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> NGK SPARK PLUGS (USA) 4922 Standard Spark Plug - BR6ES Instruction Manual

## NGK BR6ES

# NGK SPARK PLUGS (USA) 4922 Standard Spark Plug - BR6ES

Model: BR6ES

## INTRODUCTION

This manual provides essential information for the installation, operation, and maintenance of your NGK BR6ES Standard Spark Plug. NGK spark plugs are engineered for reliable performance and durability in various engine applications. Proper installation and regular maintenance are crucial for optimal engine function and longevity of the spark plug.



Image: NGK BR6ES Standard Spark Plug shown with its yellow and red packaging. The spark plug itself is silver and white, featuring the NGK logo and model number.

## PRODUCT FEATURES

The NGK BR6ES Standard Spark Plug incorporates several design elements to ensure high performance and reliability:

- **98% Pure Copper Core:** Increases heat dissipation for more reliable starts and prevents the spark plug from overheating, contributing to consistent performance.
- **High-Grade Alumina Silicate Ceramic Insulator:** Provides superior strength and heat transfer capabilities, ensuring the spark plug can withstand extreme engine conditions.
- **Cold-Rolled Threads:** Designed to prevent cross-threading during installation and reduce the risk of damage to cylinder heads, facilitating easier and safer replacement.
- **Trivalent Plating:** Eliminates the need for anti-seize compound during installation and removal, and provides excellent corrosion resistance.
- **Corrugated Ribs:** These ribs on the insulator prevent flashover, which is the electrical discharge that can occur outside the spark plug, ensuring the spark occurs at the electrode tip.





Image: A detailed view of the NGK BR6ES spark plug, highlighting its ceramic insulator, metal shell, and electrode tip. The threaded portion and terminal nut are clearly visible.

## SETUP AND INSTALLATION

Proper installation is critical for the performance and longevity of your spark plug. Always refer to your vehicle or equipment's service manual for specific instructions and torque specifications.

### Safety Precautions:

- Ensure the engine is cool before attempting to remove or install spark plugs.
- Disconnect the battery's negative terminal to prevent accidental starting or electrical shock.
- Wear appropriate personal protective equipment, including gloves and eye protection.

### Installation Steps:

1. **Remove Old Spark Plugs:** Carefully remove the spark plug wires or coil packs. Use a spark plug socket to loosen and remove the old spark plugs. Note the condition of the old plugs as it can indicate engine health.
2. **Inspect New Spark Plug:** Before installation, visually inspect the new NGK BR6ES spark plug for any damage.
3. **Check Gap:** Although NGK spark plugs are often pre-gapped for common applications, it is essential to verify the gap using a wire-type feeler gauge according to your engine manufacturer's specifications. Adjust if necessary by carefully bending the ground electrode.
4. **Install New Spark Plug:** Hand-thread the new spark plug into the cylinder head to avoid cross-threading. The trivalent plating on NGK plugs means anti-seize is not required.
5. **Torque to Specification:** Use a torque wrench to tighten the spark plug to the manufacturer's recommended torque specification. Overtightening can damage the spark plug or cylinder head, while undertightening can lead to poor heat transfer and misfires.
6. **Reconnect Components:** Reattach the spark plug wires or coil packs, ensuring they are securely connected. Reconnect the battery.



Image: An overhead view of an engine bay, showing multiple spark plugs and their associated ignition coils installed in the engine block. This illustrates the typical location for spark plug installation.

## OPERATING PRINCIPLES

The NGK BR6ES spark plug is a critical component in the ignition system of internal combustion engines. Its primary function is to ignite the air-fuel mixture in the combustion chamber, initiating the power stroke of the engine.

When the ignition coil generates a high voltage, it is sent to the spark plug. This voltage creates an electrical arc, or spark, across the gap between the center and ground electrodes. This spark ignites the compressed air-fuel mixture, causing a controlled explosion that drives the piston downwards, generating power.

The spark plug's design, including its heat range and electrode materials, is optimized to operate efficiently under specific engine conditions, ensuring complete combustion and minimizing emissions.

## MAINTENANCE

Regular inspection and timely replacement of spark plugs are essential for maintaining engine performance, fuel efficiency, and reducing emissions. The lifespan of a spark plug varies depending on engine type, operating conditions, and fuel quality.

### Inspection:

- Inspect spark plugs during routine engine maintenance, typically every 15,000 to 30,000 miles for standard copper plugs, or as recommended by your engine manufacturer.
- Look for signs of wear such as excessive electrode erosion, carbon fouling (black, sooty deposits), oil fouling (oily deposits), or overheating (blistered insulator, melted electrodes).
- Check the electrode gap for widening or irregularities.

### Replacement:

Replace spark plugs when they show signs of wear or at the intervals recommended by your engine manufacturer. Worn spark plugs can lead to misfires, reduced fuel economy, and increased emissions.





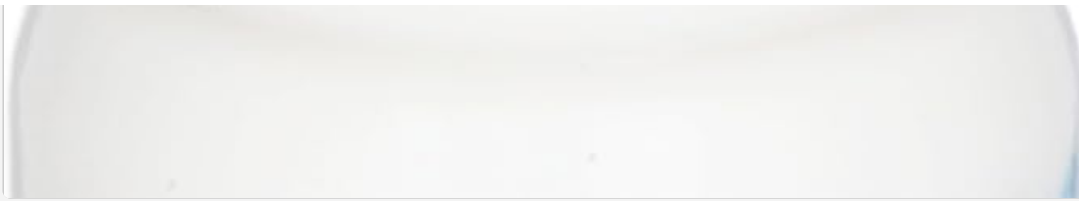


Image: A close-up view of the top portion of an NGK spark plug, showing the terminal nut and the corrugated ceramic insulator. This part connects to the spark plug wire or coil.

## TROUBLESHOOTING

Common issues related to spark plugs and their potential causes:

Symptom	Possible Cause (Spark Plug Related)	Solution
Engine Misfires or Rough Idling	Worn electrodes, incorrect gap, fouled plug (carbon, oil, lead), cracked insulator.	Inspect and replace spark plugs. Correct gap. Address underlying engine issues causing fouling.
Hard Starting	Fouled or worn spark plugs, incorrect gap.	Clean or replace spark plugs. Verify and adjust gap.
Reduced Fuel Economy	Inefficient combustion due to worn or fouled spark plugs.	Replace spark plugs at recommended intervals.
Engine Hesitation or Lack of Power	Weak spark from worn electrodes or incorrect gap.	Inspect and replace spark plugs. Ensure proper gap.
Check Engine Light (CEL)	Severe misfires detected by the engine's computer.	Diagnose fault codes. Often indicates a need for spark plug replacement or ignition system repair.

If troubleshooting steps do not resolve the issue, consult a qualified mechanic or refer to your engine's service manual for further diagnosis.

## SPECIFICATIONS

Key specifications for the NGK BR6ES Standard Spark Plug:

**Brand:** NGK

**Model:** BR6ES

**Part Number:** 4922

**Core Material:** Copper

**Thread Size:** RM (Specific to NGK's internal designation, corresponds to standard metric thread sizes for spark plugs)

**Top Material Type:** Nickel

**Vehicle Service Type:** UTV (Universal Fit, suitable for various applications including UTVs, lawn & garden, marine, power sports)

**Item Weight:** 1.76 ounces (approximately 50 grams)

**Product Dimensions:** 3.43 x 0.98 x 0.89 inches

**UPC:** 087295149225

**Insulator Type:** High-grade alumina silicate ceramic

**Electrode Type:** Standard (Copper Core)

## WARRANTY AND SUPPORT

For specific warranty information regarding your NGK BR6ES spark plug, please refer to the official NGK website or contact NGK customer support directly. Warranty terms typically cover manufacturing defects. For technical assistance, product inquiries, or support, please visit the official NGK website or contact their customer service department. Always provide your product model number (BR6ES) and any relevant purchase details when seeking support.

NGK Official Website: [www.ngksparkplugs.com](http://www.ngksparkplugs.com)

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