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Briggs & Stratton 31R907-0007-G1

Instruction Manual

Briggs & Stratton 31R907-0007-G1 500cc 17.5 Gross HP Engine

Model: 31R907-0007-G1

1. Product Overview

This genuine 500cc Briggs & Stratton single cylinder engine, model 31R907-0007-G1, is designed to provide dependable power for various equipment needs. With a power rating of 17.5 horsepower, it incorporates a premium Dual Clean air filtration system, an electric starter for convenient operation, and a maintenance-free Magnetron electronic ignition system. The engine is built for extended life, featuring a Dura-Bore cast iron cylinder sleeve. It comes equipped with an installed muffler and a 9 amp charging system.



Figure 1: Overview of the Briggs & Stratton 31R907-0007-G1 engine. This image shows the engine from a slightly elevated side view, highlighting the black engine cover, the yellow oil fill cap, the silver muffler, and the various components including the carburetor and wiring.

2. Safety Information

Always prioritize safety when operating or maintaining your engine. Read and understand all safety warnings and instructions before use. Failure to do so could result in serious injury or property damage.

- **Read the Manual:** Familiarize yourself with the entire instruction manual before attempting to install, operate, or service the engine.
- **Personal Protective Equipment (PPE):** Always wear appropriate safety gear, including safety glasses, gloves, and hearing protection, when working with the engine.
- **Fuel Safety:** Gasoline is highly flammable. Store fuel in approved containers, in a well-ventilated area, and away from ignition sources. Do not refuel a hot or running engine.
- **Exhaust Fumes:** Engine exhaust contains carbon monoxide, a colorless, odorless, and deadly gas. Operate the engine only in well-ventilated areas.

- **Hot Surfaces:** The engine and muffler become very hot during operation and remain hot for some time after shutdown. Avoid contact to prevent burns.
- **Moving Parts:** Keep hands, feet, and clothing away from moving parts such as the flywheel and crankshaft.
- **Electrical Safety:** Disconnect the spark plug wire or battery cable before performing any maintenance or adjustments to prevent accidental starting.
- **Proposition 65 Warning:** This product can expose you to chemicals including carbon monoxide, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

3. Setup and Installation

Proper setup is crucial for the engine's performance and longevity. Ensure all connections are secure and fluids are at appropriate levels before initial operation.

1. **Unpacking and Inspection:** Carefully remove the engine from its packaging. Inspect for any shipping damage.
2. **Mounting:** Securely mount the engine to your equipment using appropriate hardware. Ensure the mounting surface is stable and level.
3. **Crankshaft Connection:** Connect the equipment's drive system to the engine's 1-inch by 3-5/32-inch length crankshaft, which is tapped 7-16-20-inch. Ensure proper alignment and secure fastening.
4. **Fuel System Connection:** Connect the fuel line from your equipment's fuel tank to the engine's carburetor. Ensure all fuel connections are tight to prevent leaks.
5. **Electrical Connections:** Connect the electric starter and charging system wiring according to your equipment's wiring diagram. This engine features a 9 amp charging system.
6. **Oil Fill:** Before starting, fill the engine with the recommended type and amount of engine oil. Refer to the oil fill cap and dipstick for proper level indication. The engine is shipped with only minimal assembly lube/oil.
7. **Air Filter Installation:** Ensure the premium Dual Clean air filtration system is properly installed. This system includes a paper filter and may include a foam pre-filter.

4. Operating Instructions

Follow these steps for safe and efficient operation of your Briggs & Stratton engine.

1. **Pre-Operation Check:**
    - Check engine oil level.
    - Ensure fuel tank is adequately filled with fresh, clean gasoline.
    - Inspect air filter for cleanliness.
    - Verify all connections (fuel, electrical, mechanical) are secure.
2. **Starting the Engine (Electric Start):**
    - Ensure the equipment is in neutral and all attachments are disengaged.
    - Set the throttle to the "Fast" or "Choke" position as required for cold starts.
    - Turn the ignition key to the "Start" position. Release the key once the engine starts.
    - Allow the engine to warm up for a few minutes before engaging any loads.
3. **Stopping the Engine:**
    - Reduce engine speed to idle.
    - Turn the ignition key to the "Off" position.

Note: No official seller videos are available for direct embedding in this manual. For additional operational guidance,

please refer to the comprehensive user manual PDF linked in the Support section or consult Briggs & Stratton's official resources.

5. Maintenance

Regular maintenance is essential for optimal performance and extended engine life. Always perform maintenance with the engine off and cool, and the spark plug wire disconnected.

- **Oil Change:**
  Change the engine oil after the first 5 hours of operation (break-in period), as this engine does not have an oil filter. Subsequently, change the oil at least once a year or every 50 hours of operation, whichever comes first. Use recommended engine oil type and viscosity.
- **Air Filter Cleaning/Replacement:**
  Inspect the Dual Clean air filter regularly. Clean or replace the paper filter and foam pre-filter (if equipped) as needed, especially in dusty conditions. A dirty air filter can reduce engine performance and increase fuel consumption.
- **Spark Plug Inspection/Replacement:**
  Inspect the spark plug annually or every 100 hours. Clean or replace if fouled or worn. Ensure proper gap setting.
- **Fuel System Maintenance:**
  Periodically check fuel lines for cracks or leaks. Clean the fuel filter (if equipped) or replace it as necessary. For long-term storage, drain the fuel system or use a fuel stabilizer.
- **General Cleaning:**
  Keep the engine clean, especially cooling fins and air intake areas, to prevent overheating.

6. Troubleshooting

This section provides solutions to common operational issues. For more complex problems, consult a qualified service technician.

Problem	Possible Cause	Solution
Engine will not start	No fuel; Stale fuel; Clogged fuel filter; Fouled spark plug; Dead battery (for electric start); Loose electrical connections.	Add fresh fuel; Drain and refill with fresh fuel; Replace fuel filter; Clean/replace spark plug; Charge/replace battery; Check and tighten all electrical connections.
Engine runs rough or stalls	Dirty air filter; Stale fuel; Carburetor issues; Incorrect spark plug gap; Low oil level.	Clean/replace air filter; Drain and refill with fresh fuel; Consult service technician for carburetor; Adjust spark plug gap; Check and add oil.
Engine overheats	Blocked cooling fins; Low oil level; Operating in high ambient temperatures.	Clean cooling fins; Check and add oil; Operate in cooler conditions or reduce load.
Excessive smoke from exhaust	Too much oil; Wrong type of oil; Worn engine components.	Drain excess oil; Use recommended oil; Consult service technician for internal engine inspection.

7. Specifications

Key technical specifications for the Briggs & Stratton 31R907-0007-G1 engine.

Model Number: 31R907-0007-G1

Engine Type: Single Cylinder

Displacement: 500cc

Gross Horsepower: 17.5 HP

Crankshaft Dimensions: 1-Inch by 3-5/32-Inch Length, Tapped 7-16-20-Inch

Air Filtration: Premium Dual Clean

Ignition System: Magnetron Electronic

Charging System: 9 amp

Cylinder Sleeve: Dura-Bore Cast Iron

Approximate Weight: 51 Pounds

Material: Cast Iron (cylinder sleeve)

CARB Compliant: Yes

8. Warranty and Support

Briggs & Stratton stands behind its products with a comprehensive warranty and dedicated support.

- **Manufacturer Limited Warranty:** This engine comes with a manufacturer limited warranty of 2 years for consumer use and 1 year for commercial use. Please refer to the official Briggs & Stratton warranty statement for full terms and conditions.
- **Official User Manual:** A detailed user manual in PDF format is available for download. This document provides in-depth information on installation, operation, maintenance, and troubleshooting. You can access it here: Briggs & Stratton 31R907-0007-G1 User Manual (PDF)
- **Customer Support:** For technical assistance, parts inquiries, or warranty claims, please contact Briggs & Stratton customer service directly or visit their official website.

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