PHOBOS N BT & PHOBOS NL BT
INSTALLER REFERENCE
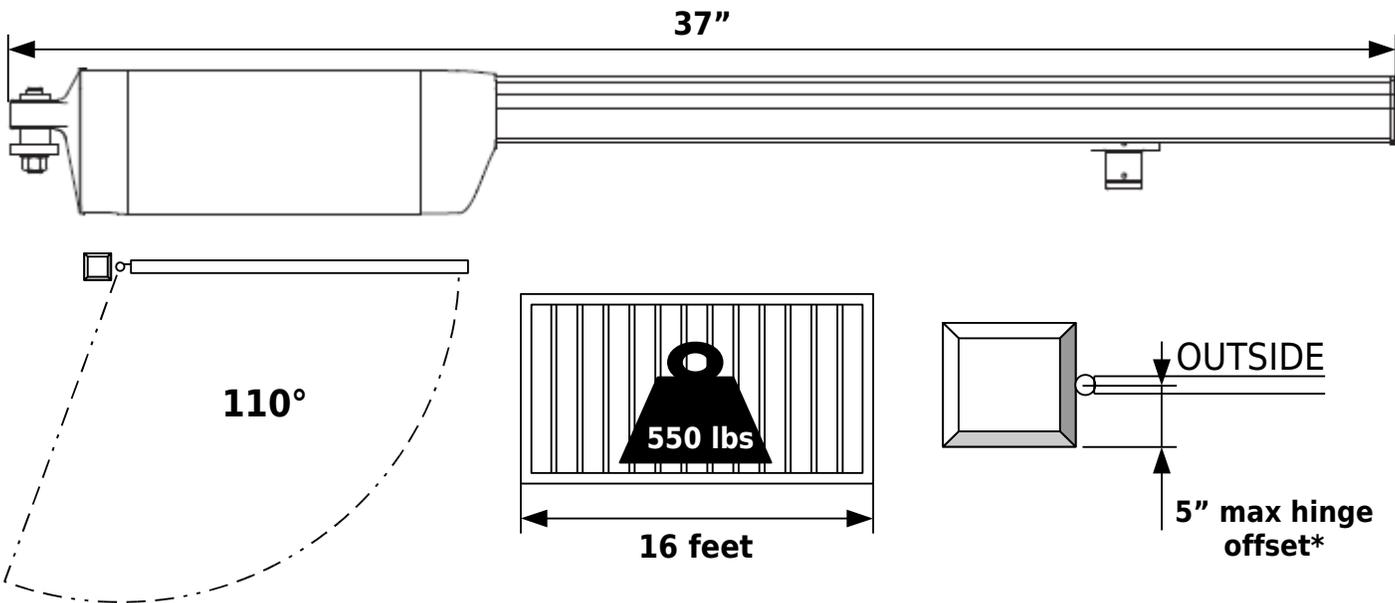
Phobos N BT

32-1/2"

90°

550 lbs

10 feet

OUTSIDE

4" max hinge offset*

Phobos NL BT

37"

110°

550 lbs

16 feet

OUTSIDE
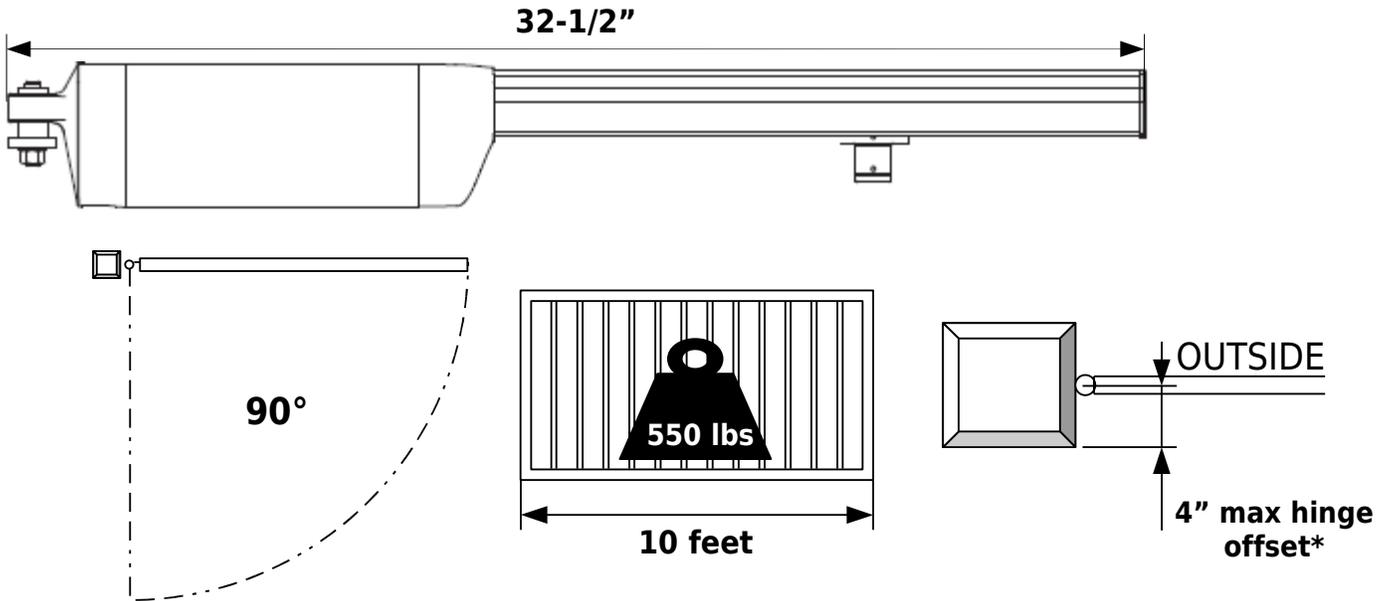
5" max hinge offset*

✳ **Maximum hinge offset does not apply to push to open applications**

☐ Determine the proper geometry. Pages 4 & 5.

☐ Install the Post bracket. Page 6 & 7.

☐ Install the Gate Bracket. Page 7.

☐ Install the magnet holder. Page 7

☐ Wire the motors. Page 8.

☐ Attach the actuators to the mounting brackets. Page 8.

☐ Set the limit switches. Page 9.

☐ Connect the motors to the control board. Page 10.

☐ Install and connect your safety devices. Page 11.

☐ Install and connect your operating devices (if applicable). Page 11.

☐ Install and connect your magnetic lock (optional). Page 12.

☐ Program your remotes. Page 13.

☐ Set your controller to Single Motor Operation if needed. Page 13.

☐ Run and time your motors from fully open to fully closed positions.

☐ Set your slowdown settings. Page 14.

☐ Set the torque adjustment. Page 14.

☐ Set additional features as needed. See Programming Menu Reference page (Back cover).

A & B DIMENSIONS - For **A** and **B** dimensions, the measurement is taken from the center of the gate's hinge point to the center of the Phobos pivot point.

PHOBOS' PIVOT POINT

PIVOT POINT ⊗

PIVOT POINT

Gate hinge

Gate post

Gate frame

A

B
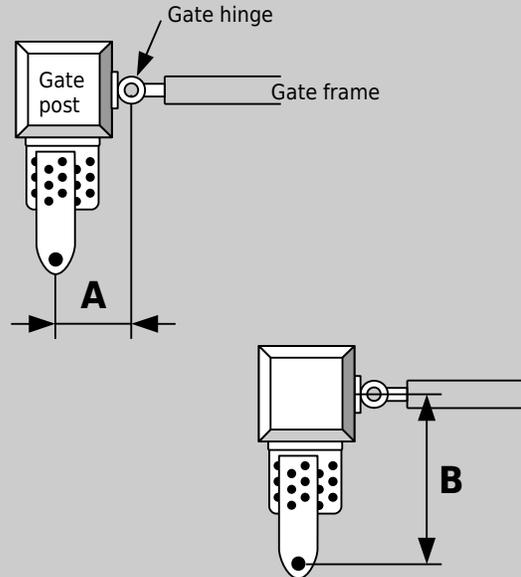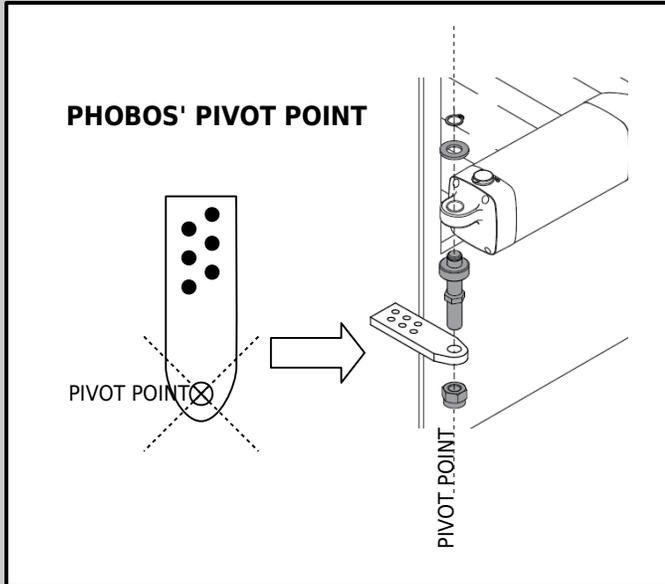
For Push-to-Open applications, please call Tech Support at 877-995-8155

C DIMENSION - For **C** dimension, the measurement is taken from the Phobos pivot point to the center of the large hole on the gate bracket **WITH THE GATE ON ITS FULLY CLOSED POSITION**.

Gate bracket

C
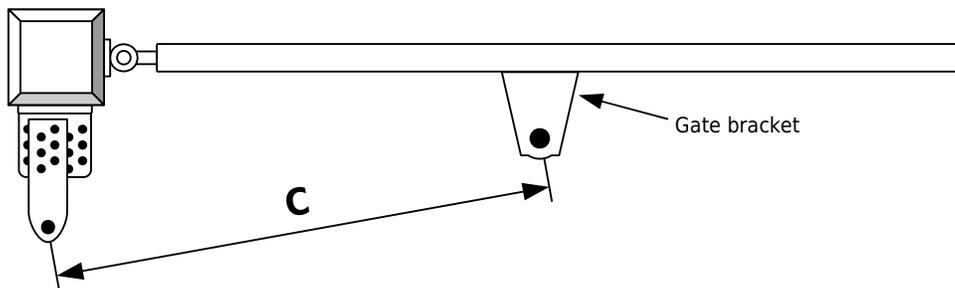
SQUARE WITH THE GATE - It is very important that the measurements are taken using the gate frame fully closed as perpendicular angle reference. If a fully closed gate is not square with the gate post, you must make the proper angle adjustments.

90°

A

90°

B
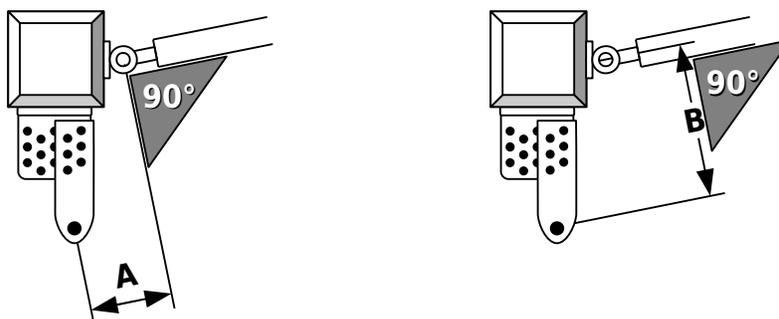
IDEAL GEOMETRY - A symmetrical geometry will give you even speed and torque throughout the entire movement of the gate as well as equally strong leverage to hold the gate in position at both open and close ends of strokes. If you are welding the post bracket, when possible, use the geometry in table 1:

		A	B	C
Table 1	**PHOBOS N BT**	**5-7/8"**	**5-7/8"**	**27-1/2"**
	PHOBOS NL BT	**7-1/2"**	**7-1/2"**	**32-1/2"**

For Push-to-Open applications, please call Tech Support at 877-995-8155

USING THE ARB BRACKETS - The ARB adjustable brackets simplify the installation process. The tables 2.1 and 2.2 gives you different options depending on the three most common gate hinge offsets. These dimensions only apply to installations where the fully closed gate is square with the gate post. DO NOT DEVIATE FROM THE DIMENSIONS ON THE TABLES

Gate hinge offset – The gate hinge offset is the distance from the center of the gate hinge to the inside edge of the gate post

Gate hinge

Gate post

Gate frame

Hinge offset

ARB
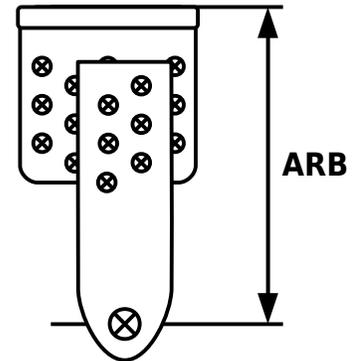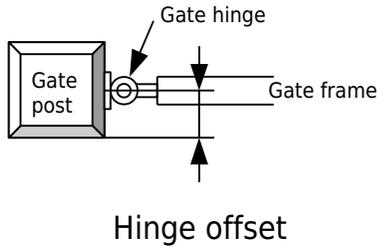
**PHOBOS N BT
ARB GEOMETRY**

	HINGE OFFSET	A	B	C	ARB
	1-1/2"	**5-1/8"**	**6-3/4"**	**27-1/2"**	**5-1/4"**
Table 2.1	**2"**	**5-1/8"**	**6-5/8"**	**27-1/2"**	**4-5/8"**
	3"	**4"**	**7-5/8"**	**27-1/2"**	**4-5/8"**

**PHOBOS NL BT
ARB GEOMETRY**

	HINGE OFFSET	A	B	C	ARB
	1-1/2"	**7-3/8"**	**7-3/8"**	**32-1/2"**	**5-7/8"**
Table 2.2	**2"**	**7-1/2"**	**7-7/8"**	**32-1/2"**	**5-7/8"**
	3"	**7-1/2"**	**7-7/8"**	**32-1/2"**	**4-7/8"**

ARB BRACKET LENGTHS - To achieve the desired ARB length, use all 3 bolts on the holes that are represented by black dots on the illustration of the long bracket piece. Insert them only on the holes that are represented by black dots on the short bracket piece. The long piece can be flipped to match the holes on the short piece.

4-5/8"

4-7/8"

5-1/4"

5-5/8"

5-7/8"
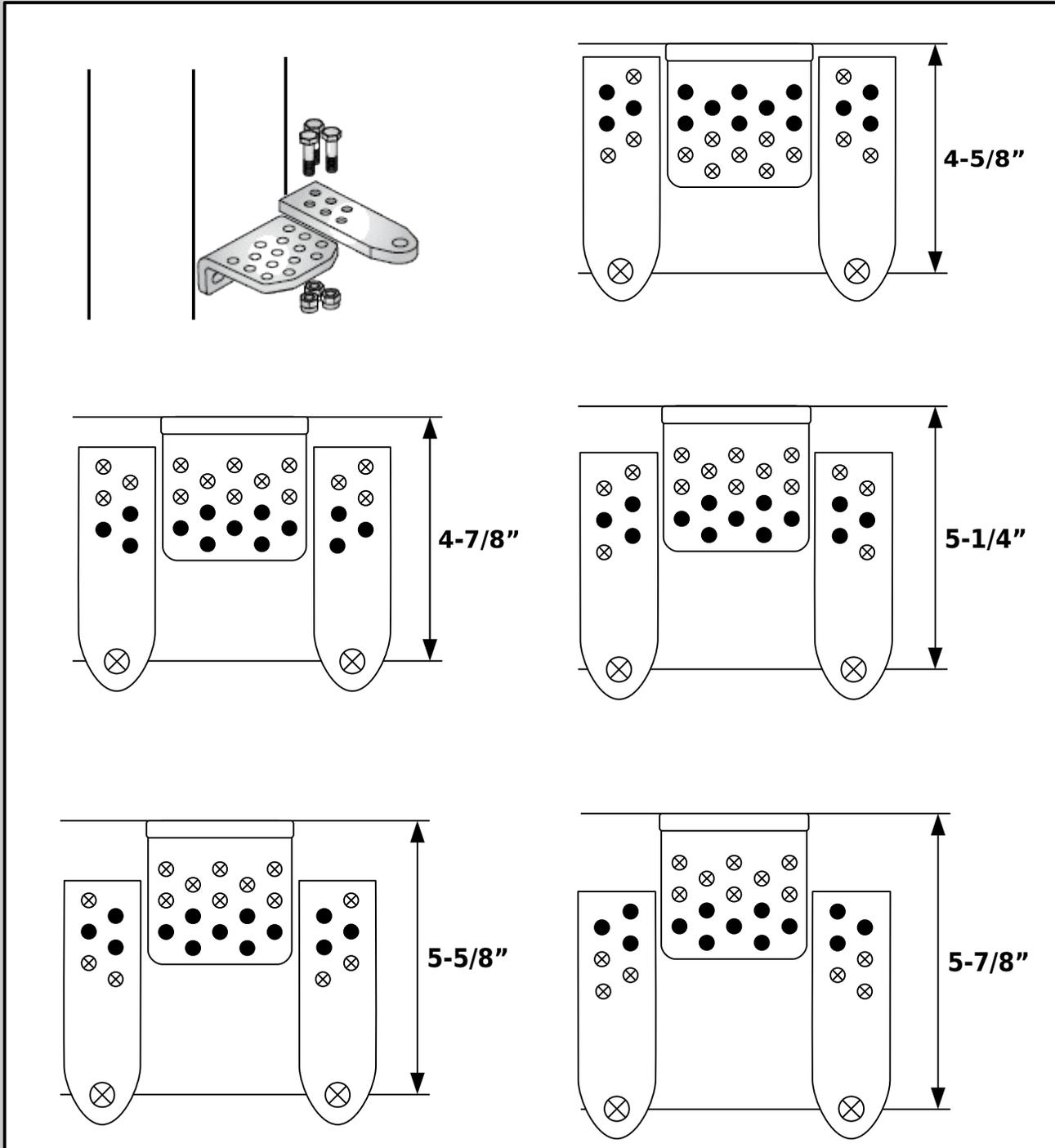
1) <u>DETERMINE THE PROPER GEOMETRY FOR YOUR INSTALLATION</u>. You can use the table below to write down your dimensions.
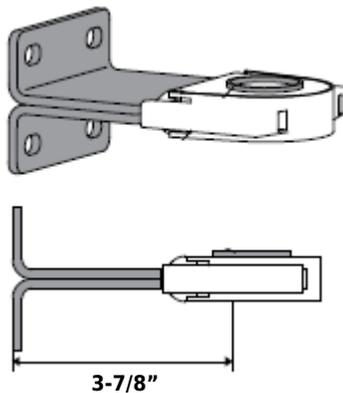
MY GEOMETRY

SIDE	HINGE OFFSET	A	B	C	ARB
RIGHT LEAF					
LEFT LEAF					

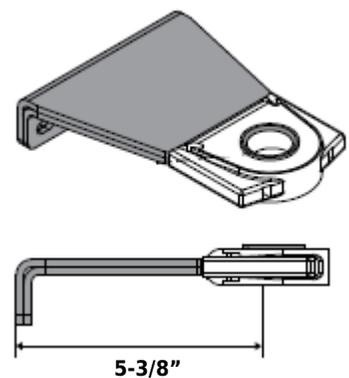**2) BOLT AND/OR WELD THE POST BRACKET ACCORDING TO YOUR GEOMETRY.**

3) <u>BOLT AND/OR WELD THE GATE BRACKET ACCORDING TO YOUR GEOMETRY</u>. Remember to measure the distance to **C** with a fully closed gate.

WELD OR BOLT
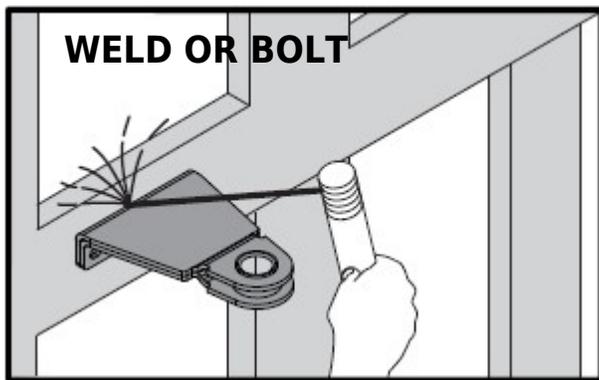
Phobos N BT gate bracket

Phobos N L BT gate bracket

3-7/8"

5-3/8"

**4) <u>INSTALL THE MAGNET HOLDER OVER THE GATE BRACKET</u>.** Do not install before or right after welding. Wait for bracket to cool down. Do not try to operate the actuators without the magnet holder in place.
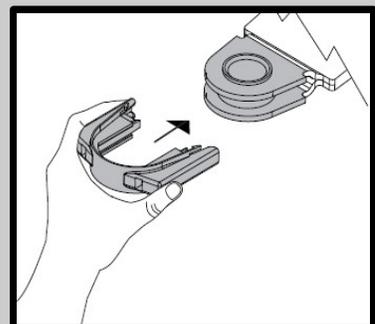
1) WIRE THE MOTORS - Before attaching the actuator to the mounting brackets, wire the motor cable and then install the protective cover as illustrated.

WHITE

14 AWG STRANDED   RED

BLACK
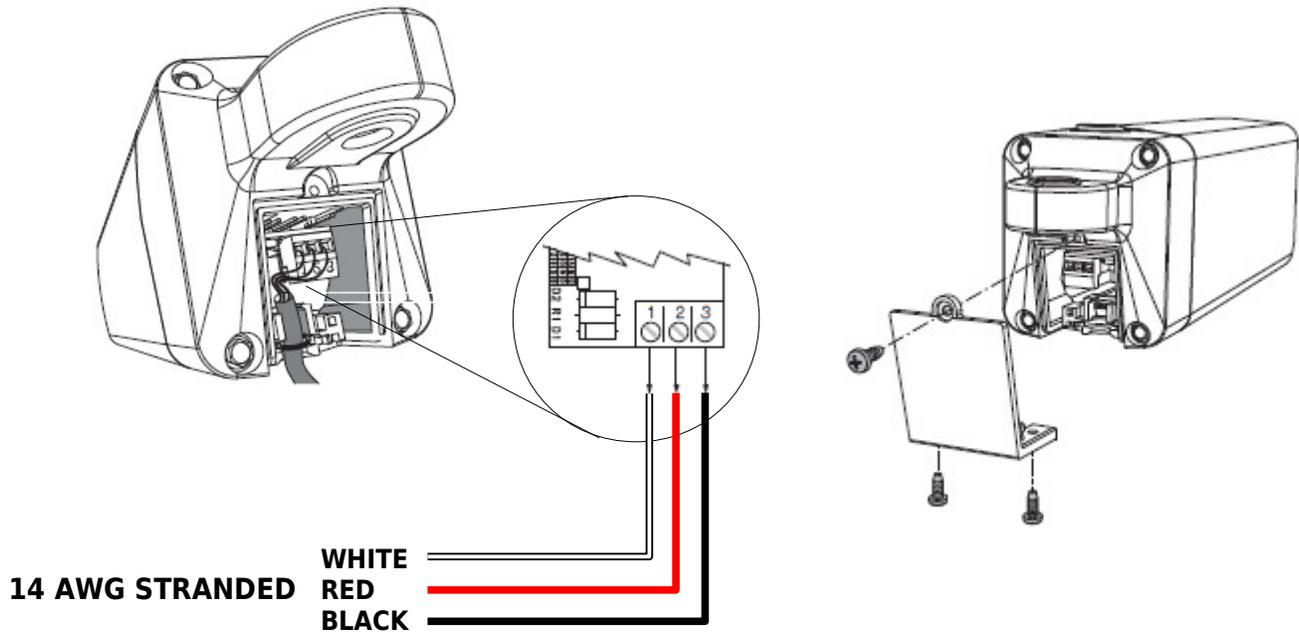
2) ATTACH THE ACTUATOR - Follow illustrations to install the actuator to the post and gate brackets.
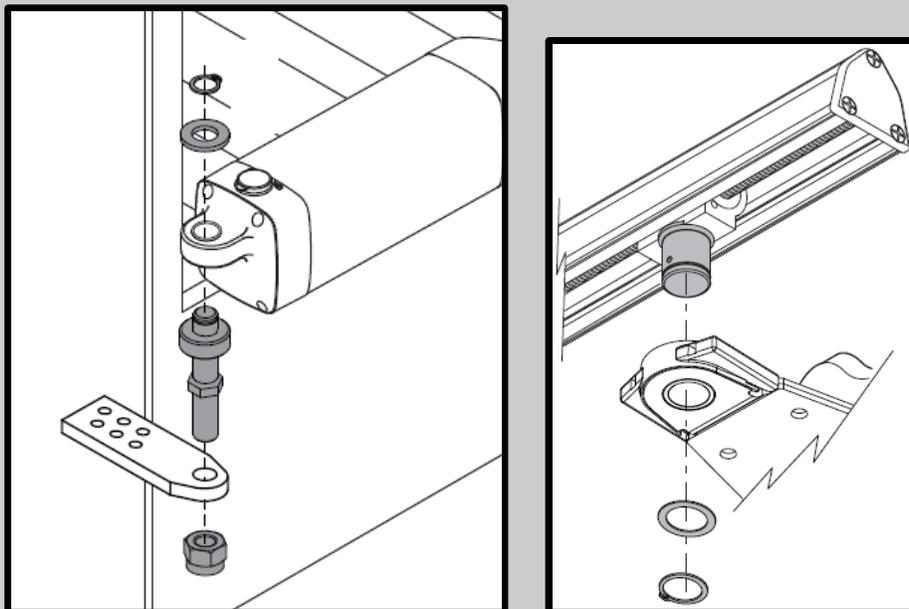
1) <u>SET TO MANUAL OPERATION</u> - Disengage the drive gear by using the triangular key and turning clockwise.
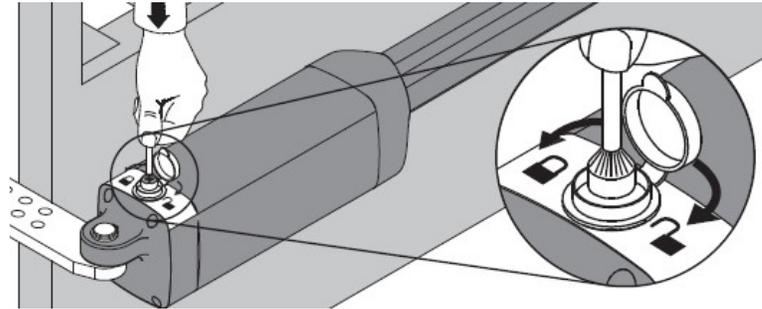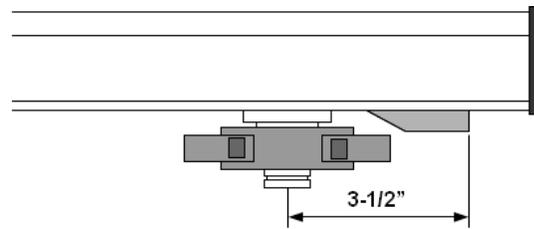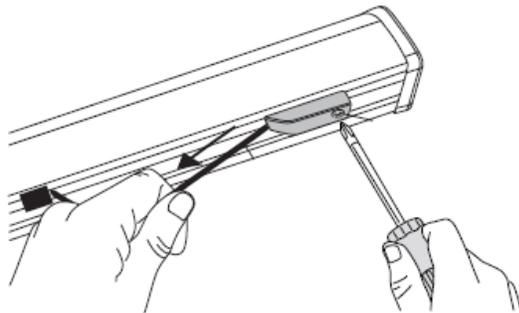
2) <u>SET THE CLOSE LIMIT</u> - Push the gate to its fully closed position. Remove the screw that holds the proximity sensor at the front end of the actuator. Slide it back so that the back end of the sensor housing is 3-1/2" from the center of the drive carriage and re-attach screw that secures sensor in place.

3-1/2"

3) <u>SET THE OPEN LIMIT</u> - Push the gate to its fully open position. Remove the screw that holds the proximity sensor closest to the actuator body. Slide it forward so that the back end of the sensor housing is 3-1/2" from the center of the drive carriage and re-attach screw that secures sensor in place.

3-1/2"
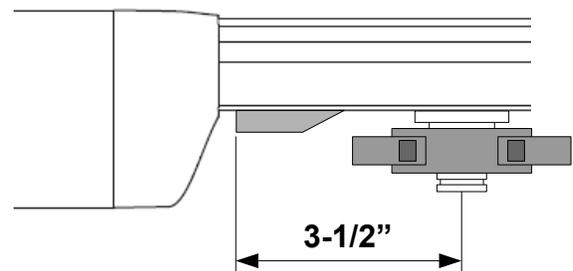
4) <u>RE-ENGAGE THE MANUAL RELEASE</u> - Use triangular key and turn counterclockwise to re-engage gears.

16 AWG
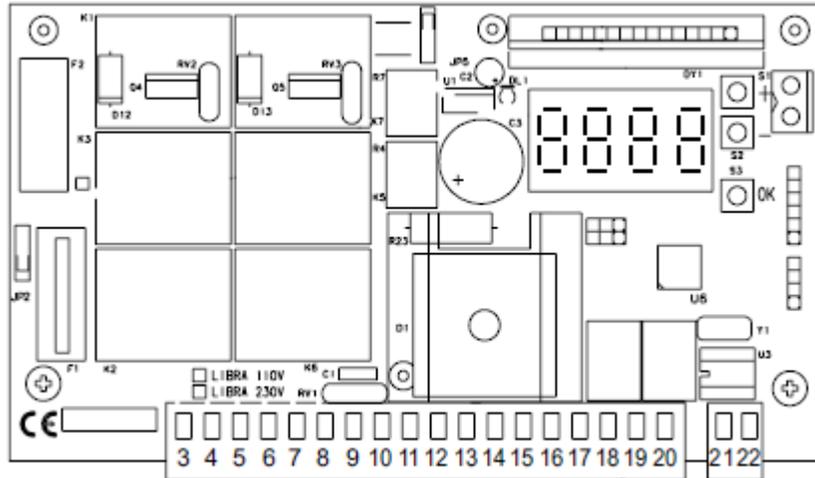
DUAL MOTOR OPERATION
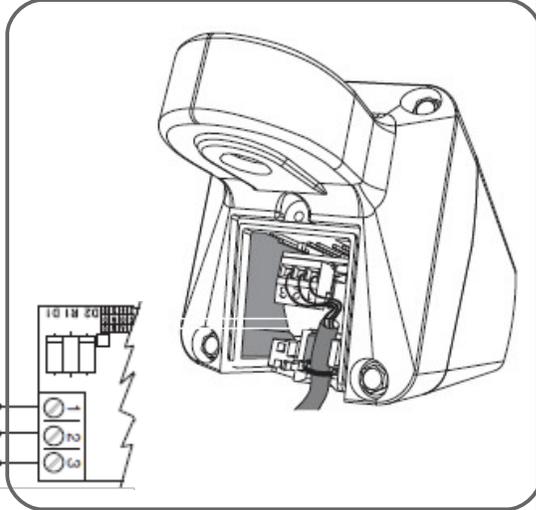
SINGLE MOTOR OPERATION
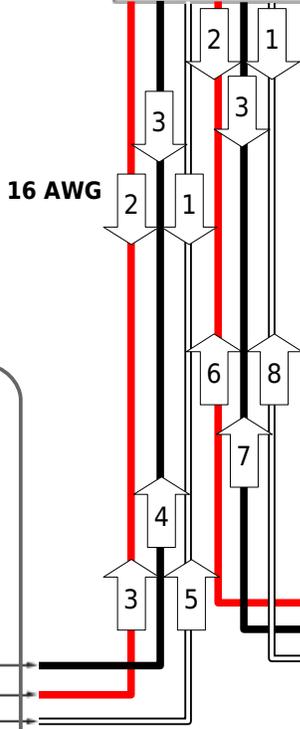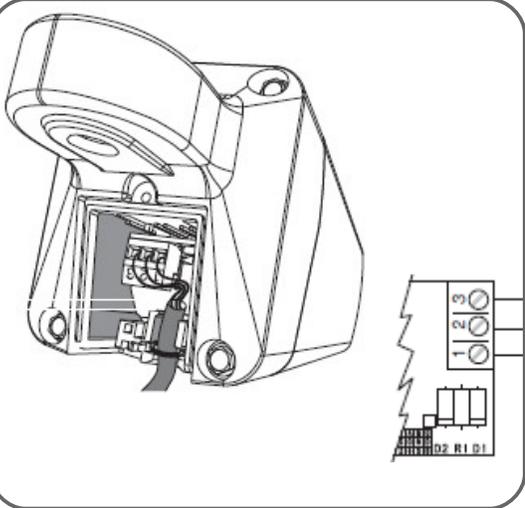
NOTE: For **push to open** applications, the **RED** and **BLACK** wires are **reversed**

PHOTOBEAM SENSOR WIRING

TRANSMITTER

RECEIVER

←18 **Normally closed**

2   14→

1   13→

Remove jumper

←15 **Common**

←12

←11

OPERATING DEVICES

COMMON   START   OPEN
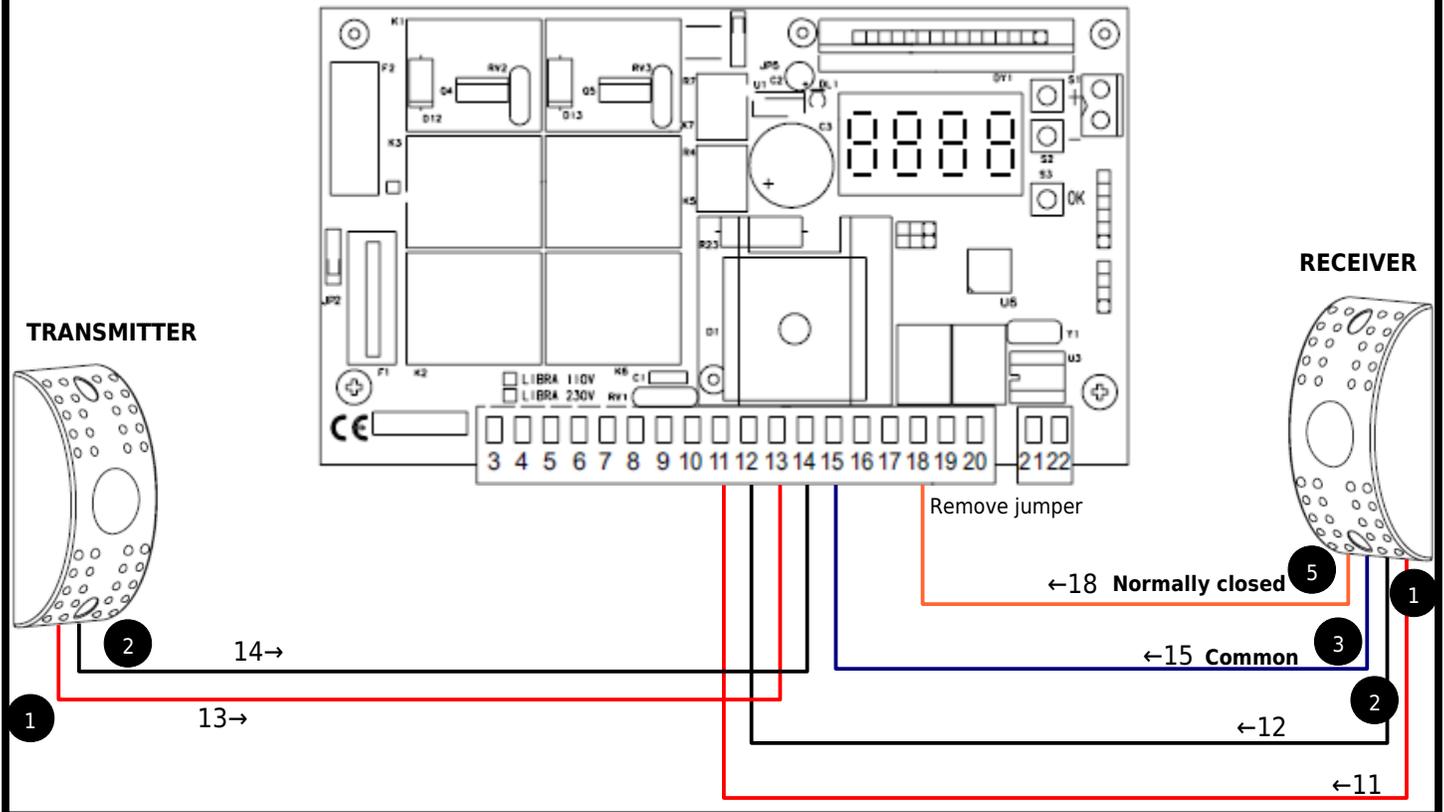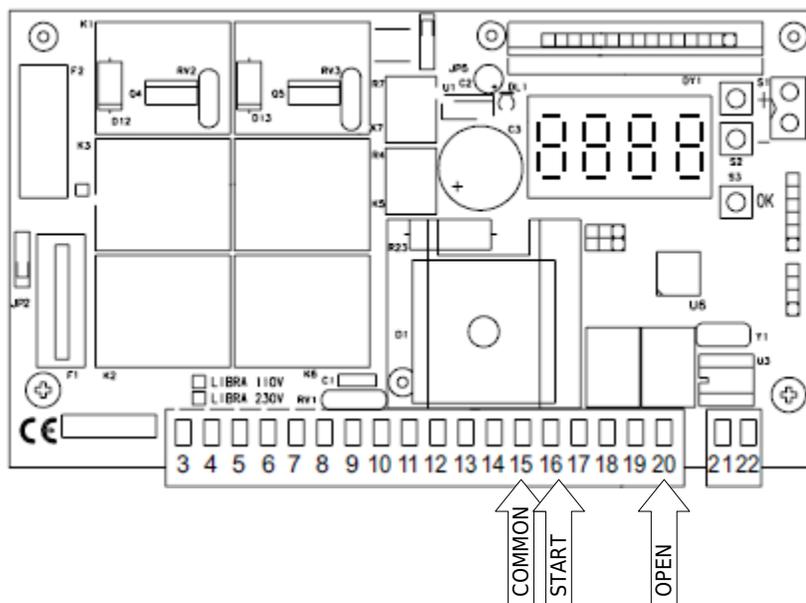
Opening devices such as exit probes, entry keypads and phone entry systems should be connected to terminals **15** (common) and **20** (open).

Open and close devices such as single button push-buttons and external radio receivers should be connected to terminals **15** (common) and **16** (start)

STOP / RESET BUTTON

COMMON
STOP
Remove jumper
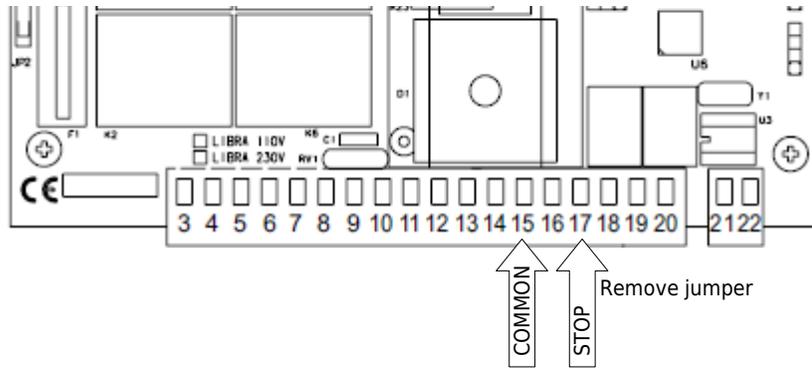
Stop button or devices should be wired to terminals **15** (common) and **17** (stop). These must be normally closed contact devices. The factory installed jumper on terminal 17 must be removed.

UL Block – When the system detects 2 consecutive physical obstructions, it stops the motors and ignores all additional commands. The activation of the stop input will reset the controller and resume its normal operation.

MAGNETIC LOCK WIRING (OPTIONAL)

- (White)

EXTERNAL POWER SUPPLY
FOR MAGNETIC LOCK

+ (Red)

Common (Blue)

24V AC/DC
Double throw
Relay
Part No. **KRELAY24V**

Positive

Normally closed (Orange)

Negative
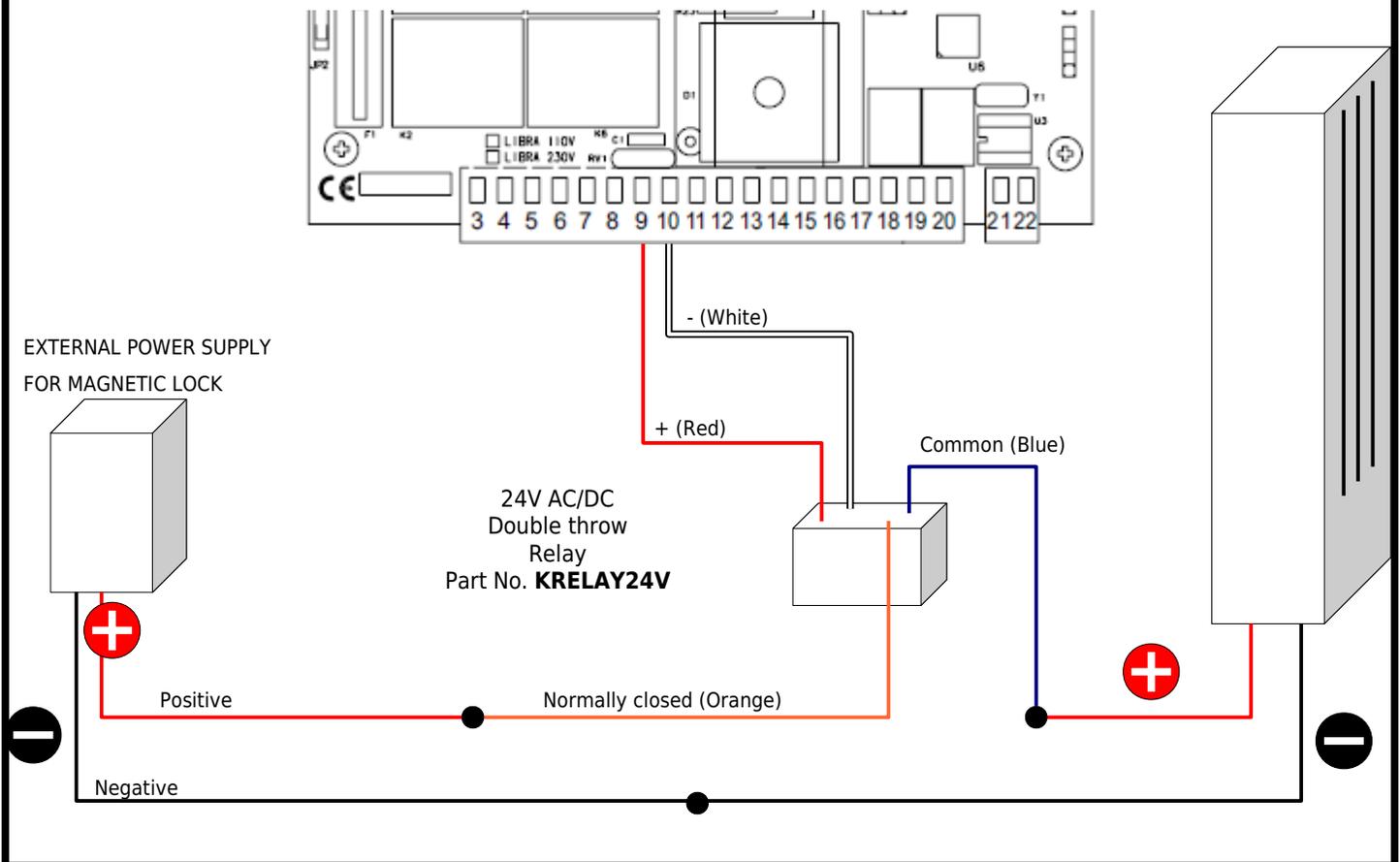
NAVIGATE THE PROGRAMMING MENU

Use the LCD display and the 3 buttons on the upper right corner of the Libra UL-R to navigate and manipulate the menu. <u>Press the **OK** button twice to start.</u>

RADIO TRANSMITTER PROGRAMMING (ADD START)

1. From the **MAIN MENU** select **RADIO**. `rAd io`

2. From the RADIO Sub-menu select **ADD START**. `Add StArt`

3. PRESS AND HOLD the *HIDDEN BUTTON* on your transmitter UNTIL THE SCREEN DISPLAYS "**RELEASE**". `h iddEn bUtton` `rELEASE`

4. "**DESIRED BUTTON**" should be displayed on your screen. If not go back to step 2. `dES irEd bUtton`

5. Momentarily press the button on your transmitter that you wish to operate the system with.

6. **OK** and the number of the memory location of the transmitter should be displayed on the screen for a short moment. If not, go back to step 2. `oH 01`

7. For additional transmitters, repeat steps 2 through 6.

MAIN MENU	
PARAM	
LOGIC	
RADIO	**ADD START**
LANGUAGE	READ
DEFAULT	ERASE 64
AUTOSET	RX CODE

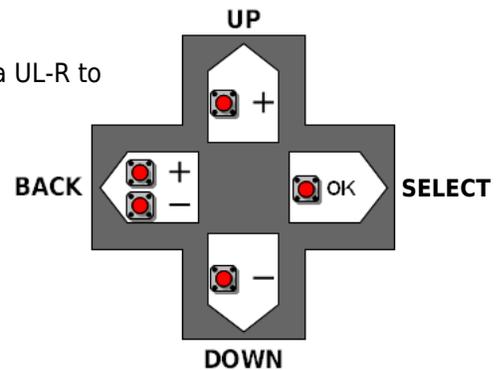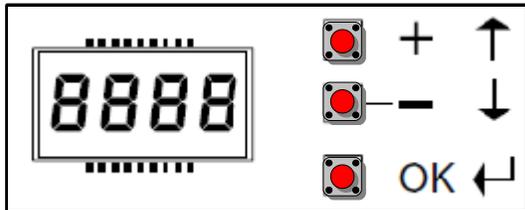| RADIO	
ADD START	**HIDDEN BUTTON**
READ	**RELEASE**
ERASE 64	**DESIRED BUTTON**
RX CODE	**OK 01**

MITTO'S HIDDEN BUTTONS

OR
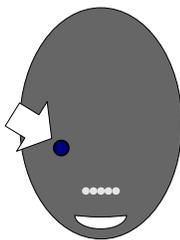
Physical hidden button
BACK OF TRANSMITTER
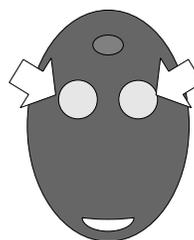
Virtual hidden button
Both buttons at the same time
FRONT OF TRANSMITTER

SINGLE MOTOR OPERATION (1 MOT ON)

1. From the **MAIN MENU** select **LOGIC**. `Lo9 ic`

2. From the LOGIC Sub-menu select **1 MOT ON**. `1 mot on`

3. Switch to **ON** by pressing the **+** button. `on`

4. Press **OK**. `Pro9`

5. Press the **+** and **–** buttons at the same time to go back to the **MAIN MENU**. `PArAm`

MAIN MENU	
PARAM	
LOGIC	TIMER TO CLOSE
RADIO	3 STEP
LANGUAGE	IBL OPEN
DEFAULT	FAST CLS
AUTOSET	PHOTOC. OPEN
	TEST PHOT
	1 MOT ON
	BLOC PERSIST
	START-CLOSE
	FIXED CODE
	RADIO PROG
	MASTER

SETTING THE MOTOR SLOWDOWN

MAIN MENU	
PARAM	TCA
LOGIC	M1 T
RADIO	M2 T
LANGUAGE	M1 T SLOW
DEFAULT	M2 T SLOW
AUTOSET	OPEN DELAY TIME
	CLS DELAY TIME
	M1 FAST TIME
	M2 FAST TIME
	SLOW SPEED
	ZONE

Prior to setting the slowdown, you must time in seconds,

how long does it take for the gate to complete a stroke

(from fully open to fully closed or viceversa).

1. From the **MAIN MENU** select **PARAM** (Parameters). `PArAm`
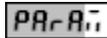
2. From the PARAM Sub-menu select **M2 FAST TIME**. `m2 FASt t me`

3. Set in seconds the motor's full speed running time (usually about 3 seconds less than the full stroke time).

4. Press **OK**. `Prog`

5. If 2 motors are connected, scroll up and select **M1 FAST TIME** and set the full speed run time . `m1 FASt t me`

6. Press **OK**. `Prog`

7. Scroll down and select **SLOW SPEED**. `Slo'' SPEEd`
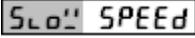
8. Select the desired slowdown speed: 0= disabled, 1=50%, 2=33%, 3=25% (recommended)

9. Press **OK**. `Prog`

10. Press the **+** and **–** buttons at the same time to go back to the **MAIN MENU**. `PArAm`

AUTOMATIC TORQUE ADJUSTMENT (AUTOSET)
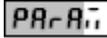
MAIN MENU
PARAM
LOGIC
RADIO
LANGUAGE
DEFAULT
AUTOSET

WARNING – Gate path must be free of all traffic and obstructions. The system will automatically open and close the gate at full torque while performing the self-learning adjustment. Failure to do so can result in property damage and/or bodily injury including death.

1. Close gate completely and make sure the gears are engaged.

2. From the **MAIN MENU** select **AUTOSET**. `AutoSEt`

3. Press **OK**. Gate will automatically open and close at full torque. `. . . . . .`

4. Once "**OK**" is displayed on the screen, press **OK**. `oH`

5. Press **+** and **–** at the same time to exit programming. `End`

AUTOMATIC CLOSING TIMER (TCA)

Enabling the TCA.

1. From the **MAIN MENU**, select **LOGIC**. `Lo9ic`

2. From the LOGIC Sub-menu, select **TCA**. `tcA`

3. Switch **ON** by pressing the **+** button and then the **OK** button. `Pro9`

4. Press the **+** and **–** buttons at the same time to go back to the **MAIN MENU** `Lo9ic`

Adjusting the TCA time. (Default: 10 seconds)

1. From the **MAIN MENU** select **PARAM** (Parameters). `PArAn`

2. From the PARAM Sub-menu select **TCA**. `tcA`

3. Adjust the amount of seconds by using the **+** and **–** buttons.

4. Press **OK**. `Pro9`

5. Press the **+** and **–** at the same time to go back to the **MAIN MENU**. `PArAn`

MAIN MENU	
PARAM	
LOGIC	**TCA**
RADIO	3 STEP
LANGUAGE	IBL OPEN
DEFAULT	FAST CLS
AUTOSET	PHOTOC. OPEN
	TEST PHOT
	1 MOT ON
	BLOC PERSIST
	START-CLOSE
	FIXED CODE
	RADIO PROG
	MASTER

MAIN MENU	
PARAM	**TCA**
LOGIC	M1 T
RADIO	M2 T
LANGUAGE	M1 T SLOW
DEFAULT	M2 T SLOW
AUTOSET	OPEN DELAY TIME
	CLS DELAY TIME
	M1 FAST TIME
	M2 FAST TIME
	SLOW SPEED
	ZONE

IGNORE PHOTO INPUT DURING OPEN CYCLE (PHOTOC. OPEN)

1. From the **MAIN MENU** select **LOGIC**. `Lo9ic`

2. From the LOGIC Sub-menu select **PHOTOC. OPEN.** `Photoc oPEn`

3. Switch **ON** by pressing the **+** button and then the **OK** button. `Pro9`

4. Press the **+** and **–** at the same time to go back to the **MAIN MENU**. `Lo9ic`

MAIN MENU	
PARAM	
LOGIC	TIMER TO CLOSE
RADIO	3 STEP
LANGUAGE	IBL OPEN
DEFAULT	FAST CLS
AUTOSET	**PHOTOC. OPEN**
	TEST PHOT
	1 MOT ON
	BLOC PERSIST
	START-CLOSE
	FIXED CODE
	RADIO PROG
	MASTER

DISCONNECT POWER AND BATTERIES BEFORE PERFORMING ANY MAINTENANCE OR REPAIR TO THE ACTUATORS

MAINTENANCE - Inspect the screw-drive gears for lubrication, debris and cleanness at least once a year. For actuators installed in areas where dirt and dust are a concern, maintenance should be done at shorter intervals. Keep the screw-drive lubricated using **BFT** grease **I101115**. Do not apply grease if gears are dirty. If necessary, clean with solvent before applying.

SCREW-DRIVE

PHOBOS UNDERSIDE
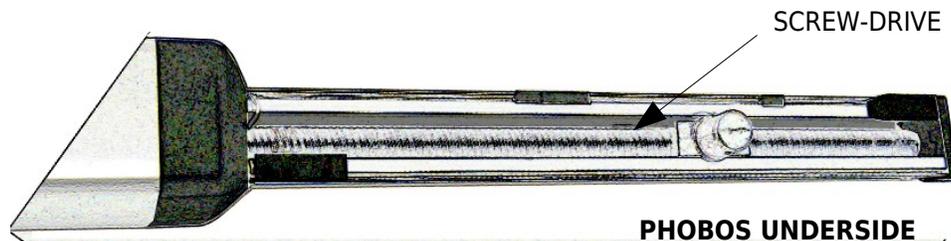
TROUBLESHOOTING

SYSTEM DOES NOT TURN ON.
- Check incoming power. You should have 120 vac at the Line In terminal block in the controller enclosure.
- Check transformer power. You should measure close to 31 VAC between the transformer's tabs labeled 0V and 25V. If no voltage is present, replace primary fuse on the *Line In* terminal block with a 1.25 Amp, slow-blow fuse.
- Check secondary fuse on the controller board. Replace with 2 Amp, slow-blow fuse if needed.

SYSTEM IS ON BUT MOTOR DOES NOT RUN.
- Verify motor wiring. Page 10.
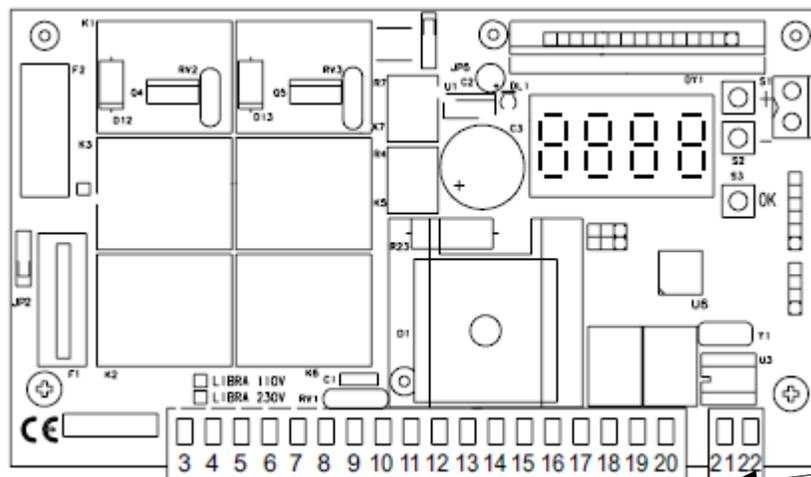- Reset UL Block by triggering the stop circuit. Page 12.

MOTOR RUNS BUT IT DOES NOT STOP.
- Make sure that the magnet holder is in place. Page 7.
- Inspect the limit switch adjustment. Page 9.
- Verify motor wiring. Page 10.

GATE STOPS DURING THE OPENING CYCLE.
- Verify that the PHOTO input is not being triggered. To defeat the PHOTO input during the open cycle see page 15.

24 - ANTENNA GROUND (shielding)

23 - EXTERNAL ANTENNA

21 & 22 – UL BLOCK indicator. Normally open contacts that changes states (closes) during a UL Block condition. Intended for connection of audible and/or visual indicator.

3, 4 & 5 – MOTOR 2 (single gate operation) connections. Terminal 3 is motor power +, 4 is motor power -, and 5 is limit switch input

6, 7 & 8 – MOTOR 1 (dual gate operation) connections. Terminal 6 is motor power +, 7 is motor power -, and 8 is limit switch input.

9 &10 provide **24VDC** output **when** the motors are **running.** Normally used to power lock relay

11 & 12 provide 24 VAC for **accessory power** (limited to 180mA).

13 & 14 provide **24VAC** at all time except when the gates reach its close limits or the stop button is pressed

WARNING:
Terminals **11** through **14** will switch to **24VDC** output when the system is running under battery back up.

15 – COMMON (+)

16 – START input. It will start a cycle, open or close depending on the last operation or limit activation. It can also be configured as a **CLOSE** only input

17- STOP command input (normally closed). Upon activation, the gates immediately stop. It also **resets** the controller to accept command inputs after a **UL BLOCK**

18 – PHOTO input (normally closed). Photo beam sensors or other **obstruction sensing devices** connect to this terminal. If triggered during the close cycle the gate reverses. If triggered during the open cycle the gate stops. The controller can be configured to ignore this input during the open cycle.

20 – OPEN input.

19 – FAULT input. Supervision circuit for photo beam sensors.

PROGRAMMING MENU REFERENCE

NAVIGATION

← + − BACK / EXIT	↓ − DOWN	↑ + UP	OK → SELECT

MAIN MENU

Press **OK** twice to enter to the programming **MAIN MENU**

MAIN MENU	DISPLAY	DESCRIPTION
PARAM	PArAi	(PARAMETERS SUB-MENU) Adjustment of all numerical values (torque, time, speed).
LOGIC	Lo9ic	(LOGIC SUB-MENU) Enabling and disabling of features.
RADIO	rAdio	(RADIO SUB-MENU) Adding and deleting of radio transmitters (remotes).
LANGUAGE	LAn9UA9E	Selection of menu language (ITA - Italian, FRA - French, ENG - English, ESP – Spanish)
DEFAULT	dEFAULt	Changes all Parameters, Logic and Language (Italian) settings to factory default.
AUTOSET	AUtoSEt	Performs Automatic torque setting for the motors.

PARAMETERS SUB-MENU

MAIN MENU		DISPLAY	DESCRIPTION	DEFAULT
PARAM	TCA	tcA	**Timer to close** - Range: 3-60 seconds.	10
LOGIC	M1 T	i1 t	**Motor 1 torque** - Range: 1-99%.	50
RADIO	M2 T	i2 t	**Motor 2 torque** - Range: 1-99%. Default: 50	50
LANGUAGE	M1 T SLOW	i1 t SLoi	**Motor 1 slowdown torque** - Range: 1-99%.	45
DEFAULT	M2 T SLOW	i2 t SLoi	**Motor 2 slowdown torque** - Range: 1-99%.	45
AUTOSET	OPEN DELAY TIME	oPEn dELAY tiE	**Motor 2 open delay time** - Range: 1.0-10 seconds.	1.0
	CLS DELAY TIME	cLS dELAY tiE	**Motor 1 close delay time** - Range: 1.0-10 seconds.	1.0
	M1 FAST TIME	i1 FASt tiE	**Motor 1 full speed run time** - Range: 1.0-30 seconds.	15
	M2 FAST TIME	i2 FASt tiE	**Motor 2 full speed run time** - Range: 1.0-30 seconds.	15
	SLOW SPEED	SLoi SPEEd	**Slowdown speed** - Range: 0=Disabled, 1=50%, 2=33%, 3=25%	0
	ZONE	2onE	NOT USED	

LOGIC SUB-MENU

MAIN MENU		DISPLAY	DESCRIPTION	DEFAULT
PARAM				
LOGIC	TCA	tcA	**Timer to close**	OFF
RADIO	3 STEP	3 StEP	**Instant reverse.** Gate reverses with START input during close cycle.	OFF
LANGUAGE	IBL OPEN	ibL oPEn	**Ignore START input** during the opening cycle.	OFF
DEFAULT	FAST CLS	FASt cLS	**Fast closing.** Gate inmediately starts to close after PHOTO is cleared.	OFF
AUTOSET	PHOTOC. OPEN	Photoc oPEn	**Ignore PHOTO** during the opening cycle.	OFF
	TEST PHOT	tESt Photo	**Photo supervision.** Enables input 19.	OFF
	1 MOT ON	i iot on	**Single motor operation.** Disables Motor 1.	OFF
	BLOC PERSIST	bLoc PErSiSt	**Positive lock.** Presses for .5 seconds on close physical stop.	OFF
	START-CLOSE	StArt-cLoSE	**Close input.** Turns terminal 16 into CLOSE only input.	OFF
	FIXED CODE	FiHEd codE	**Fixed code.** Disables the rolling code feature on the radio receiver.	OFF
	RADIO PROG	rAdio Pro9	**Quick remote learning.** Allows remotely setting receiver on learn mode.	ON
	MASTER	iAStEr	NOT USED	

RADIO SUB-MENU

MAIN MENU		DISPLAY	DESCRIPTION
PARAM			
LOGIC			
RADIO	ADD START	Add StArt	**Radio learn.** Programs transmitters as START input.
LANGUAGE	READ	rEAd	**Transmitter read.** Displays information about transmitter signal.
DEFAULT	ERASE 64	ErASE 64	**Memory deletion.** Deletes entire receiver memory.
AUTOSET	RX CODE	rH codE	**Displays receiver code** for advanced programming.