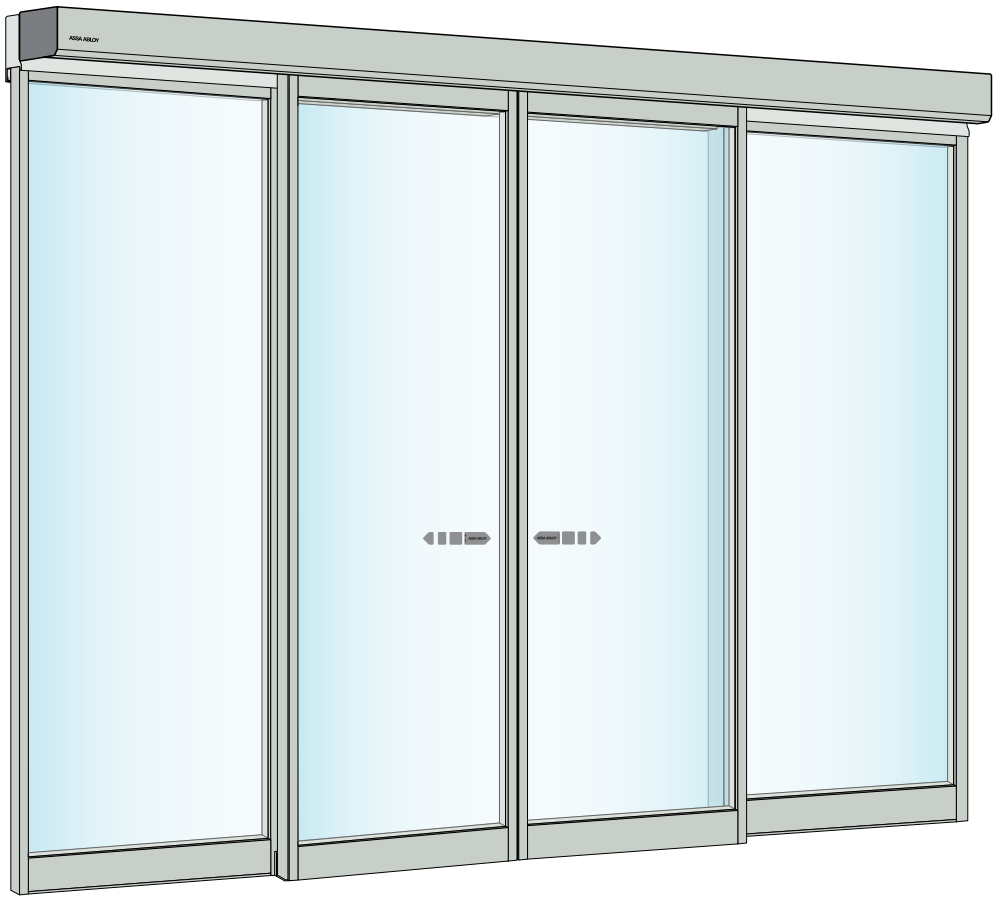
Installation and Service Manual

Sliding Door Operator

ASSA ABLOY SL300

ASSA ABLOY
Entrance Systems

Experience a safer
and more open world



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1 Revision

Following pages have been revised:

Page	Revision - → 1.0
	First version.

2 Instructions for safe operation

- Failure to observe the information in this manual may result in personal injury or damage to equipment.
- To reduce the risk of injury of persons - use this operator only with pedestrian doors.
- Do not use the equipment if repair or adjustment is necessary.
- Disconnect supply when cleaning or other maintenance is to be carried out.
- The operator can be used by children over 8 years of age if they have been instructed by a person in charge of their safety.
- The operator can be used by children 8 years of age or younger if they are supervised by a person responsible for their safety.
- The operator can be used by persons with impaired physical, sensory or mental capacity if they have been instructed by a person in charge of their safety.
- Cleaning and user maintenance shall not be made by children.
- Do not let anyone climb on or play with the door or the fixed/remote controls.
- In all instances, where work is being done, the area is to be secured from pedestrian traffic, and the power removed to prevent injury.
- Installer must properly ground door package! Improper grounding can lead to risk of personal injury.
- The mains connection must remain isolated until the wiring is completed. Then connect to the supply unit.
- The doorset can be operated automatically by sensors or manually by activators.

3 Important information

3.1 Intended use

The ASSA ABLOY SL300 is an automatic sliding door operator developed to facilitate entrances to buildings and within buildings.

The ASSA ABLOY SL300 is designed to be surface-mounted to the wall or a beam. It is easy to install for both new construction and retrofit application, and it can be adapted to a wide range of door requirements. It is to be installed indoors where it is suitable for almost all types of external and internal sliding doors.

The door is designed to offer continuous use, a high degree of safety and maximum lifetime. The system is self-adjusting to the effects caused by normal variations in the weather conditions and to minor friction changes caused by e.g. dust and dirt.

This manual contains the necessary details and instructions for the installation, maintenance and service of the Sliding Door Operator ASSA ABLOY SL300.

Save these instructions for future reference.

3.2 Safety precautions

Be sure to complete a risk assessment according to "Guide for installers of Powered Pedestrian Sliding Doors" (PRA-0004) and fill in the "Site Acceptance Test" (PRA-0005) before taking the door into operation.

To avoid bodily injury, material damage and malfunction of the product, the instructions contained in this manual must be strictly observed during installation, adjustment, repairs and service etc. Training is needed to carry out these tasks safely. Only ASSA ABLOY Entrance Systems-trained technicians should be allowed to carry out these operations.

3.3 Electronic equipment reception interference

The equipment may generate and use radio frequency energy and if not installed and used properly, it may cause interference to radio, television reception or other radio frequency type systems.

If other equipment does not fully comply with immunity requirements, interference may occur.

There is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orient the receiving antenna.
- Relocate the receiver with respect to the equipment.
- Move the receiver away from the equipment.
- Plug the receiver into a different outlet so that equipment and receiver are on different branch circuits.
- Check that protective earth (PE) is connected.

If necessary, the user should consult the dealer or an experienced electronics technician for additional suggestions.

3.4 Environmental requirements

ASSA ABLOY Entrance Systems products are equipped with electronics and may also be equipped with batteries containing materials which are hazardous to the environment. Disconnect power before removing electronics and battery and make sure it is disposed of properly according to local regulations (how and where) as was done with the packaging material.

4 Technical specification

Manufacturer:	ASSA ABLOY Entrance Systems AB
Address:	Lodjursgatan 10, SE-261 44 Landskrona, Sweden
Type:	ASSA ABLOY SL300
Mains power supply:	100 V AC -10% to 240 V AC +10%, 50/60 Hz, fuse 10 AT (building installation) **Note!** The mains power supply shall be installed with protection and an all-pole mains switch with isolating capability of Category III, at least 3 mm between contacts, shall be installed according to local regulations. These articles are not provided with the door.
Power consumption:	Max. 200 W
Degree of protection:	IP20
Auxiliary voltage:	12 V DC, 320 mA
Recommended max. door weight:	Bi-parting: ASSA ABLOY SL300-2: 100 kg/leaf Single Slide: ASSA ABLOY SL300-R/L: 120 kg
Clear opening:	Bi-parting: ASSA ABLOY SL300-2: 1100 - 2000 mm Single Slide: ASSA ABLOY SL300-R/L: 850 - 1025 mm
Opening and closing speed:	Variable up to approx. (ASSA ABLOY SL300-2): 1.2 m/s
Hold open time:	0-60 s
Ambient temperature:	-20 °C to +50 °C
Relative humidity (non-condensing):	Max. 85%
Approvals:	Third party approvals from established certification organizations valid for safety in use.
For indoor use only	

5 Design and function description

5.1 Design

The sliding door operator ASSA ABLOY SL300 works electromechanically. The motor, control unit, transmission, optional battery and electromechanical locking device are all assembled in a support beam. The motor and gear box transmit movement to the door leaves by means of a tooth belt. The door leaf is fitted to a door adapter/carriage wheel fitting and hangs on a sliding track. Movement of the bottom of the door leaf is controlled by the floor guides.

5.2 Function

Opening
When an OPENING IMPULSE is received by the control unit the motor starts and transmits movement to the door leaves, which move to the open position.

Closing
The closing starts when no OPENING IMPULSE is received and the HOLD OPEN TIME has run out.

5.3 Safety functions integrated in the operator

To permit safe passage between closing doors, the doors immediately reverse if an obstruction is detected, then resume their interrupted movement at low speed to check whether the obstruction has disappeared or not. If an obstruction is detected while the door is opening, the doors immediately stop and then close after a time delay.

5.4 Microprocessor for precise control

The microprocessor has a routine for self-monitoring, which detects any interference or faulty signals in door operation. If an input signal does not correspond to the preprogramming, the microprocessor automatically takes necessary actions to ensure safe door operation.

5.5 Power failure

The ASSA ABLOY SL300 can be equipped with a battery unit that automatically opens the doors in the event of a power failure.

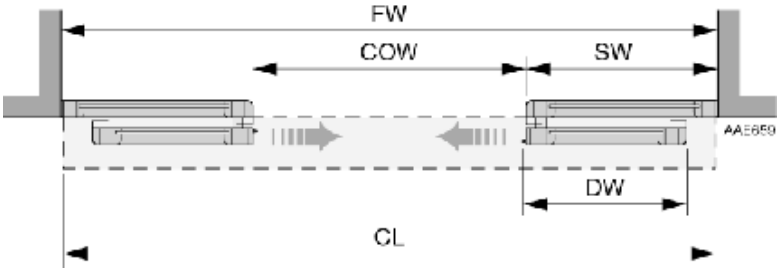
Doors used for evacuation in buildings such as hospitals and homes for elderly people may not be locked or put in programme selection OFF.

6 Models

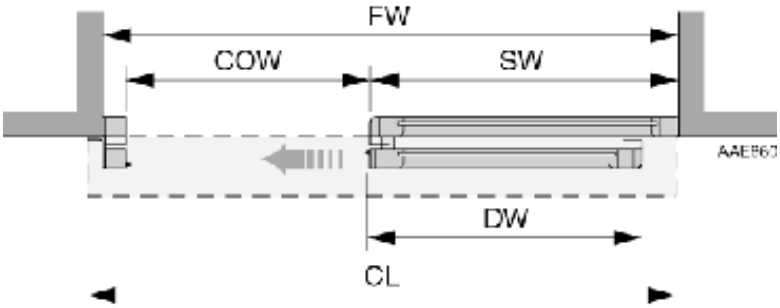
6.1 Two main models are available:

- **ASSA ABLOY SL300–2**; for bi-parting doors, consisting of a pair of door leaves which are sliding away from each other to form a common door opening.
- **ASSA ABLOY SL300-1**; for single sliding doors with one **right** or **left opening** door leaf.

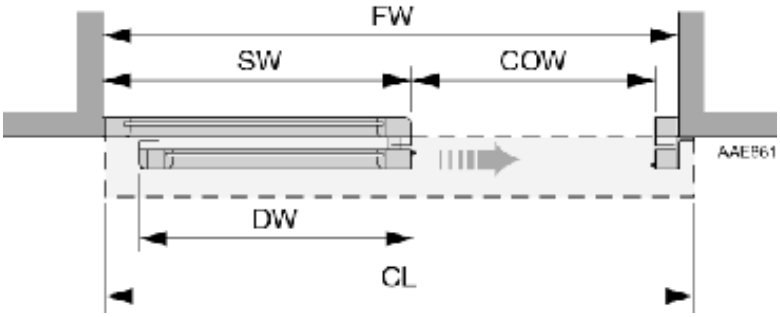
6.2 ASSA ABLOY SL300–2 (bi-parting)



6.3 ASSA ABLOY SL300–R (single sliding, right opening)



6.4 ASSA ABLOY SL300–L (single sliding, left opening)



FW = Frame width

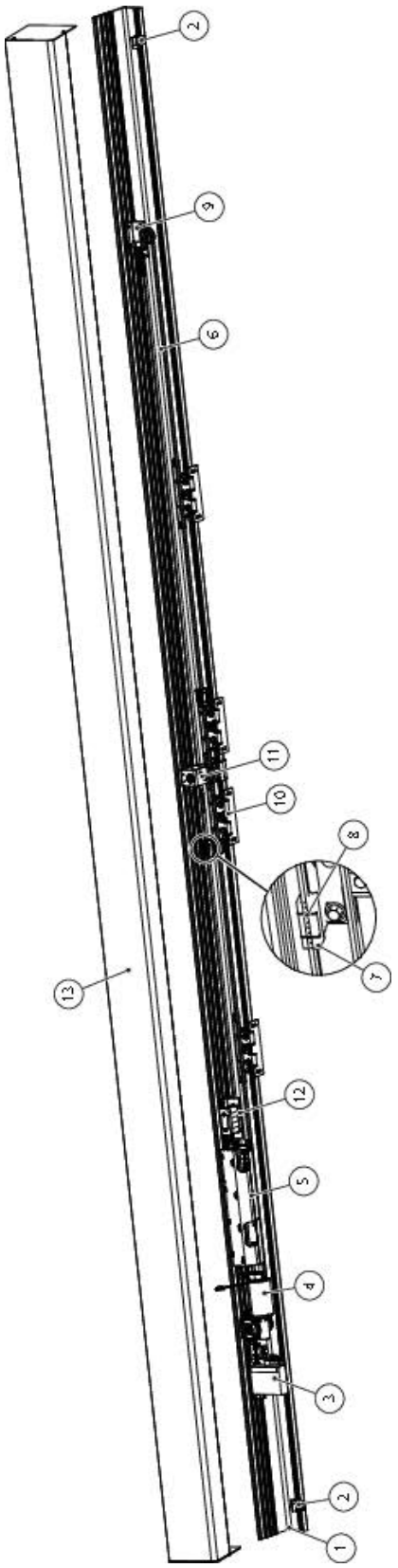
CL = Cover length (incl. end plates 2 x 2 mm, and screws)

COW = Clear opening width

SW = Side screen width

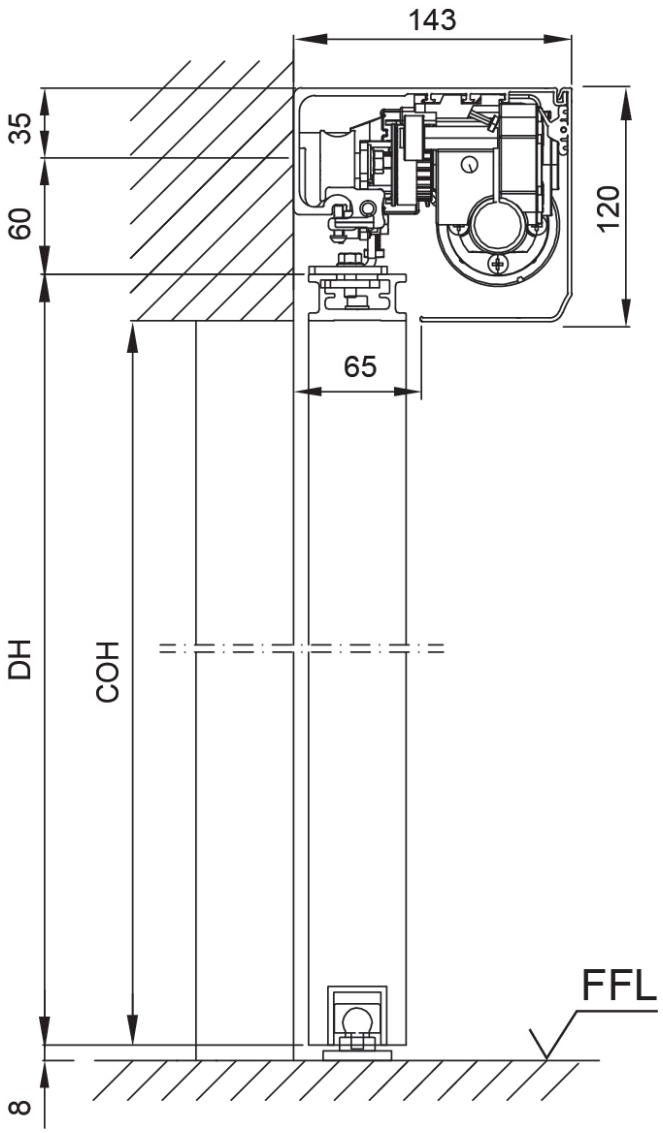
DW = Door leaf width

7 Part identification



No.	Description
1	Beam
2	Door stop
3	Power supply unit
4	Drive unit
5	Control unit
6	Tooth belt
7	Belt fitting
8	Belt securing clip
9	Tension wheel
10	Door carriage
11	Lock (option)
12	Battery (option)
13	Cover (option)

8 Space required



COH = Clear opening height

DH = Door height (**incl. door adapter**)

FFL = Finished floor level

9 Pre-installation

9.1 General tips/Safety concerns

In all instances, where work is being done, the area is to be secured from pedestrian traffic, and the main power removed to prevent injury.

- Make sure that the power is off before installing.
- If there are sharp edges after drilling the cable outlets, chamfer the edges to avoid damage to the cables.
- For enhanced security and vandalism protection, always mount the operator access in the interior of a building whenever possible.
- Make sure the ambient temperature is in the range specified in page Technical specification.
- Make sure that the door leaf and the wall are properly reinforced at the installation points.
- Unpack the operator and make sure that all parts are delivered in accordance with the packing note and that the operator is in good mechanical condition.
- Ensure proper material is being used for the door leaves and that there are no sharp edges. Projecting parts shall not create any potential hazards. If glass is used bare glass edges shall not come in contact with other glass. Toughened or laminated glass are suitable glasses.
- For support beam length over 5 m, remove the wheel holders and motor, or two technicians are needed.
- Ensure that entrapment between the driven part and the surrounding fixed parts due to the opening movement of the driven part is avoided. The following distances are considered sufficient to avoid entrapments for the parts of the body identified;
  - for fingers, a distance greater than 25 mm or less than 8 mm
  - for feet, a distance greater than 50 mm
  - for heads, a distance greater than 200 mm
  - and for the whole body, a distance greater than 500 mm
- Danger points shall be safe guarded up to a height of 2.5 m from the floor level.
- The operator shall not be used with a doorset incorporating a wicket door.

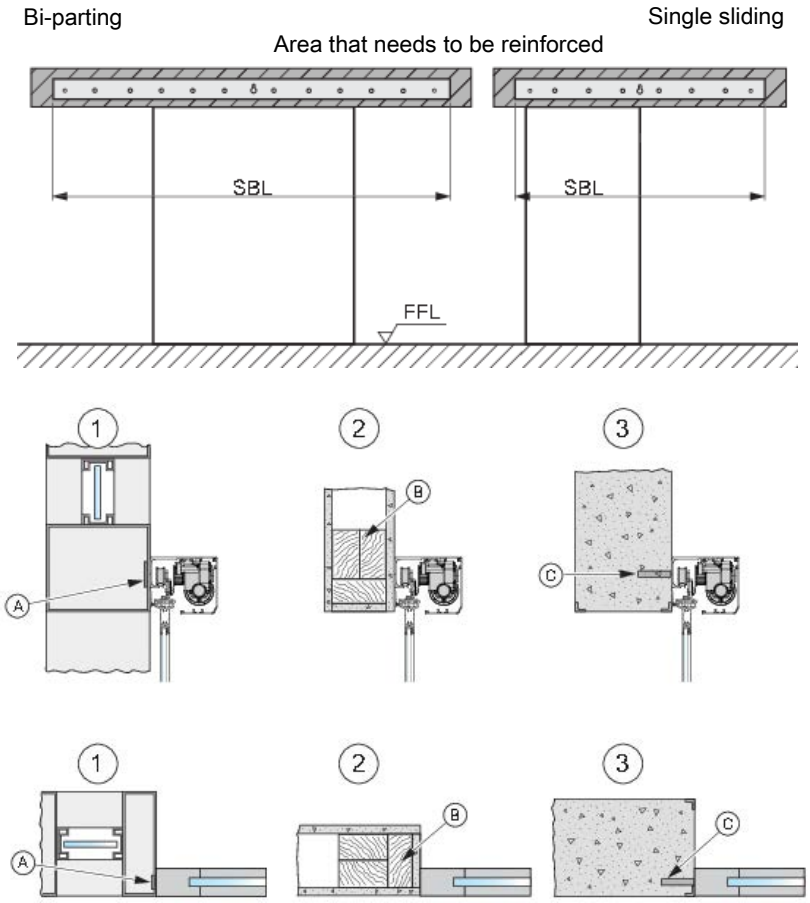
It is not possible to replace an ASSA ABLOY operator component with a component from a different brand.

10 Mechanical installation

10.1 Checking

Check that the fixing material and the upper part of the door leaf have the necessary reinforcements and that the floor is level and smooth.

The beam/wall used to fix the support beam must be flat and smooth. If necessary use ASSA ABLOY Entrance Systems mounting spacers behind the support beam to keep its straightness.



1 Aluminium profile system
2 Plasterboard wall
3 Reinforced concrete wall and brick wall

A Steel or aluminium reinforcement or rivet nut
B Wood reinforcement
C Expansion-shell bolt (for brick wall min. M6x85, UPAT PSEA B10/25)

Base material	**Minimum requirements of wall profile***
Steel	5 mm**
Aluminium	6 mm**
Reinforced concrete	min. 50 mm from the underside
Wood	50 mm
Brick wall	Expansion shell bolt, min. M6x85, UPAT PSEA B10/25 min. 50 mm from the underside

* ASSA ABLOY Entrance Systems minimum recommended requirements. Building Codes may give different specifications.

** Thinner wall profiles, not less than 2mm, must be reinforced with rivet nuts.

Tools required

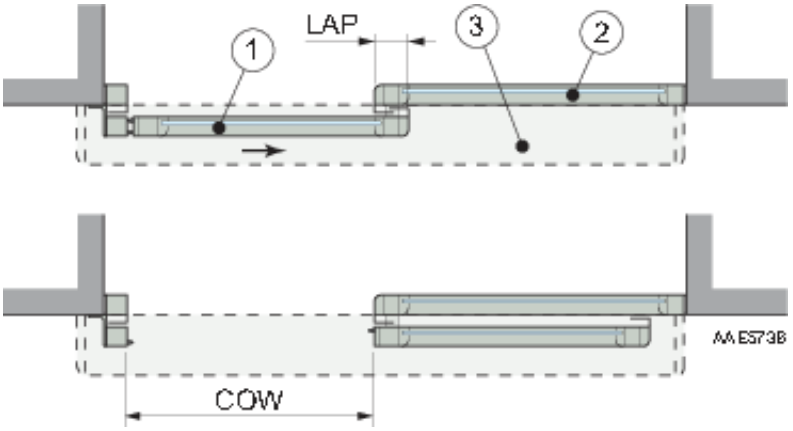
- Metric box spanners (2 x 10mm)
- Spirit level
- Tape measuring tool
- Power drill and set of drill bits, Hammer drill
- Screw driver Torx (T10, T15,T20, and T25)
- Small flat blade screw driver for wire connection
- Centre punch
- Wire stripper
- Side cutter (for wire cutting)
- Torque wrench
- Cable strap tightener
- Pencil (for marking)
- Cloth or brush (for cleaning)

10.2 Installation examples to consider during installation

Note! See the local building regulations for each country, with regards to the permissible minimum opening width, that **shall** be followed.

Recommended installation (ASSA ABLOY door systems)

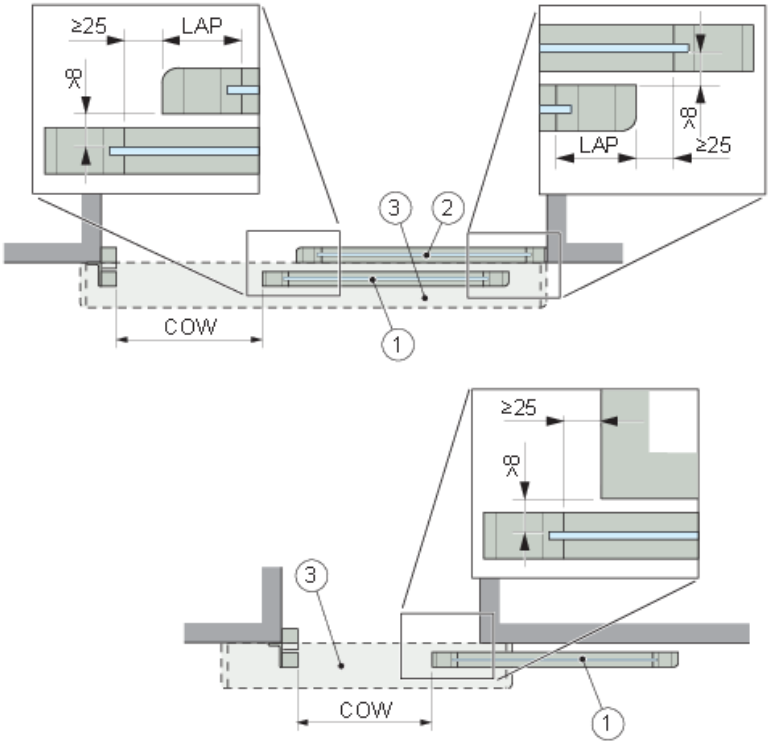
To reduce the risk for shearing of finger the jamb is used as door stop for closing and labyrinth sealings are used between door leaf (1) and fixed screen (2). The door leaf (1) can be opened fully and aligns with the fixed screen (2) if the side light is 100 mm wider than the door.



1 Door leaf
2 Fixed screen
3 Operator
COW = Clear opening width
LAP = Overlap (profile width)

Alternative installation of door system (by others than ASSA ABLOY door systems)

The distance measured between the glass pane of the door leaf (1) and the profile of the fixed screen (2) shall not exceed 8 mm. If the distance is more than 8 mm the leading edge of the door leaf (1) must not pass the mullion of the fixed screen (2) but stop at least 25 mm before.

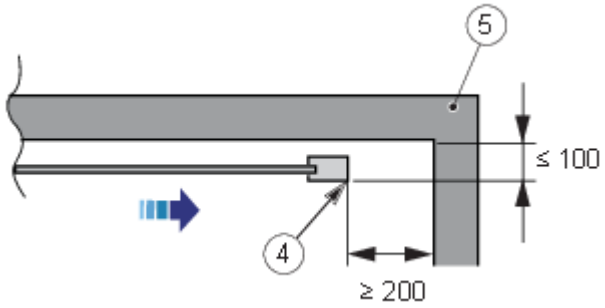


1 Door leaf
2 Fixed screen
3 Operator
COW = Clear opening width
LAP = Overlap (profile width)

The safety distances measured between the secondary closing edge (4) and surrounding fixed parts (5) are shown in the illustrations below.

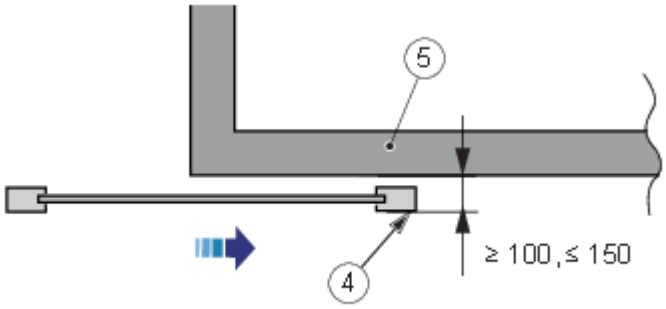
If the distance between the door and wall/side light is 100 mm or less, there shall be at least 200 mm between the door and a opposing surface when the door is in full open position. Safety distance for head or equip the operator with side presence sensors or pocket screens.

If the distance is more than 100 mm between the door and wall/side light, there shall be at least 500 mm between the door and a opposing surface when the door is in full open position. Safety distance for body or equip the operator with side presence sensors or pocket screens.



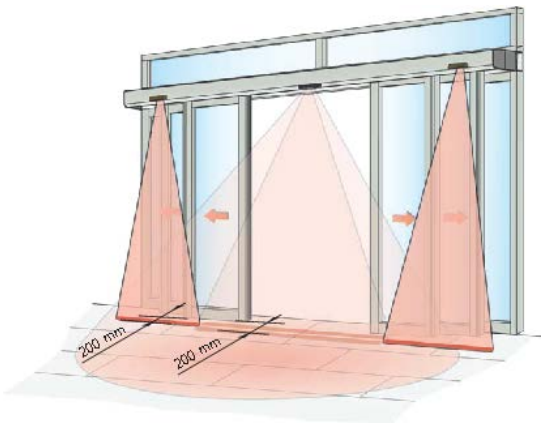
4 Closing edge
5 Fixed parts

If the distance is more than 100 mm but less than 150 mm between the door and the wall the speed of the door has to be reduced acording to PRA-0004 or equip the operator with side presence sensors or pocket screens.

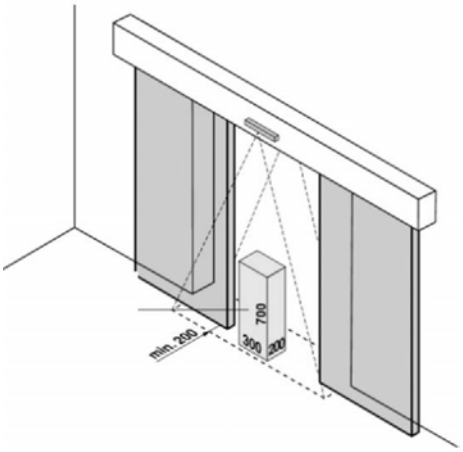


Sensor adjustment

This is an example of how the mounted sensors shall be adjusted.



This is how the presence field of the sensor is tested to fulfil the standards according to EN 16005 and DIN 18650.



10.3 Installation of support beam

Marking and fixing

Determine the installation height from the **highest point** of the finished floor:

a Measure the door leaf height (DH) **including the door adapter**.

b Add **68 mm**, including **8 mm** for floor guide or surface mounted threshold track.

c Mark the installation height on the wall as determined under items a) and b) as shown in the picture below.

d Cut the support beam to the required size on site. Drill the hole (dia. 7 mm) after cutting, 50 mm from the end as shown in the picture below.

e Drill the hole, tap or plug for the keyhole screw.

f Hang up the support beam in the center hole and tighten gently.

g **Make sure that the support beam is level** and compensate for possible sag in the ends. Mark the rest of the fixing holes.

h Tilt or remove the support beam.

i Drill the holes, tap or plug them.

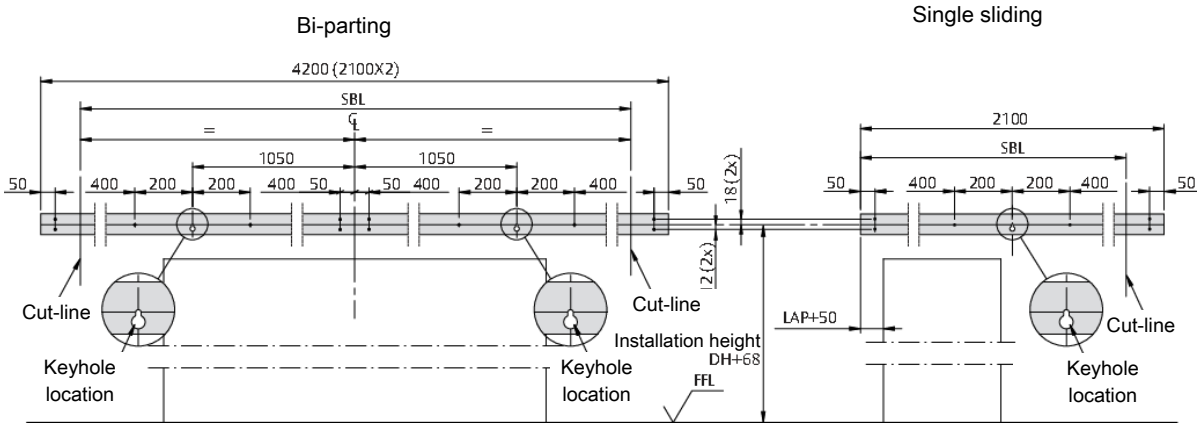
j If the wall is uneven, compensate by hanging ASSA ABLOY spacers around the bolts before they are tightened.

k Fix the support beam using bolts.

l If the holes are drilled while the support beam is in place, make sure to clean the support beam and sliding track thoroughly.

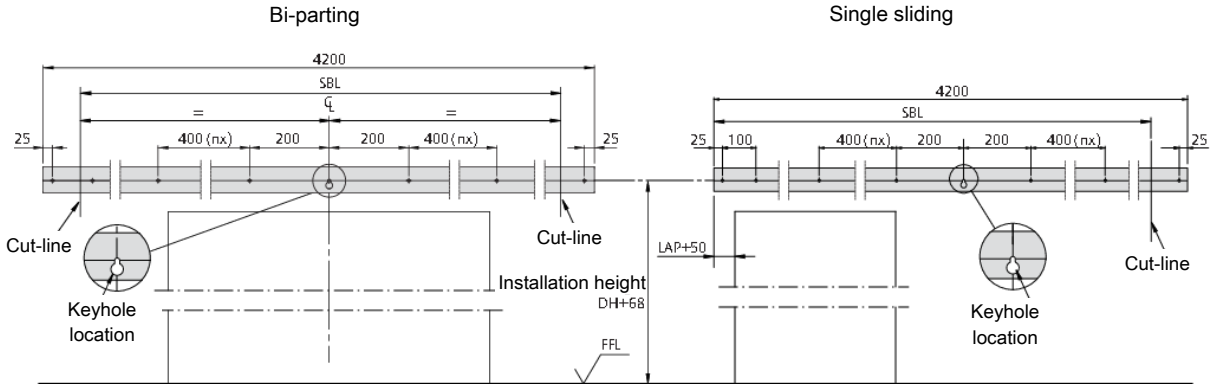
m The height of the screw head must not exceed **6.5 mm**.

Option 1



SBL = Support beam length
FFL = Finished floor level
LAP = Overlap (profile width)

Option 2



SBL = Support beam length
FFL = Finished floor level
LAP = Overlap (profile width)

10.4 Fix the door carriages to the door leaves

Fix the door carriages (10) to the door leaves (16) with screws (17).

Place the belt fittings (7) on the door carriages (10) with screws (18).

For bi-parting

The belt fitting (7) shall be attached to the door carriage (10) on the leading edge of the left door and connect to the **upper** belt.

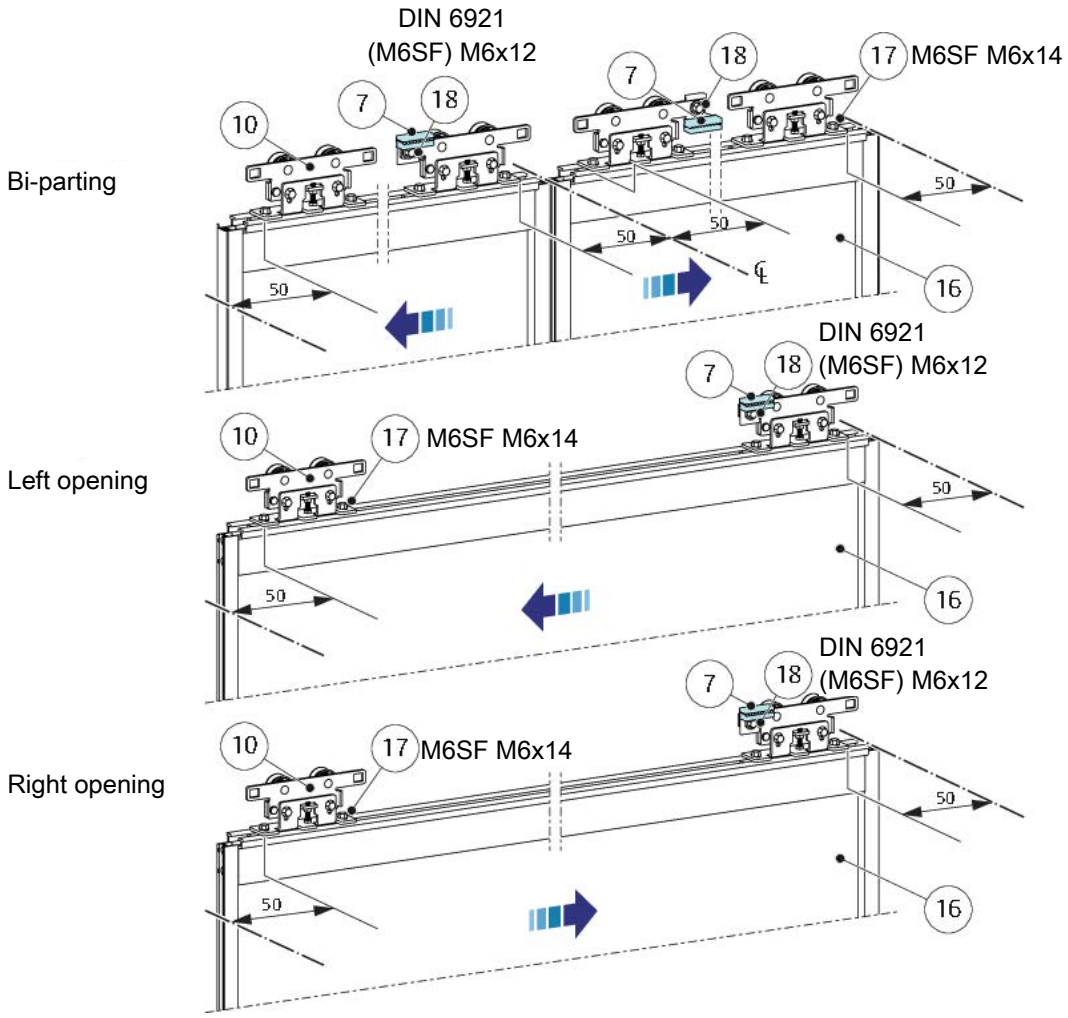
The belt fitting (7) shall be attached to the door carriage (10) on the leading edge of the right door and connect to the **lower** belt.

For single left opening doors

The belt fitting (7) shall be attached to the door carriage (10) on the leading edge of the door and connect to the **upper** belt.

For single right opening doors

The belt fitting (7) shall be attached to the door carriage (10) on the trailing edge of the door and connect to the **upper** belt.



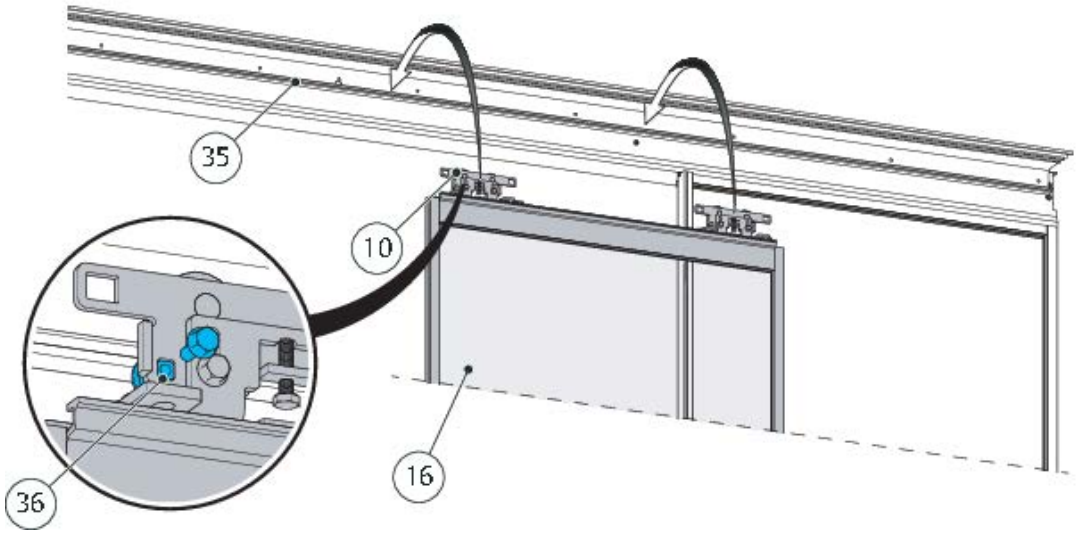
7 Belt fitting
10 Door carriage
16 Door leaf
17 Screw
18 Screw

10.5 Hanging the door leaves

a Ensure that the sliding track (35) is clean.

b Lean the door leaves (16) against the beam and lift the door carriages (10) over the sliding track (35).

c Fix the anti-derailing device (36) to the door carriages (10).

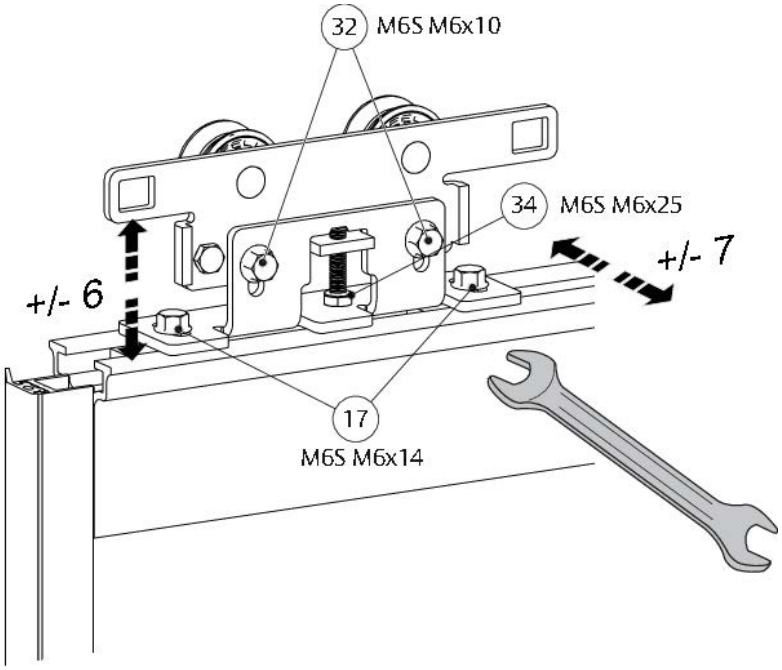


10 Door carriage
16 Door leaf
35 Sliding track
36 Anti-derailing device

10.6 Final adjustment of the door leaves

a Vertical adjustment: Loosen the screws (32) and adjust the height of the door leaves with the screw (34). Then tighten the screws (32).

b Horizontal adjustment: Loosen the screws (17) and adjust the horizontal position of the door leaves. Then tighten the screws (17).

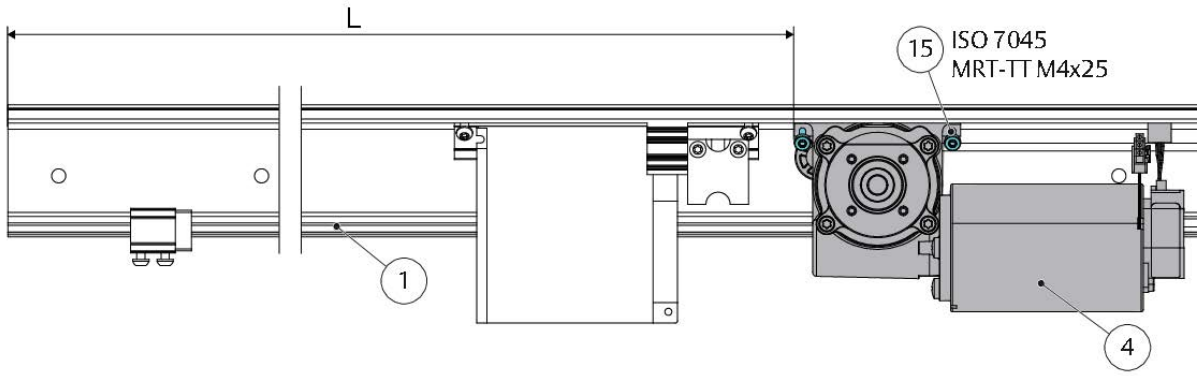


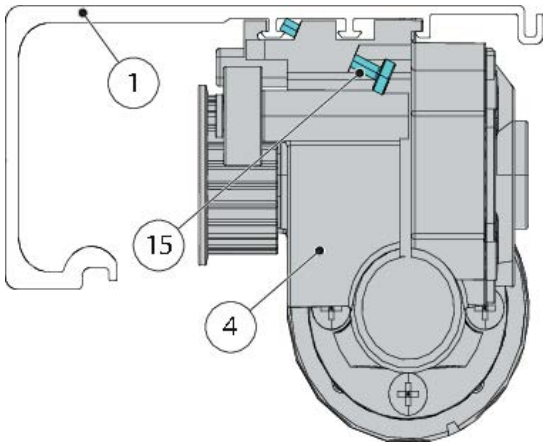
17 Screw
32 Screw
34 Screw

c Check that all door leaves are parallel.
See detailed information on page 12.

10.7 Fix the drive unit

Fix the drive unit (4) to the beam (1) with screws (15). Then tighten the screws (15) with a **torque of 3 Nm**.



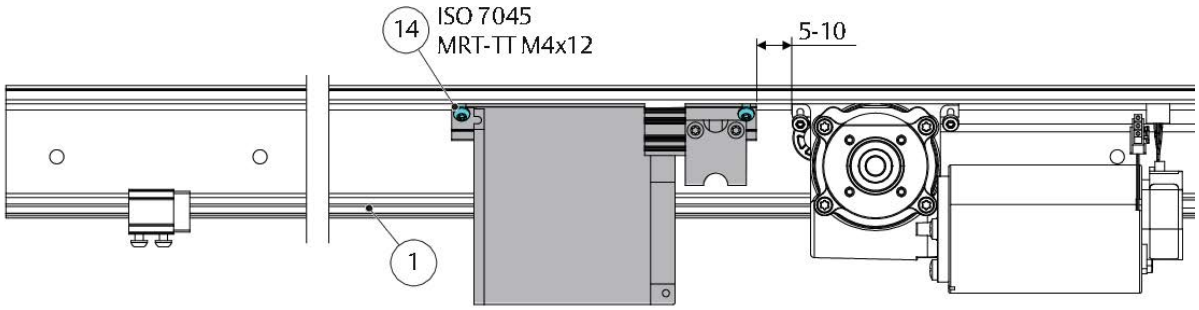


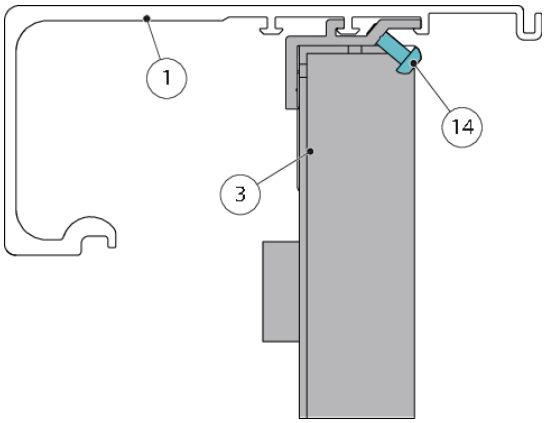
1 Beam
4 Drive unit
15 Screw

	SBL (mm)	L (mm)
Bi-parting	3000 < SBL < 4200	420
	SBL < 3000	270
Single door		300

10.8 Fix the power supply unit

Fix the power supply unit (3) to the beam (1) with screws (14).

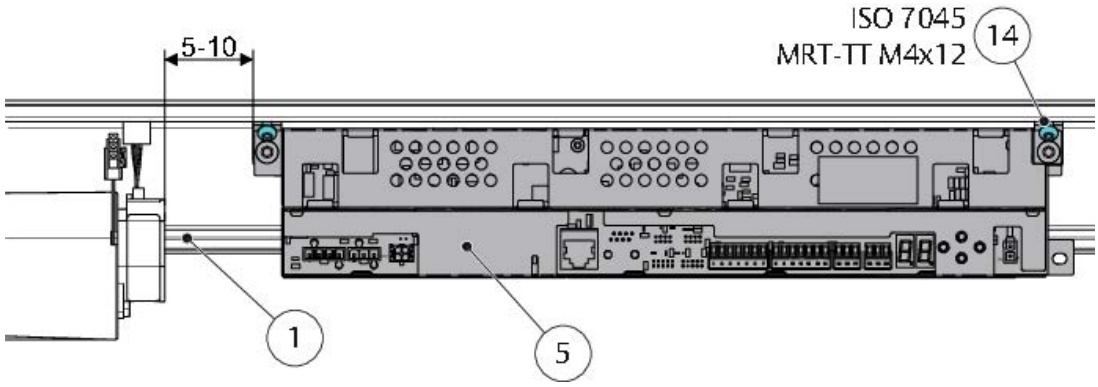


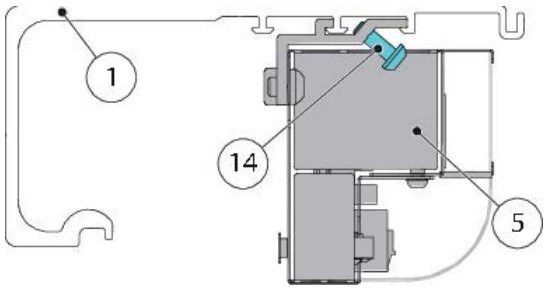


1 Beam
3 Power supply unit
14 Screw

10.9 Fix the control unit

Fix the control unit (5) to the beam (1) with screws (14).

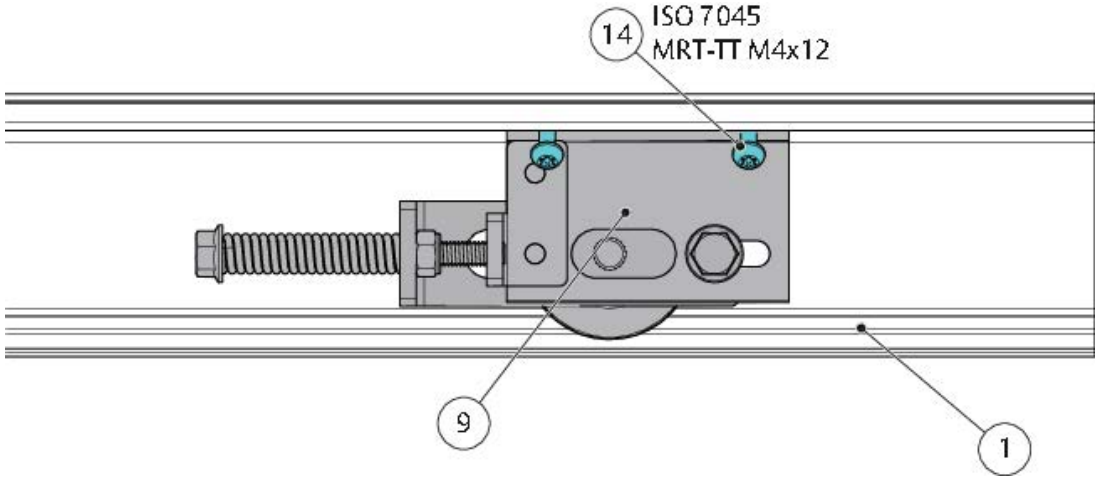


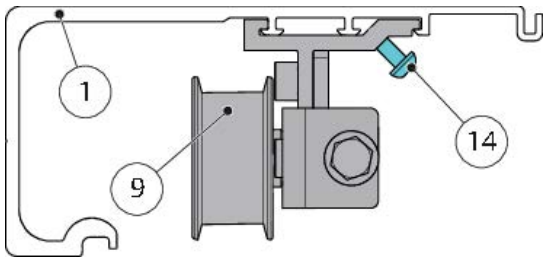


1 Beam
5 Control unit
14 Screw

10.10 Fix the tension wheel

Fix the tension wheel (9) to the beam (1) with screws (14), do not tighten the screws (14) fully, so that it can be slided along the beam (1) freely.





1 Beam
9 Tension wheel
14 Screw

10.11 Attachment of the tooth belt

a Move the door leaf to the opening position, and the distance is 200-300 mm from tension wheel (9) to belt fitting (7), tighten the screws (14) gently.

b Route the tooth belt (6) around the drive unit pulley (19) and around the tension wheel (9). Cut the tooth belt (6) to the right length if needed.

c For all doors the belt ends are joined in the belt fitting (7).

d Click the belt securing clip (8) to the belt fitting (7).

e Tension the belt by pulling the tension wheel (9) by hand, tighten the screws (14) with a **torque of 3 Nm**, fixing the tension wheel.

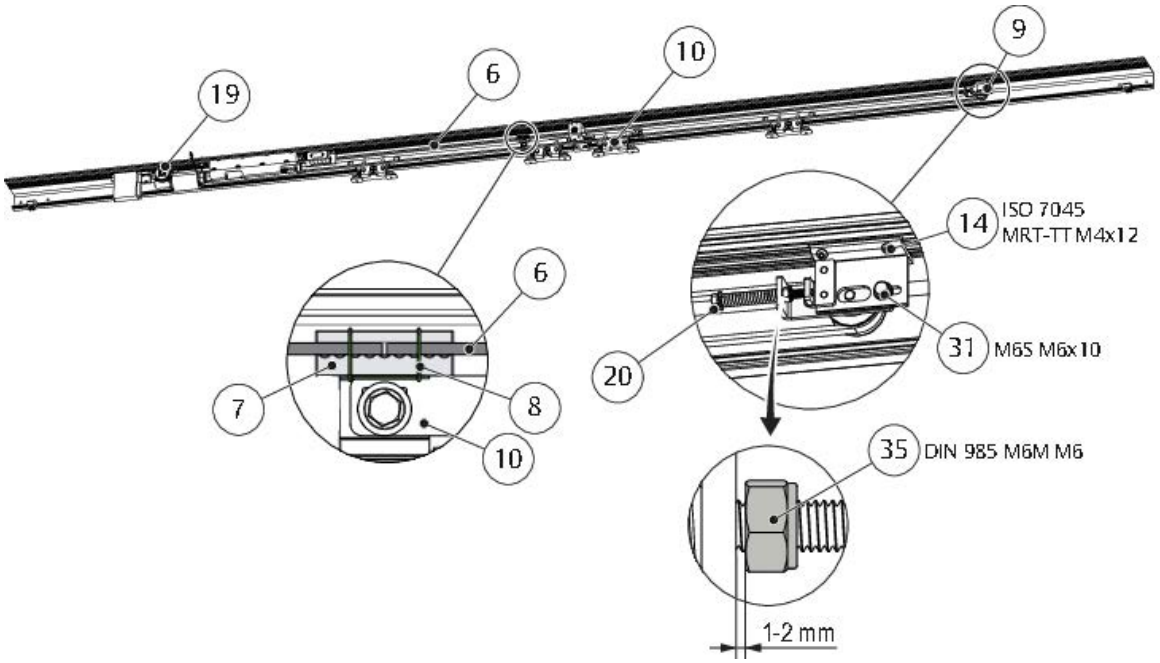
f Loosen the fixing screw (31) without removing it.

g Screw the adjustment screw (20) to its outmost position.

h Tighten the belt tension adjustment screw (20) until there is a gap of approx. 1-2 mm between the lock nut (35) and the bracket according to illustration below, but not further. Be sure not to overtighten, otherwise the adjustment screw (20) might damage the tension wheel (9).

i Retighten the fixing screw (31) with a **torque of 10 Nm**.

j Click the other belt securing clip (8) to the belt fitting (7) for bi-parting.



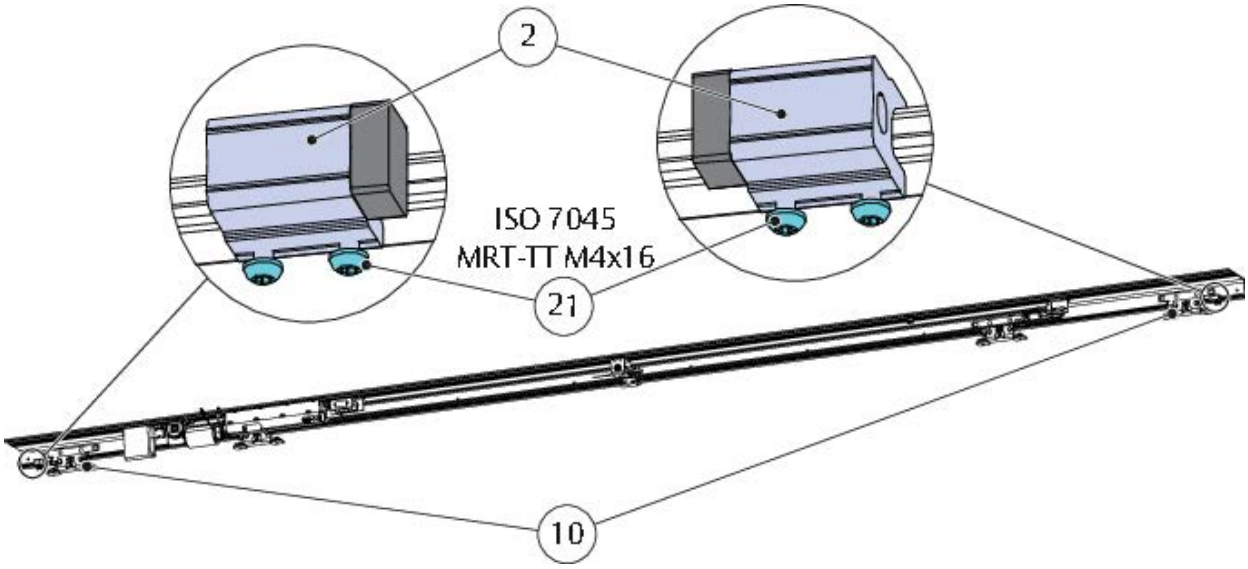
6	Tooth belt	14	Screw
7	Belt fitting	19	Drive unit pulley
8	Belt securing clip	20	Adjustment screw
9	Tension wheel	31	Fixing screw
10	Door carriage	35	Lock nut

10.12 Adjustment of the leading edge

a Push the doors by hand to the desired opening position.

b Loosen the door stops (2) by untightening the screws (21), move them against the door carriages (10), then tighten the screws (21) firmly.

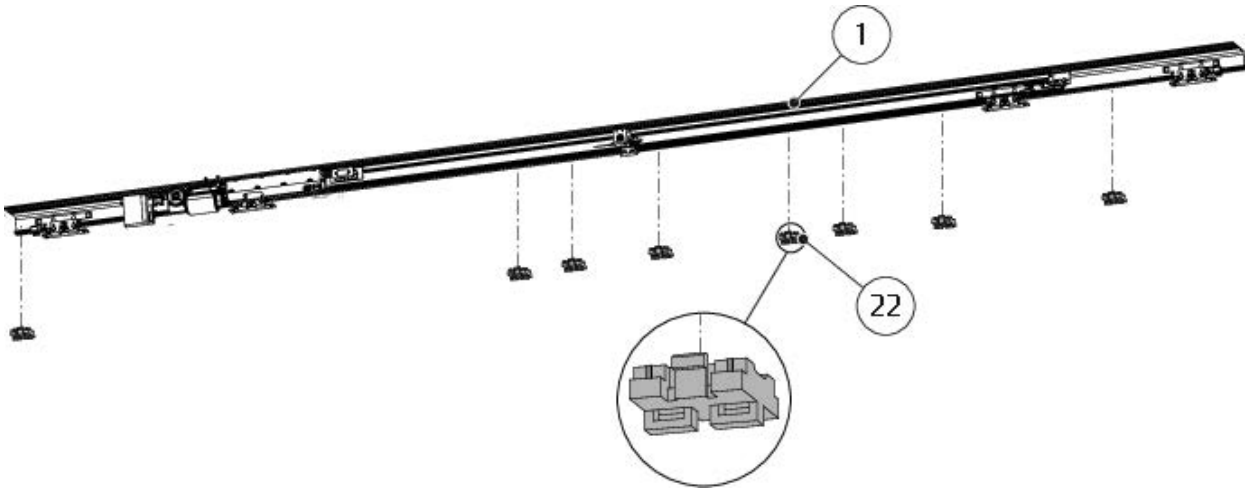
c Check safety distance according to page 16, **Recommended installation (ASSA ABLOY door systems)**.

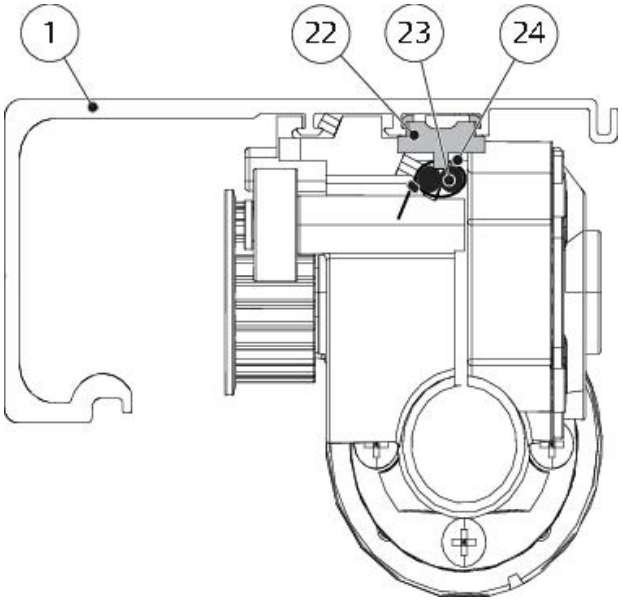


2 Door stop
10 Door carriage
21 Screw

10.13 Fix the cable fasteners

Insert cable fasteners (22) to the beam (1), fix the cables (23) with cable ties (24) when necessary.





1 Beam
22 Cable fastener
23 Cable
24 Cable tie

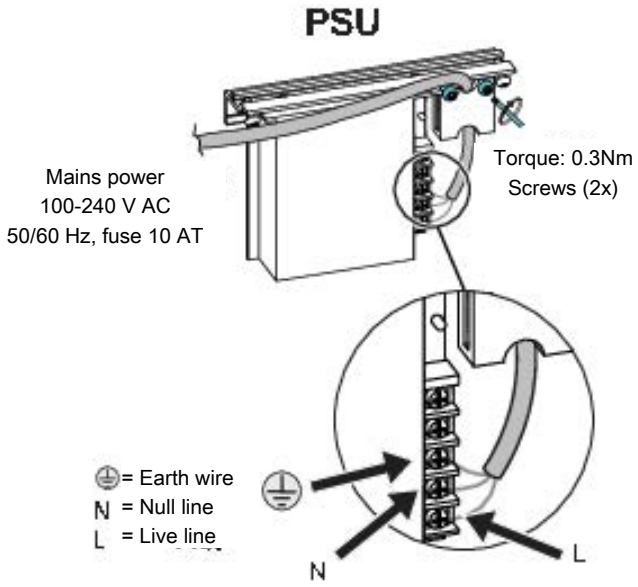
11 Electrical connections

Note! During any work with the electrical connections the **mains power** and the **electrical battery must be disconnected**.

- Place the electric switch easily accessible from the operator. If a plug contact is used in the installation the wall socket shall be placed easily accessible from the operator.
- If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

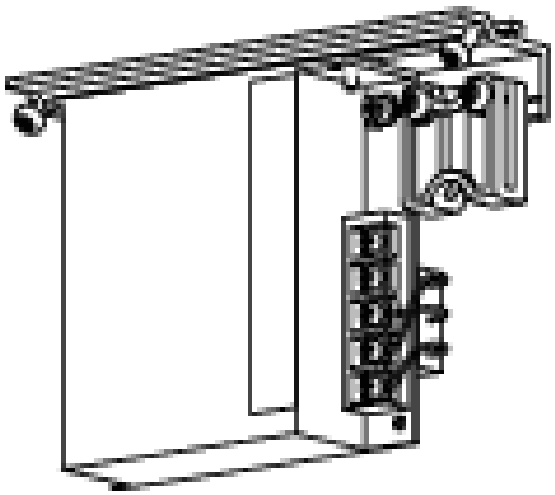
11.1 Mains connection

Installer must properly ground door package! Improper grounding can lead to risk of personal injury.

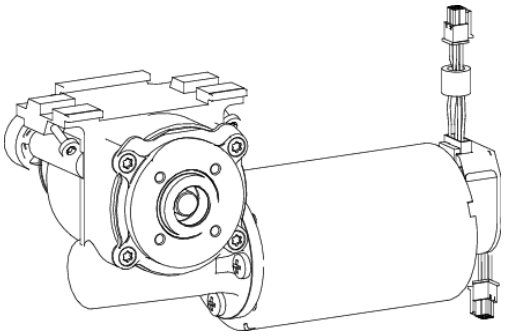


11.2 Electrical units

11.2.1 Power supply unit (PSU 75W)



11.2.2 Drive unit (ND 40V gear ratio 10:1 Pitch 5mm)

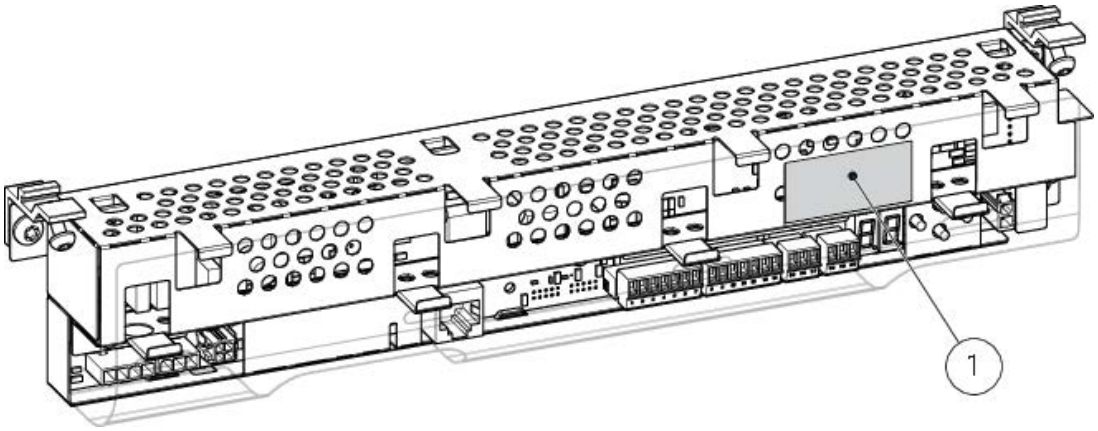


11.2.3 Main control unit (MCU)

The MCU has a label - main control type label including Hardware information and Software information.

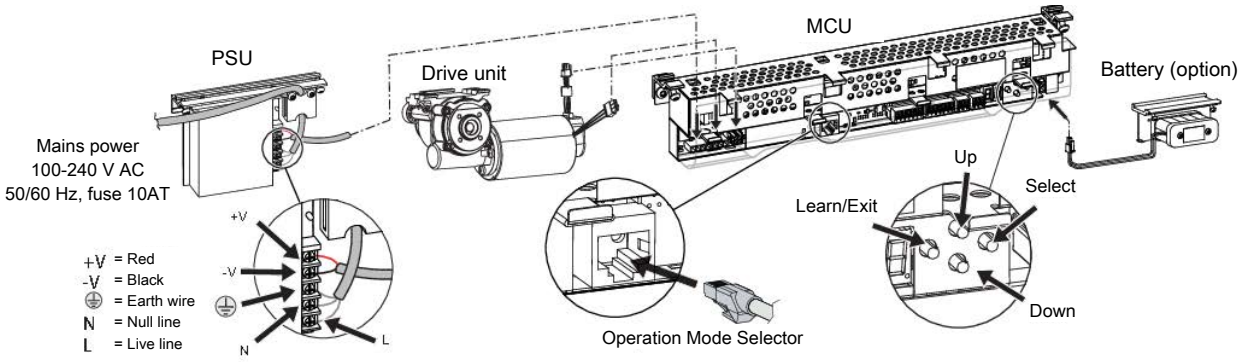
The hardware information states revision of the MCU and applies to PCB or hardware changes.

The software information states the software version.



1 Main control type label

11.2.4 Connection of electrical units



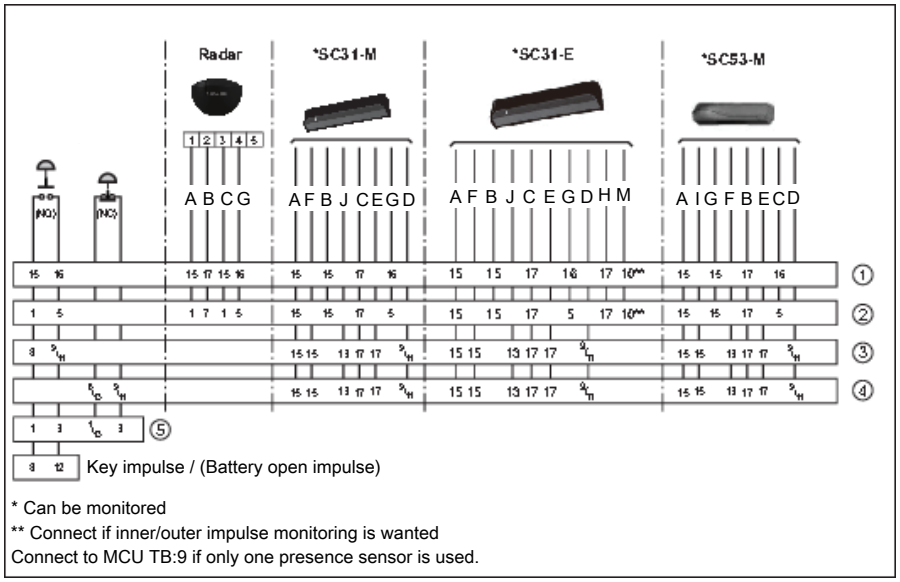
MCU

20	Lock delay LD belt lock only
19	Lock
18	(+) Lock
17	(+) 24 V DC
16	Inner impulse
15	(-) 0 V DC
14	(+) 24 V DC
13	Presence monitoring
12	Key impulse *
11	Presence impulse 2
10	C-switch
9	Presence impulse 1
8	(-) 0 V DC
7	(+) 24 V DC
6	Side presence monitoring
5	Outer impulse
4	Side presence impulse 2
3	Stop impulse
2	Side presence impulse 1
1	(-) 0 V DC

* Key impulse can generate a battery wake up if mains power is off and battery is fitted.

11.3 Connection of activation and safety units

See sensor manuals for mounting and adjustments. Protective device shall comply with EN 12978.



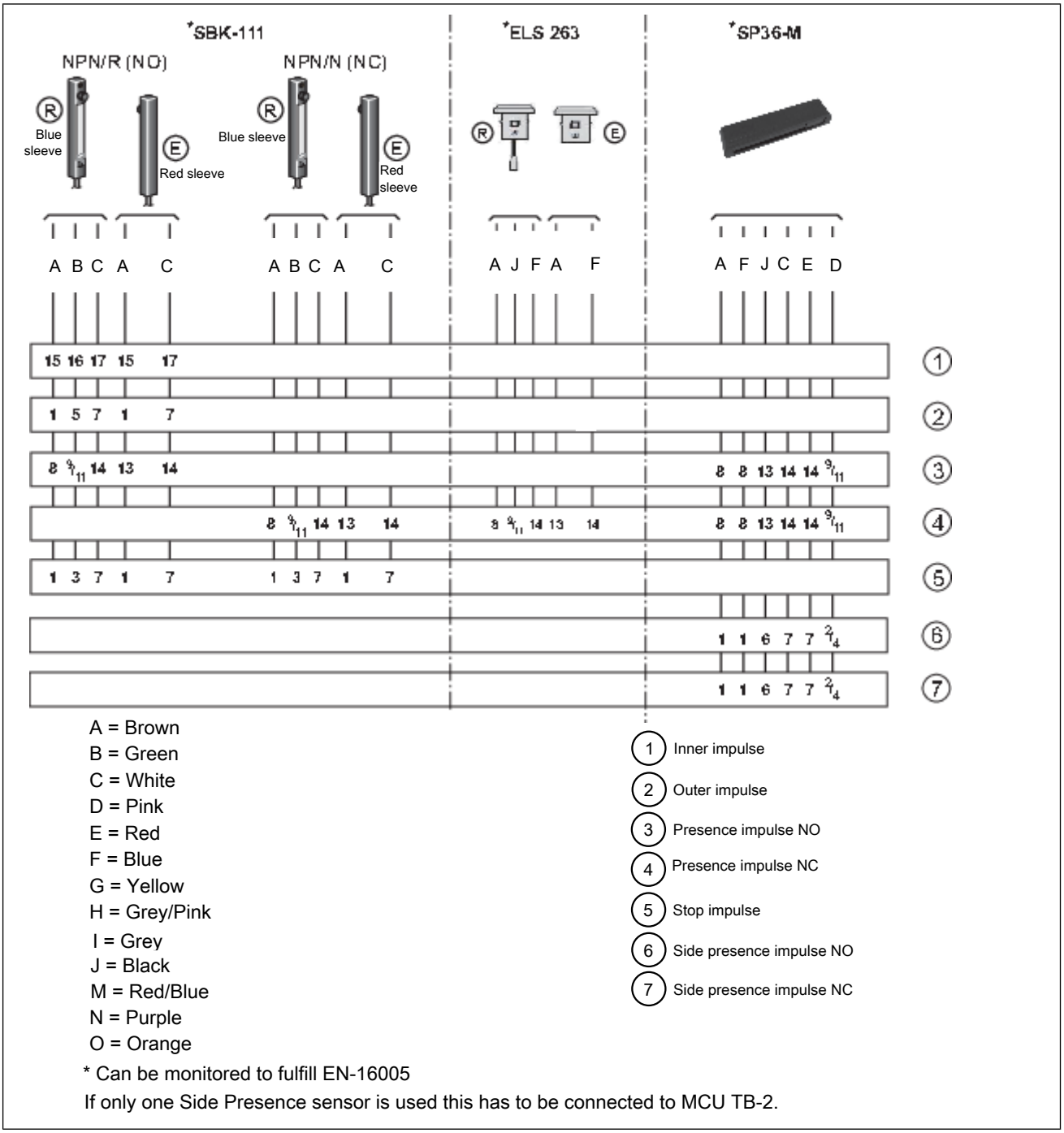
A = Brown
B = Green
C = White
D = Pink
E = Red
F = Blue
G = Yellow
H = Grey/Pink
I = Grey
J = Black
M = Red/Blue
N = Purple
O = Orange

1. Inner impulse
2. Outer impulse
3. Presence impulse NO
4. Presence impulse NC
5. Stop impulse

Common dip switch setting for inner sensors, dip switches shown are set to ON :
SC31-M: 1, 3, 5, 8, 9, (7=NO), (15=Lookback)

Common dip switch setting for outer sensors, dip switches shown are set to ON :
SC31-M: 1, 3, 8, 9, (7=NO), (15=Lookback)

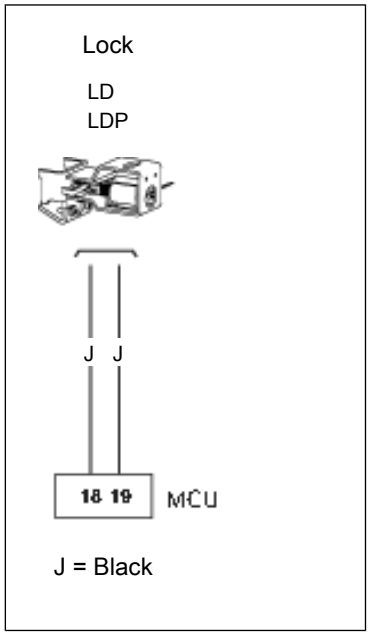
11.4 Connection of presence activation units



Common dip switch setting for side presence sensors, dip switches shown are set to ON:

SP36-M: 1, 3, 8, (7 = NO)

11.5 Connection of accessories



12 Start-Up

Start-up and adjustment must be carried out in the following order when the operator is installed.

a Only connect PSU, motor, lock, battery and operation mode selector.

b Connect the mains plug to the control unit.

c Push and hold the learn button for 2 seconds. Release the learn button when there is a flashing "L" in the display.

d The learn cycle starts 2 seconds after the learn button is released.

e When the learn is finished the display can show different parameters that could not be set automatically during the learn cycle.

f Push the door to open and activate the Push And Go, see that the door runs as expected.

g Disconnect the power and connect all accessories such as well adjusted sensors.

h Connect the mains plug to the control unit.

i Check that the sensors are in standby mode, deactivated, and there is no traffic in the door opening.

j Push the Learn button and make a learn. In the second learn all the accessories and sensors shall be learned into the control unit.

k Check the door movement by giving an impulse on the operator.

l If necessary adjust the door speed parameters to the required speeds.

m Check that the installation complies with valid regulations and requirements from the authorities, see page 16.

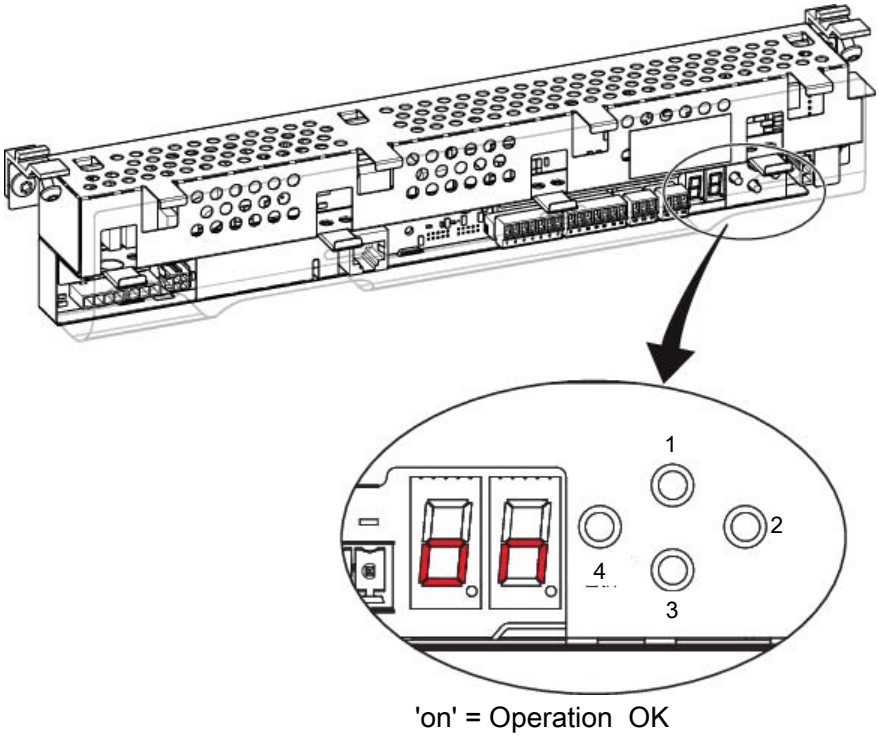
12.1 Adjustments and selection of special operating functions

The main control unit has a two-digit display that shows text and/or digits. On the right side of the display are four push buttons. The display and the buttons are referred to as the MMI.

a Parameter mode. In Parameter mode the display shows parameters from 00 to 69. A parameter control different behavior in the operator.

b Value mode. In Value mode the display shows values from 00 - 99. A value sets how a parameter shall act.

c Error mode. Error mode shows what error group and error code that is active.



1 Up (to step up in parameter or value menu)

2 Select (enters into parameter or value menu and program a value into memory)

3 Down (to step down in parameter or value menu)

4 Learn/Exit (Learn has 3 functions, 1 quick learn, 2 Normal learn, 3 default setting, Exit jumps out from value menu without saving or parameter menu)

Up and Down buttons steps between the different parameters or values.
Select steps from the standby mode into the parameter mode or steps from the parameter mode into the value change mode. In the value change mode, pushing Select, will program the selected value into the selected parameter and step back to the parameter mode.
Learn/Exit button initiate a learn of the control unit if the MCU is in the standby mode. Learn/Exit button will exit the value programming mode and enter the parameter mode without saving the value. Learn/Exit button will exit the parameter mode and enter the standby mode.

Active error

E1 = flashing letter E followed by a digit displays an active error (1-9). The digit shows the main type of error. The display switches between this main error and a two digit number to specify the error.

If several errors are active they are displayed in a sequence. Errors are cleared by a RESET from the operation mode selector or by turning off and on the mains power. For a detailed description of errors, see Troubleshooting on page 47.

12.2 The Learn function can be one of three different types

1 Push and hold the Learn/Exit button for **more than one and less than two** seconds, then each connected electronic module is recognized.

2 Push and hold the Learn/Exit button for **more than two seconds** and the display flashes L. A complete Learn cycle will start after 2 seconds when the Learn/Exit button is released. The complete learn cycle includes the learn in point no. 1.

When the learn cycle has ended the door will stay closed. If there are some parameters that couldn't be configured automatically during the learn cycle the door will open. The display will show first a "P" and then what parameter that couldn't be auto configured, e.g. whether the door is bi-parting or single sliding (parameter 67 Door Type). These parameters has to be configured by the installer.

1 Push the right button, Select, to start editing parameters.

2 Push the Select button once again and the value of this parameter is shown while flashing.

3 Push the Up or Down buttons to select the right value.

4 Push the Select button to confirm and program the selected value.

5 Continue to configure the rest of the unlearned parameters.

6 Push and hold the Learn/Exit button for more than two seconds and the display shows 'on'. After two seconds delay the door closes and is ready for operation or for further adjustments.

3 Push and hold the Learn/Exit button for more than **ten seconds** and the operator returns to default factory set parameters.
After 2 seconds the display starts to flash a L. After another 8 seconds the display shows de (de for default) and the control unit is factory set. 2 seconds after the button is released the display goes back to show what it showed before the start of the default setting.

12.3 Display test and configuring of parameters

a When the display shows "on", push the Select button and each of the two display windows make a rotating test pattern.

b Verify that all seven segments of the two display windows are lit during the test. If not there is a risk of misjudgment of the digits shown in a defective display.

c When the display test is finalized the display shows two steady digits indicating the first parameter.

d Push the Up or Down buttons to select the parameter to adjust.

e Push the Select button again to show the value of the selected parameter. The value is shown as two flashing digits.

f Push the Up or Down buttons to adjust the value in the allowed range.

g When the correct value is selected push the Select button again and the value will be programmed into the MCU memory.

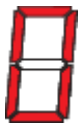
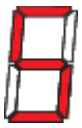
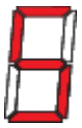
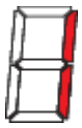
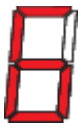
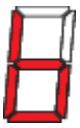
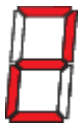
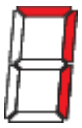
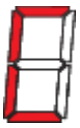
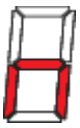
h Push the Exit button once and leave the value editing **without** making any changes.

i Push the Exit button once again to leave parameter menu. The display shows '**on**'.
It is also possible to return to normal operation '**on**' by waiting three minutes without pushing any button.

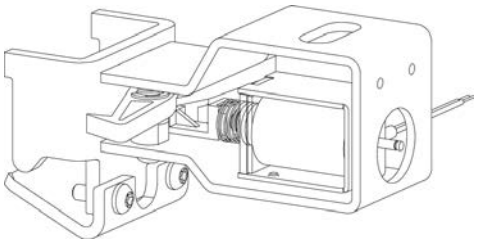
Note! The value is programmed into the MCU when pushing Select regardless if the value is changed or not. When a value is programmed into the MCU that parameter is excluded from the learn cycle. If a new learn is made the programmed parameter will remain unchanged.

To have the parameters included in the learn cycle again you have to make a default setting of the MCU, (see above).

Below is the available characters in the display. Observe 5 and S look the same.

Display	Character	Display	Character	Display	Character	Display	Character	Display	Character
	0		5		A		e		S
	1		6		b		F		t
	2		7		C		n			
	3		8		d		o			
	4		9		E		P			

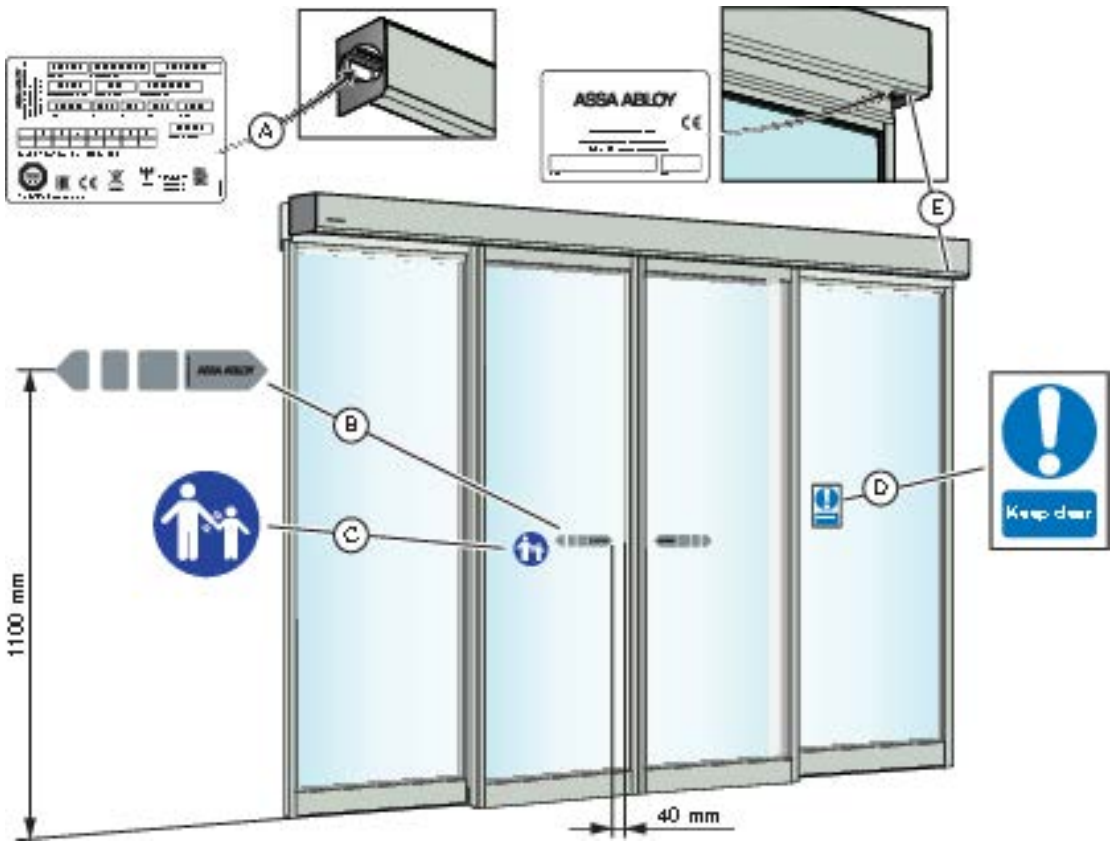
12.4 Description of parameters

Main control board parameters			
No.	**Parameter Name**	**Value**	**Description**
00	High Speed Opening	10-70	Sets the maximum opening speed. Unit cm/s.
02	High Speed Closing	10-70	Sets the maximum closing speed. Unit cm/s.
03	Hold Open Time	00-60	The general hold open time for Inner and Outer impulses. Unit seconds.
04	Key Hold Open Time	00-60	Hold open time for Key impulse. Unit seconds.
05	Lock Configuration (main control)		LDP = locked **with** power (fail safe) LD = locked **without** power (fail secure) 
	No lock	00	No lock
	LDP	01	Not to be used.
	LD	02	Not to be used.
	LDP LE	03	LDP LE = Locked with power.
	LD LE	04	LD LE = Locked without power.
06	Lock release		If "Lock Release" is On, the door will apply force in the closing direction when the lock is unlocking. This is made to prevent a lock from being stuck in locked position when opening. Should be set to On when an electromechanical lock is installed.
	Off	00	
	On	01	
07	Presence Impulse 1 Configuration		This parameter determines if a presence impulse is normally open (NO) or normally closed (NC).
	NO	00	Normally open
	NC	01	Normally closed
08	Presence Impulse 2 Configuration		This parameter determines if a presence impulse is normally open (NO) or normally closed (NC).
	NO	00	Normally open
	NC	01	Normally closed
09	Presence Impulse Monitoring		Presence impulse monitoring is a demand to be activated according to EN 16005 or DIN 18650 if the door travels faster than adjusted according to PRA-0004.
	No monitoring of precense impulse	00	Set to "00" if no monitoring of Presence impulse sensors is required or if no presence impulse sensors are installed.
	Presence impulse 1	01	Set to "01" if one Presence impulse sensor shall be monitored (if only one sensor is used this sensor has to be connected to MCU TB:9, Presence impulse 1).
	Presence impulse 1 and 2	02	Set to "02" if two Presence impulse sensors shall be monitored.

Main control board parameters			
No.	**Parameter Name**	**Value**	**Description**
10	Battery Monitoring		The battery will be tested by shutting of the power to the MCU and open the door with the battery. The test is never done in operation mode selection OPEN and OFF. Half an hour before the time has elapsed the following outer impulse generates a battery test. If there is no outer impulse within the next half hour, the operator control unit generates the opening impulse by itself ("ghost impulse"). The test is also always performed after a Reset and after changing operation mode selection from a position where a test is not done to a position where the test is made.
	Off	00	
	Convenience Monitoring	01	Will test the battery every 23 Hour. If the test fails the operator will indicate empty battery.
11	Partial Open Position	00-99 %	Sets the partial open size.
12	Opening Direction	00-01	
	CW	00	Motor is running in clockwise direction.
	CCW	01	Motor is running in counterclockwise direction.
15	Run Program	01-05	Performance adjustment. Sets how fast or slow the door shall accelerate or break.
	Smooth	01	For light doors.
	Max Performance	05	For heavy doors.
20	Partial Hold Open Time	00-60	Hold open time for Inner & Outer impulses with operation mode selection PARTIAL. Unit seconds.
27	Side Presence Input 1 Configuration	00-01	This parameter determines if a side presence impulse is normally open (NO) or normally closed (NC).
	NO	00	Normally open
	NC	01	Normally closed
28	Side Presence Input 2 Configuration	00-01	This parameter determines if a side presence impulse is normally open (NO) or normally closed (NC).
	NO	00	Normally open
	NC	01	Normally closed
29	Side Presence Impulse monitoring		Side presence impulse monitoring is a demand to be activated according to EN 16005 or DIN 18650 if the door travels faster than adjusted according to PRA-0004.
	No monitoring of Side Precense impulse	00	Set to "00" if no monitoring of Side Presence impulse sensors is required or if no Side Presence impulse sensors are installed.
	Side Presence impulse 1	01	Set to "01" if one Side Presence impulse sensor shall be monitored (if only one sensor, it has to be connected to MCU TB:2, Side Presence impulse 1).
	Side Presence impulse 1 and 2	02	Set to "02" if two Side Presence impulse sensors shall be monitored.
30	Side Presence Activation Distance	00-99	
		00	If value 00 is selected side presence impulse is valid from fully closed to fully open position.
		01-99	Unit dm.

Main control board parameters			
No.	**Parameter Name**	**Value**	**Description**
41	Battery Type	00-01	What type of battery that is mounted in the operator is identified during the Learn.
	No battery	00	
	12V	01	
43	Opening Delay For Lock	00-99	The time for opening is delayed (0.0-9.9 sec) after an opening impulse is given in operation mode selections OFF and EXIT. Unit seconds x0.1.
45	Stop Function	00-01	When this parameter is set to On (01) the Stop impulse is enabled, otherwise it is disabled.
	Off	00	Stop impulse disabled.
	On	01	Stop impulse enabled.
46	Stop Configuration	00-01	Configuration of the Stop impulse. Choose between normally open (NO) or normally closed (NC) Stop impulse.
	NO	00	Normally open
	NC	01	Normally closed
49	Opening Max Force	02-19	The force applied from the operator to the door leaf during opening. Normal Duty: Max force 190 N. Unit N x10.
4A	Close Kick Force	00-19	The force applied from the operator to the door leaf during the close kick. Normal Duty: Max force 190 N. Unit N x10.
50	Closing Max Force	02-19	The force applied from the operator to the door leaf during closing. Normal Duty: Max force 190 N. Unit N x10.
67	Door Type	00-01	
	Single sliding	00	
	Biparting	01	
68	Door weight	01-60	Will be estimated during the Learn but can also be altered manually. Unit kg x 10.
69	Friction	00-99	The friction when moving the door is automatically measured during a Learn. Max friction is 50N. Unit N.

13 Signage



Check that all required signage is applied and intact. Mandatory indicates that the signage is required by European directives and equivalent national legislation outside the European Union.

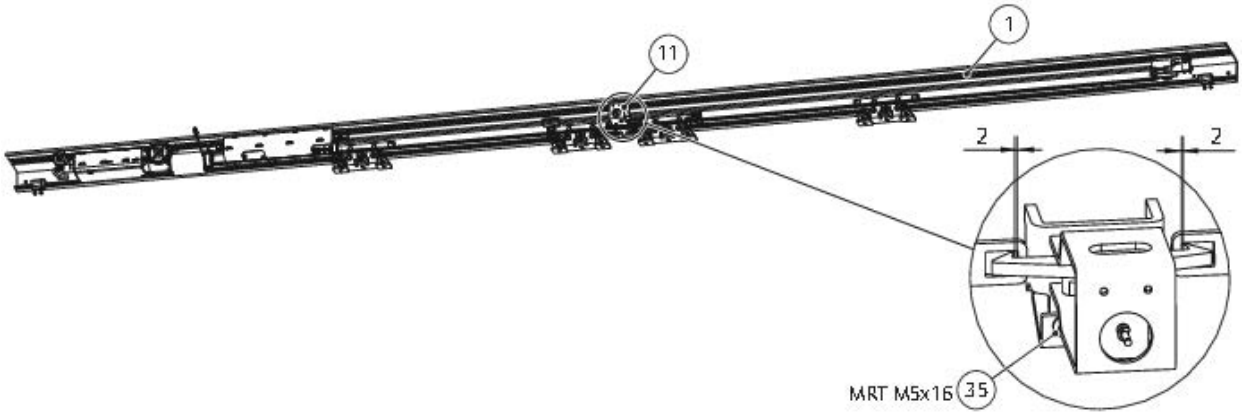
Ⓐ	Product label: Mandatory
Ⓑ	ASSA ABLOY Entrance Systems door sticker: Mandatory according to ASSA ABLOY Entrance Systems brand instructions, European directives and equivalent national legislation outside the European Union, to highlight the presence of the glass.
Ⓒ	Supervision of child (applied to both sides of the door): Mandatory according to national regulations. Recommended, if the risk analysis shows use by children.
Ⓓ	Keep clear
Ⓔ	Local product label

14 Accessories

14.1 Lock

a Install the lock (11) to the beam (1), adjust the position of the lock (11).

b Tighten the screws (35).

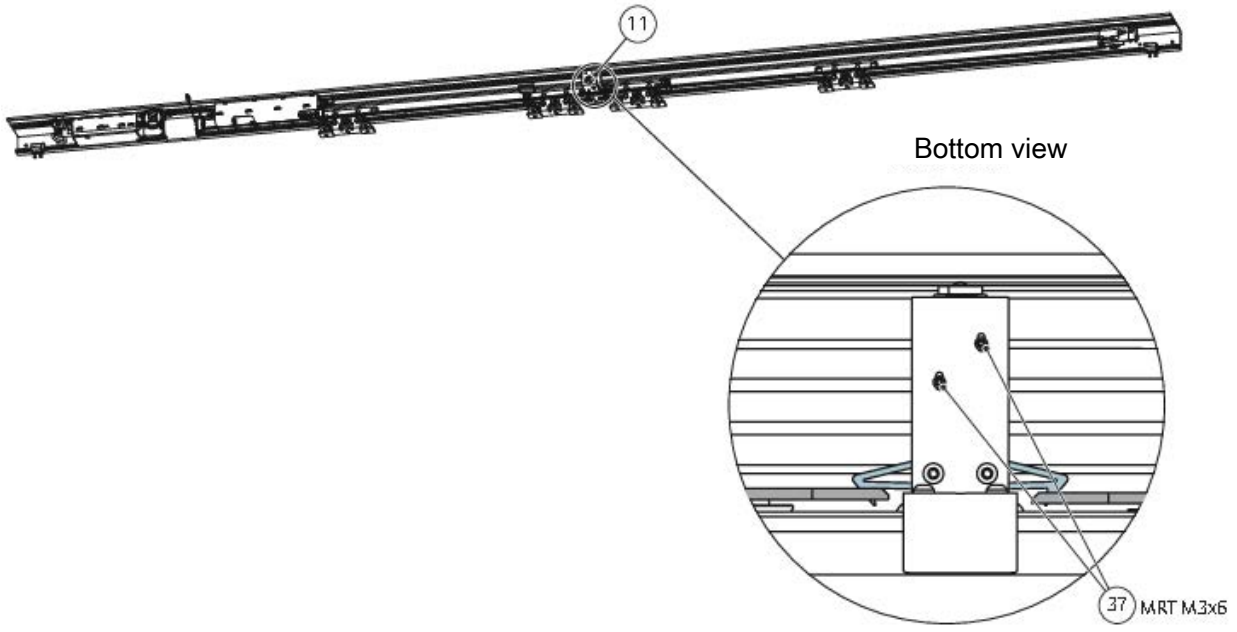


1 Beam

11 Lock

35 Screw

Note! If the lock (11) could not lock the door, adjust the screws (37).

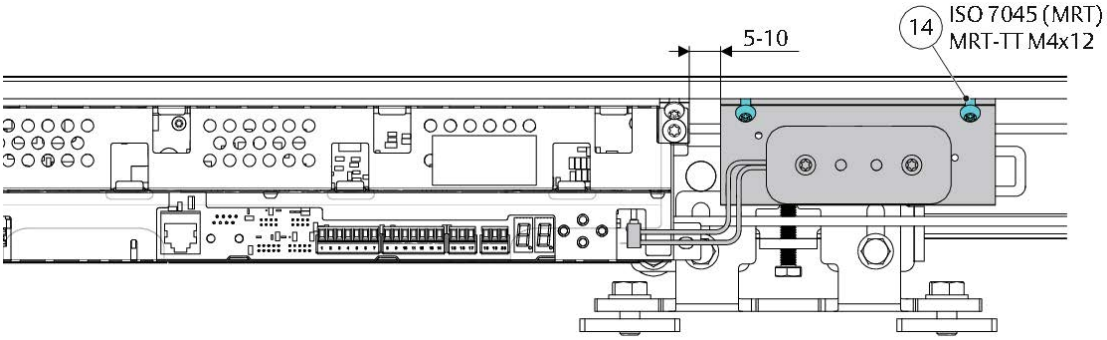


11 Lock

37 Screw

14.2 Battery

Tighten the screws.



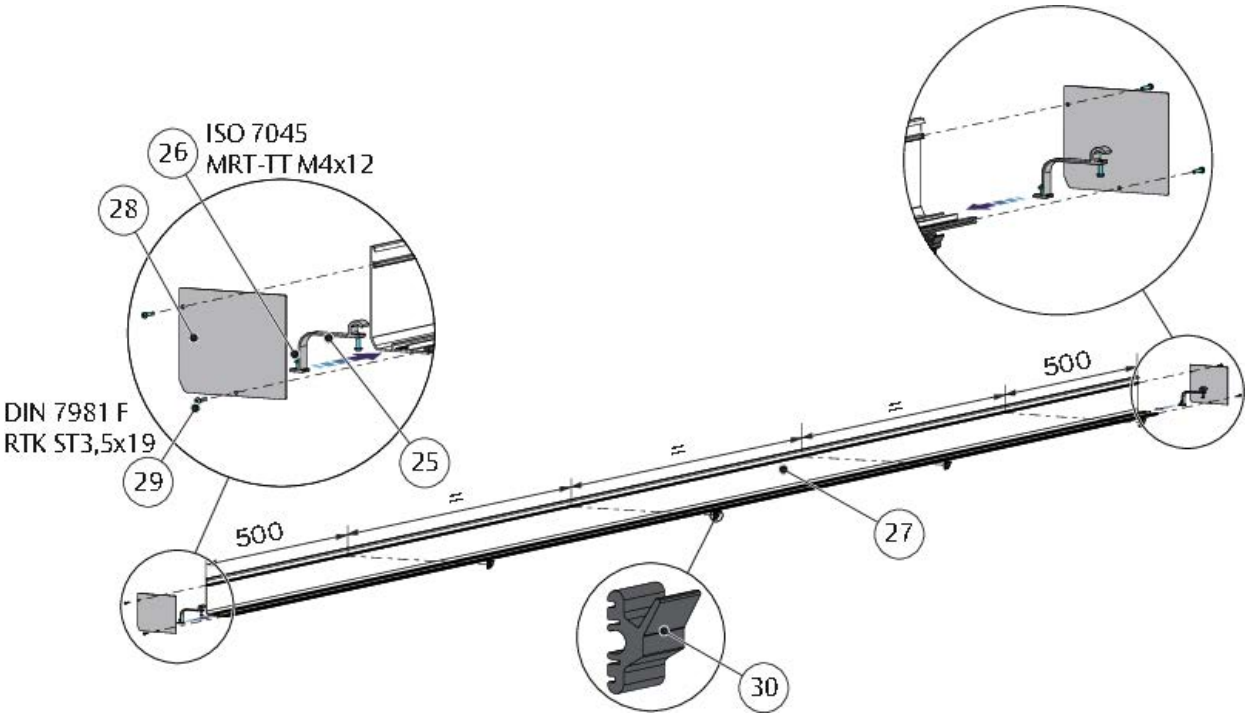
14.3 Cover set

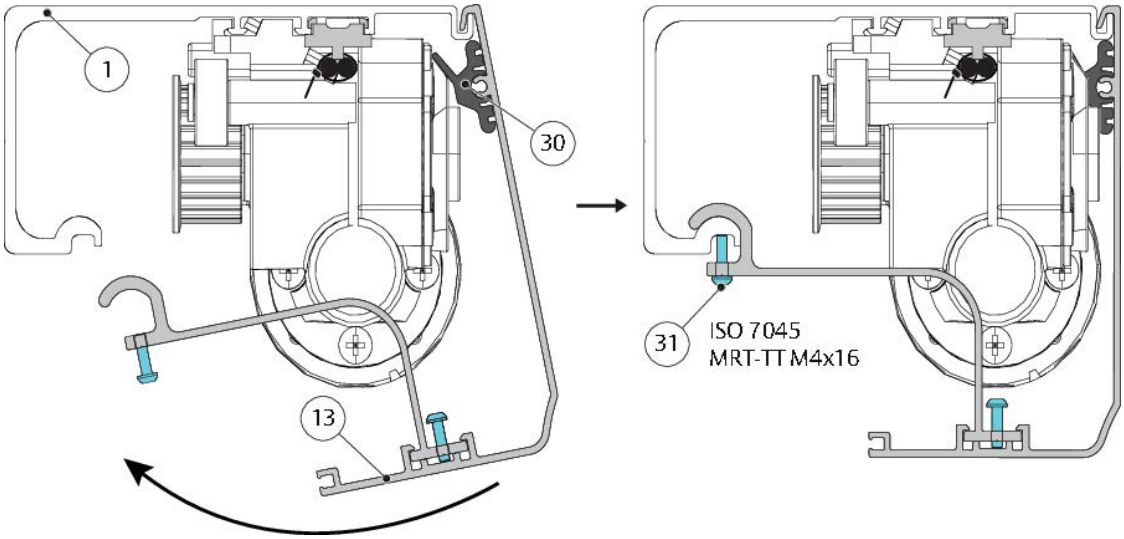
a Slide the cover locks (25) to the cover (27), then tighten screws (26), make sure that the cover locks (25) and the door stops do not interfere.

b Fix the end plates (28) with screws (29) to the end of the cover (27).

c Insert the cover supports (30) to the cover (27) as following picture.

d Hang up the cover set (13) to the beam (1), then tighten screws (31) on the cover locks (25).





1 Beam
13 Cover set
25 Cover lock
26 Screw
27 Cover
28 End plate
29 Screw
30 Cover supprot
31 Screw

14.4 Operation mode selectors

The door functions are set with operation mode selector.

The operation mode selector is available with 5 positions (plus RESET).

14.4.1 PSK-6U - Modes

OPEN, AUTO PARTIAL, AUTO, EXIT and OFF modes can be obtained.

Symbol	Text	Mode
	OPEN	The door is permanently open. The door can be moved by hand e.g. for window cleaning. All activation units are disconnected.
	AUTO PARTIAL	Two-way traffic, AUTO PARTIAL is obtained. The door can be opened partially with the inner and outer activation units and with a key switch (if fitted).
	AUTO	Two-way traffic, normal operation of the door. The door can be opened fully with the inner and outer activation units and with a key switch (if fitted).
	EXIT (ONE WAY)	One-way traffic passage from inside only. The door is normally locked if an electromechanical locking device has been fitted. The door can only be opened with the inner activation unit or with a key switch (if fitted).
	OFF	The door is closed and locks (if an electromechanical lock is fitted). The door cannot be opened with inner and outer activation units. The door can be opened partially with a key switch (if fitted).
	RESET	Turn the key clockwise to the position “R” (six o’clock) and insert a narrow object in the small hole on the operation mode selector and push briefly. The operator will RESET, then turn the key counter-clockwise back to the requested setting. The operator will start-up again, the doors will return to closed position with low speed (if operation mode selection is not OPEN). If the operator is equipped with battery unit, the operator will test the battery unit by opening with battery after the doors have closed with low speed (if operation mode selection is not OPEN or OFF). **Note!** The key cannot be removed in the "R" position.

14.5 Electrical opening with the battery unit

Used if a door is required to be opened by means of a rechargeable battery unit and remain in this position in the event of power failure. The battery can be monitored.

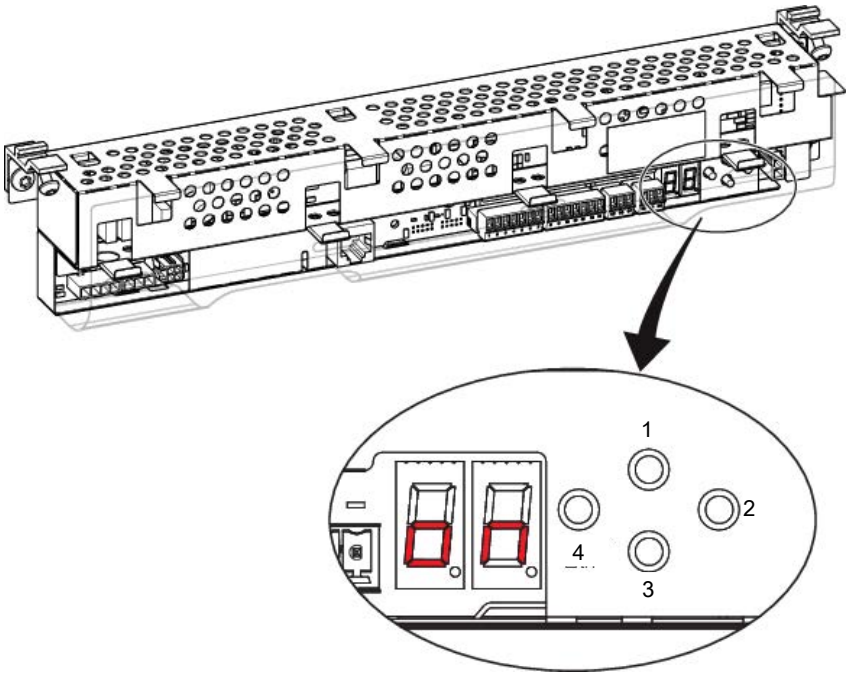
15 Troubleshooting

Before starting the troubleshooting, check that the operation mode is correctly selected. Start the troubleshooting by checking the mechanical and electrical parts of the operator in the order listed below.

The electromechanical parts are fixed in the support beam. To replace these components, the complete unit has to be loosened and replaced.

a The main control unit is equipped with a two digit display for error indication.

- During normal operation the display shows '**on**'.
- If all segments are off in the display check the mains power, power supply cable or perform a RESET. If the problem remains replace the main control unit or the power supply.
- When an error is active the display is alternating between an error type e.g. E4 (Motor / Encoder Error) and a second two digit number specifying the error more in detail e.g. 03 (encoder error). If several errors are active they will be displayed in sequence. On the electronic unit there is also a green light emitting diode (LED). If the LED is off or flashing it is indicating that the unit is failing.



'on' = Operation OK

1 Up (to step up in parameter or value menu)

2 Select (enters into parameter or value menu and program a value into memory)

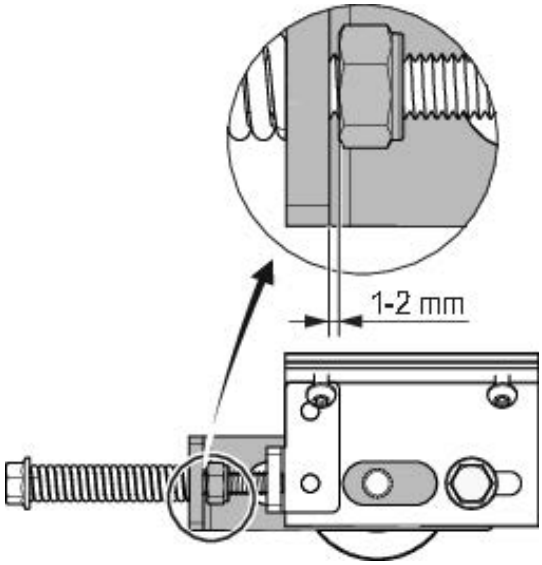
3 Down (to step down in parameter or value menu)

4 Learn/Exit (Learn has 3 functions, 1 quick learn, 2 Normal learn, 3 default setting, Exit jumps out from value menu without saving or parameter menu)

b Disconnect the mains power and batteries, if fitted. Unlock all mechanical locks. Pull the door leaf manually and check that the door can be easily moved over the complete sliding track/floor guide. If the door leaf stops or is hard to move, the reason may be sand, stones, rubbish etc. in the floor guide.

The door leaf may also be jamming on the floor or on the weather proofing brush strips. Clean the floor guide, adjust the door leaf height/depth or take other necessary measures e.g. replacement of worn parts until the door leaf is running smoothly when manually operated.

c If the belt is making noise against the beam or cover check that there is the right belt tension. On the Tension wheel assembly, measure the distance between the adjustment screw and the nut. The distance shall be 47 mm. Remove the slack reducers and release the fixing nut in the center of the tension wheel and check that the distance is 1-2mm between the nut and the adjacent plate.



Main error: Power Supply		
Detailed error	**Reason**	**Remedy**
- - Not enough power	There is not enough power to the MCU.	Check that the power does not drop from the PSU, check cables.
		Replace the PSU.

Main error: E1 Sensor Error		
Detailed error	**Reason**	**Remedy**
30 Stop Impulse Error	The control unit does not get a test answer from the stop impulse.	Make sure that the monitoring output is connected and the connections are OK.
31 Side Presence Impulse Error	The control unit does not get a test answer from the activation unit.	Make sure that the monitoring output is connected and the connections are OK.
		Replace the side presence activation unit.
32 Presence Impulse Error	The control unit does not get a test answer from the activation unit.	Make sure that the monitoring output is connected and the connections are OK.
		Replace the presence activation unit.

Main error: E2 Battery Error		
Detailed error	**Reason**	**Remedy**
21 Battery Error	The battery voltage drops due to low capacity during battery test.	Charge or replace the battery.
	The battery voltage measurement is wrong.	Replace the main control unit.
25 Battery Error	The battery is disconnected, short circuited or the internal thermal fuse in the battery is defective. The charging current is out of specification.	Make sure that the cables are OK and connected.
		Charge or replace the battery.
		Replace the main control unit.
26 Battery Action Timeout	The door is prevented its battery test within a stated time, due to high friction or jammed door.	Make sure that the door can open to the fully open position.

Main error: E3 Electronic Unit Error		
Detailed error	**Reason**	**Remedy**
00 RAM Error	Internal RAM memory error.	RESET, and if the problem remains, replace the electronic unit having a flashing or extinguished LED.
01 ROM Error	Internal ROM memory error.	RESET, and if the problem remains, replace the electronic unit having a flashing or extinguished LED.
02 EEPROM Error	Serious internal EEPROM memory error.	RESET Download a Default parameter set and perform a RESET. If the problem remains, replace the main control unit?
05 Ambient Temperature Error	Ambient temperature measurement is wrong.	RESET, and if the problem remains, replace the main control unit.
06 Brake Chopper Error	Not possible to activate brake chopper.	RESET, and if the problem remains, replace the main control unit.
08 A/D Converter Error	The internal A/D converter is broken.	RESET, and if the problem remains, replace the electronic unit having a flashing or extinguished LED.
10 Register Error	Internal register error.	RESET, and if the problem remains, replace the electronic unit having a flashing or extinguished LED.
11 OS Error	Internal program error.	RESET, and if the problem remains, replace the electronic unit having a flashing or extinguished LED.

Main error: E3 Electronic Unit Error		
Detailed error	**Reason**	**Remedy**
14 Lock Current Error	The lock is defective.	Check that the right lock is installed, and if the problem remains, replace the lock.
		RESET, and if the problem remains, replace the main control unit.
17 Hardware Watchdog Error	It is not possible to disable the motor bridge.	RESET, and if the problem remains, replace the main control unit.
18 EEPROM Critical Write Error	Internal write EEPROM memory error. This error mainly occurs when it is impossible to change a configuration parameter.	RESET, and if the problem remains, replace the main control unit.
22 Over Current Error	The output is overloaded. Possible overloaded outputs are: • MCU/MCU-ER TB:6, TB:10 and/or TB:13 • IOU TB:3 and/or TB:4	RESET, and if the problem remains, check the connected sensors and other 24 V accessories.
		RESET, and if the problem remains, replace the electronic unit having a flashing or extinguished LED.
23 Lock Circuit Error	It is not possible to disconnect the lock with the lock relay.	RESET, and if the problem remains, replace the main control unit.
24 Learn Error	The Learn cycle has timed out.	Make sure that the door can make a full open/close cycle. Check for high friction or jammed door and then make a new Learn.
33 Flash Code Error	Serious internal programming error.	RESET, and if the problem remains, replace the main control unit.
34 Output Enable Error	Test of safety related circuits failing.	RESET, and if the problem remains, replace the main control unit.
35 Link Voltage Error	The internal link voltage measurement is wrong.	RESET, and if the problem remains, replace the main control unit.

Main error: E4 Motor / Encoder Error		
Detailed error	**Reason**	**Remedy**
03 Encoder Error	The encoder, encoder cable, or motor cable is damaged.	Make sure that the encoder cable and the motor cable are connected.
04 Motor Current Error	The motor cable or the encoder cable is damaged.	Make sure that the encoder cable and the motor cable are connected.
09 Encoder Cable Error	The encoder cable is damaged.	Make sure that the encoder cable is connected, otherwise replace the encoder cable.

Main error: E5 Lock Error		
Detailed error	**Reason**	**Remedy**
07 Lock Failure	The lock or something else was preventing the door from opening the first 14 mm from closed position.	Make sure that the lock is operating without friction.
		Make sure that Hold Force and Lock Release parameters are set correctly.

Main error: E6 Communication Error		
Detailed error	**Reason**	**Remedy**
12 Motor Control Communication Error	Motor control processor disconnected from the internal bus.	RESET, and if the problem remains, replace the main control unit.
13 Door Control Communication Error	Door control processor disconnected from the internal bus.	RESET, and if the problem remains, replace the main control unit.

It is not possible to replace an ASSA ABLOY operator component with a component from a different brand.

Main error: E7 Motor Temperature High		
Detailed error	**Reason**	**Remedy**
16 Motor Temperature High	The duty cycle of the door is too high for the current Speed settings and Hold Open Time.	If the motor is warm, put the door in operation mode OPEN and wait for at least 1 minute. Reduce Speeds and increase Hold Open Time parameters.
	The heavy-duty motor is replaced by a normal duty motor.	Put the door in operation mode selection OPEN and wait for at least 5 minutes.

Main error: E8 Non-critical Error		
Detailed error	**Reason**	**Remedy**
49 EEPROM Non-critical Write Error	The main control unit cannot write error log or event log information to the EEPROM memory.	RESET, and if the problem remains, replace the main control unit if it is important to read logged information.
50 EEPROM Access Error	The EEPROM queue is full.	Too many Events to log. Reduce the number of events to log in the Event Log configuration.

15.1 After remedy or replacement the operator has to be checked as follows:

a Study the door movement and adjust the functions to the values required for a smooth door operation and make sure to comply with local regulations.

b Check that correct functions and values have been selected for the installed accessories and that the installation complies with valid regulations and requirements from the authorities.

c Clean the cover and the doors.

16 Service/Maintenance

Regular inspections shall be made according to national regulations and product documentation by an ASSA ABLOY Entrance Systems-trained and qualified technician. The number of service occasions should be in accordance with national requirements and product documentation.

As with all other technical products, an automatic door needs maintenance and service. It is essential to know the importance of maintenance to have a reliable and safe product.

Service and adjustments will ensure a safe and proper operation of an automatic door unit.

The "Service Log Book" shall be used together with the "Site Acceptance Test and Risk Assessment" document (PRA-0005) provided. Keep both documents available for maintenance and service records.

The table below shows the recommended interval in months, when to replace parts during preventive maintenance.

Part	Part number	Cycles/hour in operation			Abusive Environment
		<10	<100	>100	
		Low traffic	Medium traffic	High traffic	
Battery	331013725	24	24	24	24
Door carriage	331012592	36	24	12	12
Tooth belt	331016652	48	48	48	36
Door stop	331012594	24	24	24	24
Tension wheel	330000837	36	36	36	36
Detachment guard	331012777	60	60	60	60
Anti-rise kit	331015924	60	60	60	60

ASSA ABLOY Entrance Systems is a leading supplier of entrance automation solutions for efficient flow of goods and people. Building on the long-term success of the Besam, Crawford, Albany and Megadoor brands, we offer our solutions under the ASSA ABLOY brand. Our products and services are dedicated to satisfying end-user needs for safe, secure, convenient and sustainable operations.
ASSA ABLOY Entrance Systems is a division within ASSA ABLOY.

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