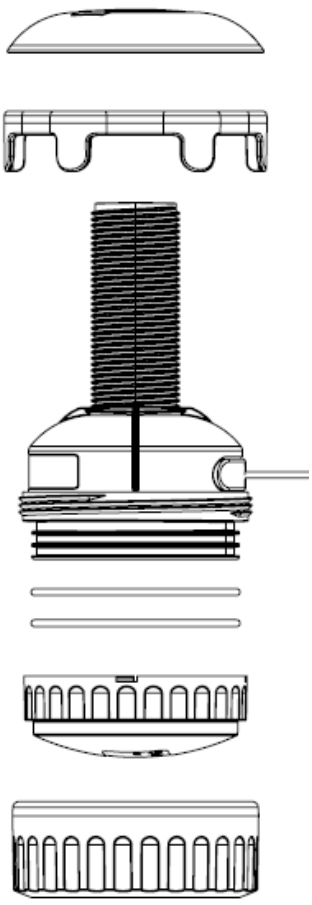
WVL Installation Draft

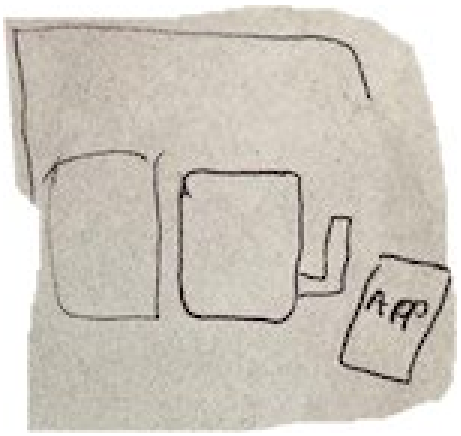
You will need:

- WVOM Bluetooth App (free download from Apple or Google Play)
- WVOM module installed in ICC2 or HCC controller (press the Reset button on the facepack after installation)
- 9VDC batteries (2 per valve, recommended)
- 1.5”/38 mm hole saw (included with each WVOM)
- Irrigation-grade waterproof connectors



Exploded view to call out components and possible replacement parts.

The Hunter WVL (Wireless Valve Link) system is a wireless output option for Hunter ICC2 and HCC controllers. WVL requires a Hunter WVOM (Wireless Valve Output Module) or WVOM-E (international versions) installed in a controller output module slot.



Verify that the WVOM module is installed in the controller. Make sure the WVL programming app is installed on your smartphone.

(link)

Prepare remote access to the controller.

- ROAM or ROAM-XL
- Centralus with mobile access
- Hydrawise with mobile access

WVL Functions and Features

The control link has 2 buttons and 2 LED lights in the battery compartment. These can perform the following functions, in order of importance. Station Assignment and Comm Check require the installation of a WVOM in the controller.

	Feature	**Function**	**Button & Process**
1	Station Assignment (REQUIRED)	Assigns controller station numbers to individual output links	Right, 2 secs.
2	Site Survey/Comm Check	Checks radio coverage at proposed installation location	Left, 3 times
3	Manual Station Test	Tests solenoid connections and operation directly from the WVL	Left, 2 secs.
4	Factory Reset	Erases all programming and assignments	Right, insert batt and hold 5 secs

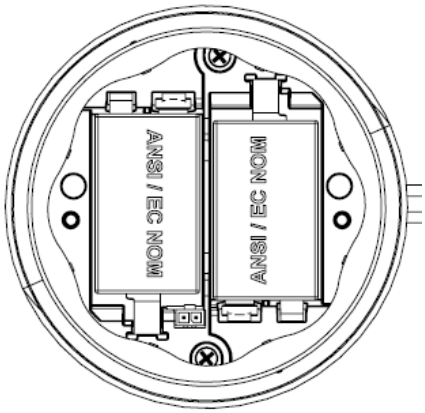
Station Assignment

Bring the WVL to be programmed near the controller location (before installing in the valve box). This insures solid communications, before moving to the field location.

Unscrew the battery cover retaining ring. Remove the waterproof cap to reveal the battery compartment.

Install the first battery. You will need to access the right button for station assignment, so installing the first battery on the left is recommended to allow easier access to the button.

Press and hold the right button for approximately 2 seconds. The right LED should turn yellow/green, showing the WVL is in assignment mode.



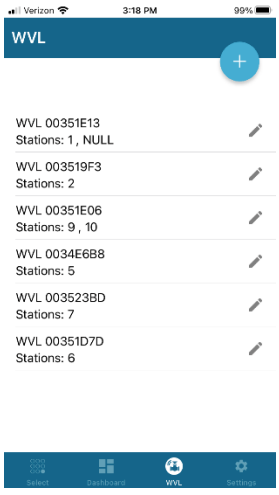
Within 5 minutes, use the mobile app to add a new station, and allow it to scan for stations in assignment mode.

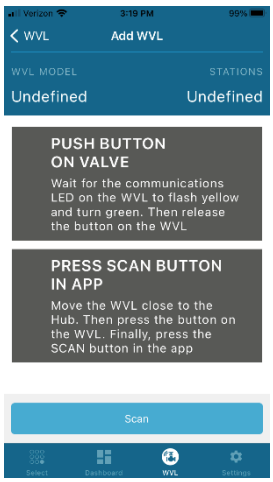
Note: Address one module at a time, to avoid duplicate addresses or confusion. After 5 minutes, the WVL will exit the assignment mode.

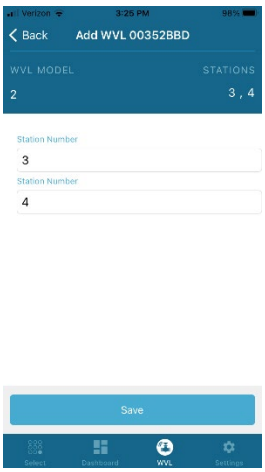
Note: Duplicate Addresses should not be used in the WVL system!

Procedure

- Place WVL in assignment mode (press and hold right button for 2 seconds until right LED is yellow.)
- Open app, scan and connect to the controller. When connected, the screen will show a list of any WVLs already connected.
- Press add (+) to add a WVL and then press the Scan button. The controller will scan for a WVL that is currently <u>in assignment mode,</u> and display the station numbering options in the app.







- Use the app to select the controller station numbers to assign to the WVL. Click Done for each station when it is assigned.
- When the station assignments for the WVL are as desired, press the Save button. The controller (WVOM) will transmit to the WVL to complete the assignment, and the app show if the save was successful. The assignment (right) light in the WVL will also flash yellow several times when the assignment is successful.
- After a successful save, take the WVL to the field location.
- Install and connect the WVL outputs to Hunter DC solenoids. Observe red/black wire polarity.

Install a second 9VDC battery if desired for improved seasonal battery life (recommended).

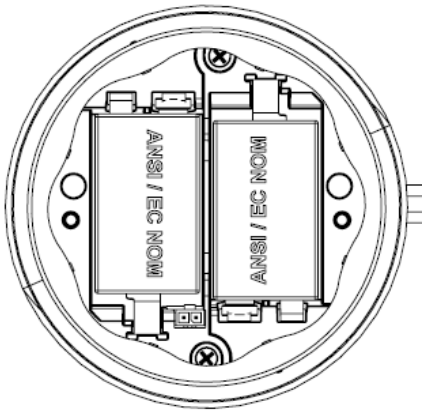
WVL Status Check

See the status of any WVL, with at least 1 battery installed. Press and release the Assignment button once. Do not hold the button down.

The Assignment light will show green if stations have been assigned, and red if not. The left (Manual) light will show battery status: green if battery is good, and red if it needs replacement.

Site Survey/Comm Check

You can verify radio coverage at the proposed installation/valve box site, prior to installation.



Move the programmed controller to the valve box location, and position it as closely to the final installation as possible.

With the battery compartment open, install at least one battery.

Press the left (manual) button 3 times. The LED will blink amber every 2 seconds to show it is listening for the WVOM signal.

Send a manual station start command to any WVL in the system (from the controller dial, with a helper, with a Hunter ROAM or ROAM-XL remote, or smartphone via central if that is an option).

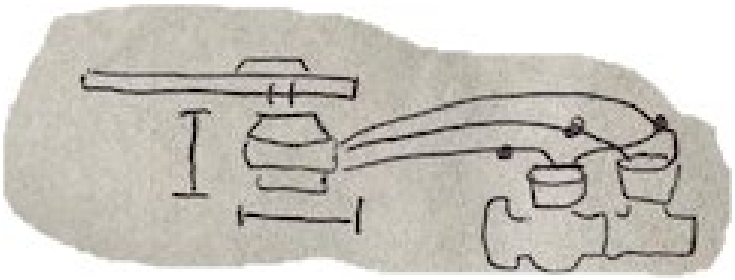
- The LED will turn green if it hears the LoRa radio commands from the WVOM. This indicates a probable successful location.
- If it does not turn green within a few seconds after the WVOM has sent a command, the signal was not heard.
    - If the command was sent to the WVL being tested, the LED will turn red

- Improve the signal (elevate controller antenna, or add a repeater), or the location may not work reliably.

Installation

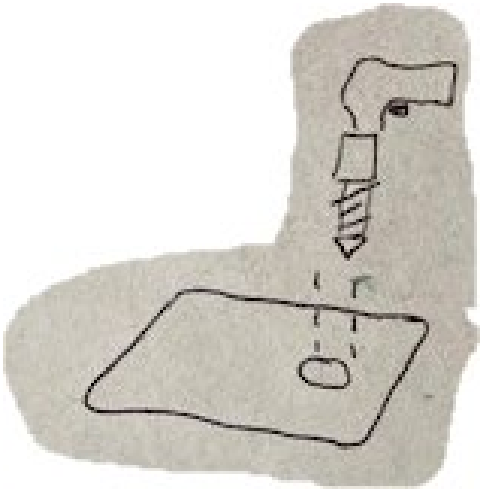
Complete the above steps first, especially station assignment. Then proceed to install and connect the WVL in the valve box.

Plan ahead to allow sufficient clearance in the valve box (show dimensions) before drilling.



Verify that the WVL assembly will fit in the valve box area without interfering with the valve or other devices in the box.

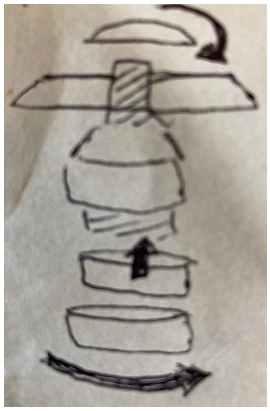
Final installation requires a minimum 4.25”/10.8 cm diameter, and 6.25”/15.9 cm vertical clearance, below the valve box lid.



Determine the center point for the WVL, and drill or use the 1 ½” (38 mm) hole saw (supplied with each WVOM) into the valve box lid on the center of the WVL location.

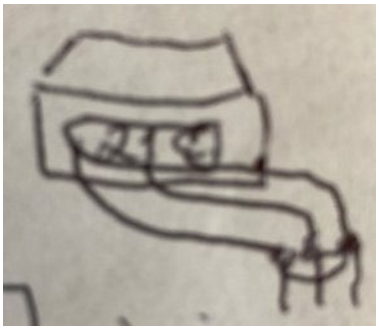
Note: It is better to drill upward from the underside of the valve box lid, to avoid any reinforcement ribs if possible.

Note: Additional trimming or modifications may be required, depending on the lid material and design. For plastic or fiberglass lids, a handheld jig saw can remove internal ribs that a hole saw cannot complete.



Insert the WVL threaded column up through the hole. Screw on the antenna cap above the valve box lid.

Use the threaded nut to tighten the connection to the underside of the valve box lid.



Connect the station output wires to the Hunter DC latching solenoids in the valve box.

Observe wire color-coding for Hunter DC solenoids: black to black, red to red. Use the black as a common wire for multi-station WVLs, to combine all black wires into a single splice.

This system will not operate with AC solenoids.

Use irrigation-grade waterproof connectors for wire splices.

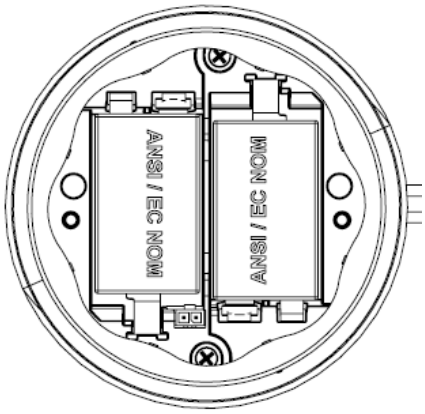
Close up of wiring output label.

Wiring diagram with multiple solenoids and shared common.

Add wiring distance table.

Manual Solenoid Test:

Test connected solenoid operation with the local manual start button in the battery compartment.



Press and hold the manual start button (left) to start the first station (blue LED will light, and solenoid will click if attached).

Press again to advance to the next station (If it is a multi-station controller).

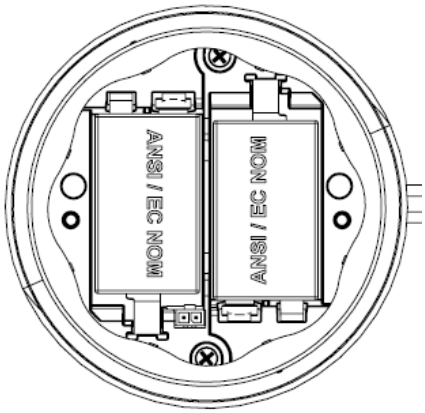
On multi-station WVLs, the blue light will blink rapidly to show which station output is active.

After the last station starts, press the button one more time to stop all test irrigation. The test function will stop after 1 minute if it does not receive further commands.

Push the battery cap back on firmly, and hand tighten the retaining ring to complete the installation.

Replace valve box lid with installed antenna, and verify proper operation with a controller station start.

Factory Reset



Factory Reset is used to clear all programming out of a WVL controller, including station assignment, Site ID, and Channel ID.

Procedure:

Remove ALL batteries from the WVL.

Press and hold the right assignment button,

Continue to hold the button, and insert one battery. Continue holding the assignment button for at least 5 seconds, until both LED lights turn red.

Release the assignment button immediately. The WVL will be completely reset.

- If the reset was successful, both LEDs will turn green momentarily.
- If the reset was not successful, the LEDs will blink red several times.

Use the app and assignment functions above to add the WVL back into the system, including station assignment.

Troubleshooting

In most cases, troubleshooting is best done with the WVL app open on a smartphone.

Problem	Causes	Solution
WVL not watering	Dead batteries WVL not addressed Improper solenoid, or solenoid disconnected WVL out of communication range	Use manual test function, replace batteries Verify WVL address (start from controller) Use manual test function, check solenoid wiring including polarity (red and black) Improve radio communications
Controller beeping	No response from WVL Low battery warning from WVL	Use WVL app to read which condition is being reported Replace batteries, improve communications, as indicated
Controller Err display (usually together with beeping)	No response from WVL Low battery warning from WVL Possible failure on another output module	Use WVL app to read which condition is being reported Replace batteries, improve communications, as indicated Troubleshoot other output modules

Station turns on for 1 second, then shuts off	WVL is wired to AC solenoid (not compatible)	Replace the solenoid with the required DC solenoid (Hunter model 458200). Red wires to red, black to black.

FCC:

WVL LoRa

"FCC ID: M3U-WVL"

"This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, you are encouraged to try to correct the interference by taking one or more of the following measures:

- *Reorient or relocate the receiving antenna.*
- *Increase the separation between the equipment and receiver.*
- *Connect the equipment into an outlet on a circuit different from that of which the receiver is connected.*
- *Consult the dealer or an experienced radio/TV technician for help.*

Changes or modifications not expressly approved by Hunter Industries could void the user's authority to operate this device. If necessary, consult a representative of Hunter Industries Inc. or an experienced radio/television technician for additional suggestions.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20cm during normal operation."

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. "

ISED:

WVL LoRa

“IC ID: 2772A-WVL”

“

This device contains licence-exempt transmitter(s)/ receiver(s) that comply with Innovation, Science and Economic Development Canada’s licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

1. L'appareil ne doit pas produire de brouillage, et
2. L'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement. ”

This equipment complies with the IC RSS-102 radiation limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm from all persons. (Translate into French as well)

LORA MAXIMUM OUTPUT POWER		
Models	Frequency Band (MHz)	Maximum Power (dBi)
WVL-100 WVL-200 WVL-400	915	0