

CHAMPION

POWER EQUIPMENT™

OWNER'S MANUAL & OPERATING INSTRUCTIONS



1 INCH WATER PUMP WITH HOSE KIT



MODEL NUMBER
100166

SAVE THESE INSTRUCTIONS
Important Safety Instructions
are included in this manual.

MADE IN CHINA
REV 100166-20150126

12039 Smith Ave.
Santa Fe Springs CA 90670
USA / 1-877-338-0999
www.championpowerequipment.com

AN IMPORTANT MESSAGE ABOUT TEMPERATURE:

Your Champion Power Equipment product is designed and rated for continuous operation at ambient temperatures up to 40°C (104°F). When your product is needed your product may be operated at temperatures ranging from -15°C (5°F) to 50°C (122°F) for short periods. If the product is exposed to temperatures outside this range during storage, it should be brought back within this range before operation. In any event, the product must always be operated outdoors, in a well-ventilated area and away from doors, windows and other vents.

Have questions or need assistance?

Do not return this product to the store!

WE ARE HERE TO HELP!

Visit our website:

www.championpowerequipment.com

for more info:

- Product Info & Updates
- Tech Bulletins
- Frequently Asked Questions
- Product Registration

– or –

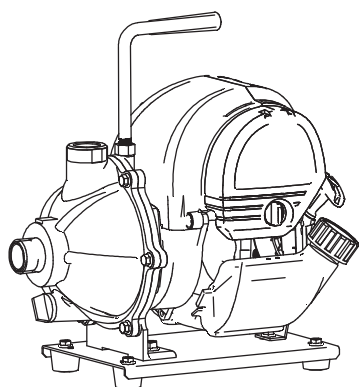
Call our Customer Care Team Toll-Free at:

1-877-338-0999

WARNING:

The Engine Exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

*We are always working to improve our products. Therefore, the enclosed product may differ slightly from the image on the cover.



1 INCH WATER PUMP WITH HOSE KIT

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INTRODUCTION

Introduction

Congratulations on your purchase of a Champion Power Equipment product. Champion Power Equipment and Champion Engine Technology designs, builds, and supports all of our products to strict specifications and guidelines. With proper product knowledge, safe use, and regular maintenance, this product should bring years of satisfying service.

Every effort has been made to ensure the accuracy and completeness of the information in this manual, and we reserve the right to change, alter and/or improve the product and this document at any time without prior notice.

Since CPE/CET highly value how our products are designed, manufactured, operated and are serviced, and also highly value your safety and the safety of others, we would like you to take the time to review this product manual and other product materials thoroughly and be fully aware and knowledgeable of the assembly, operation, dangers and maintenance of the product before use. Fully familiarize yourself, and make sure others who plan on operating the product fully familiarize themselves too, with the proper safety and operation procedures before each use. Please always exercise common sense and always error on the side of caution when operating the product to ensure no accidents, property damage, or injury occurs. We want you to continue to use and be satisfied with your CPE/CET product for years to come.

Record the model and serial numbers as well as date and place of purchase for future reference. Have this information available when ordering parts and when making technical or warranty inquiries.

Champion Power Equipment Support
1-877-338-0999
Model Number
100166
Serial Number
Date of Purchase
Purchase Location
For Oil Type see 'Add Engine Oil' section. For Fuel Type see 'Add Fuel' section.

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.

 **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.

 **NOTE**

If you have questions regarding your water pump, we can help. Please call our help line at **1-877-338-0999**

SAFETY RULES

WARNING

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

DANGER

DO NOT pump gasoline or fuel, 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 the warranty.

WARNING

The engine exhaust from this product contains chemicals known to the state of California to cause cancer, birth defects, or other reproductive harm.

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 water pump inside any building, enclosure or compartment. DO NOT allow exhaust fumes to enter a confined area through windows, doors, vents or other openings.

DANGER

Rotating parts can entangle hands, feet, hair, clothing and/or accessories. Traumatic amputation or severe laceration can result.

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.

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.

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.

CAUTION

Pumping solids through the pump, impeller or hoses is not recommended.

⚠ 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 tank at the gas station. Use an approved container to transfer the fuel to the tank.
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.

When transporting, servicing or storing the water pump:

Make certain that the fuel tank is empty.

Disconnect the spark plug wire.

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.

⚠ 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.

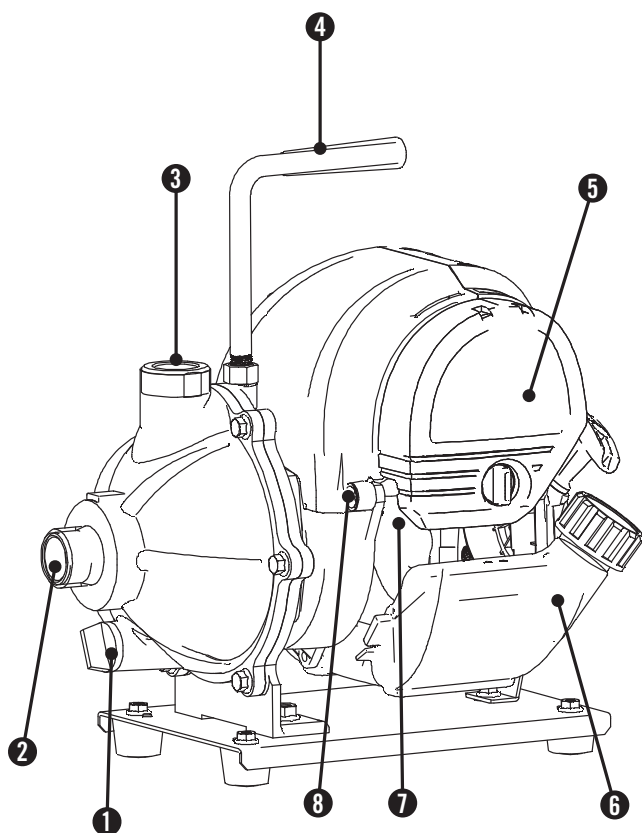
Use the water pump only for intended uses. Operate only on level surfaces. DO NOT expose water pump to excessive moisture, dust, or dirt.
DO NOT allow any material to block the cooling slots.
DO NOT use the water pump if:

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

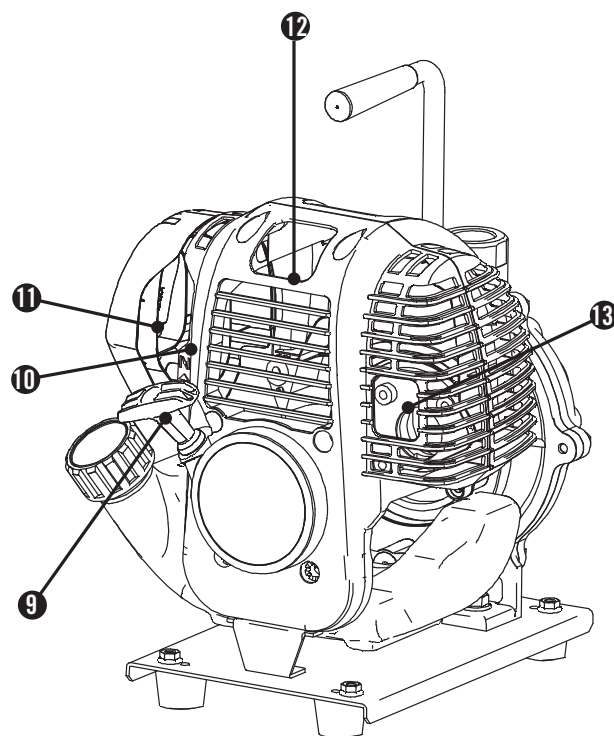
CONTROLS AND FEATURES

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



- (1) **Drain Plug**
- (2) **1 in. (2.5 cm) Inlet** – 1 in. (2.5 cm) inlet connector.
- (3) **1 in. (2.5 cm) Outlet** – 1 in. (2.5 cm) outlet connector.
- (4) **Handle**
- (5) **Air Filter** – Protects the engine by filtering dust and debris from the air intake.
- (6) **Fuel Tank** – 0.145 gal. (550 mL) capacity fuel tank.
- (7) **Throttle Lever** – Used to adjust engine speed.
- (8) **Off Button** – Press to stop the unit.



- (9) **Recoil Starter** – Used to start the engine.
- (10) **Priming Button** – Used to prime fuel for starting.
- (11) **Choke lever** – Used to start the engine.
- (12) **Spark Plug and Connector Wire**
- (13) **Muffler**

Parts Included

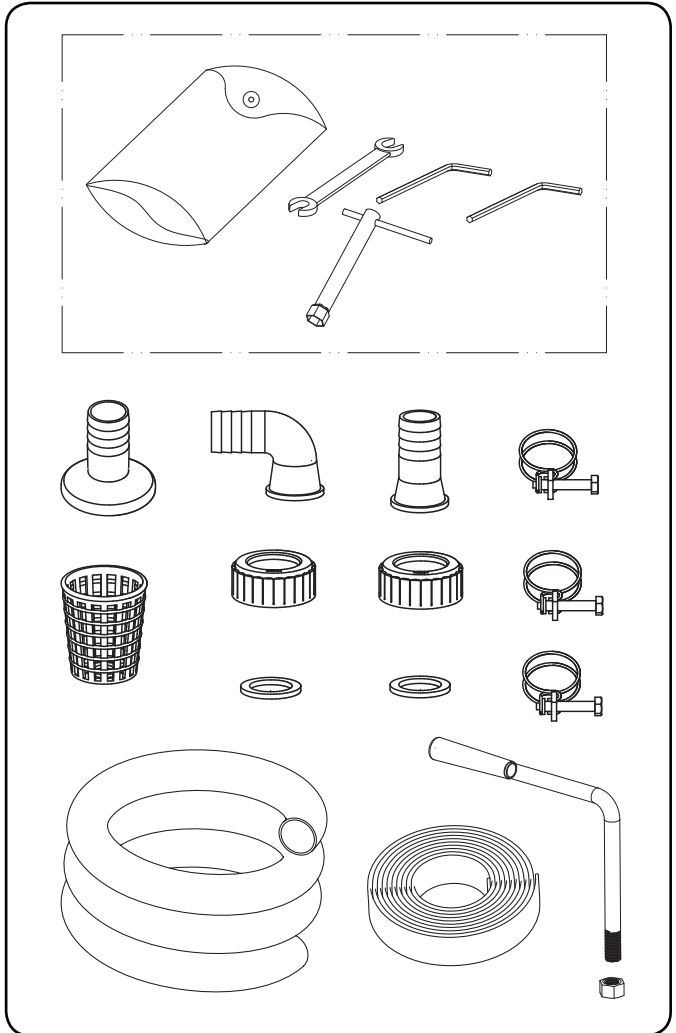
Your model 100166 gasoline powered water pump ships with the following parts:

Hose Kit

- 16.4 ft. x 1 in. (5 meter x 25mm) Intake Hose . . . 1
- 26.2 ft. x 1 in. (8 meter x 25mm) Discharge Hose. 1
- Hose Connector with Rubber gasket (Straight) . . . 1
- Hose Connector with Rubber gasket (90°) 1
- Intake Filter Screen 1
- Hose Clamps 3

Other

- Tool Kit 1
- Handle 1
- Nut, M12x1.25 (for handle) 1



ASSEMBLY

Your water pump requires some assembly. This unit ships from our factory without oil. It must be properly serviced with fuel and oil before operation.

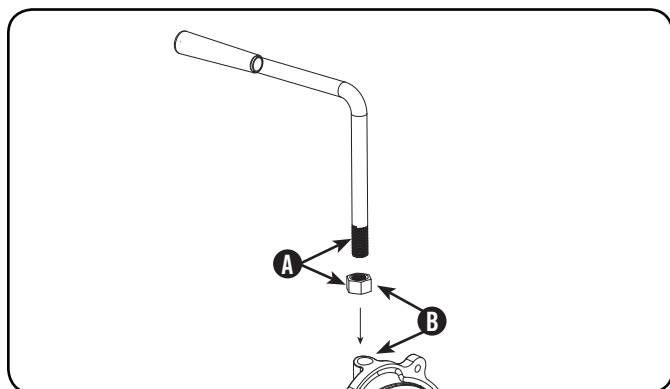
If you have any questions regarding the assembly of your water pump, call our help line at 1-877-338-0999. Please have your serial number and model number available.

Remove the Water pump from the Shipping Carton

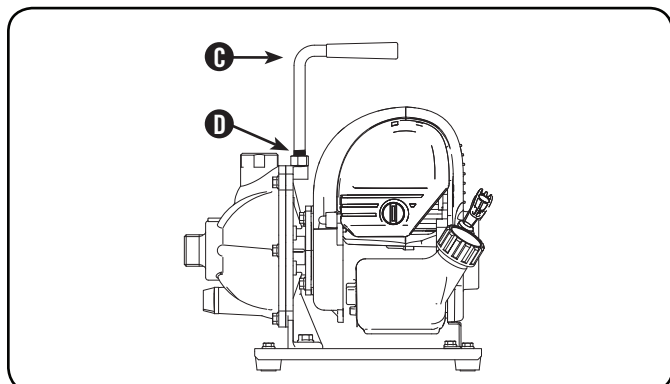
1. Set the shipping carton on a solid, flat surface.
2. Remove everything from the carton except the water pump.
3. Carefully cut each corner of the box from top to bottom. Fold each side flat on the ground.

Install the handle

1. Hand thread the M12x1.25 nut onto the handle base, up to a point where it naturally stops. (A)
2. DO NOT try to thread the nut after that stop point with any wrench, pliers, or other device.
3. Hand thread the handle/nut combo into the threaded hole on the pump side cover top. (B)



4. Once securely tightened the handle should face away from the outlet and towards the engine. (C)



Install the handle Cont'd.

! CAUTION

Hand tighten the nut and handle only. Any excess force, with tools or otherwise, may strip or break the threads on the handle or side cover hole.

NOTE

There will be some threading left on the handle that will stick out of the nut after installation is secured. This is normal and should be left unthreaded. (D)

Add Engine Oil

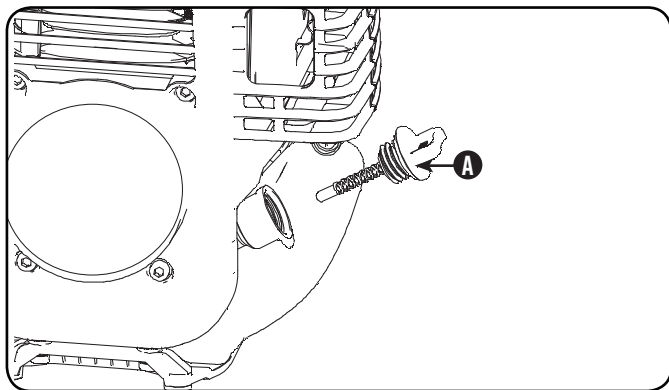
! CAUTION

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.

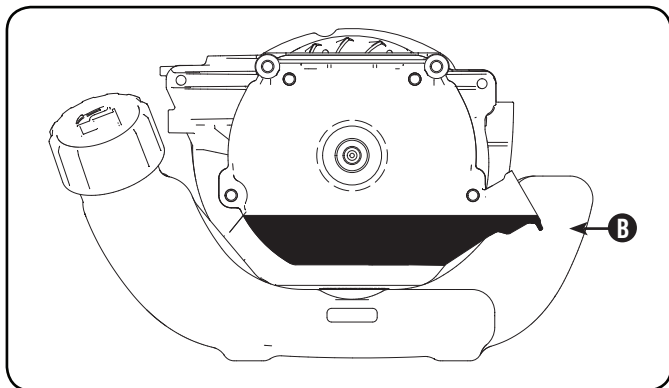
NOTE

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. (A)



3. Using a funnel (not included) add up to 2.4 ounces (70 mL) of oil and replace oil fill cap/dipstick. (B)
4. It is recommended to only fill to the base of the oil fill hole. DO NOT OVERFILL. (B)
5. Check engine oil level daily and add as needed.



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.

Add Engine Oil Cont'd.

NOTE

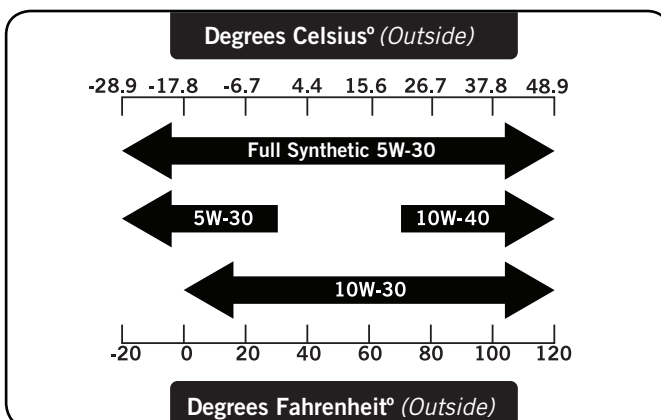
Check oil often during the break-in period. Refer to the Maintenance section for recommended service intervals.

CAUTION

The engine is NOT equipped with a low oil shut-off sensor and will NOT stop when the oil level in the crankcase falls below the threshold level.

NOTE

Weather will affect engine oil and engine performance. Change the type of engine oil used based on weather conditions to suit the engine needs.



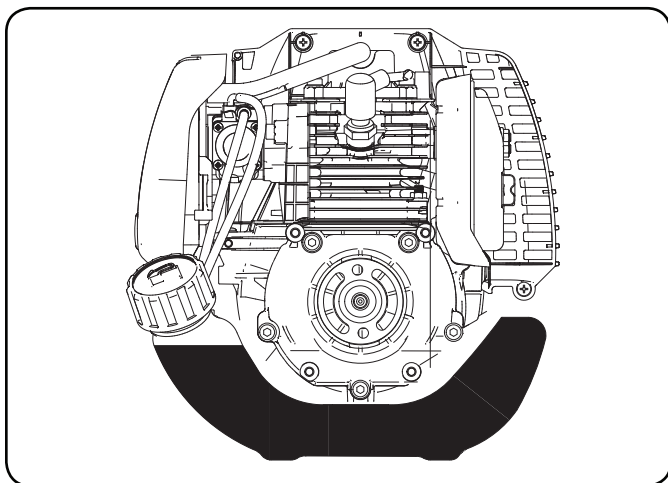
NOTE

We consider the first 5 hours of run time to be the break-in period for the engine. During the break in period we recommend using standard automotive non-synthetic blended oils. After the break in period synthetic lubricant can be used but is not required. Adjusting throttle setting will increase/decrease engine speed helping to seat piston rings. Avoid bogging or lugging the engine down and avoid prolonged running at constant RPM. After the 5 hour break-in period, change the oil. Using synthetic lubricants does not increase the recommended oil change interval.

ASSEMBLY

Add Fuel

1. Use clean, fresh, regular unleaded fuel with a minimum octane rating of 85 and an ethanol content of less than 10% by volume.
2. DO NOT mix oil with fuel.
3. Clean the area around the fuel cap.
4. Remove the fuel cap.
5. Slowly add fuel to the tank. DO NOT OVERFILL. Fuel can expand after filling. Space must be left in the tank for fuel expansion. Fuel can be forced out of the tank as a result of expansion if it is overfilled, and can affect the stable running condition of the product. When filling the tank, it is recommended to leave enough space for the fuel to expand.
6. Screw on the fuel cap and wipe away any spilled fuel.



WARNING

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

Add Fuel Cont'd.

CAUTION

Use regular unleaded gasoline with a minimum octane rating of 85.

Do not mix oil and gasoline.

Do not overfill tank, leave room.

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

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.

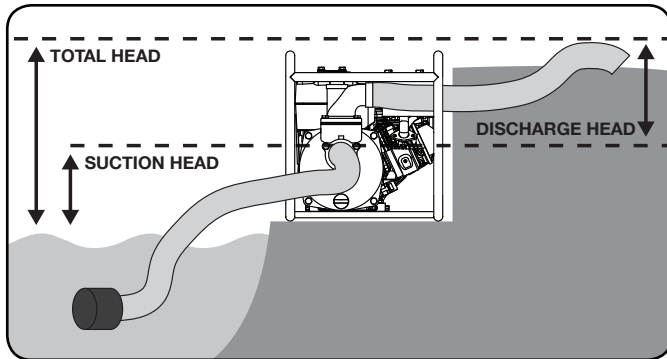
It is advisable to always shut off the fuel supply, run the engine to fuel starvation and drain the tank when the equipment is not in use for more than 30 days.

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 water 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.

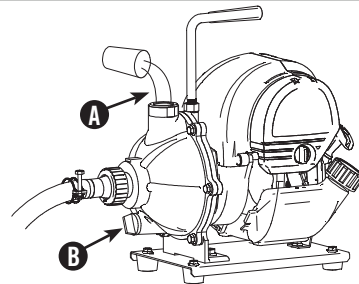
Priming the Pump

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, stop the engine and allow it to cool thoroughly before filling the chamber with water.

Pour water into the outlet located on top of the pump housing. (A) Make sure to fill the pump body to the very top of the outlet with water. Connect the outlet hose to the outlet. (See section Connecting the Outlet Hose) Make sure hose connection is secure. As the engine starts up, this will start the draw of liquid into the pump. Located within the pump assembly is the one-way 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.



NOTE

Ensure the drain plug is secure before pump priming and operation. (B) If not secure the pump will not hold water and prime correctly.

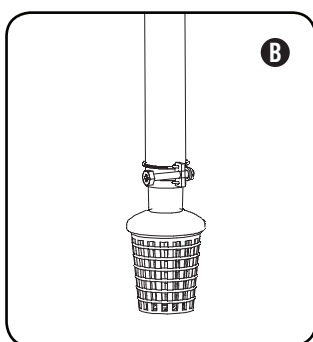
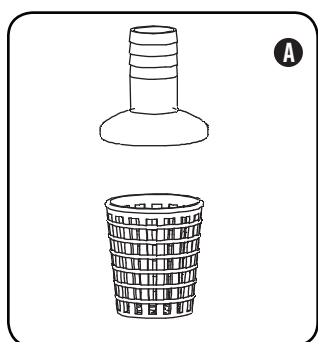
OPERATION

Connecting the Inlet Hose

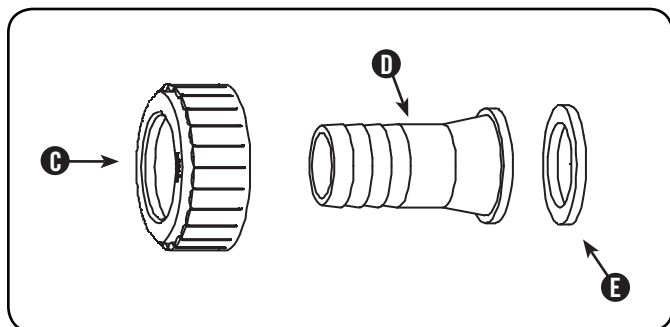
NOTE

Both the intake and outlet ports are 1 in. (2.5 cm). Please insure the connectors to the suction and discharge hose are 1 in. (2.5 cm) threaded.

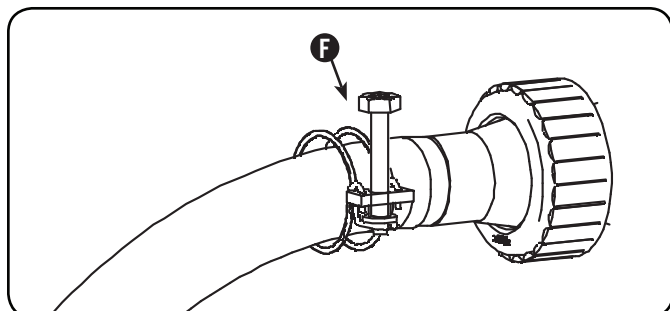
1. Attach the water filter shield to the water filter. (A)
2. Connect them to the intake hose with a hose clamp. (B)
3. Tighten the screw on the hose clamp to secure. Do not overtighten.



4. Slide the pipe joint (C) over the straight outlet joint (D) and then place the rubber gasket (E) into the base of the pipe joint.

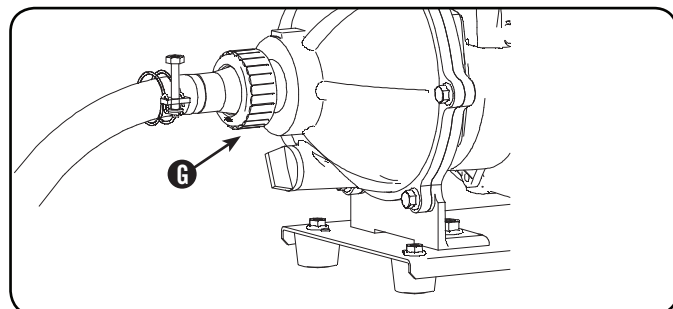


5. Connect the intake hose to the straight outlet joint with a hose clamp. (F)
6. Tighten the screw on the hose clamp to secure. Do not overtighten.



Connecting the Inlet Hose Cont'd.

7. Connect the straight outlet joint to the pump. (G)
8. Hand tighten the joint to the pump. Do not over tighten.



NOTE

The once connected to the pump, there may be some threading left after hand tightening. This is normal. DO NOT overtighten the pipe joint with any wrench, tool, or otherwise.

NOTE

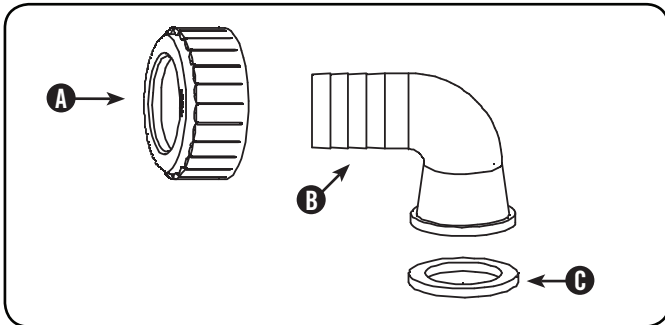
Telfon tape or other sealers are not needed for a water tight connection. The rubber gasket should help to make the connection more water tight.

Connecting the Outlet Hose

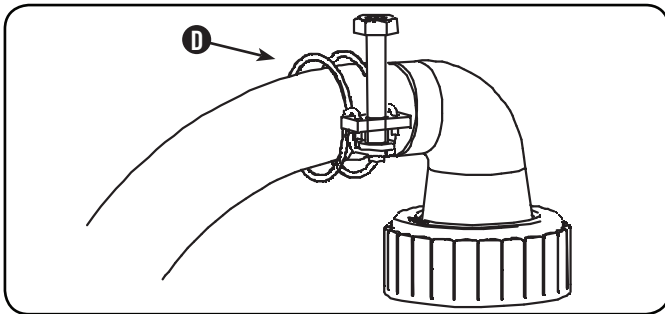
NOTE

Both the intake and outlet ports are 1 in. (2.5 cm). Please insure the connectors to the suction and discharge hose are 1 in. (2.5 cm) threaded.

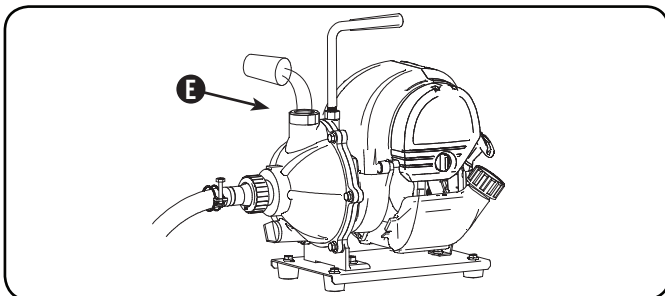
1. Slide the pipe joint (A) over the 90° outlet joint (B) and then place the rubber gasket (C) into the base of the pipe joint.



2. Connect the outlet hose to the 90° outlet joint with a hose clamp. (D)
3. Tighten the screw on the hose clamp to secure. Do not overtighten.

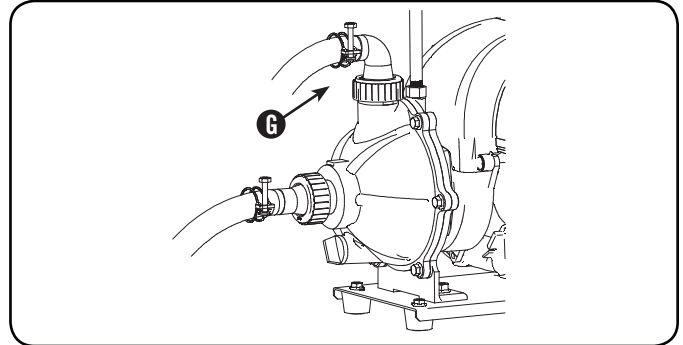


4. Prime the pump. (E) See priming the pump section >



Connecting the Outlet Hose Cont'd.

5. Connect the 90° outlet joint to the pump. (G)
6. Hand tighten the joint to the pump. Do not over tighten.



NOTE

The once connected to the pump, there may be some threading left after hand tightening. This is normal. DO NOT overtighten the pipe joint with any wrench, tool, or otherwise.

NOTE

Telfon tape or other sealers are not needed for a water tight connection. The rubber gasket should help to make the connection more water tight.

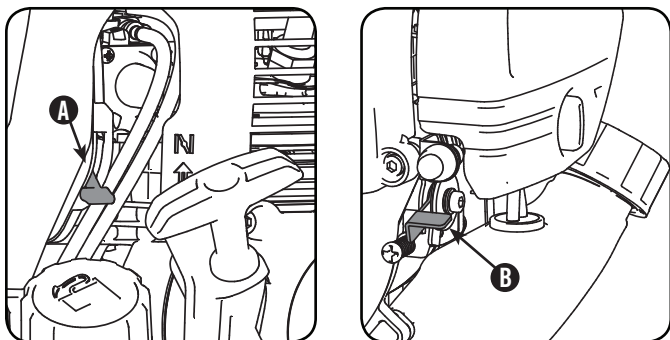
OPERATION

Starting the Engine

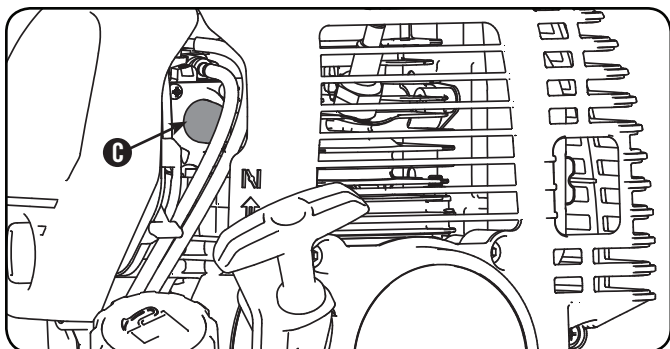
WARNING

Before attempting to start the engine, the oil level must be checked and engine oil added if needed.

1. Make certain the water pump is on a flat, level surface.
2. Check engine oil level. Add oil if needed. (see add engine oil section)
3. Check fuel level. Add fuel if needed. (see add fuel section)
4. Move the choke lever to the “Choke” position. (A)
5. Move the throttle level to the idle position. (B)



6. Push and release the primer bulb 5 times to prime the carburetor. You should see the bulb start to fill up with fuel and fuel traveling through the fuel line. (C)



7. Pull the starter cord slowly until resistance is felt and then pull rapidly.
8. As engine warms up, move the choke lever to “Run”.
9. Move the throttle lever to the desired RPM position.

NOTE

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

Starting the Engine Cont'd.

WARNING

DO NOT remove the drain plug while the water pump is on and running

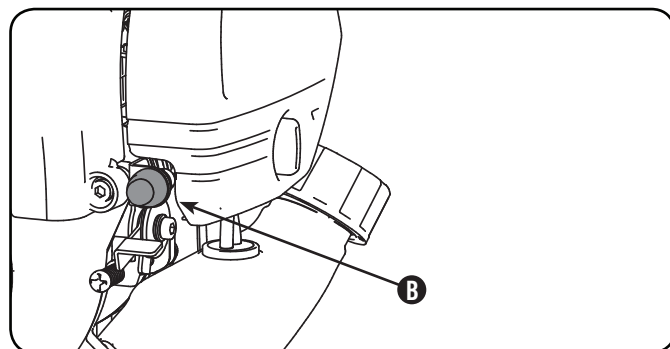
Loss of pressure and suction will occur. Injury may also occur.

NOTE

Keep choke lever in “Choke” position for 2 pulls of the recoil starter. After 2 pulls, move choke lever to the “Run” position for up to the next 3 pulls of the recoil starter. Too much choke leads to spark plug fouling/engine flooding due to the lack of incoming air. This will cause the engine not to start.

Stopping the Engine

There is a stop engine button located next to the air filter cover, above the throttle level. Simply press the button and the unit should turn off.



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.

The owner/operator is responsible for all periodic maintenance.

WARNING

Never operate a damaged or defective water pump.

WARNING

Improper maintenance will void your warranty.

DANGER

Always disconnect the spark plug wire during times of inactivity, cleaning and maintenance. This will prevent any accidental start up that may cause damage or injury.

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.

NOTE

For service or parts assistance, contact our help line at **1-877-338-0999**.

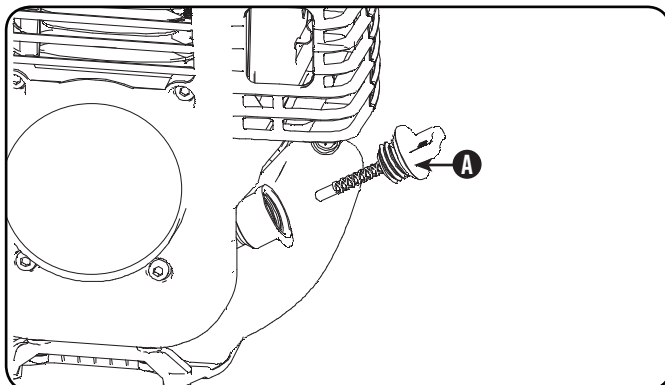
Engine Maintenance

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

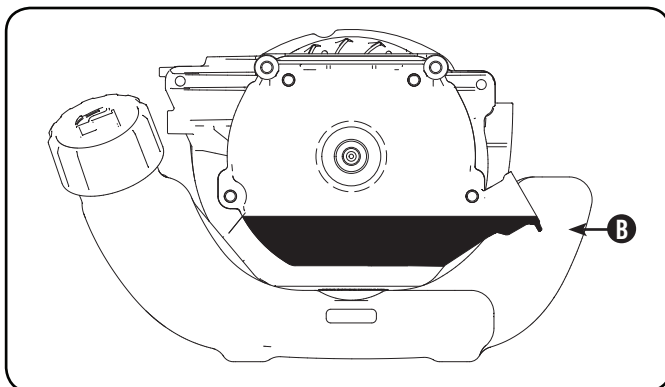
Oil

Change oil when the engine is warm. Refer to the oil specification to select the proper grade of oil for your operating environment.

1. Remove oil fill cap/dipstick to drain and add oil. (A)



2. Tip the pump on its side to drain all oil into an approved container.
3. Using a funnel (not included) add up to 2.4 ounces (70 mL) of oil and replace oil fill cap/dipstick.
4. It is recommended to only fill to the base of the oil fill hole. DO NOT OVERFILL. (B)



5. Replace the oil fill cap/dipstick.
6. Dispose of used oil at an approved waste management facility.

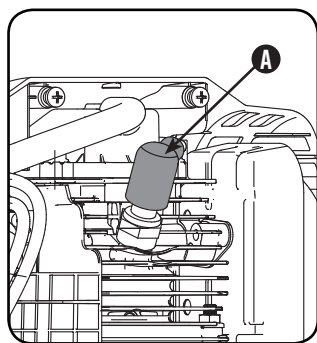
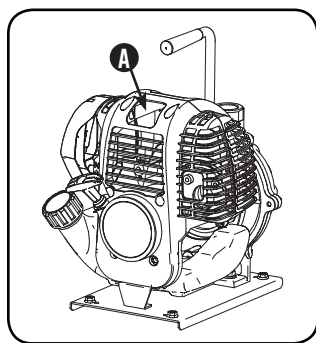
NOTE

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.

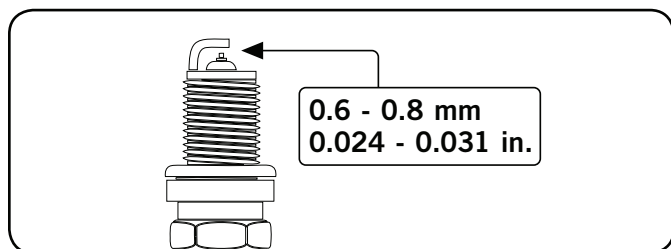
MAINTENANCE AND STORAGE

Spark Plug

1. Locate and remove the spark plug cable from the top of the spark plug. (A)



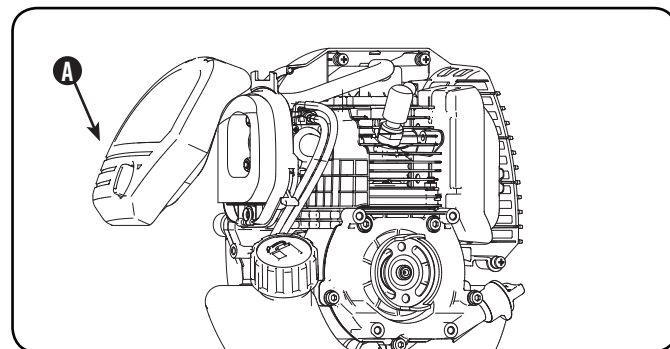
2. Use the spark plug tool that is in the tool kit to remove the spark plug.
3. Inspect the electrode on the plug. It must be clean and not worn to produce the spark required for ignition.
4. Make certain the spark plug gap is 0.6 - 0.8 mm or (0.024 - 0.031 in.).



5. Refer to spark plug section on specifications page.
6. Carefully thread the plug into the engine for replacement spark plug. (if needed)
7. Use the spark plug tool to firmly re-install the plug.
8. Re-attach the spark plug wire to the plug.

Air Filter

1. Unscrew the air filter wing nut to remove the air filter cover. (A)



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.

Cleaning

CAUTION

DO NOT spray the engine or muffler directly with water. Water may cause unsuspected damage.

Use a damp cloth to clean exterior surfaces of the engine and pump.

Use a soft bristle brush to remove dirt and oil, if needed.

Use an air compressor (25 PSI) to clear dirt and debris from the engine, muffler and pump.

Adjustments

The air-fuel mixture is not adjustable. Tampering with the governor can damage your water pump and will void your warranty. CPE recommends that you contact our service line at

1-877-338-0999 for all other service and/or adjustment needs.

Maintenance Schedule

Follow the service intervals indicated in the following maintenance schedule.

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

Contact our help line at **1-877-338-0999** to locate the nearest Champion Power Equipment certified service dealer for your water pump or engine maintenance needs.

Every Time Before Start Up	
	Check oil level
	Clean around air intake and muffler
First 5 Hours	
	Change oil - if has not been performed yet
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

*To be performed by knowledgeable, experienced owners or Champion Power Equipment certified dealers.

Storage

For longer term storage, please follow these guidelines.

Engine Storage

1. Allow the engine to cool completely before storage.
2. Clean the engine according to the instructions in the Maintenance section.
3. Drain all fuel completely from the fuel line and carburetor to prevent gum from forming.
4. Add a fuel stabilizer into the fuel tank.
5. Change the oil.
6. Remove the spark plug and pour about ½ ounce (14.8 ml) of oil into the cylinder. Crank the engine slowly to distribute the oil and lubricate the cylinder.
7. 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. 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.

DANGER

Engine exhaust contains odorless and colorless carbon monoxide gas.

To avoid accidental or unintended ignition of your product during periods of storage, the following precautions should be followed:

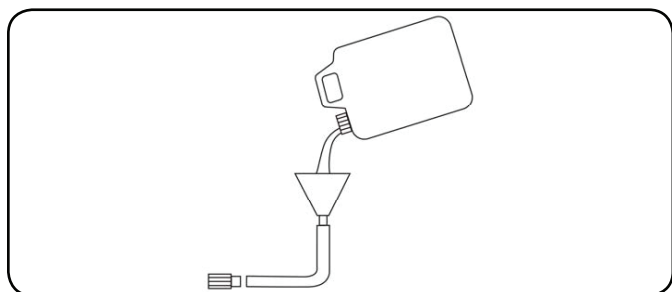
- When **storing the unit for short or extended periods of time** make sure that the spark plug wire is disconnected.

MAINTENANCE AND STORAGE

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. **DO NOT START THE ENGINE WHEN DO THIS.** Only pull the recoil cord if the fuel valve and engine switch are in the OFF position.

Engine Specifications

- Model S35
- Displacement 31cc
- Type 4-Stroke OHV
- Start Type Recoil

Water Pump Specifications

- Model 100166
- Inlet Diameter 1 in. (2.5 cm) NPT
- Outlet Diameter 1 in. (2.5 cm) NPT
- Fuel Capacity 0.145 gal. (550 mL)
- Total Head 95 ft. (29 m)
- Suction Head 16 ft. (5 m)
- Max Delivery Volume 30 Gal/min (114 L/min)
- Gross Weight 24.3 lb. (11 kg)
- Net Weight 20.9 lb. (9.5 kg)
- Height 13.6 in. (35.4 cm)
- Width 9.7 in. (24.6 cm)
- Length 12.8 in. (32.4 cm)

Fuel

Fuel capacity is 0.145 gal. (550 mL). Use regular unleaded gasoline with a minimum octane rating of 85 and an ethanol content of no more than 10% by volume.

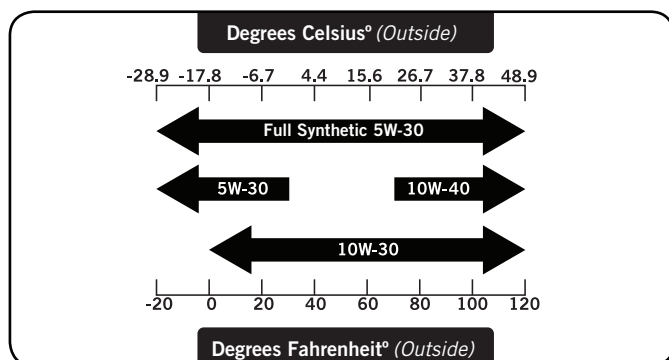
Oil

Use 10W-30 automotive oil.

Oil capacity is up to 2.4 ounces (70 mL).

DO NOT OVERFILL.

Please reference the following chart for recommended oil types for use in the water pump.



NOTE

Weather will affect engine oil and engine performance. Change the type of engine oil used based on weather conditions to suit the engine needs.

Spark Plugs

OEM spark plug: NHSP CMR5H

Make certain the spark plug gap is 0.6 - 0.8 mm or (0.024 - 0.031 in.).

Maintenance Valve Clearance

- Intake: 0.05 – 0.08 mm (0.002 – 0.003 in.)
- Exhaust: 0.08 – 0.12 mm (0.003 – 0.005 in.)

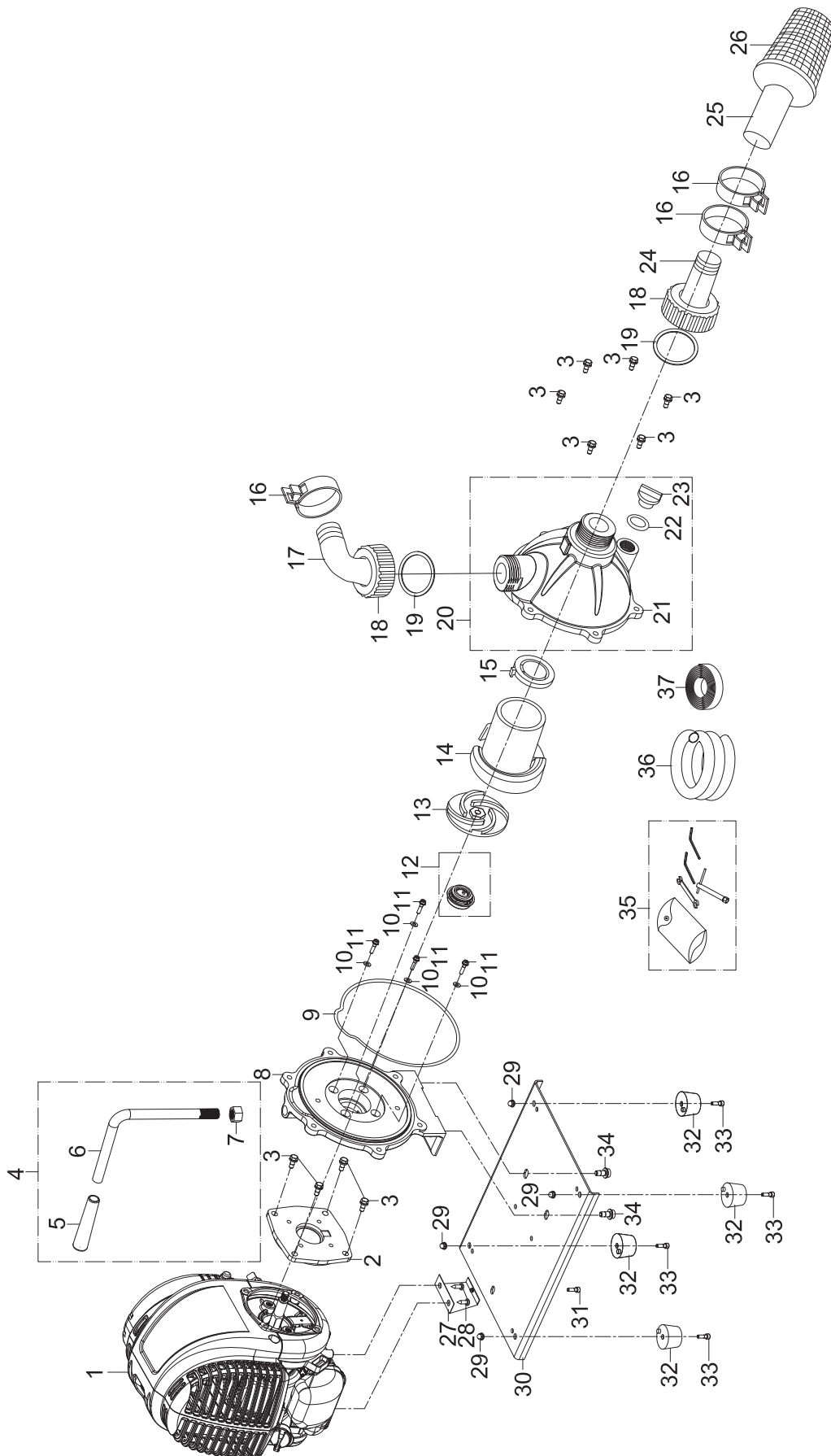
Note: Tech bulletin regarding the valve adjustment procedure is on www.championpowerequipment.com.

An Important Message About Temperature

Your Champion Power Equipment product is designed and rated for continuous operation at ambient temperatures up to 40°C (104°F). When your product is needed your product may be operated at temperatures ranging from -15°C (5°F) to 50°C (122°F) for short periods. If the product is exposed to temperatures outside this range during storage, it should be brought back within this range before operation. In any event, the product must always be operated outdoors, in a well-ventilated area and away from doors, windows and other vents.

SPECIFICATIONS

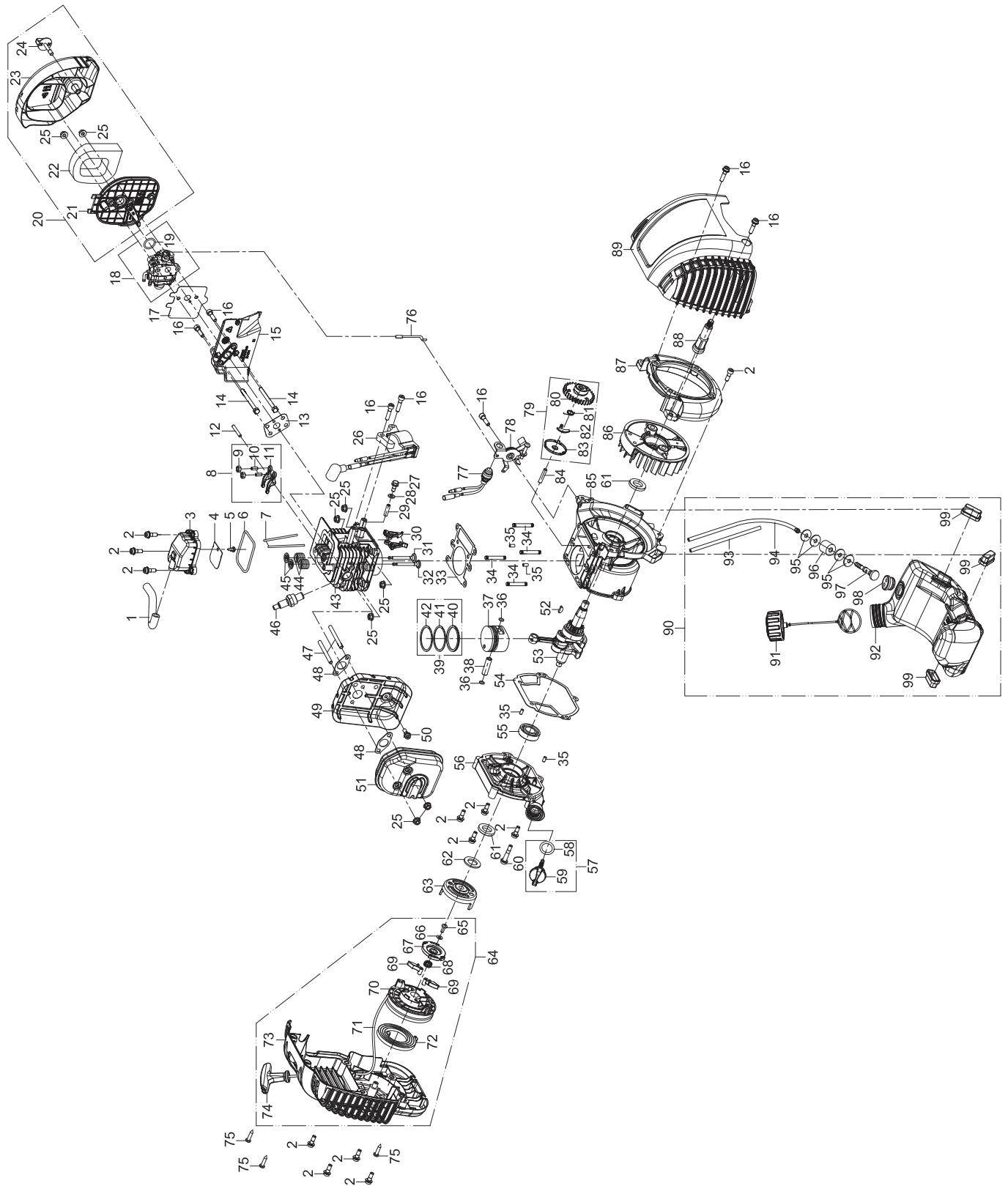
Parts Diagram



#	Part Number	Description	Qty
1	1ZC7SW001	Engine	1
2	100022034	Connecting Flange	1
3	100011264-0003	Bolt, M6 x 16	10
4	100022357-0001	Handle Assembly	1
5	100032475	Handle Glue Cover	1
6	100032474	Handle	1
7	100011428-0001	Nut, M12 x 1.25	1
8	100021995	Side Cover	1
9	100022260	Sealing Ring,Pump	1
10	100010538	Flat Washer, ø5 x 0.6 x ø9	4
11	100010833-0001	Bolt, M5 x 25	4
12	100021960	Mechanical Seal	1
13	100022062	Impeller	1
14	100022096	Volute Cover	1
15	100022145	Gasket, Inlet	1
16	100022230	Clamp, Inlet/Outlet	3
17	100022131	Outlet Joint	1
18	100022184	Pipe Joint	2
19	100022198	Gasket, Inlet/Outlet	2
20	100021936	Pump Body Component	1
21	100022026	Pump Body	1
22	100021968	Gasket, Plug	1
23	100021947	Plug	1
24	100022159	Inlet Joint	1
25	100022237	Water Filter	1
26	100022244	Shield, Water Filter	1
27	100022327-0002	Support Block, Engine	1
28	100010831-0001	Bolt, M5 x 10	2
29	100011135-0001	Nut, M6	4
30	100022348-0002	Frame Base	1
31	100011261-0004	Bolt, M6 x 12	1
32	100022334	Vibration Mount	4
33	100010835-0001	Bolt, M6 x 10	4
34	100011229-0001	Bolt, M8 x 12	2
35	100000104	Tool	1
36	100050140	Intake Hose 5m	1
37	100050139	Discharge Hose 8m	1

SPECIFICATIONS

Engine Parts Diagram



#	Part Number	Description	Qty
1	100002804	Breather Hose	1
2	100010417-0001	Screw, M5 × 15	12
3	100002301	Valve Cover	1
4	100002788	Oil Block	1
5	100011001-0001	Self-tappling Screw, ST4.2 × 10	1
6	100010128	Gasket, Valve Cover	1
7	100004387	Push Rod	2
8	100004416	Rocker Arm Assembly	2
9	100004487	Lock Nut	2
10	100030648	Adjust Nut	2
11	100004463	Upper Rocker Arm	2
12	100004481	Pin	1
13	100005549	Gasket, Carburetor Insulator	1
14	100011146-0001	Bolt, M5 × 55	2
15	100005582	Insulator	1
16	100010418-0001	Screw, M5 × 20	7
17	100030031	Gasket, Carburetor Insulator	1
18	100005165	Carburetor	1
19	100005663	O-Ring	1
20	100004626	Air Filter Assembly	1
21	100004963	Air Filter Base	1
22	100004804	Air Filter Element	1
23	100004822	Air Filter Cover	1
24	100004957	Bolt	1
25	100011451-0002	Nut, M5	8
26	100009185	Ignition Module	1
27	100011528-0003	Bolt, M6 × 10	1
28	100010539	Washer, ø6 × 1 × ø12	1
29	100004483	Pin	1
30	100004464	Lower Rocker Arm	2
31	100004517	Valve, Intake	1
32	100004540	Valve, Exhaust	1
33	100010190	Gasket, Crankcase	1
34	100010403-0001	Stud, M5 × 30	4
35	100010542	Pin, ø4 × 8	4
36	100003218	Circlip	2
37	100003055	Piston	1
38	100003112	Piston Pin	1
39	100003227	Piston Ring Set	1
40	100030448	Oil Ring	1
41	100003176	Piston Ring, 2nd	1
42	100003134	Piston Ring, 1st	1
43	100002362	Cylinder Head	1
44	100004560	Valve Spring	2
45	100004577	Valve Spring Seat	2
46	100009371	Spark Plug	1
47	100010383-0001	Stud, M5 × 54	2
48	100006544	Gasket, Exhaust	2
49	100006547	Cover, Muffler	1
50	100010420-0001	Screw, M5 × 10	1
51	100006155	Muffler	1
52	100010576	Woodruff Key	1
53	100003412	Connecting Rod	1

#	Part Number	Description	Qty
54	100010135	Gasket, Crankcase	1
55	100010668	Bearing, 6002	1
56	100002919	Crankcase Cover	1
57	100004096-0001	Dipstick Assembly	1
58	100030067	O-Ring, ø16 × 3	1
59	100004177-0001	Dipstick	1
60	100010419-0001	Screw, M5 × 28	1
61	100017615	Oil Seal, ø15 × ø26 × 5	2
62	100010911-0003	Washer, ø8	1
63	100007541	Starter Cup	1
64	100007180-0004	Recoil Starter Assembly	1
65	100010946-0002	Screw, M4 × 10	1
66	100010908-0001	Washer, ø4.3	1
67	100007431	Guide Plate	1
68	100007481	Spring	1
69	100007425	Starter Pawl	2
70	100007413	Starter Reel	1
71	100007468	Starter Rope	1
72	100007723	Starter Spring	1
73	100007496	Starter Cover	1
74	100007454	Starter Handle	1
75	100011002-0002	Self-tappling Screw, M4.2 × 19	3
76	100007934	Throttle Linkage	1
77	100009154	Stop Switch	1
78	100008058	Governor Gear Bracket Assembly	1
79	100004273	Camshaft Assembly	1
80	100004329	Drive Timing Gear	1
81	100004382	Return Spring	1
82	100004373	Pressure Release Valve	1
83	100004352	Camshaft Cover	1
84	100004350	Camshaft Pin	1
85	100002590	Crankcase	1
86	100009480	Flywheel	1
87	100007069	Flywheel Cover	1
88	100022346	Connection Shaft	1
89	100007164-0013	Shroud	1
90	100008537	Fuel Tank Assembly	1
91	100008745	Fuel Cap Assembly	1
92	100008891	Fuel Tank	1
93	100017667	Fuel Hose, ø2.5 × ø5.3 × 230	1
94	100017668	Fuel Hose, ø2.5 × ø5.3 × 270	1
95	100010813	Washer, ø5 × 1.5 × ø15	4
96	100009032	Float Filter	1
97	100009031	Float	1
98	100021457	Plug, Fuel Tank	1
99	100008927	Damping Pad	3

TROUBLESHOOTING

Problem	Cause	Solution
Water pump will not start	No fuel	Add fuel
	Faulty spark plug	Replace spark plug
Water pump will not start; Water pump starts but runs roughly	Low oil level	Fill crankcase to the proper level; place water pump on a flat, level surface
	Choke in the wrong position	Adjust choke
	Spark plug wire loose	Attach wire to spark plug
Water pump shuts down during operation	Out of fuel	Fill fuel tank
	Low oil level	Fill crankcase to the proper level; place water pump on a flat, level surface
Water pump overheating or performing poorly	Strainer or hose clogged	Remove debris from strainer or hose
	Pump not primed	Re-prime pump
	Suction hose out of water	Place suction hose under the surface of the water
	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, and or apply more telfon tape as needed.

For further technical support:

Technical Service

Mon – Fri 8:30 AM – 5:00 PM (PST/PDT)

Toll Free: 1-877-338-0999

tech@championpowerequipment.com

WARRANTY

CHAMPION POWER EQUIPMENT 1 YEAR LIMITED WARRANTY

Effective September 1, 2006. Replaces all undated warranties and all warranties dated before September 1, 2006.

Warranty Qualifications

Champion Power Equipment (CPE) will register this warranty upon receipt of your Warranty Registration Card and a copy of your sales receipt from one of CPE's retail locations as proof of purchase.

Please submit your warranty registration and your proof of purchase within ten (10) days of the date of purchase.

Repair/Replacement Warranty

CPE warrants to the original purchaser that the mechanical and electrical components will be free of defects in material and workmanship for a period of one (1) year from the original date of purchase (90 days for commercial & industrial use). Transportation charges on product submitted for repair or replacement under this warranty are the sole responsibility of the purchaser. This warranty applies only to the original purchaser and is not transferable.

Do Not Return The Unit To The Place Of Purchase

Contact CPE's Technical Service and CPE will troubleshoot any issue via phone or e-mail. If the problem is not corrected by this method, CPE will, at its option, authorize evaluation, repair or replacement of the defective part or component at a CPE Service Center. CPE will provide you with a case number for warranty service. Please keep it for future reference. Repairs or replacements without prior authorization, or at an unauthorized repair facility, will not be covered by this warranty.

Warranty Exclusions

This warranty does not cover the following repairs and equipment:

Normal Wear

Water pumps need periodic parts and service to perform well. This warranty does not cover repair when normal use has exhausted the life of a part or the equipment as a whole.

Installation, Use and Maintenance

This warranty will not apply to parts and/or labor if this water pump is deemed to have been misused, neglected, involved in an accident, abused, loaded beyond the water pump's limits, modified, installed improperly or connected incorrectly to any electrical component.

Installation, Use and Maintenance Cont'd.

Normal maintenance such as spark plugs, air filters, adjustments, fuel system cleaning and obstruction due to buildup is not covered by this warranty.

Other Exclusions

This warranty excludes:

- Cosmetic defects such as paint, decals, etc.
- Wear items such as filter elements, o-rings, etc.
- Accessory parts such as starting batteries, and storage covers.
- Failures to due acts of God and other force majeure events beyond the manufacturer's control.
- Problems caused by parts that are not original Champion Power Equipment parts.

This warranty does not apply to water pumps used for prime power in place of a utility.

Limits of Implied Warranty and Consequential Damage

Champion Power Equipment disclaims any obligation to cover any loss of time, use of this product, freight, or any incidental or consequential claim by anyone from using this water pump. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

A unit provided as an exchange will be subject to the warranty of the original unit. The length of the warranty governing the exchanged unit will remain calculated by reference to the purchase date of the original unit.

This warranty gives you certain legal rights which may change from state to state. Your state may also have other rights you may be entitled to that are not listed within this warranty.

Contact Information

Address

Champion Power Equipment, Inc.
Customer Service
12039 Smith Ave.
Santa Fe Springs, CA 90670
www.championpowerequipment.com

Customer Service

Mon – Fri 8:30 AM – 5:00 PM (PST/PDT)
Toll Free: 1-877-338-0999
Fax no.: 1-562-236-9429

Technical Service

Mon – Fri 8:30 AM – 5:00 PM (PST/PDT)
Toll Free: 1-877-338-0999
tech@championpowerequipment.com
24/7 Tech Support: 1-562-204-1188

**Champion Power Equipment, Inc. (CPE),
The United States Environment Protection Agency (U.S. EPA.) and the California Air Resources Board (CARB)
Emission Control System Warranty**

Your Champion Power Equipment (CPE) engine complies with both the U.S. EPA and state of California Air Resources Board (CARB) emission regulations.

YOUR WARRANTY RIGHTS AND OBLIGATIONS:

The US EPA, California Air Resources Board, and CPE are pleased to explain the Federal and California Emission Control Systems Warranty on your 2015 small off-road engine and engine powered equipment. In California, new, small off-road engines and new equipment that use small off-engines must be designed, built and equipped to meet the State's stringent anti smog standards. In the other states, new engines and equipment must be designed, built and equipped, at the time of sale, to meet U.S. EPA regulations for small non-road engines. CPE warrants the emission control system on your small off-road engine and equipment for the period of time listed below, provided there has been no abuse, neglect, unapproved modification, or improper maintenance of your equipment.

Your emission control system may include parts such as the carburetor, fuel-injection system, the ignition system, catalytic converter and fuel lines. Also included may be hoses, belts, connectors and other emission related assemblies. Where a warrantable condition exists, CPE will repair your small off-road engine at no cost to you including diagnosis, parts and labor. For engines less than or equal to 80cc, only the fuel tank and fuel line is subject to the evaporative emission control warranty requirements of this section.

MANUFACTURER'S EMISSION CONTROL SYSTEM WARRANTY COVERAGE:

This emission control system is warranted for two years, subject to provisions set forth below. If, during the warranty period, emission related part on your engine is defective in materials or workmanship, the part will be repaired or replaced by CPE.

OWNER WARRANTY RESPONSIBILITIES:

As the small off-road engine owner, you are responsible for the performance of the required maintenance listed in your Owner's Manual. CPE recommends that you retain all your receipts covering maintenance on your small off-road engine, but CPE 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 owner, you should however be aware that CPE may deny you warranty coverage if your small, off-road engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

You are responsible for presenting your small off-road engine to an Authorized CPE service outlet or alternate service outlet as described in (3)(f.) below, CPE dealer or CPE, Santa Fe Springs, Ca. as soon as a problem exists. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

If you have any questions regarding your warranty rights and responsibilities, you should contact:

Champion Power Equipment, Inc.
Customer Service
12039 Smith Ave.
Santa Fe Springs, CA 90670
1-877-338-0999
tech@championpowerequipment.com

EMISSION CONTROL SYSTEM WARRANTY

The following are specific provisions relative to your Emission Control System (ECS) Warranty Coverage.

1. APPLICABILITY: This warranty shall apply to 1995 and later model year California small off-road engines (for other states, 1997 and later model year engines). The ECS Warranty Period shall begin on the date the new engine or equipment is delivered to its original, end-use purchaser, and shall continue for 24 consecutive months thereafter.

2. GENERAL EMISSIONS WARRANTY COVERAGE

CPE warrants to the original, end-use purchaser of the new engine or equipment and to each subsequent purchaser that each of its small off-road engines is:

a. Designed, built and equipped so as to conform to U.S. EPA emissions standards for spark-ignited engines at or below 19 kilowatts and all applicable regulations adopted by the California Air Resources Board and

b. Free from defects in materials and workmanship that cause the failure of a warranted part to be identical in all material respects to the part as described in the engine manufacturer's application for certification for a period of two years.

3. THE WARRANTY ON EMISSION-RELATED PARTS WILL BE INTERPRETED AS FOLLOWS:

a. Any warranted part that is not scheduled for replacement as required maintenance in the Owners Manual shall be warranted for the ECS Warranty Period. If any such part fails during the ECS Warranty Period, it shall be repaired or replaced by CPE according to Subsection "d" below. Any such part repaired or replaced under the ECS Warranty shall be warranted for any remainder of the ECS Warranty Period.

b. Any warranted, emissions-related part which is scheduled only for regular inspection as specified in the Owners Manual shall be warranted for the ECS Warranty Period. A statement in such written instructions to the effect of "repair or replace as necessary", shall not reduce the ECS Warranty Period. Any such part repaired or replaced under the ECS Warranty shall be warranted for the remainder of the ECS Warranty Period.

c. Any warranted, emissions-related part which is scheduled for replacement as required maintenance in the Owner's Manual shall be warranted for the period of time prior to the first scheduled replacement point for that part. If the part fails prior to the first scheduled replacement, the part shall be repaired or replaced by CPE according to Subsection "d" below. Any such emissions-related part repaired or replaced under the ECS Warranty, shall be warranted for the remainder of the ECS Warranty Period prior to the first scheduled replacement point for such emissions-related part.

d. Repair or replacement of any warranted, emissions-related part under this ECS Warranty shall be performed at no charge to the owner at a CPE Authorized Service Outlet.

e. The owner shall not be charged for diagnostic labor which leads to the determination that a part covered by the ECS Warranty is in fact defective, provided that such diagnostic work is performed at a CPE Authorized Service Outlet.

f. CPE shall pay for covered emissions warranty repairs at non-authorized service outlets under the following circumstances:

i. The service is required in a population center with a population over 100,000 according to U.S. Census 2000 without a CPE Authorized Service Outlet AND

ii. The service is required more than 100 miles from a CPE Authorized Service Outlet. The 100 mile limitation does not apply in the following states: Alaska, Arizona, Colorado, Hawaii, Idaho, Montana, Nebraska, Nevada, New Mexico, Oregon, Texas, Utah and Wyoming.

g. CPE shall be liable for damages to other original engine components or approved modifications proximately caused by a failure under warranty of an emission-related part covered by the ECS Warranty.

h. Throughout the ECS Warranty Period, CPE shall maintain a supply of warranted emission-related parts sufficient to meet the expected demand for such emission-related parts.

i. Any CPE Authorized and approved emission-related replacement part may be used in the performance of any ECS Warranty maintenance or repair and will be provided without charge to the owner. Such use shall not reduce CPE's warranty obligation.

j. Unapproved add-on or modified parts may not be used to modify or repair a CPE engine. Such use voids this ECS Warranty and shall be sufficient grounds for disallowing an ECS Warranty claim. CPE shall not be liable hereunder for failures of any warranted parts of a CPE engine caused by the use of such an unapproved add-on or modified part.

EMISSION-RELATED PARTS INCLUDE THE FOLLOWING: (using those portions of the list applicable to the engine)

Systems covered by this warranty	Parts Description
Fuel Metering System	Fuel regulator, Carburetor and internal parts
Air Induction System	Air cleaner, Intake manifold
Ignition System	Spark plug and parts, Magneto ignition system
Exhaust System	Exhaust manifold, catalytic converter
Miscellaneous Parts	Tubing, Fittings, Seals, Gaskets, and Clamps associated with these listed systems.
Evaporative Emissions	Fuel Tank, Fuel Cap, Fuel Line, Fuel Line Fittings, Clamps, Pressure Relief Valves, Control Valves, Control Solenoids, Electronic Controls, Vacuum Control Diaphragms, Control Cables, Control Linkages, Purge Valves, Vapor Hoses, Liquid/Vapor Separator, Carbon Canister, Canister Mounting Brackets, Carburetor Purge Port Connector

TO OBTAIN WARRANTY SERVICE:

You must take your CPE engine or the product on which it is installed, along with your warranty registration card or other proof of original purchase date, at your expense, to any Champion Power Equipment dealer who is authorized by Champion Power Equipment, Inc. to sell and service that CPE product during his normal business hours. Alternate service locations defined in Section (3)(f.) above must be approved by CPE prior to service. Claims for repair or adjustment found to be caused solely by defects in material or workmanship will not be denied because the engine was not properly maintained and used.

If you have any questions regarding your warranty rights and responsibilities, or to obtain warranty service, please write or call Customer Service at Champion Power Equipment, Inc.

Champion Power Equipment, Inc.
12039 Smith Ave.
Santa Fe Springs, CA 90670
1-877-338-0999
Attn.: Customer Service
tech@championpowerequipment.com