BFT KUSTOS ULTRA A25 SWING GATE OPERATOR

INSTALLATION SAFETY

GATE AUTOMATION INSTALLATION SAFETY

While the manufacture" has designed the system under strict safety standards, it is ultimately the installers responsibility to follow and comply with national and local laws, codes and safety standards that apply to the mechanical, electrical and operational aspects of the gate automation system. These include but are not limited to: safety standards established by entities like Underwriters Laboratory (UL), NFPA 70, or codes and laws stated by corresponding state, county or municipality.

While it may not be compulsory, we highly recommend following UL 325 safety standards.

UL 325 VEHICULAR GATE AUTOMATION CLASSIFICATION

This system can be used In Class I, Class II and Class III 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 locations not servicing the general public, in which unauthorized access is prevented via supervision by security personnel.

UL 325 ENTRAPMENT PROTECTION REQUIREMENTS

For all installation classes, it is required to properly adjust the inherent obstruction sensing system and install warning signs on both sides of the gate, warning pedestrians of the dangers of the automated gate system. For Class I and Class II installation, it is required to add a non-contact device, such as a photoelectric eye **OR** a contact device such as a gate edge. For Class III installations it is required to add a non-contact device, such as a photoelectric eye, **AND** a contact device such as a gate edge **OR** an audio alarm such as a siren, horn or buzzer.

UL 325 INSTALLATION RECOMMENDATION

1. Install the gate operator only when:
   a. The operator is appropriate for the construction and the usage class of the gate.
   b. All openings of a horizontal slide gate are guarded or screened from the bottom of the gate to a minimum of 4' (1.2m) above the ground to prevent a 2-1/4" (6cm) diameter sphere from passing through the openings anywhere in the gate, and in that portion of the adjacent fence that the gate covers in the open position.
   c. All exposed pinch points are eliminated or guarding is supplied for exposed rollers.
2. 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.
3. The gate must be installed in a location so that enough clearance is supplied between the gate and adjacent structures when opening and closing to reduce the risk of entrapment. Swinging gates shall not open into public access areas.
4. The gate must be properly installed and work freely in both directions prior to the installation of the gate operator.
5. 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.
6. The Stop and/or Reset (if provided separately) must be located in the line-of-sight of the gate. Activation of the reset control shall not cause the operator to start.
7. A minimum of two (2) WARNING SGNS (supplied with the gate operator) shall be installed, one on each side of the gate where easily visible.
8. For a gate operator utilizing a non-contact sensor:
   a. Reference owner's manual regarding placement of non-contact sensor for each type of application.
   b. Care shall be exercised to reduce the risk of nuisance tripping, such as when a vehicle trips the sensor while the gate is still moving.
   c. 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.
9. For a gate operator utilizing a contact sensor such as an edge sensor:
   a. One or more contact sensors shall be located where the risk of entrapment or obstruction exists, such as at the leading edge, trailing edge and post mounted both inside and outside of a vehicular horizontal slide gate.
   b. One or more contact sensors shall be located at the bottom edge of a vehicular vertical lift gate.
   c. A hard wired contact sensor shall be located and its wiring arranged so the communication between the sensor and the gate operator is not subject to mechanical damage.
   d. A wireless contact sensor such as the 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.
   e. 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" (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.
   f. One or more contact sensors shall be located at the bottom edge of a vertical barrier (arm).

OPERATIONAL SAFETY

GENERAL SAFETY

WARNING! An incorrect installation or improper use of the product can cause damage to persons, animals or property.

- Automation should be installed on a gate which is moving freely. Any issue with the smooth opening of closing of a gate will not be corrected by adding automation.
- Scrap packing materials (plastic, cardboard, polystyrene etc.) according to the provisions set out by current standards. Keep nylon or polystyrene bags out of children's reach.
- Keep this instruction manual for future reference.
- This product was exclusively designed and manufactured for the use specified in the present documentation. Any other use not specified in this documentation could damage the product and be dangerous.
- The Company declines all responsibility for any consequences resulting from improper use of the product, or use which is different from that expected and specified in the present documentation.
- Do not install the product in explosive atmosphere.
- The Company declines all responsibility for any consequences resulting from failure to observe Good Technical Practice when constructing closing structures (door, gates etc.), as well as from any deformation, which might occur during use.
- Follow and comply with national and/or local electrical codes when performing any electrical installation.
- Disconnect the electrical power supply before carrying out any work on the installation. Also disconnect any buffer batteries, if fitted.
- Fit all the safety devices (photo cells, electric edges etc.) which are needed to protect the area from any danger caused by squashing, conveying and shearing, according to and in compliance with the applicable directives and technical standards.
- It is recommended to position at least one luminous signal indication device (blinker) where it can be easily seen for additional safety.
- The Company declines all responsibility with respect to the automation safety and correct operation when other manufacturer's components are used.
- Only use original parts for any maintenance or repair operation.
- Do not modify the automation components, unless explicitly authorized in writing by the Company.
- Instruct the product user about the control systems provided and the manual opening operation in case of emergency.
- Anything which is not expressly provided for in the present instructions is not allowed.
- Installation must be carried out using the safety devices and controls prescribed by the UL 325 Standard.

CHECKING INSTALLATION

Before the automated device is finally put into operation, perform the following checks meticulously.

- Make sure all components are fastened securely.
- Check that all safety devices (photocells, pneumatic safety edge, etc.) are working properly.
- Check the emergency operation control device.
- Check opening and closing operations with the control devices applied.
- Check the electronic logic for normal (or personalized) operation in the control panel.

ADJUSTING OPERATING FORCE

WARNING: Operating force is adjusted with extreme precision by means of the control unit's electronic control. Operation at the end of travel is adjusted electronically in the control panel. To provide good anti-crush safety, the operating force must be slightly greater than that required to move the leaf both to close and to open it.

CONTROL

There are various options when it comes to the control system (manual, remote control, access control with magnetic badge, etc.) depending on the installation's needs and characteristics. See the relevant instructions for the various control system options. People due to use the automated device must be instructed how to control and use it.

OPERATIONAL SAFETY

The installer is responsible for communicating the following information to the end-user:

This product has been designed and built solely for the purpose indicated herein. Uses not contemplated herein might result in the product being damaged and could be a source of danger.

The Firm disclaims all responsibility resulting from improper use or any use other than that for which the product has been designed, as indicated herein, as well as for failure to apply Good Practice in the construction of entry systems (doors, gates, etc.) and for deformation that could occur during use. If installed and used correctly, the automated system will meet the required level of safety. Nonetheless, **it is advisable to observe certain rules of behavior so that accidental problems can be avoided:**

- Keep adults, children and property out of range of the automated system, especially while it is operating.
- Operate the system when the full path of the gate is within sight.
- It is essential to frequently check that all safety devices are in good working condition.
- This application is not meant for use by people (including children) with impaired mental, physical or sensory capacities, or people who do not have suitable knowledge, unless they are supervised or have been instructed by people who are responsible for their safety.
- Children must be supervised to ensure they do not play with the system. Keep remote controls or other control devices out of reach of children in order to avoid the automated system being operated inadvertently.
- Check the system frequently, especially hinges, cables, springs or supports, to detect any loss of balance and signs of wear or damage.
- When cleaning the outside or performing other maintenance work, always cut off mains power.
- Keep the photocells' optics and illuminating indicator devices clean. Check that no branches or shrubs interfere with the safety devices (photocells).
- Do not use the automated system if it is in need of repair. In the event of a malfunction, cut off the power, activate the emergency release to allow access and call in qualified technical personnel (professional installer).
- If the automated system requires work of any kind, employ the services of qualified personnel (professional installer).
- Anything that is not explicitly provided for in these instructions is not allowed.
- The operator's proper operation can only be guaranteed if the information given herein is complied with. The Firm shall not be answerable for damage caused by failure to comply with the installation rules and instructions featured herein.
- Have the complete system checked including all safety devices by a qualified professional technician at least once a year.

Descriptions and illustrations herein are not binding. While we will not alter the product's essential features, the Firm reserves the right, at any time, to make those changes deemed necessary to improve the product from a technical, design or commercial point of view, and will not be required to update this publication accordingly.

WARNING

Please read and follow all instructions before installing and operating this product.
Follow all local and federal building and electrical. TS Distributors is not responsible for faults or damage cause by improper installation, application, or failure to comply with building codes.

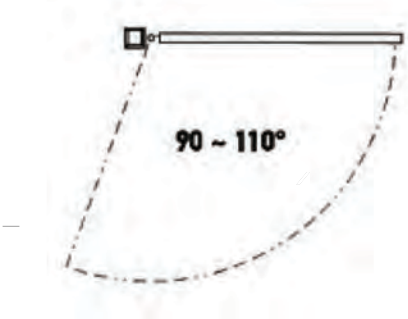
APPLICATIONS & CAPACITIES

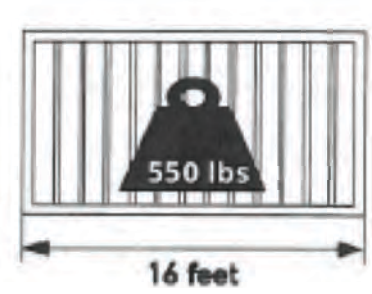
Important. This product is intended to be installed and serviced by a professional technician. The product warranty may be voided if installed or serviced by an unqualified person.

FC2

Limit Switch Functions

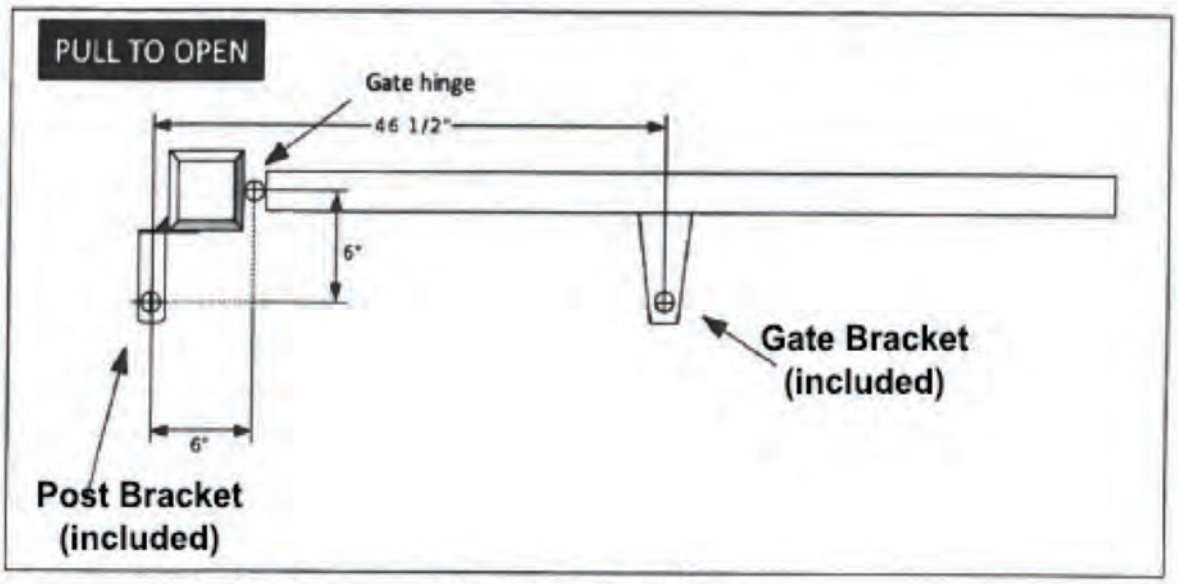
	FC1	FC2
Pull to Open	**Open**	**Close**
Push to Open	**Close**	**Open**



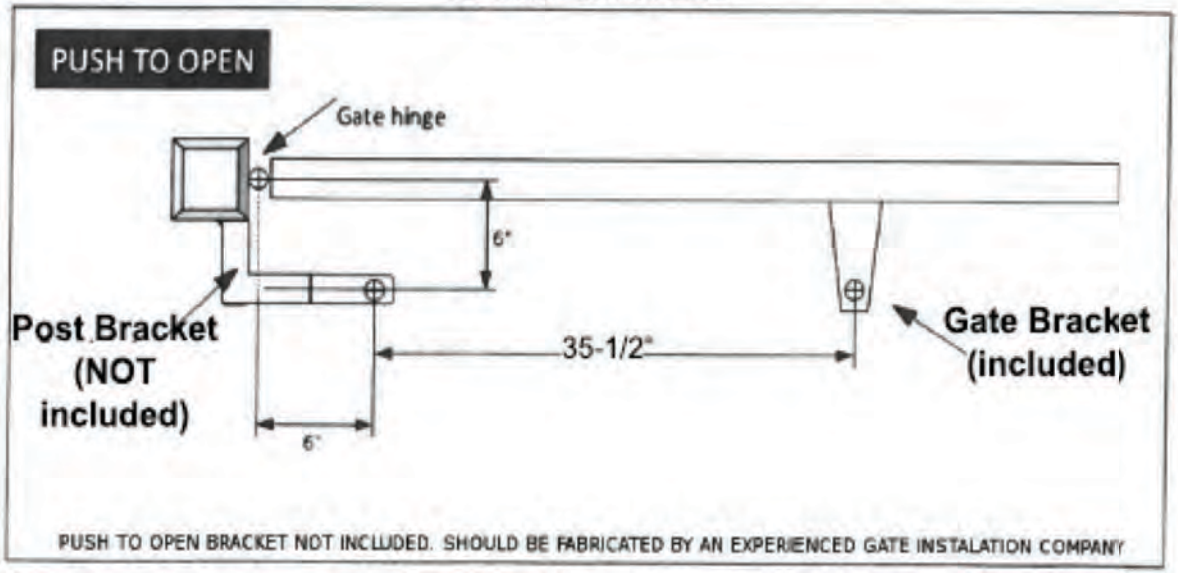


An external locking mechanism is suggested for gates over 10 feet long

USE THE CENTER PIVOT POINT OF THE GATE HINGE AS THE REFERENCE POINT

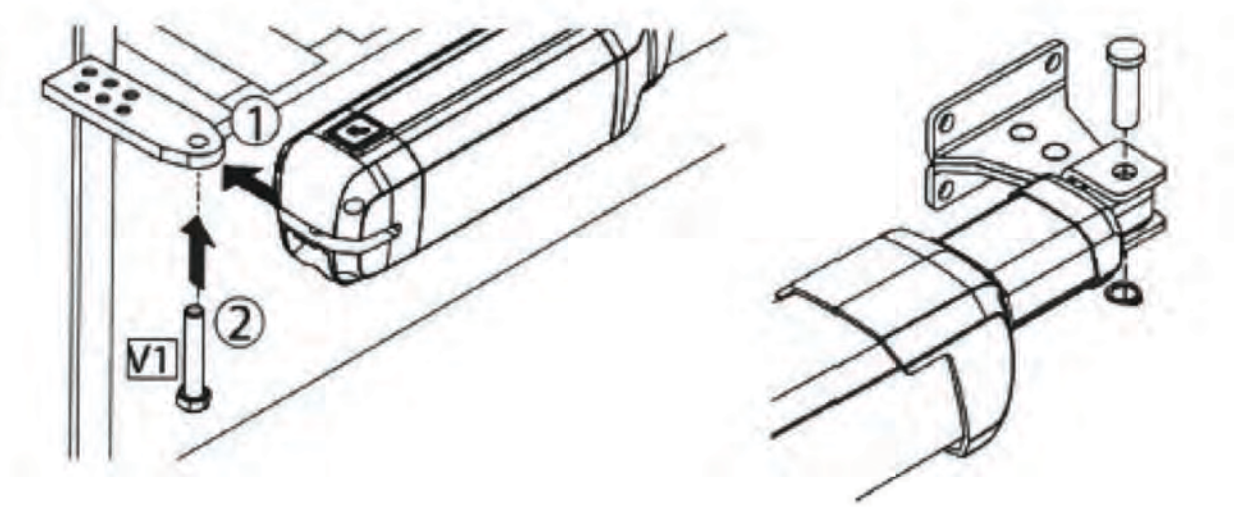


ALL DIMENSIONS IN INCHES



PUSH TO OPEN BRACKET NOT INCLUDED. SHOULD BE FABRICATED BY AN EXPERIENCED GATE INSTALATION COMPANY

MOUNTING THE ACTUATOR

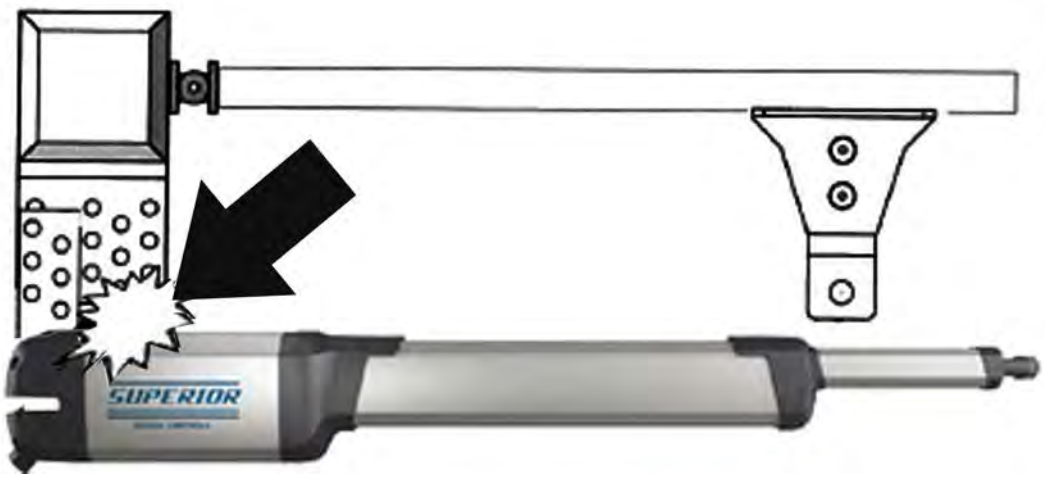


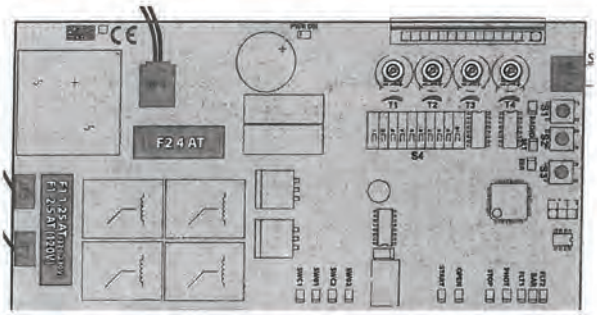
Attach the actuator to the mounting brackets as shown on the images above.

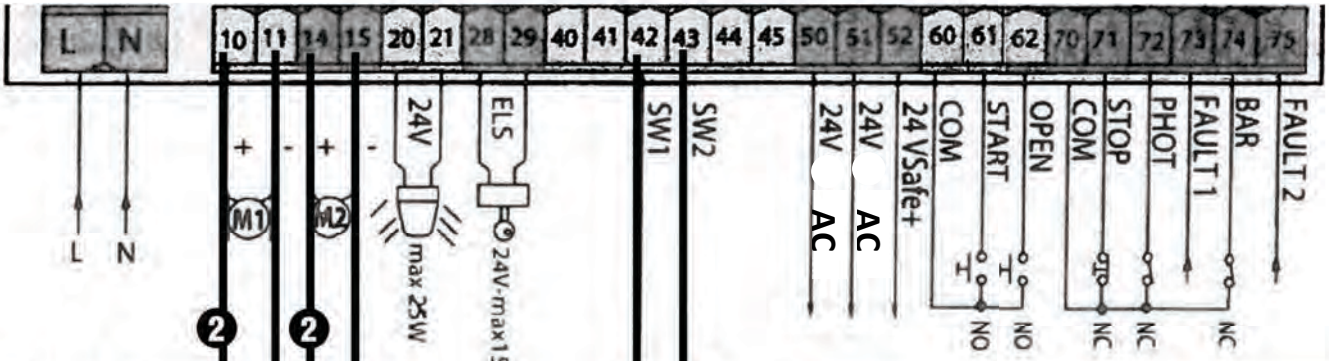
DO NOT INSTALL THE SNAP RINGS YET!!

Place them in a secure location. Install the snap rings only once you have completely finalized the installation and all adjustments.

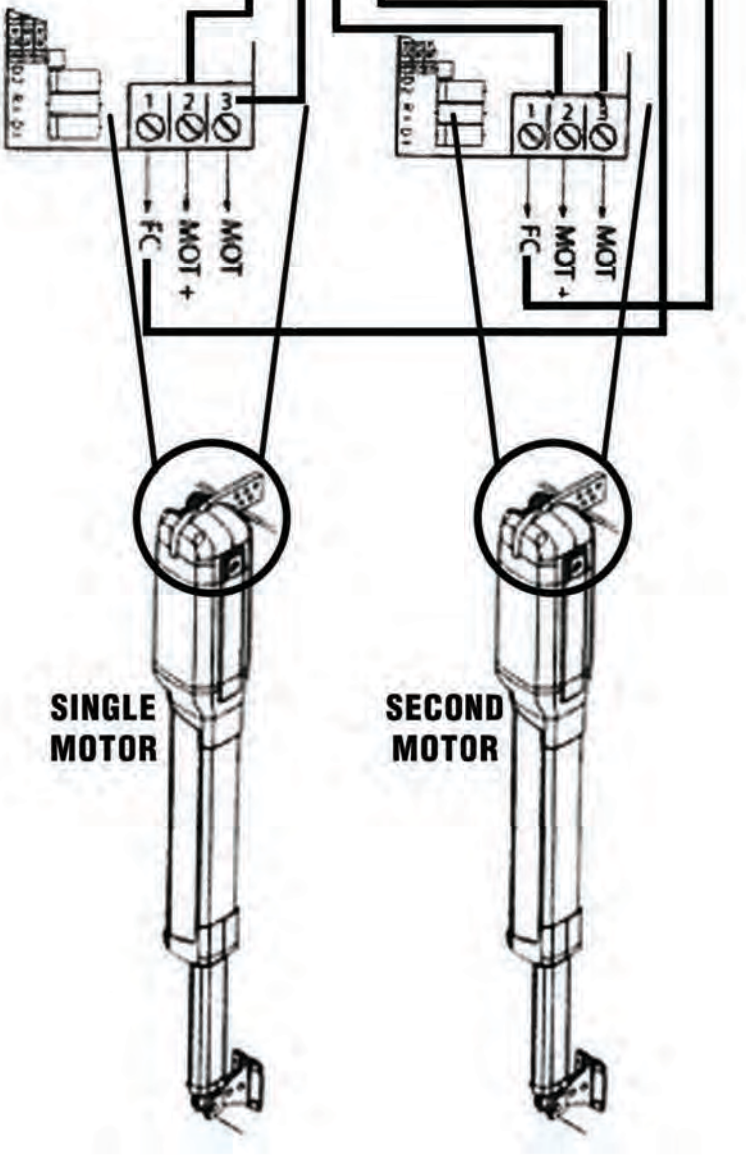
MAKE SURE THAT THE BODY OF THE ACTUATOR DOES NOT HIT THE MOUNTING BRACKET WHEN THE GATE IS FULLY CLOSED







CONNECT TO 110V POWER SOURCE



SINGLE MOTOR

SECOND MOTOR

60 & 61:
START COMMAND - RADIO RECEIVER, PUSH BUTTON, ETC

60 & 62:
OPEN ONLY - EXIT LOOP, EXIT PROBE, ETC.

70 & 72:
SAFETY - PHOTOCELLS AND SAFETY LOOP

MONITORED REFLECTIVE PHOTO EYE
(NECESSARY FOR OPERATION)

50: BROWN WIRE

52: BLUE WIRE

70: WHITE WIRE

72: BLACK WIRE

73: GRAY WIRE

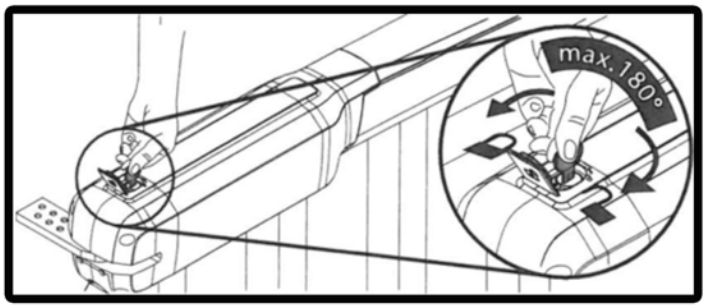
NOTE:

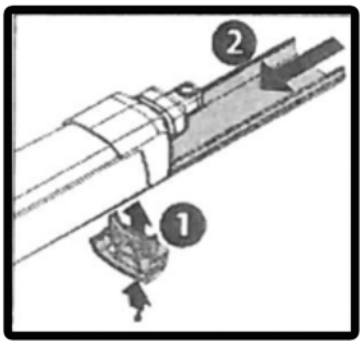
MOTOR WIRING SHOWN IS FOR PULL TO OPEN OPERATION.

SWAP MOTOR WIRES 2 & 3 FOR PUSH TO OPEN OPERATION

SETTING THE OPEN LIMITS

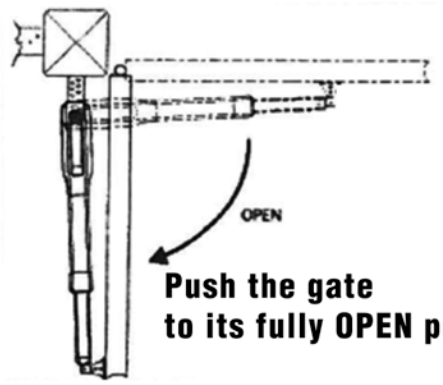
Set to Manual Operation Disengage the Drive Gear by using the key and turning clockwise.



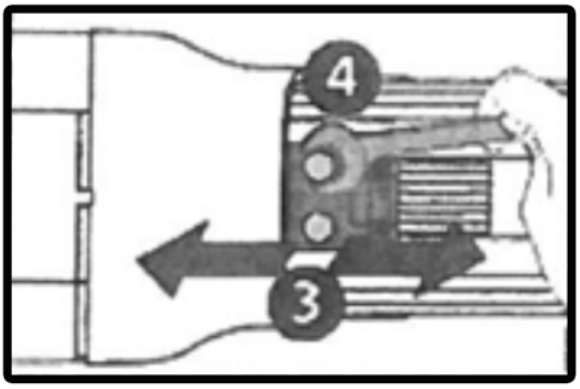


Remove cover plate (Fig 1)

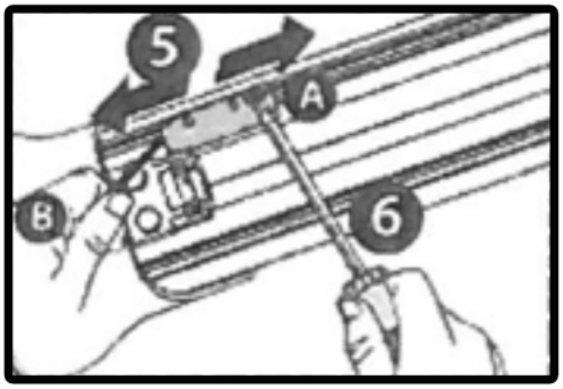
Slide off cover (Fig 2)



Push the gate to its fully OPEN position.

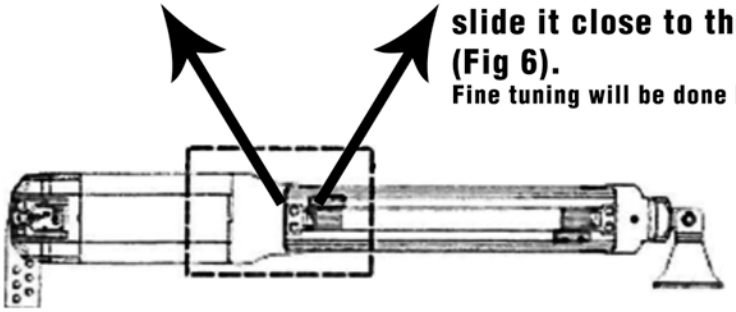


Loosen the bolts (Fig 4) and slide the Stop Block (Fig 3) against the Travel Block. Tighten the bolts.

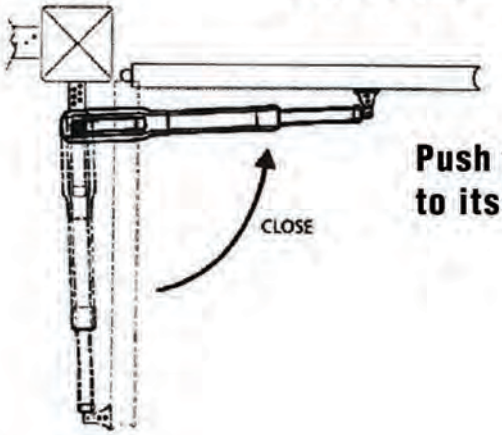


Loosen the screws on the Black Limit Switch (Fig 5) and slide it close to the Open Stop Block. (Fig 6).

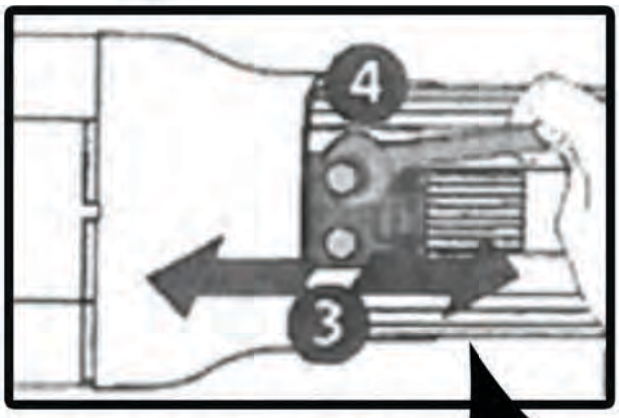
Fine tuning will be done later.

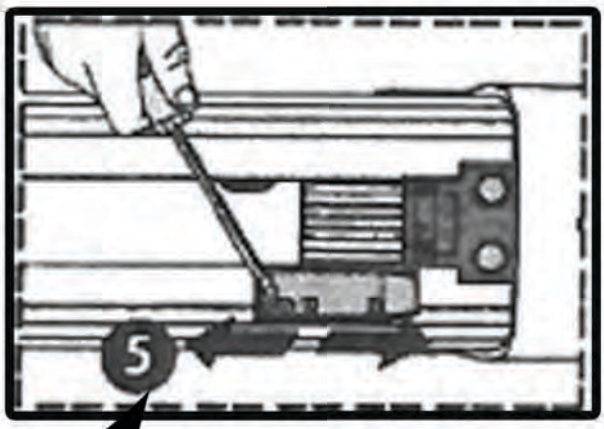


SETTING THE CLOSE LIMITS



Push the gate to its fully CLOSED position.



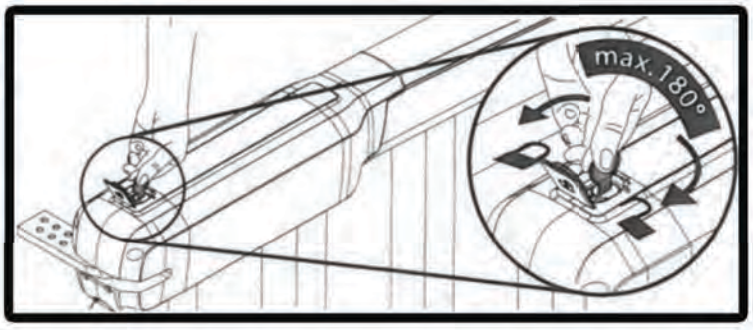


Loosen the bolts (Fig 4) and slide the Stop Block (Fig 3) against the Travel Block. Tighten the bolts.

Loosen the screws on the Black Limit Switch (Fig 5) and slide it close to the Close Stop Block.
Fine tuning will be done later.

Set to Powered Operation

Re-engage the Drive Gear by using the key and turning COUNTER CLOCKWISE.



ADJUSTING AUTO SET*

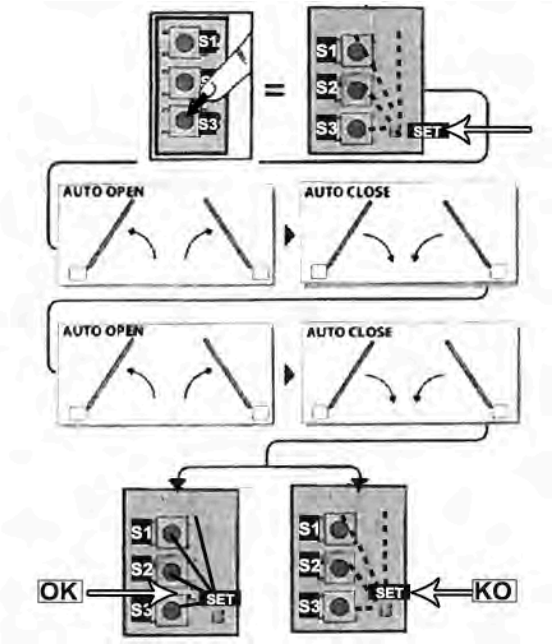
WITH GATES IN THE CLOSE POSITION PRESS THE S 3 BUTTON UNTIL S 2 LIGHT FLASHES.

THE GATE (S) WILL CYCLE 2 TIMES AUTOMATICALLY SETTING THE FORCE NEEDED TO OPERATE.

THE PROGRAMMING IS COMPLETE WHEN THE SET LIGHT TURNS SOLID.

IF SET LIGHT FLASHES STEADILY PLEASE REPEAT PROCESS.

FINE TUNE THE LIMIT SWITCHES TO DESIRED OPEN AND CLOSED POSITIONS AND TIGHTEN SCREWS.



MEMORIZING REMOTE CONTROLS TRANSMITTERS

STEP- 1

PRESS AND RELEASE
THE S1 BUTTON
THE RADIO LIGHT
WILL START FLASHING

STEP-2

PRESS AND HOLD THE TWO
BUTTONS ON THE HAND HELD
TRANSMITTER
SIMULTANEOUSLY
UNTIL THE RADIO LIGHT GOES ON SOLID.
RELEASE THE TWO BUTTONS. (Top two buttons on four button remote)

STEP-3

PRESS THE BUTTON ON THE
TRANSMITTER YOU DESIRE
FOR ACTIVATION.

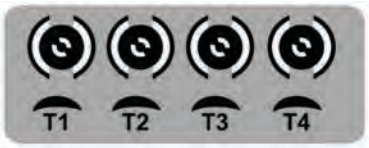
(RETURN TO STEP 2 TO
MEMORIZE ADDITIONAL
REMOTES.)

STEP-4

WHEN COMPLETED PRESS THE S1 BUTTON.
THE RADIO LIGHT WILL GO OUT.

TEST EACH TRANSMITTER FOR OPERATION.

*** ANY CHANGES DONE ON PERAMETERS WILL REQUIRE AN AUTO SET TO BE PERFORMED.**



Timmers on Circuit Board

TABLE "A" – PARAMETERS

TIMMER	Parameter	Min.	Max.	Description
T1	Automatic Closing time [s]	0	120	Waiting time before automatic closing. **NOTE: Set to 9 if not used.**
T2	Leaf Force [%]	10	100	Force exerted by leaf/leaves. This is the percentage of force delivered, beyond the force stored during the autoset cycle (and subsequently updated), before an obstacle alarm is generated. **WARNING: It affects impact force directly: make sure that current safety requirements are met with the set value (*). Install anti-crush safety devices where necessary.**
T3	Slow-down distance [%]	5	50	Set slow-down speed as a percentage of total travel. This distance is traveled at low speed. **NOTE: When this parameter is edited, a new Autoset cycle must be run to confirm it.**
T4	Motor 1 Closing Delay time [s]	0	25	Motor 1 closing delay time with respect to motor 2. **NOTE: set 0 for single motor operations (leaf 1)**

(*) In the European Union, apply standard EN 12453 for force limitations, and standard EN 12445 for measuring method.

TABLE "B" – LOGICS

DIP	Logic	Default	Cross out Setting used	Description
1	**Transmitter Programming**	**ON**	**ON**	Enables wireless memorizing of transmitters: 1 – Press in sequence the hidden key and normal key (T1-T2-T3-T4) of a transmitter that has already been memorized in standard mode via the radio menu. 2 – Press within 10 sec. the hidden key and normal key (T1-T2-T3-T4) of a transmitter to be memorized. The receiver exits programming mode after 10 sec.: you can use this time to enter other new transmitters. This mode does not require access to the control panel. **IMPORTANT: Enables the automatic addition of new transmitters, clones and replays.**
			OFF	Disables wireless memorizing of transmitters and automatic addition of clones. Transmitters are memorized only using the relevant Radio menu or automatically with replays. **IMPORTANT: Disables the automatic addition of new transmitters and clones.**
2	**BAR/8K2**	**OFF**	**ON**	Input configured as BAR 8K2 (Fig. H, ref. 5). Input for resistive edge 8K2. The command reverses movement for 2 sec..
			OFF	Input configured as BAR, safety edge (Fig. H, ref. 3-4). The command reverses movement for 2 sec..
3	**Photocell input check**	**OFF**	**ON**	Enable safety check on the PHOT input.
			OFF	Safety check on PHOT input not enabled
4	**Edge input check**	**OFF**	**ON**	Enable safety check on the BAR input.
			OFF	Safety check on BAR input not enabled.
5	**Photocells during closing**	**OFF**	**ON**	In the event beam is broken, photocell operation is disabled during opening. During closing, movement is reversed immediately.
			OFF	When beam is broken, photocells are active during both opening and closing. When beam is broken during closing, movement is reversed only once the photocell is cleared.
6	**Fast closing**	**OFF**	**ON**	Closes 3 seconds after the photocells are cleared before waiting for the set TCA to elapse.
			OFF	Logic not enabled.
7	**Block pulses During opening**	**OFF**	**ON**	The start pulse has no effect during opening.
			OFF	The start pulse has effect during opening.
8	**3-step logic**	**OFF**	**ON**	Switches to 3-step logic; during closing start reverses movement.
			OFF	Switches to 4-step logic.

	3 step	4 step
CLOSED	opens	opens
DURING CLOSING		stop
OPEN	closes	closes
DURING OPENING	stop + TCA	stop + TCA
AFTER STOP	opens	opens

9	**Hammer during Opening**	**OFF**	**OFF**	Logic not enabled.
			ON	Before opening completely, the gate pushes for approx. 2 seconds as it closes. This allows the solenoid lock to be released more easily. **IMPORTANT – Do not use this function if suitable mechanical stops are not in place.**
10	**Closing limit Switch pressure**	**OFF**	**OFF**	Movement is stopped only when the closing limit switch trips: in this case, the tripping of the closing limit switch must be adjusted accurately (Fig. G Ref. B).
			ON	Use when there is a mechanical stop in closed position. This function allows leaves to press against the mechanical stop without the Amperostop sensor interpreting this as an obstacle. Thus the rod continues its stroke for a few seconds after meeting the closing limit switch or as far as the mechanical stop. In this way, the leaves come to rest perfectly against the stop

1) GENERAL INFORMATION

The **ZARA BTL2** control panel comes with standard factory settings. Any change must be set by means of the TRIMMER and DIP SWITCH settings.
The Control unit completely supports the EELINK protocol.
Its main features are:

- Control of 1 or 2 24V BT motors
  Note: 2 motors of the same type must be used
- Electronic torque control with obstacle detection
- Separate inputs for safety devices
- Built-in radio receiver rolling code with transmitter cloning.

The board has a terminal strip of the removable kind to make maintenance or replacement easier. It comes with a series of prewired jumpers to make the installer's job on site easier.
The jumpers concern terminals: 70-71, 70-72, 70-74. If the above-mentioned Terminals are being used, remove the relevant jumpers.
TESTIING
The **ZARA BTL2** panel controls (checks) the start relays and safety devices (photo-cells) before performing each opening and closing cycle.
If there is a malfunction, make sure that the connected devices are working properly and check the wiring.

2) TECHNICAL SPECIFICATIONS	
Power supply	220-230V 50/60 Hz
Low voltage/mains insulation	> 2MOhm 500V
Operating temperature range	-20/ +55°C
Thermal overload protection	Software
Dielectric rigidity	Mains/LV3750V~for 1 minute
Motor relay switching current	10A
Maximum motor power	40W + 40W (24V)
Accessories power supply	24V ~ (demand max. 0,2A) 24V ~ safe
Solenoid lock	24V ~ max. 15W
Flashing light	24V max. 25W
Fuses	See Fig. C
N°of combinations	4 billion
Max. n°of transmitters that can be memorized	63
Maximum work time	3 minutes
Maximum power	130W
Maximum cycle	**S3 13s-1-13s-1x30** pause **90 min.**

(*other voltages to order)

Usable transmitter versions:
All ROLLING CODE transmitters compatible with ((ER-Ready))

3) TUBE ARRANGEMENT Fig. A

Intsall the electrical system referring to the standards in force for electrical systems CEI 64-8, IEC 364, harmonization document HD 384 and other national standards.

4) TERMINAL BOARD WIRING Fig. C

WARNINGS – When performing wiring and installation, refer to the standards in force and, whatever the case, apply good practice principles.
Wires carrying different voltages must be kept physically separate from each other or they must be suitably insulated with at least 1mm of additional insulation.
Wires must be secured with additional fastening near the terminals, using devices such as cable clamps.
All connecting cables must be kept far enough away from the dissipater.
WARNING! For connection to the mains power supply, use a multicore cable With a cross-sectional area of at least 3x1.5mm of the kind provided for by the regulations in force.
To connect the motors, use a cable with a cross-sectional area of at least 1.5mm of the kind provided for by the regulations in force. Byway of example, if the cable is run outside (unprotected), it must be at least type H07RN-F, while if it is run inside (in a raceway), it must be at least type H05 VV-F.

	Terminal	Definition	Description
Power supply	L	LINE	Single phase power supply 220-230V ~ 50/60 Hz
	N	NEUTRAL	
	JP2 JP5	TRANSF PRIM	Transformer primary winding connection, 220-230V~
	JP4	TRANSF SEC	Board power supply: 24V~ Transformer secondary winding 2aV= Buffer battery power supply
Motor	10	MOT 1+	Connection motor 1. Time lag during closing. (14)
	11	MOT 1 -	
	14	MOT 2+	Connection motor 2. Time lag during opening. 2s
	15	MOT 2 -	
Aux	20	BLINKER 24V (MAX. 1A)	Flashing light 24V output max. 25W. Contact stays closed while leaf is operating
	21		
	28	Solenoid lock	24V ~ max. 15W
	29		
Limit switches	40	Not used	
	41	Not used	
	42	SW1	Limit switch motor 1
	43	SW2	Limit switch motor 2
	44	Not used	
	45	Not used	
Accessories Power Supply	50	24V-	Accessories power supply output
	51	24V+	
	52	24Vsafe+	Tested safety device power supply output (photocell transmitter and safety edge transmitter). Output active only during operating cycle.
Commands	60	Common	START and OPEN inputs common
	61	START	START command button (N.O.). Operation according to "3/4-STEP" logic
	62	OPEN	OPEN command button (N.O,). Gate opened with this command. If the input stays closed, the leaves stay open until the contact is opened When the contact is open, the automated device closes following the TCA time, where activated.
Safety devices	70	Common	STOP, PHOT and BAR inputs common
	71	STOP	The command stops movement, (N.C.) If not used, leave jumper inserted
	72	PHOT (**)	PHOTOCELL input (N.C.). Operation according to "PHOTOCELL/PHOTOCELL DURING CLOSING" logic if not used, leave jumper inserted
	73	FAULT 1	Test input for safety devices connected to PHOT.
	74	BAR (**)	BAR safety edge input (N.C.) Configurable according to the "BAR/8K2" logic The command reverses movement for 2 sec. If not used, leave jumper inserted.
	75	FAULT 2	Test input for safety devices connected to BAR.
Antenna	Y	ANTENNA	Antenna input. Use an antenna tuned to 433MHz. Use RG58 coax cable to connect the Antenna and Receiver. Metal bodies close to the antenna can interfere with radio reception. If the transmitter's range is limited, move the antenna to a more suitable position.
	#	SHIELD	