FINELCOMP®

SMART FROM EVERY ANGLE

ASSEMBLY INSTRUCTIONS

C SERIE

CABLE DISTRIBUTION AND PROTECTIVE CABINETS DESIGNED FOR DEMANDING CIRMUMSTANCES

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C-SERIE: CABLE DISTRIBUTION AND PROTECTIVE CABINETS

C-serie is designed for demanding outdoor conditions, the cable distribution and protective cabinets are made of AlMg3 marine aluminium and the base is hot galvanised steel sheeting. The various width and height options of the robust frame provide a great number of size options.

The cabinets are easy to assemble and install All parts can be mounted with screws, nuts, and rivets. The fastening mechanism of the protective cabinet has been designed to allow for easy installation of the F-series enclosure centre inside it.

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: ASSEMBLY INSTRUCTIONS

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.

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.
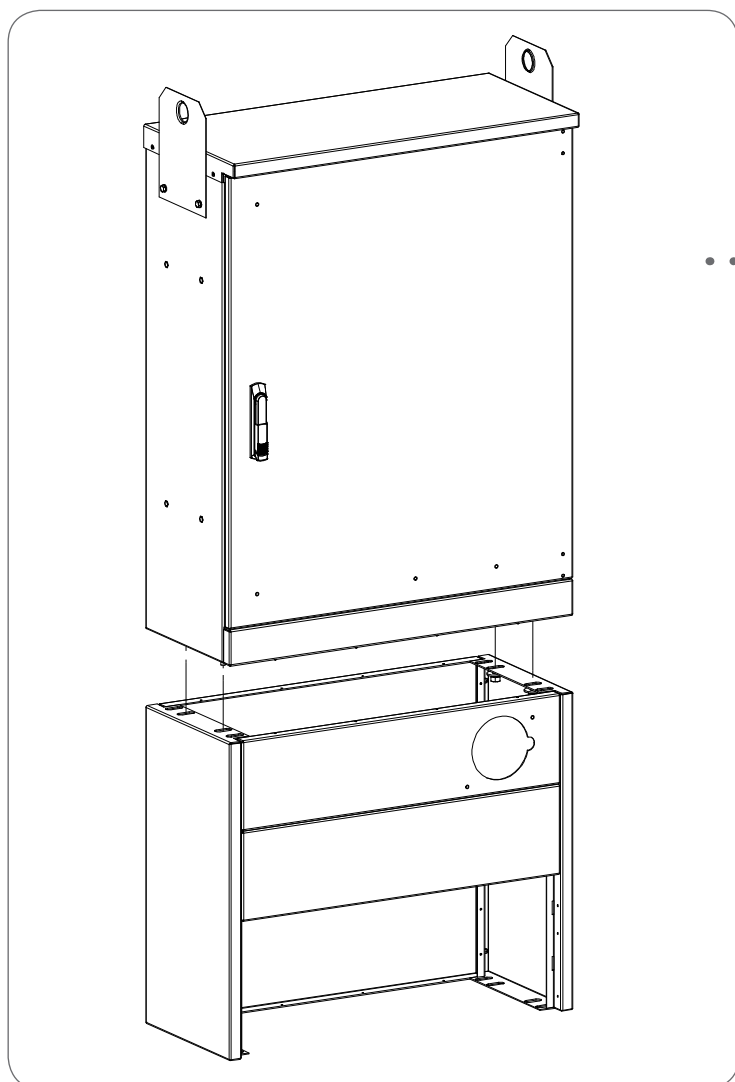

Fig. 1.1. *The main parts of the C-serie cable distribution cabinet.*

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).

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).

Two door cabinet

Back panel of two door cabinet is made of two separate panels. Panels are meant to join together with stainless steel POP-rivets 4,8x10mm. If IP-class is higher than IP20 sealing is also needed between back panels. Shown in figure 2.2

POP-niitti/POP-rivet 4,8x10 ST
Liimamassa/Glue mass

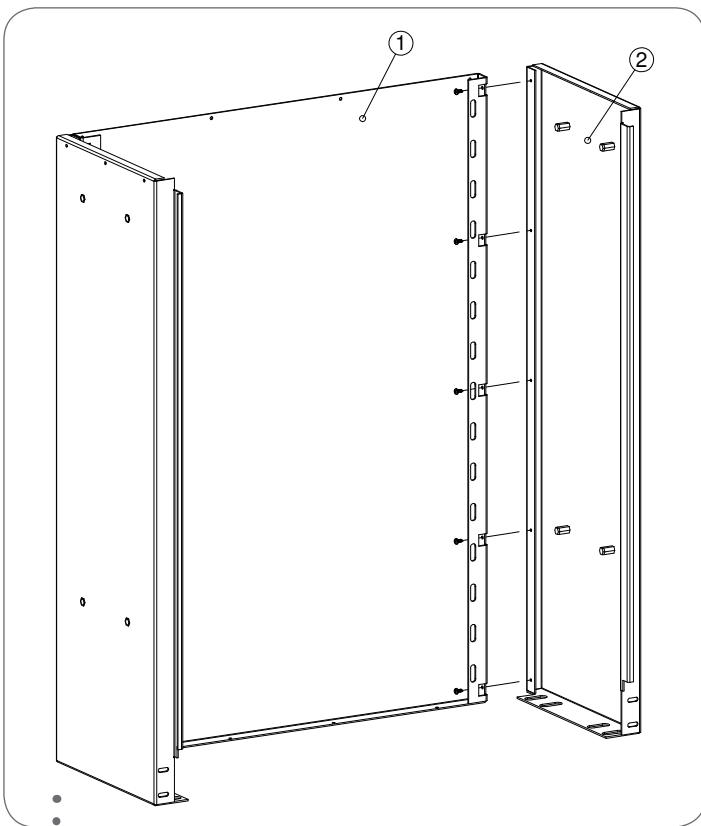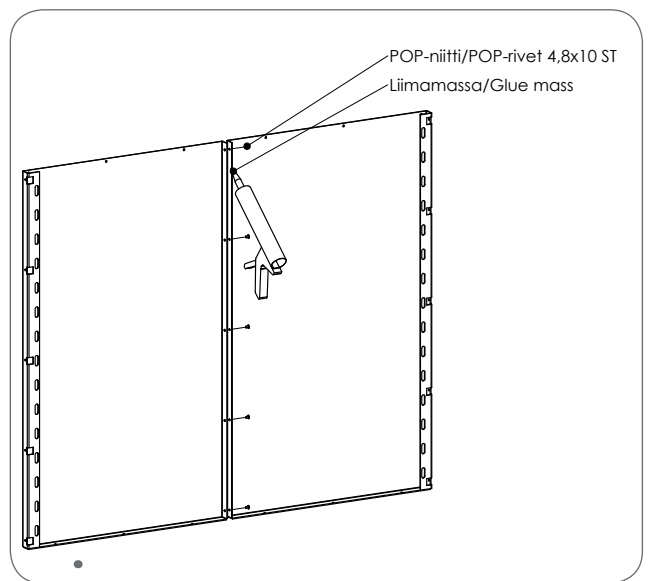**Fig. 2.2.** *The roof is fastened with stainless pop rivets and the front panel of the plinth with M6 hexagonal screws.*

Fig. 2.1. *Fastening of the side panels to the back panel. M5x10 screws should be used for the assembly.*
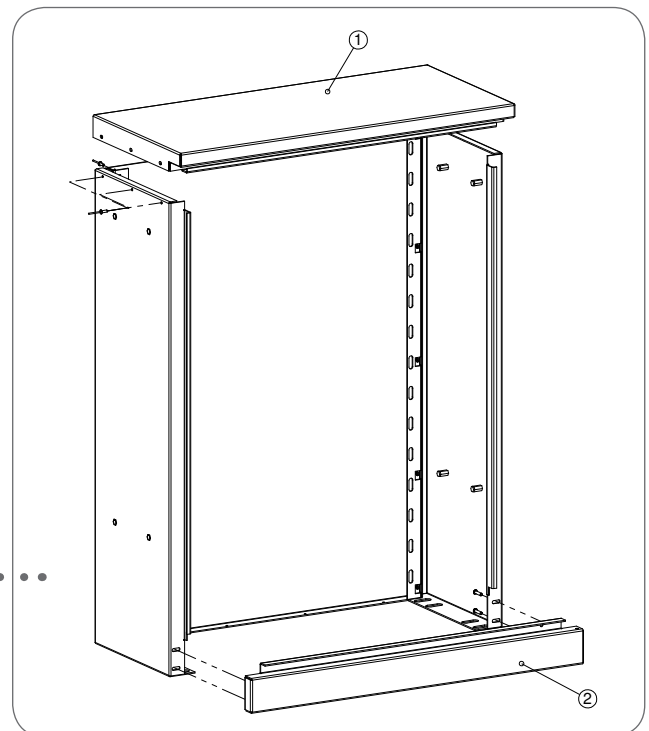
Fig 2.2.1 *Roof plate is attached to the side plates*

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.

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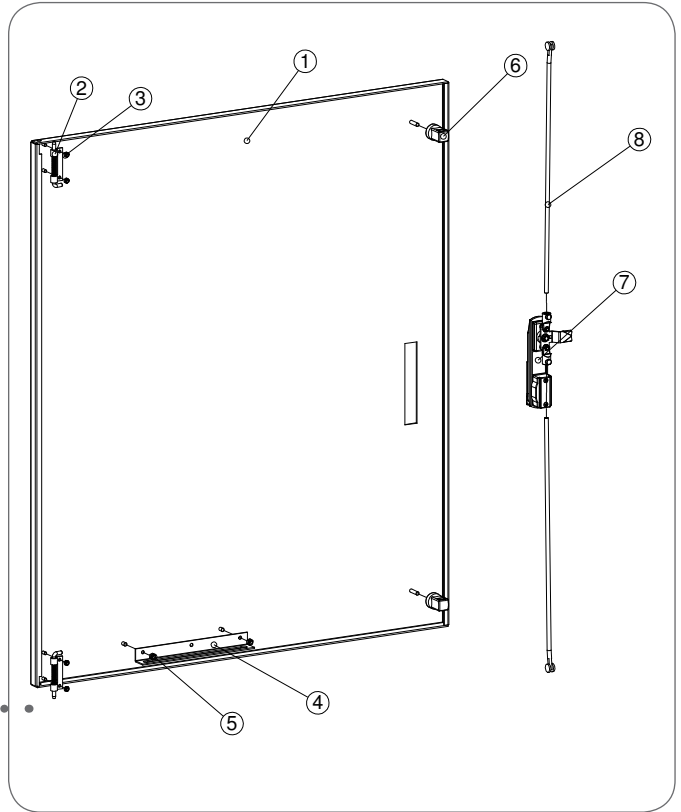
Fig. 2.3. *Fastening of the door and adjacent components.*

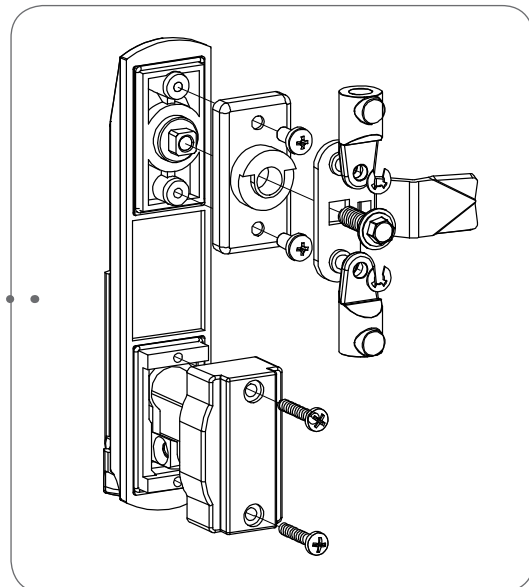| Height of the cabinet [mm]	Rod length [mm]
1120	460
1405	600
1685	740
1965	880

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.

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

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

150 deg
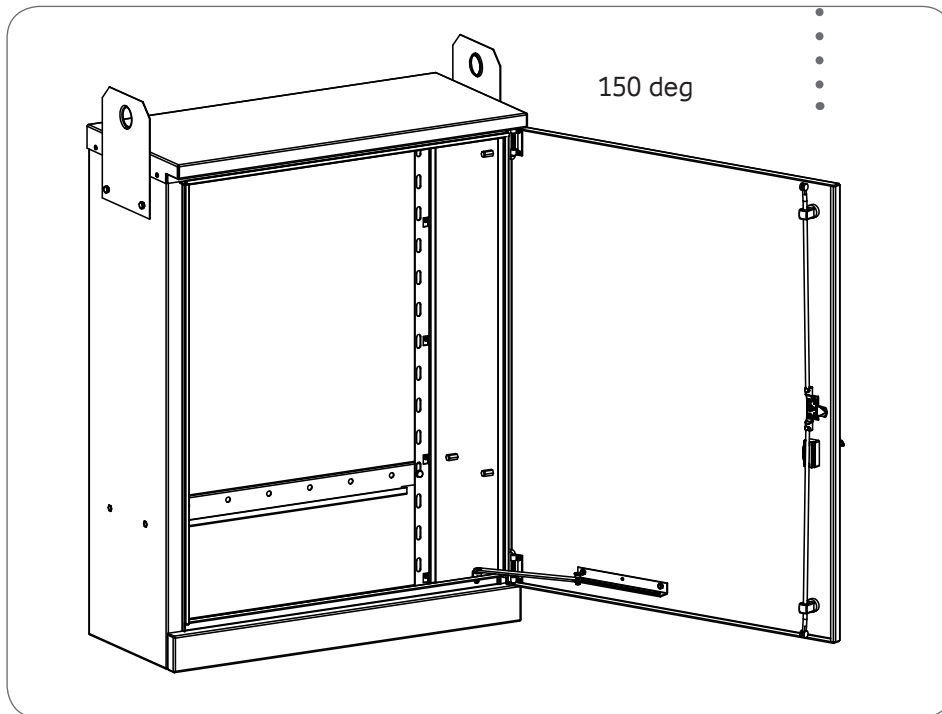
2.3 Base

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.

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.

Base 300 construction

For the base 300 you need front and back plate (1) and 2 side plates (2) of the base 300. The parts are fixed with ISO7380 M6x20mm screws (4) and the C-rail of the base (3) is attached to the side plates with 4,8x9,5mm tapping screw.
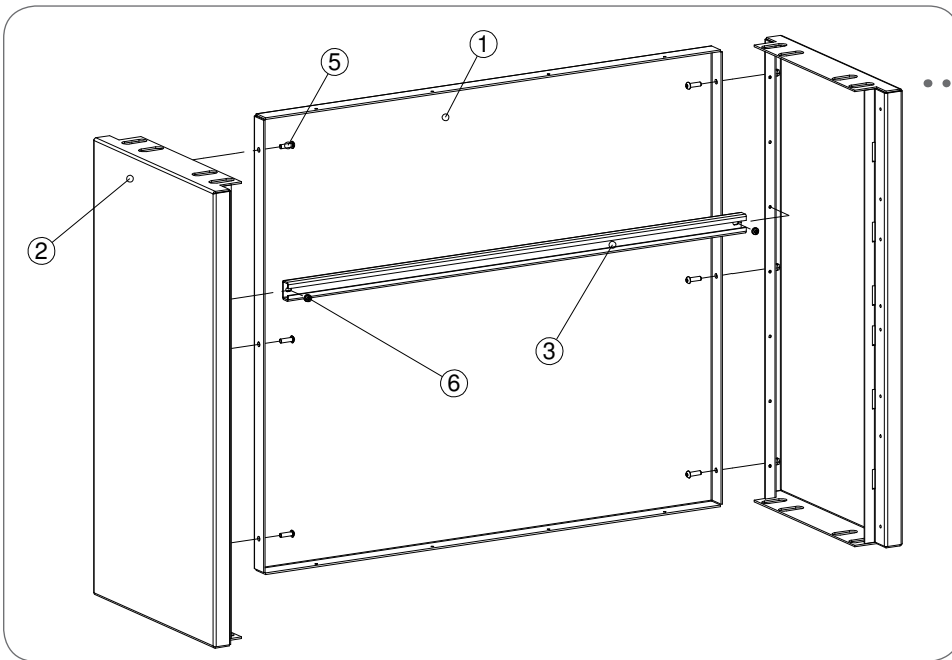
Fig. 2.6. *Assembly of the base. The first stage is to fasten the side panels to the back panel.*
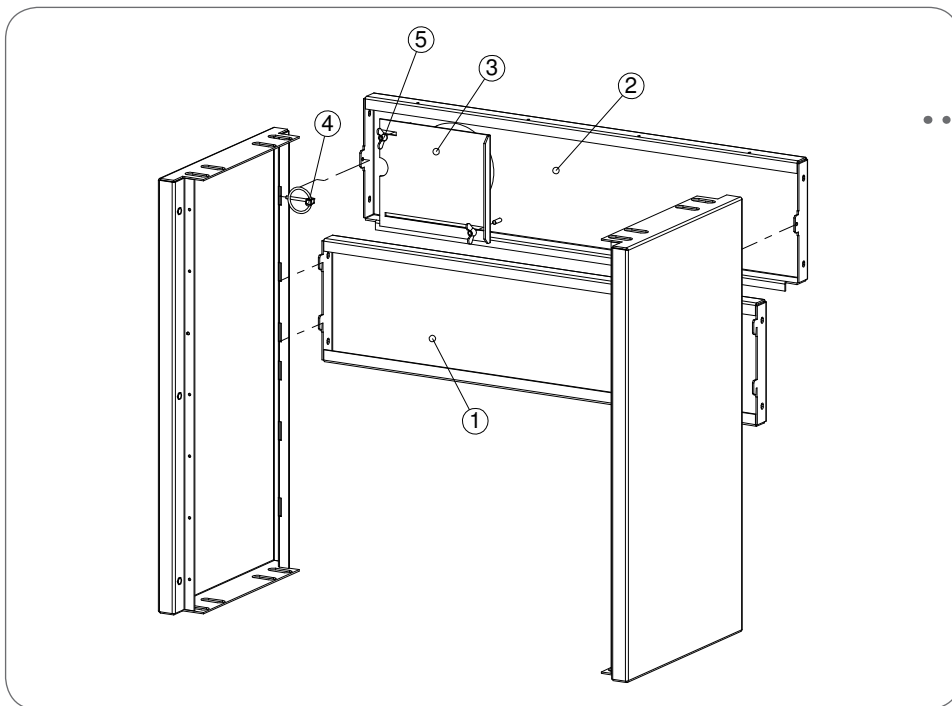
Fig. 2.7. *Assembly of the base. In the second stage, fasten the front and cover panels into the base.*
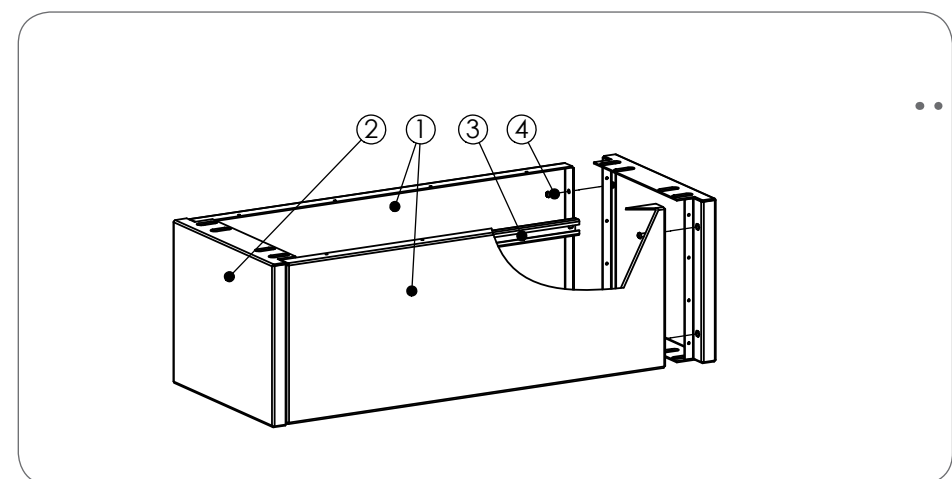
Fig 2.7.1 *Construction of the base 300*

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.

appr. 500mm filled with expanded clay pellets or similar

~500

Planks underneath the base

50mm polyurethane sheet
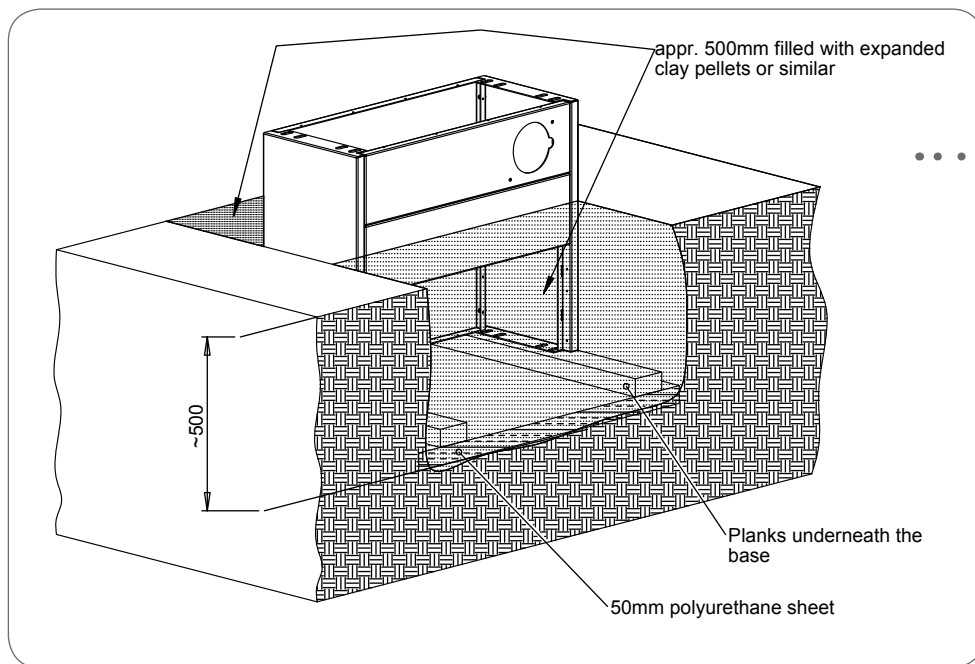
Fig. 2.8. *Installing the base of the C-serie cable distribution cabinet in the ground.*

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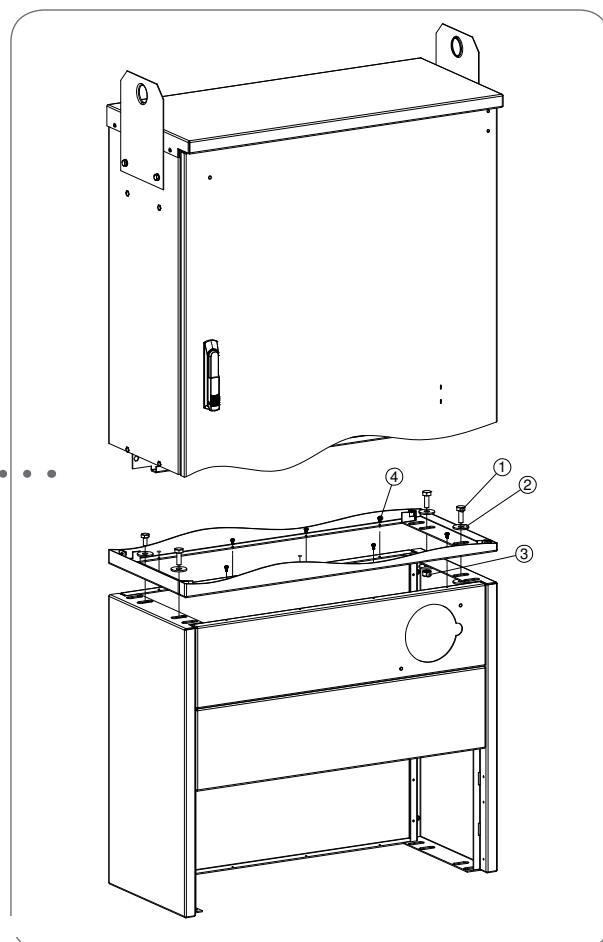
Fig. 2.9. *The cabinet and the base are fastened together with M12x30mm hexagonal screws and nuts.*

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.

2.6   Installing the F-serie system in the protective cabinet

If required, the F-serie 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.
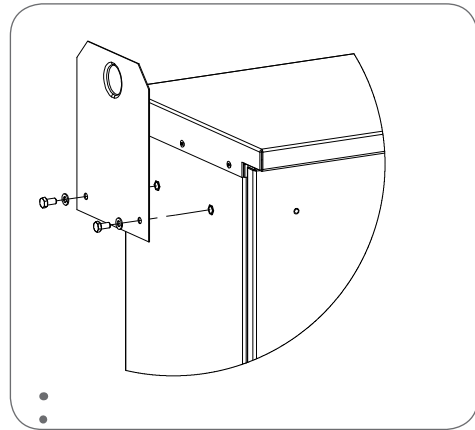
Fig. 2.10. *Fastening lifting lugs on the cable distribution cabinet.*
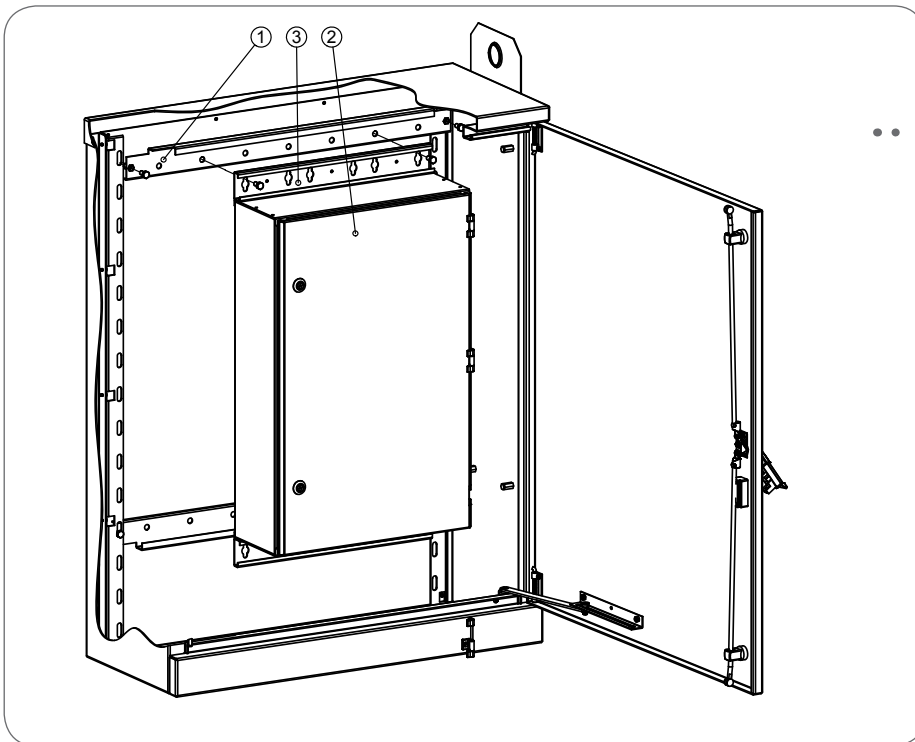
Fig. 2.11. *Adding a F-serie system inside the C-serie cable distribution cabinet. The system is mounted on the fastening rails (1) screwed inside the cabinet.*

2.7 Mounting plate for the Moducs cabinet (cable distribution cabinet)

The cable distribution cabinet can be equipped directly whit the mounting plates (4, fig.2.12).

3 SEALING

C-serie 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.

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.

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.*

4 DIMENSIONS

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.

Fig 4.1. *Basics of the measuring of the enclosure and base of the S-series*

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

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

Table 4.2. *Available sizes of the cabinet of the C-serie cable distribution cabinet.*

Status	Code	Description	Width (mm)	Height (mm)
Approved	50072485	Mounting plate 1120x400	310	895
Approved	50072493	Mounting plate 1120x600	510	895
Approved	50066806	Mounting plate 1120x850	760	895
Approved	50072489	Mounting plate 1120x1050	960	895
Approved	50066807	Mounting plate 1120x1350	1260	895
Approved	50072499	Mounting plate 1120x1600	1510	895
Approved	50066804	Mounting plate 1405x600	510	1180
Approved	50072492	Mounting plate 1405x850	760	1180
Approved	50066805	Mounting plate 1405x1050	960	1180
Approved	50066801	Mounting plate 1405x1350	1260	1180
Approved	50066808	Mounting plate 1405x1600	1510	1180
Approved	50072491	Mounting plate 1405x1900	1810	1180
Approved	50072496	Mounting plate 1685x850	760	1460
Approved	50072497	Mounting plate 1685x1050	960	1460
Approved	50066803	Mounting plate 1685x1350 (half)	1260	760
Approved	50072486	Mounting plate 1685x1600 (half)	1510	620
Approved	50072488	Mounting plate 1685x1900 (half)	1810	760
Approved	50066802	Mounting plate 1965x1350 (half)	1260	900
Approved	50072487	Mounting plate 1965x1900 (half)	1810	900

Table 4.3. *Mounting plates*

Moducs equipment bag, 1-door cabinet		
Onro	Name	pcs/bag
1	hexagonal screw M12x30 8.8 DIN 933	4
2	hexagonal nut M12 DIN934 ZN	4
3	washer M12 DIN 9021 ZN	8
4	pop riveti 4,8x10,5 rst/rst	16
5	hexagonal socket head screw ISO7380 M6x25 10,9	5
6	screw M5x10 7500-C	28
7	hexagonal screw M8x16 8.8 DIN933 ZN	4
8	hexagonal nut M6 DIN934 ZN	3
9	PVC washer 6,5/12	2

Moducs equipment bag, 2-door cabinet		
Onro	Name	pcs/bag
1	hexagonal screw M12x30 8.8 DIN 933	4
2	hexagonal nut M12 DIN934 ZN	4
3	washer M12 DIN 9021 ZN	8
4	pop riveti 4,8x10,5 rst/rst	20
5	hexagonal socket head screw ISO7380 M6x25 10,9	5
6	screw M5x10 7500-C	28
7	hexagonal screw M8x16 8.8 DIN933 ZN	4
8	hexagonal nut M6 DIN934 ZN	5
9	PVC washer 6,5/12	4

Moducs base equipment		
Onro	Name	pcs/bag
1	screw M5x10 7500-C	12
2	winged nut M6 DIN315 sink.	2
3	ring pin 4,5 mm ZN	2
4	hexagonal socket head screw ISO7380 M6x25 10,9	6

Table4.4. *The content of the equipment bag of the C-series. The equipment bag is delivered with the cabinet base.*

5 OTHER INFORMATION

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 serie distribution cabinet. Tables 5.1 and 5.2 show the values corresponding to the dimensions provided in Figure 5.1.

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.

The manufacturer reserves the right to make technical changes.

Protective earthing
Cabinet's protective earthing can be done example

using screw and nut to connect PE-wire to installation bar holes. When using smaller cabinet inside of C-serie cabinet remember to use protective earthing also in the smaller cabinet according to local regulations.

Independence of the components
C-serie cable distribution boards are not designed for some specific component brand. In other words you can use any component brand when using C-serie cable distribution boards.

Loads inside cabinet
Attached components and cabinets inside C-serie cabinet. Can produce force 1kg to each dm2 in the frontal area of the cabinet.

Attaching components to doors
Components can be attached to the doors. Maximum total weight for components which are connected to the door is 20kg / door.

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 (CL 619)
50079013	3-point lock, C-serie, T9 + padlock device

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

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

327,40 mm

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

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	powder paint, must be ordered separately