DROP

PROTECT WHAT MATTERS

Professional Installers Guide

Getting started and operating the new system and mobile app

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Chandler Systems

INTRODUCTION

Welcome to the DROP System!

DROP Water Management from Chandler Systems offers improved water quality, leak detection ability and water conservation benefits. Improving water and protecting homes are just a few of the ways that the DROP Water Management System can improve home water system.

This Professional Installer's Guide is to be used an addendum to the User's Guide. We recommend that you read that before installing the DROP System.

Be sure to check out the dropconnect.com website periodically for more information about additional DROP products as they are released.

888.363.9434

dropconnect.com

To further help you install the DROP system, we have provided you with many other resources for you to learn more. Feel free to call Chandler Systems when you need additional help. We also have many resources located on our website including instructional videos, and images.

DROP Connect is also active on various social media pages! Feel free to follow us for the most up to date information and news!

@dropconnect

Privacy Statement

For more information about privacy, visit our privacy policy (https://dropconnect.com/sites/default/files/DROP-Privacy-Statement.pdf) online.

DROP Patents

For the most up-to-date list of patents, visit our patents on our website: dropconnect.com/patents.

FCC Compliance Statement:
https://dropconnect.com/sites/default/files/FCC_Compliance_Statement.pdf

Industry Canada Compliance Statement:
https://dropconnect.com/sites/default/files/Industry_Canada_Compliance_Statement.pdf

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ABOUT

The purpose of this document is to give an installer an overview of the steps to setup a DROP system and give a quick reference for the major features and functions of the system. For complete documentation refer to the DROP Users Guide, which can be found at https://dropconnect.com/knowledgebase-resources.

These are the steps to setting up a new DROP system:

(These are explained in more detail in the following sections)

1. Plumb in the new water appliance(s) that are going to be installed with the new DROP system.
2. If you do not already have the DROP Connect app, download it from Google play, or the Apple store.
3. Place Hub
4. Connect directly to the Hub using the app on the smart device.
5. Add the DROP devices to the system using the app.
6. Adjust System Settings and Rename DROP devices (particularly Leak Detectors).
7. Finish setup of the DROP devices using the app.
8. Help the customer get connected to their DROP system.

If you are servicing a DROP system that has already been set up you should read the section about Technician Mode.

INITIAL STEPS

Before you get started, there are few things you are going to need to do.

Install the Water Appliance(s) First!

It is recommended that you plumb the water appliance(s) into the water system **before** powering the DROP system. Please see the documentation regarding the installation of the particular water appliance(s) that you are installing for specific installation instructions related to that device.

Download the DROP Mobile App

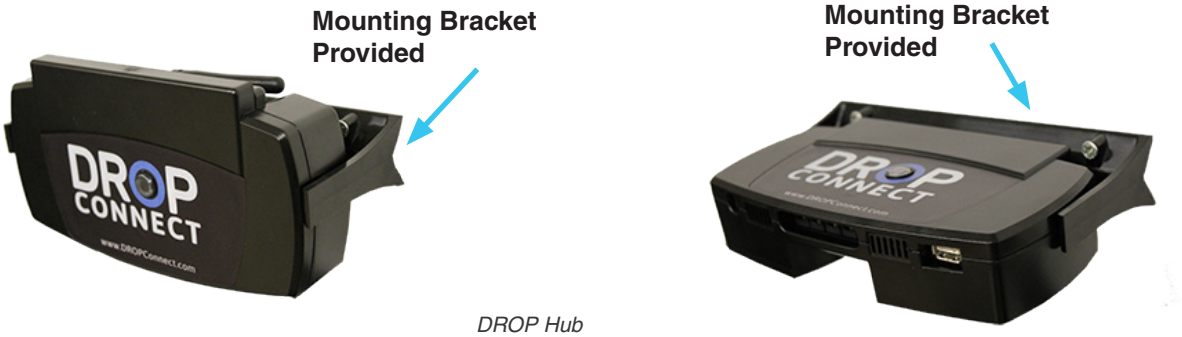
The DROP Mobile App can be found on both the iOS App Store and Google Play store. Just search for "DROP Connect" and look for the DROP icon or, here are quick links to the app.

Apple Store: https://itunes.apple.com/us/app/drop-connect/id1269747593?mt=8
Google Play: https://play.google.com/store/apps/details?id=com.chandlersystemsinc.dropconnect

ANDROID APP ON Google play Download on the App Store

Place the DROP Hub

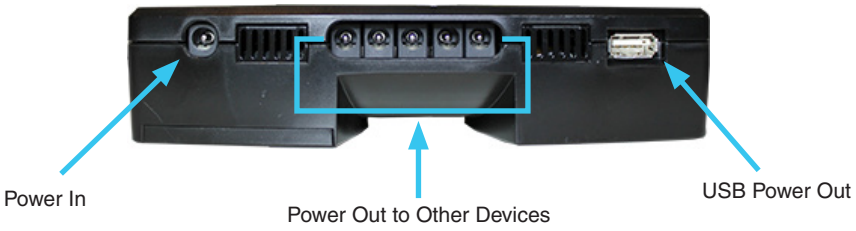
The DROP system is a wireless operating system making placement of the Hub very flexible. However there are a few things to keep in mind when you locate the Hub. If you are planning to connect the Hub to the home WiFi be sure to place the Hub within range of that network. The range of the DROP Link network gives adequate coverage to a majority of homes without the use of repeaters. Any device on the DROP network that is powered from an outlet power source can act as a repeater. However, placing the DROP Hub in a central location in the home gives it the best chance of being able to reach all the devices on the network without the need for DROP repeaters.



DROP Hub

INITIAL STEPS

Another feature to be aware of when placing the Hub is that the DROP Hub can power up to 5 additional DROP products. That is useful when there are not enough outlets to power all of the devices in an area with the provided power supplies. An example of this could be where a softener with a salt sensor, a backwashing filter and the Hub are all installed in a mechanical room. You can power the Hub with the provided power supply then connect the other devices to the Hub using the optional power distribution cord.



Back of DROP Hub

10 ft. power distribution cord available to power DROP devices from the hub (p/n: 20018X040 - Purchased Separately)

9 volt battery back up is recommended for DROP Hub

The hub also has a USB power output. This output can be used for slow charging of a tablet or phone. This is especially useful for our cabinet model where a tablet can be used for the purpose of being the user interface for the DROP system. The hub can keep the tablet charged and always ready for use.

DROP cabinet softener shown with tablet and hub (tablet purchased separately)

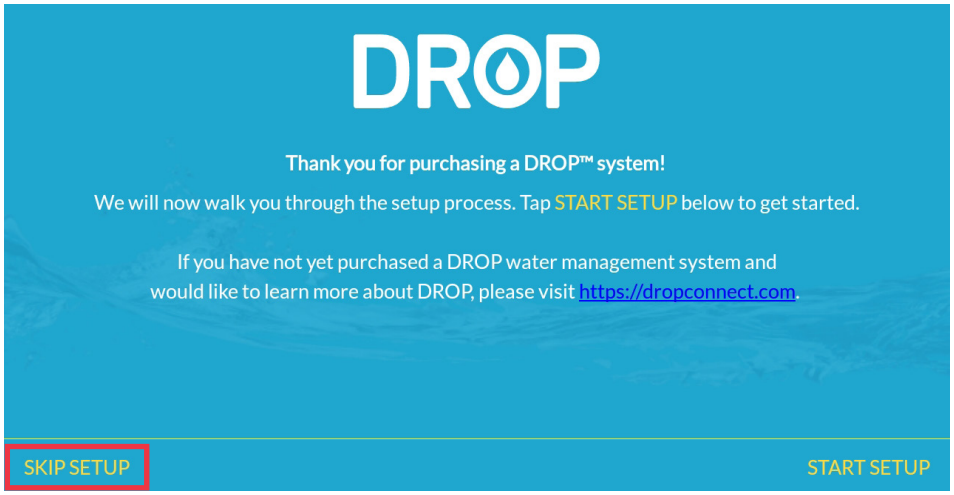
Once you have decided on a location for the Hub, you can plug it in. The Hub comes with a larger power supply than the other DROP devices. The Hub should be powered by a 12VDC 2,000mA power supply. It should be plugged into a non-switched 120v outlet. Once powered up, the Hub light will be yellow.

CONNECTING TO THE HUB

Connect Directly to the DROP Hub

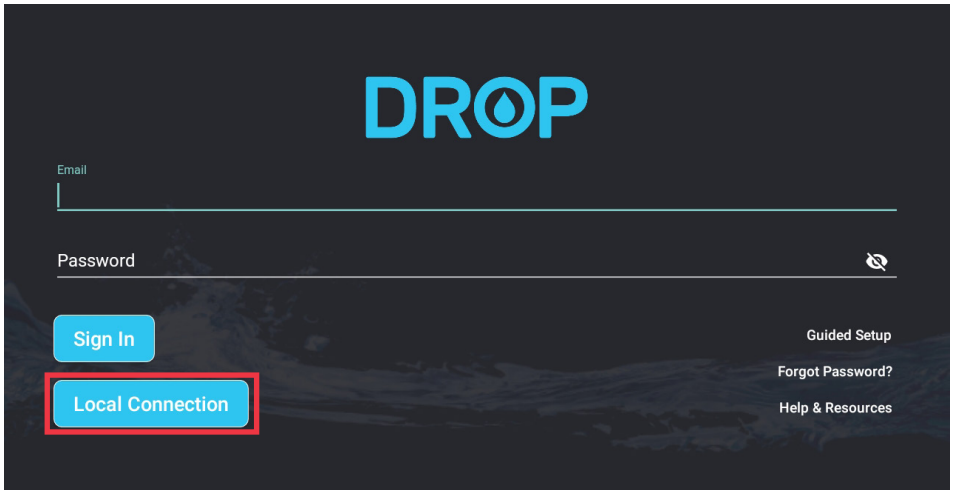
The following instructions will show you how to connect the DROP system to set the system up for the end user. This will include steps for both Apple iOS and Android OS devices.

1.



1. *To start the mobile setup without a home network, open the DROP app and select "Skip Setup". This will be the same for both Apple iOS and Android.*

2.



2. *The DROP Login screen contains helpful links for you to choose. To continue setting up the device without a network, click on "Local Connection".*

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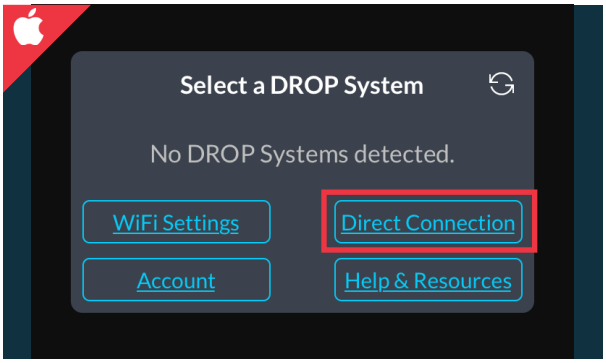
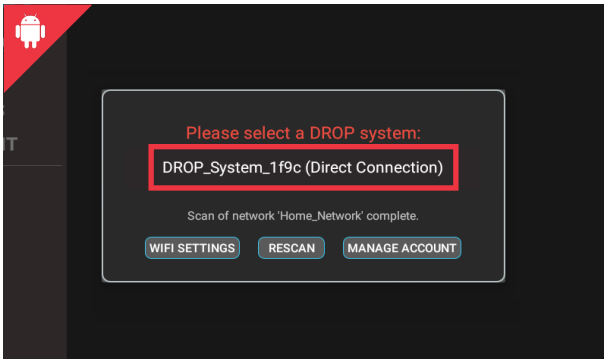
CONNECTING TO THE HUB

2.

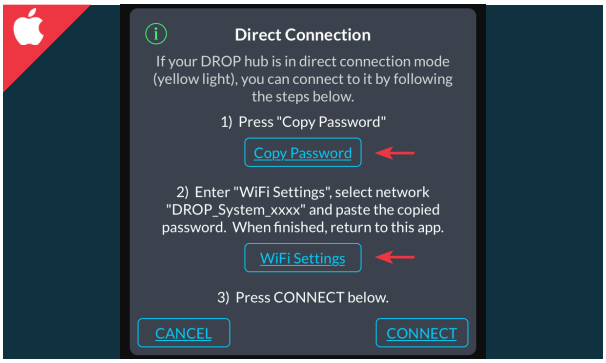


2. For this first time setup, no DROP system will be detected. Therefore, you will click on "Direct Connection" to establish a new connection to the Apple iOS device.

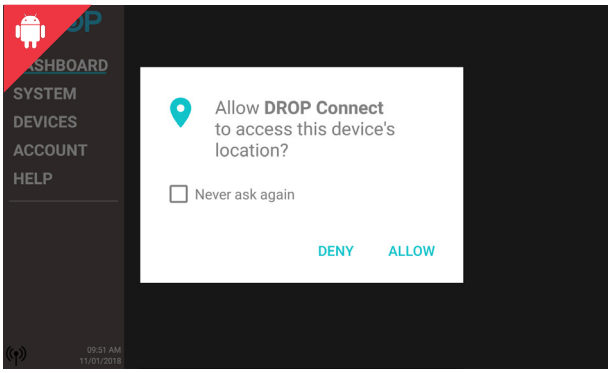


2. On the system select screen, you will find the DROP system listed. Just click on it and you will be connected directly to the system. The Android device is all set to go!

3.

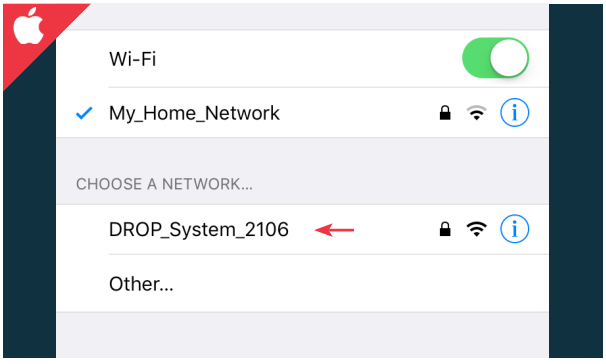


3. For security reasons, the next few steps require a temp password to be provided. First, copy the password by clicking the "Copy Password" butten and then on "WiFi Settings" to access the Apple iOS WiFi settings.



3. Google requires any android app to have the location permission in order to scan for WiFi connections. DROP connect requires this permission in order to operate.

4.



4. Once you are inside the WiFi settings and selecting a network, you will find the new DROP system. Click on the DROP system as if you were connecting to via WiFi.

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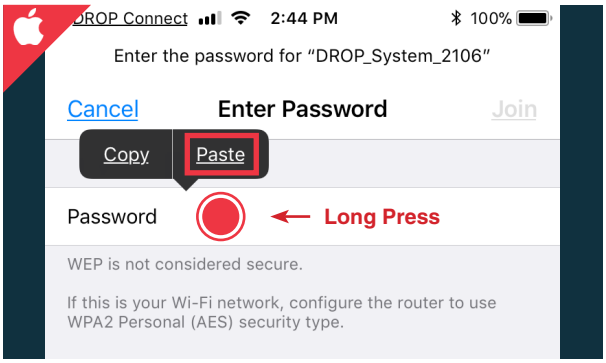
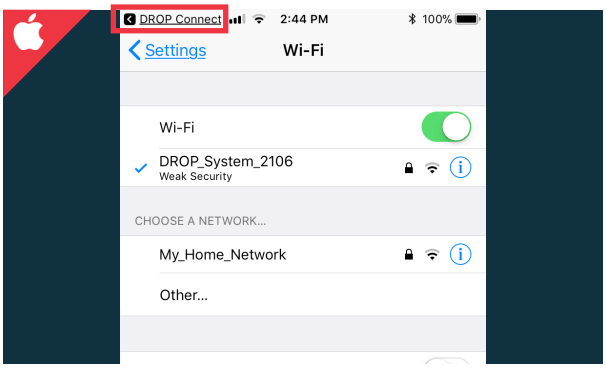
CONNECTING TO THE HUB

5.



5. When asked to provide a password to the DROP system, you will paste the temporary password you previously copied to the clipboard. You can paste by holding the finger on the password box and selecting "Paste".

6.

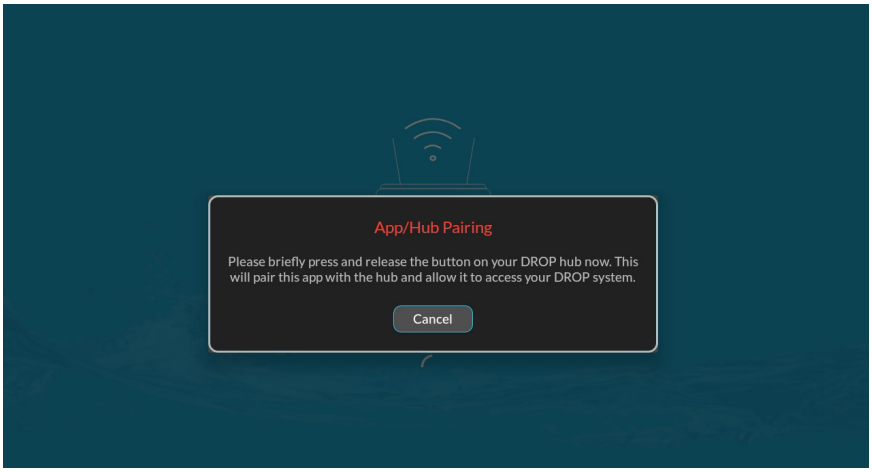


6. After you provide the temp password, the phone will be connected to the DROP system. To get back to the DROP app, select the "DROP Connect" button in the top left corner or double tap the home button to pull up open apps.

7.

4. Once you are back in the DROP app, the last step needed is to click on "Connect".

APP / HUB PAIRING

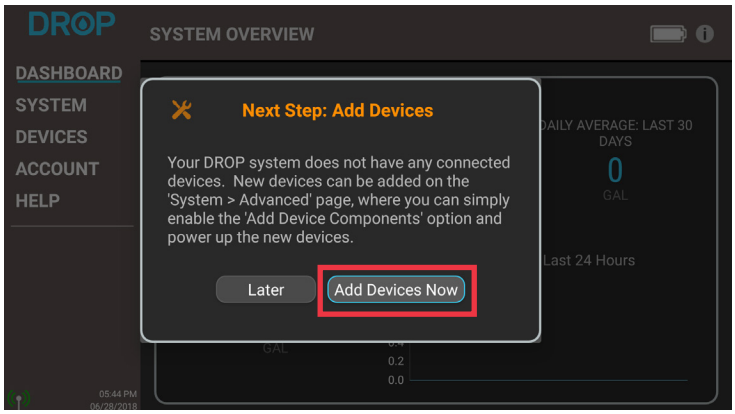


PAIRING

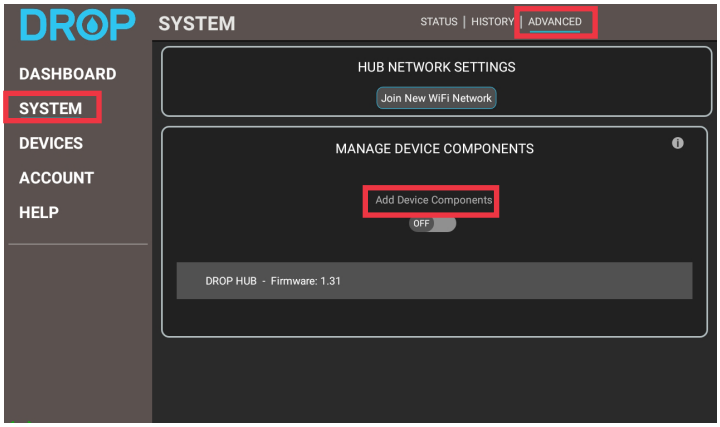
The DROP hub will only communicate with the DROP Connect app on devices that have been paired with the hub. When the app on a new device attempts to communicate with a DROP hub for the first time on a local network connection, it will prompt the user to press the button on the DROP hub to authorize the connection from that device. Once paired, the app will be able to communicate with that hub. If a user is logged into the DROP Connect app and can connect to the hub remotely, this pairing process will happen automatically, and the user will not need to press the button on the hub.

ADDING DEVICES AND NAMING

How to add DROP devices



If no devices have been added to the Hub, the app will prompt you to “Add Devices Now”. This will take you directly to the SYSTEM > ADVANCED page in the app.



First, unplug and remove any batteries from the DROP device you wish to add. Next, turn on the “Add Device Components” switch by tapping on it. The hub will enter a state where it will accept new connections. Last, immediately power up the DROP device by plugging it in, or inserting batteries. After the device has joined the DROP network you will see it added to the “Manage Device Components” table. You can then disable the ‘Add Device Components’ mode or simply wait for it to automatically disable.
Most DROP devices will be red when not paired and flash white when they are searching for a DROP system to pair to. Leak detectors are the exception; they will flash the network light slowly when not paired and quickly when they are searching for a DROP system to pair to. Once the device joins a DROP system it will show up in the list in the app under “Manage Device Components”. The device will also turn to its default LED color (typically green or blue) or, in the case of a Leak detector, will briefly turn on its green check mark LED. Repeat adding device components until all the DROP devices are joined to the Hub.

* Please note when joining multiple leak detectors to a hub, keep them in order. This way you will know which leak detector is which when you go to name them. They will be listed on the **SYSTEM > SETTINGS** page in the same order in which they were joined to the Hub.

ADDING DEVICES AND NAMING

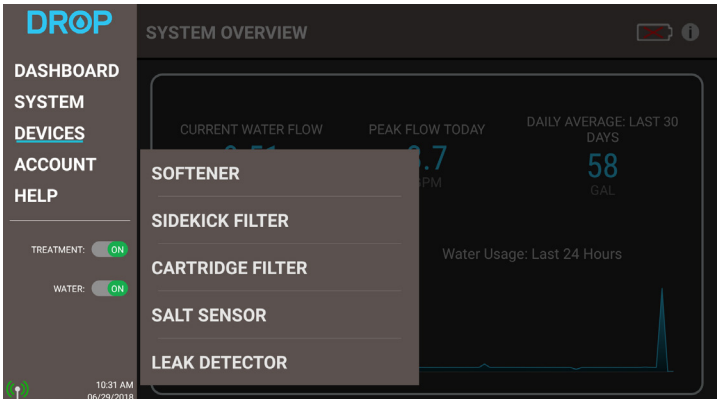
Adjust System Settings

On the **SYSTEM > SETTINGS** page, there are two settings that need checked. The “Regeneration Time” is the regeneration start time for the entire system. If a system has a filter and a softener, they will regenerate sequentially (if needed) starting at this time of day. The second setting is the “System Water Source” setting. This decides if regeneration is allowed to complete if the valves and hub have batteries installed, and the power fails while regeneration is taking place. If the water supply relies on an electric pump then this should be set to “Private Well”, otherwise if water will still be available, set it to Municipal Supply. Note that these settings will be absent on DROP systems that do not have a backwashing filter or softener.

Rename DROP system and devices.

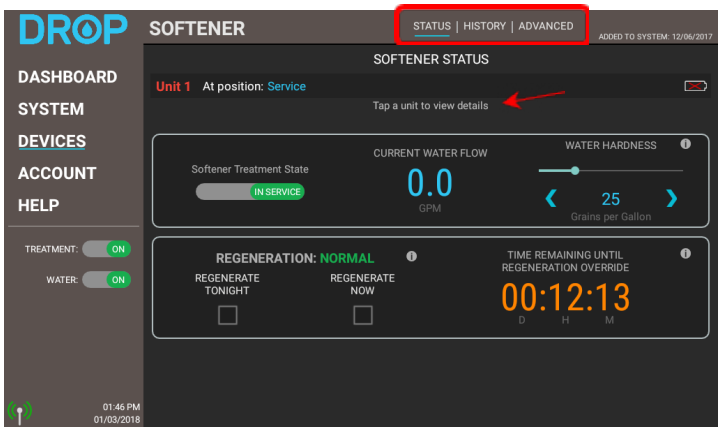
The DROP system and DROP devices can all be named to make identification easier. This can be done in the **SYSTEM > SETTINGS** page of the app. Naming the DROP system is especially useful if you have more than one DROP system to manage. Naming the DROP devices can be helpful when you have more than one of the same type of device. A good example of this is when you have multiple leak detectors; you can name one “Utility Room Leak Detector” and another “Upstairs Bathroom Leak Detector”. You will now be able to easily know which leak detector is reporting a leak.

Finish setup of DROP devices using the app.



Each of the DROP devices that you attached to the Hub will now show up in the “DEVICES” submenu. This menu is scrollable if the list gets larger than the screen can accommodate. Each of these devices should be reviewed to make sure they are properly setup.

ADDING DEVICES AND NAMING



Some DROP devices have more information and settings than others. Softeners and filters have three subpages in the app that can be selected at the top, and on the STATUS page more detail and controls can be seen by tapping on the Unit.

SOFTENER SET UP

Additional Setup for Softeners

On the softener, there are several settings that need to be verified at startup. To check these, go to **DEVICES > SOFTENER**. You will then be on the softener **STATUS** page, where the water hardness setting can be adjusted. Also on the status page a regeneration can be forced to start to check the system.

The **REGENERATE NOW** box can be checked to start the initial regeneration on the softener now that it is plumbed in and connected to the Hub.

Unit Status Details

Viewing and controlling details about the valve unit requires you to touch a unit under the Softener Status title. (Normally there is only one unit, but a duplex or triplex will have more than one unit to choose from). Once a unit is selected, the unit's status details will appear. Inside the unit status details box, controls only apply to that unit or valve. When a unit is in regeneration a **"Current Position"** will appear in the box. Tap this box to **manually advance** to any position in the regeneration cycle at any time.

Softener Advanced page

The settings on the advanced page will need to be checked. Eventually there will be default presets for the various capacity softeners, but for the time being the refill times will need to be manually set. Below is a list of the default settings that may need changed for softener units. These settings are based on using salt efficient settings.

Softener Size	**24k (3/4 Cu.Ft.)**	**32k (1 Cu.Ft.)**	**48k (1.5 Cu.Ft.)**	**64k (2 Cu.Ft.)**	**96k (3 Cu.Ft.)**
Total Capacity	20	27	40	54	81
Brine Refill Time	5	6	10	12	18

TROUBLESHOOTING

Help the customer (systems owner) to get setup

At this point the DROP system is completely setup to treat, control and protect the water system. If needed, it can operate independently without being connected to WiFi. However, we expect most users will want to get all the features and functionality out of their new DROP system. In order to be able to receive notifications and remotely control and monitor their system they will need to have their system connected to DROP web services. Because this involves connecting to their WiFi router they will need to be involved in this process. If they are available, you can help to walk them through this process. If they are not available, you may have to refer them to the DROP Users Guide so they can connect the system at a time that is convenient for them. The latest version of the Users Guide can always be found on our website https://dropconnect.com under the RESOURCES page.

The User Guide will help the customer to:

- Obtain the DROP app.
- Setup the Hub on their WiFi.
- Setup a DROP user account.
- Connect their DROP Hub to DROP Web Services for the ability to receive notifications and connect remotely to their DROP system.

Router Configuration

We have found that some routers do not properly allow devices to be found over networks. If the App is having trouble making a local connection to the Hub there are a few things you can try to remedy the problem.

Troubleshooting Steps

1. Please note that the DROP Hub requires a 2.4 GHz WiFi network to connect to. Also, it should not be connected to a “guest” type network.

2. Confirm that the smart device is connected to the local WiFi network, the same network that the Hub is connected to.

3. When scanning for the DROP system on the network (see page 10) if you press the “Rescan” button repeatedly a dialog will pop up that gives you the option to “Scan Entire Network”. If you are on a home network choose “OK” and then press “Rescan” one more time after it becomes available. This type of scan should find the hub if it is on the network. If you are on a corporate network you should contact the network administrator regarding the problems connecting to the DROP system. Enabling the “Scan Entire Network” may break network rules set up in corporate environments which may in turn remove the phone or tablet from network access.

4. You can try rebooting the Hub by pressing and holding the button on the front. After 2-4 seconds it should turn Pink, release it when it is Pink to reboot the Hub. The Hub may take 30 seconds or so before it will show up in a scan after rebooting the DROP system. You may want to try scanning multiple times.

TROUBLESHOOTING

Customer Support

The DROP Connect website is full of helpful information. Visit our Knowledgebase Resourses (https://dropconnect.com/knowledgebase-resources) for more information, videos, and other help.

If troubleshooting hasn't solved the issue, Chandler System Customer Support is available to help! Please call: **888-363-9434** for our customer support team.

DROP Hub Status

Similar to the mobile setup process, DROP can operate in any network environment, with or without WiFi. The color of the DROP Hub light will indicate to you what connection mode it is in. While observing the device, you will notice periodic purple flashes. These indicate that it is wirelessly communicating to the DROP devices during that time. Here is an overview of each mode.

Connected to WiFi and DROP Connect Services

The hub has connected to a local WiFi network and to DROP Connect servers. The Hub is able to accept remote connections. In this mode there are two ways that the app can communicate to the Hub. If the phone or tablet is connected to the same local network as the Hub, the app can communicate directly over that local network.

Connected to WiFi only

The hub has connected to a local WiFi network. To communicate to that Hub using the DROP app the phone or tablet will need to be connected to that same local network.

Direct Connection

The hub is using its own private WiFi network (this is the default state on first power up). To communicate to that Hub using the app the phone or tablet will need to be connected to the DROP WiFi which will be named “DROP_System_####”. Follow the instructions for one of the connection modes in the section “Connecting the app to the DROP system” to have the app walk you through making that connection.

Lost WiFi Signal

The hub cannot connect to the WiFi network it was previously connected to. If this persists for more than a few minutes, check that the WiFi network is available using another device, and make sure the SSID or password of that WiFi network has not changed. If it has not changed and can be connected to using other devices, reboot the hub. If it has changed, set the hub to direct connection mode (see Adv. Hub Pushbutton Functions) and then connect it using the new credentials.

Hub Pushbutton

Emergency Water On/Off

All DROP devices that treat the water also provide a water shutoff for all plumbing that is connected to the outlet of the unit. **Briefly pressing the button on the hub will toggle the water shutoff state**. Although this functionality is also available in the app, simply pressing the button to shut off or restore the water flow is a quick way to change the water shutoff state. When the system is in water shutoff, the Hub light will flash orange once a second over top of its normal status color.

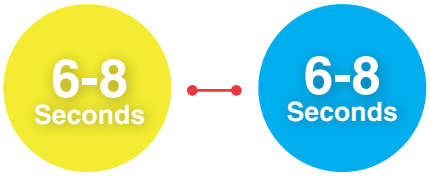
Technician Mode and Advanced Hub Pushbutton Functions

The pushbutton on the front of the Hub had been designed to perform some basic functions. By pressing and holding the pushbutton these functions can be accessed. As you hold the pushbutton, the button color will change for the different functions that are available. The following list explains the functions that are available: The Hub can easily be put into technician mode by pressing and holding the button while you power up the Hub. If the Hub is powered and has a battery, pull the power plug and within 1-5 seconds press the button and hold it while plugging power back in. After the Hub is powered and the light is yellow, then you can release the button; it is in Technician Mode. To go back to normal operation mode again, reset the Hub by pressing and holding the button until it turns pink (2-4 seconds), when it turns pink release the button.

Technician mode allows you to connect to and service the hub and system that you have direct access to, without needing to connect to the user's home WiFi network and without needing the Local Access Password. It is useful for systems that are already set up that you, as a technician, need to service. While the hub is in technician mode, it will not be available to the user either remotely, or over their normal WiFi network. Once the hub is reset, or after 15 minutes of no communication with the app, the hub reverts to all of the original settings for that system and will be available again to be used normally.

The button will turn pink. If released during this time frame the Hub will reboot. This can be helpful if you think something just isn't working right and you want to try a fresh startup to see if it fixes the problem. A reboot takes only a few seconds to complete and is generally not disruptive to any of the normal functions of the system.

While the Hub is in **Technician Mode** the pushbutton can be used to add devices to the DROP link network. Press and hold the hub push button until it turns white (approx. 4-6 seconds) and release the button while it is white. The hub will then stay white for 2 minutes, during that time new connections with DROP devices can be made to the hub.



(Not Available in Technician Mode) If the DROP Hub is connected to a local (blue or green before pressing the button) WiFi network, button color will be yellow. If released during this time frame the Hub will reset and temporarily revert to direct connection WiFi mode. Once in direct connection (yellow with button not pressed) WiFi mode, if button is held again for 6-8 seconds the button color will be blue. If released in this mode the Hub will reset and reconnect to the previous WiFi connection. Switching to direct connection WiFi mode can be helpful if you want to temporarily allow someone to access the Hub, but don't want to give them access to the local WiFi. This also can be helpful if the WiFi router is no longer available and you need to connect to the DROP system. Finally, it is a way that can be used to connect a Hub to a new WiFi without resetting the Hub.

The button will turn green. If released during this time frame the Hub will reset the app pairing keys. When the pairing keys are reset, a notification will be sent out that the pairing keys have been reset. This ensures that a user must have direct physical access to the Hub in order to clear the pairing keys and also ensures that the appropriate users are notified of the change.

While the Hub is in **Technician Mode** the pushbutton can be used to remove all connected devices from that hub's DROP link network. Press and hold the hub push button until it turns purple (approx. 18-20 seconds) and release the button while it is purple. The hub will then disconnect all DROP devices from its network, but will keep all other system settings and history data.

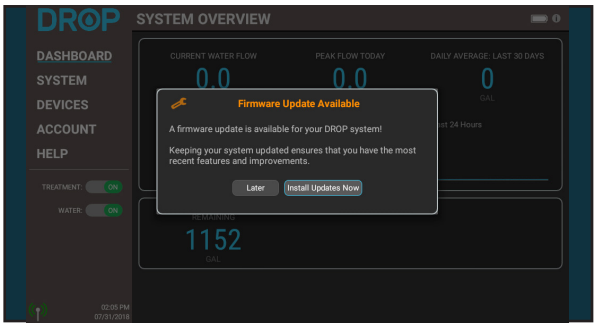
Factory Reset

A factory reset will clear all data from the hub and remove any connected devices. Typically, a factory reset is only necessary if suggested by DROP technical support staff. If a hub currently has remote access enabled it is recommended that remote access is disabled before a reset, especially if the hub will be used by someone else. Otherwise, the hub will remain locked to the original account and cannot be used by another account. To disable remote access, go to the Account page in the app and look for the 'Disable Remote Access' button.

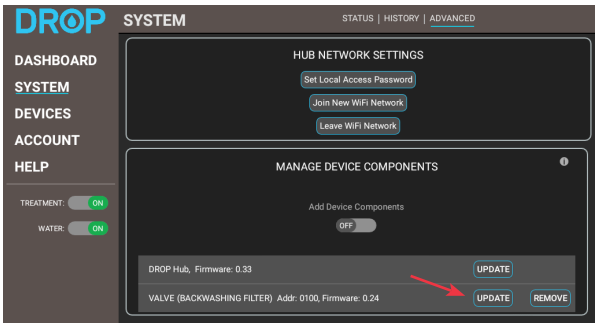
To perform a factory reset, first remove the backup battery from the hub. Unplug the hub, depress the pushbutton, and plug in the hub while continuing to depress the pushbutton. After 30 seconds, the button will begin flashing orange and red. Release the pushbutton and the hub will be armed for a factory reset while the button is red. If the button is pressed again while the button is red, a factory reset will be performed. If the button is not pressed again within 10 seconds, the factory reset will be cancelled, and the hub will start normally.

How to Update Firmware

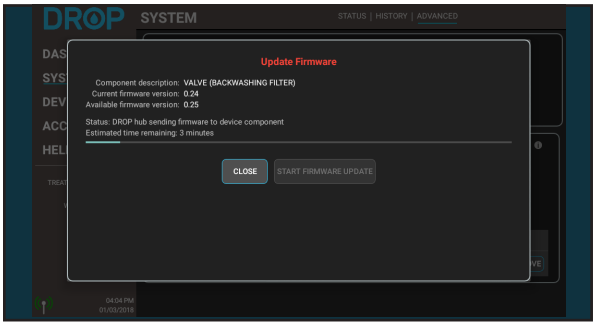
The DROP Hub and all DROP devices have firmware that is programed on each DROP component and controls how the DROP system operates. The DROP system is designed to be able to update the firmware in order to add new features and fix or improve operation. New firmware updates are distributed in the DROP App and can be downloaded to the DROP system using the app. The app will prompt you that new firmware is available when you open the app and connect to the Hub in local mode. Choosing “Install Updates Now” will take you direct to the **SYSTEM > ADVANCED** Page.



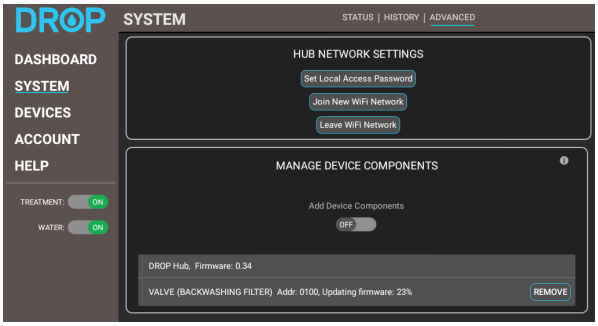
Firmware Updates Pending



Firmware Updates Pending



Sending Hub Firmware Update



Firmware will continue to be transferred. Once complete, the update will be installed on the device.

Any devices that have an update available will have an “Update” button next to them. An available Hub update must be installed before device components can be updated.

NOTE: *The App needs to remain open while the firmware data is being sent to the DROP Hub.*

DROP Lights - Normal Operation

The softener and/or filter will normally be in the service position. This is its normal position that treats the incoming water supply. The different treatment valve types have different colors when they are in their service position, so they can easily be identified by the color of their lights. These colors are identified in the list below:

Softener - Green

Filter Valve (Backwashing or Aeration Filter) – Blue

Cartridge Filter – Cyan

While observing the device, you will notice periodic purple flashes. These indicate that it is wirelessly communicating to the DROP devices during that time. Also, when the water meter on the unit senses water flow, the front lights on the device will alternate. The rate of alternation of the lights will give a general idea of the current flow rate. The highest frequency of the lights alternating is determined based on the highest flow seen by the system.

The lights will change color when the device or devices are put into Bypass mode or Water Off. If the water is off, the lights on the valves will be orange. The water can be turned back on using the app or by shortly pressing the button on the Hub. If one of the valves is bypassed, its lights will be bright yellow. Bypassed means that water will not be treated by that device while it is in bypass mode. This may be helpful if you wish to not use treated water in a particular situation, such as watering the lawn.

Image of DROP Treatment Valve Lights during Normal Operations.

DROP Lights - During Regeneration

When a treatment valve is in regeneration the lights will change color for each step in the regeneration process. While the valve is sitting in a step of the regeneration process the lights will be slowly fading from side to side (wobble). If the valve is moving to a position the lights will rotate according to the direction of the motor movement to get to that position. The colors for each position are as follows:

Softener

Position	Color
Backwash	Purple
Brine Draw	Light Pink
Rapid Rinse	Light Blue
Brine Fill	Spring Green

Backwashing Filter

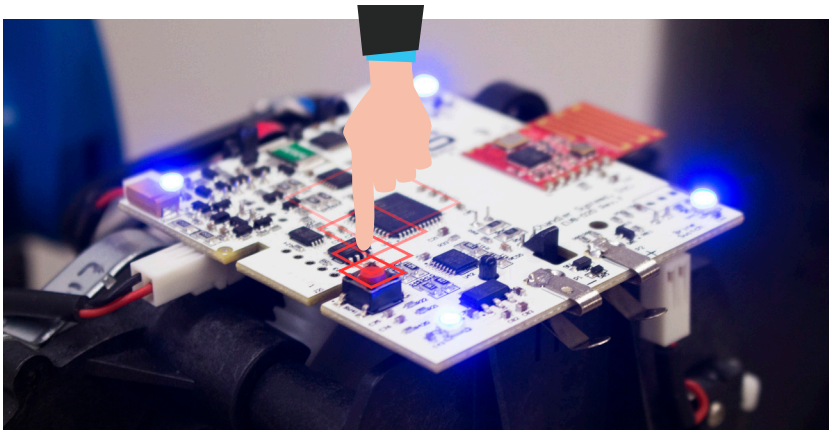
Position	Color
Backwash	Purple
Rest	Light Yellow
Rapid Rinse	Light Blue

Aeration Filter

Position	Color
Decompress	Pink
Air Release	Lime
Backwash	Purple
Rest	Light Yellow
Air/Chlorine Draw	Light Pink
Rapid Rinse	Light Blue

ADVANCED VALVE FUNCTIONS

Advanced Treatment Valve Pushbutton Functions



Advanced Treatment Valve Pushbutton.

The valve board has a pushbutton on it that can perform some basic functions. To access the button, remove the valve cover. The button is near the front left corner of the board. By pressing and holding the pushbutton the functions can be accessed. As you hold the pushbutton, the button color will change for the different functions that are available. The following list explains the functions that are available:

If a valve is in a regeneration process a short press and release on the button will send it to the next regeneration step. This is handy if you are just checking the functionality of the valve steps such as at initial installation.

2-4 Seconds

Valve lights will turn blue. Will start a regeneration cycle. If other valves are in process, the regeneration will be queued and begin shortly.

6-8 Seconds

Valve lights will turn green. Will turn valve motors into their home state. Will verify motors are in a correct position.

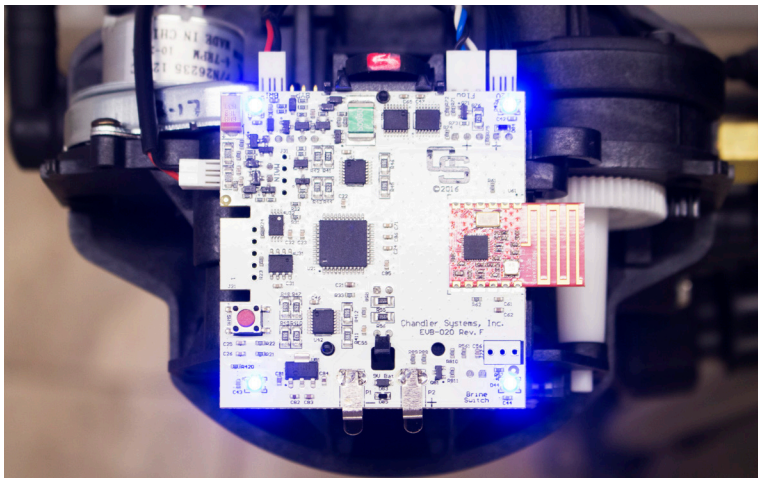
15-17 Seconds

Valve lights will turn Orange. If released during this time frame the **valve will be armed for a factory reset and the lights will turn red**. **If the button is pressed again, once it is red, a factory reset will be performed on the valve.** It is recommended that before performing a factory reset, that you remove the valve as a device on any DROP system that it might be attached to. This can be done while using a local connection in the App and going to System on the navigation menu on the left, and then the Advanced page (selected at the top). On that page you will see “Manage Device Components” . Find the valve in that list and press the “Remove” button associated with that valve. Once the valve is removed then perform the factory reset.

ADVANCED VALVE FUNCTIONS

Advanced Configuring Treatment Valve device components

The DROP treatment valve board is used on several configurations of DROP products. Normally these products will come with the board already setup, ready to use. Some situations may cause you to need to change the configuration of the board. There are two settings available on the valve configuration. The first is treatment valve type. The type options are: Softener, Backwashing filter, Aeration filter, Sidekick aeration filter, and Cartridge filter. The second setting is the device number, which can be set from 1-4. Every stage of water treatment that you have needs to have a unique device number.



DROP Treatment Valve Circuit Board.

A simple system will typically have 1 to 2 treatment stages each with only one tank. For example, a softener and a Sidekick filter. These will normally come from the factory already set up with a unique device number. Also, if you want to use two of the same type of treatment device in parallel to treat the water, the DROP system will automatically know to set up two softeners (which should have the same device number) as parallel units. The issue is when you have a system that needs two treatment steps using the same type of treatment device. For example, a backwashing carbon filter and a backwashing neutralizer filter that are used in series with each other. In this case the device number of one of the backwashing filters will need to change and it cannot be the same as any other valve device number already on the DROP system.

The other situation that may cause the need to change the device configuration is in the case of replacing a board in the system. If a generic DROP valve board is used, it may need configured to match the system that it is being installed into. Follow the steps below to change the device configuration of a board, or these steps can be followed to find out what the current configuration of a board is set to.

ADVANCED VALVE FUNCTIONS

Advanced Configuration Steps:

1. If the valve is powered up, unplug it (and remove the battery if installed).

2. Depress the pushbutton on the valve board while plugging in the valve. The board will begin flashing white LEDs. Release the pushbutton.

3. The valve will display a light code to identify its configuration. Repeatedly press the button to select the correct device type according to this list:

- **a.** 1 green LED: Softener
- **b.** 1 blue LED: Backwashing filter
- **c.** 2 blue LEDs: Backwashing filter with Aeration
- **d.** 3 blue LEDs: Sidekick filter
- **e.** 1 cyan LED: Cartridge filter

4. With the correct device type code displayed, hold the button down for 2 seconds and the LEDs will flash green to indicate the selection is accepted.

5. Next, you will see 1 to 4 white LEDs. Repeatedly press the button to select the valve device number for the board with 1 to 4 lit LEDs. All the device components in the same logical device must use the same device number. (Example: a softener with multiple tanks) Device components of different types must use different device numbers. (Example: a softener and a filter) Hold the button for two seconds again to accept the selection. When the button is released, the valve will restart and is ready for use.

Valves from the factory are preset as follows:

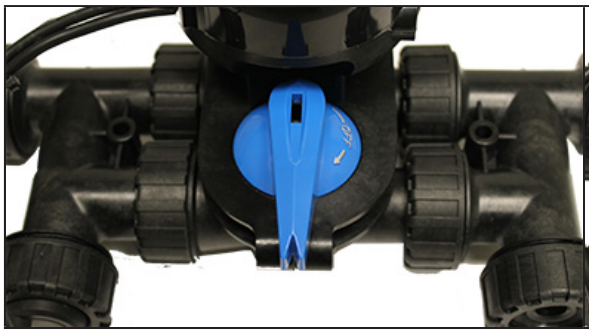
- **a.** Softeners are set to device #1
- **b.** Backwashing filters are set to device #2
- **c.** Aeration valves, including Sidekick aeration valves are set to device #3
- **d.** Cartridge filters are set to device #4

These factory presets are just for simple setup in a majority of installations and can be changed as necessary for a given installation.

HOME PROTECTION VALVE

Manual Bypass

The home protection valve features a manual bypass valve that can be used to restore water service if the shutoff valve fails while in the shutoff position. **It is very important that the manual bypass valve is off as shown below during normal operation.** Otherwise, the shutoff valve will be unable to shut off the water supply when a leak or abnormal flow is detected.



Manual Bypass Off - Normal Operation

Manual Bypass On - Emergency Water Bypass. The valve cannot protect your home in this position.

Lights

The home protection valve will normally be in the service position. This is its normal position that connects the incoming water supply to the household plumbing system. While in service, the lights on the shutoff will be green. When the valve moves to the shutoff position, the lights will change to orange.

While observing the device, you will notice periodic purple flashes. These indicate that it is wirelessly communicating to the DROP devices during that time. Also, when the water meter on the unit senses water flow, the top lights on the device will alternate. The rate of alternation of the lights will give a general idea of the current flow rate. The highest frequency of the lights alternating is determined based on the highest flow seen by the system.

HOME PROTECTION VALVE

Pushbutton Functions

The home protection valve has a recessed, touch sensitive button that can perform some basic functions. These functions can be accessed by pressing and holding the button. As you hold the pushbutton, the light closest to the button will turn white to confirm the button press, and the top lights will change for the different functions available. The following list explains the functions that are available:

The valve lights will turn orange or green, depending on the valve's current position. If the valve is in service (green lights before the button was pressed), releasing the button while the lights are orange will send the valve to the shutoff position. Likewise, if the valve is in shutoff (orange lights before the button was pressed), releasing the button while the lights are green will send the valve to the service position.

The valve lights will turn purple. Releasing the button while the lights are purple will cause the valve to turn the motor and verify the valve is in the correct position.

The valve lights will turn blue. Releasing the button while the lights are blue will cause the valve to recalibrate the pressure transducer. Note that this option should only be used when the pressure transducer is open to the atmosphere. If it reads more that 5PSI, the instruction to calibrate the transducer will be ignored.

The valve lights will turn orange. If released during this time frame the valve will be armed for a factory reset and the lights will turn red. If the button is pressed again, once it is red, a factory reset will be performed on the valve. It is recommended that before performing a factory reset, that you remove the valve as a device on any DROP system that it might be attached to. This can be done while using a local connection in the App and going to System on the navigation menu on the left, and then the Advanced page (selected at the top). On that page you will see "Manage Device Components". Find the valve in that list and press the "Remove" button associated with that valve. Once the valve is removed then perform the factory reset.

HOME PROTECTION VALVE

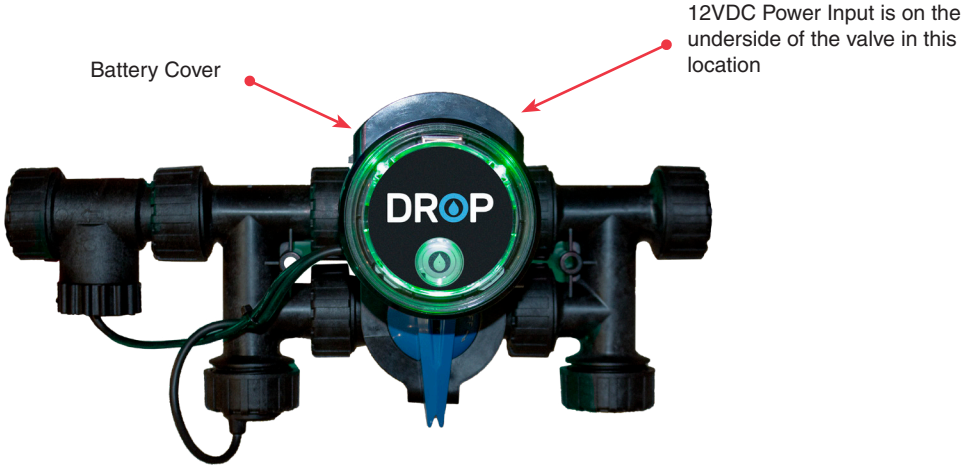
Leak Detection

The home protection valve includes a leak detection cable that plugs into the side of the home protection valve powerhead. The detection pins should be placed in the location most likely to collect water in the event of a nearby leak and can be secured using small screws, zip-ties or double-faced adhesive tape. The home protection valve is also compatible with DROP wireless leak detectors. If a leak is detected by any device in the DROP system, the home protection valve can shut the water off to protect the home.

DROP Leak Detection Cable

Battery

The home protection valve accepts a standard 9-volt alkaline battery to allow continued operation and emergency water shutoff during a power outage. The battery compartment is accessed by opening the battery cover on the side of the valve powerhead. The battery must be installed with the terminal polarity matching the polarity printed between the battery terminals inside the battery compartment.



Battery Placement