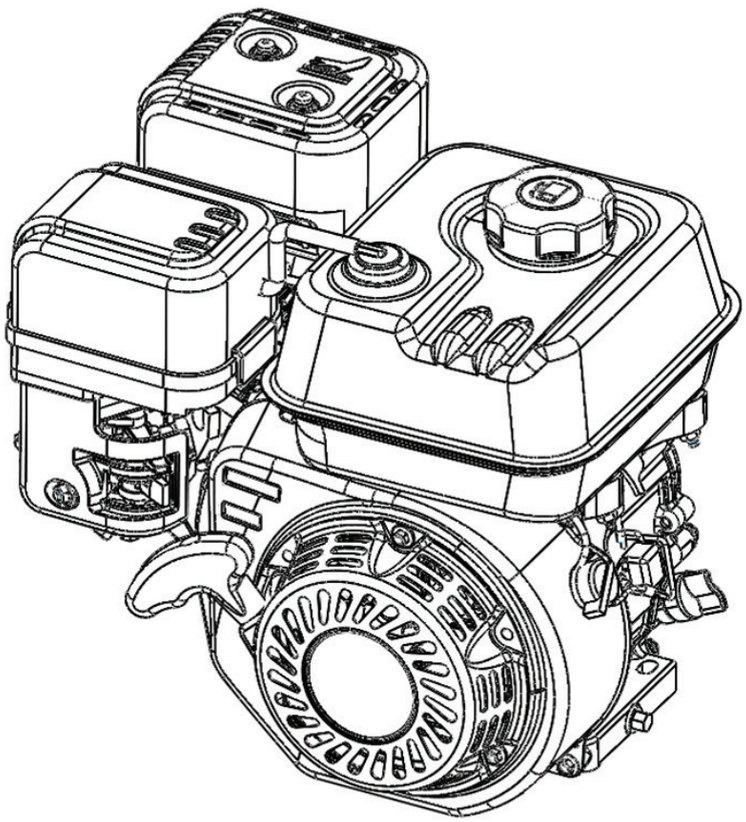
DIRTY HAND TOOLS

196cc HP GASOLINE ENGINE



Model # 100372

Operation Manual

This safety alert symbol identifies important safety messages in this manual. Failure to follow this important safety information may result in serious injury or death.

Part # 101515 Rev A

For Service or Questions

Call 1-877-487-8275

720-287-5182

www.dirtyhandtools.com

Dirty Hand Tools is a brand of

FrictionlessWorld

510 Pierce Avenue • Suite B
Louisville, CO 80027 • 720-287-5182

Table of Contents

Important Safety Information

WARNING

WARNING: Read and thoroughly understand all instructions and safety information before operating this gasoline engine. Failure to do so may cause serious injury or death. Do not allow anyone to operate this gasoline engine who has not read this manual. As with all power equipment, a gasoline engine can be dangerous if used improperly. Do not operate this gasoline engine if you have doubts or questions concerning safe operation.

Call our customer service department at **720-287-5182, 1-877-487-8275,** or visit ***www.dirtyhandtools.com*** if you have any questions or concerns about the safe operation of this equipment.

DANGER

Intended Use

Do Not Use the gasoline engine for any purpose other than for which it was designed. Any other use is unauthorized and may result in serious injury or death.

DANGER

READ THE OPERATION MANUAL BEFORE OPERATION.

General Safety

Failure to follow warnings, cautions, assembly and operation instructions in the Operation Manual may result in serious injury or death.

- **Do not** permit children to operate this equipment at any time. Do not permit others that have not read and understood the complete Operation Manual to operate this equipment.
- **Do not** operate the gasoline engine when under the influence of alcohol, drugs or medication.
- **Do not** allow a person who is tired or otherwise impaired or not completely alert to operate the gasoline engine.

Important Safety Information

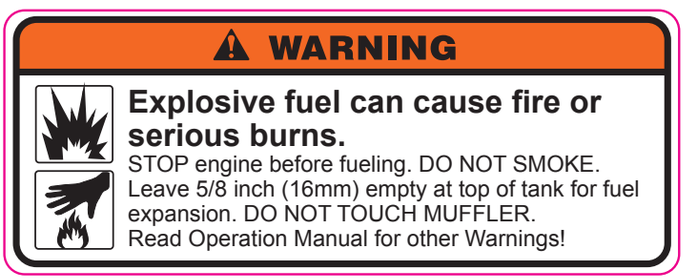
DANGER

DO NOT place fingers, hands or body near the engine when it is running.

- Keep all safety guards in place and in proper working order.
- Do not transport the equipment with the engine running.
- Do not tilt the machine while the engine is running.
- Do not leave the engine unattended when it is running. Turn off the engine before leaving the area.
- Never run the engine in an enclosed area or without proper ventilation as the exhaust from the engine contains carbon monoxide, which is an odorless, tasteless, and deadly poisonous.
- Fill the gasoline tank outdoors with the engine off and allow the engine to cool completely.
- Do not operate the engine with the air cleaner or cover over the carburetor air-intake removed, except for adjustment.Removal of such parts could create a fire hazard.
- The muffler and engine become very hot with use and can cause a severe burn; do not touch. Allow the engine to cool before refueling, doing maintenance, or making adjustments.

Safety Decals

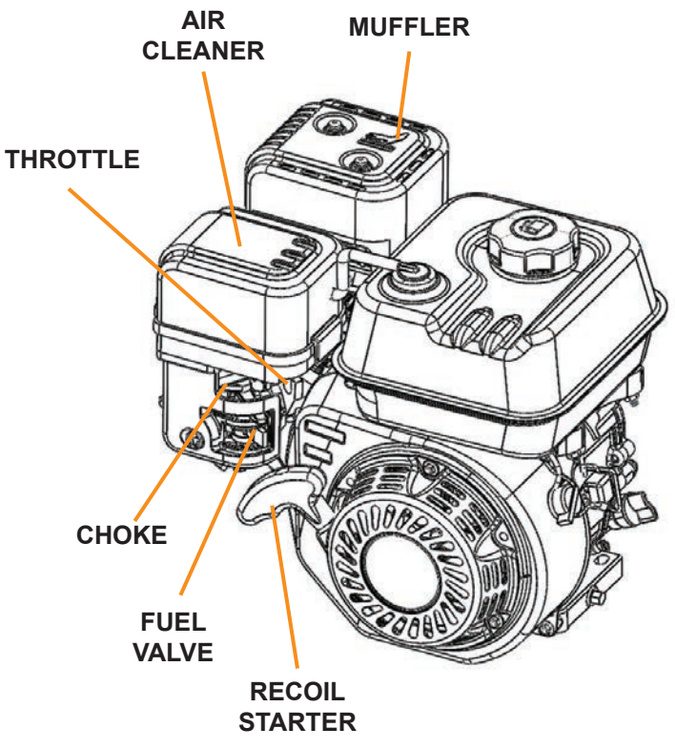
Safety labels on the gasoline engine are to remind you of important information while you are operating the unit. Make sure all safety warning decals are attached and in readable condition. Replace missing or defaced decals. Contact Dirty Hand Tools at **1-877-487-8275** for replacement decals.

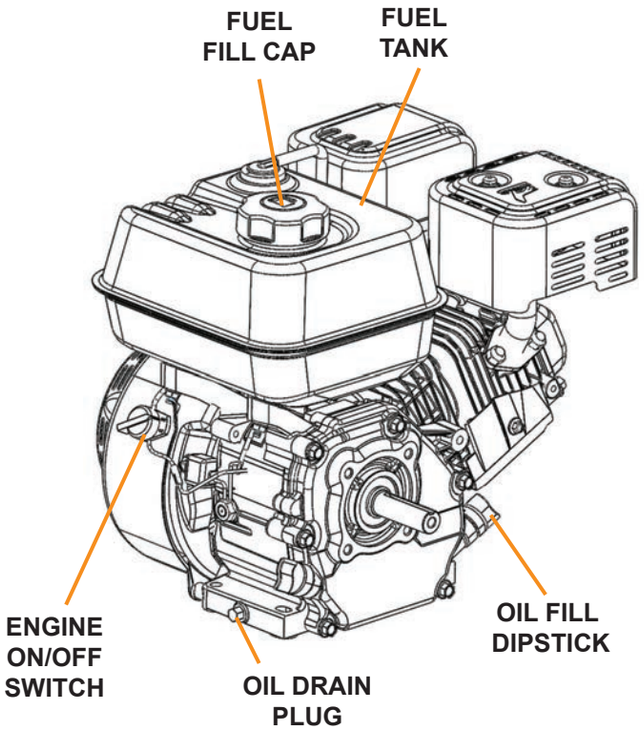


Engine Components

Setup the engine for use outside in a well ventilated area on a level, stable surface away from doors, windows, vents, etc.

READ AND UNDERSTAND THE OPERATOR'S MANUAL BEFORE STARTING THE ENGINE.





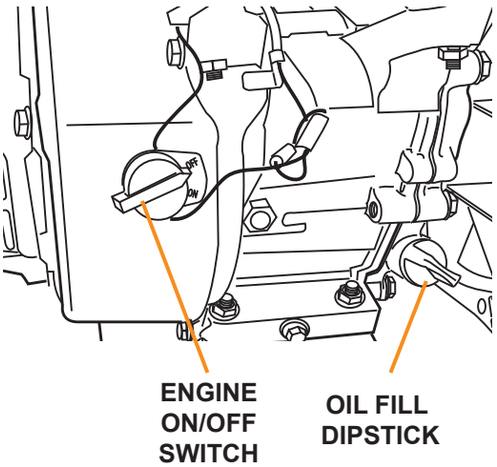
Fuel Valve
The fuel valve opens and closes the passage between the fuel tank and the carburetor. The fuel valve must be ON for the engine to run. Keep the fuel valve in the OFF position when not in use.

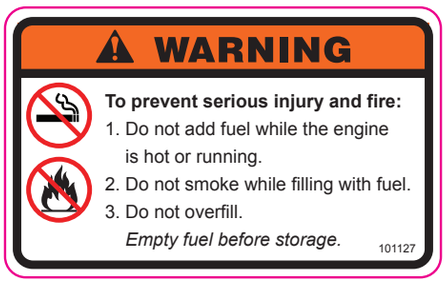
Throttle
The throttle controls engine speed. Moving the throttle to the left makes the engine run faster.

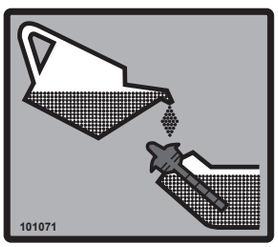
Engine Switch
The engine switch turns the ignition system on and off. The engine switch must be ON for the engine to run.

Choke
The choke opens and closes the choke valve in the carburetor. The CLOSE position enriches the fuel mixture for starting a cold engine. The OPEN position is the correct fuel mixture for operation after starting, and for restarting a warm engine.

Filling with Gasoline and Oil







WARNING

FUEL IS HIGHLY FLAMMABLE AND POISONOUS

ALWAYS FILL THE TANK WITH ENGINE OFF AND COOL.

ALWAYS CHECK THE FUEL LEVEL BEFORE OPERATING.

Allow the engine to cool for at least two minutes before removing the fuel cap.

1. Place the gasoline engine on a level surface. Set up the engine outdoors in a well-ventilated, dry area, away from building air intakes. The engine should be protected from direct exposure to rain and snow. Do not set up the engine on a conductive surface such as a metal deck.

2. The fuel tank holds approximately 2.55 gallon of fuel. 86+ octane unleaded gasoline is recommended. Do not fill above the top of the fuel filter. Replace the fuel cap securely and wipe any excess from the fuel tank before starting the engine.

WARNING

DO NOT REFUEL INDOORS OR NEAR ANY SOURCE OF POSSIBLE COMBUSTION.

DO NOT SMOKE WHILE FUELING.

DO NOT OVERFILL.

YOU MUST ADD OIL BEFORE STARTING THE ENGINE.

3. Add engine oil to the upper level of the oil filler hole. SAE 10/30 motor oil is recommended for most environmental conditions. The oil capacity is 0.63 quarts (0.6L) for Model G200F(D)A.

Note: Do not thread the dipstick in when checking the oil level.

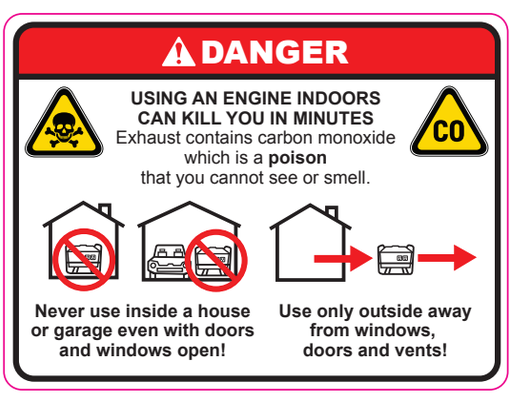
Operation Precautions

DANGER

CARBON MONOXIDE HAZARD
USING A GASOLINE ENGINE INDOORS
CAN KILL YOU IN MINUTES.

Engine exhaust contains carbon monoxide.
This is a poison you cannot see or smell.

1. Keep all safety guards in place and in proper working order.
2. NEVER place fingers, hands, or body near the engine when it is running.
3. Keep all people (except the operator) a minimum of six feet from the engine during operation.
4. Do not transport with the engine running.
5. Operate on level ground. Do not tilt the machine while the engine is running.
6. Do not leave the gasoline engine unattended when it is running. Turn off the engine before leaving the area.
7. Do not operate in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust. Gasoline-powered engines may ignite the dust or fumes.
8. Do not use this piece of equipment while tired or under the influence of drugs, alcohol or medication.
9. Parts, especially exhaust system components, get very hot during use. Stay clear of hot parts.
10. Do not cover the engine during operation.



Operation

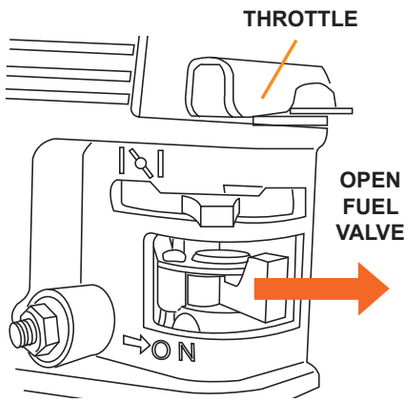


Figure 1

Figure 2

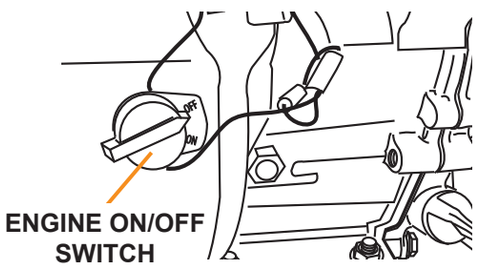


Figure 3

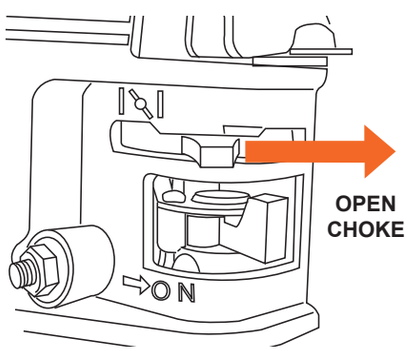


Figure 4

Engine Start

1. Turn the engine's fuel valve to OPEN (see Figure 1).
2. Turn the engine's choke lever to START (see Figure 2). Set the choke lever to the run position only when the engine has started or upon restarting a warm engine.
3. Move the throttle lever away from the SLOW position, about 1/3 of the way toward the FAST position (see Figure 1).
4. Turn the engine power switch to the ON position (see Figure 3).
5. Pull the recoil starter handle slowly until you meet some resistance. Pull the recoil starter with a rapid full arm stroke allowing the starter rope to rewind slowly. Repeat as necessary until the engine starts running.
6. After the engine warms up and starts running normally, move the choke lever to the RUN position (see Figure 4).

Note: Allow the engine to warm up for about 3 minutes before moving the choke lever to the RUN position.

7. Move the Throttle to the desired engine speed. (To the left is FAST and to the right iss SLOW).

The first 25 hours of operation is the break-in period. Breaking-in the engine will help ensure proper equipment and engine operation, and will extend the engine's lifespan. After the first 25 hours of use drain and replace the engine oil. (See Changing the Engine Oil, page 13)

CAUTION

The warranty is void if the engine is not broken in properly.

Engine Shut Off

1. Move the throttle to the SLOW position.
2. Turn the engine's power switch to OFF to stop the engine.
3. Turn the fuel valve to the OFF position.
4. Allow the engine to completely cool down before storing, at least 20 minutes.
5. For any lengthy time of storage, more than 20 days, completely empty the fuel from the engine's fuel tank and engine's fuel lines. Cover and store in a well ventilated area.

Note: In an emergency situation, to quickly shut off the engine simply turn the ON/OFF Switch to OFF.

Maintenance

WARNING

BEFORE PERFORMING ANY MAINTENANCE PROCEDURE STOP THE ENGINE, WAIT FIVE (5) MINUTES TO ALLOW ALL PARTS TO COOL.
Disconnect the spark plug wire, keeping it away from the spark plug.

Regular maintenance is the way to ensure the best performance and long life of your machine. Please refer to this manual and the engine manufacturer's owner's manual for maintenance procedures.

Maintenance Checklist

Maintenance Procedure	Before Each Use	Monthly/ 20 Hours	Every 6 Mo./ 100 Hours	Annually/ 300 Hours
Check Engine Fuel Level	X	X	X	X
Check General Equipment Condition	X			
Check Air Cleaner	X		X	X
Check Fuel Strainer	X		X	X
Clean/Replace Air Filter*		X	X	X
Check/Clean Spark Plug			X	X
Check/Adjust Idle Speed			X	X
Check/Adjust Valve Clearance			X	X
Clean Fuel Tank, Strainer & Carburetor			X	X
Clean Combustion Chamber**				X
Replace Fuel Lines**				X

* Change/clean air filter more frequently if in dusty environment
** Service performed by qualified technician

Maintenance

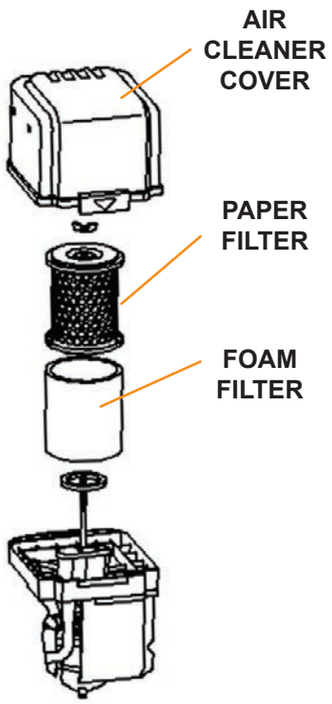


Figure 5

WARNING

TO PREVENT SERIOUS INJURY FROM ACCIDENTAL STARTING TURN THE POWER SWITCH OF THE ENGINE TO ITS "OFF" POSITION.

Wait for the engine to cool, and remove the spark plug wire before performing any inspection, maintenance, or cleaning.

Changing /Cleaning the Air Filter

1. Remove the wing nut from the air cleaner cover, and remove the air cleaner cover.
2. Remove the wing nut from the air filter, and remove the filter.
3. Remove the foam filter from the paper filter.
4. Inspect both air filter elements, and replace them if they are damaged. Always replace the paper air filter element at the scheduled interval.
5. Clean the air filter elements if they are to be reused.

Paper Air Filter

Tap the filter element several times on a hard surface to remove dirt, or blow compressed air not exceeding 30 psi through the filter element from the inside. Never try to brush off dirt; brushing will force dirt into the fibers.

Foam Air Filter

Clean in warm soapy water, rinse, and allow drying thoroughly. Or clean in nonflammable solvent and allow drying. Dip the filter element in clean engine oil, and then squeeze out all excess oil. The engine will smoke when started if too much oil is left in the foam.

6. Wipe dirt from the inside of the air cleaner base and cover, using a moist rag. Be careful to prevent dirt from entering the air duct that leads to the carburetor.
7. Place the foam air filter element over the paper element, and reinstall the assembled air filter. Be sure the gasket is in place beneath the air filter. Tighten the air filter wing nut securely.
8. Install the air cleaner cover, and tighten the cover wing nut securely.

Maintenance

Spark Plug Maintenance:

1. Disconnect spark plug wire from end of plug. Clean out debris from around the spark plug.
2. Using the spark plug wrench provided, remove the spark plug. Inspect the spark plug. If the electrode is oily, clean it using a clean, dry rag. If the electrode has deposits on it, polish it using emery paper. If the white insulator is cracked or chipped, replace the spark plug.
3. When installing a new spark plug, adjust the plug's gap to the specification on the technical specification chart. Do not pry against the electrode or the insulator, the spark plug can be damaged (see Figure 6). A recommended spark plug replacement is F7RTC or other equivalent.
4. Install the new spark plug or the cleaned spark plug into the engine. Gasket style spark plugs should be finger-tightened until the gasket contacts the cylinder head, then turned about 1/2 to 2/3 more rotation. Non-gasket-style spark plugs should be finger-tightened until the plug contacts the head, then about 1/16 turn more.

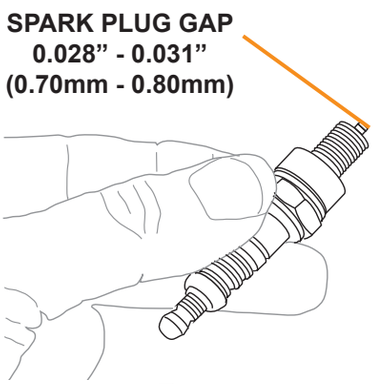


Figure 6

Sediment Cup Cleaning

1. Move the fuel valve to the OFF position, and then remove the fuel sediment cup and o-ring (see Figure 7).
2. Wash the sediment cup and O-ring in nonflammable solvent, and dry them thoroughly.
3. Place the O-ring in the fuel valve, and install the sediment cup. Tighten the sediment cup securely.
4. Move the fuel valve to the ON position, and check for leaks. Replace the O-ring if there is any leakage.

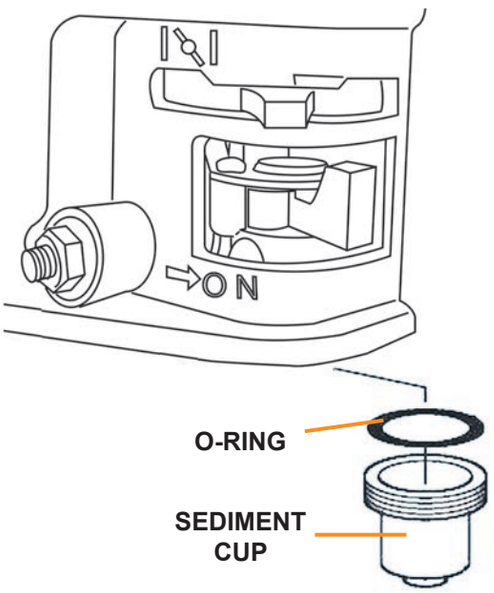


Figure 7

Idle Speed Adjustment

1. Start the engine outdoors, and allow it to warm up to operating temperature.
2. Move the throttle lever to its slowest position.
3. Turn the throttle stop screw to obtain the standard idle speed, (see Figure 8). Standard idle speed: 1,800±150 rpm

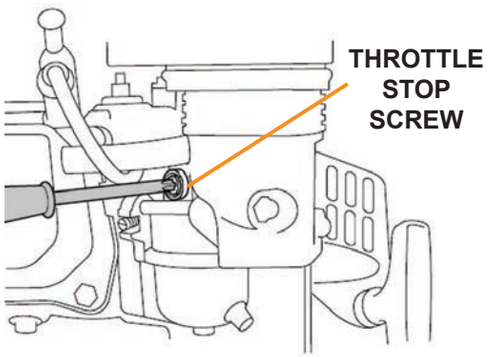
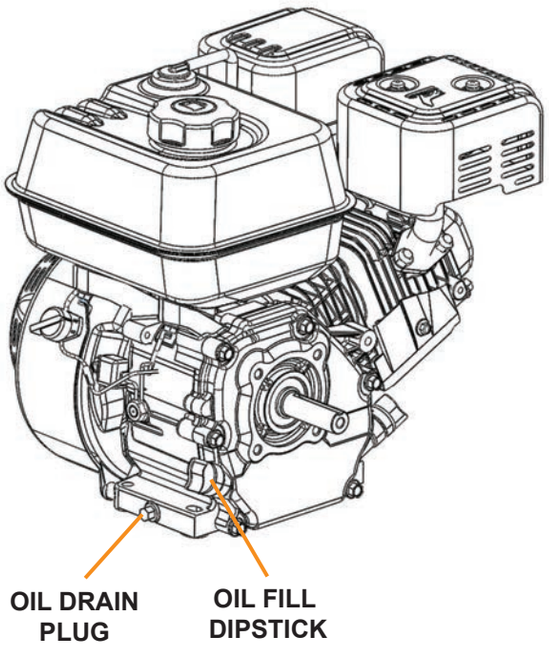
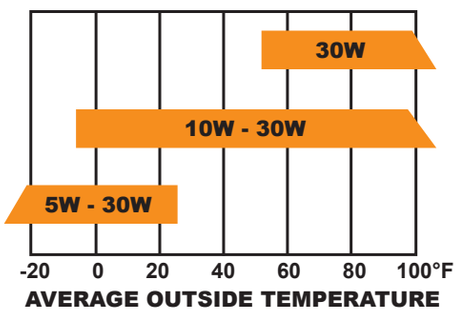


Figure 8

Maintenance



SAE VISCOSITY GRADES



WARNING

OIL IS VERY HOT DURING OPERATION AND CAN CAUSE BURNS. WAIT FOR ENGINE TO COOL BEFORE CHANGING OIL.

Wait for the engine to cool, and remove the spark plug wire before performing any inspection, maintenance, or cleaning procedures.

Changing the engine oil

1. Make sure the engine is stopped and is level.
2. Close the fuel valve.
3. Place a drain pan underneath the crankcase's drain plug.
4. Remove the drain plug and, if possible, tilt the crankcase slightly to help drain the oil out.
5. Replace the drain plug and tighten it.
6. Clean the top of the dipstick and the area around it. Remove the dipstick by threading it counterclockwise, and wipe it off with a clean lint free rag.

Note: Do not thread the dipstick in when checking the oil level.

7. Add the appropriate type of oil until the oil level is at the full level. SAE 10W-30 oil is recommended for general use for temperatures above 32˚F. Use SAE 5W-30 for temperatures consistently below 32˚F.
8. Thread the dipstick back in clockwise.

WARNING

DO NOT RUN THE ENGINE WITH TOO LITTLE OIL. THE ENGINE WILL BE PERMANENTLY DAMAGED.

Engine Troubleshooting

WARNING

BEFORE PERFORMING ANY MAINTENANCE PROCEDURE STOP THE ENGINE, WAIT FIVE (5) MINUTES TO ALLOW ALL PARTS TO COOL.

Disconnect the spark plug wire, keeping it away from the spark plug.

PROBLEM	SOLUTION
The engine will not start.	
• No fuel in tank or fuel valve closed.	• Add fuel and open fuel valve.
• Choke not in start position.	• Place choke in START position and pull recoil starter.
• Low quality or deteriorated, old gasoline.	• Drain fuel. Add fresh 87+ octane unleaded gasoline.
• Dirty fuel passageways blocking fuel flow.	• Clean out fuel passageways using fuel additive.
• Carburetor needle stuck. Smell of fuel in air.	• Gently tap side of carburetor with screwdriver handle.
• Too much fuel in chamber.	• Turn choke to RUN position.
• Spark plug wire not connected securely.	• Connect spark plug wire securely to spark plug.
• Spark plug electrode wet or dirty.	• Remove and clean spark plug. Reinstall spark plug and restart.
• Incorrect spark plug gap.	• Reset spark plug gap according to specifications.
• Spark plug wire or spark plug broken.	• Replace spark plug and/or spark plug wire.
• Cylinder not lubricated after long storage.	• Remove spark plug. Pour tablespoon of oil into spark plug hole. Replace spark plug. Crank engine a few times and try to start.
• Clogged fuel filter.	• Replace fuel filter.
	• If the engine still will not start, visit our web site at www.dirtyhandtools.com or call 1-877-487-8275 for assistance.
Engine misfires, backfires or knocks.	
• Spark plug wire loose.	• Tighten spark plug wire.
• Incorrect spark plug gap.	• Reset spark plug gap according to specifications.
• Spark plug wire or spark plug broken.	• Replace spark plug and/or spark plug wire.
• Low quality or deteriorated, old gasoline.	• Drain fuel. Add new fresh 87+ octane unleaded gasoline.
• Engine too cold.	• Use cold weather fuel and oil additives.
• Engine knocks.	• Engine overloaded, do not exceed recommended load rating.
Engine stops suddenly.	
• Low quality or deteriorated, old gasoline.	• Drain fuel. Add fresh 87+ octane unleaded gasoline.
• Defective fuel cap creates vacuum.	• Test and replace fuel cap.
• Improper idle speed.	• Move choke to RUN position.
• Incorrect timing, deposit buildup, worn engine or other mechanical problem.	• Requires qualified technician.

Storage

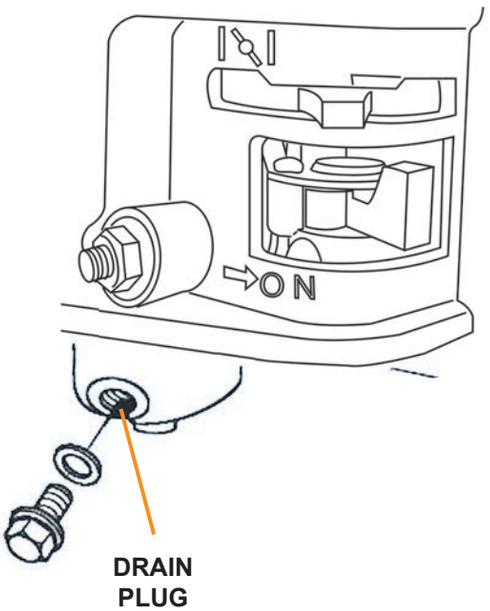


Figure 9

Draining the Carburetor

1. Let the engine to cool and clean the engine with a cloth.
2. When the engine is to be stored for longer than 20 days, prepare it for storage by emptying the fuel tank and draining all fuel lines (see Figure 9). Clean out area around spark plug and remove. Pour one tablespoon of engine oil into the cylinder through the spark plug hole. Reinstall the spark plug, but leave the spark plug wire disconnected. Pull recoil starter handle to distribute oil in the cylinder. Stop after one or two revolutions when you feel the piston start the compression stroke (when you start to feel resistance).
3. Apply a thin coat of rust preventive oil to all uncoated metal parts.
4. Cover and store in a dry, well-ventilated area out of reach of children.

Adding a Fuel Stabilizer

An alternative to draining the carburetor for storage is to add fresh gasoline and a fuel stabilizer to the gasoline tank. When adding a fuel stabilizer, fill the fuel tank with fresh gasoline. If only partially filled, air in the tank will promote fuel deterioration during storage.

1. Add fuel stabilizer following the manufacturer's instructions.
2. After adding a fuel stabilizer, run the engine outdoors for 10 minutes to be sure that treated gasoline has replaced the untreated gasoline in the carburetor.
3. Stop the engine, and move the fuel valve to the OFF position.

CAUTION

If your engine will be stored with gasoline in the fuel tank and carburetor, it is important to reduce the hazard of gasoline vapor ignition. Select a well-ventilated storage area away from any appliance that operates with a flame, such as a furnace, water heater, or clothes dryer. Also avoid any area with a spark-producing electric motor, or where power tools are operated. Leave the fuel valve in the OFF position to reduce the possibility of fuel leakage. Position the equipment so the engine is level to avoid fuel or oil leakage.

Warranty & Specifications

IMPORTANT NOTICE
We, the manufacturer, reserve the right to change the product and/or specifications in this manual without notification. The manual is for information usage only and the pictures and drawings depicted herein are for reference only.

Warranty Repair and Service
Do not return this product to the store for warranty issues or repair. Call our customer service department at **720-287-5182, 1-877-487-8275,** or visit ***www.dirtyhandtools.com*** for the location of the nearest service center.

Record the information below for future reference.

Model No. _____

Serial No. _____

Date of Purchase _____

Place of Purchase _____

Specifications

SKU/Part No.	100372
Description	Single cylinder, 4-Stroke, Forced Air Cooling, OHV
Engine	196cc EPA/CARB Approved
Idle speed	1800±150
Fuel Type	Unleaded Gasoline, 87+ Octane
Spark Plug Gap	0.028"~ 0.031" 0.7mm ~ 0.8mm
Starting Mode	Recoil Starter
Sound Rating	70 dB
Dimensions	12.3"L x 14.8"W x 13.6"H
Weight	41.8 Lbs.
Accessories	Spark Plug Wrench Included

*As rated by engine manufacturer

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