

Installation Instructions

Back-channel Cooling (In-bottom/Out-back)

D1h-D4h (FC Series FC 102, FC 202, and FC 302)

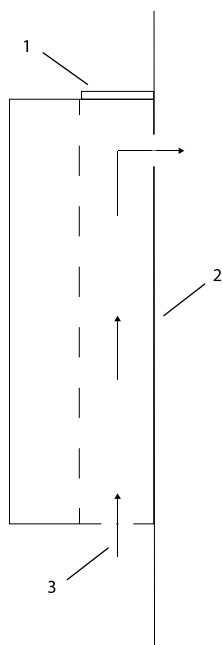
1.1 Description

The back-channel cooling (in-bottom/out-back) kit is designed for the VLT® HVAC Drive FC 102, VLT® AQUA Drive FC 202, and VLT® AutomationDrive FC 302 D1h/D3h and D2h/D4h-size frequency converters. Instead of airflow exiting the top of the unit, the kit redirects the airflow exhaust out the back. Refer to *Illustration 1.1*.

The kit contains the following parts:

Top plate assembly

- Top cover (1)
- Gasket, top cover (1)
- Gasket, cut out (1)
- Screws, M5x12 (11)



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1	Top plate assembly
2	Wall
3	Back-channel airflow

Illustration 1.1 Direction of Airflow with the In-bottom/Out-back Kit Installed

1.2 Kit Part Numbers

Part number	Kit description
176F3522	D1h/D3h, fabricated steel
176F3523	D1h/D3h, stainless steel
176F3527	D2h/D4h, fabricated steel
176F3528	D2h/D4h, stainless steel

Table 1.1 Part Numbers for all the In-bottom/Out-back Kits

1.3 Preparing for Installation

⚠ 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*.
4. Remove frequency converter from the wall or panel.

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

1.4 Installation

This kit contains gaskets to ensure a proper seal between metal parts. Before adhering a gasket to a part, check that the part matches the gasket and that no holes are covered. Remove paper backing and place the sticky side on the part.

1. Place the gasket over the grill opening on the top of the unit. Refer to *Illustration 1.2*.
2. Place the top cover over the gasket and secure it using the 11 screws included in the kit. Torque to 2.3 N-m [20 in-lb].
3. Using the dimensions from *Illustration 1.3 - Illustration 1.6*, create an exhaust opening in the wall that matches the back vent opening of the unit.
4. Reinstall the frequency converter. Create a tight seal between the wall opening and the unit by inserting the cut out gasket between the two.
5. Reconnect the wiring. For additional set-up information, refer to the Operating Instructions.

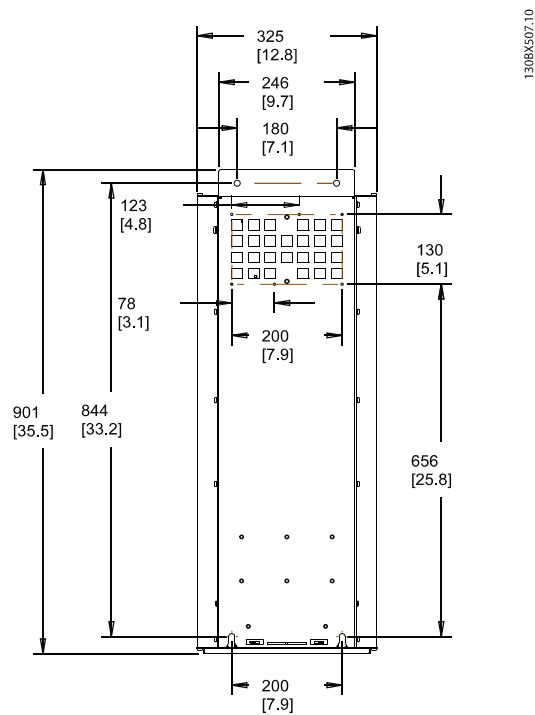
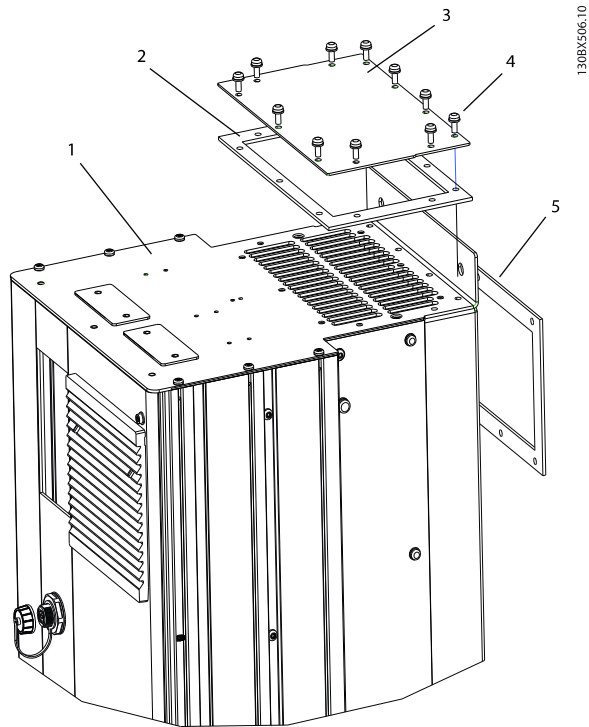


Illustration 1.3 Back Vent Dimensions, D1h



1	Top of unit
2	Gasket, top cover
3	Top cover
4	M5x12 screws (11)
5	Gasket, cut out

Illustration 1.2 Installing the Top Cover Assembly

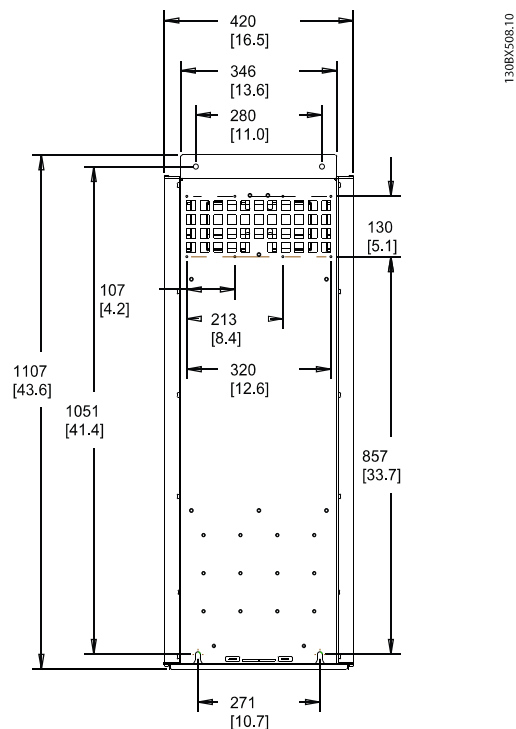
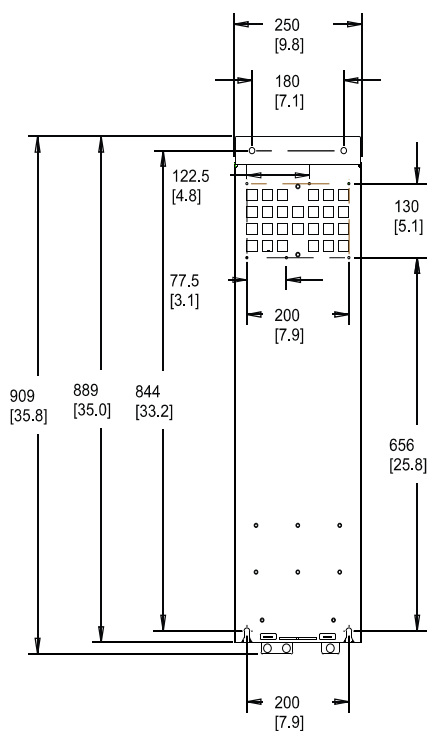
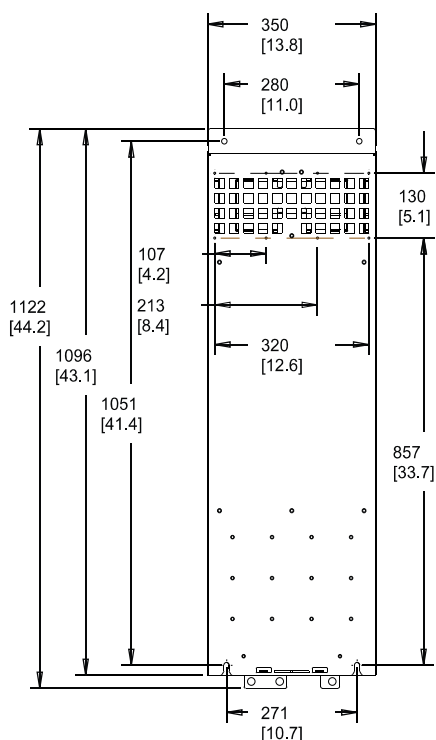


Illustration 1.4 Back Vent Dimensions, D2h



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Illustration 1.5 Back Vent Dimensions, D3h



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Illustration 1.6 Back Vent Dimensions, D4h

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Rev. 04/2014