



ACES AP2045 High Roller Pro Complete Ignition Package Instruction Manual

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ACES

ACES AP2045 High Roller Pro Complete Ignition Package



WARNING: During the installation of the High Roller CDI Box, the battery cables must be disconnected. When disconnecting the battery, always remove the NEGATIVE cable first and install it last.

Operation and features

Digital operation

The ACES Fuel Injection High Roller Digital CDI uses a high-speed microprocessor to control the ignition's output while continually analyzing and monitoring some input signals such as rpm, trigger signals, and supply voltage. The high-speed microprocessor can make fast adjustments to the output voltage, multiple spark series, rpm limits and timing while maintaining very precise timing control and accurate rev limiting. The circuits and controller of the High Roller have been shielded to protect against Electro Magnetic Interference (EMI).

Capacitive discharge

In induction ignition, the coil must store a large voltage before ignition. At high speed, because there is less time to charge the coil to its full capacity, the voltage is lower than the maximum energy, which can cause power loss or top end miss.

The capacitor of the High Roller ignition function is quickly charged to 480-535 volts and stores it until the ignition is triggered. With the CDI design, the voltage sent to the positive terminal of the coil is always at full power, even at high RPMs.

Multiple sparks

The High Roller Digital CDI produces full power multiple sparks for each spark ignition. As the rpm increases, the number of multiple sparks does decrease, but the spark series always lasts for 22 degrees of crankshaft rotation.

Protection

High Roller CDI has a reverse polarity protection circuit to help save the unit should wiring errors occur.

LED indicator

There are two LED indicators which provide you with the status of the High Roller.

Key power on-engine off	LED always on	Red
Key power on-engine on	RPM > 500 LED flash every engine cycle	Blue

Key power on-engine on	RPM < 500 LED flash every trigger	Blue
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NOTE: Do not use solid core spark plug wires with this ignition system.

Rev limiter

- The digital High Roller features a built-in rev limiter.
- The rev limiter feature provides a smooth and accurate rev limit by dropping the spark to individual cylinders.it further produces a load free rev limit that is within 1% of the selected rpm.
- The rev limit is adjusted in 100 rpm increments with the two sealed rotary switches contained under the black cover on the top of the High Roller CDI.

Number of Cylinders Selection

- The High Roller system is primarily designed for use on 8-cylinder engines, but can be used on different types of engines, such as 4-cylinder and 6-cylinder even fire engines. If you need to run on a 4-cylinder or 6-cylinders engine, make sure the cylinder select has been modified by handheld.

Start Retard

- The High Roller system will retard the timing from cranking through 700 rpm. It is automatically enabled and is adjustable from 0°-20° of retard in 1° increments. The timing retard will come in if the engine rpm drops below 500 rpm.

Launch Retard

- This feature will be activated when the launch button is applied. It is programmable from 0° – 20° in 1° increments .The Launch retard is used to offset the ignition timing during the 8 seconds after the launch button is released. It can optimize traction immediately after launch.

Nitrous Oxide Timing Retard

- The High Roller CDI system can be configured to automatically retard timing when a Nitrous Oxide System is utilized.
- When the Nitrous is activated and the throttle position indicates wide open throttle the High Roller CDI can be programmed to remove timing from the overall timing that is set, this is configured with the handheld programmer.

Burn Out Rev Limit

- The High Roller CDI system recognizes the tire burnout and can be programmed to help limit burnout RPM's.

RPM Launch Control

- The High Roller CDI system can be programmed to be used as a launch RPM controller (two step rev limiter) through the handheld controller Launch RPM can be set and programmed to help limit initial high RPM launch and prevent excess tire spin at launch.

Launch Drop RPM

- This High Roller option is for Manual shift applications using the clutch switch between shifts.
- This value will set up an RPM window so the Launch RPM limit feature will not reactivate when using the clutch between shifts. This RPM must be set lower than Launch RPM.
- High Roller Launch Rev setting example:
 - Launch Limit RPM: 3800
 - Launch Drop RPM: 1000
- This example shows the car will launch at 3,800 rpm and will have to drop to 2800 (3800 -1000) rpm during running to reset the launch feature.

Touch screen LCD

- The High Roller system is fully equipped a handheld display that can display ignition spark energy, engine RPM, number of sparks per cycle, ignition voltage, and is used to program the two-step launch control, burn out rev limit and Nitrous Timing retard.
- This handheld is a convenient way for the consumer to view the current ignition operating status and function of the High Roller CDI System.

General information

Battery

- The digital High Roller will operate on any negative ground 12-volt electrical system with a distributor.
- The High Roller can be used with 16-volt batteries and can withstand a momentary 24 volts in case of jump starts.
- The High Roller will deliver full voltage with a supply of anywhere between 8 and 18-volts. If your equipment does not use an alternator allow a minimum of 15 amp/hour for every 30 minutes of operation.

Coil

- The digital High Roller ignition can be used for most stock coils and aftermarket coils. For best results couple the High Roller CDI with an ACES Fuel Injection Blackjack Pro high-output ignition coil.

Tachometers

- The High Roller ignition features a tach output wire, which can provide trigger signals for tachometers, EFI systems, and other RPM activated devices.
- The output signals wire will generate a 12-Volt square wave signal with a 25% duty cycle. Some vehicles with factory tachometers may require a tach Adapter to operate with the High Roller CDI.

Spark plug wires

- Spark plug wires are especially important to the operation of your ignition system.
- A good quality, helically wound, suppression-type wire and proper routing are required to get the best performance from your ignition, such as the ACES WFI Blackjack Pro Series Spark Plug Wires.
- **NOTE:** Solid Core spark plug wires cannot be used with the High Roller CDI Ignition System.

Spark plugs

- Choosing the correct spark plug design and heat range is important when trying to get the best performance possible.
- It is recommended to follow the engine builder or manufacturer's specification for spark plugs.
- With that, you can then experiment with the plug gap to obtain the best performance.
- The gap of the plugs can be opened in 0.005" increments, then tested until the best performance is achieved.

Welding

- If any welding is being performed on your vehicle, please make sure to disconnect the primary power and ground wires for the High Roller CDI System from the battery as well as the tach wire.
- This will help avoid any damage to your High Roller CDI System.

Distributor cap and rotor

- When installing the High Roller CDI with an existing distributor a new distributor cap and rotor should be installed.
- Make sure to keep the inside and outside of the cap clean.
- On distributors with the smaller caps, the inside of the cap may be ion charged. You can drill vent holes in the cap to help prevent it.

Mounting

- The High Roller CDI System can be mounted in most positions, except directly upside down (if upside down,

moisture or water cannot escape).

- It can be mounted in the engine compartment if it is away from direct engine heat sources.
- It is not recommended to mount the unit in an enclosed area, such as the glove box.
- When you find a suitable location to mount the unit, make sure the wires of the ignition reach their connections.
- Hold the Ignition in place and mark the location of the mounting holes.
- Use a 1/8" drill bit to drill the holes. And use the supplied rubber isolators to mount the box.

Wiring

Heavy Red: This wire connects directly to the battery positive terminal or a positive battery junction such as the starter solenoid. Note: Do not connect to the alternator.

Heavy Black	This wire connects to a good ground, either at the battery negative terminal or to the engine.
Red	This wire is responsible for turning the High Roller on and off. This connects to a switched 12-volt source such as the ignition key or switch.
Heavy Orange	This wire connects to the coil positive terminal.
Heavy Black	This wire connects to the coil negative terminal.
White	This wire is used to connect to breaker points, or electronic ignition module. When this wire is used the magnetic pickup connector is not used.
Violet and Green- (Magnetic Pickup Connector)	These wires are routed together in one harness as the magnetic pickup connector. The connector plugs directly into a High Roller distributor, MSD distributor, or crank trigger, or any other aftermarket pickup. The Violet wire is positive, and the Green is negative. When these wires are used, the White wire is not used.
Gray	This is the tach output wire. It connects to the tachometer trigger wire or other rpm activated devices
Four Wires White Female Connector	Connect to Handheld
Four Wires White Male Connector	Step input ,Launch input , Burn out input.

General wiring information

Wire length

- The High Roller ignition wire can be shortened as long as quality connectors are used and preferably soldered

in place.

- If you need to lengthen it, please use a larger gauge wire (primary positive power wire uses a 12-gauge, other wires use 16-gauge wire).
- The connection should be soldered and sealed with heat shrink over the connection.

Grounds

- The negative wire should be grounded, the ground wire should be connected firmly, and the connection should be kept clean and free of paint.

Ballast resistor

- If your vehicle utilizes a ballast resistor in line with the coil wiring, it is recommended that you bypass the ballast resistor.

Routing wires

- Keep High Roller wires away from heat sources, such as exhaust pipes and headers, and any sharp edges.
- Trigger wires should be arranged separately from power wires and ignition wires.

Information specifications

Ignition Energy

- This is a measure of how much “heat” is produced across the spark plug gap to initiate the combustion process of the air/fuel mixture.
- Spark energy is a product of voltage, current and time with the result being measured in millijoules. it can create 150mj of ignition energy.

Primary Voltage

- This is the maximum amount of voltage that is delivered to the primary terminals of the ignition coil.
- With a CD ignition this voltage is extremely high because the High Roller steps up and stores this voltage with its transformer and capacitor.
- DO NOT attempt to check for voltage on the coil terminals with a test light.
- The primary voltage can reach between 450 and 530 volts.

Documents / Resources

<p>High Roller installation and operation</p> <p>High roller ignition control</p> <p>WARNING: Check the installation of the High Roller (H.R.) on the vehicle to make sure it is secure. If the installation is not secure, the H.R. will not operate properly.</p> <p>Operation and features</p> <p>Ignition control</p> <p>The H.R. is designed to start the engine with a single push of the button. The H.R. will start the engine if the battery is fully charged and the engine is in the "off" position. The H.R. will not start the engine if the battery is low or if the engine is already running.</p> <p>Capacitor discharge</p> <p>The H.R. is designed to start the engine with a single push of the button. The H.R. will start the engine if the battery is fully charged and the engine is in the "off" position. The H.R. will not start the engine if the battery is low or if the engine is already running.</p> <p>Multiple starts</p> <p>The H.R. is designed to start the engine with a single push of the button. The H.R. will start the engine if the battery is fully charged and the engine is in the "off" position. The H.R. will not start the engine if the battery is low or if the engine is already running.</p> <p>Features</p> <p>The H.R. is designed to start the engine with a single push of the button. The H.R. will start the engine if the battery is fully charged and the engine is in the "off" position. The H.R. will not start the engine if the battery is low or if the engine is already running.</p> <p>LED indicator</p> <p>The H.R. is designed to start the engine with a single push of the button. The H.R. will start the engine if the battery is fully charged and the engine is in the "off" position. The H.R. will not start the engine if the battery is low or if the engine is already running.</p>	<h2 style="color: #0070C0;">ACES AP2045 High Roller Pro Complete Ignition Package [pdf] Instruction Manual</h2> <h3>AP2045 High Roller Pro Complete Ignition Package, AP2045, High Roller Pro Complete Ignition Package, Roller Pro Complete Ignition Package, Pro Complete Ignition Package, Complete Ignition Package, Ignition Package</h3>
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