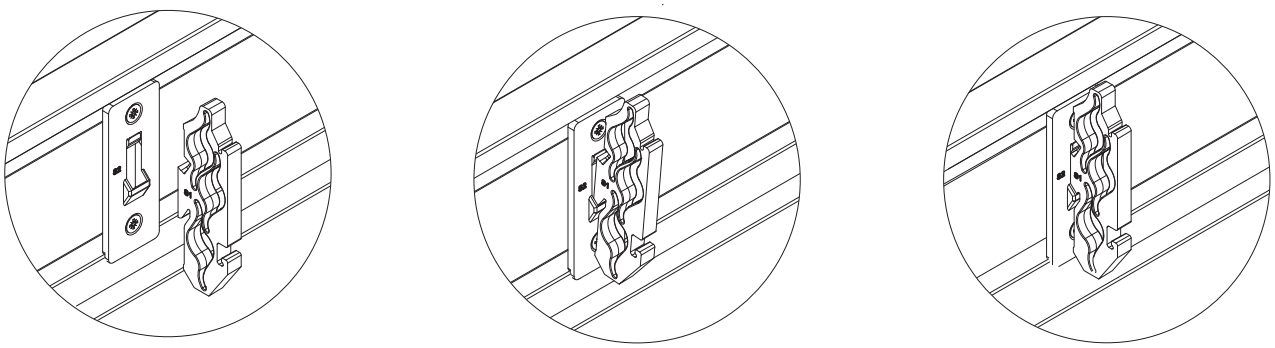
SYSTEM CHECK

After completing all assembly operations, it is advisable to test the Belt system for pressure tightness. Recommended P = 6 bar.

COUPLING RADIANT MODULES

For easier coupling, it is advisable to align the brackets on the modules with those on the jig.
Place the preassembled modules on the ground in order to align the brackets with the wall supports in the jig.





HYDRAULIC - POWER SUPPLY CONNECTION

SINGLE-SIDED VERSION

Connect the first module of the circuit to the delivery and return fixtures (using an RBM Tita-Fix Ø16x2 multilayer pipe is recommended).
Two-way upper delivery pipeline.
One-way lower return pipeline.

DOUBLE-SIDED VERSION

Connect the first module of the circuit to the delivery line and the last one to the return line (using an RBM Tita-Fix Ø16x2 multilayer pipe is recommended).

HYDRAULIC - MODULES CONNECTION ON DIFFERENT WALLS

SINGLE-SIDED VERSION

Connect the two modules on different walls to each other.
It is advisable to make the connection using two elbows (delivery and return) made up of four straight fittings and two 90-degree ones, with relative multilayer pipe Ø16x2.

DOUBLE-SIDED VERSION

Connect the two modules on different walls to each other. It is advisable to make the connection using an elbow (delivery) made up of two straight and one 90-degree fittings, with relative multilayer pipe Ø16x2.

SYSTEM CHECK

After completing all assembly and hydraulic connection operations, it is advisable to test the Belt system for pressure tightness.
Recommended P = 6 bar.

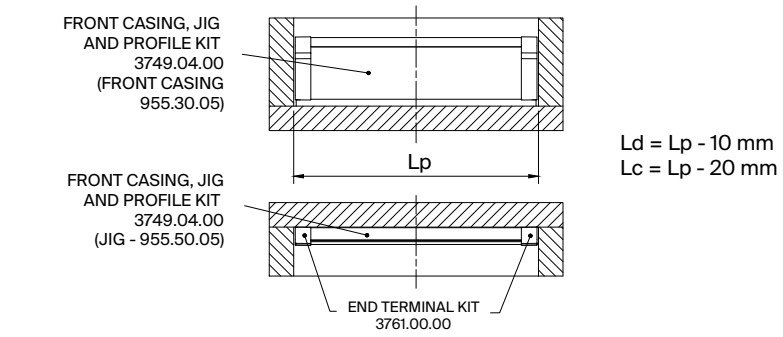
AESTHETIC PARTS

1 Cut the casing to size (see picture C)
The length shall include the associated plastic aesthetic parts to be assembled and the space required for assembly.

IMAGE C

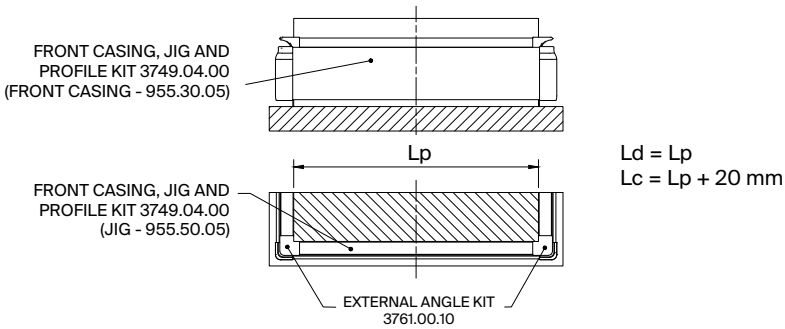
Lp = Wall lenght
Ld = Lenght of jig 955.50.05
Lc = Lenght of front casing 955.30.05

END TERMINAL (RIGHT- AND LEFT-HAND) KIT VERSION



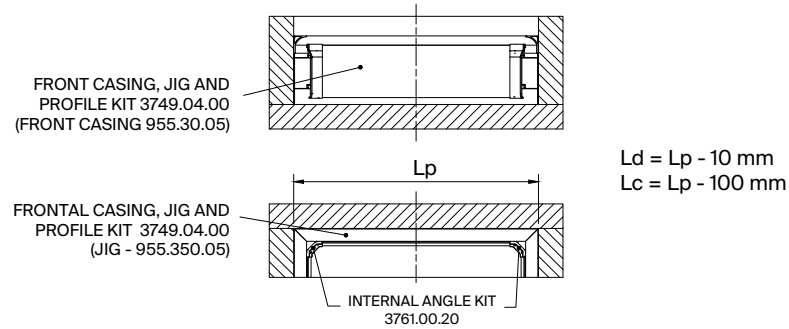
Ld = Lp - 10 mm
Lc = Lp - 20 mm

EXTERNAL ANGLE KIT (TOP AND BOTTOM) VERSION



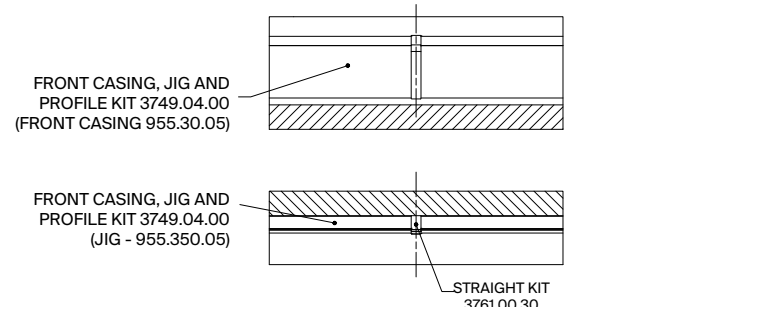
Ld = Lp
Lc = Lp + 20 mm

INTERNAL ANGLE KIT (TOP AND BOTTOM) VERSION



Ld = Lp - 10 mm
Lc = Lp - 100 mm

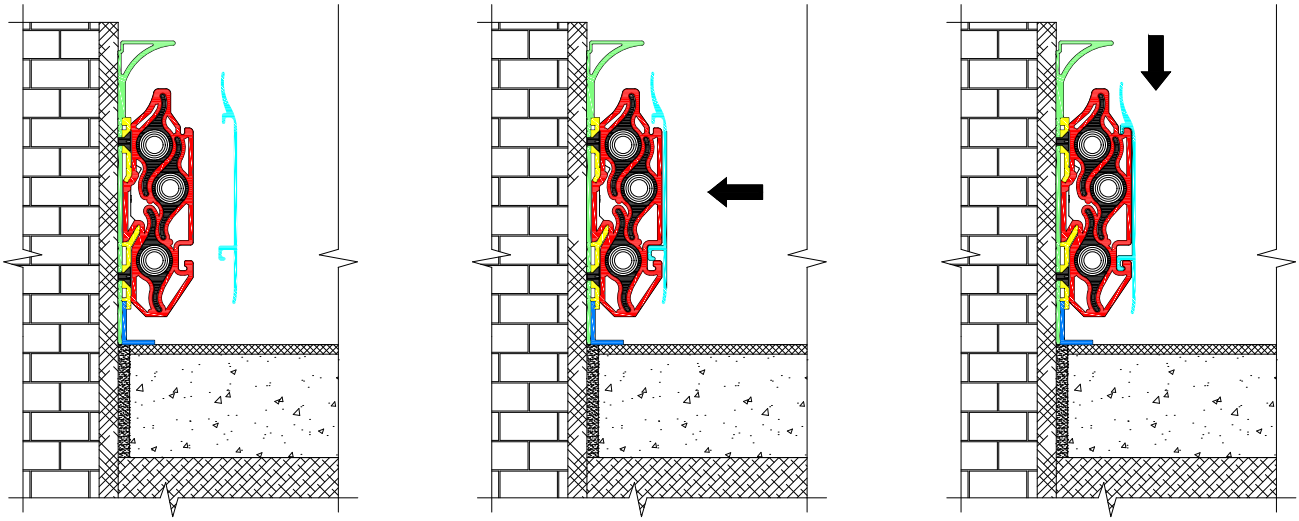
STRAIGHT KIT (TOP AND BOTTOM) VERSION



Where a STRAIGHT KIT for joining the
casing is envisaged, provide a 5 mm

2		Apply the reflective strip in its appropriate seat on the internal side of the front casing
3		Couple the front casing into its seat (see picture D).

IMAGE D



APPLICATION OF CAPS, ANGLES AND JOINTS

Where there are terminal parts of the circuit, install an end terminal kit code 3761.00.00

Where external angles are envisaged, install an external angle kit code 3761.00.10.

Where internal angles are envisaged, install an internal angle kit code 3761.00.20.

Where joints are envisaged, install a straight kit code 3761.00.30.

WARNINGS

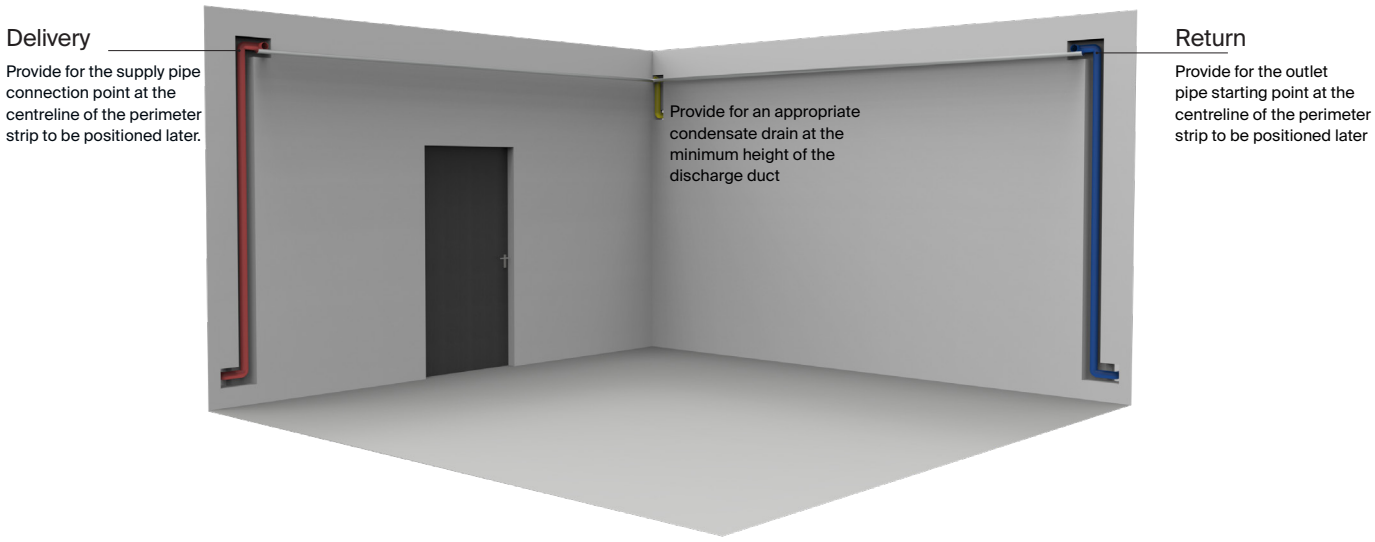
Do not install the room thermostat where the radiant elements are located - the heating of the wall could alter proper temperature measurement.

GUIDE TO INSTALLING THE KILMA BELT CEILING/FALSE CEILING SYSTEM MASONRY

1

⚠ ATTENTION!
CHECK FOR ANY IN-FLOOR HYDRAULIC PIPES OR ELECTRICAL CHANNELS, AS THIS AREA WILL BE DRILLED TO SECURE THE KILMA BELT SYSTEM.

- Fit the supply pipes at the height established in the project.
- In the cooling version, where the condensate collecting ducts are located, provide collection drains with associated siphons in order to prevent the escape of unpleasant odours.
- Prima di iniziare l'installazione prevedere un **ISOLAMENTO TERMICO** di tutto il soffitto.



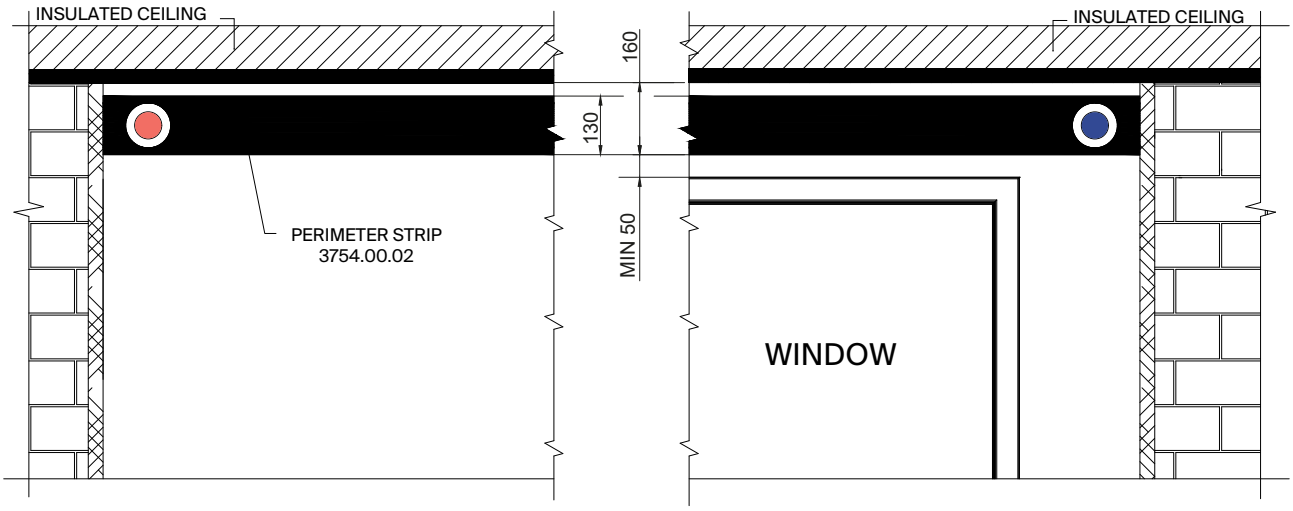
APPLYING THE PERIMETER STRIP

1

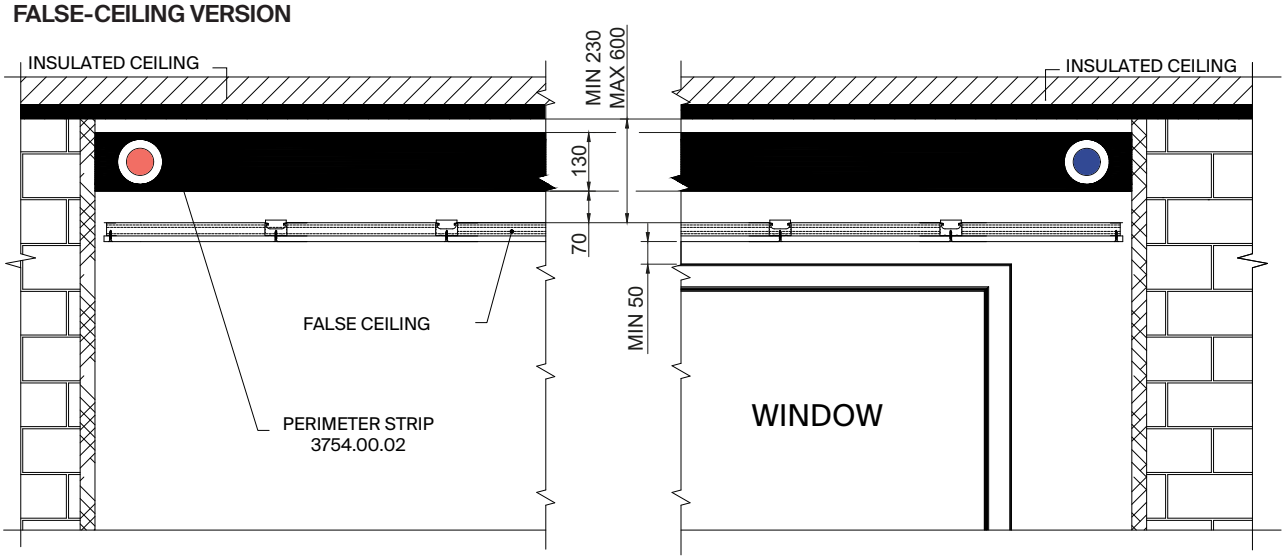
Apply the perimeter strip code 3754.00.02 on the wall.
Use a laser spirit to draw a level line.
The strip must be glued precisely as it will be used as a reference for the wall supports.

⚠ ATTENTION!
The false ceiling must be fitted after applying the MORE BELT system. There must NOT be structures preventing air circulation in the area between the ceiling and the false ceiling.

CEILING VERSION



FALSE-CEILING VERSION

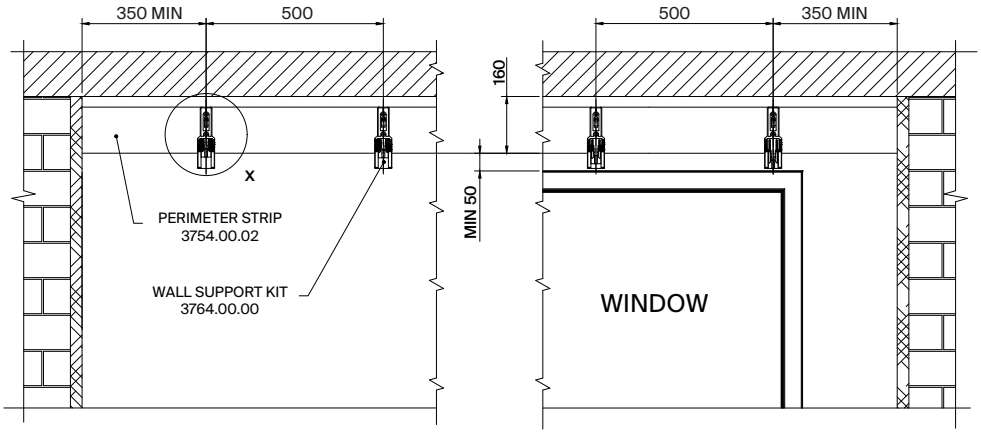


WALL SUPPORT INSTALLATION

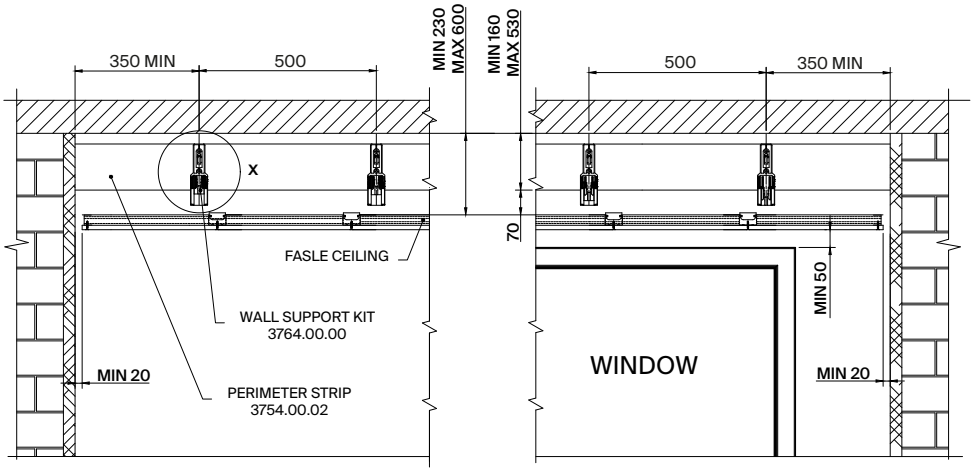
1

Fasten the support code 3764.00.00 to the wall using the upper edge of the strip as a reference.
It is recommended to keep a minimum 350 mm distance from the wall and subsequent 500 mm spacing.

CEILING VERSION

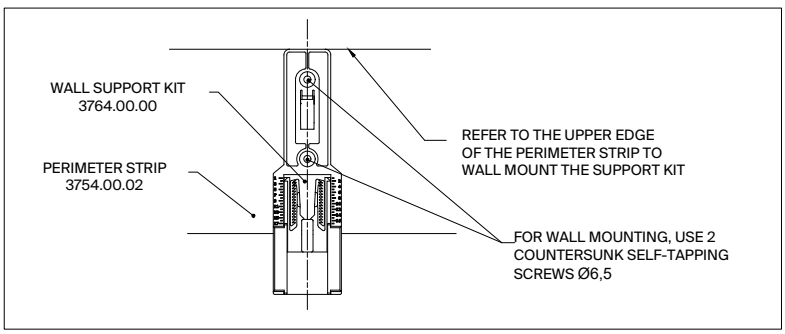


FALSE CEILING VERSION



ATTENTION: the false ceiling must be fitted after applying the MORE BELT system. There must NOT be structures preventing air circulation in the area between the ceiling and the false ceiling

X



INSTALLING CONDENSATE - COOLING DUCTS

1

Cut the collection duct to size, code 3756.04.00. The length shall include the assembly of the associated caps, joints or fittings.

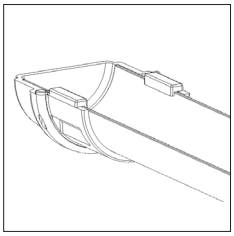
⚠ **ATTENTION!**
Remove any residual burrs.

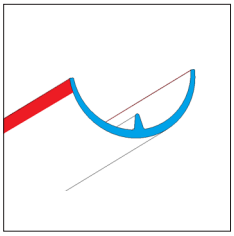
2

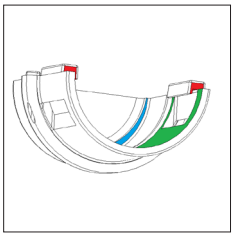
Couple the duct into its seat in the wall support until engaged.

APPLICATION OF CAPS, FITTINGS AND SLEEVES FOR CONDENSATE DUCT - PLUGS -

⚠ **ATTENTION!**
Make sure that the gasket is not twisted with the duct during assembly.





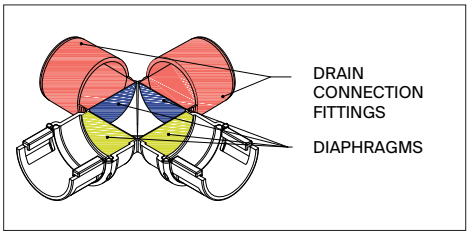


Fit the plugs at the ends of the circuit.
Lubricate the gasket **before** fitting it into the seat of the plug.
Fit the plug on the duct until it is in contact.
It is recommended to use a non-aggressive silicone lubricant, specific for elastomers.

INTERMEDIATE SLEEVE

Connect two duct sections with a sleeve. Lubricate the gaskets **before** fitting them into the sleeve seats.
Fit the sleeve between the ducts and bring them in contact with each other. **Using a silicone lubricant is recommended.**

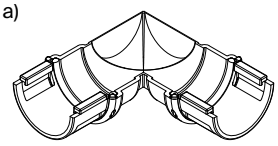
MULTI-FUNCTIONAL FITTING

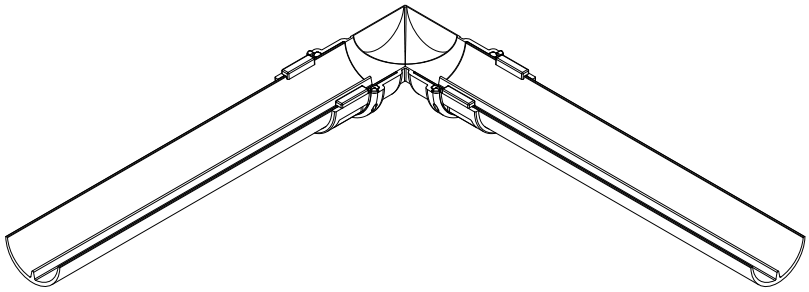


Should an elbow or connection to the drain of the condensate collecting ducts be required, provide a multi-functional fitting.

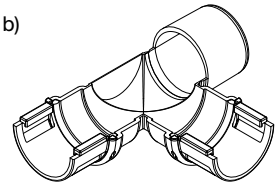
POSSIBLE CONFIGURATIONS

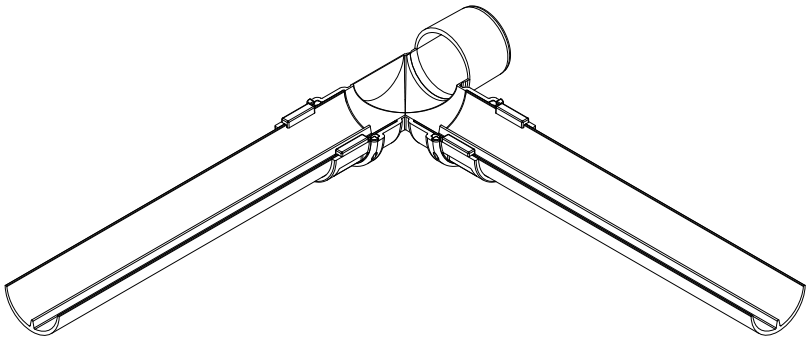
a)



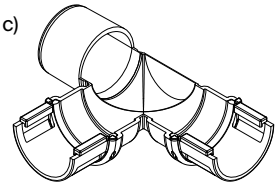


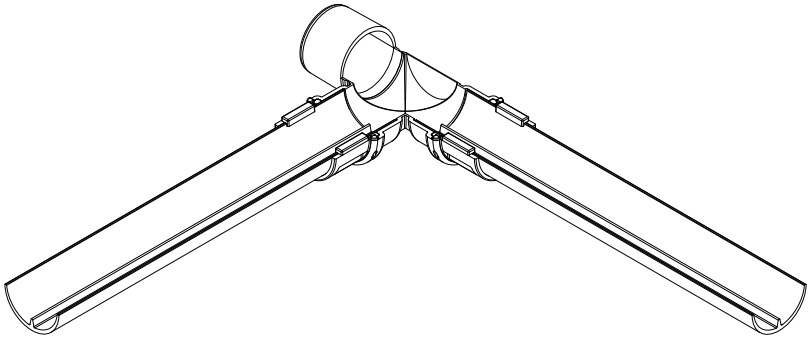
b)



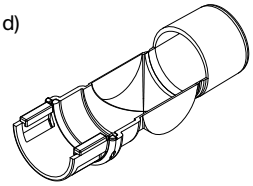


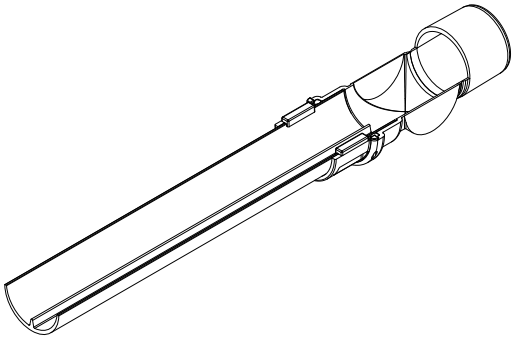
c)





d)





ADJUSTING CONDENSATE - COOLING DUCTS

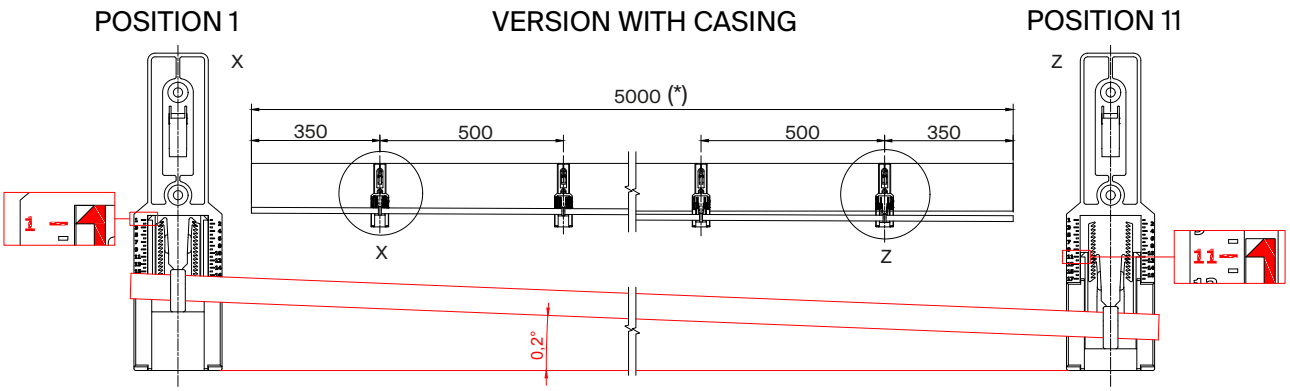
1

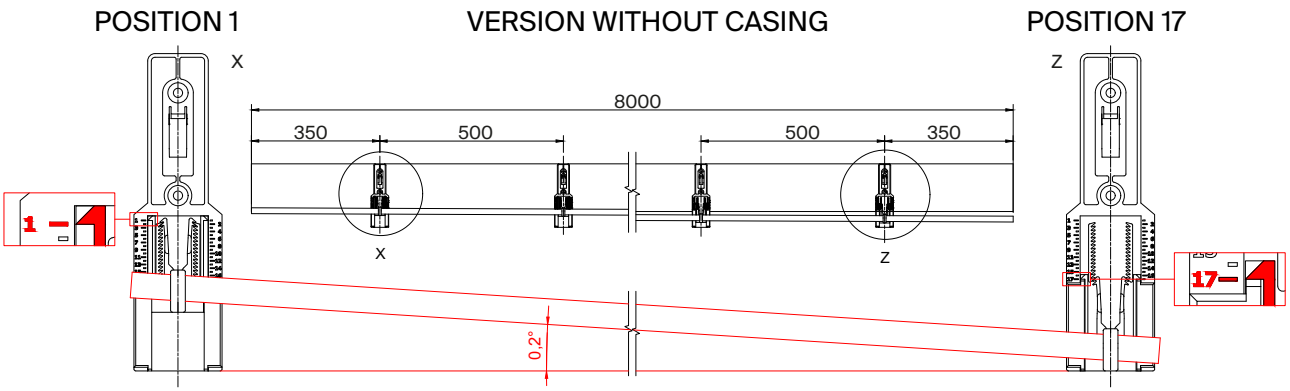
Once the ducts have been coupled to their supports (including caps, joints and fittings), adjust the gradient by acting on the sled system in the bracket.

Depending on the type of installation, two maximum extension range adjustments are possible:

- Version with casing, maximum stroke 20(*) mm. Position 11. Max duct length 5 m/0.23 ° gradient.
- Version without casing, maximum stroke 32 mm. Position 17. Max duct length 8 m/0.23 ° gradient.

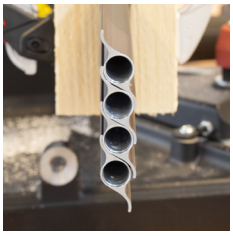
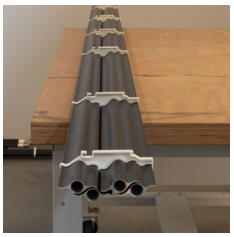
(*) even in the version with casing it is possible to exceed this value, subject to modification of the brackets on site - please contact RBM MORE Technical Service for more information





RADIANT PROFILES PREPARATION

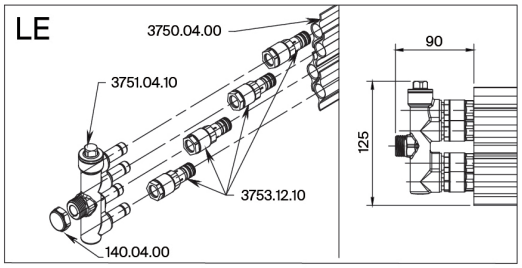
⚠ **ATTENTION!**
Do not use manual or free-hand tools but only tools with guides. Work in clean conditions. It is better to prepare the material on the bench and then install it on site.

1		⚠ **ATTENTION!** Cut the radiant profiles with a cutter; the length of the profiles must be the same, as even slight differences could prevent assembly.
2	 	Flare each profile with the RBM flaring tool code 3767.00.32. Remove any burrs or shavings.
3		Insert all the profiles into the support bracket, code 3760.00.00. The number of brackets must be equal to that of the previously mounted wall supports. ⚠ **ATTENTION!** Operation to be performed before the next blanking step.

INSERTING FITTINGS ON MANIFOLD AND JOINT SIDES

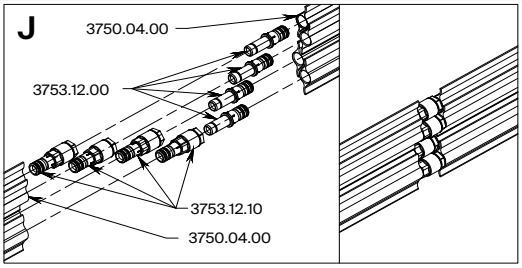
⚠ ATTENTION!
ALWAYS lubricate all gaskets!
Use only a non-aggressive silicone lubricant, specific for elastomers.

1



MANIFOLD SIDE
Insert the straight fittings code 3753.12.10 for MF radiant profile connection at the ends of the profiles where the manifolds will be subsequently provided.

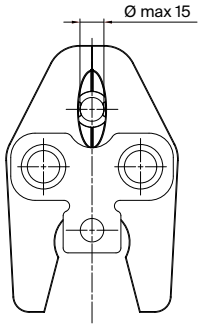
2



JOINT SIDE
At the joint, prepare the straight fittings for the connection of the MF radiant profile, code 3753.12.10, on one side of the profiles, and those for the connection of the MM radiant profile, code 3753.12.00, on the other side.

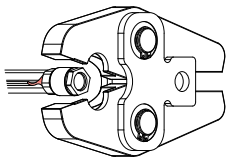
BLANKING

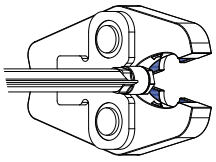
1

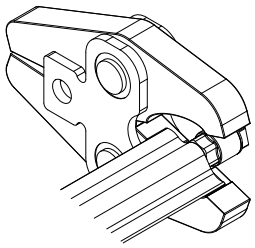


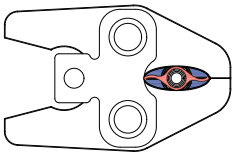
⚠ ATTENTION!
Monitor the clamp for wear. Maximum span with the clamp closed NOT exceeding 15 mm.

2









⚠ ATTENTION!
Operation to be performed with the radiant profiles already fitted in the support brackets.

Stagger the radiant profiles to get enough space for using appropriate clamps.

Bring the fitting in contact with the profile.

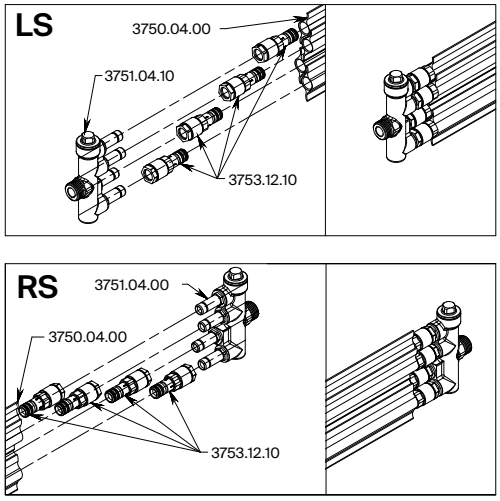
Position the radiant profiles into the elliptical seat of the clamp. Make sure that the profile is in contact with the clamp reference plane.

Keep the press running until it is completely closed and then reopened.

MANIFOLDS AND JOINTS ASSEMBLY

⚠ ATTENTION!
ALWAYS lubricate the coupling area.
Use only a non-aggressive silicone lubricant, specific for elastomers.

MANIFOLDS ASSEMBLY

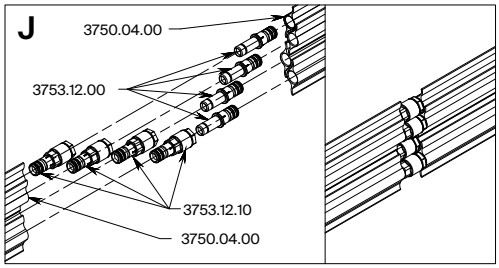


Connect the four-way manifolds to the ends of the modules, until engaged.

There must be always a right-hand manifold, code 3751.03.00, and a left-hand one, code 3751.03.10.

The manifolds are equipped with a G1/2" M thread with flat seal for connecting the system to the hydraulic equipment.

MANIFOLDS ASSEMBLY



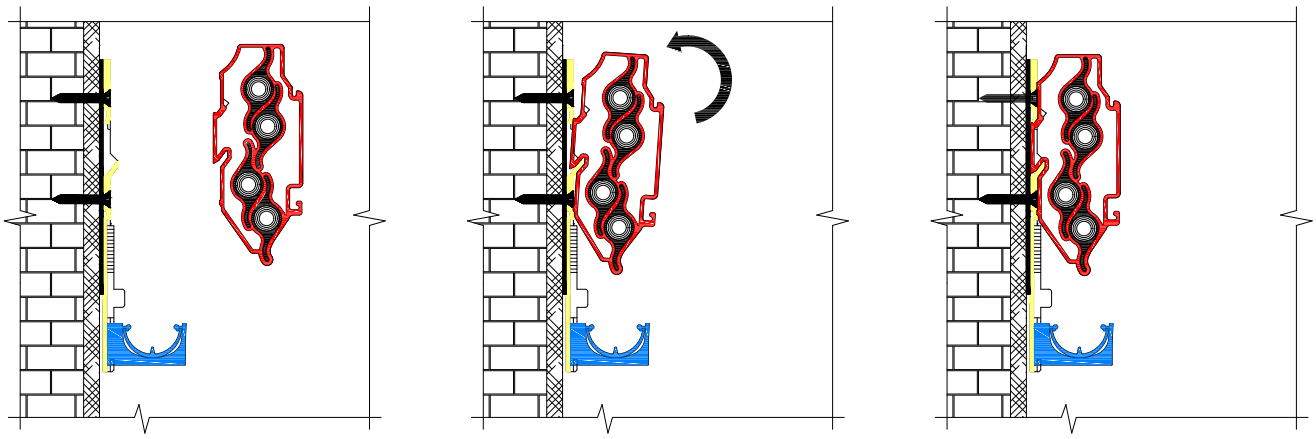
Bring the MM and MF straight fittings, previously assembled and blanked, in contact.

SYSTEM CHECK

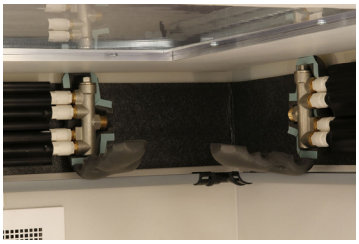
After completing all assembly operations, it is advisable to test the Belt system for pressure tightness.
Recommended P = 6 bar.

COUPLING RADIANT MODULES

For easier coupling, it is advisable to align the brackets on the modules with those on the jig.
Place the preassembled modules on the ground in order to align the brackets with the wall supports in the jig



INSULATION - COOLING ONLY



⚠ ATTENTION!
If cooling is foreseen, prepare the insulation before installing the hydraulic connections.
Right-hand shell for right-hand manifold code 3752.04.00.
Left-hand shell for left-hand manifold code 3752.04.10.

HYDRAULIC - POWER SUPPLY CONNECTION

Connect the first module of the circuit to the delivery fixture; connect the last module with pipe Ø 16x2 and G1/2" M fittings to the return fixture.

HYDRAULIC - MODULES CONNECTION ON DIFFERENT WALLS

Connect two modules on different walls by means of a multilayer tubing elbow Ø 16x2 and two straight fittings.

SYSTEM CHECK

After completing all assembly and hydraulic connection operations, it is advisable to test the Belt system for pressure tightness.
Recommended P = 6 bar.

AESTHETIC PARTS

1		Cut the casing code 3757.04.00 to size; the length shall include the associated plastic aesthetic parts to be assembled and the space required for assembly (see picture E).
2		Couple the front casing to the bracket in the radiant profile unit.
3		Where **internal angles** are envisaged, apply a joint code 3763.00.10
4		Where there is a **junction**, apply a straight joint code 3763.00.00
5		Where **external angles** are envisaged, apply a joint code 3763.00.20

WARNINGS

Do not install the room thermostat where the radiant elements are located - the heating of the wall could alter proper temperature measurement.

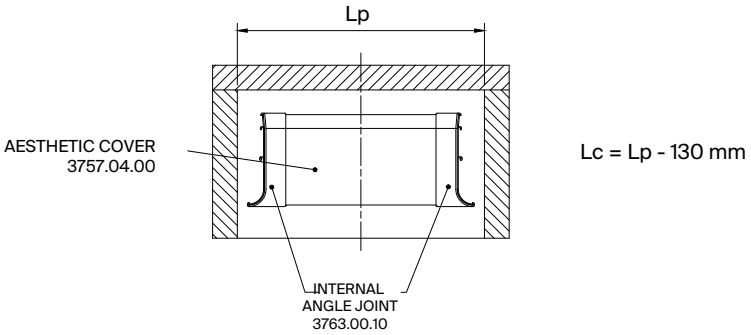
AESTHETIC PARTS

1 Cut the casing to size (see picture E)
The length shall include the associated plastic aesthetic parts to be assembled and the space required for assembly.

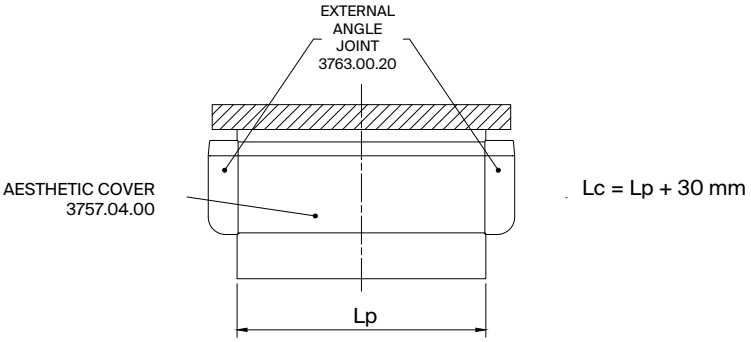
IMAGE E

Lp = Wall lenght
Lc = Lenght of aesthetic cover 3757.04.00

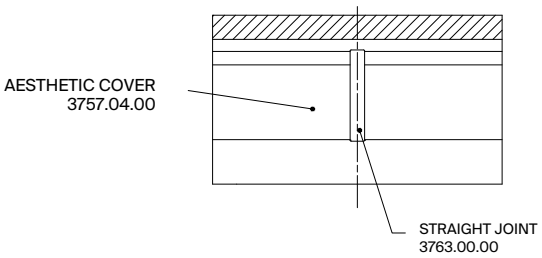
INTERNAL ANGLE JOINT VERSION



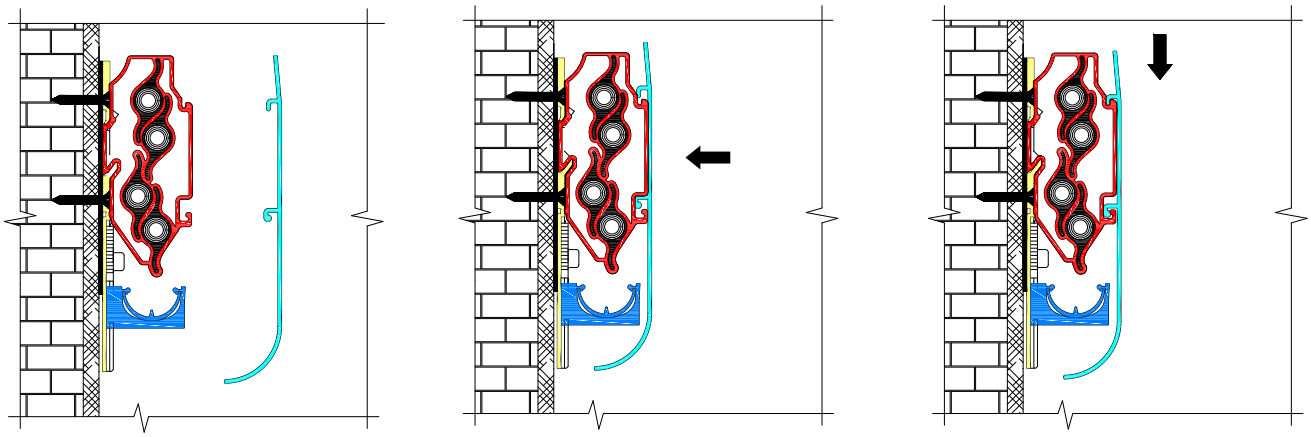
EXTERNAL ANGLE JOINT VERSION



STRAIGHT KIT VERSION



Couple the front casing into its seat (see picture below).



DISPOSAL INFORMATION

The packaging elements must not be left within the reach of children as they are hazard sources. Dispose of the packaging material in accordance with local regulations.

The symbol shown alongside indicates that the product must be disposed of separately from household waste in compliance with local laws and regulations. At the end of its service life, the system must be delivered to a collection point identified by local authorities. Separately collecting and recycling the product at the time of disposal will help preserve natural resources and ensure that the product is recycled in order to protect health and the environment.

SPECIFICATIONS

MORE BELT BASEBOARD SYSTEM - HEATING

Supply and installation of an MORE BELT perimeter base-board heating system series 3750.
A (excluding masonry, electrical connection and anything else not specified).
MORE BELT is a patented system for baseboard installation, whose operating principle isa based on radiant wall heating as a result of the Coanda effect. It is 140 mm high and 34 mm thick, and is installed in a special support casing to be mounted externally on a flat wall, or semi-recessed into the wall, with a overhang of only 8 mm from it. The system consists of 3 alluminium profiles superimposed in a staggered way and suitably shaped with specific wing profiles to obtain maximum heat conduction performance. The profiles are fixed together with polymer brackets and connected to the heat transfer circuit, derived from the main manifold or directly from a radiator outlet connection, where possible, trough specific nickel-plated brass 1-/2-/3-way manifolds enabling one- or two-sided distribution.

The system consists of:

• **Casing kit + recess jig + L-shaped profile 37490400.** The kit consists of an EN AW 6060 aluminium alloy recessed profile, painted white RAL 9010 (HxL=140 mm x 4000 mm, thickness 2 mm), to be fastened to the wall providing a base for the profiles of the MORE BELT SERIES system to be applied to the baseboard; an L-shaped EN AW 6060 aluminium alloy profile, painted white RAL 9010 (HxBxL 15mm x 20 mm x 4000 mm), to be used as finishing solution between the flor and the wall; an EN AW 6060 aluminium alloy casing, painted white RAL 9010 (HxL=107 mm x 4000 mm, thickness 1,5 mm), applied to the front of the baseboard as a closure of the system and open both at the bottom and at the top to foster heat exchange and the Coanda effect on the wall.

• **Kit with 3 radiant profiles code 37500300.** Kit consisting of 3 radiant wing-shaped tube profiles with internal diameter 14 mm, 3500 mm long, made of extruded EN AW 6060 aluminium with black Enox galvanic treatment.

• **1-way manifold 37510100.** One-way manifold made of nickel-plated brass with 1/2 “M connection; it is used as a return connection in the single-sided baseboard system.

• **2-way manifold 4137510200.** Two-way manifold made of nickel-plated brass with 1/2”M connection; it is used as a delivery connection in the single-sided baseboard system.

• **RH 3-way manifold 37510300.** RH 3-way manifold made of nickel-plated brass with 1/2” M connection; it is used as a delivery or return manifold in the double-sided system, and as a return terminal manifold of the circuit in the sigle-guided system.

• **LH 3-way manifold 37510310.** LH 3-way manifold made of nickel-plated brass with 1/2” M connection; it is used as a delivery or return manifold in the double-sided system, and as a return terminal manifold of the circuit in the single-guided system.

• **M/M Fitting 37531200.** Polymer M/M quick coupling Ø14x3 mm with double external sealing O-ring for joining several radiant profiles toghether.

• **M/F Fitting 37531210.** Polymer M/F quick coupoling with double external sealing O-ring to enable the quick coupling of M/M fittings when con-necting several radiant profiles together.

• **Plug for manifold 1400400.** Nickel-plated brass 1/2”F plug; it must be applied to 3-way manifold to divert the follow in case of conversion from double-sided 3-way manifold to a return one for single-sided system.

• **Support bracket 37600000.** PA6-20%F.V.V2 polymer bracket used for wall mounting the profiles.

• **RH-LH terminal kit, finishing 37610000.** Terminal kit consisting of 2 parts made of white ABS RAL 9010 + additive for UV stabilisation, used as aesthetic connections in the internal angles created on the walls by the system.

• **External angle kit 37610010.** Terminal kit consisting of 2 parts made of white ABS RAL 9010 + additive for UV stabilisation, used as aesthetic connections in the external angles created on the walls by the system.

• **Internal angle kit 37610020.** Terminal kit consisting of 2 parts made of white ABS RAL 9010 + additive for UV stabilation, used as aesthetic connections in the internal angles created on the walls by the system.

• **Joining sleeve kit 37610030.** Terminal kit consisting of 2 parts made of white ABS RAL 9010 + additive for UV stabilisation, used as aesthetic connections on metal casing straight parts.

• **Perimeter strip 37540002.** Adhesive polyethylene perimeter strip (130 mm x 3 mm x 20 m) preventing heat from being dispersed on the wall, it is applied at the back of the recessed profile, between the wall and the MORE BELT system.

• **Reflective strip 37550002.** Aluminised adhesive rubber reflective strip (50 mm x 3 mm x 22 m), containing and conveying heat into the casing, it is applied to the internal part of the aesthetic closing casing

MORE BELT CEILING/FALSE-CEILING SYSTEM - HEATING/COOLING

Supply and istallation of a MORE BELTperimeter ceiling or false ceiling heating system series 3750.B (excluding masonry, any false ceiling and suspended floor insulation, electrical connections and anything else not specified).
MORE BEL Tis a patented ceiling/false ceiling as well as wall-mounted system, providing respectively radiant heating by means of stratified heat in contact with the ceiling, and cooling as a result of the Coanda effect. The system consists of 4 aluminium profiles superimposed in a straggered way and suitably shaped with specific wing profiles specifically designed to optimise performance.
Thanks to its conformation, the MORE BELT system, unlike conventional radiant systems, does not require special machines dehumidification and specific temperature control equipment. Summer dehumidification is perfor-med by the system itself, through surface condensation of humid air in contact with the metal profiles, whose shape enables and optimises this effect in addition to promoting heat conduction. The profiles are fastened together with polymer brackets equipped with lower sleds to support the condensate collection and drain duct.
A sliding sled is assambled with the system to quickly set the gradient of the condensate drain. The profiles are connected to the heat tranfer circuit, derived from the main manifold, through specific nickel-plated brass 4-way manifolds. The profiles are installed around the perimeter, onthe wall and near the soffit floor slab, in the quantities and lengths required to cover the heating requirments of the room. It is advisable to provide the soffit flor slab with suitable heat insulation, in order to reduce any heat despersion of the system upwards. In the case of ceiling installation, the system is equipped with a special plastic finishing casing.
In the case of false cailing installation, the closing plasterboard layer must be fitted at a predeterminated maximum distance from both the suspended floor anthe MORE BELT system, and a 2 to 3 cm slot be provided along the whole perimeter where the system is indtalled in order to enable operationas a result of the Coanda effect.
The system is 186 mm high and 34 mm thick. The overall dimensions will also result, among other things, from the thickness of the soffit floor slab insulation, and from the positioning of any plasterboard plate with respect to the radiant profile.

The system consists of:

• **Kit with 4 radiant profiles 37500400.** Kit consisting of 4 radiant wing-shaped tube profiles with internal diameter 14 mm, 3500 mm long, made of extruded EN AW 6060aluminium with black Enox galvanic treatment.
• **M/M Fitting 37531200.** Polymer M/M quick coupling Ø14x3 mm with double external sealing O-ring for joining several radiant profiles toghether.
• **M/F Fitting 37531210.** Polymer M/F quick coupoling with double external sealing O-ring to enable the quick coupling of M/M fittings when con-necting several radiant profiles together.
• **RH 4-way manifold 37510400.** RH 4-way manifold made of nickel-plated brass with 1/2" M; it is used as a delivery or return manifold of the system.
• **LH 4-way manifold 37510410.** LH 4-way manifold made of nickel-plated brass with 1/2" M; it is used as a delivery or return manifold of the system.
• **Insulation for RH 4-way manifold 37520400.** Thermal insulation for RH 4-way manifold consisting of expanded polyethylene half shells with external anti-scratch coating.
• **Insulation for LH 4-way manifold SX 37520410.** Thermal insulation for LH 4-way manifold consisting of expanded polyethylene half shells with external anti-scratch coating.
• **Kit with condensate collecting ducts 37560400.**
The condensate collecting duct is used to convey the condensate naturally falling from the extruded profiles and drain it through a preset slope. PVC material, length 4000 mm. This detail is only necessary when the system is designed for operation in summer cooling mode as well.
• **Duct intermediate sleeve 37620000.**
Black polymer PA66-25% FV V0 sleeve for joining condensate ducts, with gaskets for duct sealing.
• **Duct plug and gasket 37620010.**
Black polymer PA66-25% FV V0 condensate collection duct plug.
• **Condensate collection duct multifuntional fitting and gaskets 37620020.** Black polymer PA66-25% FV V0 multifunctional fitting. By appropriately remuving the internal bulkheads, it can be used as an angle or as a connector between the duct and the wall-mounted drain.
• **Aesthetic cover 37570400.** White ABS V0 cover that can be painted on site, 4000 mm long, to be used in ceiling installation (no false ceiling).
• **Straight joint for ceiling casing 37630000.** White ABS V straight joint for aesthetic casing + additive for UV stabilisation.
• **Internal angle joint for ceiling casing 37630010.** White ABS V internal angle for joining casing profiles, aesthetic design + additive for UV stabilisation.
• **External angle joint for ceiling casing 37630020.** White ABS V external angle for joining casing profiles, aesthetic design + additive for UV stabilisation.
• **Wall support kit (bracket and support) 37640000.**
Kit with wal bracket (173 mm x 40 mm) made of natural PA6-20% FV V2; it is used to fasten the system to the wall and contain 4 radiant profiles while spacing them out at the same distance frome each other, in addition to providing faste-ning for any condensate drain duct and adjusting its rate.
• **Perimeter strip 37540002.** Adhesive polyethylene perimeter strip (130 mm x 3 mm x 20 m); it is used to prevent heat from being dispersed and applied between the wall and the wall support brackets.

RBM spa reserves the right to improve and change the products described and relevant technical data at any moment and without prior notice. The information and pictures contained in this document are intended for information purposes only, are not binding and do not exempt the user in any case from strictly following the regulations in force and good practice standards.

RBM MORE
Milano
Via Solferino, 15
20121 Milano (MI) Italy
T. +39 0249631136

Brescia
Via Industriale, 12/14
25075 Nave (BS) Italy
T. + 39 0300984315

info@rbmmore.com
rbmmore.com

RBM S.p.A.
Via S. Giuseppe, 1
25075 Nave (BS) Italy
P.IVA 00551250988