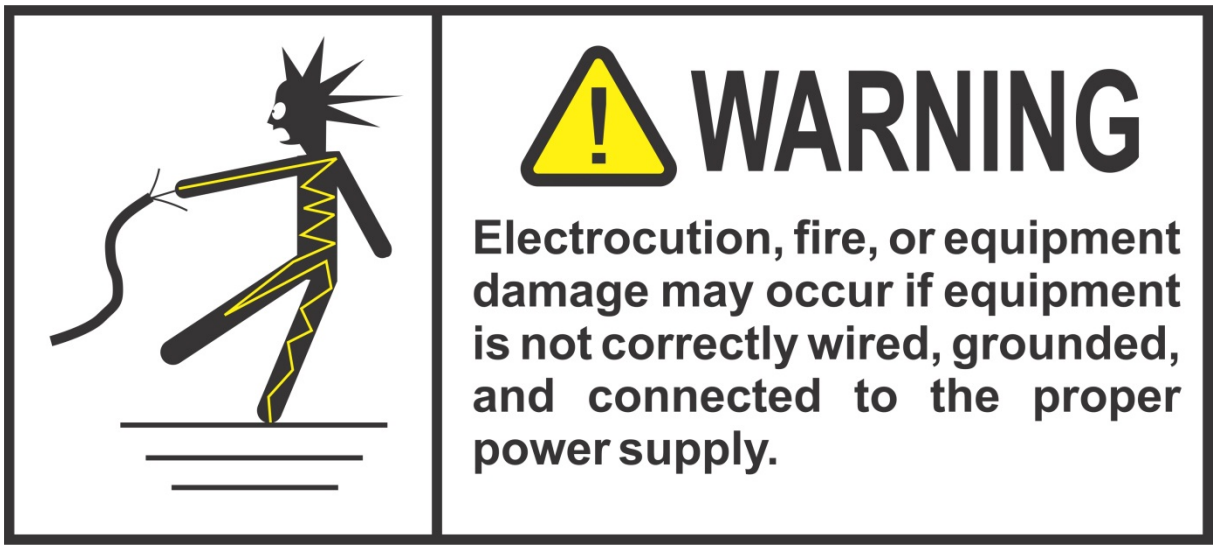
Bigelow Brook Farm, LLC
www.BigelowBrook.com

# ASSEMBLY MANUAL

For

## IX SERIES
## DUAL-RELAY SEQUENCING TIMER

# SECTION 1: SAFETY




1. The Assembly and Operation manuals can be found on our website at http://www.BigelowBrook.com/timer.

2. This manual provides critical safety instructions on the proper setup and operation of this equipment.

3. If you are not familiar with electrical wiring, consult with a qualified electrician.

4. Failure to read, understand and follow the instructions given in this manual may result in serious personal injury, including electrocution or death.

5. The owner of this equipment is solely responsible for its safe use. This responsibility includes but is not limited to proper installation in a safe environment, personnel training, usage authorization, proper inspection and maintenance, manual availability and comprehension, application of safety devices, and the usage of personal protective equipment.

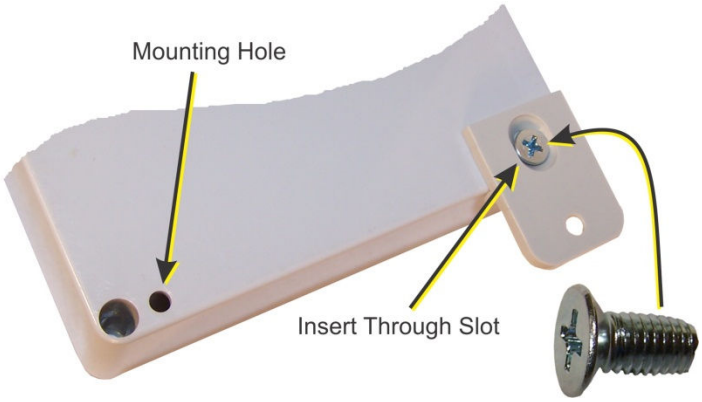
6. The manufacturer will not be held liable for injury or property damage from negligence, improper training, equipment modifications, or misuse.

7. DO NOT USE IN DANGEROUS ENVIRONMENTS. DO NOT use equipment in damp, wet locations, or where any flammable or noxious fumes may exist. Electronic equipment should be located in a NEMA 4x rated enclosure.

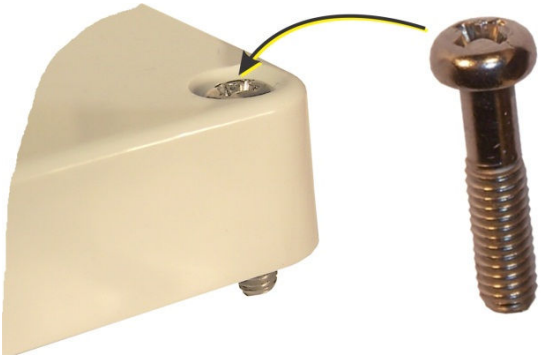
8. ALWAYS DISCONNECT FROM POWER SOURCE BEFORE SERVICING.

# SECTION 2: ASSEMBLY

1. Add the optional mounting brackets by screwing through the bracket's slotted hole into the mounting hole on the back side of the enclosure. The screw will self-thread the hole which may take a little more force.

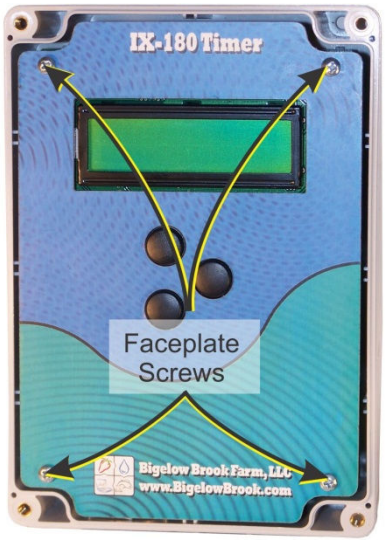



2. To remove the cover from the enclosure, unscrew the stainless steel screws. These screws will spin freely in the cover once they are free from the enclosure. (The IX-100 cover is gray and the IX-150 & 180 covers are clear.)



IX-100: Removing the cover will expose the wiring. DISCONNECT all power prior to removing the cover!

3. In order to access the wiring for the IX-150 and IX-180 models, the faceplate must be removed. Locate the 4 screws and remove them. Note: When reinstalling the screws, do not over tighten them!




Removing the faceplate will expose the wiring. DISCONNECT all power prior to removing the cover!

# SECTION 3: WIRING

- DO NOT perform any wiring while any power is applied to the timing controller.
- If you are not familiar with electrical wiring, consult with a qualified electrician.
- Improper wiring can cause damage to the circuit board or electrocution. The product warranty will be voided due to improper wiring.

Depending on the model of timer you have, wiring may already be complete.

## AC Wiring

**ELECTRICAL TUTORIAL**

Typically with alternating current (AC) power, wire colors signify what each wire represents. The definitions for wire colors are:

**BLACK**: Live (hot) line. Represented as a "+" on the circuit board. Touching an exposed terminal with a black wire will shock or electrocute. A good reminder is Black=Death.

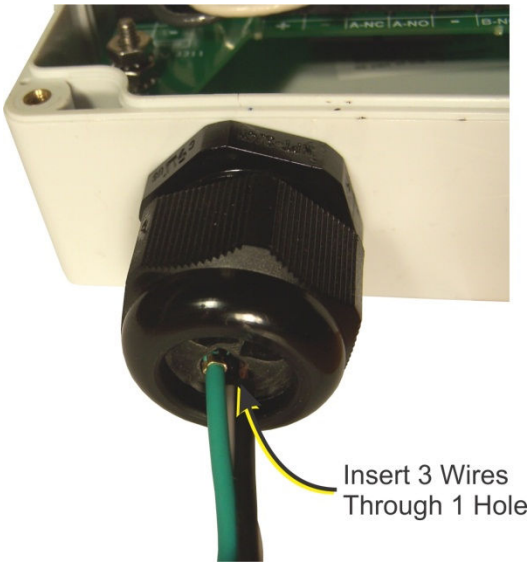
**WHITE**: Neutral. Represented as a "-" on the circuit board.

**GREEN**: Ground/Earth Ground.

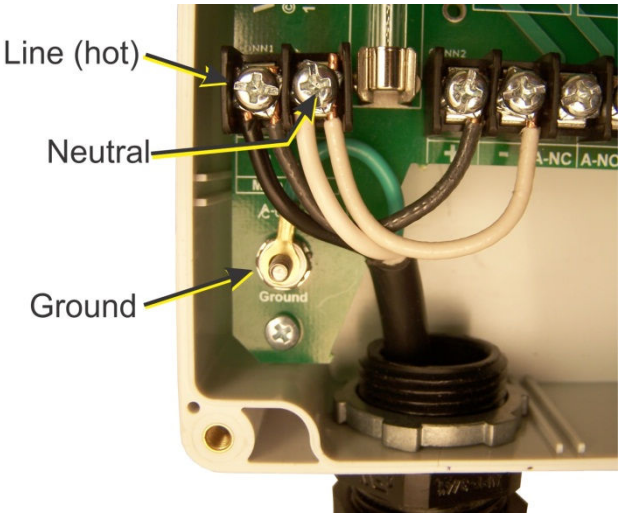
**ASSEMBLY**

1. The circuit board is pre-wired for powered relay operation. The power that is being supplied to operate the circuit board is also the same power that the relays will send to your devices. If you need to operate the timer with dry-contact relays, remove these wires.

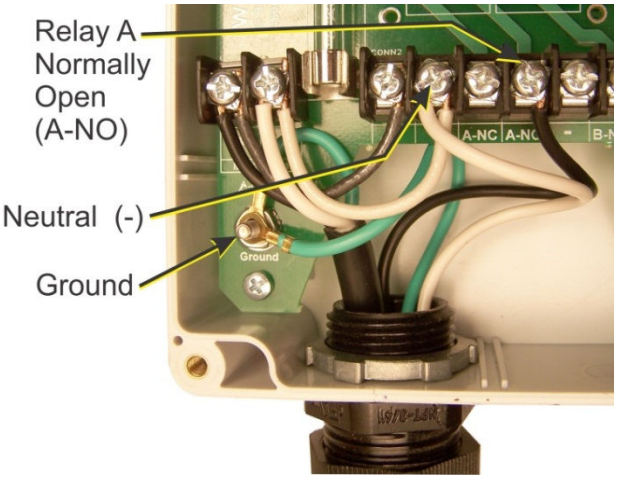
2. Insert the 3 wires for the power supply cable into one of the holes of the strain relief. Feed it through until the outer insulation is within the strain relief and the wires are able to reach the appropriate terminal block.



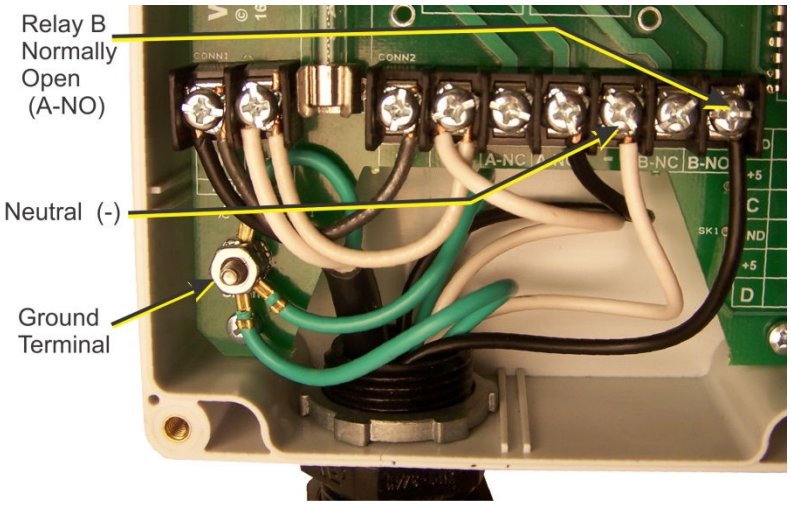

3. Place the Green wire eye-hook over the Ground terminal. Slide the black line (hot) wire into the "+" terminal and the white neutral wire into the "-" terminal. (You may need to unscrew them a bit to get the wire to fit.) Tighten the screws in the terminal block so the wire is secure. For circuits that will be operating with powered-relays, these terminals will share their position with the jumper wires that feed the relays.




4. Feed the first device pigtail through the next available hole in the strain relief. Place the Green wire eye-hook over the Ground terminal. Slide the white neutral wire into the "-" terminal. Slide the black line (hot) wire into the A-NO terminal. For circuits that will be operating with powered relays, the neutral (-) terminal will share its position with the neutral jumper wire.

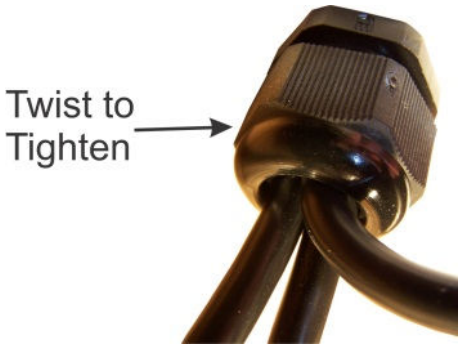


5. Feed the second device pigtail though the remaining hole in the strain relief. Connect the black wire to the B-NO terminal, the white neutral wire to the "-" terminal, and the green wire to the Ground terminal. Note: The two neutral positions in the terminal block are connected together via the circuit board.




6. Place the hex nut on the Ground Terminal and tighten to secure the ground wires.

7. Twist the outer casing of the strain relief until it is tight. This will seal the rubber grommet around the 3 cables. If you can still slide the cables through the strain relief, tighten it some more. Note: If only one of the pigtails is going to be used, a plug should be inserted into the void to prevent water or insects from getting inside the enclosure.




8. Verify all the connections and make sure there are no shorts or loose wires. Please see the Operation Manual for instructions on how to operate the timer.

# DC Wiring

**ELECTRICAL TUTORIAL**

Typically with direct current (DC) power, wire colors signify what each wire represents. The definitions for wire colors are:

**RED**: Live (hot) line. Represented as a "+" on the circuit board. Touching an exposed terminal with a red wire will shock or electrocute. A good reminder is Red=Death.

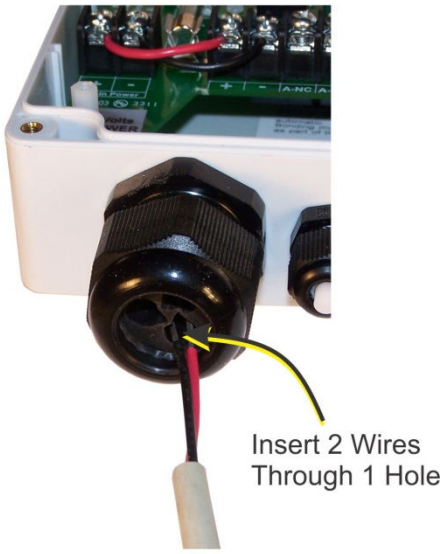
**BLACK**: Neutral. Represented as a "-" on the circuit board. In some cases, ground is also represented by green.

**ASSEMBLY**

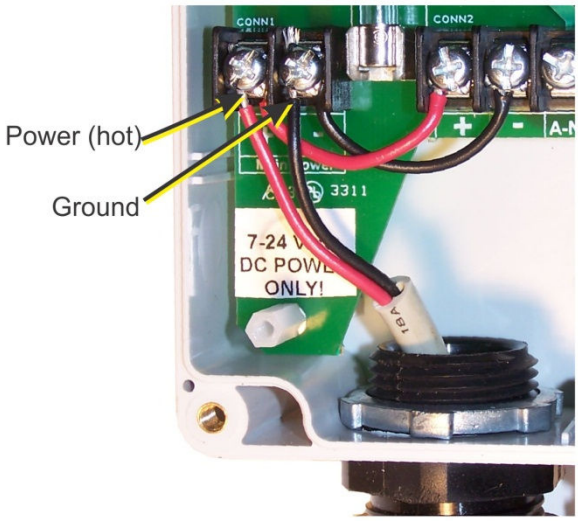
1. The circuit board is pre-wired for powered relay operation. The power that is being supplied to operate the circuit board is also the same power that the relays will send to your devices. If you need to operate the timer with dry-contact relays, remove these wires.

2. Insert the 2 wires for the power supply cable into one of the holes of the strain relief. Feed it through until the outer insulation is within the strain relief and the wires are able to reach the appropriate terminal block.

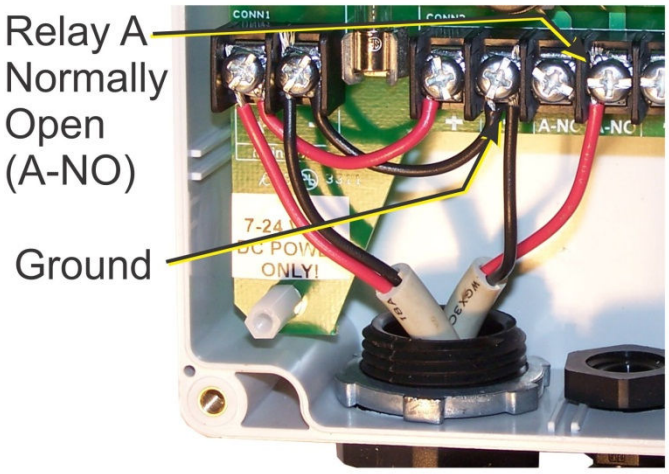
   Note: The wires should have an outer jacket so that it will seal properly when the strain relief is tightened.



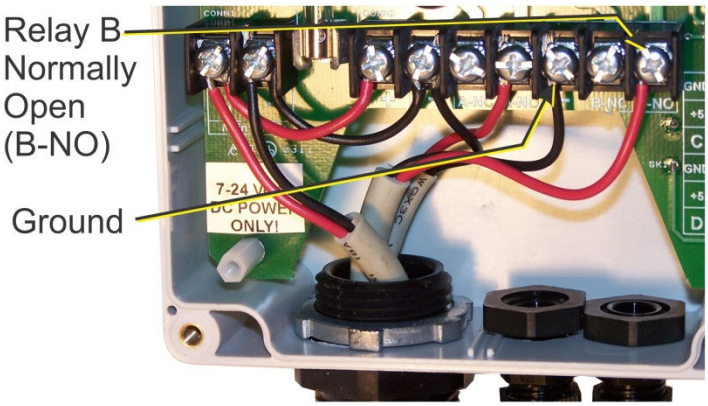

3. Slide the red power (hot) wire into the "+" terminal and the black ground wire into the "-"terminals. (You may need to unscrew them a bit to get the wire to fit). Tighten the screws in the terminal block so the wire is not able to become free. For circuits that will be operating with powered-relays, these terminals will share their position with the jumper wires that feed the relays.



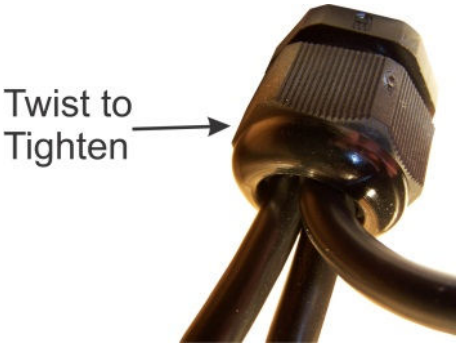

4. Feed a device pigtail through the next available hole in the strain relief. Slide the black ground wire into the "-" terminal. Slide the red line (hot) wire into the A-NO terminal. The normally open terminal represents the "power off" position during regular operation. For circuits that will be operating with powered-relays, the ground terminal will share its position with the ground jumper wire.



5. Feed the remaining device pigtail though the strain relief and connect the red wire to the B-NO terminal, the black ground wire to the "-" terminal. Note: the two ground positions (-) in the terminal block are connected together via the circuit board.




6. Twist the outer casing of the strain relief until it is tight. This will seal the rubber grommet around the 3 cables. If you can still slide the cables through the strain relief, tighten it some more. Note: If only one of the pigtails is going to be used, a plug should be inserted into the void to prevent water or insects from getting inside the enclosure.




7. Verify all the connections and make sure there are no shorts or loose wires. Please see the Operation Manual for instructions on how to operate the timer.

# SECTION 4: DEFINITIONS

**Independent**: Both relays operate on their own timing cycle, essentially splitting the timer unit into two separate timers. Both relays can be On and/or Off at the same time.

**Interlocked**: The two relays are locked together in the same time cycle. Relay A will run through its ON & OFF cycle and then Relay B will run through its cycle. Only one relay is on at a time.

**NC (Normally Closed)**: The position the relay is in during the "off" cycle. Power is available at this terminal during this cycle.

**NO (Normally Open)**: The position the relay is in during the "on" cycle. Power is available at this terminal during this cycle. This is usually the terminal to which the power wire is connected to leading to a device such as a pump or fan.