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› [Briggs & Stratton](#) /

› Briggs & Stratton 500cc 15.5 Gross HP I/C Engine Instruction Manual

Briggs & Stratton 31R907-0022-G1

Briggs & Stratton 500cc 15.5 Gross HP I/C Engine

Model: **31R907-0022-G1**

Instruction Manual

PRODUCT OVERVIEW

The Briggs & Stratton 31R907-0022-G1 is a 500cc, 15.5 Gross HP I/C Engine designed for demanding applications. It features a 1-inch diameter by 3-5/32-inch length crankshaft with a keyway and tapped 7/16-20. This engine is engineered with enhanced features for protection and durability, meeting the needs of larger equipment. Its Overhead Valve (OHV) design promotes cooler and cleaner operation, contributing to increased power, extended engine life, and improved fuel efficiency.

Key Features

- **Dura-Bore cast iron cylinder sleeve** for extended engine life.
- **Float carburetor** ensures consistent and easy starting.
- **Maintenance-free Magnetron electronic ignition** provides quick, dependable starts.
- **Anti-vibration System** reduces vibration for smoother operation.
- **12 Volt electric start** for convenient ignition.



An overhead view of the Briggs & Stratton 500cc 15.5 Gross HP I/C Engine, featuring its black engine cover, yellow oil cap, and silver exhaust system. This image illustrates the compact and robust design of the engine.

SETUP AND INSTALLATION

Pre-Installation Checklist

- Verify all components are present and undamaged.
- Ensure the mounting surface is clean, level, and capable of supporting the engine's weight and vibration.
- Have appropriate tools and safety equipment ready.

Mounting the Engine

Securely mount the engine to the equipment using appropriate bolts and fasteners. Ensure proper alignment with the driven component (e.g., pump, generator, lawn tractor chassis). Refer to your equipment's specific mounting instructions for torque specifications.

Connecting Fuel and Electrical Systems

- Connect the fuel line from the fuel tank to the engine's carburetor, ensuring all connections are secure and leak-free.
- For electric start models, connect the battery cables to the starter motor and ground, observing correct polarity.
- Ensure all electrical connections are tight and insulated to prevent shorts.

OPERATION GUIDE

Before Starting

- Check engine oil level and add oil if necessary. Use recommended oil type (refer to specifications).
- Ensure the fuel tank is filled with fresh, clean gasoline.
- Verify the air filter is clean and properly installed.

Starting the Engine (Electric Start)

1. Ensure the equipment is in neutral or disengaged.
2. Turn the fuel valve to the 'ON' position.
3. Set the choke lever to the 'FULL CHOKE' position for a cold engine. For a warm engine, set to 'HALF CHOKE' or 'NO CHOKE'.
4. Turn the ignition key to the 'START' position. Release the key once the engine starts.
5. Gradually move the choke lever to the 'RUN' position as the engine warms up.

Stopping the Engine

To stop the engine, simply turn the ignition key to the 'OFF' position. For extended storage, turn the fuel valve to the 'OFF' position and allow the engine to run until it runs out of fuel to prevent fuel system issues.

Break-in Period

During the first few hours of operation, avoid operating the engine at full throttle for extended periods. Vary the engine speed and load to allow components to seat properly. Change the engine oil after the first 5-8 hours of operation to remove any break-in contaminants.

MAINTENANCE SCHEDULE

Regular maintenance is crucial for the longevity and optimal performance of your Briggs & Stratton engine. Follow the schedule below:

Service Item	Frequency
Check Engine Oil Level	Before each use
Clean Air Filter	Every 25 hours or annually (more often in dusty conditions)
Change Engine Oil	First 5-8 hours, then every 50 hours or annually
Inspect Spark Plug	Every 100 hours or annually
Replace Spark Plug	Every 100-300 hours or annually (as needed)
Inspect Fuel Filter	Annually
Clean Cooling Fins	Annually

Oil Change Procedure

1. Run the engine for a few minutes to warm the oil.
2. Place a suitable container under the oil drain plug.
3. Remove the oil drain plug and allow all oil to drain completely.
4. Replace the drain plug and tighten securely.
5. Refill with the recommended type and amount of new engine oil (refer to specifications for capacity).
6. Check the oil level using the dipstick; do not overfill.

Air Filter Maintenance

A clean air filter is vital for engine performance and longevity. Inspect and clean the air filter regularly. Replace if damaged or excessively dirty. Do not use compressed air to clean paper elements, as this can damage the filter material.

Spark Plug Inspection and Replacement

Inspect the spark plug for wear, carbon buildup, or damage. Clean if necessary and ensure the gap is set to the manufacturer's specification. Replace the spark plug if electrodes are worn or if the insulator is cracked.

TROUBLESHOOTING COMMON ISSUES

This section provides solutions for common operational problems. For issues not listed, consult a qualified service technician.

Problem	Possible Cause	Solution
Engine will not start	No fuel, stale fuel, fouled spark plug, low oil, dead battery (electric start)	Check fuel level and quality, clean/replace spark plug, check oil level, charge/replace battery.
Engine runs rough or misfires	Dirty air filter, fouled spark plug, carburetor issues, incorrect fuel mixture	Clean/replace air filter, clean/replace spark plug, inspect carburetor, use fresh fuel.
Engine lacks power	Dirty air filter, incorrect engine speed, carbon buildup, valve issues	Clean/replace air filter, adjust throttle, consult service manual for internal issues.
Excessive smoke from exhaust	Overfilled oil, worn piston rings/valve guides, incorrect fuel	Drain excess oil, use correct fuel, consult service technician for internal wear.

TECHNICAL SPECIFICATIONS

Detailed specifications for the Briggs & Stratton 31R907-0022-G1 engine:

Specification	Value
Model Number	31R907-0022-G1
Engine Type	I/C Engine (Internal Combustion)
Displacement	500cc
Gross Horsepower	15.5 HP
Crankshaft Diameter	1-Inch
Crankshaft Length	3-5/32-Inch
Ignition System	Magnetron Electronic Ignition
Starting System	12 Volt Electric Start
Product Dimensions	48 x 48 x 48 inches
Item Weight	51 pounds
Manufacturer	Briggs & Stratton

WARRANTY AND CUSTOMER SUPPORT

Briggs & Stratton engines are backed by a manufacturer's warranty covering defects in materials and workmanship. Specific warranty terms and duration may vary; please refer to the warranty statement included with your engine or visit the official Briggs & Stratton website for detailed information.

For technical assistance, parts inquiries, or warranty claims, please contact Briggs & Stratton customer support or an authorized service dealer. You can typically find contact information on the manufacturer's website or in the documentation provided with your purchase.