

ELITE SERIES COMMERCIAL HIGH-TRAFFIC AC SLIDE GATE OPERATOR

INSTALLATION MANUAL

Model SL3000U

SL3000101U
1 HP Single Phase

SL3000501U
1/2 HP Single Phase



- THIS PRODUCT IS TO BE INSTALLED AND SERVICED BY A TRAINED GATE SYSTEMS TECHNICIAN ONLY.
- This model is for use on vehicular passage gates ONLY and not intended for use on pedestrian passage gates.
- This model is intended for use in Class I, II, III and IV vehicular slide gate applications.
- Visit LiftMaster.com to locate a professional installing dealer in your area.
- This gate operator is compatible with MyQ® and Security+ 2.0™ accessories.



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LiftMaster®
ELITE SERIES®

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SAFETY

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 gate and/or the gate operator if you do not comply with the cautionary statements that accompany it. Read them carefully.

IMPORTANT NOTE:

- *BEFORE attempting to install, operate or maintain the operator, you must read and fully understand this manual and follow all safety instructions.*
- *DO NOT attempt repair or service of your gate operator unless you are an Authorized Service Technician.*

 **WARNING**

MECHANICAL

 **WARNING**

ELECTRICAL

CAUTION

SAFETY

USAGE CLASS

CLASS I – RESIDENTIAL VEHICULAR GATE OPERATOR

A vehicular gate operator (or system) intended for use in garages or parking areas associated with a residence of one-to four single families.

CLASS II – COMMERCIAL/GENERAL ACCESS VEHICULAR GATE OPERATOR

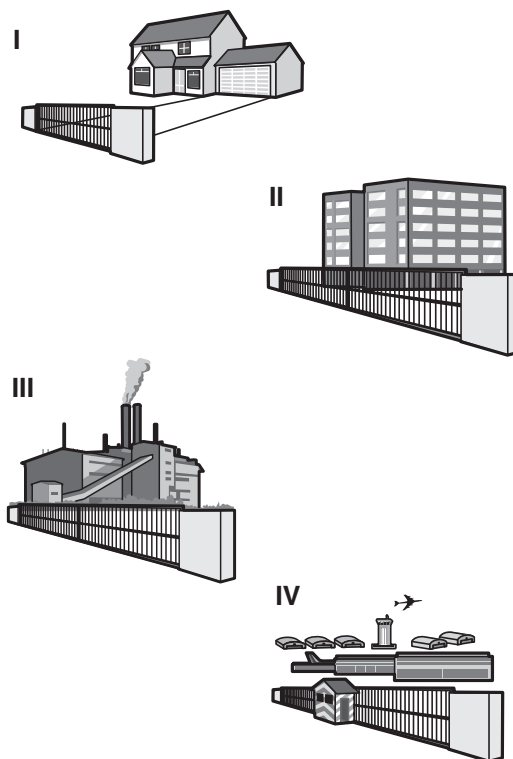
A vehicular gate operator (or system) intended for use in a commercial location or building such as a multi-family housing unit (five or more single family units), hotel, garages, retail store, or other buildings accessible by or servicing the general public.

CLASS III – INDUSTRIAL/LIMITED ACCESS VEHICULAR GATE OPERATOR

A vehicular gate operator (or system) intended for use in an industrial location or building such as a factory or loading dock area or other locations not accessible by or intended to service the general public.

CLASS IV– RESTRICTED ACCESS VEHICULAR GATE OPERATOR

A vehicular gate operator (or system) intended for use in a guarded industrial location or building such as an airport security area or other restricted access locations not servicing the general public, in which unauthorized access is prevented via supervision by security personnel.



UL325 ENTRAPMENT PROTECTION REQUIREMENTS

This vehicular gate operator must be installed with at least two independent entrapment protection means as specified in the table below.

HORIZONTAL SLIDE AND SWING GATE OPERATOR	
GATE OPERATOR ENTRAPMENT PROTECTION TYPES	
Type A	Inherent (built into the operator) entrapment protection system
Type B1	Non-contact sensors such as photoelectric sensors
Type B2	Contact sensors such as edge sensors

The same type of device shall not be used for both entrapment protection means. Use of a single device to cover both the opening and closing directions is in accordance with the requirement; however, a single device is not required to cover both directions. This operator is provided with Type A. The installer is required to install additional entrapment protection devices in each entrapment zone.

IMPORTANT SAFETY INFORMATION

⚠ WARNING

To reduce the risk of INJURY or DEATH:

- READ AND FOLLOW ALL INSTRUCTIONS.
- NEVER let children operate or play with gate controls. Keep the remote control away from children.
- ALWAYS keep people and objects away from the gate. NO ONE SHOULD CROSS THE PATH OF THE MOVING GATE.
- Test the gate operator monthly. The gate MUST reverse on contact with a rigid object or reverse when an object activates the non-contact sensors. After adjusting the force or the limit of travel, retest the gate operator. Failure to adjust and retest the gate operator properly can increase the risk of INJURY or DEATH.
- Use the emergency release ONLY when the gate is not moving.
- KEEP GATES PROPERLY MAINTAINED. Read the owner's manual. Have a qualified service person make repairs to gate hardware.
- The entrance is for vehicles ONLY. Pedestrians MUST use separate entrance.
- SAVE THESE INSTRUCTIONS.

SAFETY INSTALLATION INFORMATION

1. Vehicular gate systems provide convenience and security. Gate systems are comprised of many component parts. The gate operator is only one component. Each gate system is specifically designed for an individual application.
2. Gate operating system designers, installers and users must take into account the possible hazards associated with each individual application. Improperly designed, installed or maintained systems can create risks for the user as well as the bystander. Gate systems design and installation must reduce public exposure to potential hazards.
3. A gate operator can create high levels of force in its function as a component part of a gate system. Therefore, safety features must be incorporated into every design. Specific safety features include:
 - Edges Sensors (contact) • Guards for Exposed Rollers
 - Photoelectric Sensors • Screen Mesh
 - Vertical Posts • Instructional and Precautionary Signage
4. Install the gate operator only when:
 - a. The operator is appropriate for the construction and the usage class of the gate.
 - b. All openings of a horizontal slide gate are guarded or screened from the bottom of the gate to a minimum of 6 feet (1.8 m) above the ground to prevent a 2-1/4 inches (6 cm) diameter sphere from passing through the openings anywhere in the gate, and in that portion of the adjacent fence that the gate covers in the open position.
 - c. All exposed pinch points are eliminated or guarded, and guarding is supplied for exposed rollers.
5. The operator is intended for installation only on gates used for vehicles. Pedestrians must be supplied with a separate access opening. The pedestrian access opening shall be designed to promote pedestrian usage. Locate the gate such that persons will not come in contact with the vehicular gate during the entire path of travel of the vehicular gate.
6. The gate must be installed in a location so that enough clearance is supplied between the gate and adjacent structures when opening and closing to reduce the risk of entrapment. Swinging gates shall not open into public access areas.
7. The gate must be properly installed and work freely in both directions prior to the installation of the gate operator.
8. Controls intended for user activation must be located at least 6 feet (1.8 m) away from any moving part of the gate and where the user is prevented from reaching over, under, around or through the gate to operate the controls. Outdoor or easily accessible controls shall have a security feature to prevent unauthorized use. Exception: Emergency access controls only accessible by authorized personnel (e.g. fire, police) may be placed at any location in the line-of-sight of the gate.
9. The Stop and/or Reset (if provided separately) must be located in the line-of-sight of the gate. Activation of the reset control shall not cause the operator to start.
10. A minimum of two (2) WARNING SIGNS shall be installed, one on each side of the gate where easily visible.
11. For a gate operator utilizing a non-contact sensor:
 - a. Reference owner's manual regarding placement of non-contact sensor for each type of application. See *Install Entrapment Protection* section.
 - b. Care shall be exercised to reduce the risk of nuisance tripping, such as when a vehicle trips the sensor while the gate is still moving.
 - c. One or more non-contact sensors shall be located where the risk of entrapment or obstruction exists, such as the perimeter reachable by a moving gate or barrier.
12. For a gate operator utilizing a contact sensor such as an edge sensor:
 - a. One or more contact sensors shall be located where the risk of entrapment or obstruction exists, such as at the leading edge, trailing edge and post mounted both inside and outside of a vehicular horizontal slide gate.
 - b. A hard wired contact sensor shall be located and its wiring arranged so the communication between the sensor and the gate operator is not subject to mechanical damage.
 - c. A wireless device such as one that transmits radio frequency (RF) signals to the gate operator for entrapment protection functions shall be located where the transmission of the signals are not obstructed or impeded by building structures, natural landscaping or similar obstruction. A wireless device shall function under the intended end-use conditions.
 - d. One or more contact sensors shall be located on the inside and outside leading edge of a swing gate. Additionally, if the bottom edge of a swing gate is greater than 6 inches (152 mm) above the ground at any point in its arc of travel, one or more contact sensors shall be located on the bottom edge.
 - e. One or more contact sensors shall be located at the bottom edge of a vertical barrier (arm).

GATE CONSTRUCTION INFORMATION

Vehicular gates should be installed in accordance with ASTM F2200: Standard Specification for Automated Vehicular Gate Construction. For a copy, contact ASTM directly at 610-832-9585 or www.astm.org.

1. GENERAL REQUIREMENTS

- 1.1 Gates shall be constructed in accordance with the provisions given for the appropriate gate type listed, refer to ASTM F2200 for additional gate types.
- 1.2 Gates shall be designed, constructed and installed to not fall over more than 45 degrees from the vertical plane, when a gate is detached from the supporting hardware.
- 1.3 Gates shall have smooth bottom edges, with vertical bottom edged protrusions not exceeding 0.50 inches (12.7 mm) when other than the exceptions listed in ASTM F2200.
- 1.4 The minimum height for barbed tape shall not be less than 8 feet (2.44 m) above grade and for barbed wire shall not be less than 6 feet (1.83 m) above grade.
- 1.5 An existing gate latch shall be disabled when a manually operated gate is retrofitted with a powered gate operator.
- 1.6 A gate latch shall not be installed on an automatically operated gate.
- 1.7 Protrusions shall not be permitted on any gate, refer to ASTM F2200 for Exceptions.
- 1.8 Gates shall be designed, constructed and installed such that their movement shall not be initiated by gravity when an automatic operator is disconnected, in accordance with the following.
 - 1.8.1 Vehicular horizontal slide gate. Shall not result in continuous, unimpeded movement in either lineal direction of its travel.
 - 1.8.2 Vehicular horizontal swing gate. Shall not result in continuous, unimpeded movement in either direction along the arc of its path of travel.
- 1.9 For pedestrian access in the vicinity of an automated vehicular gate, a separate pedestrian gate shall be provided. The pedestrian gate shall be installed in a location such that a pedestrian shall not come in contact with a moving vehicular access gate. A pedestrian gate shall not be incorporated into an automated vehicular gate panel.

2. SPECIFIC APPLICATIONS

- 2.1 Any non-automated gate that is to be automated shall be upgraded to conform to the provisions of this specification.
- 2.2 This specification shall not apply to gates generally used for pedestrian access and to vehicular gates not to be automated.
- 2.3 Any existing automated gate, when the operator requires replacement, shall be upgraded to conform to the provisions of this specification in effect at that time.

3. VEHICULAR HORIZONTAL SLIDE GATES

- 3.1 The following provisions shall apply to Class I, Class II and Class III vehicular horizontal slide gates:
 - 3.1.1 All weight bearing exposed rollers 8 feet (2.44 m), or less, above grade shall be guarded or covered.

- 3.1.2 All openings shall be designed, guarded, or screened from the bottom of the gate to the top of the gate or a minimum of 72 in. (1.83 m) above grade, whichever is less, to prevent a 2 1/4 in. (57 mm) diameter sphere from passing through the openings anywhere in the gate, and in that portion of the adjacent fence that the gate covers in the open position. The gate panel shall include the entire section of the moving gate, including any back frame or counterbalance portion of the gate.
- 3.1.3 A gap, measured in the horizontal plane parallel to the roadway, between a fixed stationary object nearest the roadway, (such as a gate support post) and the gate frame when the gate is in either the fully open position or the fully closed position, shall not exceed 2 1/4 inches (57 mm), refer to ASTM F2200 for Exception.
- 3.1.4 Positive stops shall be required to limit travel to the designed fully open and fully closed positions. These stops shall be installed at either the top of the gate, or at the bottom of the gate where such stops shall horizontally or vertically project no more than is required to perform their intended function.
- 3.1.5 All gates shall be designed with sufficient lateral stability to assure that the gate will enter a receiver guide, refer to ASTM F2200 for panel types.
- 3.2 The following provisions shall apply to Class IV vehicular horizontal slide gates:
 - 3.2.1 All weight bearing exposed rollers 8 feet (2.44 m), or less, above grade shall be guarded or covered.
 - 3.2.2 Positive stops shall be required to limit travel to the designed fully open and fully closed positions. These stops shall be installed at either the top of the gate, or at the bottom of the gate where such stops shall horizontally or vertically project no more than is required to perform their intended function.

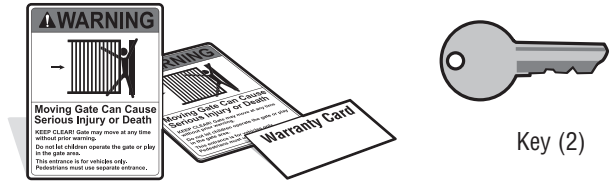
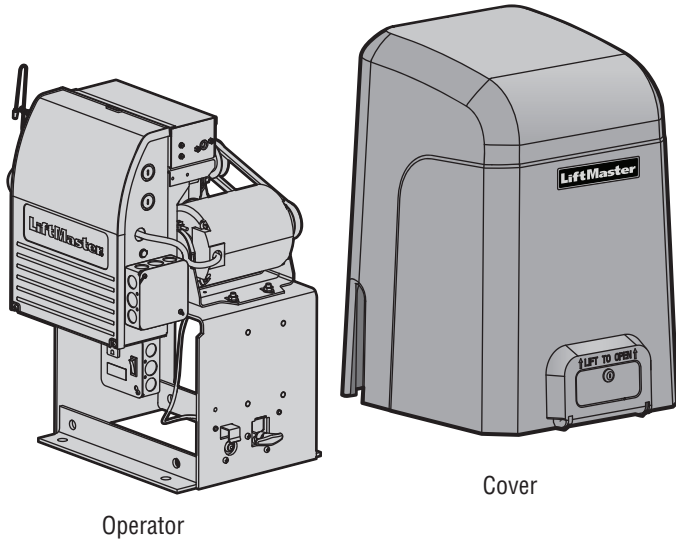
4. VEHICULAR HORIZONTAL SWING GATES

- 4.1 The following provisions shall apply to Class I, Class II and Class III vehicular horizontal swing gates:
 - 4.1.1 Gates shall be designed, constructed and installed so as not to create an entrapment area between the gate and the supporting structure or other fixed object when the gate moves toward the fully open position, subject to the provisions in 4.1.1.1 and 4.1.1.2.
 - 4.1.1.1 The width of an object (such as a wall, pillar or column) covered by a swing gate when in the open position shall not exceed 4 inches (102 mm), measured from the center line of the pivot point of the gate, refer to ASTM F2200 for exception.
 - 4.1.1.2 Except for the zone specified in Section 4.1.1.1, the distance between a fixed object such as a wall, pillar or column, and a swing gate when in the open position shall not be less than 16 inches (406 mm), refer to ASTM F2200 for exception.
- 4.2 Class IV vehicular horizontal swing gates shall be designed, constructed and installed in accordance with security related parameters specific to the application in question.

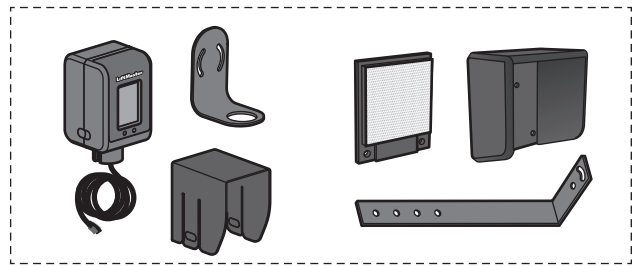
INTRODUCTION

CARTON INVENTORY

NOT SHOWN: Documentation Packet, Chain #41 - 30 feet, Eye Bolt Kit



Warning Signs (2) and Warranty Card



LiftMaster Monitored Retro-Reflective Photoelectric Sensor

TOOLS NEEDED

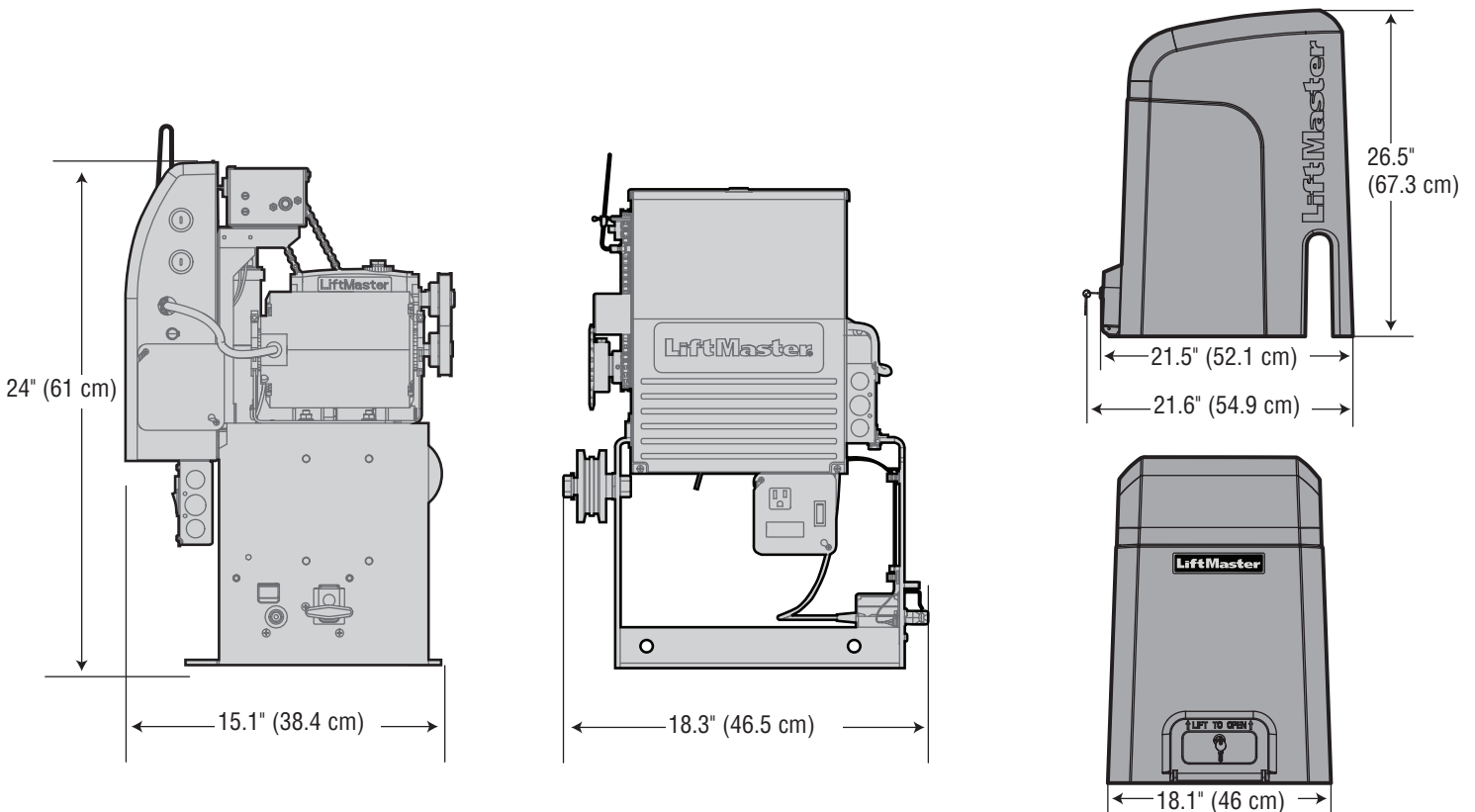
- 1/2" wrench for cover screw 5/16"
- 3/4" wrench for 1/2" concrete anchors
- Screwdrivers (Phillips head and flat head)
- Cable cutters and strippers

INTRODUCTION

OPERATOR SPECIFICATIONS

This model is intended for use in vehicular slide gate applications:

Usage Classification	Class I, II, III, & IV
Main AC Supply	Model SL3000501U 1/2 HP: 120 Vac, 6 Amps (12 Amps including accessory outlets) Model SL3000101U 1 HP: 120 Vac, 12 Amps (18 Amps including accessory outlets)
Accessory Power	24 Vac, 500 mA max. for ON + SW (switched)
Maximum Gate Weight	Model SL3000501U 1/2 HP: 1000 lbs. (453.6 kg) Model SL3000101U 1 HP: 2000 lbs. (907.2 kg)
Minimum Gate Travel Distance	4 feet (1.2 m)
Maximum Gate Travel Distance	52 feet (15.85 m)
Maximum Gate Travel Speed	1 foot/second
Maximum Daily Cycle Rate	Continuous
Maximum Duty Cycle	Continuous
Operating Temperature	Without Heater: -20°C to 60°C (-4°F to 140°F) With Optional Heater: -40°C to 60°C (-40°F to 140°F)
Expansion Board	Provided
Inherent Entrapment Protection (Type A)	RPM
External Entrapment Protection (Type B1 and/or Type B2)	3 inputs per board - any combination of up to 3 photoelectric sensors and up to 2 edge sensors



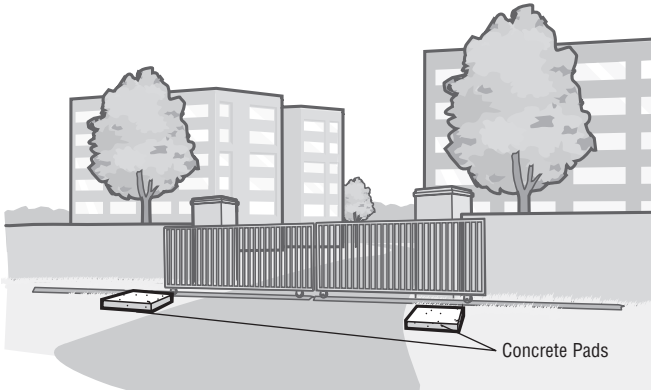
INTRODUCTION

SITE PREPARATION

Check the national and local building codes **BEFORE** installation.

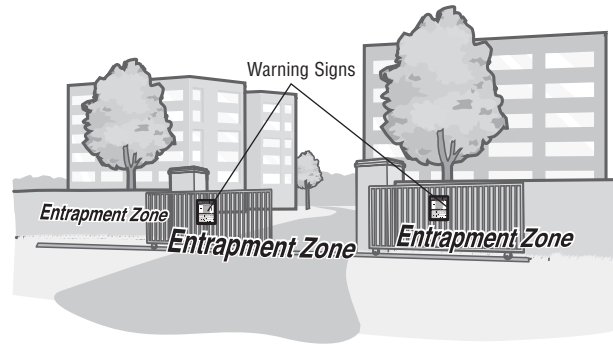
CONDUIT & CONCRETE PAD

Conduit must be UL approved for low and high voltage. Consider the operator placement **BEFORE** installing the pad or post.



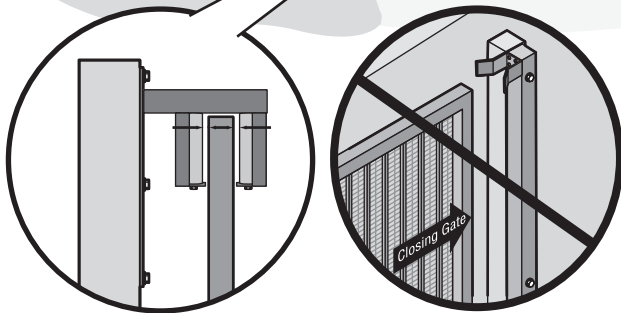
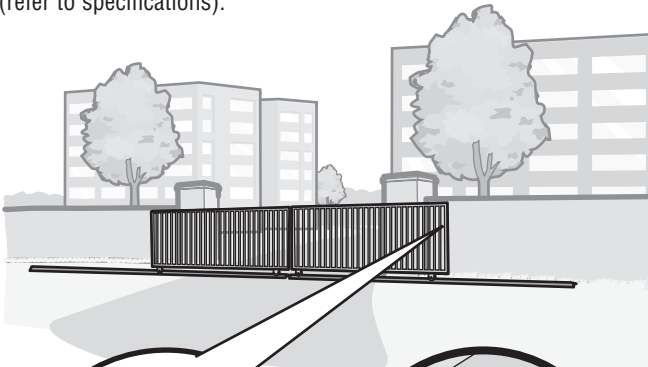
SAFETY

Entrapment protection devices are required to protect against any entrapment or safety conditions encountered in your gate application. Install warning signs on both sides of the gate.



GATE

Gate must be constructed and installed according to ASTM F2200 standards (refer to page 4). Gate must fit specifications of operator (refer to specifications).



SAFETY CATCH ROLLERS

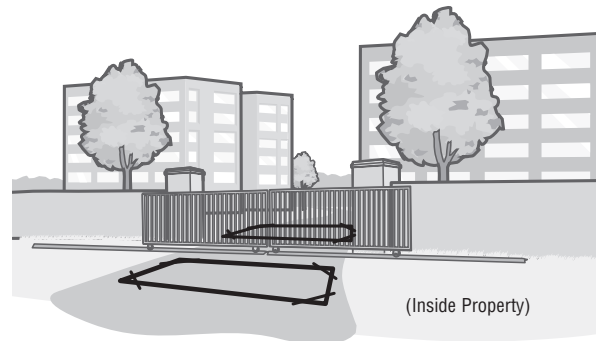
Install catch rollers with safety covers on the side of a post or wall with a minimal distance of half an inch between the rollers and gate.

DO NOT use a gate catch post.

Because the coasting distance may vary due to changes in temperature, it is **NOT** recommended to install a stop or catch post in front of the gate's path. To do so will cause the gate to hit the post in certain instances.

VEHICLE LOOPS

The vehicle loops allow the gate to stay open when vehicles are obstructing the gate path. Suggested for vehicles 14 feet (4.27 m) or longer. Vehicle loops are not required but are recommended.

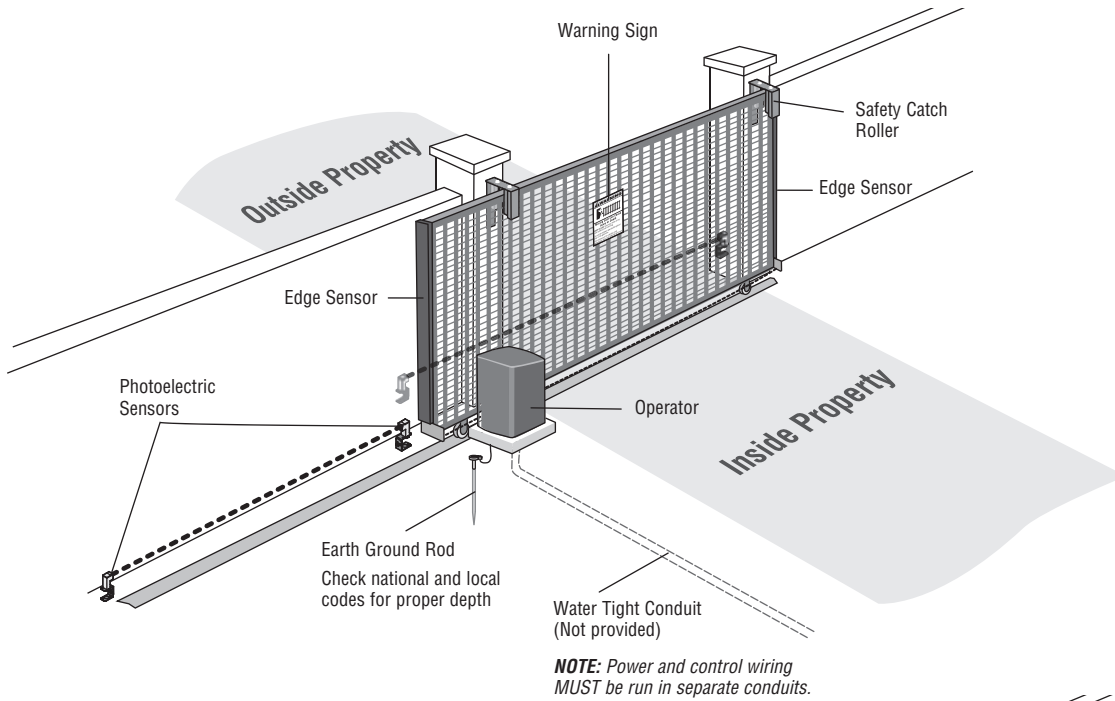


INTRODUCTION

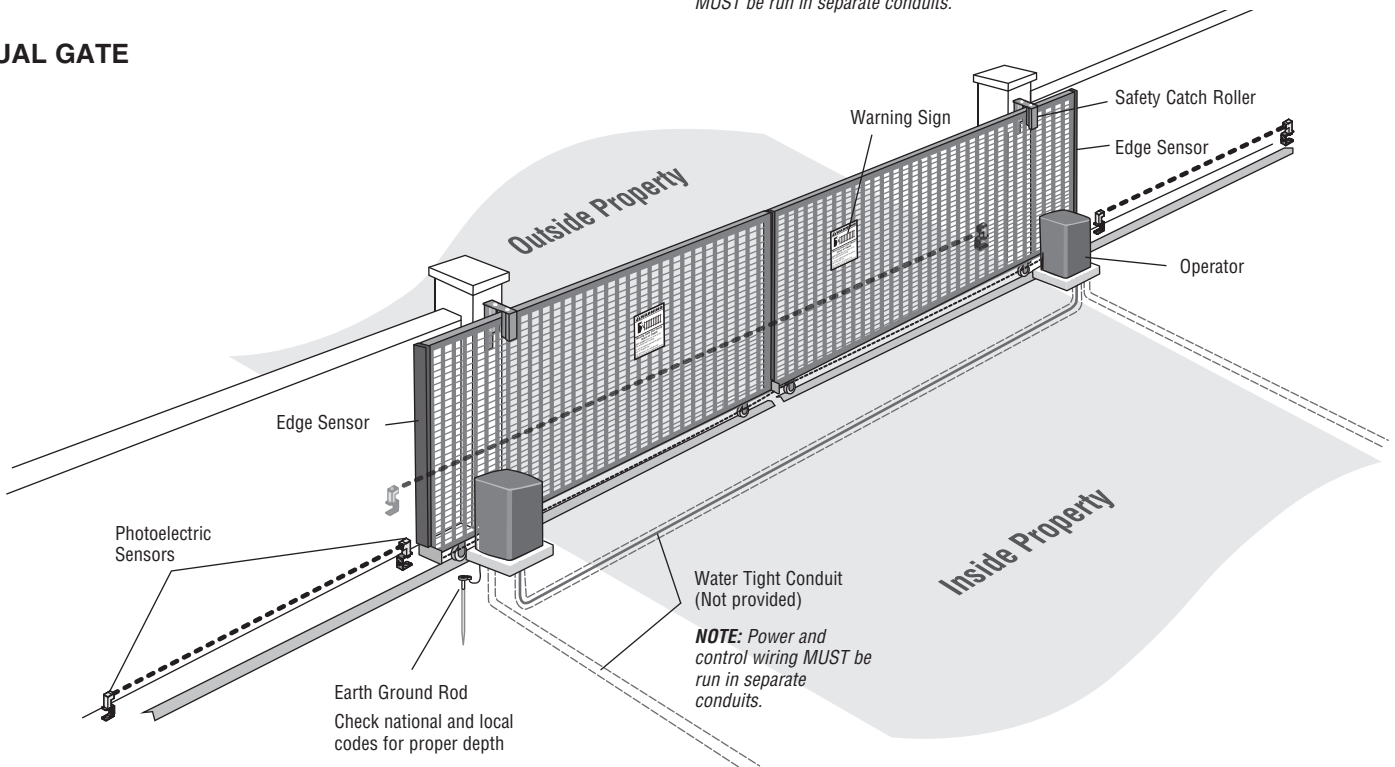
OVERVIEW OF TYPICAL INSTALLATION

IMPORTANT SAFETY INFORMATION: One or more external monitored entrapment protection sensors shall be located where the risk of entrapment or obstruction exists at either the opening or closing direction. Any gap larger than 2-1/4 inches between the gate and a fixed object such as a wall, pillar, column, or operator must be filled.

SINGLE GATE



DUAL GATE



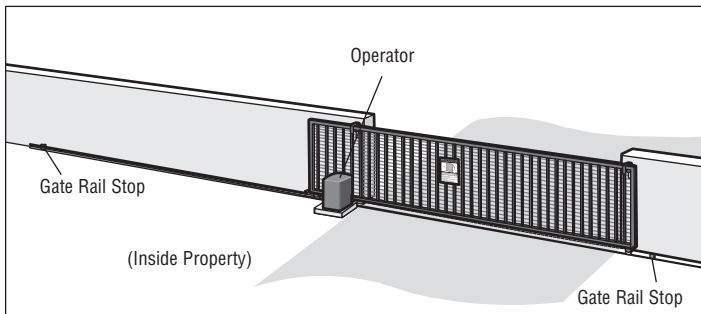
INSTALLATION

CAUTION

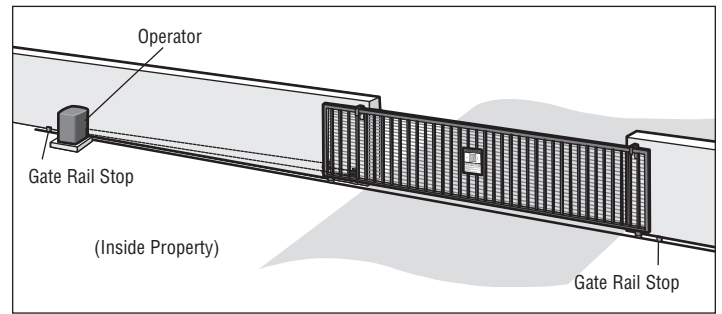
- To AVOID damaging gas, power or other underground utility lines, contact underground utility locating companies BEFORE digging more than 18 inches (46 cm) deep.
- DO NOT touch the heater when switch is on, heater may be hot.

TYPES OF INSTALLATIONS

STANDARD INSTALLATION



REAR INSTALLATION



INSTALLATION

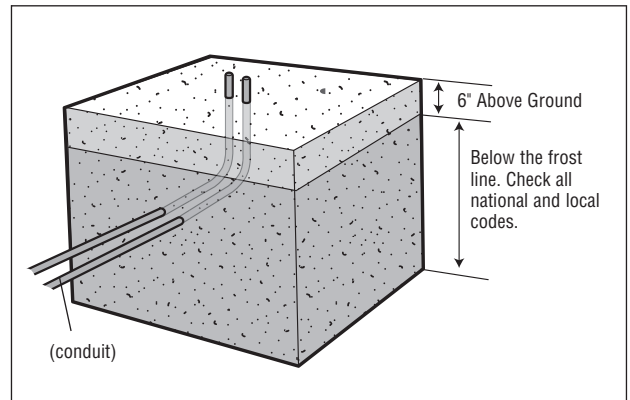
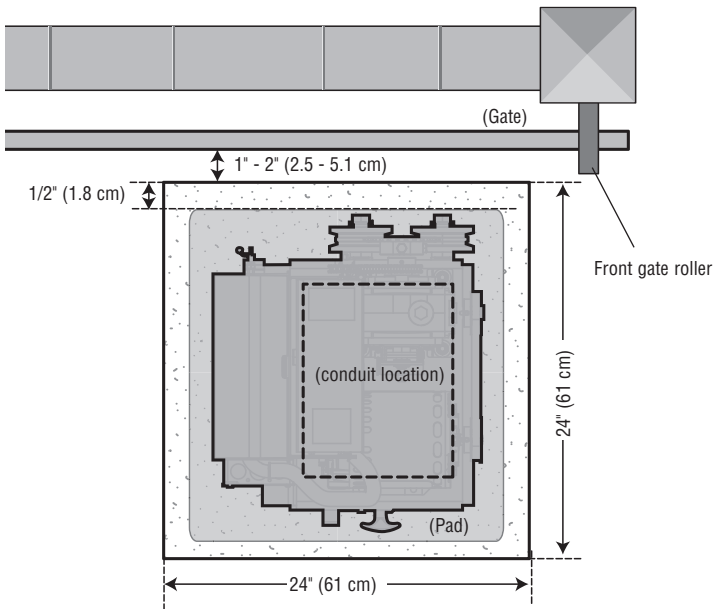
STEP 1

DETERMINE LOCATION FOR CONCRETE PAD AND OPERATOR

Check the national and local building codes before installation.

STANDARD INSTALLATION

1. The gate operator should be installed near the front roller of the gate. Lay out the concrete pad.
2. Install the electrical conduit.
3. Pour a concrete pad (reinforced concrete is recommended).



REAR INSTALLATION

1. The gate operator should be installed near the back of the gate in the OPEN position. Lay out the concrete pad.
2. Install the electrical conduit.
3. Pour a concrete pad (reinforced concrete is recommended).

