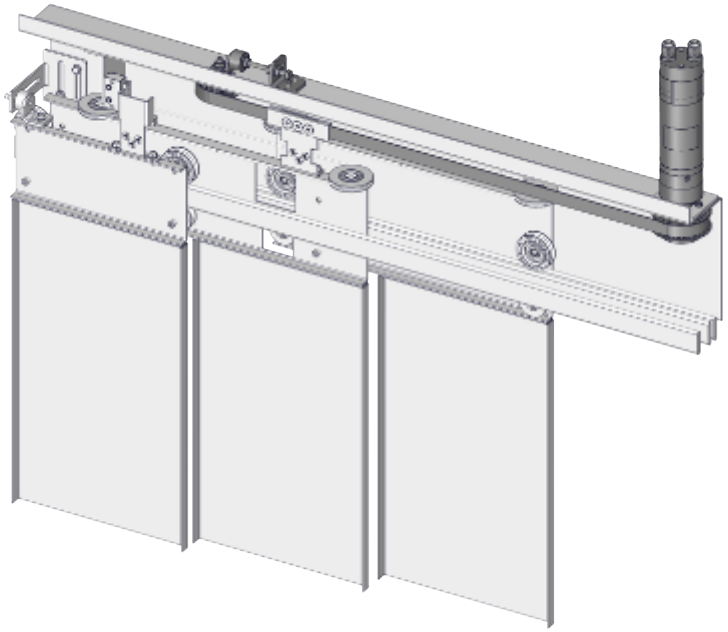
Langer & Laumann®
smart door solutions



Conversion Instructions

Otis Protecta

to TSG V4

Shows **TR**, **TL** as a mirror image of it. **ZT** 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:

— Otis Protecta 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Using an outdated version of this and any required and supplementary documentation can lead to incorrect assembly.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 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 byLanger & 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 serves to protect personnel from health and safety risks at work. The prescribed protective equipment must be worn.

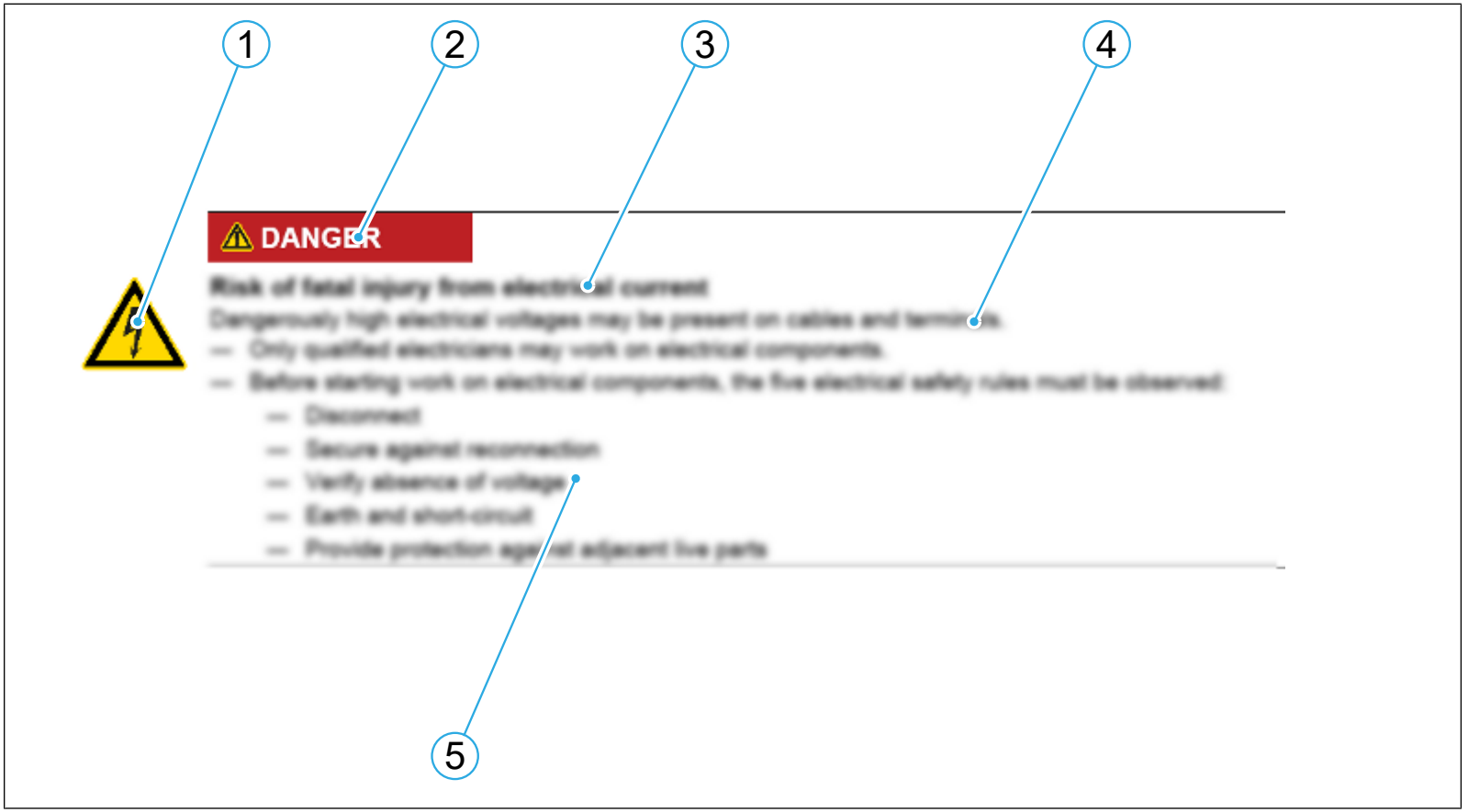
Symbol	Meaning
	Protective clothing must be worn to protect against hazards in the workplace.
	Non-slip safety footwear must be worn to prevent injuries to feet.
	Cut resistant and puncture resistant protective gloves must be worn to prevent hand injuries.
	Hard hats must be worn to prevent head injuries.
	Safety goggles must be worn to prevent eye injuries.
	Hearing protectors must be worn to protect against noise.
	Safety harnesses must be worn to protect 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

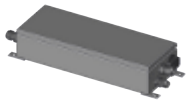
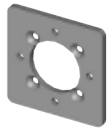
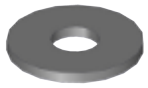
The following hazard symbols are used in this document:

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 motor	1
P002		8.20.504xx.xx	TSG motor	1
P003		1.20.60168	Spacer D = 14 mm	1
P004		1.20.60750	Timing belt pulley D = 72.77 mm, 3/8” L	1
P005		1.20.92170	Square motor bracket	1
P006		1.36.00016	Button head screw M5 × 16 mm	4
P007		1.36.00165	Washer M5	4

Pos.	Illustration	Item number	Description	Quantity
P008		1.36.00353	Countersunk screw M5 × 12 mm	4
P009		1.36.00451	Washer M4	1
P010		1.36.00509	Nut M8	4
P011		1.36.00635	Hexagon head screw M4 × 30 mm	1

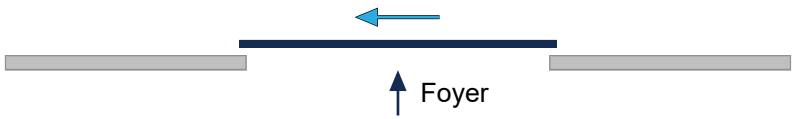
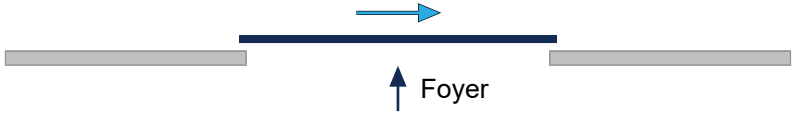
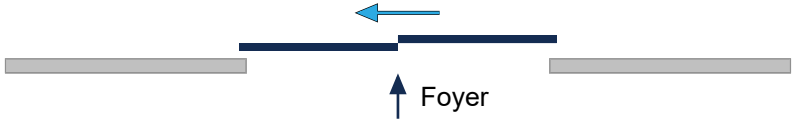
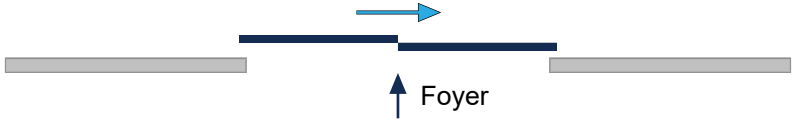
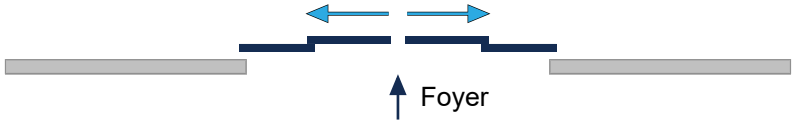
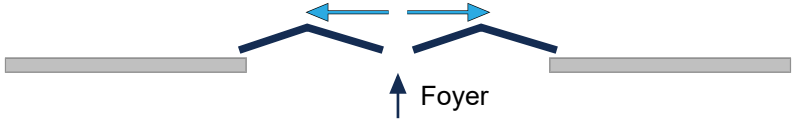
4 Required tools

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, SW 8
T113		Combination wrench, size 13
T1xx		Combination spanners, as needed
T203.0		Allen key, size 3
T2xx.x		Allen keys, as needed
T605.5		Drill bit, Ø 5.5 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

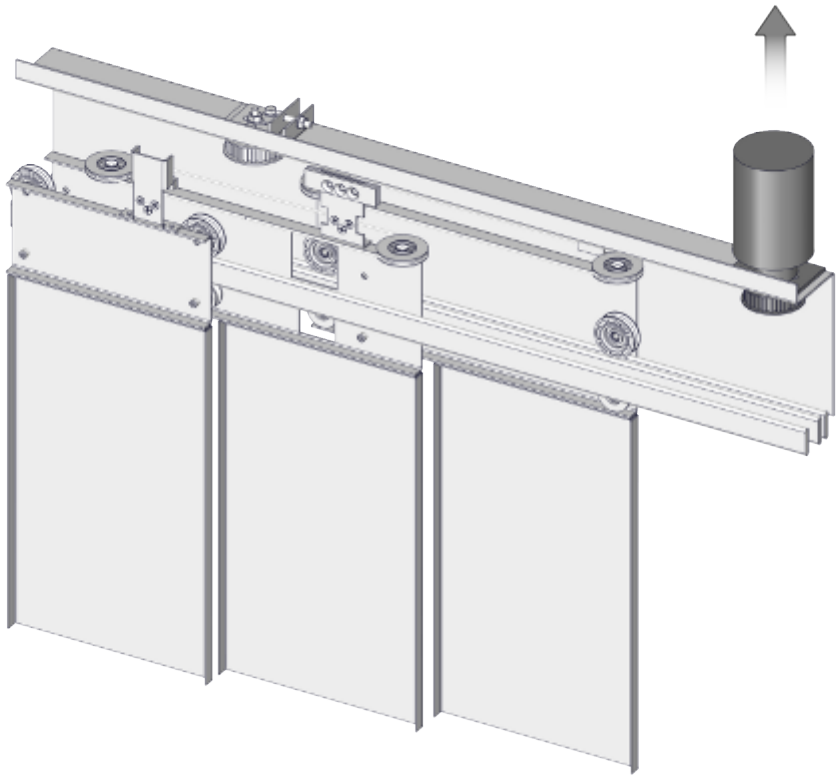
Dangerously high electrical voltages may be present on cables and terminals.

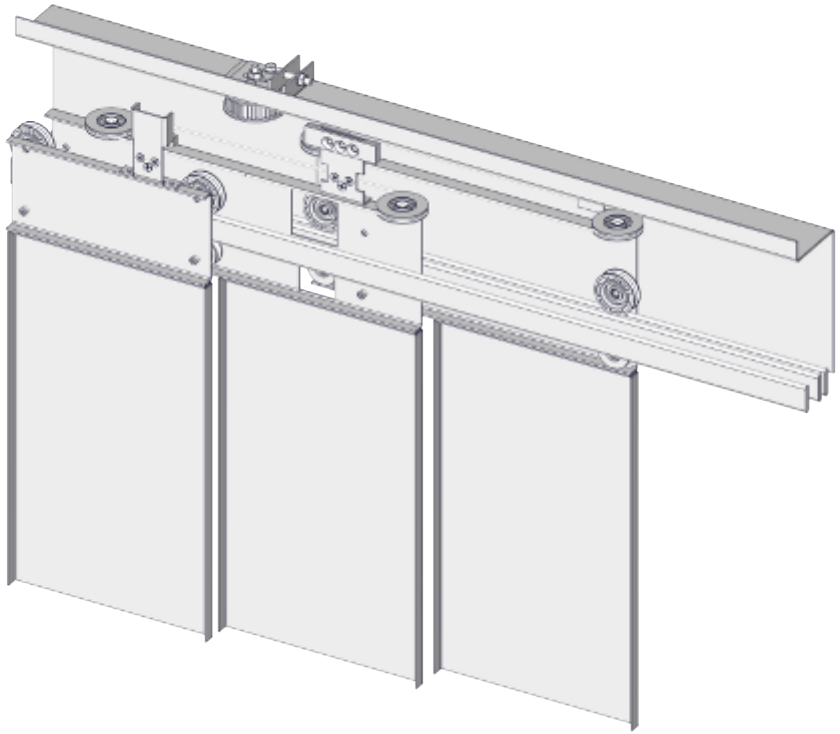
— Only qualified electricians may work on electrical components.
— Before starting work on electrical components, the five electrical safety rules must be observed:
  — Disconnect
  — Secure against reconnection
  — Verify absence of voltage
  — Earth and short-circuit
  — Provide protection against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

6.1 Dismantling the components

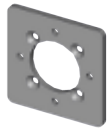
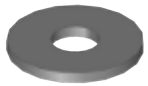




7 Assembly

7.1 Mounting the motor, bracket and timing belt pulley on the door frame

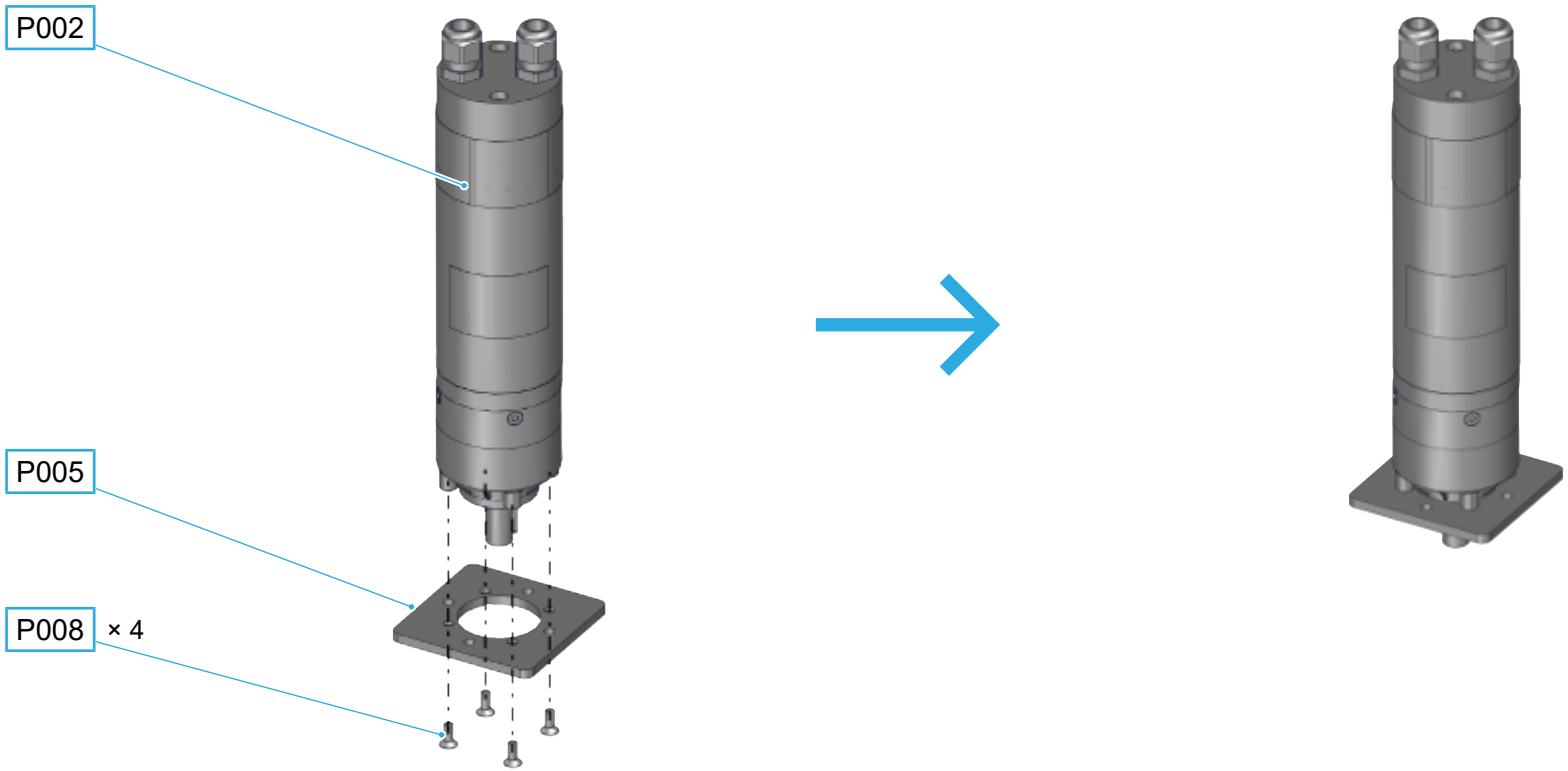
Components

Pos.	Illustration	Item number	Description	Quantity
P002		8.20.504xx.xx	TSG motor	1
P005		1.20.92170	Square motor bracket	1
P006		1.36.00016	Button head screw M5 × 16 mm	4
P007		1.36.00165	Washer M5	4
P008		1.36.00353	Countersunk screw M5 × 12 mm	4
P010		1.36.00509	Nut M8	4

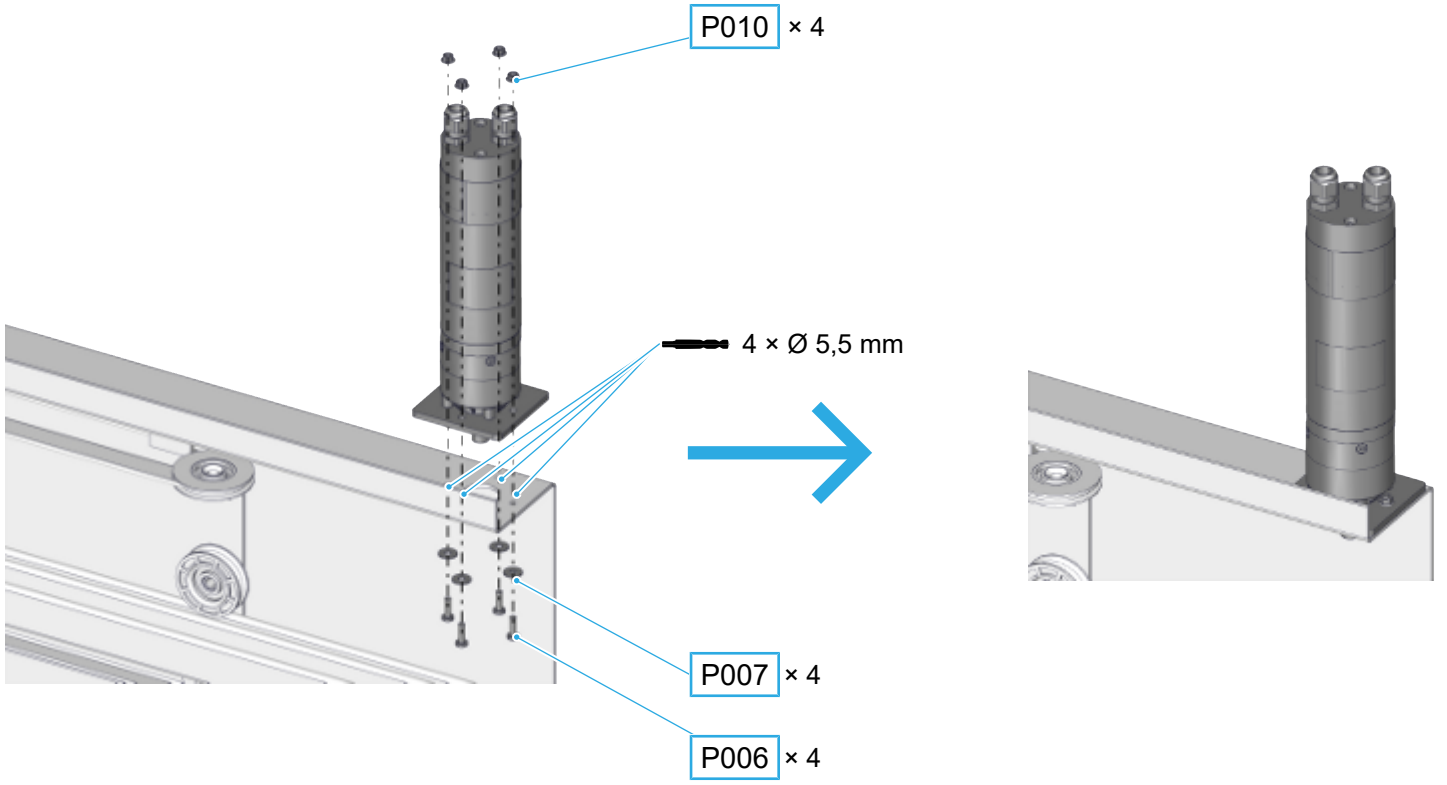
Tools

Pos.	Symbol	Description
T010		Phillips screwdriver
T108		Combination spanner, SW 8
T203.0		Allen key, size 3
T605.5		Drill bit, Ø 5.5 mm

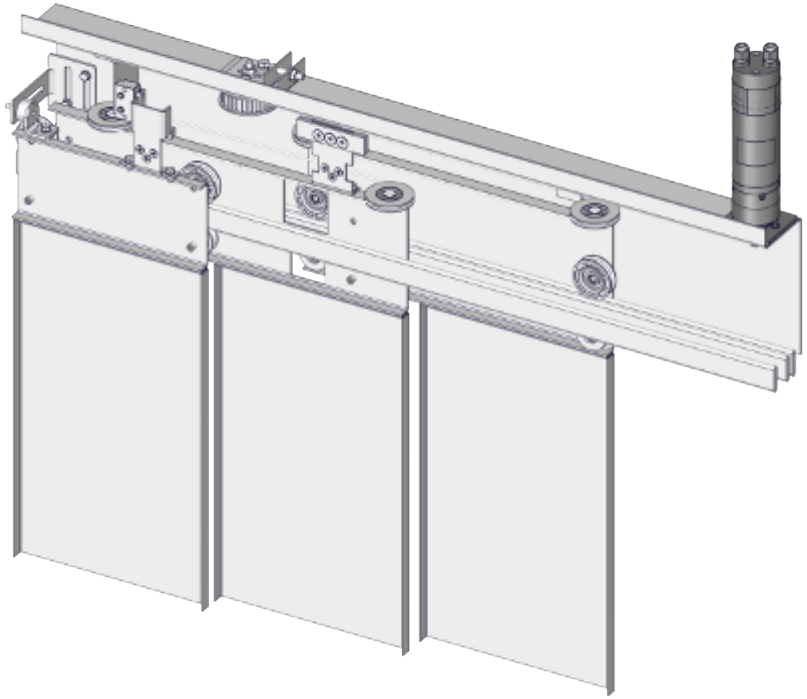
7.1.1 Mounting the bracket on the motor



7.1.2 Mounting the motor with bracket on the door frame



7.1.3 Motor, bracket and timing belt pulley mounted on the door frame



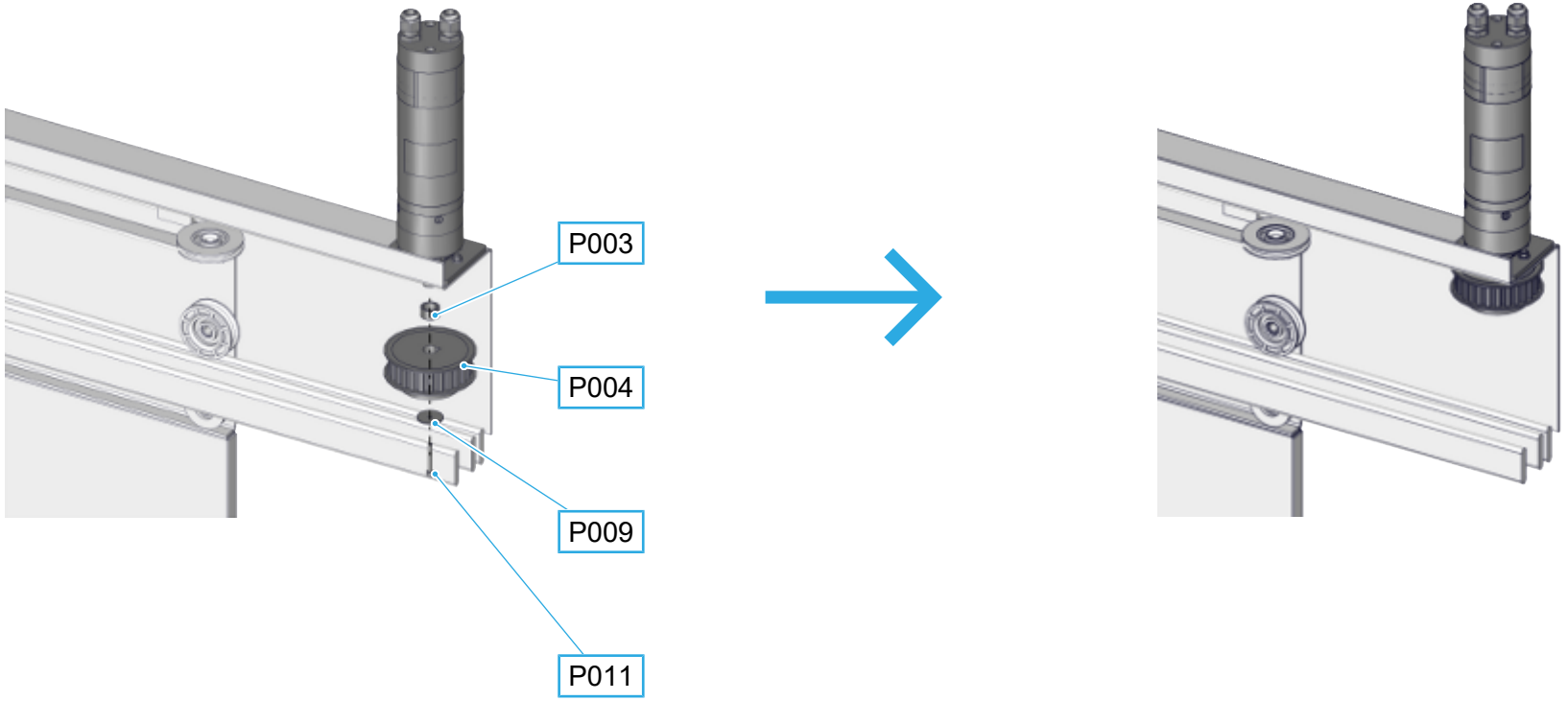
7.2 Mounting the timing belt pulley on the motor

Components

Pos.	Illustration	Item number	Description	Quantity
P003		1.20.60168	Spacer D = 14 mm	1
P004		1.20.60750	Timing belt pulley D = 72.77 mm, 3/8” L	1
P009		1.36.00451	Washer M4	1
P011		1.36.00635	Hexagon head screw M4 × 30 mm	1

Tools

Pos.	Symbol	Description
T203.0		Allen key, size 3

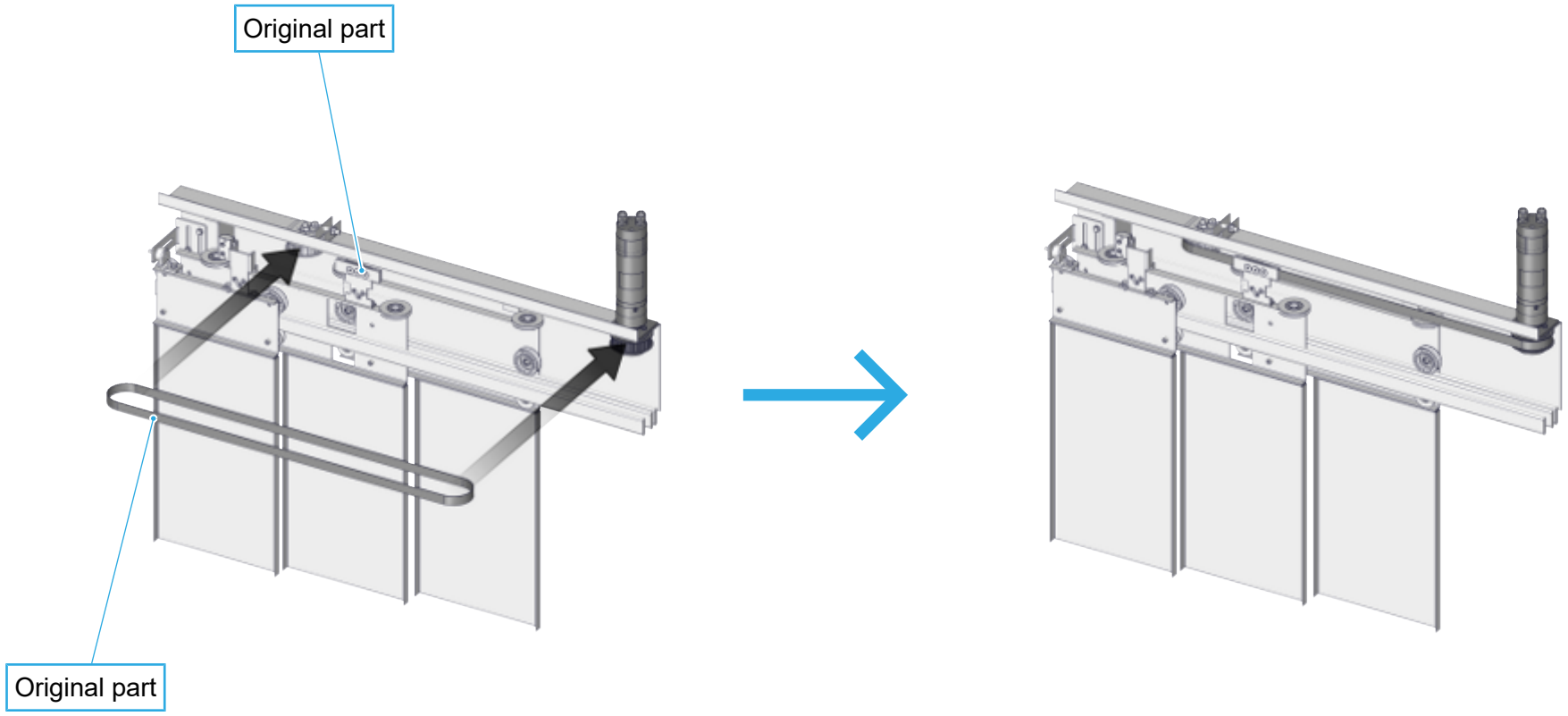

P003
P004
P009
P011

7.3 Mounting and tensioning the timing belt

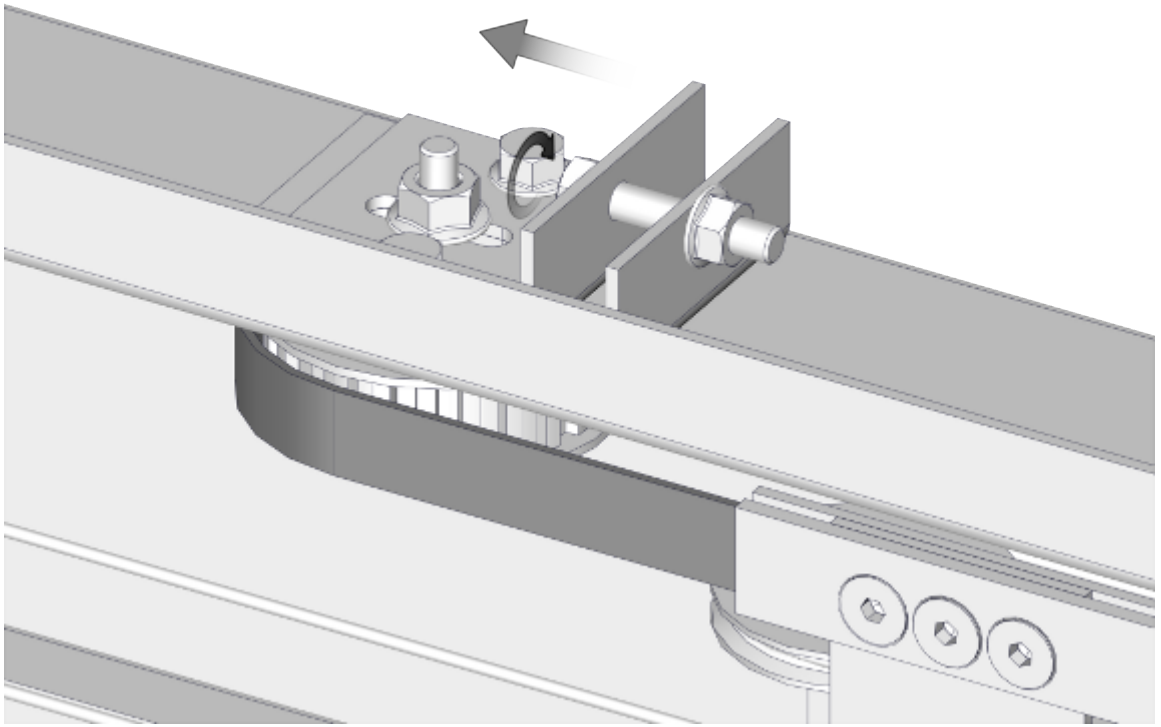
Tools

Pos.	Symbol	Description
T113		Combination wrench, size 13
T203.0		Allen key, size 3
T2xx.x		Allen keys, as needed

7.3.1 Mounting the timing belt on the original door panel cams



7.3.2 Tightening the timing belt



8 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.

8.1 Recommended parameter settings

Parameter	Function	Value
P2	Maximum opening speed	15
P3	Maximum closing speed	10
c6	Acceleration in the opening direction	10
c7	Deceleration in the opening direction	10
c8	Acceleration in the closing direction	10
c9	Deceleration in the closing direction	15
h6	Speed after return of mains power supply and speed while measuring	6

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