Installation and Service Manual Swing Door Operator ASSA ABLOY SW60



Experience a safer and more open world



ASSA ABLOY as word and logo are trademarks owned by the ASSA ABLOY Group

© ASSA ABLOY Entrance Systems, 2020

Technical data subject to change without notice.

Backtrack information: folder:Workspace Main, version:a610, Date:2020-09-02 time:07:54:12, state: Frozen

CONTENTS - Original instructions

1	Revisi	on	5			
2	Instru	ctions for safe operation	6			
3	Impor 3.1 3.2 3.3 3.4	rtant information Intended use Safety precautions Electronic equipment reception interference Environmental requirements	7 7 8			
4	Techn	ical specifications	9			
	4.1	Permitted door weight and door width				
5	How	the ASSA ABLOY SW60 works	11			
	5.1	Control switch5.1.1HOLD/AUTO/OFF switchModes and functions on app5.2.1Off / Closed5.2.2Exit5.2.3Auto5.2.4Hold / Parking5.2.5Opening5.2.6Closing5.2.7Wireless controlling5.2.8Log5.2.9Power failure5.2.10Extended closing torque5.2.11OPEN/CLOSE impulse5.2.12Power assist5.2.13Push and go5.2.14Function of locks5.2.15Impulses5.2.16Statistics5.2.17Factory reset	111 111 111 111 112 112 112 112 112 112			
6	Part io	dentification	13			
7	Arm s 7.1 7.2	ystems Pushing installation with PUSH arm 7.1.1 Drive shaft extension kits for PUSH arm Pulling installation with PULL arm 7.2.1 Drive shaft extension kits for PULL arm	15 15 16			
8	Optio 8.1 8.2	ns Push plates 8.1.1 Push plates 8.1.2 Remote transmitter push plates 8.1.3 Installation box for narrow plates Labels	17 17 17 17 17			
9		Pre-installation				
J	9.1 9.2 9.3	General tips/Safety concerns Installation examples Fastening requirements (but not included)	19 20			
10	Mech 10.1 10.2	anical installation PUSH arm system PULL arm system	21			
11		Electrical connection				
	11.1 11.2	Mains connection Control unit (CU)	35			

12	Start-	up		38
	12.1 12.2	Spring µ App	pre-tension	38 38
	12.2		Install the app Log in to the app with owner Learn Test Settings Add user Remove user Log in to the app with user	38 39 40 41 41 . 42 . 42
		12.2.9	Configuration parameters	
13				
14	Troub	leshoot	ing	46
15	Servio	ce/Maint	enance	47
16	ANSI 16.1	REQUIR 16.1.1 16.1.2	A156.19 (LOW ENERGY APPLICATION) EMENTS FOR LOW ENERGY POWER OPERATED DOORS Activation Opening Closing Force and Kinetic Energy Signage	48 48 48 48 48 48 48

1 Revision

Following pages have been revised:

Page	Revision $1.0 \rightarrow 2.0$	
Updated screenshots for the app.		

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 to persons use this operator with single swinging only.
- 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.
- 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.
- The doorset can be operated automatically or manually by activators. It can also be used manually as a door closer.

3 Important information

3.1 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. It is to be installed indoors where it is suitable for almost all types of internal swing doors. This widely-used operator can be found in applications ranging from handicapped-access in private homes to commercial establishments.

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 is less than 1 ft² (0.9 m^2) and having no dimension greater than 18" (457 mm) shall be 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 1019650.

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 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.

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 specifications

Manufacturer:	ASSA ABLOY Entrance Systems US Inc.		
Address:	1900 Airport Road, Monroe, NC 28110, US		
Туре:	ASSA ABLOY SW60		
Power supply:	120 V AC +10/-15%, 50/60 Hz, mains fuse max 10A (building instal- lation)		
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 4.1 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:	2 s - 6 h		
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, see Declaration of Conformity.		
Complies with: UL 10C, ANS	I/BHMA A156.19 and UL 325		

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



This product is to be installed internally.

4.1

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.

5 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.

- 5.1 Control switch
- 5.1.1 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 IIMP or OIMP will initiate a door open cycle.	
OFF	Only KEY Impulse can open the door.	

- 5.2 Modes and functions on app
- 5.2.1 Off / Closed

The door is closed. The door cannot be opened with the inner / outer wall or jamb-mounted contact switches. The door is locked if an electromechanical locking device has been fitted.

5.2.2 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 wall or jamb-mounted contact switches (if fitted), or by a signal to the Key Impulse.

5.2.3 Auto

The door can be opened with the inner / outer wall or jamb-mounted contact switches.

5.2.4 Hold / Parking

The door can be held at any position when opening or closing.

5.2.5 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 motor stops when the selected door opening angle has been reached. 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 38).

5.2.6 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.

5.2.7 Wireless controlling

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

5.2.8 Log

Events and errors can be displayed.

5.2.9 Power failure

During power failure the operator acts as a door closer with controlled closing speed and the lock kick will secure latching (only fire-rated doors).

5.2.10 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.

5.2.11 OPEN/CLOSE impulse

The impulse will open the door and the door will stay open until a new impulse is given.

OPEN/CLOSE impulse works only in program selection AUTO and EXIT.

5.2.12 Power assist

The motor will give/increase power assist when the door is opened manually. If the parameter is set to "Off", the door will give no power assist.

5.2.13 Push and go

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

5.2.14 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).
- 5.2.15 Impulses
 - Input for INNER / OUTER / KEY impulse.

5.2.16 Statistics

- Record data of the action for the door.
- 5.2.17 Factory reset
 - Will restore all settings with factory default settings.



ltem No.	Art. No.	Description	
1	331020157	Ground wire	
2	330000828	Back plate with power cable	
3	331020445BK	Spindle cover kit (Black)	
	331020445PD	Spindle cover kit (Grey)	
4	331019785	Bracket power plug	
5	331020810BK	Endplate with control switch (Black)	
6	331019591BK	Endplate (Black)	
7	331018537	Control unit (CU)	
8	330000841	Transmission unit	
9	330000829	Lock kick for PUSH & PULL	
10	331020253	Adaptor holder	
11	331704236	Extension power cable	
12	331020809DB	Cover (Black)	
	331020809NA	Cover (Silver)	
13	331018859	Power cord	
14	331703711	Power adaptor	
15	331020293	Power box adaptor kit	
16	330000830BK	PULL arm service kit (Black)	
	330000830PD	PULL arm service kit (Grey)	
17	331020226BK	PULL arm kit (Black)	
	331020226PD	PULL arm kit (Grey)	
18	331020857BK	PUSH arm kit (Black)	
	331020857PD	PUSH arm kit (Grey)	
19	330000831BK	Drive shaft kits for PUSH arm (Black)	
20	330000832BK	Drive shaft kits for PULL arm (Black)	

7 Arm systems

7.1 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)

7.1.1

Drive shaft extension kits for PUSH arm



Art. No.: 1020924

28mm (1⁻¹/8")

 7.2 Pulling installation with PULL arm Art. No.: 1020226
 Image: Art. No.: 1020226<

Art. No.: 1020925

8 Options

8.1 Push plates

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

8.1.1 Push plates





P/N: 75-02-102

RESS

P/N: 75-02-101



P/N: 75-02-107

P/N: 75-02-108



P/N: 75-02-280

8.1.2 Remote transmitter push plates



PLUSH TO OPEN

P/N: 75-02-272

PLISH TO OPEN



P/N: 75-02-269

P/N: 75-02-270

8.1.3 Installation box for narrow plates

P/N: 75-02-273



P/N: 75-21-002

8.2 Labels

Label kit Art. No.: 1020887

AUTOMATIC CAUTION DOOR	LOW ENERGY POWER OPERATED DOOR	
Dual Side "AUTOMATIC DOOR / CAUTION"	Dual side "Operator designed for disabled people"	
PUSH TO OPERATE	PULL TO OPERATE	
Push side "PUSH TO ACTIVATE"	Pull side "PULL TO ACTIVATE"	
ACTIVATE SWITCH TO OPERATE	BACKTON BRYOMMERSING Development Series Provide Provi	
Dual Side "Activate Switch to Operate"	"AAADM safety"	
Dual Side "Activate Switch to Operate" "AAADM safety" Product labels		

Product labels

	SW60 120 V A C 60 Hz 50 W Reastrian door operator for residential continencial orinausofulues for indoor use only use copper conductors only Owne pone picentrial of the second s	ASSA ABLOY SW60 FIRE DOOR OPERATOR WITH AUTOMATIC CLOSER UL 228 Alsa canforms to UL 100 R16992 ASSAA BLOY Entrance Systems US Inc. Re 1020654
ASSA ABLOY CUU LISTED Door operator UL 325 UL 60730	SW60 120 V A C 60 Hz 50 W Pootsvien door operator for residential commercial or industrial use. For inducer use only, use copper conductors only. Ouver pone preventiere utilises Poor usage interne sudement Utilises dos Ris conducteurs encuivre sudement. ASSA ABLOY Entrance Systems US Inc. No 1021003	ASSA ABLOY SW60 FIRE DOOR OPERATOR WITH AUTOMATIC CLOSER UL 228 Assa conforms to UL 100 R10992 ASSAA BLOY Entrance Systems US Inc. wo 1021003

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 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 safe guarded 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.

9.2 Installation examples



- 1 Aluminum profile system
- 2 Plasterboard wall
- 3 Reinforced concrete wall and brick wall
- 4 Plasterboard wall

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

9.3 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.

10 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.

10.1 PUSH arm system

1. Determine the Door Hand (push instructions)



Installation movie



https://s3m.io/dSkJi





5. Mount the Arm









10.2 PULL arm system

1. Determine the Door Hand (pull instructions)



Installation movie



https://s3m.io/musZG





5. Mount the Arm







5. Mount the Arm



11 Electrical connection

Note: 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.
- 11.1 Mains connection
- Alt. 1



- a Disconnect the mains power.
- b Connect the adaptor to the CU. (Use the power adaptor holder or the extension power cord if needed.)
- c Connect mains power to the adaptor.

Alt. 2



- a Disconnect the mains power.
- b Fix the adaptor in the box.
- c Disconnected the power wire (1) from the terminal (3), and protect the power with insulated tapes.
- d Connect the adaptor wire (2) to the terminal (3).
- e Connect mains power to the adaptor.

- 1 Power wire
- 2 Adaptor wire
- 3 Terminal


Control unit (CU) 11.2

12 Start-up

Note: An external door stop is to be installed to prevent the door from over travel.

12.1 Spring pre-tension

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



12.2 App

Connect mains power (the operator will find its closed position) 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.

12.2.1 Install the app

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





12.2.2 Log in to the app with owner





× Picese create a 5 digits pin				
\leq				
1	2	3		
4	5	6		
7	8	9		
*	0	#		

×	Please	confirm ye	sur pin	
\leq				
	1	2	3	
	4	5	6	
	7	8	9	
	*	0	#	



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.

ASSA ABLOY FOR the connection The the the the the the the the the the t	ASSA ABLOY	ASSA ABLOY ARE CONTROL ARE CON	ndd a L Des ganes	ABLOY	Kons years opproxim	ASSA ABLOY Decision Al concl and control they const the agreement the agre
12.2.5 Settings						
ASSA ABLOV SangGood Vanage	< Connected	< Settings		C Parameta	es; 3	
		Active Priors	>	Polo spentime	2.55	
C Newson >		Active Events	>	Open ng time	ua 🔰	
	AUTO CLOSING	Event Log	>	Classing time	44. >	
	Noto Coolina	5.4090is	>	Arm system	74 >	
		litera	>	Push and go	an a	
	Close	Kanfigure Parameters	,	Power assist		
	Exit	Ener:	<u>,</u>	Maparistal	ALE: >	
	Auto	INCL	>	Select lock voltage	244 >	
	Hold/Parking	Ramewa coor	>	Select lock power	uch without >	
,⊁ à E + super bras cous adour	A A U +	21 8 E Agent Press (2007)	+	ut t Separa Darsa D		
Ettes Britetern	2.500 XX000.002		(817) (#152)	0.7.94 2.7.94	an increase	
< Errors	< Active Events	< Event Log		C Statistic		
IP 74ame	D Nare	12 Name Status			Consultation Arrest	
	4 INTERCONTRACTOR 20 INTERCONTRA	Te DATE PRODUCTION STORE	3 = 6.		21	
	 21 INTERNATIONALINATION 24 INTERNATIONALINATION 	18 INTELEVISION AND ADDRESS	3 = %	La nere apolara	s.,	
	21 INTEGRATION AND IN	2 MAINT DOOP 3,2013 Adv. 2 DAINT DOOP 3,2013 Adv. 2 DAINT DOOP 3,2014 Adv.	2 = h.			
		5 INVESTIGATION AND ADDR				
		A REAL PRODUCTION AND A REAL PRODUCTION A	25-50			
		 PATELOCOLUMNIA Autor VATELOCALUMNIA Autor VATELOCALUMNIA Autor Autor 	2 - 10			
		2 DOMESSION AND A STREET	2 m 46 m			
		 BALER DOOR CLOSES ANEXE BALER DOOR COURSE ANEXE 				
		TR R STATIONESCHART ST	2 = 10			
		A REAL PROPERTY AND A REAL	1800			
		19 BUTTLE NEW JOINT Addres				
jan 3 B + Securit Securit Security Sec	, n ² 8 15 + Najaré Serié 2008 6000 m	. <i>3</i> 8 6	÷	de an an a	6 +	

12.2.4

Test





12.2.7 Remove user



12.2.8 Log in to the app with user



12.2.9 Configuration parameters

Parameter name	Default settings	Value
Hold open time	2.5s	2s - 6h
Opening time	4.5s	4.5s - 9s
Closing time	4.5s	4.5s - 9s
Arm system	Push	Push / Pull
Push and go	Not active	Not active / Active
Power assist	Off	Off / Low / Medium / High
Extend closing torque	0 (Lowest)	0 (Lowest) - 10 (Highest)
Stop on stall	Active	Not active / Active
Select lock voltage	24V	12V/24V
Select lock power	Lock with power	Lock with power / Lock without power
Push and close	Not active	Not active / Active
Key impulse hold open time	2s	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
Open / Close on inner impulse	Not active	Not active / Active

13 Cover

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



14 Troubleshooting

Fault	Possible reasons why	Remedies/Explanations	
The door does not open	Control switch is set to OFF	Change the setting of the control switch	
The motor does not start	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	Mechanical lock is locked	Unlock the lock	
door does not open	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	

15 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 regulary 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 preventive maintenance.

		Cycles/hour in operation			
Part	Part number	<10	<100	>100	Abusive
	- are number	Low traffic	Medium traffic	High traffic	Environment
PUSH arm kit (Black / Grey)	331020857BK / PD	24	12	6	6
PULL arm kit (Black / Grey)	331020226BK / PD	24	12	6	6
PULL armservice 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

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

16.1 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.

16.1.1 Activation

The operator shall be activated by a knowing act.

16.1.2 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.

16.1.3 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.

16.1.4 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 1second		
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.

16.1.5 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" +/- 12" (1270mm +/- 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.



1020004-en-US-2.0



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, 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.

assaabloyentrance.us • assaabloyentrance.ca



ASSA ABLOY Entrance Systems

Tel: 1-866-237-2687 (US) • 1-888-608-9242 (Canada) info-automatic.na.entrance@assaabloy.com assaabloyentrance.us • assaabloyentrance.ca