

AD-425S Automatic Door Operator

Instruction Manual



General Safety Precautions

- This instruction manual is intended solely for use by qualified professionals. All installations, electrical connections and adjustments must follow the installation instructions.
- Please read this manufacturer's instructions carefully before installing this unit. Incorrect installation may result in severe personal injury and/or damage to property.
- Packaging materials (plastic and polystyrene, etc) should be disposed of without causing environmental damage and should be kept out of reach of children.
- Do not install this unit in a chemical explosive environment or atmosphere to prevent a risk of explosion. The location of this unit is important in achieving proper performance and normal operating life. This unit should be installed in a safe operating condition
- Make sure the construction's strength and stability are up to standard. Manufacturer will not be held responsible for any damage resulting from incorrect use of this unit.
- These safety devices (e.g. photocell and emergency stop) must follow the technical safety regulations and current safety standards, including limiting of forces and speeds to ensure the door operator works very well at all times.

Encoder

Photocell



- The safety devices must protect any areas where the risk exists of being crushed, cut or gagged or where there are any other risks generated by the motorized door or gate. Apply hazard areas notices required by applicable regulations.
- Each installation must clearly show the identification details of the motorized door/gate.



- Make sure the voltage specified as correct for the device.
- Must provide at least 10 seconds rest time between every restarting cycle to ensure adequate residual current can be returned to power system.
- Make sure to turn the power off before installing and checking this unit and to avoid the risk of fingers that are in contact with the electronic components. External interconnection wiring should be performed wearing the antistatic glove.

Security Statement



According to operating instructions, motorized door installer and the manufacturer of the machinery have the same obligations:

- The technical documents and the annex to the AD-425S Automatic Door Operator must be kept and placed at the disposal of competent national authorities for at least 5 years from the manufacturing dates. CE attestation of conformity should deliver it to the customers.
- Should you have other queries, please refer to the <http://gianni.tw> to download AD-425S full details and other relevant documentations.

Manufacturer's Declaration

Gianni Industries, Inc.

Address: No. 306-1 Hsin Shu Road, Hsin Chuang, Taipei, Taiwan 242

E-mail: info@gianni.com.tw

<http://gianni.tw>

Herewith declares that AD-425S Automatic Door Operator **for swing doors: (One way direction only.)**

- AD-425S Automatic Door Operator can not be installed with other mechanism except electric door locks.
- Conformity with other CE directives: Electromagnetic Compatibility Directive 2004/108/EC (EN61000-6-1 、 EN61000-6-3 、 EN61000-3-2 、 EN61000-3-3)
- Product life: 5 years
- Product should be operated under the recommended door weight. A reduction in performance is to be expected when the access is made to operate at the maximum permissible weight.
- Service class, product operation times and the number of consecutive cycles have been statistically analyzed to determine under average operating conditions, and it does not represent for use under a special condition. (See **Figure 1**)
- The characteristic performance of door operation may be affected by different independent variables like friction, offset (balancing), environmental factors and so on. These factors may change the performance of the door operator's working life or parts. Furthermore, the assembly must be considered and enables infinite durability and continuous operation.

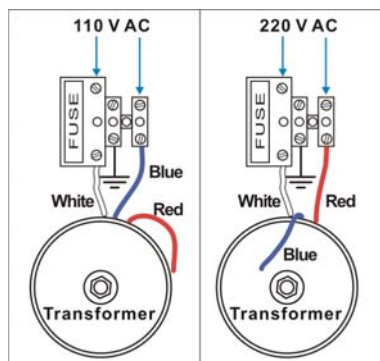
All Packing materials

1. Construction Name

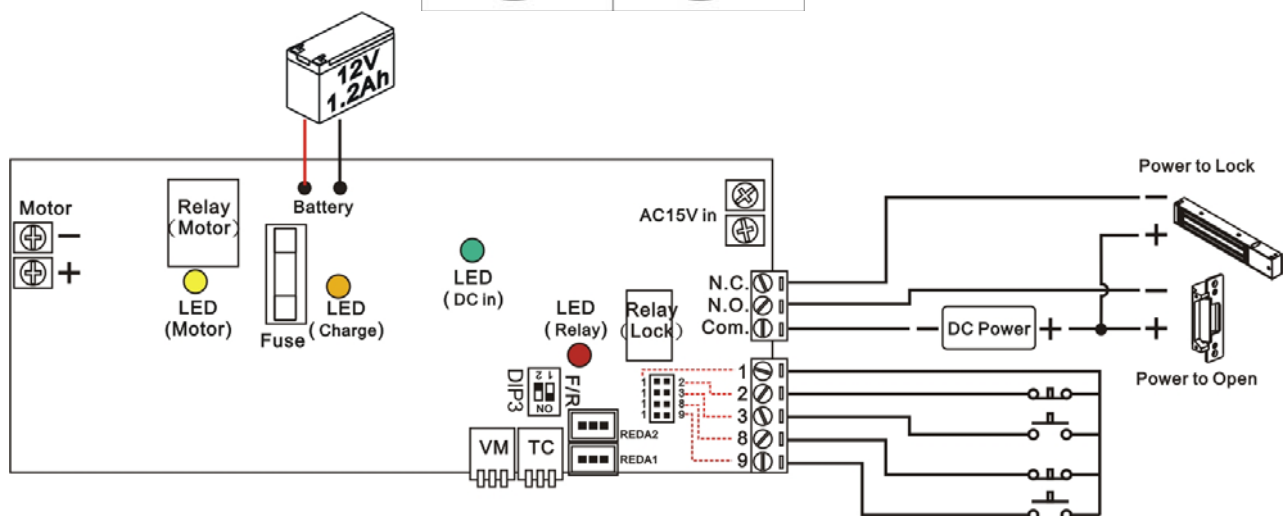


- ① Cover ② Motor ③ Reducer ④ Square Couplings ⑤ Control Board ⑥ Battery
 ⑦ Power Switch ⑧ Operating Arm ⑨ Sliding Rail ⑩ Stopper Ball ⑪ Baseplate
 ⑫ Transformer

2. Control Board

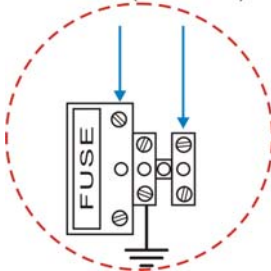
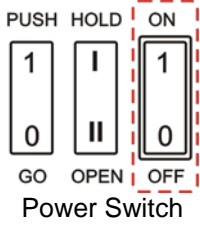
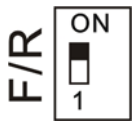
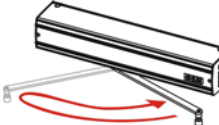
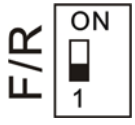


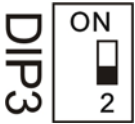
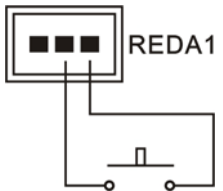
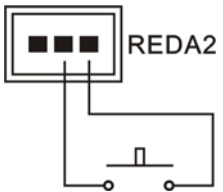


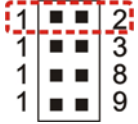
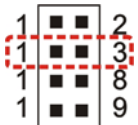
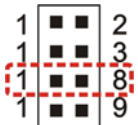
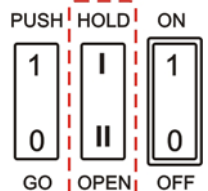

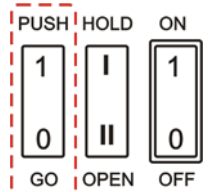
Make sure the voltage specified as correct for the device.






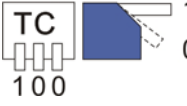












For safety reasons, we recommend user not to install this operator with a Fail-Secure Electric Locks (Power to open) in case of emergencies or power interruptions.

3. Control Board Guide

Input/Output Contact	Explanation	Remark
<p>AC110 (or 220V)</p> 	<p>Make sure the input is used correctly (AC110 or 220V).</p> <p>When turn on the power switch, it enters a learning mode.</p>	 <p>Power Switch</p>
<p>F/R</p> 	<p>AD-425S Operating Arm turns clockwise. (See Figure 5~8)</p>	
<p>F/R</p> 	<p>AD-425S Operating Arm turns counter-clockwise. (See Figure 5~8)</p>	
<p>DIP3</p> 	<p>DIP3 switch ON, when the external pressure force either "WIND" or "MAN MADE FORCE" occurs, AD-425S will automatically open and close.</p>	
<p>DIP3</p> 	<p>DIP3 switch "2", when the external pressure force either "WIND" or "MAN MADE FORCE" occurs, AD-425S can be manually opened and closed.</p>	
 <p>REDA1</p>	<p>REDA1 internal connector links up the control unit.</p>	<p>When Lock is opened and wait up to 0.7seconds, the Motor will be activated.</p>
 <p>REDA2</p>	<p>REDA2 external connector links up the control unit.</p>	<p>When Lock is opened and wait up to 0.7seconds, the Motor will be activated.</p>

Input/Output Contact	Explanation	Remark
	Jumper 1-2 is N.C. contact.	N. C. (default)
	Jumper 1-3 is N.O. contact.	N. O. (default)
	Jumper 1-8 is N.C., or using the “OPEN” switch. AD-425S becomes automatic mode. When the connector is N.O. or using the “HOLD” switch, and then change to manual mode.	
	Jumper 1-9 is N.O., or using the “GO” switch. AD-425S becomes manual mode. When the connector is N.C. or using the “PUSH” switch, and then change to automatic mode.	
LED (Relay)	Relay(Lock) Action indicator.	See page 3
LED (DC in)	PCB power status indicator.	See page 3
Battery Contact and LED (Charge)	LED (Charge) indicates the battery charge is working properly. The optimum operating temperature for the rechargeable battery is 5℃ up to 40 ℃.	This battery has an expected life of 250 recharge cycles at full charge.
BATTERY	Battery Contact.	Battery Specification (12 V,1.2 Ah)
LED (Motor)	Motor power status indicator.	See page 3
N. C.	N. C. is a normally closed contact, and it is for fail-safe (Power to Lock) Electric Locks.	All GEM electric locks are suitable.
N. O.	N. O. is a normally open contact, and it is for fail-secure (Power to Open) Electric Locks.	
Com.	Com. contact is a dry contact compatible with N. O. and N. C. contacts.	
AC 15V IN	The 15V AC power is transformed from 110 or 220 VAC by the transformer to the Control Board.	

The opening, closing and maintain -open time illustration table.

VM (Opening and Closing Time Adjustment)	Opening and Closing Operating Time	Total Opening and Closing Time (VM+ Brake Time)	TC Time (Maintain -open time adjustment)	Maintain -open time (See Figure 4)
 000	2	4.5	 000	1
 100	3	6.0	 100	5
 010	5	8.0	 010	10
 110	7	9.5	 110	15
 001	2	4.5 (With high torque output)	 001	20
 101	3	6.0 (With high torque output)	 101	25
 011	5	8.0 (With high torque output)	 011	30
 111	7	9.5 (With high torque output)	 111	35

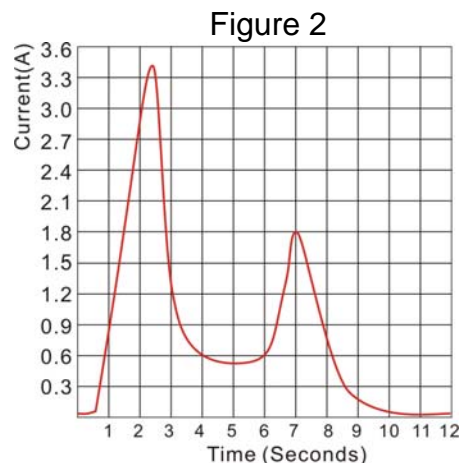
- For the wider door leaf, we suggest that you can extend the opening and closing time or adjust the high torque output. For the 95cm~120cm door width, please refer the gray region for setting. The high torque output enhanced the door stability.
- The opening operation based on 90° angle; however, there would be time difference from the setting angles.
- Please refer to the below table for TC settings.

Door width (cm)	Door weight (kg)					
	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg
75 cm	20 s	20 s	22 s	22 s	25 s	28 s
85 cm	20 s	20 s	22 s	22 s	25 s	28 s
100 cm	22 s	22 s	24 s	24 s	27 s	30 s
120 cm	22 s	22 s	24 s	24 s	27 s	30 s

5. Specification

Power Input	110V (or 220V) AC · 50-60Hz
Current (See Figure 2)	3.5A max., 0.6A average
Torque	30Nm
Opening/Closing time (VM)	4.5~9.5 s (90°)
Maintain - Open time (TC)	1~35 seconds
Battery Specification	12V 1.2AH
Temperature	-20℃ ~+55℃ (Battery 5℃ ~40℃)
Degree of Protection	IP 12D
Product Weight	6.5 kg
Motor specification	Voltage: 8~24VDC Maximum current : 4A Power consumption : 65W Maximum rotation frequency: 2400 RPM
Battery charge	12V=0.15A (Normal); 0.3A (Peak)
Dimensions	Operator: 526(L) x 100(W) x 96(D) mm Arm: 375 mm
Door Dimensions (Figure 1)	Door width : 75~120 cm Door weight : 50~100 kg
<p>Door Width (cm)</p> <p>Door Weight (kg)</p> <p>Service Class A: average of up to 600 cycles per day</p> <p>Service Class B: average of under 200 cycles per day</p> <p>This warranty is only for our specified door leaf width and door leaf weight.</p>	<p>Figure 1</p>

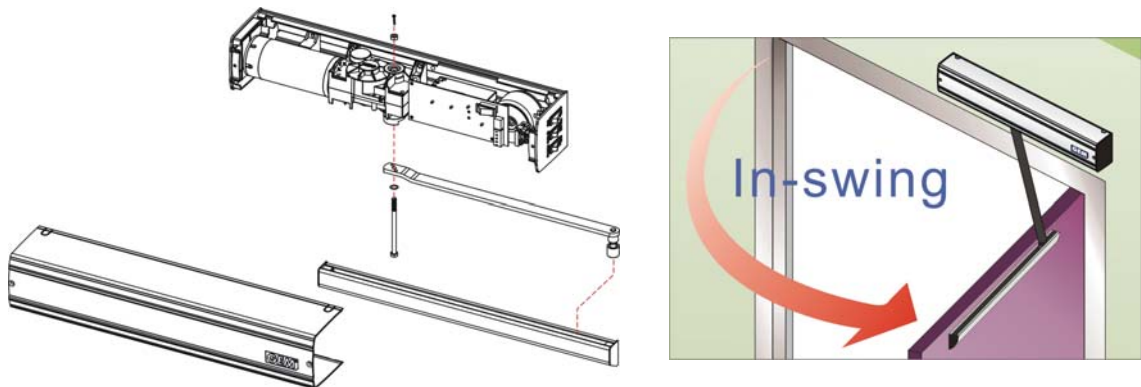
- **Figure 2:** Automatic door operator power consumption graph. When activated the current will increase from 0 to 3.5A, and will decrease to 0.5~0.6A afterward. The deceleration time will cause the current up to 1.8A.



Installation instructions

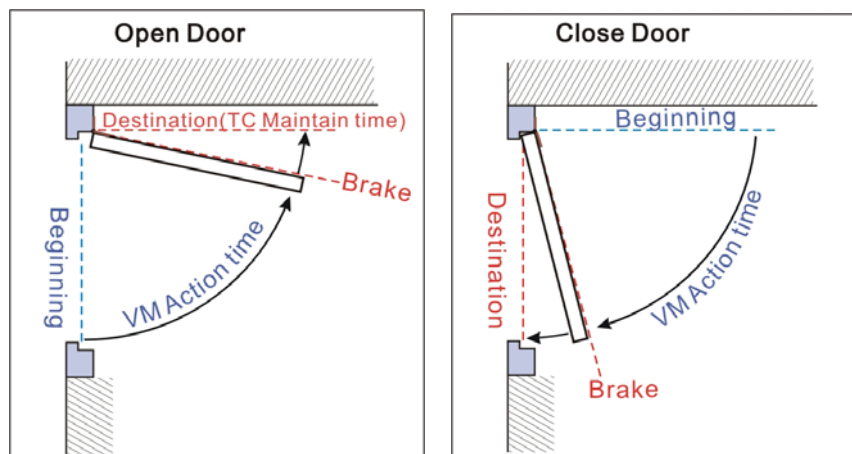
- Refer to figure 3 for in-swing door (right-hand).

Figure 3



- Opening, Closing action time and Maintain time illustration. AD-425S will be automatically counted the round trip distance and can be adjusted the opening, closing and break time.

Figure 4



- Opening angle: 90 degrees.
- Beginning
- Destination
- Brake for wall blanking function.
- VM action time is the opening and closing time.
- TC Maintain time of 1-35 seconds.

Prepare the installation

To mount the AD-425S depends on the direction way of the doors, out-swing, in-swing, right-open and left-hand doors by adjusting the F/R switch and the direction of the Operating Arm.

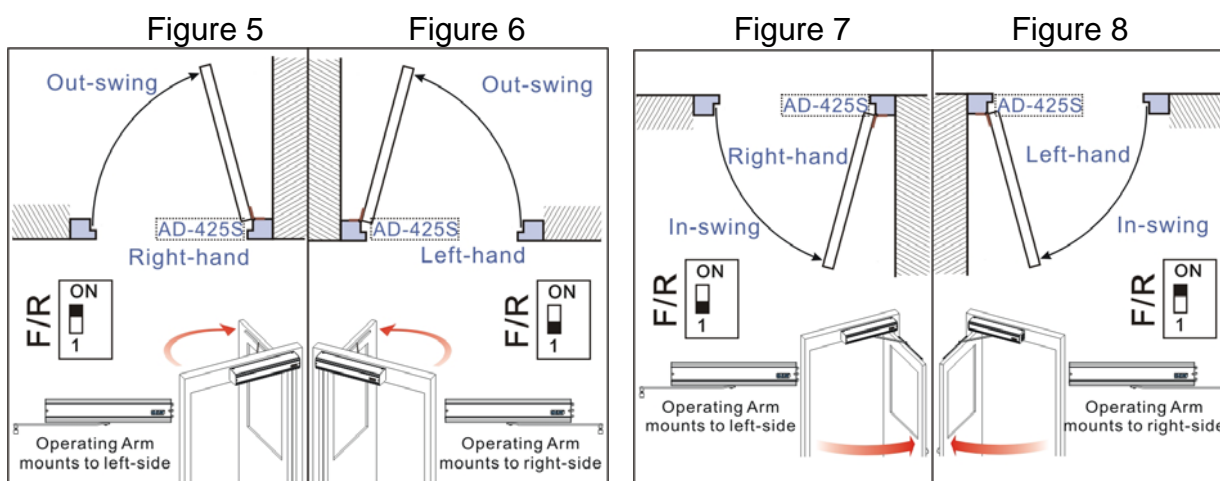
For the safety reason, AD-425S must be installed indoor.

Figure 5: For right-hand and out-swing door. F/R switch set 「ON」. Operating Arm mounts to left-side.

Figure 6: For left-hand and out-swing door. F/R switch set 「1」. Operating Arm mounts to right-side.

Figure 7: For right-hand and in-swing door. F/R switch set 「1」. Operating Arm mounts to left-side.

Figure 8: For left-hand and in-swing door. F/R switch set 「ON」. Operating Arm mounts to right-side.



To mount the operator on a right-hand door, Operating Arm mounts to left-side. (See **Figure 9**)

To mount the operator on a left-hand door, Operating Arm mounts to right-side. (See **Figure 10**)

Mount the Operating Arm

Figure 9

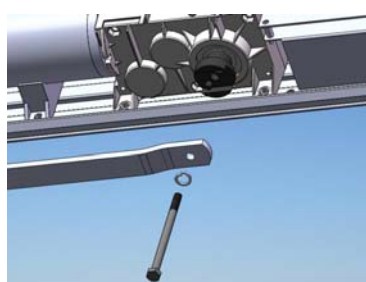
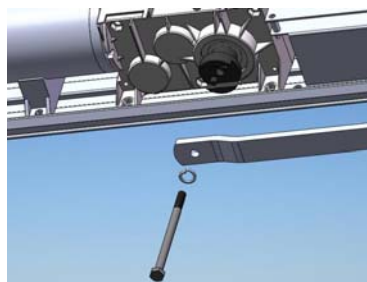
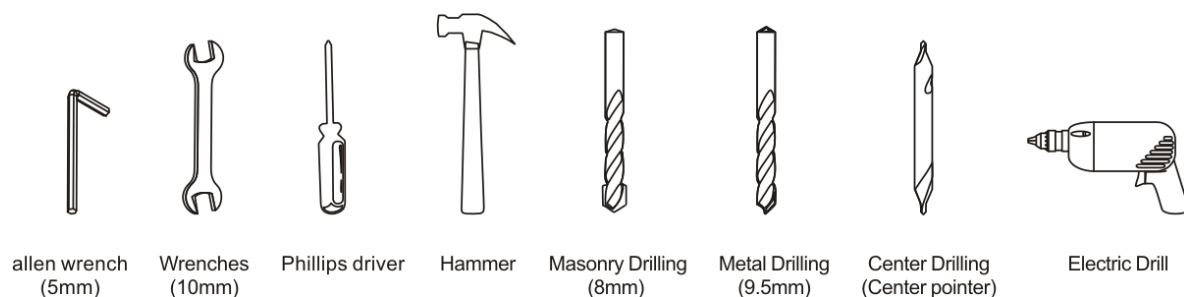


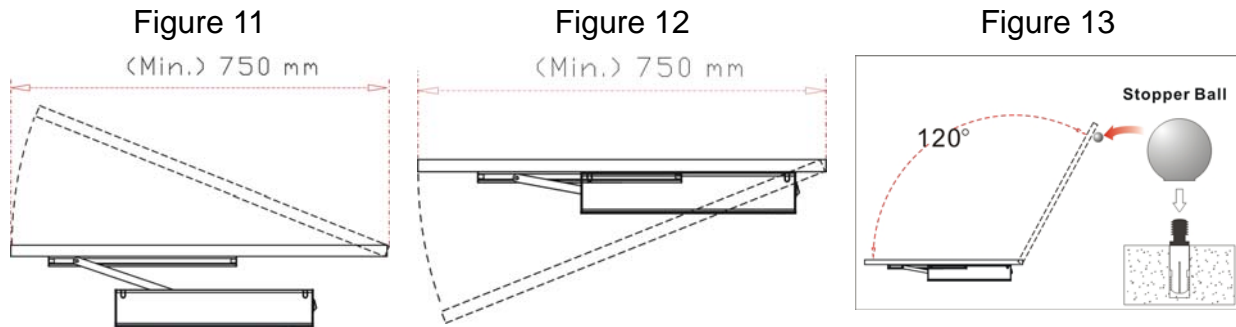
Figure 10



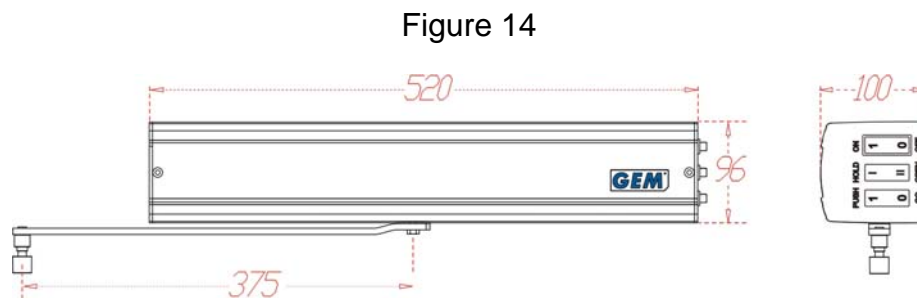
● Required Tools



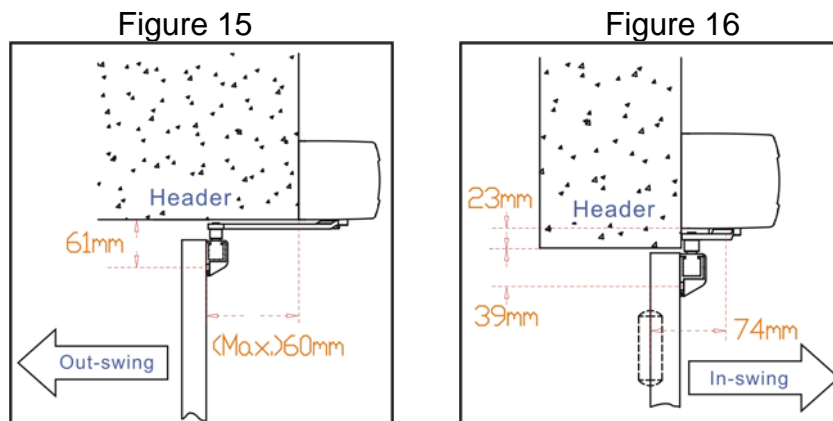
- **Figure 11~13** showing an operator installation of a minimum door leaf width and a maximum opening angle. The opening angle is recommended not excess to 120° .



- **Figure 14:** Automatic door operator dimension



- Install AD-425S on an out-swing door, make sure that the distance between the header and leaf is not more than 60mm, and the space between the header and Sliding Rail mounting hole must be 60mm. (See **Figure 15**)
- Install AD-425S on an in-swing door, make sure that the distance between Square Couplings and hinge is not more than 74mm , the space between header and the bottom of AD-425S must be 23mm, and the space between header and Sliding Rail mounting hole must be 39mm (See **Figure 16**)



- All dimensions and units are in millimeters unless otherwise specified.
- Make sure AD-425S performance is effectively; no extra door closer required.
- **Warning:** The AD-425S installation should regard the external and internal pressure conditions. To assure the proper operation and the finest performance, please make a regular check for your operator.

AD-425S Template Installation Instruction

Figure 17 Out-swing door (Right-Hand Open)

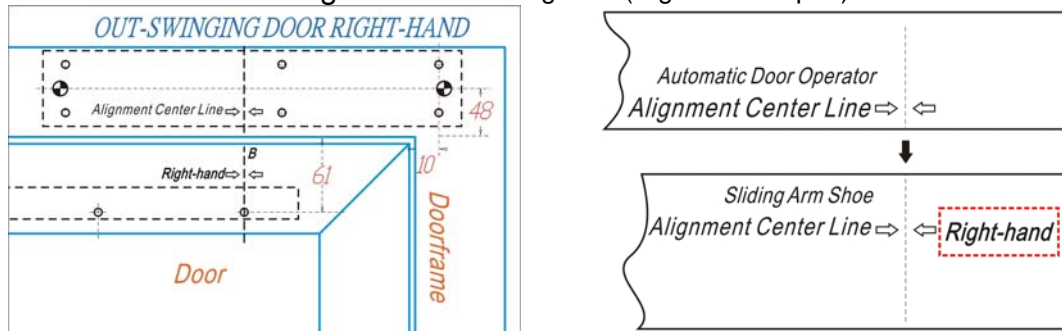


Figure 18 Out-swing door (Left-Hand Open)

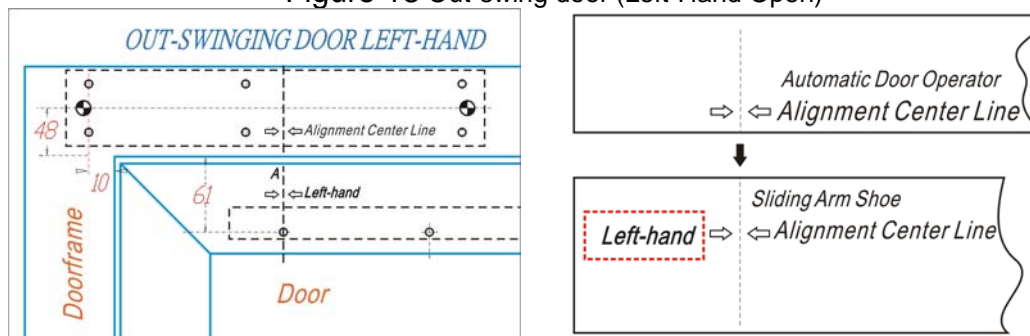


Figure 19 In-swing door (Right-Hand Open)

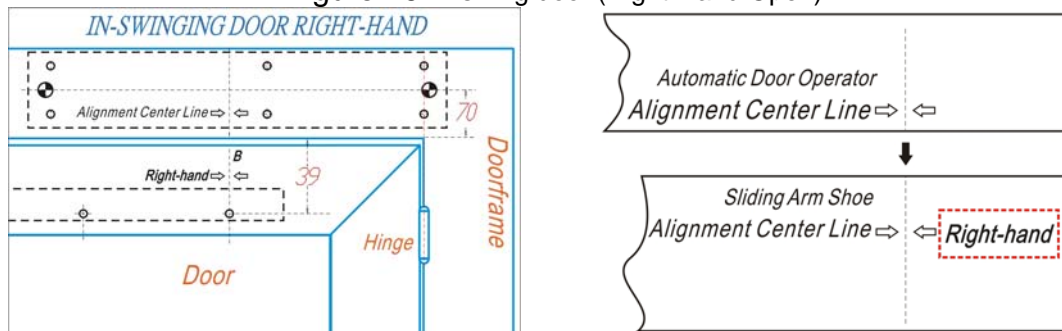
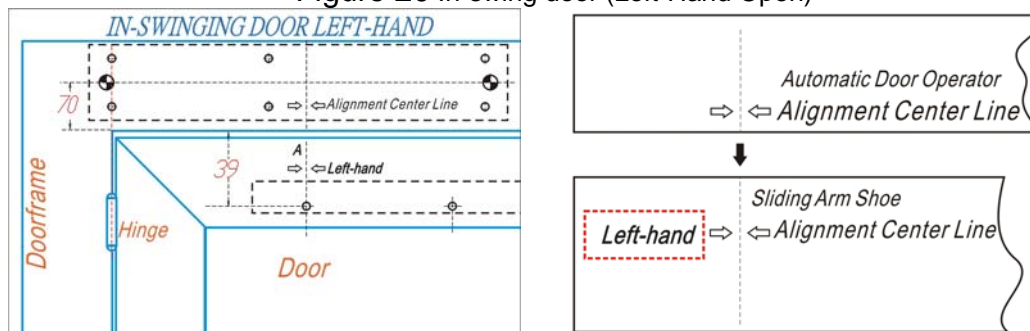

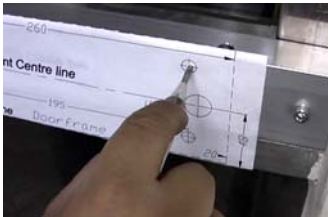
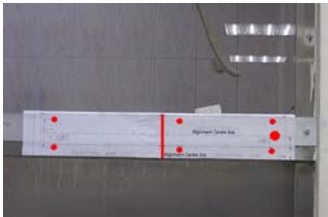

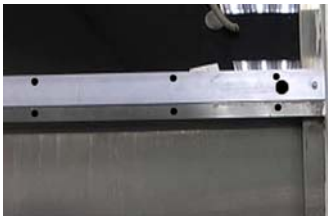




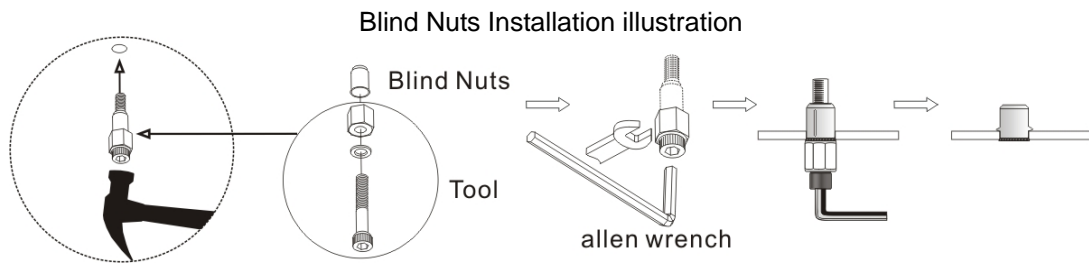
Figure 20 In-swing door (Left-Hand Open)

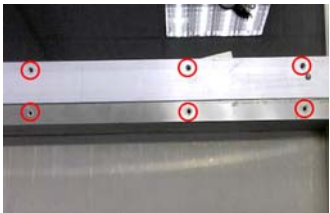


Installation Steps Out-swing door(Right-Hand Open)

Step	Figures	Explanation
Step 1.		Place the AD-425S template to the right position on the door header. See the figure presented for an out-swing door (Right-Hand Open), more details shown in Figure 17 .
Step 2.		Mark for pilot holes. (Use the center pointer)
Step 3.		Mark six pilot holes, one cable hole and center line.
Step 4.		Drill a pilot hole.
Step 5.		Drill six Ø 9.5mm pilot holes and one Ø 18mm cable hole.
Step 6.		Tap and insert a Blind Nut.

Steps	Figures	Explanation
Step 7.		Use Allen Wrench to tighten the Blind Nut. This will compress the screw so that it remains permanently fixed in the hole. Repeat these steps on other Blind Nuts. (Do not over tighten the Blind Nut.)




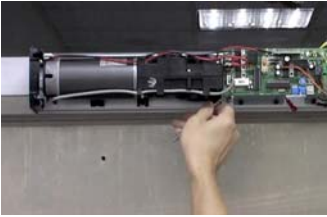
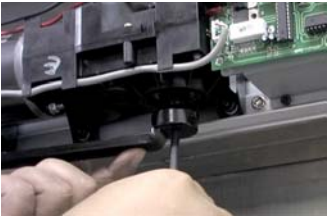




Step 8.		Blind Nuts installation completed.
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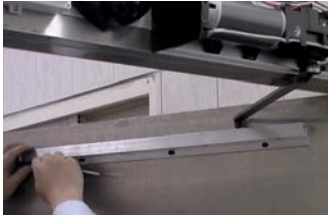


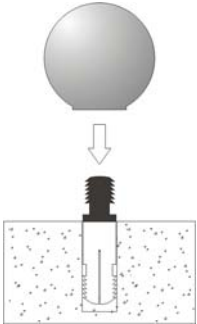


Step 9.		Place the sliding rail template to the right position on the door. See the figure presented for an out-swing door (Right-Hand Open), more details shown in Figure 17 .
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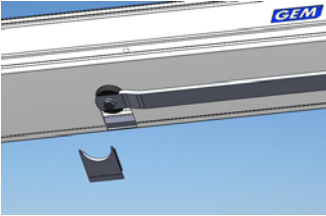

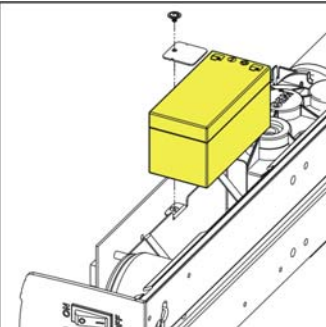
Step 10.		Mark for pilot holes. (Use the center pointer)
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Step 11.		Drill three Ø 9.5mm pilot holes.
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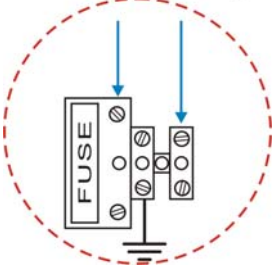
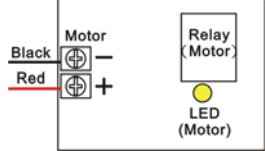
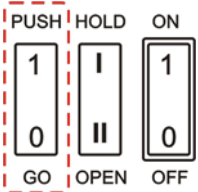
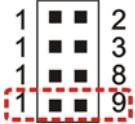
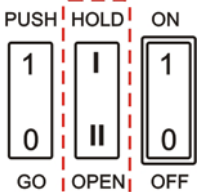
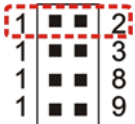
Steps	Figures	Explanation
Step 12.		Use Allen Wrench to tighten the Blind Nut. This will compress the screw so that it remains permanently fixed in the hole. Repeat these steps on other Blind Nuts. (Do not over tighten the Blind Nut.)
Step 13.		Blind Nuts installation completed.
Step 14.		Insert two mounting screws. (Screw specification: 6 X 20 mm)
Step 15.		This is the position of Mounting Hanger.
Step 16.		Mount the automatic door operator.
Step 17.		Tighten the other 4 screws. (Screw specification: 6 X 20 mm)

Steps	Figures	Explanation
Step 18.		Tighten screws.
Step 19.		Insert screws (6 x 95 mm) to the Operating Arm on Square See the figure presented for a out-swing door (Right-Hand Open), more details shown in Figure 9 .
Step 20.		Tighten nut at other end of screw.
Step 21.		Use the 10mm wrench to tighten nuts.
Step 22.		Insert pin to avoid the screws from loosing.
Step 23.		Slide the Operating Arm to Sliding Rail.

Steps	Figures	Explanation
Step 24.		Fix the Sliding Rail on the door leaf. (Screw specification: 6 X 20 mm)
Step 25.		Slide in the Sliding Rail Cover.
Step 26.		Attach two Side Ends.
Step 27.		Depending on the door leaf opening angle, there may need a Stopper Ball .
Step 28.		Optional electric lock, wireless push button, microwave sensor, reader and other accessories can be used with the AD-425S operator. See the Control Board guide above on Page 3-5 to wire this application.
Step 29.		After the initial installation, please connect AC power and turn the switch on.

Steps	Figures	Explanation
Step 30.		First opening movement, the AD-425S will be automatically set the opening angle and distance.
Step 31.		Attach the cover.
Step 32.		Attach the Operating Arm cap.
Make final settings and adjustments		Please refer to page 4~6 for more details of the setting.
Change battery		Battery is located on the back of Control Board. Remove the Fixing Plug and old battery, replace the new battery, then tighten the Fixing Plug.

Trouble shooting

Problem	Possible Cause	Solution
The door does not respond.	No AC power	<p>Make sure the Control Board and fuse are working properly and connected properly.</p> <p>AC110 (or 220V)</p> 
	Motor have no power (LED motor light not on.)	<p>Make sure all motor terminals are connected properly.</p> 
	Jumper 1-9, or PUSH Switch setting is incorrect.	<p>Jumper 1-9 is N.O., or using the “GO” switch. AD-425S becomes manual mode. When the connector is N.C. or using the “PUSH” switch, and then change to automatic mode.</p>  
	Door accidentally locked.	<p>Attach any flexible items (eg, rubber or others) to the Door-stop for increasing damping capacity. We recommend you to use the electromagnetic lock.</p>
The door can automatically open but doesn't close.	Safety contacts are open	<p>Turn to “OPEN” Mode.</p> 
	The automatic close function does not respond.	<p>Check Jumper 1-2 (N. C.)</p> 

Problem	Possible Cause	Solution
The door automatically open but doesn't close.	Safety devices are on	Contact your local distributor to check the Photocell and Safety Device. (keep the device clean)
	"REDA 1", "REDA 2" contacts are on.	Check the "REDA 1", "REDA 2" contacts are working properly. Remove the obstacles.
The door automatically opens and closes by itself.	The sensor detects something moving.	Check the "REDA 1", "REDA 2" contacts are working properly. Remove the obstacles.
The door automatically stops before reaching the preset destination.	The Encoder may be incorrect.	When the encoder is incorrect, please contact your local distributor.
	The AD-425S stops operating automatically when the door is interrupted for three times.	Make sure the door swing freely without any obstruction.
	The input power is low.	Make sure the Power input is working properly.
LED(Relay) indicates in the opposite status.	The direction of Operating Arm is incorrect.	Adjust the F/R. (Restart the power)
LED(Charge) not working.	Fuse burn out.	Replace fuse. (250V, 5A)
	Wires loose	Check the wiring

Maintenance (every 6 months)

Turn the power off. Please ensure and switches are "OFF"

- Clean and lubricate all moving components.
- Check that all screws are well tightened.
- Check all wiring is working normally.

Turn the power on. Please ensure that switches are "ON".

- Check the door movement stability.
- Check the condition of the hinges.
- Check all functions of the AD-425 are working normally. .

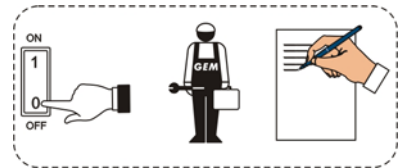
Normal Operation:

During maintenance, in case of malfunction or emergency, please ensure the power is "OFF" and the operator is working manually. For the safety reason, we recommend user do not install this operator with a Fail-Secure Electric Locks (Power to open).

General Safety Precautions

The following precautions are essential for the user.

- Read the precaution below carefully as it contains important information about safe installation and maintenance.
- This instruction must be conducted to all potential users.
- The product must be used in visible place.
- The manufacturer will not be held responsible for any damage caused by improper use of this unit.
- Do not use the door closer with the AD-425S.
- Do not put any obstacle in the door path when operating.
- Do not allow children to play or stay within the field of action of the motorized door or gate. Keep remote control or any other control devices out of the reach of children, in order to avoid an unexpected accident happened. Do not attempt to modify or fix this unit. Contact your local distributor when any service is needed.
- To assure the finest performance, please follow the operation instructions. Contact qualified personnel to make regular maintenance checks. All installation, maintenance and repair work must be documented and made available to the user.



Distributor: