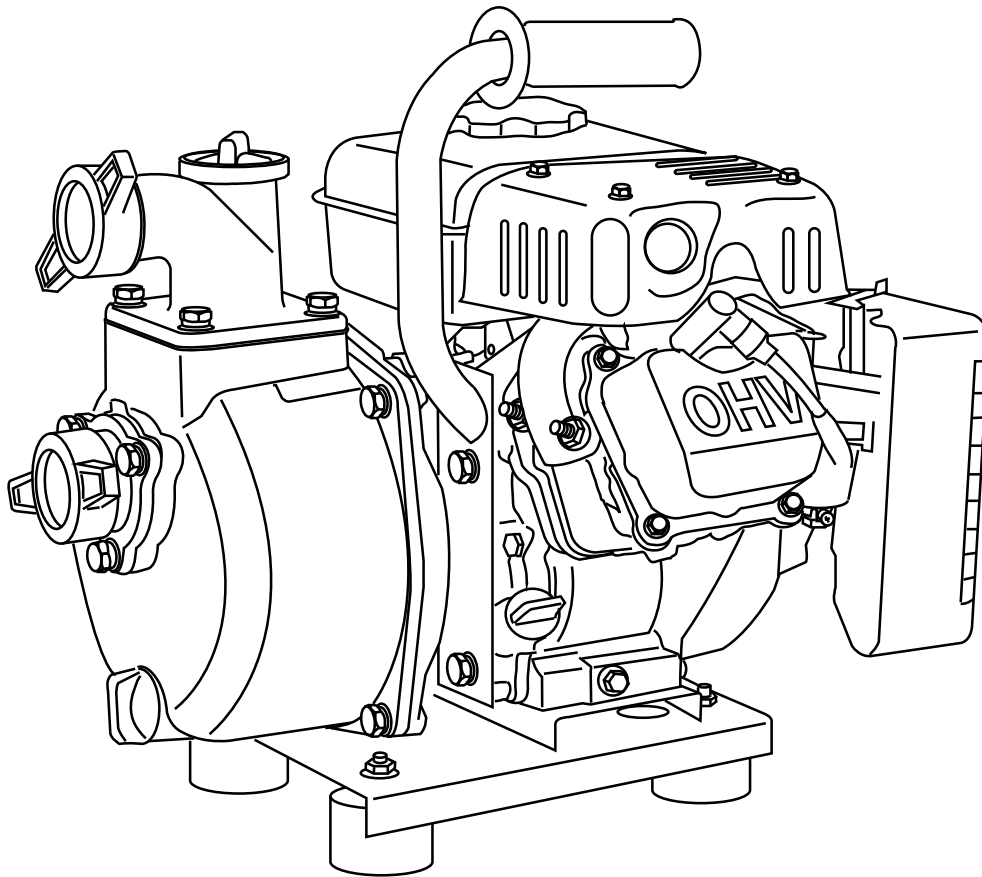




**DIRTY HAND
TOOLS**

1-1/2" DIAMETER WATER PUMP

2.2HP/79.8cc Engine



MODEL # 101099

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 # 101379 Rev A



For Service or Questions

Call 1-877-487-8275

720-287-5182

www.dirtyhandtools.com

Dirty Hand Tools® is a brand of



1100 W 120th Ave, Suite 600
Westminster, CO 80234 • 720-287-5182

Table of Contents

Important Safety Information	4
Unpacking and Setup	7
Filling with Gasoline and Oil.....	8
Operation Precautions	9
Hose Connection	10
Water Pump Location & Setup	11
Operation	12
Maintenance.....	14
Troubleshooting	17
Storage	19
Warranty and Specifications	Back Cover

Important Safety Information



WARNING

WARNING: Read and thoroughly understand all instructions and safety information before operating this portable water pump. Failure to do so may cause serious injury or death. Do not allow anyone to operate this portable water pump who has not read this manual. As with all power equipment, a portable water pump can be dangerous if used improperly. Do not operate this portable water pump 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 portable water pump for any purpose other than for which it was designed. Any other use is unauthorized and may result in serious injury or death.

Personal Protective Equipment

Wear ANSI-approved safety goggles and heavy-duty work gloves during set up. This portable water pump operates at a noise level of about 104dB, therefore you should wear ear plugs or noise deafening headphones when operating.



CAUTION

People with pacemakers should consult their physician(s) before use. Electromagnetic fields in close proximity to a heart pacemaker could cause pacemaker interference or pacemaker failure. Caution is necessary when near the engine's magneto or recoil starter.

Important Safety Information

General Safety

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



DANGER

READ THE OPERATION MANUAL BEFORE OPERATION.

- **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 portable water pump 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 portable water pump.



DANGER

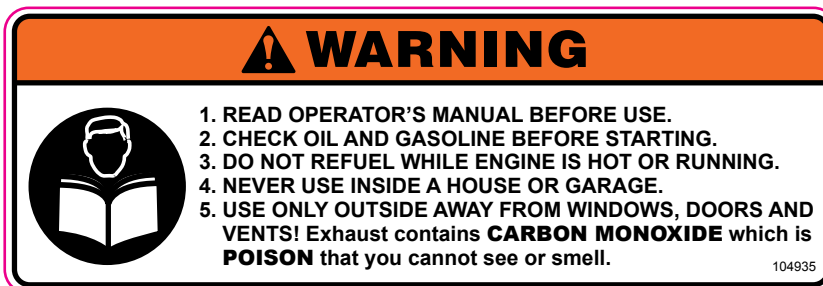
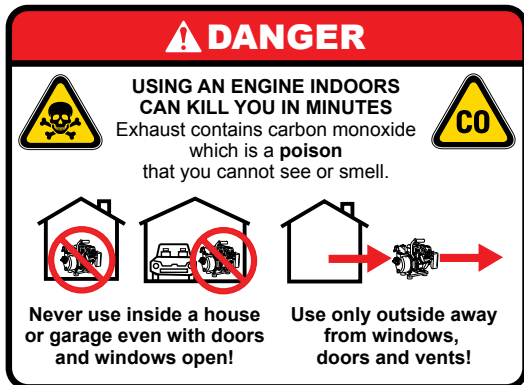
NEVER place fingers, hands, or body near the water pump when it is running.

- Keep all safety guards in place and in proper working order.
- Keep all people (except the operator) a minimum of six feet from the water pump during operation.
- Do not transport the water pump with the engine running.
- Do not tilt the machine while the engine is running.
- Do not leave the water pump 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.

Important Safety Information

Safety Decals

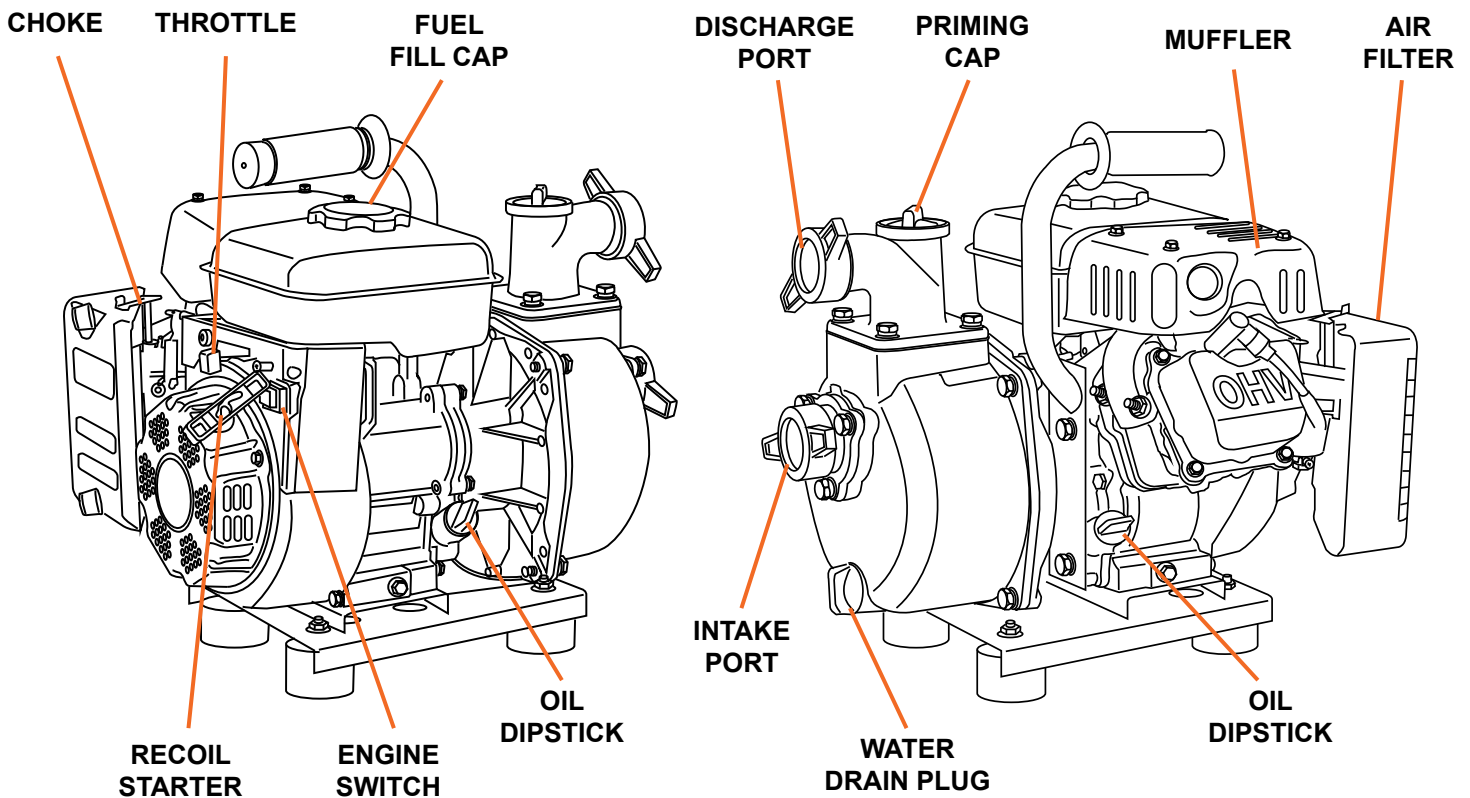
Safety labels on the portable water pump are to remind you of important information while you are operating the unit. Make sure all safety warning decals are attached and in readable condition. Replace missing or defaced decals. Contact Dirty Hand Tools at 1-877-487-8275 for replacement decals.



Unpacking and Setup

Your portable water pump is completely assembled at the factory. Save the packing materials and box for future use as a storage container. Setup for use outside in a well ventilated area on a level, stable surface away from doors, windows, vents, etc.

COMPLETELY READ AND UNDERSTAND THE OPERATOR'S MANUAL BEFORE ATTEMPTING TO OPERATE THE WATER PUMP.



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 portable water pump on a level surface. Set up the water pump outdoors in a well-ventilated area, away from building air intakes. The water pump should be protected from direct exposure to rain and snow. Do not set up the water pump on a conductive surface such as a metal deck.
2. The fuel tank holds approximately 0.90 gallon of fuel. 87+ 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 generator.



WARNING

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

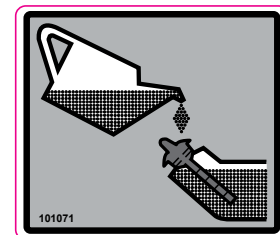
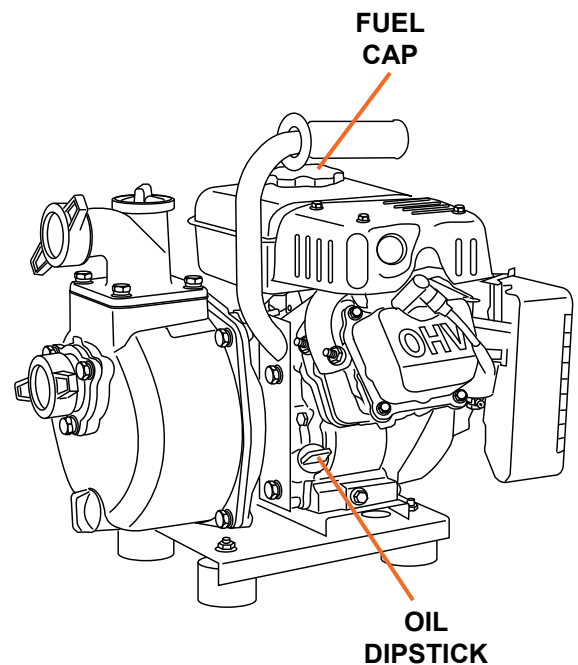
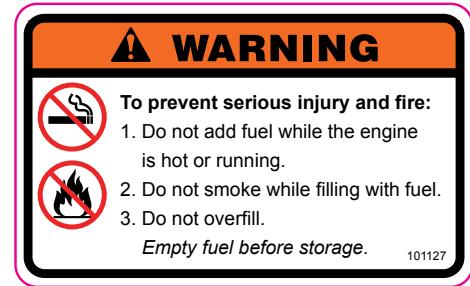
DO NOT SMOKE WHILE FUELING.

DO NOT OVERFILL.

**THE WATER PUMP IS SHIPPED WITHOUT FLUIDS.
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 0.50 quarts (0.5).

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



**DIRTY HAND
TOOLS**

Operation Precautions

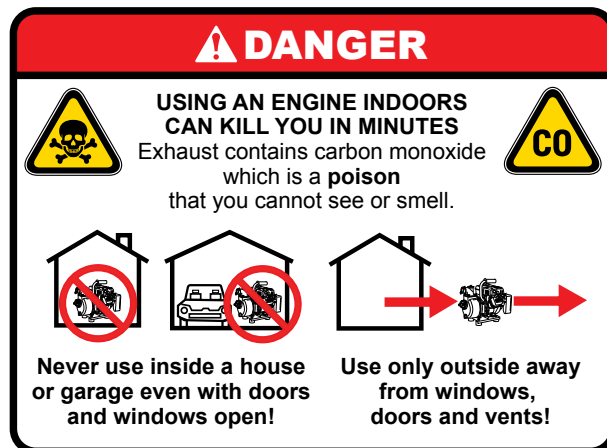


DANGER

CARBON MONOXIDE HAZARD USING AN 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 at all times, including covers for the air cleaner and muffler.
2. NEVER place fingers, hands, or body near the water pump when it is running. Do not lean or reach over the water pump when the machine is running.
3. Keep all people (except the operator) a minimum of six feet from the water pump during operation.
4. Do not transport the water pump with the engine running.
5. Operate on level ground. Do not tilt the machine while the engine is running.
6. Do not leave the water pump 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. Do not touch the muffler.
10. Do not cover the water pump during operation.



Hose Connection

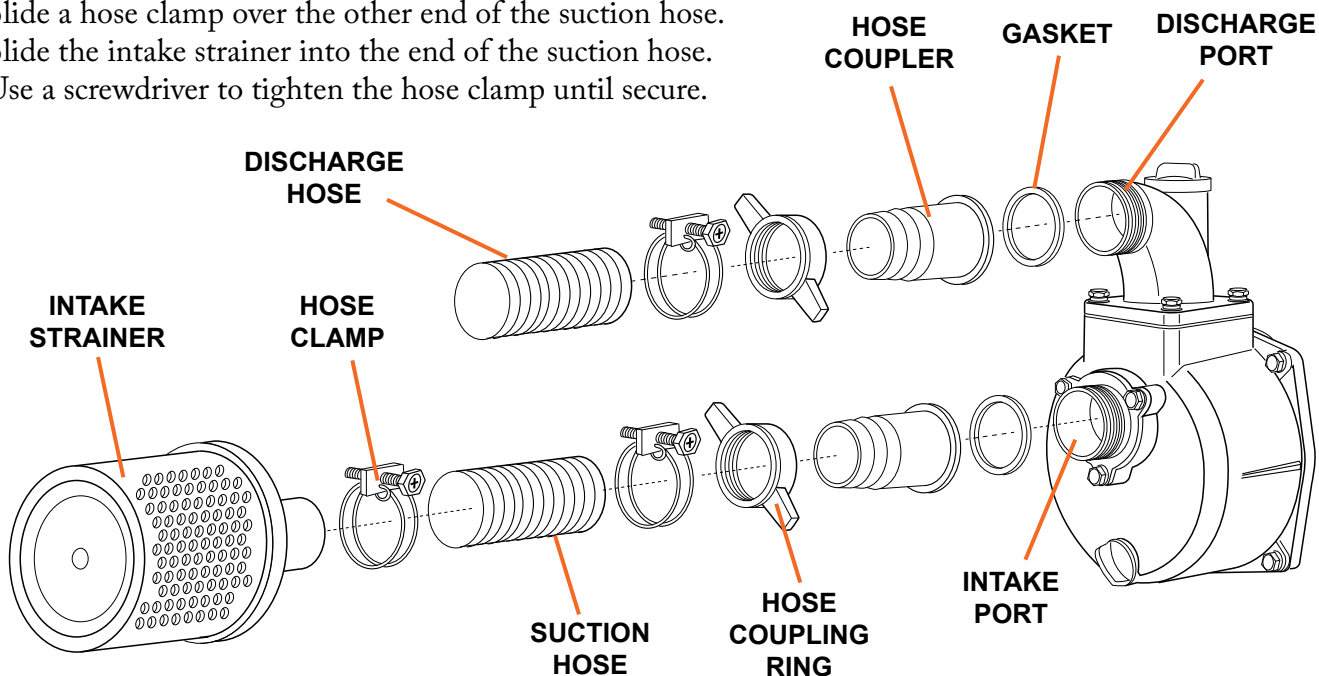


CAUTION

USE ONLY A NON-COLLAPSIBLE INTAKE HOSE DO NOT OVERTIGHTEN HOSE CLAMPS

The suction hose *must* be reinforced or be constructed of non-collapsible material. Do not use a hose with an inside diameter smaller than the pump's intake and discharge ports.

1. Slide a hose coupling ring over the hose coupler, then place a gasket on the end of the hose coupler.
2. Thread the hose coupling ring onto the intake port, and turn clockwise until fastened securely.
3. Slide a hose clamp over the end of the suction hose. Slide the hose onto the hose coupler. Use a screwdriver to tighten the hose clamp until secure.
4. Slide a hose clamp over the other end of the suction hose. Slide the intake strainer into the end of the suction hose. Use a screwdriver to tighten the hose clamp until secure.



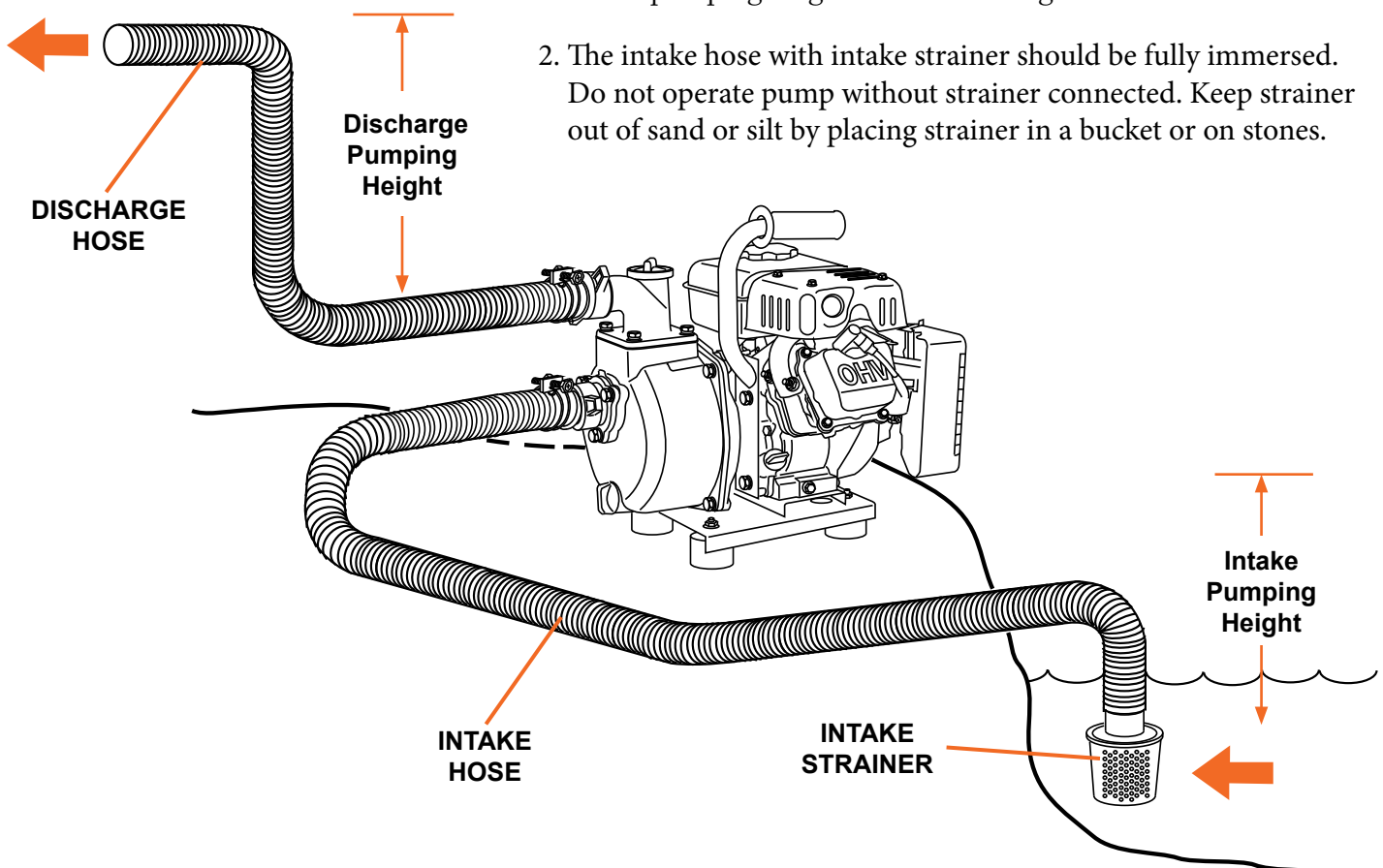
5. For the discharge hose, slide a hose coupling ring over the hose coupler and place a gasket on the end of the hose coupler.
6. Thread the hose coupling ring clockwise onto the discharge port until tightened securely.
7. Slide a hose clamp over the end of the discharge hose. Slide the discharge hose onto the hose coupler. Use a screwdriver to tighten the hose clamp until secure.

Water Pump Location & Setup

Locate the water pump on a flat, level, sturdy surface capable of supporting the weight of the pump.

1. For best results place the pump near water level and use hoses that are no longer than necessary. This allows the pump to produce the greatest output with the least self-priming time.

As pumping height increases, pump output decreases. The length, type, and size of the suction and discharge hoses can affect pump output. Discharge capability is always greater than suction capability. The pumping height for the intake hose should be less than the pumping height for the discharge hose.



2. The intake hose with intake strainer should be fully immersed. Do not operate pump without strainer connected. Keep strainer out of sand or silt by placing strainer in a bucket or on stones.

3. Secure the intake hose and the discharge hose to keep them from moving once the pump is turned on. The intake hose and the discharge hose should be as short as possible for more efficient operation.

Operation



Always check for water in the pump housing before each use.
Always run the pump with the pump housing full of water.
Running the water pump without water for an extended period of time will damage the water pump and void the warranty.

Priming the Pump

Before starting the engine, fill the pump with water.

1. Unthread the priming cap by turning it counterclockwise.
2. Fill the unit with clean water up to the top of the opening.
Replace the priming cap and tighten securely.

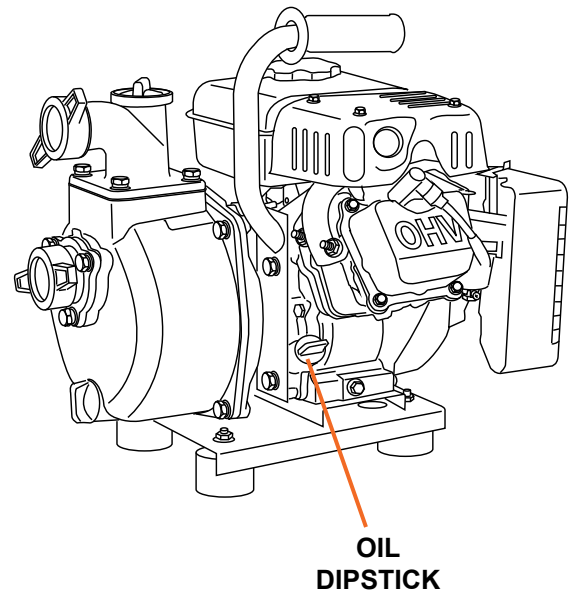
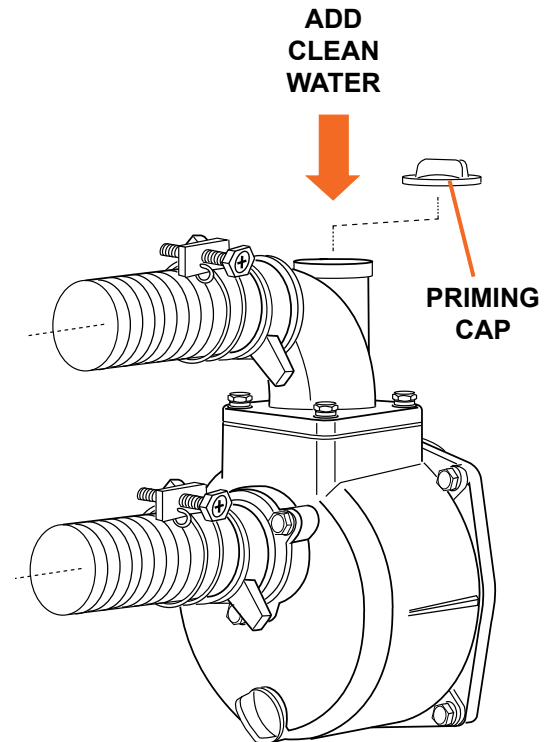


BEFORE EACH USE, CHECK THE OIL LEVEL.

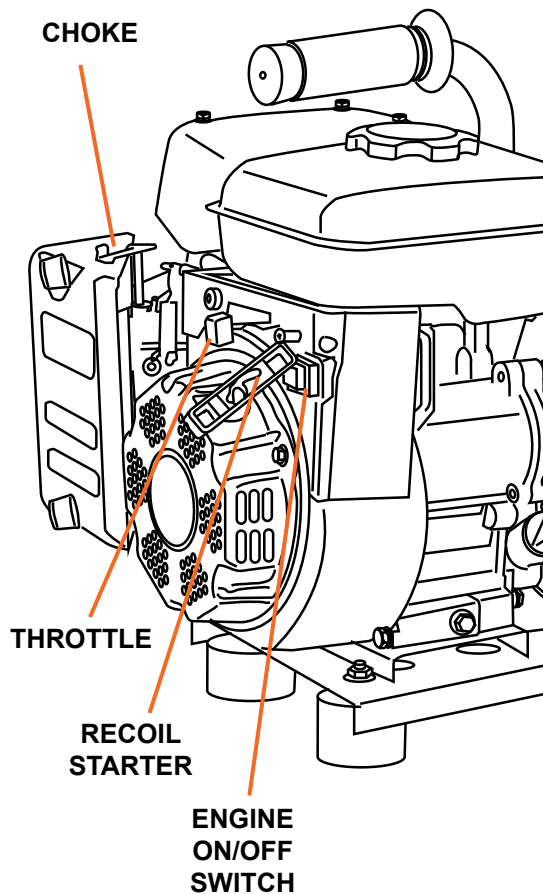
Do not run the engine without engine oil, or with low engine oil, which will permanently damage the engine.

Checking and Filling Engine Oil

1. Make sure the engine is stopped and is level.
2. Close the fuel valve.
3. 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.
4. Reinsert the Dipstick without threading it in and remove it to check the oil level. The oil level should be up to the full level.
5. If the oil level is at or below the low mark add the appropriate type of oil until the oil level is at the proper level. SAE 10W-30 oil is recommended for general use.
6. Thread the dipstick back in clockwise.



Operation



Starting the Engine

1. To start a cold engine, move the choke to the CHOKE position (to the left). To restart a warm engine, leave the Choke in the RUN position (to the right).
2. Open the fuel valve by sliding switch to the right.
3. Slide the throttle 1/3 of the way to the right.
4. Turn the engine switch on.
5. Grip the recoil starter handle and pull slowly several times to allow the gasoline to flow into the engine's carburetor. Then pull the recoil starter handle gently until resistance is felt. Allow cable to retract fully and then pull it quickly. Repeat until the engine starts.
6. Allow the engine to run for several seconds. Then move the choke lever slowly to its RUN position (to the right). Moving the choke lever too fast could stall the engine.
7. Adjust the throttle as needed.

IMPORTANT: Allow the engine to run at no load for five minutes with no load after each start-up so that the engine can stabilize.

Break-in Period

Breaking-in the engine will help ensure longer engine life and proper equipment operation. During the operational break-in period, about 3 hours of use, do not apply a heavy load to the equipment or operate the engine at its maximum speed. After about 20 hours of use, the maintenance break-in period, change the engine oil.



CAUTION

Failure to change the oil regularly may damage the engine and void the warranty.

Under normal operating conditions follow the maintenance schedule (see page 14).

Stopping the Engine

1. To stop the engine in an emergency, turn the engine switch off.
2. Under normal conditions, slide the throttle to the right and turn the engine switch to the off position.

Maintenance



WARNING

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

Turn the engine switch to the OFF position.

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
Clean Outside of Engine	X	X	X	X
Check Engine Oil Level	X	X	X	X
Check Air Cleaner	X		X	X
Check Intake Strainer	X		X	X
Change Engine Oil		X	X	X
Check/Replace Air Filter*			X	X
Check/Clean Spark Plug			X	X
Check/Adjust Idle Speed**			X	X
Check/Adjust Valve Clearance**			X	X
Clean Fuel Tank, Filter and Carburetor**				X
Replace Fuel Line as needed**				X

* Change/clean air filter more frequently if in dusty environment

** Service performed by qualified technician

Maintenance

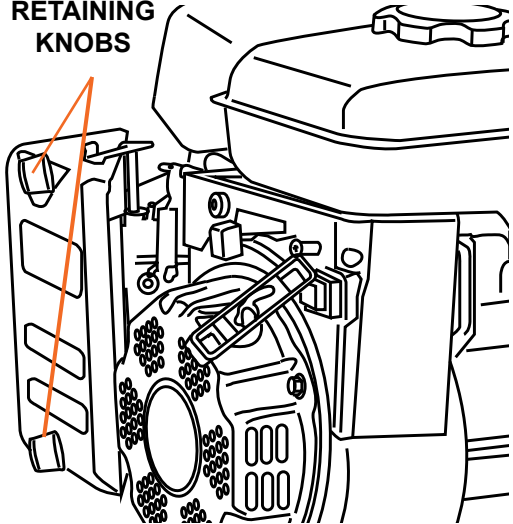


WARNING

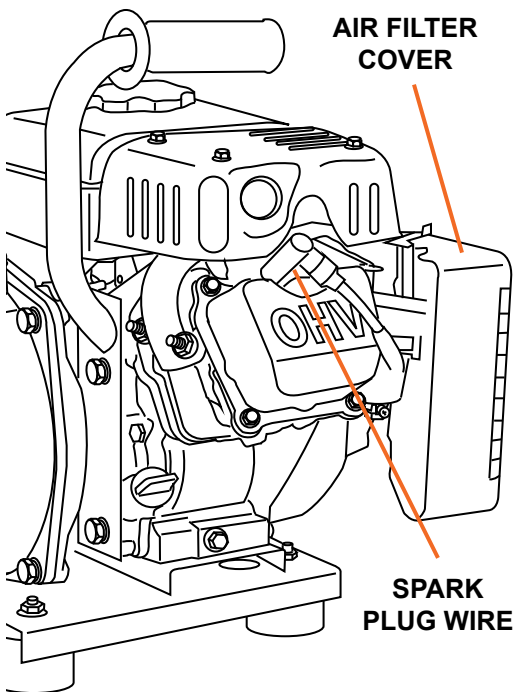
TO PREVENT SERIOUS INJURY FROM ACCIDENTAL STARTING TURN THE POWER SWITCH OF THE ENGINE TO ITS “OFF” POSITION.

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

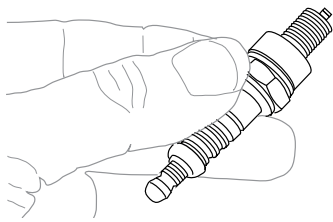
AIR FILTER
RETAINING
KNOBS



AIR FILTER
COVER



SPARK
PLUG WIRE



Changing /Cleaning the Air Filter

1. Remove the air filter by unloosening the retaining knobs on top and bottom of the cover. Pull the filter off and check for dirt. Clean or replace the filter element as needed. To clean wash the element in warm water and mild detergent several times. Rinse and allow to dry. Soak the filter in lightweight oil briefly, then shake out the excess. Install the new or clean filter and secure the air cleaner cover.

Spark Plug Maintenance:

1. Disconnect spark plug wire from the end of plug. Clean out debris from around the spark plug.
2. Using a spark plug wrench, remove the spark plug. If the spark plug is oily, clean it with a 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.
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.

Maintenance



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.

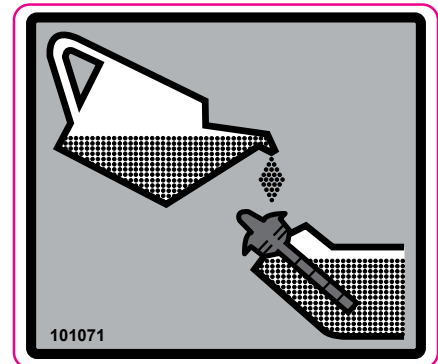
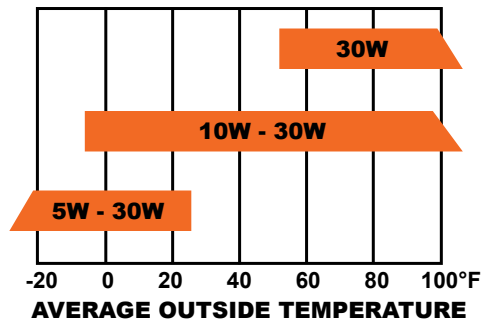
7. Add the appropriate type of oil until the oil level is at the full level. SAE 10W-30 oil is recommended for general use for temperatures above 32°F. Use SAE 5W-30 for temperatures consistently below 32°F.
8. Thread the dipstick back in clockwise.



WARNING

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

SAE VISCOSITY GRADES



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
<p>The engine will not start.</p> <ul style="list-style-type: none"> • No fuel in tank or fuel valve closed. • Choke not in start position. • Low quality or deteriorated, old gasoline. • Dirty fuel passageways blocking fuel flow. • Carburetor needle stuck. Smell of fuel in air. • Too much fuel in chamber. • Spark plug wire not connected securely. • Spark plug electrode wet or dirty. • Incorrect spark plug gap. • Spark plug wire or spark plug broken. • Cylinder not lubricated after long storage. • Clogged fuel filter. 	<ul style="list-style-type: none"> • Add fuel and open fuel valve. • Place choke in START position and pull recoil starter. • Drain fuel. Add fresh 87+ octane unleaded gasoline. • Clean out fuel passageways using fuel additive. • Gently tap side of carburetor with screwdriver handle. • Turn choke to RUN position. • Connect spark plug wire securely to spark plug. • Remove and clean spark plug. Reinstall spark plug and restart. • Reset spark plug gap according to specifications. • Replace spark plug and/or spark plug wire. • Remove spark plug. Pour tablespoon of oil into spark plug hole. Replace spark plug. Crank engine a few times and try to start. • 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.
<p>Engine misfires, backfires or knocks.</p> <ul style="list-style-type: none"> • Spark plug wire loose. • Incorrect spark plug gap. • Spark plug wire or spark plug broken. • Low quality or deteriorated, old gasoline. • Engine too cold. • Engine knocks. 	<ul style="list-style-type: none"> • Tighten spark plug wire. • Reset spark plug gap according to specifications. • Replace spark plug and/or spark plug wire. • Drain fuel. Add new fresh 87+ octane unleaded gasoline. • Use cold weather fuel and oil additives. • Engine overloaded, do not exceed recommended load rating.
<p>Engine stops suddenly.</p> <ul style="list-style-type: none"> • Low quality or deteriorated, old gasoline. • Defective fuel cap creates vacuum. • Improper idle speed. • Incorrect timing, deposit buildup, worn engine or other mechanical problem. 	<ul style="list-style-type: none"> • Drain fuel. Add fresh 87+ octane unleaded gasoline. • Test and replace fuel cap. • Move choke to RUN position. • Requires qualified technician.

Water Pump Troubleshooting

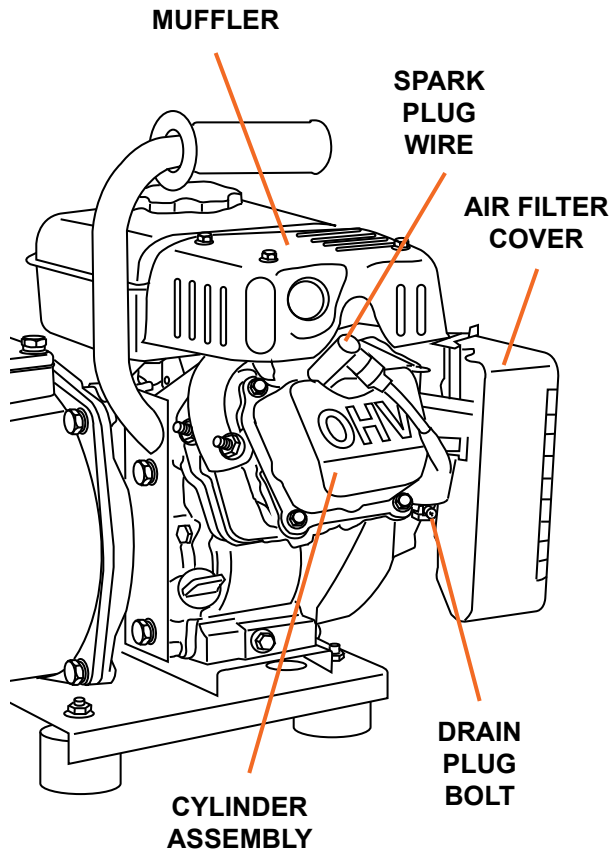
PROBLEM	SOLUTION
<p>Pump overheats</p> <ul style="list-style-type: none"> • Incorrect or not enough lubrication. • Worn parts. 	<ul style="list-style-type: none"> • Lubricate using recommended oil or grease according to directions. • Have qualified technician inspect internal mechanism and replace parts as needed.
<p>Unit stalls</p> <ul style="list-style-type: none"> • Low engine speed. • Severely clogged air filter. • Improper lubrication. 	<ul style="list-style-type: none"> • Qualified technician should increase no load speed to 3,800±100 RPM by adjusting pressure switch. • Replace air filter. • Check for proper oil level.
<p>Pump does not pump water</p> <ul style="list-style-type: none"> • Pump is not primed. • Intake strainer clogged. • Air leak at intake connector. • Hose leaks. • Suction hose has collapsing wall. • Hose has too small diameter. • Pump is too high above water surface. 	<ul style="list-style-type: none"> • Prime pump. • Clean intake strainer or replace if damaged. • Replace coupling gasket or tighten clamp. • Replace hose. • Use hose with non-collapsible wall. • Use hose with diameter 1-1/2" or greater. • Locate pump at a lower level so it doesn't have to work so hard to lift the water.
<p>Low Pump Output</p> <ul style="list-style-type: none"> • Suction hose collapsed, damaged, too long or diameter is too small. • Air leak at connector. • Strainer clogged. • Discharge hose damaged, too long or diameter too small. 	<ul style="list-style-type: none"> • Replace or adjust suction hose. • Replace coupling gasket or tighten clamp. • Clean strainer. • Replace or adjust discharge hose.

Storage



WARNING

Drain the fuel tank in a well-ventilated area away from ignition sources. If the engine is hot from use, shut the engine off and wait for it to cool before draining fuel. Do not smoke near the fuel tank.



1. Wait for the engine to cool, then clean the engine with a clean cloth.
2. When the water pump is to be stored for longer than 20 days, prepare the engine for storage by emptying the fuel tank and draining all fuel lines.
3. Remove the drain bolt from the bottom of the carburetor bowl and allow the fuel to drain.
4. 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).
5. Apply a thin coat of rust preventive oil to all uncoated metal parts.
6. Cover and store in a dry, well-ventilated area out of reach of children and away from water heaters, clothes dryers, furnaces and other ignition sources.

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.	101099
Description	1-1/2" Diameter Water Pump
Intake	1-1/2" dia.
Discharge	1-1/2" dia.
Suction Lift (ft)	26
Max Head (ft)	72
Flow Rate	80 GPM
Engine	2.2 HP/79.8cc*
Fuel Type	87+ Octane Unleaded Gasoline
Fuel Capacity	0.4 Gallons / 1.4 Liters
Spark Plug Gap	0.7 - 0.8mm
Dimensions	19.5"L x 14.4"W x 17.8"H
Weight	43 Lbs.
Accessories	1-1/2" Hose Kit

*As rated by engine manufacturer

Dirty Hand Tools® is a brand of
 **FrictionlessWorld**
1100 W 120th Ave., Suite 600
Westminster, CO 80234 • 720-287-5182

For Service or Questions
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720-287-5182
www.dirtyhandtools.com