

# Tool for Fan Replacement, Enclosure Size B3

## VLT® FC Series, FC 102, FC 103, FC 202, FC 301/FC 302

### 1 Introduction

#### 1.1 Description

This Installation Guide describes how to use the insertion tool for fan replacement in enclosure size B3 drives with protection rating IP20 and IP21 with IP21 conversion kit.

#### 1.2 Kit Code Number

Table 1: Code Number

Code number	Description
134B7249	Ext. fan ass B3

#### 1.3 Items Supplied

The following items are supplied with the kit:

- Cooling fan
- Insertion tool
- 4 x Torx 20 screws
- Installation Guide

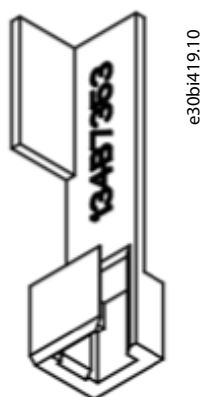


Illustration 1: Insertion Tool

#### 1.4 Tools

Only 2 tools are required for exchanging the fan on an enclosure size B3 drive:

- Philips or Torx 20 screwdriver
- Fan connector insertion tool

## 2 Safety Instructions

### 2.1 Qualified Personnel

Only qualified personnel are allowed to install the parts described in this Installation Guide. Make sure to read and save this guide.

### 2.2 Safety Precautions

Only Danfoss authorized, qualified personnel is allowed to repair this equipment.

#### ⚠ 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 indicator lights are off.

Failure to wait the specified time after power has been removed before performing service or repair work could result in death or serious injury.

- Stop the motor.
- Disconnect AC mains, permanent magnet type motors, and remote DC-link supplies, including battery back-ups, UPS, and DC-link connections to other drives.
- Wait for the capacitors to discharge fully. The minimum waiting time is specified in the table *Discharge time* and is also visible on the nameplate on top of the drive.
- Before performing any service or repair work, use an appropriate voltage measuring device to make sure that the capacitors are fully discharged.

Table 2: Discharge Time, VLT® HVAC Drive FC 102

Voltage [V]	Minimum waiting time (minutes)	
	4	15
	[kW (hp)]	
200–240	1.1–3.7 (1.50–5)	5.5–45 (7.5–60)
380–480	1.1–7.5 (1.50–10)	11–90 (15–121)
525–600	1.1–7.5 (1.50–10)	11–90 (15–121)

Table 3: Discharge Time, VLT® Refrigeration Drive FC 103

Voltage [V]	Minimum waiting time (minutes)	
	4	15
	[kW (hp)]	
200–240	0.25–3.7 (0.34–5.0)	5.5–37 (7.5–50)
380–480	0.25–7.5 (0.34–10)	11–75 (15–100)
525–600	0.75–7.5 (1.0–10)	11–75 (15–100)
525–690	–	11–75 (15–100)

Table 4: Discharge Time, VLT® AQUA Drive FC 202

Voltage [V]	Minimum waiting time (minutes)	
	4	15
	[kW (hp)]	

Voltage [V]	Minimum waiting time (minutes)	
200–240	0.25–3.7 (0.34–5.0)	5.5–37 (7.5–50)
380–480	0.25–7.5 (0.34–10)	11–75 (15–100)
525–600	0.75–7.5 (1–10)	11–90 (15–121)

Table 5: Discharge Time, VLT® AutomationDrive FC 301/FC 302

Voltage [V]	Minimum waiting time (minutes)	
	<b>4</b>	<b>15</b>
	[kW (hp)]	
200–240	0.25–3.7 (0.34–5)	5.5–37 (7.5–50)
380–500	0.25–7.5 (0.34–10)	11–75 (15–100)
525–600	0.75–7.5 (1–10)	11–75 (15–100)

## 3 Installation

### 3.1 Location of Fan

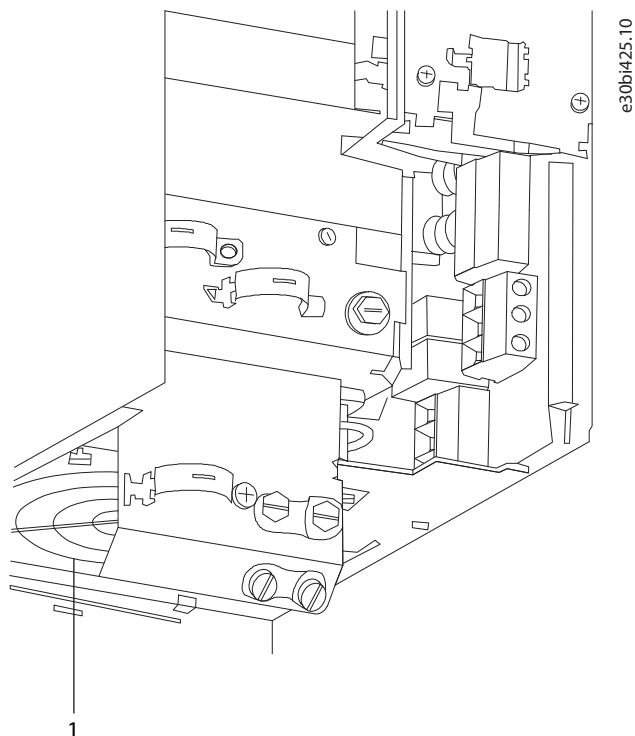


Illustration 2: Location of Fan, Enclosure Size B3

1	Fan
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### 3.2 Replacing the Fan

#### ⚠ WARNING ⚠

##### LIVE PARTS

The drive contains dangerous voltages. Not disconnecting power can result in death or personal injury.

- Before replacing the fan, make sure to disconnect power to the drive and to the live part connections on the relay terminals.

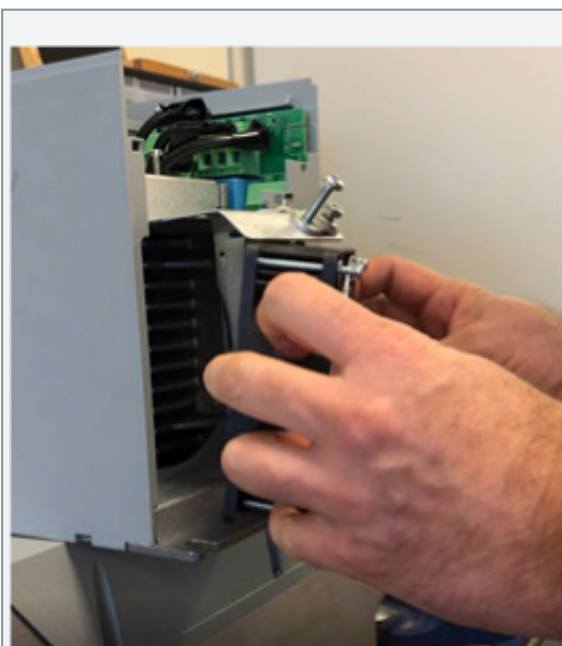
##### Procedure

1. Loosen and remove the 4 captive screws (T20) of the fan cover.



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2. Remove the fan cover.
3. Slide the fan forward and pull it out.



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4. Disconnect the fan plug from the drive.

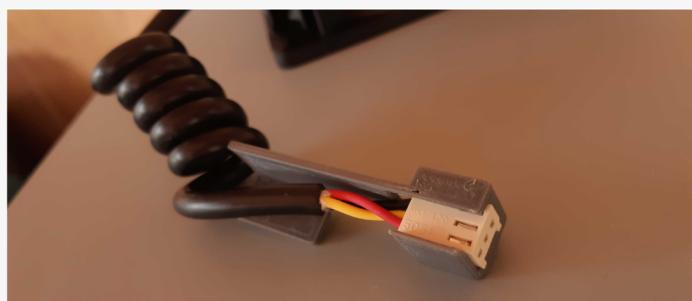


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5. Insert the fan plug-in the fan connector insertion tool.



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e30bi420.10

Illustration 3: The plug installed correctly in the insertion tool

6. To reinstall the fan connector, slide the insertion tool along the edge of the drive bracket.



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e30bi423.10

Illustration 4: Fan plug connected correctly

7. Install the fan in reverse order.
8. Tighten the 4 captive screws (T20) on the fan cover.

**Danfoss A/S**

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