

SCREENS **24100**

EN Operating Manual

TUBE



Gerriets



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Note regarding the original version and translations:

The original operating manual was written in German. All other language versions of this operating manual are translations of the original operating manual.

Subject to errors and technical changes.

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1 About this document

1.1 How to use the operating manual

Basic information about the operating manual

This operating manual is an integral part of the TUBE roller screen system and applies to the following components:

- TUBE roller screen – Item no. 24100 02003 (3 m) to 24100 02012 (12 m) and custom sizes.
- G-FRAME 54 control unit – Item no. 24800 07101
- Accessories (see *Chapter 2.5 Accessories and spare parts* [► p. 26])

The operating manual contains safety-related and functional information for the correct use of the product.



- ➔ Please read the operating manual in full, especially *Chapter 10 Safety* [► p. 79] before initial commissioning.
- ➔ If you have any questions, please contact Gerriets GmbH (for contact details, see *Chapter 12.1 Contact details* [► p. 89]).
- ➔ Ensure that all persons working with the system have access to the operating manual.
- ➔ Keep the operating manual in the immediate vicinity of the product.
- ➔ Pass on the operating manual to the new operator when transferring the product.

Safety information

Chapter 10 Safety [► p. 79] contains information on intended use, general safety instructions, personnel qualifications, protective equipment, standards, and limitation of liability.

Specific safety instructions can be found in *Chapter 4 Transport* [► p. 33], *Chapter 5 Installation* [► p. 34], *Chapter 6 Operation* [► p. 63] and *Chapter 7 Maintenance and servicing* [► p. 70].

Accident prevention regulations

- ➔ In addition to the information in this manual, local accident prevention regulations and national occupational health and safety regulations apply.

1.1.1 Symbols and markings

Presentation of a warning

Warnings are identified by a signal word and pictogram and are highlighted separately. On the left-hand side of the warning, additional pictograms may indicate specific dangers (in this example, a warning of electrical voltage). Embedded warnings may deviate from this structure.



DANGER

Type and source of the hazard

Consequences of failing to observe the warning.

- ➔ Measures to avert the danger and its consequences.

Hazard levels of warning notices

The signal word used indicates the hazard level:

**DANGER**

Elevated risk of an imminent hazardous situation resulting in severe injury or death.

**WARNING**

Medium risk of a potential hazardous situation resulting in severe injury or death.

**CAUTION**

Minimal risk of a potential hazardous situation resulting in minor or moderate injury.

**NOTICE**

Risk of a potential hazardous situation that may result in damage to the product or property.

Explanation of warning and instruction symbols used in the operating manual

Warning of specific risks



General warning symbol



Warning of suspended loads



Warning of the risk of falling objects



Warning of electrical voltage



Warning of obstacles above head height



Warning of non-ionising radiation



General mandatory sign



Follow the operating instructions

Further information and symbols



Indication of an action to be performed (one step)



Marking page number references



Marking of the first step or a sequence of steps



Marking a direct sequence



Marking the completion of an action



Marking bullet points



Marking of important information

2 Structure and function

2.1 General description

Roller screen system

3 m – Item no. 24100 02003
4 m – Item no. 24100 02004
5 m – Item no. 24100 02005
6 m – Item no. 24100 02006
7 m – Item no. 24100 02007
8 m – Item no. 24100 02008
9 m – Item no. 24100 02009
10 m – Item no. 24100 02010
11 m – Item no. 24100 02011
12 m – Item no. 24100 02012

and custom lengths.

The TUBE screen system is a mobile top-roller screen system where the winding shaft is located at the upper end of the screen.

Designed for projection applications and suitable for medium to large image formats up to 12 × 10 m (width × height). The system is suitable for use in theatres, training rooms, event venues, touring, and at trade fairs.

The roll-up and roll-down speed is infinitely variable and ranges from 0.2 m/s to 0.9 m/s. Thanks to the use of CFRP (carbon fibre-reinforced plastic) tubes, the system is characterised by its exceptionally low weight.

The system is supplied in pre-assembled modules that are assembled on site and fitted with the screen fabric. The scope of delivery includes the roller screen, the G-FRAME 54 control unit and other accessories.

For details, see *Chapter 2.2 Scope of delivery* [► p. 9].

Please also refer to your order confirmation and, where applicable, any order-specific technical documentation, drawings, and circuit diagrams.

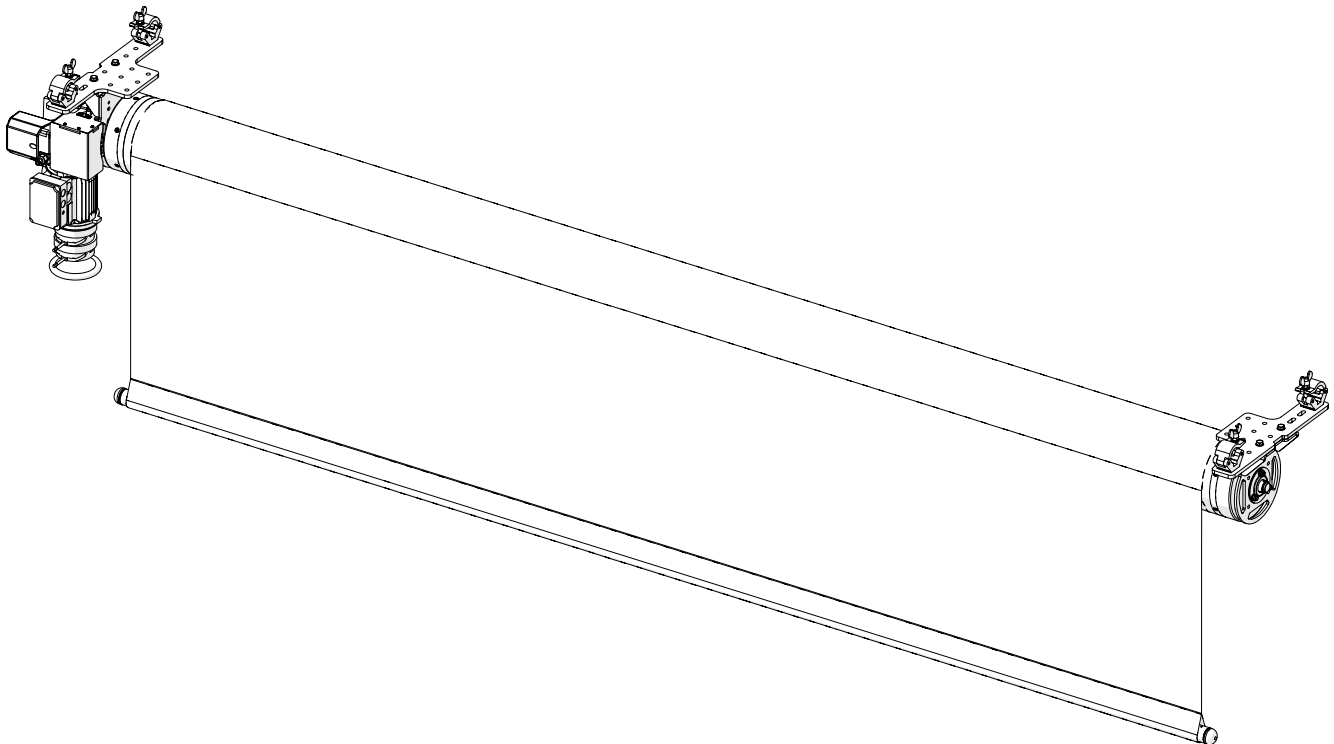


Fig. 1: Overview – TUBE roller screen

2.2 Scope of delivery

- 1** CFRP-tube(s) Ø 247 mm with mounting joints on both ends and locking clamps

1 m – Item no. 24900 04201
 2 m – Item no. 24900 04202
 3 m – Item no. 24900 04203
 4 m – Item no. 24900 04204
 5 m – Item no. 24900 04205
 6 m – Item no. 24900 04206

- 2** Screen fabric as per order
 (see delivery notes)

- 3** Aluminium bottom weight pipe, screw-on, Ø 50 × 3 mm, weight: approx. 1.3 kg/m. For lengths > 4 m, supplied in several sections, including two end caps (see delivery documents)

- 4** Drive-end assembly with bearing housing and drive unit

- 5** Non-drive-end assembly with bearing housing

- 6 & 7** Plug-in power and control cables, length 25 m (extension available on request)

- 8** G-FRAME 54 TUBE control unit incl. connection cable
 Item no. 24800 07101

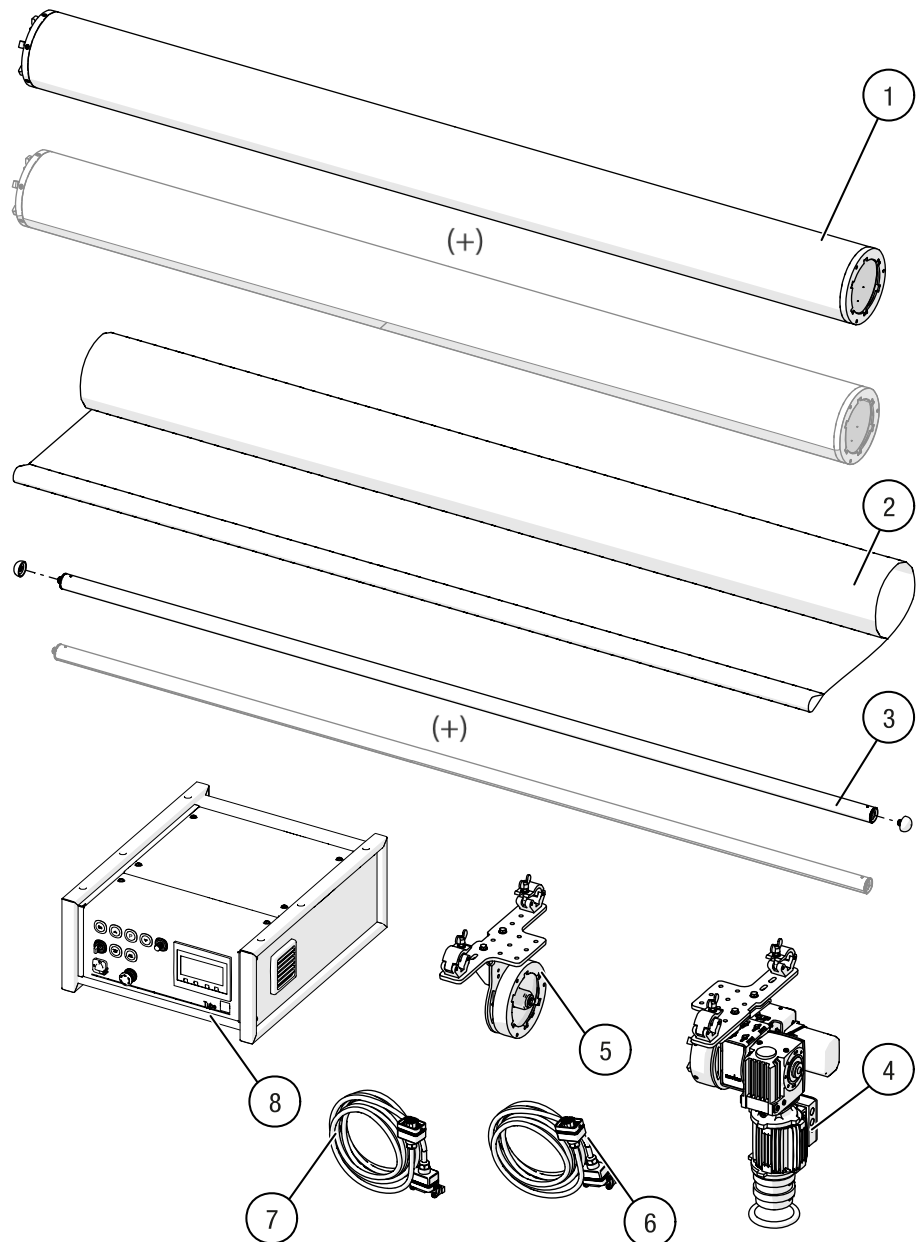


Fig. 2: Scope of delivery – TUBE roller screen system

2.3 Components and function

2.3.1 Roller screen

The TUBE roller screen features a modular design and is assembled on site. The winding shaft consists of individual CFRP tubes, which are fitted with the screen fabric (6/Fig. 3) and then bolted to the other modules. These modules include the non-drive-end assembly with bearing housing (1/Fig. 3), the suspension (2/Fig. 3), and the drive-end assembly (4/Fig. 3), which is fitted with the motor shaft and the drive unit (3/Fig. 4). Attachment to the on-site supporting structure is achieved via two suspensions mounted on each end piece using half-coupler clamps (Ø 50 mm, 2/Fig. 3).

Winding shaft

Depending on the ordered length, the winding shaft consists of one or more CFRP tube modules (4/Fig. 3). Standard lengths are 1, 2, 3, 4, 5, and 6 m. For wider versions, the configuration is selected to ensure there is no joint in the middle.

The modules are joined via a radial locking mechanism using dowel pins and a conical internal centering device. The modules are pulled onto the cone using steel locking claws (3/Fig. 3) to form a rigid connection. The six locking claws are fitted to the module end with an external cone – and to the connecting piece of the drive unit.

Screen fabric

Depending on the intended use and frequency of operation, screens (6/Fig. 3) made from various materials, such as fabric-reinforced projection screen material, are rolled onto the winding shaft (see delivery notes).

A pocket is provided at the lower end of the screen fabric to hold the bottom weight pipe (5/Fig. 3). Depending on the length of the roller screen, the bottom weight pipe consists of screw-together sections (each up to 6 m long) and end caps on both sides.

Number and description:

- 1 Non-drive-end assembly with bearing housing
- 2 Suspension half-coupler
- 3 Locking claws
- 4 CFRP-tube with locking mechanism
- 5 Aluminium bottom weight pipe
Ø 50 × 3 mm
- 6 Screen material

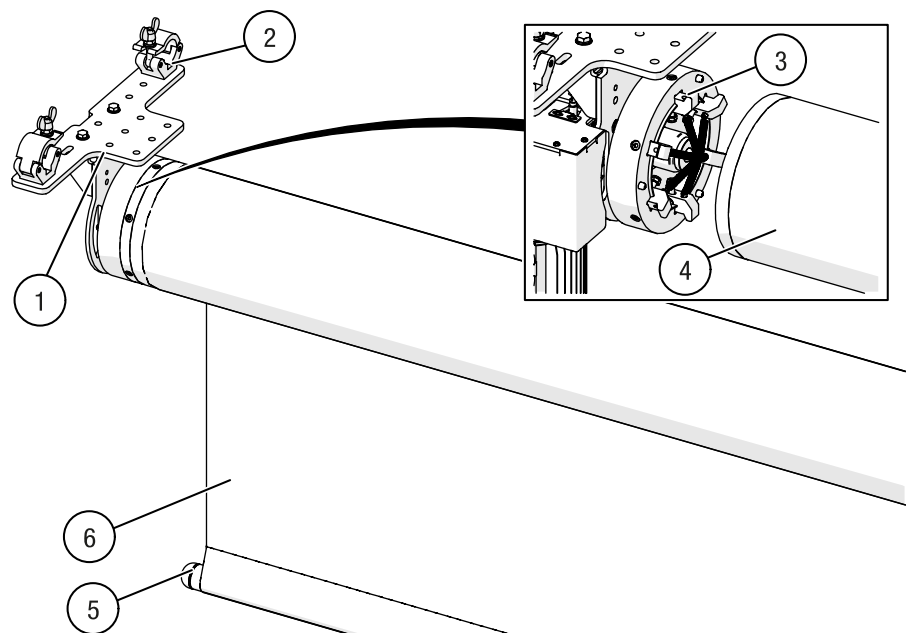


Fig. 3: Overview – TUBE (1/2)

End piece with drive unit

The drive-end assembly is located on the opposite side. It comprises the bearing housing (3/Fig. 4) and the drive unit.

A double brake (4/Fig. 4) and a handwheel (5/Fig. 4) are mounted on the drive-end assembly.

To operate the handwheel, both brakes must first be released while holding the handwheel with a firm grip to allow the shaft to rotate freely. At least three turns must remain on the winding shaft at the lower position.

NOTICE: When releasing the brakes, the screen fabric may unreel rapidly and become damaged.

Further information on using the handwheel and brakes can be found in *Chapter 6.1.3 Operating the handwheel and the brake* [► p. 69].

The travel range is limited by gear limit switches on the motor, as well as operational ends and intermediate stops programmable via the software (see also *Chapter 2.3.3 Operating, hold and emergency end positions* [► p. 13]).

The connection between the control unit and the roller screen is made via plug-in power and control cables that can be connected at both ends.

Number and description:

- 1 CFRP-tube with locking mechanism (opposite side)
- 2 Suspension half-coupler
- 3 Drive-end assembly with bearing housing and drive unit
- 4 Double brake
- 5 Handwheel

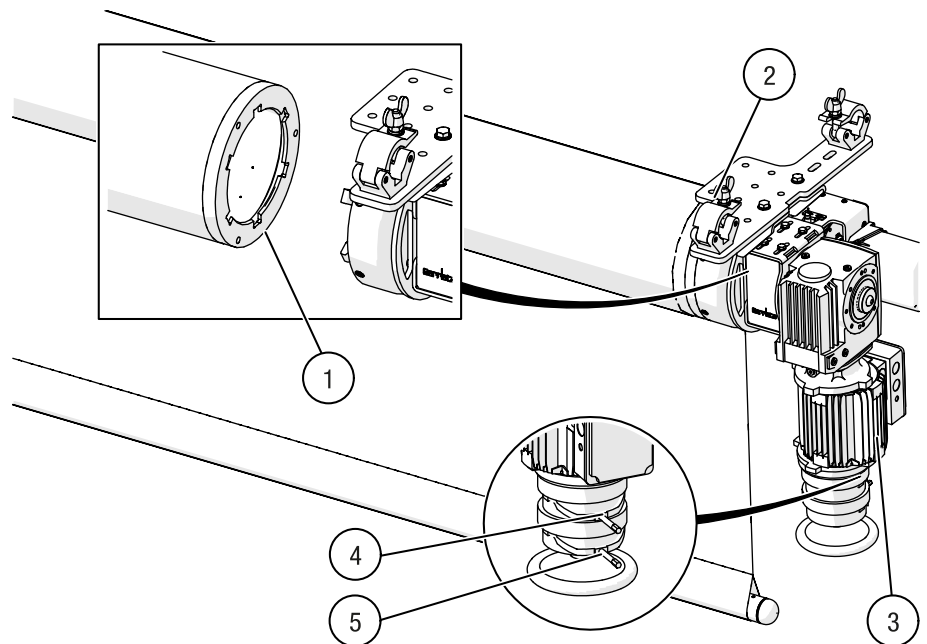


Fig. 4: Overview – TUBE (2/2)

2.3.2 Installation options

The TUBE roller screen offers several mounting configurations (see Fig. 5). The system can be rotated through 180° on the existing support structure, allowing the drive unit to be positioned on either the left or the right side. In this case, the face side of the screen fabric must be oriented accordingly.

The screen fabric can be wound onto the shaft to unroll either from the front or from the rear during operation. Ensure that the screen fabric is correctly aligned during the winding process.

Depending on the selected orientation of the drive unit and fabric, the unrolling direction, as well as the operational and emergency limit switch settings, must be adjusted accordingly.

Fig. 5: Installation and alignment options – top: screen unrolls from the front, drive unit on the right; bottom: screen unrolls from the rear, drive unit on the right (standard configuration)

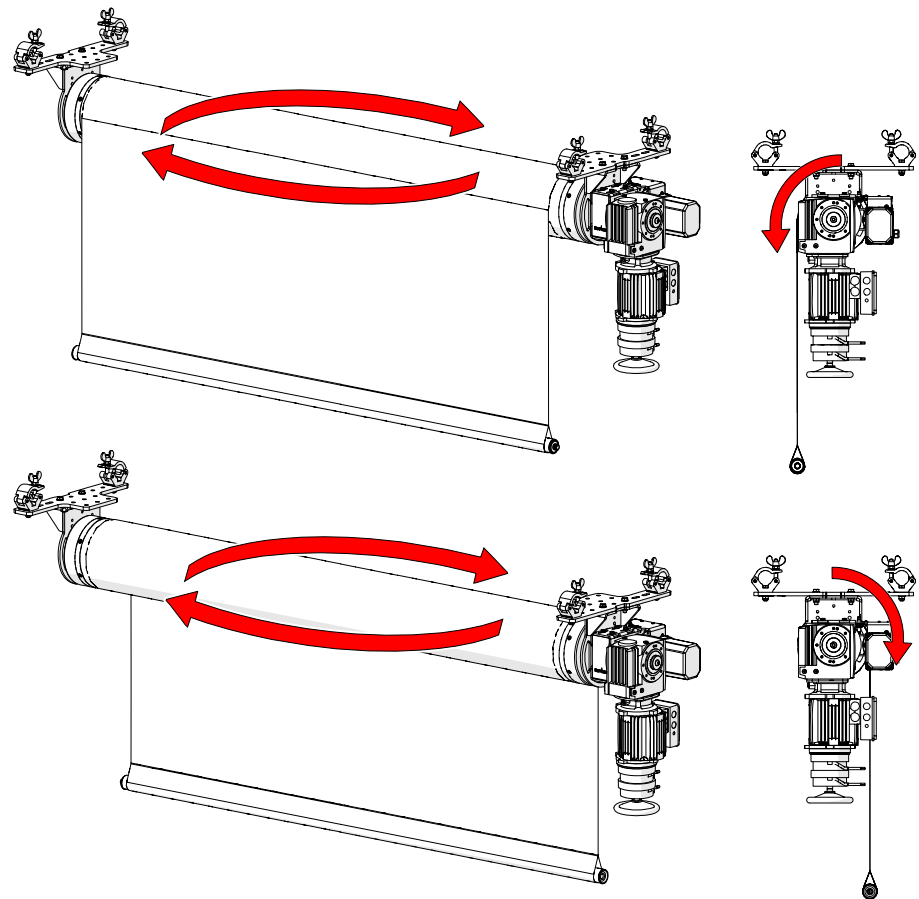


Fig. 5: Installation and alignment options – top: screen unrolls from the front, drive unit on the right; bottom: screen unrolls from the rear, drive unit on the right (standard configuration)

2.3.3 Operating, hold and emergency end positions

The TUBE roller screen is equipped with mechanical gear limit switches on the drive unit that define the upper and lower emergency end positions. The operational end positions and up to three programmable intermediate positions are defined via the software.

Before reaching the upper and lower operational limit positions (**2 and 6**/Fig. 6) and the intermediate positions (**3, 4 and 5**/Fig. 6), the system switches to low-speed mode. As soon as the distance defined in the control system is reached, the movement decelerates and stops precisely at the desired position.

The mechanical emergency limit switches (**1**/Fig. 6 – top and **7**/Fig. 6 – bottom) serve as a safety device. They protect the roller screen from damage that could result from the operational limit switches being overrun in the event of a fault.

Limit switch positions

- 1** Mechanical emergency limit switch (top)
- 2** Soft operating limit switch (top)
- 3, 4 and 5** Programmable intermediate positions (P1, P2 and P3)
- 6** Operating limit switch (bottom)
- 7** Mechanical emergency limit switch (bottom)

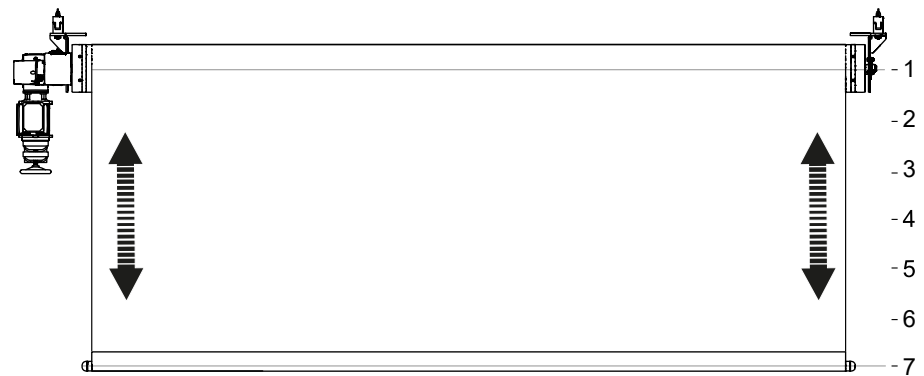


Fig. 6: TUBE roller screen – limit switches and emergency limit switches

If an emergency limit switch position is reached due to a programming error or a fault, the roller screen can be returned to the normal operating range using the key switch (see Fig. 21, [► p. 31]).



For safety reasons, a minimum of three turns of the fabric must always remain on the winding shaft when the lower emergency end position is reached.

Please observe the safety instructions in *Chapter 5.3.2 Approaching and clearing the emergency limit switches* [► p. 56].

Gearbox limit switches (emergency limit switches)

Once the limit switch enclosure has been opened, the adjustment screws on the gearbox limit switches become accessible. These are used to set the emergency end positions.

The adjustment screw (2/Fig. 7) positions the cam disc (3/Fig. 7) relative to the fixed switching contact (1/Fig. 7).

Once the limit switch box has been opened, the adjustment screws on the gearbox limit switches become accessible. These are used to set the emergency end positions.

As soon as the cam on the cam disc actuates the switching contact, the switch is triggered and the roller screen stops, defining the required travel range.

There are three adjustment screws:

- one for the upper emergency end position,
- one for the lower emergency end position,
- and a third for the simultaneous step-by-step adjustment of both emergency end positions.

Number and designation:

- 1 Switch contact
- 2 Adjustment screw
- 3 Cam disc

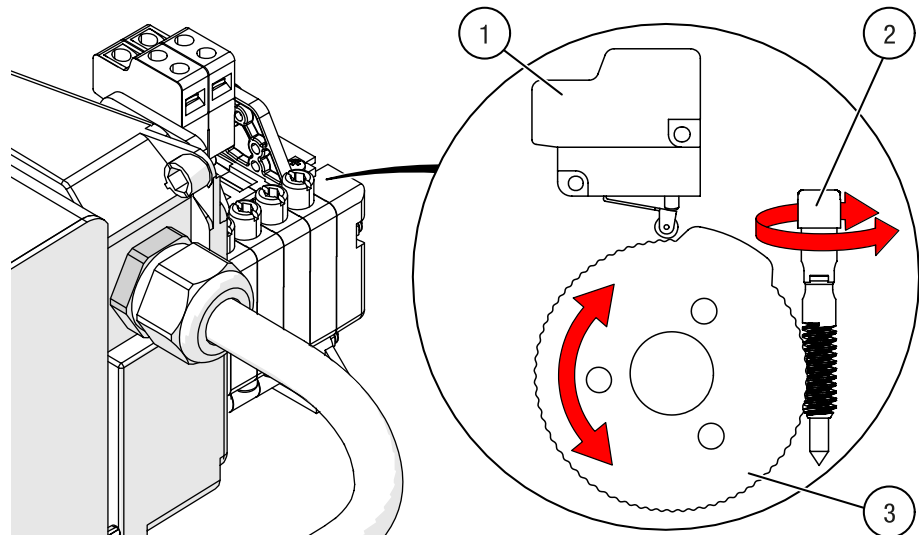


Fig. 7: Gearbox limit switches – View of the cam disc

2.4 G-FRAME 54 control unit

The G-FRAME 54 control unit is used to control the upward and downward movement of the TUBE roller screen and to regulate the travel speed. It can be integrated into a 19-inch rack, wall-mounted, or placed on a suitable flat surface.

Further information on installation is provided in *Chapter 5.2.1 Installation of the G-FRAME control unit* [► p. 44].

The system can be controlled via DMX. Optionally, the system can be extended with a second control panel using a dedicated control unit.

External control options

For operation via DMX, an external emergency stop button is required. In addition, all safety-related measures must be implemented to ensure safe and intended operation (see *Chapter 10.1.1 Intended use* [► p. 79]).

2.4.1 Front side: Control panel

Power on / off

The control panel is located on the front of the control unit (see Fig. 8). The main circuit breaker (10/Fig. 8) switches the control unit on or disconnects it from the mains supply. In the "0" position, the circuit breaker can be secured with a padlock (not included).

When the control unit is switched on, the "Control ON" indicator (1/Fig. 8) illuminates.

The emergency stop (8/Fig. 8) is used to immediately disconnect the entire system in the event of danger.

Key switch and emergency limit

The key switch (11/Fig. 8) enables movement to and from the emergency end positions. It can only be operated using the corresponding key.

The "Emergency limit up" (9/Fig. 8) and "Emergency limit down" (7/Fig. 8) buttons allow the respective emergency limit position to be selected once the key switch has been activated. This function is particularly important for inspection and testing purposes, for example in accordance with the German DGUV Guideline 315-390 (Testing of mechanical equipment in event technology).

Operation and preset positions

The "Up" (2/Fig. 8) and "Down" (4/Fig. 8) buttons must be held down for the entire duration of the movement and illuminate while pressed.

The travel speed can be adjusted between maximum and reduced speed using the potentiometer (5/Fig. 8).

The "P" button (3/Fig. 8) is used to travel to one of the preset positions (P1, P2, or P3).

The function keys F1 to F4 (6/Fig. 8) are context-sensitive and are used, for example, to configure DMX values via the integrated touch display.

Number and designation:

- 1 "Control ON" Indicator light
- 2 "Up" button
- 3 "P" button (move to preset intermediate position)
- 4 "Down" button
- 5 Potentiometer for speed
- 6 Touch display with function-keys F1–F4
- 7 "Emergency limit down" button
- 8 Emergency stop button
- 9 "Emergency limit up" button
- 10 Main circuit breaker
- 11 Key switch (enable and clear emergency limit switches)

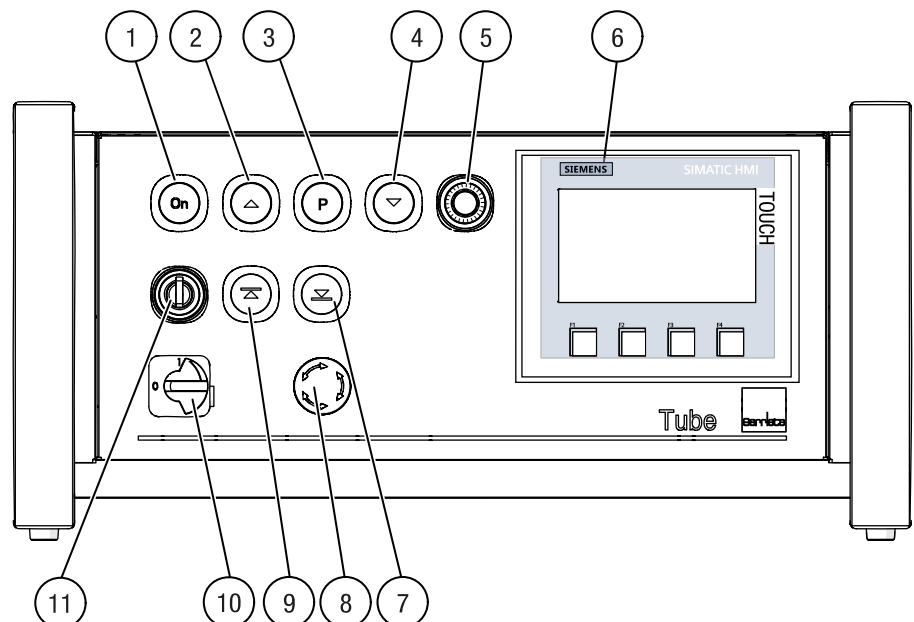


Fig. 8: G-FRAME 54 control unit – Front view

2.4.2 Operation and parameter settings

➔ Always observe the safety instructions. Parameters must only be adjusted by competent personnel.

NOTICE: Incorrect settings can cause damage to the roller screen, e.g. by over-winding or the screen fabric becoming detached.

Saved positions and operation

After switching on the control unit, a confirmation message appears indicating whether any changes have been made since the last operation. This message reminds the operator that the limit positions should be checked. After acknowledgement, the main menu is displayed.

In the upper section of the main menu, the saved positions P1, P2 and P3 are displayed as selectable buttons (2/ Fig. 9). The corresponding position values appear above the buttons (1/ Fig. 9).

After a position has been selected, the corresponding button is highlighted. The target position can then be reached using the “Up” and “Down” buttons. As soon as the position is reached, the drive unit stops, and the button illuminates green.

Operating data in the lower section of the main menu

The following operating data are displayed in the lower section of the main menu:

- Target speed and RPM (set via the potentiometer (3/ Fig. 9))
- Current position (5/ Fig. 9)
- Operating status of the roller screen (7/ Fig. 9)
- Error indicators (9/ Fig. 9)

Number and description:

- 1 Display: Stored positions
- 2 Buttons for preset positions “P1”, “P2” and “P3”
- 3 Display: Target speed and potentiometer value
- 4 Submenu 1: “Teach Pos.”
- 5 Display: Current position
- 6 Submenu 2: “Error”
- 7 Display: “Operating status”
- 8 Submenu 3: “DMX”
- 9 Button: “Error”
- 10 Submenu 4: “Parameters”

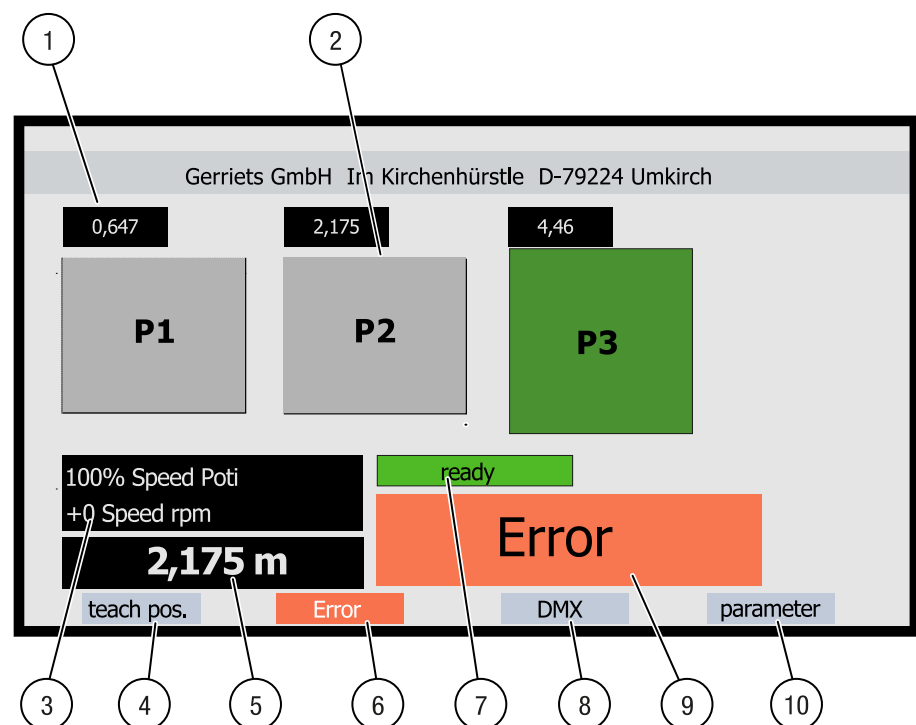


Fig. 9: Control panel – Main menu

Function-keys in the main menu

At the bottom of the main menu there are four function-keys that provide access to specific settings menus.

Each key is clearly labelled and leads to a distinct functional area:

- “Teach Pos” (4/ Fig. 9): Opens the menu for setting and saving the operational and intermediate positions of the roller screen.
- “Error” (6/ Fig. 9): Displays active error messages and allows them to be acknowledged.
- “DMX” (8/ Fig. 9): Configures the DMX settings for external operation.
- “Parameters” (10/ Fig. 9): Opens a three-page settings menu for technical operating parameters such as speed, direction of rotation and language.

The function keys can be selected directly via the touch display and guide the user through the respective setting processes.

Error

The “Error” key (6/ Fig. 9) and the associated error display (9/ Fig. 9) are only visible when an error is active. They do not appear at the same time as the “ready” display.

An overview of all error messages and troubleshooting instructions can be found in *Chapter 8 Troubleshooting* [► p. 73].

Submenu 1: “Teach Pos.”

The “Teach Pos” submenu is opened using the F1-key (4/Fig. 9 , see Fig. 10).

Number and description:

- 1 Button: Save
Operating limit (top)
- 2 Display: Operating limit value
(top)
- 3 Display: Encoder value ≥ 1000
- 4 Display: Current position
- 5 Button: Save
Intermediate positions “P1” to
“P3”
- 6 Display: Stored value
for intermediate positions
- 7 Button: Save
Operating limit (bottom)
- 8 Button “Back”: Main menu
- 9 Display: Direction of travel
- 10 Display: Value at operating
limit (bottom)
- 11 Button: “Up”
- 12 Button: “Down”

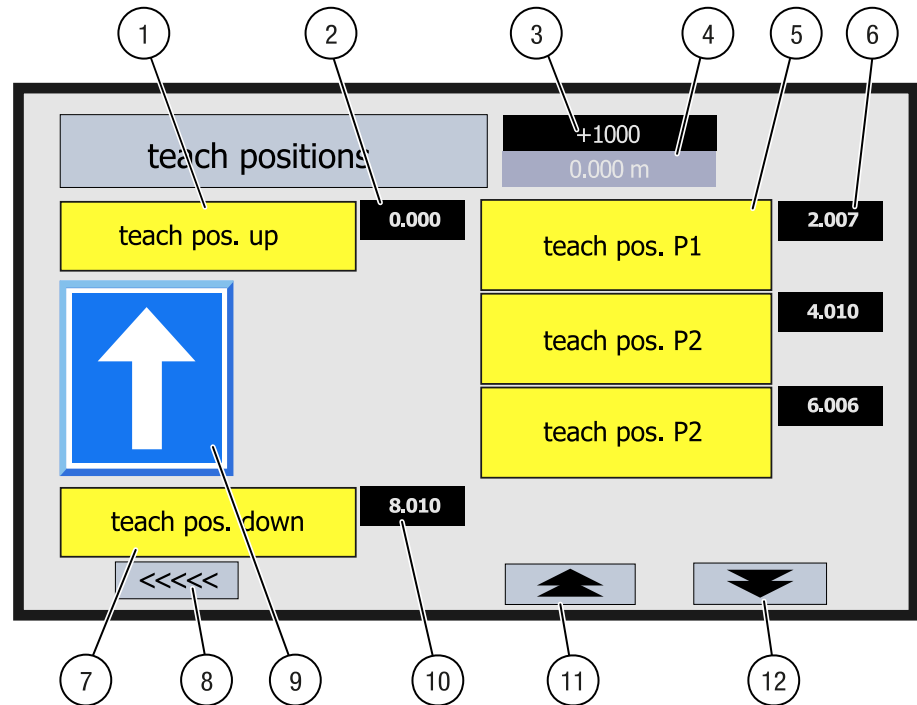


Fig. 10: Control panel – Teach positions

In this menu, the following positions can be moved to and saved:

- Operating limit (top) (1/Fig. 10)
- Operating limit (bottom) (7/Fig. 10)
- Intermediate positions “P1” to “P3” (5/Fig. 10)

The positions are reached using the “Up” (11/Fig. 10) and “Down” (12/Fig. 10) buttons and saved by pressing and holding the respective memory button. A direction arrow (9/Fig. 10) on the display indicates the system’s current direction of travel.



For TUBE systems delivered from 2025 onwards, the save button must be held down for approximately 10 seconds to save the value.

The display for the upper operating end position (2/Fig. 10) shows the saved value. A value of 0.0 is used as the reference point for all other positions.

The following values are also displayed:

- Encoder value (3/Fig. 10) with a value ≥ 1000
- Current position (4/Fig. 10)
- Stored value for intermediate positions (6/Fig. 10)
- Stored value for lower end-of-travel position (10/Fig. 10)

The “Back” button (8/Fig. 10) returns you to the main menu. All configured settings are saved automatically.

Submenu 2: “Parameters” (1/3)
Operational parameters and
creep-speed distance

When you open the parameter menu using the F4-key (11/Fig. 9), a login window appears first, in which a password must be entered. Once you have successfully logged in, settings can be made on three pages.

➔ Details on logging in and the available settings can be found in *Chapter 5.3.4 Parameter settings (language, direction of rotation and creep speed)* [► p. 60].

On the first page, in the upper section, you can enter the number of encoder increments per rotation (1/Fig. 11 ; default 500) and the winding length per rotation (2/Fig. 11 ; default for TUBE 0.75). The increments define the division of a full rotation into individual segments and are used for precise position determination.

In the lower section, you can set the distance from the target position at which the system switches to creep speed when operating at 100% speed (4/Fig. 11). In addition, the current position (6/Fig. 11) and the speed value set on the potentiometer (5/Fig. 11) are displayed.

Next / Back

The “back” button (3/Fig. 11) returns you to the main menu and saves the values.

Press the “next” button (7/Fig. 11) to go to the second page of the parameter settings.

Number and description:

- 1 Input field:
Increments per rotation
- 2 Input field: Metres per rotation
- 3 Button “Back”: Main menu
- 4 Input field:
Distance to creep speed in
metres
- 5 Display: Potentiometer value in
% Speed
- 6 Display: Current position value
- 7 Button “Next”:
Parameter Page 2/3 –
creep speed and
drive speed

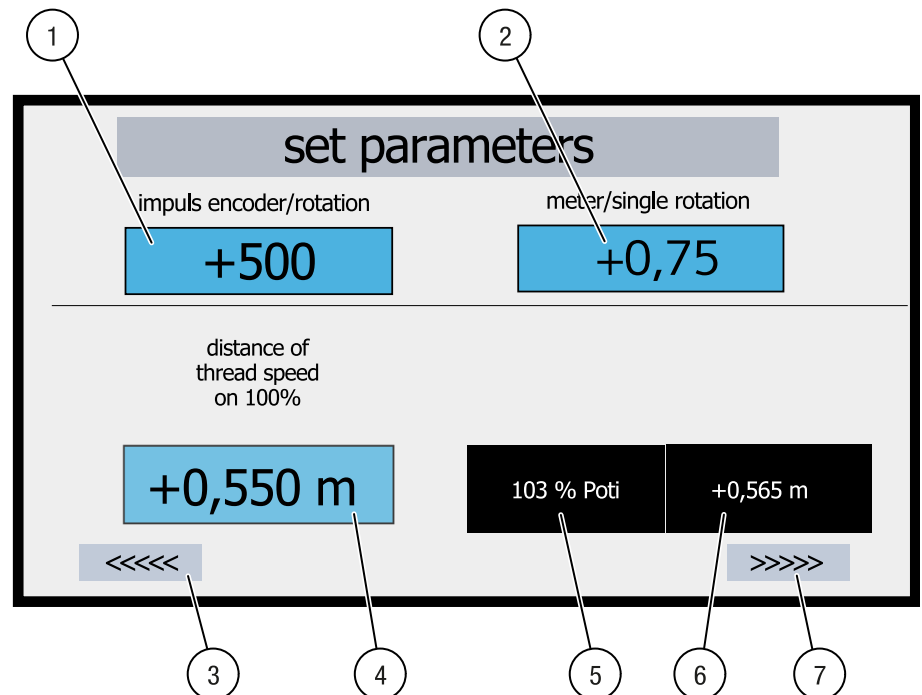


Fig. 11: Control panel – Parameters 1/3

Parameter submenu (2/3)

Creep speed corresponding to drive speed

Next / Back

Number and description:

- 1** Input field: Creep speed as a Percentage of the maximum drive frequency (default frequency 50 Hz; maximum 40 %)
- 2** Button “Back”: Page 1 Parameter settings
- 3** Input field: Drive speed (motor speed according to the drive nameplate default value 64)
- 4** Button “Next”: Page 3 parameter settings

On page 1, pressing the F4 key or selecting the “Next” button (7/ Fig. 11) opens the second page of the parameter menu.

In the “Creep speed %” input field (1/ Fig. 12), the speed value for the creep speed at the end of the deceleration ramp is set. The setting is specified as a percentage of the maximum frequency defined on the inverter (default frequency: 50 Hz; maximum 40 %).

In the “Drive speed” input field (3/ Fig. 12), the motor speed is specified according to the nameplate. The default value is 64.

Navigation is performed via the “Back” button (2/ Fig. 12) to the first page of the parameter settings and via “Next” (4/ Fig. 12) to the third page.

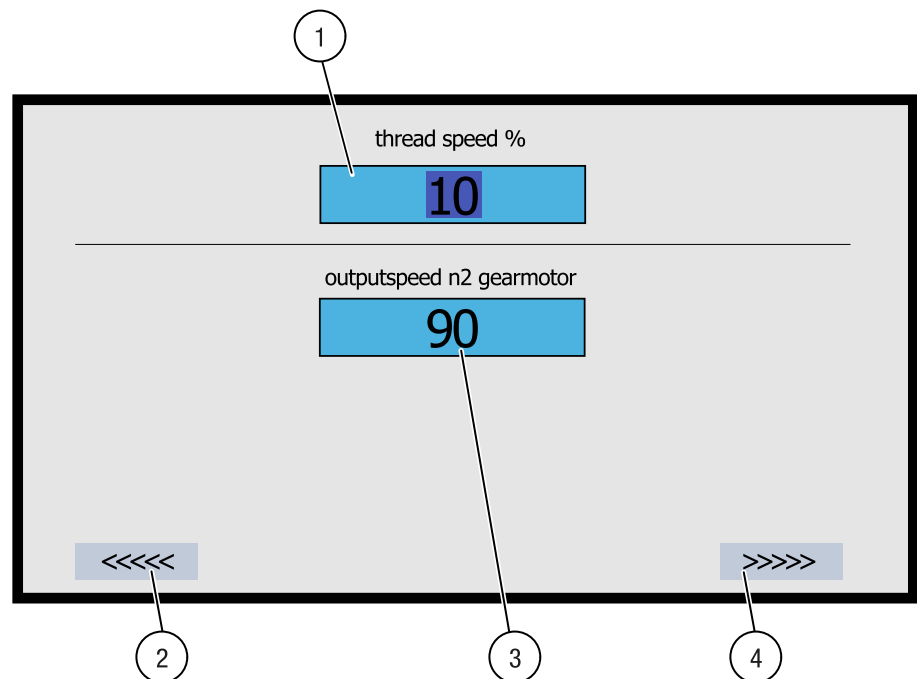


Fig. 12: Control panel – Parameters 2/3

Parameters submenu (3/3) Direction of rotation and language

Pressing the F4-key or clicking the “Next” button (4/Fig. 12) takes you to the third page of the parameter settings.

The drive’s direction of rotation can be set to clockwise (1/Fig. 13) or anticlockwise (2/Fig. 13).



If the direction of rotation is changed, all programmed intermediate positions must be reconfigured.

Language

Use the “D/E/F” button (4/Fig. 13) to select the language: German, English, or French.

Back and menu exit

Press the “Back” button (3/Fig. 13) to return to page 2 of the parameter settings. Pressing the button four times opens the main menu and saves the settings.

Number and description:

- 1 Button: “Reverse rotation to the right”
- 2 Button: “Reverse rotation to the left”
- 3 Button “Back”: Page 2 of the parameter settings
- 4 Button „D/E/F“: Language selection

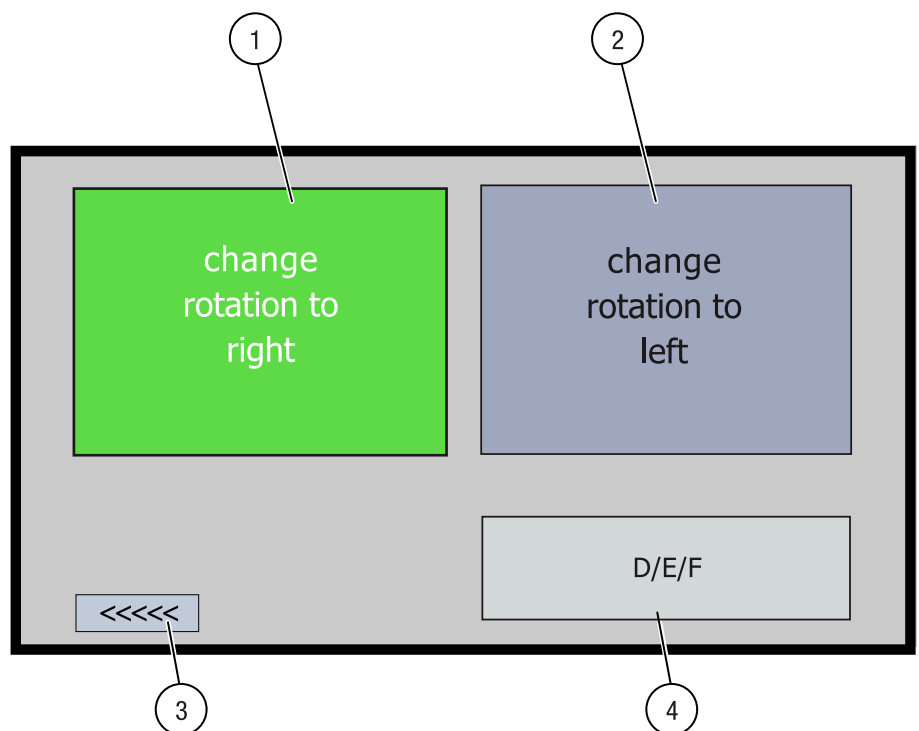


Fig. 13: Control panel – Parameters 3/3

2.4.3 Rear: Connections and settings

There are several connection and setting options on the rear of the G-FRAME 54 control unit.

The mains electrical connection is made via the cable gland (9/ Fig. 14). The on-site power supply is connected inside the control unit. The drive unit of the roller screen is supplied with power via the male connector of the motor supply cable at the power output (2/ Fig. 14).

Control commands are transmitted to the roller screen via the male connector of the control cable (3/ Fig. 14).

Optional second control point / control via DMX

The cover of the rotary switches (7/ Fig. 14) can be loosened using the knurled screw (6/ Fig. 14). The DMX start address can then be set using the exposed rotary switches. The DMX status LED (8/ Fig. 14) indicates the status of the DMX connection.

DMX control (e.g. via a DMX controller) is achieved via the DMX-IN-socket (4/ Fig. 14) and signal loop-through is achieved via the DMX-OUT-socket (5/ Fig. 14).

A second control point can be provided as an option via a dedicated control unit in consultation with Gerriets GmbH. A connection for an external emergency stop button (1/ Fig. 14) is also available. This is mandatory when operating via DMX or when using a second control panel if a risk to persons cannot be excluded.

Number and description:

- 1 Emergency stop connection (optional)
- 2 Power output (male connector)
- 3 Control signal output (male connector)
- 4 DMX-IN-socket – connection for second control panel
- 5 DMX-OUT-socket
- 6 Knurled screw DMX settings cover
- 7 Rotary switches for DMX address setting
- 8 DMX status LED
red = no connection / error
green = ready for use
- 9 Power supply (customer-side connection)

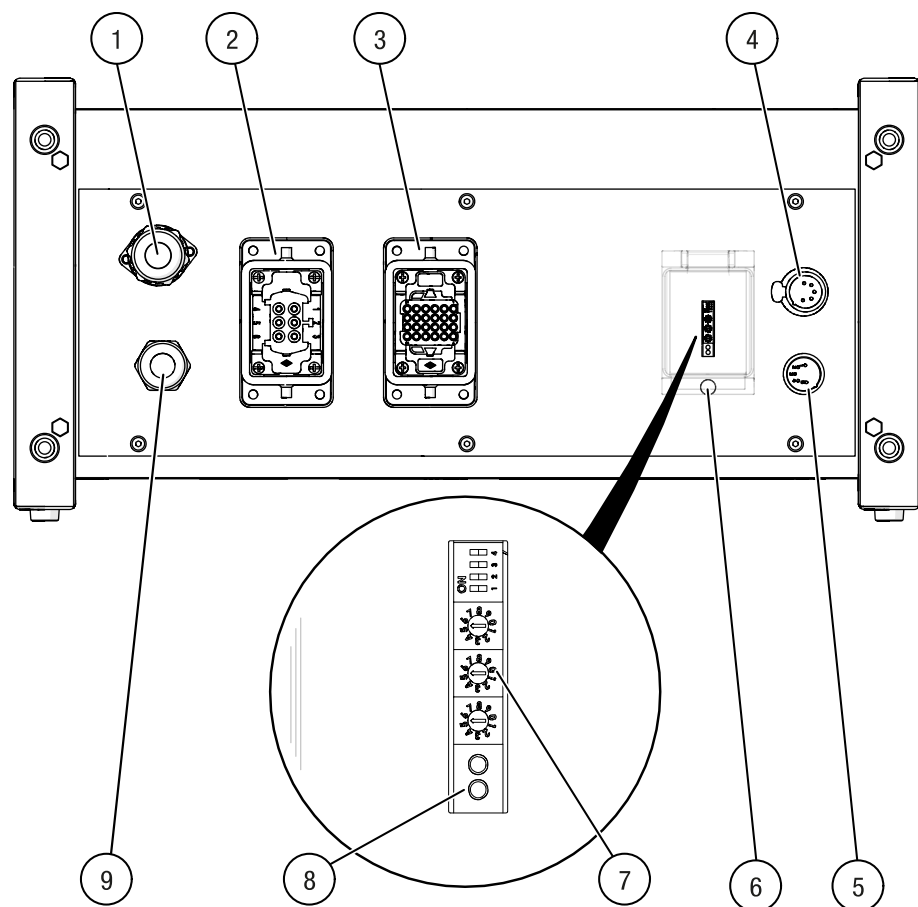


Fig. 14: Rear – G-FRAME 54 control unit

2.4.4 Connection diagram

Connecting of the roller screen system

The following diagram shows the electrical connection for the TUBE roller screen with G-FRAME 54 control unit (see Fig. 15).

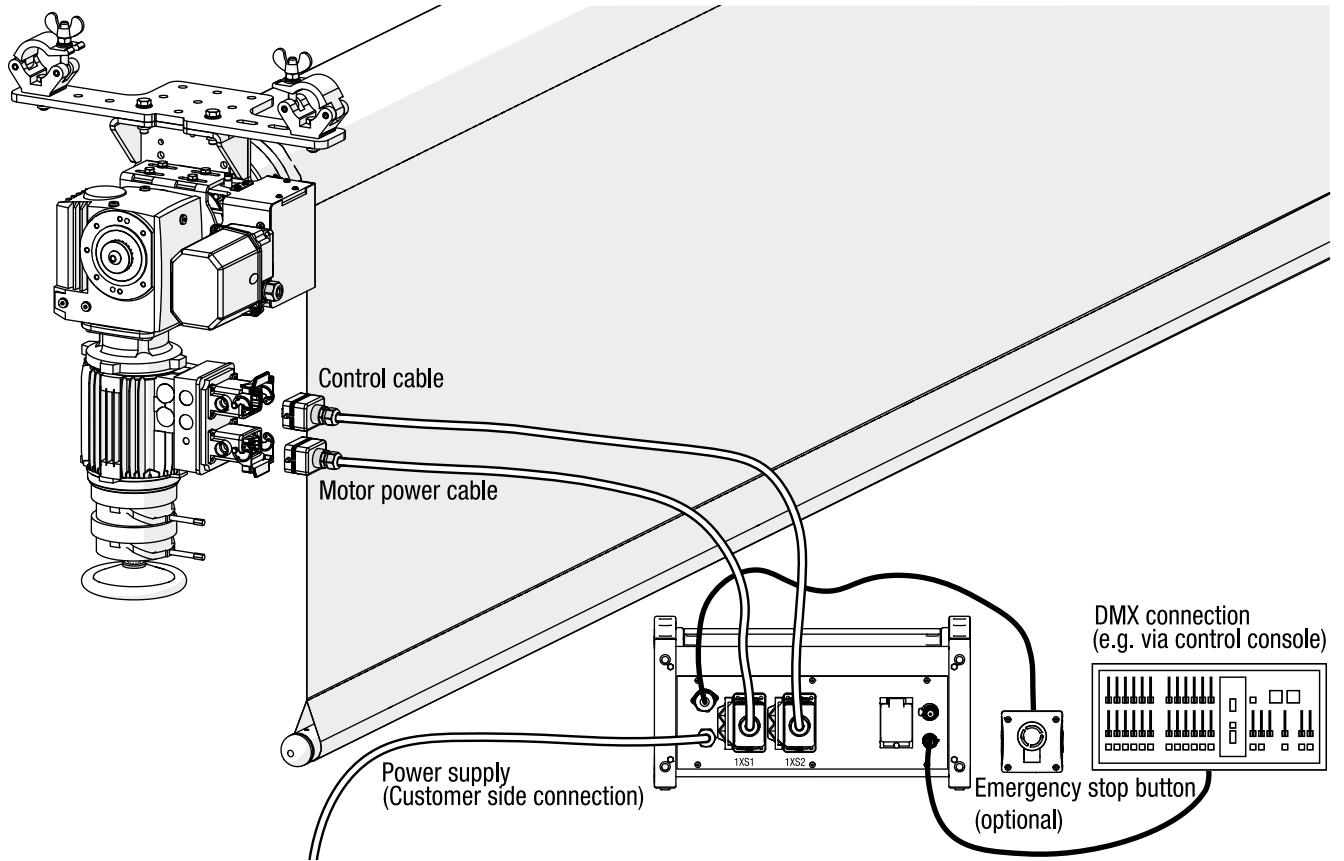


Fig. 15: Wiring diagram – G-FRAME 54 control unit TUBE

2.4.5 DMX control

To communicate with an external DMX controller, a DMX start address must be assigned to the control unit. On the rear of the control unit, there is a cover over the red rotary switches on the DMX card. The DMX address can be set to the required value there (see 7/Fig. 14). The DMX controller is connected to the DMX-IN interface on the rear of the control unit.

The TUBE control units support the DMX512, DMX512-A, and RDM protocols. The default setting specifies address 001 for the start channel.

DMX addresses and commands

Start address: Raise

Start address +1: Lower

Start address +2: Set speed

Start address +3: Position 1

Start address +4: Position 2

Start address +5: Position 3



When controlled via DMX, the system is no longer compliant. The operator must take appropriate measures to ensure safety (see *Chapter 10.1.1 Intended use* [► p. 79]).

DMX status LED

If the status LED next to the address selector illuminates green, the system is operational for DMX control. If the LED illuminates red, there is a fault (e.g. DMX cable not plugged in; see *Chapter 8 Troubleshooting* [► p. 73]).

Remote Device Management (RDM)

RDM is an extension of the DMX512 protocol and enables bidirectional communication between the master device and the connected devices. The master device can assign DMX addresses automatically and may override the manually set start address.



The manual DMX address setting can be overridden when connected to an RDM master device. A reset can be performed by selecting start address 900.

DMX parameter settings (via software)

Back

Number and name:

- 1 Display: Current position
- 2 Display: Target speed %
(potentiometer)
- 3 Display: Selected DMX-channel
- 4 Button "Back": Main menu
- 5 Display of the value of the
selected DMX channel

To enable DMX operation, select the "DMX" menu on the touchscreen. In the upper section, the display shows the current position (1/Fig. 16) and the target % speed value (2/Fig. 16), which is defined either via DMX or via the potentiometer.

The available DMX channels are shown graphically in the lower section. When a channel is selected, the corresponding button is highlighted on the screen (3/Fig. 16), while the other buttons are faded out. Inactive DMX-channels are shown in grey in the illustration for clarity. The value of the DMX-channel is shown to the right of the button (5/Fig. 16).

The "Back" button (4/Fig. 16) takes to the main menu. The settings are saved automatically.

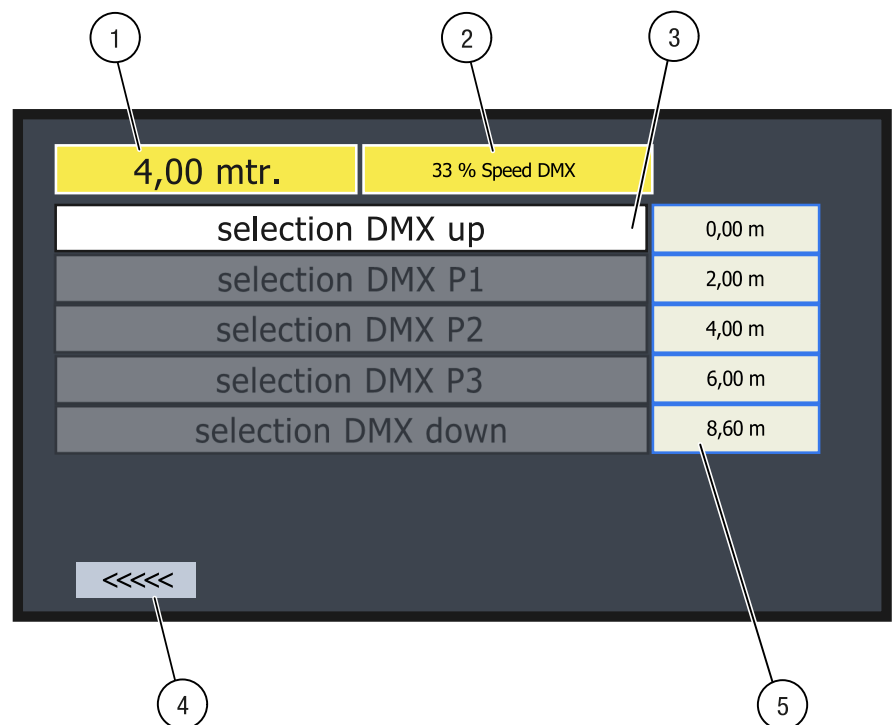


Fig. 16: Control panel – DMX menu ("DMX selection on" selected)

2.5 Accessories and spare parts

WARNING

Material damage caused by non-original spare parts and accessories

The use of parts from other manufacturers may impair the proper functioning of the TUBE roller screen system. This can lead to malfunctions as well as damage to the system or to third-party property.

➔ Use only original parts and accessories from Gerriets GmbH.

- 1** Control and motor supply cable for variable speed 25 m (included in delivery)

Extension cables are available on request.

- 2** G-FRAME wall-mounting plate / ceiling bracket for 19-inch rack (included in delivery)

- 3** External emergency stop button for DMX operation
Item no. 24800 08011

- 4** Second control unit for variable speed including cable and wall-mounting plate (optional; special control unit required; consult Gerriets GmbH)
337 × 125 × 175 mm
(L × H × W)
Item no. 24800 07201

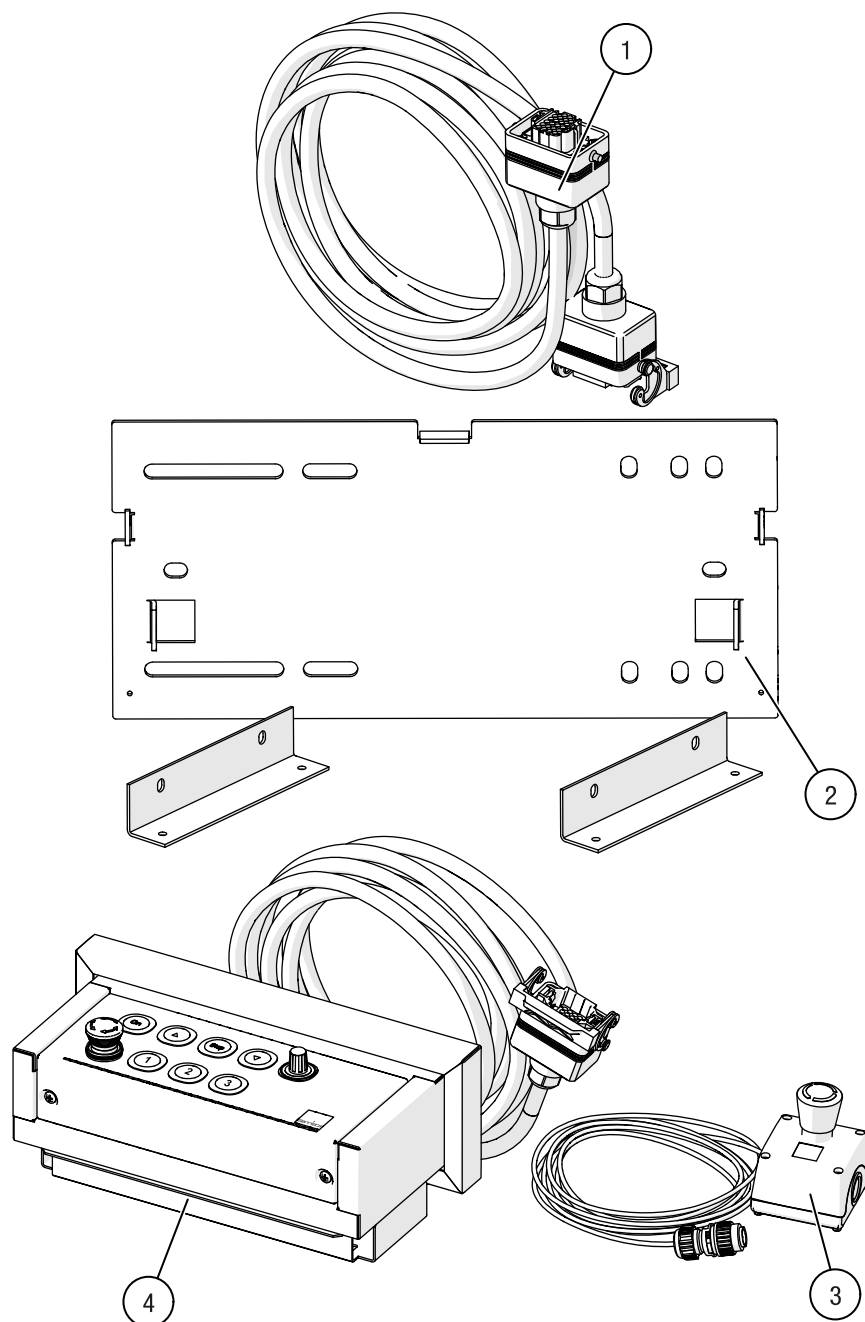


Fig. 17: Accessories – TUBE roller screen system

3 Technical data

3.1 Environmental conditions

Environmental conditions and operating parameters

Parameter	Value
Permissible ambient temperature	+20 °C to +40 °C
EMC	Complies with the EMC Directive 2014/30/EU for industrial applications.
Moisture / wetness	Not suitable for damp or wet environments; IP40 (control unit), IP54 (motor).
Connection	Power outlet with a 10 A miniature circuit breaker (MCB); all live conductors protected by a residual current device (RCD).

Table 1: Roller screen system – environmental conditions and operating parameters

CAUTION

Damage to the roller screen system caused by moisture and wind

The TUBE roller screen system is not suitable for use in wet or windy conditions and may be damaged.

- ➔ Use the TUBE roller screen system indoors only.
- ➔ If installing outdoors, take care to protect the TUBE roller screen system from moisture, wet conditions, and wind.

3.2 TUBE roller screen

3.2.1 Mechanical data

Parameter	Value
Dimensions	See Fig. 18
Max. lifting height	10 m
Clear span	See Table 3
Load capacity	See Table 3
Total weight	Weight of CFRP modules, both end assemblies (drive- and non-drive-end), drive unit (71 kg), and bottom weight pipe (excl. screen fabric and control cables; see Table 3)
Speed	0.9 m/s
Mounting	Two half-coupler clamps per end assembly (load capacity 750 kg on Ø 50 mm tube)

Table 2: Mechanical data – TUBE roller screen

Item no.	Span [m]	Length of modules [m]	Module weight [kg]	Total weight [kg]	Max. screen fabric weight [kg]
24100 02004	4	4	23	104	63
24100 02005	5	5	27	109	62
24100 02006	6	6	32	114	61
24100 02007	7	3 + 4	40	122	59
24100 02008	8	3 + 5	45	128	58
24100 02009	9	3 + 6	50	133	57
24100 02010	10	4 + 6	55	138	56
24100 02011	11	3 + 5 + 3	63	147	54
24100 02012	12	3 + 6 + 3	68	152	53

Table 3: Technical specifications – Weights and lengths of the TUBE roller screen system

Load per suspension point,
drive side (2 suspension points
per side)

$$m_{SP,drv} = \frac{m_{module} + m_{screen} + m_{weighting\ pipe} + m_{endpiece}}{2}$$

Load per suspension point,
non-drive side (2 suspension
points per side)

$$m_{SP,n-drv} = \frac{m_{module} + m_{screen} + m_{weighting\ pipe} + m_{endpiece} + m_{motor}}{2}$$

Description of dimensions:

- 1 Tube length (x)
- 2 Screen width
- 3 Total length
Tube length (x) + 554 mm
- 4 Dimension of non-drive-end assembly (bearing to module)
- 5 Dimension of drive-end assembly (motor to module)
- 6 Centre of axis to handwheel
- 7 Dimension from motor to shaft

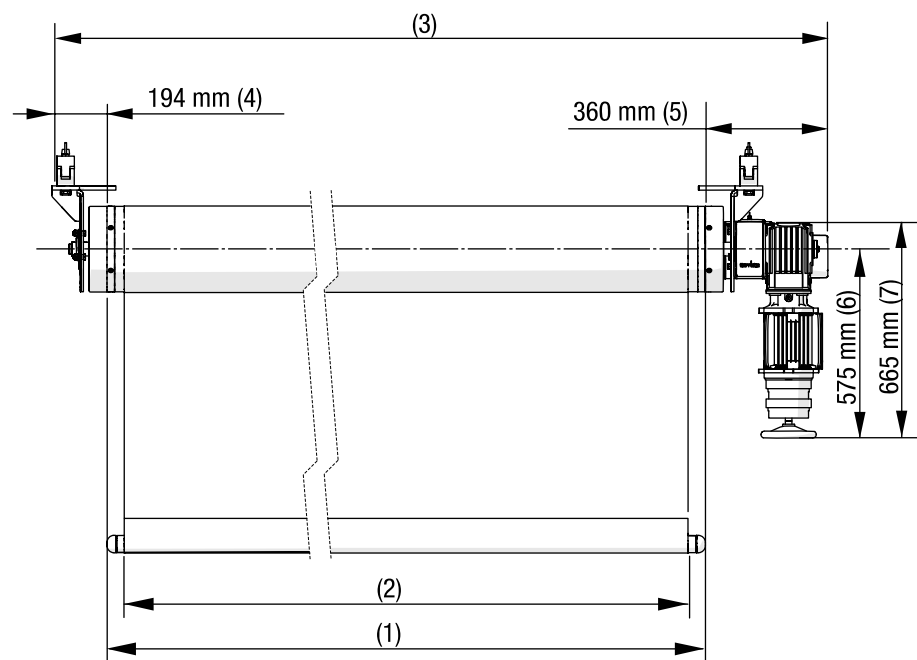


Fig. 18: TUBE roller screen – dimensions, front view

Description of dimensions:

- 1 Dimension of mounting plate
- 2 Dimensions of suspension distance
- 3 Dimension: suspension bracket to handwheel (vertical bottom)
- 4 Dimension: screen fabric to centre of shaft
- 5 Dimension from centre of shaft to outer edge

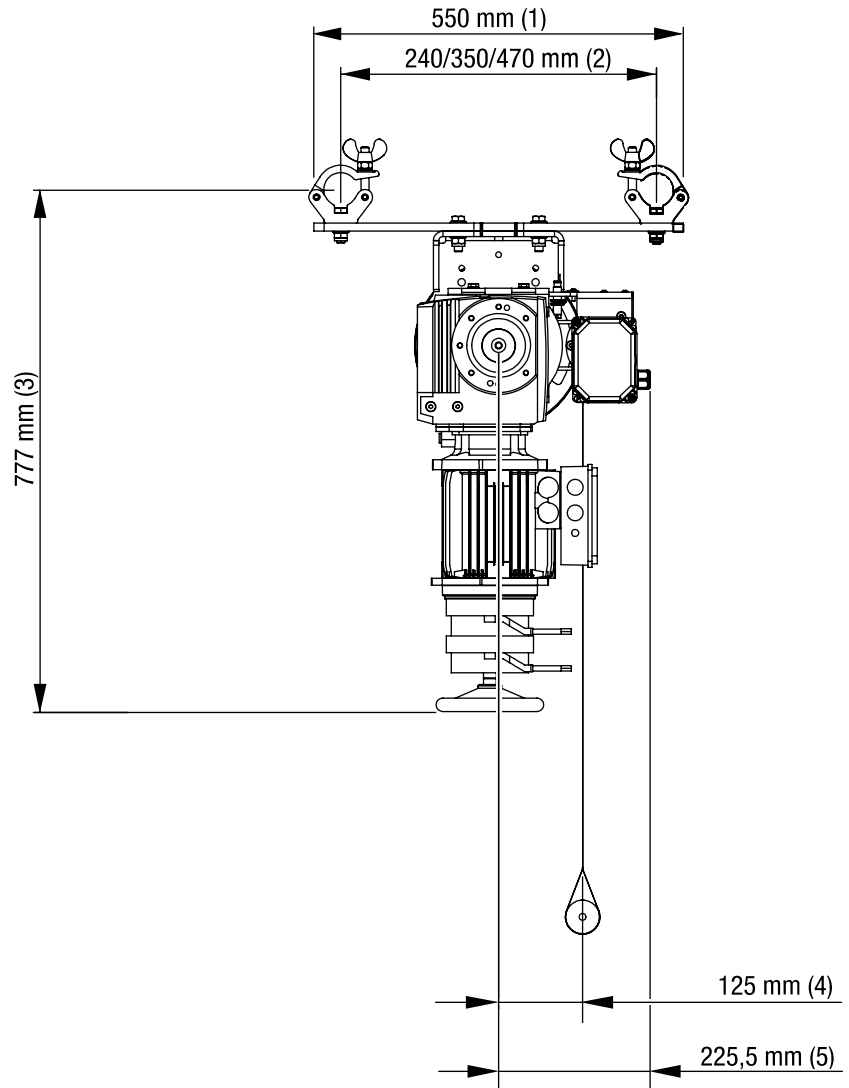


Fig. 19: TUBE roller screen – dimensions, side view

Description of dimensions:

- 1 Total length of winding shaft
Tube length (x) + 104 mm
- 2 Suspension distance
Tube length (x) + 245 mm
- 3 Total length
Tube length (x) + 554 mm

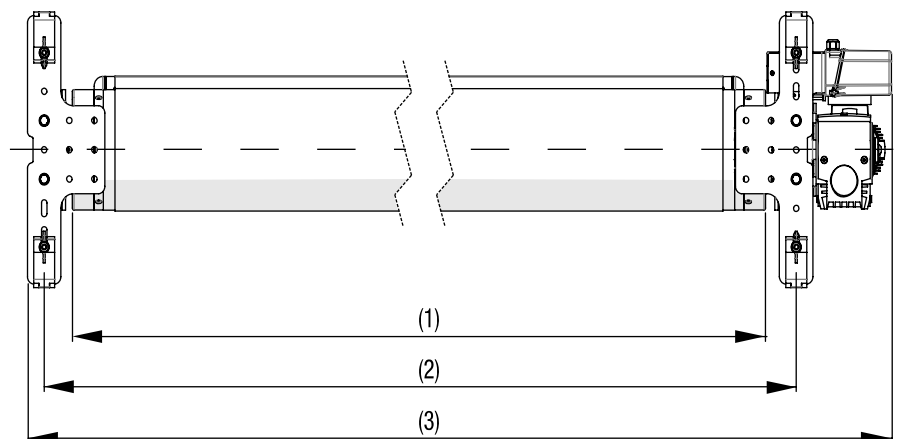


Fig. 20: TUBE roller screen – dimensions, top view

3.2.2 Electrical data

Parameter	Value
Motor type	Helical-worm gear motor with double brake (three-phase asynchronous motor)
Electrical data (power supply)	3 × 230 V / 400 VAC, 50 Hz
Motor rated current (A)	6.15 / 3.55
Operating mode / duty cycle of the motor (short-time operation, constant load)	S2-10 min (short-time operation, constant load)
Duty cycle (ED)	10 min
Degree of protection (motor)	IP54
Motor speed ($P_{N, motor}$)	1.395 rpm
Drive speed ($P_{N, drive}$)	63 rpm
Motor rated power ($P_{N, motor}$)	1.5 kW
Drive torque	191 Nm
Electrical connection	Rectangular connector with locking bail (power and control cables)
Control and power connector cable	25 m (included)
Brakes	2 × spring-applied brakes with manual release (230 VAC)
Motor protection	Thermal switch as a normally closed contact
Manual drive	Handwheel with manual brake

Table 4: Electrical specifications – TUBE roller screen system

3.2.3 Screen material

The TUBE roller screen system is designed for use with various screen fabrics and materials.

The choice of a suitable material depends on the specific application, visual requirements, and mechanical properties.

For permanent installation, we recommend a fabric-reinforced projection screen, which is characterised by high dimensional stability and good flatness. For laser projections, a sharkstooth tulle is suitable as a textile screen, offering a fine structure and high translucency.

Screen materials for short-term use / not for permanent installation



Soft PVC projection screens are only suitable for short-term use with the TUBE roller screen system:

- Our high-speed carbon roller screen system TUBE, in combination with soft PVC projection screens, was developed for the events and trade fair sector.
- Long-term use of these materials is not recommended, as bulging and edge curling may occur.
- Further information can be found in our product information or online at www.gerriets.com.

3.3 G-FRAME 54 control unit

Mechanical data

Parameter	Value
Weight	18 kg
Dimensions	See Fig. 21 and Fig. 22

Table 5: Mechanical data – G-FRAME 54 control unit

Dimensions: Front view

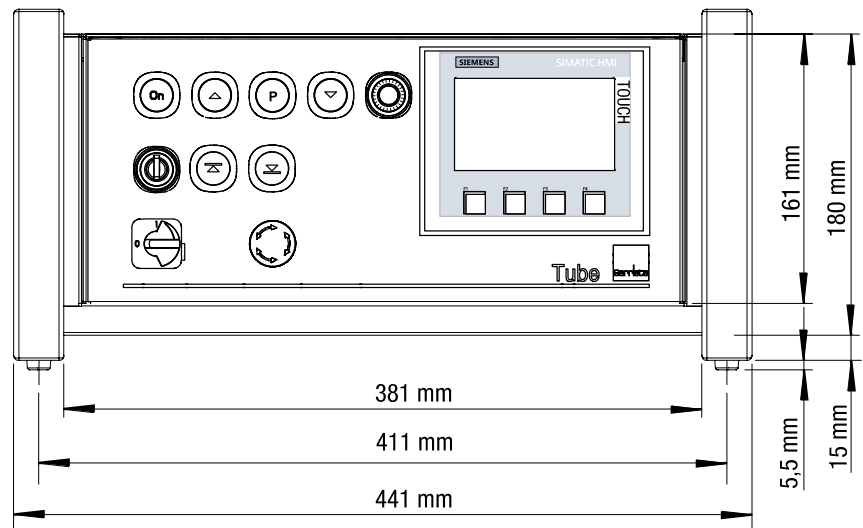


Fig. 21: Front view – G-FRAME 54 control unit (example)

Dimensions: Side view

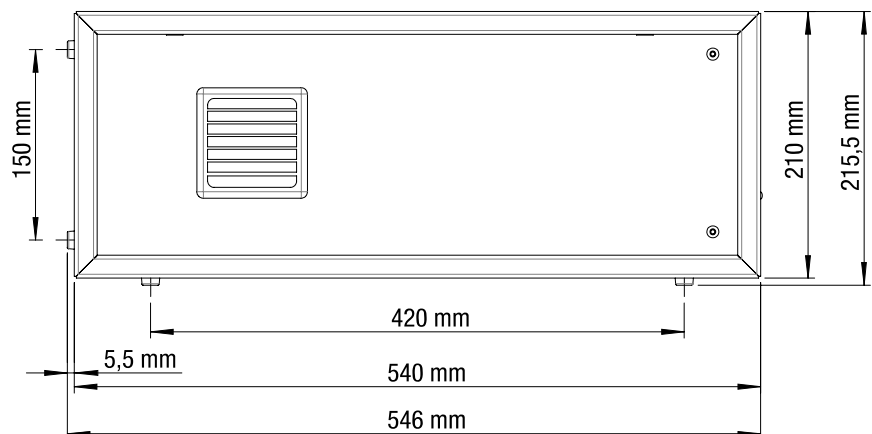


Fig. 22: Side view – G-FRAME 54 control unit (example)

Electrical data

Parameter	Value
Supply voltage	230 VAC, 8 A, 50 Hz / 120 VAC, 15 A, 60 Hz
Degree of protection	IP40
Electrical connection	<i>Emergency stop input</i> (optional), cable gland for mains connection, TUBE connection (power, control), <i>DMX-IN</i> -socket, <i>DMX-OUT</i> -socket.
Special control unit (optional)	Connection for a second control unit (subject to agreement with Gerriets GmbH).
Connection cable (not included)	NYM-J 3 × 1.5 mm ² or equivalent, on-site terminals.
Mains supply	Power outlet with a 10 A miniature circuit breaker (MCB); all live conductors protected by a residual current device (RCD).

Table 6: Electrical data – G-FRAME 54 control unit

4 Transport

4.1 Transport instructions



- ➔ Inspect the packaging immediately upon receipt for transport damage. Report any visible damage immediately.
- ➔ Verify the delivery against the delivery note to ensure completeness and integrity.
- ➔ Report any missing or damaged parts immediately.
- ➔ Retain the original packaging for future transport or storage purposes.
- ➔ Observe the safety instructions in *Chapter 10 Safety* [► p. 79].
- ➔ Perform a visual inspection after each transport and at regular intervals throughout the product's life cycle.



WARNING

Risk of personal injury and material damage due to improper transport

Improper transport may cause the loads to fall, resulting in injury of the persons handling the product or damage to the equipment.

- ➔ Wear appropriate personal protective equipment (PPE), including safety shoes and protective gloves.
- ➔ Use suitable lifting equipment (e.g. hoists, lifting gear, lifting straps).

5 Installation

- Observe the safety instructions in *Chapter 10 Safety* [► p. 79].
- The roller screen system must only be installed by competent personnel.
- If you encounter any problems during installation that you cannot resolve yourself, please contact us.



Safety instructions



WARNING

Personal injury and material damage due to falling objects

Insufficient load capacity in the ceiling structure or in individual components can cause parts to fall, resulting in severe injury or material damage.

- Observe the maximum load capacities of the entire system and individual assemblies.
- Check whether the building's structural stability certificate covers the additional loads or whether a structural engineer assessment, retrofitting, or reinforcement is required.
- Do not alter or modify the TUBE roller screen system or its individual components without prior written approval from Gerriets GmbH.
- Always tighten the bolted connections of the parts in accordance with the specific assembly instructions and the torque tables.
- Always use safety elements such as retaining rings, clips, and pins correctly and verify their effectiveness.
- Secure the load with secondary safety devices.
- Check lifting accessories for suitability and permissible load capacity before use.
- If in doubt, contact Gerriets GmbH.



WARNING

Danger from suspended loads during installation and operation

Suspended loads may occur when installing the roller screen in a truss system and when extending and retracting the projection surface. Staying in the danger zone below the structure can lead to severe injury or fatal accidents.

- Do not stand beneath the roller screen or adjacent components during installation or operation.
- Secure all loads with suitable secondary safety devices.
- Use only approved hoists and lifting accessories with sufficient load capacity.
- Follow the installation manual and ensure that all work is performed only by competent personnel.

Electrical dangers

**DANGER****Risk of fatal injury due to electrical voltage**

Work on the electrical installation involves a risk of fatal injury due to hazardous voltage.

- Never open the housing while it is connected to the power supply. Work on the housing and the electrical installation must only be performed by a qualified electrician.
- Ensure that the system is isolated from the power supply and verified as dead when working on the control unit.
- All electrical work must only be performed by competent personnel.
- Disconnect the power supply immediately in the event of damage and arrange for repairs by a qualified electrician.
- Keep moisture away from live components.
- Never bypass fuses or disable them.

**WARNING****Electromagnetic interference affecting signals and devices**

Incorrect electrical connection may cause electromagnetic fields from the frequency inverter to interfere with electrical devices, such as medical implants.

- Implement appropriate EMC shielding measures in accordance with IEC 61800-3.
- Where site-specific cabling is required, use shielded cables as specified.
- Ensure correct earthing and use central earthing points.

5.1 Installation of the roller screen

- ➔ Where possible, assemble the suspension system close to the floor using a mobile lifting device (e.g. a cable hoist or chain hoist).
- ➔ If installing at a higher level, use suitable lifting equipment.
- ➔ ladders or scaffolding at a safe working height.



If you require a different suspension method, for example on a truss pull rod, a special bracket is required, which can be supplied on request. Otherwise, a four-point truss (or a three-point truss with a single tube at the top) should be suspended between the truss pull rod and the TUBE using half-coupler clamps to distribute the load evenly.



When dismantling, ensure that the modules do not twist; otherwise, the locking claws may disengage from their guides and become jammed.

5.1.1 Installation of the CFRP-tube modules

Materials and tools

Quantity	Materials and tools
As per order	CFRP-tubes
1	Non-drive-end assembly (bearing side)
1	Drive-end assembly (motor side; approx. 71 kg)
1	Hex-key (HEX) SW 6 with torque wrench (not included)
1	Lifting hoist (not included)

Table 7: Materials and tools required for the installation of the CFRP-tube modules

Assembling the tube modules to form the winding shaft

1. Place the CFRP modules on a clean surface in the pre-marked order. In a configuration with tubes of different lengths, the shorter tubes must always be positioned on the outside.
 - ❗ **NOTICE:** A joint located at the centre of the winding shaft will overload the connecting elements and may damage the roller screen.

2. Fit the tubes together with the claw side and the matching counterpart facing each other (see Fig. 23).
3. Tighten the locking claws on the socket head cap screws in a crosswise pattern using a HEX SW 6 key in several stages, first finger-tight and then to a torque of 40 Nm (see Fig. 23).

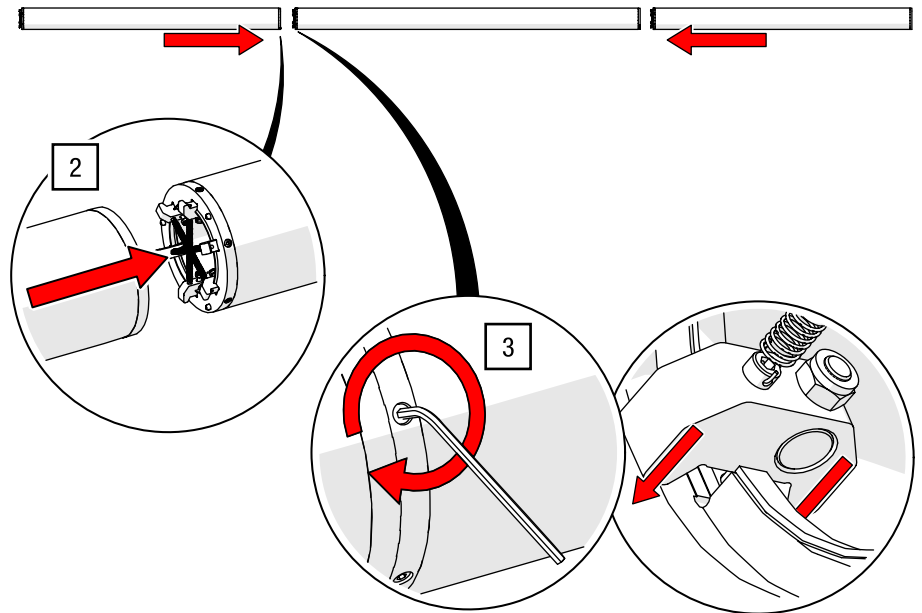


Fig. 23: TUBE roller screen – CFRP-tubes are joined

Fitting the screen



4. Fit the screen fabric before attaching the CFRP tube to the end assemblies, as described in *Chapter 5.1.2 Installation of the screen* [► p. 39].

Fitting the screen fabric before the final assembly of the tube ensures more even winding, as it prevents the winding shaft from bending during the first winding process.

Installation of the winding shaft with the end assemblies

5. Using a suitable hoist, lift the end assemblies to the installation height.

⚠ WARNING: If left unsecured, the drive-end assembly (approx. 71 kg) can cause severe personal injury or material damage due to its heavy weight.

❗ NOTICE: The drive unit will suffer damage if subjected to external loads. The roller screen must never be set down on the floor resting on the handwheel.

6. Connect the CFRP tube and [the end assemblies, then tighten the bolts gradually in a crosswise pattern, as described in step 3 (see Fig. 24).

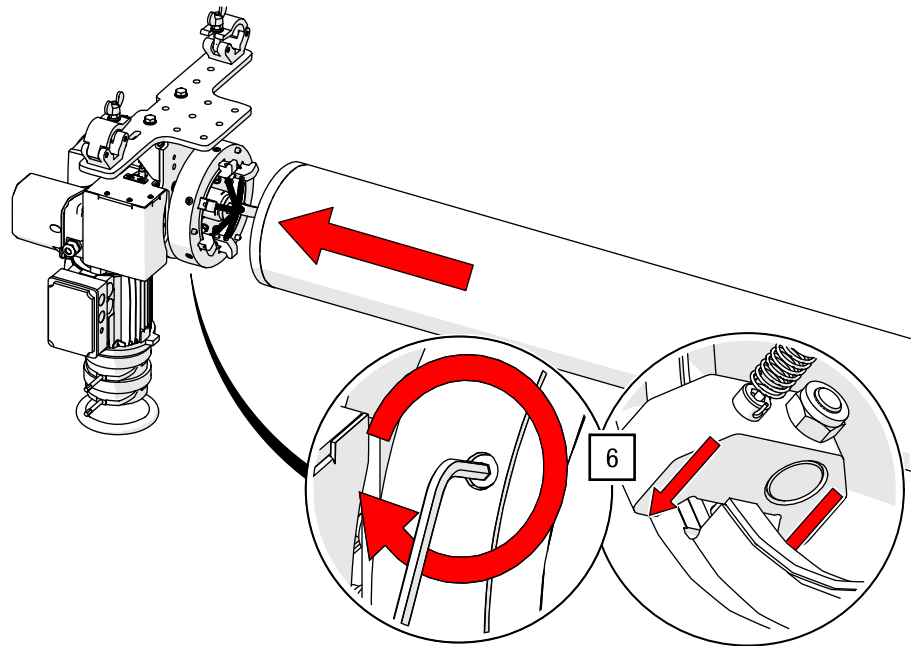


Fig. 24: TUBE roller screen – joining the CFRP tubes to the drive-end assembly

5.1.2 Installation of the screen material

Materials and tools

Quantity	Materials and tools
1	Screen fabric (material as per order)
1	Chalk line (not included)
1	Transparent protective film and adhesive tape (not included)
1	Pre-assembled CFRP-tube as per <i>Chapter 5.1.1 Installation of the CFRP-tube modules</i> [► p. 36].

Table 8: Required materials and tools for installation

Assembly

1. Remove all sharp objects and clean the floor.
2. Lay out a sturdy protective film without creases and secure it to the floor with adhesive tape.
3. Ensure that neither the protective film nor the adhesive tape leaves any marks.
- ! NOTICE:** Material damage to the screen due to discolouration.
4. Place the screen fabric flat on the protective film, ensuring that it is free of creases:
 - with the face side facing up for unrolling from back.
 - with the face side facing downwards for unrolling from front.



If there is insufficient space to lay out the screen fabric completely, place it in layers on top of each other. Avoid creasing and use as few layers as possible. Unroll one layer at a time and then reposition the CFRP tube.

5. Ensure the CFRP-tube is correctly oriented relative to the visible side in accordance with the subsequent installation situation (see *Chapter 2.3.2 Installation options* [► p. 12]).
6. Mark the CFRP-tube using a chalk line parallel to the axis and position it 0.5 m from the top edge of the screen fabric (see Fig. 25).

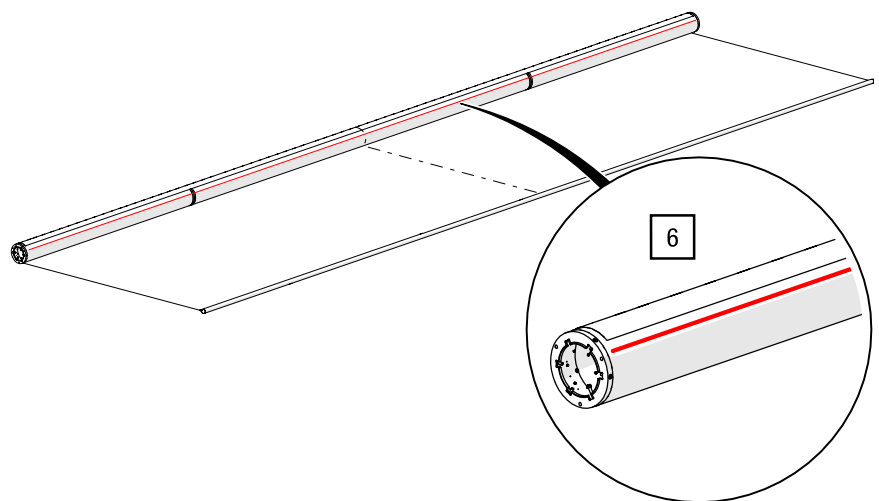


Fig. 25: Fitting the screen fabric –marking parallel to the axis using a chalk line

7. Place the screen fabric parallel to the axis and centred on the CFRP-tube and secure it without folds or tension using thin strips of adhesive tape at intervals of 20 to 30 cm (see Fig. 26).

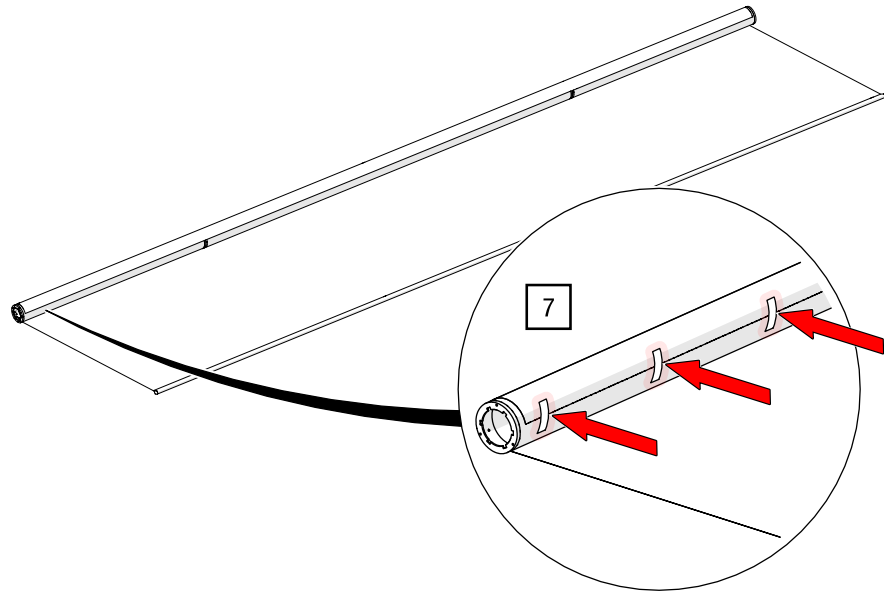


Fig. 26: Fitting the screen fabric – securing the fabric with adhesive tape

8. With the assistance of a second person, roll the screen fabric evenly onto the tube (see Fig. 27).



Ensure that the sides remain flush and aligned until the end (maximum permissible offset: 2.00 cm). If this is not achieved, unroll the screen fabric and repeat the process. If necessary, readjust the alignment of the bottom edge so that it is parallel to the axis.

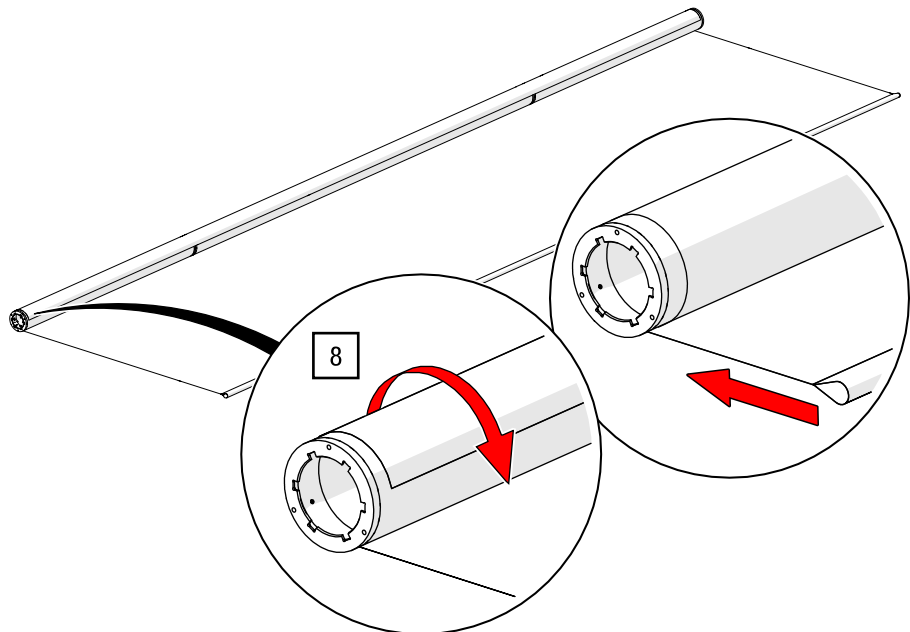


Fig. 27: Installation of the screen fabric – rolling up the fabric

9. Take care not to damage or crease the screen fabric. Lift the winding shaft to the end assemblies and install them in accordance with *Chapter 5.1.1 Installation of the CFRP-tube modules* [► p. 36].

5.1.3 Suspension of the roller screen



WARNING

Danger due to incorrect suspension and overhead work at height

Improper installation or inadequate lifting equipment may result in falling loads, crushing hazards, or material damage. The TUBE screen should ideally be suspended close to the floor using a mobile lifting device (e.g. a hoist or chain hoist).

- ➔ Use only suitable lifting equipment to raise the TUBE roller screen to the correct suspension height.
- ➔ Provide suitable work equipment for installation, such as ladders or scaffolding, at a safe working height.
- ➔ Special brackets are required for alternative suspension methods (e.g. on truss pull rods). Gerriets provides these on request.
- ➔ For more even load distribution, we recommend using a four-point truss (alternatively a three-point truss with a single tube at the top) with half-coupler clamps.

Requirements for installing a roller screen

Component	Requirements
Mounting points	• For more even load distribution, we recommend using a four-point truss (alternatively a three-point truss with a single tube at the top) with half-coupler clamps. • Suspension points [must provide] sufficient load capacity above the intended installation location. Refer to the project-specific documentation for the total weight and load distribution of the suspension points; see also <i>Chapter 3 Technical data</i> [► p. 27].

Table 9: Installation of the roller screen – requirements

Suspension

- ➔ Install the TUBE roller screen taking into account the local conditions and the intended mounting method.
- ➔ Ensure that the mounting points are perfectly level to prevent the screen fabric from becoming slanted during operation.

5.1.4 Electrical connection



WARNING

Risk of personal injury and material damage due to electrical voltage

Incorrect connection of the roller screen can result in serious personal injury and material damage to the system.

- ➔ All electrical connection work must be performed exclusively by a qualified electrician in accordance with the wiring diagram.
 - ➔ Integrate the suspension and lifting system (fly system, chain hoist system, and, if applicable, the truss) into the building's equipotential bonding system.
-



WARNING

Electromagnetic interference affecting signals and devices

Incorrect electrical connection may cause electromagnetic fields from the frequency inverter to interfere with other electrical devices, such as medical implants.

- ➔ Implement appropriate EMC shielding measures in accordance with IEC 61800-3.
 - ➔ Where site-specific cabling is required, use shielded cables as specified.
 - ➔ Ensure correct earthing and use central earthing points.
-

Materials and tools

Quantity	Materials and tools
1	TUBE roller screen
1	Control and motor supply cable (25 m)
1	On-site mounting materials appropriate for the building structure (not included)

Table 10: Required materials and tools for installation

1. Secure the roller screen to the on-site supporting structure in accordance with the structural requirements.



Mounting points must be perfectly level, as the roller screen cannot compensate for any tilt.

2. Connect the control cable previously connected to the control unit, together with the motor supply cable, to the roller screen via connectors 1XXM1 and 1XSM2 (see *Chapter 5.2.2 Electrical connection of the G-FRAME control unit* [► p. 51]; see Fig. 28).



All outgoing cables must be secured to the on-site supporting structure to provide strain relief and prevent the cables from kinking (e.g. using Softbinder or G-CABLE – see website).

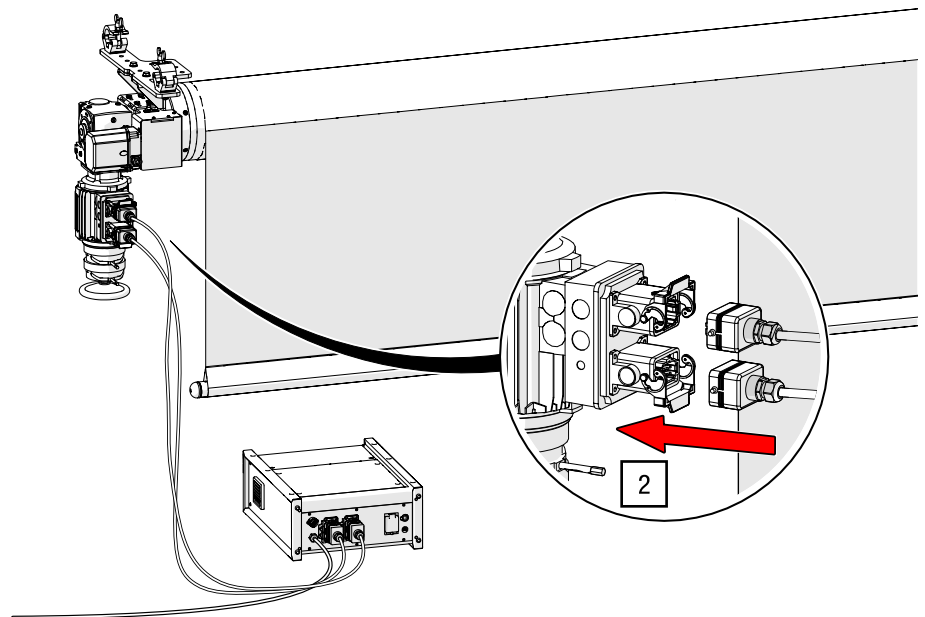


Fig. 28: Connecting the control and motor supply cables to the roller screen

5.2 Installation of the control unit

Prerequisites for control unit installation

Component	Requirements
Electrical connection	230 VAC, 50 Hz. Power outlet with a 10 A miniature circuit breaker (MCB) - All live conductors protected by an RCD

Table 11: Requirements for installation and configuration of the control system



If the power supply is protected by an RCD, the TUBE roller screen should be powered exclusively via this dedicated circuit. Its leakage current may be approximately 10 mA, or even higher when the system is switched on.



WARNING

Risk of injury due to the use of non-original parts

The use of non-approved components may impair the function and safety of the roller screen system.

- ➔ Unless otherwise stated, use only original spare parts from Gerriets GmbH.
- ➔ Please contact Gerriets GmbH for project-specific enquiries.

5.2.1 Installation of the G-FRAME control unit

The following section describes three installation options for the G-FRAME control unit: table-top, wall-mounted, or 19-inch rack installation.



There must be a clear view of the travel area from the control position. If this is not possible, a second person with visual contact with the danger zone must relay the movement instructions. Alternatively, visual monitoring via a video system is permitted.

Installation location: Table / shelf

The surface (e.g. a table or shelf) must have dimensions of at least 440 × 220 × 650 mm (W × H × D) and sufficient load-bearing capacity.



CAUTION

Material damage due to incorrect placement of the control unit

Despite the rubber feet, the control unit may fall off the surface and be damaged if a cable is pulled or the unit is knocked.

- ➔ Place the control unit on a surface with a raised edge.
- ➔ Protect the control unit from third-party interference during operation.
- ➔ Secure and route all cables correctly.

Installation location: Wall mounting

Requirements for
wall mounting

Component	Requirements
G-FRAME control unit	- The control panel is mounted on the front of the horizontal control unit (see Fig. 29). - The control unit is disconnected from the mains supply.
Wall mounting plate	Mount using 4 hexagon head screws in the designated position (hole diameter 8.5 mm; not included).

Table 12: Requirements for wall mounting

- ➔ Please ensure the load-bearing capacity of the wall material and the fasteners.

Materials and tools
wall mounting

Quantity	Materials and tools
1	Hex-key (HEX) AF 3 (not included)
1	Hex-key (HEX) SW 6 (not included)
1	G-FRAME 54 control unit
1	Wall-mounting plate
1	M8 × 30 hexagon socket screw

Table 13: Materials and tools required for wall mounting

Instructions for wall mounting

1. Disconnect the control unit from the mains supply and secure it against being switched on again.

⚠ WARNING: Risk of fatal injury due to electrical voltage.

2. Loosen the control panel screws on both sides using the HEX AF 3 (see Fig. 29).
3. Lift the control panel off the control box (see Fig. 29).

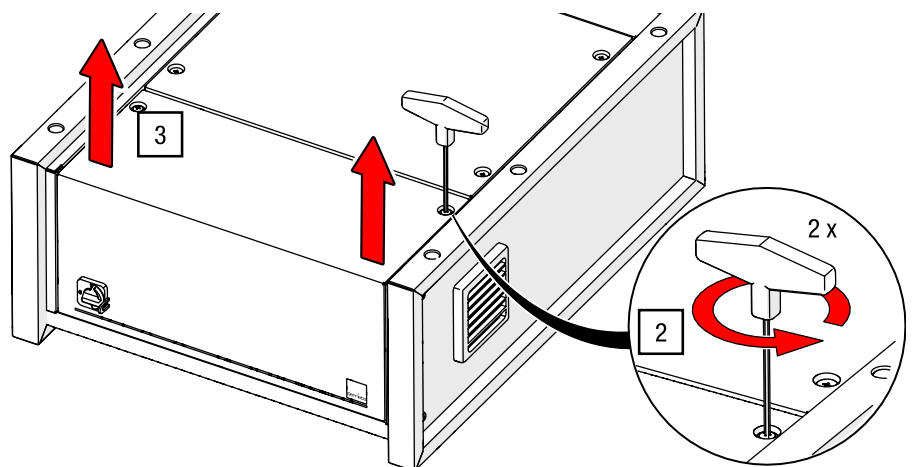


Fig. 29: Loosen and lifting the control panel (model may vary)

Positioning the detached control panel

4. and 5. Rotate the control panel through 180° and tilt it by 90° to match the orientation shown in Fig. 31 (see Fig. 30).

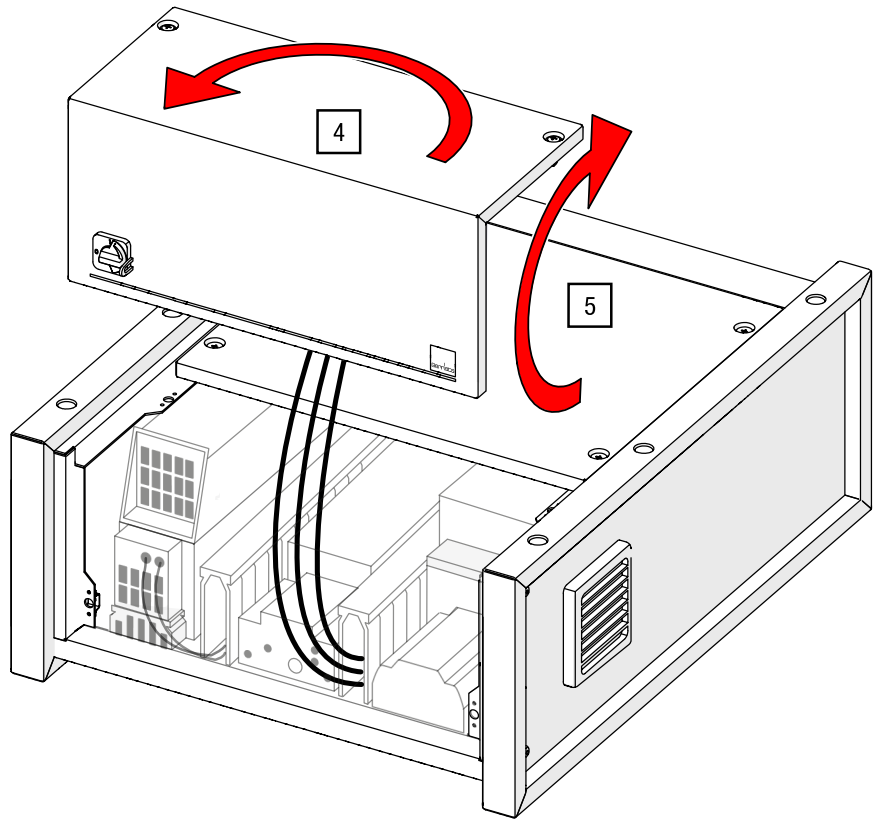


Fig. 30: Rotating the detached control panel (model may vary)

Inserting the control panel

6. Place the control panel back onto the enclosure (see Fig. 31).



Do not screw the control panel in place yet, as further assembly steps are required inside the enclosure.

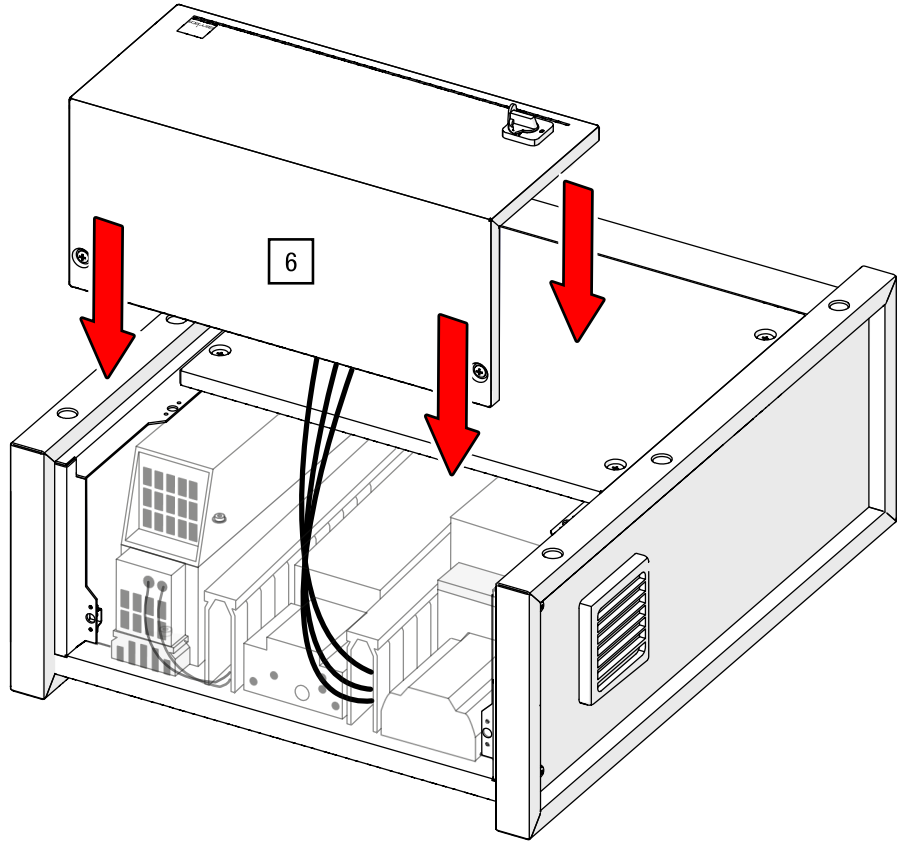


Fig. 31: Inserting the control panel (model may vary)

Screw the control unit to the wall

7. Align the control unit and engage it into the hooks on the wall-mounting plate using the slots on the rear (see Fig. 32).
8. Lift the control panel and secure the control unit with an M8 × 30 socket head capscrew (see Fig. 32).



The threaded hole is located centrally in the upper interior section. Tighten the retaining screw using a HEX SW 6 key until it presses firmly against the wall-mounting plate.

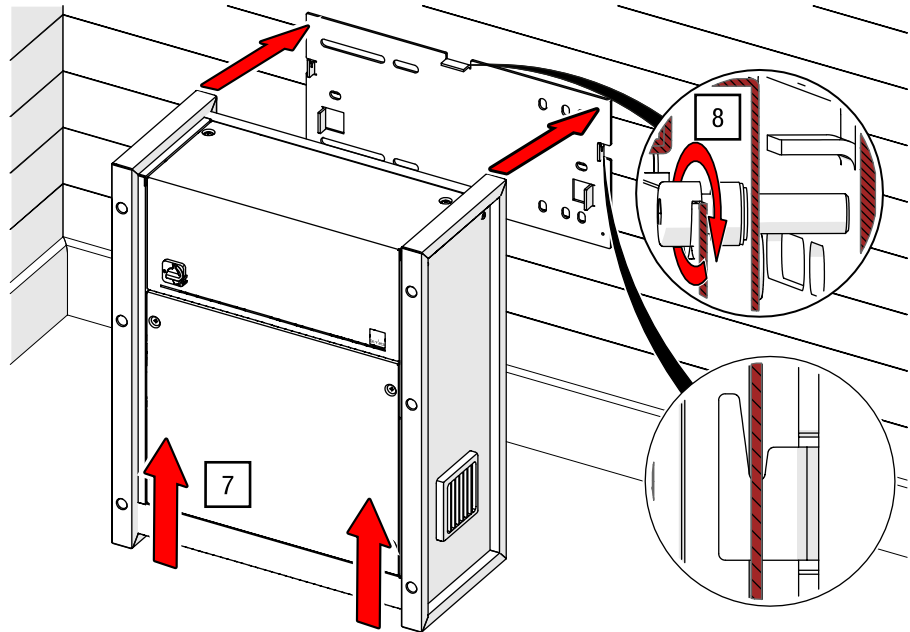


Fig. 32: Securing the control unit to the wall-mounting plate (model may vary)

9. Reinsert the control panel and secure it using the HEX AF 3 key.
 10. Verify that the control unit is securely fitted.
- ✓ The control unit is now securely mounted. The cable connections are located on the underside.

Installation location: 19-inch rack / server cabinet

Enlist the help of a second person or use lifting aids to position and secure the control unit in the 19-inch rack.

Component	Requirements
G-FRAME control unit	The control panel is mounted on the front of the horizontal control unit (see Fig. 33).
19-inch rack (on-site)	Access from the rear for cable connections is provided.

Table 14: Requirements for rack mounting

Materials and tools

Quantity	Materials and tools
1	Hex-key (HEX) AF 4 (not included)
1	G-FRAME 54 control unit
2	Ceiling bracket for 19-inch rack
4	M5 × 10 hexagon socket screw (pre-fitted)
4	On-site mounting hardware (not included)

Table 15: Materials and tools required for rack mounting

Loosen the screws

1. Loosen the four [pre-fitted socket head capscrews] at the front using a size 4 HEX-key (see Fig. 33).

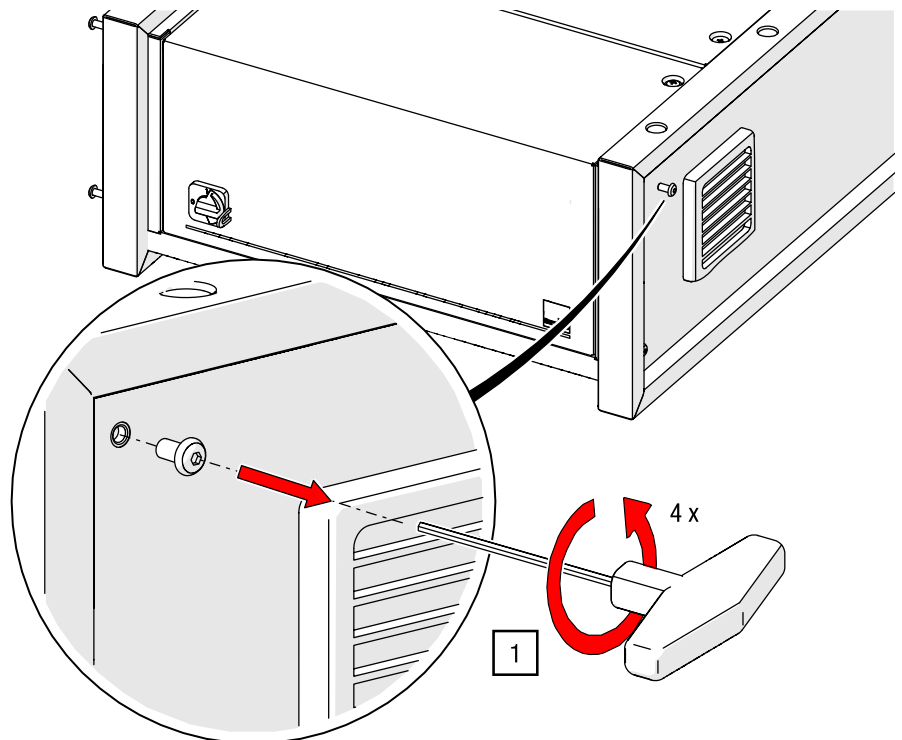


Fig. 33: G-FRAME control unit – loosening the screws for the rack brackets (model may vary)

Securing the rack brackets

2. Screw the rack brackets onto both sides of the G-FRAME control unit using the socket head capscrews (see Fig. 34).

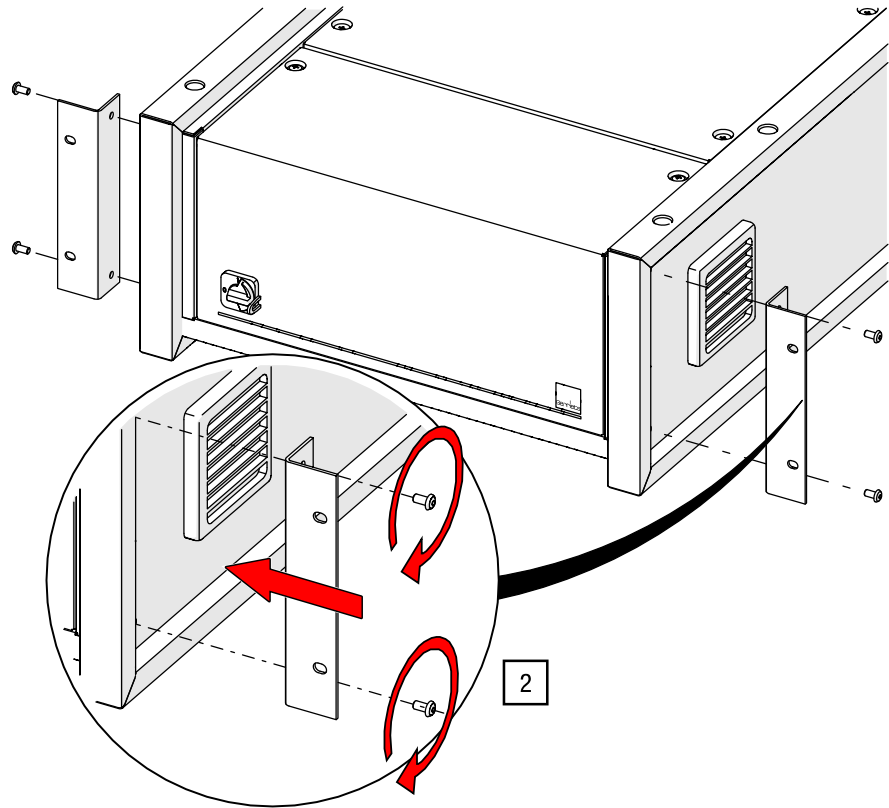


Fig. 34: Securing the rack brackets (model may vary)

Mounting the G-FRAME control unit into the rack

3. Position the G-FRAME control unit in the 19-inch rack and secure it using suitable on-site mounting hardware (see Fig. 35).

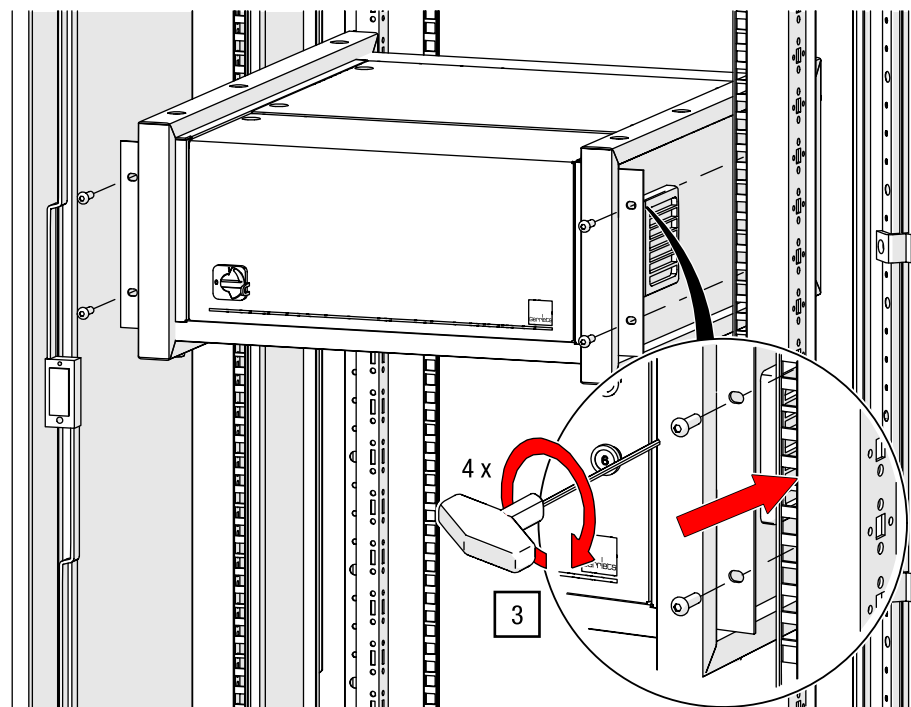


Fig. 35: Securing the G-FRAME control unit into the rack

5.2.2 Electrical connection of the G-FRAME control unit

The connections for the control unit are described in *Chapter 2.4 G-FRAME 54 control unit* [► p. 14]. Further information on connection options can be found in *Chapter 2.4.4 Connection diagram* [► p. 23].



If the power supply is protected by an RCD, the TUBE roller screen should be powered exclusively via this dedicated circuit. Its leakage current may be approximately 10 mA, or even higher when the system is switched on.

Connecting the G-FRAME

1. Before working inside the enclosure, isolate the control unit from the power supply and verify it is dead, then secure it against being switched on again.
- ⚠ **WARNING:** Risk of fatal injury due to electrical voltage.
2. Loosen the control panel screws on both sides using the HEX AF 3 key and lift the control panel off (see Fig. 36).

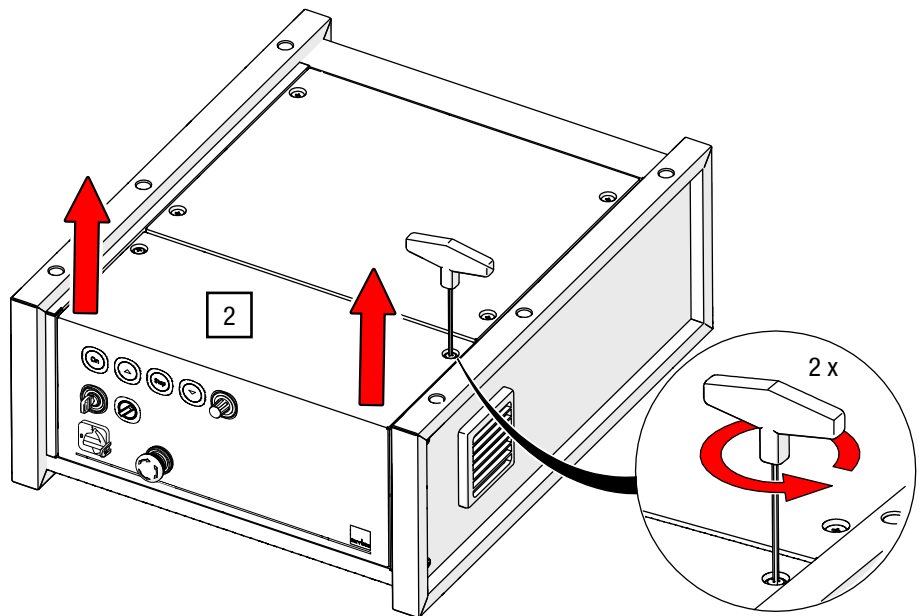


Fig. 36: G-FRAME 54 – G-FRAME 54 – loosening and lifting the control panel (model may vary)

3. Feed the connection cable through the cable gland on the rear of the control unit and connect the power supply in accordance with the manufacturer's specifications (WAGO).
The connection is made to a feed-through terminal block.
4. Close the enclosure again using the HEX AF 3.

Connecting the control and motor supply cables to the TUBE

5. Plug the 25 m motor supply cable into the socket labelled 1XS1 on the rear of the control unit and secure it with the locking bail (see Fig. 37).
6. Plug the 25 m control cable into the socket marked 1XS2 and secure it with the locking bail (see Fig. 37).

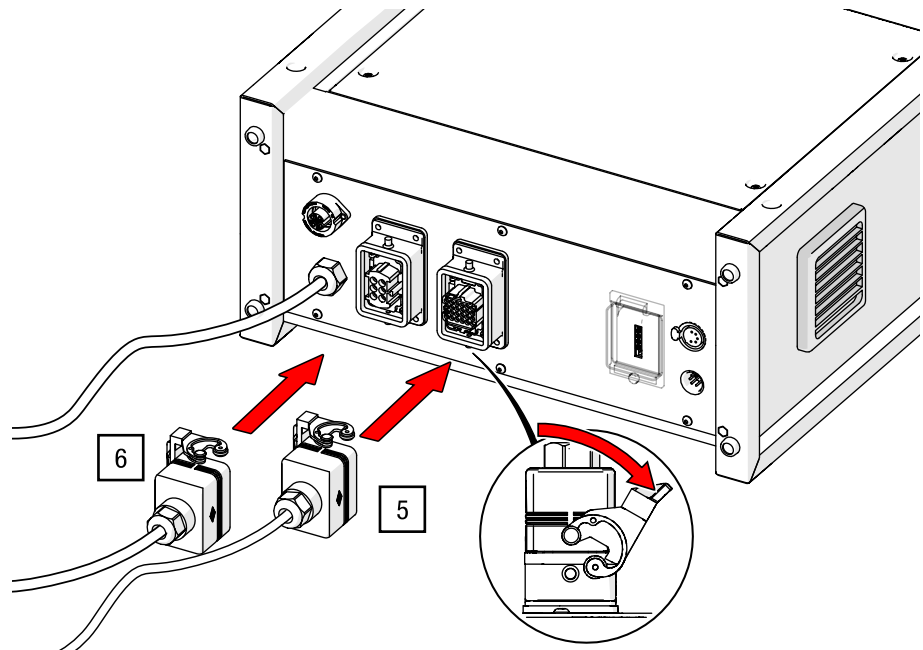


Fig. 37: G-FRAME 54 – connecting the control and motor supply cables of the roller screen (model may vary)

- ✓ The control unit is now connected. The roller screen can be operated via the front panel of the control unit. For further information, see *Chapter 6 Operation* [► p. 63].

5.2.3 Setting up DMX operation

Connecting the emergency stop button and DMX controller to the G-FRAME

1. Connect the male connector of the emergency stop button to the “Emergency Stop” socket on the rear of the control unit (see Fig. 38).
2. Connect the DMX-input cable from the external DMX controller to the DMX-IN-socket (5/ Fig. 14) on the rear of the control via the 5-pin XLR male connector (see Fig. 38).

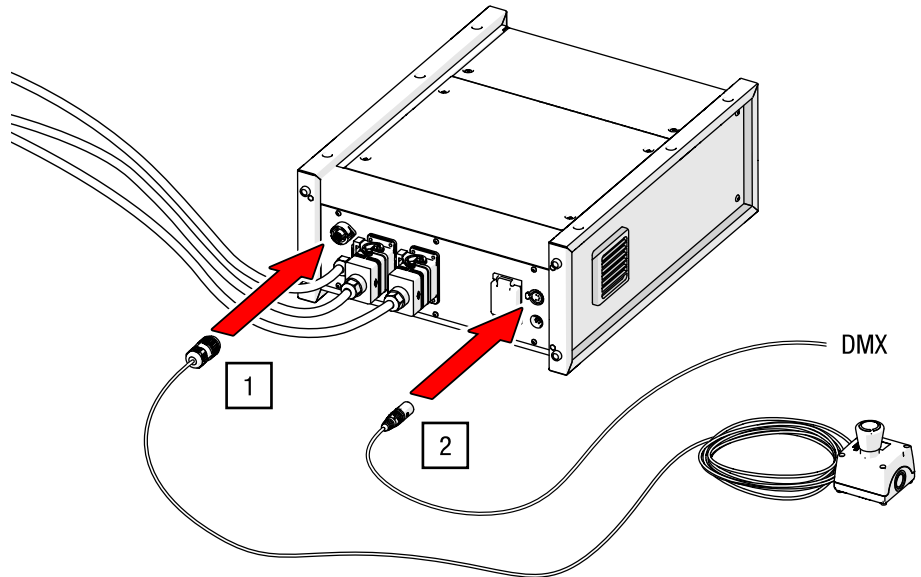


Fig. 38: G-FRAME 54 – Connecting DMX (model may vary)

Connection to other devices: DMX signal and power loop-through



You can loop the DMX signal through to other devices as required.

- ➔ Connect a 5-pin XLR cable to the DMX-OUT-socket (6/ Fig. 14) and connect the control unit to other DMX devices.

Assigning a DMX address

To communicate with the external DMX controller, the G-FRAME control unit must be assigned a DMX start address.

On the rear of the control unit, an opening provides access to the DMX card with the red rotary switches.

1. Loosen the knurled screw on the DMX setting dials (7/ Fig. 14) and open the cover.
2. Turn the rotary switches for the DMX channels (ones, tens, and hundreds digits) to the required value using a screwdriver (see Fig. 39).



In the example shown in Fig. 39, the DMX address is set to 256.
The DIP switches 1–4 remain in the “off” position.

Setting the DMX address using
the rotary switches

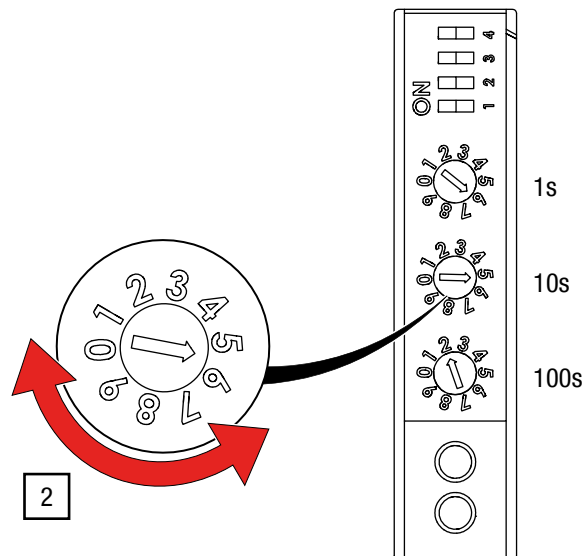


Fig. 39: Rotary switches for setting the DMX address on the G-FRAME 54 control unit

5.3 Commissioning the roller screen

5.3.1 Acknowledging an error message

➔ For information on error messages, their causes, and troubleshooting measures, see *Chapter 8.2 Troubleshooting the control system* [► p. 74].



When a fault occurs, for example when the emergency limit switches are reached or due to other causes, an error message appears in the main menu. This message is purely informative and can be acknowledged.

1. Rectify the cause of the error of the roller screen or the control unit as described in *Chapter 8 Troubleshooting* [► p. 73].
2. Press the F2-key to open the error menu and click the “Confirm” button (see Fig. 40).

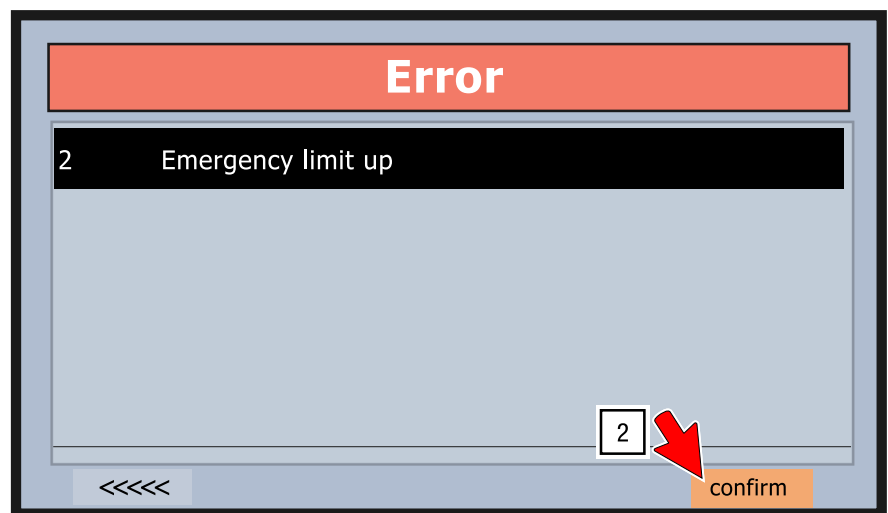


Fig. 40: Troubleshooting – Acknowledging an error message

5.3.2 Approaching and clearing the emergency limit switches

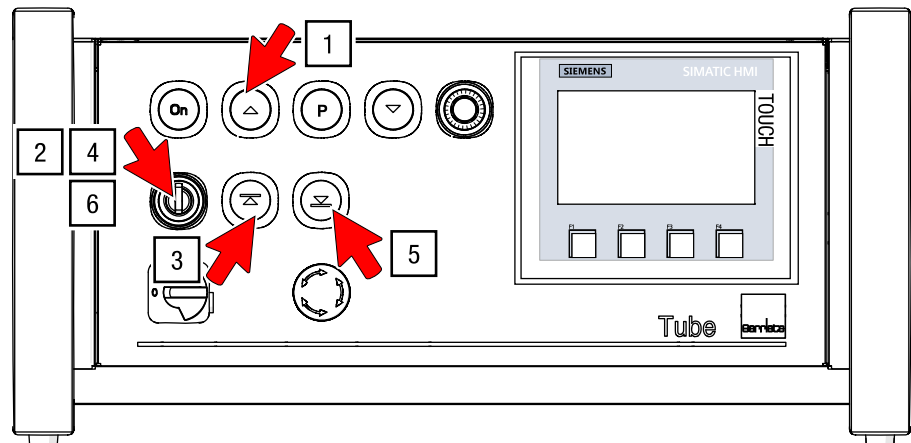


Fig. 41: Approaching the emergency limit switches – G-FRAME control

Approaching the emergency limit switches

1. Hold down the “Up” button until the roller screen has reached the operating limit (see Fig. 41).
 - ⇒ When the limit switch is reached, the corresponding button illuminates continuously.
2. Turn the key switch to the right to enable the override command (see Fig. 41).
 - ⇒ An informative warning message appears on the display (“Emergency endstop run-up active”) indicating that the emergency limit switches can now be approached (see Fig. 42).



Fig. 42: Approaching the emergency limit switches – warning message

3. Press the “Emergency limit up” button and move the roller screen upwards towards the emergency limit switch (see Fig. 41).
 - ⇒ The roller screen moves at the target speed configured via the potentiometer until it reaches the emergency limit switch.
 - ⇒ When the emergency limit switch is reached, the corresponding button illuminates red.
 - ⇒ An error message appears on the display indicating that the emergency limit switch has been reached.



You can acknowledge the error message in the menu as described in *Chapter 5.3.1 Acknowledging an error message* [► p. 55].

Clearing the emergency limit switch

4. Turn the key switch to the left to activate the “*Clear emergency limit*” command (see Fig. 41).
 - ⇒ An informative warning message appears on the display indicating that the emergency limit switches can now be cleared (see Fig. 43).

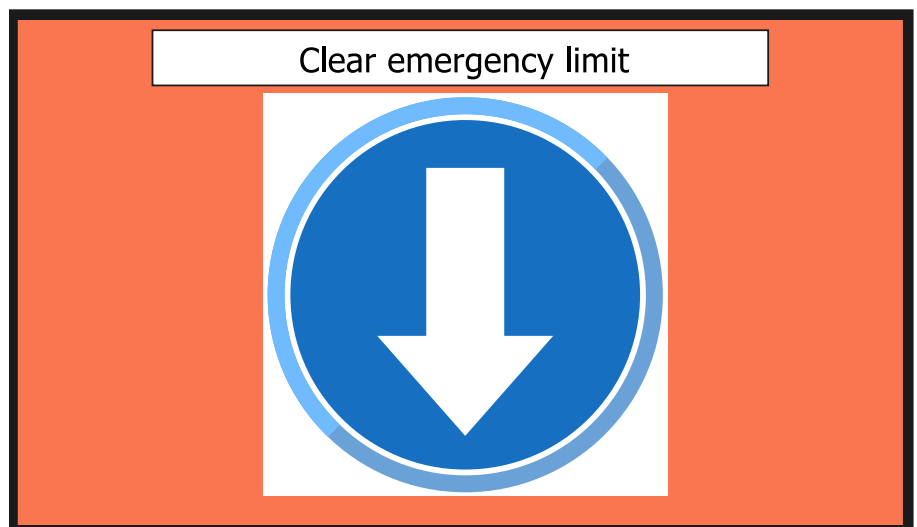


Fig. 43 Approaching the emergency limit switches – clearing the emergency limit switch

5. Press the “Emergency limit down” button to lower the roller screen out of the emergency limit switch (see Fig. 41).
 - ⇒ The roller screen moves at creep speed to the operational end position.
 - ⇒ As soon as the emergency limit switch is cleared, the drive unit stops, but is not yet in the operational position.
6. Return the key switch to the centre position and move to the target position in normal operation (see Fig. 41).
- ✓ The system is operational again after returning to normal operating mode.

5.3.3 Setting the emergency limit switches

Prerequisites

Component	Requirements
TUBE roller screen	UBE roller screen The roller screen is mounted in accordance with the specification using a suitable lifting mechanism and is operational.
Work equipment	Suitable lifting equipment for work on the roller screen.

Table 16: Requirements for setting the emergency limit switches

Materials and tools

Quantity	Materials and tools
1	Ladder or stepladder (not included)
1	Flat-head screwdriver / hex-key (HEX) AF 4, (not included)

Table 17: Required materials and tools



After the initial adjustment of the emergency limit switches, two test runs should be performed. First, perform a low-speed test to check the system’s functionality. Then, perform a second test at 100% speed to ensure that the system stops in time before the screen fabric flips or the bottom weight pipe hits the truss.

1. Loosen the enclosure screws using a flat-head screwdriver or hex key and remove the limit switch enclosure (see Fig. 44).

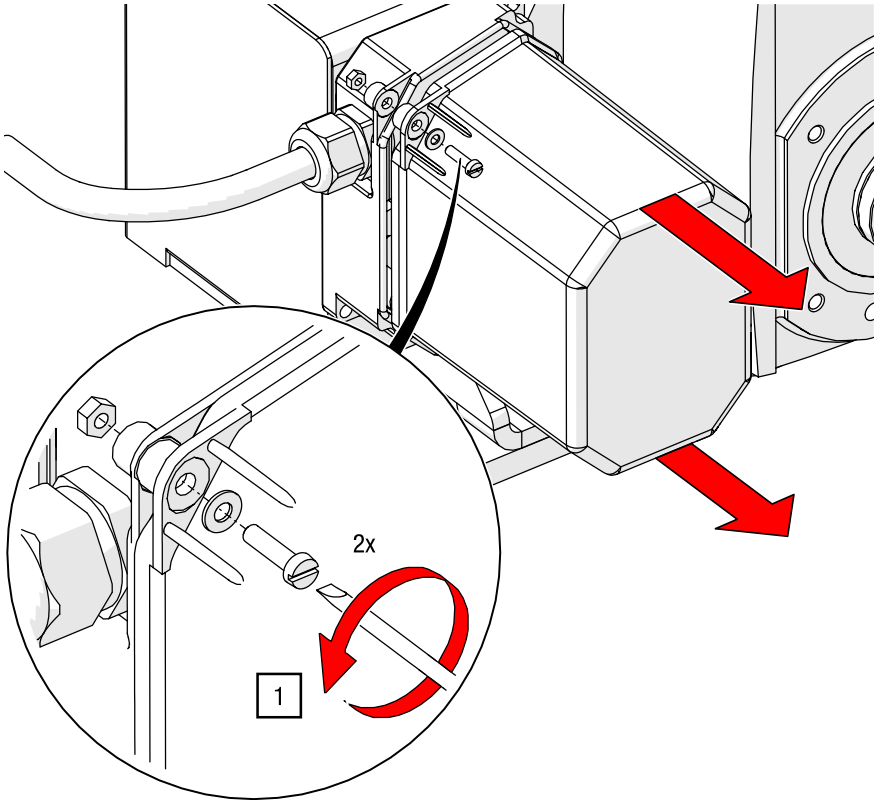


Fig. 44: Setting the emergency limit switches – opening the limit switch enclosure

2. Select the lower emergency end position so that at least three turns of the fabric remain on the winding shaft to prevent it from coming loose.

NOTICE: The screen fabric may unreel rapidly and become damaged.



In the standard version (screen fabric mounted on the connection side):

- Upward movement: Turn the adjustment screw clockwise.
- Downward movement: Turn the adjusting screw anticlockwise.

If the orientation of the screen fabric has been changed

- Reverse the direction of rotation of the adjusting screws.
- Change the direction of rotation in the parameter menu.

3 Adjusting the emergency limit bottom (Fig. 45)

4 Adjusting the emergency limit top (Fig. 45)

5 Adjust both emergency limits simultaneously (Fig. 45)

3. Turn the adjustment screw for the lower emergency limit by turning it clockwise (to move it upwards) or anticlockwise (to move it downwards) using a flat-head screwdriver / HEX (see Fig. 45).
4. Turn the adjustment screw for the upper emergency limit as per step 3 (see Fig. 45).
5. Set both emergency limit positions together by turning the adjustment screw clockwise (to move them upwards) or anticlockwise (to move them downwards) using a flat-head screwdriver (see Fig. 45).

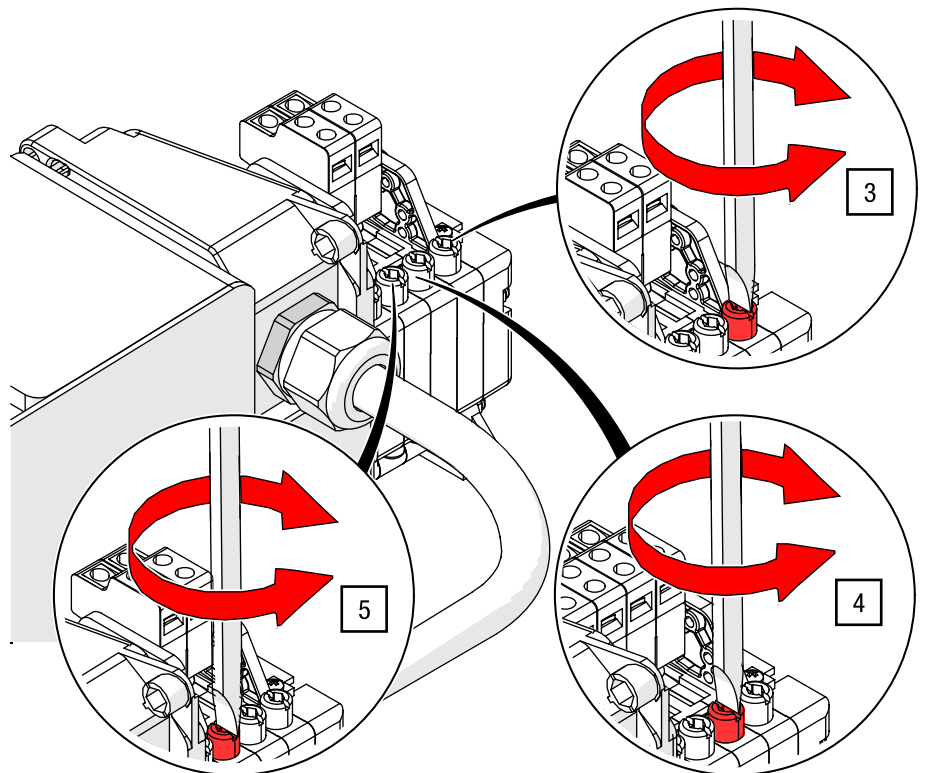


Fig. 45: Setting the emergency limit switches – adjusting the emergency limit switches

6. Close the enclosure and return the roller screen to the operating range in accordance with *Chapter 5.3.2 Approaching and clearing the emergency limit switches* [► p. 56].

5.3.4 Parameter settings (language, direction of rotation and creep speed)

In the parameter menu, various settings can be adjusted, including the direction of rotation, creep speed, and the creep-speed distance.

To access the parameter menu, you must first log in.

➔ A description of the functions and menus can be found in *Chapter 2.4.2 Operation and parameter settings* [► p. 16].

Logging in to the parameter menu 1. Press the F4-key in the main menu to open the login screen for the parameter's menu.

⇒ A password entry screen appears (see Fig. 46).

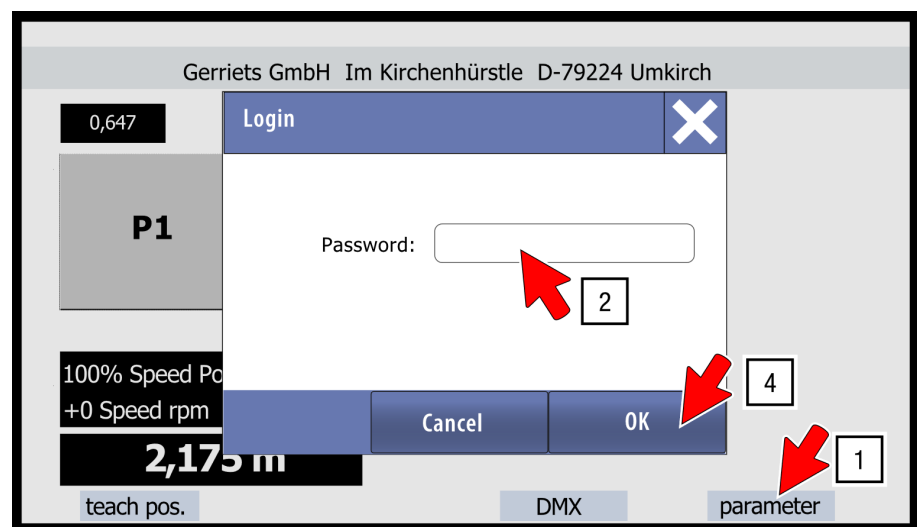


Fig. 46: Parameter Menu – Login

2. Touch the text field in the input screen (see Fig. 46).

⇒ A keyboard or numeric keypad opens.

3. Tap the “0 – 9” button and then enter “1111”.

4. By pressing the “OK” button, you return to the input screen and confirm your entry (see Fig. 46).

⇒ You are now logged in and back in the main menu.

Parameter settings

5. Press the F4-key again in the main menu to open the parameter menu.

6. Configure the required settings for the roller screen in the relevant submenus and exit the menu (see *Chapter 2.4.2 Operation and parameter settings* [► p. 16]).



After exiting the “parameter” menu, the editing mode will automatically end after one minute. The configured settings are automatically saved when you return to the main menu.

5.3.5 Setting the operational limit switches and intermediate positions

Switching on the control unit and opening the Teach Positions menu

1. Switch on the control unit using the main circuit breaker
 - ⇒ The indicator “ON” illuminates.
 - ⇒ The software starts up and cannot be operated during this process.
2. Press the F1-key (“Teach Pos”) in the main menu.
3. This takes you to the “Teach Positions” menu, where you can program intermediate positions via the software (see Fig. 47).

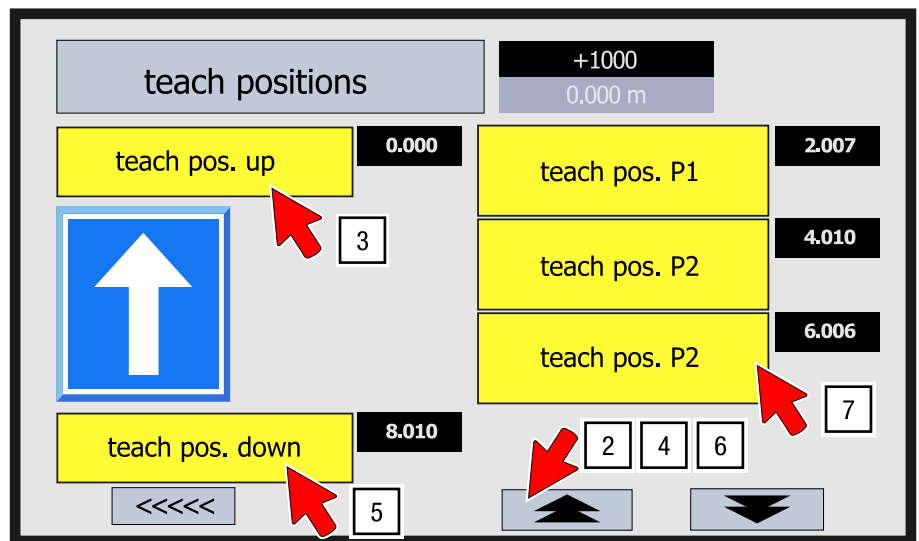


Fig. 47: Teach Positions menu – Operational limit switches and intermediate positions

Upper operational limit switch

4. Move to the target position for the upper operational limit by adjusting the position using the F3 key (up) and F4 key (down) (see Fig. 47).
 - ⇒ The roller screen moves at low speed to the target position.
 - ⇒ The direction of travel is shown as a blue arrow during movement (see Fig. 47).
5. Press the “Teach Top Pos.” button (see Fig. 47).
 - ⇒ The display next to the button changes to “0.0” confirming that the reference position has been saved.



If the upper operational end position is changed, the other values must be reconfigured accordingly. If the target position cannot be reached, the upper emergency limit switches must be adjusted in accordance with *Chapter 5.3.2 Approaching and clearing the emergency limit switches* [► p. 56]. The lower emergency limit switch must be adjusted so that at least three turns of the fabric remain on the winding shaft.

Lower operating limit

6. Move to the target position for the lower operational limit by adjusting the position using the F3-key (up) and F4-key (down) (see Fig. 47).
⇒ The roller screen moves at low speed to the target position.
7. Then press the “Teach Pos. bottom” button (see Fig. 47).
⇒ The number next to the button changes according to the current value.

Intermediate positions P1 to P3

8. Move to the target intermediate position by positioning using the F3 key (up) and F4 key (down) (see Fig. 47).
9. Press the “Teach Pos P1 to P3” button and save the target positions (see Fig. 47).
⇒ The saved value is displayed to the right of the button.

6 Operation

- ➔ Use the roller screen system only within the operating parameters specified in *Chapter 3.1 Environmental conditions* [► p. 27].
- ➔ Allow the system to acclimatise to room temperature before initial commissioning.
- ➔ Observe the safety instructions in *Chapter 10 Safety* [► p. 79].
- ➔ Check the system for proper condition before commissioning.
- ➔ Have the system inspected by an authorised expert during initial commissioning and at least every four years (see *Chapter 10.5 Inspection of mechanical equipment* [► p. 85]).
- ➔ Following any significant modifications, arrange for the system to be recommissioned with an expert inspection.
- ➔ Do not operate the system until safe operation is guaranteed.
- ➔ Depending on the installation situation, incorporate protective structures to prevent access to the danger zone.
- ➔ Ensure that the operating personnel have a clear view of the travel range and danger zones during operation.
- ➔ Avoid dynamic loads such as drops (the load dropping into the static system) or oscillating movements.
- ➔ Ensure that at least three turns of the fabric always remain on the winding shaft and that the lower emergency limit switch is adjusted accordingly.

6.1 Operation of the control unit

The components and connections are described in *Chapter 2 Structure and function* [► p. 8].

- ➔ An overview of the components and connections is shown in Fig. 8 [► p. 15].
- ➔ Information on the limit switches can be found in *Chapter 2.3.3 Operating, hold and emergency end positions* [► p. 13].

6.1.1 Operating the roller screen

Component	Requirements
G-FRAME control unit	• Correctly connected (see <i>Chapter 5.2.2 Electrical connection of the G-FRAME control</i> [► p. 51]). • Cabling checked for secure fit and integrity.

Table 18: Prerequisites – G-FRAME control unit

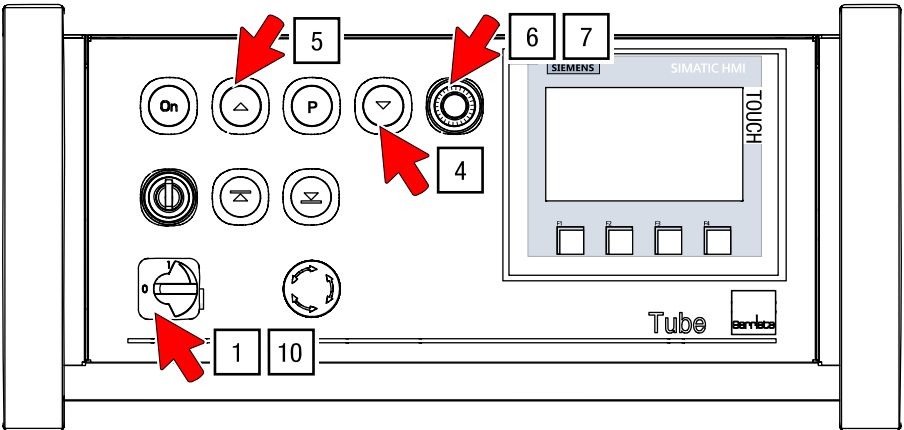


Fig. 48: Operating the roller screen – buttons on the control unit

Switching on the control unit

1. Turn the main circuit breaker to the “I” position to switch on the control unit (see Fig. 48).
 - ⇒ The indicator “ON” illuminates.
 - ⇒ The software starts up and cannot be operated during this process.
 - ⇒ A prompt regarding setup changes appears (see Fig. 49)

2. Confirm the prompt to proceed.

➔ If changes have been made to the roller screen, check and, if necessary, adjust the settings of the operational limit switches (see Fig. 49).

❗ **NOTICE:** Material damage due to incorrectly set emergency limit switches.

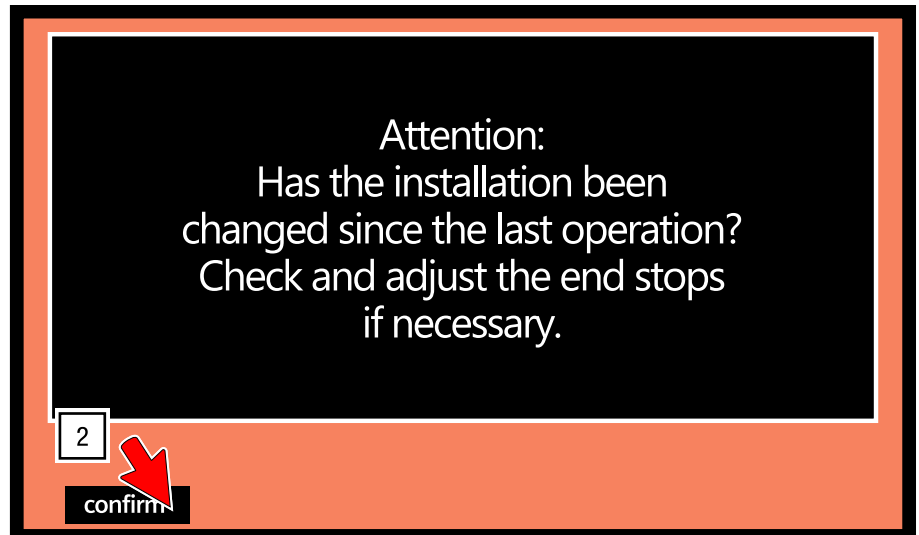


Fig. 49: Operating the roller screen – prompt for changes

TUBE roller screen – moving up and down

3. Ensure that no persons or objects are present in the travel range.

⚠ **WARNING:** Moving parts of the roller screen can cause severe injury or material damage.

4. Press and hold the Down button to lower the roller screen (see Fig. 48).

⇒ The roller screen moves downwards to the pre-limit switch (bottom) and then at reduced speed to the operational limit (bottom).

⇒ The roller screen stops automatically at the operational limit; the corresponding button then illuminates continuously.

5. Press and hold the “Up” button to raise the roller screen (see Fig. 48).

⇒ The roller screen moves upwards to the pre-limit switch (top) and then at reduced speed to the operational limit (top).

⇒ The roller screen stops automatically at the operational limit; the corresponding button then remains illuminated continuously.

Adjusting the speed using the potentiometer

6. Turn the potentiometer anticlockwise to reduce the speed ($v_{\max}$ to $v_{\min}$; see Fig. 48).
7. Turn clockwise to increase the speed ($v_{\min}$ to $v_{\max}$; see Fig. 48).

Moving to a saved position

8. Select a saved position ("P1" – "P3") from the main menu on the touch display (see also Fig. 9 [► p. 16]).



The button must be greyed out. If the "P"-button is lit green, the roller screen is already in this position.

9. Press the "P" button until the position is reached (see Fig. 48).
 - ⇒ The "P" button flashes while the roller screen is moving. Once the position has been reached, the button remains illuminated.

Switching off the control unit

10. Switch off the control unit after use and secure it at the main circuit breaker with a padlock (see Fig. 48).

 **WARNING:** Use by unauthorised persons may result in personal injury or material damage to property

6.1.2 Operation via DMX

Prerequisites

➔ You can find background information on DMX control in *Chapter 2.4.5 DMX control* [► p. 24].

Component	Requirements
G-FRAME control	- Correctly connected (see <i>Chapter 5.2.2 Electrical connection of the G-FRAME control</i> [► p. 51]. - Cabling checked for secure fit. - DMX address correct (<i>Chapter 2.4.5 DMX control</i> [► p. 24] and <i>Chapter 5.2.3 Setting up DMX operation</i> [► p. 53]).
External emergency stop button	Connected and verified for correct operation.

Table 19: Requirements for DMX operation



DMX interference is not displayed on the user interface.

Check the DMX status LED on the rear of the control unit:

- If the green DMX status LED illuminates, the connection is correct.
- If the red LED illuminates, there is an error (see *Chapter 8 Troubleshooting* [► p. 73]).

DMX operation

1. Turn the main circuit breaker to the “I” position to switch on the control unit (see Fig. 50).

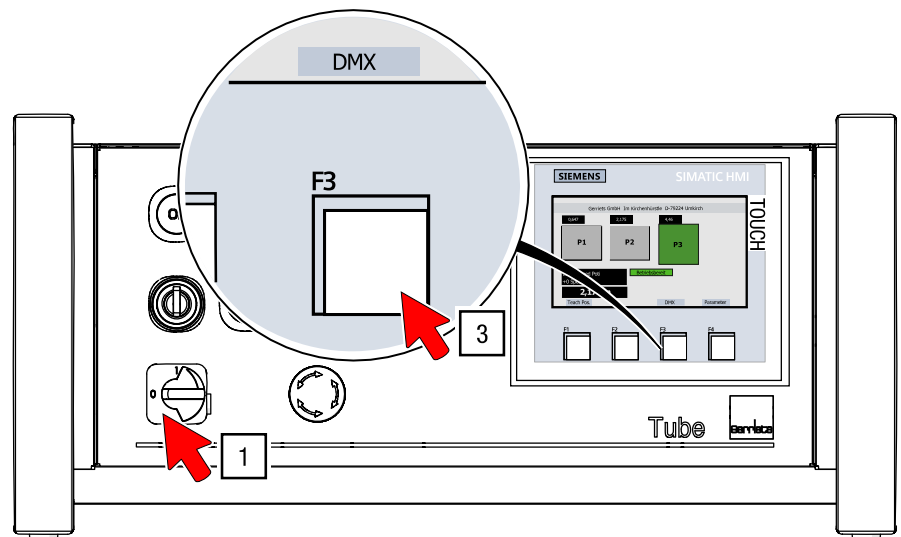


Fig. 50: Controlling a roller screen with DMX – buttons on the control unit

2. Before operation, verify that the external emergency stop button is functioning correctly.

⚠ WARNING: An undetected signal interruption or the absence of an emergency stop button in the immediate vicinity of the DMX control unit may result in the roller screen becoming uncontrollable, endangering personnel due to moving parts. The absence of an emergency stop button near the DMX control unit invalidates compliance with safety regulations.

3. Select the “DMX” menu on the touch display (Fig. 50).
 - ⇒ If no DMX channels are preset on the DMX control unit:
The “DMX” menu opens and the DMX selections are displayed.
4. If DMX channels are already active, an error message “Deselect DMX channels first” will appear as shown in Fig. 51.
 - ⇒ Rectify the fault and acknowledge the message (see also *Chapter 8.3 Troubleshooting DMX* [► p. 76]).

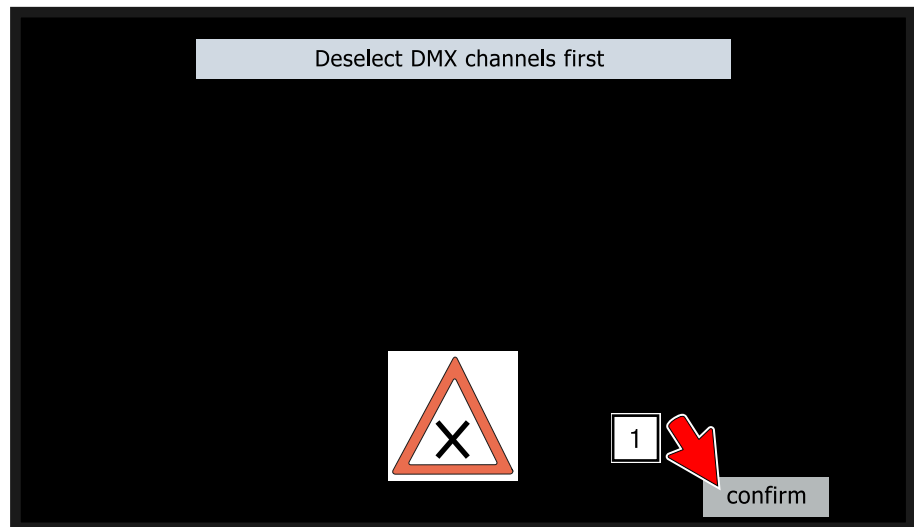


Fig. 51: Error display for active DMX channels



Ensure that the selected DMX addresses match the DMX start address set on the control unit. The movement commands are only executed correctly if the addressing is unique and free of conflicts.

Selecting DMX addresses on the DMX control unit

5. To control the roller screen via DMX, you must select the appropriate DMX addresses on the DMX controller:
 - ⇒ Start address: The roller screen moves upwards.
 - ⇒ Start address + 1: The roller screen moves downwards.
 - ⇒ Start address + 3 to + 5: The roller screen moves to the intermediate positions P1, P2 or P3, depending on the selected address.
6. Switch off the control unit after use and secure it at the main circuit breaker with a padlock to prevent accidental or unauthorised activation.



For further information on DMX operation, see *Chapter 2.4.5 DMX control* [► p. 24].

6.1.3 Operating the handwheel and the brake

To continue moving the roller screen when the power supply is switched off, it can be operated via the handwheel once the brakes have been released.

Operating the brake levers

1. Press both brake levers together by hand while holding the handwheel with a firm grip (see Fig. 52).

NOTICE: The gearbox is not self-locking, which means the roller screen may start to move due to its own dead weight.



If operated manually, the positions must be reprogrammed.

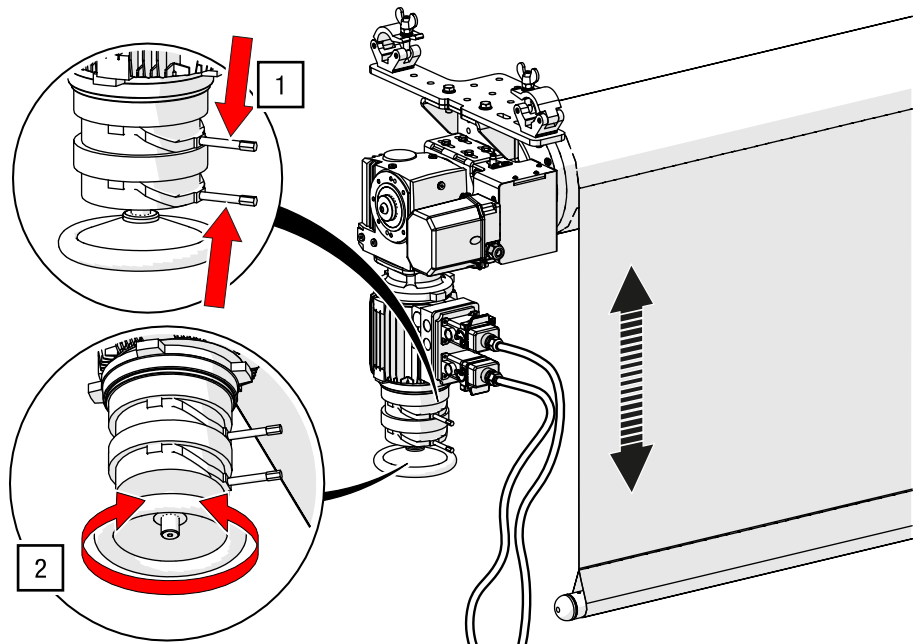


Fig. 52: Release the brake and turn the handwheel

Turn the handwheel

2. Slowly turn the handwheel in the desired direction, ensuring that at least three turns of the screen fabric remain on the CFRP tube at the lower position.

WARNING: Overrunning the emergency limit switches may cause the screen to detach from the CFRP tube and fall, which may result in material damage or personal injury.

Passing the operating limit

3. If the operating limit switch has been exceeded, actuate the key switch to raise or lower the roller screen back into the operating range (see *Chapter 5.3.2 Approaching and clearing the emergency limit switches* [► p. 56]).

7 Maintenance and servicing

7.1 Performing maintenance



Regular maintenance in accordance with the maintenance schedule is essential to ensure safe and reliable operation throughout the product life cycle.

Safety measures before starting work

- ➔ Secure the danger area during maintenance work.
- ➔ Disconnect all live components from the power supply before starting maintenance work.
- ➔ For G-FRAME control units, turn the yellow-red main switch to the “0” position and, if necessary, secure it against unauthorised restart with a padlock.
- ➔ Wear appropriate personal protective equipment (PPE).

Maintenance principles

- ➔ Follow the maintenance instructions (see *Chapter 7.2 Maintenance schedule* [► p. 71]).
- ➔ Perform all maintenance and servicing work in accordance with the specified intervals.
- ➔ Refit all screw connections and retaining elements (e.g. rings, pins, clips) in accordance with the assembly instructions, and check them for correct operation.
- ➔ Perform visual inspections of the system after each transport and at regular intervals during its life cycle.
- ➔ Check that the winding mechanism runs smoothly and watch out for creasing or uneven rolling of the screen.
- ➔ Check the motor and drive unit for smooth operation and unusual noises.
- ➔ Only use the handwheel in exceptional cases. Check that it moves smoothly and functions correctly.
- ➔ For special formats or touring applications, additional checks of the supporting structure, suspension, and fixing points are required.
- ➔ Following safety-related incidents or critical faults, an extraordinary inspection by an authorised expert is required (see *Chapter 10.5 Inspection of mechanical equipment* [► p. 85]).

7.2 Maintenance schedule

General information



Maintenance ensures operational reliability, extends the life cycle, and provides legal protection during operation.

The specified intervals are minimum values and may vary depending on usage intensity and environmental conditions (e.g. touring operation, high humidity, dust exposure).

Maintenance measures	Before each use	Quarterly	Every six months
Visual inspection: Check cables and connectors for damage		●	
Check: Ensure male connectors engage correctly			●
Check: Ensure all screw connections are tight			●
Visual inspection: Suspensions			●
Test: Mountings of the roller screen			●
Test: Check that the electrical system, including the control unit, emergency limit switches and brakes, is functioning correctly		●	
Test: Check that the winding mechanism runs smoothly and is quiet			●
Test: Motor function and lifting speed			●
Check: The screen is clean and free of creases	●		

Table 20: Maintenance table (minimum values)

Organisational notes

- ➔ Adapt the maintenance intervals as required based on operating conditions.
- ➔ Train the operating personnel accordingly.
- ➔ Record all maintenance measures in the logbook.

7.3 Cleaning

General information

This chapter describes recommended measures for cleaning and maintaining the TUBE roller screen system and the screen materials used.

Please observe the specific instructions regarding electronic components, projection screens, and PVC materials during touring operations.

7.3.1 Cleaning agents for the roller screen system

CAUTION

Risk of material damage caused by moisture and cleaning agents

Components of the TUBE roller screen system have an IP40 protection rating and are not waterproof. The ingress of moisture can cause damage to the system.

- ➔ Clean the roller screen system exclusively with a slightly damp, lint-free cloth.
- ➔ Ensure that no moisture enters the electronic components.
- ➔ Do not use aggressive or solvent-based cleaning agents.

7.3.2 Cleaning screen materials

Depending on the application, different materials are used, e.g. PVC projection screens, fabric screens, special projection films, or high-quality plastic composites.

Different care instructions apply to these materials, which are described in the respective product data sheets or installation manuals.

- ➔ Use only cleaning agents that are compatible with the material and soft cloths (e.g. microfiber cloths).
- ➔ Avoid solvents, alcohol-based cleaners, and abrasive materials, as these can damage the surface.
- ➔ Specific care instructions apply to other materials (e.g. textiles, special films) – see the relevant product data sheet.

Cleaning PVC films (short-term use)



The TUBE carbon roller screen system with soft PVC projection screens is designed for the events and trade fair sector, but is not suitable for long-term use, as folds and curling at the edges may occur.

For cleaning, we recommend the Gerriets cleaning kit (Item no. 42010 00101) with the designated cleaning agent and microfiber cloth.

- ➔ Do not use solvents, alcohol-based cleaners, or abrasive materials.
- ➔ If visible changes to the material occur (e.g. brittleness, creases, clouding), the film must be replaced.

8 Troubleshooting



- ➔ If the cause of an error cannot be clearly identified or rectified, take the system out of service and contact the Gerriets GmbH customer service (see *Chapter 12.1 Contact* [► p. 89]).
- ➔ Work on the electrical installation must only be carried out by qualified electricians. During the warranty period, such work must exclusively be carried out by authorised Gerriets GmbH personnel.

NOTICE

Risk of material damage caused by unauthorised modifications to the roller screen system

The function and safety of the TUBE roller screen may be compromised by unauthorised modifications or additions.

- ➔ Do not make any modifications or additions to the machine without prior consultation and written consent from Gerriets GmbH.

8.1 Troubleshooting the roller screen

Problem	Cause	Solution
The screen has come loose and fallen to the floor together with the bottom bottom-weight pipe.	Insufficient turns on the winding shaft due to the emergency limit switch being exceeded or incorrectly set.	➔ Reattach the screen or replace it if damaged. ➔ Adjust/set the lower emergency limit switch correctly so that at least three turns remain on the tube.

Table 21: Troubleshooting the roller screen

8.2 Troubleshooting the control system

Problem	Cause	Remedy
Error code 01: Disturbance frequency converter	Electrical fault in the frequency inverter	→ Please contact Gerriets GmbH customer service (see <i>Chapter 12.1 Contact</i> [► p. 89]).
Error code 02 / 03: emergency endstop up/down	Operating limit switch exceeded, emergency limit switch active	→ Have the roller screen moved out of the emergency limit position by authorised technical personnel. → Check the limit switches for correct operation (see <i>Chapter 5.3.2 Approaching and clearing the emergency limit switches</i> [► p. 56]). → Acknowledge the error message on the display (see <i>Chapter 5.3.1 Acknowledging an error message</i> [► p. 55])
Error code 04: Overspeed	Fault in the frequency inverter or the PLC	→ Please contact the Gerriets GmbH customer service department (see <i>Chapter 12.1 Contact</i> [► p. 89]).
Error code 05: Control up/down	Motor is not rotating in the direction expected by the PLC. Wiring fault in customer-supplied wiring or interference in the frequency inverter.	→ Please contact the Gerriets GmbH customer service department (see <i>Chapter 12.1 Contact</i> [► p. 89]).
Error code 06: Emergency stops	Emergency stop activated and active	→ Release the emergency stop, ensuring that the travel area is safe and there are no technical issues preventing safe operation of the roller screen. → Acknowledge the error message on the display (see <i>Chapter 5.3.1 Acknowledging an error message</i> [► p. 55])
Error code 07: Wrong entry of position	Intermediate positions are outside the permissible operating range	→ When selecting a new operating limit position, adjust the intermediate positions in the settings menu (see <i>Chapter 5.3.5 Setting limit switches and intermediate positions</i> [► p. 61]).
Error code 08: Control of speed "0"	The screen is moving, although it should not be moving.	→ Check the motor brake for correct operation. → Contact the Gerriets GmbH customer service (see <i>Chapter 12.1 Contact</i> [► p. 89]).

Error code 09: General fault / control of OK1	General fault / Error OK1	➔ Please contact the Gerriets GmbH customer service (see <i>Chapter 12.1 Contact</i> [► p. 89]).
Error code 10: Encoder wrong function	The frequency inverter issues a movement command, but the position value does not change. There is a problem with the electronics (e.g. faulty encoder, cable break).	➔ Check all connection cables for damage and correct seating. ➔ Contact the Gerriets GmbH customer service (see <i>Chapter 12.1 Contact</i> [► p. 89]).
Error code 11: During function break 1 not opened	Technical fault: Brake contactor defective	➔ Please contact the Gerriets GmbH customer service (see <i>Chapter 12.1 Contact</i> [► p. 89]).
Error code 12: Encoder in minus	Software: Position values are in the negative range	➔ Move the roller screen to the “Up” position and save the value. ➔ Check the position parameters.
Error code 13: At stop break 1 is open	When the motor is at a standstill, the brake releases and the roller screen unrolls slowly on its own. The brake contactor is stuck or defective.	➔ Please contact the Gerriets GmbH customer service (see <i>Chapter 12.1 Contact</i> [► p. 89]).
Error code 14: During function break 2 not opened	Technical fault: Brake contactor defective	➔ Please contact the Gerriets GmbH customer service (see <i>Chapter 12.1 Contact</i> [► p. 89]).
Error code 15: At stop break 2 is open	When the motor is at a standstill, the brake releases and the roller screen unrolls slowly under its own weight. The brake contactor is stuck or defective.	➔ Please contact the Gerriets GmbH customer service (see <i>Chapter 12.1 Contact</i> [► p. 89]).
Error code 16: At stop contactor is open	The brake contactor is stuck or defective.	➔ Please contact the Gerriets GmbH customer service (see <i>Chapter 12.1 Contact</i> [► p. 89]).

Table 22: Troubleshooting for G-FRAME control

8.3 Troubleshooting DMX operation

Problem	Cause	Solution
Display error: Deselect DMX channels first	Channels are selected on the DMX controller.	➔ Deselect all DMX channels on your controller.
Setting the DMX address on the control has no effect when operating with an RDM master.	The RDM master overrides the DMX address.	➔ Reset the control unit by selecting the start address "900".
Setting the DMX address has no effect.	The DIP switches next to the rotary knobs for the DMX settings have been changed from their default positions.	➔ Set the DIP switches to "off" (see also Fig. 39 [► p. 54]).
DMX status LED flashes red	There is no DMX signal or the cabling is faulty	➔ Connect a DMX controller. ➔ Check all cable connections for damage and correct seating.
DMX status LED flashes green	No valid DMX address has been set.	➔ Check the DMX address; see also Fig. 39 [► p. 54].

Table 23: Troubleshooting for DMX control

9 Decommissioning and disposal



In the event of a fault in individual components of the roller screen system, sustainability is prioritised, and a repair service is offered where technically feasible.

We will check whether a repair is advisable. Please contact us using the contact details in *Chapter 12 Contact details and warranty* [► p. 89] or on the back of this manual

➔ Please refer to *Chapter 10.3.3 Target groups and activities* [► p. 83] regarding responsibilities for dismantling and disposal.

9.1 Decommissioning and storing

Temporary decommissioning

1. Secure the danger zone and disconnect the roller screen system from the power supply.
2. Begin dismantling from the payload side and remove loads and load-bearing components step by step in the direction of the flow of force.
3. Coil the cables and secure them to or near the machine.
4. Clean all components and store them (see also *Chapter 7.3 Cleaning* [► p. 72]).

Information on storage

Short-term or medium-term storage (up to 2 years) is possible without special measures, provided that the storage conditions comply with the environmental requirements specified in *Chapter 3.1 Environmental conditions* [► p. 27].

- ➔ For longer-term storage, take additional measures for corrosion protection.
- ➔ Store the roller screen system in a dry, dust-free place, ideally in its original packaging.
- ➔ Do not expose the system to aggressive substances (e.g. solvents, acids).

9.2 Environmental protection, dismantling, and disposal

Environmental protection/WEEE



Dispose of the roller screen system, its components, and accessories at the end of the product's life cycle in an environmentally sound manner in accordance with the applicable legal regulations.

Please observe the national and international regulations on disposal. These apply primarily, but not exclusively, to:

- Metals
- Electronic components
- Batteries and accumulators
- Fibre composites
- Non-ferrous metals
- Plastics

If in doubt, contact the relevant local authority or a certified waste disposal company to ensure proper and legally compliant disposal. They can advise you on the correct procedures and methods.

Packaging materials that are no longer required for storage or transport must also be disposed of in an environmentally sound manner.

➔ Do not dispose of electronic components as domestic waste, as they contain recyclable materials (Directive 2012/19/EU – WEEE).

Dismantling and disposal

1. Secure the danger zone and disconnect the roller screen system from the mains.
2. Begin dismantling from the payload side and remove loads and load-bearing components step by step in the direction of the flow of force.
3. Separate mechanical components and electrical components by material type.
4. Dispose of all parts properly in accordance with local regulations.

10 Safety

10.1 Intended use and foreseeable misuse

10.1.1 Intended use

The TUBE roller screen system is intended exclusively for use as a roller tube for suitable screens in indoor environments. Operation above people is only permitted under constant supervision by trained specialist personnel, subject to an expert inspection (see *Chapter 10.5 Inspection of mechanical equipment* [► p. 85]), proper maintenance of the screen material, and a prior risk assessment.

When operating via DMX, conformity cannot be guaranteed unless additional safety measures are implemented.

- ➔ Use the roller screen system only for its intended purpose and only when it is in a safe and fully operational condition.
- ➔ Observe the maximum permissible screen sizes as well as the recommended maintenance and inspection intervals.

Exceptions at your own risk

When controlled via DMX, conformity cannot be guaranteed unless additional measures are implemented.

- ➔ Ensure that supplementary safety measures are in place when controlling the system via DMX, e.g. an external emergency stop button (see *Chapter 2.5 Accessories and spare parts* [► p. 26]).
- ➔ Conduct a risk assessment and implement suitable protective measures to minimise risks arising from improper operation.
- ➔ Ensure that no one is permitted to enter the danger zone whilst the load is suspended or in motion.

10.1.2 Foreseeable misuse

Any use other than that specified under 'Intended use' is considered improper use.

Consequences of non-compliance

Failure to follow the instructions in this operating manual can lead to serious consequences, including:

- Death or severe personal injury
- Material damage to the equipment
- Damage to third-party property

Such consequences are not covered by the product warranty or liability.

- ➔ Please refer to *Chapter 10.7 Limitation of liability* [► p. 87].

Further examples of improper use

Examples of improper use include, but are not limited to:

- Attaching components or making modifications to the product that have not been explicitly approved by Gerriets GmbH.
- Lowering the roller screen without a visual inspection.
- Moving the roller screen over people.
- Unauthorised entry into the danger zone.

10.2 General warnings and residual risks

Operator responsibility and risk assessment

The TUBE roller screen system complies with the current state of the art and applicable occupational health and safety regulations. However, improper use may result in personal injury and material damage.

Overall responsibility for safe operation of the technical system rests with the operator.

- ➔ Please observe the danger and safety warnings in this operating manual.
- ➔ Conduct a risk assessment and implement appropriate protective measures.
- ➔ Appoint a health and safety coordinator (SiGeKo / HSE coordinator) to secure the danger zone and coordinate cooperation between the various trades/contractors.

10.2.1 General warnings

Mechanical dangers



DANGER

Risk of fatal injury from falling objects or suspended loads

There is a risk of falling objects or suspended loads, which can lead to fatal accidents, serious personal injuries, or severe material damage.

- ➔ Observe the maximum load capacity of the entire system and individual components.
- ➔ Ensure that the existing building structure has sufficient load capacity for the installation of the TUBE system.
- ➔ Check whether the building's structural stability certificate covers the additional loads, or whether a detailed assessment by a structural engineer or additional structural reinforcement is required.
- ➔ Do not make any modifications, additions, or alterations to the roller screen system unless these have been approved in writing by Gerriets GmbH.
- ➔ Secure the danger zone during installation, maintenance, and operation.
- ➔ Use suitable lifting equipment and secure loads to prevent them from falling.
- ➔ Tighten bolted connections in accordance with the assembly instructions, the torque tables, and applicable guidelines.
- ➔ Use retaining elements such as rings, clips, and pins correctly and check their effectiveness.
- ➔ Check mounting hardware for suitability and permissible load capacity before use.

Electrical dangers

**DANGER****Risk of fatal injury from electrical voltage**

Contact with live parts poses a direct risk of death from electric shock. Damaged cables or faulty insulation can be life-threatening.

- ➔ Never disconnect connectors under load.
- ➔ Isolate the electrical system from the power supply before carrying out any maintenance, cleaning, or repair work.
- ➔ Ensure that the system is fully de-energised when working on the control box.
- ➔ Have all electrical installation work carried out exclusively by qualified electricians.
- ➔ Install a mains isolation device in accordance with DIN EN 60204.
- ➔ Disconnect the system from the power supply before working inside the control cabinet.
- ➔ Regularly check the electrical protective devices (e.g. overcurrent protection, equipotential bonding, RCDs) in accordance with the specifications of the power supply.
- ➔ Regularly check the system and its cabling for damage (see *Chapter 7* Maintenance and servicing [► p. 70]).
- ➔ If any damage is found, switch off the power supply immediately and arrange for professional repairs.
- ➔ Keep moisture away from live parts.
- ➔ Never bypass fuses or take them out of operation.

**WARNING****Electromagnetic interference affecting signals and devices**

Incorrect electrical connection may cause electromagnetic fields from the frequency inverter to interfere with electrical devices, such as medical implants.

- ➔ Implement appropriate EMC shielding measures in accordance with IEC 61800-3.
- ➔ Use shielded cables in accordance with site specifications.
- ➔ Ensure correct earthing and use central earthing points.

10.2.2 Residual risks

Residual risks cannot be eliminated despite compliance with all design-related and safety-related measures.

These include in particular:

- incorrect operation by the user
- technical defects or wear
- external influences during operation

The operator must ensure that appropriate organizational measures are taken to minimize these risks.

10.3 Personnel and target groups

10.3.1 Operator's responsibility

Definition of the operator	The operator is any natural or legal person who uses the system or machine for commercial or economic purposes, or who makes it available to third parties. During operation, they bear legal product responsibility for the protection of personnel and third parties. The operator bears responsibility in accordance with the Machinery Regulation (EU) 2023/1230 (or applicable national legislation).
Obligations of the operator	➔ Comply with applicable health and safety guidelines and inform personnel accordingly. ➔ Conduct a risk assessment and implement measures to minimise risks. ➔ Ensure that your staff are familiar with the regulations on occupational safety and accident prevention. ➔ Draw up operating instructions for the roller screen system and instruct personnel to read them. ➔ Provide personnel with the necessary personal protective equipment (see <i>Chapter 10.3.5 Personal protective equipment</i> [► p. 84]). ➔ Train and regularly inform personnel about specific hazards. ➔ Prevent unauthorised and untrained persons from operating the equipment. ➔ Only operate the roller screen system within the operating parameters specified in <i>Chapter 3 Technical data</i> [► p. 27].

10.3.2 Personnel responsibilities

All persons assigned to work on the roller screen system must before commencing work:

- Observe the basic regulations on occupational safety and accident prevention.
- Read and observe this operating manual, in particular the safety chapter and the safety instructions.

10.3.3 Target groups and activities

Definition of the target group

Target group	Definition
Trained personnel	Personnel at a venue or a service provider who have been trained by a qualified event technician or the manufacturer in the relevant subject areas.
Responsible event technician	A qualified professional responsible for the planning, execution, and supervision of technical processes at events.
Persons with specialist training (mechanics/electrical engineering)	Qualified individuals with vocational training in a technical field such as mechanics or electrical engineering. They possess the specific knowledge, skills, and qualifications required to carry out complex technical tasks.

Table 24: Definitions of the target groups

Areas of activity of the personnel

Activity	Trained staff	Responsible event technician	Persons with specialist training (mechanics/electrical engineering)
Transport	√	√	–
Assembly	–	–	√
Commissioning	–	√	√
Troubleshooting and fault rectification	–	(√)	√
Operation	√	√	√
Maintenance	–	√	√
Dismantling	–	–	√
Disposal / recycling	√	√	√

√ = Within the scope of activities – = Not within the scope of activities

Table 25: Allocation of areas of activity to target groups

10.3.4 Presence in the danger zone

 **WARNING**

Risk of injury from moving loads

The roller screen system must only be moved when there are no unauthorised people in the danger zone.

Remaining within the roller screen's movement area for staging purposes (scenery/theatre) is permitted only if the following conditions are met:

- ➔ The persons concerned have been instructed in advance by qualified personnel. This instruction includes:
 - Procedures in the event of an emergency
 - The meaning and function of the safety equipment (e.g. emergency stop),
 - The permitted movement ranges of the roller screen.
- ➔ The roller screen is operated exclusively by trained personnel.
- ➔ Control is via a hold-to-run device (dead-man's control), which immediately interrupts the movement when released.
- ➔ The operator has a direct, unobstructed view of the roller screen's movement area.
- ➔ Communication between the operator and all persons in the danger zone is ensured at all times.
- ➔ Access to the danger zone is restricted to the minimum necessary in terms of both time and space.
- ➔ Appropriate personal protective equipment must be worn (safety footwear, gloves).



Any other procedures are considered improper use and may result in severe personal injury.

10.3.5 Personal protective equipment

Where necessary, the operator must provide the following personal protective equipment for operating and maintenance personnel:

The selection of protective equipment is based on the risk assessment and the specific activity.

Symbol	Protective equipment
	protective gloves
	Safety footwear
	Safety helmet

Table 26: Personal protective equipment

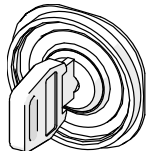
10.4 Safety and protective equipment

10.4.1 Non-enclosing protective devices

Recessed control buttons
(dead-man switch)

The G-FRAME control unit is equipped with a recessed control button. This function ensures the safe operation of the roller screen system: when the button is released, the movement is immediately interrupted. This prevents unintentional activation of the movement.

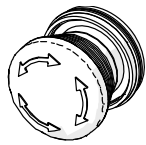
Key switch



To prevent incorrect operation in the travel range between the operating limit and the emergency limit switch, the control unit is fitted with a key switch.

The key must be issued exclusively to qualified personnel to prevent unauthorised operation

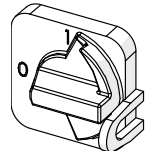
Emergency stop



An emergency stop device on the control unit allows the entire system to be shut down immediately in the event of danger.

When activated, the power supply is interrupted and the system is brought to a safe state.

Main circuit breaker
(lockable)



The control unit is equipped with a mains isolation switch that can be used to de-energise and isolate the system from the power supply.

In the “0” position, the main switch can be secured with a padlock to prevent accidental or unauthorised activation.

10.4.2 Guards

Guards (e.g. casings, barriers) must be provided by the operator in accordance with the installation situation and the risk assessment, where necessary and technically feasible.

➔ Conduct a risk assessment of your system to identify sources of danger and – where possible – eliminate them.

10.5 Inspection of mechanical equipment

Health and safety regulations and scope of application

In Germany, the regulations of the German Social Accident Insurance (DGUV) apply to the inspection of mechanical equipment used in event technology, both during initial commissioning and at regular intervals. These regulations constitute binding, autonomous legal standards.

Country-specific regulations

When used outside Germany, the relevant national accident prevention regulations and occupational health and safety provisions must be observed. Additional statutory or technical requirements may apply at the place of use. These may differ from the German provisions, particularly with regard to inspection intervals, inspection scope, documentation, and the qualification of competent persons or authorised experts.

Inspection on commissioning and at regular intervals

The TUBE roller screen system is classified as mechanical equipment within the meaning of the German accident prevention regulation “DGUV Regulation 17” (formerly BGV C1): Event and production venues for stage performances.

When used under the scope of DGUV Regulation 17, an inspection by an authorised expert is required prior to initial commissioning and following any

significant modifications. This involves checking the proper installation, equipment, and operational readiness of the system. The requirements are specified in DGUV Principle 315-390: "Testing of mechanical equipment in event technology".

Periodic inspections must be carried out as follows:

- Annually by a competent person
- Every four years by an authorised expert

The suspension mechanisms for the roller screen are also subject to mandatory inspection. It is recommended that the expert inspection of the suspension mechanisms be synchronised with the inspection of the system.

Actions required:

- ➔ Arrange for an inspection by an authorised expert prior to initial commissioning and subsequently every four years.
- ➔ Combine the annual inspection by competent persons with a full service and maintenance procedure.

10.6 Directives and standards

EU Directives

The roller screen system complies with the requirements of the following EU directives:

- 2006/42/EC – Machinery Directive
- 2014/30/EU – Electromagnetic Compatibility
- 2014/35/EU – Low Voltage Directive



These instructions are based on the Machinery Directive 2006/42/EC, which was in force at the time of writing.

Please note that this Directive will be replaced by EU Regulation 2023/1230, which will apply from 20 January 2027.

Standards applied

The roller screen system has been developed and assessed in accordance with the following standards:

- DIN EN 17206:2020 – Event technology – Machinery – Safety requirements and tests
- EN 60204-1:2006/A1 – Safety of machinery – Electrical equipment of machines – Part 1: General requirements
- DIN 56950-4:2015-12 – Event technology – Mechanical equipment – Part 4: Safety requirements for prefabricated screens

Harmonised standards

In addition, the system complies with the following harmonised standards:

- DIN EN 60204-1:2019-06 – Electrical equipment of machines
- EN ISO 13849-1:2015 – Safety of machinery – Safety-related parts of control systems
- DIN EN ISO 12100:2011-03 – Safety of machinery — General principles for design — Risk assessment and risk reduction
- EN ISO 14118:2018 – Safety of machinery — Prevention of unexpected start-up
- EN IEC 62061:2005 – Functional safety of safety-related control systems

Declaration of Conformity

The TUBE roller screen system is regarded as a machine within the meaning of the EU Machinery Directive 2006/42/EC (valid until 19 January 2027) and the subsequent EU Machinery Regulation (EU) 2023/1230 (mandatory from 20 January 2027) as soon as it has been fully assembled and commissioned.



If assembly and commissioning are carried out by Gerriets GmbH, a conformity assessment of the complete system is performed. Depending on the scope, either a declaration of conformity or a declaration of incorporation will be issued.

If assembly and commissioning are not carried out by Gerriets GmbH, but by the customer or a third party, these parties shall be deemed the manufacturer within the meaning of the aforementioned European regulations. In this case, the responsibility for conducting the conformity assessment procedure and issuing the corresponding CE declaration of conformity lies with the executing company or operator.



In the case of self-assembly, it must be ensured that all applicable requirements of the Machinery Directive or Machinery Regulation as well as the CE marking obligation are complied with. In this case, the responsibility for the correct execution and documentation of the conformity assessment does not lie with Gerriets GmbH, but with the respective operator.

10.7 Limitation of liability

Gerriets GmbH accepts no liability for damages or malfunctions attributable to the following causes:

- Failure to observe the contents and instructions in this operating manual
- Improper use of the product
- Employment of personnel without sufficient qualifications or training
- Use of spare parts, accessories, or materials not approved by Gerriets GmbH
- Unauthorized modifications or alterations to the product without prior consultation with Gerriets GmbH.

11 Abbreviations and definitions

11.1 Terms and definitions

ELL/R	Entertainment Load Limit at Rest in accordance with DIN EN 17206:2020. The maximum permissible load when the product is at rest. The value corresponds to half the working load limit (WLL).
EMC	Electromagnetic compatibility. The ability of electrical devices and systems to operate without interference in electromagnetic environments and without causing impermissible interference.
IP	IP rating. The degree of protection against the ingress of foreign objects and moisture. The classification ranges from IP00 (no protection) to IP68 (complete protection against dust and prolonged submersion).
DMX	Digital transmission protocol for controlling lighting, sound, and effects equipment. It enables the real-time transmission of control data over a single cable.
A	Ampere. The unit of electrical current.
DMX512	Standardised protocol for the digital transmission of control data for lighting and stage technology. It allows the control of up to 512 channels via a single DMX cable.
VDC	VDC stands for "Volts Direct Current" and refers to direct current, in which the current flows in one direction and remains constant.
Nm	Newton meter (Nm). The unit of torque. Equivalent to a force of one newton acting via a lever arm of one meter.
$V_{\max}$	Maximum speed of the relevant device.
$V_{\min}$	Minimum speed of the relevant device.

12 Contact details and warranty

12.1 Contact details

Opening hours:	Monday – Thursday	08:00 – 12:00 13:00 – 17:00
	Friday	08:00 – 12:00 13:00 – 15:30
Switchboard:	Our switchboard is available during business hours. Outside business hours, you may leave a message on our answerphone at any time or email us with your enquiry.	
Telephone:	Switchboard	+49 7665 – 960 0
Fax:	Switchboard	+49 7665 – 960 125
Addresses:	Delivery address	Gerriets GmbH Stage Supplies Im Kirchengürstle 5 – 7 D-79224 Umkirch
	Postal address	Gerriets GmbH Stage Equipment PO Box 1154 D-79220 Umkirch
	Freiburg Commercial Register	HRB No. 2678
	VAT No.	DE142191543
	Managing Director	Hannes Gerriets
Further contact details:	Website	www.gerriets.com
	Email	info@gerriets.com

Contact details for our locations worldwide and a QR-code for the website with further international contact details can be found on the back side of this document.

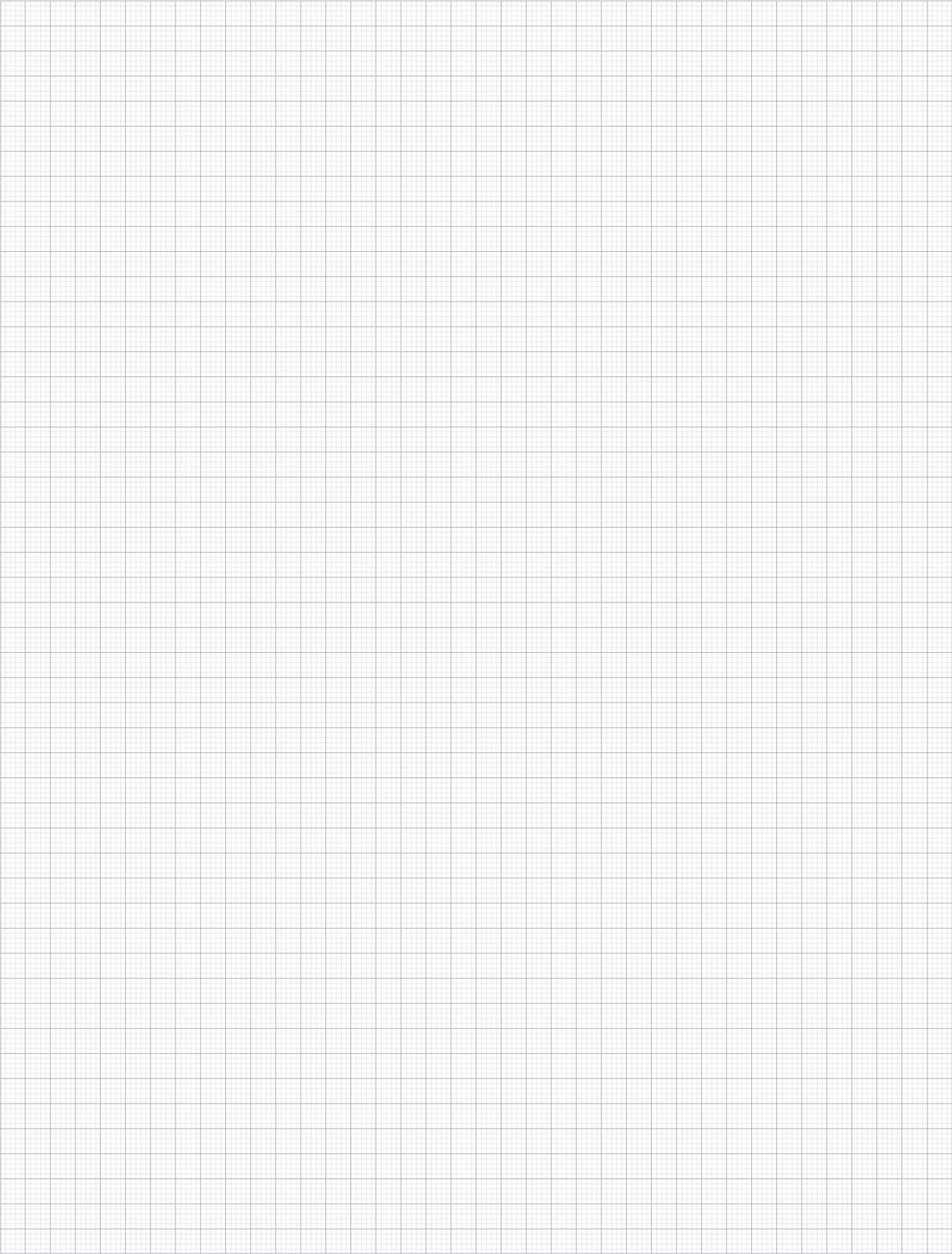
12.2 Customer service and repair

The product is supplied with a two-year warranty. This covers the replacement or repair of parts that are defective due to material or manufacturing faults.

The warranty does not cover damage caused by improper use, overload, or inadequate maintenance. Modifications or repairs conducted by unauthorised personnel may result in malfunctions that are not covered by the warranty.

In the event of a fault, please contact our customer service team so that we can assess your warranty claim and discuss the next steps. We are available during our business hours.

Further information can be found in our terms and conditions on www.gerriets.com.



GERRIETS WORLDWIDE

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