PLUMB GUARD™

By HLP Controls

Plumb Guard™ MkIV

User Manual

Version: V4 - April 2025

Introduction to Plumb Guard™ MkIV

The Plumb Guard is intended to increase safety for plumbers by providing an audible, visual and Bluetooth alert in the presence of an electrical voltage that could be harmful when cutting through metal water pipes that could be carrying the earth leakage currents from residential or commercial premises.
It works by monitoring the voltage on the pipe either side of the cut relative to earth. This requires 3 leads to provide a comprehensive protection for this specific work scenario.

The Plumb Guard™ is not a 'Safety Device' in that it will not disconnect electricity should the Plumb Guard™ detect voltage over 5V, however the duty of the Plumb Guard™ is to monitor the condition of the work area and signal an unsafe condition ie: over 5V detected.

Should the Plumb Guard™ sound and/or flash on detection of the unsafe condition, the personnel are to stop working on the pipe and call a supervisor or an authority to make the area safe for work to continue.

The Plumb Guard™ will only alarm when there is a voltage detected over 5V. It will alarm on AC or DC voltage.

As the Plumb Guard™ only detects voltage, if the Plumb Guard™ is not signalling an alarm it does not mean that there is no current flowing through the pipes.

Key Features

Plumb Guard has the following features:

- Leads connect using IEC CATII 1000V safety banana sockets
- Push on / push off switch for unit operation
- Test switch for testing the unit / leads before use
- Audible and visual indicators for alert if a potentially harmful voltage is detected
- Visual indication of which lead has detected the voltage
- Bluetooth connectivity to a phone or device (iPhone or android) for alert through the Plumb Guard app
- On-board battery and battery charger
- Automatic shutdown to save battery if the unit is left on & not 'self tested'
- Charges from cost effective USB power adapter
- Robust, waterproof case with carry handle
- 1.5 / 5 / 10 metre leads and heavy duty pipe clamps

Charging

The first step is to ensure the Plumb Guard™ is fully charged.

YOU MUST USE THE SUPPLIED CHARGE PORT AND CABLE OTHERWISE YOU COULD HARM THE BATTERY OR IT MIGHT NOT CHARGE CORRECTLY.

Plug in the USB adapter and plug in USB cable. The ON/OFF and TEST lights will flash red together while charging. When the battery is fully charged the lights will stop flashing.

NOTE: It can take up to 4 hours to fully recharge the battery if it is allowed to fully discharge.

NOTE: When the Plumb Guard™ is in use, the CHARGING light will show the level of charge still remaining:

Green = Charged
Orange = Medium charge
Red = Low, please charge the unit
Light off = Charge for use.

Also, should the ON/OFF & TEST lights flash one after the other (single flash), this indicates the battery is too low and needs charging.

WARNING: The Plumb Guard™ unit does not test for voltage while being charged. Do not try to charge on site while using the unit. Operation is only possible while the unit is not being charged.

Turning the unit on & off

Press the ON/OFF switch to turn the unit on. Press it again to turn the unit off.

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Testing the Plumb Guard™ before use

You must test the Plumb Guard™ before each use. The heart beep indicating the unit is operating to protect you does not start until after a completely successful test. The steps to conduct a test are:

- Plug in the 3 leads and connect their ends together;
- Turn on the Plumb Guard™, the ON/OFF and TEST lights should start flashing red alternately;
- Hold down the TEST button until the unit starts to alert;
- Check that both LEFT & RIGHT lights are flashing (yellow) and large light and beeper are operating;
- Release the TEST button;
- The heart beep will start within 5 seconds.

The TEST button will impose a voltage just above the required detection threshold onto each of the left and right test leads and the unit will then go into alert. If everything is working correctly both the left and right visual indicators will be flashing and the main visual indicator will also be flashing while the beeper is sounding.

NOTE: Both Left and Right visual indicators must flash AND the alarm beeper MUST sound to confirm correct operation.

Release the TEST button to end the test. The Plumb Guard™ is now ready for use. You will hear a short beep every 5 seconds indicating the Plumb Guard™ is active and working. This is the 'heart beep'.

NOTE: In TEST mode the alarm is not latched and the alarm will discontinue when the button is released.

See section on trouble shooting if the unit does not pass this test.

Bluetooth function:

The Plumb Guard™ may be operated without using the Bluetooth function. It is recommended that you download and install the Plumb Guard app from your device's app store to your phone (both iPhone & Android are supported). This will provide an extra level of protection to ensure you are aware of any alarm conditions.

Please see separate Bluetooth manual for further details.

Using the Plumb Guard™

After testing, the unit is ready for normal operation. Leaving the unit on, make the following connections IN THIS ORDER:

- Select a suitable location for the Ground Stake. The ground stake must be placed in the ground within the immediate vicinity of the work area NOTE: 1 - 2 metres away, NOT closer;
- Push the sharp spear into the ground as far as it will go;
- Connect the GREEN LEAD to the ground stake and plug into the GND LEAD socket on the Plumb Guard;
- Connect the LEFT and RIGHT leads to the pipe either side of the section to be cut.
- The leads must be attached to the metal pipe without plastic being between the lead connection and the section to be cut. If the leads can only be attached to one side, then attach both leads to the same side.
- The best condition is to connect them to either side of the section to be cut.
- Then connect the left lead to the Plumb Guard™ in the LEFT LEAD socket, and connect the right lead to the Plumb Guard™ in the RIGHT LEAD socket.
- Ensure the clamps are securely connected to the pipe. Clean the pipe if necessary. The clamps will always need to be connected to a clean section of metal pipe.
- Now you can cut the pipe or disconnect the meter knowing that the Plumb Guard™ is monitoring for any hazardous voltages.
- When finished, disconnect the left and right leads first and then the ground stake lead.
- Now you can unplug them from the Plumb Guard™ and turn the unit off.

NOTE: If the unit goes into alert, it will remain in alert until you turn it off. THIS IS INTENTIONAL.

This means you can examine the indicators to determine which side of the cut is potentially hazardous even if the leads become disconnected. Use the ON/OFF switch to turn off the power and reset the unit.

CAUTION: There is or has been a dangerous situation. Do not touch the pipes. Follow your workplace procedures or contact the local electrical providers.
DO NOT RESET & RETEST.

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Trouble Shooting

Problem	Solution
ON/OFF light does not flash.	Battery discharged. Charge the unit for at least 4 hours before trying again.
The unit does not do the 'heart beep' every 5 seconds when I turn it on, even though the ON/OFF light is flashing every second.	You must do a 'self test' first. Once you have conducted the test and all leads pass, the unit will do the 'heart beep'. This is done to ensure the unit is tested before each use.
The unit turns itself off after 5 minutes.	You must do a 'self test' first. If you don't do a test, the unit turns itself off to save battery as it might have been turned on accidentally.
Left indicator light does not flash during self test mode.	Left lead faulty or not properly connected. Reconnect lead and try again.
Right indicator light does not flash during self test mode.	Right lead faulty or not properly connected. Reconnect lead and try again.
No indicator lights flash during self test mode.	Ground lead faulty or not properly connected. Reconnect lead and try again.
Left or Right indicator flashes but not the main indicator.	Unit requires service.
Main indicator flashes but there is no beeping.	Unit requires service.
Charging light does not go steady even though unit has been charged for more than 15 hours.	Unit requires service or Make sure you are using the supplied cable & charger. Poor quality cables may stop charge.

Problem	Solution
I've lost the charger. Can I use any USB port to charge the unit including one on a computer?	No. Battery charging needs more current than a computer and regular USB plug pack can supply. Purchase a replacement plug pack or car adapter from HLP Controls.
All lights flash even when the unit is just turned on.	Unit requires service.
The unit is giving a short beep once every 5 seconds but only after test.	This is normal and indicates the Plumb Guard is operating. If the beep stops, check that the unit is still turned on and the battery is not flat. Do a self test to allow the beep to start.
The unit keeps alerting even when I disconnect the leads.	THIS IS INTENTIONAL so that you can see which side of the pipe has the dangerous voltage. Turn the unit off to reset the alert.
The ON/OFF and TEST lights flash alternately.	Battery is flat. Recharge the unit.
Lead TEST alarming (unit cannot find connection through clamps and ground)	Check proper clamp connection to pipes, check earth stake connection, check port connections. Unit will re-test connection every 15 seconds.

In the event that something does not go as expected, consult the above tables for advice on the most likely resolution to the problem. If you are still unsure please give our technical team a call on **1800 500 160**

Technical Specification

Parameter	Range
Voltage detection threshold	5±VDC or VAC (±1 V)
Test voltage	6VDC (±2 V)
Abuse voltage tolerance	265VAC continuous ± 120VDC continuous 390VDC 1 msec
Beeper sound level	85dBA at 1m case lid open
Ambient operating temperature	-20°C to +50°C
Battery charge time	4 hours maximum
Water proofing	IP65 - Not submersible
Resistance to interference	Do not operate next to RF transmitters, generators, etc
Battery operating time	• 40 hours continuous operation between full charges. • 6 hours of alert mode operation between full charges. We recommend charging regularly.

Advanced Features

When using Bluetooth from your Android or Apple phone: Download from QR code here:

1: Alarms will also alert on the phone.

2: MkIV units also have 2 extra modes:

- **Lead test** - monitors the leads for connection to the pipes under test, distinctive beep and alert message, replace leads to stop alert.
  Lead test alarm only flashes the test button and beeps every second.

- **High sensitivity** - changes alert voltage to 3V. Normally used when probing the ground around the site (see Plumb Guard Probe for details).
  Sensitivity alarm beeps 3 rapid beeps every 2 seconds with only the On/Off flashing.

Both modes can be turned on/off from the app.

To learn more go to our support page on the website: **plumbguard.com.au/support**

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Tips To Looking After Your Plumb Guard™

Charging Battery
Use the provided charge cable.
Keep it charged and ready.
Ensure no dirt in cable connection.

Storage
Store in dry place and out of sun.
Don't leave in back of ute.
Keep lid shut (when not in use).

Device is Wet
Turn device off & unplug cables.
Dampen with dry towel.
Rest out of sun with lid open.
Do not close lid when wet.

Device is Muddy
Turn device off & unplug cables.
Wipe down with damp cloth & dry.
Rest out of sun with lid open.
Do not close lid when muddy.

Calibration and Service
Service Annually.
Annual Calibration Check.

Scan To Download Tip Sheet

Notes:

Registering, Servicing and Calibration

Annual servicing is required to ensure the unit and battery are in good condition, the latest software is installed, and to confirm that the voltage accuracy is within the required limits.

Return the unit to:

HLP Controls Pty Limited
5 / 53 Argyle Street
South Windsor NSW 2756
Phone: 1800 500 160
Email: sales@hlpcontrols.com.au
Web: **plumbguard.com.au**

REGISTER NOW

plumbguard.com.au/register-calibrate

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