

INSTALLATION INSTRUCTIONS FOR VAR/VB RECEIVERS AND VAT TRANSMITTERS

The VAT Transmitter has been programmed with sequential ID numbers, and with the master valve ID of 100.

1. Install the VAT transmitter within two feet of the irrigation controller.
2. Use the multi-conductor, labeled cable wires to connect the transmitter to the controller's outputs.
3. Connect the coaxial cable to the antenna, and mount the antenna base to a 10 foot long pipe. Keep the antenna clear of surroundings for 10 feet. Mount the antenna as far away from the transmitter's location as the coaxial cable will allow.
4. Connect one end of the coaxial cable to the antenna. The other end of the coaxial cable is connected to the 'antenna tuner'. Connect the antenna tuner's connector, marked 'transmitter' to the VAT's right angle coaxial adapter. Be careful not to strip the connector's threads.
5. **To avoid damaging transmitter, the antenna's coaxial cable must be connected to the VAT before the power cable is plugged into the power outlet.** Plug the VAT's power cord into a 120VAC power outlet.

RECEIVER / VAR

The VAR/VB receiver units have been programmed to the ID numbers that are indicated on the labels attached to the grey control box. Receivers which have not been factory programmed, can be programmed by using the VAR Programmer.

6. Locate the receiver at the site of the irrigation control valves. Remove the receivers' grey control box cover by removing the 4 cover screws. **Use a hand tool only. DO NOT USE POWER TOOLS OR YOU WILL VOID THE WARRANTY.** Each of the solenoid output cables are marked with the output number. Remember that a VAR-1 will have one output cable with 2 wires, a VAR-2 will have one output cable with 4 wires, and a VAR-4, will have two output cables with four wires in each cable. The output numbers will coincide with the touch switch number located on the output interface circuit board at the top of the control enclosure.
7. Use DBRY type of wire connectors to connect the wires in the output cables to the solenoid wires. Connect the red solenoid wire from the receiver's output control cable, whose wires are marked 1, to the black wire of the latching solenoid installed in first valve, then connect the black wire from

the receiver's output control cable, marked 1, to the red solenoid wire. The valve should be in the automatic mode, and pressurized with water.

8. If wiring a VAR-2, Use a DBRY type wire connectors, connect the remaining white, and green solenoid wires in the cable marked 2, to the second valve's latching solenoid's wires. If wiring a VAR-4, Repeat steps 8, and 9 for the two remaining solenoids.
9. **Observe correct battery polarity when installing and changing batteries. Failure to do this can result in permanent damage to the receiver.**
10. Remove the four plastic screws from the battery enclosure. Install the four battery cells in the battery holder, following the polarity markings shown on the labels installed in the battery holder.
11. The receiver was shipped with the "test/run" jumper resting on top of the interface circuit board, and the fuse connected.
12. Install the "test/run" jumper across the 'test' mode pins, located on the interface board.
13. To actuate solenoids manually, use the manual touch switches located on the interface board, and labeled 1 to 4. The on/off indicator for each output, will blink when the solenoid has been turned on, and stop blinking when the solenoid is turned off.
14. If the receiver's on/off indicator light blinks, but the valve does not open, reverse the solenoid wires.

Note: the controller's master valve will turn on whenever it turns on an irrigation valve.

15. Use the controller's manual mode to turn on output 1. This will enable the VAT to send a signal to the VAR programmed to ID number 1. After a minute the valve on/off indicator on the VAR's control board will start to blink, the valve's latching solenoid will latch on, and the valve will open. Wait 30 seconds, to turn the solenoid off.
16. Use the controller again to turn off output 1. After a minute, the valve's on/off indicator on the VAR's control board will stop blinking, the valve's latching solenoid will unlatch, and the valve will close.
17. Place the receiver's interface board "test/run" jumper, in the "run" mode (remove jumper), and install the control box cover, using the four screws. **Tighten the screws using a hand tool only. DO NOT USE POWER TOOLS.**
18. Repeat steps 14 to 19 for the remaining receivers.
19. Switch the controller to the program mode. The system is now ready to run automatically. Remember that when a program starts running, the first valve will turn on after a minutes delay.

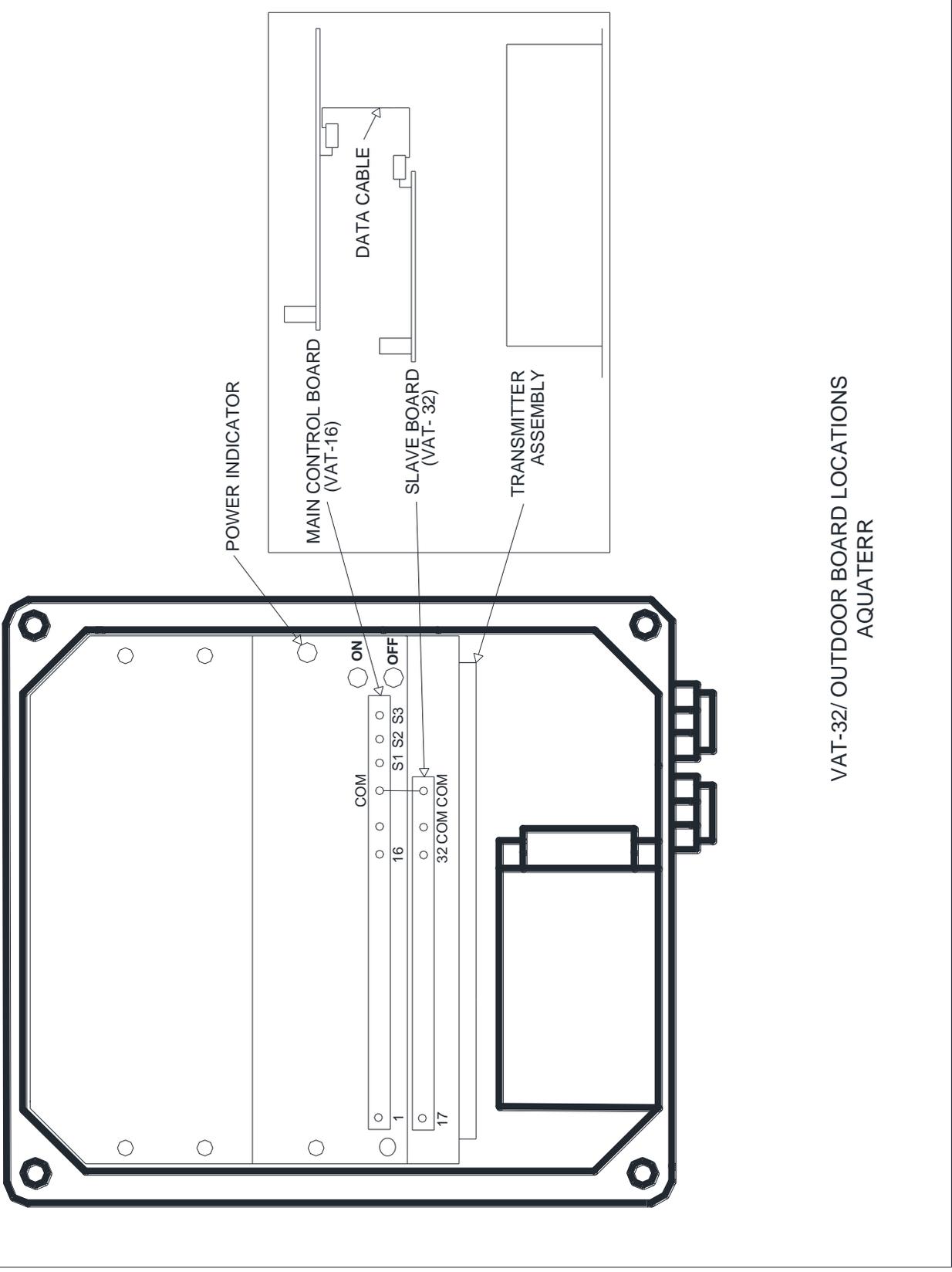
MAINTENANCE

If the receivers' battery pack voltage measures less than 2.2 volts, the batteries must be replaced. To replace the batteries:

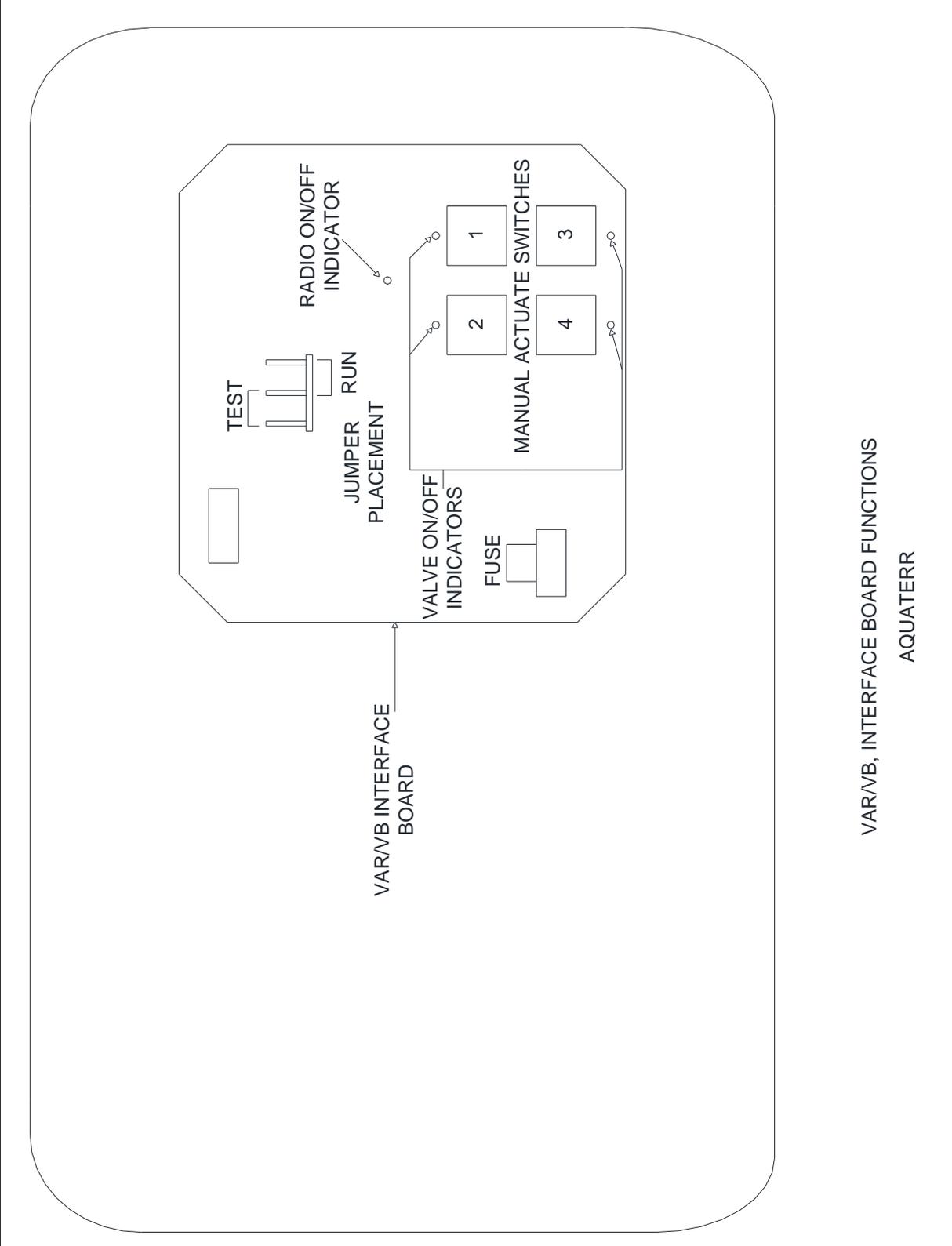
1. Remove the battery box's cover's four plastic screws.
2. Note the battery cells polarity, and remove the cells.
3. Install new battery cells, keeping the same polarity.
4. Move the "test/run" jumper to the 'test' mode position.
5. Use the manual actuate touch switch to turn a valve on, and check that the valve on/off indicator is blinking.
6. Use the manual actuate switch to turn the valve off, and check that the valve on/off indicator is off.
7. Move the "test/run" jumper to the 'run' mode position.
8. Replace the battery box cover using the four plastic screws.
9. The receiver is now ready to use again.

CAUTIONS

1. Receiver to solenoid wiring for most latching solenoids should be: black to red, and black to red. If the valve does not open with this wiring, reverse the wires.
2. **If you use a receiver Programmer, after using the Programmer, turn the Programmer off, and unplug it from the receiver, then disconnect the VAR from the batteries, by removing the battery cells, and wait for 60 seconds. Replace the battery cells, the receiver is now reset and ready to use.**
3. Observe the correct battery polarity when changing batteries.
4. Make certain to connect the VAT transmitter to the antenna, before connecting the transmitters' power supply to 120V AC.
5. Mount the transmitters' antenna as far above, and away from the transmitters location, as the coaxial cable will allow.



VAT-32/ OUTDOOR BOARD LOCATIONS
AQUATERR



VARVB, INTERFACE BOARD FUNCTIONS
AQUATERR