

# Logic 5.0 Commercial Door Operator

## INSTALLATION MANUAL

**Security+ 2.0®**

**myQ**

**Models T, APT, H, J, HJ, GH, and GT**



### NOT FOR RESIDENTIAL USE

- Please read this manual and the enclosed safety materials completely, prior to installation and use!
- This Product Is To Be Installed And Serviced By A Trained Door Systems Technician Only.
- A LiftMaster Monitored Entrapment Protection (LMEP) Device is REQUIRED for B2, T, TS, and FSTS wiring types.
- Upon completion of installation, test entrapment protection device(s) prior to placing the operator into active use.
- These operators are compatible with myQ® and Security+ 2.0® accessories.

### 2 YEAR WARRANTY

Serial # \_\_\_\_\_

Installation Date \_\_\_\_\_



LiftMaster  
300 Windsor Drive  
Oak Brook, IL 60523

# LiftMaster®

## CONNECTIVITY

- myQ Technology enables secure monitoring and control of Logic 5.0 operators and other myQ accessories with a smartphone, tablet or computer.
- Alerts can be received as email or pop-up (push) notifications on a mobile device, ensuring the status of a commercial door.
- myQ Mobile App is a free download and does not require an annual activation fee.

## SAFETY AND SECURITY

- Security+ 2.0® – with every press of the button, a new code is sent to the commercial door operator, ensuring a door will only open for the remote control programmed.

UL 325 requires all commercial door operators to be either constant pressure to close or be equipped with a primary external monitored entrapment protection device.

LiftMaster® is the leading brand of professionally installed commercial door operators and access control products for businesses worldwide. We are committed to quality products, innovative designs and comprehensive services which exceed our Customers' expectations.

## VOLTAGE SELECTION

VOLTAGE	PHASE	FIELD SELECTABLE
115V	1 Phase	YES
208V	3 Phase	YES
230V	1 and 3 Phase	YES
460V	3 Phase	YES
575V	3 Phase	NO

## TABLE OF CONTENTS

<b>SAFETY INFORMATION</b>	<b>3</b>	<b>ADJUSTMENT</b>	<b>22-23</b>
<b>TROLLEY OPERATORS</b>	<b>4-12</b>	Limit Adjustment . . . . .	22
Carton Inventory . . . . .	4	Clutch Adjustment (Belt Drive Model Operators) . . . . .	23
Operator Specifications . . . . .	4-6	<b>TESTING</b>	<b>24</b>
<b>ASSEMBLY</b> . . . . .	<b>7-9</b>	<b>MANUAL RELEASE</b>	<b>25-26</b>
Assemble the Operator (Models T and GT) . . . . .	7	Emergency Disconnect System Model GT and T . . . . .	25
Install the Chain (Models T and GT) . . . . .	8	Emergency Disconnect System Model APT . . . . .	25
Assemble the Operator (Model APT) . . . . .	9	Emergency Disconnect System Model H, GH, J, and HJ . . . . .	26
<b>TYPICAL INSTALLATION</b> . . . . .	<b>10-12</b>	<b>PROGRAMMING</b>	<b>27-43</b>
Install the Header Bracket . . . . .	10	Introduction to Programming . . . . .	27
Attach the Track to the Header Bracket . . . . .	11	Determine and Set Wiring Type . . . . .	28-37
Hang the Operator . . . . .	11	myQ Setup . . . . .	38
Attach the Door Arm . . . . .	12	Programming Remote Controls . . . . .	38-40
<b>HOIST AND JACKSHAFT OPERATORS</b>	<b>13-17</b>	Maintenance Alert System (MAS) . . . . .	40
Carton Inventory . . . . .	13	Timer-To-Close . . . . .	41
Operator Specifications . . . . .	13-14	Open Mid-Stop . . . . .	42
<b>ASSEMBLY</b> . . . . .	<b>16</b>	Car Dealer Mode . . . . .	42
Assemble the Operator . . . . .	16	Maximum Run Timer (MRT) . . . . .	43
<b>TYPICAL INSTALLATION</b> . . . . .	<b>16-17</b>	Resetting Factory Defaults - Clearing Memory . . . . .	43
Determine Mounting Location . . . . .	16	<b>MAINTENANCE</b>	<b>44</b>
Mounting . . . . .	17	Maintenance Schedule . . . . .	44
Install the Manual Disconnect . . . . .	17	Life of Operator Feature . . . . .	44
<b>WIRING</b>	<b>18-19</b>	How to Order Repair Parts . . . . .	44
Power and Ground . . . . .	18	<b>TROUBLESHOOTING</b>	<b>45-48</b>
Voltage Selection . . . . .	18	Diagnostic Chart . . . . .	45
Control Station . . . . .	19	Troubleshooting Guide . . . . .	46
<b>ENTRAPMENT PROTECTION</b>	<b>20-21</b>	Troubleshooting Error Codes . . . . .	47
LiftMaster Monitored Entrapment Protection (LMEP) . . . . .	20	Troubleshooting Radio Functionality . . . . .	48
Install the LiftMaster Monitored Entrapment Protection (LMEP) Devices (Optional) . . . . .	21	<b>WIRING DIAGRAMS</b>	<b>49-50</b>
Wire the LiftMaster Monitored Entrapment Protection (LMEP) Devices . . . . .	21	Logic (Ver. 5.0) 1 Phase Wiring Diagram . . . . .	49
		Logic (Ver. 5.0) 3 Phase Wiring Diagram . . . . .	50
		<b>ACCESSORIES</b>	<b>51-53</b>
		<b>CONTROL CONNECTION DIAGRAM</b>	<b>54</b>

# SAFETY INFORMATION

## **WARNING**

Mechanical

## **WARNING**

Electrical

## **CAUTION**

When you see these Safety Symbols and Signal Words on the following pages, they will alert you to the possibility of **serious injury** or **death** if you do not comply with the warnings that accompany them. The hazard may come from something mechanical or from electric shock. Read the warnings carefully.

When you see this Signal Word on the following pages, it will alert you to the possibility of damage to your door and/or the door operator if you do not comply with the cautionary statements that accompany it. Read them carefully.

### **IMPORTANT NOTES:**

- *BEFORE attempting to install, operate or maintain the commercial door operator, you must read and fully understand this manual and follow all safety instructions.*
- *DO NOT attempt repair or service of a commercial door operator unless you are an Authorized Service Technician.*
- *A commercial door operator should only be installed on a properly balanced door only. Ensure door is properly balanced prior to installation.*

### **ENTRAPMENT PROTECTION DEVICES:**

#### **LiftMaster Monitored Entrapment Protection (LMEP)**

Monitored photoelectric sensors and/or door edge sensors are required for any momentary contact to close modes of operation. See pages 20-21 for additional information. Refer to the accessories page 51, 'Entrapment Protection Devices' for available options.



**WARNING:** This product can expose you to chemicals including lead, which are known to the State of California to cause cancer or birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

## **IMPORTANT INSTALLATION INSTRUCTIONS**

### **WARNING**

### **TO REDUCE THE RISK OF SEVERE INJURY OR DEATH:**

1. READ AND FOLLOW ALL INSTALLATION WARNINGS AND INSTRUCTIONS.
2. Install door operator **ONLY** on a properly balanced and lubricated door. An improperly balanced door may NOT reverse when required and could result in SEVERE INJURY or DEATH.
3. ALL repairs to cables, spring assemblies and other hardware **MUST** be made by a trained door systems technician **BEFORE** installing an operator.
4. Disable ALL locks and remove ALL ropes connected to a door **BEFORE** installing an operator to avoid entanglement.
5. Install an operator, a minimum of 8 feet (2.44 m) from the floor.
6. NEVER connect a door operator to a power source until instructed to do so.
7. NEVER wear watches, rings or loose clothing while installing or servicing an operator. They could be caught in the door or operator mechanisms.
8. Install a control station:
  - within sight of the door.
  - out of reach of small children and at a minimum height of 5 feet (1.5 m) above floors, landings, steps, or any other adjacent walking surface.
  - away from ALL moving parts of the door.
9. Install the control station far enough from the door to prevent the user from coming in contact with the door while operating the controls.
10. Install the entrapment warning placard on the wall next to the control station in a prominent location, visible from the door.
11. Place the manual release/safety reverse test label in plain view on the inside of door.
12. Upon completion of installation, test the entrapment protection device(s).
13. This door operator is not intended to replace door locks. With enough force, a door without a door lock can be opened. LiftMaster always recommends the use of door locks to properly secure a door.
14. **SAVE THESE INSTRUCTIONS.**

# TROLLEY OPERATORS

## CARTON INVENTORY

Before beginning installation confirm all components are enclosed.

### DESCRIPTION

Operator assembly

Installation manual and caution labels

Hardware box (includes fasteners, track spacers, trolley, door arm assembly, front idler and header mounting bracket)

3-Button control station with MAS LED

LiftMaster Monitored Entrapment Protection (LMEP)\*

Trolley drive chain: #48 for 1/3 and 1/2 HP, #41 for 3/4 HP and higher (all GT models)

**NOTE:** The tracks are shipped separately.

\* Based on customer order.

\*\* Additional accessories may be included.

## OPERATOR SPECIFICATIONS

### DUAL VOLTAGE CONNECTIONS

Increase flexibility by enabling the installer to select the required voltage, within phase, to meet job-site requirements.

MODEL	VOLTAGE					HZ	HP					PHASE	
	115V	208V	230V	460V	575V		1/3	1/2	3/4	1	1-1/2	1	3
APT	•		•			•		•				•	
T	•	•	•	•	•	•	•	•	•	•		•	•
GT	•	•	•	•	•	•		•	•	•	•	•	•

**TYPE:** Continuous duty

### ELECTRICAL

**TRANSFORMER:** 24Vac Secondary

**CONTROL STATION:** NEMA 1 General Purpose 3-Button Control Station Open/Close/Stop w/MAS LED

**WIRING TYPE:** C2 (Factory default), B2, T, TS, D1, E2 and FSTS. See page 28 for more information regarding wiring types.

**BRAKE:** Standard on APT, GT and 3/4-1 HP T's. Optional on 1/2 HP T and not available on 1/3 HP T.

**DISCONNECT:** Quick disconnect door arm for emergency manual door operation.

### MECHANICAL

#### DRIVE REDUCTION:

Model APT First-stage heavy-duty 5L V-belt; second and third stages #41 chain; #48 output chain on trolley.

Model T First-stage heavy-duty 5L V-belt; second #41 chain; #48 (for 1/3 and 1/2HP) and #41 (for 3/4 and 1HP) output chain on trolley.

Model GT 10:1 first-stage using heavy-duty gears running in oil bath; cast iron housing; #41 chain second stage; #41 output chain on trolley.

#### OUTPUT SHAFT SPEED:

Model APT: 96 RPM

Model GT: 113.5 RPM

Model T: 140 RPM

#### DOOR SPEED (NOT ADJUSTABLE):

Model APT: 6-7" (15-18 cm) per second

Model GT: 11-12" (28-30.5 cm) per second

Model T: 11-12" (28-30.5 cm) per second

**LIMIT ADJUST:** Linear driven with adjustable limit nuts up to 24 feet (7.3 m).

**BEARINGS:** Models APT and T - Industrial ball bearings on output shaft, heavy-duty oil-filled bushing on reduction shafts.  
Model GT - Sealed roller bearings in gear reducer. Flange-mount industrial ball bearings on drive shaft.



## OPERATOR SPECIFICATIONS

### MAXIMUM DOOR AREA (SQ. FT.)

MODEL T						
STANDARD SECTIONAL	---	24 ga. 22 ga. Steel	20 ga. Steel	16 ga. Steel	---	
	Fiberglass Doors	Alum. Doors	Wood Doors	---	---	
	---	---	24 ga. Steel Insulated	20 ga. Steel Insulated	16 ga. Steel Insulated	
HP	1/3	310	285	260	175	125
	1/2	400	350	320	250	200
	3/4	560	500	450	325	275
	1	640	625	560	400	310

**NOTE:** On steel insulated doors, a 24-gauge back panel is assumed. If a heavier back panel is supplied, use the next higher HP rating. Recommended Duty Cycles: 25 per hour, in excess of 80-90 per day.

MODEL APT				
STANDARD SECTIONAL	24 ga. 22 ga. Steel	20 ga. Steel	16 ga. Steel	---
	Alum. Doors	Wood Doors	---	---
	Fiberglass Doors	24 ga. Steel Insulated	20 ga. Steel Insulated	16 ga. Steel Insulated
SQ. FT.	250	225	150	100

**NOTE:** On steel insulated doors, a 24-gauge back panel is assumed. Recommended Duty Cycles: For application requiring over 100 cycles per day.

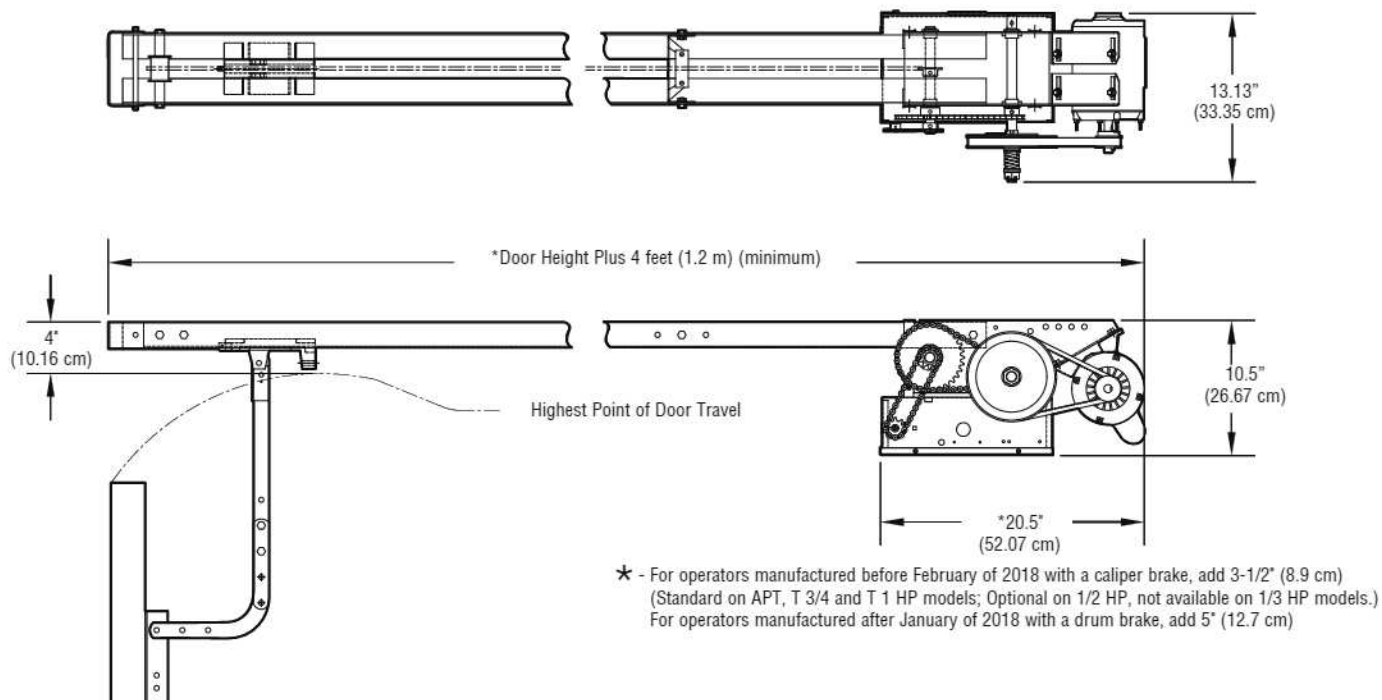
MODEL GT						
STANDARD SECTIONAL	---	24 ga. 22 ga. Steel	20 ga. Steel	16 ga. Steel	---	
	Fiberglass Doors	Alum. Doors	Wood Doors	---	---	
	---	---	24 ga. Steel Insulated	20 ga. Steel Insulated	16 ga. Steel Insulated	
HP	1/2	400	350	320	250	200
	3/4	560	500	450	325	250
	1	625	575	500	400	300
	1-1/2	---	625	550	475	380

**NOTE:** On steel insulated doors, a 24-gauge back panel is assumed. If a heavier back panel is supplied, use the next higher HP rating. Recommended Duty Cycles: 25 per hour, in excess of 90 per day.

## WEIGHTS AND DIMENSIONS

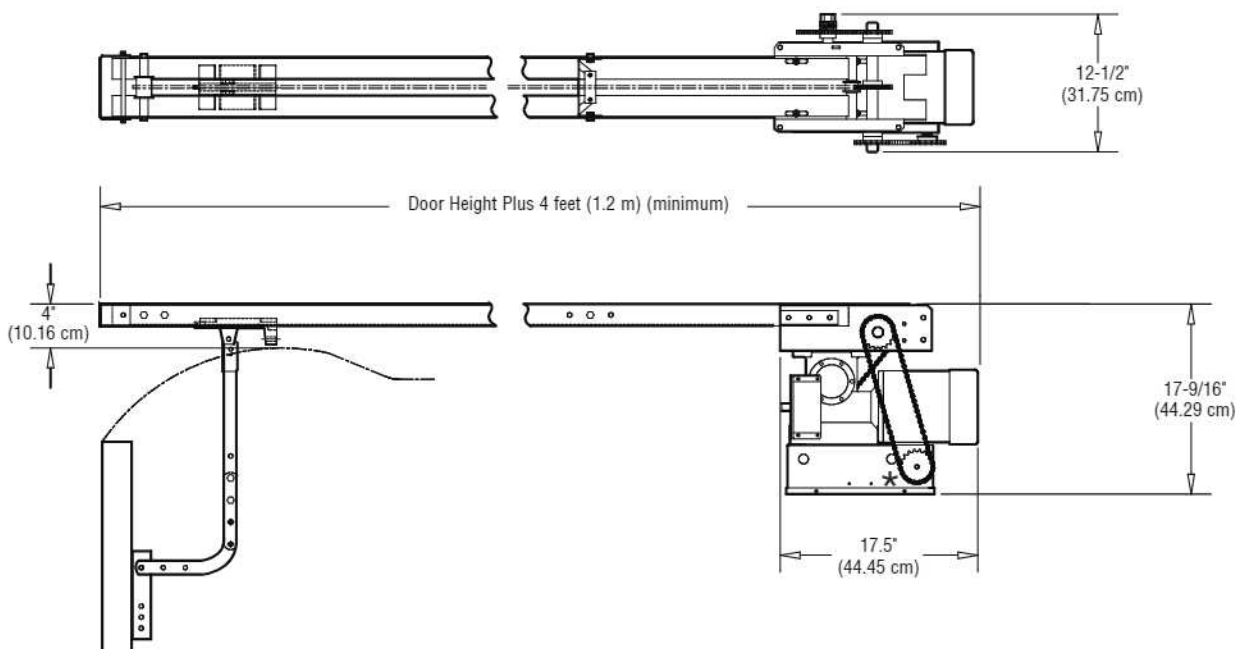
### MODELS T AND APT

Hanging Weight: 80-110 lbs.



### MODEL GT

Hanging Weight: 140 lbs.



# ASSEMBLY

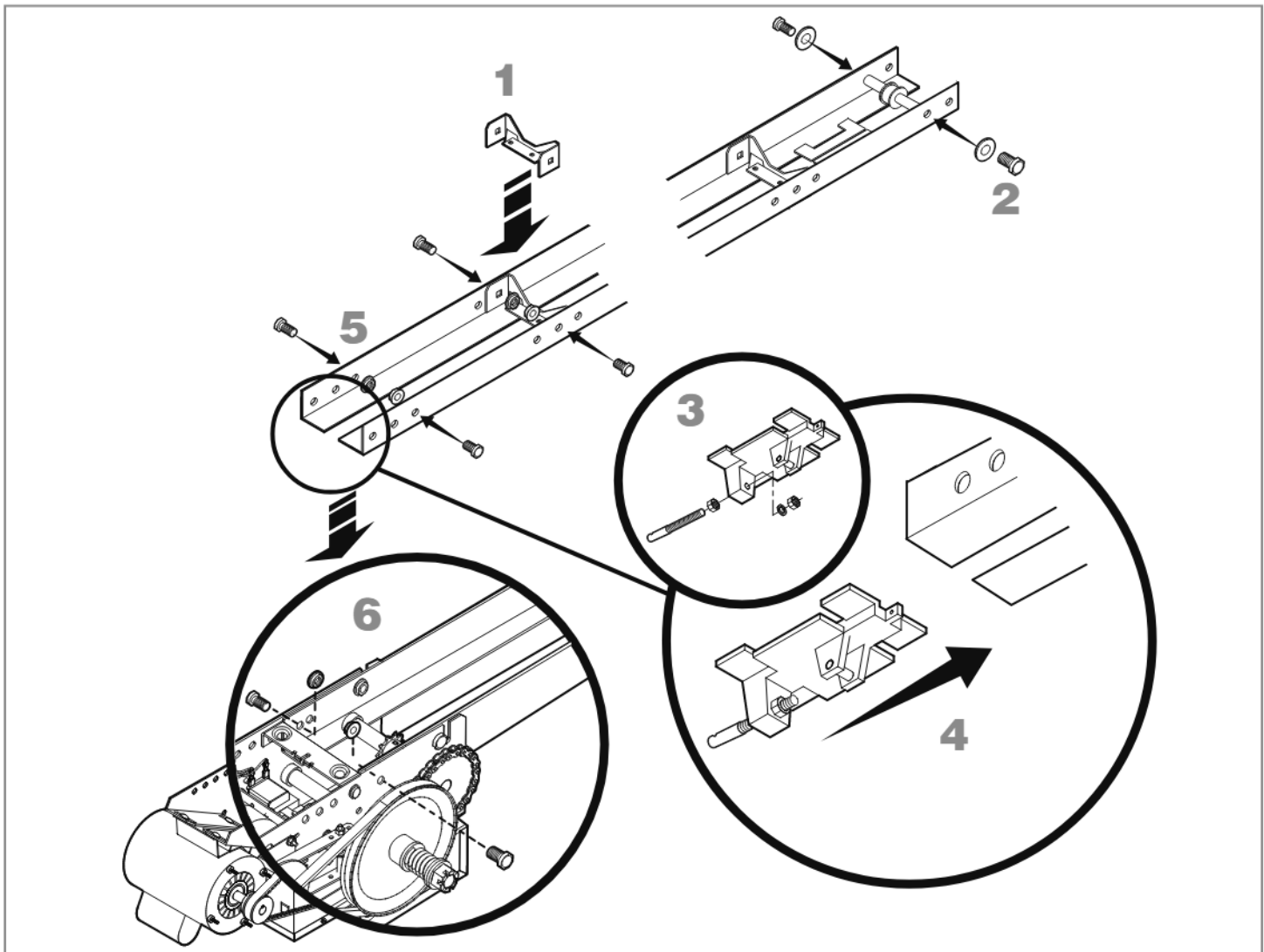
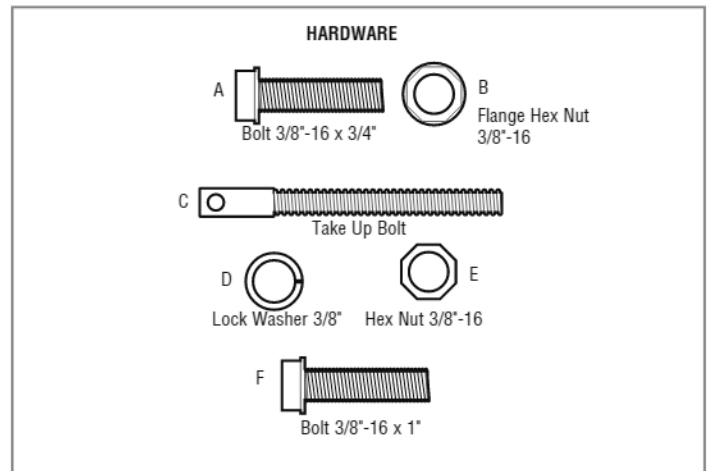
## ASSEMBLE THE OPERATOR (MODELS T AND GT)

**NOTE:** For Model APT assembly refer to page 9.

- 1** Install the track spacers evenly over the length of the track. Fasten the spacers to the track with bolt (A) and flange hex nuts (B).

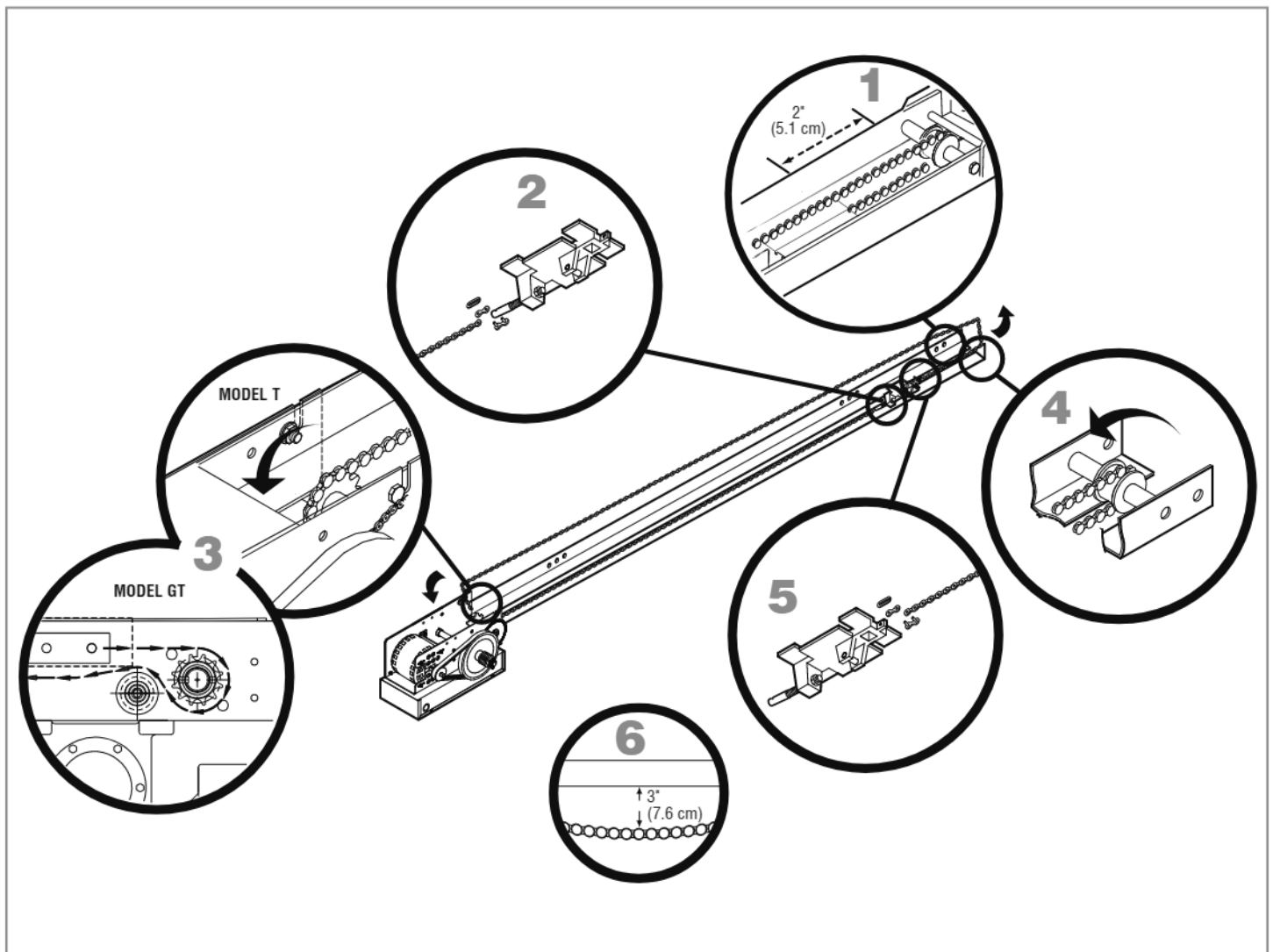
SPACERS PROVIDED	TRACK LENGTH
2	8-14 Foot
3	16-20 Foot
4	22-24 Foot

- 2** Install the front idler to the track with bolts (F) and washers (D).
- 3** Assemble the trolley with the take up bolt (C), hex nuts (E), and lock washer (D).
- 4** Slide the trolley onto the track.
- 5** Insert bolts (A) into the end of the track and loosely thread the nuts (B) onto the ends of the bolts.
- 6** Slide bolts (A) on the end of the track assembly into the "L" slot in the operator and tighten nuts (B). Insert bolts (A) into the holes on the end of the track and the operator. Secure the track with nuts (B).



## INSTALL THE CHAIN (MODELS T AND GT)

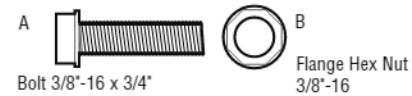
- 1** Position the trolley 2 inches (5.1 cm) away from the front idler.
- 2** Attach the chain to the trolley threaded shaft using the master link.
- 3** Run the chain along the track to the operator. Wrap the chain around the operator drive sprocket.
- 4** Run the chain along the track to the front idler. Wrap the chain around the front idler.
- 5** Attach the chain to the front of the trolley using the master link.
- 6** Tighten the chain until the chain sags about 3 inches (7.6 cm) at the mid point of the track.



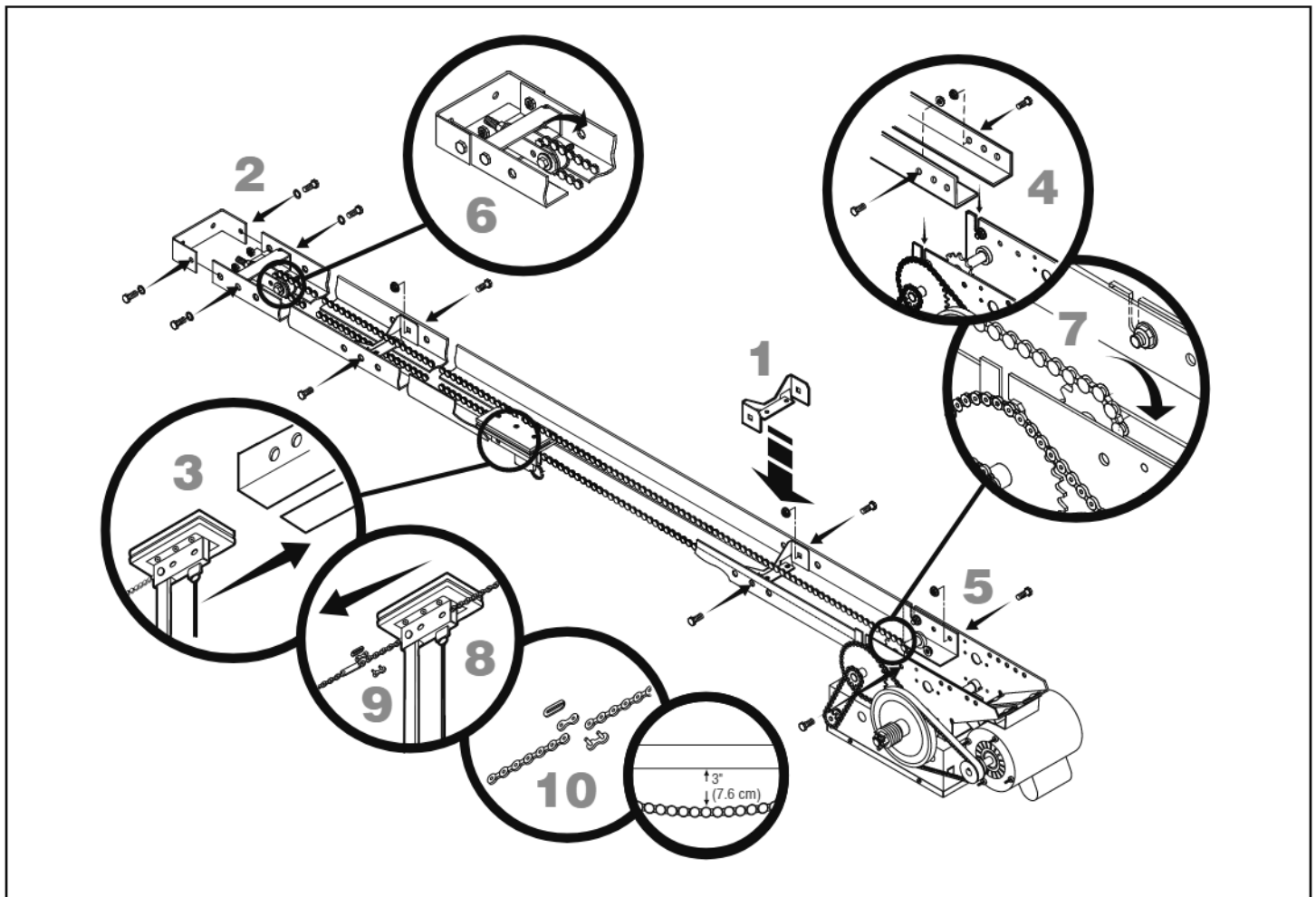
## ASSEMBLE THE OPERATOR (MODEL APT)

- 1** Install the track spacers evenly over the length of the track. Fasten the spacers to the track with bolt (A) and flange hex nuts (B).
- 2** Install the front idler in the second set of holes on the end of the track with bolts (A) and nuts (B).
- 3** Slide the trolley onto the track so the door arm hole faces the front (towards the door).
- 4** Insert bolts (A) into the end of the track and loosely thread the nuts (B) onto the ends of the bolts. Slide bolts (A) on the end of the track assembly into the "L" slot in the operator and tighten nuts (B).
- 5** Insert bolts (A) into the holes on the end of the track and the operator. Secure the track with nuts (B).
- 6** Run the chain along the track to the front idler. Wrap the chain around the front idler.
- 7** Run the chain along the track to the operator. Wrap the chain around the operator drive sprocket.

### HARDWARE



- 8** Pull the release clip on the trolley and push the end of the chain through the slot in the trolley.
- 9** Attach one end of the chain to the drive link using a master link.
- 10** Attach the other end of the chain to the free end of the drive link using a master link and making sure the chain has the correct tension (the chain should sag about 3 inches (7.6 cm) at the mid point of the track). The chain will need to be cut for proper adjustment. The take-up bolt can be loosened or tightened to adjust the slack of the chain. Slide the trolley back and forth past the drive chain to ensure there is no binding.



# TYPICAL INSTALLATION

## INSTALL THE HEADER BRACKET

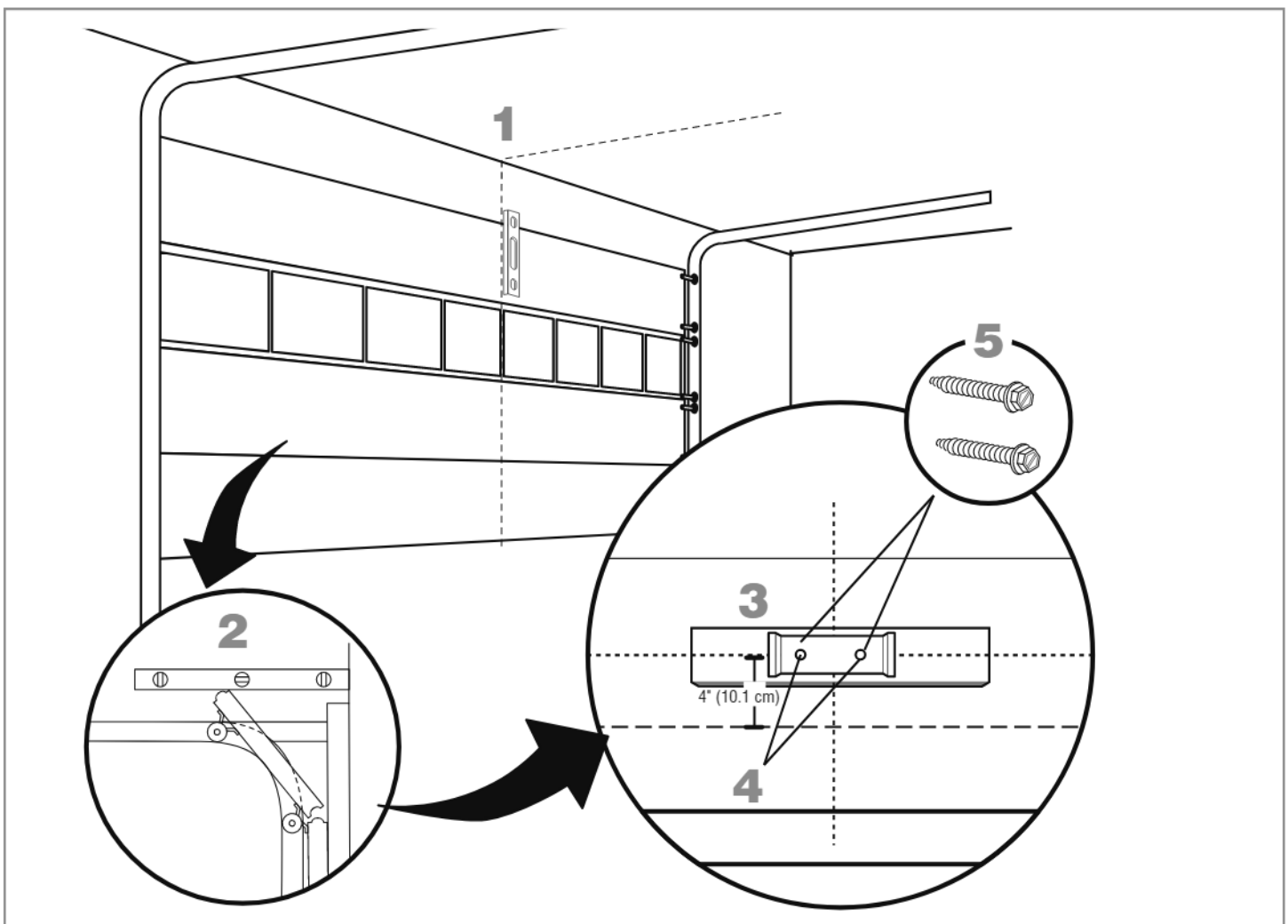
The trolley operator is generally mounted over the center of the door. However, off center mounting may be required due to interfering structures or location of the door stile / top section support. Typically, the operator may be mounted up to 24 inches (60.1 cm) off center on torsion spring doors. Extension springs require center mounting.

- 1** Close the door. Mark the center of the door with a vertical line, extend the line onto the ceiling.
- 2** Open the door to the highest point of travel mark 4 inches (10.1 cm) above the highest point of travel.
- 3** Center the header bracket on the vertical center line and the horizontal line.
- 4** Drill the pilot holes for the header bracket.
- 5** Fasten the header bracket with appropriate hardware (not provided).

## **⚠ WARNING**

To prevent possible **SERIOUS INJURY** or **DEATH**:

- Header bracket **MUST** be **RIGIDLY** fastened to the structural support on the header wall or ceiling, otherwise the door might **NOT** reverse when required. **DO NOT** install the header bracket over drywall.
- Concrete anchors **MUST** be used if mounting the header bracket or 2x4 into masonry.
- **NEVER** try to loosen, move or adjust door, springs, cables, pulleys, brackets, or their hardware, **ALL** of which are under **EXTREME** tension.
- **ALWAYS** call an Authorized Service Technician if door binds, sticks, or is out of balance.



## ATTACH THE TRACK TO THE HEADER BRACKET AND HANG THE OPERATOR

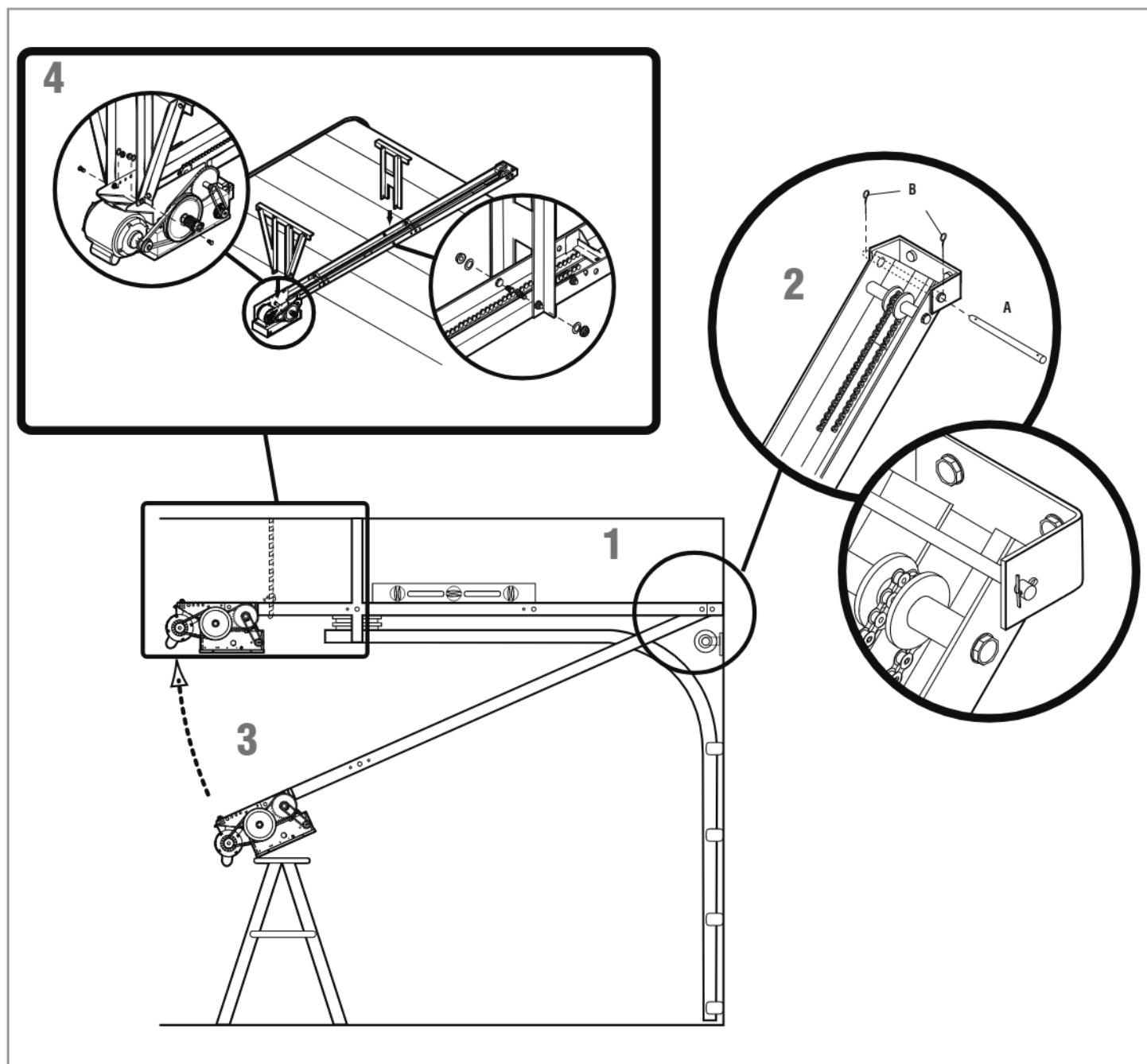
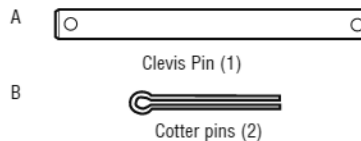
- 1** Align the track with the header bracket.
- 2** Insert the clevis pin through the track and header bracket holes. Secure with the fasteners.
- 3** Swing the operator up and ensure the operator is level.
- 4** Secure the operator using the appropriate fasteners and locking hardware to support the weight of the operator.

### ⚠ CAUTION

To avoid possible **SERIOUS INJURY** from a falling operator:

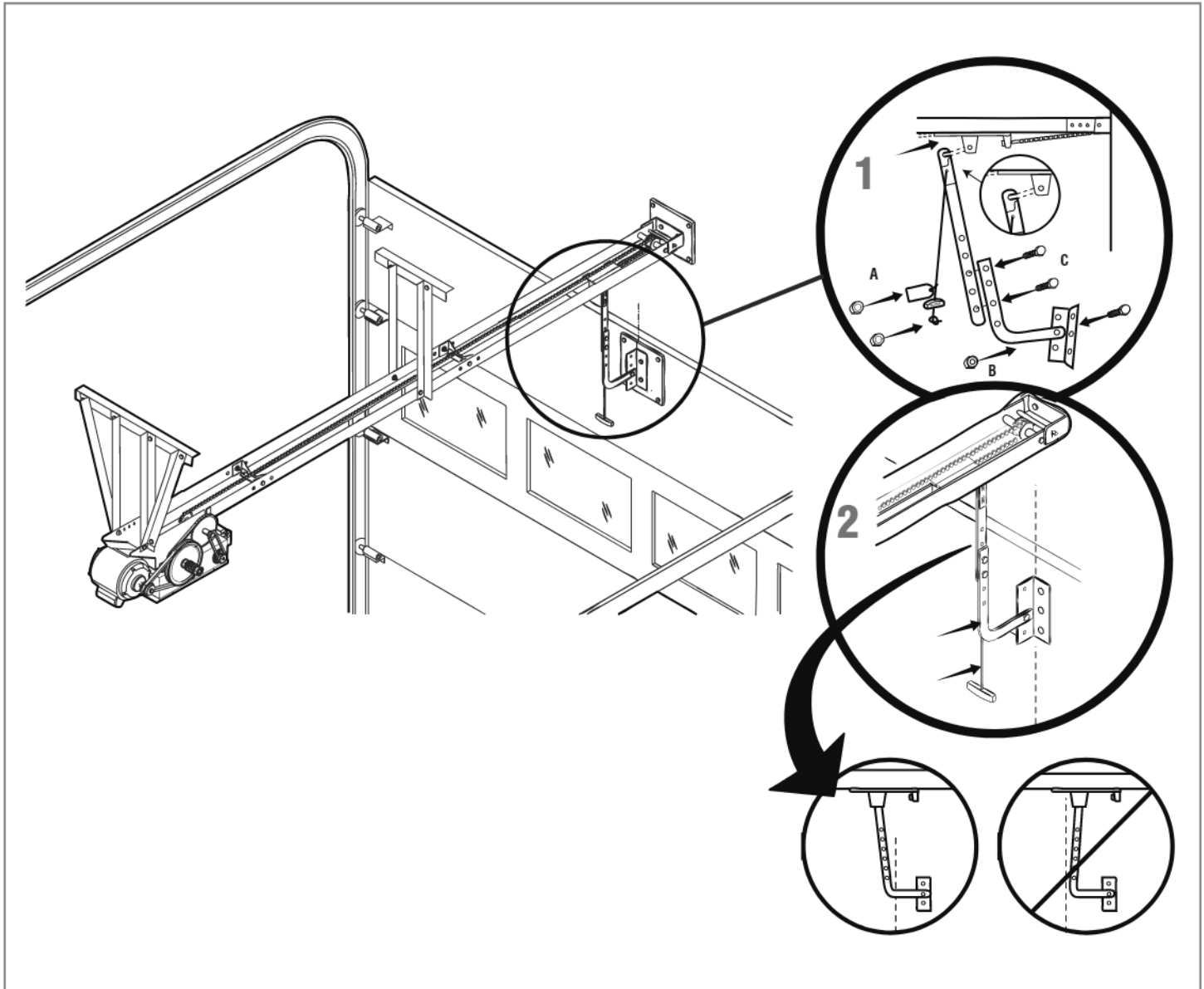
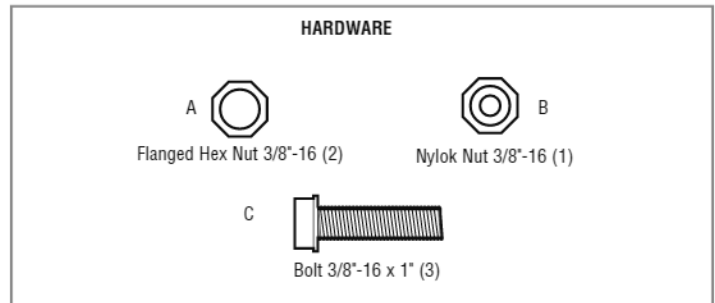
- Fasten the operator **SECURELY** to structural supports of the building.
- Concrete anchors **MUST** be used if installing **ANY** brackets into masonry.

#### HARDWARE



## ATTACH THE DOOR ARM AND BRACKET

- 1** Latch the door arm to the trolley. Make sure the open side of the notch on the door arm faces the door.
- 2** Position the door bracket to the center line of the door and attach the door bracket to the door using appropriate hardware (not included). **NOTE:** When properly installed and adjusted the door arm should be leaning back toward the operator slightly. Refer to door manufacturer's instructions for recommended installation guidelines.





# HOIST AND JACKSHAFT OPERATORS

## CARTON INVENTORY

Before beginning installation confirm all components are enclosed.

### DESCRIPTION

Powerhead assembly  
Installation manual and caution labels  
Hardware box (includes fasteners)  
3-Button Control Station with MAS LED  
*LiftMaster Monitored Entrapment Protection (LMEP)\**  
Hoist hand chain (Models H, HJ and GH ONLY)  
Door sprocket (with setscrew and keyway)  
Door/operator drive chain

\* Based on customer order.

\*\* Additional accessories may be included.

### WARNING

To prevent possible SERIOUS INJURY, DEATH, or uncontrolled descent of the door:

- When installing a jackshaft-style operator on a sectional door, additional precautions MUST be taken to assure that proper door cable tension is present throughout the ENTIRE travel of the door.

## OPERATOR SPECIFICATIONS

### DUAL VOLTAGE CONNECTIONS

Increase flexibility by enabling the installer to select the required voltage, within phase, to meet job-site requirements.

MODEL	VOLTAGE					HZ		HP					PHASE	
	115V	208V	230V	460V	575V	60	1/3	1/2	3/4	1	1-1/2	2	3	3
H	•	•	•	•	•	•	•	•	•	•	•	•	•	•
J	•	•	•	•	•	•	•	•	•	•	•	•	•	•
HJ	•	•	•	•	•	•	•	•	•	•	•	•	•	•
GH	•	•	•	•	•	•	•	•	•	•	•	•	•	•

TYPE: Continuous duty

### ELECTRICAL

TRANSFORMER: 24Vac Secondary

CONTROL STATION: NEMA 1 General Purpose 3-Button Control Station Open/Close/Stop w/LED

WIRING TYPE: C2 (Factory default), B2, T, TS, D1, E2 and FSTS. See page 28 for more information regarding wiring types.

BRAKE: J Standard on 3/4 and 1 HP operators (optional on 1/2 HP, not available on 1/3 HP)  
H Standard on 3/4 and 1 HP operators. (optional on 1/2 HP; not available on 1/3 HP).

DISCONNECT: Standard on all GH operators.  
Model J - Floor level disconnect for manual door operation.  
Models H and GH - Floor level chain hoist with electrical interlock for manual door operation.  
Model HJ - Includes both floor level disconnect systems stated above.

### MECHANICAL

#### DRIVE REDUCTION:

Model J, H, and HJ - Primary: Heavy duty (5L) V-Belt  
Secondary: #48 chain/sprocket;  
Output: #50 chain

Model GH - Primary: 45:1 for 1/2, 3/4 and 1 HP  
Worm gear-in-oil bath gear reducer 44:1 for 1-1/2 and 2 HP 42:1 for 3 HP  
Output: #50 chain

DOOR SPEED: Model J, H and HJ - 8-9" (20-23 cm) per second depending on door  
Model GH - 8-9" (20-23 cm) per second depending on door

LIMIT ADJUST: Linear driven with adjustable limit nuts up to 24 feet (7.3 m).

BEARINGS: Models H and HJ - Industrial ball bearings on output shaft, heavy-duty oil-filled bushing on reduction shafts.  
Model J - Industrial ball bearings on 1" (2.5 cm) output shaft; heavy-duty oil-filled bushings on reduction shafts.  
Model GH - Sealed roller bearings in gear reducer.

HAND CHAIN WHEEL: H, HJ, and GH only. Ordered Left or Right for H, HJ, and 3 HP GH. Switchable in field for GH 1/2 through 2 HP.

# MAXIMUM DOOR AREA (SQ. FT.)

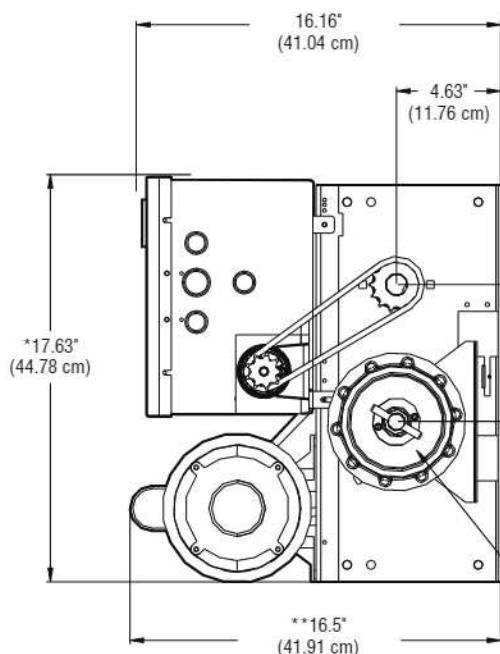
MODELS J, H, AND HJ							
ROLLING		24 ga. Steel	22 ga. Steel	---	20 ga. 18 ga. Steel	16 ga. Steel	---
		Alum. Grilles	Alum. Doors	---	Steel Grilles	---	---
SECTIONAL		---	24 ga. 22 ga. Steel	20 ga. Steel	---	16 ga. Steel	---
		Fiberglass Doors	Alum. Doors	Wood Doors	---	---	---
		---	---	24 ga. Steel Insul.	---	20 ga. Steel Insul.	16 ga. Steel Insul.
HP	1/3	310	285	260	210	175	125
	1/2	400	350	320	280	250	200
	3/4	560	500	450	380	325	250
	1	640	625	560	475	400	310

**NOTE:** On steel insulated doors, a 24-gauge back panel is assumed. If a heavier back panel is supplied, use the next higher HP rating. Recommended Duty Cycles: Up to 25 per hour, up to 80-90 per day.

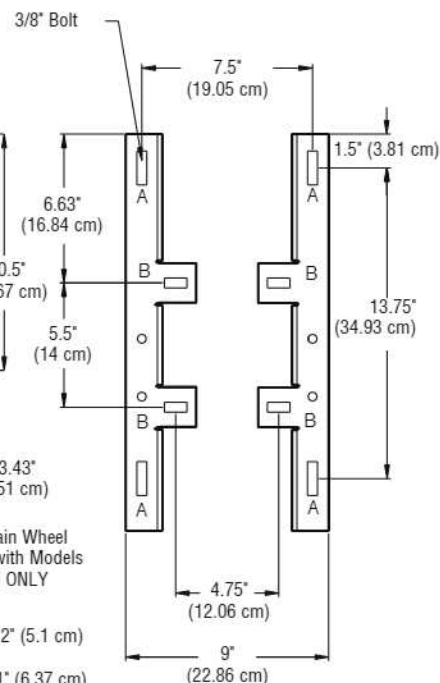
MODEL GH							
ROLLING		24 ga. Steel	22 ga. Steel	---	20 ga. 18 ga. Steel	16 ga. Steel	---
		Alum. Grilles	Alum. Doors	---	Steel Grilles	---	---
SECTIONAL		---	24 ga. 22 ga. Steel	20 ga. Steel	---	16 ga. Steel	---
		Fiberglass Doors	Alum. Doors	Wood Doors	---	---	---
		---	---	24 ga. Steel Insul.	---	20 ga. Steel Insul.	16 ga. Steel Insul.
HP	1/2	325	300	275	250	225	175
	3/4	480	430	390	340	275	225
	1	650	560	500	430	325	300
	1-1/2	---	---	680	540	425	375
	2	---	---	---	640	560	460
	3	---	---	---	875	840	620
	5	Call for specifications					

**NOTE:** On steel insulated doors, a 24-gauge back panel is assumed. If a heavier back panel is supplied, use the next higher HP rating. Recommended Duty Cycles: 25 per hour, in excess of 90 per day.

Hanging Weight: 80-110 lbs.



B - Bracket Mounting (rolling door)

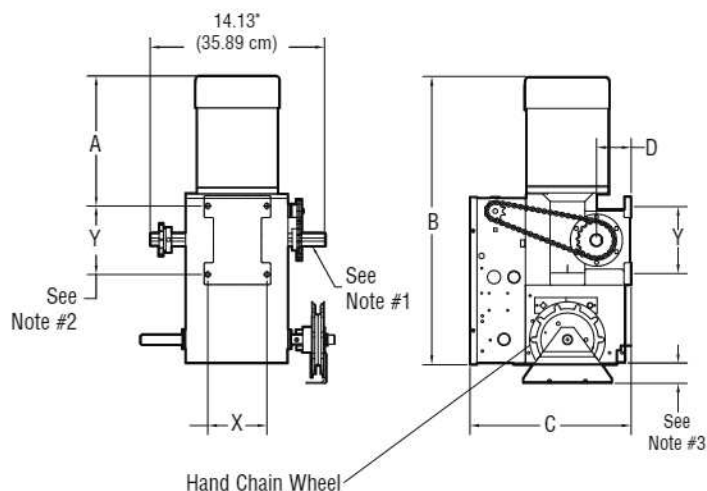


\* For operators manufactured before February of 2018 with a caliper brake, add 2" (5.1 cm) (Standard on 3/4 and 1 HP, optional on 1/2 HP)

\* For operators manufactured after January of 2018 with a drum brake, add 2.51" (6.37 cm) for left hand operator and add 1.82" (4.62 cm) for right hand operator

\*\* For operators manufactured after January of 2018 with a drum brake, add .44" (1.1 cm) for left hand operator and add 1.21" (3.07 cm) for right hand operator

Hanging Weight: 140 lbs.



- 1) Output shaft with 1" x 1/4" key for 1/2 thru 1 HP operators, 1-3/16" x 5/16" key for 1-1/2 and 2 HP operators, 1-1/4" x 1/4" key for 3 HP operators.
- 2) Mounting centers: X = 4-3/4"; Y = 5-1/2" for 1/2 thru 2 HP operators.  
X = 3-5/8"; Y = 9-1/16" for 3 HP operators.
- 3) Hand chain wheel extends 1-5/8" beyond operator in vertical mounting position as shown.

HP	PHASE	DIMENSIONS			
		A	B	C	D
1/2	1	11-1/2"	25-3/4"	12-63/64"	3"
3/4	1	12-1/2"	26-3/4"	12-63/64"	3"
1	1	12-3/4"	27"	12-63/64"	3"
1-1/2	1	12-3/4"	27"	13-63/64"	3-1/2"
1/2	3	11"	25-1/4"	12-63/64"	3"
3/4	3	11"	25-1/4"	12-63/64"	3"
1	3	12"	26-1/4"	12-63/64"	3"
1-1/2	3	12-1/2"	26-3/4"	13-63/64"	3-1/2"
2	3	12-3/4"	27"	13-63/64"	3-1/2"
3	3	13-1/4"	28-5/8"	15-15/64"	3-15/16"

# ASSEMBLY

## ASSEMBLE THE OPERATOR

The wall or mounting surface **MUST** provide adequate support for the operator.

The surface must:

- Be rigid to prevent play between the operator and the door shaft.
- Provide a level base.
- Permit the operator to be fastened securely and with the drive shaft parallel to the door shaft.

### 1 Select right (R) or left (L) handing.

On models J and GH operators the drive sprocket can be mounted on either the right or left side.

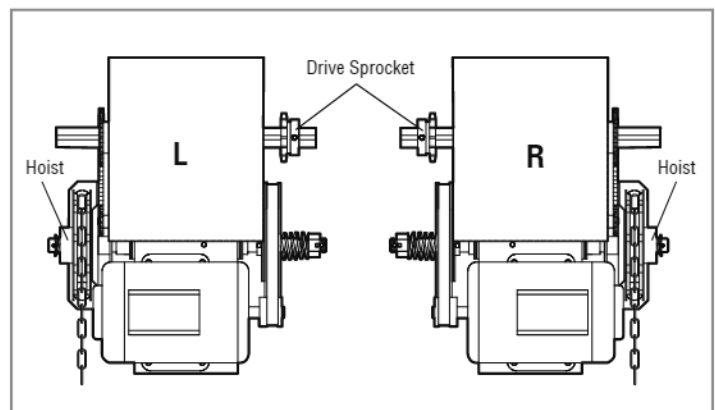
For models H and HJ with manual hand chain systems, the handing of the operator must be determined at the time of order. The handing is indicated by the last letter of the model number (R or L). If the position of the operator causes the hand chain to hang in the door opening hook the chain to the side near the top of the door jamb.

### 2 Place the operator drive sprocket on the appropriate side of the operator for your installation type. To avoid potential damage caused by an overhung load, position the sprocket as close to the center of the exposed drive shaft.

## **WARNING**

To prevent possible **SERIOUS INJURY** or **DEATH**:

- **DO NOT** connect electric power until instructed to do so.
- If the door lock needs to remain functional, install an interlock switch.
- **ALWAYS** call an Authorized Service Technician if door binds, sticks or is out of balance. An unbalanced door may **NOT** reverse when required.
- **NEVER** try to loosen, move or adjust doors, door springs, cable, pulleys, brackets or their hardware, **ALL** of which are under **EXTREME** tension and can cause **SERIOUS PERSONAL INJURY**.
- Disable **ALL** locks and remove **ALL** ropes connected to door **BEFORE** installing and operating door operator to avoid entanglement.
- Fasten the operator **SECURELY** to structural supports of the building.
- Concrete anchors **MUST** be used if installing **ANY** brackets.



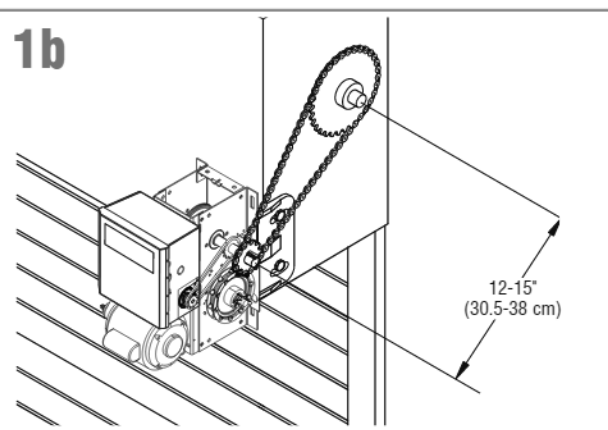
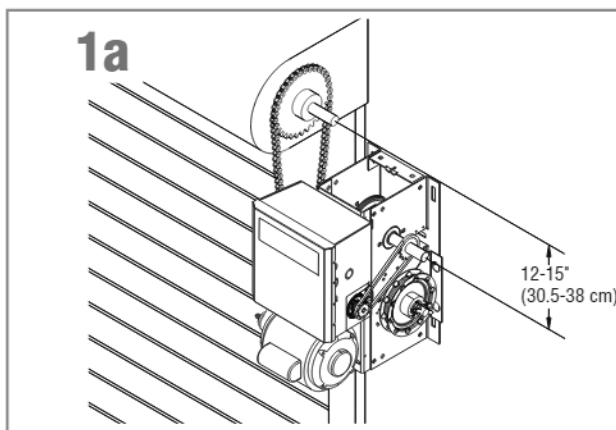
## TYPICAL INSTALLATION

### DETERMINE MOUNTING LOCATION

#### 1 The operator may be mounted on the wall, shelf or bracket (not provided, see accessories). The optimum distance between the door shaft and operator drive shaft is 12-15 inches (30.5-38 cm).

#### 1a Wall mount

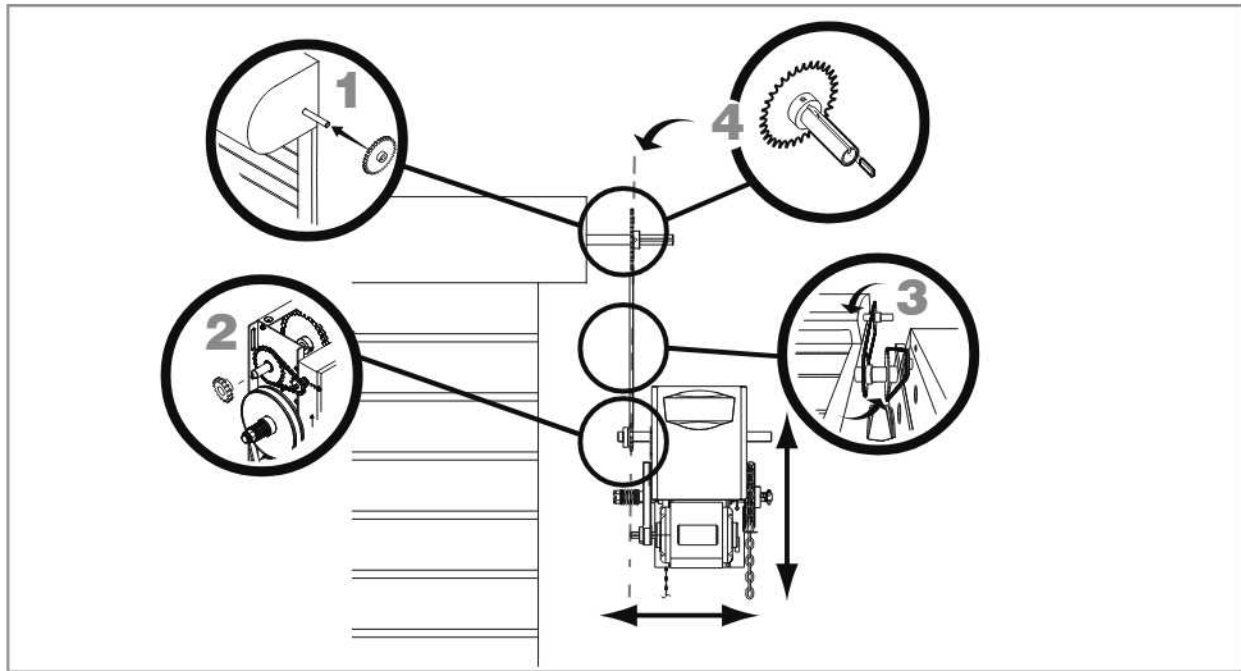
#### 1b Shelf or bracket mount



## MOUNTING

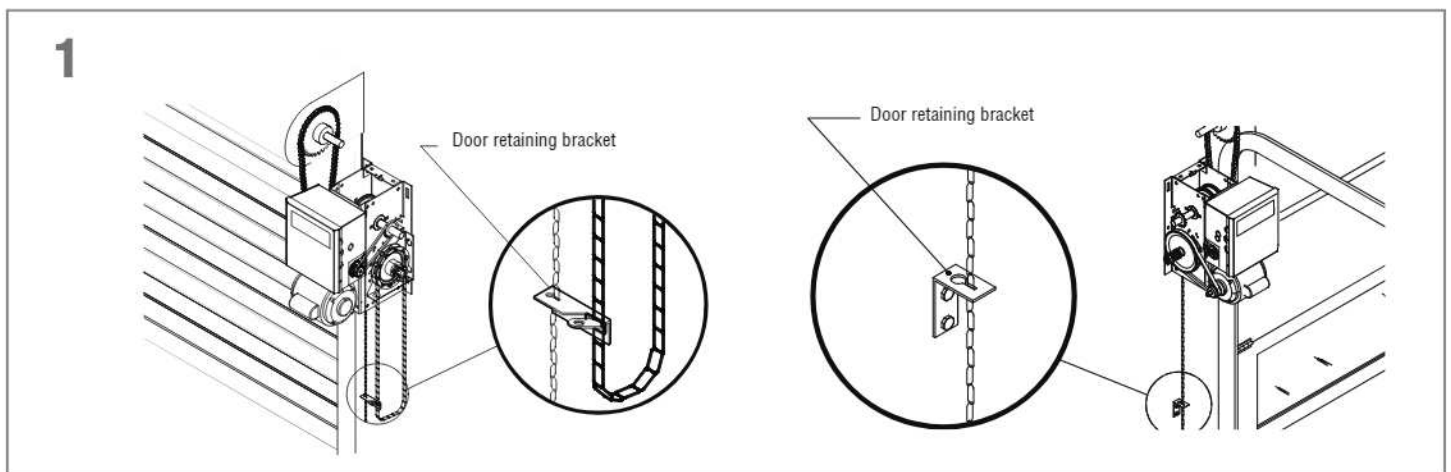
- 1 Place the door sprocket on the door shaft.
- 2 Wrap the drive chain around the door sprocket and the drive sprocket then secure with the master link.
- 3 Align the door and the drive sprockets. Insert keys and fasten the sprockets with the set screws (recommended torque for the set screws is 34-45 in/lb).

**NOTE:** It is highly recommended to add a thread adhesive to secure the set screws in place.



## INSTALL THE MANUAL DISCONNECT

- 1 Fasten Door retaining bracket 4 feet (1.2 m) above the floor.



## ⚠️ WARNING

To reduce the risk of SEVERE INJURY or DEATH:

- ANY maintenance to the operator or in the area near the operator MUST NOT be performed until disconnecting the electrical power and locking-out the power. Upon completion of maintenance the area MUST be cleared and secured, at that time the unit may be returned to service.
- Disconnect power at the fuse box BEFORE proceeding. Operator MUST be properly grounded and connected in accordance with national and local electrical codes. The operator should be on a separate fused line of adequate capacity.
- ALL electrical connections MUST be made by a qualified individual.
- DO NOT install ANY wiring or attempt to run the operator without consulting the wiring diagram.
- ALL power wiring should be on a dedicated circuit and well protected. The location of the power disconnect should be visible and clearly labeled.
- ALL power and control wiring MUST be run in separately.

## POWER AND GROUND

Power and control wiring must be run in separate conduit to comply with national and local electrical codes. For power wiring, use the appropriate wire gauge. Use conduit knockouts, conduit fittings, and appropriate conduit fittings for wiring as indicated on the electrical box label.

- 1 Remove the operator cover.
- 2 Run power wires to electrical box according to national and local electrical codes.  
ON THREE PHASE MACHINES ONLY: Incorrect phasing of the power supply will cause the motor to rotate in the wrong direction. To change motor rotation, exchange incoming power leads L1 and L2.
- 3 Attach power and ground wires to appropriate terminals.  
**NOTE:** The operator must be properly grounded. Failure to properly ground the operator could result in electric shock and serious injury.

### POWER WIRING CHART

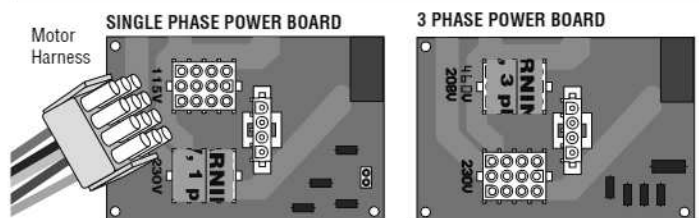
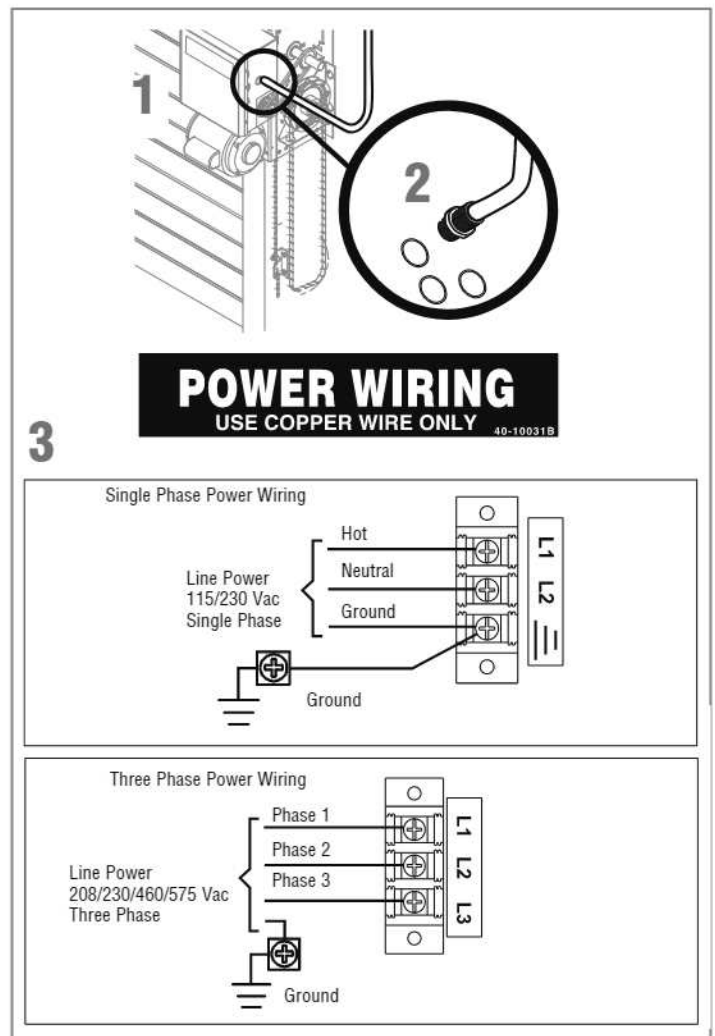
DISTANCE	GAUGE
50 feet (15.2 m)	14 AWG
100 feet (30.5 m)	12 AWG
200 feet (61 m)	8 AWG*
350 feet (106.7 m)	6 AWG*
500 feet (152.4 m)	4 AWG*
1000 feet (304.8 m)	2 AWG*

\* Maximum wire gauge that can be connected to the operator's terminal is 12 AWG. When a larger wire gauge is required, the wire must be gauged down to 12 AWG. USE COPPER WIRE ONLY.

## VOLTAGE SELECTION

For all operators except for 575V 3 Phase operators, follow the steps below. The motor harness is connected to the power board at the factory on all 575V 3 Phase operators.

- 1 Locate motor harness inside of the electrical box.
- 2 On the POWER BOARD find the appropriate receptacle matching the incoming line voltage. Remove the voltage label and apply to the inside of the electrical box for future reference. Insert the motor harness fully until locked in place.



Fusing on the 3-Phase Power Board is not field-replaceable. An Open Fuse indicates that the 3-Phase Power Board is damaged and must be replaced. Failure to replace the complete 3-Phase Power Board may result in additional damage to the Operator.

## CONTROL STATION

### **WARNING**

To prevent possible **SERIOUS INJURY** or **DEATH** from electrocution:

- Be sure power is **NOT** connected **BEFORE** installing the door control.

To prevent possible **SERIOUS INJURY** or **DEATH** from a closing door:

- Install the door control within sight of the door, out of reach of small children, at a minimum height of 5 feet (1.5 m) above floors, landings, steps, or any other adjacent walking surface, and away from **ALL** moving parts of the door.
- Install the control station far enough from the door to prevent

the user from coming in contact with the door while operating the controls.

- Install the entrapment warning placard on the wall next to the control station in a prominent location visible from the door.
- **NEVER** permit children to operate or play with door control push buttons or remote controls.
- Activate a door **ONLY** when it can be seen clearly, is properly adjusted and no obstructions exists in the path the door will travel.
- **ALWAYS** keep the door in sight until completely closed. **NEVER** permit anyone to cross path of a closing door.

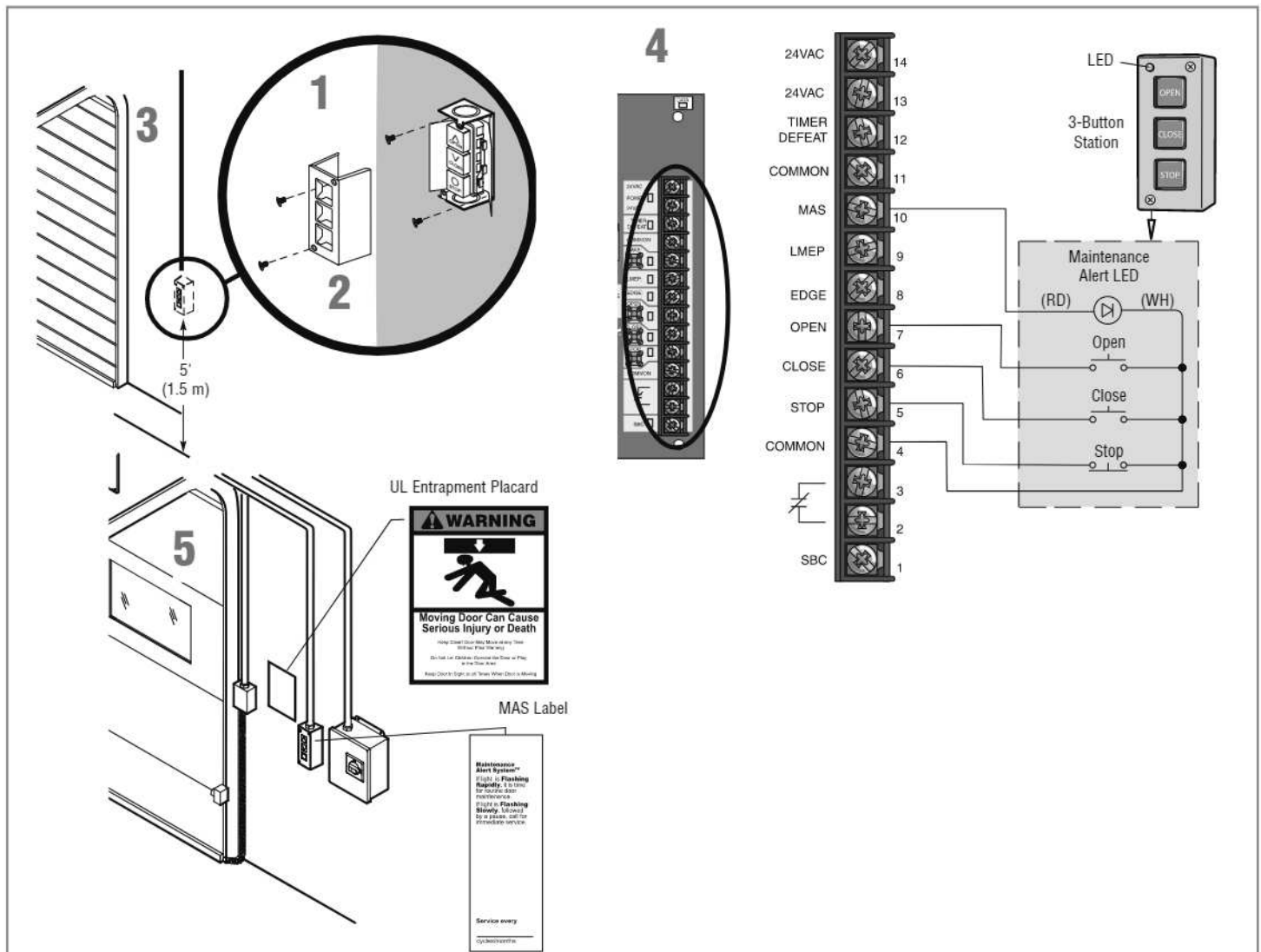
**NOTE:** The low voltage control circuit wiring requires insulated, 20 AWG or heavier wire. Refer to the back page of this manual for additional control wiring information.

- 1 Remove the control station cover.
- 2 Fasten the control station to the wall at least 5 feet (1.5 m) above floors, landings, steps, or any other adjacent walking surface. **The installation surface must be smooth and flat.** Attach the MAS label to the side of the control station.

- 3 Select the appropriate knockout and run the wires to the operator (in accordance with national and local electrical codes).

- 4 Connect wires to the control station and replace the control station cover.

- 5 Fasten the entrapment warning placard next to the control station.



# ENTRAPMENT PROTECTION

## LIFTMASTER MONITORED ENTRAPMENT PROTECTION (LMEP)

### IMPORTANT INFORMATION ABOUT THE LIFTMASTER MONITORED ENTRAPMENT PROTECTION DEVICES

A LiftMaster Monitored Entrapment Protection (LMEP) Device is required for most wiring types (refer to page 28). If a LiftMaster Monitored Entrapment Protection Device is not installed, constant pressure to close will be required from the control station.

Refer to Accessories section for a complete list of LMEP Devices.

## **WARNING**

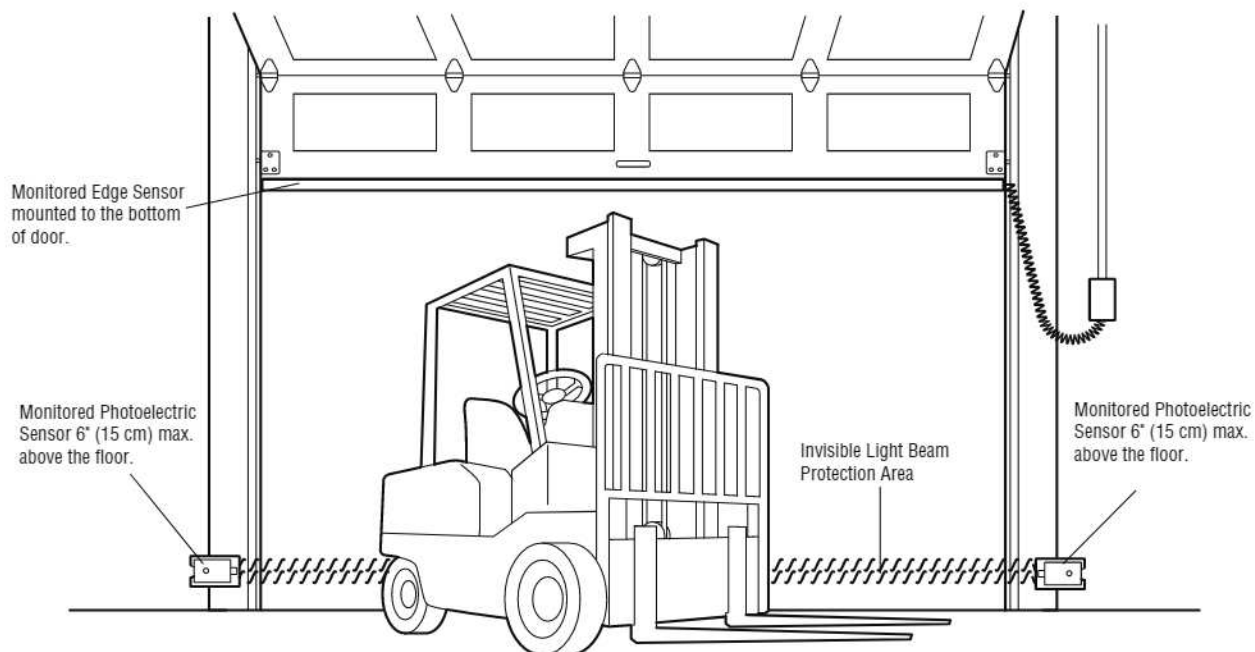
To prevent possible **SERIOUS INJURY** or **DEATH** from a closing door:

- Be sure power is **NOT** connected to the door operator **BEFORE** installing the photoelectric sensor(s).
- The door **MUST** be in the fully opened or closed position **BEFORE** installing the LiftMaster Monitored Entrapment Protection Device(s).

To prevent **SERIOUS INJURY**, **DEATH**, **ENTRAPMENT**, or **PROPERTY DAMAGE**:

- Correctly connect and align the photoelectric sensor.
- Install the primary monitored photoelectric sensor beam **NO HIGHER** than 6" (15 cm) above the floor.
- This is a required LMEP Device for B2, TS, T, and FSTS wiring types and **MUST NOT** be disabled. For D1, C2, and E2 wiring the installation of an entrapment protection device is recommended.
- LiftMaster Monitored Entrapment Protection Devices are for use with LiftMaster Commercial Door Operators **ONLY**. Use with **ANY** other product voids the warranty.
- If an edge sensor is being used on a horizontal slide door, place one or more edge sensors on both the leading and trailing edge.
- If an edge sensor is being used on a vertical moving door, place edge sensors on the bottom edge of the door.

### TYPICAL ENTRAPMENT PROTECTION DEVICE(S) OVERVIEW





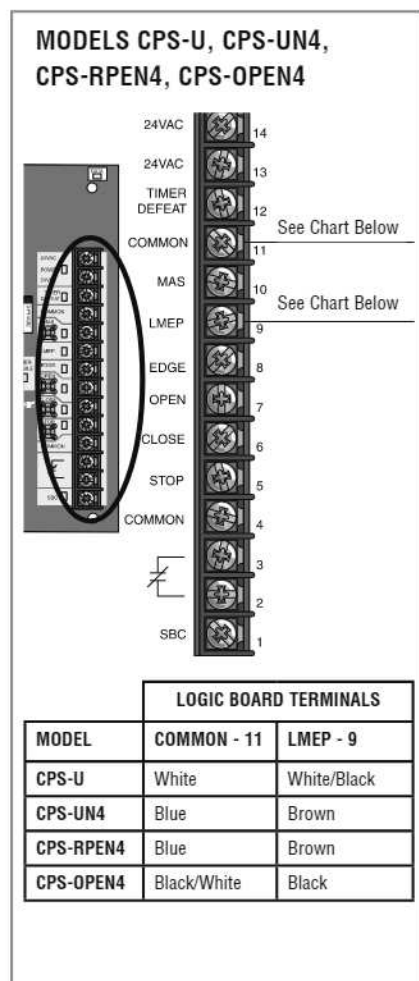
# INSTALL THE LIFTMASTER MONITORED ENTRAPMENT PROTECTION (LMEP) DEVICES (OPTIONAL)

Always refer to the installation instructions included with LiftMaster Entrapment Protection (LMEP) Devices. If a LiftMaster Monitored Entrapment Protection Device is not installed, constant pressure to close will be required from the control station.

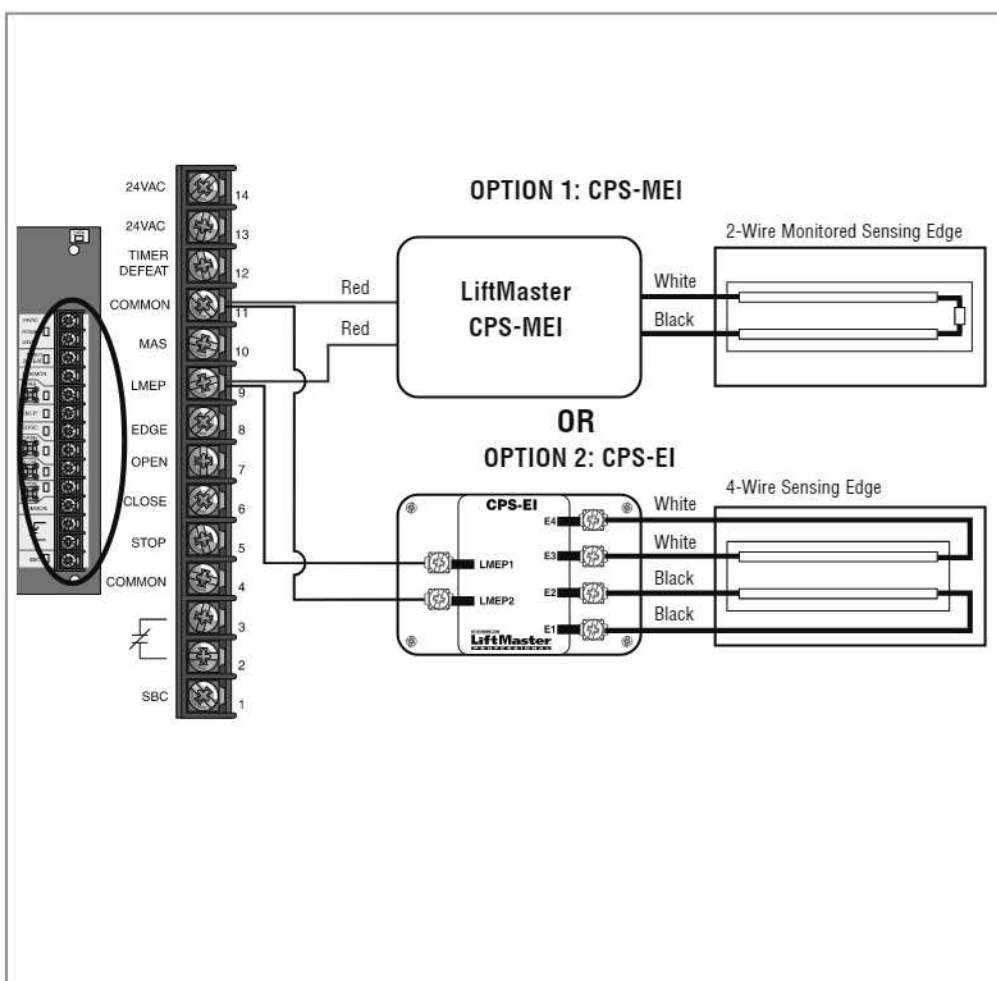
## WIRE THE LIFTMASTER MONITORED ENTRAPMENT PROTECTION (LMEP) DEVICES

- 1 Connect the LiftMaster Monitored Entrapment Protection (LMEP) Device to the logic board according to the models shown in the chart below:

### MONITORED PHOTOELECTRIC SENSOR



### MONITORED EDGE SENSOR



**NOTE:** Only one LiftMaster Monitored Entrapment Protection (LMEP) Device can be connected to the logic board. To attach additional LMEPs, a CPS3CARD option card is required. Secondary (non-monitored) entrapment protection devices (with normally open dry contact) should be wired to the EDGE and COMMON terminals.

### IMPORTANT SAFETY INSTRUCTIONS

#### **WARNING**

#### TO REDUCE THE RISK OF SEVERE INJURY OR DEATH:

1. READ AND FOLLOW ALL WARNINGS AND INSTRUCTIONS.
2. ALWAYS keep remote controls out of reach of children. NEVER permit children to operate or play with door control push buttons or remote controls.
3. ONLY activate a door when it can be seen clearly, it is properly adjusted and no obstructions exist in the path the door will travel.
4. Personnel should keep away from a door in motion and ALWAYS keep a door in sight until completely closed. NO ONE SHOULD CROSS THE PATH OF A MOVING DOOR.
5. NO ONE SHOULD GO UNDER A STOPPED OR PARTIALLY OPENED DOOR.
6. If possible, use the manual release handle to disengage a door ONLY when a door is CLOSED. Weak or broken springs or an unbalanced door could result in an open door falling rapidly and/or unexpectedly causing SEVERE INJURY or DEATH.
7. NEVER use manual release handle unless the doorway is clear of persons and obstructions.
8. After ANY adjustments are made, the entrapment protection device(s) MUST be tested. Failure to adjust the operator properly may cause SEVERE INJURY and DEATH.
9. Entrapment protection device(s) MUST be tested every month. Failure to adjust the operator properly may cause SEVERE INJURY and DEATH.
10. ALWAYS KEEP DOOR PROPERLY BALANCED. An improperly balanced door may NOT reverse when required and could result in SEVERE INJURY or DEATH. See the door manufacturer's owners manual.
11. ALL repairs to cables, spring assemblies and other hardware, ALL of which are under EXTREME tension, MUST be made by an Authorized Service Technician.
12. ALWAYS disconnect electric power to the door operator BEFORE making ANY repairs or removing covers.
13. **SAVE THESE INSTRUCTIONS.**

### LIMIT ADJUSTMENT

- 1 Begin with the door in the fully closed position to set the CLOSE limit.
- 2 Depress the retaining plate (1) and move the limit nut to the CLOSE limits (2).

**NOTE:** The Close Limit Switch (CLS) and Sensing Limit Switch (SLS) LEDs on the logic board will illuminate when the switches are activated and the power is on.

- 3 When the retaining plate is released, verify the retaining plate is fully seated with the notches of the limit nuts.
- 4 Open the door to the fully open position and set the OPEN limit (3).

**NOTE:** The Open Limit Switch (OLS) LED on the logic board will illuminate when the switches are activated and the power is on.

- 5 When the retaining plate is released, verify the retaining plate is fully seated with the notches of the limit nuts.

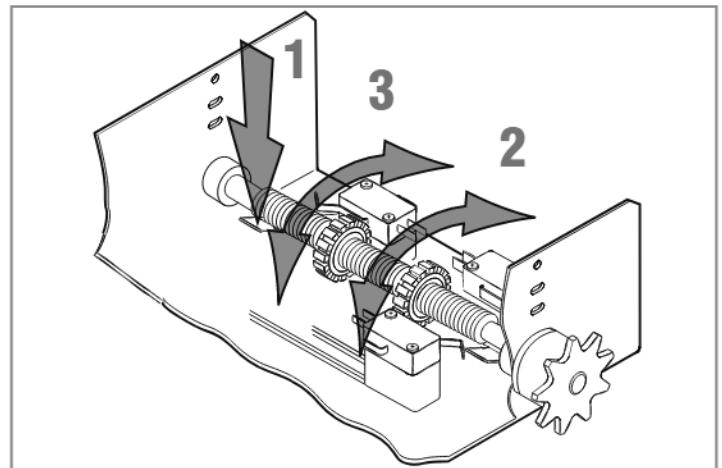
**NOTE:** In some installations, such as a through-wall-installation, the rotation of the motor and logic board may have to be changed.

1. Locate the MOTOR DIRECTION jumper on the logic board. Remove jumper and relocate from STD to REV.
2. Relocate the sensing limit switch (SLS) to the opposite side.
3. Remove the CLOSE/OPEN decal and reattach appropriately.

#### **WARNING**

To avoid SERIOUS personal INJURY or DEATH from electrocution:

- Disconnect electric power BEFORE performing ANY adjustments or maintenance.
- ALL maintenance MUST be performed by an Authorized Service Technician



## CLUTCH ADJUSTMENT (BELT DRIVE MODEL OPERATORS)

The Clutch System is designed to protect the door and motorized operator. It is NOT a substitute for an entrapment protection device.

- 1 Remove the cotter pin from the clutch nut on the clutch shaft.
- 2 Turn the clutch nut to release tension.
- 3 Re-tighten the clutch nut until there is just enough tension to permit smooth operation of the door and to allow the clutch to slip if the door is obstructed.
- 4 Secure the clutch nut with the cotter pin.

### ADJUST TORQUE LIMITER CLUTCH (MODEL GT ONLY)

- 1 Loosen the set screws of the torque adjustment nut on the gear reducer.
- 2 Back off the torque nut until there is very little tension on the belleville washers.
- 3 Tighten torque nut gradually until there is just enough tension to permit the operator to move the door smoothly through a complete open/close cycle, but to allow the reducer to slip if the door is obstructed.
- 4 Re-tighten the set screw directly over the flat portion of the shaft.

### MODEL GH (OPTIONAL MODIFICATION)

- 1 Loosen the set screws on the clutch nut.
- 2 Back off the clutch nut until there is very little tension on the clutch spring.
- 3 Tighten the clutch nut gradually until there is just enough tension to permit the operator to move the door smoothly but allow the clutch to slip if the door is obstructed. When the clutch is properly adjusted, it should generally be possible to stop the door by hand during travel.

### AUXILIARY REVERSAL SYSTEM / RPM SENSOR

The **Auxiliary Reversal System** is designed to protect the door and motorized operator. It is NOT a substitute for an entrapment protection device.

**Feature:** This feature utilizes the RPM sensor connected to the logic board to detect when the clutch slips and reverses the door (clutch must be properly adjusted). In addition, the RPM eliminates the need for a centrifugal switch on single phase motors.

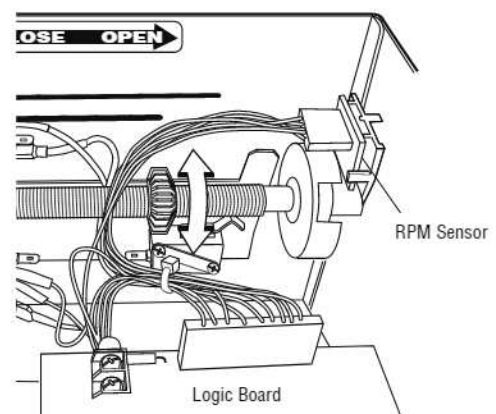
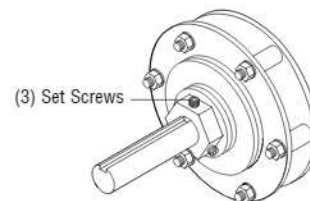
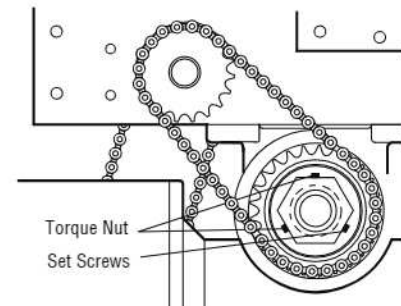
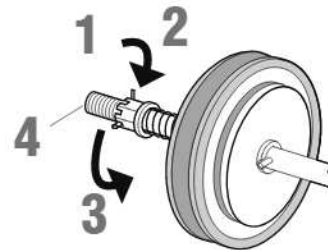
**Benefit:** The Auxiliary Reversal System reverses the operator upon hitting an obstruction, preventing excessive door and operator damage. (The Auxiliary Reversal System is not applicable on GH models unless the clutch modification is installed.)

**NOTE:** This feature is automatically learned and does not require programming.

## ⚠️ WARNING

To avoid **SERIOUS** personal **INJURY** or **DEATH** from electrocution:

- Disconnect electric power **BEFORE** performing **ANY** adjustments or maintenance.
- **ALL** maintenance **MUST** be performed by an Authorized Service Technician.



# TESTING

When testing the operator, the operator should be set to C2 wiring type (factory default).

Apply power to the operator.

When power is applied to the operator, all the LEDs will illuminate with the exception of SBC, relay A, relay B, and the Timer Defeat. Once the power up process is completed (approximately 2-3 seconds) only the appropriate LED's will continue to be lit:

- Between limits: 24Vac and STOP
- Fully closed position: 24Vac, STOP, CLS and SLS
- Fully opened position: 24Vac, STOP and OLS

Additional LED's will light when device(s) are activated.

**NOTE:** When the power up process is completed, the MAS LED will blink a code indicating the version of firmware. If the selector dial is in the DIAG, OPTN, or PROG position, the MAS will not provide this code. After the code has been provided the MAS LED will go out.

## TEST PHOTOELECTRIC SENSORS (IF APPLICABLE)

- 1 Open the door.
- 2 Place an obstruction in the path of the photoelectric sensors. The LMEP LED will blink on the logic board.
- 3 Press and hold the CLOSE button. The door should not close.
- 4 Remove the obstruction.
- 5 Press and hold the CLOSE button. Door should close.  
\*If the LMEP is activated while closing, the door should reverse.

## TEST EDGE SENSORS (IF APPLICABLE)

- 1 Open the door.
- 2 Place an obstruction in the path of the door.
- 3 Press and release the CLOSE button. The door should stop and/or reverse.
- 4 Remove the obstruction. Press and release the CLOSE button. The door should fully close.

**NOTE:** The Logic 5.0 logic board will automatically learn the LMEP Device once it is properly connected. If the LMEP Device is misaligned, activated, or disconnected the LMEP LED on the logic board will blink on and off. You can close the door by entering the Restricted Close (RC) mode by holding the close button. The operator will begin closing after 5 seconds and will continue to close to the Close Limit or when the close button is released.

To unlearn the LMEP Device, turn the selector dial to DIAG, push and hold the stop button until the MAS LED flashes. Without the LMEP Device connected the only mode of operation will be B2, D1 or E2. To Erase the LiftMaster Entrapment Protection (LMEP) Device, turn the selector dial to DIAG, push and hold the stop button until the MAS LED flashes. If an LMEP is not connected, the only mode of operation is C2, D1, or E2.

## WARNING

To avoid SERIOUS personal INJURY or DEATH:

- Disconnect electric power BEFORE performing ANY adjustments or maintenance.
- ALL maintenance MUST be performed by an Authorized Service Technician.

## TEST 3-BUTTON CONTROL STATION

- 1 Press OPEN button. (The door should move in the open direction.)
- 2 Press STOP button. (The door should stop.)
- 3 Press and hold the CLOSE button. (The door should move in the close direction.)
- 4 Release CLOSE button. Door should stop if in C2 or D1 mode. Door will reverse to full open position in E2 mode. The door should continue closing in all other modes
- 5 Press STOP button. (The door should stop.)

## TEST LIMIT ADJUSTMENT

- 1 Press OPEN button. (The door should open.)
- 2 Allow the door to fully open.
- 3 Press and hold the CLOSE button. (The door should close.)
- 4 Allow the door to fully close.
- 5 If the limits are not set properly, remove power and adjust limits (refer to Limit Adjustment section).

**NOTE:** Door travel should stop when the OPEN or CLOSE limits are activated. If door drifting is occurring, spring tension on the door will have to be checked, or a brake may be added to the operator. (Note - For Logic 5.0, brake is standard on all models larger than 1/2HP. Brake can be field-installed for 1/3 and 1/2 HP T, H, J, DJ, HJ and DHJ).

## IMPORTANT NOTES:

- Be sure you have read and understand all safety instructions included in this manual.
- Be sure the owner or person(s) responsible for operation of the door have read and understand the safety instructions, know how to electrically operate the door in a safe manner and how to manually disconnect the door from the operator.

# MANUAL RELEASE

## EMERGENCY DISCONNECT SYSTEM MODELS GT AND T

### TO DISCONNECT DOOR FROM OPERATOR

The door should be in the fully closed position if possible.

- 1 Pull emergency release handle straight down. Emergency disconnect will open.

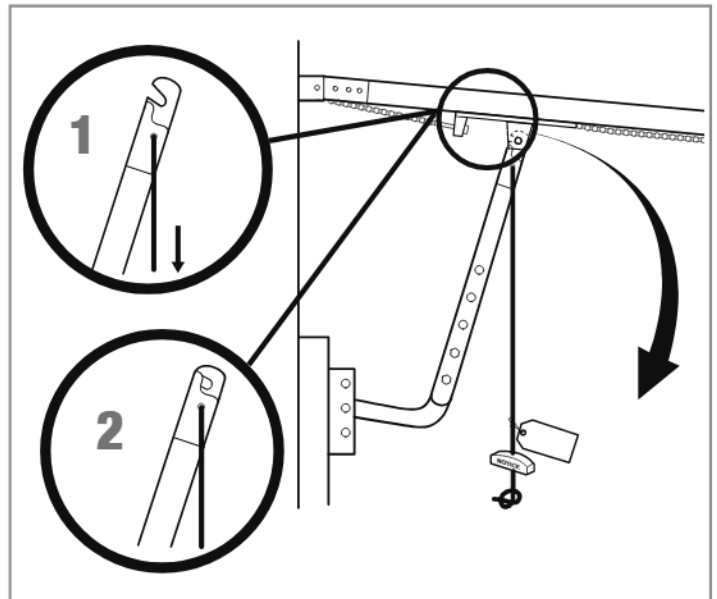
### TO RECONNECT DOOR ARM TO TROLLEY

- 2 Lift free end of door arm to trolley. Pull emergency release handle to allow arm to engage roll pin. Release handle. Emergency disconnect will close.

## **⚠ WARNING**

To prevent possible **SERIOUS INJURY** or **DEATH** from a falling door or arm:

- **DISCONNECT** electric power to the operator **BEFORE** manually operating your door.
- **DO NOT** stand under the door arm when pulling the emergency release.
- If possible, use emergency release handle to disengage trolley **ONLY** when door is **CLOSED**. Weak or broken springs or unbalanced door could result in an open door falling rapidly and/or unexpectedly.
- **NEVER** use emergency release handle unless doorway is clear of persons and obstructions.



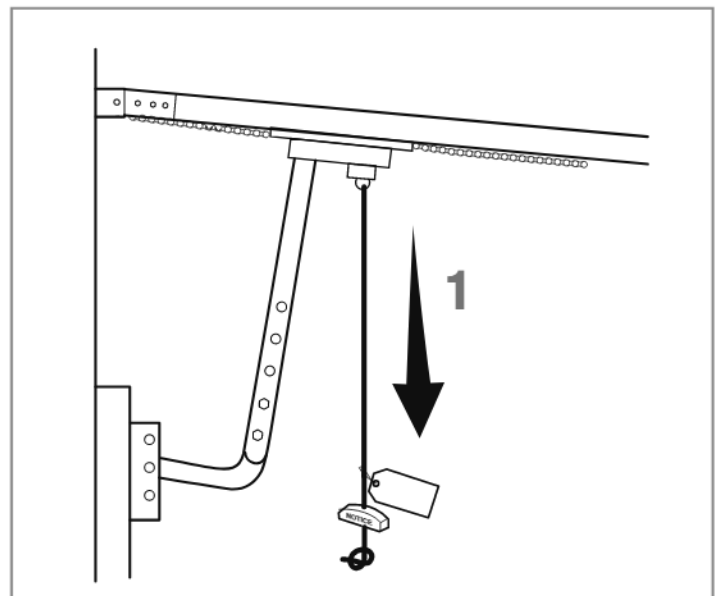
## EMERGENCY DISCONNECT SYSTEM MODEL APT

### TO DISCONNECT DOOR FROM OPERATOR

- 1 The door should be in the fully closed position if possible. Pull down on the emergency release handle and raise or lower the door manually.

### TO RECONNECT DOOR ARM TO TROLLEY

- 2 The trolley will reconnect on the next UP or DOWN operation, either manually or by using the door control or remote.



## EMERGENCY DISCONNECT SYSTEM MODELS H, GH, J, AND HJ

These operators have provisions for manually operating the door in case of emergency or power failure. Refer to the appropriate instructions below for the correct operator model.

### MODELS H AND GH

These operators are equipped with a manual hoist. An electrical interlock will disable the electrical controls when the hoist is used. To operate the hoist:

- 1** Pull the disconnect chain (sash chain) to engage the hoist mechanism. The disconnect chain may be locked in position by slipping the end through the keyhole of the chain keeper mounted on the wall.
- 2** Operate the door in the desired direction by pulling on one side or the other of the continuous loop hoist chain.
- 3** The disconnect chain must be released from the chain keeper before the door will operate again electrically.

### MODEL J

This operator has a floor level disconnect chain to disconnect the door from the door operator.

- 1** To disengage, pull the disconnect chain (sash chain) and secure in the disengaged position by slipping the end through the keyhole bracket mounted on the wall.
- 2** The door may now be pushed up or pulled down manually.
- 3** Release the disconnect chain to operate the door again electrically.

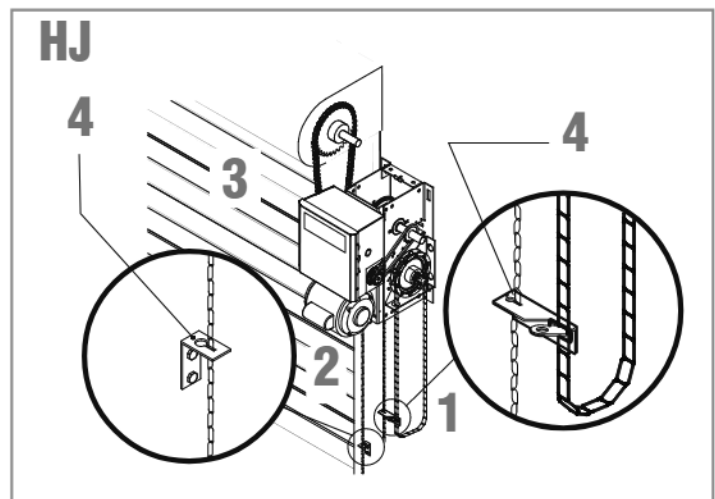
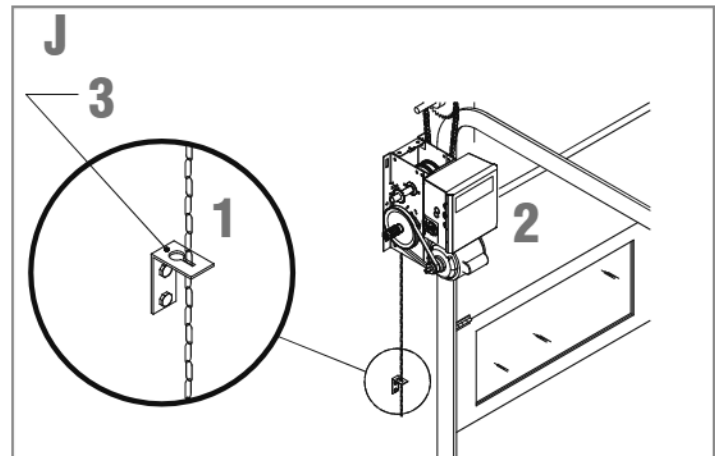
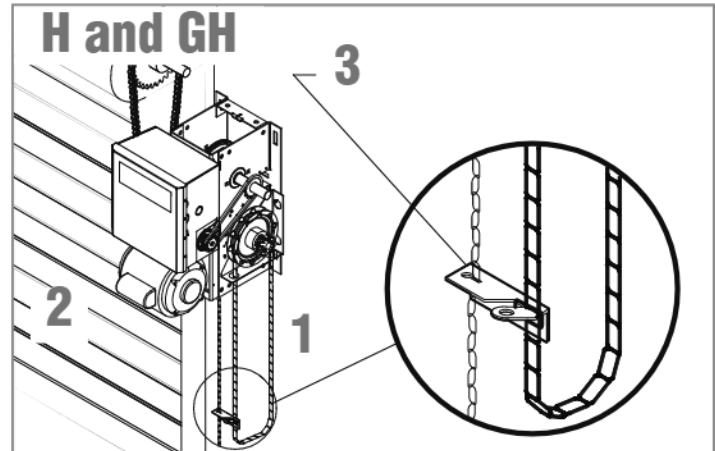
### MODEL HJ

This operator includes both a floor level disconnect chain (sash chain) to disconnect the door from the door operator and a disconnect chain with manual hoist to electrically disable the operator controls.

- 1** Pull the disconnect chain to engage the hoist mechanism. The disconnect chain may be locked in position by slipping the end through the keyhole of the chain keeper mounted on the wall.
- 2** To disengage, pull the disconnect chain and secure in the disengaged position by slipping the end through the keyhole bracket mounted on the wall.
- 3** Operate the door in the desired direction by pulling on one side or the other of the continuous loop hoist chain.
- 4** Release the disconnect chain to operate the door again electrically.

## **WARNING**

- To prevent possible **SERIOUS INJURY** from a moving chain:
- **DISCONNECT** electric power to the operator **BEFORE** manually operating your door.
  - If possible, use emergency disconnect **ONLY** when door is **CLOSED**. Weak or broken springs or unbalanced door could result in an open door falling rapidly and/or unexpectedly.
  - **NEVER** use emergency disconnect unless doorway is clear of persons and obstructions.



# PROGRAMMING

## INTRODUCTION TO PROGRAMMING

Many programmable functions require that a LiftMaster Entrapment Protection (LMEP) Device be installed in order to function. Refer to the *Entrapment Protection* section.

Before programming the logic board, set the operator's open and close limits. The LEDs on the logic board are provided to assist setting the limits. Refer to page 22 for limit switch adjustment instructions.

Apply power to the operator.

When power is applied to the operator, all the LEDs will illuminate with the exception of SBC, relay A, relay B, and the Timer Defeat.

Once the power up process is completed (approximately 2-3 seconds) only the appropriate LED's will continue to be lit:

Between limits: 24Vac and STOP

Fully closed position: 24Vac, STOP, CLS and SLS

Fully opened position: 24Vac, STOP and OLS

Additional LED's will light when device(s) are activated.

**NOTE:** When the power up process is completed, the MAS LED will blink a code indicating the version of firmware. If the selector dial is in the DIAG, OPTN, or PROG position, the MAS will not provide this code. After the code has been provided the MAS LED will go out.

## LOGIC BOARD PUSH BUTTONS (OPEN, CLOSE, STOP)

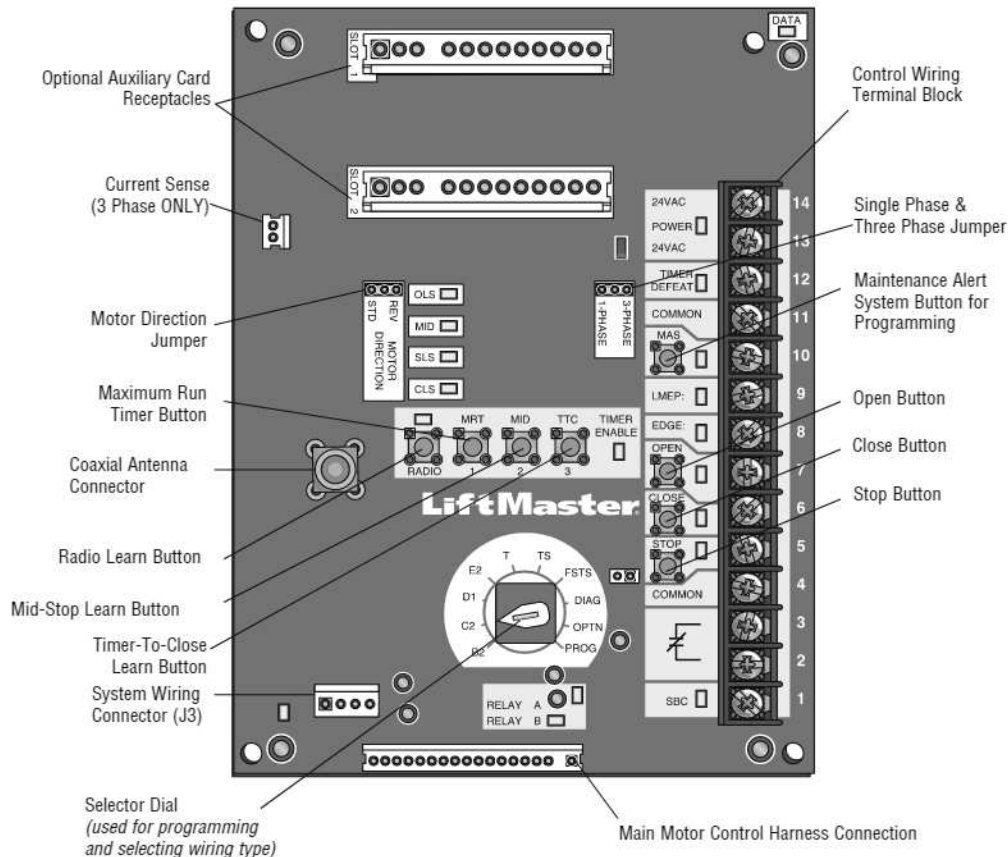
Open, Close and Stop buttons are mounted directly on the logic board. Thus, making it easy to program as well as have door control at the electrical box.

**Either the stop control or a jumper MUST be wired between terminals 4 and 5 for the on board push buttons to function.**

## CURRENT SENSING TECHNOLOGY

LOGIC 5.0 3-Phase Operators now include Current Sensing Technology. The Current Sense Harness is required for operating LiftMaster Commercial Door Operators that offer this feature. The Current Sense Feature measures overcurrent and limits operation under high-current conditions and sends a Diagnostic Error Code of 12 LED blinks. See Troubleshooting Error Codes section for more information.

## LOGIC BOARD OVERVIEW





## DETERMINE AND SET WIRING TYPE

Read the descriptions of the different wiring types to determine which setting will be correct for each application. Once the wiring type is determined, set the selector dial accordingly.

WIRING TYPE	DEVICE	ACTION	STATE	RESPONSE
<b>C2</b> Momentary contact to open and stop with constant pressure to close, open override plus wiring for sensing device to reverse. Programmable Mid-Stop available with this wiring-type. Compatible with 3-Button Station and 1-Button Station	3-Button Control Station	OPEN button is pressed momentarily:	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	Door opens to closest OPEN limit or Mid-Stop
			Door opening	No change in state
			Door closing	Door will auto reverse to OPEN limit
			Door at Open Mid-Stop	Door opens to the OPEN limit
			Door stopped during open or close cycle	Door opens to closest OPEN limit or Mid-Stop
		CLOSE button is pressed momentarily:	Operator at OPEN limit	Door closes and stops when button is released
			Operator at CLOSE limit	No change in state
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	Door closes and stops when button is released
			Door stopped during open or close cycle	Door closes and stops when button is released
		STOP button is pressed momentarily:	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	No change in state
			Door opening	Door stops
			Door closing	Door stops
			Door at Open Mid-Stop	No change in state
			Door stopped during open or close cycle	No change in state
		OPEN button is held (constant pressure):	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	Door opens to closest OPEN limit or Mid-Stop
			Door opening	No change in state
			Door closing	Door will auto reverse to OPEN limit
			Door at Open Mid-Stop	Door opens to the OPEN limit
			Door stopped during open or close cycle	Door opens to the OPEN limit (bypasses Mid-Stop)
		CLOSE button is held (constant pressure):	Operator at OPEN limit	Door closes to closest CLOSE limit or Mid-Stop
			Operator at CLOSE limit	No change in state
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	Door closes to the CLOSE limit
			Door stopped during open or close cycle	Door opens to closest OPEN limit or Mid-Stop
	3-Button Remote Control Programmed as OPEN/CLOSE/STOP	OPEN button is pressed momentarily:	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	Door opens to closest OPEN limit or Mid-Stop
			Door opening	No change in state
			Door closing	Door will auto reverse to OPEN limit
			Door at Open Mid-Stop	Door opens to the OPEN limit
			Door stopped during open or close cycle	Door opens to closest OPEN limit or Mid-Stop
		CLOSE button is pressed momentarily:	Operator at OPEN limit	Door closes to closest CLOSE limit or Mid-Stop
			Operator at CLOSE limit	No change in state
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	Door closes to the CLOSE limit
			Door stopped during open or close cycle	Door closes and stops when button is released
		STOP button is pressed momentarily:	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	No change in state
			Door opening	Door stops
			Door closing	Door stops
			Door at Open Mid-Stop	No change in state
			Door stopped during open or close cycle	No change in state
	Single Button Remote Control	Button is pressed momentarily:	Operator at OPEN limit	Door closes and stops when button is released
			Operator at CLOSE limit	Door opens to closest OPEN limit or Mid-Stop
			Door opening	Door stops
			Door closing	No change in state
			Door at Open Mid-Stop	Door opens to the OPEN limit
			Door stopped during open or close cycle	Door opens to the OPEN limit
		Button is pressed:	Operator at OPEN limit	Door closes and stops when button is released
			Operator at CLOSE limit	Door opens to closest OPEN limit or Mid-Stop
			Door opening	Door Stops
			Door closing	Door will auto reverse to OPEN limit
	Single Button Control Station (Wired)	Button is pressed:	Door at Open Mid-Stop	Door opens to the OPEN limit
			Door stopped during open cycle	Door closes and stops when button is released
			Door stopped during close cycle	Door opens to closest OPEN limit or Mid-Stop
		Door image is pressed:	Operator at OPEN limit	Door closes to the CLOSE limit
			Operator at CLOSE limit	Door opens to closest OPEN limit or Mid-Stop
			Door opening	No change in state
			Door closing	No change in state
		Door image is pressed:	Door at Open Mid-Stop	Door closes to the CLOSE limit
			Door stopped during open or close cycle	Door closes to the CLOSE limit
			Door stopped during open or close cycle	Door closes to the CLOSE limit
			Door stopped during open or close cycle	Door closes to the CLOSE limit



## DETERMINE AND SET WIRING TYPE (CONTINUED)

WIRING TYPE	DEVICE	ACTION	STATE	RESPONSE
<b>B2</b> Momentary contact to open, close and stop, plus wiring for sensing device to reverse and auxiliary devices to open and close with open override. Programmable mid stop available with this wiring type. Compatible with 3-Button Station, 1-Button Station, 1 and 3-Button Remote Control.  LiftMaster Monitored Entrapment Protection (LMPE) Device required.	<b>3-Button Control Station</b>	OPEN button is pressed momentarily:	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	Door opens to closest OPEN limit or Mid-Stop
			Door opening	No change in state
			Door closing	Door will auto reverse to OPEN limit
			Door at Open Mid-Stop	Door opens to the OPEN limit
			Door stopped during open or close cycle	Door opens to the OPEN limit
		CLOSE button is pressed momentarily:	Operator at OPEN limit	Door closes to the CLOSE limit
			Operator at CLOSE limit	No change in state
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	Door closes to the CLOSE limit
			Door stopped during open or close cycle	Door closes to the CLOSE limit
		STOP button is pressed momentarily:	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	No change in state
			Door opening	Door stops
			Door closing	Door stops
			Door at Open Mid-Stop	No change in state
			Door stopped during open or close cycle	No change in state
		OPEN button is held (constant pressure):	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	Door opens to closest OPEN limit or Mid-Stop
			Door opening	No change in state
			Door closing	Door will auto reverse to OPEN limit
			Door at Open Mid-Stop	Door opens to the OPEN limit
			Door stopped during open or close cycle	Door opens to the OPEN limit
		CLOSE button is held (constant pressure):	Operator at OPEN limit	Door closes to the CLOSE limit
			Operator at CLOSE limit	No change in state
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	Door closes to the CLOSE limit
			Door stopped during open or close cycle	Door closes to the CLOSE limit
	<b>3-Button Remote Control Programmed as OPEN/CLOSE/STOP</b>	OPEN button is pressed momentarily:	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	Door opens to closest OPEN limit or Mid-Stop
			Door opening	No change in state
			Door closing	Door will auto reverse to OPEN limit
			Door at Open Mid-Stop	Door opens to the OPEN limit
			Door stopped during open or close cycle	Door opens to the OPEN limit
		CLOSE button is pressed momentarily:	Operator at OPEN limit	Door closes to the CLOSE limit
			Operator at CLOSE limit	No change in state
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	Door closes to the CLOSE limit
			Door stopped during open or close cycle	Door closes to the CLOSE limit
		STOP button is pressed momentarily:	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	No change in state
			Door opening	Door stops
			Door closing	Door stops
			Door at Open Mid-Stop	No change in state
			Door stopped during open or close cycle	No change in state
	<b>Single Button Remote Control</b>	Button is pressed:	Operator at OPEN limit	Door closes to the CLOSE limit
			Operator at CLOSE limit	Door opens to closest OPEN limit or Mid-Stop
			Door opening	Door stops
			Door closing	Door will auto reverse to OPEN limit
			Door at Open Mid-Stop	Door opens to the OPEN limit
			Door stopped during open or close cycle	Door opens to the OPEN limit
	<b>Single Button Control Station (Wired)</b>	Button is pressed:	Operator at OPEN limit	Door closes to the CLOSE limit
			Operator at CLOSE limit	Door opens to closest OPEN limit or Mid-Stop
			Door opening	Door stops
			Door closing	Door will auto reverse to OPEN limit
			Door at Open Mid-Stop	Door opens to the OPEN limit
			Door stopped during the open cycle	Door closes to the CLOSE limit
			Door stopped during the close cycle	Door opens to the OPEN limit
	<b>myQ</b>	Door image is pressed:	Operator at OPEN limit	Door closes to the CLOSE limit
			Operator at CLOSE limit	Door opens to closest OPEN limit or Mid-Stop
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	Door closes to the CLOSE limit
			Door stopped during open or close cycle	Door closes to the CLOSE limit

## DETERMINE AND SET WIRING TYPE (CONTINUED)

WIRING TYPE	DEVICE	ACTION	STATE	RESPONSE
<b>FSTS</b> Momentary button contact for open, close and stop programming. User set mid stop. User set Timer-To-Close. The single button station opens the door to the full open limit bypassing the mid stop and activates the Timer-To-Close, putting the operator in TS mode until the door reaches the down limit, or is stopped in travel. At which time the operator enters the B2 mode. Compatible with 3-Button Station, 1-Button Station, 1 and 3-Button Remote Control. A 1-Button remote control in FSTS mode will open only with the Timer-To-Close, bypassing a programmed mid stop. The Timer To-Close will reset and reverse when closing.  LiftMaster Monitored Entrapment Protection (LMEP) Device required.	<b>3-Button Control Station</b>	OPEN button is pressed momentarily	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	Door opens to closest OPEN limit or Mid-Stop
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	Door opens to the OPEN limit
			Door stopped during open or close cycle	Door opens to closest OPEN limit or Mid-Stop
		CLOSE button is pressed momentarily	Operator at OPEN limit	Door closes to CLOSE limit
			Operator at CLOSE limit	No change in state
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	Door closes to the CLOSE limit
			Door stopped during open or close cycle	Door closes to the CLOSE limit
		STOP button is pressed momentarily	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	No change in state
			Door opening	Door stops
			Door closing	Door stops
			Door at Open Mid-Stop	No change in state
			Door stopped during open or close cycle	No change in state
		OPEN button is held (constant pressure)	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	Door opens to closest OPEN limit or Mid-Stop
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	Door opens to the OPEN limit
			Door stopped during open or close cycle	Door opens to closest OPEN limit or Mid-Stop
		CLOSE button is held (constant pressure)	Operator at OPEN limit	Door closes to the CLOSE limit
			Operator at CLOSE limit	No change in state
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	Door closes to the CLOSE limit
			Door stopped during open or close cycle	Door closes to the CLOSE limit
	<b>3-Button Remote Control Programmed as OPEN/CLOSE/STOP</b>	OPEN button is pressed momentarily	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	Door opens to closest OPEN limit or Mid-Stop
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	Door opens to the OPEN limit
			Door stopped during open or close cycle	Door opens to closest OPEN limit or Mid-Stop
		CLOSE button is pressed momentarily	Operator at OPEN limit	Door closes to the CLOSE limit
			Operator at CLOSE limit	No change in state
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	Door closes to the CLOSE limit
			Door stopped during open or close cycle	Door closes to the CLOSE limit
		STOP button is pressed momentarily	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	No change in state
			Door opening	Door stops
			Door closing	Door stops
			Door at Open Mid-Stop	No change in state
			Door stopped during open or close cycle	No change in state
	<b>Single Button Remote Control</b>	Button is pressed	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	Door opens to the OPEN limit
			Door opening	No change in state
			Door closing	Door will auto reverse to OPEN limit
			Door at Open Mid-Stop	Door opens to closest OPEN limit
			Door stopped during open or close cycle	Door opens to closest OPEN limit or Mid-Stop
	<b>Single Button Control Station (Wired)</b>	Button is pressed:	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	Door opens to the OPEN limit
			Door opening	No change in state
			Door closing	Door will auto reverse to OPEN limit
			Door at Open Mid-Stop	Door opens to the OPEN limit
			Door stopped during the open cycle	Door opens to the OPEN limit
	<b>myQ</b>	Door image is pressed:	Door stopped during the close cycle	Door opens to the OPEN limit
			Operator at OPEN limit	Door closes to the CLOSE limit
			Operator at CLOSE limit	Door opens to closest OPEN limit or Mid-Stop
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	Door closes to the CLOSE limit
			Door stopped during open or close cycle	Door closes to the CLOSE limit

## DETERMINE AND SET WIRING TYPE (CONTINUED)

WIRING TYPE	DEVICE	ACTION	STATE	RESPONSE
<b>T</b> Momentary contact to open, close, and stop, with open override and Timer-To-Close. Every device that causes the door to open, except any sensing edge input device, activates the Timer-To-Close. Auxiliary controls can be connected to open input to activate the Timer-To-Close. If the Timer-To-Close has been activated, the open button and radio control can recycle the timer. The stop button will deactivate the timer until the next command input. The Timer-To-Close will function from the programmable Mid-Stop with this wiring type. Compatible with 3-Button Station, 1-Button Station and 1 and 3-Button Remote Control.  LiftMaster Monitored Entrapment Protection (LMEP) Device required.	<b>3-Button Control Station</b>	OPEN button is pressed momentarily	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	Door opens to closest OPEN limit or Mid-Stop
			Door opening	No change in state
			Door closing	Door will auto reverse to OPEN limit
			Door at Open Mid-Stop	Door opens to the OPEN limit
			Door stopped during open or close cycle	Door opens to the OPEN limit
		CLOSE button is pressed momentarily	Operator at OPEN limit	Door closes to the CLOSE limit
			Operator at CLOSE limit	No change in state
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	Door closes to the CLOSE limit
			Door stopped during open or close cycle	Door closes to the CLOSE limit
		STOP button is pressed momentarily	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	No change in state
			Door opening	Door stops
			Door closing	Door stops
			Door at Open Mid-Stop	No change in state
			Door stopped during open or close cycle	No change in state
		OPEN button is held (constant pressure)	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	Door opens to the OPEN limit
			Door opening	No change in state
			Door closing	Door will auto reverse to OPEN limit
			Door at Open Mid-Stop	Door opens to the OPEN limit
			Door stopped during open or close cycle	Door opens to the OPEN limit
		CLOSE button is held (constant pressure)	Operator at OPEN limit	Door closes to the CLOSE limit
			Operator at CLOSE limit	No change in state
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	Door closes to the CLOSE limit
			Door stopped during open or close cycle	Door closes to the CLOSE limit
	<b>3-Button Remote Control Programmed as OPEN/CLOSE/STOP</b>	OPEN button is pressed momentarily	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	Door opens to closest OPEN limit or Mid-Stop
			Door opening	No change in state
			Door closing	Door will auto reverse to OPEN limit
			Door at Open Mid-Stop	Door opens to the OPEN limit
			Door stopped during open or close cycle	Door opens to the OPEN limit
		CLOSE button is pressed momentarily	Operator at OPEN limit	Door closes to the CLOSE limit
			Operator at CLOSE limit	No change in state
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	Door closes to the CLOSE limit
			Door stopped during open or close cycle	Door closes to the CLOSE limit
		STOP button is pressed momentarily	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	No change in state
			Door opening	Door stops
			Door closing	Door stops
			Door at Open Mid-Stop	No change in state
			Door stopped during open or close cycle	No change in state
	<b>Single Button Remote Control</b>	Button is pressed	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	Door opens to the OPEN limit
			Door opening	No change in state
			Door closing	Door will auto reverse to OPEN limit
			Door at Open Mid-Stop	No change in state
			Door stopped during open or close cycle	Door opens to closest OPEN limit or Mid-Stop
	<b>Single Button Control Station (Wired)</b>	Button is pressed:	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	Door opens to closest OPEN limit or Mid-Stop
			Door opening	No change in state
			Door closing	Door will auto reverse to OPEN limit
			Door at Open Mid-Stop	No change in state
			Door stopped during the open cycle	Door opens to closest OPEN limit or Mid-Stop
			Door stopped during the close cycle	Door opens to closest OPEN limit or Mid-Stop
	<b>myQ</b>	Door image is pressed:	Operator at OPEN limit	Door closes to the CLOSE limit
			Operator at CLOSE limit	Door opens to closest OPEN limit or Mid-Stop
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	Door closes to the CLOSE limit
			Door stopped during open or close cycle	Door closes to the CLOSE limit

## DETERMINE AND SET WIRING TYPE (CONTINUED)

WIRING TYPE	DEVICE	ACTION	STATE	RESPONSE
<b>TS</b> This mode will attempt to close the door from any position except when fully closed, or when a safety input is present. The stop button will not disable the Timer-To-Close at any position. To disable the Timer-To-Close in this mode, installation of a defeat switch is required (see wiring diagram). Momentary contact to open, close, and stop with open override and Timer-To-Close. Every device that causes door to open, including a reversing device, activates the Timer-To-Close. Auxiliary controls can be connected to open input to activate the Timer-To-Close. If the timer has been activated, the open button and radio control can recycle the timer. The Timer-To-Close will function from the programmable mid stop with this wiring type. Compatible with 3-Button Station, 1-Button Station and 1 and 3-Button Remote Control.  LiftMaster Monitored Entrapment Protection (LMEP) Device required.	<b>3-Button Control Station</b>	OPEN button is pressed momentarily	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	Door opens to closest OPEN limit or Mid-Stop
			Door opening	No change in state
			Door closing	Door will auto reverse to OPEN limit
			Door at Open Mid-Stop	Door opens to the OPEN limit
			Door stopped during open or close cycle	Door opens to the OPEN limit
		CLOSE button is pressed momentarily	Operator at OPEN limit	Door closes to the CLOSE limit
			Operator at CLOSE limit	No change in state
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	Door closes to the CLOSE limit
			Door stopped during open or close cycle	Door closes to the CLOSE limit
		STOP button is pressed momentarily	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	No change in state
			Door opening	Door stops
			Door closing	Door stops
			Door at Open Mid-Stop	No change in state
			Door stopped during open or close cycle	Door stops
		OPEN button is held (constant pressure)	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	Door opens to closest OPEN limit or Mid-Stop
			Door opening	No change in state
			Door closing	Door will auto reverse to OPEN limit
			Door at Open Mid-Stop	Door opens to the OPEN limit
			Door stopped during open or close cycle	Door opens to the OPEN limit
		CLOSE button is held (constant pressure)	Operator at OPEN limit	Door closes to the CLOSE limit
			Operator at CLOSE limit	No change in state
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	Door closes to the CLOSE limit
			Door stopped during open or close cycle	Door closes to the CLOSE limit
	<b>3-Button Remote Control Programmed as OPEN/CLOSE/STOP</b>	OPEN button is pressed momentarily	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	Door opens to closest OPEN limit or Mid-Stop
			Door opening	No change in state
			Door closing	Door will auto reverse to OPEN limit
			Door at Open Mid-Stop	Door opens to the OPEN limit
			Door stopped during open or close cycle	Door opens to the OPEN limit
		CLOSE button is pressed momentarily	Operator at OPEN limit	Door closes to the CLOSE limit
			Operator at CLOSE limit	No change in state
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	Door closes to the CLOSE limit
			Door stopped during open or close cycle	Door closes to the CLOSE limit
		STOP button is pressed momentarily	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	No change in state
			Door opening	Door stops
			Door closing	Door stops
			Door at Open Mid-Stop	No change in state
			Door stopped during open or close cycle	Door stops
	<b>Single Button Remote Control</b>	Button is pressed	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	Door opens to closest OPEN limit or Mid-Stop
			Door opening	No change in state
			Door closing	Door will auto reverse to OPEN limit
			Door at Open Mid-Stop	No change in state
			Door stopped during open or close cycle	Door opens to the OPEN limit
	<b>Single Button Control Station (Wired)</b>	Button is pressed:	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	Door opens to closest OPEN limit or Mid-Stop
			Door opening	No change in state
			Door closing	Door will auto reverse to OPEN limit
			Door at Open Mid-Stop	No change in state
			Door stopped during the open cycle	Door opens to closest OPEN limit or Mid-Stop
			Door stopped during the close cycle	Door opens to closest OPEN limit or Mid-Stop
	<b>myQ</b>	Door image is pressed:	Operator at OPEN limit	Door closes to the CLOSE limit
			Operator at CLOSE limit	Door opens to closest OPEN limit or Mid-Stop
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	Door closes to the CLOSE limit
			Door stopped during open or close cycle	Door closes to the CLOSE limit

## DETERMINE AND SET WIRING TYPE (CONTINUED)

WIRING TYPE	DEVICE	ACTION	STATE	RESPONSE
<b>T</b> <b>Car Dealer Mode</b> This mode uses the Single Button Control (SBC) input to bring the door from a closed position to the programmed Open Mid-Stop position and keep it at that location even with multiple inputs. LiftMaster Monitored Entrapment Protection (LMEP) Device required.	<b>3-Button Control Station</b>	OPEN button is pressed momentarily	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	Door opens to closest OPEN limit or Mid-Stop
			Door opening	No change in state
			Door closing	Door will auto reverse to OPEN limit
			Door at Open Mid-Stop	Door opens to the OPEN limit
			Door stopped during open or close cycle	Door opens to the OPEN limit
		CLOSE button is pressed momentarily	Operator at OPEN limit	Door closes to the CLOSE limit
			Operator at CLOSE limit	No change in state
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	Door closes to the CLOSE limit
			Door stopped during open or close cycle	Door closes to the CLOSE limit
		STOP button is pressed momentarily	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	No change in state
			Door opening	Door stops
			Door closing	Door stops
			Door at Open Mid-Stop	No change in state
			Door stopped during open or close cycle	No change in state
		OPEN button is held (constant pressure)	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	Door opens to closest OPEN limit or Mid-Stop
			Door opening	No change in state
			Door closing	Door will auto reverse to OPEN limit
			Door at Open Mid-Stop	Door opens to the OPEN limit
			Door stopped during open or close cycle	Door opens to the OPEN limit
		CLOSE button is held (constant pressure)	Operator at OPEN limit	Door closes to the CLOSE limit
			Operator at CLOSE limit	No change in state
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	Door closes to the CLOSE limit
			Door stopped during open or close cycle	Door closes to the CLOSE limit
	<b>3-Button Remote Control Programmed as OPEN/CLOSE/STOP</b>	OPEN button is pressed momentarily	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	Door opens to closest OPEN limit or Mid-Stop
			Door opening	No change in state
			Door closing	Door will auto reverse to OPEN limit
			Door at Open Mid-Stop	Door opens to the OPEN limit
			Door stopped during open or close cycle	Door opens to the OPEN limit
		CLOSE button is pressed momentarily	Operator at OPEN limit	Door closes to the CLOSE limit
			Operator at CLOSE limit	No change in state
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	Door closes to the CLOSE limit
			Door stopped during open or close cycle	Door closes to the CLOSE limit
		STOP button is pressed momentarily	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	No change in state
			Door opening	Door stops
			Door closing	Door stops
			Door at Open Mid-Stop	No change in state
			Door stopped during open or close cycle	No change in state
	<b>Single Button Remote Control</b>	Button is pressed	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	Door opens to closest OPEN limit or Mid-Stop
			Door opening	No change in state
			Door closing	Door will auto reverse to OPEN limit
			Door at Open Mid-Stop	No change in state
			Door stopped during open or close cycle	Door opens to closest OPEN limit or Mid-Stop
		Button is pressed:	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	Door opens to closest OPEN limit or Mid-Stop
			Door opening	No change in state
			Door closing	Door will auto reverse to OPEN limit
	<b>Single Button Control Station (Wired)</b>	Button is pressed:	Door at Open Mid-Stop	No change in state
			Door stopped during the open cycle	Door opens to the OPEN limit
			Door stopped during the close cycle	Door opens to the OPEN limit
		Door image is pressed:	Operator at OPEN limit	Door closes to the CLOSE limit
			Operator at CLOSE limit	Door opens to closest OPEN limit or Mid-Stop
			Door opening	No change in state
			Door closing	No change in state
		myQ	Door at Open Mid-Stop	Door closes to the CLOSE limit
			Door stopped during open or close cycle	Door closes to the CLOSE limit

## DETERMINE AND SET WIRING TYPE (CONTINUED)

WIRING TYPE	DEVICE	ACTION	STATE	RESPONSE
<b>TS</b> <b>Car Dealer Mode</b> This mode uses the Single Button Control (SBC) input to bring the door from a closed position to the programmed Open Mid-Stop position and keep it at that location even with multiple inputs. LiftMaster Monitored Entrapment Protection (LMEP) Device required.	<b>3-Button Control Station</b>	OPEN button is pressed momentarily	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	Door opens to closest OPEN limit or Mid-Stop
			Door opening	No change in state
			Door closing	Door will auto reverse to OPEN limit
			Door at Open Mid-Stop	Door opens to the OPEN limit
			Door stopped during open or close cycle	Door opens to the OPEN limit
		CLOSE button is pressed momentarily	Operator at OPEN limit	Door closes to the CLOSE limit
			Operator at CLOSE limit	No change in state
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	Door closes to the CLOSE limit
			Door stopped during open or close cycle	Door closes to the CLOSE limit
		STOP button is pressed momentarily	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	No change in state
			Door opening	Door stops
			Door closing	Door stops
			Door at Open Mid-Stop	No change in state
			Door stopped during open or close cycle	No change in state
		OPEN button is held (constant pressure)	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	Door opens to closest OPEN limit or Mid-Stop
			Door opening	No change in state
			Door closing	Door will auto reverse to OPEN limit
			Door at Open Mid-Stop	Door opens to the OPEN limit
			Door stopped during open or close cycle	Door opens to the OPEN limit
		CLOSE button is held (constant pressure)	Operator at OPEN limit	Door closes to the CLOSE limit
			Operator at CLOSE limit	No change in state
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	Door closes to the CLOSE limit
			Door stopped during open or close cycle	Door closes to the CLOSE limit
	<b>3-Button Remote Control Programmed as OPEN/CLOSE/STOP</b>	OPEN button is pressed momentarily	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	Door opens to closest OPEN limit or Mid-Stop
			Door opening	No change in state
			Door closing	Door will auto reverse to OPEN limit
			Door at Open Mid-Stop	Door opens to the OPEN limit
			Door stopped during open or close cycle	Door opens to the OPEN limit
		CLOSE button is pressed momentarily	Operator at OPEN limit	Door closes to the CLOSE limit
			Operator at CLOSE limit	No change in state
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	Door closes to the CLOSE limit
			Door stopped during open or close cycle	Door closes to the CLOSE limit
		STOP button is pressed momentarily	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	No change in state
			Door opening	Door stops
			Door closing	Door stops
			Door at Open Mid-Stop	No change in state
			Door stopped during open or close cycle	No change in state
	<b>Single Button Remote Control</b>	Button is pressed	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	Door opens to closest OPEN limit or Mid-Stop
			Door opening	No change in state
			Door closing	Door will auto reverse to OPEN limit
			Door at Open Mid-Stop	No change in state
			Door stopped during open or close cycle	Door opens to closest OPEN limit or Mid-Stop
	<b>Single Button Control Station (Wired)</b>	Button is pressed:	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	Door opens to closest OPEN limit or Mid-Stop
			Door opening	No change in state
			Door closing	Door will auto reverse to OPEN limit
			Door at Open Mid-Stop	No change in state
			Door stopped during the open cycle	Door opens to the OPEN limit
	<b>myQ</b>	Door image is pressed:	Door stopped during the close cycle	Door opens to the OPEN limit
			Operator at OPEN limit	Door closes to the CLOSE limit
			Operator at CLOSE limit	Door opens to closest OPEN limit or Mid-Stop
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	Door closes to the CLOSE limit
			Door stopped during open or close cycle	Door closes to the CLOSE limit

## DETERMINE AND SET WIRING TYPE (CONTINUED)

WIRING TYPE	DEVICE	ACTION	STATE	RESPONSE
<b>E2</b> Momentary contact to open with override and constant pressure to close. Release of close button will cause door to reverse (roll-back feature) plus wiring for sensing device to reverse. Compatible with 3-Button Station.	<b>3-Button Control Station</b>	OPEN button is pressed momentarily	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	Door opens to the OPEN limit
			Door opening	No change in state
			Door closing	Door will auto reverse to OPEN limit
			Door at Open Mid-Stop	Door opens to the OPEN limit
			Door stopped during open or close cycle	Door opens to the OPEN limit
		CLOSE button is pressed momentarily	Operator at OPEN limit	Door closes and auto reverses when button is released
			Operator at CLOSE limit	No change in state
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	Door closes and auto reverses when button is released
			Door stopped during open or close cycle	Door closes and auto reverses when button is released
		STOP button is pressed momentarily	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	No change in state
			Door opening	Door stops
			Door closing	Door stops
			Door at Open Mid-Stop	No change in state
			Door stopped during open or close cycle	No change in state
		OPEN button is held (constant pressure)	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	Door opens to the OPEN limit
			Door opening	No change in state
			Door closing	Door will auto reverse to OPEN limit
			Door at Open Mid-Stop	Door opens to the OPEN limit
			Door stopped during open or close cycle	Door opens to the OPEN limit
		CLOSE button is held (constant pressure)	Operator at OPEN limit	Door closes to the CLOSE limit
			Operator at CLOSE limit	No change in state
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	Door closes and auto reverses when button is released
			Door stopped during open or close cycle	Door closes and auto reverses when button is released
	<b>3-Button Remote Control Programmed as OPEN/CLOSE/STOP</b>	OPEN button is pressed momentarily	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	Door opens to the OPEN limit
			Door opening	No change in state
			Door closing	Door will auto reverse to OPEN limit
			Door at Open Mid-Stop	Door opens to the OPEN limit
			Door stopped during open or close cycle	Door opens to the OPEN limit
		CLOSE button is pressed momentarily	Operator at OPEN limit	Door closes and auto reverses when button is released
			Operator at CLOSE limit	No change in state
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	Door closes and auto reverses when button is released
			Door stopped during open or close cycle	Door closes and auto reverses when button is released
		STOP button is pressed momentarily	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	No change in state
			Door opening	Door stops
			Door closing	Door stops
			Door at Open Mid-Stop	No change in state
			Door stopped during open or close cycle	No change in state
	<b>Single Button Remote Control</b>	Button is pressed	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	No change in state
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	No change in state
			Door stopped during open or close cycle	No change in state
	<b>Single Button Control Station (Wired)</b>	Button is pressed:	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	No change in state
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	No change in state
			Door stopped during the open cycle	No change in state
			Door stopped during the close cycle	No change in state
	<b>myQ</b>	Door image is pressed:	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	Door opens to the OPEN limit
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	No change in state
			Door stopped during open or close cycle	No change in state

## DETERMINE AND SET WIRING TYPE (CONTINUED)

WIRING TYPE	DEVICE	ACTION	STATE	RESPONSE
<b>D1</b> Constant pressure to open and close with wiring for sensing device to stop. Compatible with 2 or 3-Button Station	<b>3-Button Control Station</b>	OPEN button is pressed momentarily	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	Door opens and stops when button is released
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	Door opens and stops when button is released
			Door stopped during open or close cycle	Door opens and stops when button is released
		CLOSE button is pressed momentarily	Operator at OPEN limit	Door closes and stops when button is released
			Operator at CLOSE limit	No change in state
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	Door closes and stops when button is released
			Door stopped during open or close cycle	Door closes and stops when button is released
		STOP button is pressed momentarily	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	No change in state
			Door opening	Door stops
			Door closing	Door stops
			Door at Open Mid-Stop	No change in state
			Door stopped during open or close cycle	No change in state
		OPEN button is held (constant pressure)	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	Door opens to the OPEN limit
			Door opening	No change in state
			Door closing	Door opens to the OPEN limit
			Door at Open Mid-Stop	Door opens to the OPEN limit
			Door stopped during open or close cycle	Door opens to the OPEN limit
		CLOSE button is held (constant pressure)	Operator at OPEN limit	Door closes to the CLOSE limit
			Operator at CLOSE limit	No change in state
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	Door closes to the CLOSE limit
			Door stopped during open or close cycle	Door closes to the CLOSE limit
	<b>3-Button Remote Control Programmed as OPEN/CLOSE/STOP</b>	OPEN button is pressed momentarily	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	Door opens and stops when button is released
			Door opening	No change in state
			Door closing	Door opens to the OPEN limit
			Door at Open Mid-Stop	Door opens and stops when button is released
			Door stopped during open or close cycle	Door opens and stops when button is released
		CLOSE button is pressed momentarily	Operator at OPEN limit	Door closes and stops when button is released
			Operator at CLOSE limit	No change in state
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	Door closes and stops when button is released
			Door stopped during open or close cycle	Door closes and stops when button is released
		STOP button is pressed momentarily	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	No change in state
			Door opening	Door stops
			Door closing	Door stops
			Door at Open Mid-Stop	No change in state
			Door stopped during open or close cycle	No change in state
	<b>Single Button Remote Control</b>	Button is pressed	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	No change in state
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	No change in state
			Door stopped during open or close cycle	No change in state
	<b>Single Button Control Station (Wired)</b>	Button is pressed:	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	No change in state
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	No change in state
			Door stopped during the open cycle	No change in state
			Door stopped during the close cycle	No change in state
	<b>myQ</b>	Door image is pressed:	Operator at OPEN limit	No change in state
			Operator at CLOSE limit	No change in state
			Door opening	No change in state
			Door closing	No change in state
			Door at Open Mid-Stop	No change in state
			Door stopped during open or close cycle	No change in state



## **DETERMINE AND SET WIRING TYPE (CONTINUED)**

### **IMPORTANT NOTES:**

1. *External interlocks may be used with all functional modes.*
2. *Auxiliary devices are any devices that have only dry contacts. Examples: loop detector, pneumatic or electrical treadles, radio controls, one button stations, pull cords, etc.*
3. *Open override means that the door may be reversed while closing by activating an opening device without the need to use the stop button first.*
4. *When the door is in a stopped position other than fully closed, and an LMEP or EDGE input is activated, the Restricted Close (RC) feature will allow a close command when the close button is pressed and held. The operator will begin closing after 5 seconds. If the close button is released the door will stop.  
When in E2 mode, the door will move to the fully open position.*

## ! WARNING

To prevent possible SEVERE INJURY or DEATH:

- Install a LiftMaster Monitored Entrapment Protection (LMEP) Device.
- NEVER permit children to operate or play with door control push buttons or remote controls.

- Activate door ONLY when it can be seen clearly, is properly adjusted and there are no obstructions to door travel.
- ALWAYS keep door in sight until completely closed. NEVER permit anyone to cross the path of closing door.

## myQ SETUP (OPTIONAL)

For Smartphone App, tablet or PC control, LiftMaster myQ Internet Gateway (model 828LM) is required.

1. To enter programming mode, press and release the RADIO button on the logic board (the RADIO LED will light).
2. To program the myQ device, place the myQ device into learn mode (see instructions for the specific myQ device).
3. When the programming is complete the RADIO LED will turn off.

**NOTE:** If the programming is not completed within 3 minutes, the program mode will be exited and the RADIO LED will turn off.

### TO ERASE ALL myQ DEVICES:

1. Press and release the RADIO button on the logic board (the RADIO LED will light).
2. Press and hold the MAS button for 5 seconds. The RADIO LED will flash for approximately 5 seconds and the RADIO LED will turn off.

All myQ devices are now erased.

Please visit [LiftMaster.com/myQ-CDO](http://LiftMaster.com/myQ-CDO) for troubleshooting information.

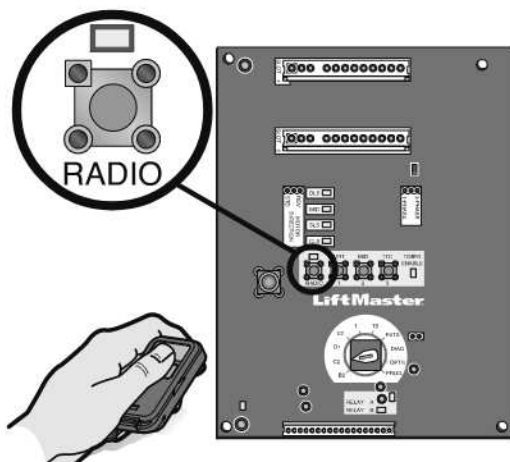
## PROGRAMMING REMOTE CONTROLS

Built in 3-channel, Security+2.0® radio receiver, up to 90 remote control devices and up to 30 keyless entry devices can be added.

**NOTE:** The following programming requires a LiftMaster Monitored Entrapment Protection (LMEP) Device.

### STANDARD REMOTE CONTROL

1. To enter programming press and release the RADIO button on the logic board (RADIO LED will light).
2. Press and hold the remote control button until the RADIO LED flashes rapidly, then release remote control button. The RADIO LED will then remain on solid after releasing the button. Repeat to add additional remote control(s).
3. Press and release the RADIO button to complete the programming. The RADIO programming mode will exit if no activity is performed within 30 seconds. The MAS and RADIO LED's will flash briefly to indicate the RADIO has exited the programming mode for remote controls and keyless entry devices. The RADIO will remain in program mode for another 150 seconds for myQ devices and then will completely exit with no activity.



### SINGLE BUTTON REMOTE CONTROL PROGRAMMED AS A SINGLE BUTTON CONTROL (SBC)

This function programs a remote control as a wireless single button control. This function will work in the following modes:

In B2 mode, operation is OPEN/STOP/CLOSE/REVERSE/STOP.

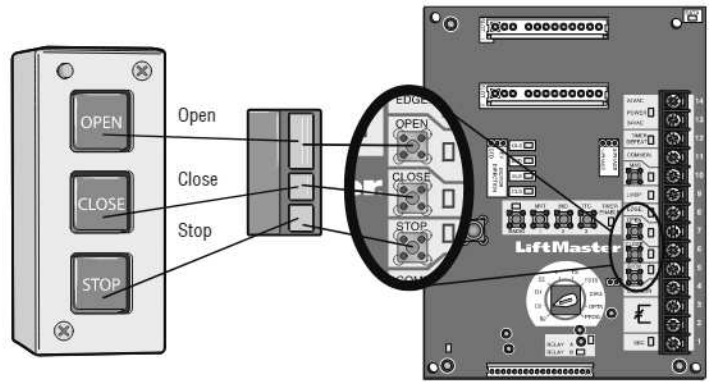
In T and TS modes, operation is OPEN/STOP/CLOSE/REVERSE/STOP and Timer-To-Close start/refresh. **NOTE:** If Car Dealer mode is enabled, SBC will be open only, stopping at the Open Mid-Stop.

In FSTS mode, operation is OPEN with Timer-To-Close start/refresh only, bypassing a programmed Open Mid-Stop.

1. Press and release the RADIO button on the logic board (RADIO LED will light).
2. Press and release the SBC externally wired button. The RADIO LED flashes rapidly and remains on solid. (If an SBC externally wired button is not present, a jumper wire may be used to momentarily short SBC and COMMON)
3. Press and hold the remote control button until the RADIO LED flashes rapidly. The RADIO LED will then remain on solid after releasing.
4. Press and release the RADIO button on the logic board (RADIO LED flashes rapidly and then turns off). The programming mode is exited if no activity is performed within 30 seconds. The MAS and RADIO LED's will flash briefly to indicate the RADIO has exited the programming mode for remote controls and keyless entry devices. The RADIO will remain in program mode for another 150 seconds for myQ devices and then will completely exit with no activity.

**NOTE:** Single button remote control is not supported with D1 and E2 wiring modes. C2 mode will only open and stop while opening.

## PROGRAMMING REMOTE CONTROLS (CONTINUED)



### THREE BUTTON REMOTE CONTROL PROGRAMMED FOR OPEN/CLOSE/STOP

**NOTE:** The following programming requires a LiftMaster Monitored Entrapment Protection (LMEP) Device.

Your Security+ 2.0® or dip switch remote control can be programmed to operate as a 3-button wireless control station: the large button will open the door, the middle button will close the door, and the third button will stop the door's movement. You may set up this feature as follows:

1. To enter programming press and release the RADIO button on the logic board (the RADIO LED will light).
2. To program the OPEN button to a remote control press and release the OPEN button on the logic board. The RADIO LED will flash and then stay on solid. Then press the corresponding button on the remote control. The RADIO LED on the logic board will flash, this confirms that the remote control has been programmed. (By programming the remote you use 1 channel of the 90 channels on the radio receiver.)
3. To program the CLOSE button to a remote control press and release the CLOSE button on the logic board. The RADIO LED will flash and then stay on solid. Then press the corresponding button on the remote control. The RADIO LED on the logic board will flash, this confirms that the remote control has been programmed. (By programming the remote you use 1 channel of the 90 channels on the radio receiver.)
4. To program the STOP button to a remote control press and release the STOP button on the logic board. The RADIO LED will flash and then stay on solid. Then press the corresponding button on the remote control. The RADIO LED on the logic board will flash, this confirms that the remote control has been programmed. (By programming the remote you use 1 channel of the 90 channels on the radio receiver.)
5. After learning remote controls press the RADIO button on the logic board (RADIO LED will turn off). **NOTE:** If no activity within 30 seconds, the MAS and RADIO LED's will flash briefly to indicate the RADIO has exited the programming mode for remote controls and keyless entry devices. The RADIO will remain in program mode for another 150 seconds for myQ devices and then will completely exit with no activity.

### REMOTE CONTROL PROGRAMMING FEATURE

#### Program Remote Controls from the 3-button control station (3BCS).

This feature allows the user to add additional remote controls from the 3BCS. By default the remote control learn option is off. **NOTE:** Requires access to the operator electrical box to enable or disable this feature.

#### To turn this feature on:

1. Turn the selector dial to PROG.
2. Press and release the RADIO button. The RADIO LED will be lit.
3. Press and release the MID button. The RADIO LED will flash quickly 6 times.
4. Press and release the RADIO button. The RADIO LED will turn off.
5. Return the selector dial to the desired wiring type.

#### To add remote controls from the 3BCS:

1. With the door in the fully closed position (close limit activated), press and hold STOP.
2. While holding STOP, press and hold CLOSE.
3. While holding STOP and CLOSE, press and hold OPEN.
4. Release all three buttons once the MAS LED has lit.
5. Learn a remote control by one of the following methods:
  - a. Programming a **standard single button/single function remote control**, push and hold the remote control button until the MAS LED goes out. Repeat steps 1 through 4 to add additional remote controls.
  - b. Programming a **3-button/three function remote control** (OPEN/CLOSE/STOP), first push the button on the 3BCS (Example: OPEN) and then press and hold the button on the remote control (Example: large button) that you want to correspond with the selected (Example: OPEN) command until the MAS LED flashes and goes out. Repeat steps 1 through 4 to add additional buttons (CLOSE AND STOP).

## PROGRAMMING REMOTE CONTROLS (CONTINUED)

### REMOTE CONTROL PROGRAMMING FEATURE

Program Remote Controls from the 3-button control station (3BCS) (continued)

To turn this feature off:

1. Turn the selector dial to PROG.
2. Press and release the RADIO button. The RADIO LED will be lit.
3. Press and release the MRT button. The RADIO LED will flash quickly 3 times.
4. Press and release RADIO button. The RADIO LED will turn off.
5. Return selector dial to desired wiring type.

**NOTE:** Restoring the operator to Factory Default (see **RESETTING FACTORY DEFAULTS**) will also disable this feature. The remote controls will still be learned.

## MAINTENANCE ALERT SYSTEM (MAS)

**Feature:** An internal cycle counter will activate a flashing LED on the 3-button control station when the preset number of cycles or months has elapsed (whichever occurs first). Setting this feature is optional. By default this feature will never activate. Logic 5.0 operators incorporate a self diagnostic feature built into the MAS LED. In addition to indicating when routine maintenance is due, the MAS LED can be used to troubleshoot some problems with the operator.

**Benefit:** The Maintenance Alert System (MAS) assists the installing dealer in setting up a routine maintenance program. Once programmed, the MAS notifies the end user (with a flashing LED on the 3-button station) when a preset number of cycles/months has elapsed and scheduled maintenance is due.

To Program (from the Operator Logic Board):

1. Close the door.
2. Turn the selector dial to PROG.
3. Press and release the MAS SET button.
4. Press the STOP button once to clear the MAS memory.
5. Press the OPEN button once for every 5,000 cycles increments. Press the CLOSE button once for every 3 month increments.
6. Press and release the MAS button to complete the programming. The on board LED will flash back the programmed settings. The OPEN LED will flash once for every 5,000 cycles. The CLOSE LED will flash once for every 3 months.
7. Turn the selector dial back to the desired wiring type.

**NOTE:** If MAS LED flashes 2 or more flashes in a row followed by a pause, an operator error occurred. Turn to page 47 to diagnose the problem.

**Example:** A door is installed with 30,000 cycle springs and has an annual service contract. To set the MAS, turn selector dial to PROG, press MAS button, press the STOP button to clear the memory and then press the OPEN button 6 times (30,000 cycles) and the CLOSE button 4 times (12 months). Press the MAS button again to complete the programming. Turn the selector dial back to the desired wiring type.

**Special Notes about MAS:** A 5th wire must be run to the control station to activate the MAS LED. The MAS LED on the logic board is always enabled. When the operator is serviced after the MAS LED has started to flash, repeat the setup procedure to program in the number or cycles desired until the next service visit OR press and

Programming

### ERASING REMOTE CONTROLS

Press and hold the RADIO button on the logic board until the RADIO LED flashes rapidly (approximately 5 seconds). All remote controls will be erased.

**NOTICE:** This device complies with Part 15 of the FCC rules and Industry Canada's license-exempt RSSs. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device must be installed to ensure a minimum 20 cm (8 in.) distance is maintained between users/ bystanders and device.

This device has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules and Industry Canada ICES standard. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful 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:

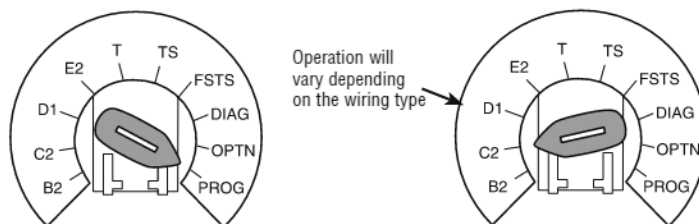
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

hold the MAS button for 5 seconds in the PROGRAM mode to reset the MAS with the current programmed value. To disable the MAS, follow the programming procedure and press the STOP button to reset the counter to zero. Every time the operator leaves the close limit one cycle is counted.

To view how many cycles are programmed into the MAS, set the selector dial to DIAG and press the MAS button. The OPEN button LED will flash once for every 5,000 cycle increment programmed and the CLOSE button LED will flash once for every 3 month increment programmed.

To view how many cycles have elapsed since the last time the MAS was programmed, set the selector dial to DIAG and press the MAS button. Press the OPEN button; the OPEN LED will flash once for every 5,000 cycles that has elapsed. Press the CLOSE button; the CLOSE LED will flash once for every (3) months that has elapsed. Press the CLOSE button; the CLOSE LED will flash once for every (3) months that have elapsed. Press the MAS button to exit. Turn the selector dial back to the desired wiring type.

### SELECTOR DIAL



### 3-BUTTON CONTROL STATION

Press This	To Get This
OPEN	Adds 5,000 cycles to the Maintenance Alert System Activation Counter.
CLOSE	Adds 3 Months to the Maintenance Alert System Activation Timer.
STOP	Clears memory, sets the Maintenance Alert System Activation Counter to 0 cycles and 0 months

Maintenance Alert LED



## ! WARNING

To prevent possible SEVERE INJURY or DEATH:

- Install a LiftMaster Monitored Entrapment Protection (LMEP) Device.
- NEVER permit children to operate or play with door control push buttons or remote controls.

- Activate door ONLY when it can be seen clearly, is properly adjusted and there are no obstructions to door travel.
- ALWAYS keep door in sight until completely closed. NEVER permit anyone to cross path of closing door.

### TIMER-TO-CLOSE

**Feature:** Timer automatically closes the door after preset time. All entrapment protection devices must be unobstructed.

**Benefit:** The door will automatically close after the preset amount of time. Great for apartment buildings, fire stations and other applications where the end user wants the door to close automatically after a specified amount of time.

**Requirements:** Must have at least one LiftMaster Monitored Entrapment Protection (LMEP) Device installed (refer to page 20). Wiring type must be set to TS, T or FSTS.

#### TO PROGRAM MANUALLY (METHOD 1):

1. Close the door.
2. Turn the selector dial to PROG.
3. Press and release the TTC button on the logic board.
4. Press and release the STOP button to clear the timer.
5. Press and release the OPEN button for every second the operator should wait before attempting to close the door. Press and release the CLOSE button for every 15 seconds the operator should wait before closing the door.
6. Press and release the TTC button to complete the programming. The OPEN/CLOSE button LEDs will flash to confirm the timer setting. The OPEN LED will flash once for every second programmed and the CLOSE LED will flash once for every 15 seconds programmed.
7. Turn the selector dial to the desired timer wiring type (TS, T or FSTS).

#### TO PROGRAM TIMER-TO-CLOSE BY EXAMPLE (METHOD 2):

1. Close the door.
2. Turn the selector dial to PROG.
3. Press and hold TTC button for 5 seconds until OPEN and OLS flashes then release.
4. Press and release the OPEN button and wait for the door to reach full open or Mid-Stop position.
5. Wait for desired amount of time to pass. (An internal stop watch starts counting when the door stops moving.)
6. Press and release the TTC button, CLOSE button or STOP button to stop the timer. (TIMER ENABLE LED will turn on.)
7. Turn the selector dial to the desired wiring type (T, TS, FSTS).

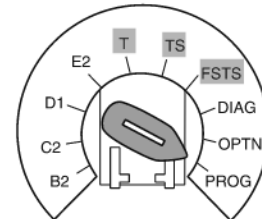
**NOTE:** To read back the Timer-To-Close setting, turn the selector dial to DIAG and press the TTC button. The OPEN LED will flash once for every second programmed and the CLOSE LED will flash once for every 15 seconds programmed.

In T Mode, timer can be deactivated from the open position by pressing the STOP button. The timer will be reactivated on the next operation command. To deactivate the timer for more than one cycle in T mode or in TS mode, attach a defeat switch to 11 and 12 (COMMON and TIMER DEFEAT).

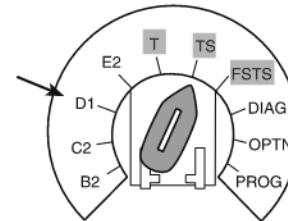
**Example:** To close the door after 70 seconds. Turn the selector dial to PROG, press and release the TTC button, press and release the STOP button to clear the timer, press and release the CLOSE button four times for 60 seconds and press and release the OPEN button 10 times for 10 seconds. Press the TTC button to finish programming the timer. Turn the selector dial to the desired timer wiring type. (TS, T, FSTS).

The STOP button WILL NOT deactivate the timer in the TS mode. For more information about TS, T, and FSTS wiring types refer to page 28.

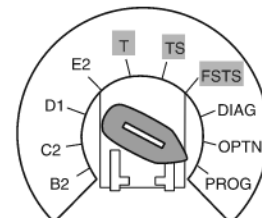
#### SELECTOR DIAL



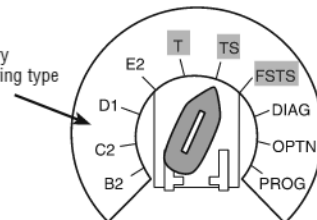
Operation will vary depending on the wiring type



#### SELECTOR DIAL



Operation will vary depending on wiring type



## OPEN MID-STOP

**Feature:** The Mid-Stop feature will open a door to a preset position prior to the fully open position (except in FSTS wiring type with Single Button Control (SBC). The SBC will bypass the programmed Mid-Stop).

A momentary open command will open the door fully from the Mid-Stop position. Once the door has reached the Mid-Stop position, the photoelectric sensors and other entrapment protection devices will not open the door beyond the Mid-Stop position when an obstruction is detected, except in E2 wiring type. The Timer-To-Close will work from the Mid-Stop.

**Benefit:** The door opens to a midpoint between open and close reducing heating and cooling costs. The door will not cycle fully, providing longer door and operator life.

### To Program:

1. Close the door.
2. Turn selector dial to PROG.
3. Press and release the MID button on the logic board.
4. Press the OPEN button, when the door reaches the desired Mid-Stop height, press and release the STOP button.
5. Press and release the MID button to complete programming.
6. Turn selector dial back to desired wiring type.

**NOTE:** To clear the Mid-Stop feature, set the selector dial to PROG. Press and hold the MID button for 5 seconds. The MID LED will flash rapidly and turn off once the Mid-Stop has been cleared. Turn selector dial back to the desired wiring type.

## CAR DEALER MODE

**Feature:** The Car Dealer Mode uses the Single Button Control input (SBC Terminals 1 and 4) to bring a door from a closed position to a programmed Open Mid-Stop position. The operator will ignore additional SBC commands while at the Mid-Stop.

**Benefit:** Provides energy cost savings by limiting the door opening height.

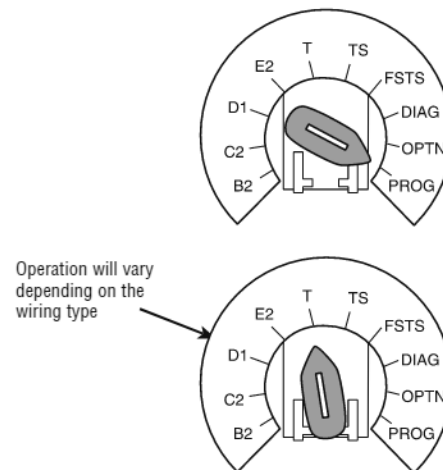
**Requirements:** This feature works in conjunction with the programmable Timer-To-Close feature. To enable this feature connect a treadle, photoelectric sensor or loop detector accessory to the SBC input and at a minimum one LiftMaster Monitored Entrapment Protection (LMEP) Device installed (refer to page 20). Wiring type must be set to TS or T (located on logic board). Before programming the Car Dealer Mode, both Mid-Stop and Timer-to-Close must be programmed.

### TO PROGRAM:

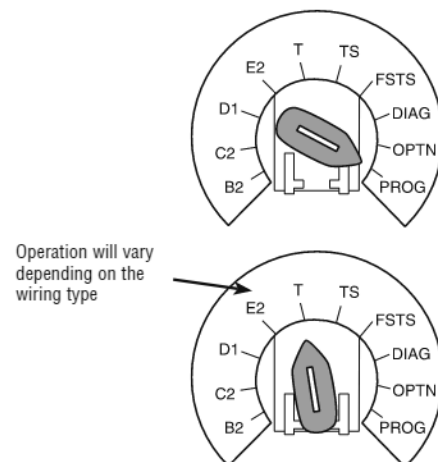
1. Close the door.
2. Turn the selector dial to PROG.
3. Push the TTC button and release (green timer enable LED will be illuminated).
4. Push the MID button and release. The Car Dealer Mode is now on (the green timer enable LED will flash 6 times indicating the Car Dealer Mode is turned on).
5. Push the TTC button and release.
6. Turn the selector dial to the desired wiring type (TS or T).

**NOTE:** To disable the Car Dealer Mode follow steps 2 and 3, then press the MRT button and release. (The Green Timer LED will flash 3 times indicating the Car Dealer Mode is off.)

### SELECTOR DIAL



### SELECTOR DIAL



## MAXIMUM RUN TIMER (MRT)

**Feature:** The operator can learn the time required to open or close a door plus an additional 10 seconds.

**Benefit:** If the operator does not meet the open or close contact limit switch within the set time, the operator will stop, limiting potential damage to the door and operator.

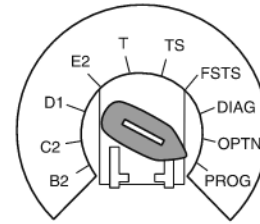
**To Program:**

**NOTE:** The factory default setting for the MRT is 90 seconds. To manually set the MRT follow the steps below.

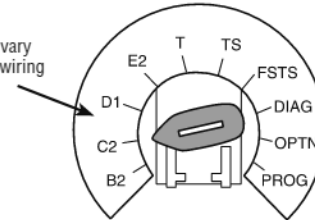
1. Close the door.
2. Set the selector dial to PROG.
3. Press and release the MRT button on the logic board.
4. Press the OPEN button and wait for the door to reach the full open limit.
5. Once the door has reached the open position, programming is complete.
6. Turn selector dial to desired wiring type.

**NOTE:** To reset MRT feature, turn selector dial to PROG and press and hold the MRT button until the MAS LED flashes rapidly.

SELECTOR DIAL



Operation will vary depending on wiring type



## RESETTING FACTORY DEFAULTS - CLEARING MEMORY

To reset most of the user installed settings back to factory defaults:

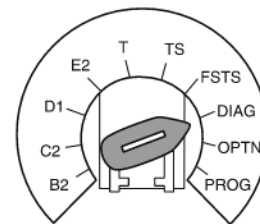
1. Turn the selector dial to DIAG.
2. Press and hold the STOP button for 5 seconds. The MAS LED will flash momentarily when the factory defaults have been restored.
3. Return the selector dial to the desired wiring type.

**Factory Defaults:**

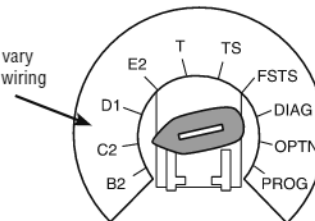
- a. Timer-To-Close = 0 seconds.
- b. The Mid-Stop is deactivated.
- c. The Maintenance Alert System is deactivated.
- d. Maximum Run Timer = 90 seconds.
- e. Car Dealer Mode is deactivated.
- f. Remote controls and myQ devices will still be learned.
- g. Remote control programming via the 3-button station is deactivated.
- h. LiftMaster Monitored Entrapment Protection (LMEP) Device(s) will be deleted from the operator memory. **NOTE:** To delete LMEP Device(s) from the operator memory, the LMEP Device(s) must be disconnected prior to reset.

**NOTE:** Life of Operator feature (Odometer/Cycle Counter) and programmed remote controls and myQ devices are not cleared.

SELECTOR DIAL



Operation will vary depending on wiring type



# MAINTENANCE

## MAINTENANCE SCHEDULE

For use with Maintenance Alert System.  
Check at the intervals listed in the following chart:

### **WARNING**

To avoid **SERIOUS** personal **INJURY** or **DEATH**:

- Disconnect electric power **BEFORE** performing **ANY** adjustments or maintenance.
- **ALL** maintenance **MUST** be performed by a trained door systems technician.

ITEM	PROCEDURE	EVERY MONTH	EVERY 3 MONTHS OR 5,000 CYCLES	EVERY 6 MONTHS OR 10,000 CYCLES
Drive Chain	Check for excessive slack. Check and adjust as required. Lubricate.		••	
Sprockets	Check set screw tightness.		•	
Clutch	Check and adjust as required.			•
Belt	Check condition and tension.			•
Fasteners	Check and tighten as required.			•
Manual Disconnect	Check and operate.			•
Non-Motor Bearings	Check for wear and lubricate.		••	
Shafts	Check for wear and lubricate.		••	
Solenoid Brake	Inspect brake pad			•
LiftMaster Monitored Entrapment Protection (LMEP)	Check alignment and functionality.	•		

### • **Use SAE 30 Oil (Never use grease or silicone spray).**

- Do not lubricate motor. Motor bearings are rated for continuous operation.
- Do not lubricate clutch or V-belt.

- Inspect and service whenever a malfunction is observed or suspected.

## HOW TO ORDER REPAIR PARTS

OUR LARGE SERVICE ORGANIZATION SPANS AMERICA

Installation and service information are available.

Call our TOLL FREE number:

**1-800-528-2806**

LiftMaster.com

## LIFE OF OPERATOR FEATURE

The logic board is equipped with a cycle counter to show how many cycles have been performed and number of months in service since installation. If the logic board is replaced, all settings will reset to 0.

1. Start with the door in the closed position.
2. Turn the selector dial to DIAG.
3. Press and release the MAS button on the logic board.
4. Press and release the MRT button on the logic board.
5. The open and close LEDs will flash. OPEN for every 5,000 cycles and CLOSE for every 3 months.

6. Return the selector dial to the desired wiring type.

**NOTE:** If the operator has not reached 5,000 cycles or 3 months, there will be no LED indications. If Logic Board is replaced, cycles and hours reset to zero.

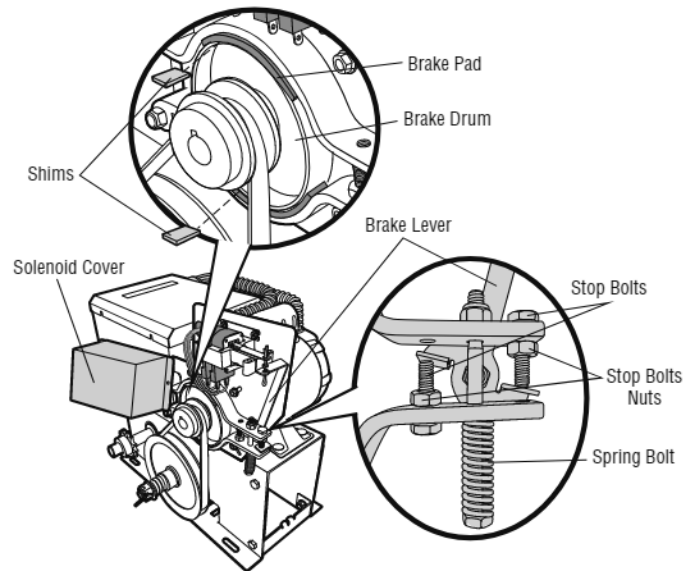


## BRAKE

A drum brake comes standard on T, H, J, and HJ model operators with 3/4HP and larger motors. It comes adjusted from the factory, however, occasional adjustments may be necessary throughout the life of the brake.

### ADJUSTING DRUM BRAKE:

1. Manually activate the brake by holding back brake lever and insert a type of shim (a business card or a folded piece of paper work well) between the brake pad and brake drum as far away from the spring bolt as possible, while still inserting between the brake pad and drum. Release the brake lever. This will create the necessary space to ensure the brake is not dragging when the door is in motion.
2. Tighten both stop bolts until the bolts come into contact with the lever. Secure the stop bolts in place by tightening the stop bolt nuts. Remove the shim used in step 1.
3. Tighten or loosen the spring bolt to add or release brake force.
4. Connect power to the operator. Run the operator and ensure the brake is working properly.
5. Make any adjustment necessary. If the solenoid buzzes while running, loosen the spring bolt until the buzzing is no longer present when the operator is in motion. A buzzing solenoid will stress the solenoid and can cause it to fail prematurely.



## TROUBLESHOOTING

### DIAGNOSTIC CHART

The logic board has several LEDs to assist in the installation and troubleshooting of the operator. The following chart should assist in verifying the operator is functioning properly. Turn the selector dial to DIAG to keep the door from moving while troubleshooting.

LED	COLOR	DEFINITION
Power	Green	Indicates power is being generated for the logic board.
Stop	Green	Indicates a closed circuit between common and terminal 5. Pressing the stop button should turn off this LED.
Open	Yellow	Indicates a closed circuit between common and terminal 7. Pressing the open button should turn on this LED.
Close	Yellow	Indicates a closed circuit between common and terminal 6. Pressing the close button should turn on this LED.
LMEP	Green	A solid illuminated LED indicates the LMEP is learned and operational. Flashing indicates sensors are obstructed, a wiring issue exists, or the LMEP Device(s) have been removed.**. Solid off indicates no sensors learned.
Timer Defeat	Yellow	Solid on indicates a closed circuit between common and terminal 12. Timer-To-Close will not close.
OLS	Yellow	Pressing the Open Limit Switch should turn on this LED. Indicates the Open Limit Switch is activated.
CLS	Yellow	Pressing the Close Limit Switch should turn on this LED. Indicates the Close Limit Switch is activated.
SLS	Yellow	Pressing the Sensing Limit Switch should turn on this LED. Indicates the Sensing Limit Switch is activated.
Edge	Yellow	Indicates a closed circuit between common and terminal 8. Pressing the Edge should turn this LED on.
Mid-Stop	Yellow	A solid illuminated LED indicates the door is stopped on up Mid-Stop. Flashing indicates Mid-Stop is being set.
Timer Enabled	Green	A solid illuminated LED indicates the TIMER is programmed and will activate from the Open or Mid-Stop positions. Flashing indicates the Timer is counting down and the door will close after the programmed preset time. Each flash represents 1 second of programmed time.
SBC	Yellow	Indicates a closed circuit between common and terminal 1. Pressing the Single Button Control Station should turn this LED on.
MAS	Yellow	Indicates the Maintenance Alert System has been activated or an error code has been triggered.
Relay A	Yellow	Indicates an OPEN or CLOSE command has been given to the motor. LED turns on when either the OPEN or CLOSE buttons are pressed.
Relay B	Yellow	Indicates an OPEN or CLOSE command has been given to the motor. LED turns on when either the OPEN or CLOSE buttons are pressed.
DATA	Green	Indicates communication between the Logic Board and optional TLS1CARD.

**RADIO Amber:** Refer to page 48 for RADIO LED codes.

**\*\* RESTRICTED CLOSE.** This method will allow a door to be closed using the operator when LMEP Device(s) are no longer working. Press and hold the CLOSE button until the door reaches the closed limit. If the CLOSE button is released before the door reaches the closed limit the operator will stop and the procedure will need to be repeated to fully close the door.

## TROUBLESHOOTING GUIDE

FAULT	POSSIBLE CAUSE	FIX
A RELAY CLICK IS HEARD WHEN GIVEN A COMMAND SLIGHTLY BEFORE MOTOR MOVEMENT. RELAY LED'S ON BOARD FLASH IN UNISON WITH THE CLICK.	This is normal operation.	➤ No action necessary. See Logic Board Overview (page 27) for more information regarding current sense.
THE OPERATOR WILL NOT RESPOND TO ANY COMMANDS.	a) No power supply.	➤ A) Make sure power is connected to the L1, L2 and L3 terminals. B) Check the motor harness and ensure the motor harness is connected to the correct power connector. C) Check the transformer.
	b) Control station not connected or wired correctly	➤ Use the OPEN, CLOSE and STOP LEDs to help check for correct wiring. Verify the board is accepting commands by using the onboard station. The green LED next to stop button must be illuminated.
	c) Interlock switch is activated.	➤ Check Interlock(s). If more than one external interlock is present they must be wired in series. Green LED next to stop button must be on.
	d) Selector dial still in PROG, OPTN, or DIAG mode.	➤ Set selector dial to the desired wiring type.
	e) Motor is malfunctioning.	➤ Verify proper voltage is being delivered to the motor (Check motor name plate).
	f) Motor thermal overload is tripped.	➤ Check to see if motor is hot. Allow motor to cool before attempting to move door. Cycle operator in constant pressure one full cycle. (OPEN and CLOSE to reset fault)
	g) Possible malfunction of an accessory.	➤ Disconnect all devices, reattach one at a time testing for a failure after each one is replaced.
	h) Power Board may need to be replaced.	➤ When the OPEN or CLOSE button is pressed, Relay A or B LED should illuminate and the door should move in the corresponding direction. If Relay A or B illuminates and the door does not move, the Power Board may need to be replaced.
	i) Possible logic board failure.	➤ Replace logic board.
POWER LED IS NOT ILLUMINATED.	a) Loose secondary wiring connections or a faulty control transformer.	➤ Repair or replace connections or control transformer.
	b) Hoist interlock switch engaged.	➤ Check interlock. Verify the manual release chain is not engaged.
STOP BUTTON LED IS NOT ILLUMINATED.	a) Control station not connected or wired correctly.	➤ Check wiring to control station.
	b) Malfunctioning interlock switch.	➤ Check interlock switch(es) for continuity.
THE DOOR WILL MOVE ABOUT A FOOT AND STOPS. AFTER STOPPING, ONLY CONSTANT PRESSURE COMMANDS WILL MOVE THE DOOR.	a) RPM sensor is not connected properly or is malfunctioning.	➤ Check the RPM assembly for loose connections. Make sure the interrupter cup is turning when operator is running. Check for foreign matter blocking. ➤ Replace RPM sensor.
	b) Clutch is slipping.	➤ Adjust clutch and verify the door is not binding.
THE DOOR WILL MOVE MOST OF THE WAY TOWARDS A LIMIT AND STOP. AN ADDITIONAL OPEN OR CLOSE COMMAND IS ABLE TO GET DOOR TO COMPLETE CYCLE.	The Maximum Run Timer is not set correctly.	➤ Manually reprogram the Maximum Run Timer (page 43) or reset the factory defaults (page 43).
THE DOOR WILL OPEN SOME BUT NOT COMPLETELY. AN EXTRA OPEN IS ABLE TO GET THE DOOR TO OPEN COMPLETELY.	A Mid-Stop may be set.	➤ Check to see if the Mid-Stop LED is on. Clear the Mid-Stop by turning the selector dial to PROG. Press and hold the MID-STOP button for 5 seconds. Return selector dial to desired wiring type.
THE DOOR WILL OPEN BUT WILL ONLY CLOSE AFTER A FIVE SECOND DELAY WITH CONSTANT PRESSURE ON THE CLOSE BUTTON (RESTRICTED CLOSE MODE).	a) The LMEP attached is obstructed or activated.	➤ If the on board LMEP LED is flashing, the photoelectric sensors are misaligned or not connected. Remove any obstructions, check the entrapment protection device wires for continuity and shorts. If more than one LMEP is installed with the use of a CPS3CARD the LMEP will not flash when one of the LMEP's is blocked.
	b) The logic board thinks the direct connect photoelectric sensors are attached and blocked.	➤ Unlearn the photoelectric sensors from the memory by resetting factory defaults.

## TROUBLESHOOTING ERROR CODES

Logic 5.0 operators incorporate a self diagnostic feature built into the MAS LED. In addition to indicating when routine maintenance is due, the MAS LED can be used to troubleshoot problems with the operator.

If the MAS LED on the logic board or 3-button control station is flashing on and off rapidly, the Maintenance Alert System has been triggered and service is due on the operator. If the MAS LED flashes 2 or more times in a row followed by a pause, an operator error has occurred. To view the errors, turn the selector dial to DIAG and press the OPEN button. To view the individual error codes (if more than one exists) press CLOSE. It is possible to have more than one error at a time.

Use the chart below to determine the error.

ERROR CODE	DESCRIPTION	SYMPTOM	SOLUTION
1 blink	MAS triggered (cycles or months).	Normal operation.	Reset MAS (page 40).
2 blinks	No RPM input during opening or closing.	The door only responds to constant pressure commands.  OR  No operator movement for 3-Phase Operator.	Clutch is slipping, adjust clutch, or verify RPM sensor connection or replace RPM sensor. <b>NOTE:</b> To relearn the RPM sensor, move the door with a constant pressure command. The door will stop once relearned and normal operation will resume. OR  Replace 3-Phase Power Board.
3 blinks	(MRT) Maximum Run Time has timed out.	The door stops before reaching the desired time.	Check the operator for any faults (e.g., bad limit switch), program the Max Run Timer OR reset to factory defaults.
4 blinks	Obstruction sensed on closing.	Operator will reverse to OPEN position.	Remove obstruction or realign photoelectric sensor.
5 blinks	A button is stuck (longer than 2 minutes).	The control station will not respond.	The control station must be fixed or replaced before it will be recognized as an input.
6 blinks	Invalid option card plugged into option card receptacles.	Option card will not function properly.	Refer to accessories page for list of supported option card(s).
7 blinks	LiftMaster Monitored Entrapment Protection (LMEP) Device faulted or removed for greater than 2 minutes.	Normal operation (5 second constant pressure override required to close).	Cleared when entrapment protection device is cleared or connected.
8 blinks	Brownout Detected - under voltage.	Operator will run as long as enough power is present.	1. Check AC line for voltage. 2. Check transformer secondary for low voltage. Too many accessories may be connected to the transformer.
9 blinks	Power board failure.	No operator movement.	Replace power board.
10 blinks	Operator was not in programming mode when the motor phase jumper was changed.	The phase will not change.	Enter programming mode and move phase jumper to change phase.
11 blinks	Too much voltage supplied to operator - over voltage.	Operator will run as long as a component failure does not occur.	1. Check AC line for voltage. 2. Voltage to be within +/- 10% of intended voltage.
12 blinks (3 Phase Only)	Current sense fault.	Motor moves for limited cycles, then motor no longer moves.	1. Check current sense wiring connection. 2. Cycle operator power after wiring has been corrected.  OR  Replace 3-Power Power Board

**NOTE:** Error codes take priority over normal MAS LED operation. Error codes will repeat on the MAS every 1.5 seconds until cleared. There may be more than one error present, but only the highest priority will flash. If the highest error is cleared, the next highest will flash. All errors self-correct when the corrective action is taken. A reset is not needed.

## TROUBLESHOOTING RADIO FUNCTIONALITY

The error codes will display at the radio LED.

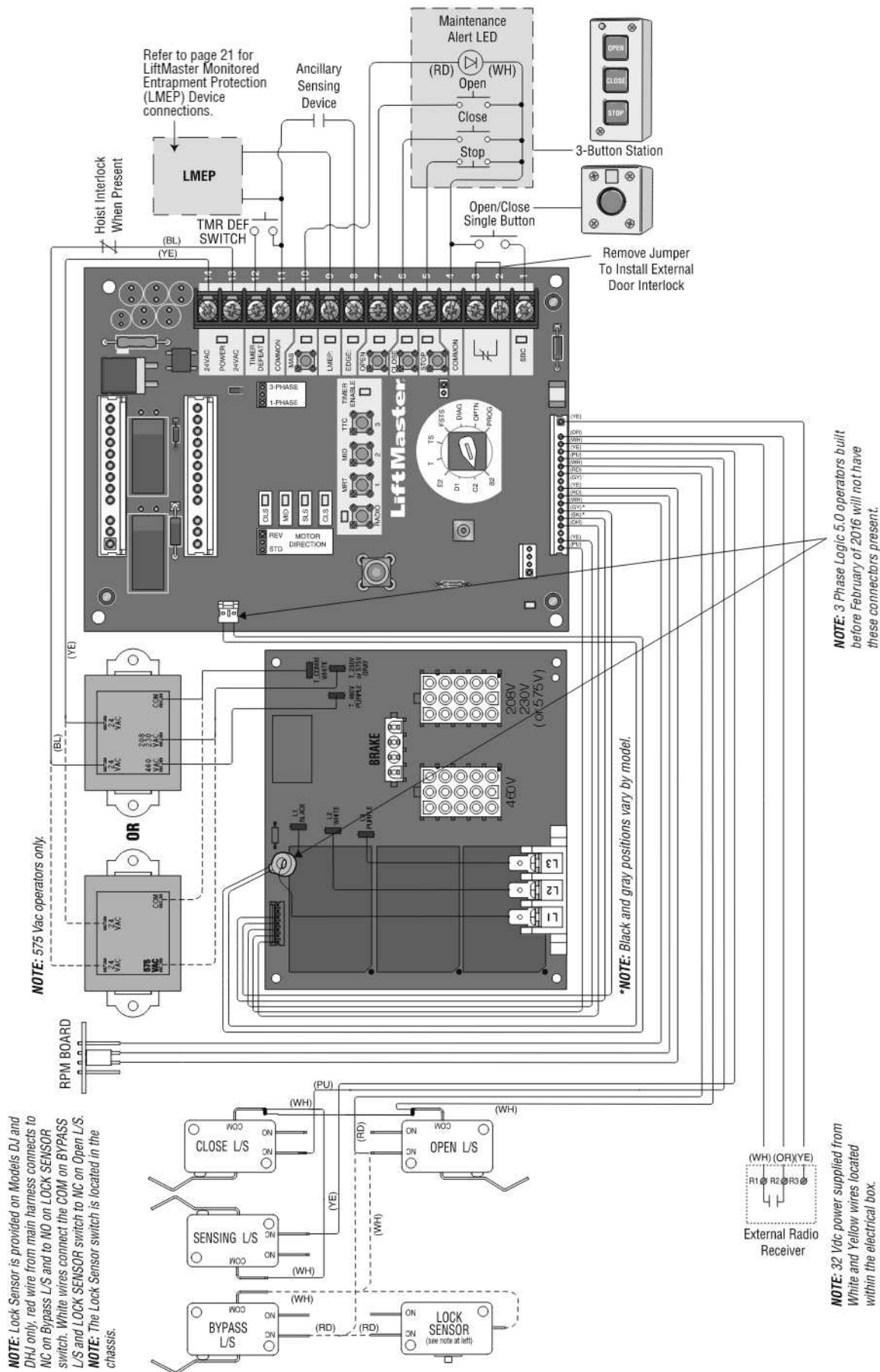
**NOTE:** Radio receiver is compatible with SECURITY+ 2.0® remote controls and keyless entry devices.

ERROR CODE	DISPLAY	SYMPTOM	POSSIBLE PROBLEM	CORRECTION
R1	Quick Flash	No response from the remote control.	Unlearned remote control - A user tries to use a remote control, but the RADIO LED only flashes briefly and there is no response from the operator.	Reprogram the remote control.
R2	No LED activity	No response from the remote control.	Cannot recognize remote control- A weak signal caused by a discharged battery or outside interference with the remote control(s) - OR - the remote control(s) being learned is not compatible with the operator. Antenna not installed or damaged.	Replace battery, eliminate interference, obtain a qualified remote control, or check antenna connections.
R3	Radio LED remains solid for 30 seconds, blinks 3 times, and remains solid for an additional 2.5 minutes.	The remote control was not programmed.	Cannot recognize remote control- A weak signal caused by a discharged battery or outside interference interfering with the learn process - OR - the remote control(s) being learned is not compatible with the operator. Antenna not installed or damaged.	Replace battery, eliminate interference, obtain a qualified remote control, or check antenna connections.
R5	3 blinks	The remote control cannot be programmed.	Duplicate remote control- A user enters RADIO function learning mode and selects the function to be learned. When the remote control button is pressed for learning, a search reveals that remote control is already learned.	This remote control already has a function associated with it. To change the function, erase all learned remote controls and re-learn the desired remote control.
R6	Quick Flash	Door will open but will not close from the remote control.	Cannot close via constant pressure in C2, D1, or E2 modes. No entrapment protection device present - A sensing device is required to close via constant pressure.	None required or change wiring mode.

## LOGIC (VER. 5.0) 1 PHASE WIRING DIAGRAM



## LOGIC (VER. 5.0) 3 PHASE WIRING DIAGRAM - WITH CURRENT SENSING TECHNOLOGY



# ACCESSORIES

## ENTRAPMENT PROTECTION DEVICES

### MONITORED

#### CPS-U



#### Dual-Sided Infrared Photo Eyes

- NEMA 1 general purpose enclosure.
- Dual-sided infrared sensors.
- For indoor use.
- Maximum range of 30 feet (9.1 m).

#### CPS-UN4



#### Monitored Thru-Beam Photo Eyes

- Heavy-duty housing for industrial applications.
- NEMA 4 enclosure protects against direct spray.
- Dual-sided infrared sensors.
- For indoor/outdoor use.
- Maximum range of 45 feet (13.7 m).

#### CPS-RPEN4



#### Monitored Retro-Reflective Photo Eyes

- Polarized reflector for use in applications with highly reflective surfaces.
- NEMA 4X enclosure protects against direct water spray and corrosion.
- Retro-reflective sensor.
- For indoor/outdoor use.
- Maximum range of 50 feet (15 m).

#### CPS-OPEN4



#### Monitored Dual-Sided Photo Eyes

- Flexible housings maintain alignment in areas with a high propensity for sensor contact.
- NEMA 4X enclosure protects against direct water spray and corrosion.
- Dual-sided infrared sensors.
- For indoor/outdoor use.
- Maximum range of 45 feet (13.7 m).

### Optical Edge System (OES)

#### OES-SD16



#### Optical Edge System

16 feet (4.9 m) Sectional 2-Wire Door Edge Kit with infrared optical sensors, rubber door edge and all mounting hardware (channel sold separately).

#### OES-SD24



#### Optical Edge System

24 feet (7.3 m) Sectional 2-Wire Door Edge Kit with infrared optical sensors, rubber door edge and all mounting hardware (channel sold separately).

#### OES-RD16



#### Optical Edge System

16 feet (4.9 m) Rolling 2-Wire Door Edge Kit with infrared optical sensors, rubber door edge and all mounting hardware (door channel not required).

- Rubber door edge is durable, flexible and easy to install.
- Premium rubber can be cut to length for exact fit.
- NEMA 6 rating protects against moisture and standing water.
- Infrared optical sensors eliminate the need for electrical contacts.
- Maximum range of 33 feet (10 m).
- Sectional and rolling door edges are also available in 50 foot (15 m) bulk rolls, along with individual components for additional savings on large installation jobs.

### MONITORED

#### CPS3CARD



#### Safety Interface Card

Plug-in Interface card enables use of a second set of monitored photo eyes or edge with a commercial door operator.

#### CPS-MEI

#### Edge Interface 2-Wire Monitored

For use with approved 2-wire edges.

#### CPS-EI

#### Edge Interface 4-Wire Monitored

For use with approved 4-wire edges.

### NON-MONITORED

#### 65-8202



#### Vehicle Detection System:

Pneumatic Sensing Edge Kit with exterior air switch, 2-wire coil cord and 14 foot (4.3 m) air hose.

#### 65-5202



#### Vehicle Detection System:

Pneumatic Sensing Edge Kit with exterior air switch, 2-wire take-up reel (20 feet [6 m] extended) and 14 foot (4.3 m) air hose.

# ACCESSORIES

## myQ ACCESSORIES

828LM



### LiftMaster® Internet Gateway

Enables owners of Commercial Door Operators to open and close their doors and turn on/off lights in or around their facility using a smart phone or tablet computer from anywhere in the world.

829LM



### Garage and Gate Monitor

Monitor open/closed status for up to 4 myQ compatible commercial door openers or gate operators and close them from anywhere in the home.

825LM



### Remote Light Control

Automatically control your lights using your commercial door opener, a Security+ 2.0® remote control or a LiftMaster® Internet Gateway. Plugs into any interior outlet.

## REMOTE CONTROLS WITH SECURITY+ 2.0® & CONNECTIVITY

811LM



### Encrypted DIP Switch Single-Button Remote Control:

Ideal for commercial door applications requiring a large number of remotes for a common space.

813LM



### Encrypted DIP Switch Three-Button Remote Control:

Includes Red, Yellow and Green markings which Indicates Open, Close, Stop.

877LM



### Wireless Keypad:

Able to be programmed with temporary access codes for visitors or delivery personnel.

## RADIO

STAR1000



### Commercial Access Control Receiver:

Connects up to 1000 LiftMaster® remote controls. Supports suspending and unsuspending remote controls to withhold and reinstate access.

850LM



### Universal Receiver:

Featuring Security+ 2.0® technology. Designed for both gated communities and commercial buildings to support and manage multiple access points multiple remote controls.

## CONTROL STATIONS

02-101



### 1-Button Control Station:

Steel enclosure.

02-102



### 2-Button Control Station:

Steel enclosure.

02-103L



### 3-Button Control Station:

Steel enclosure with Maintenance Alert System.

02-110



### Key Control Station:

Indoor flush mount, NEMA 1 with Stop button.

02-401



### 1-Button Indoor Surface Mount Station (NEMA 1)

Provides single button to activate opening one or more commercial doors.



# ACCESSORIES

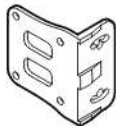
## MOUNTING BRACKETS

10-12360



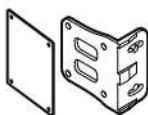
Heavy gauge steel bracket for vertical or horizontal mount on either front or top of coil on a rolling door. Has a variety of mounting hole patterns compatible with many OEM manufacturers. For use with J, H, DJ, and DH operators. May be welded.

08-9098



Cast iron bracket to mount J, H, DH, DJ, and GH side mount operators on end bracket of a rolling door or grill. For vertical or horizontal mount on either front or top of coil. Cannot be welded.

08-9098EZ



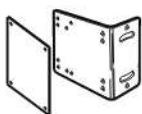
Same as 08-9098, but with adapter plate to hold mounting bolts in place for easy mounting.

1A4324



Heavy gauge steel bracket for vertical or horizontal mount on either front or top of coil on a rolling door. May be welded. For use with J, H, DJ, and DH operators.

1A4324EZ



Same as 1A4324, but with adapter plate to hold mounting bolts in place for easy mounting.

## CHAIN TENSIONERS ————— For Jackshaft Type Operators

71-6023

For 1" (2.5 cm) shafts. Recommended to properly tension drive chain between operator shaft and door shaft.

71-6125

Same as 71-6023, but for 1-1/4" (3.2 cm) shafts.



## OPTION CARDS

TLS1CARD

### Timer Light Status Card:

The TLS option card provides special functionality to activate and flash auxiliary devices such as lights, bells, and horns/strobes at various door positions, and to provide special timer functions.

AUXCARD

### Auxiliary Contact Card:

The Auxiliary Contact option card has both Normally-Open and Normally-Closed contacts that actuate when the door is idle, opening, or closing.

## ADDITIONAL CONTROL ACCESSORIES

86LM (15' [4.6 m])  
86LMT (25' [7.6 m])



### Antenna Extension Kit:

The antenna extension kit can be used with EXT-ANT for maximum radio receiver range.

RGL24LY



### Red/Green Traffic Light:

Indicates when a commercial door reaches the open position. Provides assurance of safe entering and exiting of the facility, reducing the potential for costly accidents. (TLS1CARD is recommended)

50-HERK2



### Motion Detector 24V

Microwave motion detector with two independently programmable channels.

50450



### Switch Sectional Door Interlock

NEMA 4 switch disables operator control circuit when door is locked preventing electrical operation of the door.

# CONTROL CONNECTION DIAGRAM

## IMPORTANT NOTES:

1. The 3-Button Control Station provided must be connected for operation.
2. If a STOP button is not used, a jumper must be placed between terminals 4 and 5.
3. When adding accessories, install them one at a time and test each one after it is added to ensure proper installation and operation with the Commercial Door Operator.

