eVolve Series 2170

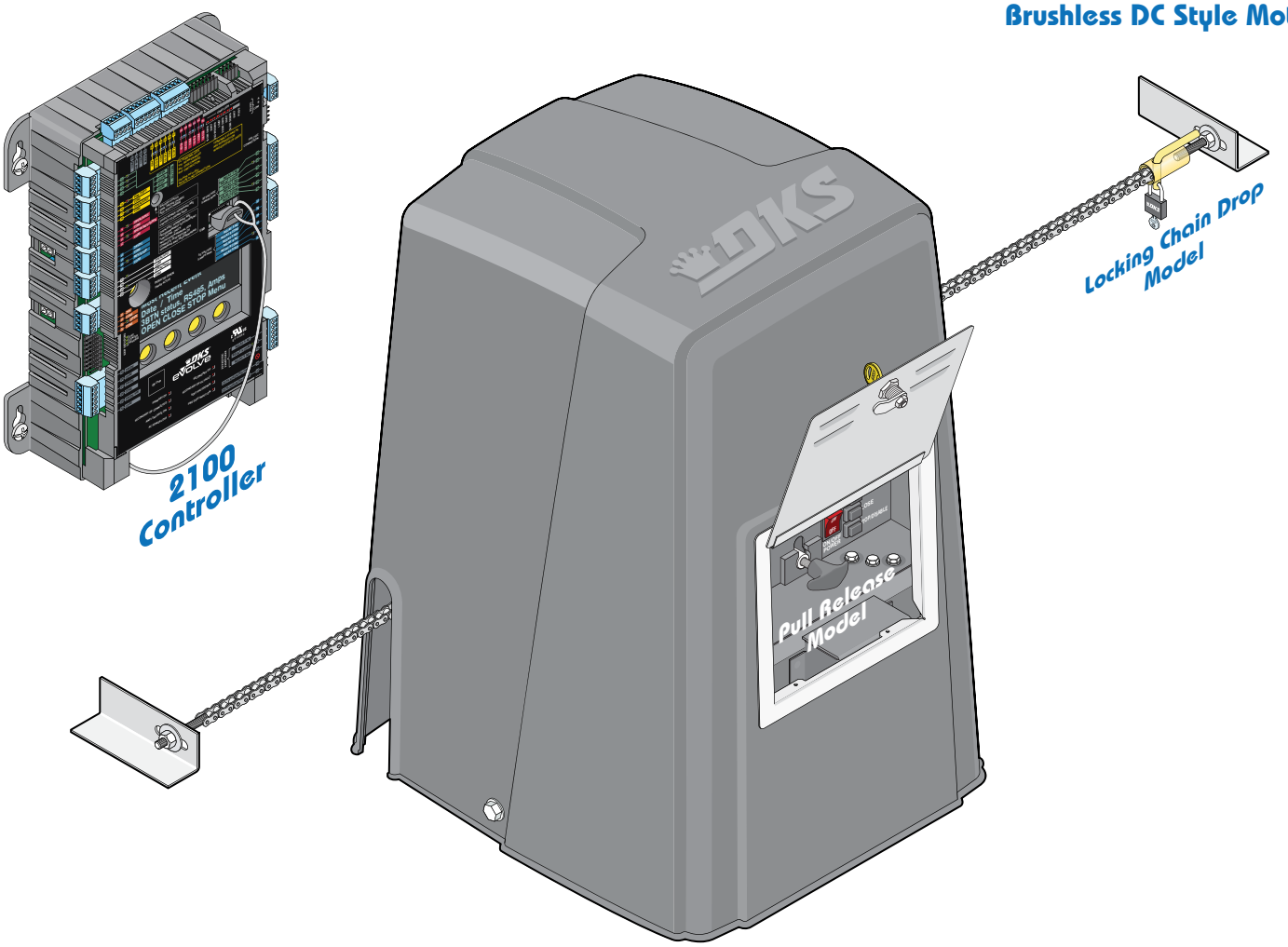
Vehicular Slide Gate Operator

Install / Owner's Manual

Use this manual for eVolve 2100 controller Revision A or higher.

2170-065-W-10-26

Brushless DC Style Motor



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: _____

_____

Phone Number: _____

2100 Controller Serial Number and Revision Letter: _____

Installer: Leave this manual with property owner

Property Owner: Checklist in back of this manual to review and verify new installation with Installer

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 direction of gate travel.

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Gate Operator

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Evolve 2170 Slide Gate Operator Specifications

Class of Operation — UL 325 Class I, II, III, IV

Type of Gate — Vehicular Slide Gates Only

Inherent Entrapment Protection — Inherent Reverse Sensors - **Type A**

External Entrapment Protection Device Inputs — Connection inputs for Non-contact Devices - Photo Beam - **Type B1**
(6) Six **Monitored** inputs - (3 Open) (3 Close) — Connection inputs for Contact Devices - Reversing Edge - **Type B2**

Note: To be compliant with **UL 325** and industry safety guidelines, entrapment protection devices need to be installed with this gate operator.

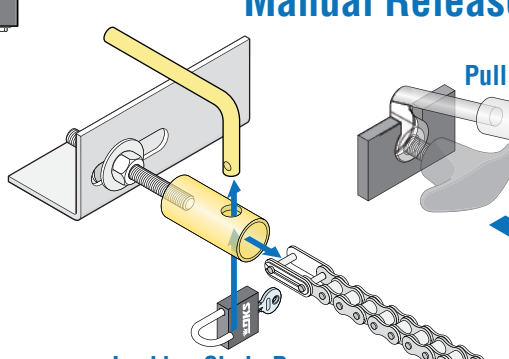
Model #	Manual Release Types	Motor Horsepower - Watts - Phase	Operator Input Volts / Amps Selectable	Max Gate Weight Installed Level	Max Gate Length Installed Level	Chain Size	Cycles per hour	Speed Slow Start Slow Stop
2170-380	Pull Release	**1/2** HP DC - **500** - 1-Phase	115VAC@5A **OR** 230VAC@3A	2300 Lbs	40 Ft	#40	Continous	1 Ft/Sec
2170-382	Chain Drop	**1/2** HP DC - **500** - 1-Phase	115VAC@5A **OR** 230VAC@3A	2300 Lbs	40 Ft	#40	Continous	1 Ft/Sec
2170-381	Pull Release	**1** HP DC - **750** - 1-Phase	115VAC@7A **OR** 230VAC@4A	3500 Lbs	40 Ft	#40	Continous	1 Ft/Sec
2170-383	Chain Drop	**1** HP DC - **750** - 1-Phase	115VAC@7A **OR** 230VAC@4A	3500 Lbs	40 Ft	#40	Continous	1 Ft/Sec

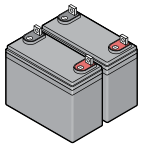
Operator MUST be Programmed BEFORE it will function.

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 in EACH direction of gate travel (minimum of 2 external devices required).

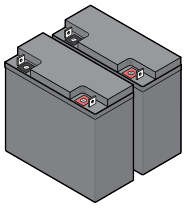
Type of wiring to be used on ALL external devices:
A) Type **CL2**, **CL2P**, **CL2R**, or **CL2X**.
B) Other cable with **equivalent** or **better** electrical, mechanical, and flammability ratings.

Manual Release Types

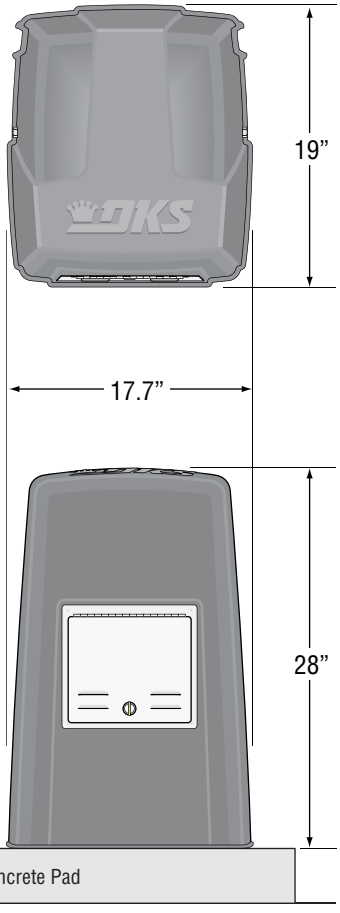




STANDARD BATTERY (SLA) Sealed Lead Acid 12 Volt 7 Amp/Hr Standard Replacement Battery
P/N 1801-003
Two (2) required.

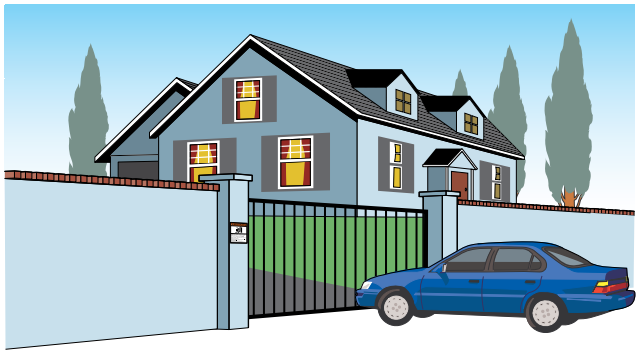


OPTIONAL BATTERY (SLA) Sealed Lead Acid 12 Volt 18 Amp/Hr Battery for Extended Back-Up Power
P/N 1801-004
Two (2) required.



UL 325 Entrapment Protection

UL 325 Classifications



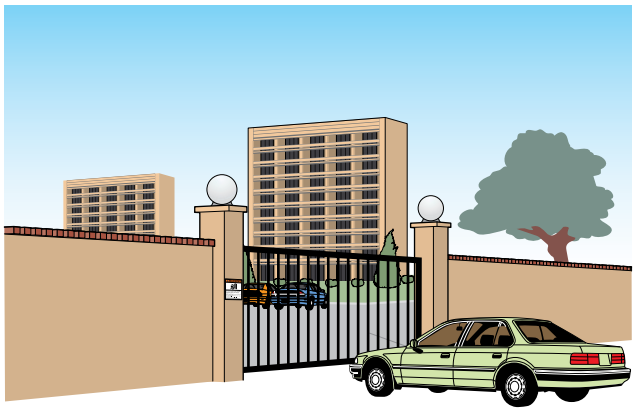
Class I - Residential Vehicular Gate Operator

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



Class III - Industrial/Limited Access Vehicular Gate Operator

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



Class II - Commercial/General Access Vehicular Gate Operator

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



Class IV - Restricted Access Vehicular Gate Operator

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

Gate Operator Category

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

Type A - Inherent entrapment protection system.

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

Type B2 - Contact device (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, folding, pivoting, 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 device, a photoelectric device, or similar entrapment protection device, which provides protection against entrapment when activated and is not incorporated as a permanent part of an operator.

All external entrapment protection devices must be **MONITORED**, and the operator must verify the presence of every device at least once during each open and close cycle. According to the standard, “Upon monitoring, should any device not be present, or a fault condition occur that precludes the sensing of an obstruction, including an interruption of the wireless signal to the wireless device or an open or short circuit in the wiring that connects the external entrapment device to the operator and the device’s supply source, the operator shall function with constant pressure...for the direction of travel being protected, or shall only be able to be moved manually....”

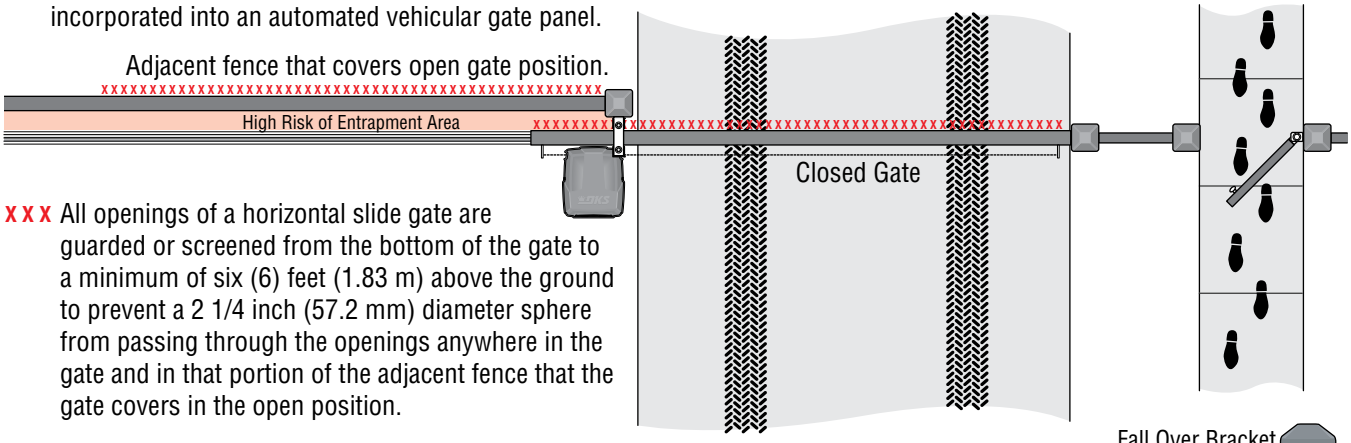
There shall be no modification made in the field to bypass, interfere with, or otherwise defeat the monitoring function by adding, suppressing, or changing, either on the operator or on external entrapment protection device(s) by the connection of wires; terminals; switches; jumpers; or components supplied with the operator or with the external entrapment protection device.

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

Slide Gate Requirements

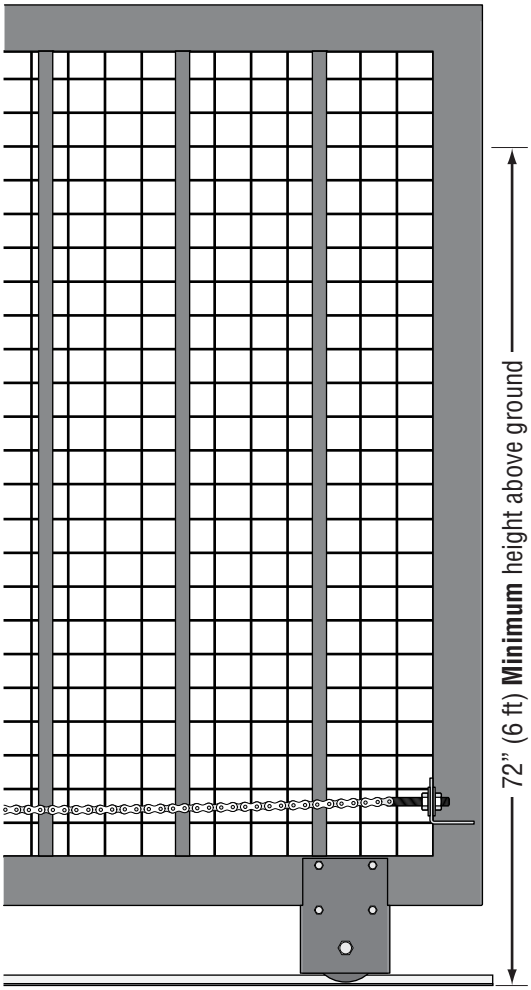
Illustrations not to scale.

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



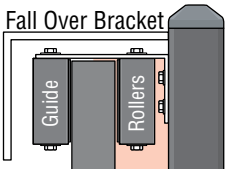
x x x All openings of a horizontal slide gate are guarded or screened from the bottom of the gate to a minimum of six (6) feet (1.83 m) above the ground to prevent a 2 1/4 inch (57.2 mm) diameter sphere from passing through the openings anywhere in the gate and in that portion of the adjacent fence that the gate covers in the open position.

Screened Wire Mesh Less than 2 1/4"

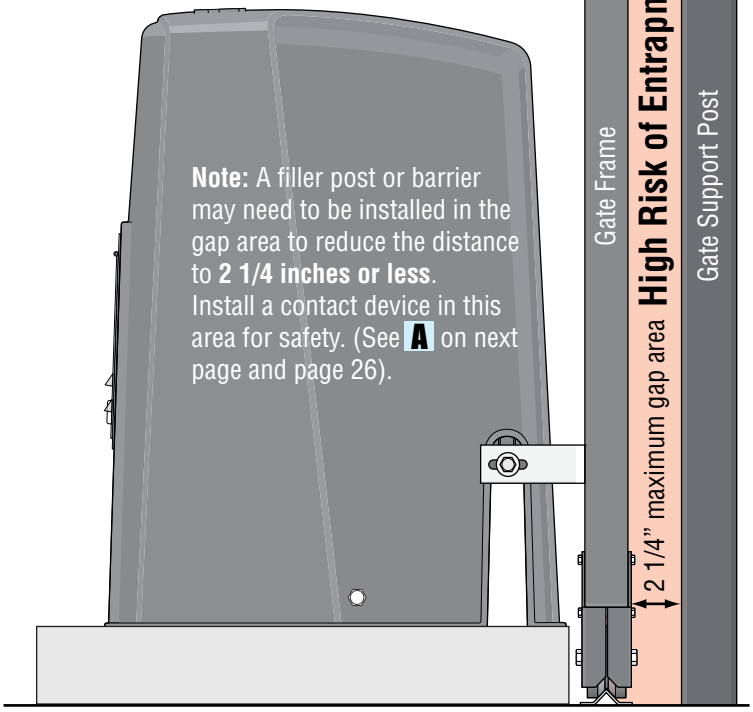


DoorKing recommends installing screened wire mesh on the **ENTIRE** gate **AND** on that portion of the adjacent fence that the gate covers in the **OPEN position**. (See above and page 11).

Gates shall be designed, constructed and installed to not fall over more than 45 degrees from the vertical plane, when a gate is detatched from the supporting hardware.



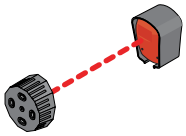
A gap, measured in the horizontal plane parallel to the roadway, between a fixed stationary object nearest the roadway (such as a gate support post) and the gate frame when the gate is in either the fully open position or the fully closed position, **shall not exceed 2 1/4 inch** (57.2 mm).



Safety Information for Slide Gate Operators

Illustration not to scale.

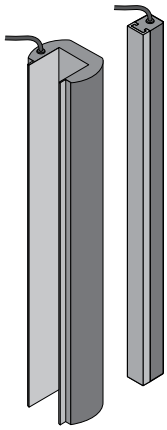
Entrapment protection devices are **REQUIRED** to reduce the risk of injury. Install devices where the risk of entrapment or obstruction exists while gate is moving. **Individual requirements will vary.** See page 26 for more information on typical layout locations and setup.



Non-Contact Devices (Photocells) Type B1

1 Helps minimize the potential of entrapment during the closing cycle of the gate. Minimizes the potential of the gate closing on vehicular or other traffic that loops cannot sense. It can be installed on the non-secure side **AND additionally** on the secure side of gate.

2 Helps minimize the potential of entrapment during the back travel of the gate (opening cycle). See previous page for gate gap information.



Contact Device (Reversing Edges) Type B2

A Installed on the fence to help minimize the potential of entrapment between the gate and fence during the opening cycle of the gate. A filler post or barrier MAY need to be installed between fence and gate.

B Helps minimize the potential of entrapment during the back travel of the gate (opening cycle).

C Helps minimize the potential of entrapment during the closing cycle of the gate. Minimizes the potential of the gate closing on vehicular or other traffic that loops cannot sense.

Guide Rollers

See previous page for more information.

Physical Stops

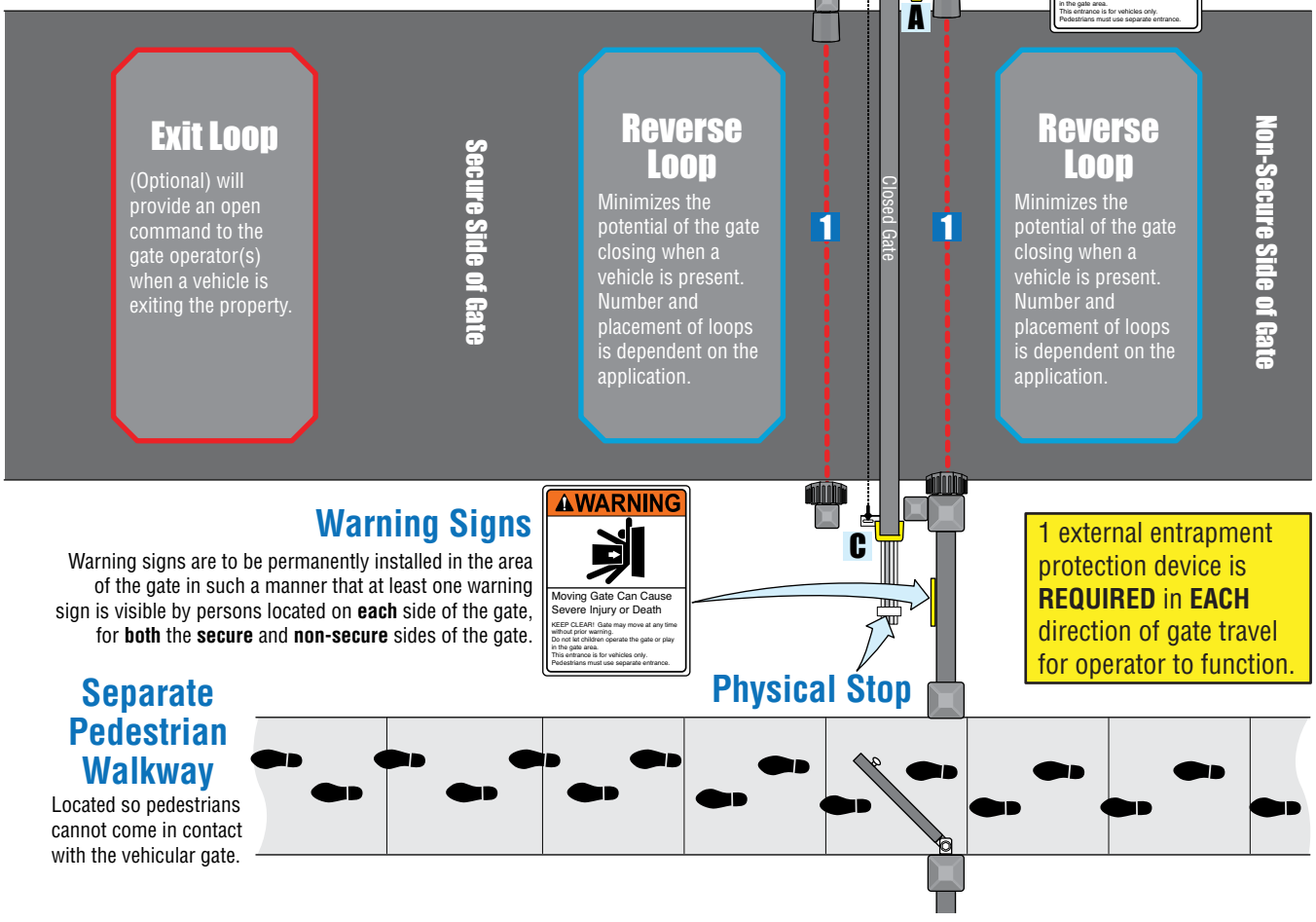
Positive stops shall be required to limit travel to the designed fully open and fully closed positions. These stops shall be installed either at the top of the gate, or at the bottom of the gate where such stops shall horizontally or vertically project no more than is required to perform their intended function.

Screened Wire Mesh

May be necessary on part of fence **AND** entire gate. See previous page for more information.

Warning Sign





Warning Signs

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

Physical Stop

1 external entrapment protection device is **REQUIRED** in **EACH** direction of gate travel for operator to function.

Separate Pedestrian Walkway

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

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

English	French
IMPORTANT SAFETY INSTRUCTIONS WARNING – To reduce the risk of severe injury or death:	**AVERTISSEMENT DE CONSIGNES DE SÉCURITÉ IMPORTANTES** – Pour réduire le risques de blessures graves ou mortelles :
1. READ AND FOLLOW ALL INSTRUCTIONS.	**1.** LIRE ET SUIVRE TOUTES LES INSTRUCTIONS.
2. Never let children operate or play with gate controls. Keep the remote control away from children.	**2.** Ne jamais laisser les enfants faire fonctionner la porte ou jouer avec les commandes de la barrière. Garder la télécommande hors de la portée des enfants.
3. Always keep people and objects away from the gate. NO ONE SHOULD CROSS THE PATH OF THE MOVING GATE.	**3.** Toujours garder les personnes et les objets loin de la barrière. PERSONNE NE DEVRAIT FRANCHIR LA BARRIÈRE EN MOUVEMENT.
4. Test the gate operator monthly. The gate MUST reverse on contact with a rigid object or stop 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.	**4.** Vérifier l'ouvre-barrière une fois par mois. La barrière DOIT inverser son mouvement au contact d'un objet rigide, lorsque celui-ci active les capteurs sans contact. Après avoir réglé la force ou la limite du déplacement, vérifier de nouveau l'ouvre-barrière. Si l'ouvre-barrière est mal réglé ou n'est pas vérifié de manière appropriée, le risque de ou de blessures graves ou mortelles est accru.
5. Use the manual release only when the gate is not moving.	**5.** Utiliser le dispositif de dégagement manuel uniquement si la barrière est immobilisée.
6. KEEP GATES PROPERLY MAINTAINED. Read the user's manual. Have a qualified service person make repairs to gate hardware.	**6.** ASSURER L'ENTRETIEN ADÉQUAT DE LA BARRIÈRE. Lire le guide d'utilisation. Demander à un professionnel qualifié de réparer la quincaillerie de la barrière .
7. The entrance is for vehicles only. Pedestrians must use separate entrance.	**7.** L'entrée est réservée aux véhicules . Les piétons doivent avoir une entrée distincte.
8. SAVE THESE INSTRUCTIONS.	**8.** CONSERVER CES INSTRUCTIONS.

Instructions regarding intended UL 325 installation:

English	French
a) Install the gate operator only when:	**a)** Installer l'ouvre-barrière uniquement si :
1) The operator is appropriate for the construction of the gate and the usage Class of the gate,	**1)** L'ouvre-barrière convient à la construction et la classe d'utilisation de la barrière.
2) All openings of a horizontal slide gate are guarded or screened from the bottom of the gate to a minimum of 1.83 m (6 ft) above the ground to prevent a 57.2 mm (2-1/4 inch) 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,	**2)** Toutes les ouvertures de la barrière coulissante horizontale sont protégées ou grillagées du bas de la barrière jusqu'à au moins 1,83 m (6 pi) du sol si bien qu'une sphère de 57,2 mm (2 1/4 po) de diamètre ne peut passer par aucune ouverture dans la barrière ou dans la portion de la clôture adjacente que la barrière couvre en position ouverte.
3) All areas of the moving vertical pivot gate panel from the bottom of the gate to the top of the gate or a minimum of 1.83 m (72 in) above grade, whichever is less, that pass by a fixed stationary object, and in the area of the adjacent fence that the gate covers during the travel of the gate, shall be designed, guarded or screened to prevent a 57 mm (2-1/4 in) diameter sphere from passing through such areas.	**3)** Toutes les zones du panneau d'une barrière à pivot verticale du bas jusqu'au haut de la barrière ou jusqu'à au moins 1,83 m (72 po) au-dessus du sol (la hauteur la plus basse prévalant) qui passe par un objet immobile et dans la portion de la clôture adjacente que la barrière couvre pendant sa course sont conçues, protégées ou grillagées si bien qu'une sphère de 57 mm (2 1/4 po) de diamètre ne peut passer par de telles zones.
4) All exposed pinch points are eliminated or guarded, and	**4)** Tous les points de pincement sont éliminés ou protégés .
5) Guarding is supplied for exposed rollers.	**5)** Des protections sont fournies pour les galets exposés.
6) The operator instructions shall list the maximum number of open and close entrapment protection devices capable of being connected to the operator.	**6)** Les instructions de l'ouvre-barrière doivent indiquer le nombre maximal de dispositifs de protection contre le coincement à l'ouverture ou à la fermeture.

Instructions regarding intended installation cont:

English	French
b) 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.	**b)** L'ouvre-barrière doit être installé uniquement sur des barrières utilisées pour les véhicules. Les piétons doivent avoir une entrée distincte. Celle-ci doit être conçue pour inciter les piétons à l'utiliser. L'accès doit se trouver dans un endroit où les piétons n'entreront pas en contact avec une barrière pour véhicules en mouvement pendant le déplacement de la barrière.
c) The gate must be installed in a location so that enough clearance is supplied between the gate and adjacent structures when opening and closing to reduce the risk of entrapment. Swinging gates shall not open into public access areas.	**c)** Pour réduire le risque de coincement lors de l'ouverture et de la fermeture, la barrière doit être installée dans un endroit où elle est suffisamment éloignée des structures avoisinantes . Les barrières basculantes ne doivent pas s'ouvrir dans des endroits accessibles au public.
d) 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 or pressure relief valve to compensate for an improperly installed, improperly functioning, or damaged gate.	**d)** S'assurer que la barrière est bien installée et fonctionne librement dans les deux directions avant d'entreprendre l'installation de l'ouvre-barrière. Ne pas trop serrer l'embrayage de l'ouvre-barrière ou la soupape de décharge de l'ouvre-barrière pour compenser une barrière mal installée, qui ne fonctionne pas correctement ou qui est endommagée.
e) For a gate operator utilizing Type D entrapment protection:	**e)** Pour un ouvre-barrière utilisant une protection contre le coincement de type D:
1) The gate operator controls must be placed so that the user has full view of the gate area when the gate is moving,	**1)** les commandes de l'ouvre-barrière doivent être placées de sorte que l'utilisateur voit l'ensemble de la zone de la barrière lorsque cette dernière est en mouvement.
2) The placard shall be placed adjacent to the controls,	**2)** La plaque exigée doit être placée à côté des commandes.
3) An automatic closing device (such as a timer, loop sensor, or similar device) shall not be employed, and	**3)** Ne pas utiliser de dispositif de fermeture automatique (comme une minuterie, une boucle de détection ou un dispositif similaire).
4) No other activation device shall be connected.	**4)** Ne brancher aucun autre dispositif d'activation.
f) Permanently mounted controls intended for user activation must be located at least 1.83 m (6 ft) 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. **Exception:** 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 gate.	**f)** Les commandes permanentes destinées à l'activation par l'utilisateur doivent être situées à au moins 1,83 m (6 pi) des pièces mobiles de la barrière et à un endroit que l'utilisateur ne peut atteindre pour actionner les commandes par -dessus ou sous la barrière, ou à côté ou au travers de la barrière. **Exception:** Les commandes d'accès d'urgence accessibles au personnel autorisé seulement (p. ex. pompiers, policiers, ambulanciers) peuvent être placées n'importe où, du moment qu'elles sont en vue de la barrière.
g) 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.	**g)** Le bouton d'arrêt, ou de réinitialisation doit être situé en vue de la barrière. L'activation de la commande de réinitialisation ne doit pas entraîner l'activation de l'ouvre-barrière.
h) A minimum of two (2) WARNING SIGNS shall be installed, in the area of the gate. Each placard is to be visible by persons located on the side of the gate on which the placard is installed.	**h)** Au moins deux (2) PANNEAUX D'AVERTISSEMENT doivent être installés dans la zone de la barrière. Toutes les plaques d'avertissement doivent être visibles des personnes situées à côté de la barrière sur laquelle les plaques sont installées.
i) For a gate operator utilizing Type B1, non-contact entrapment protection:	**i)** Pour un ouvre-barrières utilisant un capteur sans contact pour la protection contre le coincement de type B1:
1) See instructions on the placement of non-contact sensors for each Type of application,	**1)** Voir les instructions sur l'emplacement des capteurs sans contact pour chaque type d'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, and	**2)** Des précautions doivent être prises pour réduire les risques de déclenchement inutile, comme lorsqu'un véhicule déclenche le capteur pendant que la barrière est encore en mouvement.
3) One or more non-contact sensors shall be located where the risk of entrapment or obstruction exists, such as the perimeter reachable by a moving gate or barrier.	**3)** Au moins un capteur sans contact ou plus doit être situé où il existe un risque de coincement ou d'obstruction, comme dans l'espace que peuvent atteindre le bras et la barrière lorsqu'ils sont en mouvement.
j) For a gate operator utilizing Type B2, contact entrapment protection:	**j)** Pour un ouvre-barrière utilisant un capteurs de contact pour la protection contre le coincement de type B2:
1) One or more contact sensors shall be located where the risk of entrapment or obstruction exists, such as at the leading edge, trailing edge, and postmounted both inside and outside of a vehicular horizontal slide gate.	**1)** Au moins un capteur de contact doit être situé où il existe un risque de coincement ou d'obstruction, comme sur le bord d'attaque, sur le bord de fuite et sur les poteaux montés sur l'intérieur et l'extérieur d'une barrière coulissante horizontale pour véhicules.

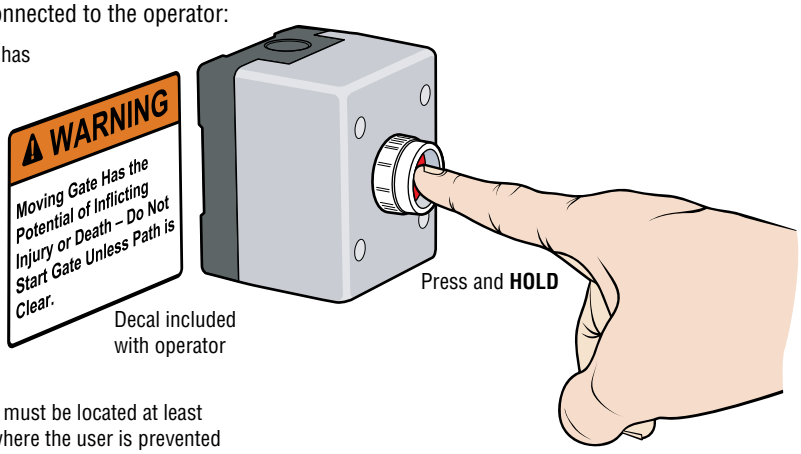
Instructions regarding intended installation cont:

English	French
2) One or more contact sensors shall be located at the bottom edge of a vehicular vertical lift gate.	**2)** Au moins un capteur de contact doit être situé sur le bord inférieur d'une barrière levante verticale pour véhicules.
3) One or more contact sensors shall be located at the pinch point of a vehicular vertical pivot gate.	**3)** Au moins un capteur de contact doit être situé au point de pincement d'une barrière à pivot vertical pour véhicules.
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.	**4)** Un capteur de contact doit être installé et câblé de sorte à éviter que la communication entre le capteur et l'ouvre-barrière soit gênée par des dommages mécaniques.
5) A wireless device such as one that transmits radio frequency (RF) signals to the gate operator for entrapment protection functions shall be located where the transmission of the signals are not obstructed or impeded by building structures, natural landscaping or similar obstruction. A wireless device shall function under the intended end-use conditions.	**5)** Un dispositif sans fil, comme un appareil qui transmet des signaux de radiofréquence (RF) à l'ouvre- barrière pour prévenir le coincement, doit être situé à un endroit où la transmission des signaux ne sera pas obstruée ou gênée par des structures, des arbres ou d'autres obstacles similaires. Un dispositif sans fil doit fonctionner dans les conditions pour lesquelles il a été conçu.
6) One or more contact sensors shall be located on the inside and outside leading edge of a swing gate. Additionally, if the bottom edge of a swing gate is greater than 101.6 mm (4 in) but less than 406 mm (16 inches) above the ground at any point in its arc of travel, one or more contact sensors shall be located on the bottom edge.	**6)** Au moins un capteur de contact doit être situé à l'intérieur et à l'extérieur du bord d'attaque d'une barrière battante. De plus, si le bord inférieur de la barrière battante est situé à plus de 101 ,6 mm (4 po), mais à moins de 406 mm (16 po) du sol à l'un des points de sa trajectoire, au moins un capteur de contact doit être situé sur le bord inférieur.
7) For a vertical barrier (arm) operator utilizing Type B2 contact entrapment protection, one or more contact sensors shall be located at the bottom edge of a vertical barrier (arm).	**7)** Pour un ouvre-barrière à bras levant utilisant un capteur de contact pour la protection contre le coincement de type B2, au moins un capteur de contact doit être situé sur le bord inférieur de la barrière à bras levant.
8) One or more contact sensors shall be located where the risk of entrapment or obstruction exists on a bifold gate, such as:	**8)** Au moins un capteur de contact doit être situé où il existe un risque de coincement ou d'obstruction sur une barrière pliante, comme :
i) At the inner and outer leading edge,	**i)** Au bord d'attaque intérieur et extérieur;
ii) Between the outer column panel and the inner bifold panel of an opening bifold gate,	**ii)** Entre le panneau de colonne extérieur et le panneau interne à deux volets d'une barrière pliante;
iii) Between the outer/column panel and any obstruction within 406mm (16 in) of the gate panel when it is in the fully open position,	**iii)** Entre le panneau de colonne extérieur et tout obstacle se trouvant à moins de 406 mm (16 po) du panneau de barrière lorsqu'il est en position complètement ouverte;
iv) At hinge points depending on the construction of the gate,	**iv)** Aux points de charnière selon la construction de la barrière;
v) On the bottom edge(s),if the bottom edge(s) of a bifold gate is/are greater than 152 mm (4 in) but less than 406 mm (16 in) above the ground at any point in its arc of travel.	**v)** Sur les bords inférieurs d'une barrière pliante, s'ils sont situés à plus de 152 mm (4 po), mais à moins de 406 mm (16 po) du sol à l'un des points de la trajectoire de la barrière.

Type D Constant Pressure Button Information

When a **constant pressure** control station (Type D) is connected to the operator:

- The gate operator controls must be placed so that the user has **FULL VIEW of the GATE AREA** when the gate is moving.
- The placard shall be placed adjacent to the controls,
- An automatic closing device (such as a timer, loop sensor, or similar device) shall **NOT** be employed, and
- No other activation device shall be connected.
- Permanently mounted controls intended for user activation must be located at least 1.83 m **(6 ft)** 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.



Important Notices

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

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

In addition to these potential hazards, automated vehicular gate systems must be installed in accordance with the UL 325 Safety Standard and the ASTM F2200 Construction Standard. Most people are unaware of, or are not familiar with, these standards. If an automated vehicular gate system is not properly designed, installed, used and maintained, severe 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 8). These include reversing loops, inherent reversing system, electric edges, photoelectric cells, or other external devices.

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

Opening device MUST be mounted a minimum of 6 feet (1.83 m) from the gate and NOT accessible through the gate!

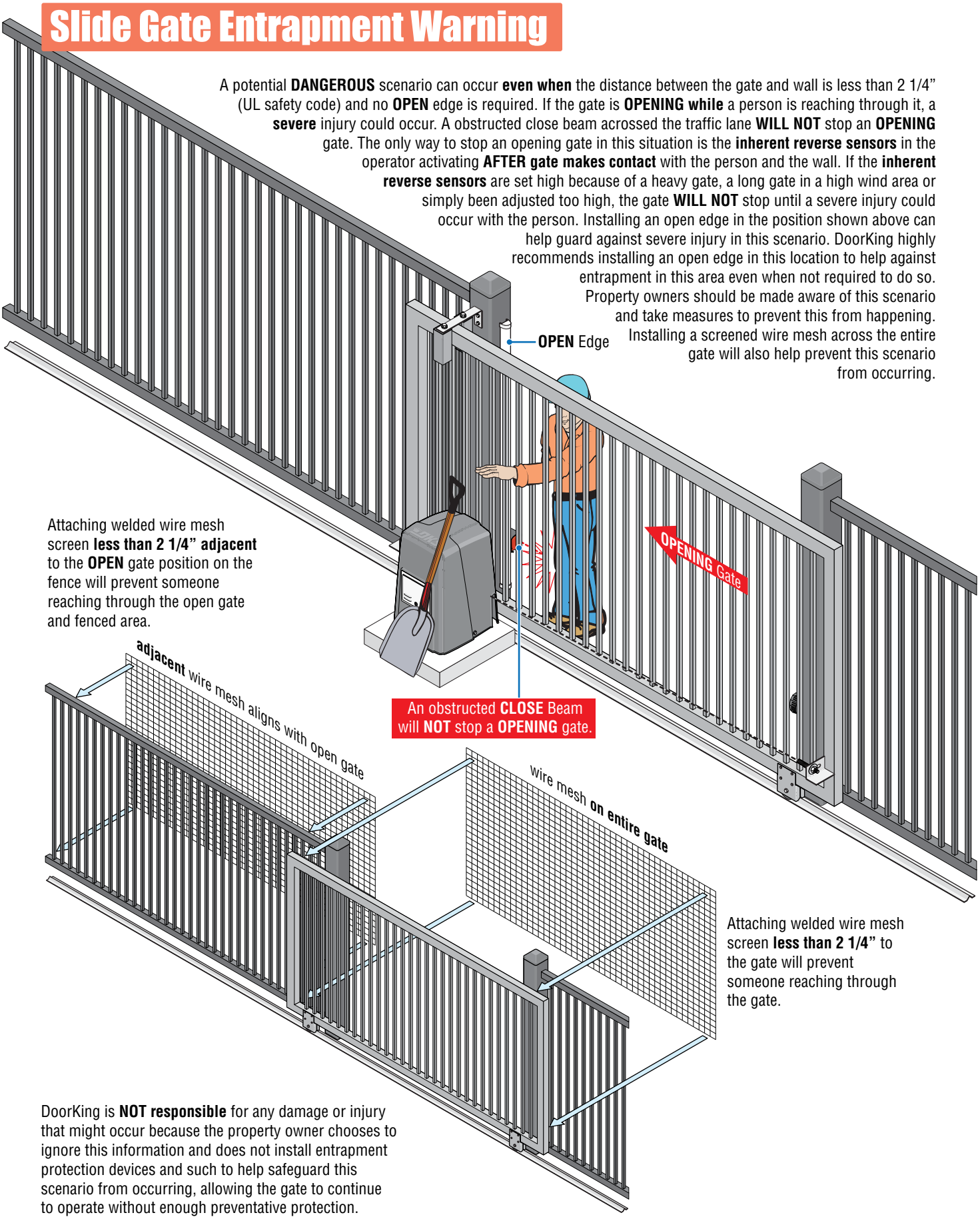
Install it high enough to keep out of reach of small children.



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

Slide Gate Entrapment Warning

A potential **DANGEROUS** scenario can occur **even when** the distance between the gate and wall is less than 2 1/4" (UL safety code) and no **OPEN** edge is required. If the gate is **OPENING while** a person is reaching through it, a **severe** injury could occur. A obstructed close beam acrossed the traffic lane **WILL NOT** stop an **OPENING** gate. The only way to stop an opening gate in this situation is the **inherent reverse sensors** in the operator activating **AFTER gate makes contact** with the person and the wall. If the **inherent reverse sensors** are set high because of a heavy gate, a long gate in a high wind area or simply been adjusted too high, the gate **WILL NOT** stop until a severe injury could occur with the person. Installing an open edge in the position shown above can help guard against severe injury in this scenario. DoorKing highly recommends installing an open edge in this location to help against entrapment in this area even when not required to do so. Property owners should be made aware of this scenario and take measures to prevent this from happening. Installing a screened wire mesh across the entire gate will also help prevent this scenario from occurring.



Attaching welded wire mesh screen **less than 2 1/4" adjacent** to the **OPEN** gate position on the fence will prevent someone reaching through the open gate and fenced area.

Attaching welded wire mesh screen **less than 2 1/4"** to the gate will prevent someone reaching through the gate.

DoorKing is **NOT responsible** for any damage or injury that might occur because the property owner chooses to ignore this information and does not install entrapment protection devices and such to help safeguard this scenario from occurring, allowing the gate to continue to operate without enough preventative protection.

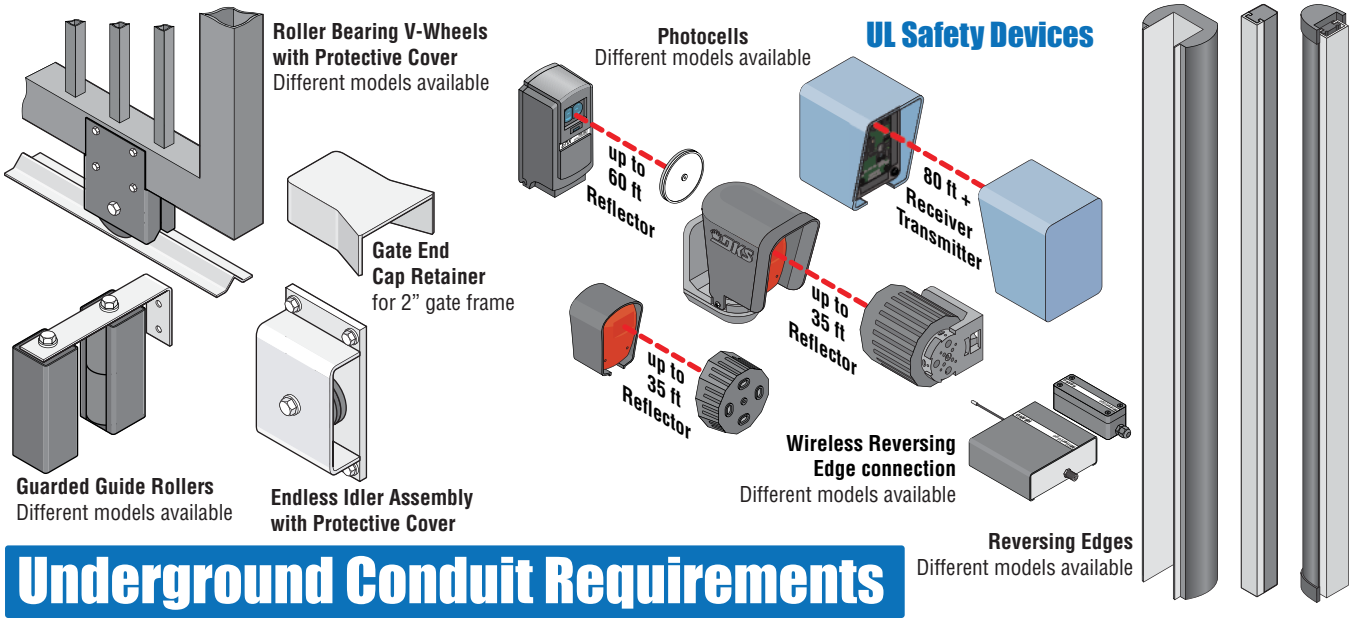
Installation Options

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

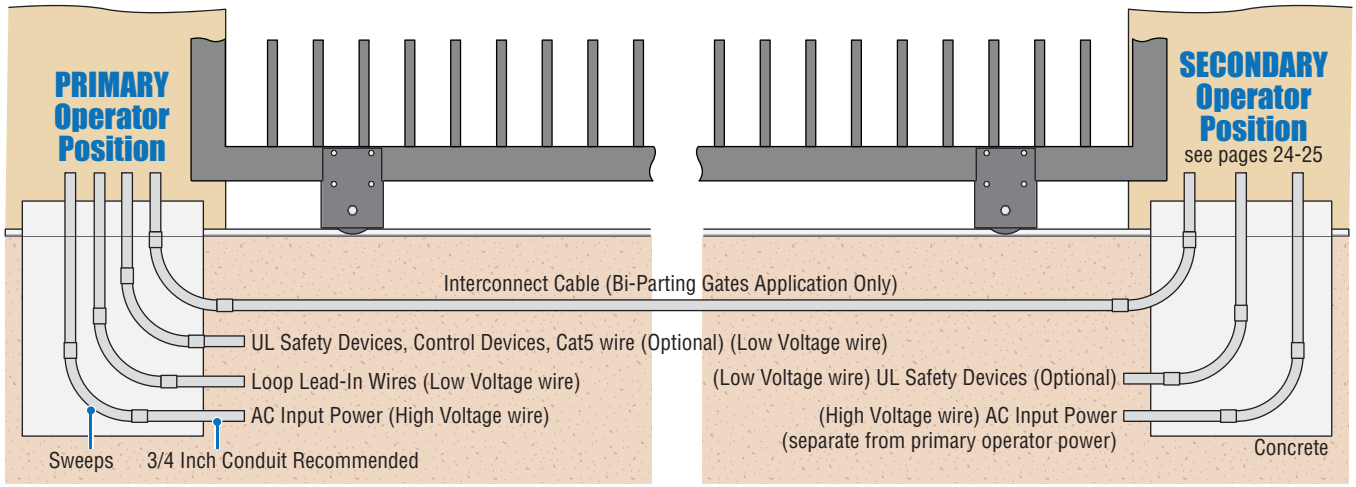
The proper installation of the vehicular slide gate operator is an extremely important and integral part of the overall access control system. Check all local building ordinances and building codes prior to installing this operator. Be sure your installation is in compliance with local codes.

Slide Gate Hardware

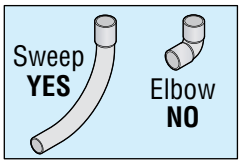
Good hardware is essential for proper operation of a sliding gate. DoorKing has a full line of gate hardware products that will ensure safe, reliable and long lasting gate operation. The gate must be properly installed and roll smoothly in both directions. UL devices **MUST** be installed in **BOTH** directions of gate travel.



Underground Conduit Requirements



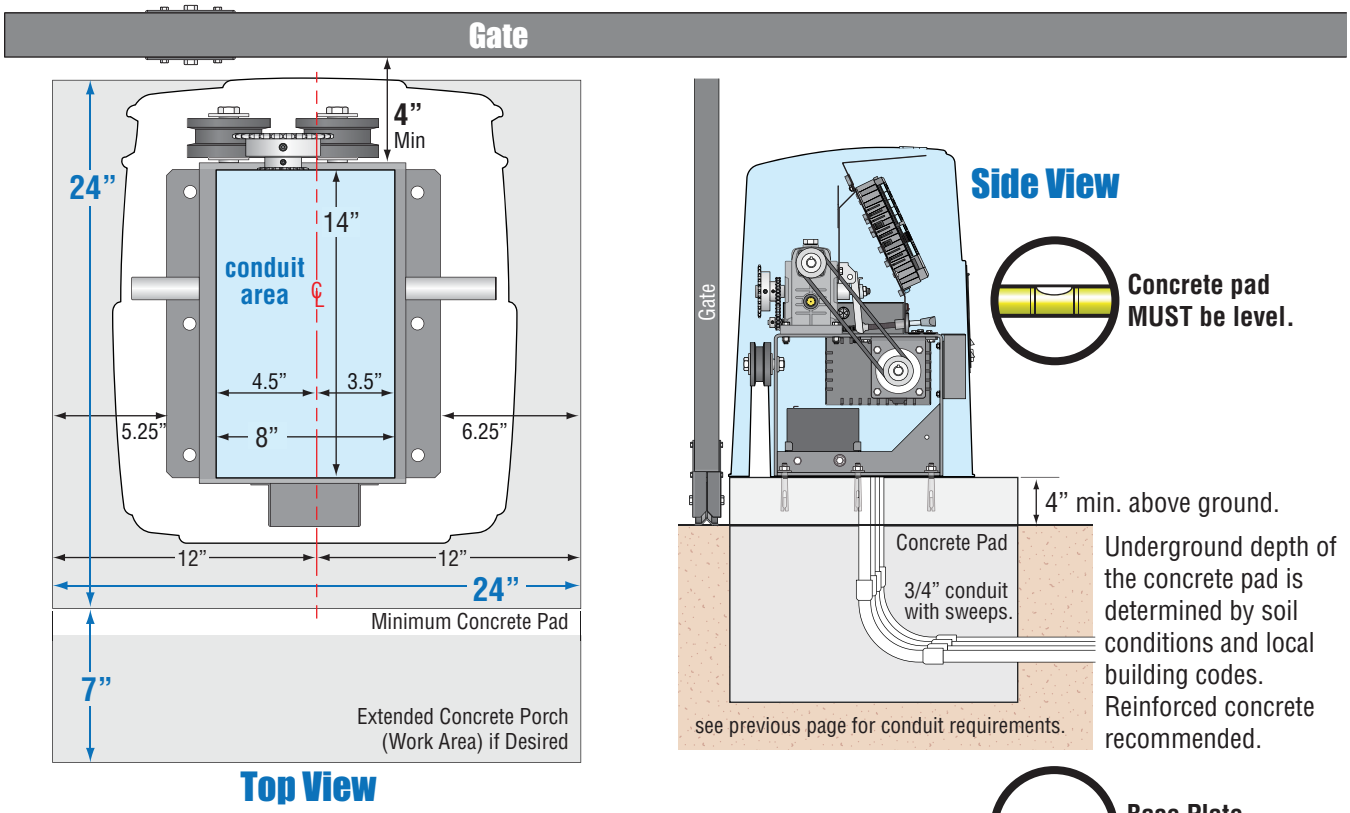
- The conduit requirements are for a typical slide gate operator installation (the secondary operator is shown when using bi-parting gates). **The conduit requirements for your application may vary from this depending on your specific needs.**
- Use only sweeps for conduit bends. Do not use 90° elbows as this will make wire pulls very difficult and can cause damage to wire insulation. DoorKing recommends using 3/4-inch conduit.
- Be sure that all conduits are installed in accordance with local codes.
- **Never** run low voltage rated wire in the same conduit as high voltage rated wire.
- **External Entrapment Protection** is **REQUIRED** (photocell and/or reversing edge). **UL Safety Devices MUST** be connected to operator in **BOTH** directions of gate travel or operator will **NOT** run. See page 26.



Concrete Pad or Post Mount Setups

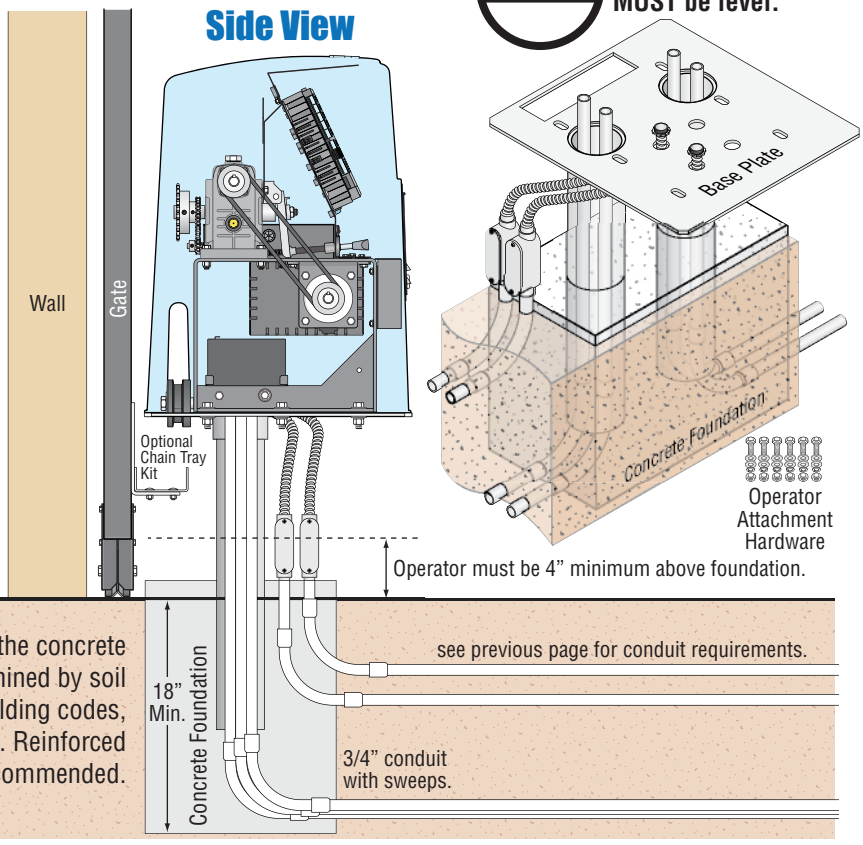
Concrete Pad Setup

See page 26 for Bi-Parting gates layout samples if needed.



Optional Post Mount Kit

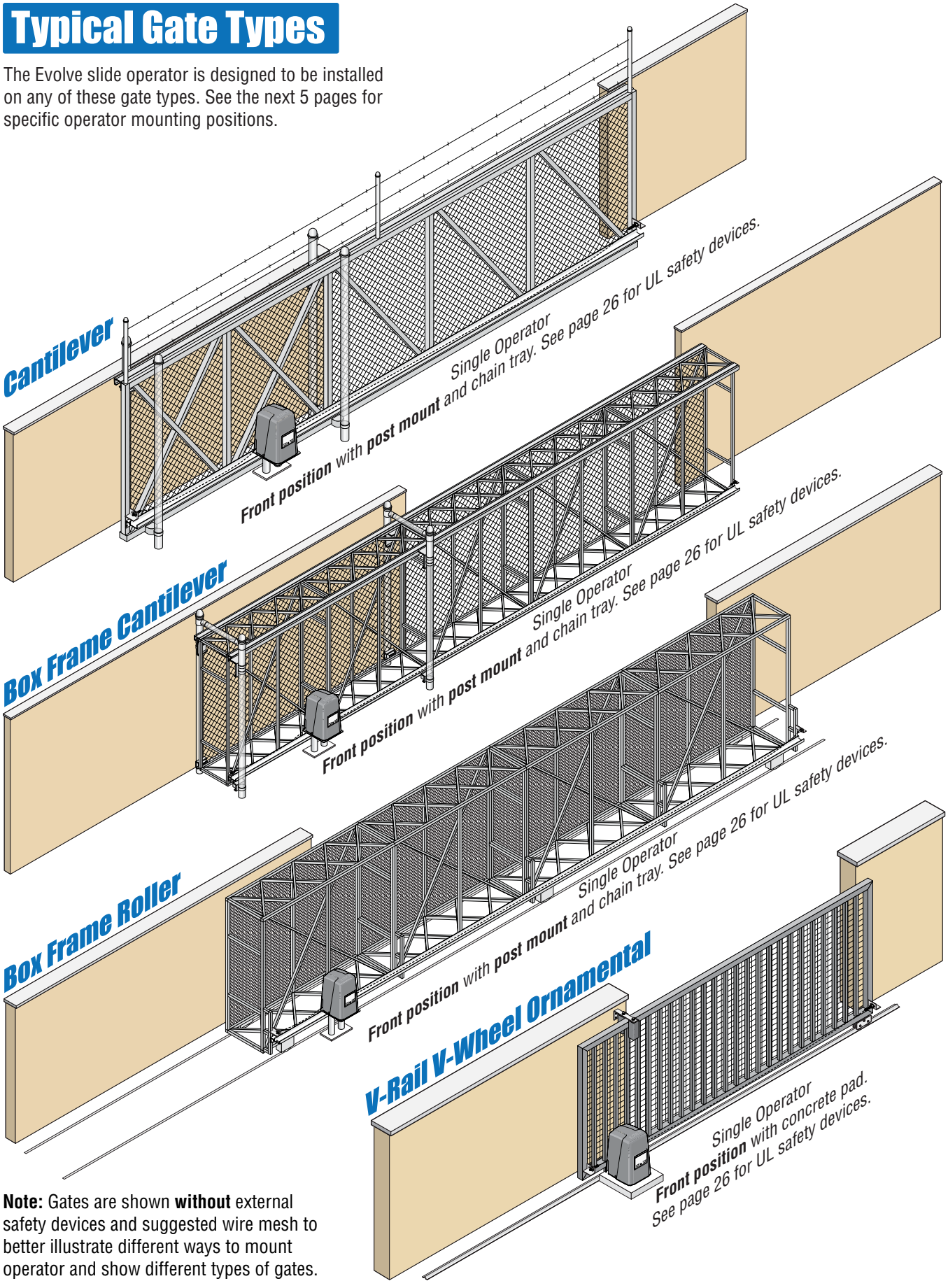
DoorKing offers a post mount kit specifically for the Model 2170 (P/N 9000-015). The kit includes a base plate, 2 posts and hardware to attach the operator to the base plate. This kit will raise the operator and allow different chain heights for specific operator applications. Refer to the instruction sheet provided with the kit for concrete foundation size, conduit type and placement. This kit is needed if a chain tray is required to support the chain's weight when a longer gate is used (See page 22 for more information about DoorKing's chain tray kit).



Underground depth of the concrete foundation is determined by soil conditions and local building codes, 18" minimum depth. Reinforced concrete recommended.

Typical Gate Types

The Evolve slide operator is designed to be installed on any of these gate types. See the next 5 pages for specific operator mounting positions.



Note: Gates are shown **without** external safety devices and suggested wire mesh to better illustrate different ways to mount operator and show different types of gates.

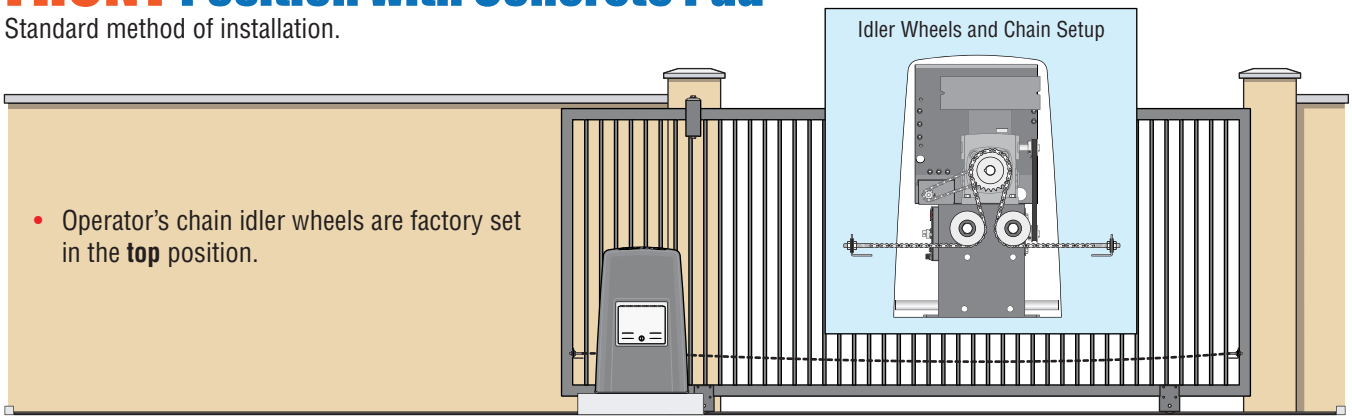
Operator Mounting Positions: Front, Rear, Center

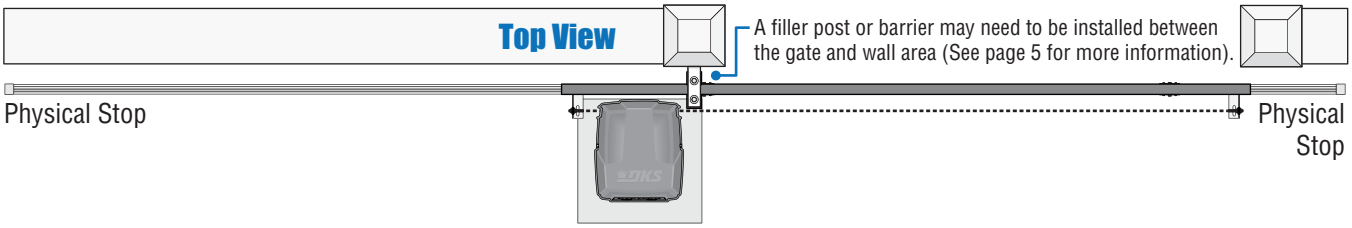
The Evolve Slide operator is designed to be installed in the **front**, **rear** and **center** mounting positions shown on this page and the next 4 pages. V-wheel V-rail ornamental gates are shown as examples but other gate types on the previous page can use the same mounting setups. Once the mounting position has been selected, refer to this page and the next 11 pages for specific installation instructions.

FRONT Position with Concrete Pad

Standard method of installation.

- Operator's chain idler wheels are factory set in the **top** position.

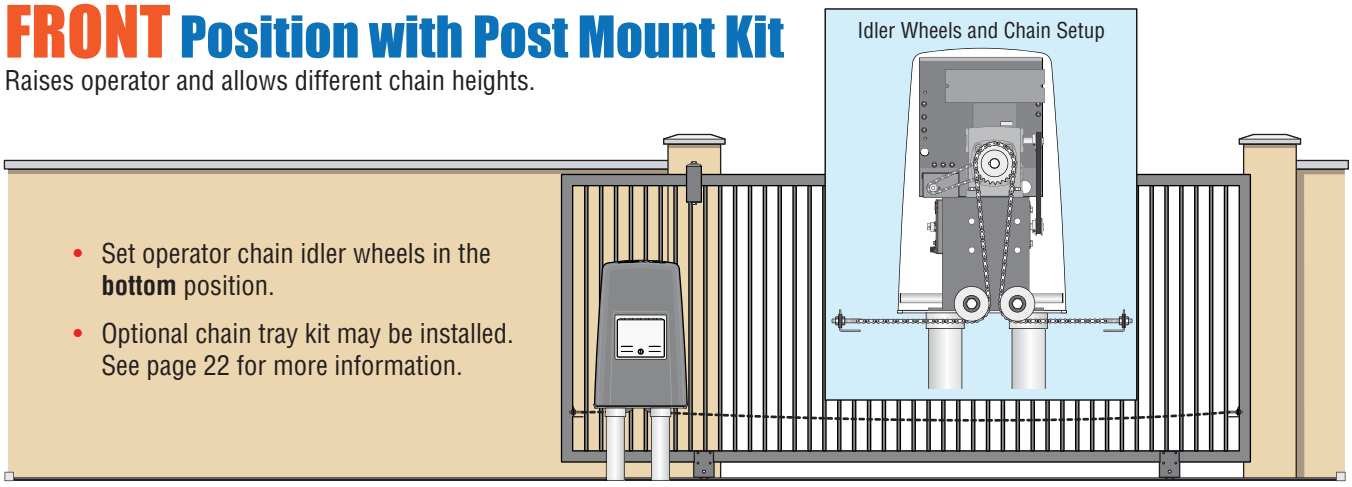




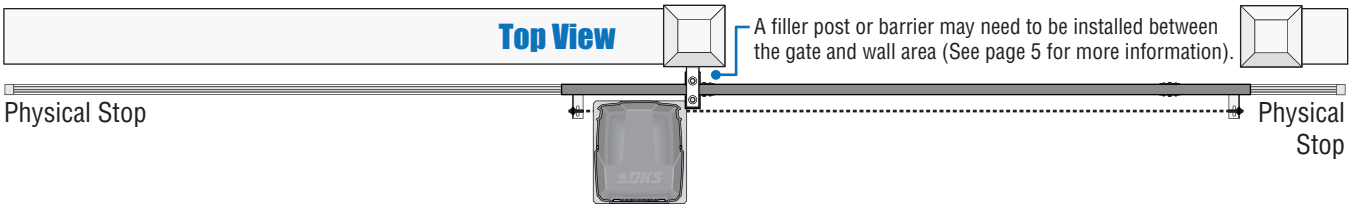
FRONT Position with Post Mount Kit

Raises operator and allows different chain heights.

- Set operator chain idler wheels in the **bottom** position.
- Optional chain tray kit may be installed. See page 22 for more information.



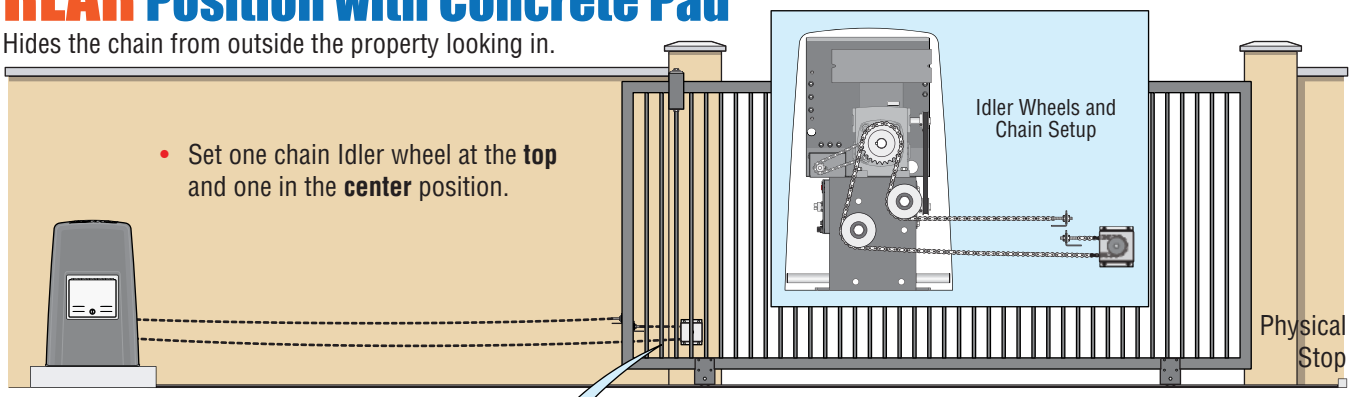
See page 13 and the post mount instruction sheet included with the kit for more information about post installation.



Additional hardware required Post mount kit (P/N 9000-015).

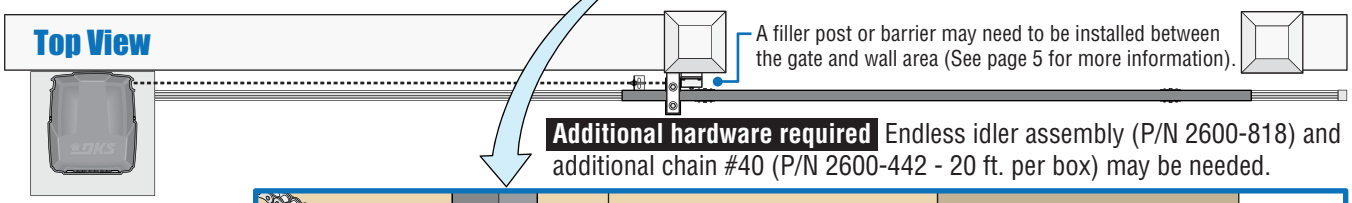
REAR Position with Concrete Pad

Hides the chain from outside the property looking in.

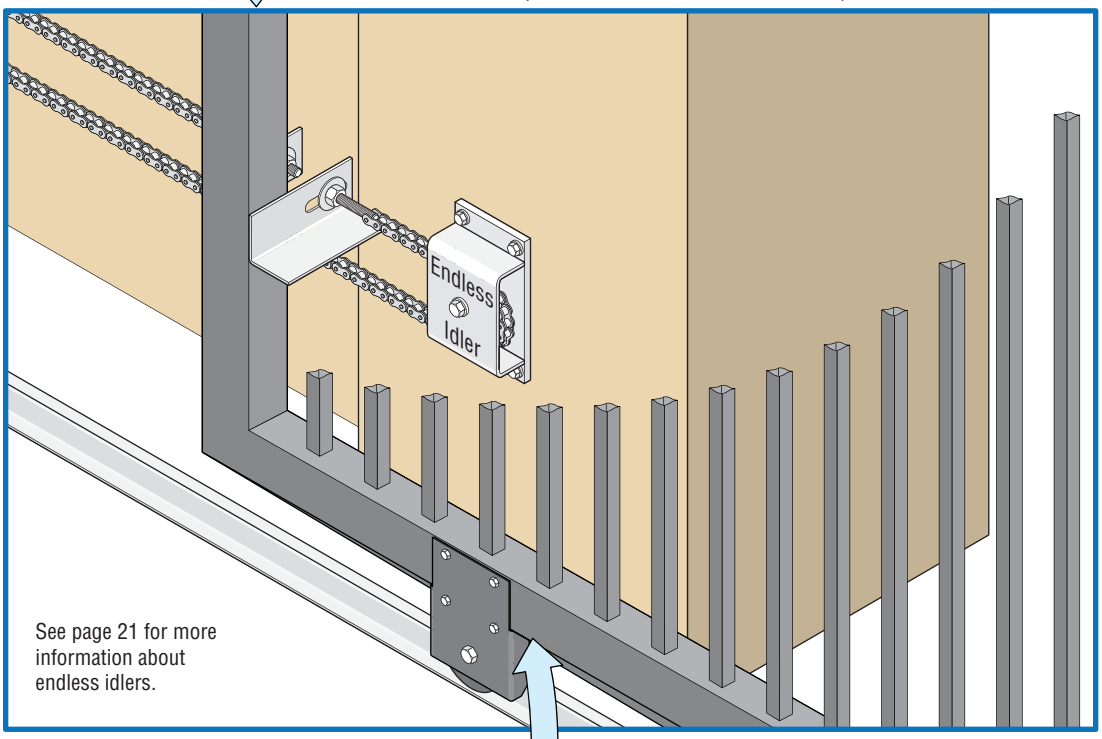


- Set one chain Idler wheel at the **top** and one in the **center** position.

Top View



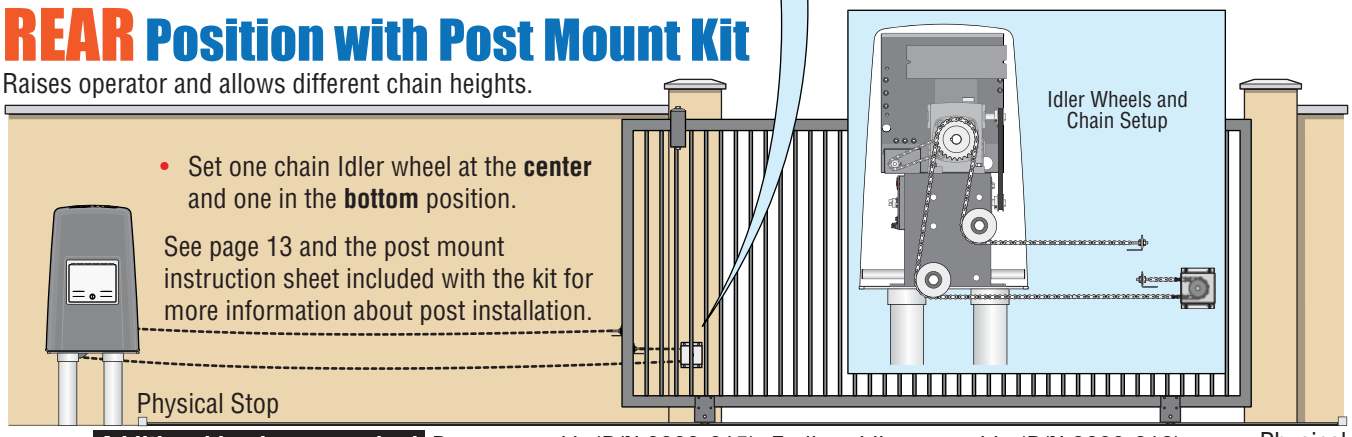
Additional hardware required Endless idler assembly (P/N 2600-818) and additional chain #40 (P/N 2600-442 - 20 ft. per box) may be needed.



See page 21 for more information about endless idlers.

REAR Position with Post Mount Kit

Raises operator and allows different chain heights.



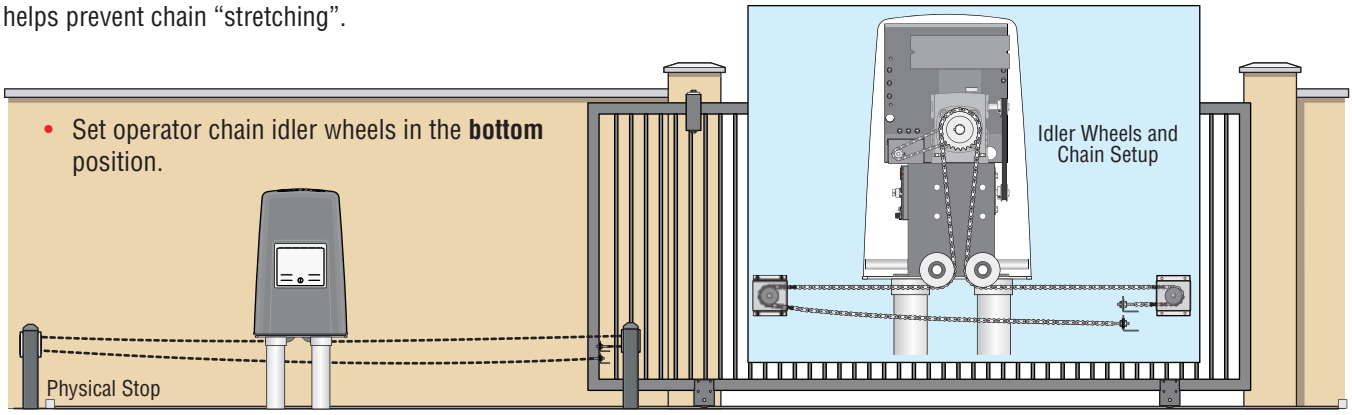
- Set one chain Idler wheel at the **center** and one in the **bottom** position.

See page 13 and the post mount instruction sheet included with the kit for more information about post installation.

Additional hardware required Post mount kit (P/N 9000-015). Endless idler assembly (P/N 2600-818) and additional chain #40 (P/N 2600-442 - 20 ft. per box) may be needed.

CENTER Position with Post Mount Kit

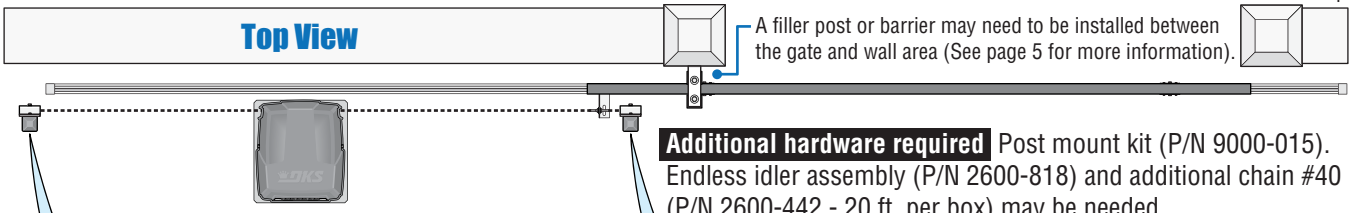
Hides chain from outside the property looking in. Allows the use of DoorKing's chain tray kit to attach to gate. This is useful with long gates. It supports the chain's weight and helps prevent chain "stretching".



See page 13 and the post mount instruction sheet included with the kit for more information about post installation.

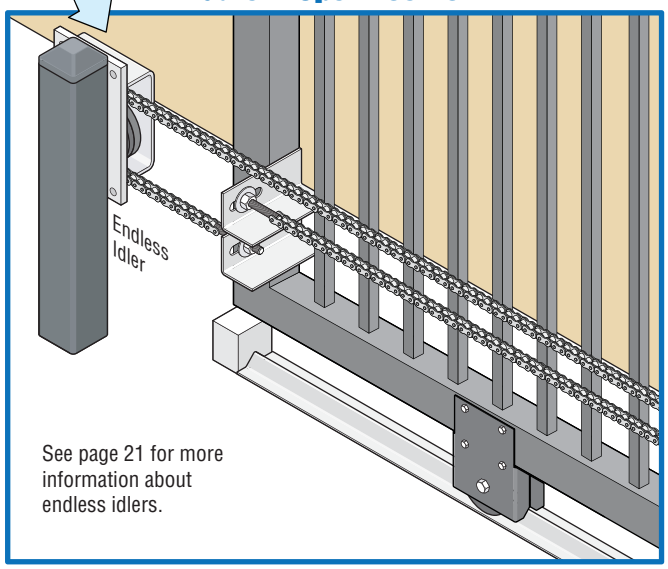
Physical Stop

Top View



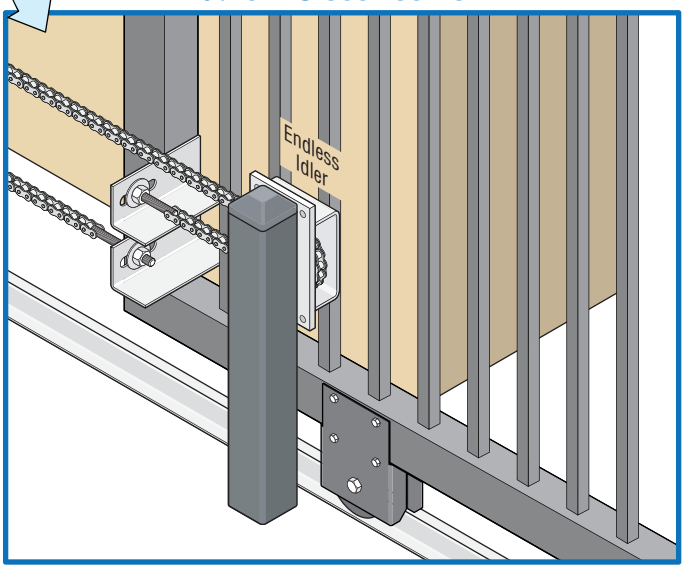
Additional hardware required Post mount kit (P/N 9000-015). Endless idler assembly (P/N 2600-818) and additional chain #40 (P/N 2600-442 - 20 ft. per box) may be needed.

Gate in Open Position



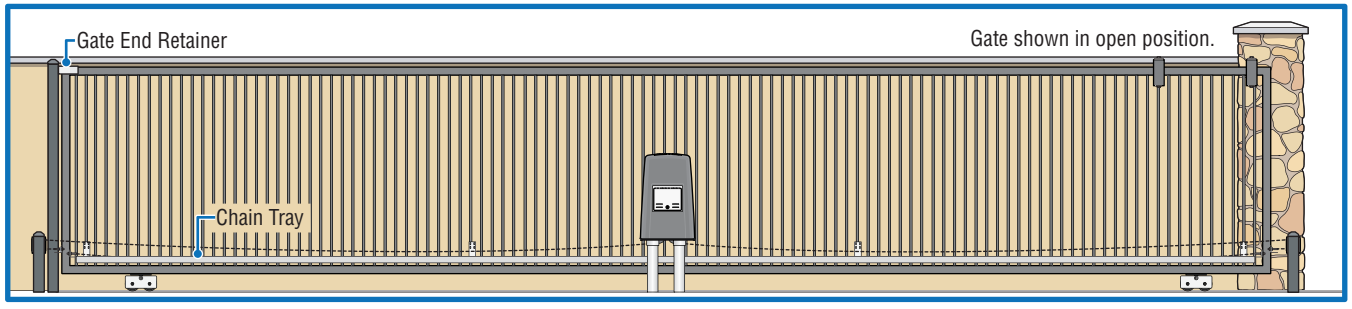
See page 21 for more information about endless idlers.

Gate in Close Position



DoorKing's Chain Tray Kit for Long Gates (Optional)

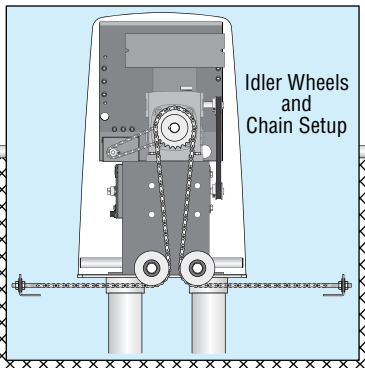
See page 22 for more information.



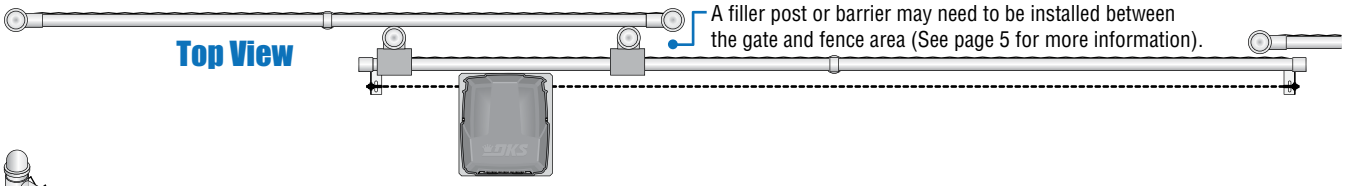
FRONT Position with Post Mount Kit for a Cantilever Gate

Raises operator and allows different chain heights for cantilever gates. More secure than gates on rails. Works with uneven road surfaces. Reduced maintenance and upkeep. Requires less work to maintain a debris-free path that is clear in the snow.

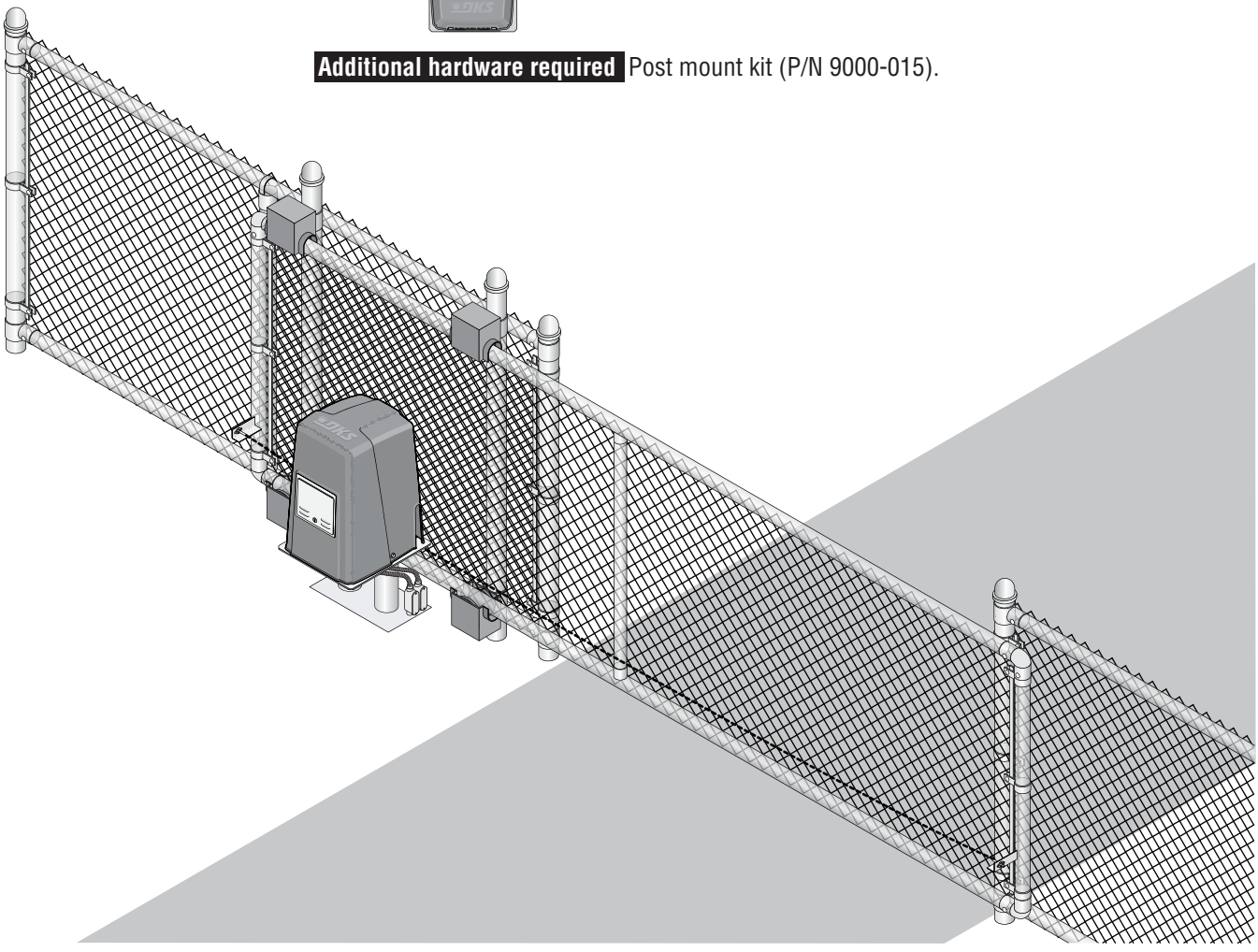
- Set operator chain idler wheels in the **bottom** position.
- Optional chain tray kit may be installed. See page 22 for more information.



See page 13 and the post mount instruction sheet included with the kit for more information about different post types.



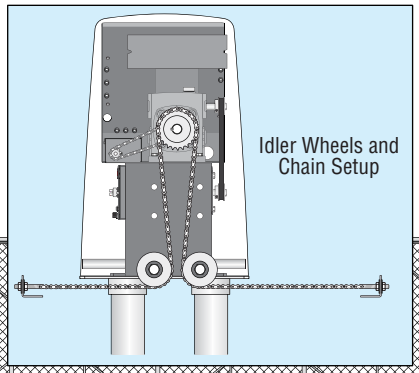
Additional hardware required Post mount kit (P/N 9000-015).

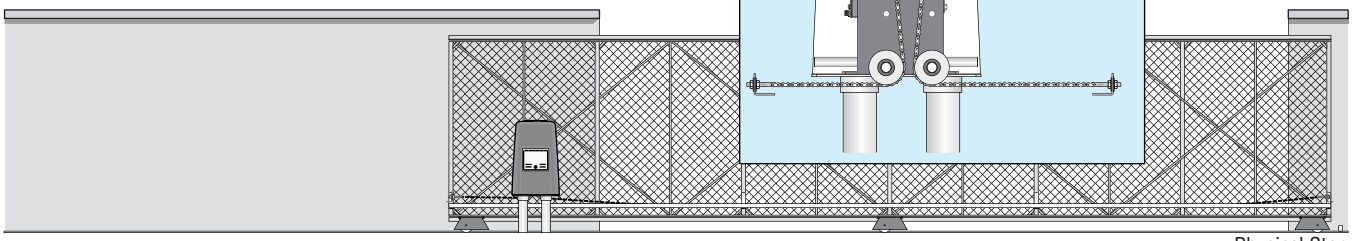


FRONT Position with Post Mount Kit for a Box Frame Gate

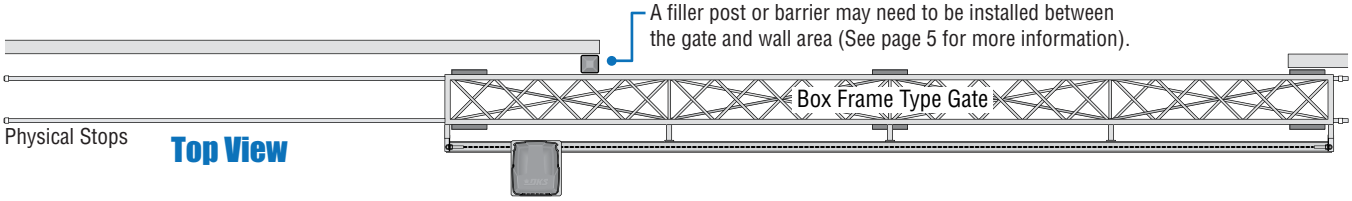
Raises operator and allows different chain heights for box frame gates. Used for Security Gates, Airports, Industrial Complex etc.

- Set operator chain idler wheels in the **bottom** position.
- Optional chain tray kit may be installed. See page 22 for more information.



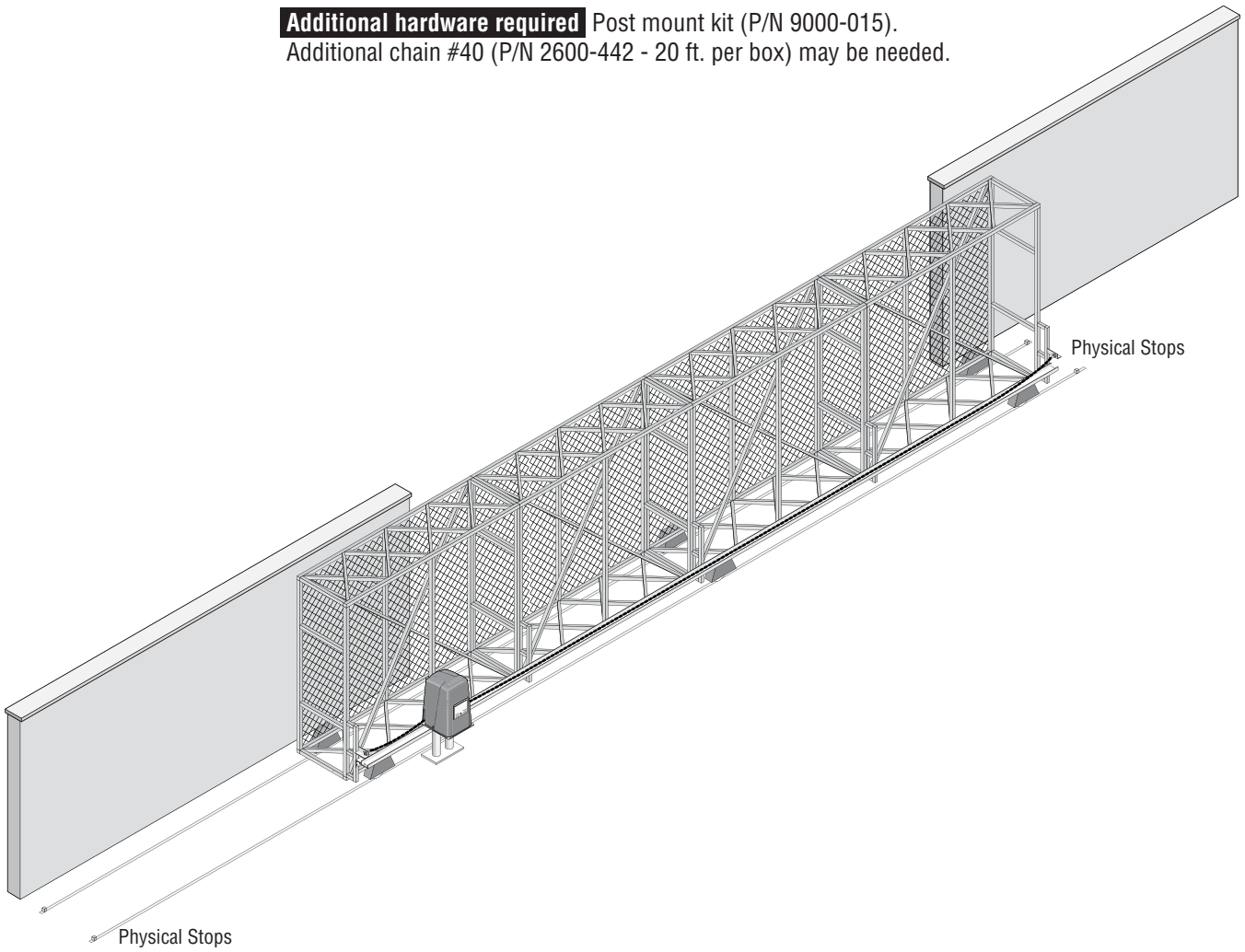


See page 13 and the post mount instruction sheet included with the kit for more information about post installation.

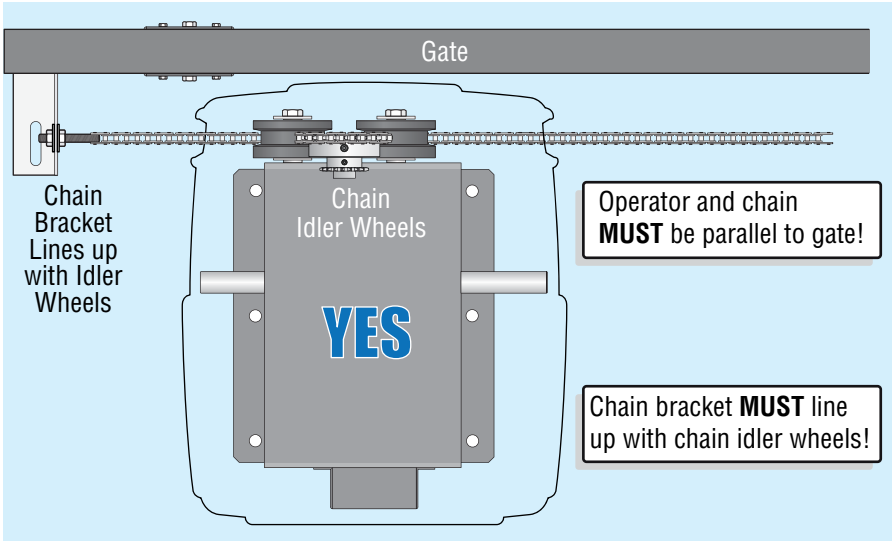


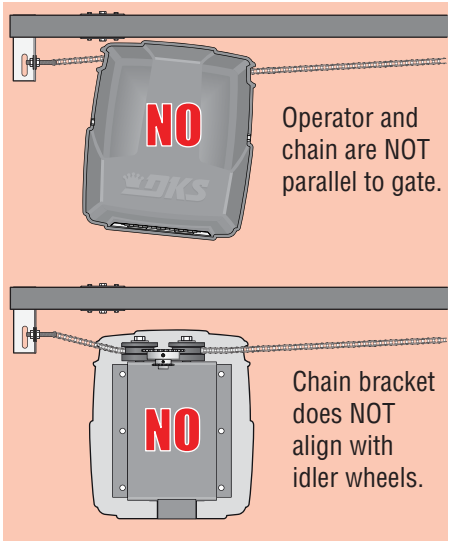
Top View

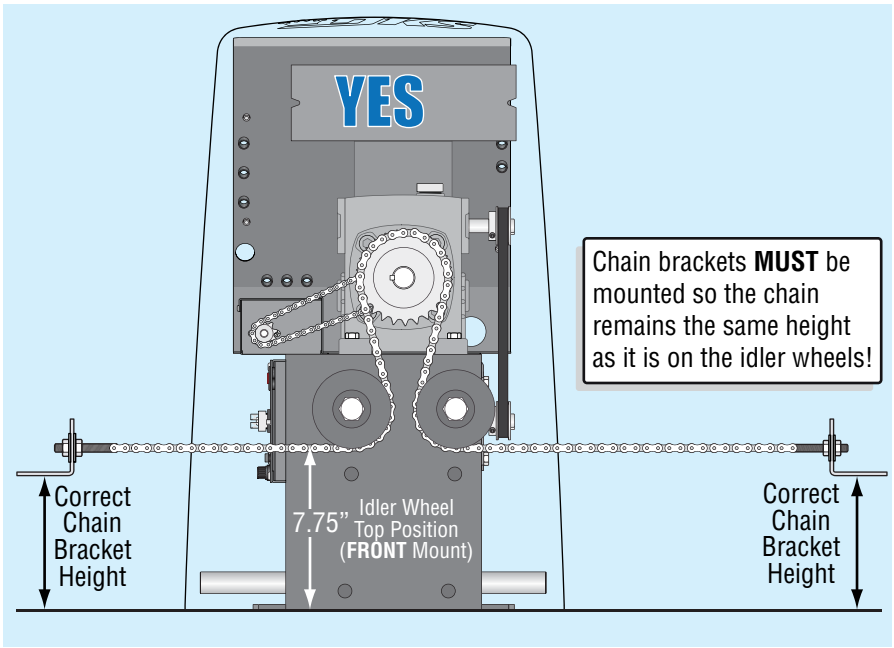
Additional hardware required Post mount kit (P/N 9000-015).
Additional chain #40 (P/N 2600-442 - 20 ft. per box) may be needed.

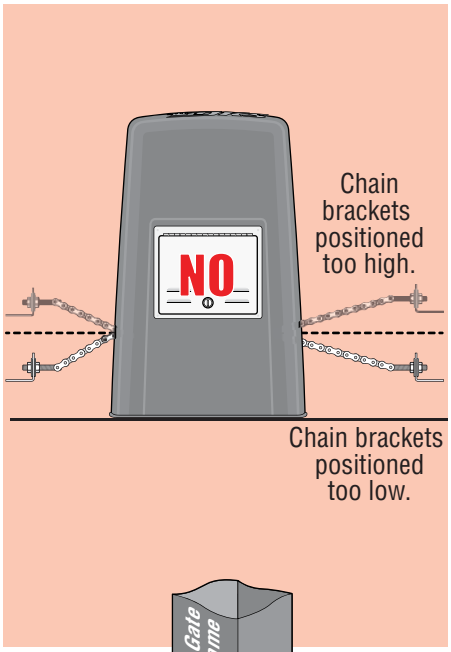


Positioning Operator and Chain

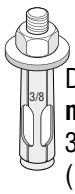






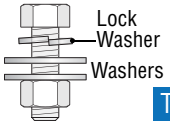


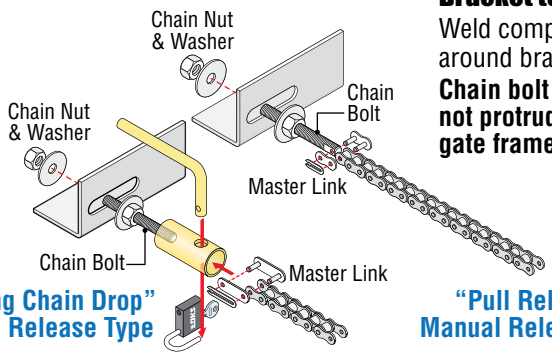
Attaching Operator and Chain



Attaching Operator to Concrete Pad
DoorKing recommends a **minimum** of four (4) 3/8" x 2" wedge anchors (not supplied).

Attaching Operator to Post Mount Plate
Use bolts provided in post mount kit.

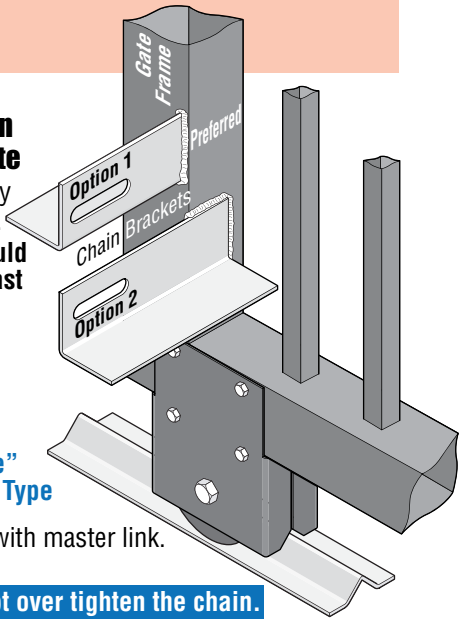




"Locking Chain Drop" Manual Release Type

"Pull Release" Manual Release Type

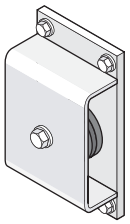
Connect Chain Bracket to Gate
Weld completely around bracket.
Chain bolt should not protrude past gate frame.



Connect Chain to Chain Bracket Connect chain to chain bolt with master link. Adjust the chain nut to tighten the chain.

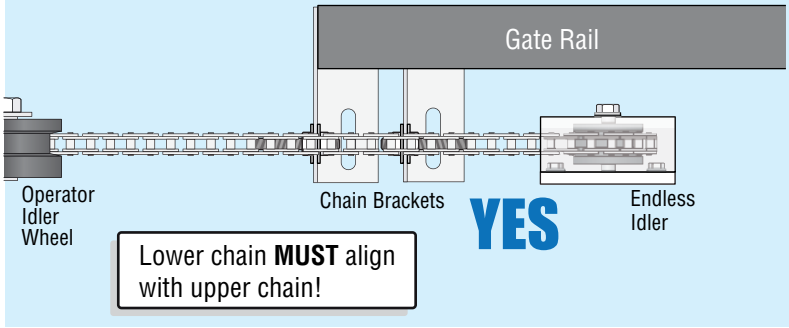
The chain should sag no more than one (1) inch per 10 feet of travel. **Do not over tighten the chain.**

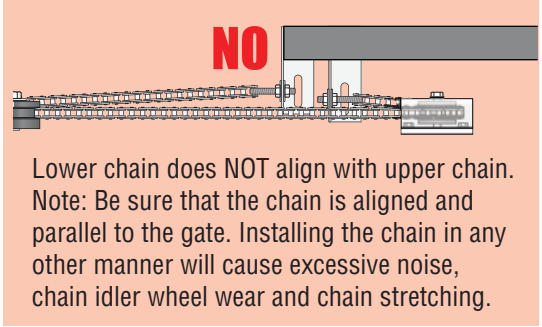
Endless Idler Assembly (On Select Installations)



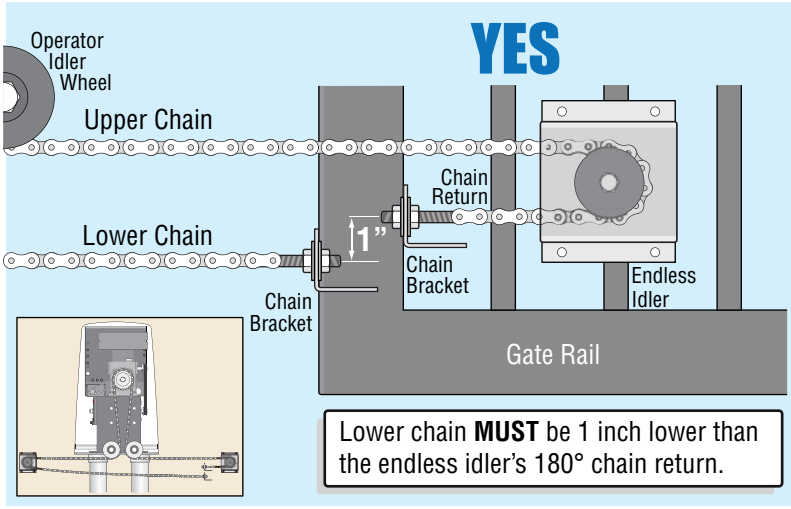
DoorKing offers an **Endless Idler Assembly** with a protective cover designed for the Model 2170 installations (P/N 2600-818). Make sure the endless idler assembly is **securely** fastened to the wall or post (Depending on which type of installation will be used). Extreme force will be exerted on this assembly during gate cycling.

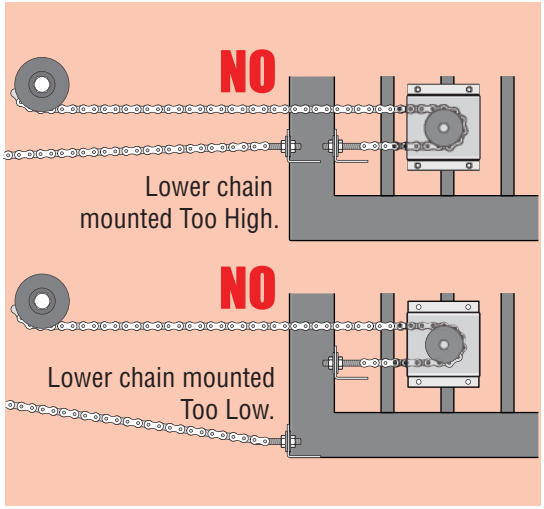
CENTER and REAR Mount Positions (Top View)



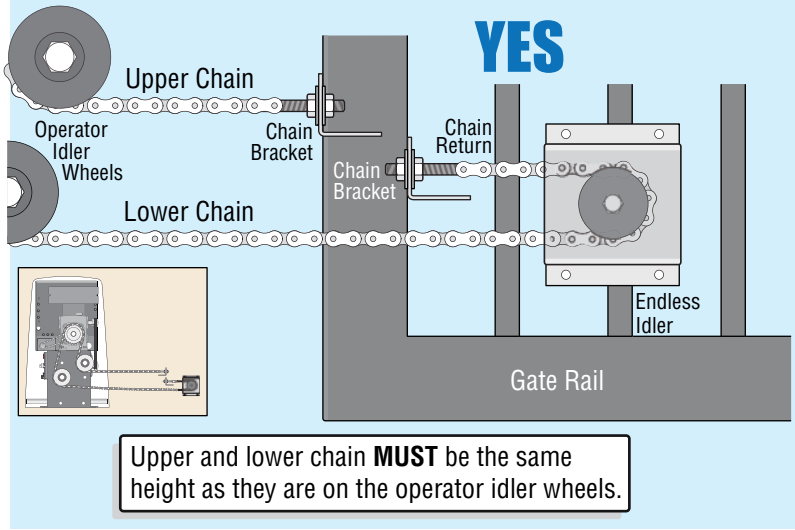


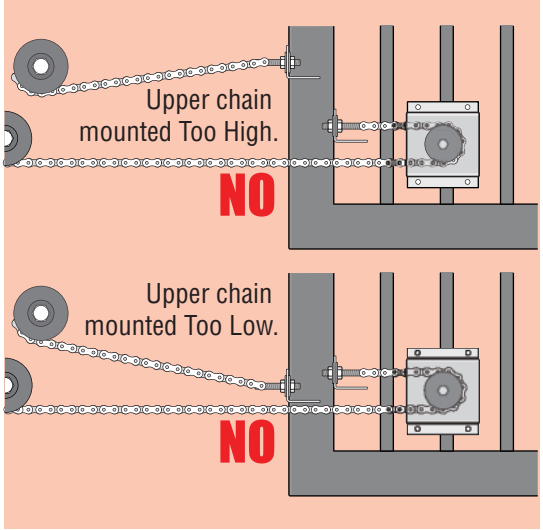
CENTER Mount Position (Side View)





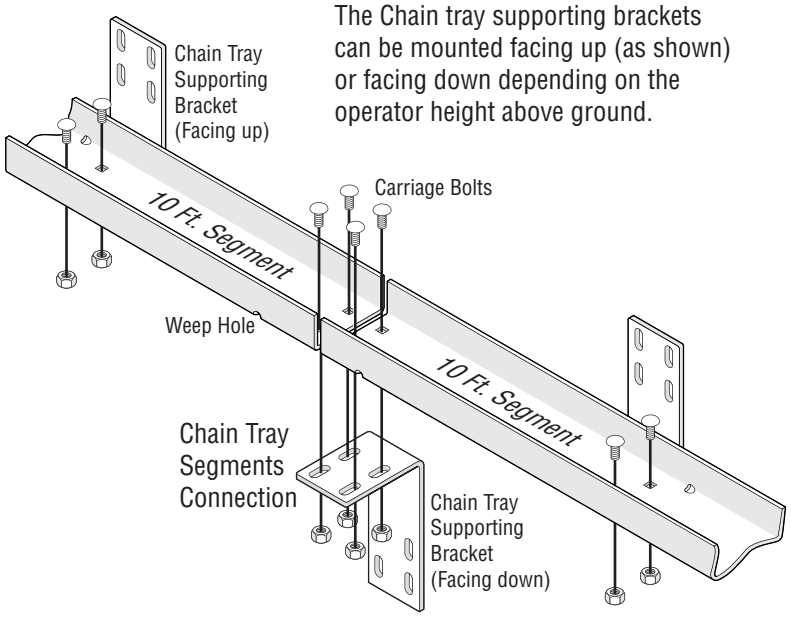
REAR Mount Position (Side View)





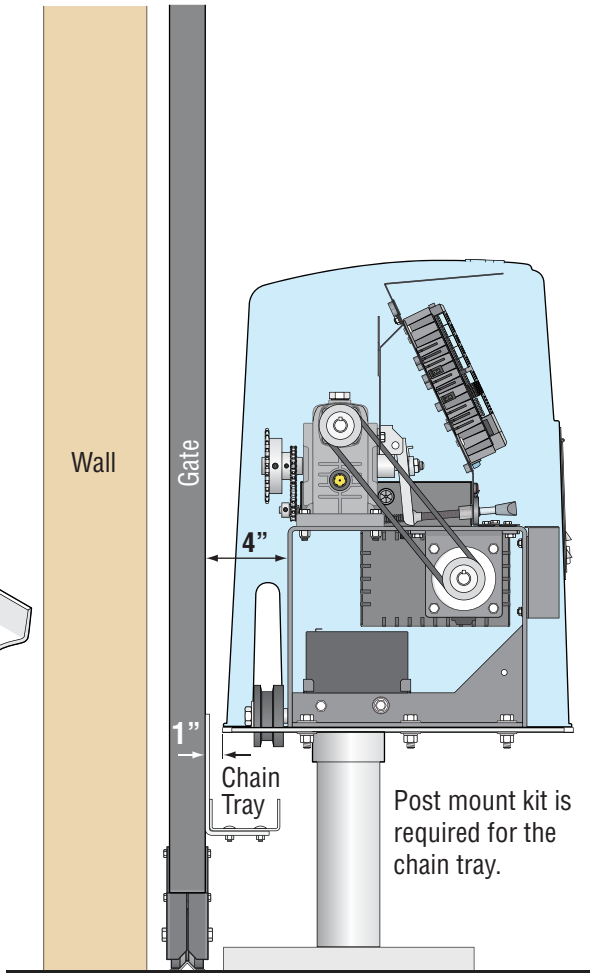
DoorKing's Chain Tray Kit (Optional)

A chain tray is recommended for gates longer than 20 ft. to support the weight of the chain. DoorKing offers a chain tray kit in 10 ft. sections to fit any length gate. (DoorKing P/N 2601-270 10 Ft. section)



The Chain tray supporting brackets can be mounted facing up (as shown) or facing down depending on the operator height above ground.

For further information about the chain tray installation, refer to instructions provided with the chain tray kit.



Installation of Warning Signs

This DoorKing Slide 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 6 for suggested mounting positions of signs.



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

A decal for a **constant pressure button** (UL Type D) is included with the operator and needs to be placed next to the button when installed. See page 9 for more information about the constant pressure button.



In-Ground Loops Typical Layout

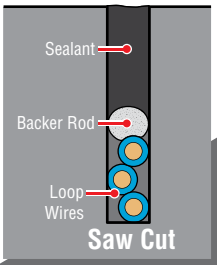
Illustration not to scale.

Every slide loop installation is unique and may have **specific problems that are not fully explained in this manual**. **DoorKing HIGHLY RECOMMENDS** that the loop system is installed by **a Professional Installer** who understands loop systems and can foresee any problems that might occur for your specific installation. Slide gates require the use of **two reversing loops wired in series** to **a single loop detector** for maximum vehicular protection. Be sure that the two reverse loops are properly phased so that the gate can slide through the "**Dead Zone**".

DoorKing offers a free "**Loop and Loop-Detectors Information Manual**" PDF at Doorking's web site for more information: **www.doorking.com**

Loop Lead-Ins

- Loop lead-in wires should be twisted 6 turns per foot.
- Use loop lead-in wires up to **100 ft. away from operator**.
- Use loop **lead-in cable farther than 10 ft. away from operator** if required.
- Series wired loop lead-ins should each be run to the operator before connecting them together for easy maintenance. See page 31 for loop lead-in wiring options.

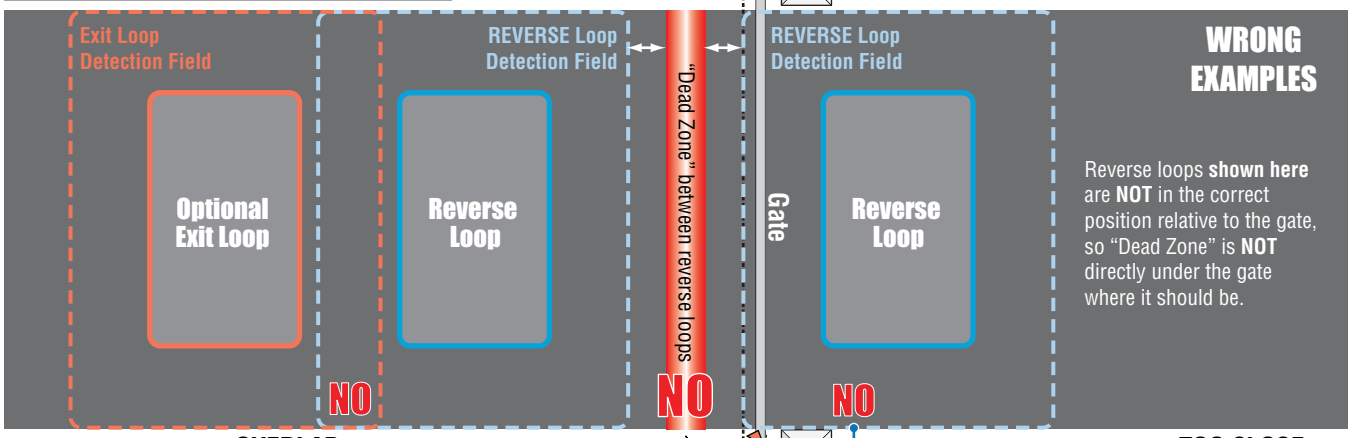


Reverse Loops

- Minimum loop size is 18 in. x 48 in.
- Loops must be the same size, same number of turns and same distance away from the gate.
- Loops **MUST** be wound in the **same direction** to create a "**Dead Zone**" between them (see below).
- Loops must be far enough away from gate to avoid gate movement interference.
- Loops should to be far enough away from the exit loop to avoid any "**cross-talk**" or on a different loop detector frequency if detection fields overlap. It's best to keep detection fields separate from each other.

Optional Exit Loop

- Minimum loop size is 18 in. x 48 in.
- Normally located 20-100 feet away from the gate so that the gate is open or opening as you drive up to it. Typically a loop lead-in cable will need to be installed.
- Loop should to be far enough away from the reverse loop to avoid any "cross-talk" or on a different loop detector frequency if detection fields overlap.



If loop detection fields **OVERLAP**, loop detectors **MUST** be on **different frequencies** or they will "**cross-talk**". It's best to keep them separate.

Loop detection field **MUST NOT** be **TOO CLOSE** to **metal gate** or gate movement interference will occur.

Requirements for Bi-Parting Gate Operators

This information is needed to setup bi-parting gates. Run **all necessary conduits** for connection of devices to **EACH** gate operator depending on **your specific** bi-parting gate layout. **Never** run high voltage wires in the same conduit as low voltage wires.

EACH Operator Requirements and Available Inputs

Light Blue Arrow: These are **REQUIRED** for **Bi-Parting** gate operators to function.

Yellow Arrow: Only these inputs will **FUNCTION** on **EACH** operator when used.

Interconnect Cable: **REQUIRED** to **HARD**wire operators together.

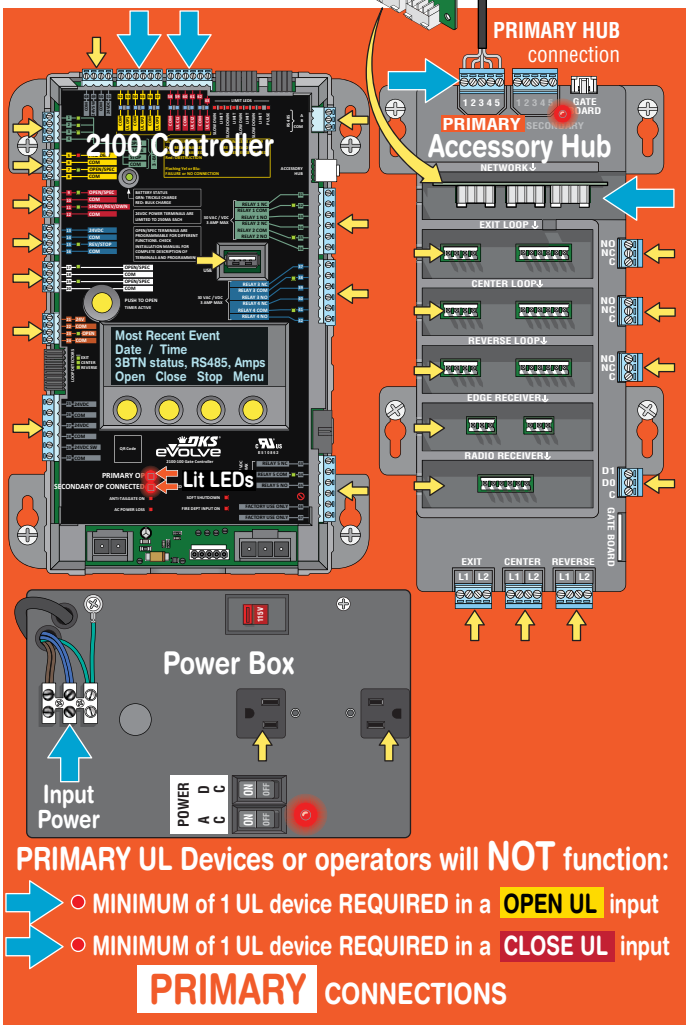
Bi-Parting HARDwiring Card: **REQUIRED** in **EACH** operator accessory hub's **NETWORK SLOT for HARDwiring**. (Included with each operator) **wireless option**, see page 32.

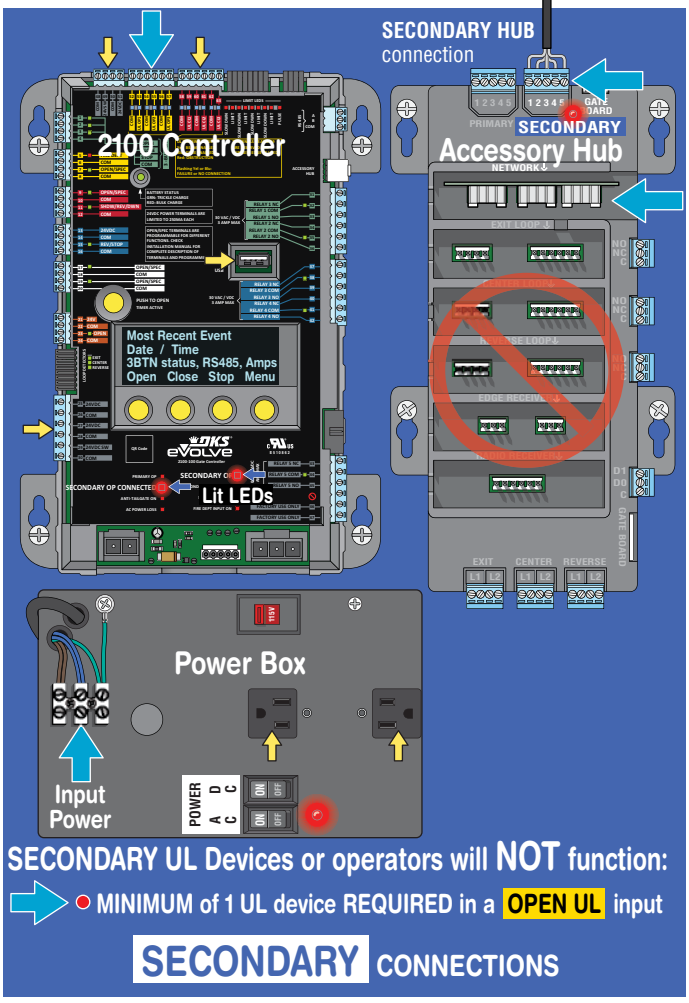
HARDwire Interconnect Cable **REQUIRED**

sold separately from DoorKing (30 ft, 40 ft, 50 ft or 200 ft)

Primary		Secondary
#1	⟷	#1
#2	⟷	#2
#3	⟷	#3
#4	⟷	#4
#5	⟷	#5

Your choice on which operator is which depending on which Primary/Secondary terminals each operator is connected to.





See next page for some sample **bi-parting gate UL Device layouts**.

Power Up and Programming for Primary/Secondary Operators

ALL devices **MUST** be connected to **EACH** operator for **YOUR specific** layout choices **BEFORE** programming can begin.

ALL above requirements MUST be met BEFORE programming can begin.

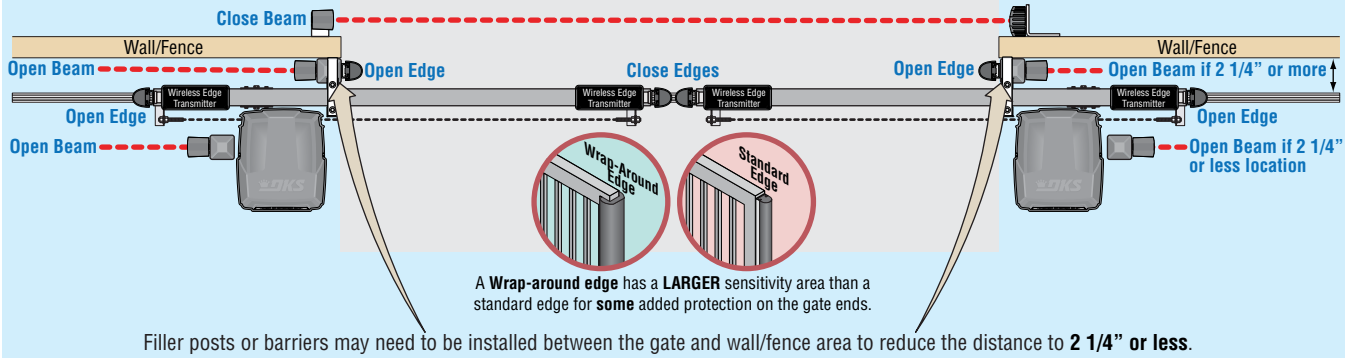
- Turn **ON** power to **BOTH** operators at **START** of programming. You **Must** program at least the **FIRST 6 steps** to setup the **PRIMARY OPERATOR** to function.
- **Step 8** will **ONLY** connect the operators together electronically (**pairing**). Programming **secondary operator** comes later in the programming sequence.
- Adjust the **Reverse Sensors** on the **SECONDARY OPERATOR** **AFTER first completing** the 21 steps needed on the **PRIMARY** operator's 2100 controller.

Bi-Parting Gates Technical Information Continued

This information is needed to layout bi-parting gates. Run **all necessary conduits** for connection of UL devices to **EACH** gate operator depending on **your specific** bi-parting gate layout. **Your layout can vary. Never** run high voltage wires in the same conduit as low voltage wires.

Typical UL Device Locations for Bi-Parting Gates

See **safety pages 3-11** in front of this manual for more information



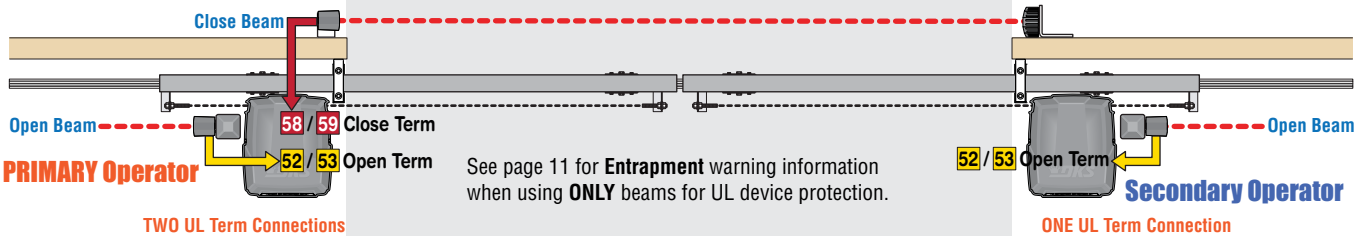
A **Wrap-around edge** has a **LARGER** sensitivity area than a standard edge for **some** added protection on the gate ends.

Filler posts or barriers may need to be installed between the gate and wall/fence area to reduce the distance to **2 1/4" or less**. Reversing edges (**OPEN** edges) should be installed on the posts, barriers or wall for safety (See page 5 for more information).

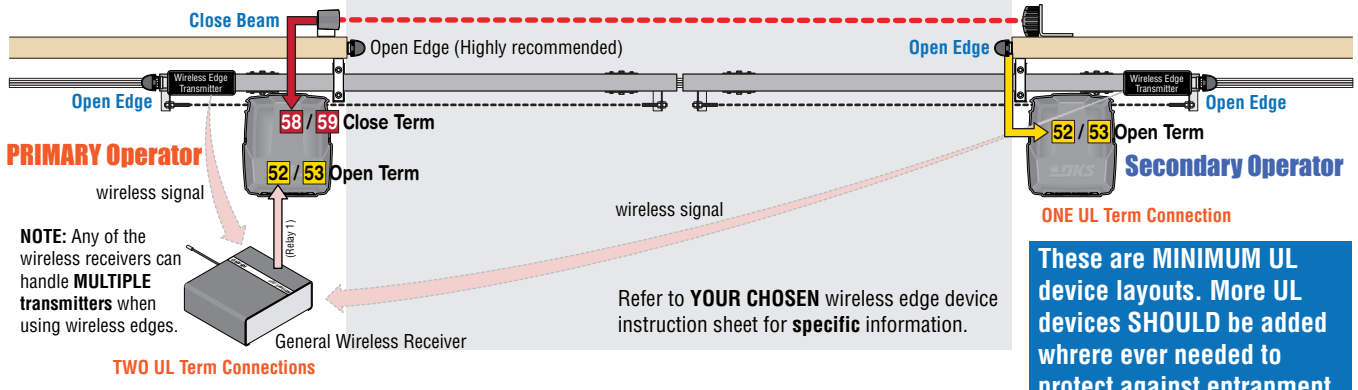
Sample UL Device Layouts and Wiring for Bi-Parting Gates

EACH operator **HAS TO HAVE** UL devices connected to them so the **OPENING** and **CLOSING** cycles are monitored by UL devices **CORRECTLY POSITIONED** for **EACH** gate's movement, see previous page for UL device requirements. **MORE UL devices should be added where needed.**

Open Beams & Close Beam

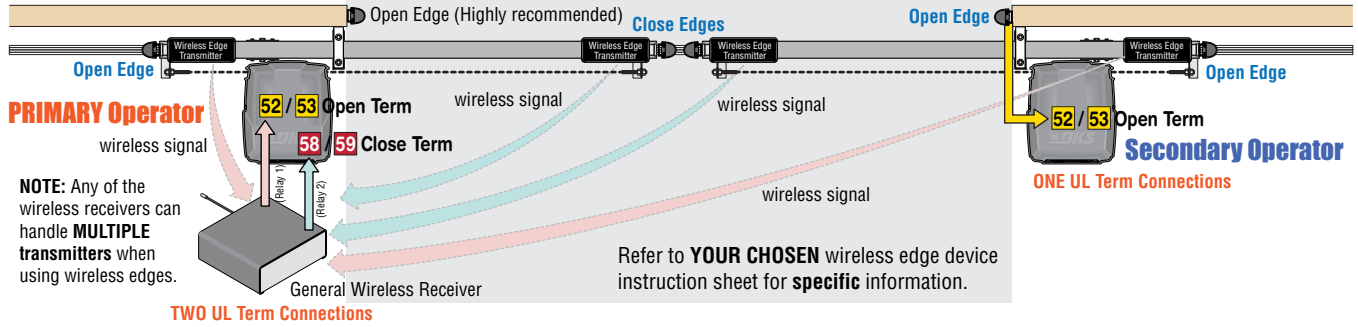


General Wireless Open Edges & Close Beam



These are MINIMUM UL device layouts. More UL devices SHOULD be added whrere ever needed to protect against entrapment.

General Wireless Open Edges & Wireless Close Edge Setup

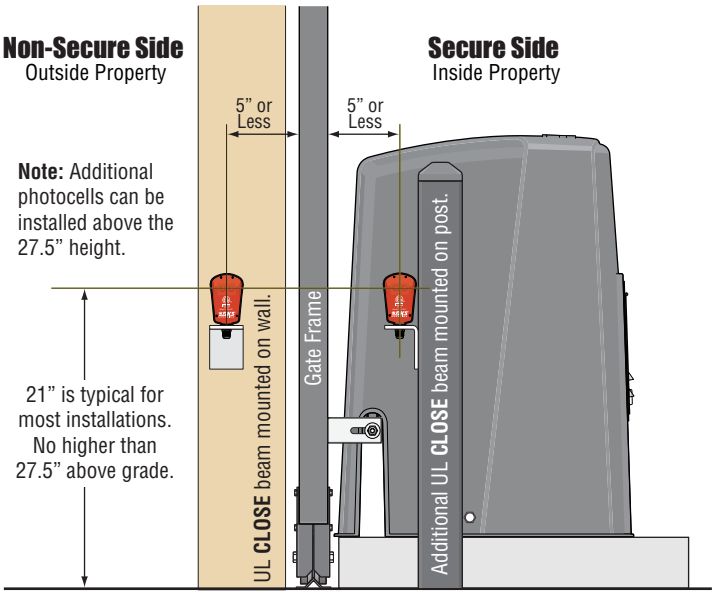


UL Device Mounting Positions and Locations

In addition to the inherent reversing sensor system-Type A, this operator has UL 325 terminals for the connection of **photo beams**-Type B1 and/or **reversing edges**-Type B2 entrapment protection required by UL 325 standards. Install these devices where the risk of entrapment or a safety hazard exists. Types of UL devices and typical mounting positions are shown below and on the next 3 pages. **Your installation can vary.**

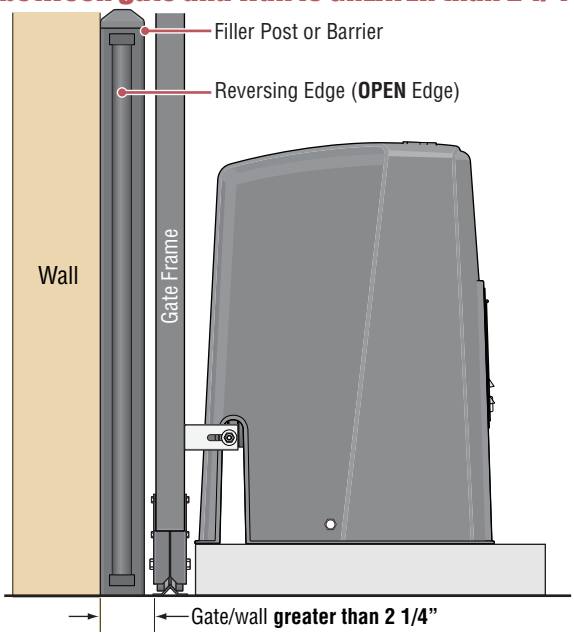
Entrapment Protection MUST be provided for the gate system where the risk of entrapment or obstruction exists. The operator will NOT run without ONE or more monitored type B1 or B2 external entrapment protection devices installed in EACH direction of gate travel. A minimum of 2 external devices REQUIRED but more can be added where ever the risk of entrapment or obstruction exists.

Typical UL CLOSE Beams mounting positions



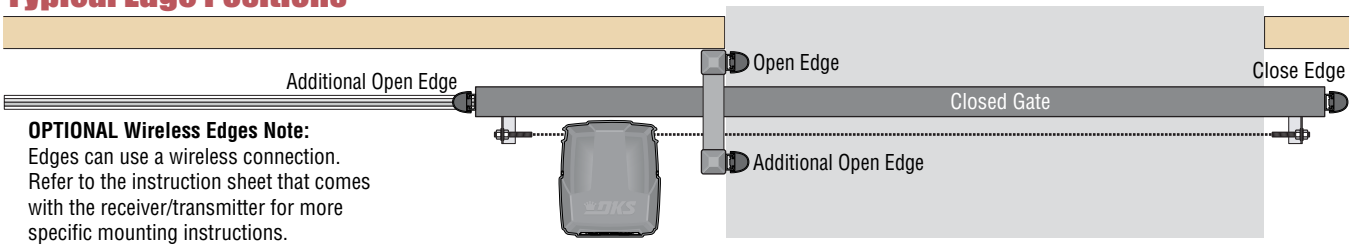
Install photocell (**Close** beam) **OUTSIDE** property, as close as practical to the gate, but **NO further away than 5"**.
ONLY install photocell **INSIDE** property **IN ADDITION** to the **Close** beam installed **OUTSIDE** property for added safety.

If distance between gate and wall is GREATER than 2 1/4"



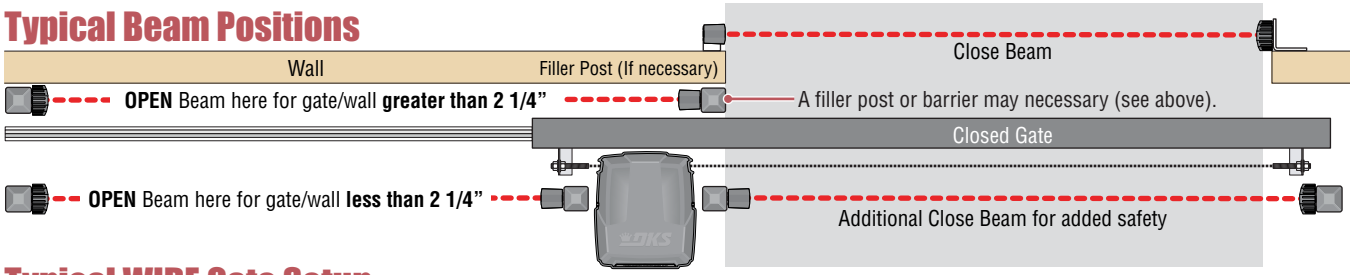
A **filler post** or **barrier** may need to be installed between the gate and wall area to reduce the distance to **2 1/4" or less**. A reversing edge (**OPEN** edge) should be installed on the post or barrier for safety (See page 5 for more information).

Typical Edge Positions

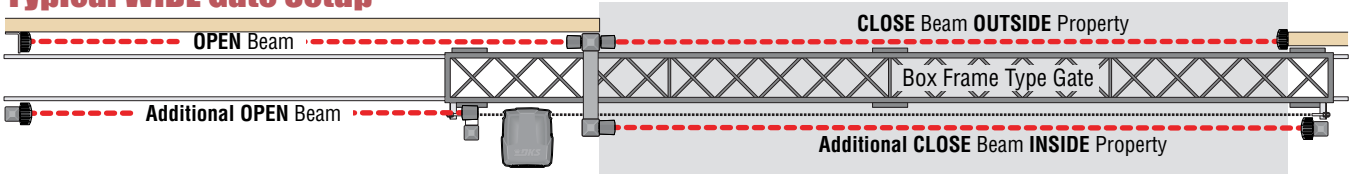


OPTIONAL Wireless Edges Note:
Edges can use a wireless connection. Refer to the instruction sheet that comes with the receiver/transmitter for more specific mounting instructions.

Typical Beam Positions



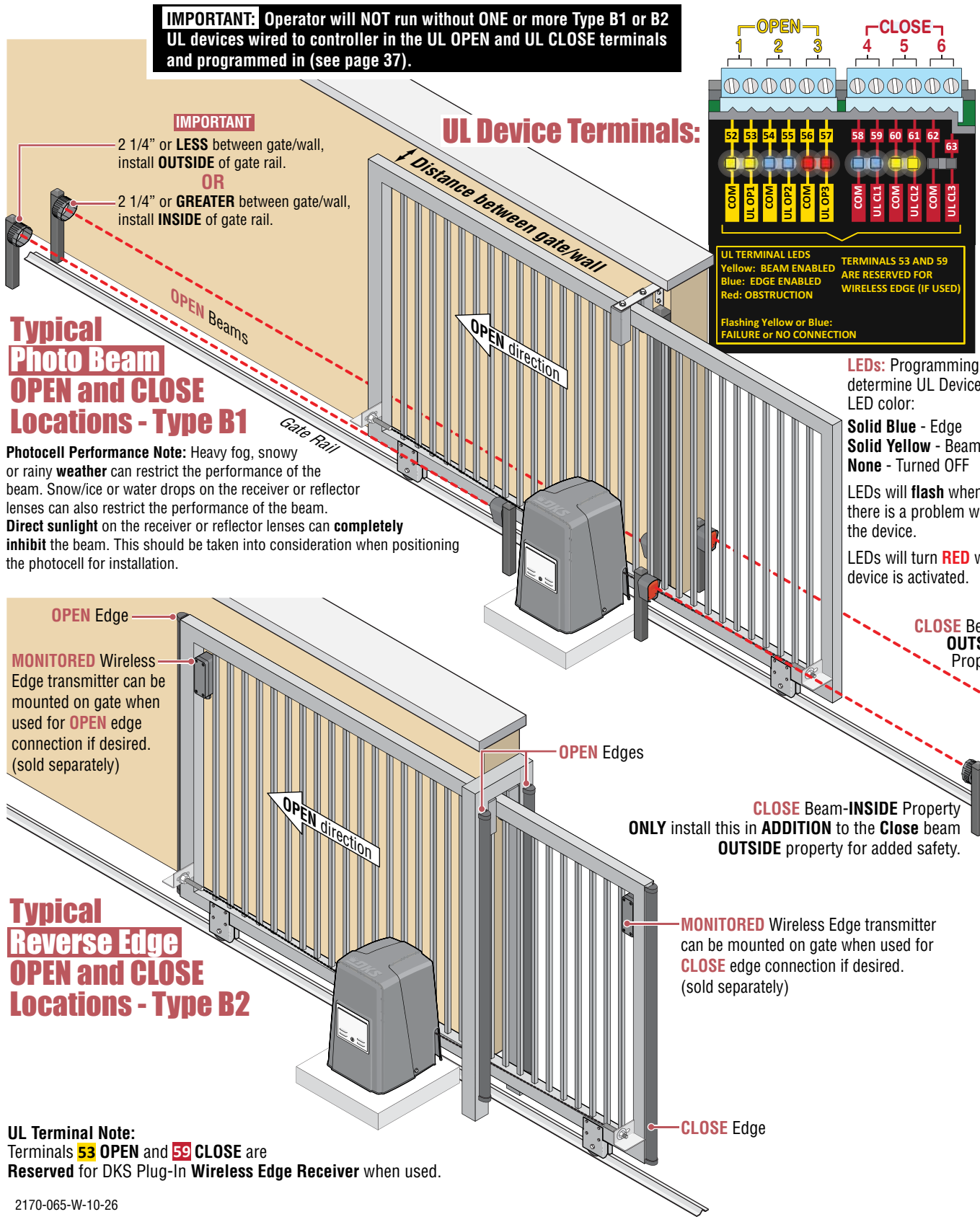
Typical WIDE Gate Setup



UL Device Locations and Terminal inputs

This operator has UL 325 terminals for the connection of **photo beams**-Type B1 and/or **reversing edges**-Type B2 entrapment protection devices required by UL 325 standards. Install these UL devices where the risk of entrapment or a safety hazard exists. Terminal input for UL devices are shown here and on the next 2 pages. **ALL** connected UL devices **MUST** be programmed or they will **NOT** function.

IMPORTANT: Operator will NOT run without ONE or more Type B1 or B2 UL devices wired to controller in the UL OPEN and UL CLOSE terminals and programmed in (see page 37).



UL Device Terminals:

Typical Photo Beam OPEN and CLOSE Locations - Type B1

Photocell Performance Note: Heavy fog, snowy or rainy **weather** can restrict the performance of the beam. Snow/ice or water drops on the receiver or reflector lenses can also restrict the performance of the beam. **Direct sunlight** on the receiver or reflector lenses can **completely inhibit** the beam. This should be taken into consideration when positioning the photocell for installation.

LEDs: Programming will determine UL Device's LED color:

Solid Blue - Edge
Solid Yellow - Beam
None - Turned OFF

LEDs will **flash** when there is a problem with the device.

LEDs will turn **RED** when device is activated.

CLOSE Beam-**OUTSIDE** Property

CLOSE Beam-**INSIDE** Property
ONLY install this in **ADDITION** to the **Close** beam **OUTSIDE** property for added safety.

Typical Reverse Edge OPEN and CLOSE Locations - Type B2

MONITORED Wireless Edge transmitter can be mounted on gate when used for **CLOSE** edge connection if desired. (sold separately)

UL Terminal Note:
Terminals **53** **OPEN** and **59** **CLOSE** are **Reserved** for DKS Plug-In **Wireless Edge Receiver** when used.

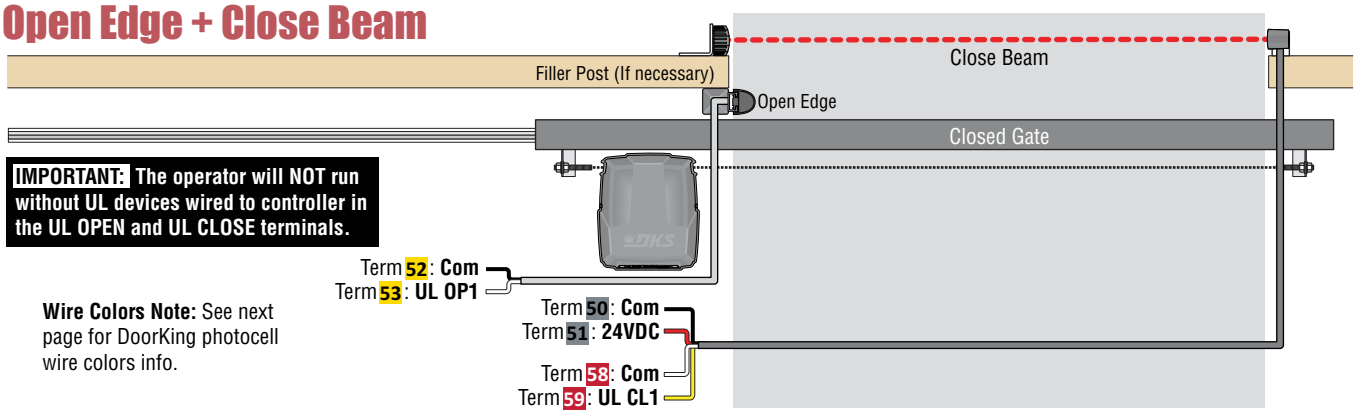
UL Devices - Sold Separately

UL Device Layouts and Wiring Examples

These layouts below are typical for **MOST** slide gate UL 325 entrapment protection device requirements. UL Terminal connection numbers are shown for each UL device used in these layouts. **Each** UL device **MUST** be specifically programmed to enable them, see "**UL Device Set up**" Step 3 programming. UL devices can be connected to **EITHER** operator when installing bi-parting gates (see page 25). **Your layout can vary.**

OPEN and CLOSE Terminals Note: You can wire **ANY OPEN** UL Device to **ANY OPEN** UL terminal and wire **ANY CLOSE** UL Device to **ANY CLOSE** UL terminal.

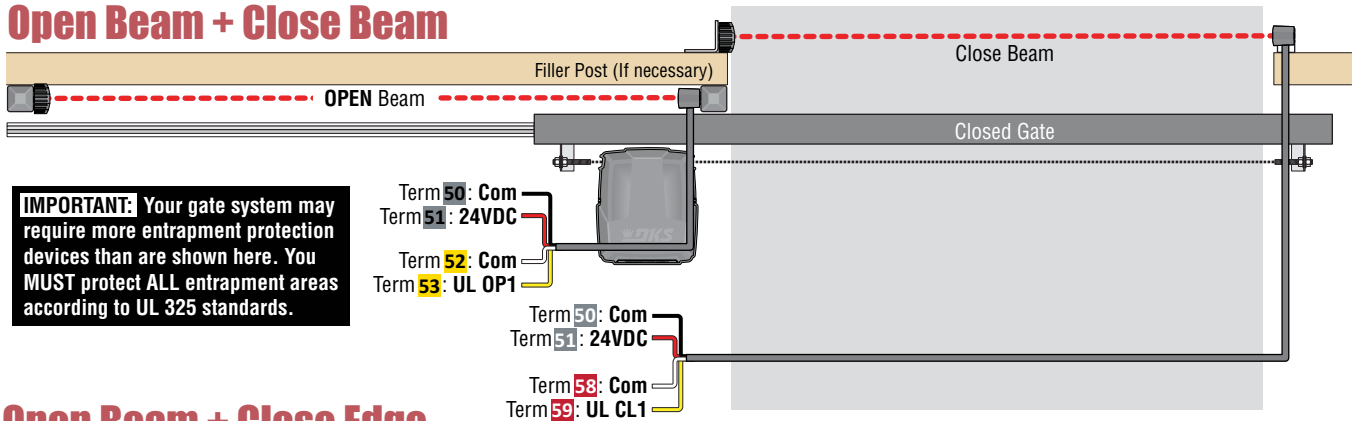
Open Edge + Close Beam



IMPORTANT: **The operator will NOT run without UL devices wired to controller in the UL OPEN and UL CLOSE terminals.**

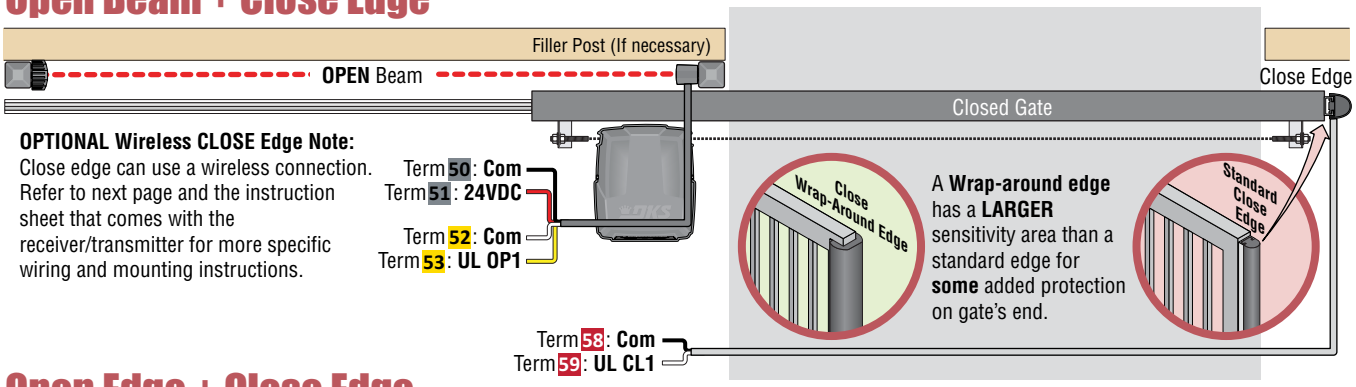
Wire Colors Note: See next page for DoorKing photocell wire colors info.

Open Beam + Close Beam



IMPORTANT: **Your gate system may require more entrapment protection devices than are shown here. You MUST protect ALL entrapment areas according to UL 325 standards.**

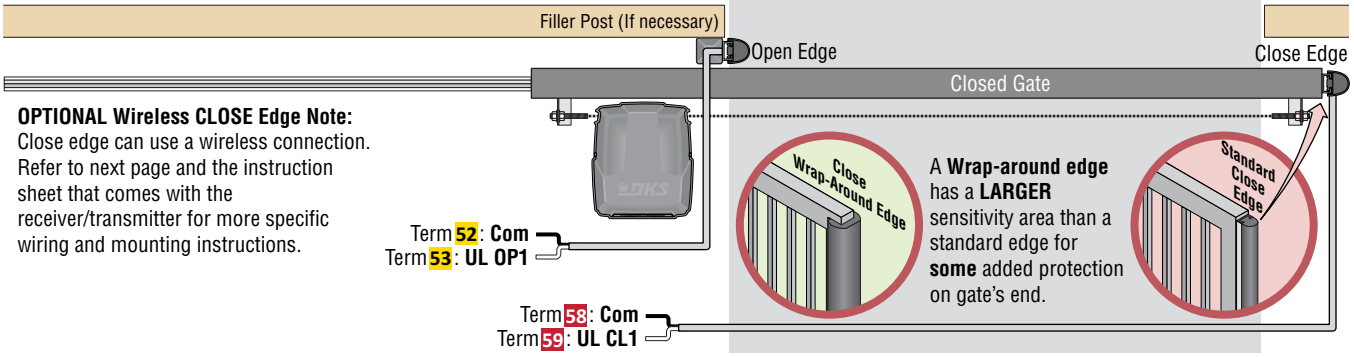
Open Beam + Close Edge



OPTIONAL Wireless CLOSE Edge Note: Close edge can use a wireless connection. Refer to next page and the instruction sheet that comes with the receiver/transmitter for more specific wiring and mounting instructions.

A **Wrap-around edge** has a **LARGER** sensitivity area than a standard edge for **some** added protection on gate's end.

Open Edge + Close Edge

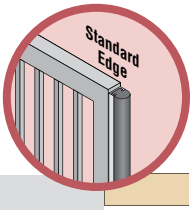


OPTIONAL Wireless CLOSE Edge Note: Close edge can use a wireless connection. Refer to next page and the instruction sheet that comes with the receiver/transmitter for more specific wiring and mounting instructions.

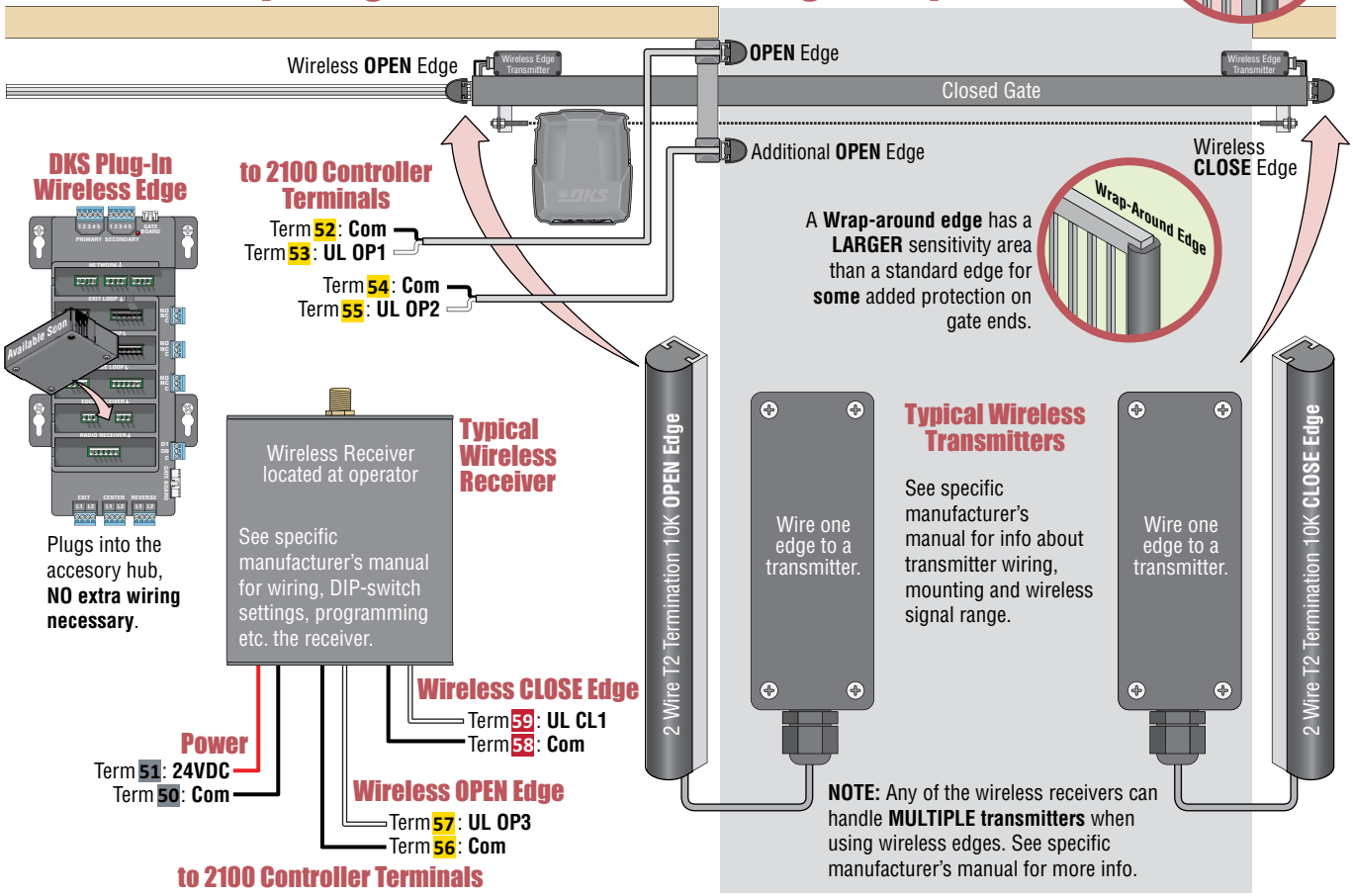
A **Wrap-around edge** has a **LARGER** sensitivity area than a standard edge for **some** added protection on gate's end.

UL Device Examples Continued

UL Terminal connection numbers are shown for each UL device used in these layouts. You can wire **ANY OPEN** UL Device to **ANY OPEN** UL terminal and wire **ANY CLOSE** UL Device to **ANY CLOSE** UL terminal. **Each** UL device **MUST** be specifically programmed to enable them, see "**UL Device Set up**" Step 3 programming. UL devices can be connected to **EITHER** operator when installing bi-parting gates.

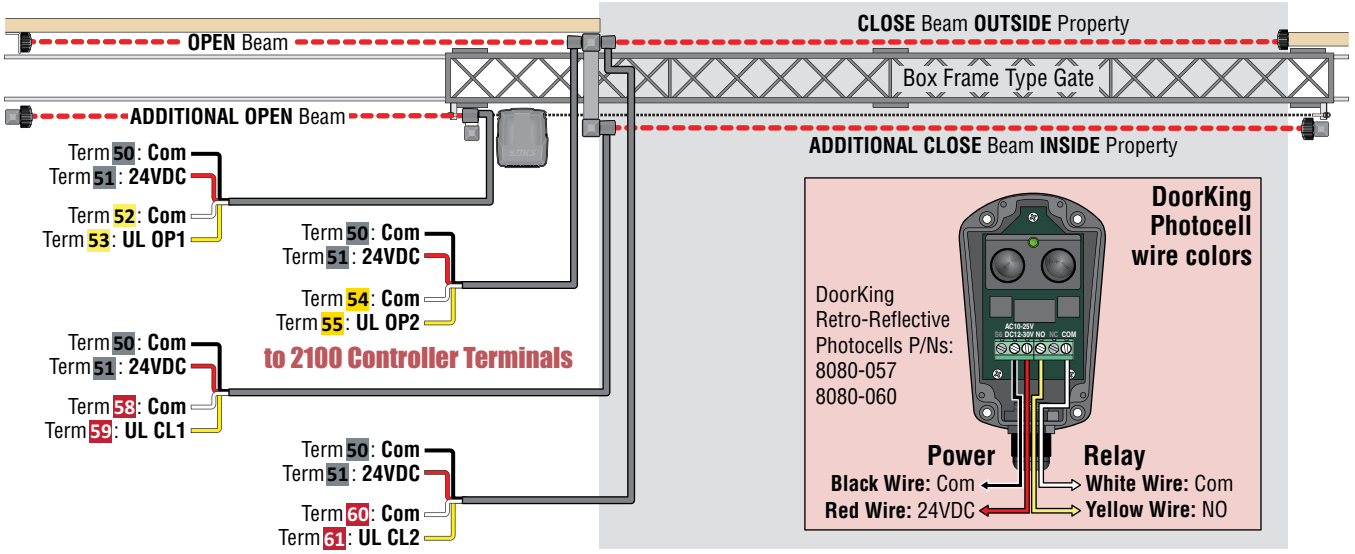


Gate with Multiple Edges - General Wireless Edge Setups



Wide Gate with Multiple Beams

A wide gate will **NOT** be protected from obstructions using **only one photocell in each cycling direction**. DoorKing suggests using photocells on **BOTH** sides of a wide gate in the opening **AND** closing direction to better protect against obstructions during gate cycling. Reversing edges should also be used to further protect against any entrapment areas or potential obstructions of gate when necessary (not shown here).



UL Devices - Sold Separately

VAC Input Power Wiring

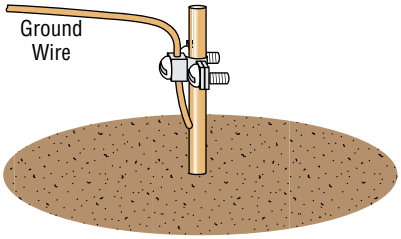
Before attempting to connect any wiring to the operator, **be sure that the circuit breaker in the electrical panel is in the OFF position.** Permanent wiring must be installed to the operator as required by local electrical codes. It is recommended that a licensed electrical contractor perform this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

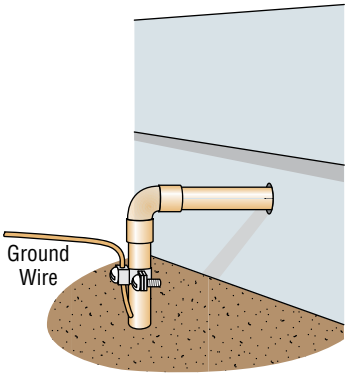
THIS GATE OPERATOR MUST BE PROPERLY GROUNDED!!

Typical Grounding Sources

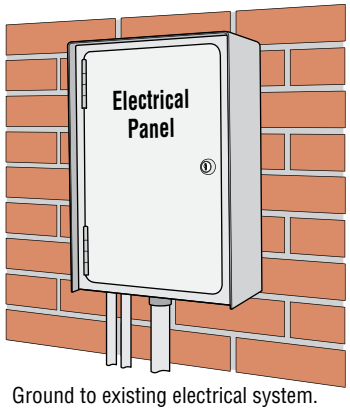
IMPORTANT: Ground wire shown without safety protection for clarity. Make sure ground wire is protected from being touched or electrical shock could occur!



Grounding rod 10 feet in soil.



Ground to metallic cold water pipe.



Ground to existing electrical system.

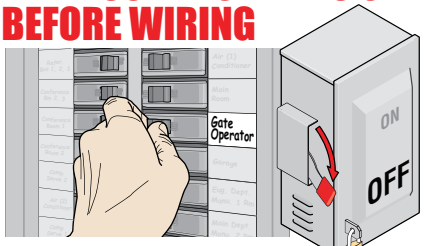
If power wiring is greater than the maximum distance shown, it is recommended that **a service feeder** be installed. When large gauge wire is used, a separate junction box must be installed for the operator connection. The wire table is based on stranded copper wire. Wire run calculations are based on an AC 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.

Operator Type - Motor HP - Watts - Phase	Input Voltage	Amps Required	Wire Sizes and Max Distances in Feet			
			12 AWG	10 AWG	8 AWG	6 AWG
Slide - **1/2** HP DC - 500 Watt - Single Phase	**115**	**5**	175	275	450	700
Slide - **1/2** HP DC - 500 Watt - Single Phase	**230**	**3**	600	950	1500	2400
Slide - **1** HP DC - 750 Watt - Single Phase	**115**	**7**	125	200	325	500
Slide - **1** HP DC - 750 Watt - Single Phase	**230**	**4**	450	700	1150	1800

Installation Note: Table is for **operator** wire run distances **ONLY**. If **additional devices** requiring power are needed, wire run distances **will** be shorter.

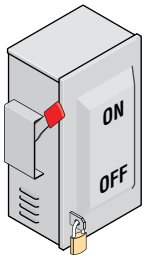
Bi-Parting Gate Operators Note: Separate power **REQUIRED** for **EACH** operator.

MAKE SURE POWER IS OFF BEFORE WIRING

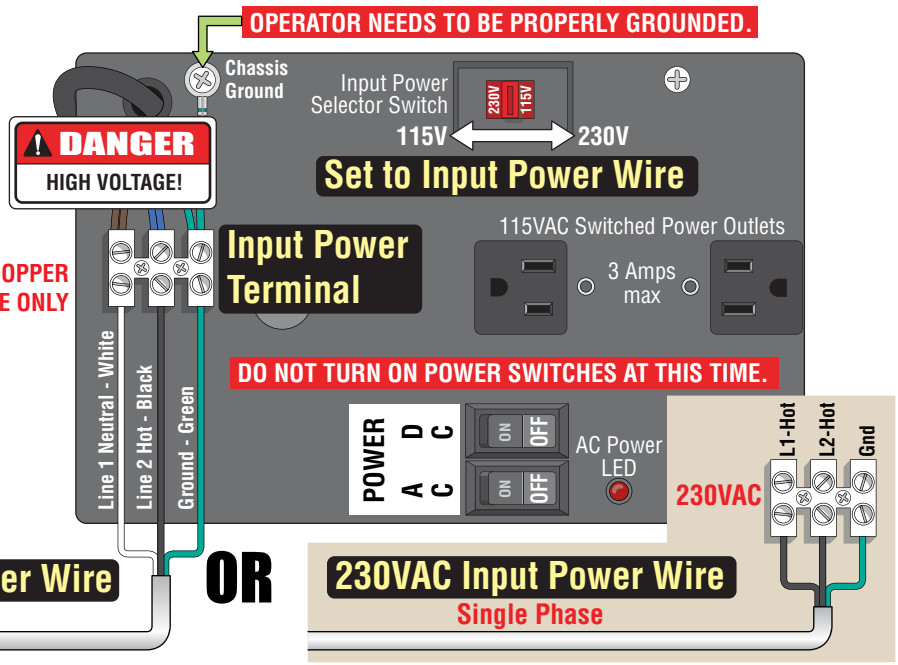


Operator should have a "**Dedicated**" circuit breaker or disconnect switch.

External Power Disconnect Switch



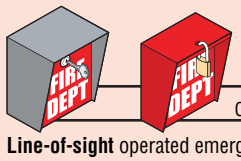
A **separate** power disconnect switch may be needed in your area. Check local building codes before installation. Recommended by DoorKing.



2100 Controller/Accessory Hub Overview

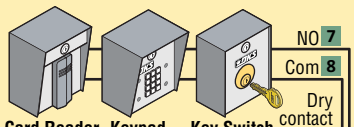
Type of wiring to be used on ALL external devices:
A) Type **CL2**, **CL2P**, **CL2R**, or **CL2X**.
B) Other cable with **equivalent** or **better** electrical, mechanical, and flammability ratings.

Fire Dept Entry Devices
DoorKing recommends using **ONLY** Knox box devices for **line-of-sight** emergency operation.
Remotely operated fire dept devices **should be** connected to terminals 1 and 4

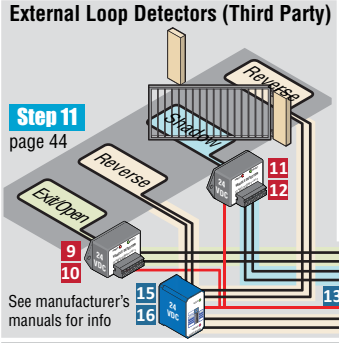


Line-of-sight operated emergency devices

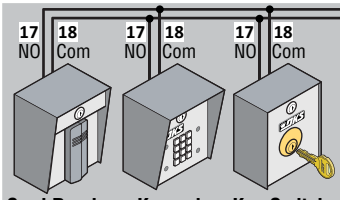
PARTIAL Open Device for SLIDE gates ONLY



External Loop Detectors (Third Party)

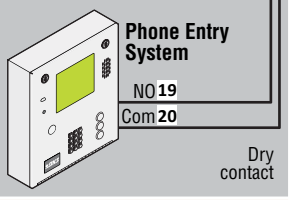


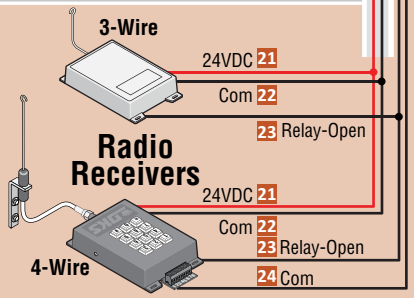
See manufacturer's manuals for info



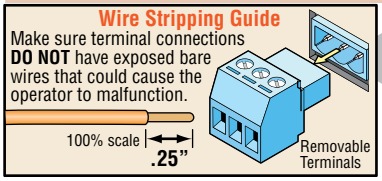
Separate power for devices if required.

FULL Open Device
NO partial open

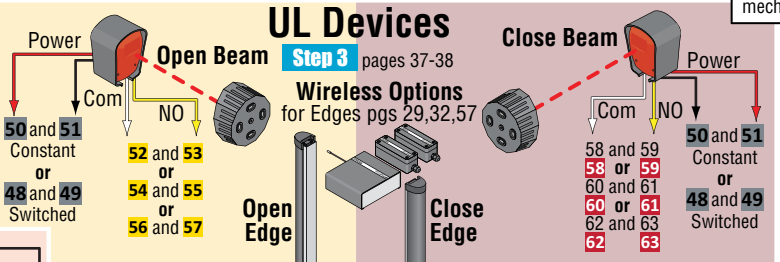




Wire Stripping Guide
Make sure terminal connections **DO NOT** have exposed bare wires that could cause the operator to malfunction.



UL Devices



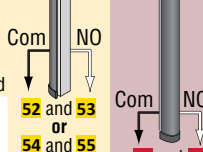
Step 3 pages 37-38

Wireless Options for Edges pgs 29,32,57

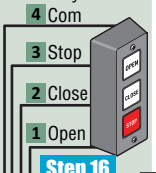
Open Edge

Close Edge

Terminals **53** **OPEN** and **59** **CLOSE** are **Reserved** for DKS Plug-In **Wireless Edge Receiver** when used



3-Button Control Station
Dry contact

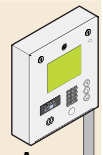


Step 16 page 46

Switched Power
Constant Power

3 UL OPEN Inputs

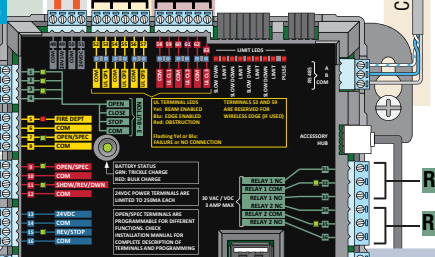
3 UL CLOSE Inputs



Access Controller using RS 485 Connection **Step 20** page 47

Cat5

5 Relays
(Form C) dry contact Relays for **Normally Closed** OR **Normally Open** activation devices.
Type of Devices: Access control systems, security sensors, remote controls, keypads, smart home hubs, motion detectors, intercom systems, lights, timers, loops and locks. These type of devices will trigger after receiving a low power signal from the 2100 Controller's **Five relay terminals.**



Relay 1 Pulse

Relay 2 Pulse

Step 12 page 44

Constant Power

Switched Power Terminals 29 49:
Power will **shut off** when **NOT** cycling gate.

Constant Power Terminals 13 21 25 27 51:
Power **always ON.**

24VDC power terminals are limited to 250MA each

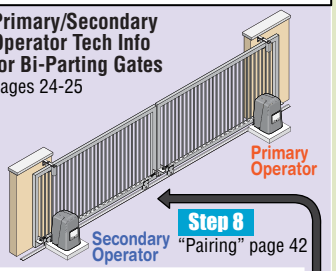
TOTAL available 24V power is **3 Amps - DO NOT EXCEED**

Operator "BEEP" Setup and Warn Before Move Devices

3-Button Operator Controls: OPEN, CLOSE,and STOP functions on HOME SCREEN.

Enter **Programming** Button page 35

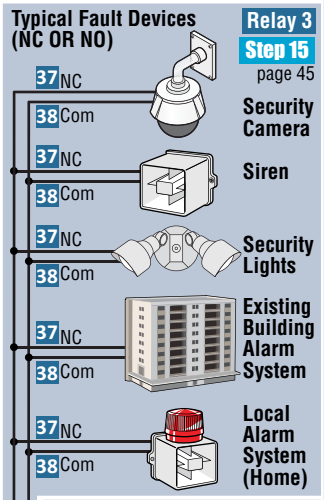
Primary/Secondary Operator Tech Info for Bi-Parting Gates
pages 24-25



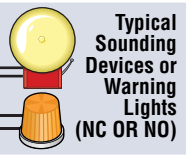
Step 8 "Pairing" page 42

Typical Fault Devices (NC OR NO)

Relay 3 **Step 15** page 45

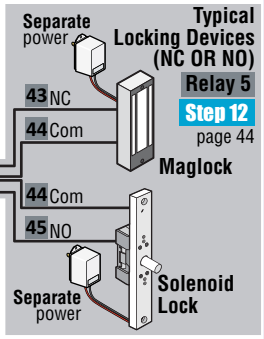


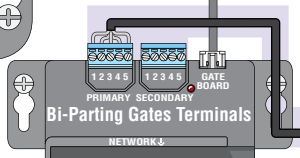
Relay 4 **Step 14** page 45



Typical Locking Devices (NC OR NO)

Relay 5 **Step 12** page 44





Interconnect Cable

DKS Plug-Ins

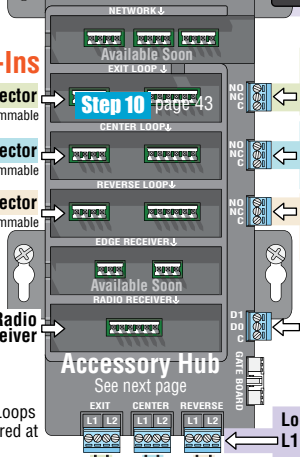
Exit Loop Detector Non-Programmable

Center Loop Detector Re-programmable

Reverse Loop Detector Re-programmable

Radio Receiver

Step 10 page 43



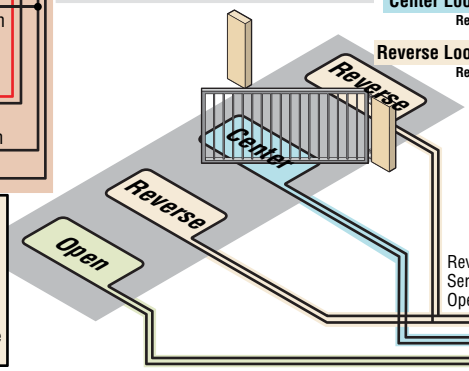
EXIT Detector Relay Terminal: Relay activates **ONLY** for a dual channel detector using **EXIT L2.** See 9413-065 PDF.

CENTER Detector Relay Terminal: Relay activates **ONLY** for a dual channel detector using **CENTER L2.** See 9413-065 PDF.

REVERSE Detector Relay Terminal: Relay activates **ONLY** for a dual channel detector using **REVERSE L2.** See 9413-065 PDF.

Wiegand Access Controller Terminal
Connects to a wiegand access controller. See radio receiver 8045-065 PDF.

Loop Lead-Ins Terminals
L1 - One standard loop function.
L2 - For a **second** loop. See 2100-222 dual channel detector 9413-065 PDF for more info.



Reverse Loops Series Wired at Operator

Wiring

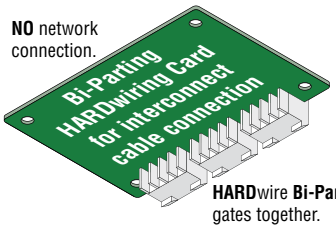
DKS Plug-Ins

These "**Plug-Ins**" are designed to be used with DoorKing Evolve vehicular gate operators **ONLY**. They simplify installation of key components that a gate operator uses to function.

DKS Plug-In HARDwire Card OR Network Card

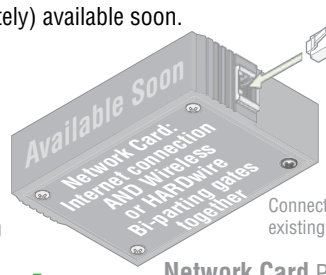
Network Jumper Card: Included with each operator and **MUST** be used when **ONLY** **HARD**wiring **interconnect cable** for **Bi-Parting gates**.

Network Card: for **INTERNET** connection **AND WIRELESS** or HARDwire connection between bi-parting gates, (sold separately) available soon.



NO network connection.

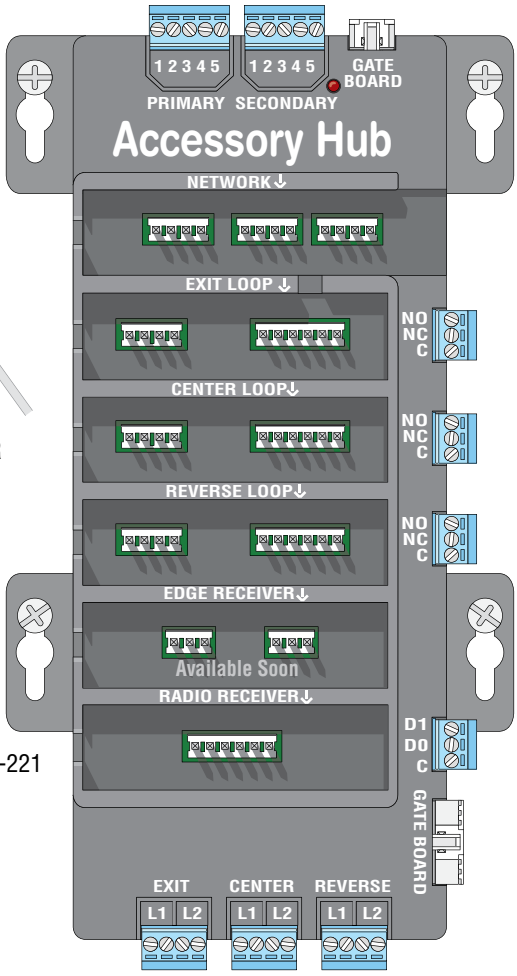
HARDwire **Bi-Parting** gates together.



Cat5/ Cat6

Connects to **YOUR** existing network.

Network Card P/N XXXX-010

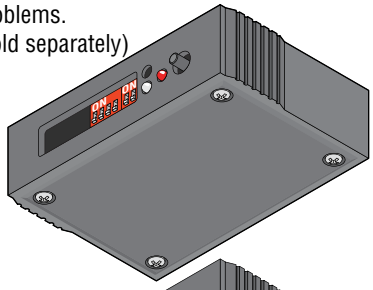


DKS Plug-In Loop Detectors

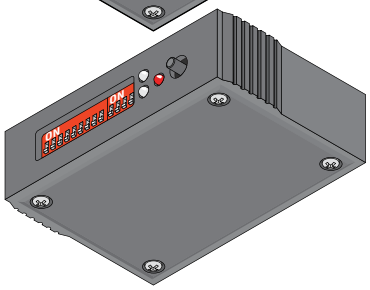
These "**Plug-In**" single-channel or dual-channel loop detectors can control **ONE loop OR** control **TWO separate loops** (including 2 series wired reversing loops configuration) depending on which detector is used.

These "Self-tuning" detectors will constantly **monitor** the **loop's frequency** status and "**Self-tune**" for any minor deviations with frequencies to keep the loop operating normally and decrease "**false calls**". The detectors also employs several automatic and advanced features that will assist technicians in the field with trouble shooting loop problems.

(sold separately)



Single-Channel Loop Detector P/N 2100-221
9412-065.pdf manual.



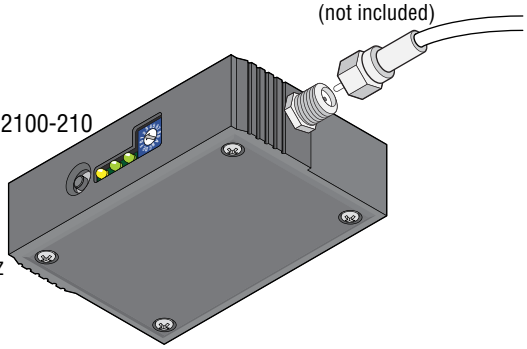
Dual-Channel Loop Detector P/N 2100-222
9413-065.pdf manual.

DKS Plug-In Radio Receiver

This "**Plug-In**" **DIRECT programmable** radio receiver is a versatile RF receiver that can output received transmitter codes in 26, 30 or 31-bit wiegand format. The receiver operates at 318 MHz and can be used with both Micro**Plus**® and Micro**Clik**® transmitters set to this frequency.

(sold separately)

Coax cable (not included)



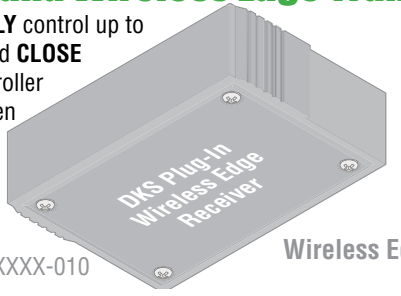
Radio Receiver P/N 2100-210
8045-065.pdf manual.

DKS Plug-In Wireless Edge Receiver and Wireless Edge Transmitter

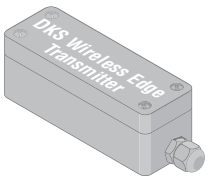
This "**Plug-In**" **Wireless Edge Receiver** is designed to **WIRELESSLY** control up to **TWO Wireless Edge Transmitters** that are located on the **OPEN** and **CLOSE** gate ends. UL terminals **53** **OPEN** and **59** **CLOSE** on the 2100 controller are **automatically** connected to the Plug-In receiver after it has been plugged into the accessory hub. Edges are controlled by those two terminals after programming them.

(sold separately)

Available Soon



DKS Plug-In Wireless Edge Receiver P/N XXXX-010

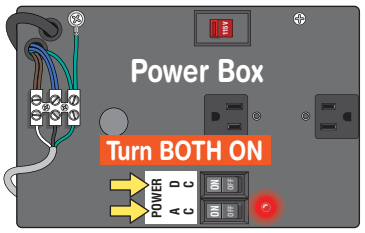


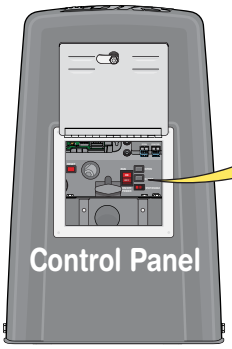
Wireless Edge Transmitter P/N XXXX-010
Sold Individually

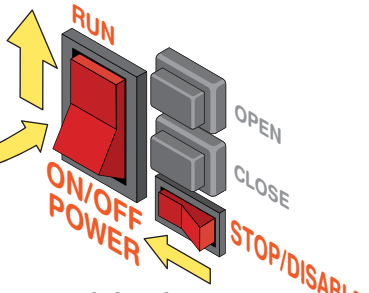
"Physically Set" Gate Operator Limit Switches

Some slide gate operator models **have limit switches** that **MUST** be "physically adjusted" instead of programmed in. The operator **MUST** have power to light up the LEDs while adjusting but, **DO NOT CYCLE THE GATE OPERATOR** while adjusting the limit switches! The operator normally stops a cycling gate using the open and close limit switches. If the limits have not been set, the gate could continue beyond its **open** and **close** positions, damaging the gate and operator.

MAKE SURE OPERATOR ON/OFF POWER IS ON
See page 51 for complete power switch descriptions.



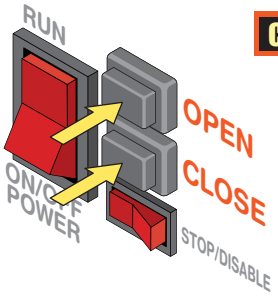




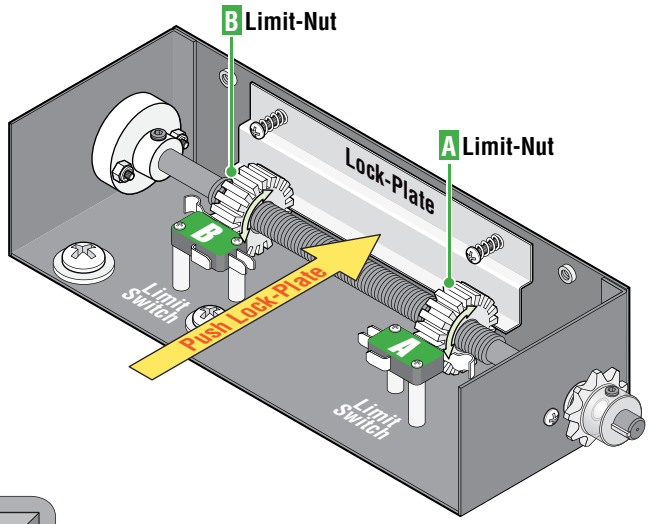
Make sure **STOP/DISABLE switch** is switched to the **LEFT** side.

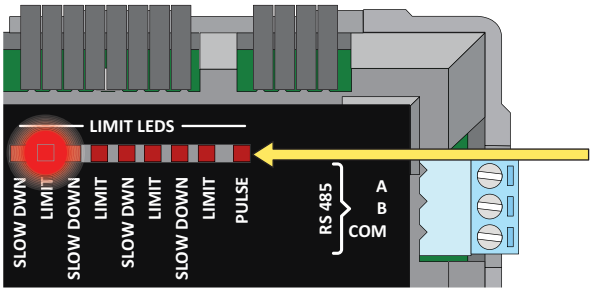
Move gate to the correct Open and Close positions:

Press and **HOLD** the **OPEN** or **CLOSE** button on the operator to move the gate to the correct **OPEN** or **CLOSE** positions. Releasing the button will **STOP** the gate **INSTANTLY**. Pressing the **SAME** button again will continue the gate's movement in the **SAME** direction.



CAUTION **Be careful** not to let gate travel beyond the **guide rollers** or **gate rail**, **damage** and/or **injury** could occur.



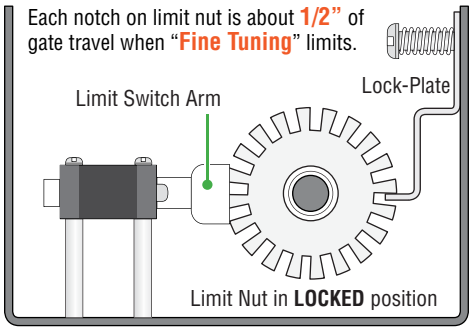


When operator **has power**, limit LEDs will light up on 2100 controller when limit switches get activated (pressing on the limit switch's arm until you hear a "Click" will light the corresponding LED on controller). Cycling the operator is **NOT** necessary.

Note: Limit switch's **opening** and **closing** direction LEDs are determined by **Step 1** "**Set OPEN Direction**" programming.

Adjust Limit Switches

With gate in the **OPEN** position, push and **HOLD** the lock-plate away from the limit-nuts to unlock them. Rotate the corresponding limit-nut until the **Limit LED lights up** on the 2100 controller. After adjusting, make sure the lock-plate is engaged in the slots on the limit nuts to **prevent** them from rotating. **Repeat the process for the CLOSED gate position**. When finished, cycle the gate a few times and re-adjust to "**Fine Tune**" gate's open and closed positions if necessary.



BEFORE Programming

General programming notes:



The "**Next**" function button is located on the **FIRST** screen in **each** step. This button allows you to proceed to the **next** step. Use the "**Back**" function button to go back to the previous step.

The "**Home**" function button returns to the "**Home Screen**" and "EXIT PROGRAMMING".

The **YELLOW** arrow ⇨ shows the programming path(s) "**in each step**". Your choices will determine **different** programming paths or **repeating** the screens as needed, typically pressing "**Ent**" or "**Set**" to complete a screen and proceed to the next one. After completeing a programming step, press the "**Next**" button to continue to the next programming step.

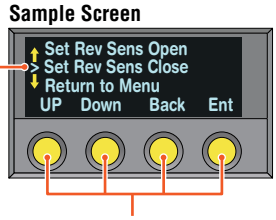
The **GREEN** arrow ⇨ typically shows the **return path(s)** back to the "**FIRST screen in a step**" so you can then press the "**Next**" button to continue to the next programming step. Some pathways will "**Return without completing**" the programming for that step if desired.

If you desire to **ONLY** go to a specific step, you must enter programming and then keep pressing the next button until you reach your desired step.
Example: To get to the "**Logs and Operation Info**" step 7, you must press the "**Menu**" button to enter programming and then **keep pressing** the "**Next**" button until you get to Step 7 "**Logs and Operation Info**".

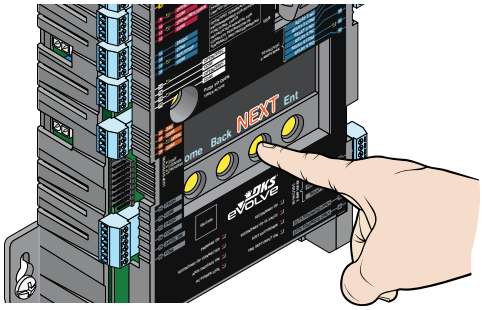
Making Programming Choices:

"**>**" **Selection Arrow:** shows the **chosen** selection in a list. The arrow can move up or down using the "**Up**" or "**Down**" function buttons to **change** the selection. Typically "**Ent**" or "**Set**" must then be pressed to **confirm** your **selected choice** and continue programming.

Sample Screen



Function Buttons: are labeled above them and **will change functions** from screen to screen.



Keep pressing "Next" button to scroll through steps

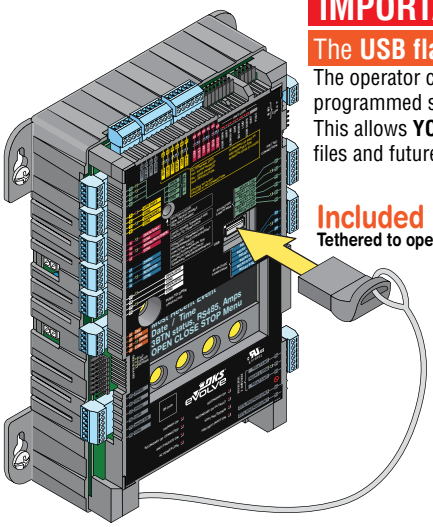
ALL SINGLE/PRIMARY OPERATOR programming "Steps" in order and page references

Step 1 Set OPEN Direction (see page 35)
Next
Step 2 Limits Check (see page 36)
Next
Step 3 UL Device Set up (see page 37-38)
Next
Step 4 Set Reverse Sensors (see page 39)
Next
Step 5 Auto Close Timer (see page 40)
Next
Step 6 Set Date & Time (see page 40)
Next
Operator start-up complete (see page 40)
Next
Step 7 Logs and Operation Info (see page 41)
Next
Step 8 Set Primary/Secondary (see page 42)
Next
Step 9 Gate Leaf Delay (see page 42)
Next
Step 10 Set Plug-in Loops (see page 43)
Next
Step 11 Set External Detectors (see page 44)
Next
Step 12 Relay Options (see page 44)
Next
Step 13 Not Used (see page 45)
Next
Step 14 Warn Before Move R4 (see page 45)
Next
Step 15 R3 Fault Output (see page 45)
Next
Step 16 3 Button Options (see page 46)
Next
Step 17 Power Fail (see page 46)
Next
Step 18 Quick Close (see page 46)
Next
Step 19 Motor Speed (see page 47)
Next
Step 20 RS 485 (see page 47)
Next
Step 21 Restore Defaults (see page 48)

ALL SECONDARY OPERATOR programming "Steps" in order and page references

Step 1 Set OPEN Direction (see page 49 & 35) **ALL installation requirements MUST be met for Bi-Parting gates.** page 24
Next
Step 2 Limits Check (see page 50)
Next
Step 3 UL Device Set up (see page 50, 37-38)
Next
Step 4 Set Reverse Sensors (see page 50 & 39)
Next
Step 8 Set Primary/Secondary (see page 50)
Next
Step 19 Set Motor Speed (see page 50 & 47)
Next
Step 21 Restore Defaults (see page 50 & 48)

USB Flash Drive



IMPORTANT

The **USB flash drive** that comes installed (tethered), should remain in the controller USB port.

The operator creates files on the installed flash drive **while** programming **YOUR specific settings**. It will re-load these programmed settings from the flash drive back onto the 2100 controller's memory **EVERYTIME power is restored** to it. This allows **YOUR specific programmed settings to remain intact**. The USB port can also be used for Importing/Exporting files and future firmware updates.

Included USB Flash Drive
Tethered to operator to prevent loss

IMPORTANT TIP: Store a **back-up copy** of **ALL** files from the operator's flash drive to your computer or cell phone **after** programming is complete. In case the operator's flash drive ever **fails** and you have to replace it.

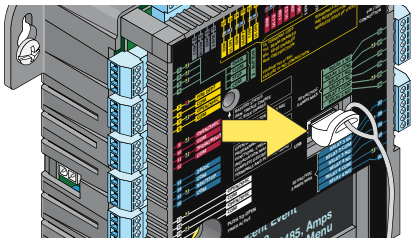
IF your back-up files are copied to a **NEW flash drive**, then those files will be re-loaded and used on the 2100 controller **after powering it up**, **NO** re-programming is necessary.

IF NO files are detected on a NEW flash drive after **powering up the 2100 controller**, then the controller will have to be completely **re-programmed**.

Bi-Parting Gates Note: 2100 controllers need to be backed-up **separately** when using **TWO** operators (Primary Back-Up and Secondary Back-Up).

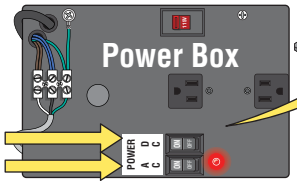
TURN ON OPERATOR(S) POWER

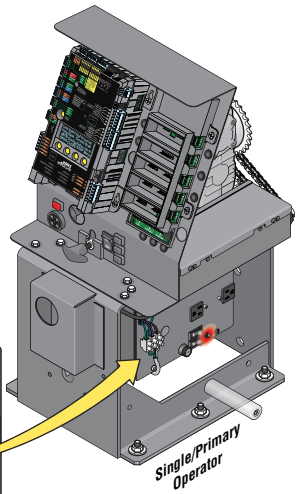
USB Flash Drive Inserted

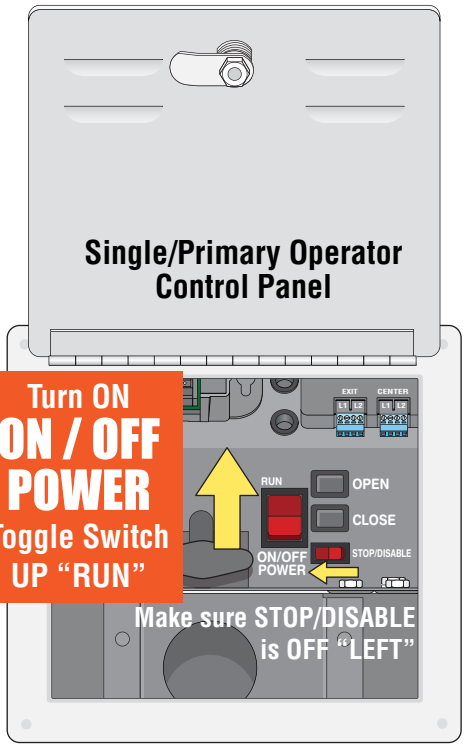


Make sure **Flash Drive** is inserted in the **USB Port BEFORE** turning power **ON,** see above.

BOTH AC and DC Power Switches MUST BE ON







See page 51 for complete power switch descriptions.

Bi-Parting Gates Note: Turn ON **BOTH** operator's power at start but

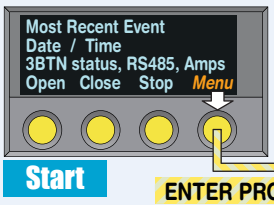
DO NOT CYCLE OPERATORS, DAMAGE/INJURY COULD OCCUR.

ALL Devices MUST be connected to operator(s) BEFORE programming can begin.

Programming Single/Primary Operator

When the operator is FIRST powered up, the screen will show the boot-up sequence, after the boot-up is complete, it will show "Bulk Charging" or "Trickle Charging" in the "Most Recent Event" column.

Home Screen



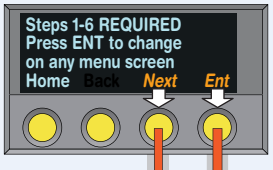
Start

Press "Menu" button

ENTER PROGRAMMING

Steps 1 thru 6 MUST be programmed in.

Generally, pressing "Ent" will confirm " ▶ " selection arrow's choice and then go to the next screen.



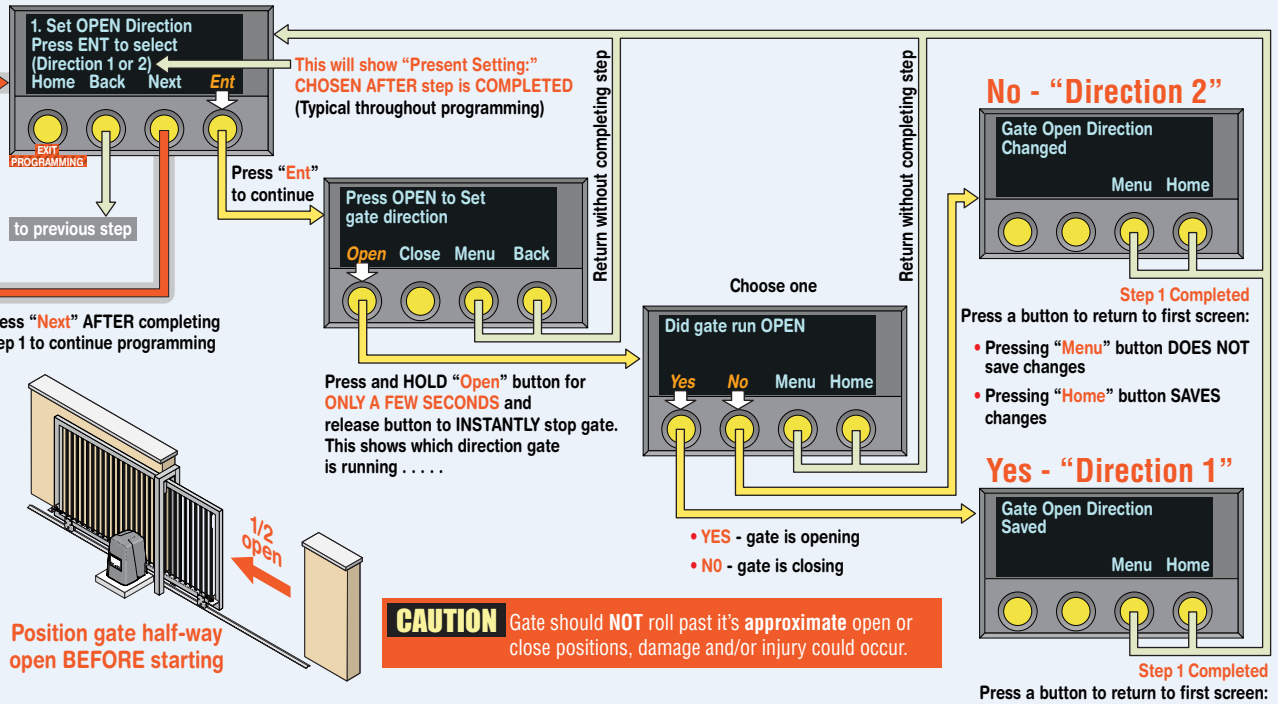
Press "Next" OR "Ent" to continue

Continued on next page

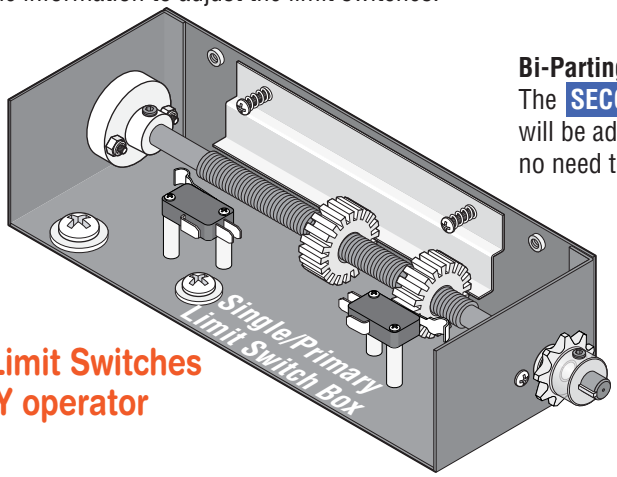
Changing Existing Programming Note:
Operator MUST be POWERED DOWN then back UP again BEFORE any changes to EXISTING programming will take effect.

Continued from previous page

Step 1 Set OPEN Direction (for Single/Primary operator) Required



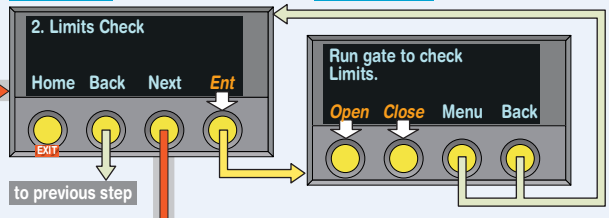
The "Physical" limit switches **MUST** be adjusted on the **SINGLE/PRIMARY** operator **BEFORE** continuing to **Step 2**, **see page 33** for **ALL** the information to adjust the limit switches.



Bi-Parting Gates Note:
The **SECONDARY** operator limit switches will be adjusted later in the programming, no need to adjust them now.

"Physically" Adjust Limit Switches on SINGLE/PRIMARY operator

Step 2 Limits Check Required



Press "Open" button and operator will cycle gate to OPEN position.
Press "Close" button to then cycle gate to CLOSED position.

"Stop" button used in case of problems with gate cycling

When OK, press "Back" or "Menu" button to continue

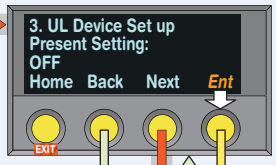
CAUTION **Be careful** not to let gate travel **BEYOND** the **guide rollers** or **gate rail**, **damage** and/or **injury** could occur.

Continued on next page

Continued from previous page

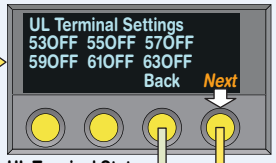
Non-contact Device (Beam) - UL Type B1
Contact Device (Edge) - UL Type B2

Step 3 UL Device Set up Required

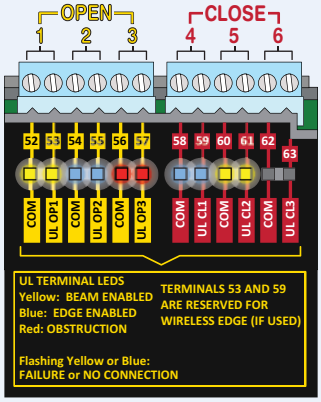


to previous step

This screen will indicate YOUR choices AFTER "Set Up UL Inputs" have been programmed.



UL Terminal Status "Factory Defaults"



Six UL Device Terminals:

EACH UL terminal MUST be programmed to activate the UL device that's connected to it.

LED color will be determined by the programming:

- Solid Blue - Edge
- Solid Yellow - Beam
- None - Turned Off

} LEDs will FLASH when there is a problem with the device

LEDs will change to Red when device is activated

DKS Plug-In Wireless Edge Receiver Note:
Terminals 53 OPEN and 59 CLOSE are RESERVED for DKS Plug-In Wireless Edge Receiver when used.

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 direction of gate travel. A minimum of 2 external devices REQUIRED but more can be added where ever the risk of entrapment or obstruction exists.

IMPORTANT ALL UL inputs are MONITORED. BEFORE the gate will open after a "open command" is given, the operator will "Check" ALL connected UL devices to verify that they are all in good working order.
IF they are, then the gate will open.
IF they are NOT, then the gate will NOT function and the LEDs on the malfunctioning UL device(s) input(s) will flash on the 2100 controller to indicate a fault with the device(s).

Single/Primary UL Devices:

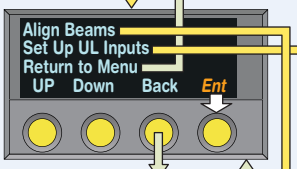
		Off	Edge	Beam
OPEN Terminals				
1	52 / 53 Term	☐	☐	☐
2	54 / 55 Term	☐	☐	☐
3	56 / 57 Term	☐	☐	☐
CLOSE Terminals				
4	58 / 59 Term	☐	☐	☐
5	60 / 61 Term	☐	☐	☐
6	62 / 63 Term	☐	☐	☐

Secondary UL Devices:

		Off	Edge	Beam
OPEN Terminals				
1	52 / 53 Term	☐	☐	☐
2	54 / 55 Term	☐	☐	☐
3	56 / 57 Term	☐	☐	☐
CLOSE Terminals				
4	58 / 59 Term	☐	☐	☐
5	60 / 61 Term	☐	☐	☐
6	62 / 63 Term	☐	☐	☐

Set Up UL Inputs:

ANY terminal can be set up for "Beam", "Edge" or remain "Off" if not used.
Use the UL Device checklists above to keep track of the UL device types and terminals used.

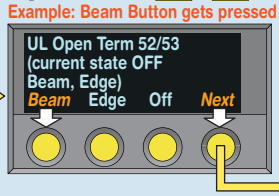


to previous screen

Press "Ent" to confirm a choice

Open Term 52 / 53

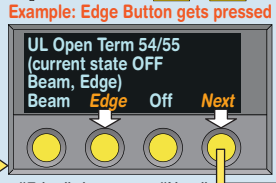
Example: Beam Button gets pressed



Press "Beam" then press "Next"

Open Term 54 / 55

Example: Edge Button gets pressed



Press "Edge" then press "Next"

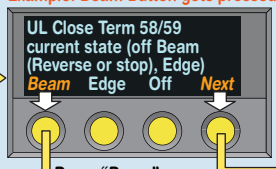
Open Term 56 / 57

Example: OFF Button gets pressed

Press "OFF" then press "Next"

Close Term 58 / 59

Example: Beam Button gets pressed

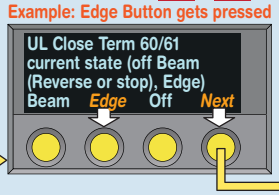


Press "Beam"

Press "Next"

Close Term 60 / 61

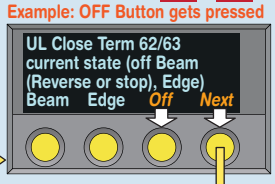
Example: Edge Button gets pressed



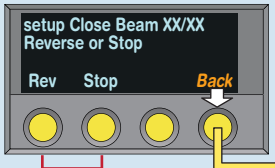
Press "Edge" then press "Next"

Close Term 62 / 63

Example: OFF Button gets pressed



Beam Chosen for A CLOSE term



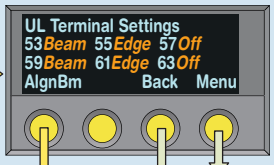
NOTE: Close Beam default is "Reverse"

Press One button

Choose desired response for activated CLOSE Beam, then press "Back" to continue

Goes back to the Close term screen

UL Terminal Status indicating Your Choices



to First screen in Step 3

Align Beams on next page

Align Beams on next page

Continued on page 39

Continued from previous page

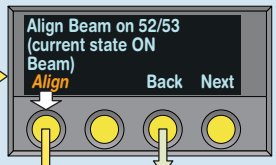
Align Beams: ANY terminal can have a Beam connected to it which may need to be aligned.

IMPORTANT "Set Up UL Inputs" MUST be programmed BEFORE Beam Alignment can take place, see previous page.

Alignment programming will only be allowed on terminals that have been "Set Up" as "Beam ON".
It skips over "Term OFF" or "Edge ON" terminals. If NO beams have been set up, it goes back to "UL Terminal Settings" screen.

Open Term 52 / 53

Example: Beam ON Set up

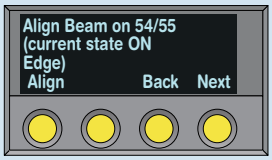


to previous screen

Align button Pressed (see below)

Open Term 54 / 55

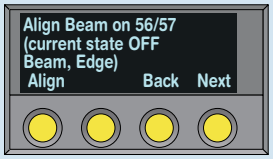
Example: Edge ON Set up



Screen for "Edge ON" WILL be skipped

Open Term 56 / 57

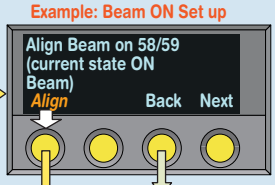
Example: Term OFF Set up



Screen for "Term OFF" WILL be skipped

Close Term 58 / 59

Example: Beam ON Set up

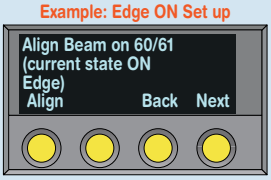


to previous "Beam ON" screen

Align button Pressed

Close Term 60 / 61

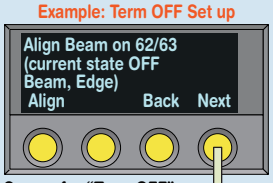
Example: Edge ON Set up



Screen for "Edge ON" WILL be skipped

Close Term 62 / 63

Example: Term OFF Set up



Screen for "Term OFF" WILL be skipped

Align Button Screen



"Physically align" your photocell to silence tone after pressing "Align" button.

If NO tone is heard after pressing align button, then beam is already aligned.

Press "Next" to continue to next "Beam ON" term

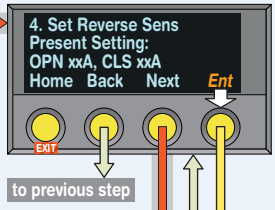
OR
If there are NO more "Beam ON" terms

Returns to screen:
"Align Beams"
"Set Up UL Inputs"
see previous page

Continued from page 37

Step 4 Set Reverse Sensors Required

Inherent Reverse Sensor - UL Type A



to previous step

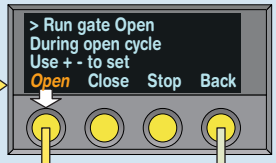
CAUTION You MUST re-adjust the Open AND Close sensors from the factory setting.

Factory Setting Note: If the factory default "**10A**" setting is **TOO LOW**, the gate will **reverse by itself**. Pressing the "**STOP**" button will stop the reversing gate cycle. Use the "**+**" button to **RAISE** the amp setting until the gate stops reversing by itself and **fully** completes a cycle.

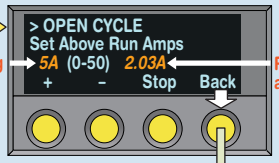
Moving gate will "Beep" while adjusting sensors

Adjust OPEN Amps REQUIRED

Gate Must be in the CLOSED position

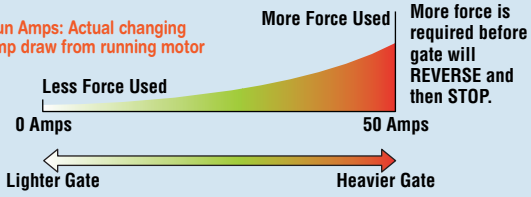


Press the **OPEN** button and **obstruct the gate** while it is **opening**. The gate should **stop**, then **reverse a few inches** and then **stop again**. If it doesn't reverse, then press the "**Stop**" button to stop gate. Adjust the open amps by using the "**+ -**" buttons to increase or decrease the force. Retest with the new settings until you are satisfied with the gate's performance, then press the "**Back**" button to continue programming.



"+ -" Amp Setting

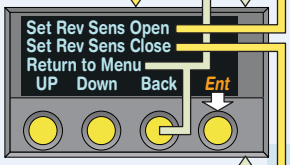
Run Amps: Actual changing amp draw from running motor



More force is required before gate will REVERSE and then STOP.

Adjusting Amps Note: A "**One Amp Setting Change**" can make the difference between having the gate **perform well** verses having the gate use **TOO much force** before reversing.

Example: 6A amp setting is **TOO LOW** because gate **reverses by itself** (run amps show 6.25A on screen) but an **8A** setting is **TOO HIGH** because gate uses **TOO much force to reverse when encountering an obstruction** (run amps show 7.35A on screen). Setting the reverse sensor to **7A** allows the gate to **fully** cycle and has **minimal** resistance to reverse itself when encountering an obstruction. **Open** and **Close** sensors **MUST** be individually adjusted and may have different amp settings.

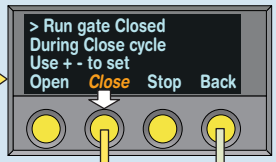


BOTH sensors MUST be adjusted.

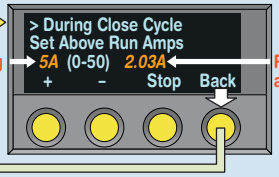
Press "Ent" to confirm a choice

Adjust CLOSE Amps REQUIRED

Gate Must be in the OPEN position

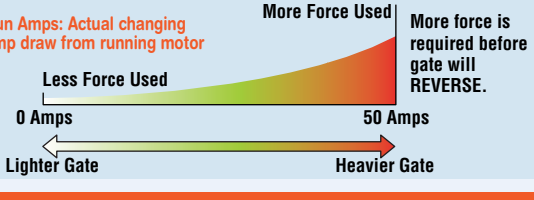


Press the **CLOSE** button and **obstruct the gate** while it is **closing**. The gate should **stop** and then reverse back to the **open position**. If it doesn't reverse, then press the "**Stop**" button to stop gate. Adjust the close amps by using the "**+ -**" buttons to increase or decrease the force. Retest with the new settings until you are satisfied with the gate's performance, then press the "**Back**" button to continue programming.



"+ -" Amp Setting

Run Amps: Actual changing amp draw from running motor



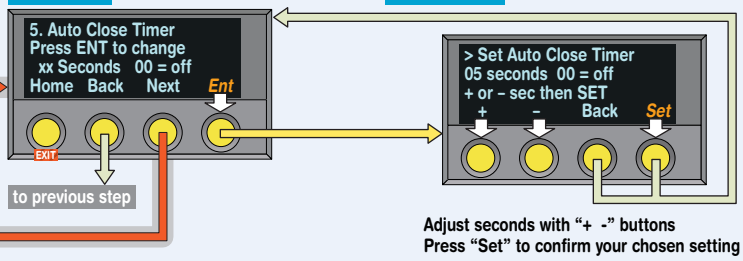
More force is required before gate will REVERSE.

CAUTION Make sure gate area is clear BEFORE adjusting reverse sensors.

Continued on next page

Continued from previous page

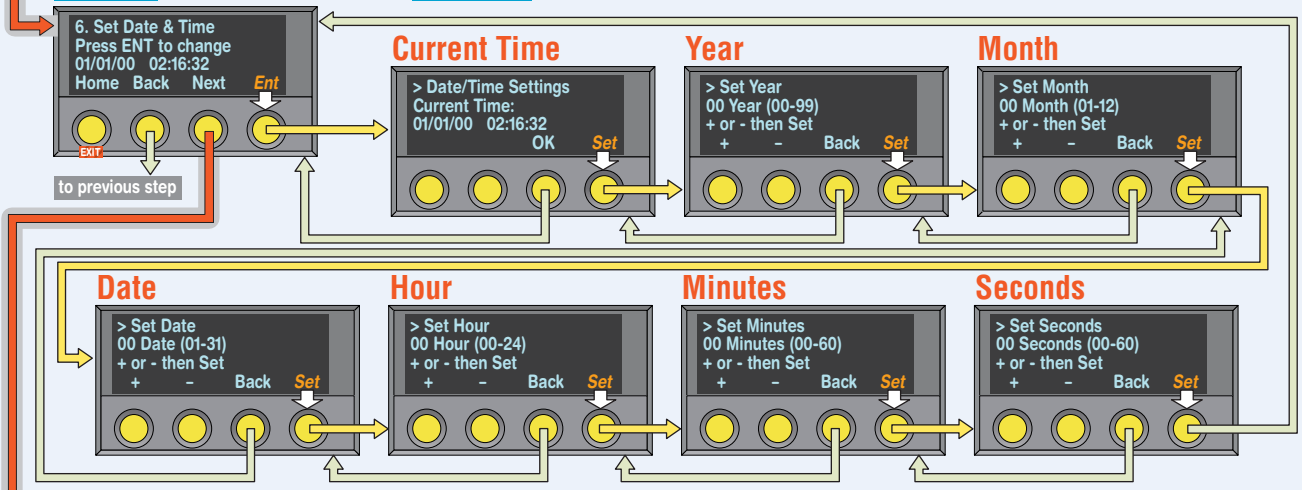
Step 5 Auto Close Timer Required



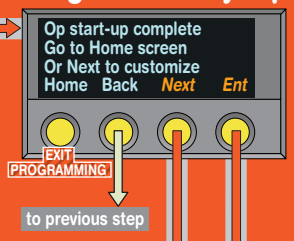
Set from 01-99 seconds for timer to close, 00 = timer Off

Adjust seconds with "+ -" buttons
Press "Set" to confirm your chosen setting

Step 6 Set Date & Time Required



Single/Primary Operator Start-up Complete



The basic Single/Primary operator will function "normally" after completing these programming steps and NO further programming is necessary. IF YOUR operator requires more customizing and/or you are installing bi-parting gates (see below), then press "Next" or "Ent" button to continue programming for YOUR SPECIFIC requirements.

IMPORTANT TIP: Make a **back-up copy** of **ALL** files on the operator's flash drive to your computer or phone **after** programming is complete for future use.

Continue programming OPTIONAL "Steps" to further customize YOUR gate system:

OPTIONAL

- Step 7 Logs and Operation Info (see page 41)
- Next
- Step 8 Set Primary/Secondary (see page 42)
- Next
- Step 9 Gate Leaf Delay (see page 42)
- Next
- Step 10 Set Plug-in Loops (see page 43)
- Next
- Step 11 Set External Detectors (see page 44)
- Next
- Step 12 Relay Options (see page 44)
- Next
- Step 13 Not Used (see page 45)
- Next
- Step 14 Warn Before Move R4 (see page 45)
- Next

OPTIONAL

- Step 15 R3 Fault Output (see page 45)
- Next
- Step 16 3 Button Options (see page 46)
- Next
- Step 17 Power Fail (see page 46)
- Next
- Step 18 Quick Close (see page 46)
- Next
- Step 19 Motor Speed (see page 47)
- Next
- Step 20 RS 485 (see page 47)
- Next
- Step 21 Restore Defaults (see page 48)

Bi-Parting Gates
Secondary Operator (see pages 49-50)

Continued on next page

Continued from previous page

Step 7 Logs and Operation Info

7. Logs and Op Info
Export log files or
Import/Exp settings
Home Back Next Ent
EXIT

to previous step

View

All Logs
Clear Logs
Return to Menu
UP Down More Ent

More Button

Control Board Info
Event Logs
Return to Menu
UP Down More Ent

More Button

Error Logs
Warning Logs
Return to Menu
UP Down Back Ent

3-Butt Open Term 1
01/01/00 00:00:21
1 of 367
Exit Prev Next

Previous Next Log

Clearing config files
This can NOT be UNDONE

S: 01234567AB
V: 1.00/NA/NA
Slide Limit
Menu Back

3-Butt Open Term 1
01/01/00 00:00:21
1 of 367
Exit Prev Next

Previous Next Event

UL Term 59 Fault (NC)
01/01/00 00:00:21
1 of 26
Exit Prev Next

Previous Next Error

Open Term 23 Hold
01/01/00 00:00:21
1 of 4
Exit Prev Next

Previous Next Warning

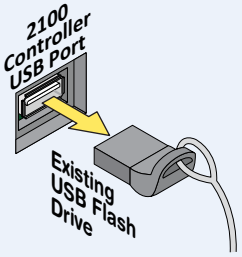
Reboot NOTE: If you reboot several times, it will show EACH reboot BEFORE the last logged event:

1. "Logic Board Reboot"
2. "Logic Board Reboot"
3. "Logic Board Reboot"
4. "Last Event"
5. "Previous Event etc...."

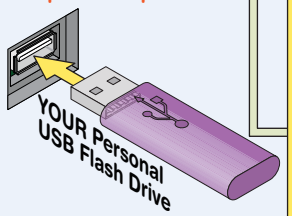
View
Export to USB
Import from USB
UP Down Back Ent

Press "Ent" to confirm a choice

FIRST Unplug existing USB Flash Drive while operator is powered up . .



THEN connect YOUR Personal USB Flash Drive to **Export** or **Import** files



USB Power Note: Operator requires a USB flash drive WITH programmed files on it whenever POWERING it UP or it will have to be re-programmed.

Export

Info, settings, Logs
Clear Logs
Return to Menu
UP Down More Ent

More Button

Op Settings
Event Logs
Return to Menu
UP Down More Ent

More Button

Error Logs
Warning Logs
Return to Menu
UP Down Back Ent

Clearing config files
This can NOT be UNDONE

Press "Ent" if choosing "Clear Logs" otherwise press "More"

Op Settings Note: Exporting the "OP Setting" file allows a back-up copy of YOUR personal programmed settings to be saved if needed for future use instead of having to re-program YOUR settings again.

Export config files

Press "Ent" to confirm ONE choice on TWO screens

Import

This will overwrite
Current settings.
Back Confirm

Importing files
This can NOT be UNDONE

Continued on next page

Continued from previous page

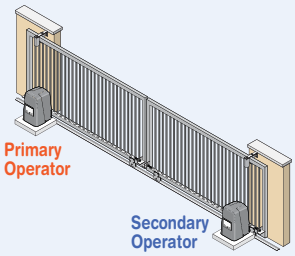
Step 8 Set Primary/Secondary Operators ("PAIRING" for Bi-parting gates ONLY)

Skip this step for a SINGLE operator, Primary/Secondary setting is ONLY used for Bi-Parting gates.

SECONDARY operator should already be powered up at start of programming:

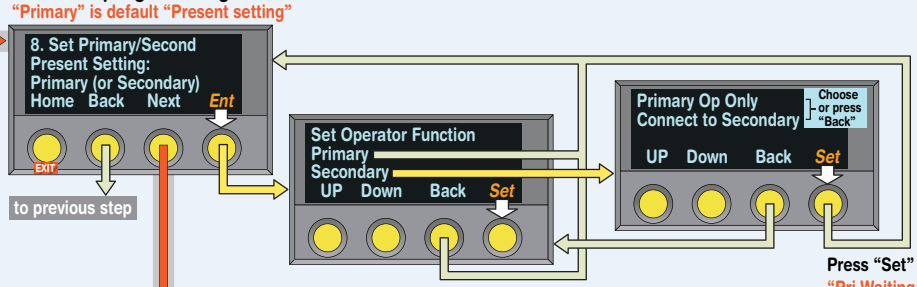
DO NOT ADJUST SECONDARY LIMIT SENSORS.
DO NOT CYCLE SECONDARY OPERATOR.

Damage and/or **Injury** could occur.



Continue programming from PRIMARY 2100 controller

"Primary" is default "Present setting"

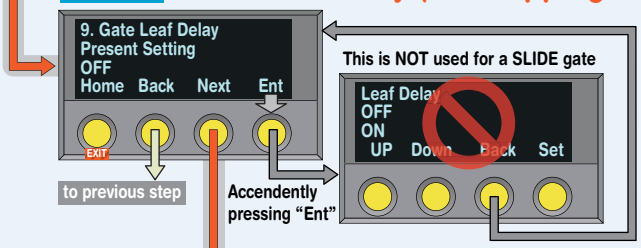


Press "Set" to confirm a choice
"Primary" on "Present Setting:"
screen if "Primary" chosen

Press "Set" to confirm a choice
"Pri Waiting to Pair" on "Present Setting:"
screen if "Connect to Secondary" chosen

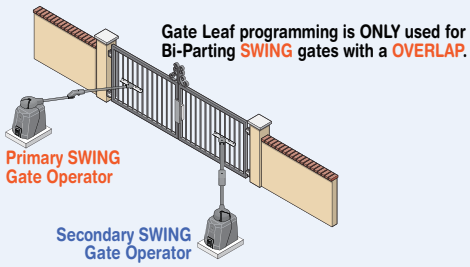
ALL Bi-Parting REQUIREMENTS MUST be met BEFORE "Pairing" operators together.
see page 24

Step 9 Gate Leaf Delay (Overlapping bi-parting SWING gates ONLY)



Accendently pressing "Ent"

Press "Back" to return to first screen
to continue "Next" button programming



Gate Leaf programming is ONLY used for Bi-Parting SWING gates with a OVERLAP.

Continued on next page

Continued from previous page

Step 10 Set Plug-in Loops

10. Loop Options
Present Setting:
Exit, Shadow, Rev
Home Back Next Ent

to previous step

Center Options

PlugIn Center
Shadow+ Loop
Rev/Stop Loop
UP Down Menu Set

Press "Set" to confirm a choice

Center Shadow+ Optns
Prevent Open OFF
Prevent Open ON
UP Down Back Set

Choose or press "Back"

Center = Reverse
Menu Back

Center Loop Options
Reverse Loop
Stop Loop
UP Down Back Set

Press "Set" to confirm a choice

Center = Stop
Menu Back

PlugIn Exit=ExitLoop
Set Plug in Center
Set Plug in Rev/STP
UP Down Menu Ent

Press "Ent" to confirm a choice

Reverse/Stop Options

Plug In Rev/STP
Reverse Loop
Stop Loop
UP Down Menu Set

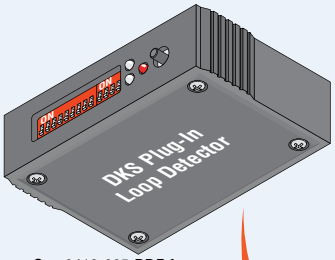
Press "Set" to confirm a choice

Rev/STP Loop = Reverse
Return to Menu
Menu Back

Rev/STP Loop = Stop
Return to Menu
Menu Back

Exit Port CANNOT be re-programmed.
It functions as a normal EXIT loop.

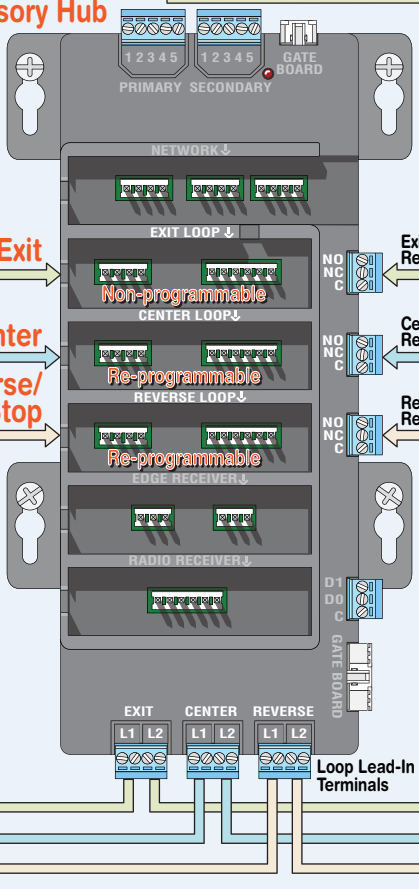
See page 48 for ALL "Plug-In Loop Default Settings"



See 9413-065 PDF for DKS **Dual Channel** plug-in loop detector information.

See 9414-065 PDF for DKS **Single Channel** plug-in loop detector information.

Accessory Hub



Exit
Center
Reverse/ Stop

Plug-In Loop Detector Ports

Exit Relay
Center Relay
Reverse Relay

EACH "L2" terminal activates the RELAY terminal for EACH DUAL Channel Plug-In Loop Detector ONLY.

The "Center" Loop port can be re-programmed to a Reverse/Stop loop if more loop ports are required for your installation.

Loop Lead-In Terminals

Plug-In Detector Settings:

EXIT Port ☐ Not Used ☐ Exit Loop

CENTER Port ☐ Not Used — Prevent Open ☐ On ☐ Off (Center Loop) — ☐ Reverse ☐ Stop (Re-programmed Loop)

REVERSE Port ☐ Not Used ☐ Reverse ☐ Stop (Reverse Loop)

Continued on next page

Continued from previous page

Step 11 Set External Detectors

11. Set External Det
Present setting:
Exit, Shadow, Rev
Home Back Next Ent

to previous step

Term 11 Options

Terminal 11 Options
Shadow+ Loop
Rev/Stop Loop
UP Down Menu Set

Press "Set" to confirm a choice

T11 Shadow+ Optns
Prevent Open OFF
Prevent Open ON
Choose or press "Back"
UP Down Back Set

Term 11 RevOptions
Reverse Loop
Stop Loop
UP Down Back Set

Press "Set" to confirm a choice

Term 11 = Reverse
Menu Back

Term 11 = Stop
Menu Back

Term 9 = Exit Loop
Set Term 11 Center
Set Term 15 Rev/Stp
UP Down Menu Ent

Press "Ent" to confirm a choice

Term 9 CANNOT be re-programmed.
It functions as a normal EXIT loop.

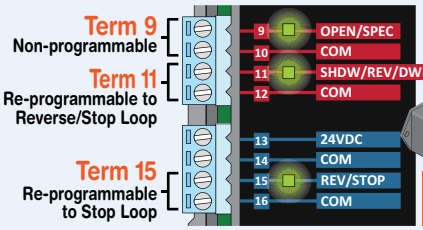
Term 15 Options

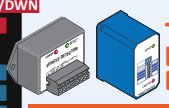
Terminal 15 options
Reverse Loop
Stop Loop
UP Down Menu Set

Press "Set" to confirm a choice

Term 15 = Reverse
Menu Back

Term 15 = Stop
Menu Back





Third Party Loop Detectors

See page 48 for ALL "External Loop Default Settings"

Step 12 Relay Options

12. Relay Options
Relays 1, 2 & 5
1-off 2-off 5-off
Home Back Next Ent

to previous step

Steps are repeated for EACH Relay chosen.

Setup Relay 1
Setup Relay 2
Setup Relay 5
Choose or press "Back"
UP Down Back Ent

Press "Ent" to confirm a choice

Select Relay Option
Relay Off
More Ent

Press "Ent" if choosing "Relay Off" otherwise press "More" button

More Button

Relay Active When
Gate at OPEN Limit
Opening & Open
Choose or press "More"
UP Down More Set

More Button

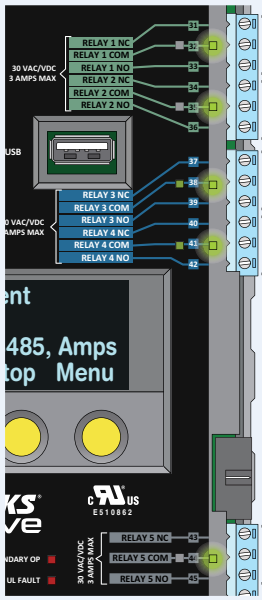
Opening & Closing
Gate Not Closed
Choose or press "More"
UP Down More Set

More Button

When car on Loop 1
When car on Loop 2
When car on Loop 3
Choose or press "Back"
UP Down Back Set

Relay Saved
Return to Menu
Menu Back

Press "Set" to confirm ONE choice on ANY of the "More" screens



Relay 1 device connection

Relay 2 device connection

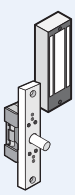
Relay 3 - R3 Fault Output
Step 15 See Next page

Relay 4 - Warn B4 Move R4
Step 14 See Next page

(Form C) dry contact Relays for **Normally Closed** OR **Normally Open** activation devices.
Type of Devices: Access control systems, security sensors, remote controls, keypads, smart home hubs, motion detectors, intercom systems, lights, timers, loops and locks. These type of devices will trigger after receiving a low power signal from the 2100 Controller.

Relay 5 device connection OR use for Maglock / Solenoid Locks

Extra "More" Screen for "Setup Relay 5" ONLY
Screen is NOT offered for relay 1 or 2



More Button for Relay 5 ONLY

Maglock Function
Solenoid Function
Return to Menu
Choose or press "Back"
UP Down Back Set

Loop 1: Plug-In Exit loop port OR Term 9 Exit/Open

Loop 2: Plug-In Center loop port OR Term 11 Shadow/Reverse

Loop 3: Plug-In Reverse loop port OR Term 15 Reverse/Stop

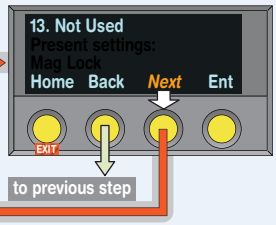
Maglock Function: Normally Closed
Active when gate is closed

Solenoid Function: Normally Open
Active when gate opens

Continued on next page

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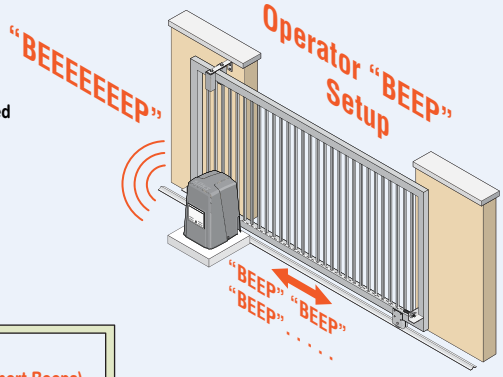
Step 13 Not Used



Step 14 Warn Before Move R4

Operator can be setup for one long "BEEEEEEP" BEFORE starting gate cycle and/or short beeps "BEEP" "BEEP" "BEEP" . . . . DURING cycling.

An external device can be connected to activate when operator starts beeping if desired (Relay 4 terminal).





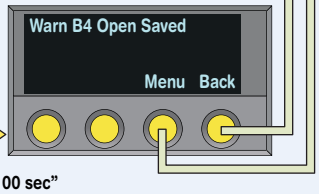
Before Travel (Long Beep)



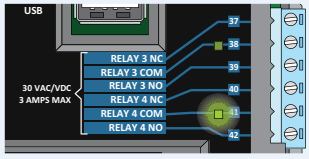
Press " + - " to adjust seconds for ONE long beep,
"00 sec" = No beep BEFORE gate cycle.
Press "Set" to confirm adjusted seconds

During Travel (Short Beeps)



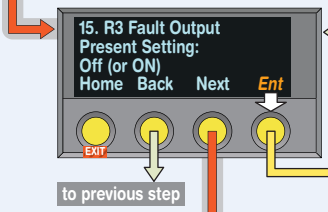


"ON" setting will "BEEP" "BEEP". . .
even if previous screen is turned "OFF - 00 sec"
Press "Ent" to confirm a choice



Relay 4
Warn Before Move
device connection (Optional)

Step 15 R3 Fault Output

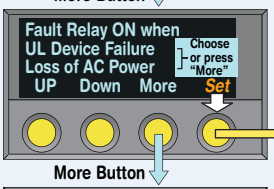




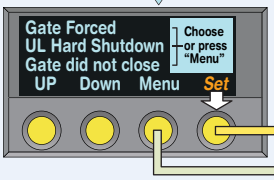
Press "Ent" if choosing "OFF"
otherwise press "More"



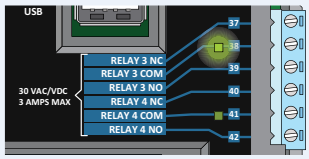
More Button



More Button



Press "Set" to confirm
ONE choice on the
TWO "More" screens

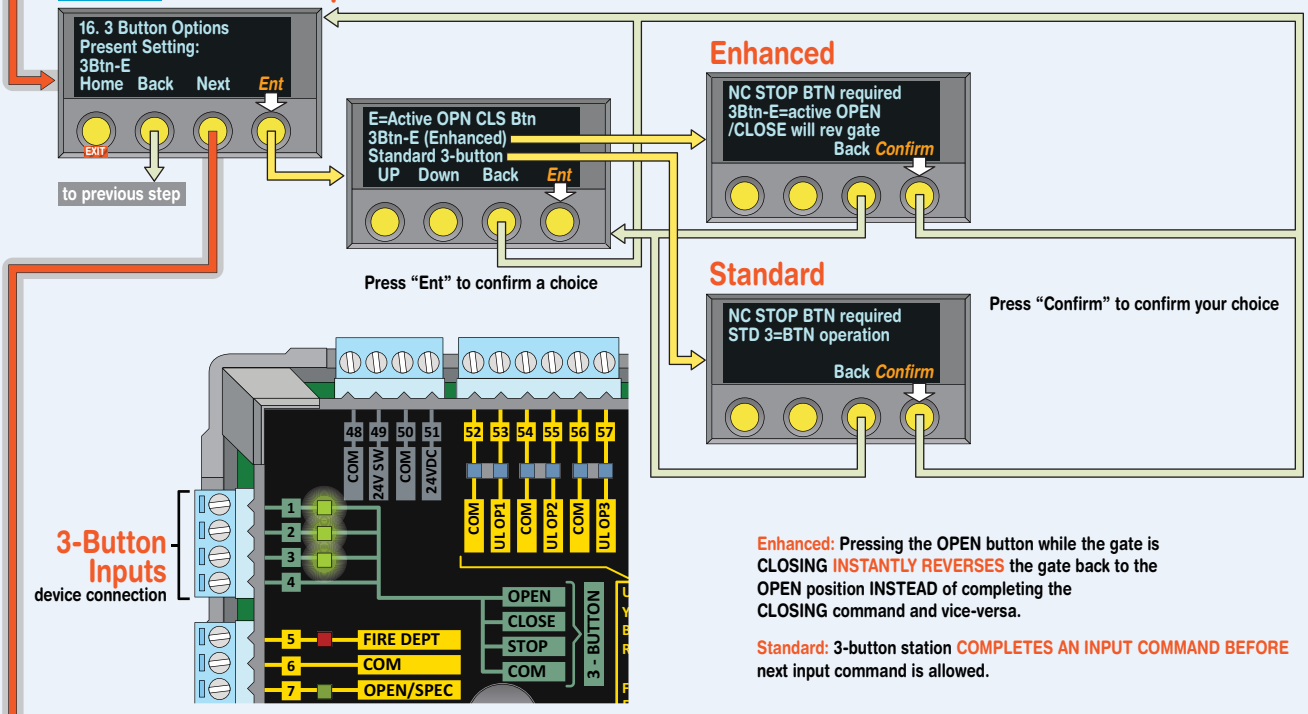


Relay 3
Fault Output
device connection

Continued on next page

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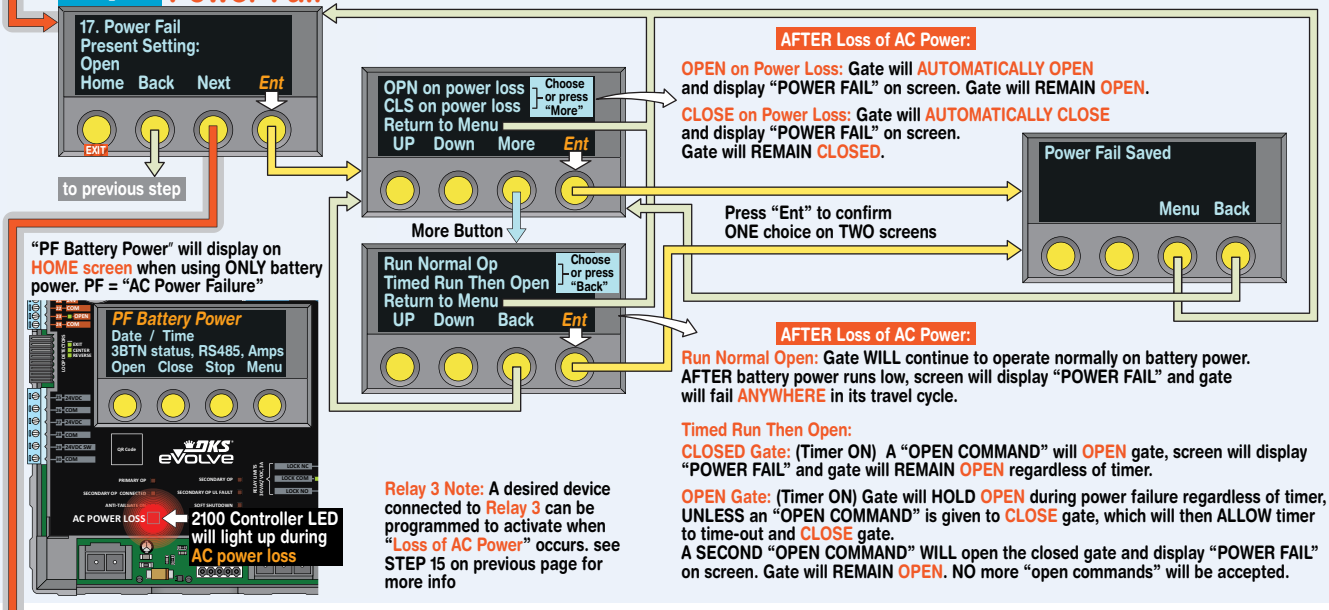
Step 16 3 Button Options



Enhanced: Pressing the OPEN button while the gate is CLOSING INSTANTLY REVERSES the gate back to the OPEN position INSTEAD of completing the CLOSING command and vice-versa.

Standard: 3-button station COMPLETES AN INPUT COMMAND BEFORE next input command is allowed.

Step 17 Power Fail



AFTER Loss of AC Power:

OPEN on Power Loss: Gate will AUTOMATICALLY OPEN and display "POWER FAIL" on screen. Gate will REMAIN OPEN.

CLOSE on Power Loss: Gate will AUTOMATICALLY CLOSE and display "POWER FAIL" on screen. Gate will REMAIN CLOSED.

AFTER Loss of AC Power:

Run Normal Open: Gate WILL continue to operate normally on battery power. AFTER battery power runs low, screen will display "POWER FAIL" and gate will fail ANYWHERE in its travel cycle.

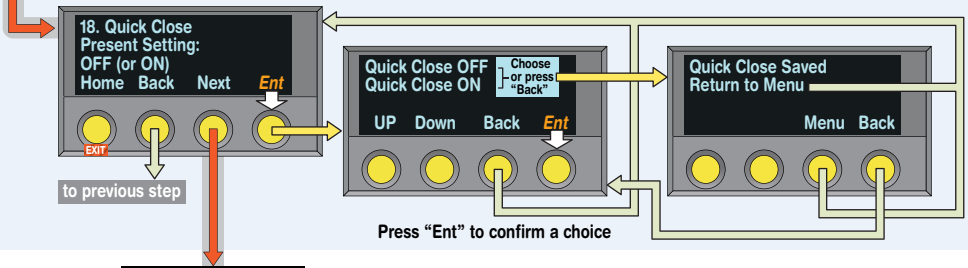
Timed Run Then Open:

CLOSED Gate: (Timer ON) A "OPEN COMMAND" will OPEN gate, screen will display "POWER FAIL" and gate will REMAIN OPEN regardless of timer.

OPEN Gate: (Timer ON) Gate will HOLD OPEN during power failure regardless of timer, UNLESS an "OPEN COMMAND" is given to CLOSE gate, which will then ALLOW timer to time-out and CLOSE gate.
A SECOND "OPEN COMMAND" WILL open the closed gate and display "POWER FAIL" on screen. Gate will REMAIN OPEN. NO more "open commands" will be accepted.

Relay 3 Note: A desired device connected to Relay 3 can be programmed to activate when "Loss of AC Power" occurs. see STEP 15 on previous page for more info

Step 18 Quick Close



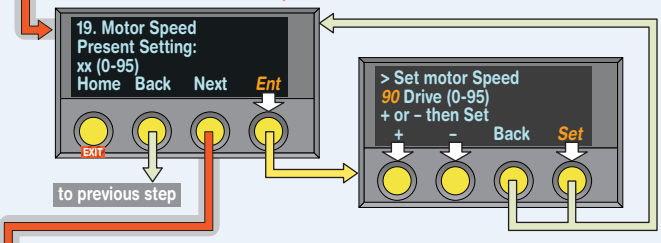
Quick Close ON: Gate will open and activate OPEN limit switch. It will close 1 SECOND after reaching open limit, regardless of auto close timer setting.

Quick Close OFF: Gate will always COMPLETE a NORMAL timed gate cycle.

Continued on next page

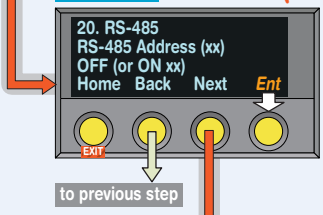
Continued from previous page

Step 19 Motor Speed

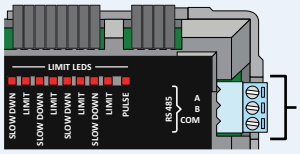


Press "Set" to set the motor speed indicated on the screen

Step 20 RS 485 (Access Controller Connection)



Available Soon



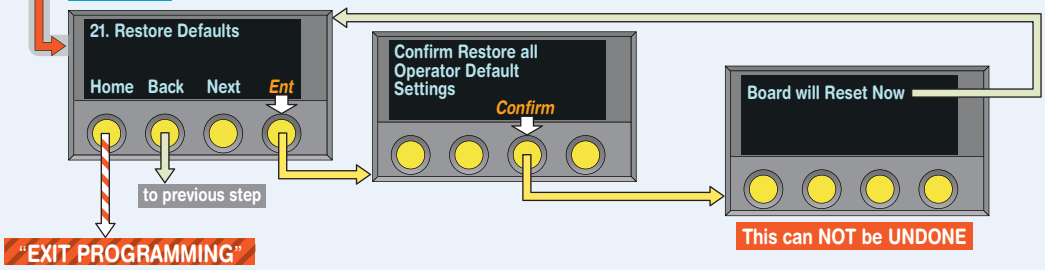
RS 485
Access Controller Connection

IMPORTANT TIP: Make a **back-up copy** of **ALL** files on the operator's flash drive to your computer or phone **AFTER** programming is complete.

Continued on next page

Continued from previous page

Step 21 Restore Defaults



Default Setting for EACH Step:

Step 1 Set OPEN Direction: Open Direction 1

Step 2 Limits Check: N/A

Step 3 UL Device Set up: **OFF** for **ALL SIX UL device terminals**
Operator will **NOT** function with **ALL** UL Device terminals **OFF**

Step 4 Reverse Sensors: 10A (**MUST** be re-programmed)

Step 5 Auto Close Timer: 00 sec, OFF

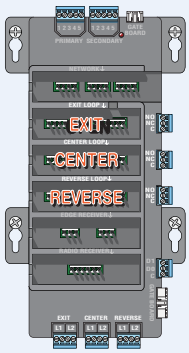
Step 6 Set Date & Time: No Date or Time

Step 7 Logs and Operation Info: N/A

Step 8 Set Primary/Secondary: Primary ONLY, No Secondary

Step 9 Gate Leaf Delay: Not Applicable

Step 10 Set Plug-in Loops: (DKS Plug-In Loop Detectors ONLY)



Accessory Hub

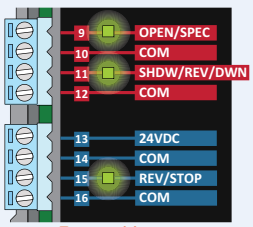
Exit Loop Port - Non-programmable
- Loop activated **while** gate OPENING will **continue opening** gate
- Loop activated **while** gate CLOSING will **reverse** and open gate
- Loop activated **when** gate OPEN will **hold** gate open
- Loop activated **when** gate CLOSED will **open** gate

Center Loop Port - **Re-programmable** to a **Reverse** Loop or a **Stop** Loop, see page 43
- Loop **inactive while** gate OPENING so gate will **continue opening**
- Loop **inactive while** gate CLOSING so gate will **continue closing**
- Loop activated **when** gate OPEN will **hold** gate open
- Loop activated **when** gate CLOSED will **NOT allow** gate to open (plus **NOT allow** any **Exit/Open** loops to open gate)

Reverse Loop Port - **Re-programmable** to a **Stop** Loop
- Loop activated **while** gate OPENING will **reverse** and close gate
- Loop activated **while** gate CLOSING will **reverse** and open gate
- Loop activated **when** gate OPEN will **hold** gate open
- Loop **inactive while** gate CLOSED so nothing happens

NOTE: Loop activates when a vehicle is directly above it.

Step 11 Set External Detectors: (Third Party Loop Detectors)



External Loop Detector Connections

Terminal 9-Exit/Open - Non-programmable
- Loop activated **while** gate OPENING will **continue opening** gate
- Loop activated **while** gate CLOSING will **reverse** and open gate
- Loop activated **when** gate OPEN will **hold** gate open
- Loop activated **when** gate CLOSED will **open** gate

Terminal 11-Shadow/Reverse - **Re-programmable** to a **Reverse** Loop or a **Stop** Loop, see page 44
- Loop **inactive while** gate OPENING so gate will **continue opening**
- Loop **inactive while** gate CLOSING so gate will **continue closing**
- Loop activated **when** gate OPEN will **hold** gate open
- Loop activated **when** gate CLOSED will **NOT allow** gate to open (plus **NOT allow** any **Exit/Open** loops to open gate)

Terminal 15-Reverse/Stop - **Re-programmable** to a **Stop** Loop
- Loop activated **while** gate OPENING will **reverse** and close gate
- Loop activated **while** gate CLOSING will **reverse** and open gate
- Loop activated **when** gate OPEN will **hold** gate open
- Loop **inactive while** gate CLOSED so nothing happens

Step 12 Relay Options: **1**-OFF, **2**-OFF, **5**-OFF

Step 13 Not Used

Step 14 Warn Before Move R4: 00 sec, OFF

Step 15 R3 Fault Output: OFF

Step 16 3 Button Options: 3Btn-E (Enhanced)

Step 17 Power Fail: OPEN

Step 18 Quick Close: OFF

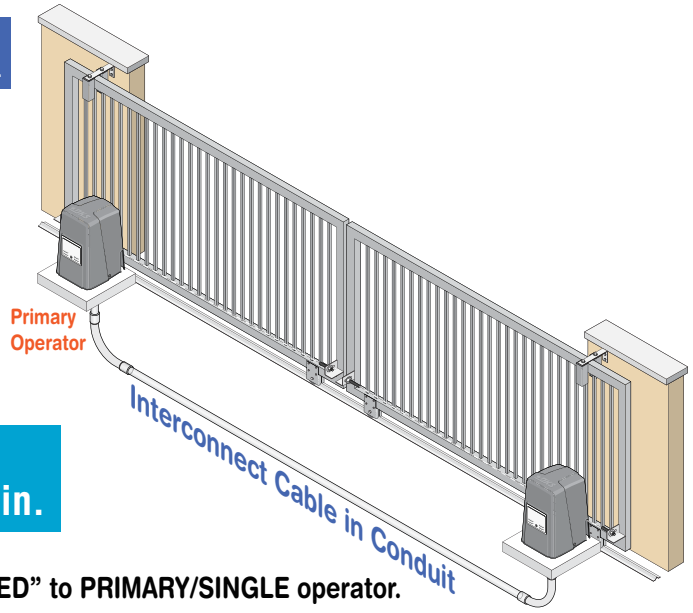
Step 19 Motor Speed: (0-95)??

Step 20 RS 485: Available Soon

Step 21 Restore Defaults: N/A

Programming Secondary Operator

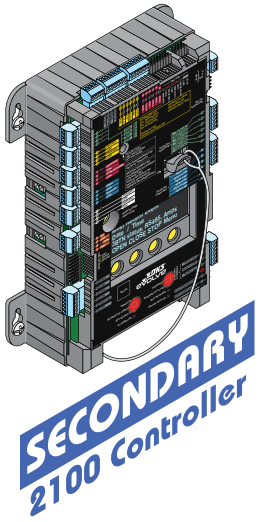
All programming for the **PRIMARY** operator **MUST** be complete **BEFORE** programming the **SECONDARY** operator.



ALL requirements MUST be met on page 24 BEFORE programming can begin.

Secondary operator should be POWERED UP and "PAIRED" to PRIMARY/SINGLE operator.

Secondary Operator



Secondary Home Screen

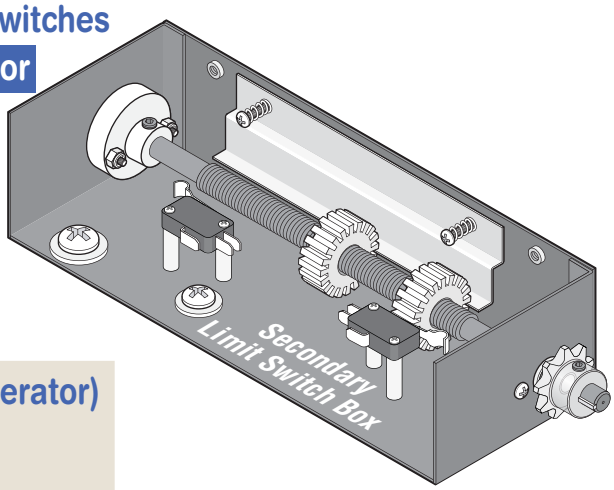


Press "Menu" to enter programming

Start

Type D: Constant pressure needed to operate opening devices for gate

"Physically" Set Limit Switches on SECONDARY Operator



The "Physical" limit switches MUST be set for SECONDARY operator BEFORE continuing programming, see page 33 for all the information to "Physically" set the limit switches.

Step 1 Set OPEN Direction (for Secondary Operator)



Press "Ent" to enter Step 1

to previous step

See page 36 for programming

Continued on next page

Continued from previous page

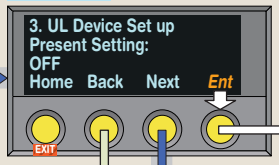
Step 2 Limits Check



CAUTION Be careful not to cycle gate before limits sensors have been adjusted, damage and/or injury could occur.

Press "Open" button and operator will cycle gate to OPEN position.
Press "Close" button to then cycle gate to CLOSED position.
When OK, press "Next" to continue

Step 3 UL Device Set up



to previous step

See pages 37-38 for programming

ALL requirements MUST be met for Bi-Parting gates. page 24

Step 4 Reverse Sensors

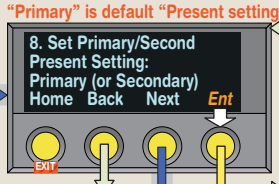


to previous step

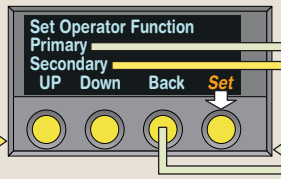
See page 39 for programming

Step 8 Set Primary/Secondary Operators

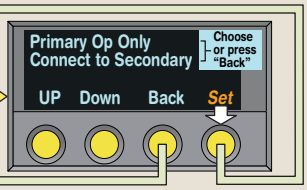
"Primary" is default "Present setting"



to previous step

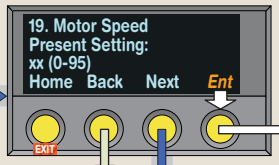


Press "Set" to confirm a choice
"Primary" on "Present Setting:" screen if "Primary" chosen



Press "Set" to confirm a choice
"Pri Waiting to Pair" on "Present Setting:" screen if "Connect to Secondary" chosen

Step 19 Motor Speed



to previous step

See page 47 for programming

Step 21 Restore Defaults



to previous step

See page 48 for programming

"EXIT PROGRAMMING"

IMPORTANT TIP: Make a **back-up copy** of **ALL** files on **EACH** operator's flash drive to your computer or phone **after** programming is complete. (**Primary** Back-Up and **Secondary** Back-Up)

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 devices. 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 manual 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**.

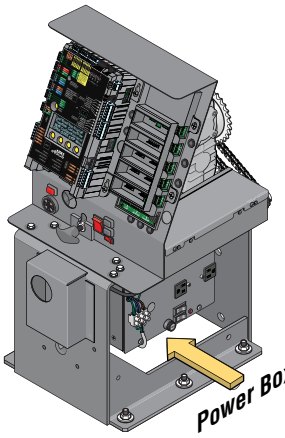
Control Panel and Power Box

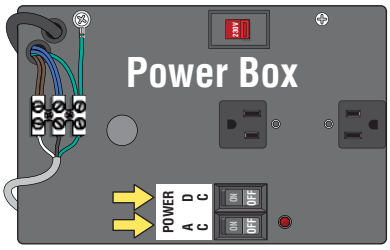
Control the **POWER**, **CYCLING** and **ALARM RESET** of operator.



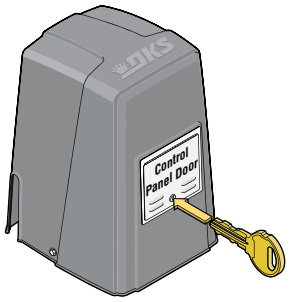
A KEY has been supplied that will unlock the control panel door on this gate operator.

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

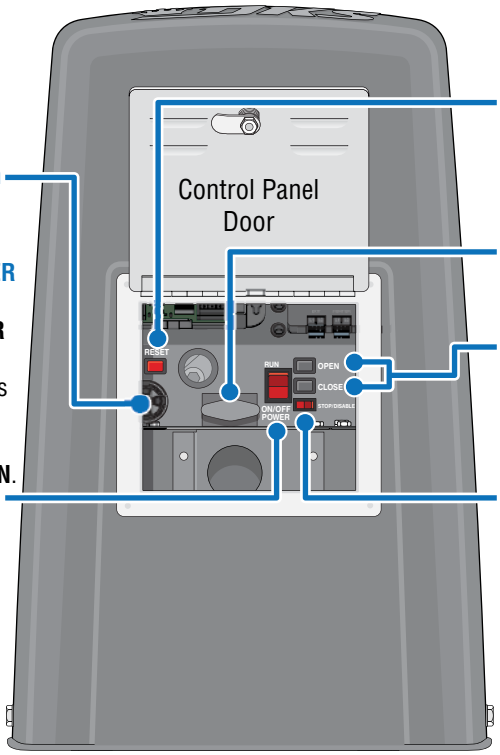




AC and DC ON / OFF Power Toggle Switches on Power Box - Switches will shut-off **EACH POWER type** (**AC** and **DC**) to operator individually, as long as control box **Main ON / OFF** power toggle switch **remains ON** (see below).
Note: Turning **BOTH** of these switches off will **Shut-Off ALL power** to operator, even if **Main ON /OFF power toggle switch** remains **ON**.



Unlock the control panel door to access the controls.



Alarm Siren

Main ON / OFF POWER Toggle Switch - Shuts-off **ALL POWER** to operator, **BOTH AC** and **DC** when switch is **DOWN (OFF)**, even if power box **AC** and **DC** toggle switches are **ON**.

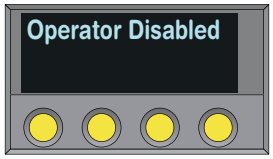
Note: EVERYTIME operator is **powered up**, it will re-load **YOUR specific programmed settings** back into its memory **BEFORE** it can resume normal operation again.

Alarm RESET Button
Turns **OFF** the **Entrapment Alarm** and restarts the operator **AFTER** a **HARD** shutdown has occurred (See next page).
2100 controller will remain powered up.

Manual Release "Pull Release" Type Models
See page 59.

OPEN Button - Operator **OPEN** cycle.
CLOSE Button - Operator **CLOSE** cycle.
Once the **Open** or **Close** buttons have been pressed, they will **complete** their cycles unless the **Stop** toggle switch is turned to "**DISABLE**".

STOP / DISABLE Toggle Switch
Disables operator from functioning when switch is **RIGHT (Disable On)** or operator will function **NORMALLY** when switch is **LEFT**.
2100 controller will remain powered up.



Operator's 2100 controller screen will show "**Operator Disabled**" when disable switch is "**RIGHT**".

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 - NO Alarm

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, Micro**PLUS** 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 device (photocell) 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.

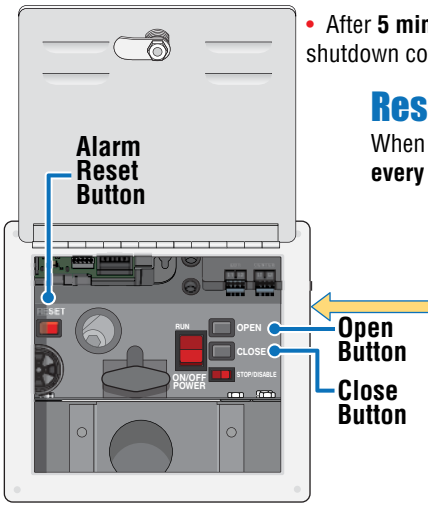
When the operator is in a soft shutdown, activation of any "**intended input**" will reset the operator. An "intended input" includes any command, any standard safety input and any loop input. Activating any of these inputs will reset the gate. At that point the gate will return to normal operation.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

HARD Shutdown - Alarm Sounding OR "Chirping"

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 sound 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 button must be pressed** to reset the operator and silence the alarm.

Resetting a HARD Shutdown

When the operator is in a hard shutdown condition (audio alarm activated or audio alarm "**chirps**" **every 5 seconds**), to silence the alarm, **press the alarm reset button**.

- Before resetting a hard shutdown, determine why the shutdown occurred. Inspect the gate for any obstructions along its path that could have activated the inherent entrapment sensing system. Inspect the gate and gate hardware.

NOTE: DoorKing operators have a built-in alarm reset push button. Activating this button will return the gate operator to normal operation, **but WILL NOT cycle the gate operator.** The **OPEN** and **CLOSE** buttons **WILL** cycle operator.

Once the gate has been reset, an **open** or **close command** is needed to cycle the gate operator. **Most activating commands** will cause the gate operator to **cycle to the open position**. This includes activation of a key switch or open command and activation of the automatic exit loop. Activation of a **close command** will cycle the gate to the **closed position**.

Manual Gate Operation

Some operators are 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. **Some operators** can **only** be manually released by **unlocking** and releasing the chain drop.

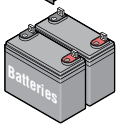
This gate operator CAN NOT be manually forced open in the event of a power failure without FIRST manually releasing the gate!

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 (AC) power failure, The gate operator is equipped with a built-in **Battery Back-Up System (DC)**, this system will allow the gate operator to continue to function normally when primary (AC) power is removed.

3 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 has a release system that allows the gate to be **Manually Operated** (See below).

Manual Release

Never attempt to manually push open the gate with the operator attached to it until you have verified that STOP/DISABLE switch is set for "DISABLE ON" OR ALL power to the operator has been SHUT-OFF.

Note: ANYTIME operator is **powered down**, it has to re-load **YOUR specific programmed settings** back into its memory after it gets **powered UP again BEFORE** it can resume normal operation. Using the STOP/DISABLE switch avoids all of this.

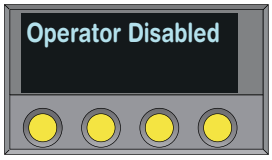
STOP/DISABLE Toggle Switch



STOP/DISABLE Switch Positions:

- **LEFT "Disable OFF"**
- **RIGHT "Disable ON"**

2100 controller will **REMAIN** powered up. Operator is **disabled**.



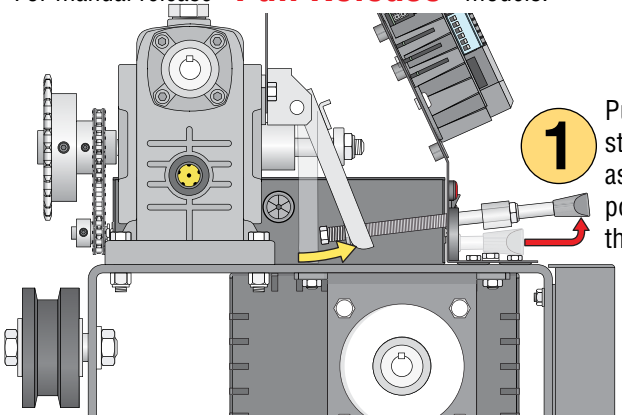
2100 controller screen will show "**Operator Disabled**" when ON.



A KEY has been supplied that will unlock the control panel door on this gate operator.

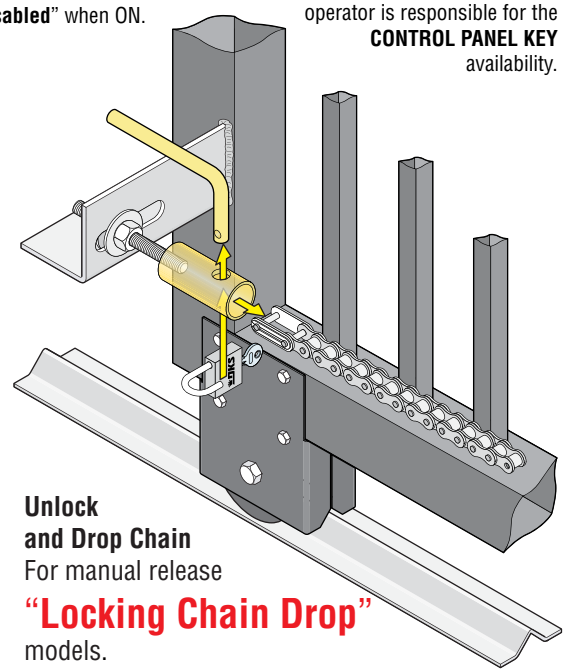
Note: The **owner** of the gate operator is responsible for the **CONTROL PANEL KEY** availability.

For manual release **"Pull Release"** models:

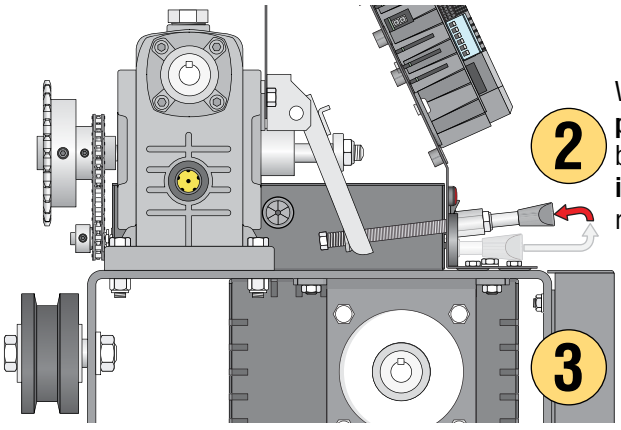


1 Pull handle straight **OUT** as far as possible and then **Lift UP**.

OR

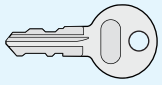


Unlock and Drop Chain
For manual release **"Locking Chain Drop"** models.



2 With handle in **UP position**, slide back down to **lock it** in manual release position.

3 **Manually Push Gate Open**



A KEY has been supplied that will unlock the chain drop.

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

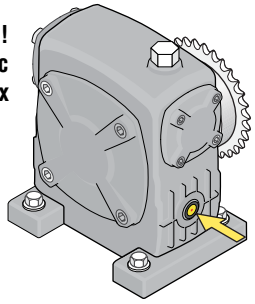
Maintenance and Troubleshooting

Inspection and service of this gate operator by a qualified technician should be performed anytime a malfunction is observed or suspected. High cycle usage may require more frequent service checks.

Maintenance

When servicing the gate operator, always check any external reversing devices (loops, photocells, 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 severe 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 SHC-629 Synthetic Gear Oil. Do not completely fill gearbox with oil. Gearbox should be HALF full only. Do not exceed this level.**

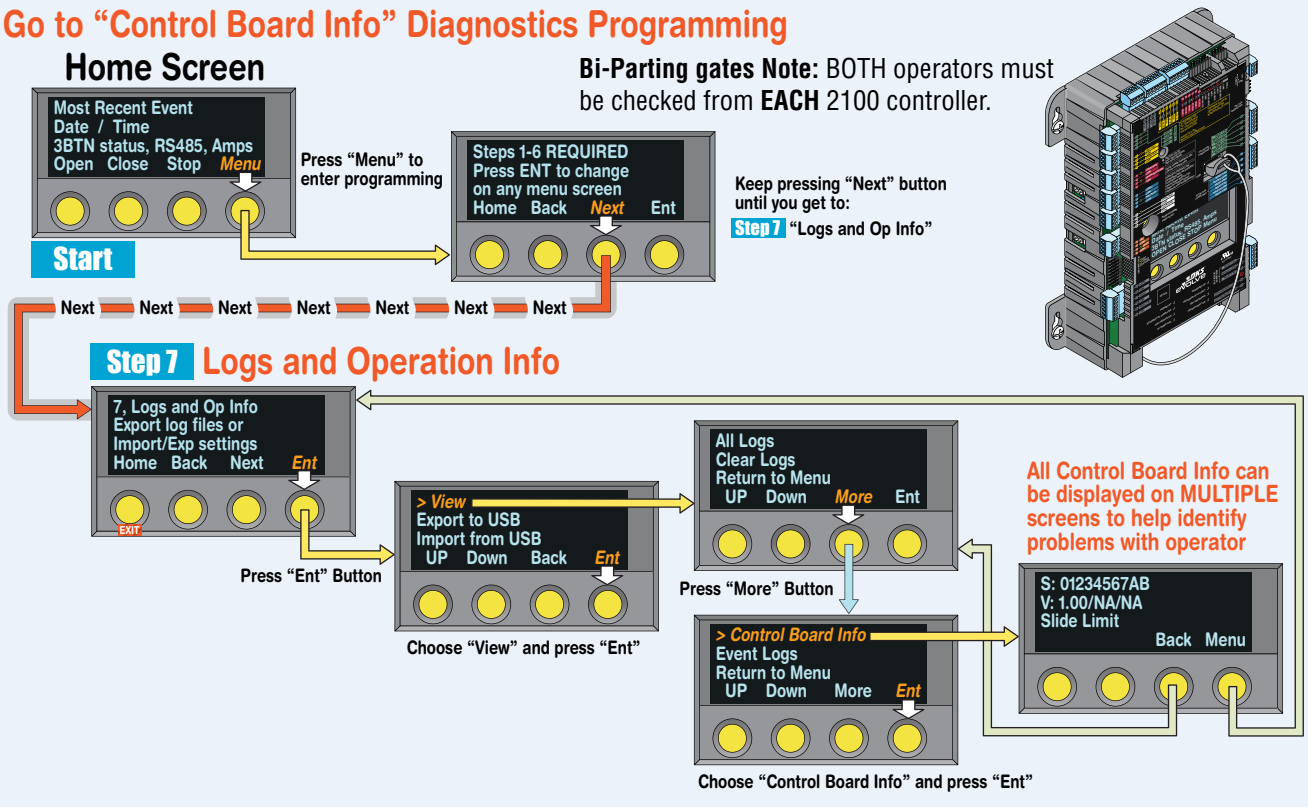


Operator Component	Maintenance	Monthly Interval		
		1	6	12
Diagnostics Programming	This programming can **display problems** with the operator. Use when necessary. See next page to access it on 2100 controller. **Note:** This is a good time to check if you have a **current BACK-UP** copy of **ALL** files on the 2100 controller's flash drive(s) for future use.			
Warning Signs	Check that warning signs are on **BOTH** sides of gate area and easily visible.	✓		
Alarm	Activate the (inherent) reverse sensors by blocking the gate with a solid object. When the gate reverses, block the gate again in the opposite direction prior to the gate limit being reached. **The entrapment alarm should activate**. Press the reset button to silence the alarm.	✓		
Drive Belt	Check for alignment, tightness and wear.		✓	
Chain	Check for sagging. Tighten if necessary. See page 20.		✓	
Fire Dept.	Check emergency vehicle access device for proper operation.	✓		
Gate	Inspect for damage. Check gate wheels, rollers and guides for wear and grease if necessary.		✓	
Grease	Wheels, guide rollers and limit nuts if necessary.		✓	
Loop(s)	Check vehicular exit and reverse loops for proper operation.	✓		
Inherent Reverse Sensors	Check that the gate reverses on contact with an object in both the **opening** and **closing** cycles. See page 60 for testing. Adjust the inherent reversing sensors if necessary. See page 39.	✓		
Pulleys	Check for alignment. Check setscrews for tightness.	✓	✓	
Manual Release	Check **manual release** for proper operation. See page 59.	✓		
External Reverse Devices	Check external reverse devices stop or reverse the gate when activated. See page 60.	✓		
Batteries	Check the batteries for any leakage or loose connections. Batteries should be replaced every two years.	✓		
Complete System	Complete check of gate and gate operating system.			✓

Troubleshooting Diagnostics and Problem Solving

The gate operator has programming diagnostics that will display **potential** or **existing problems** that the 2100 controller has detected. Specific fault conditions are checked and the operator will display that a fault exist through the "**Control Board Info**" programming step. This programming, along with a visual inspection of the gate area, should identify **MOST** of the problems with the gate system. Some problems that may arise that are not quickly identifiable by the operator's diagnostic programming or visual inspection are listed below.

Go to "Control Board Info" Diagnostics Programming

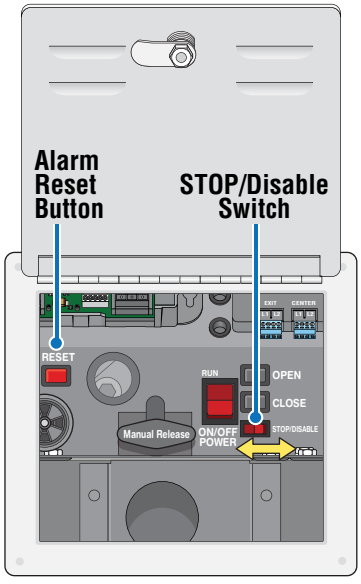


Problems that can be solved without diagnostics programming

Operator HARD Shutdown Conditions (see previous page)

If a CONSTANT tone is heard: This indicates that the operator is in a **HARD shutdown** condition. The tone will continue to sound for five minutes, and then will beep once every five seconds. The alarm **Reset Button** must be pressed to return the operator to normal operation.

If a SHORT tone 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 alarm **Reset Button** is pressed.



STOP/DISABLE Toggle Switch ON

When toggle switch is **RIGHT** (Disable On) position, it disables operator from functioning. **LEFT** (Normal) position will allow operator to function normally.

NO Operator Power

Check the incoming power supply wire with a VOM meter. A voltage drop on the input power wire (usually caused by using **too small** input power wires) will cause the operator to malfunction. Refer to the wire size chart on page 30.

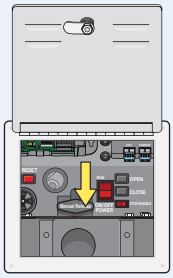
Note: A Meg-Ohm meter capable of checking up to 500 meg-ohms of resistance may be necessary to properly check the integrity of the **in-ground loops**.

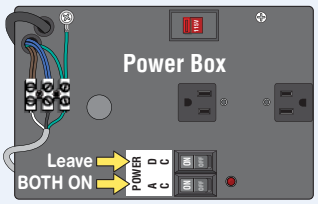
Updating eVolve Firmware

1 Power DOWN Operator

Control Panel

ON/OFF Power Switch "DOWN" OFF



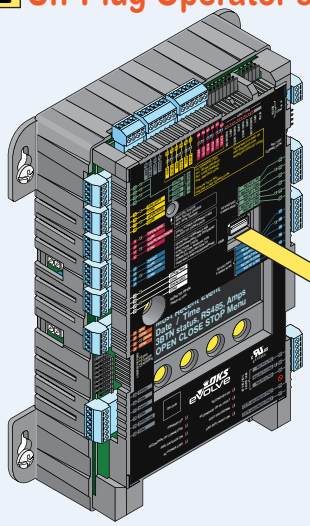


Download Firmware Update at:
www.doorking.com

DKS eVolve Firmware Update.bin

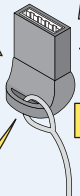
Your Cell Phone

2 Un-Plug Operator's Flash Drive





Your USB Phone Adapter

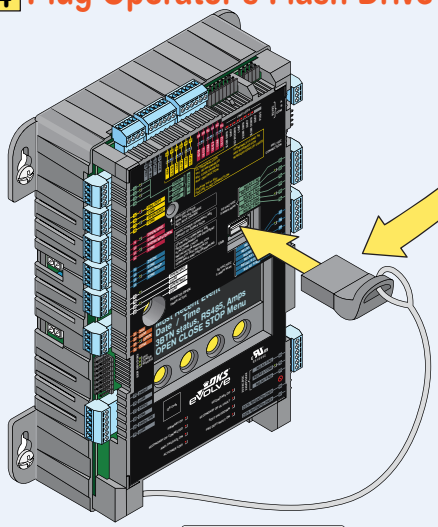


Your Computer



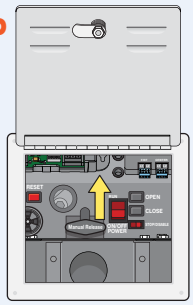
3 Copy firmware file to Operator's Flash Drive (Replace older file if prompted)

4 Plug Operator's Flash Drive Back In



5 Power UP Operator

ON/OFF Power Switch "UP" ON



Firmware will update on screen AUTOMATICALLY displaying new firmware version number

This can NOT be UNDONE

Secondary operator MUST be updated also when using Bi-Parting gates.

IMPORTANT TIP: **Back-up ALL** files from the operator's flash drive to **YOUR** computer or phone **after** firmware update is complete. In case the operator's flash drive ever fails and you have to replace it. Secondary operator's flash drive files **MUST** also be backed-up when using bi-parting gates.

Accessory Items

UL 325 Entrapment Protection Devices

Type B1 Non-Contact Devices (Beam)

DoorKing
Model 8080-057 Standard (Retroreflective 35 ft)
Model 8080-060 Deluxe Adjustable (Retroreflective 35 ft)

Miller Edge
OptiGuard (Thru-Beam 100 ft)
TruGuard (Retroreflective 30 ft)

EMX Industries
Model IRB-MON2 8080-052 (Thru-Beam 115 ft)
Model IRB-RET2 8080-053 (Retroreflective 60 ft)
Model IRB-325 (Thru-Beam 65 ft)
Model NIR-50-325 (Retroreflective 50 ft)

Omron
Model E3K-R10K4 8080-056 (Retroreflective 30 ft)

Seco-Larm
Model E-936-S45RRGQ 8080-055 (Retroreflective 45 ft)
Model E-960-D90GQ 8080-054 (Thru-Beam 90 ft)

Type B2 Contact Devices (Edge)

DoorKing

8080 Series Sensing Edges
DKS 8080-250 5ft 2-wire
DKS 8080-254 5ft 4-wire
DKS 8080-260 6ft 2-wire
DKS 8080-264 6ft 4-wire



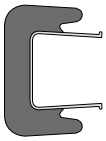
ASO



ASO Sentir 35.55 CT
Max Length 25m



ASO Sentir 35.85 CT
Length 6m / 25m



ASO Sentir 95.20 AT
Length on request
Wrap-Around Edge



ASO Sentir 92.20 RT
Length on request
Wrap-Around Edge

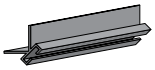
Miller Edge



ME120-T2 Max-100ft 2-wire
ME120 Max-100ft 4-wire



CPT210-T2 Max-50ft 2-wire
CPT210 Max-50ft 4-wire



ME120C5 Bottom Gate Mount
for ME120 and CPT210 Edges



CPT215-T2 Max-50ft 2-wire
CPT215 Max-50ft 4-wire



ME110-T2 Max-50ft 2-wire
ME110 Max-50ft 4-wire



8080-071 ME111-T2 6ft 2-wire
8080-091 ME111 6ft 4-wire



8080-070 MG123-T2 5ft 2-wire
8080-090 MG123 5ft 4-wire



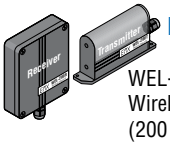
8080-066 MGS20-T2 5ft 2-wire
8080-086 MGS20 5ft 4-wire
Wrap-Around Edge



8080-065 MGR20-T2 5ft 2-wire
8080-085 MGR20 5ft 4-wire
Wrap-Around Edge

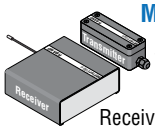
Wireless Edge Connection Devices

EMX Industries



WEL-200K
Wireless Edge Kit
(200 ft line-of-sight)

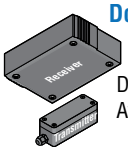
Miller R-Band Wireless



Transmitter P/N 8080-006

Receiver P/N 8080-008
(50-100 ft depending on conditions)

DoorKing



DKS Plug-In Wireless
Available Soon

Accessory items

Plug-In Radio Receiver - Radio receiver plugs directly into radio port on 2100 controller's accessory hub simplifying wiring.
Programmable 318 MHz RF receiver for 26, 30 or 31-bit wiegand format. P/N 2100-210

Plug-In Loop Detectors - Detectors plug directly into loop ports on 2100 controller's accessory hub simplifying wiring.
Single channel detector - P/N 2100-221
Dual channel detector - P/N 2100-222

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

Loop Wire - 18 AWG loop wire with XLPE insulation is ideal for ground loops. Available in 500 and 1000 foot rolls. Red, blue or black insulation.

Pre-Fab Loops - Prefabricated ground loops. 24-foot circumference with 50-foot lead-in. Available in yellow, red or blue jackets. Not for use in asphalt roadways.

Loop Test Meter - Meg-ohm meter checks the integrity of ground loops. P/N 9401-045

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

115 VAC Heater with Fan Assembly Kit - Thermostatically controlled heater and fan for cold environments.
For 115 VAC input power ONLY. P/N 1601-154

208/230 VAC Heater with Fan Assembly Kit - Thermostatically controlled heater and fan for cold environments.
For 208/230 VAC input power ONLY. P/N 1601-197

V-Wheels - 4 inch and 6 inch. UHMW or Steel. Roller bearings or sleeve bearings. Single or tandem wheel configurations.

Endless Idler Assembly with Protective Cover - Use when gate operator chain needs 180° return. Use with #40 or #41 chain. P/N 2600-818

Guarded Guide Rollers - A variety of sizes to support slide gates.

Gate End Retainer - Fits on top of end post and helps stabilize the end of the gate in the open or closed position (End post NOT provided).
Designed for slide gates with 2 in. (50.8 mm) frames. P/N 1204-004

Post Mount Kit - Required for post mount installation. P/N 9000-015.

Chain Tray Kit - 10 Ft. section. Sections connect together to fit any length gate. P/N 2601-270

Additional #40 Chain - 20 ft. per box. P/N 2600-442

Interconnect Cable - Interconnect wire cable contains all the necessary wires to interconnect primary / secondary operators.
Cable length: 30ft-P/N 2600-755 40ft-P/N 2600-756 50ft-P/N 2600-757 200ft-P/N 2600-754

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

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.
7 day clock - P/N 2600-791

7.2 Amp/Hr Standard Battery - 12 Volt-7.2 Amp/Hr. P/N 1801-003. Two (2) required.

18 Amp/Hr Extended Battery - 12 Volt-18 Amp/Hr. P/N 1801-004. Two (2) required.

Owner of the Gate Operator

Alarm Sounding OR "Chirping" and Gate WILL NOT Operate

Operator is in a HARD Shutdown Condition: The alarm will sound for (5) five minutes. After five minutes the alarm will start "Chirping" every 5 seconds and continue "Chirping" until operator gets reset.



A KEY has been supplied that will unlock the control panel cover on this gate operator.

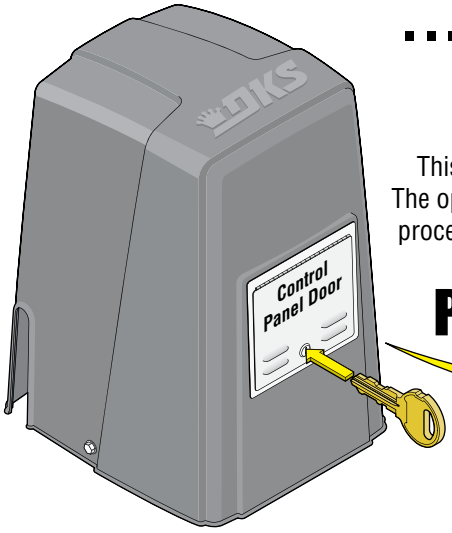
Note: The **owner** of the gate operator is responsible for the **KEY** availability.

When Alarm is Sounding OR "Chirping" . . . . .

ALWAYS CHECK THE ENTIRE GATE AREA FOR ANY OBSTRUCTIONS OR DAMAGE FIRST.

- If a Fire Dept Access Device has been activated by **emergency personnel**, then operator can be **reset** and put back into normal operation again. Alarm will **always** sound when this access device gets activated.
- If the cause of the alarm **CAN** be identified and **CORRECTED**, then operator can be **reset** and put back into normal operation again.
- 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 severe injury or DEATH!



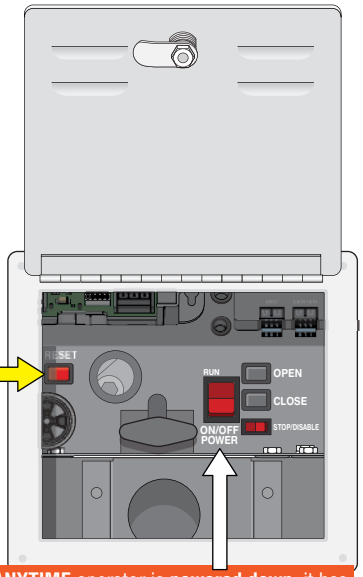
. . . . . "Reset" Operator:

UNLOCK the control panel door with **KEY.**

Press **RESET Button**.

This will shut-off the alarm and **reset** the operator. The operator **REMAINS powered up** through this entire process and normal gate operation can then continue.

Press RESET Button



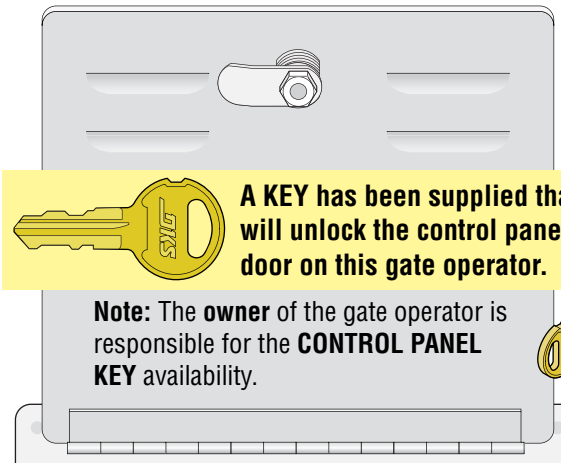
Shutting-OFF Power Note: ANYTIME operator is **powered down**, it has to re-load **YOUR specific programmed settings** back into its memory after **powering UP again BEFORE** normal operation can resume. Just using the **RESET button** avoids this slow start-up process.

Operator HARD Shutdown Condition occurs when:

1. **Fire Department** (Emergency Access) **input has been activated** by Police, Fire Department, EMT, Ambulance etc.
2. The **inherent reverse sensors** (Type A) gets activated **TWO consecutive times** before the gate completes the open cycle **OR** the close cycle.
3. The **reversing edge** contact device (Type B2) **gets activated** and reverses, but before the gate completes the reverse cycle the **inherent reverse sensors** (Type A) **gets activated**.

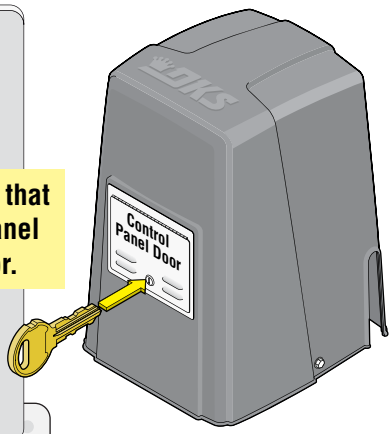
Please read **- OPERATING INSTRUCTIONS** for more information about operating this gate operator.

Manual Gate Operation OPTIONS



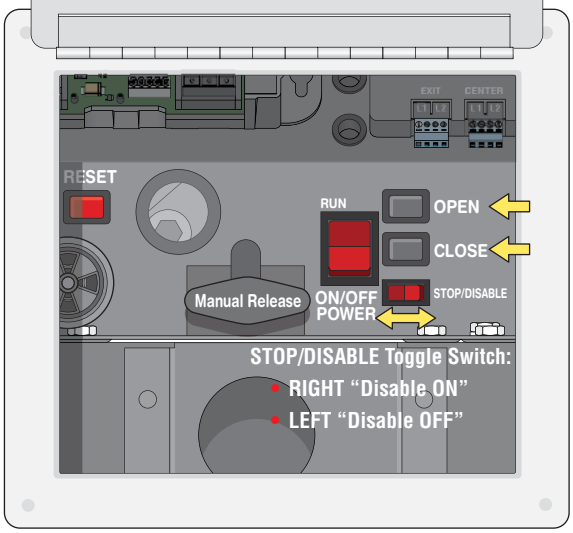
A KEY has been supplied that will unlock the control panel door on this gate operator.

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



You CANNOT just PUSH gate open!!!

Gate CANNOT be manually PUSHED open UNTIL the STOP/Disable switch has been set for "STOP/DISABLE ON", the MANUAL RELEASE HANDLE has been UNLOCKED OR the chain has been UNLOCKED and DROPPED.

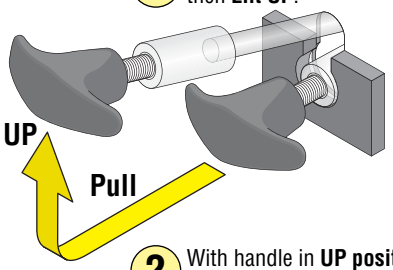


Different Situations for Manual Gate Operations

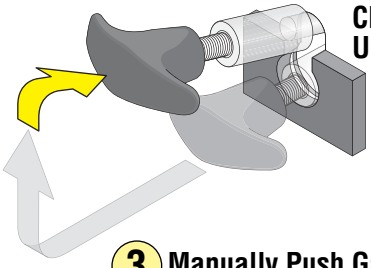
- **Both AC and DC Power are available. UL device(s) NOT functional:** **STOP/DISABLE** toggle switch **MUST** be set "**LEFT**" (Disable OFF). Press and **HOLD** the **OPEN** or **CLOSE** button (whichever is applicable) to have the **OPERATOR** move the gate using its battery power.
- **AC Power is OUT, DC power available. UL devices are functional:** **STOP/DISABLE** toggle switch **MUST** be set for "**LEFT**" (Disable OFF). **MOMENTARILY** press the **OPEN** or **CLOSE** button (whichever is applicable) to have the **OPERATOR** move the gate using its battery power.
- **AC Power is OUT, DC power available. UL device(s) NOT functional:** **STOP/DISABLE** toggle switch **MUST** be set for "**LEFT**" (Disable OFF). Press and **HOLD** the **OPEN** or **CLOSE** button (whichever is applicable) to have the **OPERATOR** move the gate using its battery power.
- **Both AC and DC power are NOT available:** **IMPORTANT!** Set the **STOP/DISABLE** toggle switch to "**RIGHT**" (Disable ON) operator is disabled, then manually release operator (choose your model shown below) and "**Physically**" push the gate to the desired position. **STOP/DISABLE** switch set to "**DISABLE ON**" ensures that if power is re-established when a manual release is engaged, the operator **CAN NOT** be cycled.

Manual release for "Pull Release" models

1. Pull straight **OUT** as far as possible and then **Lift UP**.



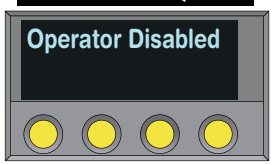
2. With handle in **UP position**, slide it back down to **lock it** in position.



3. **Manually Push Gate Open**

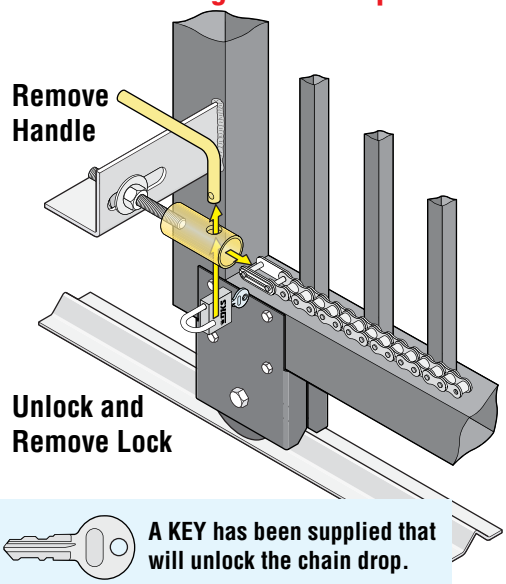
STOP/DISABLE Toggle Switch





Operator's 2100 controller screen will show "**Operator Disabled**" when **STOP/DISABLE** toggle switch is set to the "**RIGHT**" "**DISABLE ON**".
2100 controller will **REMAIN** powered up.

Manual release for "Locking Chain Drop" models



A KEY has been supplied that will unlock the chain drop.

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

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.

Inherent Reverse Sensors

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 Photocells

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 a **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 a **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.

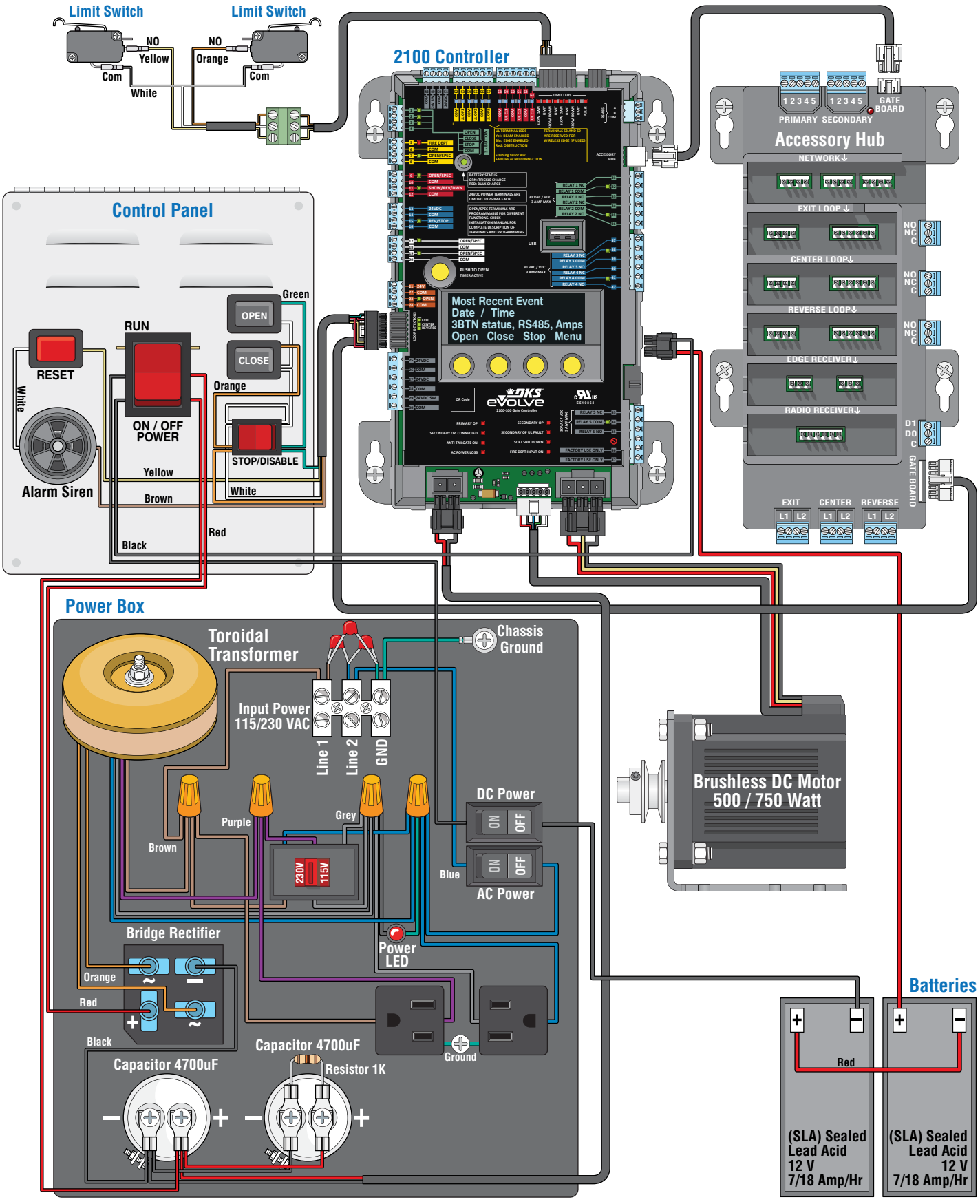
New Installation Checklist for Installer and Property Owner

Instructions: Check the space next to each item ("✓") to indicate that it has been addressed by installer **AND** property owner. If it is not applicable, enter N/A. Please note that the checklist is intended to be a summary of many **important** automated vehicular gate aspects, **But may not inclusively identify all potential hazards of every specific gate system installation.** Photos can be taken of the finished installation for future reference if desired.

Each item listed and CHECKED has been examined by the Installer and is CLEARLY understood by the Property Owner.

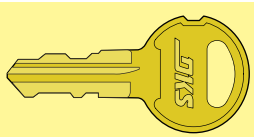
Installer	Property Owner	Description
		The operator is installed on a gate used for vehicles only. Verify that separate pedestrian access is provided or available, and the access is such that pedestrians cannot come in contact with the moving vehicular access gate during its entire length of travel.
		Gate/Hardware: Insure that there is a means to prevent the gate from falling over in the event of a roller or hinge failure. Insure the gate has physical limit stops and that gravity will not initiate motion of the gate. Insure that all rollers are guarded or covered to eliminate the possibility of a finger being inserted between the roller and gate.
		Slide Gate: Insure that the maximum opening in the gate and in that portion of the adjacent fence that the gate covers when the gate is in the open position is such that a 2 ¼" sphere cannot pass through the openings up to 72 inches above the ground or to the top of the gate, whichever is less. If the gate and adjacent fence do not meet this requirement, wire mesh (or other means) must be added to meet this requirement before placing the gate system in operation. Insure that any gaps between the slide gate and stationary posts/pilasters is less than 2 1/4" and that these areas are protected with a **UL approved** entrapment protection device.
		The gate operator system is in compliance with the **entrapment protection requirements of UL 325.** Identify all potential entrapment zones and ensure they are protected. Potential pinch areas have been guarded so as to be inaccessible OR have a contact (reverse edge) and/or non-contact (photocell) obstruction sensing devices installed. Verify that the system has in place external entrapment protection, independent from the inherent entrapment protection. Reversing edges or photocells are typical, other means are possible. For more information see your **specific** installation/owners manual for entrapment protection devices installation and locations.
		The installer has properly adjusted the **inherent reverse sensors** on the gate operator, and has tested the gate to make sure that the gate stops and reverses a short distance upon striking an immovable object.
		Check that placement of **user operational controls** are six (6) or more feet away from the gate. If any operational control is closer than six (6) feet to the gate, **DO NOT** place the automated vehicular gate into service.
		Warning signs are to be permanently installed in the area of the gate in such a manner that at least one warning sign is visible by persons located on each side of the gate, for both the secure and unsecure sides of the gate.
		The installer has instructed the property owner in the **proper use of the gate operator** and has reviewed the operational functions, obstruction-sensing devices, alarm, and reset as outlined in **your specific** installation/owners manual.
		The installer has instructed the property owner in the proper use of the operator's **manual release OPTIONS** as outlined in **your specific** installation/owners manual.
		The installer has **reviewed all safety instructions with the property owner**, including the need to never let children operate or play with gate controls, to keep the remote control away from children, and to always keep people and objects away from the gate.
		The installer has explained to the property owner that a **regular maintenance schedule** for both the gate and the gate operator is recommended, including regular testing of entrapment protection as outlined in the manufacturer's instructions.
		The installer has left the installation/owners manual with the property owner for future reference.

Model 2170 Slide Gate Operator Schematic



Alarm Sounding OR "Chirping" and Gate WILL NOT Operate

Operator is in a HARD Shutdown Condition: The alarm will sound for (5) five minutes. After five minutes the alarm will start "Chirping" every 5 seconds and continue "Chirping" until operator gets reset.



A KEY has been supplied that will unlock the control panel door on this gate operator.

To obtain key to unlock gate operator contact:

Name _____

Phone # _____

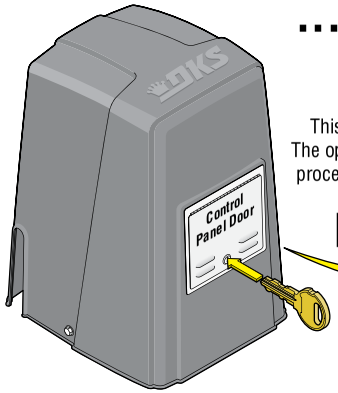
Note: The **owner** of the gate operator is responsible for the **CONTROL PANEL KEY** availability.

When Alarm is Sounding OR "Chirping" . . . . .

ALWAYS CHECK THE ENTIRE GATE AREA FOR ANY OBSTRUCTIONS OR DAMAGE FIRST.

- If a Fire Dept Access Device has been activated by **emergency personnel**, then operator can be **reset** and put back into normal operation again. Alarm will **always** sound when this access device gets activated.
- If the cause of the alarm **CAN** be identified and **CORRECTED**, then operator can be **reset** and put back into normal operation again.
- 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 severe injury or DEATH!



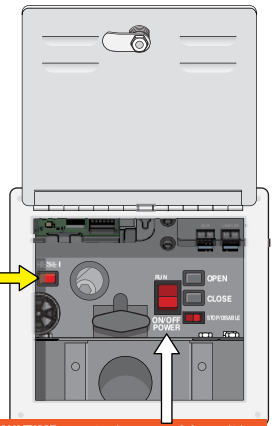
. . . . . "Reset" Operator:

UNLOCK the control panel door with **KEY.**

Press **RESET Button**.

This will shut-off the alarm and **reset** the operator. The operator **REMAINS powered up** through this entire process and normal gate operation can then continue.

Press RESET Button



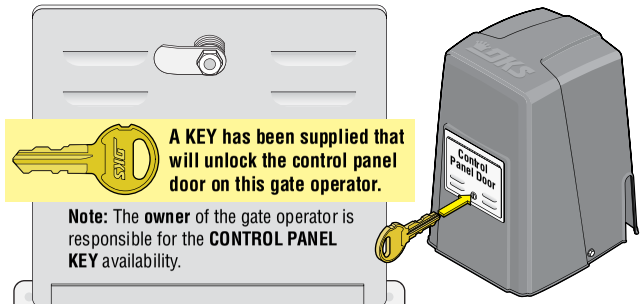
Shutting-OFF Power Note: ANYTIME operator is **powered down**, it has to re-load **YOUR specific programmed settings** back into its memory after **powering UP again BEFORE** normal operation can resume. Just using the **RESET button** avoids this slow start-up process.

Operator HARD Shutdown Condition occurs when:

1. **Fire Department** (Emergency Access) **input has been activated** by Police, Fire Department, EMT, Ambulance etc.
2. The **inherent reverse sensors** (Type A) gets activated **TWO consecutive times** before the gate completes the open cycle **OR** the close cycle.
3. The **reversing edge** contact device (Type B2) **gets activated** and reverses, but before the gate completes the reverse cycle the **inherent reverse sensors** (Type A) **gets activated**.

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

Manual Gate Operation OPTIONS

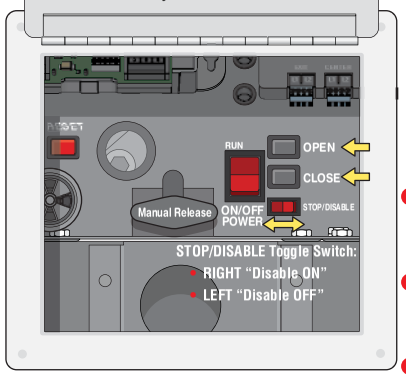


A KEY has been supplied that will unlock the control panel door on this gate operator.

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

You CANNOT just PUSH gate open!!!

Gate CANNOT be manually PUSHED open UNTIL the STOP/Disable switch has been set for "STOP/DISABLE ON", the MANUAL RELEASE HANDLE has been UNLOCKED OR the chain has been UNLOCKED and DROPPED.

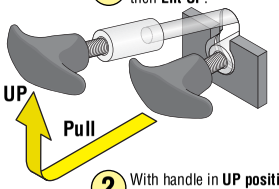


Different Situations for Manual Gate Operations

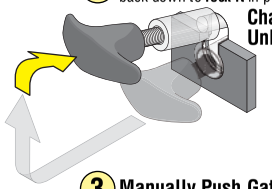
- **Both AC and DC Power are available. UL device(s) NOT functional:** **STOP/DISABLE** toggle switch **MUST** be set "**LEFT**" (Disable OFF). Press and **HOLD** the **OPEN** or **CLOSE** button (whichever is applicable) to have the **OPERATOR** move the gate using its battery power.
- **AC Power is OUT, DC power available. UL devices are functional:** **STOP/DISABLE** toggle switch **MUST** be set for "**LEFT**" (Disable OFF). **MOMENTARILY** press the **OPEN** or **CLOSE** button (whichever is applicable) to have the **OPERATOR** move the gate using its battery power.
- **AC Power is OUT, DC power available. UL device(s) NOT functional:** **STOP/DISABLE** toggle switch **MUST** be set for "**LEFT**" (Disable OFF). Press and **HOLD** the **OPEN** or **CLOSE** button (whichever is applicable) to have the **OPERATOR** move the gate using its battery power.
- **Both AC and DC power are NOT available:** **IMPORTANT!** Set the **STOP/DISABLE** toggle switch to "**RIGHT**" (Disable ON) operator is disabled, then manually release operator (choose your model shown below) and "**Physically**" push the gate to the desired position. **STOP/DISABLE** switch set to "**DISABLE ON**" ensures that if power is re-established when a manual release is engaged, the operator **CAN NOT** be cycled.

Manual release for "Pull Release" models

1. Pull straight **OUT** as far as possible and then **Lift UP**.



2. With handle in **UP position**, slide it back down to **lock it** in position.



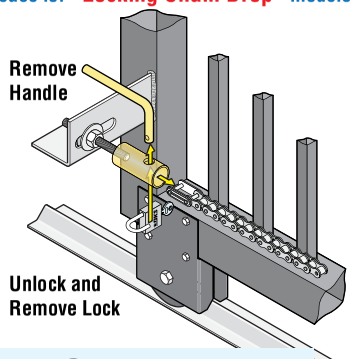
3. **Manually Push Gate Open**

STOP/DISABLE Toggle Switch



Operator's 2100 controller screen will show "**Operator Disabled**" when **STOP/DISABLE** toggle switch is set to the "**RIGHT**" "**DISABLE ON**". 2100 controller will **REMAIN** powered up.

Manual release for "Locking Chain Drop" models



A KEY has been supplied that will unlock the chain drop.

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

www.doorking.com to get a PDF of this manual - Remove this page OR print this page in color, fold and laminate - Place at the gate operator

eVolve Series 2170

Vehicular Slide Gate Operator

Install / Owner's Manual

Use this manual for eVolve 2100 controller Revision A or higher.

2170-065-W-10-26

Brushless DC Style Motor

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Visit **www.doorking.com/dealer-locator** to find a professional installing and servicing dealer in your area.

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 direction of gate travel.

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