

# Gate Operator Mounting and 4302 Control Box Options

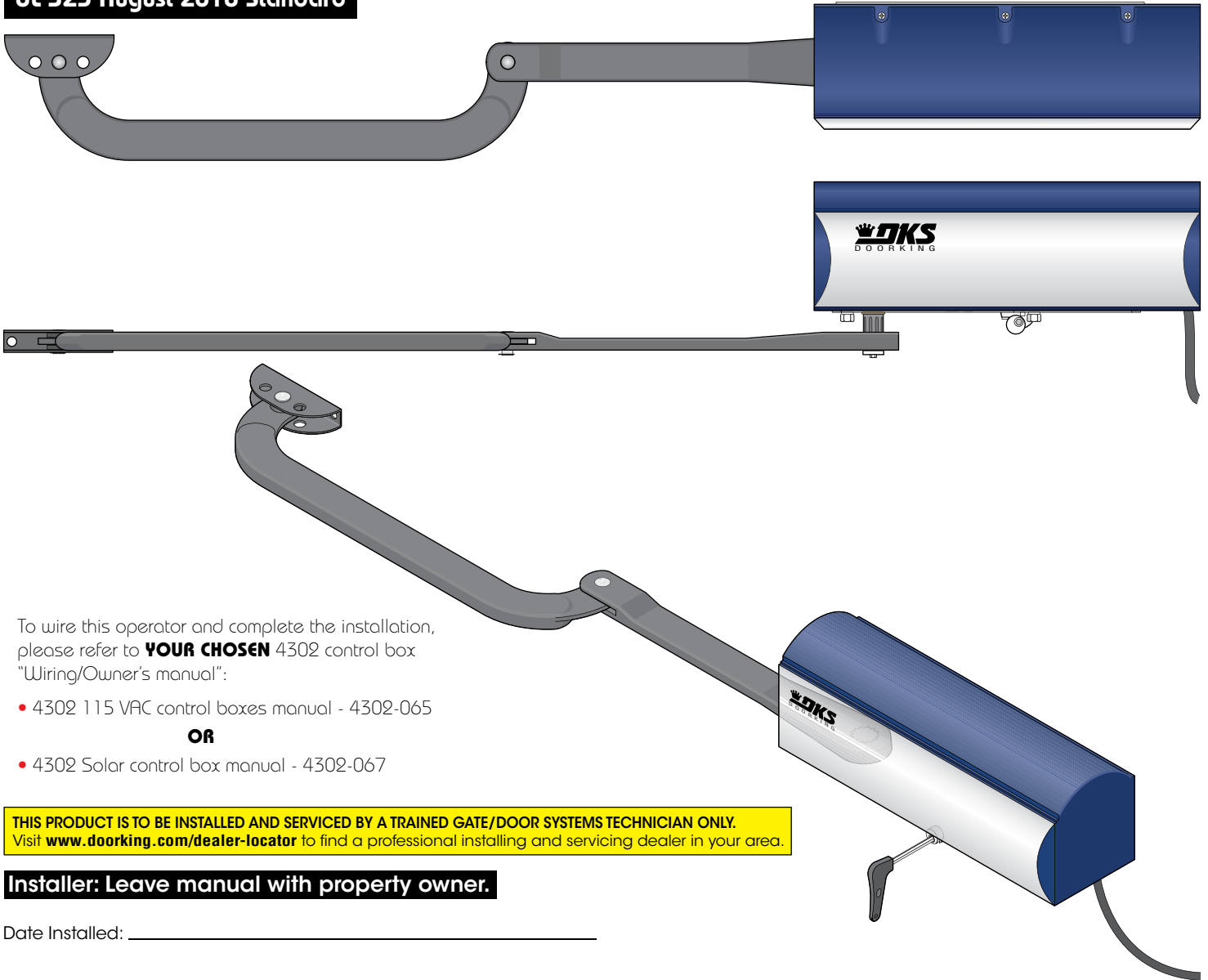
# 6004

## Vehicular Swing Gate Operator

6004-065-Y-8-24

Entrapment Protection must be provided for the gate system where the risk of entrapment or obstruction exists. The operator will NOT run without one or more monitored type B1 or B2 entrapment protection devices in EACH entrapment area.

### UL 325 August 2018 Standard



To wire this operator and complete the installation, please refer to **YOUR CHOSEN** 4302 control box "Wiring/Owner's manual":

- 4302 115 VAC control boxes manual - 4302-065
- OR**
- 4302 Solar control box manual - 4302-067

**THIS PRODUCT IS TO BE INSTALLED AND SERVICED BY A TRAINED GATE/DOOR SYSTEMS TECHNICIAN ONLY.**  
Visit [www.doorking.com/dealer-locator](http://www.doorking.com/dealer-locator) to find a professional installing and servicing dealer in your area.

### Installer: Leave manual with property owner.

Date Installed: \_\_\_\_\_

Installer/Company Name: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Circuit Board  
Serial Number  
and Revision Letter: \_\_\_\_\_

Copyright 2024 DoorKing®, Inc. All rights reserved.



Listed to ANSI/CAN/UL 325





# TABLE OF CONTENTS

<b>6004 Specifications</b>	<b>2</b>
<b>Swing Gate Requirements</b>	<b>3-4</b>
<b>ASTM F2200 Standard for Gate Construction</b>	<b>5</b>
<b>Important Safety Instructions</b>	<b>5</b>
<b>Instructions regarding intended installation:</b>	<b>5</b>
<b>Important Notices</b>	<b>6</b>
<b>UL 325 Entrapment Protection</b>	<b>7</b>
<b>Glossary</b>	<b>8</b>

## INSTALLATION

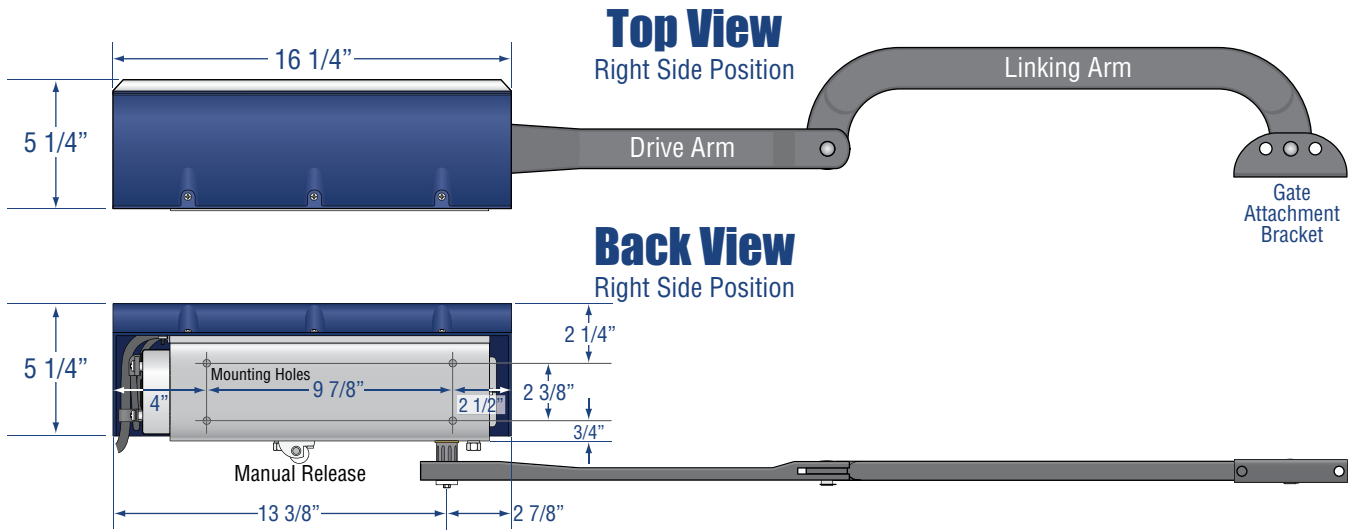
**9**

<b>Sample Installation</b>	<b>9</b>
<b>Operator Description and Disassembly</b>	<b>10</b>
<b>Operator Mounting Positions</b>	<b>11</b>
<b>Mounting Bracket and Gate Attachment Bracket</b>	<b>11</b>
<b>Operator Layouts “Gate Opens to the Inside” or “Gate Opens to the Outside”</b>	<b>12</b>
<b>4302 Control Box Options</b>	<b>13-14</b>
<b>For installers familiar with DoorKing products (Limit Sensors Adjustment)</b>	<b>15</b>
<b>Install Warning Signs</b>	<b>16</b>
<b>In-Ground Loops</b>	<b>16</b>
<b>Entrapment Protection Locations</b>	<b>17-18</b>
<b>Accessory Items</b>	<b>19</b>
<b>6004 Primary/Secondary 4302 Circuit Board Connection</b>	<b>20</b>

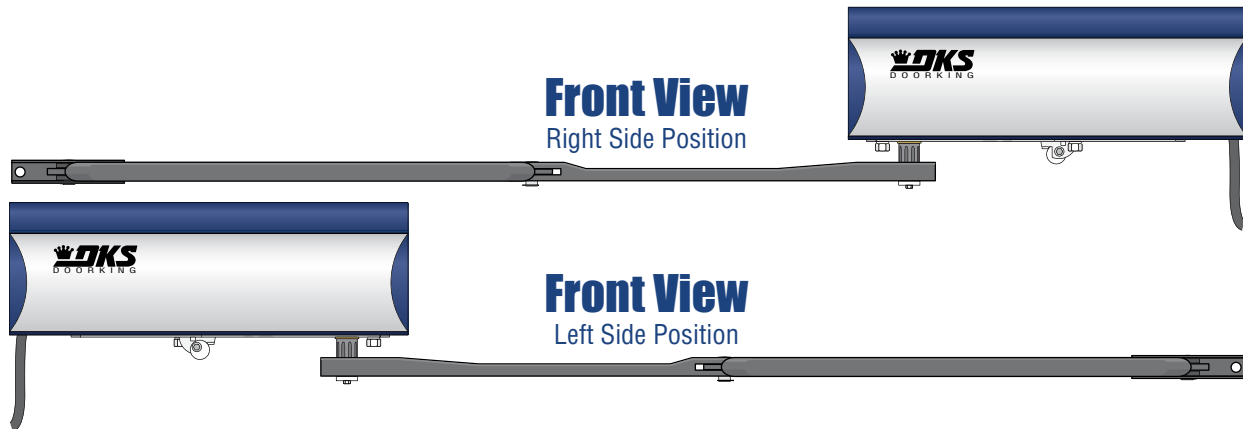
# 6004 SPECIFICATIONS

<b>Class of Operation</b>	Model 6004 - UL 325 Class I
<b>Type of Gate</b>	Vehicular Swing Gates Only
<b>Gate Operator Voltage</b>	24 VDC
<b>Current</b>	3 Amps
<b>Motor Torque</b>	300 Nm
<b>Max Gate Weight</b>	300 Lbs.
<b>Max Gate Length</b>	8 Feet
<b>Cycles Per Hour</b>	20 Per Hour with AC connected (Cycles will vary with battery power ONLY)
<b>Speed</b>	90° in approximately 18 seconds
<b>Control Box Types</b>	<ul style="list-style-type: none"> <li>• 115 VAC 60 Hz Single Phase Input Power - 24 VDC Output Power to Gate Operators</li> <li>• 24 Volt Solar Input Power - 24 VDC Output Power to Gate Operators</li> </ul>

**Type of wiring to be used on ALL external devices:**  
**A) Type CL2, CL2P, CL2R, or CL2X.**  
**B) Other cable with equivalent or better electrical, mechanical, and flammability ratings.**



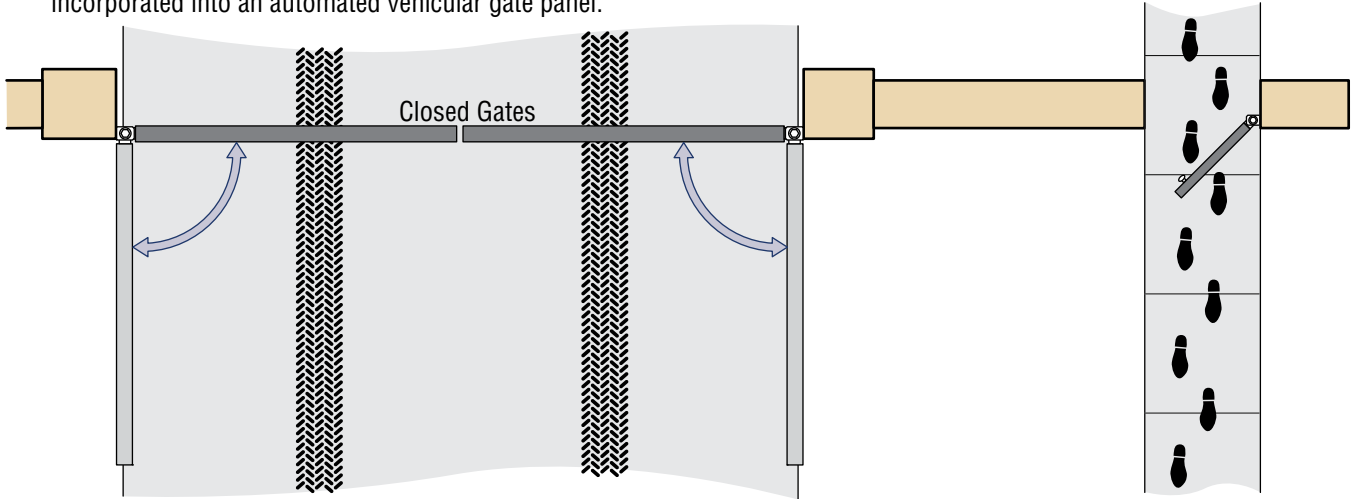
**Entrapment Protection must be provided for the gate system where the risk of entrapment or obstruction exists. The operator will not run without one or more monitored type B1 or B2 entrapment protection devices in EACH entrapment area.**



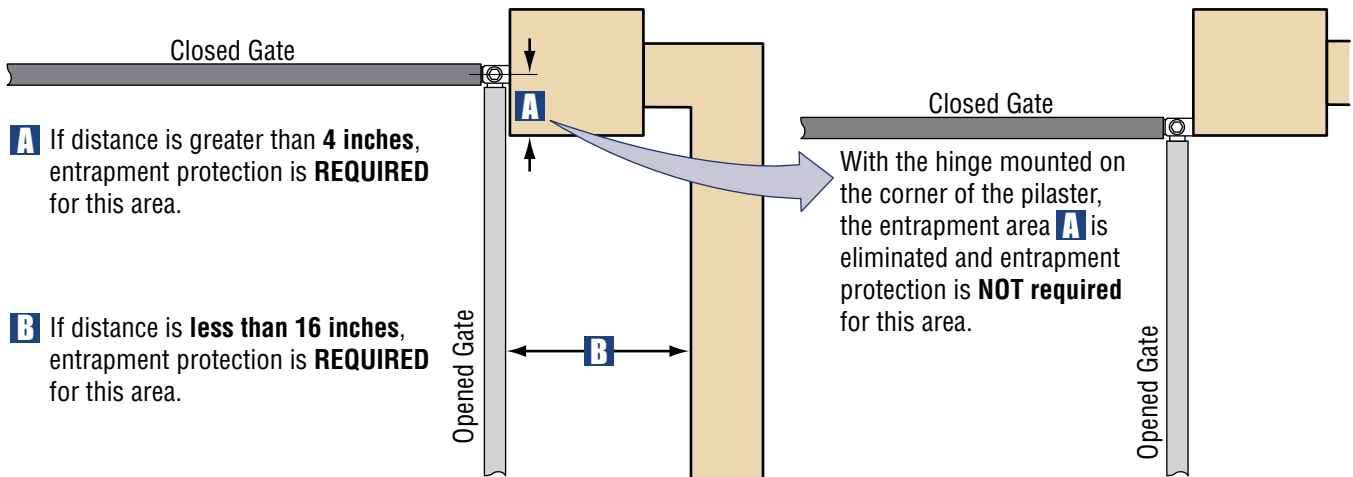
DoorKing, Inc. reserves the right to make changes in the products described in this manual without notice and without obligation of DoorKing, Inc. to notify any persons of any such revisions or changes. Additionally, DoorKing, Inc. makes no representations or warranties with respect to this manual. This manual is copyrighted, all rights reserved. No portion of this manual may be copied, reproduced, translated, or reduced to any electronic medium without prior written consent from DoorKing, Inc.

# Swing Gate Requirements

**This operator is intended for installation only on gates used for vehicles.** Pedestrians must be supplied with a separate access opening. For pedestrian access in the vicinity of an automated vehicular gate, separate pedestrian access shall be provided or available. The pedestrian access shall be in a location such that a pedestrian shall not come in contact with a moving vehicular gate access gate during the entire path of travel of the vehicular gate. A pedestrian gate shall not be incorporated into an automated vehicular gate panel.



**Entrapment Protection must be provided for the gate system where the risk of entrapment or obstruction exists. The operator will NOT run without one or more monitored type B1 or B2 entrapment protection devices in EACH ENTRAPMENT AREA.**

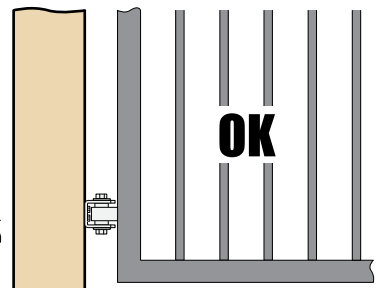
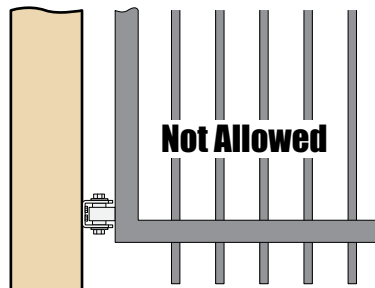
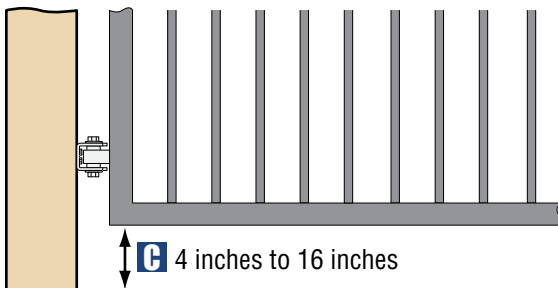


**A** If distance is greater than **4 inches**, entrapment protection is **REQUIRED** for this area.

**B** If distance is **less than 16 inches**, entrapment protection is **REQUIRED** for this area.

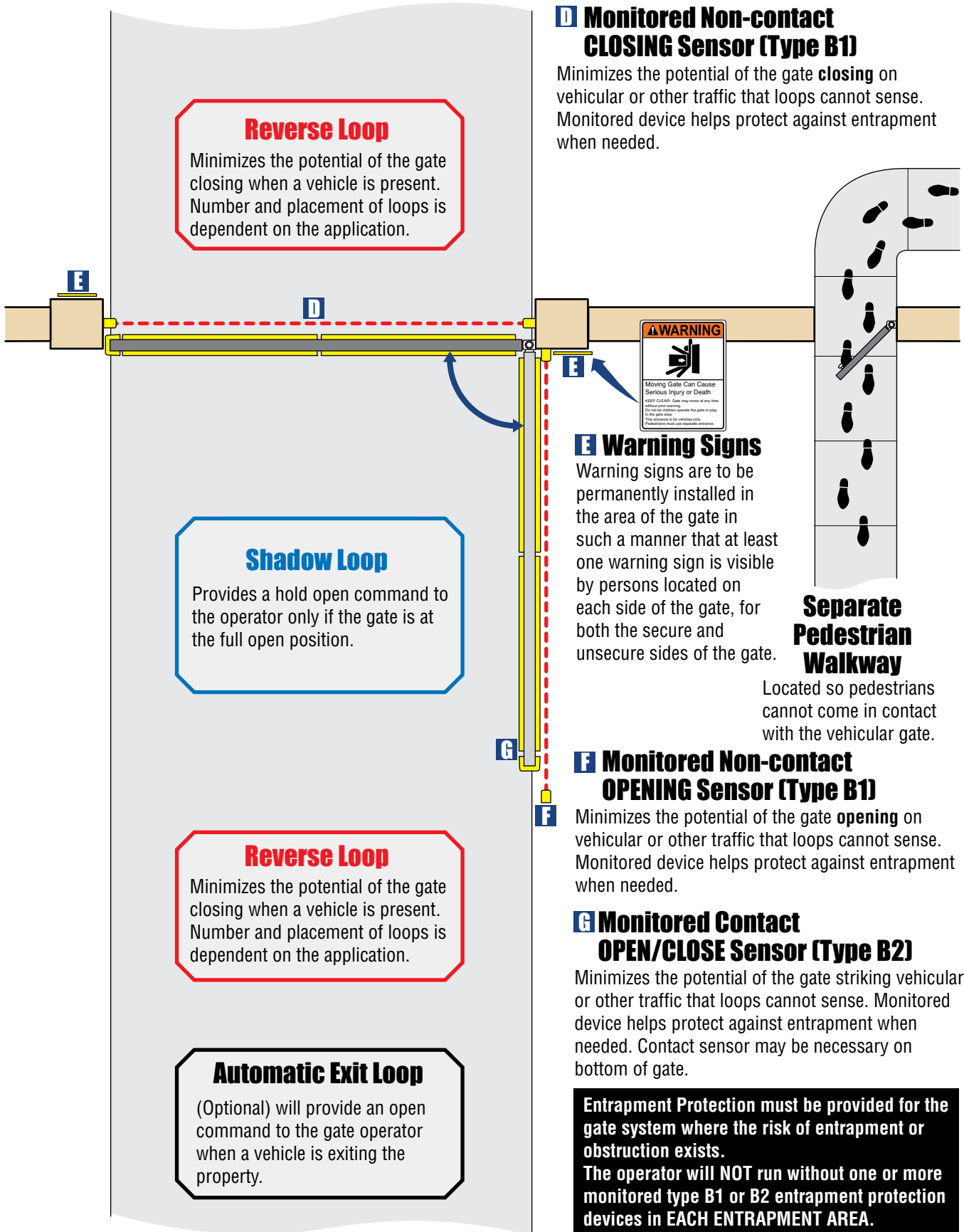
With the hinge mounted on the corner of the pilaster, the entrapment area **A** is eliminated and entrapment protection is **NOT required** for this area.

**C** If bottom of gate is **4" to 16"** above the ground at **any** part of the gate's traveling path, entrapment protection is **REQUIRED** for this area.



Gates shall have smooth bottom edges, with vertical bottom edged protrusions **NOT** exceeding **0.50 inches**.

# Swing Gate Requirements Continued



**Reverse Loop**  
Minimizes the potential of the gate closing when a vehicle is present. Number and placement of loops is dependent on the application.

**Shadow Loop**  
Provides a hold open command to the operator only if the gate is at the full open position.

**Reverse Loop**  
Minimizes the potential of the gate closing when a vehicle is present. Number and placement of loops is dependent on the application.

**Automatic Exit Loop**  
(Optional) will provide an open command to the gate operator when a vehicle is exiting the property.

**D Monitored Non-contact CLOSING Sensor (Type B1)**

Minimizes the potential of the gate **closing** on vehicular or other traffic that loops cannot sense. Monitored device helps protect against entrapment when needed.

**E Warning Signs**

Warning signs are to be permanently installed in the area of the gate in such a manner that at least one warning sign is visible by persons located on each side of the gate, for both the secure and unsecure sides of the gate.

**Separate Pedestrian Walkway**

Located so pedestrians cannot come in contact with the vehicular gate.

**F Monitored Non-contact OPENING Sensor (Type B1)**

Minimizes the potential of the gate **opening** on vehicular or other traffic that loops cannot sense. Monitored device helps protect against entrapment when needed.

**G Monitored Contact OPEN/CLOSE Sensor (Type B2)**

Minimizes the potential of the gate striking vehicular or other traffic that loops cannot sense. Monitored device helps protect against entrapment when needed. Contact sensor may be necessary on bottom of gate.

**Entrapment Protection must be provided for the gate system where the risk of entrapment or obstruction exists. The operator will NOT run without one or more monitored type B1 or B2 entrapment protection devices in EACH ENTRAPMENT AREA.**

# ASTM F2200 Standard for Gate Construction

Vehicular gates should be constructed and installed in accordance with ASTM F2200; Standard Specification for Automated Vehicular Gate Construction. For a copy of this standard, contact ASTM directly at 610-832-9585; service@astm.org; or www.astm.org.

## Important Safety Instructions

### **WARNING - To reduce the risk of severe injury or death:**

1. READ AND FOLLOW ALL INSTRUCTIONS.
2. Never let children operate or play with gate controls. Keep the remote control away from children.
3. Always keep people and objects away from gate. **NO ONE SHOULD CROSS THE PATH OF THE MOVING GATE.**
4. Test the operator monthly. The gate **MUST** reverse on contact with a rigid object or stop 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 severe injury or death.
5. Use the manual release only when the gate is not moving.
6. **KEEP GATES PROPERLY MAINTAINED.** Read the owner's manual. Have a qualified service person make repairs to gate hardware.
7. The operator is intended for installation 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.
8. **SAVE THESE INSTRUCTIONS!**

## Instructions regarding intended installation:

- Install the gate operator only if:
  1. The operator is appropriate for the construction of the gate and the usage class of the gate.
  2. All openings of a horizontal slide gate are guarded or screened from the bottom of the gate to a minimum of 6 feet (1.83 m) above the ground to prevent a 2 ¼ inch (57.2 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.
  3. All exposed pinch points are eliminated or guarded.
  4. Guarding is supplied for exposed rollers.
- 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.
- 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 should not open into public access areas.
- The gate must be properly installed and work freely in both directions prior to the installation of the gate operator. Do not over-tighten the operator clutch, pressure relief valve or reduce reversing sensitivity to compensate for a damaged gate.
- For gate operators utilizing Type D protection:
  1. The gate operator controls must be placed so that the user has full view of the gate area when the gate is moving.
  2. A warning placard shall be placed adjacent to the controls.
  3. An automatic closing device (such as a timer, loop sensor, or similar device) shall not be employed.
  4. No other activation device shall be connected.
- Controls intended for user activation must be located at least six feet (6') 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 should have a security feature to prevent unauthorized use.
- The Stop and/or Reset button must be located in the line-of-sight of the gate. Activation of the reset control shall not cause the operator to start.
- Warning signs are to be permanently installed in the area of the gate in such a manner that at least one warning sign is visible by persons located on each side of the gate, for both the secure and unsecure sides of the gate.
- For gate operators utilizing a non-contact sensor:
  1. See the instructions on the placement of non-contact sensors for each type of application.
  2. 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 in the opening direction.
  3. One or more non-contact sensors shall be located where the risk of entrapment or obstruction exist, such as the perimeter reachable by a moving gate or barrier.
- For gate operators utilizing contact sensors:
  1. One or more contact sensors shall be located where the risk of entrapment or obstruction exist, such as at the leading edge, trailing edge, and post mounted both inside and outside of a vehicular horizontal slide gate.
  2. One or more contact sensors shall be located at the bottom edge of a vehicular vertical lift gate.
  3. One or more contact sensors shall be located at the pinch point of a vehicular vertical pivot gate.
  4. A hardwired contact sensor shall be located and its wiring arranged so that the communication between the sensor and the gate operator is not subjected to mechanical damage.
  5. A wireless contact sensor 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 obstructions. A wireless contact sensor shall function under the intended end-use conditions.
  6. One or more contact sensors shall be located at the bottom edge of a vertical barrier (arm).
- Be sure you have instructed the owner of the gate operator about safe and proper operation and testing of the gate operator.

# Important Notices

Vehicular gate operator products provide convenience and security. However, gate operators must use high levels of force to move gates and most people underestimate the power of these systems and do not realize the potential hazards associated with an incorrectly designed or installed system. These hazards may include:

- Pinch points
- Entrapment areas
- Reach through hazards
- Absence of entrapment protection devices
- Improperly located access controls
- Absence of vehicle protection devices
- Absence of controlled pedestrian access

In addition to these potential hazards, automated vehicular gate systems must be installed in accordance with the UL 325 Safety Standard and the ASTM F2200 Construction Standard. Most people are unaware of, or are not familiar with, these standards. If an automated vehicular gate system is not properly designed, installed, used and maintained, serious injuries or death can result. Be sure that the installer has instructed you on the proper operation of the gate and gate operator system.

Be sure that the installer has trained you on proper and safe operation of this gate operating system and about the basic functions of the required reversing systems associated with your gate operating system and how to test them. These include reversing loops, inherent reversing system, electric edges, photoelectric cells, or other external devices.

- This Owner's Manual is your property. Keep it in a safe place for future reference.
- Be sure that all access control devices are installed a minimum distance of 6 feet away from the gate and gate operator, or in such a way that a person cannot touch the gate or gate operator while using the device. If access control devices are installed in violation of these restrictions, immediately remove the gate operator from service and contact your installing dealer.

**Opening device MUST be mounted a minimum of 6 feet from the gate and NOT accessible through the gate!**

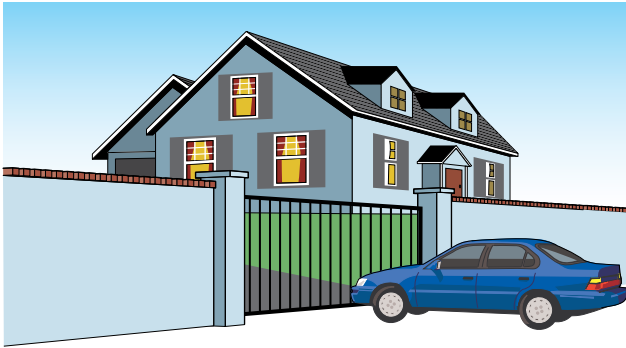


- Loops and loop detectors, photo-cells or other equivalent devices must be installed to prevent the gate from closing on vehicular traffic.
- The speed limit for vehicular traffic through the gate area is 5 MPH. Install speed bumps and signs to keep vehicular traffic from speeding through the gate area. Failure to adhere to posted speed limits can result in damage to the gate, gate operator, and to the vehicle.
- Be sure that all persons who will use the gate system are familiar with the proper use of the gate and gate operator and are familiar with the possible hazards associated with the gate system.
- Warning signs are to be permanently installed in the area of the gate in such a manner that at least one warning sign is visible by persons located on each side of the gate, for both the secure and unsecure sides of the gate.
- It is your responsibility to periodically check all entrapment protection devices. If any of these devices are observed to function improperly, remove the operator from service immediately and contact your installing or servicing dealer.
- Follow the recommended maintenance schedule.
- Do not allow children to play in the area of the operator or to play with any gate-operating device.
- To remove the gate operator from service, operate the gate to the full open position and then shut off power to the operator at the service panel.



# UL 325 Entrapment Protection

## UL 325 Classifications



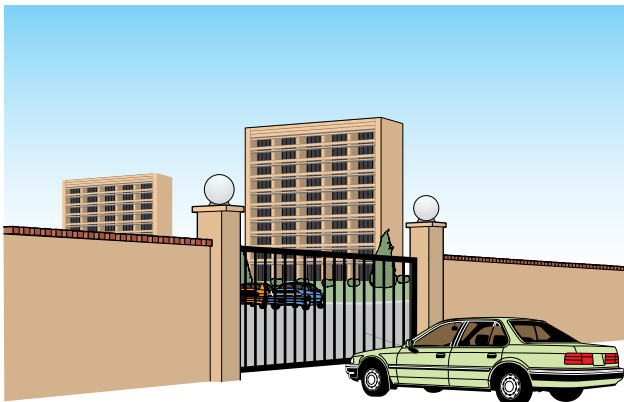
### Class I - Residential Vehicular Gate Operator

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 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 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 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.

## Gate Operator Category

Effective January 12, 2016	Horizontal Slide, Vertical Lift, Vertical Pivot	Swing, Vertical Barrier (Arm)
Entrapment Protection Types	A, B1*, B2* or D	A, B1*, B2*, C or D

**Type A** - Inherent entrapment protection system.

**Type B1** - Non-contact sensor (photoelectric sensor or the equivalent).

**Type B2** - Contact sensor (edge device or equivalent).

**Type C** - Inherent force limiting, inherent adjustable clutch or inherent pressure relief device.

**Type D** - Actuating device requiring constant pressure to maintain opening or closing motion of the gate.

\* B1 and B2 means of entrapment protection must be MONITORED.

**Vertical Barrier Note:** Barrier gate operators (arm) that is not intended to move toward a rigid object closer than 16 inches (406 mm) are not required to be provided with a means of entrapment protection.

# Glossary

**GATE** - A moving barrier such as a swinging, sliding, raising, lowering, or the like, barrier, that is a stand-alone passage barrier or is that portion of a wall or fence system that controls entrance and/or egress by persons or vehicles and completes the perimeter of a defined area.

**RESIDENTIAL VEHICULAR GATE OPERATOR – CLASS I** - A vehicular gate operator (or system) intended for use in a home of one-to four single family dwelling, or garage or parking area associated therewith.

**COMMERCIAL / GENERAL ACCESS VEHICULAR GATE OPERATOR - CLASS II** - 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), hotels, garages, retail store, or other building servicing the general public.

**INDUSTRIAL / LIMITED ACCESS VEHICULAR GATE OPERATOR - CLASS III** - 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 intended to service the general public.

**RESTRICTED ACCESS VEHICULAR GATE OPERATOR - CLASS IV** - 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.

**VEHICULAR BARRIER (ARM) OPERATOR (OR SYSTEM)** - An operator (or system) that controls a cantilever type device (or system), consisting of a mechanical arm or barrier that moves in a vertical arc, intended for vehicular traffic flow at entrances or exits to areas such as parking garages, lots or toll areas.

**VEHICULAR HORIZONTAL SLIDE-GATE OPERATOR (OR SYSTEM)** - A vehicular gate operator (or system) that controls a gate which slides in a horizontal direction that is intended for use for vehicular entrance and exit to a drive, parking lot, or the like.

**VEHICULAR SWING-GATE OPERATOR (OR SYSTEM)** - A vehicular gate operator (or system) that controls a gate which moves in an arc in a horizontal plane that is intended for use for vehicular entrance and exit to a drive, parking lot, or the like.

**SYSTEM** - In the context of these requirements, a system refers to a group of interacting devices intended to perform a common function.

**WIRED CONTROL** - A control implemented in a form of fixed physical interconnections between the control, the associated devices, and an operator to perform predetermined functions in response to input signals.

**WIRELESS CONTROL** - A control implemented in means other than fixed physical interconnections (such as radio waves or infrared beams) between the control, the associated devices, and an operator to perform predetermined functions in response to input signals.

**INHERENT ENTRAPMENT PROTECTION SYSTEM** - A system, examples being a motor current or speed sensing system, which provides protection against entrapment upon sensing an object and is incorporated as a permanent and integral part of the operator.

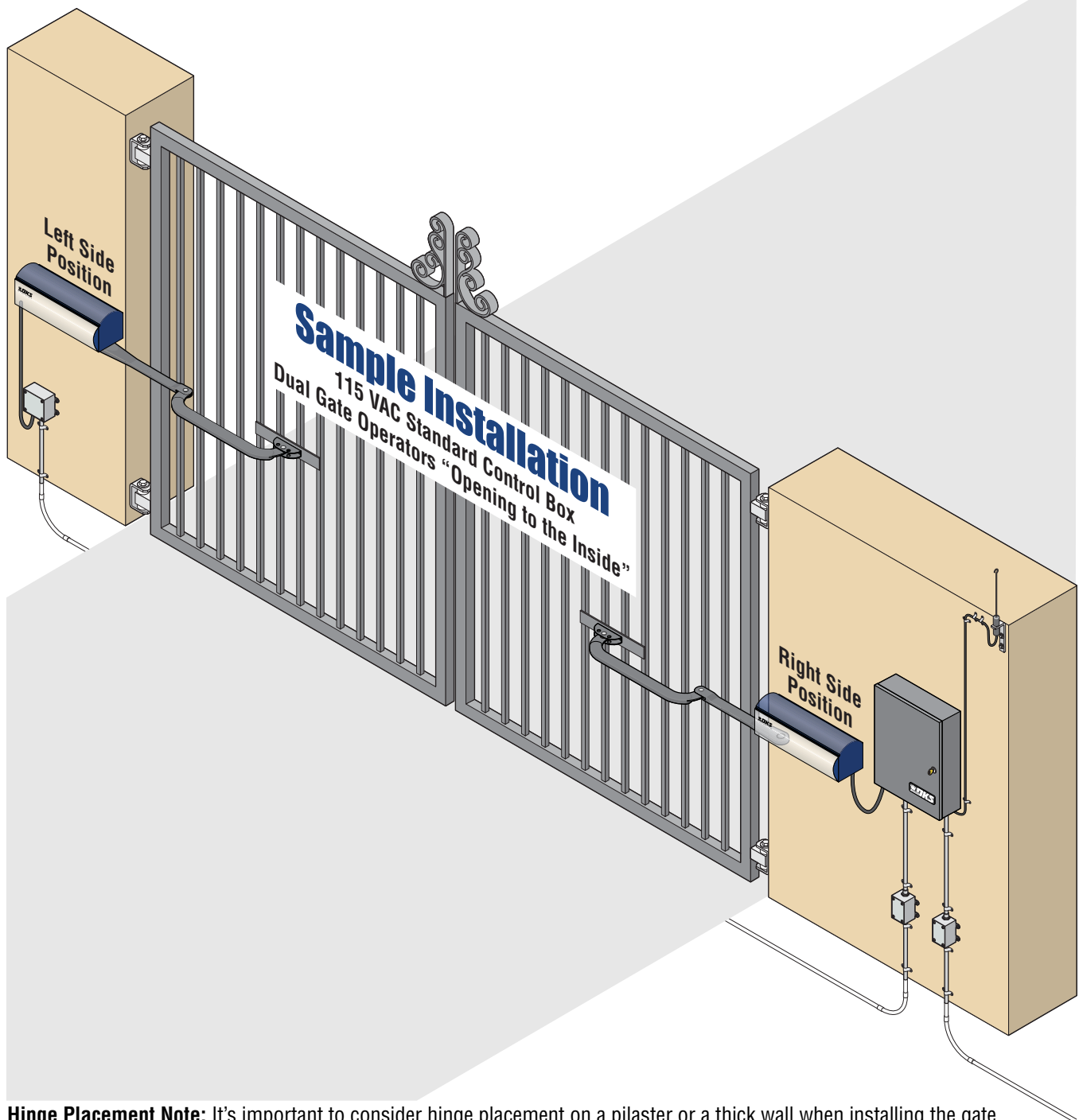
**EXTERNAL ENTRAPMENT PROTECTION DEVICE** - A device, examples being an edge sensor, a photoelectric sensor, or similar entrapment protection device, which provides protection against entrapment when activated and is not incorporated as a permanent part of an operator.

**ENTRAPMENT** - The condition when an object is caught or held in a position that increases the risk of injury.

# INSTALLATION

Prior to beginning the installation of the swing gate operator, we suggest that you become familiar with the instructions and illustrations in this manual. This will help insure that your installation is performed in an efficient and professional manner compliant with UL 325 safety and ASTM F2200 construction standards.

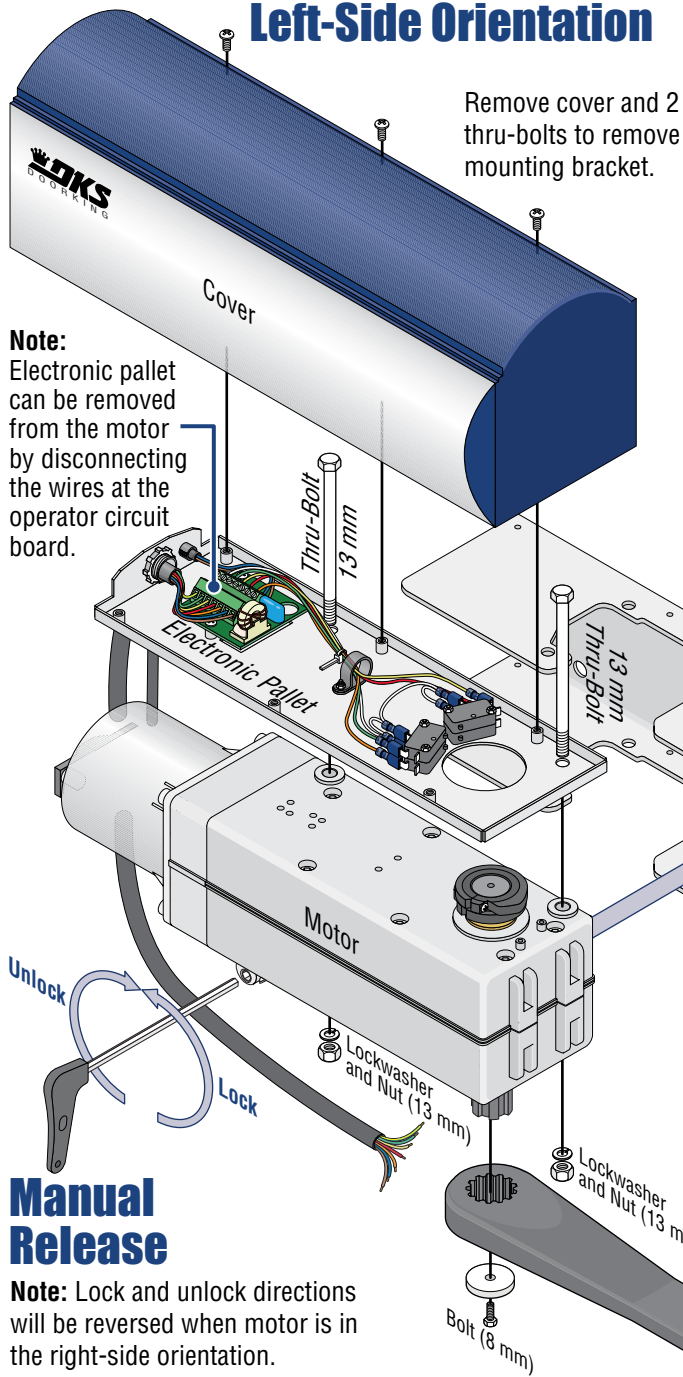
The proper installation of the vehicular slide gate operator is an extremely important and integral part of the overall access control system. Check all local building ordinances and building codes prior to installing this operator. Be sure your installation is in compliance with local codes.



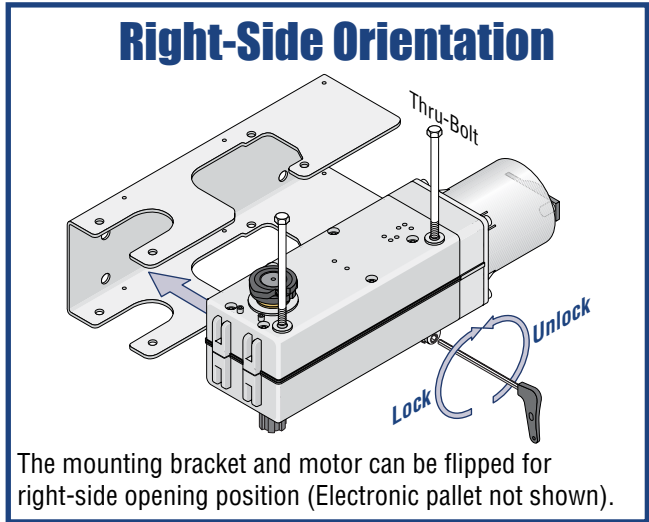
**Hinge Placement Note:** It's important to consider hinge placement on a pilaster or a thick wall when installing the gate. Placing hinges close to the corner can eliminate a potential entrapment area (See Swing Gate Requirements on pages 3 & 4).

# Operator Description and Disassembly

## Left-Side Orientation



## Right-Side Orientation



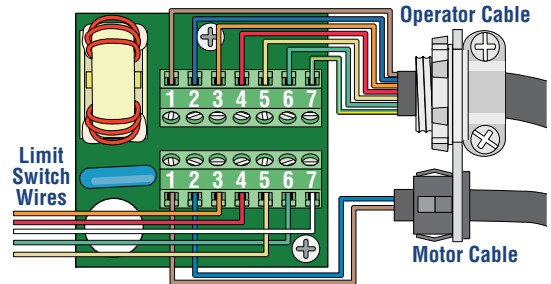
## Manual Release

**Note:** Lock and unlock directions will be reversed when motor is in the right-side orientation.

## Limit Switches and Motor Wires

- |                          |   |                |
|--------------------------|---|----------------|
| (Motor) Brown 1          | ← | 1 Brown        |
| (Motor) Blue 2           | ← | 2 Blue         |
| (Bottom Switch) Orange 3 | ← | 3 Orange       |
| (Bottom Switch) Red 4    | ← | 4 Red          |
| (Top Switch) Yellow 5    | ← | 5 Yellow       |
| (Top) Green 6            | ← | 6 Green        |
| (Common) White 7         | ← | 7 Green/Yellow |

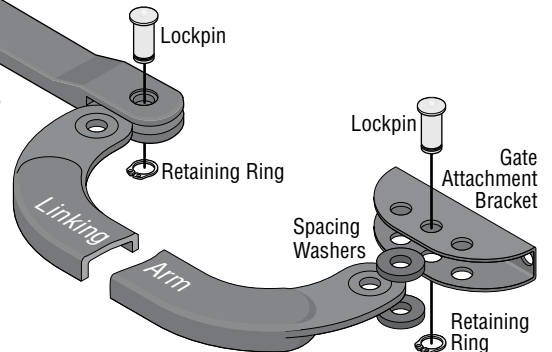
## Operator Cable



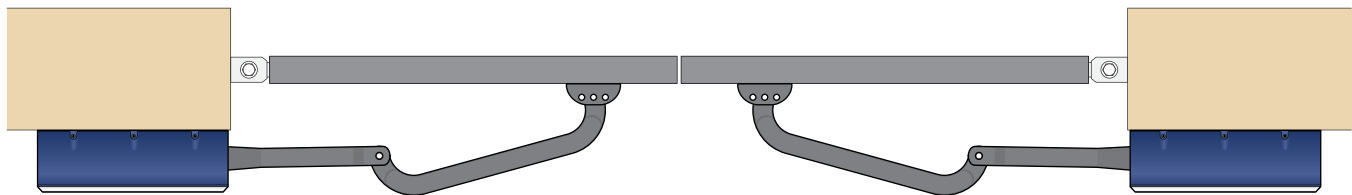
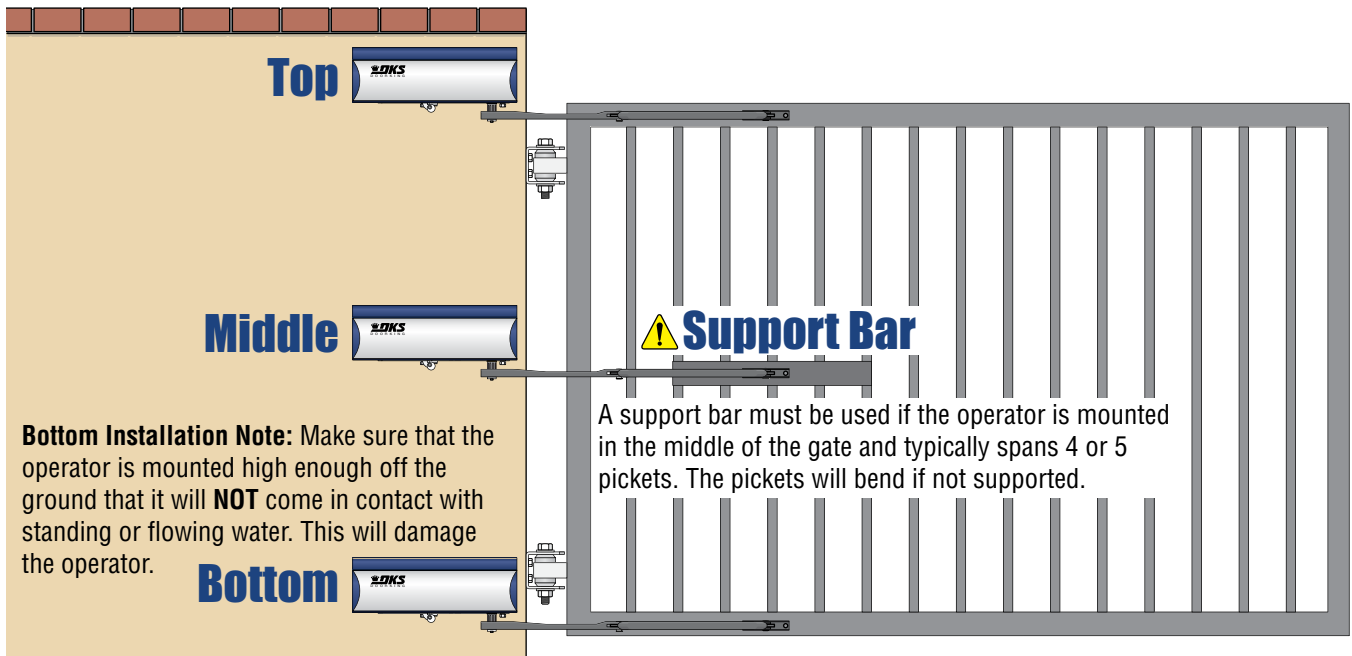
## Operator Circuit Board Wiring

## Arm Assembly

**Note:** Operator hardware is metric.



# Operator Mounting Positions



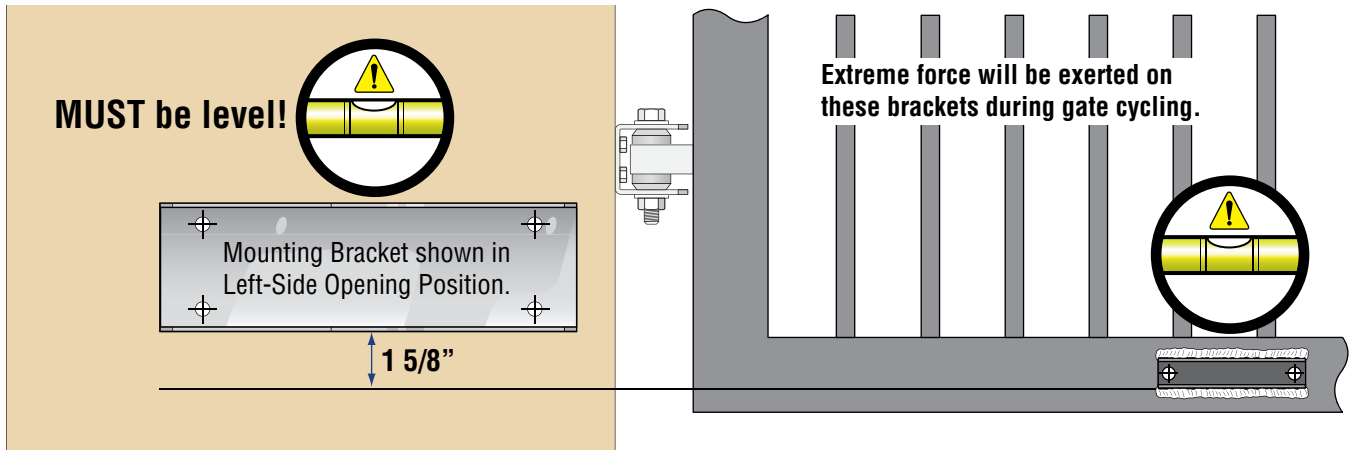
## Left-Side Position

See next page for specific layout dimensions and page 2 for operator dimensions.

## Right-Side Position

# Mounting Bracket and Gate Attachment Bracket

See next page for specific layout dimensions and page 2 for mounting bracket dimensions.



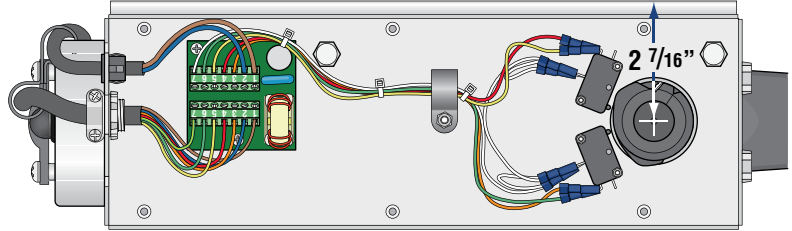
Attach mounting bracket to pilaster or wall with four (4) #10 screws and suitable expansion hardware (Not supplied).

Weld gate attachment bracket to gate or use two (2) suitable screws (Not supplied).

# Operator Layouts

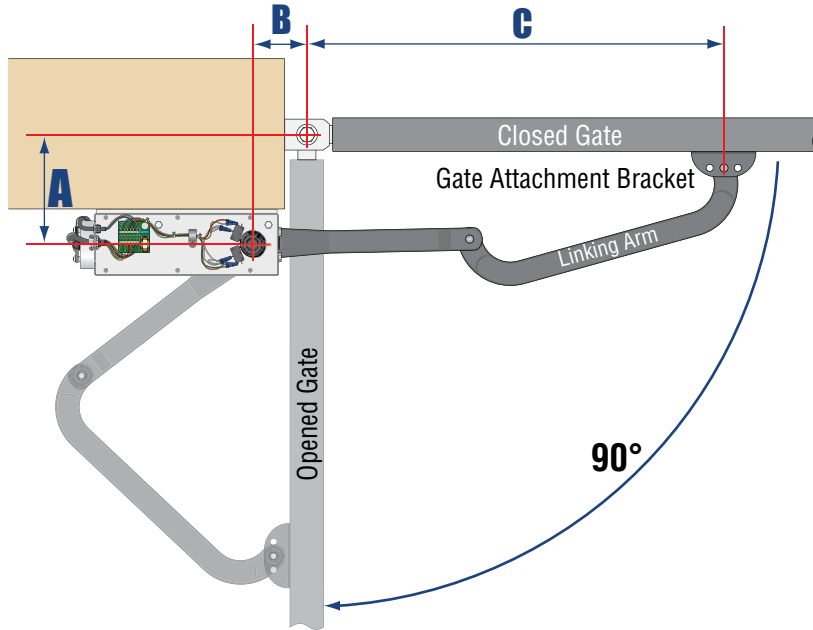
Calculate dimension **A** for your specific installation first. That will determine dimension **B** and **C** limitations depending on which gate opening direction you select (See tables below).

Top view of operator with mounting bracket installed.



Use to help calculate dimension **A**.

## Gate Opens to the Inside

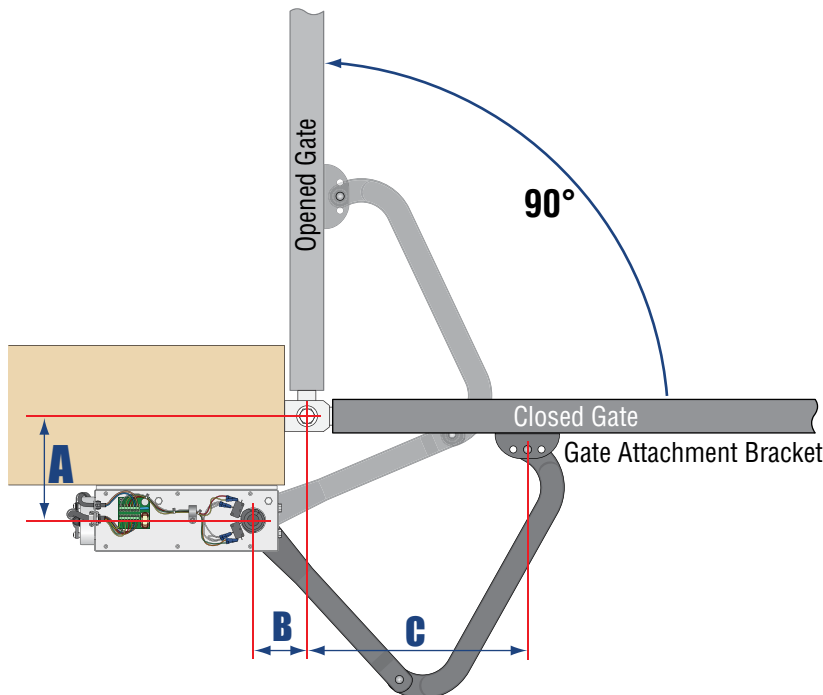


Opens to the Inside - Inches

A	B	C max.
2.50 - 4.25	4.25 - 5.00	28.75
4.25 - 6.25	4.25 - 5.00	28.25
6.25 - 8.25	4.25 - 5.00	28.00
8.25 - 10.25	4.25 - 5.00	27.25
10.25 - 12.25	4.25 - 5.00	27.00
12.25 - 14.00	4.25 - 5.00	26.25

**“A” Dimension Note:** “A” dimension greater than 6.25” **will require** entrapment protection between the open gate and the column per ASTM F2200.

## Gate Opens to the Outside



**Note:** Measurements are from the center hole of the gate attachment brackets.

Opens to the Outside - Inches

A	B	C max.
2.50 - 4.25	4.25 - 5.00	17.00
4.25 - 6.25	4.25 - 5.00	15.00
6.25 - 8.25	4.25 - 5.00	13.00
8.25 - 10.25	4.25 - 5.00	11.00
10.25 - 12.25	4.25 - 5.00	9.50

# 4302 Control Box Options

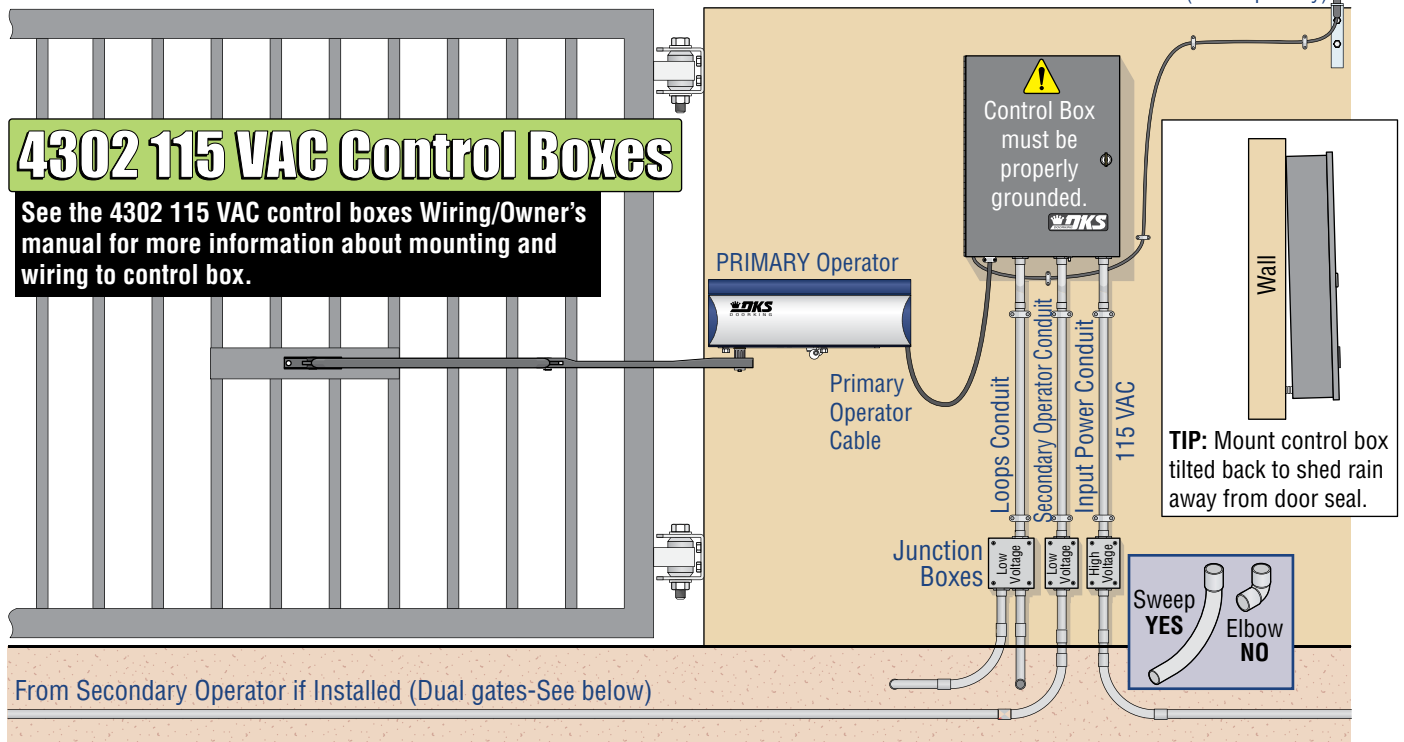
Permanent wiring must be installed to the gate operator as required by local electrical codes. It is recommended that a licensed electrical contractor perform this work. Check local building codes prior to installing any permanent wiring to ensure all wiring and connections comply with local electrical code requirements.

Position **YOUR CHOSEN** control box on the wall (**115 VAC**-see below or **Solar**-see next page), **close enough to the gate operator so the primary operator cable can be easily routed inside the box**. Make sure that the control box is mounted high enough off the ground that it will **NOT** come in contact with standing or flowing water. **This will damage the internal components**. Secure the control box to the wall with appropriate hardware (not included). Control box has pre drilled mounting holes. All power and control wires should be routed to control box in conduits with sweeps. **Never** run low voltage rated wire insulation in the same conduit as high voltage rated wire insulation.

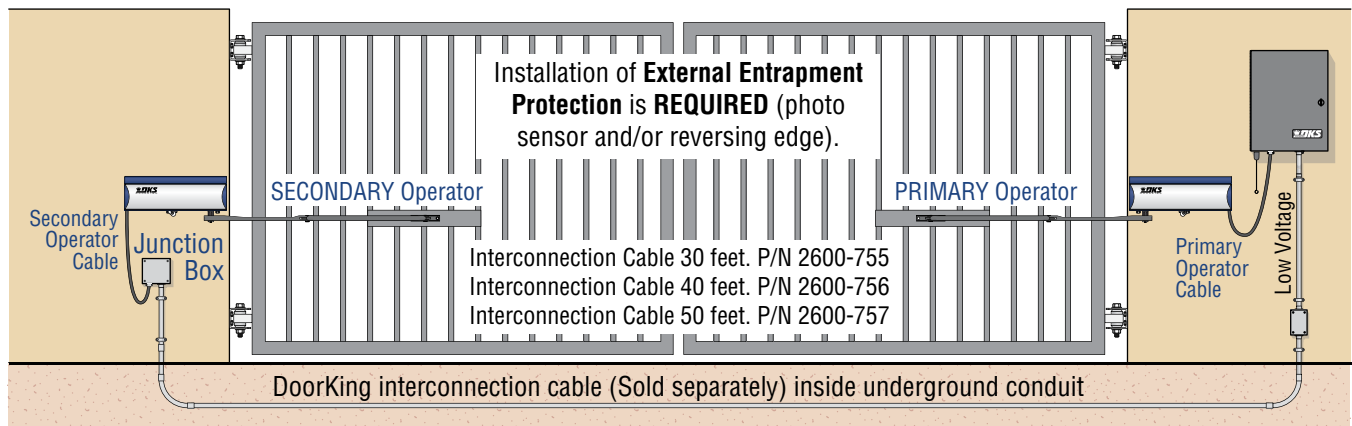
- 3/4" conduit recommended. Use only sweeps for conduit bends and **NOT** elbow connectors. Elbows will make wire pulls very difficult and can cause damage to wire insulation.
- Remove fragile components from control box to protect them during installation if necessary.
- Installation of **External Entrapment Protection** is **REQUIRED** (photo sensor and/or reversing edge).



Coaxial Cable Antenna Kit P/N 1514-073 (Sold separately)



## Dual Gate Operators (115 VAC or Solar Control Box)





# 4302 Control Box Options Cont'

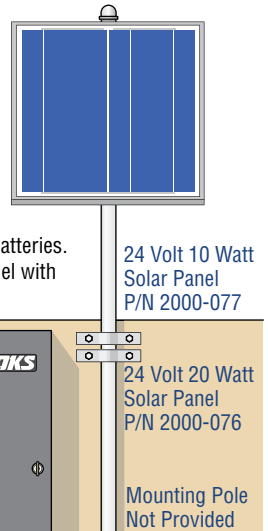
## ONLY Mount One 24 Volt Solar Panel!

The 24 volt - 10 watt or 20 watt solar panel must be correctly installed for the system to function correctly.

**DO NOT use a 12 volt solar panel. Damage WILL occur!!**

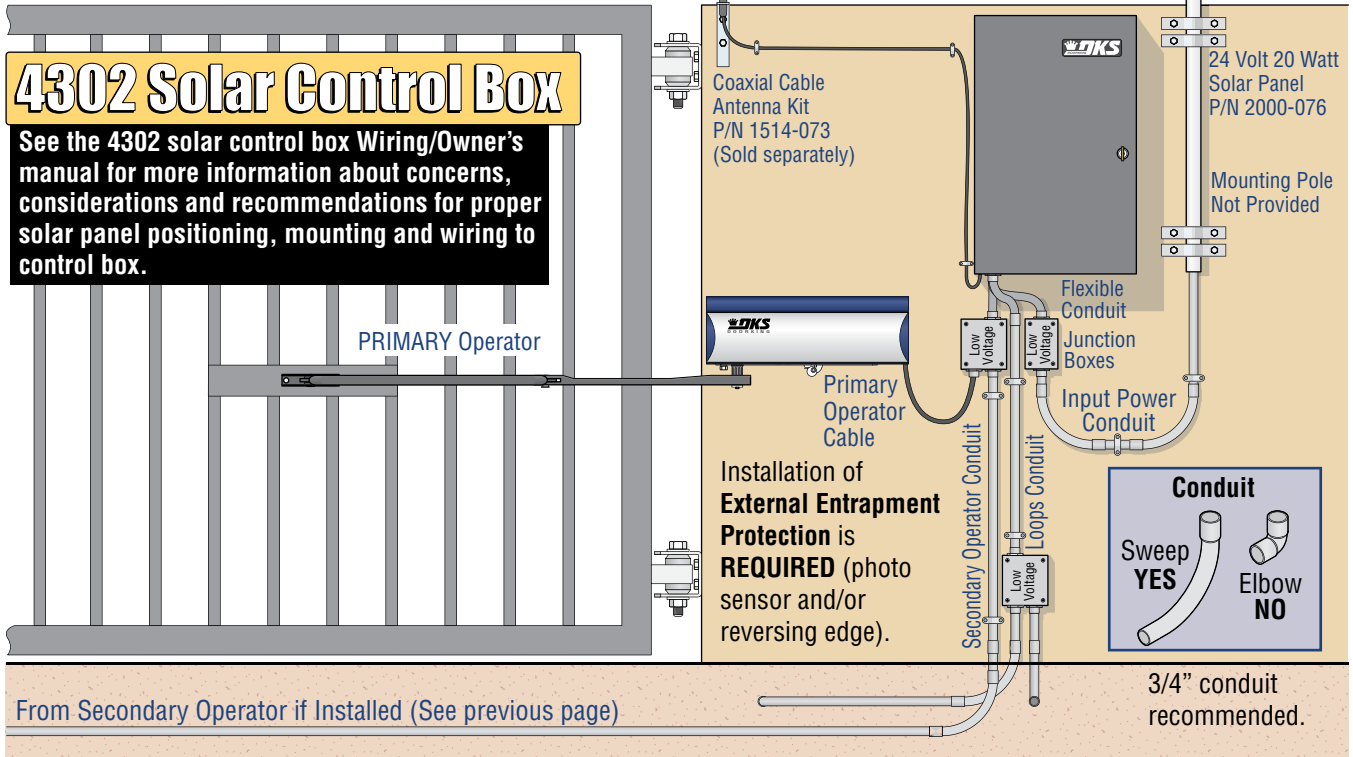
- One 24 V 10 watt panel required for 18 Amp/Hr batteries. **DO NOT USE** 10 watt panel with the 35 Amp/Hr batteries.

- One 24 V 20 watt panel required for 35 Amp/Hr batteries. **DO NOT USE** 20 watt panel with the 18 Amp/Hr batteries.

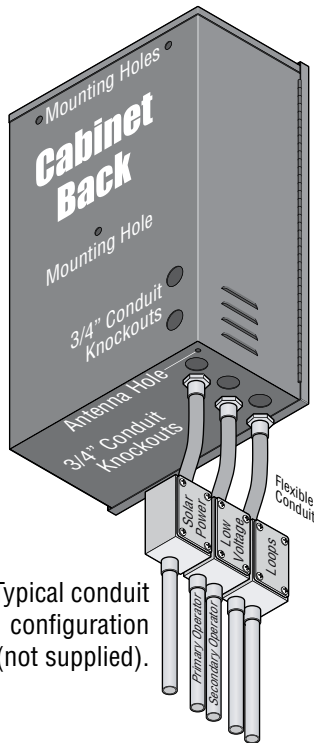


## 4302 Solar Control Box

See the 4302 solar control box Wiring/Owner's manual for more information about concerns, considerations and recommendations for proper solar panel positioning, mounting and wiring to control box.



From Secondary Operator if Installed (See previous page)

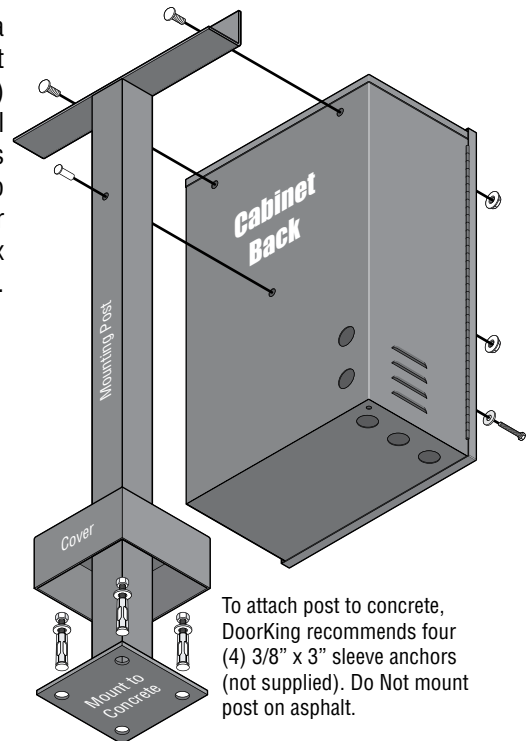
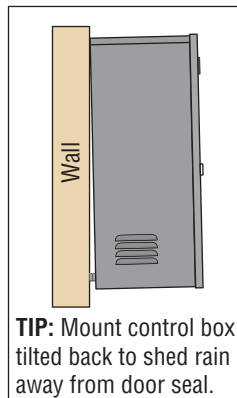


Typical conduit configuration (not supplied).

## Solar Cabinet Mounting Holes and Conduit Holes

Remove fragile components from control box to protect them during installation if necessary.

DoorKing offers a mounting post kit (P/N 1000-045) when no vertical surface is available to mount the solar control box cabinet to.





# Limit Sensors Adjustment

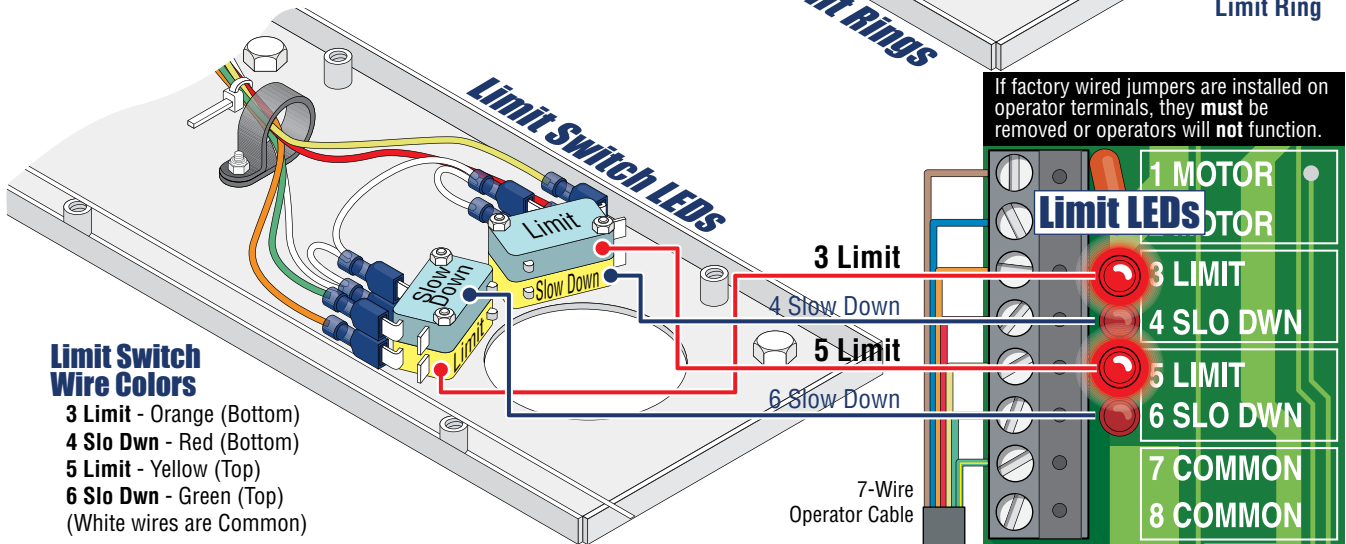
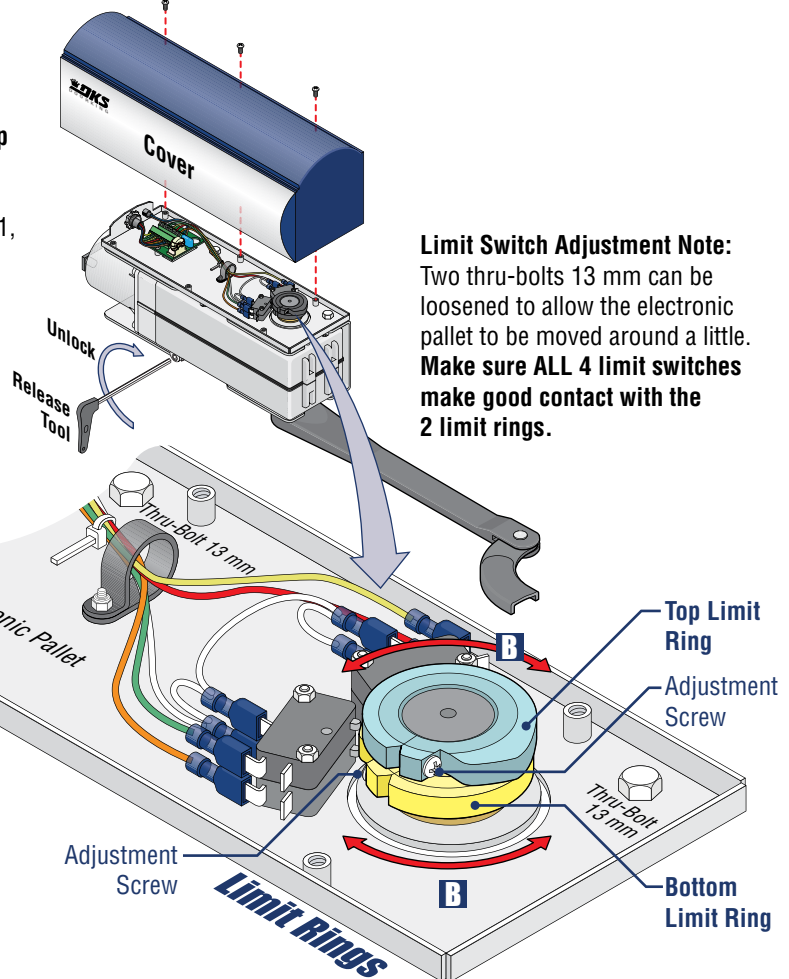
This guide is for installers familiar with DoorKing products **ONLY**. **DO NOT** use this as your **only** source to wire, adjust limit sensors and DIP-switches if you are **unfamiliar** with this operator. Please refer to the control box manual you are installing for **complete** wiring, adjustments and DIP-switch settings for this operator.

**Power to the circuit board must be ON when adjusting the limit sensors.**

**The operator MUST OPEN GATE upon initial power up and OPEN command.**

If the operator closes gate after giving first open command, shut off power and reverse DIP-switch SW1, switch 1 setting otherwise operator will **NOT** function correctly.

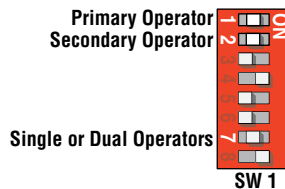
- A** With operator cover removed, un-lock operator with release tool to release arm.
- B** Manually move the gate to the desired open or closed position. Loosen adjustment screw and slowly spin the appropriate limit ring until the corresponding **LIMIT** LED on the circuit board lights up, then tighten screw. Manually move the gate to other position. Repeat process with the other limit ring.
- C** Re-lock operator with release tool and test the gate stopping positions. Re-adjust if necessary.
- D** Re-install the operator cover.



## Limit Switch Wire Colors

- 3 Limit** - Orange (Bottom)
- 4 Slo Dwn** - Red (Bottom)
- 5 Limit** - Yellow (Top)
- 6 Slo Dwn** - Green (Top)
- (White wires are Common)

- E** Adjust the Secondary operator limit rings if dual operators have been installed. DIP-switch SW 1, switch 2 controls secondary operator opening direction. DIP-switch SW 1, switch 7 **MUST** be ON when using dual operators.



**Note:** 3 and 5 limit LEDs can be **Open** or **Close** limits depending on DIP-switch SW 1, switch 1 and 2 settings

## Install Warning Signs

This DoorKing Swing Gate Operator is shipped with two warning signs. The purpose of the warning sign is to alert uninformed persons, and to remind persons familiar with the gate system, that a possible hazard exists so that appropriate action can be taken to avoid the hazard or to reduce exposure to the hazard. See page 4 for suggested mounting positions of signs.

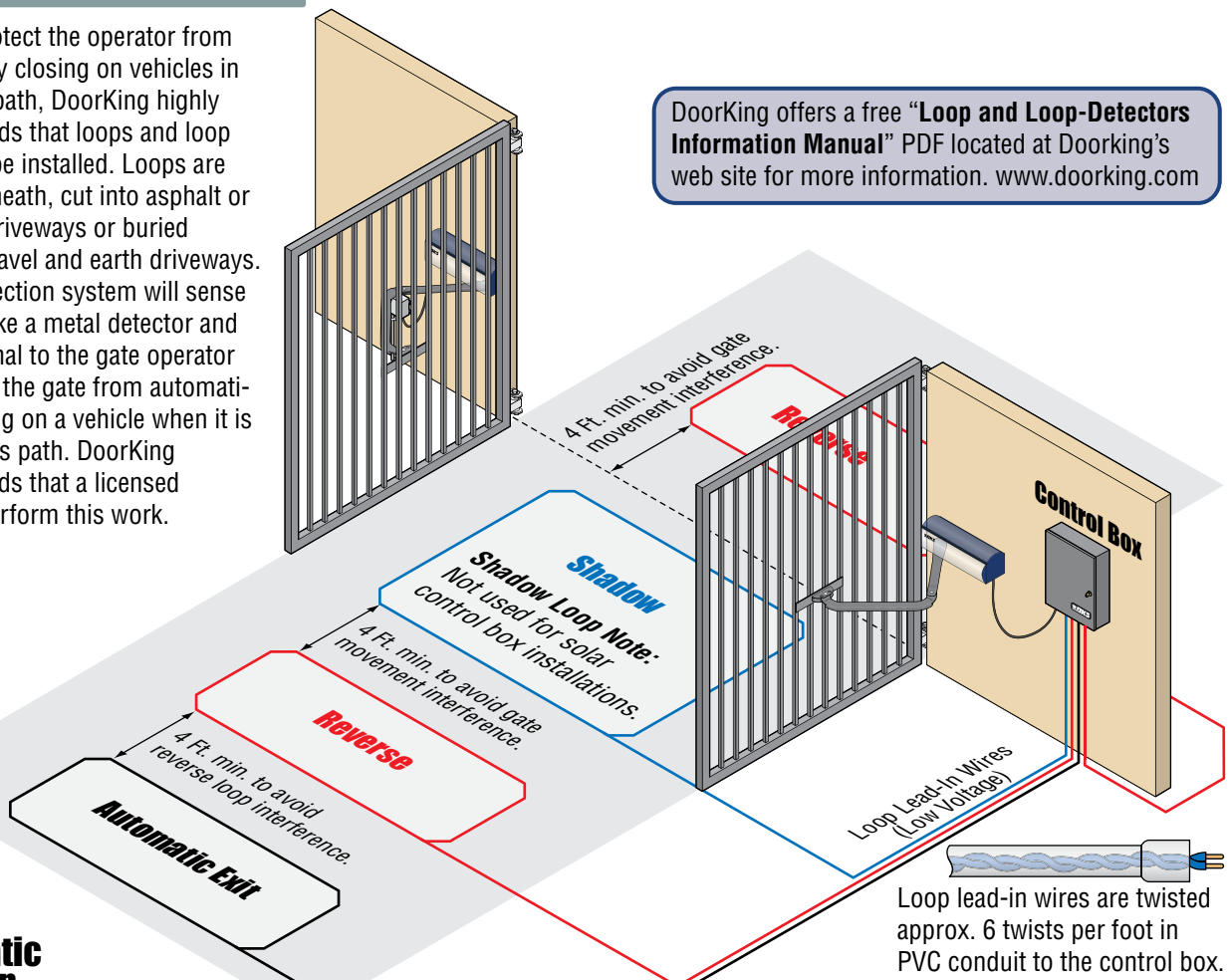
- **Warning signs are to be permanently installed in the area of the gate in such a manner that at least one warning sign is visible by persons located on each side of the gate, for both the secure and unsecure sides of the gate.**
- Use appropriate hardware such as wood or sheet metal screws (not supplied) to install the warning signs.



## In-Ground Loops

To help protect the operator from accidentally closing on vehicles in the gate's path, DoorKing highly recommends that loops and loop detectors be installed. Loops are laid underneath, cut into asphalt or concrete driveways or buried beneath gravel and earth driveways. A loop detection system will sense a vehicle like a metal detector and send a signal to the gate operator preventing the gate from automatically closing on a vehicle when it is in the gate's path. DoorKing recommends that a licensed installer perform this work.

DoorKing offers a free "Loop and Loop-Detectors Information Manual" PDF located at DoorKing's web site for more information. [www.doorking.com](http://www.doorking.com)



### Automatic Exit Loop

Automatically opens the gate for exiting vehicles without having to use a transmitter or keypad. The exit loop can be placed a minimum of 4 feet away from the reverse loop or far enough away from the gate so the gate has started or completely opened by the time you drive up to it (Free exit).

### Reverse Loops

Reverse loops are placed just outside the gate's swinging path to prevent the gate from closing on a vehicle in these areas. They will reverse the cycling of the gate while a vehicle is in or near the gate's swing pathway.

### Shadow Loop

The shadow loop is placed inside the gate's swinging path to prevent the gate from closing on a vehicle in this area. **It is only active when the gate is in the full open position.** Vehicles in the shadow area will activate it. It will not allow the gate to close unless this area is clear. After a closing cycle begins, the shadow loop **will not** reverse the gate. Reverse loops work in conjunction with the shadow loop and both should be used.

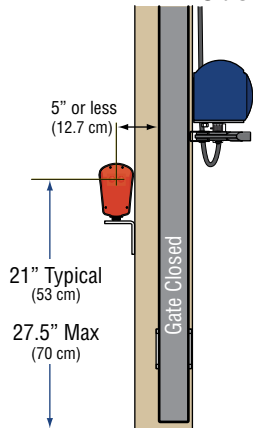
# Entrapment Protection Locations

## External Entrapment Protection Devices:

In addition to the inherent reversing sensor system, this operator has a UL 325 terminal for the connection of **photo sensors**-Type B1 and/or **reversing edges**-Type B2 entrapment protection required by UL 325 standards. Install these devices where the risk of entrapment or a safety hazard exists. Installations can vary. See the 115 VAC control box Wiring/Owner's manual **OR** Solar control box Wiring/Owner's manual to wire entrapment protection devices.

**Entrapment Protection must be provided for the gate system where the risk of entrapment or obstruction exists. The operator will NOT run without ONE or more monitored type B1 or B2 external entrapment protection devices installed in each entrapment area.**

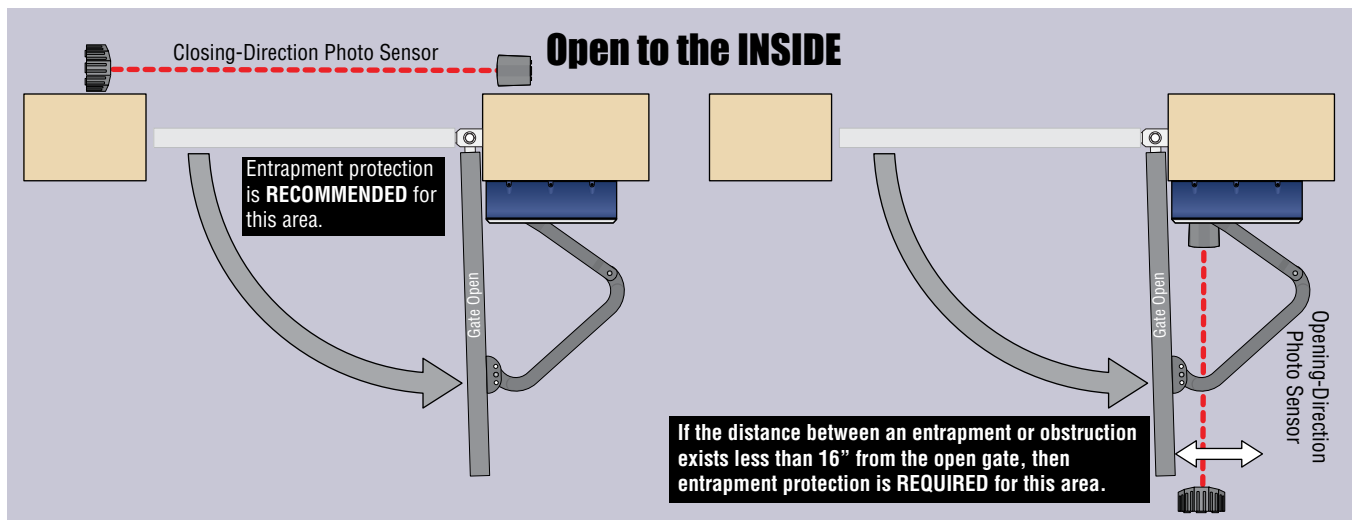
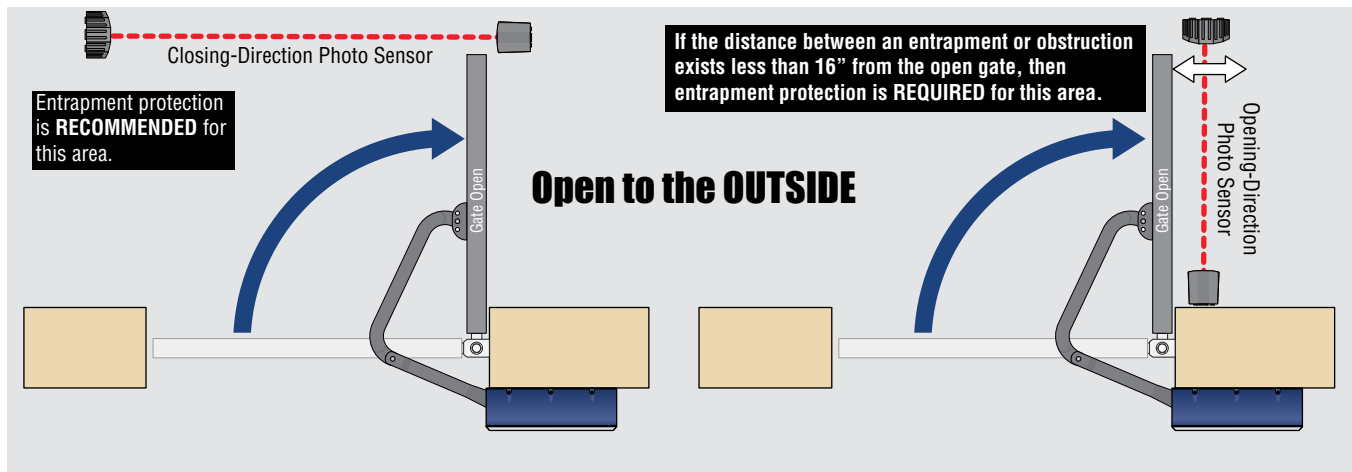
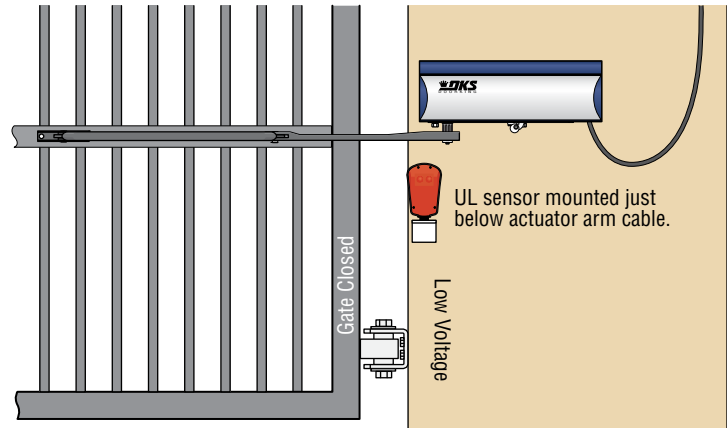
### CLOSE Photo Sensor Side End View



**IMPORTANT:** Monitored Photo and Edge sensors must be end-of-line resistive types. See specific manufacturer's wiring manual for more information.

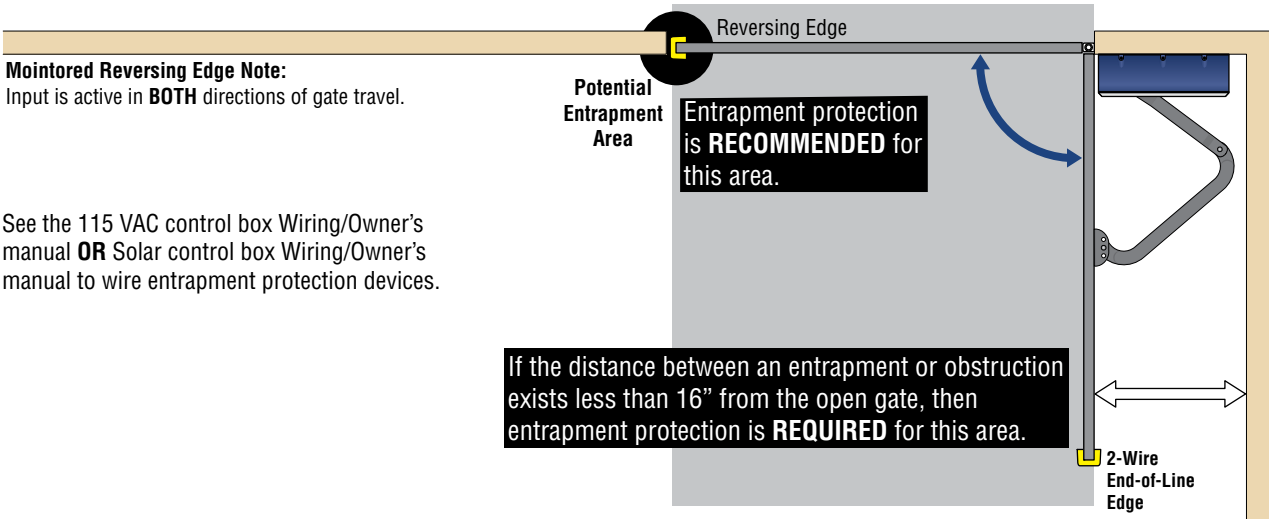
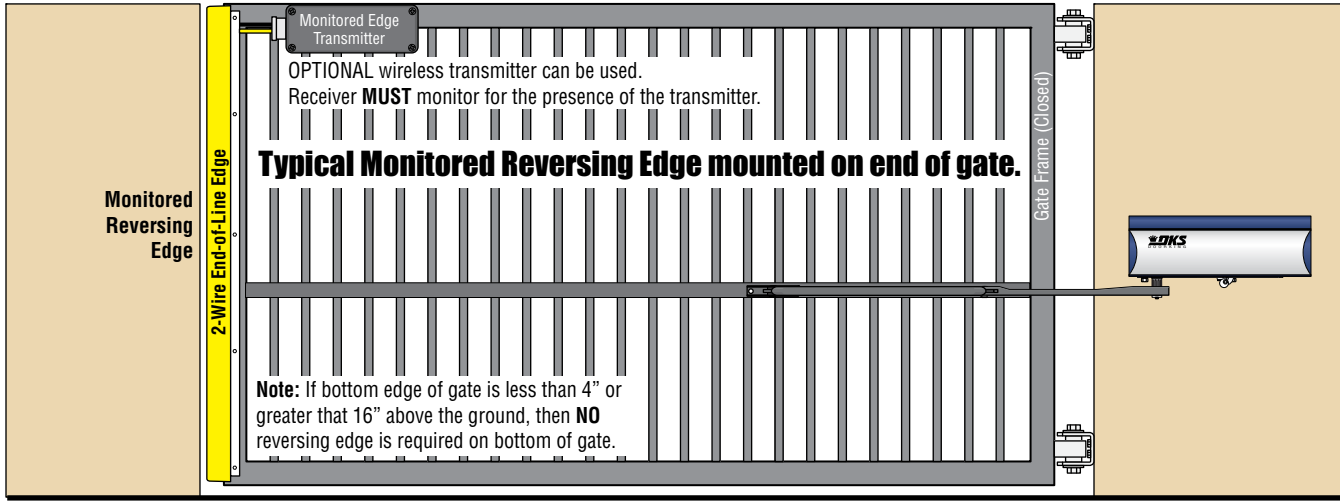
Type of wiring to be used on ALL external devices:  
**A) Type CL2, CL2P, CL2R, or CL2X.**  
**B) Other cable with equivalent or better electrical, mechanical, and flammability ratings.**

### OPEN Photo Sensor Side View

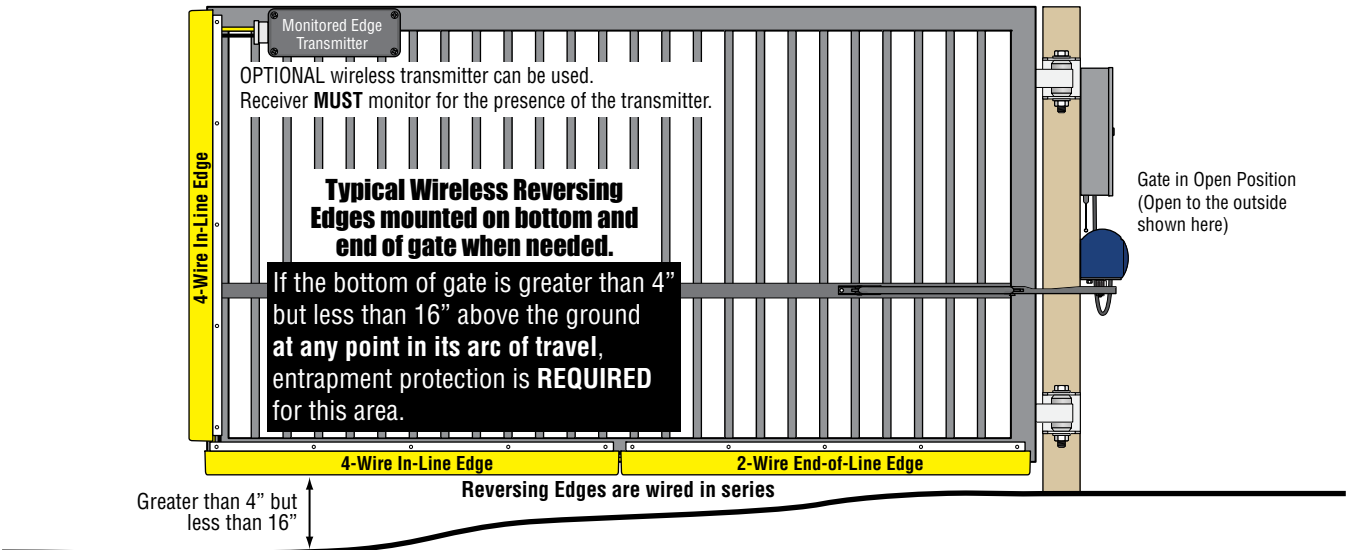


# Entrapment Protection Locations Continued

A monitored reversing edge (Type B2) or a monitored photo sensor (Type B1, see previous page) **MUST** be installed in **EACH** entrapment area or operator **WILL NOT** function.



See the 115 VAC control box Wiring/Owner's manual **OR** Solar control box Wiring/Owner's manual to wire entrapment protection devices.



# Accessory Items

**UL 325 Monitored Entrapment Protection Devices available for the model 6004 swing gate operator.**

## **Type B2 Contact Sensors (Reversing Edge)**

- DoorKing 8080 Series Sensing Edges
- Miller Edge Sensing Edges - all models with a T2 (resistive) termination.
- Miller Edge wireless monitored transmitter/receiver kit model RB-G-K10
- ASO GMBH Sentir GF Series sensing edges

## **Type B1 Non-contact Sensors (Photo Cell)**

- DoorKing Model 8080-057 Retro-Reflective Photocell
- Miller Edge Reflective-Guard Model RG
- Miller Edge Prime-Guard Model PG
- EMX Industries Model IRB-MON
- EMX Industries Model IRB-RET
- Omron Model E3K-R10K4
- Seco-Larm Model E-936-S45RRGQ
- Seco-Larm Model E-960-D90GQ

## **Monitored Expansion Kit**

- Miller Edge Multi-Input Module Model MIM-62

**Accessory items available for the model 6004 swing gate operator.**

**Control Box Types** - Fully controls actuator arm(s) with built-in battery back-up system.

- P/N 4302-111 - 115 VAC Standard Control Box, 115 VAC 60 Hz Input to box, 24 VDC output to gate operator.
- P/N 4302-112 - 115 VAC Deluxe Control Box, 115 VAC 60 Hz Input to box, 24 VDC output to gate operator. 3-115 VAC convenience outlets.
- P/N 4302-114 - 18 ah Solar Control Box, 24 VDC 20 Watt Input to box, 24 VDC output to gate operator. 2 - 12 Volt 18 Amp Hr batteries.  
P/N 2000-075 - One (1) 24 volt 10 watt solar panel required for 18 ah solar control box.
- P/N 4302-115 - 35 ah Solar Control Box, 24 VDC 20 Watt Input to box, 24 VDC output to gate operator. 2 - 12 Volt 35 Amp Hr batteries.  
P/N 2000-075 - Two (2) 24 volt 10 watt solar panels required for 35 ah solar control box.

**Plug-In Loop Detector** - Detectors plug directly into ports on circuit board simplifying wiring. (Not for use with the solar control boxes)

- Single channel detector - P/N 9410-010
- Dual channel detector - P/N 9409-010
- Single channel detector with aux relay - P/N 9411-010
- Single channel low power draw detector - P/N 9416-010
- Dual channel low power draw detector - P/N 9415-010

## **External Loop Detector**

- Reno A&E 12/24 VDC or 24 VAC - 9402-045
- Reno A&E 120 VAC - 9402-047
- Carlo Gavazzi 24 VAC/VDC - 9402-044
- Diablo 10-30 VAC/VDC low power draw - 9402-050

**Loop Hardware** - DoorKing offers a complete line of loop components to complete your gate operator system.

See DoorKing's web site - [www.doorking.com](http://www.doorking.com)

See the free manual "Loop and Loop-Detectors Information" PDF located at DoorKing's web site - [www.doorking.com](http://www.doorking.com)

**Magnetic Lock** - Magnetic Gate Lock Kit provides an excellent means to secure swing gates and is a fail-safe device allowing emergency vehicle access upon power outage.

- P/N 1216-080 and P/N 1216-081

**Interconnection Cable** - Interconnect wire cable contains all the necessary wires to interconnect primary / secondary operators.

Cable length 30 feet. P/N 2600-755    Cable length 40 feet. P/N 2600-756    Cable length 50 feet. P/N 2600-757

**Time Clock** - 7 day time clock can be used to automatically open gate at pre-set time and days. Compact clock fits inside the control box.

- P/N 2600-791 - 7 day clock

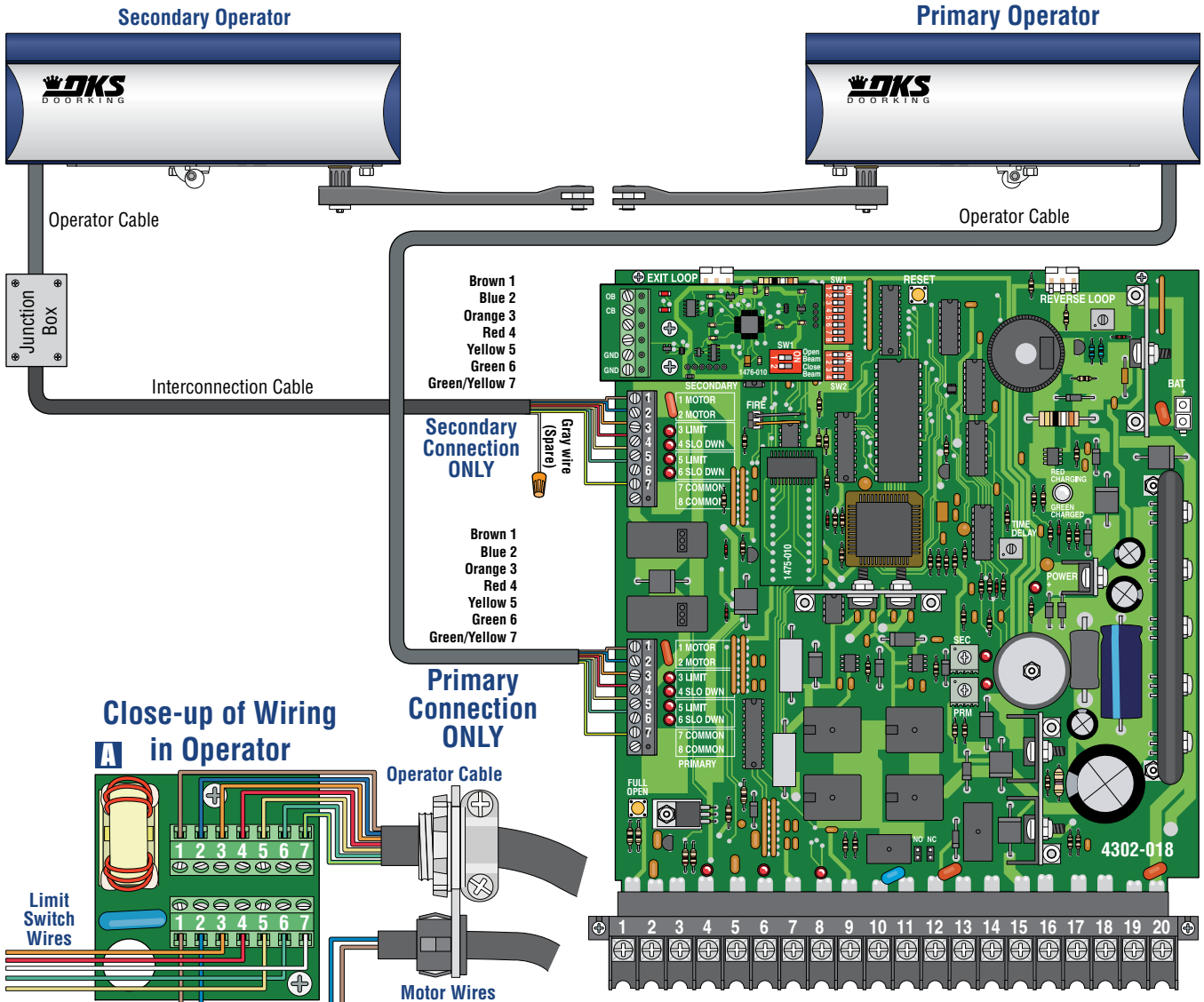
**Hinges** - Heavy-duty ball bearing hinges provide easy swing gate operation.

- P/N 1200-009 (Flange) , P/N 1200-019 (Standard), P/N 1200-039 (Heavy-Duty). Two (2) required.

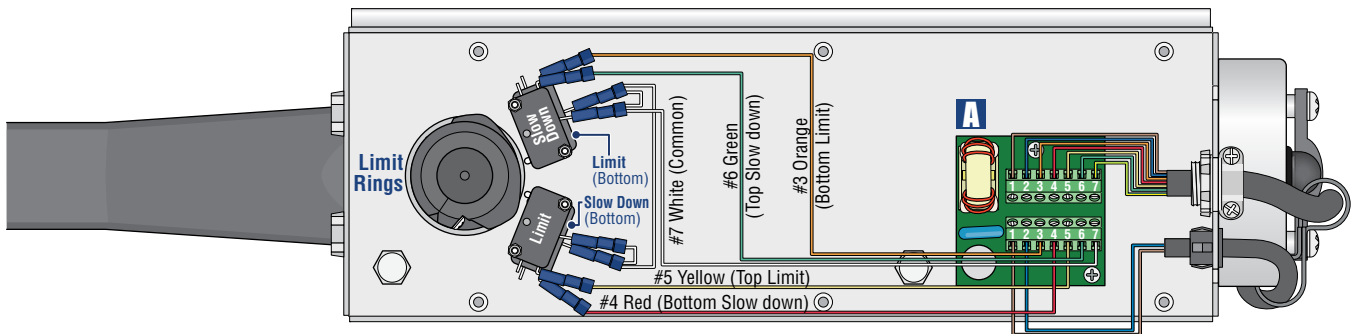
**Speed Bumps** - Prefabricated six-foot speed bump reduces traffic speed through gate system. P/N 1610-150

**Coaxial Cable Antenna Kit** - External antenna with mounting bracket and 15 ft of coaxial cable. P/N 1514-073

# 6004 Primary/Secondary 4302 Circuit Board Connection



- | Limit & Motor Wires  | Operator Cable |
|----------------------|----------------|
| (Motor) Brown #1     | 1 Brown        |
| (Motor) Blue #2      | 2 Blue         |
| (Limit) Orange #3    | 3 Orange       |
| (Slow Down) Red #4   | 4 Red          |
| (Limit) Yellow #5    | 5 Yellow       |
| (Slow Down) Green #6 | 6 Green        |
| (Common) White #7    | 7 Green/Yellow |



**Motor Wires: #1 Brown and #2 Blue**





Entrapment Protection must be provided for the gate system where the risk of entrapment or obstruction exists. The operator will NOT run without one or more monitored type B1 or B2 entrapment protection devices in EACH entrapment area.

**UL 325 August 2018 Standard**



THIS PRODUCT IS TO BE INSTALLED AND SERVICED BY A TRAINED GATE/DOOR SYSTEMS TECHNICIAN ONLY.  
Visit [www.doorking.com/dealer-locator](http://www.doorking.com/dealer-locator) to find a professional installing and servicing dealer in your area.

[www.doorking.com](http://www.doorking.com)

DoorKing, Inc.  
120 S. Glasgow Avenue  
Inglewood, California 90301  
U.S.A.

Phone: 310-645-0023  
Fax: 310-641-1586