

BB-4-D902



QUICK GUIDE

This Quick Guide shows the basic operation instructions and safety precautions for the WATERAX BB-4-DIESEL high pressure pump.

- The WATERAX BB-4-D902 pairs a WATERAX 4-stage pump end with a Kubota D902 diesel-powered engine.
- For full specifications and performance curves, see the *BB-4-D902 Data Sheet*.



Warnings and Safety Precautions

This warning label appears on the BB-4-D902 pump to identify safety hazards as follows:



Read Your Owner's Manual

The improper use of this pump could result in serious injuries as well as damage to the unit. Read the *Owner's Manual* before using your pump unit and follow the safety instructions in this Quick Guide. It contains very important safety information that **MUST** be read, understood and followed to safeguard you and your equipment from harm and damage. **This pump must only be operated by trained personnel.**



Warnings

- Do not operate if mentally or physically fatigued.
- Always inspect hoses and piping to avoid burst injuries.
- No modification and/or alteration may be made to the pump. Any such modifications void the pump warranty and can endanger pump operators.
- Do not operate the pump above the maximum rated pressure of 600 psi (41.4 bar). Use only pipe, hose, and fittings rated at or above the max. pressure rating of the pump or system design. Ensure special precautions during tandem pumping and progressive hose lays.
- Max. allowable pump intake pressure: 200 psi (13.8 bar).
- Use slow close valves wherever possible to safeguard operators and prevent damage from water hammer.
- Ensure sufficient lighting (5 lx min.) during operation.
- Dry weight of the unit: 280 lbs (127 kg).
- Dimensions: Refer to data sheet.



Always wear eye and ear protection when operating the pump unit. Sound level of the unit: 92 dB(A).



Never run the engine in a closed or confined area. Exhaust gas contains carbon monoxide which is poisonous. Avoid inhalation of exhaust gas.



Refuel engine with care. Diesel is flammable, and can ignite if exposed to heat, sparks or open flames. Refuel in a well-ventilated area, with the engine stopped. Use only fuel as recommended.



Never touch any exhaust system parts while engine is running. Always allow enough time, after stopping the unit, for proper cooling of these parts and surrounding areas. Wear protective gloves.

Preventing Damage to Equipment

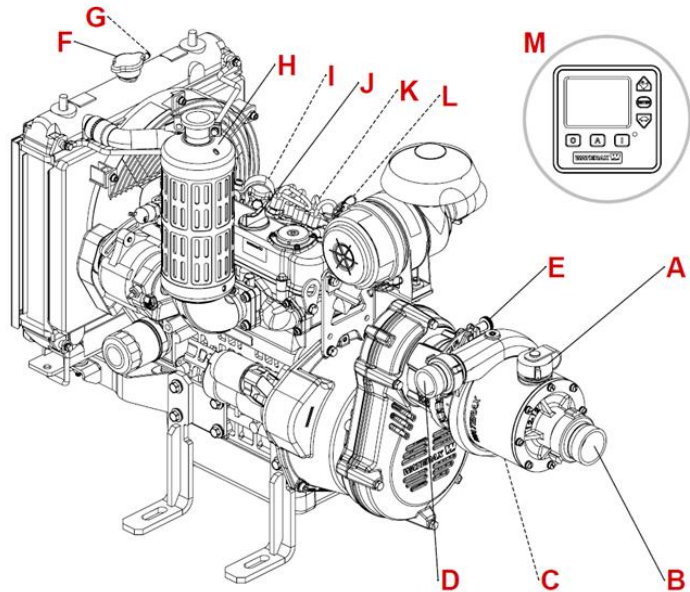
- Flush the pump with fresh water if the pump has been used to pump salty, brackish, high mineral content water, water containing debris, or foam injected water. Check that debris is cleared before using the pump again.
- Always draft water using a suction strainer.

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Parts Identification

- A. Priming cap
- B. Pump intake (suction)
- C. Pump drain port (not shown)
- D. Pump discharge
- E. Quick release pump clamp
- F. Radiator coolant cap
- G. Coolant overflow (not shown)
- H. Muffler
- I. Throttle (not shown)
- J. Oil fill plug
- K. Oil dipstick (not shown)
- L. Fuel valve (not shown)
- M. Digital Control Panel (DCP)*

*Please refer to your DCP User Instructions for installation and operating instructions.



To operate the BB-4-D902:

1. Supply recommended DIESEL fuel to engine.

Do not mix gasoline or alcohol with diesel fuel.

Fill external fuel tank and connect fuel supply line to the fuel filter according to the engine manufacturer's instructions. Pump fuel to fill supply line.

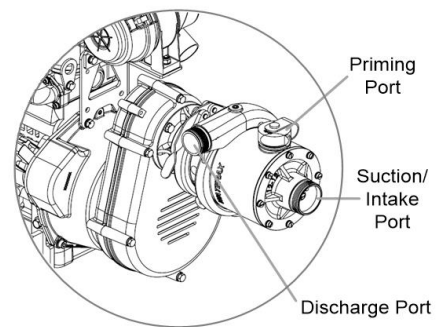
2. Check oil level (see engine manual) and top off if necessary.

3. Connect the suction hose. Use universal hose coupling wrench to tighten coupling firmly.

Drafting mode: Connect foot valve strainer to male end of suction hose, then fill suction hose with water and connect to pump intake.

Flooded Suction Mode: Connect female end of suction hose to pump intake and connect male end to hydrant or other supply

- a. Slowly open the pump inlet valves allowing the water into the pump body.
- b. Slowly open the discharge valves and priming valves to allow for entrapped air in the piping to escape.
- c. Once all the air has escaped, slowly close any opened discharge valves so that the unit may be started.



! **DO NOT** run engine with pump disconnected.

! **DO NOT** run pump when dry.

! **DO NOT** allow foot valve strainer to rest on bottom of lake or riverbed. Check strainer frequently to make sure that it is not clogged with moss, leaves, etc.

! **DO NOT** lift strainer from water while the pump is operating. Use a rope or other means to keep strainer at proper height, approximately 1 foot (30 cm) below water surface. If strainer is too close to the water surface, it will draw air and pump may lose prime.

4. Connect the discharge hose, nozzles, etc., to pump, and tighten firmly with coupling wrench.

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5. Prime the pump.

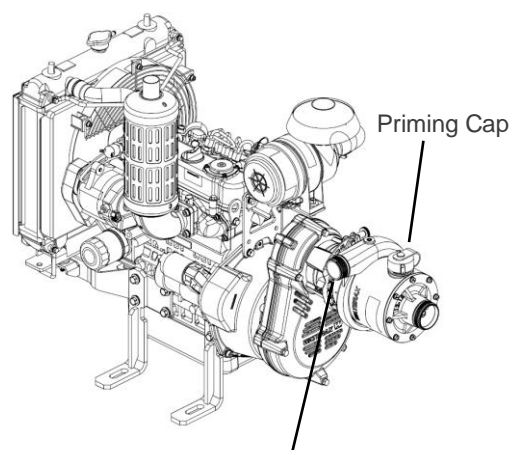
Check that all drains, discharge valves, or any auxiliary valves are closed before priming the pump. Open the priming ball valve (located between the pump and the primer).

Manual Priming: Open the priming cap and fill pump with water manually. Firmly tighten priming cap. Pump can also be primed by “jerking” the suction hose until water flows from the pump’s discharge port.

Guzzler Priming: If equipped with a Guzzler primer, follow the hand pump manufacturer’s operation instructions. Pump until water is drawn into the pump.

Electric Priming: If your pump is equipped with a *WATERAX* electric primer, move the PRIMER toggle switch on your control panel to the up position and hold it in place to allow water to enter the pump. The electric primer is intended to be used only a short duration (about 20 seconds). If pump fails to prime, see the *BB-4 Owner’s Manual* for troubleshooting tips.

Close the priming ball valve after priming. Failure to close the priming valve could cause the pump to lose prime or water to be pumped through the priming system.

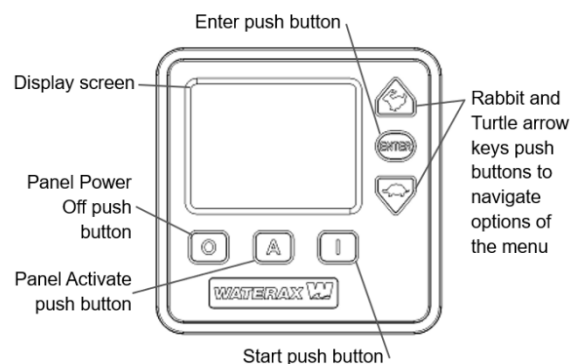


Optional: Attach hand primer to discharge port and pump until water flows into pump-end

6. Start the engine.

- Close all discharge valves.
- Open fuel valve.
- Press the 'A' button to activate the panel. A green led on the bottom right will light up indicating that the panel is powered and ready to start.
- Press and hold the 'I' (Run) button to start the engine. **DO NOT HOLD** for more than 5 seconds.
- Allow the engine to warm up for a minimum of 2 minutes before using full throttle.

Refer to the Digital Control Panel User Instructions for detailed installation and operation instructions.



7. Discharge water.

Once the pump is primed, and with the engine running, you can begin to discharge water.

- Slowly open the discharge valve. If pressure does not build in the discharge hose, the pump has not been fully primed. Prime the pump again.
- Adjust the pump performance by throttling the engine up or down, or opening or closing discharge valves at various positions, or any combination of the two.
- The **LOW-PRESSURE PROTECTION** will automatically be activated after 5 seconds. If pressure drops below 7 psi (loss of prime condition), the engine will automatically shut down to protect the pump.

! **DO NOT** leave the pump running with all the discharge valves closed for more than one minute, or else the pump may overheat and become damaged. Additionally, the pump end and the water inside it can become extremely hot and cause severe burns. **Careful when opening the discharge valve and avoid touching the pump end.** To avoid this, a re-circulation line (if provided) should be opened or a discharge line left slightly open to allow fresh water to continue to enter the pump.

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To shut down and store the BB-4-D902:

8. Shut down the pump.

- a. Gradually reduce the engine speed.
- b. Whenever the unit has been run at full throttle for most of the operation, allow the valves to remain slightly open and run the engine at idle for approximately 5 minutes before shutting down the unit.
- c. Turn off engine by pressing the "O" button on the controller.
- d. Close off the hydrant/supply to the pump.
- e. Open all valves to relieve any pressure left in the system.

9. After final use.

- a. If the pump was last run with foam or water that is salty, brackish or high in mineral content, flush the pump with fresh water for a minimum of 2 minutes or until water is clear.
- b. After the unit has cooled down, check all fluid levels and add as needed.
- c. Completely drain the pump of all water.
- d. Break down and store all equipment as outlined by the apparatus or department procedures.
- e. Visually inspect the pump end. Clean any dirt or debris from the pump unit. If necessary, a mild soap and water solution can be used. Note and report any performance irregularities or any abnormal mechanical sounds.
- f. Close all valves and plug all openings.
- g. Follow any other product, component, apparatus, and departmental procedures and/or guidelines before placing the unit in storage. Make sure all necessary tools, spares, and accessories are with the pump.

To operate the BB-4-D902 in cold weather:

- The pump can be run in below freezing temperatures if certain precautions are taken to avoid the formation of ice in the pump.
- After priming the pump, the unit should be run at low speed for a short period of time to allow all components to warm up before continuing with the remaining operating procedures.
- Unless wrapped in a heater, drain the pump of all water if it is stopped for any length of time. The engine/drive unit should be turned over a few revolutions to make sure all water has been removed from the pump. Drain the pump priming line if a primer has been used.
- After use, drain the pump, manifolds, and lines of all water. You can also pour some RV antifreeze into the pump and circulate it through the pump and plumbing system.

Warranty, Service and Support

Product and service documentation such as tech notes, data sheets, manuals and information on the limited warranty provided on products manufactured by **WATERAX** can be found on our Web site at: www.waterax.com

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