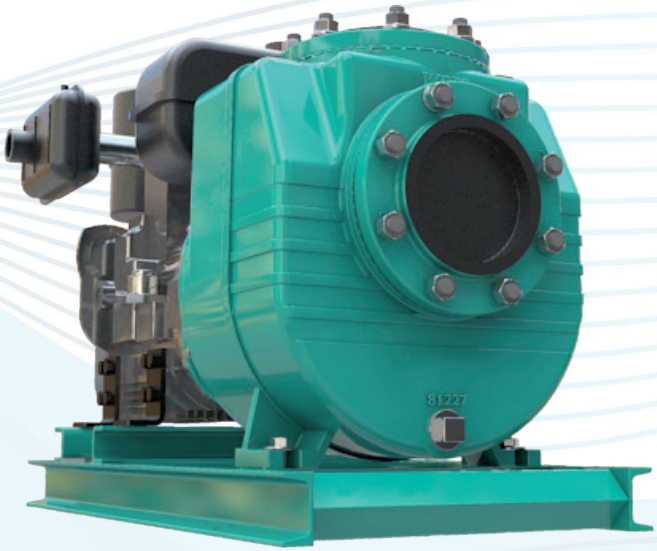
WDM PUMPS



Operation Manual

Self-Priming Pumps

WDM Water Systems

1. Introduction.

This manual contains instructions for installation and commissioning of your Self-Priming pump. Read carefully these recommendations before starting up your pump. ALWAYS KEEP ON HAND!.

Congratulations! You have purchased a product developed with the latest WDM Pumps technology.

Our pumps are designed and manufactured with parts of the highest quality. Long experience as manufacturers, our special care and dedication in production, make our products meet the highest standards.

This operation manual contains important information and guidance for the installation, operation and maintenance of your Self-Priming pump. Read instructions carefully before installing the product. Retain it for later use.

The pumps have been built according to the standards of American manufacturers pumps (Contractors Pump Bureau) and factory tested by hydrostatic testing performance to ensure proper operation. Inspect carefully and make sure there are no missing or damaged pieces in transit. If necessary, make a claim to the transportation company as soon as possible.

The design, materials and processes used in the manufacture of products ensure proper operation. However life and duration depend on appropriate application, installation, periodic inspection and general preventive maintenance.

WARNING.

WDM Pumps is not responsible for damage or accidents that occur due to non-compliance with the instructions given in this manual. The warranty is only valid when using original spare parts.

Factory's counseling is strongly recommended for installation and start-up.

2. Safety Recommendations.

- To reduce risk of electrical shock, pumps and control panels must be properly grounded in accordance with the National Electric Code (NEC) or the Canadian Electrical Code (CEC) and all applicable state, province, local codes and ordinances. Improper grounding voids warranty.
- To reduce risk of electrical shock, always disconnect the pump from the power source before handling or servicing. Lock out power and tag. Cable should be protected at all times to avoid punctures, cut, bruises and abrasions - inspect frequently.
- Never handle connected power cords with wet hands. To reduce risk of electrical shock, all wiring and junction connections should be made per the NEC or CEC and applicable state or province and local codes. Requirements may vary depending on usage and location.
- Products Returned Must Be Cleaned, Sanitized, Or Decontaminated As Necessary Prior To Shipment, To Insure That Employees Will Not Be Exposed To Health Hazards In Handling Said Material. All
- Applicable Laws And Regulations Shall Apply. Bronze/brass and bronze/brass fitted pumps may contain lead levels higher than considered safe for potable water systems. Lead is known to cause cancer and birth defects or other reproductive harm.
- Various government agencies have determined that leaded copper alloys should not be used in potable water applications. For nonleaded copper alloy materials of construction, please contact factory.
- DO NOT wear loose clothing that may become entangled in the impeller or other moving parts. Always wear appropriate safety gear, such as safety glasses, when working on the pump or piping. Keep clear of suction and discharge openings.
- DO NOT insert fingers in pump with power connected.
- Make sure lifting handles are securely fastened each time before lifting.
- DO NOT operate pump without safety devices in place. Always replace safety devices that have been removed during service or repair.
- Secure the pump in its operating position so it can not tip over, fall or slide.
- DO NOT exceed manufacturers recommendation for maximum

performance, as this could cause the motor to overheat.

- Operation against a closed discharge valve will cause premature bearing and seal failure on any pump, and on end suction and self priming pump the heat build may cause the generation of steam with resulting dangerous pressures. It is recommended that a high temperature switch or pressure relief valve be installed on the pump body. Pumps build up heat and pressure during operation-allow time for pumps to cool before handling or servicing.
- DO NOT pump hazardous materials (flammable, caustic, etc.) unless the pump is specifically designed and designated to handle them.

Pump coupled to combustion engines.

- Never operate the pump in an enclosed area where fumes can collect.
- Do not add fuel to the tank while the engine is running. Stop engine and wait until it cools.

Beware of gas evacuation systems these rotting burning engine.

These pumps are designed to operate safely when used and maintained according to what is stated in this manual. A pump is a device that contains parts that are in rotation and therefore can be dangerous. Operators and maintenance personnel should be aware of this and follow safety recommendations.

The pumps are heavy equipment: handle them with care.

3. General Information.

Receiving.

Upon receiving the pump, it should be inspected for damage or shortages. If damage has occurred, file a claim immediately with the company that delivered the pump. If the manual is removed from the packaging, do not lose or misplace.

Storage.

Short Term- Our pump's are manufactured for efficient performance following short inoperative periods in storage. For best results, pumps can be retained in storage, as factory assembled, in a dry atmosphere with constant temperatures for up to six (6) months.

Long Term- Any length of time exceeding six (6) months, but not more than twenty four (24) months. The units should be stored in a temperature controlled area, a roofed over walled enclosure that provides protection from the elements (rain, snow, wind blown dust, etc..), and whose temperature can be maintained between +40°F and +120°F (+4°C and +50°C).

If extended high humidity is expected to be a problem, all exposed parts should be inspected before storage and all surfaces that have the paint scratched, damaged, or worn should be recoated with a water base, air dry enamel paint. All surfaces should then be sprayed with a rust-inhibiting oil. Pump should be stored in its original shipping container and on initial start up, rotate impeller by hand to assure seal and impeller rotate freely.

4. Installation.

Location.

The pump should be located as near as possible to the liquid to be pumped and in no case should the pump be more than 25 feet above the surface of the liquid supply. The pump should always be as level as possible. (See Fig. 1).

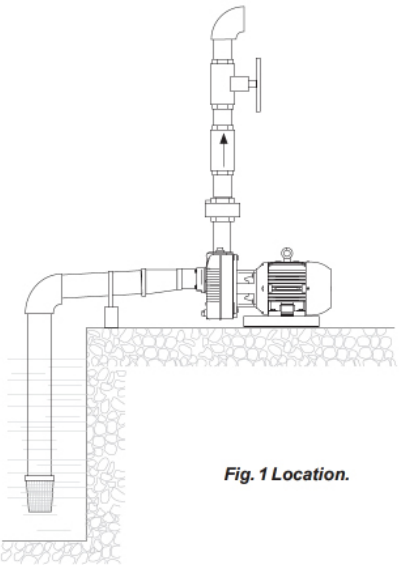


Fig. 1 Location.

Rotation.

Check rotation of pump to be sure that it agrees with direction indicated on the “ROTATION PLATE”. If rotation is incorrect, change as follows; 3 phase, interchange any two incoming wire leads. 1 phase, follow connection name plate on motor. All pump units rotate clockwise when looking from the motor end of the pump. Locate the pump on a firm footing to make sure the pump will not move due to vibration. The pumps should be level to provide favorable operating conditions.

Suction System.

It is advisable to use a suction line of the same size as the pump port size. All horizontal suction lines should slope up to the pump to avoid trapped air pockets. An adjustable stand, pipe clamp or floor flange must be installed to support the weight of the suction line. Using a smaller suction line than the pump port size can cause internal damage to the pump.

The suction line must not have holes, even small holes. The smallest air leak in the suction line may prevent the pump from priming. Coat all threaded connections in the suction line with pipe thread compound to insure an air tight joint. In addition, suction flanges should be pulled up tight to prevent air leaks.

CAUTION.

This pump should not be operated without a strainer on the end of the suction line to prevent sticks, stones, rags and other foreign matter from being drawn into the impeller. The strainer should be cleaned regularly to insure full flow.

Discharge System.

Connect discharge hose or pipe to the side outlet on the discharge tee or to the discharge elbow.

ATTENTION.

WDM Pumps does not supply all the accessories (valves, gauges, pipes, extensions, etc.) mentioned earlier in this operation manual.

Electric motor & connections.

Read Motor Manufacture's Instructions or connection diagram located on the motor name plate or inside the cover on conduit box. Wiring of motor and control, overload protection and grounding should

be in accordance with State, Province, Local and National Electrical Code (NEC) or Canadian Electrical Code (CEC). Be sure the following guidelines are met:

1. AC power is within ± 10% of rated voltage with rated frequency. (See motor name plate for rating).

   OR

2. AC power is within ± 5% of rated frequency with rated voltage.

   OR

3. A combined variation in voltage and frequency of ±10% (sum of absolute values) of rated values, provided the frequency variation does not exceed ± 5% of rated frequency.

Pump Lubrication.

The pump requires no lubrication. The impeller and seal are the only moving parts of the pump and these parts are water lubricated and need no attention.

CAUTION.

DO NOT operate pump without liquid in pump body as operating dry will result in damage to the seal.

5. Operation.

Priming.

Remove the priming plug in the top of the discharge tee or in top of pump body, and fill the pump body completely with liquid as free of solids as possible. In freezing weather, the pump should be primed with warm water, if possible, to prevent any damage that may be caused by ice forming within the pump.

Starting.

After completing this procedure, the pump is now ready for operation. Start pump by applying power to motor as outlined in the Motor Instructions.

Shutdown.

Operation may be discontinued by disconnecting electric power. When the pump has been operating in freezing weather or in liquid containing a considerable amount of solids, it is advisable to drain the pump body by removing drain plug and flushing the solids out of the body.

Replace the drain plug.

Restart.

At each subsequent start, particularly if the pump has been drained, the priming liquid level should be checked since the pump is self-priming only when the body is full of liquid.

6. Pump service and repair.

Check valve service.

To clean out or repair check valve, disconnect suction piping. Remove cap screws and suction flange.

ATTENTION.

DO NOT PRY ON FLANGE but rather bump off with a block of wood and a hammer. Pull off gasket together with weights and, round head screw and lockwasher. Examine and replace any parts showing wear or damage. When replacing gasket and weight assembly onto pump body make sure that HINGE section of gasket is at TOP and that LARGE weight is on PUMP SIDE of gasket.

Body, volute and impeller service.

To clean out or repair the body, volute or impeller, disconnect suction and discharge piping.

Remove hex nuts and lockwashers and pull body from intermediate coupling. This will expose O-ring, impeller, impeller locking screw, volute and volute gasket. Examine and replace any part showing undue wear or damage.

When impeller needs replaced, pull volute from intermediate coupling, remove set screw or cap screws and washers, and unscrew the impeller from the motor shaft. The impeller is screwed onto the shaft with right hand thread and to break loose use a block of wood against a vane and strike with a hammer. At reassembly, be sure to use the required number of shims and to result in an impeller-to-volute clearance of not more than .015”.

Shaft seal service.

To examine or replace shaft seal, remove body and impeller. Remove impeller shims and remove rotating member of shaft seal from

motor shaft. All of the components of the shaft seal are now exposed for examination. If any part shows wear or damage, replace entire shaft seal assembly. When stationary member needs replacing, pry used stationary member from intermediate coupling.

CAUTION.

Handle seal parts with extreme care.
DO NOT scratch or mar lapped faces.

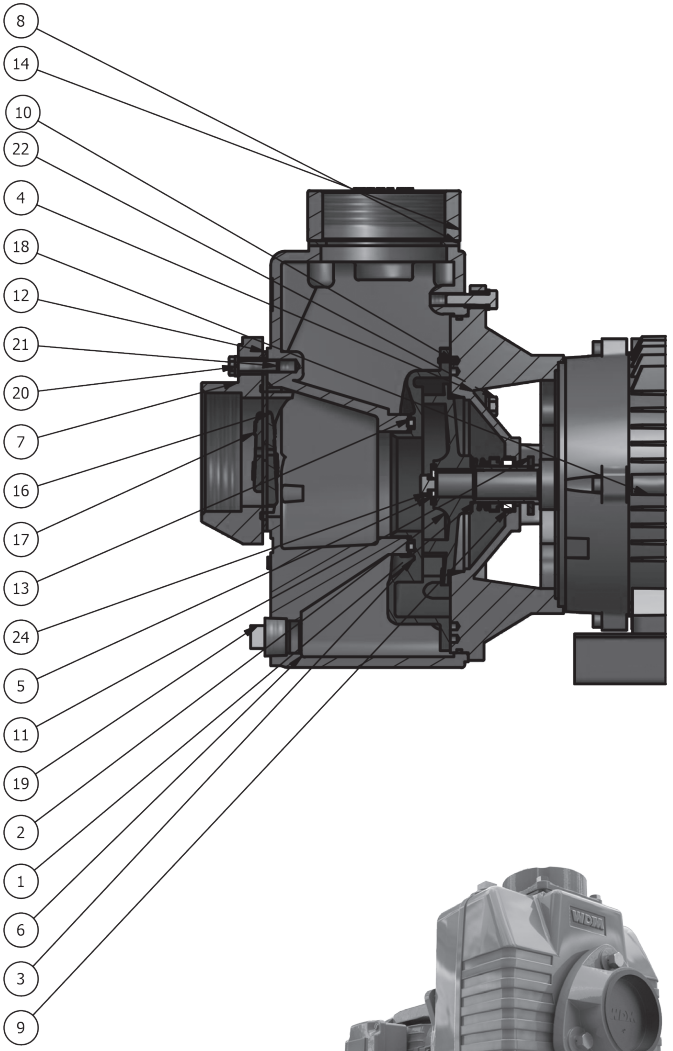
Lightly oil ring and press stationary member over motor shaft and into intermediate coupling.
Lightly oil motor shaft and inner surface of bellows of rotating member. With lapped surface facing intermediate coupling, slide rotating member onto shaft until lapped faces of rotating member and stationary member are together. Reassemble remainder of pump.

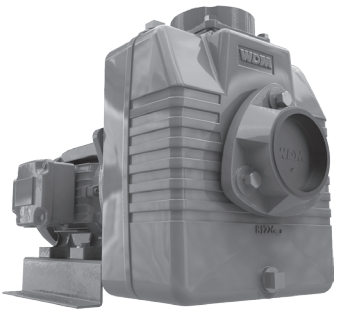
Motor service.

To remove or replace motor, disassemble pump. Remove cap screws, lockwashers to remove motor, and base. To remove motor from base, remove cap screws on hex nuts.

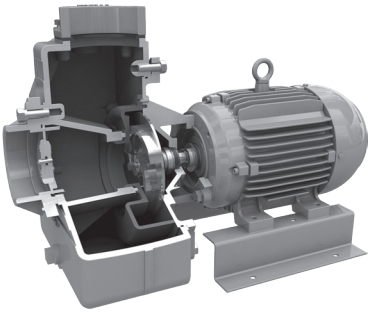
7. Sectional.

AE Series.





Item	Description	QTY
1	CAMISA BRONCE 1-1/4”	1
2	IMPULSOR	1
3	VOLUTA	1
4	ACOPLE	1
5	ARANDELA ø1-3/8xø13/32x5/32	1
6	CUERPO	1
7	TOMA DE SUCCION 4in	1
8	EMPAQUE TOMA DE DESCARGA	1
9	SELLO MECANICO	1
10	PIN PARA VOLUTA	2
11	ARANDELA CAUCHO 1-13/64 2020	1
12	EMPAQUE VALVULA CHEQUE	1
13	EMPAQUE VOLUTA	1
14	TOMA DE DESCARGA 4in	1
15	BASE	1
16	PESA GRANDE	1
17	PESA PEQUE□A	1
18	MOTOR	1
19	Square Head Plug	2
20	Heavy Helical Spring Lock Washers (Inch Series)	13
21	Hex Cap Screw	3
22	Hex Bolt - UNC (Regular Thread - Inch)	5
23	Hex Cap Screw	4
24	Hex Bolt - UNC (Regular Thread - Inch)	1



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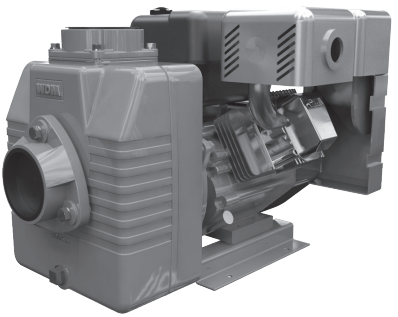
AG Series.



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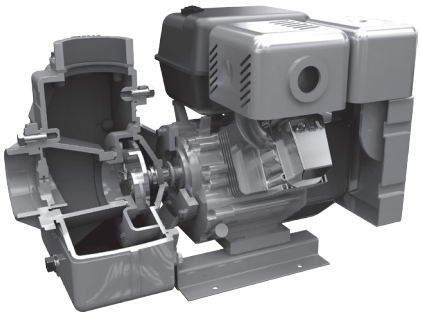

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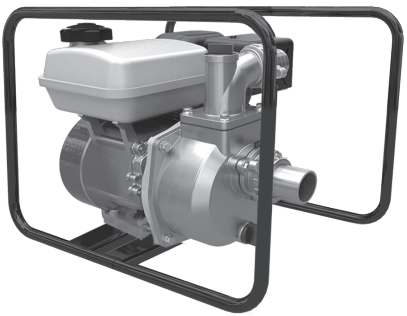
AAG Series.



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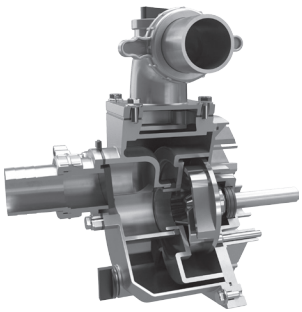
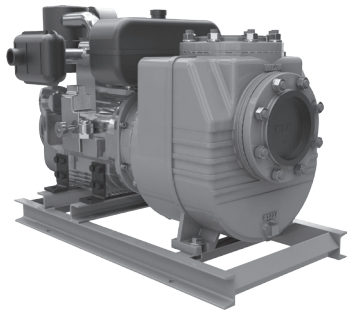


Operation Manual.

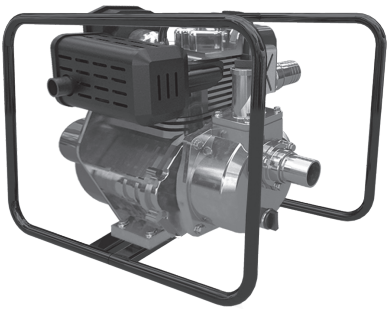
AD Series.



Item	Description	QTY

Operation Manual.

AAD Series.



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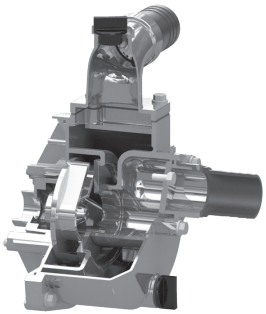
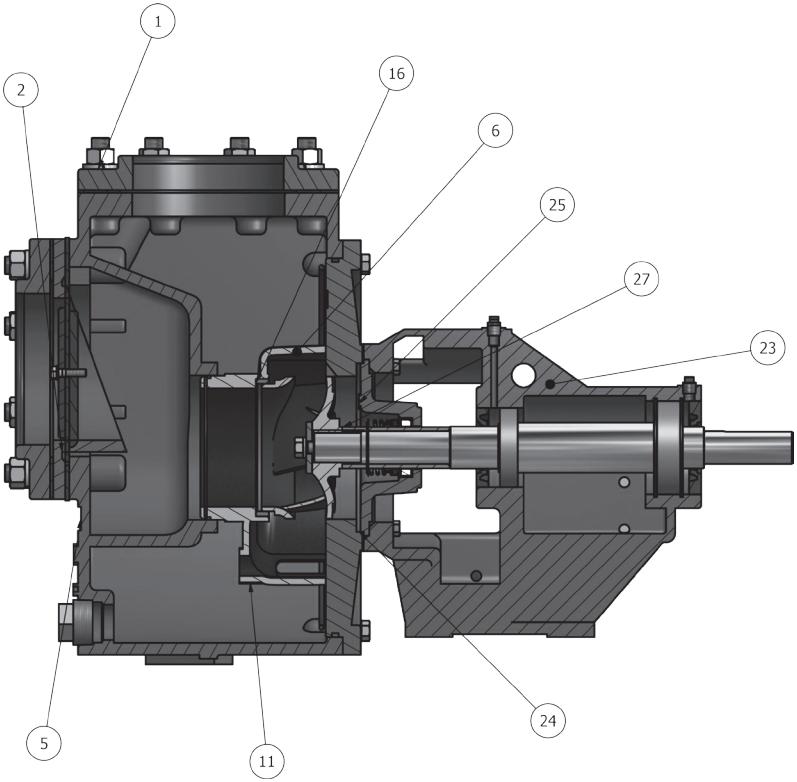
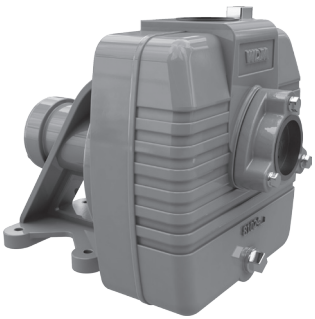
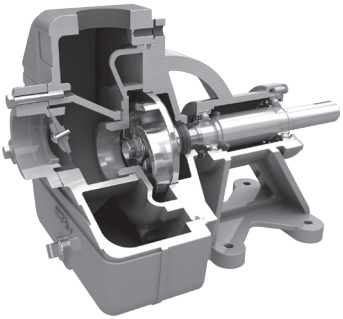


AU Series.







Item	Description	QTY
1	01137	2
2	01717	1
3	20384	2
4	97014	1
5	24449	1
6	19311	1
7	01718	1
8	01719	1
9	ANSI/ASME B18.2.1 - 5/16-18 UNC - 1,25	1
10	ASME B18.21.1 - 5/16	1
11	19103	1
12	02464	8
13	35466	8
14	ASME B18.21.1 - 3/4	8
15	30657	1
16	30681	1
17	ANSI/ASME B18.2.1 - 5/16-18 UNC - 0,75	2
18	ASME B16.11 Square Head Plug 1 1/2	2
19	ANSI B18.2.2 - 3/4 - 10	16
20	ANSI B18.21.1 - 0,875	11
21	ASME B18.21.1 - 1/2	9
22	ANSI/ASME B18.2.1 - 1/2-13 UNC - 1,5	8
23	45002	1
24	19206	1
25	24785	1
26	sello 1-3/4 tipo 21	1
27	23874	1
28	30441	1
29	ANSI/ASME B18.2.1 - 3/8-16 UNC - 2	6
30	ASME B16.11 Square Head Plug 1/4	7
31	DIN 471 - 45 x 1,75	1
32	18390	1
33	AS 568 - DASH # 256	1
34	ANSI/ASME B18.2.1 - 1/2-13 UNC - 1,25	1
35	CUÑA	1

8. Trouble shooting.

Sysmptom	Possible cause(s)	Possible solution(s)
Little or no discharge and unit will not prime.	1. Casing not filled with water.	1. Fill pump casing. Using a footvalve will extend pump life and facilitate immediate priming.
	2. Total head too high.	2. Shorten suction head.
	3. Suction head higher than pump designed for.	3. Lower suction head, install foot-valve and prime.
	4. Impeller partially or completely plugged.	4. Disassemble pump and clean out impeller.
	5. Hole or leak in suction line.	5. Repair or replace suction line.
	6. Foot-valve too small.	6. Match foot-valve to piping or install one size larger foot-valve.
	7. Impeller damaged.	7. Disassemble pump and replace impeller.
	8. Foot-valve or suction line not submerged deep enough in water; pulling air.	8. Submerge lower in water.
	9. Insufficient inlet pressure or suction head.	9. Increase inlet pressure by adding more water to tank or increasing back pressure by turning gate valve on discharge line to partially closed position.
	10. Suction piping too small	10. Increase pipe size to pump inlet size or larger.
	11. Casing gasket leaking	11. Replace.
	12. Suction or discharge line valves closed.	12. Open.
	13. Piping is fouled or damaged.	13. Clean or replace.
	14. Clogged strainer or footvalve	14. Clean or replace.
Loss of suction after satisfactory operation.	1. Air leak in suction line.	1. Repair or replace suction line.
	2. When unit was last turned off, water siphoned out of pump casing.	2. Refill (reprime) pump casing before restarting.
	3. Suction head higher than pump designed for.	3. Lower suction head, install foot-valve and primer.
	4. Insufficient inlet pressure or suction head.	4. Increase inlet pressure by adding more water to tank or increasing back pressure by turning gate valve on discharge line to partially closed position.
	5. Clogged foot-valve, strainer, or pump.	5. Unclog, clear or replace as necessary.

Sysmptom	Possible cause(s)	Possible solution(s)
Pump overloads driver.	1. Total head lower than pump rating, unit delivering too much water.	1. Increase back pressure on pump by turning gate valve on discharge line to partially closed position that will not overload motor.
	2. Specific gravity and viscosity of liquid being pumped different than the pump rating.	2. Consult factory.
Pump vibrates and/ or makes excessive noise.	1. Mounting plate or foundation not rigid enough.	1. Reinforce.
	2. Foreign material in pump causing unbalance.	2. Disassemble pump and remove.
	3. Impeller bent.	3. Replace impeller.
	4. Cavitation present.	4. Check suction line for proper size and check valve in suction line if completely open, remove any sharp bends before pump and shorten suction line.
	5. Piping not supported to relieve any strain on pump assembly.	5. Make necessary adjustments.
Pump runs but no fluid.	1. Faulty suction piping (air leak).	1. Replace.
	2. Pump located too far from fluid source.	2. Replace.
	3. Gate valve closed.	3. Open.
	4. Clogged strainer.	4. Clean or replace.
	5. Fouled foot-valve.	5. Clean or replace.
	6. Discharge height too great.	6. Lower the height.
	7. Fouled impeller.	7. Clean or replace.
	8. Faulty mechanical seal.	8. Replace.
Pump leaks at shaft.	1. Worn mechanical seal.	1. Replace.
	2. Replacement seal not installed properly.	2. Follow Maintenance instructions carefully.

9. Warranty.

WDM guarantees its GE / GU Pumps for a period of 12 months from the date of delivery, against defects in material and workmanship, according the indicated in its general conditions of sale.

Failure of the suggestions and recommendations in this manual, as well as improper product use or handling, totally invalidates the warranty.

The warranty excludes wear and tear, misuse, repair or replacement

WDM PUMPS

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