

Installation Instructions

Oversize Wiring Kit (D1h and D2h)

The oversize wiring kit is designed for the D1h and D2h frequency converters and contains the following parts:

- Option enclosure (1)
- Base plate (1)
- Top plate (2)
- Ground tie plate (1)
- Jumper bus bars, mains (3), motor (3), brake (2)
- Assorted screws and nuts

	D1h	D2h
8 mm nut	8	10
13 mm nut	3	—
17 mm nut	8	10
Tapping screws	6	6
Machine screws	15	16
Standoffs	—	2

Table 1.1 Assorted Nuts and Screws

1.1 Pre-Installation Considerations

Remove frequency converter from pedestal or wall-mount installation, if so configured.

⚠ WARNING

DISCHARGE TIME

The frequency converter contains DC-link capacitors, which can remain charged even when the frequency converter is not powered. Failure to wait the specified time after power has been removed before performing service or repair work, could result in death or serious injury.

1. Stop motor.
2. Disconnect AC mains, permanent magnet type motors, and remote DC-link power supplies, including battery back-ups, UPS, and DC-link connections to other frequency converters.
3. Wait for the capacitors to discharge fully, before performing any service or repair work. The duration of waiting time is specified in *Table 1.2*.

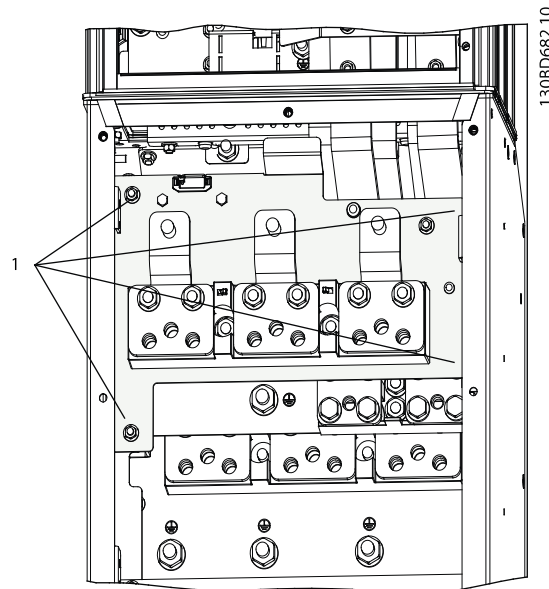
Voltage [V]	Power range [kW]	Minimum waiting time [min]
3x400	90-250	20
3x400	110-315	20
3x500	110-315	20
3x500	132-355	20
3x525	75-250	20
3x525	90-315	20
3x690	90-250	20
3x690	110-315	20

Table 1.2 Discharge Time

1.2 Installation

1.2.1 Preparing Option Enclosure

1. Remove cover from the option enclosure.
2. Remove the input terminal plate by removing four 8 mm nuts, one at each corner of the plate. Refer to *Illustration 1.1*.



1	Four 8 mm nuts
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Illustration 1.1 Removing Input Terminal Plate

1.2.2 Preparing the Frequency Converter

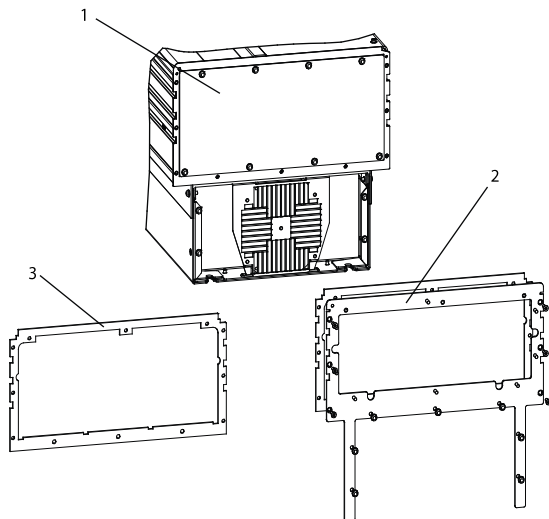
WARNING

LIFTING HAZARD

The D1h unit weighs 62 kg [135 lbs], and the D2h unit weighs 125 kg [275 lbs]. Failure to take proper lifting precautions could result in death or serious injury.

- Ensure that a hoisting mechanism is used to lift the frequency converter.

1. Set the frequency converter on its back.
2. Remove base plate from drive by removing six T25 (M4.8x19) screws and three T25 (M5x12) screws.
3. Attach the new base plate to the bottom of the frequency converter using six T25 (M4.8x19) screws and seven T25 (M5x12) screws. Refer to *Illustration 1.2*.

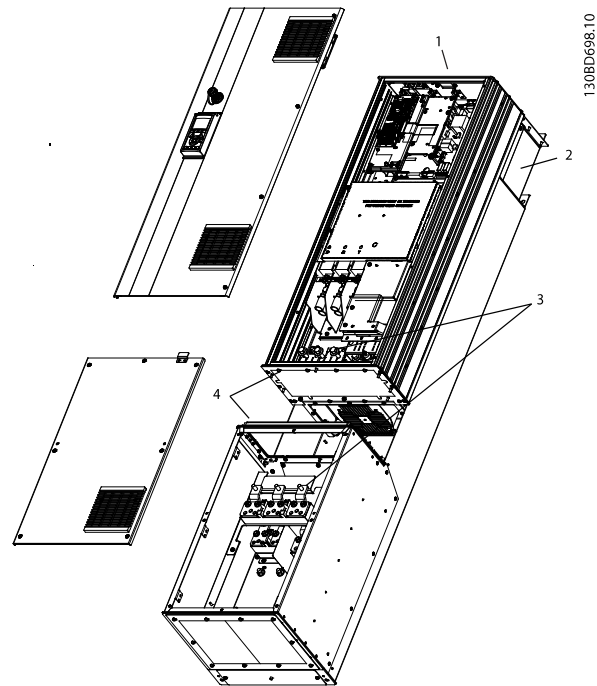


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1	Bottom of the frequency converter
2	New base plate
3	Old base plate

Illustration 1.2 Removing Old Base Plate from the Frequency Converter and Installing New Base Plate

1.2.3 Installing the Frequency Converter into Option Enclosure

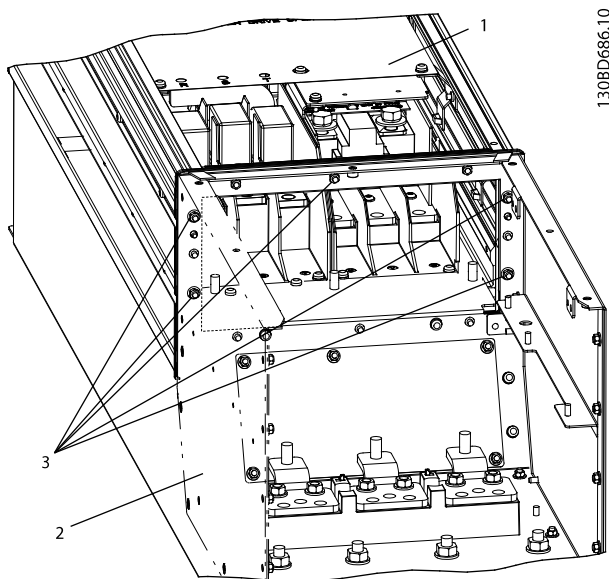


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1	Attaching top connector plates
2	Sliding the frequency converter into the option enclosure
3	Installing jumper bus bars (motor, brake, and mains)
4	Connecting unit base to option enclosure Attaching ground plate

Illustration 1.3 Installation Steps

1. With the frequency converter on its back, lift and slide the unit into the open channel of the option enclosure. Refer to *Illustration 1.3*.
2. Fasten the base of the unit to the option enclosure using five 8 mm nuts (D1h) or six 8 mm nuts (D2h). See *Illustration 1.4*.

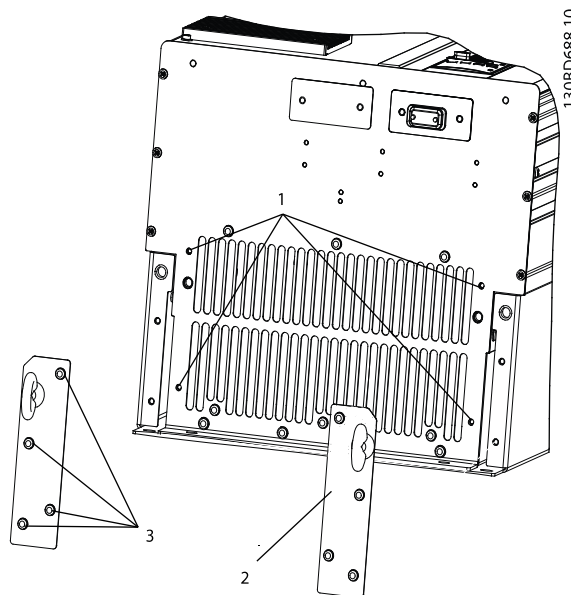


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1	Frequency converter
2	Option enclosure
3	8 mm nuts

Illustration 1.4 Attaching the Unit Base to the Option Enclosure

3. Secure the top of the unit to the option enclosure. Refer to *Illustration 1.5*
 - 3a Remove the four T25 (M5x12) screws from the top of the frequency converter
 - 3b Fasten each connector plate between the edge of the unit and the grill, using four T25 screws per plate

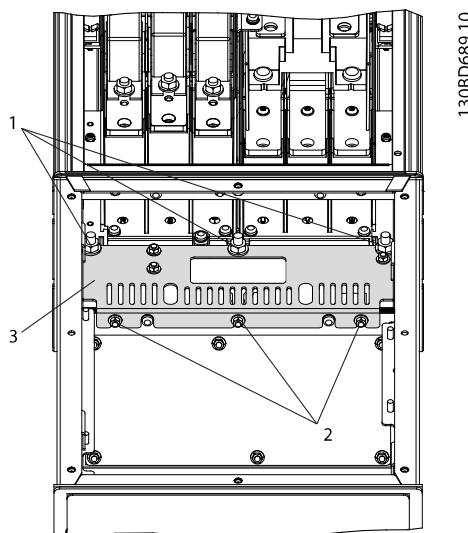


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1	Four M5x12 screws on top of the frequency converter
2	Top connector plate
3	Four M5x12 screws per connector plate

Illustration 1.5 Attaching the Top Connection Plates

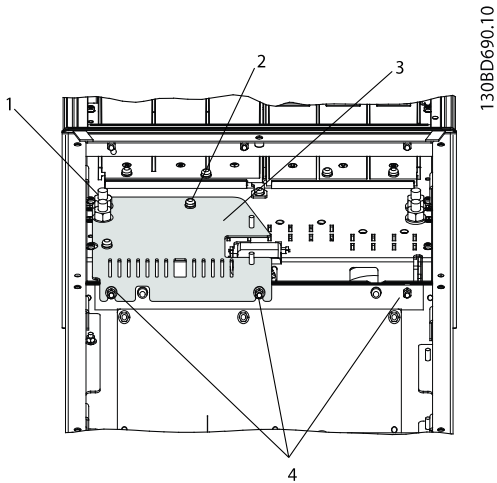
4. Install the ground plate between the bottom of the unit and the option enclosure using three 13 mm nuts and three 8 mm nuts (D1h) or two 17 mm nuts, three 8 mm nuts, and one T25 machine screw (D2h). Refer to *Illustration 1.6* and *Illustration 1.7*.



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1	13 mm nuts
2	8 mm nuts
3	Ground plate

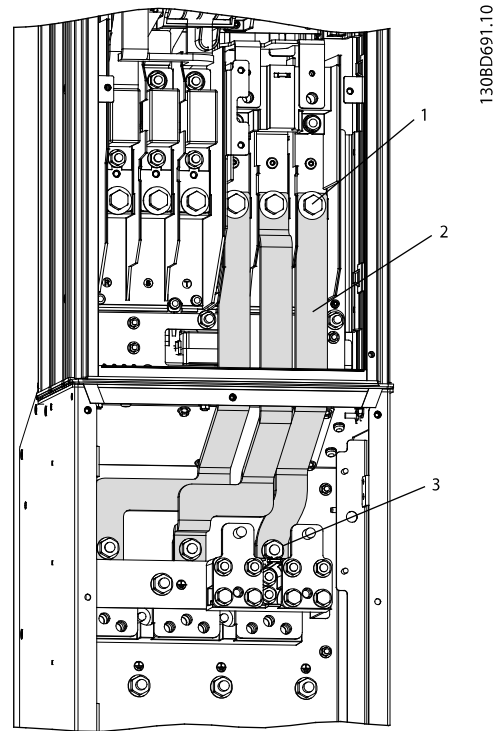
Illustration 1.6 Installing the Ground Plate on D1h



1	13 mm nuts
2	M5x12 machine screw
3	Ground plate
4	8 mm nuts

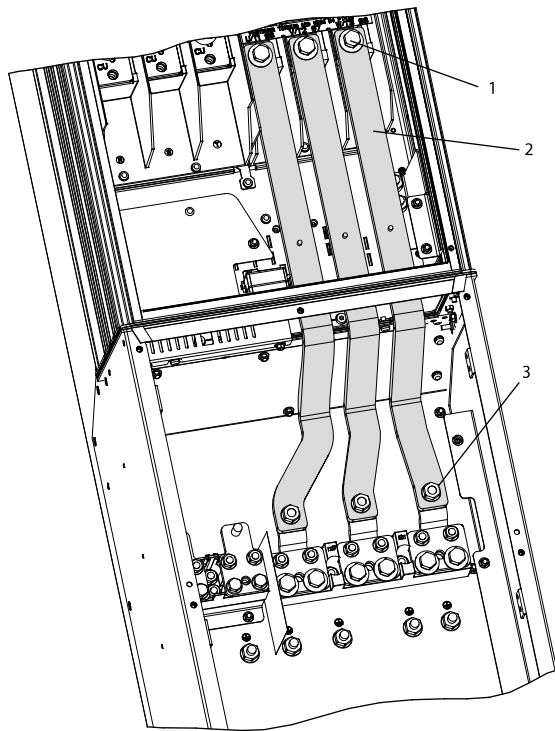
Illustration 1.7 Installing the Ground Plate on D2h

5. Install one jumper bus bar for each motor phase (U, V, W). Refer to *Illustration 1.8* for D1h and *Illustration 1.9* for D2h.
 - 5a Attach one bus bar to each of the frequency converter motor terminals using the existing terminal connection screw
 - 5b Secure each bus bar with one 17 mm nut on the option enclosure motor terminal



1	Bus bar attached to the frequency converter motor terminal
2	Jumper bus bars for each motor phase (U, V, and W)
3	Bus bar secured to the option enclosure motor terminal

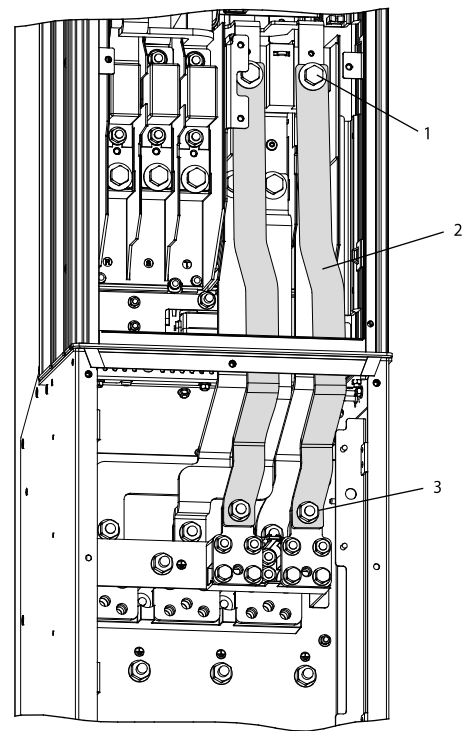
Illustration 1.8 Attaching Motor Jumper Bus Bars on D1h



1	Bus bar attached to the frequency converter motor terminal
2	Jumper bus bars for each motor phase (U, V, and W)
3	Bus bar secured to the option enclosure motor terminal

Illustration 1.9 Attaching Motor Jumper Bus Bars on D2h

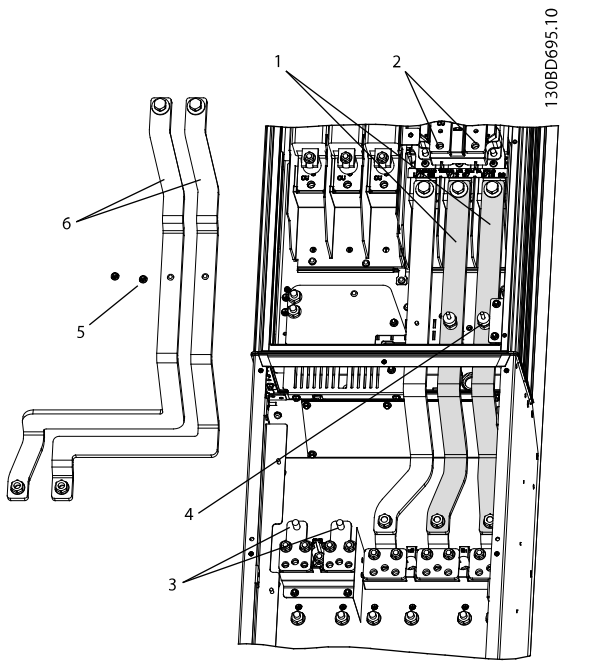
6. If the unit is a D1h and has a brake or regeneration option, install two brake jumper bus bars. Refer to *Illustration 1.10*.
 - 6a Attach one bus bar to each of the frequency converter brake terminals using the existing screw
 - 6b Secure each bus bar with one 17 mm nut on the option enclosure brake terminal



1	Bus bar attached to the frequency converter brake terminal
2	Jumper bus bars for both brake terminals
3	Bus bar secured to the option enclosure brake terminal

Illustration 1.10 Attaching D1h Brake Jumper Bus Bars

7. If the unit is a D2h and has a brake or regeneration option, perform the following steps. Refer to *Illustration 1.11*.
 - 7a Install a standoff on both the V and W motor bus bars
 - 7b Attach one bus bar to each of the frequency converter brake terminals using the existing screw
 - 7c Secure each bus bar with one 17 mm nut on the option enclosure brake terminal
 - 7d Secure each standoff using one 8 mm nut

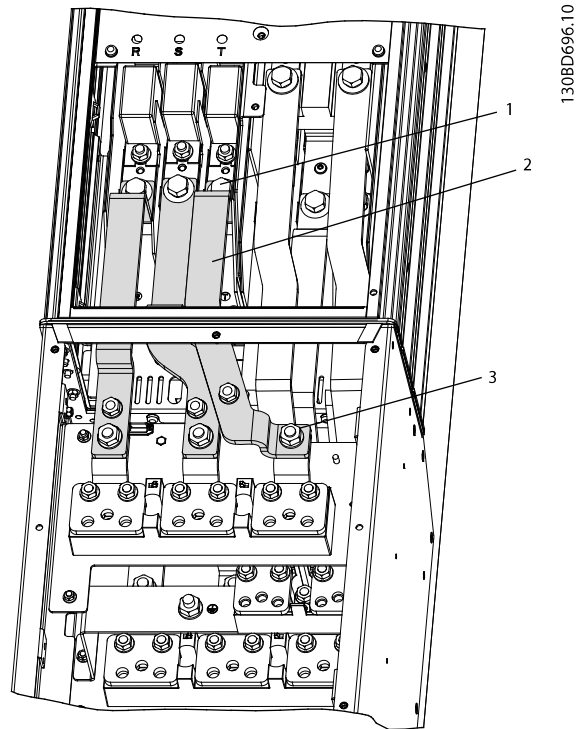


1	Motor bus bars (V and W)
2	Frequency converter brake terminals
3	Option enclosure brake terminals
4	Standoff
5	8 mm standoff nut
6	Jumper bus bars for both brake terminals

Illustration 1.11 Attaching D2h Brake Jumper Bus Bars

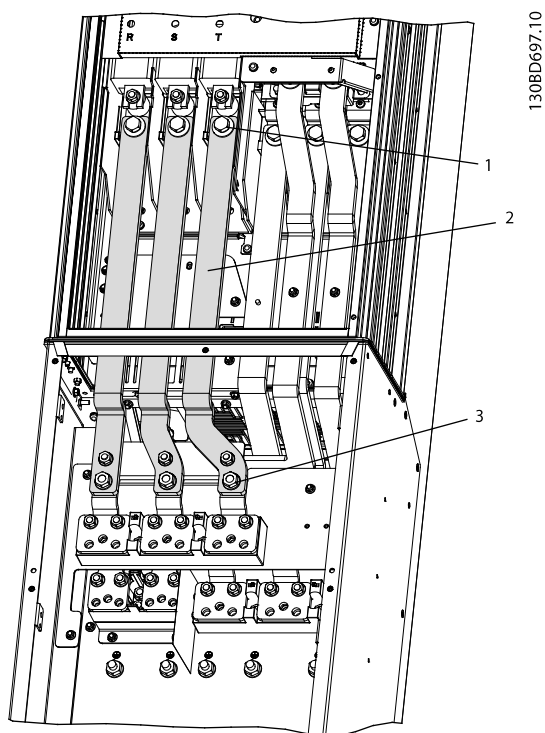
8. Reinstall the input terminal plate using four 8 mm nuts, one at each corner of the plate. Refer to *Illustration 1.1*.

9. Install one jumper bus bar for each mains phase (R, S, T). Refer to *Illustration 1.12* for D1h and *Illustration 1.13* for D2h.
 - 9a Attach one bus bar to each of the frequency converter mains terminals using the existing screw
 - 9b Secure each bus bar with one 17 mm nut on the option enclosure brake terminal



1	Bus bar attached to frequency converter mains terminal (T)
2	Jumper bus bars for the mains terminals
3	Bus bar attached to the option enclosure mains terminal

Illustration 1.12 Attaching Mains Jumper Bus Bars



1	Bus bar attached to frequency converter mains terminal (T)
2	Jumper bus bars for the mains terminals
3	Bus bar attached to the option enclosure mains terminal

Illustration 1.13 Attaching Mains Jumper Bus Bars

10. Reinstall the option enclosure cover.
11. Reinstall the D-frame unit.
12. Reconnect the unit to the mains and motor.

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