

Accuride FULLELECTRIC

Assembly Instructions

Revision history

Revision	Date	Author
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Assembly Instructions (ENG)

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2 Foreword

Dear User,

Thank you for choosing to purchase an Accuride product. Accuride **FULLELECTRIC** is a registered trademark of Accuride, which includes all-electric or electrified rail systems and is the product of years of experience in manufacturing and developing ball-guided rails.

These assembly instructions are not intended for end users. They serve only to inform the device or systems manufacturer and explain how to install and use your product. The system manufacturer is responsible for providing the end user with an instruction manual containing the relevant safety information from these assembly instructions.

We make sure that your Accuride product works seamlessly. We do this by performing full function and quality testing on our products before they leave the factory. However, you can contact your Accuride branch at any time should you have any issues.

Accuride provides a warranty on all its products provided that products are used correctly (in accordance with the specifications) and serviced correctly.

The product's performance and service life may be affected if changes are made to Accuride FULLELECTRIC® products/systems during installation and/or while it is in use. Products may not be dismantled by unauthorised personnel.

These assembly instructions reflect our current technical expertise. We are constantly updating information and therefore reserve the right to make technical changes.



3 Scope

These assembly instructions apply to products belonging to the **FULLELECTRIC** brand.

Further information:

Further information on Accuride's FULLELECTRIC® ball bearing rail can be found on our website's blog: www accuride-europe.com



Figure 1: <https://www accuride-europe.com/de/blog/kugelgelagerte-ullelectric-schiene-von-accuride-fur-die-zukunft-der-automation-ger%C3%BCstet>

4 Important information

Within the scope of these instructions, FULLELECTRIC® products are not classified as machinery, nor do they fall within the scope of the Machinery Directive or similar national regulations. These products are components which the manufacturer will incorporate into an overall system.



Description of the various symbols used in this manual:

Attention!

Failure to observe the above instructions may result in major accidents and damage.



Recommendation

Failure to observe the above rules may result in damage to, or the destruction of, the all-electric rail.

Please read the following safety instructions carefully:

Anyone who connects, installs or uses the system must have access to these assembly instructions. Please note that Accuride has taken precautions to ensure the safety of the drive system. The manufacturer/original manufacturer is responsible for obtaining full approvals for product application.

Power output:

We can indicate the nominal output voltage and the associated maximum load for a particular product on the drawings included in the quotation.

This value can vary considerably depending on the product, the operating parameters (e.g. speed and acceleration ramp) and the load/load capacity due to their construction.

Please check whether third party products are compatible with FULLELECTRIC® products, e.g. a controller, before using them in conjunction with our products.

Classification:

These products must not be used in the presence of any substances that become flammable when mixed with air.



Attention!

Electromagnetic compatibility – General

The motors used in the all-electric rails bear the CE mark as proof of compliance with the EMC Directive 2014/30/EU.

ADDITIONAL COMPONENTS



Attention!

Electromagnetic compatibility – third party components

The use of accessories, controllers and cables that cannot be specified or sold by the manufacturer of the drive system may result in increased levels of electromagnetic radiation or reduce the drive system's ability to resist interference.

PERSONS IN THE TRAVERSE RANGE



Attention!

The following applies if the all-electric rail is used in areas where there may be a risk of injury to persons:

The manufacturer is responsible for establishing appropriate operating parameters to prevent the risk of injury to persons in the traverse range.

CLAMPING FORCE



Attention!

If a slip clutch or a electronic clamping protection is used, then the manufacturer of the overall system must specify the clamping force and configure the operating parameters in a way that prevents the risk of injury to persons.

RISK OF INJURY DURING INSTALLATION



Attention!

Take care to prevent any risk of injury to persons, e.g. crushing fingers or arms, when assembling or installing the unit in which the all-electric rail is to be mounted.

CHEMICAL COMPATIBILITY OF RS-TAPE



Attention!

The white tapes of the deflector will not tolerate chemicals, cutting oils or other lubricants and should therefore not come into contact with them.

Overstretching the tapes



Attention!

Take care not to pinch or stretch the plastic contained within the tapes while installing the rail inside the unit. If the tapes are stretched permanently, this may increase the amount of slack created in the drive system and result in a predetermined breaking point.

DAMAGING THE RS-TAPE



Attention!

Care should be taken to ensure that the deflected tape does not sustain any damage or come into contact with sharp edges or abrasive materials in the deflected area. This can shorten the service life of the tape and the rail may malfunction as a result.

MAINTENANCE



Attention!

Inspect the product for damage and wear on an annual basis. Damaged or worn components should be replaced. Lubrication is required if the grease is dark and shows a high viscosity.

Lubrication

Unless otherwise specified, it's recommended to lubricate the slide every 80.000 cycles or at least once a year. The track should not be allowed to dry out.

Lubrication procedure:

- Extend the slide completely.
- Remove the polluted old grease. Important note: It's not required that the inner rail is 100% clean. Rough removal of the polluted grease is sufficient.
- Please use a commercially available rolling bearing grease class NLGI 2 or similar for relubrication.
- Apply the grease to the inner rail of the extended slide with a brush. The grease should be spread equally during operation.

AREAS OF APPLICATION



Attention!

Accuride's FULLELECTRIC® rails are not suitable for the following areas of application:

- Explosive environments
- Nuclear energy
- Heavily polluted environments
- Outdoor areas/exposure to weather
- High humidity
- Splash water

In cases where an IP protection class has been specified, the customer is responsible for checking whether this is suitable for use.

WIRING



Attention!

Only qualified personnel may connect the motor used. The connections are specified in the quotation drawing or on the motor data sheet. Common safety guidelines must be observed when connecting the motor.

AMPERAGE



Attention!

The amperage specified in the data sheet must not be exceeded under any circumstances. If the specified amperage is exceeded during a long duty cycle, the drive system may overheat and produce a defect.

HOLDING TORQUE



Attention!

In the event that a holding current is set when using a stepper motor, then the setting must be made in conjunction with the overall system. If the duty cycle is long, a holding current that is too high may cause the drive system to overheat and produce a defect.

VENTILATING THERMAL HEAT GENERATION



Attention!

The motor can heat considerably when used for a long time. For this reason, it is important to make sure that the unit is designed in a way that supplies the motor with a sufficient amount of fresh air. The manufacturer must provide sufficient amounts of supply and exhaust air to protect the motor from excessive heating.

EXTENDING THE INDUCTION GENERATOR MANUALLY



Attention!

If the system is extended manually, the motor acts like a generator and produces an electrical voltage thanks to the rotary movement. The resulting electrical currents can have a negative impact on the drive system or connected devices and this may lead to damage.

CONNECTION



Attention!

When screwing the rail to the unit, use the screw means provided by the manufacturer, such as threaded bolts, punched through holes, bayonets or similar, depending on the design. When using screws, make sure that they do not block the moving parts. The general guidelines for installing Accuride products must be strictly observed. These can be found at: www.accuride-europe.com.

MANUAL OPERATION



Recommendation

If the system is extended manually, this should be done at a low speed.

POWER SUPPLY



Recommendation

The supply voltage and current indicated on the drawing of the **FUJIELECTRIC** rail must always be observed. You run the risk of damaging the drive system or the controllers if you exceed or fall short of this value. For additional parts (controller, electromechanical interlock, etc.), the permissible limit values are to be taken from the manufacturer's data sheet.

5 General assembly instructions

Please read the following safety instructions carefully. Anyone who connects, installs or uses the system must have access to these assembly instructions.

Personnel who do not have the necessary experience with, or sufficient knowledge of, the product/s are forbidden from operating them.



Attention!

Failure to follow the above instructions may result in accidents causing serious injury to persons:

- If the product is visibly damaged, it must not be installed
- If the drive system makes unusual noises or emits smells, disconnect the power supply immediately
- Products may only be used in environments that correspond to their respective protection class.
- The amperage specified in the data sheet must not be exceeded, irrespective of the weight
- The motor may only be operated using the amperage specified on the data sheet
- Only use the drive within the intended load range
- Please make sure that any risk of injury to persons is prevented, e.g. crushing fingers or arms, when assembling the complete system in which the drive is to be mounted
- Please make sure that the mains voltage has been disconnected and the mains plug has been pulled out before mounting/dismounting
- Please check the following before putting the drive system into service:
 - The components of the drive system have been correctly installed, as per the assembly instructions
 - The unit can be operated within its entire intended traverse range.
- During operation
 - Listen for unusual noises or any uneven movement. Stop the drive system immediately if you notice anything unusual
 - Avoid brute force and do not kick, hit or hammer against the actuator
 - Do not pull on the drive to extend or retract it faster.

6 Declaration of incorporation for partly completed machinery

Declaration of incorporation for partly completed machinery

Accuride International GmbH
Werner-von-Siemens-Straße 16-18
65582 Diez/Lahn

Accuride International GmbH hereby declares that these **FULLELECTRIC** products comply with the following parts of the Machinery Directive 2006/42/EC, Annex I, European health and safety requirements for the design and construction of machinery.

This partly completed machinery may only be put into service if it has been confirmed, where appropriate, that the machinery into which this partly completed machinery is to be incorporated complies with the provisions of the Machinery Directive 2006/42/ES.

7 System description

The **FULLELECTRIC** rails shown below are for example purposes only and may differ from the illustration shown depending on their application. In particular, there may be differences in the extension length, motor length, type of coupling or type of connection used (holes, threaded bolts, bayonet, etc. ...).

Components of an all-electric rail:

- (1) Connection points for slide rails
- (2) Slide rails
- (3) Centre rails
- (4) Ball cage
- (5) Deflected tape
- (6) Lead screw
- (7) Cabinet rails
- (8) Coupling
- (9) Connection points for cabinet rails
- (10) Motor
- (11) Mounting plate for cabinet rails
- (12) Motor recess
- (13) Mounting plate for slide rails
- (14) Motor cable

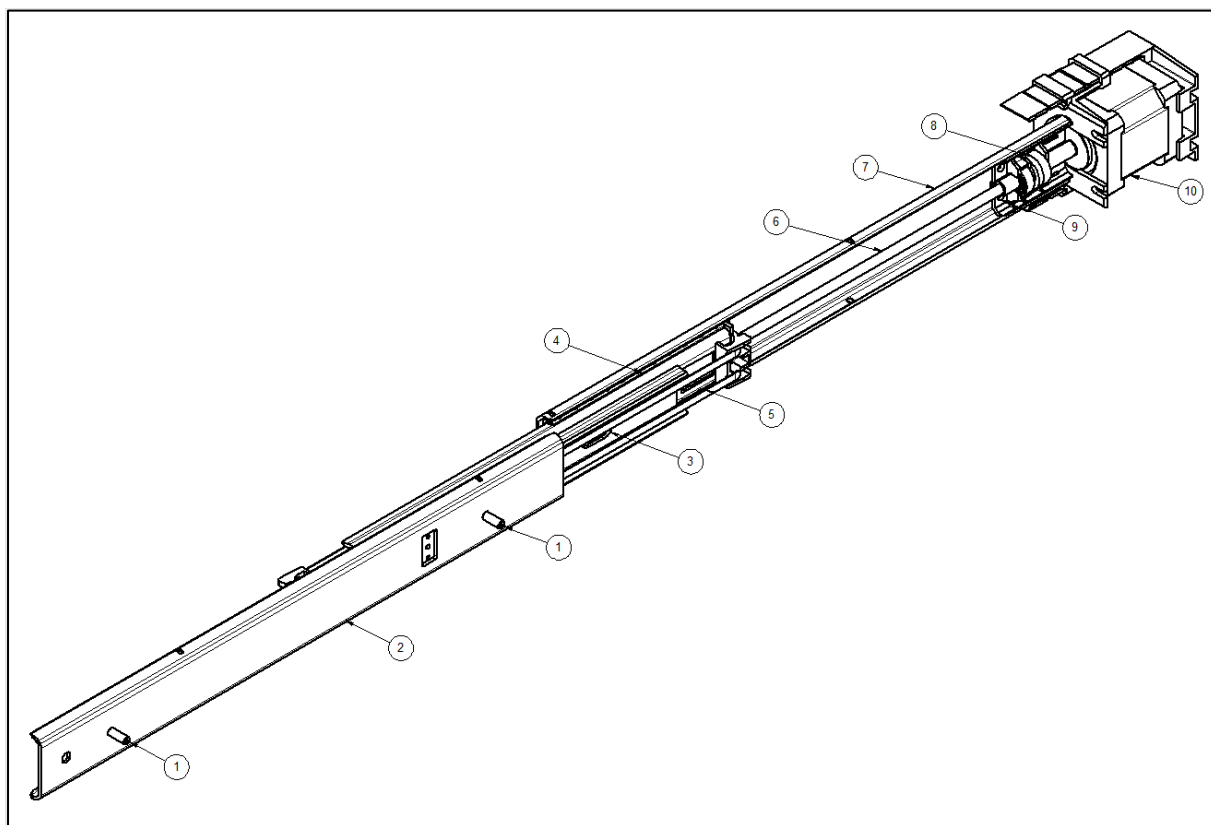


Figure 2: Assembling the FULLELECTRIC® Slide

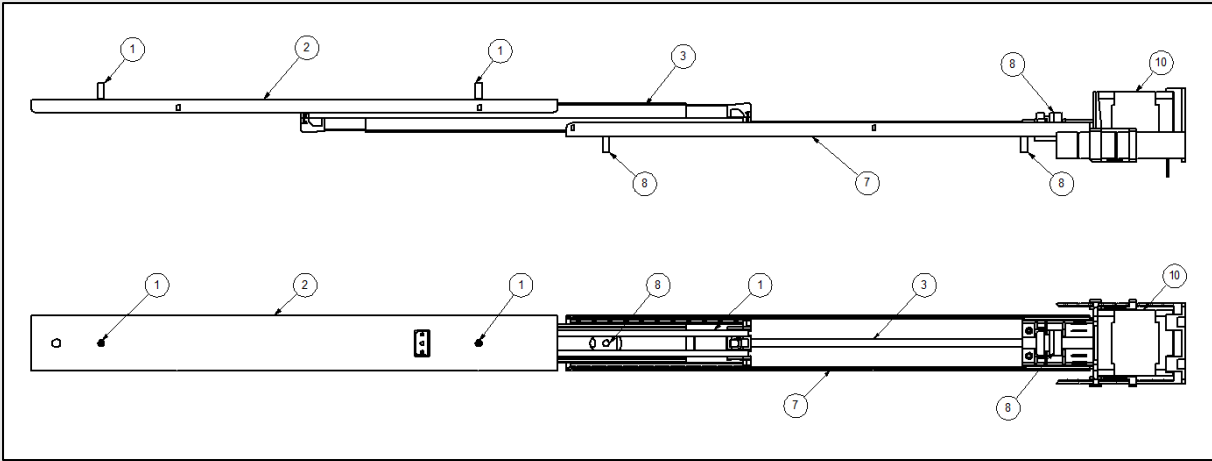


Figure 3: Side and overhead view of the FULLELECTRIC® Slide

8 Assembly – Cabinet rail



Attention!

Depending on the motor and the dimensions, make sure that there is a clearance in the part of the cabinet where the motor is located. This can be an opening or a cut-out. It is important that there is sufficient distance between the motor and the wall so that air can circulate well.

Please avoid any high pressure to the motor or drive during the installation of the slide.



Recommendation

If screws are provided to connect the rail, then care must be taken to ensure they do not come into contact with moving rail parts.

We recommend using countersunk screws as screw means.

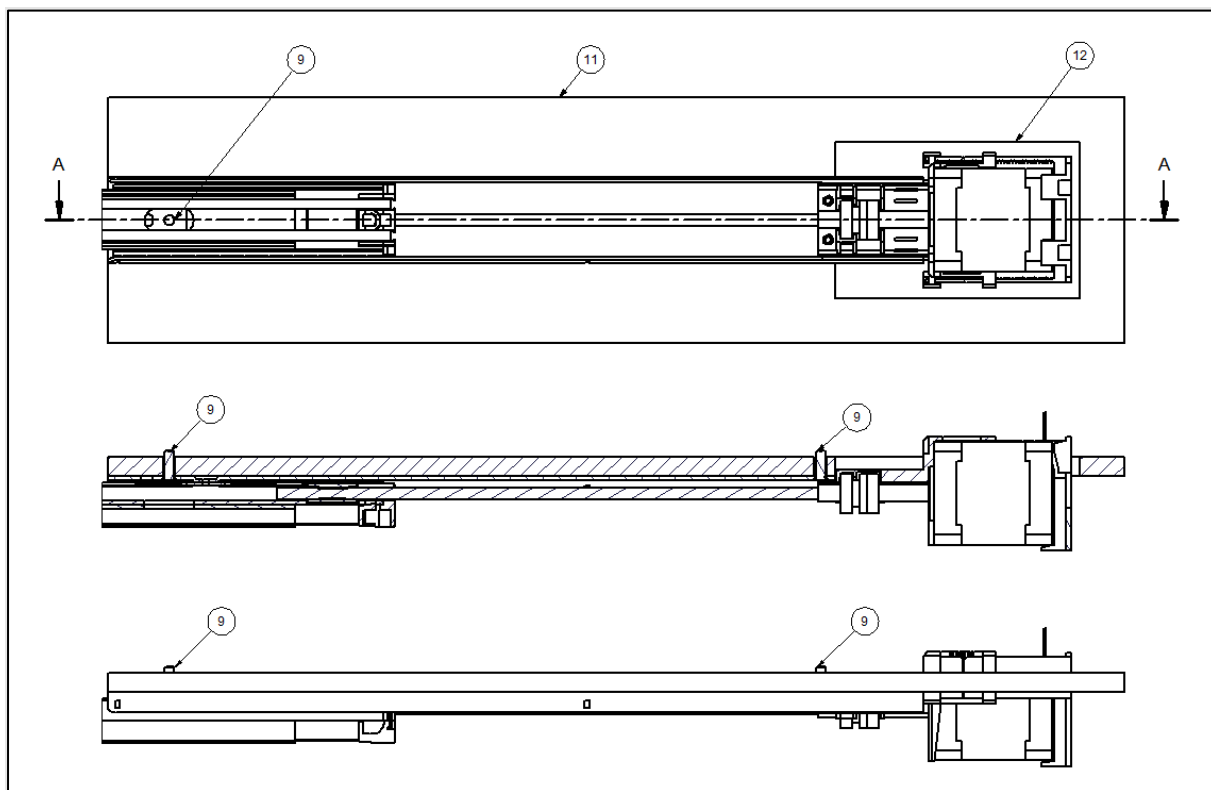


Figure 4: Assembling the cabinet rail with a clearing for the motor

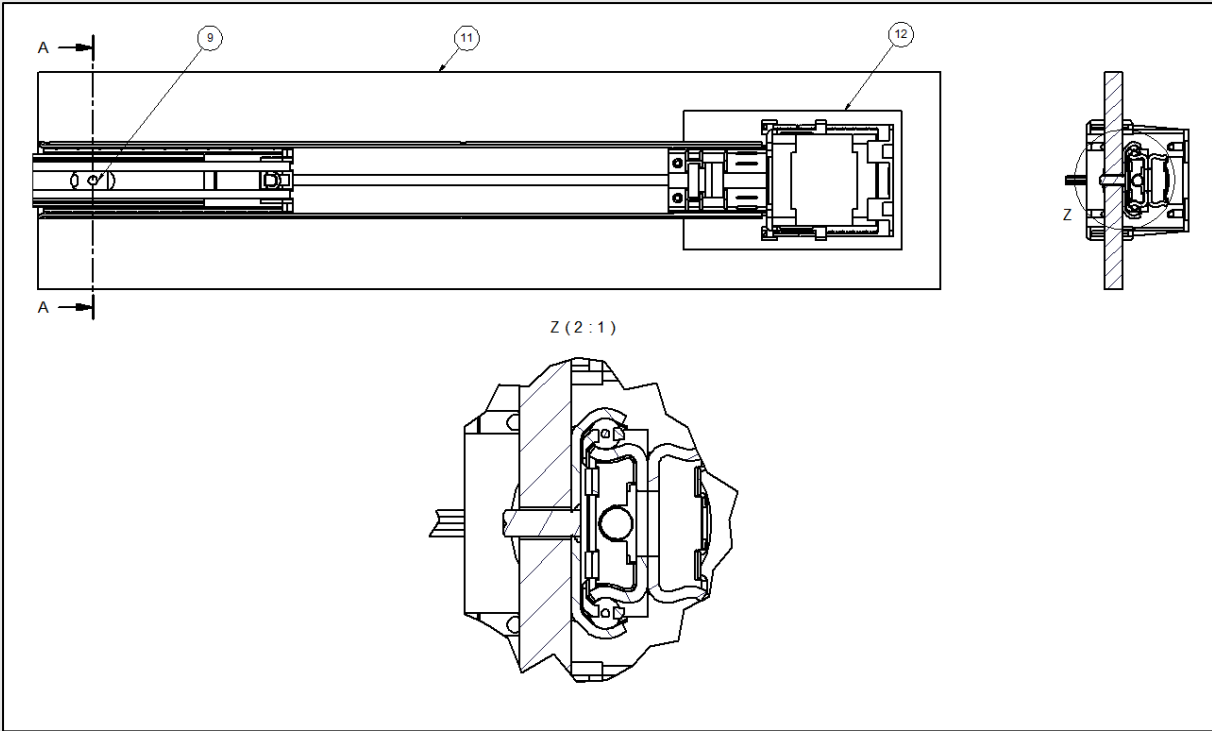


Figure 5: Assembling the cabinet rail, detailed view

9 Assembly – Slide rails



Recommendation

If screws are provided to connect the rail, then care must be taken to ensure they do not come into contact with moving rail parts.

We recommend using countersunk screws as screw means.

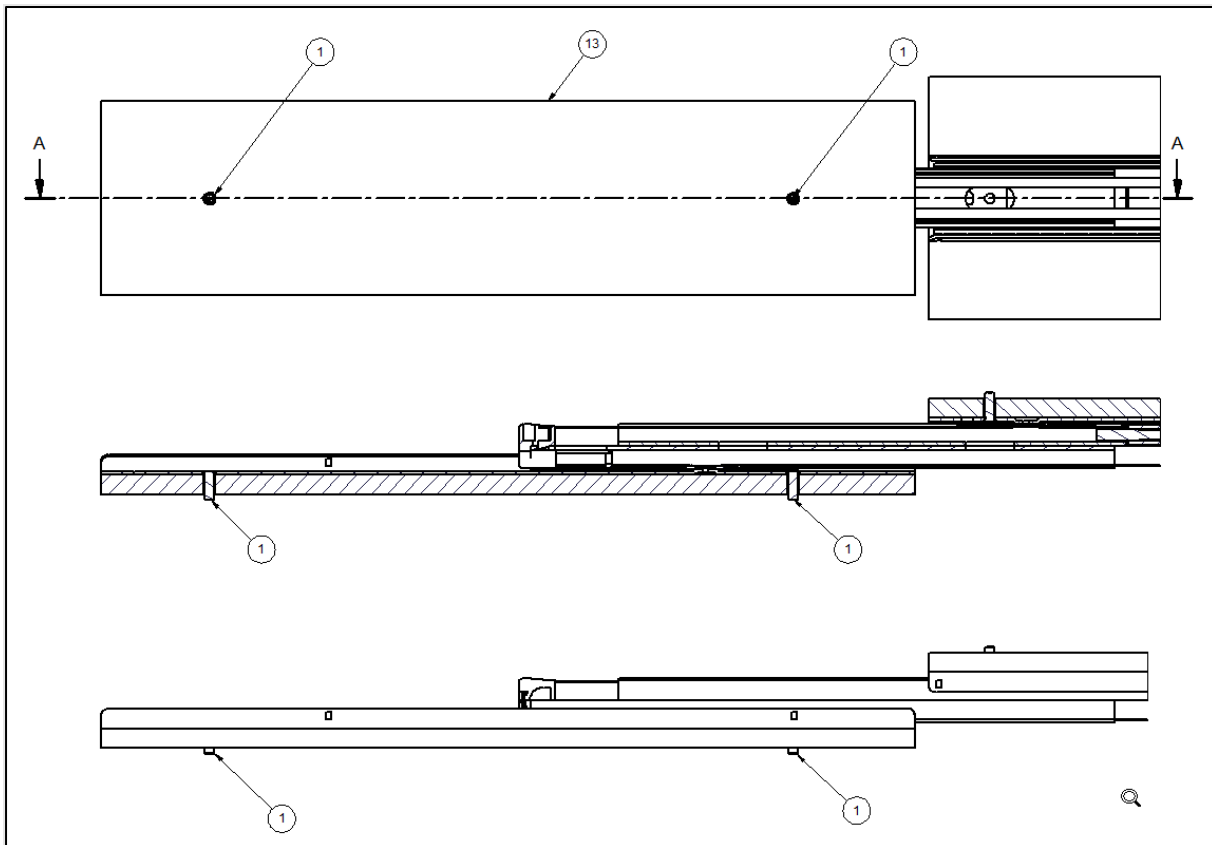


Figure 6: Assembling the slide rails

10 Wiring – Motor



Attention!

When connecting the motor, pay attention to the motor's wiring. This information can be found on the motor data sheet. Only qualified personnel may carry out the connection to the motor in accordance with the current safety guidelines.

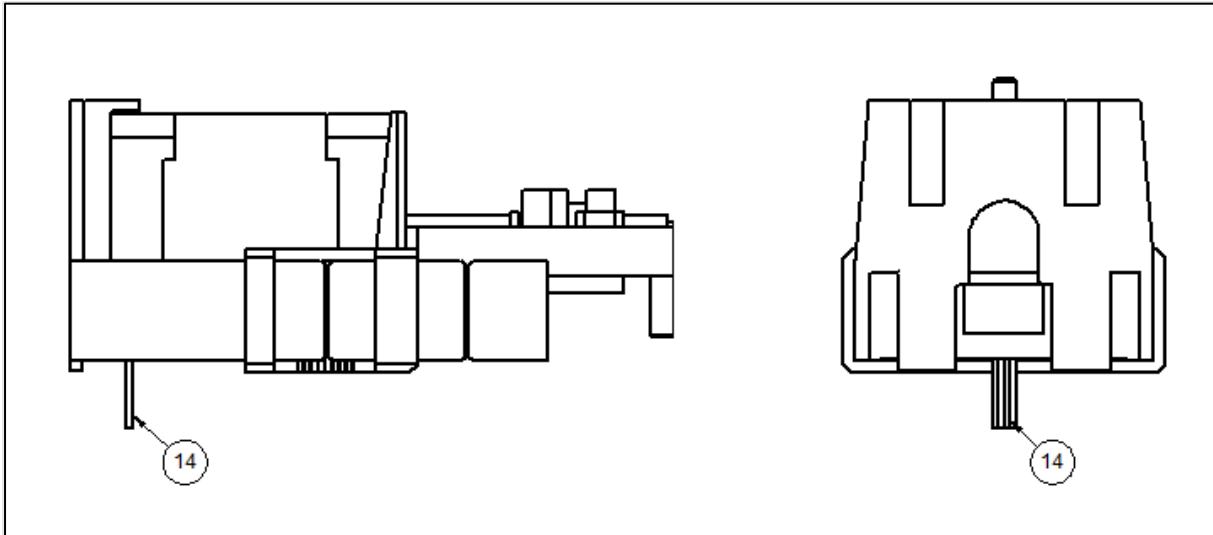


Figure 7: Motor wiring

The following table provides an example of how to assign the motor. The actual assignment of the motor intended for your purposes can be found in the motor data sheet or on the drawing.

Motor Connection		
PIN	Description	Leads
1	A +	BLK
2	A -	GRN
3	B +	RED
4	B -	BLU

11 Operating parameters

Unless otherwise specified, the FULLELECTRIC® Slide is designed for the following operating parameters.

A slide:

Fullelectric Slide Specification (1 piece)	
Specification	Value
Connection	Bipolar
AMPS/Phase [A]	2,0
Resistance/Phase [Ohms] @ 25°C	1,4 +/- 10%
Inductance/Phase [mH] @ 1 kHz	3,0 +/- 20 %
Lead Screw [mm]	10,16
Load Speed max. [mm/sec] @ 24 V	100
Load max. [kg]	15
Rotation Speed [min ⁻¹]	295,3

A pair of slides:

System Specification (1 pair)	
Specification	Value
Connection motors on controller	parallel
AMPS/Phase [A]	4,0
Load max. [kg]	30

Figure 8: Operating parameters for the FULLELECTRIC® Slide