Stripping and crimping automat for insulated ferrules in reel packaging

User Manual
UM EN CF 3000-2.5
Order No. 2888149
User Manual
Stripping and crimping automat for insulated ferrules in reel packaging

UM EN CF 3000-2,5

Revision: 02
Order No.: 2888149

This user manual is valid for:

<table>
<thead>
<tr>
<th>Designation</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CF 3000-2,5</td>
<td>1205477</td>
</tr>
<tr>
<td>CF 3000-2,5 120 V</td>
<td>1205516</td>
</tr>
</tbody>
</table>
Please observe the following notes

User group of this manual

The use of products described in this manual is oriented exclusively to qualified electricians or persons instructed by them, who are familiar with applicable standards and other regulations regarding electrical engineering and, in particular, the relevant safety concepts.

Explanation of symbols used and signal words

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety measures that follow this symbol to avoid possible injury or death.

There are three different categories of personal injury that are indicated with a signal word.

- **DANGER** This indicates a hazardous situation which, if not avoided, will result in death or serious injury.
- **WARNING** This indicates a hazardous situation which, if not avoided, could result in death or serious injury.
- **CAUTION** This indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

This symbol together with the signal word **NOTE** and the accompanying text alert the reader to a situation which may cause damage or malfunction to the device, hardware/software, or surrounding property.

This symbol and the accompanying text provide the reader with additional information or refer to detailed sources of information.

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1 Basic instructions

For simplification, only the item name CF 3000 is used in the following.

Basic condition for the proper safe handling and fault-free operation of the CF 3000 is the knowledge and observation of the safety instructions.

1.1 Intended purpose

**WARNING:** The CF 3000 is intended solely for stripping and crimping. Only the PVC-insulated conductors may be inserted into the insertion funnel on the CF 3000 for processing; under no circumstance massive metal parts or like objects. Arbitrary conversions that go beyond the retrofitting and modifications on the CF 3000 are prohibited for safety reasons.

**NOTE:** Observing all information and the adhering to the prescribed operational conditions belong to the intended purpose.

**WARNING:** The CF 3000 may only be used
– for the intended purpose and
– when in safe and fault-free condition.

**WARNING:** All persons that are involved with the startup, operation, and maintenance of the CF 3000 have to
– be appropriately qualified and
– adhere strictly to this user manual.

The CF 3000 serves to fully automatically strip flexible conductors of the classes 2, 5, and 6 according to DIN VDE 0295 and subsequent pressing insulated ferrules from reel packaging.

Ferrules are processed according to DIN 46228-4 in the cross-section range 0.5 mm² ... 2.5 mm² with 8 mm stripping length (order data, see page 21).

Furthermore, an additional fit can be used to process ferrules in the cross-section range 0.25 mm² ... 0.34 mm² with 8 mm stripping length (order data, see page 21).

**NOTE:** Use only ferrules and spare parts from Phoenix Contact (order data, see page 21).

Permitted operators

Only authorized and instructed operators may work with the CF 3000.

The owner must
– make the user manual available to the operator and
– ensure that the operator has read and understood it.
1.2 Work sites

**NOTE:** For operation and storage, avoid the following:
- Humid or dusty places and
- Places that are subject to high warmth, direct sunlight, or low temperatures (operating range: 15 °C to 35 °C).

**NOTE:**
If there is a move from a cold room to a warm room, condensation can form.
• Before using the CF 3000, open the front door and allow condensation to evaporate.

**NOTE:**
- Do not spill liquids on the CF 3000.
- Do not let the CF 3000 be shaken or jolted heavily.

**NOTE:**
The CF 3000 may be used only when the hood is closed.
• Pull the mains plug before any work on the CF 3000, such as cross-section exchange or maintenance work.

1.3 For your safety

**WARNING:** The hood is installed for your safety. You should not modify the hood under any circumstances, remove it or bridge it by conversions.

**WARNING:**
The CF 3000 may be used only when the hood is closed.
• Pull the mains plug before any work on the CF 3000, such as cross-section exchange or maintenance work.
• Make sure that there are no foreign objects inside the housing.
2 Description of the CF 3000

2.1 Scope of delivery

Illustration 2-1 Scope of delivery

1 Basic device CF 3000
2 Power cable (different types for CF 3000-2,5 and CF 3000-2,5 120 V)
3 Container for insulation residues
4 Ferrule guide for ferrules 0.5 mm² … 2.5 mm² (5 pieces) and per cross-section, one spare ferrule guide and a cable guide (not shown)
5 Operational inserts for 0.5 mm² … 2.5 mm² (5 pieces)
6 Replacement locator for each operational insert (5 pieces)
7 Securing bolt ø 6 mm

The ferrule guide and the operational inserts have the same color codes as the ferrule (according to DIN color code). They are supplied in a case. The case also includes a small brush (see page 16).

You can order a kit for 0.25 mm² and 0.34 mm² (order data, see page 21).
2.2 Overview of the operating components

1. Handle
   - The counter indicates the number of processing procedures.

2. Counter
   - The counter can be reset to 0 with this button.

3. Reset button
   - Lights up when the power supply is switched on.

4. Power-on indicator
   - To feed the conductor into the CF 3000.

5. Insertion funnel
   - Positions the ferrule and strips the cable.

6. Operational insert
   - Locks the operational insert.

7. Securing bolt
   - The hood is there for your safety. The CF 3000 functions only when the hood is closed completely.

8. Hood
   - Device connection for the power cable

9. Mains connection
   - Microfuses integrated in the mains connection.

10. Mains fuses
    - Switches the power supply of the CF 3000 on or off.

11. Mains switch
    - Secondary devise fuse with microfuse 4.0 A/T/250 V.

12. Transformer fuse
    - Device moves into maintenance position (see page 17)

13. Reverse button
    - Holder for the ferrule dispenser.

14. Ferrule dispenser holder
    - The container collects the insulation residues. Empty the container regularly.

15. Container
    - The ferrule guide positions the ferrules. The corresponding guide needs to be installed for every cross-section.
3 Putting into operation

3.1 Selecting the installation site

<table>
<thead>
<tr>
<th>NOTE:</th>
<th>The installation site needs to be level and horizontal.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>NOTE:</th>
<th>During operation and storage, avoid the following:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>– Humid or dusty places</td>
</tr>
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<td></td>
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</tr>
</tbody>
</table>

3.2 Preparing the dispenser

- Open the package of the corresponding reel ferrules, tear off the strap at the edge (1) and pull out the reel about 20 cm (2).

Preparing the ferrule guide

<table>
<thead>
<tr>
<th>NOTE:</th>
<th>Insert the ferrules precisely as directed, otherwise there may be faulty crimpings. Observe the color code of the ferrule guide.</th>
</tr>
</thead>
</table>

- Select a ferrule guide with the corresponding cross-section.
- Insert the ferrules in the corresponding guide all the way sidewise (1).
- Then pull the pin upwards (2) and push the ferrules further to the marking (3).

| NOTE: | Make sure that the pin has latched in securely. |
Mounting the ferrule guide

1. Push back the hood.
2. Insert the ferrule guide sidewise into the CF 3000 and plug onto the locating bolts in the front plate. The ferrule guide has to be seated directly at the housing panel.

**NOTE:** Make sure that the pin has latched in securely.

3. Place the dispenser of the ferrules into the holder.

Mounting the operational insert

4. Select an operational insert with the corresponding cross-section.

**NOTE:** Note the color code of the operational insert.

5. Push the operational insert sidewise into the intended guide (1).
6. Insert the securing bolt all the way into the borehole of the operational insert (2).
7. Tip over the holder of the dispenser so that it stands at a right angle to the CF 3000.

**NOTE:** Make sure that the ferrule reel can run unhindered.

8. Close the hood.

Connecting the power supply

**NOTE:** The CF 3000 is available in two variants for 230 V and 120 V. Make sure the mains connection is correct (see type plate).

9. Connect the power cable and switch on the CF 3000.

The CF 3000 is now ready for operation.

---

**NOTE:** The operational insert should not be mounted yet.
4 Operation

4.1 Stripping and crimping

Align the conductor
- The conductor has to be aligned as straight as possible before the processing.
  a) Bend is OK, maximum 2–3 mm at 6 mm length
  b) Bend too great

Cutting the conductor
- Cut off the conductor clean and straight, for example with the cable cutter CUTFOX 35 (item no. 1206638) from Phoenix Contact.
  a) Proper cut
  b) Cut surface angled
  c) Cut surface squeezed, single wires pulled out
  d) Cut surface squeezed

Stripping and crimping
- Close the hood (1).
- If necessary, read the counter (2) and reset to 0.
- Switch on the CF 3000 with the mains switch.
- Push the conductor (4) straight all the way into the insertion funnel.
  The stripping and crimping process starts automatically.
- After the standstill of the CF 3000, pull the conductor straight out.

In case of a malfunction or otherwise improper stripping, see page 17.

Putting out of operation
- If necessary, read the counter and reset to 0.
- Switch off the CF 3000 with the mains switch.

4.2 Converting to other cross-sections

The CF 3000 can be converted to the cross-sections 0.5 mm², 0.75 mm², 1.0 mm², 1.5 mm² and 2.5 mm².

Operational set, ferrule guide, and reel ferrules of a cross-section are marked by colors (color code according to DIN 46288-4).
Preparing the conversion

WARNING: Risk of injury!
The hood needs to be opened. Pull the mains plug before opening the hood!

- If necessary, read the counter and reset to 0.
- Switch off the CF 3000 with the mains switch.
- Pull the mains plug.
- Push back the hood.
- Pull the securing bolt for the operational insert (1).
- Remove the operational insert (2).

Replacing the ferrule guide

- Pull the pin upwards and pull out the ferrules.
- Remove the dispenser and roll up the remaining ferrules. Fold in the holder.
- Pull the ferrule guide backwards (towards the handle) (1) and remove sidewise from the CF 3000 (2).

Preparing the ferrule guide

NOTE: Insert the ferrules precisely as directed, otherwise there may be faulty crimpings. Observe the color code of the ferrule guide.

- Select a ferrule guide with the corresponding cross-section.
- Insert the ferrules in the corresponding guide all the way sidewise (1).
- Then pull the pin upwards (2) and push the ferrules further to the marking (3).

NOTE: Make sure that the pin has latched in securely.

Mounting the ferrule guide

NOTE: The operational insert should not be mounted yet.

- Push back the hood.
- Insert the ferrule guide sidewise into the CF 3000 and plug onto the locating bolts in the front plate. The ferrule guide has to be seated directly at the housing panel.

NOTE: Make sure that the pin has latched in securely.
• Place the dispenser of the ferrules on the holder so that the ferrules reel is fed from bottom to top in the ferrule guide.

Mounting the operational insert
Select an operational insert with the corresponding cross-section.

![NOTE: Note the color code of the operational insert.]

• Push the operational insert sidewise into the intended guide (1).
• Insert the securing bolt all the way into the borehole of the operational insert (2).
• Tip over the holder of the dispenser so that it stands at a right angle to the CF 3000.

![NOTE: Make sure that the ferrule reel can run unhindered.]

• Close the hood.

Connecting the power supply

![NOTE: The CF 3000 is available in two variants for 230 V and 120 V. Make sure the mains connection is correct (see type plate).]

• Connect the power cable and switch on the CF 3000.

The CF 3000 is now ready for operation.
4.3 Service

Clean the CF 3000 daily
- If necessary, read the counter and reset to 0.

![WARNING: Risk of injury!](image)
Pull the mains plug and disconnect the compressed air before you open the front door.

- Switch off the CF 3000 with the mains switch.
- Pull the mains plug.
- Open the hood.
- Empty the container for insulation residues daily.
- Check if there are any insulation residue inside of the CF 3000 and remove them.
- Insert the container.
- Close the hood.

Cleaning the insertion funnel
- If the insertion funnel is soiled, it can be cleaned by a brush (included in the scope of delivery).
5 Rectifying malfunctions

5.1 Maintenance position

The maintenance position is used for removing replaceable parts in case of faulty crimping or jammed-in conductors.

The control drives automatically into maintenance position in case the crimping was not completed. It may happen that the CF 3000 carries out the crimping cycle through to the end position despite a faulty crimping. In this case, press the Reverse button to drive the CF 3000 into maintenance position.

5.2 Fault cases

Table 5-1 Fault cases

<table>
<thead>
<tr>
<th>Fault/malfunction</th>
<th>Rectification</th>
<th>Fault case number</th>
<th>See</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conductor cannot be inserted</td>
<td>Press the Reverse button</td>
<td>Fault case 1</td>
<td>Page 17</td>
</tr>
<tr>
<td>Crimping process not ended</td>
<td>Remove conductor</td>
<td>Fault case 2</td>
<td>Page 18</td>
</tr>
<tr>
<td>Conductor jams in the CF 3000</td>
<td>Remove conductor</td>
<td>Fault case 2</td>
<td>Page 18</td>
</tr>
<tr>
<td>Conductor insulation is removed incompletely</td>
<td>- Check cross-section specifications&lt;br&gt;- Check stripping knife</td>
<td>Fault case 3</td>
<td>Page 18</td>
</tr>
<tr>
<td>Ferrule is not separated from the reel</td>
<td>Check the separating knife of the locator</td>
<td>Fault case 4</td>
<td>Page 19</td>
</tr>
<tr>
<td>CF 3000 does not function when the main switch is turned on</td>
<td>Check mains connection/fuses</td>
<td>Fault case 5</td>
<td>Page 19</td>
</tr>
<tr>
<td>CF 3000 works too slow</td>
<td>Check transformer fuse</td>
<td>Fault case 6</td>
<td>Page 20</td>
</tr>
<tr>
<td>Centering fork defective</td>
<td>Exchange centering forks</td>
<td>Fault case 7</td>
<td>Page 20</td>
</tr>
</tbody>
</table>

5.3 Fault case 1

The conductor cannot be inserted

The conductor can only be inserted in the start position (front) and not in the maintenance position (back).

- Press the Reverse button to get into the start position.
5.4 Fault case 2

The crimping process was not ended or the conductor is jammed in the CF 3000

- If the conductor jams in the CF 3000, press the Reverse button to get into maintenance position.
- If necessary, read the counter and reset to 0.

**WARNING: Risk of injury!**
The hood needs to be opened. Pull the mains plug before opening the hood!

- Switch off the CF 3000 with the mains switch.
- Pull the mains plug.

Remove the operational insert and take out the conductor

- Push back the hood.
- Remove the securing bolt and pull the operational insert out to the side (3).
- Remove the ferrules (4).
- Bend the conductor to the side (5).
- Pull the pin upwards and pull out the ferrules.
- Close the hood.
- Plug in the mains plug. Switch on the CF 3000 with the mains switch.
- Press the Reverse button again. The CF 3000 move into the start position.
- Pull out the conductor.

Set up the CF 3000 after that (see page 11).

5.5 Fault case 3

The conductor insulation is removed incompletely

Check cross-section specifications

- If the stripping of the conductor is not removed completely, check the cross-section specifications.
  The conductor cross-section needs to match the cross-section specifications of operational insert and ferrule guide.
- Match the inserts to the selected conductor cross-section (see page 13).

Replacing the stripping knife

- Check if the stripping knives (1) are damaged.
- If the stripping knives of the operational insert are worn or damaged, they need to be replaced (item no., see page 22).
- Loosen the Allen head screw (2), replace the stripping knives and retighten the screw.
5.6 Fault case 4
The ferrule is not separated from the reel

Replacing the locator
If the separating knife (1) is damaged or broken off, the ferrule that is crimped to the conductor will not be separated from the reel.
• Remove the operational insert (see page 13).
• Check the separating knife (1). If the separating knife (1) is defective, remove the locator (3).
• Loosen the Phillips screw (2).
• Remove the locator.
• Install a new locator for the corresponding cross-section (item number, see page 22).
• Tighten the Phillips screw (2).

5.7 Fault case 5
The CF 3000 does not function when the main switch is turned on
• Make sure that the connections between the CF 3000 and the socket has been established without fault.

Checking the mains fuses

⚠️ WARNING: Risk of injury!
The hood needs to be opened. Pull the mains plug before opening the hood!

• Switch off the CF 3000 with the mains switch.
• Pull the mains plug (1).
• Pull out the fuse holder (2).
• Replace the defective mains fuses (3) with microfuses:
  2 x 0.63 A/T/250 V (CF 3000-2,5) or otherwise
  2 x 1.25 A/T/120 V (CF 3000-2,5 120 V),
  (item no., see page 22).
• Insert the fuse holder.

⚠️ NOTE: The fuse holder has to snap in.
5.8 Fault case 6
The CF 3000 works too slow

Checking the transformer fuse

- Switch off the CF 3000 with the mains switch.
- Pull the mains plug (1).
- Turn out the fuse holder (2) with a suitable screwdriver.
- Replace the defective fuses (3) with microfuses (4.0 A/T/250 V, item no., see page 22).
- Turn the fuse holders back in.

WARNING: Risk of injury!
The hood needs to be opened. Pull the mains plug before opening the hood!

5.9 Fault case 7
Top centering fork (crimp die) or bottom centering fork (crimp casting) are defective

Exchanging the centering forks

- Switch off the CF 3000 with the mains switch.
- Pull the mains plug.
- Remove the operational insert and the ferrule guide (see page 13).
- To remove the bottom centering fork (1) and the top centering fork (2), loosen the respective Allen head screws (3).
- Take out the bottom centering fork. Press the top crimp casting a few millimeters down for that.
- Press down the hose clamp (4), pull out the hose (5) and remove the top centering fork.
- Replacing defective centering forks with new ones (item no., see page 22).

WARNING: Risk of injury!
The hood needs to be opened. Pull the mains plug before opening the hood!

NOTE: The plastic parts have to be clean and free of grease.
A  Technical Annex

A 1  Technical data

Technical data

<table>
<thead>
<tr>
<th>Description</th>
<th>Designation</th>
<th>Item no.</th>
<th>Pcs./Pkt.</th>
</tr>
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<tbody>
<tr>
<td>Mains connection</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CF 300-2,5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CF 3000-2,5 120 V</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power consumption</td>
<td></td>
<td>80 VA</td>
<td></td>
</tr>
<tr>
<td>Cycle time</td>
<td></td>
<td>1.2 s</td>
<td></td>
</tr>
<tr>
<td>Work range</td>
<td></td>
<td>0.5 mm² ... 2.5 mm²</td>
<td></td>
</tr>
<tr>
<td>with conversion kit (CF 3000-TOOLKIT 0,25)</td>
<td>0.25 mm² and 0.34 mm²</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ferrules</td>
<td></td>
<td>Reel packaging version acc. to DIN 46228-4</td>
<td></td>
</tr>
<tr>
<td>Conductor length minimum</td>
<td></td>
<td>49 mm</td>
<td></td>
</tr>
<tr>
<td>Stripping length</td>
<td></td>
<td>8 mm</td>
<td></td>
</tr>
<tr>
<td>Press form</td>
<td></td>
<td>Trapezoidal according to DIN VDE 0660-100</td>
<td></td>
</tr>
<tr>
<td>Dimension (W x H x D)</td>
<td></td>
<td>320 mm x 300 mm x 165 mm</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td></td>
<td>12 kg</td>
<td></td>
</tr>
<tr>
<td>Operational temperature</td>
<td></td>
<td>15 °C ... 35 °C</td>
<td></td>
</tr>
<tr>
<td>Noise levels</td>
<td></td>
<td>70 dB (A)</td>
<td></td>
</tr>
</tbody>
</table>

B  Order data

B 1  Stripping and crimping automat

<table>
<thead>
<tr>
<th>Description</th>
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<th>Item no.</th>
<th>Pcs./Pkt.</th>
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</thead>
<tbody>
<tr>
<td>Stripping and crimping automat, 230 V version for insulated ferrules in reel packaging according to DIN 46228-4, for cross-section range 0.5 mm² ... 2.5 mm²</td>
<td>CF 3000</td>
<td>1205477</td>
<td>1</td>
</tr>
<tr>
<td>Stripping and crimping automat, 120 V version for insulated ferrules in reel packaging according to DIN 46228-4, for cross-section range 0.5 mm² ... 2.5 mm²</td>
<td>CF 3000-2,5 120 V</td>
<td>1205516</td>
<td>1</td>
</tr>
<tr>
<td>Kit for CF 3000, 0.25 mm² and 0.34 mm², complete</td>
<td>CF 3000-TOOLKIT 0,25</td>
<td>1212376</td>
<td>1</td>
</tr>
</tbody>
</table>
## B 2 Reel Ferrules

<table>
<thead>
<tr>
<th>Description</th>
<th>Designation</th>
<th>Item no.</th>
<th>Pcs./Pkt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reel ferrules with plastic ferrule, 0.25 mm², blue</td>
<td>A1 0,25-8 BU-B</td>
<td>3240250</td>
<td>1000</td>
</tr>
<tr>
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1 Color code according to DIN 46228-4

## B 3 Spare Parts

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<th>Part</th>
<th>Cross-section</th>
<th>Designation</th>
<th>Order No.</th>
<th>Pcs./Pkt.</th>
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<td>Operational insert</td>
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<td>Locator</td>
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The locator is a component of the operational insert CF 3000 BBE...
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