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› RATION Ignition Coil Module Instruction Manual for Briggs and Stratton Engines

RATION 445877, 445977, 446677, 446777, 44677A

RATION Ignition Coil Module Instruction Manual

For Briggs and Stratton Engines: Models 445877, 445977, 446677, 446777, 44677A

1. INTRODUCTION

This manual provides essential information for the proper installation, operation, and maintenance of your RATION Ignition Coil Module. This ignition coil is designed to provide a reliable spark for optimal engine performance in compatible Briggs and Stratton engines. Please read this manual thoroughly before installation to ensure correct procedure and safe operation.

Compatibility: This ignition coil module is compatible with Briggs and Stratton engine models 445877, 445977, 446677, 446777, and 44677A. Always verify compatibility with your specific engine model before proceeding with installation.

2. SAFETY INFORMATION

Always observe the following safety precautions when working with engine components:

- **Disconnect Spark Plug Wire:** Before performing any work on the engine, always disconnect the spark plug wire to prevent accidental starting.
- **Engine Cool Down:** Allow the engine to cool completely before handling any components to avoid burns.
- **Eye Protection:** Wear appropriate eye protection to shield against debris.
- **Gloves:** Use gloves to protect hands from sharp edges and hot surfaces.
- **Proper Tools:** Use only the correct tools for the job to prevent damage to components or injury.
- **Flammable Materials:** Keep flammable materials away from the work area.

3. SETUP AND INSTALLATION

This section outlines the general steps for replacing an ignition coil module. Specific engine configurations may vary. Refer to your engine's service manual for detailed instructions if needed.

3.1 Tools Required

- Wrench set (typically 3/8", 7/16", or 1/2")
- Screwdriver set

- Feeler gauge (for setting air gap)
- Spark plug wrench

3.2 Installation Steps

1. Prepare the Engine:

- Ensure the engine is turned off and cool.
- Disconnect the spark plug wire from the spark plug.
- Remove any engine shrouds or covers that obstruct access to the ignition coil.

2. Remove Old Ignition Coil:

- Locate the existing ignition coil. It is typically mounted near the flywheel.
- Disconnect any wires attached to the coil (e.g., kill switch wire).
- Unscrew the mounting bolts that secure the coil to the engine block.
- Carefully remove the old ignition coil.

3. Install New Ignition Coil:

- Position the new RATION ignition coil module in the mounting location.
- Insert the mounting bolts, but do not tighten them fully yet.
- **Set the Air Gap:** This is a critical step. Insert a non-magnetic feeler gauge (typically 0.010 to 0.014 inches, refer to your engine manual for exact specification) between the ignition coil's laminations and the flywheel magnets.
- Rotate the flywheel until the magnets are directly under the coil's laminations, holding the feeler gauge firmly in place.
- Tighten the mounting bolts securely while the feeler gauge is still in place, ensuring the coil is parallel to the flywheel.
- Once tightened, remove the feeler gauge.
- Reconnect any wires that were disconnected (e.g., kill switch wire).

4. Reassemble and Test:

- Replace any engine shrouds or covers.
- Reconnect the spark plug wire to the spark plug.
- Attempt to start the engine to verify proper operation.



Figure 1: RATION Ignition Coil Module. This image shows the overall design of the ignition coil, including the main body, mounting points, and the spark plug wire connection.



Figure 2: Side view of the RATION Ignition Coil Module. This perspective highlights the copper conductor and the specific shape of the mounting brackets.

4. OPERATING VERIFICATION

After successful installation, the engine should start and run smoothly. A properly functioning ignition coil will ensure a consistent and strong spark, leading to efficient combustion.

- **Engine Start:** The engine should start reliably with fewer pulls or cranks.
- **Smooth Running:** The engine should run without misfires, hesitation, or excessive vibration.
- **Consistent Power:** The engine should deliver consistent power output.

If you experience difficulty starting or poor engine performance after installation, refer to the Troubleshooting section.

5. MAINTENANCE

The RATION Ignition Coil Module is designed for durability and requires minimal maintenance. However, periodic checks can help ensure its longevity and optimal performance:

- **Cleanliness:** Keep the coil and its connections free from dirt, debris, and moisture. A buildup of grime can

interfere with electrical conductivity.

- **Wire Inspection:** Periodically inspect the spark plug wire and kill switch wire (if applicable) for cracks, fraying, or damage. Replace if necessary.
- **Connection Security:** Ensure all electrical connections to the coil are secure and free from corrosion.
- **Air Gap Check:** If engine performance degrades over time, re-check the air gap between the coil and the flywheel as described in the installation section.

6. TROUBLESHOOTING

If you encounter issues after installing the RATION Ignition Coil Module, consider the following common problems and solutions:

6.1 Engine Does Not Start or Has Weak Spark

- **Check Spark Plug:** Ensure the spark plug is clean, properly gapped, and not fouled. Test with a new spark plug if unsure.
- **Spark Plug Wire:** Verify the spark plug wire is securely connected to both the coil and the spark plug. Check for damage to the wire.
- **Kill Switch Wire:** Ensure the kill switch wire is properly connected and not grounding out prematurely.
- **Air Gap:** Re-check the air gap between the ignition coil and the flywheel. An incorrect gap is a common cause of no-spark conditions.
- **Mounting Bolts:** Ensure the coil mounting bolts are securely tightened. Loose bolts can affect the air gap and coil stability.
- **Flywheel Magnets:** Inspect the flywheel magnets for damage or debris that might interfere with the coil's magnetic field.

6.2 Engine Misfires or Runs Roughly

- **Fuel System:** Rule out fuel-related issues (e.g., stale fuel, clogged carburetor, fuel filter).
- **Air Filter:** Check if the air filter is clean and not restricting airflow.
- **Spark Plug:** A partially fouled or incorrectly gapped spark plug can cause misfires.
- **Coil Connections:** Ensure all electrical connections are clean and tight.

If troubleshooting steps do not resolve the issue, it is recommended to consult a qualified engine technician.

7. SPECIFICATIONS

| Feature | Detail |
|---------------------------|--|
| Brand | RATION |
| Product Type | Ignition Coil Module |
| Compatible Engine Models | Briggs and Stratton 445877, 445977, 446677, 446777, 44677A |
| Manufacturer Part Numbers | 398811, 440-445, 440-445-A, 499447 |
| UPC | 670185936656 |

8. WARRANTY AND SUPPORT

For warranty information or technical support regarding your RATION Ignition Coil Module, please refer to the documentation provided with your purchase or contact the seller directly. Keep your proof of purchase for warranty

claims.



Figure 3: RATION Brand Logo. This logo identifies the manufacturer of the ignition coil module.