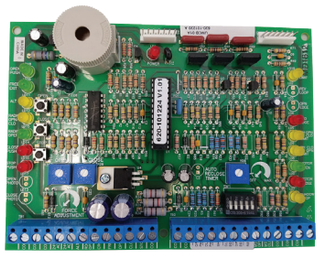
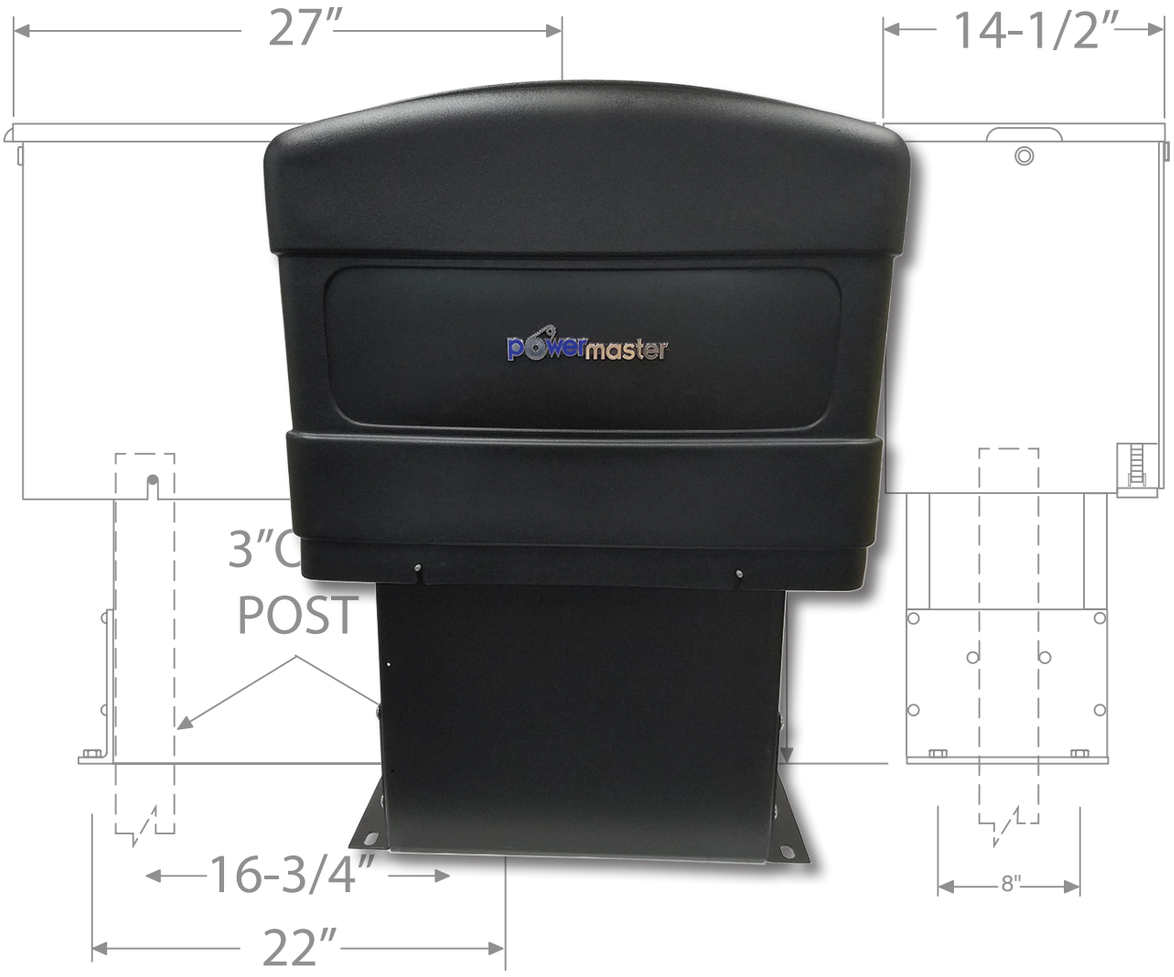
INSTALLATION AND OWNER'S MANUAL



MODEL SG-2004
Slide Gate Operator

UL 325 and UL 991 Listed



Serial #:
Date Installed:
Your Dealer:

READ THIS MANUAL CAREFULLY
BEFORE INSTALLATION OR USE.
SAVE THESE INSTRUCTIONS.

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 UL** 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.

IMPORTANT NOTICE FOR GATE OPERATORS MANUFACTURED AFTER JANUARY 11TH, 2016

All gate operators manufactured after January 11th, 2016 must have a monitored input for each direction. In order to satisfy this requirement, all PowerMaster gate operators with the universal board will have one monitored input for each direction. The reverse (REV) terminal will function for the close direction, and the open edge (OPN EDG) will function for the open direction. These terminals will look for, or "monitor", the presence of a 10k in-line resistor. If either terminal does not detect the presence of the monitored device the unit will function in constant contact for this direction. Other terminals that will also monitor for devices include Open Photo (OPN PHO) and Close Photo (CLO PHO) for each respective direction.

Note: The first time a monitored device is added to the unit, the board must "learn" what the monitored device is. To have the board learn the monitored device, perform the following steps:

1. With the power off, hold both the open and close limit simultaneously.
2. Power up the unit and release your fingers from the limits. The unit has now learned the monitored device.

E.g. The operator detects there is a monitored device on the REV terminal, but not the OPN EDG terminal. The operator will function in momentary contact to close, and constant pressure to open..

Following are the monitored devices acceptable for use with the Universal Board:

Device	Manufacturer	Description
Prime-Guard	Miller Edge	Monitored Photoeye
Reflecti-Guard	Miller Edge	Retroreflective Monitored Photoeye
IRB-MON	EMX	Monitored Photoeye
IRB-RET	EMX	Retroreflective Monitored Photoeye
The Solution	Miller Edge	Multiple Safety Devices

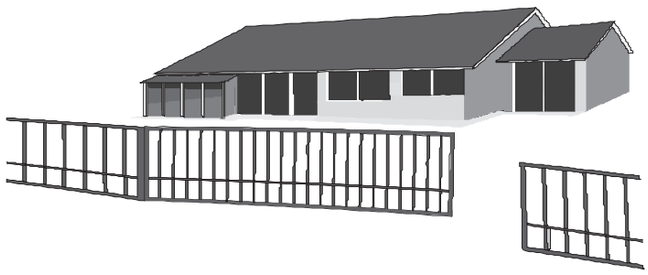
Any actions taken to circumvent this monitoring are in violation of the UL325, building code, and local laws.

UL INSTALLATION AND SAFETY CONSIDERATIONS

INSTALLATION CLASSES

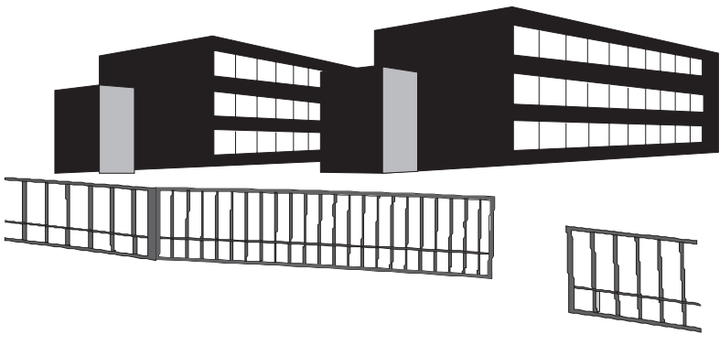
CLASS I - RESIDENTIAL VEHICULAR GATE OPERATOR

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.



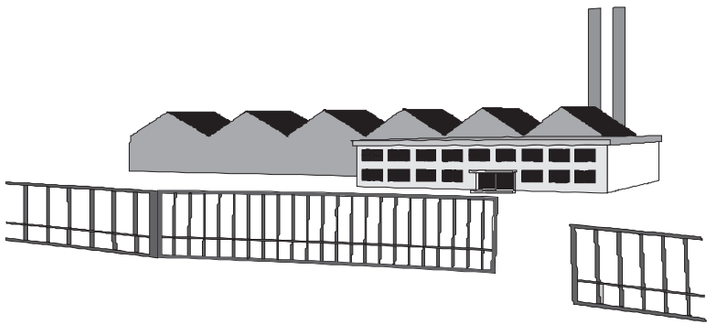
CLASS II – COMMERCIAL/GENERAL ACCESS VEHICULAR GATE OPERATOR

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.



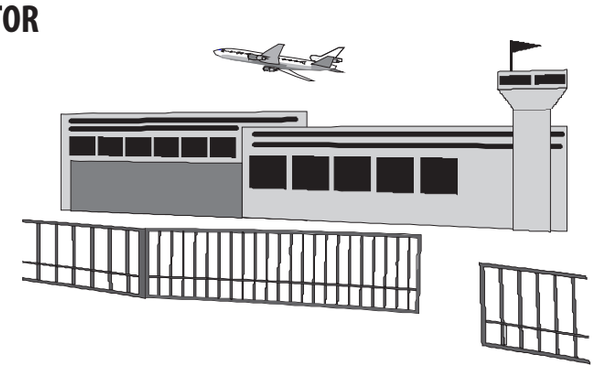
CLASS III - INDUSTRIAL/LIMITED ACCESS VEHICULAR GATE OPERATOR

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

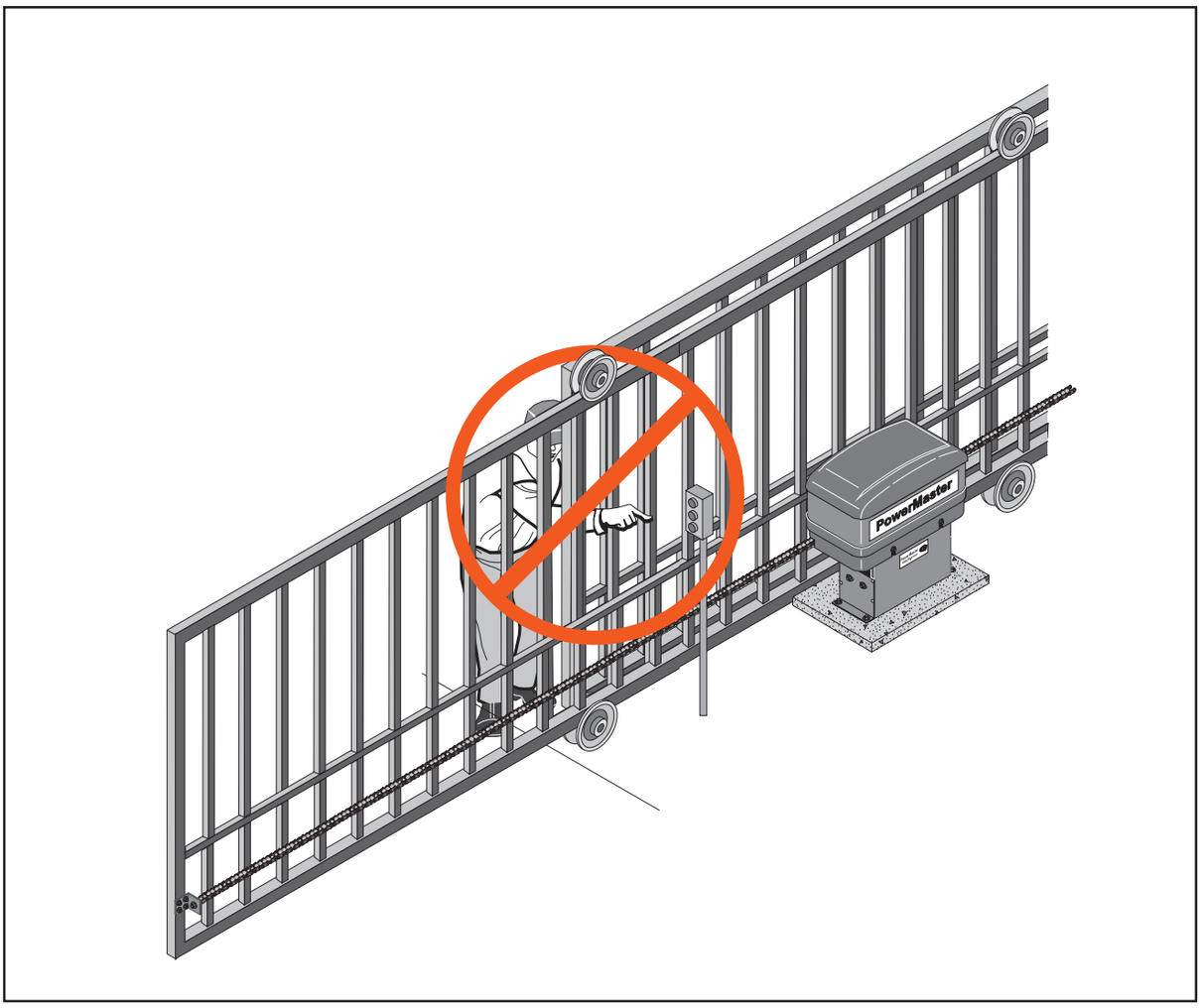
1. Familiarize yourself with the precautions and warnings for the installer. Users are relying on your design to provide a safe installation.

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 monitored 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 disconnect mechanism and safety features of the system.

7. You must install a push-button 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. Please consult your local distributor concerning the types and specifications of available controls.

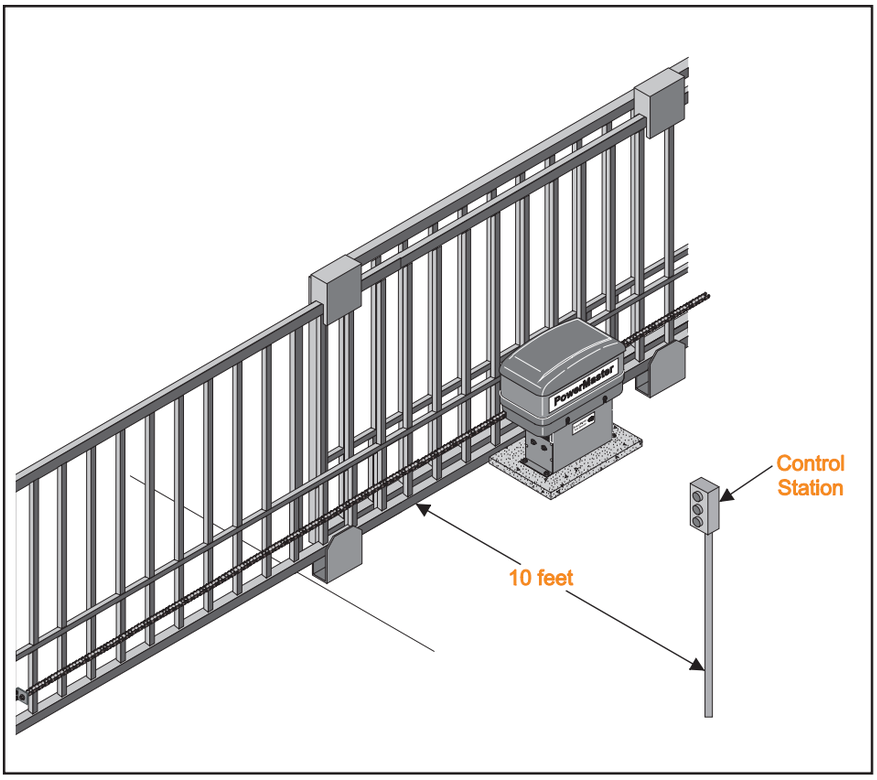
DURING INSTALLATION

1. Be aware of all moving parts and avoid close proximity to any pinch points.

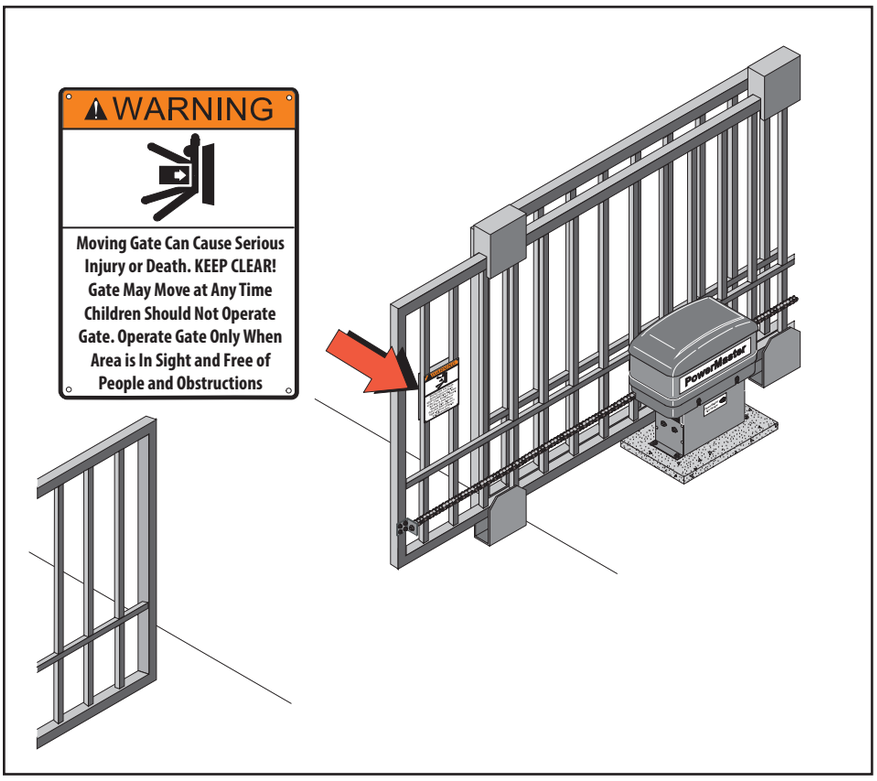
2. Disconnect power at the control panel before making any electric service connections. Connection location for controls and safety equipment can be found on the wiring diagram, and in this manual.

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 make up 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 the gate or fence 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.

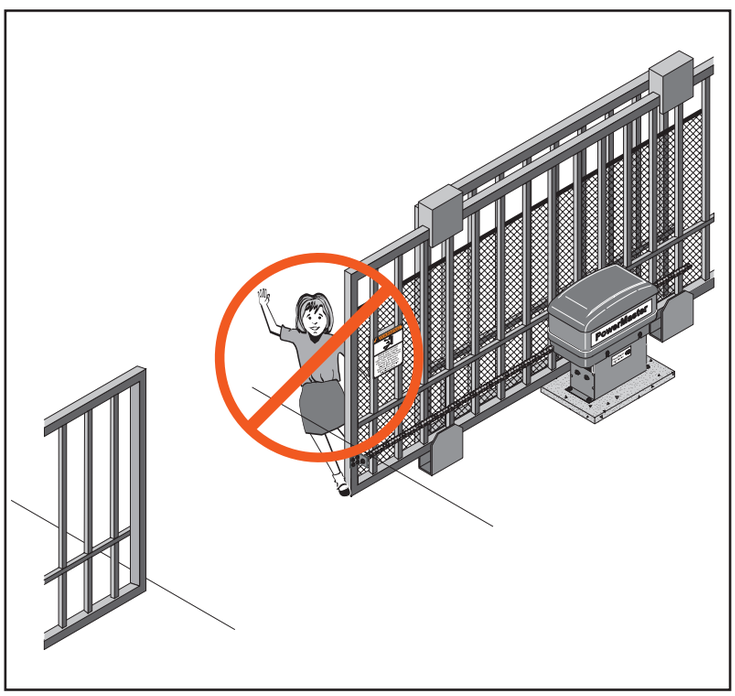
1. Be sure the following safety instructions are distributed to all persons authorized to use your gate.

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.

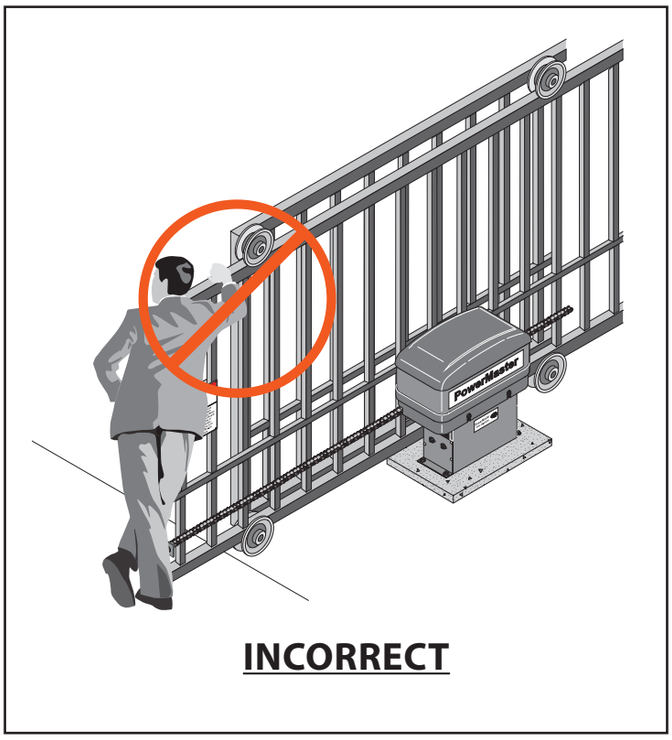
4. DO NOT operate your gate system unless you can see it when the gate moves.

5. Be sure a push-button 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 push-button located in a building should be installed within sight of the gate.

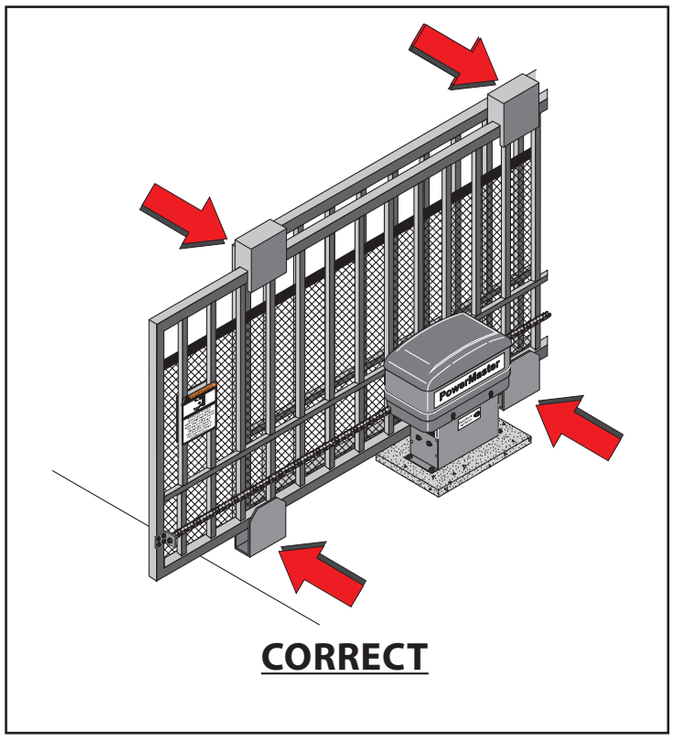


6. DO NOT operate any controls without watching the movement of the gate.

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



INCORRECT



CORRECT

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 DISCONNECT OPERATION

Your operator is equipped with a pad lockable emergency disconnect for manual operation. Be sure you have a key and understand how to operate this equipment. To disengage operator, move red disconnect lever to the left and latch it in place. See **Figure 1**.

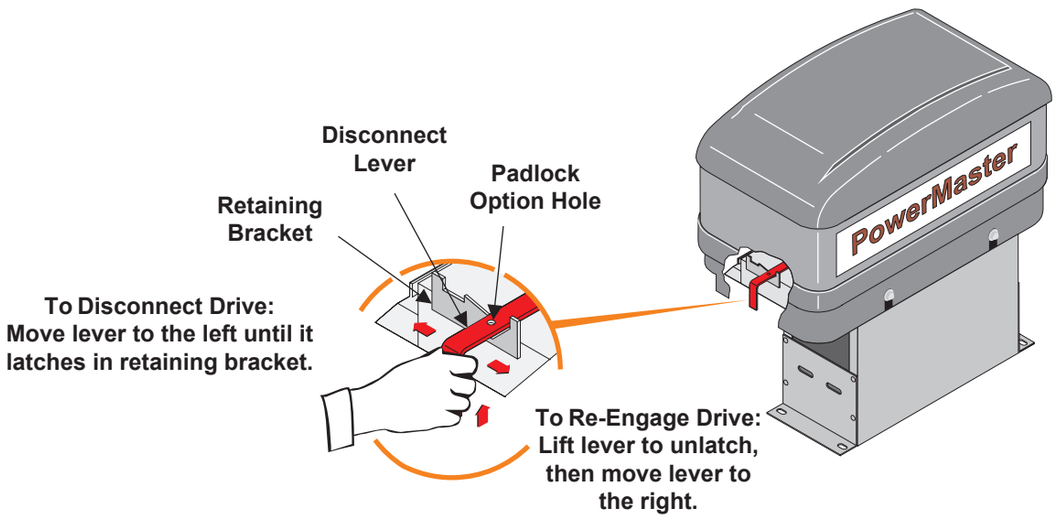


FIGURE 1

WARNING

NEVER ATTEMPT TO OPERATE THE MANUAL RELEASE WHEN THE GATE IS IN MOTION!

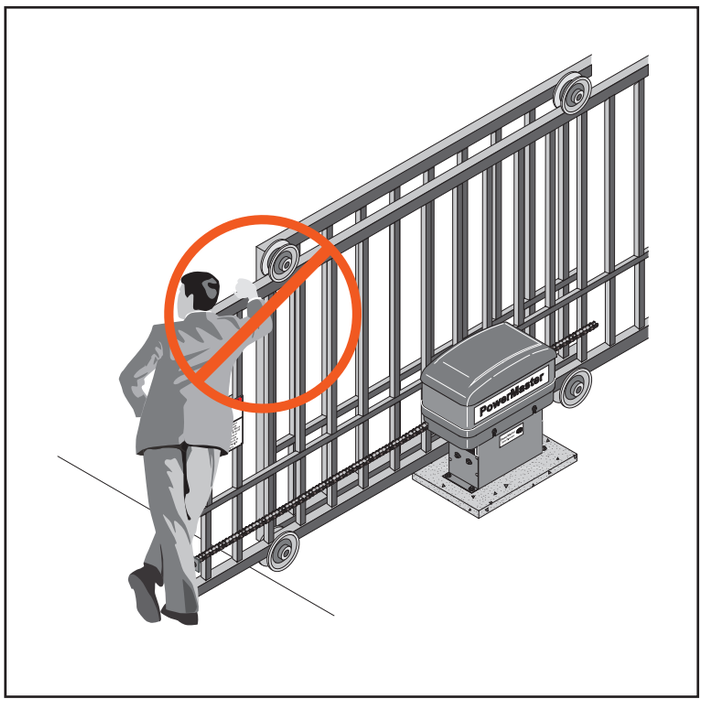
SAFETY WARNINGS FOR OPEN-ROLLER GATES AND ORNAMENTAL GRILLE-TYPE GATES

WARNING

INJURIES ASSOCIATED WITH AUTOMATIC GATES ARE MAINLY INCURRED WITH OPEN-ROLLER GATES AND ORNAMENTAL GRILLE TYPE GATES.

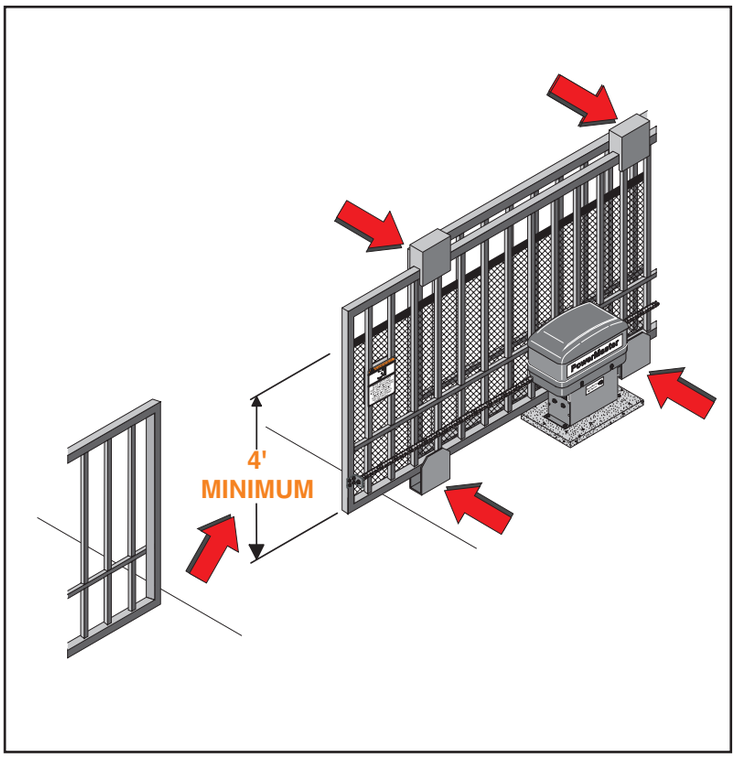
OPEN-ROLLER GATES

- 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.

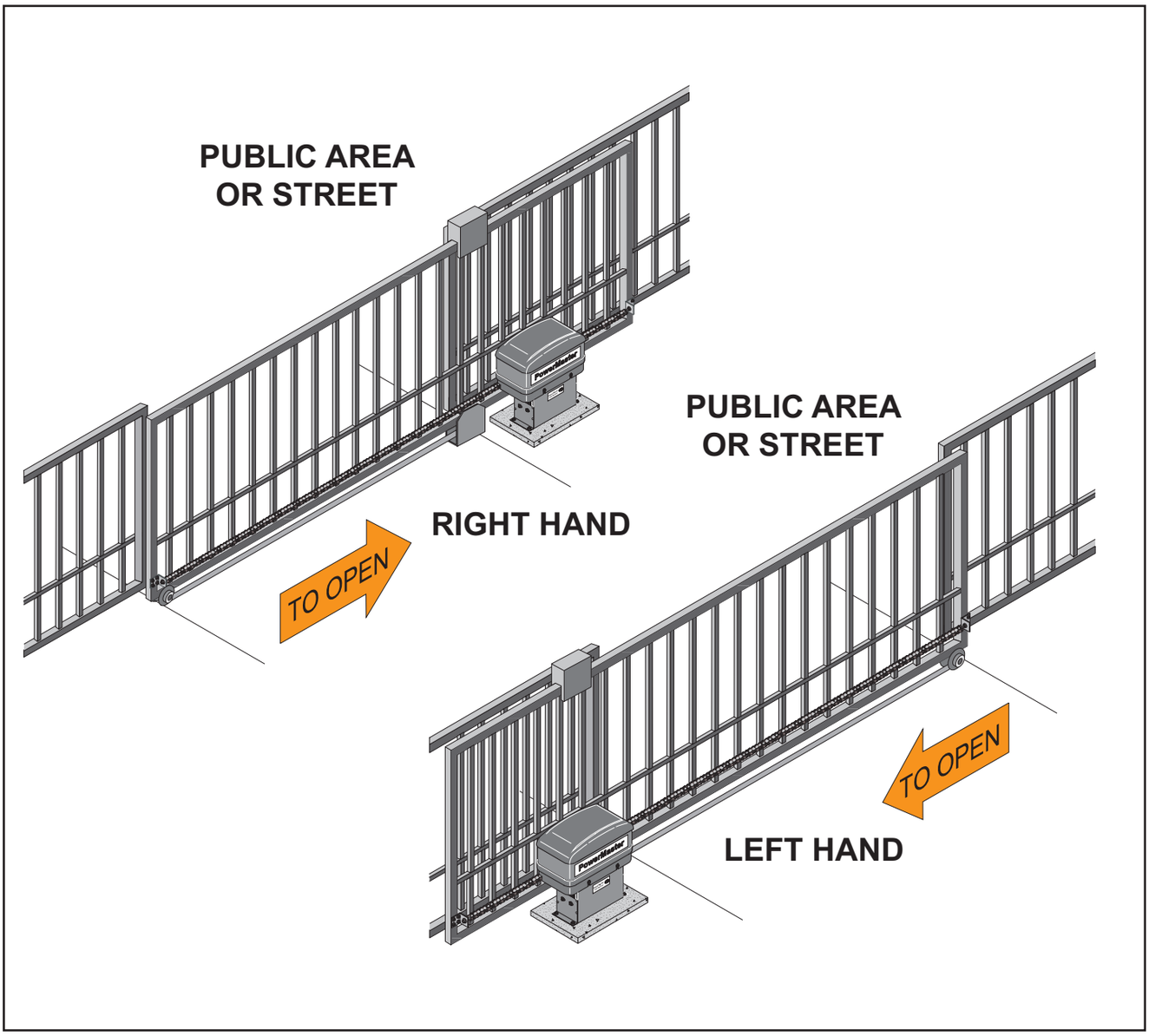


INSTALLATION INSTRUCTIONS & SET-UP PROCEDURE

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.

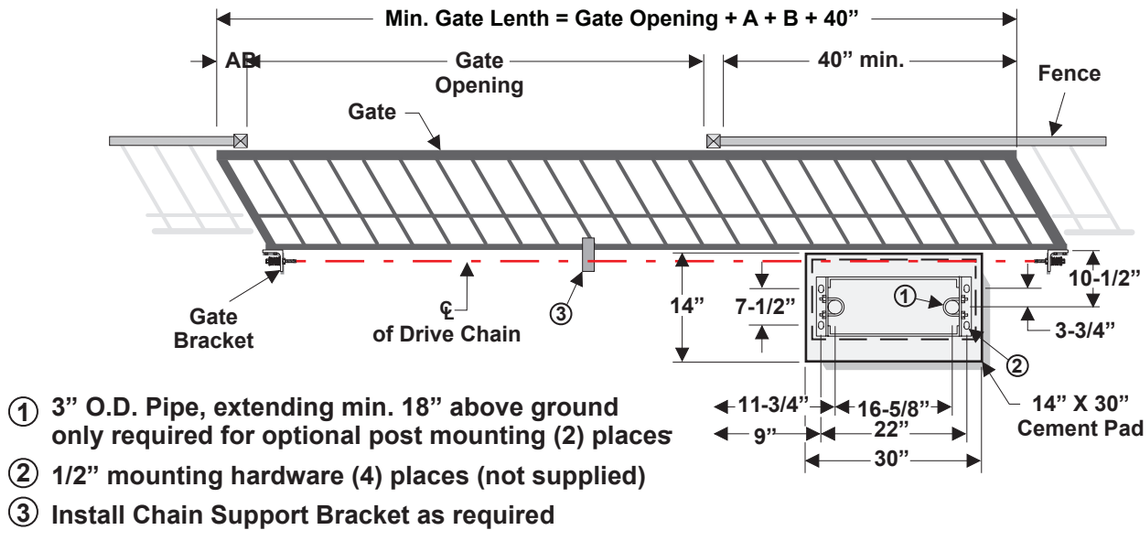


1. Gate must slide freely to fully opened and fully closed position.

2. Gate and/or extension must extend beyond the position of the operator when gate is in a fully closed position. 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.



① 3” O.D. Pipe, extending min. 18” above ground only required for optional post mounting (2) places

② 1/2” mounting hardware (4) places (not supplied)

③ Install Chain Support Bracket as required

FIGURE 2

INSTALLATION TO PAD

1. Assemble stand and mount power head using carriage bolts.

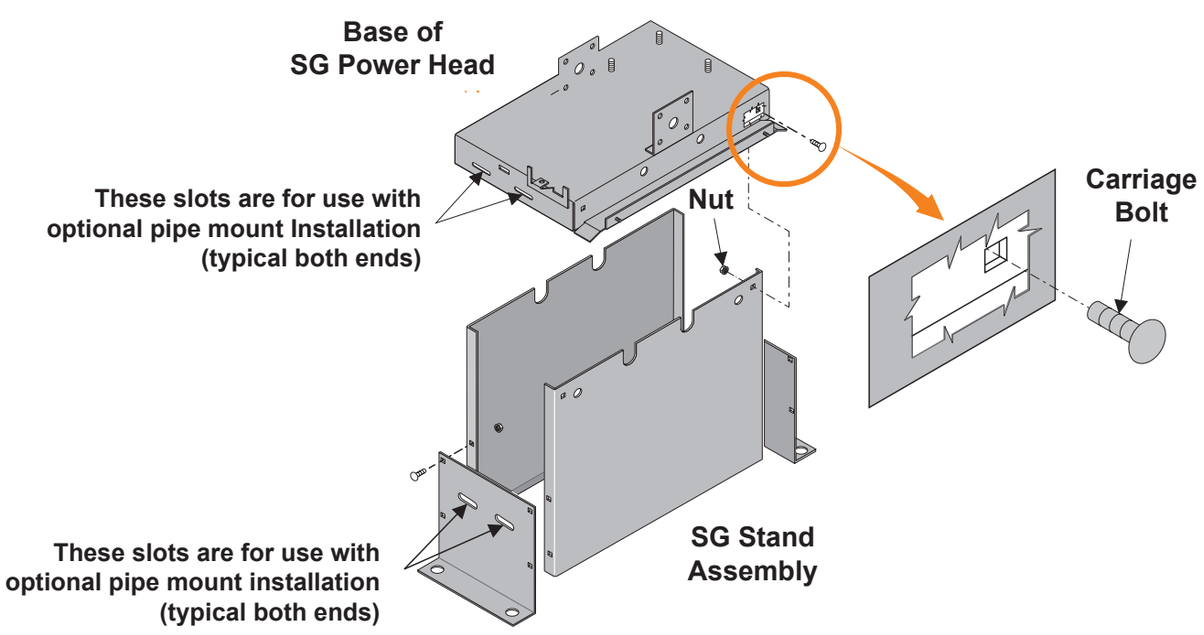


FIGURE 3

2. Using 1/2" hardware (not supplied), bolt assemble unit to the pad, being sure to align operator parallel to the fence.

NOTE: Sprockets must face the fence.

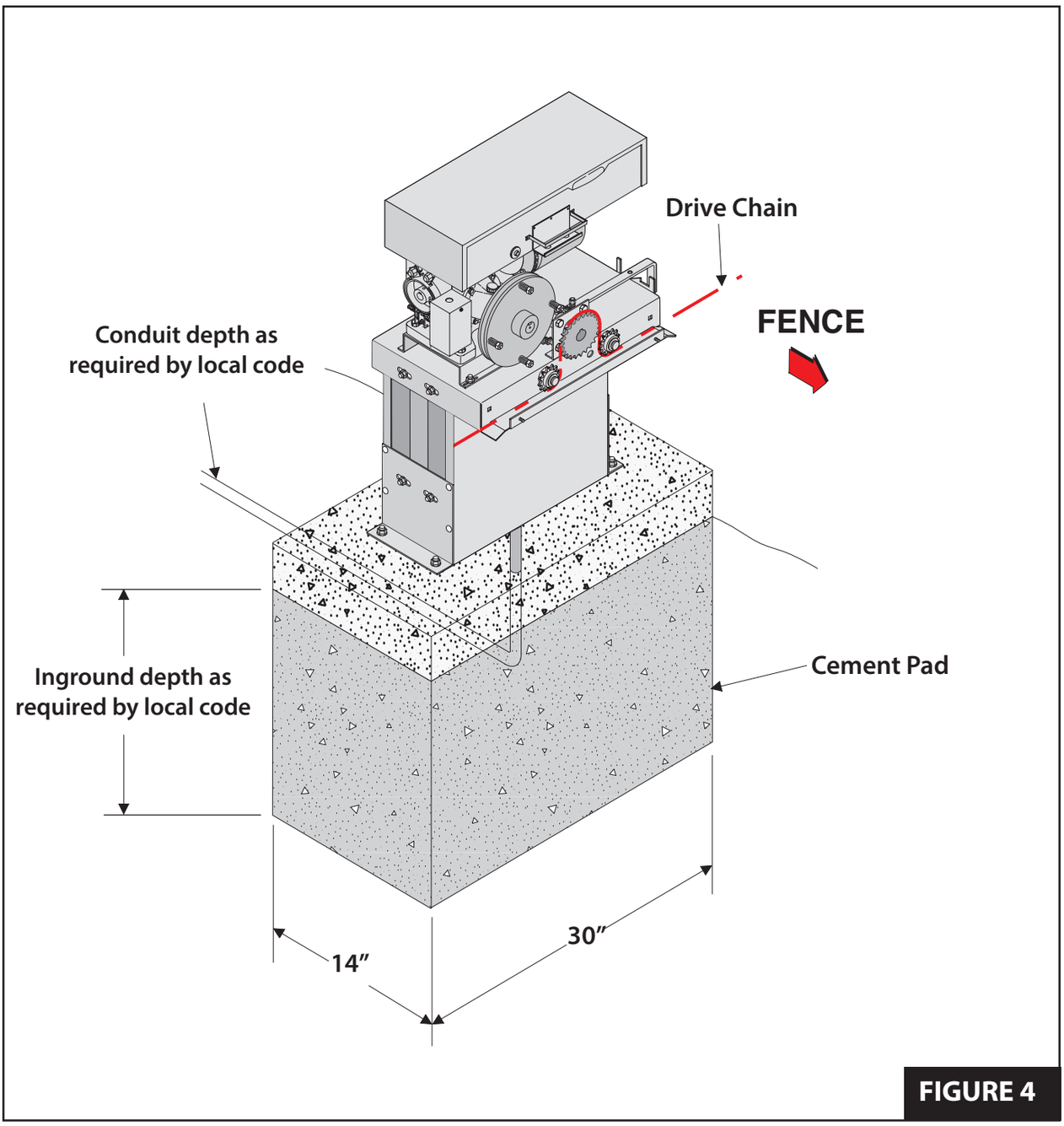


FIGURE 4

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 #50 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.

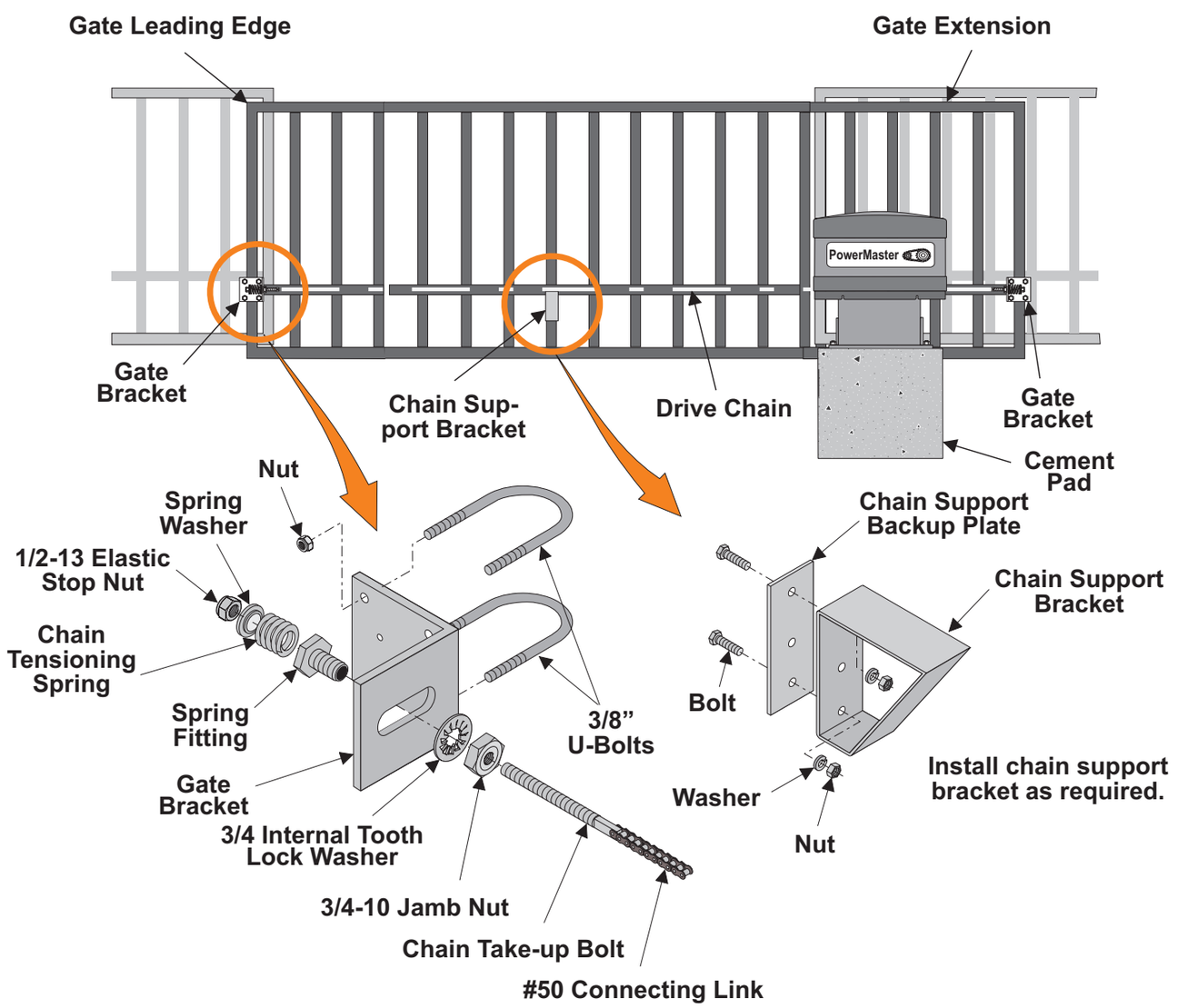
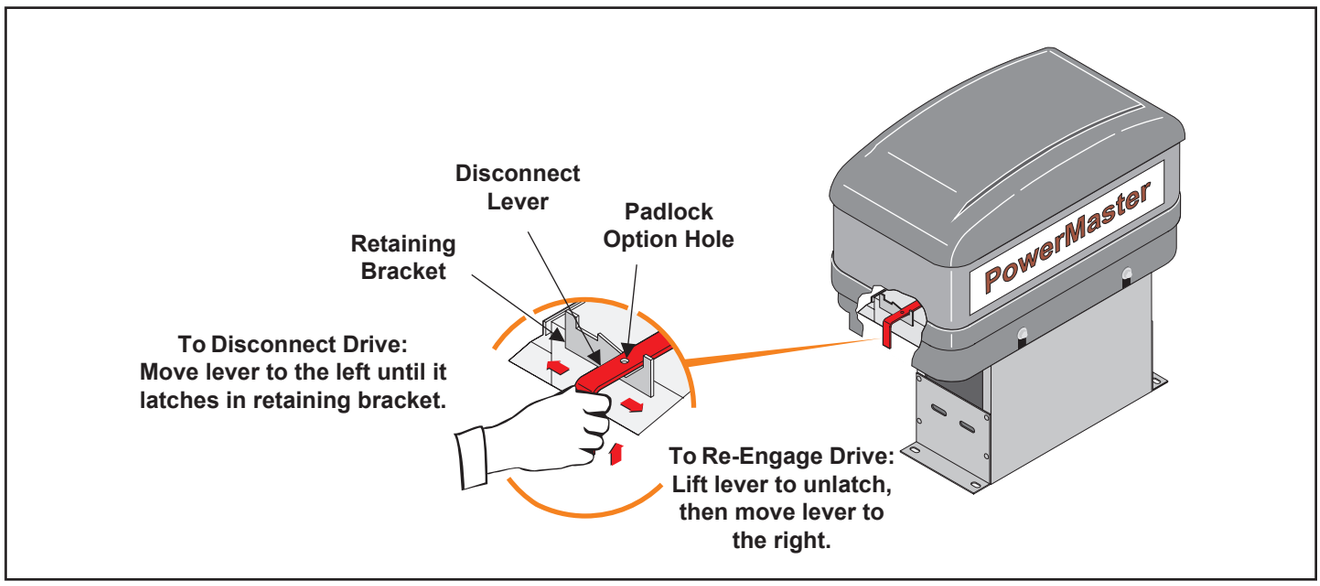


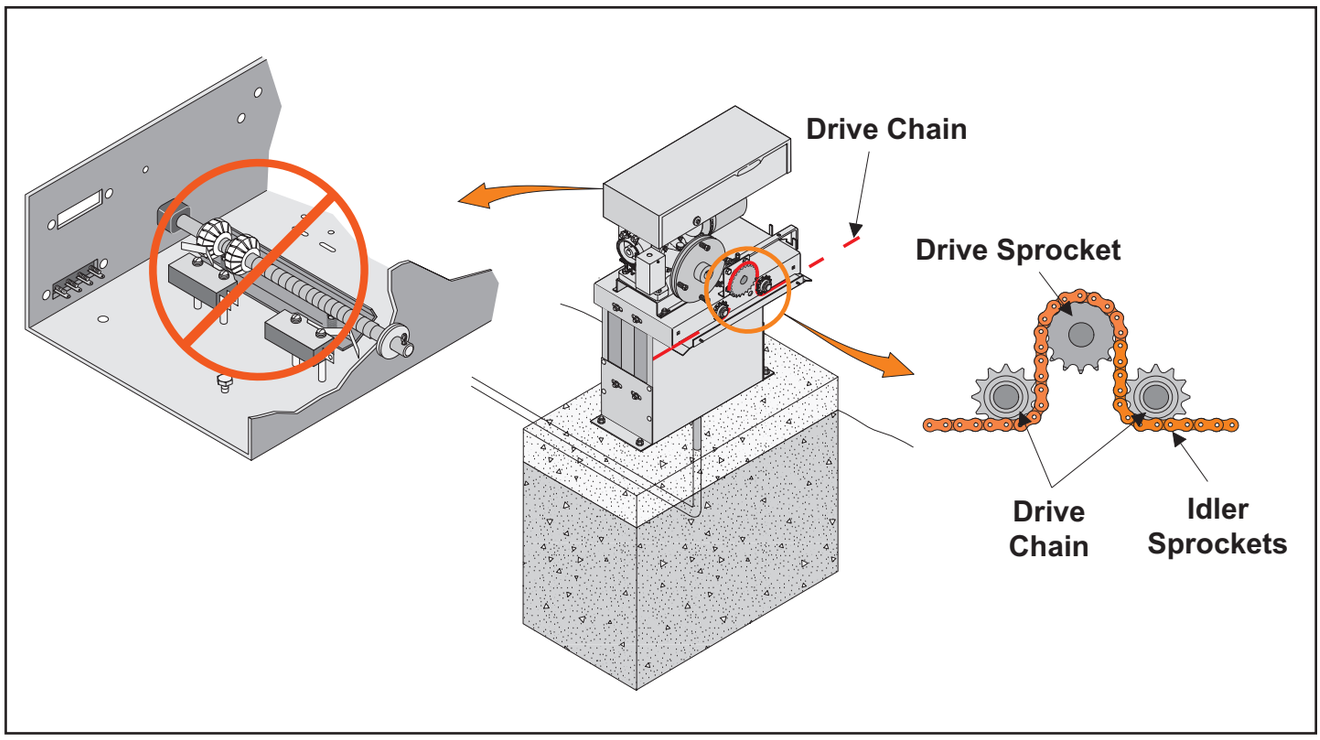
FIGURE 5

5. Disengage operator by moving the red disconnect lever (Located on the operator base at the opposite end from the motor) to the disconnect position, and latch in place.



6. Thread free end of chain under first idler sprocket, up and over drive sprocket, then under the second idler sprocket.

   NOTE: When pulling chain through operator sockets, the limit nuts in the electric box can be driven passed their normal position. Reset the limit nuts as necessary.



7. Pull the chain through to the opposite end of the gate. 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.

8. Adjust the gate bracket height at both ends of the gate to ensure the drive chain aligns with the operator idler sprockets.

9. Tighten the gate brackets securely and lock in position with the setscrews provided.

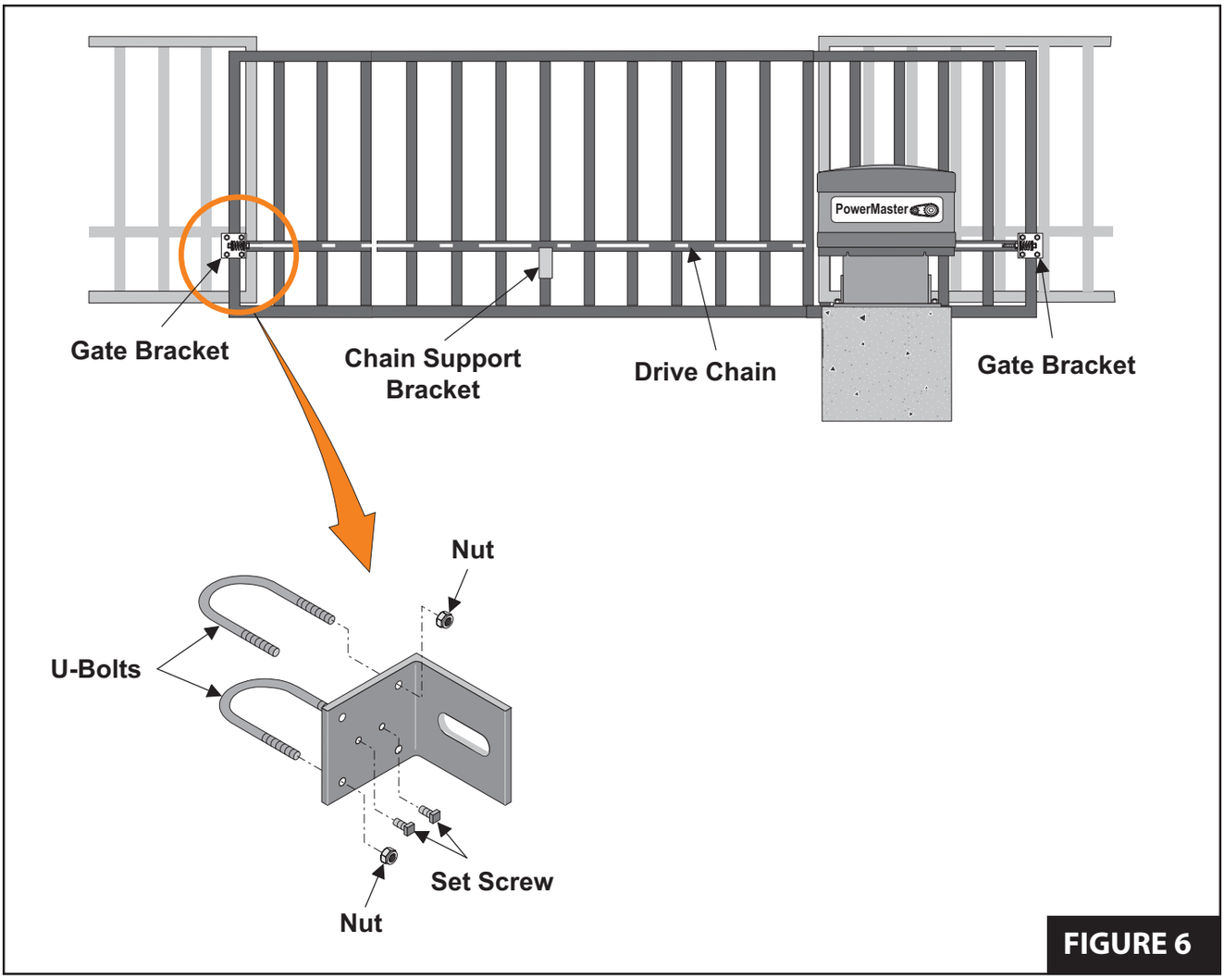
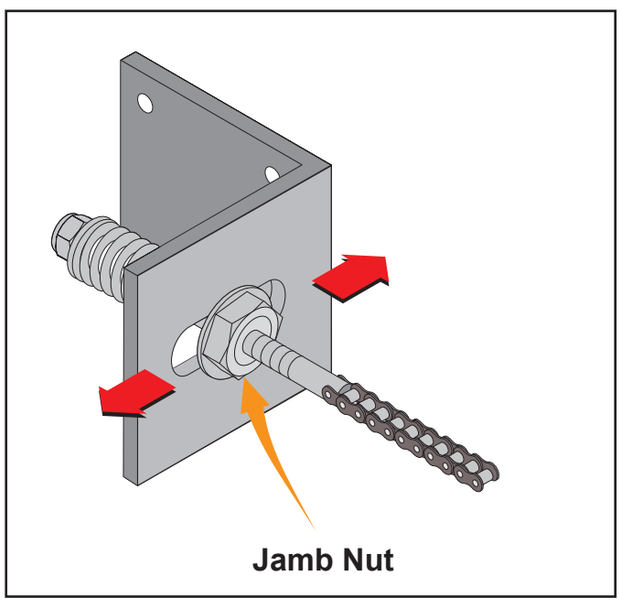
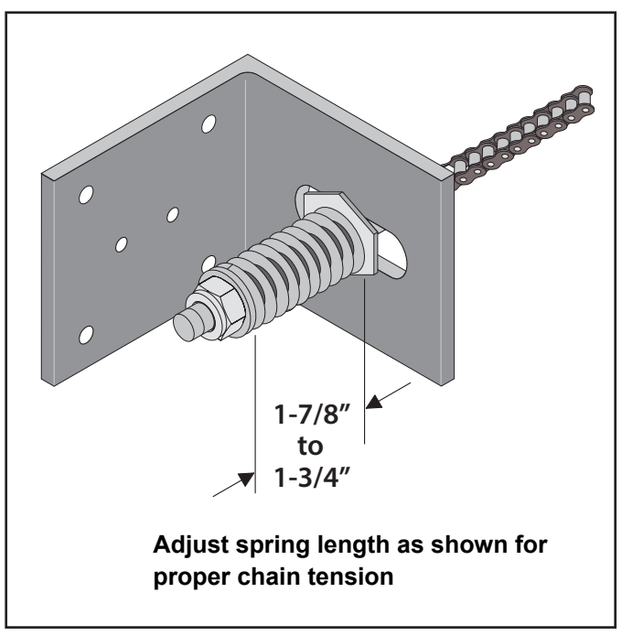


FIGURE 6

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



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



ELECTRICAL SET-UP AND CONNECTIONS

CONNECTION OF INCOMING POWER

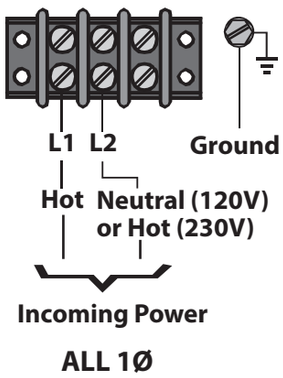
WARNING	DO NOT APPLY POWER UNTIL TOLD TO DO SO! RISK OF ELECTRICAL SHOCK OR INJURY MAY RESULT!

NOTE: Before connecting the operator to an incoming power supply, use a voltmeter to determine that the electrical service is the same as that on the operator label. If the operator is connected to an incorrect power supply, damage will result, which is NOT covered by warranty.

▲ 1. Be sure both the power switches at the source and at the operator are OFF.

▲ 2. In the diagram below, find the supply power that matches your installation and connect as shown.

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.



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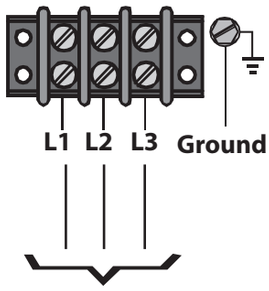


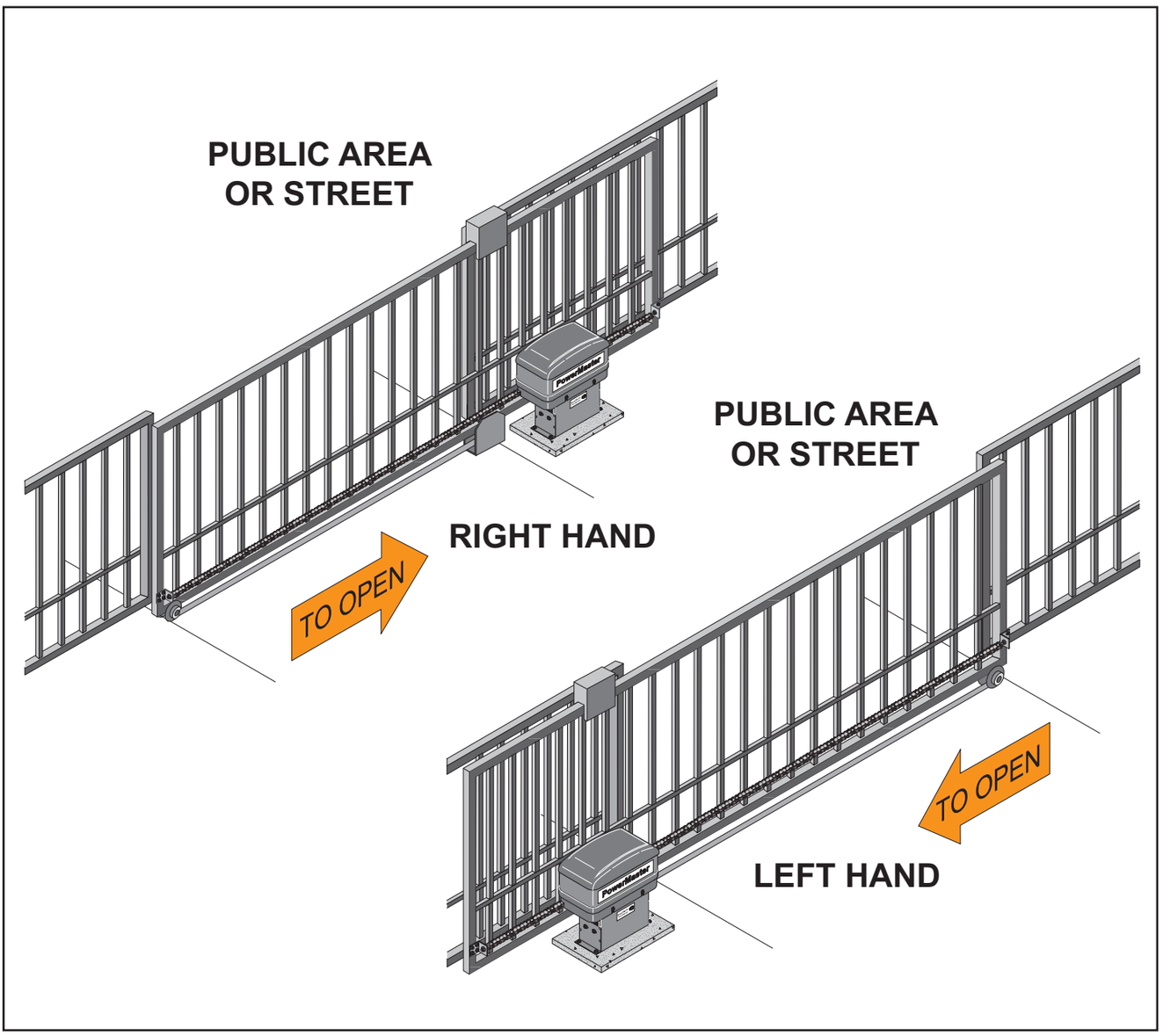
ALL 3Ø

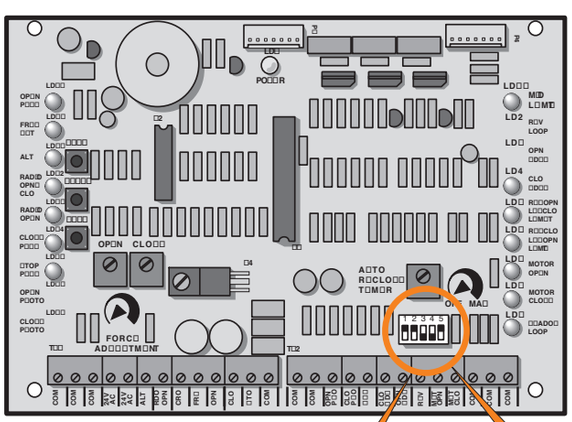
LOW VOLTAGE WIRE GAUGE/ DISTANCE CHART	
24 AWG:	Up to 150’
20 AWG:	150’ - 200’
18 AWG:	250’ - 1,500’
Control wiring should be run as twisted pairs. DO NOT run control wires in the same conduit as power wires, telephone wires, or loop detector leads.	

Line Voltage	HP	WIRE GAUGE				
		14 AWG	12 AWG	10 AWG	8 AWG	6 AWG
1 PH 115/ 208-230	1/2	150/350	250/400	400/500	500/700	650/1000
	3/4	———	150/250	250/400	400/600	500/850
	1	———	———	150/300	250/450	400/700
3 PH 208-230/ 440-480	1/2	450/2000	750/3000	1200/4300	———	———
	3/4	350/1500	600/2400	900/3700	1100/4500	———
	1	300/1200	450/1900	750/3000	900/4800	———
	1-1/2	200/800	400/1500	500/2000	900/4800	———

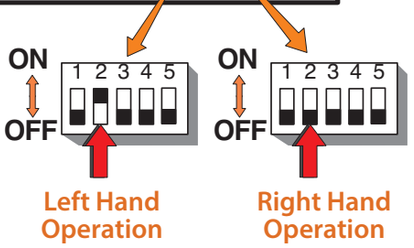
INSTALLATION OPTIONS

LEFT/RIGHT HAND CONVERSION:
Determine the hand of the operator required for this installation by checking the direction the gate moves to open when viewed from inside the fence. If it slides *right* to open is a right hand installation. If it slides *left* to open, it is a left hand installation.





Place Dipswitch #2 in the ON position for Left Hand Operation and in the OFF position for Right Hand Operation.

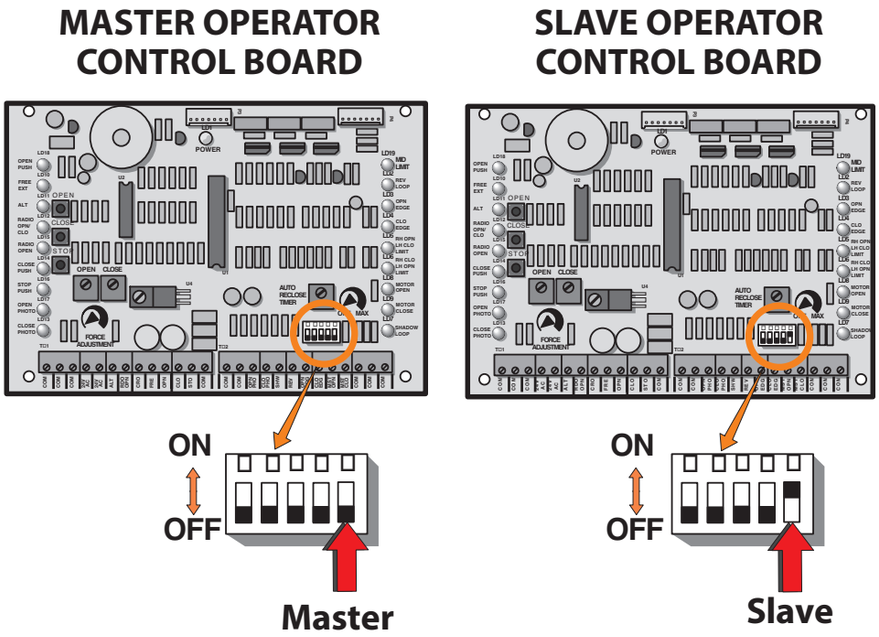


NOTE: This unit is factory setup for **RIGHT HAND** operation. To convert operator to left hand operation, move Dipswitch #2 to ***ON*** position.

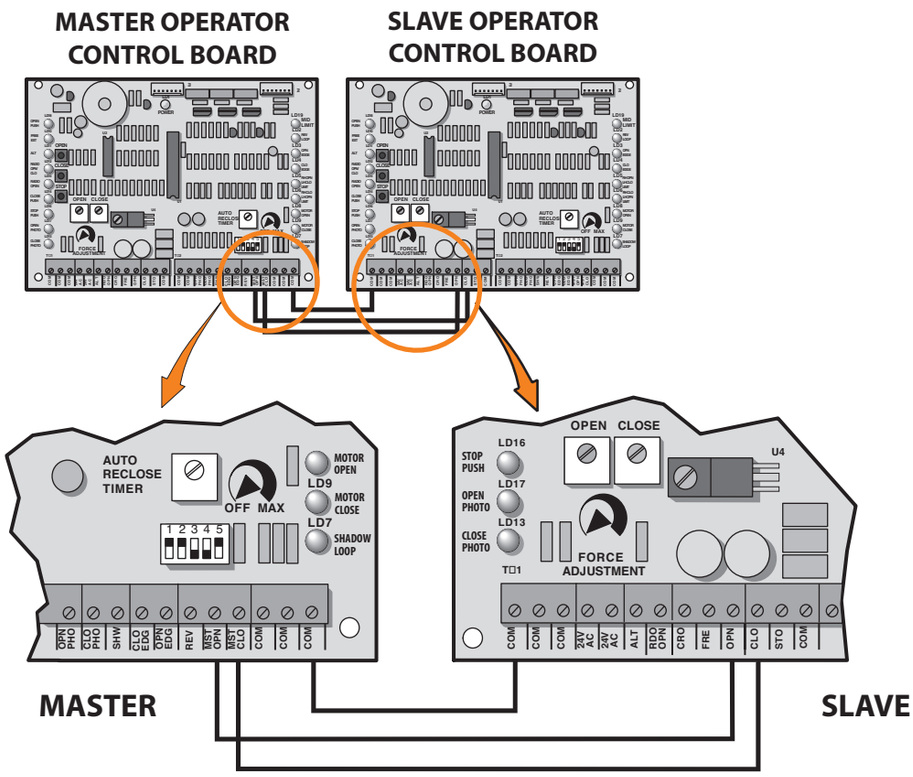
MASTER-SLAVE INSTALLATION

NOTE: A single unit is considered a Master. In a Master/Slave installation, one unit must be converted to LEFT HAND operation.

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.



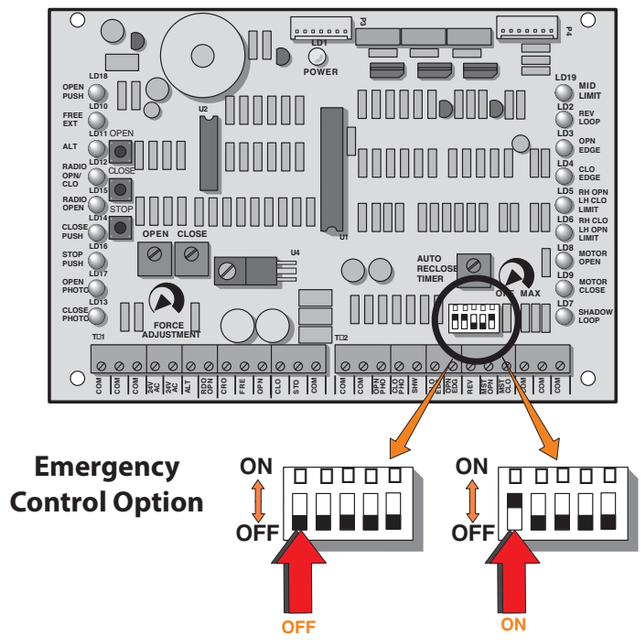
3. Connect a wire from the **"MST OPN"** terminal on the **Master** operator's control board to the **"OPN"** terminal on the **Slave** operators control board.
4. Connect a second wire from the **"MST CLO"** terminal on the **Master** operator's control board to the **"CLO"** terminal on the **Slave**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



EMERGENCY CONTROL STATION OPTION

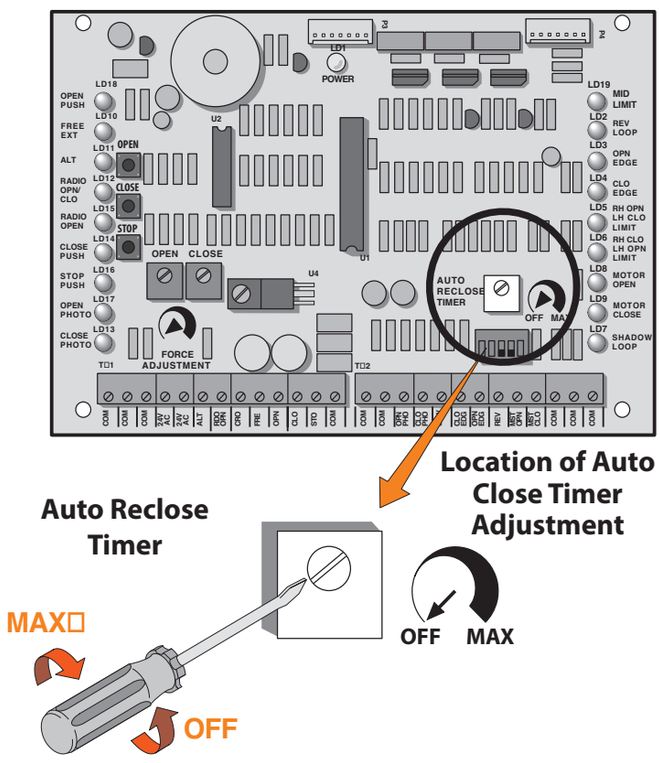
Provision has been made to change the control station operational mode to one that would only be activated when the entrapment sensing system is in stop mode; with the warning horn activated. This would give a person access to control the gate in an emergency situation, but it would be inoperative under 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.



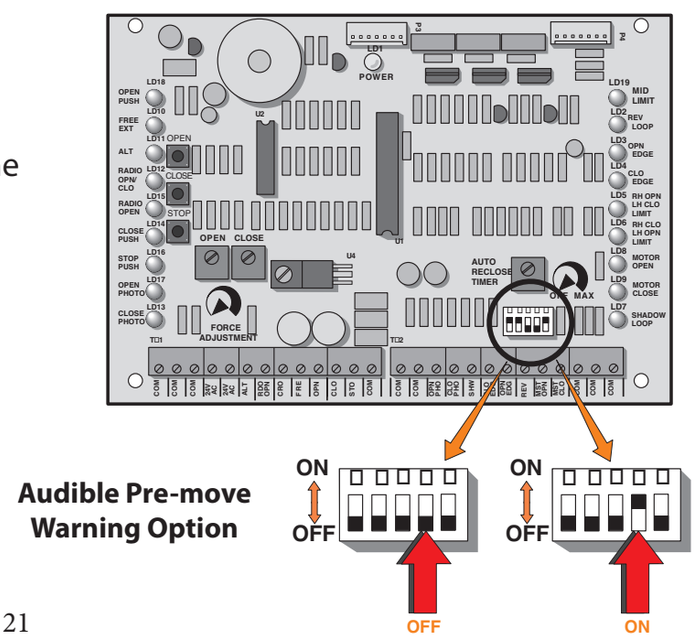
TIMER TO CLOSE OPTION

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.



AUDIBLE PRE-MOVE WARNING

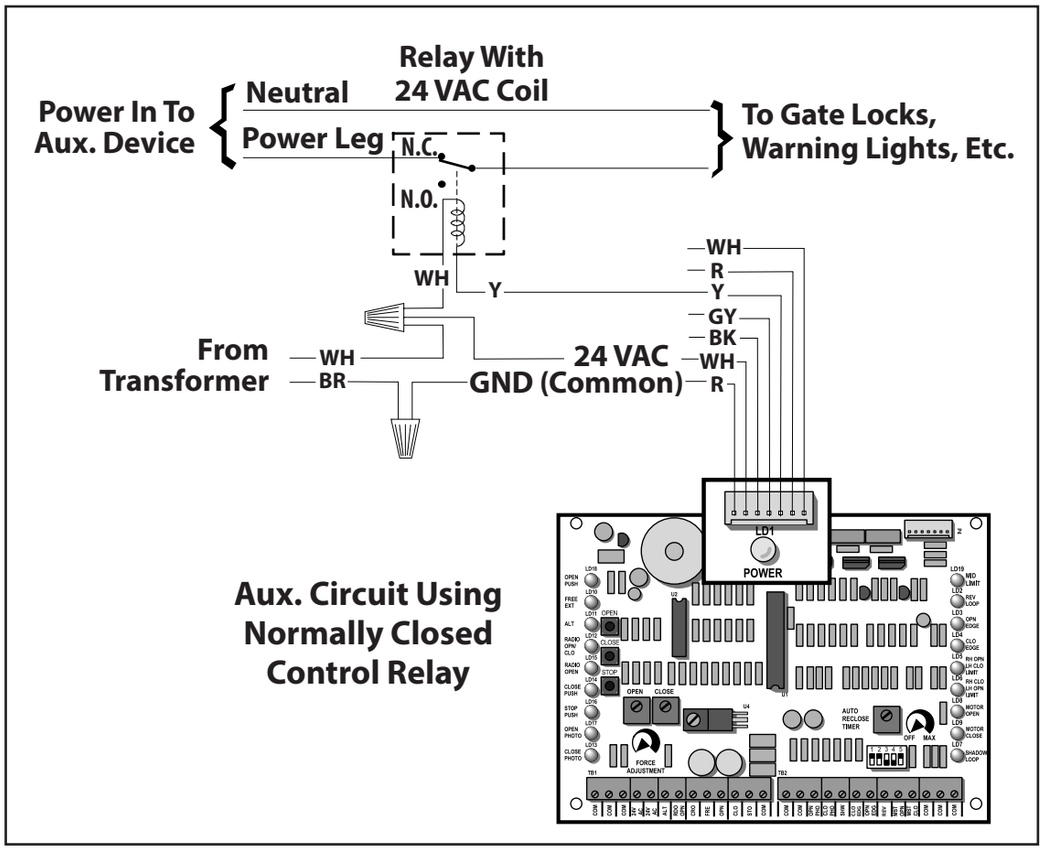
By moving Dipswitch #4 to the ***ON*** position, the option of a 3-second audible warning before gate movement may be selected.



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

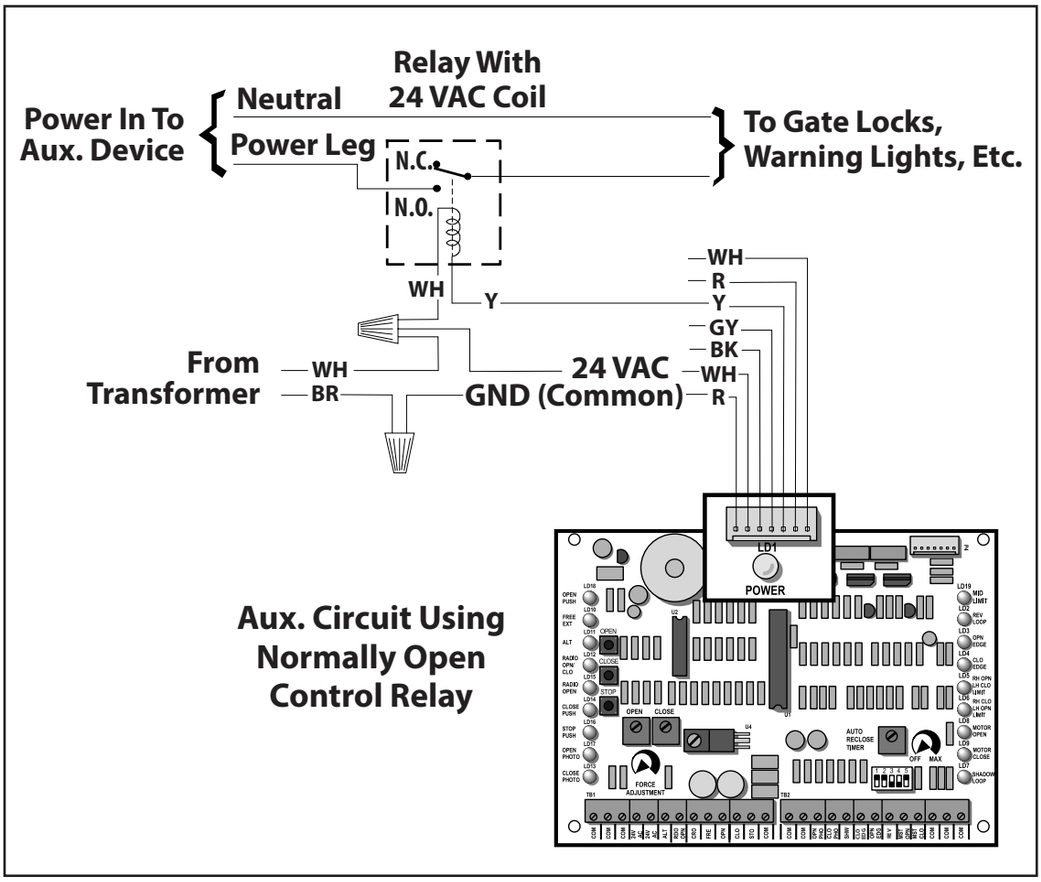
An auxiliary 24VAC power circuit (for use with a 24V control relay) has been provided. This circuit will be activated just prior to gate movement and will continue to be active until the gate stops. It may be used to control a gate lock, activate warning lights and solenoid controlled devices ,or any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

OPTION #1: POWER REMOVED DURING GATE MOVEMENT



The diagram on the left shows 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



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

LIMIT ADJUSTMENT PROCEDURE

WARNING

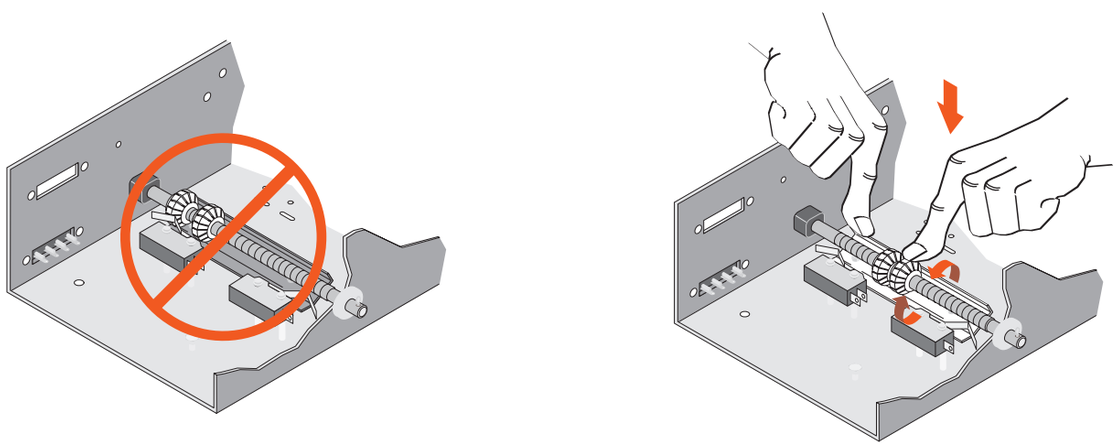
READ ENTIRE PROCEDURE BEFORE STARTING. TURN OFF MAIN POWER BEFORE MAKING ANY ADJUSTMENTS!

WARNING

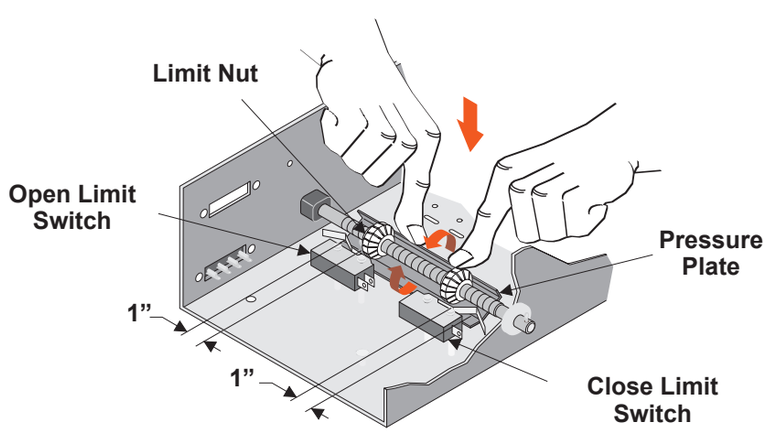
STAY CLEAR OF ALL MOVING PARTS AND ELECTRICAL COMPONENTS OF THE OPERATOR WHILE TESTING!

1. After the gate is mechanically installed, disengage operator drive with the manual disconnect lever. Move the gate to a midway position.

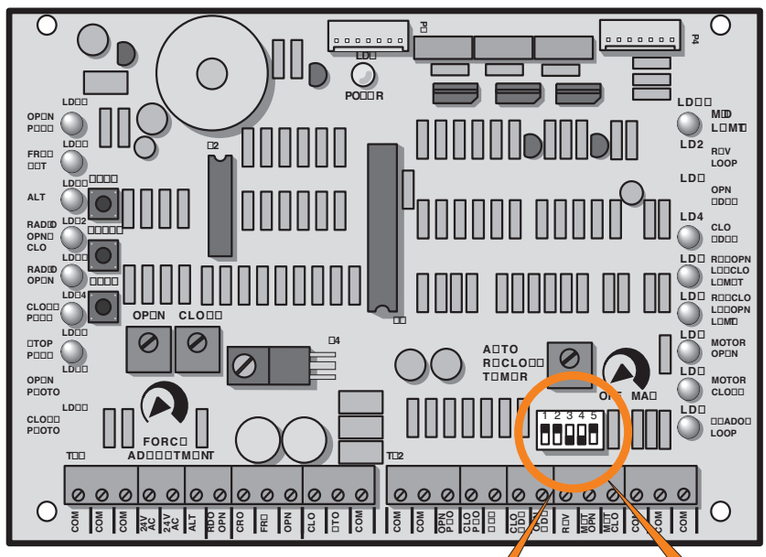
   NOTE: When moving the gate with the operator disengaged, the limit nuts on the limit assembly inside the operator can be driven passed their normal position. Reset the limit nuts as necessary, by depressing the pressure plate and rotating the limit nuts until they are both positioned near the center of the limit shaft.



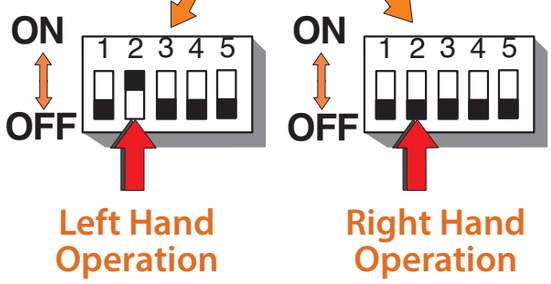
2. With the gate at mid travel, depress the pressure plate and set the grooved limit nuts approximately 1 inch from the limit switches on each side.



3. Check that Dipswitch #2 is in the correct position for left or right hand operation as determined by the location of the gate opener, when viewed from inside the fenced area.



Place Dipswitch #2 in the ON position for Left Hand Operation and in the OFF position for Right Hand Operation.



Left Hand Operation

Right Hand Operation

4. Turn on power, and re-engage operator with manual disconnect lever.

   NOTE: Operator will not run if manual disconnect lever is in the disengaged position.

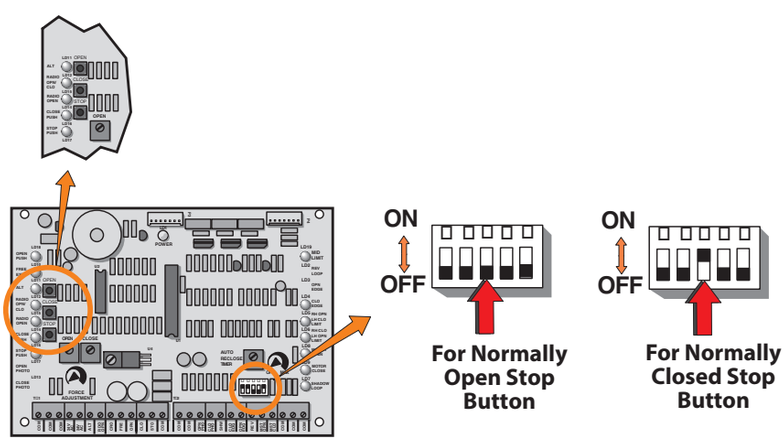
   NOTE: The first time the gate operator is run after the power is turned on, a 3-second warning will sound before the operator starts.

5. Open the gate electrically using the 3-button control station mounted on the control board.

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

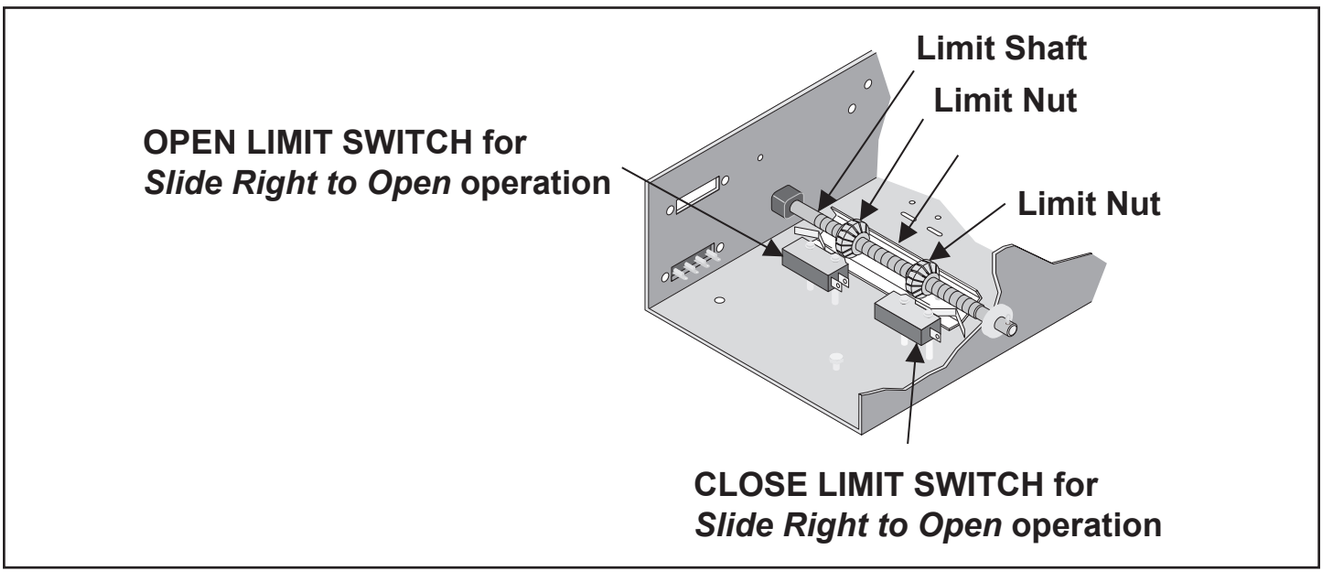
For Normally Closed Stop Button

WARNING

UNDER NO CIRCUMSTANCES SHOULD THE CONTROL STATION WIRING BE ALTERED IF THE ROTATION IS INCORRECT. TO DO SO WILL CAUSE SOME CONTROL FUNCTIONS TO BE INOPERATIVE, AND MAY RESULT IN PERSONAL INJURY OR DAMAGE TO THE GATE AND/OR OPERATOR.

6. If the gate travels in the correct direction and stops on the open limit switch, proceed to Step #11.

   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 at 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 and operator is 1Ø, consult the factory.

10. If Dipswitch #2 is in the correct position and the operator is 3Ø, switch two incoming leads and repeat Step #5.

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

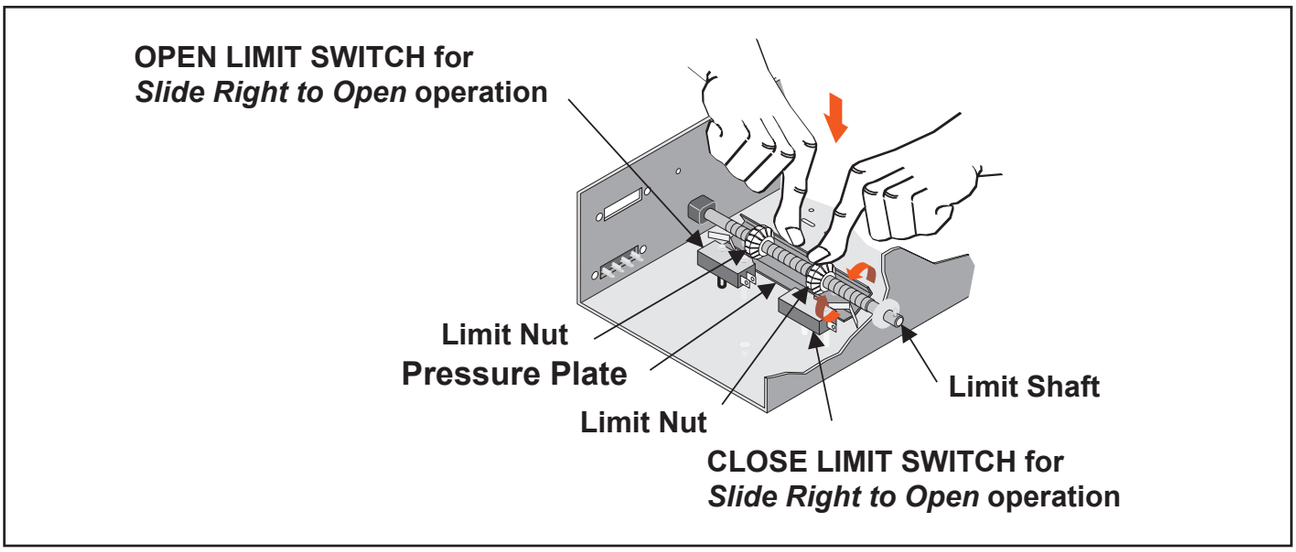
12. If there is still a distance before the gate is fully open, turn off power, move the open limit nut away from the open limit switch a few turns and turn on the power.

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

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

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

15. Repeat procedure for the CLOSE limit adjustment.



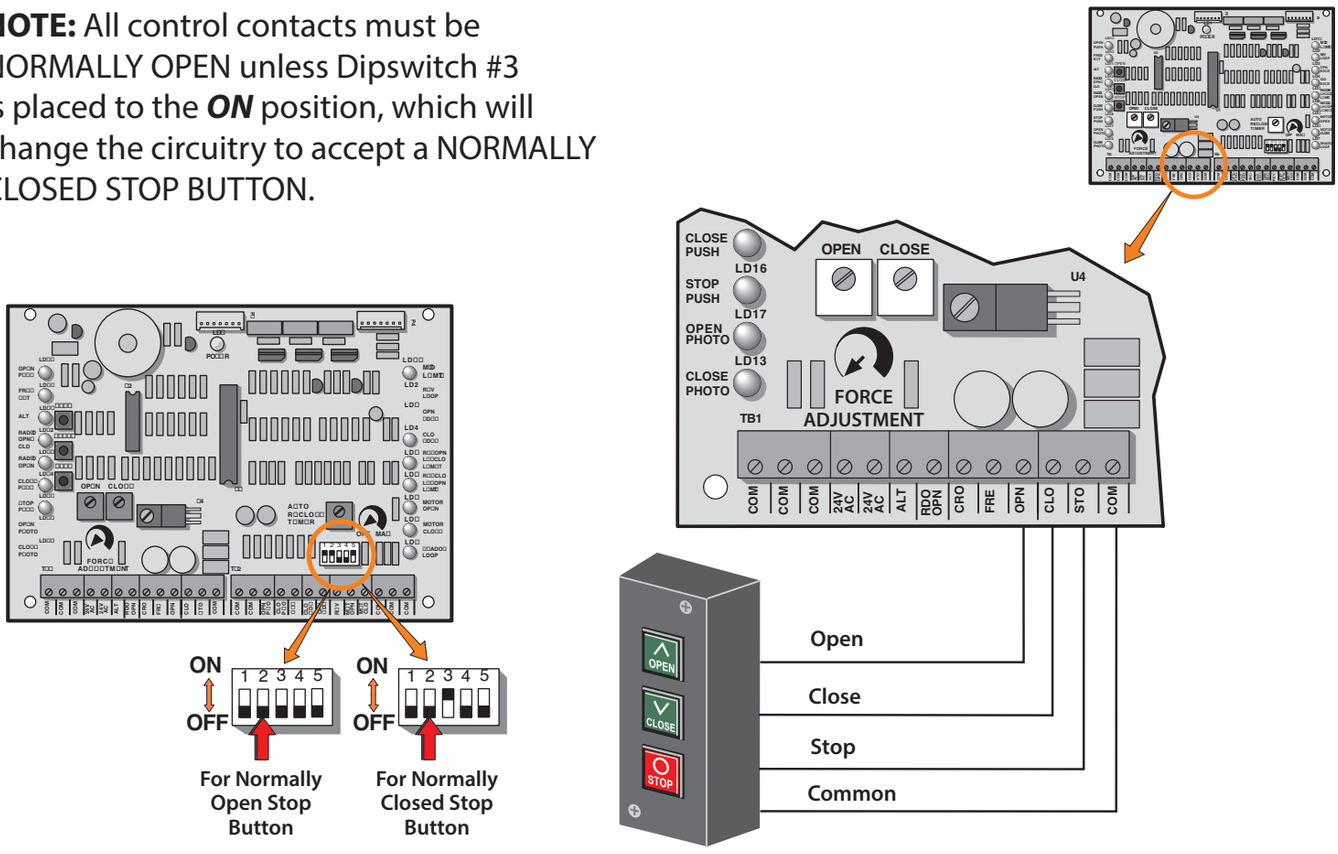
NOTE: Open and Close Limit Switches are Reversed for slide left to Open Operation.

16. 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.



⚠ WARNING: UNDER NO CIRCUMSTANCES SHOULD THE CONTROL STATION WIRING BE ALTERED IF THE ROTATION IS INCORRECT. TO DO SO WILL CAUSE SOME CONTROL FUNCTIONS TO BE INOPERATIVE AND MAY RESULT IN PERSONAL INJURY OR DAMAGE TO THE GATE AND/OR OPERATOR.

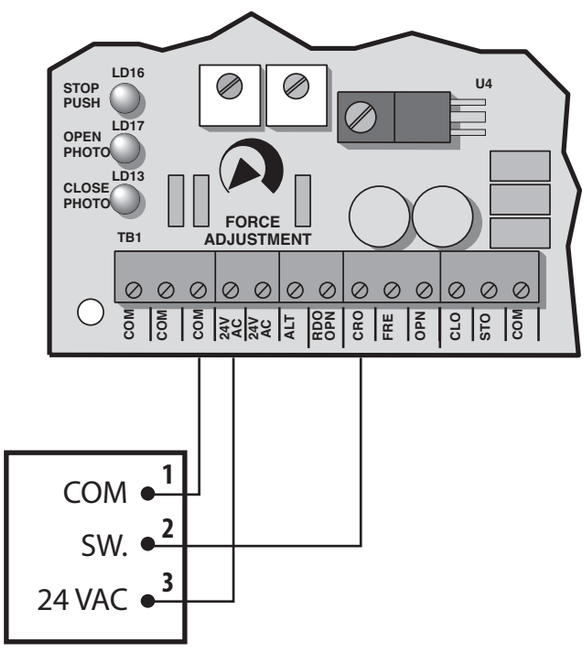
1. Connect a wire from the ***COMMON*** connection of the control station to any **"COM"** terminal on the control board.
2. Connect a second wire from the ***OPEN*** button of the control station to the **"OPN"** terminal on the control board.
3. Connect a third wire from the ***CLOSE*** button of the 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.

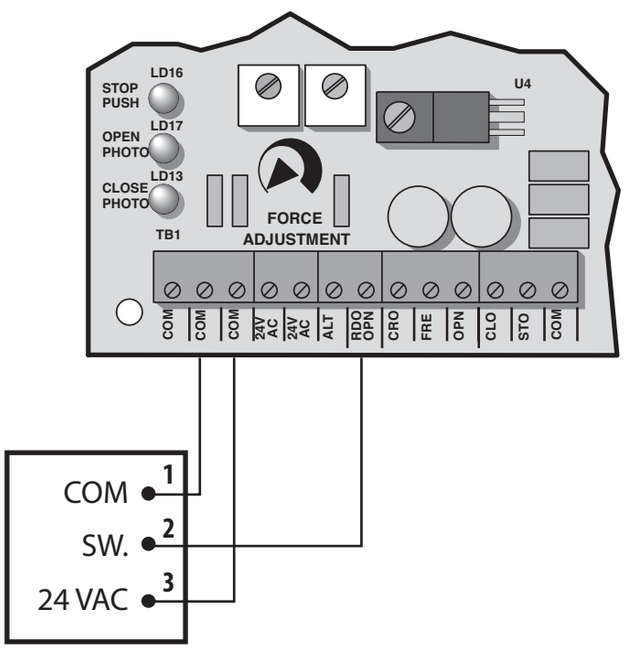
1. Choose one of the options below for connecting a three-wire radio control receiver to the control board terminal strip.

CONNECTION FOR OPEN/CLOSE OPERATOR



Three-wire radio receiver wired for OPEN/CLOSE

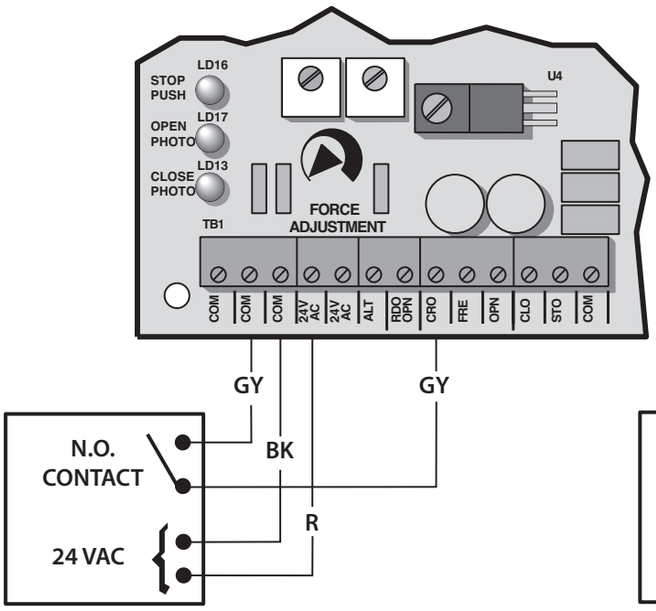
CONNECTION FOR OPEN ONLY OPERATOR



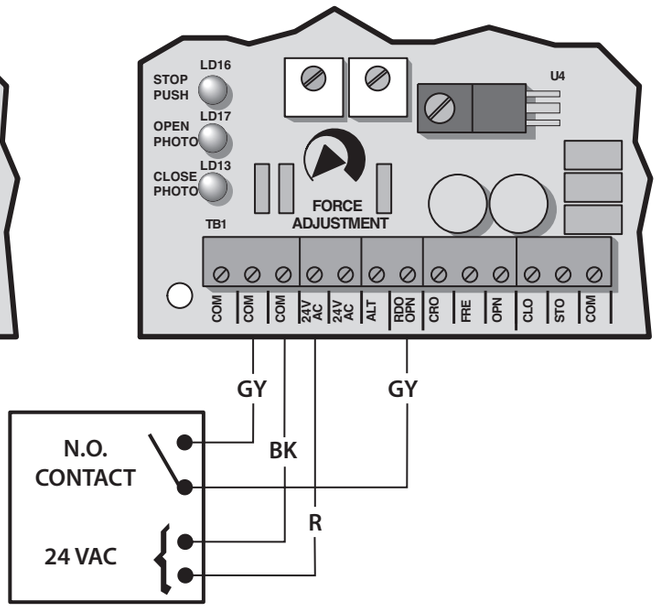
Three-wire radio receiver wired for OPEN only. NOTE: Must be used with "Timer to Close" option.

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.



Four-wire radio receiver wired for OPEN/CLOSE

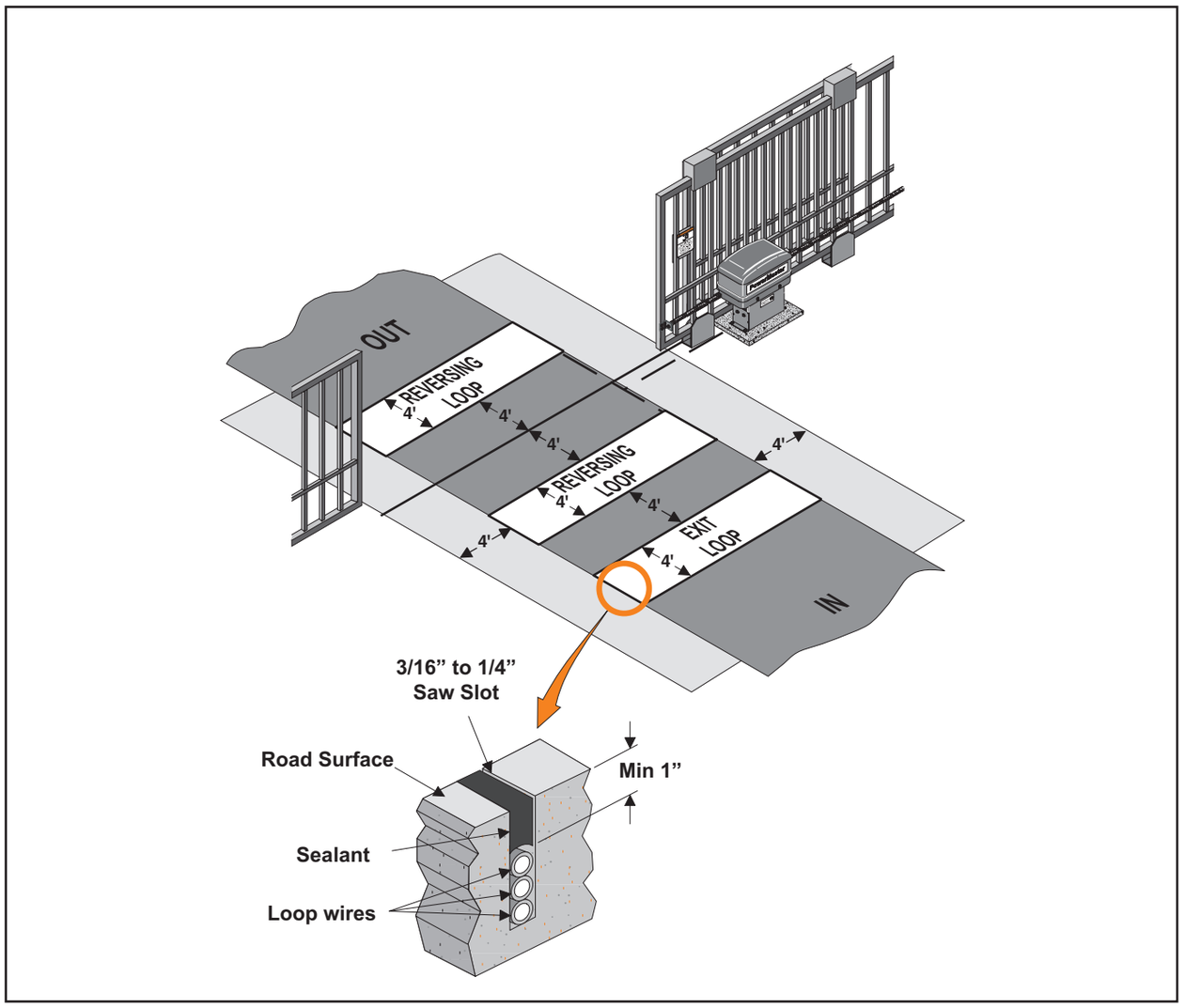


Four-wire radio receiver wired for OPEN only.
<u>NOTE</u>: Must be used with "Timer to Close" option.

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 Loop** protects 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. Lay out the desired loop locations per the diagram. The standard size chart on the following page will give an approximate length of wire required for various loop dimensions and number of turns required.

   NOTE: Length of lead-in wires must be added to loop lengths for total length of wire required.

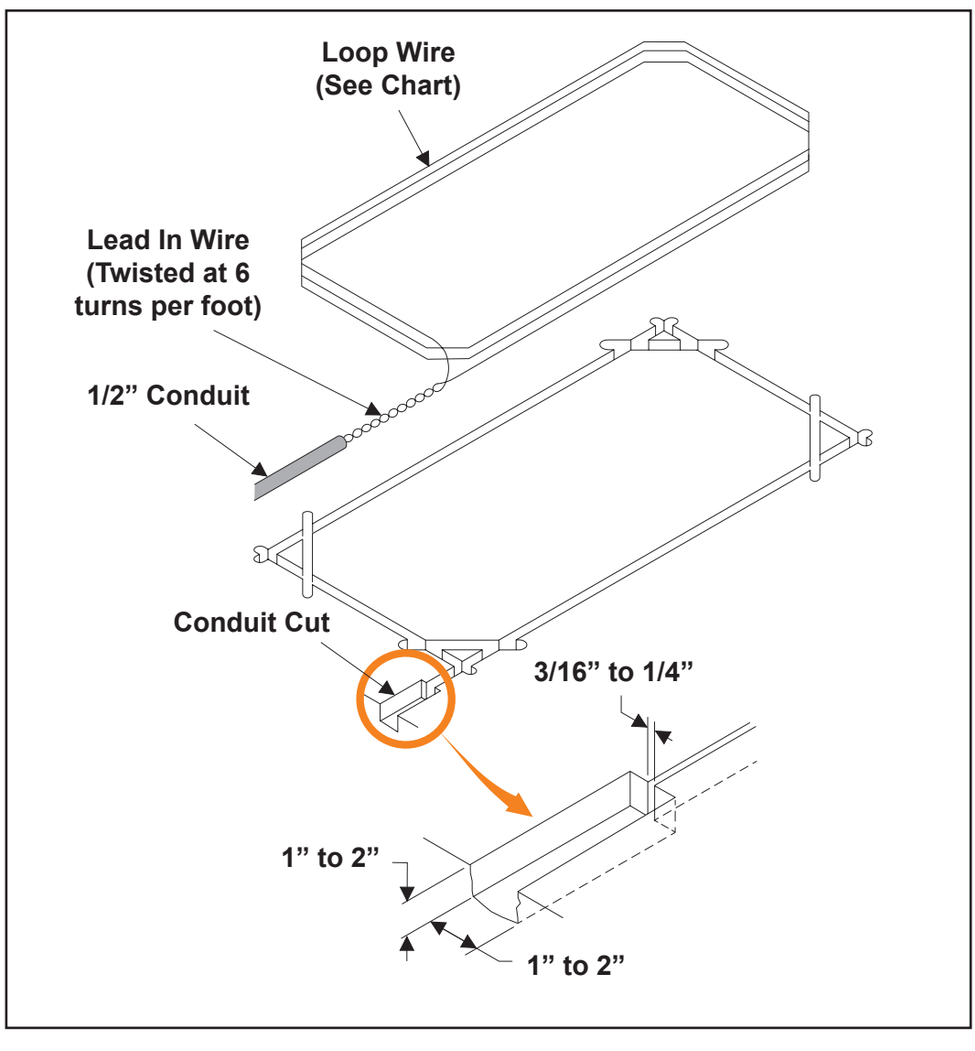
   CAUTION: The loop wires and lead-in wires must be a continuous piece of wire without splices. Only use wire intended for this type of application (Type XHHW insulation 16AWG).

   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. Call 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 at the locations laid out in **Step#1** according to the diagram below



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.

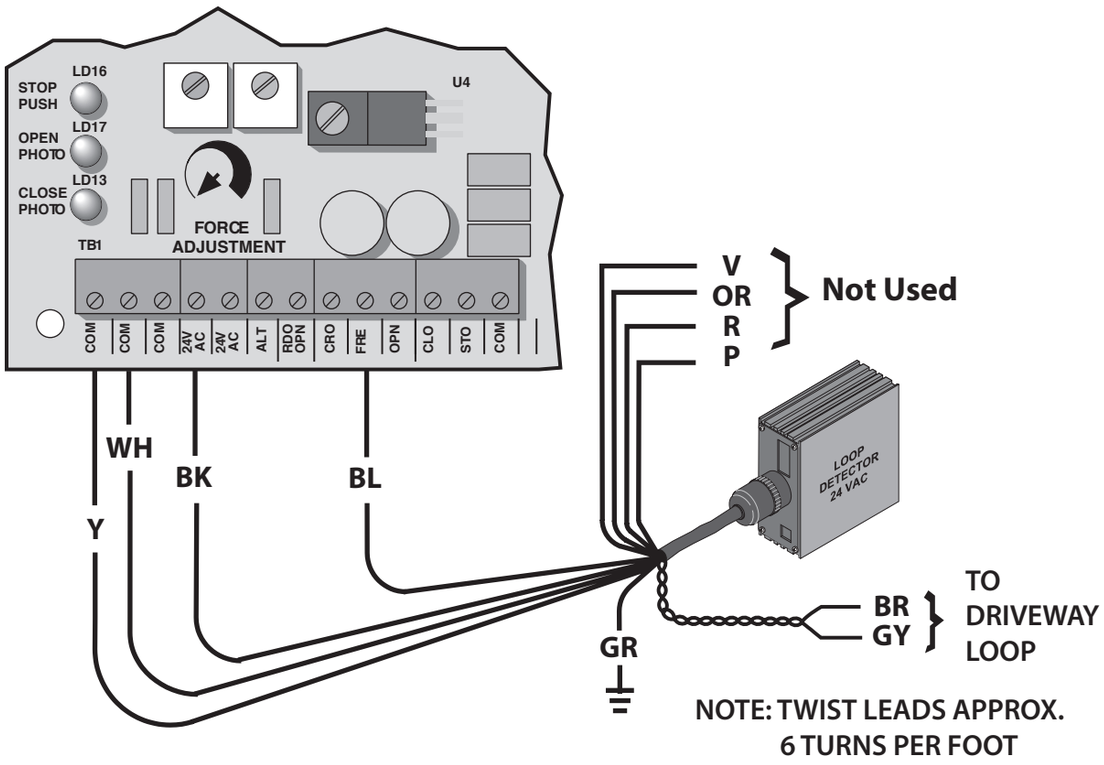
5. Seal the lead-in wire in the conduit to prevent moisture seepage into the conduit.

6. Fill over the loop wires in the groove with a recommended loop sealant. Contact your distributor for available sealants.

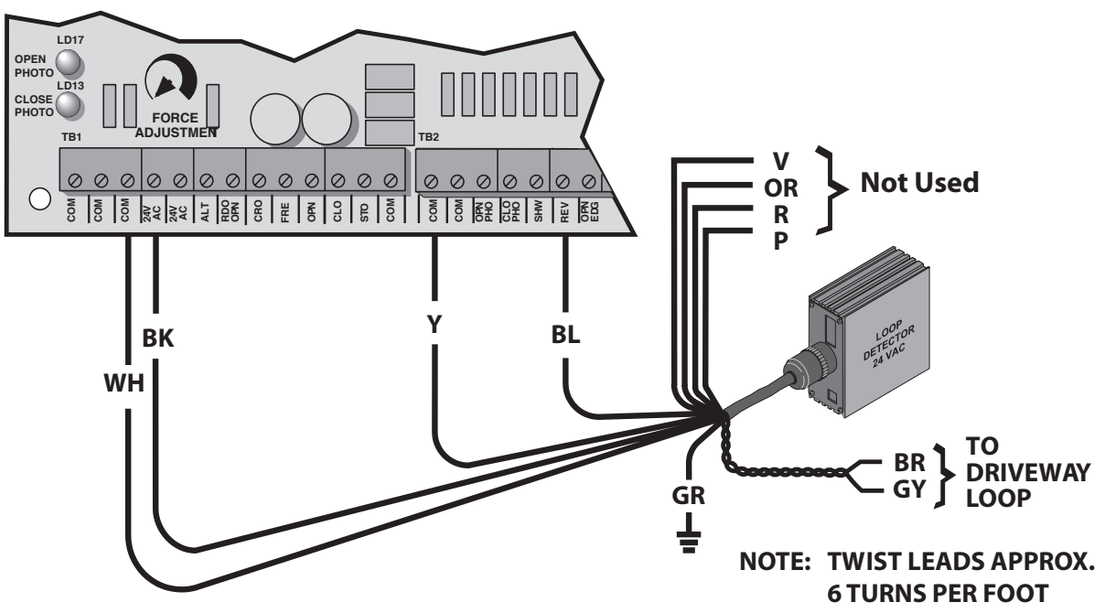
7. Mount the loop detector in the operator and connect the wire loop.

8. Connect loop detector to the operator terminal strips 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

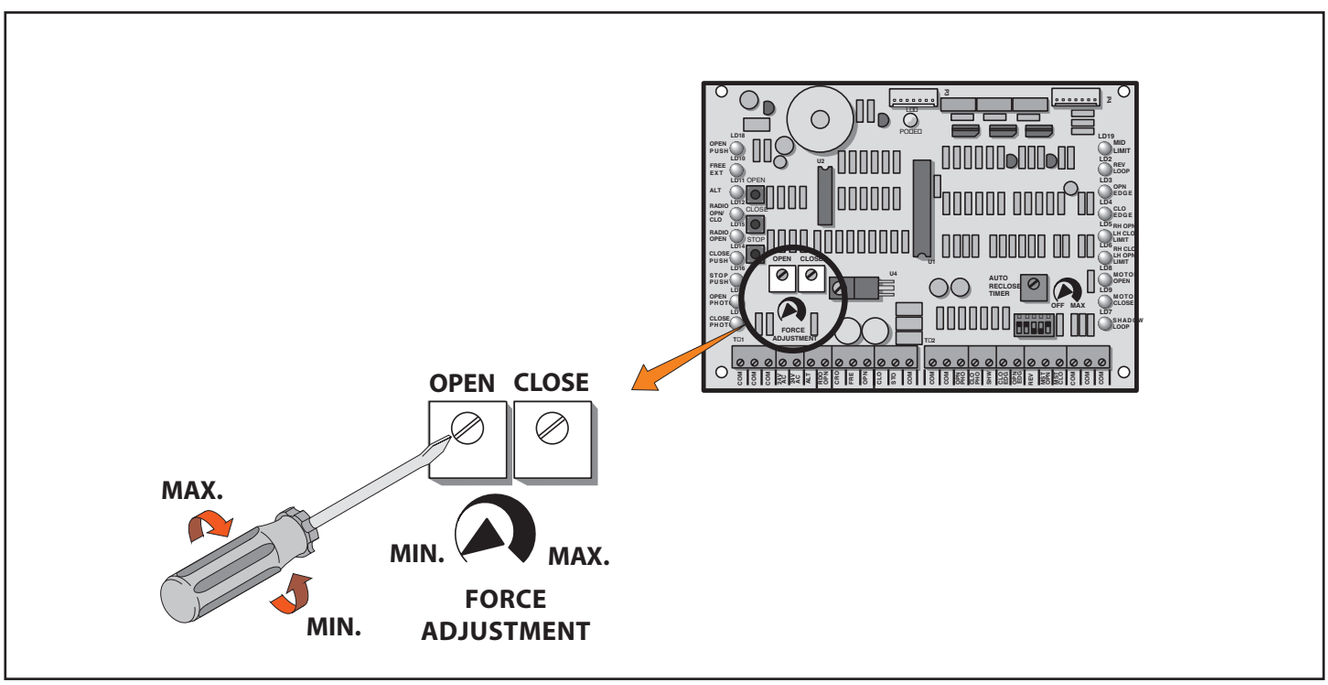
TURN OFF POWER TO OPERATOR WHEN MAKING ANY ADJUSTMENTS!

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.

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..



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 UL 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 (e.g. photo eyes, wireless edges, loop detectors, radio controls).

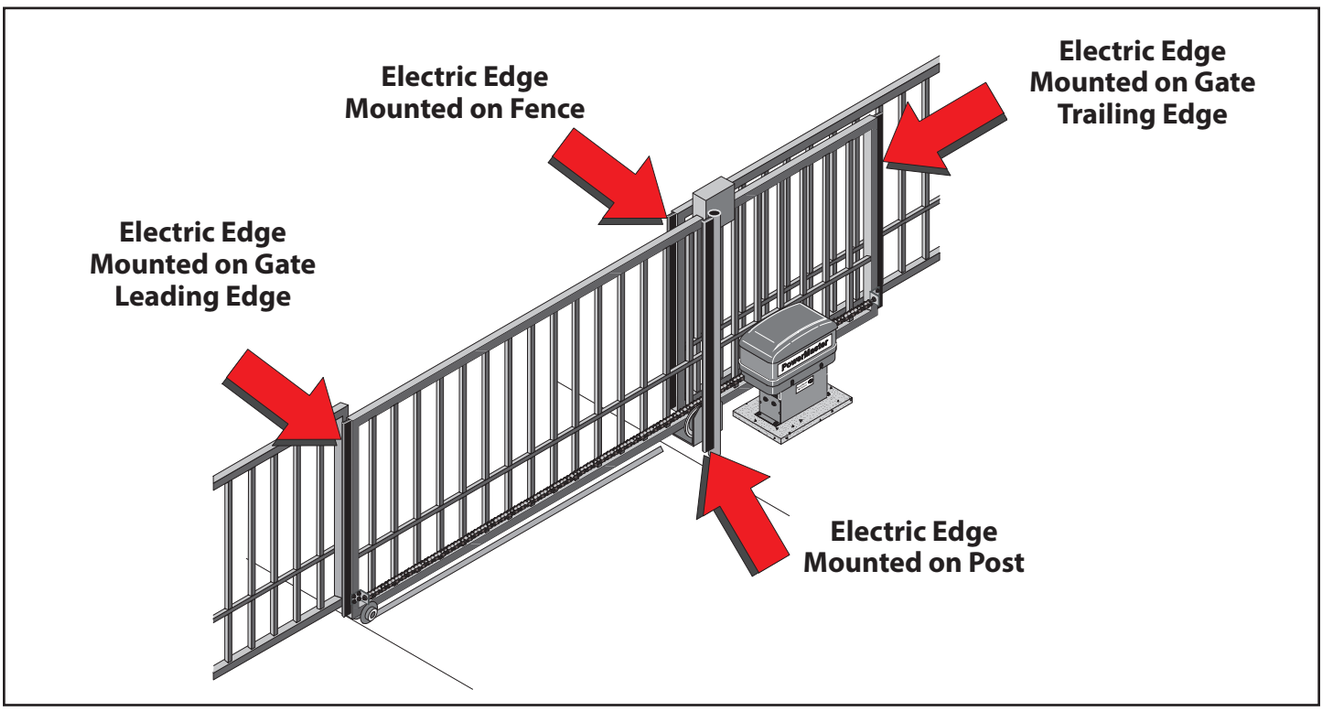
CONTACT SENSOR INSTALLATION

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 **Figure 8**.

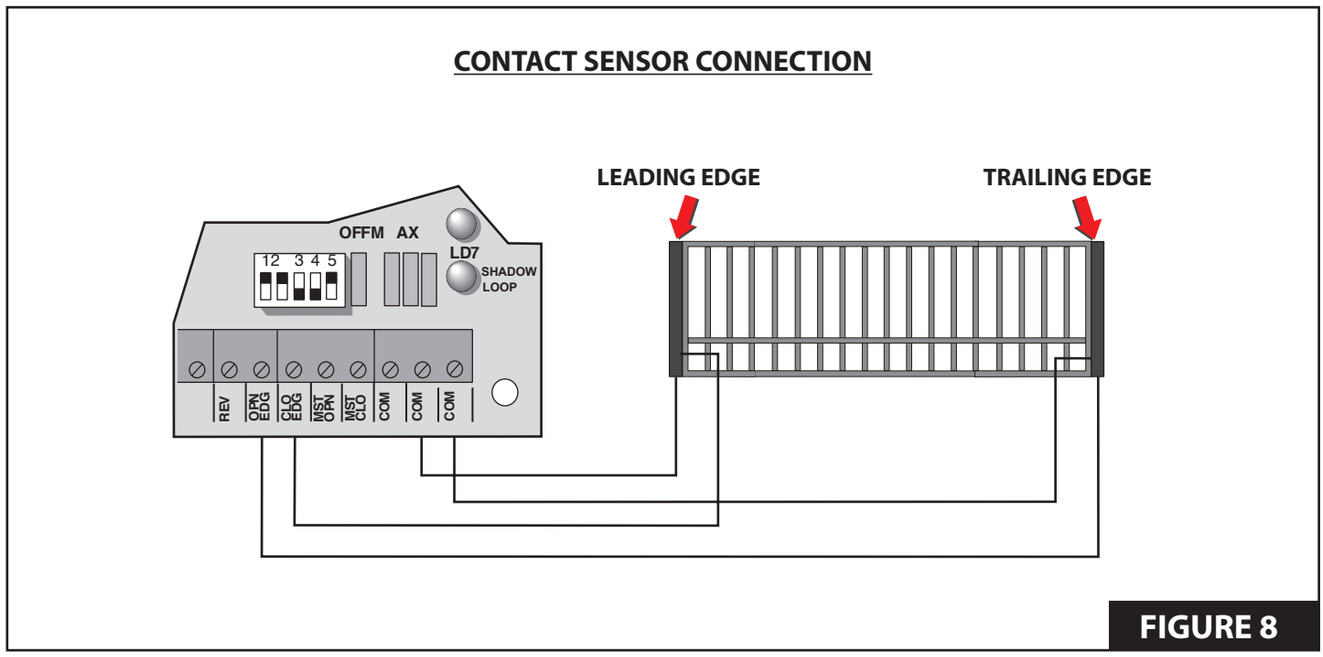


FIGURE 8

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.

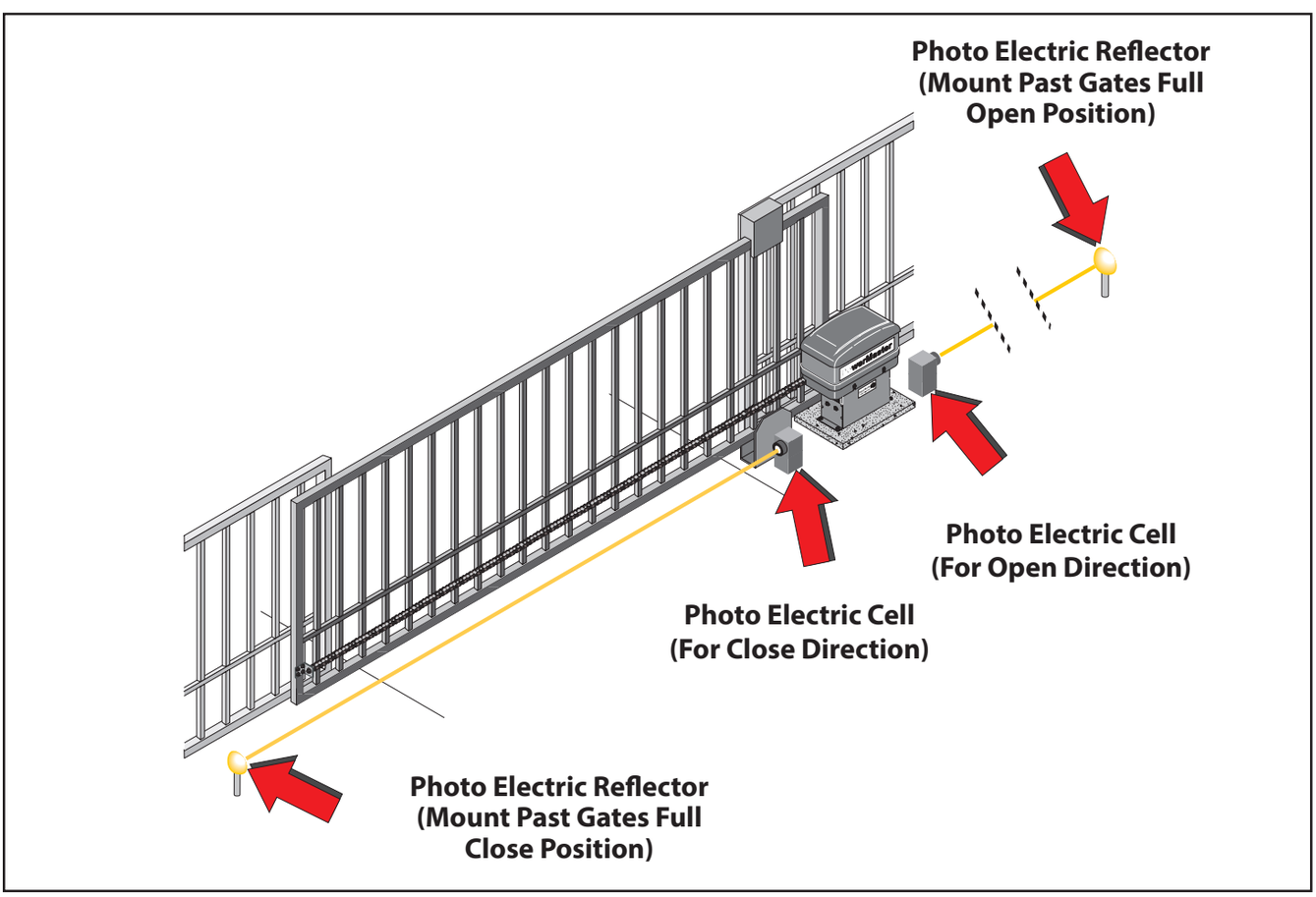
   NOTE: If an edge is activated twice or a second edge is activated before a limit is hit (full open or close) operator will stop and sound a warning horn. To reactivate system turn operator power switch off then on.

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 at least 10 inches above ground (see image on right).

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



1. Connect **NON-CONTACT** sensors to the control board as shown in **Figure 9**.

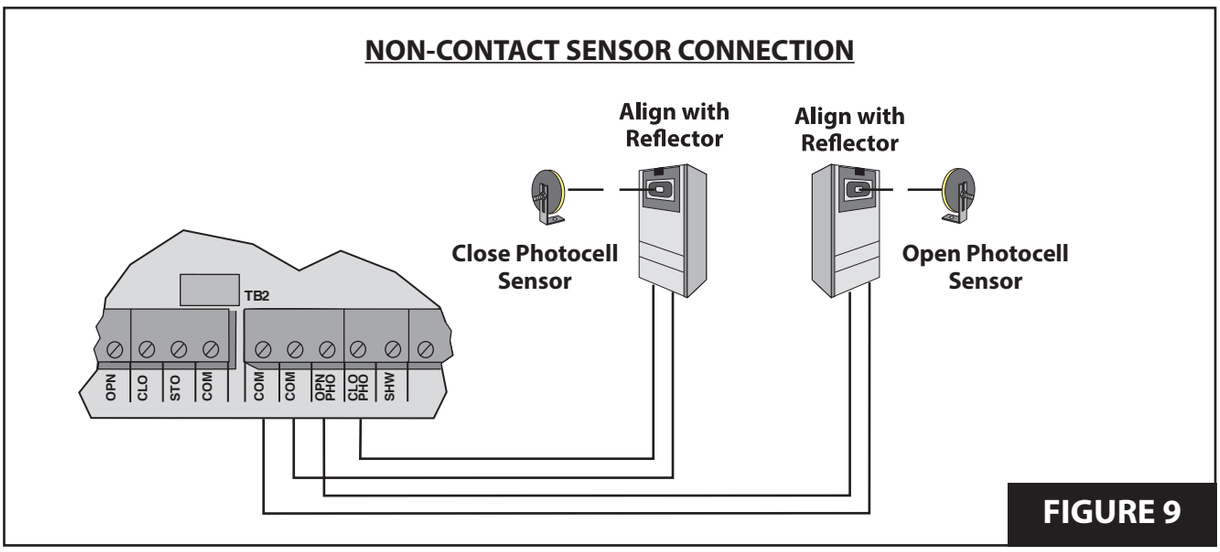


FIGURE 9

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.

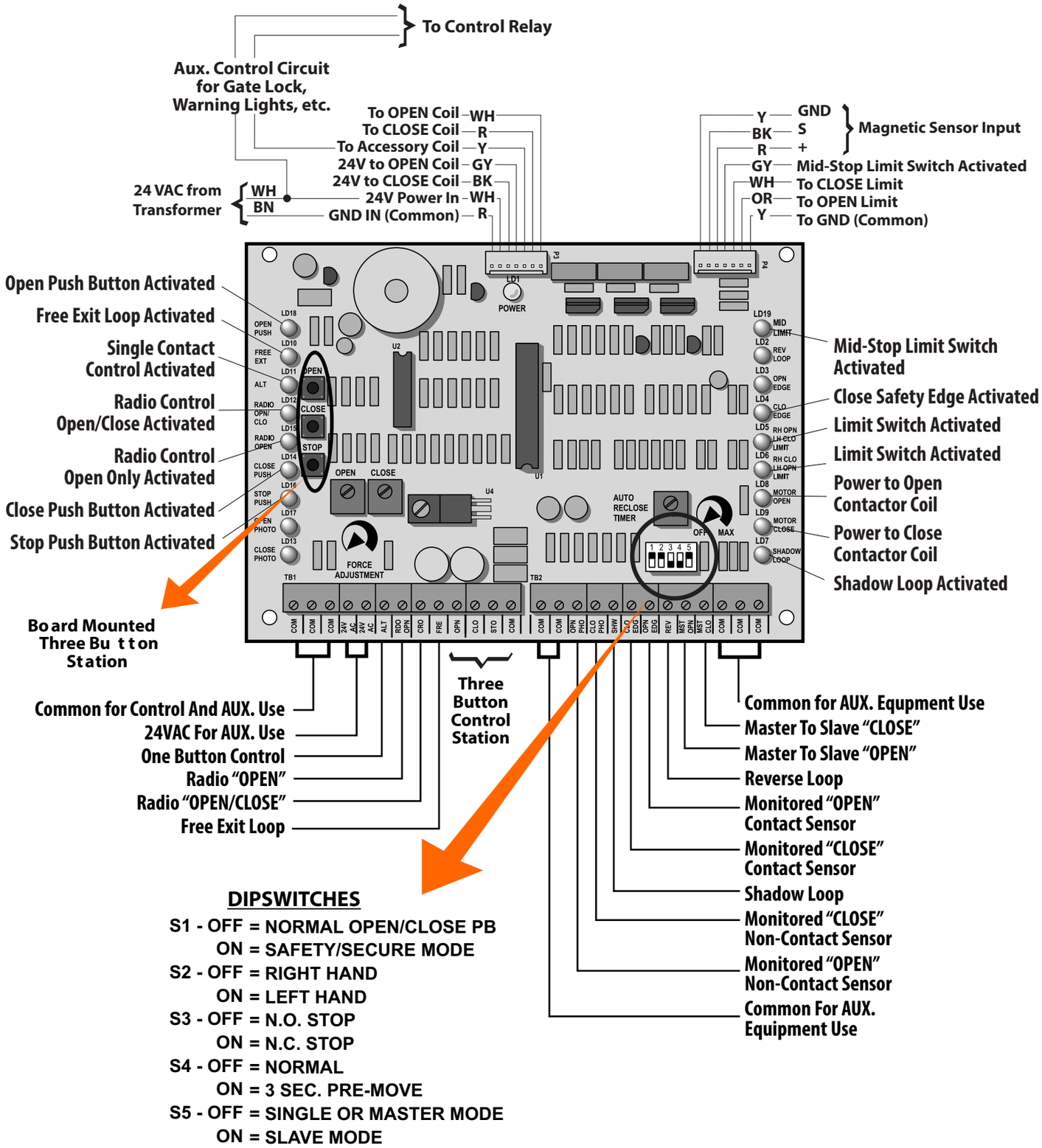
5. Test the **OPEN OBSTRUCTION SENSING SYSTEM** by blocking the beam mounted at the back area of the gate while the gate is running open.

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

MAINTENANCE SUGGESTIONS

Lubricate the drive chain and idler sprocket bearings every 3 months with 30-weight oil. Grease the drive shaft bearings every 6 months with quality grade automotive grease. The Reducer is completely sealed and should not require lubrication. Periodically check all hardware (nuts, bolts, screws, etc) for tightness.

LED AND DIPSWITCH 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

Notes

Notes

PowerMaster
Limited 5-Year Warranty

PowerMaster warrants all GATE OPERATORS (Swing, Slide, Barrier categories) to be free of defects in materials and workmanship for a period of five (5) years from date of manufacture, provided that product has been registered. A one year warranty applies if product has not been registered.

ELECTRICAL PARTS (including boards, switches, relays, etc):
PowerMaster warrants electrical parts for a two (2) year period, provided that product has been registered. A one year warranty applies if product has not been registered.

If any part is found to be defective during this period, new parts will be furnished free of charge. Failure of this product due to misuse, improper installation, alterations, vandalism, acts of God, or lack of maintenance is ***not*** covered under this warranty, and voids any other implied warranties herein.

PowerMaster is ***not responsible*** for any labor charges incurred in connection with the installation of warranted parts.

In order to activate this warranty, the registration form found with your operator **MUST BE COMPLETED AND RETURNED WITHIN THIRTY CALENDAR DAYS FROM DATE OF PURCHASE.** Visit our website at www.PowerMasterNY.com and click on the ***Register your Product*** link.

You can also register via email to PMtech@PowerMasterNY.com.

If registration is not activated, a **ONE YEAR** warranty from date of manufacture will apply for all claims.

REGISTRATION INFORMATION

Operator Information

Model SG-2004

Serial # _____

Date Installed _____

Location Installed

Address _____

Address _____

Address _____

Installer's Information

Company Name _____

Address _____

Address 2 _____

City, State, Zip _____

Telephone # _____

Contact Name _____

The end user should retain this information for their records and to obtain warranty service.

Need Technical Support?

Visit: www.PowerMasterNY.com/faqs

Call us toll free @ 1-800-243-4476

Email us: PMtech@PowerMasterNY.com

www.facebook.com/PowerMasterOperators

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www.PowerMasterNY.com

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