



Hallett Diagnostic Tool (X100012) Operating Instructions



DO NOT REMOVE FRONT PANEL WITHOUT REVIEWING INSTRUCTIONS FIRST. DAMAGE TO DISPLAY PAD MAY RESULT.

Please read entire instruction before proceeding with operation of the Hallett Diagnostic Tool.



Hallett Diagnostic Tool

The Hallett Diagnostic Tool is primarily used to read sensor outputs for NSF/ANSI 55 Class A certified Hallett 30 and 13 systems and Non-Certified Hallett 30 and 13 systems.

Hallett Diagnostic Tool / Outil diagnostique du Hallett.

Water Sensor
Câpteur eau
(DW 0.9 - 1.5) (WW 0.4 - 1.1)

Lamp Warning Setpoint
Consigne d'avertissement - lampe
70% (DW 0.55) (WW 0.28)

(DW 0.6 - 0.8) (WW 0.3 - 0.4)

Lamp Sensor
Câpteur - lampe UV

60% (DW 0.50) (WW 0.24)

Lamp Alarm Setpoint
Consigne d'alarme - lampe

UV
PURE*

UV PURE TECHNOLOGIES INC. www.uvpure.com

The Hallett Diagnostic Tool is connected to the Hallett circuit board via a cable*.

Items Included	Part Number
Display unit (1)	X100015
*Patch Cable (1) – (RJ45 to RJ45 connector)	X100019
Operating Instructions	

*For older Series Halletts (R-Series) where there is no connection port on right side of unit, an adapter cable (RJ45 to 6 pin straight) p/n X100014 must be used to connect the device – see Page 5. This cable is not provided and must be purchased separately.

Background Information & Factory settings

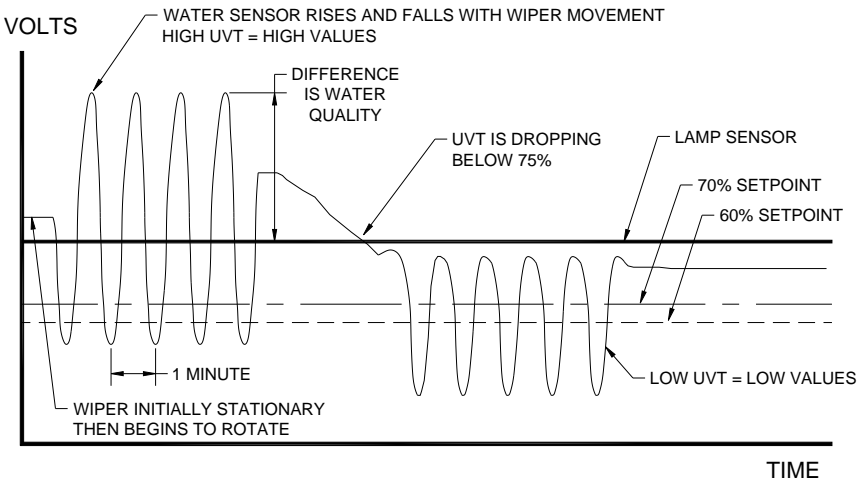
The UV Pure system has two UV sensors (one for lamp output and one for water quality) and two UV lamp set points (one for 70% lamp alarm and one for 60% lamp alarm).

The water sensor value rises and falls when the wiper is turning. Since the normal operating cycle for the wiper is on for 5 minutes and then off for 4 hours, the water sensor value may be constant if the wiper is not turning. To record the maximum value, the motor that turns the wiper should be forced to run by pushing the reset button or by unplugging and plugging in the unit. This will cause the motor to run for 5 minutes. When recording the water sensor value, always take the highest value during the 1 minute cycle that the motor turns.

Another important condition when taking the maximum water sensor value




is having the water flow through the unit. By having the water flowing, the water sensor value will be more representative of the actual operating conditions.

GRAPHICAL REPRESENTATION OF VALUES FOR DRINKING WATER



All sensor and set points are factory set as follows:

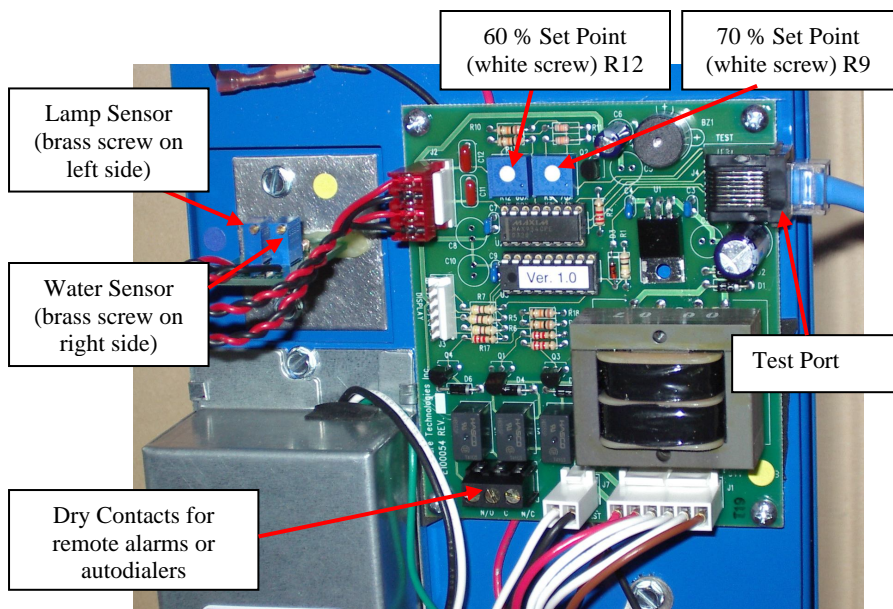
Factory Settings	Drinking Water	Waste Water
Lamp Sensor (Vdc +/- 0.05)	0.800	0.400
Water Sensor @ 100% clear water	0.900 -1.500	0.400 - 1.100
70% setpoint (Vdc +/- .005)	0.550	0.280
60 % setpoint (Vdc +/- .005)	0.500	0.240

- The "Water Quality"  alarm will turn on if maximum reading of the water sensor output does not meet or exceed the lamp sensor output after a brief moment (about 4-5 minutes). The red light is *solid* and audio alarm sounds once every 5 seconds. The solenoid valve (if supplied) will close.
- The "Lamp Fault Warning"  alarm will turn on when the Lamp Sensor goes below the 70 % set point .The red light *flashes* and audio alarm sounds once every 5 seconds. The solenoid valve (if supplied) remains open.
- The "Lamp Fault Alarm"  alarm will turn on when the Lamp Sensor goes below the 60% set point. The red light is *solid* and audio alarm sounds once every 5 seconds. The solenoid valve (if supplied) will close.

The Hallett Diagnostic Tool can also be used to adjust alarm set points of Non-Certified Hallett Systems, or non regulated installations, or certain applications such as Waste Water treatment systems. **CAUTION: The adjustment procedure applies to non certified systems only as changing sensor settings may jeopardize the system's ability to meet NSF specifications and may void warranty.**

New Series Halletts - Connecting to Circuit Boards with side RJ45 port (similar to phone jack)

The Hallett Diagnostic Tool can be connected to the circuit board by plugging in the patch cable into the port located on the right hand side of the Hallett unit. There is no need to remove front cover to review values. If the front cover requires removal, please follow the procedure located at the end of these instructions.



When the cable is plugged in, this will cause the four values to appear on the Hallett Diagnostic Tool.

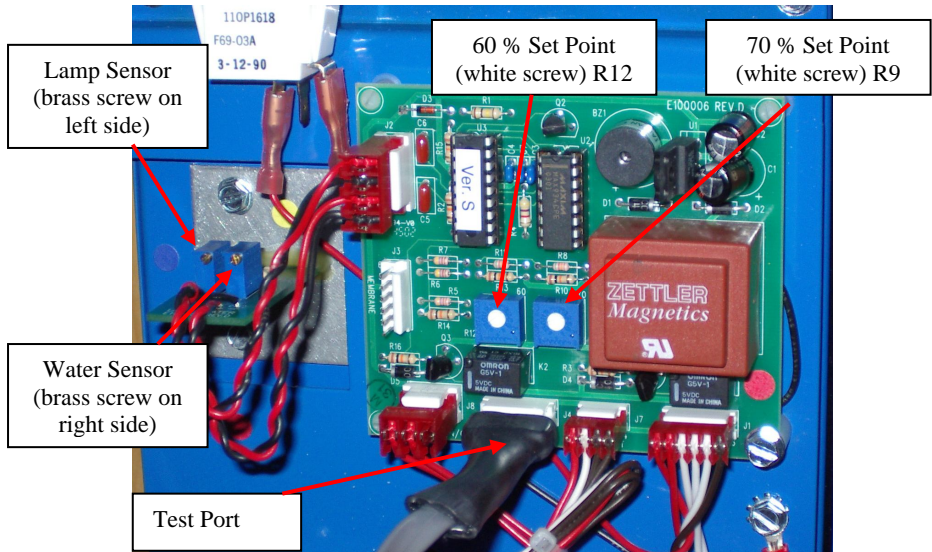
Older Series Halletts - Connecting to Circuit Boards with 6pin Test Ports

This applies to units with the following serial numbers:

Hallett 30 – CV1S.....

Hallett 13 – EV8S.....

The adapter cable p/n X100014 (purchased separately) is a RJ45 to 6 pin straight cable and it must be used to connect the device to these circuit boards. Previous versions of circuit boards have to be connected from within the front enclosure. To remove front cover to gain access to the circuit board, follow the procedure located at the end of these instructions.



Use the Adapter cable to plug into the port marked 'TEST'. This will cause the four values to appear on the Hallett Diagnostic Tool. If there are no values on the display, disconnect the cable at the Hallett Diagnostic Tool end and then reconnect it. In some cases, plugging in the Hallett Diagnostic Tool may cause the UV unit to beep and cycle the solenoid valve off & on. This is momentarily caused by the start up of the display but will return to normal.

Setup for High Coloured Water -



CAUTION: The following procedure applies to non certified systems. Changing sensor settings may jeopardize the system's ability to meet NSF specifications and may void warranty.

Ensure the water is running and wiper is turning when recording the maximum water value.

1. Turn Water Sensor clockwise one full turn to decrease sensitivity to colour. Adjust to get 0.1 volts above maximum lamp value.
2. Wait 60 sec to see if water sensor voltage exceeds lamp voltage (alarm will go off). If it does not exceed lamp voltage repeat steps 1&2 five times.
3. If alarm is still sounding, record highest voltage during a 60 sec period that the water sensor voltage reaches (ensure wiper is cycling).
4. Turn lamp sensor counter clockwise until lamp voltage goes 0.10 volts below the water sensor recorder voltage from step 3, wait 60 seconds and alarm will stop.
5. Reduce the 70 % and 60% set points until they are 70% and 60% of the final Lamp Voltage from step 3. The setpoints are reduced by turning the white screws clockwise on new boards (counter-clock wise on old boards). These white trimpots are very sensitive so it only takes a fraction of a turn to create a large change in the value.

Example: Max water value is 0.700
 Set Lamp to 0.600
 Set 70% value to 0.420 ($0.6 \times 0.7 = 0.42$)
 Set 60% value to 0.360 ($0.6 \times 0.6 = 0.36$)

Setup for Lamp Failure



1. Record Lamp Sensor value.
2. Reduce the 70% and 60% set points on large circuit board until they show 70% and 60% of the recorded lamp set point. The setpoints are reduced by turning the white screws clockwise on the new circuit boards (counter-clock wise on the old boards). These white trimpots are very sensitive so it only takes a fraction of a turn to create a large change in the value.

Example: Lamp Sensor value is 0.750
 Set 70% value to 0.525 ($0.75 \times 0.7 = 0.525$)
 Set 60% value to 0.450 ($0.75 \times 0.6 = 0.45$)

INSTRUCTIONS FOR REMOVING FRONT PANEL

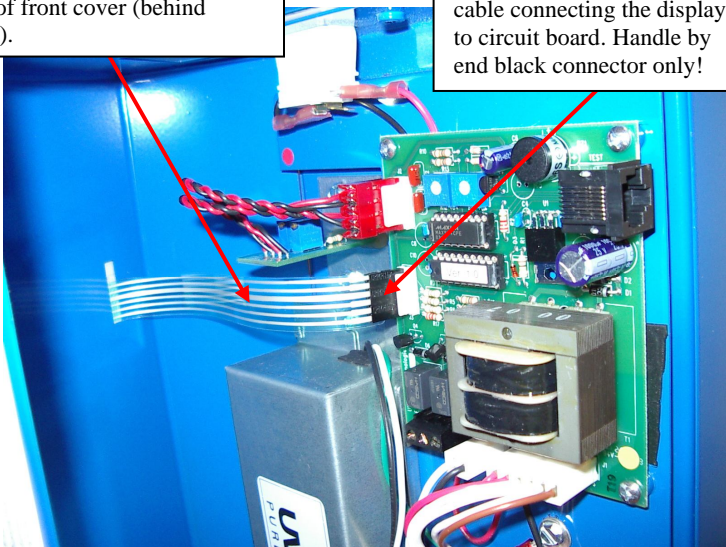
These instructions will explain how to remove the front panel in the UV Pure water purifier. This is required to make any adjustments or replace any electrical components.

Please unplug the unit before starting. You will require a Philips screwdriver.

1. Begin by removing the *front* cover (with label & lights). This is accomplished by removing the screw that secures the *top* cover. Remove the top cover. Remove the two bottom screws if they exist. Gently remove the *front* cover and hold it a couple of inches off from the body. **You must disconnect a thin ribbon cable that powers the display lights – be careful not to damage this.** Reach in and disconnect the ribbon cable from the circuit board by grabbing the end **black** connector (never pull on the green cable itself). The *front* cover will then come free.

Inside of front cover (behind display).

Take care not damage ribbon cable connecting the display to circuit board. Handle by end black connector only!



2. Proceed with inspection or repair of unit as required.
3. When complete replace the *front* cover by first reconnecting the 6-pin ribbon cable to the port marked 'MEMBRANE' or 'DISPLAY' (ensure the black connector is aligned properly). Place the *front* cover in its rest position. Ensure the bottom lip of cover is engaged onto the housing.

MAKE SURE THAT YOU DID NOT MISS ANY PINS

4. Replace the *top* cover and screw it down. Replace bottom screws.
5. Plug in the unit.

Pure, safe water.



Always.[™]