

Lifan LF190FBDQ

Lifan LF190F-BDQ 15 HP 420cc 4-Stroke OHV Industrial Grade Gas Engine User Manual

Model: LF190FBDQ

1. INTRODUCTION

This manual provides essential information for the safe operation, maintenance, and troubleshooting of your Lifan LF190F-BDQ 15 HP 420cc 4-Stroke OHV Industrial Grade Gas Engine. This industrial-grade engine is designed for dependable performance across various applications, including pressure washers, air compressors, trenchers, concrete mixers, concrete saws, mortar mixers, and go-karts. It features an electric start for convenience and a universal mounting pattern for broad compatibility. Please read this manual thoroughly before operating the engine.

2. SAFETY INFORMATION

Always prioritize safety when operating or maintaining the engine. Failure to follow safety instructions can result in serious injury or property damage.

- **Read the Manual:** Understand all instructions and warnings before use.
- **Ventilation:** Operate the engine in a well-ventilated area to prevent carbon monoxide poisoning. Never operate indoors.
- **Fuel Safety:** Gasoline is highly flammable. Store fuel in approved containers, away from ignition sources. Refuel in a well-ventilated area with the engine off and cool. Do not overfill.
- **Hot Surfaces:** The engine and exhaust system become very hot during operation and remain hot for a period afterward. Avoid contact to prevent burns.
- **Moving Parts:** Keep hands, feet, and clothing away from moving parts to prevent entanglement.
- **Engine Protection:** This engine includes a low oil shutdown feature to prevent damage. Do not bypass this safety mechanism.
- **Electrical Safety:** For electric start models, ensure battery connections are secure and correct polarity is observed.

3. PRODUCT OVERVIEW

The Lifan LF190F-BDQ engine is an Overhead Valve (OHV) design, providing efficient and quiet operation.

Key features include a 1-inch keyway shaft, compression release for easy starting, and low oil shutdown protection.



Figure 3.1: Lifan LF190F-BDQ 15 HP 420cc Gas Engine. This image displays the overall view of the industrial-grade gas engine, highlighting its robust construction and key components such as the air filter, fuel tank, and electric start mechanism.

4. SETUP

4.1 Initial Inspection

Upon unpacking, inspect the engine for any signs of shipping damage. Ensure all components are present and secure. Refer to the packing list for included items.

4.2 Adding Engine Oil

The engine is shipped without oil. Fill the crankcase with the recommended oil type and to the correct level before first use. Refer to the oil fill cap or dipstick for capacity and level indicators. Typically, 10W-30 or 10W-40 motor oil is recommended for general use.

1. Place the engine on a level surface.
2. Remove the oil fill cap/dipstick.
3. Slowly add the recommended engine oil until it reaches the upper mark on the dipstick or the lower edge of the oil fill opening. Do not overfill.
4. Securely replace the oil fill cap/dipstick.

4.3 Adding Fuel

Use fresh, unleaded gasoline with an octane rating of 87 or higher. Do not use E85 or gasoline containing more than 10% ethanol.

1. Ensure the engine is off and cool.
2. Open the fuel tank cap.
3. Carefully pour gasoline into the fuel tank, filling to approximately 1 inch below the top of the tank to allow for expansion.
4. Securely replace the fuel tank cap. Wipe up any spilled fuel immediately.

4.4 Battery Connection (Electric Start)

Connect a suitable 12V battery (not included) to the engine's electric start system. Ensure correct polarity.

1. Connect the positive (+) battery cable to the positive (+) terminal on the engine.
2. Connect the negative (-) battery cable to the negative (-) terminal on the engine.
3. Ensure all connections are tight and secure.

4.5 Mounting

The engine features a universal mounting pattern. Secure the engine to a stable, level surface using appropriate hardware. Ensure adequate clearance for operation and maintenance.

5. OPERATION

5.1 Pre-Start Checklist

- Check engine oil level.
- Check fuel level.
- Ensure air filter is clean and properly installed.
- Verify all connections (fuel lines, electrical) are secure.
- Ensure the engine is on a level surface.

5.2 Starting the Engine (Electric Start)

1. Open the fuel valve (if equipped).
2. Move the choke lever to the 'CHOKE' position (if the engine is cold).
3. Set the throttle lever to the 'FAST' position.
4. Turn the ignition key to the 'START' position and hold until the engine starts. Do not crank for more than 5 seconds at a time. Allow a 10-second cool-down period between attempts.
5. Once the engine starts, slowly move the choke lever to the 'RUN' position as the engine warms up.

5.3 Stopping the Engine

1. Move the throttle lever to the 'SLOW' or 'IDLE' position.
2. Turn the ignition key to the 'OFF' position.
3. Close the fuel valve (if equipped) to prevent fuel leakage and carburetor issues during storage.

5.4 Throttle Control

The throttle lever controls engine speed. Adjust it to the desired RPM for your application. For maximum power, set the throttle to the 'FAST' position.

6. MAINTENANCE

Regular maintenance is crucial for optimal performance and longevity of your engine. Always perform maintenance with the engine off and cool.

6.1 Engine Oil Change

Change the engine oil after the first 20 hours of operation, then every 50-100 hours or annually, whichever comes first.

1. Run the engine for a few minutes to warm the oil, then shut it off.
2. Place a drain pan under the oil drain plug.
3. Remove the oil fill cap/dipstick and the oil drain plug. Allow oil to drain completely.
4. Reinstall the oil drain plug and tighten securely.
5. Refill with recommended oil (refer to Section 4.2).
6. Securely replace the oil fill cap/dipstick.

6.2 Air Filter Maintenance

Inspect the air filter every 25 hours or more frequently in dusty conditions. Clean or replace as needed.

- Remove the air filter cover and element.
- Clean the foam element with warm, soapy water, rinse thoroughly, and allow to air dry completely. Lightly oil the foam element with engine oil and squeeze out excess.
- Replace paper elements if dirty or damaged.
- Reinstall the air filter element and cover.

6.3 Spark Plug Inspection

Inspect the spark plug every 100 hours or annually.

- Remove the spark plug cap and then the spark plug.
- Check for fouling, discoloration, or wear. Clean or replace if necessary.
- Ensure the spark plug gap is set to the manufacturer's specification (typically 0.7-0.8 mm or 0.028-0.031 inches).
- Reinstall the spark plug and cap.

6.4 Fuel System Maintenance

Regularly check fuel lines for cracks or leaks. Clean the fuel filter (if equipped) as needed.

6.5 Storage

For extended storage (over 30 days), prepare the engine to prevent fuel degradation and corrosion.

- Drain the fuel tank and carburetor, or add a fuel stabilizer.
- Change the engine oil.
- Remove the spark plug and pour a small amount of engine oil into the cylinder. Rotate the crankshaft a few times to distribute the oil, then reinstall the spark plug.
- Clean the engine exterior.
- Store in a clean, dry, well-ventilated area.

7. TROUBLESHOOTING

This section provides solutions for common engine problems. For issues not listed, contact customer support.

Problem	Possible Cause	Solution
Engine will not start	No fuel; Stale fuel; Incorrect choke position; Low oil level; Faulty spark plug; Dead battery (electric start)	Add fresh fuel; Adjust choke; Check/add oil; Clean/replace spark plug; Charge/replace battery
Engine runs poorly	Dirty air filter; Stale fuel; Incorrect throttle setting; Fouled spark plug	Clean/replace air filter; Replace fuel; Adjust throttle; Clean/replace spark plug
Engine lacks power	Dirty air filter; Incorrect throttle setting; Overloaded; Low oil level	Clean/replace air filter; Adjust throttle; Reduce load; Check/add oil
Excessive smoke	Overfilled oil; Incorrect oil type; Worn engine components	Drain excess oil; Use correct oil; Consult service center

8. SPECIFICATIONS

Feature	Specification
Model Number	LF190FBDQ
Engine Type	4-Stroke, OHV, Industrial Grade Gas Engine
Displacement	420cc
Horsepower	15 HP
Starting System	Electric Start
Shaft Type	1-inch Keyway Shaft
Product Dimensions	21 x 20 x 22 inches
Item Weight	79.7 pounds
Manufacturer	Lifan Power USA

9. WARRANTY AND SUPPORT

For warranty information or technical support, please contact Lifan Power USA directly. Keep your purchase receipt and engine model/serial number readily available when contacting support.

Manufacturer: Lifan Power USA