# List of related manuals

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You can find manuals and other product documents in PDF format on the Internet. See section Document library on the Internet on the inside of the back cover. For manuals not available in the Document library, contact your local ABB representative.
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What this manual contains

This manual describes the mechanical installation of ACS880 multidrive cabinet-installed drives.

Checking the installation site

Check the installation site according to the requirements given in chapter Technical data in ACS880-107 inverter units hardware manual (3AUA0000102519 [English]):

• The installation site is sufficiently ventilated or cooled to transfer away the drive losses.
• The ambient conditions of the drive meet the specifications.
• The wall behind the unit is of non-flammable material.
• There is enough free space above the drive to enable cooling air flow, service and maintenance.
• The floor that the unit is installed on is of non-flammable material, as smooth as possible, and strong enough to support the weight of the unit. Check the floor flatness with a spirit level. The maximum allowed deviation from the surface level is 5 mm in every 3 meters. Level the installation site, if necessary, as the cabinet is not equipped with adjustable feet.

Note: For easy maintenance, do not install the inverter on a higher level than the floor in front of it. If the inverter is placed higher, the ramp supplied with the inverter cannot be used when replacing an inverter module.

Required tools

The tools required for moving the unit to its final position, fastening it to the floor and wall and tightening the connections are listed below:

• crane, fork-lift or pallet truck (check load capacity!), iron bar, jack and rollers
• Pozidrive and Torx (2.5…6 mm) screwdrivers
• torque wrench
• set of wrenches or sockets.
Checking the delivery

The drive delivery contains:

- drive cabinet line-up
- optional modules (if ordered) installed onto the control boards at the factory
- ramp for replacement of large converter modules (if any)
- appropriate drive and optional module manuals
- delivery documents.

Check that there are no signs of damage. Before attempting installation and operation, check the information on the type designation labels of each multidrive unit to verify that the delivery is of the correct type. See sections Type designation key in the hardware manuals of the multidrive units.

Moving the unit

The drive cabinets are to be moved in the upright position. Transportation of the cabinet on its back is only allowed if the unit is equipped for such transportation at the factory. If the cabinet needs to be laid on its back, support it from below beside the cubicle seams. 1) cabinet back panel; 2) support. Never lay or transport a unit with sine filters (with option code +E206) on its back.

![Diagram of cabinet back panel and support]

The centre of gravity of the cabinet is high. Be therefore careful when moving the unit. Avoid tilting.
### ... by crane

Fasten the lifting ropes or slings to the holes of the lifting bars attached to the top of the cabinet.

**Maximum angle of the lifting ropes:** 60°

**IP54 units:** The allowed minimum height of lifting ropes or slings which have fan on the roof is 2 meters.

### ... by fork lift or pallet truck

When using a pallet truck, check its load capacity before attempting to move the unit.

Move the unit on its original pallet, preferably in the original package, to avoid damaging the cabinet surfaces and door devices.

### ... on rollers

Remove the wooden bottom frame which is part of the shipment.

Lay the cabinet on the rollers and move it carefully until close to its final location.

Remove the rollers by lifting the unit with a crane, fork-lift, pallet truck or jack.

### Final placement

Move the cabinet into its final position with an iron bar. Place a wooden piece at the bottom edge of the cabinet in order not to damage the cabinet frame with the iron bar.
Overview of the installation procedure

1. Fasten the cabinet or first shipping split to the floor and wall or roof.

   The cabinet can be installed with its back against a wall (a), or back-to-back with another unit (b). See page 9.

   **Note:** Leave some space at the side where the cabinet outmost hinges are to allow the doors to open sufficiently (w). The doors must open 120° to allow supply and inverter module replacement.

   **Note:** Any height adjustment must be done before fastening the units or shipping splits together. Height adjustment can be done by using metal shims between the cabinet bottom and floor.

   Leave 500 mm free space above the basic roof level of the cabinet for cooling.

2. Remove the lifting bars.

   Remove the lifting bars once the cabinet is in its final position. Refasten the bolts to retain the degree of protection of the cabinet.

3. If the line-up consists of shipping splits, position the second split at the end of the first and fasten the splits together. See page 10.

4. Fasten the second shipping split to the floor.

5. Connect the PE and DC busbars. See pages 10 and 11.

6. Repeat steps 2 to 5 for the remaining shipping splits.
Fastening the cabinet to the floor and wall or roof

The drive must be installed in an upright vertical position. Fasten the cabinet to the floor by using clamps along the edge of the cabinet bottom, or by bolting the cabinet to the floor through the holes inside (if they are accessible).

Alternative 1 – Clamping

1. Insert the clamps into the twin slots along the front and rear edges of the cabinet frame body and fasten them to the floor with a bolt. The recommended maximum distance between the clamps in the front edge is 800 mm (31.5”).

2. If floor mounting from back is not possible, fasten the cabinet at the top to wall with L-brackets (not included in the delivery) using the lifting bar fastening holes.

Alternative 2 – Using the holes inside the cabinet

1. Fasten the cabinet to the floor through the bottom fastening holes with M10 to M12 (3/8” to 1/2”) bolts. The recommended maximum distance between the front edge fastening points is 800 mm (31.5”).

2. If the back fastening holes are not accessible, fasten the cabinet at the top to wall with L-brackets (not included in the delivery) using the lifting bar fastening holes.
Fastening the shipping splits to each other

Long cabinet line-ups are delivered as “shipping splits”. Fasten the shipping splits to each other in the joining cubicle included at the end of each shipping split. Special screws for the fastening are enclosed in a plastic bag inside the cabinet. The threaded bushings are already mounted on the post.

1. Remove any plates covering the rear post of the joining cubicle.
2. Fasten the front and rear posts of the joining cubicle with 7 screws to the posts of the next cubicle.
3. Replace the covering plates after connecting the DC busbars.

Connecting the PE busbars

M10 bolts for connecting the PE busbars are enclosed in a plastic bag inside the cabinet. Connect the busbars as shown below with a tightening torque of 35…40 N·m (25…30 lbf·ft).

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<td>Spring washer</td>
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</tr>
<tr>
<td>3</td>
<td>Bolt</td>
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Connecting the DC busbars

Connect the DC busbars in the joining cubicle from front as follows:

1. Remove the plate covering the busbars.
2. Unscrew the bolts of the joint pieces ([a] in the figure below).
3. Connect the DC busbars with the joint pieces as shown below. Tighten the bolts to 55…70 N·m (40…50 lbf·ft).
4. Refit all plates.

**WARNING!** Do not place the spring washer against the joint piece. Use the plain washer (with electroplated zinc coating and blue chromate passivation) instead. An unpassivated zinc-coated spring washer positioned directly against the joint piece would cause corrosion.

Never use any other joint pieces, bolts or washers but the ones delivered with the unit. The materials are carefully selected to match the materials of the busbars. Other parts/materials may form electric couple and cause corrosion.

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<tr>
<td><strong>a</strong></td>
<td>Joint piece</td>
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<tr>
<td><strong>b</strong></td>
<td>Plain washer with electroplated zinc coating and blue chromate passivation</td>
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<td><strong>c</strong></td>
<td>Spring washer with mechanically sprayed zinc coating</td>
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<tr>
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*Units with single DC busbars*

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*Units with double DC busbars*
Miscellaneous

- **Cable duct in the floor below the cabinet**

A cable duct can be constructed below the 500 mm wide middle part of the cabinet. The cabinet weight lies on the two 50 mm wide transverse sections which the floor must carry. Prevent the cooling air flow from the cable duct to the cabinet by bottom plates. To ensure the degree of protection for the cabinet, use the original bottom plates delivered with the unit. With user-defined cable entries, take care of the degree of protection, fire protection and EMC compliance.

![Diagram of cabinet and cable duct](image)

- **Electric welding**

Fastening the cabinet by welding is not recommended. However, if welding is the only mounting option, proceed as follows: Connect the return conductor of the welding equipment to the cabinet frame at the bottom within 0.5 meters of the welding point.

**Note:** The thickness of the zinc coating of the cabinet frame is 100 to 200 micrometers.

**WARNING!** Ensure proper connection of the return wire. Welding current must not return via any component or cabling of the drive. If the welding return wire is connected improperly, the welding circuit may damage electronic circuits in the cabinet.

**WARNING!** Do not inhale the welding fumes.
Further information

Product and service inquiries
Address any inquiries about the product to your local ABB representative, quoting the type designation and serial number of the unit in question. A listing of ABB sales, support and service contacts can be found by navigating to www.abb.com/drives and selecting Sales, Support and Service network.

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