

Product Specifications:

Power:	3-6VDC
Battery:	CR2032 X2
Auto-off:	10 minutes
Power LED:	Flashes @ 3-Sec Interval
Input Impedance:	3 Megaohm
Signal Input:	Capacitive coupled
Receiver Pads:	2 - COP/ Plug wire
Output:	Buffered with 6V span
Protection:	Spark arrest
Adjustment:	25:1 dynamic range

Safety Information

IMPORTANT! Before you begin, make sure the test environment is safe and the vehicle meets these testing conditions:

- Test area should be well ventilated and Vehicle should have normal exhaust flow
- Vehicle should be in park or neutral and the wheels should be blocked
- Keep all tester cables clear of exhaust manifolds and radiator fan blades
- Use caution when testing on a vehicle while the engine is running (surfaces may become hot, electric cooling fans may turn on unexpectedly, etc.)
- To avoid serious injury or death, before cranking the engine, make sure the vehicle is in NEUTRAL or PARK and the parking BRAKE IS SET. If the vehicle has a manual transmission, PRESS IN THE CLUTCH PEDAL. Press ENTER to continue.

Contact Information

Whether you have a question about service or parts from Hickok or Waekon, we are ready to provide an answer. Options for reaching us include our 24/7 accessibility by fax or the World Wide Web. Or contact us by telephone during standard business hours EST.

www.hickok-inc.com

www.quick-n-ezparts.com

Fax: (216) 761-9879

**Hickok customer care & tech support:
(800) 342-5080**

Warranty

Subject to the conditions that follow and are noted below, this product is warranted to be free from defects in material and workmanship, under proper use and in accordance with the manufacturer's written recommendation and specifications, for a period designated below on all products:

- This product carries a one year limited warranty.

The manufacturer's obligation under this warranty is limited to unaltered products returned to the manufacturer by the initial end user of the new products. Therefore, this warranty does not cover any products resold by the end user to third parties, nor any reconditioned products sold as such, by the manufacturer. The sole remedy for any such defect shall be the repair, or replacement, of the product at the sole discretion of the manufacturer. This warranty does not cover expendable parts, such as batteries, nor does it cover shipping or handling. In addition, manufacturer is not liable for any loss or damage to product during shipping.

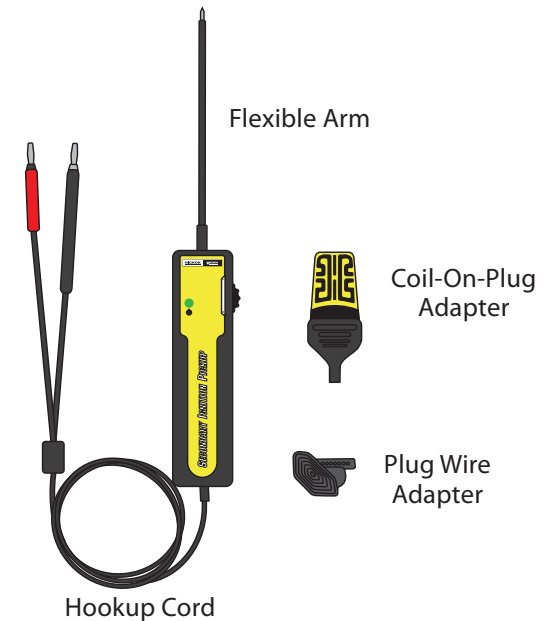
In the event it is determined that the product has been tampered with, or altered in any way, this warranty is void and all claims against the product will not be honored. All warranty claims must be submitted as outlined by the manufacturer and shall be processed in accordance with the manufacturer's established warranty claim procedures. These procedures include provisions that proof of purchase must be established (by either warranty card from the seller or by point of purchase receipt) and that the manufacturer will make every attempt to return ship the product within one business day from receipt of the returned product, freight prepaid.

In addition, all maintenance procedures, as outlined by the product manuals, should be followed for the warranty to be kept in force. Should the product not be used in accordance with procedures as specified, or if the product otherwise fails outside of the warranty, the manufacturer reserves the right to make such judgment and the party returning the product will be notified that written notification will be necessary to repair the product at a cost which the manufacturer deems as reasonable. The product will then be shipped back to the customer, COD; or as the manufacturer deems appropriate.

This is the only authorized manufacturer's warranty and is in lieu of all other expressed, or implied, warranties or representations, including but not limited to any implied warranties of merchantability or fitness or any other obligations on the part of the manufacturer. In no event will the manufacturer be liable for business interruptions, loss of profit, personal injury, costs of delays, or any special, indirect, incidental or consequential damages, costs or losses.

Secondary Ignition Pickup Instructions

Secondary Ignition Pickup (SIP)



The Secondary Ignition Pickup Adapter (SIP)

Provides secondary ignition system signal viewing using the Auto Wave.

Hookup Cord

Connects the SIP output to the Auto Wave.

Flexible Arm

Allows SIP to reach difficult ignition locations.

COP Adapter

Used for picking up COP signals (high sensitivity).

Plug Wire Adapter

Used for picking up spark plug wire signals.

Controls & Connections

On-Off / Signal Amplification Dial

To power on SIP — rotate the dial clockwise until the dial clicks.

- The SIP will automatically power off after ten minutes of on time. You can also turn off the unit by rotating the dial clockwise until it clicks.

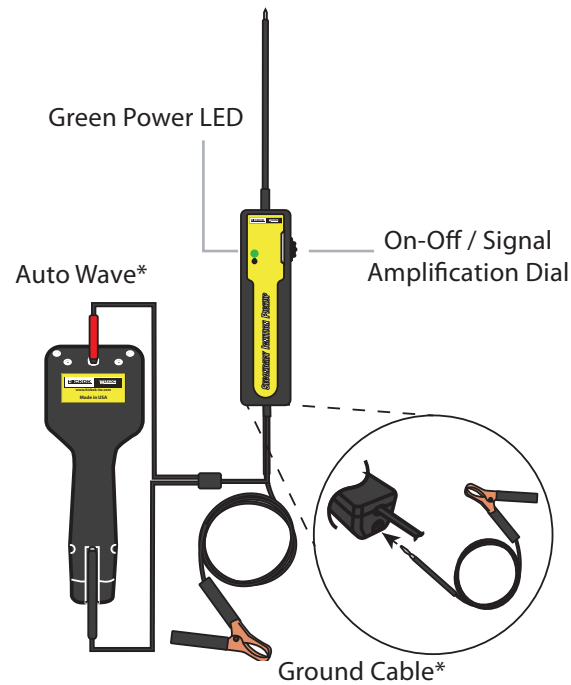
Green Power LED

The LED blinks to indicate the unit has power when the unit is turned on.

Connecting the SIP to the Auto Wave

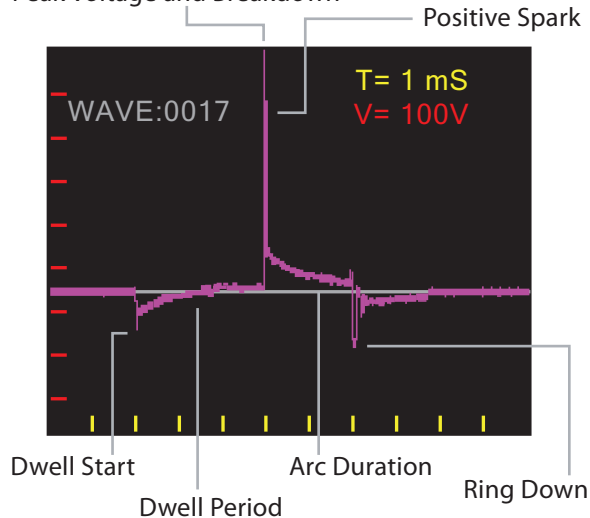
Connect the components as shown in the graphic to the right.

- Attach the COP Adapter (for coil-on-plug ignitions) or the Plug Wire Adapter (spark plug wire ignitions) to the flexible arm.
- Plug the hookup cord's red jack to the top, and the black jack to the bottom of Auto Wave as shown and plug the ground cable into SIP's ground jack.



Waveform Characteristics

Peak Voltage and Breakdown



Depending on the ignition type and manufacturer the SIP waveforms can vary greatly. This is especially so with COP because the primary and secondary windings are both detected by the SIP probe depending to how the coil is configured. On any ignition system signal you should be able to identify the key characteristics shown to the left.

Note: Negative spark ignition waveforms will appear upside down on the Auto Wave display. To invert the waveform reverse the SIP adapter input connections to the Auto Wave.

* The Auto Wave and Ground Cable are not included with The Secondary Ignition Pickup Adapter (SIP)

Viewing Secondary Ignition Waveform

Spark Plug Wire Ignitions

- Install the Plug Wire adapter tip to the end of the flexible arm and connect the SIP to the Auto Wave.
- Securely attach the ground cable clip to the vehicle's battery minus (-) or engine ground.
- Power on both units and set the SIP's signal amplification to the lowest (-) setting.
- Place the adapter tip against the spark plug wire.
- Select **Auto-set** from the Auto Wave menu or manually adjust the voltage and time scale for best waveform viewing.

Coil-On-Plug Ignitions

- Install the COP adapter tip to the end of the flexible arm and connect the SIP to the Auto Wave.
- Securely attach the ground cable clip to the vehicle's battery minus (-) or engine ground.
- Power on both units.
- Place the paddle tip against COP and adjust the signal amplification dial (+) or (-) for best waveform results.
- Select **Auto-set** from the Auto Wave menu or manually adjust the voltage and time scale for best waveform viewing.

Replacing the Battery

Auto Wave uses two CR2032 coin cell batteries located in the SIP's handle.

- Turn SIP off
- Remove four screws from back cover and remove cover
- Lift and slide out the two CR2032 coin cell batteries. Install new coin cell batteries with the plus (+) facing away from the circuit board.
- Re-install back cover and screws.