

WATERRA OWNER'S MANUAL

WS-1 & WS-1L WATER LEVEL TAPES



FEATURES & SPECIFICATIONS

OPERATION



Features

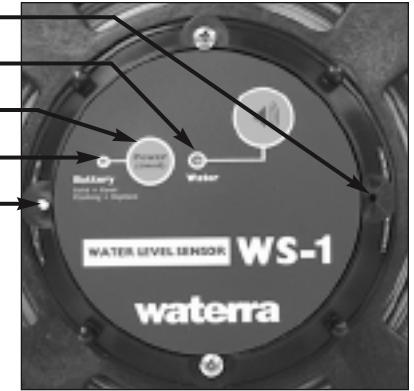
Watterra has designed the **WS-1** and the **WS-1L Water Level Tapes** as lightweight, compact, water level measuring devices. They feature enclosed reels with very narrow profiles. The WS-1 can carry up to 30 meters or 100 feet of flat tape. The WS-1L can carry 50, 75 or 100 meters or 250 feet of flat tape.

The electronics module located in the hub of the unit contains the batteries, electronic circuit board, buzzer, light, on/off membrane switch and sensitivity adjustment knob.

The on/off switch has a built-in timer so that the unit will automatically turn itself off after three minutes. This feature is designed to extend battery life. When the WS-1 or WS-1L is turned on, the battery light will be illuminated continuously. Low batteries are indicated by a flashing signal from the battery light indicator.

When the WS-1 or WS-1L water level probe contacts water, the buzzer will emit a continuous tone and the water light will illuminate. In some groundwater conditions, the probe may not adequately detect the water in the well. This may be caused by low salinity. When this happens, the sensitivity of the unit can be adjusted by rotating the sensitivity adjustment knob located on the left side of the front hub panel.

- buzzer
- water indication light
- on/off switch
- low battery indicator
- sensitivity adjustment



Adjusting the Conductivity Sensitivity Setting

In order to allow the WS-1 and WS-1L to detect water of various salinities, their design includes a sensitivity adjustment knob. This knob is located on the left side of the front hub panel. In monitoring wells where excessive bridging is experienced, the knob should be rotated to the left. Where water of low salinity is suspected, the knob should be rotated to the right. The optimum setting is obtained by adjusting the control knob to the point where the WS-1 or WS-1L is no longer emitting the water signal while the probe is immersed in the well. Then rotate the knob back in the opposite direction slowly, stopping when the water signal begins again.

Winding the Reel and the Probe Holder

The flat tape on the WS-1 and WS-1L must always be wound on the reel in the same direction. If the tape is unwound completely from the reel, be sure that it is wound back onto the reel in the correct direction. To do this, face the front of the reel and turn the handle in a clockwise direction. **Always wind your tape up by turning the reel clockwise.**

The probe of the WS-1 and WS-1L should always be retained by the probe holder when it is not in use. The probe should be mounted in the probe holder such that there is not excessive bending in the flat tape below the strain relief boot.



BATTERY REPLACEMENT



Battery Replacement

The **WS-1** and **WS-1L** are powered by 4 AA alkaline cells. These cells are contained within the hub of the unit. The batteries can be accessed by removing the two screws located on the front hub panel. These screws can be removed with a Phillips screwdriver and they join the front hub panel to the front hub.

1) Remove the screws and store them in a safe place so they may be returned to the reel. **Carefully** remove the front hub panel.

2) The battery pack is located within the hub and the batteries can now be removed from the hub. Replace the worn AA cells with four fresh batteries. Be sure to orient the batteries in accordance with the directions supplied on the battery pack.

3) Return the front hub panel to the reel ensuring that no wires from the panel are caught between the reel and the hub.

4) Replace the two screws connecting the front hub panel to the reel while supporting the front panel so that the screws will catch in the screw holes.

Care must be taken not to overtighten the screws. Overtightening may strip the threads from this part.



ROUTINE MAINTENANCE

Routine Maintenance

In order to maintain your **WS-1** or **WS-1L** in the best working order, some routine maintenance is required. The flat tape should be inspected for cuts and abrasions on a regular basis. Severely damaged tapes should be replaced. Contact Watterra if this is required. The tape should be completely spooled out of the reel and cleaned with a damp cloth and the reels will also need to be wiped down to remove sand and mud. Be sure to wind the tape back onto the reel in the correct direction (clockwise).

Check that the tape is wound onto the reel in an even manner. Do not allow the tape to accumulate on one side of the reel.

The probe tip should be cleaned on a regular basis with a toothbrush and water to remove any material that may accumulate there.

Replace the batteries when the indicator light shows that they are worn or at least once per year. See the battery replacement instructions for directions.

Water Resistance

The **WS-1** and **WS-1L** are designed to be water resistant, however these units are not waterproof. **Do not immerse the WS-1 or the WS-1L as this will damage the electronics and flood the unit.**

Cleaning and Decontamination

The **WS-1** and **WS-1L** should be kept as clean as possible as this will help keep the units in good working order. The flat tape can be cleaned by spooling the tape out of the reel into to a large bucket, allowing it to soak in a cleaning solution. The recommended detergent for this is Alkanox. Rinse the tape in clean water and pass the tape through a clean cloth as it is wound back into the reel.

Do not immerse the reel and electronics! The reel can be cleaned with a clean, damp cloth. If the inside of the reel becomes contaminated or is excessively dirty, the tape and reel should be disassembled for a more thorough cleaning.

PARTS LIST



– Tape



– Probe

WARRANTY INFORMATION

Warranty Information

Waterra USA Inc. and Waterra Pumps Limited ("Waterra") warranty all well probe parts to be free from defects in material and workmanship affecting its use for a period of 12 months following the date of purchase.

Exclusions and Conditions

The Waterra Warranty **does not include** shipping or an obligation to provide another unit while the original well probe is being repaired.

The Waterra Warranty **does not apply** to well probes used as rental equipment or to well probes contaminated by materials harmful to such products.

The Waterra Warranty **does not apply** to the tape or batteries used within the well probe.

The Waterra Warranty **does not apply** to parts failure due to neglect in cleaning or servicing the well probe nor does it cover failure of a part caused by misuse or inappropriate use of the well probe.

The Waterra Warranty **is not valid if the well probe is not paid for in full within 60 days** of the invoice date.

Returning Well Probes to Waterra

Waterra requires that all customers notify Waterra prior to returning their well probe under the Waterra warranty program. The well probe will only be accepted if it has been thoroughly cleaned and decontaminated. Well probes must be properly packaged.

Please contact Waterra in order to obtain a shipping address.

CONTACT WATERRA

Contacting Waterra

As of November 2004 Waterra can be reached as follows:

Canada and International

Waterra Pumps Limited,
5200 Dixie Road, Unit 44
Mississauga, ON L4W 1E4
CANADA
voice: 905.238.5242
fax: 905.238.5704
email: waterra@jdirect.com

United States

Waterra USA Inc.
715 West Orchard Drive, Unit 5
Bellingham, WA 98225
USA
voice: 360.738.3366
fax: 360.738.3399
email: waterra@openaccess.org