

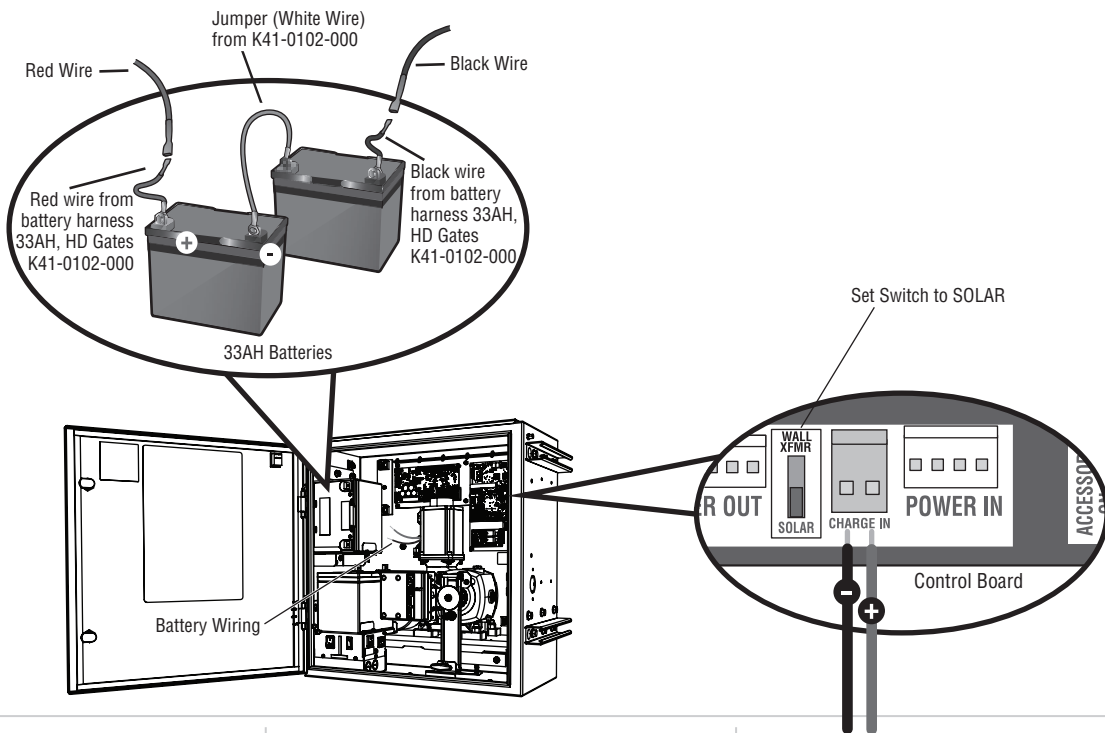
SOLAR PANELS

Wire the Solar Panels and Batteries

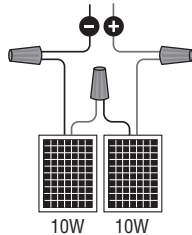
20W min. - 60W max. for solar applications.

NOTE: 33AH batteries are strongly recommended for optimal solar performance.

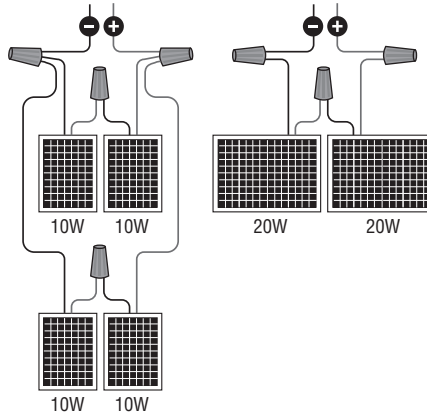
1. Connect (+) wire from solar panels to (+) pin on CHARGE IN connector on control board.
2. Connect (-) wire from solar panels to (-) pin on CHARGE IN connector on Control board.
3. Set the WALL XFMR/SOLAR switch to SOLAR.



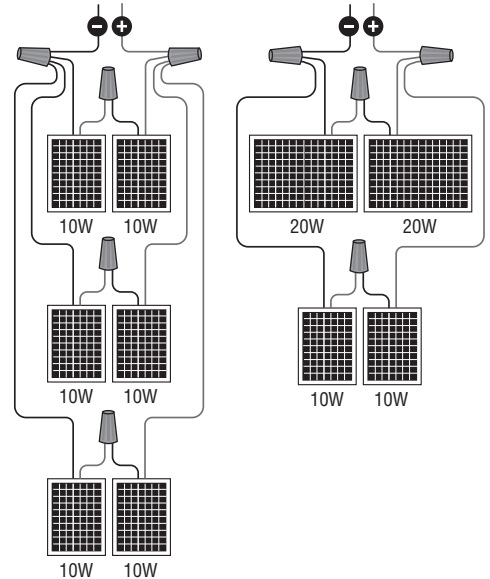
20W APPLICATION IN SERIES



40W APPLICATION IN SERIES



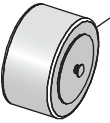
60W APPLICATION IN SERIES



REPAIR PARTS



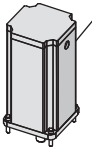
Idler Sprocket (QTY 2)
IHSL24UL - K41-0240-000
INSL24UL - K41-0239-000



Transformer
IHSL24UL - K41-0241-000
INSL24UL - K41-0346-000



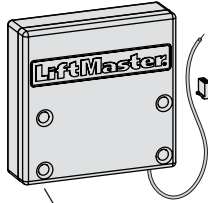
Output Sprocket
IHSL24UL - K41-0243-000
INSL24UL - K41-0242-000



Motor
IHSL24UL - K41-0254-000
INSL24UL - K41-0253-000



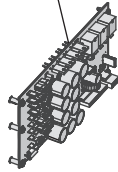
EMI Board
K1D7078



Limit System Encoder
IHSL24UL, INSL24UL - K41-0246-000



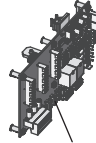
Interlock Assembly
IHSL24UL - K41-0256-000
INSL24UL - K41-0255-000



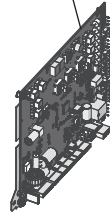
BLDC Motor Drive Board
IHSL24UL - K41-0245-000
INSL24UL - K41-0244-000



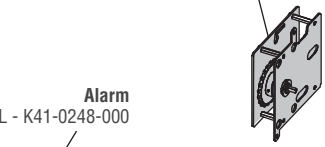
Relay Adapter Board
K41-0072-000



Expansion Board
K1D8387-1CC



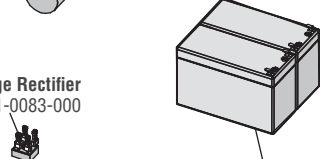
Control Board
K41-0073-000



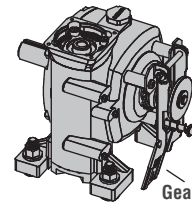
Limit System
IHSL24UL, INSL24UL - K41-0247-000



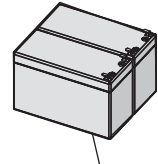
Alarm
IHSL24UL, INSL24UL - K41-0248-000



Bridge Rectifier
K41-0083-000



Gear Reducer
IHSL24UL - K41-0252-000
INSL24UL - K41-0251-000



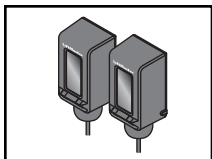
Battery, 7AH 12 Vdc
K74-30762 (1)
29-NP712 (2)

NOT SHOWN

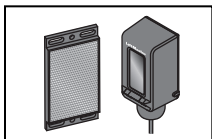
K41-0257-000	Harness kit, IHSL24UL, INSL24UL
K94-34778	Wire Harness - Control Board to Expansion Board
19-40240D	#40 Chain - 10 feet
19-50310	#40 Master Link
K77-36764	Hardware Kit (chain bolt and chain bracket)
K07-50637	Chain Bolt
K41-0102-000	33AH Battery Harness
40-39235	Warning Sign
K41-0249-000	Power Control and Relay Board Mounting Plate
K41-0250-000	Expansion Board and Terminal Block Mounting Plate
K41-0259-000	Chain Guard, IHSL24UL, INSL24UL
K41-0258-000	Idler Bracket Kit, IHSL24UL, INSL24UL
19-3025	#50 Nickel Plated Chain - 25' IHSL24U
19-50ML	#50 Master Link
K10-30699-1	Mounting Bracket

ACCESSORIES

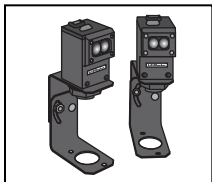
Entrapment Protection



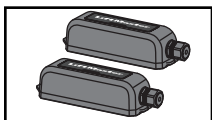
LiftMaster monitored through beam photoelectric sensor
Model LMTBUL



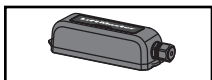
LiftMaster monitored retro-reflective photoelectric sensor
Model LMRRUL



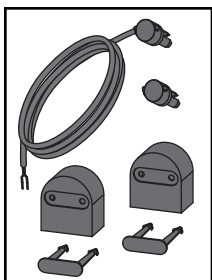
LiftMaster Monitored Commercial Protector System®
Models CPS-UN4 and CPSUN4G



LiftMaster monitored wireless edge kit (transmitter and receiver)
Model LMWEKITU



LiftMaster monitored wireless edge transmitter
Model LMWETXU



Large profile monitored edge (82 ft. roll)
Model L50
Large profile ends kit (10 pair)
Model L50E
Small profile monitored edge (82 ft. roll)
Model S50
Small profile ends kit (10 pair)
Model S50E

Plastic channel

8 ft. (2.4 m) for both small and large profile edges (pack of 10).
Model L50CHP

Aluminum channel

10 ft. (3.1 m) for both small and large edge profiles (pack of 8).
Model L50CHAL

LiftMaster large profile monitored edges (4ft., 5ft., 6ft.)

Model L504AL, L505AL, L506AL

Remote Controls

LiftMaster offers a variety of LiftMaster remote controls to satisfy your application needs. Single-button to 4-button, visor or key chain. The following remote controls are compatible with operators manufactured by LiftMaster after 1993. Contact your authorized LiftMaster dealer for additional details and options.



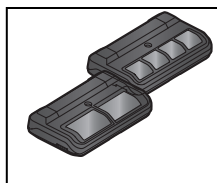
3-button remote control

The 3-button remote control can be programmed to control the operator. Includes visor clip.
Model 893MAX



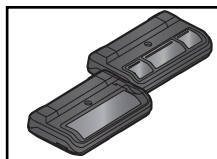
3-button mini-remote control

The 3-button remote control can be programmed to control the operator. Includes key ring and fastening strip.
Model 890MAX



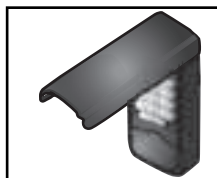
Security+ 2.0® learning remote controls

One button can control a gate operator and the other(s) can control garage door(s). It can also be programmed to Security+® or Security+ 2.0® code format.
Models 892LT and 894LT



Programmable DIP Remote Controls

Ideal for applications requiring a large number of remote controls.
Models 811LMX and 813LMX



Keyless entry

Enables homeowner to operate gate operator from outside by entering a 4-digit code on a specially designed keypad.
Model 878MAX



Wireless commercial keypad

Durable wireless keypad with blue LED backlight metal keypad, zinc-alloy metal front cover and 5 year 9V lithium battery. Security+ 2.0® compatible.
Model KPW250



Commercial access control receiver

Access control receiver for up to 1,000 devices (any combination of remote controls and wireless keyless entries).
Model STAR1000

ACCESSORIES

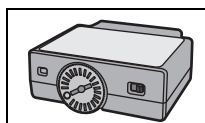
Miscellaneous



Remote antenna extension kit

The remote antenna extension kit allows the antenna to be remotely installed.

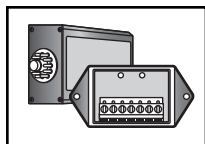
Model 86LM



Plug-in loop detector

Low power. Conveniently plugs into existing control board. Not to be used as entrapment protection.

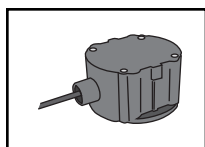
Model LOOPDETL



Loop detector

Low power loop detectors mounted and wired separately inside control box. LiftMaster low power accessory. Not to be used as entrapment protection.

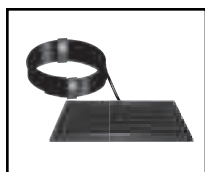
Model LD7LP



Vehicle sensing probe

The vehicle sensing probe is buried in the ground and can detect a car as it approaches and will then open the gate.

Model CP4



Solar panel kit

This kit is to replace or add a solar panel to the operator application. 60W maximum for 24 Vdc operators and 30W maximum for 12 Vdc operators.

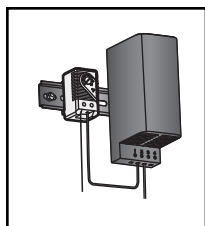
Models SP10W12V (10 Watt, 12V) and SP20W12V (20 Watt, 12V)



Magnetic gate lock

Outdoor magnetic lock, transformer, junction box, mounting plate and hardware. Not for use with Solar Applications. Must be powered separately.

Model MG1300



Heater

The heater keeps the gearbox and batteries at a suitable temperature when the outside temperature is below -4°F (-20°C). The thermostat MUST be set between 45°F and 60°F (7°C and 15.5°C) to ensure proper gate operation. The heater can be powered by 110 to 250 Vac.

Model HTR

Solenoid lock harness kit

Model K77-37972

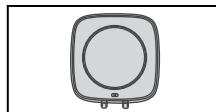
Warning sign

Model 40-39235

#50 Chain Drive Sprocket

(Model INSL24UL ONLY)

Model INSL50CH



Long range RFID reader

Model LMSC1000



LiftMaster® Internet Gateway

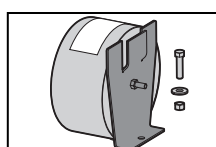
Internet enabled accessory which connects your gate operator to your WiFi network and allows you to monitor and control gate operators and lighting accessories enabled by myQ® technology.

Model 828LM



myQ® Business™ connected access protocol - high capacity

Models CAPXLV and CAPXM



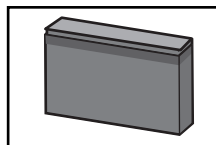
Transformer kit

Changes input voltage (208/240/480/575 Vac) to an output voltage of 120 Vac. Rated 208/240/480/575 Vac, 5.2/4.5/2.3/1.9 A, 60 Hz, 1 PH

Model 3PHCONV

Batteries

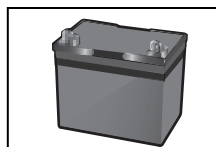
Gate access system batteries replace or upgrade the gate operator batteries. Two identical 12 Vdc batteries are required for each gate operator. Do not mix 7AH and 33AH batteries within a gate operator.



7AH batteries

Standard 7 AMP-Hour Battery, 12 Vdc, to replace original batteries provided with operator. Reuse existing harnesses.

Models 29-NP712 (2) and K74-30762 (1)

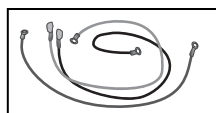


33AH batteries

Upgrade 33 AMP-Hour Battery, 12 Vdc. Ideal for solar applications and extended battery backup. Two required.

Model A12330SGLPK

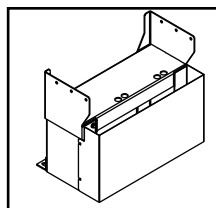
Must use INBAT33 - mounting bracket.



Battery harness, 33AH, HD Gates

For 33AH battery applications.

Model K41-0102-000



Riser

Riser for elevating operator for pad mounting and retrofit to most SL585 applications.

Model MRIN

WARRANTY

LiftMaster 5 Year Limited Commercial Warranty

LiftMaster ("Seller") warrants to the first purchaser of this product, for the structure in which this product is originally installed, that it is free from defect in materials and/or workmanship for a period of 5 year commercial installation from the date of purchase [and that the INSL24UL and IHSL24UL is free from defect in materials and/or workmanship for a period of 5 year commercial installation from the date of purchase]. The proper operation of this product is dependent on your compliance with the instructions regarding installation, operation, maintenance and testing. Failure to comply strictly with those instructions will void this limited warranty in its entirety.

If, during the limited warranty period, this product appears to contain a defect covered by this limited warranty, call **1-800-528-2806**, toll free, before dismantling this product. Then send this product, pre-paid and insured, to our service center for warranty repair. You will be advised of shipping instructions when you call. Please include a brief description of the problem and a dated proof-of-purchase receipt with any product returned for warranty repair. Products returned to Seller for warranty repair, which upon receipt by Seller are confirmed to be defective and covered by this limited warranty, will be repaired or replaced (at Seller's sole option) at no cost to you and returned pre-paid. Parts will be repaired or replaced with new or factory-rebuilt parts at Seller's sole option.

ALL IMPLIED WARRANTIES FOR THE PRODUCT, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO THE 5 YEAR COMMERCIAL LIMITED WARRANTY PERIOD SET FORTH ABOVE [EXCEPT THE IMPLIED WARRANTIES WITH RESPECT TO THE INSL24UL and IHSL24UL, WHICH ARE LIMITED IN DURATION TO THE 5 YEAR COMMERCIAL LIMITED WARRANTY PERIOD FOR THE INSL24UL and IHSL24UL, AND NO IMPLIED WARRANTIES WILL EXIST OR APPLY AFTER SUCH PERIOD. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. THIS LIMITED WARRANTY DOES NOT COVER DAMAGE CAUSED BY IMPROPER INSTALLATION, OPERATION OR CARE (INCLUDING, BUT NOT LIMITED TO ABUSE, MISUSE, FAILURE TO PROVIDE REASONABLE AND NECESSARY MAINTENANCE, UNAUTHORIZED REPAIRS OR ANY ALTERATIONS TO THIS PRODUCT), LABOR CHARGES FOR REINSTALLING A REPAIRED OR REPLACED UNIT, OR REPLACEMENT OF BATTERIES.

THIS LIMITED WARRANTY DOES NOT COVER ANY PROBLEMS WITH, OR RELATING TO, THE GATE OR GATE HARDWARE, INCLUDING BUT NOT LIMITED TO THE GATE SPRINGS, GATE ROLLERS, GATE ALIGNMENT OR HINGES. THIS LIMITED WARRANTY ALSO DOES NOT COVER ANY PROBLEMS CAUSED BY INTERFERENCE. ANY SERVICE CALL THAT DETERMINES THE PROBLEM HAS BEEN CAUSED BY ANY OF THESE ITEMS COULD RESULT IN A FEE TO YOU.

UNDER NO CIRCUMSTANCES SHALL SELLER BE LIABLE FOR CONSEQUENTIAL, INCIDENTAL OR SPECIAL DAMAGES ARISING IN CONNECTION WITH USE, OR INABILITY TO USE, THIS PRODUCT. IN NO EVENT SHALL SELLER'S LIABILITY FOR BREACH OF WARRANTY, BREACH OF CONTRACT, NEGLIGENCE OR STRICT LIABILITY EXCEED THE COST OF THE PRODUCT COVERED HEREBY. NO PERSON IS AUTHORIZED TO ASSUME FOR US ANY OTHER LIABILITY IN CONNECTION WITH THE SALE OF THIS PRODUCT.

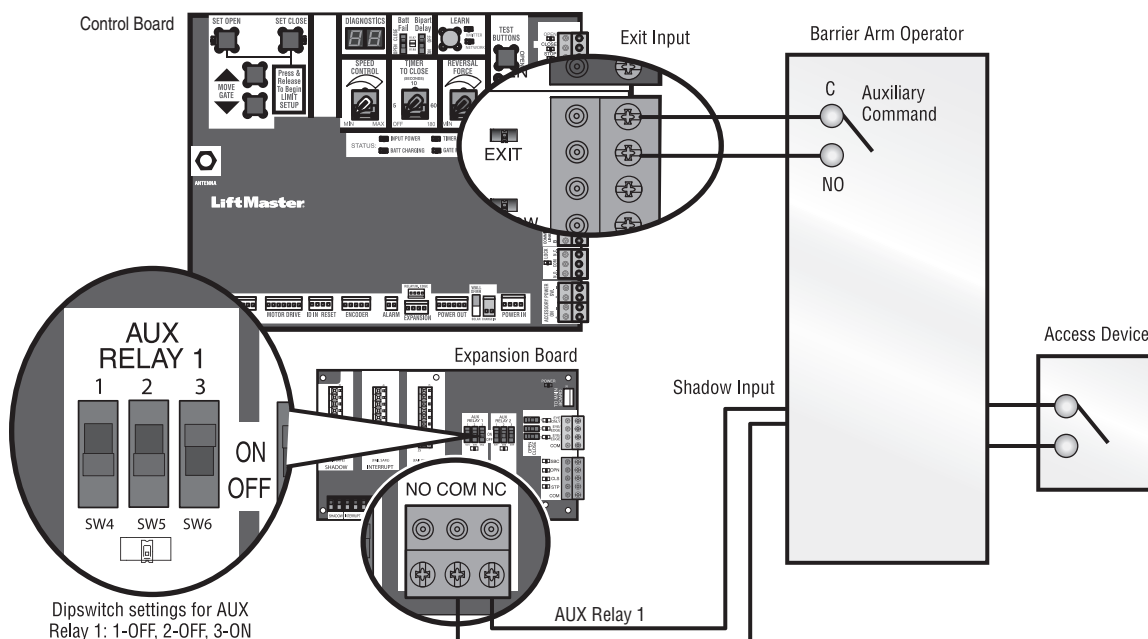
Some states do not allow the exclusion or limitation of consequential, incidental or special damages, so the above limitation or exclusion may not apply to you. This limited warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

APPENDIX

SAMS Wiring with Relays Not Energized

SAMS Operation

To keep vehicles from rushing the gate, the barrier arm stays in closed position until the gate reaches fully open position then the barrier arm is released to open and allow vehicles to pass.



Dual Gate Settings

NOTE: We recommend that all accessories, except entrapment protection devices, and board configurations are set on the primary operator.

Control board

FEATURE	PRIMARY OPERATOR	SECONDARY OPERATOR
Timer-to-Close	Set the TTC dial to desired setting	OFF
Bi-Part Delay Switch	Synchronized Close: ON	Synchronized Close: ON
Speed	Set the speed control dial on each operator to the desired setting, see page 22 for more details	

Expansion board

FEATURE	PRIMARY OPERATOR	SECONDARY OPERATOR
QUICK CLOSE Switch	ON	OFF
ANTI-TAIL Switch	ON	OFF
LOW BATT Switch	Battery Fail OPEN: OPEN Battery Fail CLOSE: CLOSE	Battery Fail OPEN: OPEN Battery Fail CLOSE: CLOSE
AC FAIL OPEN/BATT Switch	OPEN	OPEN

Accessories

ACCESSORY	PRIMARY OPERATOR	SECONDARY OPERATOR
Remote Controls	Program remote controls 1 to 50 to the primary operator.	Program remote controls 51 to 100 to the secondary operator
LiftMaster Internet Gateway	Program to primary operator.	
Garage and Gate Monitor	Program to primary operator.	

APPENDIX

Manual Adjustments with a Remote Control

To set the limits using a remote control, first you will need a 3-button remote control that has been programmed for OPEN, CLOSE, and STOP. Refer to the *Programming* section.

Initial Limits and Force Adjustment

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.

Ensure the gate is closed.

1. Press and release the SET OPEN and SET CLOSE buttons simultaneously to enter limit setting mode.
2. Press and hold the OPEN or CLOSE button on the remote control until the gate reaches the desired open position. The gate can be jogged back and forth using the OPEN and CLOSE buttons on the remote control.
3. Once the gate is in the desired open position, press and release the STOP button on the remote control.
4. Press and release the OPEN button on the remote control again to set the open limit.
5. Press and hold the CLOSE or OPEN button on the remote control until the gate reaches the desired close position. The gate can be jogged back and forth using the OPEN and CLOSE buttons on the remote control.
6. Once the gate is in the desired close position, press and release the STOP button on the remote control.
7. Press and release the CLOSE button on the remote control again to set the close limit.
8. Cycle the gate open and close. This automatically sets the force.

When limits are set properly the operator will automatically exit limit setting mode.

Refer to the *Adjustment* section and follow the instructions for *Speed Control*, *Fine Tune the Force*, and *Obstruction Test*.

Adjust the limits

If the limits have already been set the operator will exit the limit setting mode after resetting each limit.

Set the Close Limit Only

1. Press and release the SET OPEN and SET CLOSE buttons simultaneously to enter limit setting mode.
2. Press and hold the CLOSE button on the remote control until the gate reaches the desired close position. The gate can be jogged back and forth using the OPEN and CLOSE buttons on the remote control.
3. Once the gate is in the desired close position, press and release the STOP button on the remote control.
4. Press and release the CLOSE button on the remote control again to set the close limit.

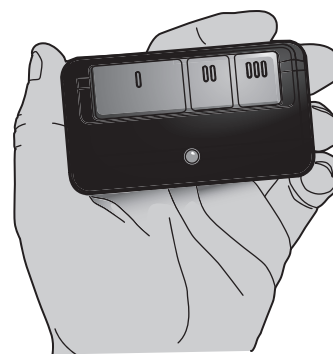
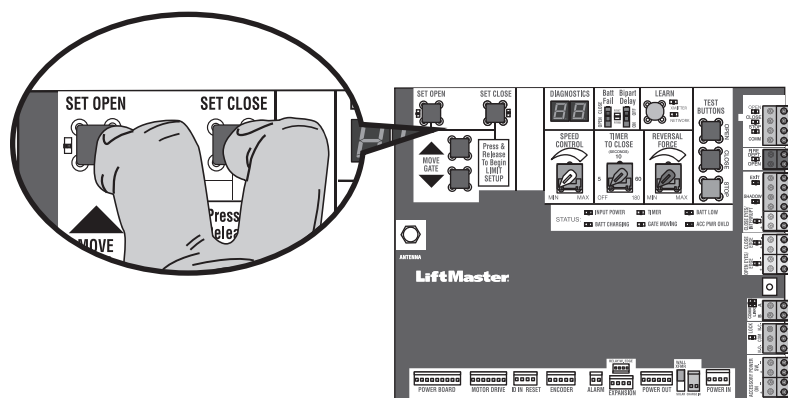
When the close limit is set properly the operator will automatically exit limit setting mode.

Set the Open Limit Only

1. Press and release the SET OPEN and SET CLOSE buttons simultaneously to enter limit setting mode.
2. Press and hold the OPEN button on the remote control until the gate reaches the desired open position. The gate can be jogged back and forth using the OPEN and CLOSE buttons on the remote control.
3. Once the gate is in the desired open position, press and release the STOP button on the remote control.
4. Press and release the OPEN button on the remote control again to set the open limit.

When the open limit is set properly the operator will automatically exit limit setting mode.

Perform the obstruction test after every limit, speed, and force setting adjustment see page 23.



3-Button Remote Control programmed for OPEN, CLOSE, and STOP