MSD 6520

MSD Digital 6-Plus Ignition Control

Model: 6520

Product Overview

The MSD Digital 6-Plus Ignition Control is an advanced digital ignition system designed for high-performance automotive applications. It utilizes a 15 Megahertz microcontroller for precise control of ignition timing and rev limits. This unit is engineered for efficiency and reliability, producing high spark energy with reduced current draw.

Key Features:

- Adjustable rotary switches for rev limits in 100 rpm increments.
- Single stage retard for nitrous and top-end performance.
- Start retard function to ease pressure on the starter, flywheel, and engine.
- Adjustable magnetic pickup compensation for accurate trigger signals.
- LED display for warning of trigger signal problems or faulty charging system.
- Polyurethane potted for enhanced vibration and water protection.
- C.A.R.B Approved.

Setup and Installation

Proper installation is crucial for the optimal performance and longevity of your MSD Digital 6-Plus Ignition Control. Always disconnect the battery before beginning any electrical work.

Mounting the Unit:

Select a mounting location that is away from direct engine heat, exhaust, and excessive vibration. Ensure the unit is securely fastened using the provided hardware. The unit should be mounted with the finned heat sink exposed to airflow for proper cooling.

Figure 1: The MSD Digital 6-Plus Ignition Control unit, showing its red finned heat sink design.

Wiring Connections:

Refer to the wiring diagram specific to your vehicle and ignition system. The Digital 6-Plus requires connections for power, ground, coil primary, and trigger input. Ensure all connections are clean, secure, and properly insulated.

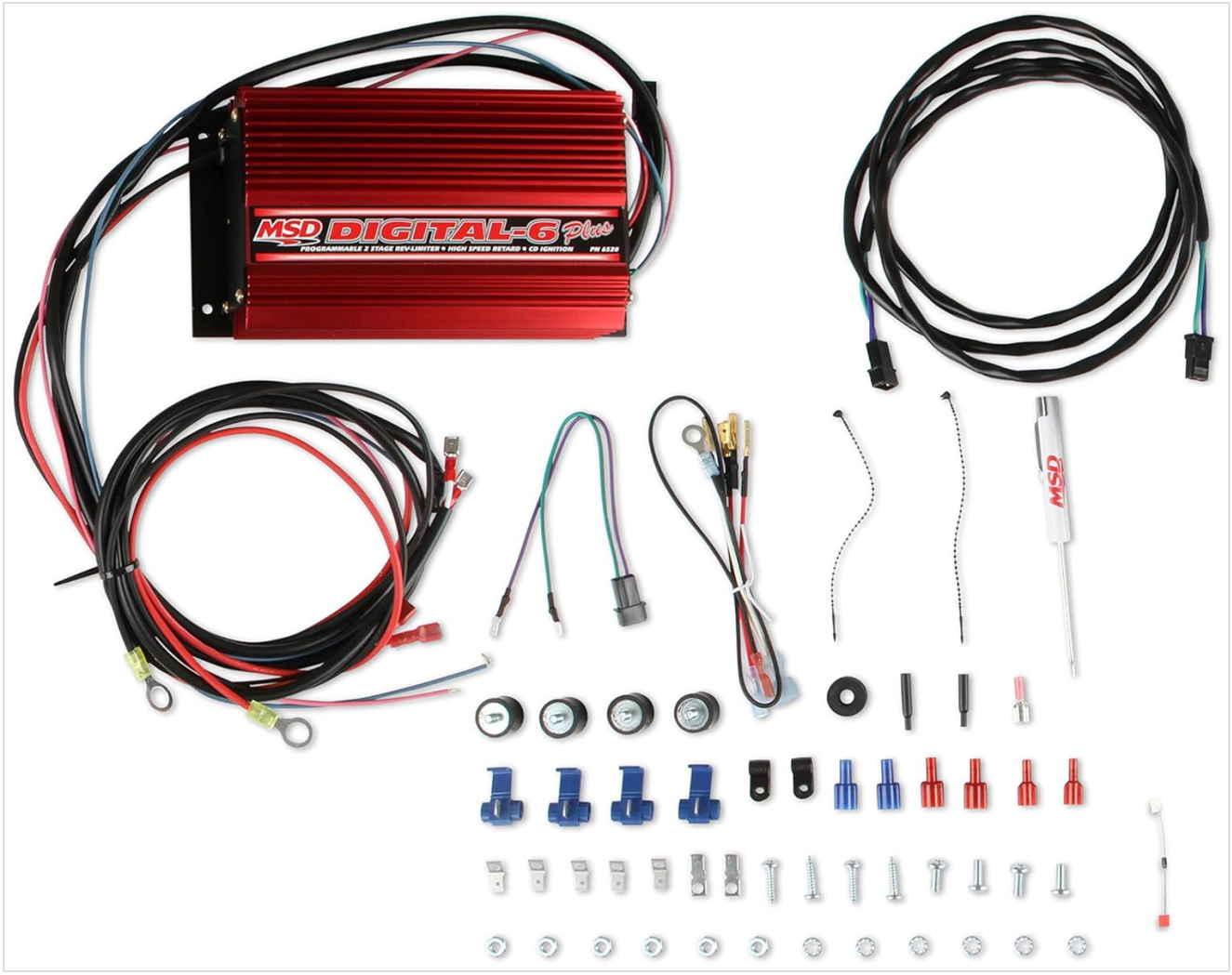

Figure 2: Complete kit including the MSD Digital 6-Plus Ignition Control unit, wiring harnesses, and various installation accessories.

Figure 3: Detailed view of the primary wiring harness, showing red, black, and blue wires for power, ground, and coil connections.

Figure 4: Close-up of the trigger input harness, typically connecting to the distributor or crank trigger.

Initial Power-Up:

After all connections are made, reconnect the battery. Observe the LED display for any warning indicators. Consult the troubleshooting section if any issues arise.

Operating the Digital 6-Plus

The Digital 6-Plus offers several adjustable features to optimize engine performance.

Rev Limit Adjustment:

The unit features rotary switches for setting two distinct rev limits in 100 RPM increments. These limits can be used for launch control or over-rev protection. Refer to the specific instructions for setting these limits based on your engine's requirements.

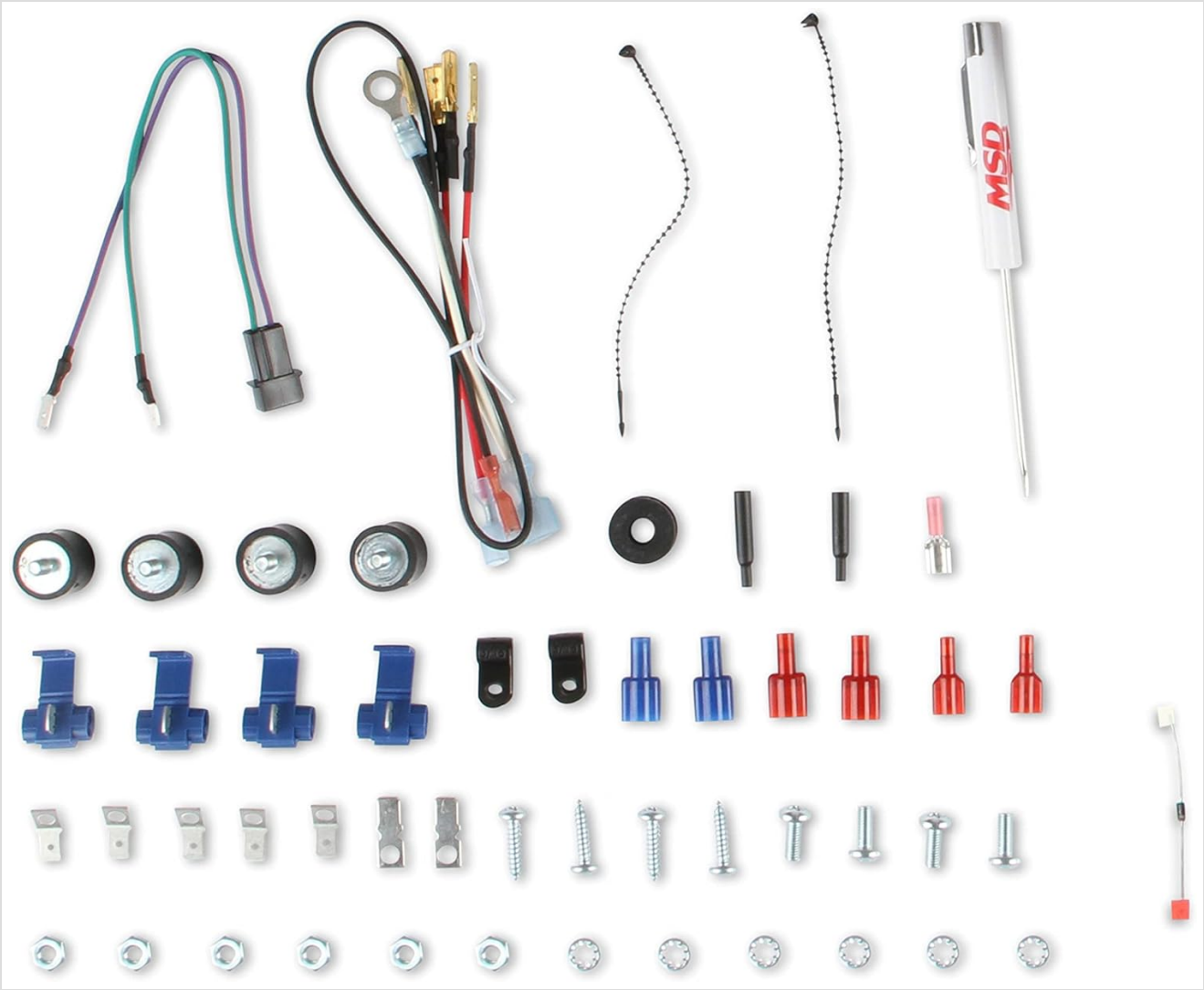

Figure 5: Various small components, including different types of electrical connectors and mounting hardware, used for installation and adjustment.

Single Stage Retard:

This feature allows for a single stage of timing retard, commonly used with nitrous oxide systems or for fine-tuning top-end performance. Ensure proper calibration to avoid engine damage.

Start Retard:

The start retard function reduces ignition timing during cranking, making starting easier and reducing stress on the starter motor and flywheel. This feature is automatically engaged during engine start-up.

Maintenance

The MSD Digital 6-Plus Ignition Control is designed for durability and requires minimal maintenance. However, periodic checks can ensure continued optimal performance.

- **Wiring Inspection:** Periodically inspect all wiring connections for signs of wear, corrosion, or loose terminals. Ensure all connections remain secure.
- **Unit Cleanliness:** Keep the unit clean and free of excessive dirt, oil, or debris. A clean unit allows for better heat dissipation.
- **Mounting Security:** Verify that the unit remains securely mounted and that mounting hardware is tight.

Troubleshooting

This section provides guidance for common issues you might encounter with your MSD Digital 6-Plus Ignition Control.

Problem	Possible Cause	Solution
Engine Cranks but No Spark	Loose or corroded power/ground connections; Faulty trigger signal; Damaged coil; Unit malfunction.	Check battery voltage and ground connections. Verify trigger signal integrity. Test coil resistance. Consult MSD technical support if unit is suspected faulty.
Engine Misfires or Runs Rough	Incorrect wiring; Spark plug or wire issues; Improper rev limit settings; EMI interference.	Review wiring diagram. Inspect spark plugs and wires. Adjust rev limits. Ensure proper grounding and shielding to minimize EMI.
LED Warning Light On	Trigger signal problems; Faulty charging system.	Check trigger input connections and sensor. Verify alternator and battery health.

For more complex issues, it is recommended to contact MSD technical support or a qualified automotive technician.

Specifications

Specification	Value
Operating Voltage	12-18 volts, negative ground (Full voltage output down to 7 volts supply)
Current Draw	0.7 amps per 1,000 rpm (7.2 amps) with 14V battery @ 10,000 rpm
RPM Range	12,500 rpm with 14.4 volt supply
Spark Duration	20° crankshaft rotation through 3,300 rpm
Spark Energy	135 millijoules per spark
Weight	3.7 lbs (1.4 Kilograms)
Dimensions (L x W x H)	8.5"L x 4.5"W x 2.2"H (approx. 9.45 x 2.36 x 9.45 inches item dimensions)
Voltage Output Max (Primary)	535 Volts delivered to coil
Voltage Output Max (Secondary)	45,000 Volts (with MSD HVC Coil)
Core Material	Polyurethane
Manufacturer	MSD Ignition
Model Name	MSD 6520 Digital 6-Plus Ignition Control Box
Part Number	6520
UPC	085132065202

Warranty and Support

Warranty Information:

The product comes with a manufacturer's warranty. For specific details regarding the warranty period and coverage, please refer to the documentation included with your product or contact MSD directly. The provided information states "Warranty Description: Warranty".

Legal Disclaimer:

CALIFORNIA WARNING: Cancer and Reproductive Harm -www.P65Warnings.ca.gov

Customer Support:

For technical assistance, installation questions, or troubleshooting beyond the scope of this manual, please contact MSD customer support. Contact information can typically be found on the manufacturer's website or product packaging.