### **Installation Manual**

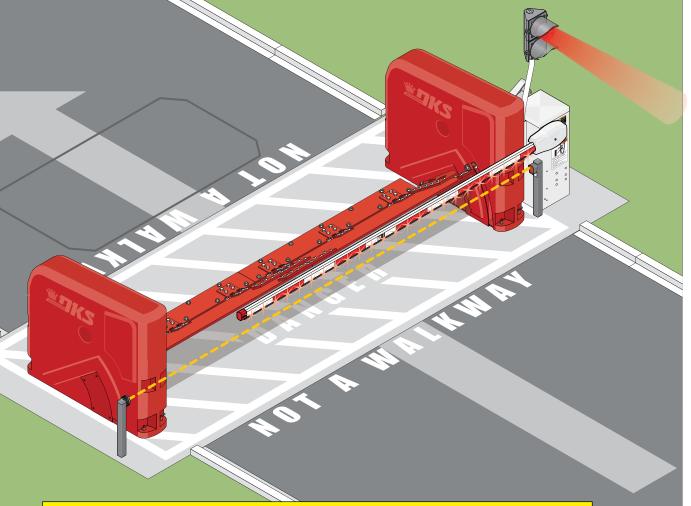
# **1625 Wedge Barrier**

Surface Mount Vehicular Wedge Barrier Accessory

Use this manual for circuit board 1601-010 Revision AK or higher.

1625-065-G-10-24

IMPORTANT: Installation of Traffic Light, Photocell and Octagon Arm with LED Edge is REQUIRED.



**WARNING** pre-stressed concrete may be used in multi-level parking garages. Cutting a tensioned cable, or tendon, can endanger the contractor and compromise the structural integrity of the floor. Contact the building structural engineer for specific instructions and information BEFORE drilling or saw cutting into the floor.

INSTALLATION AND USE OF THE WEDGE BARRIER IN AREAS SUBJECT TO FREEZING WEATHER WITH POTENTIAL FOR SNOW AND ICE ACCUMULATION IS NOT RECOMMENDED.

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The 1625 wedge barrier is not a stand-alone product. It must be used with a 1602-590 Barrier Gate Operator (sold separately). The 1625 is crash rated (ASTM F2656 PU-30-(P1, P2). It is intended to provide a more formidable barrier in conjunction with a standard barrier arm operator system. The 1625 is ideally used to control passenger vehicles and lightduty trucks.



# **TABLE OF CONTENTS**

IMPORTANT SAFETY INFORMATION	2-3
Wedge Barrier One-Way Operation	4
Wedge Barrier and 1602-590 Operator Overview	5
Wedge Barrier Model Parts Configuration	6-7
Concrete Pad Setup	8-10
Existing Concrete	8
NEW Concrete Pad	8
Concrete Requirements and DimensionsUnderground Conduit and Photocell Position	8 9
Warning Signage	_
Critical Measurements	
Mounting Operator and Wedge on Concrete Pad	11-15
1 Permanently Mount Operator	11
2 Permanently Mount Support Post Next to Operator	11
3 Bolt Plates Together	12
4 Wedge Lifting Arm Assembly	12
5 Precisely Mark Anchors	
6 Permanently Mount Support Post and Wedge Plates	
7 Add Counter-Weights	14
9 Install Covers	15 15
Install Reverse/LED Edge on Octagon Arm	16
Install Octagon Arm with Reverse/LED Edge	17-18
Install Traffic Light (Required)	19-20
Install Photocell (Required)	21
Entry Lane Only In-Ground Loop Options	22
Manual Release Operation	23
ALL Components Wiring Schematic	24
Wedge Components	
Wedge Barrier Options:	
12 ft Wide Model P/N 1625-612 (14 ft Octagon Arm with 12 ft Edge)	
14 ft Wide Model P/N 1625-614 (14 ft Octagon Arm with 12 ft Edge OR 17 ft Oct	agon Arm, 15 ft Edge)
16 ft Wide Model P/N 1625-616 (17 ft Octagon Arm with 15 ft Edge) 18 ft Wide Model P/N 1625-618 (17 ft Octagon Arm with 15 ft Edge)	
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UCTAYUN NEVERSINY/LED	
Edge Arm Options:	
14 Ft 1-Piece Octagon Arm Only P/N 1601-555 3 Ft Extension Arm P/N 1602-303	0
Octagon Arm Hardware Kit (Required) P/N 1601-235	
12 Ft Reverse Edge + Red/Green LED P/N 8080-096	
15 Ft Reverse Edge + Red/Green LED P/N 8080-315	
Retro-Reflective Photocell  Retro-Reflective Photocell  Retro-Reflective Photocell  Retro-Reflective Photocell  Retro-Reflective Photocell	0 0
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### **DoorKing Safety for Wdge Barrier**

- DKS Wedge Barrier System is crash rated (ASTM F2656 PU-30-(P1, P2). It is intended to provide a formidable barrier to help prevent passenger vehicles and light-duty trucks from driving through a controlled traffic lane.
- Wedge barrier MUST have reverse/LED edge on arm, traffic light and photoelectric cell functioning or remove wedge barrier from service until repairs have been made.
- Make sure all warning signs are on operator and arm. They MUST be easily visible.
- Do not install the operator in such a way that the arms moves within 16 inches of a rigid object or 10 feet from high voltage power wires with arm in the raised position.
- · Speed limit through barrier area is 5 MPH. Install speed bumps, warning signs and hazard stripes where visible in the area of the wedge barrier gate, failure to do so may result in injury, damage to operator and vehicle.
- Users should be familiar with proper use of operator, these include; hardware operation, reversing functions and testing, reversing loops, inherent reversing system, electric edges, photoelectric cells related external devices and possible hazards.
- Keep adults, children and objects away from operator and HAZARD ZONES.
- Automotive ONE-WAY traffic only No bicycles or motorcycles.

#### Pedestrians MUST be provided with separate access.

- · All electrical connections should be made in accordance with local electrical codes.
- Security features should be installed to avoid unauthorized use.
- . Controls intended for user activation must be located at least six feet (6') away from any moving part of the barrier gate and where the user is prevented from reaching over, under or around the wedge barrier gate to operate the controls. Emergency access controls only accessible by authorized personnel (e.g., fire, police, EMS) may be placed at any location in the line-of-sight of the wedge barrier gate.
- . When manually operating the gate operator arms, the user MUST make sure that the gate area is clear BEFORE operating the controls. Any activity in the traffic lane should be monitored to ensure a safe operation when opening or closing the wedge barrier gate. The motion of the barrier arms must be directly observable by the person operating the wedge barrier. While barrier arm is in motion

NO pedestrian and NO vehicle shall be in the immediate vicinity of the wedge barrier area.

- When removing the operator from service, move the arms to the full open position and shut off power at the service panel.
- Operators and components should be properly installed and maintained following the recommended service schedule, test the operator monthly. Keep all debris from underneath wedge plate and from operator housing vents and off of arms. Contact your service dealer for any maintenance or repairs.

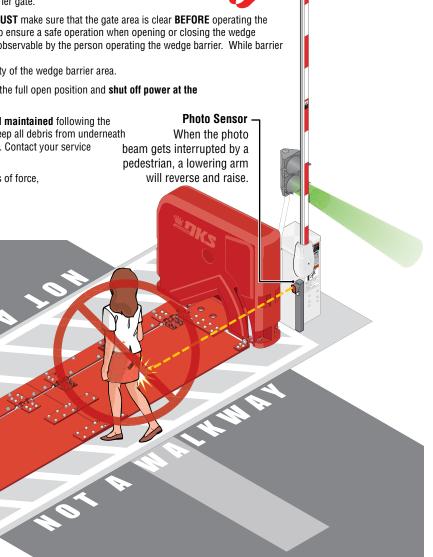
 Vehicular wedge barrier gate operator can produce high levels of force, it is important that you are aware and eliminate possible HAZARDS; Pinch Points, Entrapment Areas, Overhead Power Wires, Absence of Controlled Pedestrian Access, Traffic Backup.





**IMPORTANT:** A wedge barrier gate operator installed WITHOUT any external safety sensors **CANNOT** sense a person under the raised arm and can strike them while the arm is lowering.

> This scenario is VERY **DANGEROUS and MUST NEVER OCCUR!!**



IMPORTANT: ALL debris and trash needs to be kept from underneath wedge plate.

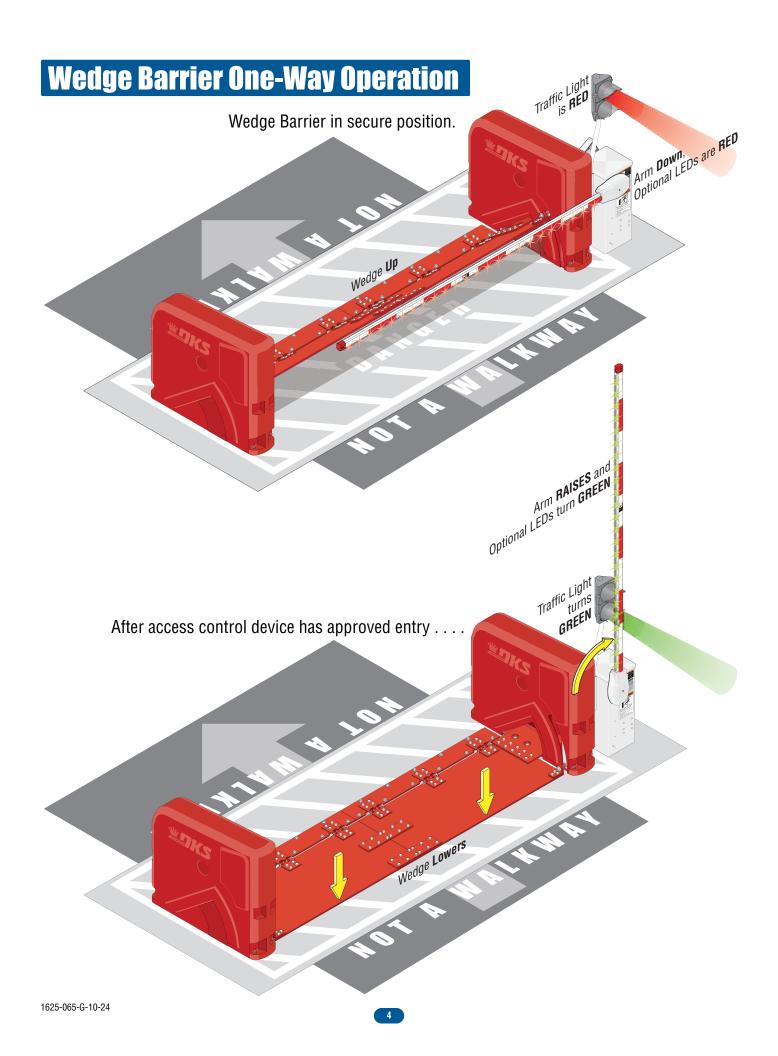
### **Safety and Traffic Management for Wedge Barrier System**

Vehicular wedge barrier gate operator can produce high levels of force. It is important that you are aware and eliminate possible HAZARDS; Pinch Points, Entrapment Areas, Overhead Power Wires, Absence of Controlled Pedestrian Access, and Traffic Management.

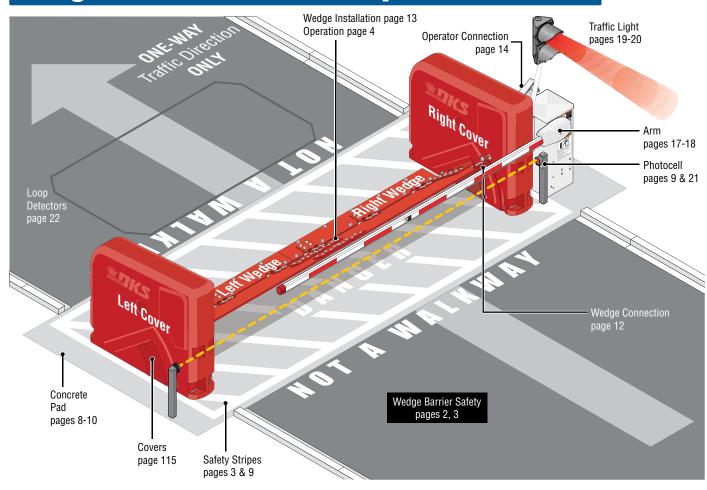
### Pedestrians MUST be provided with separate access.

A Separate Pedestrian Entrance: Located so pedestrians E Pedestrian Alert Warning: **CANNOT** come in contact with the wedge barrier system. "NOT A WALKWAY" pavement marking facing both directions, permanently painted WHITE on pavement. B Warning Signs: Permanently mounted on operator and arm and easily visible. F In-Ground Loops: Minimizes the potential of the gate closing when a C Non-Contact Sensor: (photocell) Minimizes the potential vehicle is present. of the arms lowering on vehicular or other traffic that loops cannot sense. Located directly under arm. Arm Red/Green LED Lights: D Hazard Stripes: NO stopping or standing "Hazard Stripes". Helps with arm's visibility and Permanently painted WHITE on pavement on both sides of arm. position. Helps control traffic. Contact Sensor: (reverse edge) Minimizes the potential of the arms lowering on vehicular or other traffic TIP: The stripes and letters can be painted that loops cannot sense. on cement **BEFORE** installation of wedge Located directly on arm. begins. Painting the word "DANGER" OPENING: underneath wedge plate is recommended. Arm RAISES and See next page and cover for example. LEDS turn GREEN В OPENING: Traffic Red/Green Light: Helps control traffic. F IMPORTANT: ALL debris

and trash needs to be kept from underneath wedge plate.



## **Wedge Barrier and 1602-590 Operator Overview**



Use this manual for the Model 1602-590 wedge barrier operators with circuit board 1601-010 Rev AK or higher ONLY.

### **1602-590 Wedge Barrier Operator**

Class of Operation UL 325 Class II, III, IV – ETL Listed

Type of Gate - Use with 1625 Series Wedge Barriers Only

Gate Cycles - Low Cycle

#### **Pedestrian Protection -**

Inherent entrapment sensing system (Type A) Provision for connection of a non-contact sensor (Type B1) and/or contact sensor (Type B2)

Model #	Convenience Open	Horsepower - Volts	Amp	Max Arm Length	Speed 90°
1602-590	No	1 HP - 115 VAC	9.7	14 Ft.	3.5 Sec

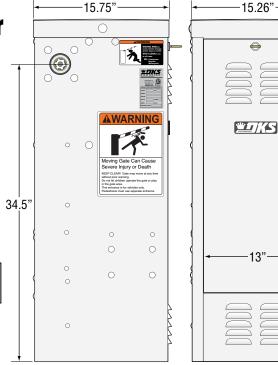
**Note:** 208/230/460/575 VAC input voltage can be connected to the operator by installing an "**Optional**" High Voltage Kit (P/N 2600-266).

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.

Refer to the 1601-065 Manual for ALL information about the 1602-590 Operator

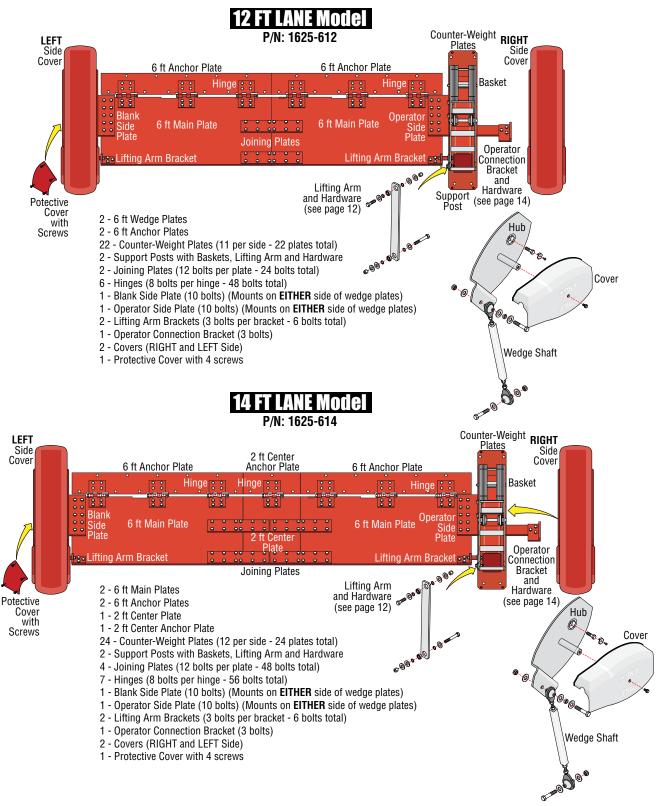


39.6"

### **Wedge Barrier Model Parts Configuration**

Prior to beginning the installation of the wedge barrier, 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.

#### Barrier operator 1602-590 can be installed on either side of wedge plates

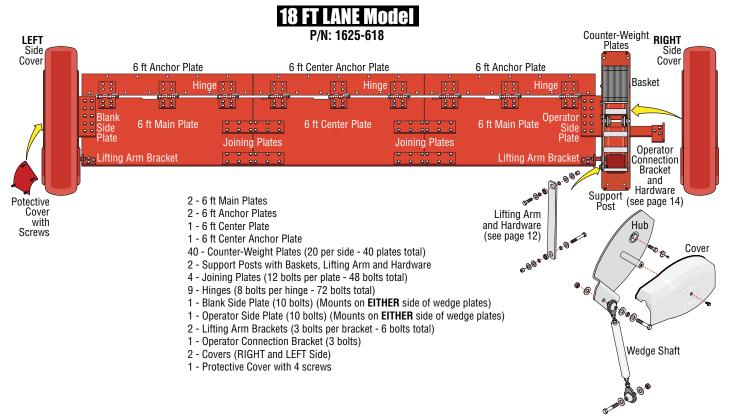


### **Wedge Barrier Model Parts Configuration Continued**

Prior to beginning the installation of the wedge barrier, 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.

### Barrier operator 1602-590 can be Installed on either side of wedge plates

#### 16 FT LANE Model P/N: 1625-616 Counter-Weight Plates RIGHT **LEFT** Side Cover Side 4 ft Center Cover 6 ft Anchor Plate Anchor Plate 6 ft Anchor Plate Basket Operator 6 ft Main Plate 6 ft Main Plate Joining Plates Joining Plates Operator Lifting Arm Bracket Lifting Arm Bracket Connection Bracket Lifting Arm and Hardware Hardware Support (see page 14) 2 - 6 ft Main Plates (see page 12) of Potective 2 - 6 ft Anchor Plates Cover 1 - 4 ft Center Plate Hub 1 - 4 ft Center Anchor Plate Screws 36 - Counter-Weight Plates (18 per side - 36 plates total) Cover 2 - Support Posts with Baskets, Lifting Arm and Hardware 4 - Joining Plates (12 bolts per plate - 48 bolts total) 8 - Hinges (8 bolts per hinge - 64 bolts total) 1 - Blank Side Plate (10 bolts) (Mounts on EITHER side of wedge plates) · Go.o. 1 - Operator Side Plate (10 bolts) (Mounts on EITHER side of wedge plates) 2 - Lifting Arm Brackets (3 bolts per bracket - 6 bolts total) 1 - Operator Connection Bracket (3 bolts) 2 - Covers (RIGHT and LEFT Side) Wedge Shaft 1 - Protective Cover with 4 screws



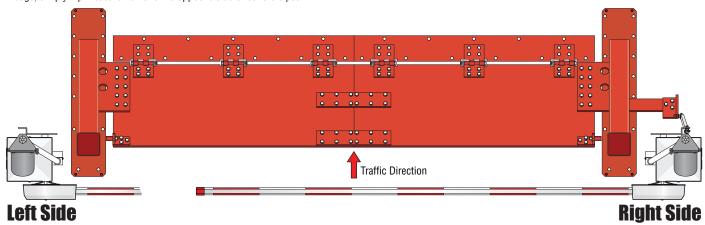
### **Concrete Pad Setup**

#### **EXISTING Concrete**

**WARNING** for Precast Concrete: Drilling into precast concrete is **NOT recommended** without professional advice or assistance. If you don't know where the prestressed wire strands are located, you risk damaging the structural integrity of the precast concrete and the drilling equipment you use. If you need to drill into precast concrete to anchor the wedge barrier to it, you must contact the building engineer before proceeding.

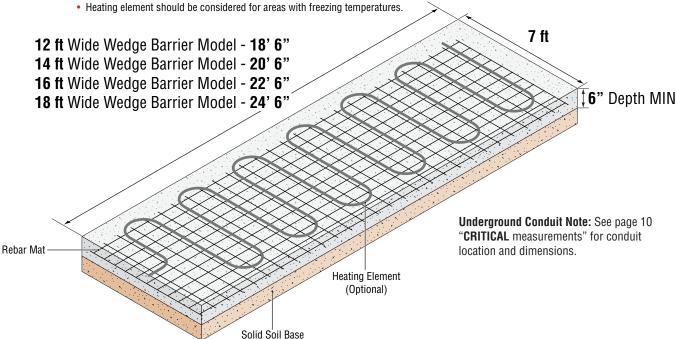
#### **NEW Concrete Pad**

Select which side of wedge barrier the operator will be installed on (manual shows installation on the **RIGHT side** of wedge. To install operator on **LEFT side** of wedge, simply flip measurements to the opposite side of concrete pad.

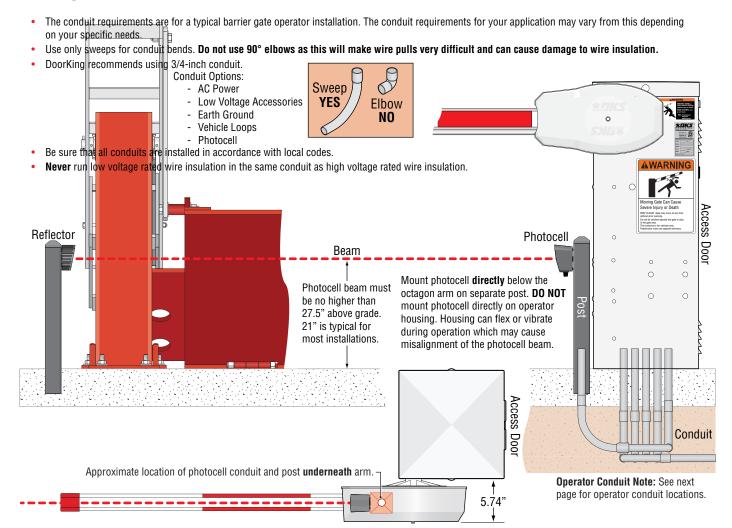


#### **Concrete Requirements and Dimensions**

- Concrete Pad 4,000 PSI. At least 6" deep.
- Soil compression under and around the foundation shall be compacted to a soil density of 95% of standard ASTM-698.
- · Add gravel where necessary to insure a solid base. Soil must be stable and able to support the weight of the concrete pad.
- The 1625 Wedge must be installed on a flat and level concrete surface on grade with the roadway surface.
- Place one layer rebar mat at eight (8) inch on-center. Use #5 (5/8 inch) Grade 40 or better.
- Cure concrete properties 4000 psi (minimum) with smooth finish and proper drainage.

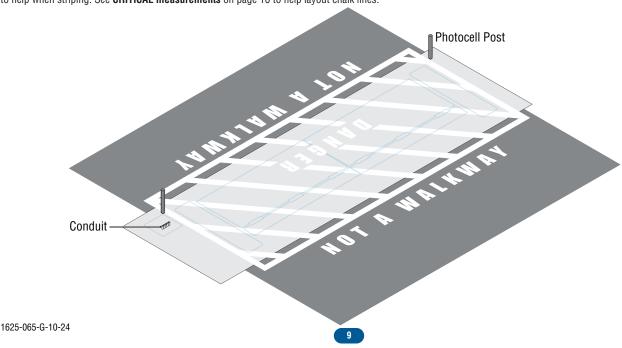


#### **Underground Conduit and Photocell Position**

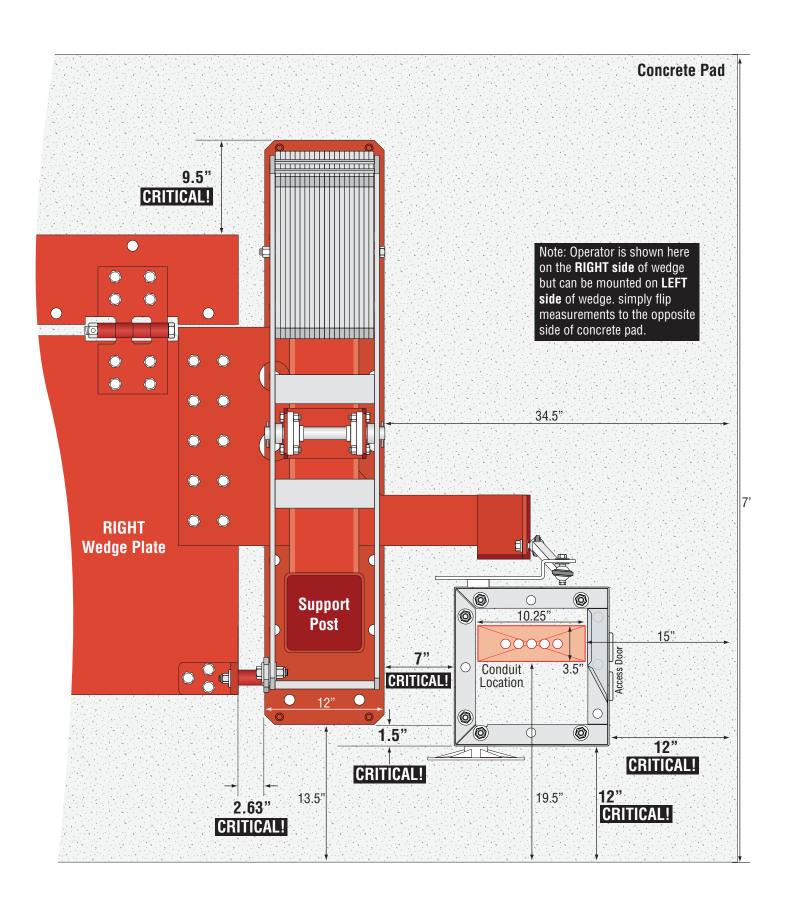


### **Warning Signage**

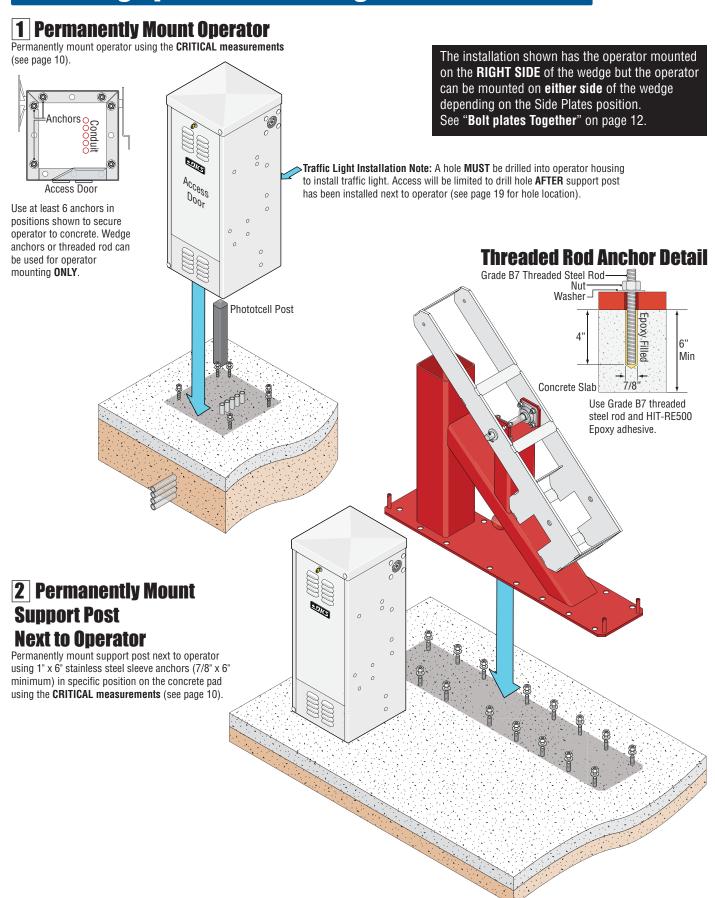
**AFTER** concrete pad has been poured but **BEFORE** wedge and operator have been installed, warning stripes and verbage can be painted on the surface to discourage pedestrians from walking in the general area. It's much easier to paint now rather than after the installation. "**DANGER**" can be painted underneath the wedge plates that only shows when wedge plates are raised for better safety awareness. Chalk lines can be snapped on the concrete to layout where all components will be located to help when striping. See **CRITICAL measurements** on page 10 to help layout chalk lines.

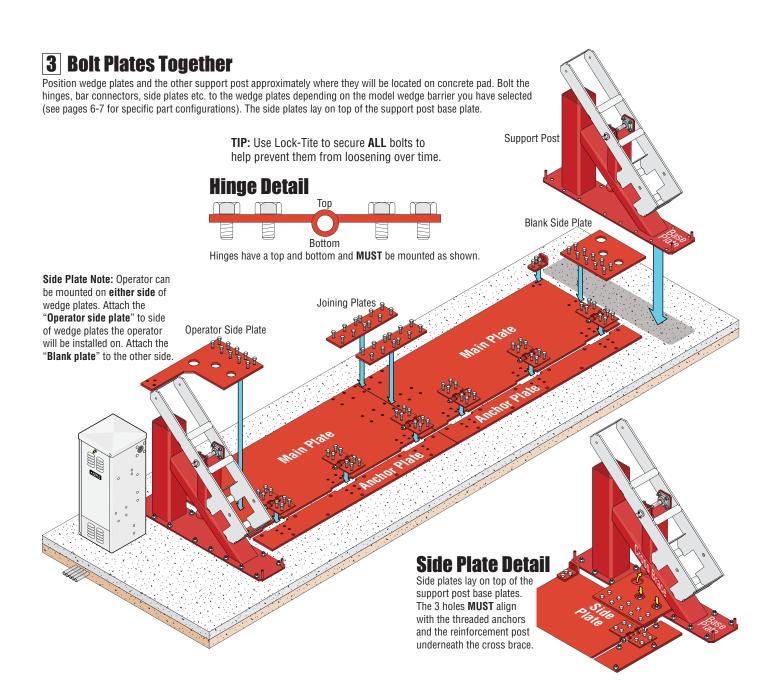


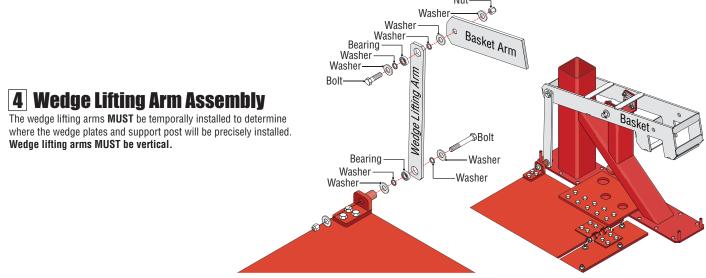
#### **Critical Measurements**



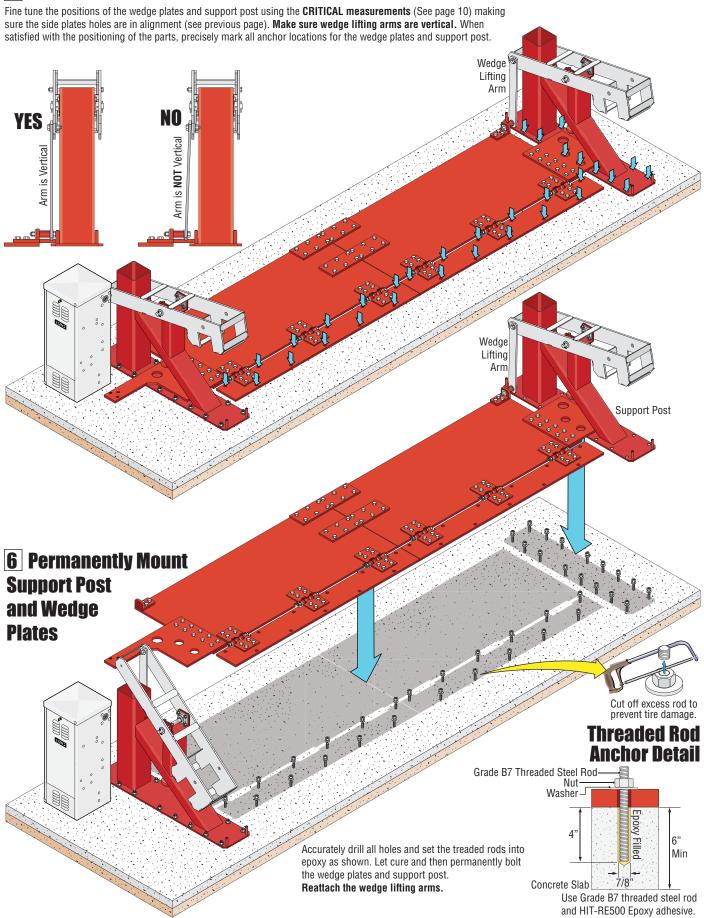
## **Mounting Operator and Wedge on Concrete Pad**





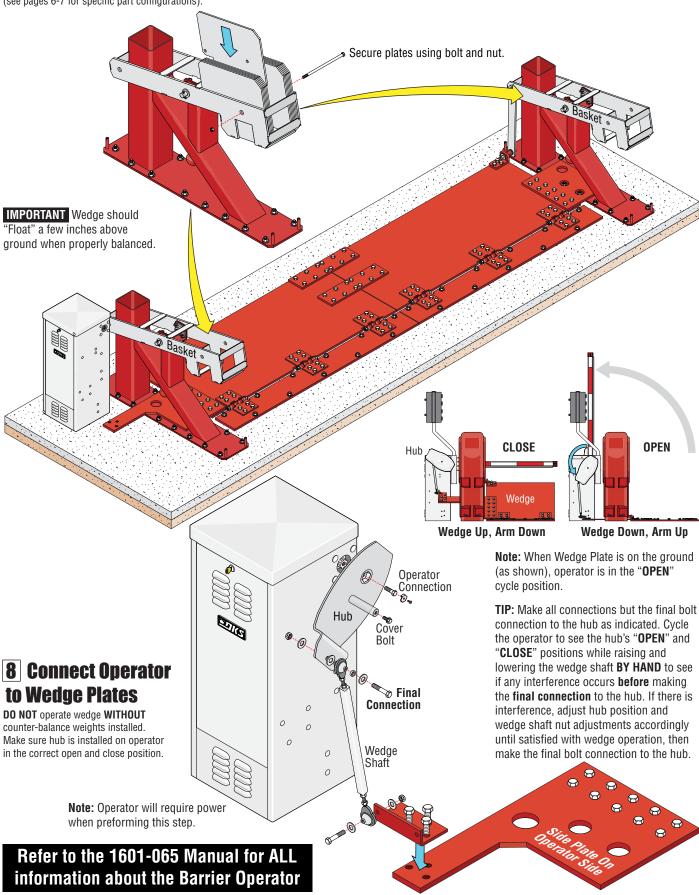


### **5** Precisely Mark Anchors



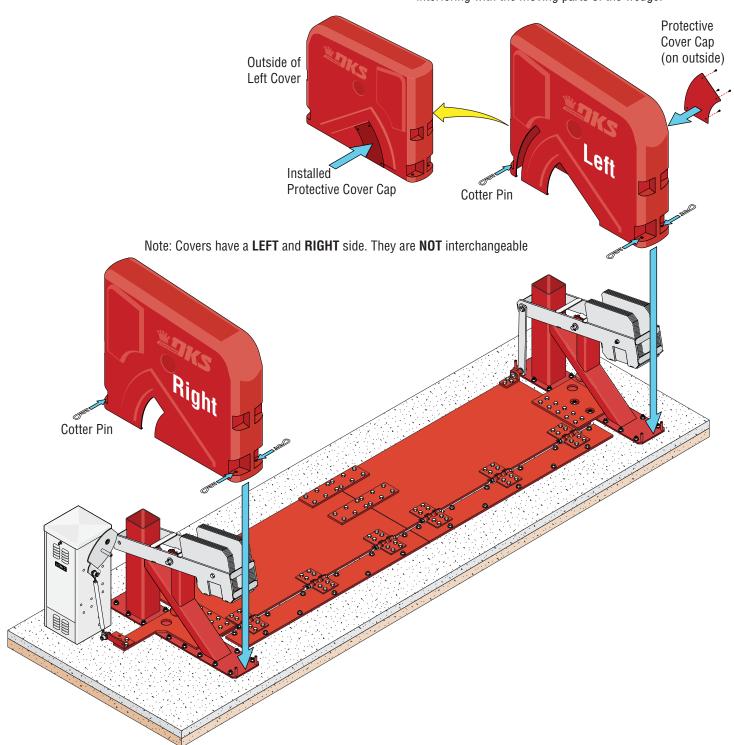
### 7 Add Counter-Weights

Add counter-weights to baskets to counter-balance wedge. There are a different number of plates installed depending on the model wedge barrier you have selected (see pages 6-7 for specific part configurations).



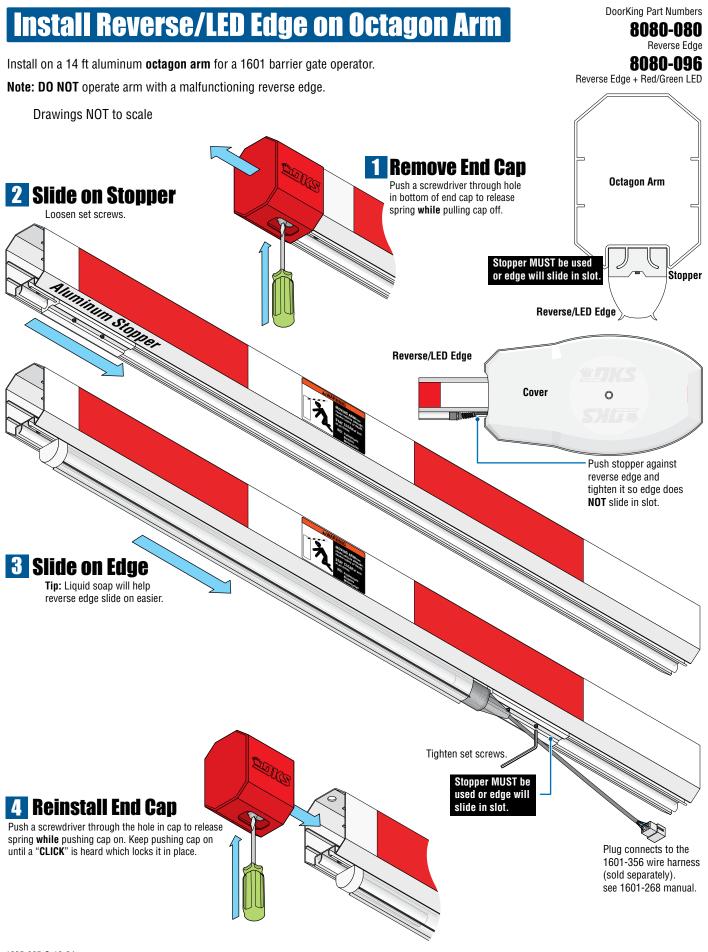
### 9 Install Covers

Protective Cover Cap: Only one. Install on the outside of the cover as shown, on the opposite cover from the operator side. Use 4 self-tapping screws. Helps protect against debris and trash getting inside the cover and interfering with the moving parts of the wedge.

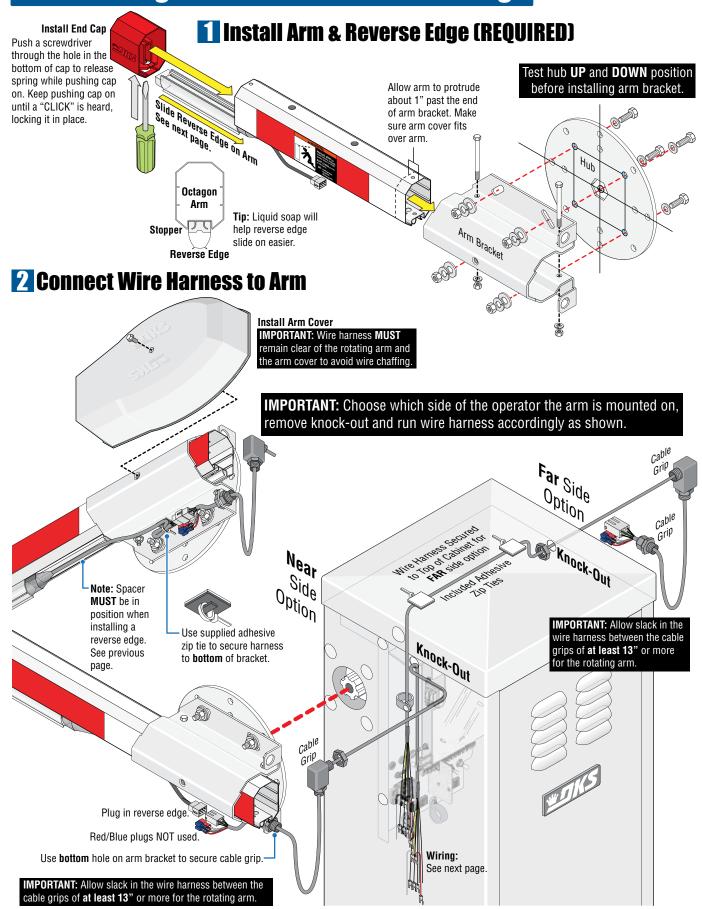


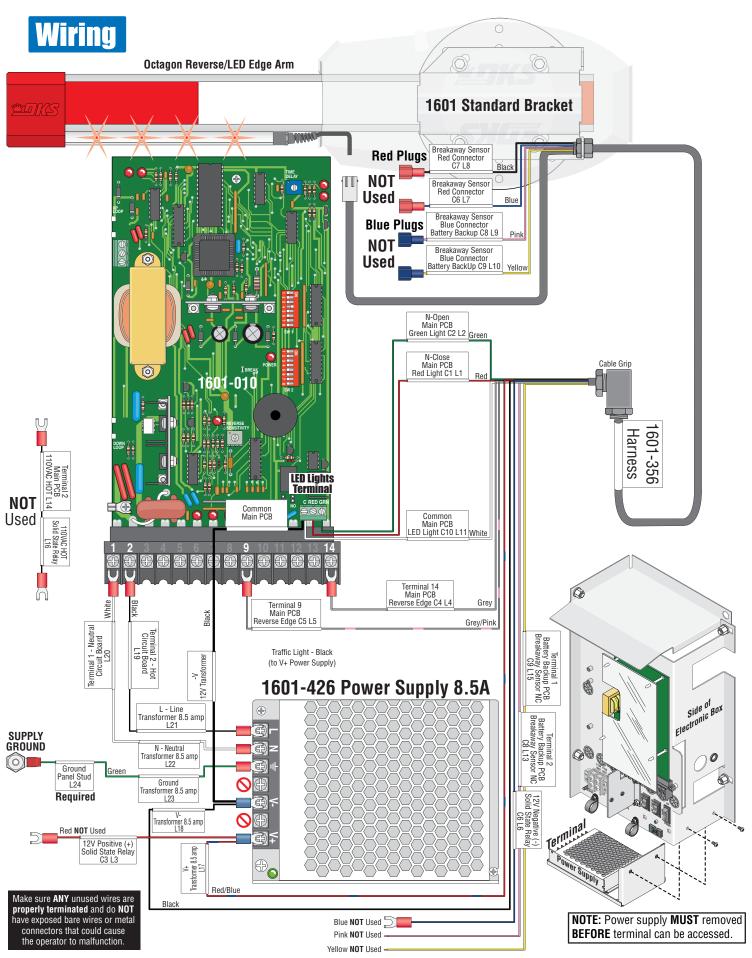
**Regular Maintenance of Wedge System**Regular inspection and removal of trash, debris, gravel, and rock is required in order to keep wedge barrier functioning properly. Neglecting to regularly clean trash and debris UNDERNEATH WEDGE PLATE is the number one cause of breakage and malfunctions. Check all bolts for tightness witch can loosen over time from normal operation.

Make sure all moving parts are functioning normally. If they are NOT, remove wedge barrier from service immediately until it can be repaired.



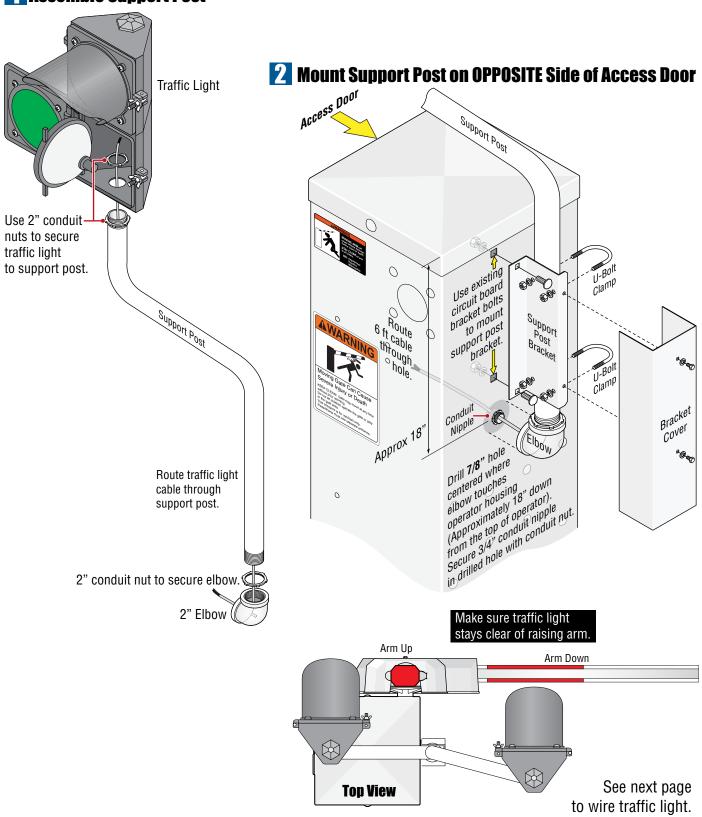
## **Install Octagon Arm with Reverse/LED Edge**

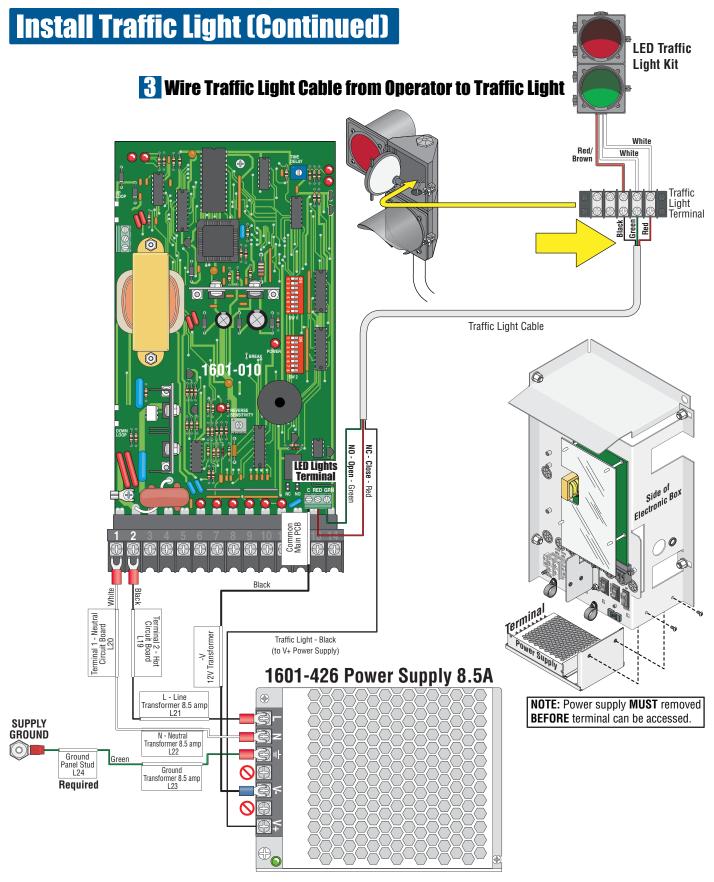




# **Install Traffic Light (REQUIRED)**

### 1 Assemble Support Post

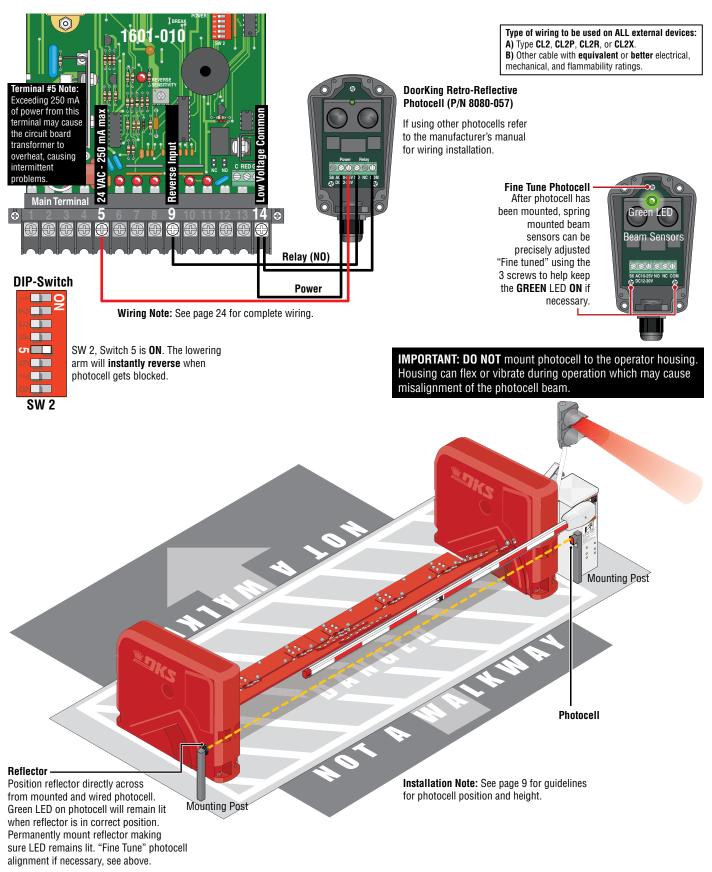




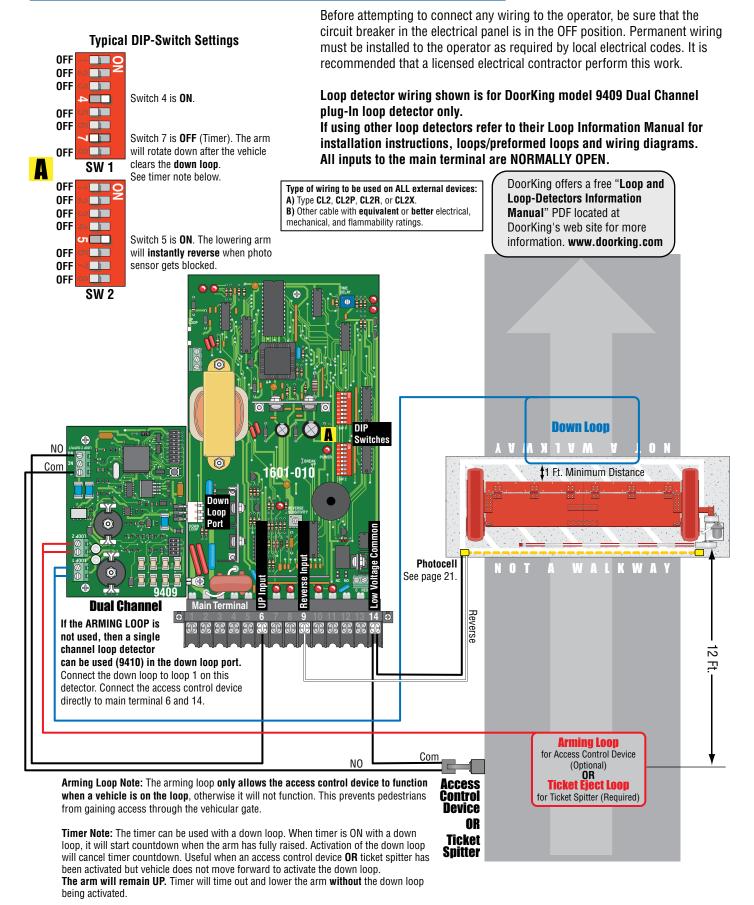
! Keep wire clear of all moving parts.

# **Install Photocell (REQUIRED)**

Mount photocell directly below the octagon arm on separate posts as shown (see page 9), mounting brackets not supplied.

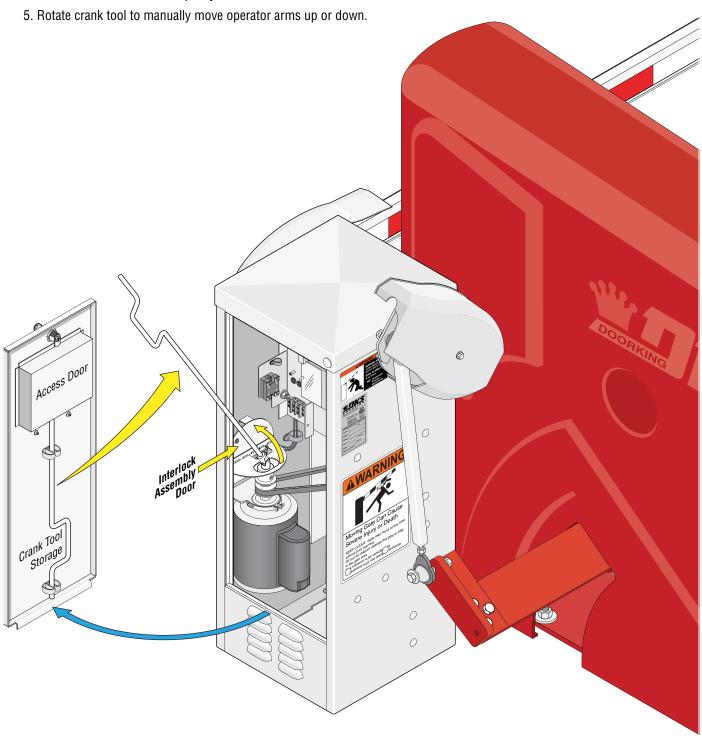


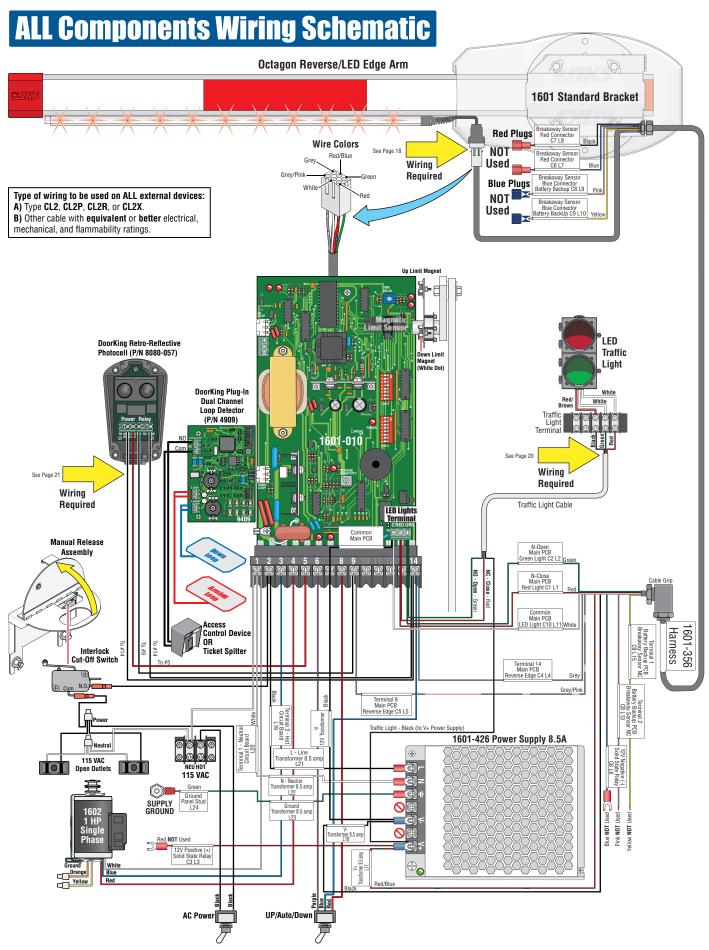
### **Entry Lane Only In-Ground Loop Options**



# **Manual Release Operation**

- 1. Unlock and remove access door.
- 2. Remove crank tool from inside access door.
- 3. Flip interlock assembly door up, power will be disabled from operator.
- 4. Insert crank tool into motor pulley as shown.





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