



## Tach/Sync Adapter

# 901



# Adapter Operation

The SELECT button powers the 901 and selects the mode of operation. Pressing the SELECT button steps the unit through the test modes. After one minute of no signal the 901 will automatically turn the power off to save the battery.

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## RPM Mode

1. Plug the banana plugs into the Digital Multimeter (DMM) or other tester. RED to the positive input ; BLACK to the negative or COMMON input.
  2. Select the Volts or millivolts DC setting on the DMM.
  3. Connect the Spark Pickup around any single Sparkwire. This includes Distributors and Direct Ignition Systems with 2 outputs (DIS2). On Coil-Per-Plug systems, connect the pickup around any single primary drive wire that feeds the coil. See "Getting a Stable Reading" for more details.
  4. Use the SELECT button to set the proper mode. The "#1 Sync" light should be OFF. Use the "Conv (4c)" mode for 4 stroke engines with distributors or Coil-Per-Plug. Use the "D.I.S.(2c)" mode for 2 stroke and DIS2 engines.
  5. Read RPM. One millivolt is 1 RPM (e.g. 690mV = 690 RPM). When using a Volt DC scale each volt is equal to 1000 RPM ( e.g. 1.85 V = 1850 RPM).
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## SYNC Mode

In Sync mode the 901 generates a sharp digital pulse. It can be used on DMM's that have an RPM function, or used as a trigger for a LabScope.

1. Plug the banana plugs into the DMM, LabScope, or other tester. RED to the positive input ; BLACK to the negative or COMMON input.
2. Select the RPM setting on the DMM.
3. Connect the Spark Pickup around any single Sparkwire. This includes Distributors, Direct Ignition Systems with 2 outputs (DIS2 ). On Coil-Per-Plug systems, connect the pickup around any single primary drive wire that feeds the coil. See "Getting a Stable Reading" for more details.
4. Use the SELECT button to set the proper mode. The "#1 Sync" light should be ON. Use the "Conv (4c)" mode for 4 stroke engines with distributors or Coil-Per-Plug. Use the "D.I.S.(2c)" mode for 2 stroke and DIS2 engines.
5. Read RPM . Each time a spark is detected that "#1 Sync" light will blink OFF briefly.

NOTE: in DIS2 mode the 901 will provide a Sync pulse each engine cycle. However this pulse may be generated when Cylinder #1 fires OR when the cylinder sharing a coil with Cylinder #1 fires. When analyzing your test results if a cylinder shows a problem remember to check its companion cylinder

# Getting a Stable Reading

If the RPM reading is not reasonably stable, the following steps will help you obtain the most stable reading possible.

1. Make sure the spark pickup is close to the spark plug, and the pickup latch is securely closed.
2. On DIS double ended coil system, some of the coils fire opposite of a conventional coil. Turn the spark pickup over.
3. A misfiring spark plug wire will cause an erratic reading. Move the pickup to another spark plug wire.
4. Inspect the spark pickup for a broken U-core or I-Core.

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## Compatible Equipment

All DMM's that accept banana plugs and have an RPM range. The 901 will provide a sharp driven signal for RPM readings for these meters and correct for double-end DIS and 2 Stroke systems.

All DMM's that accept banana plugs and have a Volts and/or millivolts range. The 901 will provide RPM readings for these meters adjusting for double-end DIS and 2 Stroke systems.

Any LAB SCOPES that require a Cylinder #1 sync input. The 901 will provide a sharp driven signal for synchronizing displays for these scopes and correct for double-end DIS and 2 Stroke systems.

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## Parts & Accessories

X008-01	Spark Pickup
W000-03	Extension Lead

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## Technical Support

Any questions or inquiries about service can be answered by contacting Ferret at:

Ferret Instruments, Inc.  
1310 Higgins Drive  
Cheboygan, MI 49721  
(616) 627-5664, Fax (616) 627-2727  
Toll Free (800) 627-5655 or  
(800) 647-5655 for Alaska, Hawaii, and Canada

# SAFETY PRECAUTIONS

## —Read All Instructions Before Using The Adapter—

Always wear eye protection when testing vehicles. Be extra careful near batteries and moving parts. Do not lay tools on a battery.

Battery gas is highly explosive.

If a battery explodes flush the acid away from skin with generous amounts of water. Follow up with a neutralizing solution of baking soda and then more water.

Never use a wrench on the ungrounded battery terminal until the grounded one has been disconnected. Contact between the vehicle body metal and the hot terminal can cause sparks to ignite gas or even weld tools into a battery short circuit.

Keep the space around a battery well ventilated.

Do not make sparks or allow flames near batteries.

Before working on a vehicle set the brakes and block the wheels. Beware of automatic parking brake releases.

Keep your work area well ventilated and free of exhaust.

Avoid electrical shocks caused by getting close to live ignition wires or touching the coil TACH terminal. A person's reaction near a live engine can be more damaging than the shock.

Keep spark producing devices at least 0.5m (18") above the floor to reduce the hazard of igniting gasoline vapor.

Do not let test leads wind up in a moving fan or pulley. Route leads away.

Remove finger rings and metal wrist bands. They can short terminals and become very hot from electric current.