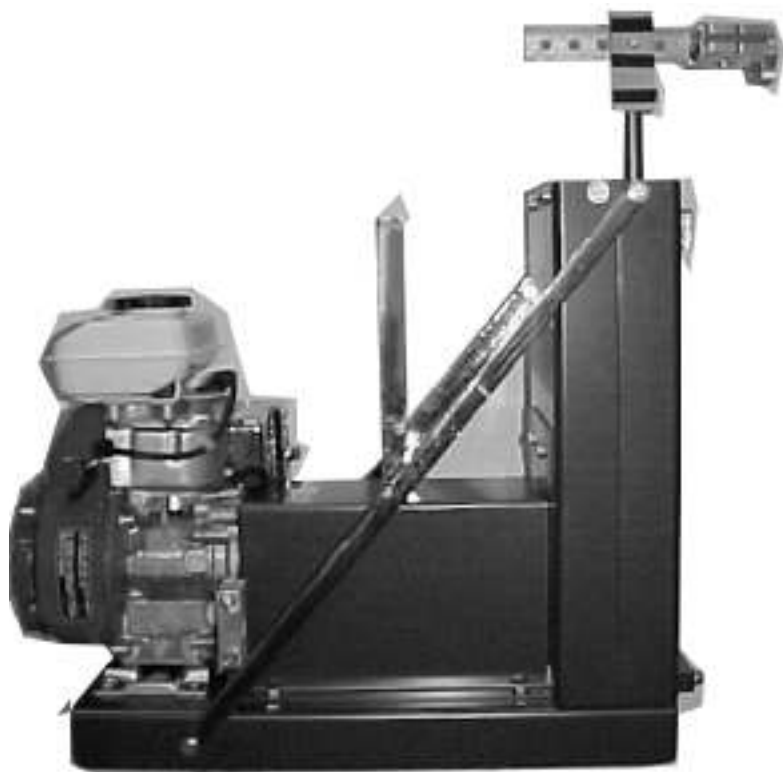


WATERRA OWNER'S MANUAL

POWERPUMP 2



waterra Groundwater Monitoring
Equipment and Supplies

SN#



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WATERRA POWERPUMP 2 FEATURES & CAUTIONS

Features

The **Waterra PowerPump 2** is a gasoline powered mechanical drive mechanism which pumps water by repeatedly lifting and dropping a tubing and footvalve assembly that is extended below the water surface in a well. The PowerPump components include a 3 H.P. gasoline engine, a 19:1 parallel shaft speed reducer, a centrifugal clutch and a linear pump drive mechanism. This drive mechanism includes a reciprocating post which extends above the pump frame that connects to a tubing clamp. The pump unit is designed to hang from a well casing and is secured to the casing with a ratchet belt. All components on the pump are fully adjustable to permit operation in wells with variable casing completion heights and diameters.

Caution

Operators of the Waterra PowerPump 2 must first familiarize themselves with this Owner's Manual and the operating instructions for the Honda Engine GX100 before attempting to operate this piece of equipment. These manuals are included with your pump.

The operator must stand clear of the oscillating drive arm when the pump is in use. The rapid up-down motion of this part creates a potential hazard. Care must also be taken to avoid contact with the exhaust muffler as this part can become hot and cause burns. Warning labels on the pump indicate where these hazards exist – please heed them.

The Waterra PowerPump 2 is heavy – it weighs 75 pounds (34 kg), so care must be taken when transporting the pump. Use proper lifting techniques in order to avoid back injuries.

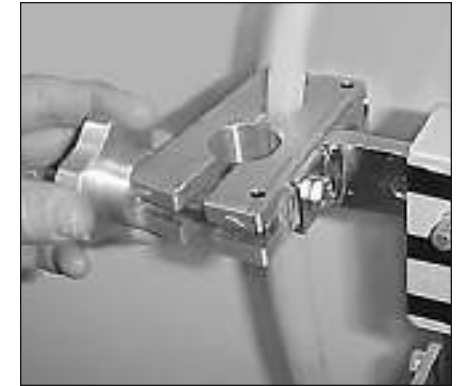
The Waterra PowerPump 2 should always be transported in an upright position. This will prevent oil from leaking from the crankcase into the cylinder, or fuel from leaking from the fuel tank. Prior to transporting the unit, remove all gasoline from the engine.

Before starting the Waterra PowerPump 2, ensure that there is enough tubing between the tubing clamp and the tubing discharge clamp. Insufficient tubing will cause unnecessary strain on the equipment.

WATERRA POWERPUMP 2 ASSEMBLY & OPERATION

Assembly & Operation

The **tubing clamp** is attached to the reciprocating post by the locking block and clevis pin assembly at the top of the pump. The plastic tubing, once installed to the desired depth in the well, is attached to the pump with the tubing clamp. The position of the tubing clamp should be adjusted so that the tubing hangs clear of the well casing to prevent wear. About 5 or 6 feet of tubing should extend above this clamp to allow for controlled discharge of the groundwater.

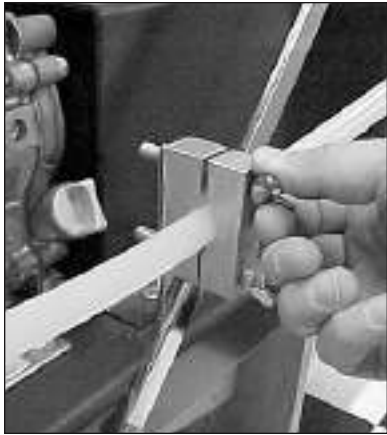


The **tubing discharge clamp** utilizes a V block clamp which is attached to the bracket located on the base aluminum channel below the engine. It is attached to the pump by the two adjustable threaded bolts and butterfly nuts which accommodates tubing ranging in size from 5/8" to 1" O.D. Clamping the tubing in this way provides a fixed discharge point which makes it easier to sample and measure flow rates. An adjustable ratchet belt is provided which can be used to firmly attach the PowerPump 2 to the well casing while operating.



Anchoring of the pump with the ratchet belt is especially important when pumping deep wells due to the greater amount of tubing inertia and motor vibration. The clamp is also useful in securing the pump in situations where ground conditions are very soft and unstable.

WATERRA POWERPUMP 2 ASSEMBLY & OPERATION



Assembly & Operation (cont'd)

Starting the PowerPump 2 —

Before starting the engine, ensure that the pump is properly installed on the well and the tubing firmly clamped to the pump. We recommend that you carefully examine the quick release clamp to ensure that the up and down stroking motion will not result in a collision between pump components and the well casing.

Follow the procedures outlined in the Honda Owner's Manual for starting the engine. The clutch is a centrifugal

clutch and therefore will not engage until the engine output revolutions are sufficiently high enough. Do not start the pump with the throttle at its maximum position. Once the engine is running smoothly, the pump is started by increasing the throttle and thus engaging the clutch. Once running, the throttle can be adjusted to provide the desired stroke rate. At any time during the operation of the pump, pumping can be stopped by decreasing the throttle or switching the pump off.



WATERRA POWERPUMP 2 ROUTINE MAINTENANCE

Engine

Please consult the Honda Owner's Manual for details on engine maintenance.

Pump Drive Mechanism

We recommend that the bearings and slide rail be lubricated after every 50 hours of operation. However, if pumping is conducted in extreme heat or dusty conditions, additional greasing may be necessary. Use a standard grease lubricant for all bearings in the drive mechanism. Access to the grease nipple for the slide rail mechanism is attained by removing the two bolts on the cover at the rear of the slide rail housing. To help minimize friction, grease should also be applied directly to the section of the reciprocating post which slides through the bushing guide.

We also recommend that, after every 100 hours of use, all bolts be checked, especially those fastening the major pump components to the pump frame.





– Tubing Clamp



– Locking Block
and Clevis Pin



– Ratchet Belt



– V Block Discharge Clamp

Warranty Information

Waterra Pumps Limited warrants that each new PowerPump 2 will be free, under normal use and maintenance, from any defects in material or workmanship for the relevant warranty period. Necessary repairs shall be made and replacement parts provided at no cost to the consumer when Waterra acknowledges that such defects are attributable to faulty material or workmanship at the time of manufacture. This warranty is not transferable.

Warranty Period

3 H.P. Honda engine — — — Manufacturer's warranty period
New gear box — — — — — Manufacturer's warranty period
All other components — — 6 months

This warranty does not cover:

- i) any repairs required as a result of collision, accident, striking an object, abuse, misuse, lack of required maintenance or use of an incorrect power source;
- ii) any repairs required as a result of any attachments, parts or devices installed or repairs done by a party other than Waterra Pumps Limited;
- iii) any PowerPump 2 modified, altered, disassembled or remodeled; and
- iv) normal maintenance service such as: tightening screws, bolts or fittings, lubrication and engine tune-up and the replacement of parts required for normal maintenance services including filters, ignition points and condensers, spark plugs and wires, fuses, belts, lubricants and other expendables susceptible to natural wear.

Owner's Obligation

The owner agrees to follow all safety procedures outlined with this equipment and follow the maintenance schedule as indicated in the Owner's Manual. A record must be kept of regular inspections and maintenance performed.

WATERRA POWERPUMP 2

CONTACT WATERRA

Disclaimer

To the extent that the law permits, Waterra Pumps Limited disclaims any responsibility for the loss of time or use of the PowerPump 2, transportation or towing costs or any other indirect, incidental or consequential damage, inconvenience, commercial loss or personal injury. The warranty is not valid if the product is not paid for in full within 60 days of the invoice date.

Returning PowerPumps to Waterra

Waterra requires that all customers notify Waterra prior to returning their PowerPump 2 under the Waterra warranty program. The PowerPump will only be accepted if it has been thoroughly cleaned and decontaminated. PowerPumps must be properly packaged and all fuel must be removed from the pump prior to shipping. Please contact Waterra in order to obtain a shipping address.

Contacting Waterra

Waterra maintains a website at www.waterra.com. That site will have our current phone numbers and return addresses. In addition, this manual will be maintained on the site.

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