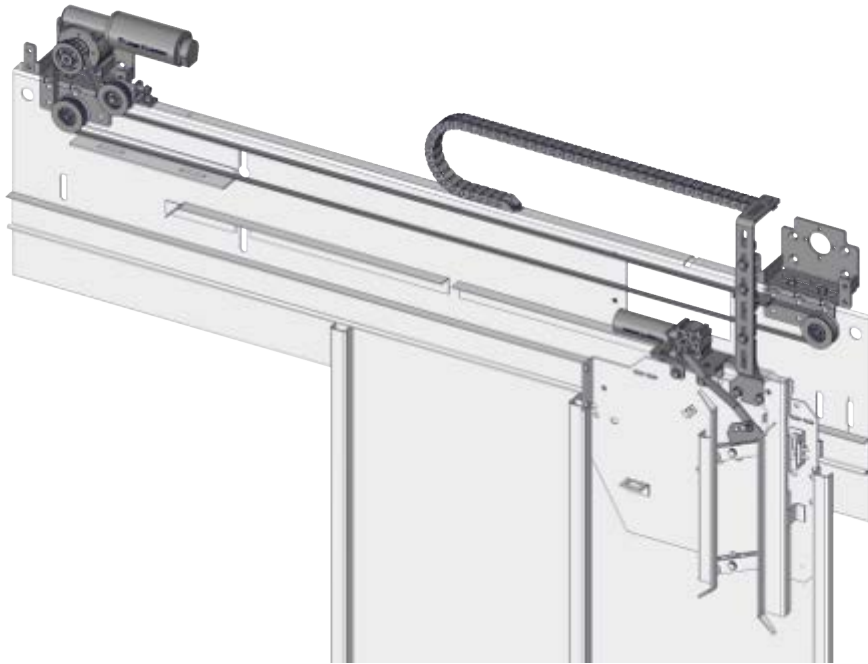
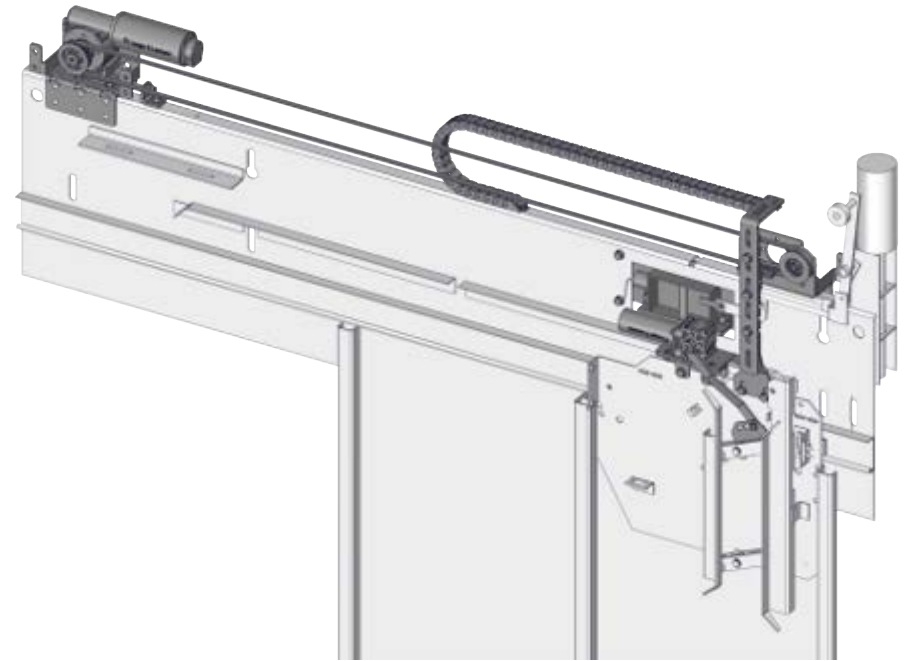




Door without original FKTV (chap. 7)



Door with original FKTV (chap. 8)

Conversion Instructions Kone ADX to TSG V4

Shows **TL**, **TR** mirror image, **ZT** like **TL**.

Imprint

Manufacturer	Langer & Laumann Ing.-Büro GmbH
Address	Wilmsberger Weg 8 48565 Steinfurt Germany
Phone	+49 (2552) 92791 0
E-mail	info@lul-ing.de
Internet	www.lul-ing.de

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:

- Kone ADX to 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Using an outdated version of this and any required and supplementary documentation can lead to incorrect assembly.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 directed at end customers of Langer & Laumann Ing.-Büro GmbH.

In addition to reading these conversion instructions, the following requirements and previous technical knowledge of the user is required for correct operation of the device:

- comprehensive technical knowledge of the existing facilities
- knowledge of the operating manuals of these facilities
- Classification as skilled personal

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 tasks described in this manual set different requirements for the qualification of the assigned personnel. Inadequately qualified employees are not able to correctly assess the risks and expose themselves and others to the risk of injuries. It is prohibited for inadequately qualified personnel to be in the working/danger zone. Persons whose ability to respond is influenced, for example, by drugs, alcohol or medication may not work on the facility.

Skilled personnel Work on mechanical components may only be carried out by suitably qualified skilled personnel (lift installer for defined tasks in lift construction according to DGUV 303-001).

Electrically skilled personnel Work on electrical components may only be carried out by electrically skilled personnel or lift installers with further training as an electrically skilled person for defined tasks in lift construction according to 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.

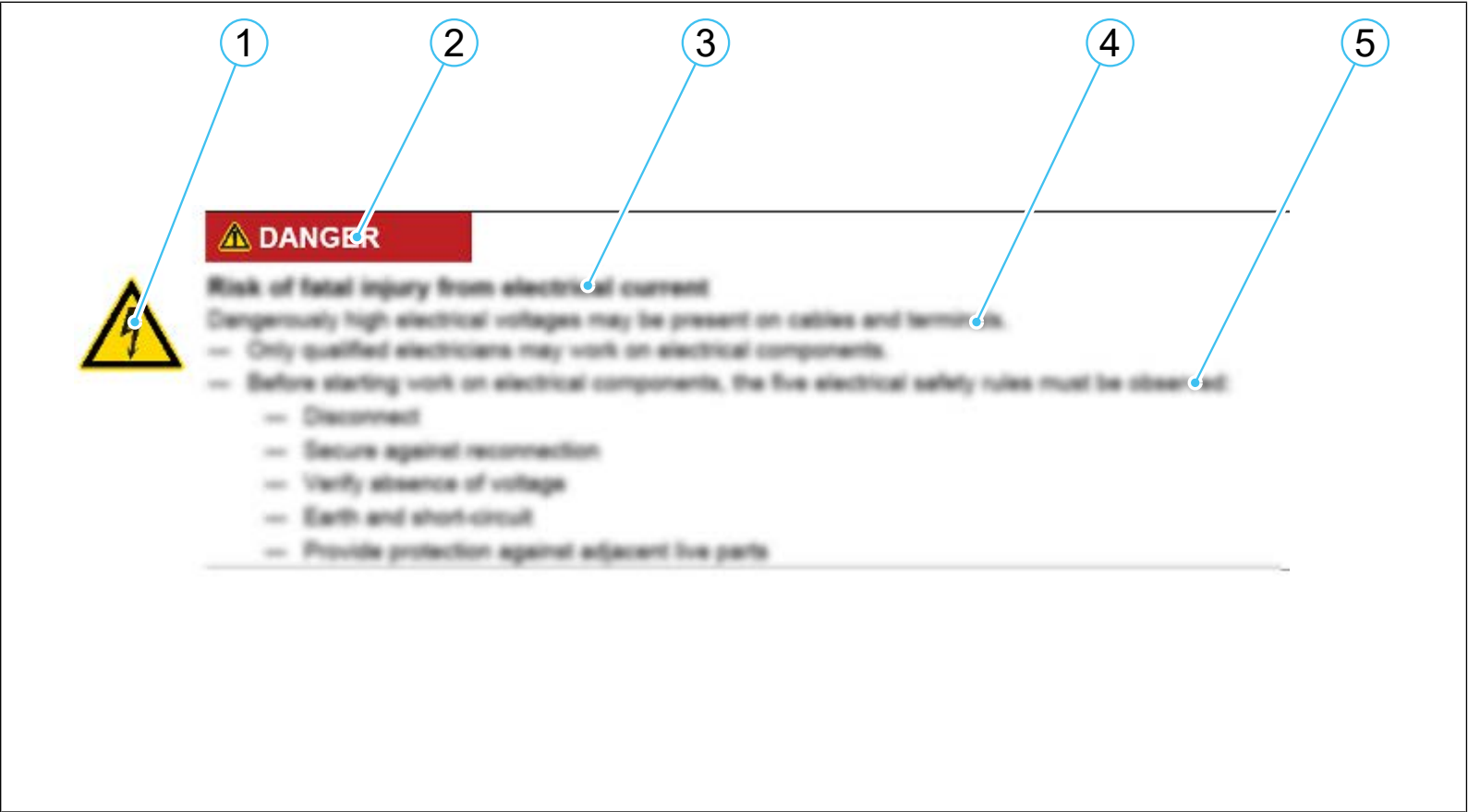
Symbol	Meaning
	Wearing protective work clothing protects against hazards in the workplace.
	Wearing slip-resistant safety footwear protects against injuries to the feet.
	Wearing cut and puncture-resistant protective gloves protects against injuries to the hands.
	Wearing a protective cap protects against 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:



The diagram illustrates the structure of a warning notice with five numbered callouts:

- 1**: Hazard symbol (lightning bolt in a triangle)
- 2**: Signal word (**DANGER**)
- 3**: Type and source of hazard (Risk of fatal injury from electrical current)
- 4**: Possible consequences of non-observance (Dangerously high electrical voltages may be present on cables and terminals.)
- 5**: Procedure for hazard prevention (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)

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 the 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 the signal words

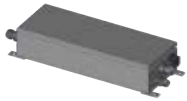
The following hazard-specific symbols are used in this document:

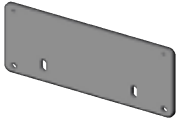
Symbol	Designation
	Automatic start-up
	Electrical hazard

Table 3: Meaning of the hazard-specific 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.

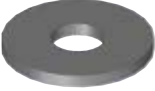
Pos.	Illustration	Item number	Description	Quantity
P001		8.20.xxxxx.04	TSG electronics	1
P002		8.20.400xx.xx	TSG motor	1
P003		8.20.60002.xx	Timing belt 8M	1
P004		1.20.20094	L-shaped bracket	1
P005		1.20.20xxx	Z-shaped rod	1
P006		1.20.20096	L-shaped bracket	1
P007		1.20.20097	T-shaped plate	1

Pos.	Illustration	Item number	Description	Quantity
P008		1.20.20098	Rectangular plate	1
P009		1.20.20xxx	Rectangular plate	1
P010		1.20.30650	Rectangular plate	1
P011		1.20.30984	L-shaped bracket	1
P012		1.20.30985	Plate, square	2
P013		1.20.30996	Bush	2
P014		1.20.59070	L-shaped bracket	1
P015		1.20.60003	Deflection pulley D = 56 mm, 8M	3

Pos.	Illustration	Item number	Description	Quantity
P016		1.20.60007	Timing belt lock	1
P017		1.20.60705	Motor bracket	2
P018		1.20.90010	TSG sine drive	1
P019		1.20.91129	Buffer M6 15 × 15 mm	2
P020		1.20.94071	L-shaped bracket	1
P021		1.25.17050	Chain	1
P022		1.36.00020	Button head screw M3 × 12 mm	4
P023		1.36.00115	Hexagon head screw M8 × 40 mm	1

Pos.	Illustration	Item number	Description	Quantity
P024		1.36.00135	Locking screw M6 × 12 mm	1
P025		1.36.00138	Locking screw M6 × 16 mm	4
P026		1.36.00169	Spring washer M8	1
P027		1.36.00332	Countersunk screw M4 × 10 mm	8
P028		1.36.00385	Countersunk screw M8 × 35 mm	2
P029		1.36.00430	Nut M8	2
P030		1.36.00440	Washer M8	4
P031		1.36.00501	Nut M8	15

Pos.	Illustration	Item number	Description	Quantity
P032		1.36.00502	Nut M6	2
P033		1.36.00509	Nut M8	3
P034		1.36.00720	Locking screw M8 × 20 mm	11
P035		1.36.00725	Locking screw M8 × 25 mm	5
P036		1.36.00730	Locking screw M8 × 30 mm	2
P037		1.36.00740	Locking screw M8 × 40 mm	2
P038		1.36.00749	Locking screw M8 × 50 mm	1
P039		1.36.00870	Sleeve, D = 15 mm	2

Pos.	Illustration	Item number	Description	Quantity
P040		1.36.00905	Slotted flat head screw with shoulder M6 × 6 mm	2
P041		1.36.01035	Washer M8	1
P042		1.36.02215	Countersunk screw M5 × 16 mm	3
P043		1.36.05040	Set screw M5 × 5 mm	1

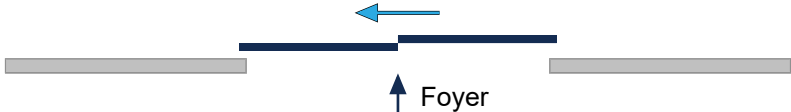
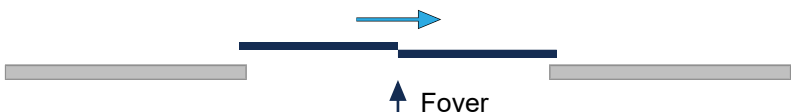
4 Required tools

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
T108		Combination spanner, size 8
T110		Combination wrench, size 10
T113		Combination wrench, size 13
T202.5		Allen key, size 2.5
T203.0		Allen key, size 3
T205.0		Allen key, size 5
T603.5		Drill bit, Ø 3.5 mm
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	
Z: Center opening	
ZT: 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



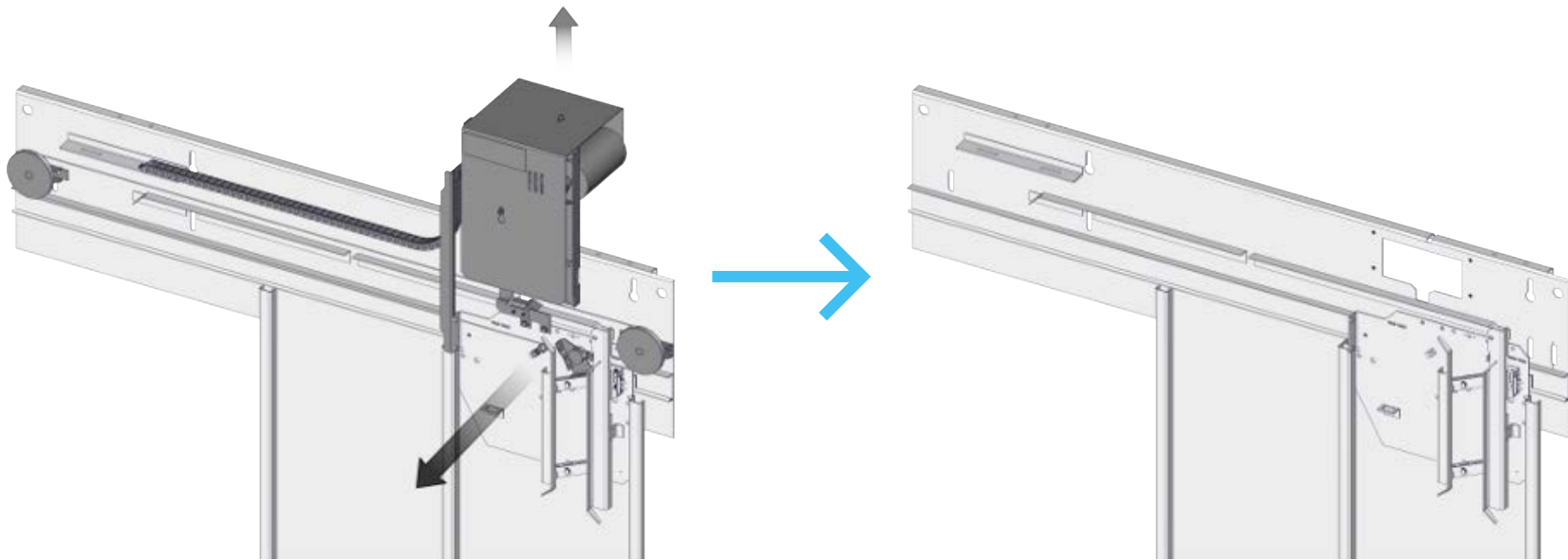
Risk of fatal injury from electrical current

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

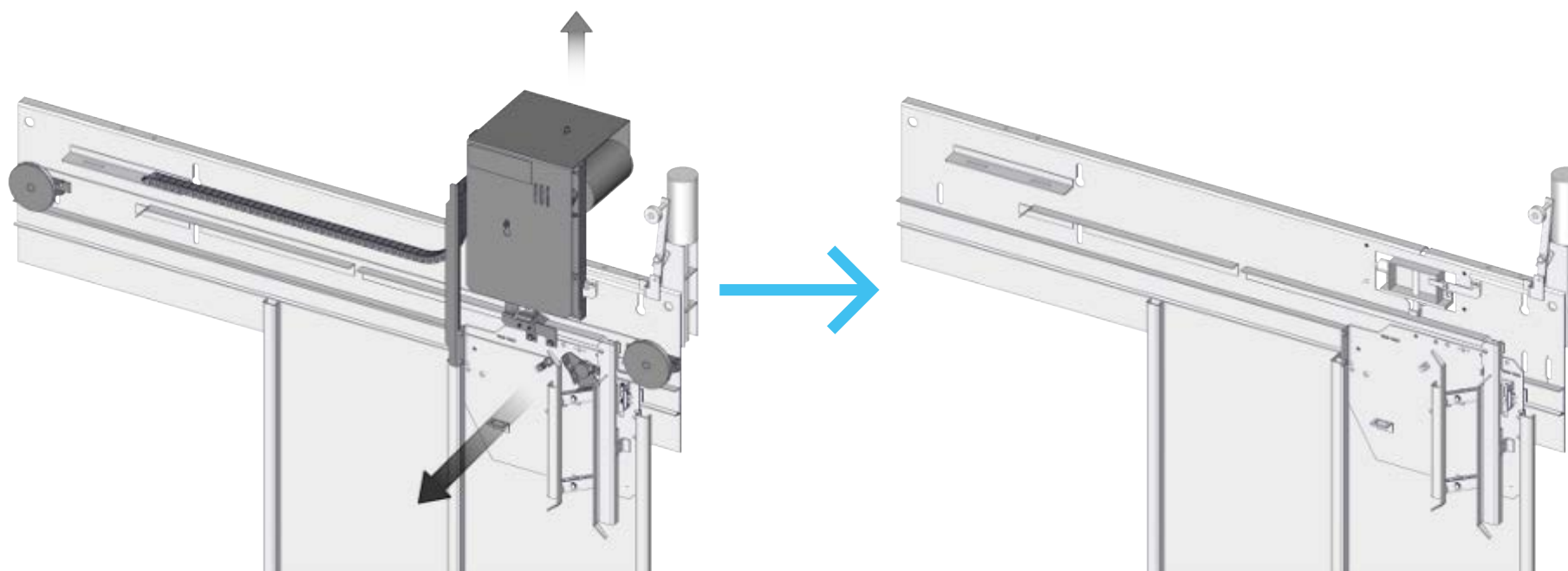
- Only qualified electricians may work on electrical components.
- Before starting work on electrical components, the five electrical safety rules must be observed:
 - Disconnect
 - Secure against reconnection
 - Verify absence of voltage
 - Earth and short-circuit
 - Provide protection against adjacent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



Door without original FKTV: shows the components to be dismantled.



Door with original FKTV: shows the components to be dismantled.
The lock plate is reused.

7 Mounting: Door without original FKTV

7.1 Mounting the motor unit on the door frame

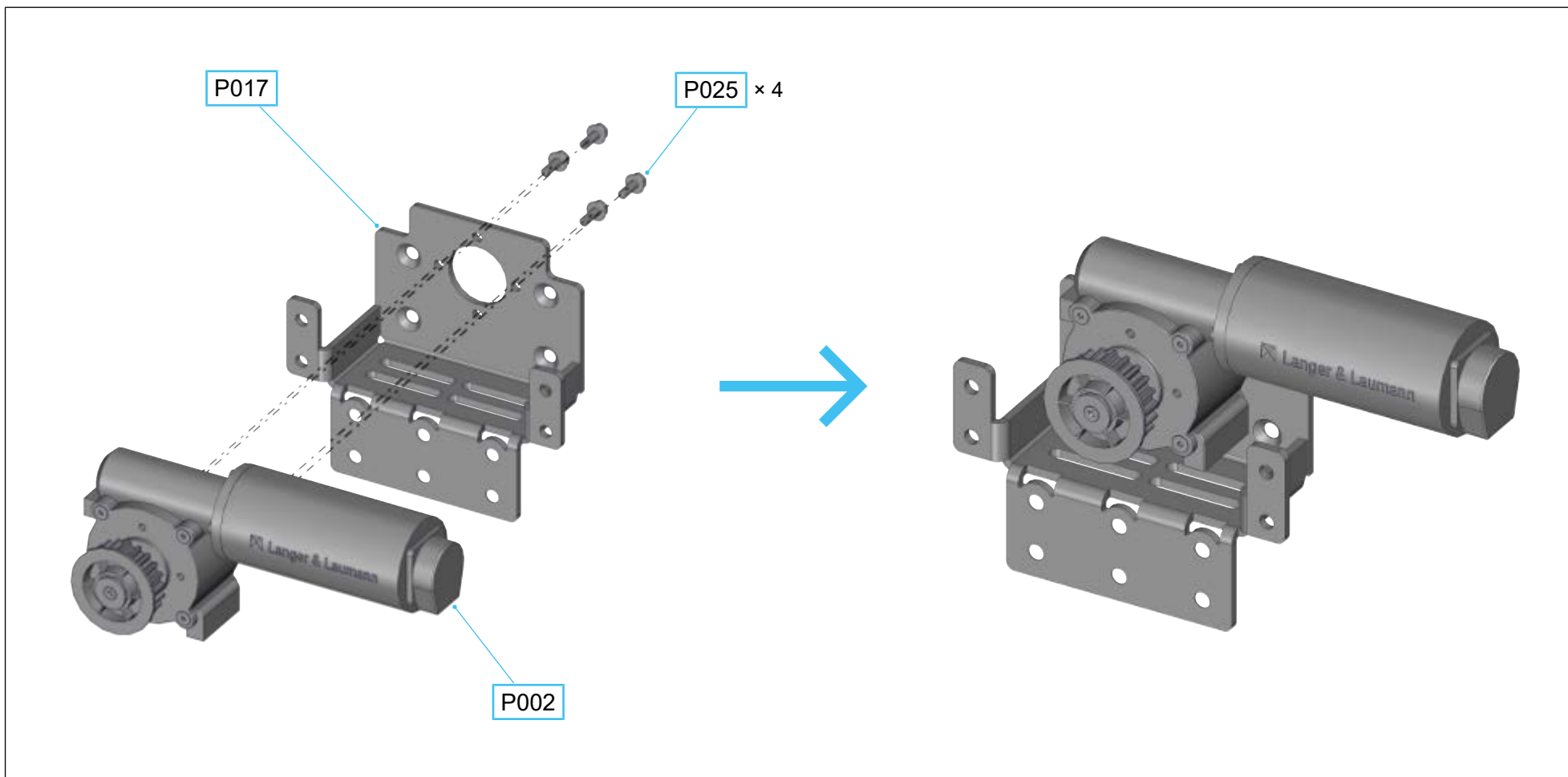
Components

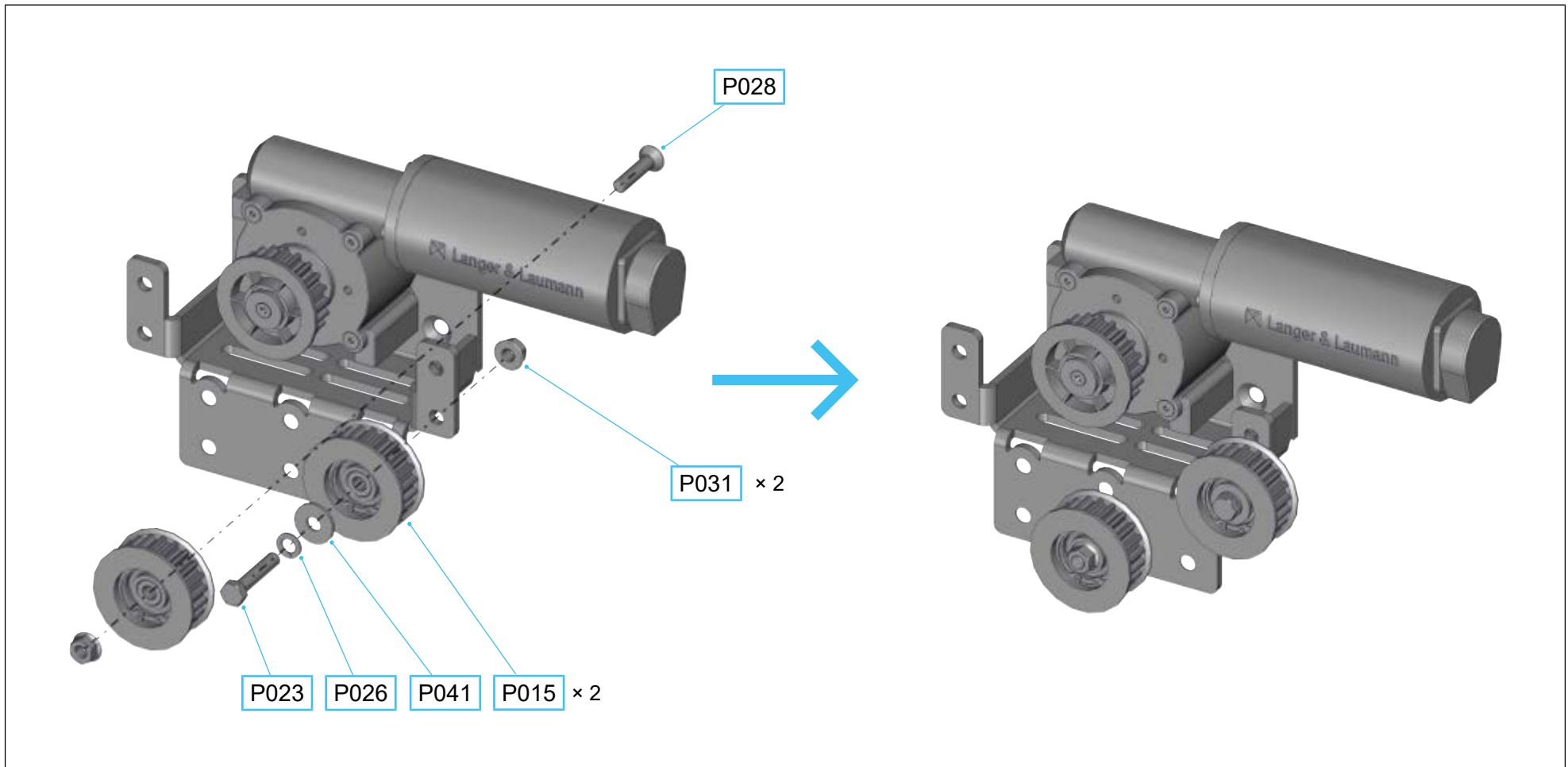
Pos.	Illustration	Item number	Description	Quantity
P002		8.20.400xx.xx	TSG motor	1
P015		1.20.60003	Deflection pulley D = 56 mm, 8M	2
P017		1.20.60705	Motor bracket	1
P023		1.36.00115	Hexagon head screw M8 × 40 mm	1
P025		1.36.00138	Locking screw M6 × 16 mm	4
P026		1.36.00169	Spring washer M8	1

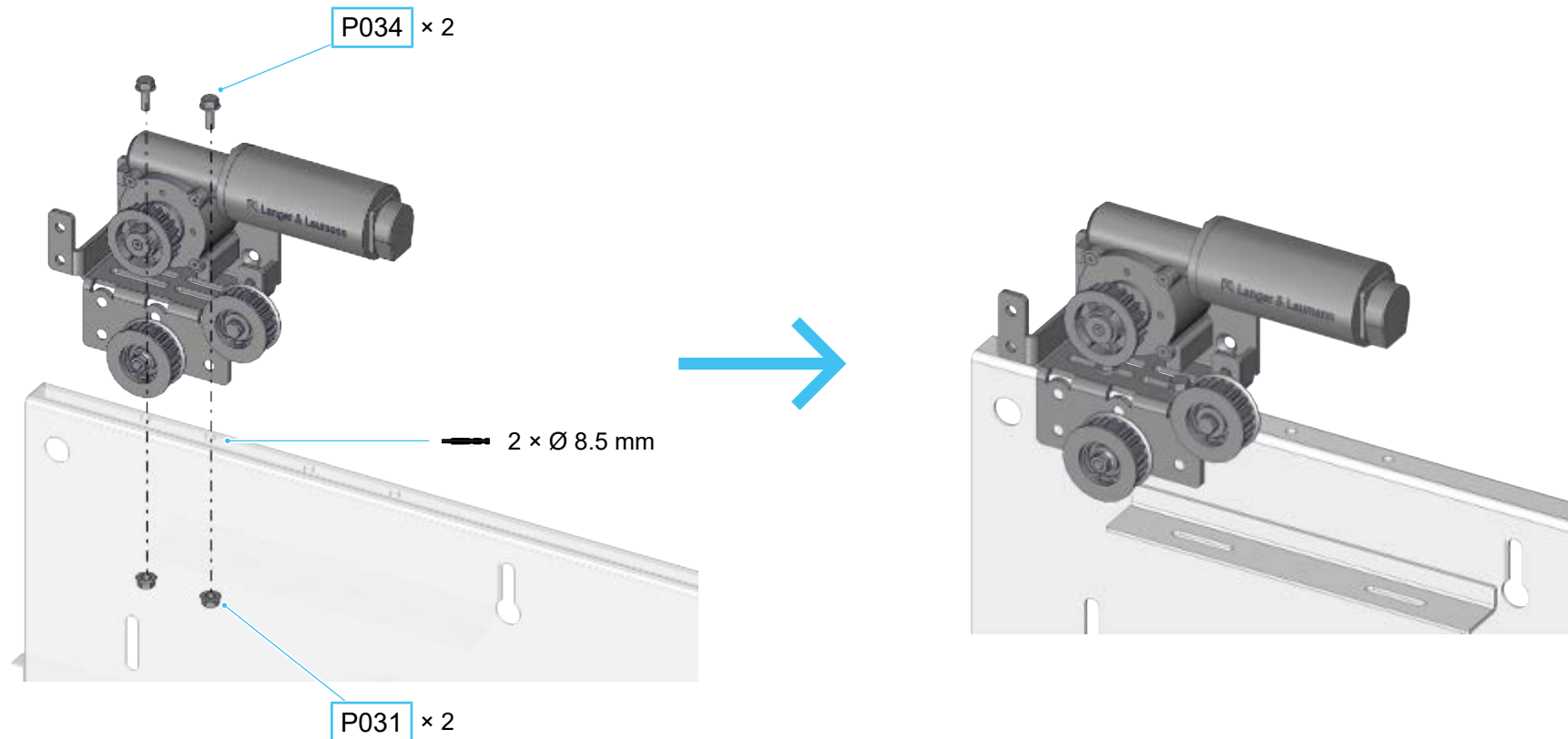
Pos.	Illustration	Item number	Description	Quantity
P028		1.36.00385	Countersunk screw M8 × 35 mm	1
P031		1.36.00501	Nut M8	4
P034		1.36.00720	Locking screw M8 × 20 mm	2
P041		1.36.01035	Washer M8	1

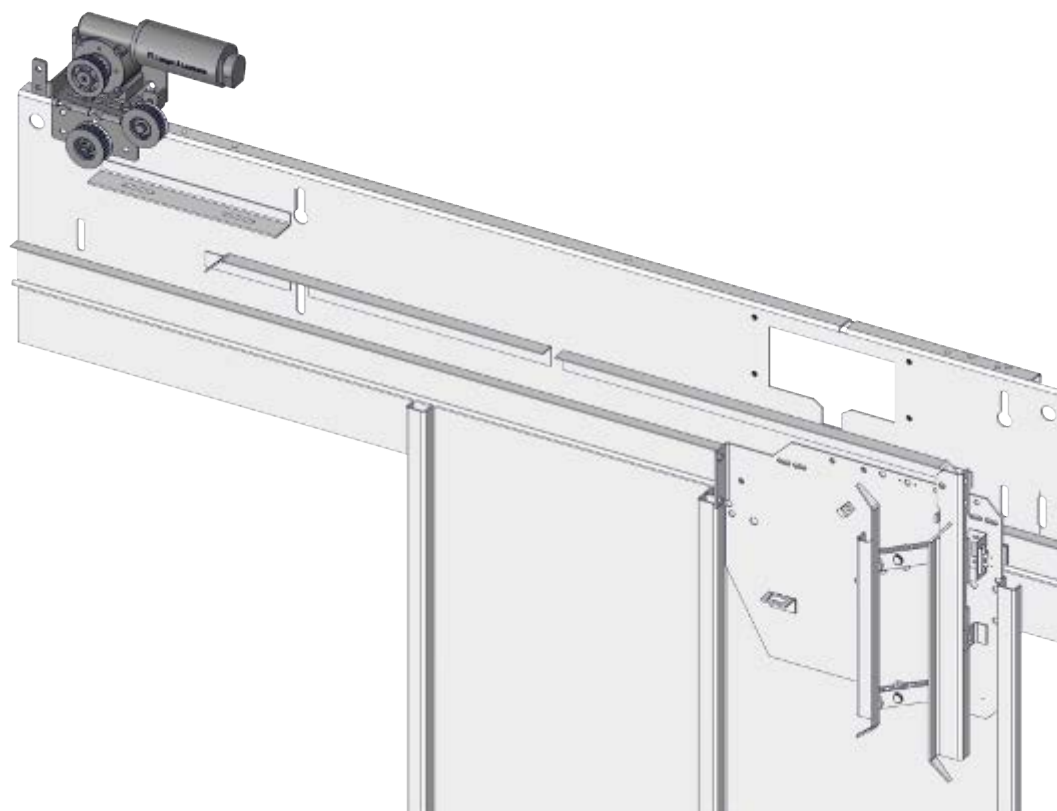
Tools

Pos.	Symbol	Description
T110		Combination wrench, size 10
T113		Combination wrench, size 13
T205.0		Allen key, size 5
T608.5		Drill bit, Ø 8.5 mm









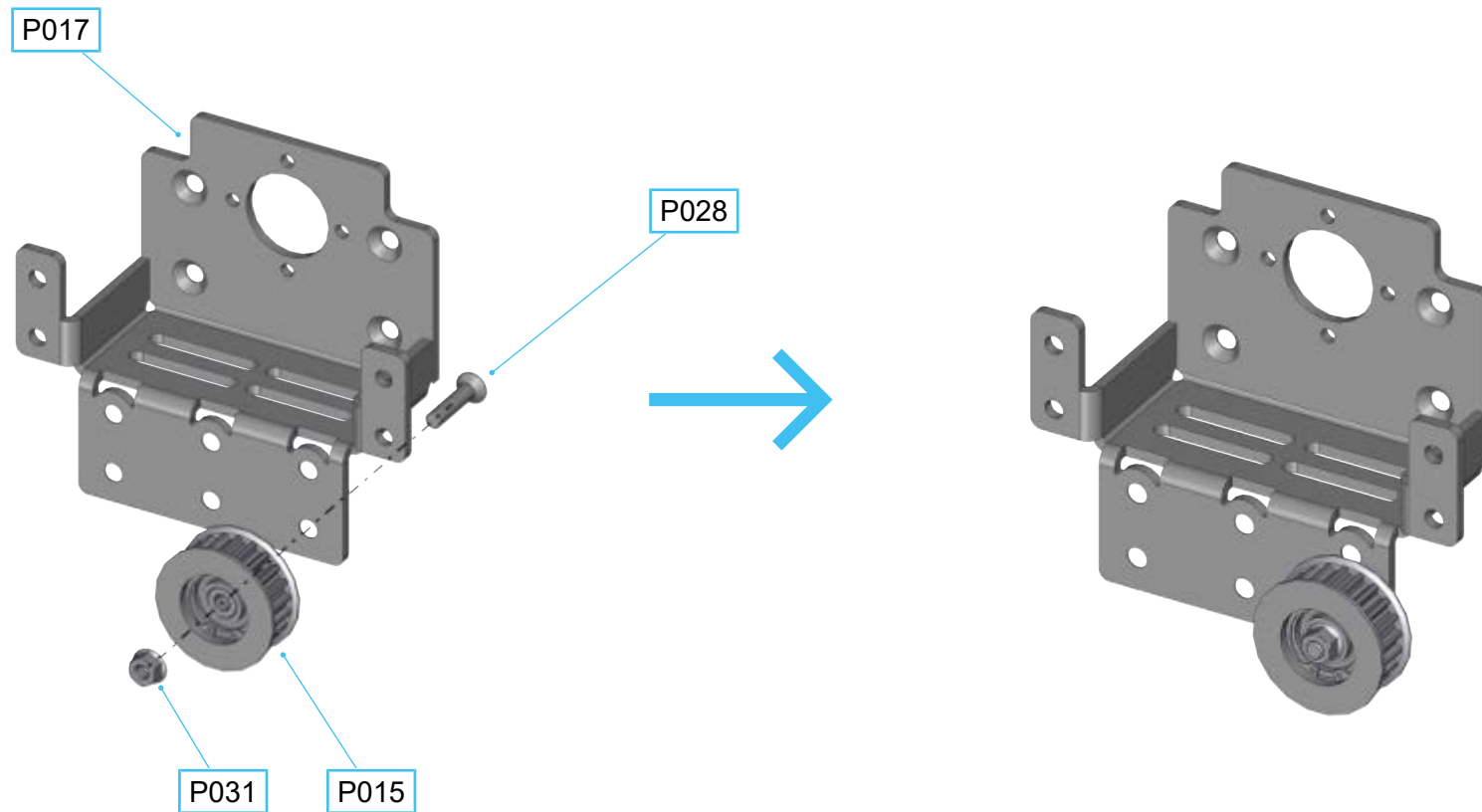
7.2 Mounting the deflection unit on the door frame

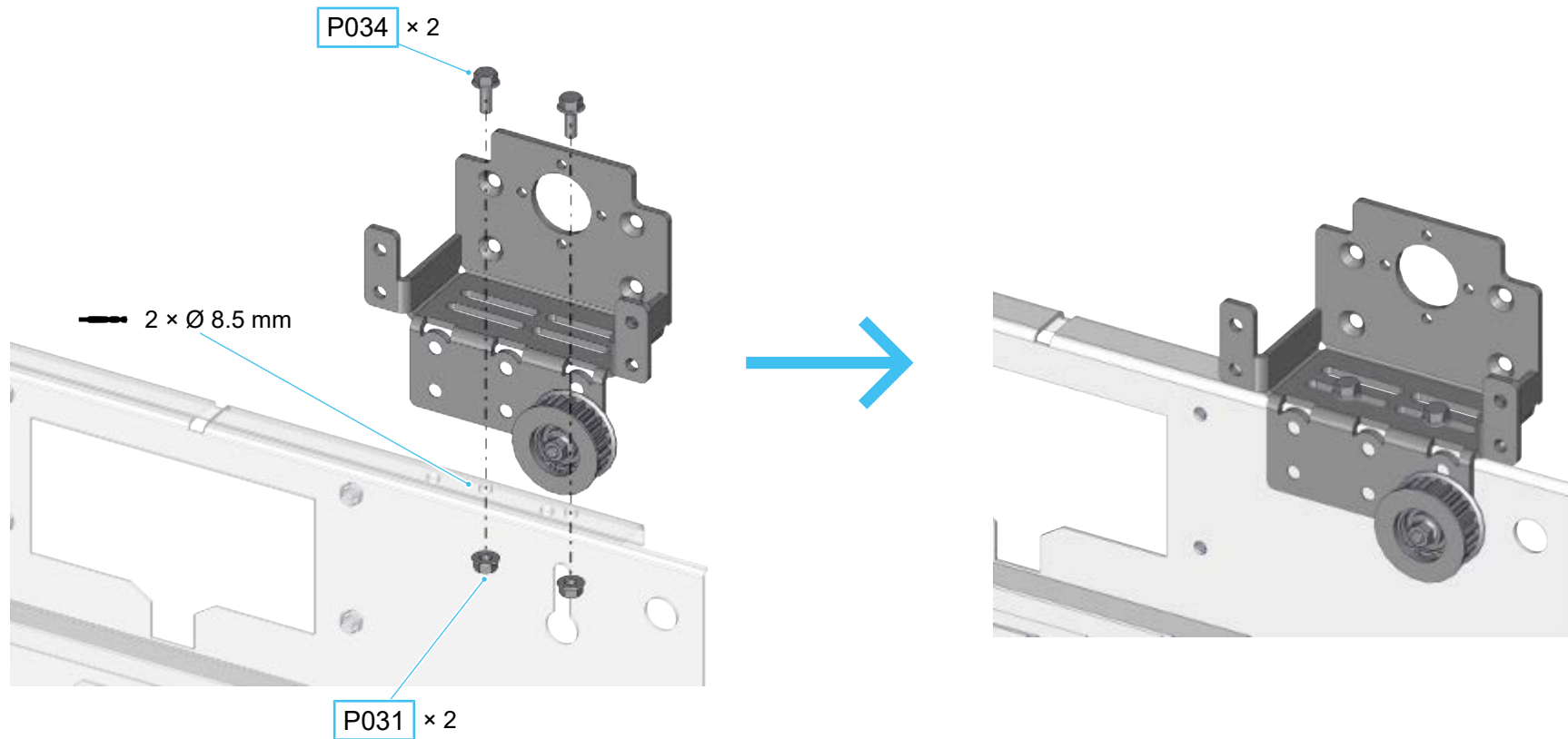
Components

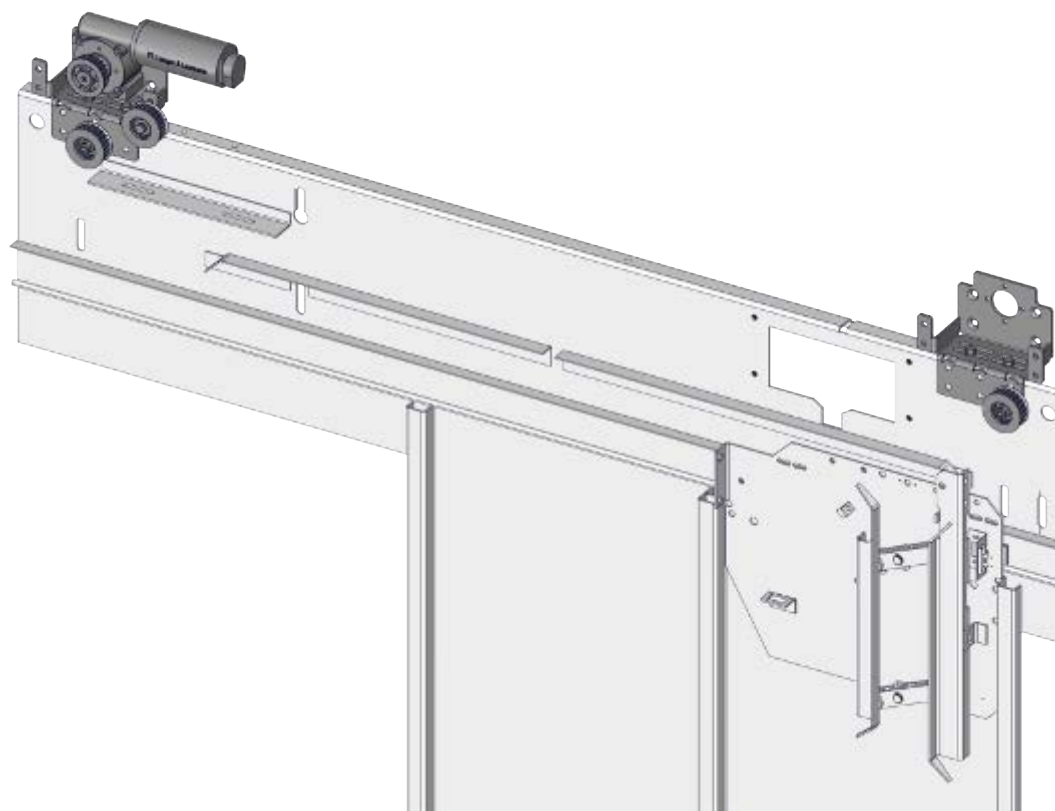
Pos.	Illustration	Item number	Description	Quantity
P015		1.20.60003	Deflection pulley D = 56 mm, 8M	1
P017		1.20.60705	Motor bracket	1
P028		1.36.00385	Countersunk screw M8 × 35 mm	1
P031		1.36.00501	Nut M8	3
P034		1.36.00720	Locking screw M8 × 20 mm	2

Tools

Pos.	Symbol	Description
T113		Combination wrench, size 13
T205.0		Allen key, size 5
T608.5		Drill bit, Ø 8.5 mm







7.3 Mounting the sinus drive on the door frame

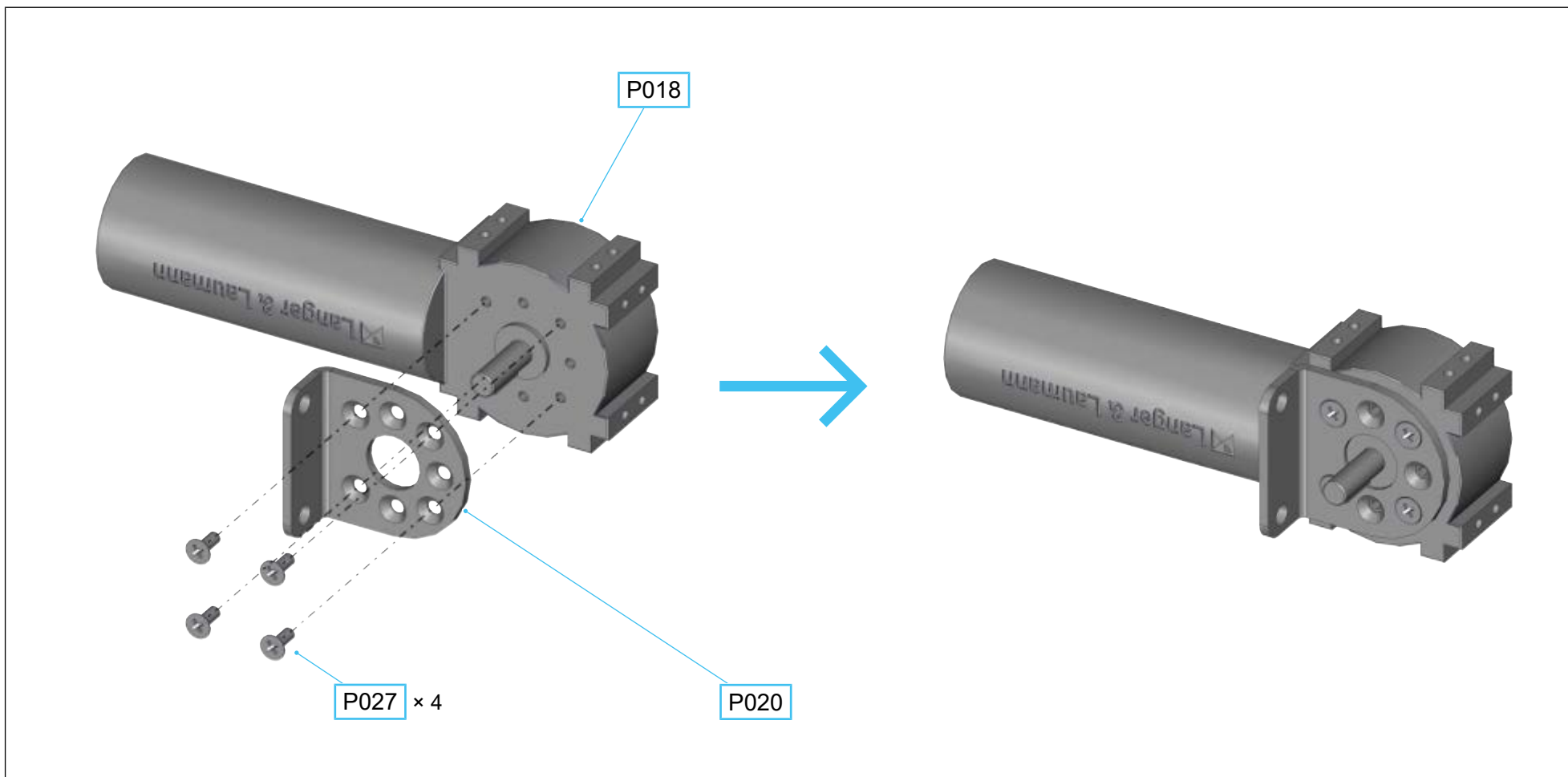
Components

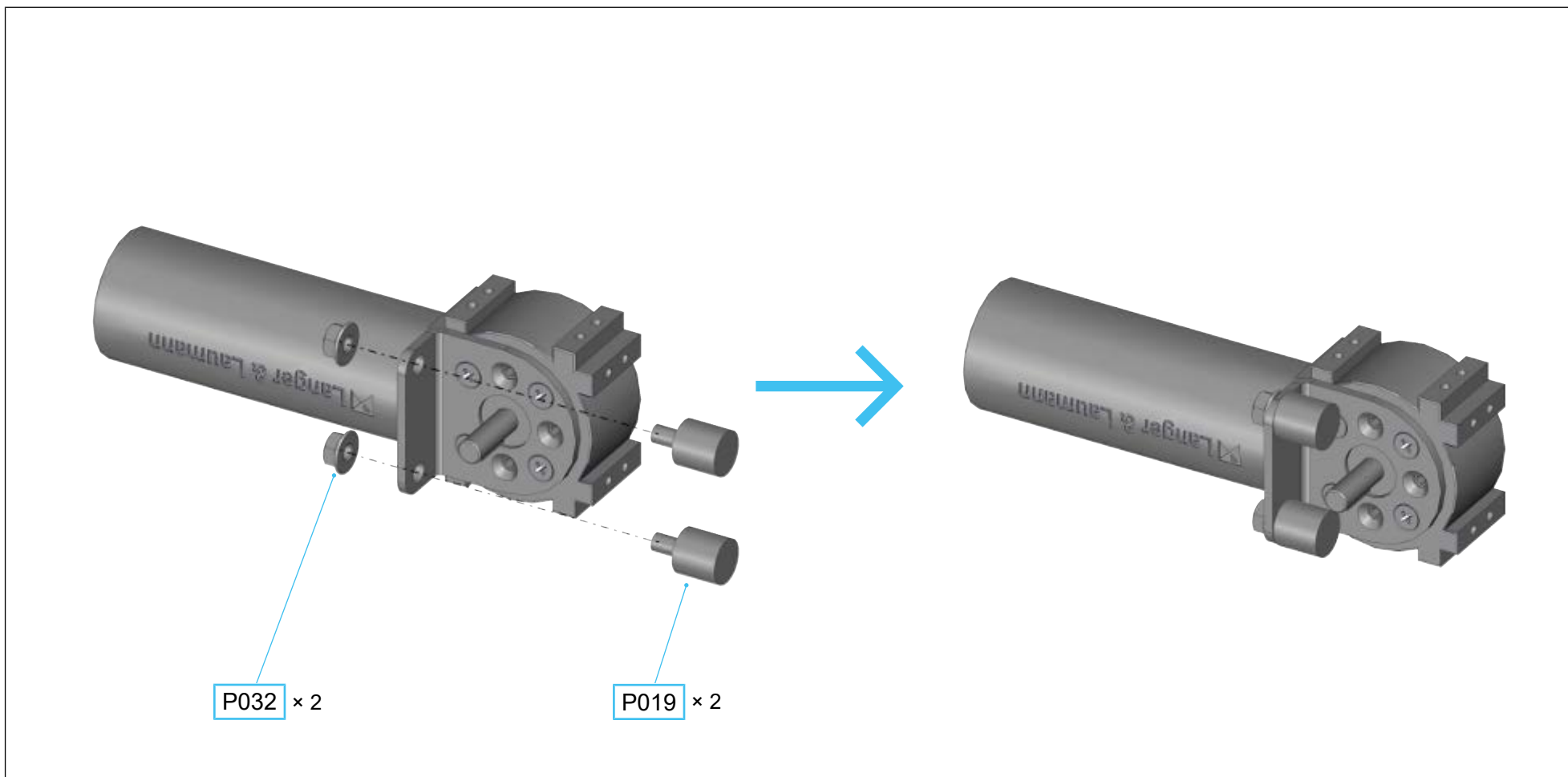
Pos.	Illustration	Item number	Description	Quantity
P006		1.20.20096	L-shaped bracket	1
P009		1.20.20xxx	Rectangular plate	1
P018		1.20.90010	TSG sine drive	1
P019		1.20.91129	Buffer M6 15 × 15 mm	2
P020		1.20.94071	L-shaped bracket	1
P027		1.36.00332	Countersunk screw M4 × 10 mm	8
P032		1.36.00502	Nut M6	2

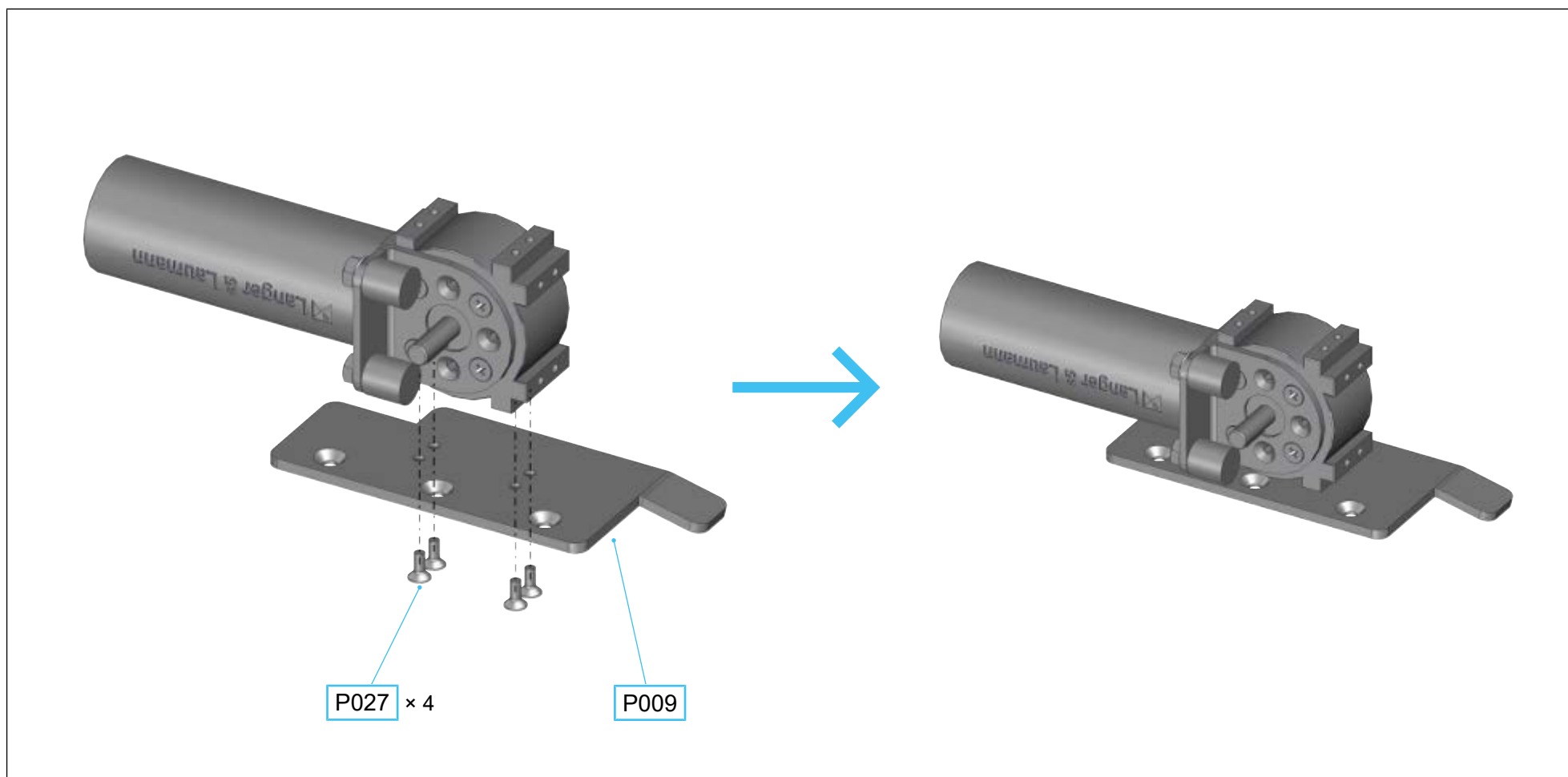
Pos.	Illustration	Item number	Description	Quantity
P033		1.36.00509	Nut M8	3
P034		1.36.00720	Locking screw M8 × 20 mm	2
P042		1.36.02215	Countersunk screw M5 × 16 mm	3

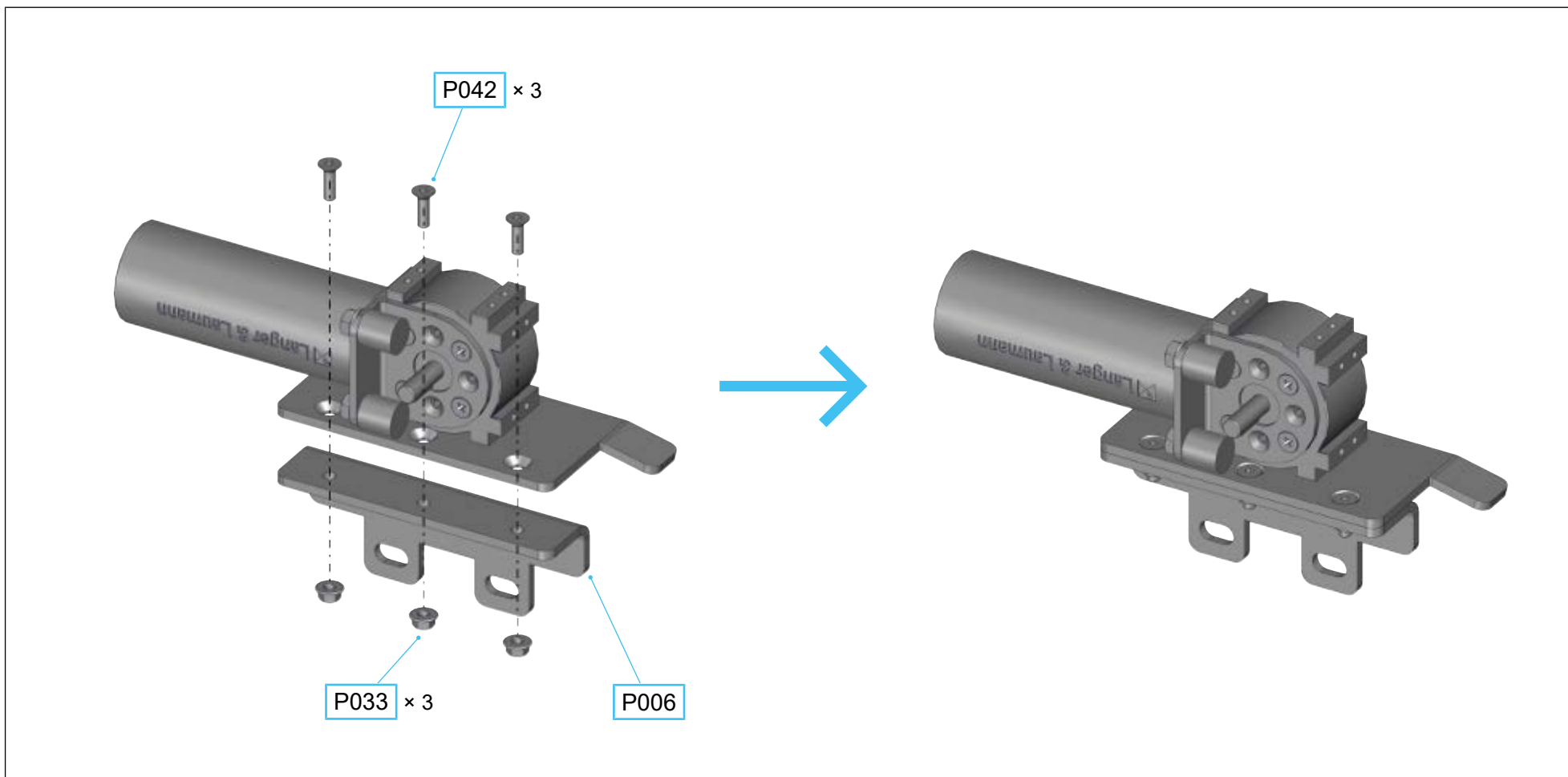
Tools

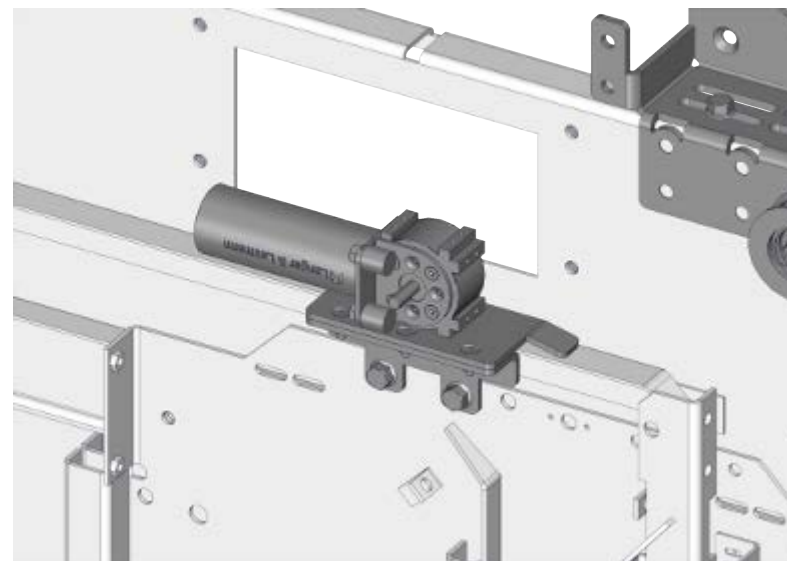
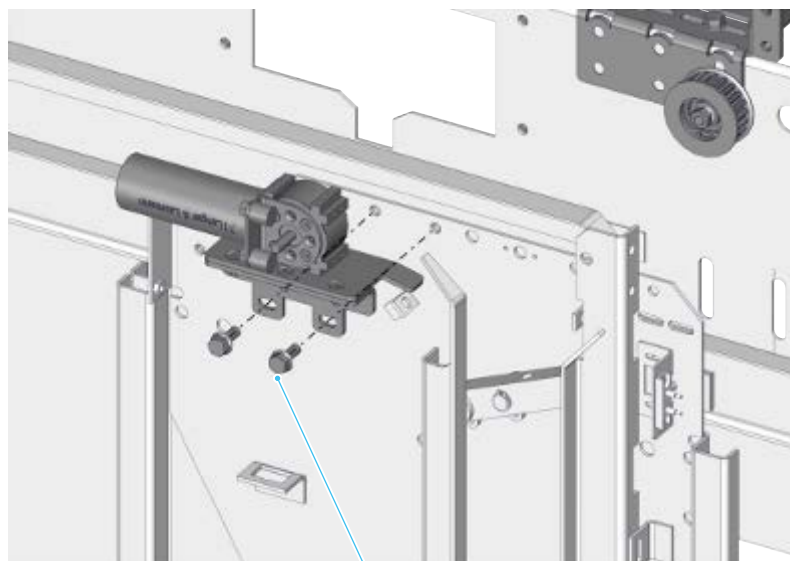
Pos.	Symbol	Description
T010		Phillips screwdriver
T110		Combination wrench, size 10
T113		Combination wrench, size 13
T203.0		Allen key, size 3

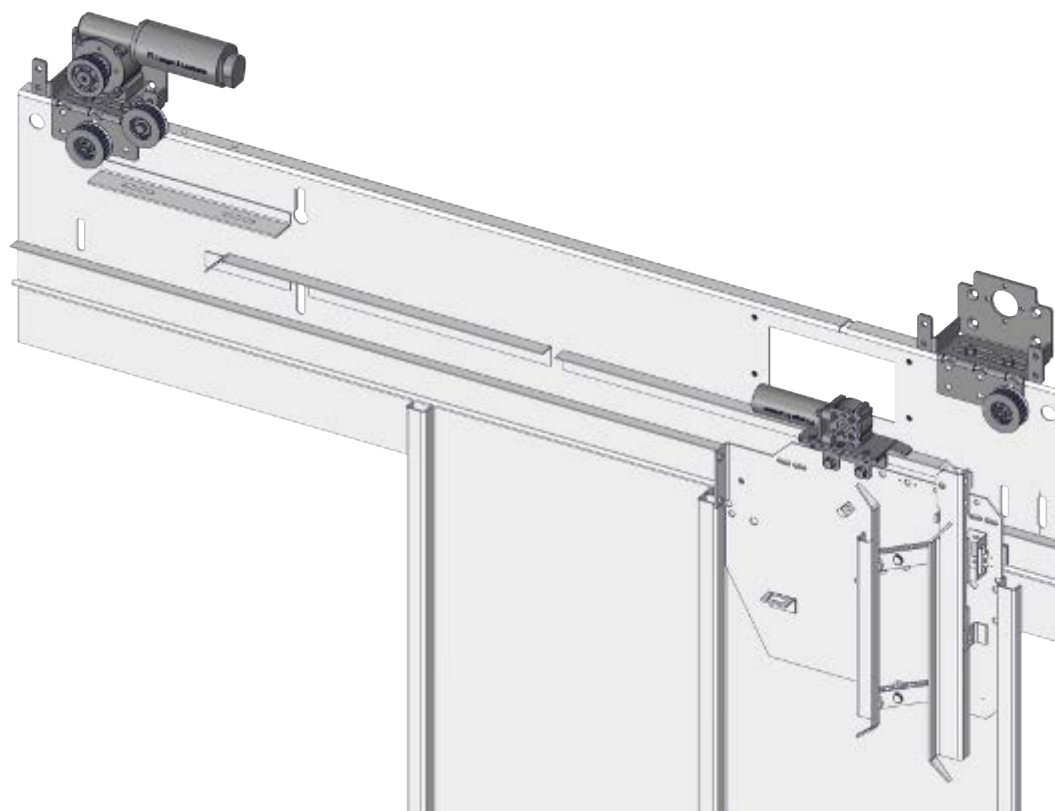












7.4 Mounting the connecting rod on the original skate

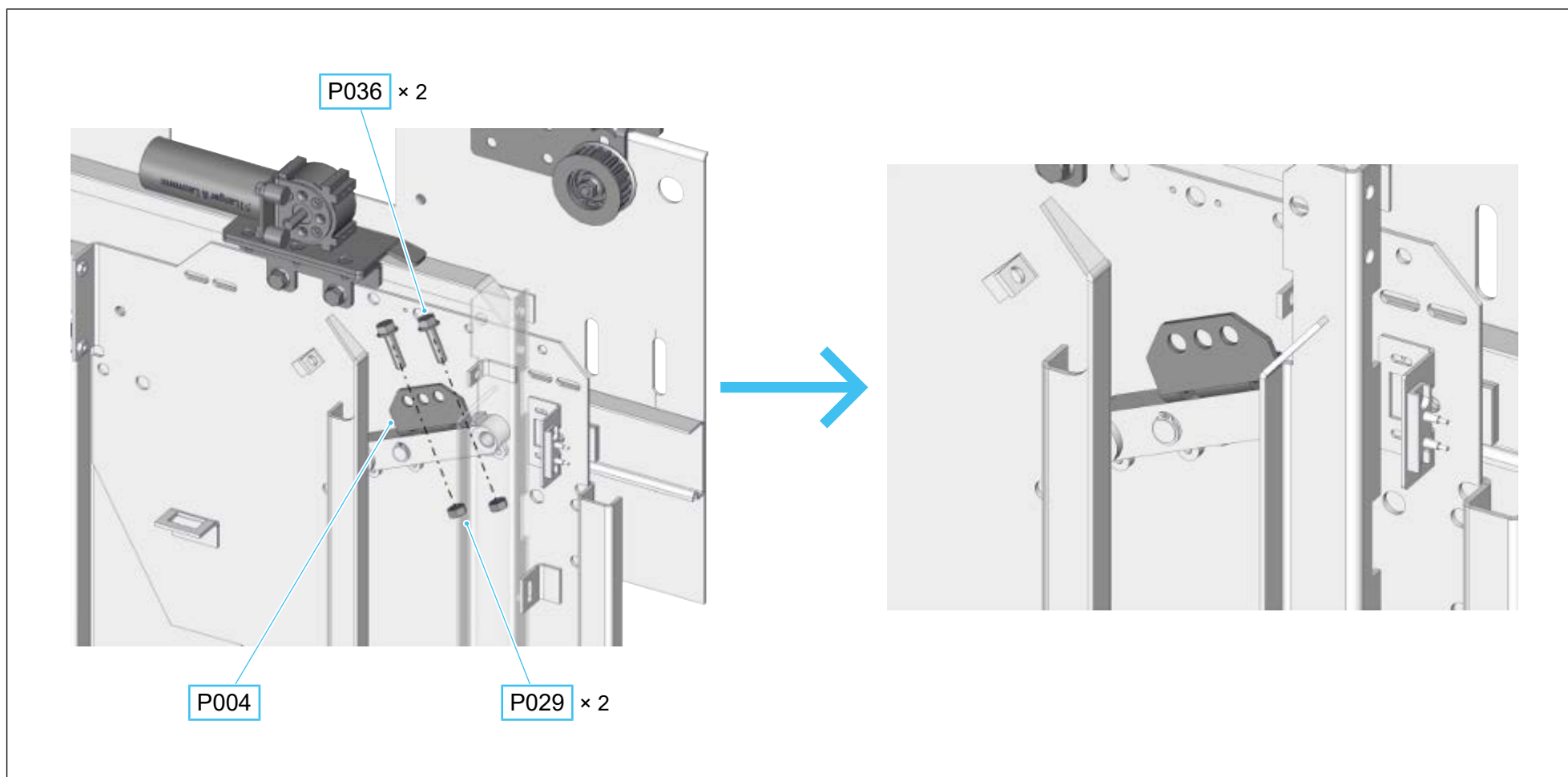
Components

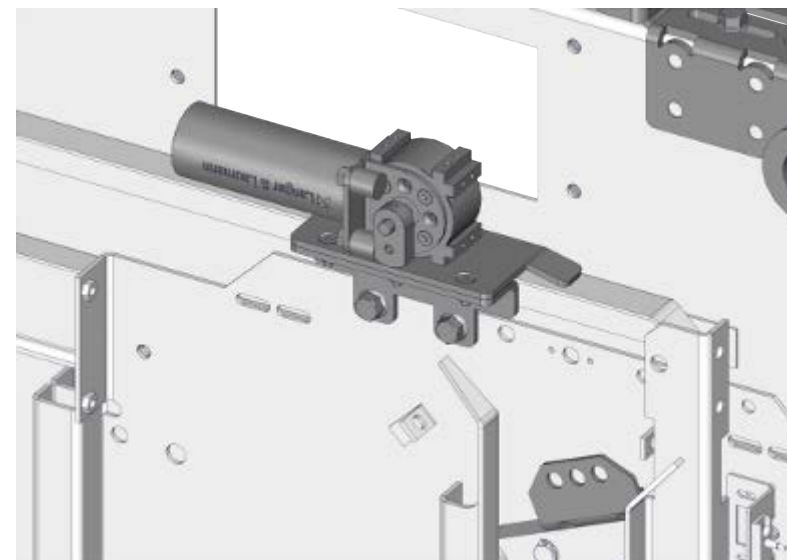
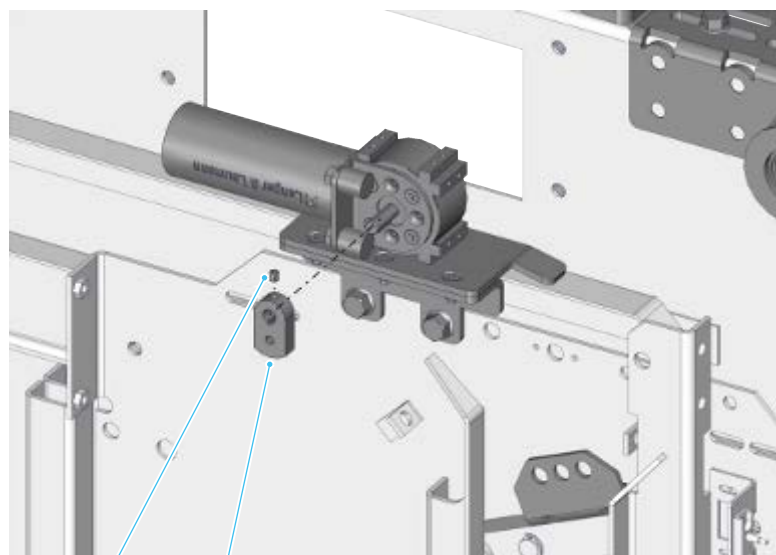
Pos.	Illustration	Item number	Description	Quantity
P004		1.20.20094	L-shaped bracket	1
P005		1.20.20xxx	Z-shaped rod	1
P010		1.20.30650	Rectangular plate	1
P013		1.20.30996	Bush	2
P029		1.36.00430	Nut M8	2
P036		1.36.00730	Locking screw M8 × 30 mm	2
P040		1.36.00905	Slotted flat head screw with shoulder M6 × 6 mm	2

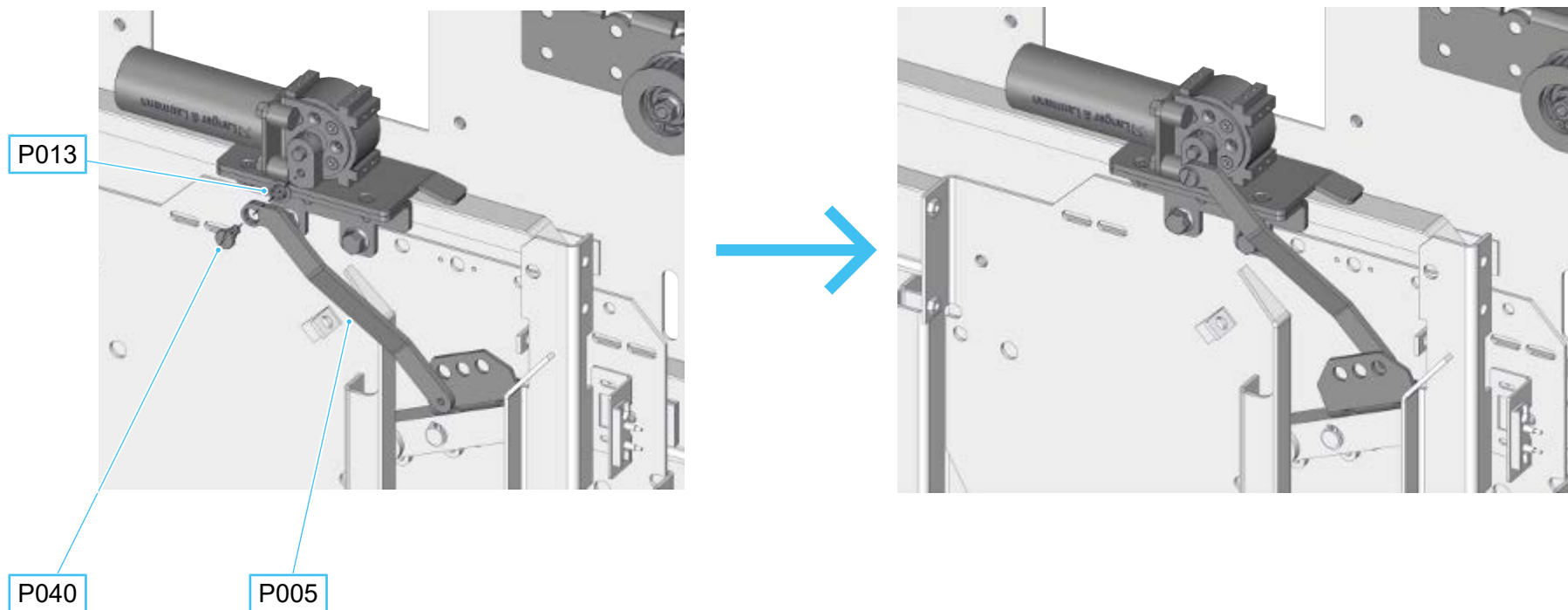
Pos.	Illustration	Item number	Description	Quantity
P043		1.36.05040	Set screw M5 × 5 mm	1

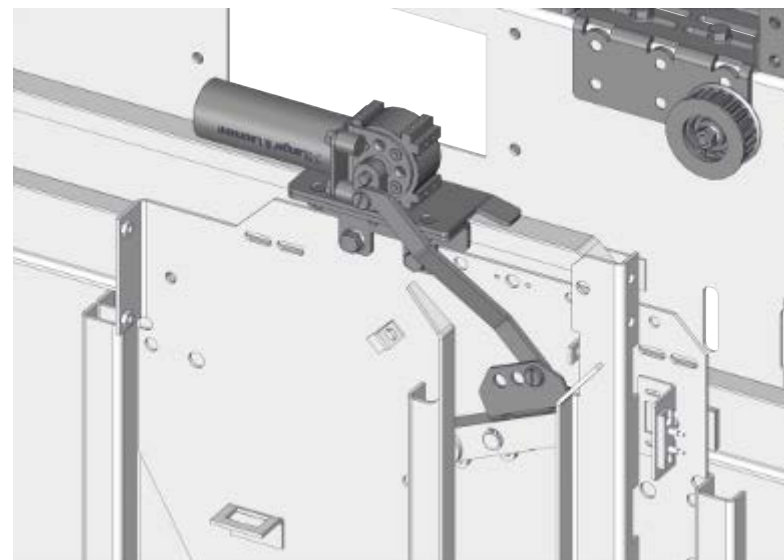
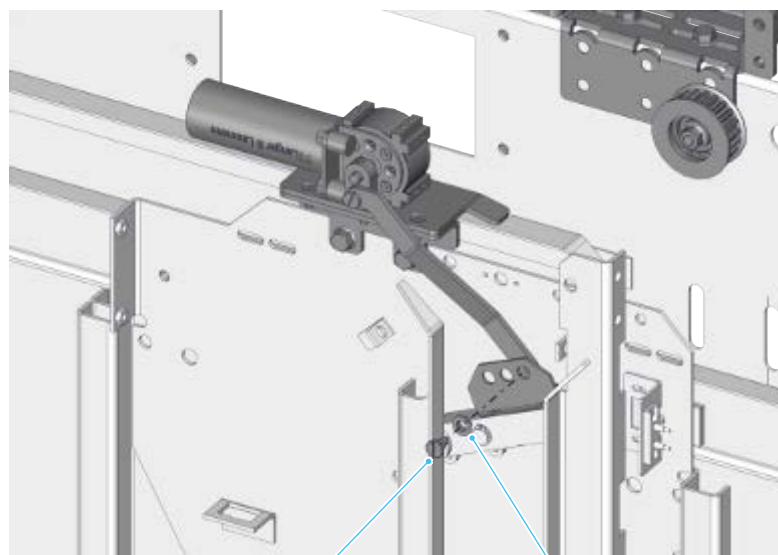
Tools

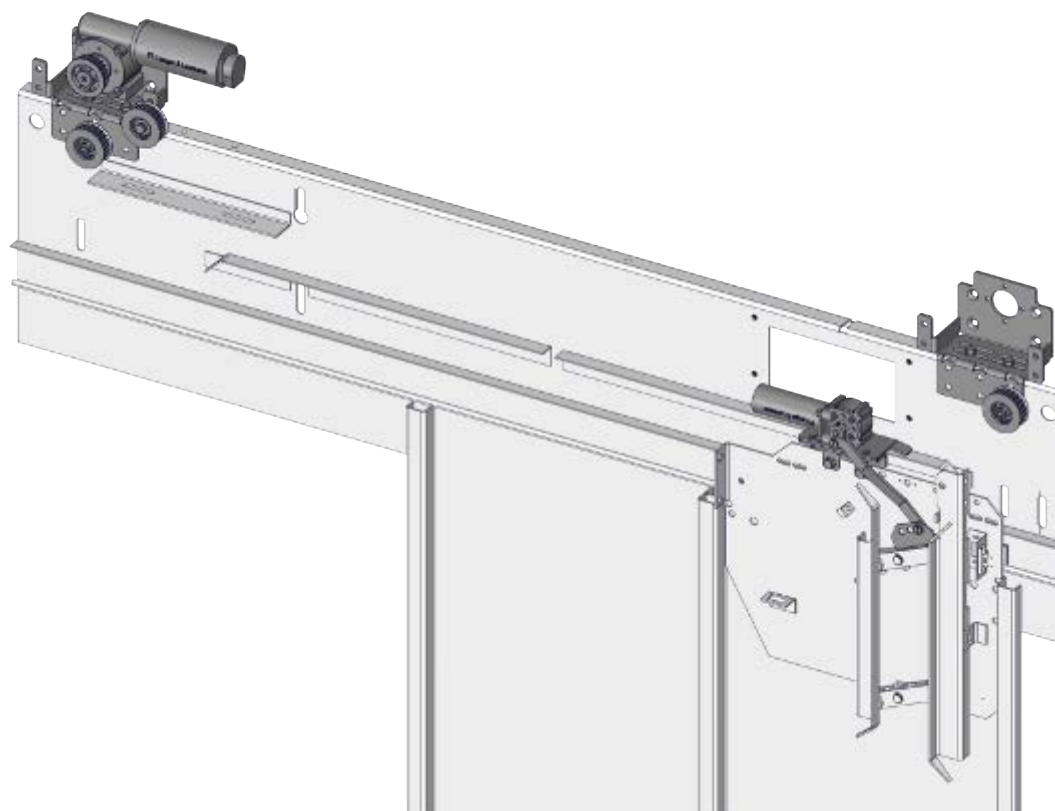
Pos.	Symbol	Description
T009		Slotted screwdriver
T113		Combination wrench, size 13
T202.5		Allen key, size 2.5











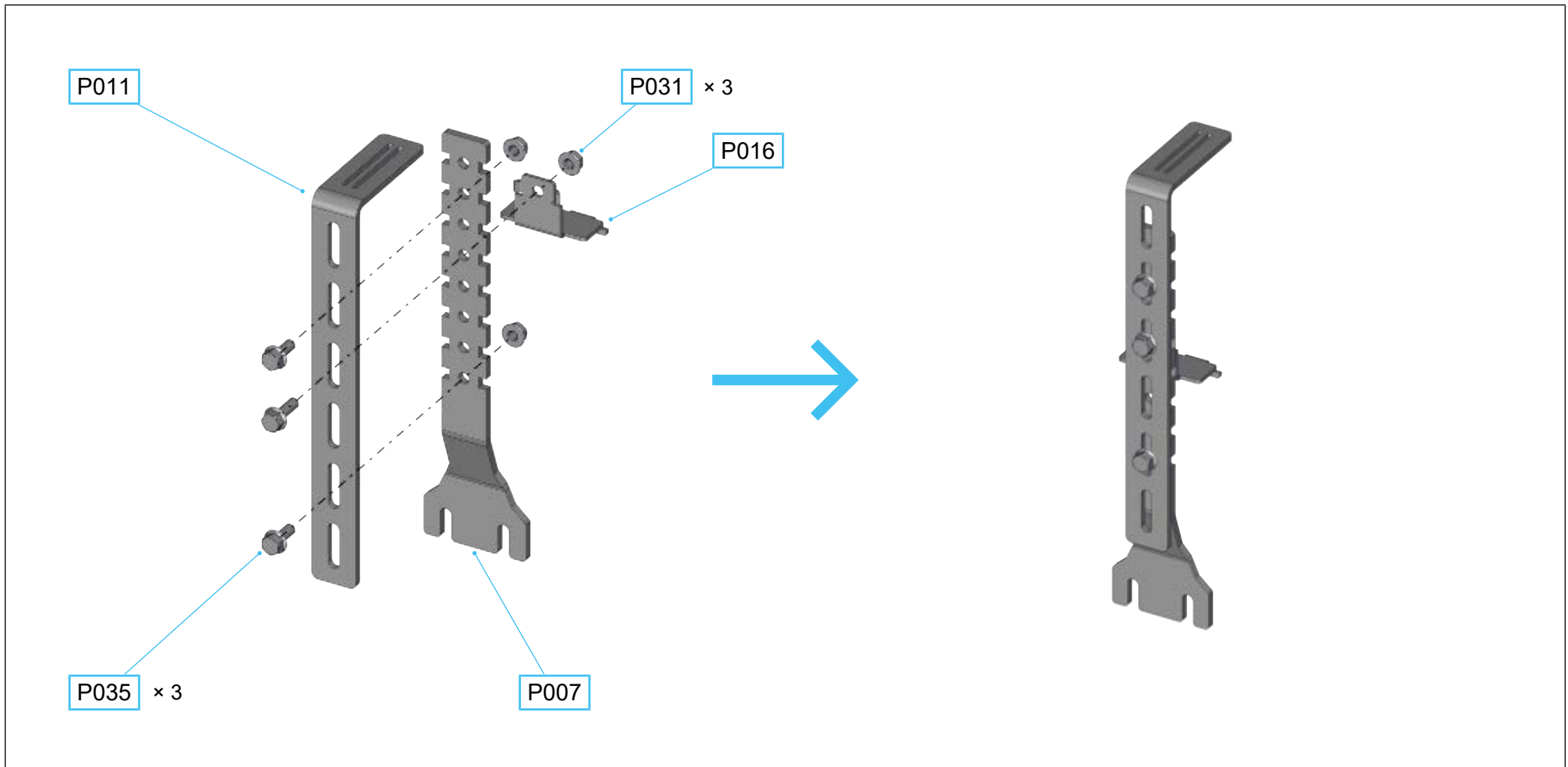
7.5 Mounting the door panel coupler

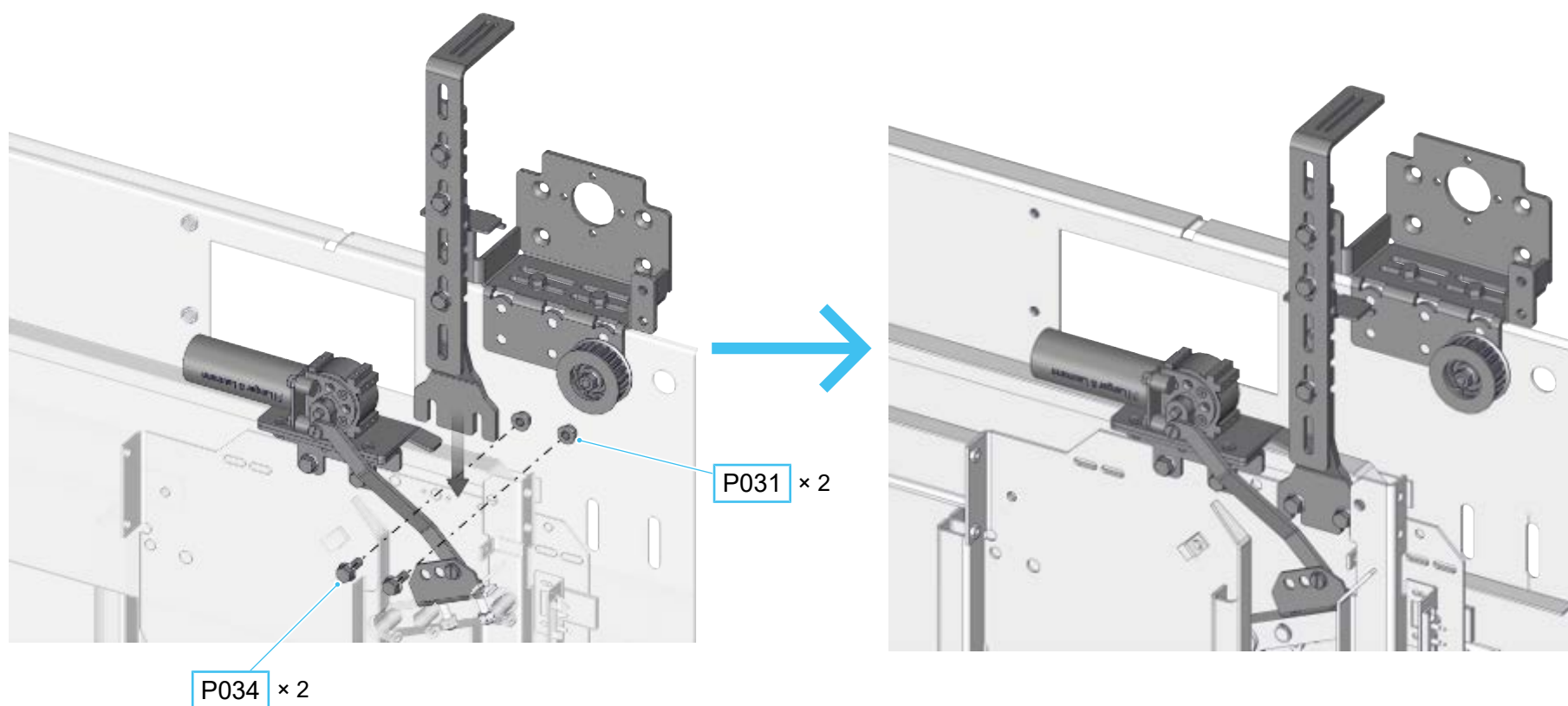
Components

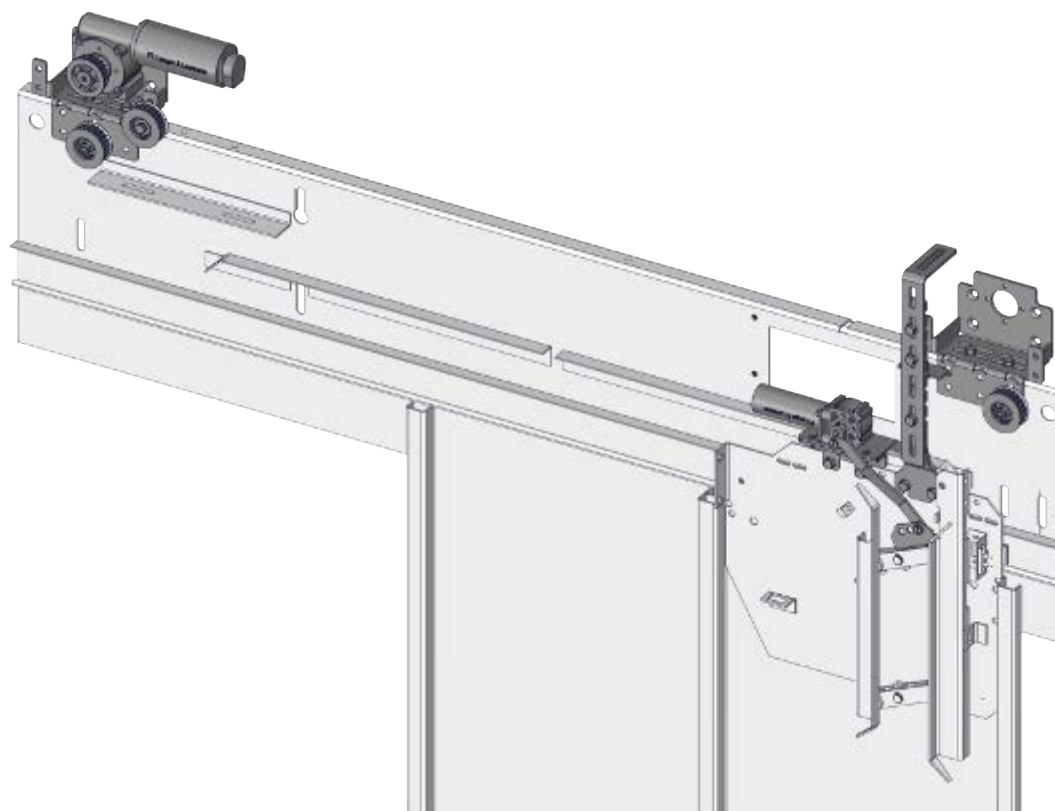
Pos.	Illustration	Item number	Description	Quantity
P007		1.20.20097	T-shaped plate	1
P011		1.20.30984	L-shaped bracket	1
P016		1.20.60007	Timing belt lock	1
P031		1.36.00501	Nut M8	5
P034		1.36.00720	Locking screw M8 x 20 mm	2
P035		1.36.00725	Locking screw M8 x 25 mm	3

Tools

Pos.	Symbol	Description
T113		Combination wrench, size 13







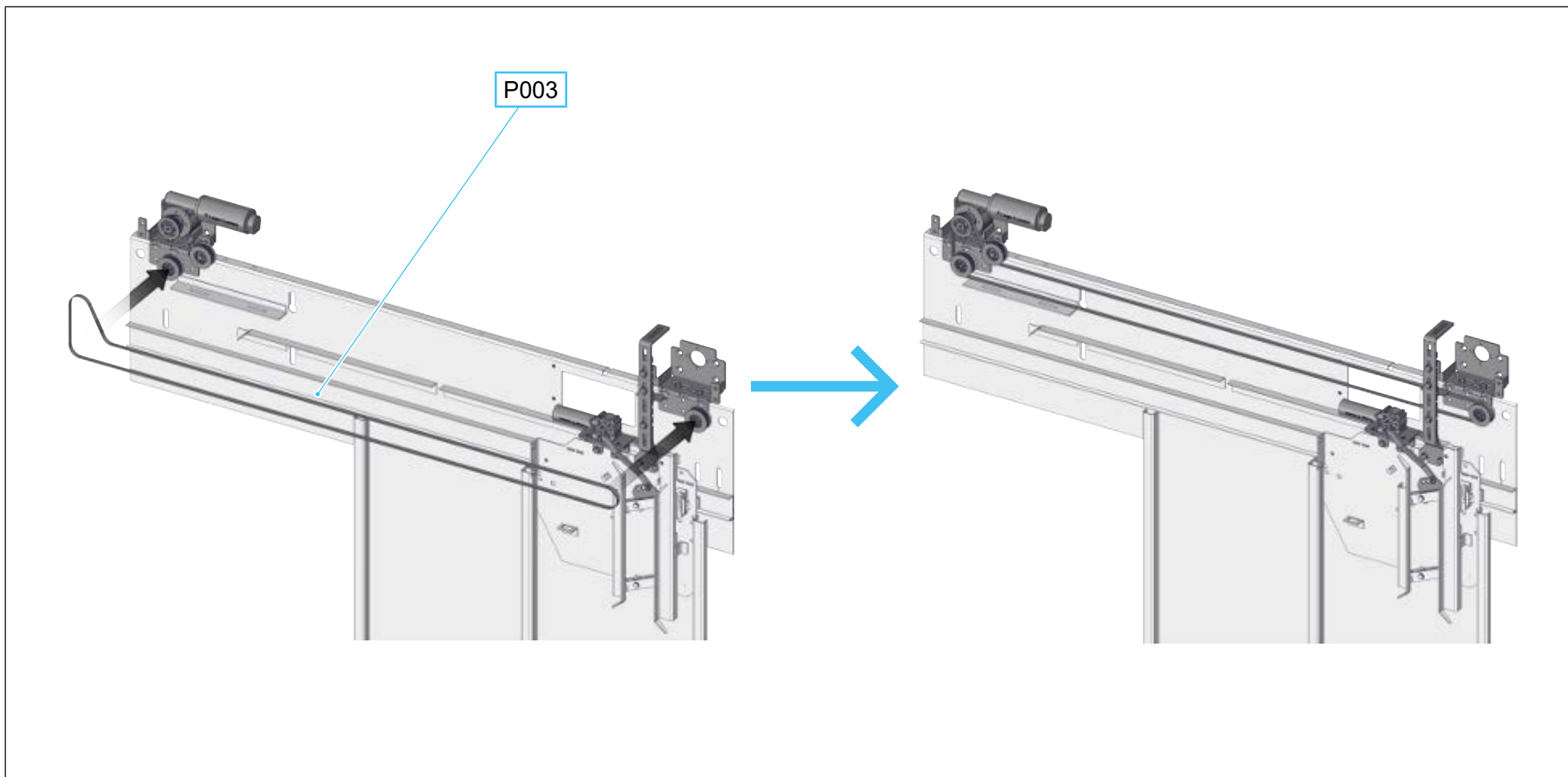
7.6 Installing the timing belt and timing belt lock

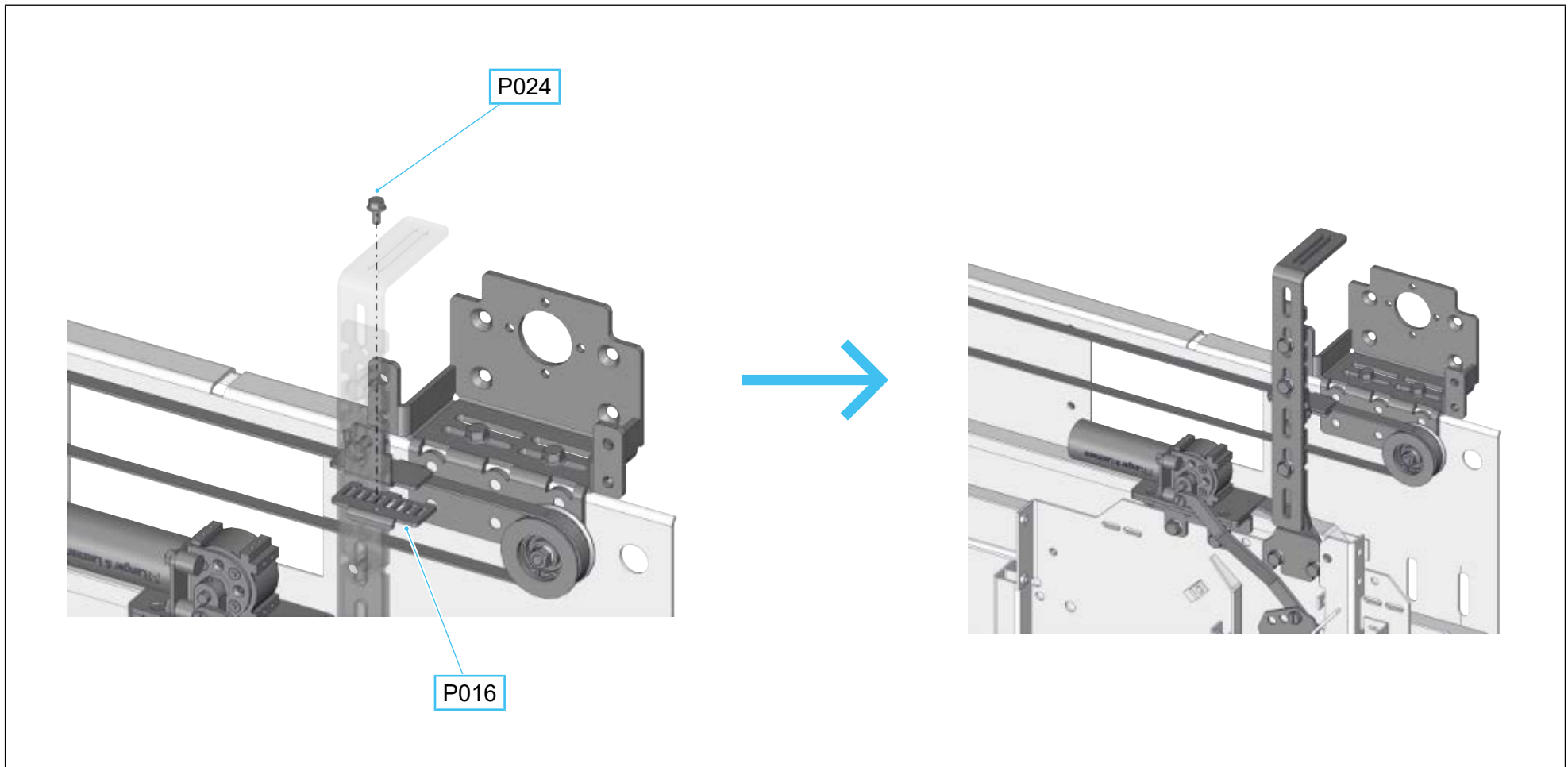
Components

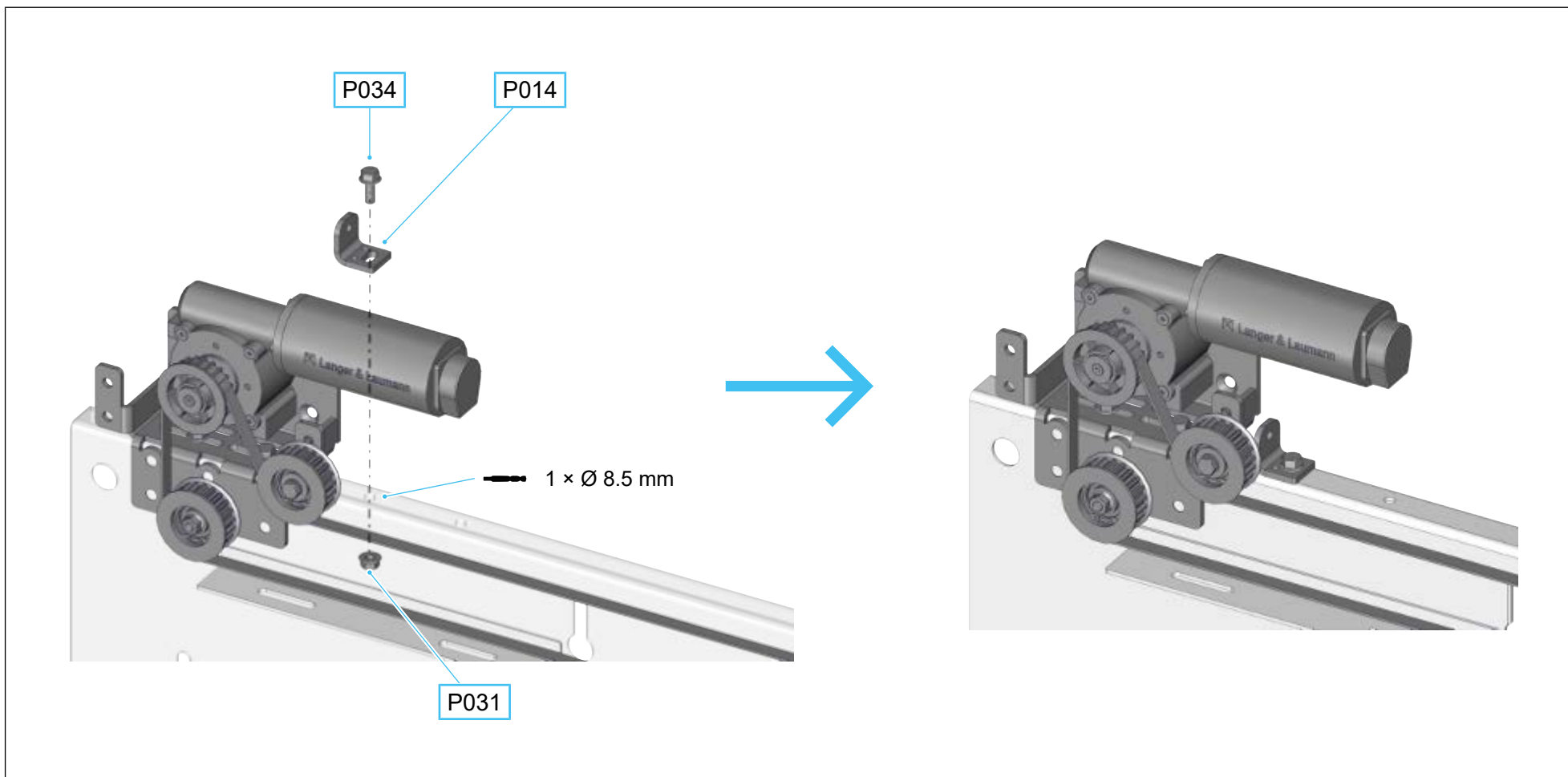
Pos.	Illustration	Item number	Description	Quantity
P003		8.20.60002.xx	Timing belt 8M	1
P014		1.20.59070	L-shaped bracket	1
P016		1.20.60007	Timing belt lock	1
P024		1.36.00135	Locking screw M6 × 12 mm	1
P031		1.36.00501	Nut M8	1
P034		1.36.00720	Locking screw M8 × 20 mm	1
P038		1.36.00749	Locking screw M8 × 50 mm	1

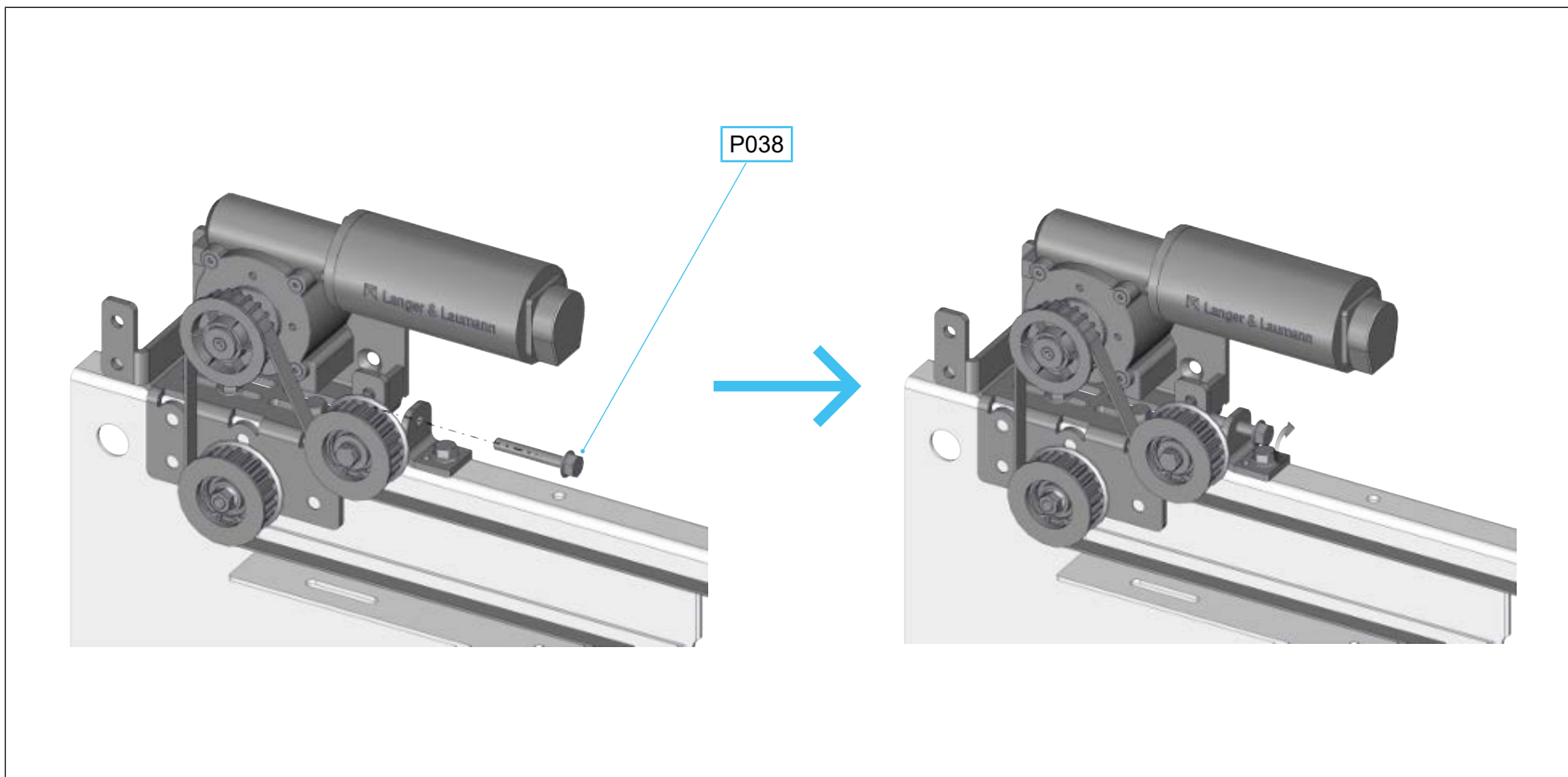
Tools

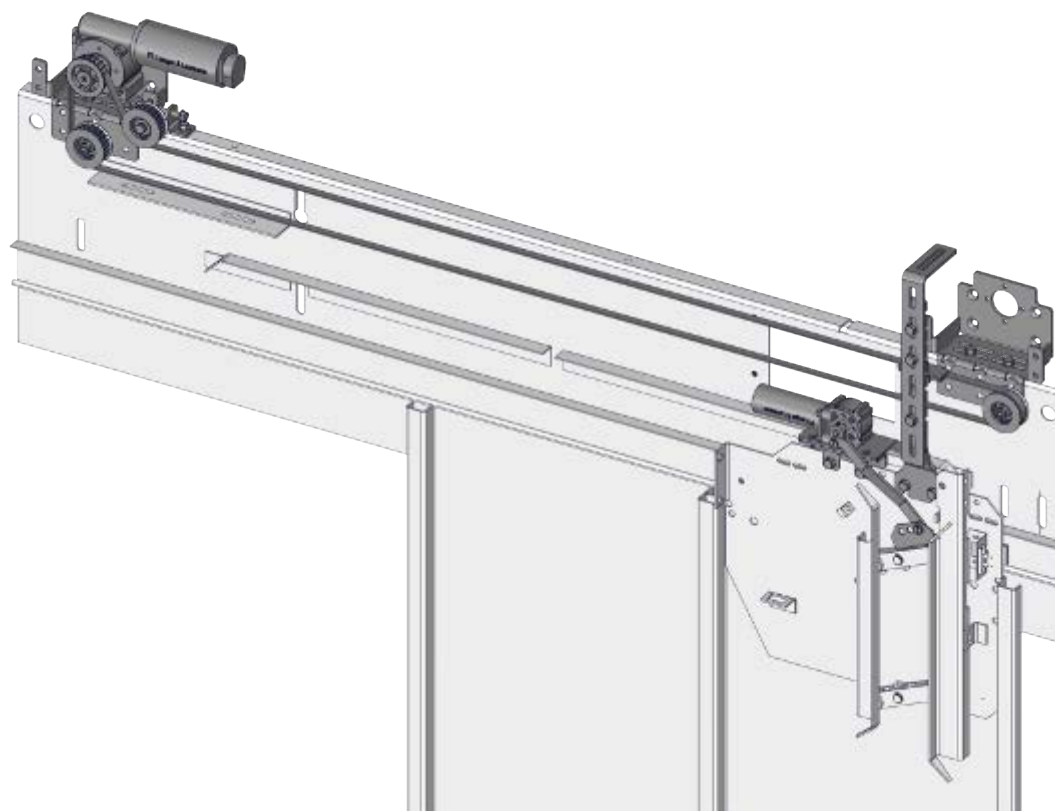
Pos.	Symbol	Description
T110		Combination wrench, size 10
T113		Combination wrench, size 13
T608.5		Drill bit, Ø 8.5 mm











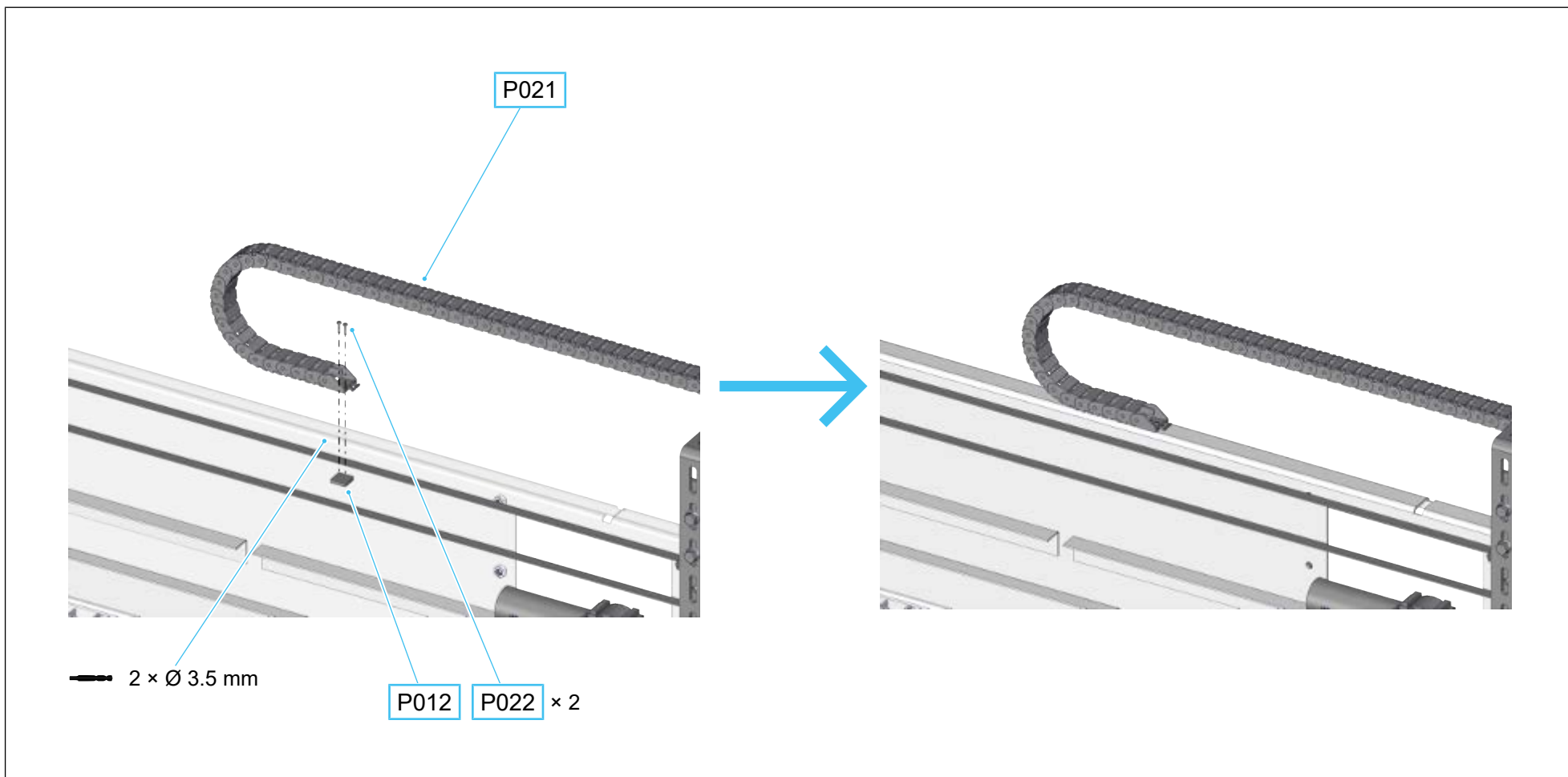
7.7 Mounting the energy chain

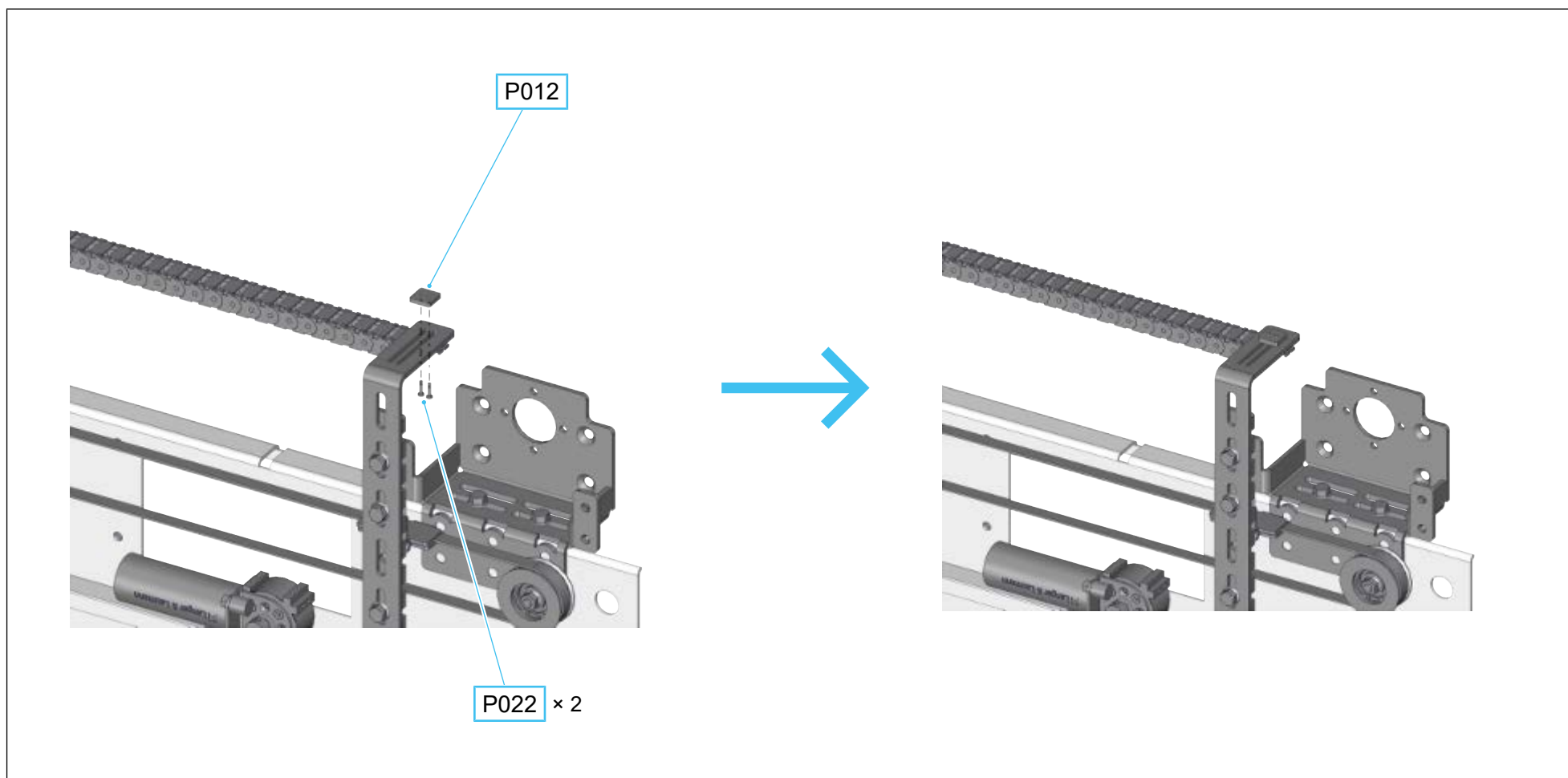
Components

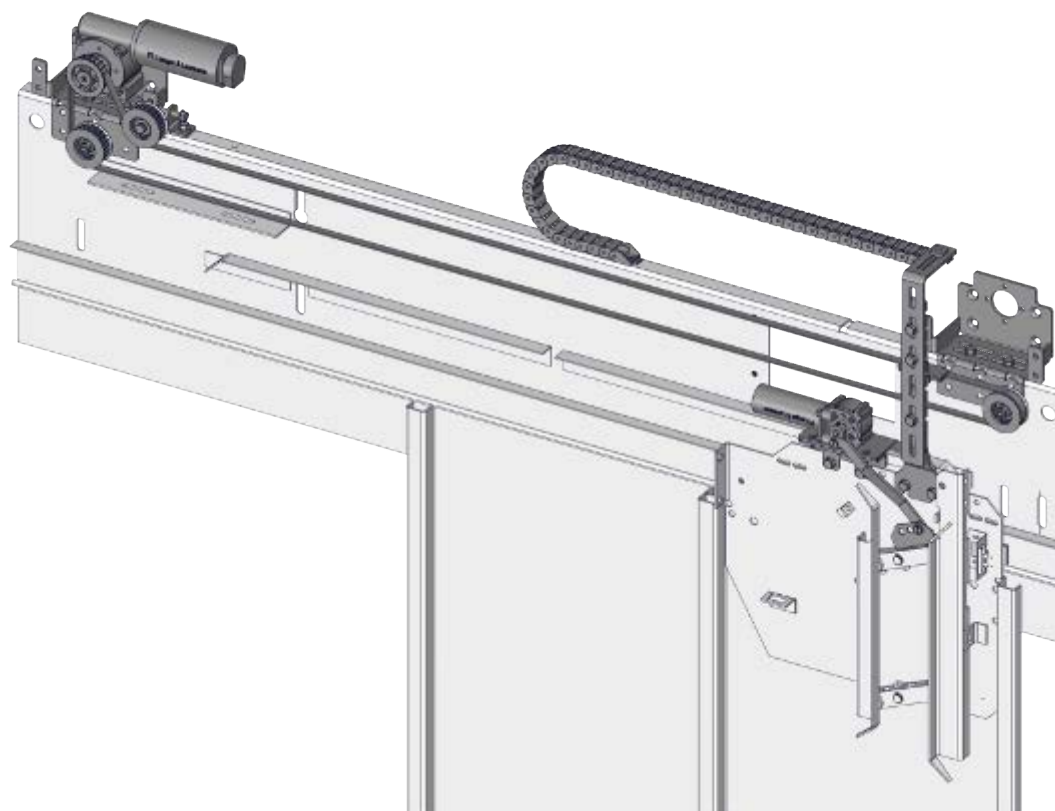
Pos.	Illustration	Item number	Description	Quantity
P012		1.20.30985	Plate, square	2
P021		1.25.17050	Chain	1
P022		1.36.00020	Button head screw M3 × 12 mm	4

Tools

Pos.	Symbol	Description
T010		Phillips screwdriver
T603.5		Drill bit, Ø 3.5 mm







8 Mounting: Door with original FKTV

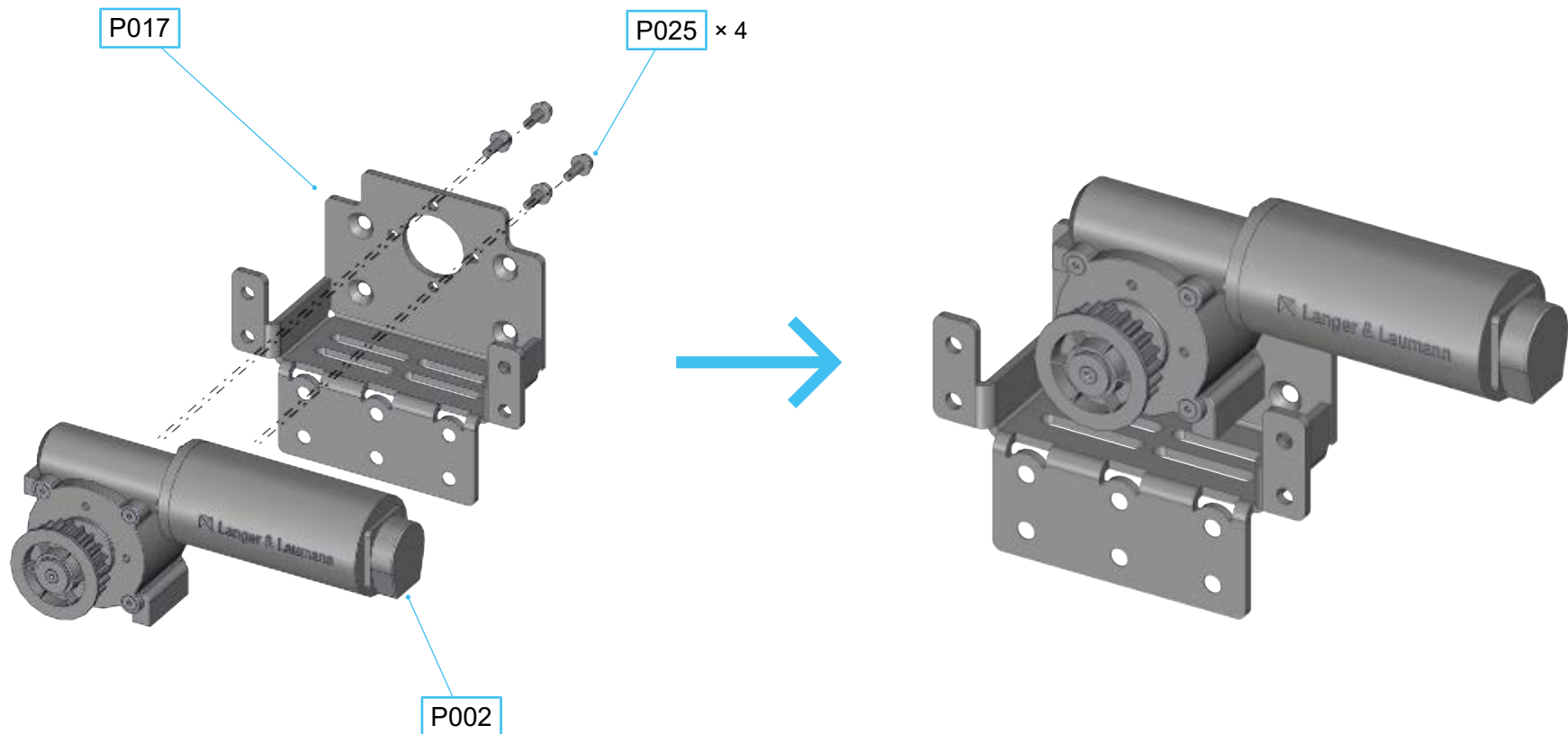
8.1 Mounting the motor unit on the door frame

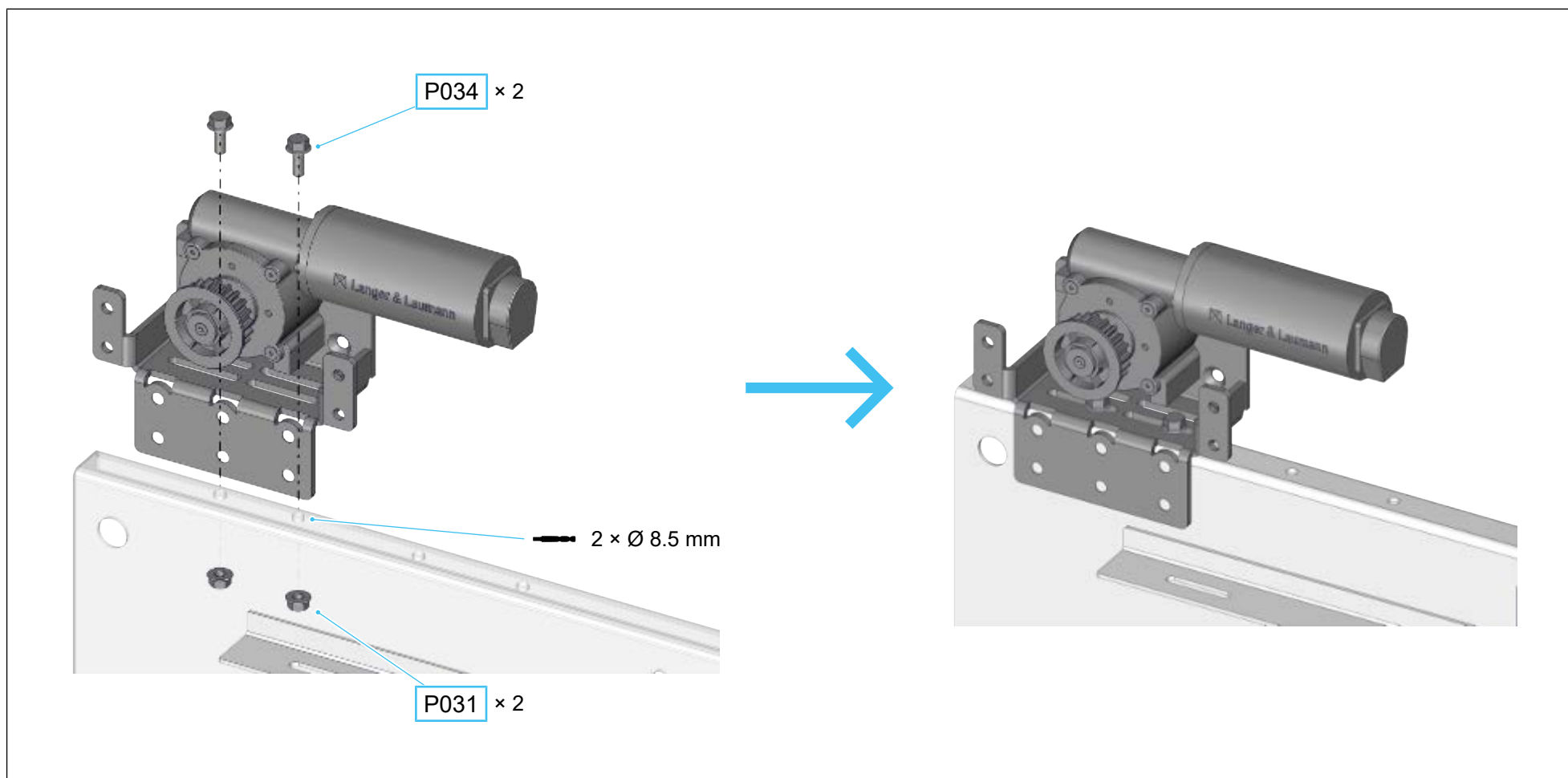
Components

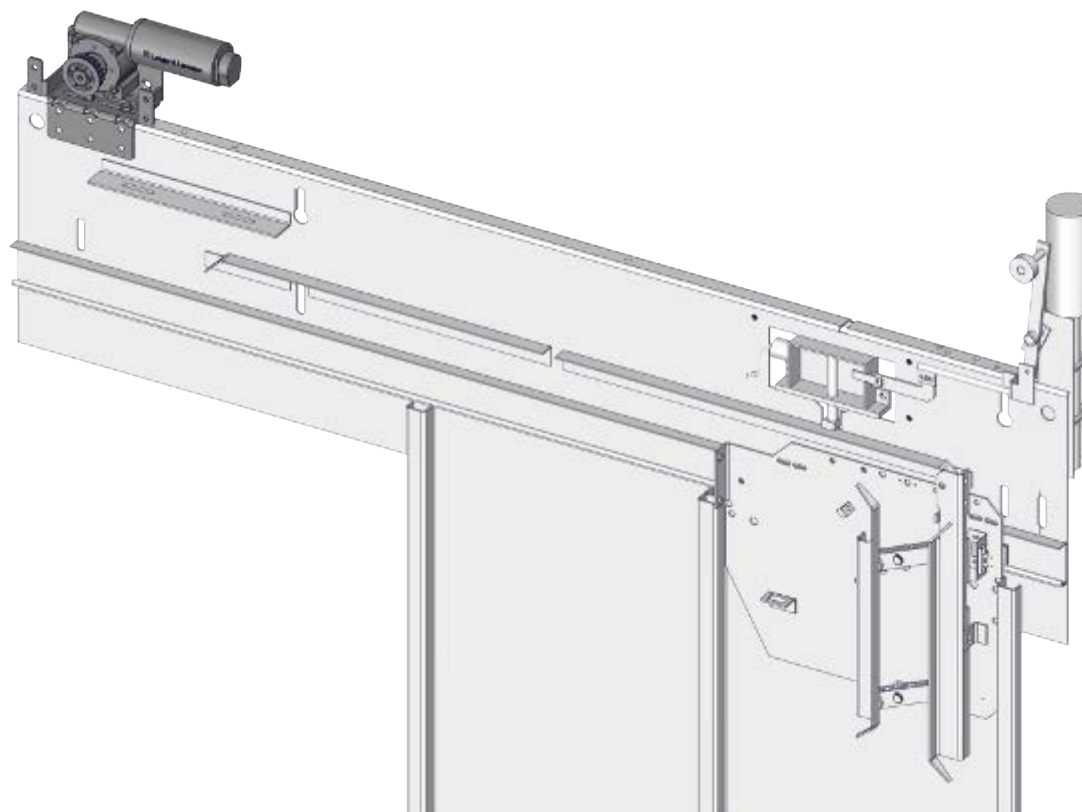
Pos.	Illustration	Item number	Description	Quantity
P002		8.20.400xx.xx	TSG motor	1
P017		1.20.60705	Motor bracket	1
P025		1.36.00138	Locking screw M6 × 16 mm	4
P031		1.36.00501	Nut M8	2
P034		1.36.00720	Locking screw M8 × 20 mm	2

Tools

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







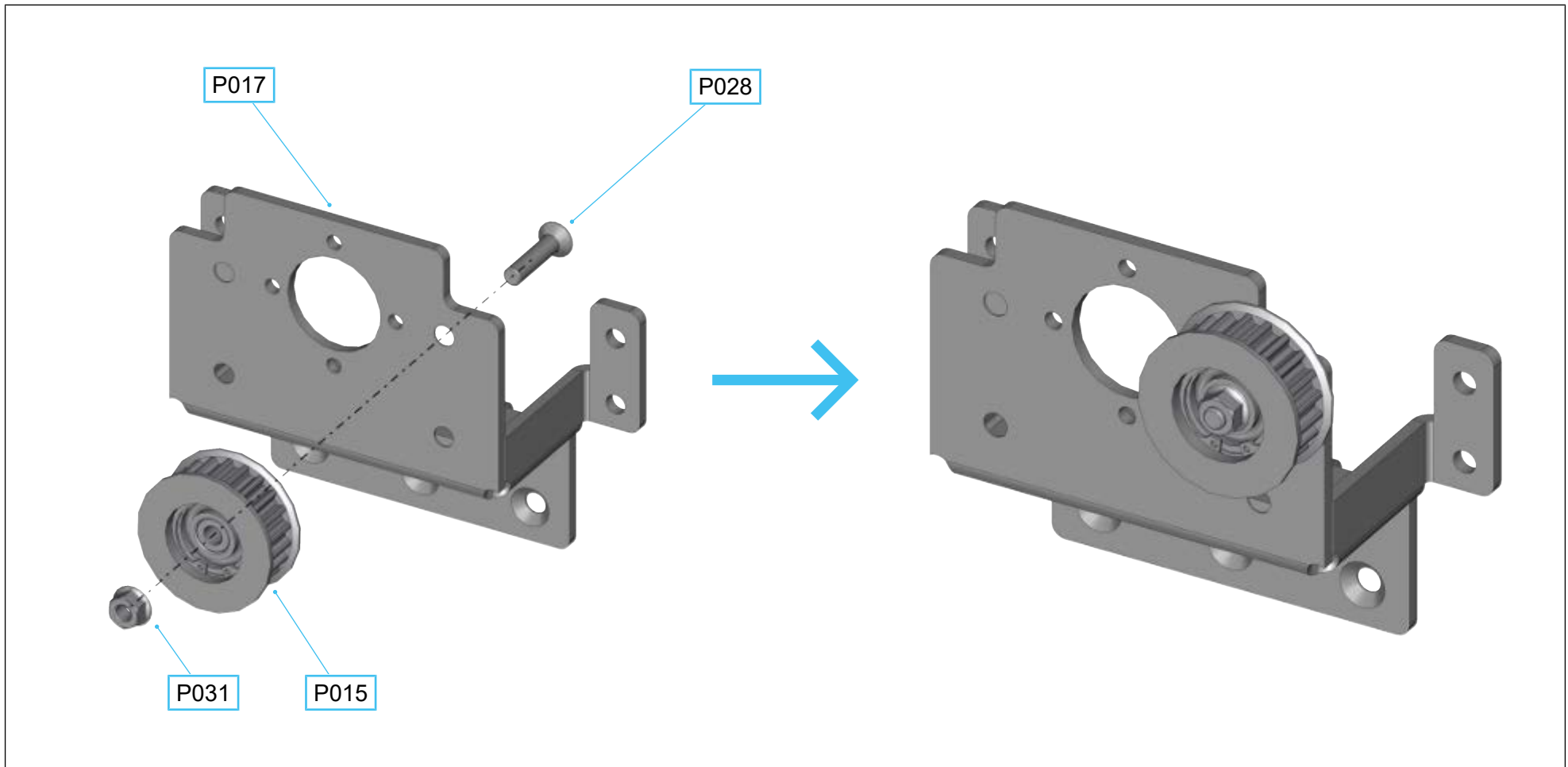
8.2 Mounting the deflection unit on the door frame

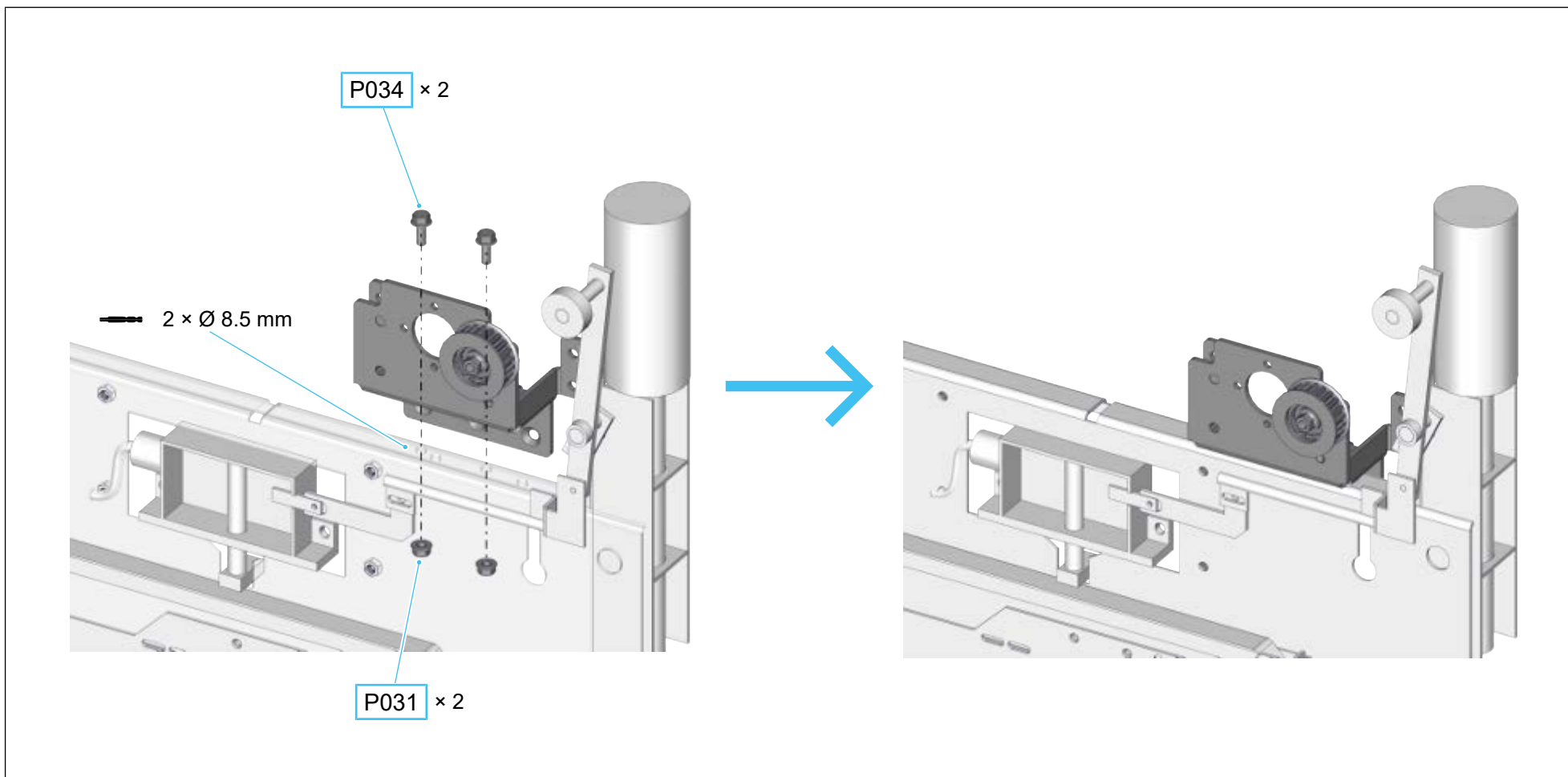
Components

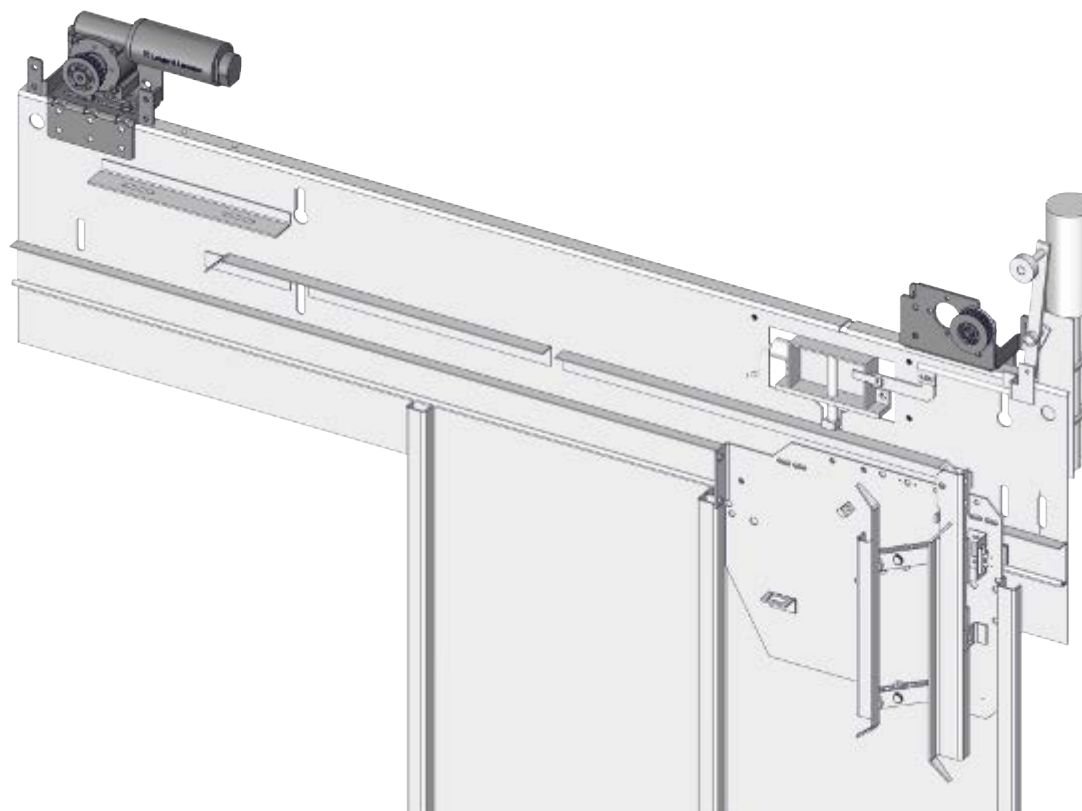
Pos.	Illustration	Item number	Description	Quantity
P015		1.20.60003	Deflection pulley D = 56 mm, 8M	1
P017		1.20.60705	Motor bracket	1
P028		1.36.00385	Countersunk screw M8 × 35 mm	1
P031		1.36.00501	Nut M8	3
P034		1.36.00720	Locking screw M8 × 20 mm	2

Tools

Pos.	Symbol	Description
T113		Combination wrench, size 13
T205.0		Allen key, size 5
T608.5		Drill bit, Ø 8.5 mm







8.3 Mounting the sinus drive on the door frame

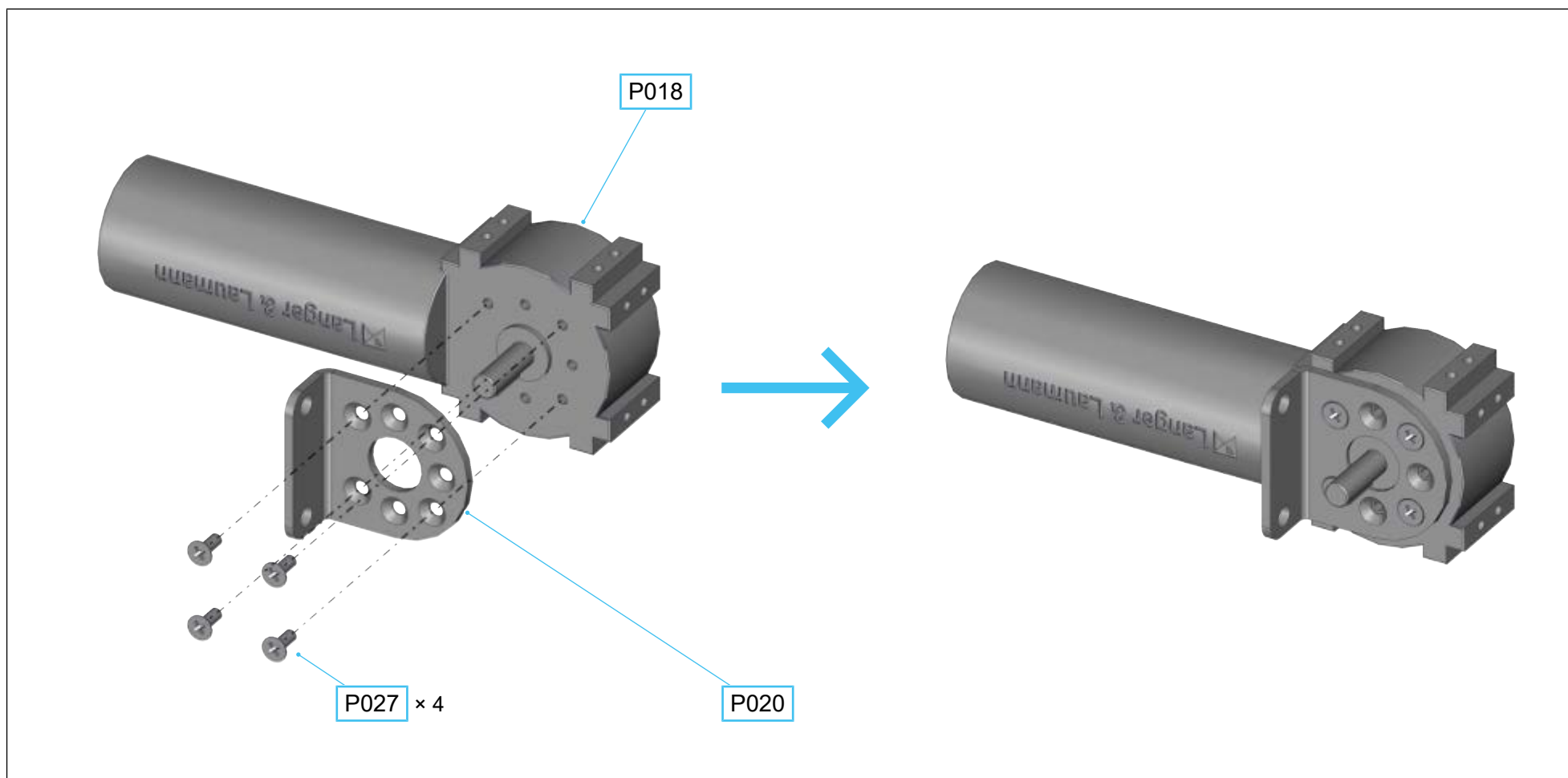
Components

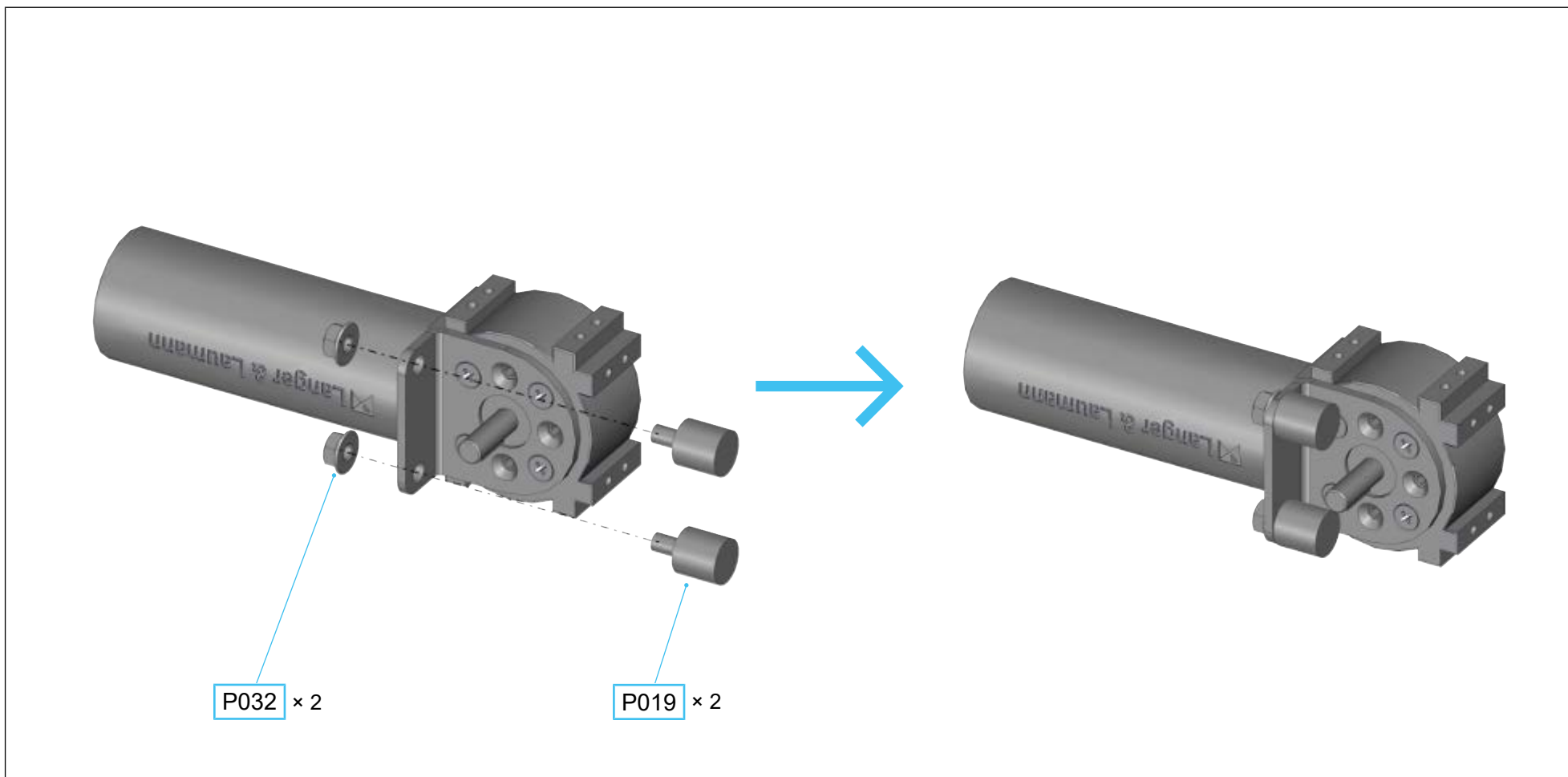
Pos.	Illustration	Item number	Description	Quantity
P006		1.20.20096	L-shaped bracket	1
P009		1.20.20xxx	Rectangular plate	1
P018		1.20.90010	TSG sine drive	1
P019		1.20.91129	Buffer M6 15 × 15 mm	2
P020		1.20.94071	L-shaped bracket	1
P027		1.36.00332	Countersunk screw M4 × 10 mm	8
P032		1.36.00502	Nut M6	2

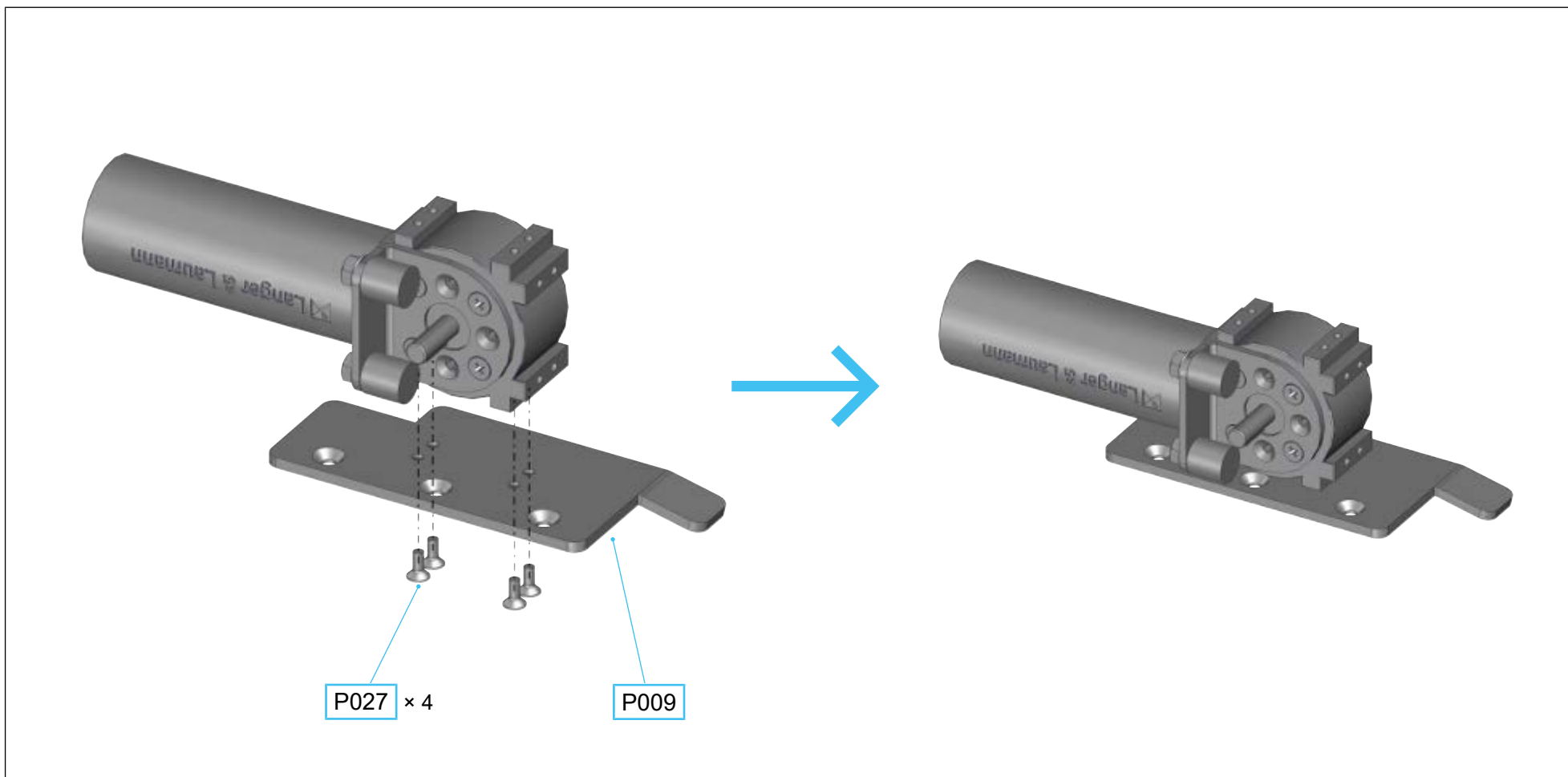
Pos.	Illustration	Item number	Description	Quantity
P033		1.36.00509	Nut M8	3
P034		1.36.00720	Locking screw M8 × 20 mm	2
P042		1.36.02215	Countersunk screw M5 × 16 mm	3

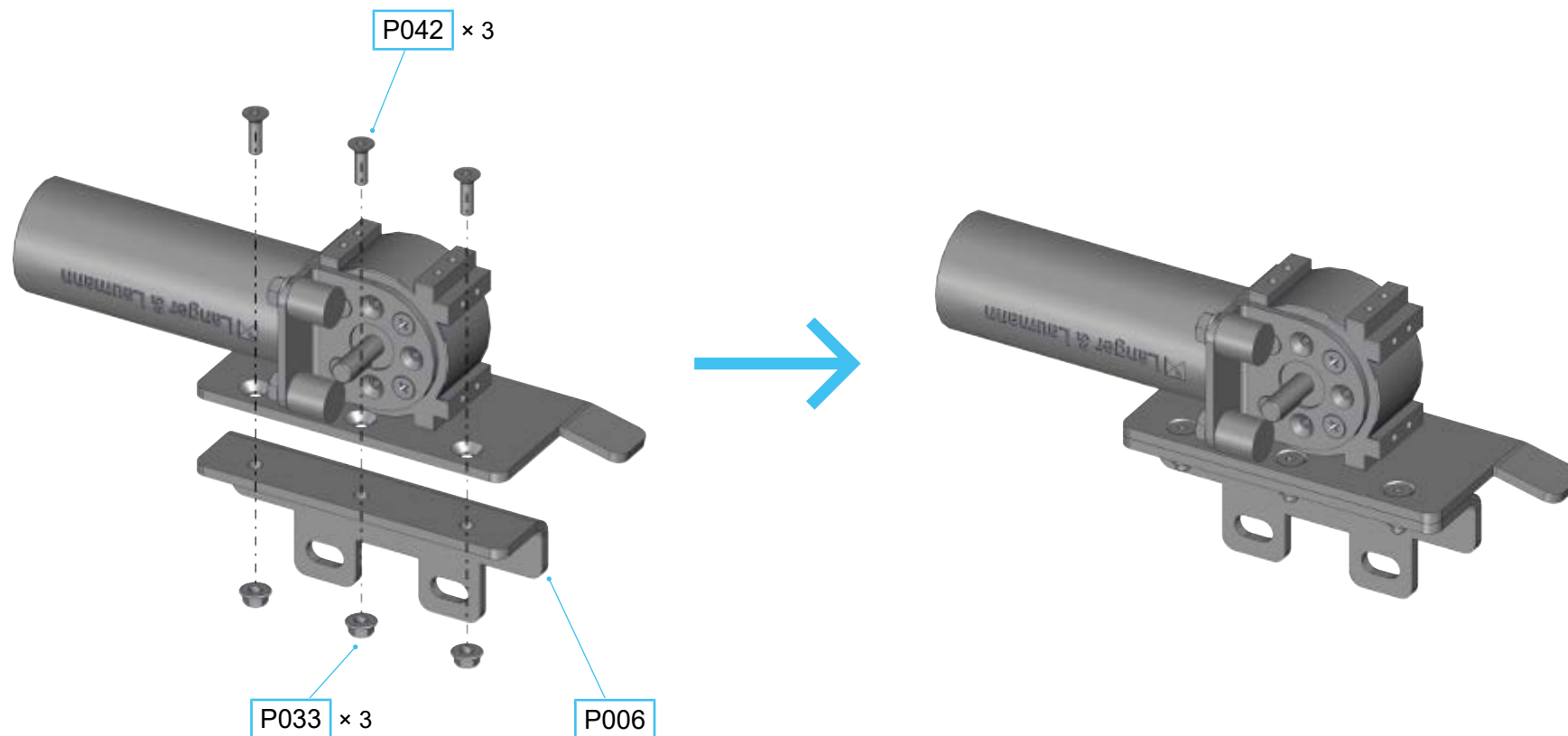
Tools

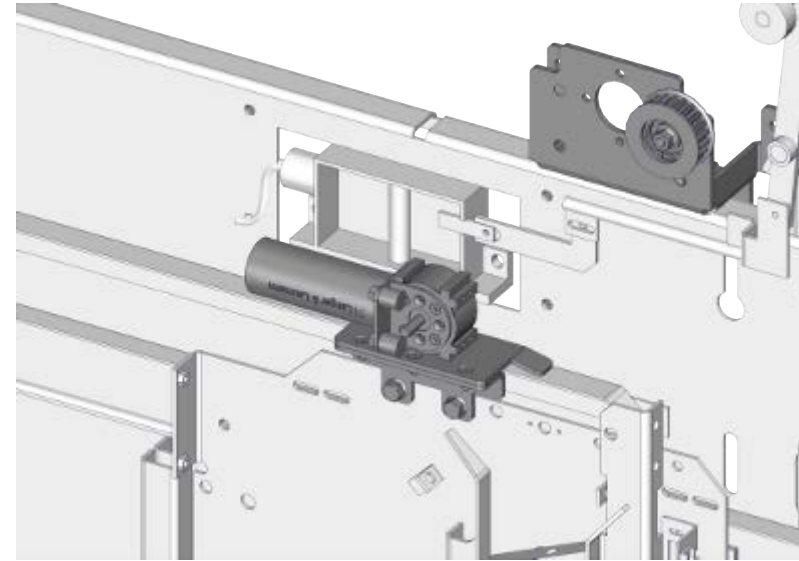
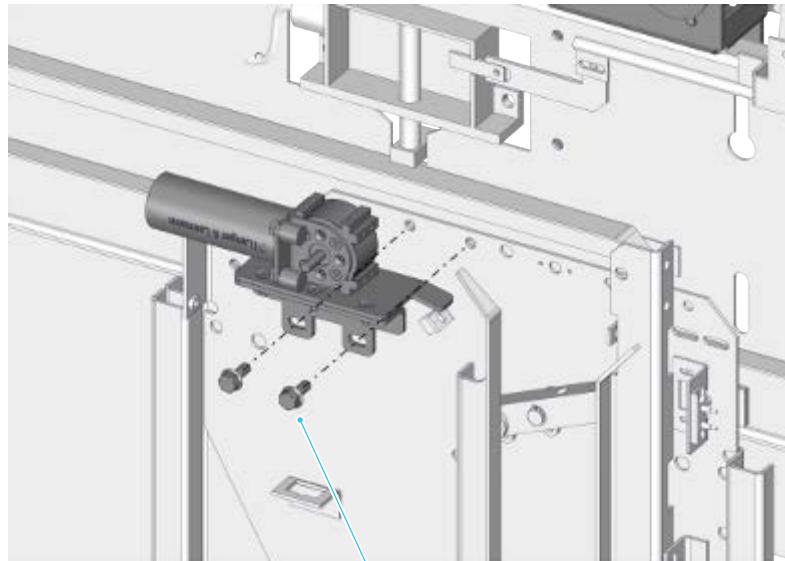
Pos.	Symbol	Description
T010		Phillips screwdriver
T110		Combination wrench, size 10
T113		Combination wrench, size 13
T203.0		Allen key, size 3

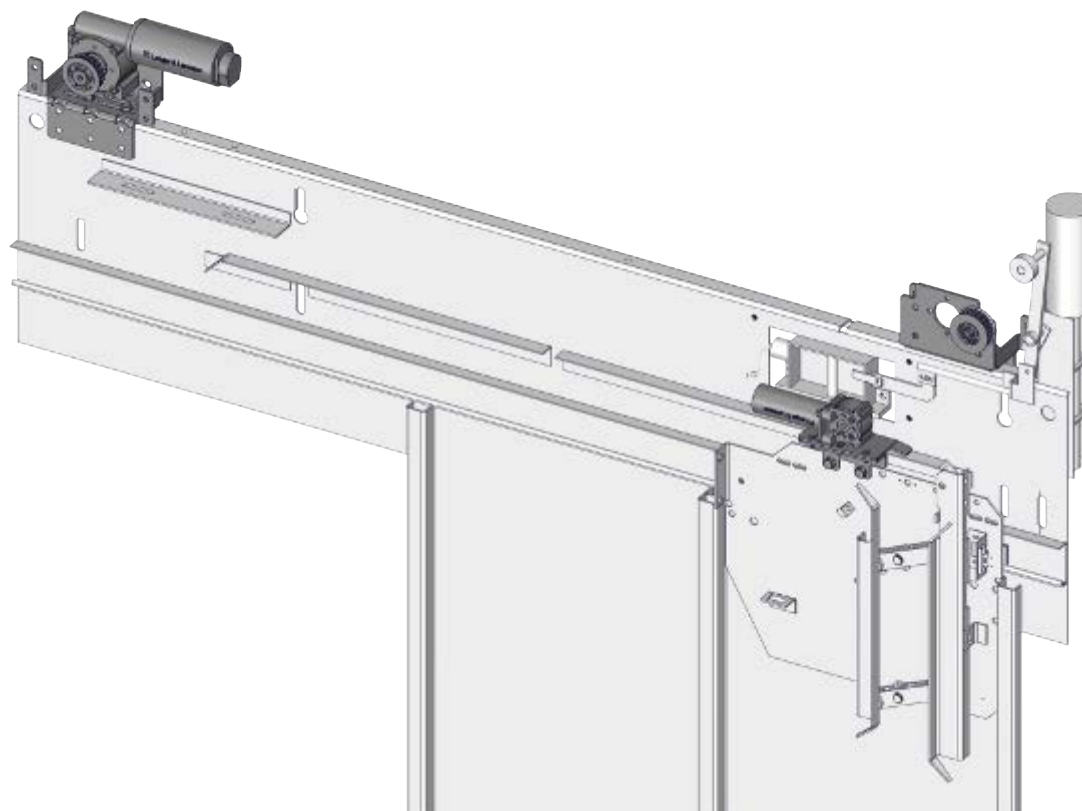












8.4 Mounting the connecting rod on the original skate

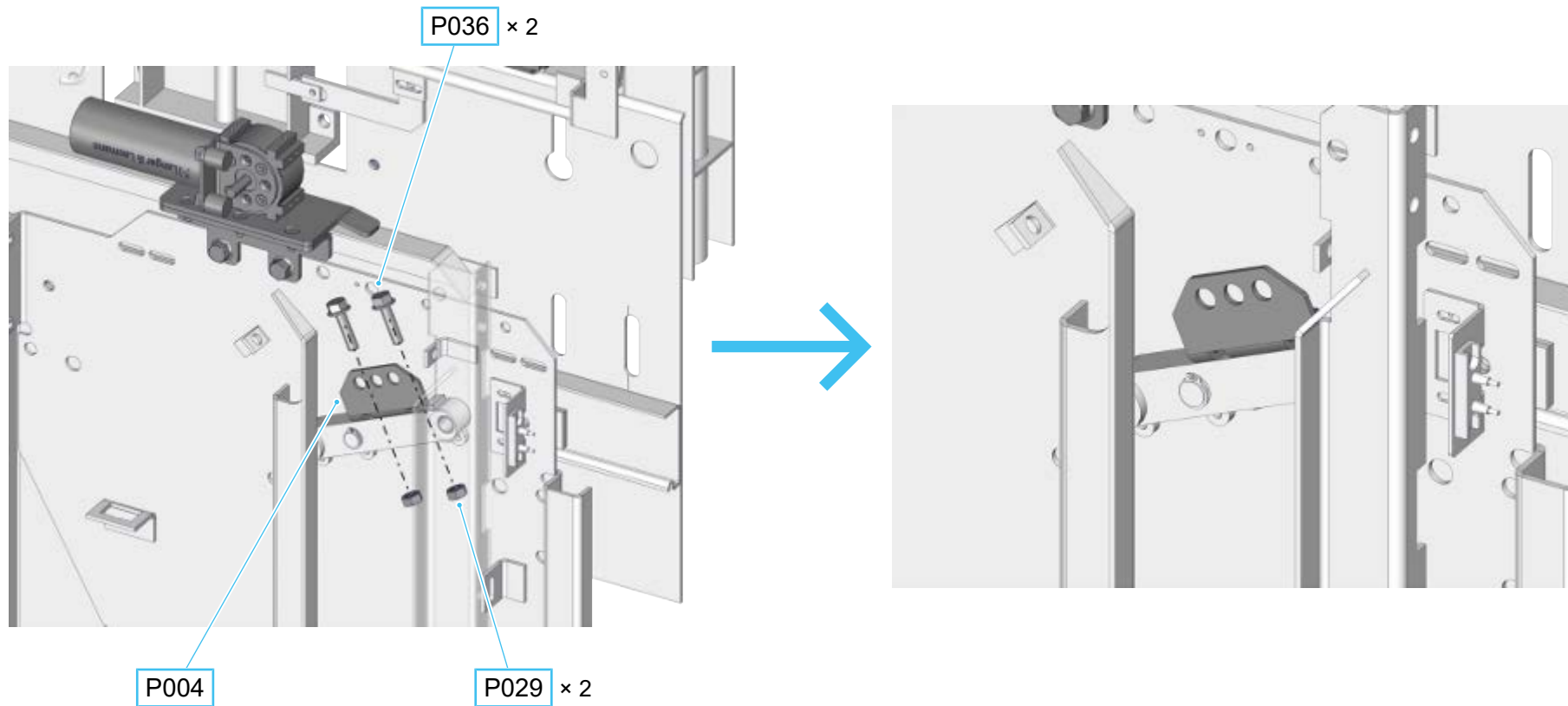
Components

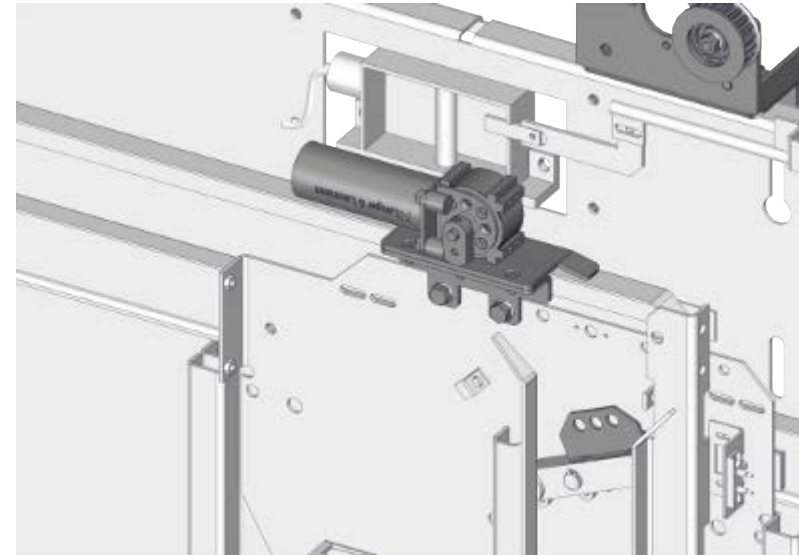
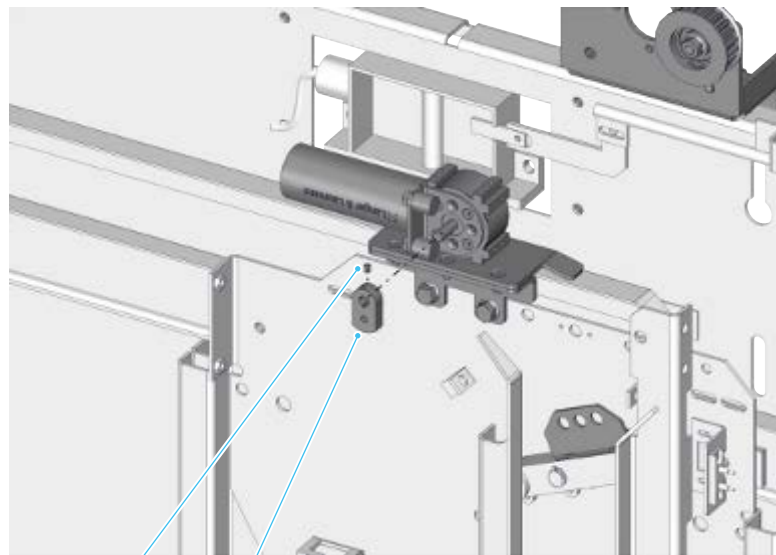
Pos.	Illustration	Item number	Description	Quantity
P004		1.20.20094	L-shaped bracket	1
P005		1.20.20xxx	Z-shaped rod	1
P010		1.20.30650	Rectangular plate	1
P013		1.20.30996	Bush	2
P029		1.36.00430	Nut M8	2
P036		1.36.00730	Locking screw M8 × 30 mm	2
P040		1.36.00905	Slotted flat head screw with shoulder M6 × 6 mm	2

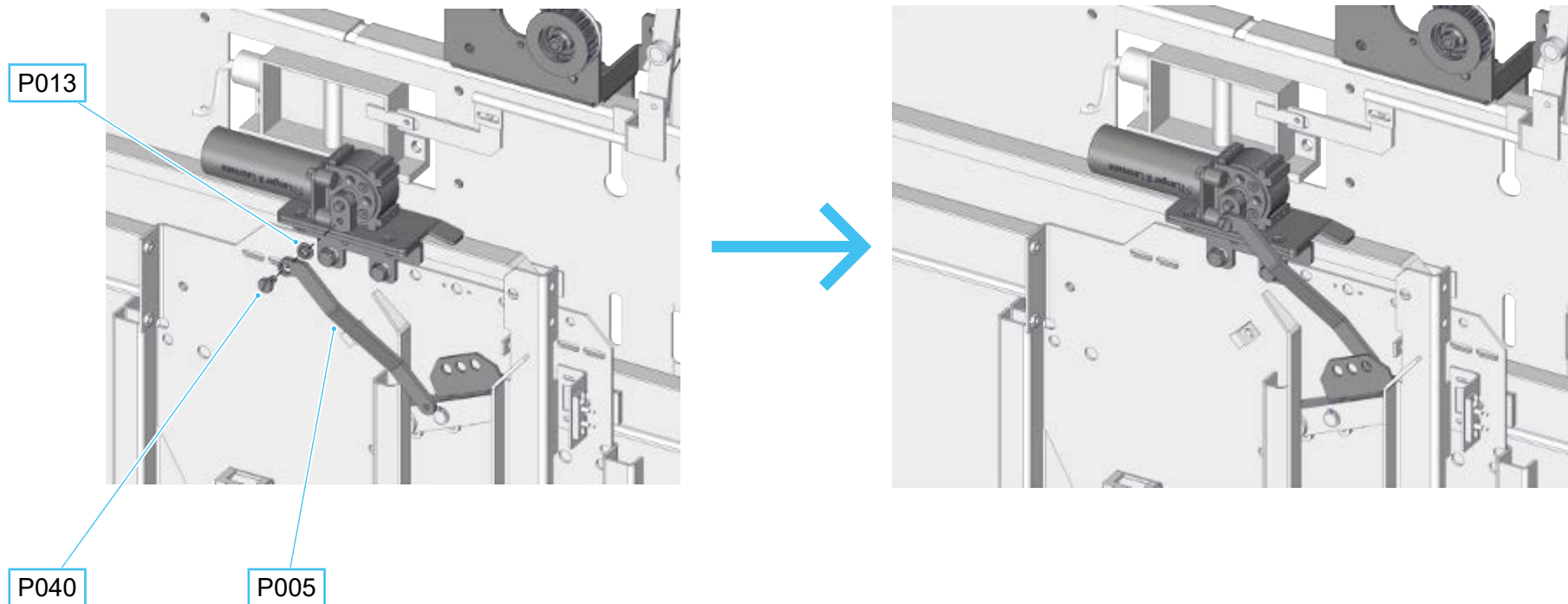
Pos.	Illustration	Item number	Description	Quantity
P043		1.36.05040	Set screw M5 × 5 mm	1

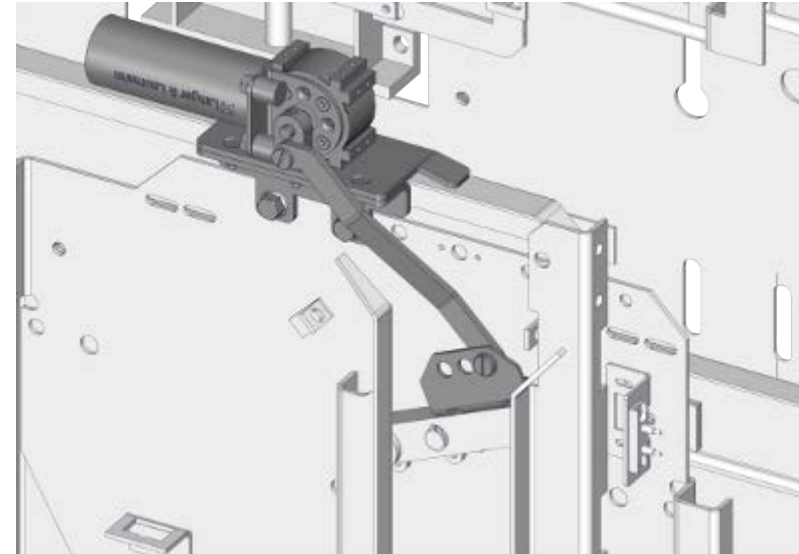
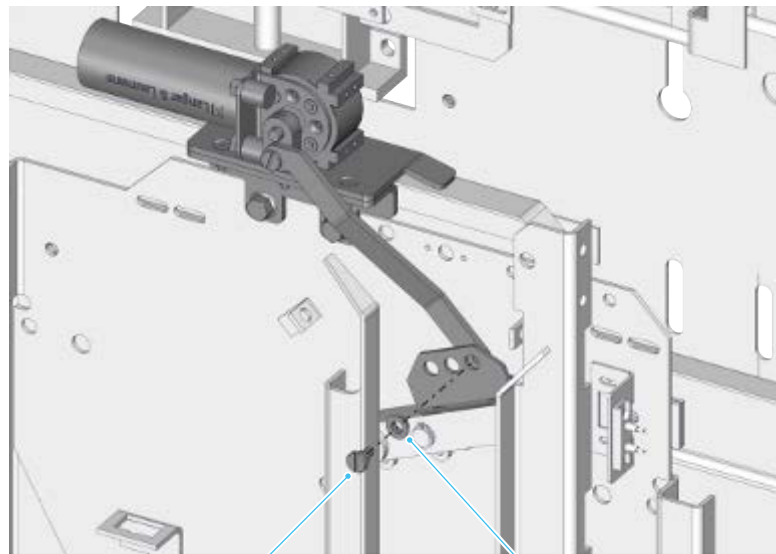
Tools

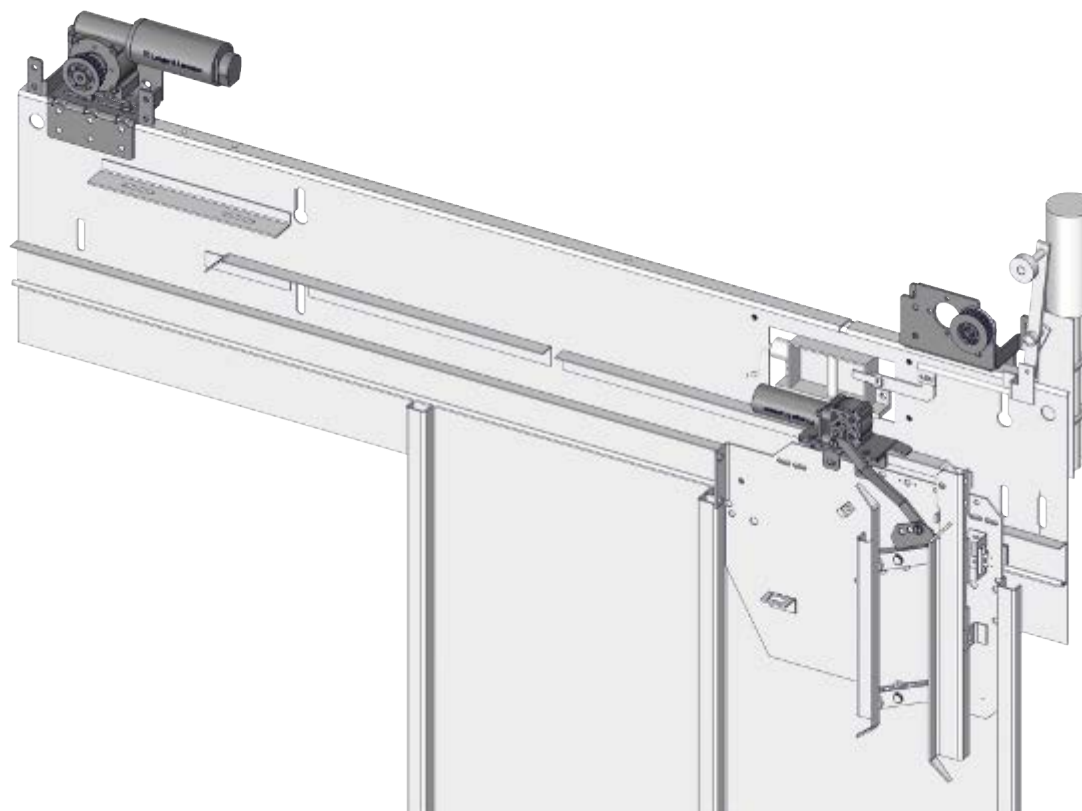
Pos.	Symbol	Description
T009		Slotted screwdriver
T113		Combination wrench, size 13
T202.5		Allen key, size 2.5











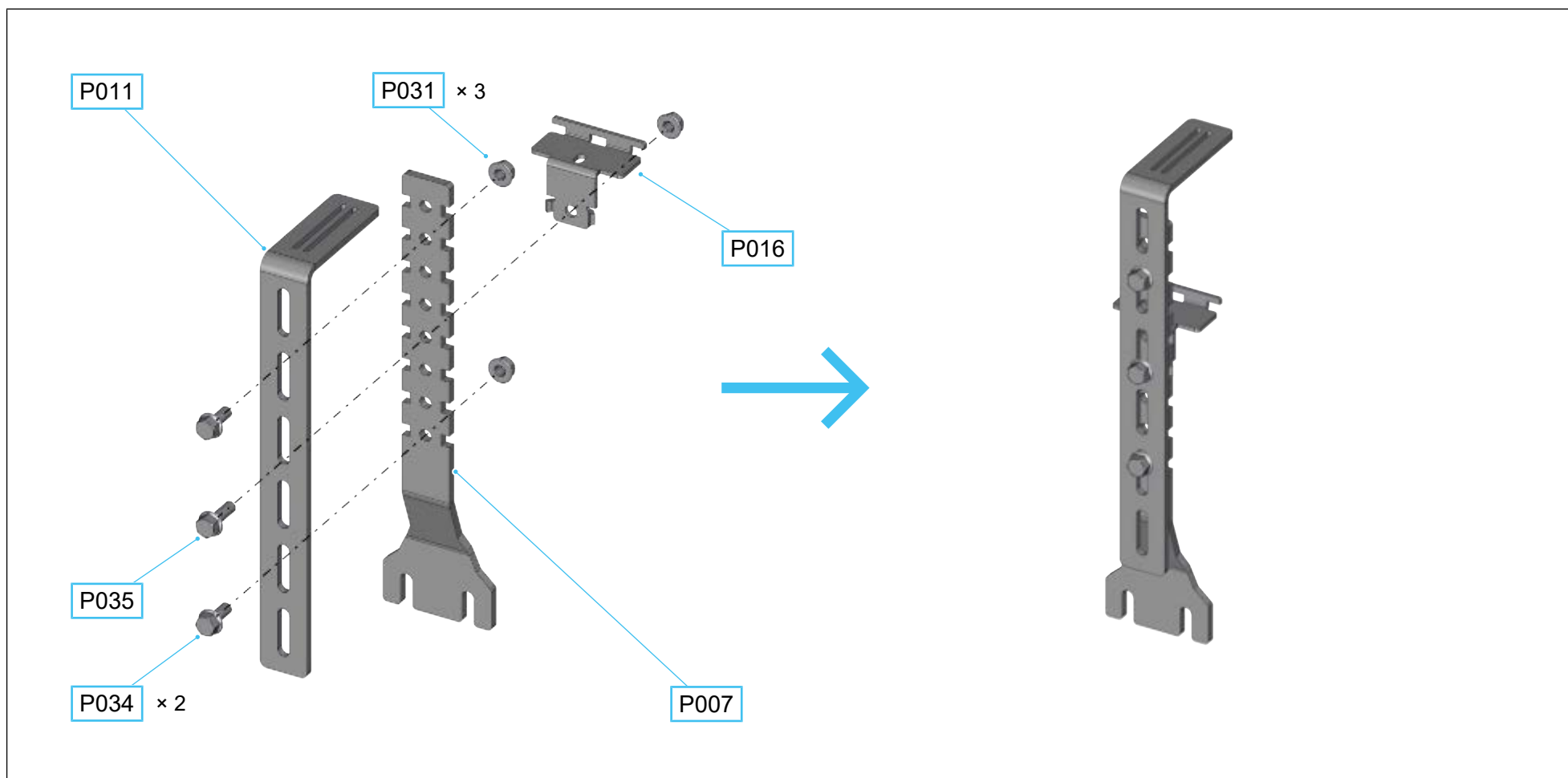
8.5 Mounting the door panel coupler

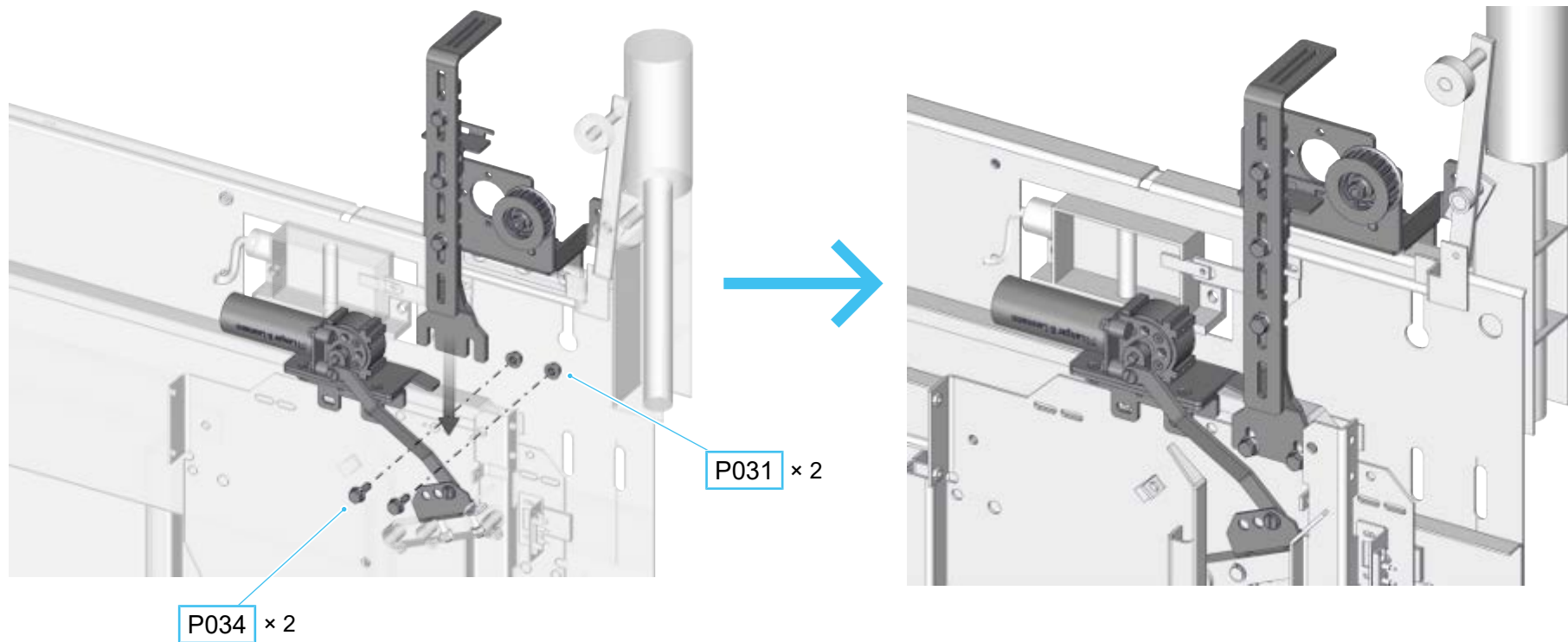
Components

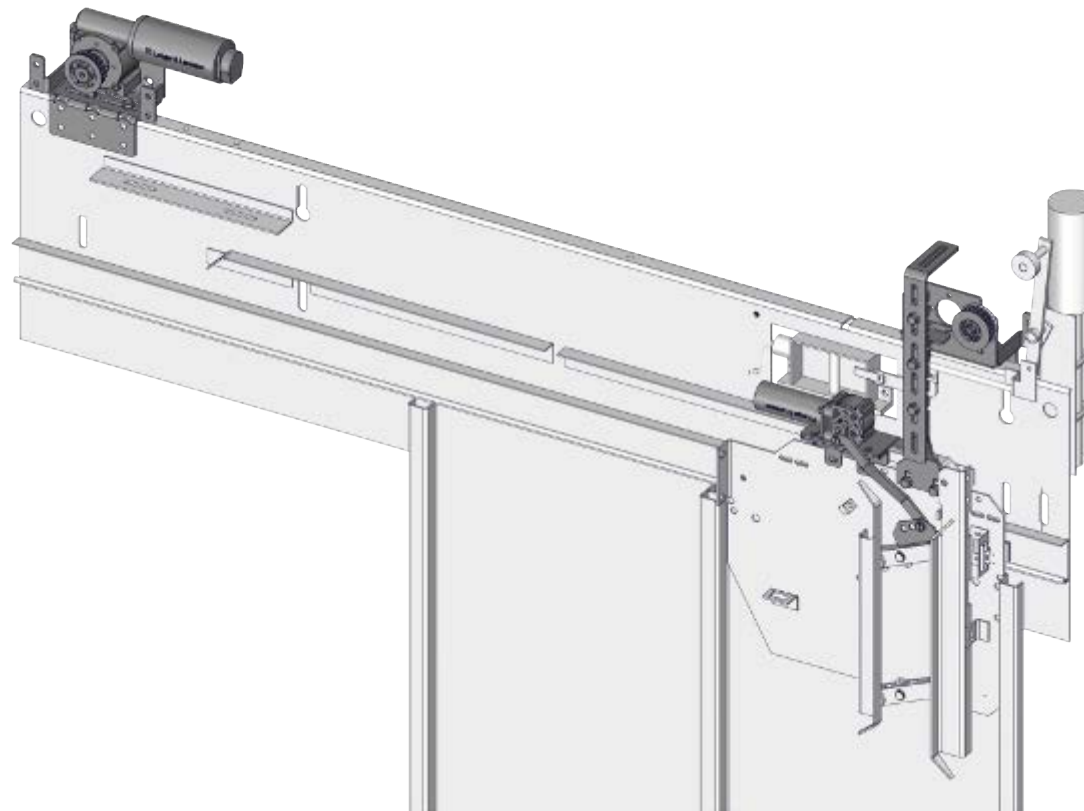
Pos.	Illustration	Item number	Description	Quantity
P007		1.20.20097	T-shaped plate	1
P011		1.20.30984	L-shaped bracket	1
P016		1.20.60007	Timing belt lock	1
P031		1.36.00501	Nut M8	5
P034		1.36.00720	Locking screw M8 × 20 mm	4
P035		1.36.00725	Locking screw M8 × 25 mm	3

Tools

Pos.	Symbol	Description
T113		Combination wrench, size 13







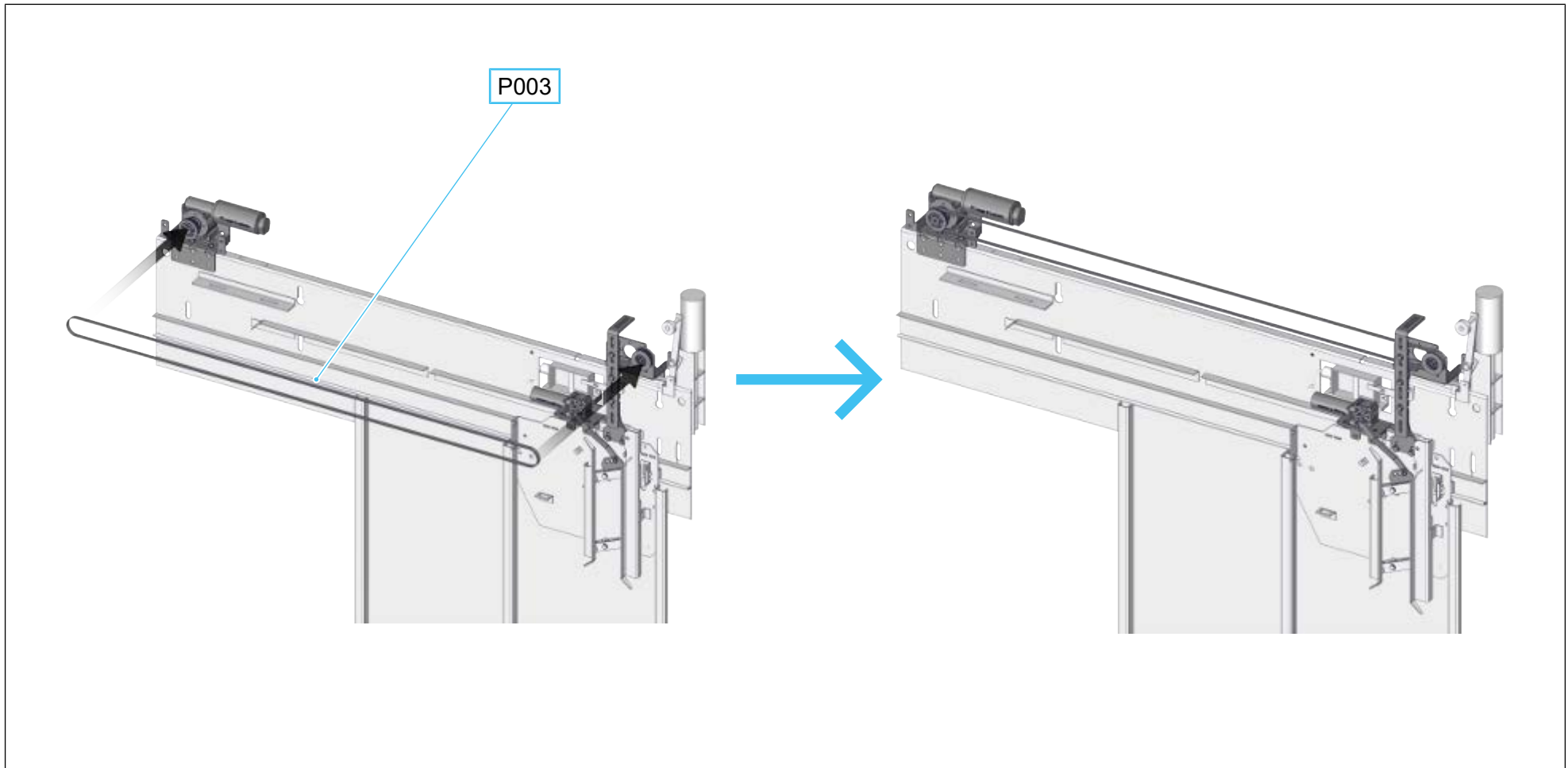
8.6 Installing the timing belt and timing belt lock

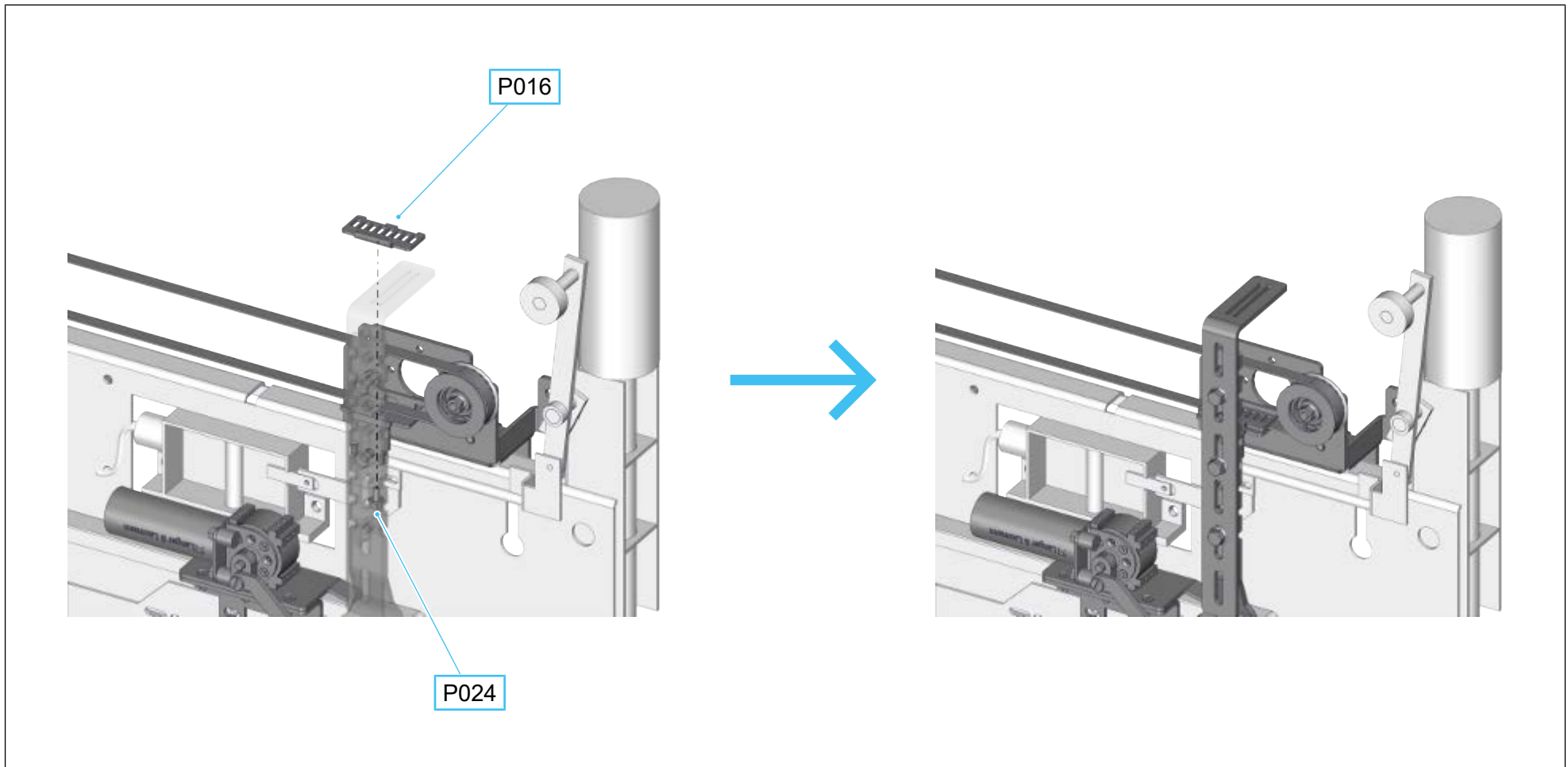
Components

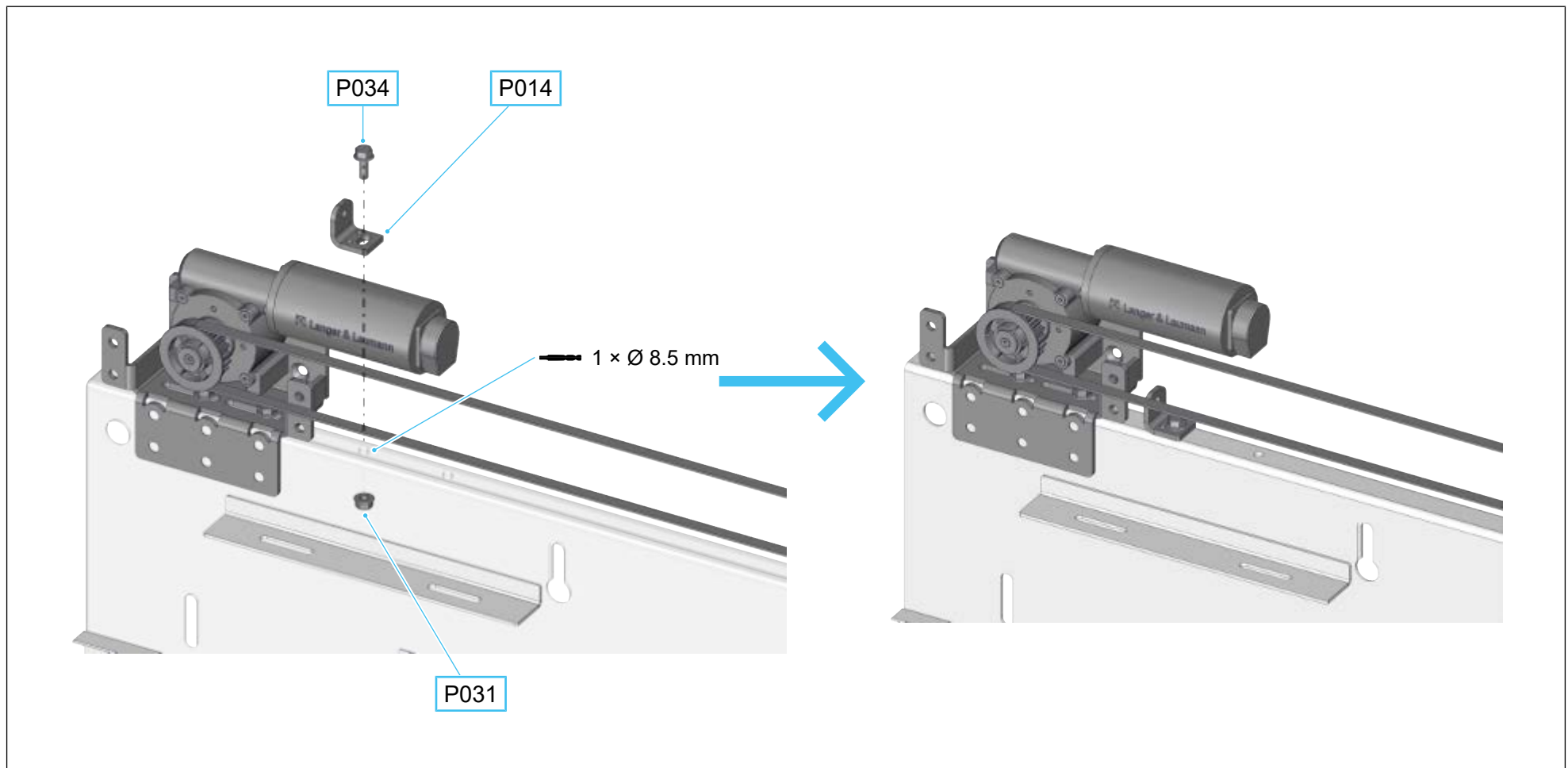
Pos.	Illustration	Item number	Description	Quantity
P003		8.20.60002.xx	Timing belt 8M	1
P014		1.20.59070	L-shaped bracket	1
P016		1.20.60007	Timing belt lock	1
P024		1.36.00135	Locking screw M6 × 12 mm	1
P031		1.36.00501	Nut M8	1
P034		1.36.00720	Locking screw M8 × 20 mm	1
P038		1.36.00749	Locking screw M8 × 50 mm	1

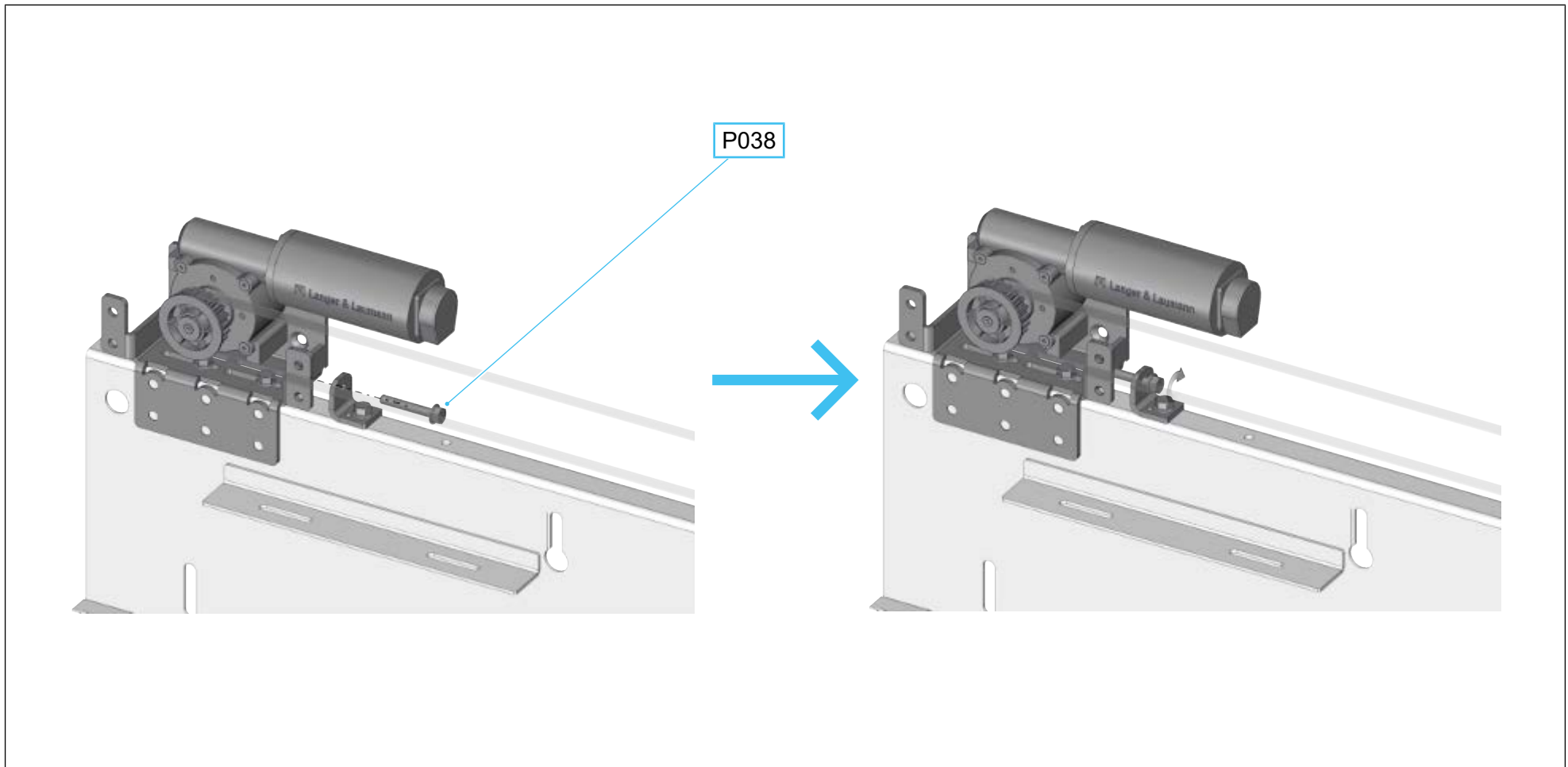
Tools

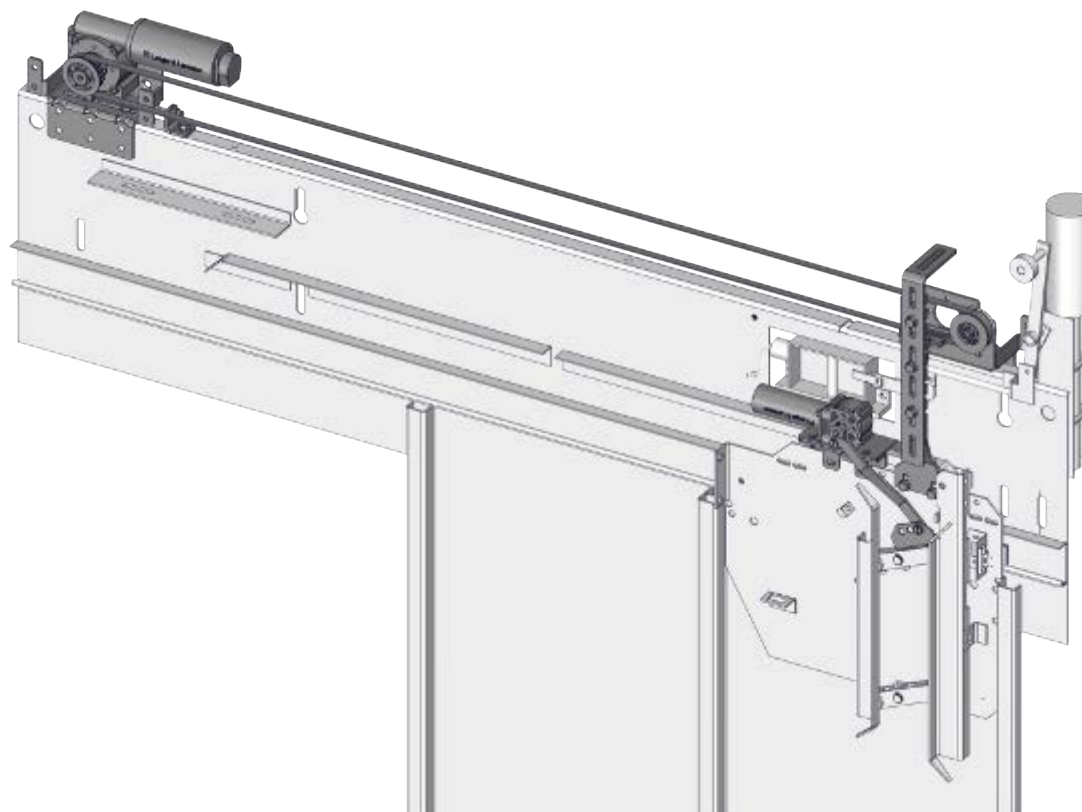
Pos.	Symbol	Description
T110		Combination wrench, size 10
T113		Combination wrench, size 13
T608.5		Drill bit, Ø 8.5 mm





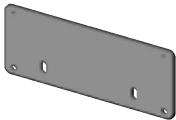






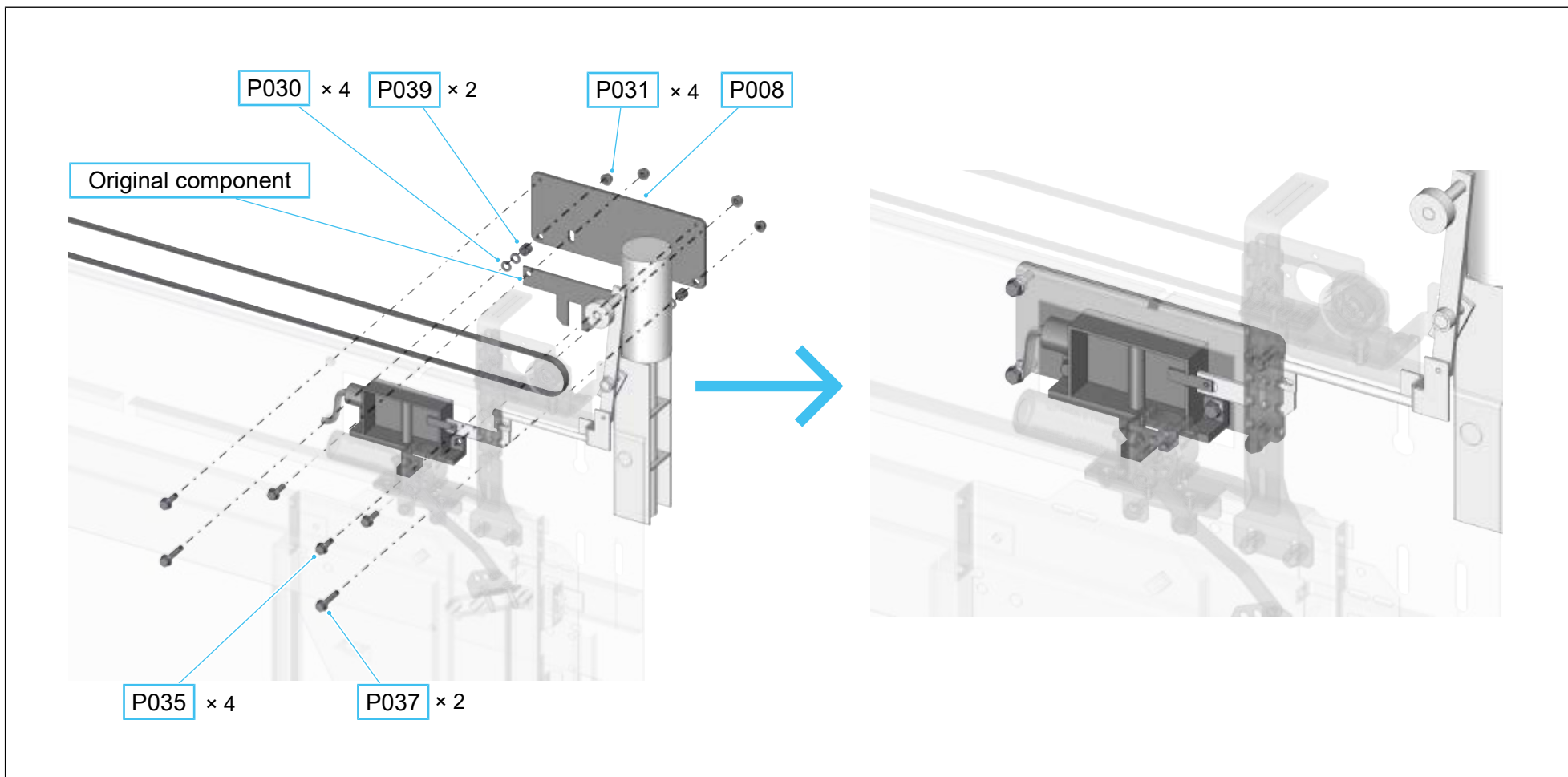
8.7 Mounting the original lock plate on the door frame

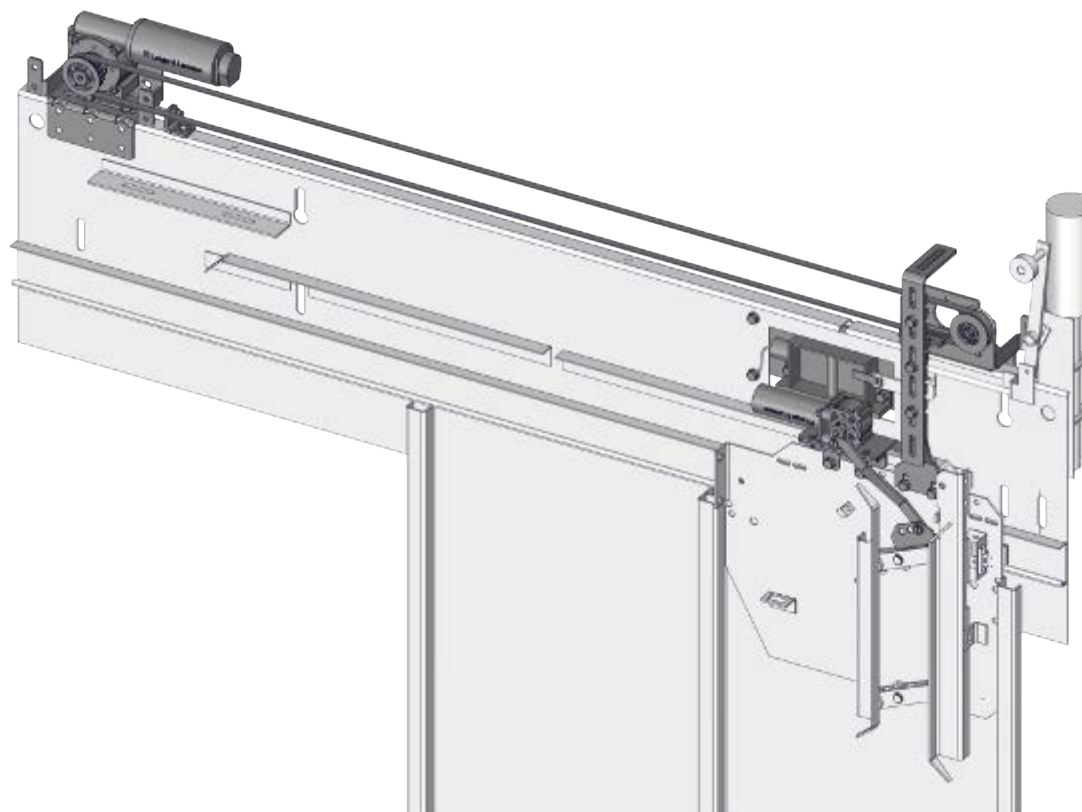
Components

Pos.	Illustration	Item number	Description	Quantity
P008		1.20.20098	Rectangular plate	1
P030		1.36.00440	Washer M8	4
P031		1.36.00501	Nut M8	4
P035		1.36.00725	Locking screw M8 × 25 mm	4
P037		1.36.00740	Locking screw M8 × 40 mm	2
P039		1.36.00870	Sleeve, D = 15 mm	2

Tools

Pos.	Symbol	Description
T113		Combination wrench, size 13





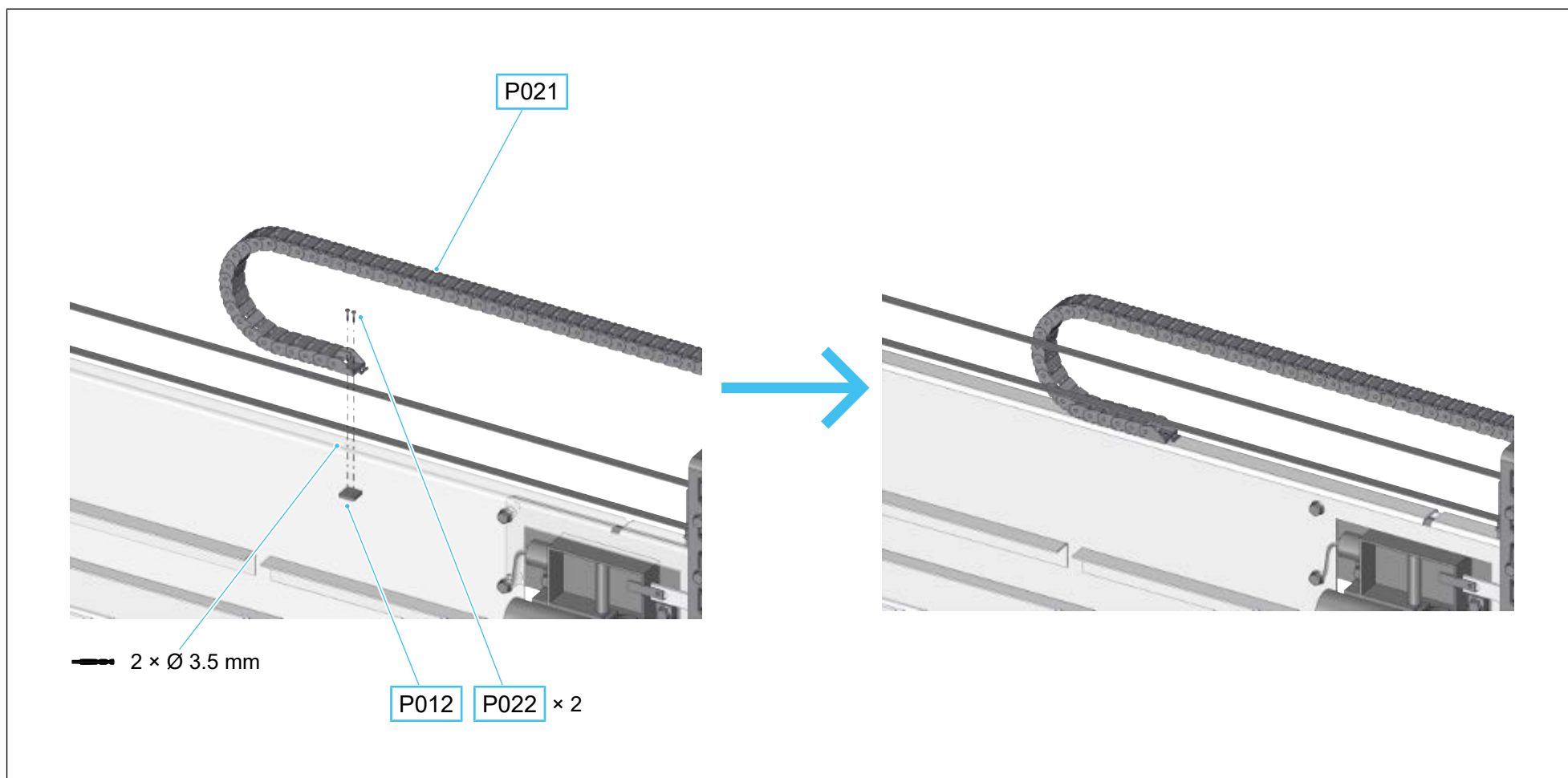
8.8 Mounting the energy chain

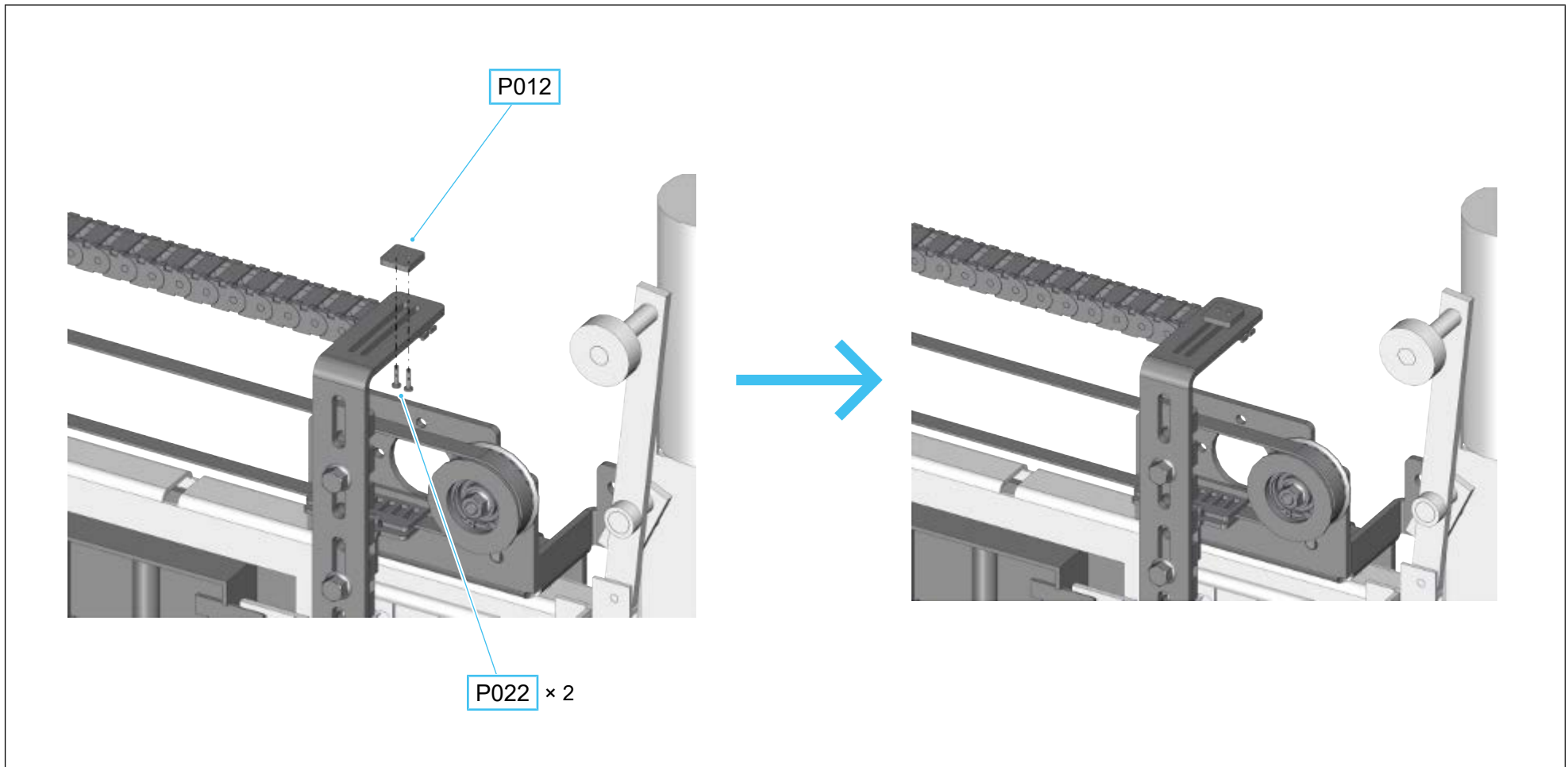
Components

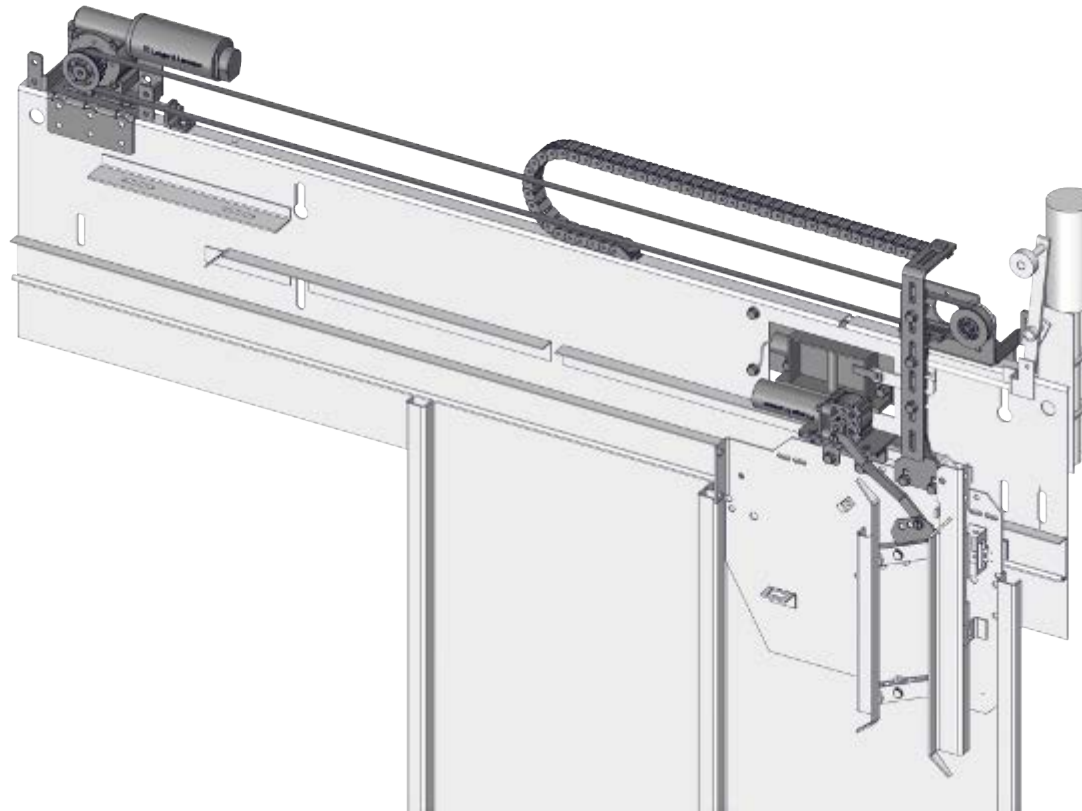
Pos.	Illustration	Item number	Description	Quantity
P012		1.20.30985	Plate, square	2
P021		1.25.17050	Chain	1
P022		1.36.00020	Button head screw M3 × 12 mm	4

Tools

Pos.	Symbol	Description
T010		Phillips screwdriver
T603.5		Drill bit, Ø 3.5 mm







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.



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