



CROMTECH

DIESEL WATER PUMPS



CROMTECH DIESEL PUMPS OPERATION MANUAL

Thank you for purchasing a Cromtech Diesel Pump.

This manual provides understanding of the operation and maintenance of your pump. Please read this manual carefully before operating.

For any questions regarding operation or maintenance, please consult your local service agent. Find your local service agent at www.crommelins.com.au.

IMPORTANT ICONS

Important information is distinguished by the notifications below. The Safety Alarm Symbol () alerts you to potential hazards. Please obey all safety information in the symbol to avoid any possible injury or even death.

 **DANGER:** - Indicates a hazardous situation which, if not strictly complied with, will result in substantial property damage, serious injury or DEATH.

 **WARNING:** Indicates a hazardous situation which, if not strictly complied with, may result in property damage,

 **CAUTION:** Indicates a hazardous situation which, if not strictly complied with, could result in property damage or injury.

 **NOTE:** Indicates important information to simplify operation and understanding.



WARNING: PLEASE READ AND UNDERSTAND THIS MANUAL BEFORE OPERATING THE PUMP.



NOTE: We continually seek advancements in product design and quality. Therefore, there may be minor discrepancies in actual machine and the printed manual.

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WARRANTY

CROMTECH™ and CROMMELINS™ are a registered trademark of The Crommelin Group. Crommelins warrants their goods against defects in materials and workmanship under normal use and service.

The Crommelin Group warranty does not cover fair wear commensurate with the age of the product, any damage caused by accident, abuse, misuse, neglect or failure to observe proper operating instructions or proper machinery maintenance as described in the instruction manual.

It is the owner's responsibility to regularly maintain a product in accordance with the owner's manual and only use the equipment for its designed purpose.

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

CONSUMER ADVICE

Any claim under these warranties must be made in the warranty period from the date of purchase of the product.

There are over 185 national authorised service/repair agents available, visit www.crommelins.com.au for their details and locations.

To make a claim under the warranty, you must return the product (with proof of purchase) to the closest warranty agent or to the place of purchase.

Where a failure does not amount to a major failure, Crommelins Machinery is entitled to choose between providing you with a repair, replacement or refund. To obtain compensation, you would need to provide documentary evidence of the loss or damage suffered, and documentary evidence that such loss or damage was a reasonably foreseeable consequence of a failure by The Crommelins Group to comply with a consumer guarantee under the Australian Consumer Law.

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SAFETY WARNINGS

! WARNING: DO NOT Operate this pump until you have read ALL safety, operation, and maintenance instructions listed in this manual.

- Failure to follow the instructions may result in property damage, INJURY or DEATH.
- The warnings and precautions discussed in this manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

! WARNING: Modifications to any part of the pump is not allowed and may void your warranty.

! WARNING: This pump is intended for is designed for pumping clean water for the agriculture, forestry or garden area. This pump is not designed for a permanent application.

! WARNING: Before each use, check for loose or damaged parts, signs of oil or fuel leaks, and any other condition that may affect proper operation. Repair or replace all damaged or defective parts immediately.

- Locate all operating controls and safety labels.
- Operate only on level surfaces.
- DO NOT expose pump to excessive dust, or dirt.
- Keep all safety guards in place and in proper working order at all times.
- DO NOT allow any material to block the cooling slots.
- DO NOT allow children or untrained persons to operate the pump.
- DO NOT run the pump unattended. Turn off the pump before leaving the area.

! DANGER: FIRE OR EXPLOSION - Diesel fuel is flammable and explosive.

- Fire or explosion can cause severe burns or death.
- Keep flammable items away while handling fuel.
- Fill fuel tank outdoors and in a well-ventilated area. Ensure the pump is stopped before filling.
- Always wipe off spilled fuel and wait until the fuel has dried before starting the pump.
- DO NOT operate pump with known leaks in fuel system.
- Use proper fuel storage and handling procedures. DO NOT store fuel or other flammable materials nearby.

- Empty the fuel tank before storing or transporting the pump.
- Keep fire extinguisher handy and be prepared if a fire starts.

⚠ DANGER: TOXIC FUMES - The exhaust of the engine contains carbon monoxide, an odorless, colorless, poison gas. Using engine indoors CAN KILL YOU!

- NEVER use pump inside any building or any kind of enclosure, EVEN IF doors and windows are open.
- Place the pump in a well-ventilated area and consider wind and air currents when positioning the pump

⚠ DANGER: MOVING PARTS - Moving parts can cause severe injury. Keep hands and feet away.

- DO NOT operate with covers, shrouds, or guards removed.
- DO NOT wear loose-fitting clothing, dangling drawstrings or items that could become caught. Tie up long hair and remove jewelry.
- NEVER place fingers, hands, or body near the engine when it is running.

⚠ DANGER: KICKBACK - Rapid retraction of the starter cord will pull hand and arm towards the engine faster than you can let go.

- Unintentional startup could result in an injury.

⚠ WARNING: HOT SURFACE - The running pump produces heat. Severe burns can occur on contact.

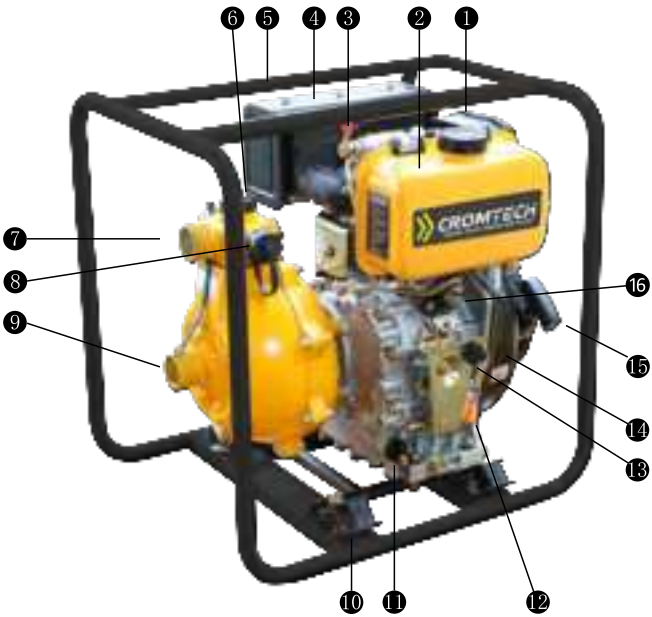
- DO NOT touch pump while operating or just after stopping. Avoid contact with hot exhaust gases.
- Maintain at least one metre of clearance on all sides to ensure adequate cooling.
- Combustible material can catch fire on contact. Maintain at least one metre of clearance from combustible materials.

⚠ WARNING: ACID (For types equipped with battery) - Be careful when using any battery.

- Keep away from open flame, heat or spark.
- Battery will exhaust hydrogen while charging. Only charge a battery in a well ventilated place.
- Avoid spilled battery acid. If contact with skin is made, wash immediately with clean water.

DIESEL TWIN IMPELLER FEATURES

Model TFT150DE

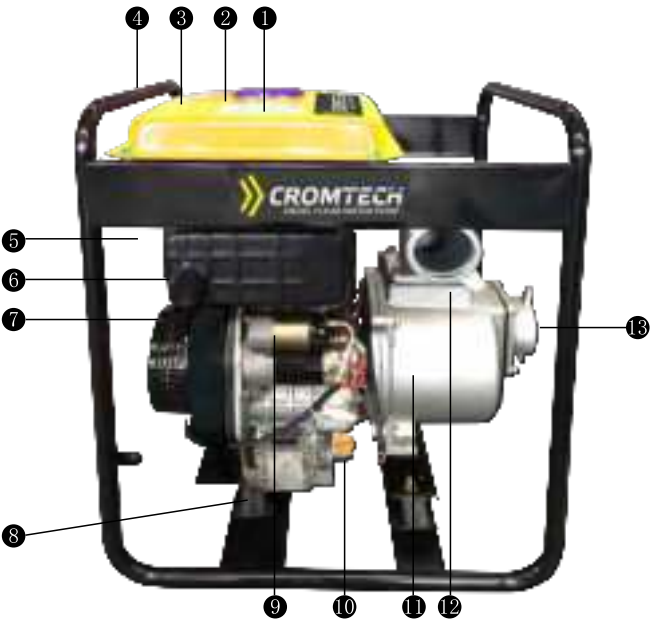


- | | | |
|-----------------------|----------------------------|-----------------------------|
| 1 Fuel cap | 7 1.5inch Outlet | 14 Recoil start |
| 2 Fuel tank | 8 1 inch Outlet/s | 15 Recoil handle |
| 3 Decompression Lever | 9 1.5inch Inlet | 16 Fuel connection nut |
| 4 Muffler guard | 10 Engine mount | 17 Electric Key Start |
| 5 Frame | 11 Oil drain | 18 Battery mount location/s |
| 6 Priming cap | 12 Oil dipstick | 19 Air cleaner element |
| | 13 Engine throttle control | |



DIESEL CLEAR WATER PUMP FEATURES

Model CTD301E



- | | | |
|----------------|--|-----------------------------|
| 1 Fuel cap | 8 Engine mount | |
| 2 Fuel gauge | 9 Starter motor (Electric start model) | |
| 3 Fuel tank | 10 Oil dipstick | |
| 4 Frame | 11 Pump casing | 15 Electric start key |
| 5 Air cleaner | 12 3 inch outlet | 16 Battery mount location/s |
| 6 Muffler | 13 3 inch inlet | |
| 7 Recoil start | 14 Fuel tap | |



PUMP SPECIFICATIONS

Model	TFT150DE	CTD301E
Max. Water Flow (L/min)	250L/min	833L/min
Max. Total Head (m)	75m	25m
Max. Suction Depth	8m	8m
Engine	5.3HP Cromtech 178	5.3HP Cromtech 178
Max. Power	4.0kW (296cc)	4.0kW (296cc)
Max. Speed (rpm)	3600rpm	3600rpm
Decibels (at 7m)	86db	86db
Fuel Tank	3.5L	12.0L
Oil Capacity	1.1L	1.1L
Outlet	1.5 inch, 1 inch outlet (2x)	3 inch outlet
Inlet	1.5 inch	3 inch inlet
Weight (kg)	45kg	49kg
Dimensions (LxWxH)	560x460x565mm	560x475x690mm

FEATURES

- Steel frame with rubber engine mount
- Mechanical seal (ceramic carbon)
- Diesel powered
- Electric start
- 1 Year Cromtech warranty

OPERATING CHECKLIST

1. **OPERATING AREA** - This pump is for outdoor use.
 - Only use OUTSIDE and place the pump in a well-ventilated area.
 - Only operate the pump on a flat, level surface and in a clean, dry operating environment.
 - Allow one metre clearance on all side of the pump while operating outdoors.
 - Pumps used for construction sites may be subject to additional rules and regulations.
 - When operating wear ear protection



DANGER: TOXIC FUMES - The exhaust of the generating set contains carbon monoxide, an odorless, colourless, poison gas. Using engine indoors **CAN KILL YOU**.

- **NEVER** use inside any building or any kind of enclosure, **EVEN IF** doors and windows are open.
 - **Place the pump in a well-ventilated area and carefully consider wind and air currents when positioning pump.**
2. **OPERATING CONDITION** - Check for loose or damaged parts, signs of oil or fuel leaks, and any other condition that may affect proper operation. Repair or replace all damaged or defective parts immediately.
 - Remove any excessive dirt or debris, especially around the muffler and recoil starter.
 - **DO NOT** move or tip the pump during operation.Use pump only for intended uses. If you have questions about intended use, ask your local dealer.

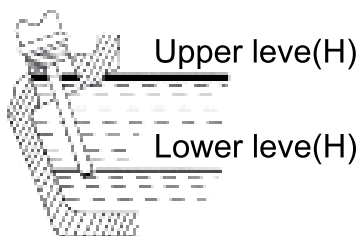


DANGER: Failing to correct problem(s) before operation could result in property damage, serious injury or DEATH.

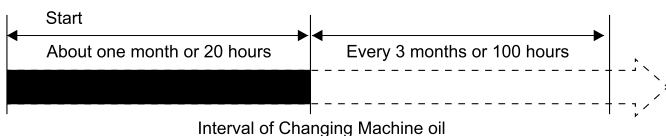
3. CHECK ENGINE OIL

! WARNING: This engine is not filled with oil. Any attempt to crank or start the engine before it has been properly filled (with the recommended type and amount of oil) may result in engine damage and void your warranty.

1. **ENGINE OIL** - Place the pump on a level surface with engine stopped.
 - Remove the dipstick and wipe it clean.
 - Reinstall dipstick into tube; rest on oil fill neck, DO NOT thread cap into tube.



2. Remove the dipstick again and check oil level. Level should be at top of indicator on dipstick.
3. If lower, fill to the upper limit (marked with “H”) of the dipstick with the recommended oil. Reinsert and fully tighten the dipstick.



! WARNING: Oil is a major factor affecting performance and service life of an engine. Use SAE30 oil.

! CAUTION: LEVEL GROUND - Operate only on level surface. The engine is equipped with a low oil sensor (applicable types) that will automatically stop the engine when the oil level falls below the safe limit. To avoid the inconvenience of an unexpected shutdown, fill to the upper limit and check the oil level regularly.

4. CHECK FUEL LEVELS



CAUTION: Only diesel fuel can be used. The fuel must be filtered. Fuel should be free of water or dust as this can result in problems with the fuel injection pump and nozzle.

FILLING THE FUEL TANK - With the engine stopped, check the fuel level gauge. Refill the fuel tank if necessary.

- Use clean, fresh, regular diesel fuel only.
- DO NOT mix with other fuels.
- Be sure not to fill above the upper limit mark, always fill to the level indicator, or fill to 25mm below full level (to allow room for fuel expansion in hot temperatures).



DANGER: FIRE OR EXPLOSION - Diesel is flammable and explosive. A fire or explosion can cause severe burns or death.

- Keep flammable items away while handling gasoline.
- Fill fuel tank outdoors and in a well-ventilated area with the engine stopped.
- Always wipe off spilled fuel and wait until the fuel has dried before starting the engine.
- DO NOT operate the engine with known leaks in the fuel system.
- Use proper fuel storage and handling procedures. DO NOT store fuel or other flammable materials nearby.
- Empty the fuel tank before storing or transporting this engine.
- Keep fire extinguisher handy and be prepared if a fire starts.



CAUTION: To insure easy starting, do not use fuel left over from the previous season.

5. CHECK AIR CLEANER ELEMENT



WARNING: Never run the pump without the air cleaner element as damage to the engine may occur.

- The air cleaner must be changed when the output of engine decreases or if the exhaust colour looks darker than normal. See page 19.

LOW OIL WARNING SYSTEM/STOP DEVICE

! NOTE: The device works automatically to stop the engine when the oil pressure falls below the regulatory level to prevent engine seizure

- The oil temperature will rise too high if the engine is operated with insufficient oil.
- Too much oil is dangerous as it may cause sudden excessive engine revs.
- Be sure to check oil is at optimum specified levels.

BREAK-IN OPERATION

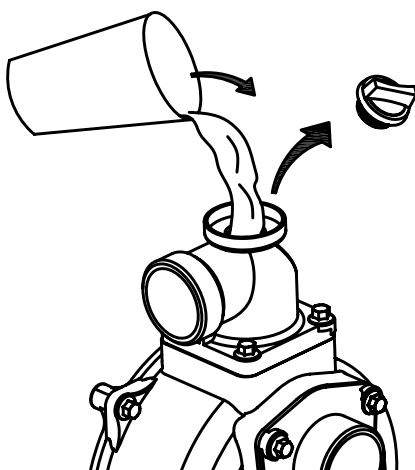
! WARNING: While your pump is still new, over working the pump may shorten the life of the engine. Follow the break-in procedures during the first 20-30 hours.

1. Avoid over working the pump with heavy loads during break-in period
2. Change engine oil regularly (Every 20 hours or one month after initial use, and every 3 months or 100 hours thereafter).

PRIMING THE PUMP

! CAUTION: Operating a pump with no water will damage the seals, which may void the warranty.

- *PRIME THE PUMP* - Fill the pump with water before starting it. Remove the water inlet cap and fill pump head with water.



PRE-START INSTRUCTIONS

! NOTE: When starting the pump for the first time, restarting the engine after it stopped due to fuel shortage or starting the engine after fuel filter cleaning. Follow these steps.

- **Always check that there is no air trapped in the fuel line. Trapped air needs to be cleared before starting.**
 1. To clear air in the fuel line, loosen the fuel connection nut that is between the injecting pump and fuel line (See page 7).
 2. Ensure the ignition is in the 'OFF' position.
 3. Bleed the fuel line by pulling the recoil starter slowly to start the fuel pumping action.
 4. Continue until there is no air bubbles coming out and the fuel is flowing freely.
 5. Tighten fuel connection nut



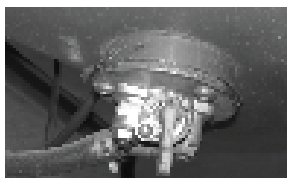
STARTING THE PUMP

! WARNING: Be sure to turn on the main switch before starting the pump.

ELECTRIC STARTING

! NOTE: Always keep the starting key turned to 'ON' while the engine is running.

1. The preparation for starting the engine is the same as the recoil start
2. Open the fuel tap to the 'ON' position.



3. Set the engine speed lever to 'RUN' position.



4. Push down the decompression lever (It will return automatically when the recoil starter is pulled)
5. Turn the starting key clockwise to 'START' position
As soon as it starts, release your hand and let the key automatically return to its initial position. If the pump doesn't start after 10 seconds, please wait at least 15 seconds before attempting again.

RECOIL STARTING (MANUAL START)

 **NOTE: Rapid retraction of the starter cord will pull hand and arm towards the engine faster than you can let go.**

- **Unintentional startup could result in an injury.**
 - **Never pull out the recoil start when the diesel engine is running, as damage may occur.**
1. Open the fuel tap to the 'ON' position
 2. Set the throttle speed control to 'START' position.
 3. Set ignition key switch to 'ON' position
 4. Pull out the recoil start handle and prepare to start the pump.
 5. Pull the rope to the point where resistance is felt. Return the recoil handle to the initial position
 6. Push down the decompression lever (It will return automatically when the recoil starter is pulled)
 7. Grip the recoil handle firmly and pull quickly and briskly (Two hand might be needed).
 8. Return the recoil gently back to prevent damaging the starter. Do not allow the handle grip to snap back.

RUNNING THE PUMP

 **CAUTION: Operating a pump with no water will damage the seals, which may void the warranty.**

- Once the pump is started you can adjust the water flow with the throttle speed control.
- The engine will need to be warmed for about 3 minutes

 **NOTE: LOW OIL WARNING SYSTEM - The pump is fitted with a low oil warning system and will automatically stop in case of low oil pressure or lubrication shortage.**

- If started again, it will immediately stop. Check the oil level, fill to correct level and try again.

- If insufficient oil, the oil temperature will rise too high and damage may occur.
- Too much oil is dangerous as it may cause sudden excessive engine rpm.
- Be sure to check oil is at optimum specified levels.

DURING OPERATION

 **WARNING: Check for unusual sounds or vibrations during operation.**

- Check for misfiring or the engine running rough
- If you notice any above problems, stop the engine and consult you local service agent.

STOPPING THE PUMP

1. Turn the throttle lever to low speed and run the engine for 1-2 minutes more.
2. ELECTRIC START - Switch the ignition switch to the 'OFF' position. Turn the fuel tap to the 'OFF' position.
3. RECOIL START - Turn the fuel tap to the 'OFF' position.

 **CAUTION: If the engine continues to run even after the speed lever is moved to the 'STOP' position, turn the fuel tap to the 'OFF' position to stop the engine. DO NOT stop the engine with the decompression lever.**

GENERAL MAINTENANCE

 **NOTE: It's the operator's responsibility to complete all scheduled maintenance in a timely manner. Correct any issues before operating the pump. Always follow the inspection and maintenance schedule in this manual.**

- Before servicing the pump, stop the pump, disconnect all hoses and allow the pump to cool.

MAINTENANCE SCHEDULE - Service your pump more frequently when operating in adverse conditions.

- Contact your local service agent for parts or engine maintenance needs.
- See maintenance schedule on next page

Item \ Service period regular	Daily check	First month or 20 Hrs	Every 3 months or 100 Hrs	Every 6 months or 300 Hrs	Every year or 1000 Hrs
Check and replenish fuel	○				
Drain fuel F.O. tank		○			
Check and replenish lube oil	○				
Check for oil leakage	○				
Check and tighten each parts engine	○			● Tighten head bolts	
Chang lube oil		○ (1st time)	○ (2nd and thereafter)		
Clean oil filter			○ (Clean)	○ (Replace)	
Air cleaner element replacement	Service more frequently when used in dusty areas			○ (Replace)	
Clean fuel filter				○ (Clean)	● (Replace)
Check fuel pipe				● (Replace if necessary)	
Check battery fluid	(Monthly)				

PUMP MAINTENANCE

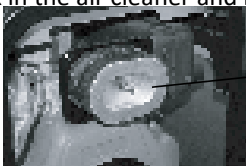
! WARNING: DO NOT modify the pump in any way.

CHECK/CHANGE AIR CLEANER ELEMENT

! WARNING: Never run the pump without the air cleaner element as damage to the engine may occur.

- The air cleaner must be changed when the output of engine decreases or if the exhaust colour looks darker than normal.

1. Loosen the wing nut, detach the cover and remove the air cleaner element.
2. Wash in warm water. DO NOT wash with detergent.
3. Squeeze thoroughly and dry with a clean cloth.
4. Saturate in clean engine oil. Squeeze in a clean, absorbent cloth to remove all excessive oil.
5. Place element back in the air cleaner and reattach the cover. Tighten wing nut.



CHECK/CHANGE FUEL FILTER

! WARNING: Change filter regularly to insure maximum engine output.

- CLEAN FILTER - Every 6 months or 300 hours
- REPLACE FILTER - Every year or 1000 hours

CHECK BATTERY FLUID / CHARGING BATTERY

! NOTE: Before starting, check for physical damage to battery and also electrolyte levels. Replenish with distilled water to the upper mark.

- The diesel engine uses a 12V battery. The battery fluid will be lost through continuous charging and discharging.
- CHECK BATTERY FLUID LEVELS - Check monthly. If battery is damaged or not holding charge. Replace battery.

STORAGE AND TRANSPORT

! DANGER: FIRE OR EXPLOSION - Diesel fuel is flammable and explosive. Empty the fuel tank and shut off fuel tap before storing or transporting this pump

1. STORAGE - The pump should be cleaned and placed in the starting position.
2. LONG TERM STORAGE - Follow the instructions below for if the pump is not being used within the next 2 months or longer.
 - i. Clean the pump according to the instructions in the maintenance section (pg 19).
 - ii. Run the pump for 3 minutes and stop it.
 - iii. Drain old oil and replace with fresh oil.
 - iv. Turn off the fuel supply at the fuel valve.
 - v. Change the oil.
 - vi. Slowly pull the recoil start handle until pressure is felt (that is, to the point in the compression stroke where the intake and exhaust valves are closed), and leave the recoil in that position. This prevents moisture forming while the engine is not in use/storage.
 - vii. Store the unit in a clean, dry area out of direct sunlight.

3. STARTING POSITION

- I. **MANUAL STARTING** - Press the decompression lever (non-compression position), pull the recoil handle 2-3 times. Do not start the diesel engine.
- II. **ELECTRIC STARTING** - When the decompression lever is in the non-compression position, turn the switch to the 'ON' position for 2-3 seconds. Do not start the engine.

TROUBLE SHOOTING

 **WARNING: Turn off the pump before starting maintenance work.**

FAULT	POSSIBLE CAUSE	REMEDY
Engine can hardly start or cannot start /Low power	1. Throttle speed control closed 2. Stop switch closed 3. Inferior oil or fuel is used. 4. Engine works over loaded or over heated 5. Insufficient oil	1. Open the throttle governor 2. Turn the switch to ON position 3. Change new fuel or oil 4. Check the engine work condition 5. Add oil to standard level
Pump cannot work or low water flow after engine start	1. Impurities filter blocked 2. Insufficient water in pump 3. Problem with water pipe like block, loose, leak and pipe, length too long or diameter too narrow. 4. Input pipe is not in the water. 5. Input pipe leak 6. Pump mounting too high 7. Speed of pump is too low 8. Pump will not draw water 9. There is air in the output hose/outlet	1. Check and remove the impurities 2. Unscrew the priming plug and fill with enough water 3. Check the water pipe and adjust 4. Check and put it into water 5. Check the connection 6. Lower the mounting height 7. Turn the throttle speed control to high speed 8. Check max. depth of suction hose and ensure it is in the working parameters. 9. Seal may be broken or damaged. Repair seal.
Power consumption of pump is too high	1. There is wear between impeller and the diffuser 2. The impeller is obstructed by weed or debris	1. Listen carefully to hear if impeller is grinding with pump case. Repair if needed. 2. Open the pump casing (while stopped) and clear obstruction
Pump flow suddenly stopped	1. The connector on the inlet has come loose or is leaking 2. The connector on the outlet pipe has come loose or is leaking 3. Suction head is too high and causing capitations 4. There is an obstruction in the inlet pump/casing	1. Reconnect the inlet pipe 2. Reconnect the outlet pipe 3. Check suction head and lower position of pump 4. Check and clear obstruction
There is vibrations or noise	1. Suction head is high and causing cavitations 2. There is an obstruction in the inlet pump/casing 3. Pump is not stable or on angle 4. There is air in the pump or hoses 5. Impeller is damaged	1. Check suction head and lower position of pump 2. Check and clear obstruction 3. Stop machine. Adjust to a level surface and restart 4. Check pump and hose seals for air leaks 5. Stop machine, change with new one.



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