

 **WARNING**

To reduce the risk of INJURY or DEATH:

- Disconnect all power BEFORE installing or servicing operator.
- See manual prior to servicing regarding maintenance and required safety testing.



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

Introduction

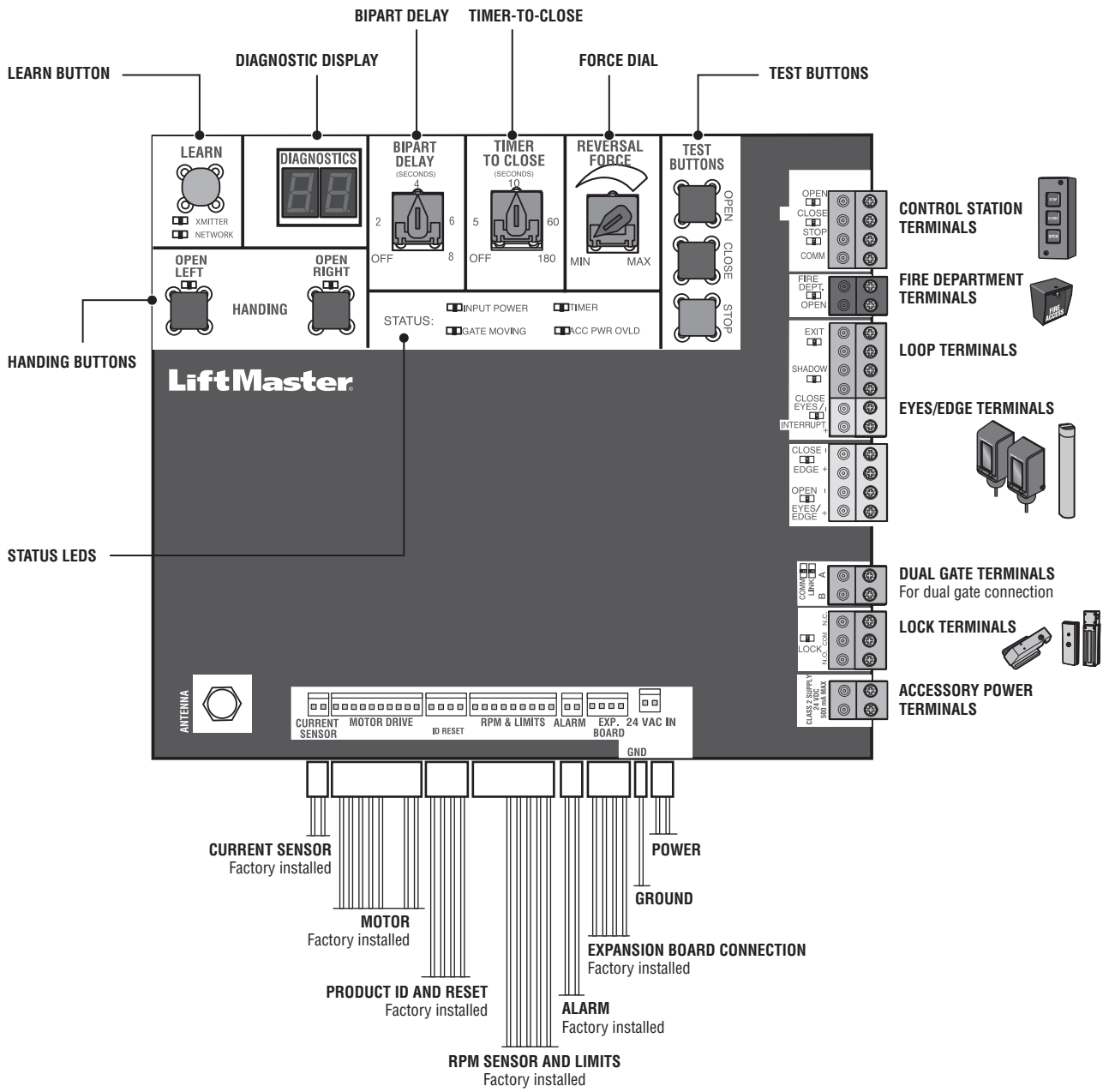
This kit provides a replacement control board for all LiftMaster AC gate operators. Slide gate operators with the new control board require a **minimum of two** external monitored entrapment protection devices to function; one in the open direction and one in the close direction. See Verify Proper Entrapment Protection section.

Replace the Control Board

1. Make sure the AC power switch on the operator is OFF.
2. Turn off the AC power from the main power source circuit breaker.
3. Remove the operator cover or electrical box cover to access the control board.
4. Disconnect all wiring from the control board and label the location for rewiring to the new control board.
5. Remove the control board from the operator.
6. Install the new control board.
7. Reconnect all wiring to the new control board, see *Control Board Overview* section.
8. Turn on the AC power from the main power source circuit breaker.
9. Turn on the AC power switch.

Proceed to the following sections to complete adjustment and setup of the operator.

Control Board Overview



Verify Proper Entrapment Protection

WARNING

To prevent SERIOUS INJURY or DEATH from a moving gate:

- ALL gate operator systems REQUIRE two independent entrapment protection systems for each entrapment zone.
- Entrapment protection devices MUST be installed to protect anyone who may come near a moving gate.
- Locate entrapment protection devices to protect in BOTH the open and close gate cycles.
- Locate entrapment protection devices to protect between moving gate and RIGID objects, such as posts, walls, pillars, columns, or operator itself.

Entrapment protection MUST be installed according to the following UL 325 requirements:

- Slide gate operators require a **minimum of two** external monitored entrapment protection devices to function; one in the open direction and one in the close direction.
- Swing gate operators require the installation of the first external monitored entrapment protection device to function.
- Every installation is unique. It is the responsibility of the installer to ensure that ALL entrapment zones are protected with an external monitored entrapment protection device, protecting both the open and close gate cycles.
- **LiftMaster monitored external entrapment protection devices MUST be used with LiftMaster operators to meet UL325 requirements, see Accessories.**
- Test ALL entrapment protection devices after completing installation of the operator. For testing instructions, refer to the manual provided with your entrapment protection device.

Definitions

ENTRAPMENT: The condition when a person is caught or held in a position that increases the risk of injury.

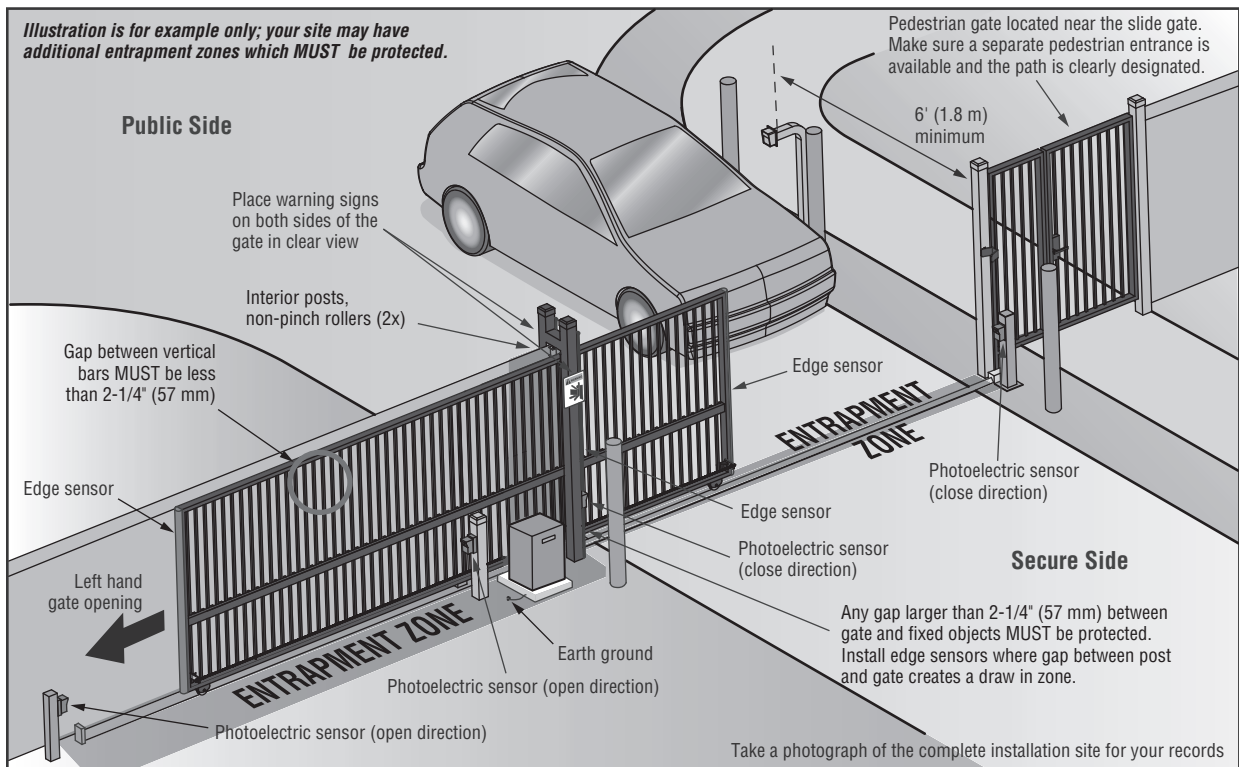
SLIDE GATE ENTRAPMENT ZONE: An entrapment zone exists if at any point during travel, the gap between the gate and any opposing fixed edge or surface such as posts, walls, pillars, columns or operator itself, is less than 16" (406 mm) in a location up to 6 ft. (1.8 m) above grade.

SWING GATE ENTRAPMENT ZONE: Locations between a moving gate or moving, exposed operator components and a counter opposing edge or surface where entrapment is possible up to 1.8 m (6 ft) above grade. Such locations occur if during any point in travel:

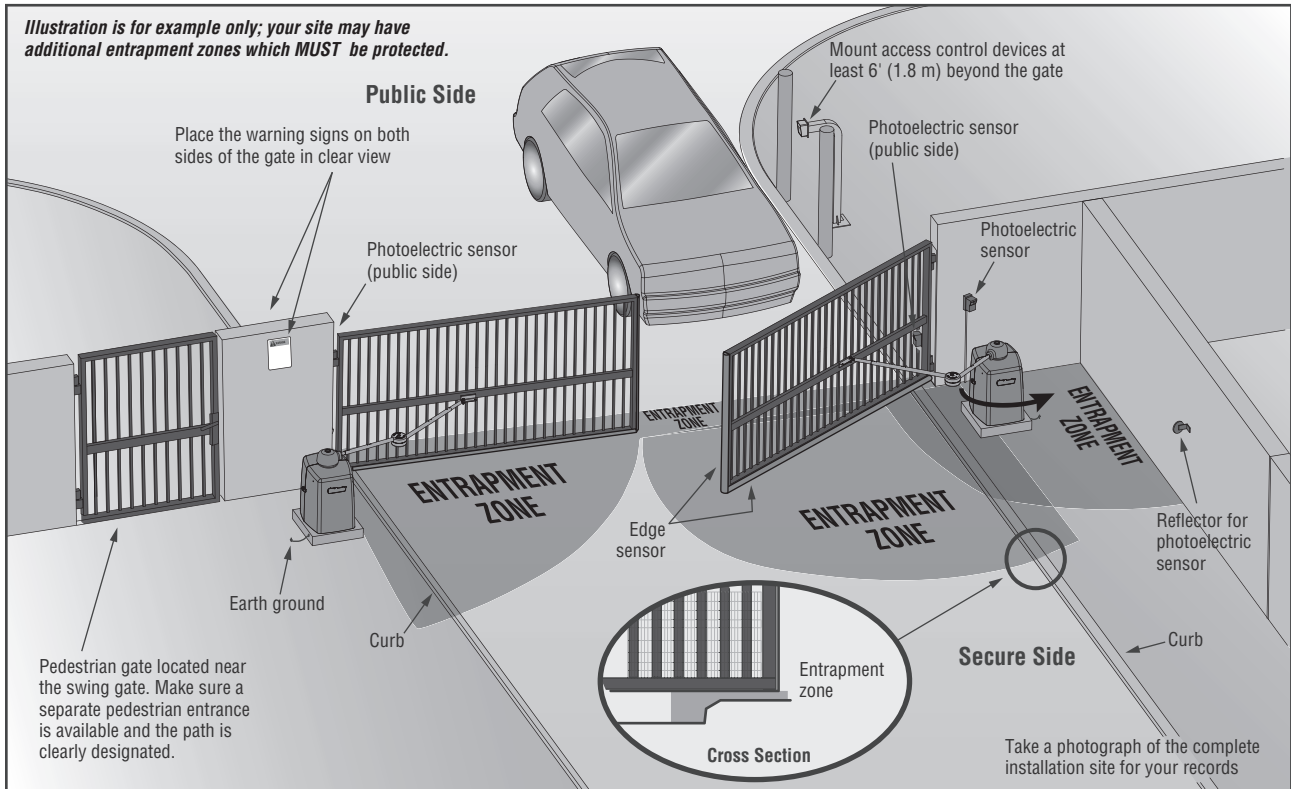
- The gap between the bottom of a moving gate and the ground is greater than 101.6 mm (4 in) and less than 406 mm (16 in); or
- The distance between the center line of the pivot and the end of the wall, pillar, or column to which it is mounted when in the open or closed position exceeds 101.6 mm (4 in). Any other gap between a moving gate and fixed counter opposing edges or surfaces or other fixed objects is less than 406 mm (16 in) (examples are walls, curbs, berms or other immovable objects).

Illustrations provided by DASMA Gate Systems Safety Guide

Slide Gate Entrapment Protection



Swing Gate Entrapment Protection



Wire Entrapment Protection Devices

All control wiring used to connect external devices to Class 2 circuits of the operator must be (QPTZ) Power-Limited Circuit Cables, Type CL2, CL2P, CL2R, or CL2X or other cable with equivalent or better electrical, mechanical, and flammability ratings.

There are three options for wiring the entrapment protection devices depending on the specific device and how the device will function. Refer to the specific entrapment protection device manual for more information. These entrapment protection device inputs are for monitored devices, which include pulsed photoelectric sensors, resistive edge sensors, and pulsed edge sensors. **Only one monitored entrapment protection device may be wired to each input.** Additional entrapment protection devices may be wired to the expansion board.

Control Board

CLOSES EYES/INTERRUPT

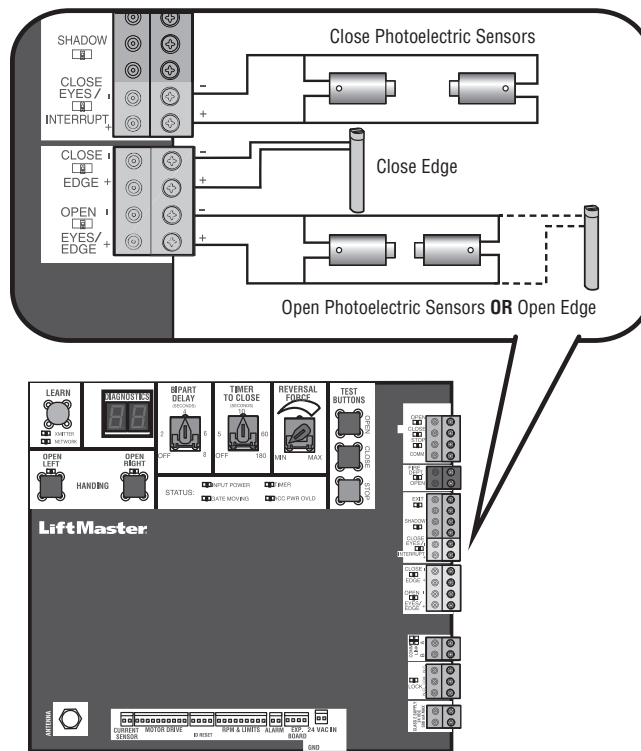
(2 Terminals) The CLOSE EYES/INTERRUPT input is for photoelectric sensor entrapment protection for the close direction. When an obstruction is sensed during gate closing the gate will open to the full open position and resets the Timer-to-Close. This input will be disregarded during gate opening.

CLOSE EDGE

(2 Terminals) The CLOSE EDGE input is for edge sensor entrapment protection for the close direction. When an obstruction is sensed during gate closing the gate will reverse to the full open position, disengaging the Timer-to-Close. This input will be disregarded during gate opening.

OPEN EYES/EDGE

(2 Terminals) The OPEN EYES/EDGE input is for photoelectric sensor or edge sensor entrapment protection for the open direction. When an obstruction is sensed during gate opening the gate will reverse for 4 seconds then stop. This input will be disregarded during gate closing.



Dual Gate Setup (if applicable)

There are two options for dual gate communication: wired or wireless. Follow the directions according to your application. Do not use wired and wireless communication simultaneously.

Wireless setup

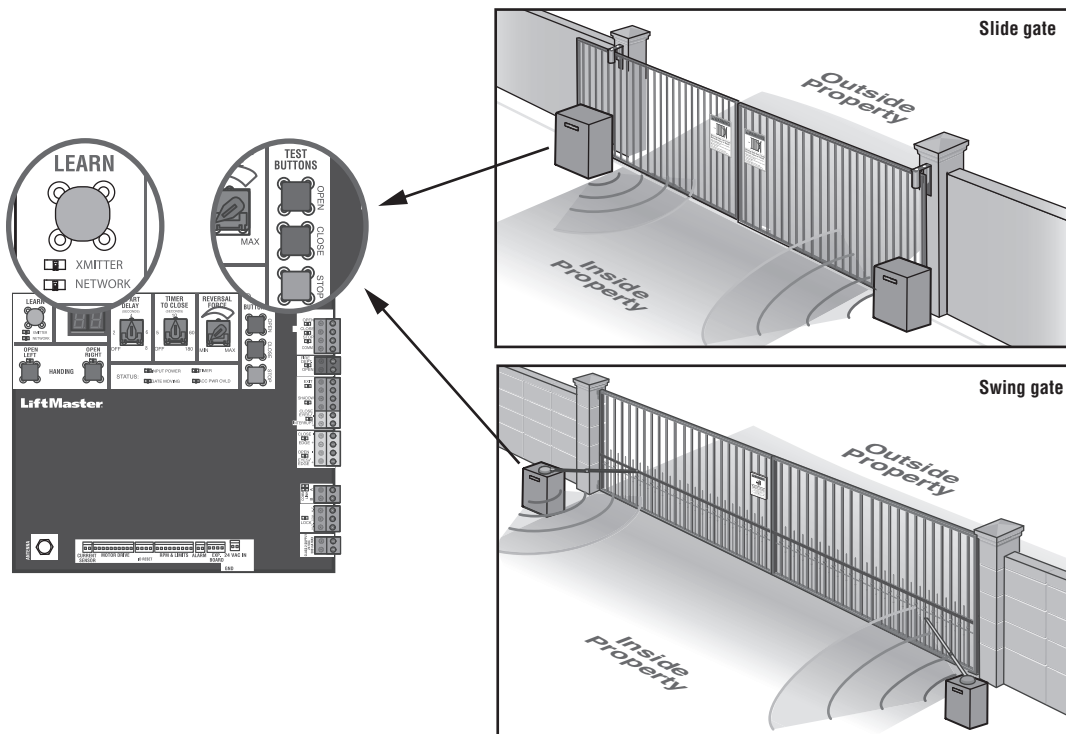
To activate the wireless feature:

1. Choose an operator to be the network primary operator. All wireless accessories will need to be programmed to the primary operator. **NOTE:** We recommend that all accessories and board configurations are set on the primary operator.
2. Press and release the LEARN button on the primary operator. The green XMITTER LED will light. **NOTE:** The operator will time out of programming mode after 180 seconds.
3. Press and release the LEARN button again on the primary operator. The yellow NETWORK LED will light.
4. Press and release the OPEN test button to assign this operator as network primary.
5. Press and release the LEARN button on the second operator. The green XMITTER LED will light.
6. Press and release the LEARN button again on the second operator. The yellow NETWORK LED will light.
7. Press and release the CLOSE test button to assign this operator as network second.

Both operators will beep and the yellow NETWORK LEDs will turn off indicating programming is successful.

To deactivate the wireless feature:

1. Press and release the LEARN button on either operator. The green XMITTER LED will light.
2. Press and release the LEARN button again on the same operator. The yellow NETWORK LED will light.
3. Press and hold the LEARN button for 5 seconds. The yellow NETWORK LED will blink (operator will beep) then turn off indicating successful deactivation.
4. Repeat the steps for the other operator.



Adjust the Handing and Limits

⚠ WARNING

To reduce the risk of SEVERE INJURY or DEATH:

- Without a properly installed safety reversal system, persons (particularly small children) could be SERIOUSLY INJURED or KILLED by a moving gate.
- Too much force on gate will interfere with proper operation of safety reversal system.
- NEVER increase force beyond minimum amount required to move gate.
- NEVER use force adjustments to compensate for a binding or sticking gate.
- If one control (force or travel limits) is adjusted, the other control may also need adjustment.
- After ANY adjustments are made, the safety reversal system MUST be tested. Gate MUST reverse on contact with an object.

Slide gate operators with the new control board require a **minimum of two** external monitored entrapment protection devices to function; one in the open direction and one in the close direction.

The adjustments allow you to set where the gate will stop in the open and close position. The force is adjusted automatically when you set the limits but should be fine tuned using the FORCE dial on the control board (refer to Force Dial section). The Test Buttons on the control board will not work until the handing is set. For dual gate applications the limits will have to be set for each operator. The gate MUST be attached to the operator before setting the limits and force.

OPEN RIGHT: If the operator is installed on the right side of the driveway when looking out of the property, the gate should be set to open right.

OPEN LEFT: If the operator is mounted on the left side of the driveway when looking out of the property, the gate should be set to open left.

Set the handing

1. To set the initial handing of the operator, make sure that both OPEN LEFT and OPEN RIGHT LEDs are flashing. If they are not flashing, press and hold both the OPEN LEFT and OPEN RIGHT handing buttons until both handing LEDs start to flash and the operator beeps.
2. Press and release either the OPEN RIGHT or OPEN LEFT button depending on which direction the gate should open. The corresponding handing LED will turn solid.

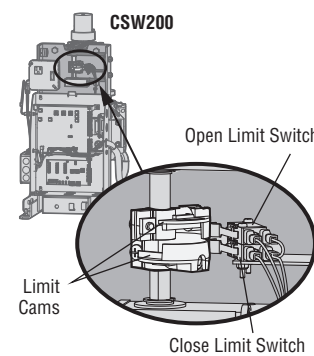
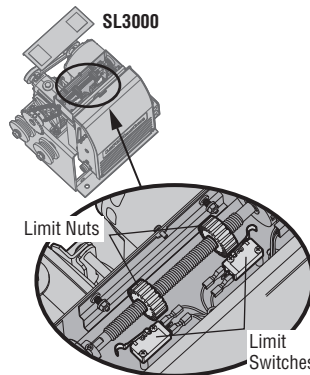
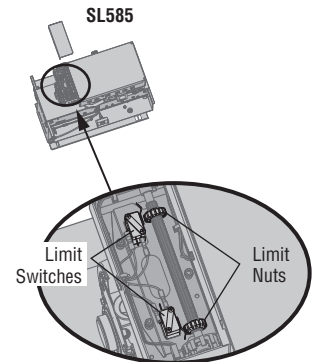
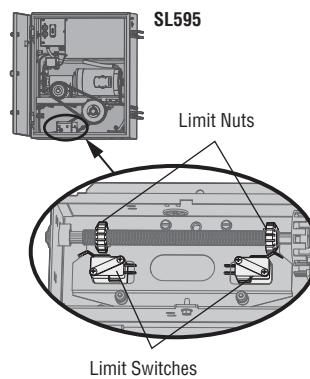
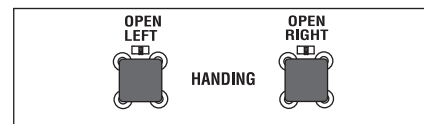
To relearn the handing, repeat the steps above.

Set the limits

1. Make sure the gate is closed.
2. Press and release the OPEN test button to open the gate.
3. Press the STOP test button when the desired OPEN limit is reached. Adjust the limit nut or cam so it makes contact with the OPEN limit switch at this position. If the gate stops early, move the limit nut or cam to allow for additional travel.
4. Press and release the CLOSE test button to close the gate.
5. Press the STOP test button when the desired CLOSE limit is reached. Adjust the limit nut or cam so it makes contact with the CLOSE limit switch at this position. If the gate stops early, move the limit nut to allow for additional travel.

Set the Force and Run Distance

1. Press the OPEN test button to open the gate.
2. Press and release both the OPEN LEFT and OPEN RIGHT handing buttons.
3. Press the handing button below the solid LED.
4. Run the operator one full cycle using the test buttons. The initial forces and run distance will be set during this cycle.



Readjust the Limits

To readjust the limits, follow the “Set the Limits” and “Set the Force and Run Distance” instructions above. **It is important that the force and run distance are set after every limit readjustment.**

HANDING LEDS			
OPEN LEFT LED	OPEN RIGHT LED	OPERATOR MODE	EXPLANATION
OFF	OFF	NORMAL MODE	Control board not powered
BLINKING	BLINKING	HANDING SETUP MODE	Handing not set
BLINKING	ON	HANDING SETUP MODE	Handing set to the direction of the solid LED
ON	BLINKING	HANDING SETUP MODE	Handing set to the direction of the solid LED
ON	OFF	NORMAL MODE	Open left handing is set
OFF	ON	NORMAL MODE	Open right handing is set

Fine Tune the Force

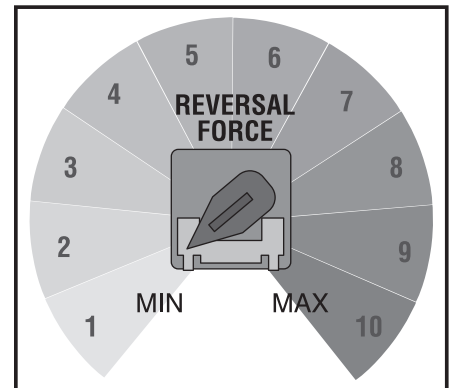
Once the initial limits have been set, the REVERSAL FORCE DIAL on the control board is used for fine tuning the force where wind or environmental changes may affect the gate travel. The REVERSAL FORCE DIAL is set to minimum at the factory.

Based on the length and weight of the gate it may be necessary to make additional force adjustments. The force setting should be high enough that the gate will not reverse by itself nor cause nuisance interruptions, but low enough to prevent serious injury to a person. The force setting is the same for both the open and close gate directions.

Settings 1-3: Fixed force settings (the force will not adjust due to gate wear or temperature changes)

Settings 4-10: Automatically increase the force due to gate wear or temperature changes

1. Open and close the gate with the TEST BUTTONS.
2. If the gate stops or reverses before reaching the fully open or closed position, increase the force by turning the force control slightly clockwise.
3. Perform the “Obstruction Test” after every limit and force setting adjustment (see below).

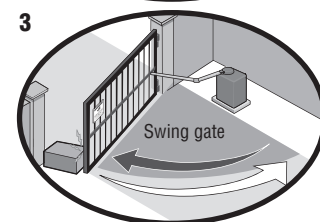
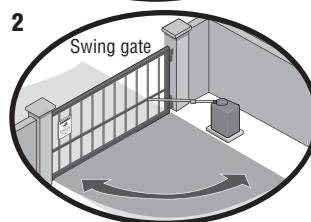
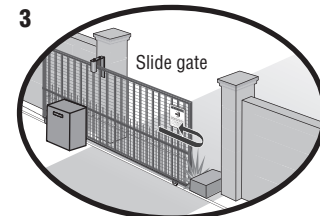
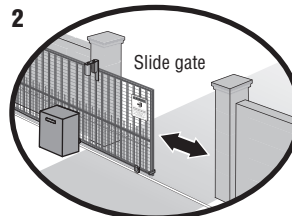
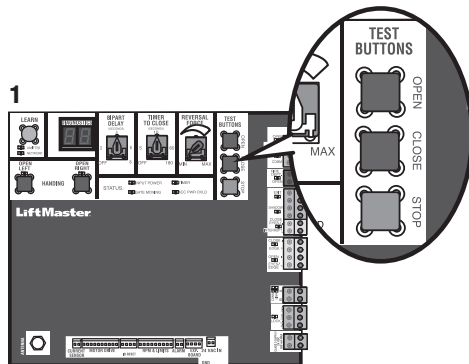


Obstruction Test

The operator is equipped with an inherent (built in to the operator) obstruction sensing device. If the gate encounters an obstruction during motion, the gate reverses all the way to the limit. The following procedure will test ONLY the inherent (built in to the operator) obstruction sensing device:

1. Open and close the gate with the TEST BUTTONS, ensuring that the gate is stopping at the proper open and close limit positions.
2. Place an object between the open gate and a rigid structure. Make sure that any external entrapment protection devices will NOT be activated by the object.
3. Run the gate in the close direction. The gate should stop and reverse upon contact with the object. If the gate does not reverse off the object, reduce the force setting by turning the force control slightly counter-clockwise. The gate should have enough force to reach both the open and close limits, but MUST reverse after contact with an object.
4. Repeat the test for the open direction.

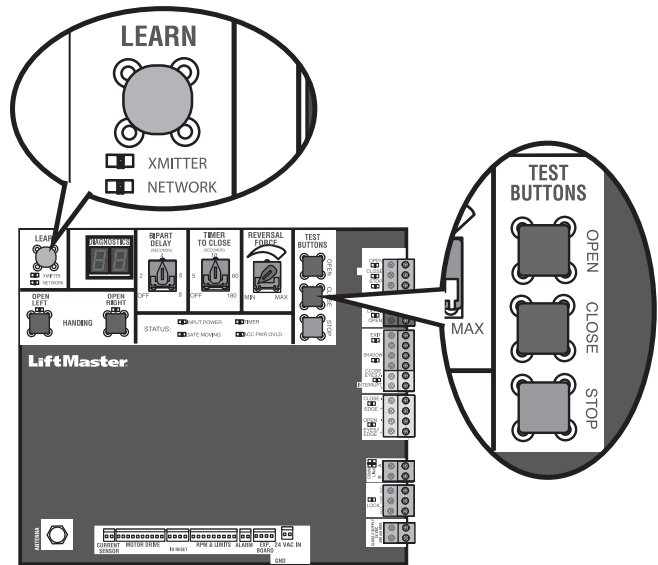
Test the operator after any adjustments are made.



Programming

Remote Controls (Not Provided)

A total of 50 Security+ 2.0® remote controls or KPW250 keypads and 2 keyless entries (1 PIN for each keyless entry) can be programmed to the operator. When programming a third keyless entry to the operator, the first keyless entry will be erased to allow the third keyless entry to be programmed. When the operator’s memory is full it will exit the programming mode and the remote control will not be programmed. The memory will need to be erased before programming any additional remote controls. **NOTE:** If installing an 86LM to extend the range of the remote controls DO NOT straighten the antenna.



There are 3 different options for programming the remote control depending on how you would like the remote control to function. Choose a programming option:

OPTION	DESCRIPTION	PROGRAMMING STEPS
Single button as OPEN only	Program a single button on the remote control for open only. The Timer-to-Close can be set to close the gate.	<ol style="list-style-type: none"> 1. Press and release the LEARN button (operator will beep and green XMITTER LED will light). NOTE: The operator will time out of programming mode after 30 seconds. 2. Press the OPEN button. 3. Press the remote control button that you would like to program.
Single button (SBC) as OPEN, CLOSE, and STOP	Program one remote control button as an open, close, and stop.	<ol style="list-style-type: none"> 1. Press and release the LEARN button (operator will beep and green XMITTER LED will light). NOTE: The operator will time out of programming mode after 30 seconds. 2. Press the remote control button that you would like to program.
Three separate buttons as OPEN, CLOSE, and STOP	Program each remote control button as an open, close, and stop.	<ol style="list-style-type: none"> 1. Press and release the LEARN button (operator will beep and green XMITTER LED will light). NOTE: The operator will time out of programming mode after 30 seconds. 2. Press the OPEN, CLOSE, or STOP button, depending on the desired function. 3. Press the remote control button that you would like to program.

The operator will automatically exit learn mode (operator will beep and green XMITTER LED will go out) if programming is successful. To program additional Security+ 2.0® remote controls or remote control buttons, repeat the programming steps above.

NOTICE: This device complies with Part 15 of the FCC rules and Industry Canada’s license-exempt RSSs. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Any changes or modifications not expressly approved by the party responsible for compliance could void the user’s authority to operate the equipment. This device must be installed to ensure a minimum 20 cm (8 in.) distance is maintained between users/bystanders and device. This device has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules and Industry Canada ICES standard. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

LiftMaster Internet Gateway (Not Provided)

To program the operator to the LiftMaster Internet Gateway:

Program using the learn button on the operator's control board:	Program using the reset button on the operator:
<ol style="list-style-type: none">1. Connect the ethernet cable to the LiftMaster Internet Gateway and the router.2. Connect power to the LiftMaster Internet Gateway.3. Create an online account by visiting www.myliftmaster.com.4. Register the LiftMaster Internet Gateway.5. Use an internet enabled computer or smartphone to add devices. The LiftMaster Internet Gateway will stay in learn mode for three minutes.6. Press the Learn button twice on the primary operator (the operator will beep as it enters learn mode). The LiftMaster Internet Gateway will pair to the operator if it is within range and the operator will beep if programming is successful.	<ol style="list-style-type: none">1. Connect the ethernet cable to the LiftMaster Internet Gateway and the router.2. Connect power to the LiftMaster Internet Gateway.3. Create an online account by visiting www.myliftmaster.com.4. Register the LiftMaster Internet Gateway.5. Use an internet enabled computer or smartphone to add devices. The LiftMaster Internet Gateway will stay in learn mode for three minutes.6. Ensure gate is closed.7. Give the operator an OPEN command.8. Within 30 seconds, when the gate is at the open limit press and release the reset button 3 times (on primary gate) to put primary operator into High Band Learn Mode (the operator will beep as it enters learn mode). The LiftMaster Internet Gateway will pair to the operator if it is

The status as shown by the LiftMaster Internet Gateway app will be either "open" or "closed". The gate operator can then be controlled through the LiftMaster Internet Gateway app.

Erase All Codes

1. Press and release the LEARN button (operator will beep and green XMITTER LED will light).
2. Press and hold the LEARN button again until the green XMITTER LED flashes and then release the button (approximately 6 seconds). All remote control codes are now erased.

To Remove and Erase Monitored Entrapment Protection Devices

1. Remove the entrapment protection device wires from the terminal block.
2. Press and release the OPEN LEFT and OPEN RIGHT buttons simultaneously. The handing direction LED will remain solid. The other direction LED will begin flashing (entering setup mode).
3. Press the OPEN LEFT and OPEN RIGHT buttons simultaneously to exit.

Constant Pressure Override (CPO)

Constant Pressure Override is for use with KPW5 and KPW250 keypads (not provided). The KPW5/KPW250 wireless commercial keypads are security keypads and can only be programmed to ONE gate operator (see the KPW5/KPW250 manual for complete programming instructions).

The Constant Pressure Override feature is intended to temporarily override a fault in the entrapment protection system, in order to operate the gate until the external entrapment protection device is realigned or repaired. Use the feature only in line of sight of the gate when no obstructions to travel are present. External entrapment protection devices include LiftMaster monitored photoelectric sensors and LiftMaster monitored wired and wireless edge sensors. Be sure to repair or replace these devices promptly if they are not working properly.

To use Constant Pressure Override:

1. Enter a valid 4-digit PIN.
2. Press and hold # for 5 seconds to enter CPO. Continue to hold # to keep the operator in motion. A continuous tone will sound until limit is met and/or # is released.
3. The operator will stop when either the operator reaches a limit or the user releases #.

Reinstall the Cover

1. Replace the operator cover or electrical box cover if applicable.