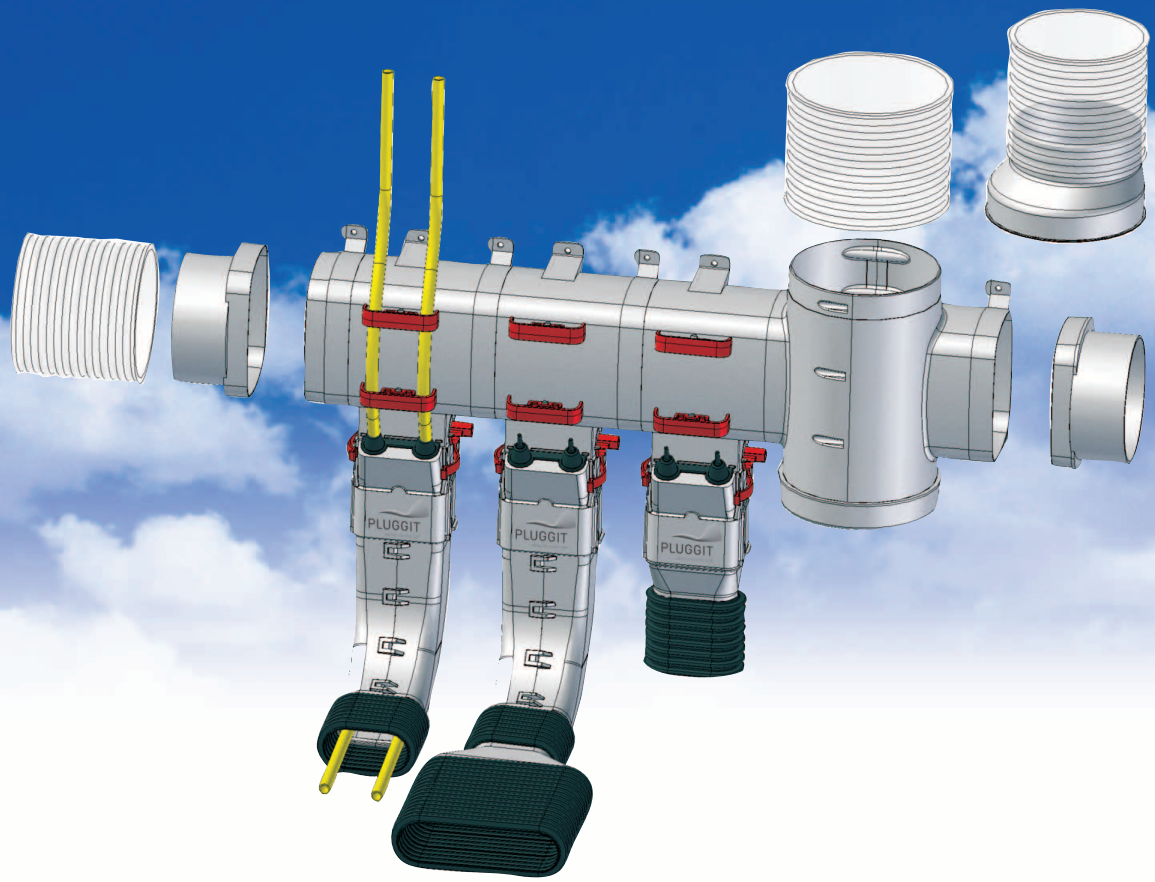
Installation and Operating Manual

Pluggit 2Q-Fresh Air System



Installation and operation – easy and reliable

- Modular system with push-fit connections
- Central air volume control of fresh air supply and exhaust air
- Cleanable

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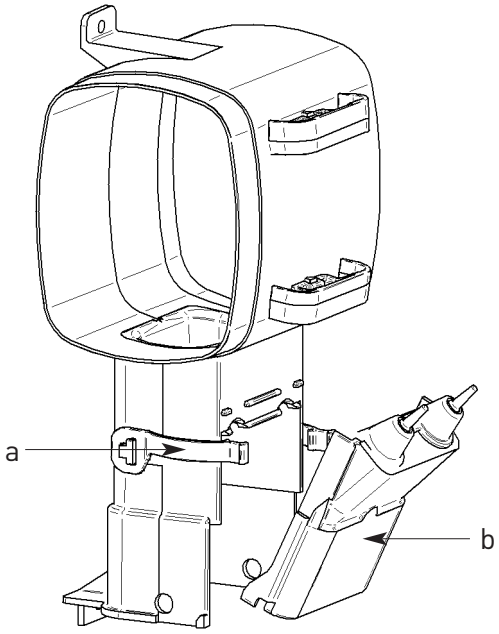
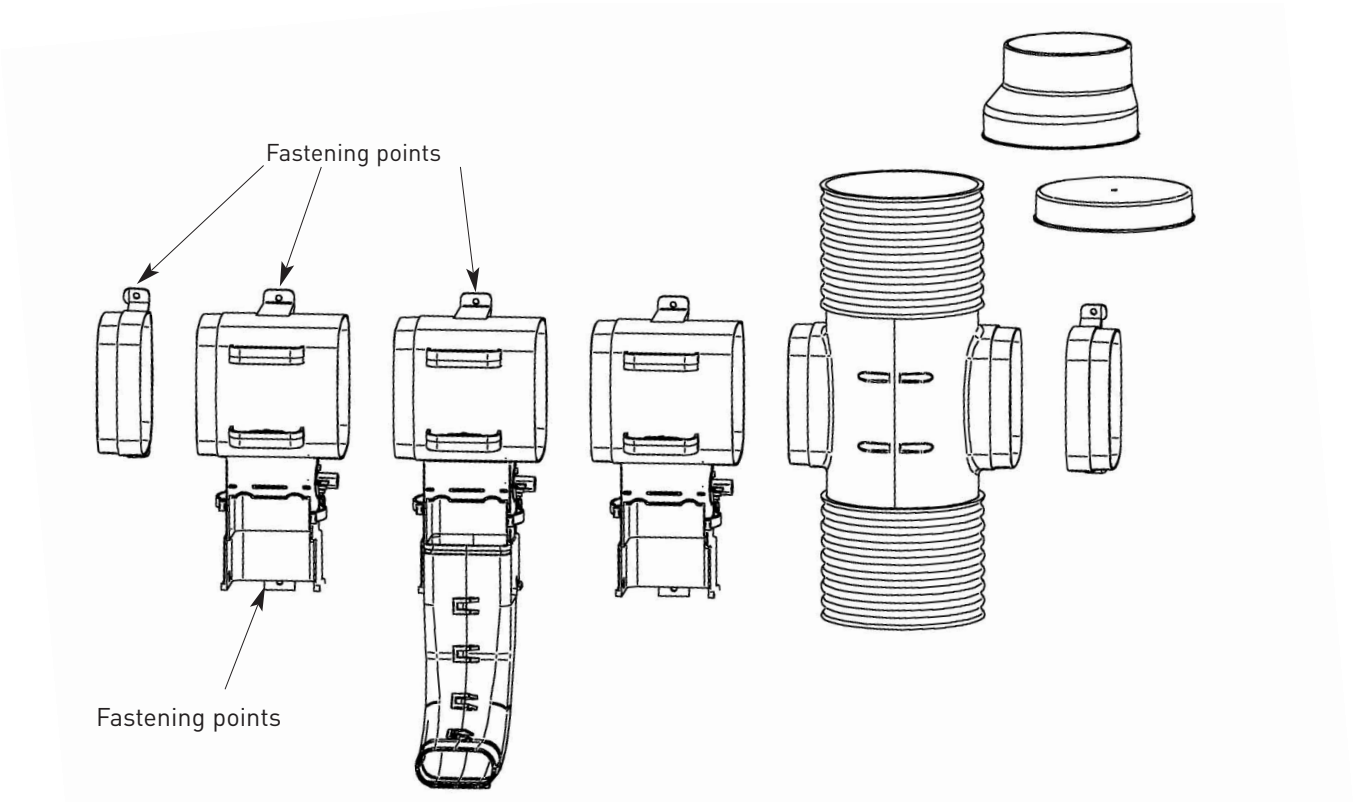
1. Release the two lateral clamping springs (a) located on the top half of the sub-distributor VT510 or VT520

2. Remove the sealing flap (b) as depicted in the graphic.

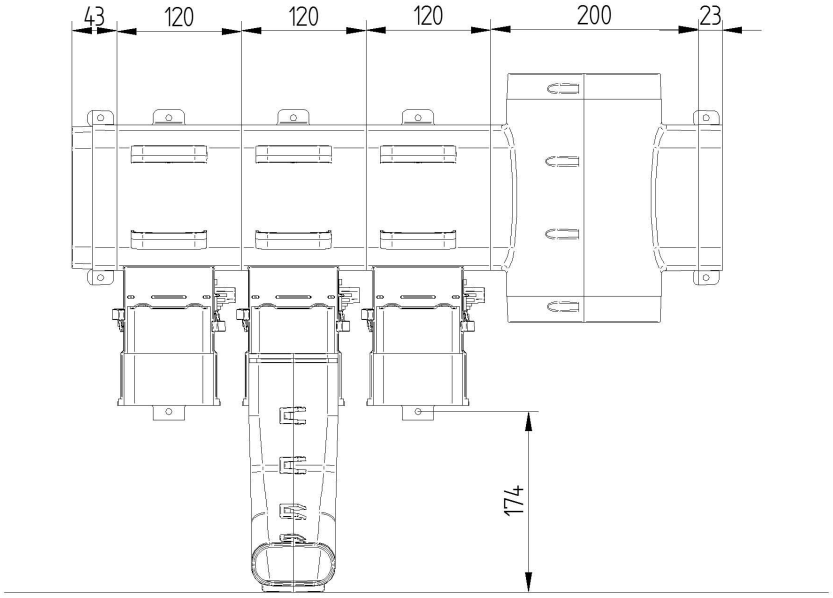
3. Fit together the required number of sub-distributors. The main distributor (junction) can be positioned to the left, right or in the middle.

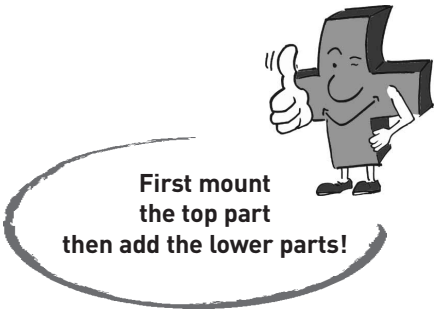
4. The connection components (angled or straight outlets) are mounted later on, as they would cover the lower fastening fixtures of the distributor.



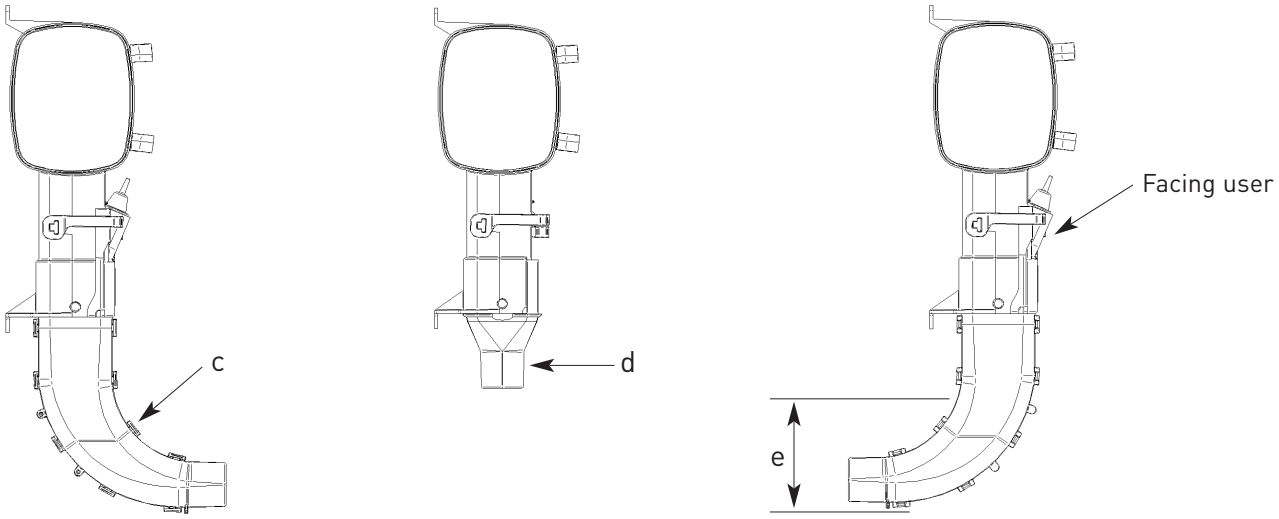


5. Mount the distributor block onto the wall or in the Pluggit distribution cabinet as depicted in the graphic. If you are not using a Pluggit distribution cabinet, draw the lower line for the mounting holes 174 mm above the unfinished floor. Alternatively, you can use a sub-distributor bend to gauge the height. Mark the mounting holes and mount the distributor block.

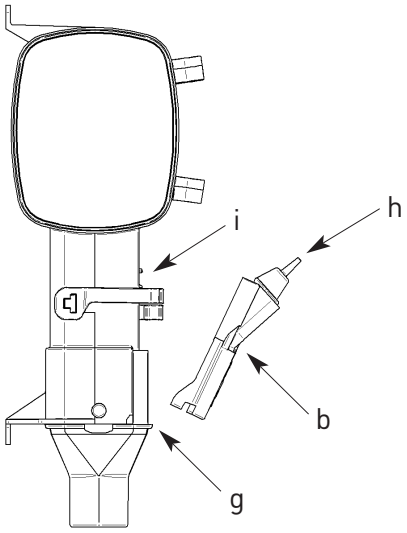


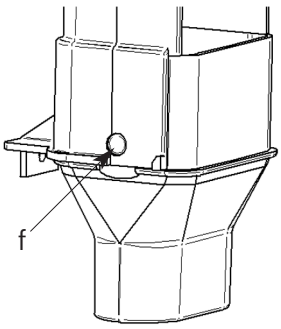


6. Push the connecting bend (c) or the straight outlet channel into the sub-distributor (the bend can be inserted facing forwards or turned 180° to face in the opposite direction). Replace the sealing flap. Please ensure that the sealing flap is always fitted facing towards the user and remember that it must remain accessible at all times.
When routing channels to the rear ensure there is an 80 mm high opening in the wall (e).

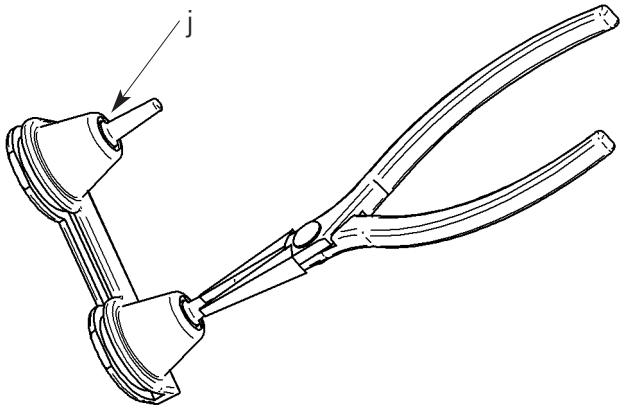


7. The anchor point (f) must engage when fitting the sub-distributor bends and straight outlets. Ensure when fitting the sealing flap (b) that the flap engages with the lower projections (g) and that the rubber pipe packing (h) is seated in groove (i) as intended.

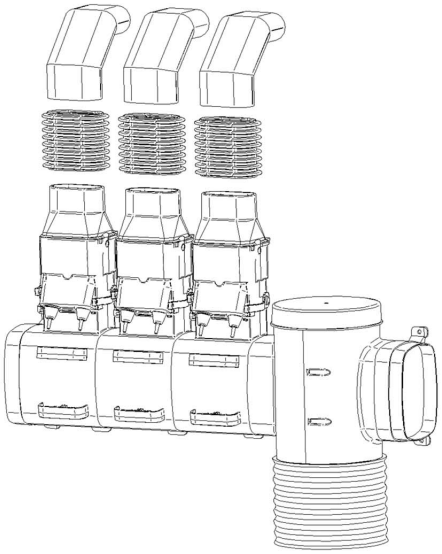




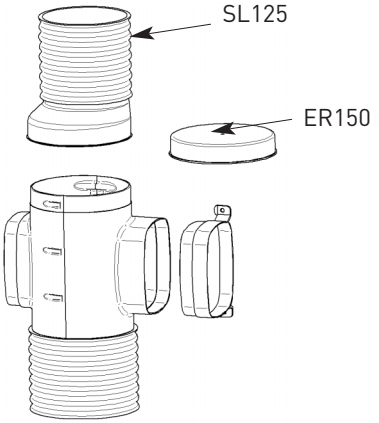
8. If the system is to be installed together with PluggMar air-warming elements or if other heating pipes are to be routed through the PluggFlex channel we recommend that you pierce the sealing groove (j) with a sharp instrument.
Then remove the rubber spigot by hand or using a pair of pliers.
The resulting hole is sufficient to pass through pipes with diameters ranging from 10-16 mm.
The heating distributor is positioned 20-30 cm above this or below if the air distributor is facing the other way.
12-14 mm PEX heating tubes can be connected with the fresh air supply system from both sides (distributor or floor box). Generally speaking the tubing is inserted before the channel bend is introduced and secured. It can prove practical to use tube grips when heating tubes made from other materials such as composite tubes are used.

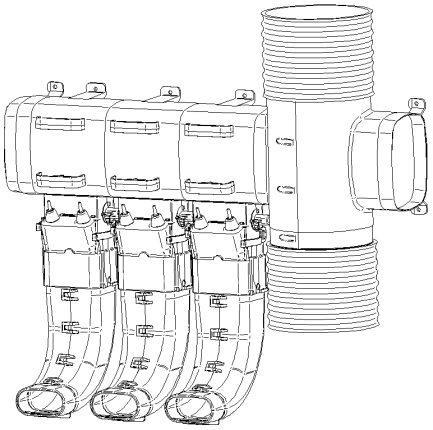


9. We recommend connecting the sub-distributor to the rising ducting DN150 via a main distributor.
When connecting, the air channels can also be fed from underneath through the ceiling (top graphic). For this purpose the straight distributor module VT520 is used in conjunction with a bend BO090 on top. Without this bend it would not be possible to achieve the minimum specified bend radius for the PluggFlex channel.

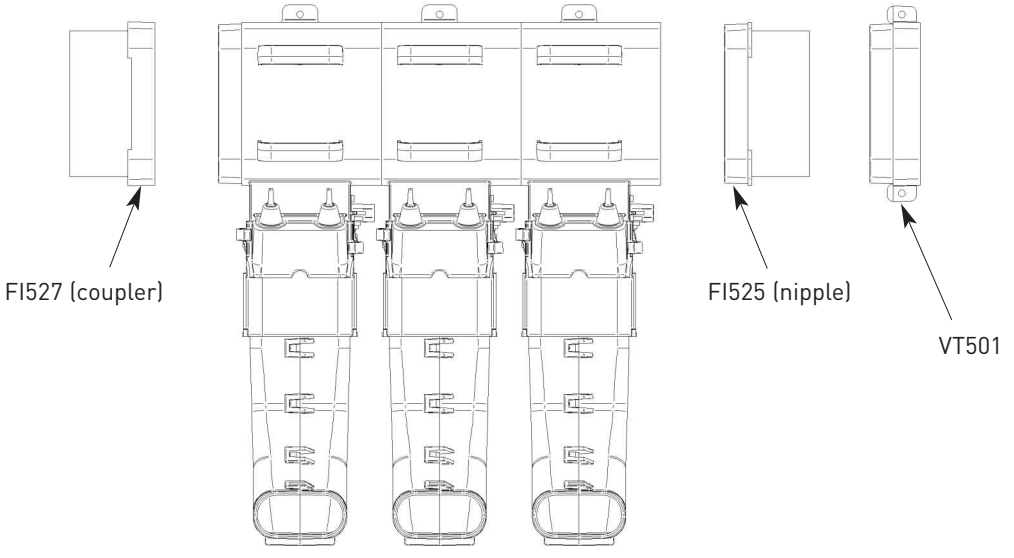


10. When required it is possible to connect the rising ducting DN125 using the reducer ER150.
Please observe the max. volume flow rate of 150 m^3/h.

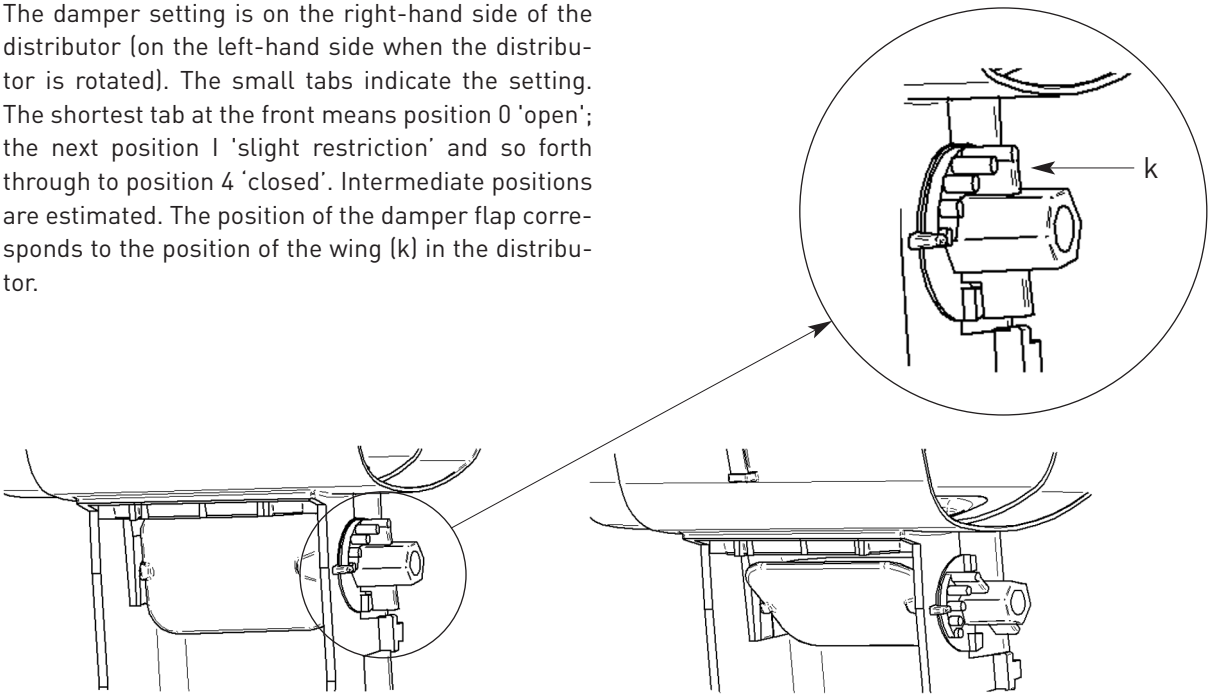




11. For volume flow rates up to max. 100 m^3/h the hose SL125 can be connected directly into the side of the distributor. For this purpose the connecting nipple FI525 is used on the right-hand side and the coupler FI527 on the left-hand side. Please note when installing rotated 180° (connections facing upwards) this is reversed with the nipple on the left and the coupler on the right. The blanking cap VT501 can be fitted to both sides.



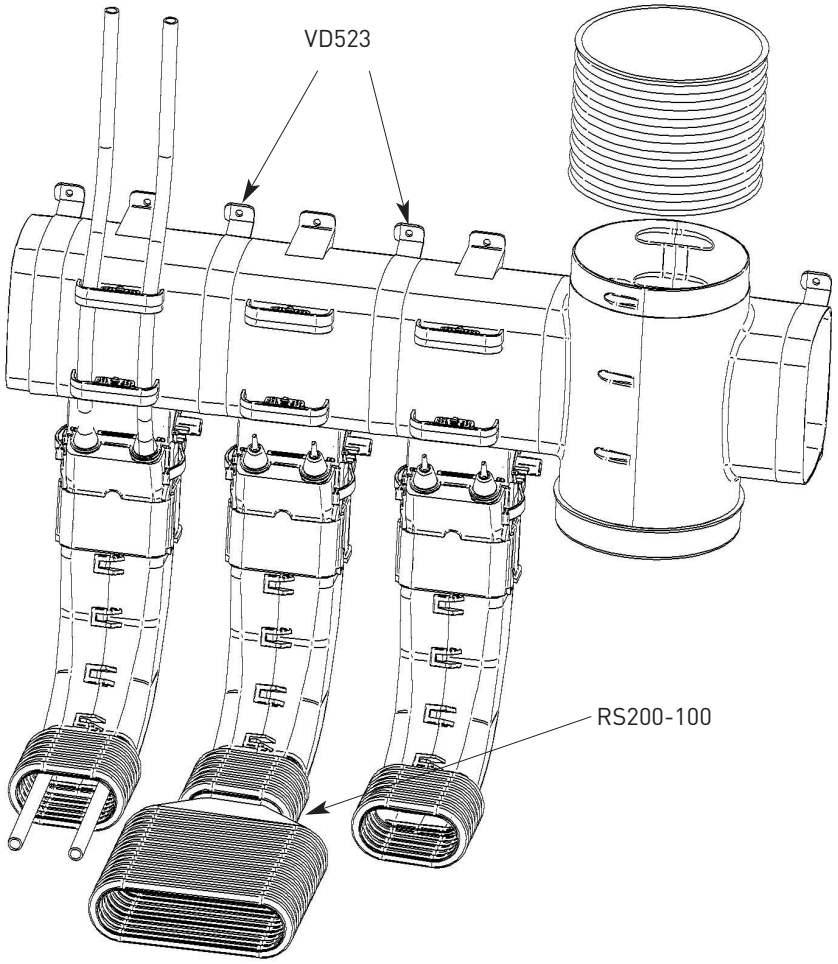
12. The damper setting is on the right-hand side of the distributor (on the left-hand side when the distributor is rotated). The small tabs indicate the setting. The shortest tab at the front means position 0 'open'; the next position I 'slight restriction' and so forth through to position 4 'closed'. Intermediate positions are estimated. The position of the damper flap corresponds to the position of the wing (k) in the distributor.



Damper flap position = open

Damper position = position 2

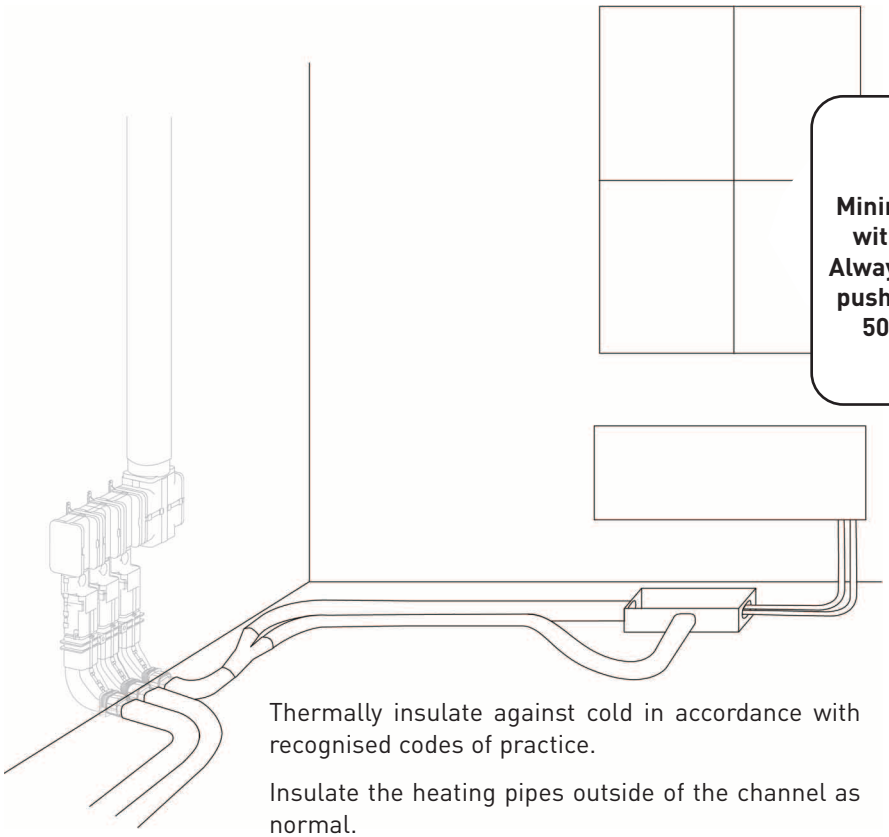
13. Utilizing the the RS200-100 reducer enables the PluggFlex channel PK200 to be connected to a sub-distributor. If this is to be installed close to the distributor then use two 23 mm VD523 spacers to increase the distance between the two distributors.



14. The Pluggit basic system

Tips for installing channels:

Minimum 5 metre lengths. Secure channels with KS100 clamps or perforated straps. Always secure at bends, before and after the push-fit connections. Minimum bend radius 50 cm; for smaller radii use preformed components.



Thermally insulate against cold in accordance with recognised codes of practice.

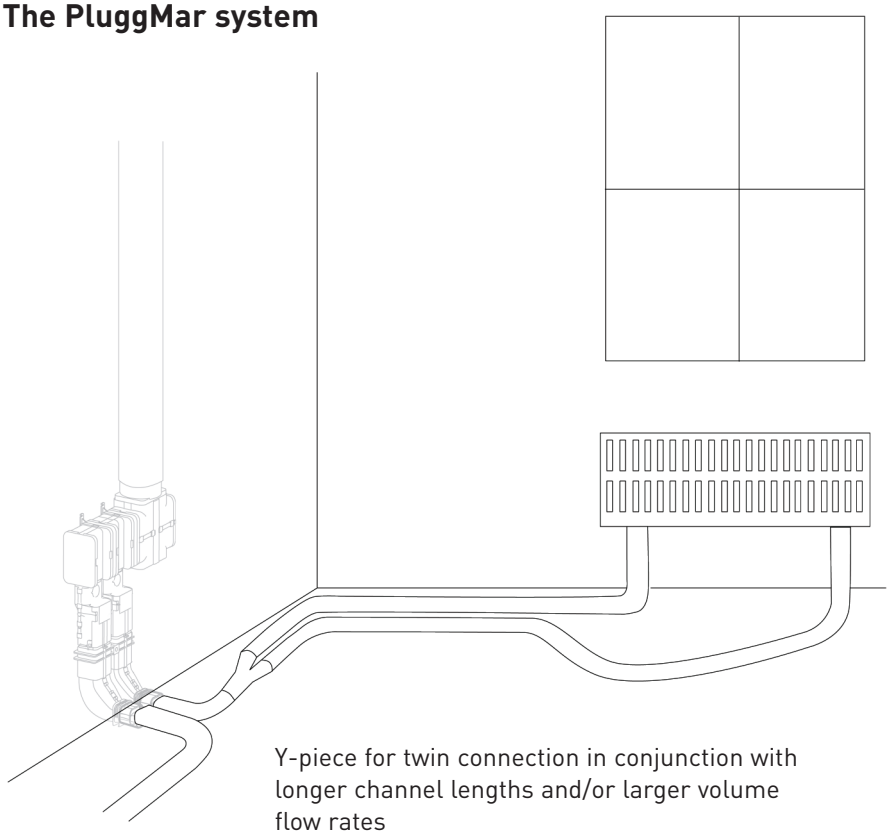
Insulate the heating pipes outside of the channel as normal.

Protect the heating pipes in the floor box against UV radiation.

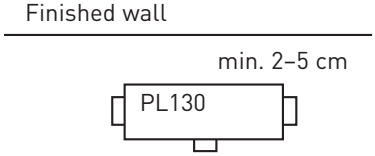
Important:
When installing please note the exact length of each individual line of supply air ducting and label each sub-distributor

1. with the length and type of supply air ducting
2. to which room it is allocated
3. with the number of 90° bends (list on page 16)

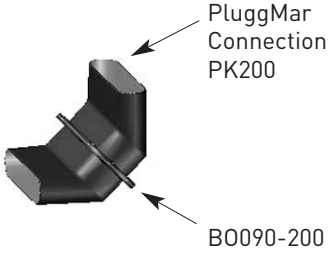
The PluggMar system



Y-piece for twin connection in conjunction with longer channel lengths and/or larger volume flow rates



Please note that if floors adjoin cold construction elements the insulation must be laid below channels and outlet. The clearance between the lower edge of the outlet to the finished floor should not exceed 12.5 cm (screw length). The package set PL130 contains more information on installation.

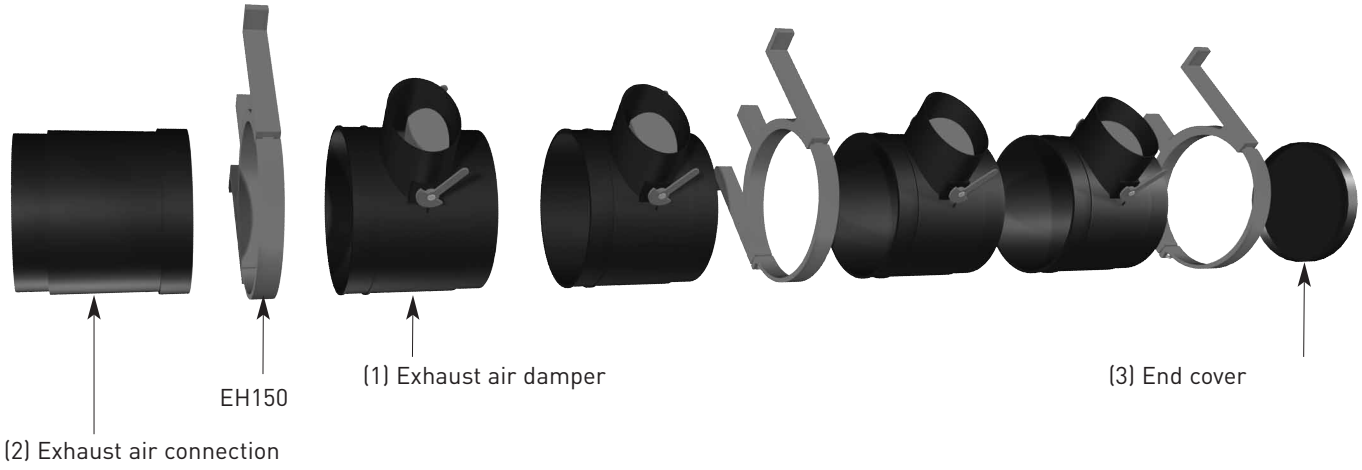


15. The exhaust air system

Exhaust-air filter inlets are installed in wet rooms (for example bathrooms, kitchens, WC) and, if required, in changing rooms and entrance halls. Ensure when fitting the exhaust-air filter inlet in the kitchen that it is at least two meters away from the oven.

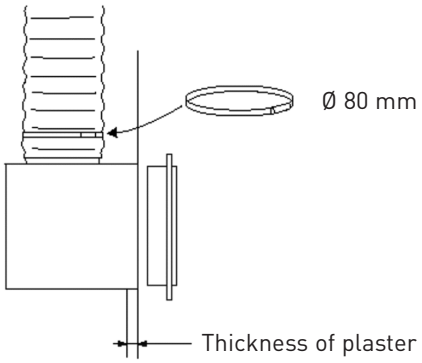
Installing the distributor:
The individual components are designed with push-fit connections for simple installation. You can use the lateral mold parting line for guidance when twisting the pipe connections. The arrows on the sides indicate the direction of the exhaust air flow; meaning they point towards the ventilation unit. The pipe connected to the exhaust air connection (2) must be secured with a bracket.

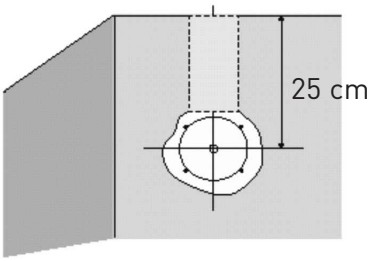
The arrows on the damper flaps point in the direction of flow; meaning towards the ventilation unit!



Please note:
All openings in the system must be closed before commencing with the commissioning procedure. Therefore, you should leave the plaster blanking caps in the elbow!
Otherwise, an unwanted thermal circulation could result. This can lead to the build up of condensation and in turn to hygiene and electrical problems with the system.

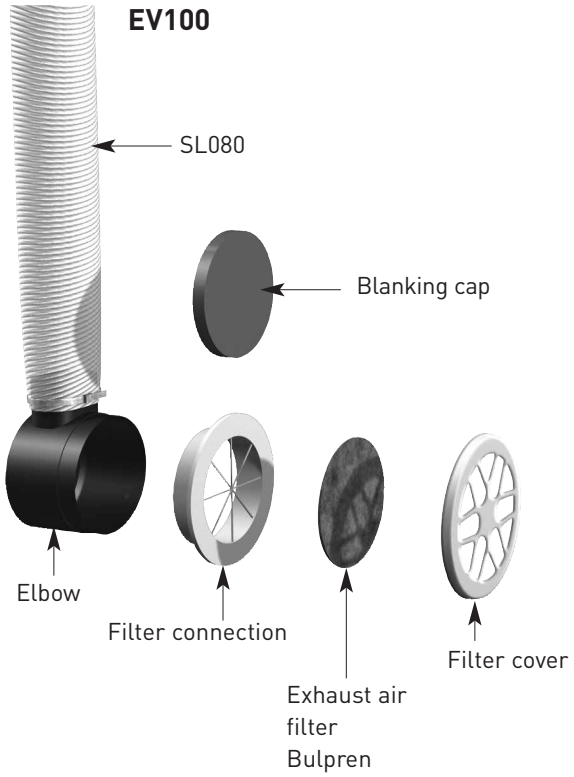
Elbows:
Ensure that the front edge of the elbow is mounted flush with the front side of the plasterboard (or the finished plaster).
When built into the wall the standard solution (EV100) is suitable for all wet rooms requiring an exhaust air volume flow rate of between 5 and 60 m^3/h.

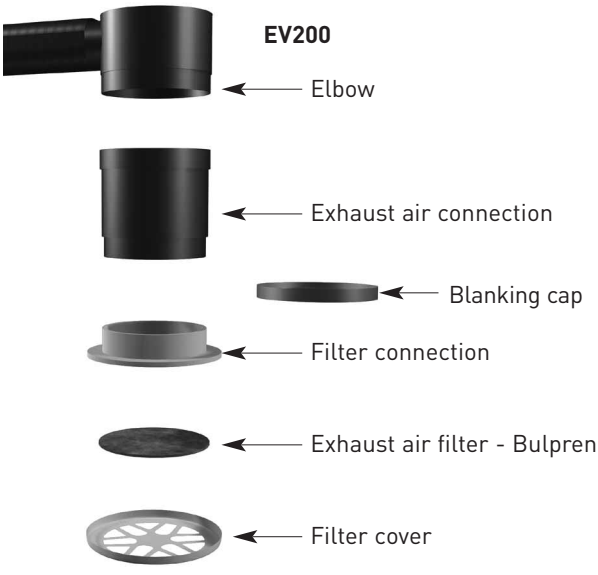




Fixing with screws (dry lining) or quick hardener (masonry wall construction)

Special solution – ceiling (EV200):
The recessed ventilation duct is suitable for exhaust volume flow rates from 5-30m^3/h, for example in changing rooms, entrance halls and so forth when it is not possible to route the PluggFlex hose duct SL080 in the wall.
The elbow can be extended with the exhaust air connection EA150 as often as required. Several connections and extension pieces can be fitted one after the other for this purpose. The connection adapter can also be shortened as needed to the required measurement. The exhaust air inlet with filter is suitable for any height.





Important:
When installing please note the exact length of each individual line of exhaust air ducting and label the distributor at each exhaust air damper.
1. with the length of each exhaust air line
2. to which room it is allocated and
3. the number of 90° bends (list on page 16)

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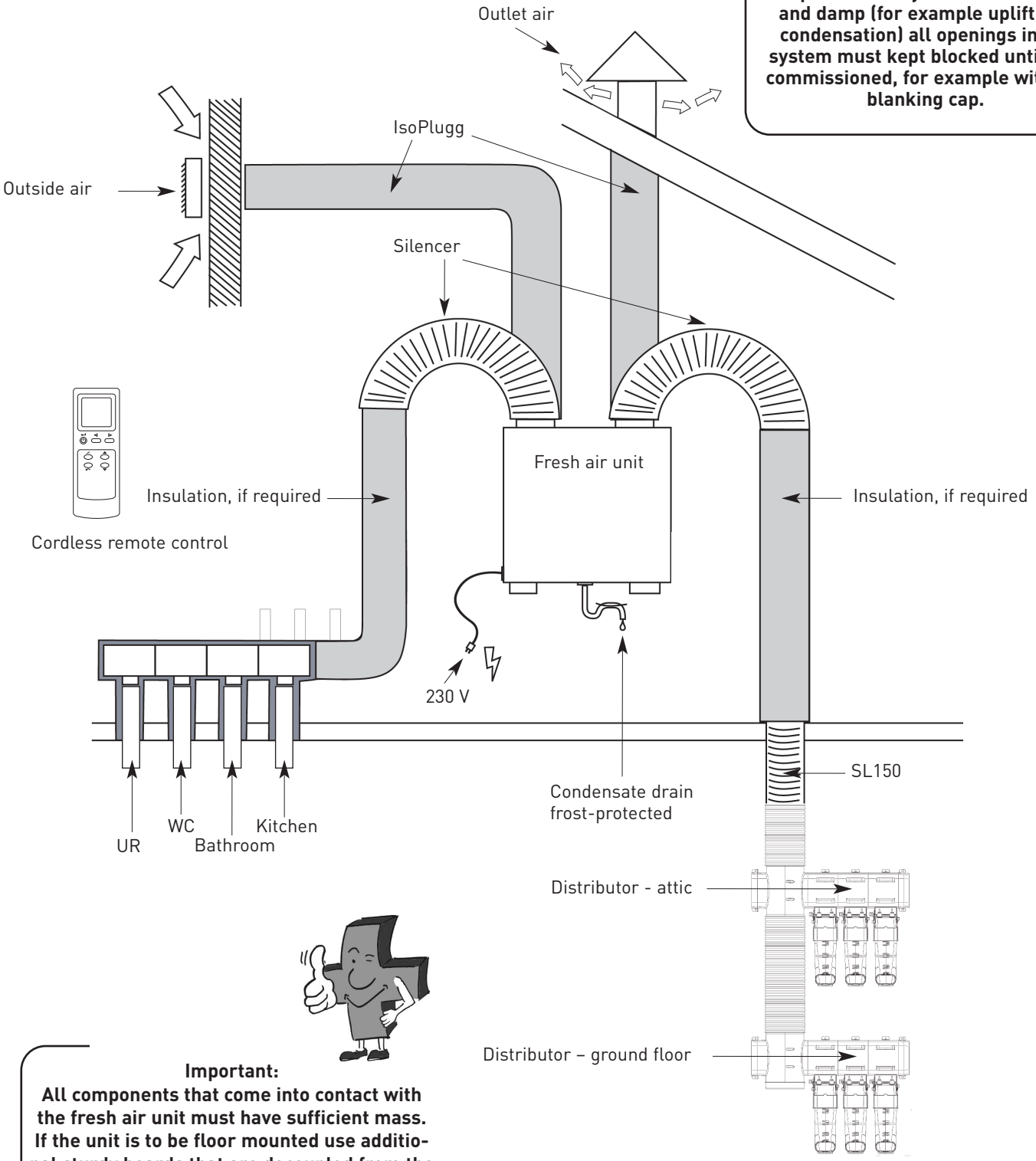
16. Mounting the ventilation unit

Important:
To protect the system from soiling and damp (for example uplift and condensation) all openings in the system must kept blocked until it is commissioned, for example with the blanking cap.



Important:
All components that come into contact with the fresh air unit must have sufficient mass. If the unit is to be floor mounted use additional sturdy boards that are decoupled from the floor by means of sound proofing mats.

Please observe the mounting instructions for the fresh air unit.

17. Condensate connections

Ensure that the condensate hose has no direct access to the surrounding air or to the waste water system. This is achieved by means of a water trap in the hose (Fig. 1) or by means of a water trap in a siphon into which the hose is inserted (Fig. 3). Please also refer to the Installation Manual for the fresh air unit. There are units available with an integrated siphon.

Air will be sucked in if the hose is open to the surroundings. The inflow of air can prevent condensate from draining away. Avoid using a double S-trap arrangement or routing in the form of a wave (crossed out in Fig. 1).

Ensure the minimum vertical clearance h = 10 cm is maintained between the water trap and the device.

A double S-trap arrangement (crossed out in Fig. 1) prevents drainage.

Units with two condensate connections require a siphon for each connection or each of the condensate hoses must be routed separately to the water trap.

Ensure the entire condensate drainage system is frost proof.

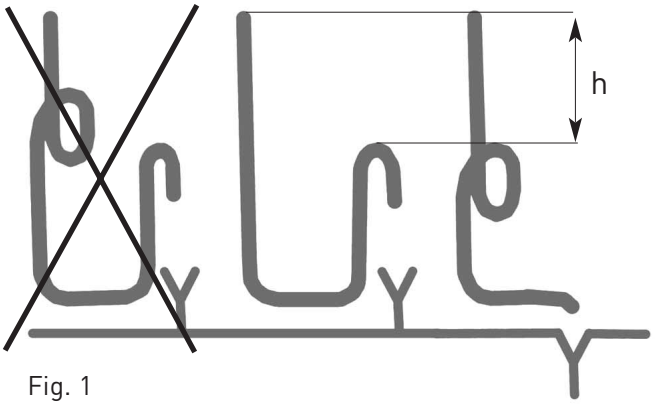


Fig. 1

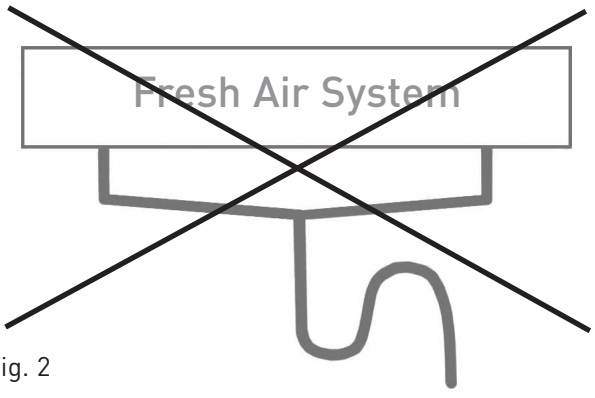


Fig. 2

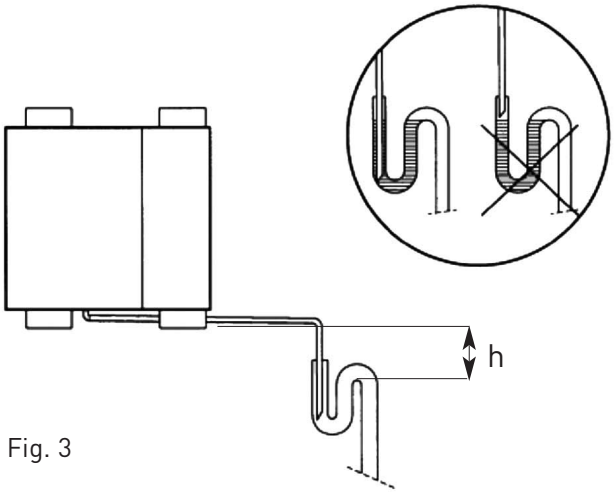


Fig. 3

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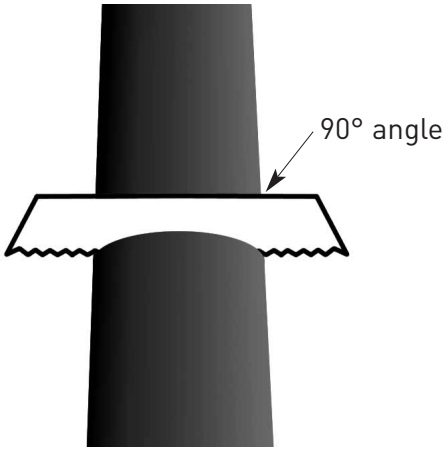
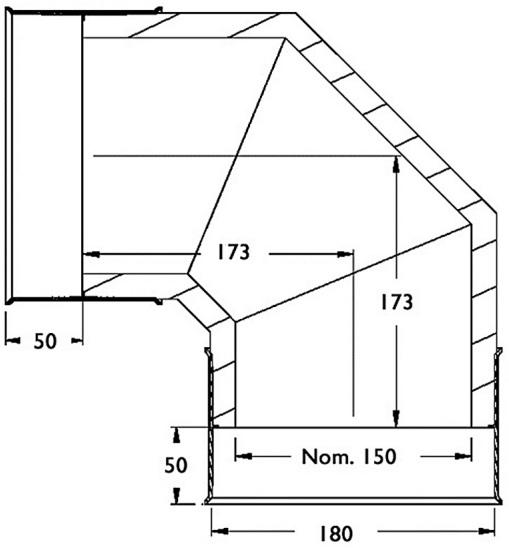
18. IsoPlugg insulated duct pipe

The individual IsoPlugg duct pipes are designed with push-fit connections for simple installation. Ensure when cutting the pipes to size that you make a straight cut exactly at right-angles to the axis. A fixing clamp, for example, can be used to help in cutting a straight edge. The duct pipes must be fitted together properly and secured to the wall approx. every two metres, and at the very least always before and after a bend is intalled. For this purpose the fixing clamp IPBS2 can be screwed directly to the wall or a commercially available DN180 clamp used. Joints should be secured with duct tape or better with self-adhesive strips of insulation (additional condensate protection at the joint).



Cutting angle on IsoPlugg insulated duct pipe

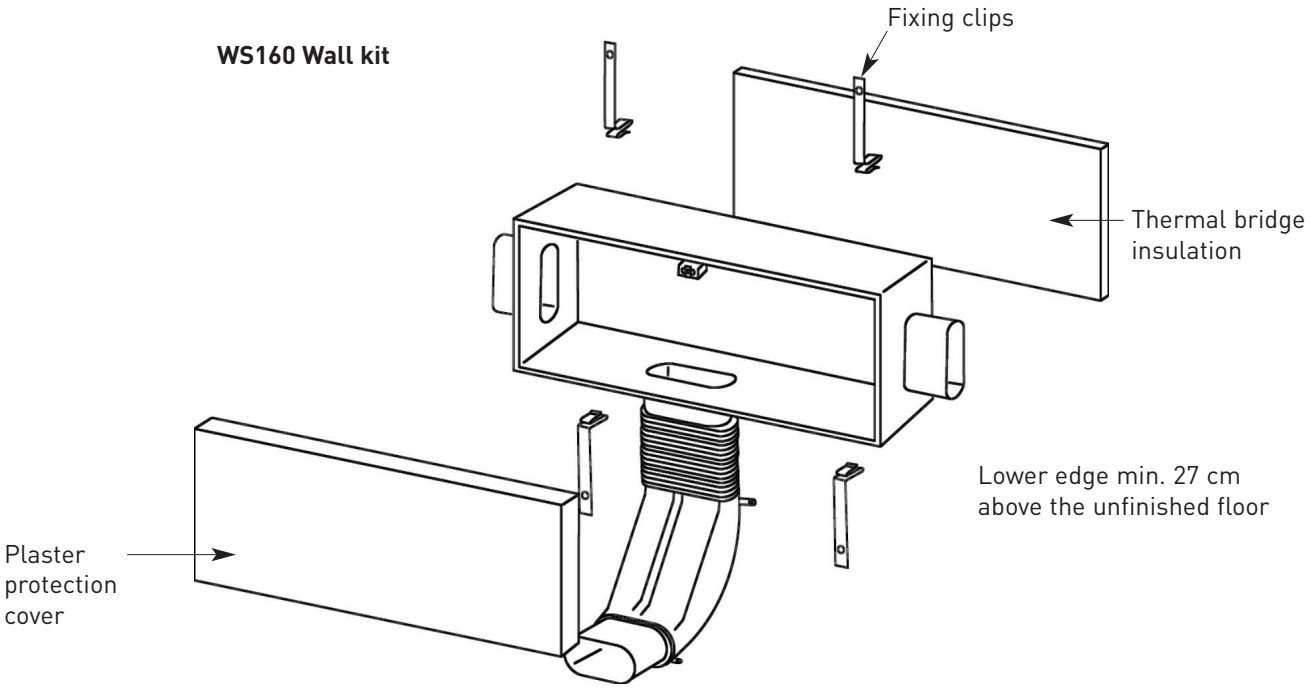


IPB07 90°bend

IPBS2 fixing clamp

19. More parts for special solutions

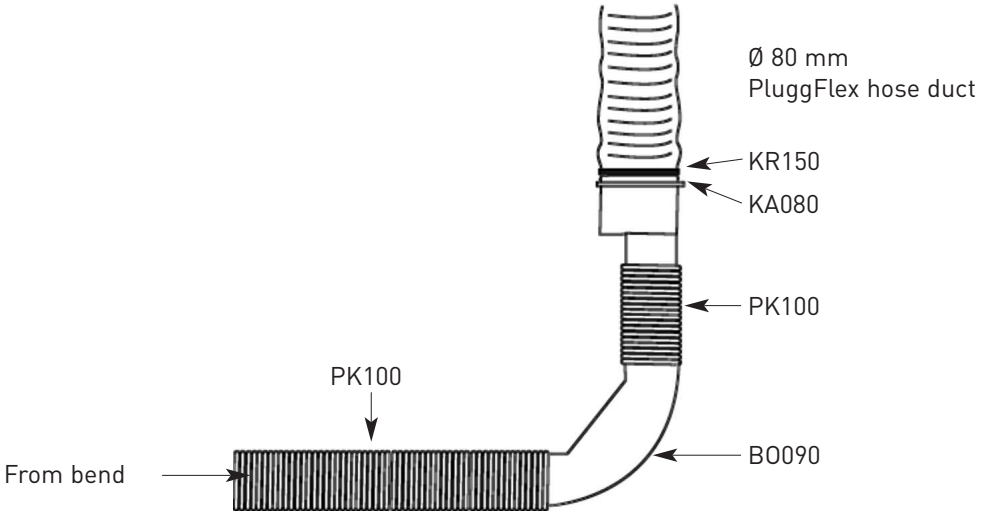
WS160 Wall kit



Important:
Fill the joints with gypsum mortar.
Ensure a diffusion barrier is included with dry lining solutions.

To simplify mounting use the fixing clips (4 pcs).

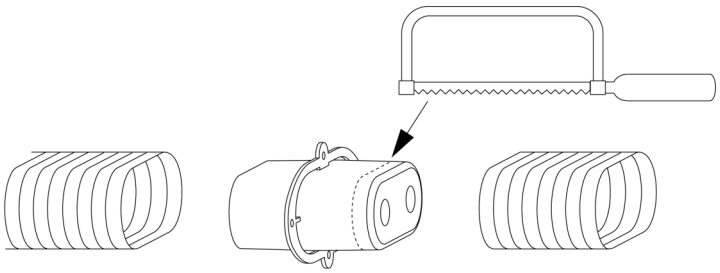
Special solution for exhaust air with low volume flow rates



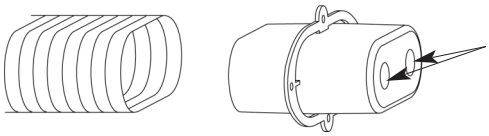
19. More parts for special solutions

UA100 Universal adapter

...as an adapter between channels:

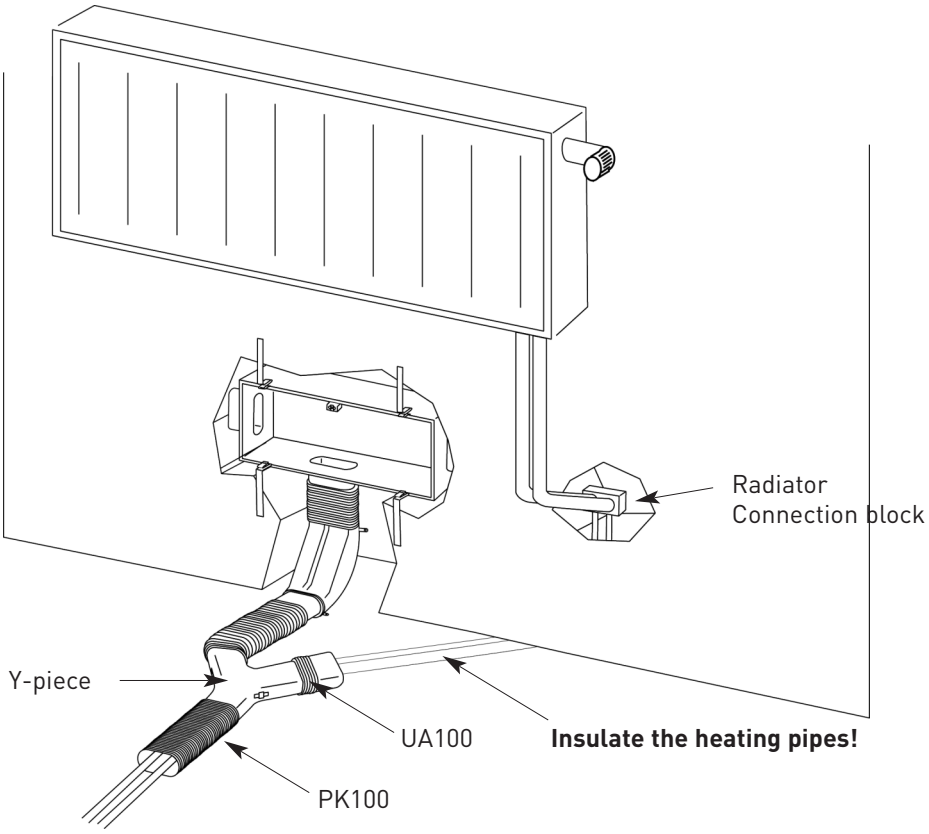


... as protective cover:



Please note:
Fix the channel to the floor before and after the connecting joint.

Integrating a conventional radiator into the Pluggit system



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Construction project _____ Project No.: _____

Specialist company _____ Fresh air unit ☐ P180 ☐ P300 ☐ P450

Fresh air supply

Calculated air volume _____ m³/h

Suction via ☐ AG ☐ DH ☐ EWT

	PluggFlex hose duct incl. silencer		
	SL180	SL150	SL125
Suction grilles through to ventilation unit			
From ventilation unit to 1st distributor VT1			
1. From distributor to 2nd distributor VT2			
2. From distributor to last distributor VT3			

Room designation	Distributor	Total length vert. to outlet	Length of distributor to Y-piece	Length of distributor to PK200	Pipes
Room type	VT1/VT	m	m	m	0/2

Exhaust air

Calculated air volume _____ m³/h

Outlet air ☐ AG ☐ DH

	PluggFlex hose duct incl. silencer		
	SL180	SL150	SL125
From ventilation unit to outlet air grille			
From ventilation unit to 1st collector S1			
1. From collector to 2nd collector S2			

Room designation	Collector	Length SL80	Length PK100	Length PK200	Adapter KA080	Bends SL080
Room type	S1/S2	m	0 ----- 5	m	Item	Item

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Technician		Name/address of specialist company (stamp)
Site manager/team leader		
Date of installation		
Location (construction project)	Name	
	Street	
	Post code/town	
	Telephone	

		Remarks	OK	Not OK
Ventilation unit is noise decoupled (air and structure borne) and mounted in an accessible location				
Condensate drain properly installed above wastewater line. DN 40 and siphon installed frost-proof				
Ventilation unit set (DIP switches or measurement*)		Level 1: m^3/h Level 2: m^3/h Level 3: m^3/h		
Damper setting		**Fresh air supply**		
	Living room 1			
	Living room 2			
	Dining room			
	Bedroom			
	Child 1			
	Child 2			
	Guest			
	Office			
Damper setting		**Exhaust air**		
	Kitchen			
	Bathroom			
	WC			
	UR			
	Gallery/entrance			

	Remarks	OK	Not OK
Electrical installation checked and tested			
Outside wall grill and filter clean, roof cover secure			
Ducting secure OSA/OA ducting insulated vapour tight; SA/EA ducting thermally insulated, if necessary			
Supply air distributor checked, sealed and, if necessary, soundproofed			
Supply air outlets checked and clean			
Dimensions, lengths and routing as plans			
Exhaust air valves checked			
Instructed customer			
Pointed out ventilation openings			
Handed over documentation			

* * The windows and doors must be closed throughout the house when measurements are taken.

Remarks

Customer requests maintenance contract

The system has been fully installed and tested; however, the system should only be put into permanent operation after all other building work has been completed so that no excessive amounts of soiling or dust are to be feared. The system has been commissioned and handed over in perfect working order, without any reservations.

Date _____ Signature of technician _____ Signature of client _____

This is also the guarantee card

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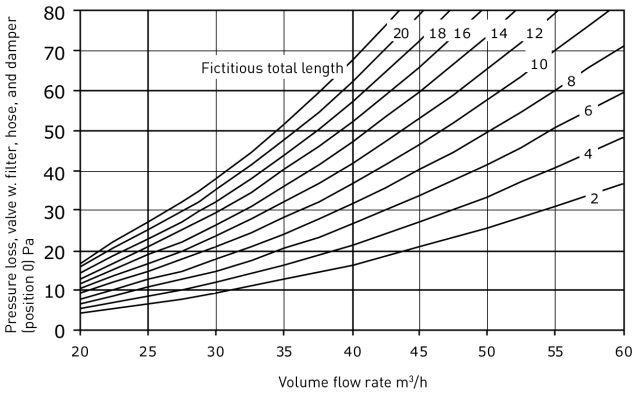
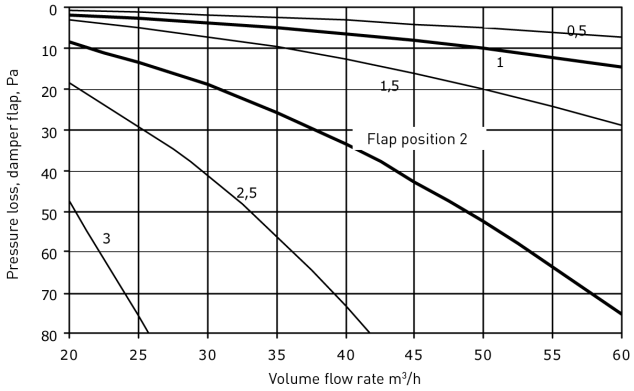
In the diagram opposite determine the fictitious hose length SL080 between intake suction and exhaust air collector. The number of bends and lengths in the PluggFlex channel PK100 are multiplied by 2 m. 1 m is calculated for bends BO090 and bends with a bend radius greater than 40 cm. The minimum permissible bend radius is 10 cm.

Enter the desired volume flow rates and determine the intersecting point with the fictitious hose lengths on the horizontal line and follow the line to the left. Read the pressure loss of the duct. Calculate the highest permissible pressure loss p_{max}.

Determine the pressure difference between pmax and the pressure loss of the respective hose duct (taken from the diagram above).
This pressure difference must be balanced by the damper flap. Enter this pressure and the desired volume flow rate in the lower diagram. Read the setting for the damper flap at the intersecting point. A more detailed calculation is required in special cases.





Room	Length SL080	Length PK100	90° bends	Total	Volume flow rate	Pressure loss	P_{max} – P	Damper flap position
A _____		___*2 = ___	___*2 = ___					
B _____		___*2 = ___	___*2 = ___					
C _____		___*2 = ___	___*2 = ___					
D _____		___*2 = ___	___*2 = ___					
E _____		___*2 = ___	___*2 = ___					
F _____		___*2 = ___	___*2 = ___					
G _____		___*2 = ___	___*2 = ___					

BIA System engl./V01 08.2008

The technology makes the difference.

2Q

By laying the concealing ventilation in the floor and through ideal placing of the air outlets, a perfectly aligned cross-ventilation is created. Displacement ventilation means that fresh air is transported into the room, without the risk of draughts, without any annoying noises, and without any pressure, and during the cold months, pre-heated.

allfloor

allfloor – in ceilings, walls, above or beneath concrete and screed – the system concept from Pluggit offers maximum flexibility when installing ventilation ducts and therefore is as ideal for use in new buildings as it is in building renovations.

ServoFlow

This innovative technology facilitates the supply of exactly the required or desired amount of fresh air through a highly sensitive sensor and control. After installation, the system can be set at a push of a button to the system characteristics, to save time and money, and recalibrates itself automatically at regular intervals.

EE

Energy efficiency – a high degree of heat recovery alone makes a ventilation system appear high-performing and energy-efficient only superficially. Instead, what is important for the assessment is the ratio of energy used to the degree of heat recovery achieved – called the electrical energy efficiency. As a result of the high density, a consumption-optimised device-design and the latest heat exchanger technology, our ventilation systems achieve excellent values in terms of heat recovery and energy efficiency.

CleanSafe

The principle of CleanSafe guarantees an almost impossible potential for dirt in our distribution system through technically smooth surfaces and, additionally, a problem-free cleaning concept, the convincing results of which have been confirmed by an independent testing institute.

Please download the current texts for invitation to tender in the format data norm, excel or text from our homepage **www.pluggit.com** or request them at **info@pluggit.com**!

Do you love fresh air? For more information about the company, the intelligent technology of the Pluggit 2Q-Fresh Air Systems, references and distribution partners, go to **www.pluggit.com** or for dialogue go to **www.lueftungsblog.de**

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Pluggit GmbH | Wamslerstraße 2 | DE-81829 München | Telefon +49 (0)89 35 77 31 - 0 | Fax +49 (0)89 35 77 31 - 79
www.pluggit.com | www.lueftungsblog.de