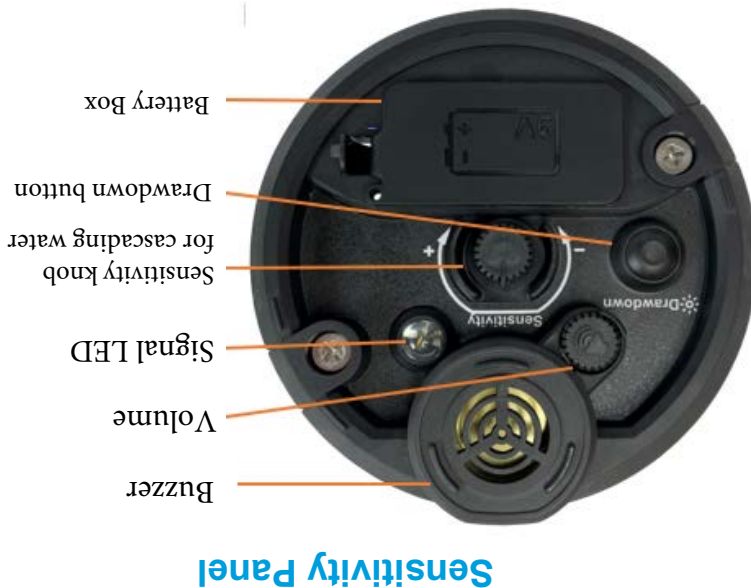




Image 1



ITEM	PART NUMBER
Sensitivity Electronic Panel	1221-2



**Image 2**  
Hanger to support the meter of the well head.  
Tape Guide to protect the tape from sharp edges.

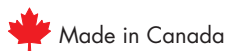
**HERON ALSO MANUFACTURES:**

- Water Level Meters
- Data Loggers
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**dipper-Tough**  
**Static & Drawdown Levels**





## General Care of the dipper-Tough

The **dipper-Tough** is a high quality, robust, premium water level meter, capable of **2 Functions - static and Drawdown** levels. Ideal for use in waste disposal and remediation sites and other harsh environments. The **dipper-Tough** will provide many years of reliable service when these recommendations are followed:

- Avoid sharp edged casing, use the tape guide on the unit to prevent damage to the tape.
- Take care to avoid the tape becoming entangled with other equipment in boreholes or wells, use stilling pipes when possible.
- Neatly rewind and clean the tape after each use.

Refer to: **Cleaning the dipper-Tough**

**DO NOT** use the **dipper-Tough** as a guide to backfilling, bentonite sealing or sand packing in wells. This type of material falls through the water column at a much slower rate than the **dipper-Tough** probe and can result in a trapped tape and probe.

**DO NOT** allow the tape to "reefall" down the well, it may become caught in other equipment in the well.

## Warranty is conditional upon adherence to these guidelines.

### Equipment Check

Before taking the unit into the field, carry out these simple tests

- First time use, remove the pull tab on the battery.
- Check the condition of battery and circuit by pressing the **Change Mode** button from **static** to **Drawdown**. The unit will sound and the indicator light will come on when the probe is in air. If the unit does not respond, replace the battery and try again.

- Test the entire unit by placing the probe in tap water. If the **dipper-Tough** is working properly, the unit will sound as above.

**DO NOT** test in distilled water.

### Use in the Field

The **dipper-Tough** operates in two modes, **static** and **Drawdown** in **static** mode, the unit is silent until the probe touches the water. In **Drawdown** mode, the unit sounds and the light remains on when the probe is **not** in water.

**NOTE:** There is no on/off switch on the instrument. If using in **Drawdown** mode, return the unit to **static** mode to turn indicators off. The **dipper-Tough** consumes no power in **static** mode when probe is not in water.

- To avoid damaging the tape on the side of the casing, hang the **dipper-Tough** on the casing and run the tape over the guide on the frame leg (see image 2). If you cannot hang the unit, hold the **dipper-Tough** away from the side of the casing and guide the tape down the center of the well.
- The **sensitivity knob** (see Figure 1) is used to maintain a sharp distinctive signal by adjusting the unit's response to varying conductivities. Turn the knob clockwise for low conductivity (pure) water and counter-clockwise for high conductivity (dissolved minerals) water. In wells that have cascading water that may give false readings, reduce the sensitivity by turning the sensitivity knob counter-clockwise.
- Reel the tape down the well carefully, avoiding the edge of the casing.

### FOR STATIC MODE

- When the unit sounds (in **static** mode) carefully measure the depth to water indicated on the tape from your datum point.
- Raise and lower the probe in and out of the water to ensure a consistent result.

### FOR DRAWDOWN MODE

- When the probe is in water at the desired **Drawdown** level push the **Change Mode** button to **Drawdown** mode (see Figure 1), the unit will now be silent in water and start pumping the water out. Once the water goes past the tip of the probe, the unit will sound in air.
- Turn off pump and put the **dipper-Tough** back in **static** mode.

When rewinding the tape, remove as much water and debris as possible from the tape and the probe.

**Caution:** Note the blue indicator on the tape to avoid injury from the probe coming out of the well too quickly.

## Warranty is conditional upon adherence to these guidelines.

*\* unless otherwise specified under local law*

- Failure of parts caused by misuse.
- Parts failure due to neglect in cleaning or servicing.
- and have rendered the unit unserviceable.
- Products contaminated by materials which are known to be hazardous
- Products used as rental equipment.
- Tape, bag or batteries used with the product.

**Heron Instruments Warranty** coverage does not extend to the following:  
 equipment.  
 In no event shall **Heron** be held liable for any direct, indirect or consequential damages, abuse, acts of third parties (rental equipment), environmental conditions or expenses which may arise in connection with such defective equipment.  
 This warranty shall not apply to damage of equipment caused by improper installation, usage, storage, alteration or inadequate care.

**Heron Instruments Inc.** warrants to repair or replace any defective equipment or part upon inspection by a **Heron** service technician. Warranty will be determined to our satisfaction to have a defect in workmanship or original material. The customer is responsible for all shipping fees to return the item to **Heron**.

### Warranty (2 years, tape & probe N/A) \*

**Contact Heron Instruments or your Heron Distributor if you cannot isolate the problem.**

- air). Dry the probe with a clean cloth.
- A. The unit may be in **Drawdown** mode. Press the **Change Mode** button (see Figure 1), putting the unit into **static** mode (silent in air). Dry the probe with a clean cloth.
- Q. Why would the instrument continue to sound when not in water?**  
 the electronic panel.
- A. Loosen the screws from the electronic panel and take the panel off the unit. Make sure tape connectors are connected to the back of the electronic panel.
- Q. If I check the above and the unit still doesn't sound.**  
 A. Make sure there are no cuts or nicks in the tape
- Q. Why doesn't the unit sound when testing the probe?**  
 the battery if necessary.
- A. Refer to **Equipment Check** and follow procedures. **Change**
- Q. What if there is no sound or indicator light when the unit is tested?**

### Troubleshooting the dipper-Tough

Always clean the **dipper-Tough** after use in the field to maintain optimal performance and extend the life of the unit.  
 The **dipper-Tough** may be cleaned with any **mild** household dishwashing detergent or **Alonox** if necessary and rinsed with water.  
 If the electronic panel is removed first, the reel and tape can be washed gently with a power washer. Remove the retaining thumb screws (nuts) (see Figure 1) to release the panel. Take care not to lose the thumb screws as the unit will not work without them.  
**DO NOT** use abrasives, partially halogenated hydrocarbons or ketones to clean the reel.

For service information:  
 • visit [www.heroninstruments.com](http://www.heroninstruments.com)  
 • email [service@heroninstruments.com](mailto:service@heroninstruments.com)  
 • call 1-800-331-2032 or 905-628-4999

**WATCH THE VIDEO ON "HOW THE DRAWDOWN FEATURE WORKS" FOUND ON HERON INSTRUMENTS' YOUTUBE CHANNEL.**