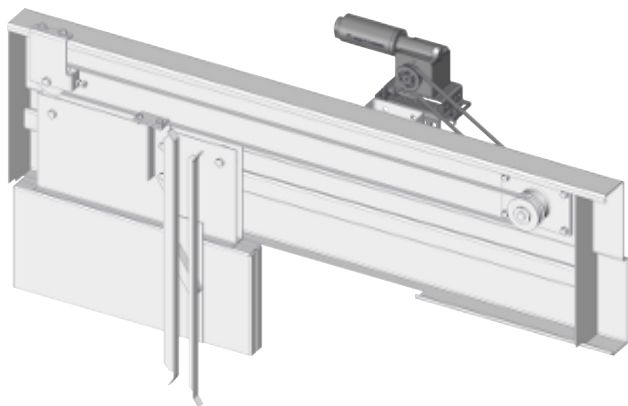
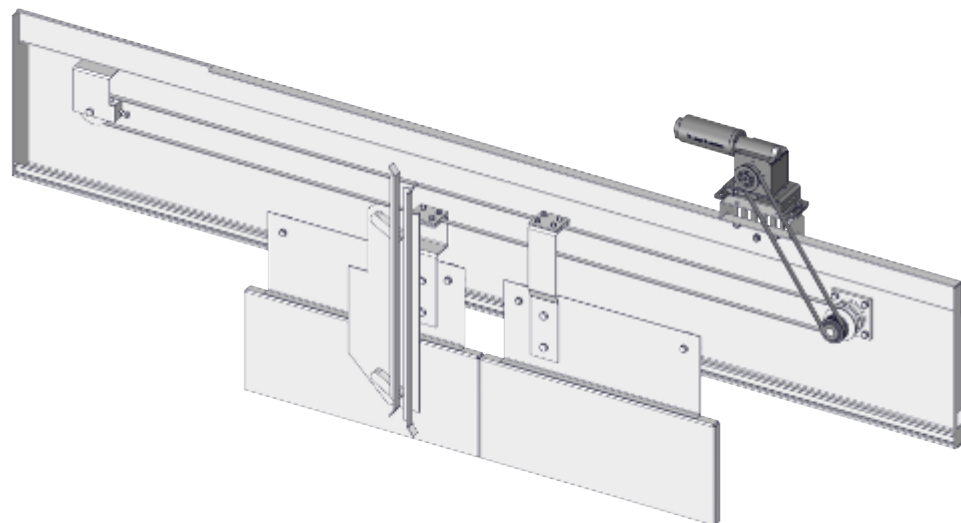




Variant 1: Assembly TL/TR
Chapter 7



Variant 2: Assembly Z
Chapter 8

Conversion Instructions Mitsubishi indirect to TSG V4

Shows **TL**, **TR** is mirror image of it, **Z** like **TL**.

Imprint

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Dokument **in Deutsch** durch Scannen des QR-Codes anfordern.



Obtenir le document **en français** en scannant le code QR.



1 About these instructions

1.1 Purpose

These conversion instructions contain important information and general mechanical assembly steps for the conversion of an existing system. These instructions must be observed to avoid hazards, repair costs and downtimes and increase the reliability and service life of the system.

1.2 Scope

These conversion instructions apply to the following conversion kit:

- Mitsubishi indirectto TSG V4

1.3 Version information

The version number of these conversion instructions is shown on the front page and footer of each page.

Always retain and use the latest version of all documents.

Using an outdated version of this and any required and supplementary documentation can lead to incorrect assembly.

1.4 Contact information

See page 2.

1.5 Customers for whom these instructions are intended

These conversion instructions are intended for end customers of Langer & Laumann Ing.-Büro GmbH.

To ensure correct operation of the system, in addition to reading these conversion instructions, personnel must have the following qualifications and relevant technical knowledge:

- Extensive technical knowledge of these systems
- Thorough knowledge of the operating instructions of these systems
- Recognised as a qualified specialist

1.6 Other applicable documents

The following documents are required for work not described in these conversion instructions:

- Fitting instructions for the door control unit with information on electrical connection, fitting and commissioning
- Information on components not manufactured and supplied by Langer & Laumann

2 Safety

2.1 General safety instructions

Personnel must have carefully read and understood these conversion instructions before starting the conversion work.

The safety instructions and guidelines specified in these conversion instructions must be observed.

The accident prevention regulations applicable at the place of use and general safety regulations must be observed.

2.2 Personnel requirements

2.2.1 Personnel qualification and scope of work

The work described in these instructions places different demands on the qualifications of personnel. Insufficiently qualified personnel cannot correctly assess the potential risks and may expose themselves and others to the risk of injury. Insufficiently qualified personnel are not permitted to enter work areas/danger zones. Persons whose reactions are influenced, e.g. by drugs, alcohol or medication, must not work on the system.

Qualified personnel Only qualified personnel (lift fitters for specific activities in lift construction in accordance with DGUV 303-001) may work on mechanical components.

Qualified electricians Only qualified electricians or lift fitters with advanced training as qualified electricians for specific activities in lift construction may work on electrical components in accordance with DGUV 303-001.

2.2.2 Personal protective equipment

Personal protective equipment is used to protect people against health and safety impairments during their work. The specified protective equipment must be worn.

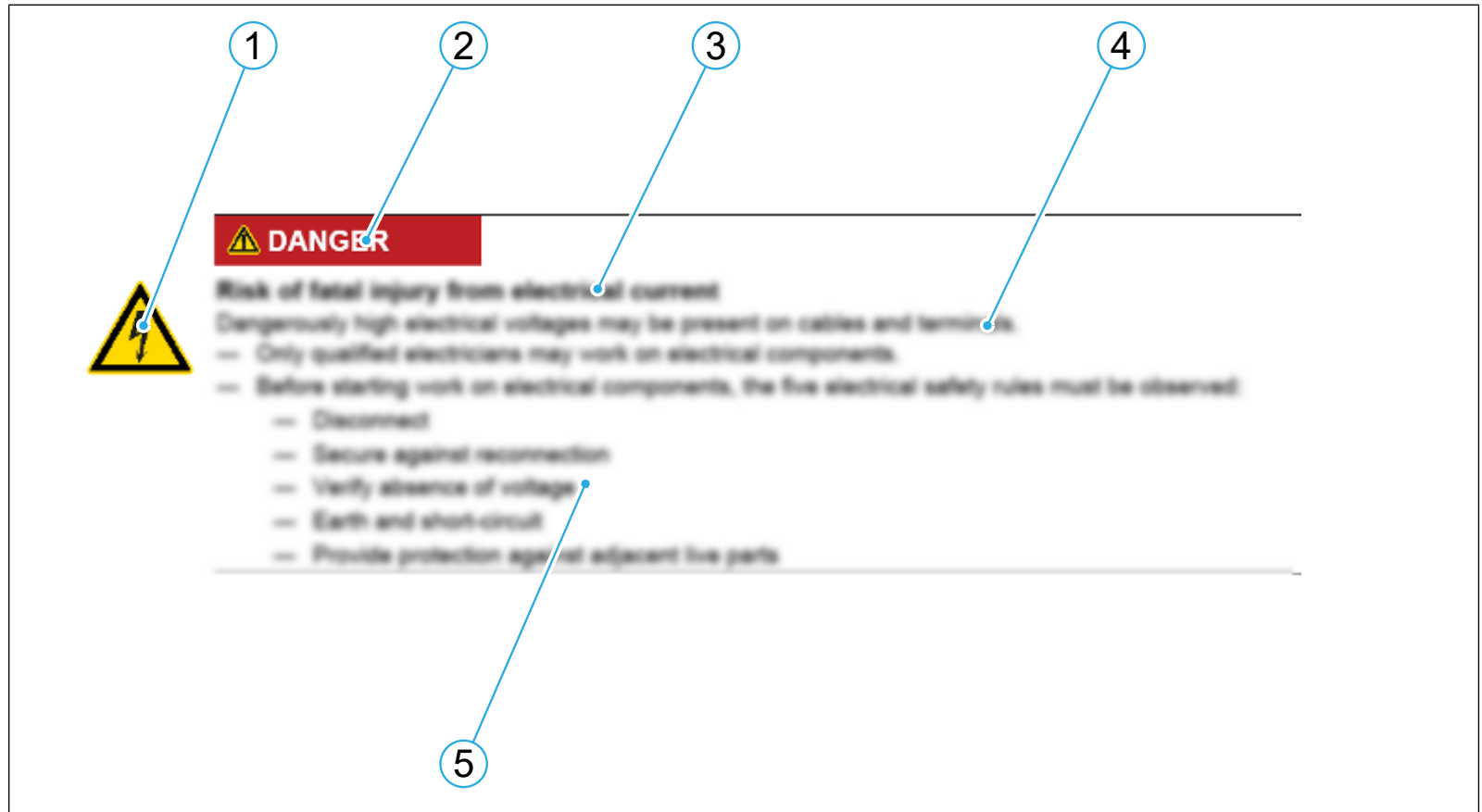
Symbol	Meaning
	Wearing protective work clothing protects against hazards in the workplace.
	Wearing slip-resistant safety footwear protects against injuries to the feet.
	Wearing cut and puncture-resistant protective gloves protects against injuries to the hands.
	Wearing a protective cap protects against head injuries.
	Wearing goggles protects against eye injuries.
	Wearing hearing protection protects against hearing damage.
	Wearing a fall arrest system protects against falls.

Table 1: Personal protective equipment

2.3 Warnings

2.3.1 Structure of warning notices

All warning notices in this document are structured as follows:



1	Hazard symbol	2	Signal word
3	Type and source of hazard	4	Possible consequences of non-observance
5	Procedure for hazard prevention		

2.3.2 Meaning of signal words and symbols

The following signal words are used in this document:

Signal word	Meaning, consequences if not prevented
DANGER	Warns of an imminent hazardous situation which results in death or serious injury.

Table 2: Meaning of signal words

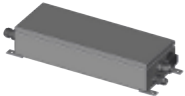
The following hazard symbols are used in this document:

Symbol	Designation
	Automatic start-up
	Electrical hazard

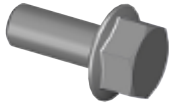
Table 3: Meaning of hazard symbols

3 In the box

The conversion kit components are shown in the table. The position numbers are used in the following chapters to identify the individual components. For logistical reasons, the packaging can contain further components that are not required for actual use.

Pos.	Illustration	Item number	Description	Quantity
P001		8.20.xxxxx.04	TSG electronics	1
P002		8.20.400xx.xx	TSG motor	1

Pos.	Illustration	Item number	Description	Quantity
P003a		1.20.61190	Endless timing belt 8M 960 mm	1
P003b		1.20.60096	Endless timing belt 8M 1168 mm (alternative)	1
P004		1.20.30712	Sleeve D = 25.5 mm	1
P005		1.20.60061	Motor bracket	1
P006		1.20.60132	Timing belt pulley D = 56 mm, 8M	1
P007		1.20.60530	L-shaped bracket	1
P008		1.20.92090	L-shaped bracket	1
P009		1.36.00138	Locking screw M6 x 16 mm	4

Pos.	Illustration	Item number	Description	Quantity
P010		1.36.00501	Nut M8	9
P011		1.36.00720	Locking screw M8 × 20 mm	3
P012		1.36.00730	Locking screw M8 × 30 mm	2
P013		1.36.02125	Hexagon head screw M8 × 80 mm	2
P014		1.36.06050	Ball bearing for deflection side	1
P015		1.36.06075	Ball bearing for drive side	2

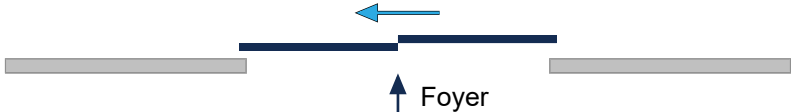
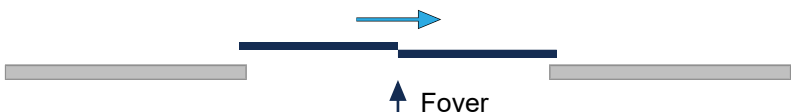
4 Required tools

The tools required for the conversion are shown in the table. The position numbers are used in the following chapters to identify the individual tools.

Pos.	Symbol	Description
T001		Soft face hammer
T002		Hammer
T003		Puller for bearings and pinions
T004		Pipe wrench
T005		Side cutters
T006		Circlip pliers
T007		Angle grinder
T008		Measuring tool (folding rule or measuring tape)
T009		Slotted screwdriver
T010		Phillips screwdriver
T110		Combination wrench, size 10
T113		Combination wrench, size 13
T608.5		Drill bit, Ø 8.5 mm

5 Definition of door opening directions

The possible door opening directions are shown in the following table in schematic form.

L: Left opening	
R: Right opening	
TL: Telescopic left opening	
TR: Telescopic right opening	
C: Center opening	
CT: Center telescoping opening	
FD: Folding door	

6 Disassembly of existing components

DANGER



Danger to life from rotating/moving system components

- Before starting work, switch off the system completely.
- Keep away from unsecured rotating/moving system components.

DANGER



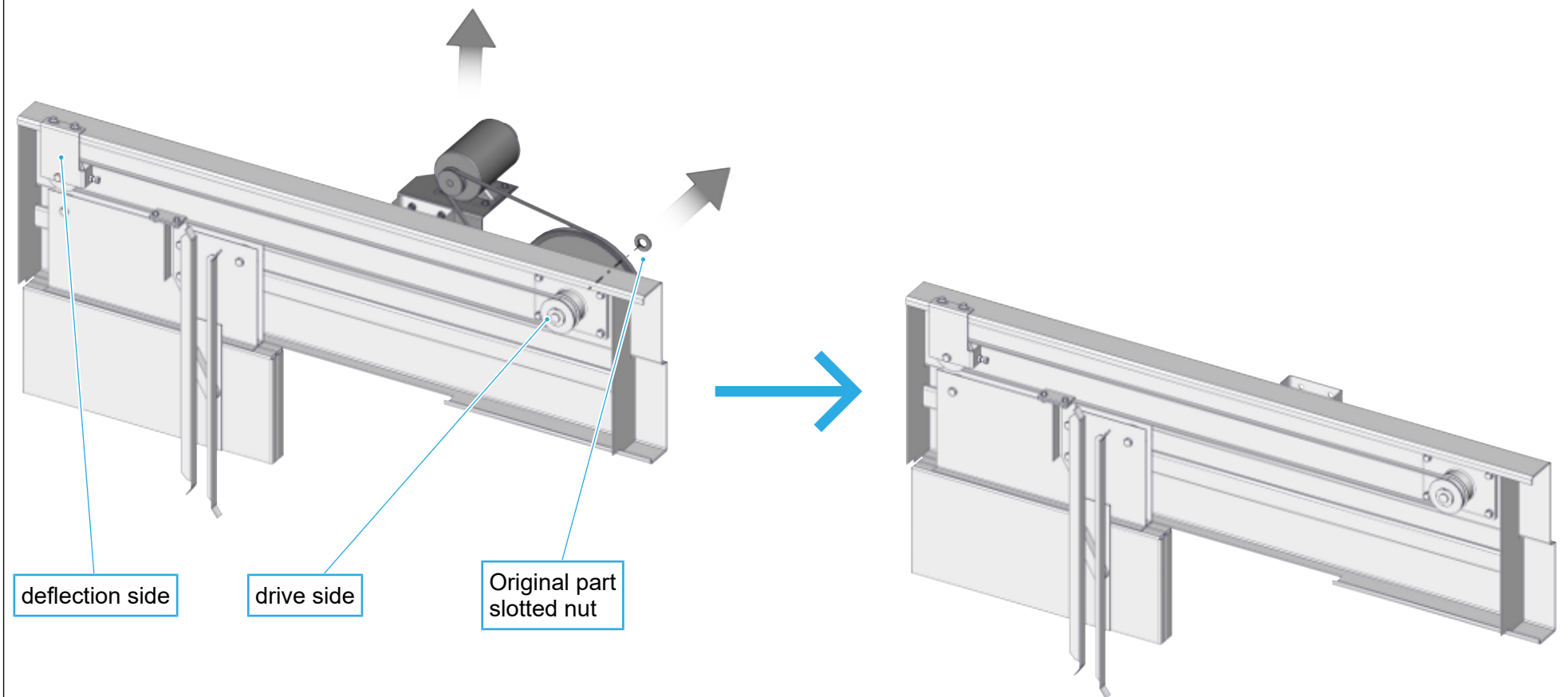
Risk of fatal injury from electrical current

Dangerously high electrical voltages may be present on cables and terminals.

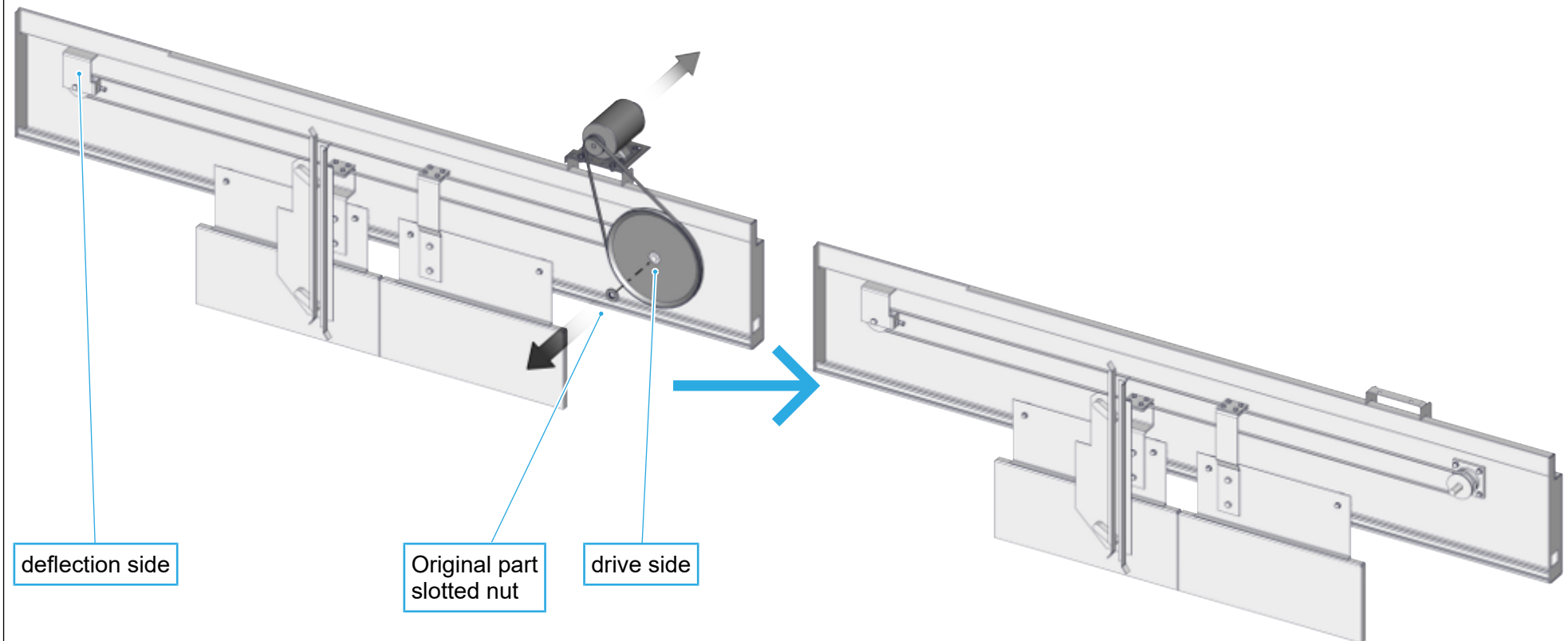
- Only qualified electricians may work on electrical components.
- Before starting work on electrical components, the five electrical safety rules must be observed:
 - Disconnect
 - Secure against reconnection
 - Verify absence of voltage
 - Earth and short-circuit
 - Provide protection against adjacent live parts

Tools

Pos.	Symbol	Description
T002		Hammer
T003		Puller for bearings and pinions
T004		Pipe wrench
T005		Side cutters
T006		Circlip pliers
T007		Angle grinder
T1xx		Combination spanners, as needed



Variant 1, assembly TL / TR: Instead of the original ball bearings, the ball bearings supplied can be used (deflection side: 1.36.06050, drive side: 2 × 1.36.06075).



Variant 2, assembly Z: Instead of the original ball bearings, the ball bearings supplied can be used (deflection side: 1.36.06050, drive side: 2 × 1.36.06075).

7 Assembly TL / LR, variant 1

7.1 Mounting the motor and bracket on the door frame

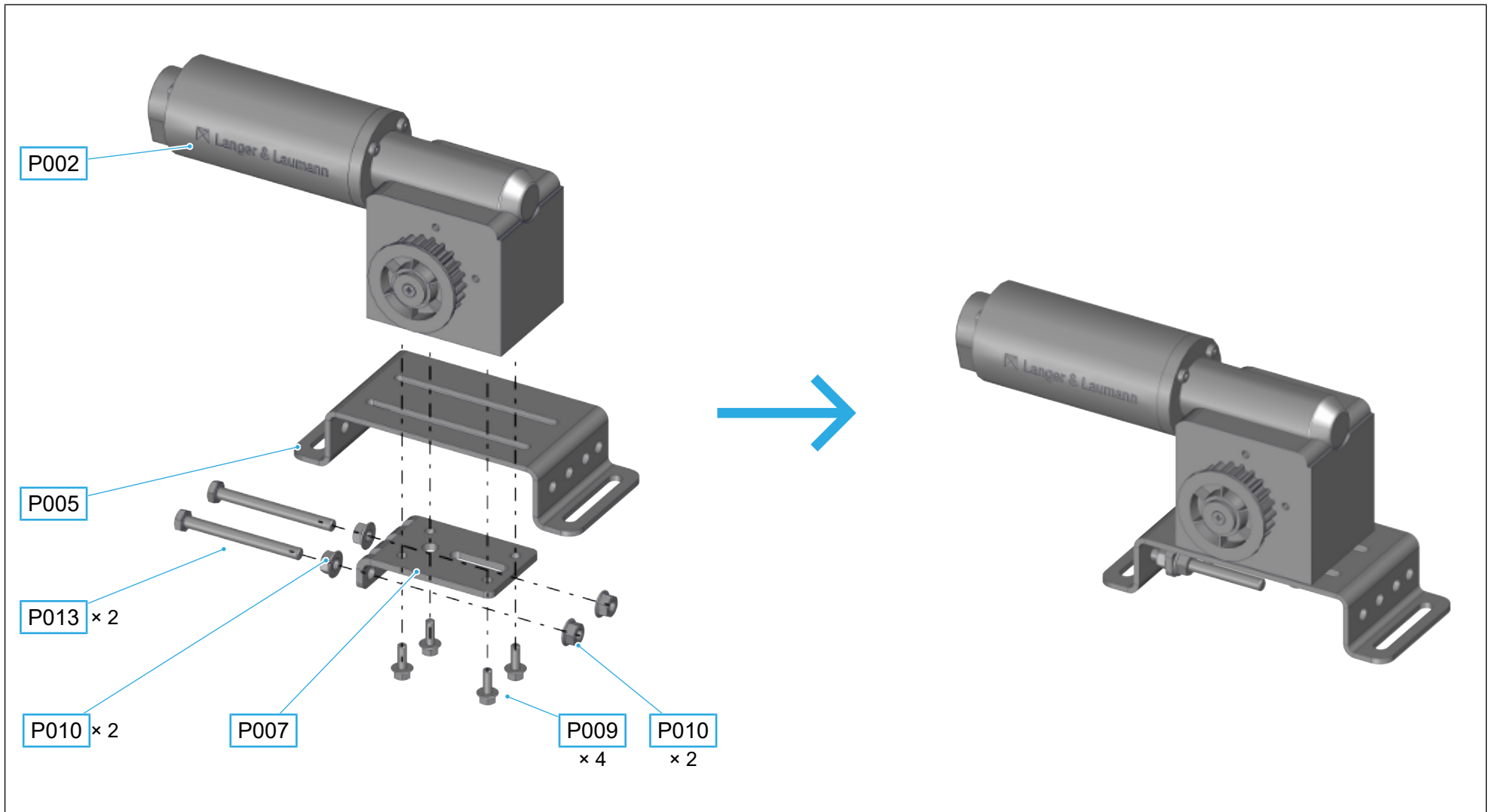
Components

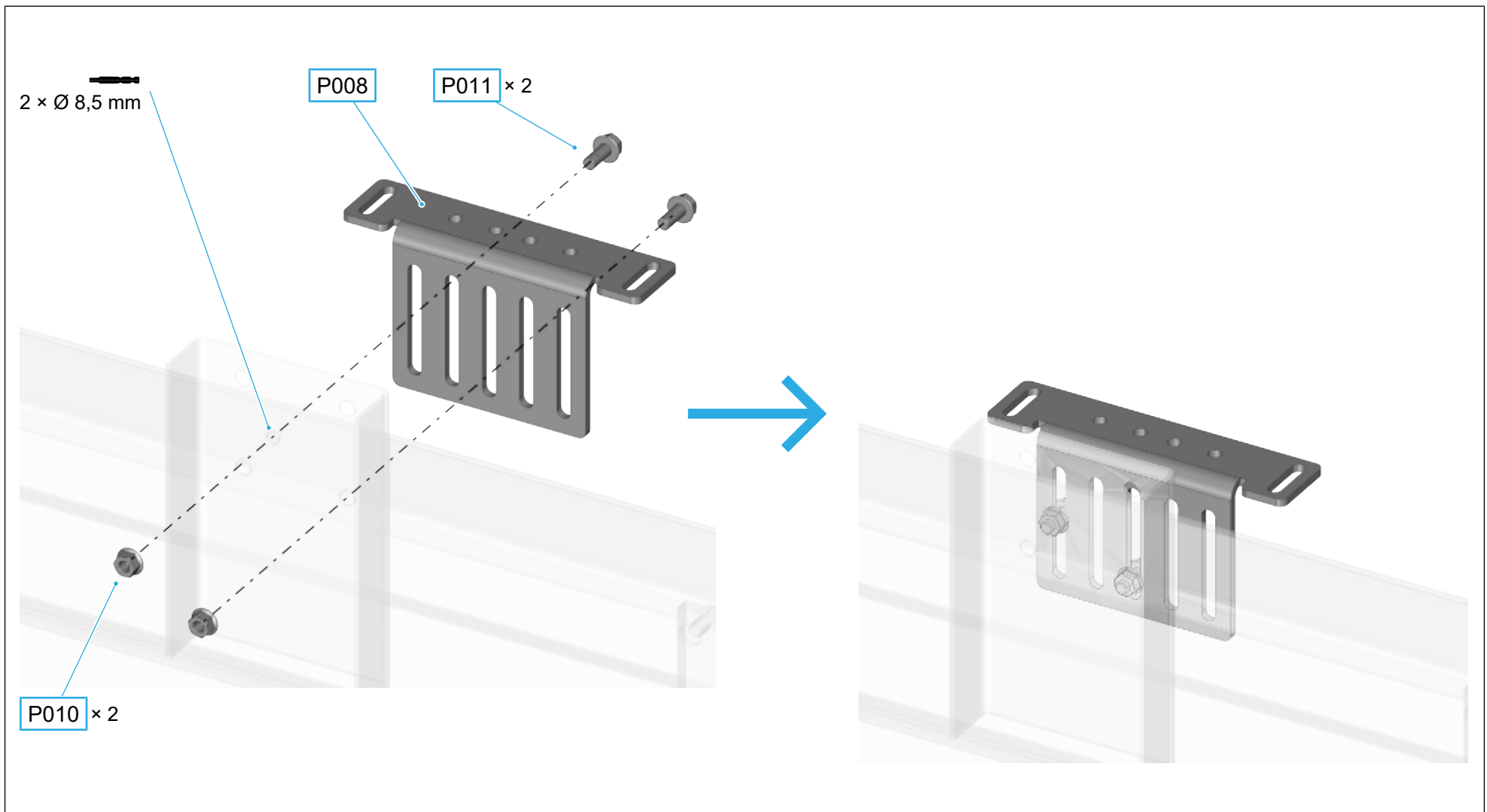
Pos.	Illustration	Item number	Description	Quantity
P002		8.20.400xx.xx	TSG motor	1
P005		1.20.60061	Motor bracket	1
P007		1.20.60530	L-shaped bracket	1
P008		1.20.92090	L-shaped bracket	1
P009		1.36.00138	Locking screw M6 × 16 mm	4
P010		1.36.00501	Nut M8	8

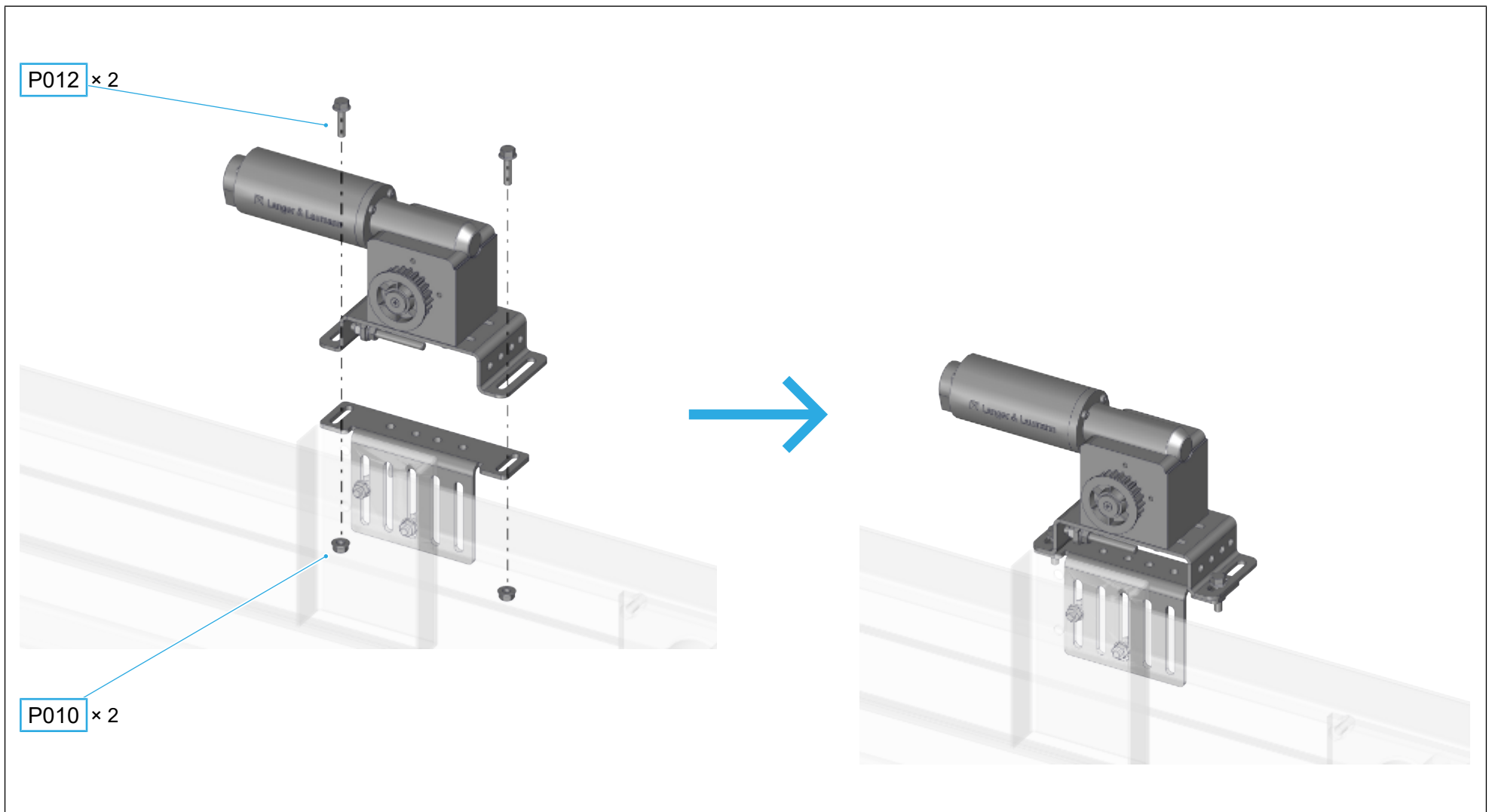
Pos.	Illustration	Item number	Description	Quantity
P011		1.36.00720	Locking screw M8 × 20 mm	3
P012		1.36.00730	Locking screw M8 × 30 mm	2
P013		1.36.02125	Hexagon head screw M8 × 80 mm	2

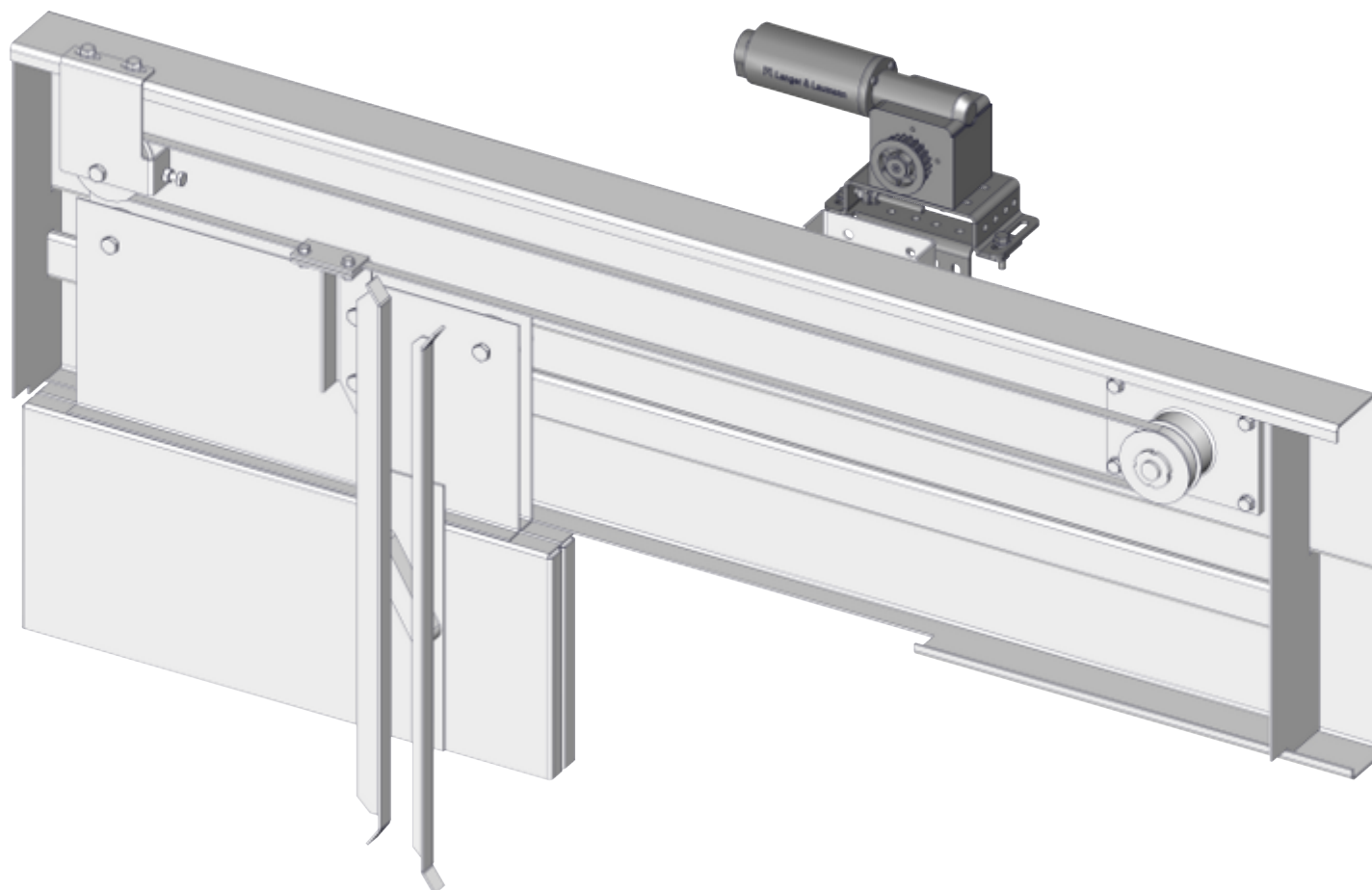
Tools

Pos.	Symbol	Description
T110		Combination wrench, size 10
T113		Combination wrench, size 13
T608.5		Drill bit, Ø 8.5 mm





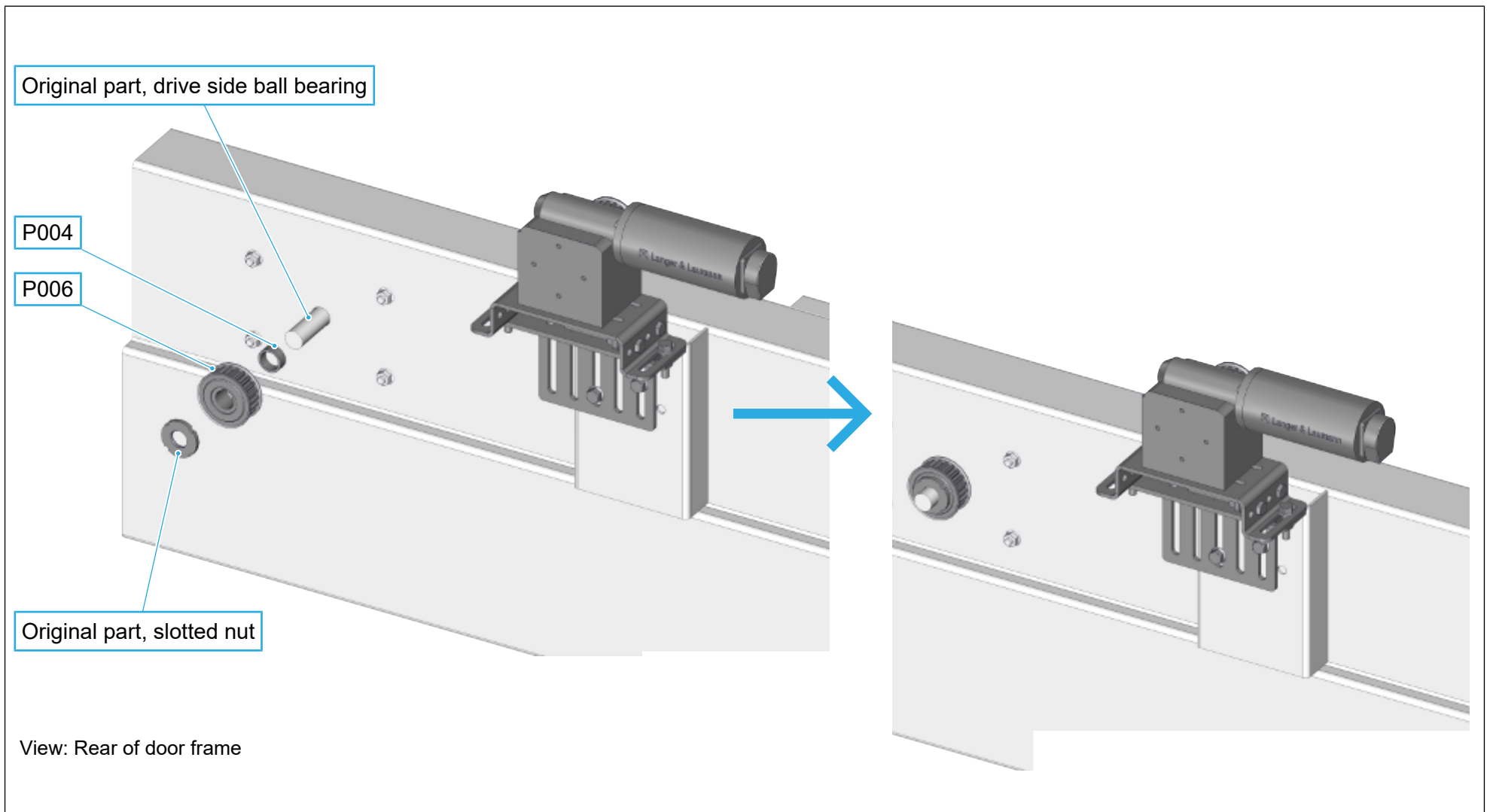


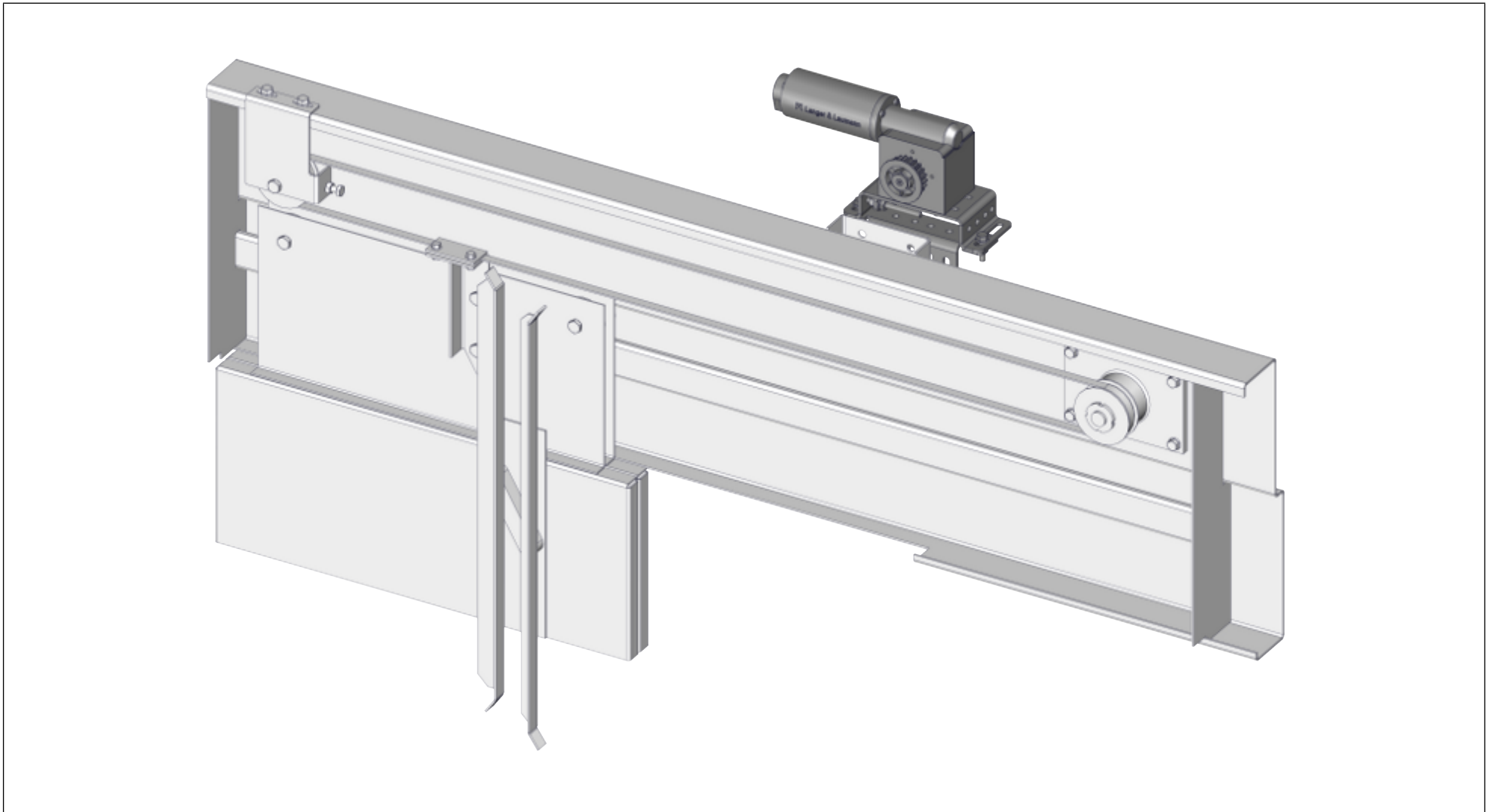


7.2 Mounting the timing belt pulley

Components

Pos.	Illustration	Item number	Description	Quantity
P004		1.20.30712	Sleeve D = 25.5 mm	1
P006		1.20.60132	Timing belt pulley D = 56 mm, 8M	1

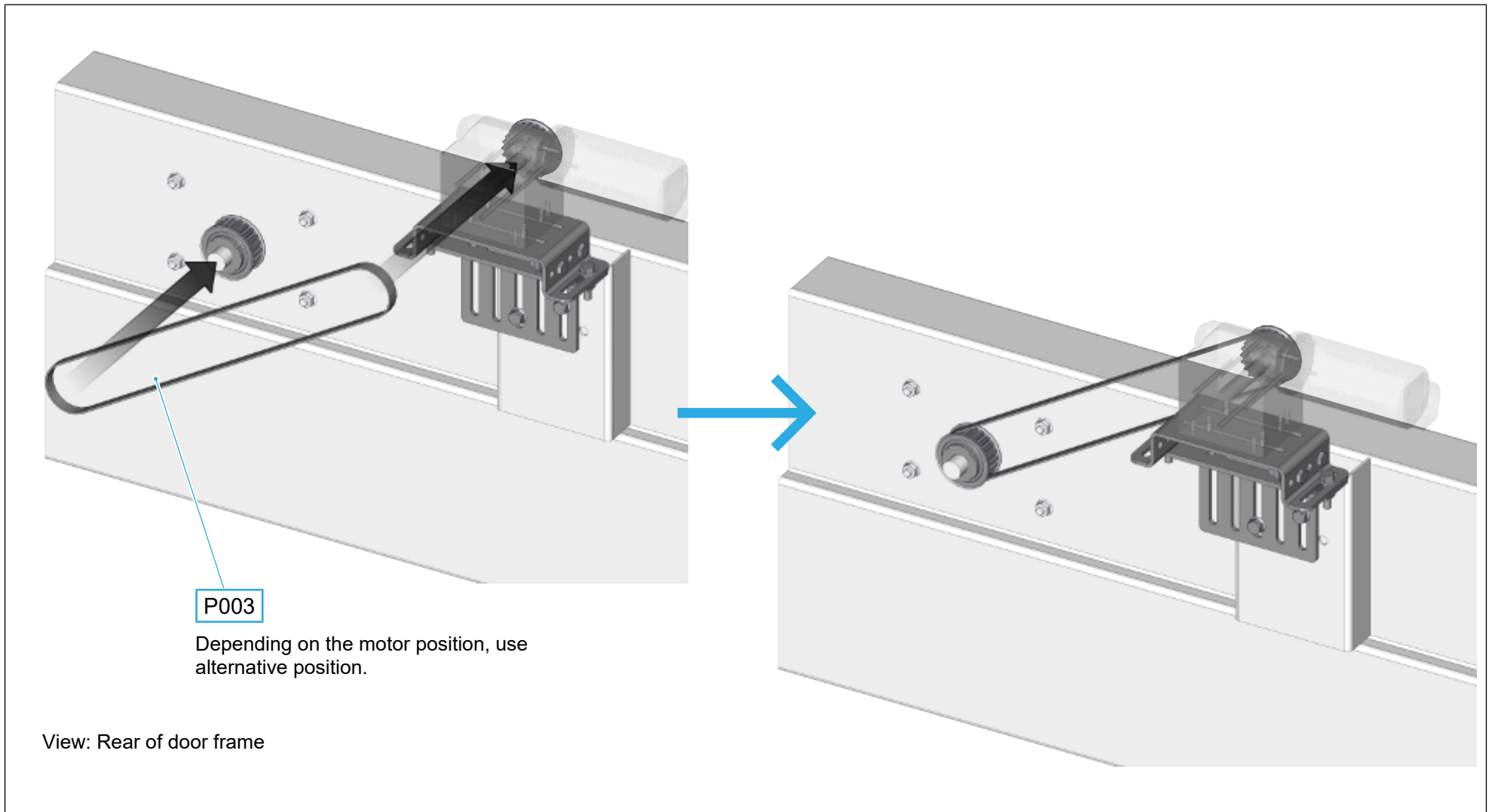


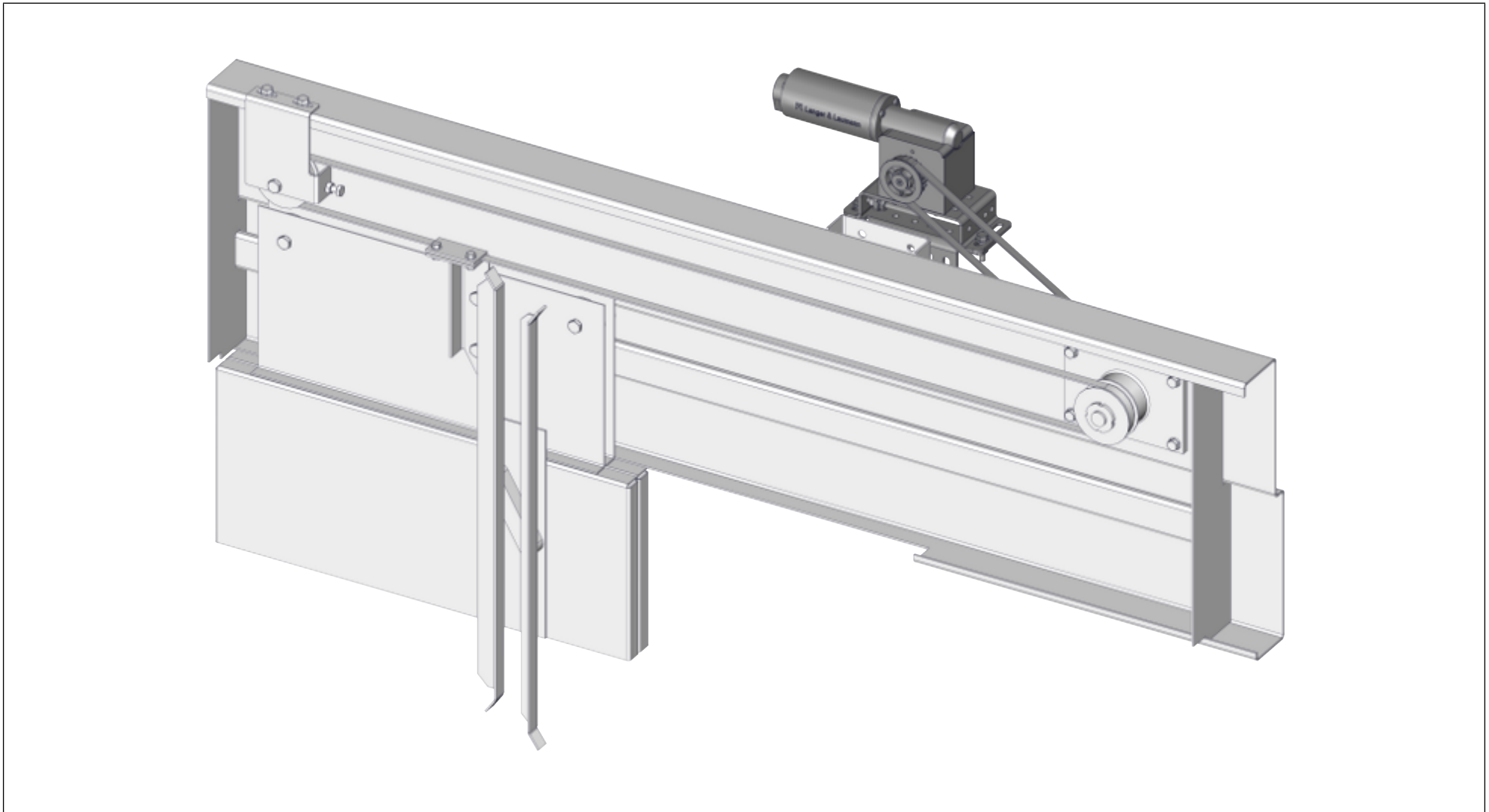


7.3 Mounting the timing belt

Components

Pos.	Illustration	Item number	Description	Quantity
P003a		1.20.61190	Endless timing belt 8M 960 mm	1
P003b		1.20.60096	Endless timing belt 8M 1168 mm (alternative)	1

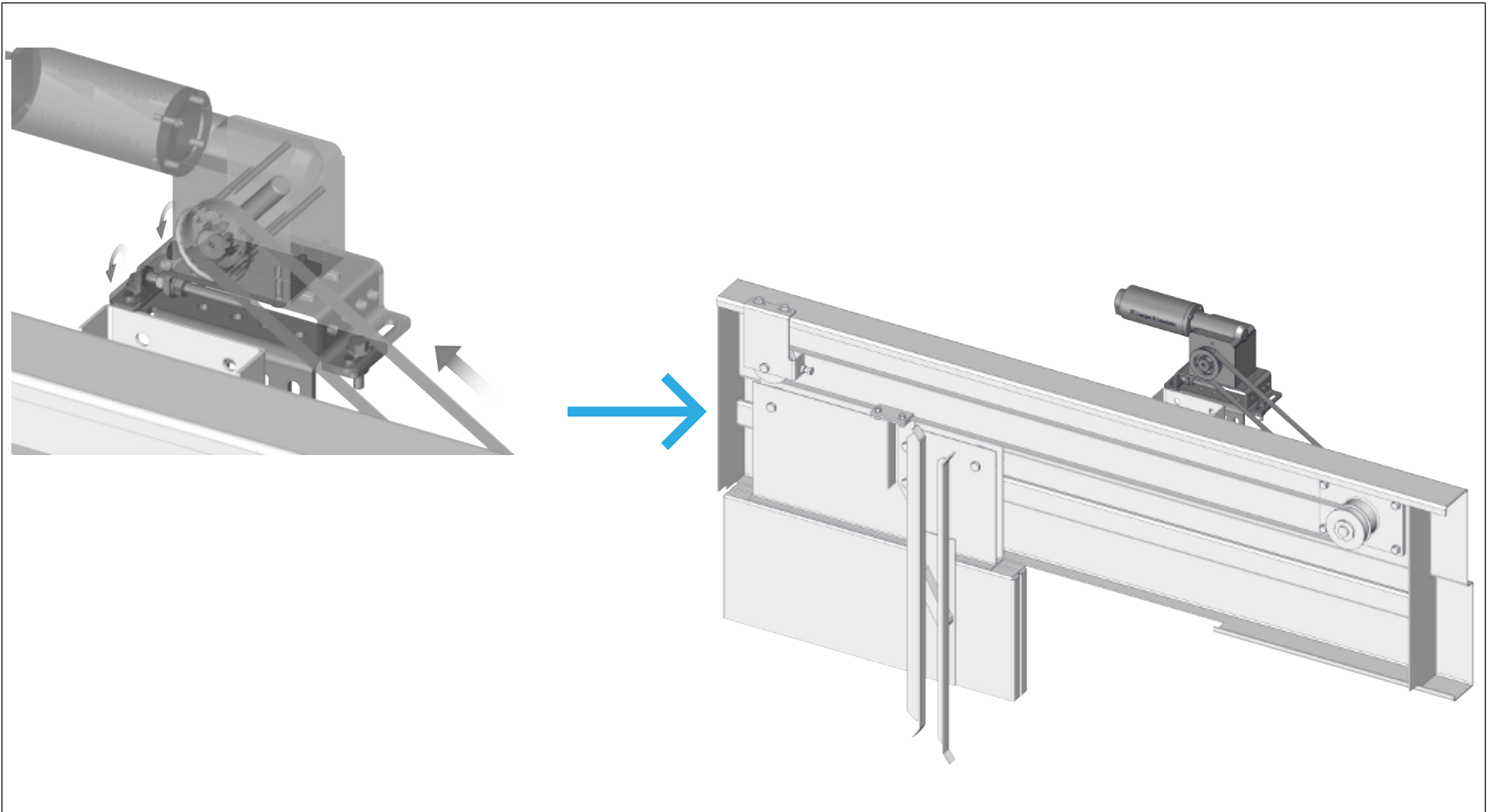




7.4 Tightening the timing belt

Tools

Pos.	Symbol	Description
T113	⬡	Combination wrench, size 13



8 Assembly Z, variant 2

8.1 Mounting the motor and bracket on the door frame

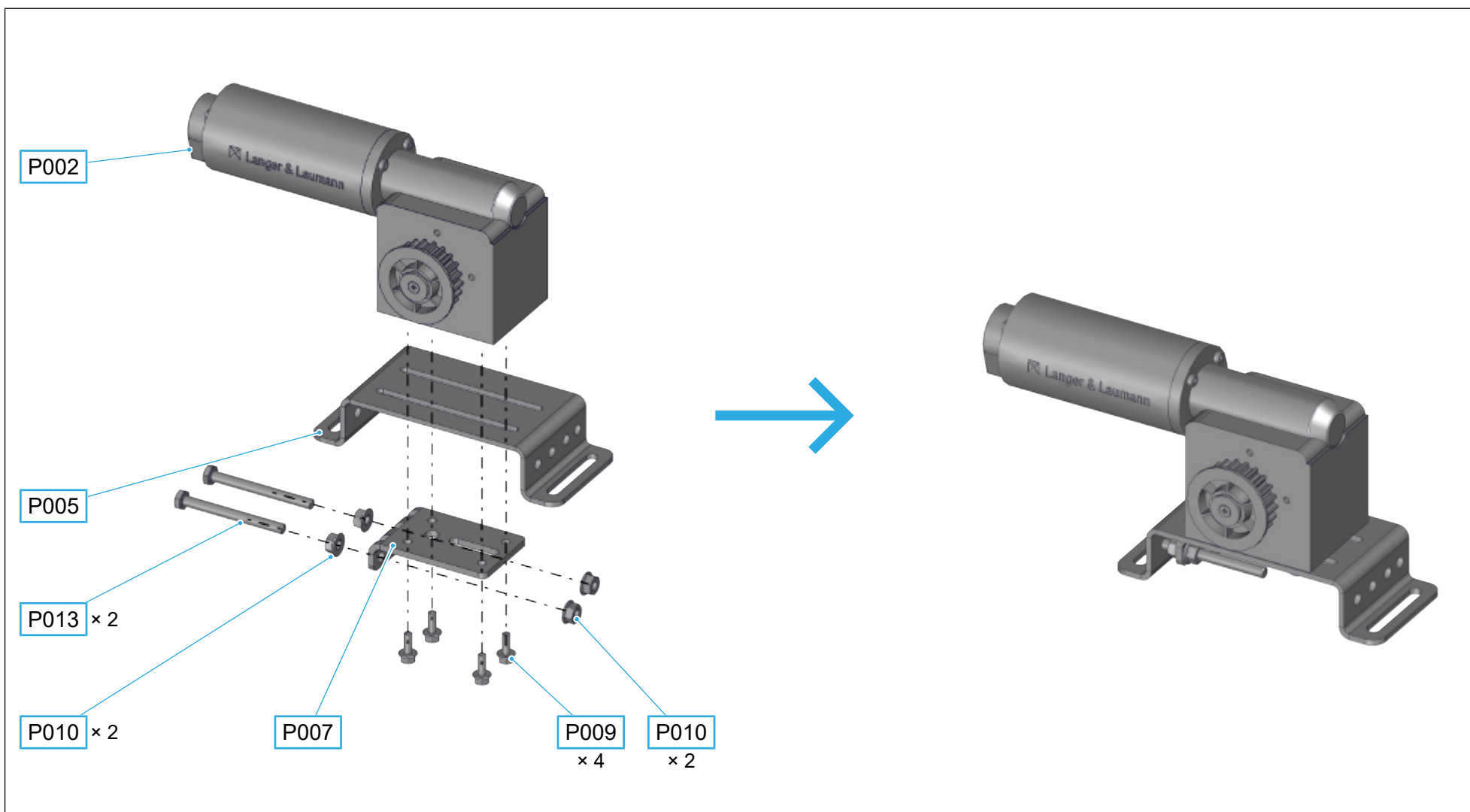
Components

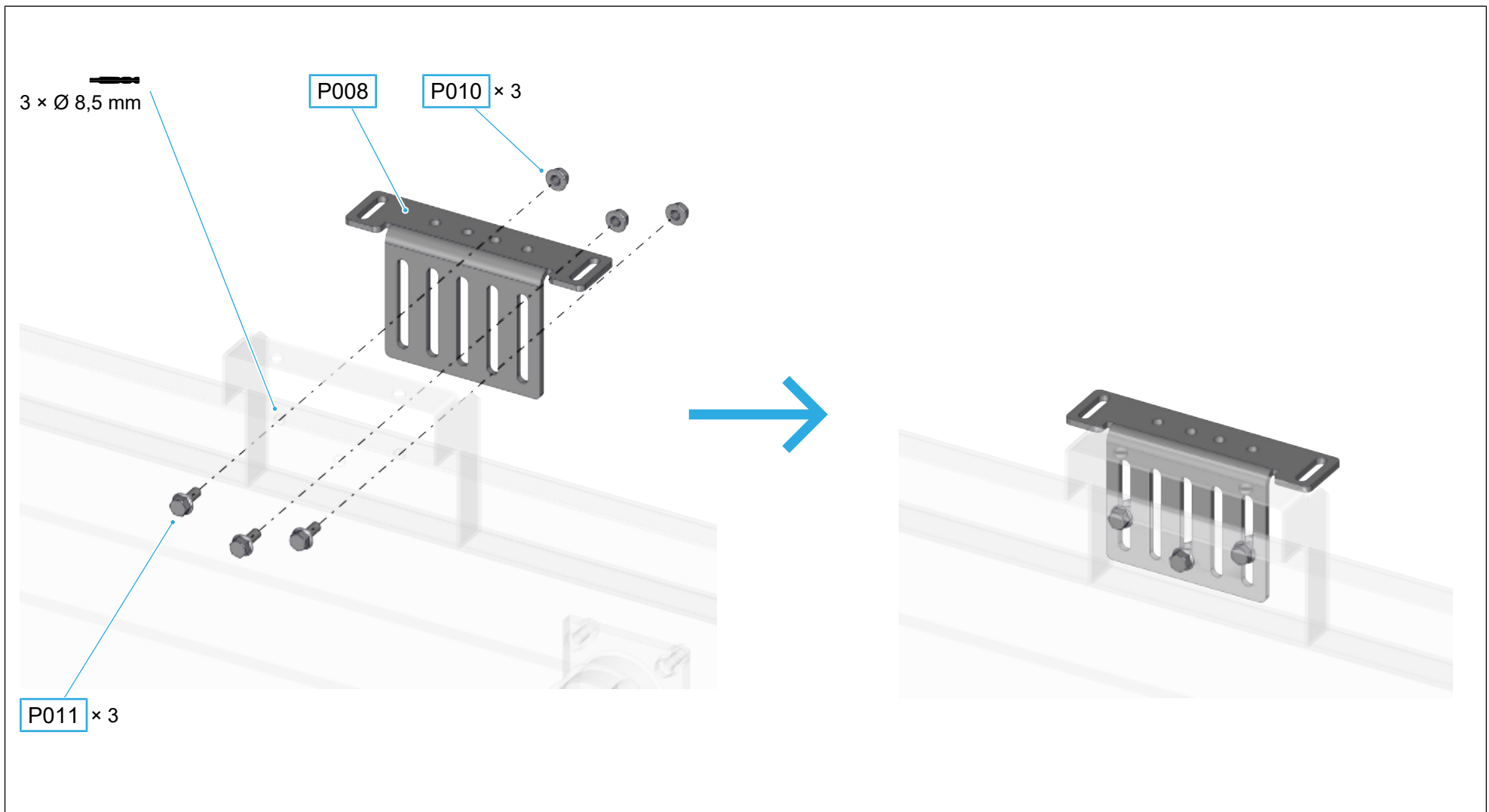
Pos.	Illustration	Item number	Description	Quantity
P002		8.20.400xx.xx	TSG motor	1
P005		1.20.60061	Motor bracket	1
P007		1.20.60530	L-shaped bracket	1
P008		1.20.92090	L-shaped bracket	1
P009		1.36.00138	Locking screw M6 × 16 mm	4
P010		1.36.00501	Nut M8	9

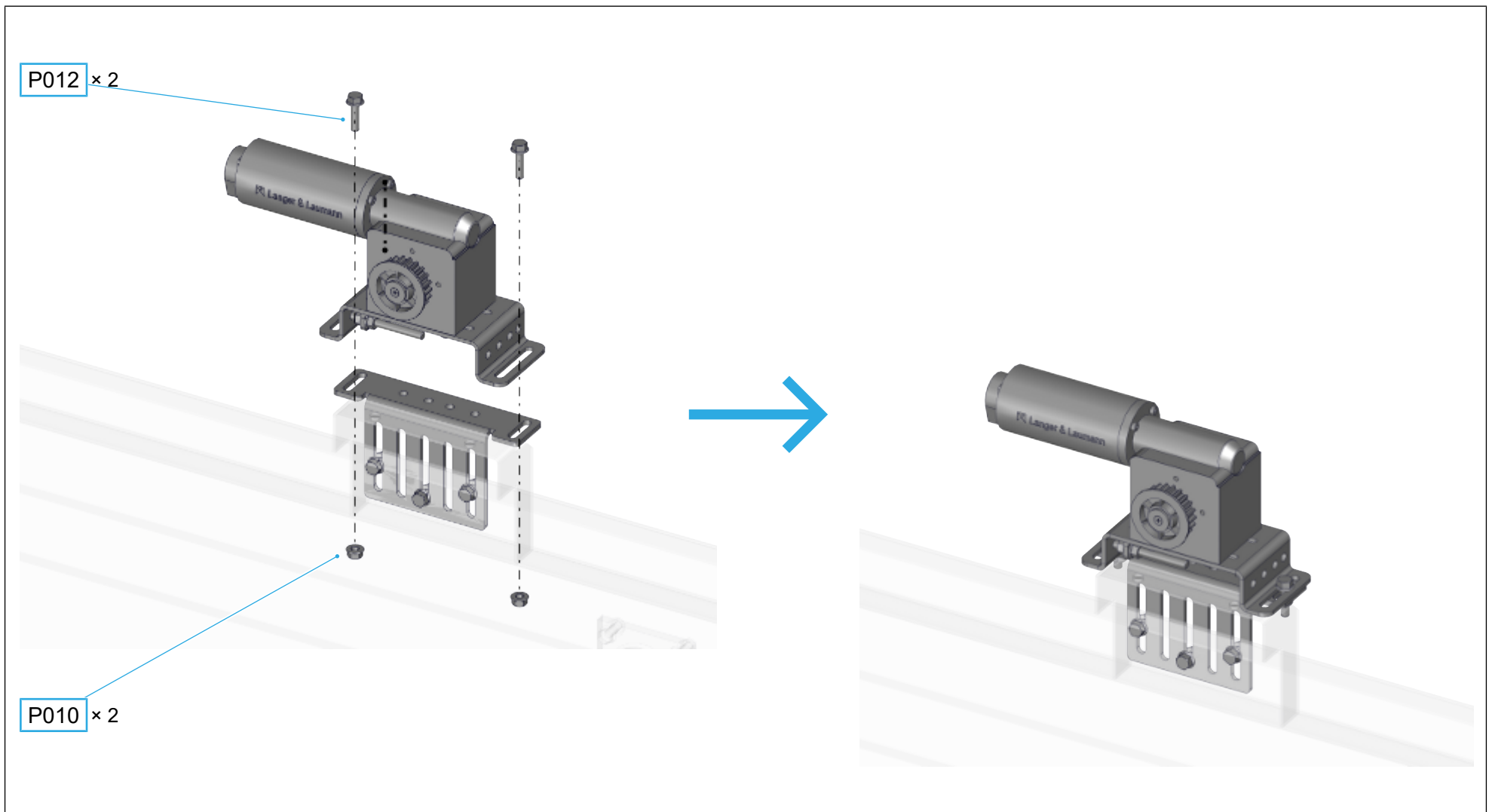
Pos.	Illustration	Item number	Description	Quantity
P011		1.36.00720	Locking screw M8 × 20 mm	3
P012		1.36.00730	Locking screw M8 × 30 mm	2
P013		1.36.02125	Hexagon head screw M8 × 80 mm	2

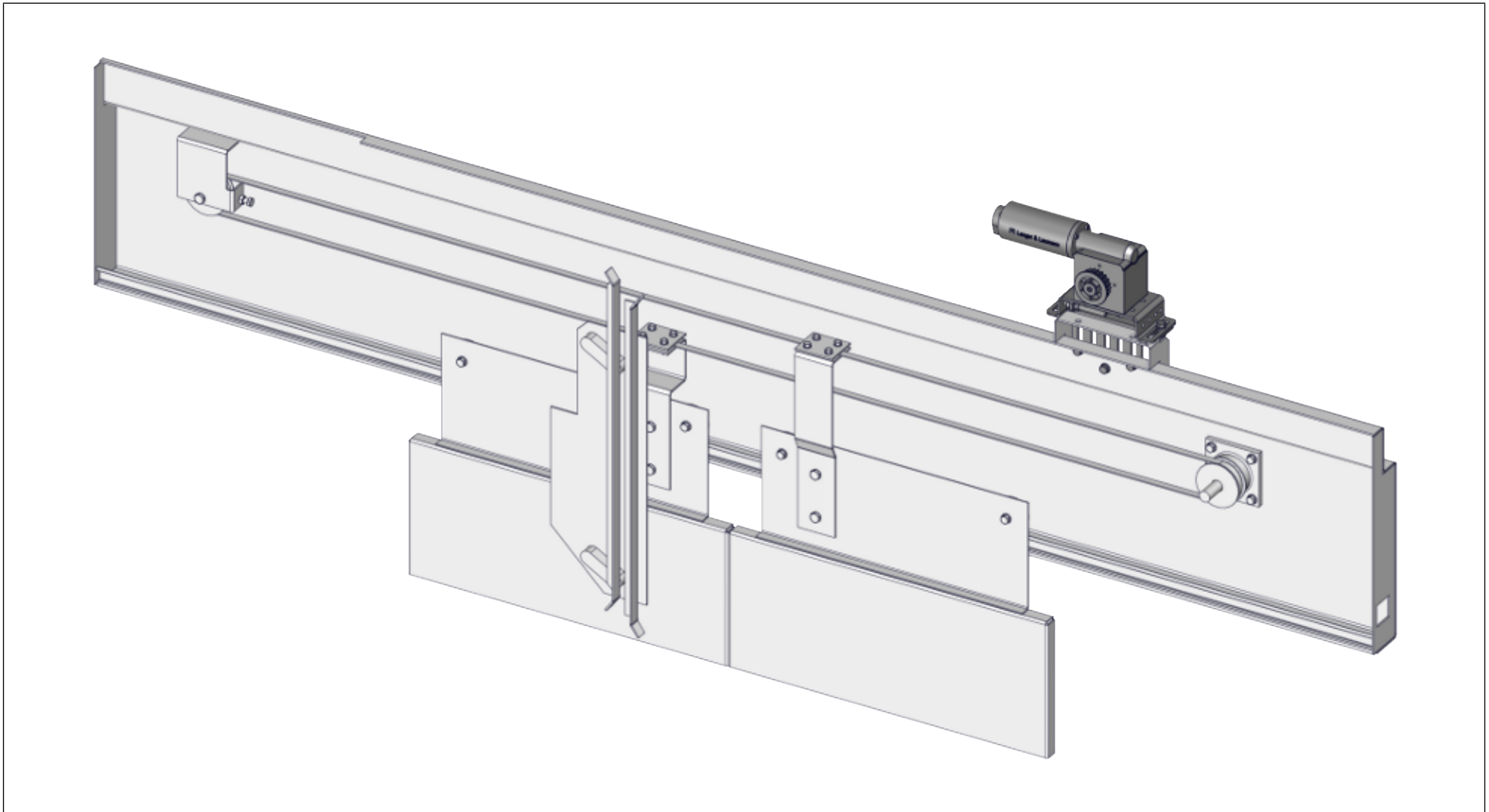
Tools

Pos.	Symbol	Description
T110		Combination wrench, size 10
T113		Combination wrench, size 13
T608.5		Drill bit, Ø 8.5 mm





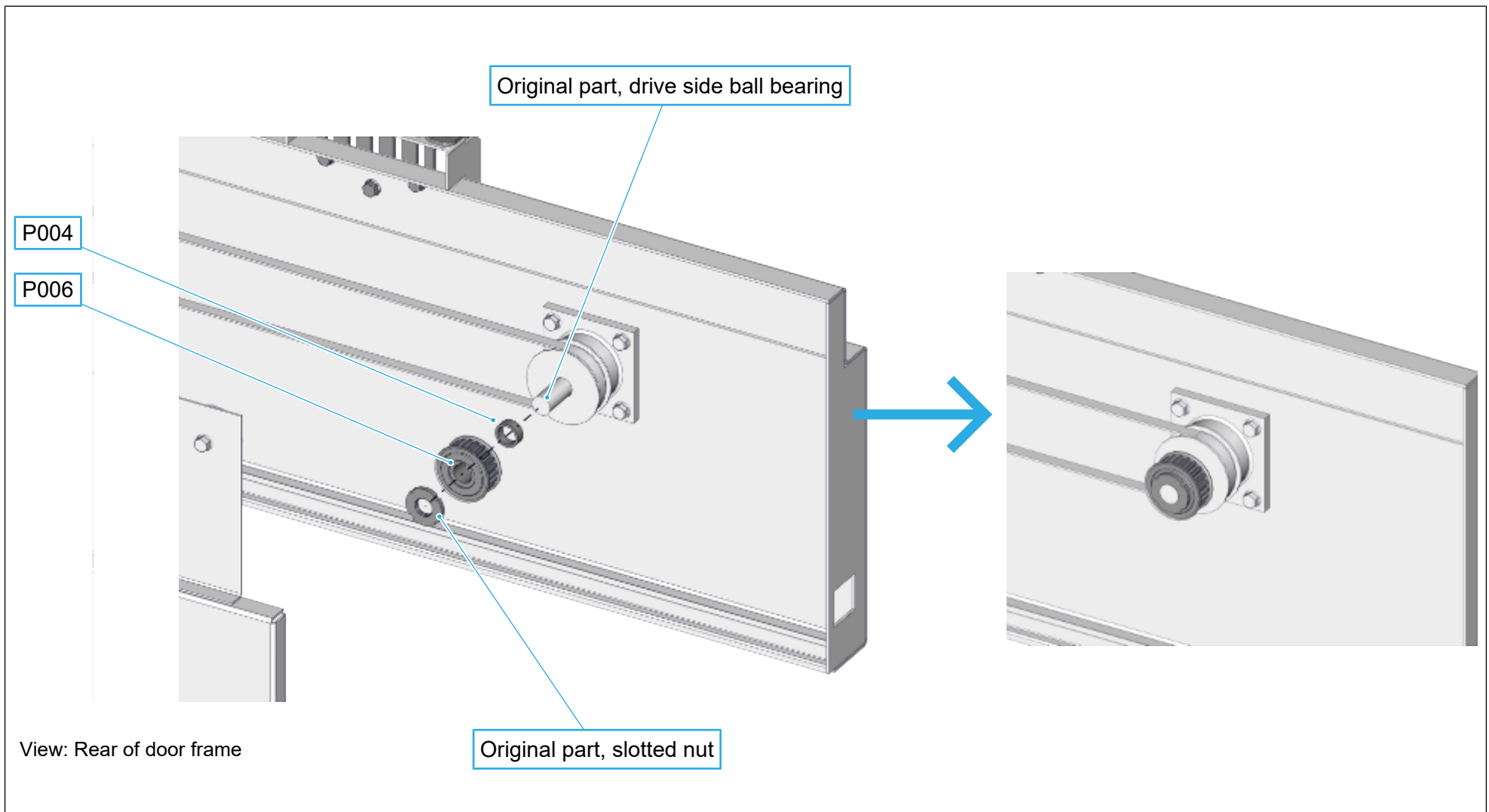


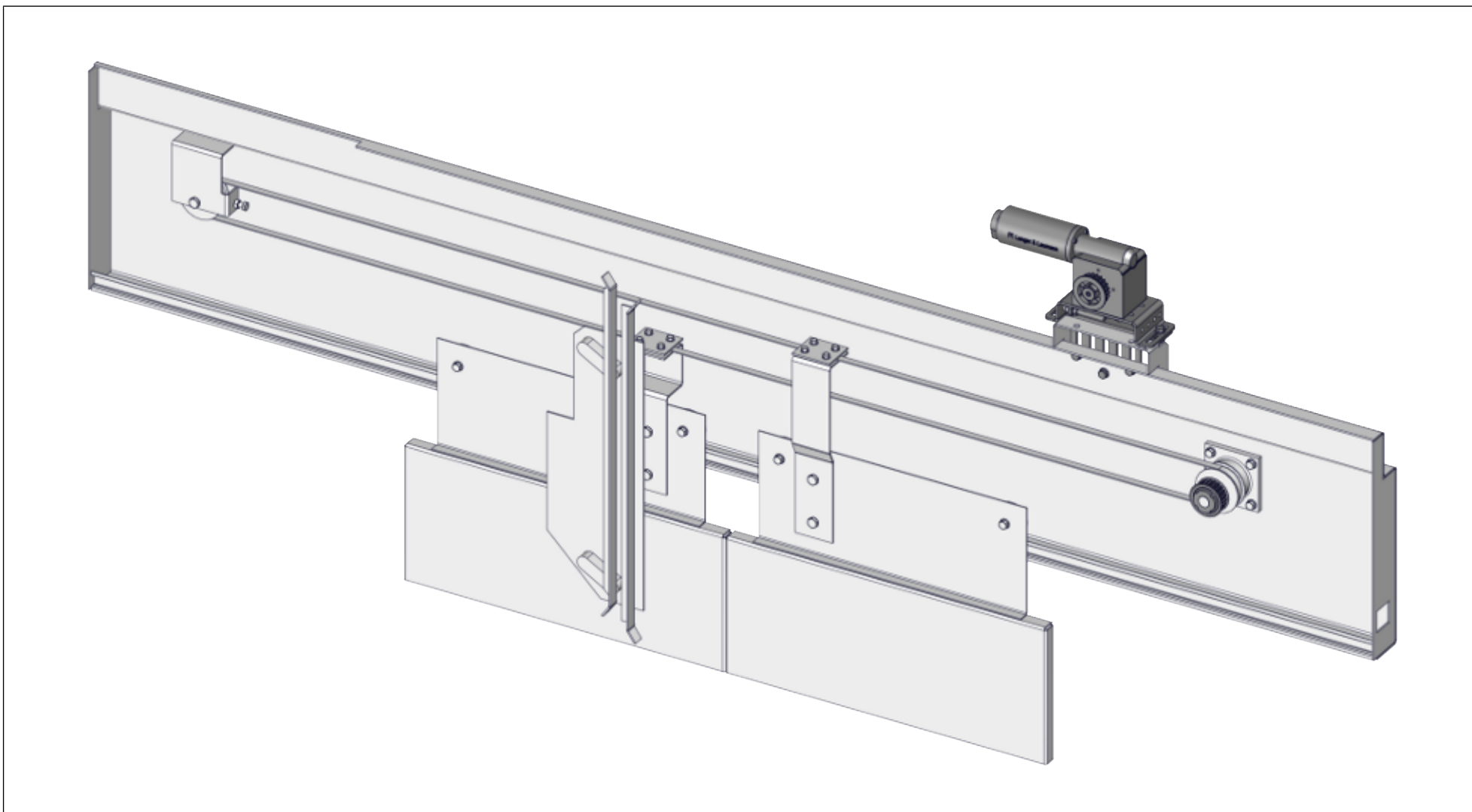


8.2 Mounting the timing belt pulley

Components

Pos.	Illustration	Item number	Description	Quantity
P004		1.20.30712	Sleeve D = 25.5 mm	1
P006		1.20.60132	Timing belt pulley D = 56 mm, 8M	1

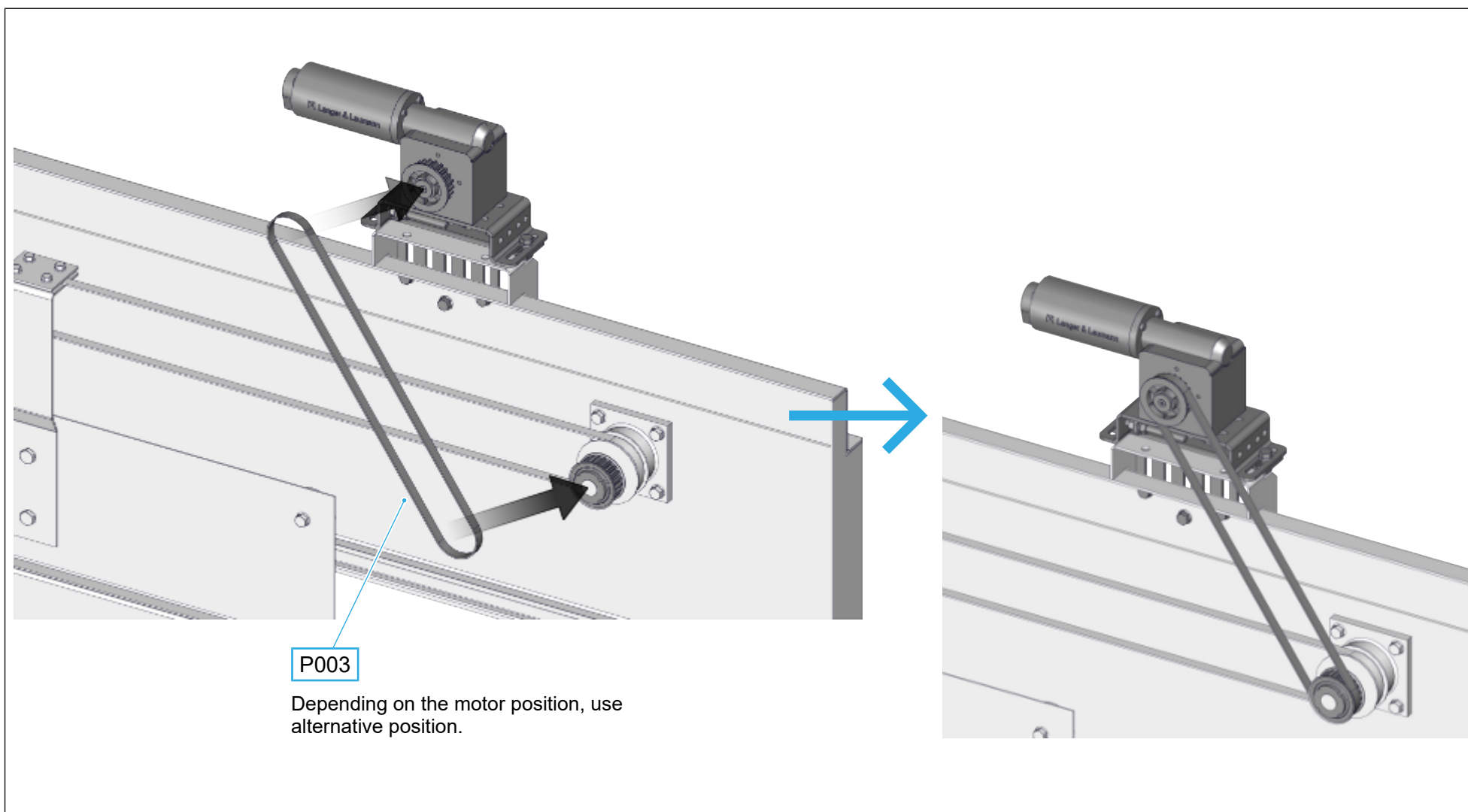


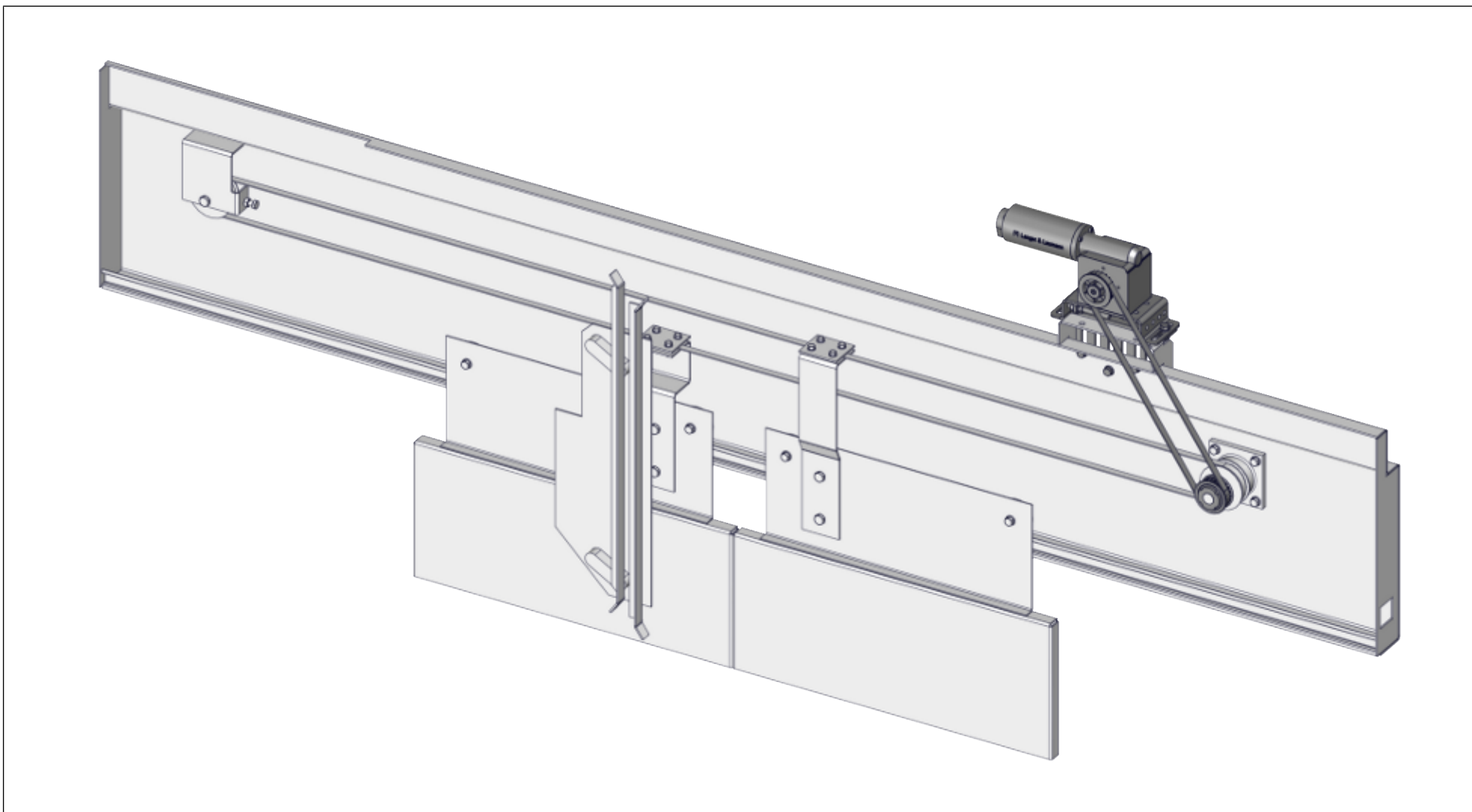


8.3 Mounting the timing belt

Components

Pos.	Illustration	Item number	Description	Quantity
P003a		1.20.61190	Endless timing belt 8M 960 mm	1
P003b		1.20.60096	Endless timing belt 8M 1168 mm (alternative)	1

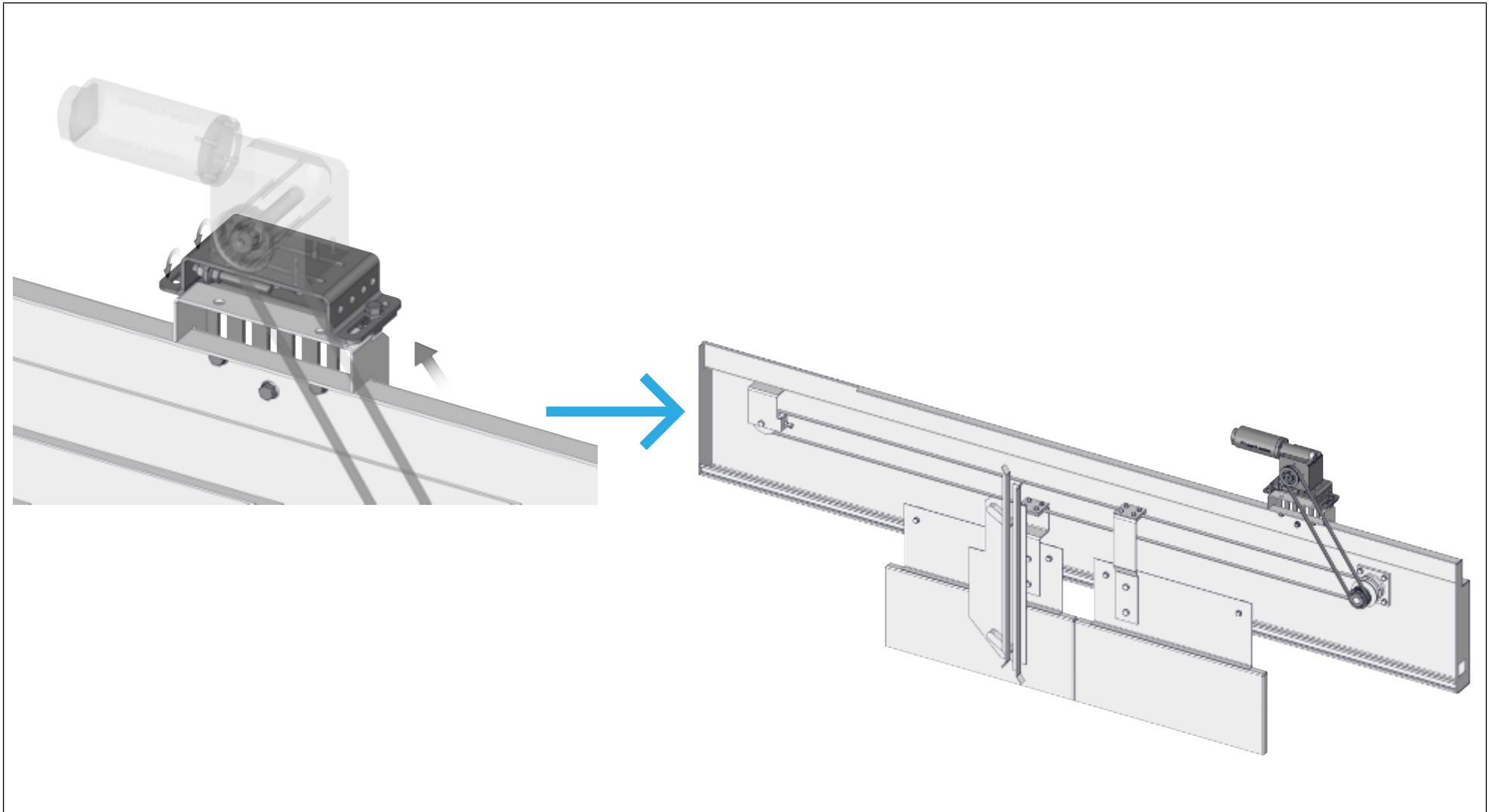




8.4 Tightening the timing belt

Tools

Pos.	Symbol	Description
T113	⬡	Combination wrench, size 13



9 Fitting, connecting and commissioning the door control unit

Fitting, connecting and commissioning the door control unit are described in detail in the **assembly instructions** supplied with the door control unit.



Innovation meets Technology

