

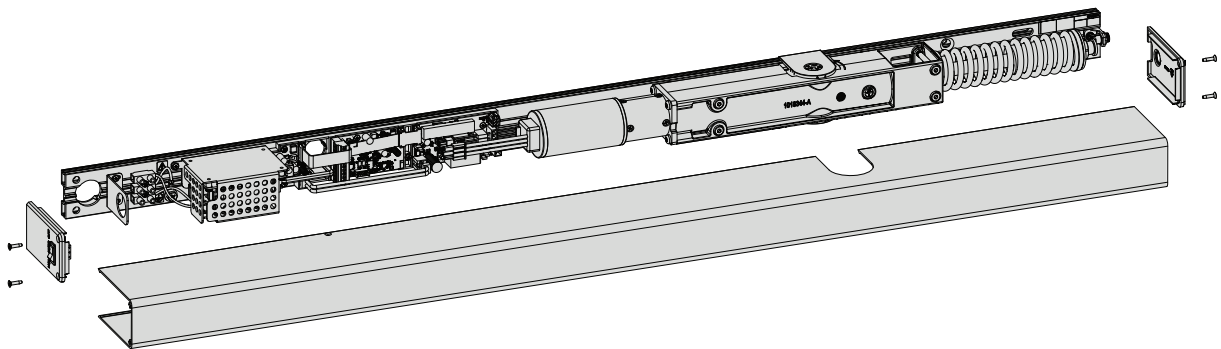
Installation and Service Manual

Swing Door Operator

ASSA ABLOY SW60

ASSA ABLOY
Entrance Systems

Experience a safer
and more open world



Original instructions

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Backtrack information: folder:Workspace Main, version:a886, Date:2025-01-15 time:08:38:20, state: Working

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1 Revision

Following pages have been revised:

Page	Revision - → 1.0
	First release.

2 Presentation of notes and warning signs

Various symbols and texts are used in this manual for easier understanding and identification.

Note: When you see **Note!** it contains useful advice and information to ensure correct and compliant usage of the system.



Potential hazardous situation that can lead to either minor or severe injuries or death and cause either minor or substantial property damage.



Potential hazardous situation that could lead to danger of electric shock and cause serious injury or death.

3 WARNING: Important safety instructions. Follow all instructions since incorrect installation can lead to severe injury.



- Failure to observe the information in this manual may result in personal injury or damage to equipment.
- To reduce the risk of injury to persons - use this operator with single swinging only.
- For indoor use only
- Make sure the ambient temperature is in the range specified on page [Technical specifications](#).
- Before installing the drive, check that the driven part is in good mechanical condition, correctly balanced and opens and closes properly.
- After installation, ensure that the mechanism is properly adjusted and that the protection system and any manual release function correctly.
- Do not use the equipment if repair or adjustment is necessary.
- Disconnect supply power when cleaning or other maintenance is to be carried out.
- The operator can be used by children only when 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 concerning use of the appliance in a safe way and understand the hazards involved.
- Cleaning and user maintenance shall not be made by children.
- Do not let children or anyone climb on or play with the door or the fixed/remote controls.
- In all instances, where work is being done on the doorset, the area is to be secured from pedestrian traffic, and the power removed to prevent injury.

- The doorset can be operated automatically or manually by activators. It can also be used manually as a door closer.
- Do not dash through a closing door.

4 Important information

4.1 Intended use

The ASSA ABLOY SW60 is an automatic swing door operator developed to facilitate entrances to buildings and within buildings through swing doors. The ASSA ABLOY SW60 is an electromechanical operator approved for fire door applications. This widely used operator can be found in applications ranging from handicapped access in private homes to commercial establishments. It is recommended for interior openings with a maximum weight of 200 pounds. It is available for exterior openings with doors that have a maximum weight of 200 pounds and may be subject to low/mild wind conditions or stack pressures. For environments of more severe wind conditions and stack pressures, please consider the ASSA ABLOY SW200.

Door operator used in escape routes shall be installed so that the door opens in the escape direction unless the system allows break-out in this direction.

The motor and gear box are combined into a compact unit mounted alongside the control unit within the cover. The operator is connected to the door leaf with a range of different arm systems.

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.

For escape in emergency situations the doorset is opened manually.

This manual contains the necessary details and instructions for the installation, maintenance and service of the Swing Door Operators ASSA ABLOY SW60.

Make sure that the connection to the source of supply by a flexible cord shall not be allowed to become entrapped in moving parts of the operator or door system.

The glazing material in unframed swinging doors and/or framed swinging doors, except that glazing material that is less than 1 ft² (0.9 m²) and having no dimension greater than 18" (457 mm), shall comply with the requirements of ANSI Z97.1.

Please use the adaptor provided with the operator in the packaging, other adaptor may result in risk of fire.

For use see User manual 1027007.

Save these instructions for future reference.

4.2 Safety precautions

Be sure to complete a risk assessment according to "Guide for installers of Powered Pedestrian Swing Doors" (PRA-0006) and fill in the "Site Acceptance Test" (PRA-0007) 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. Factory authorized training is required to carry out these tasks safely. Only ASSA ABLOY Entrance Systems-trained technicians should be allowed to carry out these operations.

4.3 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.

4.4 Environmental requirements

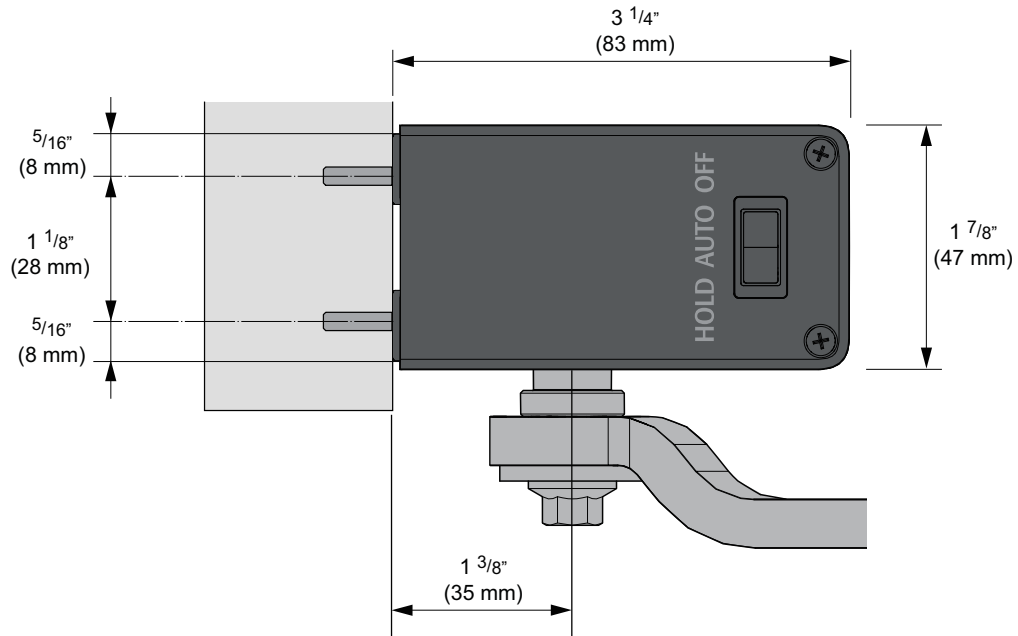
ASSA ABLOY Entrance Systems products are equipped with electronics and may also be equipped with batteries containing materials which are hazardous to the environment. Disconnect power before removing electronics and battery and make sure it is disposed of properly according to local regulations (how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

5 Technical specifications

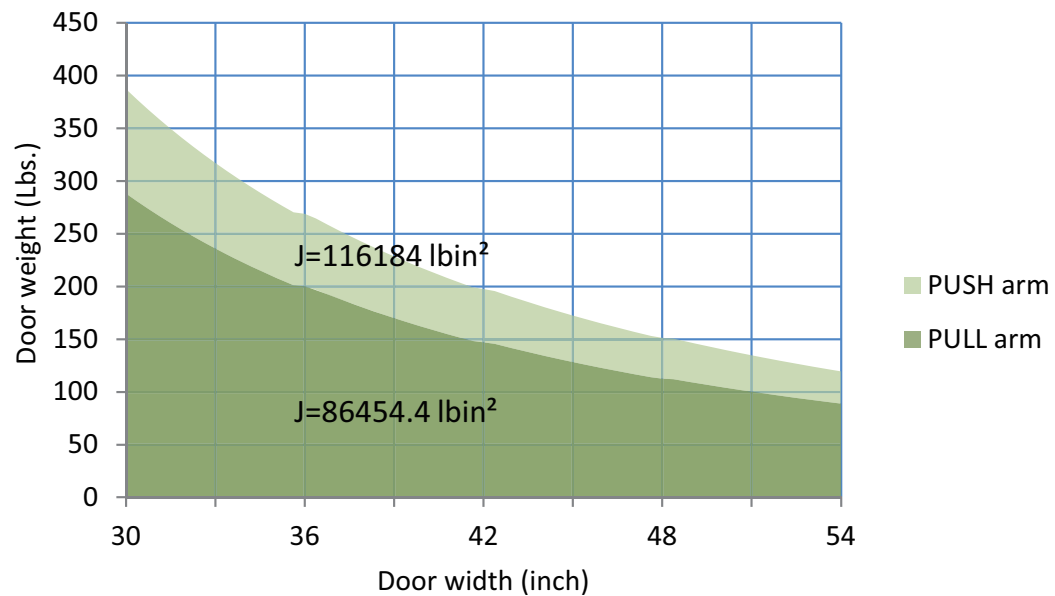
Ensure that the door operator with the technical specifications below is suitable for the installation.

Manufacturer:	ASSA ABLOY Entrance Systems US Inc.
Address:	1900 Airport Road, Monroe, NC 28110, US
Type:	ASSA ABLOY SW60
Power supply:	120 V AC +10/-15%, 50/60 Hz, mains fuse max. 10A (building installation)
Power consumption:	Max. 90 W
Auxiliary voltage:	24 V DC, max. 400 mA (max. 1000 mA including lock)
Max. weight:	200 Lbs. Note: Refer to section 5.1 and the appropriate standard (ANSI/BHMA A156.19) for door forces and speeds as related to door weight and width.
Door width:	30 - 48"
Electro-mechanical locking device:	Selectable: 12 V DC, max. 1200 mA or 24 V DC, max. 600 mA
Door opening angle:	PUSH arm: 80° - 110°, with reveal 0 - 5 1/8" PULL arm: 80° - 110°, with reveal 0 - 2"
Opening time (0° - 80°):	Variable between 4.5 - 9 s
Closing time (90° - 10°):	Variable between 4.5 - 9 s
HOLD open time:	2s - 6h
Ambient temperature:	-4 °F to +113 °F
Relative humidity:	Max. 95%
Drive unit weight:	7.5 Lbs.
Class of protection:	IP20
Approvals:	Third party approvals from established certification organizations valid for safety in use.
Complies with: UL 10C, ANSI/BHMA A156.19 and UL 325	

This product is to be installed internally.



5.1 Permitted door weight and door width



Permitted door weight and door width:

Push arm: 150 Lbs. / 48" or 266 Lbs. / 36"

Pull arm: 112 Lbs. / 48" or 200 Lbs. / 36"

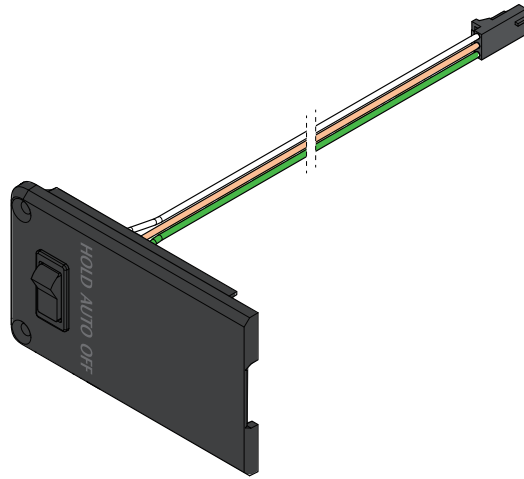
Note: Complies with UL 325.

6 How the ASSA ABLOY SW60 works

The swing door operator ASSA ABLOY SW60 uses a motor which is connected to the output shaft. The push or pull arm system that is connected to the output shaft opens the door in a surface mounted application.

6.1 Door mode functionality

6.1.1 HOLD/AUTO/OFF switch



Function	Program
HOLD	The door can be held at any position when opening or closing.
AUTO	Impulses from activation units connected to inner impulse or outer impulse will initiate a door open cycle. The door can be opened with the inner / outer push plates or other knowing act devices.
OFF	Only KEY Impulses such as key pads and after hours security access can open the door.

Note: If an electric strike is installed, the door function must be set to EXIT using the app to operate properly.

6.2 Modes and functions on app

6.2.1 Wireless controlling

The door can be controlled by the app on a smartphone or a tablet.

6.2.2 Off / Closed

The door is closed. The door cannot be opened with the inner / outer push plates or other knowing act devices. The door is locked if an electromechanical locking device has been fitted.

6.2.3 Exit

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 push plates or other knowing act devices (if fitted), or by a signal to the Key Impulse.

6.2.4 Auto

The door can be opened with the inner / outer push plates or other knowing act devices. Electromechanical locking device will be released when door is closed.

6.2.5 Hold / Parking

The door can be held at any position when opening or closing. The door will not react on impulses, "push and go" or "push and close".

6.2.6 Opening

When an activation signal is received by the control unit, the door is opened at the installer-adjusted opening speed. Before the door is fully open at back check, it slows automatically to low speed. The open position is held by the motor.

If the door is obstructed while opening, it will stop on stall which can be selected with the app (see page 51).

6.2.7 Closing

When the hold open time has elapsed, the operator will close the door automatically, using spring force and motor. The door will slow to low speed at latch check before it reaches the fully closed position. The door is kept closed by spring power or combined with extended closing torque by the motor.

If the door is obstructed while closing, it will reverse upon obstruction which can be selected with the app (see page 51).

6.2.8 Event Log

Events and errors can be saved.

6.2.9 Extended closing torque

The motor will increase the closing torque when the door is closed or during closing. If the parameter is set to "0", the door will close with normal spring power.

6.2.10 Power assist

The "Power assist" function will help the user to open the door manually. If "High" is chosen, the motor will give maximum help. In door mode "Off / Closed", the motor will not assist the user.

6.2.11 Push and go

When the door is manually pulled / pushed to open, it will perform an open cycle. Push and go is not active in mode "Off / Closed".

6.2.12 Push and close

When the door is manually pulled / pushed towards closed position, the "Push and close" function will cancel the hold open time and start to close the door.

6.2.13 Stop on stall

When the door is opening and gets blocked the "Stop on stall" function will make the door stop and stand still in the blocked position for a short time and then start closing. If "Stop on stall" is inactive, the door will continue to drive towards the open position for some time before it starts closing.

6.2.14 Reverse upon obstruction

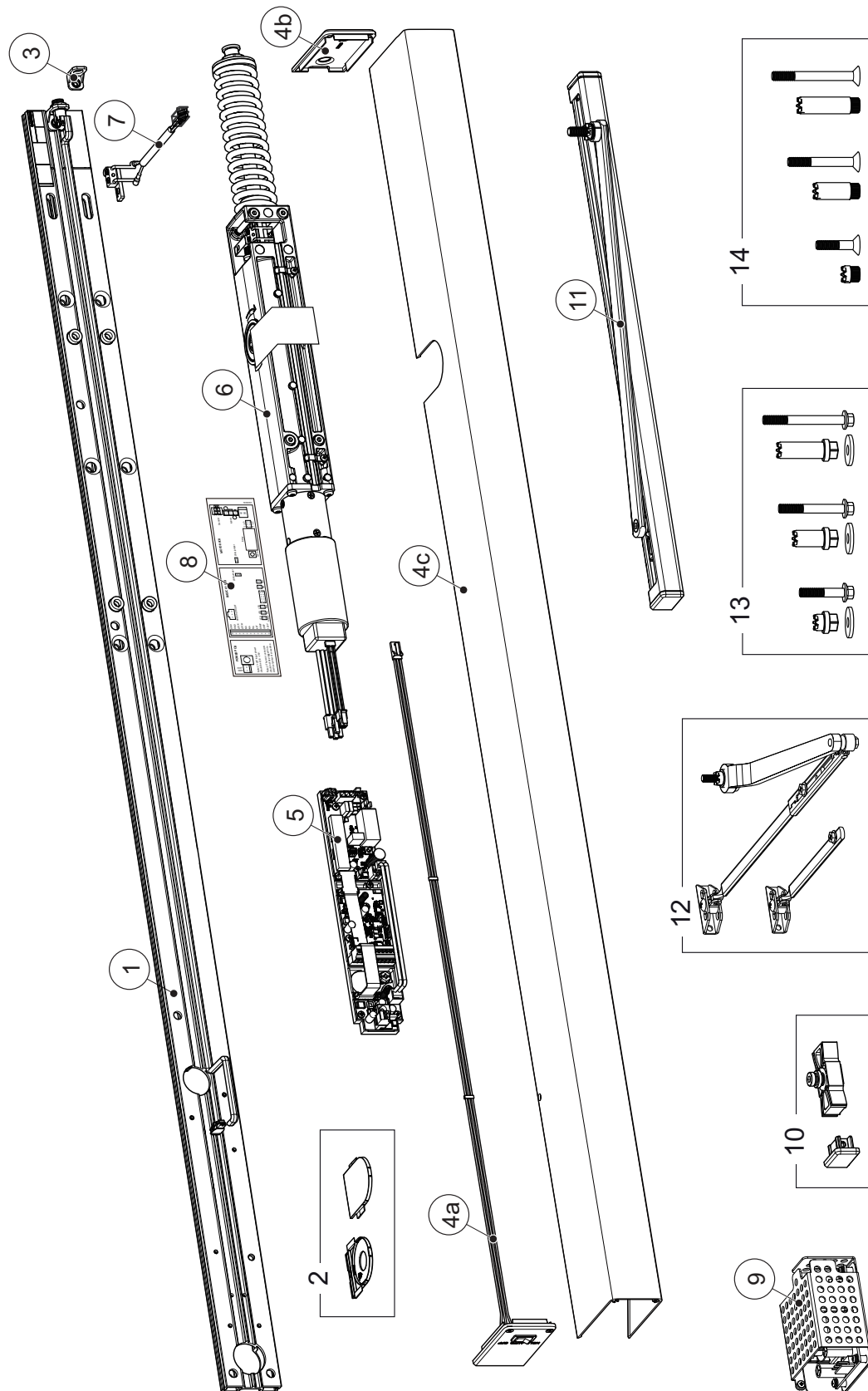
If the door gets blocked when closing, the "Reverse upon obstruction" will make the door re-open. If the "Reverse upon obstruction" is disabled the door will continue to drive towards the closed position.

6.2.15 Ratchet function

When the door is given an activation signal, the door will open and stay in the open position until a second activation signal is received. The "Ratchet function" is only active if the parameter is enabled and the activation signal sent to the door is an inner impulse (connected to inner impulse).

- 6.2.16 Function of locks
- The control unit has an available output of DC for external locks
 - The lock output is short circuit proof and can supply a lock with 12 V DC, max. 1200 mA or 24 V DC, max. 600 mA. Lock function is active in mode "Off / Closed" and "Exit".
 - Select 12 V DC or 24 V DC, locked with or without power
 - Lock release and opening delay
 - If the door cannot fully close, the operator will perform a lock retry (once if manually, twice if automatically open).
- 6.2.17 Impulses
- Input for INNER / OUTER / KEY impulse.
- 6.2.18 Statistics
- Record data of the action for the door.
- 6.2.19 Factory reset
- Will restore all settings with factory default settings.
 - All users that have previously been connected to the door will be removed. Owner need to re-take ownership and re-add all users.

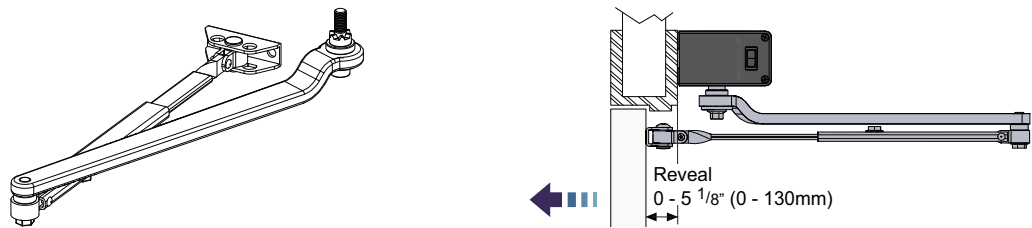
7 Part identification



Item No.	Art. No.	Description
1	330001225	Back plate with power cable
2	331020445BK	Spindle cover kit (Black)
	331020445PD	Spindle cover kit (Grey)
3	331019785	Bracket power plug
4a	331026622	Endplate with control switch (Black), 83 mm
4b	331026156	Endplate (Black), 83 mm
4c	331026148DB	Cover (Black), 83 mm
	331026148NA	Cover (Silver), 83 mm
5	331018537	Control unit (CU)
6	330000841	Transmission unit
7	330000829	Lock kick for PUSH & PULL
8	331020035	CU connection label
9	331026784	Power supply assembly
10	330000830BK	PULL arm service kit (Black)
	330000830PD	PULL arm service kit (Grey)
11	331020226BK	PULL arm kit (Black)
	331020226PD	PULL arm kit (Grey)
12	331020857BK	PUSH arm kit (Black)
	331020857PD	PUSH arm kit (Grey)
13	330000831BK	Drive shaft kits for PUSH arm (Black)
14	330000832BK	Drive shaft kits for PULL arm (Black)

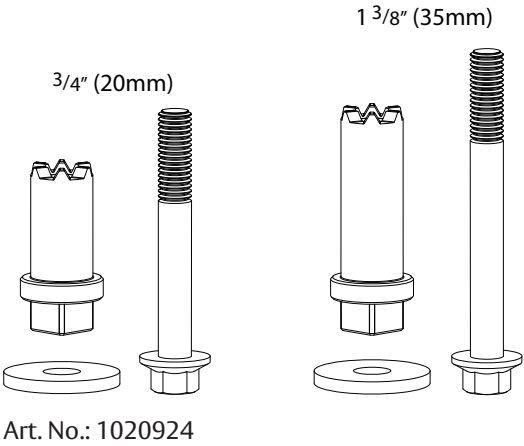
8 Arm systems

8.1 Pushing installation with PUSH arm



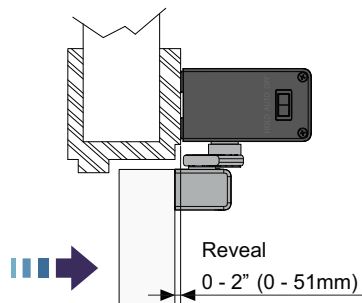
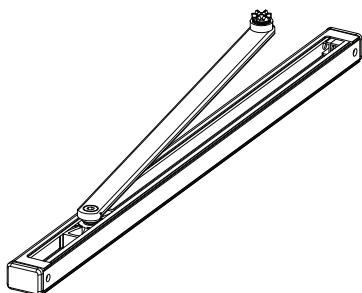
	Reveal
Art. No.: 1020224 	0 - 2 11/16" (0 - 68mm)
Art. No.: 1019456 	2 1/4 - 5 1/8" (56 - 130mm)

8.1.1 Drive shaft extension kits for PUSH arm



8.2 Pulling installation with PULL arm

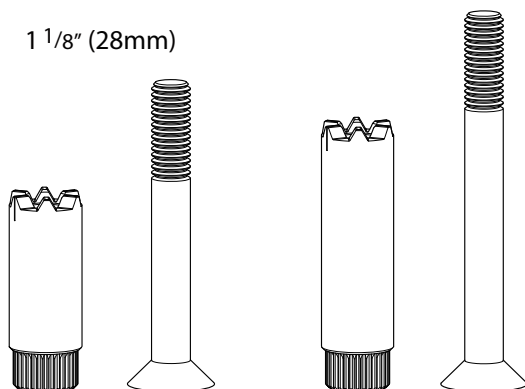
Art. No.: 1020226



8.2.1 Drive shaft extension kits for PULL arm

1 3/4" (43mm)

1 1/8" (28mm)



Art. No.: 1020925

9 Options

9.1 Push plates

For ADA compliance, center of push plate(s) must be 34"-48" above finished floor or height required by local AHJ.

9.1.1 Push plates



P/N: 75-02-101



P/N: 75-02-102



P/N: 75-02-107



P/N: 75-02-108



P/N: 75-02-280

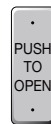
9.1.2 Remote transmitter push plates



P/N: 75-02-273



P/N: 75-02-272



P/N: 75-02-269



P/N: 75-02-270

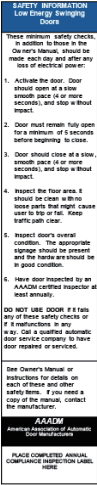
9.1.3 Installation box for narrow plates



P/N: 75-21-002

9.2 Labels

Label kit, Art. No.: 1020887

	
Dual side "AUTOMATIC CAUTION DOOR"	Dual side "Low Energy Power Operated Door"
	
Push side "PUSH TO OPERATE"	Pull side "PULL TO OPERATE"
	
Dual side "ACTIVATE SWITCH TO OPERATE"	"AAADM safety"

10 Pre-installation

10.1 General tips/Safety concerns



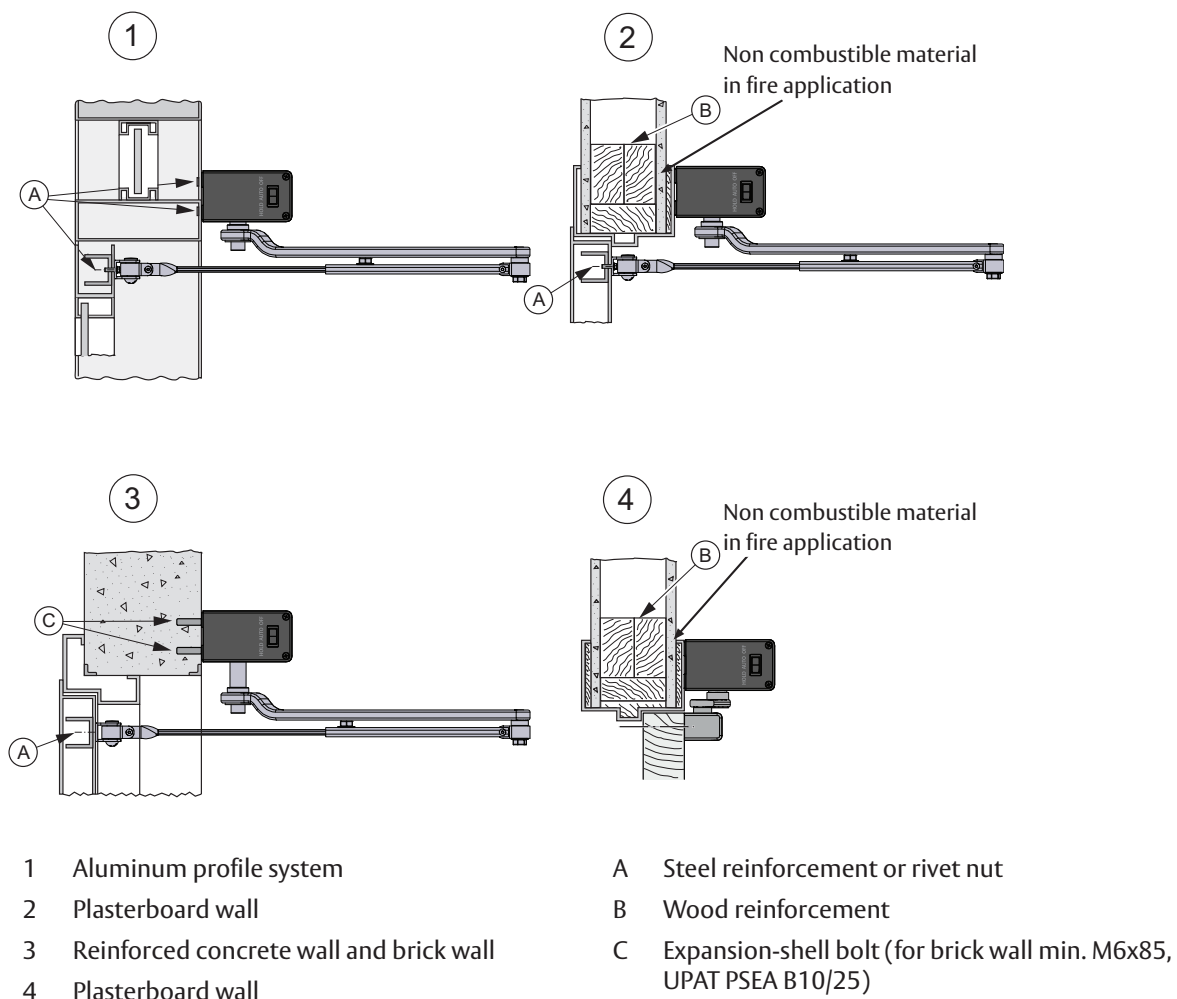
In all instances, where work is being done, the area is to be secured from pedestrian traffic to prevent injury.



In all instances, where work is being done, the main power is to be 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.
- The cables must avoid sharp edges and moving parts. Attach the cable with cable ties along the cable routing.
- 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 on page [Technical specifications](#).
- 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.
- 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 15/16" (25 mm) or less than 5/16" (8 mm)
 - for feet, a distance greater than 1 15/16" (50 mm)
 - for heads, a distance greater than 7 7/8" (200 mm)
 - and for the whole body, a distance greater than 19 11/16" (500 mm)
- Danger points shall be safeguarded up to a height of 98 7/16" (2.5 m) from the floor level.
- The operator shall not be used with a doorset incorporating a wicket door.
- If the adaptor is broken, it is important to cease using the operator to avoid wearing down the spline-teeth of the drive unit.

10.2 Installation examples



10.3 Fastening requirements (but not included)

Base material	Minimum requirements of wall profile*
Steel	3/16" (5mm)**
Aluminum	1/4" (6 mm)***
Reinforced concrete	min. 2" (50 mm) from the underside
Wood	2" (50 mm)
Brick wall	Expansion-shell bolt, min. M6x85, UPAT PSEA B10/25, min. 2" (50 mm) from the underside

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

** Thinner wall profiles (1/8-3/16" / 3-5 mm) must be reinforced with rivet nuts.

*** Thinner wall profiles (5/32-1/4" / 4-6 mm) must be reinforced with rivet nuts.

11 Mechanical installation

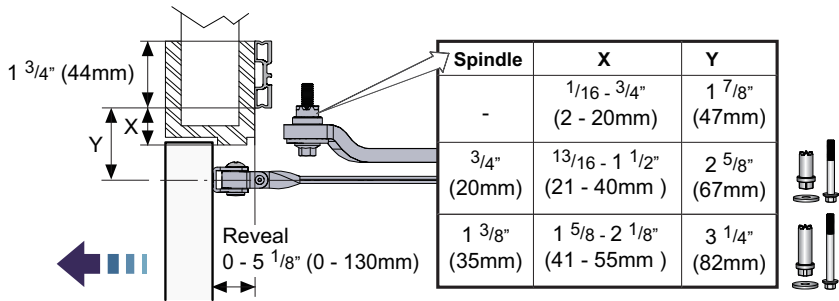
The operator is mounted on either side of the door header depending on type of doors. The door is controlled with a push or pull arm system.

Note: Consider all power wire entry locations and signaling wires before preparing back plate.

Please do not touch the PCB during installation to prevent static breakdown.

11.1 PUSH arm system

1. Determine the Door Hand (push instructions)

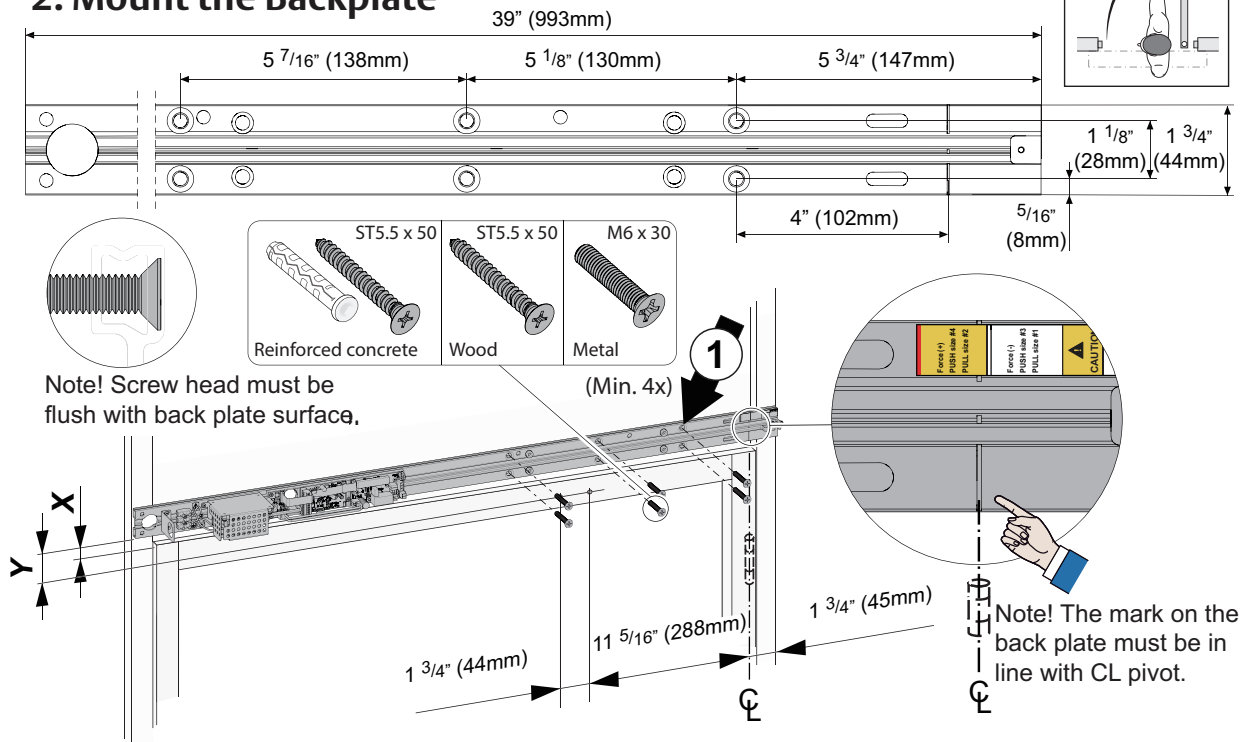


Installation movie



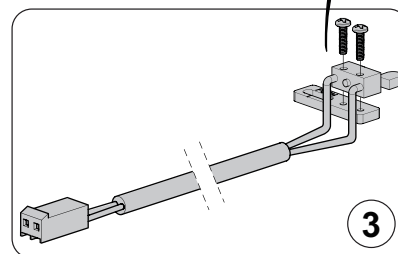
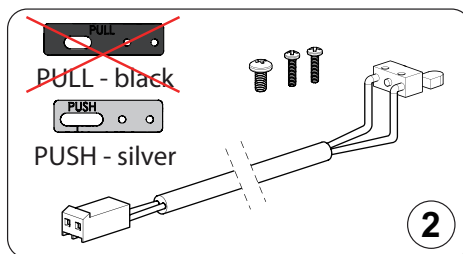
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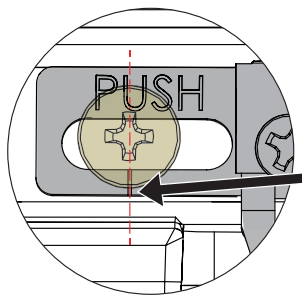
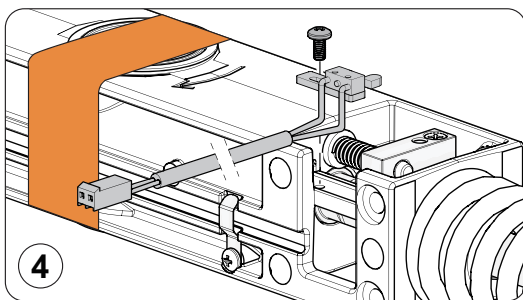
2. Mount the Backplate



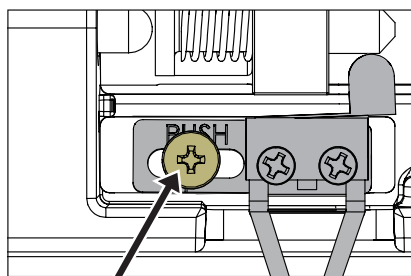
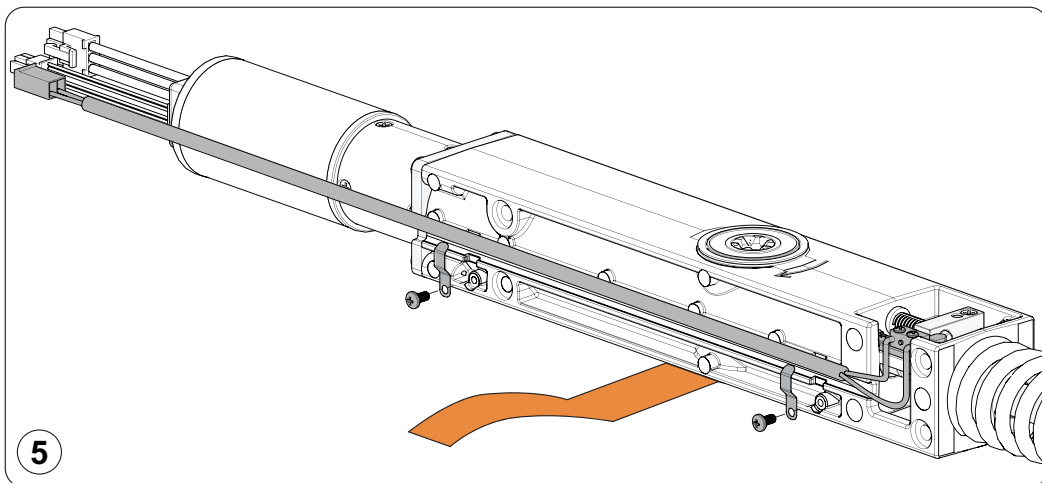
3. Mount the Lock kick (Optional)

! Note! Install lock kick for all fire-rated doors.



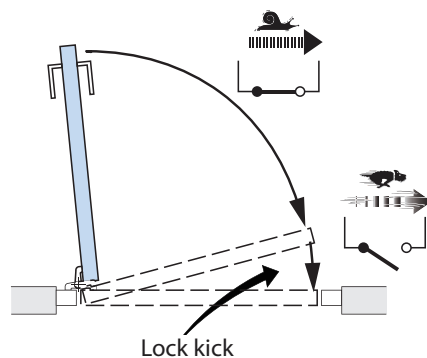


Refer to the picture for recommended location of lock kick.



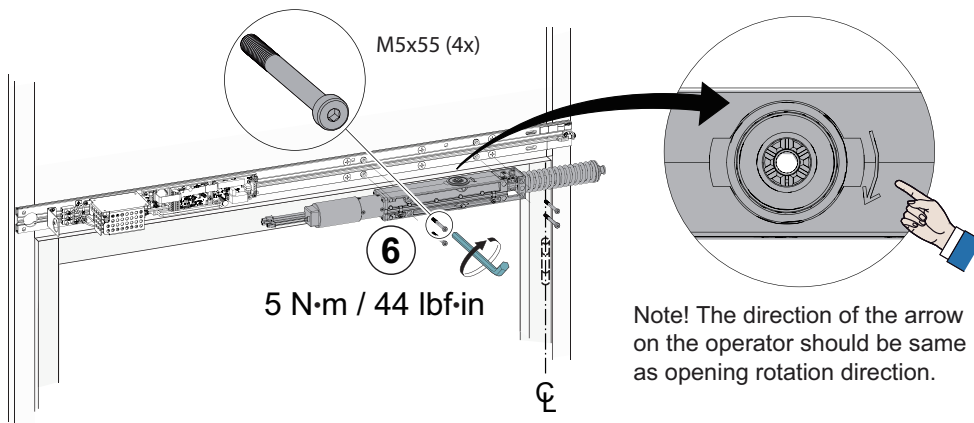
Unscrew this screw to move the lock kick and adjust angle of lock kick.

+ -
Max. Min.



Lock kick

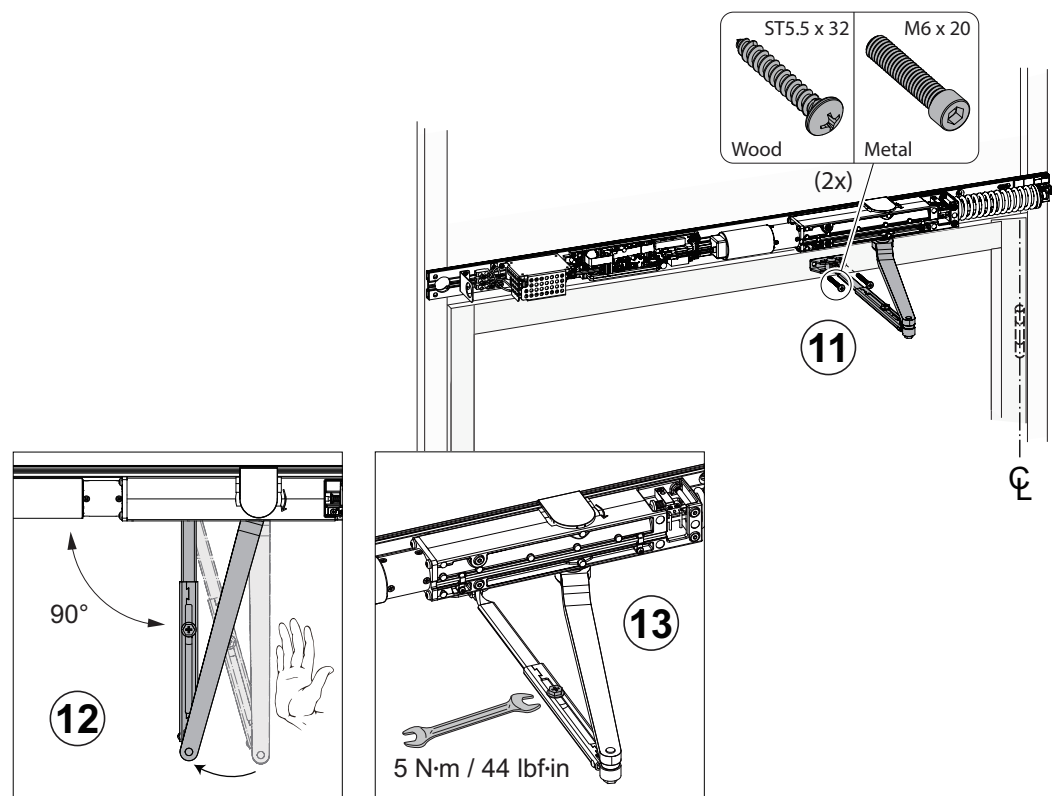
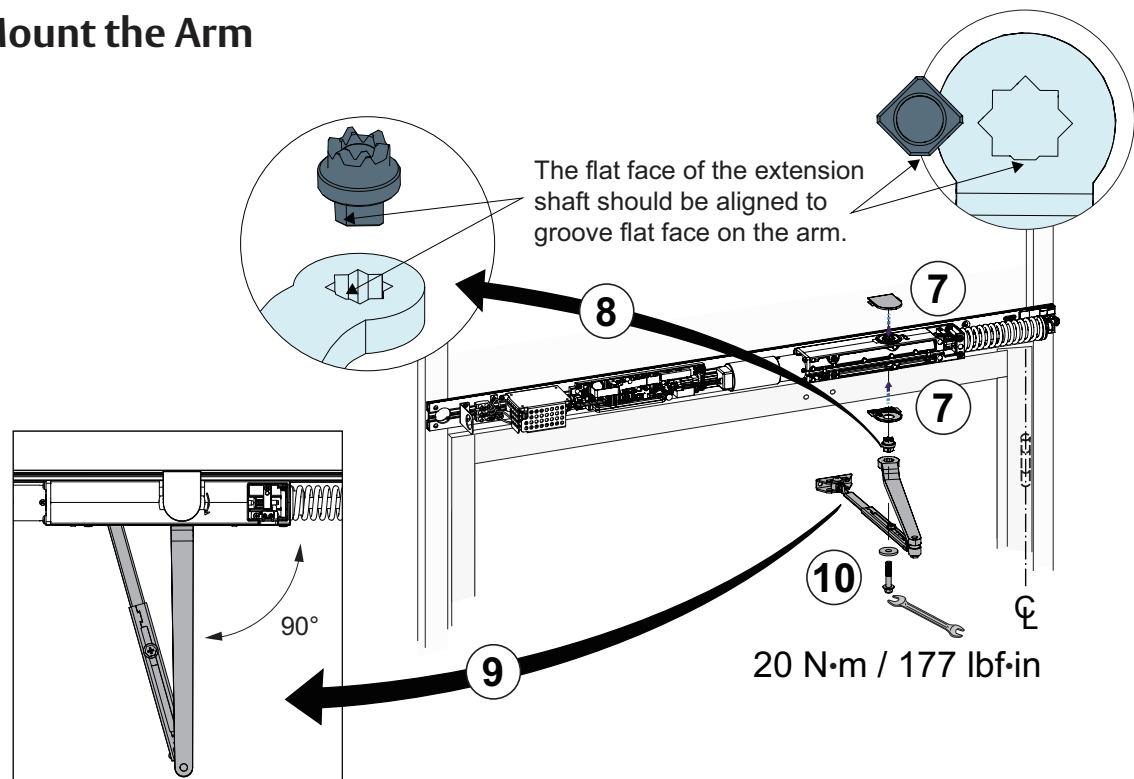
4. Mount the Operator

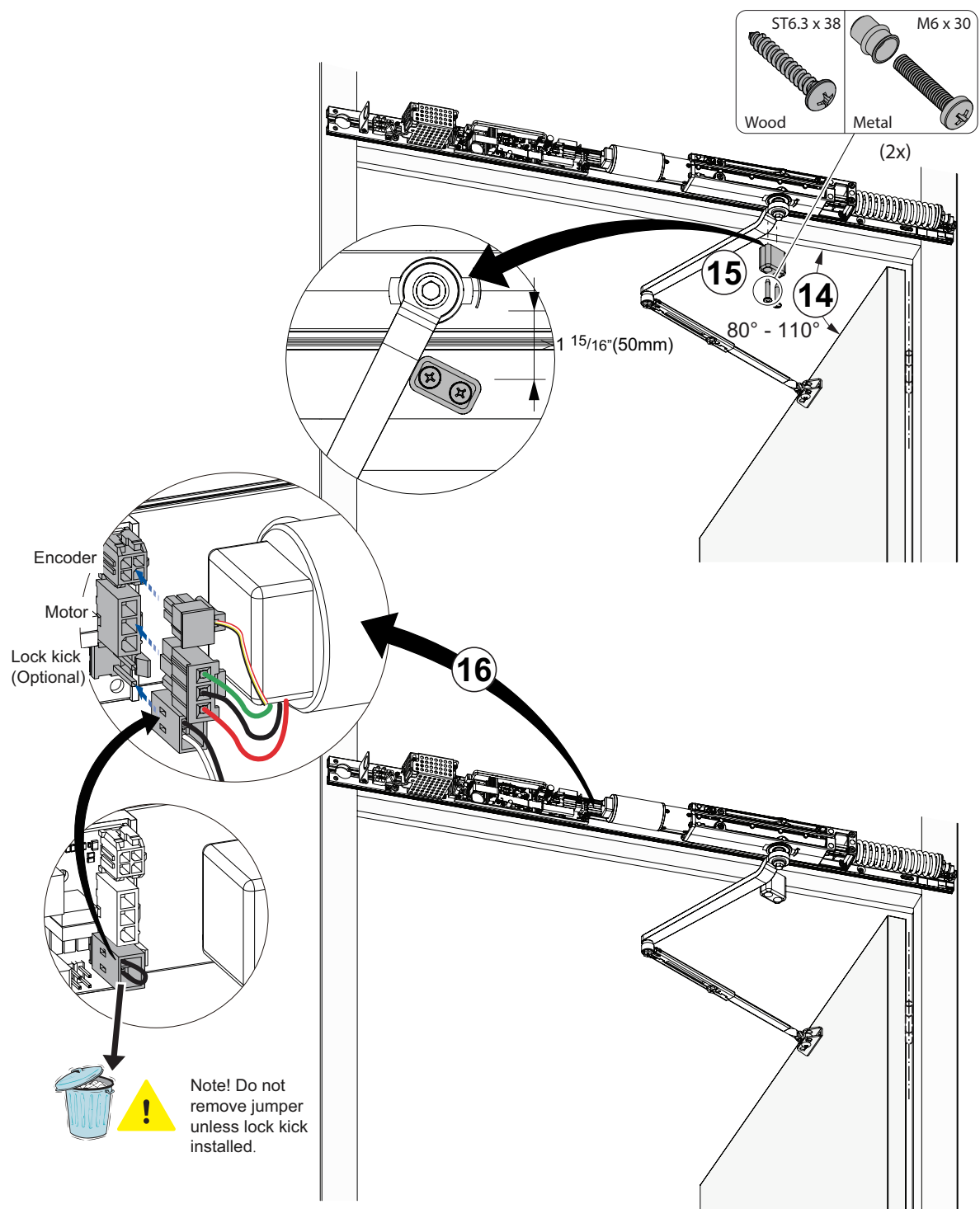


5 N·m / 44 lbf·in

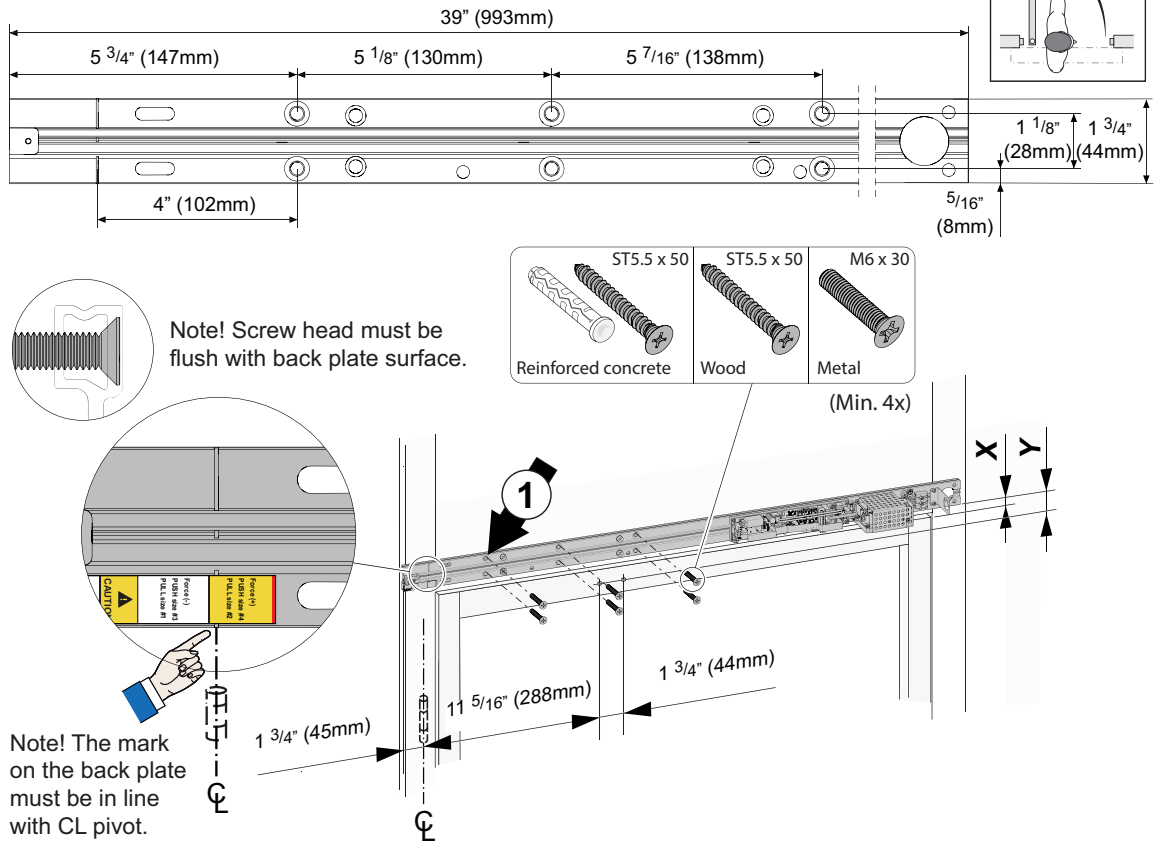
Note! The direction of the arrow on the operator should be same as opening rotation direction.

5. Mount the Arm





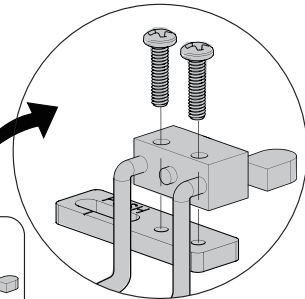
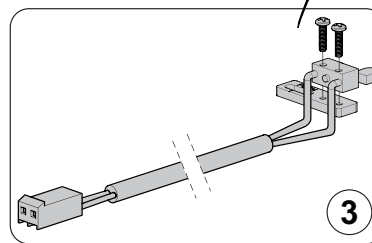
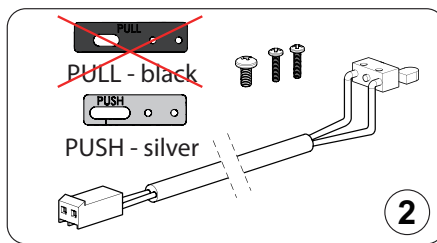
2. Mount the Backplate



3. Mount the Lock kick (Optional)

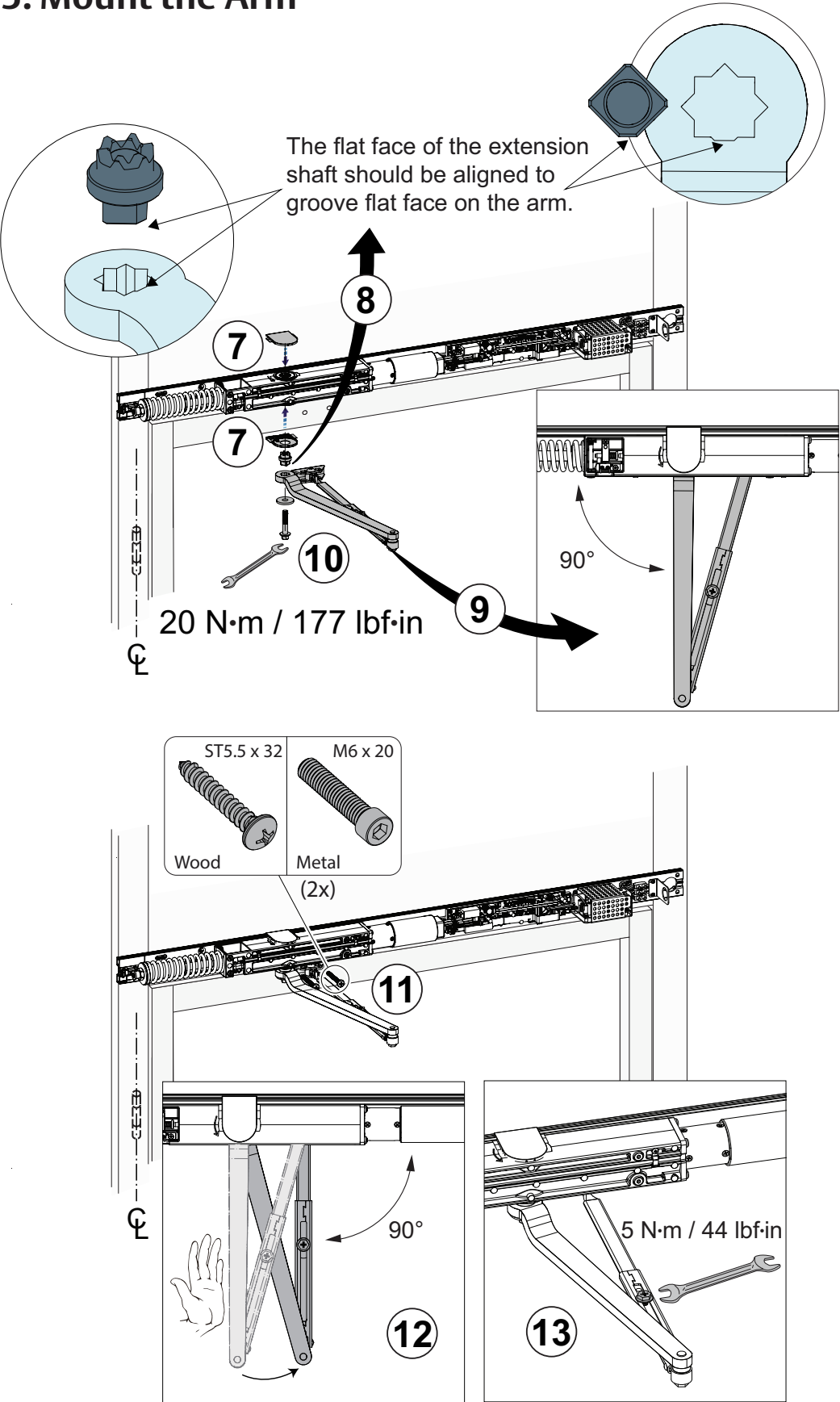


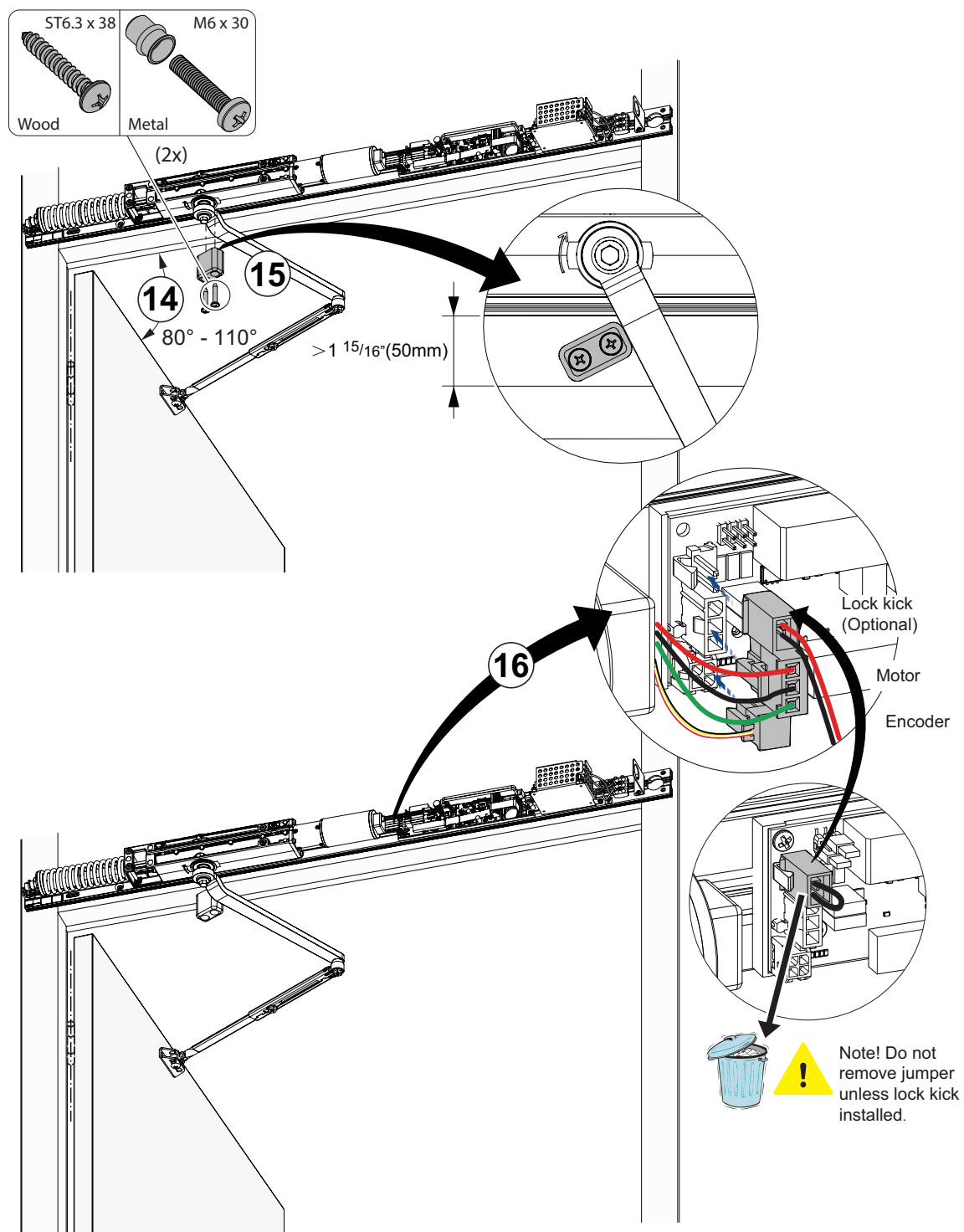
Note! Install lock kick for all fire-rated doors.



Note! The direction of the arrow on the operator should be same as opening rotation direction.

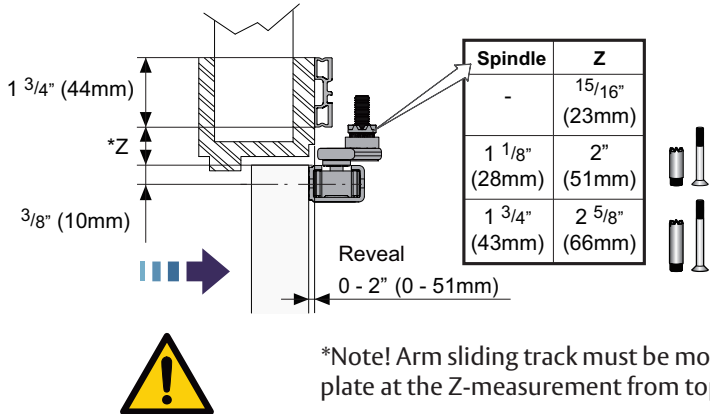
5. Mount the Arm





11.2 PULL arm system

1. Determine the Door Hand (pull instructions)

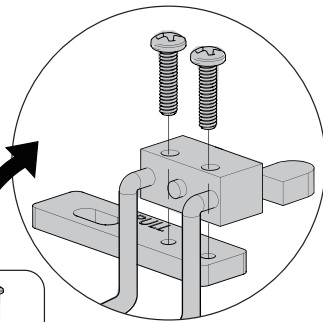


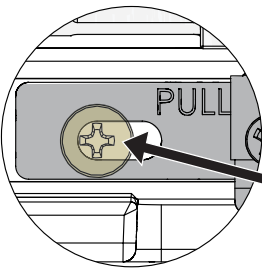
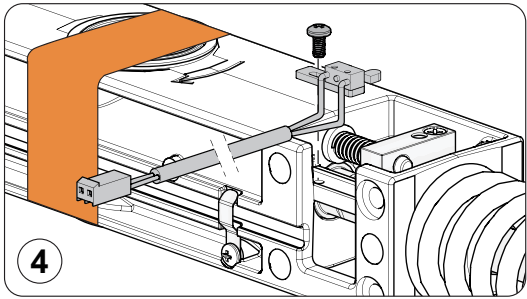
Installation movie



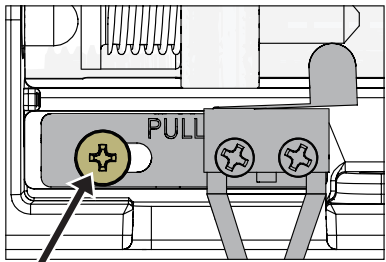
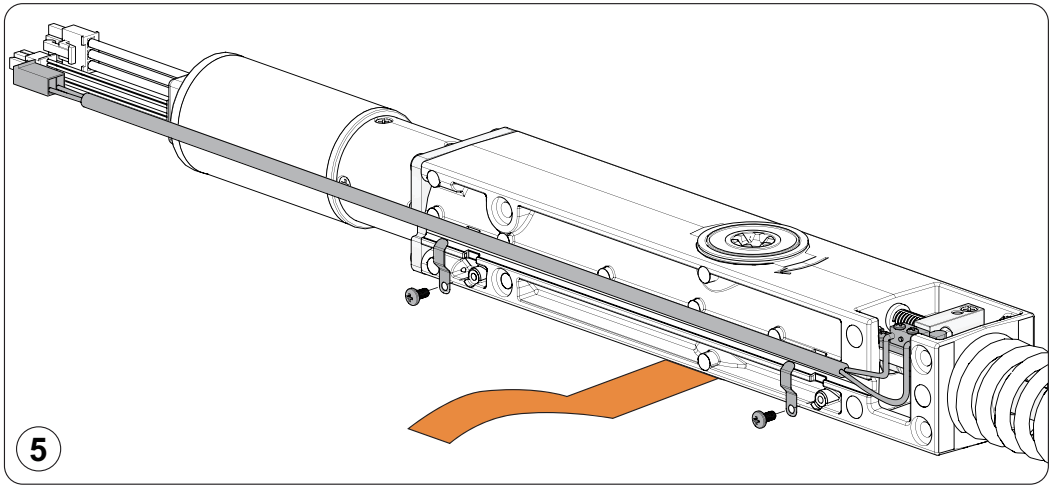
<https://s3m.io/musZG>

*Note! Arm sliding track must be mounted at the top of the door and the back plate at the Z-measurement from top of the door.



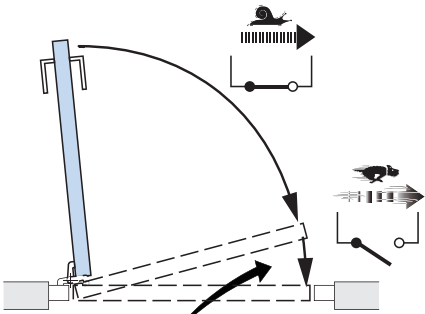


Refer to the picture for recommended location of lock kick.



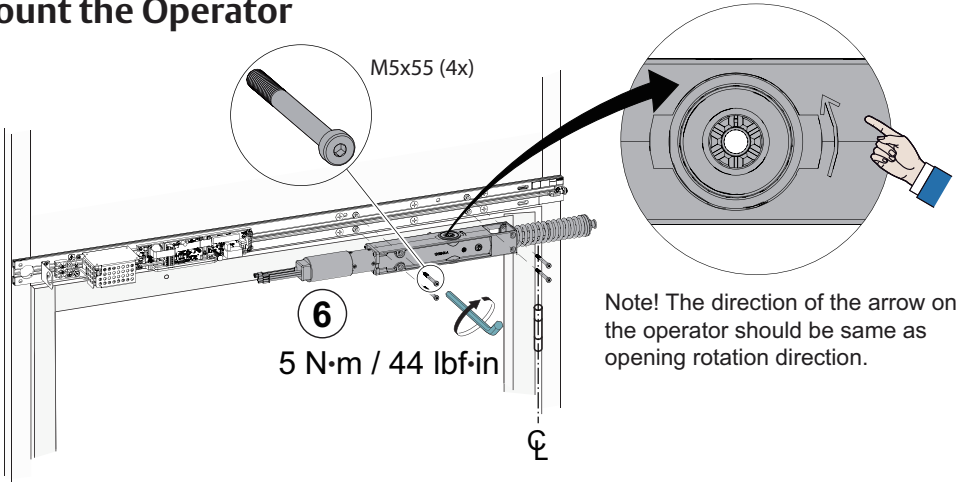
Unscrew this screw to move the lock kick and adjust angle of lock kick.

+ -
Max. Min.



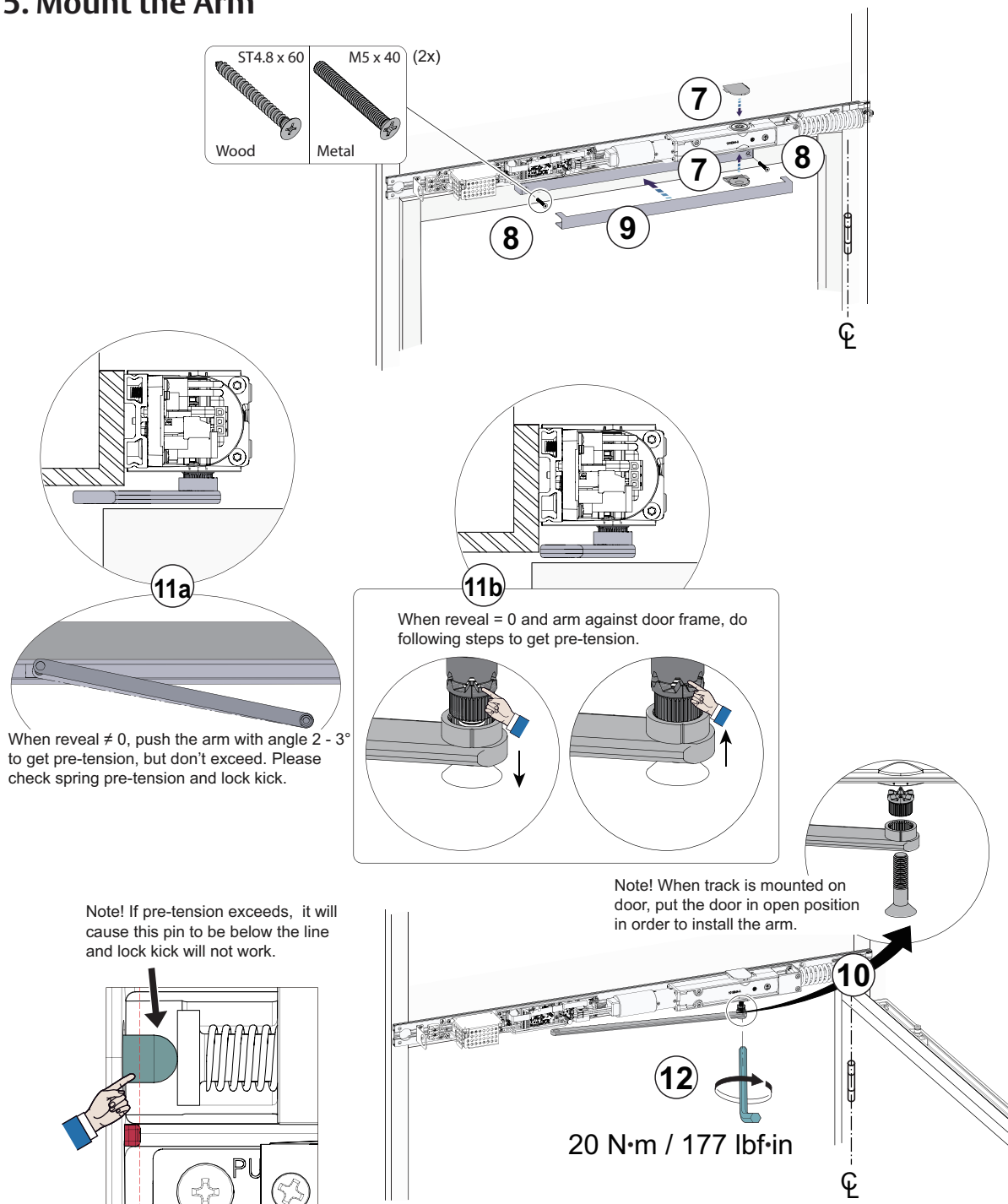
Lock kick

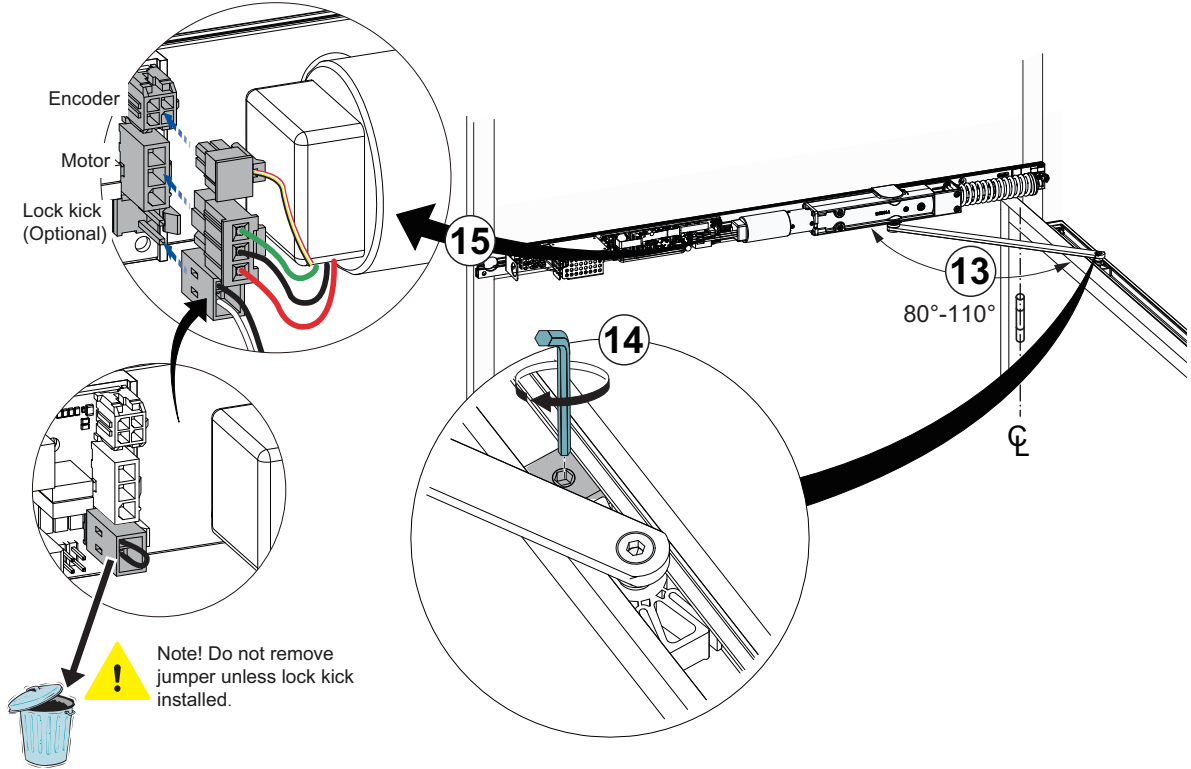
4. Mount the Operator



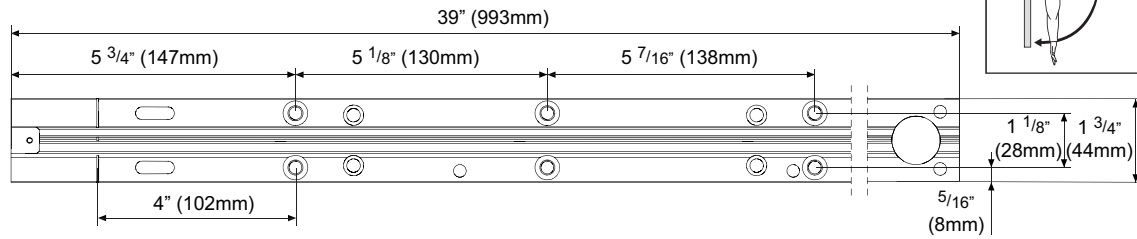
Note! The direction of the arrow on the operator should be same as opening rotation direction.

5. Mount the Arm

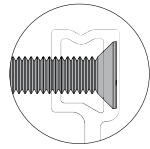
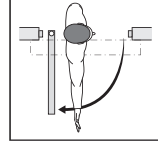




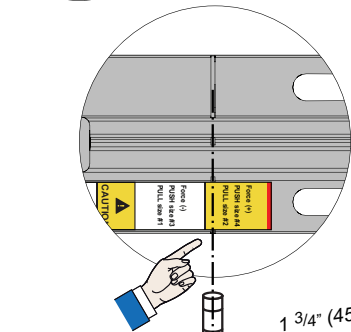
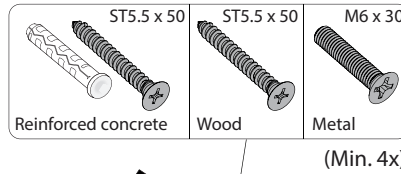
2. Mount the Backplate



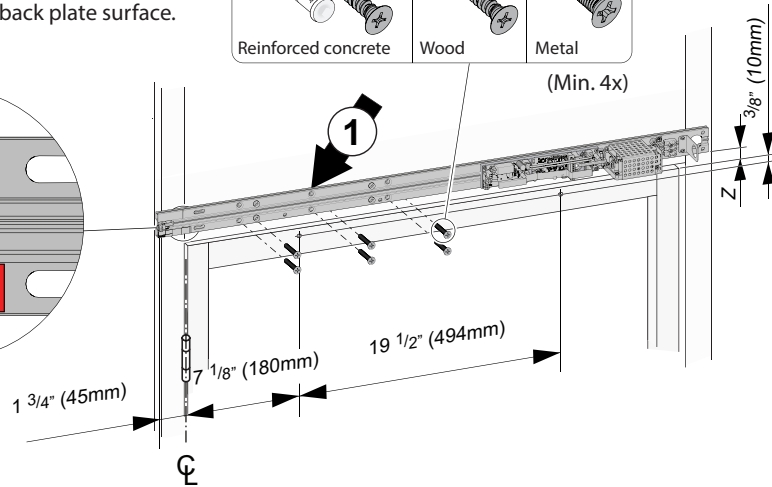
Right hand



Note! Screw head must be flush with back plate surface.



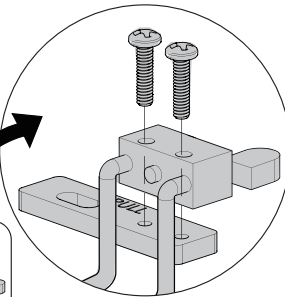
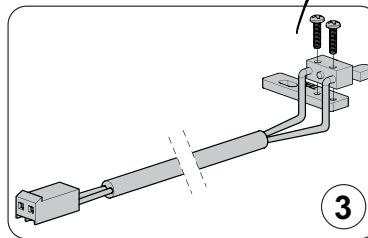
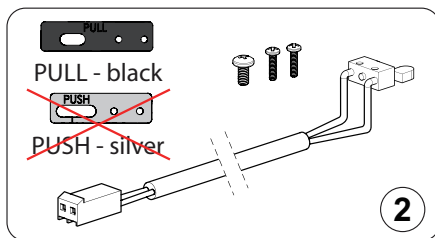
Note! The mark on the back plate must be in line with CL pivot.

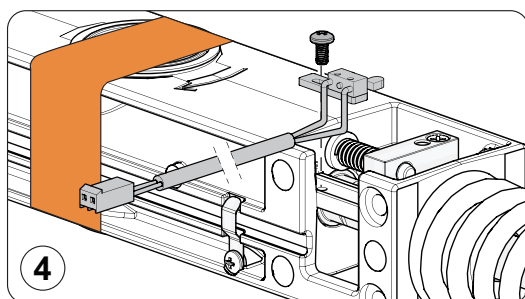


3. Mount the Lock kick (Optional)

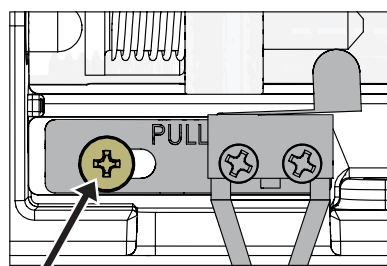
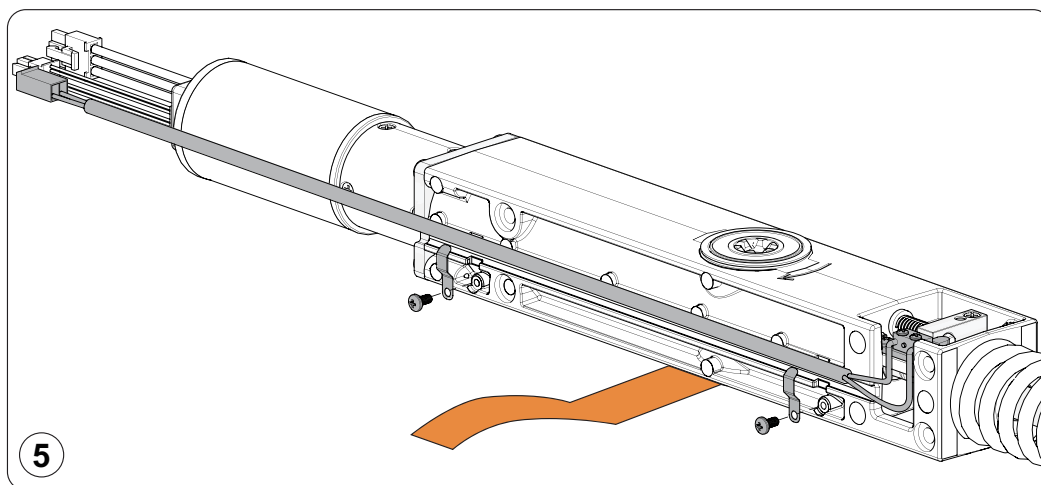


Note! Install lock kick for all fire-rated doors.



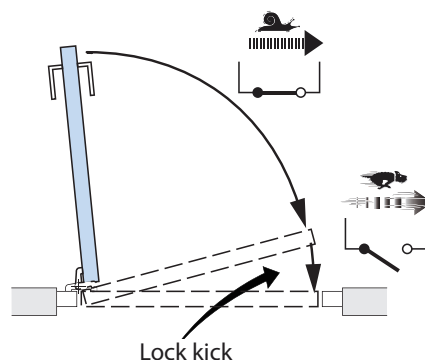


Refer to the picture for recommended location of lock kick.

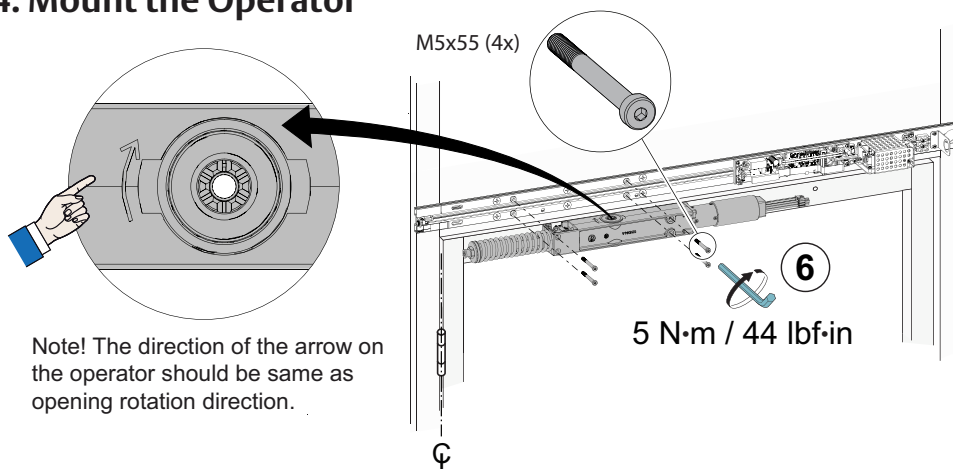


Unscrew this screw to move the lock kick and adjust angle of lock kick.

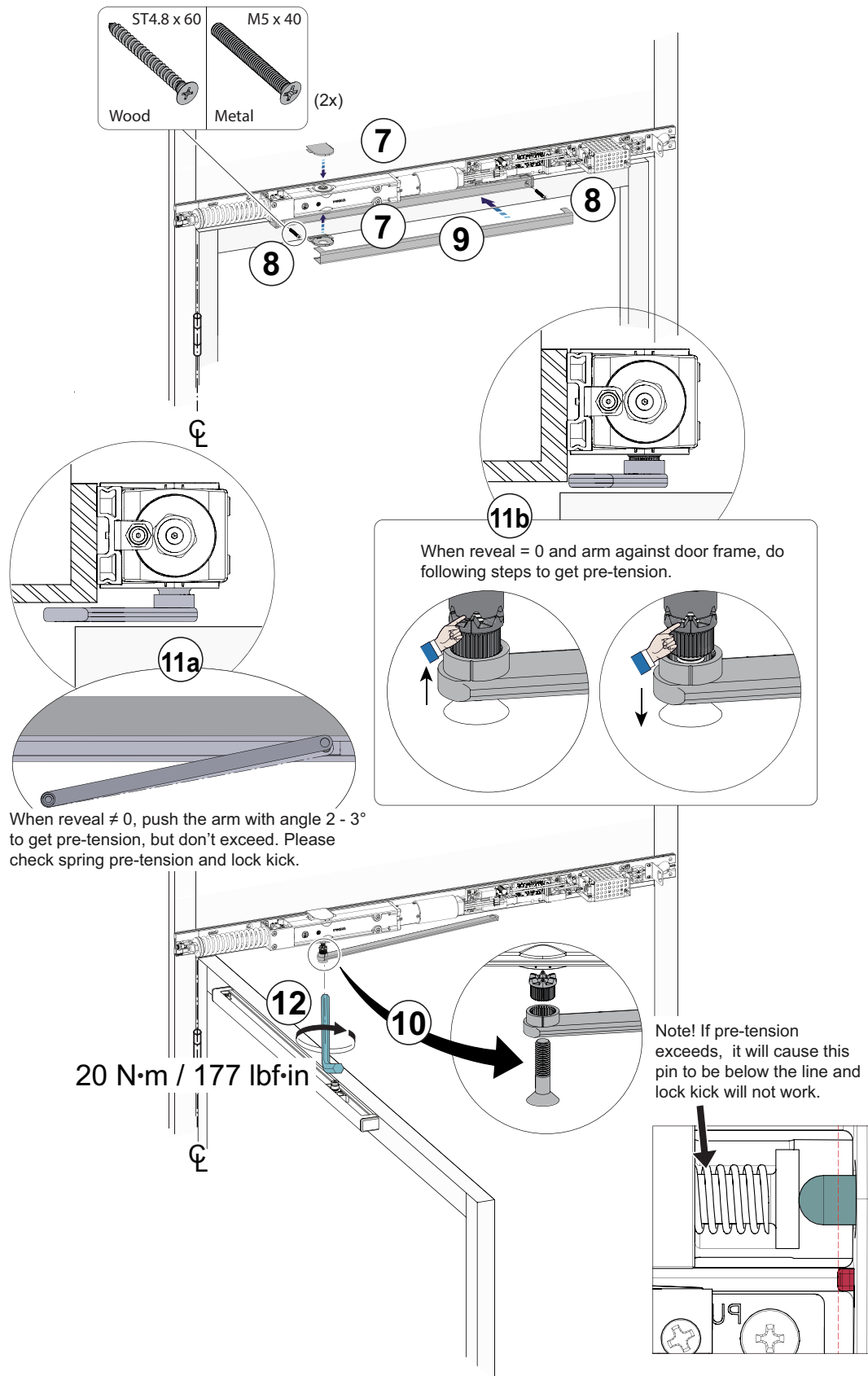
Max. Min.

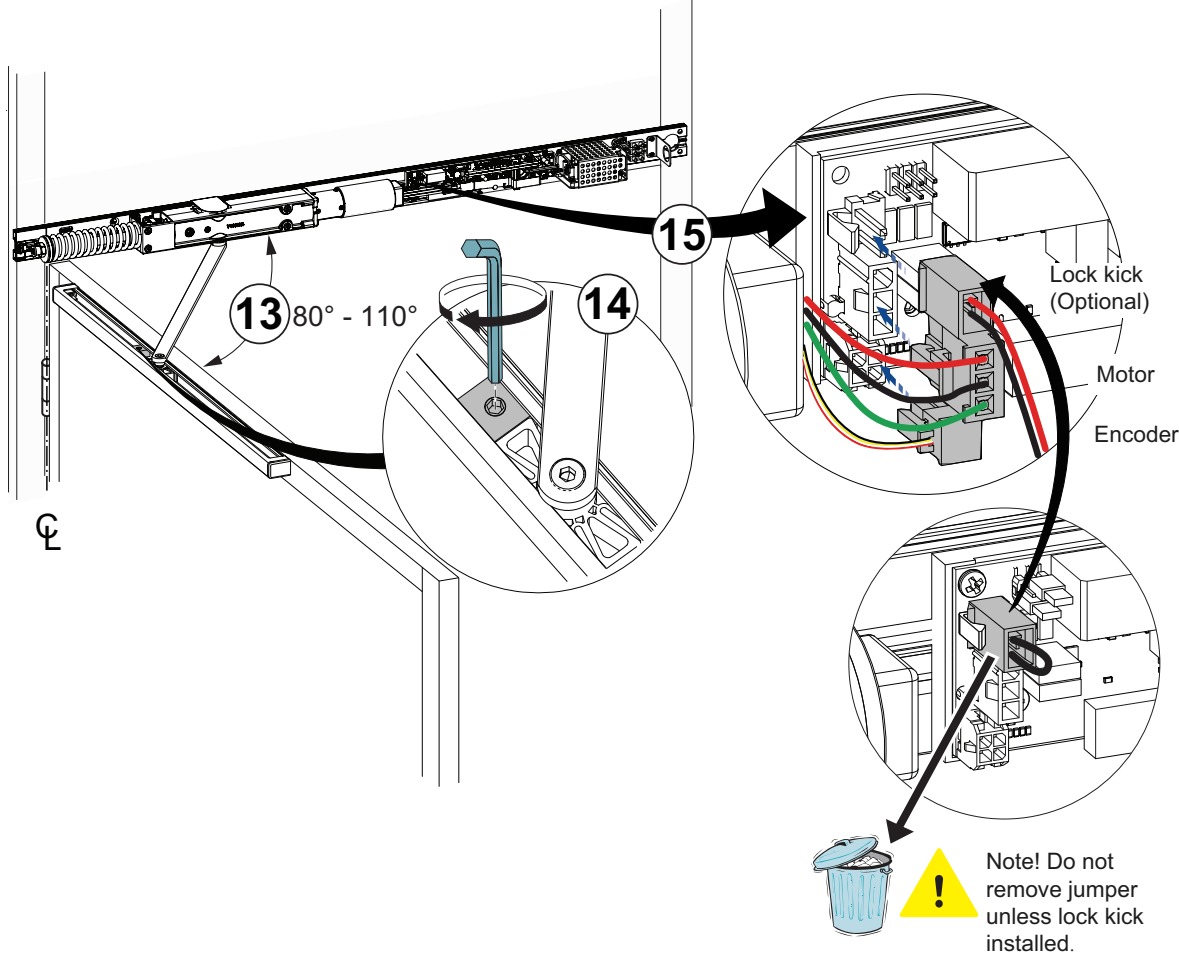


4. Mount the Operator



5. Mount the Arm





12 Electrical connection

The installation shall be made according to local codes.

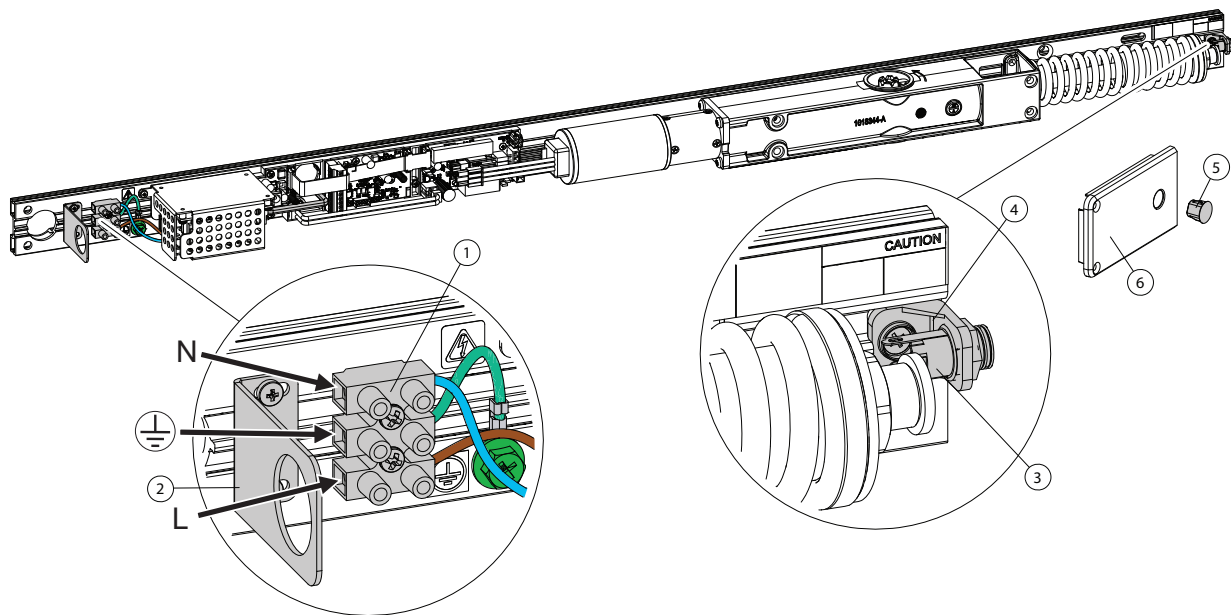


During any work with the electrical connections the **mains** must be disconnected.

- 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.

12.1 Mains connection

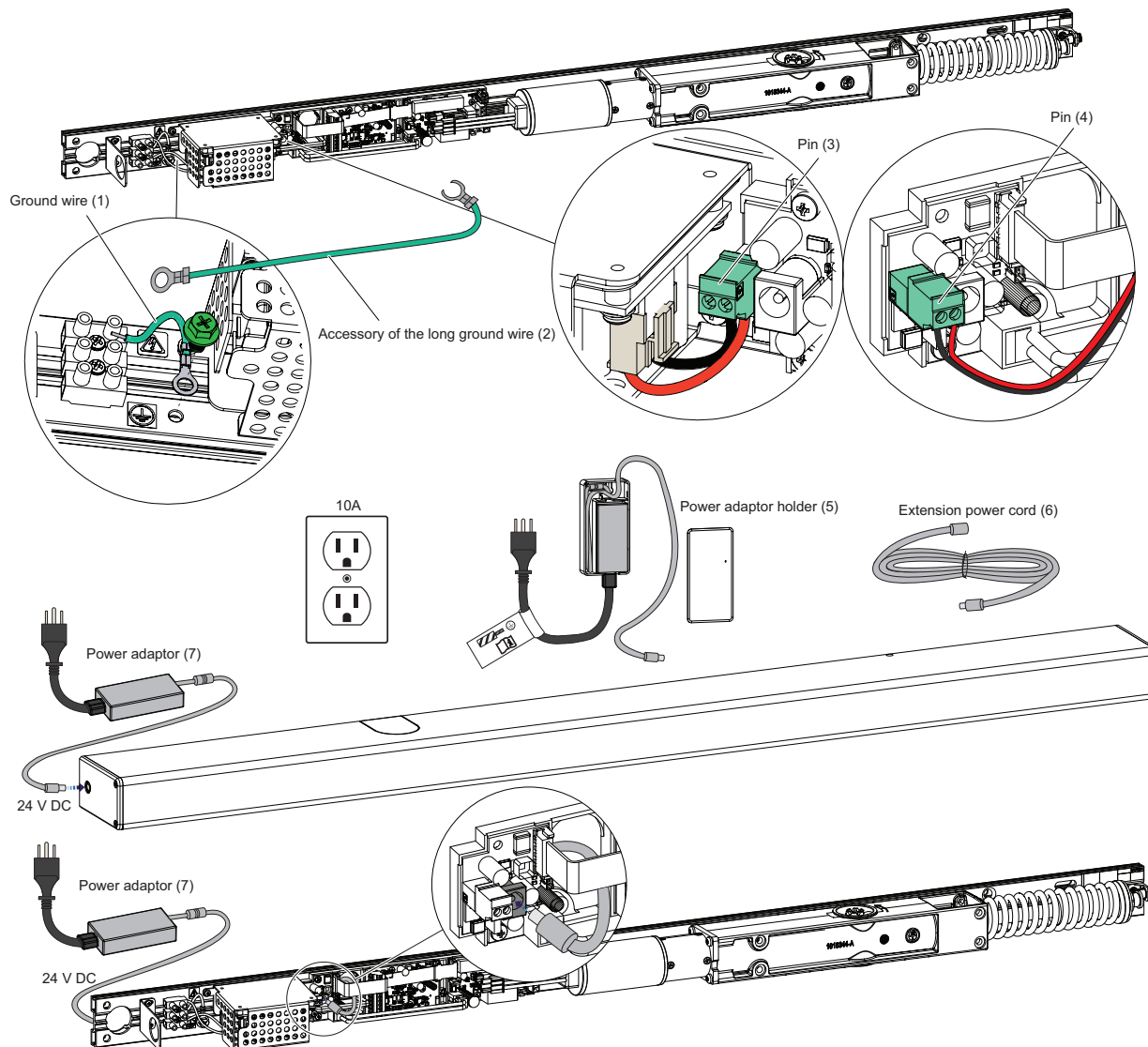
Alt. 1 Power supply (default)



- Disconnect the mains power.
- Fix cable connector with mains power to bracket (2), then connect wires to connection block (1).
- If inserting the cap (5) on the endplate (6), have to remove the cable (3) and the bracket power plug (4).

- 1 Connection block
- 2 Bracket
- 3 Cable
- 4 Bracket power plug
- 5 Cap
- 6 Endplate

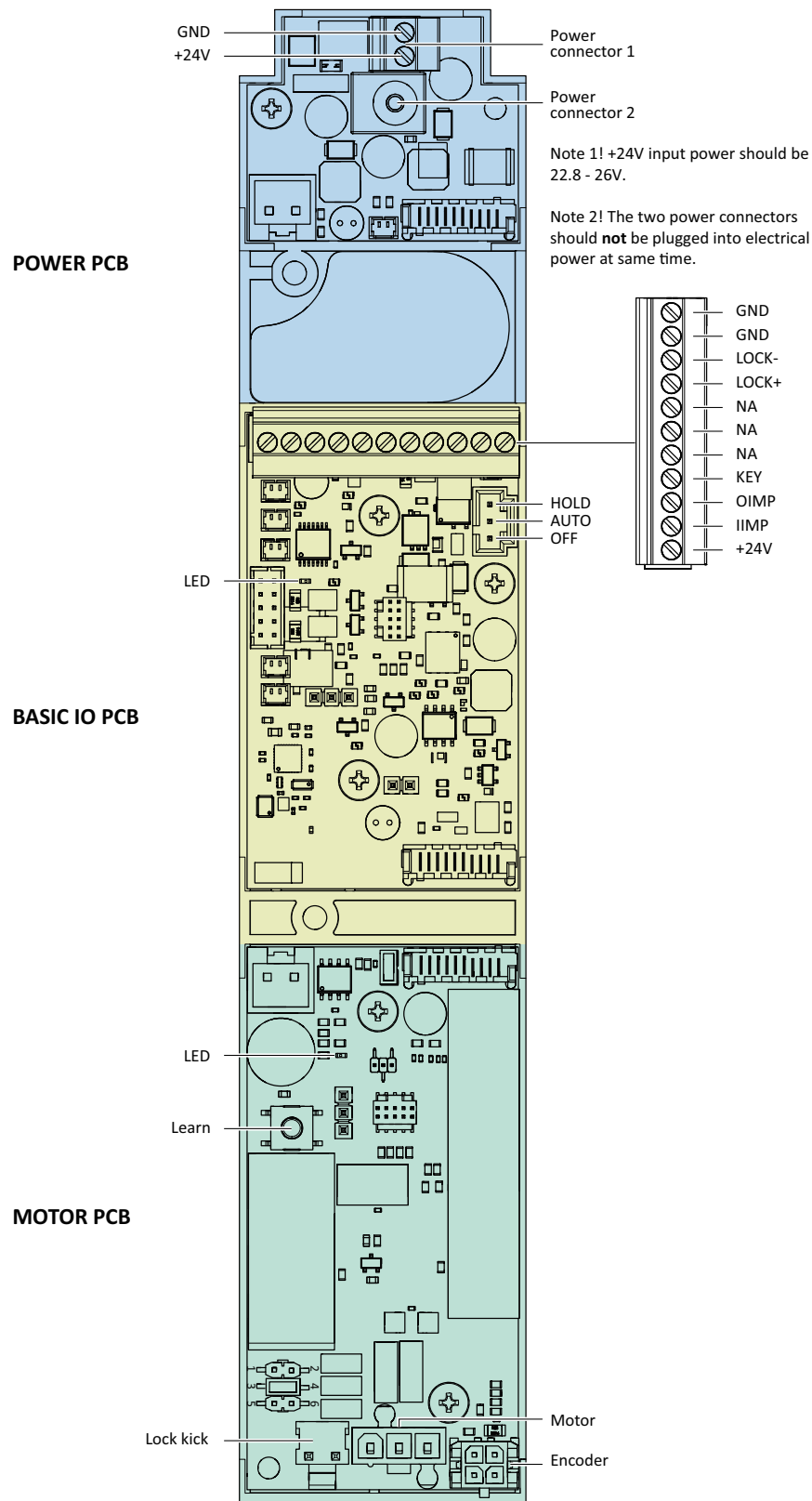
Alt. 2 Power adaptor (option)



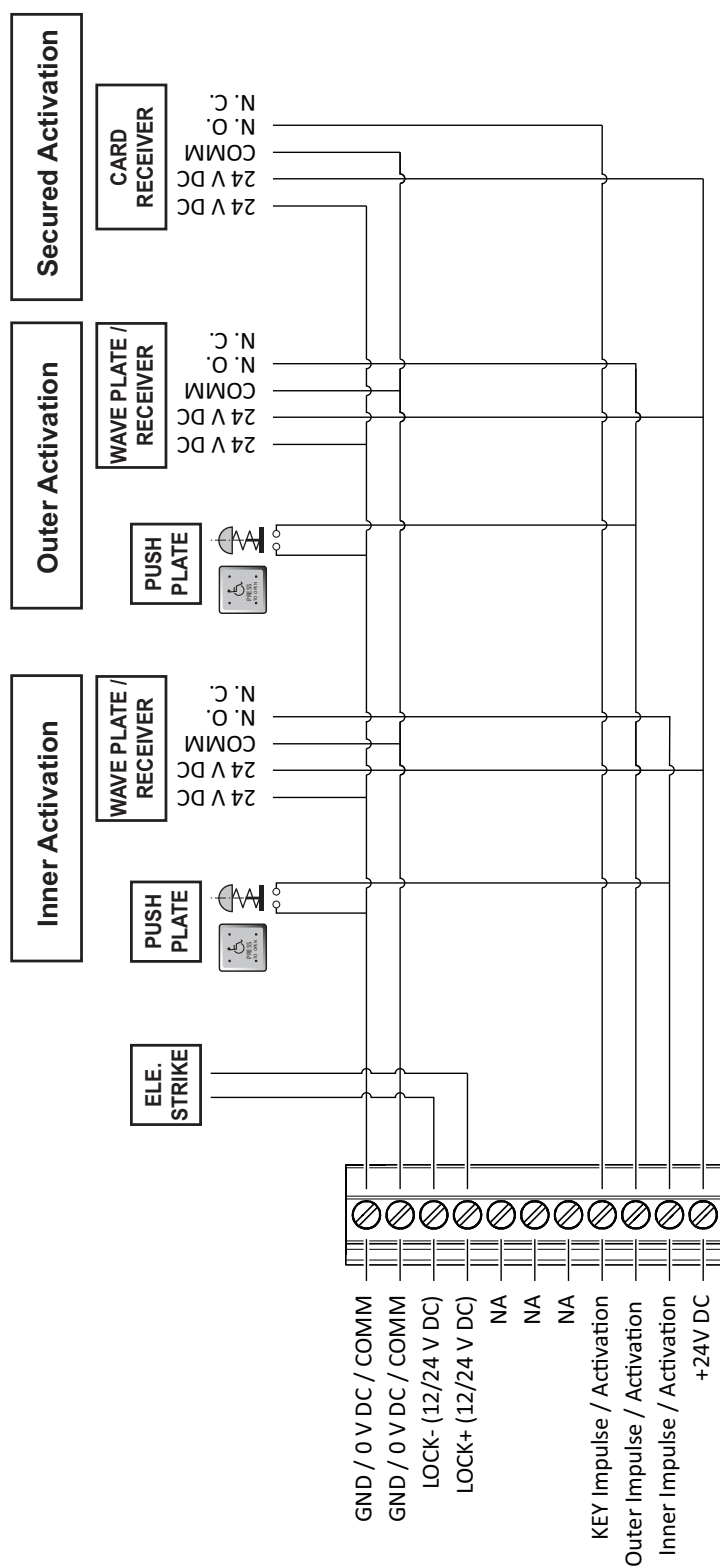
- Disconnect the mains power.
- Remove the ground wire (1), and replace it with accessory of the long ground wire (2) to make the backplate grounded.
- Replace the pin (3) on CU with the pin (4).
- Connect the power adaptor (7) to the CU. (Use the power adaptor holder (5) or the extension power cord (6) if needed.)
- Connect mains power to the power adaptor (7).

- 1 Ground wire
- 2 Long ground wire
- 3 Pin
- 4 Pin
- 5 Power adaptor holder
- 6 Extension power cord
- 7 Power adaptor

12.2 Control unit (CU)



12.3 Connection of activation units and accessories (option)



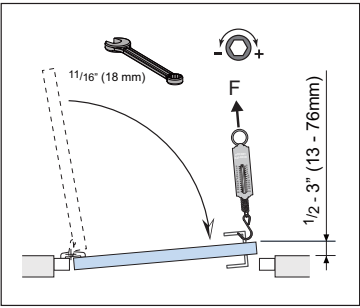
13 Start-up

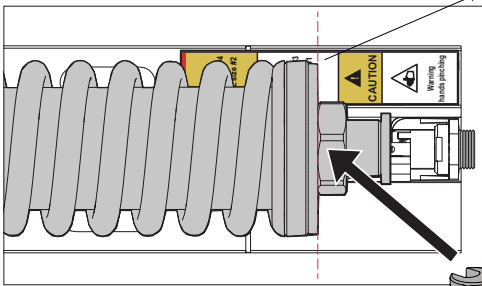
Note: An external door stop is to be installed to prevent the door from over travel. Do not use a hold open stop.

13.1 Spring pre-tension (not include concealed installation)

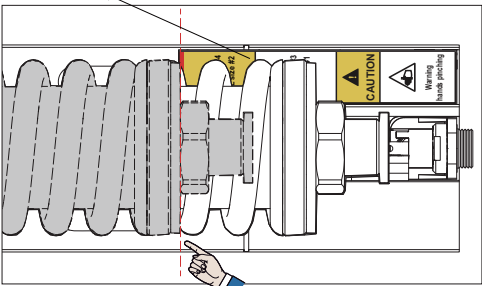
The spring pre-tension is factory set to either size #2 PULL or size #4 PUSH. Adjust the spring according to the following information.

Door closer power size according to ANSI 156.4	Closing force between 1/2" (13mm) and 3" (76mm)		Door weight
	F (lbf)	F (N)	
Size #1 PULL	2 - 3	9 - 13	50 lbs / 23 kg
Size #2 PULL (Default)	3 - 5	13 - 22	80 lbs / 36 kg
Size #3 PUSH	5 - 8	22 - 36	100 lbs / 45 kg
Size #4 PUSH (Default)	8 - 11	36 - 49	125 lbs / 57 kg





11/16" (18 mm)



Spring shall not be over pre-tensioned. Make sure that the spring does not exceed the red line on the sticker.

Force (+)
PUSH size #4
PULL size #2

Force (-)
PUSH size #3
PULL size #1

CAUTION
Wiring
hands pinching

13.2 App

Connect mains power and make sure the LED is on.

Before the learning procedure starts, make sure that the door has been properly closed i.e., not by force.

13.2.1 Install the app

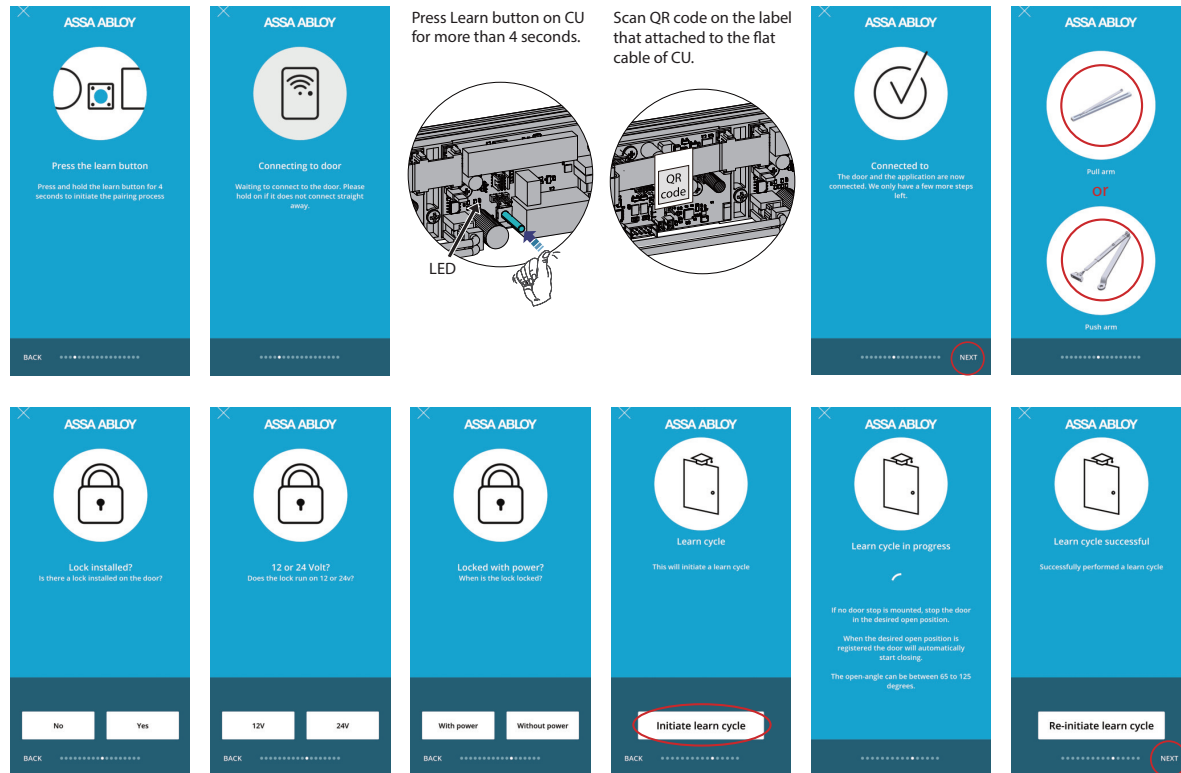
Download the ASSA ABLOY Swing Door Manager app from the **Google Play** or **App Store**.



13.2.2 Log in to the app with owner



13.2.3 Learn



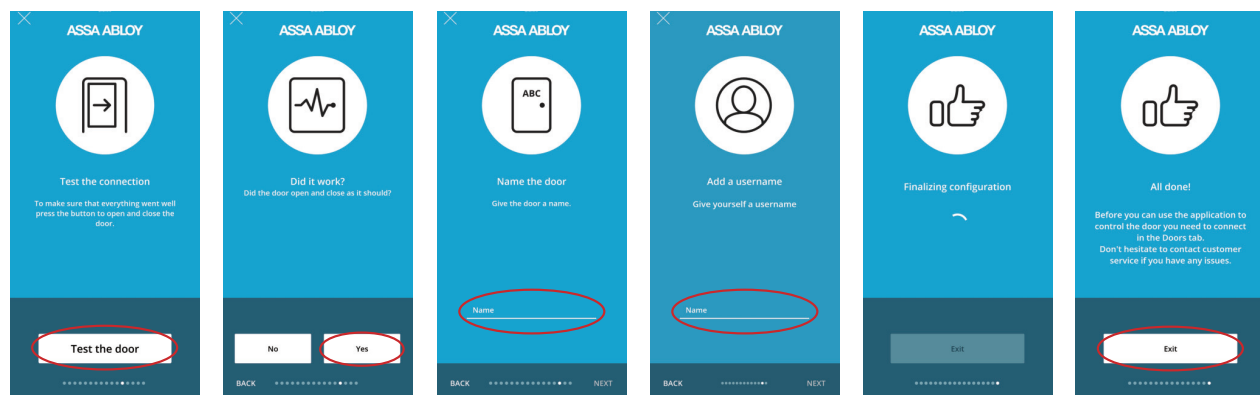
Note: If any issues with learning or could not connect to the door after learning, please check the connectin of mains power, installation of the unit or the arm system, then restart learning again.

Note: If any of the parameters SPRING PRE-TENSION are changed after performing a learn, a new learn must be carried out.

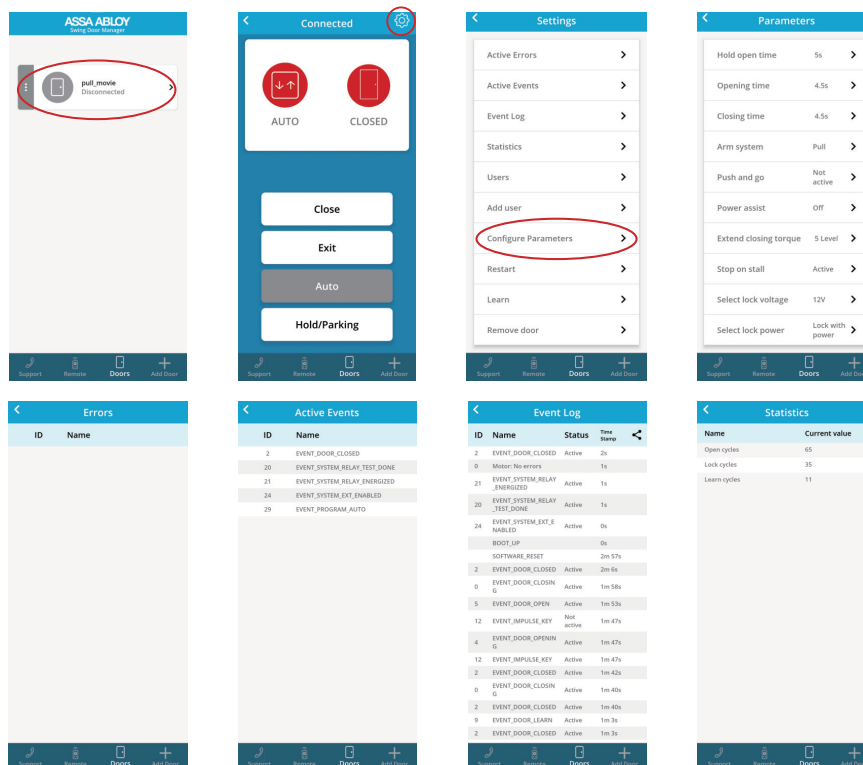


The back-check will be automatically adjusted to 10° and 1 second before open position. The latch-check will be automatically adjusted to 10° and 1.5 seconds before closed position.

13.2.4 Test

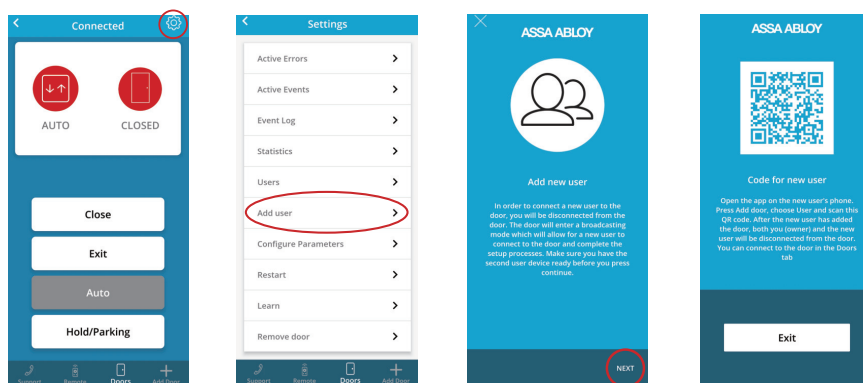


13.2.5 Settings

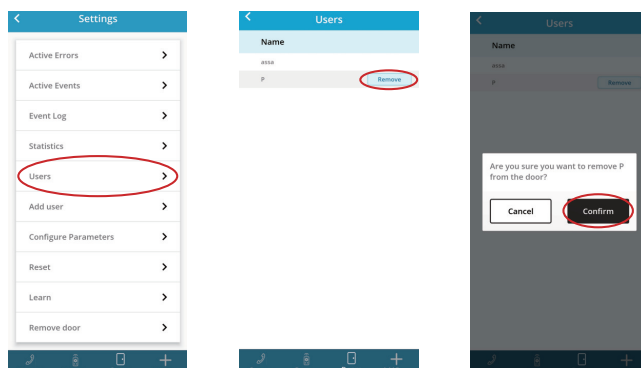


13.2.6 Add user by owner

Note: Owner can add up to 7 users.



13.2.7 Remove user by owner



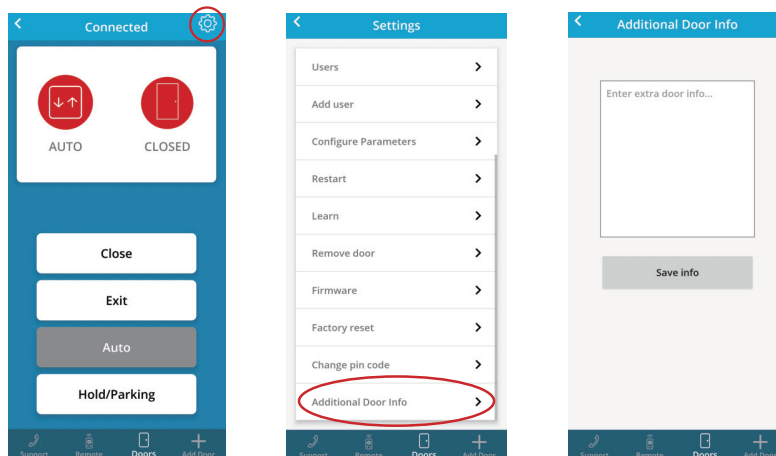
13.2.8 Log in to the app with user



13.2.9 The differences between owner and user

Functions	Owner	User
Factory reset	Yes	No
Show users	Yes	No
Add user	Yes	No
Remove user	Yes	No

13.2.10 Additional door information

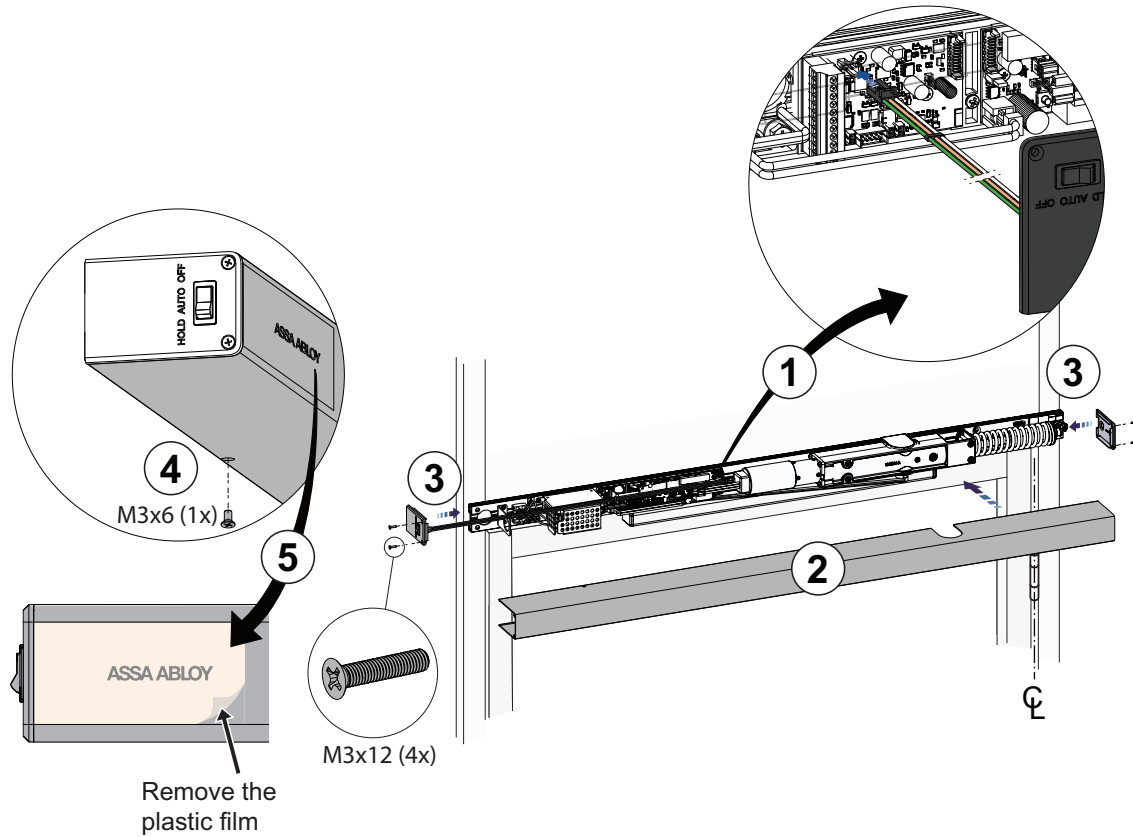


13.2.11 Configuration parameters

Parameter name	Default settings	Value
Hold open time	5s	2s - 6h
Opening time	4.5s	4.5s - 9s
Closing time	4.5s	4.5s - 9s
Arm system	Push / Pull	Push / Pull
Push and go	Not active	Not active / Active
Power assist	Off	Off / Low / Medium / High
Extend closing torque	0 Level (Lowest)	0 Level (Lowest) - 10 Level (Highest)
Stop on stall	Active	Not active / Active
Select lock voltage	12V / 24V	12V / 24V
Select lock power	Lock with power / Lock without power	Lock with power / Lock without power
Push and close	Not active	Not active / Active
Key impulse hold open time	5s	2s - 25s
Number of lock retries	1 time	0 - 2 times
Lock kick	Not active	Not active / Active
Reverse upon obstruction	Active	Not active / Active
Lock release time	0.5s	0s - 5s
Ratchet function	Not active	Not active / Active

14 Cover

- Secure cover with screw.
- Apply the ASSA ABLOY logotype to the cover, see below.



15 Troubleshooting

Fault	Possible reasons why	Remedies/Explanations
The door does not open The motor does not start	Control switch is set to OFF	Change the setting of the control switch
	Mains power is missing	Check the mains power and fuse in the building
LED light blinks	Door is in error	Remove power, wait 10 seconds. Re-introduce power and test door functions.
The motor starts but the door does not open	Mechanical lock is locked	Unlock the lock
	Something jammed beneath the door	Remove object
	Electric striking plate is binding	Select lock release
		Adjust striking
	Arm system has come loose	Tighten the arm system by installation steps
The door does not close	Control switch is set to HOLD	Change the setting of the control switch
	Something jammed beneath the door	Remove object

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. Regular scheduled maintenance should be in accordance with national requirements and product documentation. This is especially important when the installation concerns a fire-approved door or a door with an emergency opening function.

As with all other electro-mechanical products, an automatic door requires regular maintenance and service. It is essential to know the importance of regular scheduled maintenance to have a reliable and safe product.

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

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

Part	Part number	Cycles/hour in operation			Abusive Environment
		<10	<100	>100	
		Low traffic	Medium traffic	High traffic	
PUSH arm kit (Black / Grey)	331020857BK / PD	24	12	6	6
PULL arm kit (Black / Grey)	331020226BK / PD	24	12	6	6
Pull arm service kit (Black / Grey)	330000830BK / PD	24	12	6	6
Lock kick for PUSH & PULL	330000829	24	12	6	6
Control unit (CU)	331018537	60	60	60	60
Transmission unit	330000841	60	24	24	24

17 ANSI / BHMA A156.19 (LOW ENERGY APPLICATION)

17.1 REQUIREMENTS FOR LOW ENERGY POWER OPERATED DOORS

The following texts are excerpts from American National Standard for low energy power operated swing doors. Please refer to the full standard if necessary.

17.1.1 Activation

The operator shall be activated by a knowing act.

17.1.2 Opening

Doors shall open from closed to back check, or 80 degrees which ever occurs first, in 3 seconds or longer as required in Table I. Backcheck shall not occur before 60 degrees opening. Total opening time to 90 degrees shall be as in Table II. If the door opens more than 90 degrees, it shall continue at the same rate as backcheck speed. When powered open, the door shall remain at the open position for not less than 5 seconds.

17.1.3 Closing

Doors shall close from 90 degrees to 10 degrees in 3 seconds or longer as required in Table I. Doors shall close from 10 degrees to fully closed in not less than 1.5 seconds.

17.1.4 Force and Kinetic Energy

The force required to prevent a stopped door from opening or closing shall not exceed 15 lbf (67 N) measured 1" (25 mm) from the latch edge of the door at any point during opening or closing. The kinetic energy of a door in motion shall not exceed 1.25 lbf-ft (1.69 Nm). Table I provides minimum times for various widths and weights of doors for obtaining results complying with this kinetic energy.

Doors shall open with a manual force not to exceed 15 lbf (67 N) to release a latch, if equipped with a latch, 30 lbf (133 N) to set the door in motion, and 15 lbf (67 N) to fully open the door. The forces shall be applied at 1" (25 mm) from the latch edge of the door.

Table I

Minimum Opening Time to Back Check or 80 degrees, which ever occurs first, and the Minimum Closing Time from 90 degrees to Latch Check or 10 degrees.

"D" Door Leaf Width - Inches (mm)	"W" Door Weight in Pounds (kg)				
	100 (45.4)	125 (56.7)	150 (68.0)	175 (79.4)	200 (90.7)
*30 (762)	3.0	3.0	3.0	3.0	3.5
36 (914)	3.0	3.5	3.5	4.0	4.0
42 (1067)	3.5	4.0	4.0	4.5	4.5
48 (1219)	4.0	4.5	4.5	5.0	5.5

* Check applicable Building Codes for clear width requirements in Means of Egress.

Table II

Total Opening Time to 90 Degrees

Backcheck at 60 degrees	Backcheck at 70 degrees	Backcheck at 80 degrees
Table I plus 2 seconds	Table I plus 1.5 seconds	Table I plus 1 second
If the door opens more than 90 degrees, it shall continue at the same rate as backcheck speed.		

Note: To determine maximum times from close to full open, the operator shall be adjusted as shown in the chart. Back check occurring at a point between positions in Table II shall use the lowest setting. For example, if the backcheck occurs at 75 degrees, the full open shall be the time shown in Table I plus 1.5 seconds.

17.1.5 Signage

Doors shall be equipped with signage visible from either side, instructing the user as to the operation and function of the door. The signs shall be mounted 50" $\pm$ 12" (1270mm $\pm$ 305mm) from the floor to the center line of the sign.

The letters shall be 5/8 inch (16 mm) high minimum.

Doors All doors shall be marked with signage visible from both sides of the door, with the words "AUTOMATIC CAUTION DOOR" (see illustration below). The sign shall be a minimum of 6" (152 mm) in diameter with black lettering on a yellow background. Additional information may be included.

Additionally one of the following knowing act signs shall be applied:

When a **Knowing Act Switch** is used to initiate the operation of the door operator, the doors shall be provided with signs on both sides of the door with the message "ACTIVATE SWITCH TO OPERATE". The lettering shall be white and the background shall be blue.

When push/pull is used to initiate the operation of the door operator, the doors shall be provided with the message "PUSH TO OPERATE" on the push side of the door and "PULL TO OPERATE" on the pull side of the door. The lettering shall be white and the background shall be blue.



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