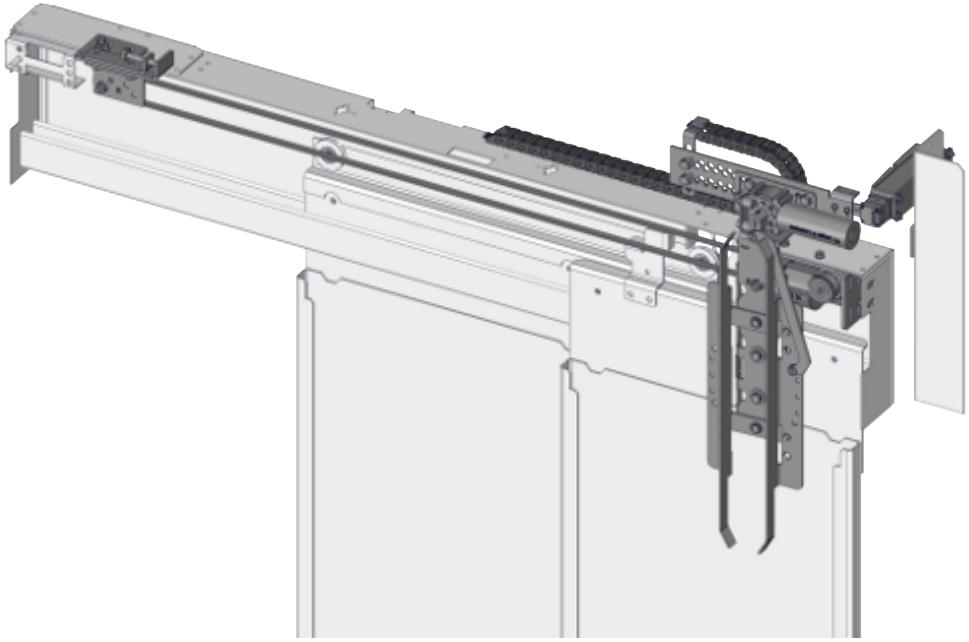
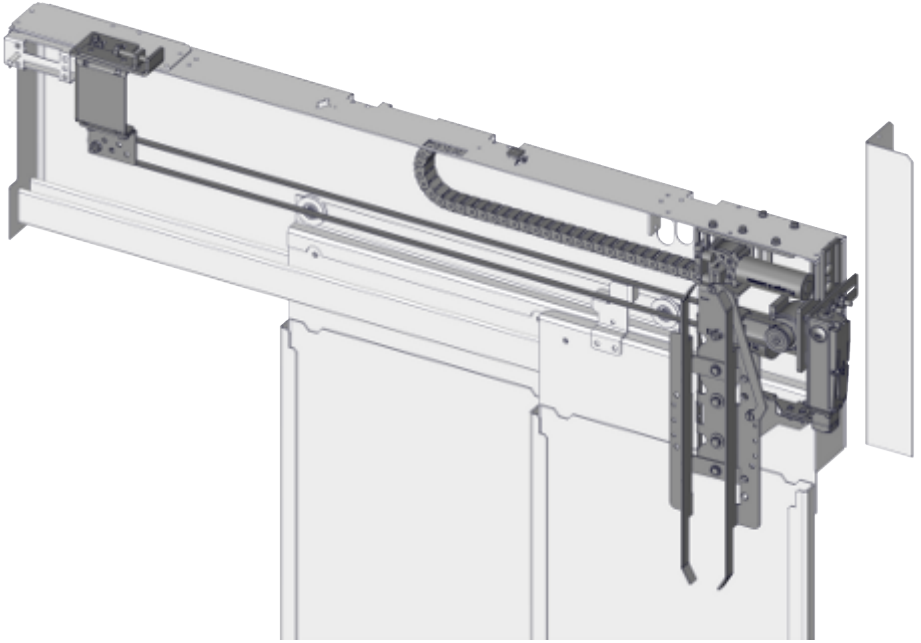
Langer & Laumann®
smart door solutions



Conversion variant 1: low door frame, section 7



Conversion variant 2: high door frame, section 8

Conversion Instructions

Thyssen EDO-15

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:

— Thyssen EDO-15to 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Using an outdated version of this and any required and supplementary documentation can lead to incorrect assembly.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.

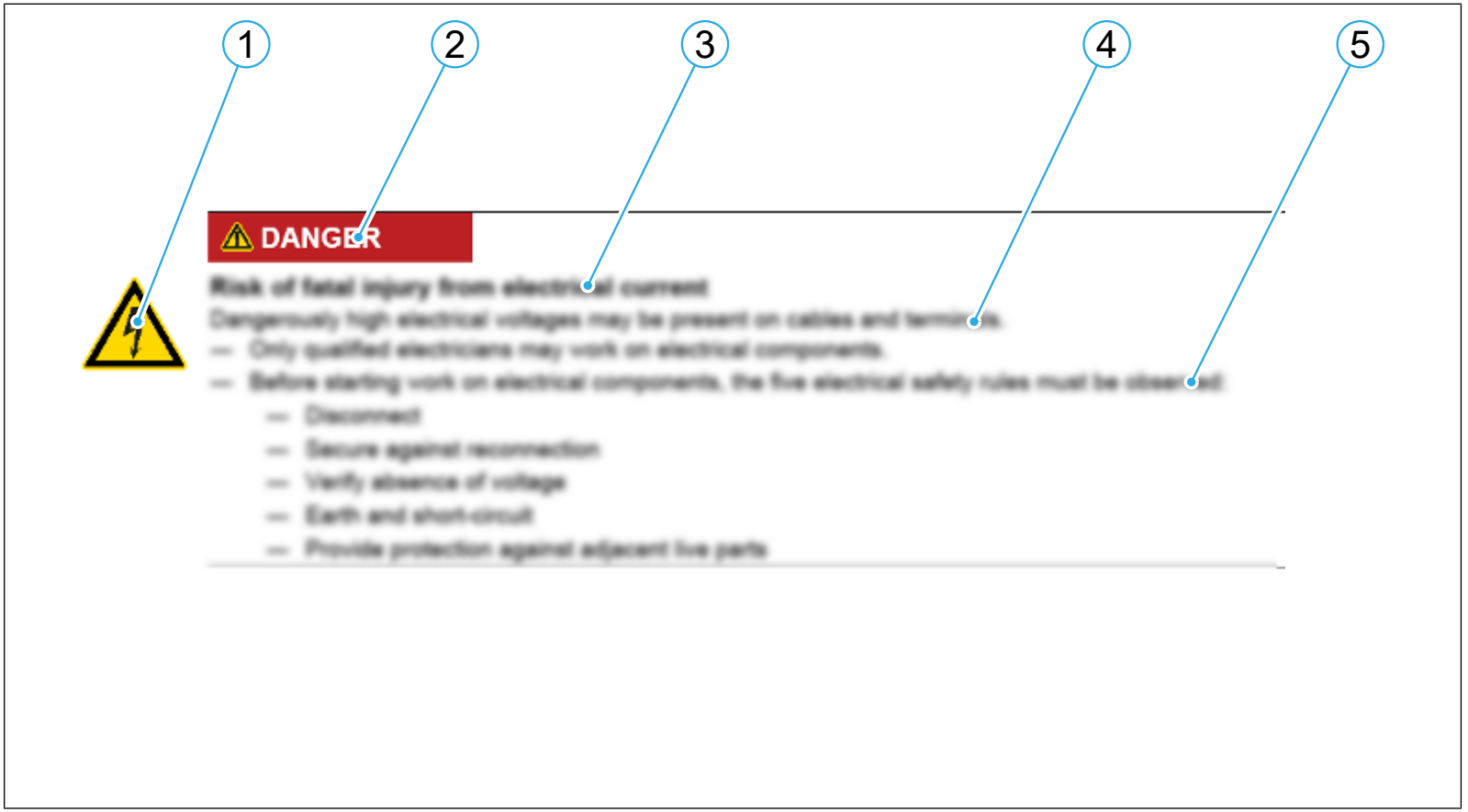
Symbol	Meaning
	Wearing protective work clothing protects against hazards in the workplace.
	Wearing slip-resistant safety footwear protects against injuries to the feet.
	Wearing cut and puncture-resistant protective gloves protects against injuries to the hands.
	Wearing a protective cap protects against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

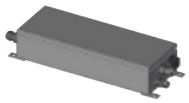
The following hazard symbols are used in this document:

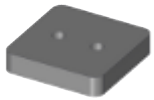
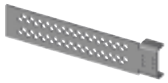
Symbol	Designation
	Automatic start-up
	Electrical hazard

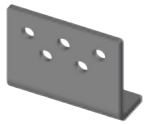
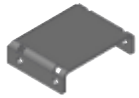
Table 3: Meaning of hazard symbols

3 In the box

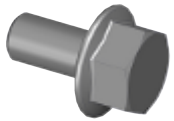
The conversion kit components are shown in the table. The position numbers are used in the following chapters to identify the individual components. For logistical reasons, the packaging can contain further components that are not required for actual use.

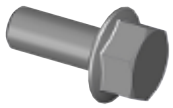
Pos.	Illustration	Item number	Description	Quantity
P001		8.20.xxxxx.04	TSG electronics	1
P002		8.20.200xx.xx	TSG motor	1

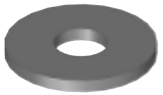
Pos.	Illustration	Item number	Description	Quantity
P003		8.20.60002.xx	Timing belt 8M	1
P004		8.20.20160	Electrical skate	1
P005		2.20.34060	Bracket	1
P006		1.14.20712	Car door locking device	1
P007		1.14.20722	Rectangular plate	1
P008		1.20.30985	Plate, square	2
P009		1.20.34070	Plate	1
P010		1.20.34040	Angle	1

Pos.	Illustration	Item number	Description	Quantity
P011		1.20.60005	Timing belt lock, L-shaped	1
P012		1.20.60013	L-shaped bracket	1
P013		1.20.60110	L-shaped bracket	1
P014		1.20.60131	Deflection pulley, D = 37 mm, 5M	1
P015		1.20.60140	Timing belt pulley, D = 37 mm, 5M	1
P016		1.20.60550	Motor bracket, L-shaped	1
P017		1.20.60551	Motor bracket, L-shaped	1
P018		1.20.60552	Angle bracket, C-shaped	1

Pos.	Illustration	Item number	Description	Quantity
P019		1.20.60555	L-shaped bracket	1
P020		1.20.60557	L-shaped bracket	1
P021		1.20.60560	Synchronous belt lock 5M	1
P022		1.20.60565	L-shaped bracket	1
P023		1.25.17050	Chain	1
P024		1.36.00008	Button head screw M4 × 20 mm	2
P025		1.36.00020	Button head screw M3 × 12 mm	4
P026		1.36.00115	Hexagon head screw M8 × 40 mm	3

Pos.	Illustration	Item number	Description	Quantity
P027		1.36.00130	Locking screw M5 × 12 mm	4
P028		1.36.00135	Locking screw M6 × 12 mm	4
P029		1.36.00137	Locking screw M6 × 20 mm	3
P030		1.36.00138	Locking screw M6 × 16 mm	4
P031		1.36.00169	Spring washer M8	5
P032		1.36.00430	Nut M8	2
P033		1.36.00440	Washer M8	1
P034		1.36.00455	Nut M4	2

Pos.	Illustration	Item number	Description	Quantity
P035		1.36.00480	Washer M4	4
P036		1.36.00501	Nut M8	11
P037		1.36.00502	Nut M6	7
P038		1.36.00509	Nut M8	4
P039		1.36.00525	Mushroom head square neck screw M8 × 20 mm	2
P040		1.36.00710	Locking screw M8 × 16 mm	4
P041		1.36.00720	Locking screw M8 × 20 mm	8
P042		1.36.00749	Locking screw M8 × 50 mm	1

Pos.	Illustration	Item number	Description	Quantity
P043		1.36.00871	Sleeve, D = 15 mm	2
P044		1.36.01028	Cylinder head screw M5 × 45 mm	4
P045		1.36.01035	Washer M8	4
P046		1.36.01037	Washer M5	4
P047		1.36.05040	Set screw M5 × 5 mm	1

4 Required tools

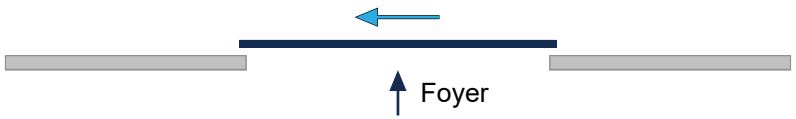
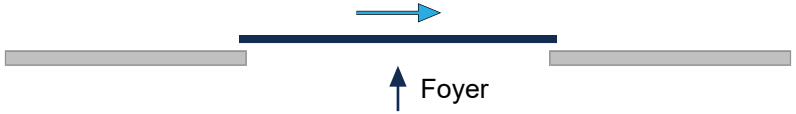
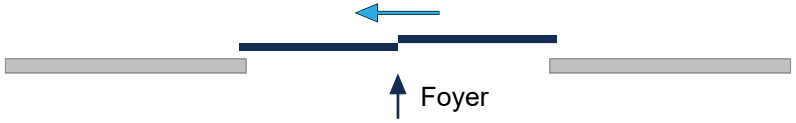
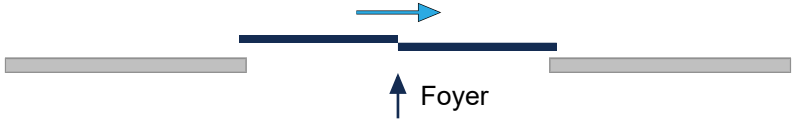
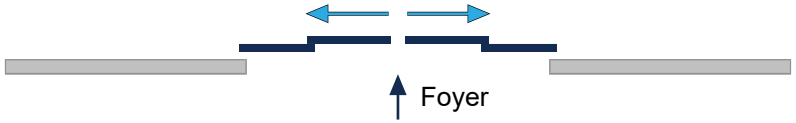
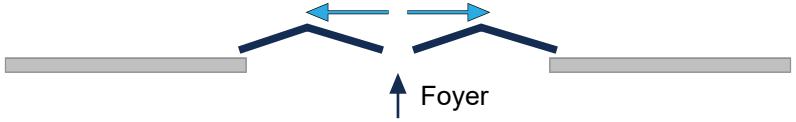
The tools required for the conversion are shown in the table. The position numbers are used in the following chapters to identify the individual tools.

Pos.	Symbol	Description
T001		Soft face hammer
T002		Hammer
T003		Puller for bearings and pinions
T004		Pipe wrench

Pos.	Symbol	Description
T005		Side cutters
T006		Circlip pliers
T007		Angle grinder
T008		Measuring tool (folding rule or measuring tape)
T009		Slotted screwdriver
T010		Phillips screwdriver
T107		Combination spanner, SW 7
T108		Combination spanner, size 8
T110		Combination wrench, size 10
T113		Combination wrench, size 13
T202.5		Allen key, size 2.5
T204.0		Allen key, size 4
T603.5		Drill bit, Ø 3.5 mm
T606.5		Drill bit, Ø 6.5 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	
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

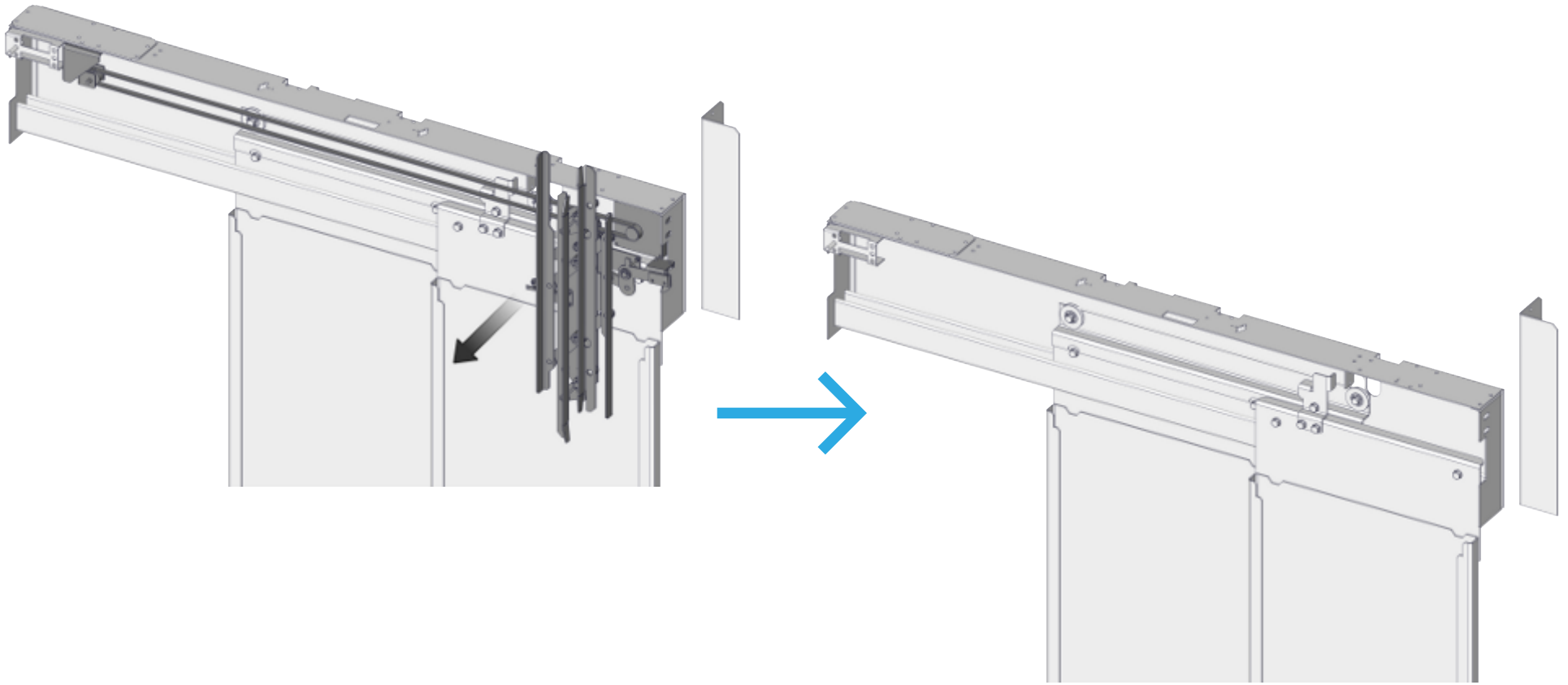
Risk of fatal injury from electrical current

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

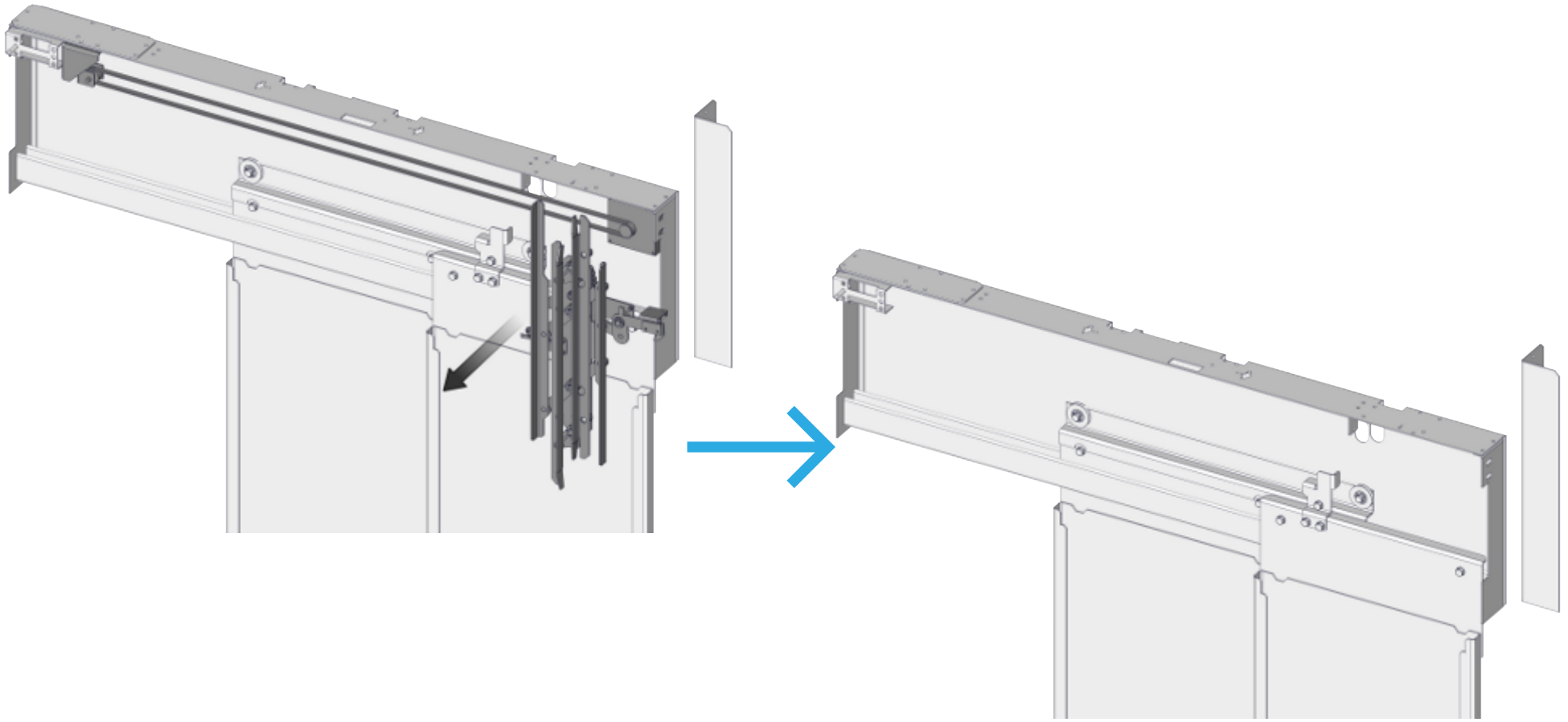
— Only qualified electricians may work on electrical components.
— Before starting work on electrical components, the five electrical safety rules must be observed:
  — Disconnect
  — Secure against reconnection
  — Verify absence of voltage
  — Earth and short-circuit
  — Provide protection against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



Dismantling for conversion variant 1: low door frame

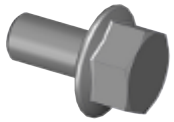


Dismantling for conversion variant 2: high door frame

7 Mounting conversion variant 1: low door frame

7.1 Mounting the motor and bracket

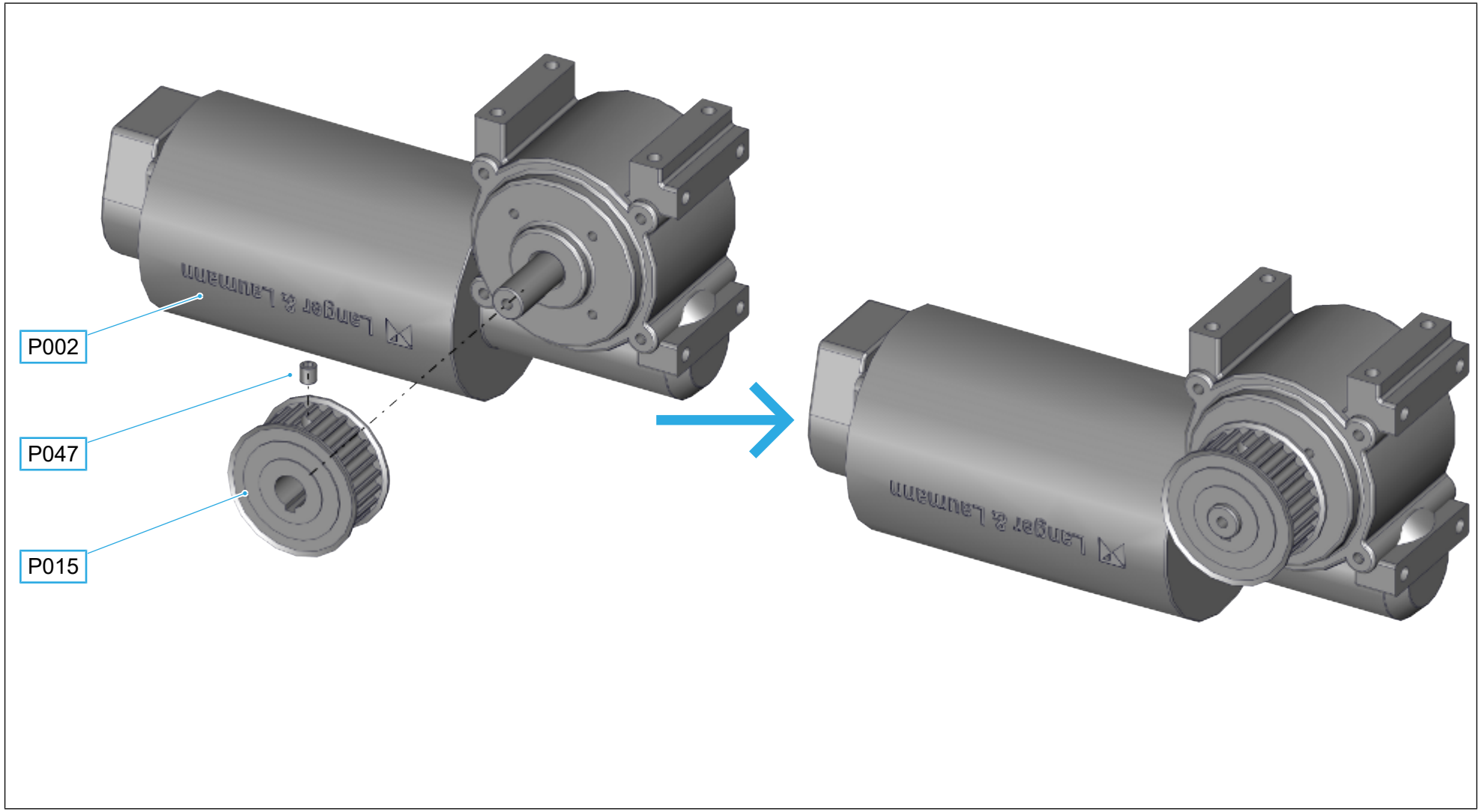
Components

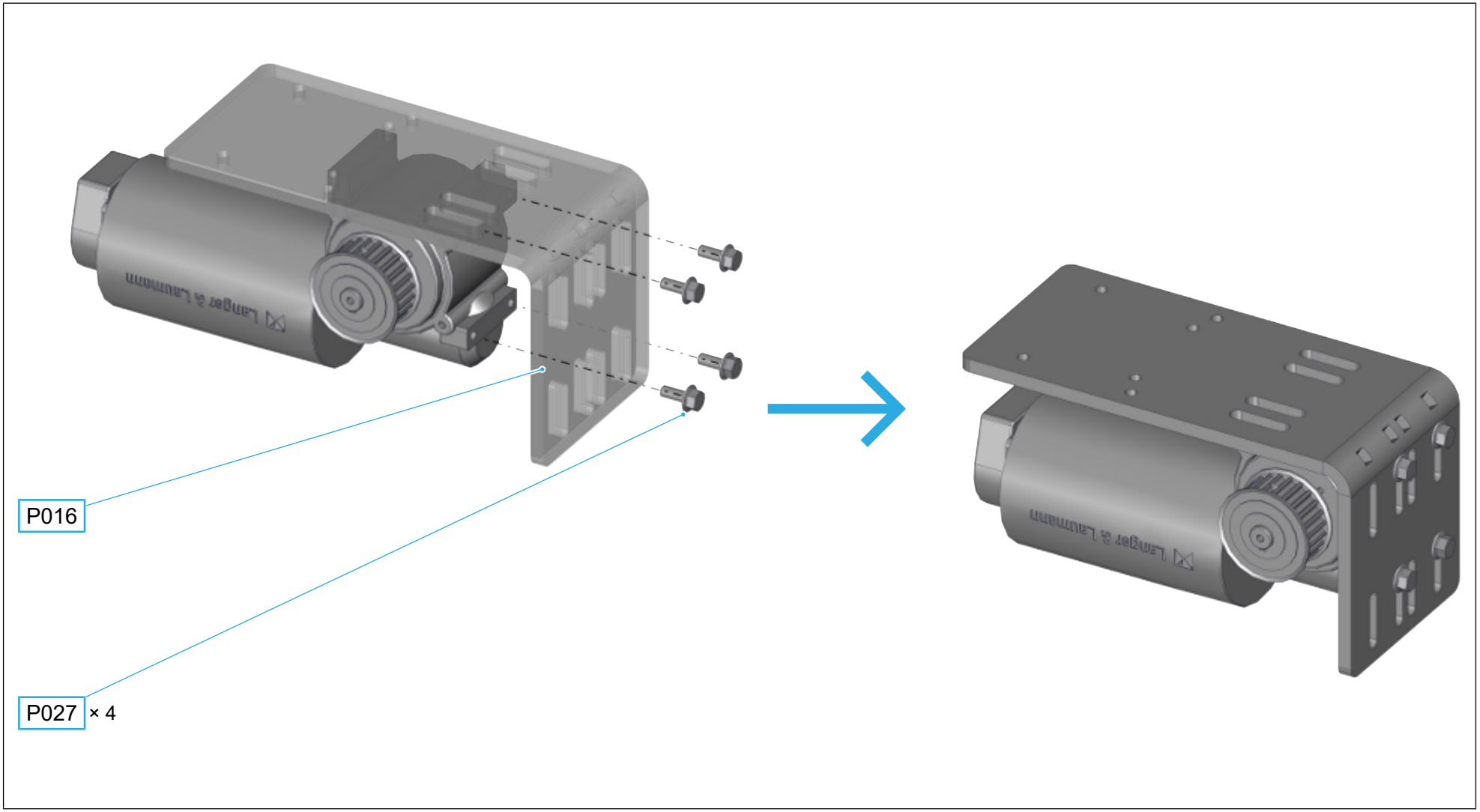
Pos.	Illustration	Item number	Description	Quantity
P002		8.20.200xx.xx	TSG motor	1
P015		1.20.60140	Timing belt pulley, D = 37 mm, 5M	1
P016		1.20.60550	Motor bracket, L-shaped	1
P027		1.36.00130	Locking screw M5 × 12 mm	4
P028		1.36.00135	Locking screw M6 × 12 mm	3
P030		1.36.00138	Locking screw M6 × 16 mm	2

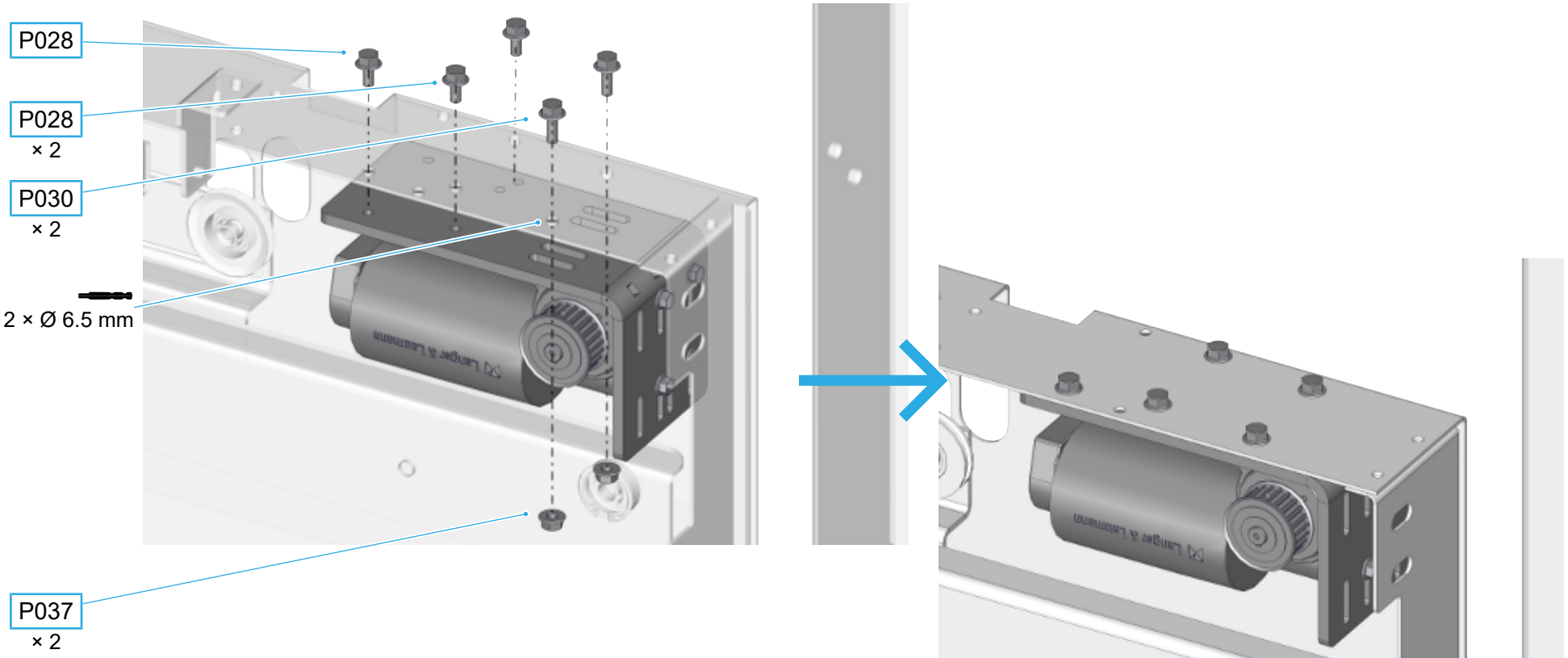
Pos.	Illustration	Item number	Description	Quantity
P037		1.36.00502	Nut M6	2
P047		1.36.05040	Set screw M5 × 5 mm	1

Tools

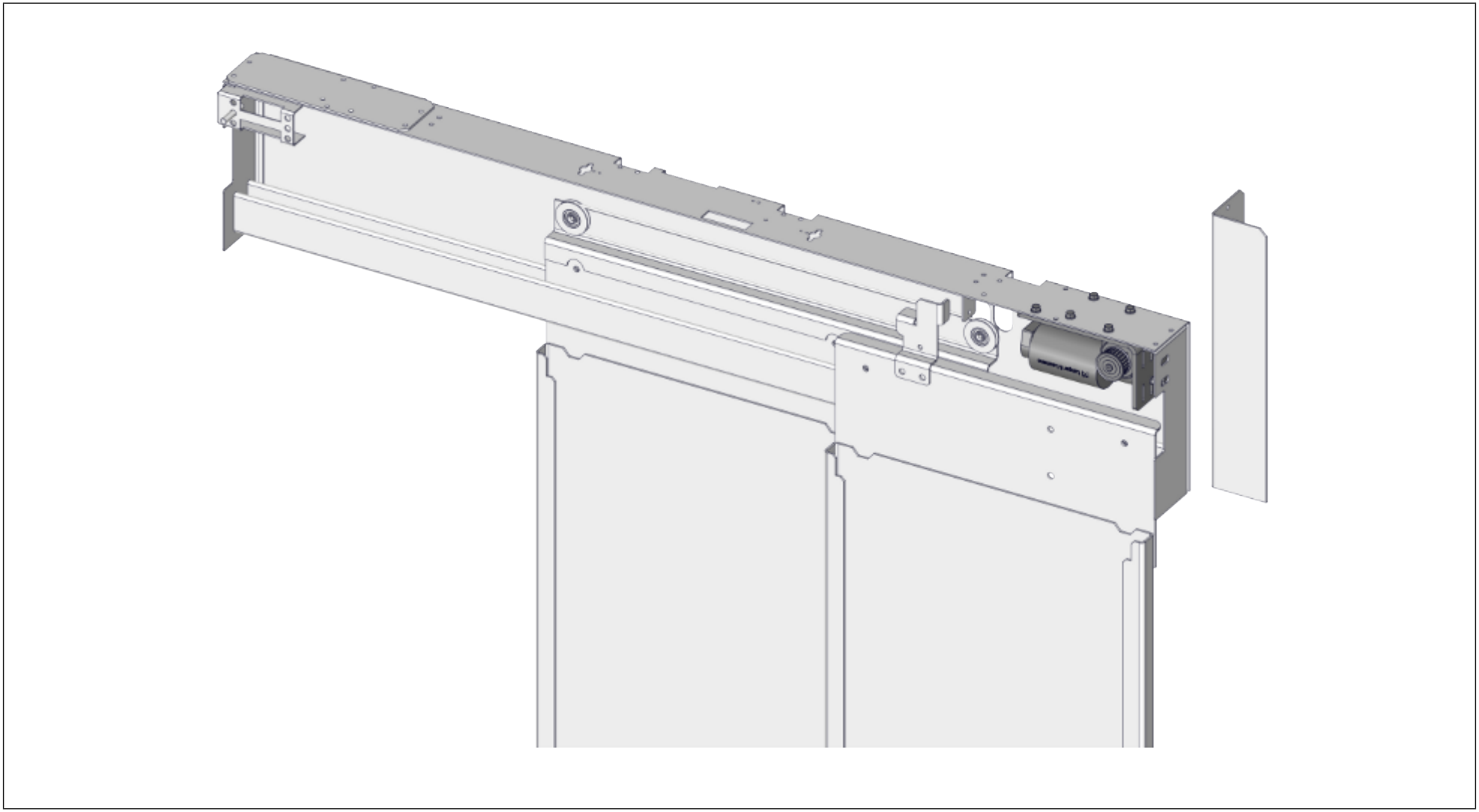
Pos.	Symbol	Description
T108		Combination spanner, size 8
T110		Combination wrench, size 10
T202.5		Allen key, size 2.5
T606.5		Drill bit, Ø 6.5 mm


P002
P047
P015


P016
P027 × 4

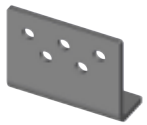


At the places which are locked with nuts, drill 2 x into the door frame.



7.2 Mounting the deflection unit

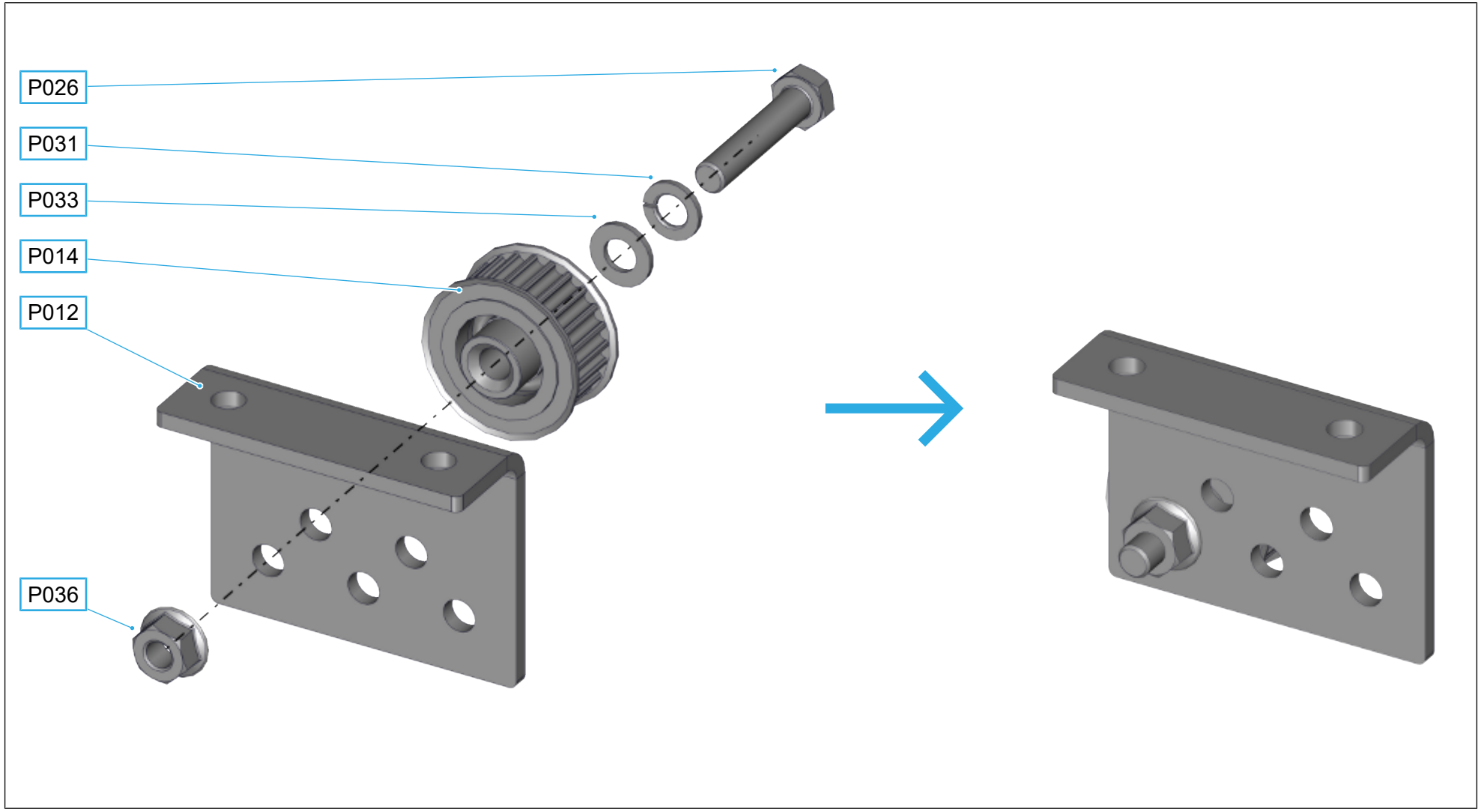
Components

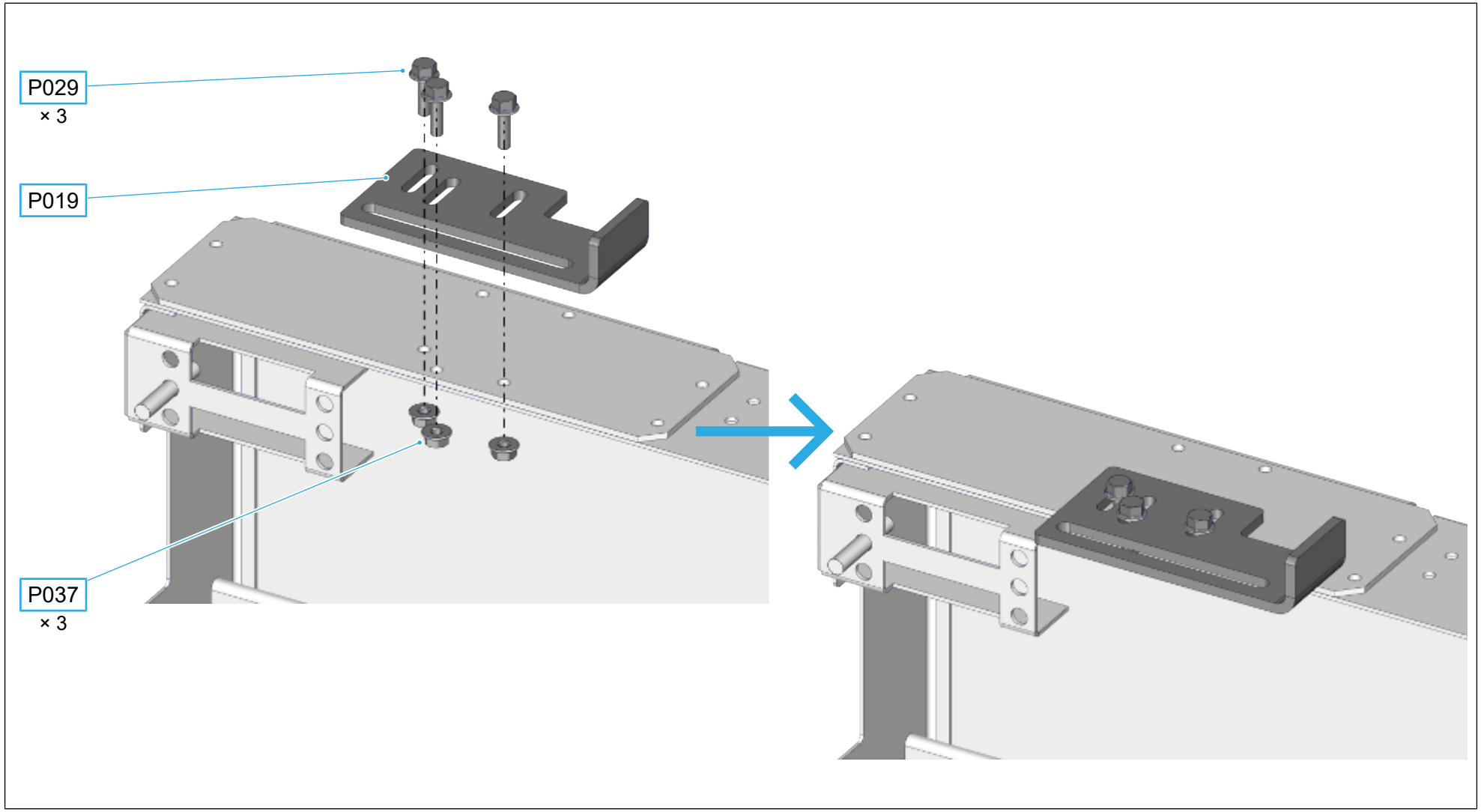
Pos.	Illustration	Item number	Description	Quantity
P012		1.20.60013	L-shaped bracket	1
P013		1.20.60110	L-shaped bracket	1
P014		1.20.60131	Deflection pulley, D = 37 mm, 5M	1
P019		1.20.60555	L-shaped bracket	1
P026		1.36.00115	Hexagon head screw M8 × 40 mm	1
P029		1.36.00137	Locking screw M6 × 20 mm	3
P031		1.36.00169	Spring washer M8	1

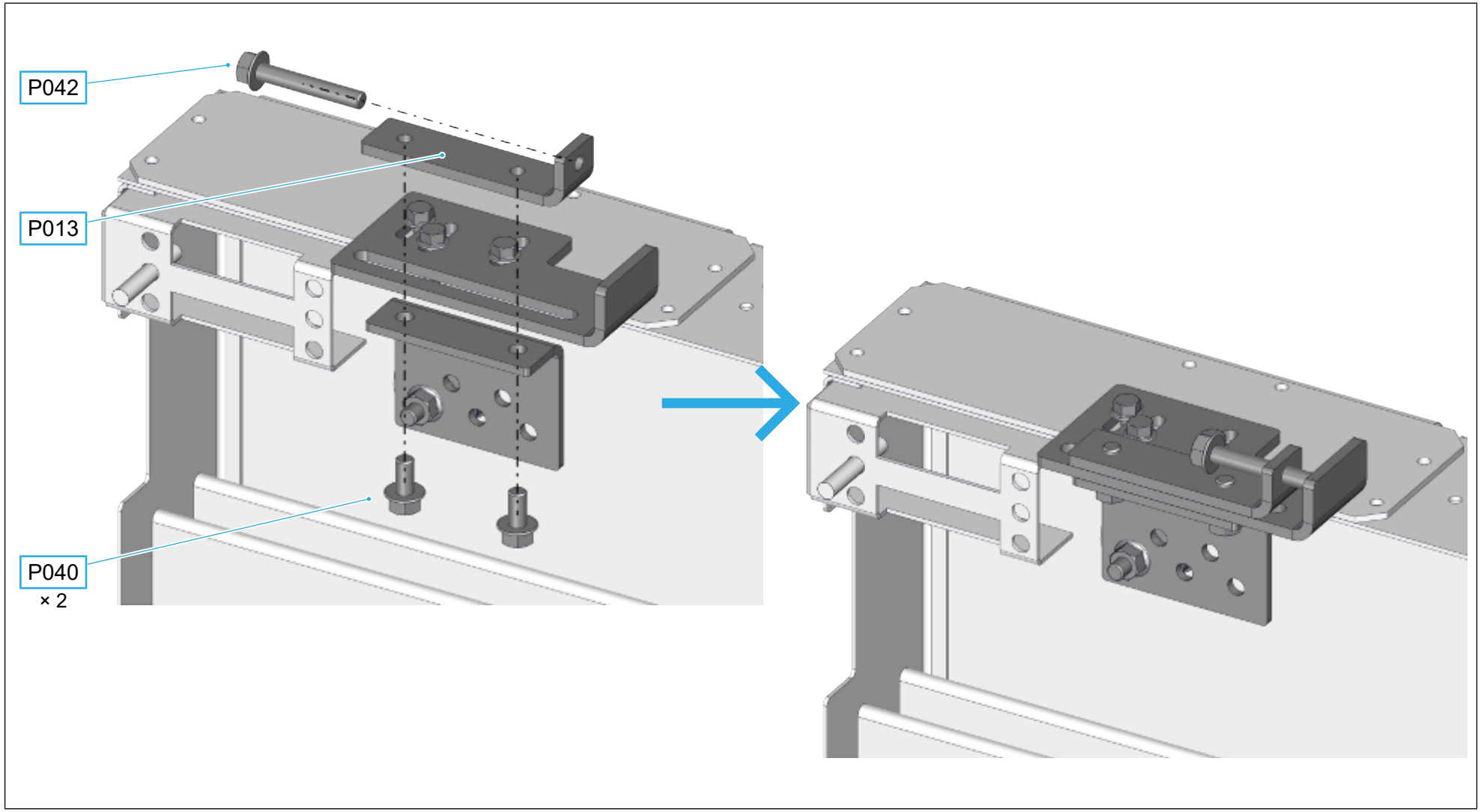
Pos.	Illustration	Item number	Description	Quantity
P033		1.36.00440	Washer M8	1
P036		1.36.00501	Nut M8	1
P037		1.36.00502	Nut M6	3
P036		1.36.00501	Nut M8	1
P037		1.36.00502	Nut M6	3
P040		1.36.00710	Locking screw M8 × 16 mm	4
P042		1.36.00749	Locking screw M8 × 50 mm	1

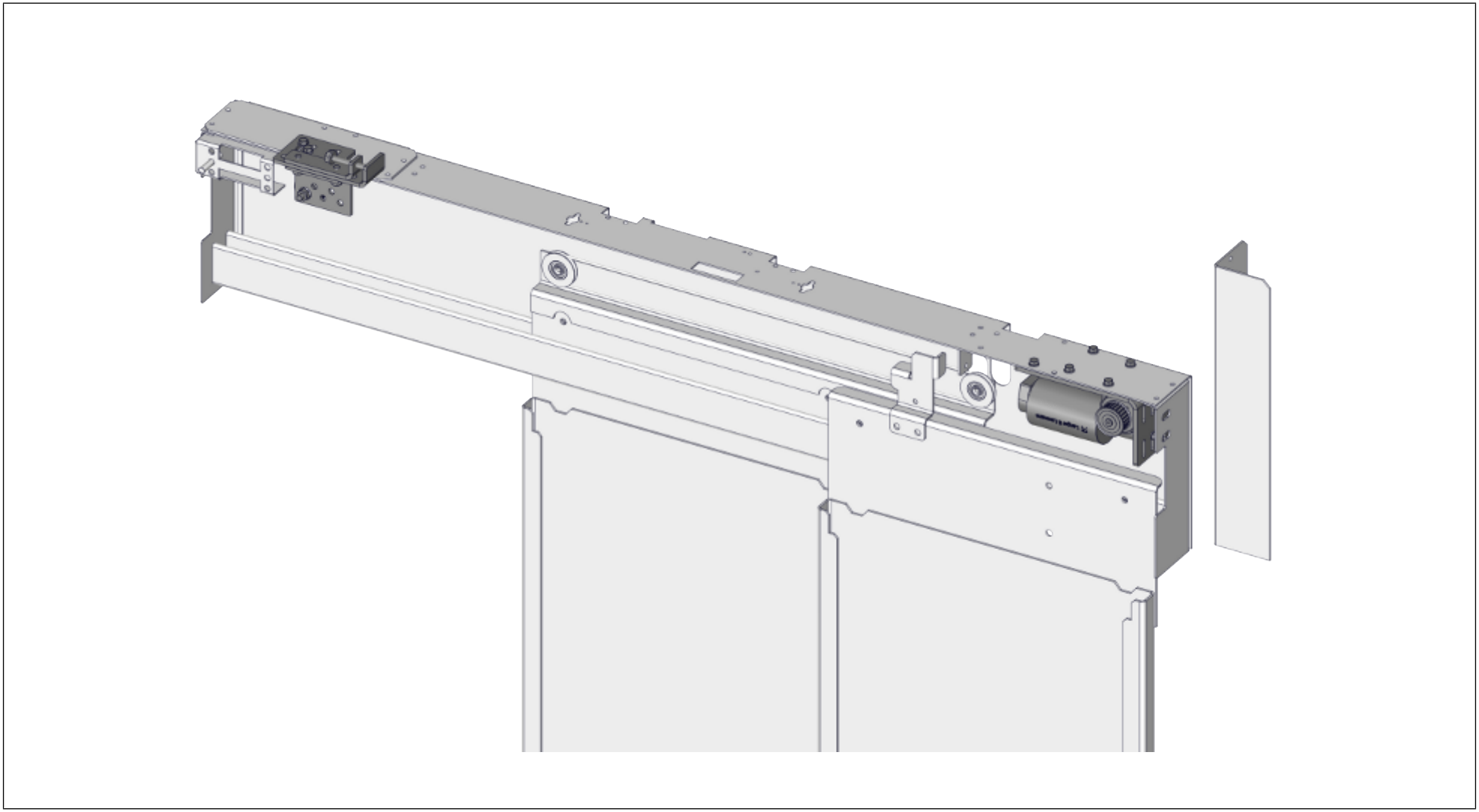
Tools

Pos.	Symbol	Description
T110	⬢	Combination wrench, size 10
T113	⬢	Combination wrench, size 13



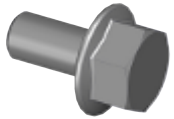

P029
× 3
P019
P037
× 3


P042
P013
P040
× 2



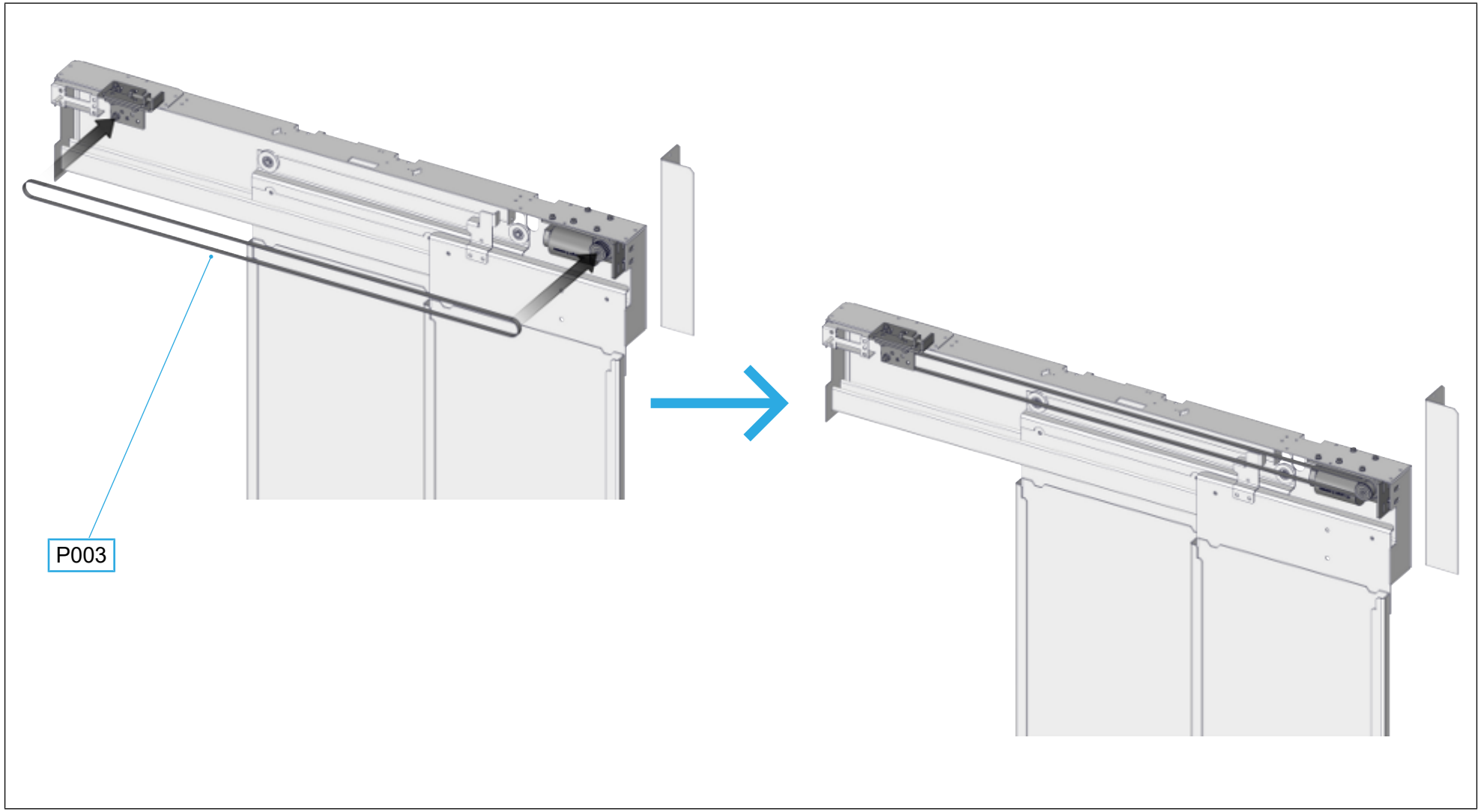
7.3 Mounting and tensioning the timing belt

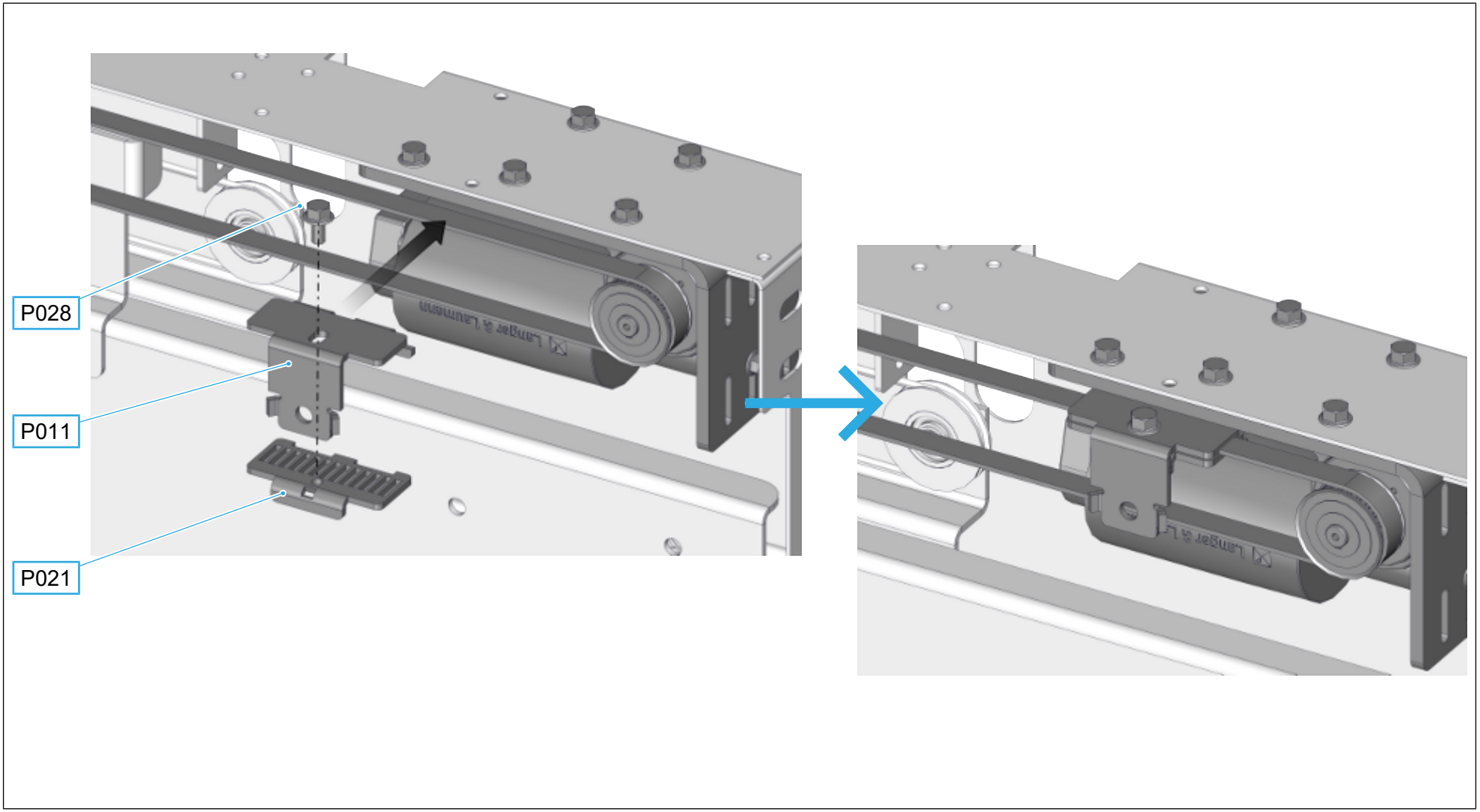
Components

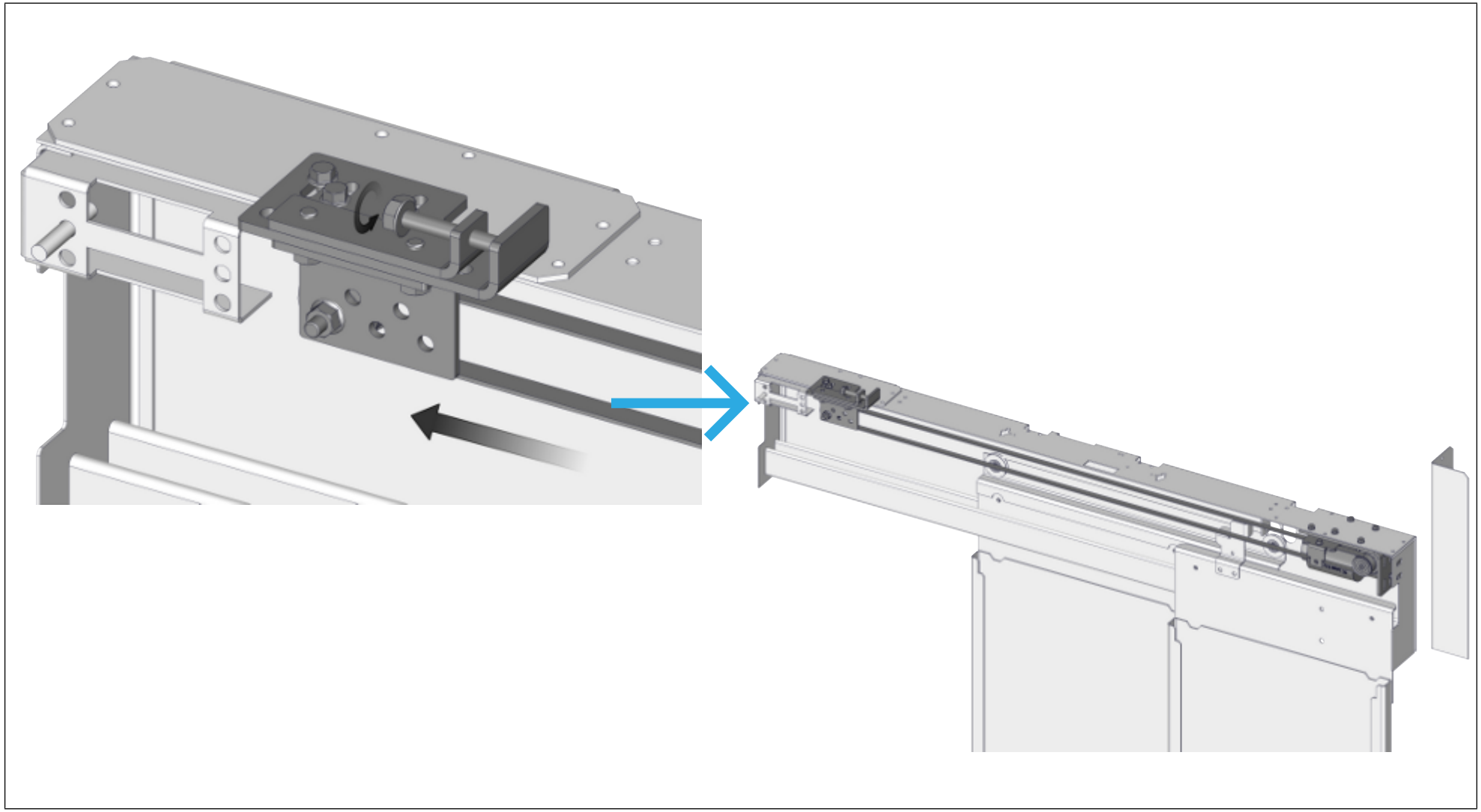
Pos.	Illustration	Item number	Description	Quantity
P003		8.20.60002.xx	Timing belt 8M	1
P011		1.20.60005	Timing belt lock, L-shaped	1
P021		1.20.60560	Synchronous belt lock 5M	1
P028		1.36.00135	Locking screw M6 × 12 mm	1

Tools

Pos.	Symbol	Description
T110	⬢	Combination wrench, size 10
T113	⬢	Combination wrench, size 13

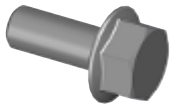

P003

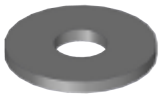

P028
P011
P021



7.4 Mounting the electrical skate

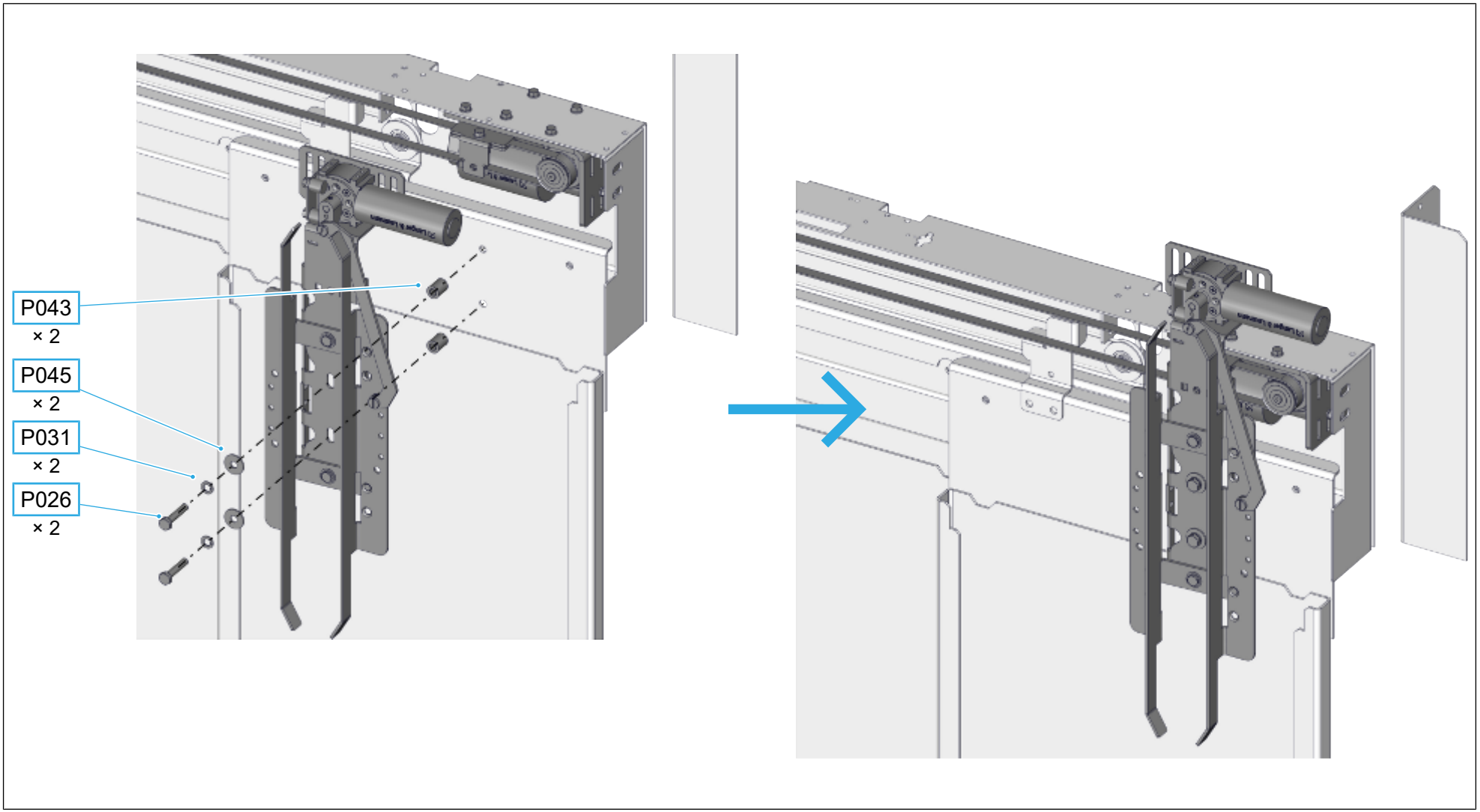
Components

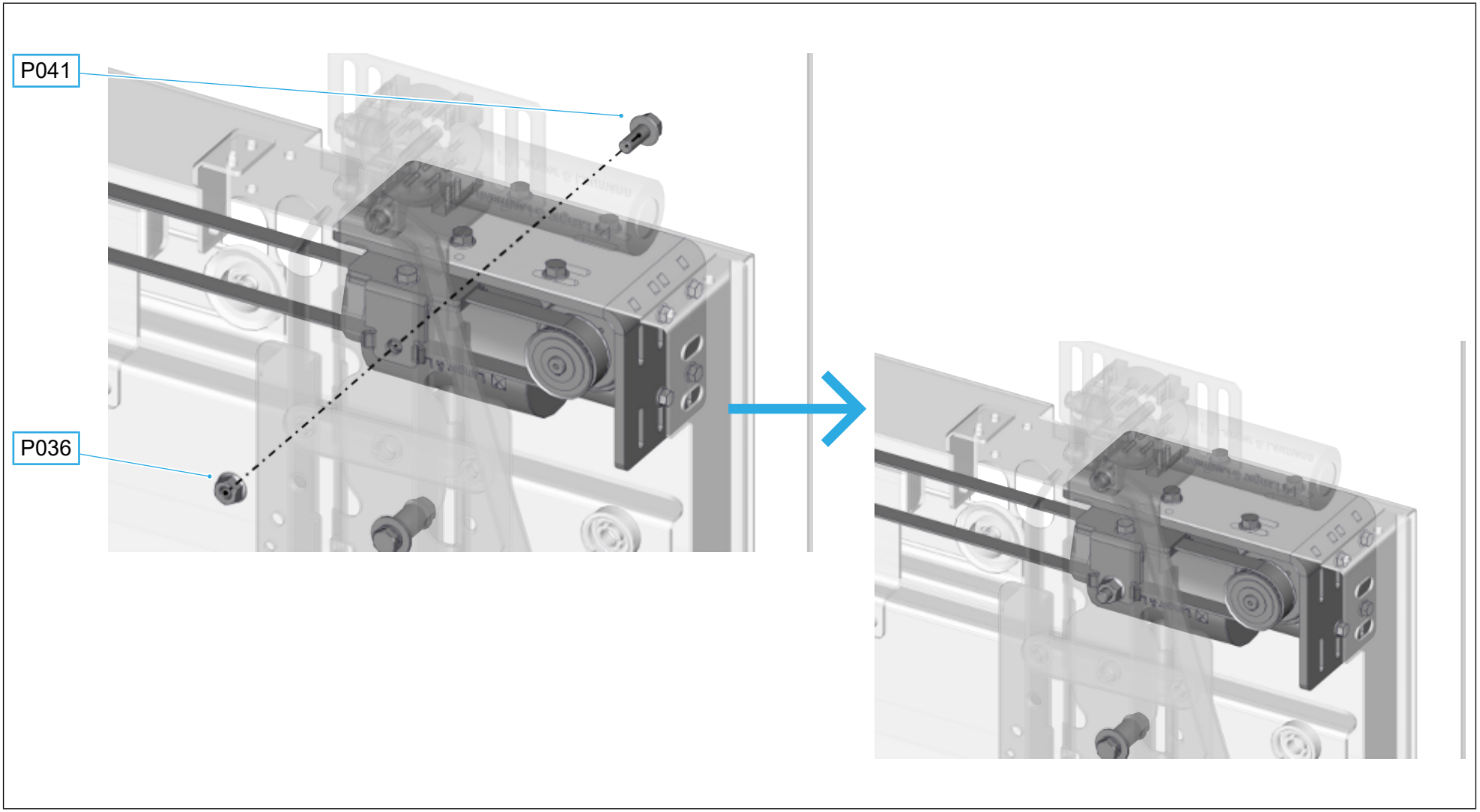
Pos.	Illustration	Item number	Description	Quantity
P004		8.20.20160	Electrical skate	1
P026		1.36.00115	Hexagon head screw M8 × 40 mm	2
P030		1.36.00138	Locking screw M6 × 16 mm	2
P031		1.36.00169	Spring washer M8	2
P036		1.36.00501	Nut M8	1
P037		1.36.00502	Nut M6	2
P041		1.36.00720	Locking screw M8 × 20 mm	1

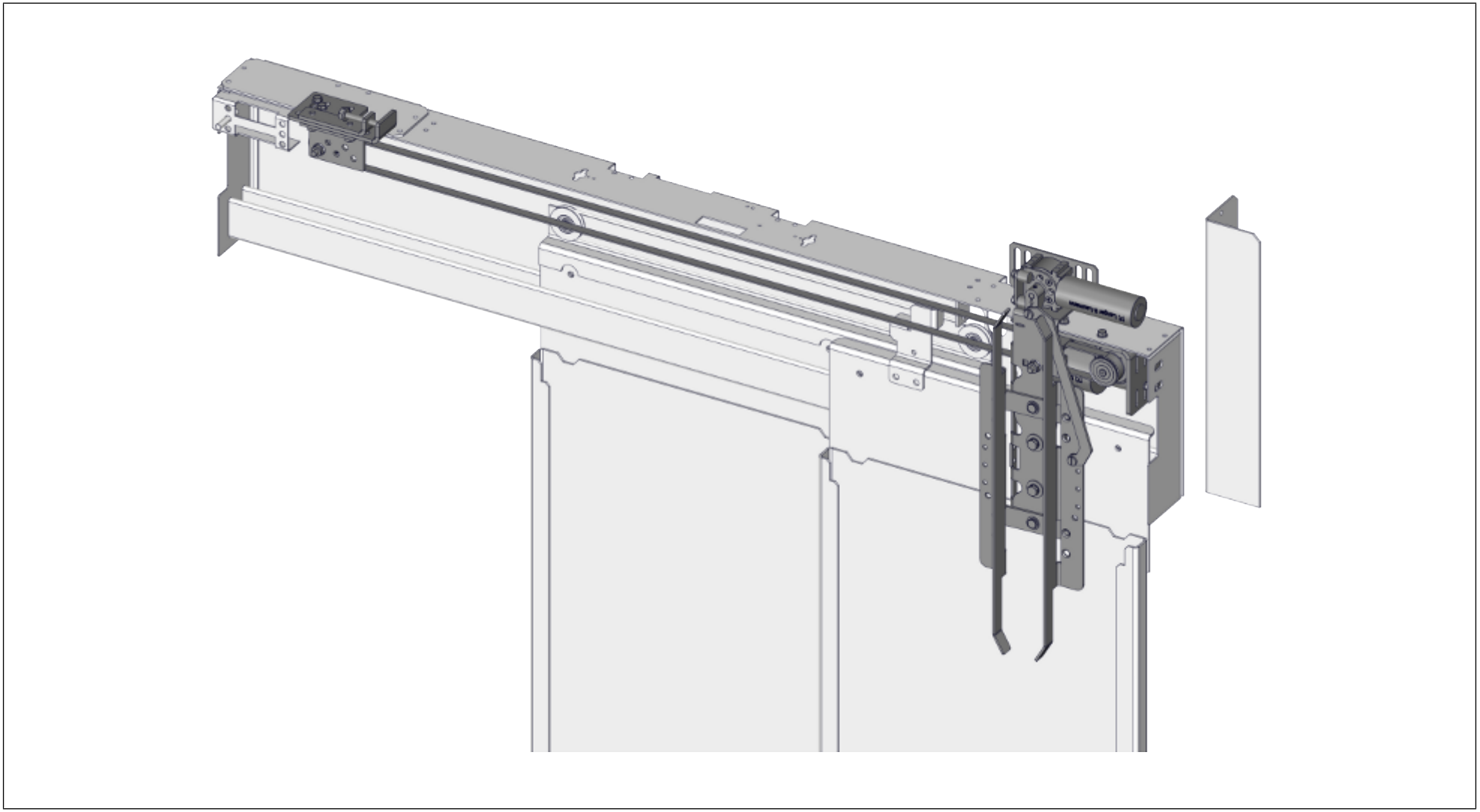
Pos.	Illustration	Item number	Description	Quantity
P043		1.36.00871	Sleeve, D = 15 mm	2
P045		1.36.01035	Washer M8	2

Tools

Pos.	Symbol	Description
T113	⬣	Combination wrench, size 13

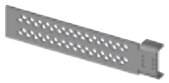
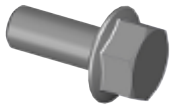

P043
× 2
P045
× 2
P031
× 2
P026
× 2


P041
P036



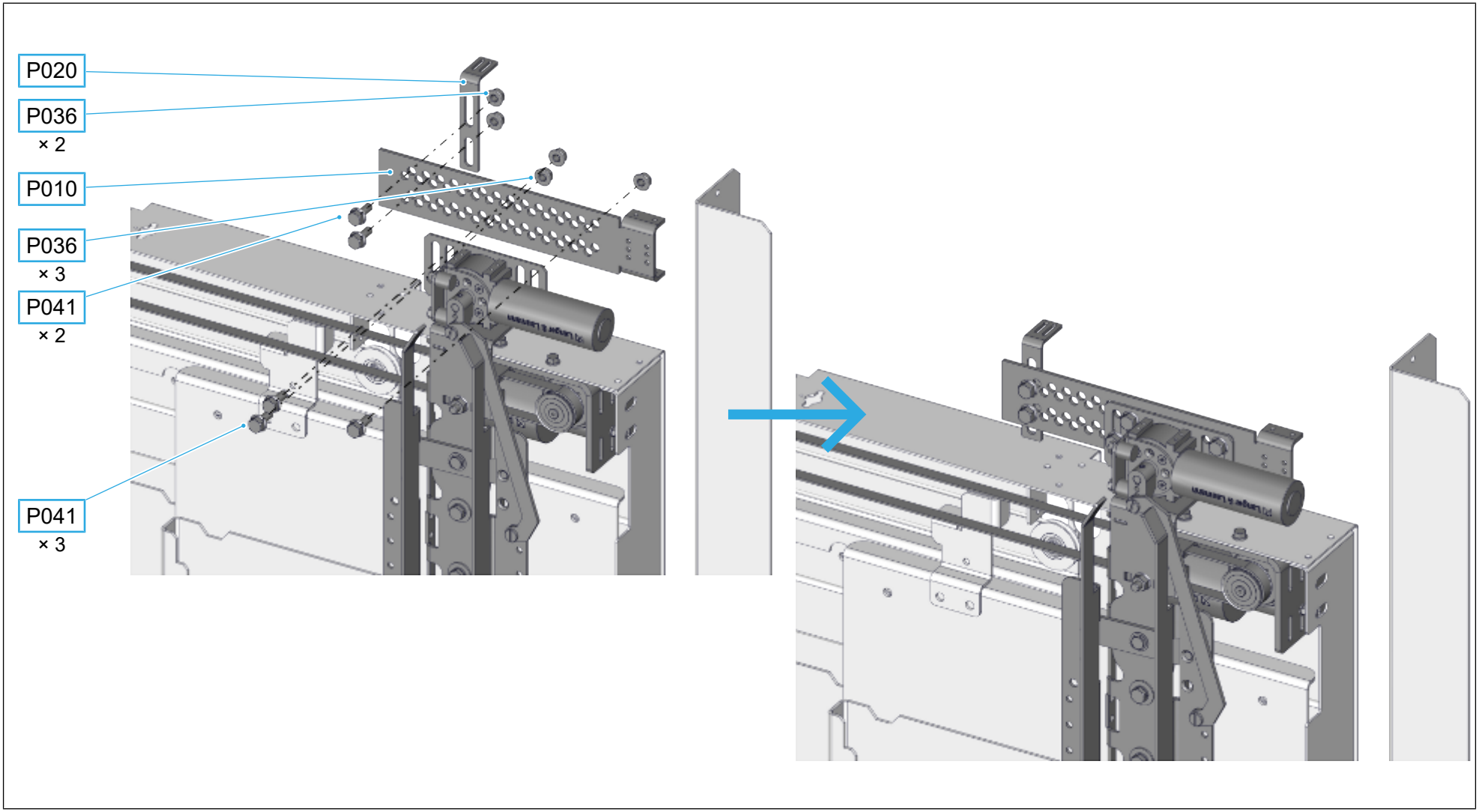
7.5 Mounting the energy chain

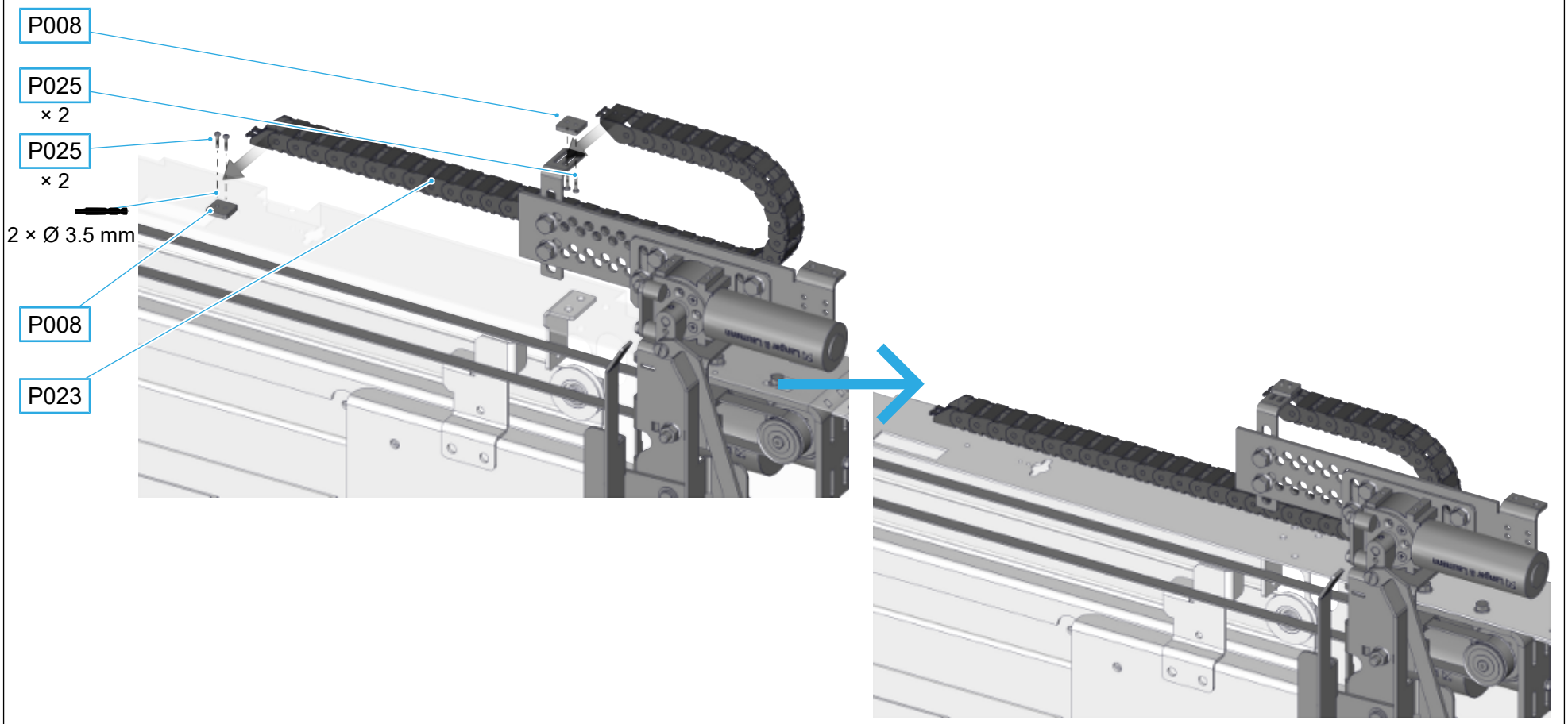
Components

Pos.	Illustration	Item number	Description	Quantity
P008		1.20.30985	Plate, square	2
P010		1.20.34040	Angle	1
P020		1.20.60557	L-shaped bracket	1
P023		1.25.17050	Chain	1
P025		1.36.00020	Button head screw M3 × 12 mm	4
P036		1.36.00501	Nut M8	5
P041		1.36.00720	Locking screw M8 × 20 mm	5

Tools

Pos.	Symbol	Description
T010		Phillips screwdriver
T113		Combination wrench, size 13
T603.5		Drill bit, Ø 3.5 mm


P020
P036
× 2
P010
P036
× 3
P041
× 2
P041
× 3

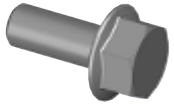


Drill 2 × into the door frame.

7.6 Mounting the car door locking device

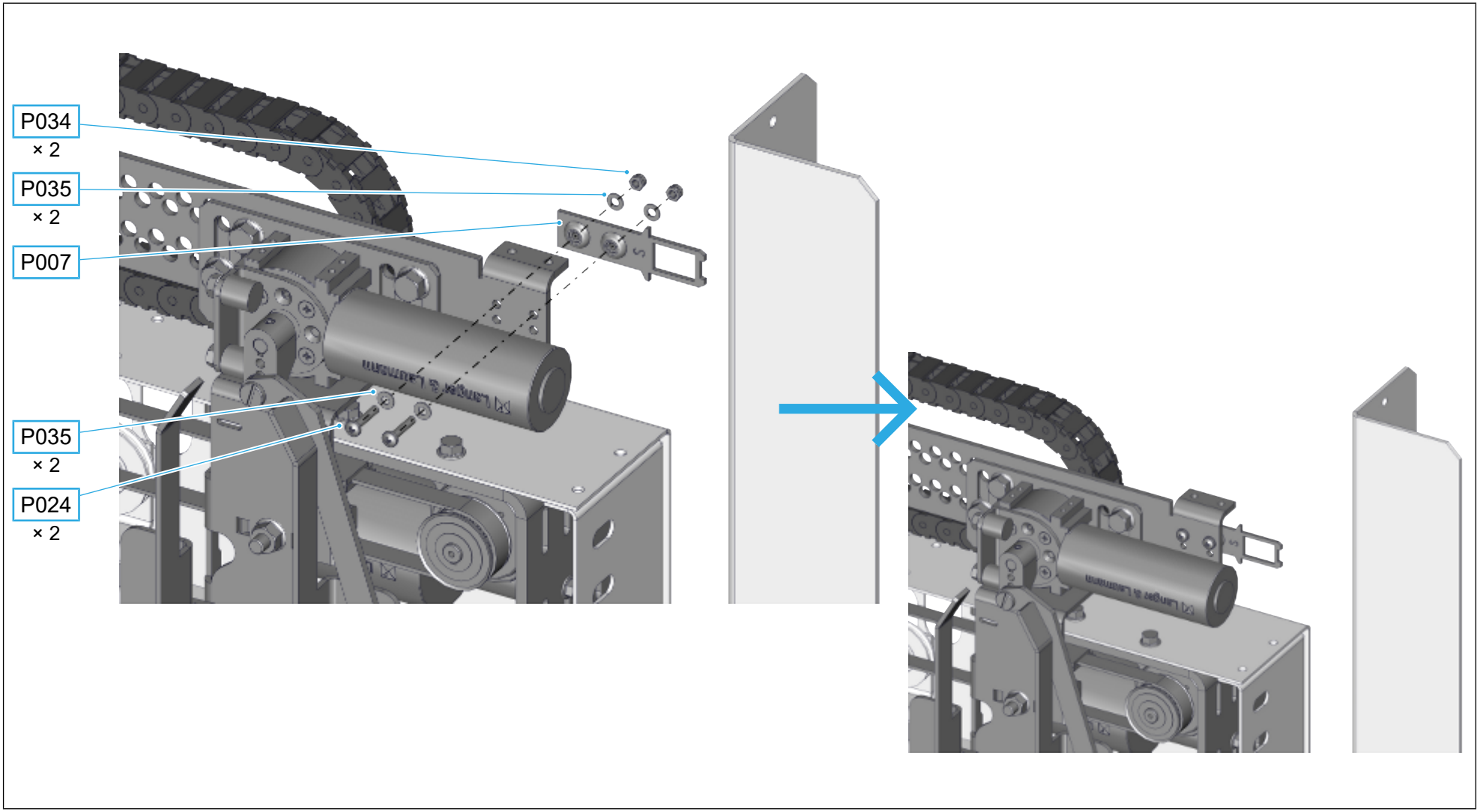
Components

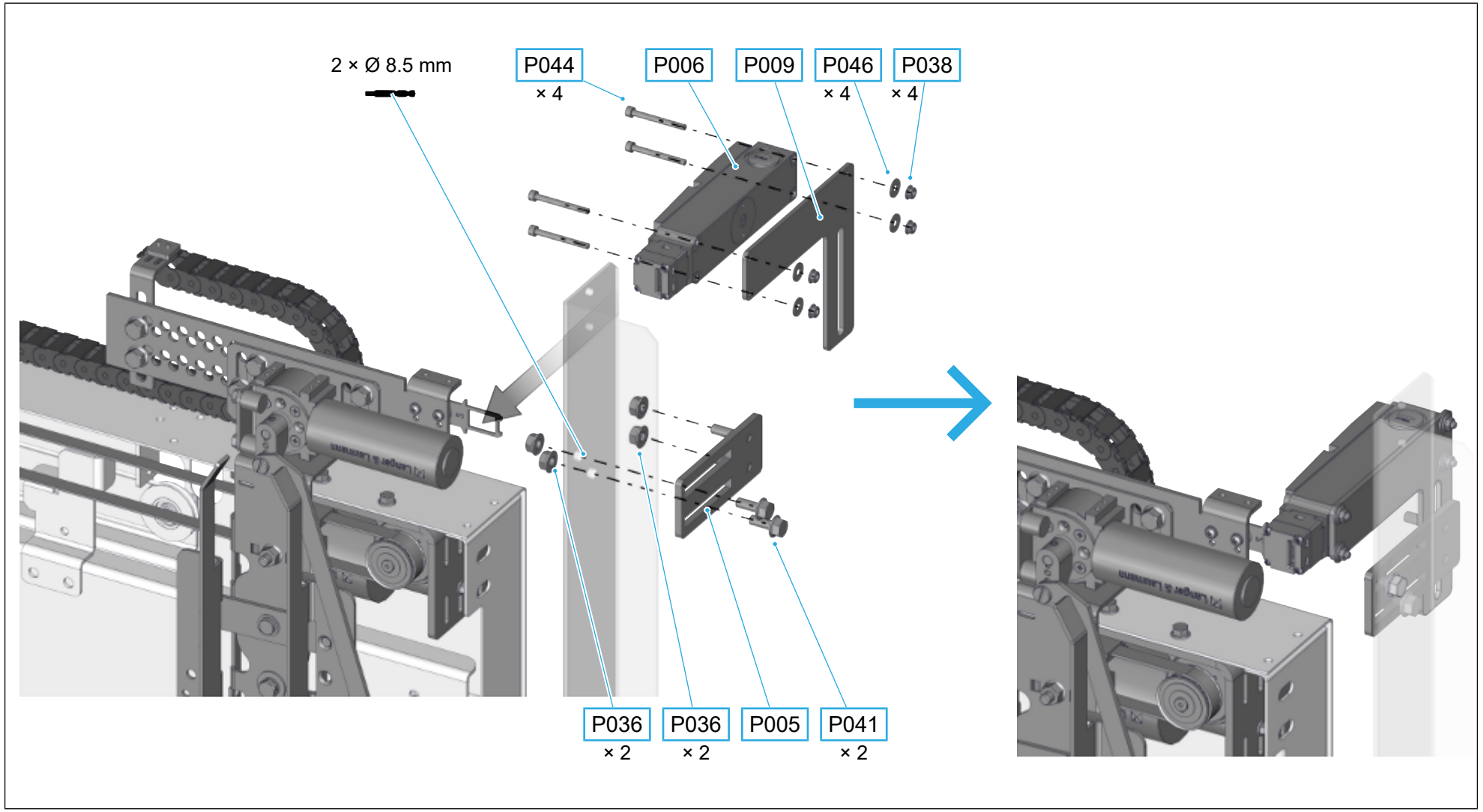
Pos.	Illustration	Item number	Description	Quantity
P005		2.20.34060	Bracket	1
P006		1.14.20712	Car door locking device	1
P007		1.14.20722	Rectangular plate	1
P009		1.20.34070	Plate	1
P024		1.36.00008	Button head screw M4 × 20 mm	2
P034		1.36.00455	Nut M4	2
P035		1.36.00480	Washer M4	4

Pos.	Illustration	Item number	Description	Quantity
P036		1.36.00501	Nut M8	4
P041		1.36.00720	Locking screw M8 × 20 mm	2

Tools

Pos.	Symbol	Description
T010		Phillips screwdriver
T107		Combination spanner, SW 7
T108		Combination spanner, size 8
T113		Combination wrench, size 13
T204.0		Allen key, size 4
T608.5		Drill bit, Ø 8.5 mm

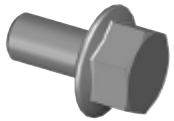

P034
× 2
P035
× 2
P007
P035
× 2
P024
× 2


2 × Ø 8.5 mm
P044
× 4
P006
P009
P046
× 4
P038
× 4
P036
× 2
P036
× 2
P005
P041
× 2

8 Mounting conversion variant 2: high door frame

8.1 Mounting the motor and bracket

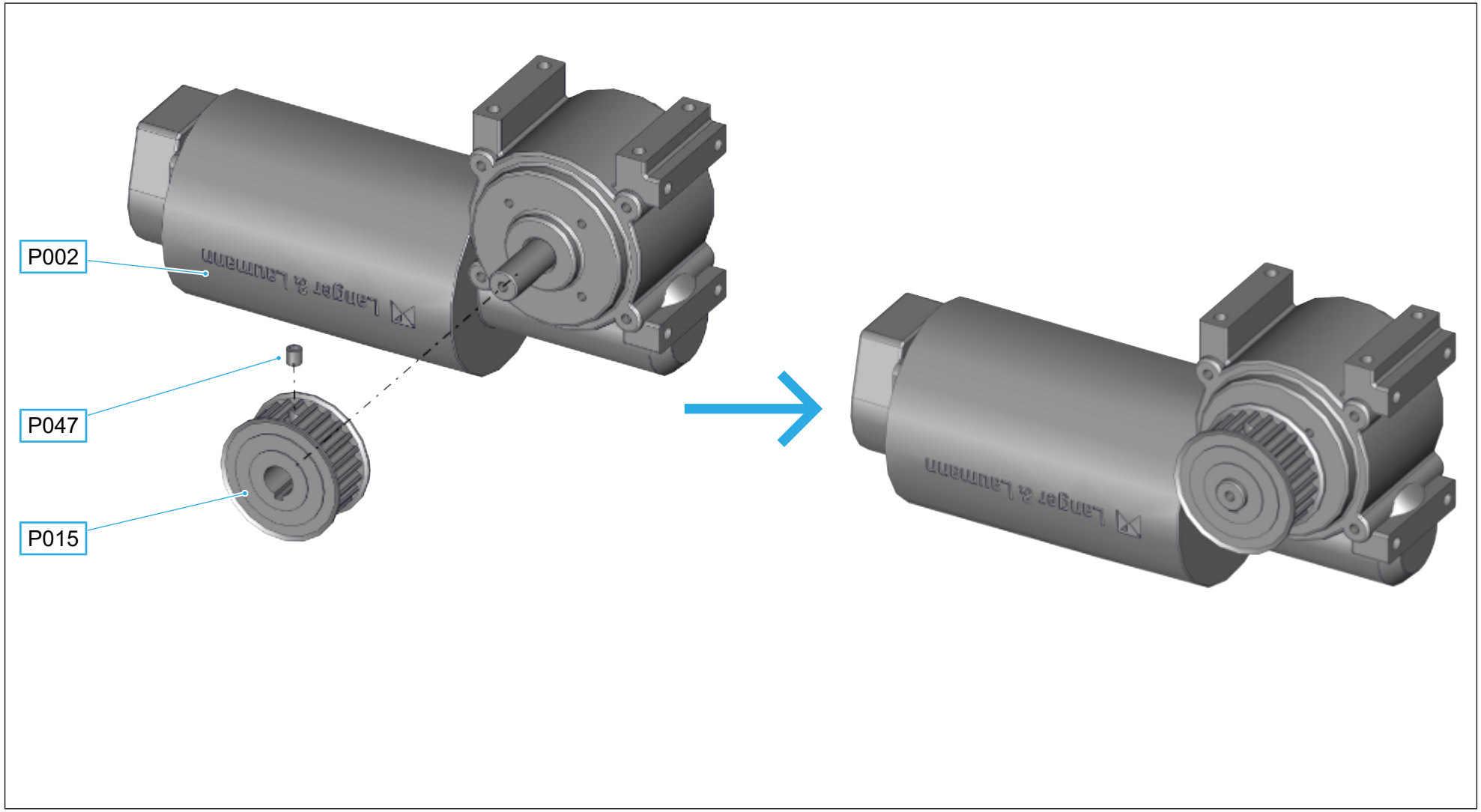
Components

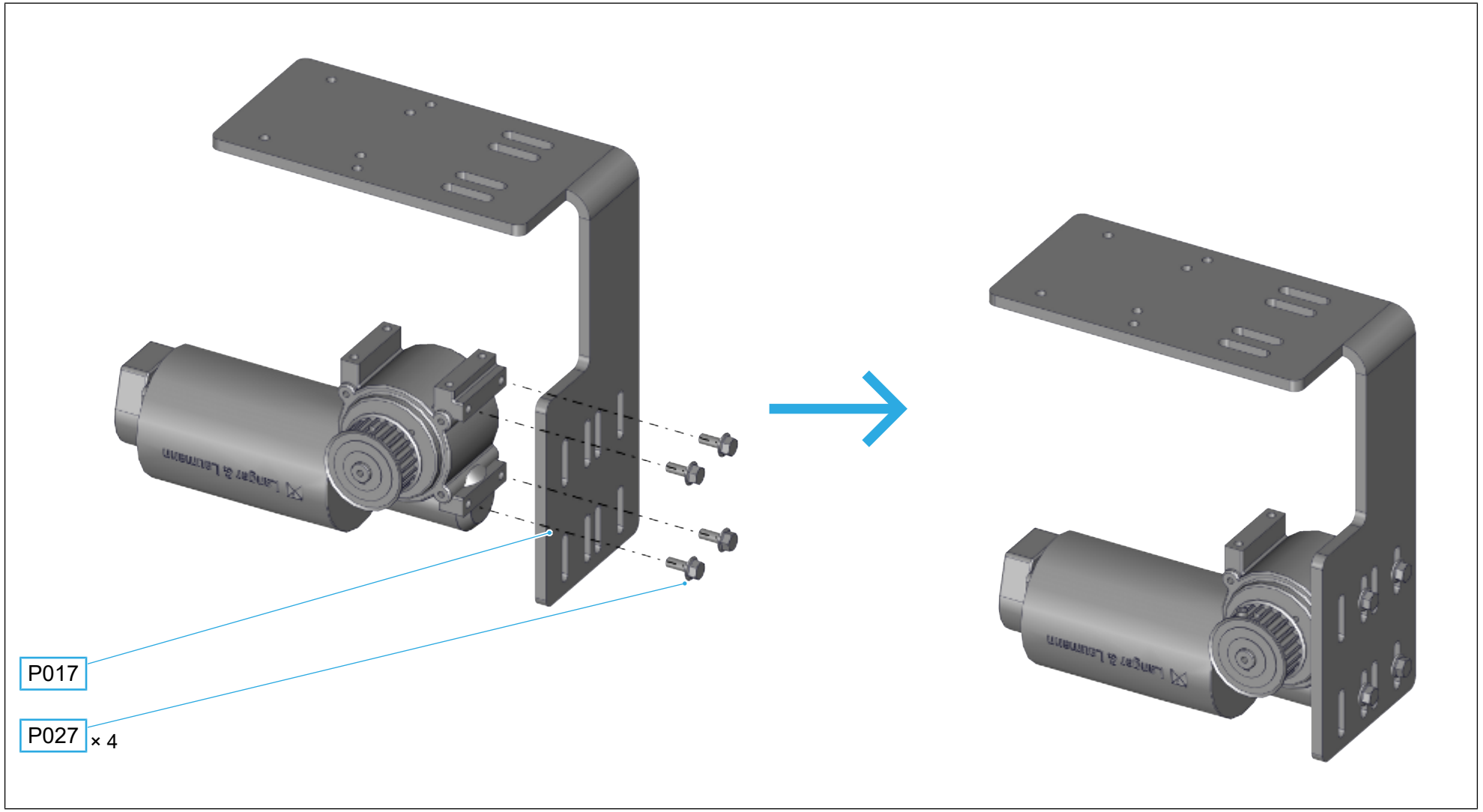
Pos.	Illustration	Item number	Description	Quantity
P002		8.20.200xx.xx	TSG motor	1
P015		1.20.60140	Timing belt pulley, D = 37 mm, 5M	1
P017		1.20.60551	Motor bracket, L-shaped	1
P027		1.36.00130	Locking screw M5 × 12 mm	4
P028		1.36.00135	Locking screw M6 × 12 mm	3
P030		1.36.00138	Locking screw M6 × 16 mm	2

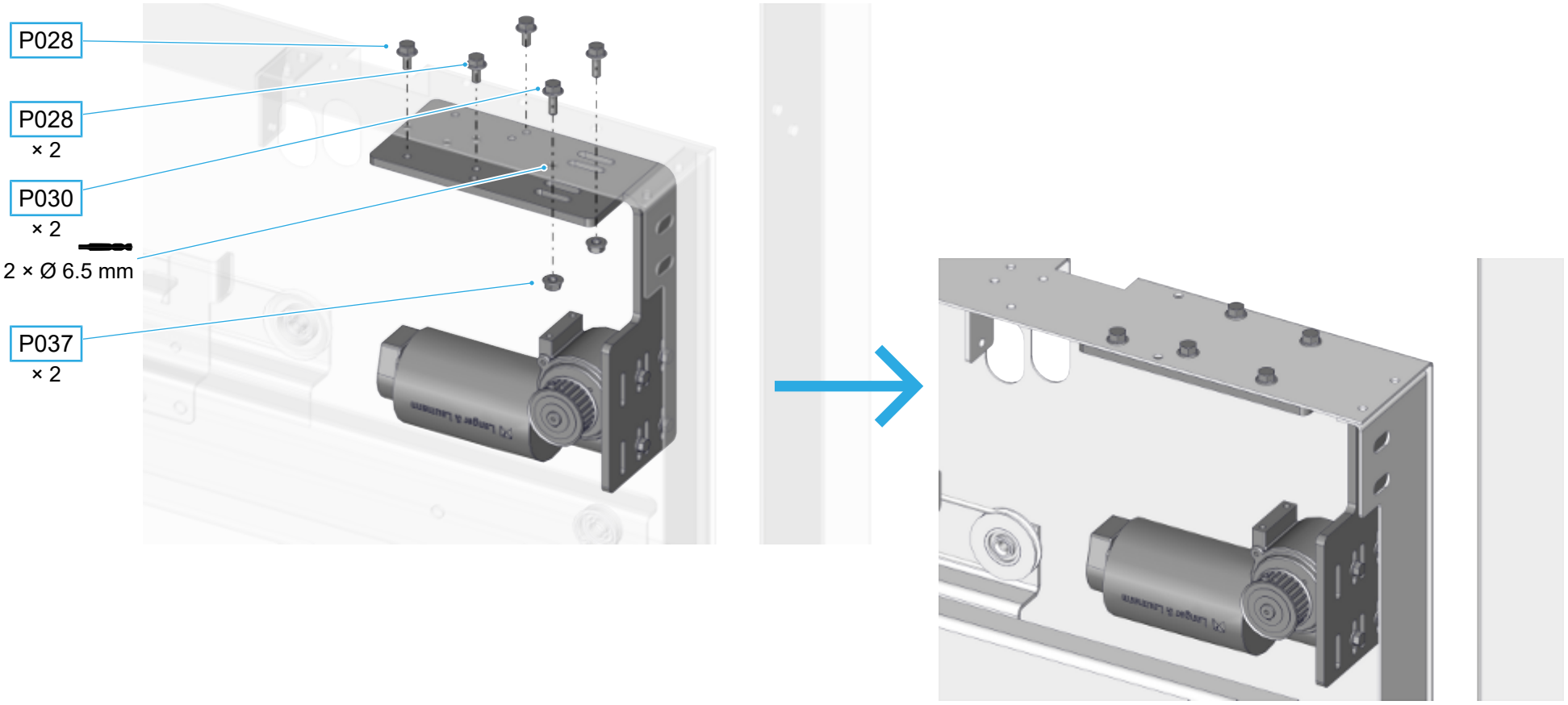
Pos.	Illustration	Item number	Description	Quantity
P037		1.36.00502	Nut M6	2
P047		1.36.05040	Set screw M5 × 5 mm	1

Tools

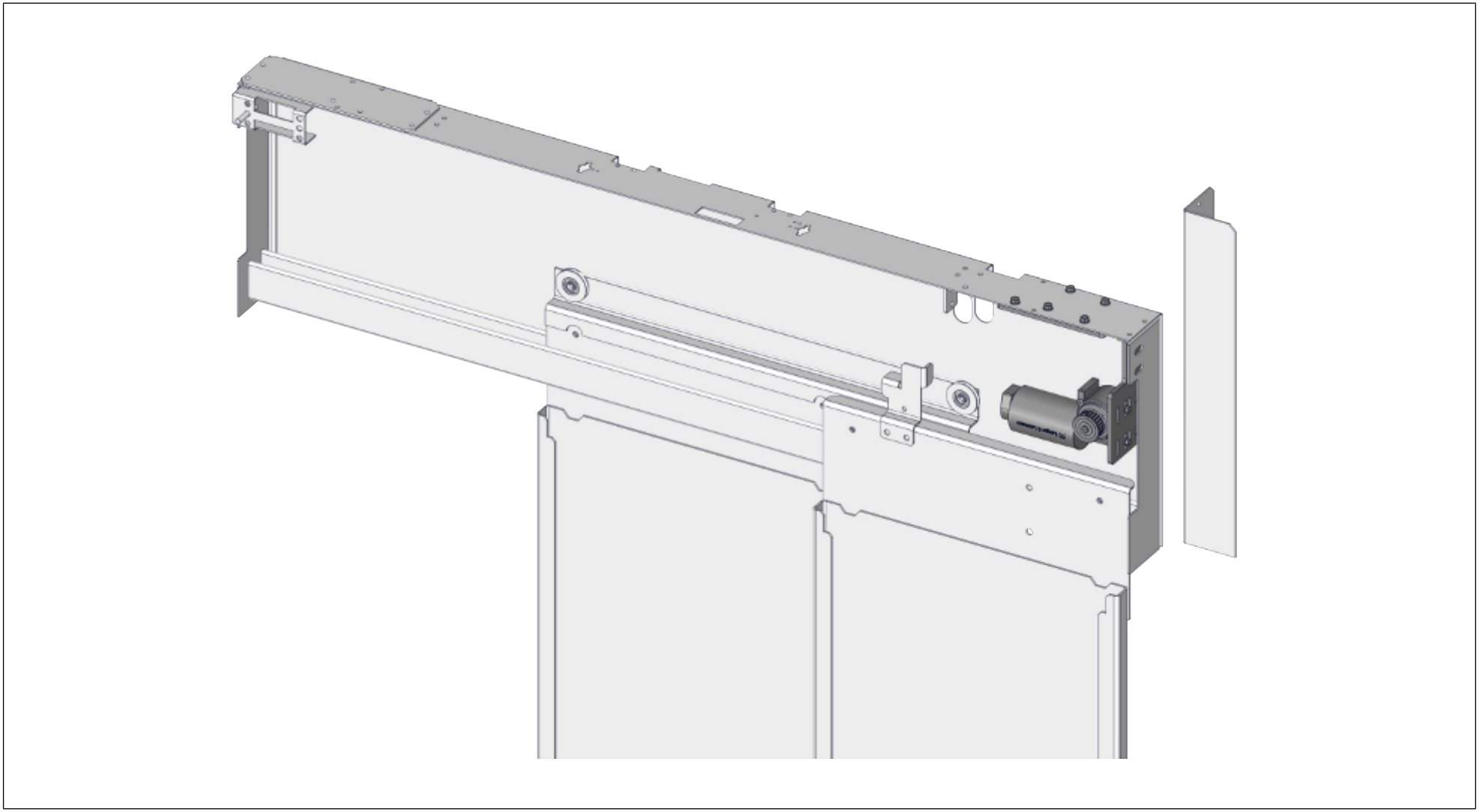
Pos.	Symbol	Description
T108		Combination spanner, size 8
T110		Combination wrench, size 10
T202.5		Allen key, size 2.5
T606.5		Drill bit, Ø 6.5 mm


P002
P047
P015


P017
P027
× 4

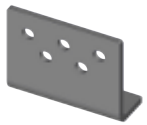
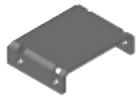


At the places which are locked with nuts, drill 2 x into the door frame.



8.2 Mounting the deflection unit

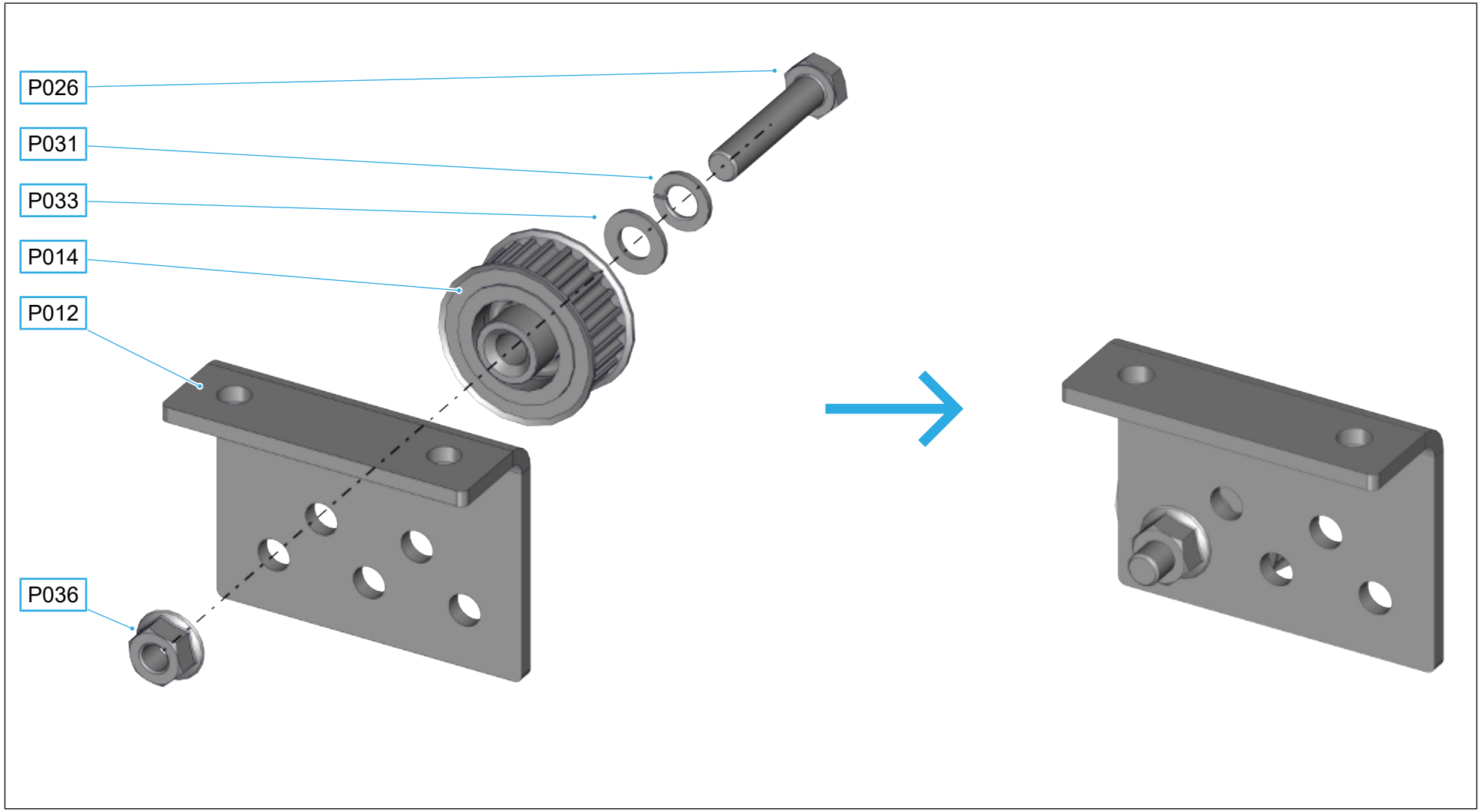
Components

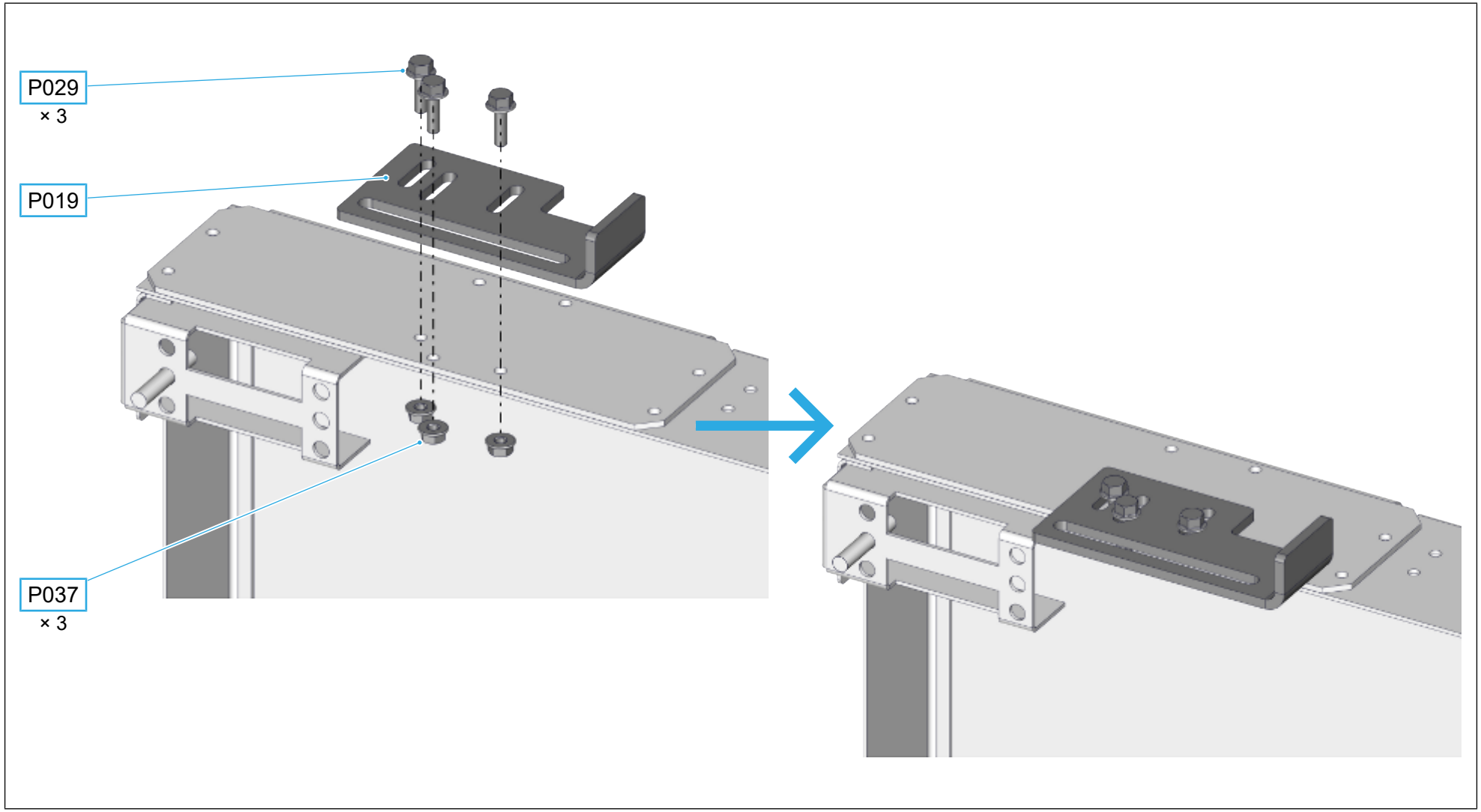
Pos.	Illustration	Item number	Description	Quantity
P012		1.20.60013	L-shaped bracket	1
P013		1.20.60110	L-shaped bracket	1
P014		1.20.60131	Deflection pulley, D = 37 mm, 5M	1
P018		1.20.60552	Angle bracket, C-shaped	1
P019		1.20.60555	L-shaped bracket	1
P026		1.36.00115	Hexagon head screw M8 × 40 mm	1
P029		1.36.00137	Locking screw M6 × 20 mm	3

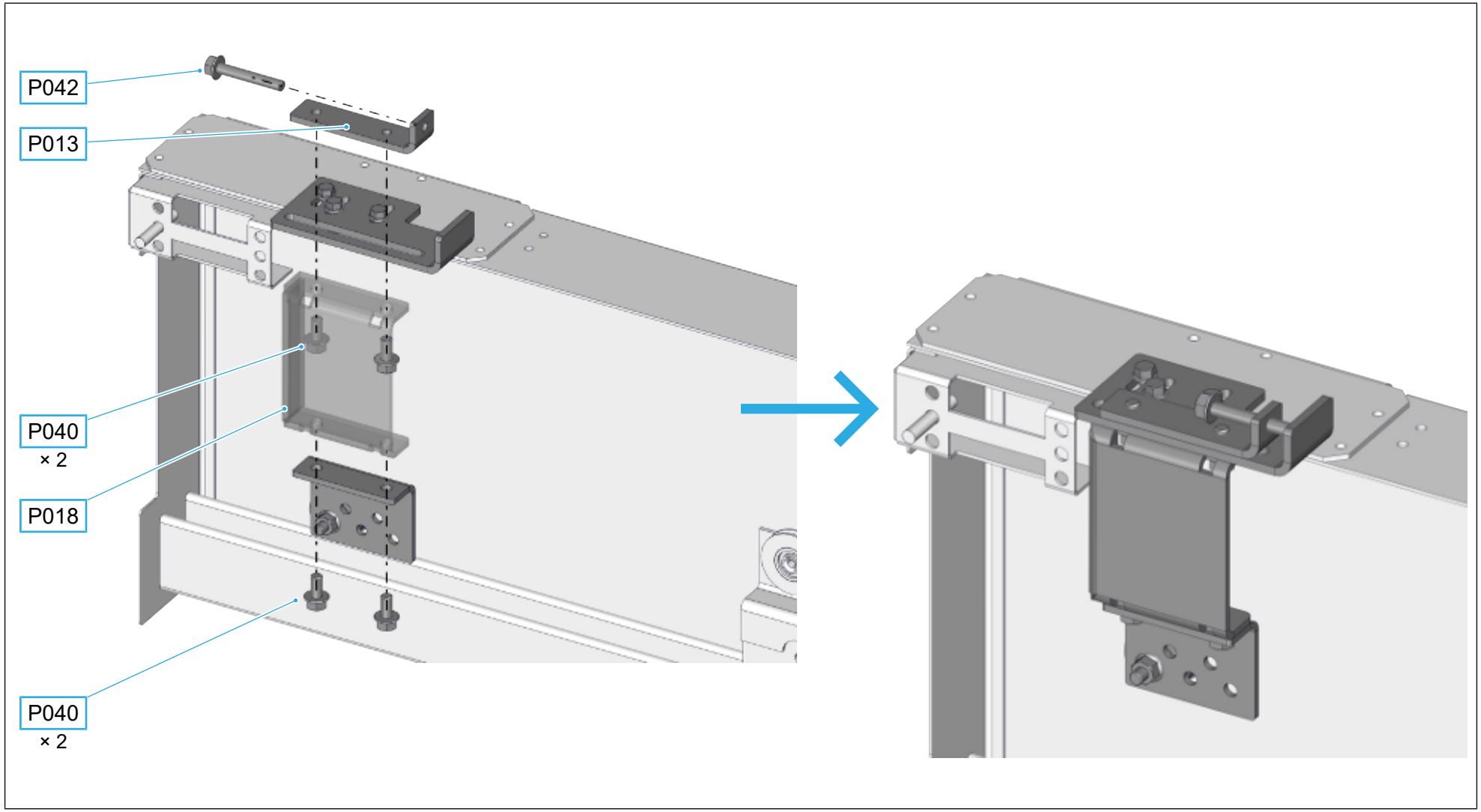
Pos.	Illustration	Item number	Description	Quantity
P031		1.36.00169	Spring washer M8	1
P033		1.36.00440	Washer M8	1
P036		1.36.00501	Nut M8	1
P037		1.36.00502	Nut M6	3
P040		1.36.00710	Locking screw M8 × 16 mm	4
P042		1.36.00749	Locking screw M8 × 50 mm	1

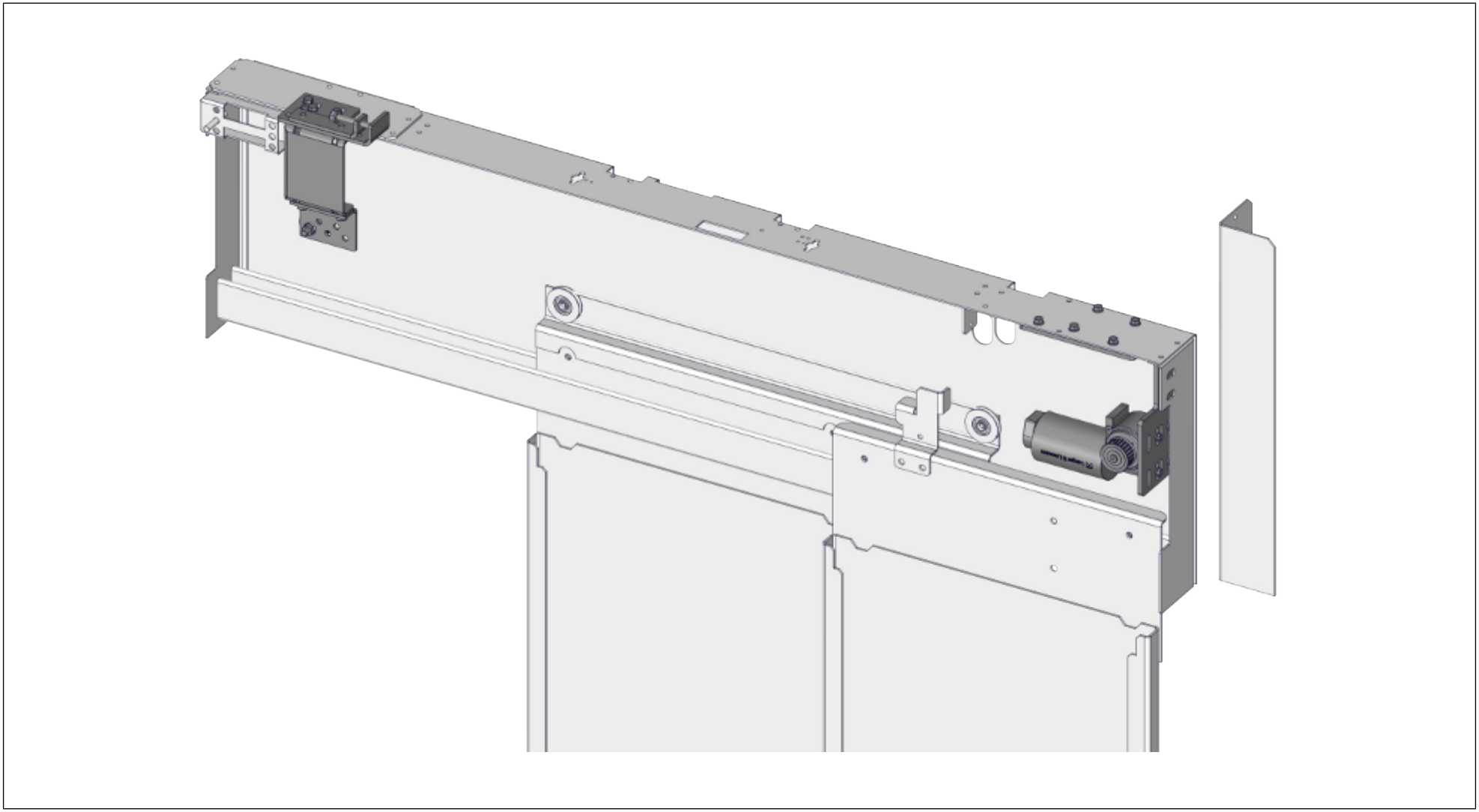
Tools

Pos.	Symbol	Description
T110	⬢	Combination wrench, size 10
T113	⬢	Combination wrench, size 13


P026
P031
P033
P014
P012
P036

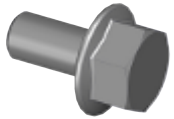

P029
× 3
P019
P037
× 3


P042
P013
P040
× 2
P018
P040
× 2



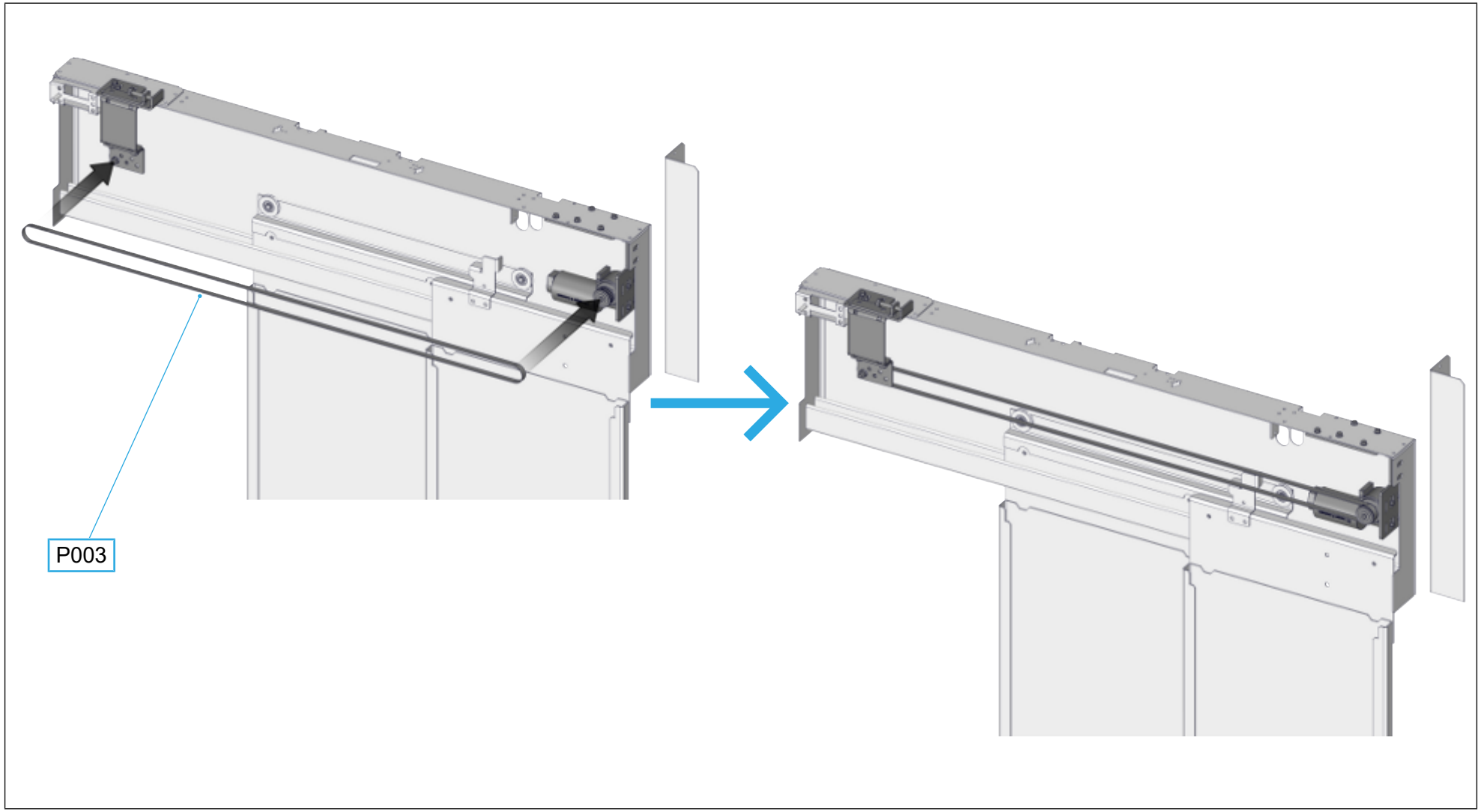
8.3 Mounting and tensioning the timing belt

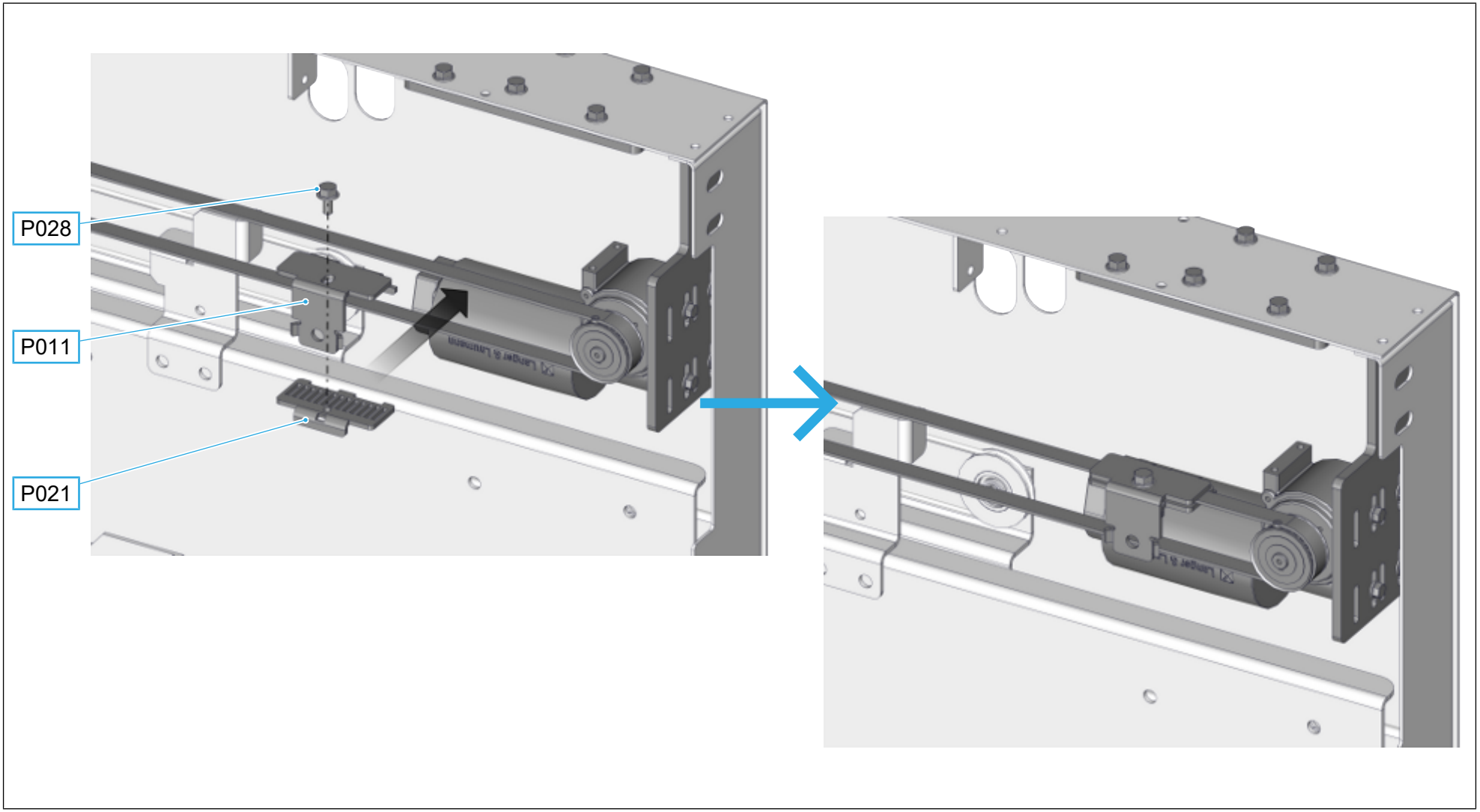
Components

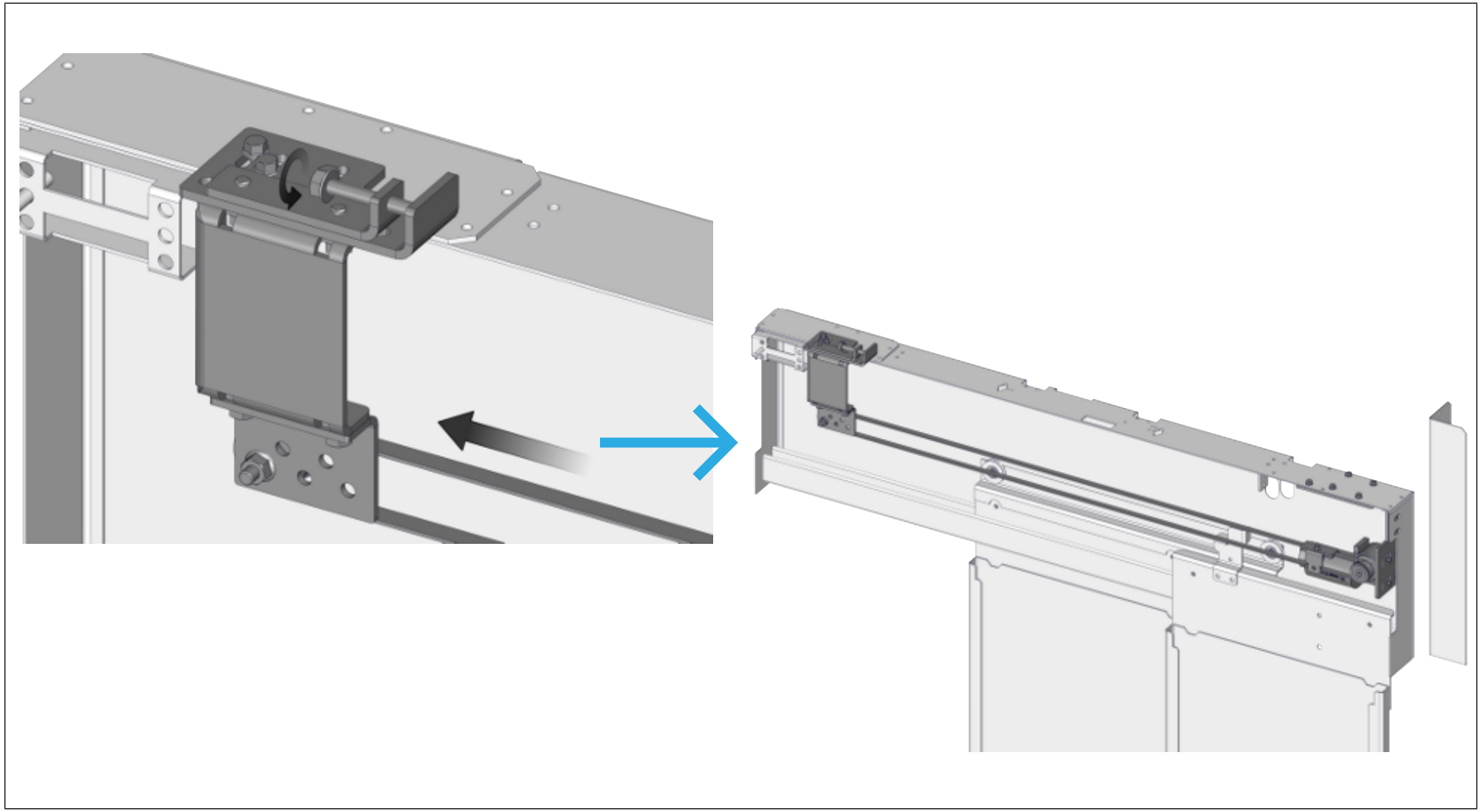
Pos.	Illustration	Item number	Description	Quantity
P003		8.20.60002.xx	Timing belt 8M	1
P011		1.20.60005	Timing belt lock, L-shaped	1
P021		1.20.60560	Synchronous belt lock 5M	1
P028		1.36.00135	Locking screw M6 × 12 mm	1

Tools

Pos.	Symbol	Description
T110	⬢	Combination wrench, size 10
T113	⬢	Combination wrench, size 13


P003

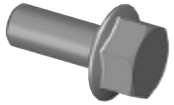
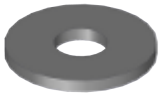

P028
P011
P021



8.4 Mounting the electrical skate

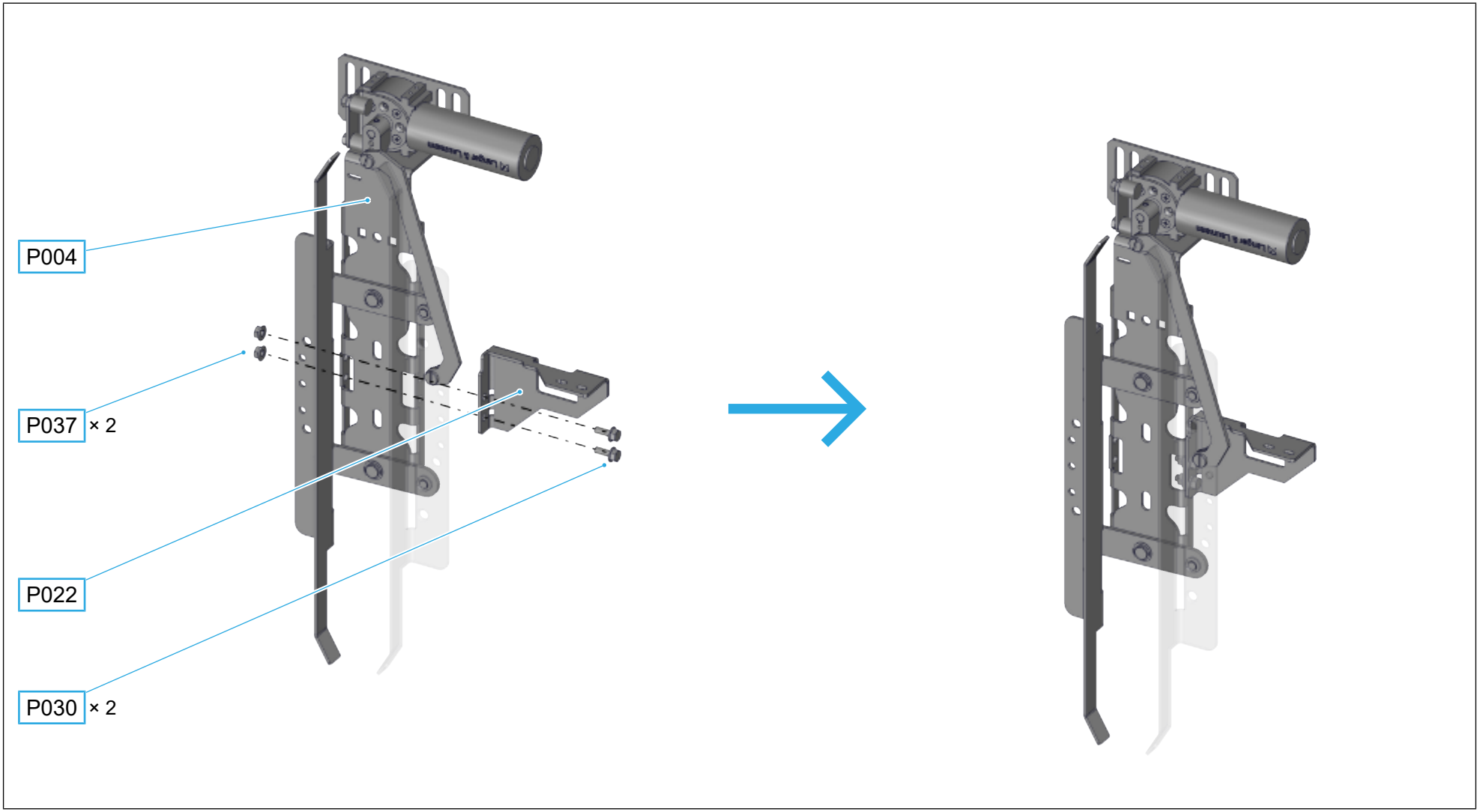
Components

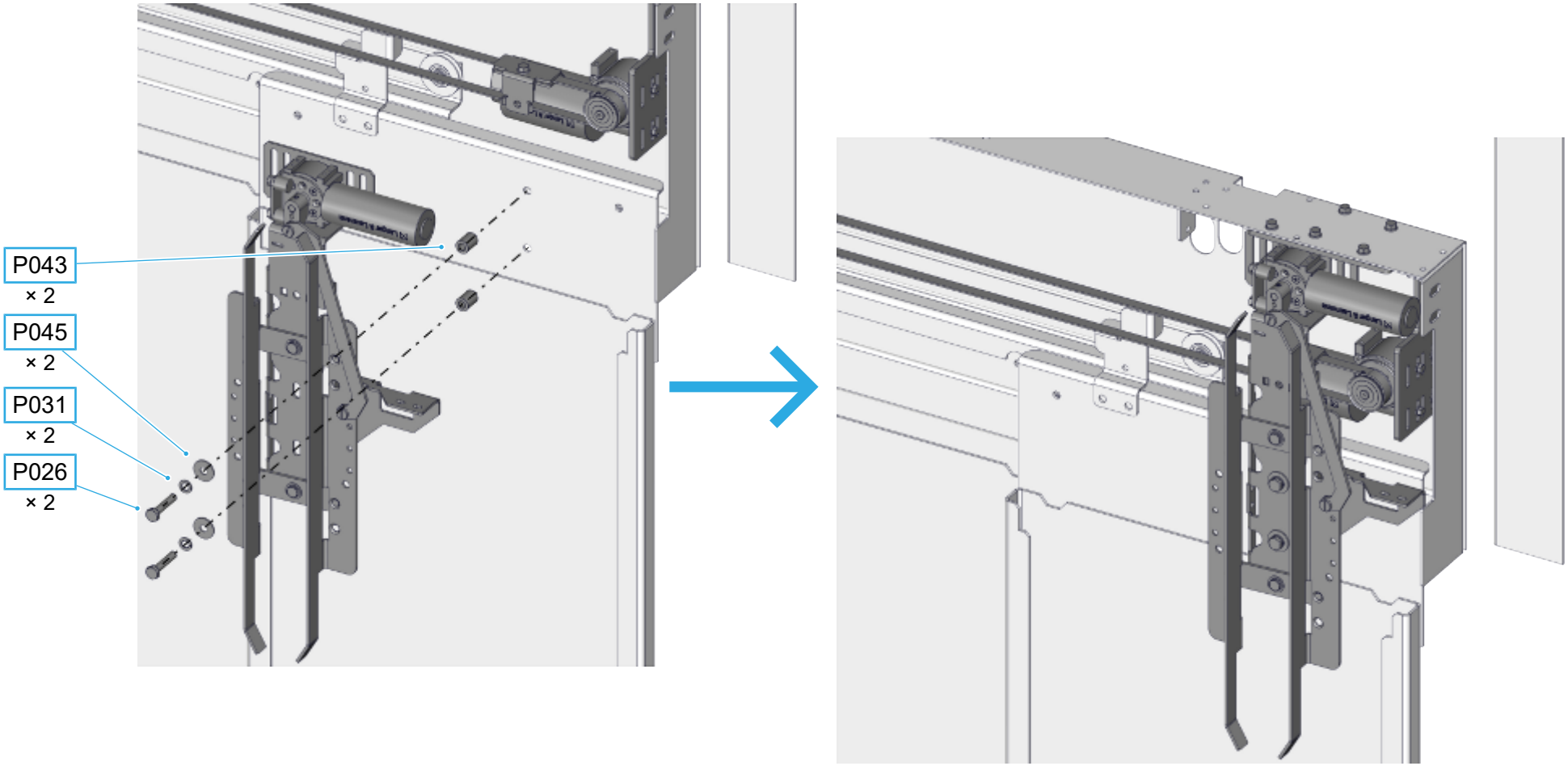
Pos.	Illustration	Item number	Description	Quantity
P004		8.20.20160	Electrical skate	1
P022		1.20.60565	L-shaped bracket	1
P026		1.36.00115	Hexagon head screw M8 × 40 mm	2
P030		1.36.00138	Locking screw M6 × 16 mm	2
P031		1.36.00169	Spring washer M8	2
P036		1.36.00501	Nut M8	1
P037		1.36.00502	Nut M6	2

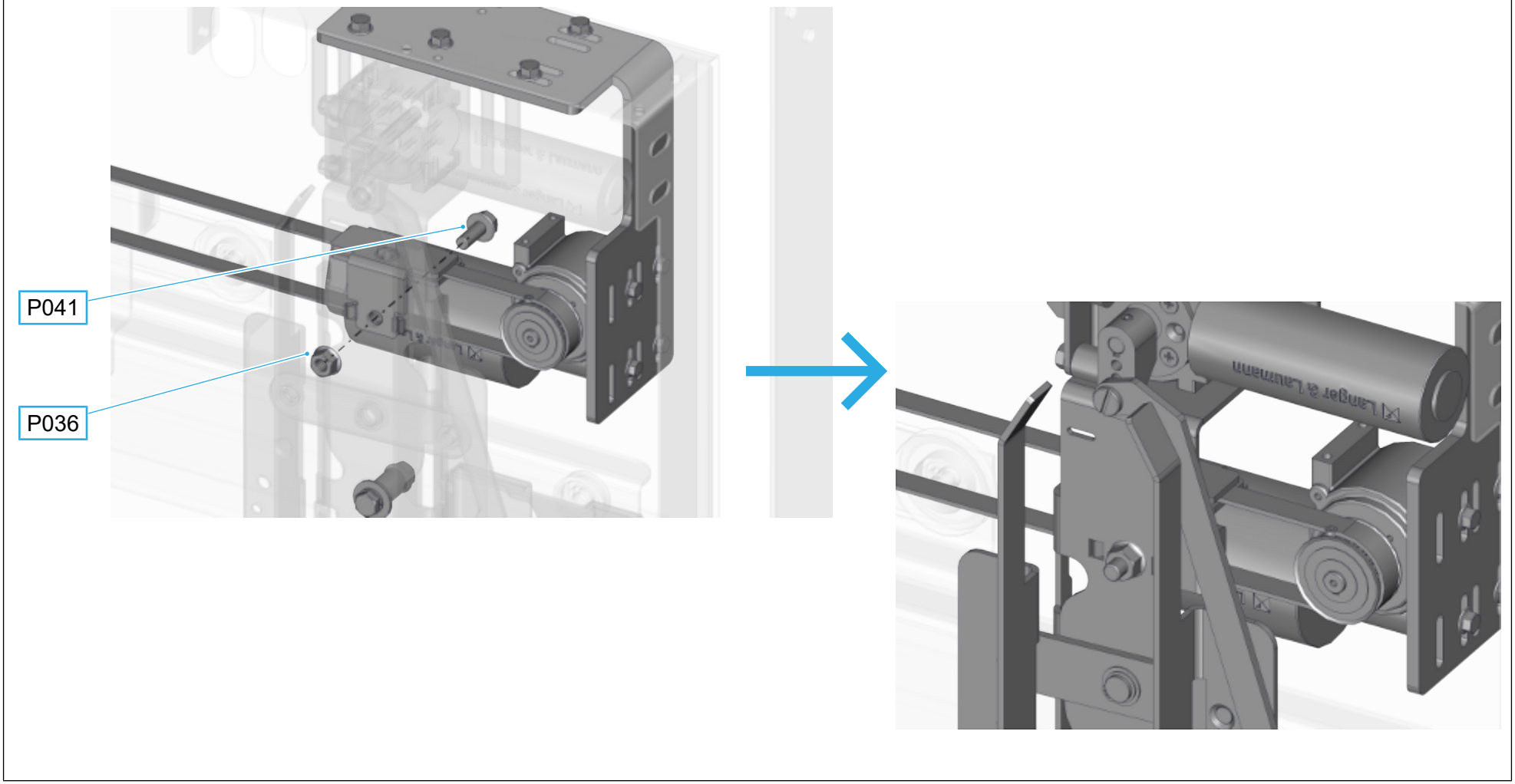
Pos.	Illustration	Item number	Description	Quantity
P041		1.36.00720	Locking screw M8 × 20 mm	1
P043		1.36.00871	Sleeve, D = 15 mm	2
P045		1.36.01035	Washer M8	2

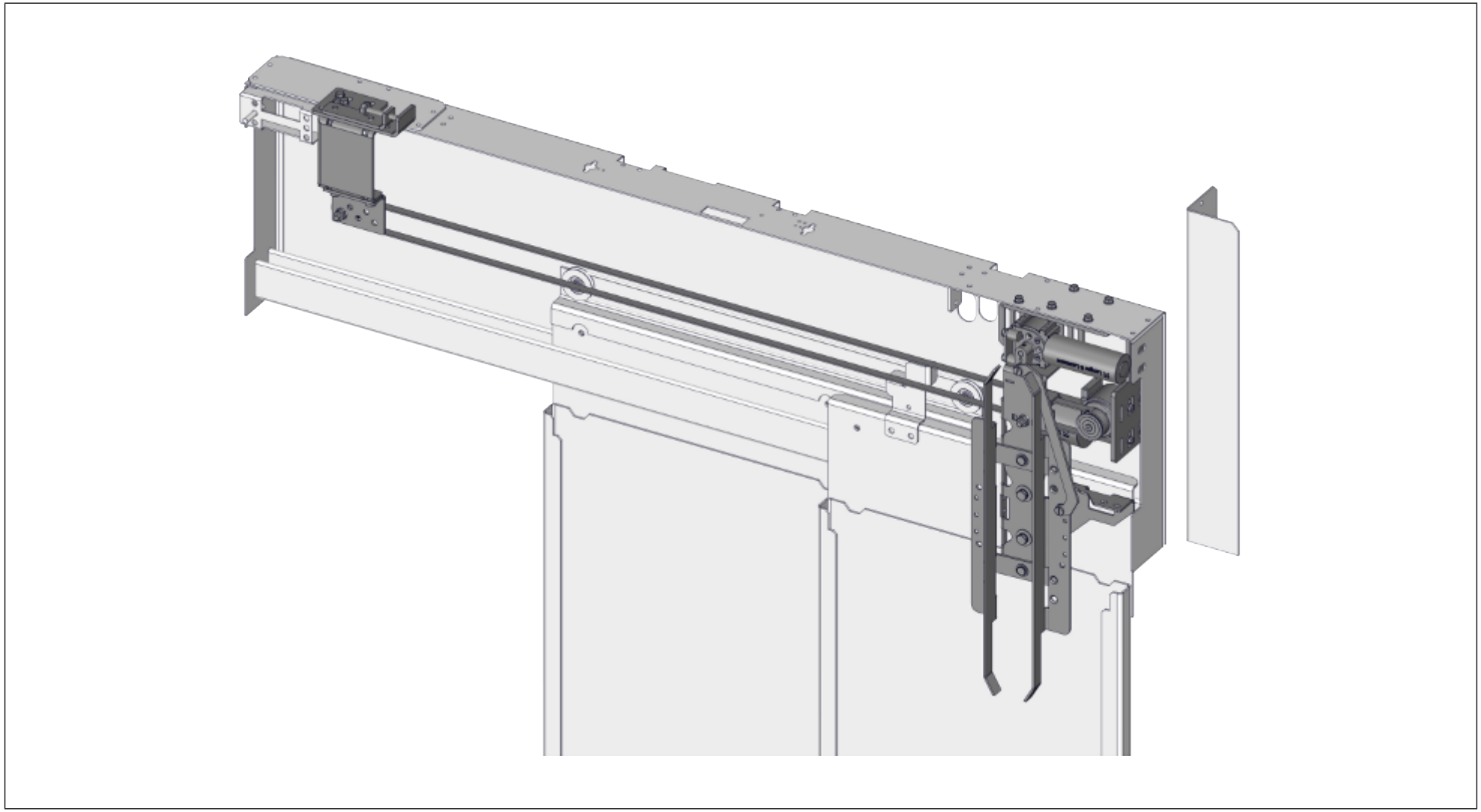
Tools

Pos.	Symbol	Description
T110	⬢	Combination wrench, size 10
T113	⬢	Combination wrench, size 13


P004
P037 × 2
P022
P030 × 2

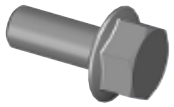

P043
× 2
P045
× 2
P031
× 2
P026
× 2


P041
P036



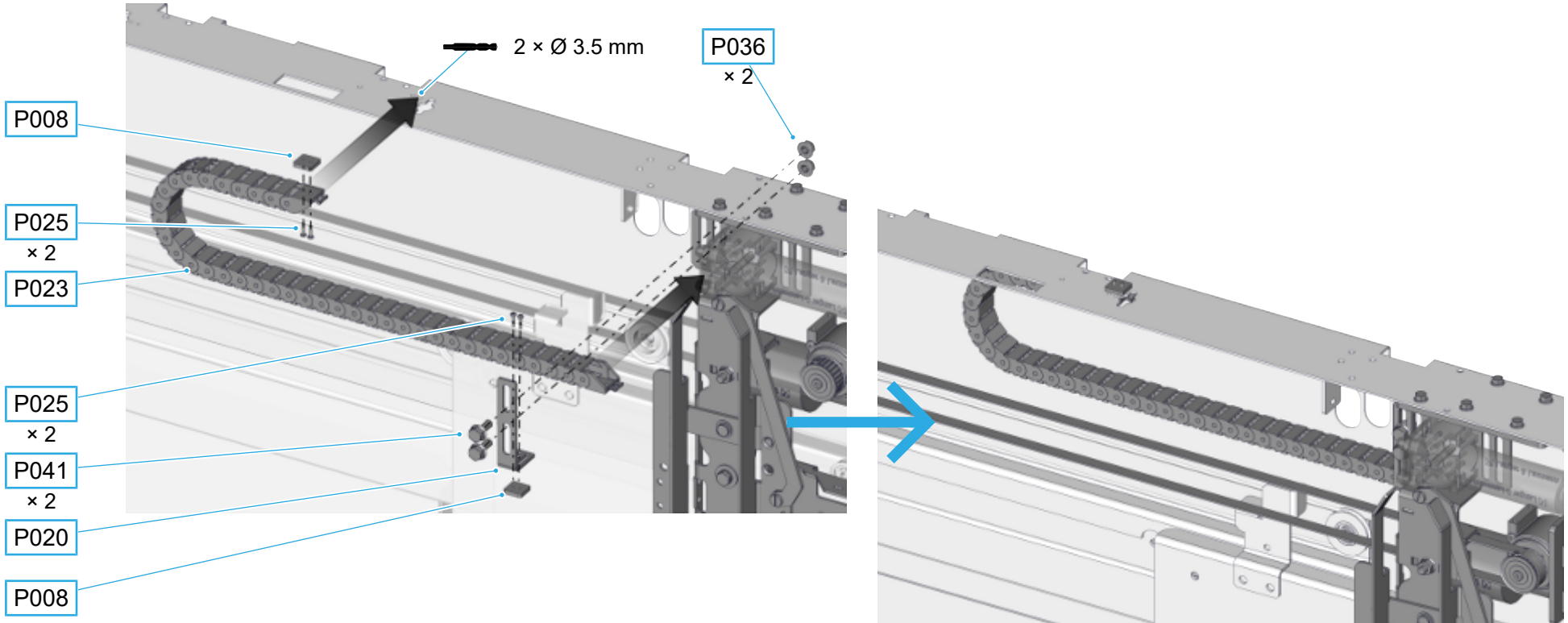
8.5 Mounting the energy chain

Components

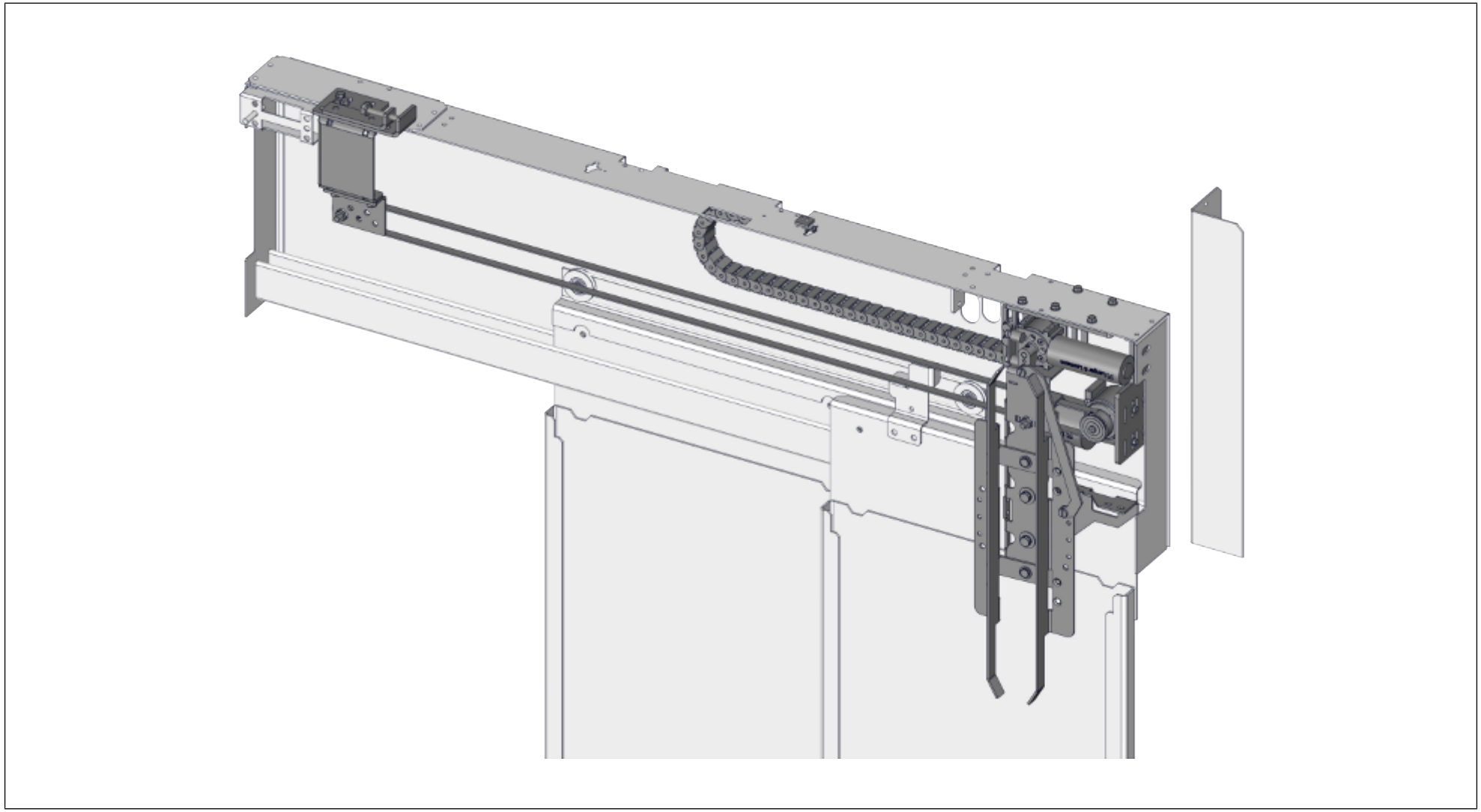
Pos.	Illustration	Item number	Description	Quantity
P008		1.20.30985	Plate, square	2
P020		1.20.60557	L-shaped bracket	1
P023		1.25.17050	Chain	1
P025		1.36.00020	Button head screw M3 × 12 mm	4
P036		1.36.00501	Nut M8	2
P041		1.36.00720	Locking screw M8 × 20 mm	2

Tools

Pos.	Symbol	Description
T010		Phillips screwdriver
T113		Combination wrench, size 13
T603.5		Drill bit, Ø 3.5 mm



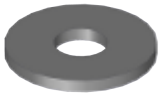
Drill 2 × into the door frame.



8.6 Mounting the car door locking device

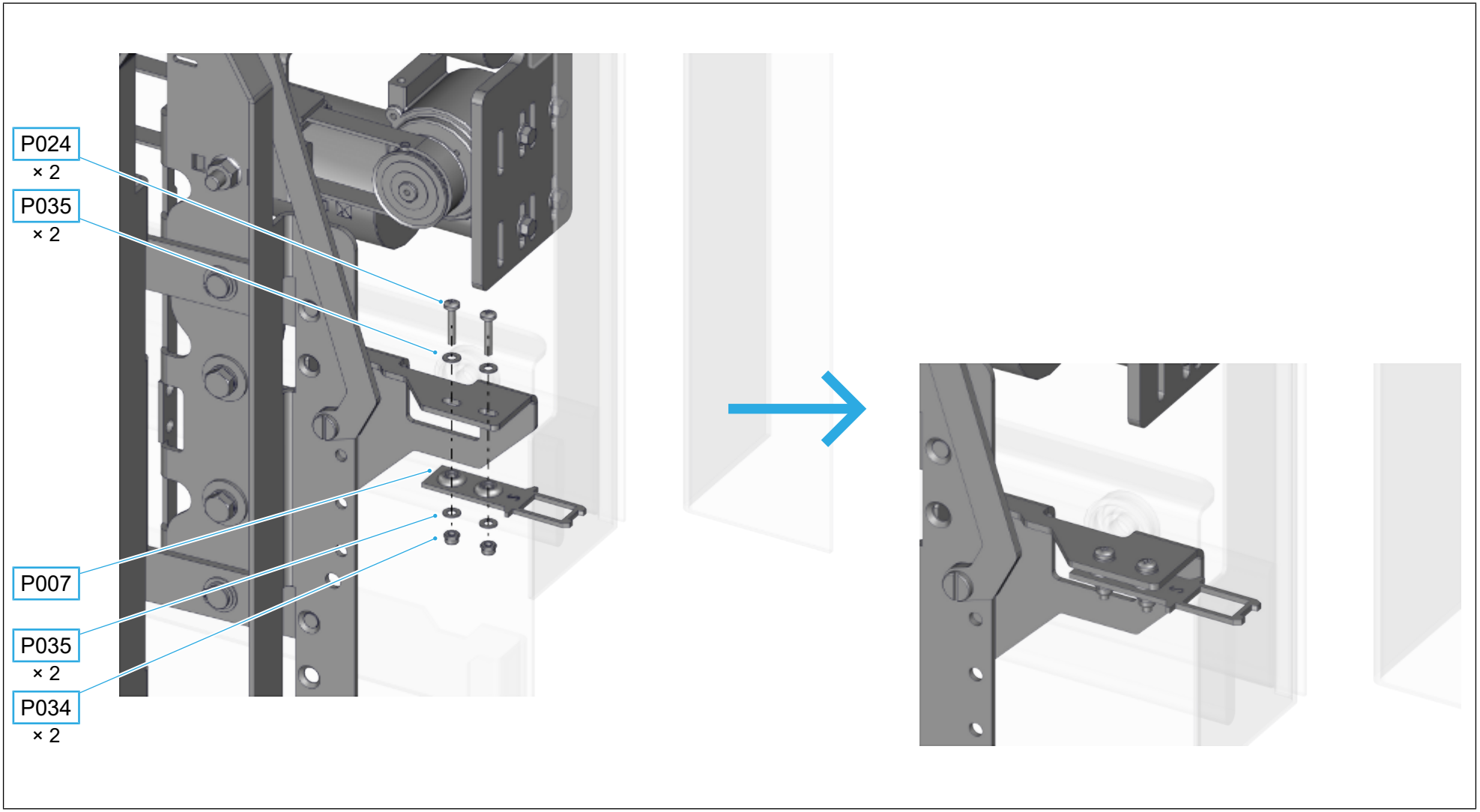
Components

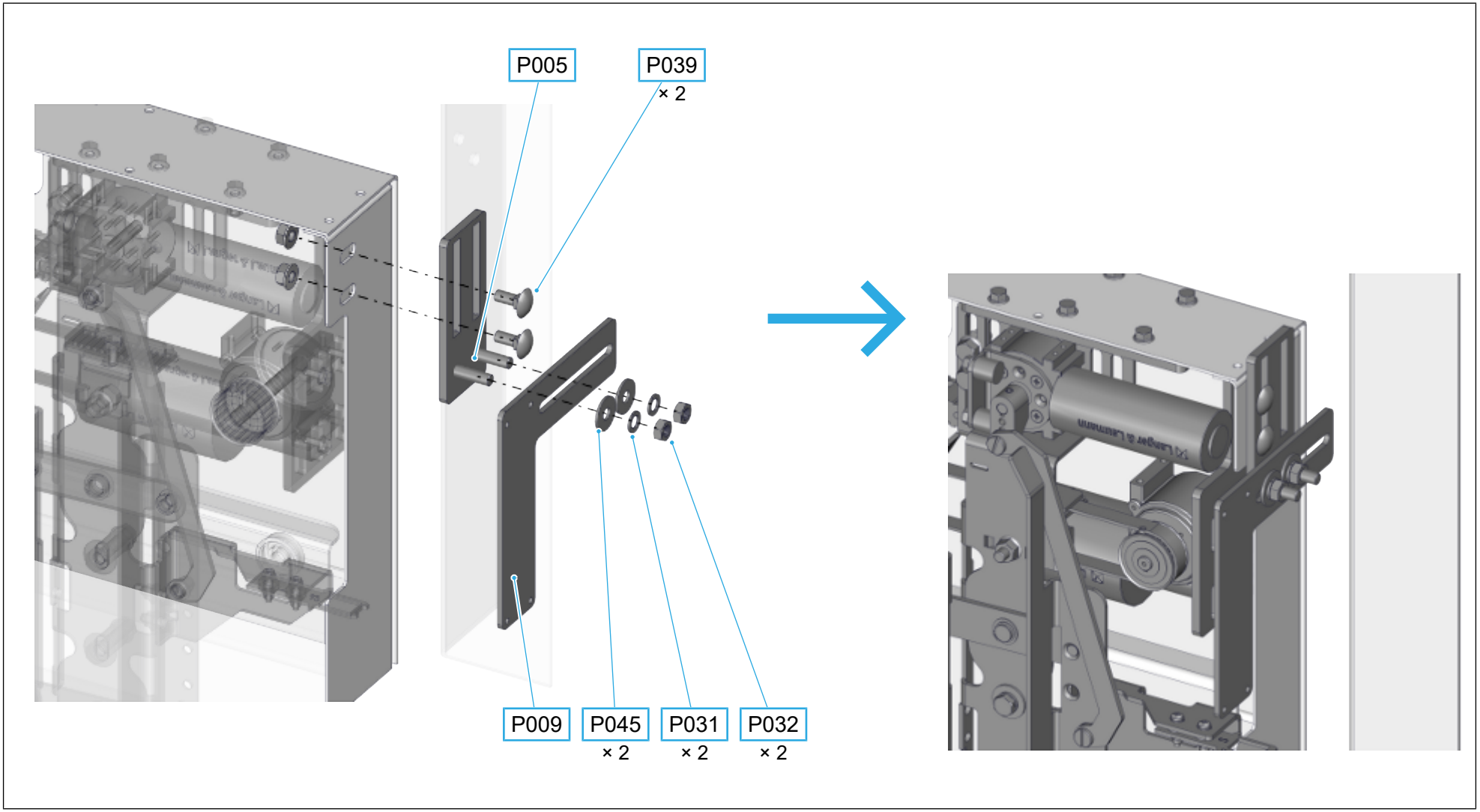
Pos.	Illustration	Item number	Description	Quantity
P005		2.20.34060	Bracket	1
P006		1.14.20712	Car door locking device	1
P007		1.14.20722	Rectangular plate	1
P009		1.20.34070	Plate	1
P024		1.36.00008	Button head screw M4 × 20 mm	2
P034		1.36.00455	Nut M4	2
P035		1.36.00480	Washer M4	4

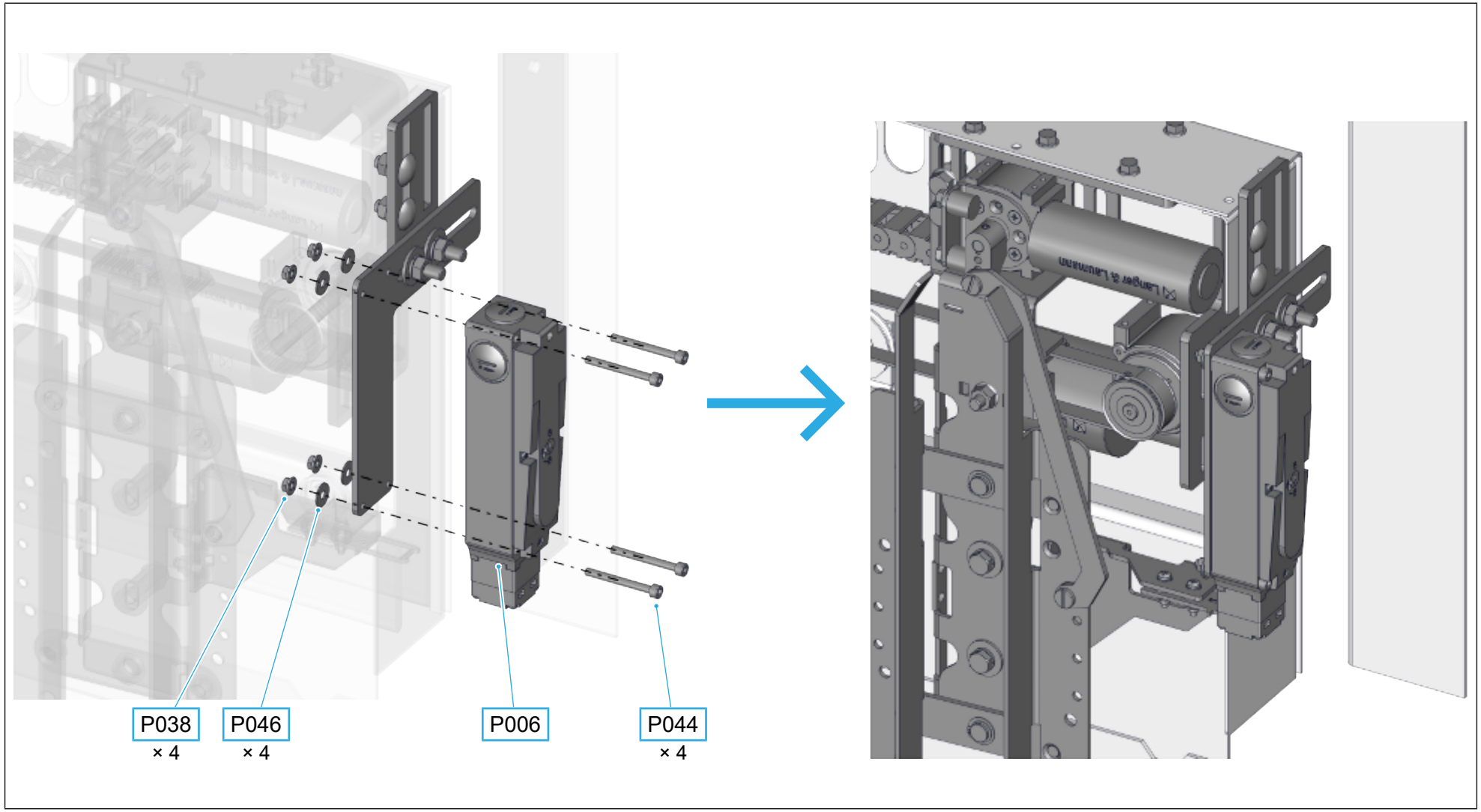
Pos.	Illustration	Item number	Description	Quantity
P031		1.36.00169	Spring washer M8	2
P038		1.36.00509	Nut M8	4
P039		1.36.00525	Mushroom head square neck screw M8 × 20 mm	2
P044		1.36.01028	Cylinder head screw M5 × 45 mm	4
P045		1.36.01035	Washer M8	2
P046		1.36.01037	Washer M5	4

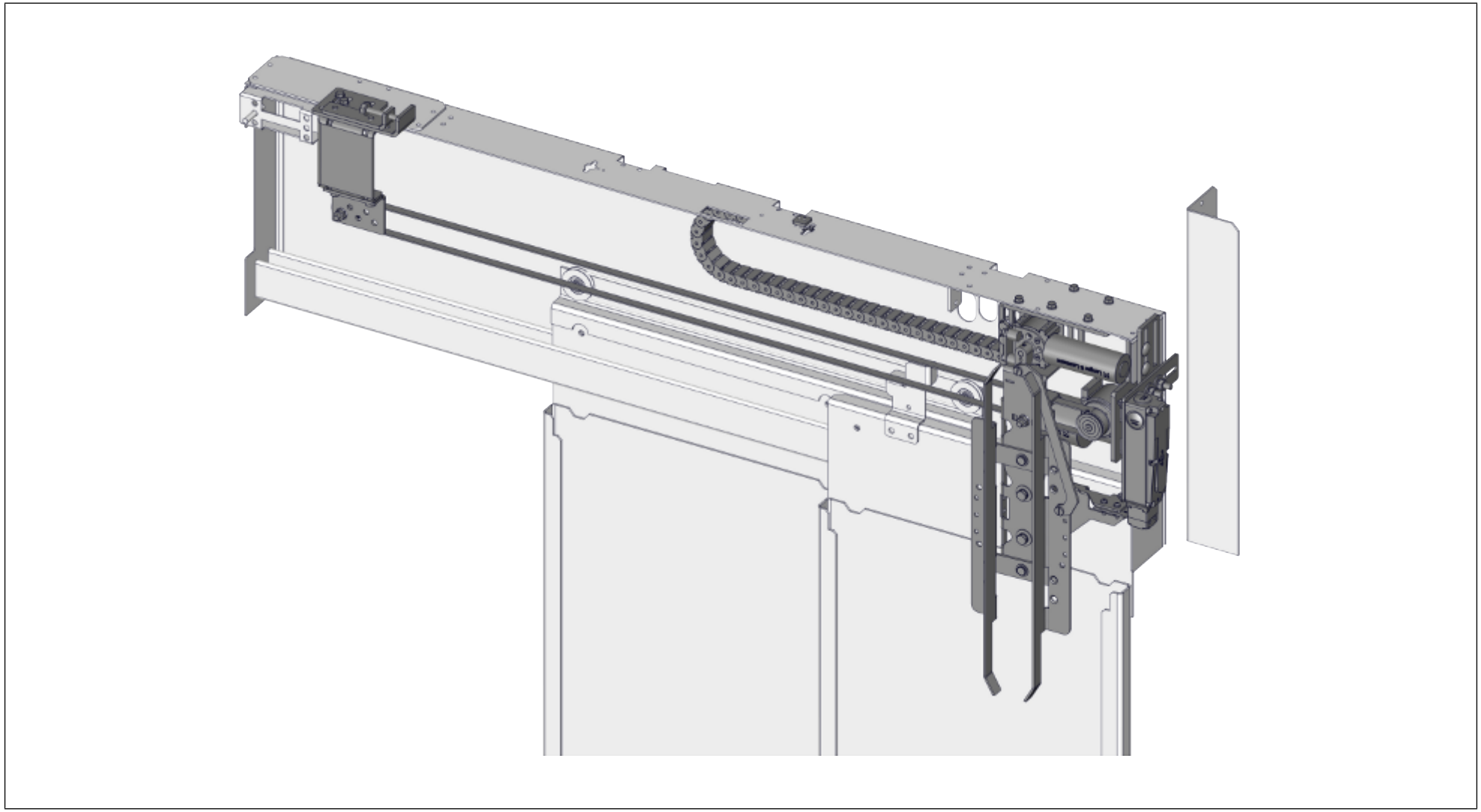
Tools

Pos.	Symbol	Description
T010		Phillips screwdriver
T107		Combination spanner, SW 7
T108		Combination spanner, size 8
T113		Combination wrench, size 13
T204.0		Allen key, size 4


P024
× 2
P035
× 2
P007
P035
× 2
P034
× 2


P005
P039
× 2
P009
P045
× 2
P031
× 2
P032
× 2


P038
× 4
P046
× 4
P006
P044
× 4



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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