

# Installation Instructions

## Ground Bar Kit for E1h/E2h Drives

### VLT<sup>®</sup> FC Series FC 102, FC 103, FC 202, and FC 302

#### Description

The ground bar kit fits the following drives in E1h and E2h enclosures:

- VLT<sup>®</sup> HVAC Drive FC 102
- VLT<sup>®</sup> Refrigeration Drive FC 103
- VLT<sup>®</sup> AQUA Drive FC 202
- VLT<sup>®</sup> AutomationDrive FC 302

The kit includes a pair of ground bars for installation inside E1h/E2h enclosures.

#### Kit Part Numbers

Use these instructions with the following kits.

Kit number	Kit description
176F6609	Ground bar kit for E1h/E2h drives

Table 1.1 Part Numbers for Kits

#### Items Supplied

The ground bar kit contains the following items.

Item	Quantity
Ground bar	2
Angle bracket	2
M5x18 mm screw	4
M6 hex nut	4

Table 1.2 Items Supplied in Ground Bar Kit

#### Safety Information

#### **⚠ WARNING**

##### ELECTRICAL SHOCK HAZARD

VLT<sup>®</sup> FC series drives contain dangerous voltages when connected to mains voltage. Improper installation, and installing or servicing with power connected, can cause death, serious injury, or equipment failure.

To avoid death, serious injury, or equipment failure:

- Only use qualified electricians for the installation.
- Disconnect the drive from all power sources before installation or service.
- Treat the drive as live whenever the mains voltage is connected.
- Follow the guidelines in these instructions and local electrical safety codes.

#### **⚠ WARNING**

##### DISCHARGE TIME

The drive contains DC-link capacitors, which can remain charged even when the drive is not powered. High voltage can be present even when the warning LED indicator lights are off. Failure to wait 40 minutes after power has been removed before performing service or repair work can result in death or serious injury.

- Stop the motor.
- Disconnect AC mains and remote DC-link power supplies, including battery back-ups, UPS, and DC-link connections to other drives.
- Disconnect or lock PM motor.
- Wait 40 minutes for capacitors to discharge fully.
- Before performing any service or repair work, use an appropriate voltage measuring device to make sure that the capacitors are fully discharged.

## Installation Instructions

### Installing the Ground Bar Kit

The ground bar kit includes 2 ground bars, 1 for the mains side and 1 for the motor side of the drive. To install the ground bars, use the following steps. Refer to *Illustration 1.1* to *Illustration 1.3*.

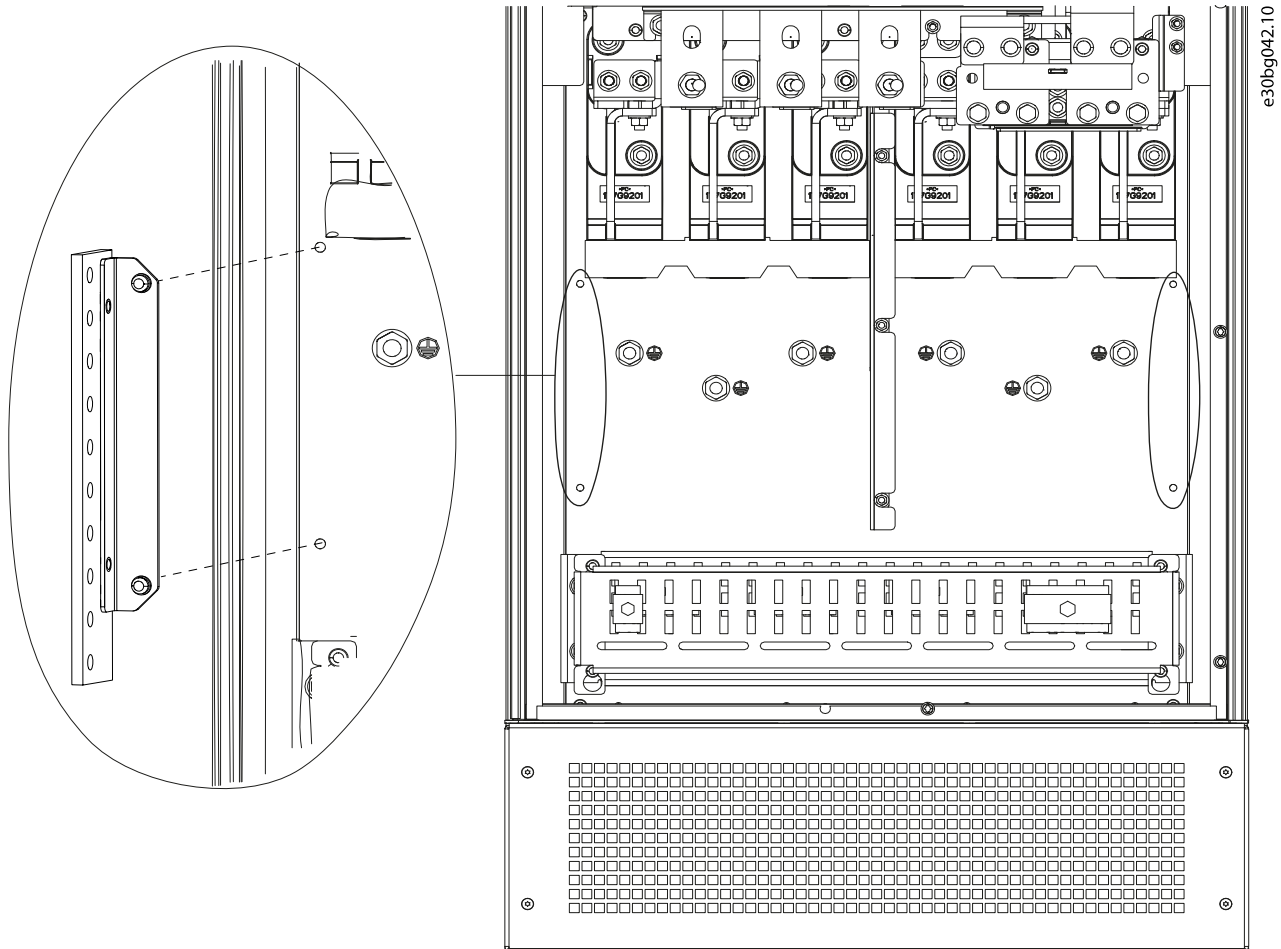
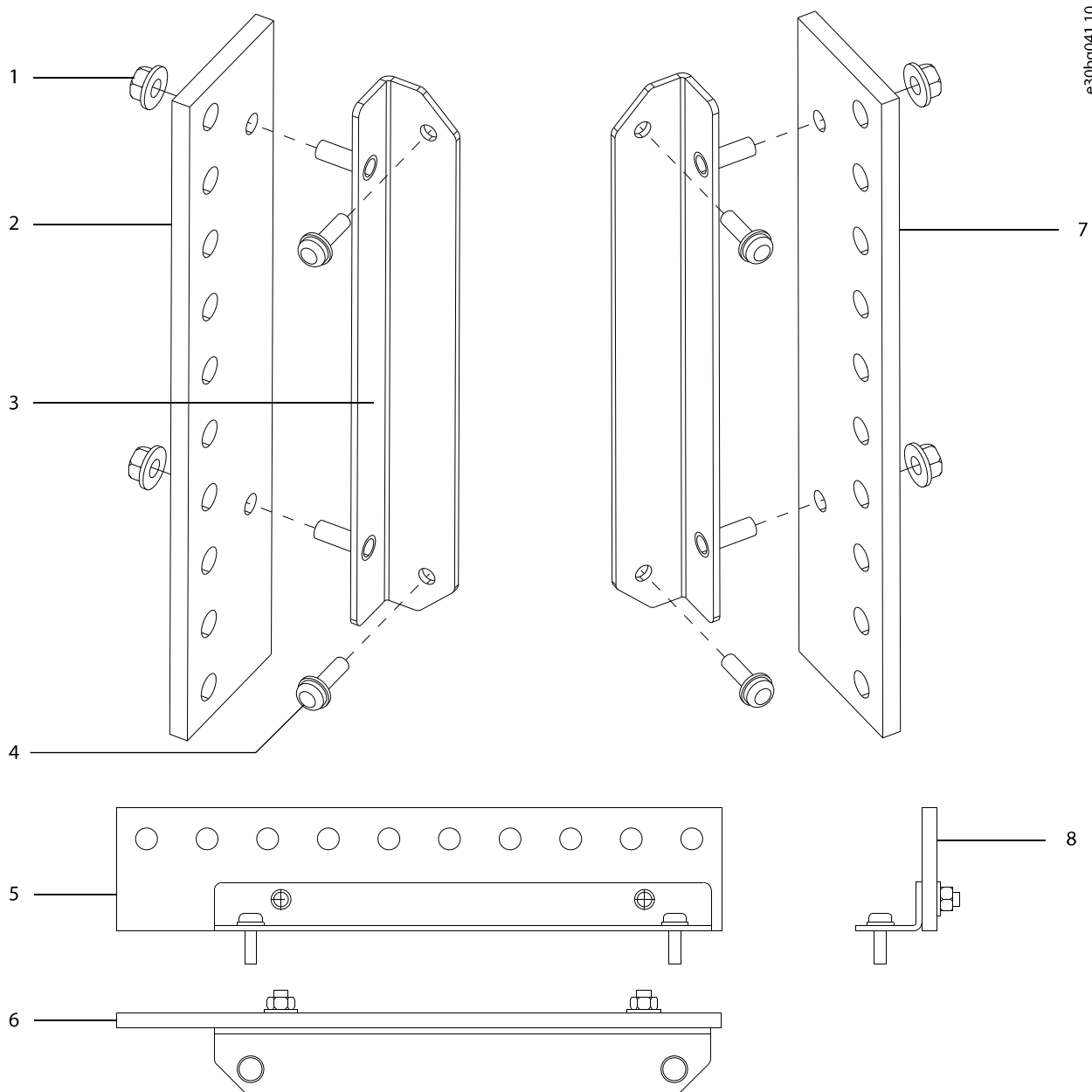


Illustration 1.1 Location of Ground Bar Mounting Holes in Midplate



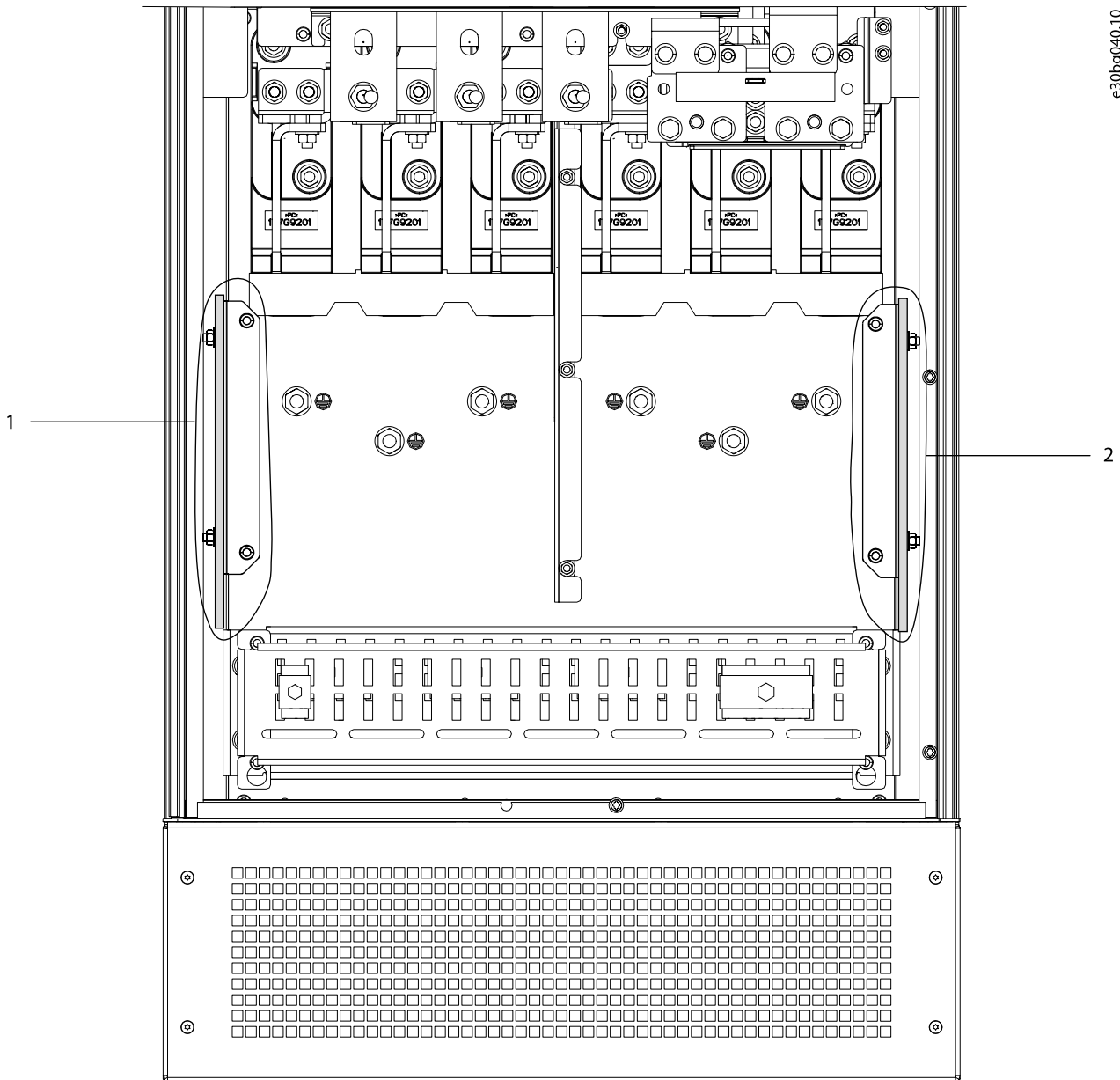
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1	M6 hex nut	5	Side view of assembled ground bar and bracket
2	Ground bar assembly for mains side	6	Front view of assembled ground bar and bracket
3	Angle bracket	7	Ground bar assembly for motor side
4	M5x18 mm screw	8	End view of assembled ground bar and bracket

Illustration 1.2 Assembly of Ground Bars and Angle Brackets

1. Attach the ground bars to the angle brackets:
  - 1a Place 1 ground bar over the 2 threaded posts on the angle bracket.
  - 1b Fasten 2 M6 hex nuts (T30) to the bracket posts, 1 on each post. See *Illustration 1.2*.
  - 1c Tighten nuts to 3.9 Nm (35 in-lb).
  - 1d Repeat for remaining ground bar and angle bracket. Position ground bar with the long end oriented in the opposite direction on

- the bracket. When correctly assembled, the 2 ground bars mirror each other.
2. Remove 4 screws from the mounting holes in the midplate, 2 from each side of the drive. For the location of the mounting holes, see *Illustration 1.1*.
  3. Position the 2 angle brackets with attached ground bars over the mounting holes in the midplate. See *Illustration 1.3*.
  4. Fasten angle brackets to the midplate with 4 M5x18 mm screws (T25) from the kit, 2 in each angle bracket. Tighten to 2.3 Nm (20 in-lb).



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1	Mains side ground bar installed	2	Motor side ground bar installed
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**Illustration 1.3 Ground Bars and Angle Brackets Installed**



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