



TURNSTYLE ENTERPRISES



The Armless Gate Opener™



Instruction Manual



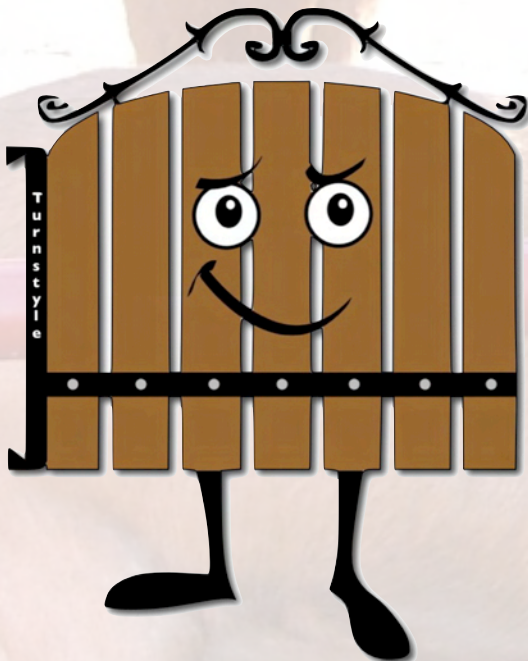
The Power Is In The Post™



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ENTERPRISES



Contact our office:

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Turnstyle Enterprises wishes to emphasize that safety always comes first. It is of the utmost importance that the correct installation guidelines be followed during assembly and that all people and objects be kept clear of potential entrapment areas. Please read the following safety guidelines before performing your installation.

Before beginning your installation, make sure that your gates and gate opener installation comply with applicable local codes.

Installation Safety for Automatic Gates

- a. Install the gate opener only when:
 1. The operator is appropriate for the construction of the gate and the usage Class of the gate.
 2. All exposed pinch points are eliminated or guarded.
- b. The operator is intended for installation only on gates used for vehicles. Pedestrians must be supplied with a separate access opening. The pedestrian access opening shall be designed to promote pedestrian usage. Locate the gate such that persons will not come in contact with the vehicular gate during the entire path of travel of the vehicular gate.
- c. The gate must be installed in a location so that enough clearance is supplied between the gate and adjacent structures when opening and closing to reduce risk of entrapment. Swinging gates shall not open into public access areas.
- d. The gate must be properly installed and work freely in both directions prior to the final adjustment of the operator and connection to the power supply.
- e. Controls intended for user activation must be located at least six feet (6') away from any moving part of the gate and where the user is prevented from reaching over, under, around or through the gate to operate the controls. Outdoor or easily accessible controls shall have a security feature to prevent unauthorized use.
- f. The Stop and/or Reset button must be located in the line-of-sight of the gate. Activation of the reset control shall not cause the operator to start.
- g. A minimum of two (2) WARNING SIGNS shall be installed, one on each side of the gate where easily visible. **[Warning signs have been supplied with the Turnstyle operator.]**

[FOR USERS AND INSTALLERS UTILIZING TYPE "D" ENTRAPMENT PROTECTION, NON-CONTACT SENSORS AND CONTACT SENSORS, THE FOLLOWING ADDITIONAL SAFETY CONCERNS APPLY. MORE DETAILED TREATMENT MAY BE FOUND IN UNDERWRITERS LABORATORIES SPECIFICATION 325 (UL 325).]

- a. For gate operators utilizing Type D [entrapment] protection:
 1. The gate operator controls must be placed so that the user has full view of the gate area when the gate is moving.
 2. An automatic closing device (such as a timer, loop sensor, or similar device) shall not be employed, and
 3. No other activation device shall be connected.
- b. For gate operators utilizing non-contact sensor, refer to UL 325, Section 31.1.1:
 1. See instructions on the placement of non-contact sensors for each type of application.
 2. Care shall be exercised to reduce the risk of nuisance tripping, such as when a vehicle, trips the sensor while the gate is moving, and
 3. One or more non-contact sensors shall be located where the risk of entrapment or obstruction exists, such as the perimeter reachable by a moving gate or barrier.
- c. For a gate operator utilizing a contact sensor, refer to UL 325, Section 31.1.1:
 1. A hardwired contact sensor shall be located and its wiring arranged so that the communication between the sensor and the gate operator is not subjected to mechanical damage.
 2. A wireless contact sensor such as one that transmits radio frequency (RF) signals to the gate operator for entrapment protection functions shall be located where the transmission of the signals are not obstructed or impeded by building structures, natural landscaping or similar obstruction. A wireless contact sensor shall function under the intended end-use conditions.
 3. One or more contact sensors shall be located on the inside and outside leading edge of a swing gate. Additionally, if the bottom edge of a swing gate is greater than 6 inches (152 mm) above the ground at any point in its arc of travel, one or more contact sensors shall be located on the bottom edge.

Operational Safety For Automatic Gates

WARNING - To reduce the risk of injury or death:

1. READ AND FOLLOW ALL INSTRUCTIONS.
2. Never let children operate or play with gate controls. Keep the remote control away from children.
3. Always keep people and objects away from the gate. NO ONE SHOULD CROSS THE PATH OF THE MOVING GATE.
4. Test the gate operator monthly. The gate MUST reverse on contact with a rigid object or stop when an object activates the non-contact sensors. After adjusting the force or the limit of travel, retest the gate operator. Failure to adjust the gate operator properly can increase the risk of injury or death.
5. Use the emergency release only when the gate is not moving.
6. KEEP GATES PROPERLY MAINTAINED. Read the owner's manual. Have a qualified service person make repairs to the gate hardware.
7. The entrance is for vehicles only. Pedestrians must use separate entrance.
8. SAVE THESE INSTRUCTIONS.

Congratulations on the purchase of your new *Turnstyle Gate Mounting System™*

It is our mission to make the world's finest gate opener; unsurpassed in reliability, versatility, aesthetics and ease of installation. Whether you choose to perform self-installation or elect a qualified professional for installation purposes, you will find the Turnstyle Gate System installs quickly and easily. Before you begin your installation, please refer to the portions of this manual which apply to your purchase. If you have any problems, questions or concerns, a member of our team will be happy to assist you.

Call: 1-800-548-2212



Applications

This gate operator is suitable for uses with Classes I, II, III, and IV vehicular gate applications.

Class I-RESIDENTIAL VEHICULAR GATE OPERATOR - A vehicular gate operator (or system) intended for use in a home of one to four single family dwelling, 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 multi-family 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 security area or other restricted access location or building such as an airport security area or other restricted access locations not serving the general public, in which unauthorized access is prevented via supervision by security personnel.

NOTE: Class II, III, and IV users should consult local codes for further requirements.

Pre-Installation Considerations

Turnstyle Gate Mounting Systems (GMS)[™] are sold in two different mounting configurations, **Pillar Mount** and **Ground Mount**. The Pillar Mount utilizes an owner provided post or pillar for its support and is attached to the pillar or post by means of mounting brackets. The Ground Mount operates as a “stand alone” installation in which the Turnstyle operator is set in the ground. Each system is available in both **Manual** and **Automatic** configurations.

If your gate(s) are to be integrated (welded to a Turnstyle Operator,) you or your gate fabricator will need to take special precautions. The inner tube containing the motor and other heat sensitive components must be removed prior to and welding. Failure to take these precautions could result in heat damage to the motor and other internal parts of your operator and render your warranty void. A separate instruction guide regarding welding and powder coating is provided with operators intended for integration.



Ground Mount



Pillar Mount

Tools / Items required for installation:

Turnstyle Pillar Mount GMS[™]:

Included with your package:

- * (1) Turnstyle Pillar Mount operator; (2) for dual gate installation
- * (2) Pillar Mount brackets; (4) for dual gate installation
- * (2) Gate mounting brackets; (4) for dual gate installation (if your gate is integrated with the Turnstyle operator, you do not need gate mounting brackets)
- * Gate Mounting Hardware
- * (1) Turnstyle Installation DVD

For Automatic GMS[™]

- * (1) Control box with control board and two key chain remotes
- * (1) Rechargeable 12V 7AH Battery, (2) for dual gate installation
- * (1) AC/AC Transformer
- * (2) Safety Placards

Other items required:

- * Mounting hardware for your pillar mount brackets (dependent on the material type of your pillar/post)
- * Power Drill
- * Drill bit (dependent on the material type of your pillar/post and pillar mounting hardware)
- * Hex Bit Socket Set
- * Tape measure
- * Level
- * String level and string (for dual gate installations)

Turnstyle Ground Mount GMS[™]:

Included with your package:

- * (1) Turnstyle Ground Mount operator; (2) for dual gate installation
- * (2) Ground Mount brackets; (4) for dual gate installation
- * (2) Gate mounting brackets; (4) for dual gate installation (if your gate is integrated with the Turnstyle operator, you do not need gate mounting brackets)
- * Gate Mounting Hardware
- * (1) Turnstyle Installation DVD

For Automatic GMS[™]

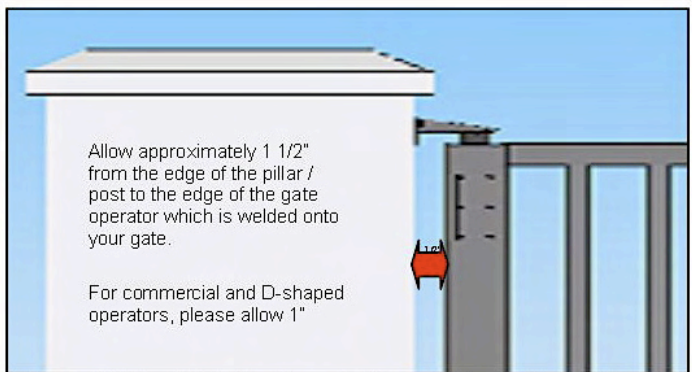
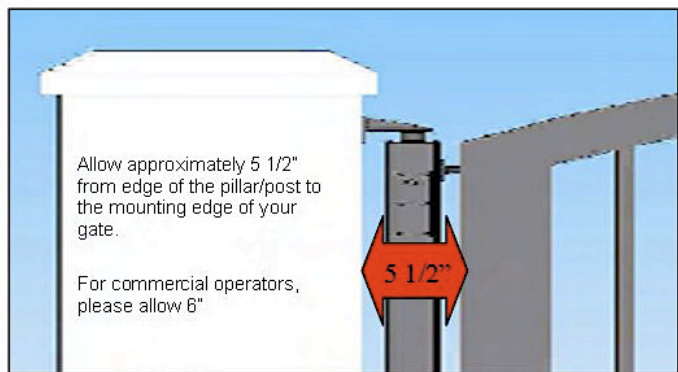
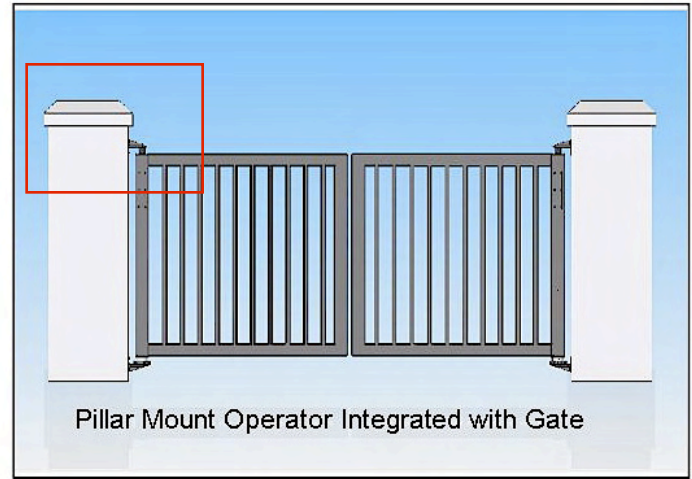
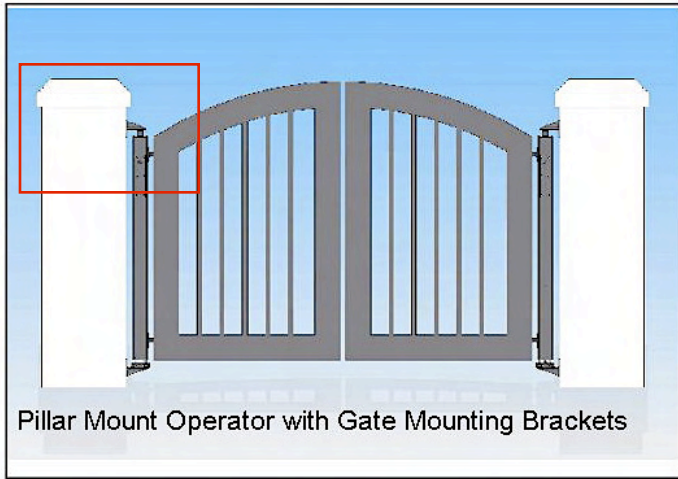
- * (1) Control box with control board and two key chain remotes
- * (1) Rechargeable 12V 7AH Battery, (2) for dual gate installation
- * (1) AC/AC Transformer
- * (2) Safety Placards

Other items required:

- * Shovel or Post Hole digger
- * Tape measure
- * Concrete mix
- * Hex Bit Socket Set
- * Level
- * String level and string (for dual gate installations)

Measuring for a Turnstyle GMS™

When the Turnstyle GMS™ is mounted to the end of your gate, the operator becomes your gate's hinge and accounts for approximately 5 1/2" when a gate mounting bracket is used and approximately 1 1/2" if operator and gate are integrated. In order to correctly mount your GMS™ to a pillar/post, the pillar/post must be at least 6" taller than your gate operator.



If you are using gate mounting brackets to mount your gate to the operator, allow approximately 5 1/2" (to include pillar mount brackets, operator and the gate mounting brackets).

If your gate is integrated with the gate operator, the operator becomes the mounting end of your gate. Allow approximately 1 1/2" between the edge of the pillar/post and the operator/gate.



Turnstyle Pillar Mount GMS™ utilizing Gate Mounting Brackets



Integrated Turnstyle Pillar Mount GMS™

Step By Step: How to Install a Turnstyle Pillar Mount Gate Mounting System (GMS)[™]

The following instructions are for installation of a Turnstyle Pillar Mount GMS[™] onto typical wood post(s) upon level to near level ground.

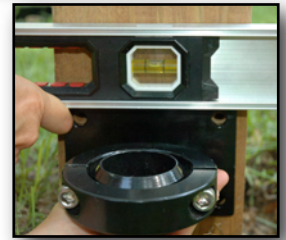
If your gates will be mounted over ground where interference between the bottom of the gate and the ground could occur when the gate is operated, see your gate fabricator and installer for correct gate fabrication and location of the GMS[™].



Step 1: Mount the Lower Pillar Mount Bracket

a. Determine location of lower bracket

Determine the desired height of the bottom of your gate above ground level and place your lower pillar mount bracket onto the pillar/post accordingly.



TURNSTYLE TIP *If dual gate system is being installed, start your installation with the pillar/post located on the highest ground.*

b. Level lower pillar mount bracket

Once the desired location of the lower pillar mount bracket is determined, make sure the bracket is level/square onto the pillar/post by using a level and/or square.



c. Mark pilot holes onto pillar/post for lower pillar mount bracket

Once the lower bracket is level, mark all 4 pilot holes onto the pillar/post using the lower pillar mount bracket as your guide.

d. Mounting your lower pillar mount bracket onto pillar/post

Depending on the construction of your pillar/post, drill your pilot holes and securely attach the lower pillar mount bracket. Make sure the bracket is securely attached to the pillar/post to ensure that it safely carries the weight load anticipated with your particular gate installation.



TURNSTYLE TIP *Make sure you use a drill bit that corresponds with the material of the pillar/post into which you will be drilling.*

Step 2: Mounting your Turnstyle Operator

a. Place Turnstyle operator into the lower bracket

Loosen or remove the collar clamp from the lower bracket using a 5/16" hex wrench to increase ease of placing the inner tube into the lower bracket.

Now place the inner round steel tube extending from the bottom of the Turnstyle gate operator into the lower pillar mount bracket and hold the operator upright/parallel to the pillar/post.



TURNSTYLE TIP *If you are installing an automatic Turnstyle operator, make sure to not pinch the electrical wire between the operator tube and the lower bracket.*

Step 3: Mount upper pillar mount bracket

For safety purposes, have a helper hold the Turnstyle operator in place while you mount the upper pillar mount bracket.

a. Place upper pillar mount bracket onto top of Turnstyle operator

Securely place the upper pillar mount bracket onto the pivot detail (top pin) of the Turnstyle operator and hold the upper bracket against the pillar/post.

The upper pillar mount bracket should touch the white nylon "C" clip washer located on the top pin of the Turnstyle operator.



a.



b. Determine location of upper pillar mount bracket

With the upper pillar mount bracket held against the pillar/post, place a level on the Turnstyle operator and move the upper bracket along the pillar/post until the operator is vertically level (plumb).

b. & c.



c. Level upper pillar mount bracket

Once the correct location of the upper bracket is determined, make sure the bracket is level/square onto the pillar/post by using a level and/or square.

d. Mark pilot holes onto pillar/post for upper pillar mount bracket

Once the upper bracket is level, mark all 4 pilot holes onto the pillar/post using the upper pillar mount bracket as your guide.

d.



e. Mounting your upper pillar mount bracket onto pillar/post

Depending on the construction of your pillar/post, drill your pilot holes and securely attach the upper pillar mount bracket. Make sure the bracket is securely attached to the pillar/post to ensure that it safely carries the weight load anticipated with your particular gate installation.

a. Optional: The holes can be drilled directly into the pillar/post through the holes of the upper bracket without removing the upper brackets. Be sure to hold the upper bracket steady so the holes will be drilled into the correct location.

b. Make sure you use a drill bit that corresponds with the material of the pillar/post into which you will be drilling.

e.

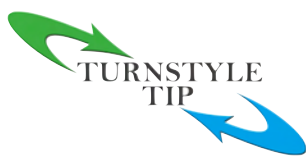
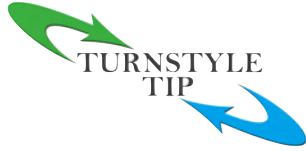


Step 4: Attach the gate mounting brackets and gate onto the Turnstyle Operator.

If your gate has been integrated with your Turnstyle operator, you will not need to attach gate mounting brackets. In this case, your gate will already be integrated (welded) with the Turnstyle operator. See page 4 for further instructions.

See page 12 for instructions on attaching your brackets and gate to your Turnstyle operator.

At this point you have successfully installed a Pillar Mount single gate manual Turnstyle GMS™



Step By Step: How to Install the *opposite* operator for a Turnstyle Pillar Mount Dual Gate Mounting System (GMS)[™]

Step 1: *Mount lower pillar mount bracket onto opposite pillar/post.*

a. **Determine location of lower bracket onto adjacent pillar/post.**

Using a string level, stretch a string from the bottom edge of the previously installed lower bracket to the opposite pillar/post.

Once the string is level, mark the opposite pillar/post.

Place the bottom edge of the second lower pillar mount bracket onto the opposite mark on the pillar/post.

Once the correct location of the opposite lower pillar mount bracket is determined, return to page 7 and follow installation instructions from **Step 1: b. Level lower pillar mount bracket.**



When mounting dual gates onto pre-existing columns or posts which are not perfectly plumb, adjustable brackets may be used. See page 13.

Leave the adjustment collar on the lower bracket loose for manual operation.

At this point you have successfully installed a Pillar Mount dual gate manual Turnstyle GMS[™]

If you are installing an automatic Turnstyle GMS[™], proceed to page 14 to find the electronics installations instructions.



Step By Step: How to install a Ground Mount GMS™

The following instructions are for installation of a Turnstyle Ground Mount GMS™ upon level to near level ground.

If your gates will be mounted over ground where interference between the bottom of the gate and the ground could occur when the gate is operated, see your gate fabricator and installer for correct gate fabrication and location of the GMS™.



Turnstyle Ground Mount Operator

Ground Sleeve

Step 1: Install ground sleeve and Turnstyle Ground mount operator

a. Determine location of your Turnstyle Ground mount GMS™

a. Your Turnstyle ground mount operator (if installed in an end mount configuration) should be placed at least ¾" away from the last fence post of your fence section to avoid the operator hitting the fence post during operation.

b. If a dual gate system is being installed, start the installation of your first ground mount operator next to the end of your fence section located on the highest ground elevation.

b. Prepare hole in the ground for your Ground Mount operator

Once the desired location of the ground mount operator is determined, dig a hole in the ground approximately 31" deep and approximately 10" in diameter with a shovel or post hole digger.

Test fit the ground sleeve into the hole and continue digging until the collar clamp on the ground sleeve is just above ground level.

c. Prepare concrete

Prepare concrete mixture according to manufacturer's instructions.

d. Level Turnstyle operator and secure ground sleeve into ground

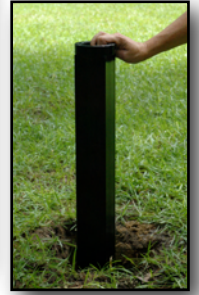
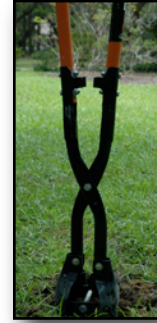
Once the appropriate size hole has been prepared with the ground sleeve in place, slide the inner steel tube of the Turnstyle operator into the ground sleeve. Tighten the collar clamp located at the top of the ground sleeve onto the inner steel tube.

With ground sleeve in hole and operator attached, recheck the placement of your operator to be sure the operator is the desired distance from the end of your fence or last fence post. Adjust as necessary.

Once the operator and ground sleeve are in the desired position, place a level on the side of the Turnstyle operator and fill the hole around the ground sleeve with concrete.

Continuously check your level (plumb) on at least 2 consecutive sides of the operator and on top as you are filling the hole around the ground sleeve with concrete. Adjust the operator as needed through out this process to be sure the operator is plumb once the hole is completely filled with concrete.

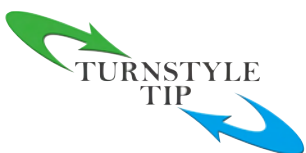
Although concrete is recommended around the ground sleeve, concrete is not absolutely necessary if your gate is to be mounted onto the Turnstyle ground mount operator in a center mount configuration. When a gate is mounted in a center configuration, the weight of the gate is equally balanced on either side and does not necessarily need the additional support that is required for an end mount configuration. Adding some gravel around the ground sleeve can help in soft soil conditions.



a. & b.



d.



e. Allow concrete to cure

Support the Turnstyle operator if necessary, until the concrete sets sufficiently to hold the operator and ground sleeve plumb or loosen the collar clamp on the ground sleeve and slide the inner steel tube of the operator out of the ground sleeve and allow the concrete to cure.

- a. *Removing the Turnstyle operator from the ground sleeve while allowing the concrete to cure will reduce external forces on the ground sleeve.*
- b. *Cover the ground sleeve while allowing the concrete to cure to avoid debris from entering the ground sleeve.*
- c. *Allow the concrete to cure according to the concrete manufacturer's guidelines.*
- d. *Leave the collar clamp on the ground sleeve loose for manual operation.*

Once concrete is set and ground sleeve(s) is/are secure, replace the Turnstyle operator(s) into the ground sleeve(s) if they were removed during concrete curing.

Step 2: Attach the gate mounting brackets and gate onto the Turnstyle Operator.

If your gate has been integrated with your Turnstyle operator, you will not need to attach gate mounting brackets. In this case, your gate will already be integrated (welded) with the Turnstyle operator. See page 5 for further instructions.

See page 12 for instructions on attaching your brackets and gate to your Turnstyle operator.

At this point you have successfully installed a Ground Mount single gate manual Turnstyle GMS™

If you are installing an automatic Turnstyle GMS™, proceed to page 14 to find the electronics installations instructions.

Step By Step: How to Install the opposite operator for a Turnstyle Ground Mount Dual Gate Mounting System (GMS)™

Step 1: Install the opposite ground sleeve and Turnstyle ground mount operator

Return to page 10 and follow Ground Mount installation instructions from **Step 1: a. Determine location of your Turnstyle Ground mount GMS™** through **Step 1: c. Prepare concrete** and then proceed below.

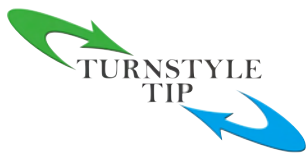
- a. **Using a string level, stretch a string from the top of the previously installed ground sleeve to the top of the opposite ground sleeve.**

Adjust the ground sleeve as needed (back filling if necessary,) until the string is level and the ground sleeve is in its desired location.

Return to page 10 and follow Ground Mount installation instructions from **Step 1: d. Level Turnstyle operator and secure ground sleeve into ground** through **Step 2: Attach the gate mounting brackets and gate onto the Turnstyle Operator.**

At this point you have successfully installed a Ground Mount dual gate manual Turnstyle GMS™

If you are installing an automatic Turnstyle GMS™, proceed to page 14 to find the electronics installations instructions.



Step By Step: How to attach your gate mounting brackets and gate onto your Turnstyle operator(s)

Three types of gate mounting brackets are available: **Unicorn** brackets, **wood** brackets and **tube** brackets. Please follow the instructions that correspond to your gate mounting brackets.

***Note - If your gate(s) have been integrated (welded) with your Turnstyle operator, you will not need to attach gate mounting brackets.**

a. Attach gate mounting brackets

Line up the 4 holes in the gate mounting brackets with the 4 pre-drilled holes in the Turnstyle operator.

Insert the provided screws through the holes in the gate mounting brackets into each of the 4 pre-drilled holes in the Turnstyle operator.

Tighten these screws with a 3/16" hex wrench.

b. Mount your gate onto the gate mounting brackets

It is suggested for safety purposes that two people be present while mounting any gate(s) onto the Turnstyle mounting brackets.

Unicorn Brackets

Mount your gate onto the Turnstyle operator by sliding the unicorn bracket into the holes on the side of your gate.

Once your gate is in place upon both the top and bottom unicorn brackets, place a washer and nut over remaining exposed portion of the unicorn bracket.

Tighten nut with the provided hex wrench.

** Note - Unicorn brackets have two nuts (one on either side of the gate frame) which provide a measurement adjustment feature by tightening and/or loosening the nuts in order to prevent gaps between your dual gates and/or opposite post.*

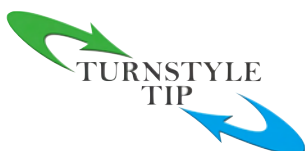
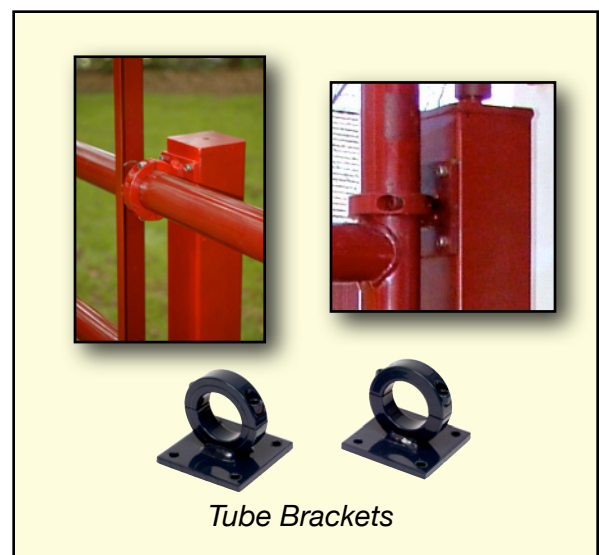
Tube Brackets

Set mounting end of tube gate into the cup of the tube gate mounting brackets

Adjust your gate to the desired position along the Turnstyle gate operator.

Once your gate is in the desired position, alternately tighten the two socket head cap screws in the tube gate mounting brackets to secure your gate onto the Turnstyle gate operator.

Lastly, lock the position of your tube gate in the mounting brackets by tightening the set screw in the outer half of the tube gate mounting bracket.



Do not tighten bolts until your tube/chain link gate is in the desired position along the Turnstyle gate operator.

Wood Brackets

Slide wood gate into the wood gate mounting brackets

Adjust wood gate vertically to the desired position along the Turnstyle operator.

Place a level on top of the wood gate and adjust gate as needed.

Once the gate is level and in the desired position along the Turnstyle operator, mark all four holes on each side of the wood brackets.

**Optional - The holes can be drilled directly into the wood gate through the holes of the wood brackets without removing the wood gate from the wood gate mounting brackets. Be sure to hold the wood gate steady so the holds will be drilled into the correct location.*

TURNSTYLE
TIP

Slide wood gate back into the wood brackets (if needed) and line up the holes in both sides of the wood brackets with the pre-drilled holes in the wood gate.

Screw through the holes in the wood brackets into each of the pre-drilled holes in the wood gate and tighten to secure your wood gate onto the Turnstyle gate operator. Thru bolts can also be used.



Adjustable Pillar Mount Brackets



Our optional adjustable pillar mount brackets have a 1 1/2" horizontal range of movement, making gate adjustments quick and easy.

See the Turnstyle Catalog for details and pricing information.



Step By Step: Control Panel Installation for your GMS™

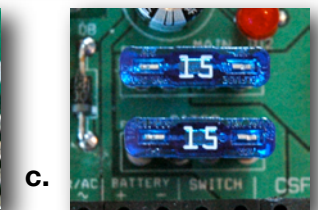
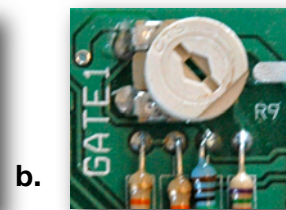
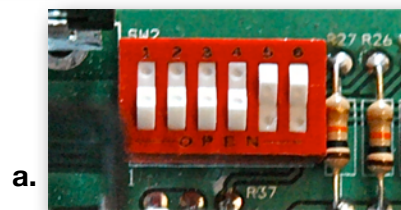
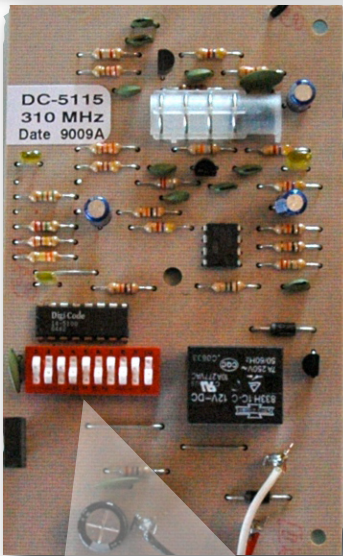
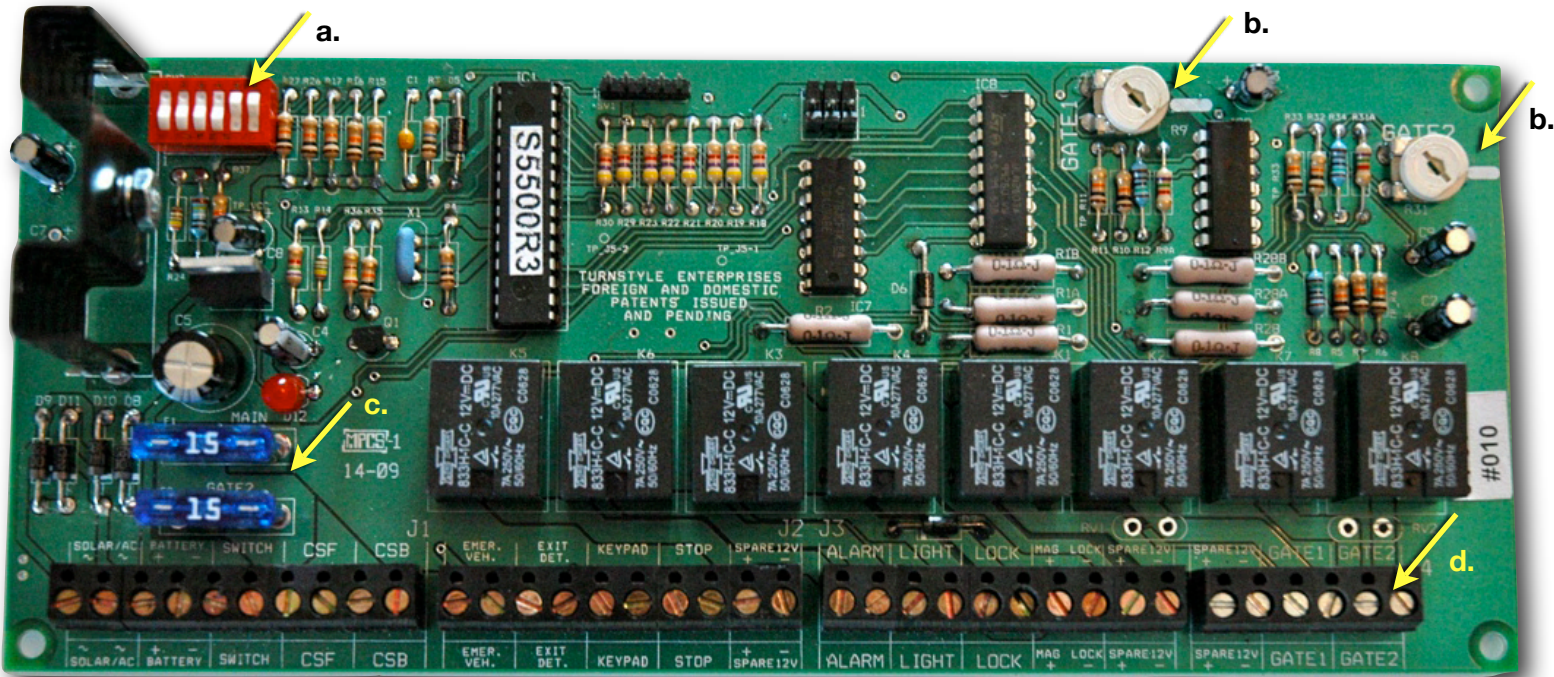
The Control Panel will arrive mounted inside the Control Box. Also mounted inside the Control Box, and pre-wired to the control panel; are the wireless receiver with its antenna, on-off (reset) switch, and the 100dB Alarm. The Control Box is configured to accommodate wiring. Each operator is supplied with approximately 20 feet of low-voltage wire, allowing the Control Box to be mounted on any surface within a 20 foot radius. The Control Box also houses the 12 Volt battery(s). An on-off (reset) switch is located on the underside of the Control Box. It is also pre-wired to the appropriate terminal on the Control Panel.

1. **Control Panel:** The Control Panel is a printed circuit board measuring 8.5 inches by 3.5 inches.

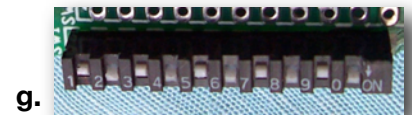
WARNING: Do not attempt to remove the Control Panel from the Control Box. Contact with the reverse side of the printed circuit board can cause irreparable damage to the circuit board and render your warranty void.

The installer and/or end user has four areas of concern when wiring the Control Board (see descriptions and figures below):

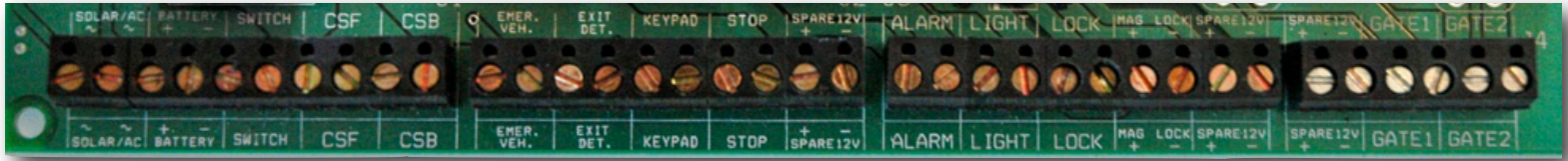
- Dip Switches** (a small red block containing six dip switches, located on the top left side of the Control Board)
- Sensitivity Adjustment Potentiometers** (small round white controls with adjusting screw heads, located in the upper right quadrants of the Control Board)
- Fuses** (located on bottom left side of Control Board) 15 amp limit.
- Wiring Terminals** (There are 18 sets of wiring blocks located along the bottom of the Control Board)



Digi-Code® Wireless Receiver The Digi-Code Wireless Receiver comes pre-wired to the Turnstyle Control Board and contains a small red square containing 10 dip switches (figure e.) These dip switches are used to program a wireless keychain transmitter, or a wireless visor transmitter (figures f.) to the Turnstyle system. The wireless transmitters also contain 10 dip switches. Simply unscrew the back of your transmitter and sync the dip switches to match the dip switches on the Wireless Receiver Board. Dip switch synchronization is critical to proper programming. **Example:** if switch 1 is dipped towards the number on the wireless receiver board, it must also be dipped towards the number inside the wireless transmitter as well, and so on. Figure g. shows the dip switches contained inside the wireless keychain transmitters, the same "toward the number" programming technique is required. ***Note: Factory set dip switches will be in an alternating pattern (2,4,6,8,10), and creating a unique combination is highly recommended.**



d.



2. Wiring Terminal Functions: The 18 sets of wiring blocks are labeled in white lettering. The function of each wiring block is described below:

Spare 12V - These three printed circuit board (PCB) terminals provide access points for 12VDC power that may be required to power peripheral accessories and/or safety devices. If none of these devices are included in your final installation, these terminals will remain unused. **CAUTION - Do NOT connect ANY voltage source to any of these terminals. Doing so will damage the circuit board and render your warranty void.**

Solar/AC - Input for Solar Panel or supplied AC power supply. The polarity of the inputs is non critical. The recommended voltage is either 12VAC or 18VDC @ 1 amp. ***DO NOT USE CONVENTIONAL 110V.**

BATTERY - Input for battery source. This DC voltage requires correct polarity. However, reverse polarity will not damage the control panel. The positive (Red) wire should always be connected to the left-hand terminal marked (+) and the negative (Black) wire connected to the right-hand terminal marked (-).

SWITCH - System power switch. This input is used to power 'off' / 'on' and to 'reset' the system. Upon power up, all previous states are reset and the system will always initialize to gate being fully closed and locked.

CSF (Contact Strip Front of Gate) - Input for contact safety edge installed on front of gate. Activated input will prevent gate from closing, and reverse the gate direction if gate was closing.

CSB (Contact Strip Back of Gate) - Input for contact safety edge installed on back of gate. Activated input will prevent gate from opening, and reverse the gate direction if gate was closing.

EMER. VEH. (Emergency Vehicle Opener) - Input for Emergency Vehicle Opener. Activation will open the gate. Continuous activation will prevent the gate from automatically closing.

EXIT DET. (Exit Detection) - Input for devices to be used to only open the gate. Activated input will start the gate opening procedure if gate was not moving. Input activations while gate is moving have no effect.

KEYPAD - Input for wired keypad, or other fixed input device in sight of gate. Activation will Open/Stop/Close/Stop the gate (repeated activations cycle through these 4). Activation will not stop the alarm.

STOP/NCI (NON-CONTACTING INPUT) - Input for non-contacting safety sensors, such as an optical sensor, with a normally open output. Activated input will stop gate instantly and return gate to fully open position.

ALARM - Output for 12VDC high volume (100 dB minimum) alarm (included). If alarm is activated, clicking the on/off switch will silence the alarm and reset the system.

LIGHT - Output for 12V lighting. Lights turn on when gate is moving and remain on for approximately 30 seconds after completion of the cycle. Do not exceed 40W of lighting.

LOCK - Terminal points for lock motor(s) leads. Multiple locks may be employed.

MAG LOCK - Terminal points for magnetic lock leads. The Magnetic Lock activates as soon as the gates complete their close cycle. The gate opening cycle will not begin until the Magnetic Lock disengages. The Magnetic Lock is wired into the terminal labeled "Mag Lock" Polarity is not crucial. Switches 5 and 6 must be open.

GATE 1 - Terminal points for gate motor leads. Polarity depends on desired swing of gate. Use this terminal with a single mount gate.

GATE 2 - Terminal points for gate motor leads. Polarity depends on swing of gate. Use this terminal in addition to Gate 1 with dual mount gates.

3. Wiring Instructions ***NEVER CONNECT 110V AC DIRECTLY TO THE CONTROL BOARD.**

The Turnstyle System is low voltage (12V DC), thereby eliminating the danger of electric shock. Care should be taken however to guard against cuts and abrasions of the wire as this could cause a short circuit. All wires should be passed through one of the strain relief fittings in the bottom of the Control Box. Wires should be stripped back between 1/4" if needed. The exposed ends are then inserted into the proper terminals in the wiring blocks and the screws tightened.

- a. Attach the Gate wires first. If a single gate is installed, attach the wires to "Gate 1" terminal (Blue wire on left, Brown wire on right), keeping in mind you may have to reverse polarity. If dual gates are installed, attach the wires from either gate to "Gate 1" terminal and the other to "gate 2" terminal.
- b. Next, attach the charging source(s) to the "Solar/AC" terminal. These terminals are not polar. You can attach an optional 12V solar panel or the included AC/AC wall transformer, an AC trickle charger, or both to the "Solar/AC" terminals. These sources charge the 12 volt battery.



- c. Next, attach the 12V battery, paying close attention to wiring colors.

***Note: Before wiring other accessories, you should now proceed to the Adjustments section below to adjust the swing of the gates, polarity and sensitivity.**

4. Adjustments

Now that you have installed and wired your gate(s), you must now make some adjustments; the opening and closing positions of the gate(s), the sensitivity of the gate(s) to obstructions, and Automatic Closing (Auto-Close) time (if desired).

1. Open and Closed Positions of the Gates

Turnstyle Gate Operators are engineered to move 90 degrees in either direction. Following your installation, your gates will most likely not open and close the way you want. However, adjustment to the desired positioning is very simple. First, direct your attention to the collar at the bottom of the operator(s). On a pillar mount the collar is a part of the lower mounting bracket. On a ground mount, the collar is a part of the ground sleeve (pictured below). The collar has two Allen (hex head) screws. Position the gate(s) in the closed position. Tighten the Bottom Mount screws so that the gate(s) are level and will not swing freely.



- a. With your keychain transmitter, press the button to activate the gate(s). Note the direction of opening of each gate. Press the button a second time to stop the gates before they hit any obstructions. If a gate is not moving in the desired direction, reverse the wires for that gate on the Control Panel wiring block. Again, press the transmitter button and allow the gate(s) to move until they completely stop. The gate(s) will not be in the desired positions. Do not press the button again because that will reverse the movement of the gate(s).
- b. Loosen the collars at the bottom of the gate(s) until the gates move freely. Position the gate(s) in the full 90 degree open position. Tighten the collars. Press the transmitter button again and allow the gate(s) to fully close. Loosen the collars and adjust the gate(s) to the final closed position. Tighten the collars securely. The gate(s) should now open and close to the desired positions. If the gate positions need any fine tuning, use the above procedure.

2. Sensitivity Adjustment

The sensitivity adjustments are round white potentiometers located in the upper right quadrant of the circuit board (pictured right). The sensitivity is preset at the factory for most applications. It is intended to interrupt the operation of the system in the event the gate(s) encounter resistance such as striking an object or person. However, because of wind load or the weight of the gate(s), you may need to adjust sensitivity. To decrease sensitivity, turn the adjusting screw counter-clockwise. To increase sensitivity, turn the adjusting screw clockwise.



3. Locks & Auto-Close Adjustments

The Turnstyle operator system has an automatic closing (Auto-Close) feature that is programmed into the Control Panel. This feature allows you to have the Control Panel automatically close your gate(s) without the need of human input. You can elect to have the gate(s) close after either 5, 10, 20, 30, 40, 50, or 60 seconds. The "Auto-Close" time begins as soon as the gate(s) reach their fully open positions. "Auto-Close" may be modified, enabled or disabled at any time.

On the left hand side of the control panel is a small red block with six switches (pictured below, left).

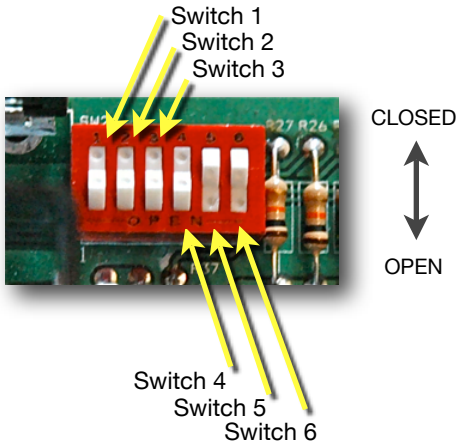
Switches 1, 2 & 3 select Auto-Close. See chart below.

Switch 4: MOTOR-DRIVE MODE. Closing (Up) Switch 4 will select simultaneous motor drive mode (Both Gates 1 and 2 will open and close at the same time), while opening (Down) Switch 4 will select sequential motor drive mode (Gate 1 will open first, followed in 1 second by Gate 2; Gate 2 will close first, followed by Gate 1). **Always select simultaneous mode when using the Power Bolt Lock and sequential mode when using the Magnetic Lock.**

Switch 5: LOCK TYPE. Closing (Up) switch 5 will select the Power Bolt Lock, while opening (Down) Switch 5 will select the Magnetic Lock.

Switch 6: LOCK ENABLE. Closing (Up) switch 6 will disable the Power Bolt Lock. Opening (Down) Switch 6 will enable the Power Bolt Lock or Magnetic Lock as selected.

Auto-Close Adjustments (Switches 1 - 3)



SWITCH 1	SWITCH 2	SWITCH 3	FUNCTION
CLOSED (UP)	CLOSED (UP)	CLOSED (UP)	AUTO-CLOSE DISABLED
CLOSED (UP)	CLOSED (UP)	OPEN (DOWN)	AUTO CLOSE ENABLED - 5 SECOND DELAY
CLOSED (UP)	OPEN (DOWN)	CLOSED (UP)	AUTO CLOSE ENABLED - 10 SECOND DELAY
CLOSED (UP)	OPEN (DOWN)	OPEN (DOWN)	AUTO CLOSE ENABLED - 20 SECOND DELAY
OPEN (DOWN)	CLOSED (UP)	CLOSED (UP)	AUTO CLOSE ENABLED - 30 SECOND DELAY
OPEN (DOWN)	CLOSED (UP)	OPEN (DOWN)	AUTO CLOSE ENABLED - 40 SECOND DELAY
OPEN (DOWN)	OPEN (DOWN)	CLOSED (UP)	AUTO CLOSE ENABLED - 50 SECOND DELAY
OPEN (DOWN)	OPEN (DOWN)	OPEN (DOWN)	AUTO CLOSE ENABLED - 60 SECOND DELAY

***Note:** In the figure above, Switches 1-4 are in the Closed (Up) position; Switches 5-6 are in the Open (Down) position. Tip* Closed is "towards the number."

***Note:** If, after enabling the "Auto-Close" feature; you find the gates are automatically *opening* rather than closing, the polarity of the gate wires are reversed at the control panel. Simply reverse the positions of the wires at the "Gate" terminals. Now, after your gates open, they should "Auto-Close".

Motor Drive Mode (Switch 4)

SWITCH 4	FUNCTION
CLOSED (UP)	SIMULTANEOUS MOTOR DRIVE MODE
OPEN (DOWN)	SEQUENTIAL MOTOR DRIVE MODE

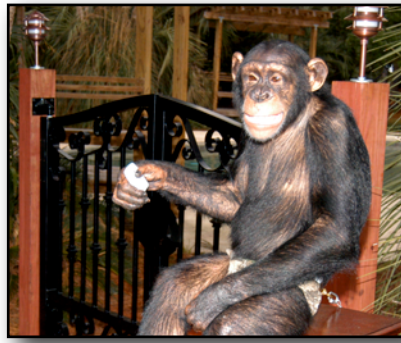
Lock Type (Switch 5)

SWITCH 5	FUNCTION
CLOSED (UP)	POWER BOLT LOCK SELECTED
OPEN (DOWN)	MAGNETIC LOCK SELECTED

Lock Enable (Switch 6)

SWITCH 6	FUNCTION
CLOSED (UP)	LOCK MOTOR DISABLED
OPEN (DOWN)	POWER BOLT OR MAGNETIC LOCK ENABLED


Optional Equipment Installation



The control panel to your Turnstyle Gate Operating System allows the employment of various optional devices.

- 1. Solar Panel** - A solar panel is an optional battery charging device. The solar panel wires are connected to the terminal block labeled "Solar/AC." Polarity is not critical. Be sure the solar panel is facing south for maximum exposure to sunlight.
- 
- 2. Exit Devices** - Various exit devices can be used to open your gate(s) upon exit. These include exit wands, loop detectors and optical sensors. These devices should be wired into the terminal labeled "ED." Wiring instructions are provided with each of these devices.
 - 3. Lights (low voltage)** - Low voltage lights add beauty as well as function. They are wired directly into the terminal block labeled "Light." The lights come on when the gate is activated and remain on for approximately 30 seconds after the cycle completes. They also visually relay critical system information such as battery conditions and sensor actions.
- 
- 4. Contact Sensors** - Contact sensors are sensitive strips attached to either the front, back, or both edges of the opening end of a gate. Contact sensors will stop the movement of a gate immediately upon contacting an object or person. A front edge contact sensor must be connected to the "CSF" terminal and back edge contact sensor must be connected to the "CSB" terminal.
 - 5. Power Lock** - The power bolt lock is designed to close four (4) seconds after the gate(s) complete their close cycle. The gate opening cycle will not begin until the power bolt lock is completely open. The power bolt lock is wired into the terminal labeled "LOCK." Polarity is critical. Before mounting your lock to your gates, follow the below sequence to ensure proper installation and functioning.
 - First establish that your gates are opening and closing correctly. (See "Adjustments", p.16). If you are employing the "Auto-close" feature, follow the "Auto-close Adjustment" instruction on p. 17.
 - Extend the bolt on your lock by touching the wires to the battery terminals (Brown wire to the Positive RED Terminal, Blue wire to the Negative BLACK Terminal). With the gates in the closed position, wire the lock to the control panel at the terminal marked "LOCK" and lay it on the ground. Now, open your gates and close them. The lock bolt should retract when the gates are opened and extend 4 seconds after the gates are fully closed.
 - If the lock works in reverse of the open/close cycle, simply reverse the wires on the board to change the polarity. Once the lock opens and closes in sync with the gate(s) it is safe to mount your lock; (See p. 17).
- 
- 6. Key Pads** - The wireless key pad is designed to work with the wireless receiver, already installed in your control box electronics enclosure. Follow the instructions provided with the wireless keypad for programming. No further wiring is required. Hard wired key pads should be connected to the terminal marked "K" on the control panel. Refer to the instructions provided with the wired keypad for programming.
 - 7. Emergency Vehicle Opening Devices** - The "EVO" terminal on the control panel is reserved for emergency vehicle opening devices for admittance of fire and other emergency vehicles. Check with local fire, police and municipal authorities for EVO requirements.
- 

TROUBLESHOOTING THE OPERATOR AND ACCESSORIES

SYMPTOM	REMEDIES
THE GATE OPENS OK BUT AFTER CLOSING, IT REOPENS.	<ol style="list-style-type: none"> 1. EXCESSIVE CLOSING PRESSURE. IF THE GATE IS OVER ROTATING INTO A FIXED STOP, LOOSEN BOTTOM COLLAR AND READJUST GATE POSITION. (SEE PAGE 16) 2. THE AUTO-REVERSE SENSITIVITY IS TOO HIGH. READJUST SENSITIVITY. (SEE PAGE 16) 3. POWER BOLT LOCK MAY BE MISALIGNED. ADJUST ACCORDINGLY.
THE GATE MOVES A FEW FEET, BUT THEN STOPS AND/OR REVERSES.	<ol style="list-style-type: none"> 1. THE AUTO-REVERSE SENSITIVITY IS TOO HIGH. READJUST SENSITIVITY. (SEE PAGE 16) 2. BATTERY VOLTAGE MAY BE TOO LOW. MAKE SURE CHARGER AND/OR SOLAR PANEL ARE DELIVERING CURRENT.
THE GATE WILL NOT OPEN USING THE KEYFOB OR KEYPAD TRANSMITTERS. 	<ol style="list-style-type: none"> 1. CHECK SWITCH LOCATED ON BOTTOM OF CONTROL BOX, TO ENSURE IT IS IN THE "ON" POSITION. 2. CODE SWITCHES IN THE TRANSMITTERS DO NOT MATCH THE CODE SWITCHES IN THE RECEIVER. RESET THE CODE SWITCHES TO MATCH. (SEE KEYCHAIN TRANSMITTER INSTRUCTIONS.) 3. LOW OR DEAD BATTERY IN THE TRANSMITTER. REPLACE BATTERY. 4. FUSE BLOWN ON CIRCUIT BOARD. REPLACE FUSE. IF FUSES CONTINUE TO BLOW, CONTACT TURNSTYLE TECHNICAL SUPPORT (800-548-2212). 5. LOOSE WIRE. CHECK FOR LOOSE AND/OR UNATTACHED WIRES. 6. OPERATOR BATTERY LOW VOLTAGE. CHECK TRANSFORMER AND/OR SOLAR PANEL WIRING (PAGE 15). REPLACE BATTERY IF NECESSARY. 7. DEFECTIVE RECEIVER. REPLACE RECEIVER. <p>IF YOU DETERMINE THE SYSTEM CANNOT BE RESTORED IMMEDIATELY, LOOSEN THE BOTTOM COLLAR ON THE OPERATOR, MAKING YOUR GATE MANUAL.</p>
THE KEYFOB TRANSMITTER WORKS ONLY AT A SHORT DISTANCE.	<ol style="list-style-type: none"> 1. TRANSMITTER BATTERY LOW. REPLACE BATTERY. 2. RECEPTION IS BEING BLOCKED. AN EXTERNAL ANTENNA MAY BE NECESSARY.
ONLY ONE GATE WILL OPERATE (DUAL GATES).	CHECK THE CRCUIT BOARD. IF YOU HAVE DUAL GATES, THERE SHOULD BE TWO WIRES ATTACHED TO THE WIRING TERMINAL MARKED "GATE1" AND TWO WIRES ATTACHED TO THE TERMINAL MARKED "GATE2." IF NOT, REATTACH THE WIRES.
AUDIBLE ALARM SOUNDING.	RESET ON/OFF SWITCH. CHECK GATES FOR OBSTRUCTIONS. IF THE ALARM CONTINUES, TURN OFF SWITCH FOR 5 MINUTES AND THEN TURN BACK ON. (THE AUDIBLE ALARM IS A SAFETY DEVICE AND SHOULD NEVER BE DISCONNECTED).
THE GATE OPENS BUT THEN CLOSES WITHIN A FEW SECONDS.	THE AUTO-CLOSE FEATURE MAY BE ACTIVATED. SEE PAGE 17 TO DEACTIVATE OR CHANGE THE DELAY TIME ON THE AUTO-CLOSE FEATURE.
THE POWER BOLT LOCK WILL NOT OPERATE.	<ol style="list-style-type: none"> 1. CHECK THE WIRING. BOTH WIRES FROM THE POWER BOLT LOCK SHOULD BE WIRED INTO THE CIRCUIT BOARD AT TERMINAL "LOCK." 2. CHECK THE "AUTO-CLOSE" SWITCHES ON THE CIRCUIT BOARD. THE LOCK WILL NOT WORK UNLESS SWITCH 1 IS "UP." (SEE PAGE 17)
THE POWER BOLT LOCK CLOSES WHEN IT SHOULD OPEN AND OPENS WHEN IT SHOULD CLOSE.	THE WIRES ARE INCORRECTLY CONNECTED AT THE CONTROL PANEL. AT THE TERMINAL MARKED "LOCK" REVERSE THE POSITION OF THE TWO WIRES.
GATE SQUEAKS WHEN OPENING OR CLOSING.	TOP PILLAR MOUNTING BRACKET MAY BE MISALIGNED. CHECK THE OPERATOR AND TOP BRACKET FOR PLUMB AND LEVEL. ADJUST IF NECESSARY. (SEE PAGE 8)
GATE IS OUT OF ALIGNMENT AFTER CLOSING.	BOTTOM MOUNTING BRACKET IS NOT TIGHT ENOUGH. REALIGN GATES AND TIGHTEN BOTTOM BRACKET COLLAR SUFFICIENTLY. (SEE PAGE 7)

Our Promise To You

We are dedicated to providing the industry's most reliable and aesthetically pleasing gate opening system. We promise uncompromising quality and innovation backed up by the utmost in friendly and efficient service. By using the finest components coupled with innovative engineering, we strive to make the Turnstyle Gate Mounting System™ second to none in performance, versatility, safety and aesthetics.



TURNSTYLE AUTOMATIC GATE OPERATOR TURNSTYLE ENTERPRISES, INC. LIMITED WARRANTY

Turnstyle Automatic Gate Operating Systems are warranted against defects for a period of (12) twelve months (thirty-six (36) months for Commercial Operators) from the date of purchase, providing recommended installation procedures are followed. This warranty is in lieu of all other warranties expressed or implied (some states do not allow limitations on how long an implied warranty lasts, so this limitation may not apply to you) and shall be considered void if damage was due to improper installation or use, connection to improper power source, or if damage was caused by fire, flood or lightning. The manufacturer will not be responsible for any labor charges incurred in the removal or replacement of defective parts.

In case of failure due to defective material or workmanship during the warranty period, the defective part will be repaired or replaced at the manufacturer's option at no charge if returned freight prepaid. New or factory rebuilt replacements may be used. Replacement parts are warranted for the remaining portion of the original warranty period. The manufacturer will pay standard ground freight on the return of repaired or replaced items in warranty.



Toll Free: 1-800-548-2212

Direct: 1-843-527-3530

www.turnstylegates.com

This label contains valuable information. Please use the serial number whenever communicating with Turnstyle Customer Service. Identical labels are affixed to the Turnstyle post and to the inside cover of the control panel enclosure.