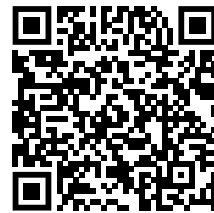


EN **Operating manual**
BELT-TRACK





Scan the following QR code or click the icon in the PDF view to access the BELT-TRACK product page. There you will find further product information such as videos and application examples.



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This operating manual was created by:
Gerriets GmbH
Im Kirchengürtle 5-7
DE-79224 Umkirch
+49 7665 960 0
gerriets.com

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Note on the original version and translations:

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

Subject to errors and technical modifications.

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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 part of the track system BELT-TRACK including:

- Track system BELT-TRACK – Item no. 31220 0XXXX
- Drives (electric incl. control components)
- Accessories (see *Chapter 2.8 Accessories and spare parts* [► p. 27]).

The operating manual provides valuable information for safe and efficient use of the product.



- ➔ Read the operating manual, especially *Chapter 10 Safety* [► p. 97], thoroughly before use.
- ➔ If anything is unclear, contact Gerriets GmbH.
(contact details are provided in *Chapter 13.1 Contact* [► p. 105]).
- ➔ Ensure that all persons working with the track system and associated components have access to the operating manual.
- ➔ Keep the operating manual available at all times in the immediate vicinity of the product.
- ➔ When selling the product, pass on the operating manual to the new owner.

Safety information

Chapter 10 Safety [► p. 97] contains information on intended use, general safety instructions, information on personnel qualifications, safety and protective devices, directives, and standards, as well as the disclaimer.

Specific safety instructions can be found in *Chapter 4 Transport* [► p. 38], *Chapter 5 Installation* [► p. 39] and *Chapter 7 Maintenance and servicing* [► p. 92].

Accident prevention regulations

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

1.1.1 Symbols and markings

Representation of a warning

Warnings are identified by a signal word, a pictogram, and a structured description. They contain information on the type and source of the hazard, possible consequences and measures to avoid the hazard (in this example warning of electrical voltage).

Embedded warnings are shown in abbreviated form and usually only contain the signal word and hazard description.



⚠ DANGER

Type and source of the hazard

Possible consequences of not observing the warning.

- ➔ Measures to avert the hazard and its consequences.

Hazard levels of warnings

The signal word, such as Warning, describes the hazard level:

**DANGER**

Indicates a hazardous situation which, if not avoided, will result in death or serious injury.

**WARNING**

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

**CAUTION**

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

**NOTICE**

Indicates information related to property damage that is not associated with personal injury.

Explanation of warning and mandatory signs used in the operating manual

Warning of specific risks



General warning sign



Warning of suspended loads



Warning of falling objects



Warning of electrical voltage



Warning of obstacles at head level



General mandatory sign



Observe the operating manual

Other notes and symbols



Marking of an action to be carried out (one step)



Marking of page number references



Marking of the first step



Marking of a direct consequence of an action



Marking of the completion of an action



Marking bullet points



Marking of important information

2 Structure and function

Track system

Item no. 31220 0XXXX

BELT-TRACK is a track system for the motorised operation of medium to heavy curtains, variable masking systems for screens and also scenery materials. The BELT-DRIVE enables precise and reproducible motion sequences as well as exact positioning.

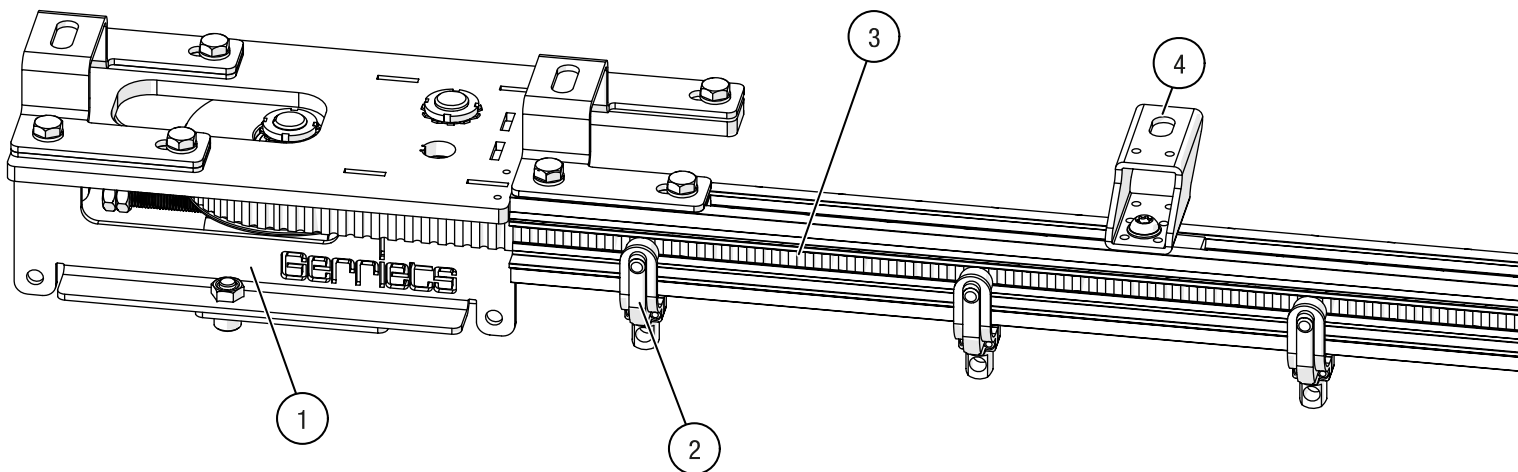
The slip-free drive via the timing belt enables precise positioning through encoders and corresponding control. The integrated guide enables compact installation in existing structures. The system is used to control and move curtains and other elements in architecture, stage and studio areas, cruise ships, theatres, and cinemas. It also allows complex track layouts with overlaps, opposing curves and different radii.

The motorised function of the system simplifies operation and supports flexible room design. Its robust construction and high performance guarantee reliable operation, even under intensive use.

Suspension and mounting options are available in various variants, which are shown in *Chapter 2.3 Suspension variants* [► p. 12].

2.1 Overview – straight track single-run

The following illustration shows a single-run track for a one-piece curtain.



Number and designation (1/2):

- 1** Deflection unit – left/right
Item no. 31220 0604X
- 2** Double-wheel curtain runner
Item no. 31220 00021
- 3** Timing belt – black/green
Item no. 31220 0090X
- 4** Track suspension bracket
Item no. 31220 08011

In the deflection unit (1/Fig. 1) of the BELT-TRACK system, the timing belt (3/Fig. 1) is guided to the deflection pulley and fed into the second belt channel via a belt wheel. The unit is pre-assembled for left or right-hand installation according to the order. The versions differ in the position of the guide rollers and belt wheel.

The timing belt tension is adjusted – if a tensioning unit is present – at the deflection unit with belt tensioner or at the motor-side deflection unit via a slide (see *Chapter 5.4.4 Tensioning timing belt* [► p. 71]).

Number and designation (2/2):**5 Master runner with belt clamp**

Item no. 31220 00011

6 Deflection unit for BELT-DRIVE units, left/right

Item no. 31220 06011

7 Encoder unit BT12

Item no. 31220 07943

8 BELT-DRIVE BT12

Item no. 31220 07443

9 Geared limit switch

The deflection unit is equipped with two elongated holes intended for ceiling suspension and can compensate for certain tolerances during installation. At the track suspension bracket there are also elongated holes (4/Fig. 1). The track suspension bracket is fastened using a T-slot nut in the track profile.

The curtain is suspended from both the double-wheel curtain runner (2/Fig. 1) and the master runner (5/Fig. 1). The master runner is available in two variants.

In one version, it is equipped with a belt clamp used to fix the two belt ends. In the other version, the master runner is directly coupled to the timing belt.

Further along, the timing belt is first guided over several belt wheels at the deflection unit for BELT-DRIVE units (6/Fig. 1) before being directed onto a central belt wheel. This is equipped with a coupling disc that has special receptacles for the pins of the motor unit (8/Fig. 1).

The motor units differ in their running speed and traction force, while the coupling, mounting plate and the mounting on the motor-side deflection unit are identical for all variants.

The motor unit has a geared limit switch (9/Fig. 1), with which values for end and intermediate positions can be set.

Depending on the order, an encoder unit (7/Fig. 1) is also integrated, which enables precise position determination and is required for programming intermediate positions (see also *Chapter 2.6.7 Encoder units* [► p. 23]).

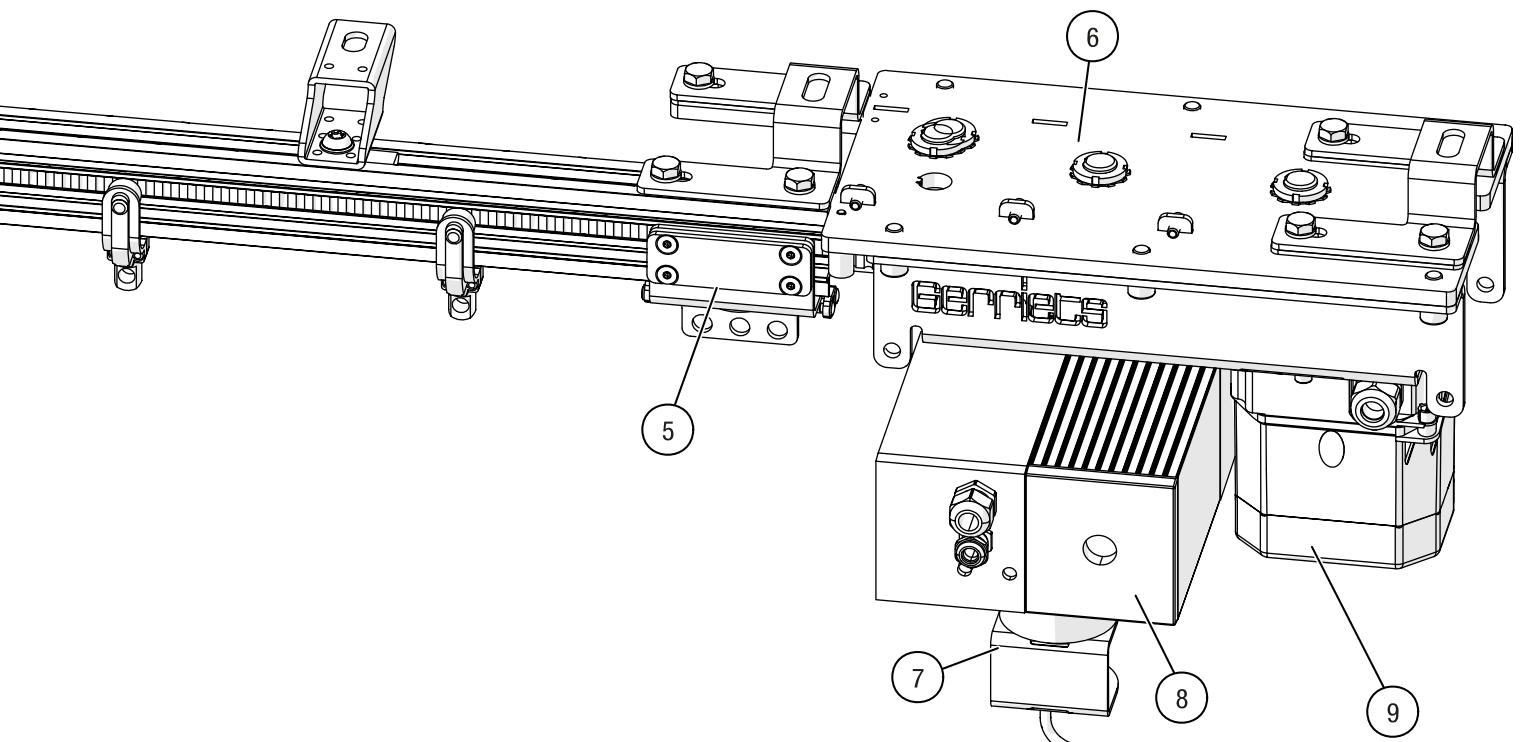


Fig. 1: Overview – BELT-TRACK – Short straight track with motor unit

2.2 Overview – curved track with overlap

Number and designation (1/2): The track parts are connected with a track splice (7/Fig. 2).

1 Deflection unit for BELT-DRIVE units left/right
Item no. 31220 06011

2 BELT-DRIVE BT-R
Item no. 31220 07432

3 Double-wheel curtain runner
Item no. 31220 00021

4 Master runner with/without belt clamp
Item no. 31220 0001X

In this example, the timing belt is driven by the BELT-DRIVE BT-R unit (2/Fig. 2).

The motor is mounted on the deflection unit for BELT-DRIVE units (1/Fig. 2), at which the timing belt is deflected over several pulleys and fed back into the timing belt channel.

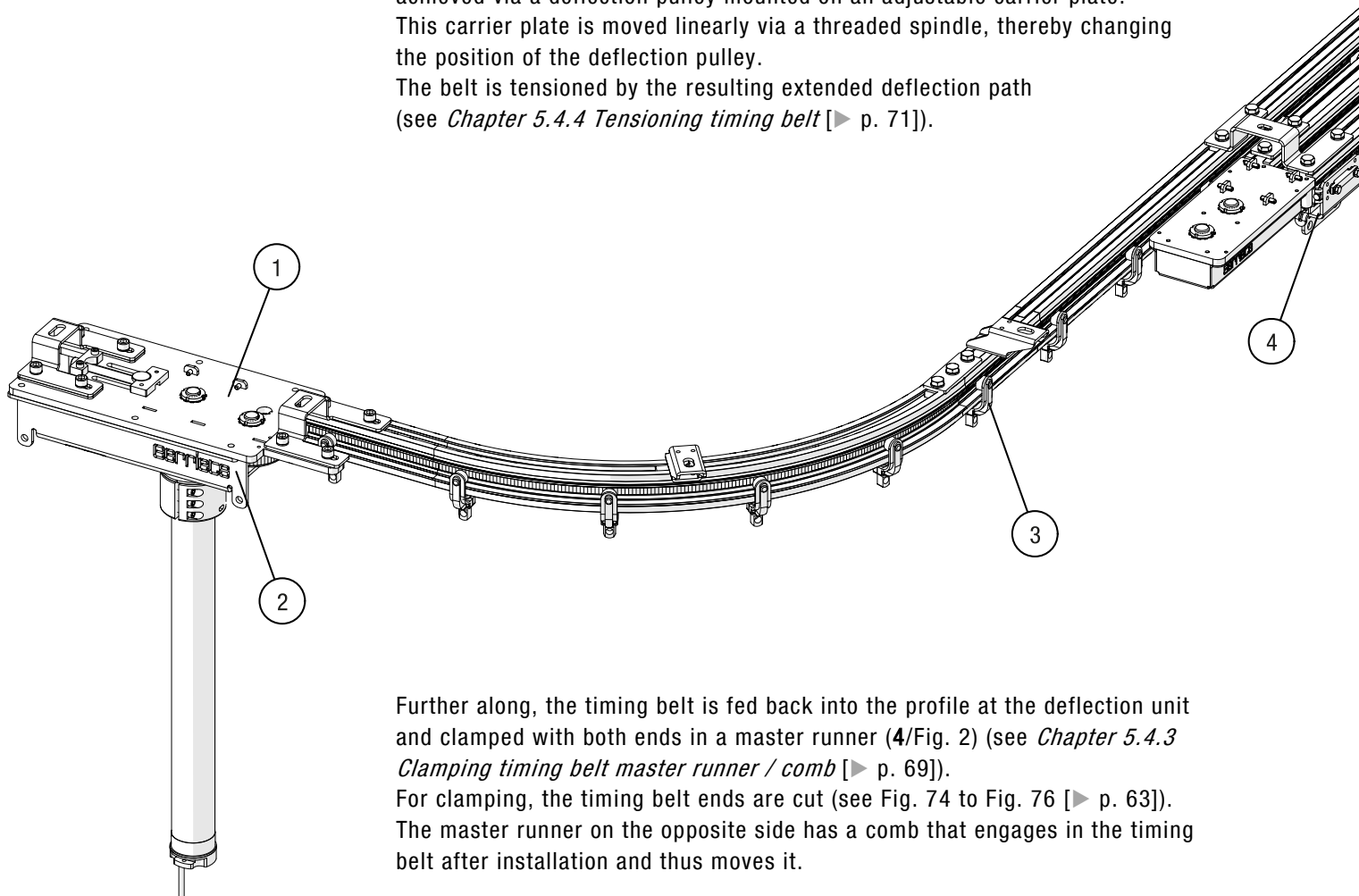
A coupling disc connects the motor to the central drive wheel and has special receptacles for the pins of the motor unit.

Further along, the timing belt is guided over several deflection pulleys onto the second track section at the crossover unit (5/Fig. 2). Depending on the track layout purchased, the crossover unit may be pre-assembled for left or right. In the middle between the two track runs is a mounting hole where the system can be centrally fastened.

This is particularly helpful when mounting under load bars, pipe grid ceilings and trusses.

At least one tensioning unit must be present in the system – either at the drive or at the deflection unit. At the deflection unit, the timing belt tension is achieved via a deflection pulley mounted on an adjustable carrier plate. This carrier plate is moved linearly via a threaded spindle, thereby changing the position of the deflection pulley.

The belt is tensioned by the resulting extended deflection path (see *Chapter 5.4.4 Tensioning timing belt* [► p. 71]).



Further along, the timing belt is fed back into the profile at the deflection unit and clamped with both ends in a master runner (4/Fig. 2) (see *Chapter 5.4.3 Clamping timing belt master runner / comb* [► p. 69]).

For clamping, the timing belt ends are cut (see Fig. 74 to Fig. 76 [► p. 63]).

The master runner on the opposite side has a comb that engages in the timing belt after installation and thus moves it.

The curtain can be fixed at all deflection units using the holes provided in the housing.

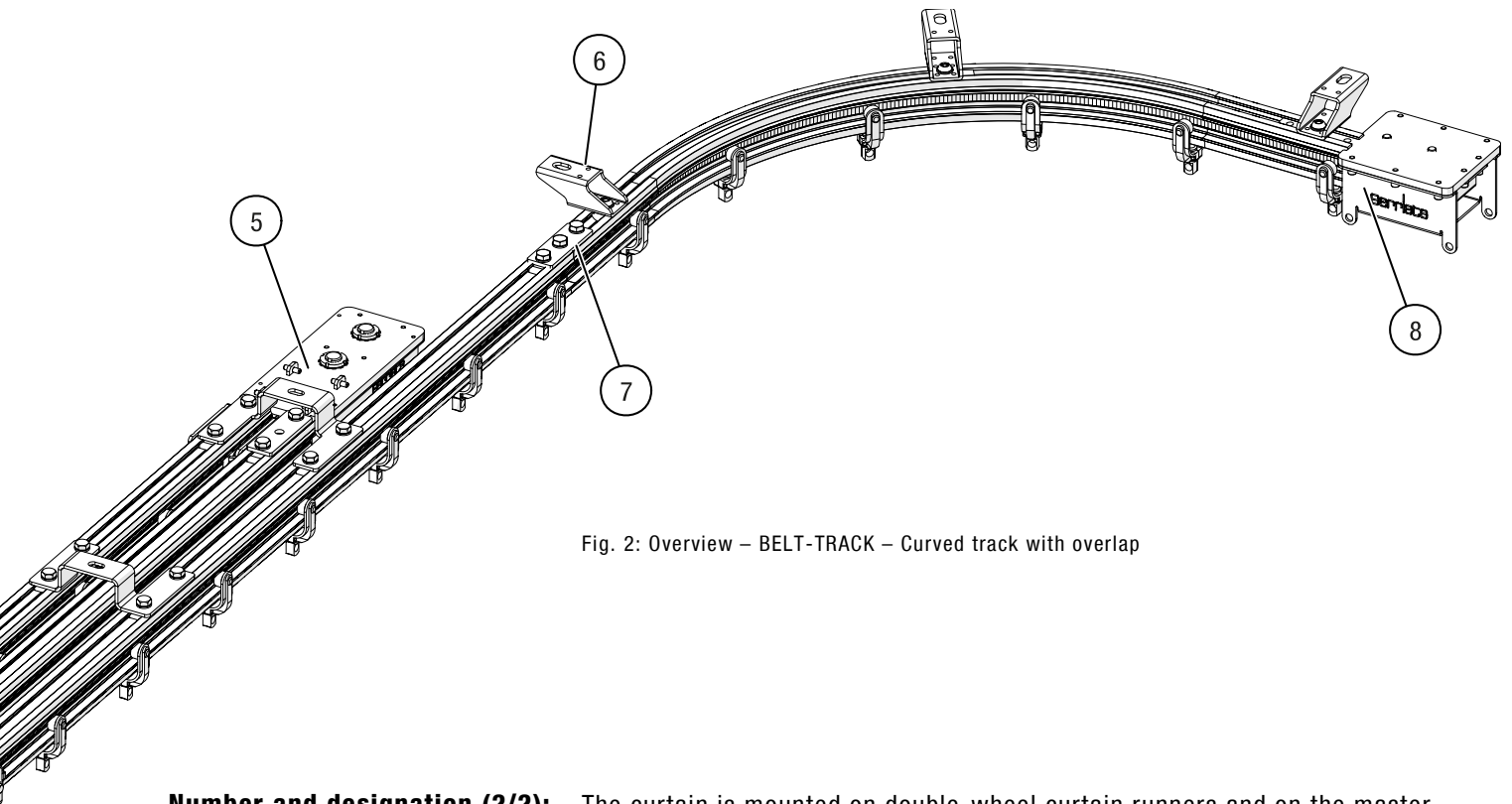


Fig. 2: Overview – BELT-TRACK – Curved track with overlap

Number and designation (2/2):

5 Crossover unit

left/right

Item no. 31220 06051

6 Track suspension bracket

Item no. 31220 08011

7 Track splice

Item no. 31220 00061

8 Deflection unit – left/right

Item no. 31220 0604X

The curtain is mounted on double-wheel curtain runners and on the master runner (4/Fig. 2). The double-wheel runner (3/Fig. 2) is equipped with a 360° rotatable mounting for the curtain in the centre.

The master runner can additionally be extended with overlap arms to enable an overlap of two curtain sections in a single-track system.

The curtain sections can be attached to the designated mounting holes on the master runners and runners using various fastening methods, such as curtain hooks, tie tape, soft ties, and shackles.

2.3 Suspension variants

Number and designation:

1 Track suspension bracket
incl. fastening elements
Item no. 31220 08011

2 G-CLAMP 48/60
incl. fastening elements
Item no. 31000 08091

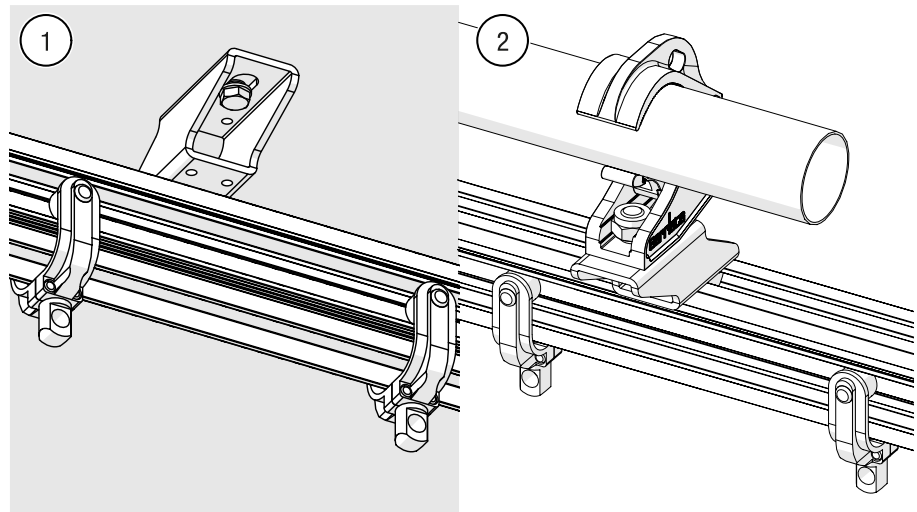


Fig. 3: BELT-TRACK – Suspension variants (left – track suspension brackets exemplary, right G-CLAMP)

Number and designation:

1 Wall mount bracket
250 and 380
incl. fastening elements for
mounting on suspensions
(suspension not included
in delivery)
Item no. 31000 088XX

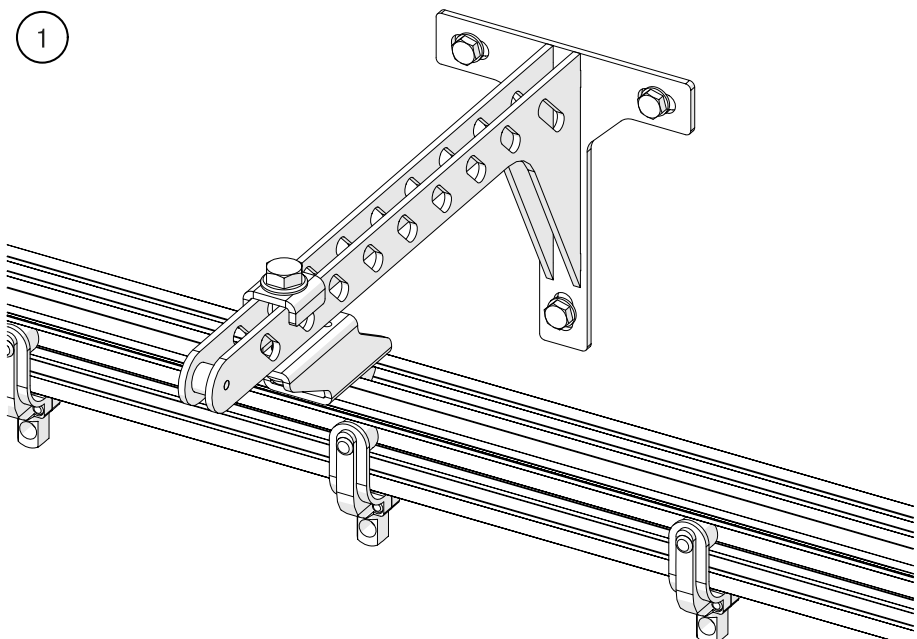


Fig. 4: BELT-TRACK – Wall mount bracket on suspension

2.4 Installation variants

Explanation

The track system is available in single-track and double-track versions. The choice between left and right variants of the drive and deflection units depends on the connection position of the track and the respective installation situation.

The deflection unit shown illustrates the version with integrated belt tensioner. The variant without belt tensioner is available under Item no. 31220 0604X; each in left and right versions.



The audience viewing direction is indicated by the pictogram in the description.

Components of the track system

These are further divided according to the orientation of the following components:



- Motor units (left or right side),
- Deflection units (left or right side)
- Track overlaps (left or right side).



2.4.1 Single-track system



Motor unit (left)

Item no. 31220 06011

Deflection unit with belt tensioner (right)

Item no. 31220 06045



Motor unit (right)

Item no. 31220 06015

Deflection unit with belt tensioner (left)

Item no. 31220 06041



Motor unit (left)

Item no. 31220 06011

Deflection unit with belt tensioner (left)

Item no. 31220 06041



Motor unit (right)

Item no. 31220 06015

Deflection unit with belt tensioner (right)

Item no. 31220 06045



Fig. 5: Installation variants – Single-track system with motor mounted on the left and deflection unit mounted on the right

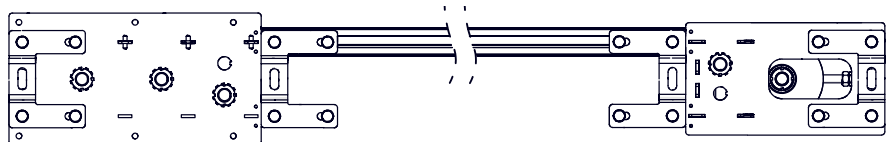


Fig. 6: Installation variants – Single-track system with motor mounted on the right and deflection unit mounted on the left

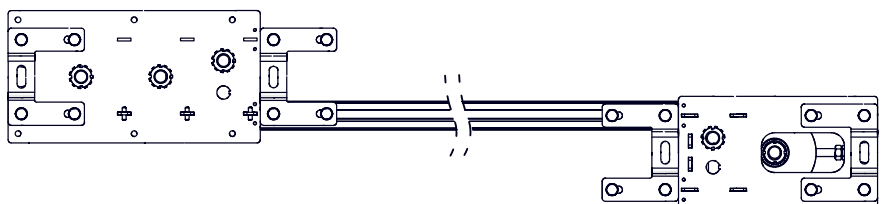


Fig. 7: Installation variants – Single-track system with motor mounted on the left and deflection unit mounted on the left

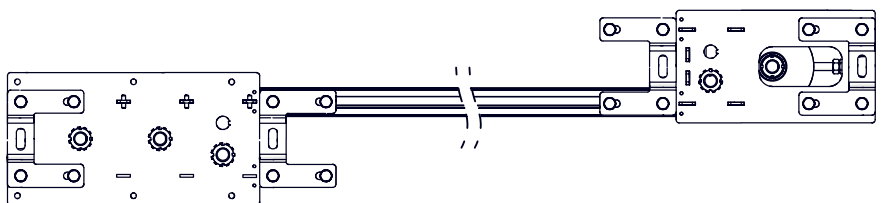
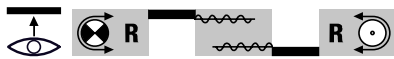


Fig. 8: Installation variants – Single-track system with motor mounted on the right and deflection unit mounted on the right

2.4.2 Double-track system



Motor unit (right) – Item no. 31220 06015

Deflection unit with belt tensioner (right) – Item no. 31220 06045

Crossover unit (right) – Item no. 31220 06061

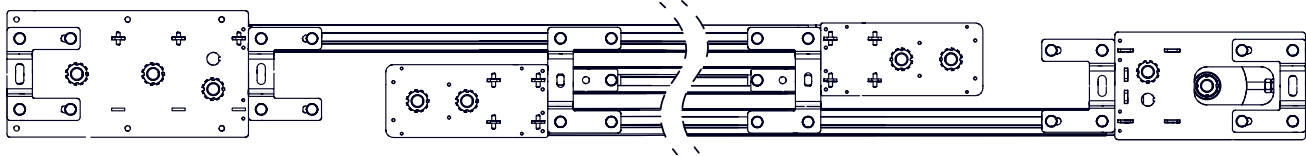


Fig. 9: Installation variants – Double-track system with motor, track overlap, and deflection unit on the right



Motor unit (left) – Item no. 31220 06011

Deflection unit with belt tensioner (left) – Item no. 31220 06041

Crossover unit (left) – Item no. 31220 06051

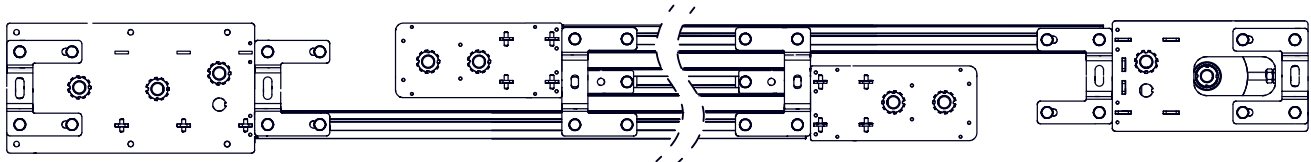


Fig. 10: Installation variants – Double-track system with motor on the left, track overlap on the left and deflection unit on the left

2.5 Master runners and runners

BELT-TRACK master runner
with belt clamp
(illustration right)
Item no. 31220 00011

BELT-TRACK master runner
with belt clamp
Item no. 31220 00011
and overlap arm set right
(illustration left)
Item no. 31220 00255

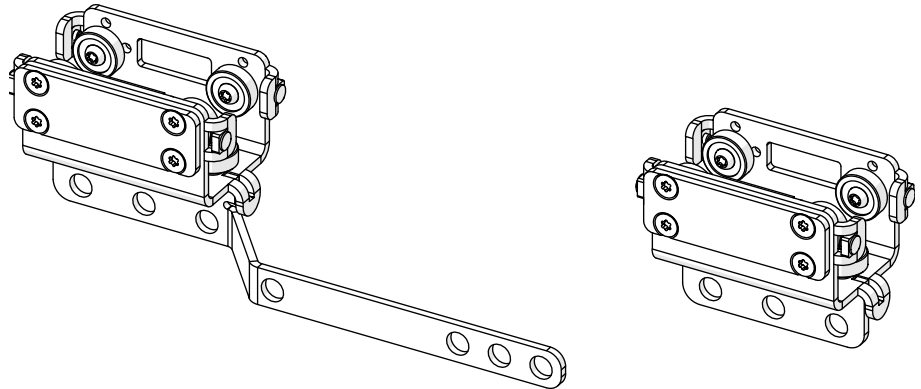


Fig. 11: Master runner with belt clamp and right-side overlap arm (left) and master runner with belt clamp (right)

BELT-TRACK master runner
with coupling to timing belt
Item no. 31220 00075
and overlap arm set left
Item no. 31220 00251

BELT-TRACK master runner
with coupling to timing belt
Item no. 31220 00075

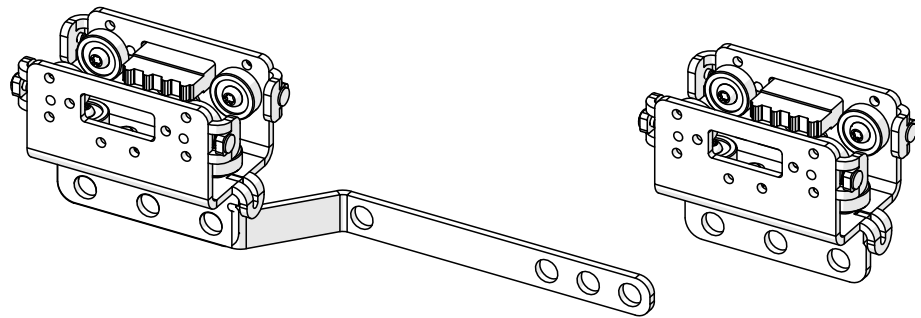


Fig. 12: Master runner with coupling to timing belt and left-side overlap arm (left) and master runner with coupling to timing belt (right)

BELT-TRACK
double-wheel runner:
Item no. 31220 00021

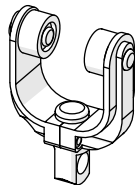


Fig. 13: Double-wheel runner

Scenery runner with coupling
to timing belt
Item no. 31220 00075
(Fig. 14 left)

BELT-TRACK Scenery runner with
belt clamp
Item no. 31220 00073
(Fig. 14 right)

The Scenery runner (see Fig. 14 right) can be ordered as a single unit without the base part. The load below the Scenery runner is suspended from a gimbal bearing, allowing multi-directional movement.

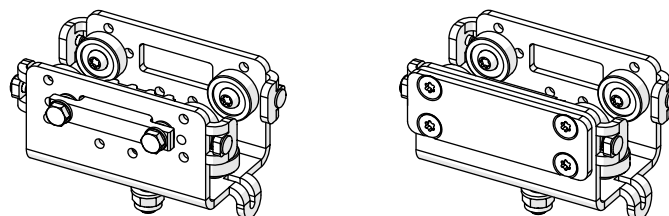


Fig. 14: Scenery runner with coupling to timing belt (left) and Scenery runner with belt clamp (right)

2.6 Drives

2.6.1 BELT-DRIVE in detail

Timing belt path at the motor unit

The timing belt is driven by the motor unit. In the centre of this unit is a drive wheel whose coupling disc has mounting holes for the pins of the motor unit. On the left side there is an adjustment option with which the timing belt tension can be increased after the timing belt has been fully inserted and fastened, so that the system operates without slippage. At the guide bolts, the timing belt is guided into the track profile in the direction of the overlap.

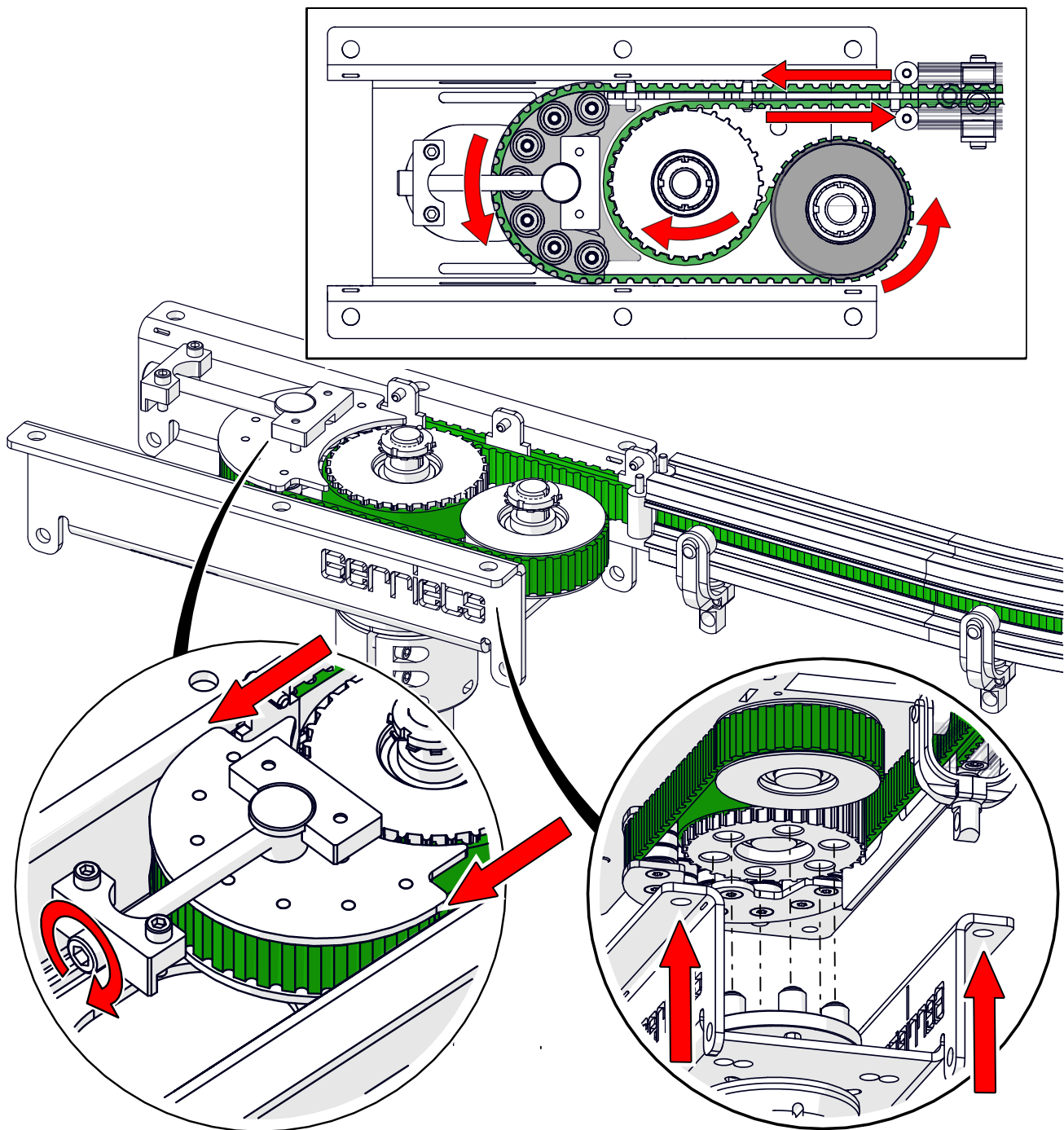


Fig. 15: BELT-DRIVE – Motor unit

Overlap

In the overlap, the timing belt coming from the motor side is deflected in the opposite direction at deflection rollers. A profile part inserted in the centre enables operation via two deflection units on the second track section.

Clamping of the timing belt ends

The belt ends are clamped at the master runner (see Fig. 16 – detail right).

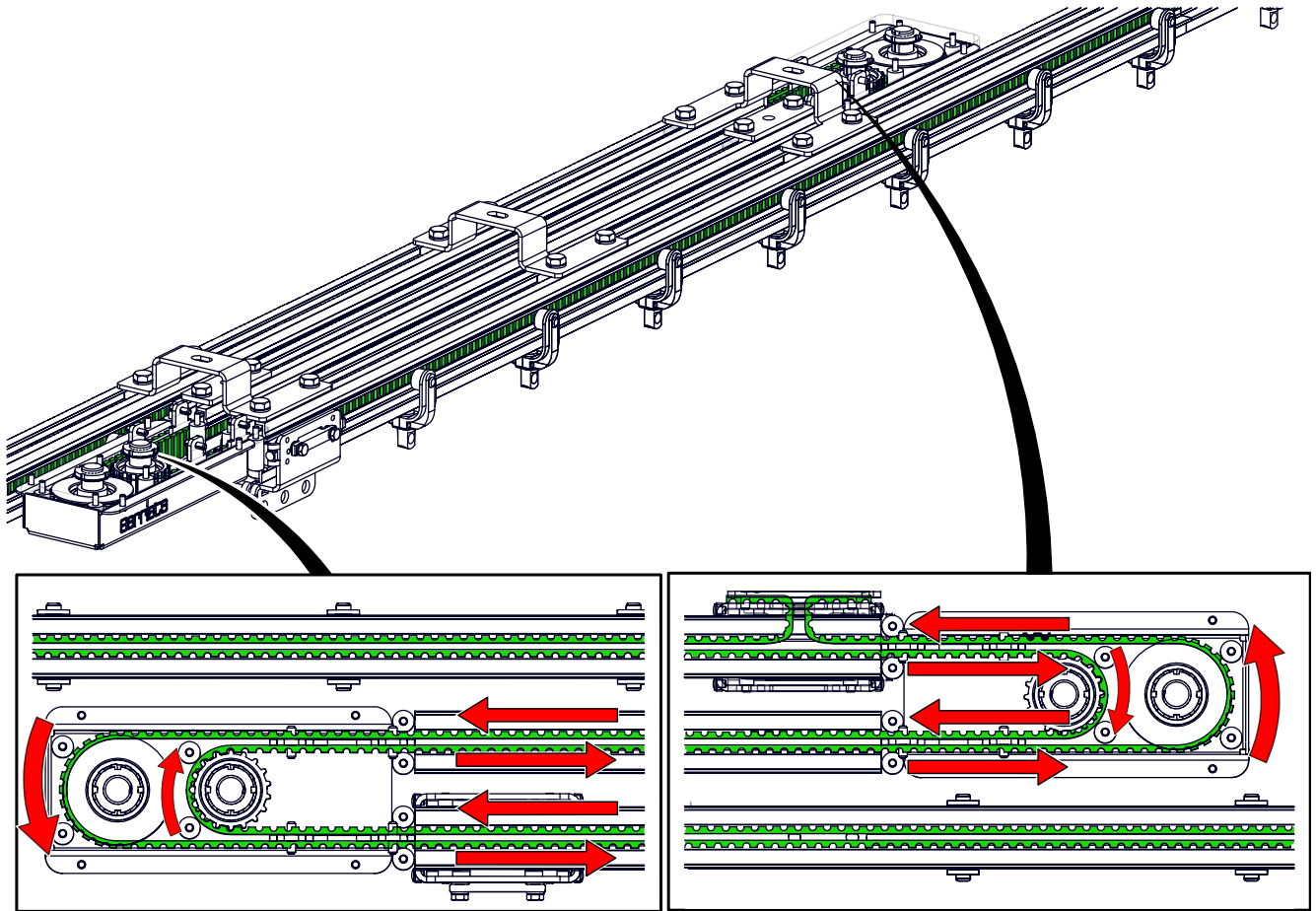


Fig. 16: BELT-DRIVE – Crossover unit

Deflection unit

At the deflection unit, the timing belt is deflected back to the crossover unit.

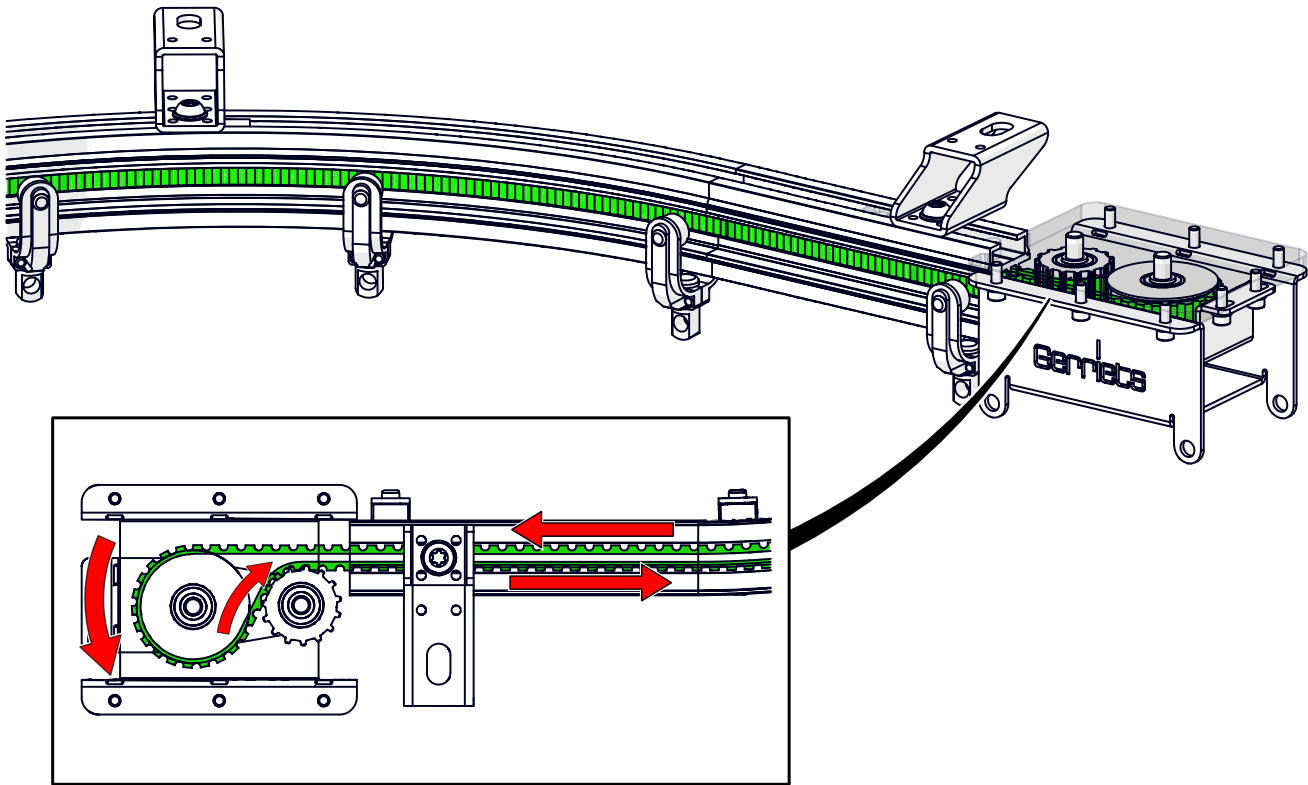


Fig. 17: BELT-DRIVE – Deflection unit

2.6.2 Tubular motor – BT-R

The BELT-DRIVE BT-R (Item no. 31220 0743X) is a compact tubular motor that can be operated without an external control unit.

Control is carried out directly via a wall switch. The motor has two integrated geared limit switches with which the end positions can be set using key combinations (see *Chapter 5.7.2 Setting BT-R limit switches* [► p. 85]). It is suitable for simple applications with uniform movement, e.g. in smaller stage or presentation areas.

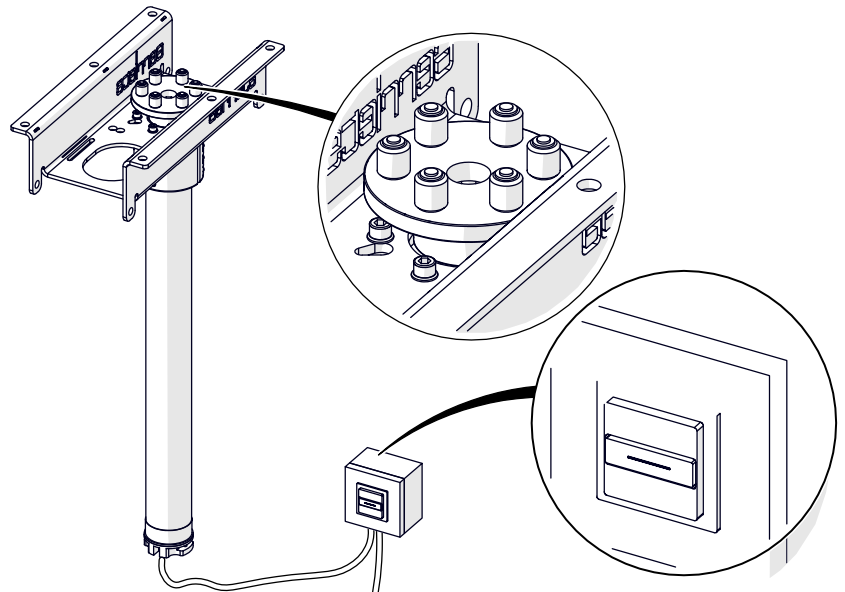


Fig. 18: Tubular motor BT-R with wall switch (shown with surface-mounted cap and cover frame)

2.6.3 Compact geared motor – BT12

The BT12 (Item no. 31220 07443) is a plug-on geared motor for medium loads. It enables a positive drive transmission via the timing belt of the BELT-TRACK system. The motor is equipped with a 4-contact geared limit switch, which ensures reliable end position shutdown.

It is suitable for applications in the theatre and event sector with medium curtain weight and moderate travel distances.

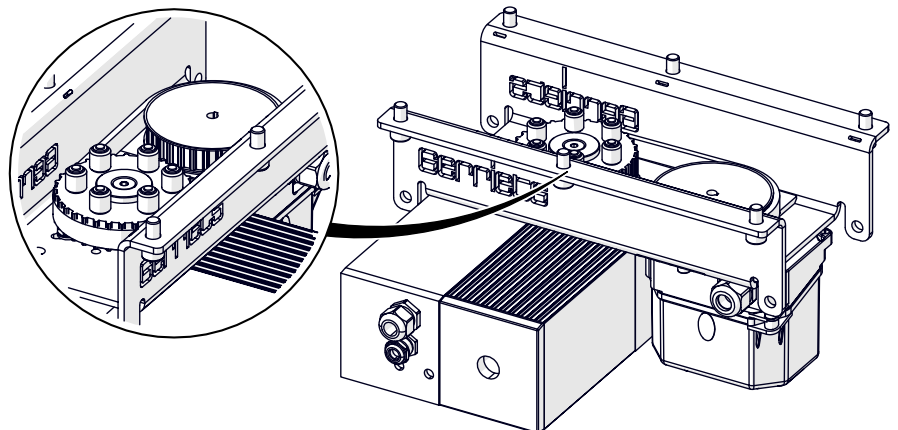


Fig. 19: Compact geared motor – BELT-DRIVE BT12

2.6.4 Compact geared motor – BT30

The BT30 (Item no. 31220 07465) is a powerful plug-on geared motor for long distances and heavy curtain systems. It also uses positive drive transmission equipped with a 4-contact geared limit switch.

Due to its robust design, the BT30 is particularly suitable for professional stages, touring productions, and applications with high traction forces.

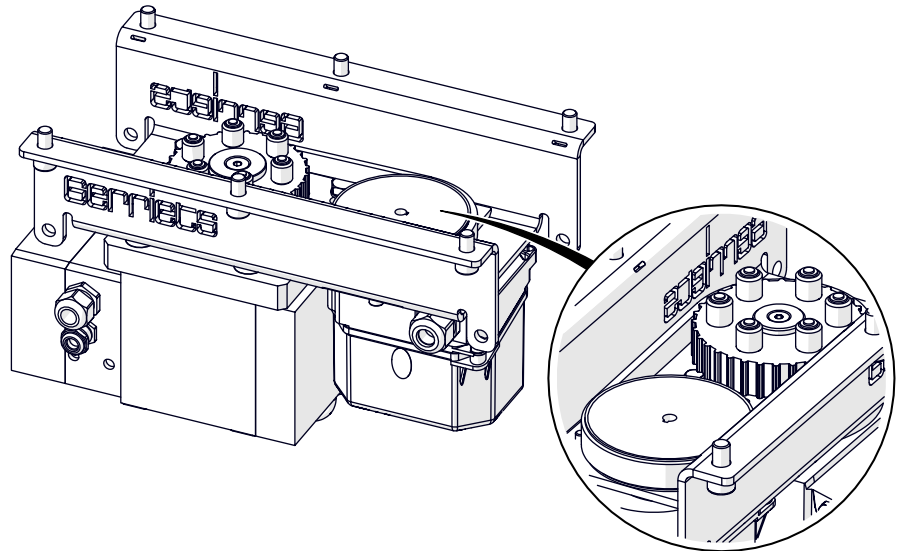


Fig. 20: Compact geared motor – BELT-DRIVE BT30

2.6.5 Motor unit – BT-L

The motor unit BT-L (Item no. 31220 07487) is a compact geared motor with a 6-contact geared limit switch. This enables a two-stage shutdown in which the motor automatically decelerates before reaching the end position.

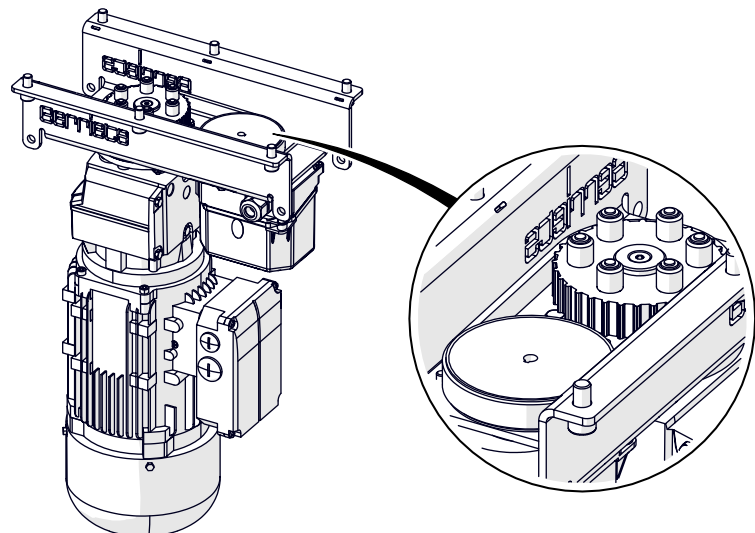


Fig. 21: Geared motor – BELT-DRIVE BT-L

2.6.6 Operating, holding and emergency end positions

The following describes the setting options for motorisation with geared limit switch.

Detailed instructions for setting the switches can be found in *Chapter 5.7.1 Setting the geared limit switches BT12 / BT30 / BT-L* [► p. 82].

The motorisation with tubular motor differs from this scheme and its setting is described in *Chapter 5.7.2 Setting BT-R limit switches* [► p. 85].

4-contact geared limit switch
for BT12 / BT30

The BELT-DRIVE is equipped with geared limit switches at the motor unit. With the 4-contact version, these define the emergency end positions and operating end positions for the open/closed (right/left) directions.

- Operating end positions: **2**/Fig. 22 (closed) and **6**/Fig. 22 (open)
- Emergency end positions: **1**/Fig. 22 (closed) and **7**/Fig. 22 (open)

The emergency limit switches limit the emergency end positions and serve as a safety precaution. They protect the BELT-DRIVE and the track system from damage that could occur, for example, from overrunning the operating limit switches due to a defect.

6-contact geared limit switch
for BT-L with pre-end position
and ramp function

For drives with higher speed, such as the BT-L, a geared limit switch with 6 contacts can be used. This additionally enables the setting of pre-end positions (**3**/Fig. 22 – closed or **5**/Fig. 22 – open).

These pre-end positions enable ramp operation, in which the speed is reduced before reaching the operating end position (see diagram Fig. 22 below). This allows the drive to stop more gently and in a material-friendly manner. The ramp can be adjusted individually according to requirements.

Digital control with encoder units

In addition, intermediate positions can be controlled via encoder units (**4**/Fig. 22).

Limit switch positions

- 1 Emergency limit switch (closed)
- 2 Operating limit switch (closed)
- 3 Pre-operating limit switch (6-contact; closed)
- 4 Intermediate position(s) (with encoder unit)
- 5 Pre-operating limit switch (6-contact; open)
- 6 Operating limit switch (open)
- 7 Emergency limit switch (open)

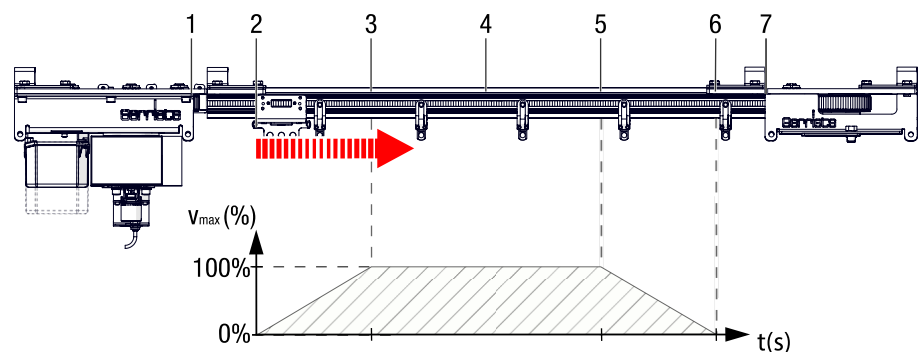


Fig. 22: Track system BELT-TRACK – Limit switches

Geared limit switch setting for BT12, BT30

After opening the limit switch box, the geared limit switches are accessible. These enable the setting of emergency and operating end positions.

Adjustment is carried out using an adjustment screw (2/Fig. 23), which moves the cam disc (3/Fig. 23) towards the fixed switching contact (1/Fig. 23). This defines the desired travel distance.

When turning the adjustment screw, the cam disc rotates so that its flank presses against the limit switch contacts.

The 4-contact geared limit switches have a total of five adjustment screws:

- Two for the emergency end positions (open/closed),
- two for the operating end positions (open/closed),
- a central adjustment screw with which all positions can be adjusted together as a block.

BT-L (6-contact with pre-end)

The 6-contact geared limit switch has two additional adjustment screws for setting the pre-end positions.

These enable a ramp function that allows the drive to transition smoothly into the operating end position. The ramp starts from maximum speed.

Number and designation:

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

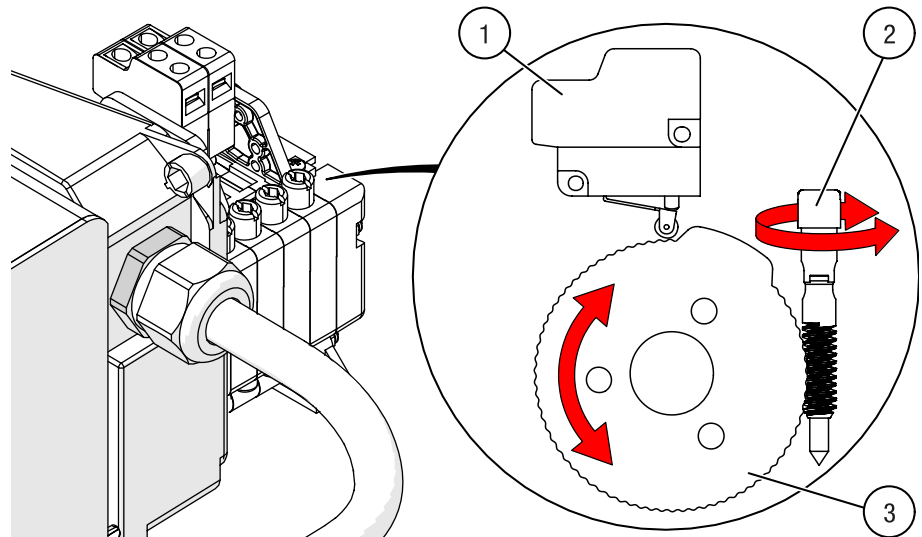


Fig. 23: Geared limit switch – Setting the cam disc

Geared limit switch BT-R

The limit switches are integrated in the tubular motor BT-R and can be programmed via key combinations (see also *Chapter 5.7.2 Setting BT-R limit switches* [► p. 85]).

2.6.7 Encoder units

Description

The encoder unit in the BELT-TRACK track system from Gerriets precisely detects the position and speed of the drive motor of the BELT-DRIVE. It continuously provides digital feedback to the control unit to ensure exact movement and positioning of the moving element (e.g. curtain, scenery) along the track. This enables smooth acceleration, precise stop points and reliable synchronisation during show sequences or automated scene changes.



Standard Gerriets encoder units are supplied pre-assembled and pre-wired. If your system requires a customer-specified encoder, please provide the relevant information in advance. We will make the necessary arrangements.

Number and designation:

- 1** Encoder unit BT12
Item no. 31220 07943
- 2** Encoder unit BT30
Item no. 31220 07945
- 3** Encoder unit BT-L
Item no. 31220 07947

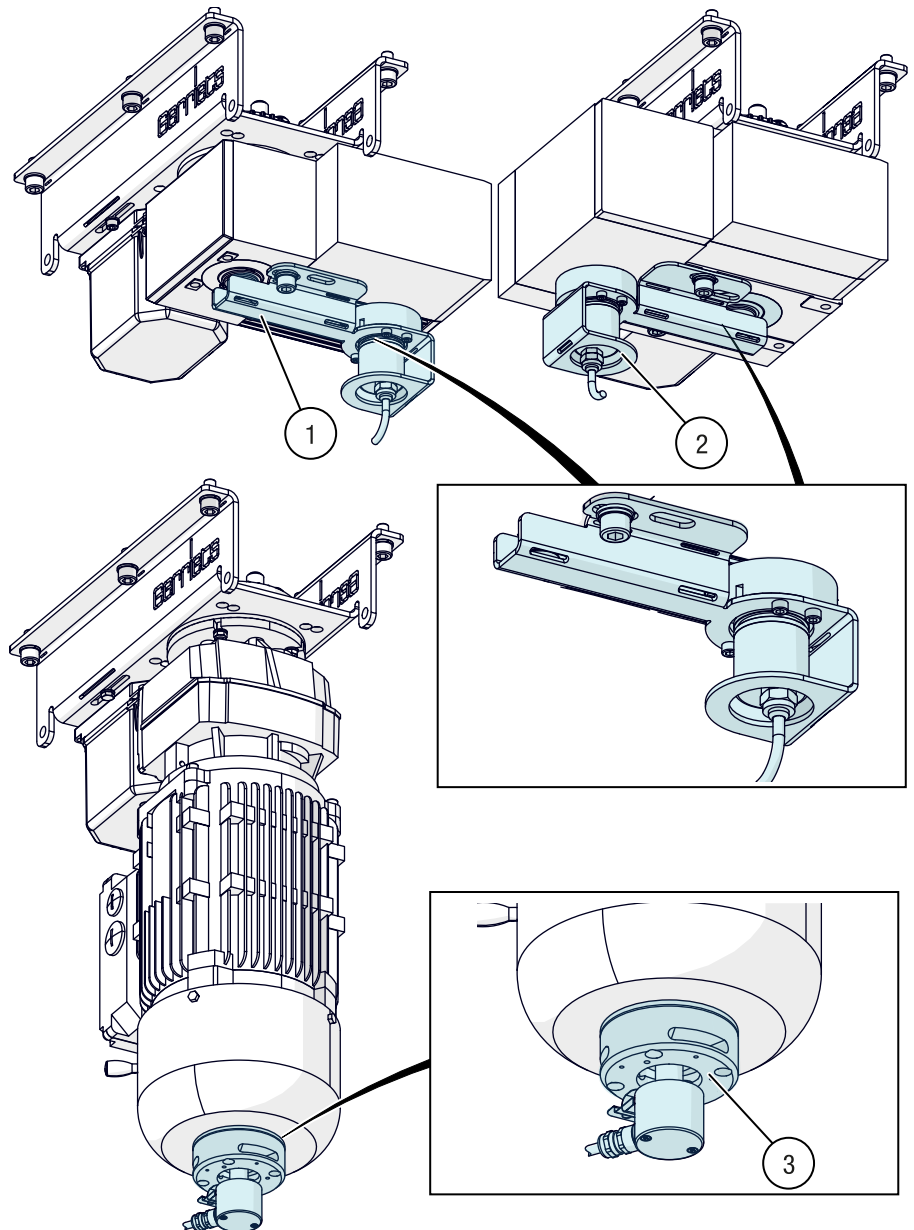


Fig. 24: BELT-DRIVE – Encoder units

2.7 Control unit

Various G-FRAME control units and matching accessories are available for BELT-TRACK drives.

Further information is available at www.gerriets.com or from Gerriets specialist staff.

2.7.1 G-FRAME 54 control

The G-FRAME 54 control unit is used to control the motorised track system. It enables the curtain or scenery material to be moved along the track and, with appropriate configuration, the travel speed to be adjusted. The control unit can be integrated into a 19-inch rack, mounted on a wall or placed on a surface (see *Chapter 5.6.1 Setting up G-FRAME control* [► p. 74]). Depending on the version, the control unit is available for fixed or variable travel speed. With the fixed speed version, the potentiometer (5/Fig. 25) is omitted.

Number and designation:

- 1 'ON' indicator light
- 2 'Open' button
- 3 'STOP' button
- 4 'Close' button
- 5 Potentiometer for speed (only with frequency inverter control)
- 6 Emergency stop switch
- 7 Internal/DMX selector switch
- 8 Main circuit breaker

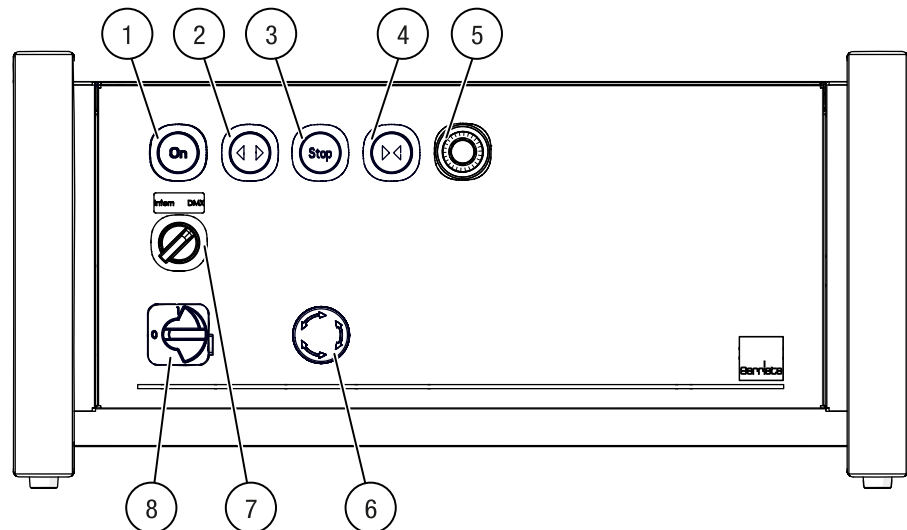


Fig. 25: Front – G-FRAME 54 control unit

Explanation of push buttons and switches

- 'ON' indicator light (1/Fig. 25): Shows the operating status of the control unit.
- 'Open' button (2/Fig. 25): The system moves in the 'Open' travel direction.

During movement, the activated travel button ('Open' or 'Close') flashes until the corresponding limit switch is reached, then remains continuously illuminated.

- 'Close' button (4/Fig. 25): Moves the system in the opposite direction.
- 'STOP' button (3/Fig. 25): Stops the movement immediately.
- Potentiometer (5/Fig. 25): Enables the travel speed to be reduced compared to the maximum speed.
- Emergency stop switch (6/Fig. 25): Disconnects the control unit from the mains in an emergency.
- Internal/DMX selector switch (7/Fig. 25): Selects between local operation and external control.

External control options	The system can alternatively be controlled externally. A selector switch on the front enables the selection between internal control and DMX operation. In addition, it is possible to request a special control unit with a secondary remote control panel. For DMX operation, an external emergency stop button must be connected. All necessary measures must also be taken to ensure intended operation (see <i>Chapter 10.1.1 Intended use</i> [► p. 97]).
DMX extension:	The following DMX extension options are available for the G-FRAME 54:
Variant 1 – Item no. 31800 09111	DMX card with functions: OPEN / CLOSE
Variant 2 – Item no. 31800 09121	DMX card with functions: OPEN / CLOSE and speed.
Variant 3 – Item no. 31800 09131	DMX card with functions OPEN / CLOSE, speed, and control of max. 3 intermediate positions.

2.7.2 DMX control (hardware and software)

	The G-FRAME control unit can be extended with appropriate DMX modules to enable control via the DMX protocol.
DMX address	For communication with an external DMX controller, a DMX start address must be assigned to the BELT-TRACK control unit. A cover over the red rotary switches on the DMX card is located on the rear of the G-FRAME control unit. The DMX address can be set to the desired value on these (see <i>Chapter 5.7.4 Setting DMX channel</i> [► p. 88]). The DMX control unit is connected to the DMX input at the rear. The BELT-TRACK control units support the protocols DMX512, DMX512-A and RDM. The control unit can be addressed using commercially available DMX controllers. The default setting is address 001 for the start channel.
DMX addresses and commands	Start address: Open Start address +1: Close Start address +2: Speed Start address +3: Position 1 Start address +4: Position 2 Start address +5: Position 3
	 Please note that when the BELT-TRACK track system is controlled via DMX, conformity with the Machinery Directive 2006/42/EC no longer applies. The operator is obliged to take measures to ensure safety (see also <i>Chapter 10.1.1 Intended use</i> [► p. 97]).
DMX status LED	When the status LED next to the address switch lights up green, the system is ready for DMX operation. If the status LED lights up red, there is a fault (e.g. DMX cable not plugged in; see also <i>Chapter 8 Troubleshooting</i> [► p. 94]).

Remote Device Management (RDM)

RDM extends the DMX512 protocol by enabling bidirectional communication between the controller and the device.

The master device can assign DMX addresses to selected devices.



When connected to an RDM master, the manually set DMX address may be ineffective.

The control unit can be reset by setting the start address to 900.

2.8 Accessories and spare parts

2.8.1 Mechanical and electrical

! NOTICE

Property damage due to non-genuine spare parts and accessories

Use of parts from other manufacturers can impair the proper function of the BELT-TRACK track system and lead to damage to the product or third-party property.

➔ Only use original parts and accessories from Gerriets GmbH.

Number and designation:

- 1 G-CLAMP 48/60 incl.
fastening elements
Item no. 31000 08091
- 2 BELT-TRACK belt
Item no. 31220 0090X
- 3 Curtain hook
Item no. 31000 09012
- 4 Control/supply cable for
fixed/variable speed
fixed: Item no. 31900 004X01
var.: Item no. 31900 03X01
- 5 BELT-TRACK
connecting pins
(20 pins pack size)
Item no. 31220 09115
- 6 BELT-TRACK
suspension T-slot nut
Item no. 31220 00113
- 7 Emergency stop button for
DMX operation
Item no. 24800 08011
- 8 BELT-TRACK
Insert T-slot nut
Item no. 31220 00144
- 9 TRAC-DRIVE 2. Remote control
panel for variable/fixed speed
Item no. 31800 0X02X

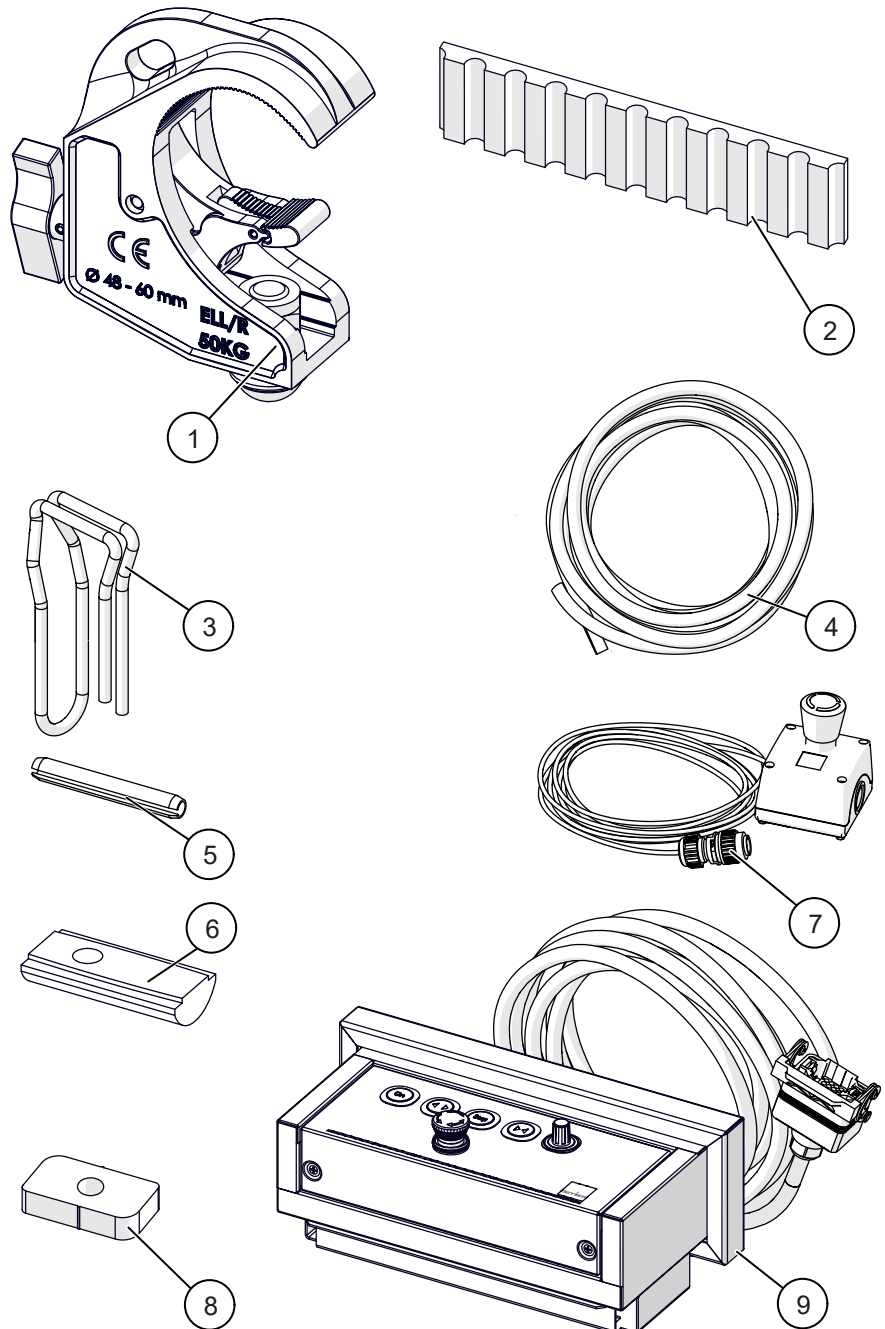


Fig. 26: Accessories – Track system BELT-TRACK

3 Technical data

3.1 Ambient conditions

Ambient conditions and operating parameters

Parameter	Value
Permissible ambient temperature	Room temperature
Humidity/moisture	Not suitable for use in humid/wet environments

Tab. 1: Track system – Ambient conditions and operating parameters

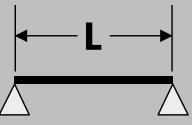
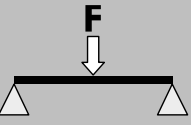
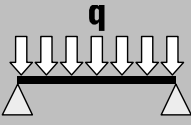
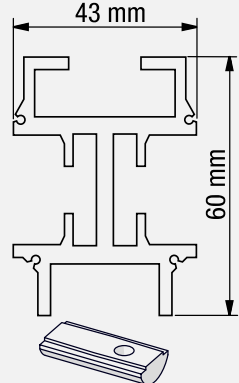
3.2 Track system

Mechanical data track system

Parameter	Value
Weight	1920 g/m
Profile cross-section dimensions	See Tab. 3
Profile length	Max. 6.0 m (approx. 20 ft)
Colour variants	Black, silver, and custom colours
Load capacity	See Tab. 3
Mounting	According to specification
Min. bending radius track	0.5 m (19.6")
Maximum system length	36 m

Tab. 2: Track system – Mechanical data

3.2.1 Permissible load with standard T-slot nut

Suspension spacing [m]	Point load [kg]	Line load q [kg/m]	Distributed total load [kg]	Track profile cross-section [mm]
				
2.00 m	75 kg	47 kg/m	94 kg	
1.75 m	85 kg	53 kg/m	93 kg	
1.50 m	85 kg	62 kg/m	93 kg	
1.25 m	85 kg	75 kg/m	94 kg	
1.00 m	85 kg	94 kg/m	94 kg	
0.50 m	85 kg	187 kg/m	94 kg	

Tab. 3: Permissible load – Track with standard T-slot nut

3.3 Runners and master runners

Mechanical data

Parameter	Value
Required stowage space	Depending on curtain attachment, runner spacing, and master runner variant; see following drawings.
Overlap of curtain sections at the master runners	Master runner with single-sided overlap arm: approx. 350 mm (see Fig. 31)
Load capacity double-wheel runner	15 kg
Load capacity master runner	35 kg
Load capacity Scenery runner	35 kg
Runner spacing	Standard approx. 200 mm; project-specific deviations possible.

Tab. 4: Runners and master runners BELT-TRACK – Mechanical data

Dimensions – double-wheel runner
Item no. 31220 00021

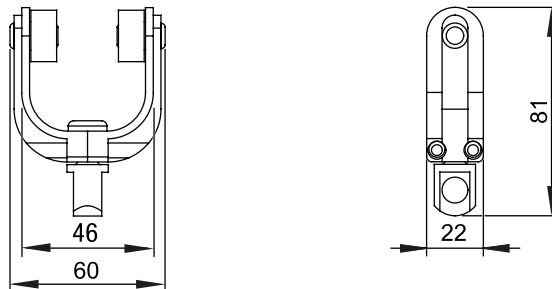


Fig. 27: Dimensions – Double-wheel runner

Dimensions – Master runner
Item no. 31220 0001X

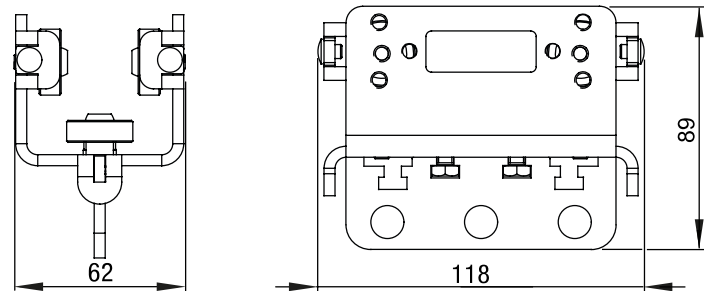


Fig. 28: Dimensions – Master runner

Dimensions – Scenery runner
Item no. 31220 0007X

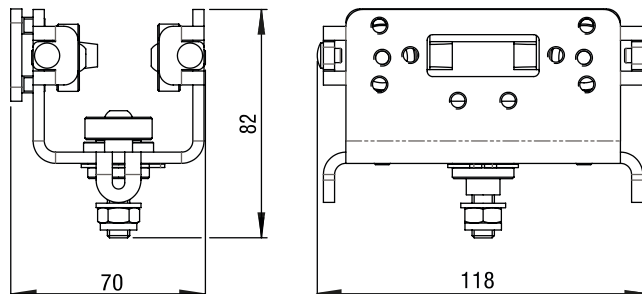


Fig. 29: Dimensions – Scenery runner

Dimensions – Master runner with
single-sided overlap arm
Item no. 31220 0025X

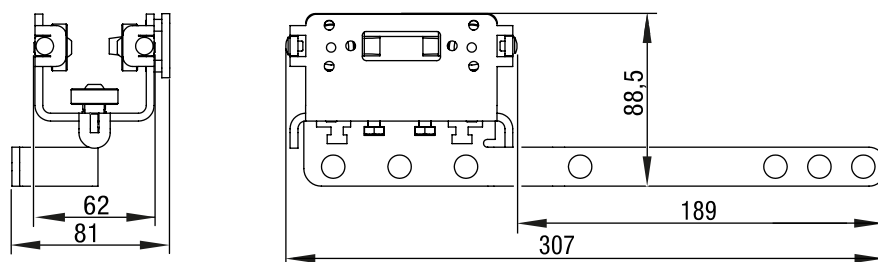


Fig. 30: Dimensions – Master runner with overlap arm

Overlap – Two master runners
with overlap arm

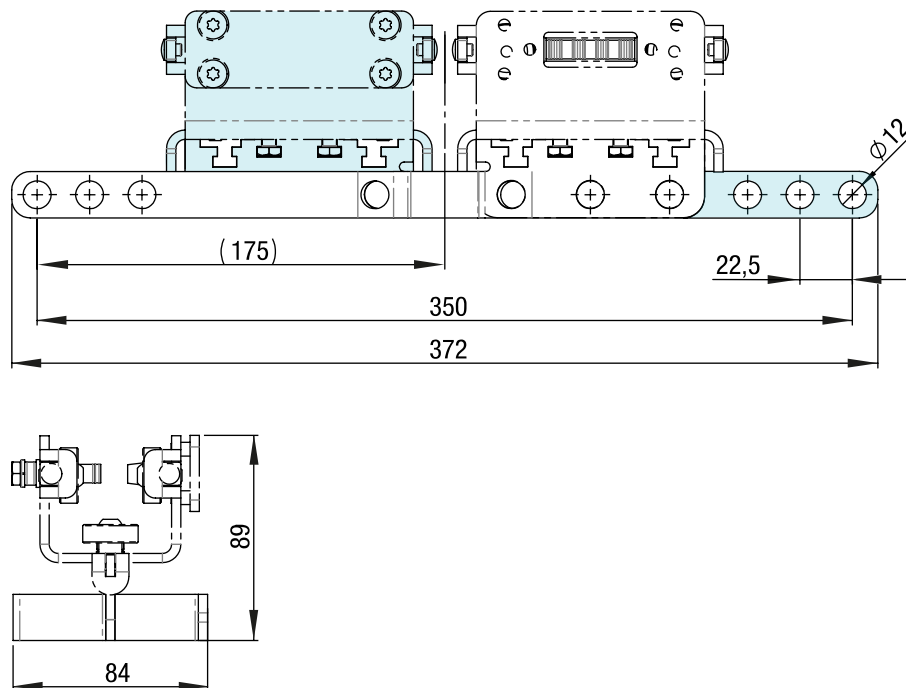


Fig. 31: Dimensions – Overlap

Mechanical data deflection units

31

Dimensional drawing of
the deflection unit
Item no. 31220 0604X

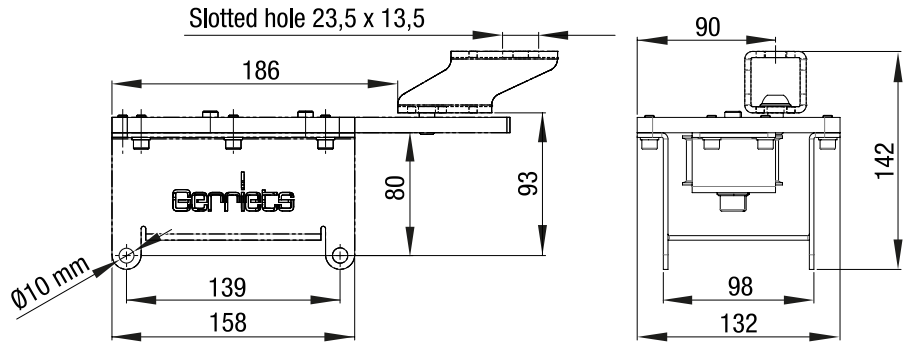


Fig. 34: Dimensions – Deflection unit

3.4.2 Crossover unit

Mechanical data crossover unit

Parameter	Value
Version	Left/right
Components	2 × deflection unit, 1 × BELT-TRACK overlap profile section, 1 × central bearing/suspension
Standard overlap	1000 mm
Installation length	1510 mm
Required installation space	200 mm
Weight	13.4 kg (standard crossover unit 1000 mm)
Special length	According to order / customer-specific requirements
Mounting	Via deflection units and central suspension according to mounting variant

Tab. 6: Crossover unit BELT-TRACK – Mechanical data

Dimensional drawing

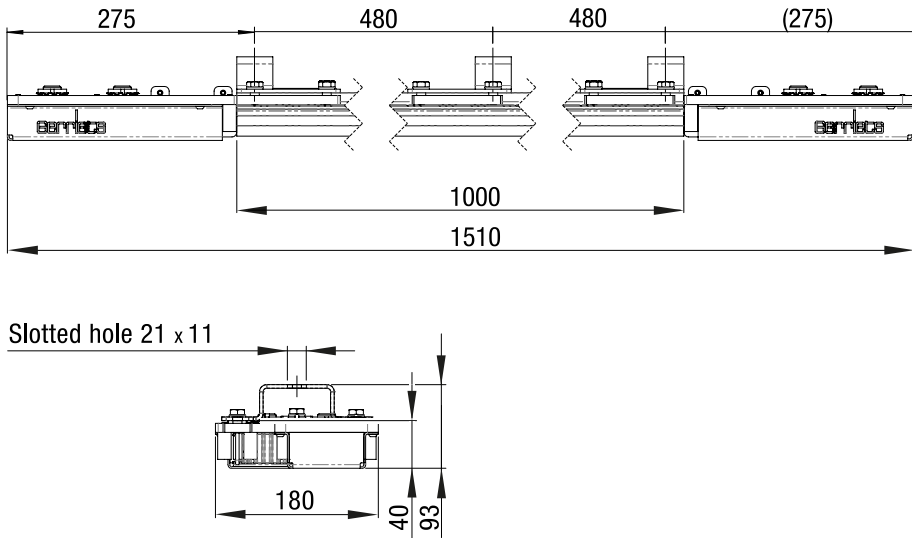


Fig. 35: Dimensions – Crossover unit

3.5 Motorisation

3.5.1 Mechanical data

Mechanical data

Parameter	Value
Weight depending on variant	BT-R – 17.3 kg BT-L – 20.0 kg BT12 – 13.2 kg BT30 – 16.0 kg
Dimensions / required installation space	See Fig. 36, Fig. 37, Fig. 38 and Fig. 39.
Mounting	Dedicated screw holes on the sheet metal for mounting on the deflection unit for BELT-DRIVE units

Tab. 7: Motors BELT-TRACK – Mechanical data

Dimensions – BT12

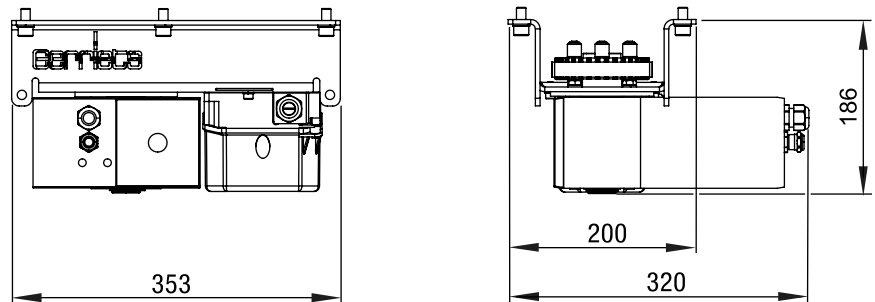


Fig. 36: Dimensions – Motor BT12

Dimensions – BT30

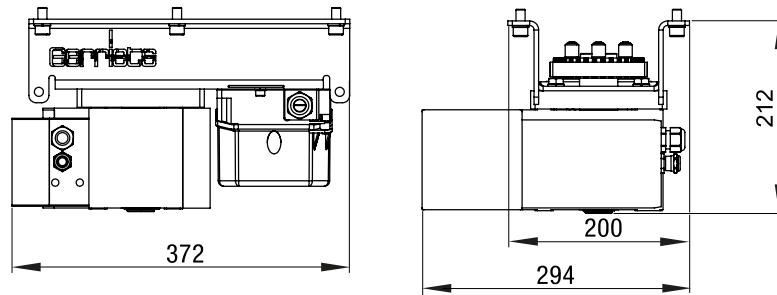


Fig. 37: Dimensions – Motor BT30

Dimensions – BT-L

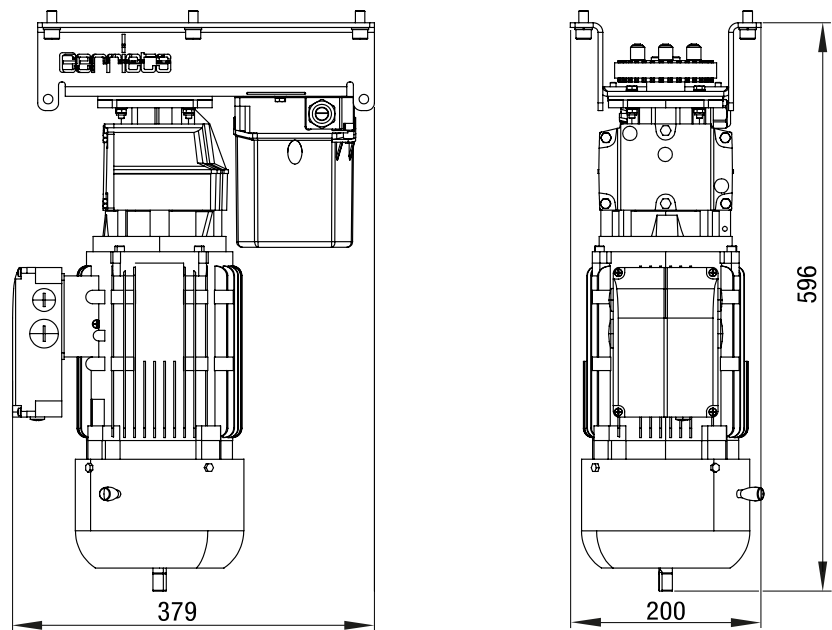


Fig. 38: Dimensions – Motor BT-L

Dimensions – BT-R

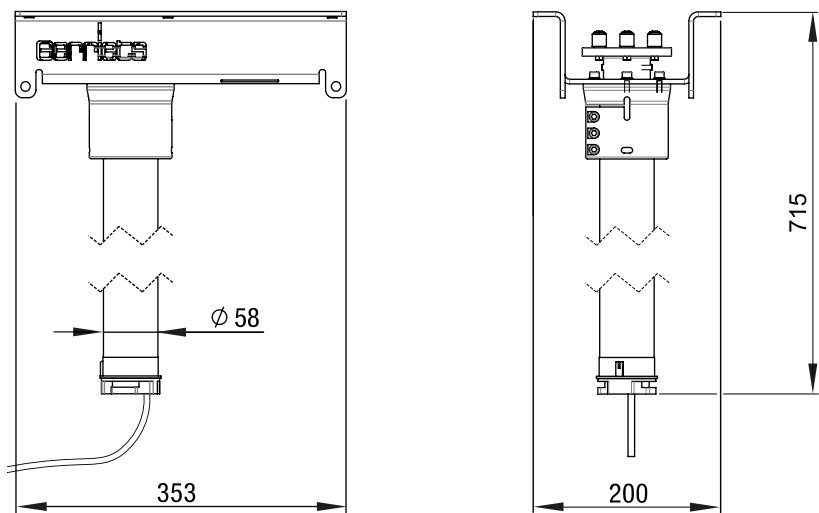


Fig. 39: Dimensions – Motor BT-R

3.5.2 Electrical data

Tubular motor BT-R

Parameter	Value
Power supply	230 V AC, 50 Hz
Electric drive	Electric motor with electronic end shutdown (230 V AC)
Protection rating	IP44
Traction force	800 N / 400 N
Pull speed	Max. 20 cm/s or 40 cm/s (model-dependent)
Motor torque	20–40 Nm (depending on gear ratio and speed)
Motor speed	32 rpm (variant 20 cm/s) / 75 rpm (variant 40 cm/s)
Motor rated power	Approx. 275 W
Motor rated current	Approx. 1.25 A
Max. operating time	4 min
Limit switch	Electronic

Tab. 8: Electrical data – BT-R

Compact geared motor BT12

Parameter	Value
Power supply	3 × 230 V / 400 V AC
Electric drive	Worm gear motor
Protection rating	IP54
Electrical connection	Connection by qualified personnel to G-FRAME 54 Item no. 31800 0301X
Traction force	800 N
Pull speed	Max. 30 cm/s
Motor torque	39.5 Nm
Motor speed	68 rpm
Operating mode / motor duty cycle	0.4 (Short-time operation, constant load)
Motor rated current	1.25 A
Motor rated power	400 W
Limit switch setting	Geared limit switch

Tab. 9: Electrical data – BT12

Compact geared motor BT30

Parameter	Value
Power supply	3 × 230 V / 400 V AC
Electric drive	Worm gear motor
Protection rating	IP54
Electrical connection	Connection by qualified personnel to G-FRAME 54 Item no. 31800 0301X
Traction force	1200 N
Pull speed	Max. 60 cm/s
Motor torque	60 Nm
Motor speed	123 rpm
Operating mode / motor duty cycle	0.4 (Short-time operation, constant load)
Motor rated current	2.5 A
Motor rated power	1100 W
Limit switch setting	Geared limit switch

Tab. 10: Electrical data – BT30

Motor unit BT-L

Parameter	Value
Electrical data (power supply)	3 × 230 V / 400 V AC
Electric drive	Spur gear motor
Protection rating	IP55
Electrical connection	Connection by qualified personnel to G-FRAME 54 Item no. 31800 0301X
Traction force	1040 N
Pull speed	Max. 90 cm/s
Motor torque	124 Nm
Motor speed	196 rpm
Operating mode / motor duty cycle	1 (Short-time operation, constant load)
Motor rated current	4.12 A
Motor rated power	1100 W
Brake torque	10 Nm
Brake supply voltage	230 V
Brake coil voltage	205 V
Limit switch setting	Geared limit switch

Tab. 11: Electrical data – BT-L

3.6 Control unit

3.6.1 G-FRAME 54 control unit

Refer to the order documents for your product.

Mechanical data

Parameter	Value
Weight	According to version
Dimensions	See Fig. 40 and Fig. 41

Tab. 12: Mechanical data – G-FRAME 54 control unit

Dimensions: Front view

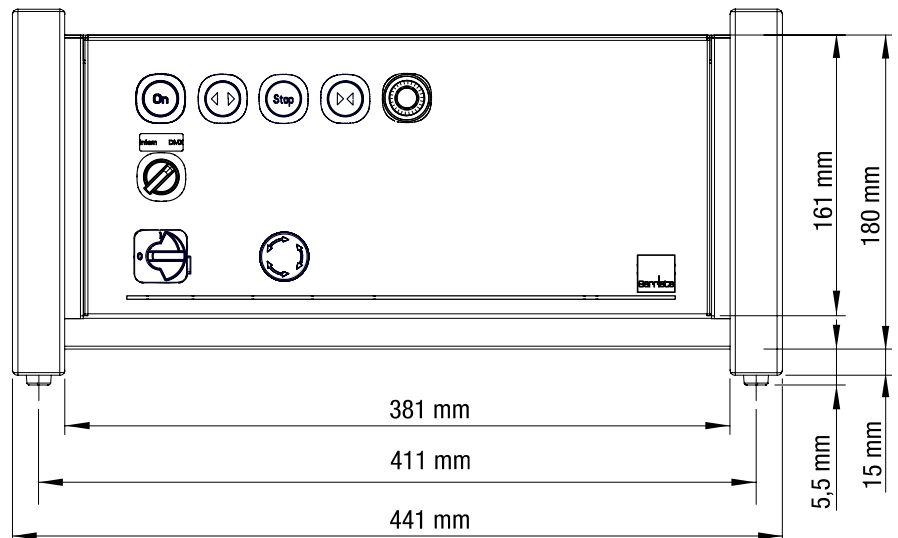


Fig. 40: Front view – G-FRAME 54 control unit (exemplary)

Dimensions: Side view

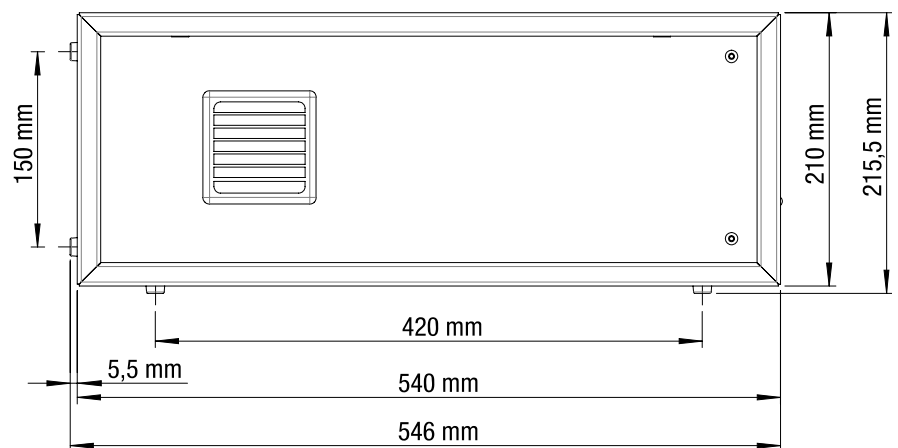


Fig. 41: Side view – G-FRAME 54 control unit (exemplary)

Electrical data

Parameter	Value
Electrical data	3 × 230 / 400 V AC – 50 Hz
Protection rating	IP40
Electrical connection	Direct wiring

Tab. 13: Electrical data – Control unit G-FRAME 54

4 Transport

4.1 Notes on transport



- Check the packaging immediately upon receipt for transport damage. Report visible damage immediately.
- Then check the delivery against the delivery note for completeness.
- Report missing or damaged parts immediately.
- Keep the original packaging for later transport or storage.
- Observe the safety instructions in *Chapter 10 Safety* [► p. 97].
- Conduct a visual inspection after each transport and periodically during the product life cycle.



WARNING

Personal injury and property damage due to incorrectly performed or improper transport



Incorrectly performed or improper transport can cause goods to fall and lead to personal injury or property damage.

- Wear necessary personal protective equipment (safety shoes, gloves).
- Use suitable aids or carrying devices (e.g. lifting equipment or carrying straps).

5 Installation

- Observe the safety instructions in *Chapter 10 Safety* [► p. 97].
- Observe the maximum load capacities and suspension spacings from *Chapter 3.2 Track system* [► p. 28].
- Select the T-slot nuts used according to the permissible load capacities (see tables in *Chapter 3.2 Track system* [► p. 28]).
- Observe the installation notes according to *Chapter 5.1 Installation notes / Track system* [► p. 40].
- Plan the required mounting material according to your ceiling or wall construction.
- The screw drives may vary due to internal processes (TORX® / hexagon socket).
- Screw tightening torques can be found in the installation steps or in *Chapter 12.1 Screw tightening torques* [► p. 104].
- Always conduct installation steps such as ceiling mounting of the pre-assembled track system with two people.
- Ensure that assembly aids are positioned securely.
- Protect the curtain with plastic sheeting from contamination by surrounding construction work during longer installation interruptions.
- Before installing the runners, ensure that the tracks are free from drilling dust and dirt.
- If you encounter problems during installation that you cannot resolve yourself, please call us.



Notes on safety



DANGER

Risk of death from electrical voltage

When working on the electrical installation, there is a risk of death from high voltages.

- Never open the housing while it is connected to a power source.
- Ensure that the system is de-energised before working on or in the terminal box.
- Ensure that work on the electrical installation is carried out exclusively by qualified specialist personnel.
- Switch off the power supply immediately if damaged and arrange for repair.
- Keep moisture away from live parts.
- Never bypass the fuses or put them out of operation.



WARNING

Personal injury and property damage due to falling objects

Insufficient load capacities in the ceiling construction or individual components can cause objects to come loose and fall, resulting in death, severe injury, or property damage.

- ➔ Observe the load capacities of the overall system and individual components.
- ➔ Only install the system on a sufficiently load-bearing substrate or substructure.
- ➔ Do not make any modifications, additions, or conversions to the product unless these have been approved by Gerriets.
- ➔ Ensure that loads to be fastened are secured against falling even during installation.
- ➔ Assemble the screw connections of the parts using the specific installation instructions and torques.
- ➔ Always insert locking elements such as rings, clips, and pins correctly and check their effectiveness.
- ➔ If you are unsure about the purchased system, contact Gerriets GmbH.

5.1 Installation notes / Track system

- ➔ Fasten the suspension points at intervals no greater than those calculated for the order, up to a maximum of 2.0 m.
- ➔ Always fasten a suspension near deflection units, drives and other components that generate higher loads.
- ➔ Ensure that the substrate for mounting the suspension points is as level as possible. Use aids such as cross and line lasers to determine mounting positions. Deviations can be compensated with shims.

Distance of suspensions to the joint

In the joint area between two track ends, the load capacity of the track system is lower.

- ➔ Fasten a suspension point on one side so that the distance from the centre of the suspension to the joint is no more than 10 cm (see Fig. 42).

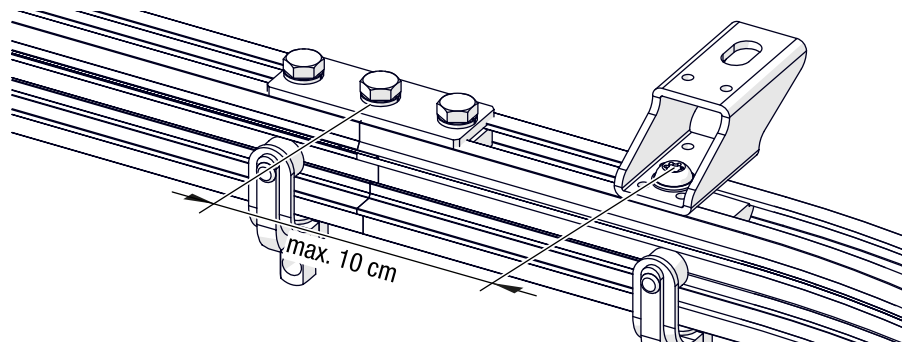


Fig. 42: Suspension distance to the joint

5.2 Installing the track system

5.2.1 Track splices

Required materials / tools

Quantity	Materials / tools
1	Hammer (not included in delivery)
1	Pipe wrench (not included in delivery)
1	Hexagon open-ended spanner AF 17 (not included in delivery)
1	BELT-TRACK track splice (including four connecting pins) – Item no. 31220 00061
2	BELT-TRACK track sections

Tab. 14: Required materials and tools for installing the track splices

Installing connecting pins

1. Compress the connecting pins slightly conically with a pipe wrench and insert them into the designated centre holes (see Fig. 43).

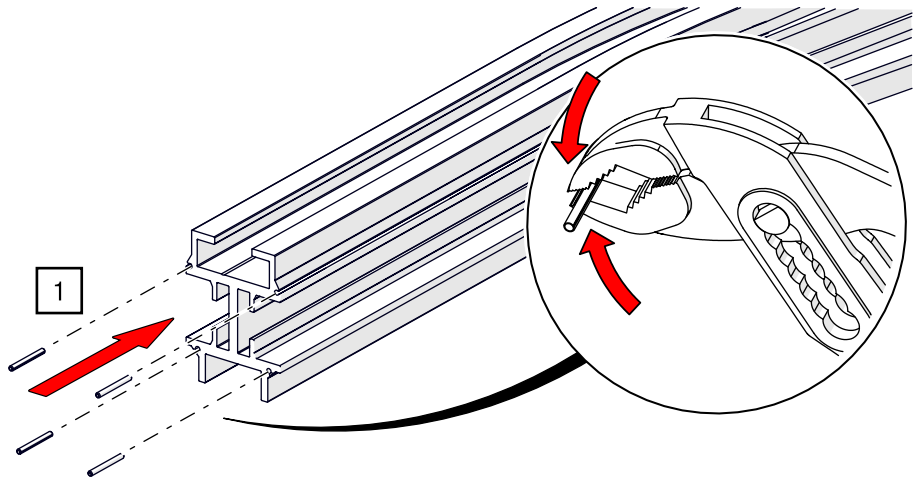


Fig. 43: Track splice – Insert connecting pin into the track section

2. Carefully hammer the connecting pins halfway into the track (see Fig. 44).



For easier connection of the track profiles, it is helpful to drive the connecting pins to different depths.

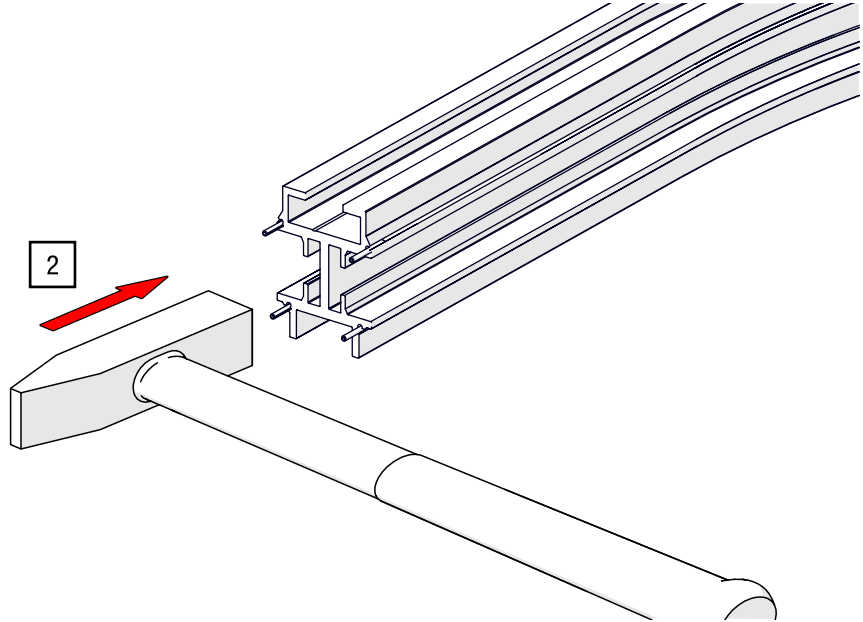


Fig. 44: Track splice – Hammer in connecting pin

Inserting the track splice

3. Slide the pre-assembled track splice completely into the slot channel of a track section (see Fig. 45).

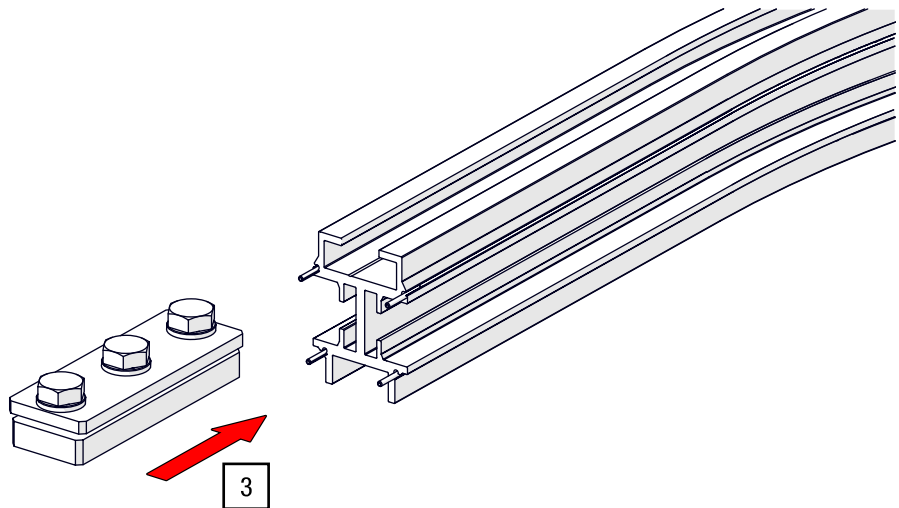


Fig. 45: Track splice – Insert into the track

Connecting track sections

4. Place the second track section onto the connecting pins and position it flush with the first track section (see Fig. 46).

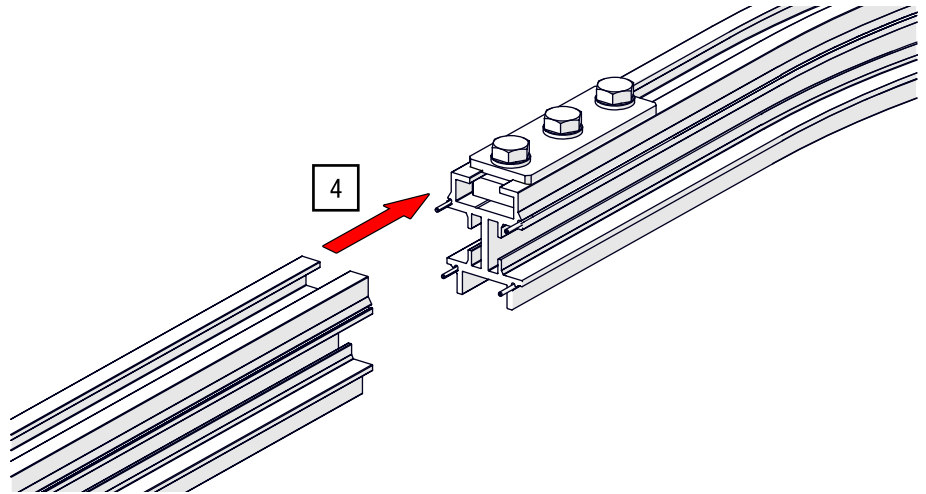


Fig. 46: Track splice – Join track sections together

5. Move the track splice centrally onto the connected track sections (see Fig. 47).

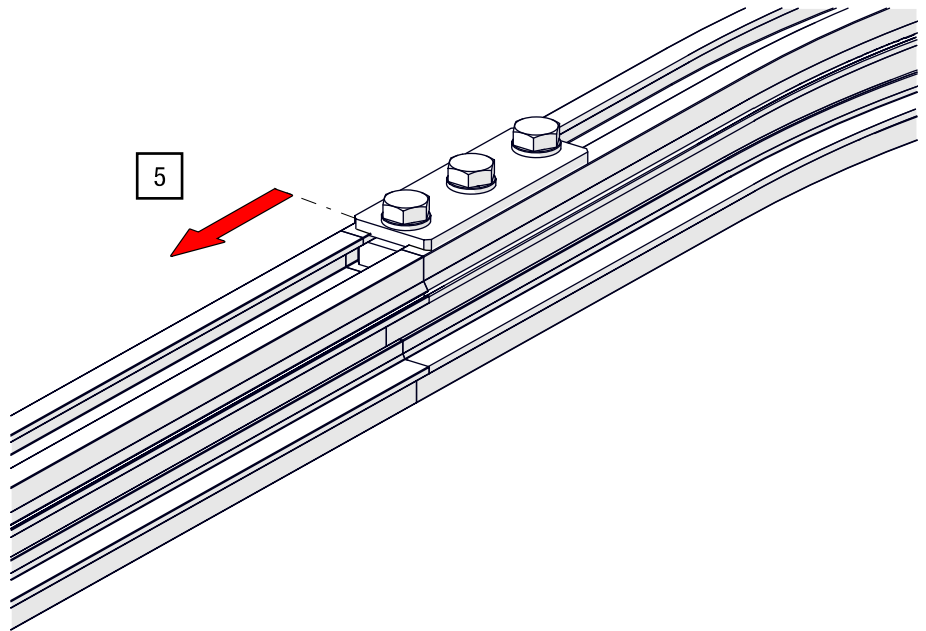


Fig. 47: Track splice – Position centrally

Securing the track splice

6. Tighten the four M10 hexagon screws with a hexagon open-ended spanner AF 17 from the inside outward (see Fig. 48).

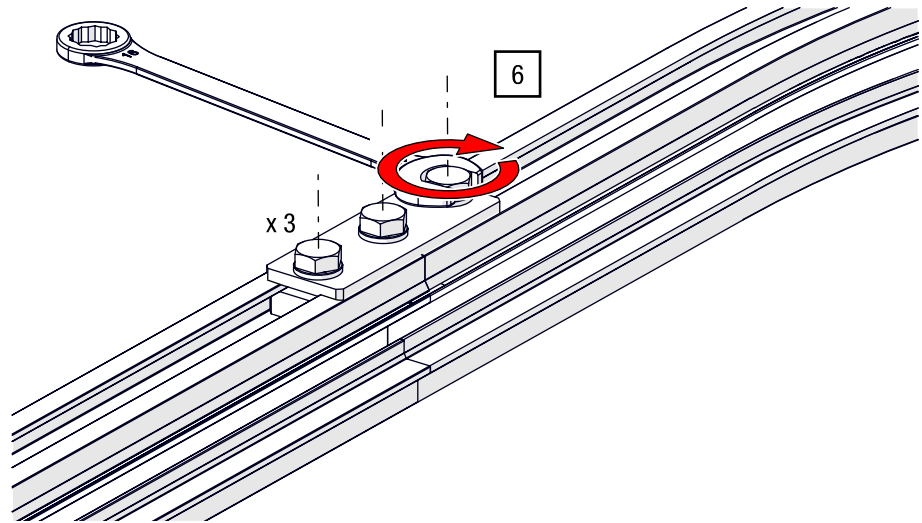


Fig. 48: Track splice – Tighten hexagon screws

5.2.2 Track suspension bracket

Required materials / tools

Quantity	Materials / tools
According to number of suspensions	Mounting material appropriate for the substrate (not included in delivery): • Concrete ceiling: E.g. drop-in anchor E M8, hexagon screw M8 ISO 4017 • Wooden ceiling: E.g. SPAX 8 • Plasterboard: E.g. toggle bolt HTB M8
Quantity according to order	BELT-TRACK track sections
1	Suitable tool, e.g. drill (not included in delivery)
Quantity according to order	BELT-TRACK suspension bracket Item no. 31220 08011
1	Allen key AF 6 (not included in delivery)

Tab. 15: Required materials / tools for direct ceiling mounting of track with suspension

Mounting suspension on track profile

1. Insert the T-slot nut loosely into the track profile and mount the suspension (see Fig. 49).

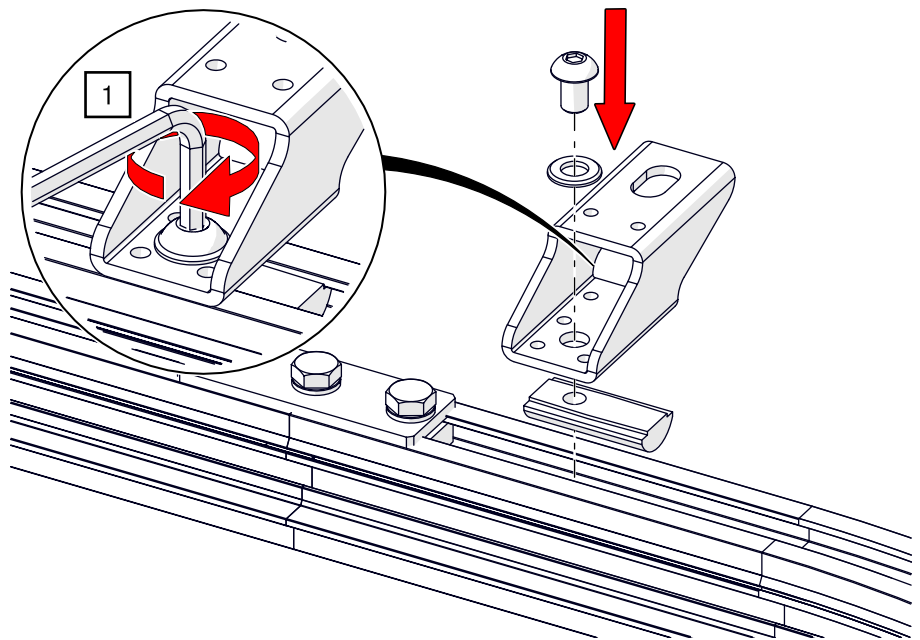


Fig. 49: Ceiling mounting – Mount suspension on the track profile

2. Fasten the suspension to the ceiling with mounting material suitable for the substrate in accordance with the manufacturer's instructions (concrete ceiling example; see Fig. 50).



Ensure that the substrate for mounting the suspension points is as level as possible. Use aids such as cross and line lasers to determine the level positions. Deviations in levelness can be compensated with shims.

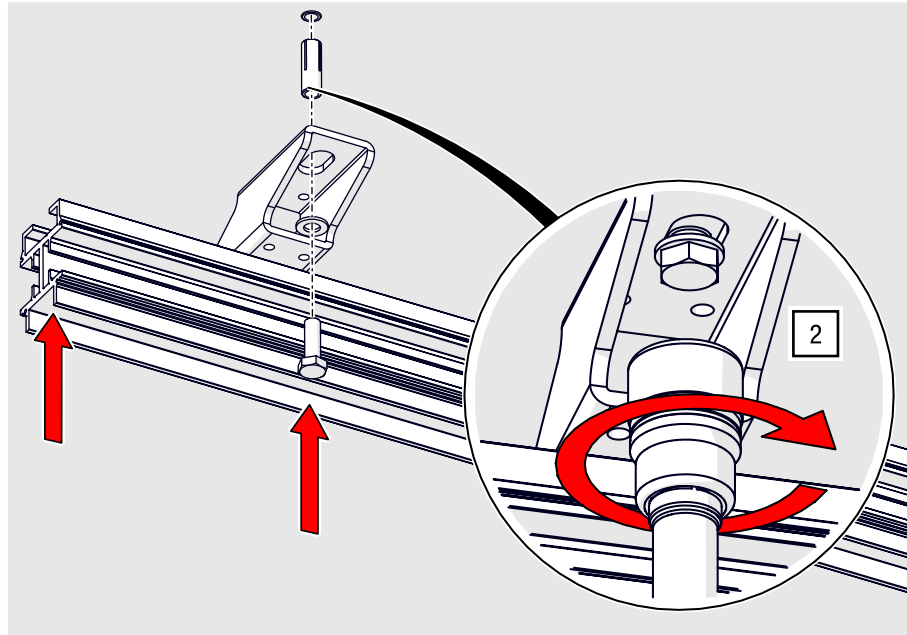


Fig. 50: Ceiling mounting – Mount track to the ceiling

5.2.3 G-CLAMP

Required materials / tools

Quantity	Materials / tools
According to number of suspensions	G-CLAMP direct 48/60 incl. fastening elements for mounting with suspension Item no. 31000 08091 Consisting of: • 1 × G-CLAMP • 1 × Pan head screw M12 with hexagon socket • 1 × Nut M12 • 1 × Washer D12
Quantity according to order	BELT-TRACK track sections
Quantity and type according to order	BELT-TRACK track suspension bracket Item no. 31220 08011
1	Allen key AF 6 (not included in delivery)
1	Allen key AF 8 (not included in delivery)

Tab. 16: G-CLAMP – Required materials and tools for installation

Installation:

Mounting material for step 1:

1 × Pan head screw M10

1 × Washer 10

1 × BELT-TRACK suspension bracket

1 × Standard T-slot nut



1. Insert the T-slot nut loosely into the track profile and mount the suspension on the track using an Allen key AF 6 (see Fig. 51).

The alignment of the suspension is carried out according to the design or planned positioning of the components and the overall system either parallel/aligned to the track or at a 90° angle to it.

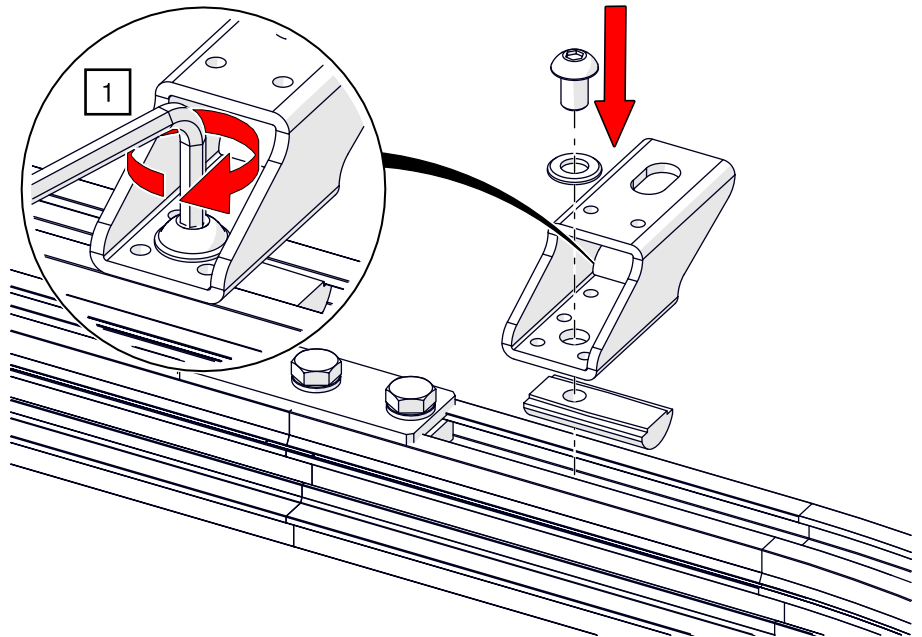


Fig. 51: Ceiling mounting – Mount suspension on track profile

Mounting material for step 2:

1 x Pan head screw M12 with
hexagon socket

1 x Nut M12

1 x Washer D12

2. Fasten the G-CLAMP to the suspension with an Allen key AF 8 and 93 Nm (see Fig. 52).

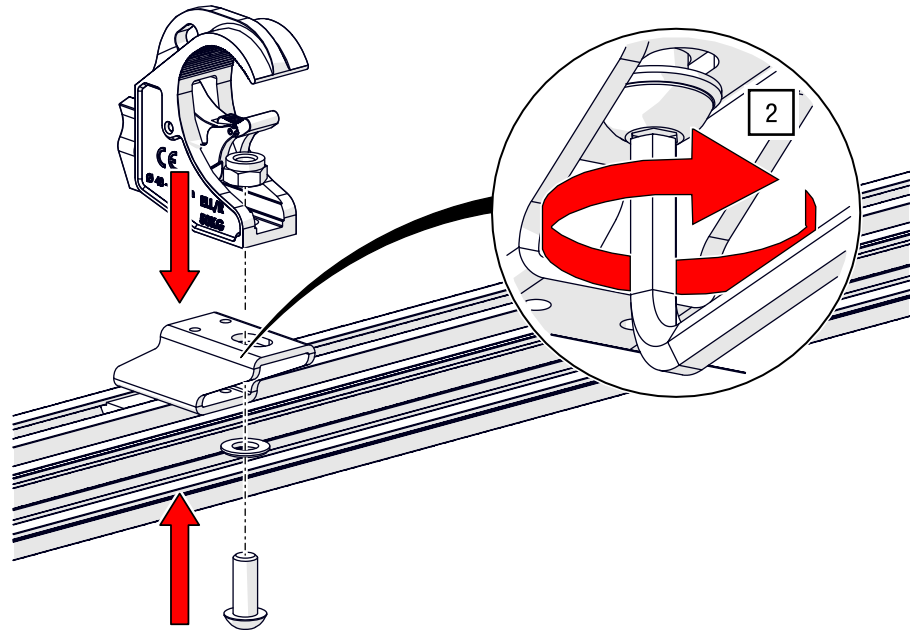


Fig. 52: Mount suspension – Installation with T-slot nut

3. Open the pipe clamps to maximum and lift them to the pipe of the support structure (see Fig. 53).

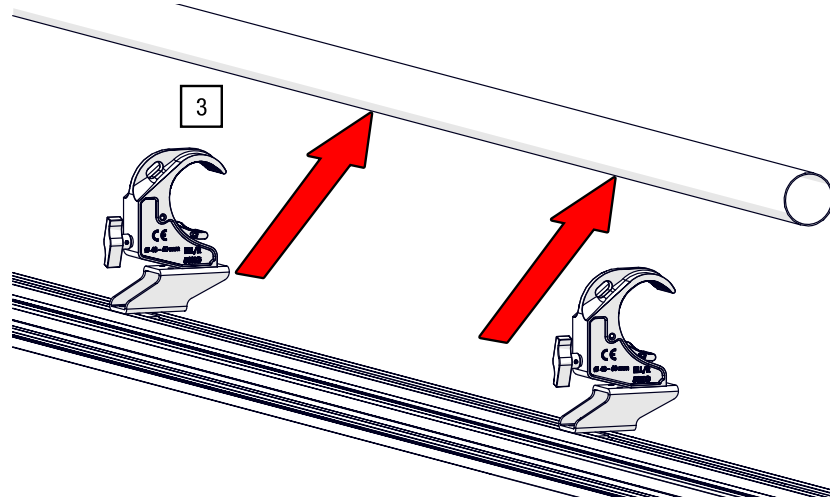


Fig. 53: G-CLAMP – Position on the pipe

4. Fasten the G-CLAMP hand-tight to the pipe (see Fig. 54).

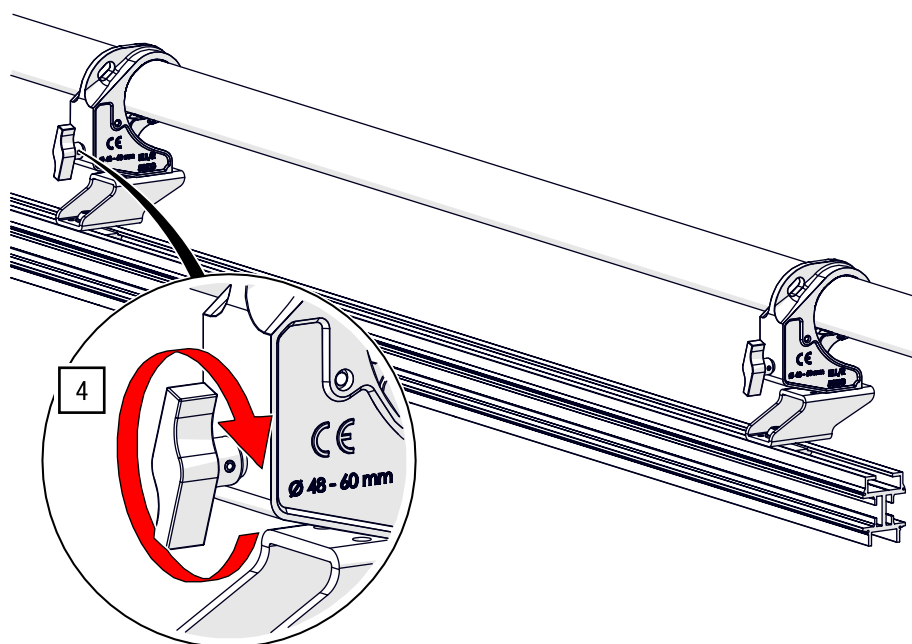


Fig. 54: G-CLAMP direct – Fasten on the pipe

5.2.4 Wall mount bracket

Required materials / tools

Quantity	Materials / tools
According to number of suspensions	Mounting material appropriate for the substrate (not included in delivery): - Concrete wall: e.g. drop-in anchor E M10 × 40, hexagon screw M10 × 30 (ISO 4017) - Wooden wall / Plasterboard according to substrate
1	Suitable tool e.g. drill (not included in delivery)
Quantity according to order	Wall mount bracket – Item no. 31000 088XX
1	Open-ended spanner AF 17 (not included in delivery)
1	Ratchet with socket AF 17 (not included in delivery)
1	Allen key AF 8 (not included in delivery)

Tab. 17: Required materials / tools for installing the wall mount bracket

Installing wall mount bracket for direct mounting on concrete wall



1. Fasten the wall mount bracket to the wall with mounting material suitable for the substrate (see Fig. 55).

Ensure that the substrate for mounting the wall mount brackets is as level as possible. Use aids such as cross and line lasers to determine the mounting positions.

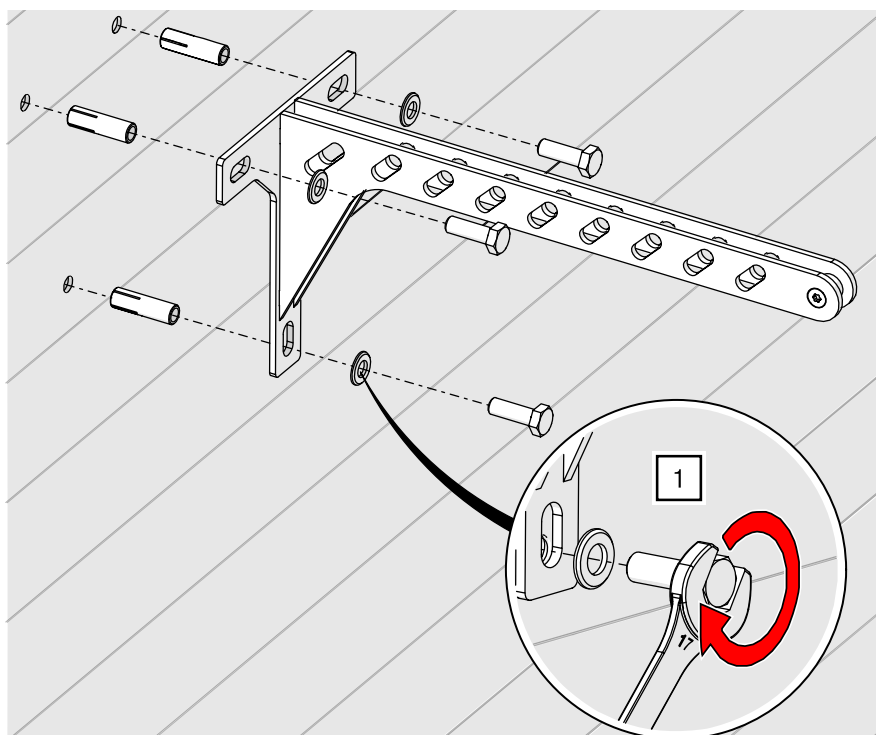


Fig. 55: Wall mount bracket – Mount on the wall

*Mounting material for step 2:**1 × Hexagon screw M12**2 × Washer D12**1 × Nut M12**1 × Cover plate*

2. Screw the pre-assembled suspension and the wall mount bracket together at the required distance using a ratchet with socket AF 17 (see Fig. 56).

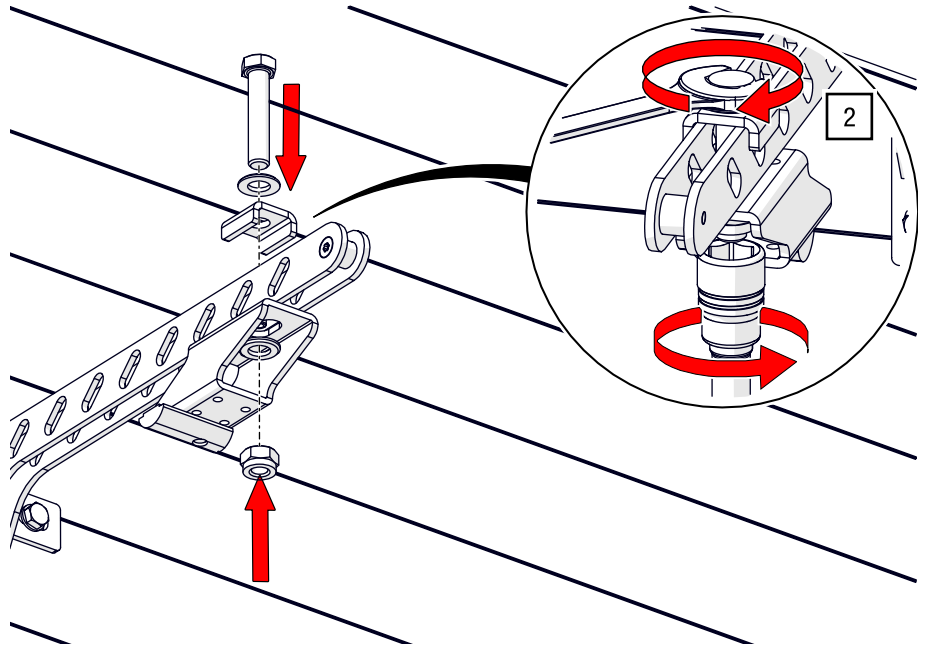


Fig. 56: Wall mount bracket – Screw loosely pre-assembled suspension to the wall mount bracket

3. Lift the pre-assembled track profile to the wall mount bracket and insert the T-slot nuts into the track slot (see Fig. 57).
4. Screw them in with an Allen key AF 8 (see Fig. 57).

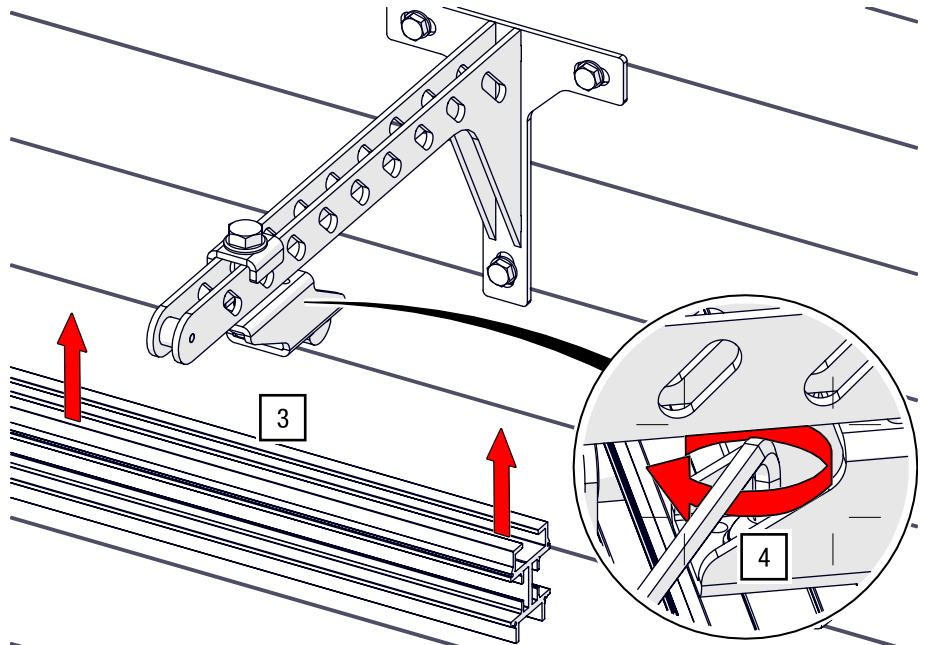


Fig. 57: Wall mount bracket – Pre-assemble screws with T-slot nut

5.2.5 Overlap

The overlap consists of two deflection units, an overlap profile section, and a centre bearing.

The standard overlap unit has an installation length of 1510 mm. The required installation depth is 200 mm.

The deflection units – like all other track sections – are connected using track splices (spliced). Pre-assemble the corresponding unit before mounting it on the support structure.

Required materials / tools

Quantity	Materials / tools
According to order	Double track suspension bracket (Left/right) Item no. 31220 060X1 Consisting of: • 2 × Deflection unit • 1 × BELT-TRACK overlap profile section • 1 × Centre bearing
1	Open-ended spanner AF 17 (not included in delivery)

Tab. 18: Crossover unit – Required materials and tools for installation

Fastening transition profile between deflection units

1. Loosen the hexagon screws of the clamping plate with an open-ended spanner AF 17 (see Fig. 58).

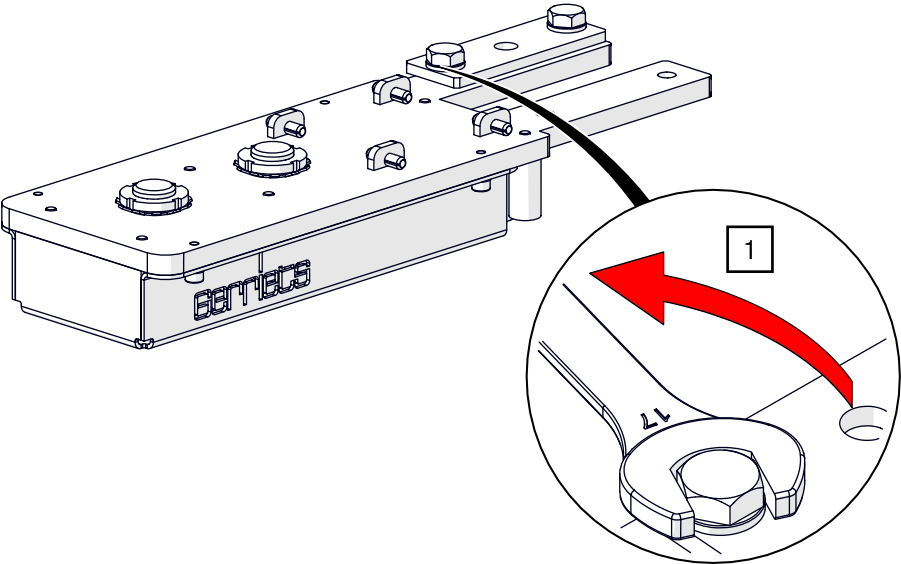


Fig. 58: Crossover unit – Loosen clamping plate on the deflection unit

2. Slide the transition profile onto the corresponding guide the deflection units (see Fig. 59).

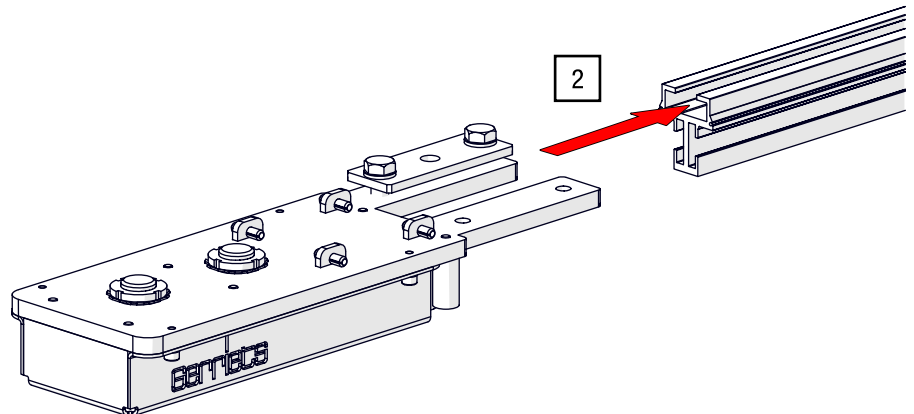


Fig. 59: Crossover unit – Slide overlap profile onto the deflection unit

3. Tighten the screws on both deflection units (see Fig. 60).

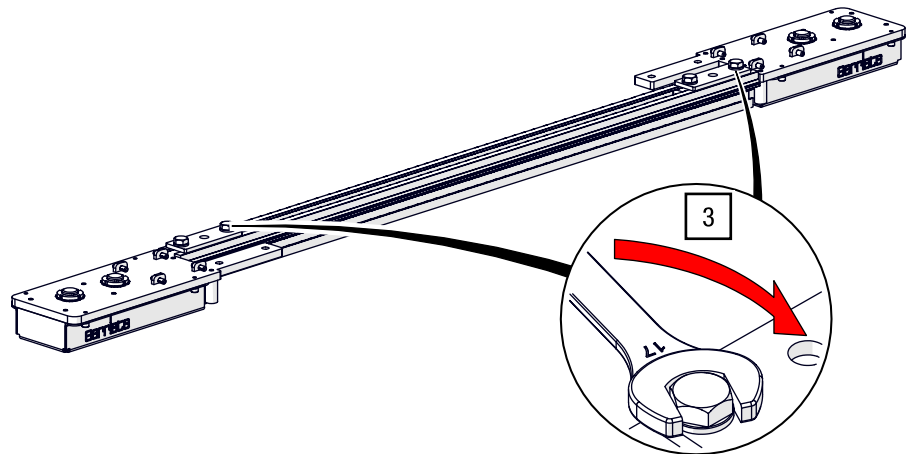


Fig. 60: Crossover unit – Connect deflection units with the overlap profile

Fastening deflection unit with straight track sections

4. Insert two T-slot nuts per straight track section into the slot of the track section and slide the track onto the guide of the deflection unit (see Fig. 61).

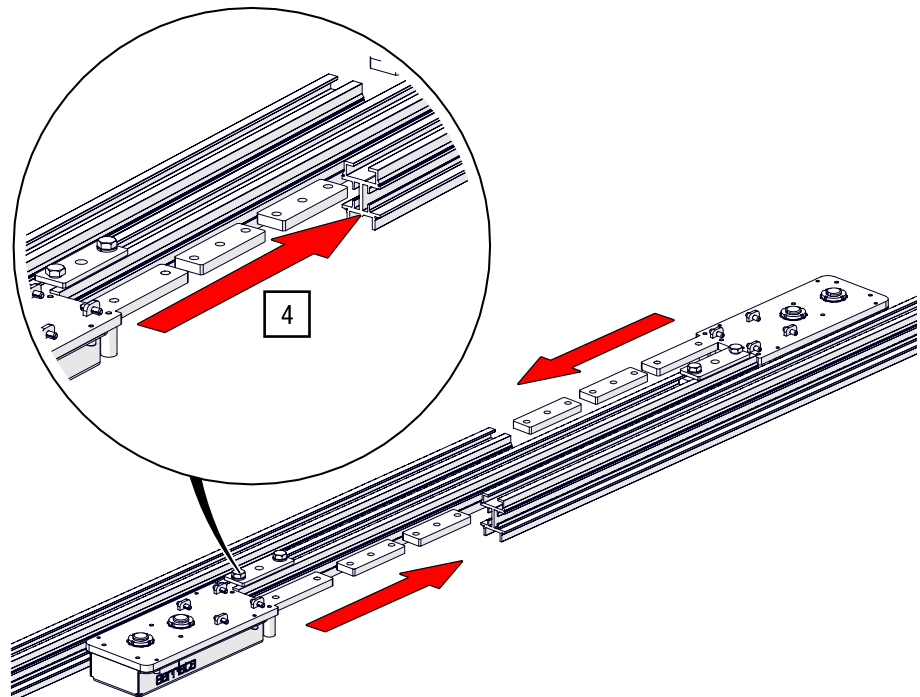


Fig. 61: Crossover unit – Insert T-slot nuts and slide the track onto the deflection unit

Fitting crossover unit with suspension

5. Screw the guides and T-slot nuts together with the suspensions (see Fig. 62).
6. Position the remaining suspension centrally between the two deflection units according to Fig. 62.

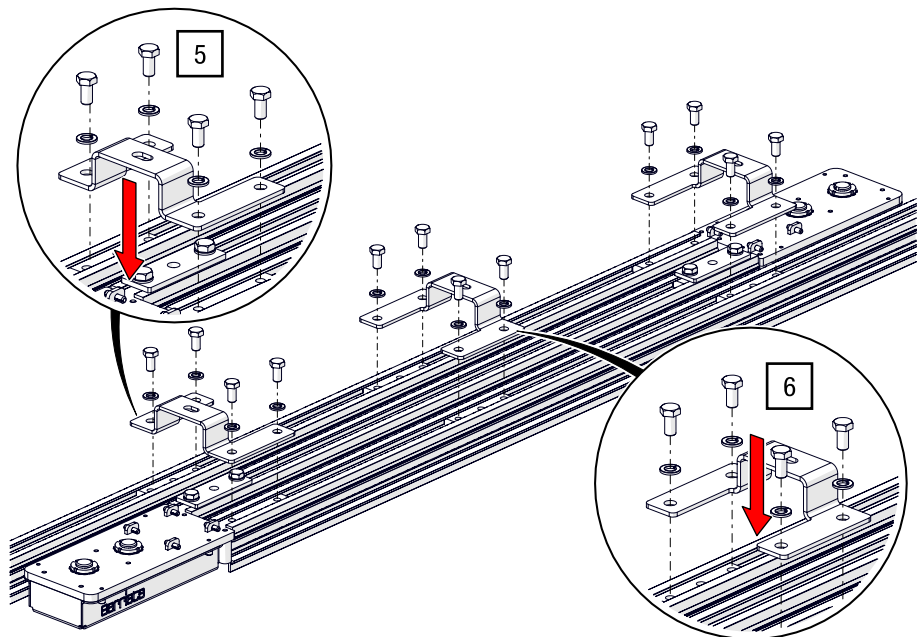


Fig. 62: Crossover unit – Mount suspensions and guide the deflection unit

7. Tighten all screws with an open-ended spanner AF 17 (see Fig. 63).

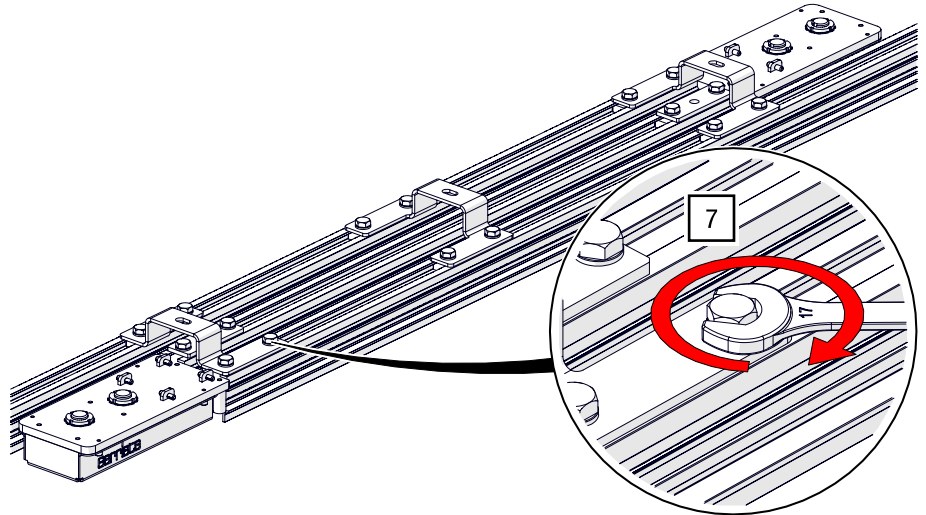


Fig. 63: Crossover unit – Tighten screws of the suspensions

Suspending crossover unit

- ➔ Mount the crossover unit on the support structure according to the instructions in the corresponding chapter.
- ➔ Information for direct ceiling suspension can be found under *Chapter 5.2.2 Track suspension bracket* [► p. 45].
- ➔ Information for attaching a pipe hook can be found under *Chapter 5.2.3 G-CLAMP* [► p. 47].
- ➔ Information for attaching a wall mount bracket can be found under *Chapter 5.2.4 Wall mount bracket* [► p. 50].

5.2.6 Fitting master runner with overlap arm (optional)

The installation is shown below as an example using the master runner with belt clamp. The steps are identical for all master runner variants.

Required materials / tools

Quantity	Materials / tools
1	BELT-TRACK overlap arm set (left/right) Item no. 31220 00255 Consisting of: • 1 × Overlap arm • 2 × Nut with clamping part M6 • 2 × Washer 6
1	BELT-TRACK master runner with belt clamp Item no. 31220 00011
1	Ratchet with socket AF 10 (not included in delivery)

Tab. 19: Master runner with overlap arm – Required materials and tools

Releasing fabric suspension
on the master runner

1. Release the fabric suspension on the master runner by loosening the two nuts with a ratchet and socket AF 10 (see Fig. 64).

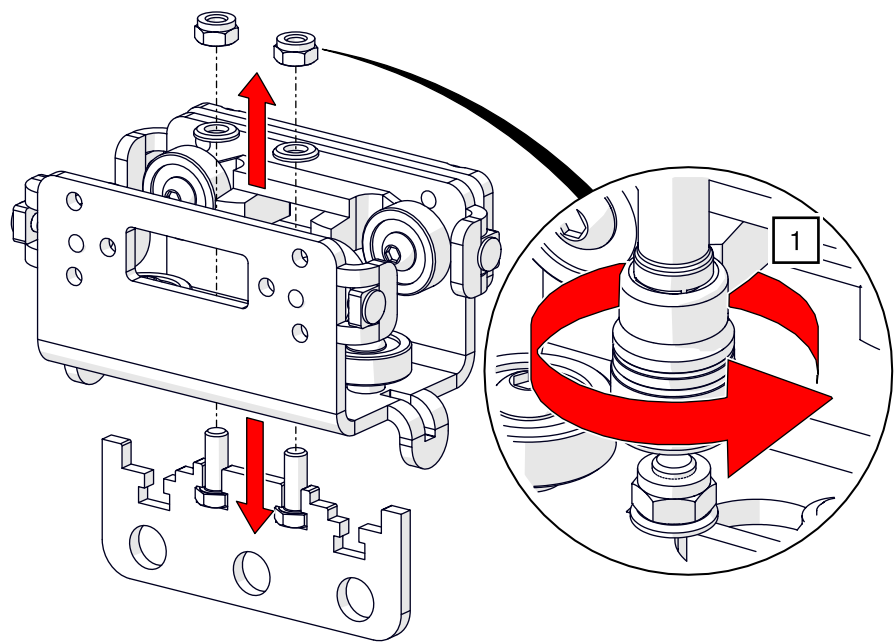


Fig. 64: Overlap arm – Release fabric suspension

2. Screw the overlap arm set to the designated mounting points on the master runner (see Fig. 65).

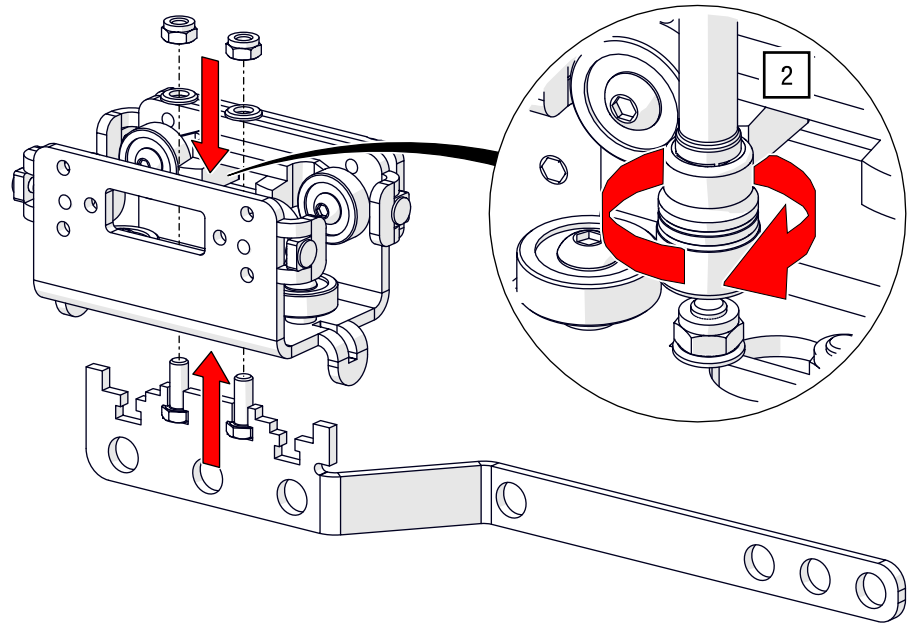


Fig. 65: Overlap arm – Screw on overlap arm

5.2.7 End stop (multi-part curtain on same track)

Required materials / tools

Quantity	Materials / tools
1	BELT-TRACK end stop – Item no. 31220 00981
1	Allen key AF 5 (not included in delivery)

Tab. 20: Required materials and tools for installing the BELT-TRACK end stop

1. Hang the pre-assembled end stop in the track profile and tighten the screw with T-slot nut using an Allen key AF 5 and 27 Nm (see Fig. 66).

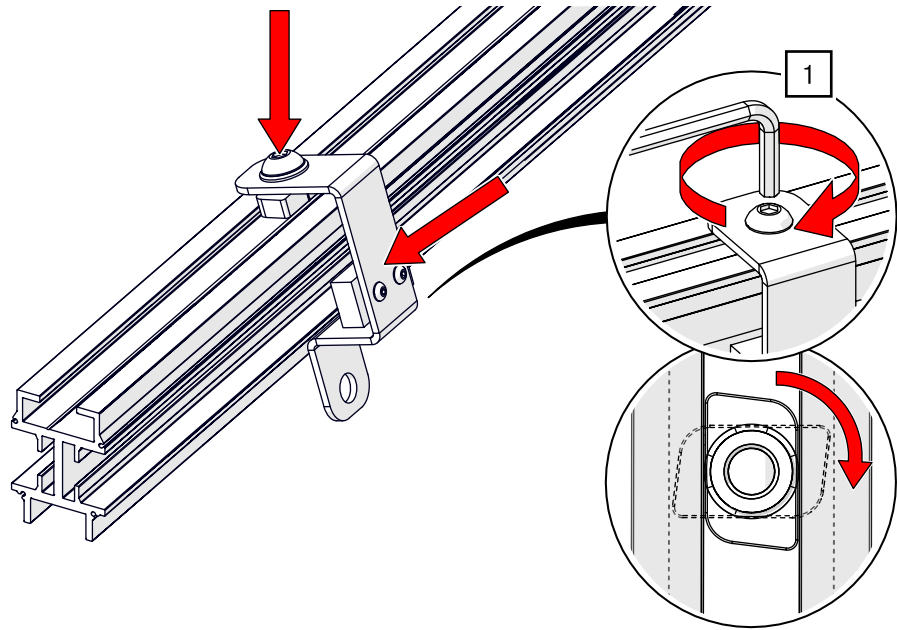


Fig. 66: BELT-TRACK end stop – Install end stop

5.3 Deflection units

- ➔ Insert the master runners and runners at the free track ends before installing the motor mount or deflection units.
- ➔ If provided for your project, install the overlap arms on the master runners in accordance with *Chapter 5.2.6 Fitting master runner with overlap arm (optional)* [► p. 56].

5.3.1 Deflection unit with/without belt tensioner

Required materials / tools

Quantity	Materials / tools
1	BELT-TRACK deflection unit Item no. 31220 0603X (pre-assembled left/right)
Alternatively,	BELT-TRACK deflection unit with belt tensioner Item no. 31220 0604X (pre-assembled left/right)
1	Allen key AF 6 (not included in delivery)
Alternative 1	Hexagon key with ratchet / open-ended spanner AF 17

Tab. 21: Required materials and tools for installing the BELT-TRACK deflection unit

Deflection unit without belt tensioner

1. Slide the deflection unit onto the track profile (see Fig. 67).

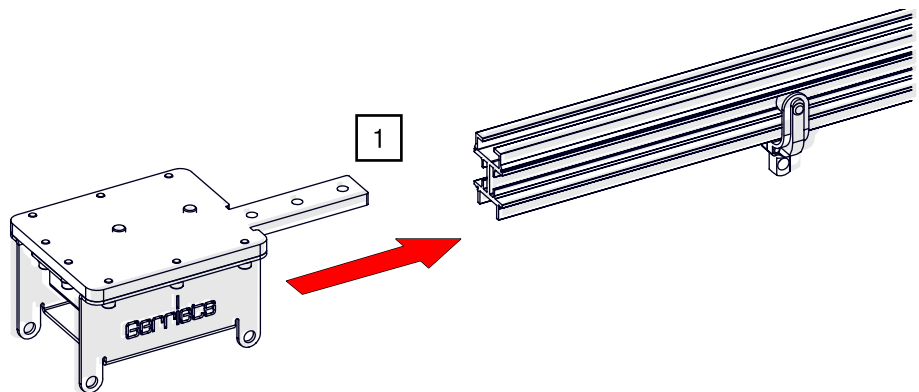


Fig. 67: BELT-TRACK deflection unit – Slide web into track profile

2. Screw the suspension to the web and track profile with an Allen key AF 6 (see Fig. 68).

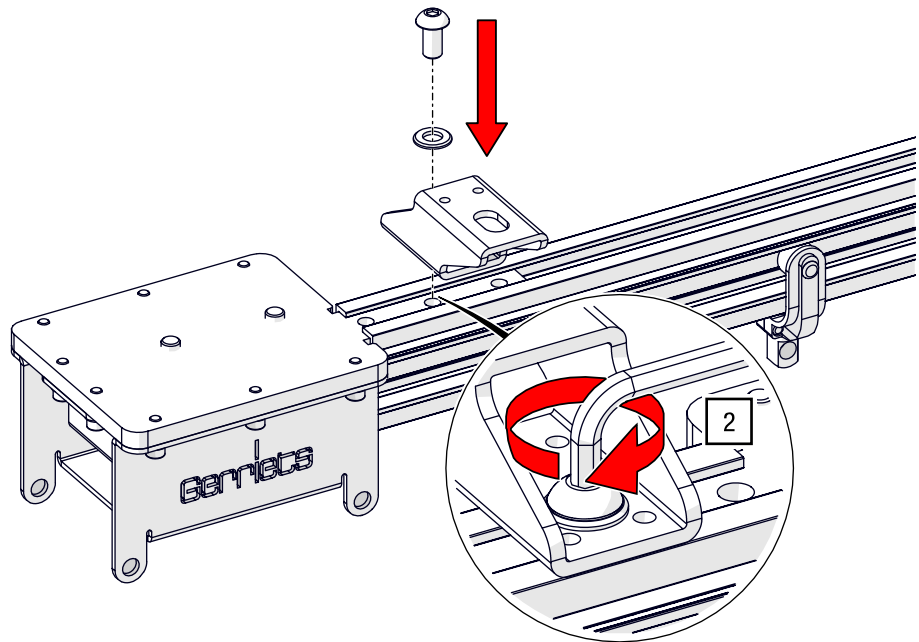


Fig. 68: BELT-TRACK deflection unit – Fasten to track

3. Fasten the suspension according to your selected suspension variant.

Deflection unit with belt tensioner

1. Loosen the screws on the clamping plate on the side of the guide rollers of the deflection unit with belt tensioner with an open-ended spanner AF 17 (see Fig. 69).

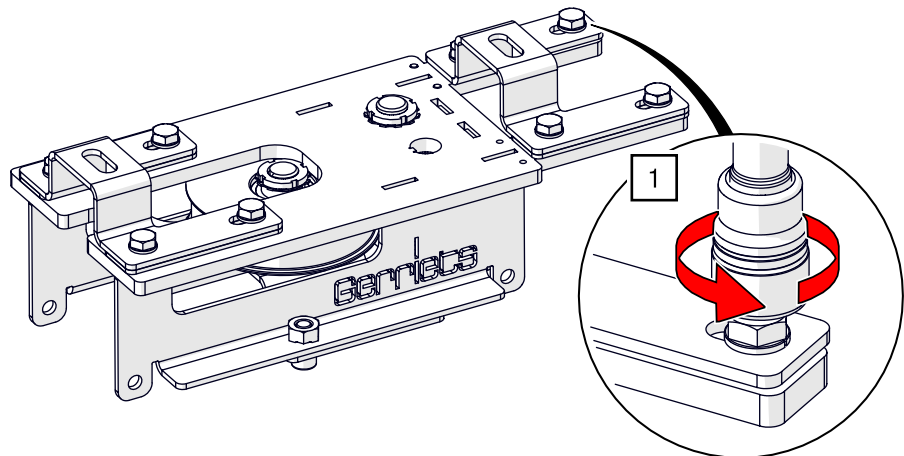


Fig. 69: BELT-TRACK deflection unit – Loosen screws on clamping plate

2. Slide the web into the track profile and then tighten the screws with an open-ended spanner AF 17 (see Fig. 70).

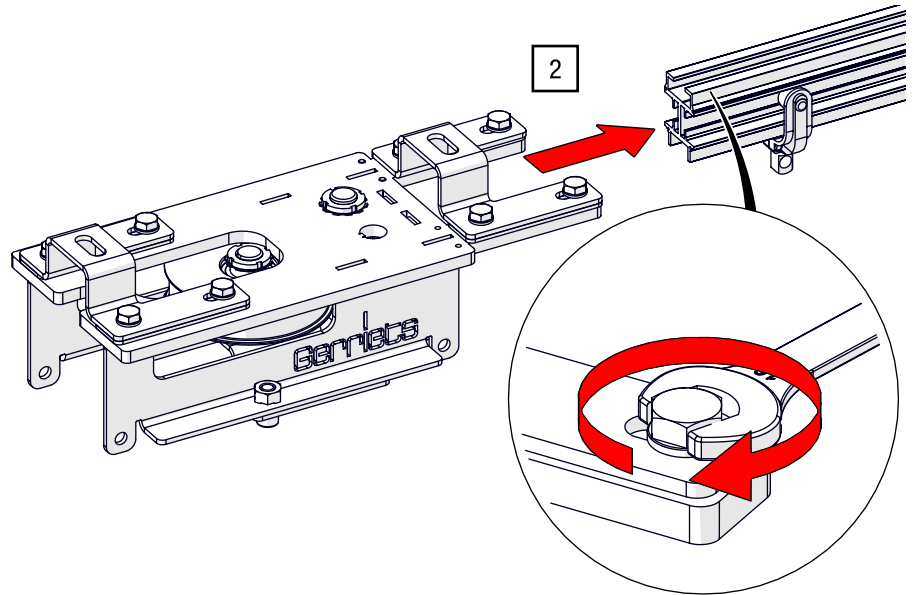


Fig. 70: BELT-TRACK deflection unit – Install deflection unit with belt tensioner

3. Fasten both suspensions to the on-site support structure according to your selected suspension variant.

5.3.2 Deflection unit for BELT-DRIVE units

Required materials / tools

Quantity	Materials / tools
1	BELT-TRACK deflection unit for BELT-DRIVE units – Item no. 31220 0601X
Alternative 1	Hexagon key with ratchet / open-ended spanner AF 17

Tab. 22: Required materials and tools for installing the BELT-TRACK deflection unit for BELT-DRIVE

- ➔ Follow the installation steps from *Chapter 5.3.1 Deflection unit with/without belt tensioner* [► p. 59].

5.4 Fitting timing belt



On the following three illustrations you will find a clear representation of the timing belt routing at the motor and deflection units of the BELT-TRACK track system in advance.

Installation information:
Final belt routing on motor unit

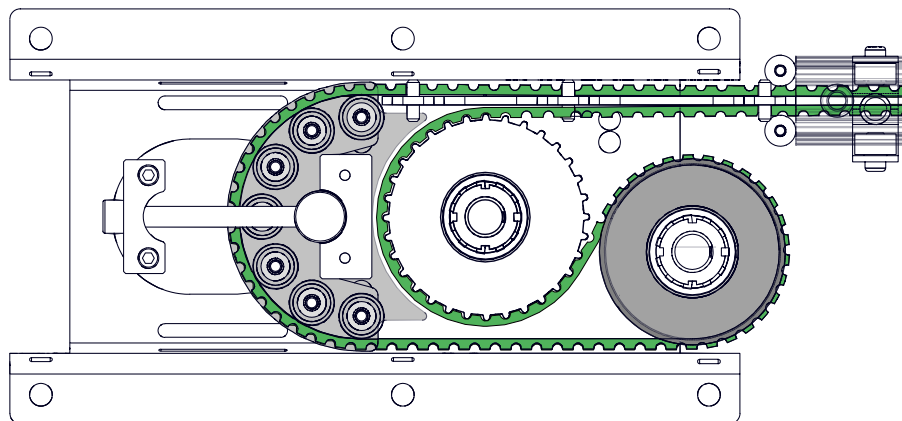


Fig. 71: Timing belt – Belt routing in the motor unit

Final belt routing on deflection unit of track overlap
(with deflection roller)
Illustration of clamping of belt ends on master runner.

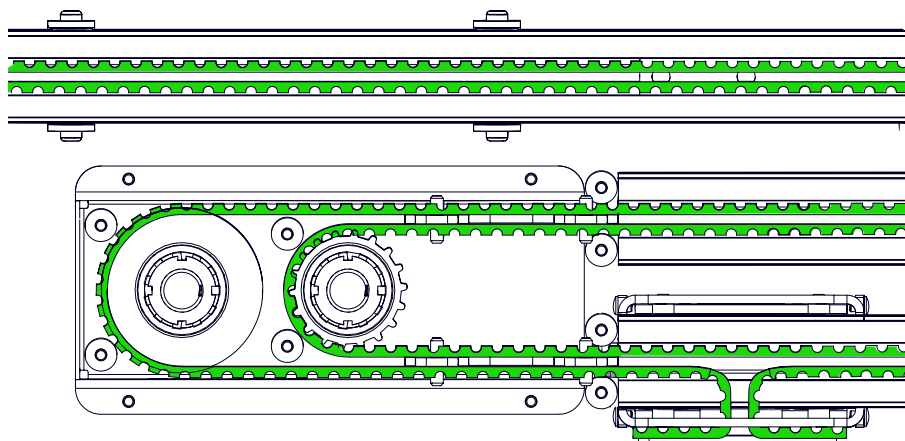


Fig. 72: Timing belt – Belt routing in the deflection unit of the track overlap

Final belt path at deflection unit
(without belt tensioner)

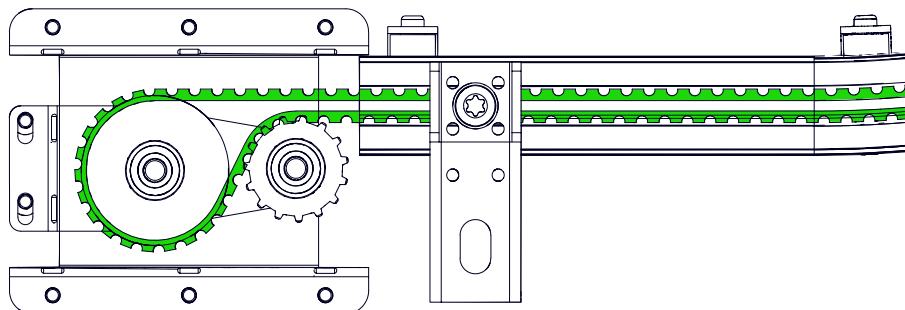


Fig. 73: Timing belt – Belt routing in the deflection unit

5.4.1 Cutting timing belt

Required materials / tools

Quantity	Materials / tools
1	BELT-TRACK belt
1	Pincers (not included in delivery)

Tab. 23: Required materials and tools for cutting the timing belt

Dimensions for belt ends

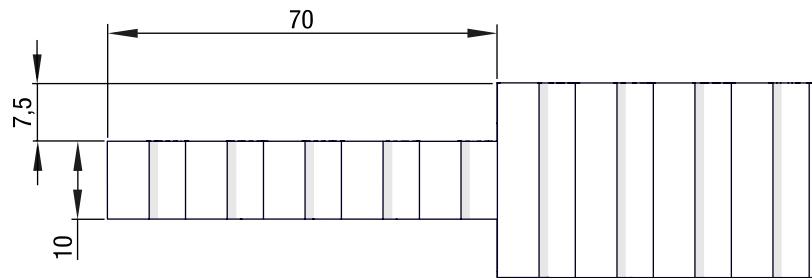


Fig. 74: Cutting timing belt – Dimensions

Cutting timing belt

- Slide one end of the timing belt approx. 70 mm into the track profile (see Fig. 75). Transfer the contour of the exposed profile edges to the timing belt with a suitable pen (see Fig. 75).
Alternatively, the timing belt end can be marked according to the dimensional sketch in Fig. 74.

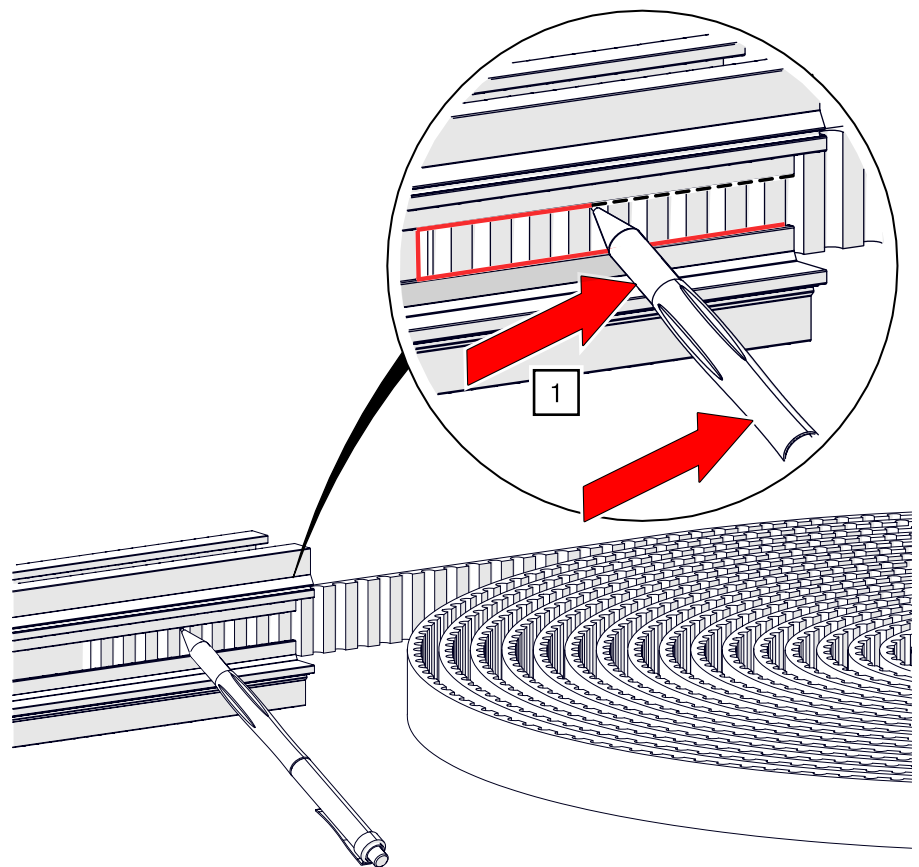


Fig. 75: Cutting timing belt – Mark belt

2. Cut with end cutting pliers first along the timing belt until you reach the end of the marking after 70 mm and then across the wire mesh (see Fig. 76).

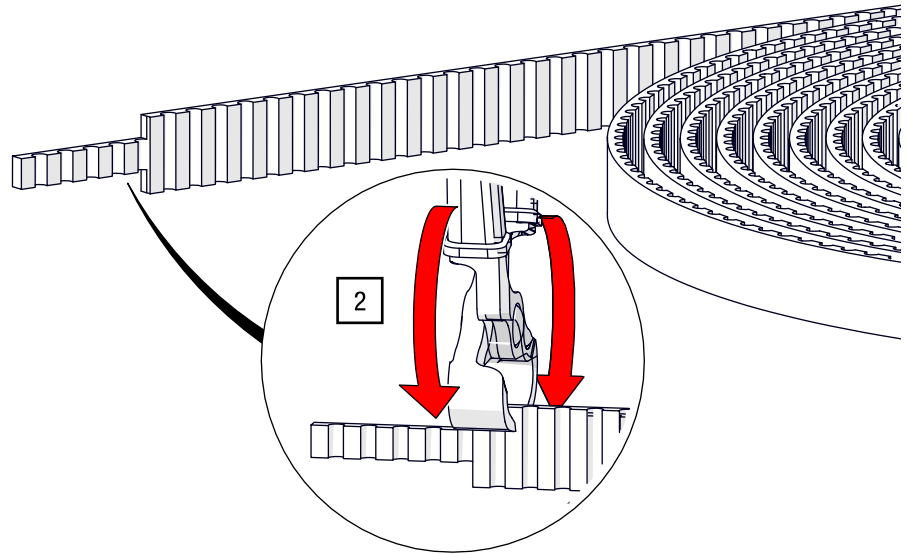


Fig. 76: Cutting timing belt – Cut belt along the marking

3. Check in the track profile whether the cut-out area fits through the gap in the track profile without grinding.

5.4.2 Inserting timing belt in track system

Required materials / tools

Quantity	Materials / tools
1	Installed track system with deflections
1	Allen key AF 5 and AF 8 (not included in delivery)
1	TORX®-key T25 (not included in delivery)

Tab. 24: Required materials and tools for inserting the timing belt



Ideally conduct the insertion of the timing belt with two people so that one person can pull the timing belt at the front end and a second person can continuously feed more belt into the profile.

1. Open the housings of all deflection units by loosening the socket head screws with an Allen key AF 5 / 8 and set the cover plates aside (see Fig. 77).

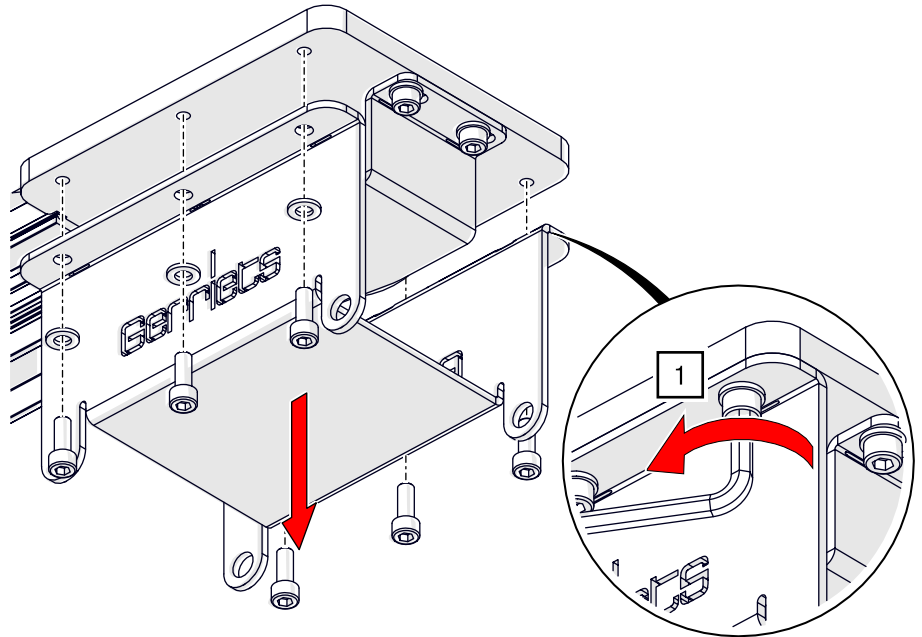


Fig. 77: Timing belt installation – Open housing of the deflections

Deflection unit at track end

2. Slide the master runner to the last deflection unit (open position) (see Fig. 78).

3. Carefully begin threading the timing belt into the BELT-TRACK track at the deflection unit with suitable protective gloves, if necessary, using pliers (see Fig. 78).

⚠ CAUTION: After cutting the timing belt, parts of the wire reinforcement may be exposed and have sharp or pointed edges.

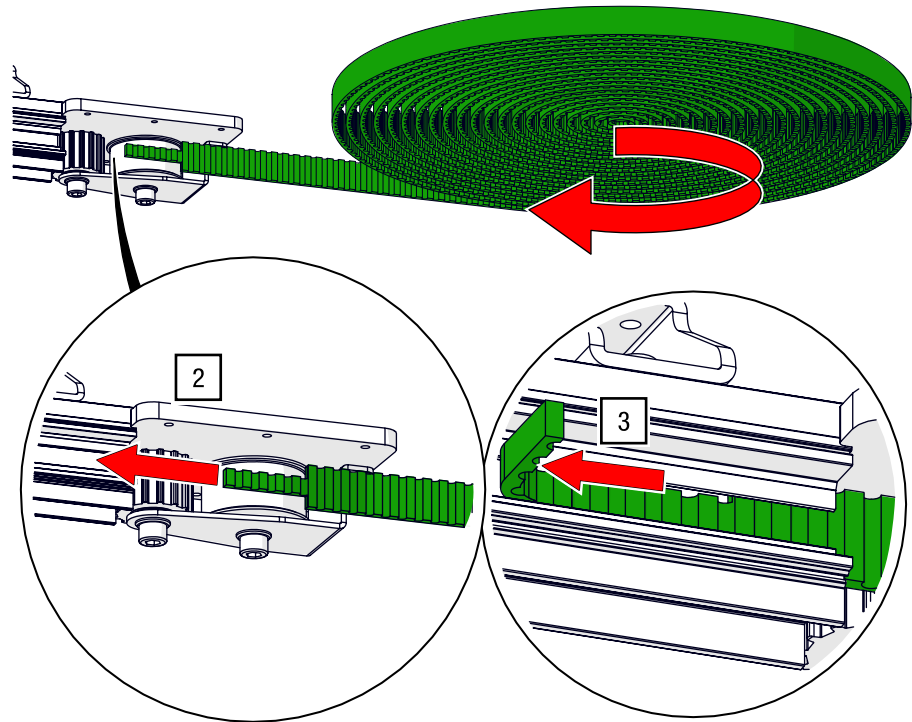


Fig. 78: Timing belt installation – Thread timing belt

Optional crossover unit Part 1

4. Guide the timing belt further through the path to the first deflection roller of the overlap, there past the guide roller and around the outer deflection roller (see Fig. 79).

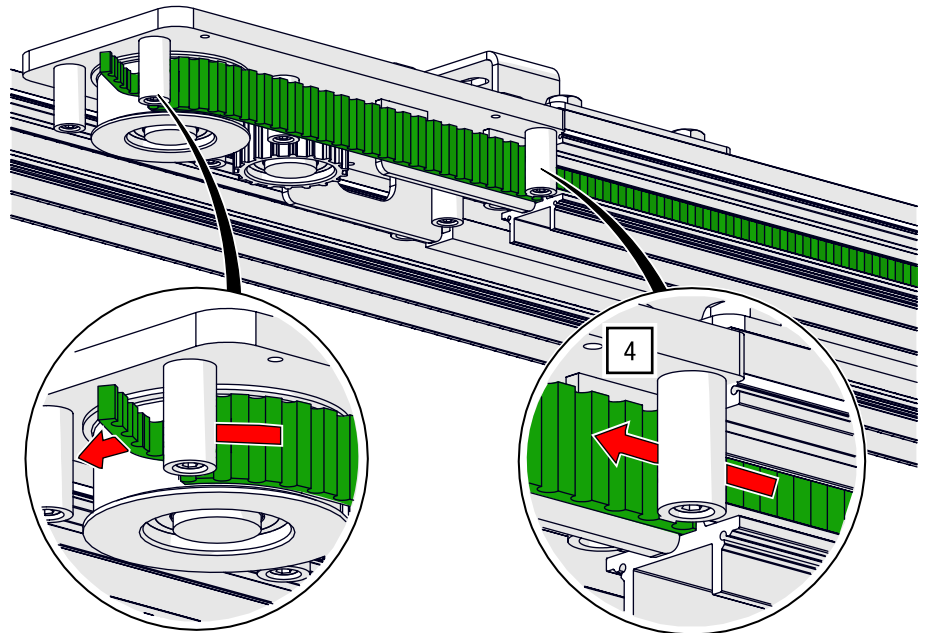


Fig. 79: Timing belt installation – Threading timing belt through outer wheel on the deflection unit

5. Pull the timing belt to the second deflection unit and place it around the inner deflection roller (see Fig. 80).

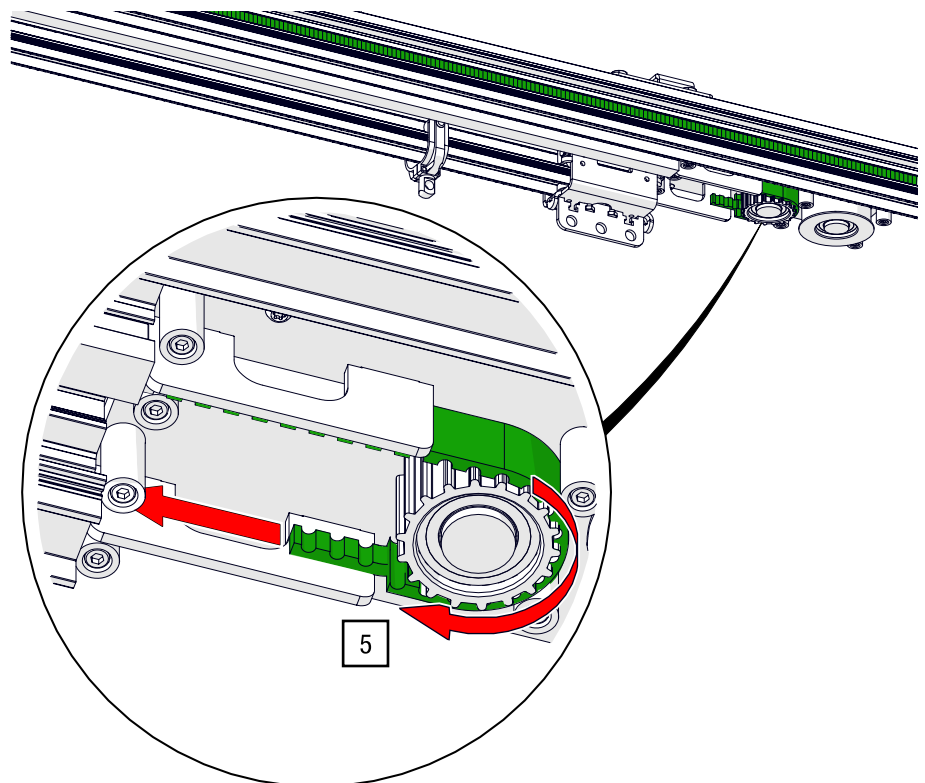


Fig. 80: Timing belt installation – Threading timing belt through inner wheel on the deflection unit

Deflection unit for BELT-DRIVE units (motor unit)

6. Pull the timing belt through the motor unit while observing the risk of clamping (see Fig. 81).

⚠ CAUTION: There is a risk of crushing between the moving belt wheels.

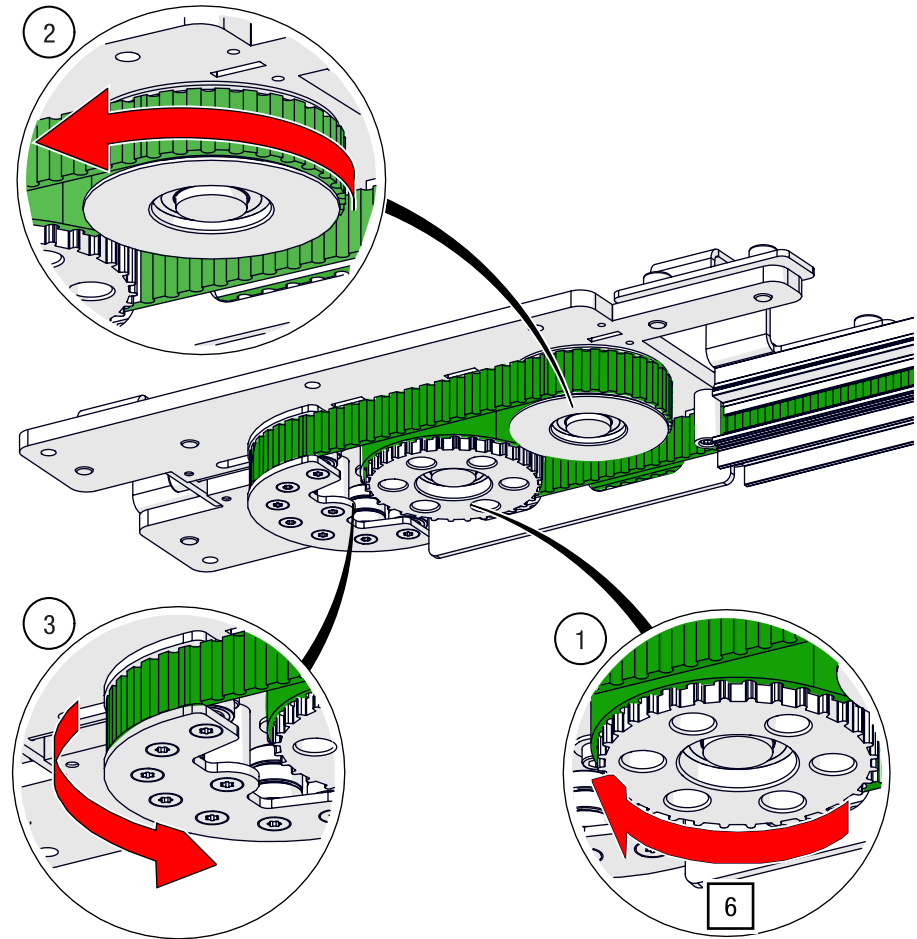


Fig. 81: Timing belt installation – Guide timing belt through motor unit

Optional crossover unit Part 2

7. Pull the timing belt to the second deflection unit and place it around the outer deflection roller (see Fig. 79 and Fig. 80).
8. Thread the timing belt further through the path through the first deflection at the overlap around the inner deflection roller (see Fig. 79 and Fig. 80).

Pulling belt to master runner
and adjusting

9. Pull the timing belt to the deflection roller at the track end and place it around the wheels according to Fig. 73 until both belt ends meet at the master carriage.

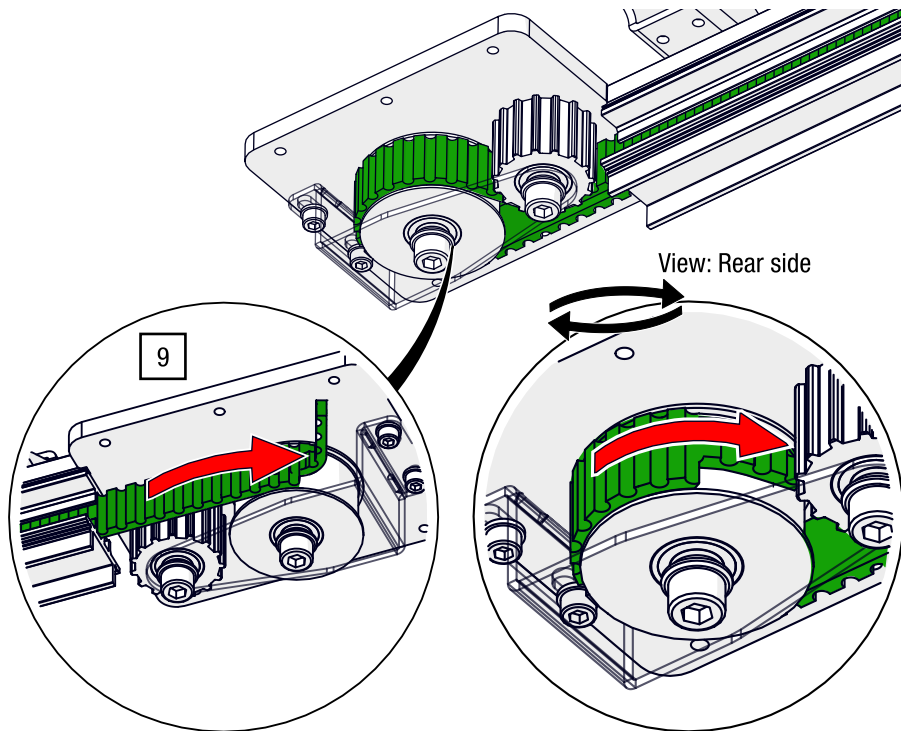


Fig. 82: Timing belt installation – Guide timing belt through deflection unit

10. The belt is supplied with a slight excess length. Shorten the end until the ends overlap by a total of 14 cm (7 cm per side).
11. Then cut the end again according to Fig. 76.

5.4.3 Clamping timing belt master runner / comb

Clamping belt ends

1. Loosen the clamping plate on the master runner with an Allen key AF 4 (see Fig. 83).

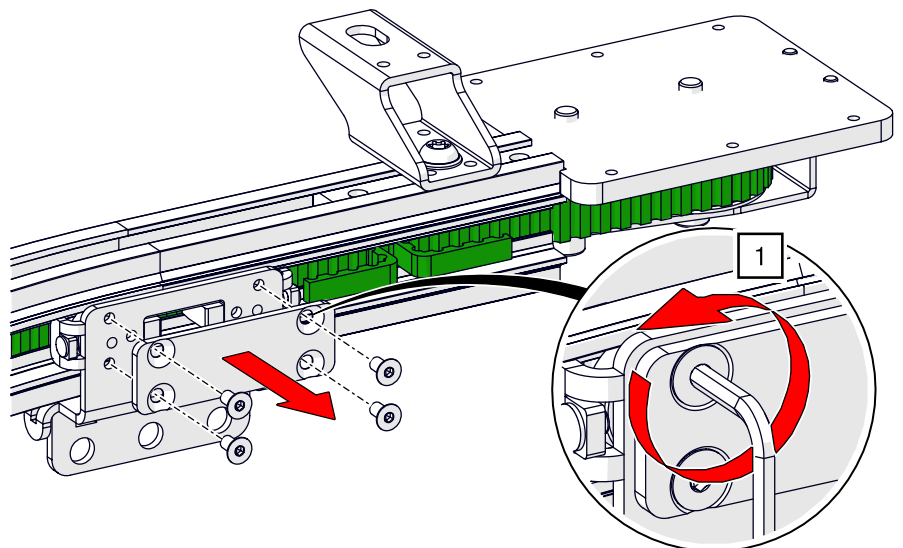


Fig. 83: Timing belt installation – Loosen clamping plate on master runner

2. Pull the master runner over the two ends and pull the ends with needle-nose pliers through the released hole to the left and right outward (see Fig. 84).
3. Reassemble the clamping plate and clamp the timing belt ends (see Fig. 84).

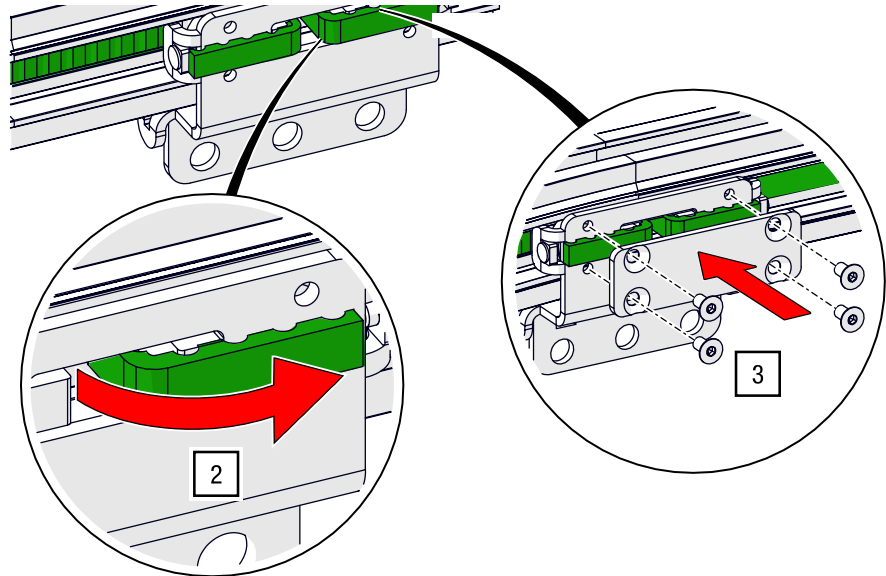


Fig. 84: Timing belt installation – Guide belt ends through the master runner and clamp

Clamping master runner
with comb to belt

4. Pull the first master runner into 'curtain closed' position (see Fig. 85).
5. Pull the second master runner also into 'curtain closed' position, insert the comb and tighten it hand-tight with an open-ended spanner AF 10 (see Fig. 85).

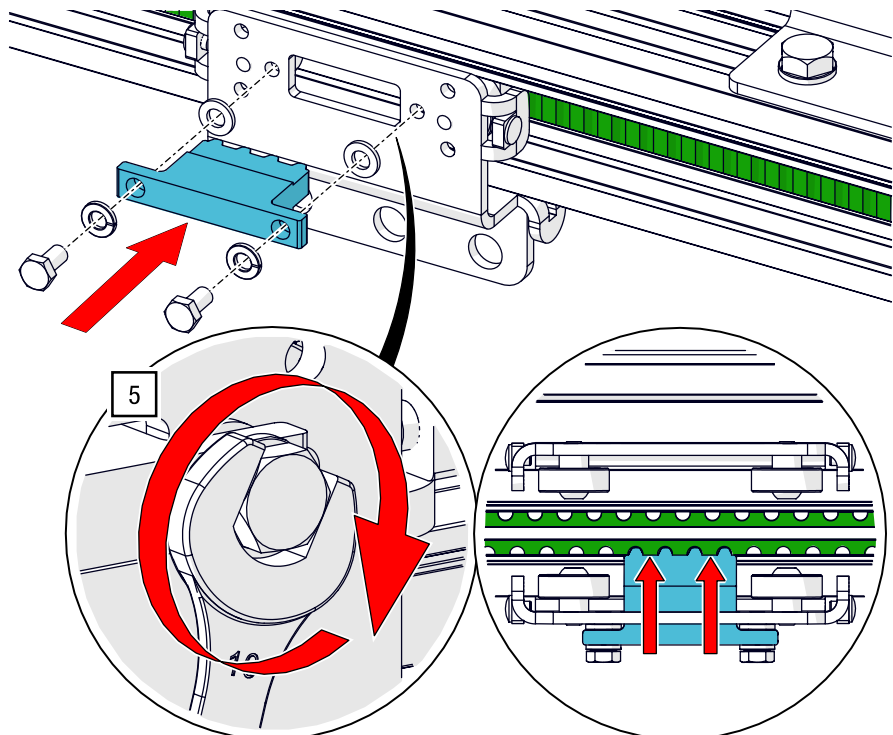


Fig. 85: Timing belt installation – Fasten master runner with belt comb

5.4.4 Tensioning timing belt

Selecting correct timing belt tension

! NOTICE

Property damage due to incorrect belt tension

Excessive belt tension can damage the timing belt, bearings, or drive components. Insufficient belt tension can cause grinding noises, increased wear, and the timing belt to slip or jam.

- Tension the timing belt only until it sits correctly in the motor-side deflection unit and at the deflection units.

Variant 1: Tensioning device on the motor unit

1. Move the slide by turning the threaded screw with an Allen key AF 8 (see Fig. 86).

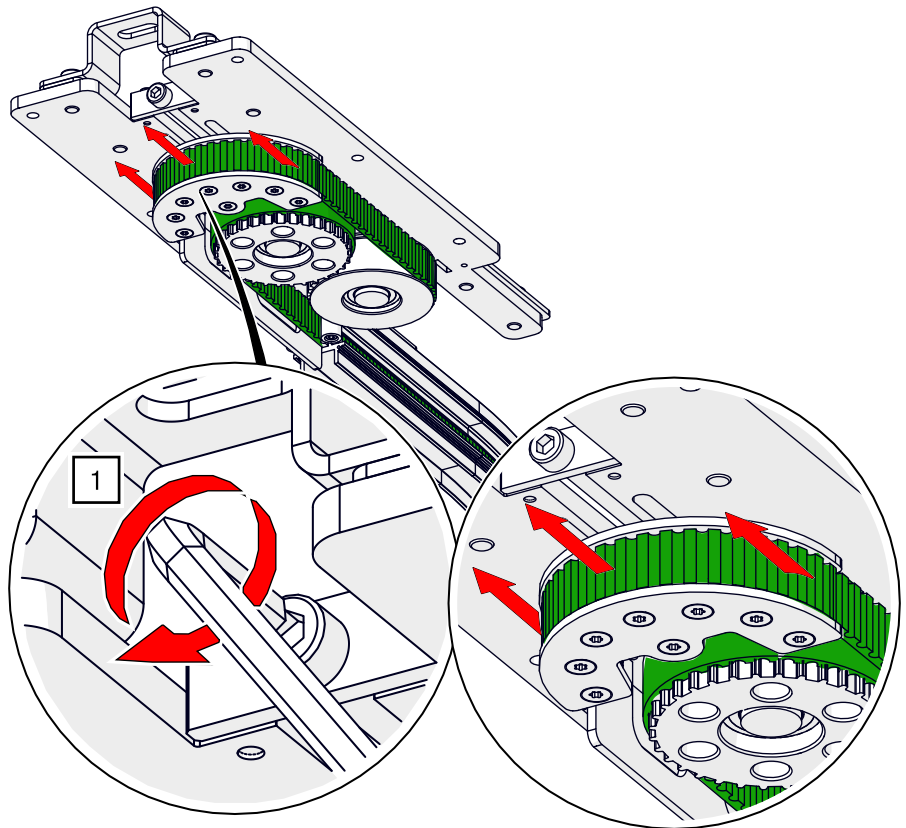


Fig. 86: Timing belt installation – Tension timing belt on the motor unit

Variant 2: Tensioning device
on the deflection unit

1. Move the carriage by turning the threaded screw with an open-ended spanner AF 19 (see Fig. 87).

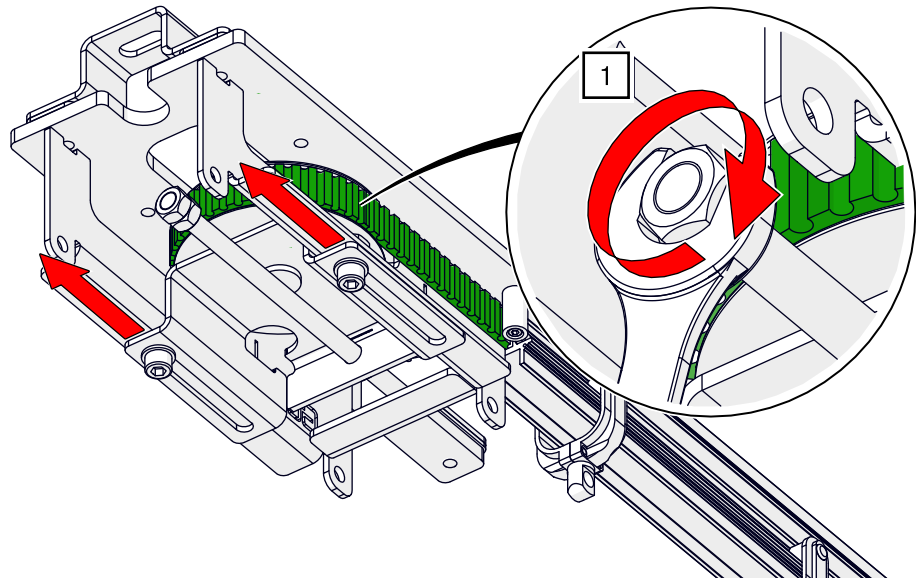


Fig. 87: Timing belt installation – Tension timing belt on the deflection unit

For both variants

2. Then conduct a test run. Observe the slack side of the timing belt. The timing belt must not grind and must not make any unusual noises.
3. Correct the timing belt tension if grinding noises or unusual running noises occur.

5.5 Fitting motorisation

5.5.1 Fastening motor to motor unit

Required materials / tools

Quantity	Materials / tools
1	Installed track system with deflections
1	Motor (the suspension is the same for all motors)
1	Allen key AF 8 (not included in delivery)
1	Small lifting platform or lifting device corresponding to motor weight

Tab. 25: Required materials and tools for installing the motor



Conduct the installation of the motor with two people.

- Lift the motor according to its weight to the motor unit on the track system using a lifting device or lifting platform and tighten the six socket head cap screws with an Allen key AF 8 (see Fig. 88).

⚠ WARNING: Due to the high motor weight, injuries and property damage may occur during installation.

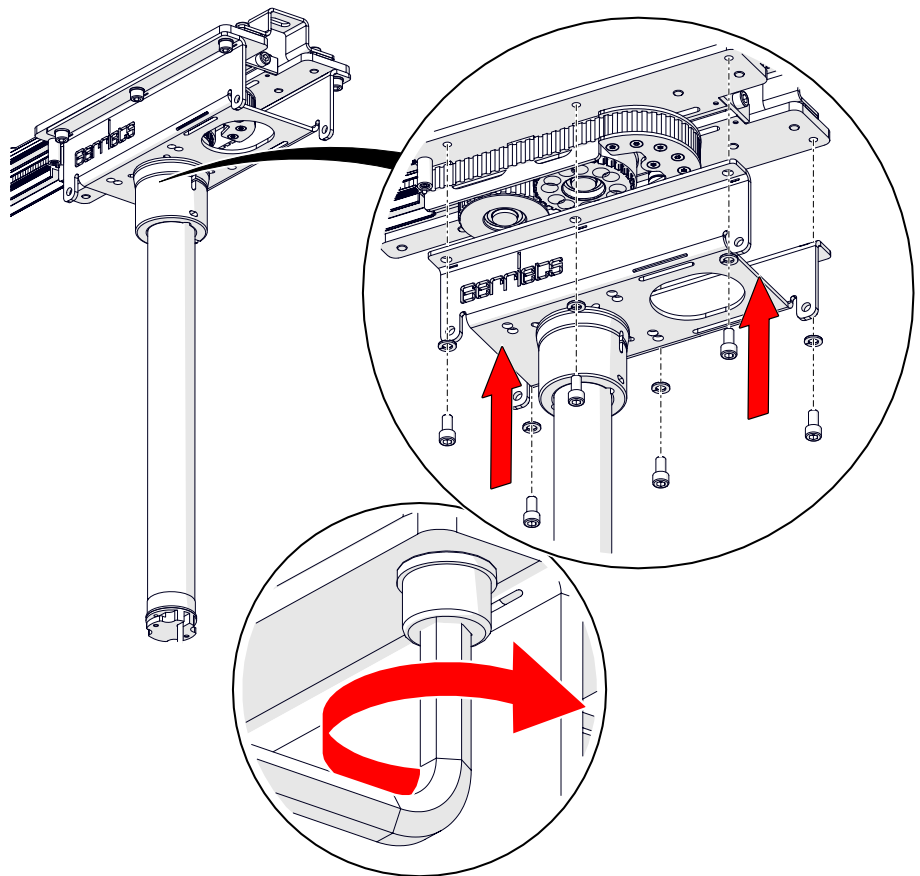


Fig. 88: Fitting motorisation

5.6 Mounting G-FRAME 54 control

Prerequisites for control installation

Component	Required prerequisites
Electrical connection	AC voltage 230 Volt, 50 Hz. Socket with 10 A circuit breaker All phase conductors with RCD residual current monitoring

Tab. 26: Prerequisites for installation and setup of the control



The BELT-TRACK track system must be connected to the designated circuit protected by an RCD.

The residual current may be approx. 10 mA and may briefly increase when switching on.



WARNING

Risk of injury when not using original parts

If original parts are not used, the function and safety of the entire track system may be impaired.

- ➔ Only use original parts and accessories from Gerriets GmbH.
- ➔ If in doubt, contact Gerriets GmbH.

5.6.1 Setting up G-FRAME control

Below are the three possible installation variants of the G-FRAME control: Table installation, wall mounting or installation in a 19-inch rack.



From the operating position there must be an unobstructed view of the hazardous area. Otherwise, a second person for instruction or a camera monitoring system must be provided.

Installation location: Table

The surface (table, shelf or similar) must be at least 440 × 220 × 650 mm (W × H × D) and load bearing.



NOTICE

Property damage due to unsuitable installation of the control

Improper installation can damage the control unit through cable pull or impact if it falls from the table.

- ➔ Place the control unit on a stable surface with a raised edge.
- ➔ Protect the control unit from external interference by third parties during operation.
- ➔ Secure the cables properly and route them so that no tensile forces occur.

Installation location: Wall

Prerequisites

Wall mounting

Component	Required prerequisites
G-FRAME control	- The control panel is on the front side of the lying control (see Fig. 89). - The control is disconnected from the mains
Wall mounting plate	The wall mounting plate is attached at the intended mounting position with 4 × hexagon screws (Ø-hole 8.5 mm; not included in delivery).

Tab. 27: Prerequisites for wall mounting

➔ Observe the load capacities of wall material and fastening material.

Materials / tools

Wall mounting

Quantity	Materials / tools
1	Allen key AF 3 (not included in delivery)
1	Allen key AF 6 (not included in delivery)
1	G-FRAME 54 control unit
1	Wall mounting plate
1	Hexagon socket screw M8 × 30

Tab. 28: Required materials and tools for wall mounting

Instructions for wall mounting

4. Disconnect the control unit from the power supply before working inside the housing and secure it against being switched on again.

⚠ WARNING: Electrical voltage can cause death or severe injury.

5. Loosen the control panel with the Allen key AF 3 on both sides (see Fig. 89).
6. Lift the control panel from the control unit housing (see Fig. 89).

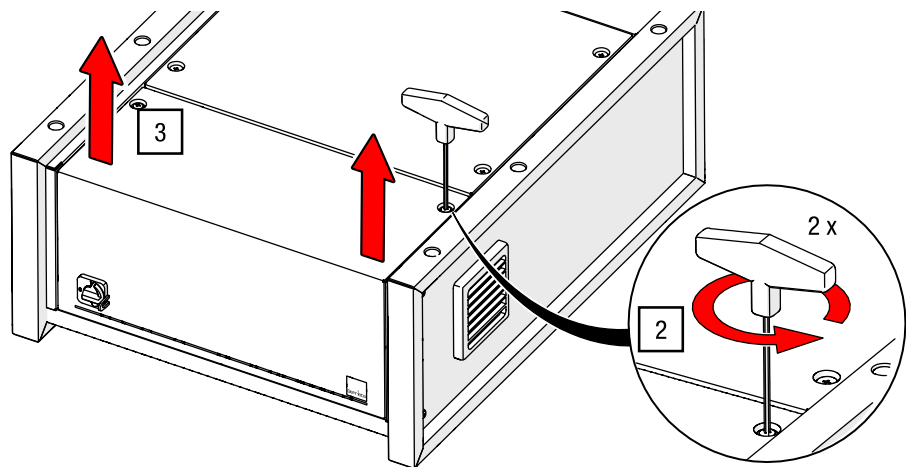


Fig. 89: Loosen and lift control panel (control unit model may vary)

Positioning the loosened control panel

4. and 5. Rotate the control panel 180° and then tilt it 90° so that it matches the orientation from Fig. 91 (see Fig. 90).

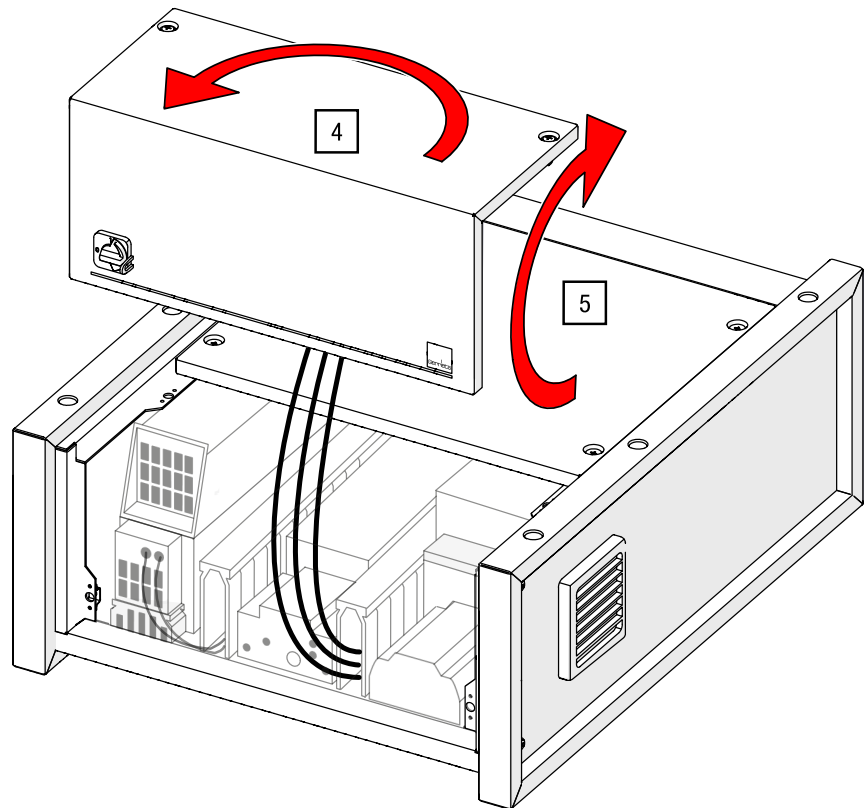


Fig. 90: Rotate loosened control terminal (control unit model may vary)

Inserting control panel

6. Place the control panel back onto the control unit housing (see Fig. 91).



Do not fasten the control panel yet, as further work inside the housing is required during the further course of installation.

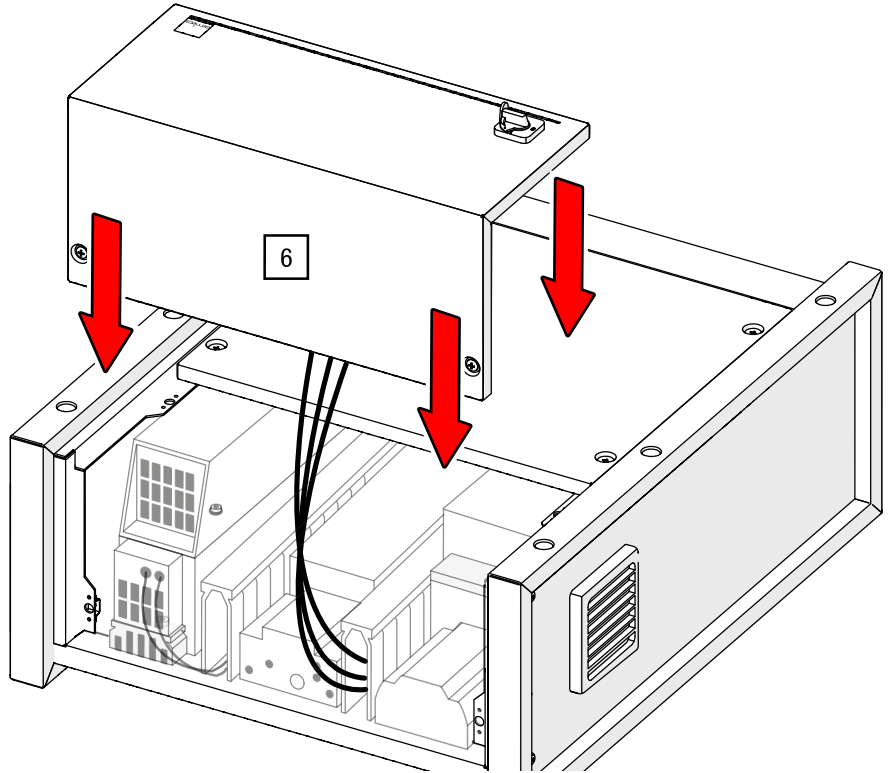


Fig. 91: Insert terminal (control unit model may vary)

Fastening control unit to wall

7. Set up the control unit and hang it with the designated slots on the rear into the two hooks of the wall mounting plate already pre-assembled on the wall (see Fig. 92).
8. Lift off the control panel and secure the control unit to the wall mounting plate with an M8 x 30 socket head cap screw (see Fig. 92).



You will find the open threaded hole for the securing screw centrally in the upper interior of the control unit. The securing screw is screwed in with an Allen key AF 6 until it presses against the wall mounting plate.

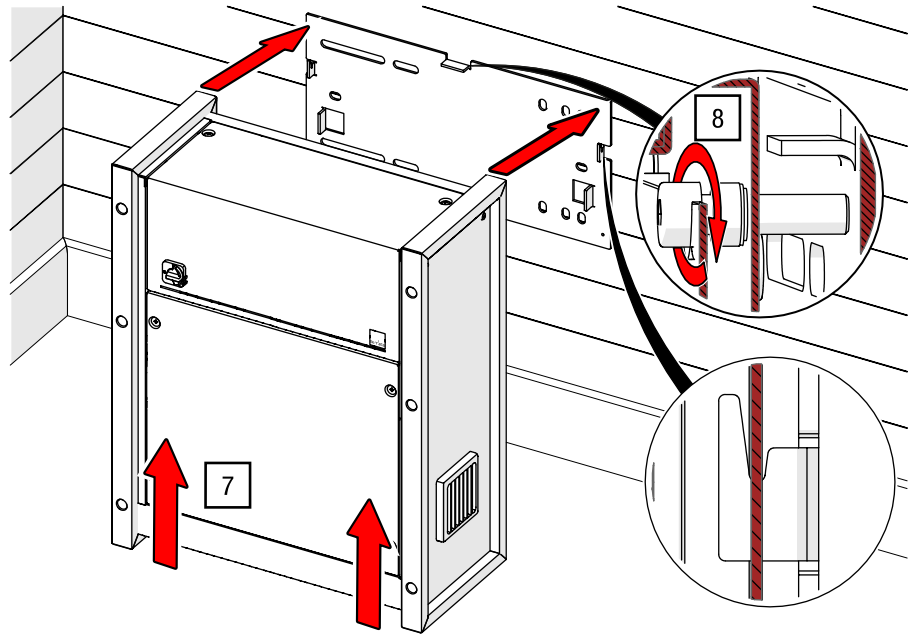


Fig. 92: Secure control unit to wall mounting plate (control unit model may vary)

9. Place the control panel back into the control unit housing and secure the control panel with the Allen key AF 3.
 10. Check that the control unit is securely seated.
- ✓ The control unit is now firmly mounted on the wall and ready for installation. The cable connections can be found on the underside.

Installation location: Server cabinet/rack

Use a second person or lifting aids to position and fasten the control unit in the 19-inch rack.

Component	Necessary prerequisites
G-FRAME control unit	The control panel is mounted on the front of the lying control unit.
19-inch rack (customer-supplied)	The rack is accessible from the rear for cable connection.

Tab. 29: Prerequisites for rack mounting

Materials / tools

Quantity	Materials / tools
1	Allen key AF 4 (not included in delivery)
1	G-FRAME 54 control unit
2	Mounting brackets for 19-inch rack
4	Socket head cap screw M5 × 10 (pre-assembled)
4	Fastening material (according to 19-inch rack used; not included in delivery)

Tab. 30: Required materials and tools for rack mounting

Loosening screws

1. Loosen the four socket head cap screws pre-assembled on both sides in the front area of the housing with the Allen key AF 4 (see Fig. 93).

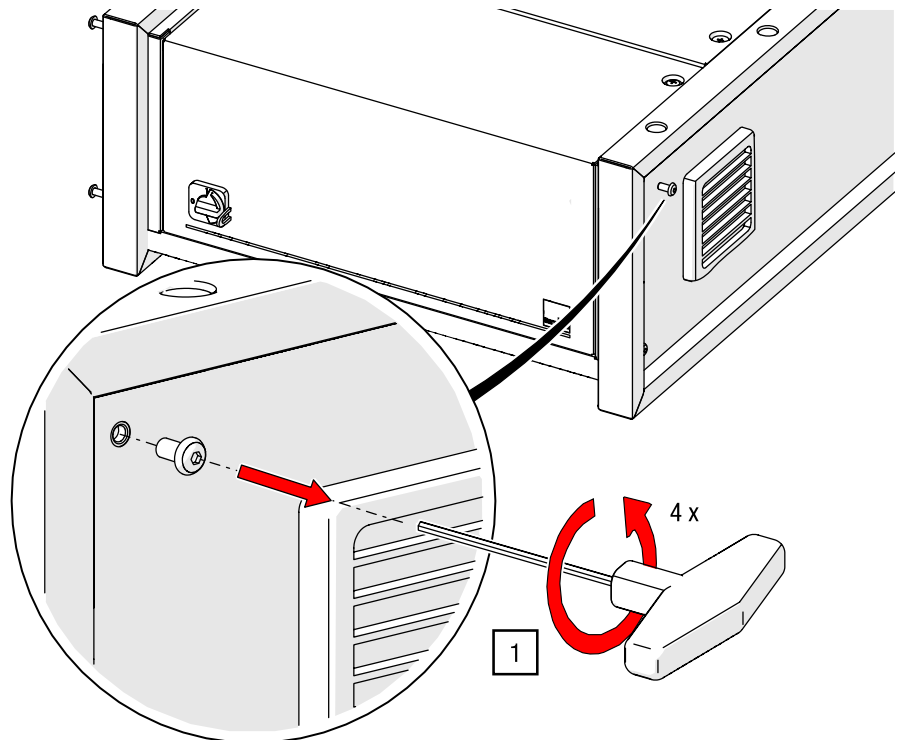


Fig. 93: G-FRAME control unit – Loosen screws for mounting brackets (control unit model may vary)

Fastening rack mounting brackets

2. Fasten the mounting brackets with the socket head cap screws to both sides of the G-FRAME control unit (see Fig. 94).

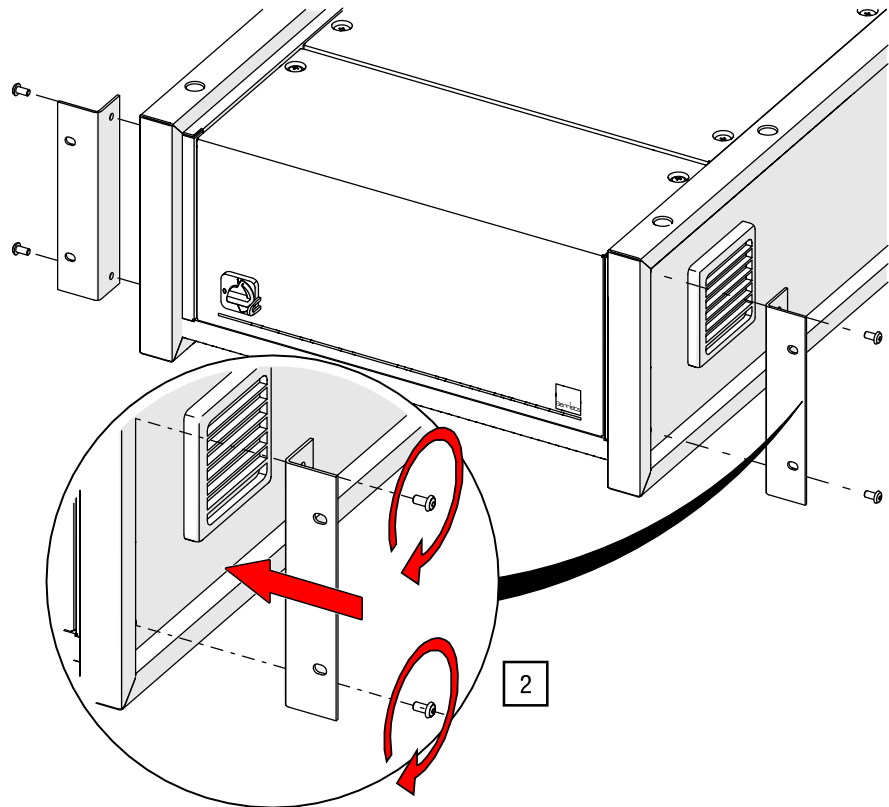


Fig. 94: Fasten rack mounting brackets (control unit model may vary)

Fastening G-FRAME control unit
in rack

3. Position the G-FRAME control unit in the 19-inch rack and fasten it with suitable mounting material (see Fig. 95).

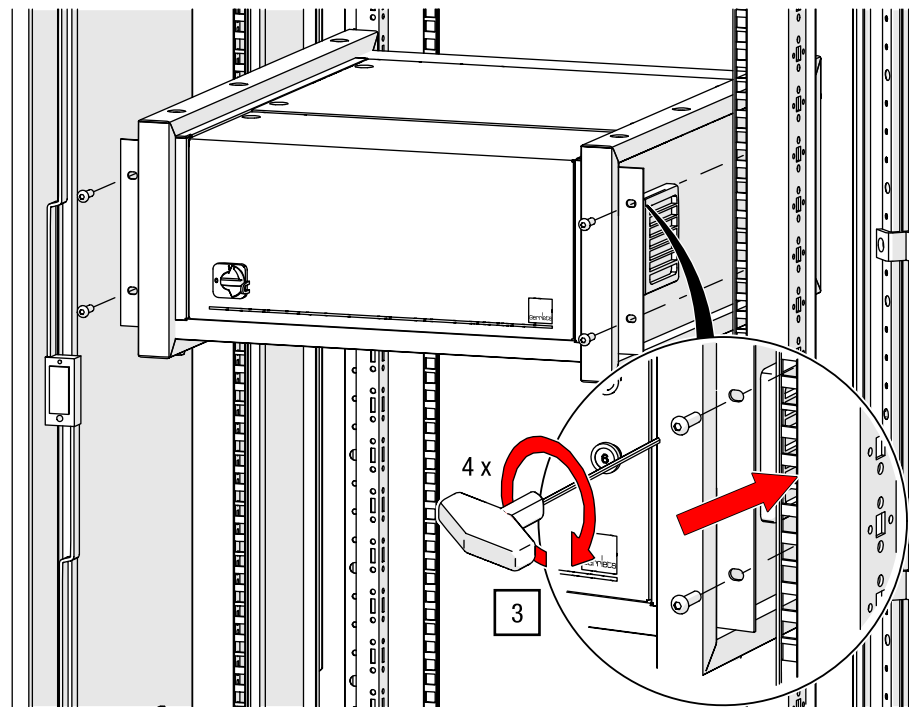


Fig. 95: Fasten G-FRAME in rack (control unit model may vary)

5.6.2 Connecting G-FRAME control unit



DANGER

Danger to life from electrical voltage

When working on the electrical installation, there is danger to life from high voltages.

- ➔ Never open the housing while it is connected to a power source.
- ➔ Ensure that the system is de-energised before working on and inside the terminal box.
- ➔ Ensure that work on the electrical installation is carried out exclusively by qualified specialist personnel.
- ➔ Switch off the power supply immediately if damaged and arrange for repair.
- ➔ Never bypass the fuses or put them out of operation.
- ➔ Only connect the drive to a power network with a functional protective conductor.
- ➔ Ensure that the mains voltage matches the nominal voltage specified on the motor nameplate.

Scope of delivery with Gerriets control unit

1. Connect the control cables to the drive according to the enclosed wiring diagram.
2. Follow the enclosed documentation of the G-FRAME control unit and the drive.

Scope of delivery without Gerriets control unit
Setting up the system

- ➔ See enclosed cable diagram for connecting the drive.
- ➔ Complete the system setup before operation, including the limit switches and, if applicable, DMX settings according to *Chapter 5.7 Setting up the system* [► p. 82].

5.7 Setting up the system

Limit switches

Depending on the combination of drive and control unit, the BELT-TRACK system is supplied with different limit switch types.



For the limit switches to be set correctly, the curtain must be freely movable.
During initial installation or after changes to the curtain, an adjustment of the limit switch positions may be required.

The following provides detailed instructions for setting the respective limit switch types.

5.7.1 Setting the geared limit switches BT12 / BT30 / BT-L

The separate geared limit switches of the motor variants BT12, BT30 and BT-L are set mechanically via the adjustment screws in the limit switch housing. To shift a limit switch position upwards (open), turn the corresponding adjustment screw on the limit switch clockwise. To shift a limit switch position downwards (closed), turn the corresponding adjustment screw on the limit switch counterclockwise.

For 6-contact limit switches, there are two additional adjustment screws between the two operating ends for the pre-operating end upper / lower, where the ramp function is initiated.

Prerequisites

Component	Necessary prerequisites
BELT-TRACK track system	The track system is mounted at the end position with a suitable pulling device and ready for operation.
Work equipment	Suitable lifting equipment for working on the motor unit.

Tab. 31: Prerequisites

Materials / tools for setting the geared limit switches

Quantity	Materials / tools
1	Ladder or lift (not included in delivery)
1	Slotted screwdriver / Allen key AF 4 (not included in delivery)

Tab. 32: Required materials and tools



After the initial setting of the emergency limit switches, two test runs should be made: A first one at low speed against the emergency limit switches to check their function, and then a second one at 100% speed to check whether the emergency limit switches are set such that the system stops in time.

1. Loosen the housing screws with a slotted screwdriver / Allen key and remove the limit switch housing (see Fig. 96).

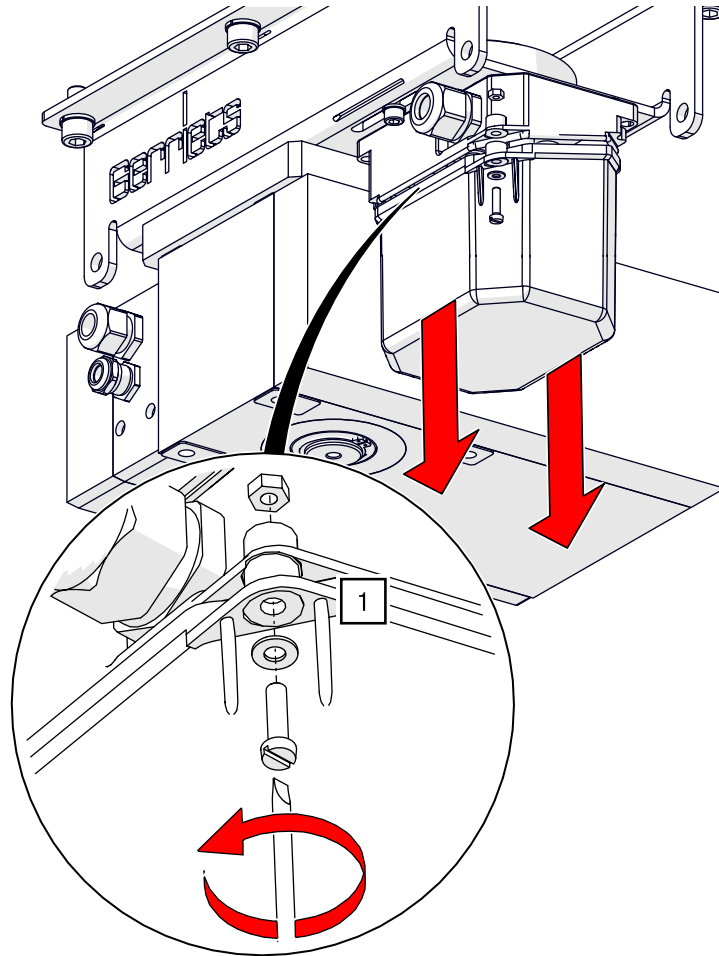


Fig. 96: Setting emergency limit switches – Release adjustment wheels

Setting limit switches

2. Move the corresponding limit switch positions by turning the adjustment screw with a slotted screwdriver / Allen key AF 4 clockwise (open) and anticlockwise (close) (see Fig. 97).

Limit switch assignment:

Black = All positions together

1 Emergency limit open

2 Operating limit open

() Pre-operating limit open

() Pre-operating limit closed

3 Operating limit closed

4 Emergency limit closed

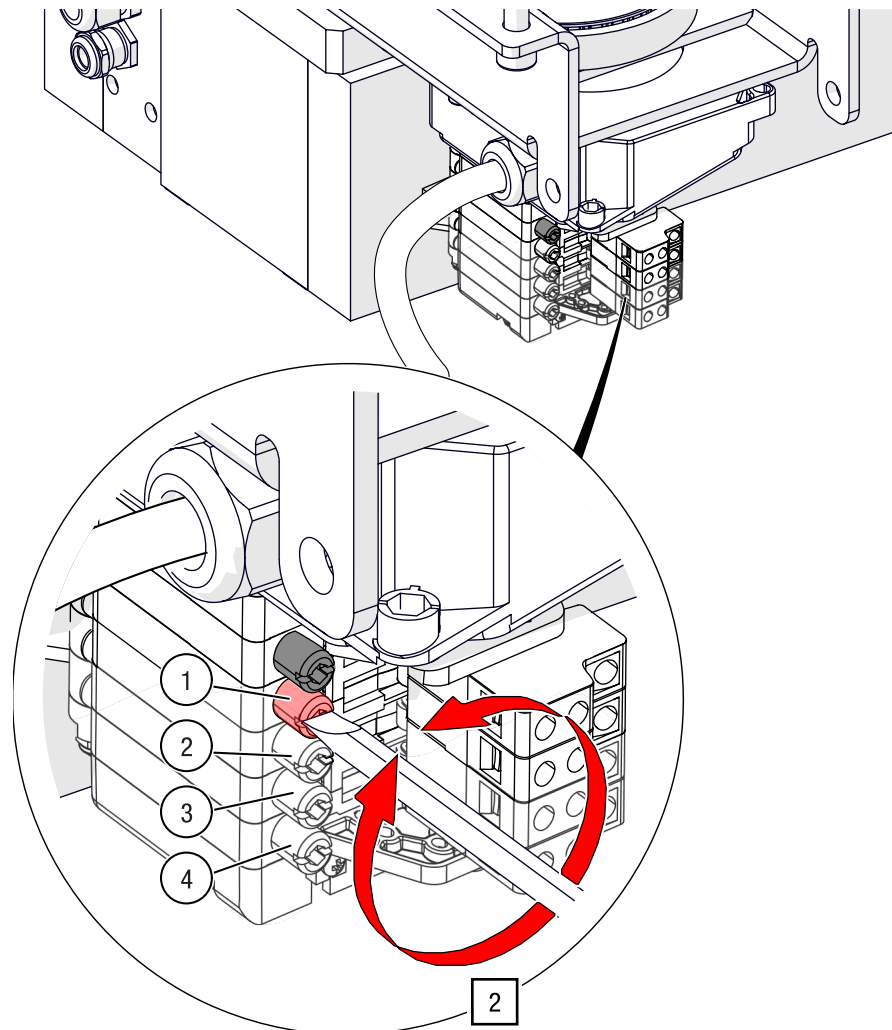


Fig. 97: Setting emergency limit switches – Adjust adjustment wheels

3. Close the housing and move the curtain back into the operating range.

5.7.2 Setting BT-R limit switches

Entering command sequences

To program the drive module, certain key sequences must be entered. These usually consist of three or six consecutive key presses. Entry is made via the control unit.



The keys are to be pressed briefly (less than 0.5 seconds) each time. A maximum of 1 second may elapse between individual steps. The last step of a sequence is to be executed with the key held down (HOLD) to confirm the entry.



The assignment of LEFT/RIGHT to open/closed depends on the installation position and direction of travel of the system. In the following examples, LEFT is described as the left limit position and RIGHT as the right limit position; open/closed is to be checked according to the actual curtain movement.

Example of a 3-step command sequence:

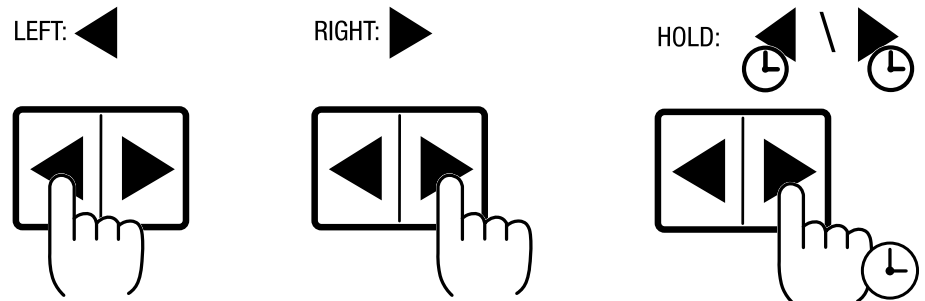


Fig. 98: Limit position setting – BT-R (command sequence example LEFT+RIGHT+LEFT/RIGHT (HOLD))



If the control unit has a stop position, this must be activated after each command sequence before a new entry is made.

Teaching the limit positions

The drive allows manual teaching of the limit positions for horizontal movement. This is necessary to define the maximum travel distances of the curtain or scenery. The teaching process begins either at the 'left' or 'right' limit positions.



As long as no limit positions are stored, the motor only moves jerkily with a slight delay after each key press when the keys are pressed.

Example 1: Starting with the left limit position (closed)

1. If the curtain is already in the left limit position, move it back approx. 20 cm (RIGHT).
2. Move the curtain to the left limit position by pressing the LEFT key on the control unit.
3. Press the following key combination to save the left limit position (see Fig. 99).

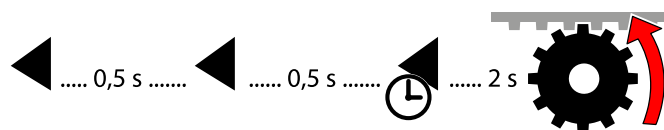


Fig. 99: Limit position setting – setting the left limit position

4. Move the curtain to the right limit position by pressing the RIGHT key on the control unit.
5. Press the following key combination to save the right limit position (see Fig. 100):

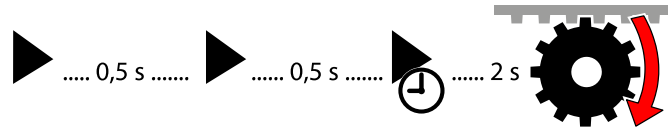


Fig. 100: Limit position setting – Setting right limit position

Example 2: Starting with the right limit position (open)

1. If the curtain is already in the right limit position, move it approx. 20 cm to the left (LEFT).
2. Bring the curtain to the desired right limit position (open) by pressing the RIGHT key on the control unit.
3. Press the following key combination to save the right limit position (see Fig. 101):

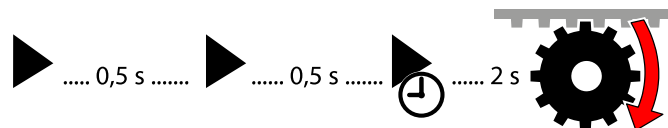


Fig. 101: Limit position setting – Setting right limit position

4. Move the curtain to the left limit position by pressing the LEFT key on the control unit.
5. Press the following key combination to save the left limit position (see Fig. 102).

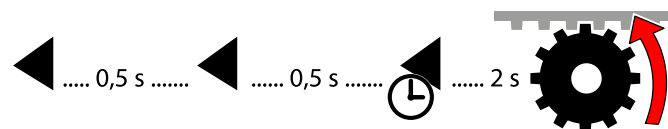


Fig. 102: Limit position setting – Setting left limit position

5.7.3 Deleting BT-R limit switches

Deleting the left limit position

- ➔ Move to the left limit position and delete both limit positions with the following key combination (see Fig. 103).

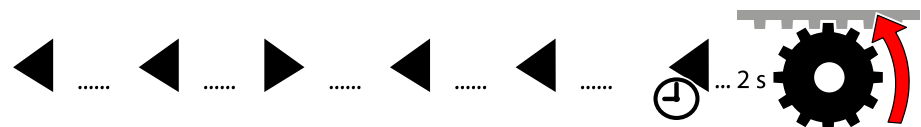


Fig. 103: Limit position setting – Deleting the left limit position

Deleting the right limit position

- ➔ Move to the right limit position and delete both limit positions with the following key combination (see Fig. 104).

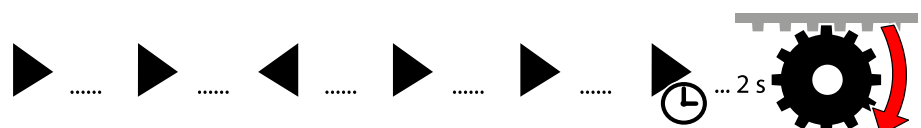


Fig. 104: Limit position setting – Deleting the right limit position

Complete deletion of both limit positions from the left limit position

➔ Move to the left limit position and delete both limit positions with the following key combination (see Fig. 105).

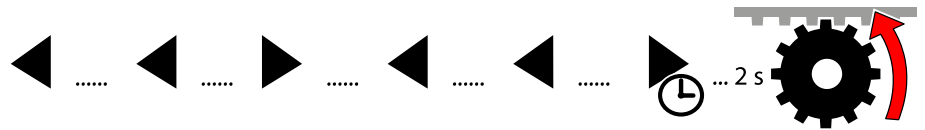


Fig. 105: Limit position setting – Deleting the left limit position

Alternatively: Complete deletion of both limit positions from the right limit position

➔ Move to the right limit position and delete both limit positions with the following key combination (see Fig. 106).

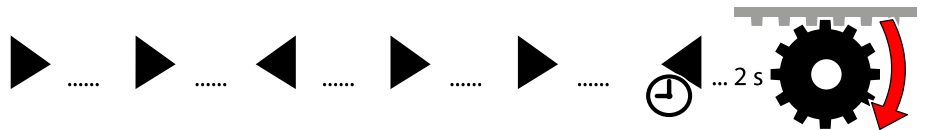


Fig. 106: Limit position setting – Deleting the right limit position

5.7.4 Setting DMX channel

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



When purchasing a G-FRAME control unit with DMX module, you will find the option to set the DMX channels on the rear.

You can loop the DMX signal through to other devices.

➔ Connect a 5-pin XLR cable to the DMX-OUT on the rear of the control unit and connect the control unit to other DMX devices.

DMX address assignment

For communication with the external DMX control device, you must assign a start address to the G-FRAME control unit. On the rear of the control unit there is a recess that exposes the DMX card with the red rotary switches.

- 1. Loosen the knurled screw at the adjustment wheels of the DMX setting and open the cover.
- 2. Turn the adjustment wheels for the DMX channels on the three adjustment wheels (units, tens, and hundreds digits) with a screwdriver to the desired digit (see Fig. 107).



In the example in Fig. 107, DMX address 256 is set as an example. The slide switches 1–4 ('DIP switches') remain switched off ('off').

Setting DMX address on rotary dials

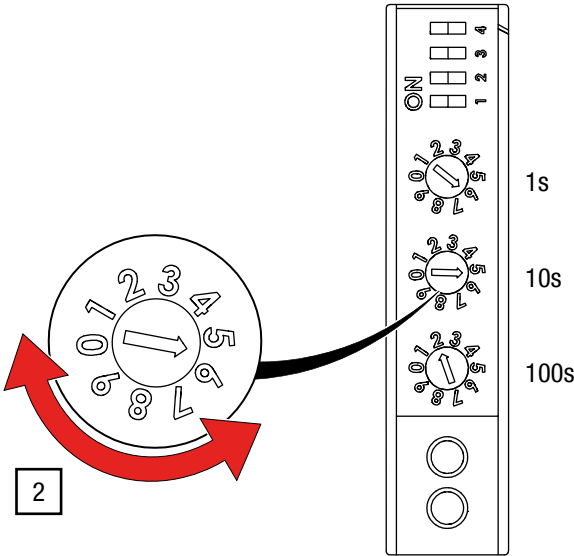


Fig. 107: Rotary dials for setting the DMX address on G-FRAME control unit

6 Operation

6.1 Operating tubular motor BT-R with wall switch

Before starting

Component	Necessary prerequisites
Track system	Installed according to installation instructions
Control unit and motor	Wired, connected and pre-assembled

Tab. 33: Prerequisites for operation



Depending on the installation situation, the wall switch can be mounted horizontally or crosswise.
When mounted crosswise, the buttons apply according to direction of travel LEFT/RIGHT.

Operating tubular motor with wall switch

1. Press the 'OPEN' button (or 'LEFT') to open the curtain or move the scenery material (see Fig. 108).
2. Press the 'STOP' button to stop the travel operation (see Fig. 108).
3. Press the 'CLOSE' button (or 'RIGHT') to close the curtain or move the scenery material (see Fig. 108).

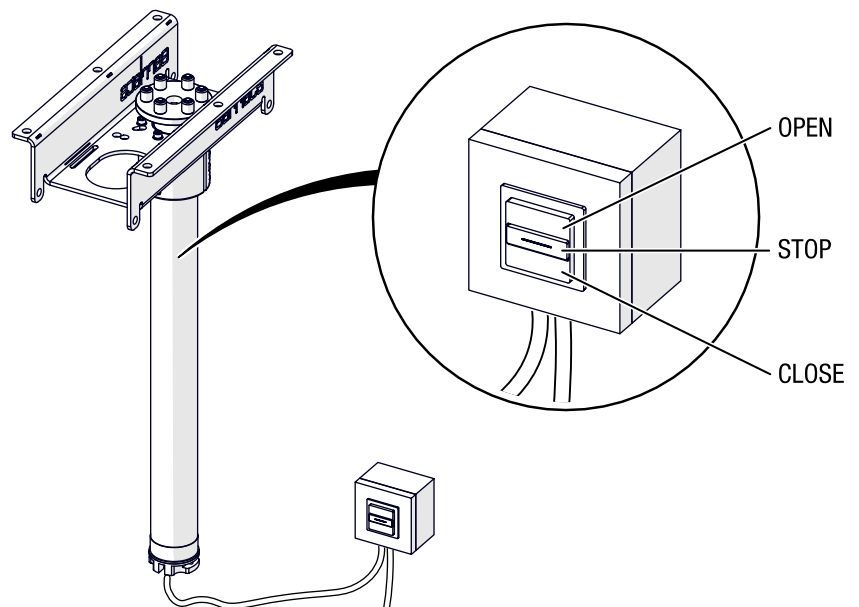


Fig. 108: Tubular motor BT-R – Operation (wall switch layout may vary)

6.2 Operating motors with G-FRAME 54

Component	Necessary prerequisites
G-FRAME control unit	• Correctly connected (see <i>Chapter 5.6.2 Connecting G-FRAME control unit</i> [► p. 81]). • Wiring checked for secure fit and integrity. • DMX address set (see <i>Chapter 5.7.4 Setting DMX channel</i> [► p. 88]).

Tab. 34: Necessary prerequisites for operation with G-FRAME control unit

Number and designation:

- 1 Indicator light control unit 'ON '
- 2 'Open' button
- 3 'STOP' button
- 4 'Close' button
- 5 Potentiometer for speed (only with frequency inverter control)
- 6 Emergency stop switch
- 7 Internal/DMX selector switch
- 8 Main circuit breaker

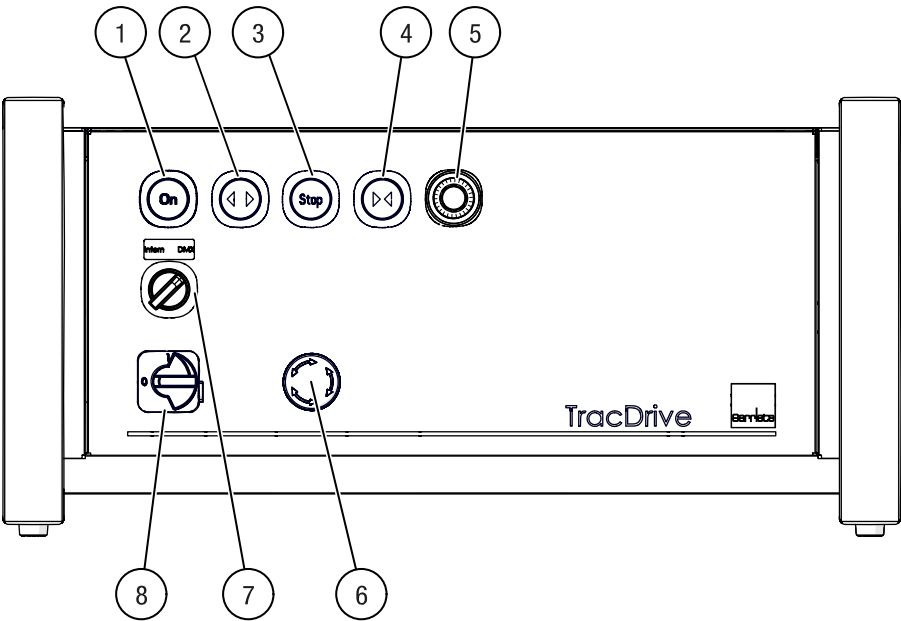


Fig. 109: Front – G-FRAME 54 control unit

Operation

1. Unlock the emergency stop button if it was previously activated.
 2. Turn the main circuit breaker to the 1 position to switch on the control unit (8/ Fig. 109).
 3. Check whether the 'ON 'light (1/ Fig. 109) illuminates.
 4. Set the 'Internal/DMX' switch (7/ Fig. 109) to the desired input source:
 - Select '**Internal**' if the control unit is to be operated locally via the integrated controls.
 - Select '**DMX**' if the control unit is to be operated externally via DMX.
 5. Ensure that the movement area is visible at all times during operation.
- ⚠ WARNING:** Moving parts in the track system can cause serious injuries or property damage.

Variant 1: For control unit
without DMX (local control)

6. Press the 'Open' button (**2**/Fig. 109) to open the curtain or move the scenery material.
7. Press the 'STOP' button (**3**/Fig. 109) to stop the travel operation.
8. Press the 'Close' button (**4**/Fig. 109) to close the curtain or move the scenery material in the opposite direction.

Variant 2: Control
via DMX



In DMX mode, control is exclusively via the external control device. The local controls are non-functional in this operating mode.

9. Select the corresponding travel command via your DMX control device (assignment see *Chapter 2.7.2 DMX control (hardware and software)* [► p. 25]).

Speed (optional)

10. When using local control with variable speed, adjust the desired speed with the potentiometer (**5**/Fig. 109).

7 Maintenance and servicing

7.1 Operational maintenance



Regular maintenance according to the maintenance schedule is the prerequisite for efficient and safe use of the track system and all its components.

- Observe the maintenance instructions.
- Qualified specialist personnel may only conduct maintenance work.
- Conduct maintenance and servicing work regularly to ensure trouble-free operation within the product lifetime.
- Reinsert screw connections according to the specific installation instructions as well as securing elements (e.g. rings, pins, and clips) and check their effectiveness.

7.2 Maintenance schedule

Maintenance measure	Before each use	Quarterly	Semi-annually	Annually
Unusual running noises	●			
Contamination				●
Timing belt: Condition			●	
Timing belt: Tension			●	
Runners and master runners: Smooth running and quiet operation				●
Runners and master runners: Visual inspection of rollers, deformation of housing and attachments				●
Master runner: Timing belt fastening				●
Timing belt rollers: Smooth running				●
Suspensions: Visual inspection and screw connections				●
Track connections				●
Secure fit of screw connections for fastening the motor and deflection unit				●
Electrical system and control unit				●
Curtain or load attachment to runners		●		

Tab. 35: Maintenance table

Maintenance frequency
varies according to use



Some of the mentioned tasks are heavily dependent on use and environmental conditions. The cycles mentioned are minimum specifications. Different maintenance cycles may be possible in individual cases.

- ➔ Correct deviating maintenance cycles.
- ➔ Instruct the operating personnel accordingly.

7.3 Wear parts

Note on timing belt wear



If cracks, material removal, or other signs of wear are visible on the tooth tips or tooth flanks of the timing belt, or if the timing belt is damaged in the clamping area, it must be replaced.

- ➔ Please contact us in this case for a suitable replacement part.
- ➔ On request, we are also happy to conduct professional installation (see *Chapter 13.1 Contact* [► p. 105]).

7.4 Storage

Short-term and medium-term storage (up to 2 years) is possible without extraordinary measures under storage conditions in accordance with the environmental conditions from *Chapter 3.1 Ambient conditions* [► p. 28].

- ➔ For longer-term storage, take additional measures for corrosion protection.
- ➔ Store the track system dry and dust-free.
- ➔ Do not expose the track system to aggressive media.

8 Troubleshooting

8.1 General information



- ➔ In case of malfunctions whose cause you cannot determine and rectify yourself, shut down the system and contact the Gerriets GmbH customer service (see *Chapter 13.1 Contact* [► p. 105]).
- ➔ Work on the electrical installation must be carried out by specialists and particularly during the warranty period by personnel of Gerriets GmbH.

NOTICE

Property damage due to unauthorised modifications to the track system

The function and safety of the BELT-TRACK track system can be impaired by non-intended modifications.

- ➔ Do not make any changes or additions with non-original spare parts.
- ➔ Observe the maximum load capacity (see load capacity tables in *Chapter 3.2 Track system* [► p. 28]).
- ➔ If in doubt, contact us (see *Chapter 13 Contact and warranty* [► p. 105]).

8.2 Control via DMX

Problem	Cause	Remedy
Setting the DMX address on the control unit has no effect when operating with RDM master.	The RDM master overwrites the DMX address.	➔ Perform a 'Reset' on the control unit by selecting 'Start address 900'.
Setting the DMX address has no effect.	The slide switches ('DIP switches') on the rotary dials for DMX-setting have been changed.	➔ Switch the slide switches to 'off' (see also Fig. 107 [► p. 88]).
DMX status LED flashes red.	There is no DMX signal or the wiring is faulty.	➔ Connect a DMX control device. ➔ Check all cable connections for secure fit and integrity.
DMX status LED flashes green.	No valid DMX-start address has been set.	➔ Check the DMX address, see also Fig. 107 [► p. 88].

Tab. 36: Troubleshooting for DMX control

8.3 Track system and belt

Problem	Cause	Remedy
Belt slips on drive wheel; end positions no longer correct.	Insufficient belt tension	➔ Retension the timing belt according to <i>Chapter 5.4.4 Tensioning timing belt</i> [► p. 71]. The timing belt must sit cleanly everywhere and must not cause any rubbing noises. ➔ Tension the timing belt sufficiently until it sits snugly everywhere and there are no more bulges. ➔ Reset the limit positions according to <i>Chapter 5.7 Setting up the system</i> [► p. 82].
Running noises at motor-side entry or deflection units	Motor or deflection unit not aligned straight with the track.	➔ Check and correct the alignment of the parts to each other.
Belt makes running noises at the motor-side entry or at deflection units in the timing belt channel.	Insufficient belt tension	➔ Tension the timing belt sufficiently until it sits snugly everywhere and there are no more bulges.
Belt slips or tears off during operation with motor units BT-L, BT30 and to a lesser extent with BT12.	Limit switches incorrectly set, motor runs to block and has sufficient power to cause damage to belt.	➔ Reset the limit switches in accordance with <i>Chapter 5.7 Setting up the system</i> [► p. 82].

Tab. 37: Troubleshooting for track system and belt

9 Decommissioning and disposal



In the event of defects in individual components of the track system, we focus on sustainability and offer repair where possible.

We are happy to check for you whether a repair makes sense. Contact us via the contact options in *Chapter 13 Contact and warranty* [► p. 105] or via the contact details of the locations on the back.

9.1 Temporary shutdown

1. Secure the danger area.
2. Begin dismantling from the payload side and remove loads and load-bearing components in the force flow step by step.
3. Clean all components and store them in dry and dust-free containers or ideally in the original packaging.

9.2 Environmental protection, dismantling, and disposal

Environmental protection/WEEE



Dispose of the track system, the components and the accessories at the end of their service life in an environmentally friendly manner in accordance with applicable legal regulations.

Also observe the national and international regulations.

This applies in particular, but not exclusively, to metals, electronic components, batteries and accumulators, fibre composite materials and plastics.

If in doubt, contact the local authority or a specialised disposal company to ensure proper disposal in accordance with environmental standards. There you can find out about the correct procedures and methods.

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

Dismantling and disposal

1. Proceed according to step 1 and 2 from the previous *Subchapter 9.1 Temporary shutdown* [► p. 96].
2. Dispose of all parts properly in compliance with local regulations.

10 Safety

10.1 Use

10.1.1 Intended use

The BELT-TRACK track system is intended exclusively for hanging and moving medium-weight to heavy curtains and scenery. Use may only take place within the load capacity of the overall system and individual components (track, master runner, runner) specified by the manufacturer. The permissible load on the master runners and runners must not be exceeded.

BELT-TRACK is designed for stationary indoor installation in event venues. Use outdoors as well as in humid or corrosive environments is not permitted.

Even if individual components (e.g. the drive) may be suitable for other areas of use, the track system is exclusively designed for indoor operation.

- ➔ Reliably prevent unauthorised persons from entering the danger area during installation.
- ➔ Observe the instructions in this operating manual.
- ➔ Conduct inspection and maintenance work regularly.

10.1.2 Foreseeable misuse

Any use other than that specified under intended use is considered non-intended use.

Consequences of non-compliance

Failure to follow the instructions in this operating manual may result in profound consequences including death, serious personal injury and damage to the system or property of third parties. These are not covered by product warranty or liability.

- ➔ Please observe *Chapter 10.6 Disclaimer of liability* [► p. 102].

Other examples of non-intended use

Examples of non-intended use include:

- Attaching attachments not approved by Gerriets and modifying the product.
- Unauthorised entry into the danger area during installation.
- Picking up and moving ('flying') persons.

10.2 General warnings and residual risks

General information

The track system BELT-TRACK complies with the latest technical standards as well as the applicable safety and occupational health regulations. Nevertheless, there is a risk of injury to the installer and third parties as well as property damage, particularly during installation.

10.2.1 General warnings

Mechanical hazards



DANGER

Risk of injury from falling objects and suspended loads

Falling objects can cause fatal accidents, severe injury, or property damage.

- ➔ Pay attention to the maximum load capacity of the overall system and individual components.
- ➔ Only install the system on a sufficiently load-bearing substrate or substructure.
- ➔ Avoid dynamic loads such as falls ('falling' of the load into the static system) or swinging movements.
- ➔ Do not make any changes, additions, or modifications to the track system unless these have been approved in writing by Gerriets.
- ➔ Secure the danger area.
- ➔ Secure loads to be fastened against falling during installation (e.g. using suitable lifting equipment).
- ➔ Always mount the screw connections of the parts using the specific installation instructions and torque tables.
- ➔ Always use securing elements such as rings, clips, and pins correctly and check their effectiveness.
- ➔ Check mounting equipment for suitability and permissible load capacity before use.

Electrical hazards

**DANGER****Danger to life from electrical voltage**

Contact with live parts poses a danger to life from electric shock. A damaged cable or its insulation can be life-threatening.

- ➔ Never disconnect plug connectors under load.
- ➔ De-energise the electrical system before all maintenance, cleaning, and repair work.
- ➔ Ensure that the system is de-energised when working on the control cabinet.
- ➔ Have electrical installation work carried out exclusively by qualified specialist personnel.
- ➔ Install a mains disconnection device in accordance with EN 60204.
- ➔ Disconnect the system from the mains before working inside the control unit housing.
- ➔ Regularly check the electrical protection (e.g. Overcurrent protection, equipotential bonding, residual current device) in accordance with the power supply specifications.
- ➔ Regularly check the system and its wiring for integrity (see *Chapter 7 Maintenance and servicing* [► p. 92]).
- ➔ In the event of damage, switch off the power supply immediately and arrange for repair.
- ➔ Keep moisture away from live parts.
- ➔ Never bridge fuses or put them out of operation.

**WARNING****Electromagnetic interference with signals and devices**

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

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

10.2.2 Residual risks

Despite compliance with all design and safety measures, residual risks cannot be completely excluded.

These include in particular:

- Operator error
- Technical defects or wear
- External influences during operation

The operator must ensure through appropriate organisational measures that these risks are reduced to a minimum.

10.3 Personnel and target group

10.3.1 Operator responsibility

Definition of the operator	The operator is a person who uses the system or machine commercially or economically themselves or makes it available to third parties. During operation, they bear the legal product responsibility for the protection of personnel or third parties.
Operator obligations	➔ Comply with applicable occupational health and safety guidelines and inform your personnel accordingly. ➔ Ensure that your personnel are familiar with the occupational safety and accident prevention regulations. ➔ Provide your personnel with the required protective equipment (see <i>Chapter 10.3.3 Personal protective equipment</i> [► p. 100]). ➔ Prevent installation by unauthorised and uninstructed persons. ➔ Only operate the track system under the operating parameters specified in <i>Chapter 3 Technical data</i> [► p. 28].

10.3.2 Personnel responsibility

All persons entrusted with installation on the BELT-TRACK track system commit themselves before starting work:

- To observe the basic regulations on occupational safety and accident prevention.
- To read and observe the installation instructions including the safety chapter and safety notices.

10.3.3 Personal protective equipment

The operator must, if necessary, provide the following personal protective equipment for installation and maintenance personnel:

Symbol	Protective equipment
	Protective gloves
	Safety shoes
	Safety helmet

Tab. 38: Personal protective equipment

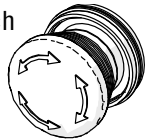
10.4 Safety and protective devices

10.4.1 Non-separating protective devices

Recessed control buttons
(dead man's switch)

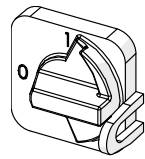
To prevent unintentional activation, the control button on the G-FRAME 54 control unit is recessed. The travel movement of the BELT-TRACK track system is interrupted when the button is released.

Emergency stop switch



An emergency stop switch is fitted to the G-FRAME control unit to de-energise the entire system in the event of danger.

Main circuit breaker
(lockable)



A mains disconnection device is fitted to the G-FRAME control unit to de-energise the system. The mains disconnection device can be locked in the 0-position with a small padlock to prevent switching on by unauthorised persons.

10.4.2 Separating protective devices

Separating protective devices must be provided by the operator according to the installation situation and hazard situation.

- ➔ Prepare a hazard assessment of your system to identify and, if possible, eliminate hazard sources.

10.5 Directives and standards

EU/EC directives and standards

The track system complies with the directives:

- 2006/42/EC Machinery Directive



This manual is based on the Machinery Directive 2006/42/EC valid at the time of preparation.

Please note that this directive is being replaced by EU Regulation 2023/1230, which will be mandatory from 20 January 2027.

The track system complies with the standards:

- EN 17206:2020 Entertainment technology – Machinery and other production areas – Safety requirements and testing
- EN 60204-1:2019-06 Safety of machinery – Electrical equipment of machines – Part 1: General requirements (IEC 60204-1:2016, modified); German version EN 60204-1:2018

Harmonised standards

Furthermore, the following harmonised standards are fulfilled:

- EN ISO 13849-1:2015 Safety of machinery – Safety-related parts of control systems – Part 1: General principles for design (ISO 13849-1:2015); German version EN ISO 13849-1:2015
- EN ISO 12100:2011-03 Safety of machinery – General principles for design – Risk assessment and risk reduction (ISO 12100:2010); German version EN ISO 12100:2010
- EN 1037:1995 + A1 Safety of machinery – Prevention of unexpected start-up
- EN 62061:2005 Safety of machinery – Functional safety of safety-related electrical, electronic, and programmable electronic control systems

Declaration of conformity

The BELT-TRACK track system is to be considered a machine within the meaning of the EU Machinery Directive 2006/42/EC (valid until 19.01.2027) as well as the subsequent EU Machinery Regulation (EU) 2023/1230 (mandatory from 20.01.2027) once it has been fully assembled and put into operation.



If Gerriets GmbH has been commissioned with the installation of a complete curtain track system including an electric motor drive, a conformity assessment of the system will be carried out by them. Depending on the scope, Gerriets GmbH issues a declaration of conformity or an incorporation declaration within the meaning of the Machinery Directive. If you only obtain the components of the system from Gerriets GmbH in order to install the system yourself, you are considered the manufacturer within the meaning of the EU Machinery Directive (2006/42/EC). In this case, it is your responsibility to conduct the conformity assessment procedure.

10.6 Disclaimer of liability

Gerriets GmbH assumes no liability or warranty for damage and malfunctions caused by:

- Non-compliance with the operating manual.
- Non-intended use.
- Use of personnel who are not appropriately qualified.
- Use of spare parts, accessories and materials not approved by Gerriets GmbH.
- Modifications or conversions of the product not approved by Gerriets GmbH.

11 Abbreviations and explanations

11.1 Terms and explanations

ELL/R	Entertainment Load Limit at rest according to EN 17206:2020. This indicates the maximum possible load at rest and corresponds to half of the Working Load Limit (WLL).
Nm	Nm (Newton metre) is a unit of measurement for torque, i.e. the force required to rotate an object. It corresponds to a force of one Newton at a lever arm length of one metre.
AF/Allen key	An Allen key is a tool with a hexagonal profile.
Slack side	Unloaded section of a circulating traction device, e.g. a timing belt. The slack side runs from the driven area back to the deflection unit and transmits little or no tensile force.

12 Appendix

12.1 Screw tightening torques

On the torques

The tightening torques are stated in the specific instructions for action; however, if further data is required, you can take it from the following table.



For highly stressed screws, lower tightening torques may be required. In this case, a screw calculation is necessary. The tightening torques in the action chapters take precedence.

Tightening torque [Nm]			
Screw size	Screw strength class 8.8	Self-locking screw	Hand-tight
	According to VDI 2230-1, Tab. A8	According to manufacturer specifications	According to DIN 3110
M4	3	-	3
M5	6	11	6
M6	11	19	11
M8	27	42	27
M10	54	85	42
M12	93	130	48
M16	230	330	53
M20	464	-	75

Tab. 39: Overview of screw tightening torques

13 Contact and warranty

13.1 Contact

Business hours:	Monday – Thursday	08:00–12:00 13:00–17:00
	Friday	08:00–12:00 13:00–15:30
Telephone switchboard:	Our telephone switchboard is available continuously during business hours. Outside business hours, you can leave messages on our answering machine without time limit or send us your enquiry by e-mail.	
Telephone:	Switchboard	+49 7665–960 0
Fax:	Switchboard	+49 7665–960 125
Addresses:	Delivery address	GERRIETS GmbH Stage equipment Im Kirchenhürstle 5-7 D-79224 Umkirch
	Postal address	Gerriets GmbH Stage equipment P.O. Box 1154 D-79220 Umkirch
	Commercial Register Freiburg VAT ID No.	HRB No. 2678 DE 142191543
	Managing Director	Hannes Gerriets
	Internet E-mail	www.gerriets.com info@gerriets.com
Further contact options	Contacts for our worldwide locations & a QR code for the website with further international contact options can be found on the back of the document.	

13.2 Customer service and repair

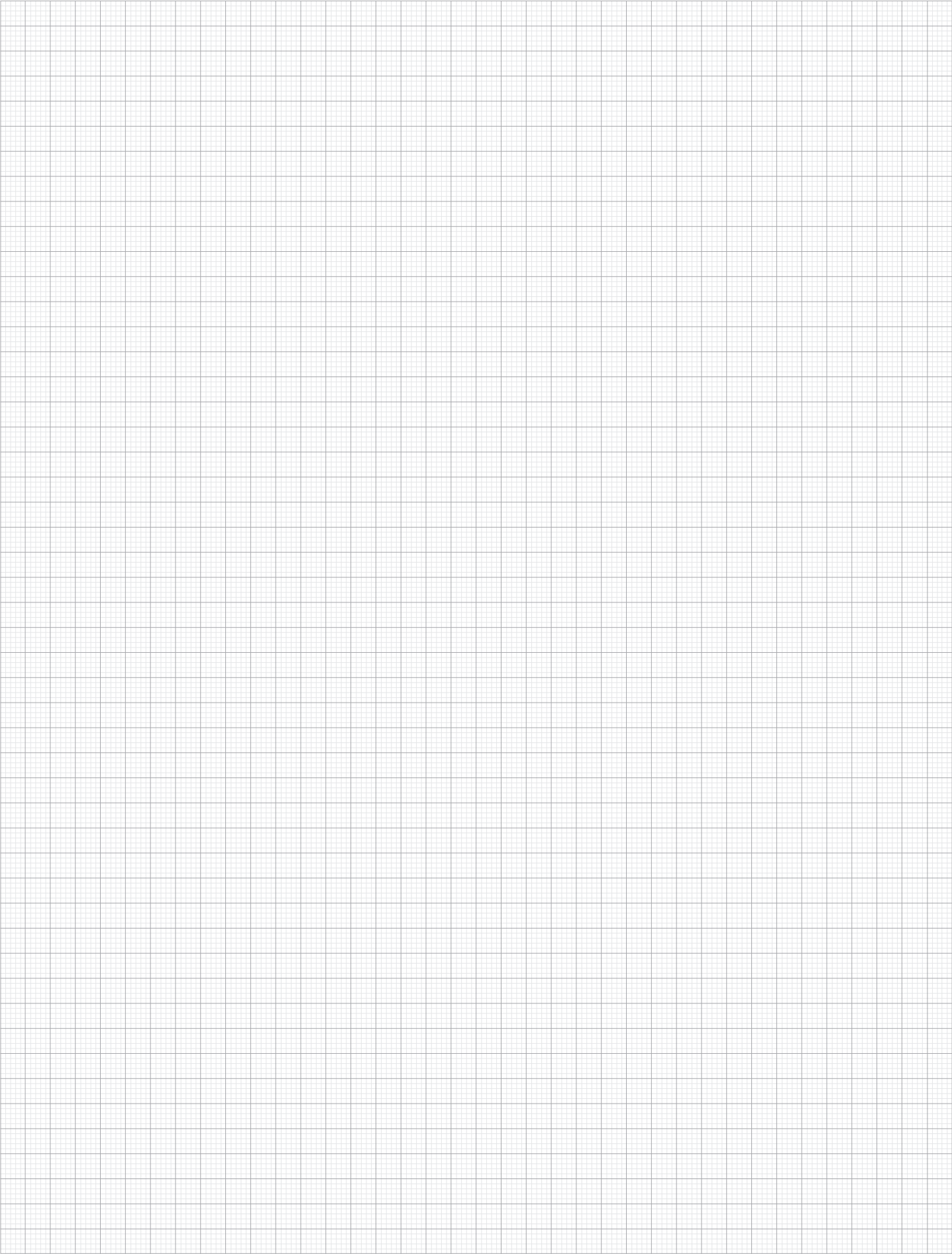
Our product is supplied with a two-year warranty.

This covers the replacement or repair of defective parts attributable to material or manufacturing defects. The warranty does not cover damage caused by improper use, overloading, or improper maintenance.

Please note that modifications or repairs by unauthorised personnel may result in faults that are not covered by the warranty.

In the event of a defect, please contact our customer service to check the warranty claim and discuss how we can best assist you. With our high quality standards, your complete satisfaction is always close to our heart, and we are at your disposal during our business hours.

Please also refer to our General Terms and Conditions at www.gerriets.com.



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