Ford SP548

Motorcraft SP548 Spark Plug Set Instruction Manual

Model: SP548 | Brand: Ford/Motorcraft

Introduction

This manual provides essential information for the Motorcraft SP548 Spark Plug Set, designed for specific Ford Mustang and F-150 models from 2011 to 2017. These genuine OEM parts are engineered for optimal performance, reliability, and durability in compatible vehicles.

The Motorcraft SP548 spark plugs are compatible with the following vehicles:

- 2020 Mustang Shelby GT350, Shelby GT350R 5.2L V8 - Gas
- 2019 Mustang Shelby GT350, Shelby GT350R 5.2L V8 - Gas
- 2018 Mustang Shelby GT350, Shelby GT350R 5.2L V8 - Gas
- 2017 F-150 King Ranch, Lariat, Platinum, SSV, XL, XLT 5.0L V8 - Flex
- 2017 Mustang GT, GT Premium, Shelby GT350, Shelby GT350R 5.0L V8 - Gas, 5.2L V8 - Gas
- 2016 F-150 King Ranch, Lariat, Platinum, SSV, XL, XLT 5.0L V8 - Flex
- 2016 Mustang GT, GT Premium, Shelby GT350, Shelby GT350R 5.0L V8 - Gas, 5.2L V8 - Gas
- 2015 F-150 King Ranch, Lariat, Platinum, XL, XLT 5.0L V8 - Flex
- 2015 Mustang GT, GT 50 Years Limited Edition, GT Premium, Shelby GT350, Shelby GT350R 5.0L V8 - Gas, 5.2L V8 - Gas
- 2014 F-150 FX2, FX4, King Ranch, Lariat, Platinum, STX, XL, XLT 5.0L V8 - Flex
- 2014 Mustang GT 5.0L V8 - Gas
- 2013 F-150 FX2, FX4, King Ranch, Lariat, Platinum, STX, XL, XLT 5.0L V8 - Flex
- 2013 Mustang Boss 302, GT 5.0L V8 - Gas
- 2012 F-150 FX2, FX4, King Ranch, Lariat, Platinum, STX, XL, XLT 5.0L V8 - Flex
- 2012 Mustang Boss 302, GT 5.0L V8 - Gas
- 2011 F-150 FX2, FX4, King Ranch, Lariat, Platinum, STX, XL, XLT 5.0L V8 - Flex
- 2011 Mustang GT 5.0L V8 - Gas

These spark plugs are specifically for 5.0L engines from 2011-2020 and 5.2L engines without a supercharger from 2015-2017.

Setup and Installation

Installing spark plugs requires specific tools and knowledge. It is highly recommended that installation be performed by a qualified automotive technician or an individual with significant experience in vehicle maintenance.



Figure 1: A set of eight Motorcraft SP548 spark plugs, each packaged in its original box, ready for installation.

Pre-Installation Checks:

- **Verify Fitment:** Always cross-reference the spark plug model (SP548) with your vehicle's owner's manual or a reliable automotive parts catalog to ensure compatibility with your specific engine, drivetrain, and trim level.
- **Inspect New Plugs:** Before installation, carefully inspect each new spark plug for any signs of damage to the insulator, electrodes, or threads.
- **Check Gap:** While Motorcraft spark plugs are typically pre-gapped, it is crucial to verify the gap setting for your specific vehicle. For many compatible Ford 5.0L V8 engines, the recommended gap is between *0.041 to 0.047 inches*. Adjust if necessary using a spark plug gapping tool. Incorrect gapping can lead to misfires or reduced engine

performance.

Installation Procedure (General Guidelines):

1. **Safety First:** Ensure the engine is cool before beginning work. Disconnect the negative terminal of the vehicle's battery.
2. **Access Spark Plugs:** Locate the spark plugs, which are typically found on the cylinder heads. You may need to remove engine covers, ignition coils, or other components to gain access.
3. **Remove Old Plugs:** Carefully disconnect the ignition coil connector and remove the coil. Use a spark plug socket and ratchet to loosen and remove the old spark plugs. Note the condition of the old plugs as this can indicate engine health.
4. **Install New Plugs:** Hand-thread the new spark plugs into the cylinder head to avoid cross-threading. Once finger-tight, use a torque wrench to tighten them to the manufacturer's specified torque setting. Refer to your vehicle's service manual for precise torque specifications. *Do not overtighten.*
5. **Reassemble:** Reinstall the ignition coils and reconnect their electrical connectors. Reattach any components removed for access.
6. **Reconnect Battery:** Reconnect the negative terminal of the battery.

Note: *Some vehicle configurations, such as certain F-150 models, may have spark plugs that are challenging to access. Ford has made design improvements over the years to facilitate this process, but patience and the correct tools are essential.*

Operation and Function

Spark plugs are critical components of a gasoline engine's ignition system. Their primary function is to ignite the air-fuel mixture in the combustion chamber, creating the power stroke that drives the engine.

- **Ignition:** The spark plug receives a high-voltage electrical pulse from the ignition coil. This voltage creates a spark across the gap between the center and ground electrodes.
- **Combustion:** The spark ignites the compressed air-fuel mixture, causing a rapid expansion of gases that pushes the piston down, generating power.
- **Heat Transfer:** Spark plugs also play a role in transferring heat away from the combustion chamber to the engine's cooling system, helping to maintain optimal engine temperature.

Properly functioning spark plugs ensure efficient fuel combustion, leading to smooth engine operation, optimal fuel economy, and reduced emissions.

Maintenance

Regular maintenance of spark plugs is essential for the longevity and performance of your vehicle. While Motorcraft SP548 spark plugs are designed for durability, they are wear items and require periodic inspection and replacement.

- **Replacement Interval:** Consult your vehicle's owner's manual for the recommended spark plug replacement interval. Many Ford vehicles using these plugs suggest replacement around 60,000 to 100,000 miles, depending on driving conditions and engine type.
- **Inspection:** During routine maintenance, or if you notice performance issues, inspect the spark plugs. Look for signs of wear such as:
    - Excessive electrode wear (rounded electrodes, increased gap).
    - Fouling (deposits of carbon, oil, or fuel on the insulator tip).
    - Cracked or chipped insulators.

- **Gap Check:** Even if not replacing, periodically check the spark plug gap. Over time, the gap can widen due to electrode erosion, affecting ignition efficiency.

Replacing spark plugs at the recommended intervals helps maintain engine efficiency, prevent misfires, and ensure smooth idling.

Troubleshooting

If your vehicle exhibits symptoms of ignition system issues, the spark plugs may be a contributing factor. Here are common symptoms and potential causes related to spark plugs:

Symptom	Potential Spark Plug Related Cause
Rough Idling	Worn, fouled, or incorrectly gapped spark plugs can lead to an uneven idle.
Engine Misfires or Hesitation	A spark plug failing to ignite the air-fuel mixture can cause misfires, especially under acceleration.
Reduced Fuel Economy	Inefficient combustion due to worn plugs can result in more fuel being consumed for the same power output.
Difficulty Starting	Weak or inconsistent spark can make the engine harder to start.
Check Engine Light (CEL)	Misfires detected by the engine control unit (ECU) will often trigger the CEL. Diagnostic trouble codes (DTCs) can pinpoint specific cylinder misfires.

Troubleshooting Steps:

1. **Visual Inspection:** Remove spark plugs and visually inspect them for signs of wear, fouling, or damage. Compare their appearance to spark plug condition charts available online or in service manuals.
2. **Check Gap:** Re-check the gap of each spark plug. Adjust if it has widened beyond specifications.
3. **Test Ignition Coils:** A faulty ignition coil can mimic spark plug issues. Test the coils if spark plugs appear to be in good condition.
4. **Professional Diagnosis:** If symptoms persist after inspecting and replacing spark plugs, consult a professional mechanic for a comprehensive diagnostic check of your vehicle's ignition and fuel systems.

Specifications

Key specifications for the Motorcraft SP548 Spark Plug Set:

Specification	Detail
Brand	Ford / Motorcraft
Manufacturer Part Number	SP548
Core Material	Copper
Top Material Type	Alloy Steel
Thread Size	RM
Vehicle Service Type	Car, Truck

Specification	Detail
Automotive Fit Type	Vehicle Specific Fit
Item Weight (per set)	Approximately 14.8 ounces
UPC	031508552289
Package Dimensions	8.39 x 4.57 x 1.3 inches

Warranty and Support

Specific warranty details for the Motorcraft SP548 Spark Plug Set are typically provided at the point of purchase or through official Ford/Motorcraft channels. As these are genuine OEM parts, they are generally covered by Ford's standard parts warranty, which may vary by region and purchase location.
For detailed warranty information, claims, or technical support, please refer to your original purchase documentation or contact an authorized Ford or Motorcraft parts dealer. You can also visit the official Motorcraft website for general information and contact options.

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