Water Add Kit

Items Included in the Kit

Unpack the kit and review its contents.

Label the Sensor Cable(s): Label **both ends** of the cable using colored tape or zip ties to identify its function when routed to the Hub.

Recommendations:
Yellow – Slump Hydraulic Sensor
Red – Drum Sensor (Drum 1)
Green – Drum Sensor (Drum 2)
Blue – Water Add Flow Meter
White – Washout Switch

Flow Meter
Kit Quantity: 1
DF Part Number: **WATER-103**
(2) G1 1/4" to 1" Hose Barbs preinstalled (WATER-106)

M12 Cordset, 20M Cable
Kit Quantity: 1
DF Part Number: **GEN-102**

Male Terminals
DF Part Number: **GEN-110**

Female Terminals
DF Part Number: **GEN-101**

1" SS Hose Clamps
Kit Quantity: 3
DF Part Number: **WATER-102**

Tools for the Job (not included)

- #2 Phillips screwdriver (or screw gun with #2 Phillips end)
- Flat screwdriver (or screw gun with flat end)
- Hose cutter
- Cable stripper (nice to have)
- Wire crimpers
- Wire strippers
- Side cutters

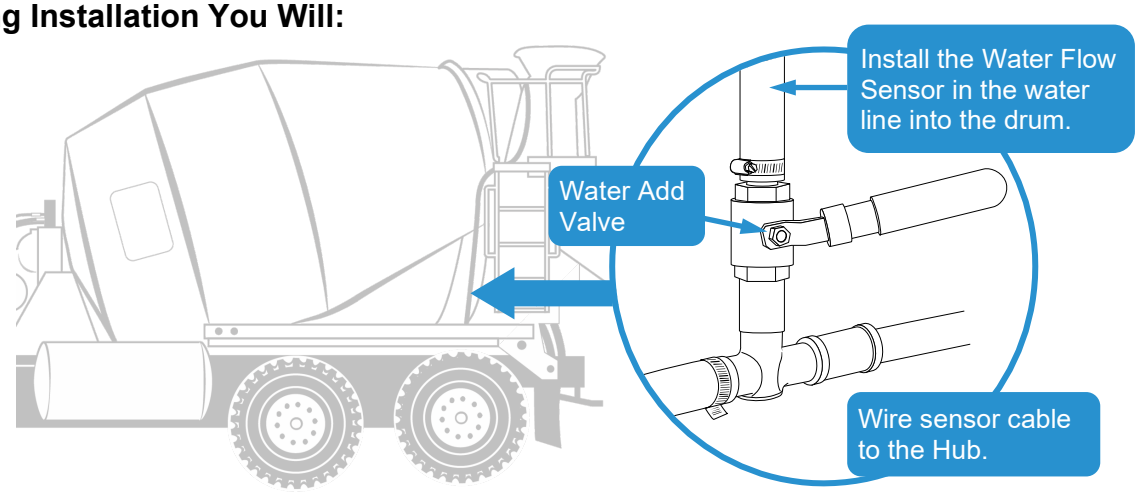
Additional Items Needed (not included)

- Grommets, bushings, hole plugs (to pass wiring through dash/firewall)
- Wire ties
- Colored tape (to mark cables)

Installation – Water Add Kit

The Flow Meter is installed in the water add line going into the drum. This allows the driver and dispatch to monitor water added to the batch of concrete.

During Installation You Will:



Step 1. Before starting—color code each end of the sensor cable to identify its function when routed to the hub (blue recommended for Flow Meter).

Step 2. Engine must be off, but leave battery connected.

Step 3. Start installation above the water add valve in the 1” water hose going to the drum.

Important: Vibration can cause false readings—install sensor where it will NOT vibrate against any object or surface.

Step 4. Drain the water add hose line.

Step 5. **Use tape to mark the cutout section of the hose.**

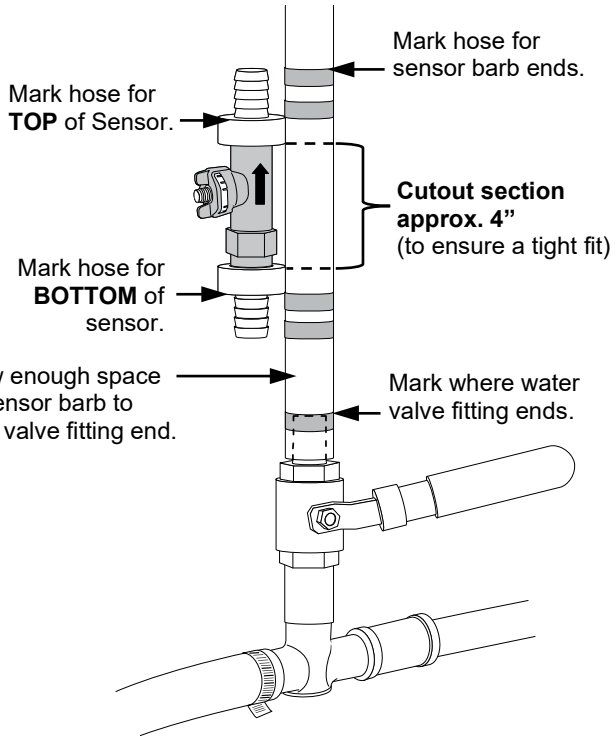
STOP DO NOT cut the hose until you carefully measure the cutout section needed and mark any hidden fitting ends.

5.1. Mark the hose where the water valve fitting ends, see image.

5.2. Hold sensor in place against hose:

A. Make sure sensor barbs will clear any fittings.

B. Position sensor where it **will NOT vibrate** against any object or surface.



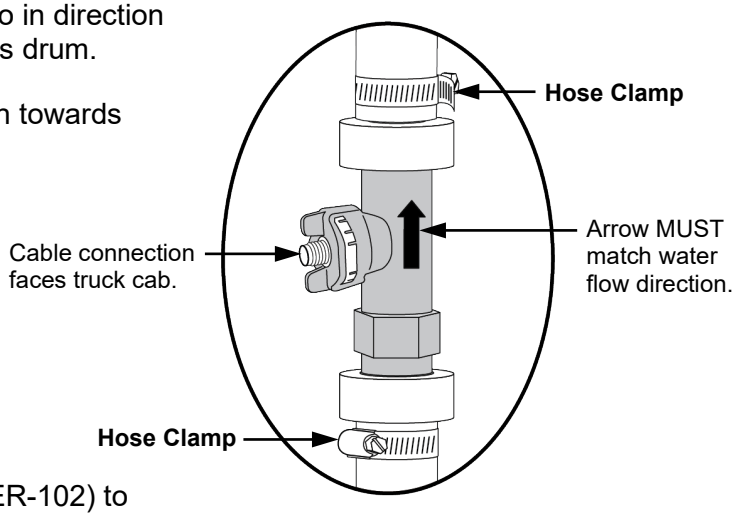
5.3. Mark the sensor ends on the hose and mark a cutout section approx. 4”, see image reference.

Step 6. Using a hose cutter—cut out the section of hose **approx. 4” long**.

Step 7. Install the Flow Meter (WATER-103) in the cutout section (the sensor should fit tight).

7.1. Arrow on sensor MUST go in direction of water flow—UP towards drum.

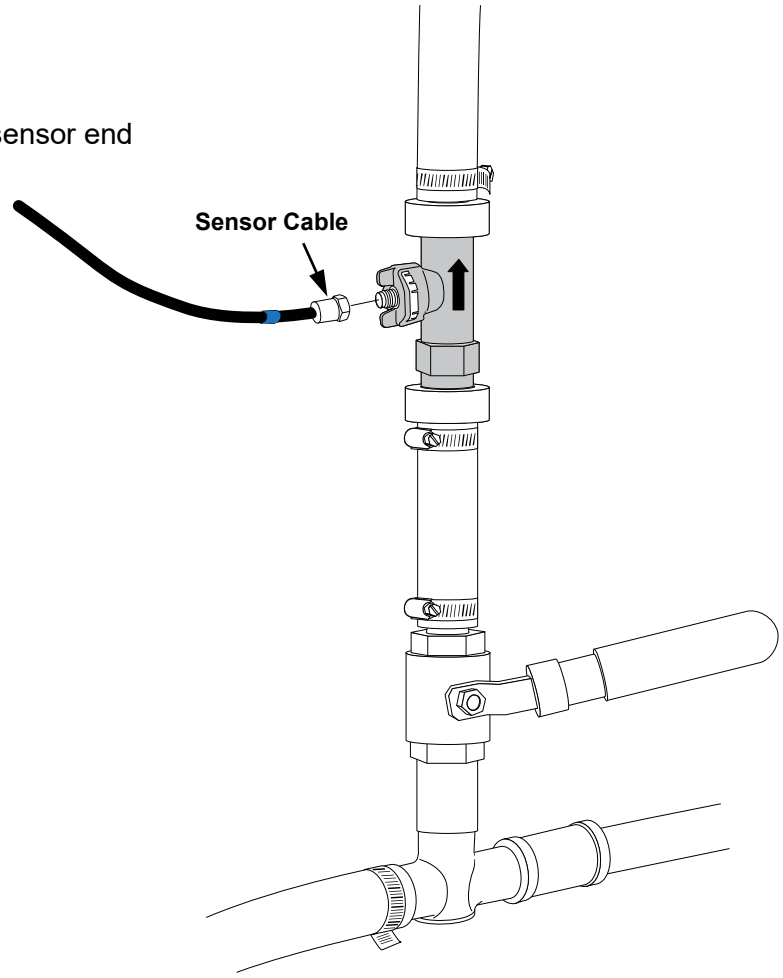
7.2. Face the cable connection towards the truck cab.



7.3. Use a hose clamp (WATER-102) to fasten each end of the sensor.

Fasten hose securely to avoid leaks.

Step 8. Connect cable (GEN-102) to sensor end (until hand tight).



FLOW METER WIRING

To connect sensor wiring, you need access to the Hub. Generally, the Hub is located in the dash (Rear Discharge Mixers) or on the back cab wall (Front Discharge Mixers).

Route Sensor Cable and Connect it to the Hub

If you have additional sensors to install, route all the cables together, then zip tie them to the frame as a group whenever possible.

Step 1. Route sensor cable(s) to the Hub—fasten cables approx. every foot.

Important: Route cables safely—avoid moving parts, pinch points, and sharp edges. Use a grommet or bushing on pass-thru holes as needed.

Rear Discharge Mixers: Run cable(s) through the frame rails, under the cab, through a hole in the firewall, and into the dash to connect to the Hub.

Front Discharge Mixers: Run cable(s) through the frame rails, up the back cab wall, and pass it thru a hole into the cab to connect to the Hub.

Step 2. **BEFORE cutting any cable**:

2.1. Measure enough cable length for Hub to be removed from the dash and set aside to work on it effectively.

2.2. **Move the color coding (tape)** so the cable can still be identified after being cut.

2.3. Cut off any extra cable length.

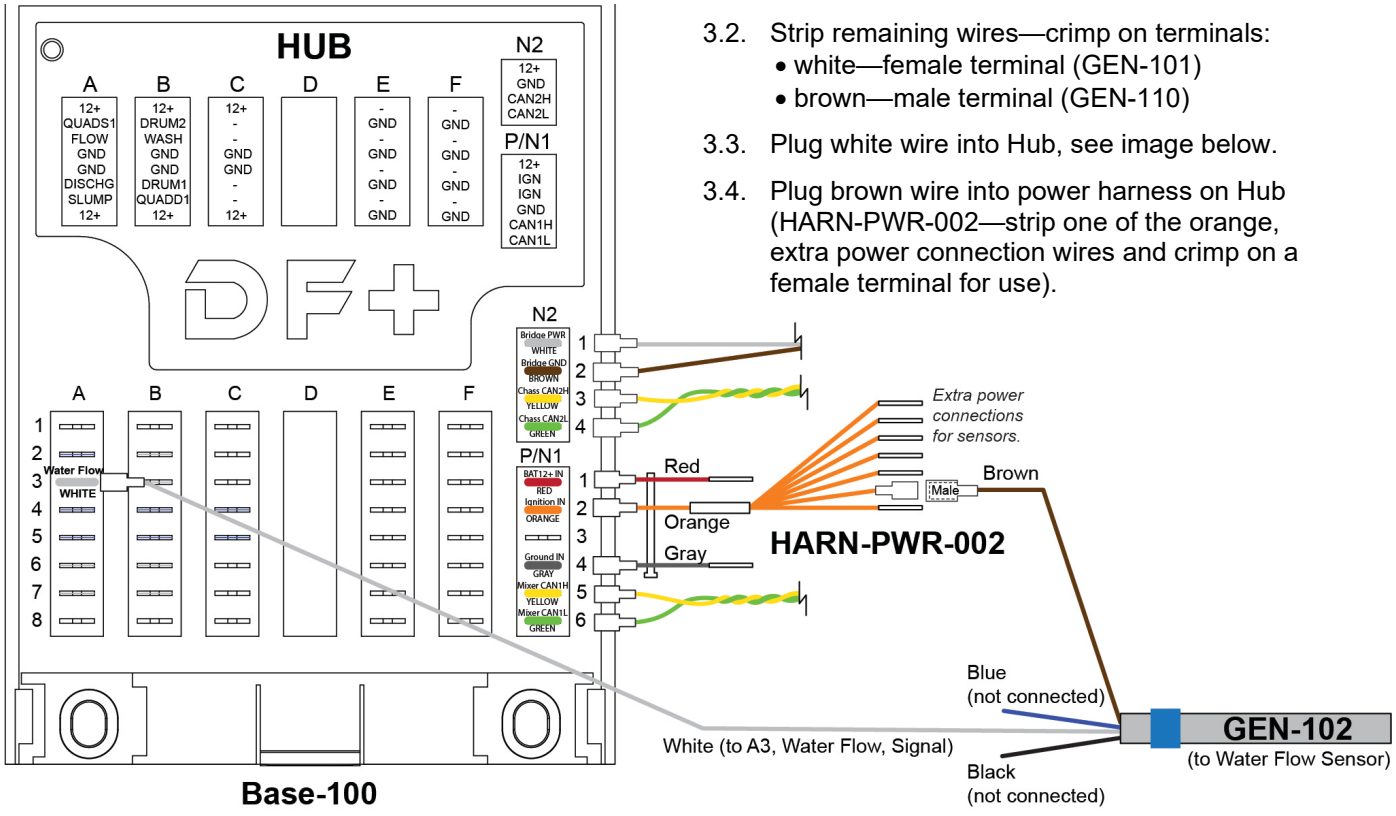
Step 3. Connect Flow Meter Sensor Cable to Hub (use GEN-102 Cable color coded for Water Add Flow Meter).

3.1. Black wire and blue wire not used.

3.2. Strip remaining wires—crimp on terminals:
- white—female terminal (GEN-101)
- brown—male terminal (GEN-110)

3.3. Plug white wire into Hub, see image below.

3.4. Plug brown wire into power harness on Hub (HARN-PWR-002—strip one of the orange, extra power connection wires and crimp on a female terminal for use).



Step 4. Double check that all wiring connections are securely fastened.

If applicable, complete any additional sensor wiring to the Hub before testing each sensor (refer to the wiring instructions in each sensor's section).

Installer Verification

Step 5. Prepare the system for verification.

5.1. Make sure there is enough water in the tank for testing (min. approx. 5 gallons).

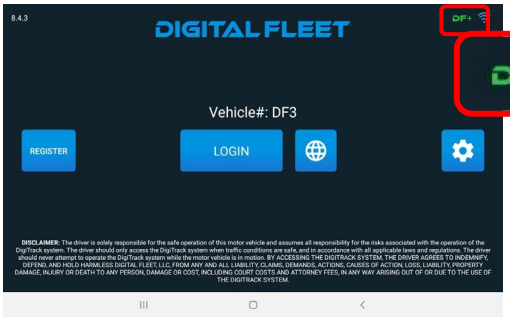
5.2. Turn the truck ON and if applicable, pressurize the tank.

5.3. Make sure the pump is enabled and ready for use.

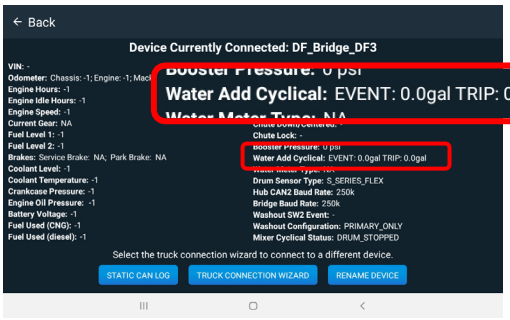
5.4. Check hose connections for leaks—tighten hose clamps if needed.

Step 6. If possible, have the tablet near you to watch the reading on-screen as water is added.

Step 7. Verify the tablet shows correct water add reading:



7.1 **Press DF+ icon** to navigate to the DF+ diagnostic screen.



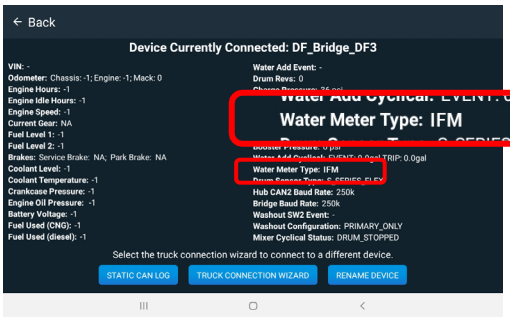
7.2 **On diagnostic screen**—scroll down to the Water Add Cyclical reading.

- **Event** reading shows a **running total** as water is added to the drum.
- **Trip** reading is updated after the valve is closed to show total water amount added.

7.3 To test the system, add a minimum 5 gallons of water while observing the readings.

Note: By default, the system filters out any readings less than a gallon to avoid vibration noise. Reference troubleshooting section for noise filtering issues.

If **Event** reading displays an accurate running total, and **Trip** reading updates to match the water amount added, the Water Add Cyclical is verified. *(If incorrect, reference the Water Add Troubleshooting section).*



7.4 Scroll down to observe Water Meter Type—it should read IFM. (*If incorrect, contact DF+ Support.)*

If the reading is correct, Water Add installation is verified.

WATER ADD TROUBLESHOOTING

Issue	Possible Cause	Potential Solution
Water was added, but no reading shows.	No water passing thru sensor	Water valve was turned on, but no water passes thru the sensor—make sure the tank has water in it. Waterlines must be drained after use when the temperature is below 40°F. Water freezing in the lines can block water flow and damage the sensor.
	Noise filtering (reading too small to display) • Sensor is reading all the time	By default, the system is set up to filter out readings less than a gallon to help prevent vibration noise (false readings shown on the tablet). If the threshold is set too high, the system may not pick up all water add events—the default may need to be adjusted, contact DF+ Support. **Recheck:** Add a minimum of 5 gallons of water to the drum (to exceed any minimum threshold) to test the system again. See False readings section in the Troubleshooting below.
	Parameter setting on tablet	Check the Water Sensor Type shown on the diagnostic screen—it should read IFM (reference sensor's Installer Verification instructions section, Step 7.4). If incorrect, contact DF+ Support.
	Open circuit/short circuit (sensor to Hub)	Make sure sensor is installed properly in the 1" water add hose going to the drum—arrow indicator on sensor MUST point in direction of water flow (reference Water Add Installation section, Step 7). **Check cable at sensor end.** Make sure the M12 cable connection to the sensor is securely attached (hand tight), (reference Water Add Kit Installation section, Step 8). **Check wire connections on Hub (Base-100):** Make sure sensor cable is run into the truck cab and all connections to the Hub match the wiring diagram (reference Flow Meter Wiring section of Water Add Installation section). **Check ignition** connections: • Make sure brown wire is connected to orange wire of HARN-PWR-002 (ignition). • Make sure orange wire of HARN-PWR-002 is plugged into N1-2 (ignition) on Hub. **Check ground** connection: • Make sure gray wire of HARN-PWR-002 is plugged into N1-4 (ground) on Hub. **Check Water Flow signal** connection at Hub: • Make sure white wire is connected to A3 (Water Flow Signal on Hub).

Issue	Possible Cause	Potential Solution
		Inspect cable length for damage. Check the sensor pins for damage—remove the cable end from the sensor to inspect the pins. Visually check the length of the cable for damage—make sure it has not been pinched, nicked, or damaged in any way
	Open circuit *(Hub to truck)*	Make sure the Hub is properly wired to the truck's power, ground, and ignition (reference the Wiring Diagram that fits your truck's configuration in the Sensor Base Kit section.) Verify the truck has the proper fuses installed and make sure they are not blown.
	Damaged sensor	Visually inspect the sensor. If it is cracked/leaks water, or looks physically damaged, replace the sensor (reference Water Add Installation section, Step 7). Waterlines must be drained after use when the temperature is below 40°F. Water freezing in the lines can block water flow and damage the sensor.
False readings	Vibration issues	Make sure the sensor is not able to vibrate against any object or surface during transit or use. By default, the system is set up to filter out readings less than a gallon to help prevent vibration noise (false readings). If the threshold is set too low, the system may show false readings (readings all the time or outside of water add events)—the default may need to be adjusted, contact DF+ Support. If the system is not showing actual water add events, see the Noise filtering section above.
Other issues listed above check ok, but sensor still not working.		Replace the sensor (reference Water Add Kit Installation, section Step 7).

For installation or troubleshooting questions, please call DF+ Support at 630.518.4606.