

2 in. GASOLINE WATER PUMP WITH HOSE KIT Operator's Manual

MODEL NUMBER: TWA-0201

SERIAL NUMBER:

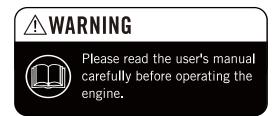
Both model number and serial number may be found on the main label. You should record both of them in a safe place for future use.

FOR YOUR SAFETY

READ AND UNDERSTAND THE ENTIRE MANUAL BEFORE OPERATING MACHINE

Customer Support (888) 680-2849, inquiry@bilthardusa.com

SAFETY INSTRUCTIONS AND WARNINGS







⚠ Read this manual carefully before operating this water pump. This manual should stay with this water pump if it is sold.

INTRODUCTION

This Operating Manual has been designed to instruct you on the correct operation. Your satisfaction with this product and its safe operation is our ultimate concern. Therefore please take the time to read the entire manual, especially the Safety Precautions. They will help you to avoid potential hazards that may exist when working with this product.

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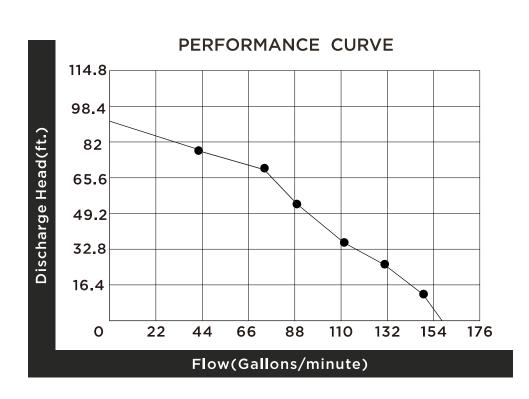
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SPECIFICATIONS

Pump	
Suction & Discharge Size	2in, NPT
Maximum Flow	158 GPM
Maximum Head	91ft
Maximum suction	23ft
Mechanical Seal	Ceramic

Engine			
Engine model		YF168F-2	
Engine displacement(Cu.Centimeters)		196cc	
Cooling System		Forced air cooled	
Fuel	Type	87+ octane, stabilizer-treated unleaded gasoline	
Fuel	Capacity	0.9gal(3.5L)	
Engine Oil	Type SAE	10W-30	
Engine Oil	Capacity	20.3 fl.oz.(600ml)	
Bore x Stroke		68 mm x 54 mm	
Compression Ratio		8.5:1	
Spark Plug	Type	F6RTC	
Spark riug	Gap	0.024"- 0.028"	
Valve Clearance	Intake	0.004" 0.006"	
valve diearance	Exhaust	0.004"- 0.006"	
Engine Speed		3600 RPM	
Assembled weight(lbs)		75.7lbs(34.34kg)	



MANUAL CONVENTIONS

This manual uses the following symbols to help differentiate between different kinds of information. The safety symbol is used with a key word to alert you to potential hazards in operating and owning power equipment. Follow all safety messages to avoid or reduce the risk of serious injury or death.

A DANGER

DANGER indicates an imminently hazardous situation which, if not avoided, **will** result in death or serious injury.

↑ WARNING

WARNING indicates a potentially hazardous situation which, if not avoided, *could* result in death or serious injury.

! CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, *may* result in minor or moderate injury.

CAUTION

CAUTION used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, *may* result in property damage.

⚠ WARNING

Read this manual thoroughly before operating your water pump. Failure to follow instructions could result in serious injury or death.

\land DANGER

DO NOT pump gasoline and fuel oil mixtures, detergents, acids, chemicals, beverages, pesticides, fertilizers or any other flammable liquid or corrosive.

Pumping volatile liquids may result in an explosion or fire. These liquids will corrode the pump and void your warranty.

⚠ DANGER

Engine exhaust contains carbon monoxide, a colorless, odorless, poison gas. Breathing carbon monoxide will cause nausea, dizziness, fainting or death. If you start to feel dizzy or weak, get to fresh air immediately.

Operate water pump outdoors only in a well ventilated area DO NOT operate the semitrash pump inside any building, enclosure or compartment.

DO NOT allow exhaust fumes to enter a confined area through windows, doors, vents or other openings.

⚠ WARNING

Running engines produce heat. Severe burns can occur on contact.

Combustible material can catch fire on contact.

DO NOT touch hot surfaces. Avoid contact with hot exhaust gases. Allow equipment to cool before touching. Maintain at least 3 ft. (91.4 cm) of clearance on all sides to ensure adequate cooling. Maintain at least 5 ft. (1.5 m) of clearance from combustible materials.

\Lambda DANGER

Rotating parts can entangle hands, feet, hair, clothing and/or accessories.

Traumatic amputation or severe laceration can

Keep hands and feet away from rotating parts. Tie up long hair and remove jewelry. Operate equipment with guards in place. DO NOT wear loose-fitting clothing, dangling drawstrings or items that could become caught.

\land DANGER

The water pump develops powerful force.

DO NOT move the water pump when it is in use. DO NOT use hoses or connectors that are worn, damaged or frayed. DO NOT allow children or unqualified persons to operate or service the water pump. DO NOT open top plug or drain plug.

∕N WARNING

DO NOT immerse this unit in water.

⚠ WARNING

Sparks can result in fire or electrical shock.

When servicing the water pump:

Disconnect the spark plug wire and place it where it cannot contact the plug. DO NOT check for spark with the plug removed. Use only approved spark plug testers.

A DANGER

Fuel and fuel vapors are highly flammable and extremely explosive.

Fire or explosion can cause severe burns or death. Unintentional startup can result in entanglement, traumatic amputation or laceration.

When adding or removing fuel:

Turn the engine off and let it cool for at least two minutes before removing the fuel cap. Loosen the cap slowly to relieve pressure in the tank.

Only fill or drain fuel outdoors in a well-ventilated area. DO NOT pump gas directly into the engine at the gas station. Use an approved container to transfer the fuel to the engine.

DO NOT overfill the fuel tank.

Always keep fuel away from sparks, open flames, pilot lights, heat and other sources of ignition. DO NOT light or smoke cigarettes.

When starting the engine:

DO NOT attempt to start a damaged engine. Make certain that the gas cap, air filter, spark plug, fuel lines and exhaust system are properly in place. Allow spilled fuel to evaporate fully before attempting to start the engine.

Make certain that the water pump is resting firmly on level ground.

When operating the water pump:

DO NOT move or tip the water pump during operation.

DO NOT tip the water pump or allow fuel or oil to spill from the engine. Block the wheels to prevent unintended movement.

When transporting or servicing the water pump:

Make certain that the fuel shutoff valve is in the off position and the fuel tank is empty. Disconnect the spark plug wire.

When storing the water pump:

Store away from sparks, open flames, pilot lights, heat and other sources of ignition.

⚠ WARNING

Water pumped through this unit shall NOT be used as drinking water.

⚠ WARNING

DO NOT pump salt, sludge, sewer, sea, or any other type of water containing solid material which diameter is more than 5mm.

⚠ WARNING

Rapid retraction of the starter cord will pull hand and arm towards the engine faster than you can let go. Unintentional startup can result in entanglement, traumatic amputation or laceration.

Broken bones, fractures, bruises or sprains could result.

When starting engine, pull the starter cord slowly until resistance is felt and then pull rapidly to avoid kickback.

(!) CAUTION

Exceeding the water pump's specification for maximum head can damage the water pump and/or hose kits connected to it.

DO NOT modify the water pump in any way. DO NOT attempt to exceed the rated flow. Attempting to increase the rated flow may damage the unit and/or shorten its life.

(!) CAUTION

Improper treatment or use of the water pump can damage it, shorten its life and void your warranty.

Use the water pump only for intended uses. Operate only on level surfaces. DO NOT expose water pump to excessive moisture, dust, or dirt. DO NOT allow any material to block the cooling slots. DO NOT use the water pump if:

- Equipment sparks, smokes or emits flames
- Equipment vibrates excessively

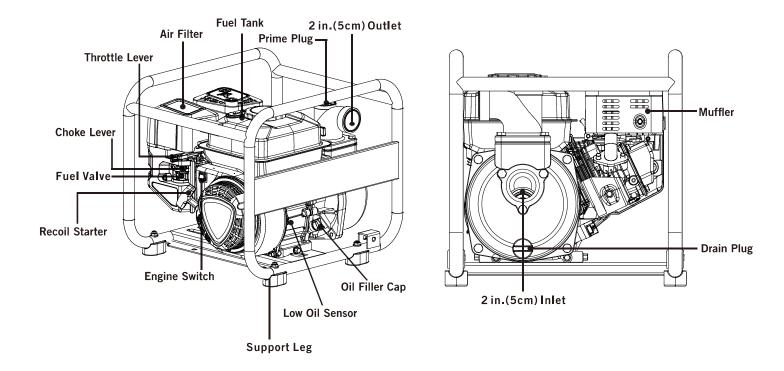
CAUTION

Lay sturdy planking along each side of the hose or pipe, when the hose or pipe runs across any type of roadway. Make sure that the planking length will run the length of the roadway. This will ensure some protection of the hose or pipe from any passing vehicles.

CONTROL PARTS

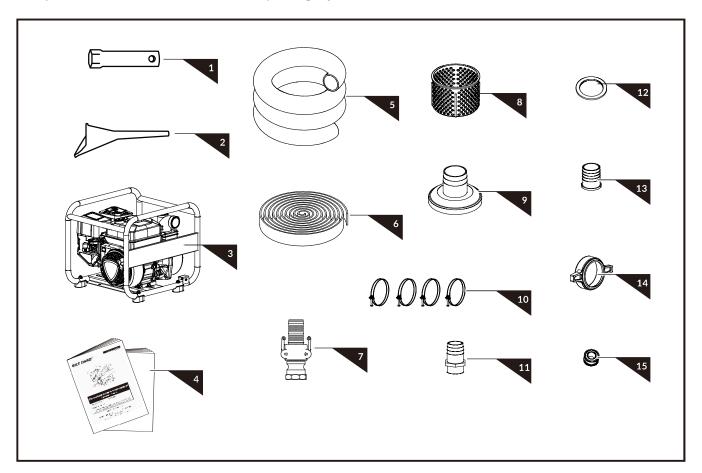
Read this owner's manual before operating your water pump. Familiarize yourself with the location and function of the controls and features. Save this manual for future reference.

Water Pump



CONTENTS SUPPLIED

The water pump comes partially assembled and is shipped in carefully packed package. After all the parts have been removed from the package, you should have:



#	Description	Qty
1	Spark Plug Socket	
2	Oil Funnel	
3	Water Pump	1
4	Operator' s Manual	1
5	Green Suction Hose	1
6	Blue Outlet Hose	1
7	Cam Lock Coupler,2in,NPT	1
8	Mesh Enclosure	1

Description	
9 Mesh Interface	
Hose Clamp(2in)	
Strainer Adapter,2in,NPT	1
Seal Gasket	
Outlet Hose Fitting	1
Outlet Hose Adapter(2"NPT)	1
Teflon Tape	1
	Mesh Interface Hose Clamp(2in) Strainer Adapter,2in,NPT Seal Gasket Outlet Hose Fitting Outlet Hose Adapter(2"NPT)

Add Engine Oil

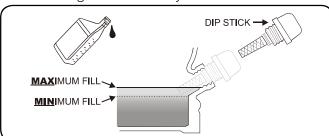
(CAUTION

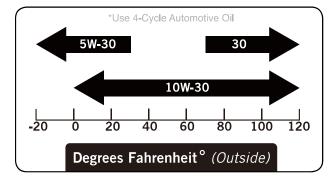
DO NOT attempt to crank or start the engine before it has been properly filled with the recommended type and amount of oil. Damage to the water pump as a result of failure to follow these instructions will void your warranty.

NOTE

The recommended oil type is 10W-30 automotive oil.

- 1. Place the water pump on a flat, level surface.
- 2. Remove oil fill cap/dipstick to add oil.
- 3. Add up to 20.3 fl.oz.(600ml)of oil (not included) and replace oil fill cap/dipstick. DO NOT OVERFILL.
- 4. Check engine oil level daily and add as needed.





NOTE

Check oil often during the break-in period. Refer to the Maintenance section for recommended service intervals.

CAUTION

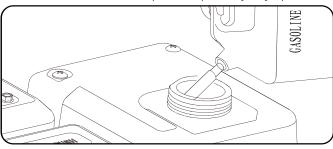
The engine is equipped with a low oil shut-off and will stop when the oil level in the crankcase falls below the threshold level.

Add Fuel

1. Use clean, fresh, regular unleaded fuel with a minimum octane rating of 87 and an ethanol content of less than 10% by volume.

Add Fuel Cont'd.

- 2. DO NOT mix oil with fuel.
- 3. Clean the area around the fuel cap.
- 4. Remove the fuel cap.
- 5. Slowly add the fuel in the tank. DO NOT fill fully. Add fuel until reach the red line.
- 6. Screw on the fuel cap and wipe away any spilled fuel.



⚠ WARNING

Pouring fuel too fast through the fuel screen may result in blow back of fuel at the operator while filling.

! CAUTION

Use regular unleaded gasoline with a minimum octane rating of 87.

Do not mix oil and gasoline.

Add fuel until reach the red line.

DO NOT pump gas directly into the generator at the gas station. Use an approved container to transfer the fuel to the water pump.

DO NOT fill fuel tank indoors.

DO NOT fill fuel tank when the engine is running or hot.

DO NOT overfill the fuel tank.

DO NOT light cigarettes or smoke when filling the fuel tank.

♥ NOTE

Our engines work well with 10% or less ethanol blend fuels. When using blended fuels there are some issues worth noting:

- Ethanol-gasoline blends can absorb more water than gasoline alone.
- These blends can eventually separate, leaving water or a watery goo in the tank, fuel valve and carburetor.
- With gravity-fed fuel supplies, this compromised fuel can be drawn into the carburetor and cause damage to the engine and/or potential hazards.
- There are only a few suppliers of fuel stabilizer that are formulated to work with ethanol blend fuels.
- Any damages or hazards caused by using improper fuel, improperly stored fuel, and/or improperly formulated stabilizers, are not covered by manufacture's warranty.

It is advisable to always shut off the fuel supply, run the engine to fuel starvation and drain the tank when the equipment is not in use for more than 30 days.

ASSEMBLY

High Altitude Operation

WARNING

Follow instructions 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 proceeding. Do not smoke.

NOTICE

Warranty void if necessary adjustments are not made for high altitude use.

At high altitudes, the engine's carburetor, governor (if so equipped), and any other parts that control the fuel-airratio will need to be adjusted by a qualified mechanic to allow efficient high-altitude use and to prevent damage to the engine and any other devices used with this product. The fuel system on this engine may be influenced by operation at higher altitudes. Proper operation can be ensured by installing an altitude kit at (not included)altitudes higher than 3000 ft. above sea level. At elevations above 8000 ft, the engine may experience decreased performance, even with the proper main jet. Operating this engine without the proper altitude kit installed may increase the engine's emissions and decrease fuel economy and performance. The kit should be installed by a qualified mechanic.

- 1. Turn off the engine.
- 2. Close the fuel valve.
- 3. Place a bowl under the fuel cup to catch any spilled fuel.

CAUTION

Carburetor bowl may have gas in it which will leak upon removing the bolt.

- 4. Unthread the bolt holding the fuel cup.
- 5. Remove the bolt, Bolt Seal, fuel cup, Fuel Cup Seal and Main Jet from the body of the carburetor assembly.A carburetor screwdriver (not included) is needed to remove and install the Main Jet.



NOTE

The mixing tube is held in place by the Main Jet and might fall out when it is removed. If it falls out, replace it in the same orientation before replacing the Main Jet.

6. Replace the Main Jet with the replacement Main Jet needed for your altitude range(1a).



NOTE

The Fuel Cup Seal and Bolt Seal may be damaged during removal and should be replaced with the new ones from the kit.

7. Replace the Fuel Cup Seal (3a), fuel cup, Bolt Seal (2a), and bolt. Tighten in place.

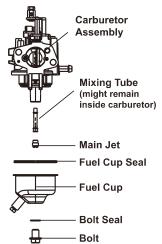


Do not cross thread bolt when tightening. Finger tighten first and then use a wrench to make sure the bolt is properly threaded.

8. Wipe up any spilled fuel and allow excess to evaporate before starting engine. To prevent FIRE, do not start the engine while the smell of fuel hangs in the air.

High Altitude Kit Parts List - A

Part Description		Qty	
1a	Main Jet 3000-8000 ft.	1	
2a	Bolt Seal	1	
За	Fuel Cup Seal	1	

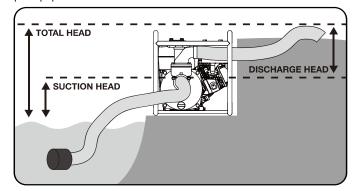


Water Pump Location

Place the water pump in a well ventilated area. DO NOT place the water pump near vents or intakes where exhaust fumes could be drawn into occupied or confined spaces. Carefully consider wind and air currents when positioning water pump.

This water pump must have at least 5 ft. (1.5 m) of clearance from combustible material. Leave at least 3 ft. (91.4 cm) of clearance on all sides of the semitrash pump to allow for adequate cooling, maintenance and servicing.

Place the pump on a level surface free from any obstructions or potential hazards. The pump should be placed close to the water level to ensure maximum pump performance.



Pump output will be affected by the type, length, and size of the suction and discharge hoses. The pumping height, also known as the total head, is the distance from the water level to the point of discharge. As this distance increases, pump output decreases. The discharge capacity is greater than the suction capacity. Therefore, it is important that the suction head is less than the discharge head.

The time required to draw water from the source to the pump (self-priming time) can be decreased by minimizing the suction head.

⚠ WARNING

DO NOT run the pump dry.

Running the pump dry can destroy the pump seals and will void the warranty. If the pump was running while dry by mistake, stop the engine and allow it to cool thoroughly before filling the chamber with water.

Connecting a Hose Kit

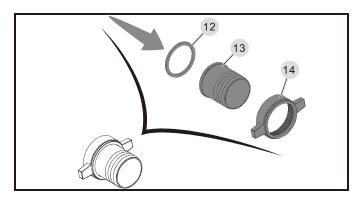


Both the intake and discharge ports are 2 in. (5.1 cm) NPT. Please ensure the connectors to the suction and discharge hose are 2 in. (5.1 cm) NPT threaded.

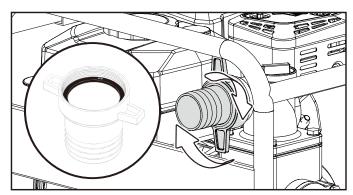
Connecting a Hose Kit Cont'd.

Connect the Discharge Hose (Blue)

1. Locate of the following: outlet hose adapter (14), seal gasket (12), and outlet hose fitting (13) and align for assembly.



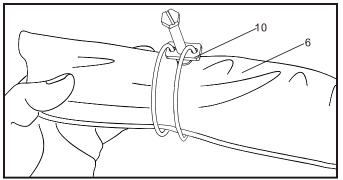
2. Thread the assembled connector to the outlet fitting (top of pump).



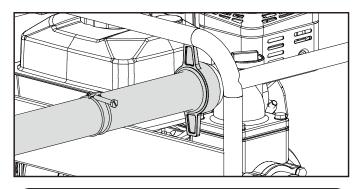
NOTICE

Make sure the gasket is seated inside before threading the adapter on.

3. Locate and slide the hose clamp (10) over the blue outlet hose (6).

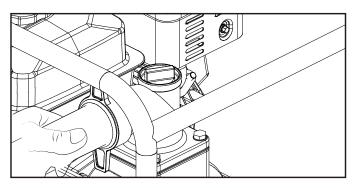


4. Slide the blue discharge hose over the outlet hose fitting.

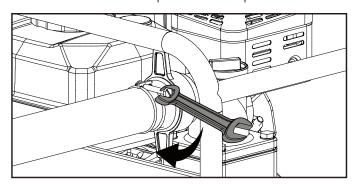


NOTICE

You may use a small amount of dish soap on the outlet hose fitting to help ease the outlet hose on the fitting. Work the soap around the fitting with your finger. Then work the blue hose on the outlet, by twisting and turning until it's fully seated.



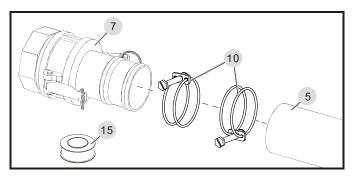
5. Slide the hose clamp in place about midway on the outlet hose adapter as shown. Tighten to 7.4±1.5 lbf-ft (10±2 Nm) with a 10mm wrench. The hose clamp should be placed behind the outlet adapter barbs on the smooth part of the adapter.



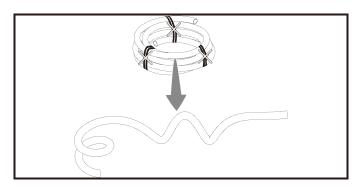
Connecting a Hose Kit Cont'd.

Connect the Suction Hose (Green) and Suction Filter

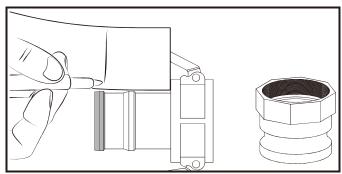
 Locate the following: cam lock coupler (coupler and fitting together) (7), hose clamps (10), Teflon® tape (15), green suction hose (5) and align for assembly.



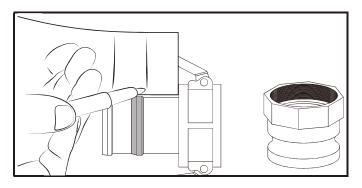
2. Cut ties and uncoil the green hose and use some weight to help straighten the hose out. Best to do this on a warmer day in the sun.



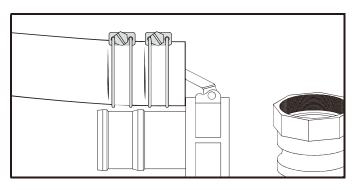
3. Separate the cam lock coupler and fitting. Align the green hose to the coupler and mark the locations of the ribs on the fitting.



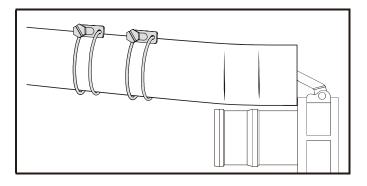
4. Mark the second rib on the coupler on the hose.



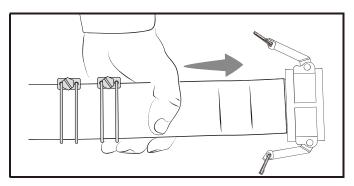
5. Lay the green hose side by side and place the clamp in their approximate location.



6. Slide the clamps back and start to assemble the green hose to cam lock coupler.



7. Insert the cam lock coupler in the green rigid suction hose until properly seated.



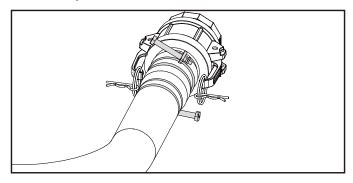
Connecting a Hose Kit Cont'd.

NOTICE

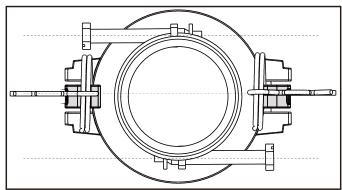
You may use a small amount of dish soap on the cam lock coupler to help ease the green hose on the fitting. Work the soap around the coupler with your finger. Then work the green hose on the fitting, by twisting and turning until it's fully seated.

You may need to dip the green suction hose into boiling water for 1 minute to install the hose as well. This will allow the material to stretch some while assembling the green hose to the cam lock coupler.

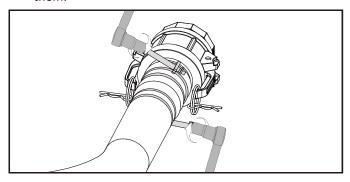
8. Slide the clamps over cam lock coupler just past the marks you made on the hose earlier.



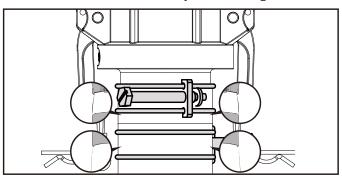
9. Rotate and align the clamp bolts so you have clearance for the cam levers to lock in place later.



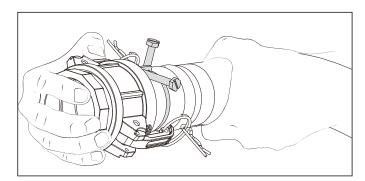
10. Tighten each clamp to 11.1 ± 1.5 lbf-ft (15 ± 2 Nm) with a 10mm socket and 3/8" drive ratchet until the clamp completely tightens. If you do not have a torque wrench, hand tight then $\frac{1}{4}$ turn past full tight. This will need to be as tight as you can make them.



11. Once tightened, visually confirm the hose is raised on the ribs. This indicates you have it tight.

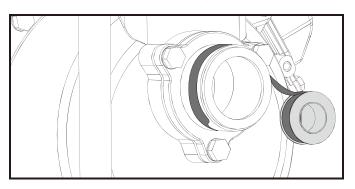


12. Test connection is tight by twisting coupler in the hose to make sure it doesn't turn. If coupling turns, then tighten clamps further until coupling won't turn.

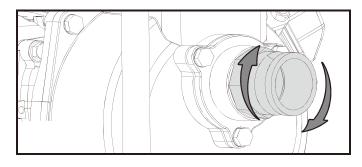


Connecting a Hose Kit Cont'd.

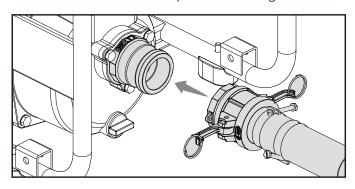
13. Wrap the inlet clockwise with the Teflon® tape provided with 4 complete wraps.



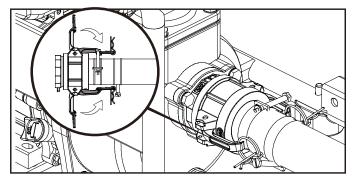
14. Thread the fitting over the tape and hand tighten. Use either 14" Channellock® or a pipe wrench with 2.5" (63.5mm) opening min, hand tight then 1 1/2 turn past full tight. This is critical to make sure the fitting is tight so you do not have air leaks.



15. Attach the cam lock coupler to the fitting.



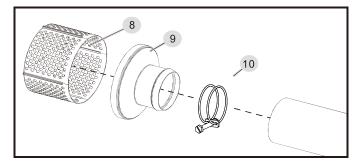
16. Lock in place with the cam levers.



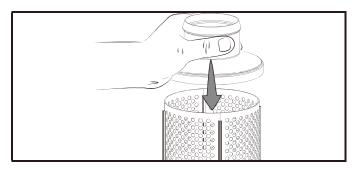


If the cam levers do not clamp down completely, rotate and align the clamp bolts so you have clearance for the cam levers to lock. See step 9 earlier.

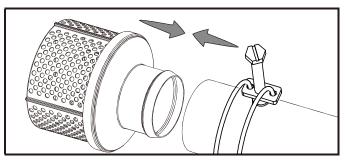
17. Locate the following: mesh enclosure(8), mesh interface (9) and hose clamp(10).



18. Snap the filter pieces together.



19. Place the clamp on the other end of the green hose. Attach the strainer to the green suction hose.

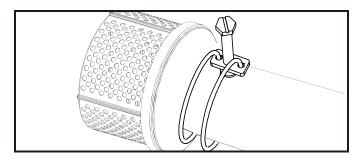


NOTICE

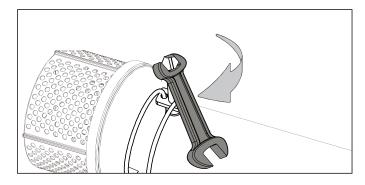
You may use a small amount of dish soap on the filter to help ease the green hose on the filter. Work the soap around the filter with your finger. Then work the green hose on the filter, by twisting and turning until it's fully seated.

Connecting a Hose Kit Cont'd.

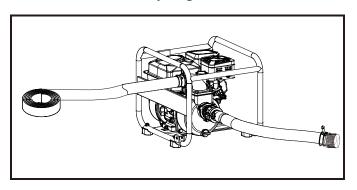
20. Slide the clamp just before the end of the green hose.



21. Tighten the clamp to 7.4 ± 1.5 lbf-ft (10 ± 2 Nm) with a 10mm wrench. If you do not have a torque wrench, hand tight then $\frac{1}{4}$ turn past full tight.



22. You should have everything connected.



Priming the Pump

NOTICE

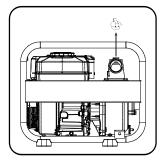
DO NOT run the pump dry.

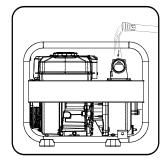
Running the pump dry can destroy the pump seals and will void the warranty. If the pump was running while dry, stop the engine and allow it to cool thoroughly before filling the chamber with water.

NOTICE

Ensure the priming plug is secure before pump operation, if not secure the priming plug could be ejected and water or other liquids could be pumped through the top of the outlet flange.

 Remove the priming cap (top) and fill pump body to the very top of outlet flange with water. Reinstall the priming plug. DO NOT over tighten.





 As the engine starts up, this will start the draw of liquid into the pump. Located within the pump assembly is the oneway valve. As you prime the pump housing this one-way flap valve shuts off the opening to the suction hose. The priming process is only required when the pump housing is not full of water.

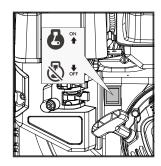
NOTICE

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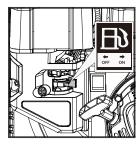
Starting the Engine

Starting Engine

1. Move the engine switch to the ON position.

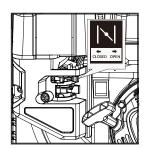


2. Rotate the fuel valve to the "ON" position.



3. Move the choke lever to the CLOSED position.

If the engine is hot, closing the choke is not necessary.



4. Move throttle lever to middle position.



5. Pull the recoil starter until engine compression has become difficult to pull. Let the recoil return to the home position, then pull quickly to start the engine. Repeat steps as needed. Fully open the choke.

· If engine does not start, check engine oil level. Engine will not start with low or no engine oil.



NOTE

Pump performance can be adjusted using the throttle. To decrease pump output, slide the throttle to the right. To increase it, slide the throttle to the



⚠ WARNING

DO NOT remove either top, or drain (bottom) plugs while the water pump is on and running

Loss of pressure and suction will occur. Injury may also occur.

Stopping the Engine

- 1. Turn the fuel valve to the "OFF" position.
- 2. Move the throttle lever to slow position.
- 3. Press the engine switch to the "OFF" position.

Important: Always ensure that the Fuel Valve and the Engine Switch are in the "OFF" position when the engine is not in use.



♥ NOTE

If the engine will not be used for a period of two (2) weeks or longer, please see the Storage section for proper engine and fuel storage.

MAINTENANCE

The owner/operator is responsible for all periodic maintenance.



Never operate a damaged or defective water pump.

⚠WARNING

Improper maintenance will void your warranty.



◯ NOTE

Maintenance, replacement, or repair of emission control devices and systems may be performed by any non-road engine repair establishment or individual.

Complete all scheduled maintenance in a timely manner. Correct any issue before operating the water pump.

Engine Maintenance

To prevent accidental starting, remove and ground spark plug wire before performing any service.

0il

CAUTION! Wait for engine to cool before changing oil. Refer to the oil specification to select the proper grade of oil for your operating environment.

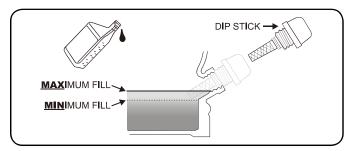
- 1. Remove the oil drain plug with a 12 mm socket and extension (not included).
- 2. Allow the oil to drain completely.
- 3. Replace the drain plug.
- 4. Remove oil fill cap/dipstick to add oil.
- 5. Add up to 20.3 fl.oz.(600ml)of oil (not included) and replace oil fill cap/dipstick. DO NOT OVERFILL.
- 6. Dispose of used oil at an approved waste management facility.



◯ NOTE

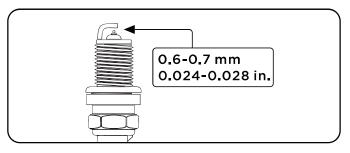
Once oil has been added, a visual check should show oil about 1-2 threads from running out of the fill hole. If using the dipstick to check oil level, DO NOT screw in the dipstick while checking.

Oil Cont'd.



Spark Plugs

- 1. Remove the spark plug cable from the spark plug.
- 2. Use the spark plug tool that shipped with your water pump to remove the plug.
- 3. Inspect the electrode on the plug. It must be clean and not worn to produce the spark required for ignition.
- 4. Make certain the spark plug gap is 0.6 0.7 mm or (0.024 - 0.028 in.).



- 5. Refer to spark plug section on specifications page.
- 6. Carefully thread the plug into the engine.
- 7. Use the spark plug tool to firmly install the plug.
- 8. Attach the spark plug wire to the plug.

Air Filter

- 1. Unscrew wing nut to remove the air filter cover.
- 2. Remove the foam element.
- 3. Wash in liquid detergent and water. Squeeze thoroughly dry in a clean cloth.
- 4. Saturate in clean engine oil.
- 5. Squeeze in a clean, absorbent cloth to remove all excess oil.
- 6. Reassemble the element.
- 7. Reattach the air filter cover and tighten wing nut.

(!) CAUTION

DO NOT spray engine with water.

Water can contaminate the fuel system.

MAINTENANCE

Cleaning

Use a damp cloth to clean exterior surfaces of the engine. Use a soft bristle brush to remove dirt and oil. Use an air compressor (25 PSI) to clear dirt and debris from the engine.

Clean the Spark Arrestor

- 1. Allow the engine to cool completely before servicing the spark arrestor.
- 2. Remove the four screws holding the cover plate which retains the spark arrestor to the muffler.
- 3. Remove the spark arrestor screen.
- 4. Carefully remove the carbon deposits from the spark arrestor screen with a wire brush.
- 5. Replace the spark arrestor if it is damaged.
- 6. Position the spark arrestor on the muffler and attach with the screws removed in step 2.



Failure to clean the spark arrester will result in degraded engine performance.

Adjustments

The air-fuel mixture is not adjustable. Tampering with the governor can damage your water pump and your electrical devices and will void your warranty.

Maintenance Schedule

Follow the service intervals indicated in the following maintenance schedule.

Service your water pump more frequently when operating in adverse conditions.

Every 8 hours or daily			
Check oil level			
Clean around air intake and muffler			
First 5 Hours			
Change oil			
Every 50 hours or every season			
Clean air filter			
Change oil if operating under heavy load or in hot environments			
Every 100 hours or every season			
Change oil			
Clean/Adjust spark plug			
Check/Adjust valve clearance*			
Clean spark arrester			
Clean fuel tank and filter*			
Every 250 hours			
Clean combustion chamber*			
Every 3 years			
Replace fuel line			

TRANSPORTATION AND STORAGE

Transporting the Generator

To prevent fuel spillage when transporting, be sure to perform the following:

- 1. Tighten the fuel cap.
- 2. Flip the engine switch to the OFF position.
- 3. Drain the fuel tank if possible.
- 4. Keep the generator upright. Never place the generator on its side or upside down doing so could damage the internal components of the generator and make it difficult to start.

⚠WARNING

Avoid direct sunlight inside a vehicle. If the water pump is left in an enclosed vehicle for many hours, the high temperature could cause the fuel to vaporize and result in a possible explosion.

Storage

For longer term storage, please follow these guidelines.



Engine switch should be in the "OFF" position while pulling the recoil cord, and performing storage maintenance steps.

Engine Stored for Less than 30 Days

- 1. Allow the engine to cool completely before storage.
- 2. Clean engine according to the Maintenance section.
- 3. To extend the fuel storage life add a properly formulated fuel stabilizer to the tank.
- 4. Ensure the fuel valve is in the "OFF" position.

Engine Stored for Over 30 Days

- 1. Add a properly formulated fuel stabilizer to the tank.
- 2. Run the engine for a few minutes so the treated fuel cycles through the fuel system and carburetor.
- 3. Turn the fuel valve to the "Off" position.
- 4. Let the engine run until fuel starvation has stopped the engine. This usually takes a few minutes.
- 5. The engine needs to cool completely before cleaning and storage.
- 6. Clean the engine according to the maintenance section.
- 7. Change the oil.
- 8. Remove the spark plug and pour about 1/2 ounce (14.8 ml) of oil into the cylinder. Crank the engine slowly to distribute the oil and lubricate the cylinder.
- 9. Reattach the spark plug.

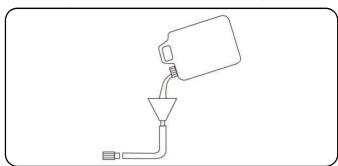
Water Pump Storage

- 1. Allow the water pump to cool completely before storage.
- 2. Turn off the fuel supply at the fuel valve.
- 3. Remove the Drain Plug at the bottom of the pump to drain the pump chamber thoroughly.
- 4. Clean the water pump according to the instructions in the Maintenance section.
- 5. Once the pump is dry, spray WD-40 or similar product into the pump housing through all ports and drainage hole.
- 6. Store in a clean, dry place out of direct sunlight.

Winter Storage

Protect your water pump parts from freezing.

- 1. Apply all storage instructions from previous sections.
- 2. Make sure water pump hose is free of all water before storing for winter.
- 3. In order to prevent the pump from freezing you will need to insert RV antifreeze.
- 4. You will need approximately 6 ounces (177.4 ml) of RV Antifreeze, a funnel, and approximately 12 in. (30.5 cm) of garden hose or equivalent. See diagram below.



5. Pour the antifreeze into the funnel, then pull on the engine recoil starter to create suction in the pump housing. Pull the recoil several times until antifreeze comes out of the pump outlet.

Product Disposal

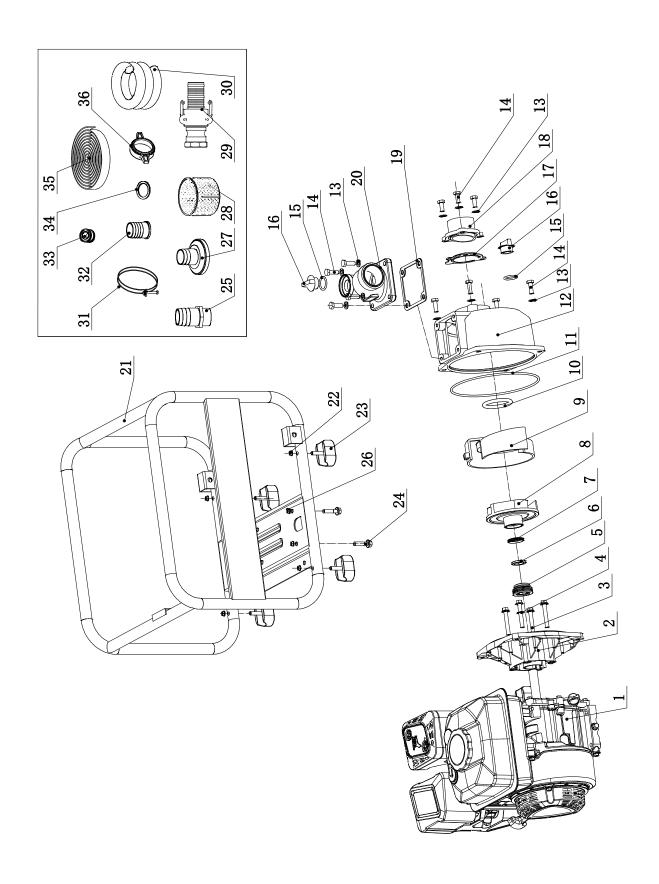
Do not dispose of a used water pump or parts with your household waste. This product contains electrical or electronic components that should be recycled. Please take this product to your local recycling facility for responsible disposal to minimize its environmental impact. Do not dispose of used oil or fuel in the trash or down a drain. Please contact your local recycling center or auto garage to arrange proper oil/fuel disposal.



Please recycle the packaging and electronic components where facilities exist. Please contact your local auto garage or recycling facility to properly dispose of oil/fuel.

TROUBLESHOOTING

Problem	Cause	Solution
Water nump will not start	No fuel	Add fuel
Water pump will not start	Faulty spark plug	Replace spark plug
Water pump will not start; Water pump starts but runs	Low oil level	Fill crankcase to the proper level; place water pump on a flat, level surface
roughly	Choke in the wrong position	Adjust choke
	Spark plug wire loose	Attach wire to spark plug
	Out of fuel	Fill fuel tank
Water pump shuts down during operation	Low oil level	Fill crankcase to the proper level; place water pump on a flat, level surface
	Strainer or hose clogged	Remove debris from strainer or hose
	Pump not primed	Re-prime pump
Water pump overheating or	Suction hose out of water	Place suction hose under the surface of the water
performing poorly	Head limit exceeded	Relocate pump so suction head is less than discharge head (maximum 98 feet)
	Air leak	Tighten connectors and clamps or replace seal packing
	Water not added to pump	Review "Priming the Pump" section of this manual
Pump will not draw water	Hose clamps on inlet hose are not tight	Even small pinhole leak can result in vacuum loss preventing pump from priming. Check hose clamps to ensure they are tight. Adjust clamp position if necessary.

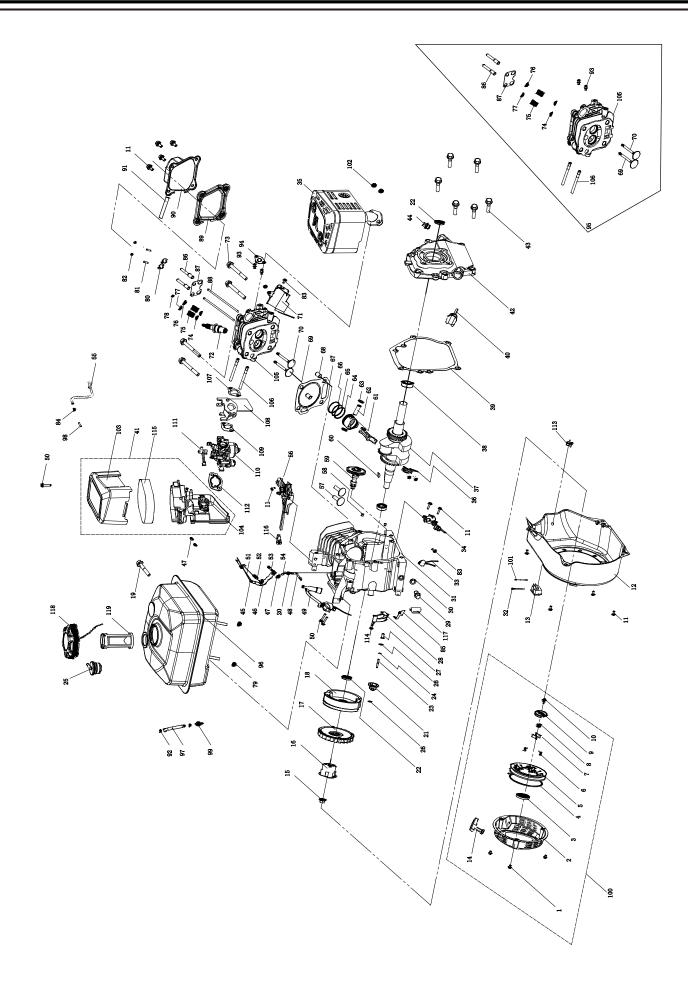


PARTS LIST

#	Part Number	Description	Qty
1	TWA-0201	Engine	1
2	202.251303.00	Pump Base	1
3	1.5789.0860	Flange Bolt M8 x 60	4
4	202.251002.01	Washer Ø8	4
5	202.250300.00	Water Seal	1
6	202.251301.00	Friction-Piece	1
7	202.251302.00	Seal, Friction-Piece	1
8	202.251106.00	Impeller	1
9	202.251202.00	Impeller Cover	1
10	202.251203.00	Seal, Impeller Cover (Ø53 x Ø 7)	1
11	202.251111.00	Seal, Base Pump	1
12	202.251101.00	Pump Body	1
13	1.97.1.08	Washer Ø8	11
14	1.5783.0820	Bolt M8x20	11
15	202.251403.00	Seal, Plug (Ø23.6 x Ø3.55)	2
16	202.251401.00	Plug	2
17	202.251105.00	One-Way Valve	1
18	202.251104.02	Inlet Flange, NPT	1

#	Part Number	Description	Qty
19	202.251103.00	Seal, Outlet Flange	1
20	202.251102.02	Outlet Flange, NPT	1
21	61197.2.2	Frame, 510 × 426 × 410	1
22	1.6177.1.08	Lock Nut M8, Flange	4
23	602.300021.00	Rubber	4
24	1.5789.0835	Flange Bolt M8 x 35	4
25	202.250004.02	Strainer Adapter, 2 in, NPT	1
26	1.6187.1.08	Lock Nut M8	4
27	202.250004.01	Mesh Interface	1
28	202.250003.01	Mesh Enclosure	1
29	202.250500.01	Cam Lock Coupler, 2 in, NPT	1
30	9.1800.002	Rigid Intake Hose, 12Ft	1
31	2.06.024	Clamp (2 in)	4
32	202.250001.01	Hose Fitting	1
33	9.1900.001	Teflon Tape	1
34	202.250002.01	Seal Ring	1
35	9.1800.017	Collapsible Outlet Hose, 50Ft	1
36	202.250005.01	Hose Adapter, NPT	1

ENGINE PARTS DIAGRAM



ENGINE PARTS LIST

#	Part Number	Description	Qty
1	1.16674.0608	Flange Bolt M6 x 8	3
2	27.061100.04.2	Cover,Recoil Starter, Black	1
3	21.061005.00	Spring, Recoil Starter	1
4	2.10.003.1	Rope Ø4 x 1550, Black	1
5	21.061001.01	Reel, Recoil Starter	1
6	45.060003.00	Spring, Ratchet	2
7	45.060002.00	Starter Ratchet, Steel	2
8	45.060009.00	Spring, Ratchet Guide	1
9	45.060007.00	Ratchet Guide	1
10	45.060008.00	Screw, Ratchet Guide	1
11	1.5789.0612	Flange Bolt M6 x 12	12
12	27.080100.09.34	Fan cover, Blue	1
13	5.1000.013.3	Switch, Red	1
14	21.061006.02	Handle, Recoil	1
15	2.02.006	Nut M14	1
16	83.060001.01	Pulley, Start	1
17	23.080001.00	Cooling Fan	1
18	24.120100.02	Flywheel	1
19	2.08.156	Flange Bolt Assembly M6 x 33	1
20	2.03.021.1	Washer Ø6.4 x Ø13 x 1	1
21	21.110100.00	Gear, Governor	1
22	2.11.001	Oil Seal Ø25 x Ø41.3 x 6	2
23	21.110013.00	Shaft, Governor Gear	1
24	21.110011.00	Clip, Governor Gear	1
25	152,070800.00	Reversal Valve	1
26	2.03.020.1	Washer Ø6.2 x Ø15 x 0.5	2
27	21.110012.01	Bushing, Govornor Gear	1
28	23.080600.00	Air Guide, Right	1
29	2.08.037	Drain Bolt M10 x 1.25 x 25	2
30	2.03.016	Washer Ø10 x Ø16 x 1.5, Drain Bolt	2
31	25.030100.00	Crankcase	1
32	27.120300.00	Ground Lead	1
33	21.120400.00	Diode Assemb l y	1
34	21.127000.02	Oil Level Sensor	1
35	27.101000.14.2	Muffler Assembly, Black	1
36	23.050200.00	Connecting Rod	1

#	Part Number	Description	Qty
37	25.050100.02	Crankshaft, P	1
38	1.276.6205	Bearing 6205	2
39	24.030008.00	Gasket, Crankcase Cover	1
40	21.031000.00.1	Oil Dipstick Assembly, Black	1
41	27.091000.05	Air Cleaner Assembly	1
42	24.030007.00	Cover, Crankcase	1
43	1.5789.0832	Flange Bolt M8 x 32	6
44	21.031000.01.1	Oil Filler Cap, Black	1
45	23.110005.01	Spring, Throttle Return	1
46	21.110003.00	Arm, Governor	1
47	1.6177.06	Nut M6	3
48	21.110001.00	Shaft, Governor Arm	1
49	22.123000.07	Ignition Coil	1
50	1.5789.0625	Flange Bolt M6 x 25	3
51	23.110006.00	Rod, Governor	1
52	23.110007.00	Spring, Governor	1
53	2.08.040	Bolt M6 x 21, Governor Arm	1
54	21.110008.00	Pin, Shaft	1
55	24.070014.06	Pipe, Reversal Valve	1
56	24.111000.01	Control Assembly	1
57	25.040013.00	Lifter, Valve	2
58	2.04.001	Dowel Pin Ø9 x 14	2
59	27.041000.01	Camshaft	1
60	2.14.012	Woodruff Key 4 x 7.5 x 19	1
61	26.050005.00.1	Piston	1
62	23.050003.00	Pin, Piston	1
63	2.09.001	Cirdip Ø18 x Ø1	2
64	26.050303.00	Ring, Oi l	1
65	26.050302.00	Ring, Second Piston	1
66	26.050301.00	Ring, First Piston	1
67	26.030009.00	Gasket, Cylinder Head	1
68	2.04.003	Dowel Pin Ø10 x 14	2
69	23.040002.00	Valve, Intake	1
70	23.040006.00	Valve, Exhaust	1
71	25.080400.00	Air Guide, Lower	1
72	2.15.002	Spark Plug F6RTC	1

ENGINE PARTS LIST

#	Part Number	Description	Qty
73	1.5789.0860	Flange Bolt M8 x 60	4
74	23.040017.00	Valve Oil seal	2
75	21.040003.00	Oil Seal, Valve	2
76	21.040007.00	Retainer, Exhaust Valve Spring	1
77	21.040001.00	Retainer, Intake Valve Spring	1
78	21.040008.00	Rotator, Exhaust Valve	1
79	1.6187.1.06	Nut M6	2
80	21.040009.00	Rocker Arm	2
81	21.040020.00	Screw, Valve Adjustment	2
82	21.040021.00	Nut M6, Lock	2
83	1.5789.0608	Flange Bolt M6 x 8	3
84	2.06.006	Clamp Ø7 x Ø1	1
85	21.080002.00	Suppoet, Diode	1
86	21.040010.00	Bolt, Rocker Arm	2
87	23.040004.00	Guide Plate, Push Rod	1
88	27.040005.00	Push Rod	2
89	21.020002.00	Gasket, Cylinder Head Cover	1
90	21.021000.00	Cover, Cylinder Head	1
91	21.020001.00	Breather Tube	1
92	2.06.005	Clamp Ø9 x Ø1	2
93	2.01.010	Stud Bolt M8 x 35	2
94	26.100001.00	Gasket, Exhaust Pipe	1
95	26.010000.00	Cylinder Head Assembly	1
96	27.071000.05.2	Fuel Tank	1
97	24.070011.03	Pipe	1
98	24.070030.00	Venthole	1
99	21.070600.03	Joint, Fuel Pipe	1
100	27.061000.04	Recoil Assembly	1
101	27.120300.01	Off Line	1
102	1.6175.08	Nut M8	2
103	27.091200.09	Cover, Air Cleaner	1
104	27.091100.05	Base, Air Cleaner	1
105	26.010100.00	Cylinder Head, 196cc	1
106	2.01.009	Stud Bolt M6 x 110	2
107	24.130002.00	Gasket, Insulator	1
108	23.130001.00	Insulator, Carburetor	1

#	Part Number	Description	Qty
109	22.130003.00	Gasket, Carburetor	1
110	26.131000.03	Carburetor	1
111	27.130100.00.29	Choke Handle	1
112	21.130004.00	Gasket, Air Cleaner	1
113	2.05.005	Clamp Ø6 x 6.5	1
114	1.5789.0620	Flange Bolt M6 x 20	1
115	27.091003.05	Element, Air Cleaner	1
116	24.111008.01	Grip Sheath, Speed Governor,	3lack
117	27.210003.00	Wire Sheath	1
118	24.070100.04	Cap, Fuel Tank	1
119	46.070300.00	Fuel Filter, Fuel Tank	1

Combined Exhaust and Evaporative Emissions Control Warranty Statement

YOUR WARRANTY RIGHTS AND OBLIGATIONS

The United States Environmental Protection Agency and DU DU GROUP (DU DU) are pleased to explain the emission control system warranty on your 2022/2023 model year small off-road engine/equipment. In the United States, new small off-road engine/equipments must be designed, built and equipped to meet stringent anti smog standard. DUDU must warrant the emission control system on your small off-road engine/equipment for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your small off-road engine/equipment. Where a warrantable condition exists, DUDU will repair your small off-road engine/equipment at no cost to you, including diagnosis, parts and labor.

MANUFACTURER'S WARRANTY COVERAGE:

This emissions control system is warranted for two years. If any emission-related part on your small off-road engine/equipment is defective, the part will be repaired or replaced by DU DU.

OWNER'S WARRANTY RESPONSIBILITIES:

As the small off-road engine/equipment owner, you are responsible for the performance of the required maintenance listed in your owner's manual. DUDU recommends that you retain all receipts covering maintenance on your small off-road engine/equipment, but DUDU cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

As the small off-road engine/equipment owner, you should however be aware that DU DU may deny you warranty coverage if your small off-road engine/equipment or a part has failed due to abuse, neglect,

improper maintenance or unapproved modifications.

If you have any questions regarding your warranty rights and responsibilities, you should contact DU DU GROUP at (888)680-2849 or inquiry@bilthardusa.com.

DEFECTS WARRANTY REQUIREMENTS:

- (a) The warranty period begins on the date the engine/equipment is delivered to an ultimate purchaser.
- (b) General Emissions Warranty Coverage. DUDU warrants to the ultimate purchaser and each subsequent owner that the engine/equipment is:
- (1) Designed, built, and equipped so as to conform with all applicable regulations adopted by the Environmental Protection Agency.
- (2) Free from defects in materials and workmanship that causes the failure of a warranted part for a period of two years.
- (c) Warranty Parts for Exhaust Emission.
 - (1) Fuel System
 - (2) Air Induction System
 - (3) Ignition System

The following parts are also considered emission related components for exhaust emissions, if applicable:

- (1) Exhaust Gas Recirculation (EGR) System
- (2) After treatment devices.
- (3) Crankcase ventilation valves.
- (4) Sensors.
- (5) Electronic control units.
- (d) Warranty Parts for Evaporative Emission include fuel tank, fuel cap, fuel line and fittings, carbon canister, vapor hoses. They may also include, if applicable, liquid/vapor separator, clamps, pressure relief valves, etc.

Du Du will furnish with each new engine/equipment written instructions for the maintenance and use of the engine/equipment by the owner.

PLEASE READ THE FOLLOWING CAREFULLY

The manufacturer and/or distributor has provided the parts list and assembly diagram in this manual as a reference tool ONLY. Neither the manufacturer or distributor makes any representation or warranty of any kind to the buyer that he or she is qualified to make any repairs to the product, or that he or she is qualified to replace any parts of the product. In fact, the manufacturer and/or distributor expressly states that all repairs and parts replacements should be undertaken by certified and licensed technicians, and not by the buyer. The buyer assumes all risk and liability arising out of his or her repairs to the original product or replacement parts thereto, or arising out of his or her installation of replacements thereto.

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