

# Assembly instructions

Version 7/2012

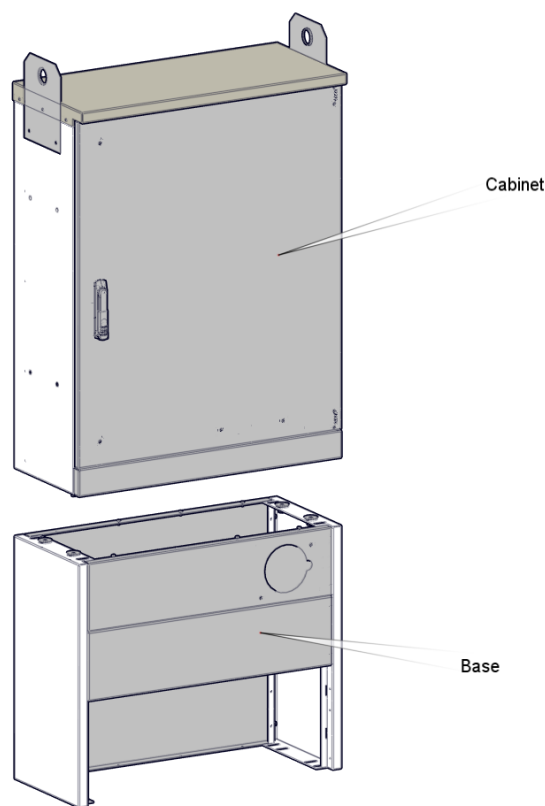
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## 1 GENERAL

C-serie is a cable distribution and protective cabinet for low-voltage and instrument centres, made of marine aluminium and hot galvanised steel sheeting. The structures have been designed in accordance with standard IEC/EN 62208, in addition to which the requirements of standard IEC/EN 61439-5 have been taken into account. The following standards have been taken into account in the dimensioning of the cabinet: SFS 2533:2008 (Cable distribution cabinets. Dimensions for cabinets), SFS 2534 (Cable distribution cabinets. Dimensions for bases), SFS 2851 (Cable distribution cabinets. Lock and key), and EN 60529 (Degrees of protection provided by enclosures, IP Code).

The structure has two main parts: the protective cabinet, and the base (see Figure 1.1). The assembly and installation of the structure does not require welding, as all parts can be mounted with screws, nuts, and rivets.



**Fig. 1.1.** The main parts of the C-serie cable distribution cabinet.

The internal thread rivets in the side panels of the cabinet can be used to join together several cabinets and mount lifting lugs and snow alarms. The fastening rails on the cabinet's back panel feature oval-shaped 10x20mm holes, which can be used to install a fastening rail for an electrical distribution board inside the cabinet. The holes may also be used to mount an assembly panel suitable for fuse switches and similar.

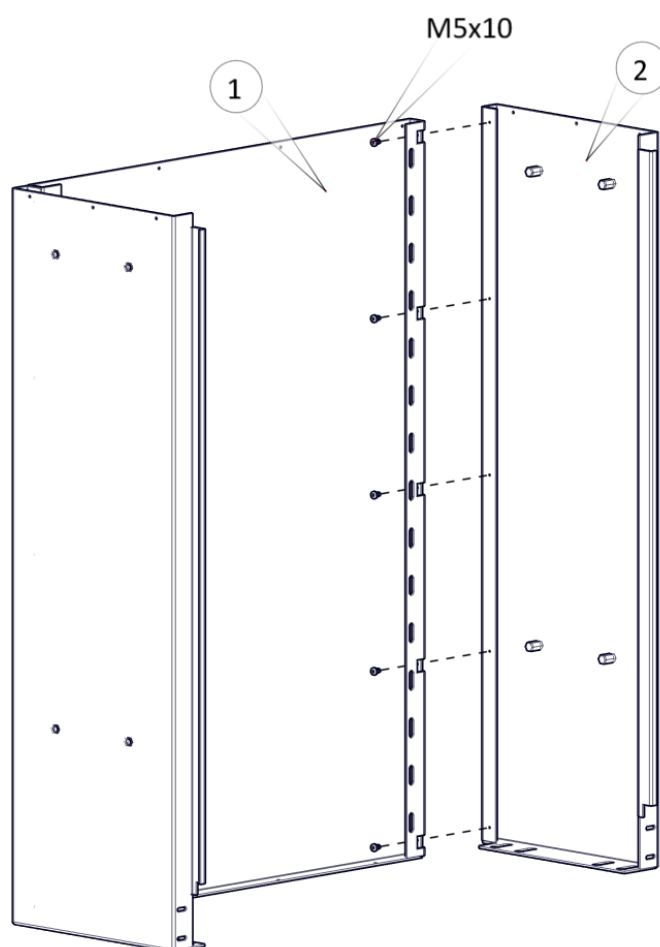
Depending on their size, the cabinets come equipped with either one or two doors. The doors have hinges, three-point locking, and a hold-open hook for locking the door open during work.

C-serie distribution cabinets are delivered to the client in parts. The delivery includes all assembly, fastening, and locking parts required for assembly of the cabinet.

## 2 ASSEMBLY INSTRUCTIONS

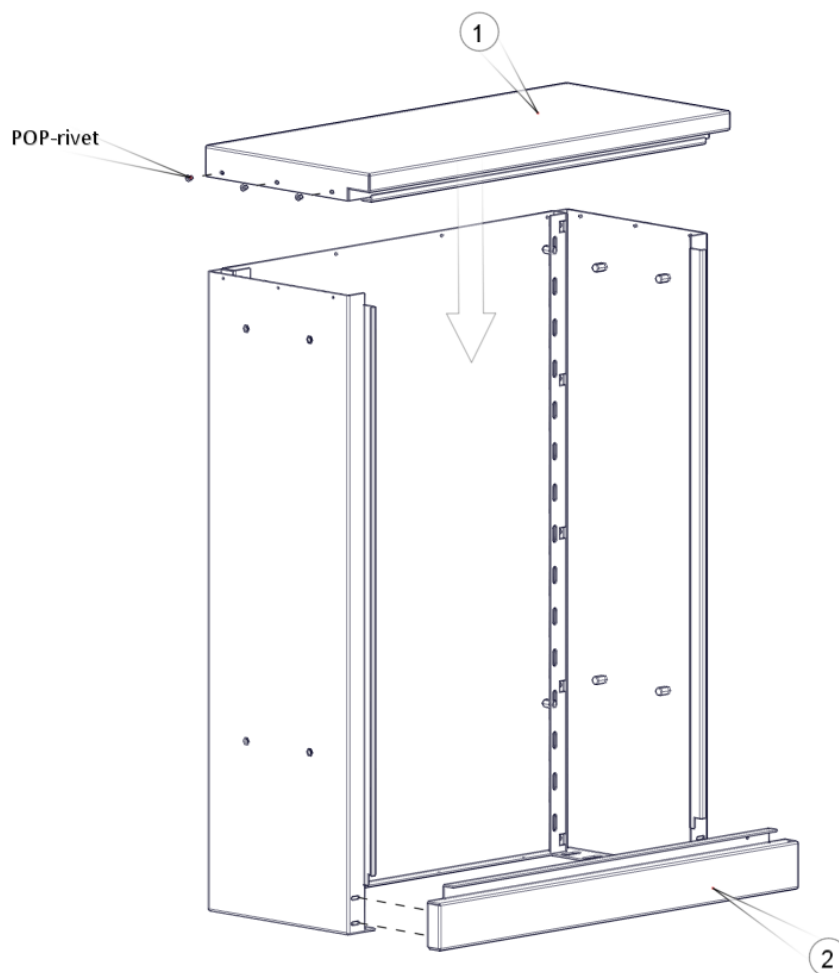
### 2.1 Protective cabinet

Begin assembly by fastening the side panels (2) to the back panel(s) (1) with M5x10 assembly screws (see Figure 2.1).



**Fig. 2.1.** Fastening of the side panels to the back panel. M5x10 screws should be used for the assembly.

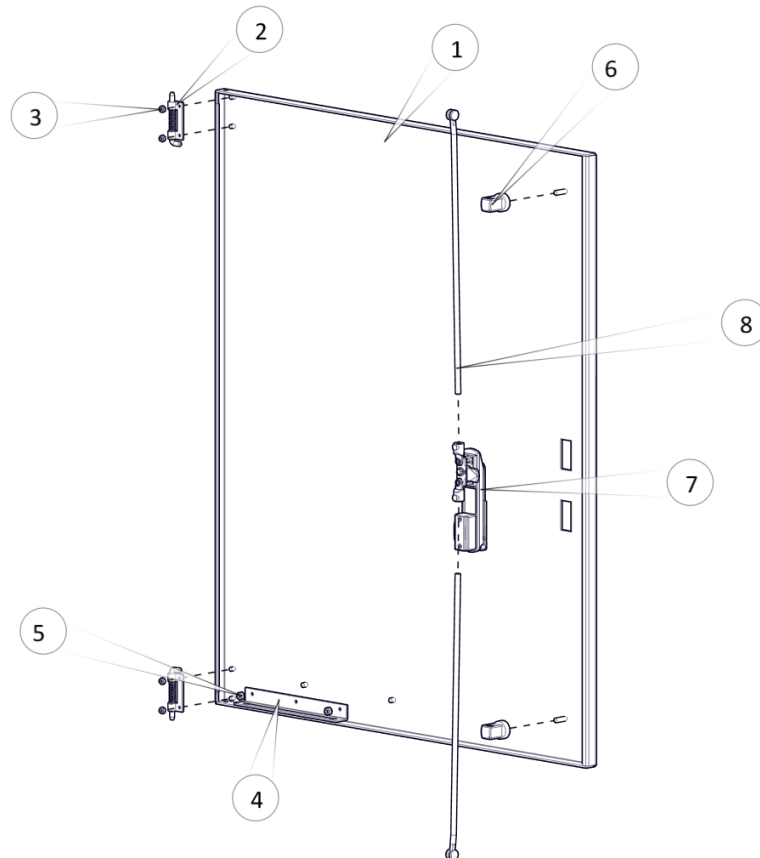
Once the side and back panels have been screwed together, fasten the roof panel (1) in place with rivets. Next, screw the front panel of the plinth (2) in place with four M6x25 hexagonal screws (ISO7380).



**Fig. 2.2.** The roof is fastened with stainless pop rivets and the front panel of the plinth with M6 hexagonal screws.

## 2.2 Assembly and fastening of the door

Next, install the spring-loaded hinges (2) in the M5x15 stamped bolts located in the corners of the door (1) with M5 nuts (3). Screw the bar of the hold-open hook (4) into the M6x10 stamped bolts that have been installed in the doors with M6 nuts (5). Screw the guide post (6) of the bars (8) of the three-point lock into the door. The above operations are shown in Figure 2.3.



**Fig. 2.3.** Fastening of the door and adjacent components.

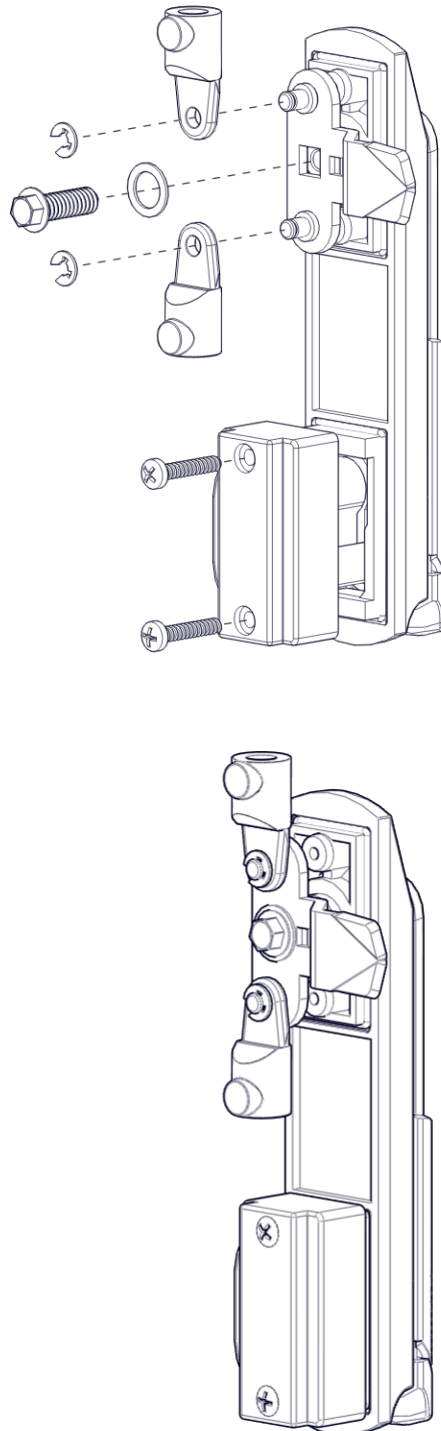
The hold-open hook can be used to lock the door open during work. The locking mechanism of the door also includes push rods that must be cut to length before the door is installed. Table 2.1 shows the required push rod length for standard-sized cabinets of different heights.

Height of the cabinet [mm]	Rod length [mm]
1120	460
1405	600
1685	740
1965	880

**Table 2.1.** The push rod length required by various cabinet models.

### 2.2.1 *Assembly of the lock*

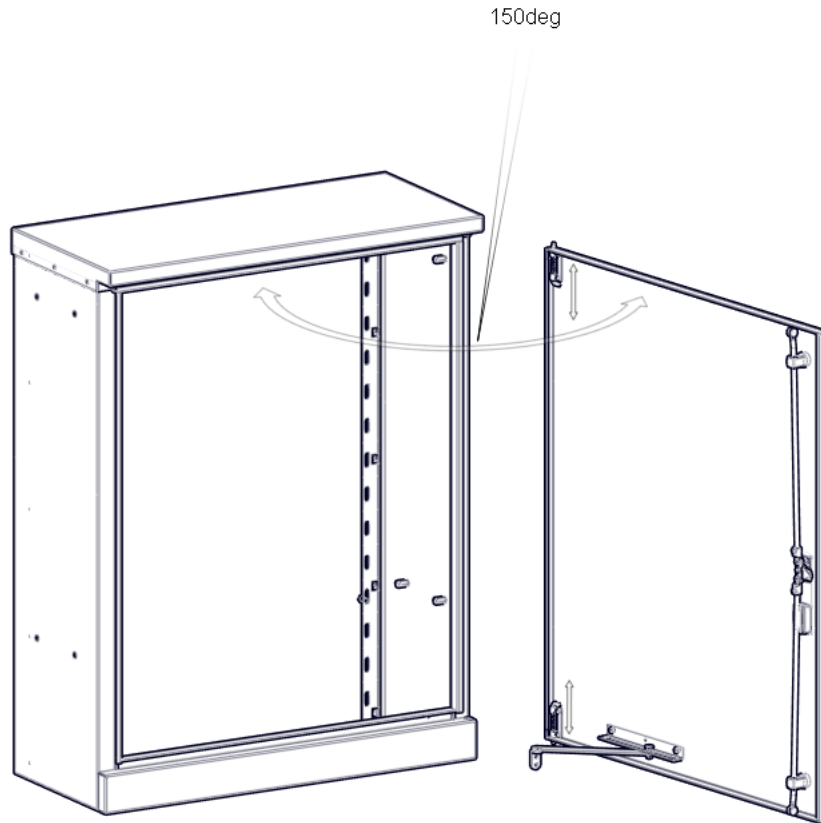
Figure 2.4 is an exploded view of the lock structure.



**Fig. 2.4.** An exploded view of the three-point lock and its assembly.

### 2.2.2 *Mounting the door to the cabinet*

Fasten the assembled door to the cabinet by means of hinges. Install a 6/12 PVC washer in the hinge between the bottom edge of the door and the front panel of the plinth. The hold-open hook should be fastened behind the front panel of the plinth and in the relevant bar located on the door, as shown in Figure 2.5.



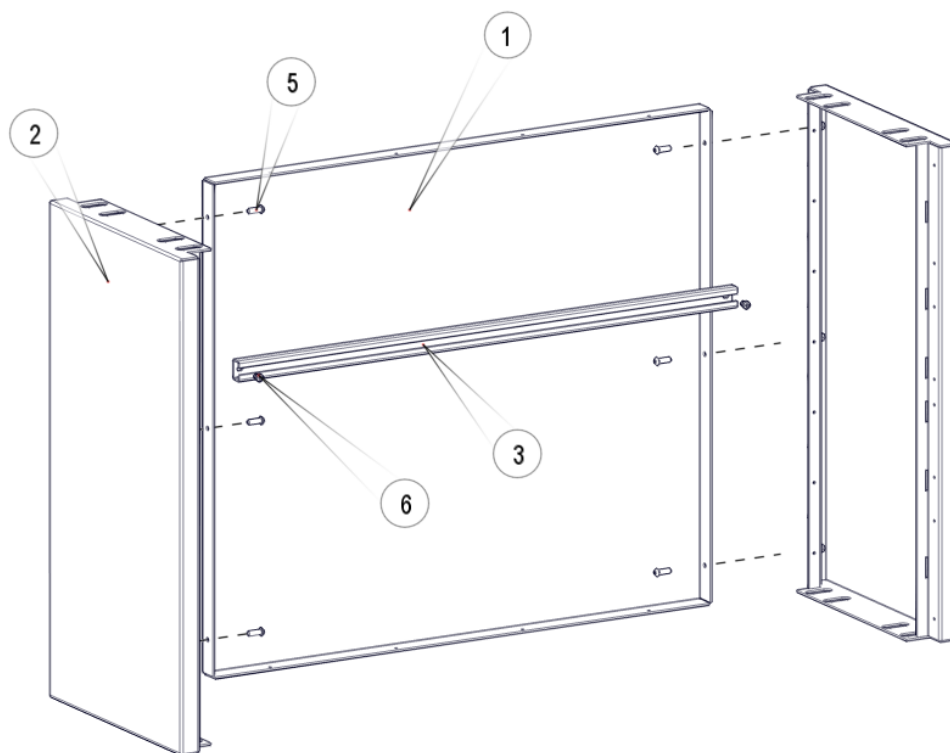
**Fig. 2.5.** The door is fastened to the cabinet with spring-loaded hinges. The opening angle of the door is 150 degrees.

The opening angle of the door is the same (150 degrees) in all cabinet models.

## 2.3 Base

Start the assembly by screwing together the back panel (1) and side panels (2) of the base. The side panels of the base feature M6 internal thread rivets ready installed, into which the back panel is fastened with ISO7380 M6x20mm screws (5).

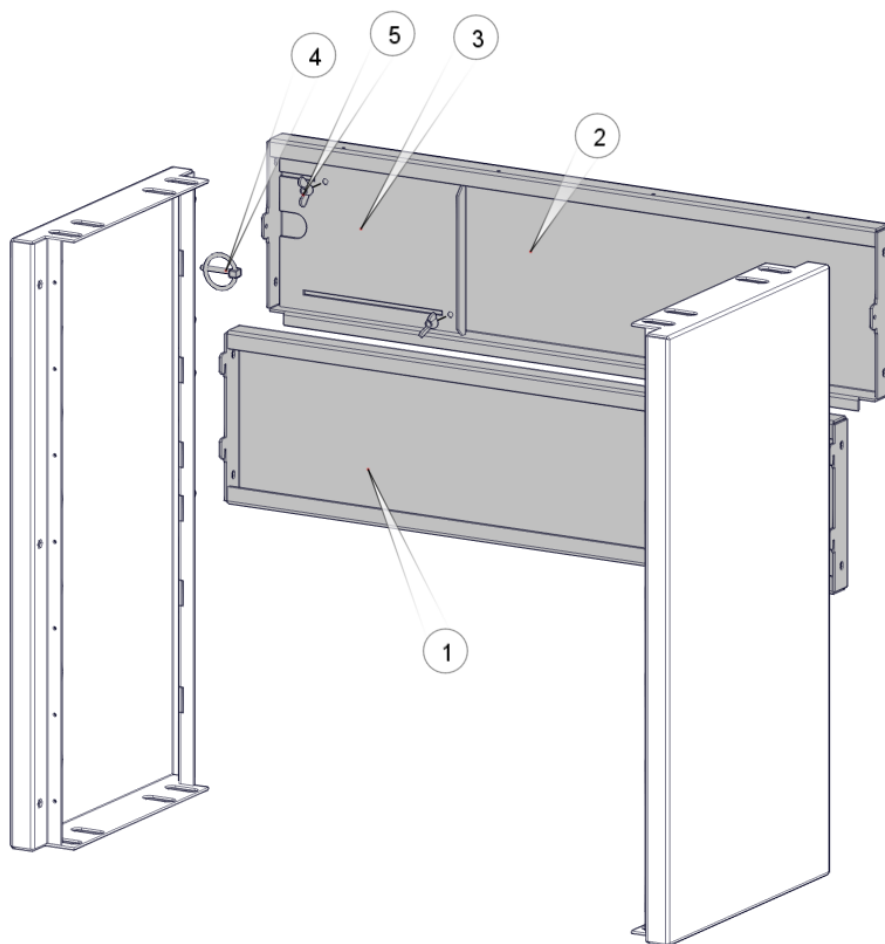
M5x10 screws (6) should be used to fasten the cable clamp rail (3) to the base.



**Fig. 2.6.** Assembly of the base. The first stage is to fasten the side panels to the back panel.



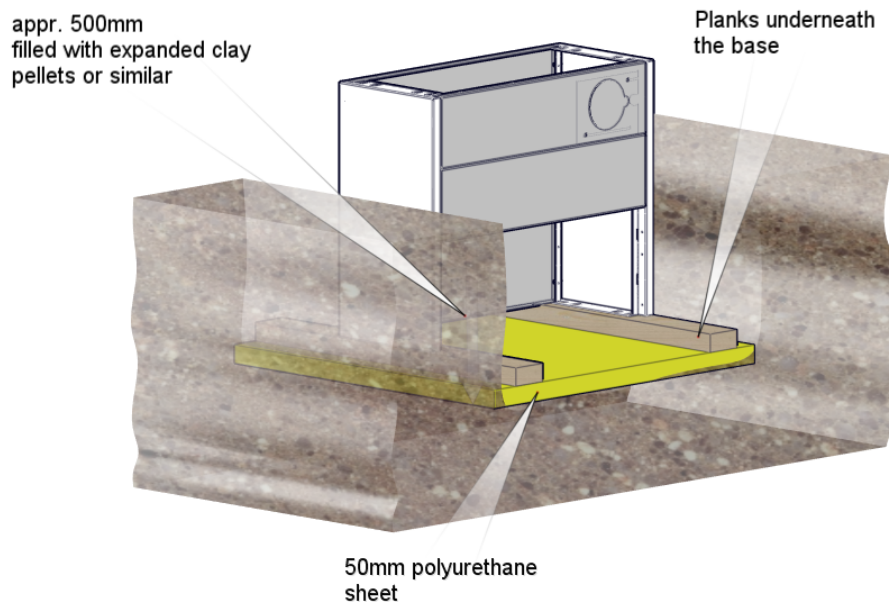
Next, the lower front panel (1) is fastened to the base, which is thread through the slots in the side panels of the base and, if considered necessary, screwed to the side panels with 4.8x5mm self-tapping screws. The upper front panel of the base (2) is also thread through the side panels and locked in place with ring pin (4) and, if considered necessary, 4.8x9.5mm self-tapping screws. The round thread-through holes in the upper front panel of the base can be covered with a cover panel (3) that is fastened with winged nuts as shown in Figure 2.7.



**Fig. 2.7.** Assembly of the base. In the second stage, fasten the front and cover panels into the base.

### 2.3.1 Installing the base in the ground

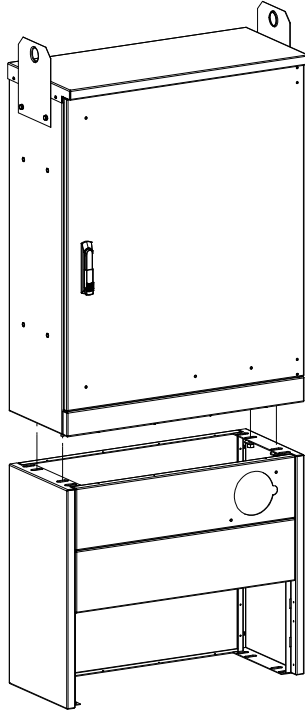
A 500mm deep hole is required to install the base in the ground. The bottom of the hole should be enforced with a 50mm polyurethane sheet (Finnfoam, or similar). Next, place impregnated wood planks underneath the base and fill up the hole with expanded clay aggregate as shown in Figure 2.8.



**Fig. 2.8.** Installing the base of the C-serie cable distribution cabinet in the ground.

## 2.4 Joining of the cabinet and the base

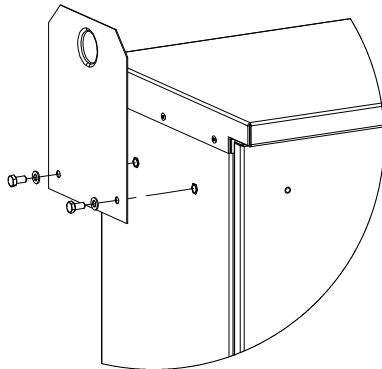
The cabinet and the base are fastened together with four M12x30mm hexagonal screws and nuts as shown in Figure 2.9.



**Fig. 2.9.** The cabinet and the base are fastened together with M12x30mm hexagonal screws and nuts.

## 2.5 Lifting lugs

Lifting lugs are installed on the sides of the cabinet to facilitate lifting of the C-serie cable distribution cabinet. For fastening the lifting lugs, both side panels feature M8 internal thread rivets. Screw the lifting lugs in place with M8 hexagonal screws and washers, as shown in Figure 2.10.

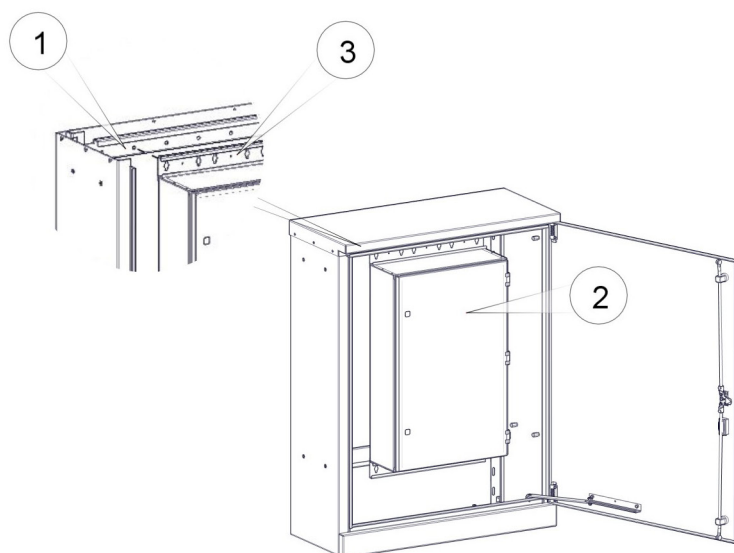


**Fig. 2.10.** Fastening lifting lugs on the cable distribution cabinet.

When the lifting lugs are fastened and the cabinet lifted in accordance with the instructions, they withstand a maximum lift weight of 300kg.

## **2.6 Installing the F-series system in the protective cabinet**

If required, the F-series system (2) may be installed inside a ready assembled cabinet. Tie rails (3) or fastening corners are mounted on both ends of the distribution board. Next, install two fastening rails (1) inside the cabinet and use them to screw the tie rails of the distribution board in place as shown in Figure 2.11.



**Fig. 2.11.** Adding a F-serie system inside the C-serie cable distribution cabinet. The system is mounted on the fastening rails (1) screwed inside the cabinet.

## 3 SEALING

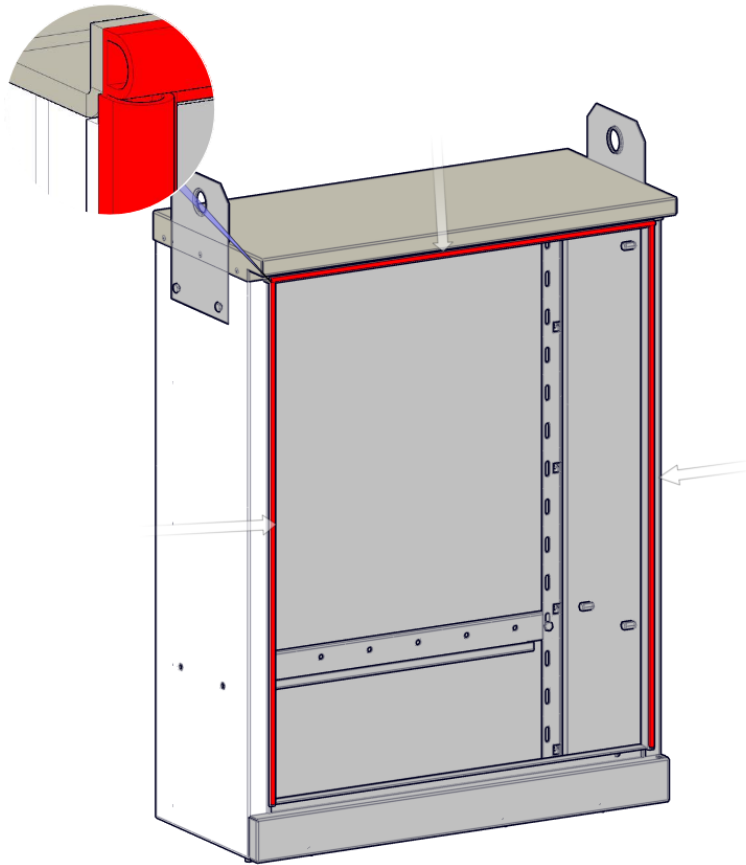
C-series cable distribution cabinet can be upgraded to enclosure class IP34D by applying various sealing methods. With no sealing, the cabinet meets the requirements set for enclosure class IP21.

### *Protective cabinet*

To achieve enclosure class IP34D, adhesive (Würth) or sealing silicone should be used on all seams of the parts surrounding the body. During the assembly, the sealing compound should be applied between the parts as a trail that is no less than 1.5 mm in diameter, and is compressed when the parts are screwed together. All holes and openings should be sealed/covered when applying the sealing agent.

Note! Remember that the use of adhesive makes it difficult to dismantle the structure later if future modifications are required.

Use P-shaped rubber seal on the inner sides and top of the door as shown in Figure 3.1.



**Fig. 3.1.** Sealing the door with a P-shaped rubber seal. The seal should be fastened on the inner sides and top part of the door.

### *Base*

We recommend that adhesive be used in the seams of the base parts and when fastening the cabinet to the base in order to avoid splashing water or dust from getting inside the cabinet.

## 4 FURTHER INFORMATION

The C-serie cable distribution cabinet is intended as a protective cabinet for switchboards, control stations, automation centres, and electronic equipment.

### *Conformity*

When assembling the C-serie cable distribution cabinet, part tests (IEC/EN 61439-5) and similar should be used to verify that the structural solutions of the cabinets comply with the tested centre and that they meet the requirements of the standards that were used as a basis for the certification.

In addition to the examples and instructions provided in these instructions for use, the requirements and regulations of standard IEC/EN 61439 regarding the assembly of a cable distribution cabinet should be followed. It should be kept in mind when using the structure that various product standards should be followed in the manufacture of the final product.

Only such screws, lifting lugs, washers, hinges, and tested components (or ones similar to them) that have been designed to be used in the assembly of this cabinet should be used and the assembly instructions and instructions for use provided by the mechanics supplier of the enclosed distribution board followed in the installation of the structure.

Manufacturer reserves the right to technical changes.

### *Equipment earthing*

The body can be provided with protective earthing by means of screws and nuts in the holes of the fastening rails of the cabinet. When installing the entire system, pay attention also to the protective earth of the cabinet and the enclosed distribution board. This can be done by installing a guard wire between the parts.

### *Independency from components*

The structures of the C-serie cable distribution cabinet are not dependable on specific component types, i.e., they are compatible with the products of any component manufacturer.

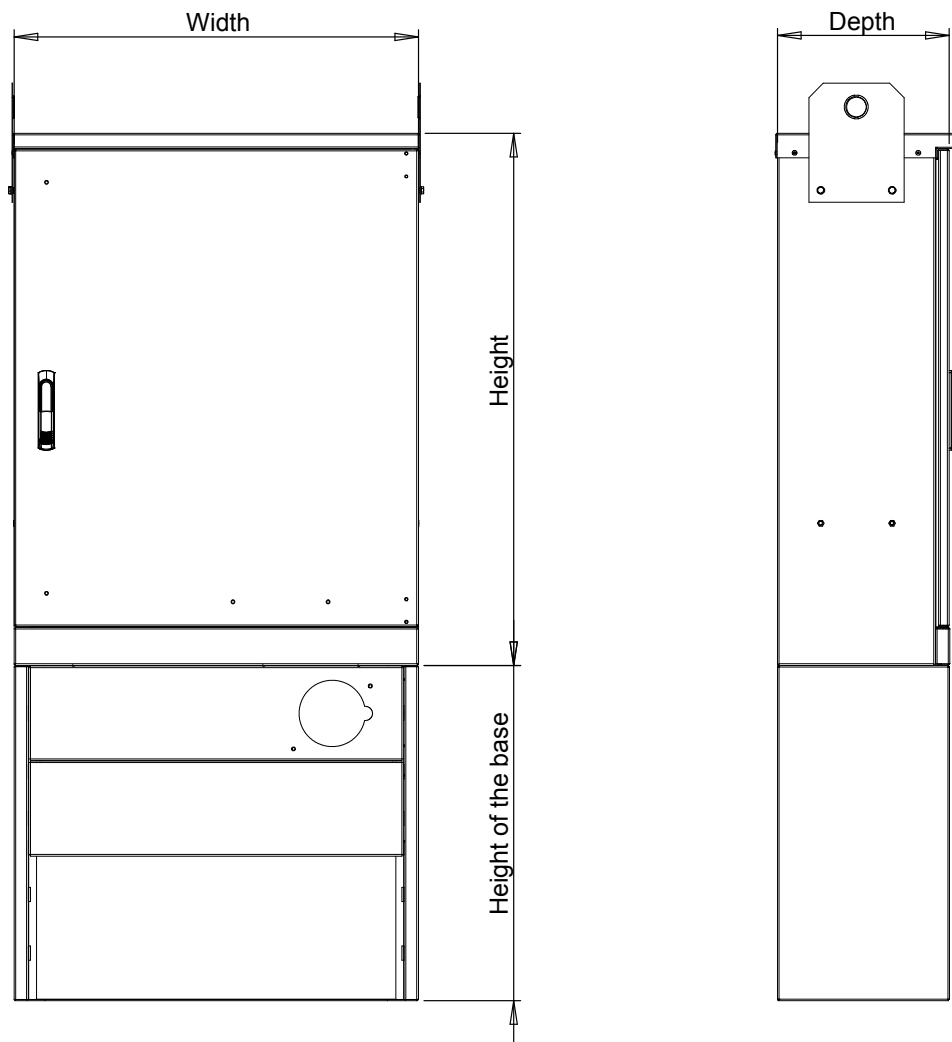
### *Load durability*

The maximum weight of enclosures to be installed inside the cabinet can be 1.0 kg per square decimetre of front surface of the cabinet.

A maximum weight of 20 kg per door can be fastened to the doors.

## 5 DIMENSIONS

The cabinet is available in one depth dimension only, 360mm. Figure 1 shows the dimensioning principles of the cabinet and the base of the C series distribution cabinet. Tables 5.1 and 5.2 show the values corresponding to the dimensions provided in Figure 5.1.



**Fig. 5.1.** Dimensioning of the C-serie cabinet structure.

**Table 5.1.** Available sizes of the cabinet of the C-serie cable distribution cabinet.

Code	Moducs (height x width) [mm]	Door size (h x w) [mm]
50070001	1120x400	960x340
50070003	1120x600	960x540
50070005	1405x600	1245x540
50070007	1120x850	960x790
50070009	1405x850	1245x790
50070011	1685x850	1525x790
50070013	1120x1050	960x990
50070015	1405x1050	1245x990
50070017	1685x1050	1525x990
50070019	1120x1350	960x1290
50070021	1405x1350	1245x1290
50070023	1685x1350	1525x1290
50070025	1965x1350	1805x1290
50070027	1120x1600	960x1540
50070029	1405x1600	1245x1540
50070031	1685x1600	1525x1540
50070033	1965x1600	1805x1540
50070035	1405x1900	1245x1840
50070037	1685x1900	1525x1840
50070039	1965x1900	1805x1840

**Table 5.2.** Available sizes of the base of the C-serie cable distribution cabinet.

Code	Base (h x w) [mm]	Code	Base (h x w) [mm]
50070101	700x400	50070102	300x400
50070105	700x600	50070106	300x600
50070110	700x850	50070111	300x850
50070115	700x1050	50070116	300x1050
50070120	700x1350	50070121	300x1350
50070125	700x1600	50070126	300x1600
50070130	700x1900	50070131	300x1900



**Table 5.3.** Available lock options of the C-series cable distribution cabinet.

Code	Lock
50079010	3-point lock, C-serie, flat key 1333
50079011	3-point lock, C-serie, triangle cylinder T9
50079012	3-point lock, C-serie, for Abloy cylinder
50079013	3-point lock, C-serie, T9 + padlock device

### *Installation depth*

A cross-section picture of the C-series cable distribution cabinet and corresponding installation depth is shown in Figure 5.2.



**Fig. 5.2.** A cross-section picture of the C-series cable distribution cabinet and corresponding installation depth.

## 6 TECHNICAL INFORMATION

### General

The body of the C-serie cable distribution cabinet (empty enclosure) has been certified in accordance with standards IEC/EN 62208 and 61439-5. The product meets the essential requirements set down in the low-voltage directive 2006/95/EY for CE conformity marking.

Protection class of enclosure	IP34D
Impact strength	IK10
Nominal dimensions	
depth	360mm
width, assembled	400 – 1900mm
height	1120 - 1965mm
Material	
cabinet	aluminium AlMg3, 2.5mm
base	hot-galvanized steel sheet 275MAC, 2.5mm
Surface finishing	
cabinet	epoxy polyester paint



## C-serie parts list

Accessories	Pieces/cabinet	Note!
3-point lock, complete	1	check the model!
hexagonal screw DIN933 M12*30	4	
hexagonal nut DIN934 Nyloc M12	4	
washer DIN9021 M12	8	
pop rivet 4,8x10rst	16	
hexagonal socket head screw (ball head) ISO7380 M6x25	12	
hexagonal nut DIN934 Nyloc M6	6	
screw Kerb 4,8x9,5 Torx	5	
ring pin 4,5x40	5	only for the base!
winged nut M6	2	only for the base!
hexagonal screw M8x16	4	
	pieces/door	
hold-open hook	1	
PVC washer 6/12	2	
hinge 60002030	1	left
hinge 60002033	1	right