

Powerdrive

Product family

EN Pre-installation instructions

192474-01



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1 Introduction

1.1 Symbols and illustrations

In these instructions, warning notices are used to warn against material damage and injuries.




- ▶ Always read and observe these warning notices.
- ▶ Observe all measures marked with the warning symbol and warning word.

Warning notices

Warning symbol	Warning word	Meaning
	DANGER	Danger to persons. Non-compliance will result in death or serious injuries.
	WARNING	Danger to persons. Non-compliance can result in death or serious injuries.
	CAUTION	Danger to persons. Non-compliance can result in minor injuries.

Further symbols and illustrations

Important information and technical notes are highlighted to explain correct operation.

Symbol	Meaning
	means "important note". Information to prevent property damage, to understand or optimise the operation sequences.
	means "additional Information"
	Symbol for an action: This means you have to do something. ▶ If there are several actions to be taken, keep to the given order.

1.2 Revisions and validity

Version 01: valid for Powerdrive product family from model year 2021

1.3 Product liability

In compliance with the liability of the manufacturer for his products as defined in the German "Product Liability Act", compliance with the information contained in this brochure (product information and intended use, misuse, product performance, product maintenance, obligations to provide information and instructions) must be ensured. Failure to comply releases the manufacturer from his statutory liability.

1.4 Reference documents

Type	Name
Wiring diagram	Automatic sliding doors DCU1-NT/DCU1-2M-NT
Additional wiring diagrams	Automatic sliding doors DCU1-2M-NT, door controller DCU1-2M-NT for automatic sliding doors in escape routes, FR variants DUO, LL, RWS
Installation instructions	Powerdrive product family

These documents are subject to change. Use only the most recent version.

2 Fundamental safety notes



GEZE GmbH is referred to as GEZE below.

2.1 Intended use

The sliding door system is used for the automatic opening and closing of a building passage.

The sliding door system may only be used in a vertical installation position and in dry rooms within the permitted application area.

The sliding door system is designed for pedestrian traffic in buildings.

The sliding door system is not designed for the following uses:

- for industrial use
- for area of application which do not serve pedestrian traffic (such as garage doors)
- on mobile objects such as ships

The sliding door system may only be used:

- in the modes of operation provided for by GEZE
- with the components approved/released by GEZE
- with the software delivered by GEZE
- in the installation variants / types of installation documented by GEZE
- within the tested/approved area of application (climate / temperature / IP rating)

Any other use is considered non-intended and will lead to the exclusion of all liability and warranty claims to GEZE.

2.2 Safety notes

- Intervention and modifications which influence the safety technology and functionality of the sliding door system may only be carried out by GEZE.
- Problem-free and safe operation assumes proper transportation, proper set-up and installation, qualified operation and correct maintenance have taken place.
- The relevant accident prevention regulations and other generally recognised safety technology or health & safety rules must be kept.
- Only original accessories, original spare parts and accessories approved by GEZE guarantee problem-free function of the sliding door system
- The mandatory installation, maintenance and repair work must be performed by properly trained personnel authorised by GEZE.
- The country-specific laws and regulations are to be observed during safety technology tests.
- If unauthorised changes are made to the system, GEZE cannot be held liable in any way whatsoever for any resulting damage, and the statement of approval for use in escape and rescue routes is no longer valid.
- GEZE does not accept any warranty for combinations with third-party products.
- Only original GEZE parts may be used for repair and maintenance work.
- The connection to the mains voltage must be completed by an electrician or specialised electrical technician. Perform the power connection and protective earth connection test in accordance with VDE 0100 Part 600.
- Use an on-site 10-A overload cut-out as the line-side disconnecting device.
- Protect the display programme switch against unauthorised access.
- In compliance with Machinery Directive 2006/42/EC, a risk analysis must be performed and the door system identified in accordance with CE Marking Directive 93/68/EEC before the door system is commissioned.
- Observe the latest versions of guidelines, standards and country-specific regulations, in particular:
 - DIN 18650: "Building hardware – Powered automatic doors"
 - VDE 0100, Part 600: "Installation of low-voltage systems"
 - EN 16005: "Power operated pedestrian doorsets – Safety in use– Requirements and test methods"
 - EN 60335-1: "Household and similar electrical appliances - Safety Part 1: General requirements"
 - EN 60335-2-103: "Household and similar electrical appliances - Safety: Special requirements for drives for gates, doors and windows"
- Do not loosen screw-fitted , electrical ground connections.



The product should be installed or incorporated in such a way that effortless access to the product is guaranteed during any repairs and/or maintenance, and that any removal costs do not stand out of proportion to the value of the product.

2.3 Safety-conscious working

- Secure workplace against unauthorised entry.
- Use only the cables specified on the cable plan provided. Cables must be shielded in compliance with the wiring diagram.
- Secure loose, internal drive cables with cable ties.
- Before working on the electrical system:
 - Disconnect the drive from the 230 V mains and secure it against being switched back on again. Check isolation from power supply.
 - Disconnect the control unit from the 24 V rechargeable battery.
- Note that if an Uninterruptible Power Supply (UPS) is used, the system will still be supplied with voltage despite the fact that the power supply is disconnected.
- Always use insulated wire-end ferrules for wire cores.
- Make sure of sufficient lighting.
- Risk of injury with opened drive. Hair, clothing, cables, etc. can be drawn in by rotating parts.
- Risk of injury caused by unsecured crushing, impact, drawing-in or shearing spots.
- Risk of injury due to sharp edges on the drive and door leaf.
- Risk of injury during installation through freely moving parts.

2.4 Environmentally conscious working

- When disposing of the door system, separate the different materials and have them recycled.
- Do not dispose of batteries and rechargeable batteries with household waste.
- Comply with the statutory regulations when disposing of the door system and the batteries/rechargeable batteries.

2.5 Safety note related to transportation and storage

- ▶ Do not throw, do not drop.
- ▶ Avoid heavy impacts.
- Storage temperatures under -30 °C and above $+60\text{ °C}$ can result in damage to the device.
- Protect against humidity.
- Dry, well ventilated, closed, weather-proof and UV-protected rooms are suitable as storage areas.

2.6 Qualification

Observe country-specific regulations!

Applicable in Germany:

Companies that carry out the pre-assembly of sliding door drives for escape routes must be licensed as an expanded manufacturing facility by the testing institution that issued the type approval certificate.

3 About this document

These instructions describe the pre-installation for automatic sliding door drives in the Powerdrive product family.

4 Overview

4.1 Diagrams

Number	Type	Name
70506-0-001	Drive drawing	Powerdrive PL/FR drives
70506-2-0240	Component drawing	Cover version 200×90×6500
70506-2-0238	Component drawing	Cover version 150×90×6500
70506-2-0218	Component drawing	Cover, bespoke 200×105/90
70506-2-0217	Component drawing	Cover, bespoke 150×105/90
70499-2-0247	Component drawing	Track, perforated
70485-2-0200	Component drawing	Track, bespoke PL 2-leaf
70485-2-0251	Component drawing	Track, bespoke PL 1-leaf



The diagrams are subject to change without notice. Use only the most recent version.

4.2 Tools and aids

Tool	Closer size
Tape measure	
Marking pen	
Torque spanner	
Allen key	2 mm, 2.5 mm, 3 mm, 4 mm, 5 mm, 6 mm
Open-ended spanner	8 mm, 10 mm, 13 mm, 15 mm
Screwdriver set	Floor guide slit up to 6 mm/cross-slot PH2 and PZ2
Side-cutting pliers	
Crimping pliers for cables	
Wire stripper	
Display programme switch/Service terminal ST220/GEZEconnects	

4.3 Torques

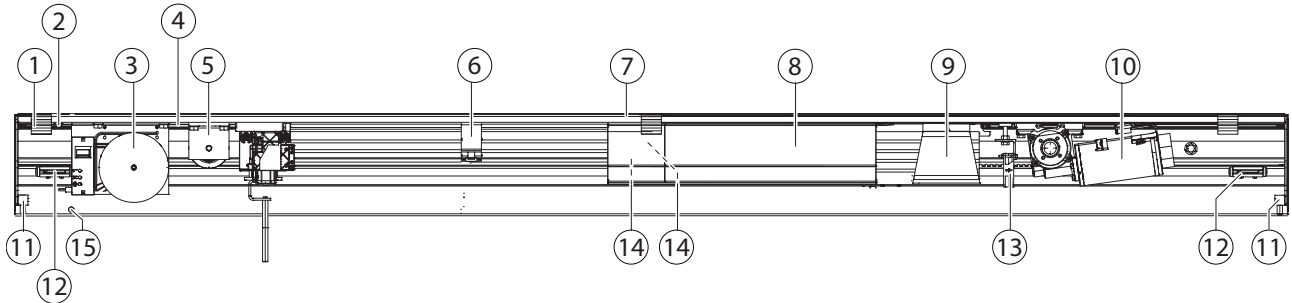
The torques are given at the respective installation step.

4.4 Components and assembly groups

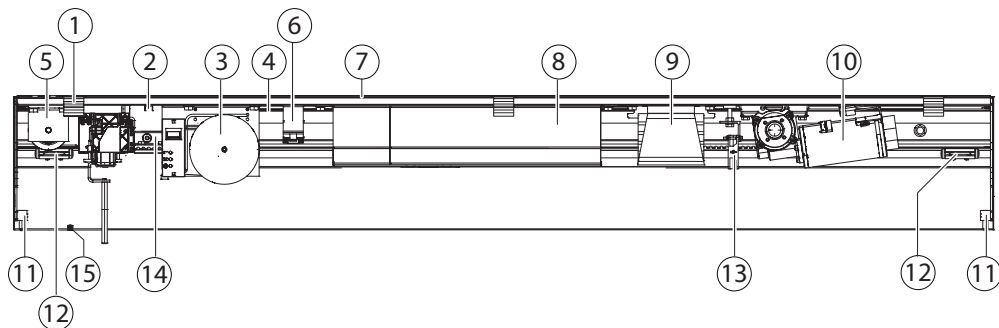
These illustrations show the equipment of a standard drive in 2-leaf and 1-leaf version, right and left hand slide to open.

The structure of the assembly groups can vary depending on the drive equipment or version. Precise details about positioning of the individual components are provided on the drive drawing.

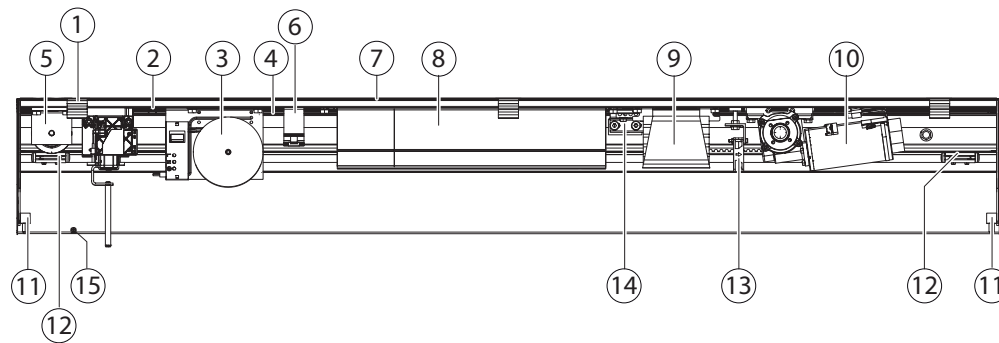
2-leaf



1-leaf, right hand slide to open



1-leaf, left hand slide to open



4.5 VP-Kit bill of material

- | | | | | | |
|---|--------------------|----|----------------------|---|---|
| 1 | Cover fixing | 9 | Rechargeable battery | - | Div. clear adhesive labels |
| 2 | Transformer ground | 10 | Motor gear unit | - | Accessories attachment drive components |
| 3 | Transformer | 11 | Cover catch | - | Accessories for cable fastening |
| 4 | Transformer cable | 12 | Stop buffer | - | Installation instructions |
| 5 | Deflection pulley | 13 | Fan (option) | - | User manual |
| 6 | Cable guide | 14 | Driver | - | Wiring diagram |
| 7 | Track | 15 | Cover earthing | - | Log book |
| 8 | Control unit | | | - | Safety analysis |
| | | | | - | EC Installation Declaration of Conformity |
| | | | | - | Inspection certificate booklet |
| | | | | - | Type test mark |
| | | | | - | Drive drawing |
| | | | | - | Roller carriage |

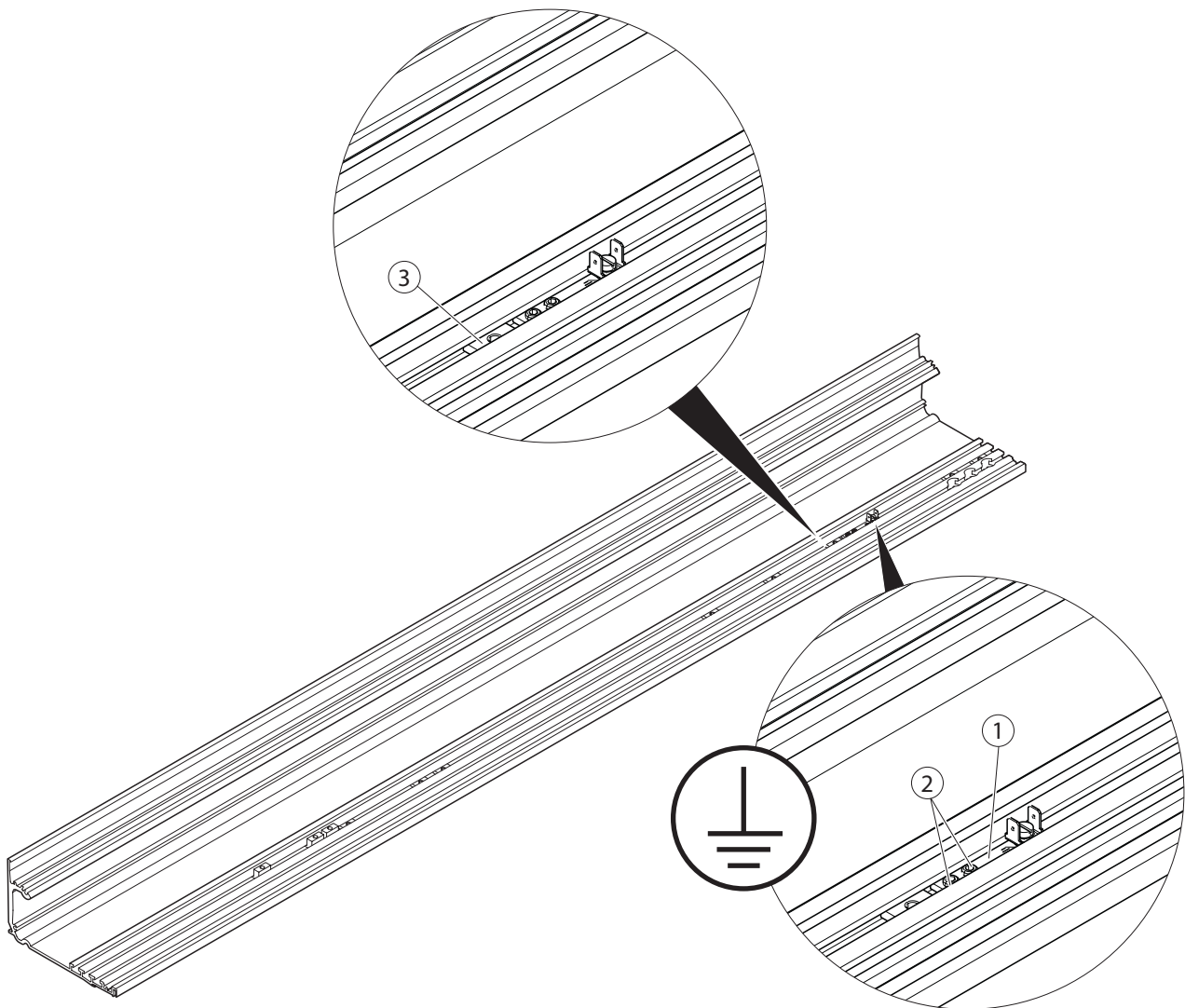
5 Pre-mounting

The up-to-date drive drawing is applicable for the pre-installation work to be carried out. All components must be identified and installed in accordance with the drive drawing.

5.1 Machining the track and cover

- ▶ Check profiles for damage.
- ▶ Cut the track and cover to the required length (see machining drawings, Chapter 4.1).
- ▶ Check whether additional bore holes are necessary (see machining drawing for bespoke track, Chapter 4.1).
- ▶ Clean the track after machining.

5.2 Preparing the track

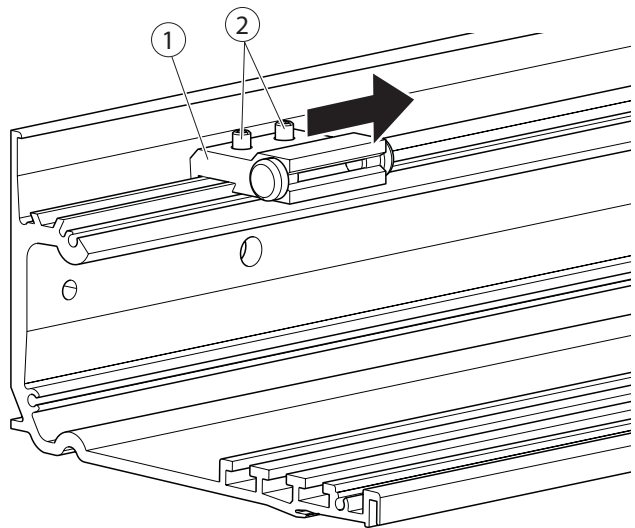


- ▶ Slide sliding blocks (3) and earthing jumpers (1) into the mounting groove in accordance with the drive drawing. Heed the sequence.
- ▶ Use 2 setscrews (2) to screw the earthing jumper (1) tight (torque 4 Nm).

5.3 Installing stop buffers

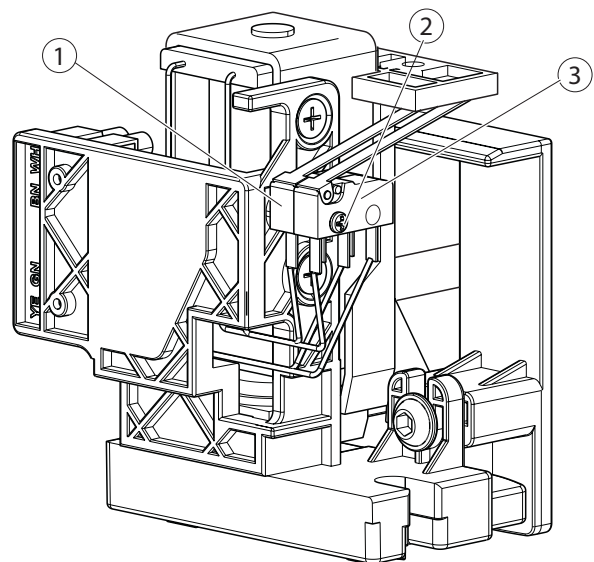
- ▶ Slide the stop buffers (1) onto the track from the left and right.
- ▶ Tighten the Allen screws (2) of the stop buffer **slightly**.

The exact position of the stop buffers (1) is specified during moving leaf installation.



5.4 Connecting the contact on the toothed belt locking (optional)

- ▶ Remove the screws (2) on the feedback switch (1) of the tooth belt locking mechanism.
- ▶ Place the alarm contact switch (3) on the feedback switch (1).
- ▶ Fasten both switches with the longer screw (2) from the retrofitting set on the tooth belt locking mechanism.
- ▶ Connect the cable for the tooth belt locking mechanism.
- ▶ Shorten the switching flag of the alarm contact switch if necessary.

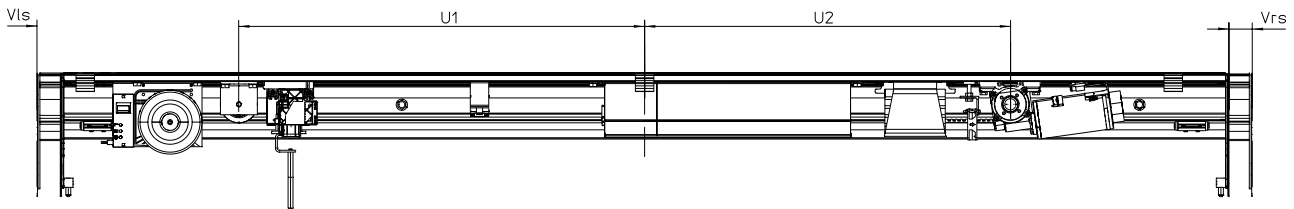


5.5 Installing the drive components

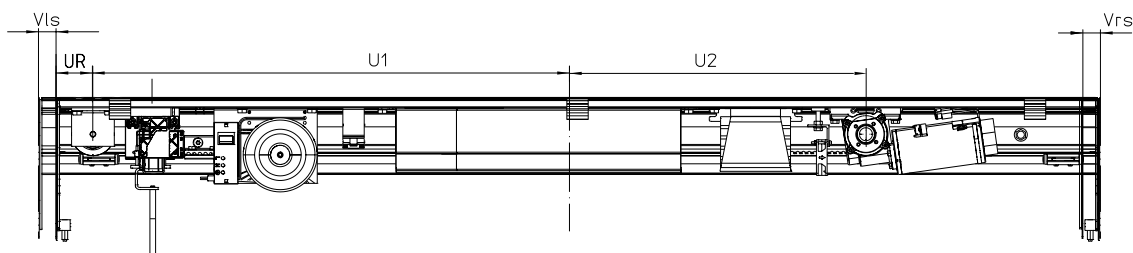


The exact positioning of the components is given on the drive drawings.

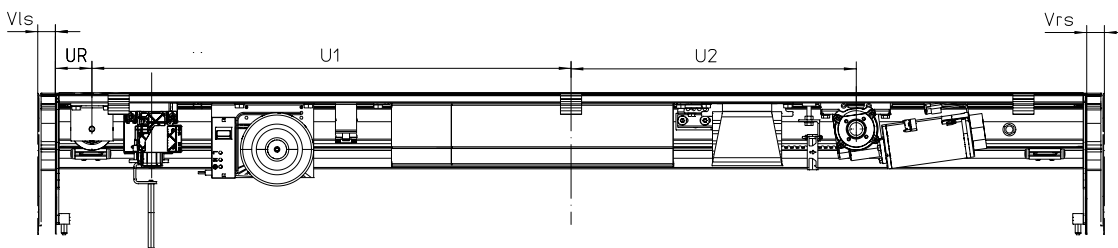
Illustrated: 2-leaf, ÖW 900 mm



Illustrated: right hand slide to open, ÖW = 700 mm



Illustrated: left hand slide to open, ÖW = 700 mm



Legend:

ÖW	Opening width
U1	Position of the deflection pulley (measured from the middle)
U2	Position of the motor gear unit
UR	Position of the deflection pulley (measured from the side)
Vrs	Extension left
Vls	Extension right



When the drive is extended (Vls / Vrs) the positions of the components must be adapted accordingly.

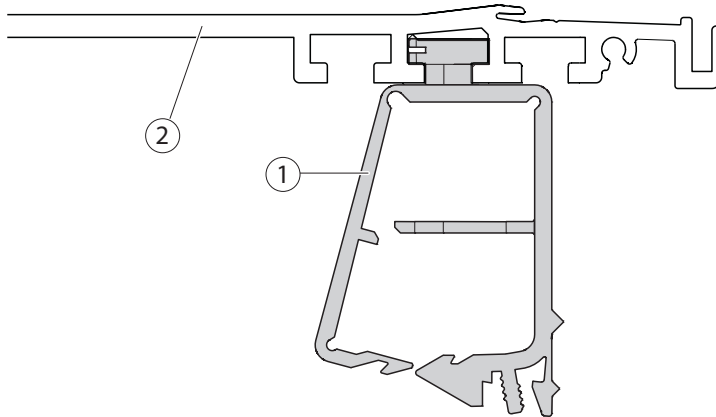
- ▶ Push the sliding blocks into the track from the right. For the arrangement, see the drive diagram.
- ▶ Install the components with the screws provided in accordance with the drawing.
 - Deflection pulley torque: 15 Nm
 - Torque for other components: 10 Nm

5.6 Installing cable guides



Cables can be cut!

- ▶ Lay cables in such a way that there are no cables near the moving parts.
Cable guide spacing approx. 200 mm.



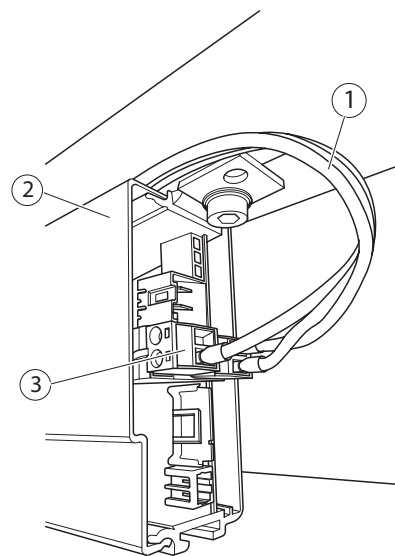
- ▶ Fix the cable guide (1) on the track (2).

5.7 Connecting transformer and control unit



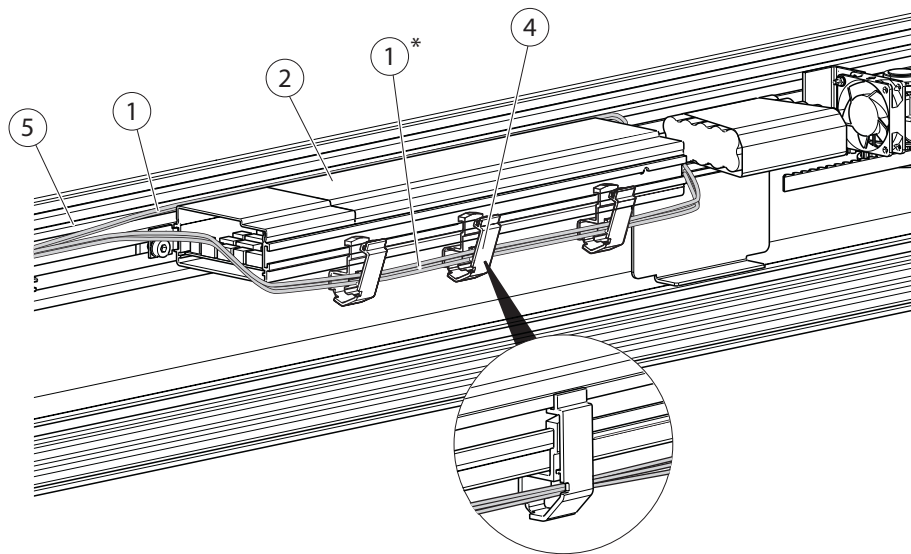
- ▶ Make sure that cables are cut to length and routed in such a way that they do not become jammed when the cover is positioned and cannot come into contact with moving components.

- ▶ Cut the three-wire cable (1) to length.
- ▶ Strip both ends and attach insulated wire-end ferrules.
- ▶ Attach the two plugs (3) to the control unit (2).
- ▶ Plug the connector (3) into the control unit (2).



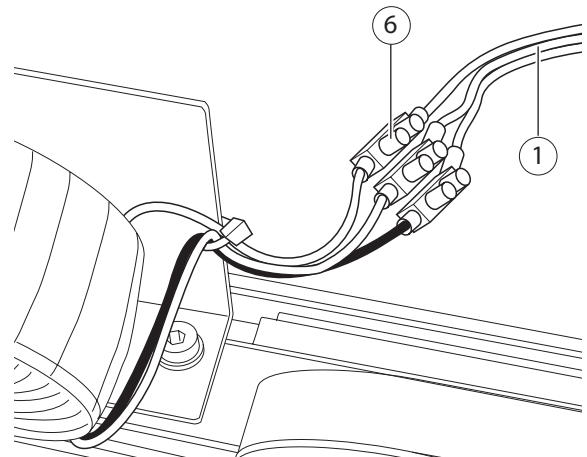
- ▶ Note earthing connection!
- ▶ Do not mix up wires!

- ▶ Fix the cable guide DCU (4) to the control unit
- ▶ Guide the transformer cable (1) between the control unit (2) and track (5).

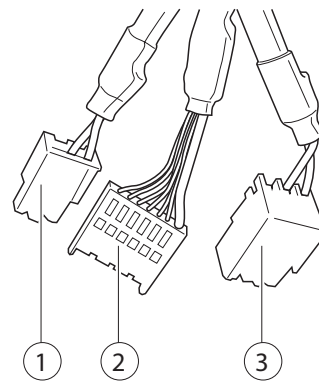


* Alternatively, the transformer cable (1) can also be mounted on the front of the control unit.

- ▶ Fit the transformer cable (1) to terminal (5) of the transformer.

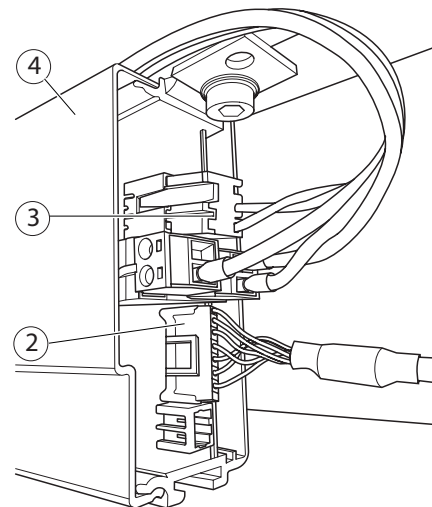


5.8 Connecting motor gear unit and control unit



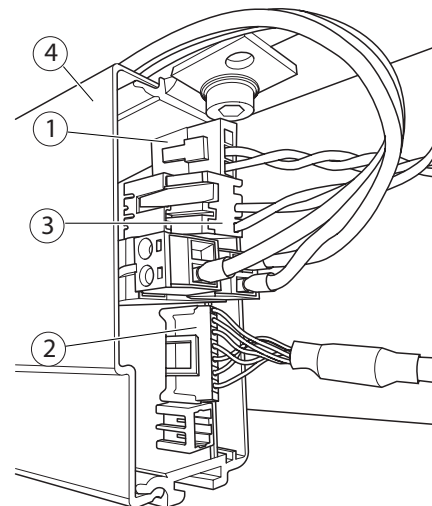
Powerdrive PL

- ▶ Lay the rotary encoder cable (2) and motor connection cable (3) to the control unit.
- ▶ Insert the connector into the control unit (4).



Powerdrive PL-FR

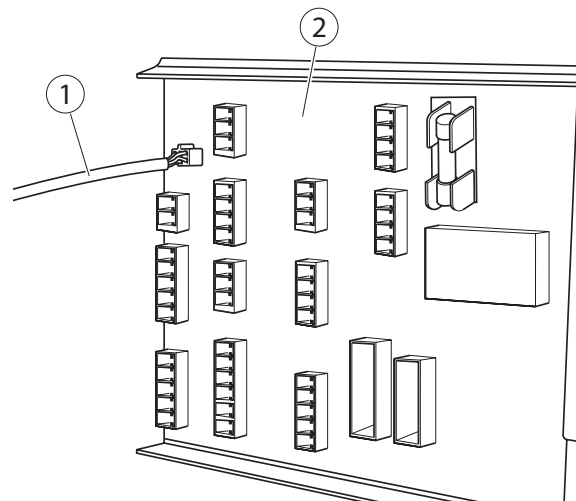
- ▶ Route the rotary encoder cable (2), motor connection cable (3) and motor connection cable of the second motor gear unit (1) to control unit.
- ▶ Insert the connector into the control unit (4).



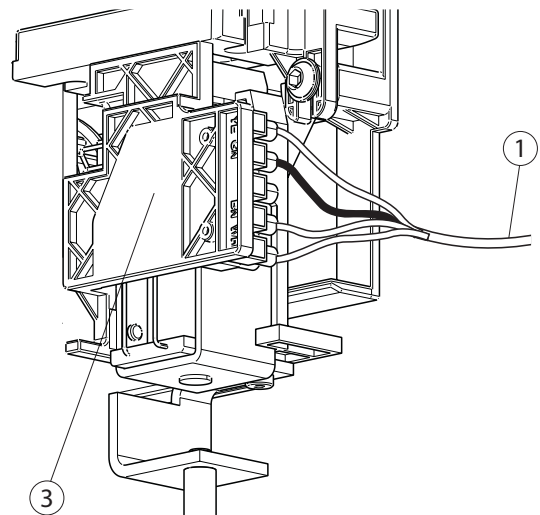
Do not plug rechargeable battery cable into the control unit yet.
The rechargeable battery is not connected to the control unit until the production test and commissioning.

5.9 Connecting the tooth belt locking mechanism (optional) and control unit

- ▶ Plug the cable for tooth belt locking mechanism (1) in at the control unit (2).

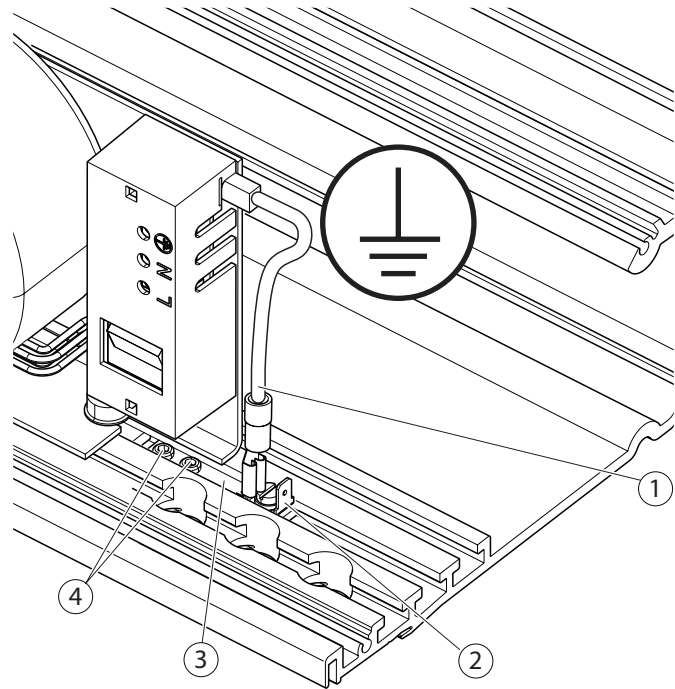


- ▶ Lay the cable for tooth belt locking mechanism (1) through the cable guide to the tooth belt locking mechanism (optional) (3), shorten if necessary, strip and attach the insulated wire-end ferrules.
- ▶ Connect the tooth belt locking mechanism (option) as shown on the wiring diagram.



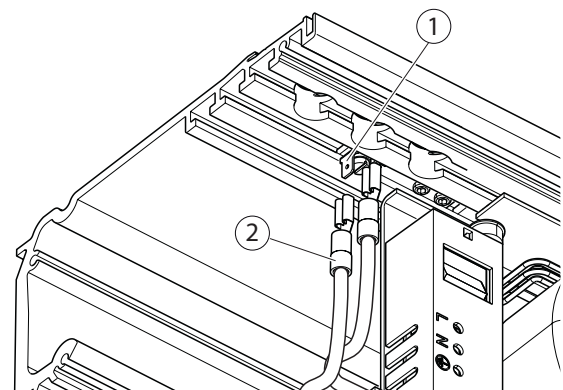
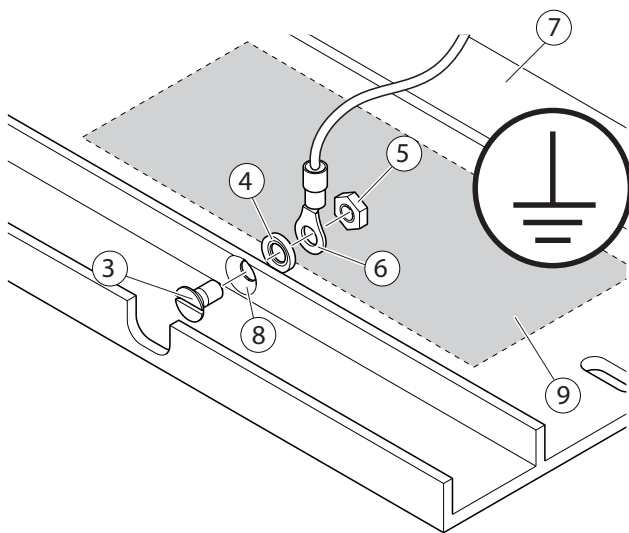
5.10 Fitting the transformer ground

- ▶ Connect the earthing cable (1) from the transformer to the device flat plug (2).



- ! The track is not earthed if there is a poor connection between earthing jumper (3) and track.
 - ▶ Check whether the setscrews (4) of the earthing jumper (3) penetrate the anodised layer of the track.

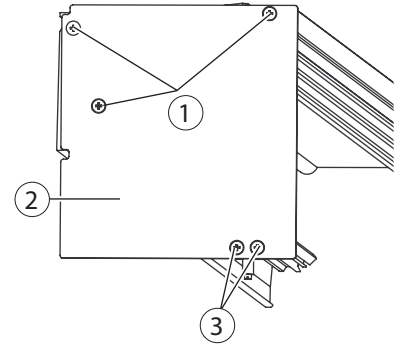
5.11 Fitting the cover earthing



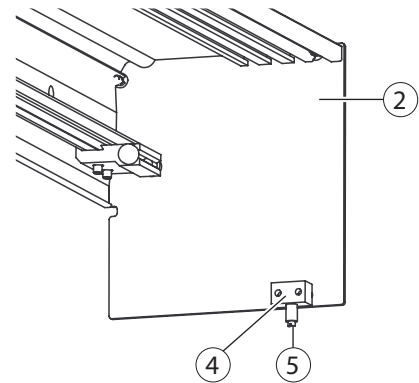
- ▶ Screw the cable shoe of the cover earthing cable (6) using a countersunk screw (3), serrated washer (4) and hexagon nut (5) to the cover (7).
- ▶ Connect the earthing cable (2) of the cover with the second plug-in connection of the device flat plug (1).
- ▶ Keep the counterbore (8) clear of any coatings.
- ▶ Remove the coating at some points in the dotted area (9) on the inside of the cover, if there are no blank points available for the device safety test.

5.12 Installing the side plates

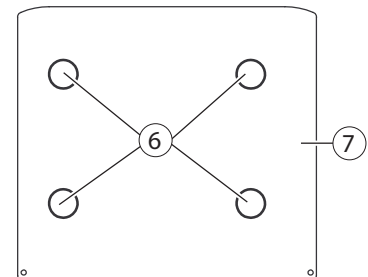
- ▶ Screw the side plates (2) to side of the track with 4.8 x 13 countersunk tapping screws (1).



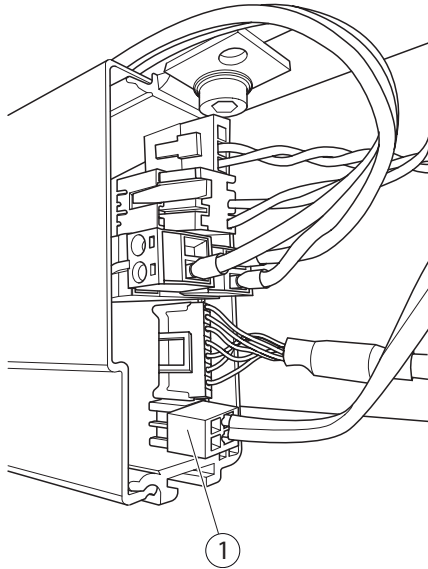
- ▶ Screw the retaining block (4) to the side plates (2) on the inside with 4.8 x 13 countersunk tapping screws (3).
- ▶ Screw the threaded pins (5) completely into the retaining blocks (4) from below.



- ▶ Glue the side cover panels (7) to the side plates (2) on the outside with 4 glue dots (6) each.
- ▶ When gluing, note the following:
 - The glued surfaces must be clean and grease-free.
 - The visible surfaces of the side cover panels must be on the outside.
 - The top edges of the side plates and the side cover panel must be flush.



5.13 Connecting the rechargeable battery and control unit

**CAUTION!**

Risk of injury due to impact and crushing!

When the rechargeable battery cable (1) is plugged in, the pulley on the motor gear unit may move suddenly.

▶ Do not reach into the area of moving parts.

- ▶ Check whether the rechargeable battery cable (1) is long enough.
- ▶ If necessary, plug the rechargeable battery extension cable to the rechargeable battery cable.
- ▶ Route the rechargeable battery cable (1) to the control unit.
- ▶ Insert the connector into the control unit.

6 Device safety test and production test



WARNING

Risk of fatal injury due to electric shock!

- ▶ The electrical system (230 V/115 V) may only be connected and disconnected by a professional electrician or specialist electrical technician.

- ▶ Complete a device safety test according to EN 60335-1 Annex A.

The device safety test consists of the following parts:

- Protective earth test with 10A test current
- Insulation strength testing (high voltage test) with 1000 VAC

A testing device suitable for this standard must be used.

Testing process

- ▶ Connect the mains cable with the mains plug to the transformer.
- ▶ Insert the mains plug in the testing device.
- ▶ Start the test on the testing device.
- ▶ Use the probe to test all metal parts connected to the protective conductor in sequence.
The low ohm connection between the PE line of the mains cable and the metal part contacted with the probe is tested in each case.

Use the probe to contact at least the following test points:

- Transformer metal bracket
- PE connection on the secondary side of the transformer (luster terminal)
- Track (blank, non-anodised area)
- Device flat plug for transformer ground connection
- Cover (blank, non-anodised area)

All protective earth connections must have a resistance of less than 0.1 Ω.

- ▶ Then start an insulation strength test (high voltage test) on the testing device.



Only drives that have passed the device safety test may be operated.

The results of the device safety test must be documented in a traceable manner along with the serial number of the drive.

After the device safety test, do not remove the device flat plug of the ground connection from the track.

- ▶ Complete the production test as described in the wiring diagram.

6.1 Unplugging the cables

- ▶ Unplug the rechargeable battery cable from the control unit and secure it for transport.
- ▶ Unplug the ground line on the cover from the ground connector.

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