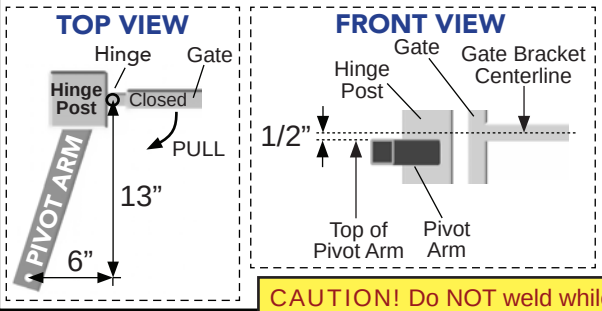
Mercury 310 / SolarBOX / Apollo 816
Quick Start Installation Guide

Actuator And Control Box Installation *(perform ALL steps in numerical order)*:

IMPORTANT! Read entire manual before attempting the installation. This is NOT a "do-it-yourself" project. Use a qualified contractor to install this system. Read all safety information!

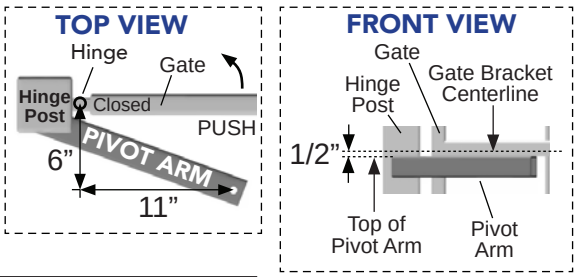
1 Weld or clamp pivot arm onto hinge post. For Pull-to-Open installation, use **Detail A.** For Push-to-Open, use **Detail B**:

A Pull-to-Open

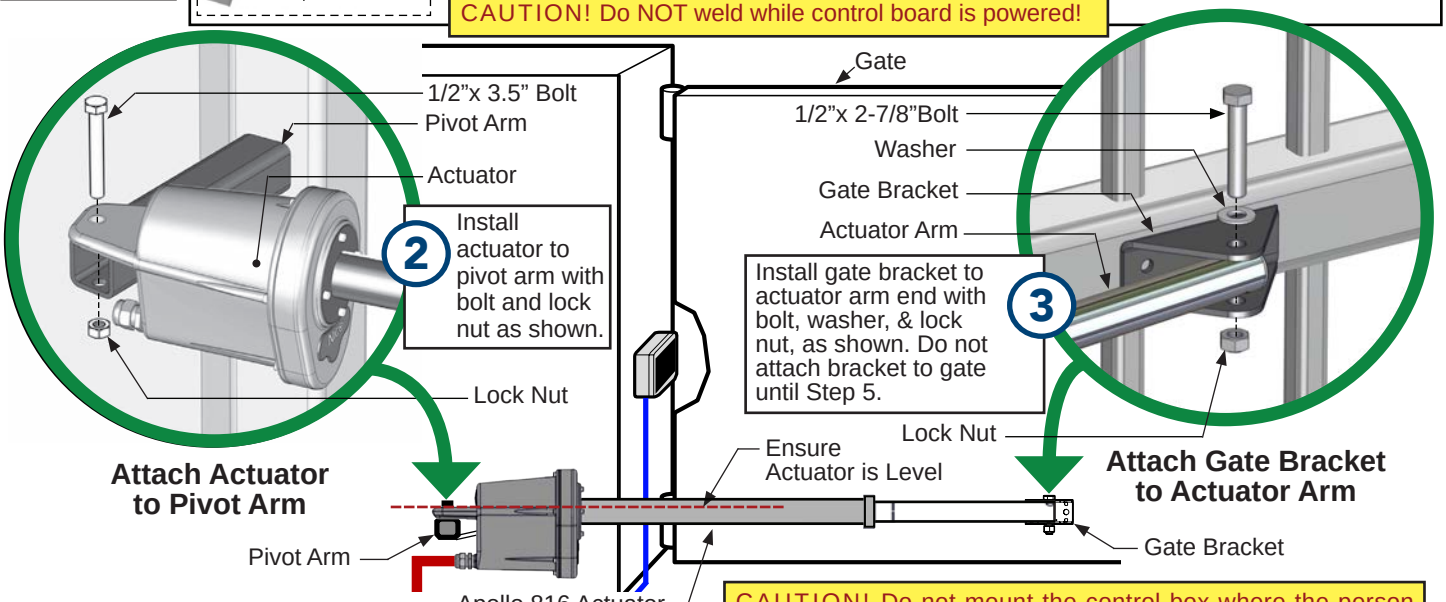


Or

B Push-To-Open



CAUTION! Do NOT weld while control board is powered!



2 Install actuator to pivot arm with bolt and lock nut as shown.

3 Install gate bracket to actuator arm end with bolt, washer, & lock nut, as shown. Do not attach bracket to gate until Step 5.

Fig-1: Pivot Arm, Actuator, & Gate Bracket

CAUTION! Do not mount the control box where the person using the push button on box can come in contact with the gate!

4 Ensure actuator arm is fully *retracted*, then position gate bracket on gate structural support per **Detail A** or **Detail B**:

A Pull-To-Open: Fully open gate, then locate bracket on gate support.

B Push-To-Open: Fully close gate, then locate bracket on gate support.

5 Affix Gate Bracket to gate structural support by welding or using bolt/nut.

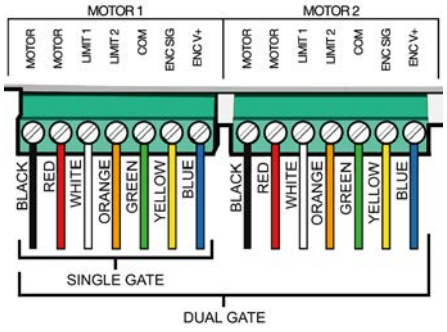
6 **Mount Control Box** same side as primary actuator and min. 6 feet away from pivot arm.

7 **Place Battery** inside control box (terminals facing toward the front).

8 **Apollo 816 Actuator Wiring:**

Pass single gate actuator cable through grommets in control box bottom and wire as shown.

For dual gate, dig trench across drive, run 2nd cable through conduit, & wire as shown.



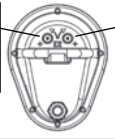
9 Connect battery and solar panels to Mercury controller.

See image on next page.

10 **Set 816 Actuator Mechanical Limits:**

1. Remove plastic caps from limit adjust screws on 816 motor rear (see image).
2. Use arrow button to run gate to *open limit* (gate stops & both LEDs light on Mercury controller).
3. Select screw to adjust gate position as follows:
   - If arm ***extended***, use **Extend Screw** (CCW = extend more, CW = extend less)
   - If arm ***retracted***, use **Retract Screw** (CCW = retract less, CW = retract more)
4. Use arrow button to run gate to *close limit* (gate stops & both LEDs light on Mercury controller) and adjust position per Step 3.
5. Replace plastic caps over screws.

Extend Screw
Less (CW) ⊗ More (CCW)



Retract Screw
More (CW) ⊗ Less (CCW)

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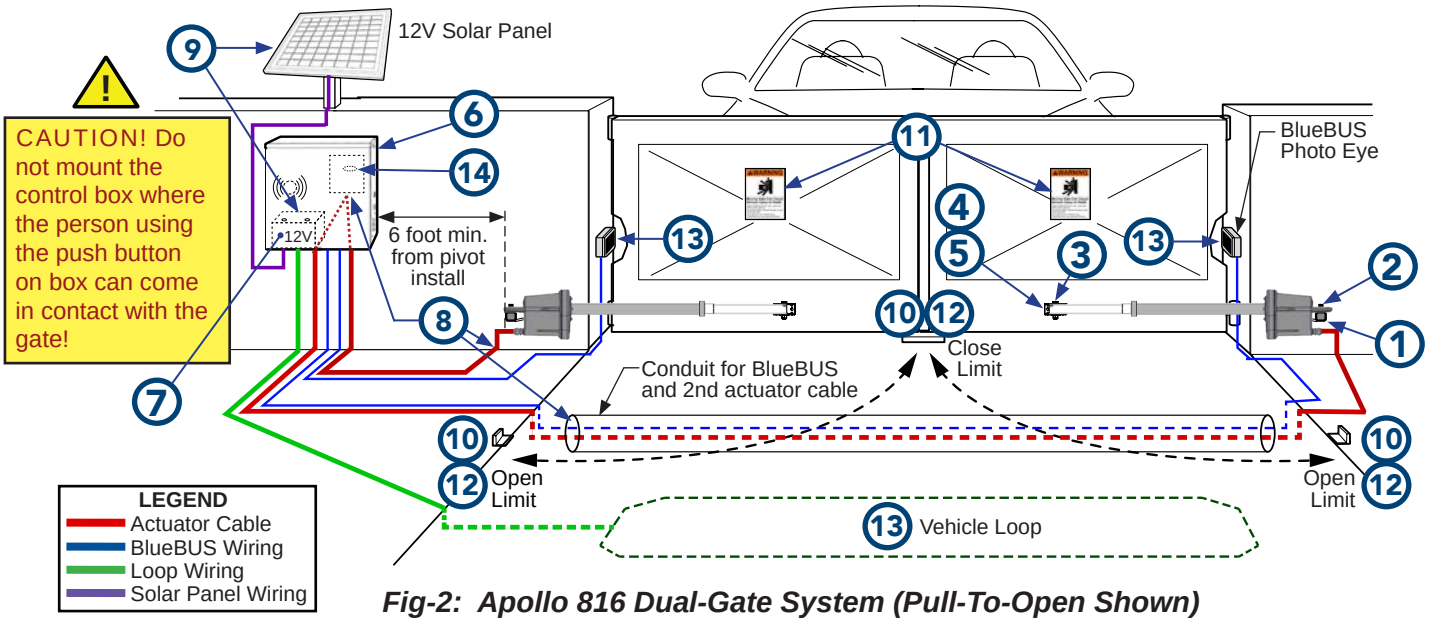


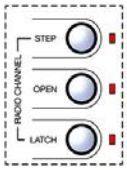
Fig-2: Apollo 816 Dual-Gate System (Pull-To-Open Shown)

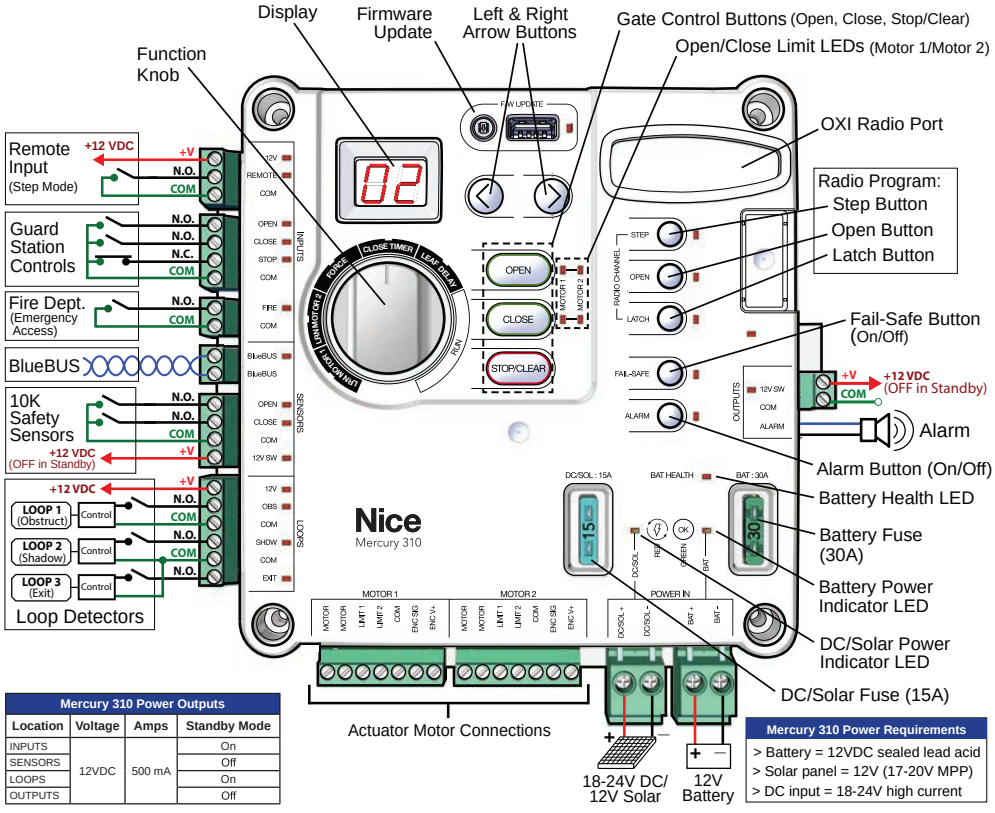
11 Attach warning signs to gate(s).

12 Perform Gate Limit Learn procedure (below right).

13 Connect other accessories, such as loop detectors, photo eyes, or other safety devices. See controller accessory inputs in the image below.

14 To program the OXI receiver, press/hold desired button on remote control, then within 2 seconds press & release the STEP, OPEN, or LATCH button on Mercury controller. LED flashes twice & alarm chirps to indicate progamming success.





Mercury 310 Power Outputs			
Location	Voltage	Amps	Standby Mode
INPUTS	12VDC	500 mA	On
SENSORS			Off
LOOPS			On
OUTPUTS			Off

Mercury 310 Power Requirements
> Battery = 12VDC sealed lead acid
> Solar panel = 12V (17-20V MPP)
> DC input = 18-24V high current

Gate Limit Learn Procedure:

1. Set function knob to LRN MOTOR 1 (display flashes LI).
2. Use Left/Right buttons to "jog" gate to between open and close limits.
3. Press/hold both left and right buttons for two (2) seconds.
4. Display will show solid LI and gate will run at crawl speed to first limit.
5. After reaching first limit, display flashes between OP and CL (LEDs also flash).
6. Observe *current* position of the gate and do only one of the following:
   - If gate is at *open* limit, press the **open button**.
   - If gate is at *close* limit, press the **close button**.
7. Gate auto-runs to 2nd limit at crawl speed & stops, then runs to 1st limit at normal speed & stops, then runs to the 2nd limit at normal speed & stops.
8. When finished, display will show either OP or CL, depending on buttons pressed during procedure.
9. If dual gate, set function knob to LEARN MOTOR 2 (display flashes L2) & repeat all steps for 2nd motor.

Fig-3: Mercury 310 Controller Features