

LK Installation cabinet RTB & LK Installation cabinet RTB-XL

DESIGN

The LK Installation cabinet RTB is designed to be used when you wish to hide the LK Mini Loop Valve RTB. The LK Installation cabinet RTB-XL is designed to be used when you wish to hide it together with electronic room control.

The cabinet has a sealed base with rubber pipe grommets. The base of the cabinet is fitted with a drainage opening which allows any water leakage to drain to a location that can be inspected in accordance with industry practices. The cabinet is made from 1 mm powder coated steel plate, RAL 9016. The cabinet is designed to be fitted built into a wall or externally on a wall.

When built into a wall, the wall thickness must be at least 95 mm.

The cabinet is intended for right mounting, i.e. the primary shunt connection is from the right side via the cabinet base. The cabinet should be supplemented with a frame/hatch. There are two types of frame/hatch depending on whether the cabinet is built into or installed externally on an inner wall.

For external mounting, the cabinet should also be supplemented with a base to hide the pipes between the cabinet and floor.

LK Installation cabinet RTB & LK Installation cabinet RTB-XL is supplied with pipe grommets, a bellow sleeve for drainage, 1.5 metres conduit for drainage, a drainage elbow with outlet plate, cable grommets for room control, spray guard and installation instructions.

The back of the cabinet has four prefitted M8 nuts, which can be attached to the LK Cabinet Stand if you wish to install the cabinet before a concrete base is cast. The upper side of the cabinet includes knock-out holes if needed for cable grommets for room control.



LK Installation cabinet RTB.



LK Installation cabinet RTB-XL.



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LK Frame/hatch

The cabinet can be supplemented with a frame/hatch for built-in or external mounting. On delivery, the hatches are fitted with a screw-driver latch though a key latch is available as an accessory. In environments with intensive water exposure and/or chemicals, e.g. animal stables, baths or washing locations, LK offers specially made frames and hatches with greater resistance to corrosion. Contact LK for more information.

LK Frame/hatch for a built-in cabinet includes a precipitating frame to cover the hole around the cabinet. The frame covers an area of 15 mm beyond the edge of the cabinet. When the cabinet is installed externally on a wall, the LK Frame/hatch for external assembly is used, which fits edge to edge with the sides of the cabinet.



LK Frame/hatch INB for built-in mounting and LK Base


LK Base

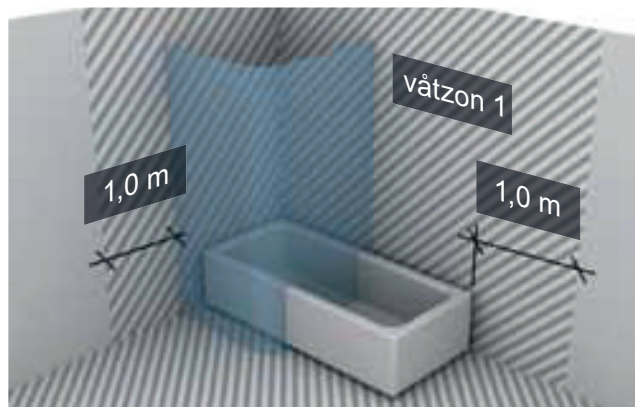
The LK Base is used when the LK Installation cabinet RTB / RTB-XL are installed externally on a wall. The LK Base hides the pipe installation between the cabinet and floor. The base can slide for heights from 220 to 280 mm. The base includes holes for installing cabinet drainage. If an alternative placement is used for cabinet drainage, the supplied cover plug can be used to hide the hole in the base.

ASSEMBLY REQUIREMENTS

Assembly in stud-frame

For installation in a wall, a minimum stud-frame thickness of 95 mm. Note the cabinet's placement depth with insulated feed pipes, see example under *Working procedure* step 4.

 In cases where the cabinet is in a wet room, the cabinet must not be placed with its opening in wet zone 1. See image below from the Swedish industry rules on Safe Water Installation for a definition of wet zone 1.



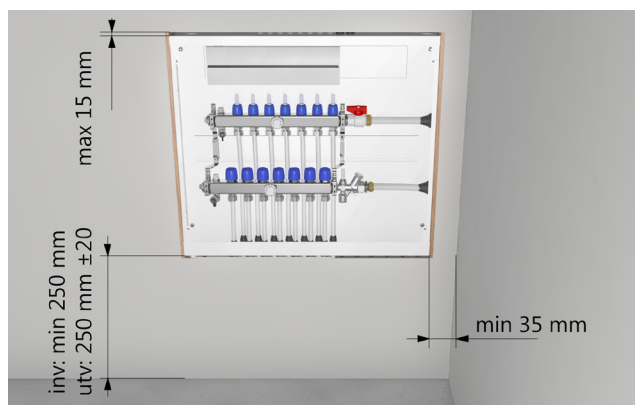
Wet zone 1

Installation height when installing in a stud-frame

In order to assemble and leave space for the drainage pipe then the cabinet must be mounted at least 250 mm between the bottom of the cabinet base and the installed floor. The drainage pipe should be installed with a slope.

Installation height when installing ext. on a wall

When installing externally on an inner wall the cabinet should be placed 250 (± 20) mm above the completed floor in order to provide space for the base.



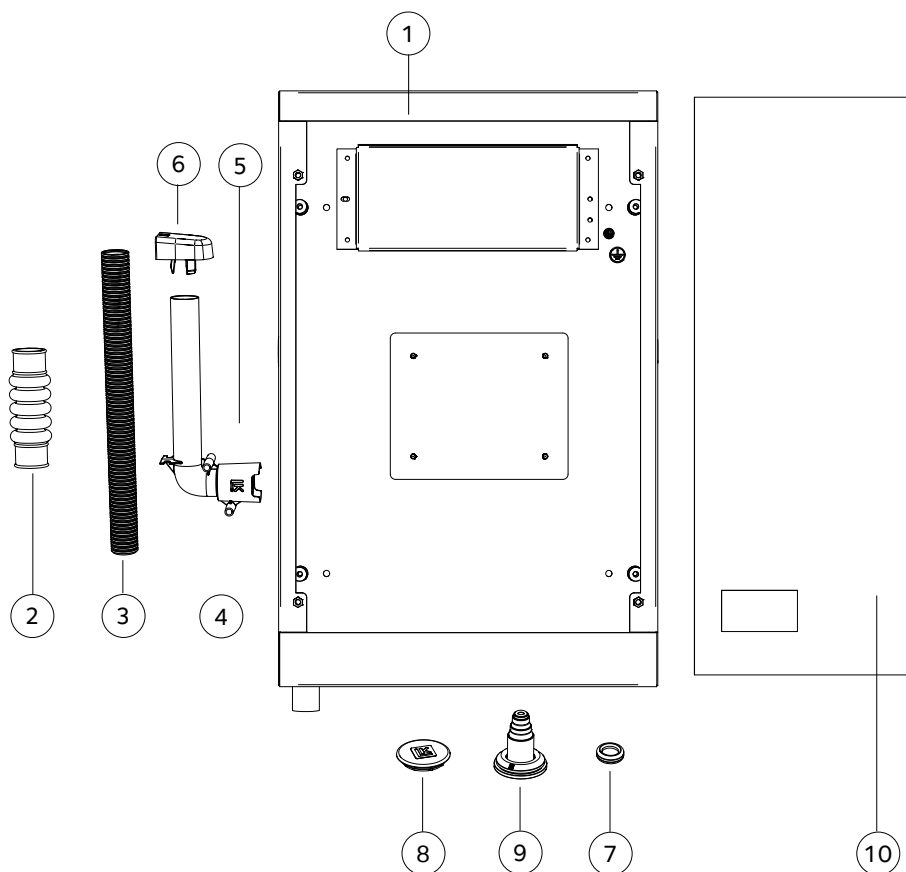
Principle diagram for installing in a stud-frame

Assembly near a wall

When installing near a wall in a stud-frame, at least 35 mm is required from the outside of the cabinet to adjoining walls to provide space for the LK Frame/hatch INB



SUPPLIED WITH PRODUCT




No.	Name	Quantity	Article no.
1	LK Installation cabinet RTB	1 pcs	-
2	Bellow Sleeve 25 LP	1 pcs	188 27 42 (also incl. in package 188 26 11)
3	Conduit Ø25	1.5 m	187 06 65
4	Assembly screws for Drainage Elbow (4.2 x 65 mm)	2 pcs	incl. in package 188 26 11
5	Drainage Elbow V2	1 pcs	incl. in package 188 26 11
6	Outlet Plate V2, White	1 pcs	188 26 13 (also incl. in package 188 26 11)
7	Cable Grommet	4 pcs	33952 (also incl. in package 33950)
8	Sealing Plug Black 40 LP	2 pcs	188 27 21
9	Pipe Grommet 8-20 LP	2 pcs	298 61 50
10	LK Spray Guard (345x 200 mm)	2 pcs (Installation cabinet RTB)	188 24 19
	LK Spray Guard (533 x 200 mm)	2 pcs (Installation cabinet RTB-XL)	188 24 10

WORKING PROCEDURE

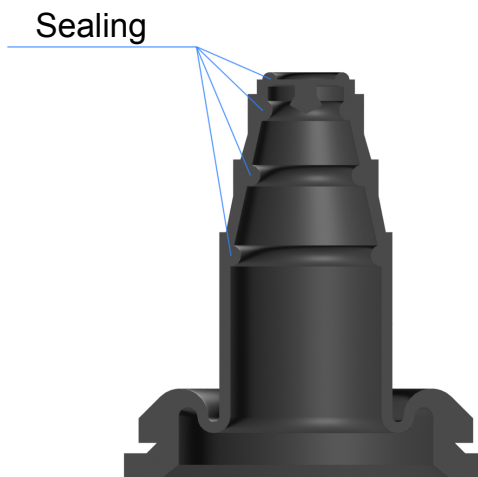
1 - Prepare pipe grommets

Prepare pipe grommets for feed pipes and under-floor heating pipes by adapting/cutting grommets to the correct dimension based on the pipe dimension used.

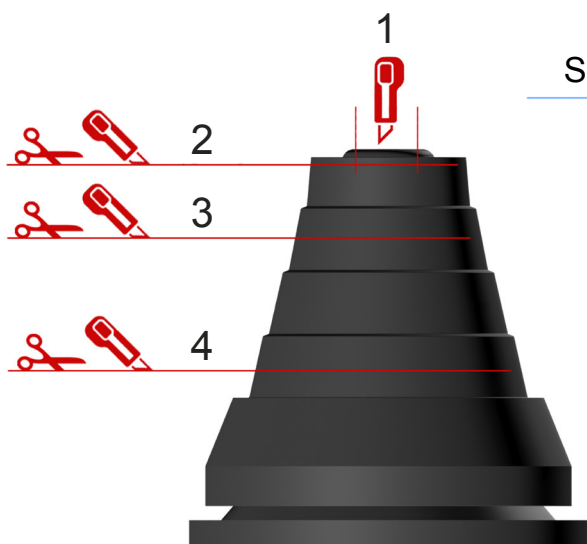
 If the seal for the pipe dimension is damaged when cutting, then it must be replaced with a new seal.



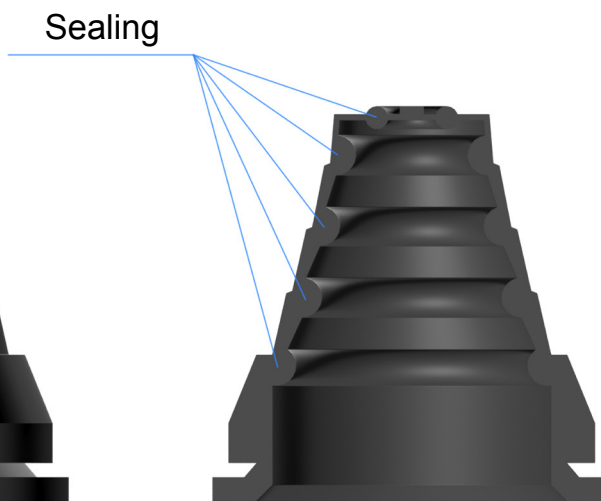
Cutting pipe grommet.



A cross-section of the pipe grommet shows the placement of the pipe seal.



Cutting pipe grommet.



A cross-section of the pipe grommet shows the placement of the pipe seal.

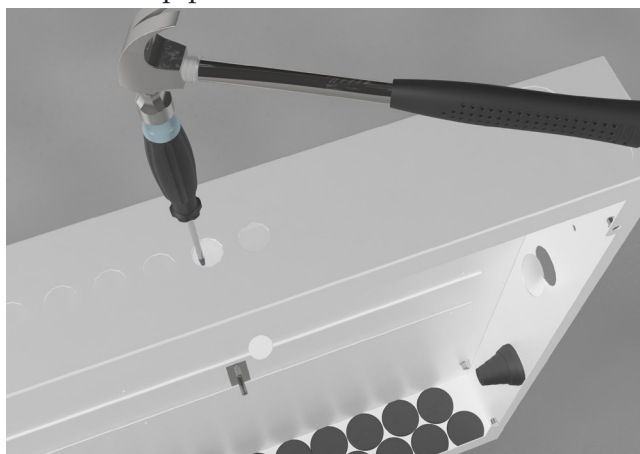
Cutting level	Dim. Pipe	Dim. Conduit (PiP)
1	Ø12	–
2	Ø16-20	–
3	Ø25	Ø25
4	Ø32	Ø34



2 - Knock-out

Remove the knock-out holes for the minishunt's capillary tube connected room sensor or the knock-out hole with cables to the electronic room control. Install the cable grommets provided.

If the feed pipes are to be connected from the side, the knock-out holes are removed from the side of the cabinet. The pipe grommets are then installed for the feed pipes.



Principle diagram: Remove the knock-out holes using a hammer and screwdriver

3 - Assemble the pipe grommets and sealing plugs

Fit the adapted pipe grommets and the LK Sealing Plug before the cabinet is installed in its final location. Pay particular attention during the assembly of pipe grommets and sealing plugs so the cabinet base is sealed.

LK Sealing Plugs are fitted so the LK Logo can be seen inside the cabinet.

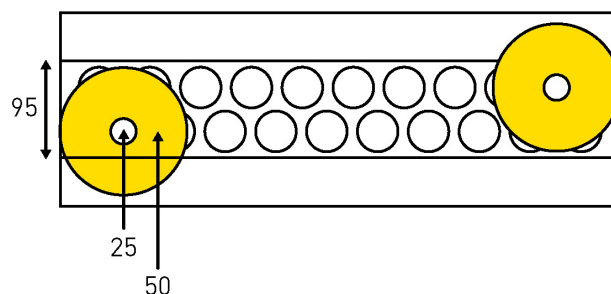


Principle diagram: Assemble the pipe grommets and sealing plugs

4 - Install the cabinet

Install the cabinet in the stud-frame externally on an existing wall taking into account the headings above regarding assembly height, wet zone 1 and installation near a wall.

Fix the cabinet in the building structure. For wood stud constructions, use the screws and sealing plates supplied. The cabinet can also be fixed using the LK Leg Stand. Pay attention to the depth of the cabinet's placement so there is also space for any pipe insulation, see example below.



Example, installation with insulation on feed pipe. The illustration shows a cabinet with a depth of 95 mm.



The cabinet should never be installed further out than edge to edge with the stud-frame, so the Frame/hatch GV INB can be installed.

If the cabinet is placed on an outer wall, it should be installed on the warm side of the construction, inside the airtight foil.



Securing the cabinet in a stud-frame

5 - Mount LK Mini Loop Valve RTB

Mount the console of the mini loop valve valve as instructed place in the cabinet. Then mount the LK Mini Loop Valve RTB.



LK Mini Loop Valve RTB mounted in LK Installation cabinet RTB.

6 - Pipe grommets

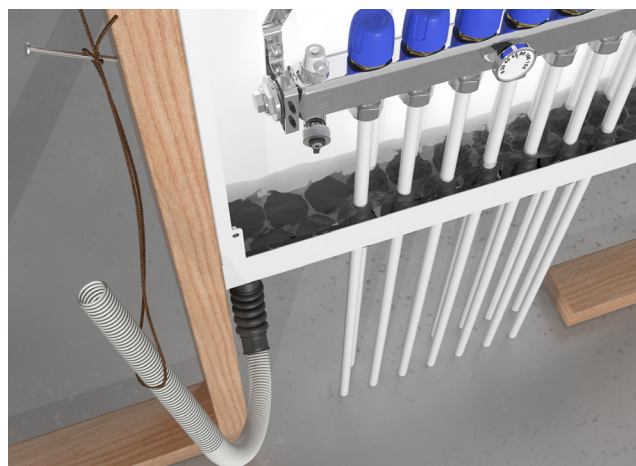
Pull the underfloor heating pipes and any power feed cables through the pipe grommets. This is easier if the pipes have been lubricated with soapy water or similar. The pipes are then connected to the shunt group and mini manifold, if used.

7 - Leak testing of the cabinet base

Connect the conduit with the bellow sleeve to the cabinet's drainage opening. Bind the conduit so its opening is slightly above the base of the cabinet, or alternatively, use the LK Bottom Plug in a drainage elbow or manifold cabinet. Pour water up to the edge of the cabinet base and wait about 10 minutes. Then check that the cabinet base is sealed. Look at the underside of the cabinet base to be sure there is no trace of water. When the cabinet seal has been checked, the cabinet drainage is assembled as below.



A leak test is always carried out on the cabinet base before the wall covering is mounted.



Principle diagram for leak testing of the cabinet base

8 - Installing cabinet drainage

Drainage outlets from a cabinet with tap water installation must always drain onto an area with a floor drain or watertight flooring. Drainage outlets from a cabinet with heating system installation may drain from the wall surface beneath the cabinet. Bear in mind that it must be possible to rapidly detect any leaks.

If the pipe penetrates a wall, the distance between the pipe and the adjacent wall or the sealing layer of the floor must be at least 60 mm.

There are several ways to install the drainage elbow:

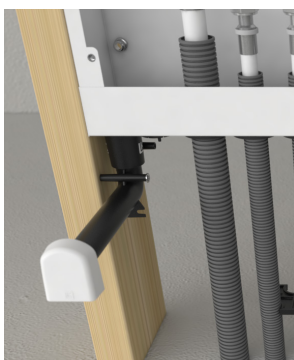
8a – Drainage elbow connected directly to the cabinet's outlet pipe

Drainage from the wall surface under the cabinet. Connect the drainage elbow directly to the cabinet's outlet pipe after all pipe inlets and sealing plugs have been installed.

Fix the drainage elbow to a wall stud in a suitable position. Insert the two installation screws supplied in any of the fixing holes.

For cabinets mounted externally on the wall, the drainage elbow opens out into the pre-drilled hole in the base.

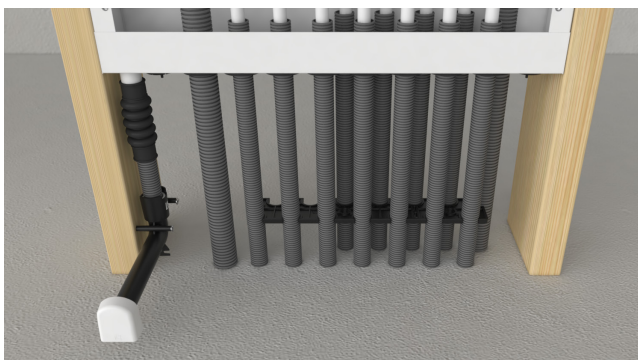




A drainage elbow directly connected to the cabinet's outlet pipe will drain into the same room as the cabinet's service hatch or, alternatively, the room behind.

8b – Drainage elbow connected via a conduit.

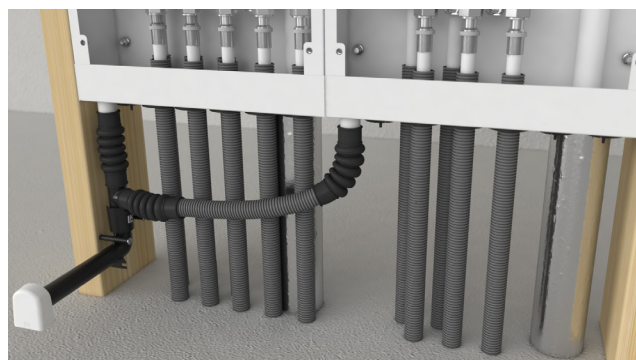
Connect the conduit to the cabinet's drainage pipe using the bellow sleeve. The bellow sleeve must not be deformed in a manner that prevents the flow of any water leaks. Connect the drainage elbow to the conduit. Note that the pipe should rest in the drainage elbow at a depth of approximately 20 mm. Fix the drainage elbow to a wall stud in a suitable position. Insert the two installation screws supplied in any of the fixing holes. Ensure that the conduit is installed sloping downwards towards the outlet and that the conduit is secured.



Drainage elbow connected via a conduit.

8c – Connection of drainage pipes

It is possible to connect drainage pipes from two cabinets. The illustration below shows side-by-side installation but drainage pipes can also be connected when the cabinets are mounted further apart Use LK Drainage Kit 25 Duo. Fix the drainage elbow to a wall stud in a suitable position. Insert the two installation screws supplied in any of the fixing holes. Ensure that the conduit is installed sloping downwards towards the outlet and that the conduit is secured.



Connection of drainage pipes

9 – Installation of outlet plate

Install a wall panel with a hole for the drainage elbow's outlet pipe. Hole diameter approx. 26 mm. Connect any sealing layer as per the instructions of the supplier of the sealing layer. Although LK Systems can supply the LK Pipe Membrane, the sealing contractor should carry out the installation and be responsible for the waterproofing characteristics of the sealing layer in accordance with industry regulations issued by the Swedish Ceramic Tile Council (BBV), Swedish Flooring Trade Association Wet Room Control (GVK) or the Swedish Painting Industry Wet Room Control (MVK).

Once the wall panelling is installed, the drainage elbow should be cut to size using the LK Drainage elbow cutter V2. Alternatively, the drainage elbow can be cut to a suitable length using a tool such as a hacksaw blade. Be careful not to damage the surface layer, leave 2-3 mm of the outlet pipe protruding from the wall.

Install the LK Outlet Plate V2 in the outlet pipe. For a more luxurious finish, the LK Outlet Plate V2 Chrome is available as an accessory.



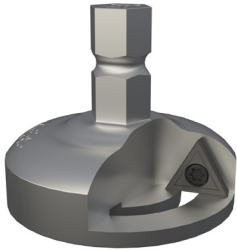
Installation of the LK Outlet Plate V2.



ACCESSORIES



LK Outlet Plate V2 Chrome, article no. 188 26 14.



LK Drainage elbow cutter V2, article no. 188 26 15.

10 - Install Spray Guard

Assemble the spray guard supplied. Be careful that the guard is pushed out to the side so the entire cabinet width is covered by the guard.

11 - Install Frame/hatch

There are two types of frame/hatch depending on whether the cabinet is built into or installed externally on an inner wall. On delivery, the hatch is fitted with a screwdriver latch though the LK Key Latch is available as an accessory.

11 a - Install Frame/hatch INB

When the cabinet is built into a wall, the LK Frame/hatch INB is used which has a precipitating frame in order to cover the hole around the cabinet. The frame covers an area of 15 mm beyond the edge of the cabinet.

See overview of articles.

Install the LK Frame/hatch using the M5 screws provided. If the cabinet is installed so far into the construction that the screws are too short, then these should be replaced with longer screws (not included).

11 b - Install Frame/hatch UTV

When the cabinet is installed externally on a wall, the LK Frame/hatch UTV is used, which fits edge to edge with the outsides of the cabinet.

See overview of articles.

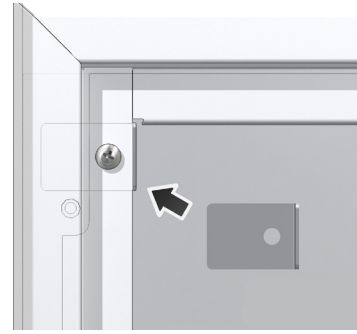


Plate and screws for the LK Frame/hatch UTV

Install the frame using the screws and mounting plate provided, see picture above. Install the four white cover plugs on the end of the cabinet.

12 - Install Base

With an external installation of the cabinet, install the LK Base by first pushing the upper part of the base into the intended grooves in the cabinet frame. Also ensure that the drainage elbow runs through the intended hole. The lower part of the base is then pulled out to the floor. When the correct height is reached, then the installation is fixed using screws on the front of the base. Adapt the length of the drainage elbow to the outside of the base and install the outlet plate.



LK Base, installation



Outlet plate fitted on base

ASSEMBLY AIDS

Assembly using LK Cabinet Stand L2

The back of the cabinet is fitted with four anchor points (M8 nuts) which can be used to assemble the cabinet before the concrete base is cast. The LK Cabinet Stand L2 can be used as an aid and is assembled as below.

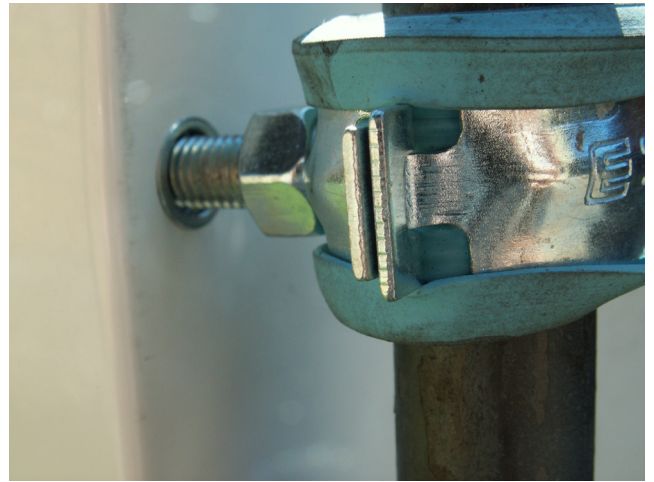


LK Cabinet Stand L2 with anchor clips.

Mount the four M8 nuts provided in the back of the cabinet. Attach pipe fixings to the extended bolts. Slip on the round bar and attach the conduit pieces provided with the stand. The conduits stop the stand from becoming set in the concrete, making it reusable.

Knock down the round bars through the insulation and into the sand until the installation feels stable. Lift up the cabinet to a suitable height and tighten the fixings. Tape the conduits to the legs of the stand to stop the conduits from moving when pouring the concrete.

Mounted cabinet stand L2.



Close-up of fastening to cabinet.

Assembly using LK Legs

The LK Leg Stand simplifies cabinet assembly on prefabricated concrete joists. Manufactured from galvanised steel plate.

Supplied in pairs inc. 4 x self-tapping sheet metal screws with gasket for attachment to the manifold cabinet. The foot of the legs has a 6 mm hole for attachment to the concrete joists. The legs are secured using a bolt or metal nail plug (not supplied).

In cases where the manifold cabinet is not adequately secured by the leg stand, then the cabinet should also be secured to the wall

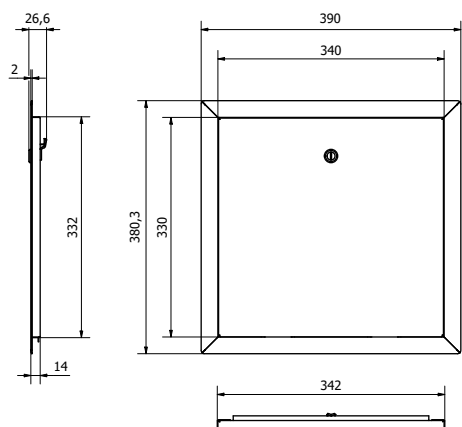


LK Leg Stand

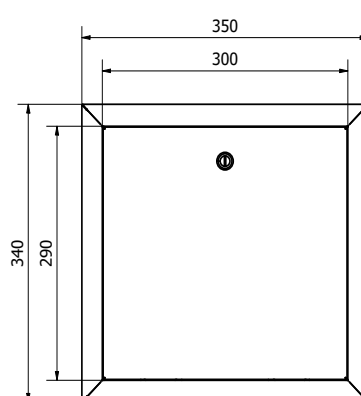


DIMENSION DRAWINGS

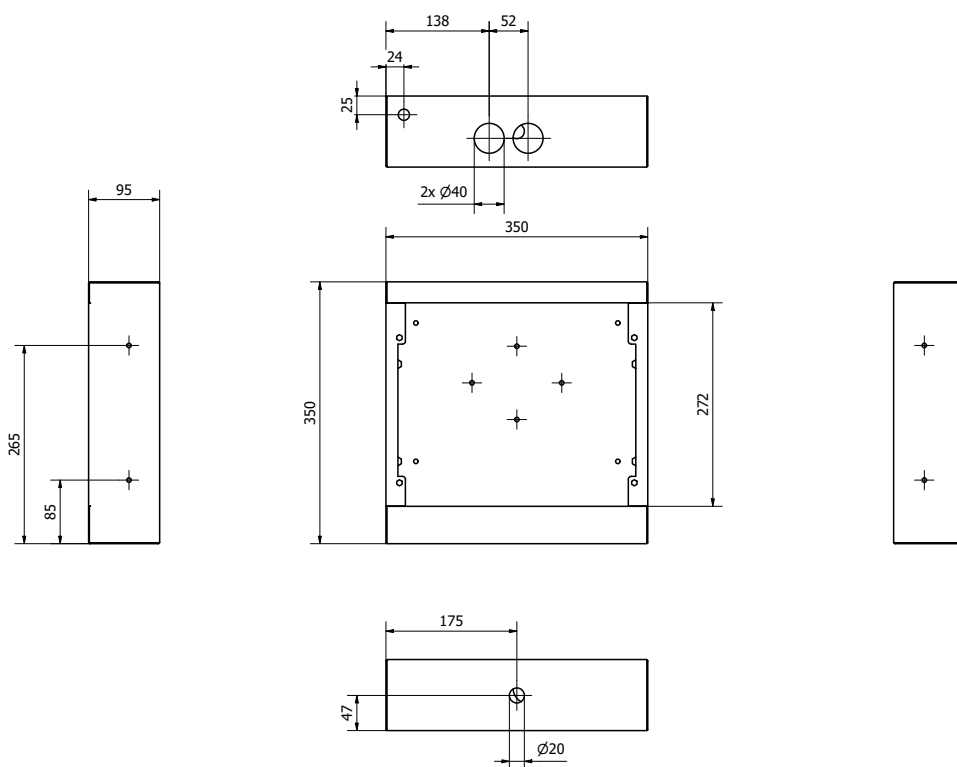
LK Frame/hatch UNI INB 350x350



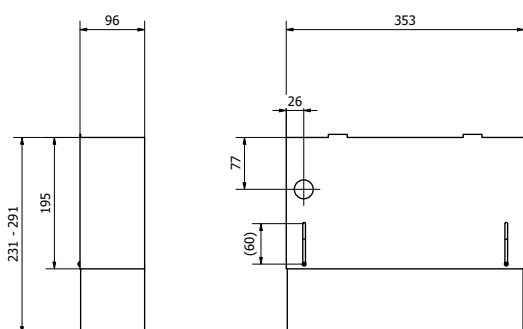
LK Frame/hatch UNI UTV 350x350



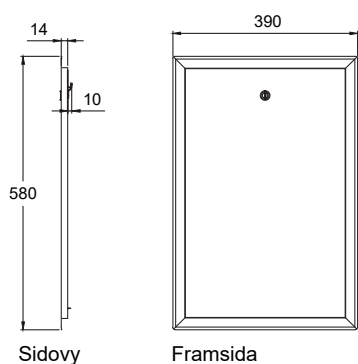
LK Installation cabinet RTB



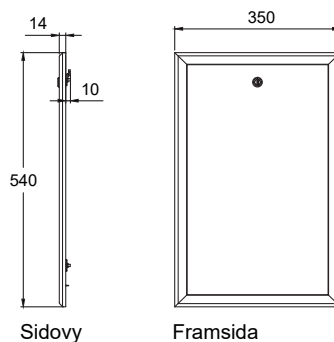
LK Base



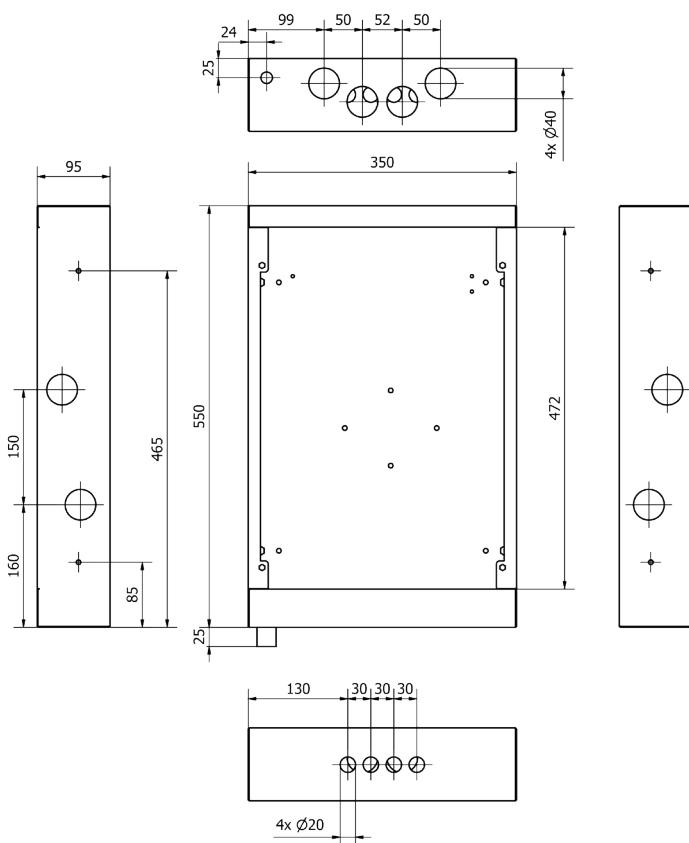
LK Frame/hatch UNI INB



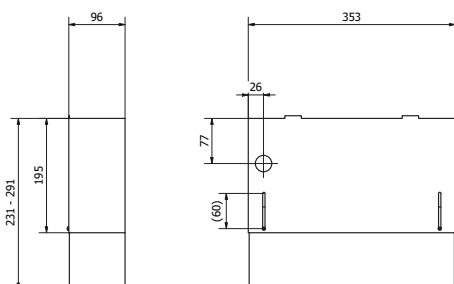
LK Frame/hatch UNI UTV



LK Installation cabinet RTB-XL



LK Base



PIPE DIMENSIONS

The table below shows which dimensions and pipe types can be connected to LK Installation cabinet RTB / LK Installation cabinet RTB-XL. For more information on LK Floor Heating systems, see www.lksystems.se/en (products/lk underfloor heating/products/pipes)

Pipe grommet	PE pipe	Metal pipe	RiR (pipe in pipe) conduit dimensions
Pipe grommet 8-20 LP	8, 12, 16 and 20 mm	-	-
Pipe grommet 20-25 LP for PE supply pipe	20, 25 and 32 mm	22 and 28 mm	34 mm
LK Pipe grommet 8, Quattro*	8 mm	-	-
LK Pipe grommet 32 RiR LP*	32 mm	-	40-44 mm

* Ordered separately.

OVERVIEW OF ARTICLES

Namn	RSK nr.	Avsedd för
LK Installation cabinet RTB	298 88 56	LK Mini Loop Valve RTB
LK Installation cabinet RTB-XL	298 88 57	LK Mini Loop Valve RTB which is controlled by electronic control
LK Frame/hatch INB Kopplings-skåp UNI 350x350	188 23 48	Built-in LK Installation cabinet RTB
LK Frame/hatch UNI INB	188 13 08	Built-in LK Installation cabinet RTB
LK Frame/hatch UTV Kopplings-skåp UNI 350x350	205 48 38	Wall mounted LK Installation cabinet RTB
LK Frame/hatch UNI UTV	188 13 10	Wall mounted LK Installation cabinet RTB-XL
LK Base UNI	188 13 01	Wall mounted LK Installation cabinet RTB & RTB-XL

