24827

4810

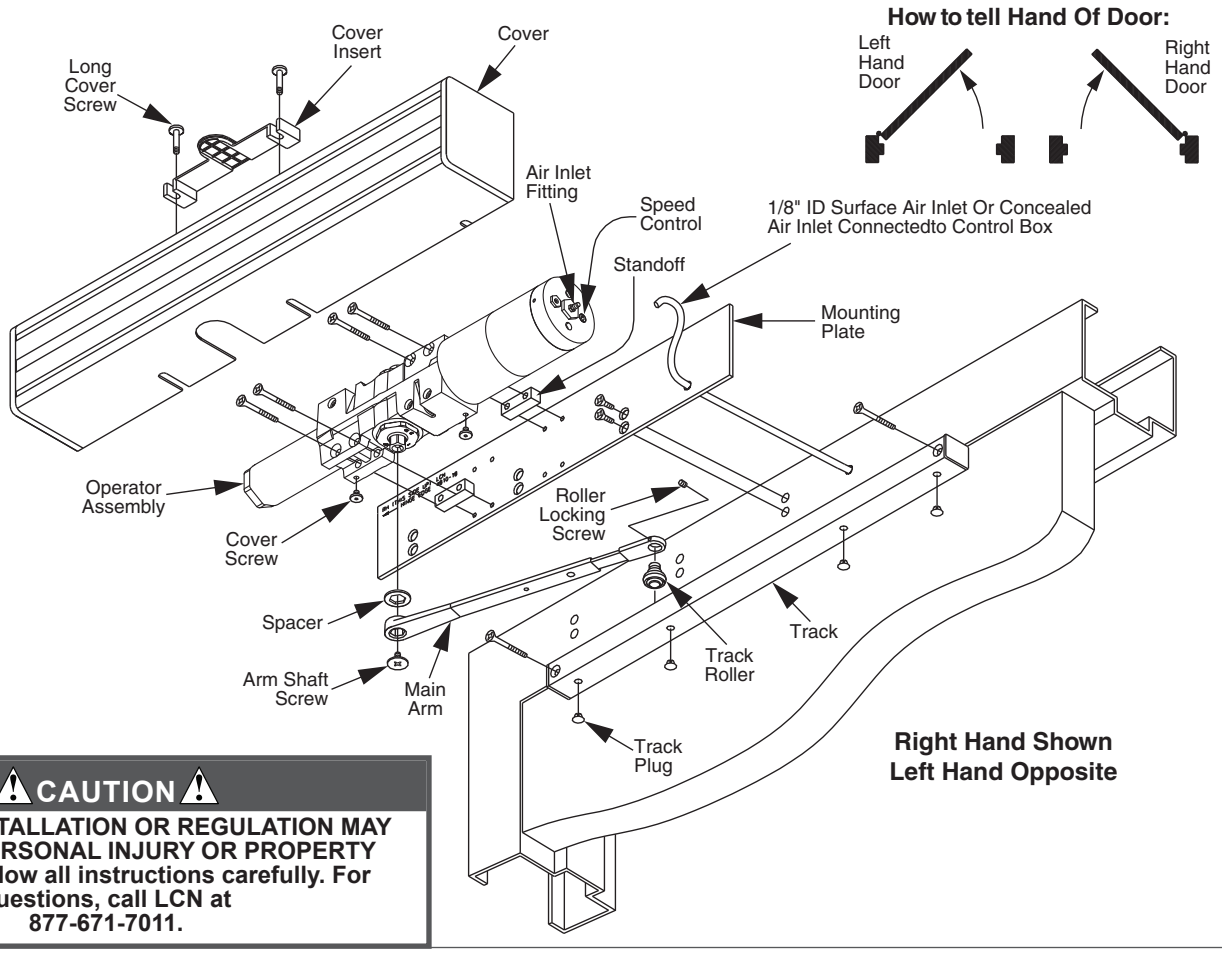
LCN®

Non-Handed/Non-Sized Auto Equalizer

Installation Instructions

Installation and adjustment instructions of low energy door operator

ⓘ **Note: This door operator requires additional system components. Please see the LCN Closer Catalog.**



⚠ CAUTION ⚠

IMPROPER INSTALLATION OR REGULATION MAY RESULT IN PERSONAL INJURY OR PROPERTY DAMAGE. Follow all instructions carefully. For questions, call LCN at 877-671-7011.

Installation

1	Prepare the frame via the template (see page 5), then secure the mounting plate to the frame with the screws provided.	5	Remove the end cap from the track, insert the track roller, mount the track on the door, and secure with the screws provided.
2	Secure the operator assembly to the mounting plate with 4 ¼-20 x 2½ screws.	6	Loosen the roller-locking screw in the end of the arm, open the door part-way (about 30°), pull the arm over the top of the door, and connect to the track roller. Tighten the arm-set screw firmly.
3	Connect the air line to the air inlet fitting.		
4	Place the spacer on the operator shaft, then push the arm onto the operator shaft at approximately 30° to the door. Secure it with the arm shaft screw.		

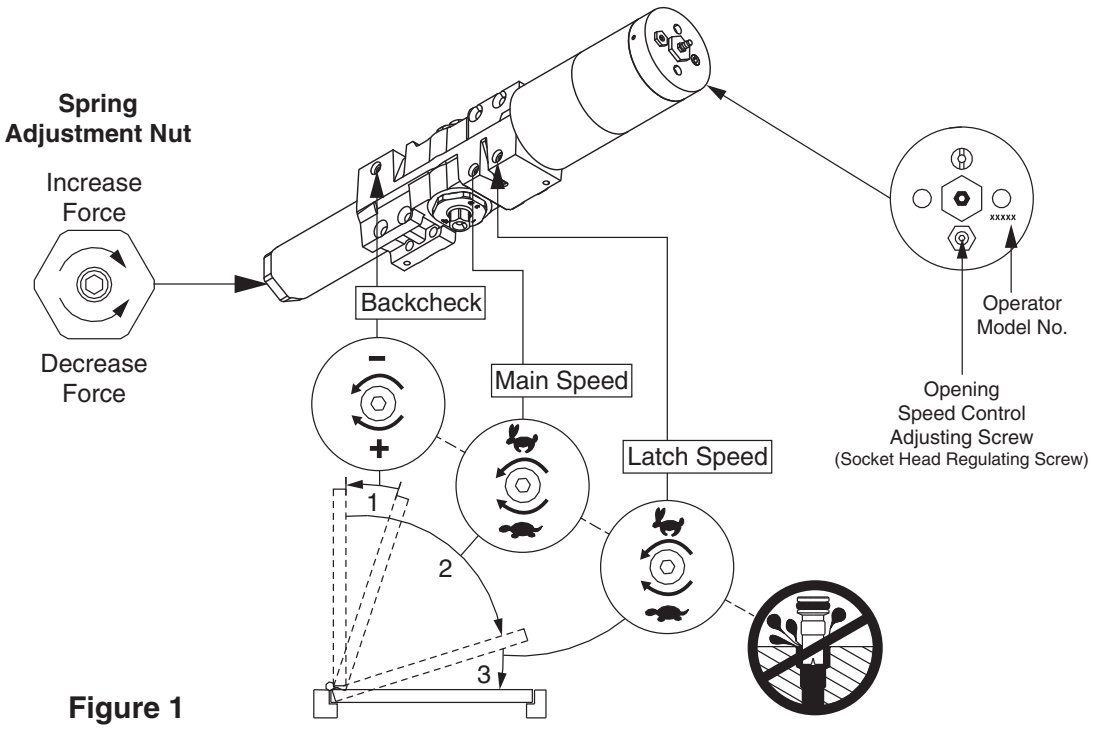


Figure 1

Closing Force Adjustment

To adjust the closing force, turn the spring adjustment nut clockwise or counterclockwise the required number of turns to match the door w°idths in Tables 1 & 2. For maximum adjustment, turn clockwise 5 turns, and counterclockwise 7 turns.

Closing Speed Adjustment

1. A “normal” closing time from a 90° open position is 5 to 7 seconds, and evenly divided between the main speed and the latch speed.
2. Use the 3⁄32” Allen wrench provided.
3. To slow the main speed of the door, turn the regulating screw nearest to the arm clockwise.
4. To slow the latch speed of the door, turn the regulating screw nearest to the latch clockwise.
5. Do not allow the door to slam into the frame.

Opening Speed Adjustment

ⓘ **Note: For air pressure regulation, see the control box instructions.**

The door opening speed must be adjusted to suit the width and weight of the door. The wider or heavier the door, the slower it should open.

1. To determine the opening speed, measure the door leaf width and weight.
2. Set the set speed to open the door from 0° to 80° form the time shown in Table 3.
3. Using the 3⁄32” Allen wrench provided, turn the speed control clockwise to slow the door, or counterclockwise to increase the speed. The opening speed control adjusting screw is located at the end of the door operator, near the tubing connection (see Figure 1).
4. If the door weight cannot be measured, the weight can be estimated by finding the area of the door (area= length x width), and multiplying the area by the weight per square foot for the door type being used (shown in Table 4).

Reference Tables

Exterior Door	
Maximum Door Width	Number of Turns
30”	0 Turns
36”	2 Turns Clockwise
42”	7 Turns Clockwise

Table 1

Interior Door	
Maximum Door Width	Number of Turns
34”	5 Turns Counterclockwise
38”	0 Turns
48”	2 Turns Clockwise

Table 2

Fastest Opening Time in Seconds to 80° Position			
Door Weight in Pounds	Door Width in Inches		
	36”	42”	48”
100 lbs.	3.0 sec.	3.0 sec.	3.0 sec.
125 lbs.	3.5 sec.	3.5 sec.	3.5 sec.
150 lbs.	3.5 sec.	3.5 sec.	3.5 sec.
200 lbs.	4.0 sec.	4.0 sec.	4.0 sec.

Table 3

ⓘ **Note: If the door width or weight is between the sizes listed, use the time shown for the next wider or heavier door.**

⚠ CAUTION ⚠

DO NOT SET THE DOOR SPEED FASTER THAN THE CHART RECOMMENDS!

Door Weight	
Door Type	Weight per Sq. Ft.
Solid Core Wood 20 Ga. Flush Hollow Metal Aluminum x 1” Glass	5.5
Mineral Core Door 16 Ga. Flush Hollow Metal Aluminum x 1” Glass	7.0

Table 4

ⓘ **Note: These weights are for 1¾” thick doors. If the doors are thicker or thinner than 1¾”, consult the door manufacturer for proper weight, or weigh the door.**

Backcheck Adjustment

1. Backcheck slows the door swing as it approaches to a full opening position (see Figures 1 & 2).
2. If necessary, increase the resistance of backcheck to prevent the door from striking a wall. To increase the resistance, turn the regulating screw nearest to the hinge clockwise by quarter turns. **DO NOT USE AN ABRUPT BACKCHECK.**

Delay Adjustment

After opening, the door should remain at the 90° position for no less than 5 seconds. This “delay time” can be increased to approximately 30 seconds by turning the timer adjustment wheel(s) in the control box clockwise. For the location of this wheel(s), refer to the 7900 or 7980 Series Control Box instruction sheet. Adjust the “delay time” to a maximum that is practical for the elderly or handicapped. The time cycle begins when the switch or scanner is activated.

Attach the Cover

1. Slide the cover insert into the top cutout in the cover (see Figure 2).
2. Push the cover over the operator assembly and against the mounting plate.
3. Insert the cover screws, and tighten securely.

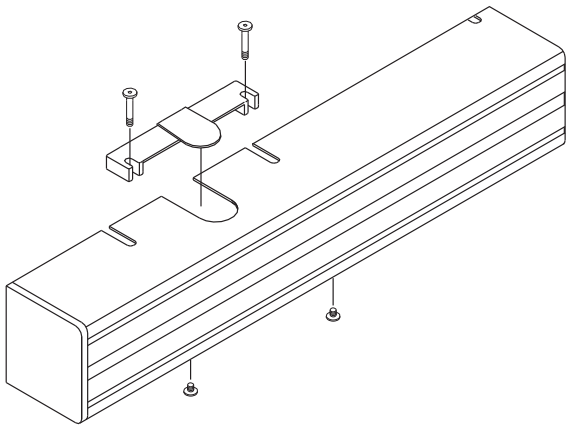


Figure 2

Locate the Caution/Automatic Door Decal

1. Locate one decal on each side of the door, near the lock stile, approximately 53” minimum to 63” maximum above the floor. The decal location must be visible without interference from the door trim, panic devices, etc.
2. Clean a 6” x 6” area where decals will be placed.
3. Apply one decal (Item 20 on page 4) on each side of the door.
4. Remove the backing and “roll” the decal onto the door to avoid trapping any air under the decal.

Set Screw Adjustment For Single Lever Arm

It may be necessary to adjust the fully open door position. Minor adjustments can be made by using the telescoping arm by:

1. Shorten the arm length to decrease the door to decrease the door opening. Lengthen the arm to increase it.
2. Remove the set screw and adjust the arm to the preferred length.
3. Replace the set screw and tighten securely after adjustment.
4. After adjusting the arm, cycle the door to ensure that it operates properly.

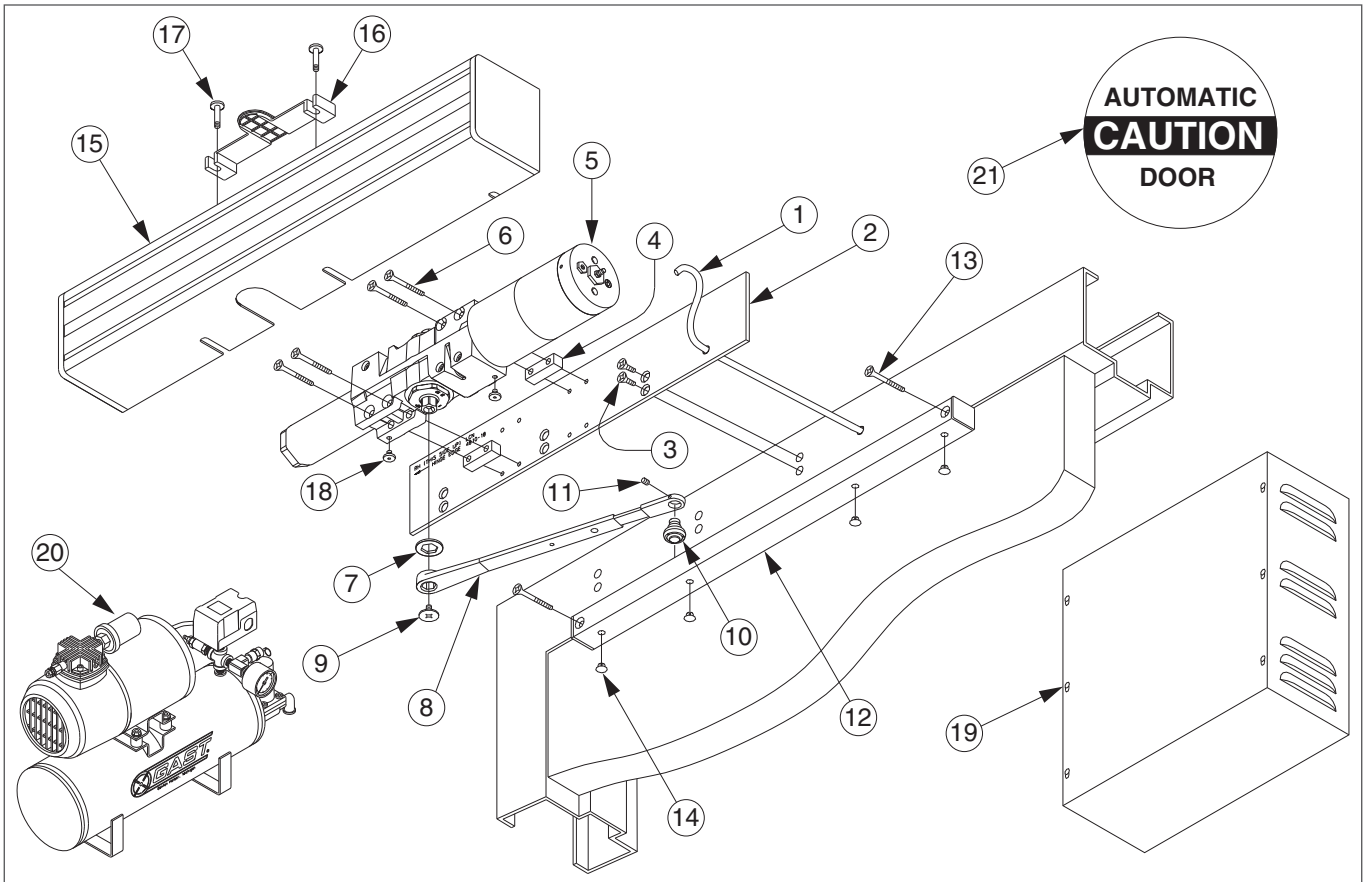


Figure 3

Item Number	Part Number	Description	Quantity
1	925	⅛" I.D. Pneumatic Tubing	Order Length Required
2	4810-18	Standard Mounting Plate	1
3	No. 14 x 1½" ¼-20 x 5/8"	Phillips Head Wood Screw or Phillips Head Machine Screw	6
4	4810-182	Standoff	2
5	4810-3071	LCN Switch-Actuated Auto Equalizer	1
6	No. ¼-20 x 2½"	Phillips Head Machine Screw	4
7	4810-61	Spacer	1
8	4810-3077	Arm	1
9	4810-159	Arm Shaft Screw	1
10	4810-3034	Track Roller	1
11	4810-425	Roller Locking Screw	1
12	4810-3038	Track	1
13	No. 14 x 2½" No. ¼-20 x 1½"	Phillips Head Wood Screw Phillips Head Machine Screw	2
14	4810-141	Track Plug	4
15	4810-72	Cover	1
16	4810-163	Cover Insert	1
17	4810-31L	Long Cover Screw	2
18	4810-31	Cover Screw	2
19	7900 or 7980 Series	Control Box	1
20	920 Series	Compressor (Optional)	1
21	4810-155G	Decal	2

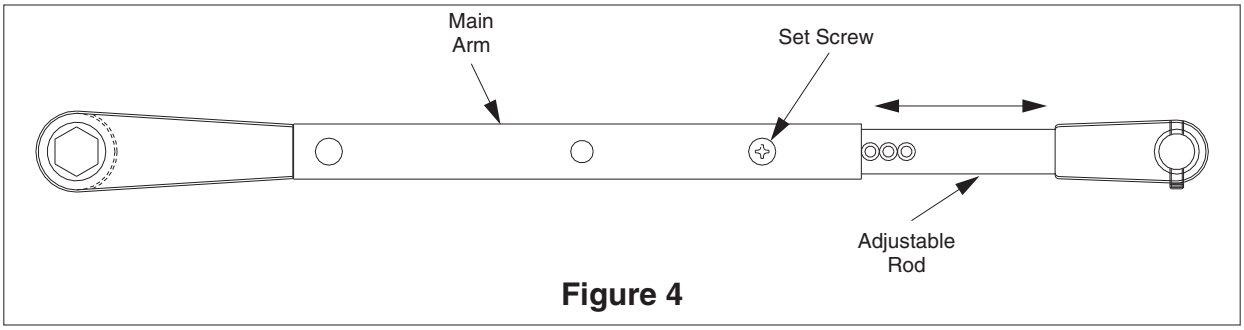


Figure 4

Adjust The Single Lever Arm Set Screw

It may be necessary to adjust the fully open door position. A minor adjustment can be made by using the telescoping arm as follows (see Figure 4):

1. Shorten the length of the arm to decrease the door opening. Lengthen the arm to increase the door opening.
2. Remove the set screw, and adjust the arm to the preferred length.
3. Replace the set screw, and tighten securely after adjustment.
4. After the arm adjustment is made, cycle the door to ensure that it is operating properly.

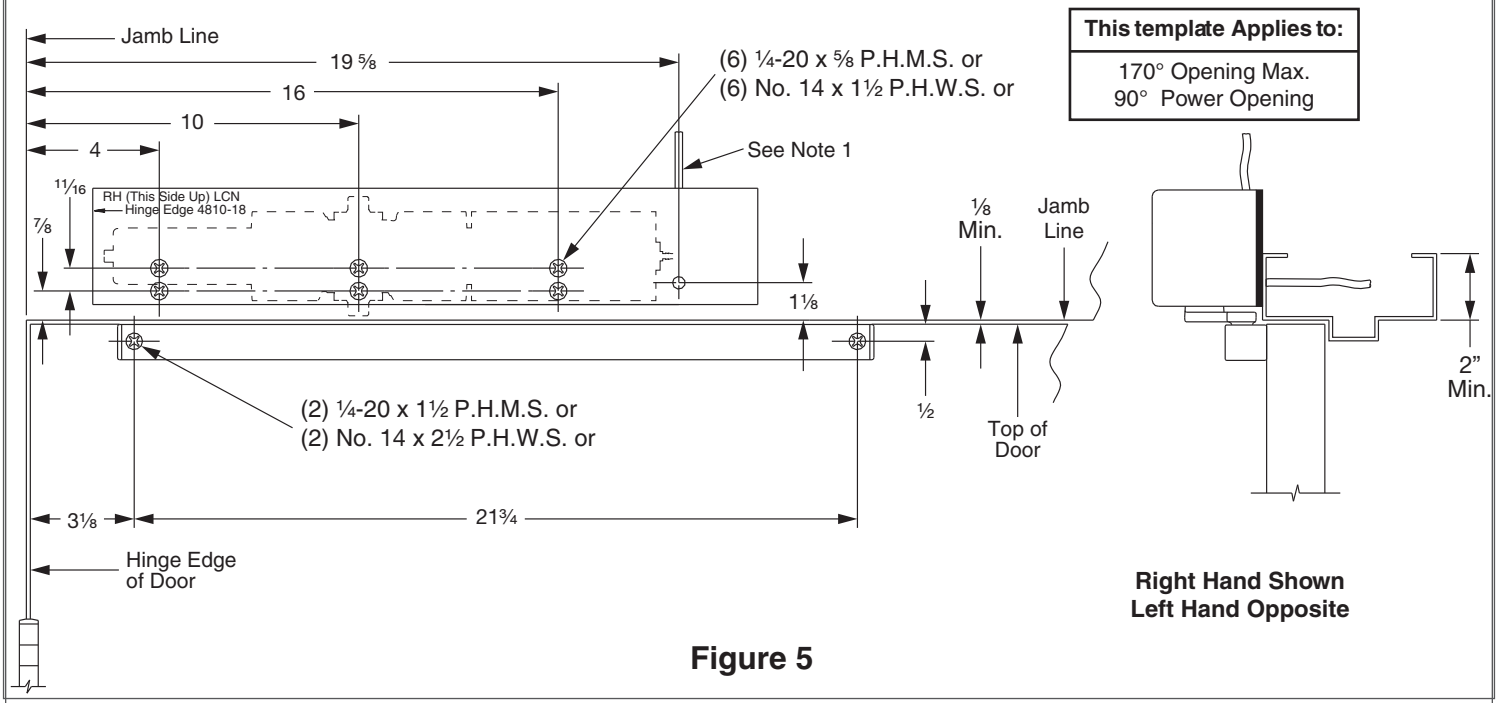


Figure 5

Notes:

1. The ¼" I.D. tubing is connected to the control box.
2. Locate the closer & track from the center line of the pivot or swing clear hinges when used.
3. Auxiliary stops are recommended at the maximum opening.
4. The closer size is 20" x 3½" x 3 5/16".
5. Reinforcing per ANSI/SDI-100 is recommended for hollow metal doors & frames.

Inch	1/8	1/4	1/2	5/8	11/16	7/8	1 1/8	1 1/2	2	2 1/2	3 1/8	4	10	16	19 5/8	21 3/4
M.M.	3	6	13	16	18	22	29	38	51	64	79	102	254	406	498	552

Customer Service
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