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**Briggs & Stratton 499631**

# Briggs & Stratton 499631 Engine Piston Ring Set Instruction Manual

## 1. INTRODUCTION

This manual provides essential information for the proper handling, installation, and maintenance of the Briggs & Stratton 499631 Engine Piston Ring Set. This genuine Original Equipment Manufacturer (OEM) part is designed to restore optimal compression and oil control in compatible Briggs & Stratton engines. Adhering to these instructions will ensure correct function and prolong the life of your engine.

## 2. PRODUCT OVERVIEW

The Briggs & Stratton 499631 Piston Ring Set includes the necessary rings for one piston. These rings are critical components that seal the combustion chamber, transfer heat from the piston to the cylinder wall, and regulate engine oil consumption. The set typically includes a top compression ring, a second compression ring, and an oil control ring assembly.



Image 1: The Briggs & Stratton 499631 Piston Ring Set. This image displays the individual rings included in the set, typically consisting of compression rings and an oil control ring assembly, designed for a single piston.

### 3. SAFETY INFORMATION

Always prioritize safety when working with engine components. Failure to follow safety precautions can result in serious injury or damage to equipment.

- Wear appropriate personal protective equipment (PPE), including safety glasses and gloves.
- Ensure the engine is cool and disconnected from any power source before beginning work.
- Work in a well-ventilated area.
- Refer to your engine's specific service manual for detailed disassembly and reassembly procedures.
- Keep all parts clean and free from debris during installation.

### 4. SETUP AND INSTALLATION

Proper installation of piston rings is crucial for engine performance and longevity. This section outlines the general steps; always consult your engine's specific service manual for exact procedures and torque specifications.

#### 4.1 Tools Required

- Piston ring compressor
- Piston ring expander (optional, but recommended)
- Feeler gauges

- Torque wrench
- Clean rags and solvent
- Engine oil

## 4.2 Pre-Installation Checks

1. **Inspect Piston and Cylinder:** Ensure the piston and cylinder bore are clean, free of scoring, and within manufacturer specifications.
2. **Check Ring Gaps:** Before installing on the piston, insert each ring into its respective cylinder bore (squarely) and measure the end gap with a feeler gauge. Compare to engine manufacturer specifications.
3. **Check Ring-to-Groove Clearance:** Place each ring into its corresponding piston groove and check for proper side clearance.

## 4.3 Installation Steps

1. **Install Oil Control Ring:** Carefully install the oil control ring expander, followed by the upper and lower oil control rails, into the lowest piston groove. Ensure the ends of the expander do not overlap.
2. **Install Second Compression Ring:** Install the second compression ring (usually the darker or tapered ring) into the middle groove. Note any markings (e.g., 'TOP' or a dot) that indicate the ring's orientation.
3. **Install Top Compression Ring:** Install the top compression ring into the uppermost groove, again observing any orientation markings.
4. **Stagger Ring Gaps:** Once all rings are installed, rotate them so that their end gaps are staggered at 120-degree intervals around the piston, avoiding alignment with the piston pin bore.
5. **Lubricate:** Lightly coat the piston, rings, and cylinder bore with clean engine oil.
6. **Compress Rings:** Use a piston ring compressor to carefully compress the rings onto the piston.
7. **Insert Piston:** Gently tap the piston into the cylinder bore, ensuring the connecting rod aligns correctly with the crankshaft journal.

## 5. OPERATING CONSIDERATIONS

After installing new piston rings, a proper break-in period is essential for the rings to seat correctly against the cylinder walls. Follow your engine manufacturer's recommendations for initial startup and break-in procedures. Avoid prolonged idling or excessive loads during the first few hours of operation.

## 6. MAINTENANCE

While piston rings themselves do not require direct maintenance, their longevity and performance are directly tied to overall engine maintenance practices.

- **Regular Oil Changes:** Use the recommended engine oil and change it at specified intervals to prevent sludge buildup and ensure proper lubrication.
- **Air Filter Maintenance:** A clean air filter prevents abrasive particles from entering the engine, which can cause premature wear on cylinder walls and rings.
- **Fuel Quality:** Use clean, fresh fuel to prevent carbon deposits that can foul rings.
- **Engine Temperature:** Ensure the engine operates at its correct temperature to prevent thermal stress on rings and cylinders.

## 7. TROUBLESHOOTING

If engine performance issues persist after piston ring replacement, consider the following common problems:

- **Excessive Oil Consumption:** Could indicate improper ring seating, damaged oil control rings, or worn valve guides. Ensure proper break-in and check for other engine issues.
- **Low Compression:** May result from improperly gapped rings, broken rings, or cylinder head issues (e.g., valve problems, head gasket leak). Recheck ring gaps and inspect cylinder head components.
- **Smoke from Exhaust:** Blue smoke typically indicates oil burning, often due to piston ring issues. Black smoke suggests rich fuel mixture, and white smoke indicates coolant burning.
- **Engine Knocking/Noise:** While not directly related to rings, severe wear or improper assembly could contribute to other internal engine noises.

For persistent issues, consult a qualified engine technician or refer to your engine's comprehensive service manual.

## 8. SPECIFICATIONS

Specification	Detail
Part Number	499631
Type	Engine Piston Ring Set
Manufacturer	Briggs & Stratton (OEM)
Item Weight	0.01 ounces (approximate)
National Stock Number	2805-01-589-4983
Application	Compatible Briggs & Stratton Lawn & Garden Equipment Engines

## 9. WARRANTY AND SUPPORT

As a genuine Briggs & Stratton OEM part, this piston ring set is covered by the standard Briggs & Stratton warranty for replacement parts. For specific warranty details, claims, or technical support, please refer to the official Briggs & Stratton website or contact their customer service directly. Always provide your engine's model, type, and code numbers when seeking support.

For further assistance, visit the [Briggs & Stratton official website](#).