

MONOXIVENT®

Source Capture Systems

Operation, Maintenance and Installation Manual

XL Hose Reel - Version 2 April 2024



MONOXIVENT - SOURCE CAPTURE SYSTEMS

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Oversize Motor Operated Hose Reel Installation and Maintenance Instructions

- 1.** Read and understand all instructions prior to starting installation.
- 2.** Inspect all equipment when delivered. Report and indicate any damage on freight bill.
- 3.** Remove packing material from the hose reel and inspect for hidden damages. If any hidden damage is found, notify the freight carrier immediately and arrange for the carrier to make an inspection.
- 4.** Install the hose reel in a location as directed by the owner. The reel must be mounted to rigid building structural support members. Mounting hardware to be a minimum Grade 8 to include bolts, lock nuts, washers and lock washers. Hanging the reel from threaded rod is not acceptable. The reel must be installed level and plumb using all end and mid point bolt holes. Once installed, as the complete assembly must be re-checked for level and plumb. Adjust as required.
- 5.** Install the motorized hose reel up/down switch in a location as directed by the owner. Securely attach the up/down switch to a wall or column. The up/down switch should be mounted in the work bay that serves its' respective hose reel.
- 6.** Determine the wire routing from the primary power source to the motorized hose reel. Wire from the primary power source to the motorized hose reel. Follow all NEC and local codes as applicable.
- 8.** Confirm that all wiring is correct before turning on main power source.
- 9.** Turn on main power source. Test up/down operation of hose reel. Run hose reel through several complete up/down cycles to confirm proper operation.
- 10.** Adjust up/down limit switches if necessary. The motorized hose reel should not over rotate in either direction, up or down. If the reel over rotates going up you risk potential damage to the reel, nozzle, and flex hose. If the reel over rotates going down you risk potential damage to the reel and flex hose.

Operation

1. With the hose in the fully stored position, depressing the down button on the wall mounted up/down switch will lower the flex hose. Lower the hose only the required amount to reach the vehicles tailpipe. Do not unwind the hose completely from the hose reel.
2. Attach the tailpipe adapter over the vehicles tailpipe.
3. When the vehicles service is complete, and before driving the vehicle from the bay, remove the tailpipe adapter from the vehicles tailpipe. Depress the up button on the well mounted up/down switch and completely wind hose back on to storage reel.
4. Moving vehicle with hose reel attached could result in sever damage to the hose reel assembly, the building structure and the vehicle itself.

Maintenance

1. Thoroughly clean the hose reel inner tube and hose drum surfaces as required.
2. The bearing at the discharge end of hose storage reel is a high temperature permanently lubricated bearing. Inspect this bearing for wear by removing the discharge duct. Upon inspection reattach discharge duct.
3. Remove the motor cover to grease the two bearings located opposite the discharge duct. Bearings to be lubricated using high temperature grease.
4. Lubricate drive chain and sprockets with light grease/oil as necessary.
5. Check drive sprockets and chain for wear. Replace as required. Check and adjust drive chain tension as required.
6. Check hose reel mounts for cracked or loose bolts. Tighten or replace as required.
7. Check up/down switch for proper operation. Make sure mounting bolts are tight. Make sure electrical connections are tight.
8. Inspect the flexible hose for damage and/or water. Replace hose as required.

IMPORTANT

Oversized Motorized Hose Reel Mounting Instructions

Hose reel must be mounted rigid to building structural members.

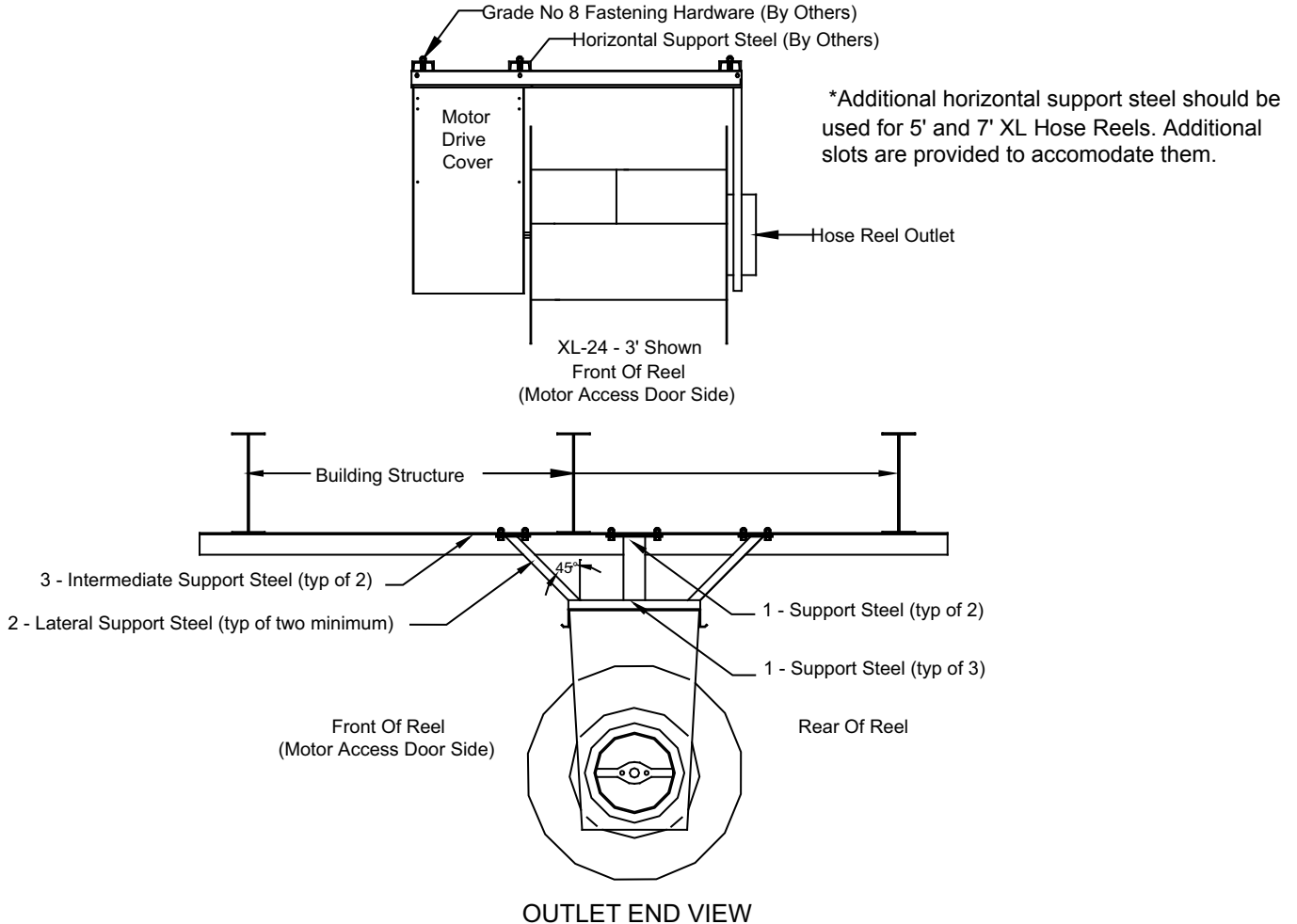
1/2" Mounting hardware to be a minimum of grade 8 bolts, nuts, washers, and lock washers. Mounting hardware is not included.

Hanging with threaded rod or other types of suspension hangers is not acceptable. This will cause the reel to sway when in operation and result in hanger stress and failure.

Mount the reel level and plumb and using all end and midpoint bolt holes.

XL Hose Reel Mounting Instructions

Support Steel At Each Reel "A" Frame Required



The hose reel should be supported at each "A" frame with support steel bolted to the "A" frames. Fastening hardware should be Grade No 8, 1/2" minimum. Monoxivent does not make recommendations for the sizing of intermediate support steel or hose support steel due to the number of variables found in existing and new construction. Mounting height is determined by the limits of the rigid structural mounting frame assembly. Consult a structural engineer if necessary.

1. Support steel should provide a rigid mounting frame to building structure.
2. Lateral support steel provides control of torque movement upon start of the reel motor. Lateral support steel, at a minimum, should brace opposite corners, opposite sides. If torque is not adequately controlled, lateral bracing at all corners should be used with two at front and two at rear.
3. Where intermediate support steel is required, it is to be sized for the span based on hose reel weight, including hose and accessories and allow for the operating torque of motor and drum.

Hose Reel Hose Installation Procedure

1. Slide hose clamp over hose.



2. Slide hose over hose connection hub attached to reel. Make sure hose is fully engaged over hub.



Hose Reel Hose Installation Procedure

3. Slide clamp over hose/hose hub connection. Position clamp screw so that it is at either the 1:30 or 10:30 position relative to the top of the hose and securely tighten.



4. At approximately the 11:30 and 12:30 positions drill a 3/16" hole through the clamp, hose and hose connection hub.



Hose Reel Hose Installation Procedure

5. Through the two holes drive 1/4" self-tapping screws through the clamp, hose and hose connection hub.



Note: On XL Series reels that incorporate 10" diameter through 18" diameter hose drill three 3/16" holes and screw three 1/4" self-tapping screws at approximately the 10:00 o'clock, 12:00 o'clock and 1:00 o'clock positions.



Industrial DC Operators

Models JDC, JHDC, and
TDC

DC Jackshaft, Hoist, and Trolley
For Doors up to 700, 1200, and 2200 lbs

NOT FOR RESIDENTIAL USE

NOT FOR RESIDENTIAL USE

- Please read this manual and the enclosed safety materials completely, prior to installation and use!
- This product is to be installed and serviced by a trained door systems technician ONLY.
- These operators are compatible with myQ®, myQ® Smart Facility Access™, and Security+ 2.0® accessories.
- These operators are Wi-Fi® compatible.

2 YEAR WARRANTY

Serial # _____

Installation Date _____

Safety Information


Safety Symbol and Signal Word Review



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.

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


IMPORTANT NOTES:

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

ENTRAPMENT PROTECTION DEVICES

Monitored Entrapment Protection

Monitored photoelectric sensors and/or door edge sensors are required for any momentary contact to close modes of operation. See "Entrapment Protection" on page 24 for additional information. Refer to the Entrapment Protection Devices in "Accessories" on page 63 for available options.

 **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 an operator, a minimum of 8 feet (2.44 m) from the floor.
6. NEVER connect a door operator to a power source until instructed to do so.
7. NEVER wear watches, rings or loose clothing while installing or servicing an operator. They could be caught in the door or operator mechanisms.
8. Install a wall controller:
 - within sight of the door.
 - out of reach of small children and at a minimum height of 5 feet (1.5 m) above floors, landings, steps, or any other adjacent walking surface.
 - away from ALL moving parts of the door.
9. Install the wall controller far enough from the door to prevent the user from coming in contact with the door while operating the controls.
10. Install the entrapment warning placard on the wall next to the wall controller in a prominent location, visible from the door.
11. Place the manual release/safety reverse test label in plain view on the inside of door.
12. Upon completion of installation, test the entrapment protection device(s).
13. This door operator is not intended to replace door locks. With enough force, a door without a door lock can be opened. LiftMaster always recommends the use of door locks to properly secure a door.
14. SAVE THESE INSTRUCTIONS.

Introduction

Voltage Selection

Voltage Selection	
120/240V single and 3 phase	dedicated sku
480V 3 phase	dedicated sku
208V 3 phase	Via accessory step down transformer
600V 3 phase	Via accessory step down transformer

Model Electrical Ratings

Model	Operator Type	Electrical Rating	Cycle	Max. Door Weight
JDC7S1BMC	Jackshaft non-hoisted Operators	120Vac, 5A, 1PH; 240Vac, 2.5A, 1PH/3PH**	Standard Cycle	700 lbs.
JDC7S4BMC		480Vac, 1.25A, 1PH/3PH**		
JHDC7S1BMC	Hoist Operators	120Vac, 5A, 1PH; 240Vac, 2.5A, 1PH/3PH*	Standard Cycle	700 lbs.
JHDC7S4BMC		480Vac, 1.25A, 1PH/3PH*		
JHDC12S1BMC		120Vac, 9A, 1PH; 240Vac, 4.5A, 1PH/3PH*		
JHDC12S4BMC		480Vac, 3A, 1PH/3PH*	Extended Cycle	1200 lbs
JHDC12X1BMC		120Vac, 10A, 1PH; 240Vac, 5A, 1PH/3PH*		
JHDC12X4BMC		480Vac, 3.5A, 1PH/3PH*		
JHDC22X1BMC		120/240 single, 3 phase*	Extended Cycle	2200 lbs
JHDC22X4BMC		480V 3 phase*		
TDC7S1BMC		Trolley Operators	120Vac, 5A, 1PH; 240Vac, 2.5A, 1PH/3PH*	Standard Cycle
TDC7S4BMC	480Vac, 1.25A, 1PH/3PH*			
TDC12S1BMC	120Vac, 9A, 1PH; 240Vac, 4.5A, 1PH/3PH*			
TDC12S4BMC	480Vac, 3A, 1PH/3PH*			
TDC12X1BMC	120Vac, 10A, 1PH; 240Vac, 5A, 1PH/3PH*		Extended Cycle	1200 lbs
TDC12X4BMC	480Vac, 3.5A, 1PH/3PH*			
TDC22X1BMC	120/240 single, 3 phase*			
TDC22X4BMC	480V 3 phase*			
JHDC12X1N4XMC	Hoist Nema4X Operators	120/240 single, 3 phase N4X	Extended Cycle	1200 lbs
JHDC12X4N4XMC		480V 3 phase N4X		
JHDC22X1N4XMC		120/240 single, 3 phase		2200 lbs
JHDC22X4N4XMC		480V 3 phase		
TDC12X1N4XMC	Trolley Nema4X Operators	120/240 single, 3 phase N4X	Extended Cycle	1200 lbs
TDC12X4N4XMC		480V 3 phase N4X		
TDC22X1N4XMC		120/240 single, 3 phase N4X		2200 lbs
TDC22X4N4XMC		480V 3 phase N4X		

* BBU capable

** BBU included

Operator Specifications

Duty Cycles:

- Standard: 20 cycles per hour / 90 cycles per day
- Extended: 30 cycles per hour / 150 cycles per day
- BBU: 10 cycles, when fully charged.

Wall Controller: NEMA 1 General Purpose 3-Button Wall Controller Open/Close/Stop, LCD Display, and floor level commissioning through intuitive user menu.

Operation Mode: C2 (Factory default), B2, B2/T, B2/TS, D1, E2 and FSTS.

Brake: Standard Dynamic braking on 700, 1200, 2200; only 2200 has the standard Solenoid powered-off brake.

Disconnect:

- Jackshaft: No disconnect. Jackshaft operators come standard with battery backup for automatic opening or closing in case of emergency.
- Hoist: Operator includes an Engage rope (green) and a disengage rope (red) with manual hoist to electronically disable the operator controls.
- Trolley: Quick disconnect door arm for emergency manual door operation.

Mechanical Drive Reduction:

- Model JDC: 65:1 gearbox with #50 chain output.

- Model JHDC: 65:1 gearbox with #50 chain output.
- Model TDC: 65:1 gearbox with #48 chain output on 700 units and #41 chain output on 1200 and larger units.

Door Speed:

Fine adjustments are made via Wall Controller menu; if you want to slow down the operator, please adjust via sprocket choice:

- Model JDC: 12" per second for sectional and 8-9" per second for rolling steel doors.
- Model JHDC: 12" per second for sectional and 8-9" per second for rolling steel doors.
- Model TDC: 12" per second for sectional and 8-9" per second for rolling steel doors.

Limit Adjust: Electronic limits, Floor level adjust-ability up to 20ft.

Temperature Ratings:

- -20°C (14°F) to +65°C (149°F)
- ENVIRONMENT: For indoor use only.

Max. Door Weight: See Operator Charts which include Door Weight and Height information.

Door Dim: See Operator Charts which include Door Weight and Height information.

Important Safety Instructions



WARNING

To reduce the risk of SEVERE INJURY or DEATH:

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

Battery Backup Wiring

NOTE: It's recommended to install battery backup unit at ground level, prior to mounting operator on fixed location.

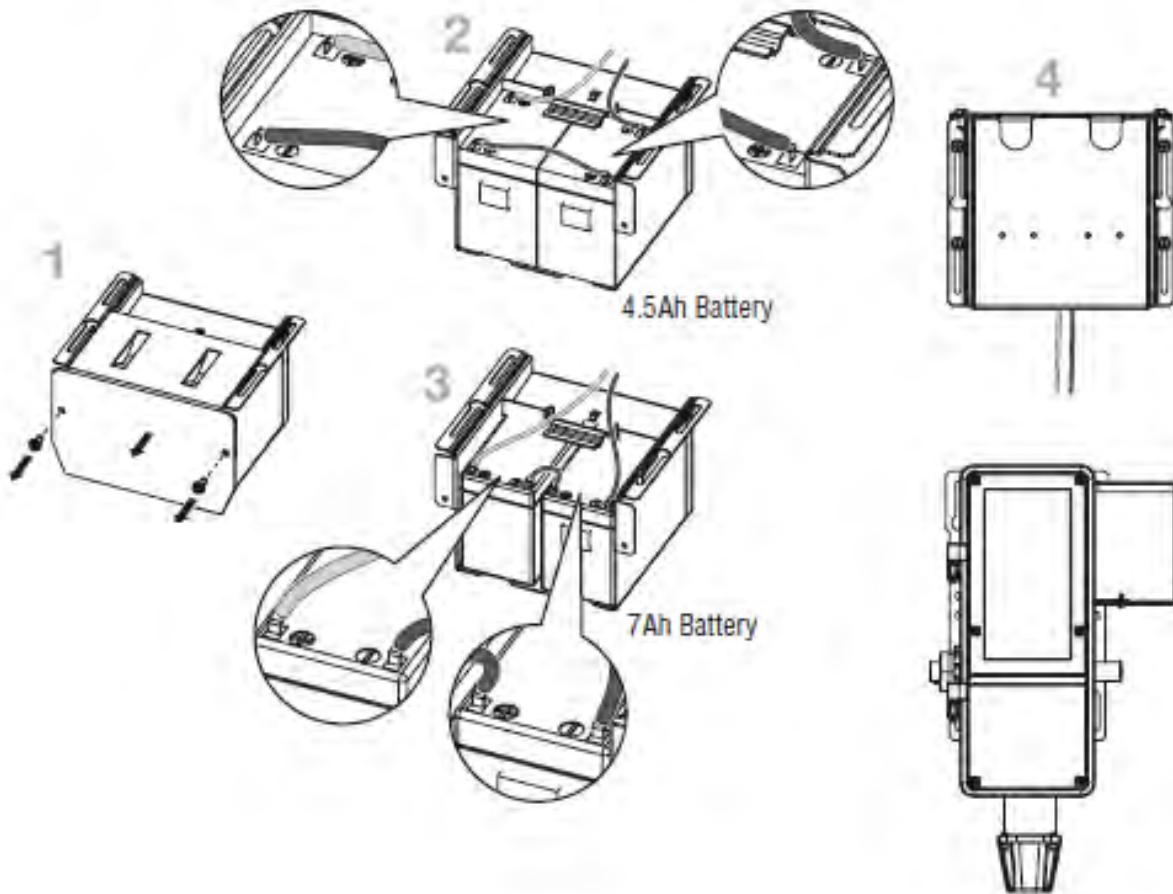
1. Remove the battery cover from the battery enclosure (see image 1).
2. Ensure jumper and battery harness are properly routed and connected (see images 2 and 3).
3. Using supplied screws, reinstall and secure battery box cover and ensure screws are tightened firmly (see image 1).
4. Using supplied screws, mount battery enclosure to operator (OR) in an appropriate alternate location and ensure screws are tightened firmly. (Reference the Recommended mounting location.)
5. Route wires around backside of battery enclosure, through knock out and into electrical box. (Reference the Knock out location.)
6. Place snap in cord gland over top of wires and snap into place.

Recommended mounting location:

- JHDC/JDC: Side of operator, opposite from drive shaft and sprocket location.
- TDC: Mount to the bottom of the operator. Open electrical box and knock out appropriate backside ½ conduit location.

Knock out location:

- JHDC/JDC: Bottom of the electrical box, adjacent to the EMI filter board.
- TDC: Bottom of the electrical box, adjacent to the antenna AUX connection.



Wiring



WARNING

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

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

Power and Ground

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

1. Open the operator cover.
2. Run power wires to electrical box according to national and local electrical codes.

NOTE: ON THREE PHASE POWER only use two of the power legs cap off the third leg.

3. Attach power and ground wires to appropriate terminals. Incoming power leads go to L1 and L2. Ground is on the EMI filter board.

NOTE: The operator must be properly grounded. Failure to properly ground the operator could result in electric shock and serious injury.

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

Image A

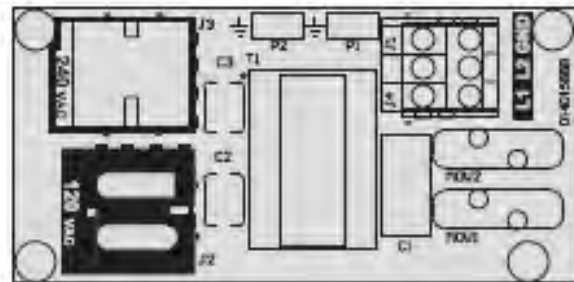
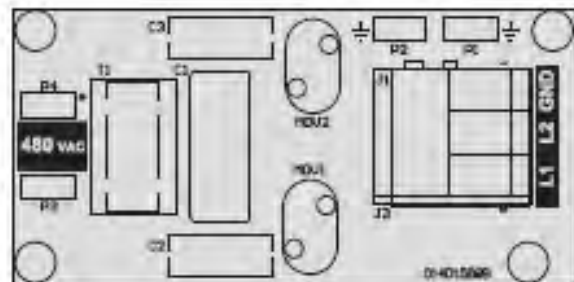


Image B



Voltage Selection

NOTE: LiftMaster offers two types of EMI filter boards. However, each operator will **ONLY** house a single type of board, dependent on operator voltage specification ordered. Reference Image A for 120V/240Vac and Image B for 480Vac.

1. Locate EMI filter board inside of the electrical box.
2. Remove the Orange voltage sticker covering the voltage connector/s and stick it to the inside of the electrical box.
3. On units with type (A) EMI filter board. Verify incoming voltage and phase 1 or phase 3 type.
4. Plug the connector to the appropriate plug-in labeled 120Vac OR 240Vac.

Wall Controller Installation

WARNING

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

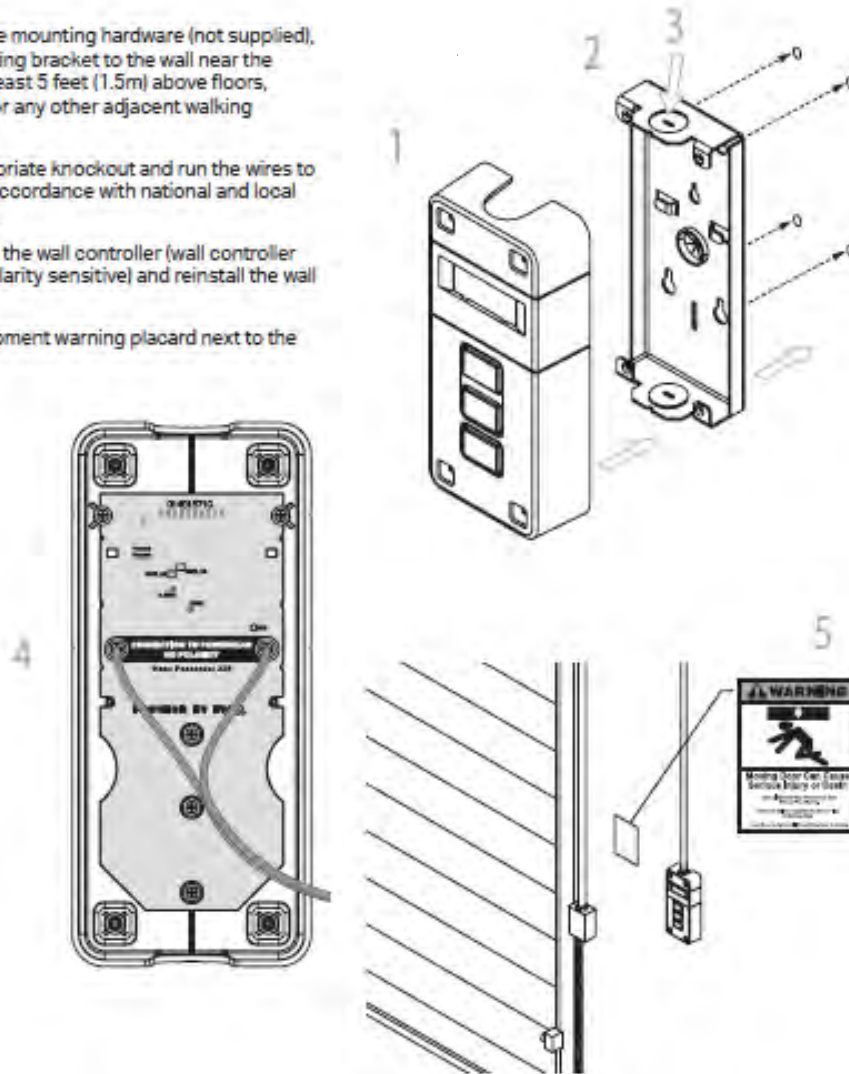
- Be sure power is **NOT** connected **BEFORE** installing the door control.

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

- Install the door control within sight of the door, out of reach of small children, at a minimum height of 5 feet (1.5 m) above landings, steps, or any other adjacent walking surface, and away from **ALL** moving parts of the door.
- Install the control station far enough from the door to prevent the user from coming in contact with the door while operating the controls.
- Install the entrapment warning placard on the wall next to the control station in a prominent location visible from the door.
- **NEVER** permit children to operate or play with door control push buttons or remote controls.
- Activate a door **ONLY** when it can be seen clearly, is properly adjusted and no obstructions exist in the path the door will travel.
- **ALWAYS** keep the door in sight until completely closed. **NEVER** permit anyone to cross path of a closing door.

NOTE: The field wiring terminals are rated for 14-22 AWG wire Stranded and 12-22 AWG Solid.

1. Remove wall control cover from mounting bracket by loosening the four Philips screw at each corner of the housing.
2. Using appropriate mounting hardware (not supplied), fasten the mounting bracket to the wall near the operator and at least 5 feet (1.5m) above floors, landings, steps, or any other adjacent walking surface.
3. Select the appropriate knockout and run the wires to the operator (in accordance with national and local electrical codes).
4. Connect wires to the wall controller (wall controller wires are **NOT** polarity sensitive) and reinstall the wall controller cover.
5. Fasten the entrapment warning placard next to the wall control.



Testing

Apply power to the operator. When power is applied to the operator, the LCD display will illuminate, relay A, relay B, and the Timer Defeat.

Test all Entrapment Protection Devices

It is the responsibility of the specifier, purchaser, installer, and property owner to ensure that, on completion, the installation of the entrapment protection devices comply with all relevant federal, state, and local codes and regulations.

TEST THE MONITORED LIGHT CURTAIN (IF APPLICABLE)

1. With the door in the full open position, press the close button.
2. While the door is closing, obstruct any of the light beams on the Monitored Light Curtain (the green LED on the Monitored Light Curtain Receiver will blink when the light beam is obstructed). The door should stop and reverse.

TEST THE PHOTOELECTRIC SENSORS (IF APPLICABLE)

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

TEST THE EDGE SENSORS (IF APPLICABLE)

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

Test Wall Controller Menu Access

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 (see "Set Limits" on page 30).

NOTE: Door travel should stop when the OPEN or CLOSE limits are reached. If door drifting is occurring, spring tension on the door.

  WARNING
To avoid SERIOUS personal INJURY or DEATH :
<ul style="list-style-type: none">• Disconnect electric power BEFORE performing ANY adjustments or maintenance.• ALL maintenance MUST be performed by an Authorized Service Technician.

Wiring Diagram

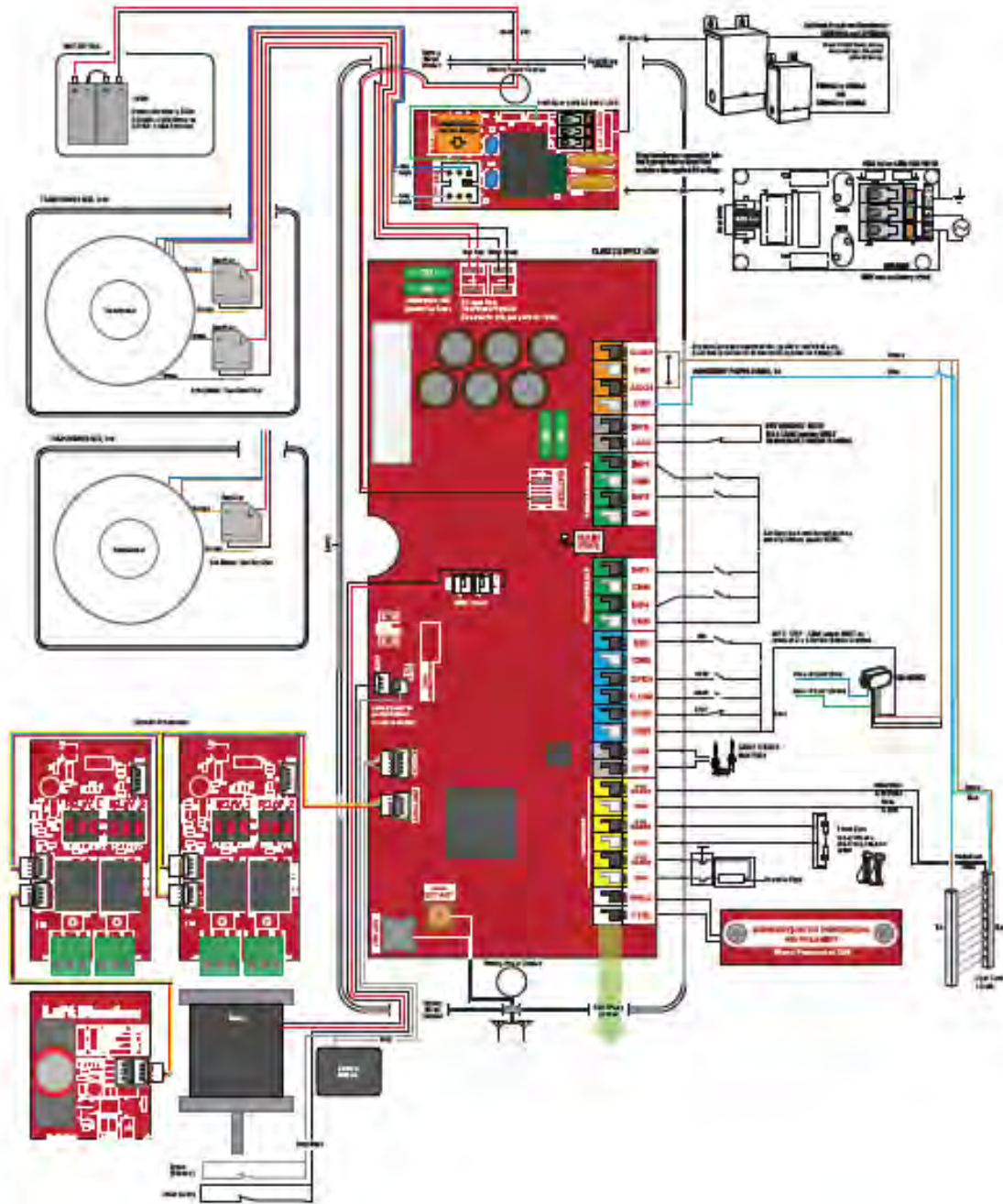
⚠️ ⚡ WARNING

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

- Disconnect electric power and/or battery **BEFORE** installing, performing **ANY** adjustments, or maintenance. Installation and **ALL** maintenance **MUST** be performed by a trained door systems technician.

For continued protection against fire:

- Replace **ONLY** with fuse of same type and rating.



Programming

Quick Start Commissioning

Follow the below instructions to provision the JHT operator out-of-the-box or after factory reset:

Quick Start Commissioning Menu

Follow device menu prompt to select DOOR HANGING

Follow device menu prompt to select DOOR DRUM

Follow device menu prompt to select DOOR SPROCKET (J/H ONLY)

Follow device menu prompt to set OPEN LIMIT

Follow device menu prompt to set CLOSE LIMIT

Follow device menu prompt to LEARN WIFI

The operator will be in WiFi Learn Mode for 10 minutes if "YES" is selected.

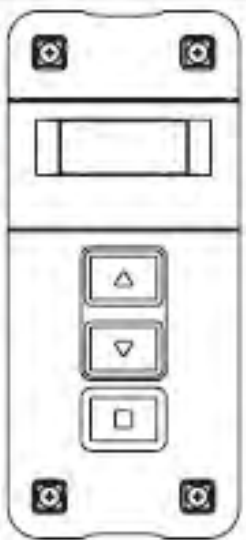
 **WARNING**

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

- Disconnect electric power **BEFORE** performing **ANY** adjustments or maintenance.
- **ALL** maintenance **MUST** be performed by a trained door systems technician.
- Please wait several seconds for capacitors to discharge and for display to go out.

Quick Exit of Menu
Hold down the "UP" and red "Stop" buttons for 3 seconds until the screen goes blank and it will exit you out of the menu you are in.

Quick Enter into the Menu
Hold down the "Down" and red "Stop" buttons for 3 seconds until the screen goes blank and it will take you to the main menu.



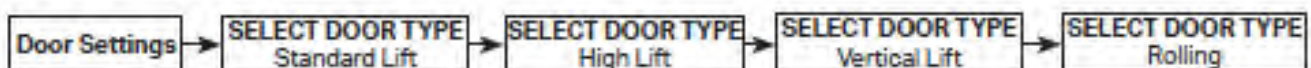
Manual Commissioning Program Flow

IMPORTANT: All entrapment protection devices will be disconnected during the manual commissioning steps.

The System Settings menus are password-protected.

ENTER PROGRAMMING

1. Press the "STOP/ENTER" and "DOWN" buttons on the inside of the controller at the same time for 3+ seconds to enter the operator menu. If the controller is closed, press the "Stop" then "Close" then "Open" until the unit goes into program mode.
2. Scroll down to "SYSTEMS SETTINGS" with the "UP" and "DOWN" buttons and press "ENTER." You will be prompted to enter the password for the operator.
3. Enter 326 as the password.



Programming (continued)

NOTE: Please obtain the latest Installation Manual by search the model number at liftmaster.com.

SELECT DOOR SETTINGS

SECTIONAL DOORS

STANDARD, HIGH LIFT AND VERTICAL

1. To select Door Hanging, Cable Drum (and Sprocket JHDC/ JDC) settings, navigate to the SYSTEM SETTINGS > DOOR SETTINGS submenu.
2. Select The Drum Type. Correct Drum Types are required for the correct door profile to run the system.
 - a. Standard Lift choices: D400-96, D400-144, D5250- 18, D525-216, D800-384**
 - b. Full Vertical choices: D850-132, D1100-216, D1350-336
 - c. High Lift choices: 48° HL: D400-54, D525-54, 60° HL: D575-120, 144° HL: D6375-164
3. Sprocket FOR JHDC / JDC (ONLY) If you have a different sprocket size, use Custom option to add your tooth sprocket.

700lb operators - Standard Lift, High Lift and Full Vertical 16 tooth sprocket recommended

1200lb operators - Standard Lift, High Lift and Full Vertical 22 tooth sprocket recommended

2200lb operators - Standard Lift, High Lift and Full Vertical 32 tooth sprocket recommended (Vertical with D1350-336 - 42 tooth sprocket recommended)

Any other tooth configuration, please use Custom Option and enter your sprocket info.

ROLLING DOOR

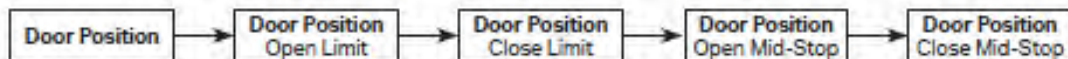
1. Select Rolling Door
2. Select Insulated or Non-Insulated Door Type
3. Select Height (increment of 2')
 - a. 8', 10', 12', 14', 16', 18', up to 40'
4. Select Width (increment of 2')
 - a. 8', 10', 12', 14', 16', 18', up to 40'
5. Select Sprocket (SKU dependent, please reference page 4)
 - a. Sprocket choices: 50, 60, 72, 82, Custom

IMPORTANT: Once you choose your drum, allow inverter parameter to update. Once the inverter is updated, you can re-enter the menu to set limits and learn force.

SET LIMITS

IMPORTANT: When setting limit positions, it is important that the door runs in the direction of the intended limit.
Example: When setting the close limit, only use the CLOSE button. When setting the open limit, only use the OPEN button. Using the opposite direction button will cause the limit positions to drift over time.

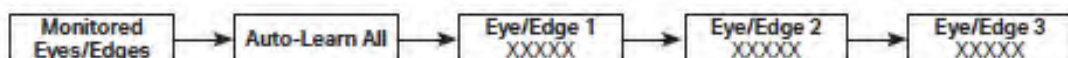
To set limits, navigate to the SYSTEM SETTING > DOOR POSITIONS submenu.



MONITORED EYES/EDGE CONFIGURATION

If monitored entrapment protection devices are wired to the system during the initial power-up, they will be learned to the system, and the operating mode will automatically switch to B2.

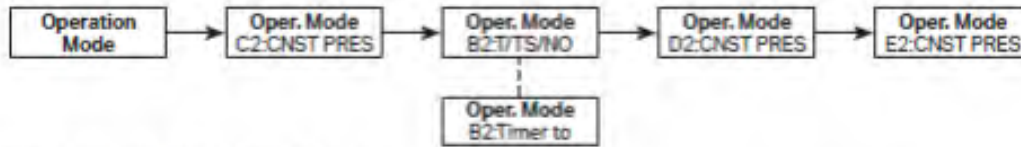
If no monitored sensor is attached, the system will default to C2 mode. To manually program an entrapment protection device, navigate to the SYSTEM SETTINGS > MONITORED EYES/EDGES submenu, otherwise it will Auto-Learn the monitored device.



Programming (continued)

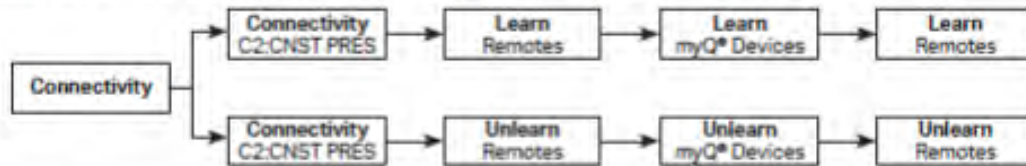
OPERATION MODE (RECOMMENDED)

To change the operating mode from the defaults B2 or C2, navigate to the SYSTEM SETTINGS > OPERATION MODE submenu.



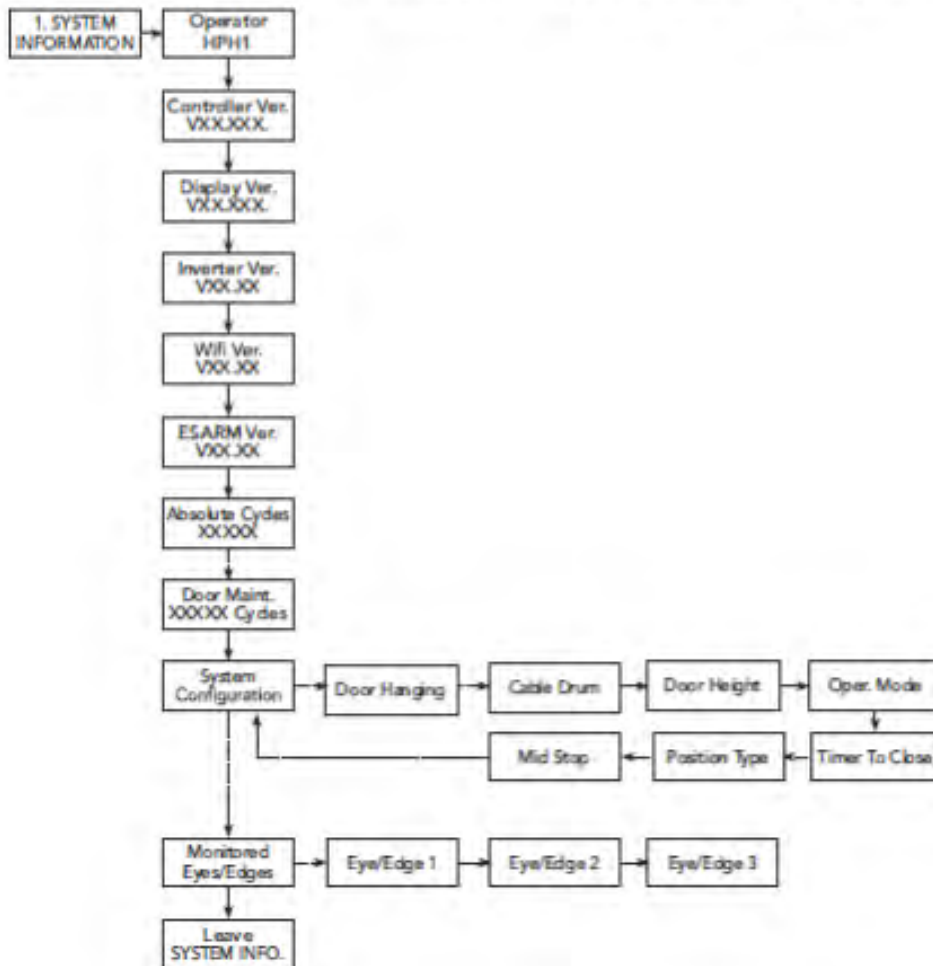
CONNECTIVITY (RECOMMENDED)

To connect the operator to a network, navigate to SYSTEM SETTINGS > CONNECTIVITY > LEARN > LEARN WIFI submenu. See the "myQ® Smart Facility Access" on page 43 to connect your devices to myQ® Business Facility.



Hold ENTER and DOWN for three seconds to open the System Information Menu.

NOTE: This menu tree is only for informational purposes. These settings cannot be changed by the user.



Programming (continued)

Determine Operating Mode

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 Monitored Entrapment Protection 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.

B2 / 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 sensing edge input device, activates the Timer-To-Close. Auxiliary controls can be connected to open input to activate the Timer-To-Close.

If the Timer-To-Close has been activated, the open button and radio control can recycle the timer. The stop button will deactivate the timer until the next command input. The Timer-To-Close will function from the programmable mid stop with this wiring type. Compatible with 3-Button Station, 1-Button Station and 1 and 3-Button Remote Control.

NOTE: Programmable "Car Dealer Mode" available.

B2 / TS

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" on page 28).

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.

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 B2/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 DEVICE IS RECOMMENDED.

A LiftMaster Entrapment Protection 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.

IMPORTANT NOTES:

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

Programming (continued)

WIRING TYPE	DEVICE	ACTION	STATE	RESPONSE	
D1 - Constant pressure to open and close with wiring for sensing device to stop. Compatible with 2 or 3-Button Station	3-Button Wall Controller	OPEN button is pressed momentarily	Operator at OPEN limit	No change in state	
			Operator at CLOSE limit	Door opens and stops when button is released	
			Door opening	No change in state	
			Door closing	Door stops	
			Door at Open Mid-Stop	Door opens and stops when button is released	
			Door stopped during open or close cycle	Door opens and stops when button is released	
		CLOSE button is pressed momentarily	Operator at OPEN limit	Door closes and stops when button is released	
			Operator at CLOSE limit	No change in state	
			Door opening	Door stops	
			Door closing	No change in state	
			Door at Open Mid-Stop	Door closes and stops when button is released	
			Door stopped during open or close cycle	Door closes and stops when button is released	
		STOP button is pressed momentarily	Operator at OPEN limit	No change in state	
			Operator at CLOSE limit	No change in state	
			Door opening	Door stops	
			Door closing	Door stops	
			Door at Open Mid-Stop	No change in state	
			Door stopped during open or close cycle	Door stops only in the closed position	
		OPEN button is held (constant pressure)	Operator at OPEN limit	No change in state	
			Operator at CLOSE limit	Door opens to the OPEN limit	
	Door opening		No change in state		
	Door closing		Door stops		
	Door at Open Mid-Stop		Door opens to the OPEN limit		
	Door stopped during open or close cycle		Door stops only in the closed position		
	CLOSE button is held (constant pressure)	Operator at OPEN limit	Door closes to the CLOSE limit		
		Operator at CLOSE limit	No change in state		
		Door opening	No change in state		
		Door closing	No change in state		
		Door at Open Mid-Stop	Door closes to the CLOSE limit		
		Door stopped during open or close cycle	Door stops only in the open position		
	3-Button Remote Control Programmed as OPEN / CLOSE / STOP Not all transmitters will give constant pressure to close	OPEN button is pressed momentarily	Operator at OPEN limit	No change in state	
			Operator at CLOSE limit	No change in state	
			Door opening	No change in state	
			Door closing	No change in state	
			Door at Open Mid-Stop	No change in state	
			Door stopped during open or close cycle	No change in state	
		CLOSE button is pressed momentarily	Operator at OPEN limit	No change in state	
			Operator at CLOSE limit	No change in state	
			Door opening	No change in state	
			Door closing	No change in state	
			Door at Open Mid-Stop	No change in state	
			Door stopped during open or close cycle	No change in state	
		STOP button is pressed momentarily	Operator at OPEN limit	No change in state	
			Operator at CLOSE limit	No change in state	
			Door opening	No change in state	
			Door closing	No change in state	
			Door at Open Mid-Stop	No change in state	
			Door stopped during open or close cycle	No change in state	
		Single Button Remote Control	Button is pressed	Operator at OPEN limit	No change in state
				Operator at CLOSE limit	No change in state
				Door opening	No change in state
				Door closing	No change in state
				Door at Open Mid-Stop	No change in state
				Door stopped during open or close cycle	No change in state
	Single Button Wall Controller (Wired)	Button is pressed:	Operator at OPEN limit	No change in state	
			Operator at CLOSE limit	No change in state	
			Door opening	No change in state	
			Door closing	No change in state	
			Door at Open Mid-Stop	No change in state	
			Door stopped during the open cycle	No change in state	
	myQ	Door Image is pressed:	Operator at OPEN limit	No change in state	
			Operator at CLOSE limit	No change in state	
			Door opening	No change in state	
			Door closing	No change in state	
			Door at Open Mid-Stop	No change in state	
			Door stopped during open or close cycle	No change in state	

Programming (continued)

Programmable Inputs

- The controller contains three programmable inputs that may be configured to accept several different input devices.
- Navigate through the menus to SYSTEM SETTINGS (enter password) to PROG INPUTS. Select INP1, INP2 or INP3.
- Select a Function from the list. Press Enter.
- Select a Polarity from the list. Press Enter.

Function Options:

- Non-monitored Eye/Edge Input
- Car Dealer Input (typically loop detector, treadle hose, card reader)
- Timer Defeat
- All Fly (previously known as FSTS)

Radio

The controller has a built in Security+ 2.0[®] radio receiver, that can program up to 90 remote control devices and up to 30 keyless entry devices.

Programming Remote Controls and myQ[®] Devices

1. Select SYSTEM SETTINGS from the main menu (enter passcode.)
2. Select CONNECTIVITY.
3. Select one of: Learn myQ Devices, Wi-Fi, or Remotes.
4. The operator will indicate the selected accessory is being learned.
5. Repeat as needed for any other devices and remotes.

Erasing Programmed Devices

1. Select Connectivity from the main menu (enter passcode).
2. Select Erase.
3. Select the type of device to be erased or select "Erase all".
4. Press "UP" button to erase the selected device.
5. Display will confirm erasing selected device.

Reset Defaults

Parameter	Default Value
Operating Mode	B2
Frequency Profile	Maximum Speed
Open Frequency	10HZ
Close Frequency	10HZ
Limits	Must Relearn Limits
Timer to Close	120 sec.
Delay to Open	0
Delay to Close	0
INP1 Function	No Function
INP1 Logic	N.O.
INP2 Function	No Function
INP2 Logic	N.O.
INP3 Function	No Function
INP3 Logic	N.O.
Eye/Edge	Unlearned
Service Counter Interval	5000
Service Counter Value	Is not reset
Absolute Cycle Counter	Is not reset

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

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

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

This device has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules and Industry Canada ICES standard. These limits are designed to provide reasonable protection against harmful interference in a commercial

installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

Programming (continued)

myQ[®] Smart Facility Access

One Platform allows you to manage access for unlimited facilities, users and vehicles.

The myQ[®] Smart Facility Access allows you to control all your access points in the facility from the myQ[®] website application from anywhere. Monitor and control your vehicular access doors, gated entry locations, and even dock positions from a universal platform. myQ[®] technology uses a 900Mhz signal or a Wi-Fi connection to communicate securely from your connected devices to myQ[®] enabled accessories or directly to a Wi-Fi network.

Setup a myQ[®] Smart Facility Access Account

NOTE: If you have an existing myQ[®] account, your myQ[®] Business™ account will have the same password.

We have made the account setup process easier than ever. It's completely self-service. Go to Account.myQ.com and begin the process.

1. Select Country, Name, email, and create password.
2. Verify the email with a 4-digit code.
3. Select property manager or partner.
4. To create a myQ[®] Facility, select property type, property name, property manager information. You are now ready to access your dashboard and all other myQ[®] features.
5. Set up the Facility and add users and groups to provide access to the Facility (refer to the available Help in myQ[®] Business™).
6. You will get a welcome email from LiftMaster. Accept the invitation and register or login to your account.
7. Set up the Facility and add users & groups to provide access to the Facility (refer to the available Help in myQ[®] Business™).
8. Follow on-screen prompts to get your Variable Speed Door Operator and additional devices connected.

Provisioning Wi-Fi

Follow the below instructions to pair the operator:

1. Press the *STOP/ENTER* and *DOWN* buttons at the same time for 3+ seconds to enter the operator menu.
2. Scroll down to *SYSTEM SETTINGS* with the *UP* and *DOWN* buttons and press *ENTER*. You will be prompted to enter the password for the operator.
3. Enter 326 as the password.
4. Scroll down to *CONNECTIVITY* and press *ENTER*.
5. Press *ENTER* again to select *CONNECTIVITY LEARN*.
6. Scroll down to *LEARN WIFI* and press *ENTER*. The operator will now be in Learn Mode.
7. Using your own device (laptop, tablet, or smart phone) go to your device's Wi-Fi setting and search for the Wi-Fi network called myQ-nnn where the nnn is the last 3 serial numbers of your operator. Select that Wi-Fi network.
8. Once your device (laptop, tablet, or smart phone) is connected to the operator, open a web browser and go to setup.myqdevice.com on your device and follow the instructions.

Troubleshooting

Additional Troubleshooting

The table below is a guide for best practice system troubleshooting, containing potential causes and corrective actions.

Symptom	Possible Causes	Diagnosis	Resolution
Powerhead main board is off (no LEDs are lit or blinking) (continued)	Transformer is overheating	Transformer has an internal thermal protection device which disconnects AC power if the transformer overheats. If the transformer is allowed to cool, AC power should reconnect and restore power to the operator.	Transformer should not normally overheat. If overheating occurs: Check door for imbalance and/or resistance Check ambient temperature and ensure it is within the operational ratings of the door operator. Ensure that air can move freely around the door operator, and that dust or other foreign matter is not preventing airflow.
	AC power absent or out of range	Verify input AC voltage: Measure AC voltage between 'L1' and 'L2' terminals at EMI filter board input connector. Verify voltage is within specifications. If voltage is outside specifications, see resolution.	If voltage is absent, restore power to the operator. Check for tripped breakers, blown fuses, faulty AC wiring, open disconnects, etc. If voltage is out of specification, consult an electrician.
	AC input voltage mis-selected (120V/240V models only)	Check whether the transformer connector is plugged in to the connectors on the EMI filter board marked '120V' or '240V'. Verify this matches the input AC voltage supplied to the operator.	If 240V power is applied when 120V is selected, damage to other components of the operator electronics may have occurred. Ensure voltage selection is corrected and verify the operator functions.
	Blown DC input fuses on main board	Check fuses: Measure voltage across DC IN fuses. If voltage is greater than 0.5V, fuses are blown. See resolution. Fuses may also be visually inspected. Fuses should have their internal metallic fuse element intact. If there is a break in the fuse element, fuse is blown.	Replace both DC IN fuses with automotive style ATO or ATC fuses, 30A 32V. Both DC IN fuses must be present and intact for proper operation of the door operator.
	Faulty Powerhead main board	Perform this test only after first checking fuses. Measure DC voltage between 'DC IN' + and - terminals. Voltage should be between 30 and 48 volts DC with motor stopped. If voltage is present and MAIN PWR LED is not lit, see resolution.	Turn off AC power and disconnect batteries (if present) for at least 30 seconds, then reconnect batteries (if present) and turn on AC power. If no LEDs are lit after cycling power, cycle power again as above but disconnect all cabling from mainboard except for main power wiring before restoring batteries/ AC power. If LEDs still do not light, replace main board. If LEDs light after disconnecting other devices, suspect a short or overload from a connected device.

Troubleshooting (continued)

Symptom	Possible Causes	Diagnosis	Resolution
Powerhead main board is off (no LEDs are lit or blinking) (continued)	Faulty EMI filter board	Verify EMI filter board: Perform this test only after first verifying input AC voltage. Measure AC voltage at EMI filter board output. Measure from brown wire to blue wire. [todo: check wire colors for 480V] Verify voltage is within specifications.	If input voltage is within specification but output voltage is outside specifications or is absent, replace the EMI filter board.
	Faulty Transformer	Verify Transformer: Perform this test only after first verifying the EMI filter board. Disconnect transformer output winding from rectifier(s) and measure the AC voltage across transformer output winding. Voltage should be between 22 and 35 volts AC. If voltage is out of range, see resolution.	If voltage is too high or too low, check that 120V/240V input voltage selection is correct. If voltage is absent: transformer has thermal protection to automatically disconnect input voltage if the transformer overheats. Allow transformer to cool if it is hot, and then re-test. If transformer is cool and voltage is still absent, replace the transformer.
	Faulty wiring or connections	Inspect all connections and wiring from EMI filter board, transformer, rectifiers, and DC IN terminals on the main board. Ensure there are no loose connections, cut wires, broken insulation, etc. Verify wiring matches wiring diagram.	Correct any issues found with wiring or connections.
	Faulty Rectifier	Verify Rectifier: If the transformer and all wiring is verified but DC voltage is still not present at the main board DC IN terminals, the rectifiers are most likely faulty. If an electrical meter with a diode test function is available, each of the 4 diodes internal to the bridge rectifiers may be checked using the diode check functionality: 1) check each diode in the forward direction and verify they conduct with ~ 1V drop or less 2) check each diode in the reverse direction and verify they do not conduct (meter will read the same as disconnected leads)	Replace faulty rectifier(s). Rectifier mounting screws must be tight enough to ensure good thermal contact with the chassis through the thermal interface pad. However, the rectifier screw must not be too tight or it could be damaged. [torque spec here, even?] Interface between the rectifier and the chassis should be clean of any foreign substances before a new rectifier is installed.
	Short or overload in device connected to main board	Turn off power and disconnect batteries from main board. Disconnect all cabling from main board except for main power. Restore power and verify LEDs light. Reconnect wiring to main board one device at a time testing to see if any device causes the main board to fail to light LEDs.	If any device is found to cause an issue, the device may be faulty and should be repaired or replaced as necessary.

Troubleshooting (continued)

Symptom	Possible Causes	Diagnosis	Resolution
LCD wall control is off or not functioning (display shows nothing or is unlit, and wall control is unresponsive) (continued)	Multiple LCD wall controls wired to a single operator.	Only one LCD wall control is supported per operator. Check that only one is connected to the WALL CTRL terminals on the powerhead main board.	Disconnect any additional LCD wall controls and wire just one LCD wall control. If additional control stations are desired, use the SBC or OPEN, CLOSE, and STOP terminals instead.
	Wall control is wired to incorrect terminals on the powerhead main board.	Confirm that wall control wiring is run to the WALL CTRL terminals on the powerhead main board.	Move wall control wiring to the WALL CTRL terminals
	No power to powerhead main board	Verify MAIN PWR LED is lit on the mainboard. If it is unlit, main board may not have power.	Follow troubleshooting for symptom 'Powerhead main board is off'
	Wall control circuit shorted	Test for wall control short circuit: Power cycle the operator. Check WALL CTRL LED on powerhead main board. If LED is unlit, a short circuit is detected on the WALL CTRL terminals by the main board and the wall control is disabled.	Turn off AC power and disconnect batteries (if present). Remove wall control wiring from main board terminals. Restore batteries and AC power. If WALL CTRL LED remains unlit, short circuit may be internal to main board. Replace main board. If WALL CTRL LED is blinking, short is in wall control wiring or wall control. Reconnect wiring to main board. Disconnect wall control from wiring. Repeat test. If WALL CTRL LED is blinking, short is in wall control. Replace wall control. If WALL CTRL LED is off, short is in wiring. Check wiring and correct the issue.
	Bad connection between wiring and wall control	Visually inspect the wiring connections to the wall control screw terminals. Wires should be sandwiched between the screw and the exposed metallic pads on the circuit board. Ensure insulated part of wire is not caught between screw and circuit board.	Correct any issues noted during inspection
	No voltage output from powerhead main board WALL CTRL terminals	Verify main board WALL CTRL terminals: Disconnect wall control wires. Measure DC voltage at WALL CTRL terminals. Voltage should be between 11 and 13V DC.	If voltage is absent or out of range, turn off power to operator and disconnect batteries if present. Wait 30 seconds and then reconnect batteries and reapply AC power. If fault persists, replace main board

Troubleshooting (continued)

Symptom	Possible Causes	Diagnosis	Resolution
LCD wall control is off or not functioning (display shows nothing or is unlit, and wall control is unresponsive) (end)	Faulty wiring	Perform this test only after verifying main board WALL CTRL terminals. Verify wall control wiring: Disconnect wires from wall control and measure the DC voltage on the wiring at the end near the wall control. If voltage is not between 11 and 13 volts DC, wiring is faulty.	If voltage is absent or out of range, turn off power to operator and disconnect batteries if present. Wait 30 seconds and then reconnect batteries and reapply AC power. If fault persists, replace or repair wall control wiring.
	Faulty wall control	Perform this test only after verifying wall control wiring. Check voltage at wall control: With a voltmeter, test for 12VDC at the screw terminals on the rear of the wall control. If 12V is present and wall control is not active, wall control is faulty. If 12V is absent only when the wall control is connected, wall control may have internal short circuit.	Replace faulty wall control.
Main board DC IN fuses blow immediately upon powerup	Stray wiring/metal contacting main board	Visually inspect E-box. Check for any metallic objects or bare wires that may be inadvertently touching the main board.	Prevent metallic objects or bare wires from touching the main board. Turn power off and replace fuses, then re-apply power.
	Internal short on main board	Turn off AC power. Disconnect all wiring from main board except DC IN power wiring. Replace fuses and reapply power. If fuses still blow immediately, fault is in main board.	replace main board
Door moves in wrong direction when pressing up/down buttons	Reverse mounting mode configured wrong (reverse limits)	Check the setting for the reverse mounting mode (reverse limits)	ensure the setting is correct
	Wiring for open and close terminals swapped (does not apply to LCD wall control)	Check that open button is connected to OPEN terminal and close button is connected to CLOSE terminal.	Correct wiring.
(ONLY applies to units with Battery Backup) Unit reports that it is on battery power even when AC power is present	AC power path issues	Disconnect batteries, check if powerhead main board powers off.	If powerhead main board loses power, leave batteries disconnected and follow troubleshooting for 'Powerhead main board is off'
	AC input voltage mis-selected (120V/240V models only)	Check whether the transformer connector is plugged in to the connectors on the EMI filter board marked '120V' or '240V'. Verify this matches the input AC voltage supplied to the operator.	Note that if incorrect voltage is applied to the operator, damage to the operator electronics may have occurred. Ensure voltage selection is correct and verify operator functionality.
	AC power out of range	Verify input AC voltage: Measure AC voltage between 'L1' and 'L2' terminals at EMI filter board input connector. Verify voltage is within specifications. If voltage is outside specifications, see resolution.	Ensure the circuit supplying the operator is the correct voltage class for the operator (e.g. 120V, 240V, or 480V) If voltage is out of specification for the circuit, consult an electrician.

Troubleshooting (continued)

Symptom	Possible Causes	Diagnosis	Resolution
Door runs slowly/at half speed	Wall control disconnected or damaged	If communications to the wall control is absent, system will run at half speed.	LCD Wall control is strongly recommended to be connected. If it is desired to run the system without a wall control, temporarily or permanently, the system can be returned to full speed operation by replacing the wall control wiring with a jumper wire. If the wall control is present but not functioning, see 'LCD wall control is off or not functioning'
Operator turns off despite backup battery being connected	Dead or worn batteries	Low battery voltage	Allow batteries to recharge Replace worn out batteries. Batteries must both be replaced together. Do not mix old and new batteries.
	Blown battery fuses on main board	Visually inspect battery fuses or check continuity	If fuses are blown, replace both fuses together
Operator runs momentarily then stops in limit learn mode	Encoder wiring fault	Inspect encoder cable for disconnection, bad connection, cut cable, etc.	Correct any issues found with encoder wiring
	Encoder fault or encoder interface fault	Go to limit learn process. Number displayed while in door limit learn mode is the encoder position. Jog door several inches in either direction and release button. Number displayed should change. Make sure to cancel changes or set limit again when finished.	If encoder position does not change with door movement, the encoder, encoder wiring, and powerhead main board are suspect. Check all three for any visible damage. Attempt power cycling and restoring factory defaults. Replace or repair suspected faulty components.

Troubleshooting (continued)

If an error occurs, the idle screen is replaced by a screen showing the error code and a description of the error.

Error messages originate in one of three categories:

- Motor drive and power circuitry
- Door control codes related to the motor and encoder
- Option codes related to accessories used with the industrial DC operator.

Consult the Table of Error Codes below to determine the cause and corrective action. Depending on the type of error, user interaction may be required to clear the error. The error window closes when the error has been cleared/corrected.

Code	Display Message	Description	Possible Causes	Diagnosis	Resolution
	MOVE THE DOOR	Displayed in limit learn mode. The position encoder requires some movement before the position can be determined on powerup. Once the position has been successfully determined, the position will be maintained until power is lost.	Door has not been moved since the last power cycle	Upon initial powerup, this message will be displayed in the limit learn menu if no other movement has occurred.	Move the door slightly in either direction using the up or down buttons on the wall control. 'MOVE THE DOOR' message will disappear. If door does not move, or moves and stops, see troubleshooting steps for F04 UNAUTHORIZED STOP. If door moves without issue but 'MOVE THE DOOR' stays on the screen, see troubleshooting steps for F91 ENCODER.
F01	F01 CLOSE LIMIT	Door has moved beyond the lower end position	Operator has been manually hoisted below the lower end position (hoisted jackshaft models only)	Check position of door/operator with manual hoist	Move position back within normal limits. Adjust door position limits if necessary.
			Door is falling or drifting downward when operator is stopped	Check for excessive door imbalance in down direction	Rebalance door replace broken springs ensure correct springs and drums are used
F02	F02 OPEN LIMIT	Door has moved beyond the upper end position	Operator has been manually hoisted above the upper position limit (hoisted jackshaft models only)	Check position of door/operator with manual hoist	Move position back within normal limits. Adjust door position limits if necessary.
			Door is drifting upward when operator is stopped	Check for excessive door imbalance in up direction	Rebalance door Ensure correct springs and drums are used
F04	F04 UNAUTH. STOP (continued)	No motor motion was detected when the operator was attempting to move the motor.	Door encountered obstruction or other mechanical jam	Check doorway for obstruction. Check to ensure the mechanical system moves properly and without hangups or excessive resistance.	Remove obstruction
			Motor cable is disconnected or wiring fault	Check that motor cable is plugged into the powerhead main board completely. Ensure that motor cable is intact and in good condition.	Ensure motor connector is fully seated. Repair any problems with the cabling. If cabling is beyond repair, replace motor.

Troubleshooting (continued)

Code	Display Message	Description	Possible Causes	Diagnosis	Resolution
F04	F04 UNAUTH. STOP (end)	No motor motion was detected when the operator was attempting to move the motor.	Worn motor brushes	Motor DC resistance should be less than 3 ohms. If it is greater than 3 ohms, the brushes may fail to maintain contact with the commutator internal to the motor.	Replace motor Replace motor brushes (extended duty models only)
			Powerhead main board motor drive fault	Measure DC voltage across motor terminals at main board. In idle state, voltage should be 0. Activate door operator with open/close. Voltage may vary over a wide range, from several volts up to about 40 volts DC.	If voltage is absent during activation, check for other fault codes and correct as necessary. If no other fault codes are present, power cycle the operator and try again. If fault persists, reset settings to factory defaults and reconfigure the operators. If fault still persists, replace main board.
			Encoder wiring fault	Inspect encoder cable for disconnection, bad connection, cut cable, etc.	Correct any issues found with encoder wiring
			Encoder fault or encoder interface fault	Go to limit learn process. Number displayed while in door limit learn mode is the encoder position. Jog door several inches in either direction and release button. Number displayed should change. Make sure to cancel changes or set limit again when finished.	If encoder position does not change with door movement, the encoder, encoder wiring, and powerhead main board are suspect. Check all three for any visible damage. Attempt power cycling and restoring factory defaults. Replace or repair suspected faulty components.
			Motor drive fault occurred	Check for other fault codes	Review other fault codes and perform problem resolution as necessary.
F08	F08 NO CONFIG	Configuration was not found or was reset to factory setting	New operator is not configured.	If the operator is new, the configuration is initially unset.	Configure the operator per the normal process.
			Operator was factory reset from the menu	If the operator is factory reset, the configuration will be unset.	Configure the operator per the normal process.
F14	F14 SET LIMITS	End positions are not set or stored	Limits were never set out of box	New product as shipped does not have any limits set.	Learn door limits
			Settings were reset or invalidated from the menu	F14 error	Re-learn door limits

Troubleshooting (continued)

Code	Display Message	Description	Possible Causes	Diagnosis	Resolution
F19	F19 SYSTEM ID	System ID is not configured in the system. System ID is needed by the powerhead main board to correctly run the operator. (service kit boards only)	System ID is unset (service board replacement)	F19 error	Configure system ID in the menu by using the LCD wall control. Ensure system ID is chosen properly. Operator may not function properly if the chosen system ID does not match the operator.
F23	F23 OVERTEMP	Motor drive circuitry temperature is too high. Message is displayed until the circuitry cools down.	Door imbalance or excessive resistance	Inspect door for imbalance or excessive resistance	Repair or correct conditions resulting in excessive door imbalance/resistance
			Poor airflow/cooling	Check area around operator for adequate ventilation space on the sides, above, and below the operator. Check the electronics enclosure for dust or other debris near or behind the PCBA that restricts airflow or cooling.	Correct any airflow restrictions around or inside the operator to improve cooling of the electronics.
			Ambient temperature too hot	Measure ambient temperature near the powerhead when the overheating is occurring. Check against the temperature range specification for the product.	Product must be used within the specified operating temperature range or risk of damage to the operator is possible.
			Excessive gear reducer or motor drag	Check that the motor and gearbox rotate freely and smoothly when disconnected from the door	Correct any issues found, or replace any faulty or worn components producing excessive drag
			Faulty powerhead main board	If OVERTEMP fault never clears, even when the electronics have cooled, the main board may be faulty.	Replace main board.
			Faulty motor drawing excessive current	If motor is getting excessively hot or does not spin smoothly when powered, there could be an issue with the motor	Replace motor

Troubleshooting (continued)

Code	Display Message	Description	Possible Causes	Diagnosis	Resolution
F26	F26 OVER VOLT	Motor drive circuitry detected an overvoltage condition	AC input voltage mis-selected (120V/240V models only)	Check whether the transformer connector is plugged in to the connectors on the EMI filter board marked '120V' or '240V'. Verify this matches the input AC voltage supplied to the operator.	If 240V power is applied when 120V is selected, damage to other components of the operator electronics may have occurred. Ensure voltage selection is corrected and verify the operator functions.
			Door imbalance causes motor regeneration	Inspect door for imbalance or broken springs	repair or correct conditions resulting in excessive door imbalance
			AC power out of range	Verify input AC voltage: Measure AC voltage between 'L1' and 'L2' terminals at EMI filter board input connector. Verify voltage is within specifications. If voltage is outside specifications, see resolution.	Ensure the circuit supplying the operator is the correct voltage class for the operator (e.g. 120V, 240V, or 480V) If voltage is out of specification for the circuit, consult an electrician.
F31 F32 F33 F34	F31 OPEN HELD F32 CLOSE HELD F33 STOP HELD F34 SBC HELD	Wall control buttons held/ stuck for at least 1 minute. Open/Close/ Stop/SBC inputs triggered for at least 1 minute.	Wall control buttons stuck	Check that all buttons return to the normal state properly when released.	Repair, clean, or replace sticking buttons or controls as necessary.
			Wiring short circuit	Inspect wiring for open/ close/stop/SBC terminals for short circuits	Correct any wiring faults found
			Faulty accessory connected to OPEN/CLOSE/ STOP/SBC terminals	Disconnect accessories from the terminals.	If problem is resolved by disconnection of other external accessories, suspect a wiring issue, faulty accessory, or incompatible accessory.
			Faulty LCD wall control	Swap wall control with known-good unit	If known-good wall control resolves the issue, fault is with previous wall control
			Faulty powerhead main board	Remove all accessories from OPEN/CLOSE/STOP/ SBC terminals. Ensure wall control is replaced with a known-good unit for diagnosis.	Try power cycling the operator and restoring factory defaults. If problems persist, replace powerhead main PCBA

Troubleshooting (continued)

Code	Display Message	Description	Possible Causes	Diagnosis	Resolution
F41 F44 F47	F41 EYE/ EDG1 BLK F44 EYE/ EDG2 BLK F47 EYE/ EDG3 BLK	Monitored eyes/ edges 1/2/3 blocked for 3 minutes or more	Obstruction in doorway is blocking eye or contacting edge	Check for obstructions	If obstructions are present, remove the obstruction
			improperly configured eye/ edge input	Check system settings item in the menu to check the device type setting for the input	Ensure the safety device type matches the device that is actually installed
			Unapproved safety device is being used	Ensure the safety device is approved for use with the operator	Replace the safety device with one that is approved for use with the operator
			Photoeyes misaligned	Check alignment	If eyes are misaligned, correct the alignment
			Wiring fault to photoeye emitter	Check that the photoeye emitter is powered and wired correctly. LED on emitter is lit.	Correct wiring faults
			Resistive type edge shorted or shorted wiring	Check for short circuits in the wiring or in the resistive edge.	Correct any wiring faults
			Sunlight causing photoeye blocking condition	Block sunlight from shining in the receiver and check if photoeye remains blocked	Resolution for this issue may be difficult. Swapping the emitter and receiver can sometimes provide relief from the issue, but other times just causes the issue to surface at another time of day.
			Damaged photo eyes or edge	Swap safety device with known-good device A properly functioning resistive edge should measure 8-14 kOhm in the normal unobstructed state	If a known-good safety device works, replace the faulty safety device
			Damaged powerhead main board	Swap safety device with known-good device connected directly to the powerhead main board	If the main board still won't detect known- good safety devices connected directly to the board, power cycle the operator. If the problem persists, reset to factory defaults and configure again. If problem still persists, replace the powerhead main board.

Troubleshooting (continued)

Code	Display Message	Description	Possible Causes	Diagnosis	Resolution
F42 F45 F48	F42 EYE/ EDG1 MIS F45 EYE/ EDG2 MIS F48 EYE/ EDG3 MIS	Monitored eyes/ edges 1/2/3 learned, but no longer detected as present.	Certain safety devices may show as missing when they are blocked, even if they are present and functioning	See F41/F44/F47 errors: safety device blocked	Ensure only safety devices approved for use with the operator are used. Correct blocked safety device condition
			Improperly configured photoeye input	Check system settings item in the menu to check the device type setting for the input	Ensure the safety device type matches the device that is actually installed
			Unapproved safety device is being used	Ensure the safety device is approved for use with the operator	Replace the safety device with one that is approved for use with the operator
			Wiring fault to safety device	Check for LED status on photoeye type devices. Check wiring for short or open circuit Ensure wires are wired into correct terminals and that polarity is correct for polarity-sensitive devices	Correct wiring faults
			Damaged photo eyes or edge	Swap safety device with known-good device	If a known-good safety device works, replace the faulty safety device
			Damaged powerhead main board	Swap safety device with known-good device connected directly to the powerhead main board	If the main board still won't detect known- good safety devices connected directly to the board, power cycle the operator. If the problem persists, reset to factory defaults and configure again. If problem still persists, replace the powerhead main board.
F43 F46 F49	F43 EYE/ EDG1 BLK. F46 EYE/ EDG2 BLK. F49 EYE/ EDG3 BLK.	Monitored eyes/ edges 1/2/3 were blocked or missing when the door was commanded to move.	See sections for F41/F42/F44/ F45/F47/F46 as applicable	-	-

Troubleshooting (continued)

Code	Display Message	Description	Possible Causes	Diagnosis	Resolution
F51 F52 F53 F54	F51 INP1 BLOCK F52 INP1 CMND	Unmonitored eye/edge device triggered for 3 minutes or more on input 1/2/3/4, or blocked when door motion was requested	Obstruction in doorway is blocking unmonitored eye/edge device	Check for obstructions	If obstructions are present, remove the obstruction
F55 F56 F57 F58	F53 INP2 BLOCK F54 INP2 CMND		Improperly configured input	Check system settings item in the menu to check the device type setting for the input	Ensure the device type matches the device that is actually installed
	F55 INP3 BLOCK F56 INP3 CMND		Incompatible device is being used	INP1/2/3/4 inputs are compatible with dry-contact type devices. Ensure the device being used is a dry-contact type device.	If the device is incompatible, replace with one that is, or move the device to another input which is compatible with the device
	F57 INP4 BLOCK F58 INP4 CMND		Wiring fault to device	Check wiring for short or open circuit Ensure wires are wired into correct terminals	Correct wiring faults
			Damaged device	Swap device with known-good device	If a known-good device works, replace the faulty device
			Damaged powerhead main board	Disconnect unmonitored eye/edge. Open circuit condition is equivalent to an unobstructed unmonitored eye/edge device.	If the main board still detects an obstruction with no device connected, power cycle the operator. If the problem persists, reset to factory defaults and configure again. If problem still persists, replace the powerhead main board.

Troubleshooting (continued)

Code	Display Message	Description	Possible Causes	Diagnosis	Resolution
F61	F61 CTM FAULT	Cable Tension Monitor (CTM) device triggered or missing	Cable tension lost	Check that CTM devices have proper cable tension beneath the roller on the arm, and that the roller is properly riding on the cable. Ensure the cables are properly wrapped on the cable drums.	If cable tension is lost, carefully resolve the issue, check that limits are set properly, and monitor the issue to ensure it is resolved. Ensure no binding occurs in door travel that could produce slack cables.
			Improperly configured input	Check system settings item in the menu to check the the setting for the CTM input.	Ensure the configured number of CTM devices matches the number that are actually installed. Relearn CTM(s) if necessary.
			CTM wiring fault	Check wiring for short or open circuit Ensure wires are wired into the correct terminals	Correct wiring faults
			Damaged CTM device	Swap CTM(s) with known-good device Or verify CTM with multimeter on ohms range. A single CTM with the hinge open should measure 1000 Ohms (1 kOhm). When closed, a CTM should measure open-circuit.	If a known-good CTM works, replace the faulty CTM
			Damaged powerhead main board	Swap CTM(s) with known-good CTM(s) connected directly to the powerhead main board	If the main board still won't detect known-good CTM(s) connected directly to the board, the fault may exist with the main board. Attempt power cycling the unit and, failing that, resetting to factory defaults. If problem still persists, replace the main board.
F62	F62 WLESS BLK	Wireless edge blocked	Obstruction in doorway is blocking eye or contacting edge	Check for obstructions	If obstructions are present, remove the obstruction
			Unapproved safety device is being used	Ensure the safety device is approved for use with the wireless edge kit	Replace the safety device with one that is approved for use with the wireless edge kit
			Wiring fault to safety device	Check wiring for short or open circuit	Correct wiring faults
			Damaged edge	Swap safety device with known-good device	If a known-good safety device works, replace the faulty safety device
			Damaged wireless edge transmitter	Swap safety device with known-good device connected directly to the transmitter	If the wireless edge still shows blocked with known-good safety devices connected directly, power cycle the operator and the wireless edge transmitter. If problem still persists, replace the transmitter.

Troubleshooting (continued)

Code	Display Message	Description	Possible Causes	Diagnosis	Resolution
F63 F64	F63 WE BLE MISS F64 WE BLE MISS	Wireless edge receiver lost BLE (wireless) communications with edge F64 - CLOSE direction edge F63 - OPEN direction edge	Transmitter/ receiver pairing issue	WE BLE MISS error	Pair transmitters to the receiver
			Dead battery in transmitter	Check transmitter battery power	Replace batteries
			Interference in 2.4GHz band	Check for other devices using the 2.4GHz band that may be causing interference If other 2.4GHz devices have interference problems (e.g. Bluetooth® headset) there is likely interference.	Reduce 2.4GHz band congestion
			Distance between transmitter and receiver is too far	Intermittent or complete loss of signal	Shorten distance between transmitter and receiver
			Bad transmitter	Swap transmitter(s) with known-good transmitter(s) and pair to the receiver	If a known-good transmitter resolves the issue, replace the bad transmitter
Bad receiver	Swap receiver with known-good receiver and pair to the transmitters	If known-good receiver resolves the issue, replace the bad receiver			
F65 F66	F65 WE I2C MISS F66 WE I2C MISS	Wireless edge is configured, but the main powerhead board cannot communicate with the wireless edge receiver. F66 - CLOSE direction edge F65 - OPEN direction edge	Wireless edge removed	Wireless edge intentionally removed	If the wireless edge is no longer wanted, it can be unlearned from the safety devices menu by using the LCD wall control.
			Communication cable disconnected or damaged	Check cable between receiver and powerhead main board for disconnection or damage to the cabling.	Correct any issues or replace any faulty parts.
			Firmware glitch or transient condition	Power cycle the operator completely. If the power cycle does not resolve the issue, restore factory defaults settings and reconfigure the operator.	If the steps listed in the diagnosis resolve the issue, there may have been a transient condition that caused an issue that was resolved. If the issue occurs excessively, the problem may lie elsewhere.
			Bad receiver module or bad powerhead main board	Replace the receiver module with a known good unit.	If the problem is resolved, replace the receiver with a new one. If the known good unit still does not work, replace the powerhead main board.
			Other bad accessory on the I2C expansion bus	Temporarily remove other accessories from between the wireless edge receiver and the powerhead main board	If issue is resolved, add accessories back one by one to find the accessory that causes the issue, then troubleshoot that device

Troubleshooting (continued)

Code	Display Message	Description	Possible Causes	Diagnosis	Resolution
F68	F68 WE CRITBATT	Wireless edge transmitter has low battery	The battery in the wireless edge transmitter is low	Check battery condition in wireless edge transmitter	Replace battery in wireless edge transmitter.
F89	F89 WC DISC	Indicates wall control is not detected	Wall control is intentionally disconnected	See resolution	Liftmaster strongly recommends using an LCD wall control with the operator. If the wall control is intentionally disconnected, this error can be cleared by placing a jumper wire between the WALL_CTRL terminals on the powerhead main board. If the jumper is removed and a wall control reconnected, the system may require a power cycle to recognize the new wall control.
			Wall control is wired but off or not functional	Check wall control for display backlight, text on the display, and function of open/close/stop buttons	If LCD wall control isn't functioning properly, see diagnosis for fault 'LCD wall control is off or not functioning'
F91	F91 ENCODER	The system has detected irregularities in the signals received from the encoder.	Direction of rotation incorrect	Watch operator output shaft when commanding operator to open. If output shaft rotates in the close direction, then rotation direction is incorrect.	Ensure motor red and black wires match the labeling on the powerhead main board near the motor connector. Ensure reverse mount setting is set properly.
			System ID mismatch between powerhead main board and operator chassis can cause the encoder to not be recognized.	Check that the system ID in the system information menu matches the model of the operator	Main board system ID must match the operator. Replacement service kit main boards allow setting the system ID using the menu on the LCD wall control. Factory installed boards cannot have the System ID set manually.
			Door is drifting up or down due to imbalance when starting	Check for excessive door imbalance	Rebalance door
			Encoder wiring fault	Inspect encoder cable for disconnection, bad connection, cut cable, etc.	Correct any issues found with encoder wiring
			Encoder fault or encoder interface fault	Go to limit learn process. Number displayed while in door limit learn mode is the encoder position. Jog door several inches in either direction and release button. Number displayed should change. Make sure to cancel changes or set limit again when finished.	If encoder position does not change with door movement, ensure system ID in the system information menu matches the operator. If the system ID matches but the problem persists, the encoder, encoder wiring, and powerhead main board are suspect. Check all three for any visible damage. Replace or repair suspected faulty components.

Troubleshooting (continued)

Code	Display Message	Description	Possible Causes	Diagnosis	Resolution
F95	F95 MOTOR COMM	Message with invalid format received from motor MCU.	Powerhead main board firmware glitch or hardware damage.	Fault is internal to the powerhead main board. See resolution.	Power cycle the operator. If the issue persists, reset the settings to factory defaults and reconfigure the operator. If the issue still persists, replace powerhead main PCBA.
F96	F96 INTR LOCK	INTR LOCK circuit was broken Motor drive circuit is disabled when the INTR LOCK circuit is open. INTR LOCK circuit consists of the INTR LOCK wiring terminals and the hoist chain interlock switch. Operators without a hoist include a jumper to bypass the hoist chain interlock switch connections.	Hoist is engaged	Check that the hoist mechanism is disengaged.	Pull the green rope to disengage the hoist.
			INTR LOCK devices disconnected or missing	Check to ensure INTR LOCK devices are properly connected to the INTR LOCK terminals. INTR LOCK terminals should have jumper placed if no devices are connected.	Reconnect INTR LOCK devices. If no INTR LOCK devices are intended to be used, then place a wire jumper between both terminals.
			Hoist switch cable or hoist switch jumper disconnected or missing	Check to ensure hoist switch or jumper are properly connected.	Correct any wiring issues with the hoist switch cable or hoist switch jumper.
			Device connected to INTR LOCK terminal is open or INTR LOCK device is faulty	Check that any devices connected to INTR LOCK terminal are in their normal, closed state to allow the operator to move	Restore INTR LOCK devices to their normal state. If a faulty device is attached, repair or replace the device.
			Wiring fault	Check for open circuit or short circuit wiring faults for the INTR LOCK wiring.	If any wiring fault is found, correct the fault.
			Damaged powerhead main board	Disconnect INTR LOCK devices and replace with jumper. If fault goes away, issue is not with powerhead main board.	If the main board still won't resolve the fault with a jumper connected directly to the board, the fault may exist with the main board. Attempt power cycling the unit and, failing that, resetting to factory defaults. If problem still persists, replace the main board.
F101	F101 BBU LOW	Battery is present but discharged (voltage is low)	Backup battery is discharged due to loss of AC power.	Check to ensure that AC power is present and in normal operating range for the operator	Restore AC power and ensure battery recharges properly
			Battery is worn out or has failed	Batteries can be tested with a suitable battery tester. Older batteries are more likely to be worn out, as are batteries that are used often.	Replace batteries. Always replace both batteries as a set. Do not mix old and new batteries or use mismatched types.


Troubleshooting (continued)

Code	Display Message	Description	Possible Causes	Diagnosis	Resolution
F102	F102 BBU DISCONN	Battery is learned to the system but the battery is not detected	Backup battery is disconnected	Verify all battery wiring is connected securely and properly to the correct terminals and with the correct polarity.	Correct any wiring issues.
			Battery is worn out or has failed	Batteries can be tested with a suitable battery tester. Older batteries are more likely to be worn out, as are batteries that are used often.	Replace batteries. <i>Always replace both batteries as a set. Do not mix old and new batteries or use mismatched types.</i>
			Battery fuses blown	Visually inspect battery fuses or measure the fuses with a multimeter for continuity.	If fuses are blown, replace both together with new fuses.
F105	F105 AC FAIL	AC failure. System is running on battery.	Power outage	Check for proper voltage at the input of the operator	Error code will resolve when power is restored
			Input voltage outside specifications	Check for proper voltage at the input of the operator	Ensure voltage supplied to the operator is within the specified operating range
F106	F106 WC SHORT	Indicates wall control is removed and jumpered out.	Wall control is intentionally disconnected	Error message is informational only.	Liftmaster strongly recommends using the provided LCD wall control with the operator.
			Wiring short circuit	Inspect wiring for short circuits, damage, etc.	Resolve any faults found, then power cycle the operator
			Damaged wall control	Replace wall control with known-good unit, then power cycle the operator	If known good wall control resolves the issue, replace the bad wall control
F120	F120 MAINT DUE	Maintenance counter reached preset limit.	Maintenance counter reached preset limit.	F120 error code	Reset maintenance counter using the menu through the wall control
F121	F121 OVER CYCLED	Standard/extended cycle count reached	Operator has been cycled too many times in a short period of time	Refer to specified cycle ratings for the operator model that is installed	Reduce cycle rate to ensure it is within specifications for the operator

Maintenance

Maintenance Schedule

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

 WARNING
<p>To avoid SERIOUS personal INJURY or DEATH:</p> <ul style="list-style-type: none"> • Disconnect electric power BEFORE performing ANY adjustments or maintenance. • ALL maintenance MUST be performed by a trained door systems technician.

Item	Procedure	Every Month	Every 3 Months or 5,000 Cycles	Every 6 Months or 10,000 Cycles
Drive Chain	<ul style="list-style-type: none"> • Check for excessive slack. • Check and adjust as required. • Lubricate. 		●●	
Sprockets	Check set screw tightness.		●	
Fasteners	Check and tighten as required.			●
Manual Hoist (if applicable)	Check and operate.			●
Shafts	Check for wear and lubricate.		●●	
LiftMaster Monitored Entrapment Protection	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.

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

How to order repair parts: LiftMaster.com

Service Parts

Model JHDC

SERVICE KITS

Item	Part #	Description
	190925FT12	Hoist Chain
	K41-0269-000	Disengage Rope (red), Engage Rope (green), two screws
	15-50B12LGH	Drive Sprocket

Model TDC, JDC, and JHDC Common Parts

SERVICE KITS

Item	Part #	Description	Item	Part #	Description
	K41-0374-000	24 DC Motor, Gear Box & Encoder (Jack Shaft 700)		K41-0394-000	EMI Board 2200 (480Vac)
	K41-0375-000	24 DC Motor, Gear Box & Encoder (Jack Shaft 1200)		K41-0395-000	Control Box with Cover
	K41-0376-000	24 DC Motor, Gear Box & Encoder (Jack Shaft 2200)		K41-0380-000	Bridge Rectifier 700/1200
	K41-0377-000	24 DC Motor, Gear Box & Encoder (Trolley 700)		TBD	Bridge Rectifier 2200
	K41-0378-000	24 DC Motor, Gear Box & Encoder (Trolley 1200)		K41-0381-000	Toroidal Transformer 700Lb/120Vac-240VAC
	K41-0379-000	24 DC Motor, Gear Box & Encoder (Trolley 2200)		K41-0382-000	Toroidal Transformer 700Lb/480VAC
	K41-0409-000	1200 Extended duty Motor, Gear Box & Encoder Trolley		K41-0383-000	Toroidal Transformer 1200Lb/120Vac-240VAC
	K41-0410-000	1200 Extended duty Motor, Gear Box & Encoder Hoist		K41-0384-000	Toroidal Transformer 1200Lb/480VAC
	K41-0388-000	Main board (with Battery Backup)		K41-0385-000	Toroidal Transformer 2200Lb/120Vac-240VAC
	K41-0389-000	EMI Board 700 (120VAC 240VAC)		K41-0386-000	Toroidal Transformer 2200Lb/480VAC
	K41-0390-000	EMI Board 700 (480Vac)		K77-36541	Antenna
	K41-0391-000	EMI Board 1200 (120VAC 240VAC)		K41-0387-000	Encoder (with drive sprocket, snap ring, mounting plate, screws)
	K41-0392-000	EMI Board 1200 (480Vac)		TBD	Brake 24VDC (for 2200 operators)
	K41-0393-000	EMI Board 2200 (120VAC 240VAC)			