Drum 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

Magnetic Sensor
Kit Quantity: 2
DF Part Number: **DRUM-100**

M12 Cordset, 10M Cable
Kit Quantity: 2
DF Part Number: **GEN-105**

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

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

Magnet Caps
Kit Quantity: 12
DF Part Number: **CAP-DRUM-BOLT-ASSY**

(A 12 mm x 6 mm Disk Magnet is preinstalled in each cap.)

Spacer Template

(Provided to set spacing between magnet and sensor.)

Adhesive

(Provided to adhere Magnet Cap.)

SS 1/4” Bolt
DF Part Number: **DRUM-BRKT003**

SS 1/4” Washer
DF Part Number: **DRUM-BRKT004**

SS 1/4” Washer
DF Part Number: **DRUM-BRKT005**

Brackets: Multiple brackets provided for flexibility (use best combination for your installation).

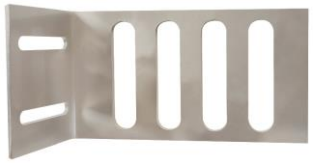
Mounting Hardware, Drum Sensor Bracket, 90 Deg Mount SS
DF Part Number: **DRUM-BRKT201**

Bracket, Drum Sensor, Mount to Counter Prox
DF Part Number: **DRUM-BRKT-208**

Bracket, Drum Counter
DF Part Number: **DRUM-BRKT-010**

Legacy Brackets (not included in kit)

Mounting Hardware, Drum Sensor Bracket, 90 Deg Mount SS
DF Part Number: **DRUM-BRKT001**



Mounting Hardware, Drum Sensor Bracket, Plate SS
DF Part Number: **DRUM-BRKT002**

Bracket, Drum 90 Degree Offset
DF Part Number: **DRUM-BRKT-006**

Tools for the Job (not included)

- 17 mm Wrench (x2)
- 7/16” Wrench and 7/16” Socket with Ratchet (for Bracket fasteners)
- Impact with Impact Sockets (nice to have)
- Cable Stripper (nice to have)
- Wire crimpers
- Wire strippers
- Side cutters
- Drill/bits (for mounting holes, if needed)

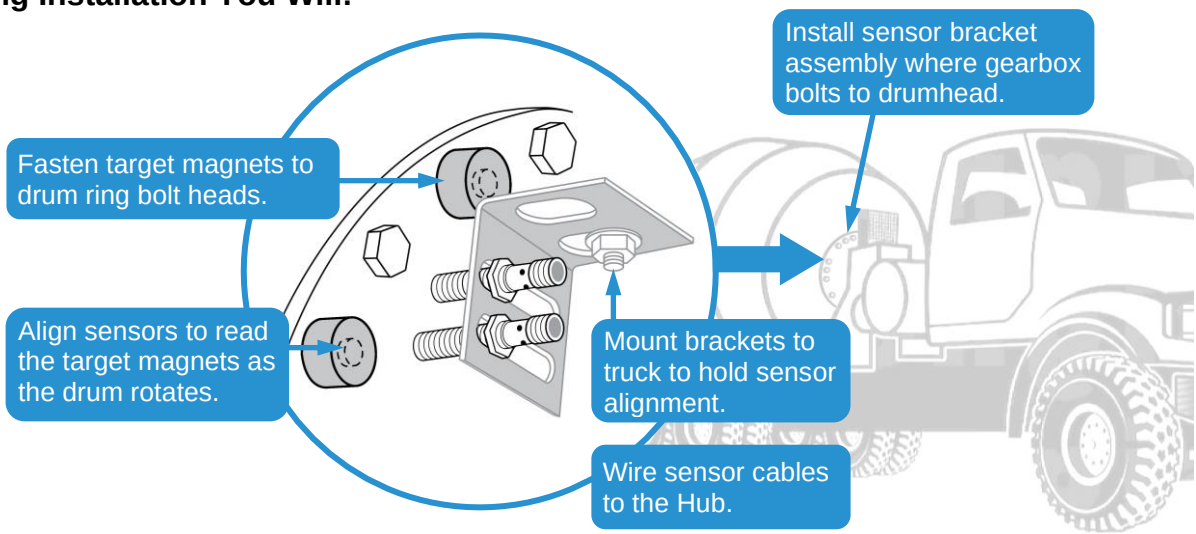
Additional Items Needed (not included)

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

Installation – Drum Kit

The Drum Sensor Kit is installed to show drum speed and direction on the driver's tablet. The sensors read target magnets as they pass by during drum rotation and send the data to the tablet.

During Installation You Will:



INSTALLATION

Step 1. Before starting—color code each end of the sensor cables to identify their function when routed to the hub (red recommended for Drum 1; green for Drum 2).

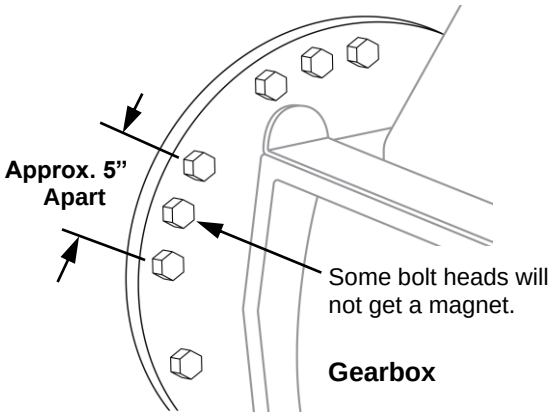
Step 2. Engine must be off, but leave battery connected.

Step 3. Start installation at the gearbox that moves the drumhead—use drum ring bolt heads as mounting locations for the magnets.

Step 4. Determine magnet spacing—attach magnets:

4.1. Mark 12 **evenly spaced** bolt heads on the drum ring approx. 5" apart (it may be necessary to rotate the drum to reach the bolt heads).

Mark 12 Bolt Heads—MUST BE EVENLY SPACED.

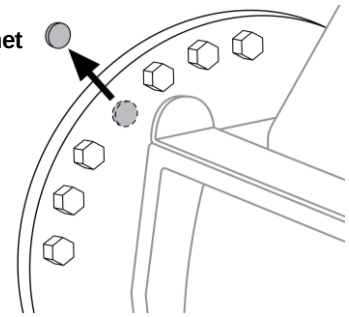


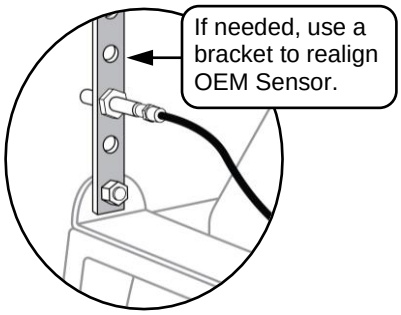
RECHECK spacing before attaching any magnets. The magnets are the targets for the drum sensors; they MUST be evenly spaced to read accurately.

4.2. **Rear Discharge Mixers equipped with an OEM Drum Sensor:**
If the drum counter sensor is in the installation pathway, it must be moved and realigned (reference manufacturer's instructions for reinstallation).

OEM Drum Counter Magnet

Move magnet and realign its sensor out of the installation pathway.





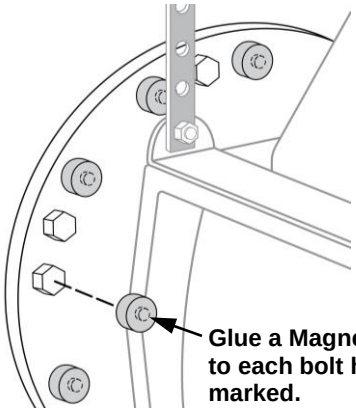
4.3. **IMPORTANT – Before installing DF+ drum sensor magnets,** remove any third-party drum sensor system, including any brackets associated with it. This may require removing drum bolts to take off brackets mounted behind them—**reinstall any drum bolts removed.**

Make sure all drum bolts are securely fastened before continuing.

4.4. Use adhesive provided to secure a Magnet Cap (CAP-DRUM-BOLT-ASSY) with a magnet to each bolt head marked—ensure the cap fully covers the bolt head.

Magnet Cap
(magnet preinstalled so south polarity faces sensor)

Important: Third-party magnets MUST always have **south polarity facing sensor.**



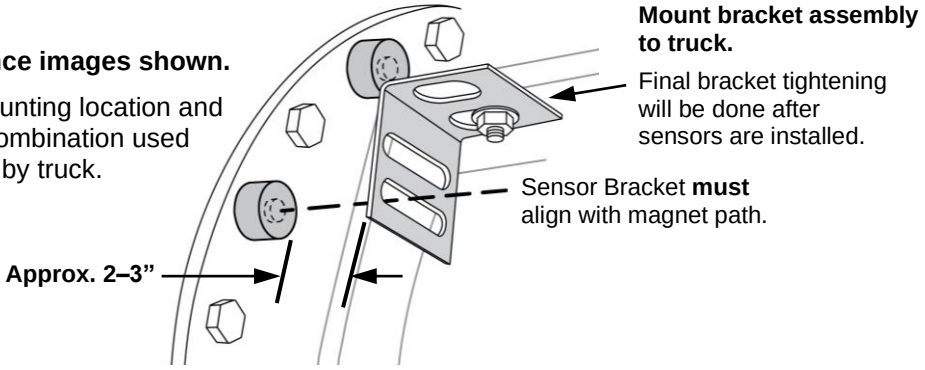
Step 5. Mount the Sensors—**all magnet and sensor spacing is very important**:

5.1. The kit provides an assortment of brackets, select a combination that aligns the drum sensors with the magnet path.

- Add mounting or sensor holes to brackets if needed (sensors require a 12-15 mm hole).
- Use stainless steel fasteners—always use locknuts.

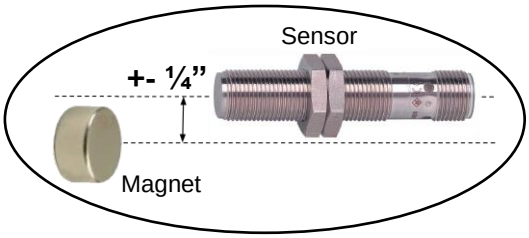
General reference images shown.

Note: Actual mounting location and bracket combination used may vary by truck.

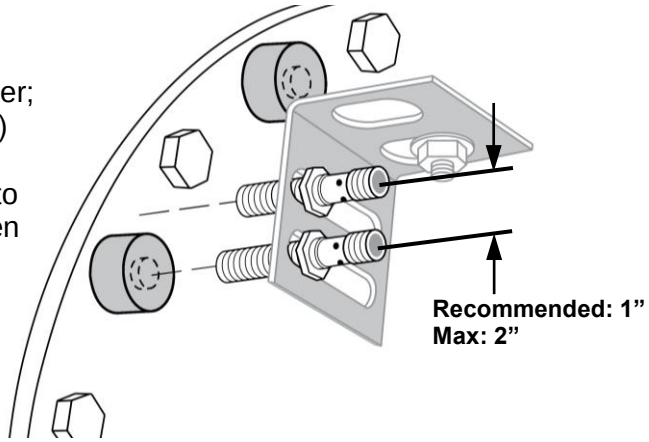


5.2. Mount drum sensors in bracket so BOTH sensors align with the magnet path.

- Align sensor center to magnet center—minimize off center to no more than 1/4”.

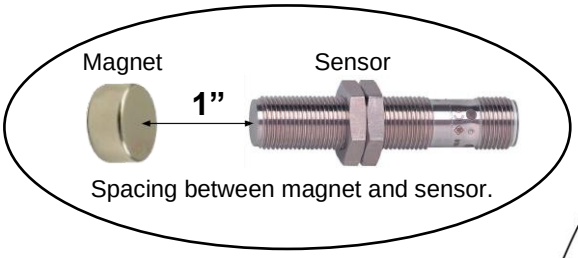


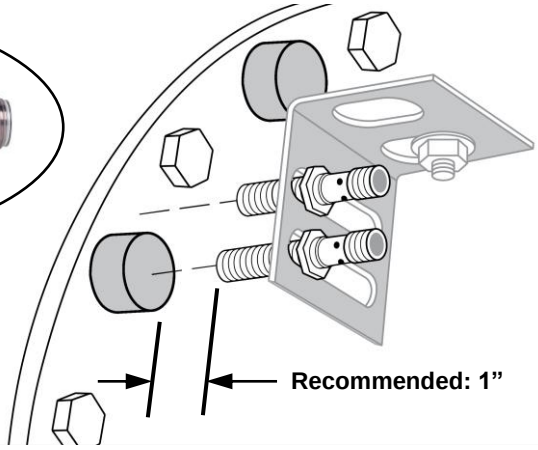
- Mount sensors close together; **recommended 1”** (max. 2”)
- Adjust brackets as needed to hold sensors in position, then fully tighten all bracket fasteners.



5.3. Set the sensor distance to the magnet—recommended spacing is 1” (use the spacing template provided).

Important: Correct spacing prevents contact as the drum flexes/jumps in transit. Correct spacing ensures sensors read accurately.

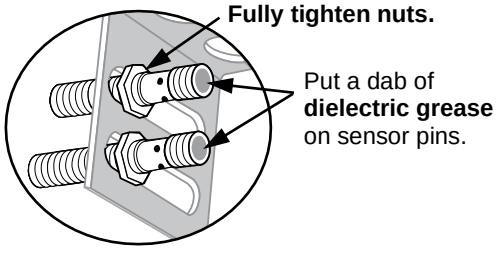




STOP **Rotate the drum and check the sensor spacing for EACH magnet**; reset the spacing according to the closest magnet.

5.4. Use a pair of 17 mm wrenches to fully tighten the sensor nuts to the bracket.

5.5. Put a dab of dielectric grease on sensor pins to help prevent corrosion.

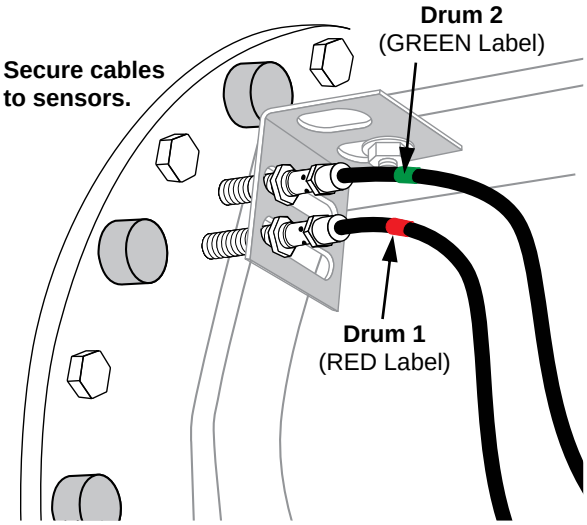


Step 6. Connect cable (GEN-105 labeled RED) to Drum Sensor 1 (LH sensor), see image.
Connect cable (GEN-105 labeled GREEN) to Drum Sensor 2 (RH sensor).

Sensor Cable Orientation

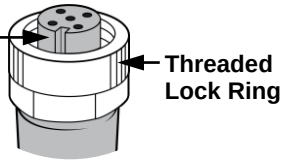
Passenger Side Installation (shown):
Drum 1 cable (RED tape) goes on BOTTOM.

Driver Side Installation:
Drum 1 cable (RED tape) goes on TOP.



Do not force a connection—end should slide on easily, check key alignment.

Thread lock ring onto sensor until hand tight (ring clicks slightly when locked).



General reference image only (pins may vary).

DRUM SENSOR WIRING

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

HUB
BASE-100

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 cable can still be identified after being cut.

2.3. Cut off any extra cable length.

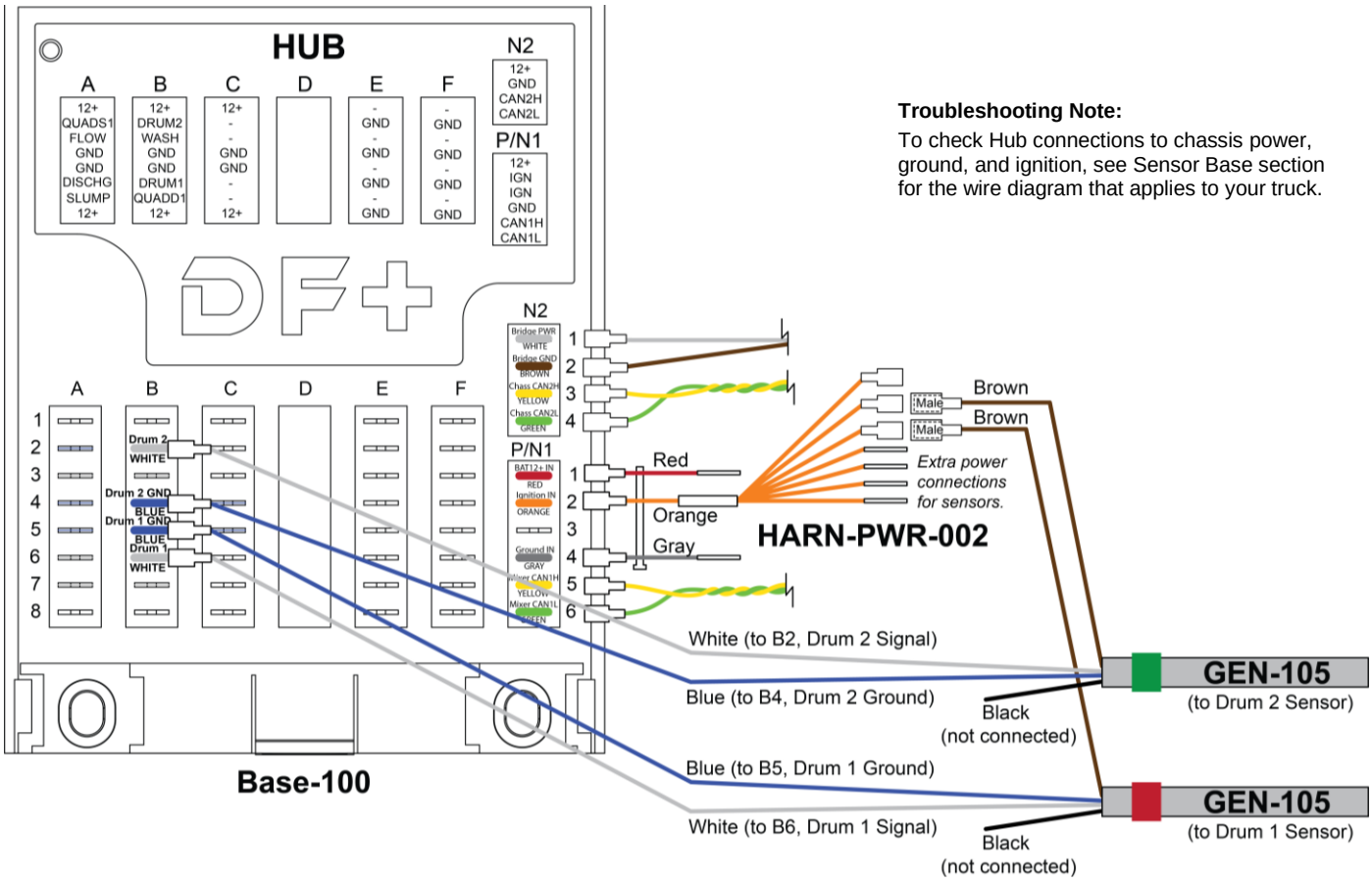
Step 3. Connect Drum Sensor 1 and Drum Sensor 2 cables to Hub (use GEN-105 Cable color coded RED for Drum 1; GREEN for Drum 2)

3.1. Black wires not used.

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

3.3. Plug blue and white wires into Hub, see image below.

3.4. Plug brown wire into power harness on Hub (HARN-PWR-002—strip an orange, extra power connection wire and crimp on a female terminal for Drum 1 and 2 cables).



Troubleshooting Note:
To check Hub connections to chassis power, ground, and ignition, see Sensor Base section for the wire diagram that applies to your truck.

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

STOP 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 1. Verify the sensors LEDs are working—check LED status:

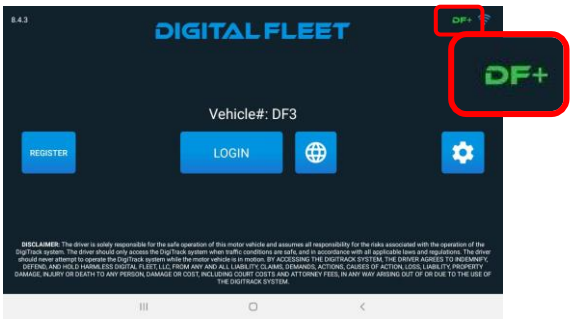
1.1. Turn the truck on and spin the drum.

1.2. Watch the LED indicators for a full cycle as sensors pass the magnets—LEDs should turn OFF and ON as the drum rotates.

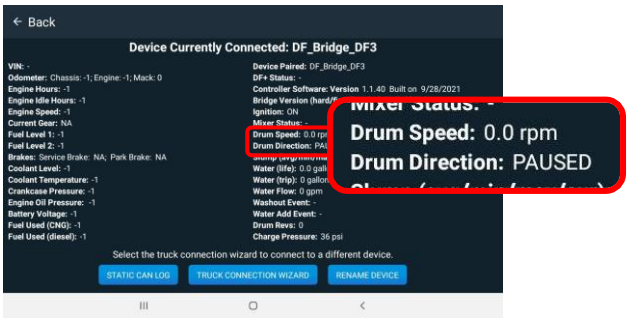
- LED turns OFF when magnet is seen.
- LED turns ON when no target magnet is detected.

(For LED indicator issues, reference the Drum Troubleshooting Table.)

Step 2. Verify the tablet shows correct drum speed and direction:



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



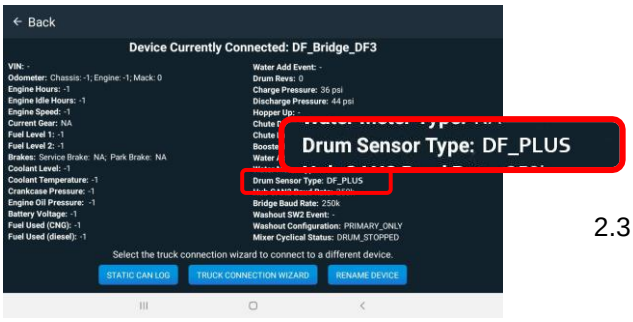
2.2 **On diagnostic screen**—observe drum speed and direction.

Spin the drum in charge at full displacement while the truck is at an idle.

- Drum Speed should show 6-7 rpm *(If incorrect, reference Incorrect Speed in Drum Troubleshooting Table.)*
- Drum Direction should show CHARGING *(If incorrect, reference Opposite Direction in Drum Troubleshooting Table.)*

Spin the drum in discharge at full displacement while the truck is at an idle—be careful, there may be material in drum, and it can make a mess.

- Drum Speed should show 6-7 rpm *(If incorrect, reference Incorrect Speed in Drum Troubleshooting Table.)*
- Drum Direction should show DISCHARGING *(If incorrect, reference Opposite Direction in Drum Troubleshooting Table.)*



2.3 **Scroll down to observe drum setting**—should read DF+ sensor (older version may read TRUCK_IQ) *(If incorrect, call DF+ Support.)*

If the readings are correct, sensor installation is verified.

DRUM SENSOR TROUBLESHOOTING

Issue	Possible Cause	Potential Solution
Both LEDs always OFF *(Sensors always reading magnets.)*	No power/ground (most likely)	**Check cable connections at sensors**—key on cable connector aligns it to the sensor pins; lock ring threads onto sensor until hand tight (see Drum Kit Installation, Step 6). **Check wire connections on Hub:** Make sure both sensor cables run into the truck cab and all connections match the appropriate wire diagram (reference Drum Sensor Wiring section of Drum Kit Installation Instructions). **Check ignition** connection: • Make sure brown wires are connected to orange wires 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 blue wires are connected to ground on Hub. • Make sure gray wire of HARN-PWR-002 is plugged into N1-4 (ground) on Hub. Make sure the Hub is connected to chassis power, ground, and ignition (as applicable, reference Sensor Base section for the wire diagram that applies to your truck). Verify truck has proper fuses installed; make sure fuses are not blown.
1 LED always OFF *(Sensor always reading magnets.)*	No power/ground (most likely)	
Both LEDs always ON *(Sensors never reading magnets.)*	Sensor distance incorrect (most likely)	Check distance between sensor and magnet; check alignment (reference Drum Kit Installation, Step 5.2–5.4).
1 LED always ON *(Sensor never reading magnets.)*	Sensor distance incorrect (most likely)	
Incorrect speed	Incorrect number of magnets	Check for missing magnet(s)—there should be 12; replace any missing (reference Drum Kit Installation, Step 4).
	Not reading all the magnets.	Check sensor distance/location to make sure it is properly set (reference Drum Kit Installation, Step 5). Brackets left behind the drum bolts from a previous third-party sensor system can affect magnet reading, reference Drum Kit Installation, Step 4.3.
Opposite direction	Wiring is backwards	**To fix the issue at the sensors:** Drum 1 and Drum 2 cables are backwards—switch cable connections on sensors. **To fix the issue at the Hub:** Reference Drum Sensor Wiring section for Hub. The white (signal) wires of Drum 1 and Drum 2 cables are connected backwards on the Hub. • Drum 1 cable—white to B6 (Drum 1 Signal on Hub). • Drum 2 cable—white to B2 (Drum 2 Signal on Hub).

Issue	Possible Cause	Potential Solution
Damaged wiring		**Inspect cable length for damage.** Check sensor pins for damage—remove cable end from sensor to inspect pins. Whenever cable is disconnected, clean end and put a dab of dielectric grease on sensor pins before reconnecting. Visually check the cable length for damage—make sure it has not been pinched, nicked, or damaged in any way. **Check for any type of damage, for example:** **Frayed** harness or wire  **Pinched** wire or harness  **Cut** or exposed wire  **Burned or hot wire** (discolored or distorted covering)  For any damage to the wiring or plug ends, replace the cable (reference the sensor's, Installation section).
Damaged sensor		Visually inspect the sensor. If it looks physically damaged, replace the sensor (reference Drum Kit Installation, Step 5).
Other issues listed above check ok, but sensor still not working.		Replace the sensor (reference Drum Kit Installation, Step 5).

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