UL 325 August 2018 Standard

Bi-Parting Gate Operators CANNOT be used.

This vehicular gate operator is designed for Class III and Class IV applications ONLY and must NEVER be used in applications serving the general public.

This product is to be installed and serviced by a trained gate/door systems technician only. Visit www.doorking.com/dealer-locator to find a professional installing and servicing dealer in your area.

Date Installed: ________________________________

Installer/Company Name: ________________________________

_________________________________________ Circuit Board
Serial Number ________________________________ and Revision Letter: ________________________________

Phone Number: ________________________________

Leave Manual with Owner

UL 325 Compliant
The two DIP-switches located on the circuit board are used to program the operator to operate in various modes and to turn on or off various operating features. Whenever a switch setting is changed, power to the operator must be turned OFF and then turned back on for the new setting to take affect. Check and review ALL switch settings prior to applying power to the operator.

**Quick Guide: DIP-Switches**

See page 18 for more information about DIP-switches.

<table>
<thead>
<tr>
<th>Switch</th>
<th>Function</th>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Changes the direction the operator will open/close the gate.</td>
<td><strong>ON</strong></td>
<td>Opens Clockwise using <strong>ON</strong> setting. <strong>OFF</strong></td>
</tr>
<tr>
<td>2</td>
<td>Auto-Close Timer</td>
<td><strong>OFF</strong></td>
<td>Auto-close timer is OFF. Manual input required to close gate.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>ON</strong></td>
<td>Auto-close timer is ON. Adjustable from 1-23 seconds to close gate.</td>
</tr>
<tr>
<td>3</td>
<td>Exit Loop Port Output</td>
<td><strong>OFF</strong></td>
<td>The output wired to terminal #4 becomes the output from the loop detector installed in the EXIT loop port. Plug-in loop detector required for &quot;OFF&quot; function.</td>
</tr>
<tr>
<td></td>
<td>Full Open Input</td>
<td><strong>ON</strong></td>
<td><strong>Normal Setting.</strong> Terminal #4 is a normal full open input for a single gate operator.</td>
</tr>
<tr>
<td>4 and 5</td>
<td>Relay Activation and LED Indicator Light Activation</td>
<td><strong>4-OFF 5-OFF</strong></td>
<td>Relay activates and LED is ON when the gate is fully open.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>4-OFF 5-ON</strong></td>
<td>Relay activates and LED is ON when the gate is not closed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>4-ON 5-OFF</strong></td>
<td>Relay activates and LED is ON when the gate is opening and open.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>4-ON 5-ON</strong></td>
<td>Relay activates and LED is ON when the gate is opening and closing.</td>
</tr>
<tr>
<td>6</td>
<td>Warn Before Operate</td>
<td><strong>OFF</strong></td>
<td>Internal alarm will NOT sound.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>ON</strong></td>
<td>Internal alarm will sound before gate starts and throughout gate’s cycle.</td>
</tr>
<tr>
<td>7</td>
<td>Reverses Gate</td>
<td><strong>OFF</strong></td>
<td><strong>Normal Setting.</strong> Input to terminal #6 and/or reverse loops will REVERSE gate during CLOSE cycle. Shadow loop setting when used, see pages 18 &amp; 26.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>ON</strong></td>
<td>DO NOT use <strong>ON</strong> setting.</td>
</tr>
<tr>
<td>8</td>
<td>Quick-Close Timer Override</td>
<td><strong>OFF</strong></td>
<td><strong>Normal Setting.</strong> Timer will function normally.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>ON</strong></td>
<td>Opening gate will stop and begin to close as soon as all reversing inputs (Reverse loops, photo sensors) are cleared regardless of the distance the gate has opened.</td>
</tr>
</tbody>
</table>

**SW 2**

<table>
<thead>
<tr>
<th>Switch</th>
<th>Function</th>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Self-Test</td>
<td><strong>OFF</strong></td>
<td><strong>Normal Setting.</strong> Normal gate operation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>ON</strong></td>
<td>Self-test mode. Operator <strong>MUST</strong> be disconnected from gate to run self-test.</td>
</tr>
<tr>
<td>2</td>
<td>Not Used</td>
<td><strong>OFF</strong></td>
<td>Leave in the <strong>OFF</strong> position.</td>
</tr>
<tr>
<td>3</td>
<td>Not Used</td>
<td><strong>OFF</strong></td>
<td>Leave in the <strong>OFF</strong> position.</td>
</tr>
<tr>
<td>4</td>
<td>Spare</td>
<td><strong>OFF</strong></td>
<td>Leave in the <strong>OFF</strong> position.</td>
</tr>
</tbody>
</table>
**QUICK GUIDE: Terminal Descriptions**

- SW 1, switch 3 is **ON**, terminal #4 functions as a normal **FULL open** input. **Single operator use ONLY.**
- SW 1, switch 3 is **OFF**, input to terminal #4 becomes the output from a plug-in loop detector installed in the **EXIT loop port** of the circuit board.

This input **ONLY functions when gate is fully opened** or in the **closing cycle**.

When gate is closing: An input to terminal #6 will stop and **reverse** and the gate to the full open position.

**Note:** If the auto-close timer is **ON**, when gate reaches the open position, timer will time out and close the gate.

Shadow loop connection if desired, see page 26.

**DO NOT use ON setting. Switch 7 must be OFF.**

**3-Button Control Station Jumper**

- Jumper Pins 1 & 2 **ONLY** when using a 4-wire control station to **enable STOP** terminal #9.

**IMPORTANT:** Leave 3-button control station jumper pins on 2 & 3 when **NOT wiring** a 3-button control station to control board otherwise operator will **NOT function.**

- **Operation of relay is dependent on setting of SW 1, switches 4 and 5.** See page 17 and 18 for DIP-switch function descriptions.

Relay contacts can be set for **Normally Open (NO)** or **Normally Closed (NC)** operation. Contact rating is 1 amp maximum at 24-volts DC.

**Main Terminal Input LEDs Note:** The LED that is to the left of the main terminal wiring input will light when that terminal input gets activated.

**Main Terminal #3 Note:**

Exceeding 250 mA of power from this terminal may cause the circuit board transformer to overheat, causing intermittent problems.

See pages 23-26 for terminal wiring.
SPECIFICATIONS

Use this manual for the Model 6555 operators with circuit board 4404-018 Rev A or higher ONLY.

Class of Operation: Model 655 - UL325 Class III, IV
Type of Gate: Vehicular Swing Gates Only
Inherent Entrapment Protection Device: Inherent Reverse Sensor System (Type A)
External Entrapment Protection Device Inputs: Connection inputs for Non-contact Sensor - Photo Sensor (Type B1)

Connection input for Contact Sensor - Reversing Edge (Type B2)

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.

<table>
<thead>
<tr>
<th>Model #</th>
<th>Volt / Phase</th>
<th>Amps</th>
<th>Motor Power</th>
<th>Max Gate Weight</th>
<th>Max Gate Length</th>
<th>Cycles Per Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>6555-381</td>
<td>230 / 1</td>
<td>11.5</td>
<td>2 HP</td>
<td>2000 lbs</td>
<td>25 ft</td>
<td>60</td>
</tr>
</tbody>
</table>

This vehicular gate operator is designed for Class III and Class IV applications ONLY and must never be used in applications serving the general public.

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.

Bi-Parting Gate Operators CANNOT be used.

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Swing Gate Requirements

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.

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.

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

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

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

**Warning Signs**
Permanently mounted and easily visible from either side of the gate.

**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.

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

**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. See page 13 for more information.

**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. See page 13 for more information.

**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. See previous page and page 14.

**Separate Pedestrian Walkway**
Located so pedestrians cannot come in contact with the vehicular 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 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 injury or death.
5. Use the emergency 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 entrance is for vehicles only. Pedestrians must use separate entrance.
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 open 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.

- A minimum of two (2) WARNING SIGNS shall be installed, one on each side of the gate where easily visible.

- 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.
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 (see section 7). 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.

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.

Be sure that warning signs are permanently installed on both sides of the gate in an area where they are fully visible to traffic.

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 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.

**Gate Operator Category**

<table>
<thead>
<tr>
<th>Horizontal Slide, Vertical Lift, Vertical Pivot</th>
<th>Swing, Vertical Barrier (Arm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A, B1*, B2* or D</td>
<td>A, B1*, B2*, C or D</td>
</tr>
</tbody>
</table>

**Entrapment Protection Types**

- **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.
SECTION 1 - INSTALLATION

Prior to beginning the installation of the swing gate operator, we suggest that you become familiar with the instructions, illustrations, and wiring guide-lines 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 swing 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.

1.1 Underground Conduit Requirements

- The conduit requirements are for a typical swing gate operator installation. The conduit requirements for your application may vary from this depending on your specific needs.
- Use only sweeps for conduit bends. Do not use 90° elbows as this will make wire pulls very difficult and can cause damage to wire insulation. DoorKing recommends using 3/4-inch conduit.
- External Entrapment Protection is REQUIRED (photo sensor and/or reversing edge).
- Be sure that all conduits are installed in accordance with local codes.
- Never run low voltage rated wire insulation in the same conduit as high voltage rated wire insulation.

1.2 Concrete Pad

Conduit Location

- Underground depth of the concrete pad is determined by soil conditions and local building codes. Reinforced concrete recommended.
- Concrete pad MUST be level. Note: Bevel the edges of concrete pad to eliminate water puddling under the operator.

Concrete pad Width: 32" Concrete Pad Length Min.: 19" 3/4" to Center of Conduit Area 6 1/2" x 6 1/2" 12" to Center of Conduit Area 15" to Center of Conduit Area 38" 4" minimum above ground 24" Approximate Conduit Position

Bi-Parting Gate Operators CANNOT be used.
1.4 Installation Layout

**Arm Calculations**

**Drive Arm**

\[
67.88" / 2 = 33.94 \text{ (round number up)} = 34 \text{ inches}
\]

**Connecting Arm**

\[
86.26" - 33.94 = 52.32 \text{ (round number down)} = 52.25 \text{ inches}
\]

Note: Arm length is measured from center hole to center hole. “Actual” arm length will be longer.

---

**Concrete Pad**

**Connecting Arm**

\[
52.25" - 33.94 = 52.32 \text{ (round number down)} = 52.25 \text{ inches}
\]

**Drive Arm**

\[
34" - 33.94 = 0.06 \text{ inches}
\]

Note: Arm length is measured from center hole to center hole. “Actual” arm length will be longer.
1.5 Securing Operator to Pad

Permanently attach the operator to the concrete pad using six (6) 3/8” x 3” sleeve anchors (not supplied).

Remove breather pin from gear reducer AFTER the operator has been secured in place.
1.6 Attach Gate Bracket

A. Release hub with release tool. **DO NOT REMOVE HUB!**
B. Bolt crank arm to operator.
C. Slide elbow assembly on crank arm.
D. Bolt control arm to gate bracket.
E. Slide control arm into elbow assembly. **KEEP ARM ASSEMBLY LEVEL.**
F. Bolt gate bracket to gate.

Arm assembly and gate bracket **MUST** be level for gate to function correctly.
1.7 Determining Arm Lengths
Slide elbow assembly back and forth, manually opening and closing gate until satisfied with the gate’s 90° open and fully closed positions.

Mark and cut off excess arms. Secure arms to elbow assembly with 6 allen screws. Tighten hub and replace release tool. Install safety covers.

1.8 Installation of 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 3 for suggested mounting positions of signs.

- Permanently install the supplied warning signs in locations so that the signs are visible by persons on both sides of the gate.
- Use appropriate hardware such as wood or sheet metal screws (not supplied) to install the warning signs.
1.9 Entrapment Protection Installation

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. 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. Install these devices where the risk of entrapment or a safety hazard exists, examples of which are shown below and next page. Installations can vary.

Typical UL Photo Sensor mounting height and distance away from gate. Opening-Direction Photo Sensors

Monitored OPEN Photo Sensor

If the distance between an entrapment or obstruction exists less than 16” from the open gate, then entrapment protection is REQUIRED for this area.

Monitored CLOSE Photo Sensor

Entrapment protection is RECOMMENDED for this area.

See page 24 for UL 325 terminal wiring for a monitored photo sensor.
1.9 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.

**Monitored Sensor Note:**
Input is active in **BOTH** directions of travel.

potential entrapment area

**Entrapment protection is **RECOMMENDED** for this area.**

If the distance between an entrapment or obstruction exists less than 16” from the open gate, then **entrapment protection is **REQUIRED** for this area.**

See page 25 for UL 325 terminal wiring for a monitored reversing edge.

**Typical Monitored Reversing Edge mounted on end of gate.**

**Note:** If bottom edge of gate is less than 4” or greater than 16” above the ground, then **NO** reversing edge is required on bottom of gate.

If the bottom of gate is greater than 4” but less than 16” above the ground at any point in its arc of travel, entrapment protection is **REQUIRED** for this area.

**Typical Wireless Reversing Edges mounted on bottom and end of gate when needed.**

**OPTIONAL** wireless transmitter can be used. Receiver **MUST** monitor for the presence of the transmitter.

**Note:** If bottom edge of gate is less than 4” or greater than 16” above the ground, then **NO** reversing edge is required on bottom of gate.
SECTION 2 - AC POWER TO OPERATOR

Before attempting to connect any wiring to the operator, be sure that the circuit breaker in the electrical panel is in the OFF position. Permanent wiring must be installed to the operator as required by local electrical codes. It is recommended that a licensed electrical contractor perform this work.

Since building codes vary from city to city, we highly recommend that you check with your local building department prior to installing any permanent wiring to be sure that all wiring to the operator (both high and low voltage) complies with local code requirements.

THIS GATE OPERATOR MUST BE PROPERLY GROUNDED!!

2.1 High Voltage Wire Runs

The distance shown in the chart is measured in Feet from the operator to the power source. If power wiring is greater than the maximum distance shown, it is recommended that a service feeder be installed. When large gauge wire is used, a separate junction box must be installed for the operator connection. The wire table is based on stranded copper wire. The wire run calculations are based on a power source with a 3% voltage drop on the power line, plus an additional 10% reduction in distance to allow for other losses in the system.

This table illustrates the high voltage wire size and distance limitations for the operator.

<table>
<thead>
<tr>
<th>Model Type</th>
<th>Voltage/Phase Required</th>
<th>Amps Required</th>
<th>Wire Size / Max Distance in Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>6555-381</td>
<td>230 / 1</td>
<td>11.5</td>
<td>12 AWG 180</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10 AWG 290</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>8 AWG 490</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6 AWG 735</td>
</tr>
</tbody>
</table>

“Optional” 3.3 Amp Heater Installation Note: When installing the heater(s), refer to the “high voltage AC power wire size and distance requirements” table on the instruction sheet with the heater kit (208/230VAC P/N 1601-197) (460VAC P/N 1601-198) for AC power wire run requirements.

2.2 High Voltage Terminal Connection

- Route incoming high voltage power through conduit and into the operator as shown.
- Be sure wiring is installed in accordance with local codes. Be sure to color code all wiring.
- It is recommended that a surge suppressor be installed on the high voltage power lines to help protect the operator and circuit board from surges and power fluctuations.

DO NOT cycle the operator without the OPEN and CLOSE limit sensors in their specific open and close positions. The limit sensors or the AC power switch are the only ways to STOP the operator once an open cycle has started. This could cause damage to the gate and/or operator if the gate opens too far!

EXTERNAL ENTRAPMENT PROTECTION MUST be connected or the gate operator WILL NOT function.
SECTION 3 - ADJUSTMENTS

The switch settings and adjustments in this chapter should be made after your installation and wiring to the operator(s) is complete. Whenever any of the programming switches on the circuit board are changed, power must be shut-off, and then turned back on for the new setting to take effect.

3.1 Circuit Board Description and Adjustments

LEDs Indicate that low voltage power is applied to the circuit board. Input LEDs should be OFF and will only illuminate when the input is activated (see page 22). Limit LEDs will be on when the respective limit switch is activated.

- **DIP-Switches**: Set the DIP-switches on the circuit board to the desired setting. See switch descriptions on next 2 pages.

- **Fire Dept Open**: Connect ONLY emergency access controls accessible by authorized personnel (e.g., fire, police, EMS). Upon activation, alarm will sound and the operator will go into a hard shutdown after reaching the open limit. Operator must be reset to resume normal operation. See pages 23, 28-29.

- **Auto-Close Timer**: Auto-close timer (when turned on) SW 1, switch 2.

  Adjust from 1 second (full counter-clockwise) to approximately 23 seconds (full clockwise).

- **3-Button Control Station Jumper page 23**

- **Dry Relay Contact**: Dry relay contacts (terminals 11-12) can be set for Normally Open (NO) or Normally Closed (NC) operation by placing the relay shorting bar on the N.O. or N.C. pins respectively. SW 1, switches 4 and 5 must be set to control relay. See next 2 pages for descriptions.

- **Inherent Reverse Sensors**: Adjust reversing sensitivity for open and close directions. Full counter clockwise for minimum sensitivity, full clockwise for maximum sensitivity. See page 20.

- **AC Module Adjustment**: See page 21.

- **Self-Test**: Self-test (when turned on) SW 2, switch 1.

  **CAUTION**: Do not run self-test with the operator connected to the gate. The drive chain MUST be disconnected before running the self-test. This feature is designed for bench testing ONLY.
## 3.2 DIP-Switch Settings for 4404 Circuit Board

The two DIP-switches located on the circuit board are used to program the operator to operate in various modes and to turn on or off various operating features. Whenever a switch setting is changed, power to the operator must be turned OFF and then turned back on for the new setting to take effect. Check and review ALL switch settings prior to applying power to the operator.

### SW 1

<table>
<thead>
<tr>
<th>Switch</th>
<th>Function</th>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Changes the direction the operator will open/close the gate.</td>
<td>OFF</td>
<td>Opens Clockwise using ON setting.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ON</td>
<td>Opens Counter-Clockwise using OFF setting.</td>
</tr>
<tr>
<td>2</td>
<td>Auto-Close Timer</td>
<td>OFF</td>
<td>Auto-close timer is OFF. Manual input required to close gate.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ON</td>
<td>Auto-close timer is ON. Adjustable from 1-23 seconds to close gate.</td>
</tr>
<tr>
<td>3</td>
<td>Exit Loop Port Output</td>
<td>OFF</td>
<td>The output wired to terminal #4 becomes the output from the loop detector</td>
</tr>
<tr>
<td></td>
<td>Full Open Input</td>
<td>ON</td>
<td>Normal Setting. Terminal #4 is a normal full open input for a single gate</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>operator.</td>
</tr>
<tr>
<td>4 and 5</td>
<td>Relay Activation and LED Indicator Light Activation</td>
<td>4-OFF 5-OFF</td>
<td>Relay activates and LED is ON when the gate is fully open.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4-OFF 5-ON</td>
<td>Relay activates and LED is ON when the gate is not closed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4-ON 5-OFF</td>
<td>Relay activates and LED is ON when the gate is opening and open.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4-ON 5-ON</td>
<td>Relay activates and LED is ON when the gate is opening and closing.</td>
</tr>
<tr>
<td>6</td>
<td>Warn Before Operate</td>
<td>OFF</td>
<td>Internal alarm will NOT sound.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ON</td>
<td>Internal alarm will sound before gate starts and throughout gate's cycle.</td>
</tr>
<tr>
<td>7</td>
<td>Reverses Gate</td>
<td>OFF</td>
<td>Normal Setting. Input to terminal #6 and/or reverse loops will REVERSE gate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ON</td>
<td>during CLOSE cycle. Shadow loop setting when used, see pages 18 &amp; 26.</td>
</tr>
<tr>
<td>8</td>
<td>Quick-Close Timer Override</td>
<td>OFF</td>
<td>Normal Setting. Timer will function normally.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ON</td>
<td>Opening gate will stop and begin to close as soon as all reversing inputs (Reverse loops, photo sensors) are cleared regardless of the distance the gate has opened.</td>
</tr>
</tbody>
</table>

See next page for ALL 12 switch definitions and typical settings.

### SW 2

<table>
<thead>
<tr>
<th>Switch</th>
<th>Function</th>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Self-Test</td>
<td>OFF</td>
<td>Normal Setting. Normal gate operation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ON</td>
<td>Self-test mode. Operator MUST be disconnected from gate to run self-test.</td>
</tr>
<tr>
<td>2</td>
<td>Not Used</td>
<td>OFF</td>
<td>Leave in the OFF position.</td>
</tr>
<tr>
<td>3</td>
<td>Not Used</td>
<td>OFF</td>
<td>Leave in the OFF position.</td>
</tr>
<tr>
<td>4</td>
<td>Spare</td>
<td>OFF</td>
<td>Leave in the OFF position.</td>
</tr>
</tbody>
</table>
3.2 Continued

The two DIP-switches located on the circuit board are used to program the operator to operate in various modes and to turn on or off various operating features. Whenever a switch setting is changed, power to the operator must be turned OFF and then turned back on for the new setting to take affect. Check and review ALL switch settings prior to applying power to the operator.

Switch Definitions

**Switch 1**

Motor direction switch - **Must** OPEN the gate upon initial AC power up and open command. If the open command begins to close the gate, turn AC power off and reverse this switch.

**Switch 2**

Turns the auto-close timer on or off. Can be adjusted from 1 to 23 seconds to close gate.

**Switch 3**

A device wired to terminal #4 (Switch 3 **ON**) is a normal full open input. The output wired to terminal #4 (Switch 3 **OFF**) becomes the output of a plug-in loop detector that is installed in the EXIT loop port of the circuit board (Which must be installed for the "OFF" setting to function).

**Switches 4-5**

These work in conjunction with each other and determine when the relay on the board will be activated. This relay can be used as a switch for various functions such as illuminating a warning light when the gate is moving, or turning on a green light when the gate is full open. If a magnetic lock is used with the gate operator, these switches must be set for magnetic lock operation which limits the relay to activate only when the gate is opening and full open.

**Switch 6**

Warn Before Operate, When set to the **ON** position, the internal alarm in the operator will start sounding 2-3 seconds prior to the gate starting and continue throughout the gate’s cycle.

**Switch 7**

(Switch 7 **MUST** be **OFF**) Input to terminal #6 will reverse gate. The closing gate that gets activated will reverse back to the open position.

**DO NOT** use **ON** setting.

a SHADOW loop connected to terminal #6 input will only be active when the gate is in the fully opened position, see page 26.

**Switch 8**

Turning the quick-close feature on will cause the auto close timer to close the gate after 1 second, regardless of the setting of the auto close timer potentiometer. This will also cause an **opening gate** to stop and reverse when the reverse loops and/or N.O. photo sensors are cleared. This feature, along with turning switch 7 **ON** above, is useful to help prevent tailgating vehicles from unauthorized entry.

**Switch Definitions**

**SW 1**

Typical Settings

**Switch 1**

Motor direction switch - **Must** OPEN the gate upon initial AC power up and open command. If the open command begins to close the gate, turn AC power off and reverse this switch.

**Switch 2**

Turns the auto-close timer on or off. Can be adjusted from 1 to 23 seconds to close gate.

**Switch 3**

A device wired to terminal #4 (Switch 3 **ON**) is a normal full open input. The output wired to terminal #4 (Switch 3 **OFF**) becomes the output of a plug-in loop detector that is installed in the EXIT loop port of the circuit board (Which must be installed for the "OFF" setting to function).

**Switches 4-5**

These work in conjunction with each other and determine when the relay on the board will be activated. This relay can be used as a switch for various functions such as illuminating a warning light when the gate is moving, or turning on a green light when the gate is full open. If a magnetic lock is used with the gate operator, these switches must be set for magnetic lock operation which limits the relay to activate only when the gate is opening and full open.

**Switch 6**

Warn Before Operate, When set to the **ON** position, the internal alarm in the operator will start sounding 2-3 seconds prior to the gate starting and continue throughout the gate’s cycle.

**Switch 7**

(Switch 7 **MUST** be **OFF**) Input to terminal #6 will reverse gate. The closing gate that gets activated will reverse back to the open position.

**DO NOT** use **ON** setting.

a SHADOW loop connected to terminal #6 input will only be active when the gate is in the fully opened position, see page 26.

**Switch 8**

Turning the quick-close feature on will cause the auto close timer to close the gate after 1 second, regardless of the setting of the auto close timer potentiometer. This will also cause an **opening gate** to stop and reverse when the reverse loops and/or N.O. photo sensors are cleared. This feature, along with turning switch 7 **ON** above, is useful to help prevent tailgating vehicles from unauthorized entry.
3.3 Limit Sensors

**CAUTION**
**DO NOT REMOVE HUB!**

Loosen set screws to adjust the limit sensors. Make sure set screws are tightened after adjustment.

![Diagram of limit sensors and magnetic sensor activator](image)

Magnetic sensor activator must be directly above the limit sensor to activate it.

**Limit Sensor LEDs**

**Opens Clockwise**

- Switch 1 “ON”
- SW 1

**Opens Counter-clockwise**

- Switch 1 “OFF”
- SW 1

**Approximate Limit Bracket Positions**

- OPEN Limit Sensor
- TOP Limit Bracket
- BOTTOM Limit Bracket
- Slow-Down Limit Sensor
- CLOSE Limit Sensor

**DO NOT** allow the magnetic sensor activator to travel past the open or closed limit sensors!

**Important Limit Sensor Adjustment Note:**

It is very important **NOT** to cycle the gate operator before the limit sensors are in the correct position or it could cause damage to the gate and operator.

Turn **ON AC power**. Manually release the gate operator hub with the release tool (See page 30). Physically move the gate to the desired open position. Loosen the set screw on the OPEN limit sensor and slowly slide it under the magnetic sensor activator until the OPEN limit Sensor LED lights up on the circuit board. Tighten the set screw and repeat this process for the close gate position. Secure the hub with the release tool and cycle the operator a few times and readjust if necessary.
3.4 Inherent Reverse Sensors Adjustment

This vehicular gate operator is equipped with an inherent adjustable reversing sensor (Type A) used as entrapment protection according to UL 325 standards. The gate will reverse direction after “physically” encountering an obstruction in either the opening or closing gate cycle. If the Auto-Close Timer (DIP-switch SW 1, switch 2) is ON and the gate physically encounters an obstruction during the CLOSING cycle, it will reverse to the open position and HOLD the gate at this position (Soft shutdown condition). Another input command is needed before the gate will reset and close again.

If the Partial Open Feature is being used and the gate physically encounters an obstruction during the CLOSING cycle, the gate will only reverse to the FULL open limit switch setting and NOT the partial open setting.

For the reverse system to function correctly, the gate must be properly installed and work freely in both directions and the limit switches must be properly adjusted before adjusting these sensors. The ideal adjustment will allow the operator to move the gate through its entire travel cycle without reversing, but will reverse upon contact with an obstruction with no more than 40 Lbs of force. This force can be measured with a gate scale.

1. Press the “Push to Operate” button to OPEN the gate.
2. After opening gate reaches full speed, slowly rotate the OPEN reverse sensor clockwise until the LED lights up and gate reverses direction. Rotate the OPEN reverse sensor back counter-clockwise approximately 1/8 turn to decrease the sensitivity (LED will turn off). The gate will assume a soft shutdown so press the “Push to Operate” button to cycle the operator.
3. Press the “Push to Operate” button to CLOSE the gate.
4. After closing gate reaches full speed, slowly rotate the CLOSE reverse sensor clockwise until the LED lights up and the gate reverses direction. Rotate the CLOSE reverse sensor back counter-clockwise approximately 1/8 turn to decrease the sensitivity (LED will turn off). The gate will assume a soft shutdown so press the “Push to Operate” button to cycle the operator.
5. Cycle the gate a few times to be sure that it cycles completely. The current sensor may need to be adjusted if gate will not reverse properly (See 3.5 below)

Test the operator reversing sensitivity:

Place an immobile object along the gate path, allowing the gate to strike it while in the open and close cycles. The gate must reverse direction after striking the object. If it does not, increase the OPEN and CLOSE reverse sensitivity (steps 2 and 4) and repeat this testing until the correct sensitivity has been achieved in BOTH directions. The operator will assume a soft shutdown after striking and reversing the gate which will require a momentary jumper wire across terminals 1 and 4 to cycle the operator again.

CAUTION: Keep pedestrians and vehicles clear of the gate while adjusting and testing sensors!

3.5 Current Sensor Adjustment

This vehicular gate operator uses a current sensing device to detect any obstructions in the path of the opening or closing gate. The current sensor uses a sensing coil with a given number of turns through it to monitor the current flow into the operator. Each time the wire passes through the coil, it is considered a turn. The number of turns through the sensing coil is dependant on the operating voltage of the operator, the speed of the gate and the weight of the gate.

In general, light weight gates may require additional turns of wire through the current sensor, while heavier gates may require less turns. In addition, the speed of the gate can affect how the current sensor works. Gates running at a higher speed may require less turns of wire through the sensor. CAUTION – HIGH VOLTAGE: Be sure power is turned OFF before changing the number of wire turns to the current sensor. If you are setting the reverse sensors (section 3.4 above) and reach the full sensitive position without activating the reversing function, add an additional turn of wire through the current sensor. If you are decreasing the sensitivity and the gate will not run properly, reduce the number of turns through the current sensor.

Sample Turns

<table>
<thead>
<tr>
<th>Voltage and Phase</th>
<th>Turns</th>
</tr>
</thead>
<tbody>
<tr>
<td>230 Single Phase</td>
<td>2</td>
</tr>
</tbody>
</table>
3.6 Gate Speed Description and Adjustment

The 6555 models are equipped with an AC module that allows you to adjust the speed of the gate.

Knob Adjustment

To adjust the speed, simply rotate the speed control knob clockwise to increase the gate speed, or counter-clockwise to decrease the gate speed.
### 4.1 Main Terminal Description

- **Main Terminal Input LEDs Note:** The LED that is to the left of the main terminal wiring input will light when that terminal input gets activated.

- **Main Terminal #3 Note:** Exceeding 250 mA of power from this terminal may cause the circuit board transformer to overheat, causing intermittent problems.

- **DANGER:** HIGH VOLTAGE! Used in conjunction with the circuit board inherent reversing sensors. See page 20 for further information.

- **WARNING:** DO NOT USE:
  - Standard Reverse OR Stop
  - 3-Button Station Full Open
  - 3-Button Station Close
  - 3-Button Station Stop

- **Low Voltage Common**
- **Full Open**
  - 24 VAC - 250 mA max.
  - (See note below)
- **DO NOT USE**
- **Dry Relay Contact**
- **Dry Relay Contact**
- **Low Voltage Common**
- **Entrapment Alarm**
- **Alarm Reset**
- **Current Sensor**
- **Current Sensor**
- **Motor Hot**
- **Motor Neutral**
- **Earth Ground**

- **SW 1, switch 3 is **ON**, terminal #4 functions as a normal FULL open input. (Normal Setting). Single operator use ONLY.**
- **SW 1, switch 3 is **OFF**, input to terminal #4 becomes the output from a plug-in loop detector installed in the EXIT loop port of the circuit board.**

- **This input ONLY functions when gate is fully opened or in the closing cycle.**

  When gate is closing: An input to terminal #6 will stop and reverse and the gate to the full open position.

  **Note:** If the auto-close timer is **ON**, when gate reaches the open position, timer will time out and close the gate.

  Shadow loop connection if desired, see page 26.

  **DO NOT use ON setting.**

  **Switch 7 must be OFF.**

- **3-Button Control Station Jumper**
  - Jumper Pins 1 & 2 ONLY when using a 4-wire control station to enable STOP terminal #9.

  **IMPORTANT:** Leave 3-button control station jumper pins on 2 & 3 when NOT wiring a 3-button control station to control board otherwise operator will **NOT** function.

- **Operation of relay is dependent on setting of SW 1, switches 4 and 5. See page 17 and 18 for DIP-switch function descriptions.**

  Relay contacts can be set for Normally Open (NO) or Normally Closed (NC) operation. Contact rating is 1 amp maximum at 24-volts DC.
4.2 Control Wiring

Gate will ONLY OPEN when this device is activated by authorized personnel ONLY (fire, police, EMS) and operator has power. Alarm will sound during entire open cycle. Operator will then go into a hard shutdown once fully opened. Operator MUST be reset to function normally again. This device MUST be mounted in the line-of-site of gate so authorized personnel can monitor gate movement.

Activation Note: Activation of this device will OPEN gate regardless of the status of the open direction monitored external entrapment protection device(s). If gate is opening, and the operator’s inherent entrapment protection system detects an obstruction, the operator will reverse approx. 2 inches and go into a hard shutdown. Operator reset button MUST be pushed to function again OR cycle operator’s power.

Main Terminal #3 Note: Exceeding 250 mA of power from this terminal may cause the circuit board transformer to overheat, causing intermittent problems.

Important: Controls must be installed a minimum of 6-feet from the gate or installed in such a way that the person using the control cannot come in contact with the gate or gate operator.

Gate Tracker - DoorKing Access Control System (Model 1833, 1835, 1837 or 1838) tracker system can be connected. This system can keep track of gate operator cycle count, shorted inputs, loop detector problems, any forced entry attempts, if the gate has struck anything during the open or close cycle, power interruptions, etc. For more detailed information refer to the Tracker Installation and Wiring Manual P/N 2358-065.
4.3 Entrapment Protection Wiring

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. **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. Install these devices where the risk of entrapment or a safety hazard exists. Installations can vary.

**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.

**Sensor LEDs Note:**
LED ON: Connected device has been activated. LED remains off during normal operation.
LED Flashing: Connected device is in fault. Wiring to device is bad.

**IMPORTANT:** Photo sensors must use **Normally Closed (NC)** contacts with the beam set for light operate (relay activated when beam is not obstructed). Some manufacturer’s photo sensor contacts are labeled as **Normally Open (NO)** but their relay functions the same way as described above. See specific manufacturer’s wiring manual for more information about their specific relay function.

**Monitored CLOSE Photo Sensor**

Entrapment protection is **RECOMMENDED** for this area.

If the distance between an entrapment or obstruction exists less than 16" from the open gate, then entrapment protection is **REQUIRED** for this area.

**Note:** Only 1 monitored device can be connected to each input. An **OPTIONAL** Expansion Kit (sold separately) will allow connection for additional devices.
4.3 Entrapment Protection Wiring Continued

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.

WIRELESS Multiple Reversing Edge Configuration

HARDWIRED Multiple Reversing Edge Configuration

Wiring Multiple Reversing Edges
(Add as many “4-wire” In-Line edges as needed)
Reversing Edges are wired in series

To Wireless Edge Transmitter
OR
Operator Aux Terminals 9 & 10

To Open/Close

ENTRAPMENT PROTECTION WIRING

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.

OPTIONAL Wireless Note: Refer to the instruction sheet that comes with the receiver/transmitter for more specific wiring and mounting instructions.

LED Notes:
LED OFF: appropriate device is connected.
LED ON: device has been activated.
Flashing LED: Device NOT connected.
Not appropriate device.

1477-010SW1

Monitored OPEN/CLOSE Reversing Edge

Entrapment protection is RECOMMENDED for this area.

Potential Entrapment Area

If the distance between an entrapment or obstruction exists less than 16” from the open gate, then entrapment protection is REQUIRED for this area.
4.4 Loop Detector Wiring

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 opening or closing on a vehicle when it is in the gate’s path. DoorKing recommends that a licensed installer perform this work.

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 opening or even completely opened by the time you drive up to it (Free exit).

Shadow Loop

will ONLY HOLD the main gates in the Full Open Position when a vehicle is on the shadow loop. However, it WILL NOT stop or reverse the main gates once they start to close.

Reverse Loops

are placed on each side of the gate to prevent the gate from closing on a vehicle in the gate’s path. They will stop or reverse the cycling of the gate while a vehicle is in or near the gate’s pathway.

• Loop detector wiring is shown for DoorKing plug-in loop detectors. If other loop detectors are used, refer to the installation instructions supplied with those detectors for wiring instructions.
• If other detectors are used, use a separate power supply to power these detectors.
• Loop layout shown is for a typical swing gate application with two-way traffic, or one-way exit only traffic.

DoorKing offers a free “Loop and Loop-Detectors Information Manual” PDF located at DoorKing’s web site for more information. www.doorking.com
SECTION 5 - OPERATING INSTRUCTIONS

IMPORTANT SAFETY INSTRUCTIONS

WARNING - To reduce the risk of 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 injury or death.
5. Use the emergency release only when the gate is not moving and power has been shut-off.
6. KEEP GATES PROPERLY MAINTAINED. Read the owner’s manual. Have a qualified service person make repairs to gate hardware.
7. The entrance is for vehicles only. Pedestrians must use separate entrance.
8. SAVE THESE INSTRUCTIONS.

5.1 AC Power Switch and Reset Button

Unlock the power switch cover and open to access the MAIN POWER and the operator RESET button.

- AC Power Switch - Powers the operator ON (toggle up) or OFF (toggle down).
- Alarm Siren
- Reset Button - Used to turn off the entrapment alarm and to reset the operator after a hard shutdown has occurred.
5.2 Shutdown Conditions

Under various entrapment conditions the operator will assume either a soft or hard (alarm) shutdown. To determine what type of reset action is required, you will need to understand how the different entrapment conditions affect the gate operator.

Soft Shutdown

This occurs in various situations where the inherent or entrapment protection devices have been activated. In a soft shutdown condition, the operator will not respond to any input that was present when the entrapment protection device sensed an obstruction. If the gate stops at the open position, the operator will not respond to the automatic close timer.

- Example 1 - A time clock keys the gate open in the morning and an entrapment protection device senses an obstruction prior to the gate reaching the full open position. If the entrapment is sensed by the inherent system, the gate will reverse and run back to the closed position. The time clock input is still present, but the gate will not re-open.

NOTE: In some systems, the time clock input comes from the telephone entry system relay. This same relay may also provide open commands for a card reader, MicroPLUS transmitters and the visitor telephone entry. If so, these devices will also be disabled in a soft shutdown condition.

- Example 2 - If the gate is closing and an entrapment protection device is activated, the gate will either stop or reverse and run back to the open position, depending upon if the secondary or inherent device was activated. The automatic close timer will not close the gate.

- Example 3 - Vehicle arrives at open loop and gate runs towards the open position. The inherent entrapment protection is activated. The gate reverses and runs back to the closed position. If the vehicle is still present at the open loop a soft shutdown condition does not occur. The loop input provides an immediate reset of the operator and the gate will again run to the open position.

Resetting a Soft Shutdown

In some conditions, a soft shutdown will reset as soon as the entrapment condition clears. For example, if a non-contact sensor (photo sensor) is sensing an obstruction, the operator will stop the gate and assume a soft shutdown condition. When the photocell clears, the operator will return to normal operation.

When the operator is in a soft shutdown, activation of any "intended input" will reset the operator. An "intended input" includes any command, any standard safety input and any loop input. Activating any of these inputs will reset the gate. At that point the gate will return to normal operation. If the gate is open, the automatic close timer will then time out and close the gate.

Hard Shutdown (Alarm Activated)

A hard shutdown condition occurs when the inherent entrapment protection system has sensed two consecutive obstructions before the gate reaches the full open or closed position.

- Example - The gate is closing and the inherent entrapment protection system senses an obstruction and causes the gate to reverse direction. As the gate begins to run in the open direction, a second obstruction is sensed prior to the gate reaching the full open position. Once the second obstruction has been sensed, the operator will stop, the audio alarm will be activated and all standard inputs are shut down (including open commands, safety commands, loop inputs, etc.).

The audio alarm will sound for five minutes, or until the operator’s reset button is pushed. After (5) five minutes the alarm will “chirp every 5 sec.” and the hard shutdown condition will remain in affect until the reset button is pushed.

- After 5 minutes, the audio alarm will “chirp” every 5 seconds. This indicates that the operator is in a hard shutdown condition and the reset switch must be activated to reset the operator and silence the alarm.

Continued on the next page
5.3 Manual Gate Operation

This operator is equipped with a manual release system that will allow the gate to be pushed open in the event of a power outage or equipment failure. NEVER remove the hub from the operator after manually releasing it.

- This gate operator CAN NOT be manually forced open in the event of a power failure without FIRST manually releasing the gate! (See next page)

- Never attempt to manually push open any gate with an operator attached to it until you have verified that power to the operator has been shut-off.

Emergency Vehicle Access Conditions

The automatic vehicular gate system must be designed to allow access to emergency vehicles under different operating conditions.

1. During normal powered operation, emergency vehicles access the gate by use of the Emergency Vehicle Access Device installed on your gate system. The type of device that is used in your community is dependent on your city codes. These devices may include (but are not limited to) Fire Department lock boxes, Click-2-Enter radio receivers, strobe light sensors, siren sensors, etc.

2. In the event of a primary (AC) power failure and a back-up system (DC) power failure (low charged or dead batteries for example), the system must have a release system to allow the gate to be Manually Operated (See next page).
Manual Release

- Be sure that power is removed or shut-off prior to placing the gate operator in manual operation.

A Unlock the cover and rotate sliding door.

Never attempt to manually push open any gate with an operator attached to it until you have verified that power to the operator has been shut-off.

B Remove release tool and place where shown.

C Release hub. Gate can now be manually operated.

CAUTION
DO NOT REMOVE HUB!
6.1 Maintenance

When servicing the gate operator, always check any external reversing devices (loops, photo eyes, etc.) for proper operation. If external reversing devices cannot be made operable, do not place this operator in service until the malfunction can be identified and corrected.

Always check the inherent reversing system when performing any maintenance. If the inherent reversing system cannot be made operable, remove this operator from service until the cause of the malfunction is identified and corrected. Keeping this operator in service when the inherent reversing system is malfunctioning creates a hazard for persons which can result in serious injury or death should they become entrapped in the gate.

When servicing this gate operator, always turn power OFF!!

If gearbox requires oil, use only Mobil SYNTHETIC SHC-629 Oil. Do not completely fill gearbox with oil. Gearbox should be half full only. Do not exceed this level.

<table>
<thead>
<tr>
<th>Operator Component</th>
<th>Maintenance</th>
<th>Monthly Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warning Signs</td>
<td>Check that warning signs are on BOTH sides of the gate area.</td>
<td>✓</td>
</tr>
<tr>
<td>Alarm</td>
<td>Activate the primary (inherent) reverse system by blocking the gate with a solid object. When the gate reverses, block the gate in the opposite direction prior to the limit being reached. The entrapment alarm should activate. Press the reset button to silence the alarm.</td>
<td>✓</td>
</tr>
<tr>
<td>Arms</td>
<td>Check set screws and nuts. Check bushings for wear.</td>
<td>✓</td>
</tr>
<tr>
<td>Drive Belt</td>
<td>Check for alignment, tightness and wear.</td>
<td>✓</td>
</tr>
<tr>
<td>Fire Dept.</td>
<td>Check emergency vehicle access device for proper operation.</td>
<td>✓</td>
</tr>
<tr>
<td>Gate</td>
<td>Inspect for damage. Check gate hinges for wear and grease if necessary.</td>
<td>✓</td>
</tr>
<tr>
<td>Inherent Reverse System</td>
<td>Check that the gate reverses on contact with an object in both the opening and closing cycles. See page 439. Adjust the reversing sensor if necessary.</td>
<td>✓</td>
</tr>
<tr>
<td>Loop(s)</td>
<td>Check vehicular reverse and shadow loops for proper operation.</td>
<td>✓</td>
</tr>
<tr>
<td>External Reverse Device</td>
<td>Check external reverse device(s) stop or reverse the gate when activated. See page 39.</td>
<td>✓</td>
</tr>
<tr>
<td>Complete System</td>
<td>Complete check of gate and gate operating system.</td>
<td>✓</td>
</tr>
</tbody>
</table>
6.2 Built-In Diagnostic Tests

This gate operator is designed with built-in diagnostics that will alert you to potential or existing problems that the microprocessor has detected. Specific fault conditions are checked and the operator will signal that a fault exist through the built-in alarm.

**Constant alarm is heard when power is applied:** This indicates that the limit switch wire harness is not connected to the circuit board. In this condition, the operator will not run and the tone will continue until the fault is corrected. Check to be sure that the limit switch plug is properly inserted into the limit switch plug on the circuit board.

**Constant alarm is heard:** This indicates that the operator is in a hard shutdown condition (section 6.2 on page 32). The tone will continue to sound for five minutes, and then will beep once every five seconds. The operator-reset button must be pressed or power must be removed and then reapplied to return the operator to normal operation.

**Short “chirp” is heard every five seconds:** This indicates that the operator has been in a hard shutdown condition in excess of five minutes. This will continue until the operator-reset button is pressed or until power is removed from the operator (section 6.2 on page 32).

**Operator runs for 1 second and stops, two short “chirps” are heard:** This indicates that there may be a fault with the current sensor circuit.

6.3 Troubleshooting

Have a good VOM meter to check voltages and continuity. A Meg-Ohm meter capable of checking up to 500 meg-ohms of resistance is necessary to properly check the integrity of the ground loops. When a malfunction occurs, isolate the problem to one of three areas: 1. the operator, 2. the loop system, 3. the keying devices. Use caution when checking high voltage terminals, motor capacitor and the motor.

1. Check the input indicator LEDs. They should only come ON when a keying device (card reader, push button, etc.) is activated. If any of the input LEDs are ON continuously, this will cause the gate operator to hold open. Disconnect the keying devices one at a time until the LED goes OFF.

2. Check any external entrapment protection devices. Any short or malfunction in these devices can cause the gate operator to stop or to hold open.

3. A malfunction in a loop or loop detector can cause the gate operator to hold open, or to not detect a vehicle when it is present over the loop. Pull the loop detector circuit boards from the loop ports on the operator circuit board. If the malfunction persists, the problem is not with the loop system. For more information on trouble shooting loops and loop detectors, refer to your loop detector instruction sheet and to the DoorKing Loop and Loop Detector Information Manual located on DoorKing’s web site.

4. Check to be sure that there are no shorted or open control wires from the keying devices to the gate operator. If a keying device fails to open the gate, press the Key Switch or momentarily jumper across terminals 1 and 4 on the operator circuit board. If the gate operator starts, this indicates that a problem exist with the keying device and is not with the gate operator.

5. Check the high voltage supply. A voltage drop on the supply line (usually caused by using too small supply voltage wires) will cause the operator to malfunction. Refer to the wire size chart in section 2.1 on page 15.
<table>
<thead>
<tr>
<th>Symptom</th>
<th>Possible Solution(s)</th>
</tr>
</thead>
</table>
| Operator will not run. Power LED is OFF. | - Check that AC power to the operator is turned ON.  
- Transformer may be overheated. Turn power off and allow board to cool for several minutes then retest. Check for low VAC power and low voltage shorts.  
- Check for VAC at high voltage input terminal. If voltage measures 0, check the incoming power wires or replace circuit board. |
| Operator will not run. Power LED is ON. | - Insure that a minimum of one (1) external entrapment protection device is connected in EACH entrapment area and the inputs are connected and enabled (UL 325 DIP-switches are turned ON).  
- If a photocell is used as an external entrapment protection device, check to be sure that the beam is not blocked.  
- Disconnect gate from the gate operator and check that the gate swings freely without any binding.  
- **Bypass circuit board and Check Motor:** Turn power switch OFF and remove the circuit board. Place a jumper wire from terminal #18 to #17. **CAUTION – HIGH VOLTAGE.** Turn the power switch ON. The motor should run. Turn the power switch OFF and remove the jumper. With power switch still OFF, place a jumper wire from terminal #18 to #16. **CAUTION – HIGH VOLTAGE.** Turn the power switch ON. The motor should run in the opposite direction. Turn the power switch OFF and remove the jumper.  
- If the motor runs in both steps above, replace the control board. If the motor does not run, or runs in only one direction, problem can be a bad motor, motor capacitor, motor resistors, wire connections from the control board to the motor or a bad control board. |
| Operator will not run, entrapment protection input(s) LED is ON. | - The entrapment protection device has a fault or the wiring to it is shorted. |
| Operator will not run, entrapment protection input(s) LED is Blinking. | - The entrapment protection device is not connected or the wiring to it is open. |
| Gate opens a short distance, then stops and reverses. | - Disconnect the gate from the gate operator and check that the gate swings freely without any binding.  
- Re-adjust the reverse sensitivity.  
- Continue troubleshooting. |
| Gate opens but will not close. | - Be sure that the each LED on the control board lights when the keying device connected to the terminal is activated. If LED does not light, momentarily place a jumper wire from terminal #1 to the input terminal being checked. If LED lights and device. Operator should run in the open direction. If operator runs in the close direction, turn power OFF and change direction from open to close. Go to above section if operator runs in only one direction. |
| Gate opens a short distance, then stops and reverses. | - Disconnect the gate from the gate operator and check that the gate swings freely without any binding.  
- Re-adjust the reverse sensitivity.  
- Continue troubleshooting. |
| Gate closes but will not open. | - Operator may be in a “soft shutdown.” Check input LEDs. If any are ON, momentarily disconnect, then re-connect the wire going to the respective terminal. Operator should open.  
- Check to be sure that the operator is running in the proper direction. Turn power OFF, and then back ON. Activate a keying device. Operator should run in the open direction. If operator runs in the close direction, turn power OFF and change direction from open to close. Go to above section if operator runs in only one direction.  
- Be sure that the each LED on the control board lights when the keying device connected to the terminal is activated. If LED does not light, momentarily place a jumper wire from terminal #1 to the input terminal being checked. If LED lights and gate opens, problem is with the keying device. If LED does not light, replace control board.  
- Bypass circuit board and check motor as described above. |
| Gate starts to close, then reverses to open. | - Re-adjust the reverse sensitivity.  
- Disconnect the gate from the gate operator and check that the gate swings freely without any binding.  
- Check the loop detector LEDs and input LEDs. Any that flash ON will cause the gate to reverse.  
- Continue troubleshooting. |
| Gate closes then re-opens. | - Check for any input or loop detector LED’s that are ON.  
- Check that the operator is running in the proper direction (see “gate closes but will not open”). |
| Alarm is sounding. Operator will not run. | - Operator is in a “hard shutdown” condition. Reset button must be pushed to return operator to normal operation, see Section 6.2 Shutdown Conditions, page 32.  
- Check the gate and gate hardware for any binding, correct where necessary.  
- Gate may be too heavy. |
| Alarm chirps once every 5 seconds. Operator will not run. | - Operator has been in a “hard shutdown” condition in excess of 5 minutes. Reset button must be pushed to return operator to normal operation, see Section 6.2 Shutdown Conditions, page 32. |
| Alarm sounds when power is applied and operator will not run. | - The limit switch wire harness is not plugged into the circuit board. Check that the limit switch connector is properly plugged into the limit switch plug on the circuit board. |
| Operator runs for 1 second and stops, two short chirps are heard. | - There may be a problem with the current sensor on the circuit board. Replace the circuit board. |
| Operator has intermittent functionality problems that vary. | - The main terminal #3 250 mA power has been exceeded. Check total amp draw of connected device(s). |
6.4 Accessory Items

UL 325 Monitored Entrapment Protection Devices available for the model 6555 swing gate operator.

**Type B2 Contact Sensors (Reversing Edge)**
- 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)**
- 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 6555 swing gate operator.

**Plug-In Loop Detector** - Detectors plug directly into ports on circuit board simplifying wiring.
- 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

**Heater and Fan Assembly** - Cold weather climates where temperatures drop below 40°F (4°C).
- 208/230 VAC - P/N 1601-197
- 460 VAC - P/N 1601-198

**Time Clock** - 7 day time clock can be used to automatically open gate at pre-set time and days. Compact clock fits inside the operator.
- P/N 2600-791 - 7 day clock

**Torsion Rods** - Torsion rod assembly is used on uphill swing gates for counter balance.
- P/N 1203-084

**Hinges** - Heavy-duty ball bearing hinges provide easy swing gate operation.
- P/N 1200-009, P/N 1200-019, P/N 1200-039.

**Surge Devices** - High and low voltage surge suppressors help prevent circuit board failure caused by lightning strikes and power surges.
- P/N 1879-010 - High Voltage
- P/N 1878-010 - Low Voltage

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

Hub Assembly
Remove the TWO allen screws on bottom of hub to remove the complete hub assembly.

Limit Sensors Collar

Brass Bushing

Gearbox Shaft Extension with 4 Keys

Stainless Steel Washer

Snap Ring

Gearbox Collar
Remove the FOUR allen screws to remove the gearbox collar.

Limit Sensor Assemblies
Loosen set screws on plastic limit assemblies to remove them. Be CAREFUL not to damage limit sensor wires after the assemblies have been removed.

Note: Close Limit Sensor assembly must be reinstalled on TOP of Limit Sensor assembly.
**SECTION 7 - OWNER OF THE GATE OPERATOR**

### 7.1 Alarm Sounding and Gate WILL NOT Operate

A KEY has been supplied that will unlock the power switch cover on this gate operator.

**Note:** The owner of the gate operator is responsible for the KEY availability.

**When alarm is sounding** . . .

**ALWAYS CHECK GATE AREA FOR ANY OBSTRUCTIONS FIRST.**

If the cause of the alarm cannot be corrected, shut-off power and DO NOT place this operator back into service until the malfunction can be identified and CORRECTED.

**IMPORTANT:** Putting this gate operator back into service without CORRECTING the cause of the alarm could result in serious injury or DEATH!

![Diagram of gate operator with unlock and reset buttons highlighted]

**Gate Operator is in a Hard Shutdown Condition when Alarm is Sounding**

This occurs when:

1. The inherent entrapment protection system (Type A) gets activated TWO consecutive times before the gate completes the open or close cycle.
2. The reversing edge contact sensor (Type B2) gets activated and reverses but before the gate completes the reverse cycle the inherent entrapment protection system (Type A) gets activated.

The audio alarm will sound for five minutes, or until the operator’s reset button is pushed. After (5) five minutes the alarm will “chirp every 5 sec.” and the hard shutdown condition will remain in affect until the reset button is pushed.

Please read **SECTION 5 - OPERATING INSTRUCTIONS** for more information about operating this gate operator.
7.2 Manual Gate Operation

**Caution:** NEVER attempt to manually operate the gate until you have VERIFIED that power to the gate operator has been SHUT-OFF!

A KEY has been supplied that will unlock the cover and power switch cover on this gate operator.

**Note:** The owner of the gate operator is responsible for the KEY availability.

A. Unlock the cover and rotate sliding door.

B. Remove release tool and place where shown.

C. Release hub. Gate can now be manually operated.

Please read **SECTION 5 - OPERATING INSTRUCTIONS** for more information about operating this gate operator.
7.3 Gate Operator’s Monthly Checkup

**Caution:** Make SURE gate area is clear BEFORE testing the gate operator!

DO NOT repair or adjust gate systems yourself. Contact a trained gate systems technician with any questions or to make any repairs or adjustments. If you feel uncomfortable performing any of these inspections or testing, a qualified service technician will perform the visual inspections and testing for you.

You can find a trained service technician at DoorKing’s “Dealer Locator” at www.doorking.com

**Visual Inspection**

Visually inspect the rollers, fasteners, brackets and other gate hardware for proper alignment, proper tightness, and signs of damage, breakage, looseness, rust or wear. Moving parts should be lubricated and should not be squeaking.

Visually inspect wiring for fraying or exposure. If a malfunction is found, contact a trained service technician to make adjustments or repairs.

**Test Built-In Reversing Sensor**

Begin with the gate in the fully OPEN position. Stand just outside the path of the gate and close the gate (typically auto-timer will time-out and close gate automatically). As the gate is closing, firmly press a solid object against the end of the gate frame in the direction opposing the travel of the gate. The gate should stop within 2 sec. and reverse to the OPEN position. Another input command is needed before the gate will reset and close again. Repeat this test while opening the gate. Start from the fully CLOSED position. While opening, gate should stop and reverse to the CLOSE position. If gate does NOT respond like it should in either direction of gate travel, contact a trained service technician to make adjustments or repairs.

**Test Photo Sensors**

If the gate has a photo sensing device protecting the path of a closing gate, perform the following test. Begin with the gate in the fully OPEN position. Stand just outside the path of the gate and close the gate (typically auto-timer will time-out and close gate automatically). Pass an object across the path of the closing photo sensing beam. The gate should stop within 2 sec. and reverse to the OPEN position. Typically the auto-timer times out and gate closes again. If the gate has a photo sensing device protecting the path of an opening gate, start from the fully CLOSED position. OPEN gate. Pass an object across the path of the opening photo sensing beam. The gate should stop, the gate will resume opening when the beam is clear. If gate does NOT respond like it should in either direction of gate travel, contact a trained service technician to make adjustments or repairs.

**Test Reversing Edges**

If the gate has a reversing edge(s) protecting the path of a closing gate, perform the following test. Begin with the gate in the fully OPEN position. Stand just outside the path of the gate and close the gate. As the gate is closing, firmly press a solid object against the reversing edge in the direction opposing the travel of the gate. The gate should stop within 2 sec. and reverse to the OPEN position (typically auto-timer will time-out and close gate automatically). If the gate encounters another obstruction before it is closed, the gate will stop and reverse to the OPEN position again. A input command is needed before the gate will reset and close again, auto-timer will NOT close gate (Typically, press your remote button for input command). If the gate has a reversing edge(s) protecting the path of an opening gate, starting from the fully CLOSED position. Stand just outside the path of the gate and open the gate. OPEN gate. As the gate is opening, firmly press a solid object against the reversing edge in the direction opposing the travel of the gate. gate should stop and reverse to the CLOSE position. If gate does NOT respond like it should in either direction of gate travel, contact a trained service technician to make adjustments or repairs.

**Note:** This gate operator uses high levels of force to move the gate and most people underestimate the power of these systems and do not realize the potential hazards associated with this system if NOT maintained properly.

Scheduled maintenance visits are offered by most qualified service technicians to MAINTAIN your gate operator system.
When alarm is sounding...

Gate Operator is in a Hard Shutdown Condition when Alarm is Sounding

This occurs when:

1. The inherent entrapment protection system (Type A) gets activated TWO consecutive times before the gate completes the open or close cycle.
2. The reversing edge contact sensor (Type B2) gets activated and reverses but before the gate completes the reverse cycle the inherent entrapment protection system (Type A) gets activated.

If the cause of the alarm cannot be corrected, shut-off power and DO NOT place this operator back into service until the malfunction can be identified and CORRECTED.

IMPORTANT: Putting this gate operator back into service without CORRECTING the cause of the alarm could result in serious injury or DEATH!

Caution:

NEVER attempt to manually operate the gate until you have VERIFIED that power to the gate operator has been SHUT-OFF!

Please read SECTION 5 - OPERATING INSTRUCTIONS for more information about operating this gate operator.

Manual Gate Operation

Caution:

DO NOT REMOVE HUB!

Power Switch Cover

Unlock the power switch cover. A KEY has been supplied.

Remove release tool and place where shown.

Release hub. Gate can now be manually operated.

Remove release tool and place where shown.

UNLOCK the power switch cover with KEY and press RESET BUTTON. This will reset the gate operator and allow normal gate operation again.

Gate Operator’s RESET POINTS:

1. The operator must be in the shut-off position.
2. The operator must be clear of any obstructions.
3. The operator must be in the normal operating mode.
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

Bi-Parting Gate Operators CANNOT be used.

This vehicular gate operator is designed for **Class III** and **Class IV** applications ONLY and must NEVER be used in applications serving the general public.

**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.