

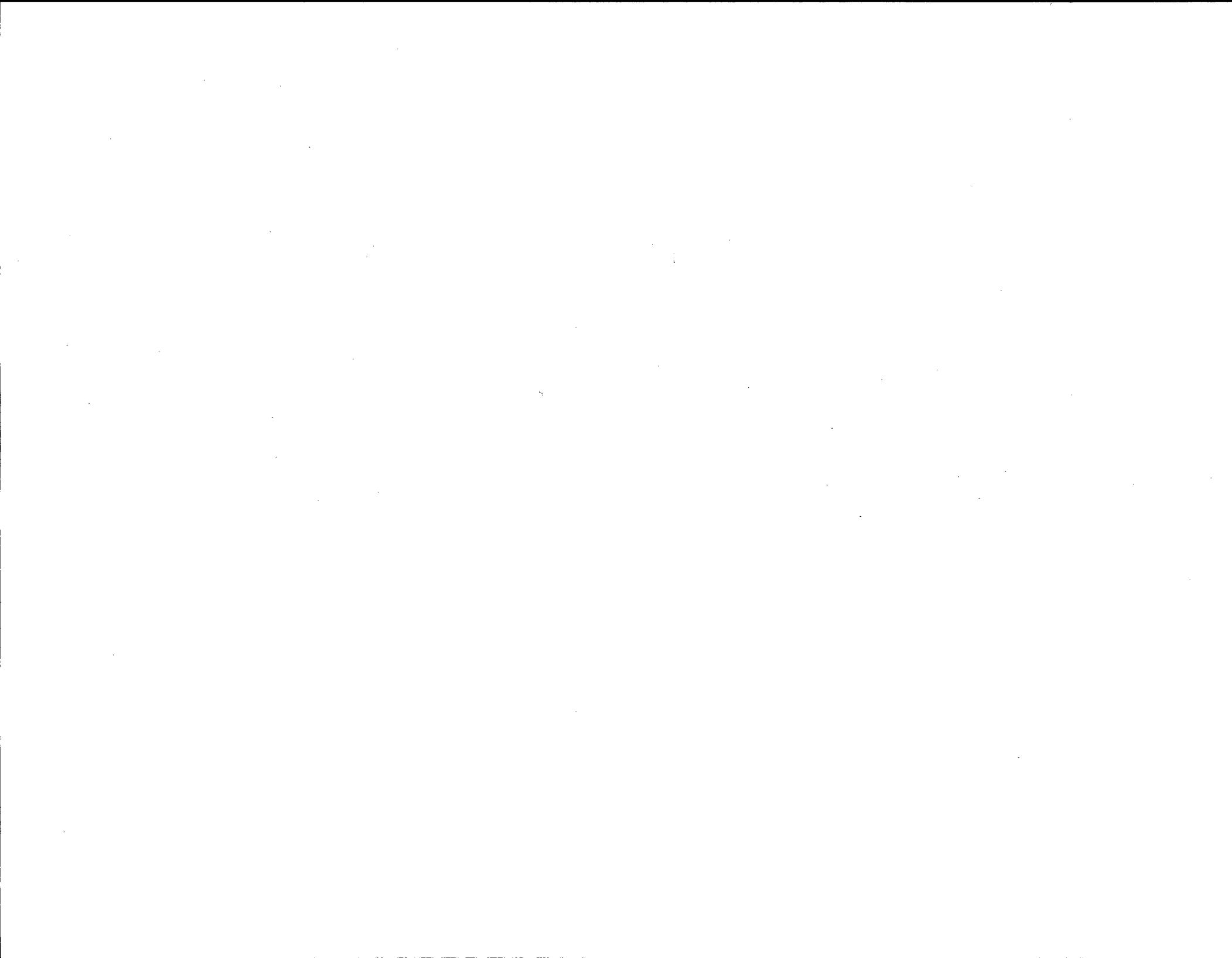
**UAF CTC Parking Garage Door Replacement
Project No.: 2014087 CTCPGD**

**Building: Barnette Street Parking Garage
Building No.: TV654**

**Contractor: Michael Perry Travers
dba Klondike Door Service
2626 Phillips Field Rd
Fairbanks, AK 99709-3941
Telephone: (907) 457-7221**

**Operational and Maintenance Manual, Volume 1 of 1
Discipline: Electrical**

May 2014





Division of Design and Construction
590 University Avenue
P.O. Box 758160
Fairbanks, Alaska 99775-8160
Ph: (907) 474-5299 Fx: (907) 474-7554

LETTER OF TRANSMITTAL

To: Karl Bergman

Date: May 19, 2014
Attn: _____
Subject: 201487 CTCPGD

Subject: UAF CTC Parking Garage Door Replacement

We are transmitting the following: Attached Under Separate Cover

COPIES	DESCRIPTION
2	O&M Manual

These are transmitted:

For your approval As requested For your review and comments
For your information For your records

NOTE:

cc: CTCPGD

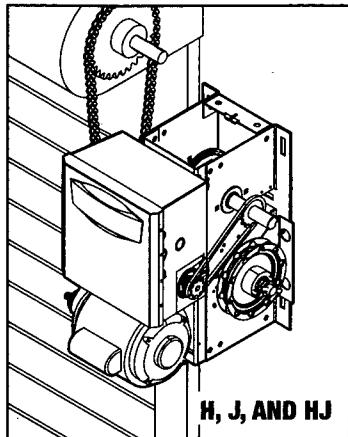
University of Alaska Fairbanks
Division of Design and Construction

Signed: Diane Pederson

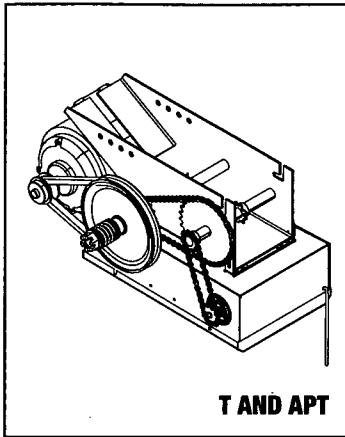
MS



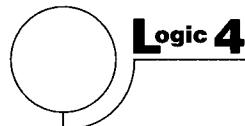
INSTALLATION MANUAL



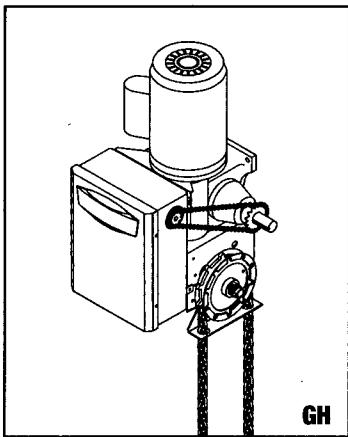
H, J, AND HJ



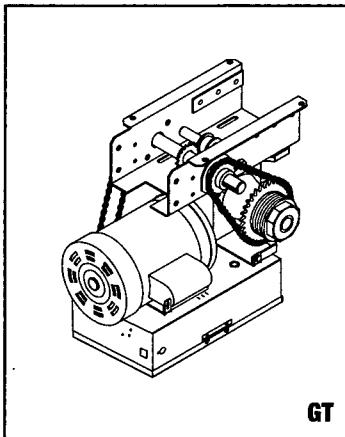
T AND APT



Logic 4



GH



GT

**THIS PRODUCT IS TO BE
INSTALLED AND SERVICED
BY A TRAINED DOOR
SYSTEMS TECHNICIAN
ONLY.**

Operators are shipped in C2
operating mode.

Visit www.liftmaster.com to locate
a professional installing dealer in
your area.

CONTACT INFORMATION

2 YEAR WARRANTY

Serial # Box

Installation Date 5/13/2014

THIS OPERATOR FEATURES THE ENHANCED



The Maintenance Alert System™ allows the installer to set an internal Maintenance Cycle Counter. The Logic 4 operator incorporates a self-diagnostic feature built into the (MAS) Maintenance Alert System LED. An LED on the 3-button station will signal when the set number of cycles/months is reached or when the operator requires immediate service.

NOT FOR RESIDENTIAL USE



315MHz
Radio Receiver
Built on Board

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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 operator, you must read and fully understand this manual and follow all safety instructions.*
- *DO NOT attempt repair or service of your commercial door and gate operator unless you are an Authorized Service Technician.*
- *Operator intended to be installed on a properly balanced door only. Make sure door is properly balanced before installing.*

SAFETY INFORMATION

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 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 operator.
4. Disable ALL locks and remove ALL ropes connected to door BEFORE installing operator to avoid entanglement.
5. Install door operator 8 feet (2.44 m) or more above floor.
6. NEVER connect door operator to power source until instructed to do so.
7. NEVER wear watches, rings or loose clothing while installing or servicing operator. They could be caught in door or operator mechanisms.
8. Install control station:
 - within sight of the door.
 - out of reach of children at minimum height of 5 feet (1.5 m).
 - 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 wall next to the control station in a prominent location that is visible from the door.
11. Place manual release/safety reverse test label in plain view on inside of door.
12. Upon completion of installation, test entrapment protection device.
13. **SAVE THESE INSTRUCTIONS.**

TROLLEY OPERATORS

CARTON INVENTORY

Before beginning your installation check that all components were provided.

DESCRIPTION

Powerhead assembly
Owner's 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 LED
Trolley drive chain: #48 for 1/3 and 1/2 HP,
#41 for 3/4 HP and higher (all GT models)
Entrapment Protection Device: Model CPS-U photoelectric sensors (standard)

NOTE: The tracks are shipped separately.

OPERATOR SPECIFICATIONS

MOTOR

TYPE: Continuous duty

HORSEPOWER:

Model APT 1/2 HP

Model GT 1/2, 3/4, 1 and 1-1/2 HP

Model T 1/3, 1/2, 3/4 and 1 HP

SPEED (At rated load): 1725 RPM

VOLTAGE:

Model APT 115V 1 Phase

Model GT and T 115/230V 1 Phase,
208/230/460/575V 3 Phase

CURRENT (Amperage):

Model T and GT

Voltage-Phase	1/3 HP	1/2 HP	3/4 HP	1 HP	1-1/2 HP
115-1Ø, 60Hz	8.5	11.2	13.6	16	20
230-1Ø, 60Hz	4.2	5.6	6.8	8	10
208/230-3Ø, 60Hz	3	3.1	4	6	7
460-3Ø, 60Hz	1.5	1.75	2	3	3.5
575-3Ø, 60Hz	1.3	1.4	1.6	1.8	2.75

Model APT

Voltage-Phase	1/2 HP
115-1Ø, 60Hz	11.2

ELECTRICAL

TRANSFORMER: 24Vac Secondary

CONTROL STATION: NEMA 3-Button Station
Open/Close/Stop w/LED

WIRING TYPE: C2 (Standard)

Momentary contact to OPEN & STOP, constant pressure to CLOSE, plus wiring for sensing device to reverse and auxiliary devices to open and close with open override. See page 29 for optional wiring types and operating modes.

LIMIT ADJUST: Linear driven, fully adjustable screw type cams. Adjustable to 24 feet.

SAFETY

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

ENTRAPMENT PROTECTION:

LiftMaster Monitored Entrapment Protection (LMEP)

Photoelectric Sensors (CPS-U): Through beam used to provide non-contact safety protection.

Safety Edge (Optional): Electric or pneumatic sensing device attached to the bottom edge of door.

OPERATOR SPECIFICATIONS

TROLLEY

MECHANICAL

DRIVE REDUCTION:

Model APT and T..... Primary: Heavy duty (5L) V-Belt
 Secondary: #41 chain/sprocket;
 Output: #48 chain (1/3 and 1/2 HP Model T and APT)
 or #41 chain (3/4 and 1 HP Model T ONLY)
 Model GT..... Primary: 20:1 Heavy duty
 worm gear-in-oil-bath speed reducer
 Output: #41 chain

OUTPUT SHAFT SPEED:

Model APT..... 96 RPM
 Model GT..... 113.5 RPM
 Model T..... 140 RPM

DOOR SPEED (not adjustable):

Model APT..... 6-7" per second

Model GT..... 11-12" per second

Model T..... 11-12" per second

BRAKE: Solenoid actuated disc brake on 3/4 and 1 HP, standard
 on Model GT (Available as an option for 1/3 and 1/2 HP)

BEARINGS:..... Output Shaft: Shielded ball bearing

Model APT and T..... Clutch Shaft: IronCopper sintered and oil
 impregnated

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 Insul.	20 ga. Steel Insul.	16 ga. Steel Insul.
1/3 HP	310	285	260	175	125
1/2 HP	400	350	320	250	200
3/4 HP	560	500	450	325	275
1 HP	640	625	560	400	310

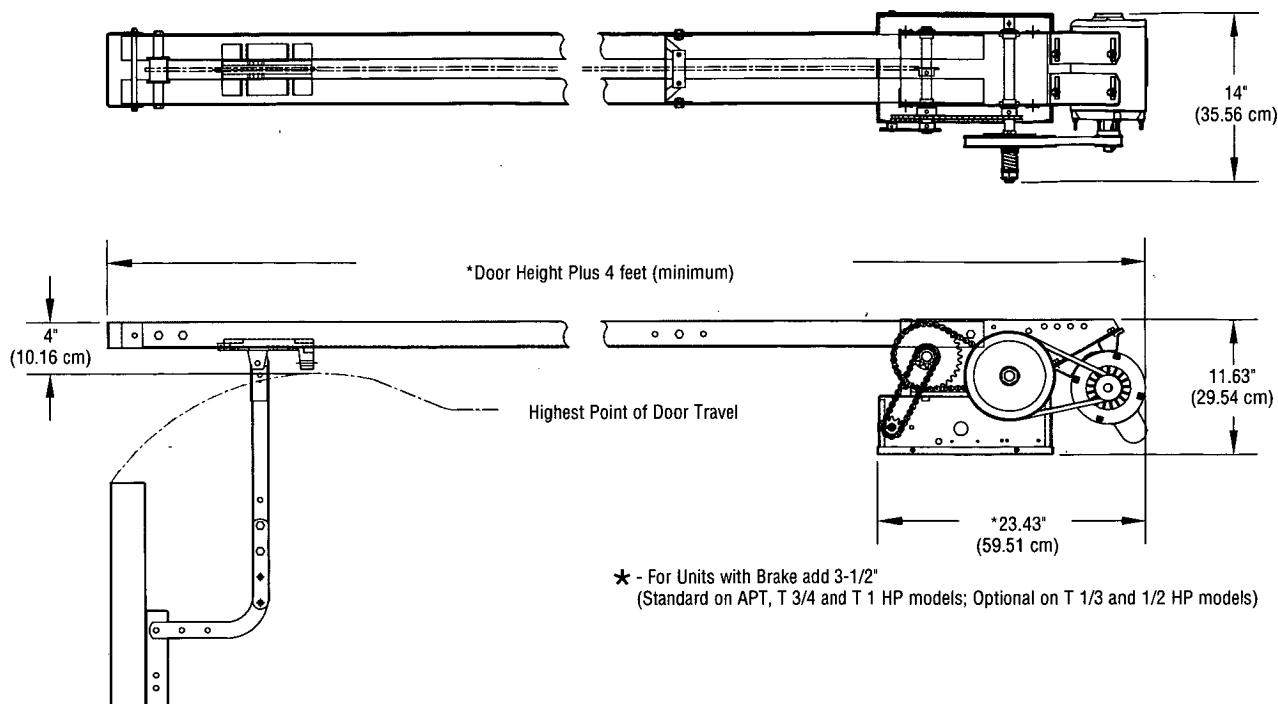
MODEL APT					
STANDARD SECTIONAL	---	24 ga. 22 ga. Steel	20 ga. Steel	16 ga. Steel	---
	Alum. Doors	Wood Doors	---	---	---
	Fiberglass Doors	24 ga. Steel Insul.	20 ga. Steel Insul.	16 ga. Steel Insul.	---
1/2 HP	250	225	150	100	---

MODEL GT					
STANDARD 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.
1/2 HP	400	350	320	250	200
3/4 HP	560	500	450	325	250
1 HP	625	575	500	400	300
1-1/2 HP	---	625	550	475	380

WEIGHTS AND DIMENSIONS

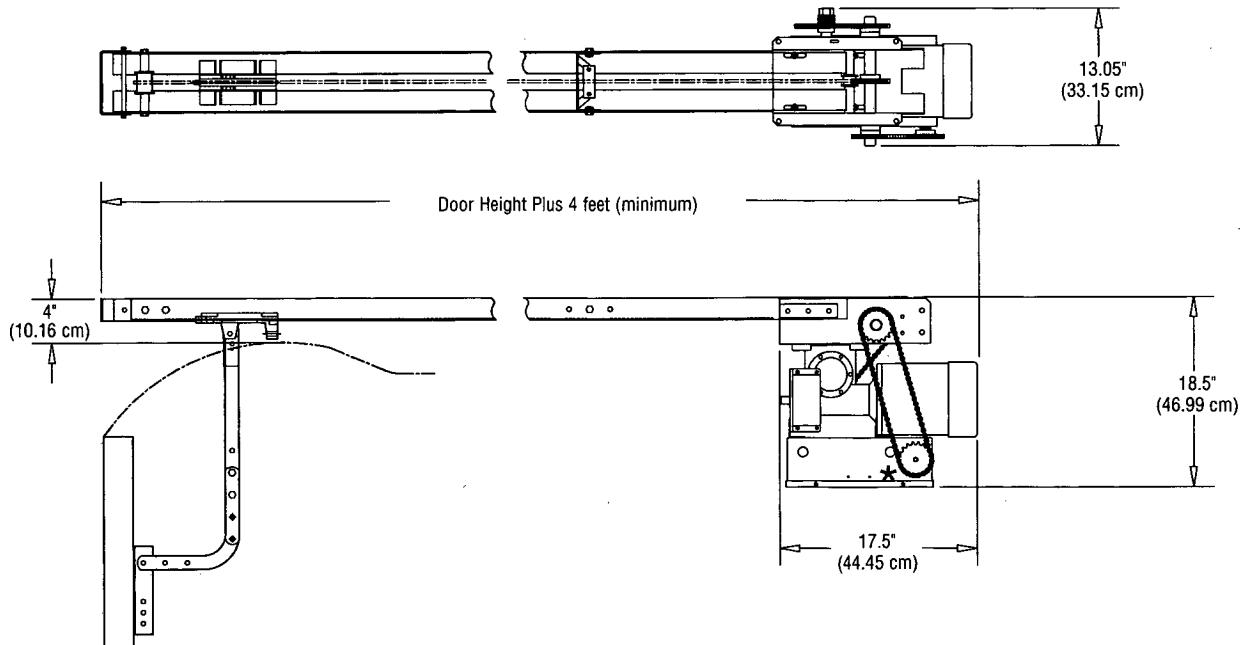
MODELS T AND APT

Hanging Weight: 80-110 lbs.



MODEL GT

Hanging Weight: 140 lbs.

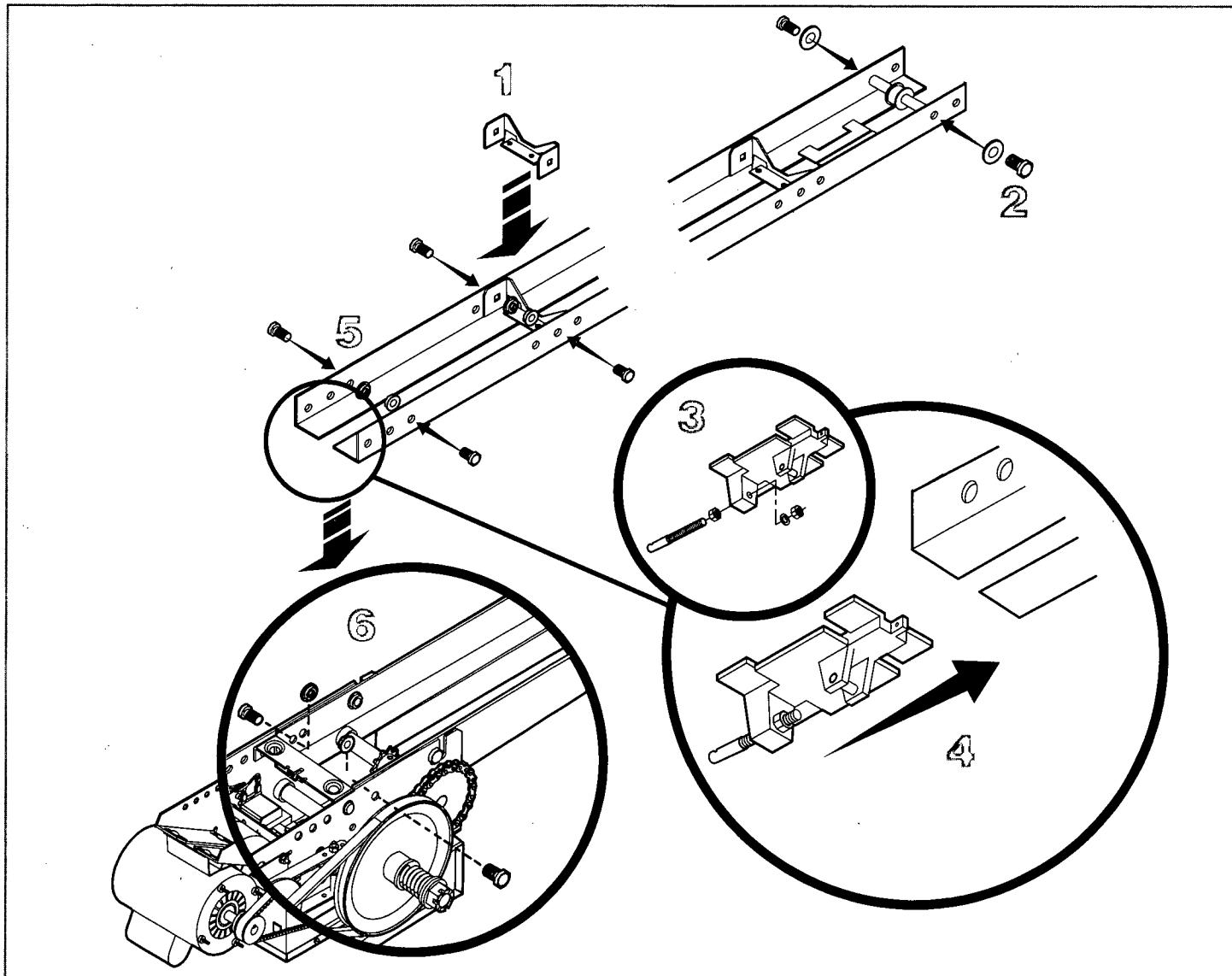
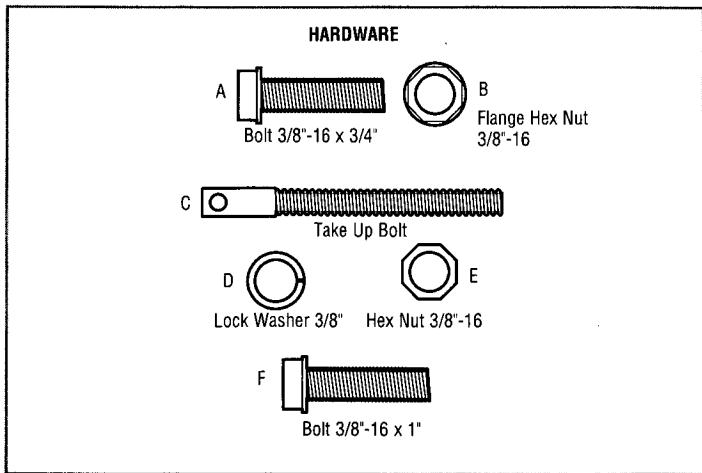


ASSEMBLY

ASSEMBLE THE OPERATOR (MODELS T AND GT)

NOTE: For Model APT assembly refer to page 9.

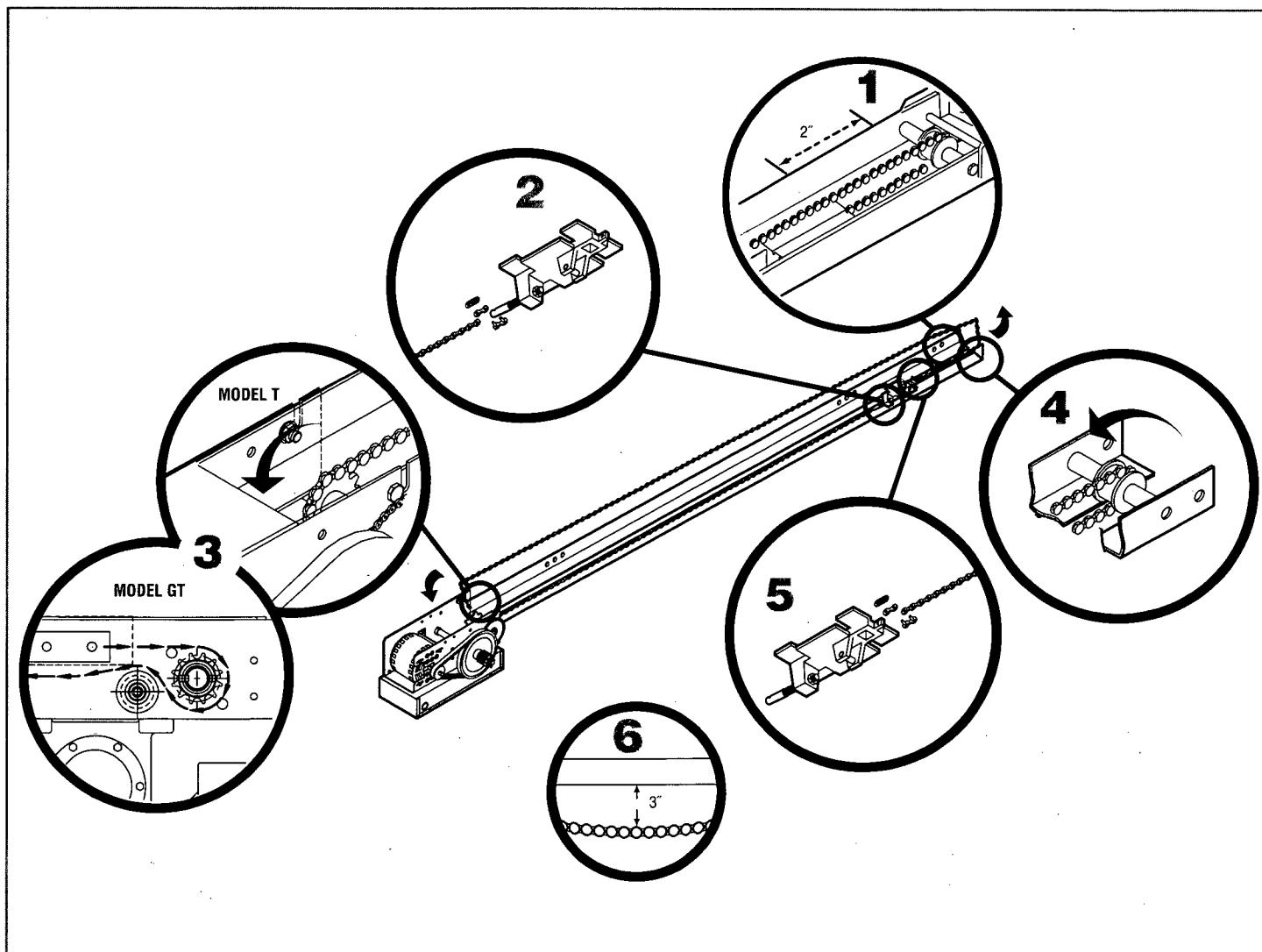
- 1 Install the track spacers evenly over the length of the track. Fasten the spacers to the track with bolt (A) and flange hex nuts (B).
- 2 Install the front idler to the track with bolts (F) and washers (D).
- 3 Assemble the trolley with the take up bolt (C), hex nuts (E), and lock washer (D).
- 4 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)

NOTE: For Model APT assembly refer to page 9.

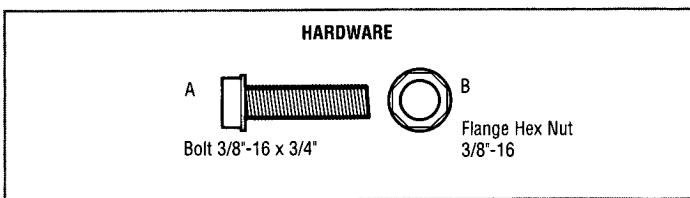
- 1** Position the trolley 2 inches away from the front idler.
- 2** Attach the chain to the trolley threaded shaft using the master link.
- 3** Run the chain along the track to the operator. Wrap the chain around the operator drive sprocket.
- 4** Run the chain along the track to the front idler. Wrap 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 at the mid point of the track.



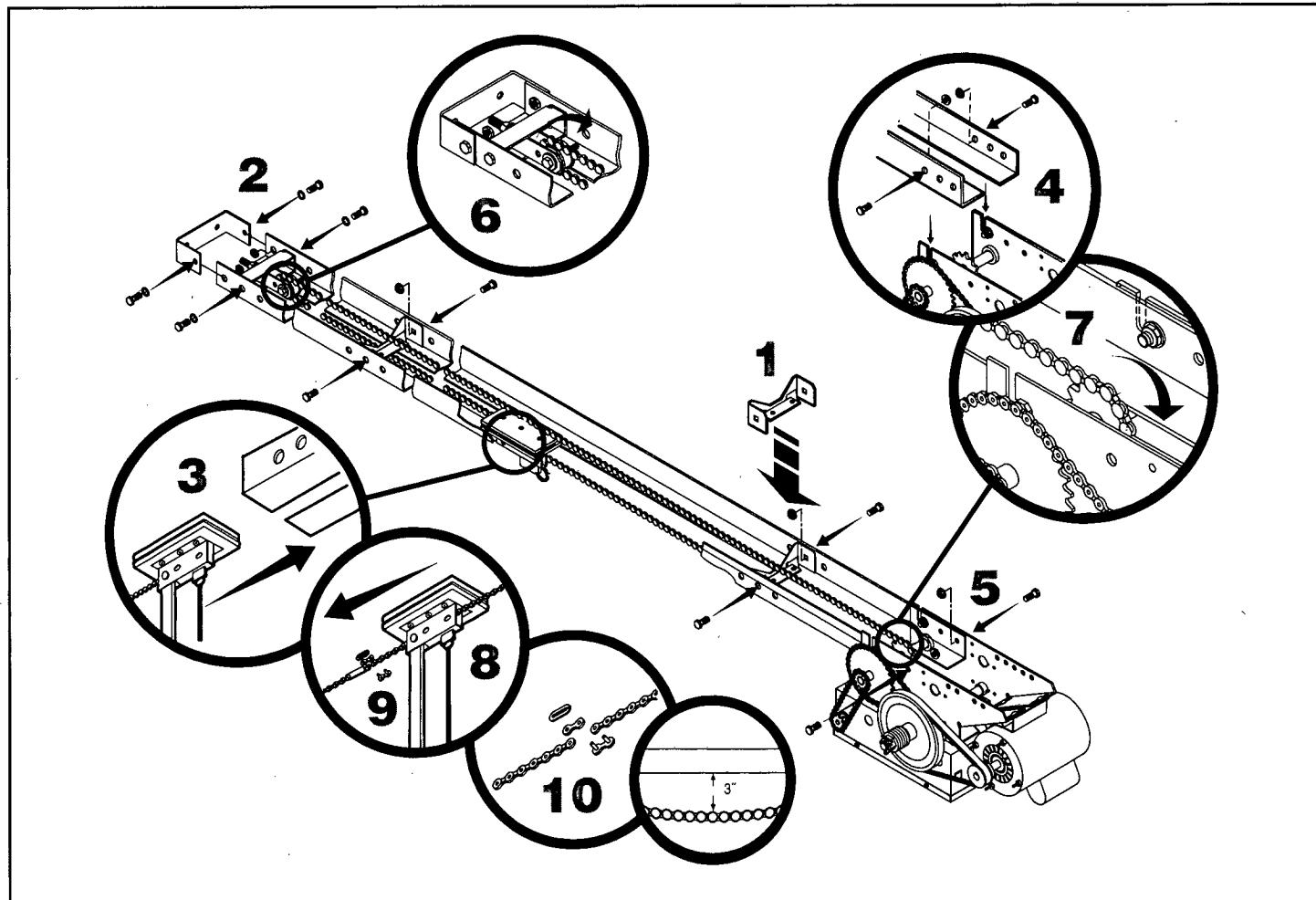
ASSEMBLE THE OPERATOR (MODEL APT)

NOTE: If your model is not an APT, proceed to the next page.

- 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.



- 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 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

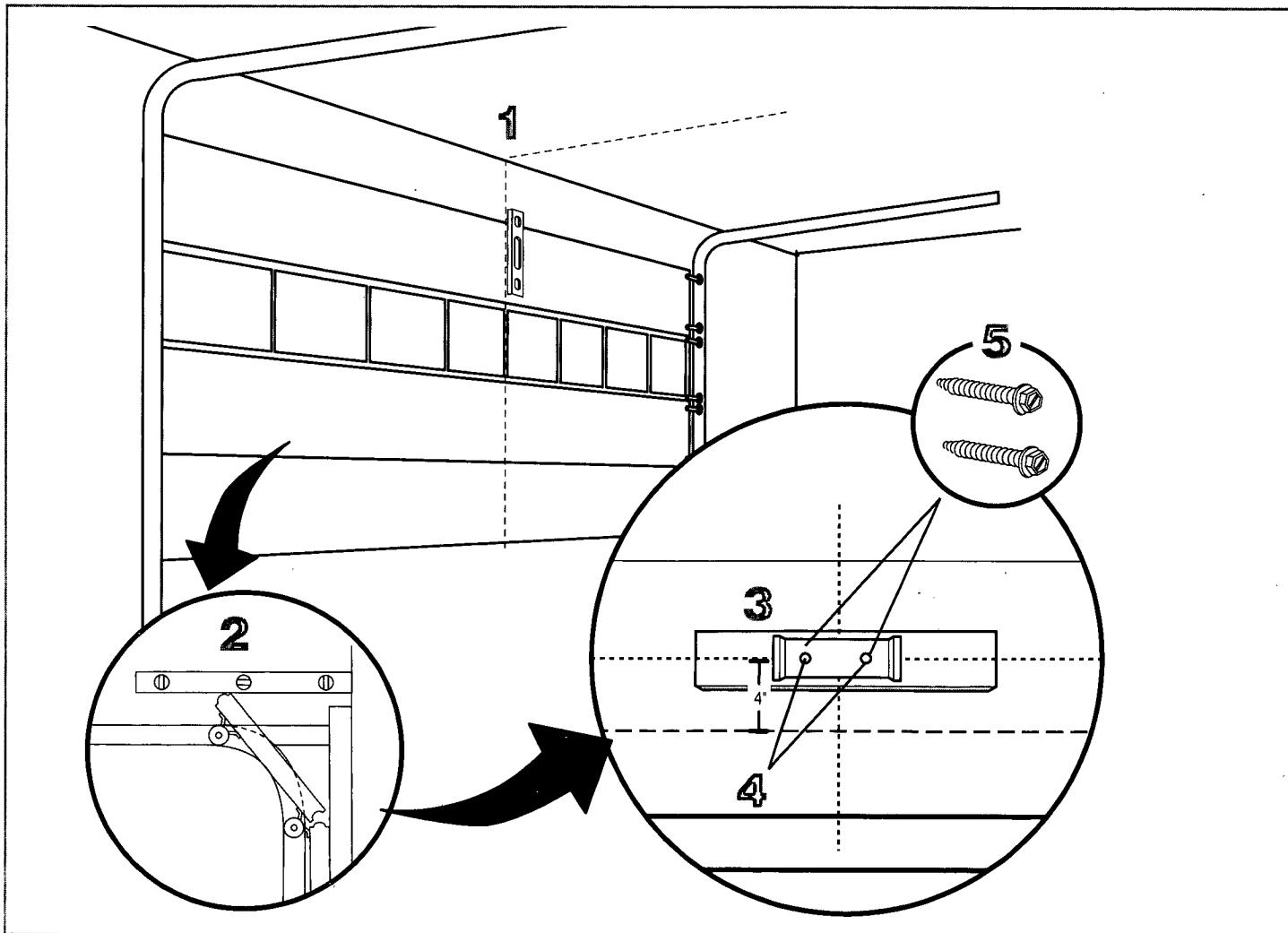
The trolley operator is generally mounted over the center of the door. However, off center mounting may be required due to interfering structures or location of door stile / top section support. Typically, the operator may be mounted up to 24 inches off center on torsion spring doors. Extension springs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

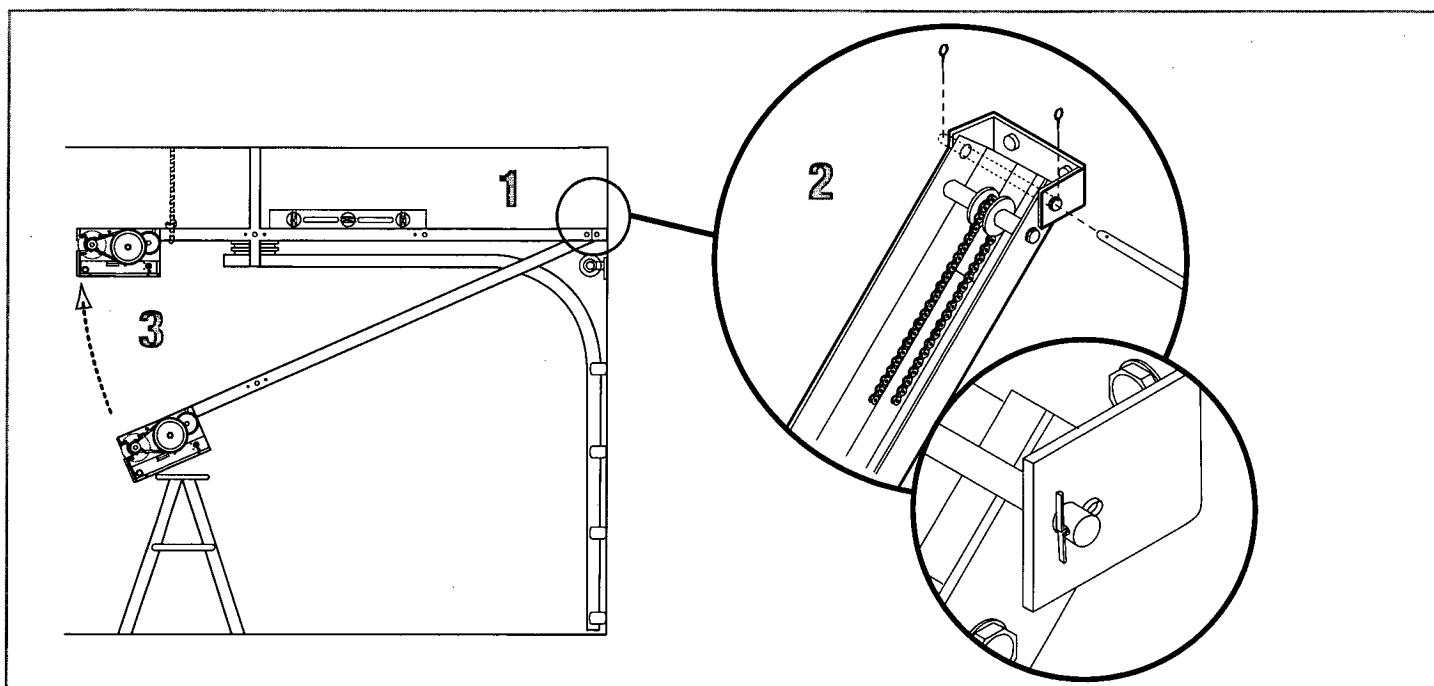
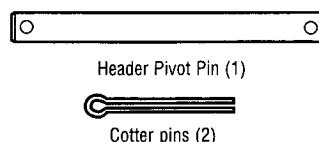
- Header bracket MUST be RIGIDLY fastened to structural support on header wall or ceiling, otherwise door might NOT reverse when required. DO NOT install header bracket over drywall.
- Concrete anchors MUST be used if mounting header bracket or 2x4 into masonry.
- NEVER try to loosen, move or adjust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



ATTACH THE TRACK TO THE HEADER BRACKET

- 1 Align the track with the header bracket.
- 2 Insert the pin through the track and header bracket holes.
Secure with the fasteners.
- 3 Swing the operator up and ensure the operator is level.

HARDWARE



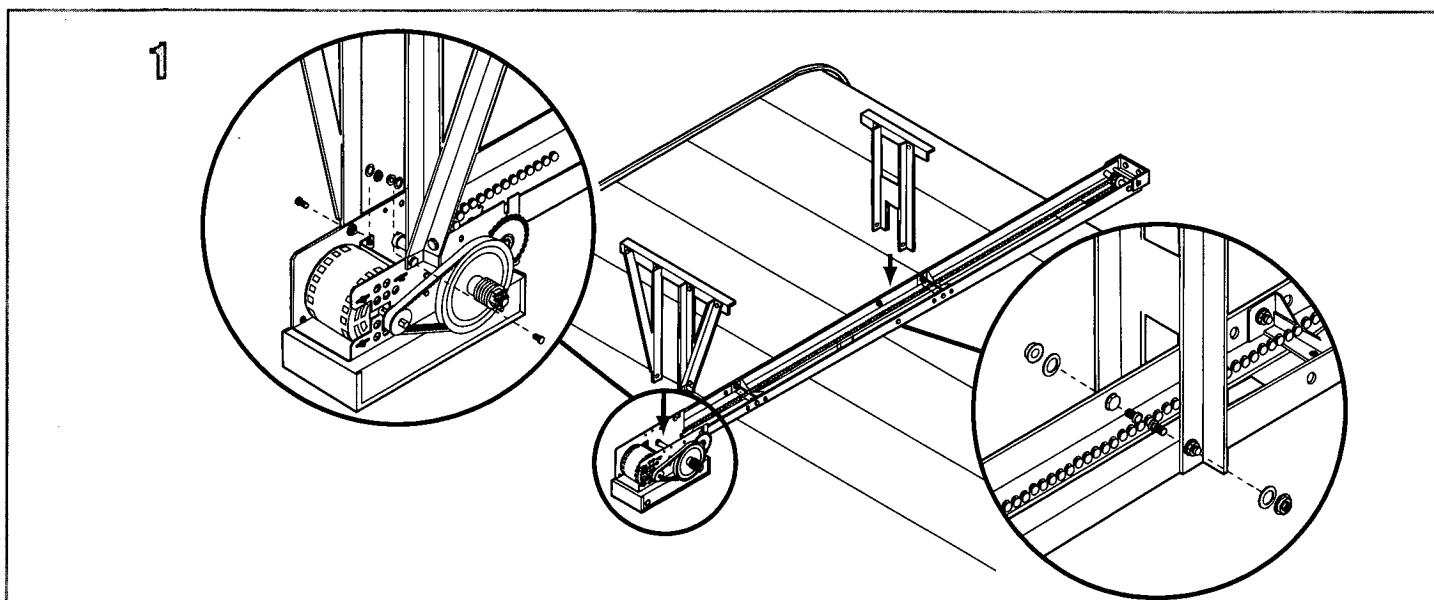
HANG THE OPERATOR

- 1 Secure the operator using the appropriate fasteners and locking hardware that will support the weight of the operator.

CAUTION

To avoid possible SERIOUS INJURY from a falling operator:

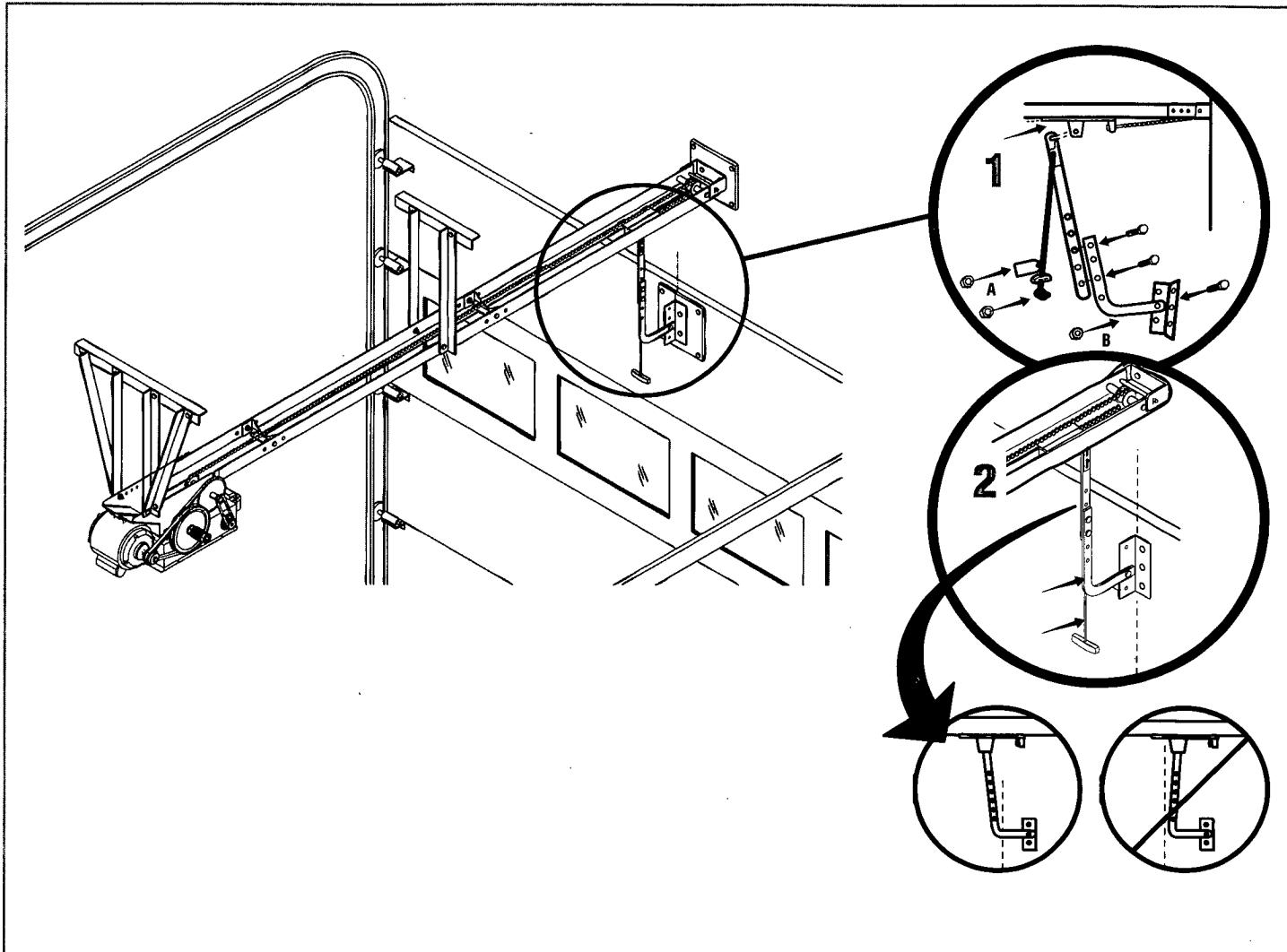
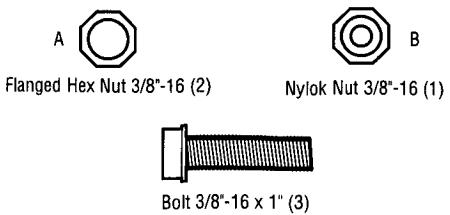
- Fasten the operator SECURELY to structural supports of the building.
- Concrete anchors MUST be used if installing ANY brackets into masonry.



ATTACH THE DOOR ARM

- 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.

HARDWARE



HOIST AND JACKSHAFT OPERATORS

CARTON INVENTORY

Before beginning your installation check that all components were provided.

DESCRIPTION

Powerhead assembly
Owner's 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 LED
Hoist hand chain (Models H, HJ and GH ONLY)
Door sprocket
Door/operator drive chain
Entrapment Protection Device: Model CPS-U photoelectric sensors (standard)

OPERATOR SPECIFICATIONS

MOTOR

TYPE: Continuous duty

HORSEPOWER:

Model J, H and HJ 1/3, 1/2, 3/4 and 1 HP

Model GH 1/2, 3/4, 1, 1-1/2, 2 and 3 HP

SPEED: 1725 RPM

VOLTAGE:

Model J, H and HJ 115/230V 1 Phase
208/230/460/575V 3 Phase

Model GH 115/230V 1 Phase
208/230/460/575V 3 Phase

CURRENT (Amperage):

Models H, HJ, and J

Voltage-Phase	1/3 HP	1/2 HP	3/4 HP	1 HP
115-1Ø, 60Hz	8.5	11.2	13.6	16
230-1Ø, 60Hz	4.2	5.6	6.8	8
208/230-3Ø, 60Hz	3	3.1	4	6
460-3Ø, 60Hz	1.5	1.75	2	3
575-3Ø, 60Hz	1.3	1.4	1.6	1.8

Model GH

Voltage-Phase	1/2 HP	3/4 HP	1 HP	1-1/2 HP	2 HP	3 HP
115-1Ø, 60Hz	11.2	13.6	16	20	-	-
230-1Ø, 60Hz	5.6	6.8	8	10	-	-
208/230-3Ø, 60Hz	3.1	4	6	7	8	10.6
460-3Ø, 60Hz	1.75	2	3	3.5	4	4.8
575-3Ø, 60Hz	1.4	1.6	1.8	2.75	3	-

ELECTRICAL

TRANSFORMER: 24Vac Secondary

CONTROL STATION: NEMA 3-Button Station
Open/Close/Stop w/LED

WIRING TYPE: C2 (Standard)
Momentary contact to OPEN and STOP, constant pressure to CLOSE, plus wiring for sensing device to reverse and auxiliary devices to open and close with open override. See page 29 for optional wiring types and operating modes.

LIMIT ADJUST: Linear driven, fully adjustable screw type cams. Adjustable to 24 feet.

SAFETY

DISCONNECT:

Model J Floor level disconnect for manual door operation

Model H and GH Floor level chain hoist with electrical interlock for manual door operation

Model HJ Includes both floor level disconnect systems stated above

ENTRAPMENT PROTECTION:

LiftMaster Monitored Entrapment Protection (LMEP)

Photoelectric Sensors (CPS-U): Through beam
used to provide non-contact safety protection.

Safety Edge (Optional): Electric or pneumatic sensing device attached to the bottom edge of door.

OPERATOR SPECIFICATIONS

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

OUTPUT SHAFT SPEED:

Model J, H and HJ..... 36 RPM
 Model GH 38.3 for 1/2, 3/4 and 1 HP
 39.2 for 1-1/2 and 2 HP
 41.1 for 3 HP

DOOR SPEED:

Model J, H and HJ..... 8-9" per second depending on door
 Model GH 8-9" per second depending on door

BRAKE: Solenoid actuated disc brake

BEARINGS Output Shaft: Shielded Ball Bearing
 Clutch Shaft: IronCopper sintered and oil impregnated
 Models H and HJ ONLY

HAND CHAIN WHEEL: Left or right handing
 Models H and HJ ONLY

HOIST WHEEL: Standard mounting on left or right side

MAXIMUM DOOR AREA (SQ. FT.)

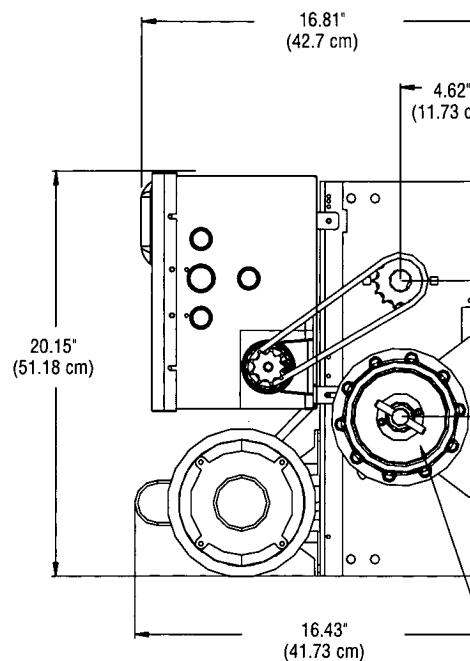
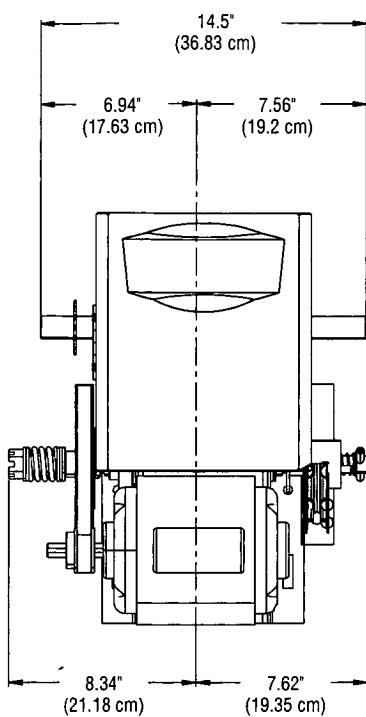
MODELS J, H, AND HJ						
ROLLING	24 ga. Steel	22 ga. Steel	---	20 ga. 18 ga. Steel	16 ga. Steel	---
	Alum. Grilles	Alum. Doors	---	Steel Grilles	---	---
	---	24 ga. 22 ga. Steel	20 ga. Steel	---	16 ga. Steel	---
SECTIONAL	Fiberglass Doors	Alum. Doors	Wood Doors	---	---	---
	---	---	24 ga. Steel Insul.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

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

WEIGHTS AND DIMENSIONS

MODELS J, H AND HJ

Hanging Weight: 80-110 lbs.

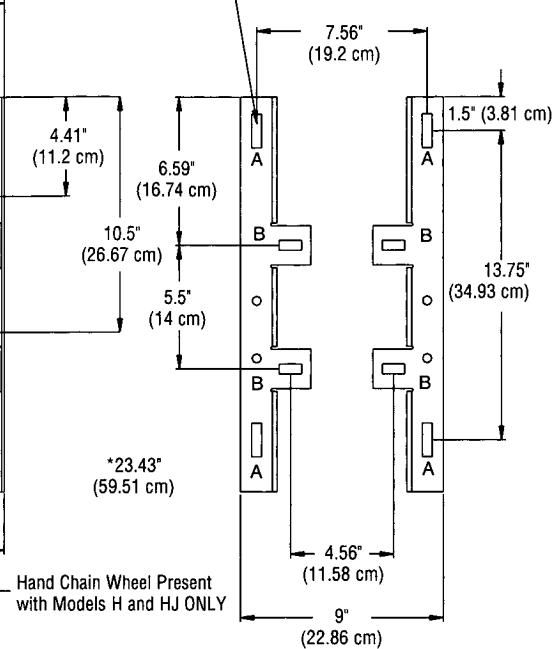


Door Height Plus 4 feet (minimum)

A - Wall Mounting

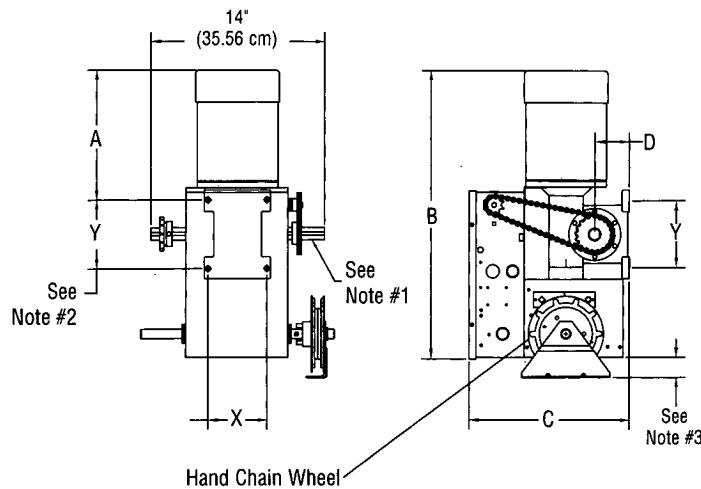
B - Bracket Mounting (rolling door)

3/8" Bolt



MODEL GH

Hanging Weight: 140 lbs.



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

NOTES:

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.

ASSEMBLY

ASSEMBLE THE OPERATOR

It is imperative that the wall or mounting surface provide adequate support for the operator.

This surface must:

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

1 Select handing. Right (R) or Left (L).

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

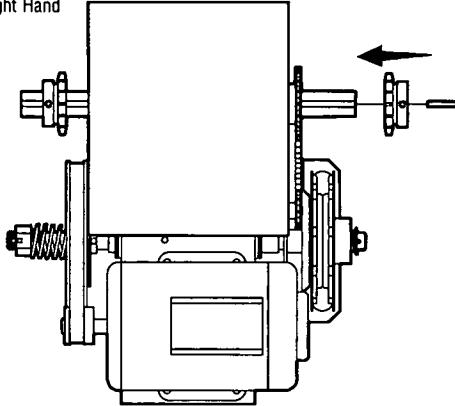
For models H and HJ with manual hand chain systems, the handing of the operator must be determined at the time of order. The handing is indicated by the last letter of the model number (R or L). The hand chain wheel cannot be switched. If your installation causes the hand chain to hang in the door opening, hook the chain to the side near the top of the door jamb.

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 a trained door systems 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.

EXAMPLE: Right Hand



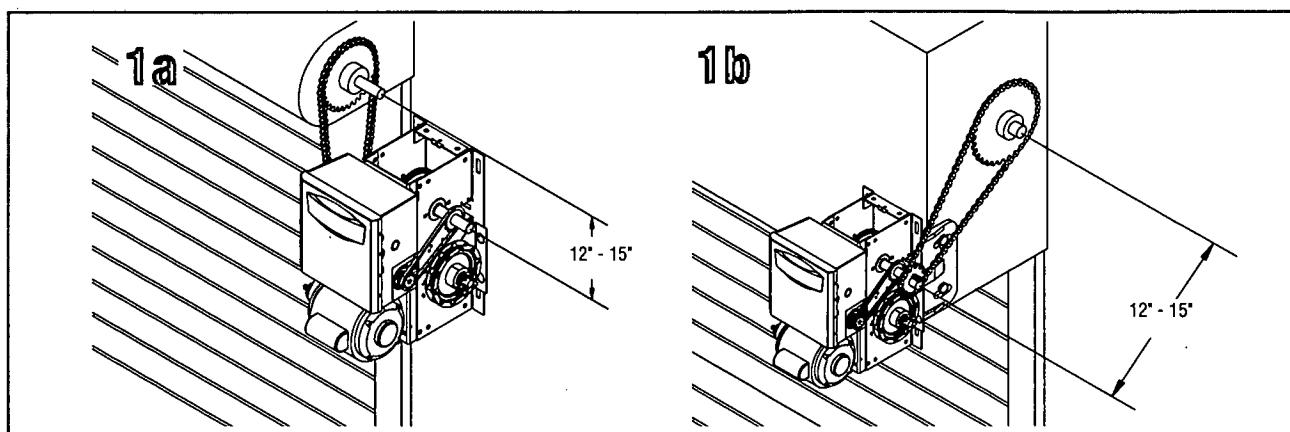
TYPICAL INSTALLATION

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.

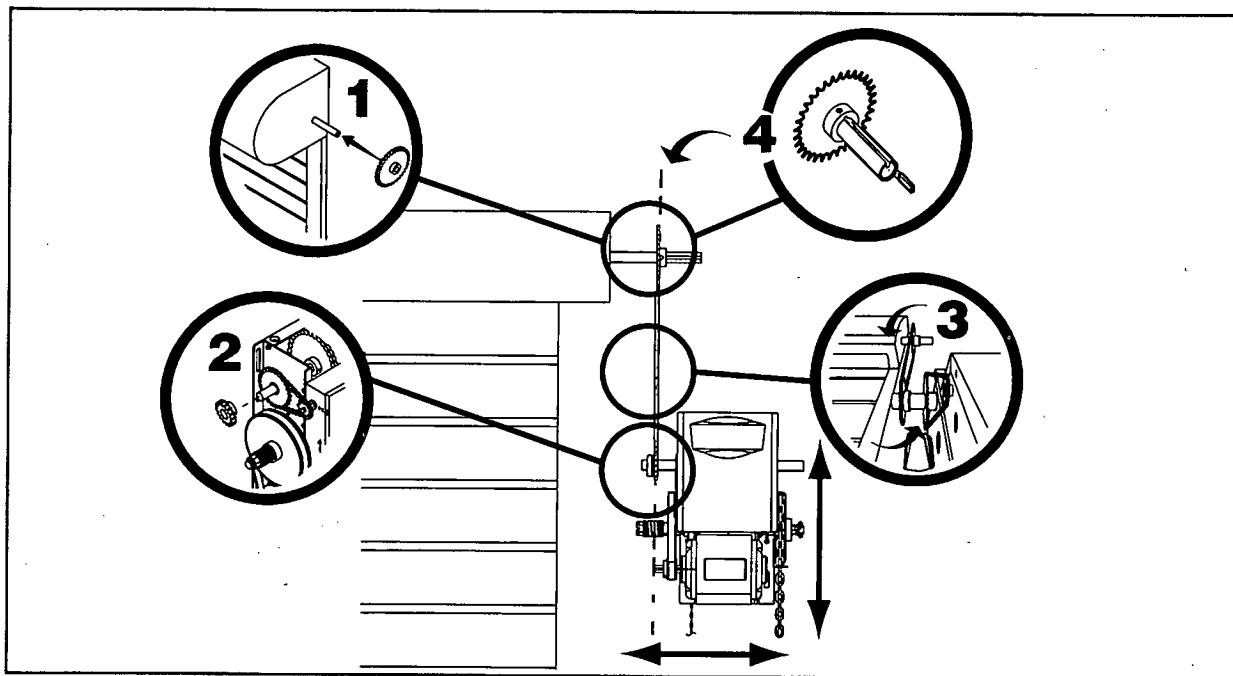
1a Wall mount

1b Shelf or bracket mount

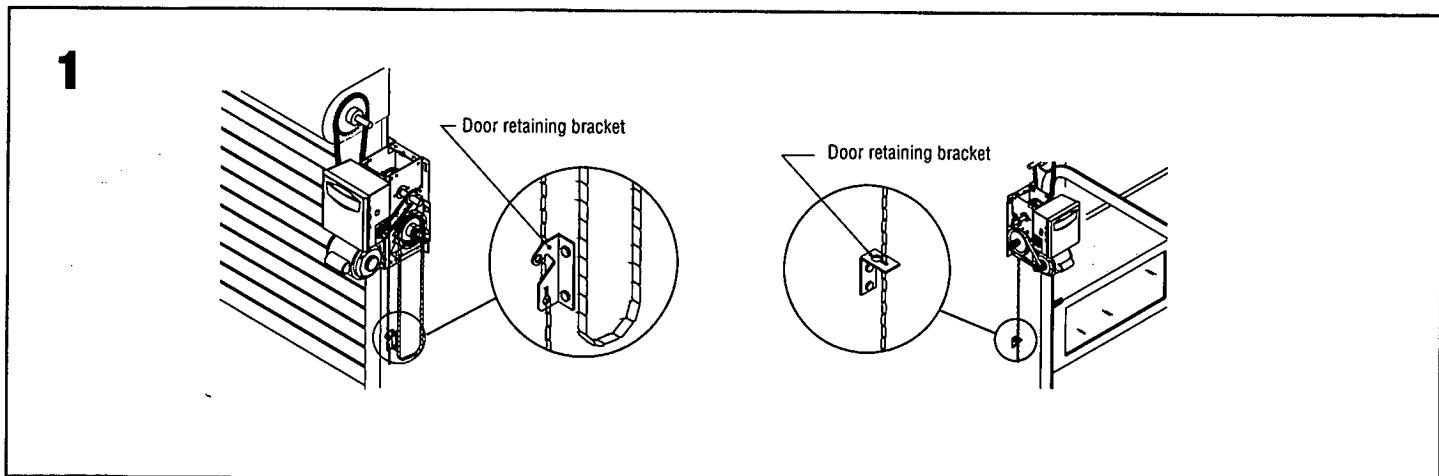


MOUNTING

- 1** Place the door sprocket on the door shaft.
- 2** Place the operator drive sprocket on the appropriate side of the operator for your installation type.
- 3** Wrap the drive chain around the door sprocket and the drive sprocket then secure with the master link.
- 4** Align the door and the drive sprockets. Insert keys and fasten the sprockets with the set screws. **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 above the floor.



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 29). The operator comes standard with the photoelectric sensors model CPS-U, additional entrapment devices are available for purchase (see accessories). If a LiftMaster Monitored Entrapment Protection device is not installed, constant pressure to close will be required from the control station.

When properly connected and aligned, the photoelectric sensors will detect an obstruction in the path of its invisible light beam. If an obstruction breaks the light beam while the door is closing, the door will stop and typically reverse to the full open position.

The photoelectric sensors must be installed facing each other across the door, no more than 6" (15 cm) above the floor.

Each photoelectric sensor has an LED that will glow steady when the sensor is properly connected and aligned. The LEDs on both photoelectric sensors will flicker rapidly when obstructed or misaligned.

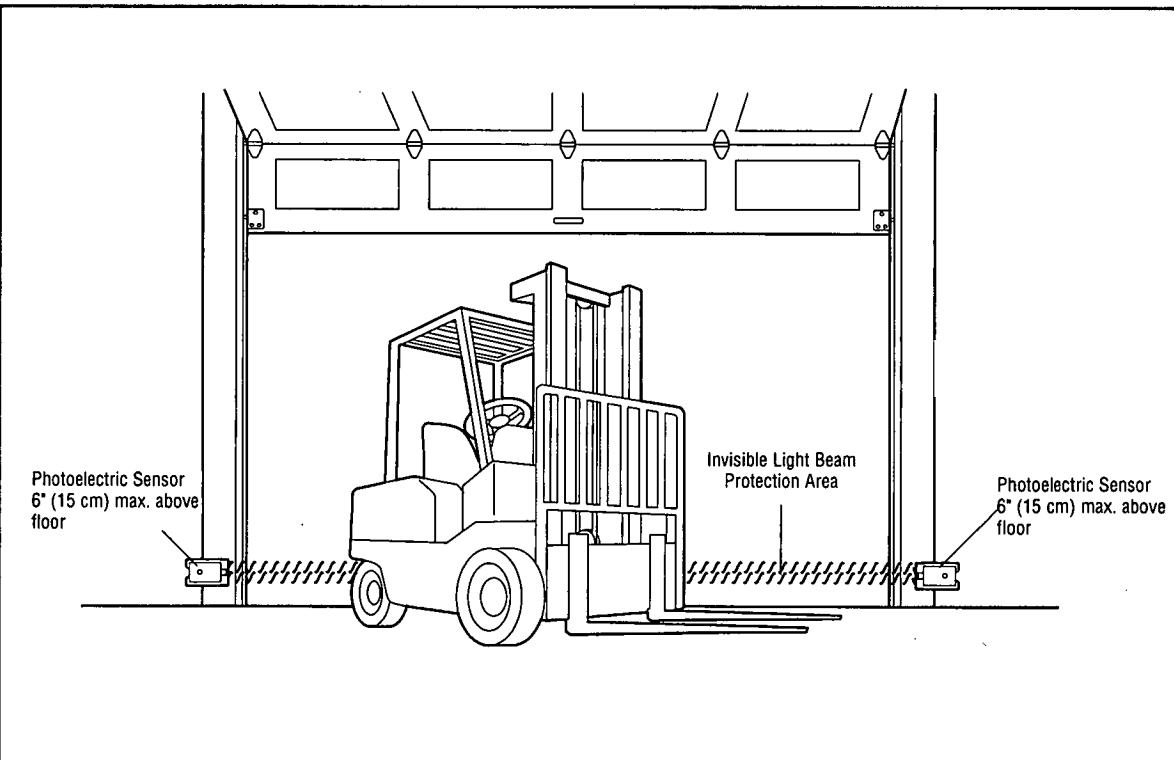
WARNING

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.
- The door MUST be in the fully opened or closed position BEFORE installing the LiftMaster Monitored Entrapment Protection device.

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

- Correctly connect and align the photoelectric sensor.
- Install the photoelectric sensor beam NO HIGHER than 6" (15 cm) above the floor.
- This is a required safety 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 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, then place one or more edge sensors on both the leading and trailing edge.
- If an edge sensor is being used on a vertically moving door, then place one or more edge sensors on the bottom edge of the door.

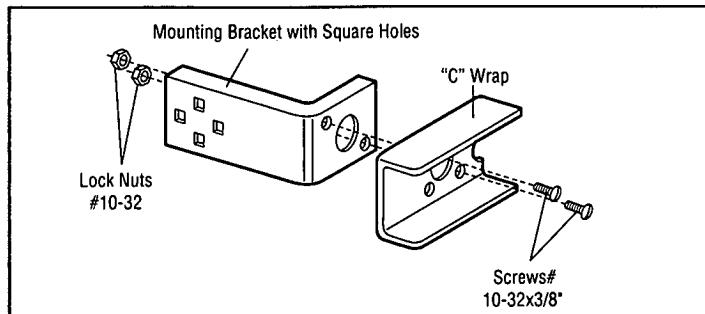


INSTALL THE PHOTOELECTRIC SENSORS (PROVIDED)

The following instructions show recommended assembly of the bracket(s) and "C" wrap based on the wall installation of the photoelectric sensors on each side of the door or on the door tracks themselves. There are also alternate mounting methods which may fit your installation requirements better.

Make sure the wraps and brackets are aligned so the photoelectric sensors will face each other across the door.

1 Fasten the "C" wraps to the mounting brackets having square holes, using hardware shown.



WALL INSTALLATION

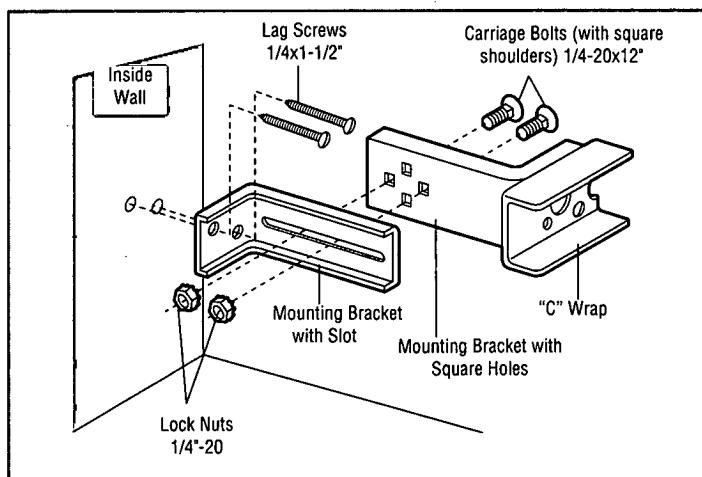
2 Connect each assembly to a slotted bracket, using the hardware shown. **Note alignment of brackets for left and right sides of the door.**

3 Finger tighten the lock nuts.

4 Use bracket mounting holes as a template to locate and drill (2) 3/16" diameter pilot holes on both sides of the garage door, 4-6 inches (10-15 cm) above the floor. Do not exceed 6 inches (15 cm).

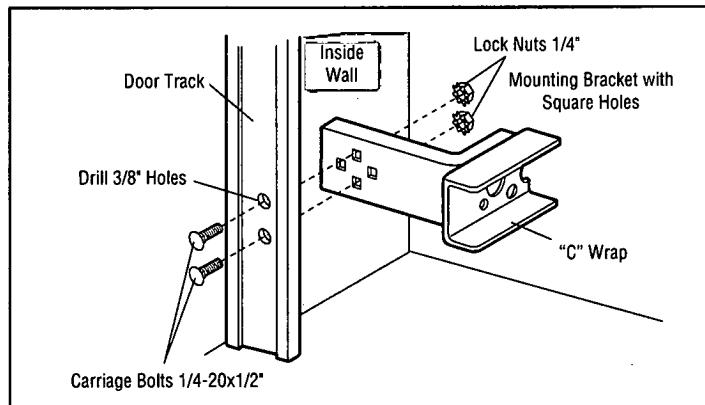
5 Attach bracket assemblies with 1/4"x1-1/2" lag screws.

6 Adjust right and left side bracket assemblies to the same distance out from mounting surface. Make sure all door hardware obstructions are cleared. Tighten the nuts securely.

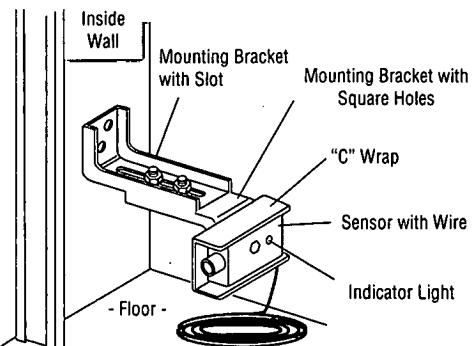


DOOR TRACK INSTALLATION

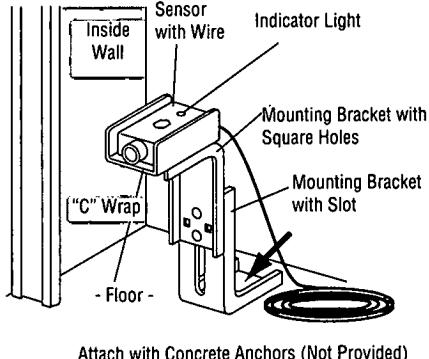
2 Discard slotted bracket. Drill 3/8" holes in each track and fasten securely with hardware.



ALTERNATE WALL INSTALLATION

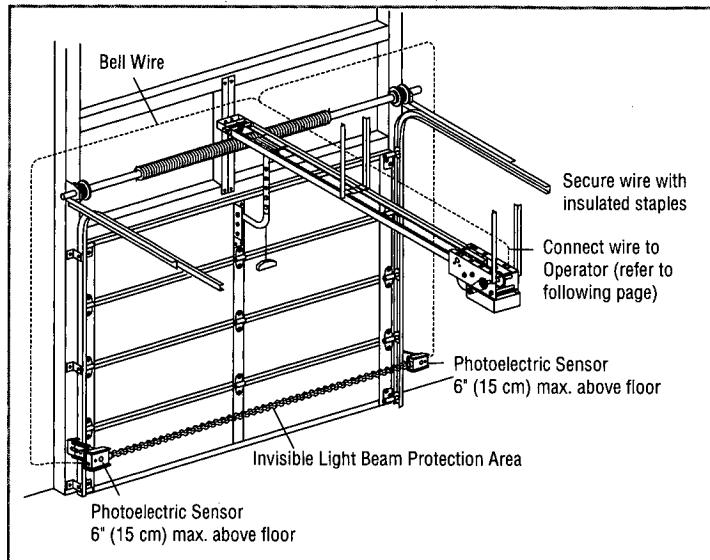
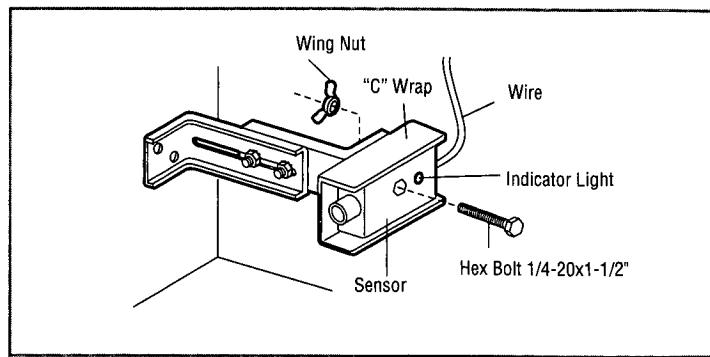


ALTERNATE FLOOR INSTALLATION



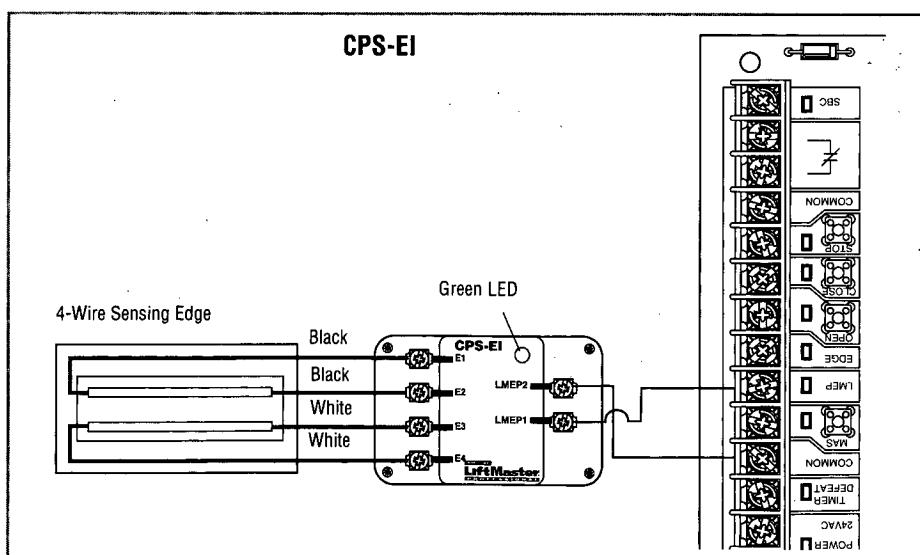
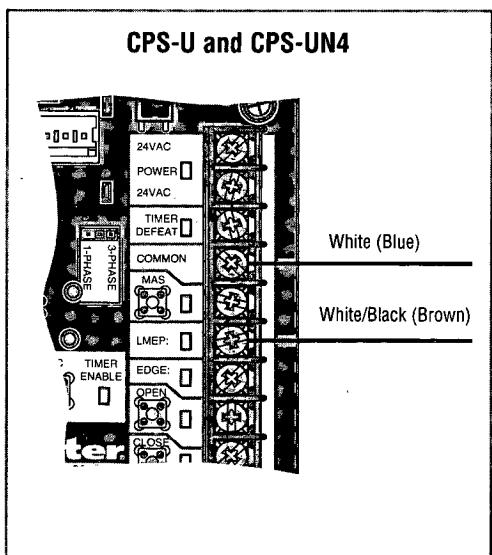
MOUNT THE PHOTOELECTRIC SENSORS (PROVIDED)

- 1 Center each sensor in the bracket with the lenses pointing toward each other across the door.
- 2 Attach the sensors to the brackets with the provided hardware. Finger tighten the *receiving sensor* wing nut. Securely tighten the *sending sensor* wing nut.
- 3 Run the wires from both sensors to the operator. Use insulated staples to secure wire to the wall and ceiling.
- 4 Connect the sensor wires to the operator (see below).



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 below:



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 door when it can be seen clearly, it is properly adjusted and there are no obstructions to door travel.
4. Personnel should keep away from a door in motion and ALWAYS keep door in sight until completely closed. NO ONE SHOULD CROSS THE PATH OF THE MOVING DOOR.
5. NO ONE SHOULD GO UNDER A STOPPED, PARTIALLY OPENED DOOR.
6. If possible, use manual release handle to disengage door ONLY when door is CLOSED. Weak or broken springs or 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 doorway is clear of persons and obstructions.
8. After ANY adjustments are made, the entrapment protection device MUST be tested. Failure to adjust the operator properly may cause SEVERE INJURY and DEATH.
9. Entrapment Protection device 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 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 a trained door systems technician.
12. ALWAYS disconnect electric power to 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 Safety 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 that 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).

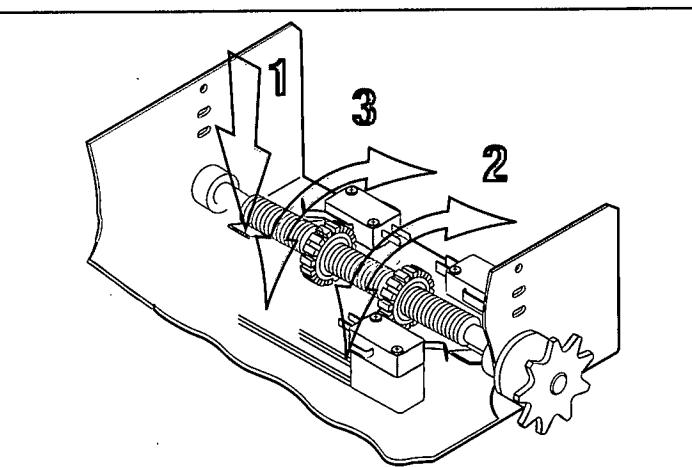
NOTE: The Open Limit Switch (OLS) LED on the logic board will illuminate when the switches are activated and the power is on.

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

WARNING

To avoid SERIOUS personal INJURY or DEATH from electrocution:

- Disconnect electric power BEFORE performing ANY adjustments or maintenance.



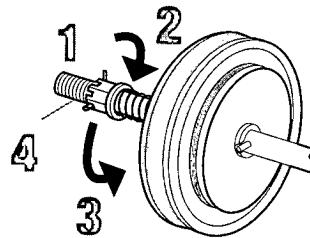
CLUTCH ADJUSTMENT (BELT DRIVE MODEL OPERATORS)

- 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.

WARNING

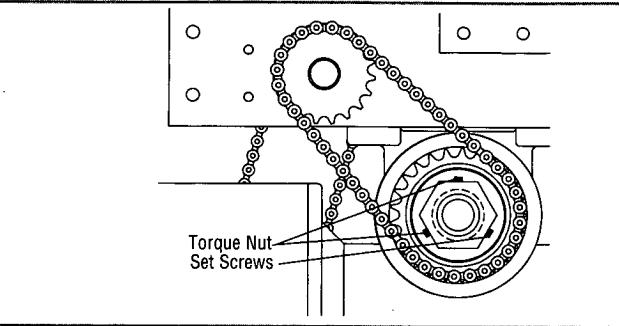
To avoid SERIOUS personal INJURY or DEATH from electrocution:

- Disconnect electric power BEFORE performing ANY adjustments or maintenance.



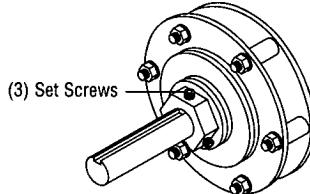
ADJUST TORQUE LIMITER CLUTCH (MODEL GT)

- 1 Loosen set screws of torque adjustment nut on the gear reducer.
- 2 Back off 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 that is directly over the flat portion of the shaft.



MODEL GH (OPTIONAL MODIFICATION)

- 1 Loosen set screws on clutch nut.
- 2 Back off clutch nut until there is very little tension on the clutch spring.
- 3 Tighten clutch nut gradually until there is just enough tension to permit the operator to move the door smoothly but to 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.



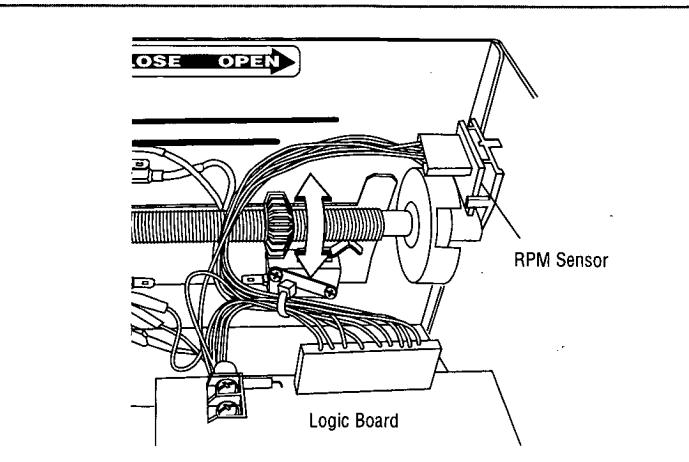
AUXILIARY REVERSAL SYSTEM / RPM SENSOR

The **Auxiliary Reversal System** is designed to protect the door and motorized operator. It is NOT a substitute for a safety sensing 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. We require the use of safety devices for primary safety protection. By removing the centrifugal switch on single phase motors, the leading cause of motor failures is eliminated. (Auxiliary Reversal System not applicable on models GH and GT.)

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



TESTING

Apply power to the operator.

When power is applied to the operator, the following LED's will illuminate: STOP, CLOSE, OPEN, LMEP, 24Vac, RADIO, DATA, TIMER ENABLE, OLS MID, SLS, CLS, and MAS. 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 over, 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.

ALIGN THE PHOTOELECTRIC SENSORS

1. After power is connected to the operator, the green indicator lights in both the sending and receiving sensors will glow steadily if wiring connections and alignment are correct.
2. If the green indicator lights are flashing rapidly (and the invisible light beam path is not obstructed), alignment is required:
 - Loosen the receiving sensor wing nut to allow slight rotation of the sensor. Adjust sensor vertically and/or horizontally until the green indicator light glows steadily.
 - When the indicator lights are glowing in both sensors, tighten the receiving sensor wing nut.

TEST THE PHOTOELECTRIC SENSORS

1. Open the door.
2. Place an obstruction in the path of the photoelectric sensors. The LMEP LED will blink on the logic board and the receiving eye LED will turn off.
3. Press and hold the CLOSE button. The door should not close if photoelectric sensors are installed.
4. Remove the obstruction.
5. Press and hold the CLOSE button. Door should close. If door did not reverse from obstruction, check photoelectric sensors.

NOTE: The Logic 4 control board will automatically learn the photoelectric sensors (LMEP) once they are properly connected. If the LMEP is misaligned or disconnected the LMEP LED on the logic control 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 photoelectric sensors, turn the selector dial to DIAG, push and hold the stop button until the MAS LED flashes. Without the photoelectric sensors connected the only mode of operation will be 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 a trained door systems 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).

IMPORTANT NOTES:

- Do not leave power to the operator on unless all safety and entrapment protection devices have been tested and are working properly.
- 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.

ON/USER

MANUAL RELEASE

EMERGENCY DISCONNECT SYSTEM MODEL 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.

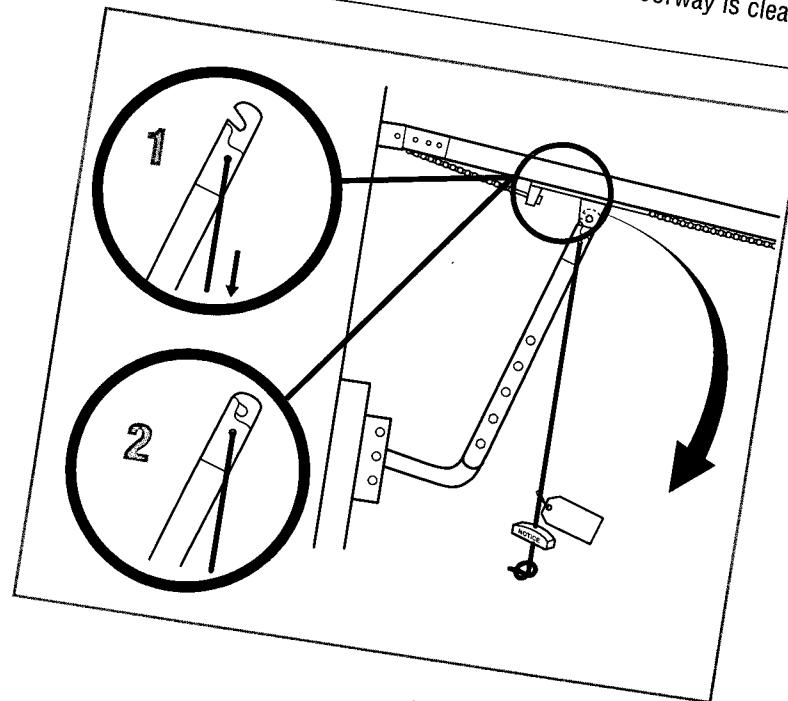
TO RECONNECT DOOR ARM TO TROLLEY

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:

- 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.



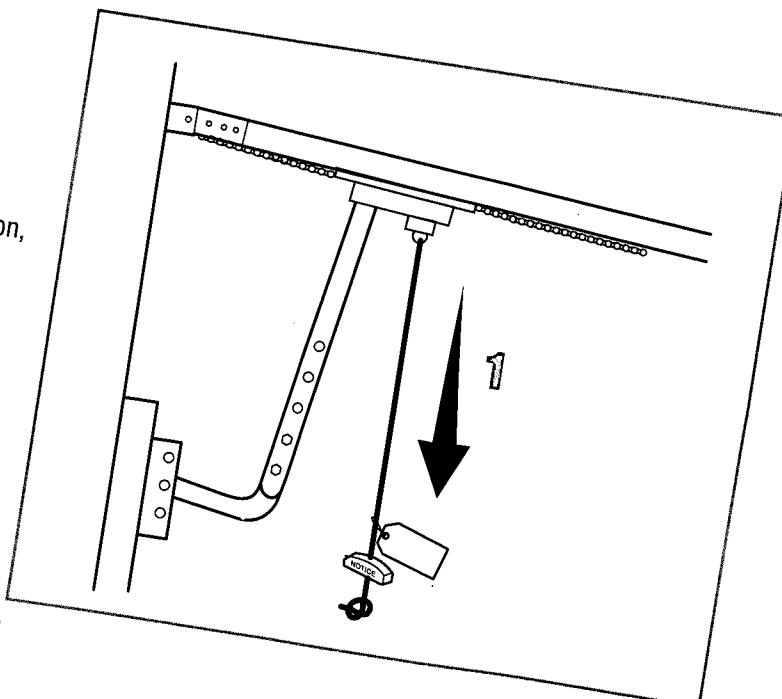
EMERGENCY DISCONNECT SYSTEM MODEL APT

TO DISCONNECT DOOR FROM OPERATOR

The door should be in the fully closed position if possible.
1 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 MODEL H, GH, J, AND HJ

This operator has provisions for manually operating the door in case of emergency or power failure. Refer to the appropriate instructions below for your model operator.

MODEL 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

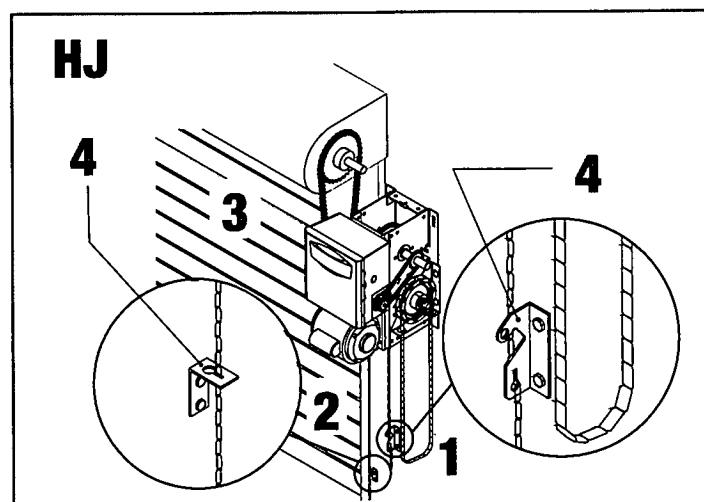
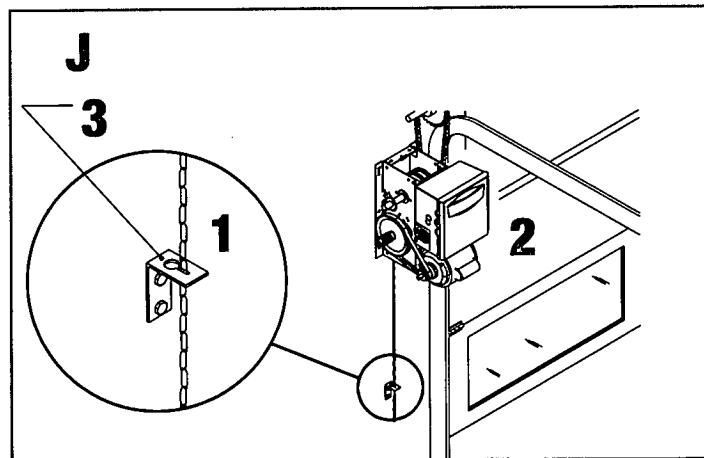
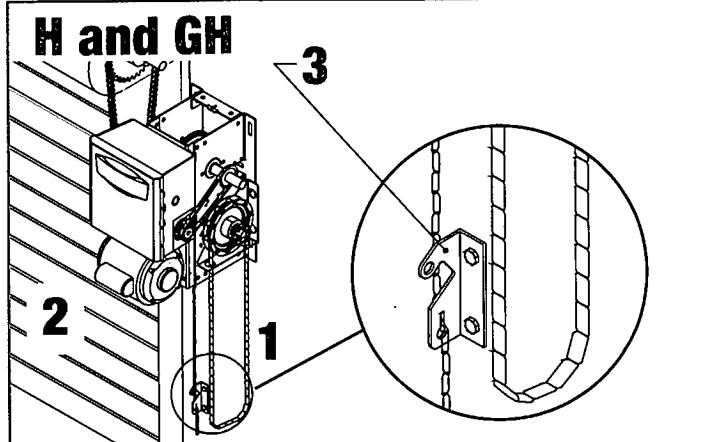
This operator includes both a floor level disconnect chain (sash chain) to disconnect the door from the door operator and a disconnect chain with manual hoist to electrically disable the operator controls.

- 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.

CAUTION

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.

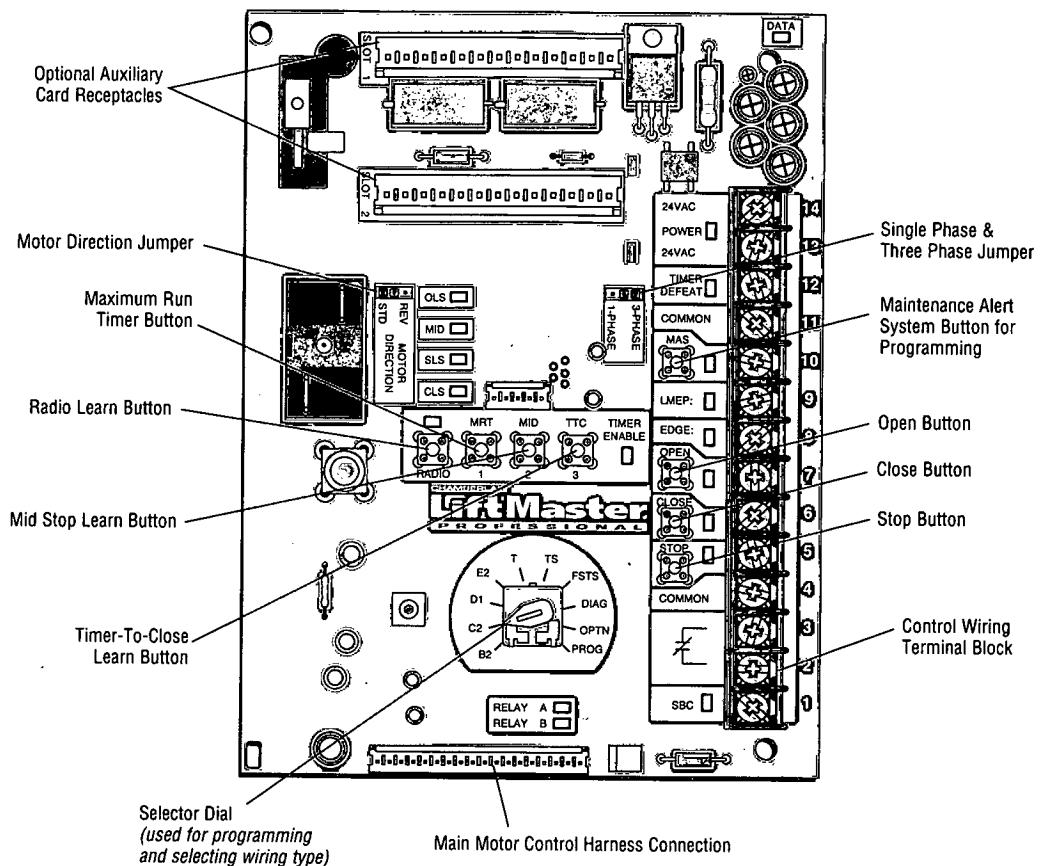


PROGRAMMING

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.

LOGIC BOARD OVERVIEW



LOGIC BOARD LED OVERVIEW

NOTE: Before programming the logic board, set the operator's open and close limits. LEDs on the logic board are provided to assist setting the limits. As each limit is activated the corresponding LED will light up. The abbreviations are Open Limit Switch (OLS), Close Limit Switch (CLS) and Sensing Limit Switch (SLS). Refer to page 19 for limit switch adjustment instructions.

When power is applied to the operator, the following LED's will illuminate: STOP, CLOSE, OPEN, LMEP, 24Vac, RADIO, DATA, TIMER ENABLE, OLS MID, SLS, CLS, and MAS. Once the power up process is completed (approximately 2-3 seconds) only the appropriate LED's will continue to be lit (i.e., STOP, 24Vdc, limit LED(s) if limit(s) is activated).

NOTE: When the power up process is over, 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.

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.

LIFTMASTER MONITORED ENTRAPMENT PROTECTION (LMEP) DEVICE IS REQUIRED

A LiftMaster Entrapment Protection (LMEP) device is **required** for the following wiring types.

B2 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.**

TS (TIMER SECURE)

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.**

NOTE: A Programmable "Car Dealer Mode" available.

T Momentary contact to open, close, and stop, with open override and Timer-To-Close. Every device that causes the door to open, except any safety 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.**

NOTE: Programmable "Car Dealer Mode" available.

FSTS 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 IS RECOMMENDED

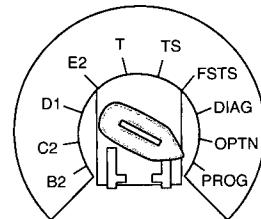
A LiftMaster Entrapment Protection (LMEP) device is recommended for the following wiring types.

C2 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.**

E2 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.**

D1 Constant pressure to open and close with wiring for sensing device to stop. **Compatible with 2 or 3-Button Station.**

SELECTOR DIAL



IMPORTANT NOTES:

1. External interlocks may be used with all functional modes.
2. Auxiliary devices are any devices that have only dry contacts. Examples: photocell, 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 a safety input is activated (LMEP or EDGE), 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.

PROGRAMMING REMOTE CONTROLS

⚠ 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.

Built in 3-channel, 315 MHz radio receiver allows you to add as many as 23 Security+® remotes or dip switch remote controls.

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

NOTICE: To comply with FCC and or Industry Canada (IC) rules, adjustment or modifications of this receiver and/or transmitter are prohibited, except for changing the code setting or replacing the battery. THERE ARE NO OTHER USER SERVICEABLE PARTS.

Tested to Comply with FCC Standards FOR HOME OR OFFICE USE. 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.

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 programming mode is exited if no activity is performed within 30 seconds.

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.

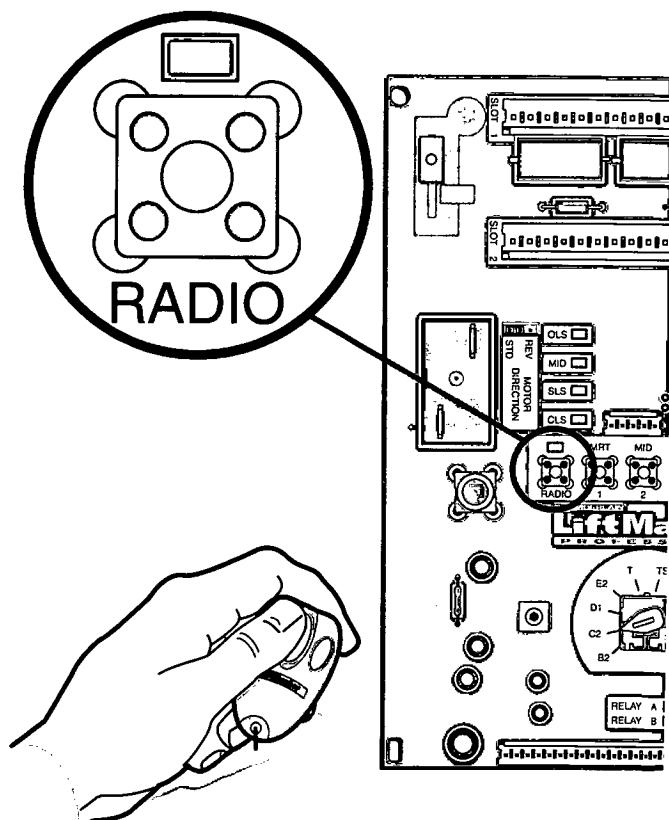
In FSTS mode, operation is OPEN with Timer-To-Close start/refresh only, bypassing a programmed Open Mid Stop.

1. Press and release the RADIO button on the logic board (RADIO LED will light).
2. Press and release the SBC externally wired button or TIMER on the logic board (RADIO LED flashes rapidly and then remains on solid).
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.

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

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.

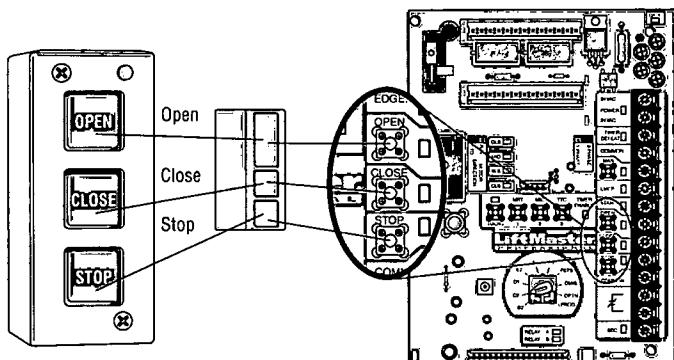


PROGRAMMING REMOTE CONTROLS

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

Your 315 MHz Security+® 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 23 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 23 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 23 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 radio will automatically exit programming mode.



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).

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 4 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:

1. Close the door.
2. Turn the selector dial to PROGRAM.
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 35 to diagnose problem.

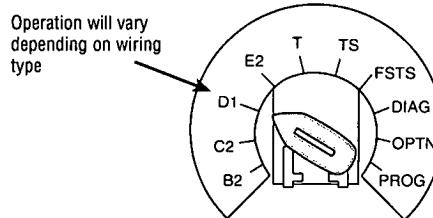
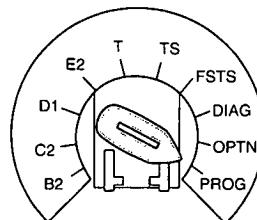
Example: A door is installed with 30,000 cycle springs and has an annual service contract. To set the MAS, turn selector dial to PROGRAM, press MAS button, press the STOP button to clear the memory and then press the OPEN button 6 times (30,000 cycles) and CLOSE 4 times (12 months). Press the MAS again to complete the programming. Turn the selector dial back to 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 of cycles desired until the next service visit OR press and hold the MAS button for 5 seconds in the PROGRAM mode to reset the MAS with its current programmed value. To disable the MAS, follow the programming procedure above and press the STOP button to reset the counter to zero. Every time the operator leaves the close limit is counted as one cycle.

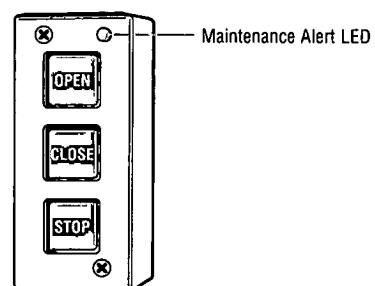
To view how many cycles are programmed into the MAS, set the selector dial to DIAGNOSTIC and press the MAS button. The OPEN button LED will flash once for every 5,000 cycle increment programmed and the CLOSE button LED will flash once for every 3 month increment programmed.

To view how many cycles have elapsed since the last time the MAS was programmed, set the selector dial to DIAGNOSTIC 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 MAS button to exit. Turn the selector dial back to desired wiring type.

SELECTOR DIAL



3-BUTTON STATION



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

OPEN MID STOP

Feature: The Mid Stop feature is to open the door to a preset point prior to the fully open position.

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.

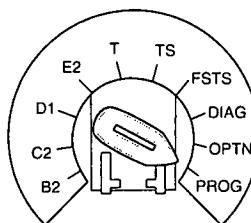
To Program:

1. Close the door.
2. Turn selector dial to PROGRAM.
3. Press and release the MID button on logic board.
4. Press the OPEN button, wait until the door reaches the desired mid stop height, then 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.

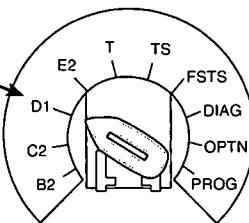
NOTE: A momentary open command will open the door fully from the Mid Stop position. Once at the Mid Stop, photoelectric sensors and other safety devices will not open the door beyond the mid stop position, except in E2 mode. The Timer-To-Close will work from the Mid Stop.

To clear the Mid Stop set the selector dial to PROG and 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 desired wiring type.

SELECTOR DIAL



Operation will vary depending on wiring type



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 door after preset time. All safety devices must be unobstructed.

Benefit: The door will automatically close after 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.

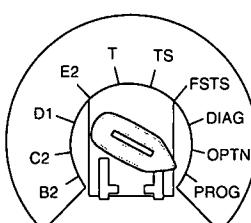
Requirements: Must have at least one LiftMaster Monitored Entrapment Protection (LMEP) device installed (refer to page 20). Wiring type must be set to TS, T or FSTS.

TO PROGRAM MANUALLY (METHOD 1):

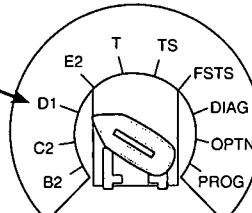
1. Close the door.
2. Turn the selector dial to PROGRAM.
3. Press and release the TIMER button on the logic board.
4. Press and release the STOP button to clear the timer.
5. Press and release the OPEN button for every second the operator should wait before attempting to close the door. Press and release the CLOSE button for every 15 seconds the operator should wait before closing the door.
6. Press and release the TIMER button to complete 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 desired timer wiring type (TS, T or FSTS).

Example: To close the door after 70 seconds. Turn selector dial to PROGRAM, press and release the TIMER 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 TIMER button to finish programming the timer. Turn selector dial to desired timer wiring type. (TS, T, FSTS).

SELECTOR DIAL



Operation will vary depending on wiring type



TIMER-TO-CLOSE

PROGRAM TIMER-TO-CLOSE BY EXAMPLE (Method 2):

TO PROGRAM:

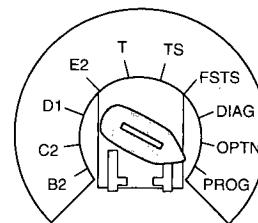
1. Close the door.
2. Turn the selector dial to PROGRAM.
3. Press and hold TIMER button for 5 seconds until OPEN and OLS flashes then release.
4. Press and release the OPEN button and wait for the door to reach full open or mid stop position.
5. Wait for desired amount of time to pass. (An internal stop watch starts counting when the door stops moving.)
6. Press and release the TIMER button, CLOSE button or STOP button to stop the timer. (TIMER SET 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 DIAGNOSTIC and press the TIMER button. The OPEN LED will flash once for every second programmed and the CLOSE LED will flash once for every 15 seconds programmed.

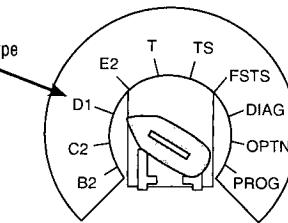
In T Mode, timer can be deactivated from the open position by pressing the STOP button. The timer will be reactivated on the next operation command. The STOP button WILL NOT deactivate the timer in the TS mode. To deactivate the timer for more than one cycle in T mode or in TS mode, attach a defeat switch to 11 and 12 (COMMON and TIMER DEFEAT).

Reminders: FSTS wiring mode allows the Timer-To-Close to be activated by the Single Button Control (terminal 1) only. T wiring mode allows the door to attempt to close only one time for safety purposes.

SELECTOR DIAL



Operation will vary
depending on wiring type



CAR DEALER MODE

Feature: The car dealer mode uses the SBC (Single Button Control 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.

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

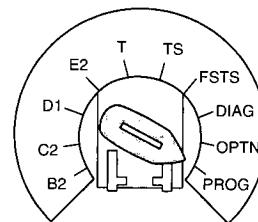
Requirements: This feature works in conjunction with the programmable Timer-To-Close feature. To enable this feature you must first connect a treadle, photoelectric sensor or loop detector accessory to the SBC input and must have at least one LiftMaster Monitored Entrapment Protection (LMEP) device installed (refer to page 20). Wiring type must be set to TS or T.

TO PROGRAM:

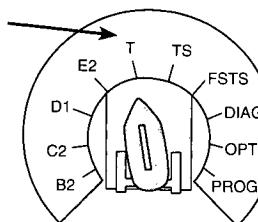
1. Start with the door in the closed position.
2. Turn the SELECTOR DIAL to PROG.
3. Push the TIMER button and release (Green Timer LED will be lit).
4. Push the MID button and release. This turns on the Car Dealer Mode. (The GREEN TIMER LED will flash 6 times indicating the Car Dealer Mode is turned on.)
5. Push the TIMER button and release.
6. Turn the SELECTOR DIAL to the desired wiring type (TS or T).

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

SELECTOR DIAL



Operation will vary
depending on wiring type



MAXIMUM RUN TIMER (MRT)

Feature: The operator can learn the time it takes to open or close the door plus an additional 10 seconds.

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

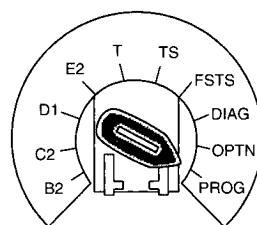
To Program:

NOTE: The default setting for the MRT is 90 seconds. In the event the application requires the MRT be manually learned for a longer duration follow steps below.

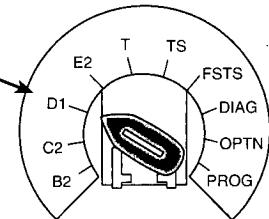
1. Start with the door in the closed position.
2. Set the selector dial to PROGRAM.
3. Press and release the MRT button on logic board.
4. Press the OPEN button and wait for the door to reach the full open limit.
5. Once the door has reached the open position, programming is complete.
6. Turn dial to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

NOTE: To reset MRT only, turn selector dial to program 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:

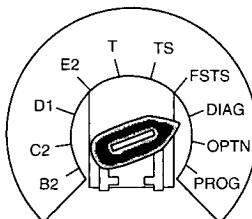
1. Turn the selector dial to DIAGNOSTIC.
2. Press and hold the STOP button for 5 seconds. The MAS LED will flash momentarily when the factory defaults have been restored.
3. Return the selector dial to the desired wiring type.

Factory Defaults:

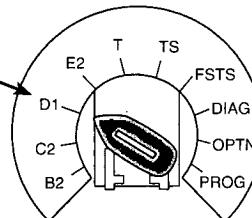
- a. Timer-To-Close = 0 seconds
- b. The Mid Stop is deactivated
- c. The Maintenance Alert System is deactivated
- d. The Maximum Run Timer is set to 90 seconds
- e. Car Dealer Mode is deactivated
- f. The remote controls will still be learned
- g. Remote control programming via the 3-button station
- h. The LiftMaster Monitored Entrapment Protection (LMEP) device will be unprogrammed

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

SELECTOR DIAL



Operation will vary
depending on wiring type

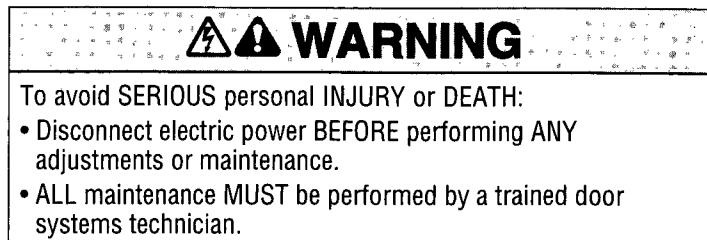


MAINTENANCE

MAINTENANCE SCHEDULE

For use with Maintenance Alert System.

Check at the intervals listed in the following chart:



ITEM	PROCEDURE	EVERY MONTH	EVERY 3 MONTHS OR 5,000 CYCLES	EVERY 6 MONTHS OR 10,000 CYCLES	EVERY 12 MONTHS OR 20,000 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.			•	♦
Bearings and Shafts	Check for wear and lubricate.		•♦		
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.

♦ Repeat ALL procedures.

- 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

www.liftmaster.com

LIFE OF OPERATOR FEATURE (ODOMETER/CYCLE COUNTER)

The operator is equipped with an odometer to show how many months and cycles the operator has performed from the time it was installed. This feature can help determine how long the operator has been in service.

1. Start with the door in the closed position.
2. Turn the SELECTOR DIAL to DIAG (diagnostic mode).
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 lights will flash. OPEN for every 5,000 cycles and CLOSE for every 3 months.
6. Return the SELECTOR DIAL to the desired wiring type.

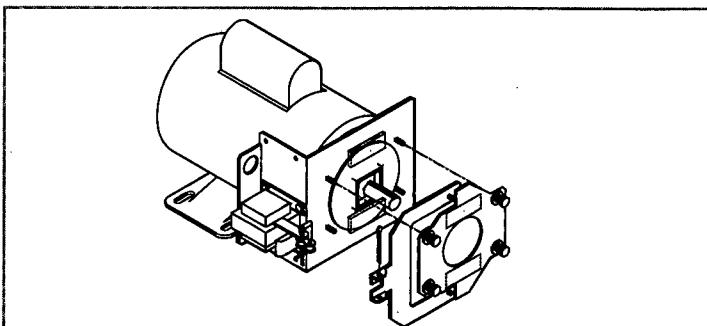
NOTE: If the operator has not reached 5,000 cycles or 3 months, there will be no indications.

BRAKE (IF PRESENT)

A solenoid brake is available as an option for some models. The brake is adjusted at the factory and should not need additional adjustment for the life of the brake assembly.

Inspect the brake pad and replace brake assembly when necessary.

NOTE: Your operator may look different than the operator shown.



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 DIAGNOSTIC to keep the door from moving while troubleshooting.

LED	COLOR	DEFINITION
Power	Green	Indicates that power is being generated for the logic board.
Stop	Green	Indicates a closed circuit between common and terminal 5. Pressing stop 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	Solid on indicates photoelectric sensors learned. Flashing indicates photoelectric sensors need to be connected or obstructed**. 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.
CLS	Yellow	Pressing the Close Limit Switch should turn ON this LED.
SLS	Yellow	Pressing the Sensing Limit Switch should turn ON this LED.
Edge	Yellow	Indicates a closed circuit between common and terminal 8. Pressing the edge should turn ON this LED.
Mid Stop	Yellow	Solid on indicates door is stopped on up or down mid stop. Flashing indicates MID STOP is being set.
Timer Enabled	Green	Solid on indicates TIMER is programmed and will activate from open or mid stop position. Flashing indicates Timer is counting down and door will close after preset time.
SBC	Yellow	Indicates a closed circuit between common and terminal 1. Pressing the single button control station should turn ON this LED.
MAS	Yellow	Indicates the Maintenance Alert System has been activated or an error code has been triggered.
Relay A	Yellow	Indicates open or close command has been given to the motor. LED turns on when OPEN/CLOSE button is pressed.
Relay B	Yellow	Indicates open or close command has been given to the motor. LED turns on when OPEN/CLOSE button is pressed.
DATA	Green	Indicates communication between the Logic 4 board and optional TLSCARD.

** RESTRICTED CLOSE. This method will allow you to close the door 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
THE OPERATOR WILL NOT RESPOND TO ANY COMMANDS	<ul style="list-style-type: none"> a) No power supply b) Operator control station is wired wrong c) Interlock switch is activated d) Dial still in programming, option, or diagnostic mode e) Motor is malfunctioning f) Motor thermal overload tripped g) Possible accessory malfunction h) Off Board relay may need to be replaced see wiring diagram i) Possible logic board failure 	<ul style="list-style-type: none"> ► Verify primary line voltage from power source. Green POWER LED must be on. ► Use the OPEN, CLOSE and STOP LEDs to help check correct wiring. Verify that the board is accepting commands by using the onboard station. Green LED next to stop button must be on. ► 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. ► Set dial to desired wiring type. ► Verify proper voltage getting to the motor (Check motor name plate). ► 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. ► Disconnect all devices, reattach them one at a time testing for a failure after each one is replaced. ► When the OPEN or CLOSE button is pressed, Relay A or B LED should turn on and the door should move in the corresponding direction. If Relay A or B lights and the door does not move, off board relay may need to be replaced (see wiring diagram Off Board Relays). ► Replace logic board.
POWER LED IS NOT ON	<ul style="list-style-type: none"> a) Loose secondary wiring connections or a faulty control transformer b) Hoist interlock switch 	<ul style="list-style-type: none"> ► Repair or replace connections or control transformer. ► Check interlock. Verify the manual release chain is not engaged.
STOP BUTTON LED IS NOT ON	<ul style="list-style-type: none"> a) Control station not connected or wired correctly b) Interlock switch 	<ul style="list-style-type: none"> ► Check wiring to control station. ► Check interlock switch(es) for continuity.
THE DOOR WILL MOVE ABOUT A FOOT THEN STOP. AFTER STOPPING, ONLY CONSTANT PRESSURE COMMANDS WILL MOVE THE DOOR	<ul style="list-style-type: none"> a) RPM sensor is not connected properly or may need to be replaced b) Clutch slipping 	<ul style="list-style-type: none"> ► Check the RPM assembly for loose connections. Check that RPM wheel is turning when operator is running. Check for foreign matter blocking optical lens. ► Replace RPM sensor. ► Adjust clutch and verify that door is not binding.
THE DOOR WILL MOVE MOST OF THE WAY TOWARDS A LIMIT THEN STOP. AN EXTRA OPEN OR CLOSE COMMAND IS ABLE TO GET DOOR TO COMPLETE CYCLE	The Maximum Run Timer is not set correctly	<ul style="list-style-type: none"> ► Manually reprogram the Maximum Run Timer (page 35). OR reset the factory defaults (page 35).
THE DOOR WILL OPEN SOME BUT NOT COMPLETELY. AN EXTRA OPEN IS ABLE TO GET THE DOOR TO OPEN COMPLETELY	There may be a Mid Stop set	<ul style="list-style-type: none"> ► Check to see if the Mid Stop LED is on. Clear the Mid Stop by turning the selector dial to program. Press and hold the MID STOP button for 5 seconds. Return dial to desired wiring type. To reset Open Mid Stop refer to page 33.
THE DOOR WILL OPEN BUT WILL ONLY CLOSE AFTER A FIVE SECOND DELAY WITH CONSTANT PRESSURE ON THE CLOSE BUTTON (RESTRICTED CLOSE MODE)	<ul style="list-style-type: none"> a) The photoelectric sensors, edge or other sensing device is obstructed or activated b) The logic board thinks that the direct connect photoelectric sensors are attached and blocked 	<ul style="list-style-type: none"> ► If the on board LMEP LED is flashing, the photoelectric sensor are misaligned or not connected. Remove any obstructions, check the safety device wires for continuity and shorts. ► Unlearn the photoelectric sensors from the memory by resetting factory defaults.

TROUBLESHOOTING ERROR CODES

Logic 4.0 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.

If the MAS LED is flashing on and off rapidly, the Maintenance Alert System has been triggered and the schedule operator service is due. If the MAS LED flashes 2 or more pulses in a row followed

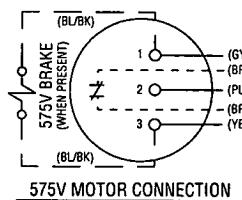
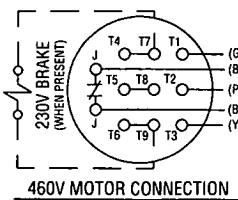
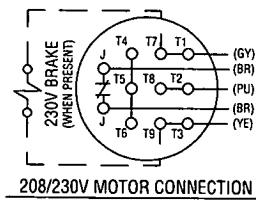
by a pause, an operator error has occurred. To view how many errors currently exist, turn the selector dial to DIAGNOSTIC and press the OPEN button. To read out each individual error code (if more than one exists) press CLOSE. It is possible to have more than one error at a time.

The chart below can assist with identifying the flashes on the MAS LED.

ERROR CODE	DISPLAY	DESCRIPTION	EFFECT	CORRECTION
E1	1 blink	MAS triggered (cycles or months)	None normal operation	Reset MAS (page 32).
E2	2 blinks	No RPM input during opening	The door only responds to constant pressure commands	Clutch is slipping, adjust clutch, or verify RPM sensor connection or replace RPM sensor. <i>NOTE: To relearn the RPM sensor, move the door with a constant pressure command. The door will stop once relearned and normal operation will resume.</i>
E3	3 blinks	(MRT) Maximum Run Time timed out	The door stops before reaching set open or close limit(s)	First check Operator for any faults (i.e., Bad Limit switch), manually learn Max Run Timer (page 35) OR reset factory defaults (page 35).
E4	4 blinks	Obstruction sensed on closing	Operator will reverse to OPEN position	Cleared by removing obstruction or realigning photoelectric sensors and giving a close command.
E5	5 blinks	Stuck button pressed for greater than 2 minutes	Stuck button on 3-button station will not respond	Stuck button must be unstuck before it will be recognized as an input.
E6	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).
E7	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 safety device is cleared or connected.
E8	8 blinks	Brownout Detected	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.
E9	Flash on start of movement	Motor movement at invalid time	Operator will continue to function normally for 5 operations and then default to a constant pressure mode	Check relays and the drive circuitry to ensure that they are turning off. Operator must know that they are turning off. Operator must run correctly for two starts for the error to be cleared.
E10	10 blinks	Motor Phase Jumper changed while unit is not in programming mode	The phase will not change	Enter programming mode and move phase jumper to change phase.

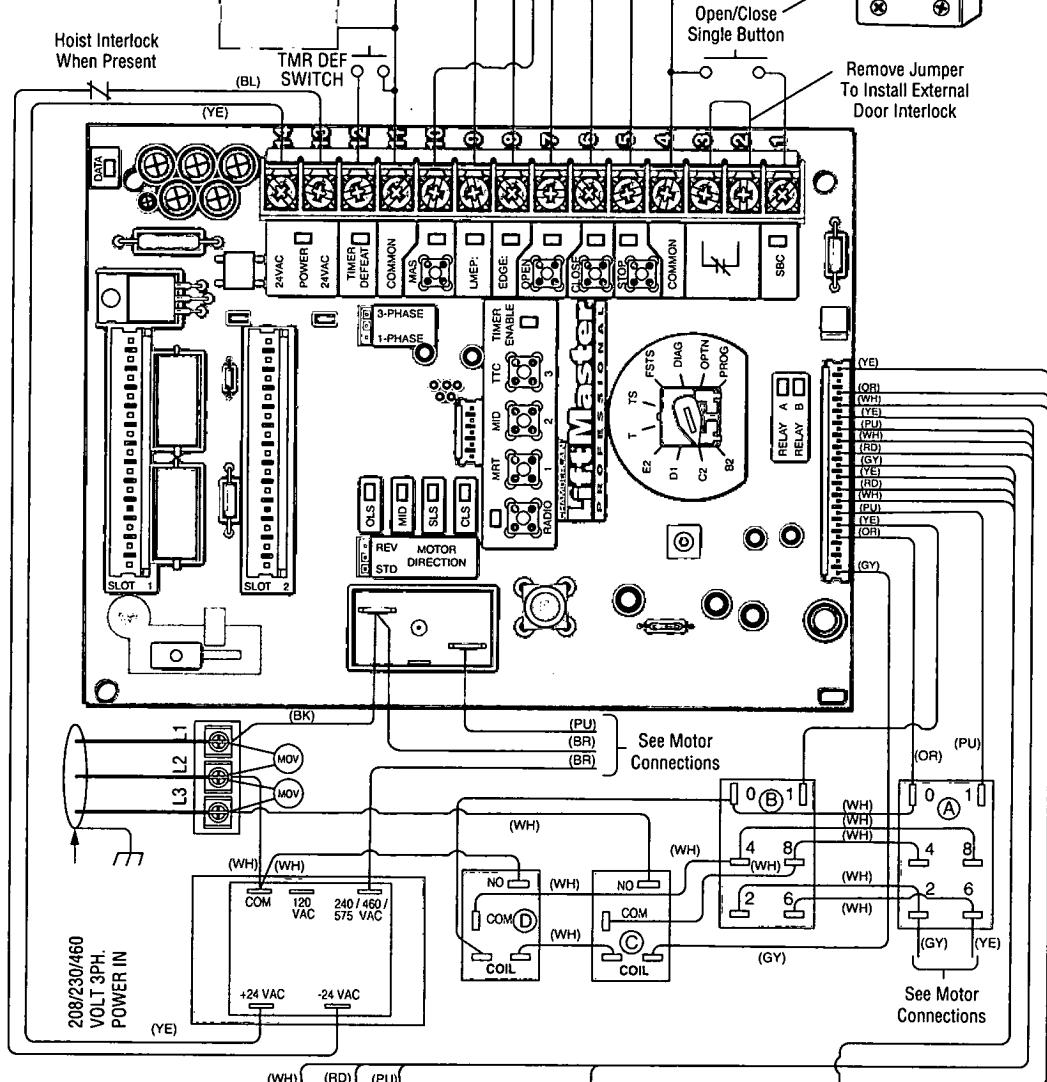
NOTE: Error codes take priority over normal MAS LED operation. Error codes will repeat on the MAS every 1.5 seconds until cleared. There may be more than one error present, but only the highest priority will flash. If the highest error is cleared, the next highest will flash. All errors self-correct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

LOGIC (VER. 4.0) 3 PHASE WIRING DIAGRAM



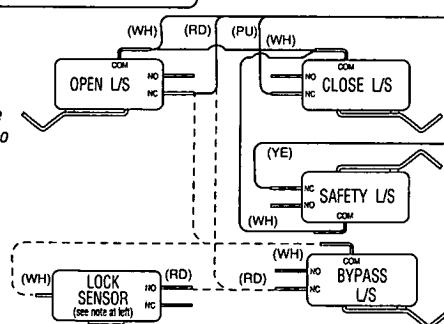
NOTE: Gray (GY) and purple (PU) motor wires are reversed for H and HJ right hand models and all GH and J models.

Refer to page 22 for
LiftMaster Monitored
Entrapment Protection (LMEP)
device connections



NOTE: Lock Sensor is provided on Models DJ and DH only, red wire from main harness connects to NC on BYPASS L/S and to NO on LOCK SENSOR switch. White wires connect the COM on BYPASS L/S and Lock Sensor switch to NC on Open L/S.

NOTE: The Lock Sensor switch is located in the chassis.



NOTE: 32 Vdc power supplied
from White and Yellow wires located
within the electrical box.

ACCESSORIES

REMOTE CONTROLS 315MHz



LiftMaster offers a variety of **SECURITY+**® Remote Controls for your application needs. Single to 4-Button, visor or key chain. Contact your authorized dealer.

371LM

1-Button SECURITY+® Remote Control:

Includes visor clip.

373LM

3-Button SECURITY+® Remote Control:

Includes visor clip.

333LM

3-Button Tri-Colored Dip Switch Remote Control:

Includes visor clip.

WPB1LM3

Wireless Single Push Button Control SECURITY+®:



Rugged composite housing. (Wireless controls cannot be used in place of hard wired controls.)

WPB3LM3

Wireless 3 Button Control Station SECURITY+®:



Rugged composite housing. (Wireless controls cannot be used in place of hard wired controls.)

WKP5LM3 (5 4-digit entry codes)

WKP250LM3 (250 4-digit entry codes)



Wireless Access Control Keypads SECURITY+®:

Rugged composite housing. (Wireless controls cannot be used in place of hard wired 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.

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.

ENTRAPMENT PROTECTION DEVICES

MONITORED

CPS-UN4



Commercial Protector System®:

Provides protection on doors up to 45' wide. NEMA-4 rated.

CPS-U



Commercial Protector System®:

Provides protection on doors up to 30' wide.

CPS3CARD



Option Logic Board:

For use when more than one set of photoelectric sensors are required. Also available pre-packaged with a second set of photoelectric sensors; see CPS3 or CPS3-N4 in Commercial Door Operator Product and Accessories Price List for more information.

CPS-EI



Monitored Safety Edge Interface:

For use with the approved 4-wire safety edge (see below).

65ME1234

Miller ME123 4-Wire Monitored Safety Edge:

For sectional or rolling doors.

65ME110

Miller ME110 4-Wire Monitored Safety Edge:

For rolling grilles and counter shutters.

MOUNTING CHANNELS

65ME123C

U-Shaped Mounting Channel:

For 65ME1234 edge when installed on sectional doors.

65ME123C1

T-Shaped Mounting Channel:

For 65ME1234 edge when installed on rolling doors. Fits between L-shaped angles used to construct a bottom bar on rolling doors.

65ME123CA3

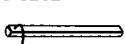
L-Shaped Mounting Channel:

For 65ME1234 edge when installed on sectional doors.

NON-MONITORED

65-8202

Vehicle Detection System:



Pneumatic Sensing Edge Kit with exterior air switch, 2-wire coil cord and 14' air hose.

65-5202

Vehicle Detection System:



Pneumatic Sensing Edge Kit with exterior air switch, 2-wire take-up reel (20' extended) and 14' air hose.

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.

CHAIN TENSIONERS

For Jackshaft Type Operators

71-6023

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

71-6125

Same as 71-6023, but for 1-1/4" shafts.

MISCELLANEOUS

1A3982

Operator Cover:



For use with wall-mounted J, H, GH, DH or DJ operators.

Measures 31" x 19" x 18" (L x W x D). Assembly required. Recommended for damp environments where direct spray is present. Required when the operator is installed less than 8 feet above the floor.

**86LM (15')
86LMT (25')**

Antenna Extension Kit:

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



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.

3 BUTTON STATION OR 3 POSITION KEYSWITCH WITH SPRING RETURN TO CENTER AND STOP BUTTON		
STANDARD 	2 OR MORE 	KEY LOCKOUT
NOTE: Stop circuit must be wired in series for all stop buttons to function. This may require removal of factory installed jumper bar in the 3-button station.		
2 BUTTON STATION OR 3 POSITION KEYSWITCH WITH SPRING RETURN TO CENTER		
STANDARD 	2 OR MORE 	D1 & E2 MODE ONLY See note 2.
TIMER DEFEAT SWITCH 	1 BUTTON STATION OR ANY AUXILIARY DEVICE OPEN / CLOSE 	RADIO CONTROLS
NOTE: 32 Vdc power supplied from white and yellow wires located within the electrical box.		
NON-MONITORED SENSING DEVICE TO REVERSE OR STOP		EXTERNAL INTERLOCK
Note: 11 and 4 are both the same common. Either is acceptable.		Remove Factory Installed Jumper When Interlock is Used
		All Wiring Types

Electrical Box

Electrical Box Replacement Kits

To order a complete electrical box replacement kit, add a K-Prefix to the model number of your operator for example:

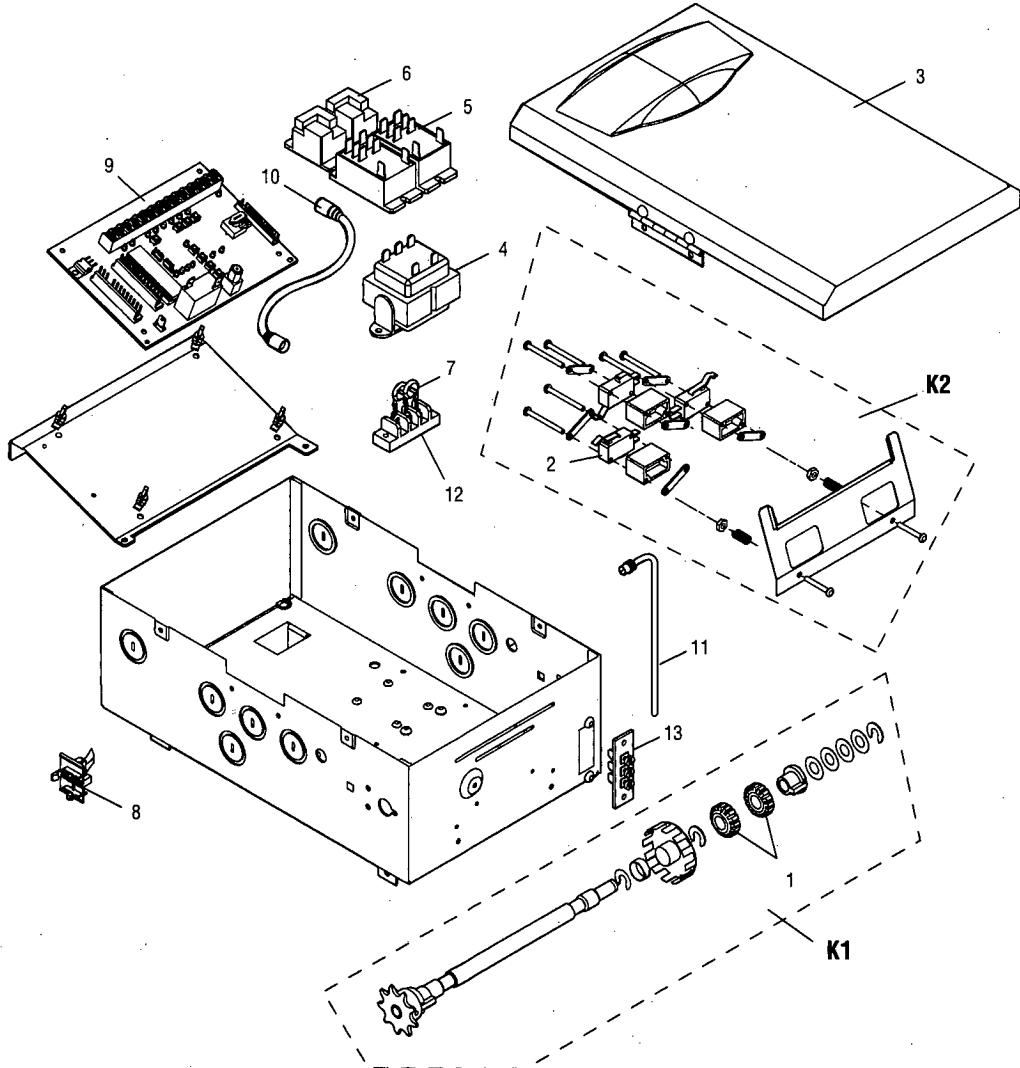
T5011L4 (Operator) = K-T5011L4 (Electrical Box Kit)

Service Kits

ITEM	PART#	DESCRIPTION
K1	K72-10047	Limit Shaft Kit (Models T, APT, SD & GH 1/2 - 2 HP)
K1	K72-10047-1	Limit Shaft Kit (Models GT, GSD & GH 3 HP) Complete with: Limit Shaft, Limit Nuts, Limit Bearings, Limit Sprocket, Interrupter Cup, Shim Washers; Compression Ring, Roll Pin and E-Rings.
K2	K72-12515-1	Limit Switch Kit Complete with: Limit Nut Retainer, Switch Plates, Backup Plate, Depress Plates, Limit Switches, Standoffs, Screws and Locknuts.

Individual Parts

ITEM	PART#	DESCRIPTION
1	13-10024	Limit Nut
2	23-10041	Limit Switch
3	K75-35627	Cover
4	21-14182	Transformer, 115/230 Volts, 20Va
	21-35057	Transformer, 460 Volts, 40Va
	21-35077	Transformer, 575 Volts, 40Va
5	29-31244	Relay, 24 Vdc DPST (A & B Relay) All Operators
6	29-31245	Relay, 12 Vdc SPDT (C & D Relay) 3 Phase Only
	29-31229	Relay, 24 Vdc SPDT (C Relay) 1 Phase Only
7	K74-31243	MOV 580 Volts
8	K79-15016-1	RPM Sensor Assembly
9	K1A6837	Logic Board - L4
10	K2A761	Coaxial Cable
11	K1C3196-3	Antenna
12	42-31247	Terminal Block
13	42-10040	Terminal Block, Radio



Model T

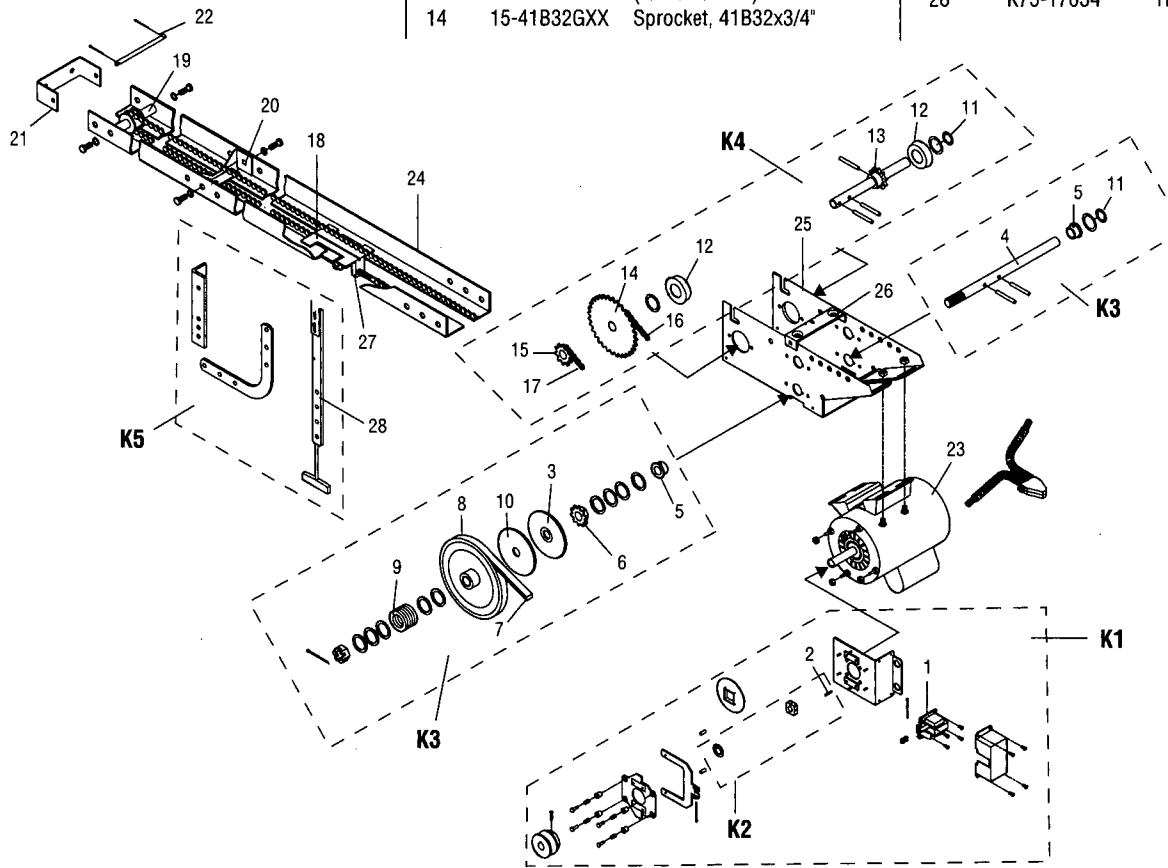
Service Kits

ITEM	PART#	DESCRIPTION
K1	71-B120	Brake Kit, 115 Volt Models
	71-B208	Brake Kit, 208 Volt Models
	71-B240	Brake Kit, 230-460 Volt Models
	71-B575	Brake Kit, 575 Volt Models
		Complete with: Brake Hub Kit, Brake Release Lever, Brake Disk, Spring Cup, Studs, Compression Springs, Brake Solenoid, Solenoid Cover, Spacers, Mounting Plate, Pressure Plate, Feather Key and Conduit.
K2	K75-10177	Brake Hub Kit
		Complete with: Brake Hub, Set Screw, Push on Fastener and Feather Key.
K3	K72-12506	Clutch Shaft Kit (1/3 & 1/2 HP)
	K72-12507	Clutch Shaft Kit (3/4 & 1 HP)
		Complete with: Clutch Plate, Clutch Shaft, Bearing 3/4" I.D., Sprocket 41B10x3/4", 5L Belt, Motor Pulley, Spring, Clutch Disc, Shim Washers, Castle Nut, Flat Washers, Cotter Pin, Roll Pins and Push on Fastener.
K4	K72-12508	Output Shaft Kit (1/3 & 1/2 HP)
	K72-12509	Output Shaft Kit (3/4 & 1 HP)
		Complete with: Output Shaft, Bearing, Roller Chain with Master Link, Limit Chain, Shim Washers, Roll Pins, Push Ring 3/4" and Sprockets (41B32 & 48B10).
K5	K75-12870	Door Arm Kit
		Complete with: Curved Arm, Straight Arm, Door Bracket and Hardware.

Door Drive Chain Kits

PART#	DESCRIPTION
19-5810	#48 Chain (1/3 & 1/2 HP) Doors 8' to 10'
19-5112	#41 Chain (3/4 & 1 HP) Doors 8' to 10'
19-5812	#48 Chain (1/3 & 1/2 HP) Doors to 12'
19-5112	#41 Chain (3/4 & 1 HP) Doors to 12'
19-5814	#48 Chain (1/3 & 1/2 HP) Doors to 14'
19-5114	#41 Chain (3/4 & 1 HP) Doors to 14'
19-5816	#48 Chain (1/3 & 1/2 HP) Doors to 16'
19-5116	#41 Chain (3/4 & 1 HP) Doors to 16'
19-5818	#48 Chain (1/3 & 1/2 HP) Doors to 18'
19-5118	#41 Chain (3/4 & 1 HP) Doors to 18'
19-5820	#48 Chain (1/3 & 1/2 HP) Doors to 20'
19-5120	#41 Chain (3/4 & 1 HP) Doors to 20'

ITEM	PART#	DESCRIPTION
15	15-48B10G1	Sprocket, 41B10x3/4"
16	19-41047	Roller Chain, #41x47
		Pitches
17	19-48033M	Limit Chain, #48x33
		Pitches
18	75-10170	Trolley
19	75-10174	Front Idler Assembly
20	K75-10259	Tracker Spacer
21	10-10205	Header Bracket
22	11-10130	Header Pivot Pin
23		
1/3 HP	K20-1033B-2LP	Motor - models T3311L4, T3321L4
	K20-3033B-4P	Motor - models T3323L4, T3343L4
	K20-3033M-5	Motor - model T3353L4
1/2 HP	K20-1050B-2LP	Motor - models T5011L4, T5021L4
	K20-3050B-4P	Motor - models T5023L4, T5043L4
	K20-3050M-5	Motor - model T5053L4
3/4 HP	K20-1075B-2LP	Motor - models T7511L4, T7521L4
	K20-3075B-4P	Motor - models T7523L4, T7543L4
	K20-3075M-5	Motor - model T7553L4
1 HP	K20-1100B-2LP	Motor - models T1011L4, T1021L4
	K20-3100B-4P	Motor - models T1023L4, T1043L4
	K20-3100M-5	Motor - model T1053L4
		Door Track*
12	12-10331	Flange Bearing
13	15-41B10G1	Sprocket, 41B10x3/4" (3/4 & 1 HP)
	15-48B10GXX	Sprocket, 41B10x3/4" (1/3 & 1/2 HP)
14	15-41B32GXX	Sprocket, 41B32x3/4"
		Heavy Duty Straight Arm



Model GT

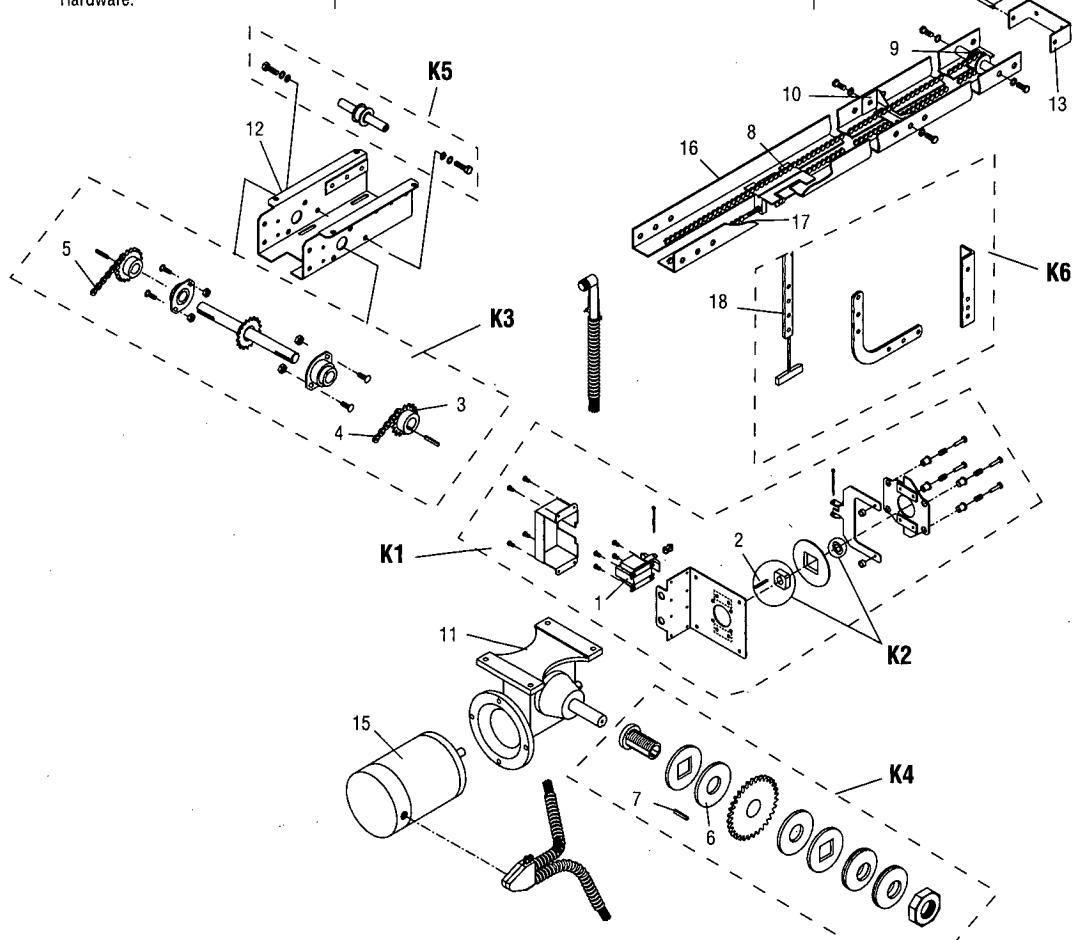
Service Kits

ITEM	PART#	DESCRIPTION
K1	71-B120	Brake Kit, 115 Volt Models
	71-B208	Brake Kit, 208 Volt Models
	71-B240	Brake Kit, 230-460 Volt Models
	71-B575	Brake Kit, 575 Volt Models*
		Complete with: Brake Hub Kit, Brake Solenoid Cover, Brake Release Lever, Brake Disk, Spring Cup, Studs, Compression Springs, Chain, Brake Solenoid, Spacers, Mounting Plate, Pressure Plate, Feather Key, Screw, Cotter Pin and Push on Fastener.
K2	K75-10177	Brake Hub Kit Complete with: Brake Hub, Set Screw, Push on Fastener and Feather Key.
K3	K72-12859	Drive Shaft Kit Complete with: Drive Shaft, Ball Bearing, Sprocket (40B19, 41B12 and 48B18), Roller Chain with Master Link, Chain, Limit Chain, Key, Carriage Bolt and Nut.
K4	K75-12858	Torque Limiter Kit (1" Shaft) Complete with: Torque Limiter Hub, Pressure Plates, Washers, Clutch Discs, Sprocket, Key and Hex Jam Nut.
K5	K72-18989	Idler Shaft Kit Complete with: Idler Shaft, Bearing, Pulley, Hex Bolt, Flat Washers, Lock Washers and E-Ring.
K6	K75-12870	Door Arm Kit Complete with: Curved Arm, Straight Arm, Door Bracket and Hardware.

Door Drive Chain Kits

PART#	DESCRIPTION
19-5112	#41 Chain Doors to 8 to 12'
19-5114	#41 Chain Doors to 14'
19-5116	#41 Chain Doors to 16'
19-5118	#41 Chain Doors to 18'
19-5120	#41 Chain Doors to 20'
19-5124	#41 Chain Doors to 24'

ITEM	PART#	DESCRIPTION
15	K20-1050B-2LP	Motor - models GT5011L4, GT5021L4
	K20-3050B-4P	Motor - models GT5023L4, GT5043L4
	K20-3050M-5	Motor - model GT5053L4
3/4 HP	K20-1075B-2P	Motor - models GT7511L4, GT7521L4
	K20-3075B-4P	Motor - models GT7523L4, GT7543L4
	K20-3075M-5	Motor - model GT7553L4
1 HP	K20-1100B-2LP	Motor - models GT1011L4, GT1021L4
	K20-3100B-4P	Motor - models GT1023L4, GT1043L4
	K20-3100M-5	Motor - model GT1053L4
1-1/2 HP	K20-1150C-2LP	Motor - models GT1511L4, GT1521L4
2 HP	K20-3200C-4P	Motor - models GT1523L4, GT1543L4
3 HP	K20-3200C-5	Motor - model GT1553L4
16		Door Track*
17	1110197	Take Up Bolt
18	K75-17034	Heavy Duty Straight Arm



* Call for Pricing and Availability

Model APT

Service Kits

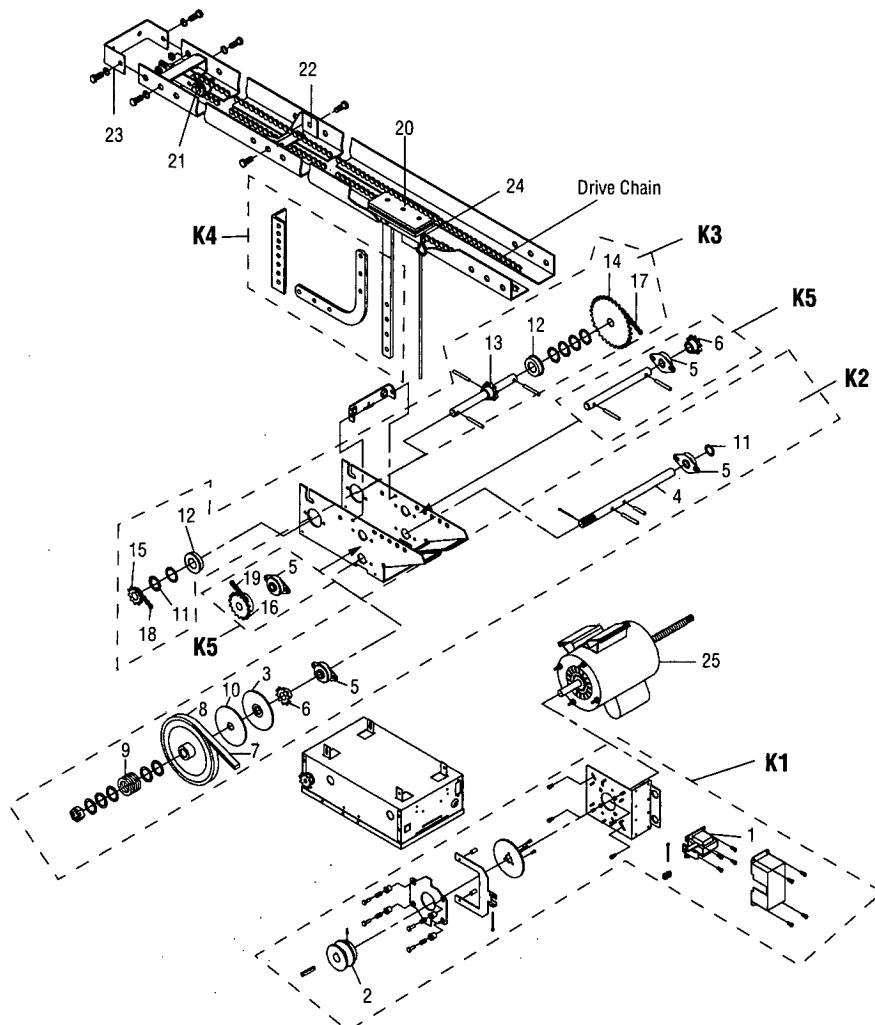
ITEM	PART#	DESCRIPTION
K1	71-AB120	Brake Kit, 115 Volt Models Complete with: Brake Solenoid, Cover, Brake Release Lever, Brake Disk, Spring Cup, Studs, Compression Springs, Brake Solenoid, Spacers, Mounting Plate, Pressure Plate, Feather Key and Conduit.
K2	K72-13057	Clutch Shaft Kit Complete with: Clutch Plate, Clutch Shaft, Bearing 3/4" I.D., Sprocket 41B10x3/4", 5L Belt, Motor Pulley, Spring, Clutch Disc, Shim Washers, Castle Nut, Flat Washers, Cotter Pin, Roll Pins and Push on Fastener.
K3	K72-13059	Output Shaft Kit Complete with: Output Shaft, Bearing, Roller Chain with Master Link, Limit Chain, Shim Washers, Roll Pins, Push Ring 3/4" and Sprockets (41B32 & 48B10).
K4	K75-13074	Door Arm Kit Complete with: Curved Arm, Straight Arm, Door Bracket and Hardware.
K5	K72-13058	Intermediate Shaft Kit Complete with: Shaft, Bearings, Roll Pins, Washers and Sprockets (41B10x3/4" & 41B16x 3/4").

Individual Parts

ITEM	PART#	DESCRIPTION
1	22-120	Brake Solenoid, 115 Volts
2	17-6014-1	Motor Pulley
3	10-10166	Clutch Plate
4	11-10014	Clutch Shaft
5	12-729	Pillow Flange Bearing
6	15-41B10G1	Sprocket, 41B10x3/4"
7	16-5L300	Cogged Belt
8	17-10165	Clutch Pulley 7" O.D. 5L
9	18-10164	Spring Clutch
10	39-10167	Clutch Disc
11	87-P-075	Push on Fastener
12	12-10331	Bearing
13	15-48B10GXX	Sprocket, 48B10x3/4"
14	15-41B32GXX	Sprocket, 41B32x3/4"
15	15-48B10G1	Sprocket, 48B10x3/4"
16	15-41B16GXX	Sprocket, 41B16x3/4"
17	19-41047	Roller Chain, #41x47 Pitches
18	19-48033M	Limit Chain, #48x33 Pitches
19	K75-10388	Intermediate Chain, #41x23 Pitches
20	K75-10387	Slider Assembly
21	K75-10388	Chain Tension Assembly
22	K75-10259	Tracker Spacer
23	10-10205	Header Bracket
24	K75-10406	Drive Link Assembly
25	K20-1050B-2RLP	Motor - APT5011L3

Door Drive Chain Kits

PART#	DESCRIPTION
19-5810	#48 Chain Doors 8' to 10'
19-5812	#48 Chain Doors to 12'
19-5814	#48 Chain Doors to 14'
19-5816	#48 Chain Doors to 16'
19-5818	#48 Chain Doors to 18'
19-5820	#48 Chain Doors to 20'



* Call for Pricing and Availability

Model SD

Brake Assembly Kits

ITEM	PART#	DESCRIPTION
B1	07-10179	Brake Hub
B2	10-10187	Brake Solenoid Cover
B3	10-10190	Brake Release Lever
B4	10-10191	Brake Disc, Zinc Plated
B5	11-10192	Spring Cup
B6	11-10193	Brake Stud
B7		Compression Spring (Available in complete brake kits only)
B8	19-48001	Chain, #48x1 Pitch
B9	22-120	Brake Solenoid, 115 Volts
	22-35704	Brake Solenoid, 208 Volts
	22-240	Brake Solenoid, 230-460 Volts
	22-575-1	Brake Solenoid, 575 Volts
B10		Spacer, .20 I.D.x.31 (Available in complete brake kits only)
B11	K75-10180	Brake Mounting Plate Assembly
B12	K75-10184	Brake Pressure Plate Assembly
B13	80-9001	Feather Key
B14	86-CP04-112	Cotter Pin, 1/8"x1-3/4" Zinc Plate
B15	87-P-062	Push on Fastener, 5/8" Int. Star
B16	17-6014	Motor Pulley
Brake Kits		
71B120		For 115 Volt Operators
71B208		For 208 Volt Operators
71B240		For 230-460 Volt Operators
71B575		For 575 Volt Operators

Individual Parts

ITEM	PART#	DESCRIPTION
1	K75-10030	Frame Spacer
2	10-10011M1	Drawbar Frame
3		Motor
4	K28-10747	Double BX Connector

Hardware Kits

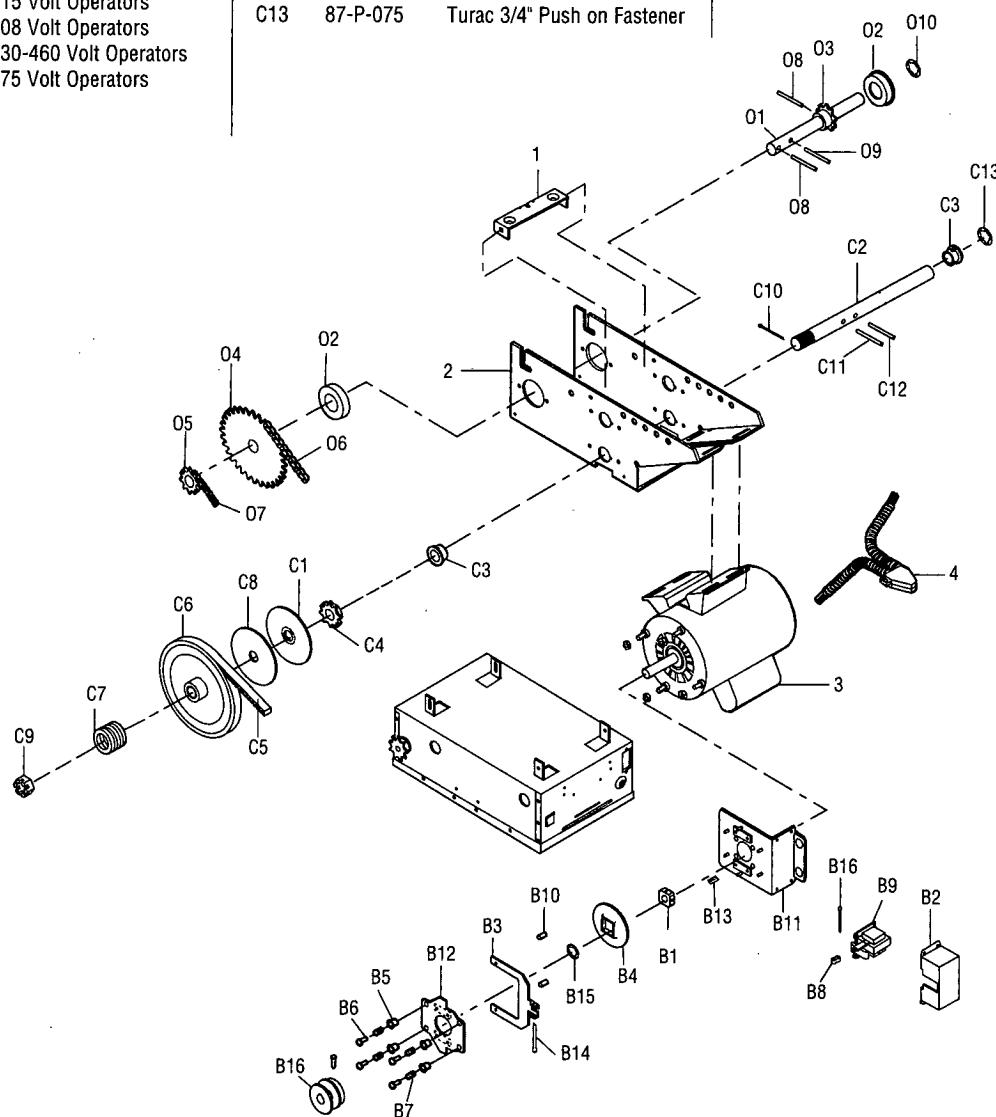
PART#	DESCRIPTION
K77-10473	Single Slide Door Kit
K77-10474	Bi-Sliding Door Kit
K75-10470	Trolley Slider for Single Slide Door Kit
K75-10471	Trolley Slider for Bi-Sliding Door Kit
K75-10469	Door Disconnect Kit

Clutch Shaft Kit

ITEM	PART#	DESCRIPTION
C1	10-10166	Clutch Plate
C2	11-10014	Clutch Shaft
C3	12-10029	Bearing 3/4" I.D.
C4	15-41B10G1	Sprocket, 41B10x3/4"
C5	16-5L300	Cogged Belt
C6	17-10165	5L Motor Pulley 7" O.D.
C7	18-10164	Clutch Spring (1/3 & 1/2 HP)
C8	18-10168	Clutch Spring (3/4 & 1 HP)
C9	39-10167	Clutch Disc
C10	84-SH-76	Castle Nut 3/4-16"
C11	K-SPSHORT	Roll Pin 1/4"x1-1/8" (10 Pins)
C12	86-RP08-200	Roll Pin 1/4"x2"
C13	87-P-075	Turac 3/4" Push on Fastener

Output Shaft Kit

ITEM	PART#	DESCRIPTION
01	11-10015	Output Shaft
02	12-10331	Flange Bearing
03	15-48B10GXX	Sprocket, 48B10x3/4" Bore, Steel
04	15-41B32GXX	Sprocket, 41B32x3/4" Bore
05	15-48B10G1	Sprocket, 48B10x3/4" Bore
06	19-41047	Drive Chain, #41x47 Pitches
07	19-48033	Limit Chain, #48x33 Pitches
08	86-RP08-102	Roll Pin, 1/4" Dia.x1-1/8"
09	86-RP08-108	Roll Pin, 1/4" Dia.x1-1/2"
010	158A53	Push Ring, 3/4" I.D.



* Call for Pricing and Availability

Model GSD

Brake Assembly Kits

ITEM	PART#	DESCRIPTION
B1	07-10179	Brake Hub
B2	10-10187	Brake Solenoid Cover
B3	10-10190	Brake Release Lever
B4	10-10191	Brake Disc, Zinc Plated
B5	11-10192	Spring Cup
B6	11-10193	Brake Stud
B7		Compression Spring (Available in complete brake kits only)
B8	19-48001	Chain, #48 X 1 Pitch
B9	22-120	Brake Solenoid, 115 Volts
	22-35704	Brake Solenoid, 208 Volts
	22-240	Brake Solenoid, 230-460 Volts
	22-575-1	Brake Solenoid, 575 Volts
B10		Spacer, .20 I.D. X .31 (Available in complete brake kits only)
B11	K75-10180	Brake Mounting Plate Assembly
B12	K75-10184	Brake Pressure Plate Assembly
B13	80-9001	Feather Key
B14	86-CP04-112	Cotter Pin, 1/8"x1-3/4" Zinc Plate
B15	87-P062	Push on Fastener, 5/8" Int. Star

Brake Kits

- 71B120 For 115 Volt Operators
- 71B208 For 208 Volt Operators
- 71B240 For 230-460 Volt Operators
- 71B575 For 575 Volt Operators

Individual Parts

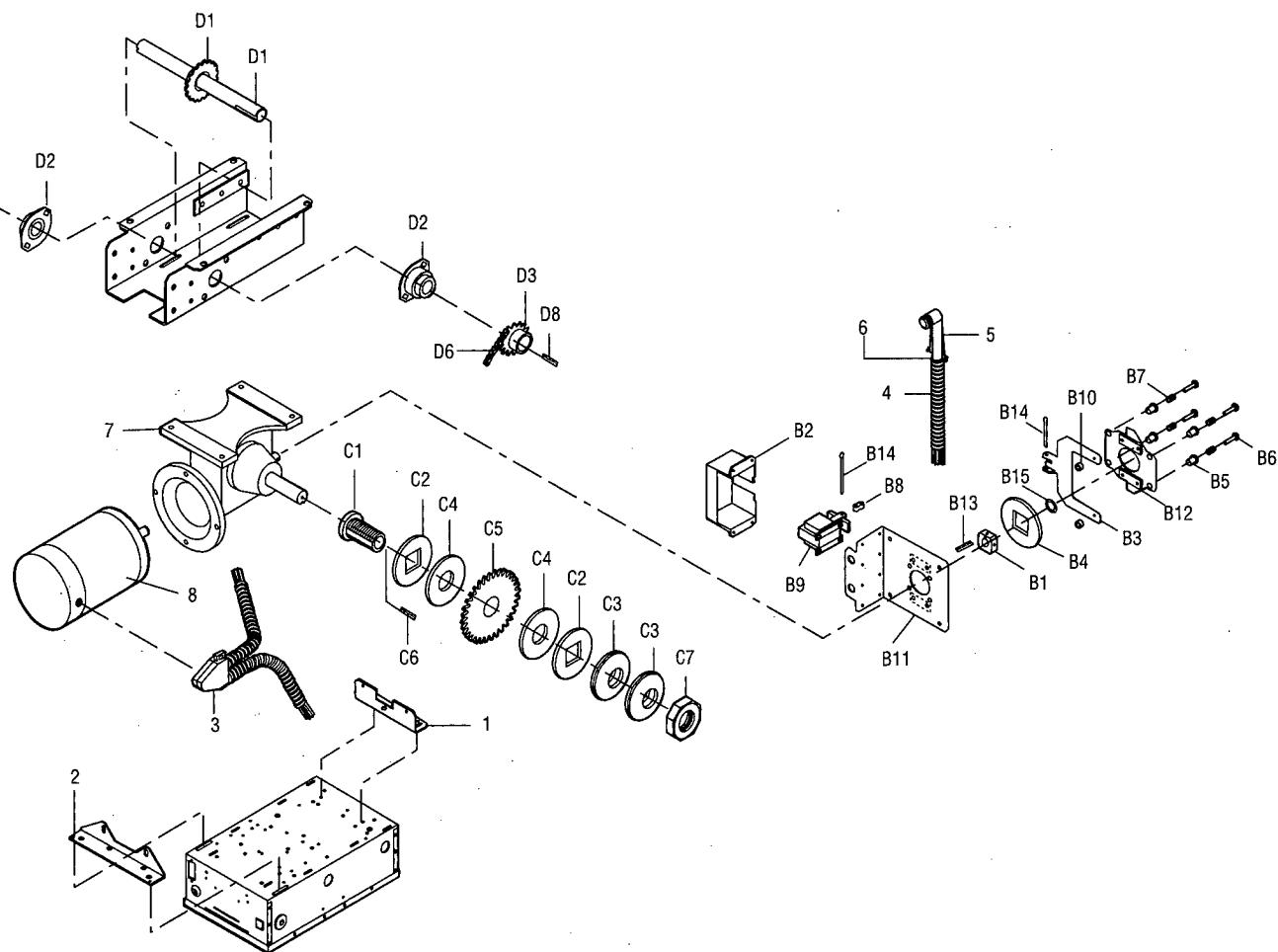
ITEM	PART#	DESCRIPTION
1	10-10446	Mounting Bracket, Electrical Box - Brake
2	10-10447	Mounting Bracket, Electrical Box - Reducer
3	K28-10747	Double BX Connector
4	28-10218	Conduit, 3/8" NLA
5	28-10219	Connector, 90 Degree
6	28-10220	Bushing, Anti-Short
7	32-10540	Gear Reducer
8		Motor Drive Chain

Hardware Kits

PART#	DESCRIPTION
K77-10473	Single Slide Door Kit
K77-10474	Bi-Sliding Door Kit
K75-10470	Trolley Slider for Single Slide Door Kit
K75-10471	Trolley Slider for Bi-Sliding Door Kit
K75-10469	Door Disconnect Kit

Drive Shaft Kit

ITEM	PART#	DESCRIPTION
D1	11-10537	Drive Shaft
D2	12-12004 1"	Ball Bearing
D3	15-40B19LGF	Sprocket, 40B19x1" Bore
D4	15-41B12LXX	Sprocket, 41B12x1" Bore
D5	15-48B18LGE	Sprocket, 48B18x1" Bore
D6	19-40047M	Drive Chain, #40 with Master Link
D7	19-48069M	Limit Chain, #48 with Master Link
D8	80-207-23	Key, 3/16"x3/16"x1-3/8"



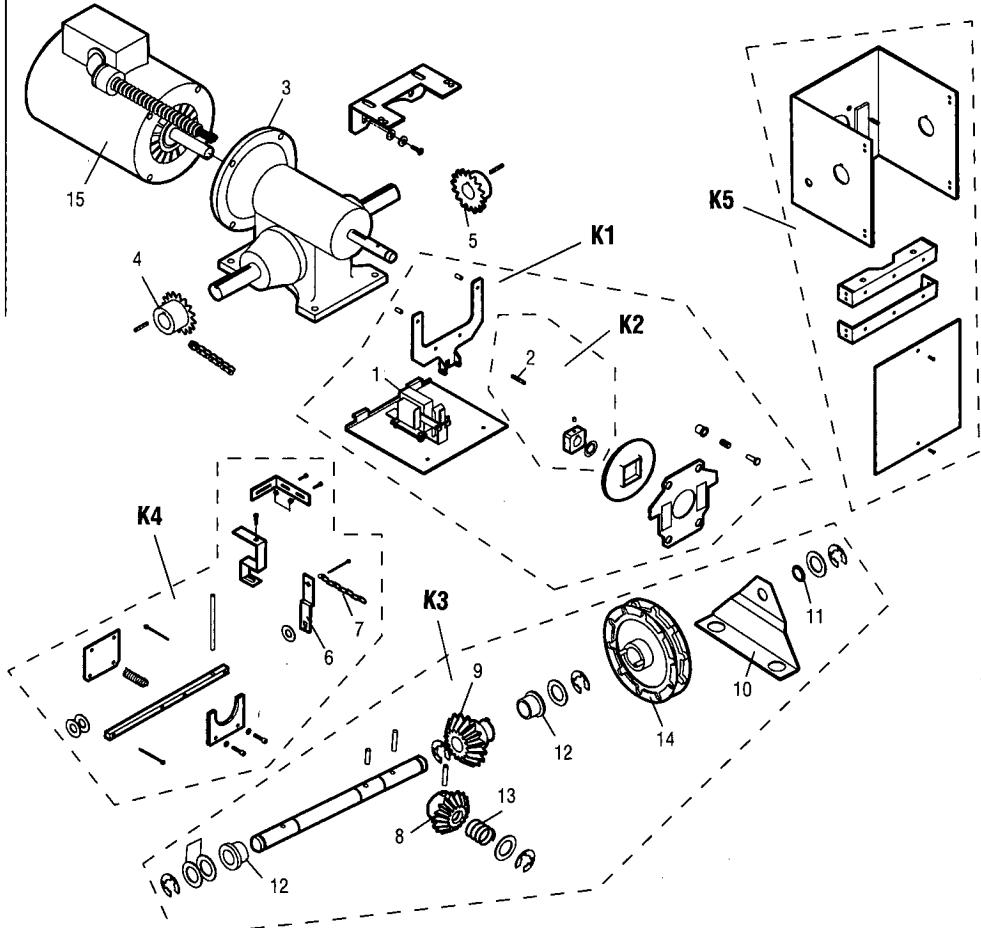
Model GH

Service Kits

ITEM	PART#	DESCRIPTION
K1	K75-12584	Brake Kit, 115 Volt Models
	K75-12585	Brake Kit, 230-460 Volt Models
	K75-12586	Brake Kit, 575 Volt Models
		Complete with: Brake Hub Kit, Brake Release Lever, Brake Disk, Spring Cup, Studs, Compression Springs, Brake Solenoid, Solenoid Cover, Spacers, Mounting Plate, Pressure Plate, Feather Key and Fastener.
K2	K75-10177	Brake Hub Kit
		Complete with: Brake Hub, Set Screw, Push on Fastener and Feather Key.
K3	K72-12789	Hand Chain Shaft Kit (1/2-2 HP)
	K75-14661	Hand Chain Shaft Kit (3 HP)
		Complete with: Bevel Gear 5/8" ID, Bevel Gear 3/4" ID, Hand Chain Guide, Hand Chain Shaft, Bearing 3/4" ID, Nyliner Bearing, Compression Spring, Chain Wheel, Washers, Roll Pins and E-Rings.
K4	K75-30737	Disconnect Kit
		Complete with: Disconnect Lever, Bevel Gear Yoke, Brake Release, Actuator Bracket, Switch Actuator, Disconnect Shaft, Tension Spring, Sash Chain with Keyring, Screws, Nuts, Flat Washers, Lock Washers, Cotter Pins and Roll Pin.
K5	K75-12829	Gear Housing Kit (1/2-1 HP, 115 Volts)
	K75-12830	Gear Housing Kit (1/2-1 HP, 230-460 Volts)
	K75-12831	Gear Housing Kit (1/2-1 HP, 575 Volts)
	K75-12832	Gear Housing Kit (1/2-2 HP, 230-460 Volts)
	K75-12833	Gear Housing Kit (1/2-2 HP, 575 Volts)
		Complete with: Housing Support Bracket, Pads and Pressure Plate, Housing with Cover, Disconnect Kit, Hand Chain Shaft and Brake Kit.

Individual Parts

ITEM	PART#	DESCRIPTION	ITEM	PART#	DESCRIPTION
1	22-120	Brake Solenoid, 115 Volts		15	
	22-35704	Brake Solenoid, 208 Volts	1/2 HP	K20-1050C-2LP	Motor - models GH5011L4, GH5021L4
22-240		Brake Solenoid, 230-460 Volts		K20-3050C-4P	Motor - models GH5023L4, GH5043L4
22-575-1		Brake Solenoid, 575 Volts		K20-3050M-5	Motor - model GH5053L4
2	80-9001	Feather Key	3/4 HP	K20-1075C-2LP	Motor - models GH7511L4, GH7521L4
3	32-11009	Gear Reducer (1/2-1 HP, 45:1)		K20-3075C-4P	Motor - models GH7523L4, GH7543L4
	32-11010	Gear Reducer (1/2-2 HP, 44:1)		K20-3075M-5	Motor - model GH7553L4
	32-11011	Gear Reducer (3 HP, 45:1)	1 HP	K20-1100C-2LP	Motor - models GH1011L4, GH1021L4
4	15-48B18LGE	Sprocket, 48B18 LGE (1/2-1 HP)		K20-3100C-4P	Motor - models GH1023L4, GH1043L4
	15-48B18PJH	Sprocket, 48B18 PJH (1/2-2 HP)		K20-3100M-5	Motor - model GH1053L4
	15-48B18QGH	Sprocket, 48B18 (3 HP)	1-1/2 HP	K20-1150C-2LP	Motor - models GH1511L4, GH1521L4
5	15-50B12LGH	Sprocket, 50B12 (1/2-1 HP)		K20-3200C-4P	Motor - models GH1523L4, GH1543L4
	15-50B12PJH	Sprocket, 50B12 (1/2-2 HP)	2 HP	K20-3200C-4P	Motor - models GH2023L4, GH2043L4
	15-80B9QGH	Sprocket, 80B9 (3 HP)		K20-3300C-4	Motor - models GH3023L4, GH3043L4
6	10-11021	Disconnect Lever			
7	198A12	Sash Chain, 12' with Keyring			
8	08-11012	Bevel Gear, 5/8" ID			
	75-13334	Bevel Gear, 3/4" I.D. (3 HP)			
9	08-11013	Bevel Gear, 3/4" I.D.			
	08-13333	Bevel Gear, 3/4" I.D. 24 tooth (3 HP)			
10	10-10882	Hand Chain Guide			
11	12-10883	Nyliner Bearing			
12	12-10029	Bearing, 3/4" I.D.			
13	18-11008	Compression Spring			
14	75-10884	Chain Wheel Assembly			



* Call for Pricing and Availability

INSTALLATION AND ALIGNMENT

The CPS Photoelectric Sensors must be installed facing each other across the door, no more than 6" (15 cm) above the floor. If photoelectric sensor protection is required at a level above 6" (15 cm), use a CPS3CARD combined with an additional set of compatible photoelectric sensors.

Each photoelectric sensor has an LED that will glow steady when the sensors are properly connected and aligned. **The LEDs on both photoelectric sensors will flicker rapidly when obstructed or misaligned. This is an improvement over previous versions of photoelectric sensors that make installation and troubleshooting easier.**

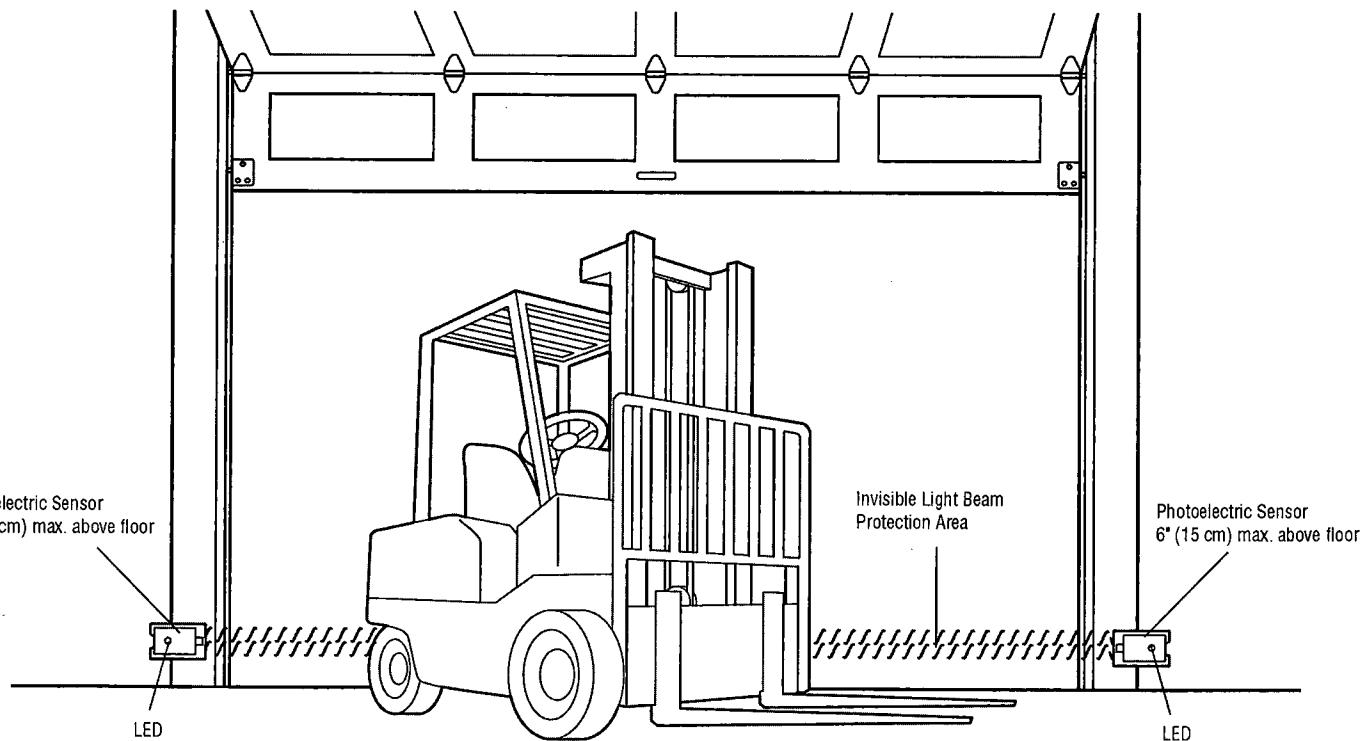
WARNING

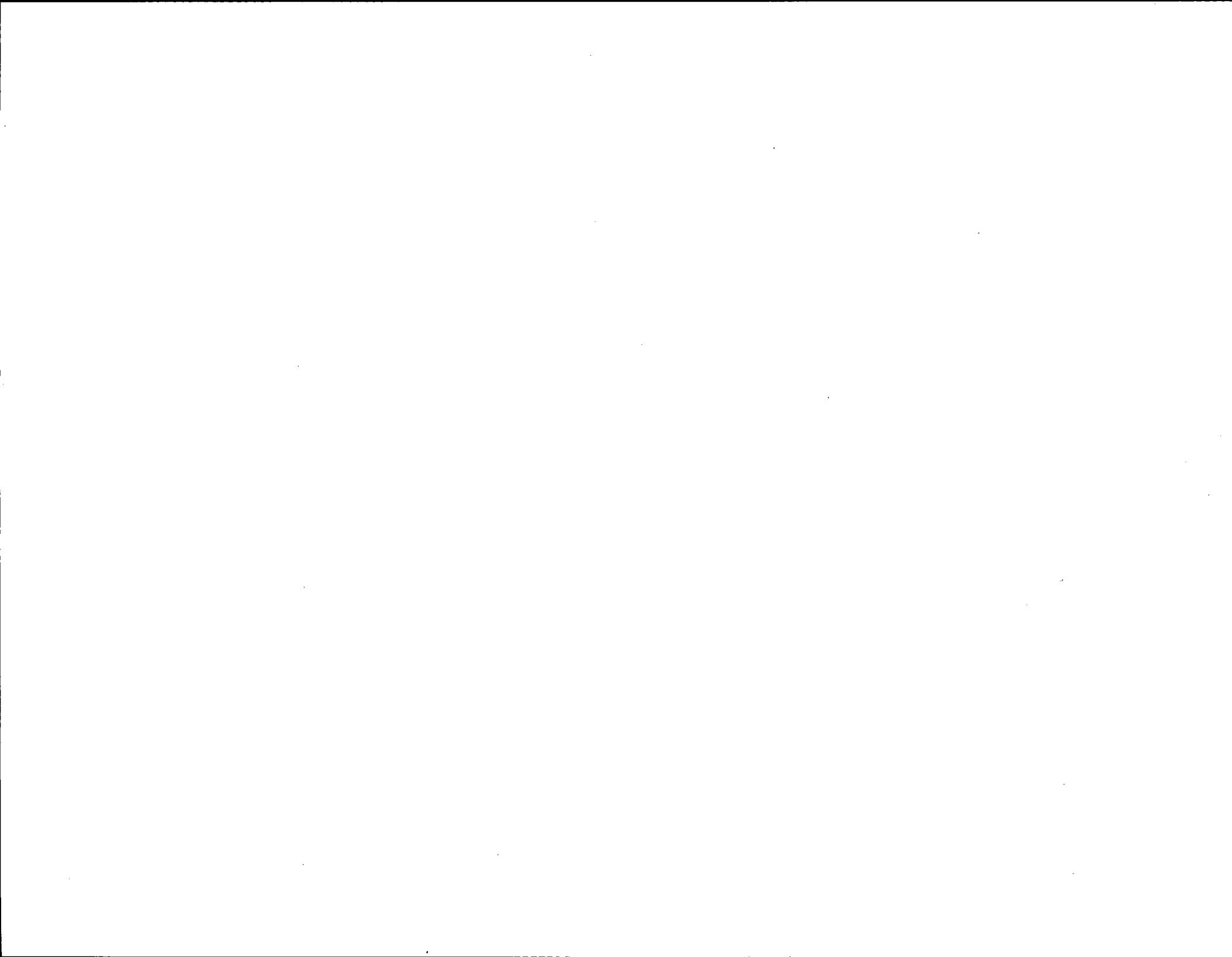
To prevent possible SERIOUS INJURY or DEATH from a closing door:

- Be sure power is not connected to the door operator BEFORE installing the photoelectric sensor.
- The door MUST be in the fully opened or closed position BEFORE installing the LiftMaster Monitored Entrapment Protection device.

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

- Correctly connect and align the photoelectric sensor.
- Install the photoelectric sensor beam NO HIGHER than 6" (15 cm) above the floor.
- This is a required safety 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 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, then place one or more edge sensors on both the leading and trailing edge.
- If an edge sensor is being used on a vertically moving door, then place one or more edge sensors on the bottom edge of the door.

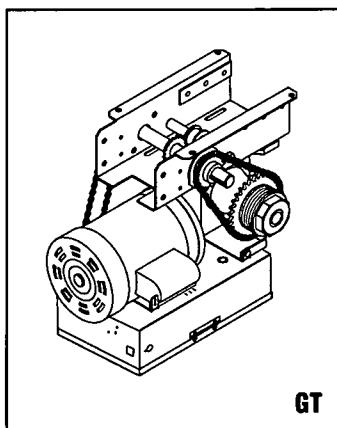
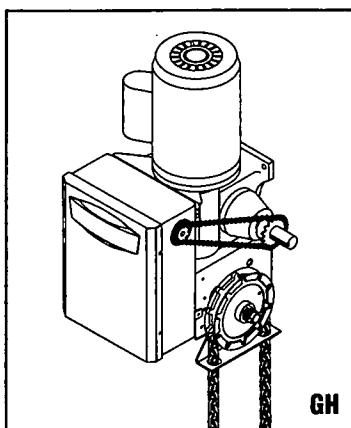
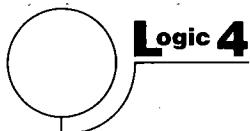
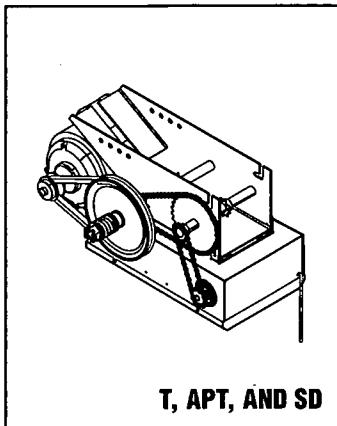
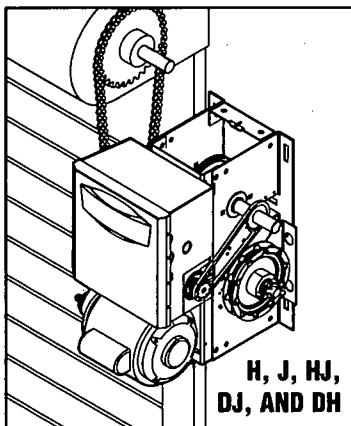




LiftMaster

Commercial Door Operators

USER'S GUIDE



**THIS PRODUCT IS TO BE
INSTALLED AND SERVICED
BY A TRAINED DOOR
SYSTEMS TECHNICIAN
ONLY.**

Operators are shipped in C2
operating mode.

Visit www.liftmaster.com to locate
a professional installing dealer in
your area.

CONTACT INFORMATION

2 YEAR WARRANTY

Serial # Box _____
Installation Date 5/13/2014

THIS OPERATOR FEATURES THE ENHANCED



The Maintenance Alert System™ allows the installer to set an internal Maintenance Cycle Counter. The Logic 4 operator incorporates a self-diagnostic feature built into the (MAS) Maintenance Alert System LED. An LED on the 3-button station will signal when the set number of cycles/months is reached or when the operator requires immediate service.

NOT FOR RESIDENTIAL USE



315MHz
Radio Receiver
Built on Board

BASIC PROGRAMMING

⚠ 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.

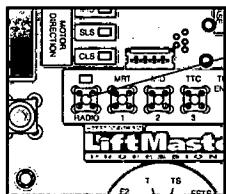
REMOTE CONTROLS

Built in 3-channel, 315 MHz radio receiver allows you to add as many as 23 Security+® remotes or dip switch remote controls.

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

SINGLE BUTTON REMOTE CONTROL

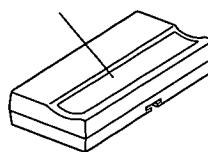
1



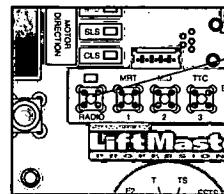
Press and release the RADIO button (RADIO LED will light).

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

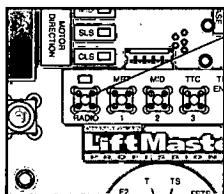


Press and release the RADIO button to complete the programming. The programming mode is exited if no activity is performed within 30 seconds.

3-BUTTON REMOTE CONTROL TO OPERATE AS A WIRELESS 3-BUTTON CONTROL STATION

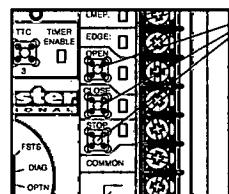
NOTE: The feature will use 3 of the 23 memory channels in the operator.

1



Press and release the RADIO button on the logic board (the Radio LED will light).

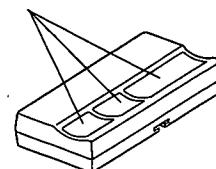
2



Press and release the desired button on the logic board (OPEN, CLOSE or STOP). The Radio LED will flash and then stay on solid.

3

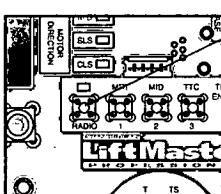
Press and hold the desired button of the remote control until Radio LED flashes rapidly, then release.



Repeat steps 1 through 3 to program additional buttons.

TO ERASE ALL REMOTE CONTROLS

1



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.

BASIC PROGRAMMING

⚠ 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 door after preset time. All safety devices must be unobstructed.

Benefit: The door will automatically close after 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):

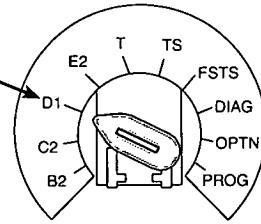
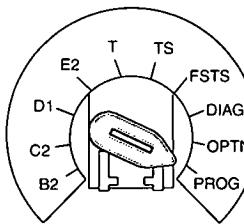
1. Close the door.
2. Turn the selector dial to PROGRAM.
3. Press and release the TIMER button on the logic board.
4. Press and release the STOP button to clear the timer.
5. Press and release the OPEN button for every second the operator should wait before attempting to close the door. Press and release the CLOSE button for every 15 seconds the operator should wait before closing the door.

6. Press and release the TIMER button to complete 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 desired timer wiring type (TS, T or FSTS).

Example: To close the door after 70 seconds. Turn selector dial to PROGRAM, press and release the TIMER 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 TIMER button to finish programming the timer. Turn the selector dial to desired timer wiring type (TS, T, or FSTS).

SELECTOR DIAL



PROGRAM TIMER-TO-CLOSE BY EXAMPLE (Method 2):

TO PROGRAM:

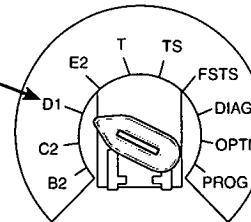
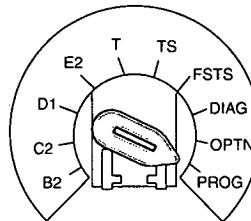
1. Close the door.
2. Turn the selector dial to PROGRAM.
3. Press and hold TIMER button for 5 seconds until OPEN and OLS flashes then release.
4. Press and release the OPEN button and wait for the door to reach full open or mid stop position.
5. Wait for desired amount of time to pass. (An internal stop watch starts counting when the door stops moving.)
6. Press and release the TIMER button, CLOSE button or STOP button to stop the timer. (TIMER SET 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 DIAGNOSTIC and press the TIMER button. The OPEN LED will flash once for every second programmed and the CLOSE LED will flash once for every 15 seconds programmed.

To deactivate the timer from the open position press the STOP button. The timer will be reactivated on the next operation command. To deactivate the timer for more than one cycle, attach a switch to 11 and 12 (Common and Timer Defeat).

Reminders: FSTS wiring mode allows the Timer-To-Close to be activated by the Single Button Control (terminal 1) only. T wiring mode allows the door to attempt to close only one time for safety purposes.

SELECTOR DIAL



MANUAL RELEASE

⚠ WARNING

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

- 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 GT AND T

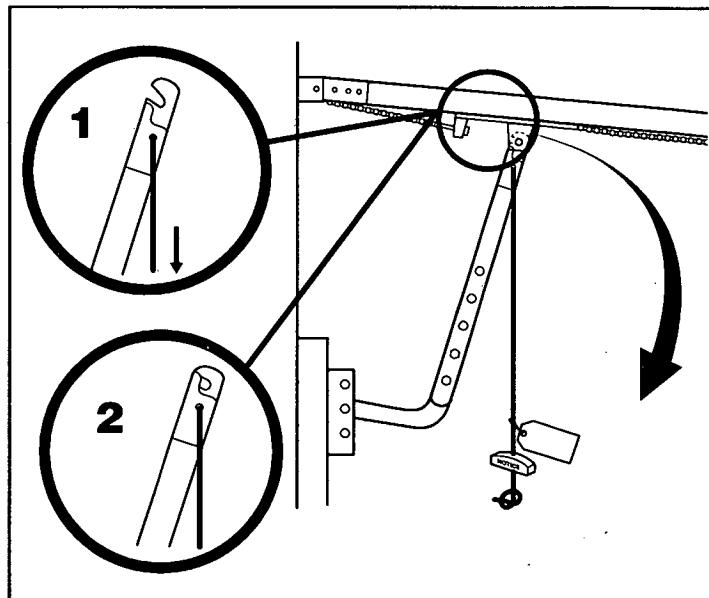
TO DISCONNECT DOOR FROM OPERATOR

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.



EMERGENCY DISCONNECT SYSTEM MODEL APT

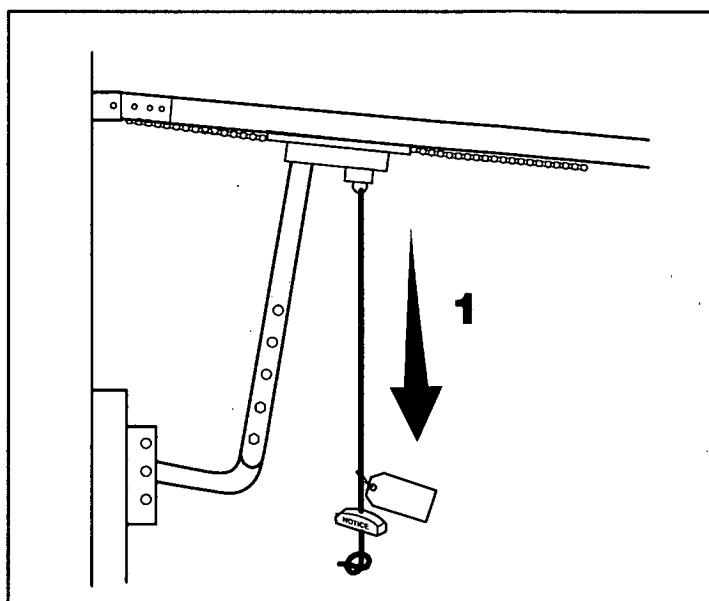
TO DISCONNECT DOOR FROM OPERATOR

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

- 1 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.



MANUAL RELEASE

EMERGENCY DISCONNECT SYSTEM MODEL H, GH, J, AND HJ

This operator has provisions for manually operating the door in case of emergency or power failure. Refer to the appropriate instructions below for your model operator.

MODEL 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.

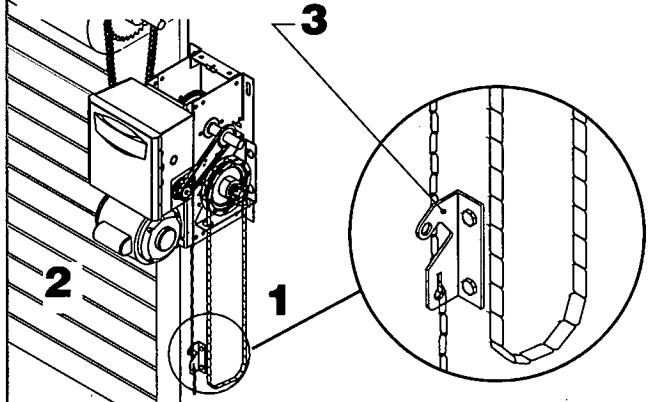
- 1 Pull the disconnect chain to engage the hoist mechanism. The disconnect chain may be locked in position by slipping the end through the keyhole of the chain keeper mounted on the wall.
- 2 To disengage, pull the disconnect chain and secure in the disengaged position by slipping the end through the 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.

CAUTION

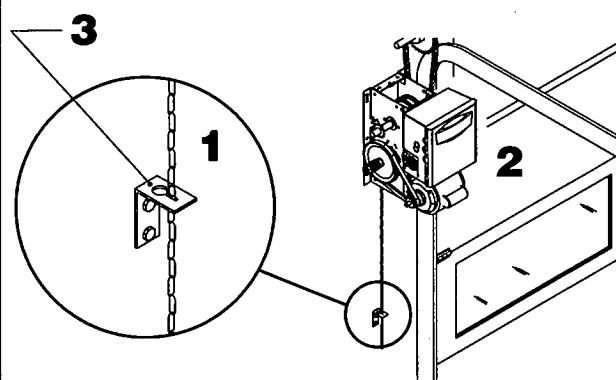
To prevent possible SERIOUS INJURY from a moving chain:

- 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.

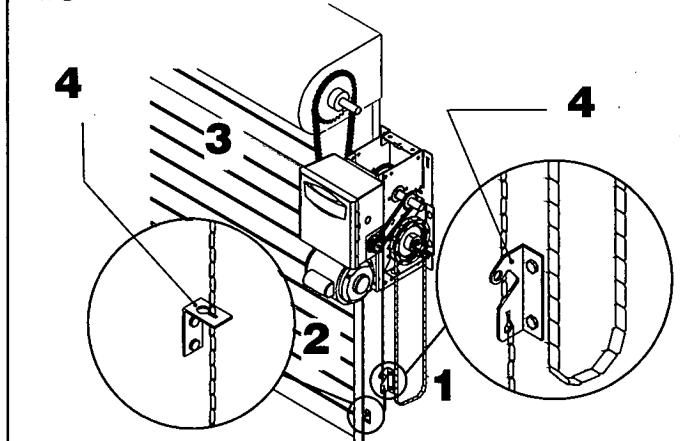
H and GH



J



HJ



TESTING

Apply power to the operator.

When power is applied to the operator, the following LED's will illuminate: STOP, CLOSE, OPEN, LMEP, 24Vac, RADIO, DATA, TIMER ENABLE, OLS MID, SLS, CLS, and MAS. 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 over, 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.

ALIGN THE PHOTOELECTRIC SENSORS

1. After power is connected to the operator, the green indicator lights in both the sending and receiving sensors will glow steadily if wiring connections and alignment are correct.
2. If the receiving sensor indicator light is not glowing steadily (and the invisible light beam path is not obstructed), alignment is required:
 - Loosen the *receiving sensor* wing nut to allow slight rotation of the sensor. Adjust sensor vertically and/or horizontally until the green indicator light glows steadily.
 - When the indicator lights are glowing in both sensors, tighten the receiving sensor wing nut.

TEST THE PHOTOELECTRIC SENSORS

1. Open the door.
2. Place an obstruction in the path of the photoelectric sensors. The LMEP LED will blink on the logic board and the receiving eye LED will turn off.
3. Press and hold the CLOSE button. The door should not close if photoelectric sensors are installed.
4. Remove the obstruction.
5. Press and hold the CLOSE button. Door should close. If door did not reverse from obstruction, check photoelectric sensors.

IMPORTANT NOTES:

- Do not leave power to the operator on unless all safety and entrapment protection devices have been tested and are working properly.
- 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.

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.

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).

TROUBLESHOOTING

To locate a dealer in your area visit us online at www.liftmaster.com

CONDITION	POSSIBLE CAUSE	FIX
OPERATOR WILL NOT RESPOND TO ANY COMMANDS	No power	► Check circuit breaker.
	Accessory failure	► Verify photoelectric sensors are aligned.
	Possible component failure	► Contact your installing dealer.
OPERATOR MAKES NOISE BUT DOOR DOES NOT MOVE	Operator requires adjustment	► Contact your installing dealer.
DOOR DRIFTS AFTER OPERATOR STOPS	Operator or door requires adjustment	► Contact your installing dealer.
DOOR OPENS/CLOSES TOO FAR	Operator requires adjustment	► Contact your installing dealer.
DOOR REVERSES UNEXPECTEDLY	Entrapment protection device activated	► Verify photoelectric sensors are aligned. If photoelectric sensors are aligned and operator still does not operate properly, contact your installing dealer.
RADIO FUNCTIONALITY		
NO RESPONSE	Remote control is not programmed	► See PROGRAMMING REMOTE CONTROLS section.
	Low battery	► Replace battery.
REMOTE CANNOT BE PROGRAMMED	Low battery	► Replace battery.
POOR RANGE	Low battery in remote	► Replace battery.
	Possible radio interference	► Contact your installing dealer.

MAINTENANCE SCHEDULE

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.

Every 3 months or 5,000 cycles repeat all tests in the Testing section.

Call a trained door systems technician. To locate a dealer in your area visit us online at www.liftmaster.com.

The operator should be serviced at the following intervals:

- Every 3 months or 5,000 cycles
- Every 6 months or 10,000 cycles
- Every 12 months or 20,000 cycles

OPERATOR NOTES

ACCESSORIES

REMOTE CONTROLS 315MHz



1-Button SECURITY+® Remote Control:
Includes visor clip.

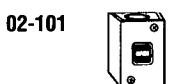


3-Button SECURITY+® Remote Control:
Includes visor clip.



3-Button Tri-Colored Dip Switch Remote Control:
Includes visor clip.

CONTROL STATIONS



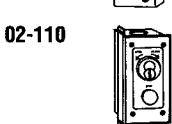
1-Button Control Station:
Steel enclosure.



2-Button Control Station:
Steel enclosure.

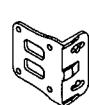


3-Button Control Station:
Steel enclosure with Maintenance Alert System.

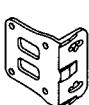


Key Control Station:
Indoor flush mount, NEMA 1 with Stop button.

MOUNTING BRACKETS



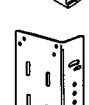
10-12360 Heavy gauge steel bracket for vertical or horizontal mount on either front or top of coil on a rolling door. Has a variety of mounting hole patterns compatible with many OEM manufacturers. May be welded. For use with J, H, DJ, and DH operators.



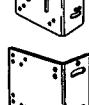
08-9098 Cast iron bracket to mount J, H, DH, DJ, and GH side mount operators on end bracket of a rolling door or grill. For vertical or horizontal mount on either front or top of coil.



08-9098EZ Same as 08-9098, but with adapter plate to hold mounting bolt holes in place for ease of use.

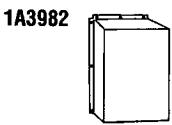


1A4324 Heavy gauge steel bracket for vertical or horizontal mount on either front or top of coil on a rolling door. May be welded. For use with J, H, DJ, and DH operators.

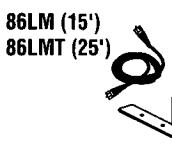


1A4324EZ Same as 1A4324, but with adapter plate to hold mounting bolt holes in place for ease of use.

MISCELLANEOUS



1A3982 **Operator Cover:**
For use with wall-mounted J, H, GH, DH or DJ operators. Measures 31" x 19" x 18" (L x W x D). Assembly required. Recommended for damp environments where direct spray is present. Required when the operator is installed less than 8 feet above the floor.



86LM (15') **86LMT (25')**
Antenna Extension Kit:
The antenna extension kit can be used with EXT-ANT for maximum radio receiver range.

ENTRAPMENT PROTECTION DEVICES

MONITORED

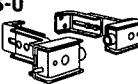
CPS-UN4



Commercial Protector System®:

Provides protection on doors up to 45' wide. NEMA-4 rated.

CPS-U



Commercial Protector System®:

Provides protection on doors up to 30' wide.

CPS3



Option Logic Board:

For use when more than one set of photoelectric eyes are required.

CPS-EI



Monitored Safety Edge Interface:

For use with the approved 4-wire safety edge (see below).

65ME1234

Miller ME123 4-Wire Monitored Safety Edge:

For sectional or rolling doors.

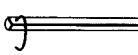
65ME110

Miller ME110 4-Wire Monitored Safety Edge:

For rolling grilles and counter shutters.

NON-MONITORED

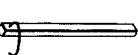
65-8202



Vehicle Detection System:

Pneumatic Sensing Edge Kit with exterior air switch, 2-wire coil cord and 14' air hose.

65-5202



Vehicle Detection System:

Pneumatic Sensing Edge Kit with exterior air switch, 2-wire take-up reel (20' extended) and 14' air hose.

TLSCARD

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.

MOUNTING CHANNELS

65ME123C

U-Shaped Mounting Channel:

For 65ME1234 edge when installed on sectional doors.

65ME123C1

T-Shaped Mounting Channel:

For 65ME1234 edge when installed on rolling doors. Fits between L-shaped angles used to construct a bottom bar on rolling doors.

65ME123CA3

L-Shaped Mounting Channel:

For 65ME1234 edge when installed on sectional doors.

CHAIN TENSIONERS

For Jackshaft Type Operators

71-6023

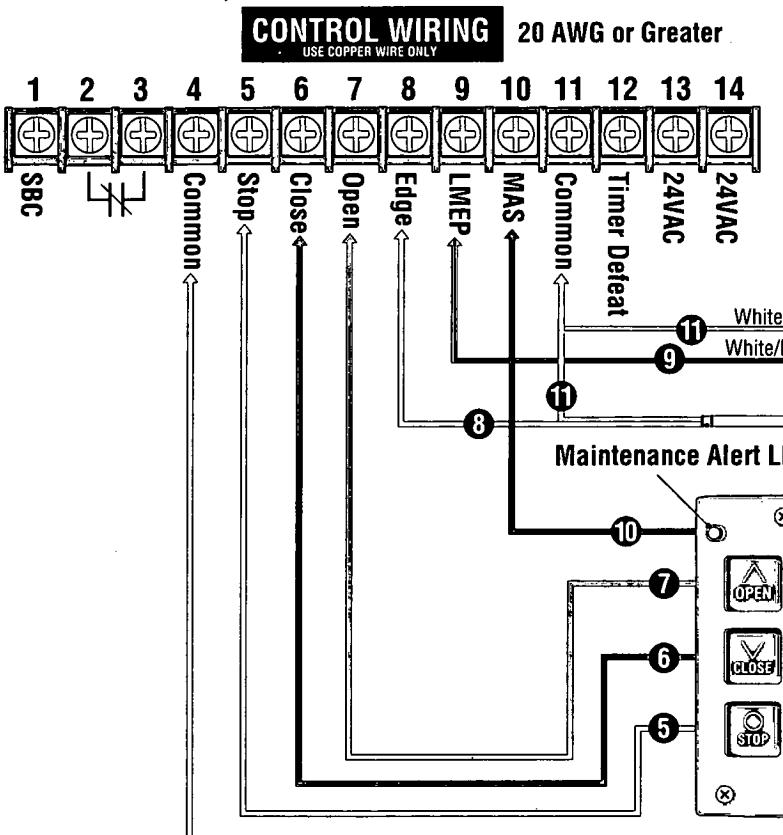
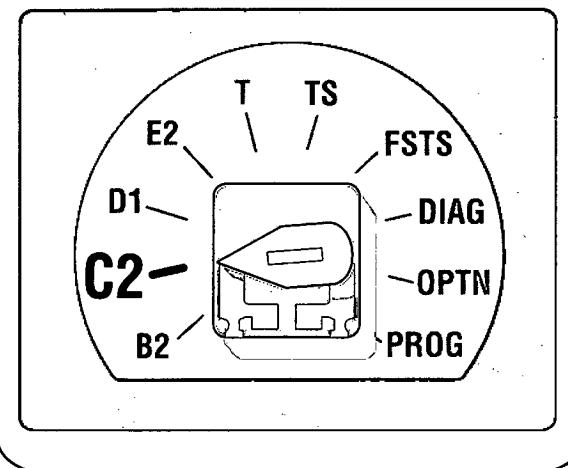
For 1" shafts. Recommended to properly tension drive chain between operator shaft and door shaft.

71-6125

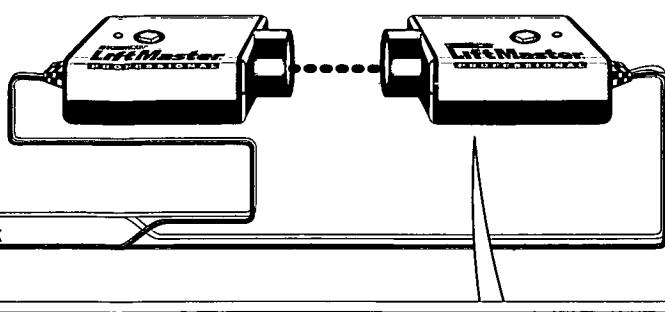
Same as 71-6023, but for 1-1/4" shafts.



Board Selector Dial Factory Setting is C2



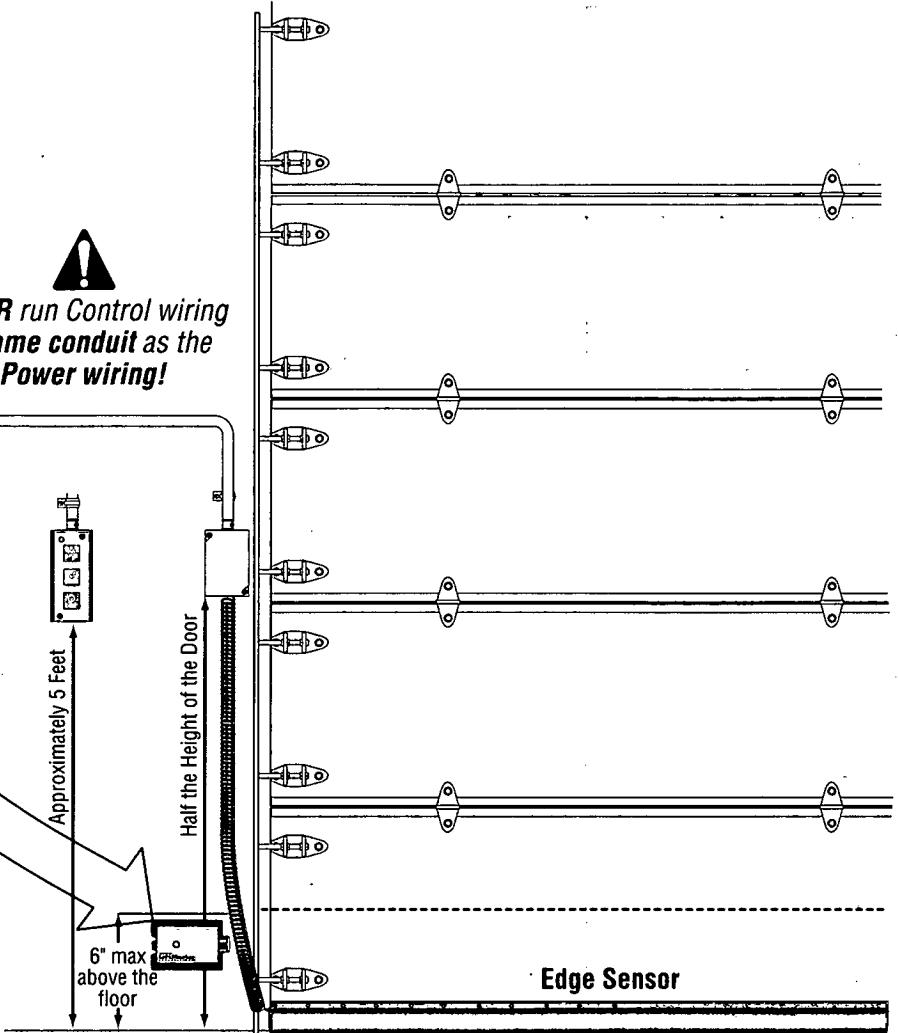
LiftMaster Monitored Entrapment Protection (LMEP)
is required for most programmable settings.
Thru-Beam Photoelectric Sensors (Shown)



NEVER run Control wiring
in same conduit as the
Power wiring!

Follow ALL national and local electrical codes

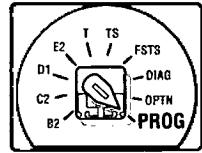
- ④ Push and Release to **Open** (without Mid Stop programming)
- ④ Push and **Hold** to **Close**
- ④ Push and Release to **Stop**



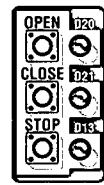
MAS Programming (Maintenance Alert System)

1. The 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.

2. Close the Door.



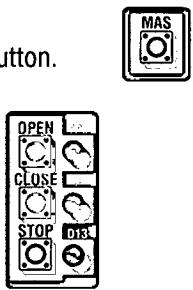
3. Turn the selector dial to **PROG**.



4. Press and release the **MAS** button.



5. Press the **STOP** button once to clear the MAS counter.



6. Press the **OPEN** button once for every **5,000 Cycles** increments. Press the **CLOSE** button once for every **3 Month** increments. Press the **STOP** button once to **Clear the MAS Setting**.



7. Press 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.



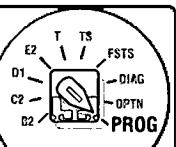
8. Turn the selector dial back to the desired wiring type.



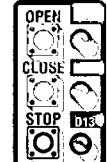
Timer-to-Close Programming

Timer automatically closes door after a preset time.

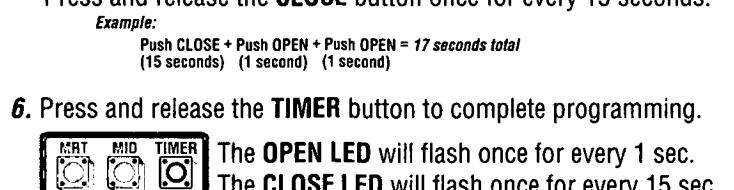
1. Close the Door.
2. Turn selector to **PROG**.
3. Press and release the **TIMER** button.



4. Press and release the **STOP** button to clear the timer.
5. Press and release the **OPEN** button once for every 1 second. Press and release the **CLOSE** button once for every 15 seconds.

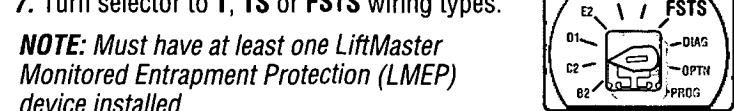


6. Press and release the **TIMER** button to complete programming.



7. Turn selector to **T, TS or FSTS** wiring types.

NOTE: Must have at least one LiftMaster Monitored Entrapment Protection (LMEP) device installed.



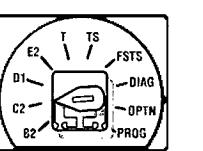
OPEN Mid Stop Programming

The mid stop feature is to open the door to a preset point prior to the fully open position.

1. Close the Door.
2. Turn selector to **PROG**.
3. Press and release the **MID** button.
4. Press the **OPEN** button, wait until the door reaches the desired mid stop height, then press and release the **STOP** button.
5. Press and release the **MID** button to complete programming.



6. Turn selector back to selected wiring type.



QuickStart for the model GH door operator

IMPORTANT: This QuickStart is intended to highlight a typical installation. These instructions are not intended to be comprehensive. Since each application is unique, it is the responsibility of the purchaser, designer, installer and end user to ensure that the total door system is safe for its intended use. Please consult the manual and/or a qualified technician for further information.

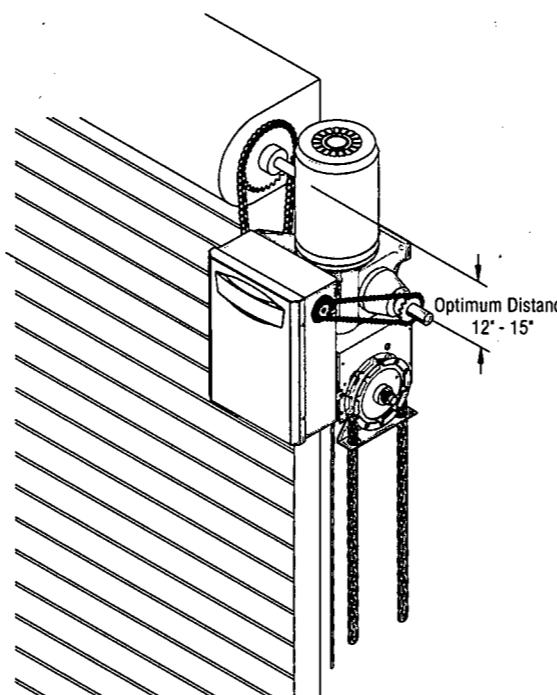
Operator Mounting

- 1a **Wall Mount:** The operator should generally be installed below the door shaft, and as close to the door as possible.
- 1b **Bracket Shelf Mounting:** The operator may be mounted either above or below the door shaft.

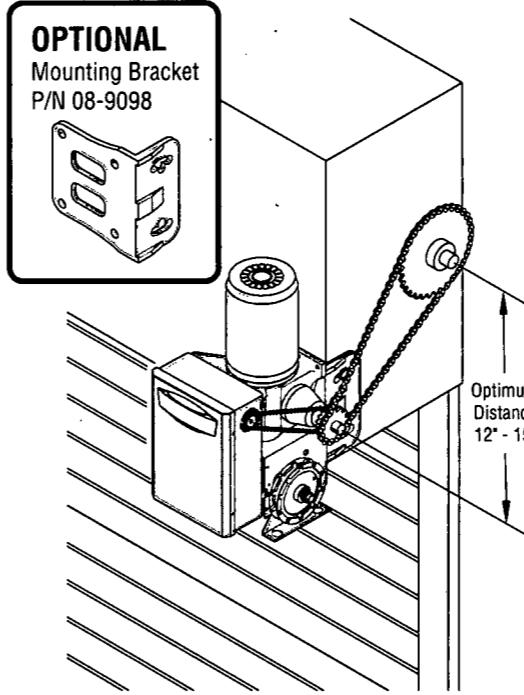
NOTE: The optimum distance between the door shaft and operator drive shaft is between 12 - 15 inches.

- 2 Place door sprocket on the door shaft. **Do not insert the key at this time.**
- 3 Place drive sprocket on the appropriate side of the operator. **Do not insert the key at this time.**
- 4 Wrap chain drive around door sprocket and join roller chain ends together with master link.
- 5 Raise operator to approximate mounting position and position chain over operator sprocket.
- 6 Raise or lower operator until the chain is taut (not tight). Make sure the operator output shaft is parallel to door shaft and sprockets are aligned. When in position, secure the operator to wall or mounting bracket.
- 7 Align sprockets, insert key into keyway, and secure.
- 8 Place hand chain around hand chain wheel.
- 9 Run the power wires through the power wiring conduit hole in the electrical box enclosure. Connect the power to the operator. Connect the earth ground to the ground screw in the electrical box enclosure. **Follow ALL local electrical codes.**
- 10 Adjust the limit switches to open and close door properly. Make sure the limit nuts are positioned between the limit switches before proceeding with adjustments.
- 11 Radio programming and troubleshooting instructions inside cover of operator.

1a Right Hand Wall Mounted Operator

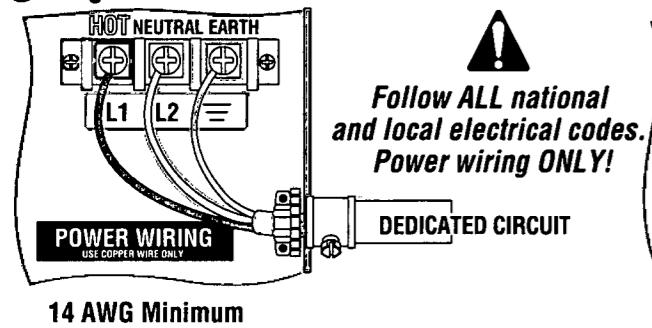


1b Bracket Shelf Mounted Operator

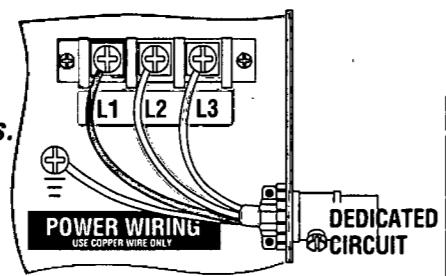


Inside the Electrical Box

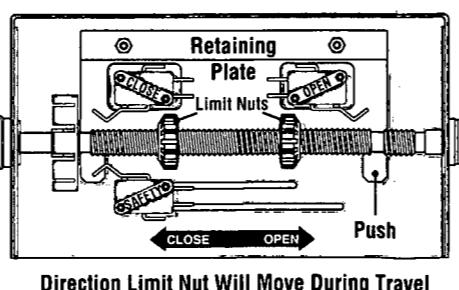
9 Single Phase Connections



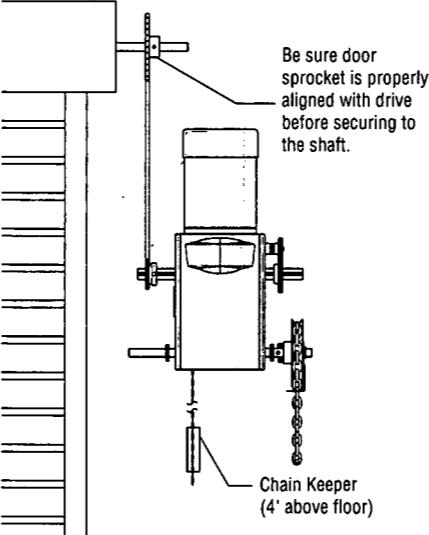
Three Phase Connections



10 Limit Switches



7 Align Sprockets



ELITE™ SERIES LOGIC 4

Manual Operation

This operator has provisions for manually operating the door in case of emergency or power failure. These operators are equipped with a manual hoist. An electrical interlock will disable the electrical controls when the hoist is used. **Turn off power to the operator BEFORE manually operating your door.**

Electrical Interlock with Hoist

To operate the hoist, pull the disconnect chain (small 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. Operate the door in the desired direction by pulling on one side or the other of the continuous loop hoist chain (large chain). The disconnect chain must be released from the chain keeper before the door will operate again electrically.



Turn off power to the operator BEFORE manually operating your door.

Electrical Interlock with Hoist

