

MODEL "CSG"

SLIDE GATE OPERATOR



PowerMaster

Installation Manual
CSG 2004 OPERATOR
SLIDE GATE OPERATOR

UL 325 AND UL 991 LISTED 

Important Safety Information.....	3
UL Installation and Safety Considerations.....	4-5
System Designer Safety Instructions.....	6
Installer Safety Instructions	7-10
End User Safety Warnings	11-14
Manual Operation.....	15
Safety Warnings.....	16-17
Installation & Setup Procedure	
Before Installing Operator.....	18
Installation of Cement Pad.....	19
Installation of Operator.....	19-23
Electrical Connections.....	24
Left Hand/Right Hand Conversion	26
Master/Slave Installation	27
Emergency Control Station	29
Timer To Close.....	30
Audible Pre-Move Warning.....	31
Auxiliary Circuit	31-32
Limit Adjustment	33-36
Accessory Connections	
Connection of a 3 Button.....	37
Connection of a Radio.....	38-39
Loop Detector Systems.....	40
Loop Installation (Standard Layout Chart).....	41
Cutting The Required Groove.....	42
Loop Connections.....	43
Safety Device Connections	
Inherent Obstruction Sensing Device.....	44
Secondary Obstruction Sensing Devices	
Contact - Sensing Edge	45
Non-Contact – Photo Eyes	47
2004 Gate Board Overview.....	49
2004 LED & Dipswitch Information.....	50
Maintenance Log/Notes.....	51-53
Warranty.....	54

IMPORTANT!

FOR SLIDE GATE OPERATING SYSTEMS

SAFETY IS EVERYONE'S BUSINESS

Automatic gate operators provide convenience and security to users. However, because these machines can produce high levels of force, it is important that all gate operator system designers, installers, and end users be aware of the potential hazards associated with improperly designed, installed, or maintained systems. Keep in mind that the gate operator is a component part of a total gate operating system.

The following information contains various safety precautions and warnings for the system designer, installer and end user. These instructions provide an overview of the importance of safe design, installation, and use.

Warnings are identified with the ▲ symbol. This symbol will identify some of the conditions that can result in serious injury or death. Take time to carefully read and follow these precautions and other important information provided to help ensure safe system design, installation and use.

▲ **WARNING:** Gate operators are only one part of a **TOTAL GATE OPERATING SYSTEM.** It is the responsibility of purchaser, designer, and installer to ensure that the total system is safe for its intended use. All secondary entrapment safety devices must be **RECOGNIZED** by U/L to ensure the safety of the complete operating system.

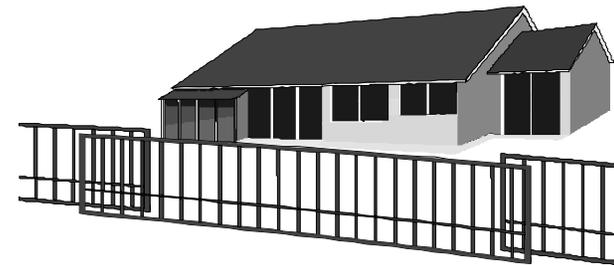
▲ **WARNING:** This operator is only intended for installation on gates used for vehicular traffic. A separate pedestrian access opening shall be provided which is designed to promote pedestrian usage and shall be located such that persons will not come in contact with the vehicular gate during its entire path of travel.

U/L INSTALLATION AND SAFETY CONSIDERATIONS

INSTALLATION CLASSES

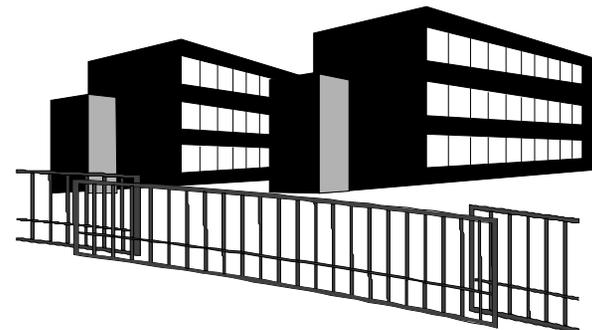
CLASS I – RESIDENTIAL VEHICULAR GATE OPERATOR

A vehicular gate operator (or system) intended for use in a home of one to four single-family dwellings, or a garage or parking area associated therewith.



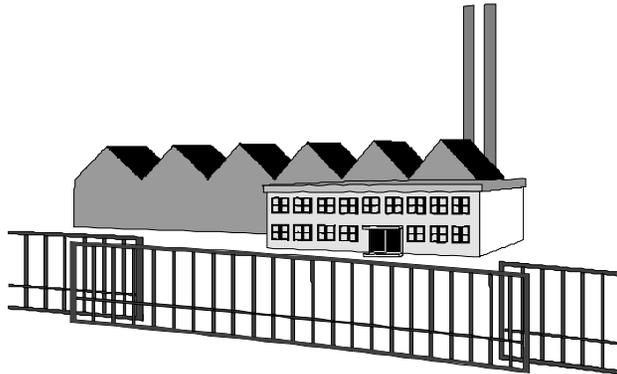
CLASS II – COMMERCIAL/GENERAL ACCESS VEHICULAR GATE OPERATOR

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



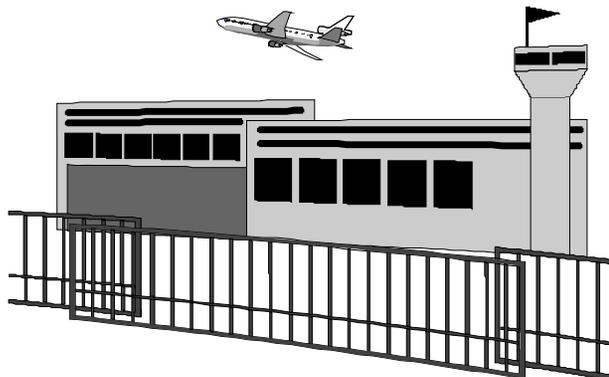
CLASS III- INDUSTRIAL/LIMITED ACCESS VEHICULAR GATE OPERATOR

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



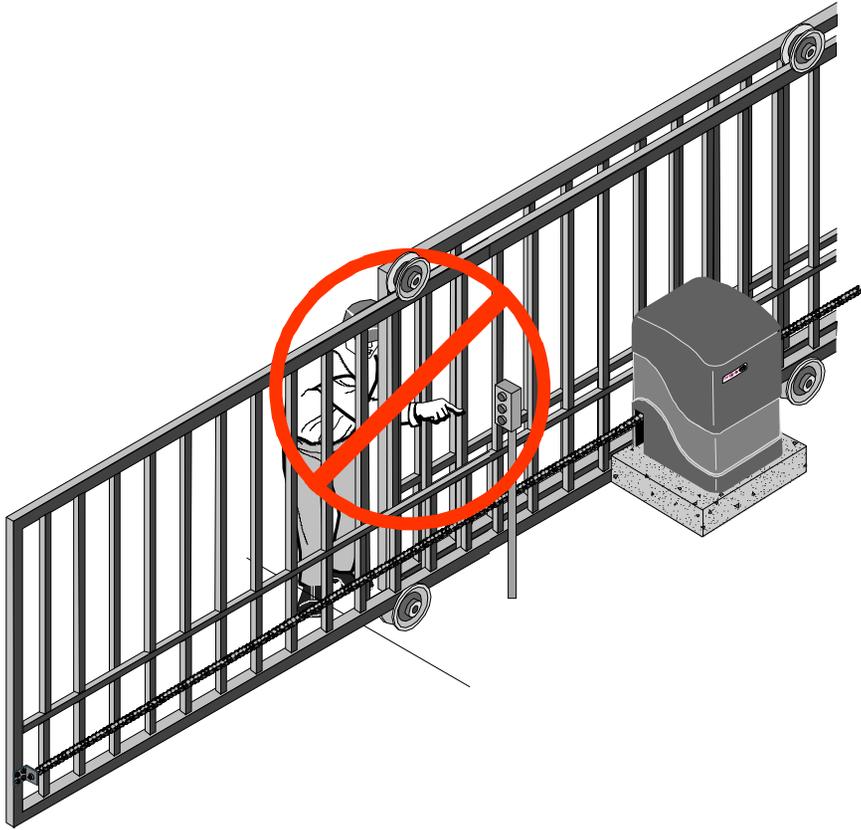
CLASS IV- RESTRICTED ACCESS VEHICULAR GATE OPERATOR

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



SYSTEM DESIGNER SAFETY INSTRUCTIONS

- ▲ 1. Familiarize yourself with the precautions and warnings for the installer. Users are relying on your design to provide a safe installation.
- ▲ 2. The operator is supplied with a primary obstruction sensing entrapment protection system. The installation must also have a secondary entrapment protection system installed, such as photoelectric sensors or an electric edge system.
- ▲ 3. When designing a system that will be entered from a highway or main thoroughfare be sure the system is placed far enough away from the road to eliminate traffic backup. Distance from the road, size of the gate, usage levels, and gate cycle/speed must be considered to eliminate potential traffic hazards.
- ▲ 4. The majority of injuries from slide gate operator systems occur with Open Roller or Ornamental Grille Type Gates. **We strongly recommend the use of roller guards.** The illustrations and descriptive captions found on the following pages provide precautions to help eliminate injuries or fatalities. Familiarize yourself with them when designing the total system.
- ▲ 5. Design the gate system so a person cannot reach over, under, around, or through the gate to operate any controls. Never place controls on the gate operator itself.



INSTALLER SAFETY INSTRUCTIONS

BEFORE INSTALLATION

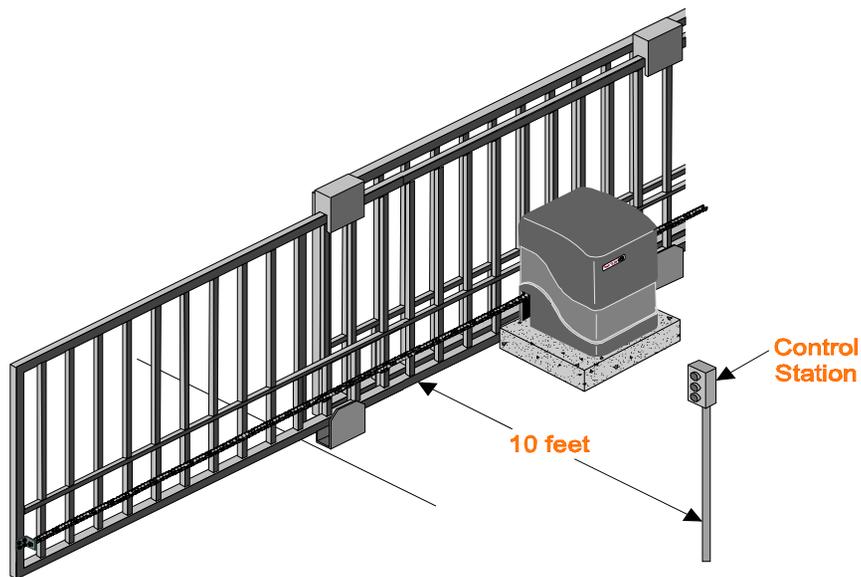
- ▲ 1. Check to see that the operator is proper for this type, size and class of gate and its frequency of use. If you are not sure, consult factory.
- ▲ 2. Check to see that there are no structures adjacent to the area, which may pose a risk of entrapment when gate is opening or closing.
- ▲ 3. You must ensure that the gate has been properly installed and works freely in both directions. Replace

or service any worn or damaged gate hardware prior to installation. A freely moving gate will require less force to operate and enhance the performance of the operator as well as the safety devices used within the system.

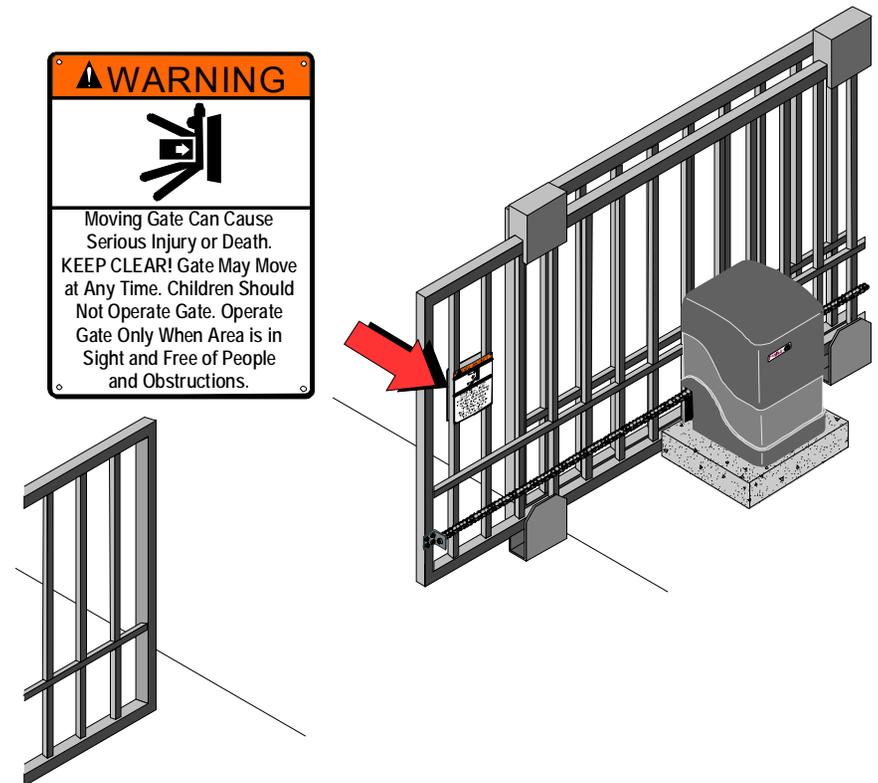
- ▲ 4. Install the gate operator on the inside of the property and/or fence line. **DO NOT** install an operator on the public side of the gate.
- ▲ 5. Severe injury or death can result from entrapment by a gate. The operator is supplied with an obstruction sensing primary entrapment protection system. Additional safety equipment such as electric edges or photocell sensors must be installed to provide the required secondary entrapment protection system. For assistance in selecting the correct type of safety equipment, consult the factory.
- ▲ 6. Review the operation of the unit and become familiar with the manual operation procedure and safety features of the system.
- ▲ 7. You must install a pushbutton control or key switch to allow for normal operation of the gate if the automatic controls do not work. Locate the push button or key switch and small warning placard within sight of the gate in a secured area at least 10 feet or more from the gate and fence to keep users away from the moving gate and fence.
- ▲ 8. Outdoor or easily accessed gate controls should be of the security type to prohibit unauthorized use.

DURING INSTALLATION

- ▲ 1. Be aware of all moving parts and avoid close proximity to any pinch points.
- ▲ 2. Disconnect power at the control panel before making any electric service connections. Connection location for controls and safety equipment can be found on the wiring diagram, and in this manual.
- ▲ 3. Know the procedure for engaging and manually operating the unit.
- ▲ 4. Adjust the open and close force adjustment on the control board in each direction to the minimum force required to operate the gate smoothly. **DO NOT increase the force adjustment setting to makeup for rough spots in gate travel - FIX THE GATE INSTEAD!**
- ▲ 5. Locate the controls at least 10 feet from the moving gate so that the user can observe the gate operation, but is not able to come in contact with the gate while operating the controls.



- ▲ 6. Attach large warning signs provided to each side of gate in the most conspicuous place. Mount control station and smaller warning placard together within sight of the gate opening.



AFTER INSTALLATION

- ▲ You are responsible for ensuring that the end user understands the basic operations and safety systems of the unit, **INCLUDING THE MANUAL OPERATION PROCEDURE.**
- ▲ Point out that the safety instructions in brochure are the responsibility of the end user, and then **LEAVE THIS MANUAL WITH THE END USER**

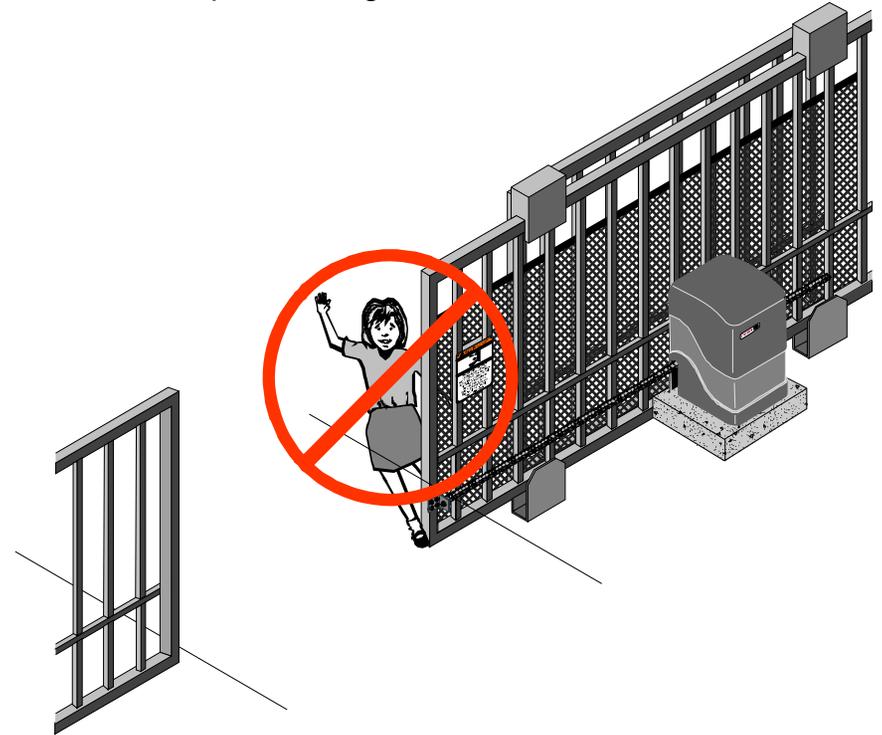
END-USER SAFETY WARNINGS

The manufacturer of the gate operator does not know what type of gate you have, or what type of automatic system is installed on your gate. Be sure you've been fully instructed on the sequence of operation for your specific gate system(s). Keep the gate properly maintained and have a qualified service person make repairs.

- ▲ 1. Be sure the following safety instructions are distributed to all persons authorized to use your gate.
- ▲ 2. **KEEP GATEWAY CLEAR (Front and Back) AT ALL TIMES.** Your automatic gate is not for pedestrian use. No one should ever cross the path of the moving gate.

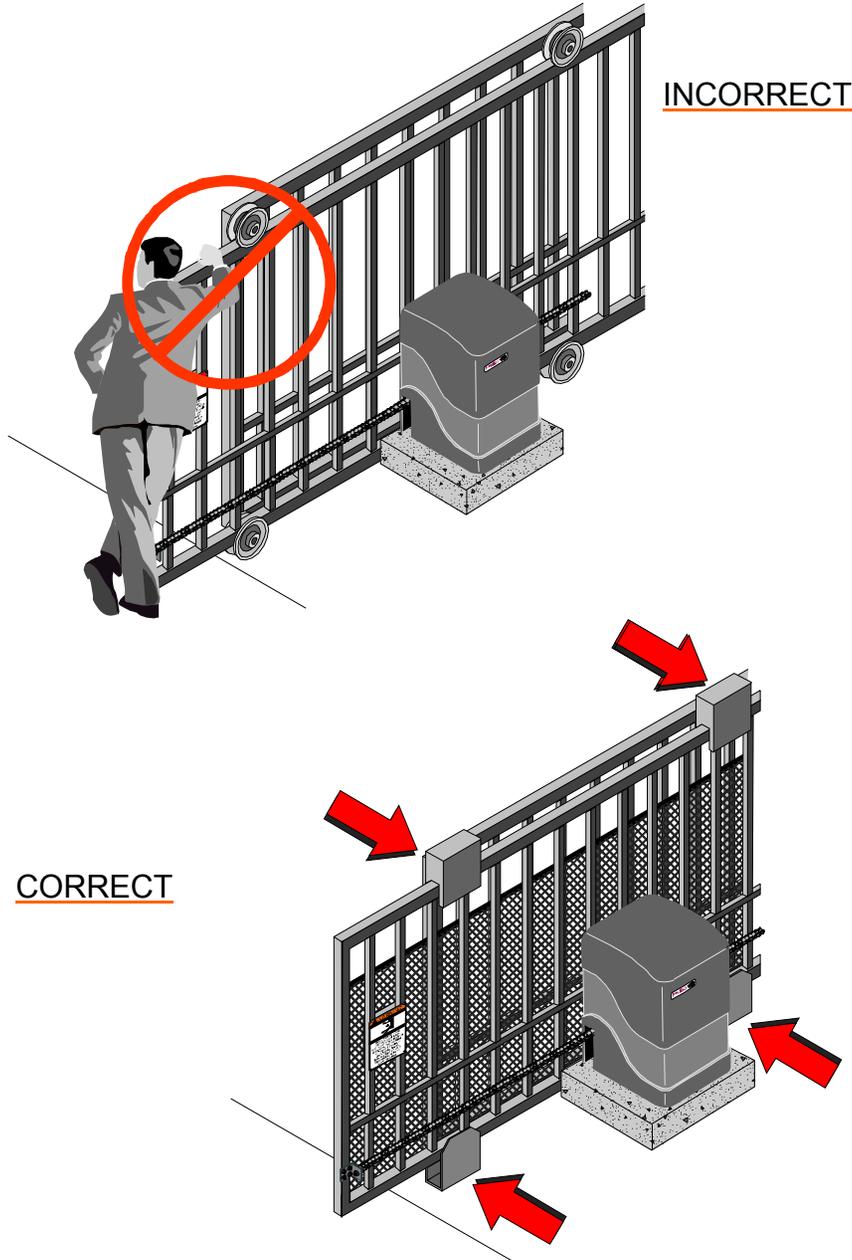


- ▲ 3. **DO NOT** allow children to play near your gate, or to operate the gate.



- ▲ 4. **DO NOT** operate your gate system unless you can see it when the gate moves.
- ▲ 5. Be sure a pushbutton or key switch has been installed for manual electric operation in the event your radio or card key does not work. Any mounted control station should be located a minimum of 10 feet from the gate so the gate cannot be reached through or touched. Any pushbutton located in a building should be installed within sight of the gate.
- ▲ 6. **DO NOT** operate any controls without watching the movement of the gate.

- ▲ 7. If your gate has open rollers, be sure roller guards have been purchased and installed.

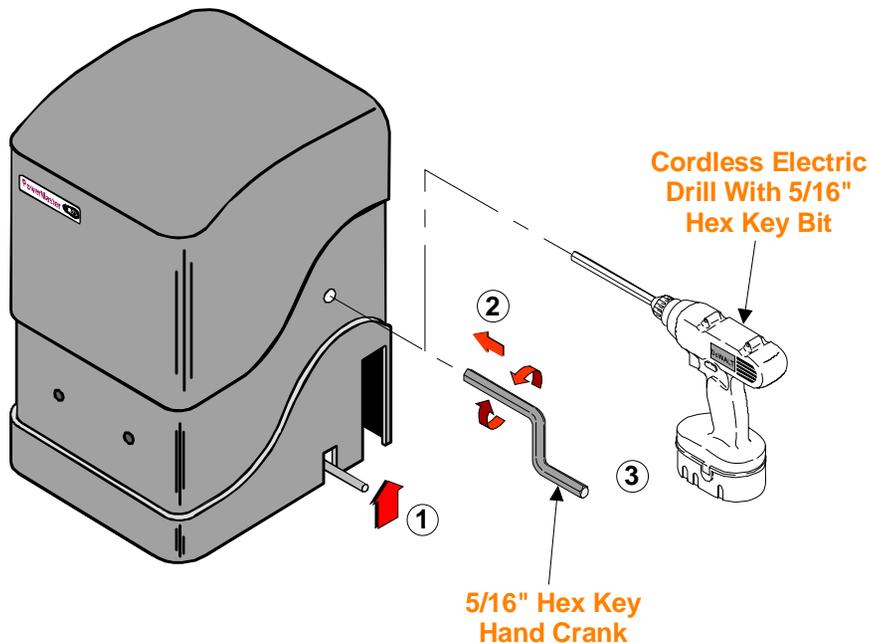


- ▲ 8. Your gate system is required to have a primary and a secondary entrapment safety system installed and maintained.
- ▲ 9. If your gate closes automatically, loop detectors should be installed to detect the presence of a vehicle.
- ▲ 10 **DO NOT** increase force adjustment to compensate for a damaged gate. The gate should always be maintained to operate manually as easily as possible to provide maximum protection.
- ▲ 11. Check all safety systems at least once per month for the correct force, speed and sensitivity. Gate must reverse when hitting a rigid object, or when a non-contact sensor is activated. **If these functions are observed to operate improperly, discontinue use and have it serviced immediately!**
- ▲ 12. You are responsible for ensuring that warning signs are installed and maintained on both sides of your gate.
- ▲ 13. To ensure safe operation of this equipment, you must read this safety manual and keep it for reference.

MANUAL OPERATION

▲ Your operator is equipped with a hand crank for manual operation. Be sure you have the crank or cordless drill with 5/16 hex key bit available and understand how to operate this equipment.

1. Lift interlock lever at base of cover.
2. Insert hand crank or cordless electric drill bit into hole in side of cover until it locates in 5/16" hex socket of drive hub.



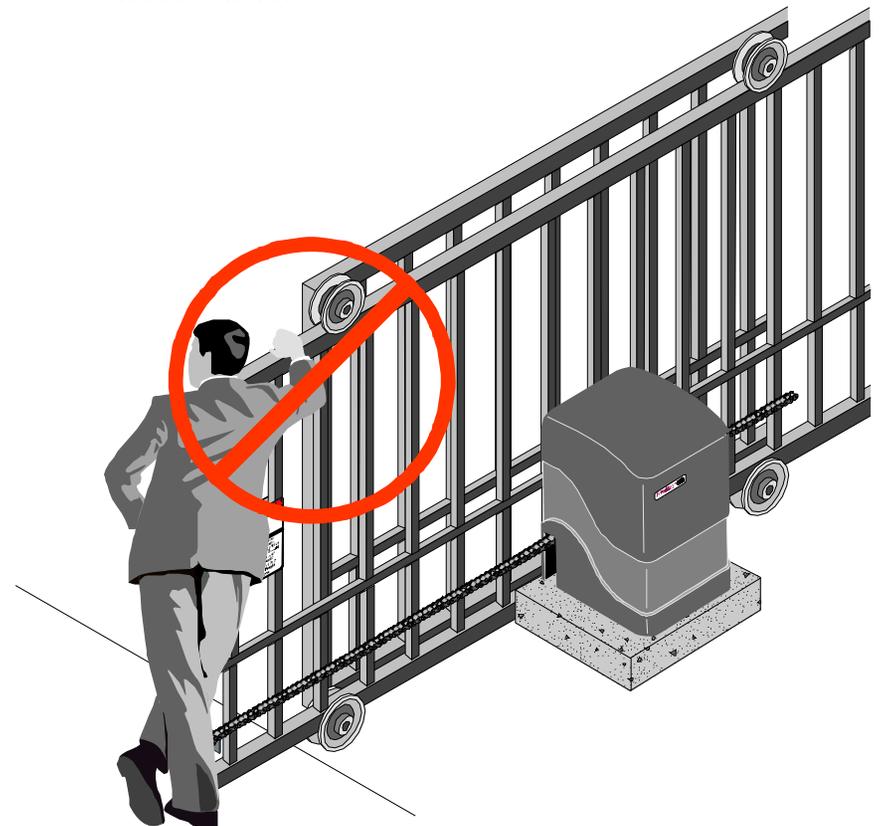
3. Rotate hand crank or use cordless drill to manually move gate in the desired direction.

SAFETY WARNINGS FOR OPEN-ROLLER GATES AND ORNAMENTAL GRILLE-TYPE GATES

▲ **WARNING:** INJURIES ASSOCIATED WITH AUTOMATIC GATES ARE MAINLY INCURRED WITH OPEN-ROLLER GATES AND ORNAMENTAL "GRILLE TYPE" GATES.

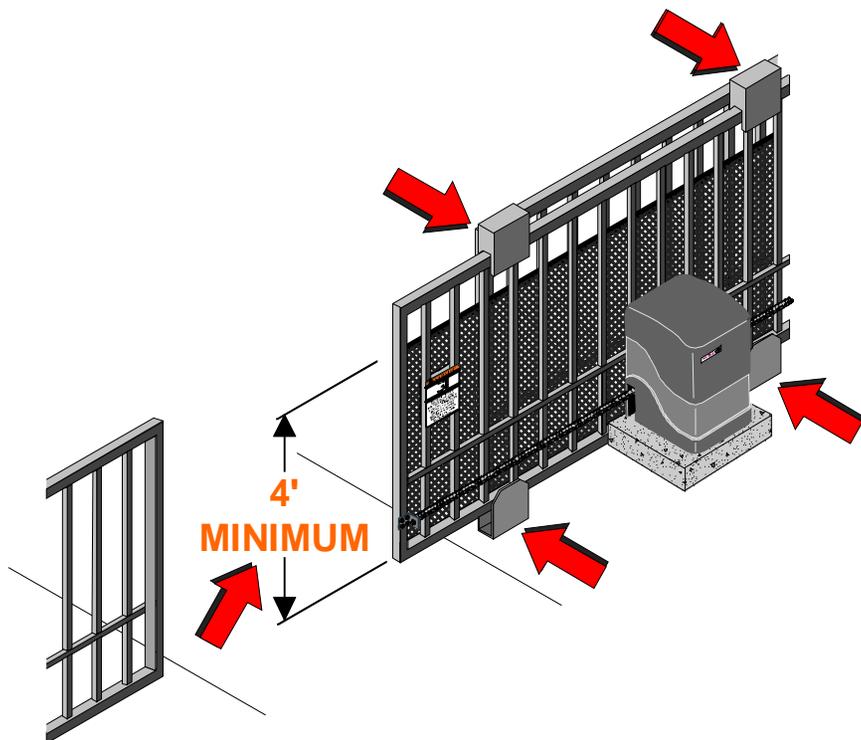
OPEN-ROLLER GATES

▲ Injuries occur when people get their hands caught between the top of the gate and the roller. This potential pinch point should be guarded whenever an automatic operator is installed. Roller Guards are available from various fence suppliers for refitting of these rollers.



ORNAMENTAL "GRILLE TYPE" GATES

- ▲ Injuries occur when people put their arms through openings in the grilles when the gate is operated. The person cannot retract his/her arm and it gets caught between the grille and the fence post or fence. The potential hazard must be guarded. It can be simply done by placing a screen mesh on the gate and fence in the area of the gate. The screen must be a minimum of 4 feet high from the bottom (unless the gate and fence are shorter) with openings that a 2¼-inch sphere cannot fit through. This will help to prevent access through openings when the gate travels.

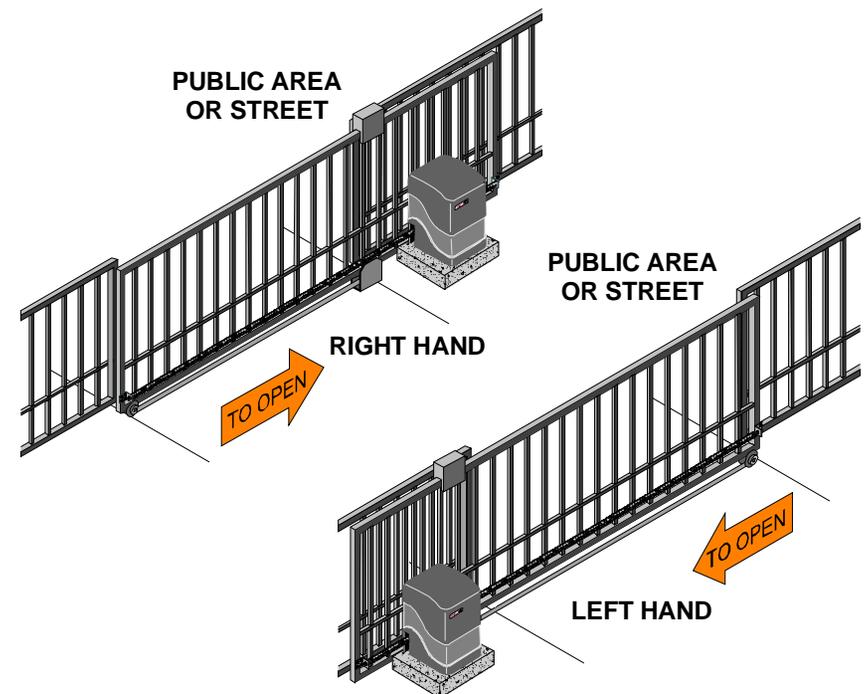


INSTALLATION INSTRUCTIONS

- ▲ **WARNING:** DO NOT APPLY POWER UNTIL TOLD TO DO SO! RISK OF ELECTRICAL SHOCK OR INJURY MAY RESULT!

BEFORE INSTALLING OPERATOR

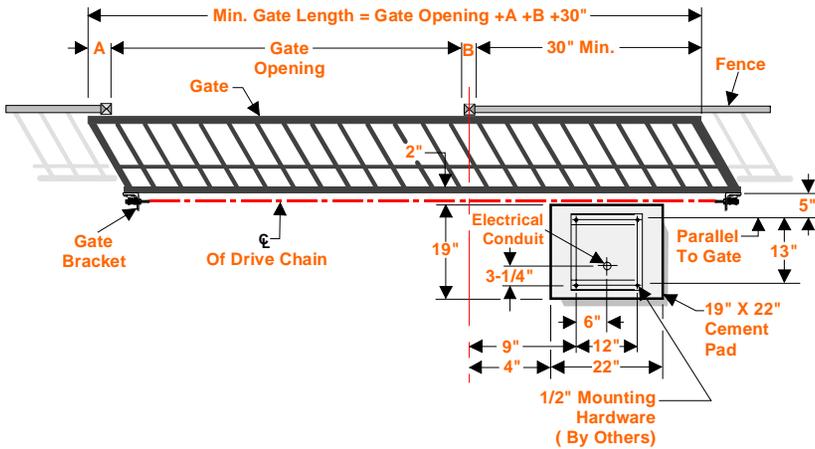
IMPORTANT: Operator should always be mounted inside the gate. Determine whether the installation is Left hand or Right hand by the direction the gate moves in order to open, when viewed from inside the fence.



1. Gate must slide freely to fully opened and fully closed position.
2. Gate and/or extension must extend beyond the position of the operator. The operator will be located as shown above, for left and right hand installation.

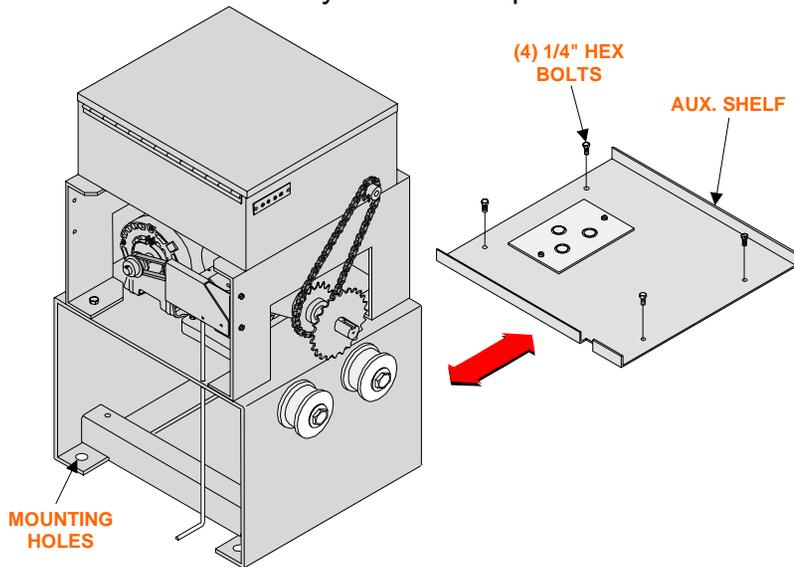
INSTALLATION OF CEMENT PAD

Lay out the cement pad as shown. Be sure top surface is level. Allow 2 days cure time before installing operator. Bolt pattern must be parallel to the gate.



INSTALLATION TO PAD

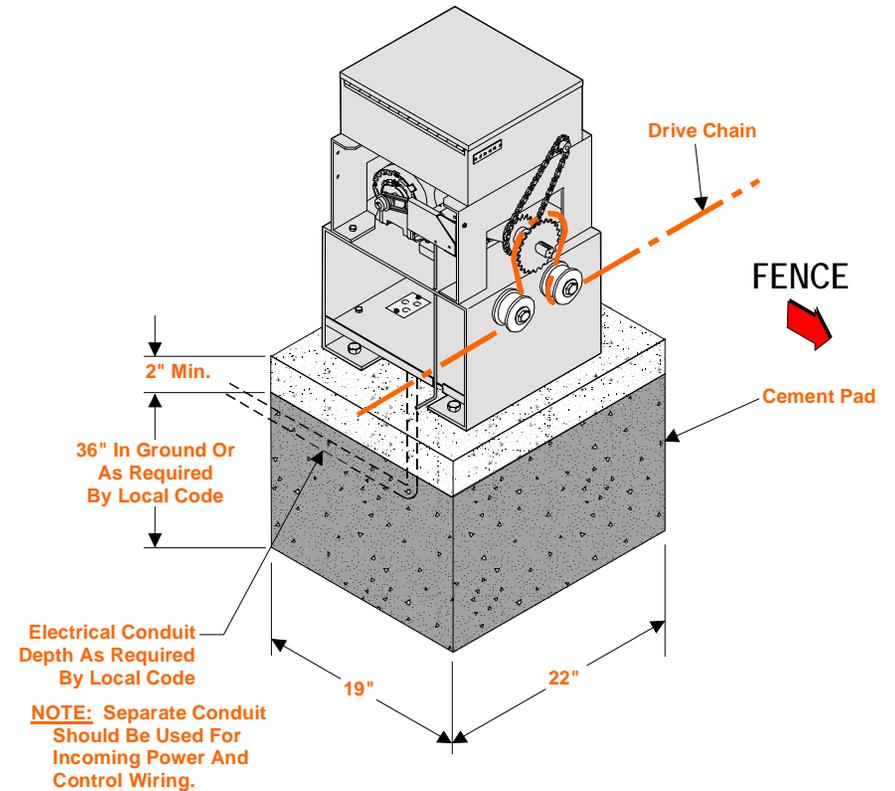
1. Remove auxiliary shelf from operator frame.



2. Using 1/2" hardware (Not Supplied) bolt assembled unit to the pad, being sure to align operator parallel to the fence.

NOTE: Drive sprocket, and rollers must face the fence.

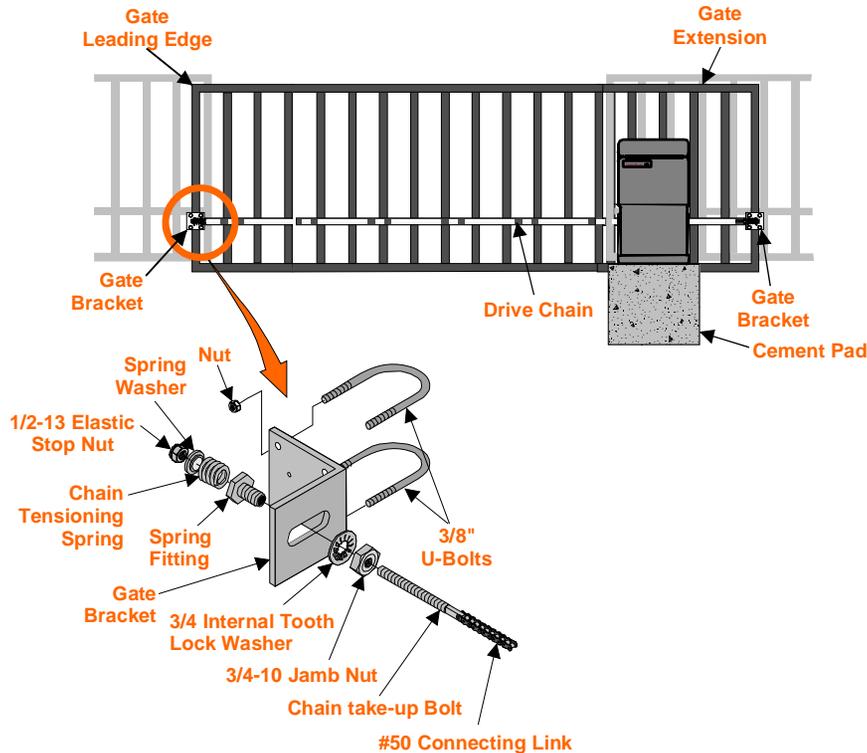
3. Replace auxiliary shelf in operator and secure position with 1/4" hardware.



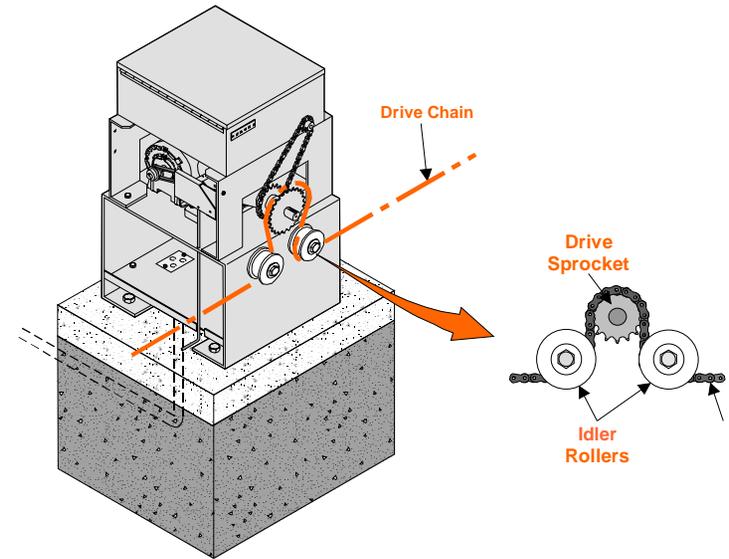
ATTACHING DRIVE CHAIN

1. Install gate brackets at each end of the gate with U-bolts provided. Do not fully tighten at this time.
2. Attach a chain take up bolt to one end of the drive chain using a #41 connecting link.

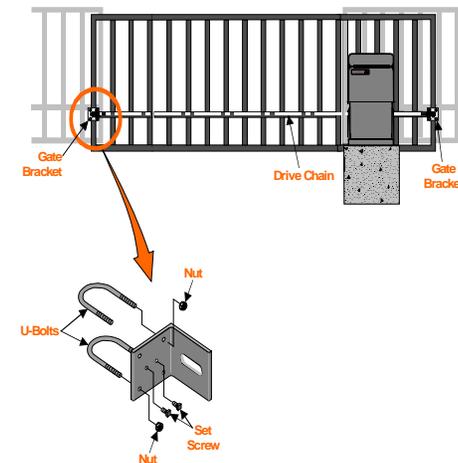
3. Install spring fittings into gate brackets using 3/4" nuts and lock washers. **DO NOT** tighten.
4. Install chain take up bolt, previously attached to the chain, into spring fitting in furthest gate bracket. Secure it in position with spring, spring washer, and 1/2" elastic stop nut.



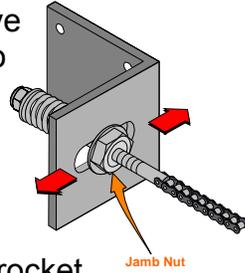
5. Thread chain under first idler roller, up and over drive sprocket, then under the second idler roller.
6. Move gate to tighten drive chain between operator drive sprocket and gate bracket.
7. Secure gate position with rope or chock.
8. Measure out required length of drive chain needed for attaching to remaining gate bracket.



9. Cut the chain to the correct length, attach remaining chain take-up bolt and install in the gate bracket as in steps 2 through 4.
10. Adjust the gate bracket height at both ends of the gate to insure the drive chain aligns with the operator idler rollers.
11. Tighten the gate brackets securely and lock in position with the setscrews provided.



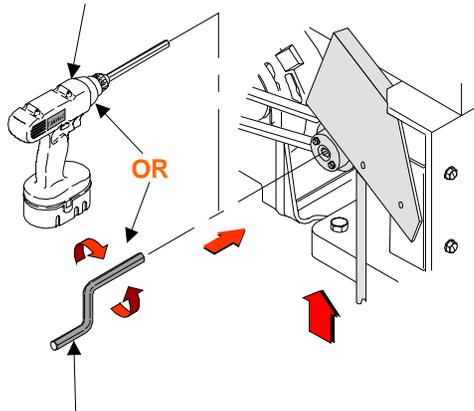
12. Align drive chain to the drive sprocket and ensure it is parallel to gate using slots in gate bracket as shown below.



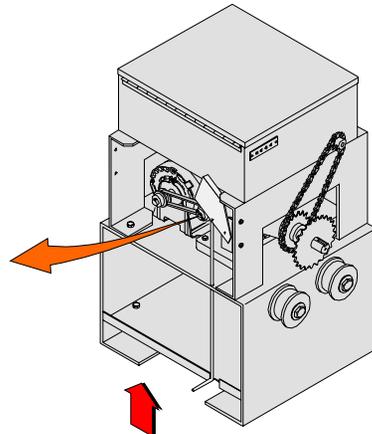
NOTE: If required, reposition drive sprocket by loosening set screws and relocating drive sprocket on operator drive shaft. Tighten set screws after desired location is obtained.

NOTE: By moving the gate manually to each end of its travel, chain alignment is simplified.

Cordless Electric Drill With 5/16" Hex Key Bit

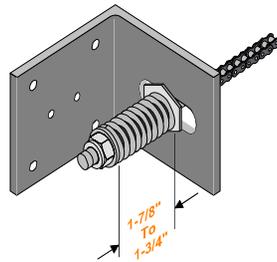


5/16" Hex Key Hand Crank



Lift Interlock lever To Expose Drive Hub

13. Adjust chain tension so that the chain tension springs are reduced to a length within 1-7/8" and 1-3/4".



Adjust Spring Length As Shown For Proper Chain Tension

ELECTRICAL CONNECTIONS

WARNING- DO NOT APPLY POWER UNTIL TOLD TO DO SO. RISK OF SHOCK OR INJURY MAY RESULT!

NOTE: Wiring to operator must use watertight materials in accordance with local electric code. See wire gauge/distance charts for proper sizing. Master/Slave installations should have **SEPARATE** power supply wiring or length of wire runs should be figured at half that shown on the chart. **This unit must be grounded in accordance with N.E.C. and local codes.**

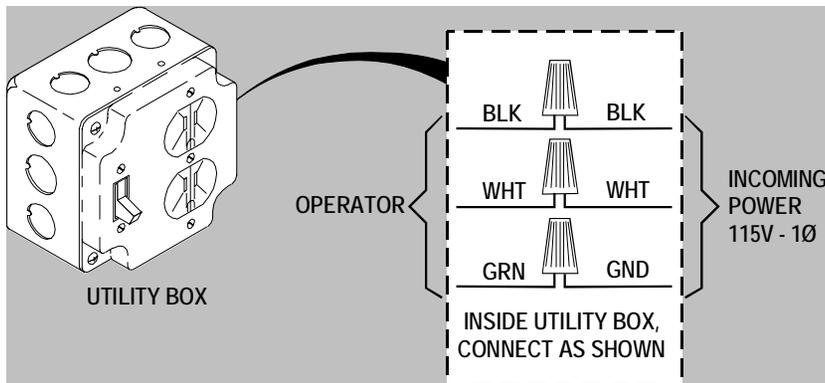
Before connecting the operator, use a voltmeter to determine that the electrical service is 115V. THIS OPERATOR CANNOT BE CONNECTED AT 230 VOLTS. Damage will result which is not covered under warranty.

Line Voltage	HP	14 AWG	12 AWG	10 AWG	8 AWG	6 AWG
115 VAC	1/2	150'	250'	400'	500'	650'

LOW VOLTAGE WIRE GAUGE /DISTANCE CHART	
24 AWG :	Up to 150'
20 AWG :	150' - 200'
18 AWG :	250' - 1,500'
Control wiring should be run as twisted pairs. <u>DO NOT</u> run control wires in the same conduit as power wires, telephone wires, or loop detector leads.	

1. Be sure power switches at source and operator are OFF.
2. Connect incoming power lines and ground wire as shown below.

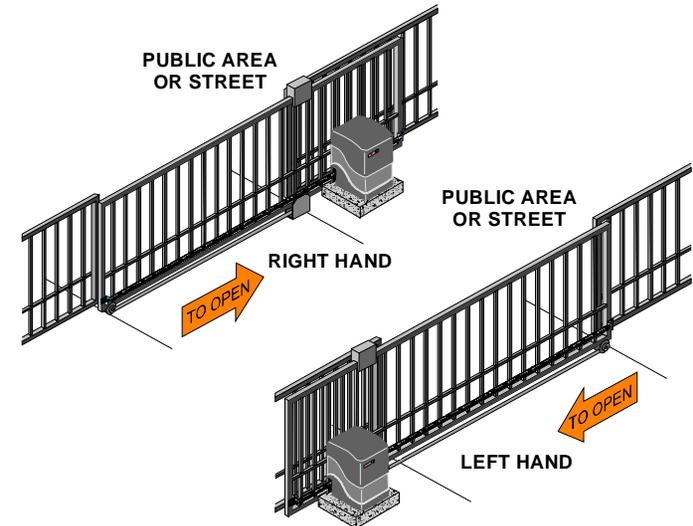
Hot leg (black) to BLACK; Neutral (white) to White; Ground to GREEN



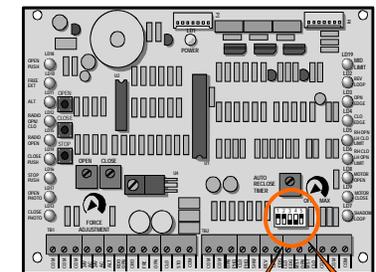
INSTALLATION OPTIONS

LEFT/RIGHT HAND CONVERSION:

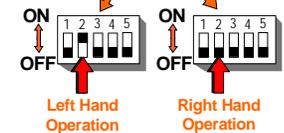
Determine the hand of the operator required for this installation by checking the direction the gate moves in order to open, when viewed from inside the fence. Slides **RIGHT** to open is a right hand installation, slides **Left** to open is a left hand installation.



NOTE: This unit is factory setup for **RIGHT HAND** operation. To convert operator to left hand operation move dipswitch #2 to "ON" position.



Place Dipswitch #2 In "ON" Position For Left Hand Operation And "OFF" Position For Right Hand Operation.

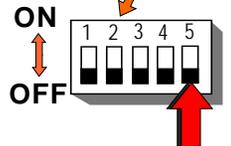
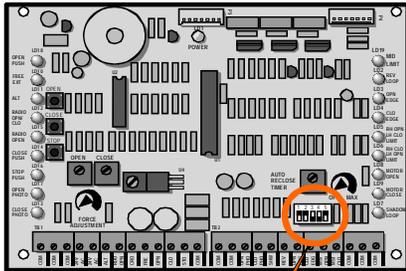


MASTER/SLAVE INSTALLATION

NOTE: A single unit is considered a Master.

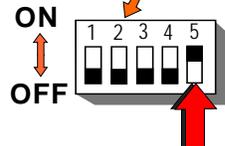
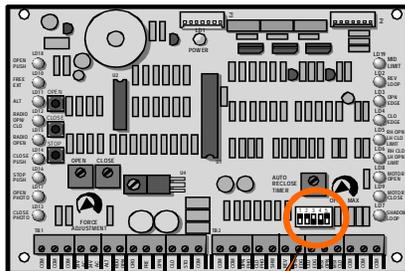
1. Place dipswitch #5 on the **MASTER** operator's control board in the "OFF" position.
2. Place dipswitch #5 on the **SLAVE** operator's control board in the "ON" position.

MASTER OPERATOR CONTROL BOARD



Master

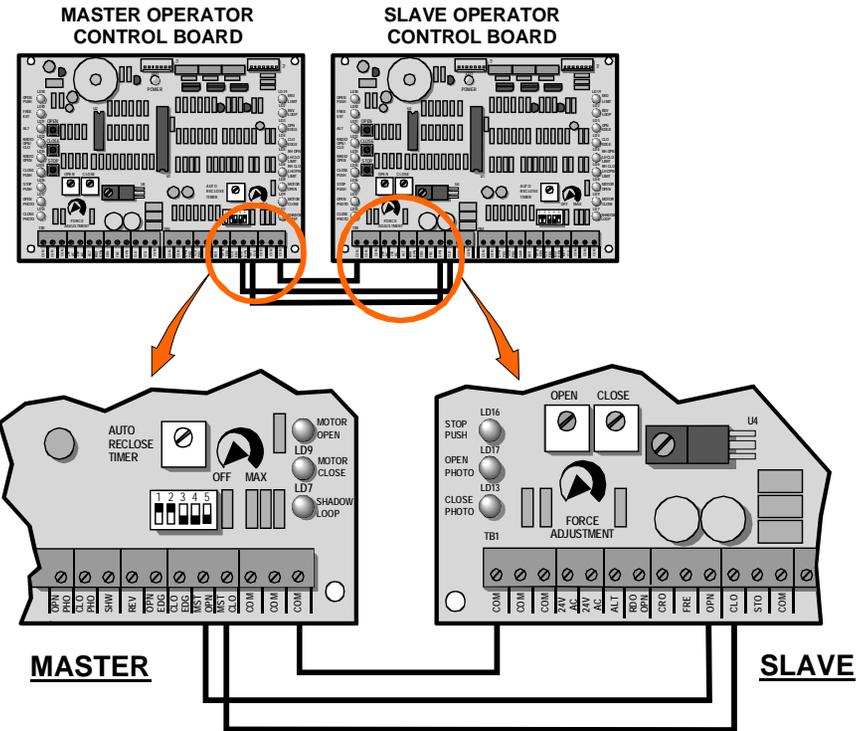
SLAVE OPERATOR CONTROL BOARD



Slave

3. Connect a wire from the "MST OPN" terminal on the **Master** operators control board, to the "OPN" terminal on the **Slave** operators control board.
4. Connect a second wire from the "MST CLO" terminal on the **Master** operators control board, to the "CLO" terminal on the slave operators control board.
5. Connect a third wire from any "COM" terminal on the **Master** operators control board, to any "COM" terminal on the **Slave** operators control board.

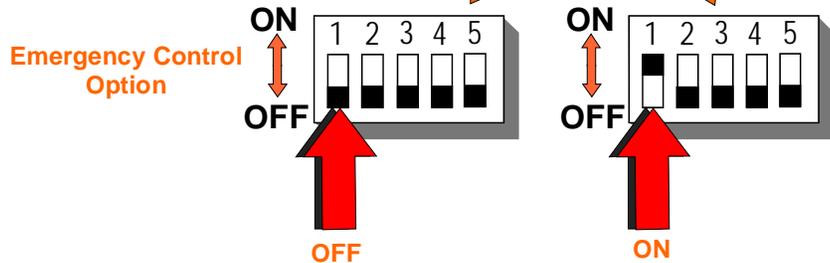
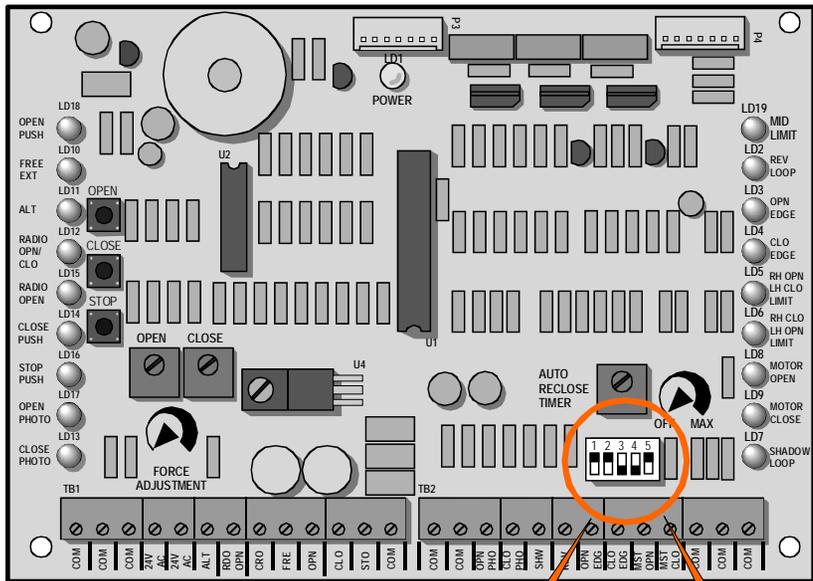
NOTE: In a Master/Slave installation, one unit must be converted to **LEFT HAND** operation.



EMERGENCY CONTROL STATION OPTION

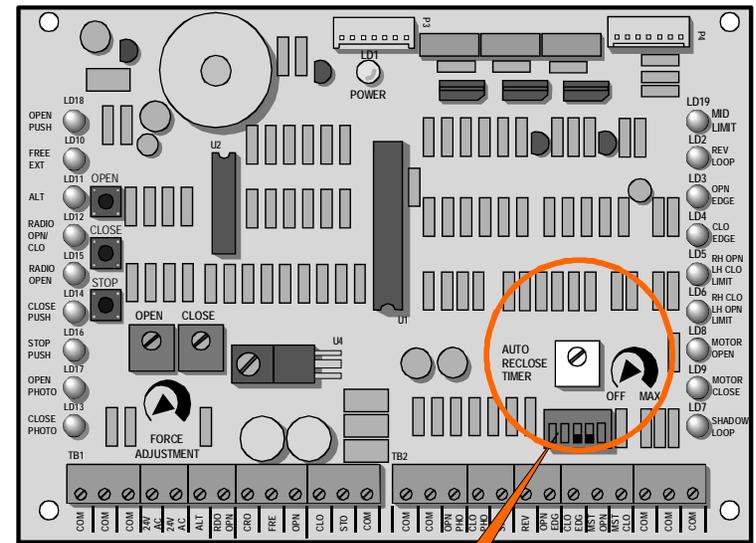
Provision has been made to change the control station operational mode to one that would only be activated when the entrapment sensing system is in stop mode; with the warning horn activated. This would give a person access to control the gate in an emergency situation, but it would be inoperative under normal circumstances. To activate this option, move dipswitch #1 to the "ON" position.

NOTE: When this emergency mode of operation is activated, the control station functions as a constant pressure control.

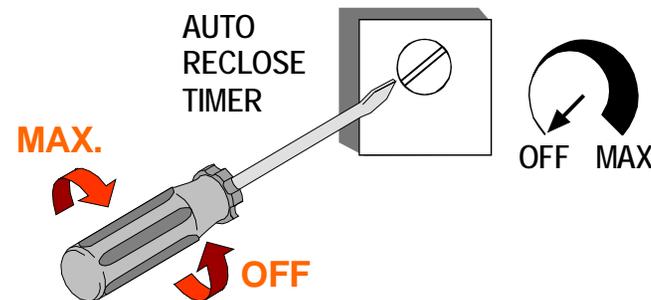


TIMER TO CLOSE OPTION

The operator is equipped with a timer to close option for use with **OPEN ONLY** control devices such as a radio control, or card key control. The **AUTO RECLOSE TIMER** adjustment screw is located on the printed circuit board. The operator is shipped from the factory with this timer preset to the off position; fully counter clockwise. As the timer adjustment screw is rotated clockwise, the closing of the gate can be delayed from 2 seconds to 60 seconds. The timer to close will be activated whenever the gate is stopped, except in the closed position.

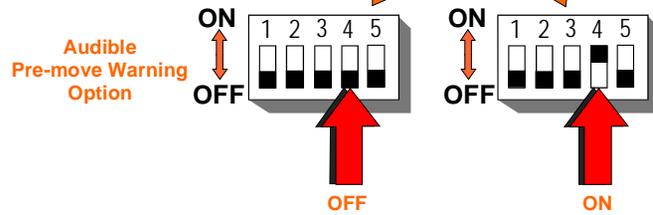
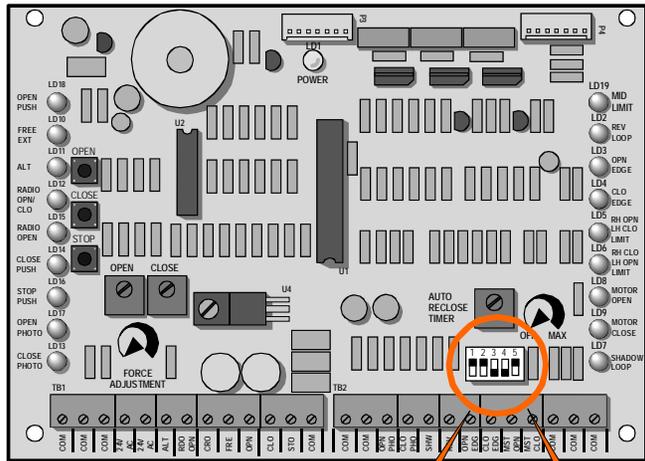


Location Of Auto Close Timer Adjustment.



AUDIBLE PRE - MOVE WARNING

By moving Dipswitch #4 to the “ON” position the option of a 3 second Audible Warning, before gate movement, may be selected.

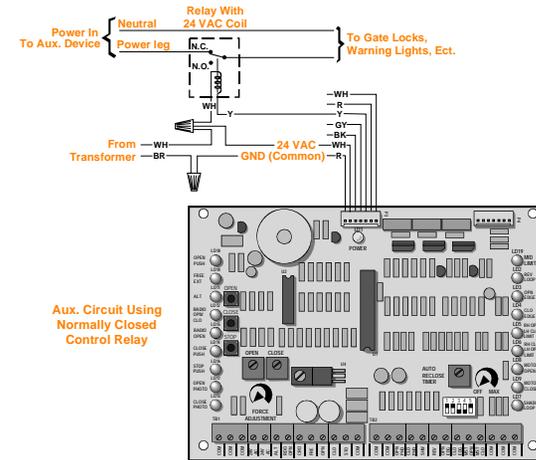


AUXILIARY CIRCUIT FOR USE WITH GATE LOCKS, WARNING LIGHTS, ETC

An auxiliary 24 VAC power circuit, for use with a 24V control relay, has been provided. This circuit will be activated just prior to gate movement and will continue to be active until the gate stops. It may be used to control a gate lock, activate warning lights and solenoid controlled devices or any other system required during this time interval. Two control options are available.

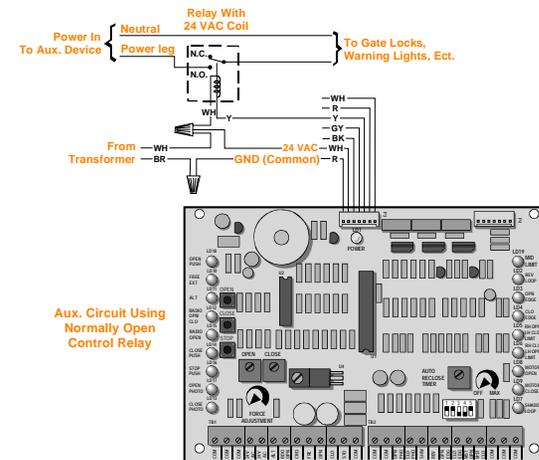
OPTION #1 – POWER REMOVED DURING GATE MOVEMENT

Below is a diagram showing the connection of a device, such as a magnetic gate lock, requiring the removal of power during the gate movement.



OPTION #2 – POWER SUPPLIED DURING GATE MOVEMENT

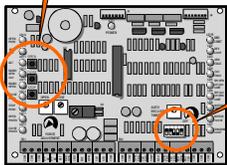
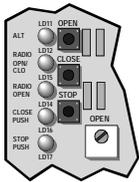
The following diagram shows the connection of a device, such as a solenoid operated gate lock, requiring power during gate movement.



BOARD MOUNTED CONTROL STATION

If Dipswitch #3 is in the “OFF” position, the board mounted three button station will function normally.

NOTE: If Dipswitch #3 is in the “ON” position for use with a **NORMALLY CLOSED “STOP” BUTTON**, then the board mounted “STOP” button must be held depressed in order to use the open and close buttons. Releasing the stop button will then stop the operator.



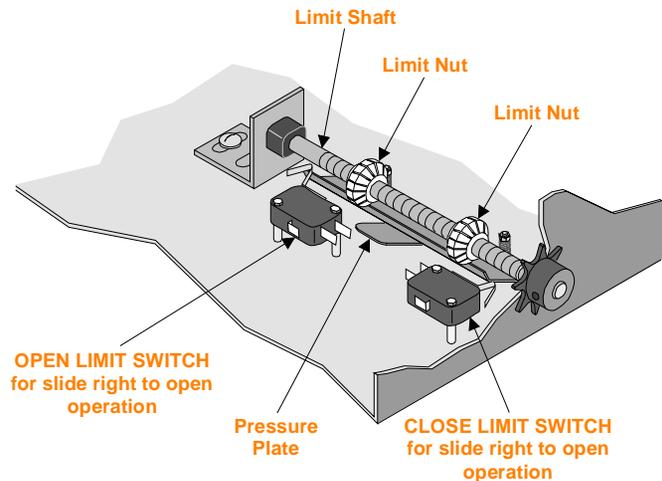
For Normally Open Stop Button



For Normally Closed Stop Button

6. If the gate travels in the correct direction and stops on the open limit switch, proceed to step #10.

NOTE: Open and Close Limit Switches are Reversed for **Slide Left to Open Operation**.



7. If the operator runs in the wrong direction proceed to step #9.

8. If the limit nut depresses the open limit switch but does not stop the gate, press the stop button or turn off the power immediately, and consult factory. (1-800-243-4476).

9. Check position of dipswitch #2 to be sure it coincides with the installation. (Left Hand or Right Hand) If this is correct consult the factory. (1-800-243-4476).

10. If the operator functions properly, run the operator to the open limit switch and turn off the power.

11. If there is still a distance before the gate is fully open, turn off power, move the open limit nut away from the open limit switch a few turns and turn on the power.

12. Press the OPEN button again to check how much further the gate opened.

13. Continue this procedure until the OPEN limit is set.

NOTE: When making fine adjustments, turn the limit nut one quarter turn at a time; reconnect power and test run the gate.

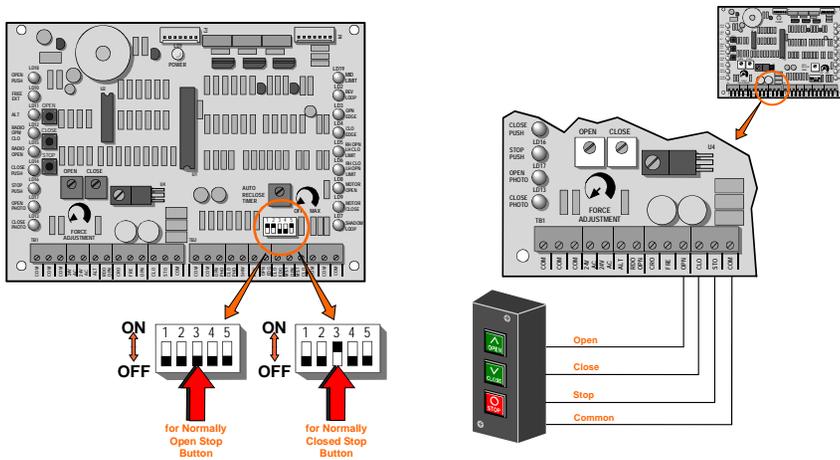
14. Repeat procedure for the CLOSE limit adjustment.

15. After the desired open and close position of the gate has been obtained, make certain that a groove in both limit nuts are engaged by the pressure plate.

CONTROL CONNECTIONS

CONNECTION OF A THREE-BUTTON STATION:

NOTE: All control contacts must be **NORMALLY OPEN** unless dipswitch #3 is placed to the “ON” position, which will change the circuitry to accept a **NORMALLY CLOSED STOP BUTTON**. Refer to Page 35.



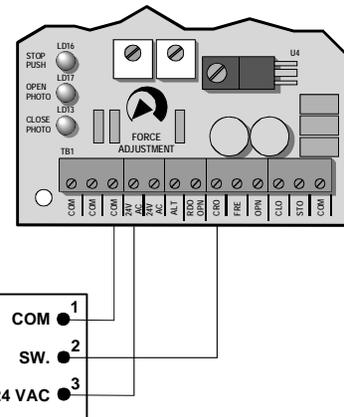
1. Connect a wire from the common connection of the control station to any “COM” terminal on the control board.
2. Connect a second wire from the “OPEN” button of the control station to the “OPN” terminal on the control board.
3. Connect a third wire from the “CLOSE” button of the control station to the “CLO” terminal on the control board.
4. Connect a fourth wire from the “STOP” button of the control station to the “STO” terminal on the control board.

RADIO CONTROL INSTALLATION

A Three or Four wire radio control receiver can be installed on this operator. See the diagrams below for the correct connections to match your installations equipment and desired functions.

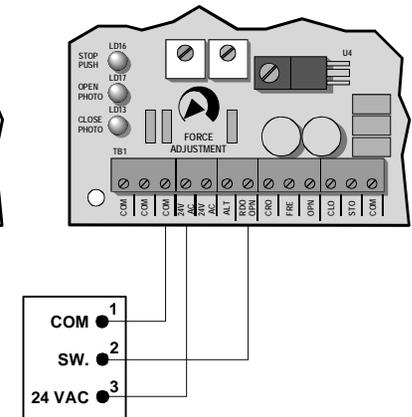
1. Choose one of the options below for connecting a **three-wire** radio control receiver to the control board terminal strip.

CONNECTION FOR OPEN/CLOSE OPERATOR



Three Wire Radio Receiver
Wired For "OPEN/CLOSE"

CONNECTION FOR OPEN/ONLY OPERATOR

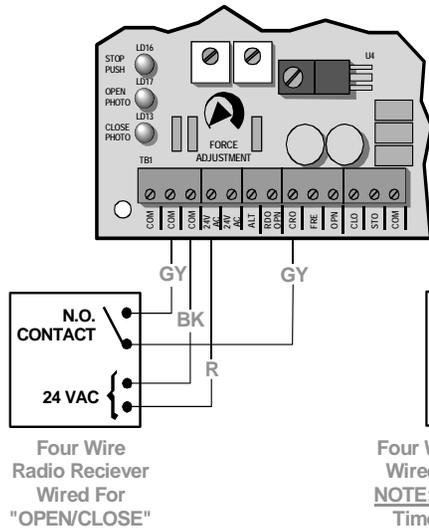


Three Wire Radio Receiver
Wired For "OPEN" Only
NOTE: Must Be Used With
Timer to Close Option.

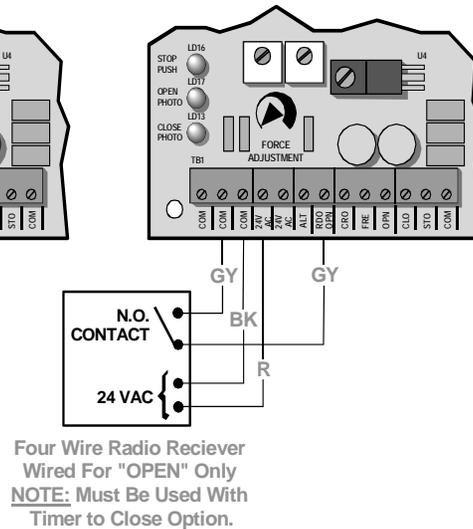
2. Choose **ONE** of the options below for the connection of a **FOUR-WIRE** radio control receiver to the control board terminal strip.

NOTE: If your radio's connecting wires are not color coded as shown, see the radio's installation manual to determine which wires are for the normally open contacts and which require the 24 VAC Power Supply.

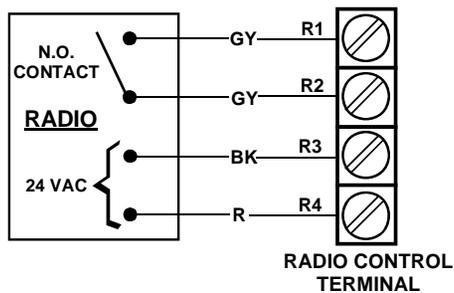
CONNECTIONS FOR OPEN/CLOSE OPERATION



CONNECTIONS FOR OPEN ONLY OPERATION



1. For electrical connections of a four-wire radio receiver via the external terminal strip. See below.

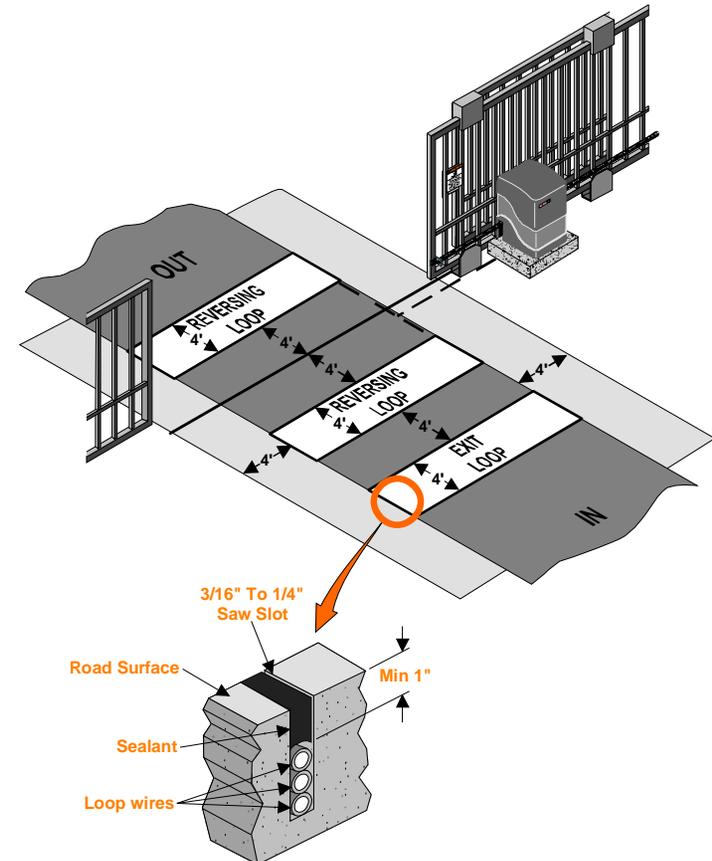


NOTE: Internal wiring for the radio control terminal strip is factory set-up for the OPEN ONLY option. For the OPEN/CLOSE option, move the wire on the control board terminal strip from the "RDO OPN" terminal to the "CRO" terminal.

LOOP DETECTOR SYSTEMS AND INSTALLATION

The diagram below depicts the typical loop options for a Slide Gate installation.

1. The **Exit Loop** provides a signal to open the gate when a vehicle enters the loop zone.
2. The Reversing Loops protect a vehicle in the loop zone from being contacted with the gate by overriding any close signal while the gate is open, and by reversing the gate if closing.



LOOP INSTALLATION

1. Layout the desired loop locations per the diagram. The standard size chart below will give an approximate length of wire required for various loop dimensions and number of turns required.

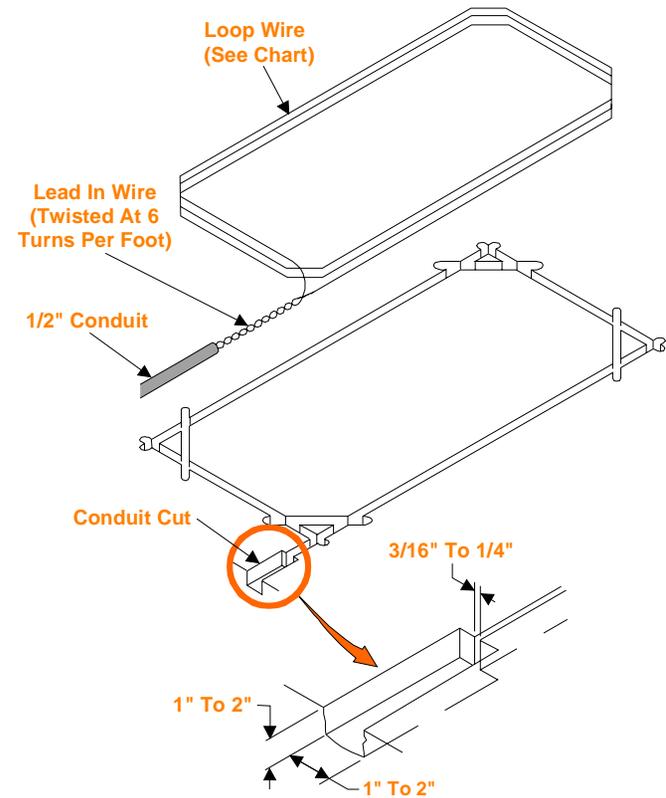
CAUTION: The Loop wires and Lead-in wires must be a continuous piece of wire without splices. Only use wire intended for this type of application. (Type XHHW insulation 16AWG)

NOTE: Buried steel from drains or other systems may affect functioning of the loop system. Check with the factory for advice on any special installations. (1-800-243-4476).

STANDARD LOOP LAYOUTS FOR APPROX 36" HEIGHT DETECTION

LOOP SIZE	# OF TURNS	LOOP WIRE LENGTH (FT)
4' X 4'	4	64'
4' X 6'	4	80'
4' X 8'	3	72'
4' X 10'	3	84'
4' X 12'	3	96'
4' X 14'	3	108'
4' X 16'	3	120'
4' X 18'	3	132'
4' X 20'	3	144'
4' X 22'	3	156'
4' X 24'	3	168'
4' X 26'	3	180'
4' X 28'	3	192'
4' X 30'	2	136'
4' X 32'	2	144'
4' X 34'	2	152'
4' X 36'	2	160'
4' X 38'	2	168'
4' X 40'	2	176'

2. Cut the required groove as shown in the diagram below at the locations laid out in **Step #1**.



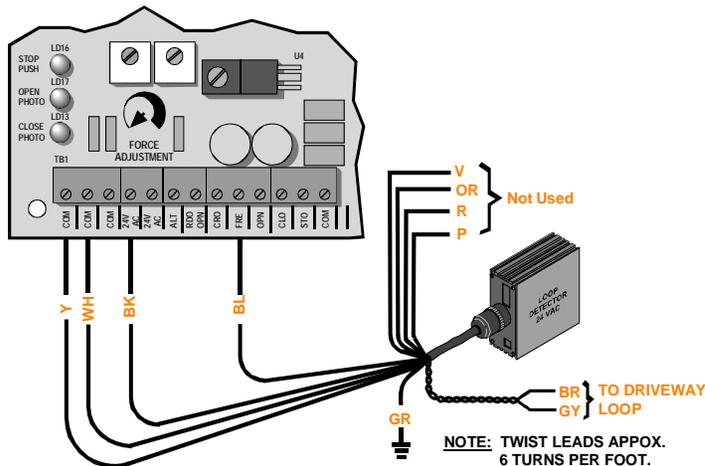
3. Leaving enough wire for the **LEAD IN**, insert the specified number of turns of wire in the cut grooves. (See chart).

CAUTION: Be careful not to damage the wire insulation during installation.

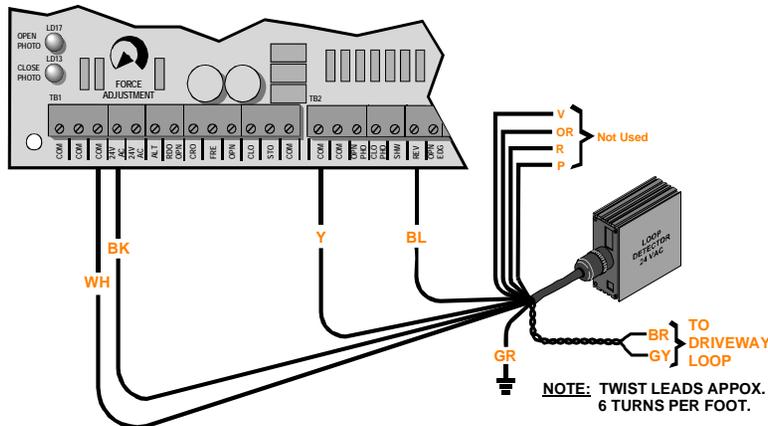
4. After completing the required number of loop turns, twist the ends together at the rate of **6** turns per foot to form the **LEAD-IN**.
5. Seal the **LEAD-IN** wire in the conduit to prevent moisture seepage into the conduit.

- Fill over the loop wires in the groove with a recommended loop sealant. Contact your distributor for available sealants.
- Mount the loop detector in the operator and connect the wire loop.
- Connect loop detector to the control board as shown in the following diagrams.

EXIT LOOP CONNECTION



REVERSING LOOP CONNECTION



SAFETY DEVICE CONNECTIONS

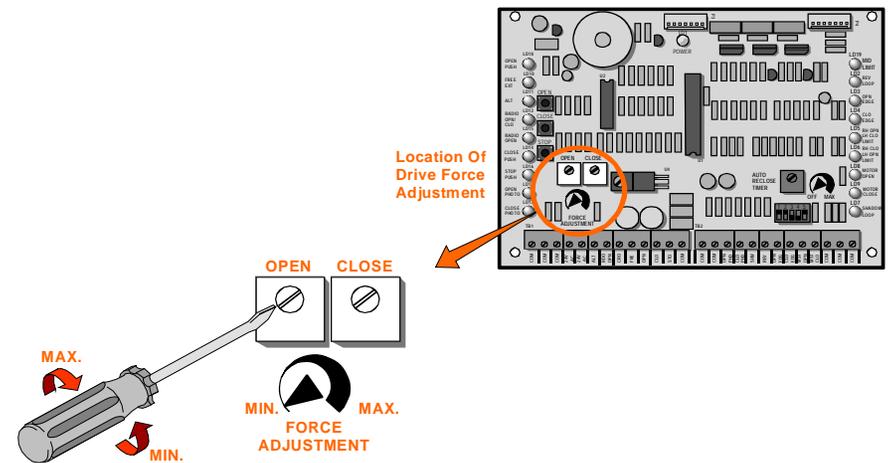
INHERENT OBSTRUCTION SENSING DEVICE:

NOTE: The gate MUST move smoothly and easily in manual operation before attempting this adjustment.

WARNING: TURN OFF POWER TO OPERATOR WHEN MAKING ANY ADJUSTMENTS.

This unit is supplied with a speed sensing system, which will stop the gate when it encounters an obstruction and then backs the gate off approximately 2 inches. If the gate is started again and a second encounter occurs before hitting a limit switch, the gate will stop and sound a warning signal. A constant pressure control will then be needed to start the gate. This sensing system has sensitivity adjustments located on the printed circuit board. The force required to activate the system may be adjusted in both **OPEN** and **CLOSE** directions separately. Start at minimum and increase force setting until it is just over what is required to move the gate smoothly without any nuisance tripping.

WARNING: NEVER INCREASE FORCE SETTING TO MAKE UP FOR A GATE THAT IS NOT MAINTAINED PROPERLY. THIS WILL DESENSITIZE THE OPERATION OF THE SAFETY SYSTEM.



SECONDARY OBSTRUCTION SENSING DEVICES

Another sensing device (Either a contact or a non-contact system) must be installed and connected to this unit to increase protection against entrapment per U/L requirements.

NOTE: All safety device contacts must be **NORMALLY OPEN**.

NOTE: 24 VAC power is available at marked terminals for devices that may require it (i.e., photo eyes, wireless edges, etc).

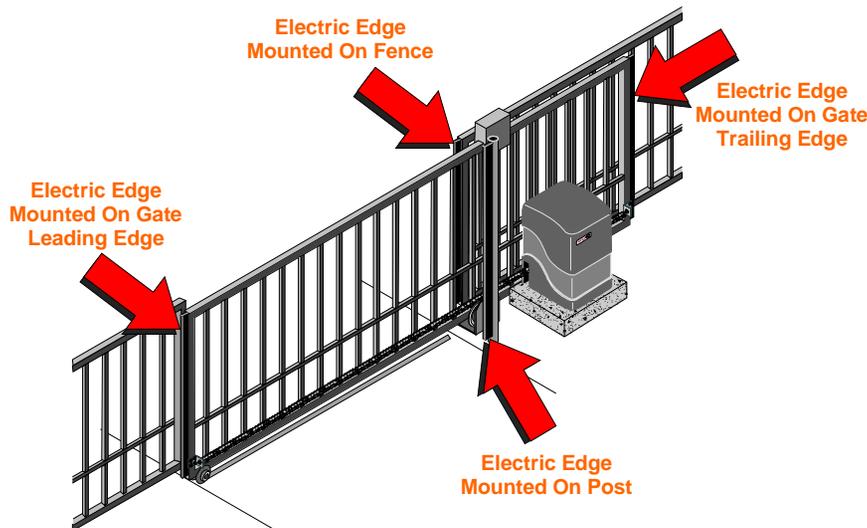
CONTACT SENSOR INSTALLATION:

NOTE: Wireless sensors must be installed so there is no signal interference.

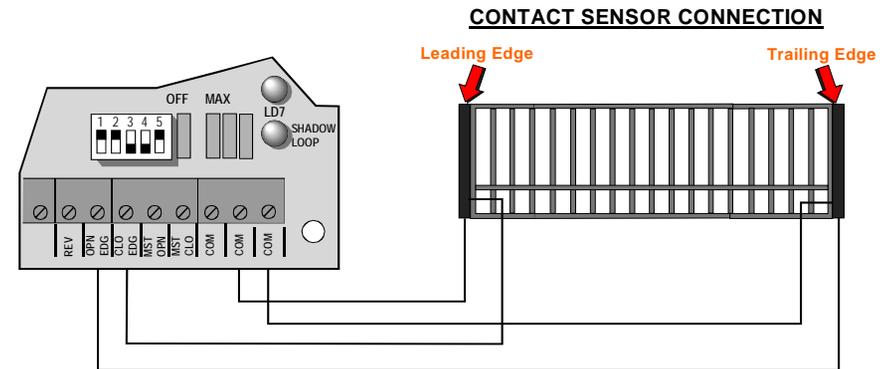
NOTE: All hard wiring to safety edges must be installed so there is no threat of mechanical damage to wiring between components, when the gate is moving.

1. Install electric edge sensors in locations shown below.

NOTE: A separate pedestrian gate must be installed if there is no other entry access but the vehicular gate.



2. Connect contact sensor edges to the control board as shown in the illustration below.



NOTE: Leading edge is connected to “CLO EDG” and “COM” terminals. Trailing edge, Post Mounted edge and Fence Mounted edge are connected to “OPN EDG” and “COM” terminals.

3. After sensors are mounted and electrically connected, turn on the power.

4. Test the close obstruction sensing system for proper operation, by depressing the leading edge sensing strip while the operator is running closed.

NOTE: The operator should stop and reverse a short distance and then stop.

5. Run the operator to the close limit.

6. Test the open obstruction sensing system by depressing one of the other three edge sensors while the gate is opening.

NOTE: The operator should repeat the STOP AND REVERSE procedure.

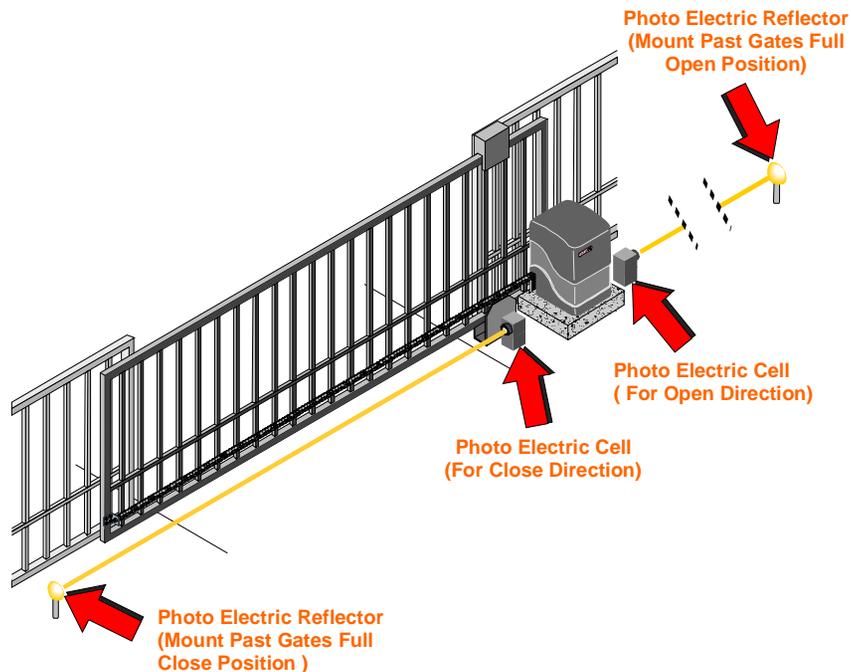
7. Run operator to the close limit and repeat step #6 for the other two edges.

NOTE: If an edge is activated twice or a second edge is activated before a limit is hit (full open or close) operator will stop and sound a warning horn. To reactivate system turn operator power switch off then on.

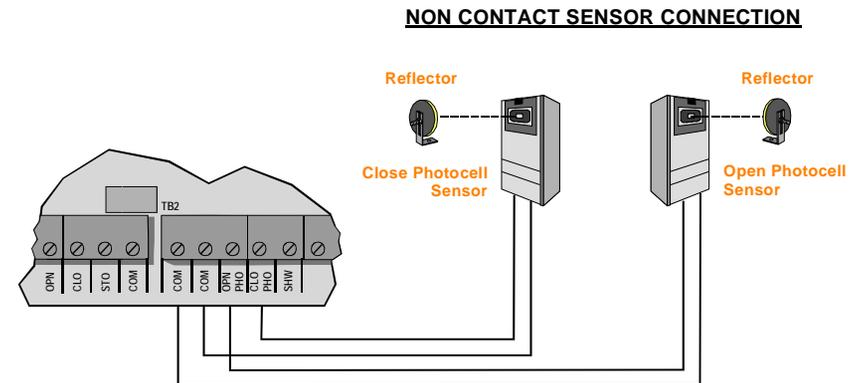
NON-CONTACT SENSOR INSTALLATION

1. Install photoelectric cell as close to inside of gate as possible.
2. Photocells should be installed across the gate opening and behind the gate (as shown below) at least 10 inches above ground.

NOTE: A separate pedestrian gate must be installed if there is no other entry access but the vehicular gate.



3. Connect **NON-CONTACT** sensors to the control board as shown below.



NOTE: Close photocell is connected to “CLO PHO” and “COM” terminals. Open photocell is connected to “OPN PHO” and “COM” terminals.

AFTER SENSORS ARE CONNECTED:

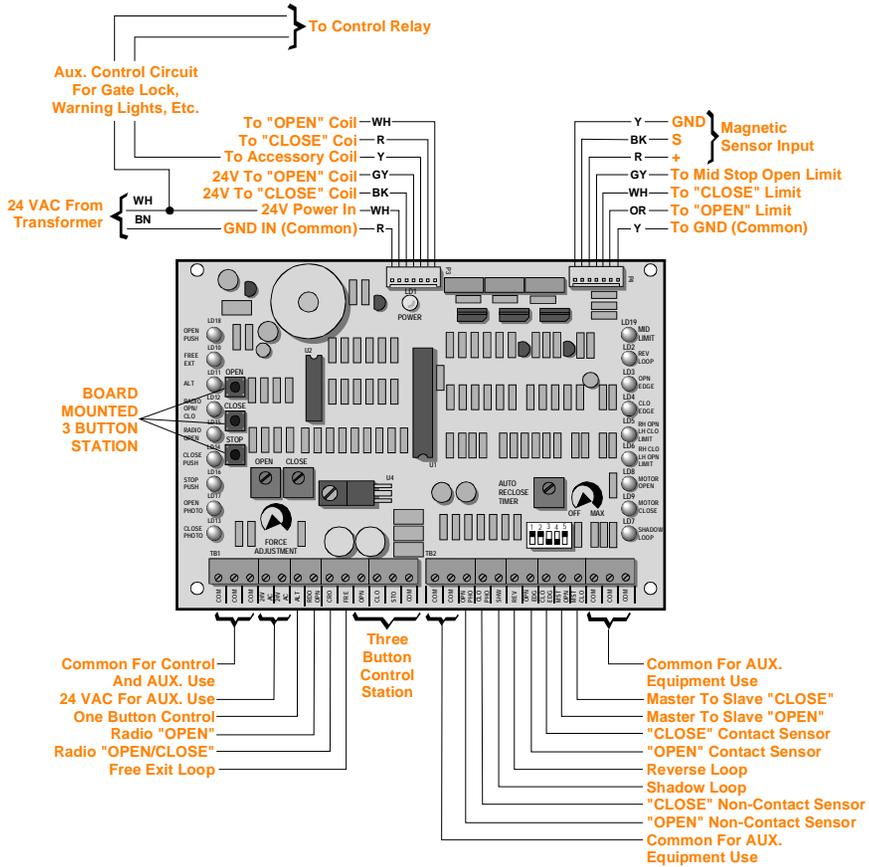
1. Turn on power.
2. Make sure the photo-beams are properly aligned per the manufacturer’s specifications.
3. Test the **CLOSE** obstruction sensing system for proper operation, by blocking the beam across the gate opening while the gate is running closed.

NOTE: The gate should stop and reverse a short distance and then stop.

4. Run operator to close limit.
5. Test the **OPEN** obstruction sensing system by blocking the beam mounted at the back area of the gate while the gate is running open.

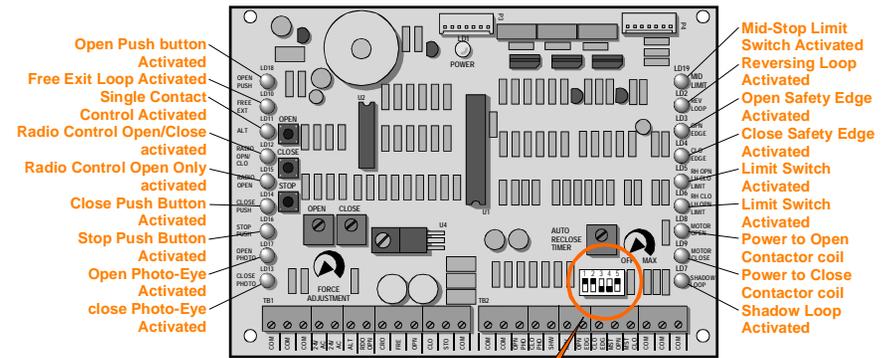
NOTE: The operator will stop, wait approximately 5 seconds and then continue running open.

WIRING TO 2004 UMCB-01 CONTROL BOARD



LED AND DIP SWITCH INFORMATION FOR

2004 UMCB-01 CONTROL BOARD



DIPSWITCHES

- S1 - OFF = NORMAL OPEN/CLOSE PB
ON = SAFETY/SECURE MODE
- S2 - OFF = RIGHT HAND
ON = LEFT HAND
- S3 - OFF = N.O. STOP
ON = N.C. STOP
- S4 - OFF = NORMAL
ON = 3 SEC. PRE-MOVE
- S5 - OFF = SINGLE OR MASTER MODE
ON = SLAVE MODE

Registration Information

Model CSG

Date Installed _____

Serial # _____

Location Installed:

Address _____

Address _____

Address _____

Installer's Information

Company Name _____

Company Address _____

Company Address _____

Company Address _____

Company Telephone # _____

Company Contact _____

R&S Automation
7200 E. 92nd Avenue
Unit A
Portland, OR 97266
877-388-4001
503-771-4685
Fax 503-774-6708

John Greene Corp.
2807 Center Circle Drive
Downers Grove, IL 60515
800-374-7890
Fax 630-627-7995

A map of the United States with callouts to regional distributors. The callouts include:

- Oregon:** R&S Automation (7200 E. 92nd Avenue, Unit A, Portland, OR 97266, 877-388-4001, 503-771-4685, Fax 503-774-6708)
- California:** R & S Automation Inc. (15075 Wicks Blvd, San Leandro, CA 94577, 800-543-6001, 510-357-4110, Fax 510-483-1326)
- Texas:** R & S Automation Inc. (1560 N. Missile Way, Anaheim, CA 92801, 800-963-3111, 714-449-1645, Fax 714-449-1679)
- Illinois:** John Greene Corp. (2807 Center Circle Drive, Downers Grove, IL 60515, 800-374-7890, Fax 630-627-7995)
- Arlington, TX:** John Greene Corp. (3024 Avenue E. East, Arlington, Tx 76011, 800-925-7890, Fax 817-633-5735)
- Florida:** John Greene Corp. (3516 E. Norvell Bryant Hwy, Hernando, FL 34442, 800-323-3674, Fax 352-726-8999)
- New York:** Power Door Products (610 Fenimore Rd, Mamaroneck, NY 10543, 914-698-5083, Fax 914-698-6866)

Toll Free technical support @ 1-800-243-4476
Email to techsupport@power-master.net



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