



P U M P

OPERATION, PERFORMANCE, SPECIFICATIONS and PARTS MANUAL

AGP-HC300, AGP-HC500 & AGP-HC750 3, 5 & 7.5 HP Heavy Duty Grinder Pumps

- Thank you for purchasing this pump. Take the time to read the instructions carefully before using this appliance. We strongly recommend that you keep this instruction manual in a safe place for future reference.
- Please refer to our website and the Products Center for additional installation and operation instructions.
- Refer to the website for replacement parts information.



FIGURE 1

MARKS AND MEANING:

⚠ DANGER "Danger" indicates an imminent hazardous situation which, if not avoided, WILL result in death or serious injury.

⚠ WARNING "Warning" indicates an imminent hazardous situation which, if not avoided, MAY result in death or serious injury.

⚠ CAUTION "Caution" indicates a potentially hazardous situation which, if not avoided, MAY result in minor or moderate injury.

Grinder Pump Models:
AGP-HC300, AGP-HC500
& AGP-HC750





Grinder Pumps Models: AGP-HC300, AGP-HC500 & AGP-HC750 General Safety Information

Before installation, read the following instructions carefully. Failure to follow instruction and safety information could cause serious bodily injury, death and/or property damage. Each Ashland Pump is individually factory tested to ensure proper performance. Closely following these instructions will eliminate potential operating problems assuring years of trouble-free service.

Most accidents can be avoided by using common sense.

IMPORTANT - Ashland Pump is not responsible for losses, injury or death resulting from failure to observe these safety precautions, misuse, abuse or misapplication of pumps or equipment.

⚠ DANGER All returned products must be cleaned, sanitized, or decontaminated prior to shipment, to ensure employees will not be exposed to health hazards in handling said materials. All applicable laws and regulations shall apply.



⚠ WARNING Bronze/brass fitted pumps may contain lead levels higher than considered safe for potable water systems. Government agencies have determined that leaded copper alloys should not be used in potable water applications.

⚠ WARNING Installation, wiring, and junction connections must be in accordance with the National Electric Code and all applicable state and local codes. Requirements may vary depending on usage and location.

⚠ WARNING Installation and servicing is to be conducted by qualified personnel only.

⚠ DANGER Rotating machinery, amputation or severe lacerations can result. Keep clear of suction and discharge openings. DO NOT insert fingers into pump with power connected.



⚠ WARNING Always wear eye protection when working on pumps. Do not wear loose clothing that may become entangled in moving parts.

⚠ DANGER Pumps build up heat and pressure during operation. Allow time for pumps to cool before handling or servicing.

⚠ DANGER Hazardous Voltage can shock, burn or cause death. This pump is not intended for use in swimming pools or water installations where human contact with pumped fluid is possible.



⚠ DANGER Risk of electrical shock. To reduce risk of electrical shock, always disconnect pump from source before handling. **Lock out power & tag.**



⚠ WARNING Do Not use these pumps in water over 145°F. Do not exceed manufacturer's recommended maximum performance, as this could cause the motor to overheat.

⚠ CAUTION Make sure lifting handles are securely fastened each time before lifting.

⚠ DANGER Do not lift, carry or hang pump by the electrical cables. Damage to the electrical cables can cause shock, burns or death. Never handle connected power cords with wet hands. Use appropriate lifting device.



⚠ WARNING Pumps often handle materials which could cause illness or disease. Wear adequate protective clothing when working on a used pump or piping. Never enter a basin after it has been used.

⚠ DANGER Failure to permanently ground the pump, motor and controls before connecting to power can cause shock, burns or death.



⚠ DANGER These pumps are NOT to be installed in locations classified as hazardous in accordance with the National Electric Code, ANSI/NFPA 70.



⚠ WARNING Do not introduce into any sewer, either directly, or through a kitchen waste disposal unit or toilet: Seafood Shells, Aquarium Gravel, Cat Litter, Plastic Objects, Sanitary Napkins or Tampons, Diapers, Rags, Disposable Wipes or Cloth, Medications, Flammable Material, Oil or Grease, Strong Chemicals, Gasoline.

- Operation against a closed discharge valve will cause premature bearing and seal failure on any pump.
- Any wiring of pumps should be performed by a qualified electrician.
- Cable should be protected at all times to avoid punctures, cuts, bruises, and abrasions-inspect frequently.
- Never handle connected power cords with wet hands.
- Never let cords or plugs lie in water outside the sump pit.
- These pumps are offered in a three phase and single phase wiring configuration. Voltages will vary according to the application and can be seen in the tables in this manual.



Grinder Pumps

Models: AGP-HC300, AGP-HC500 & AGP-HC750

Specifications

IMPORTANT Prior to installation, record Model Number, MFG Date, Amps, Voltage, Phase and HP, from pump nameplate for future reference. Also record the voltage and current readings at startup:	1 Phase Models		Model Number: _____
	Amps: _____	Volts: _____	MFG Date: _____
	3 Phase Models		Phase: _____
	Amps L1-2: _____	Volts L1-2: _____	HP: _____
	Amps L2-3: _____	Volts L2-3: _____	SN: _____
	Amps L3-1: _____	Volts L3-1: _____	

MODEL	HP	HZ	VOLTS/PH	RPM	FULL LOAD AMPS	NEMA START CODE	CORD TYPE	CORD SIZE	CORD O.D.	POTENTIAL RELAY	START CAPACITOR	RUN CAPACITOR
AGP-HC300M2-35	3	60	230/1	3450	24	F	W	8AWG/4C	.96"	500V, 300 Pickup	270-324UF-330V AC	30UF +/-5%-370-VAC
AGP-HC300M3-35	3	60	230/3	3450	14.3	M	SOOW	12AWG/AC	.65"	N/A	N/A	N/A
AGP-HC300M4-35	3	60	460/3	3450	7.1	M	SOOW	14AWG/4C	.58"	N/A	N/A	N/A
AGP-HC300M5-35	3	60	208/1	3450	27.6	G	W	8AWG/4C	.96"	ICM CONTROLS UMSR-50	270-324UF-330V AC	30UF +/-5% 370V AC
AGP-HC300M6-35	3	60	208/3	3450	14	K	SOOW	12AWG/4C	.65"	N/A	N/A	N/A
AGP-HC500M2-35	5	60	230/1	3450	40	F	W	8AWG/4C	.96"	ICM CONTROLS UMSR-50	430-516UF-250V AC	30UF +/-5%-370V AC
AGP-HC500M3-35	5	60	230/3	3450	21	F	W	8AWG/4C	.96"	N/A	N/A	N/A
AGP-HC500M4-35	5	60	460/3	3450	10.5	J	SOOW	14AWG/4C	.58"	N/A	N/A	N/A
AGP-HC500M5-35	5	60	208/1	3450	46	J	W	8AWG/4C	.96"	ICM CONTROLS UMSR-50	430-516UF-250V AC	30UF +/-5%-370V AC
AGP-HC500M6-35	5	60	208/3	3450	25	H	W	8AWG/4C	.96"	N/A	N/A	N/A
AGP-HC750M3-35	7.5	60	230/3	3450	27	G	W	8AWG/4C	.96"	N/A	N/A	N/A
AGP-HC750M4-35	7.5	60	460/3	3450	13.5	G	SOOW	12AWG/4C	.65"	N/A	N/A	N/A
AGP-HC750M6-35	7.5	60	208/3	3450	31.1	F	W	8AWG/4C	.96"	N/A	N/A	N/A

DESCRIPTION:

To reduce domestic sewage to finely ground slurry

PHYSICAL DATA:

Discharge Size 2-1/2"-3" ANSI Flange
 Impeller Type 10-Vane, Vortex – Brass
 Cable Length 35'

LIQUID HANDLING:

Maximum Liquid Temp. 140°F - Intermittent,
 104°F - Continuous
 Acceptable pH Range 6-8

TEMPERATURE:

Maximum Stator 180°C

TECHNICAL DATA:

Power Cord Type SOOW, W
 Sensor Cord Type SOOW
 Motor Housing Cast Iron
 Casing Cast Iron
 Impeller Brass
 Motor Shaft 416 SS
 Hardware SS
 O-Rings Fluorocarbon
 Mechanical Seals SiC
 Upper Bearing Radial Deep Groove
 Lower Bearing Double Row Angular Contact
 Insulation Class H

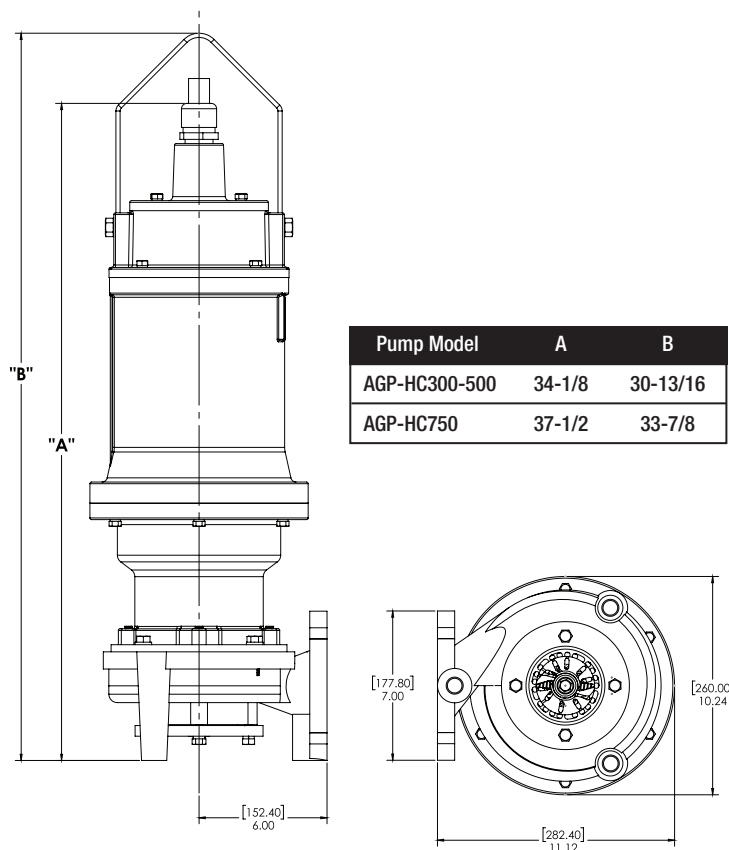


FIGURE 2



Grinder Pumps Models: AGP-HC300, AGP-HC500 & AGP-HC750 Performance

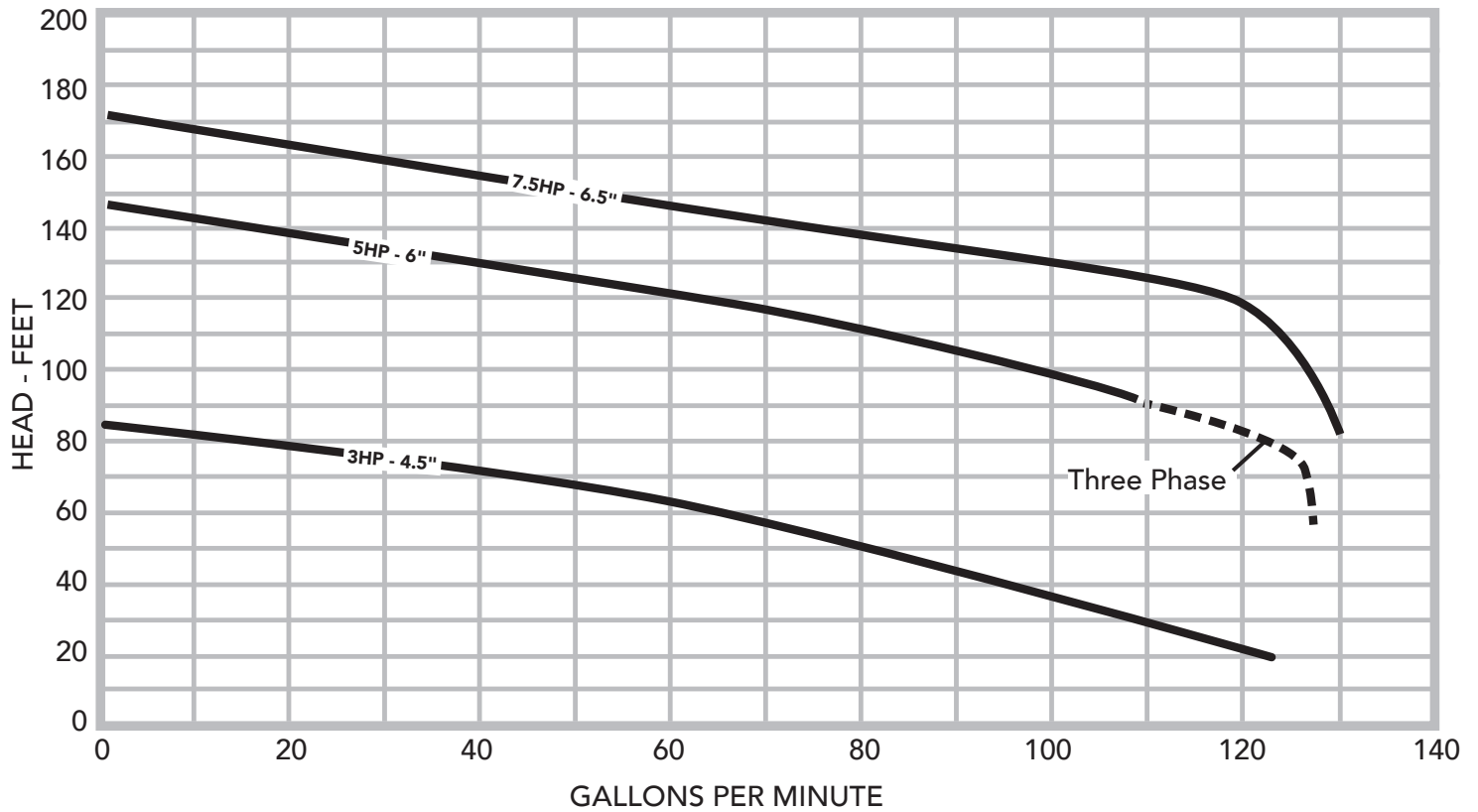


FIGURE 3



Grinder Pumps Models: AGP-HC300, AGP-HC500 & AGP-HC750 Receiving and Installation

Receiving Inspection

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

Any product that is stored for a period longer than six (6) months from the date of purchase should be bench tested prior to installation. A bench test consists of checking the impeller to assure it turns freely and a run test to assure the motor (and switch if provided) operate properly. Do not pump out of liquid.

⚠ WARNING IMPORTANT! A clearance under the pump for entrance of sewage solids must be a minimum of 3 inches to a maximum of 4.5 inches.

Submergence

The pump should always be operated in the submerged condition. The minimum sump liquid level should never be below the pump's volute (see minimum submergence chart on page 16)

Installation

The sump or basin shall be sealed and vented in accordance with local plumbing codes. This pump is designed to pump domestic wastewater, nonexplosive and noncorrosive liquids and shall NOT be installed in locations classified as hazardous in accordance with the National Electrical Code (NEC) ANSI/ NFPA 70 or Canadian Electric Code (CEC). The pump should never be installed in a trench, ditch, or hole with a dirt bottom. The legs will sink into the dirt and the suction will become plugged.

Discharge Piping

Install discharge piping or hose assembly to the pump. Discharge piping should be as short as possible and sized no smaller than the pump discharge. Do not reduce the discharge pipe size below that which is provided on the pump. Both a check valve and a shut-off valve are recommended for each pump. The check valve is used to prevent backflow into the sump. The shut-off valve is used to manually stop system flow during pump servicing. Be sure the discharge pipe has a 1/8" diameter hole approx. 5" from end nearest volute and oriented towards the pump body.

Control Panel

All pumps require a control panel. Single phase models require start components in panel.

Motor

Each motor is provided with heat sensor thermostats attached directly to the motor windings. The thermostats open if the motor windings see excessive heat and, in turn, open the motor contactor in the control panel when used, breaking the power to the pump. When the motor is stopped due to an overheated condition, it will not start until the motor has cooled.

Motor Seal Failure Warning

On three phase models, the seal chamber is oil-filled and provided with moisture sensing probes to detect water leakage through the lower shaft seal. The probes can also detect moisture present in the upper motor housing.

The presence of water energizes a red seal leak warning light at the control panel. This is a warning light only, and does not stop the motor. It indicates a leak has occurred and the pump must be repaired. Normally, this indicates the outboard seal has leaked. Allowing the unit to operate too long after the warning could cause upper seal leakage along with motor failure.

The resistance across the moisture sensing (seal failure) probes should be checked after a seal leak warning light has lit. This can be done by disconnecting the red and orange control wires from the control panel, and measuring the resistance with an ohmmeter between the wires. The reading should be 100,000 ohms or greater. If the measured values are below those indicated above, then the pump may have a lower seal failure and require service.

Note: Failure to use proper circuitry and to connect the motor overheat protection in the control panel would negate all warranties.

Motor Power Cord, Control Cord And Cord Cap Assembly

Each motor power cord has 4 conductors: white, black, red and green.

For three phase motors the red, black and white conductors connect to the three line leads, and the green is connected to a good ground. Interchanging any two line leads will reverse the rotation of the motor (see figure 4, page 6)



Grinder Pumps Models: AGP-HC300, AGP-HC500 & AGP-HC750 Minimum Submergence

MINIMUM SUBMERGENCE MAY BE CALCULATED FOR FLOWS OTHER THAN MAXIMUM FLOW, REFER TO HYDRAULIC INSTITUTE STANDARD ANSI/HI 9.8 (SECTION 9.8.7)

SUBMERGENCE LEVELS (RAIL MOUNTED PUMPS)		
PUMP MODEL	"A" (RECOMMENDED)	"B" ABSOLUTE MINIMUM SUBMERGENCE LEVEL (MAX FLOW)
AGP-HC300	4-1/2"	15-13/16"
AGP-HC500	4-1/2"	17-3/8"
AGP-HC750	4-1/2"	17-3/8"

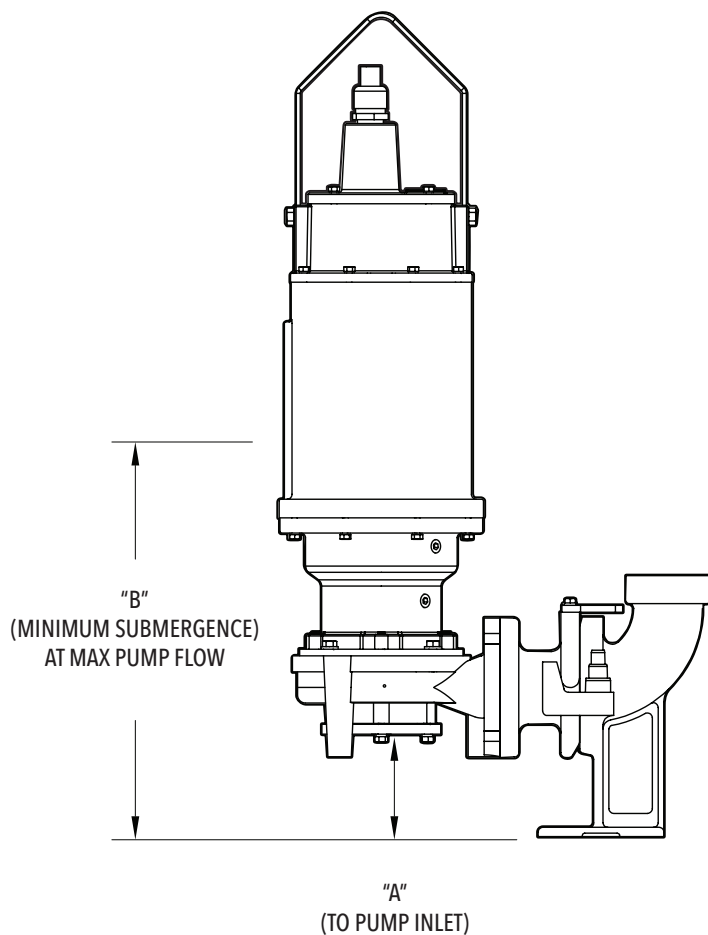


FIGURE 4



Grinder Pumps Models: AGP-HC300, AGP-HC500 & AGP-HC750 Receiving and Installation

Note: Rotation should be clockwise when observed from the top of the pump. This can be checked by noting which direction the pump torque is upon initial starting. A properly rotating pump will torque counterclockwise upon start.

The control cable has 5 conductors: black, white, red, yellow and green. White and black connect to the heat sensor terminals; red and yellow connect to the seal failure leads; and the green connects to the ground in the control panel (figure 4)

Note: Each cable has a green ground wire and must be properly grounded per the National Electric Code and local codes.

Electrical Motor Controls: All electrical controls & motor starting equipment should be as specified in these instructions.

PRE-OPERATION CHECK VOLTAGE AND PHASE

Before operating pump, check to make sure that voltage and phase information stamped on the pump's identification plate matches the available power.

CHECK PUMP ROTATION

Before putting pump into service for the first time, the motor rotation must be checked. Improper motor rotation can result in poor pump performance and can damage the motor and/or pump.

IDENTIFICATION PLATE

Note the numbers on the pump's identification plate and record at the end of this manual for future reference.

Electrical Connections



Turn circuit breaker off before plugging or unplugging the switch and/or pump.

Always rely upon a Certified Electrician for installation.

Thermal Protection

The normally closed (N/C) over temperature sensor is embedded in the motor windings and will detect excessive

heat in the event an overload condition occurs.

The thermal sensor will trip when the windings become too hot and will automatically reset when the pump motor cools to a safe temperature. It is recommended that the thermal sensor be connected in series to an alarm

device to alert that an over temperature condition has occurred.

In the event of an over temperature, the source of this condition should be determined and repaired immediately. Thermal protection shall not be used as a motor overload device.

SEWAGE PUMP OIL FILL CHART AGP-HC300, AGP-HC500, AGP-HC750		
PUMP MODEL	MOTOR HOUSING CAVITY OIL LEVEL (L)	SEAL HOUSING CAVITY OIL LEVEL (L)
AGP-HC300M2	3.10 QTS.	.85 QTS.
AGP-HC300M3	3.10 QTS.	.85 QTS.
AGP-HC300M4	3.10 QTS.	.85 QTS.
AGP-HC300M5	3.10 QTS.	.85 QTS.
AGP-HC300M6	3.10 QTS.	.85 QTS.
AGP-HC500M2	2.75 QTS.	.85 QTS.
AGP-HC500M3	2.75 QTS.	.85 QTS.
AGP-HC500M4	2.75 QTS.	.85 QTS.
AGP-HC500M5	2.75 QTS.	.85 QTS.
AGP-HC500M6	2.75 QTS.	.85 QTS.
AGP-HC750M2	2.33 QTS.	.85 QTS.
AGP-HC750M3	2.33 QTS.	.85 QTS.
AGP-HC750M4	2.33 QTS.	.85 QTS.
AGP-HC750M6	2.33 QTS.	.85 QTS.



Grinder Pumps Models: AGP-HC300, AGP-HC500 & AGP-HC750 Installation and Service

Pre-Operation

1. Check Voltage and Phase compare to the voltage and phase information stamped on the pump name plate.
2. Check Pump Rotation - Improper motor rotation can result in poor pump performance and can damage the motor and/or pump. Check rotation by momentarily applying power and observe the "kickback". Kickback should always be in a counter-clockwise direction as viewed from motor end or opposite to impeller rotation. Incorrect rotation for Single-Phase pumps is unlikely. If the rotation is incorrect, contact the factory.
3. Name Plate - Record the information from the pump name plate for future reference.
4. Pump-Down Test - Be sure pump has been plugged in, lowered into the basin or sump, check the system by filling with liquid and allowing the pump to operate through its pumping cycle. The time needed to empty the system, or pump-down time along with the volume of water, should be recorded.

Maintenance

Minimal maintenance is required. Perform the following checks when pump is removed from operation or when pump performance deteriorates:

- a). Inspect motor chambers for oil level and contamination.
- b). Inspect impeller and body for excessive build-up or clogging.
- c). Inspect motor and bearings.
- d). Inspect seal for wear or leakage.
- e). Inspect cutters for wear

Servicing

NOTE: Item numbers in () refer to part numbers shown on page 15.

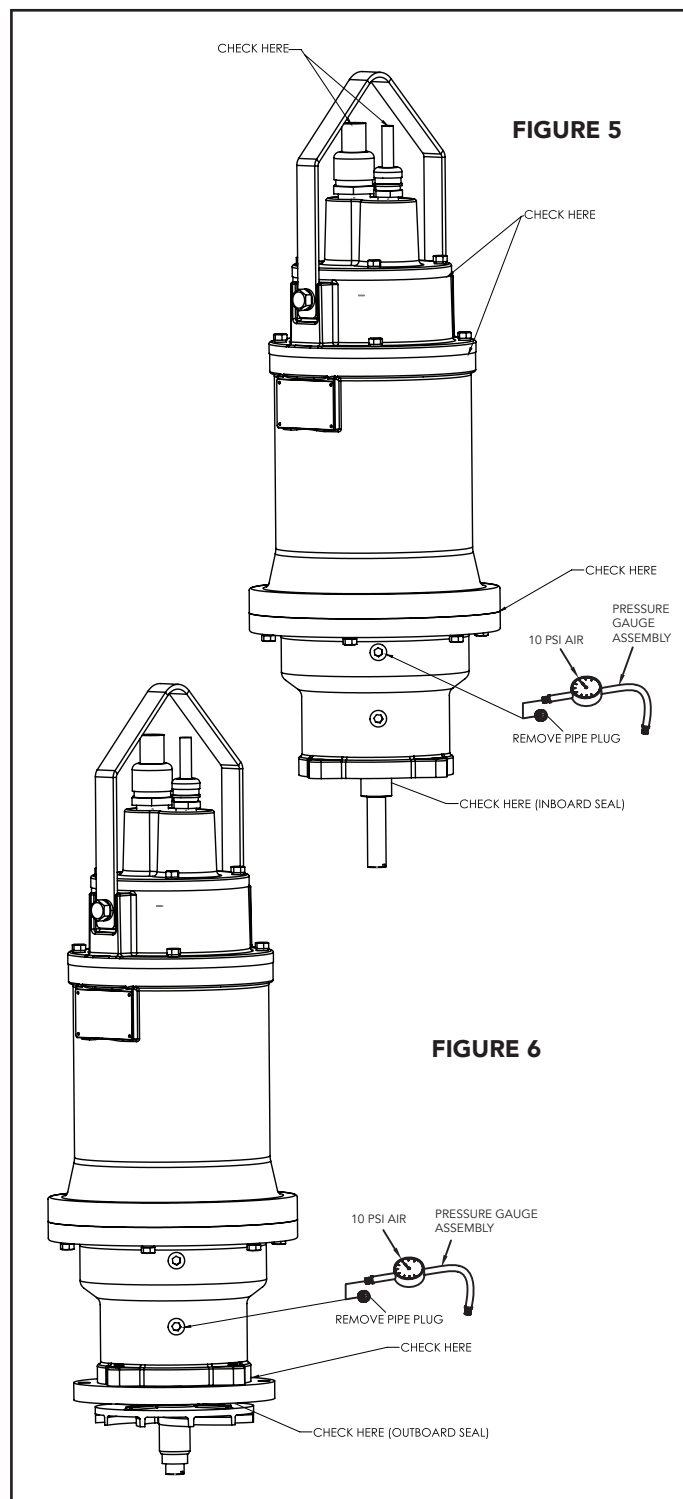
Cooling Oil - Anytime the pump is removed from operation, the cooling oil in the motor housing and seal housing should be checked visually for oil level and contamination. To check oil, set unit upright. Remove oil plug (8) from housing (3). With a flashlight, visually inspect the oil in the housing (3) to make sure it is clean and clear, light amber in color and free from suspended particles. Milky white oil indicates the presence of water. Oil level should be just above the motor when pump is in vertical position.

Oil Testing

- Drain oil into a clean, dry container by placing pump on its side. Remove oil plug (8), from housing (3).
- Check oil for contamination using an oil tester with a range to 30 Kilovolts breakdown.
- If oil is found to be clean and uncontaminated (measuring above 15 KV. breakdown), refill the housing.

Motor Housing Pressure Test:

If oil has been drained, fill to normal level before performing pressure test (See Figures 5 and 6). Remove pipe plug (8) from motor housing (3).





Grinder Pumps Models: AGP-HC300, AGP-HC500 & AGP-HC750 Installation and Service

Apply pipe sealant to pressure gauge assembly and tighten into hole. Pressurize motor housing to 10 psi Use soap solution around the sealed areas above the oil level and inspect joints for "air bubbles". For sealed areas below oil level, leaks will seep oil. If, after five minutes, the pressure is still holding constant, and no "bubbles" / oil seepage is observed, slowly bleed the pressure and remove the gauge assembly. Replace oil. Leak must be located and repaired if pressure does not hold.

Seal Chamber Pressure Test

Set pump on its side with fill oil plug (8) downward, remove plug (8) and drain all oil from seal chamber. Apply pipe sealant to pressure gauge assembly and tighten into hole in seal housing (3). Pressurize seal chamber to 10 psi and check for leaks.

Oil Replacement Motor Housing

Remove oil plug (8) from motor housing (3). Drain all oil (if not already done so) from motor housing (3) and dispose of properly per Local Code. Set pump upright and refill with new cooling oil, see "Cooling Oil" chart. Fill this motor housing in accordance with the levels shown in the oil level fill chart on page 7. Apply pipe thread compound to threads of oil plug (8) then assemble to motor housing (3).

Oil Replacement Seal Chamber

Drain all oil (if not already done so) from seal chamber and dispose of properly per Local Code. Place pump on its side with oil plug (8) upward, and refill with new oil in accordance with the oil level shown in the oil level fill chart on page 7. Apply pipe thread compound to threads of oil plug (8) and assemble to motor housing (3)



DO NOT overfill oil. Overfilling of housing with oil can create excessive and dangerous pressure which can destroy the pump and create a hazard. Overfilling oil voids warranty.



WARNING

Before any service work is done, disconnect and lock out electrical power to pump.

Disassembly Cutter

Lay pump on its side and remove the cutter retaining screw (23) and washer (24). A small amount of heat may be needed to loosen screw. **DO NOT** overheat. Wedge a flat screwdriver between cutter and shredding ring and remove screw. Remove the radial cutter (5) and square key (30) by sliding them straight off the shaft (18). Be careful not to misplace the shim washers (29), as these will be used to properly space the radial cutter (6) from the shredding ring (6)



CAUTION

Cutter edges are very sharp. Cutter must be removed before removing volute.

Volute

Remove hex bolt and washer (11) to remove volute (27).

Shredding Ring

To replace the shredding ring (26) remove plate (21) by first removing hex head screws and lock washer (22).

Impeller

Remove impeller (1) by sliding it vertically off the shaft over the impeller/cutter key (38).

Do not store pump without impeller in place.

Outer Seal

Handle seal parts with care. Remove spring and rotate member from shaft. Examine all seal parts. Inspect contact faces for signs of uneven wear tracks on stationary face, chips and scratches on either seal face. **DO NOT** interchange seal components, replace the entire shaft seal (19) if necessary.

Seal Plate

Remove cap screws (28) from seal plate (30). Remove seal plate (30) and o-ring (13) from seal housing (15). With flat screwdriver, press out seal (19) stationary member. Inspect o-ring (20) for cuts or abrasions.

Cooling Oil Recommended Supplier/Grade	
Shell Diala	S2-2X-A
Conoco	Pale Paraffin 22
Mobile	D.T.E. Oil Light
BP	Enerpar SE100
Texaco	Diala-Oil-AX
Quaker-Houghton	WOCO Premium 100



Grinder Pumps Models: AGP-HC300, AGP-HC500 & AGP-HC750 Service

Inner Seal

Remove retainer seal (19) rotating member and spring from rotor shaft. Press stationary from seal housing (37) with flat screwdriver. Examine all seal parts. Inspect contact faces for signs of uneven wear tracks on stationary, chips and scratches on either seal face.

DO NOT interchange new and old seal components, replace the entire shaft seal (19).

Bearings

Using a bearing puller or arbor press remove bearing (18) from shaft. Remove upper motor bearing from shaft with a bearing puller.



IMPORTANT! - All parts must be clean before reassembly. Handle seal parts with extreme care. DO NOT damage lapped surfaces.

REASSEMBLY

Bearing

Be careful not to damage the rotor shaft when replacing bearing. Using an arbor press, hold the rotor and press the upper bearing (32) on the rotor shaft, applying force to the inner race of the bearing only. In the same manner replace lower bearing (18) onto rotor shaft.

Inner Seal

Clean and oil seal cavity in seal housing (37). Lightly oil (Do not use grease) outer surface of stationary member. Press seal's (19) stationary member firmly into seal housing (37), using a seal installation tool. Nothing should come in contact with the seal face except the seal tool. The seal tool material must be made of a material that will not scratch the seal face upon installation. Be sure the stationary is in straight. Place seal's retaining ring (41) and spring over shaft until seated. Slide a bullet tool over rotor shaft threads.

Lightly oil (**Do not use grease**) shaft, bullet, and inner surface of bellows on rotating member, slide rotating member over bullet and onto shaft until it engages spring. Make sure spring is seated in retaining ring and spring is lined up on rotating member and not cocked or resting on bellows tail. Compress spring and install retaining ring (14).

Seal Housing

Lubricate and set o-ring (20) in place on seal plate (30). Place seal plate (30) over shaft and onto seal housing (15), being sure o-ring (13) is not twisted and in the groove. Place four capscrews (28) through holes in seal housing and into seal plate and torque to 6.5 ft/lbs.

Outer Seal

Clean and lightly oil stationary seal cavity in seal plate. Slide seal guide tool over motor shaft. Lightly oil (**Do not use grease**) outer surface of seal's (19) stationary member.

Press stationary firmly into seal plate using a seal pusher tool. Be sure the stationary member is in straight. Nothing but the seal tool is to come in contact with seal face.



IMPORTANT ! Do not hammer on the seal pusher. It will damage the seal face.

With lapped surface of rotating member facing inward toward stationary, slide rotating member onto shaft, until lapped faces of stationary and rotating seal are together. Place spring over shaft and rotating member. Be sure it is seated on the retainer and not cocked or resting on bellows tail.

Impeller

Place impeller/Cutter key (38) into the shaft key-way. Slide the impeller (1) onto the shaft (2) aligning impeller Key-way (1) and the impeller Key (38).

Shredding Ring

Install shredding ring (26) into volute and install cover (21) with cap screw (22).

Volute

Place volute (27) on seal plate (30). Place hex nut (11) through seal plate (30) and into volute (27) and torque evenly to 11 ft/lbs.

Cutter

Install Shims (29) onto the shaft (2). Be sure to line up the key-way on the shims (28) with the Impeller/Cutter Key (38). The shims (29) will rest on the impeller hub (1). Install the Radial Cutter (25) onto the shaft (2) aligning the Radial Cutter key-way (25) with the Impeller/Cutter Key (38). Install the Impeller washer (24) and Impeller Bolt (23). Using feeler gauges, check the axial distance between the Radial Cutter (25) and the Shredding Ring (26). The distance should be .005"-.007". Install or remove Shims (29) between the Radial Cutter (25) and Impeller (1) until the desired gap of .005"-.007" is reached. Once the gap is reached, remove Impeller Bolt (23) and add Thread Locker to the bolt and re-install into the Shaft (2) through the impeller washer (24).



CAUTION

Cutter edges are very sharp. Extreme caution must be used when checking cutter rotation.

Carefully check that rotating cutter rotates smoothly. If resistance is felt, loosen cap screws (22) and adjust cover (21) so that cutter clearance is set to minimize friction.



Grinder Pumps Models: AGP-HC300, AGP-HC500 & AGP-HC750 Installation

Installing Pump in Sump

These pumps are usually installed in concrete or fiberglass basins with the lift-out rail system. Figure 6 shows pump mounted on the rail system. Instructions for installing rail system are furnished with rail package.

If pump is not installed with lift-out rail system it must be properly supported on legs and connected to discharge pipe so that space is provided under pump for entrance of sewage. Pump inlet should not be closer than 3 inches from bottom of sump.

It is not generally desirable to install these pumps without the rail system except on special O.E.M. packaged systems. Check valves should always be installed along with shut-off valves. This allows for easier service and prevents backflow into basin.

Starting Pump After Installing in Sump Basin

If pump is 3 phase, pump rotation must be checked.

Before lowering pump into basin, connect power lines and start motor using H-O-A switch in the Hand position. Grinder impeller should turn counterclockwise when looking at grinder impeller. If rotation is wrong, interchange any two line leads at control box.

Service and Repair

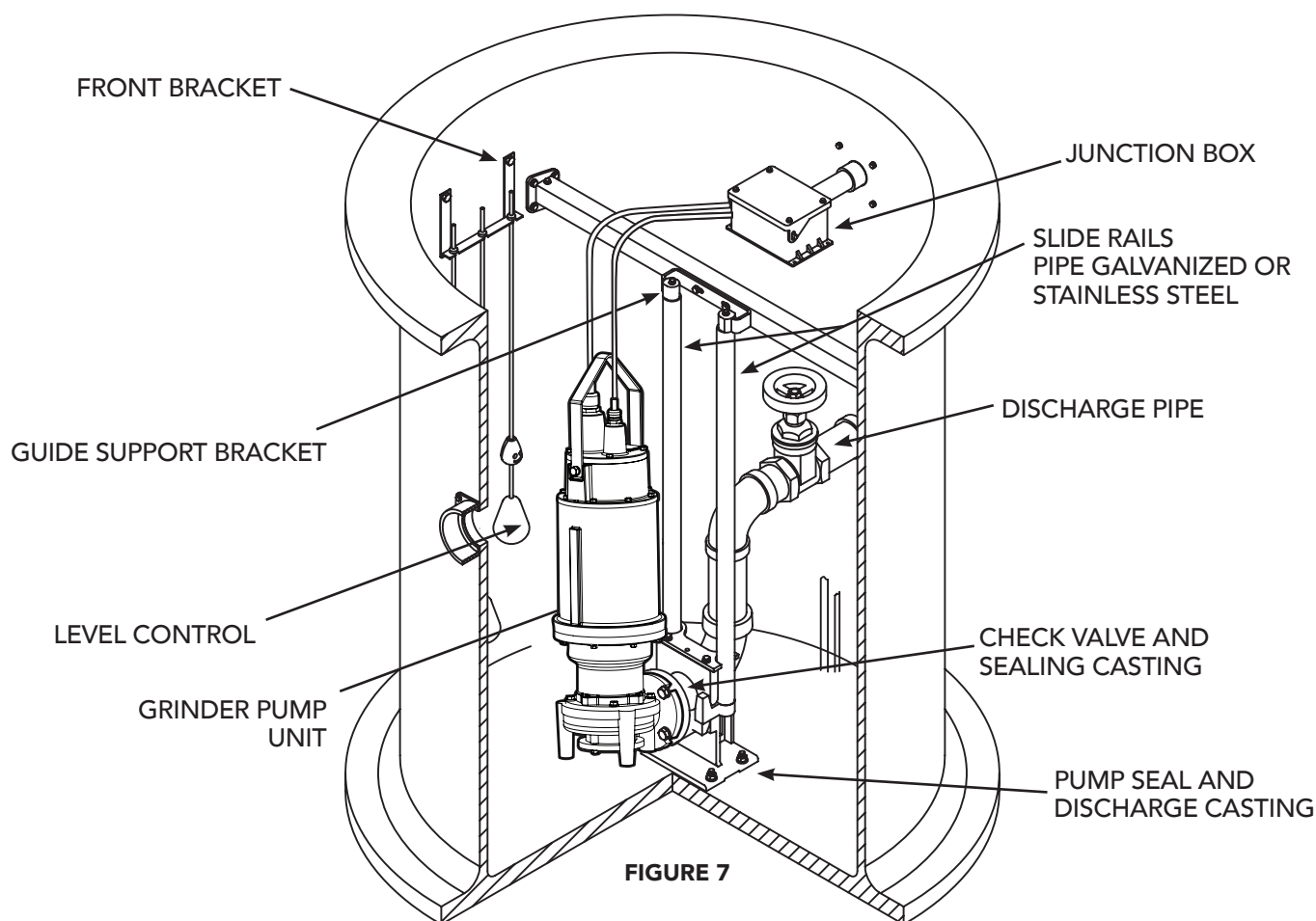
Important: Pump should be thoroughly cleaned of trash and deposits before starting disassembly operations (pages 7-9).

CAUTION

Disconnect all power and control wires to motor at control panel before starting disassembly operation. Never rely on opening circuit breaker only.

CAUTION

Operating pump builds up heat and pressure; allow time for pump to cool to room temperature





Grinder Pumps Models: AGP-HC300, AGP-HC500 & AGP-HC750 Wiring Diagram

WIRING CONNECTIONS

1. All electrical wiring must be in accordance with local code and only qualified electricians should make the installations.
2. Instructions for wiring to control panel will be included with control panel.
3. All wires should be checked for shorts to ground with an ohmmeter or megger after the connections are made. This is IMPORTANT, as one grounded wire can cause failure of the pump, control panel or personal injury.

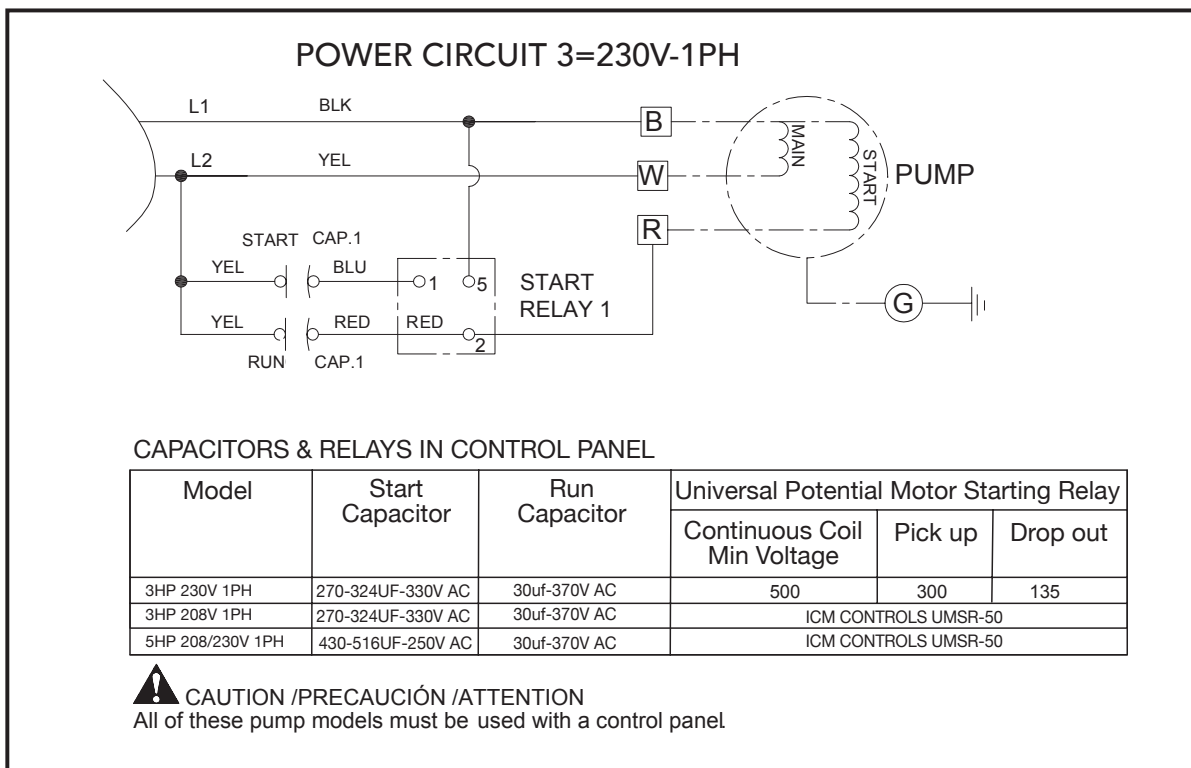
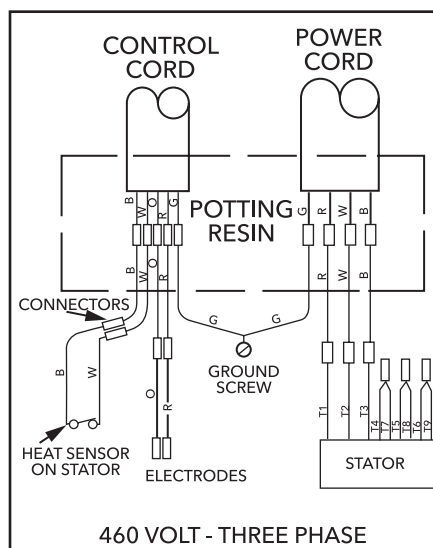
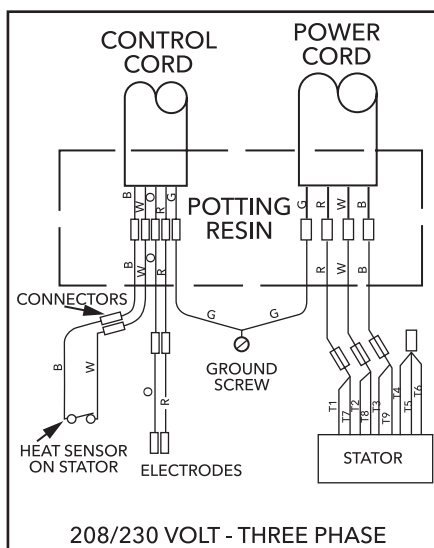
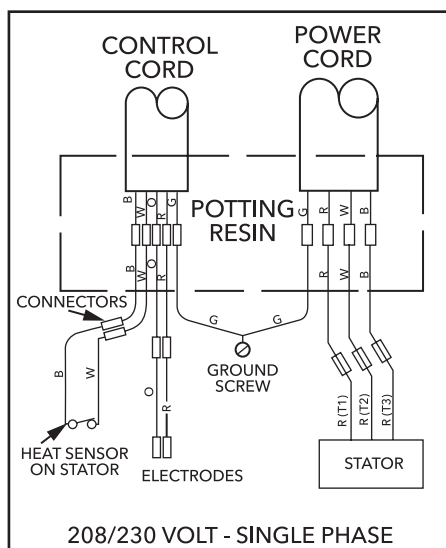


FIGURE 8



Grinder Pumps Models: AGP-HC300, AGP-HC500 & AGP-HC750 Troubleshooting



CAUTION Always disconnect the pump from the electrical power source before handling. If the system fails to operate properly, carefully read instructions and perform maintenance recommendations. If operating problems persist, the following chart may be of assistance in identifying and correcting them.

SYMPTOM	POSSIBLE CAUSES	CORRECTIVE ACTION
Pump runs but does not pump liquid	1. Pump impeller maybe air locked 2. If pump is three phase, rotation may be backward 3. Vent hole clogged 4. Clogged inlet 5. Discharge gate valve may be closed 6. Discharge check valve may be clogged or have a broken clapper 7. Discharge head may be too high	1. Purge air 2. See instruction for checking 3. Clean out the vent hole 4. Clean out the grinder inlet 5. Remove and examine check valve for proper installation and freedom of operation 6. Remove and examine 7. Check elevation
Red light comes on at control box	1. This indicates some water has leaked past the lower seal and has entered the seal chamber and made contact with the electrode probe.	1. Change oil in seal chamber and make contact with electrode probe
Overload trips at control box and alarm due to high water level in basin	1. Grinder impeller may be clogged with foreign objects.	1. Check grinder impeller for freedom of operation, security and condition. Clean impeller cavity and inlet of any obstruction.
Circuit breaker trips with control	1. Excessive load possibly caused by a short in the motor or control box. 2. If this condition happens after an electrical storm, motor or control box may be damaged by lightning.	1. Check pump for short using ohm meter 2. Reset breaker by pushing completely down on handle then back to ON position. If breaker trips again in a few seconds check motor for lightning damage

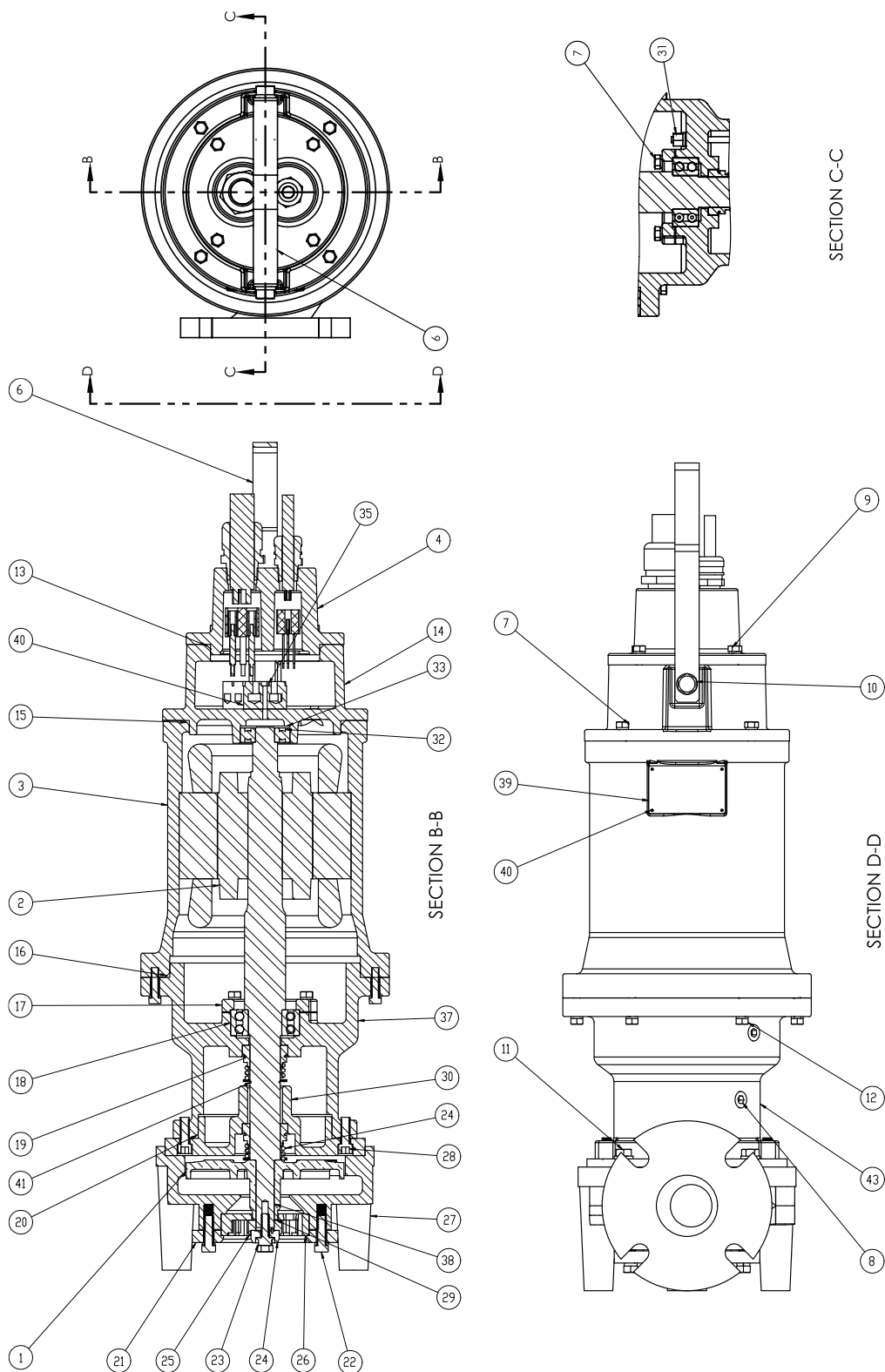


Grinder Pumps Models: AGP-HC300, AGP-HC500 & AGP-HC750 Troubleshooting

SYMPTOM	POSSIBLE CAUSES	CORRECTIVE ACTION
Yellow run light stays on continuously	1. H-O-A switch may be in the hand position 2. Level control switch may have failed causing pump to continue to operate when water is below lower control 3. Grinder assembly may be partially clogged causing pump to operate at very reduced capacity 4. Gate valve or check valve may be clogged causing low pump flow. 5. Pump may be air locked.	1. Reposition pump or clean basin as required to provide adequate clearance for float 2. Disconnect level control. Set ohmmeter for a low range, such as 100 ohms full scale and connect to level control leads. Actuate level control manually and check to see that ohmmeter shows zero ohms for close switch and full scale for open switch (Float Switch) 3. Check grinder assembly for freedom of operation, security, and condition. Clean the cavity and inlet of any obstruction 4. Remove and examine check valve for proper installation and freedom of operation 5. Loosen union slightly to allow trapped air to escape. Verify that turn-off level of switch is set so that impeller cavity is always flooded. Clean vent hole.
Pump is noisy and pump rate is low	1. Grinder assembly may be partially clogged with some foreign objects causing noise and overload on the motor. 2. Radial cutter may be rubbing on shredding ring due to bent shaft or misalignment.	1. Check grinder assembly for freedom of operation, security, and condition. Clean impeller cavity and inlet of any obstruction. 2. If need replace shaft
Grease and solids have accumulated and will not pump out of basin	1. Lower control switch may be set too high. 2. Trash and grease may have accumulated around floats causing pump to operate erratically	1. Check and reset the control switch 2. Run pump on hand operation for several minutes with small amount of water running into basin to clean out solids and grease.



Grinder Pumps Models: AGP-HC300 & AGP-HC500 Parts



For Repair Parts, call 1-855 281-6830
please provide
1) Model Number,
2) Serial Number and
3) Part description from parts list

FIGURE 9



Grinder Pumps Model: AGP-HC300 Parts

No.	Part Description	Part No. for pump models					Qty
		AGP-HC300M2-35 3HP 230V 1PH	AGP-HC300M3-35 3HP 230V 3PH	AGP-HC300M4-35 3HP 460V 3PH	AGP-HC300M5-35 3HP 208V 1PH	AGP-HC300M6-35 3HP 208V 3PH	
1	Impeller	091AGP069	091AGP069	091AGP069	091AGP069	091AGP069	1
2	Rotor/Shaft Assembly	091LGP320	091LGP320	091LGP320	091LGP320	091LGP320	1
3	Housing/Stator Assembly	091LGP307	091LGP309	091LGP309	091LGP308	091LGP309	1
4	Cord Cap Assembly	091LGP312	091LGP311	091LGP311	091LGP312	091LGP311	1
5	Dielectric Oil	80002B01	80002B01	80002B01	80002B01	80002B01	
6	Lifting Handle	091LGP706	091LGP706	091LGP706	091LGP706	091LGP706	1
7	Hex Head Capscrew 5/16-18 x 1" SST w/Lockwasher	091LGP323	091LGP323	091LGP323	091LGP323	091LGP323	7
8	Pipe Plug-3/8 NPT, SST	091AGP035	091AGP035	091AGP035	091AGP035	091AGP035	2
9	Hex Head Capscrew 5/16-18 x 7/8" SST w/Lockwasher	091LGP324	091LGP324	091LGP324	091LGP324	091LGP324	4
10	Hex Head Capscrew 1/2-13 x 15/16" SST w/Lockwasher	091LGP325	091LGP325	091LGP325	091LGP325	091LGP325	2
11	Hex Head Capscrew 7/16-14 x 1-1/4" SST w/Lockwasher	091AGP011	091AGP011	091AGP011	091AGP011	091AGP011	4
12	Hex Head Capscrew 5/16-18 x 1-1/4" SST w/Lockwasher	091LGP326	091LGP326	091LGP326	091LGP326	091LGP326	6
13	O-Ring (2-245)	091LGP314	091LGP314	091LGP314	091LGP314	091LGP314	1
14	Connection cover	091LGP304	091LGP304	091LGP304	091LGP304	091LGP304	1
15	O-Ring (2-258)	091LGP315	091LGP315	091LGP315	091LGP315	091LGP315	1
16	O-Ring (2-264)	091ANC037	091ANC037	091ANC037	091ANC037	091ANC037	1
17	Bearing Retainer	091LGP302	091LGP302	091LGP302	091LGP302	091LGP302	1
18	Lower Bearing-Angular Contact	091AGP017	091AGP017	091AGP017	091AGP017	091AGP017	1
19	Mechanical Seal-Type 21	091AGP012	091AGP012	091AGP012	091AGP012	091AGP012	2
20	O-Ring (2-253)	091ANC213	091ANC213	091ANC213	091ANC213	091ANC213	1
21	Shredding Ring Cover	091AGP004	091AGP004	091AGP004	091AGP004	091AGP004	1
22	Hex Head Capscrew 3/8-16 x 2-1/16" SST w/Lockwasher	091AGP003	091AGP003	091AGP003	091AGP003	091AGP003	4
23	Hex Head Capscrew 5/16-18 x 1" SST Serrated Head	091AGPH03	091AGPH03	091AGPH03	091AGPH03	091AGPH03	1
24	Impeller Washer	091AGPH04	091AGPH04	091AGPH04	091AGPH04	091AGPH04	1
25	Radial Cutter	091AGPH06	091AGPH06	091AGPH06	091AGPH06	091AGPH06	1
26	Shredding Ring	091AGPH08	091AGPH08	091AGPH08	091AGPH08	091AGPH08	1
27	Volute	091AGP007	091AGP007	091AGP007	091AGP007	091AGP007	1
28	HexSocket Head Head Capscrew 3/8-16 x 1-1/8" SST	091AGP008	091AGP008	091AGP008	091AGP008	091AGP008	4
29	Shim	091AGPH07	091AGPH07	091AGPH07	091AGPH07	091AGPH07	1
30	Seal Plate	091AGP010	091AGP010	091AGP010	091AGP010	091AGP010	1
31	Moisture Sensor Assembly	091ANC032	091ANC032	091ANC032	091ANC032	091ANC032	1
32	Upper Bearing-Radial Ball (6304)	091LGP321	091LGP321	091LGP321	091LGP321	091LGP321	1
33	Wave Washer	091LGP322	091LGP322	091LGP322	091LGP322	091LGP322	1
34	Connection Terminal	091LGP330	091LGP330	091LGP330	091LGP330	091LGP330	1
35	#8-32 x 1-1/4" Rd. Hd. Machine Screw SST	091LGP331	091LGP331	091LGP331	091LGP331	091LGP331	2
36	Set Screw Electrical Connector	091LGP332	091LGP332	091LGP332	091LGP332	091LGP332	4
37	Bearing Housing	091LGP301	091LGP301	091LGP301	091LGP301	091LGP301	1
38	Impeller/Cutter Key	091AGP038	091AGP038	091AGP038	091AGP038	091AGP038	1
41	Snap ring (Inboard Seal)	091AGP014	091AGP014	091AGP014	091AGP014	091AGP014	1
*42	Leg Kit	091AGP037	091AGP037	091AGP037	091AGP037	091AGP037	1



Grinder Pumps Model: AGP-HC500 Parts

No.	Part Description	Part No. for pump models					Qty
		AGP-HC500M2-35	AGP-HC500M3-35	AGP-HC500M4-35	AGP-HC500M5-35	AGP-HC500M6-35	
		5HP 230V 1PH	5HP 230V 3PH	5HP 460V 3PH	5HP 208V 1PH	5HP 208V 3PH	
1	Impeller	091AGP569	091AGP569	091AGP569	091AGP569	091AGP569	1
2	Rotor/Shaft Assembly	091LGP520	091LGP520	091LGP520	091LGP520	091LGP520	1
3	Housing/Stator Assembly	091LGP507	091LGP509	091LGP509	091LGP508	091LGP509	1
4	Cord Cap Assembly	091LGP312	091LGP312	091LGP311	091LGP312	091LGP312	1
5	Dielectric Oil	80002B01	80002B01	80002B01	80002B01	80002B01	
6	Lifting Handle	091LGP706	091LGP706	091LGP706	091LGP706	091LGP706	1
7	Hex Head Capscrew 5/16-18 x 1" SST w/Lockwasher	091LGP323	091LGP323	091LGP323	091LGP323	091LGP323	7
8	Pipe Plug-3/8 NPT, SST	091AGP035	091AGP035	091AGP035	091AGP035	091AGP035	2
9	Hex Head Capscrew 5/16-18 x 7/8" SST w/Lockwasher	091LGP324	091LGP324	091LGP324	091LGP324	091LGP324	4
10	Hex Head Capscrew 1/2-13 x 15/16" SST w/Lockwasher	091LGP325	091LGP325	091LGP325	091LGP325	091LGP325	2
11	Hex Head Capscrew 7/16-14 x 1-1/4" SST w/Lockwasher	091AGP011	091AGP011	091AGP011	091AGP011	091AGP011	4
12	Hex Head Capscrew 5/16-18 x 1-1/4" SST w/Lockwasher	091LGP326	091LGP326	091LGP326	091LGP326	091LGP326	6
13	O-Ring (2-245)	091LGP314	091LGP314	091LGP314	091LGP314	091LGP314	1
14	Connection cover	091LGP304	091LGP304	091LGP304	091LGP304	091LGP304	1
15	O-Ring (2-258)	091LGP315	091LGP315	091LGP315	091LGP315	091LGP315	1
16	O-Ring (2-264)	091ANC037	091ANC037	091ANC037	091ANC037	091ANC037	1
17	Bearing Retainer	091LGP302	091LGP302	091LGP302	091LGP302	091LGP302	1
18	Lower Bearing-Angular Contact	091AGP017	091AGP017	091AGP017	091AGP017	091AGP017	1
19	Mechanical Seal-Type 21	091AGP012	091AGP012	091AGP012	091AGP012	091AGP012	2
20	O-Ring (2-253)	091ANC213	091ANC213	091ANC213	091ANC213	091ANC213	1
21	Shredding Ring Cover	091AGP004	091AGP004	091AGP004	091AGP004	091AGP004	1
22	Hex Head Capscrew 3/8-16 x 2-1/16" SST w/Lockwasher	091AGP003	091AGP003	091AGP003	091AGP003	091AGP003	4
23	Hex Head Capscrew 5/16-18 x 1" SST Serrated Head	091AGPH03	091AGPH03	091AGPH03	091AGPH03	091AGPH03	1
24	Impeller Washer	091AGPH04	091AGPH04	091AGPH04	091AGPH04	091AGPH04	1
25	Radial Cutter	091AGPH06	091AGPH06	091AGPH06	091AGPH06	091AGPH06	1
26	Shredding Ring	091AGPH08	091AGPH08	091AGPH08	091AGPH08	091AGPH08	1
27	Volute	091AGP007	091AGP007	091AGP007	091AGP007	091AGP007	1
28	HexSocket Head Head Capscrew 3/8-16 x 1-1/8" SST	091AGP008	091AGP008	091AGP008	091AGP008	091AGP008	4
29	Shim	091AGPH07	091AGPH07	091AGPH07	091AGPH07	091AGPH07	1
30	Seal Plate	091AGP010	091AGP010	091AGP010	091AGP010	091AGP010	1
31	Moisture Sensor Assembly	091ANC032	091ANC032	091ANC032	091ANC032	091ANC032	1
32	Upper Bearing-Radial Ball (6304)	091LGP321	091LGP321	091LGP321	091LGP321	091LGP321	1
33	Wave Washer	091LGP322	091LGP322	091LGP322	091LGP322	091LGP322	1
34	Connection Terminal	091LGP330	091LGP330	091LGP330	091LGP330	091LGP330	1
35	#8-32 x 1-1/4" Rd. Hd. Machine Screw SST	091LGP331	091LGP331	091LGP331	091LGP331	091LGP331	2
36	Set Screw Electrical Connector	091LGP332	091LGP332	091LGP332	091LGP332	091LGP332	4
37	Bearing Housing	091LGP301	091LGP301	091LGP301	091LGP301	091LGP301	1
38	Impeller/Cutter Key	091AGP038	091AGP038	091AGP038	091AGP038	091AGP038	1
41	Snap ring (Inboard Seal)	091AGP014	091AGP014	091AGP014	091AGP014	091AGP014	1
*42	Leg Kit	091AGP037	091AGP037	091AGP037	091AGP037	091AGP037	1



P U M P

Grinder Pumps Model: AGP-HC750 Parts

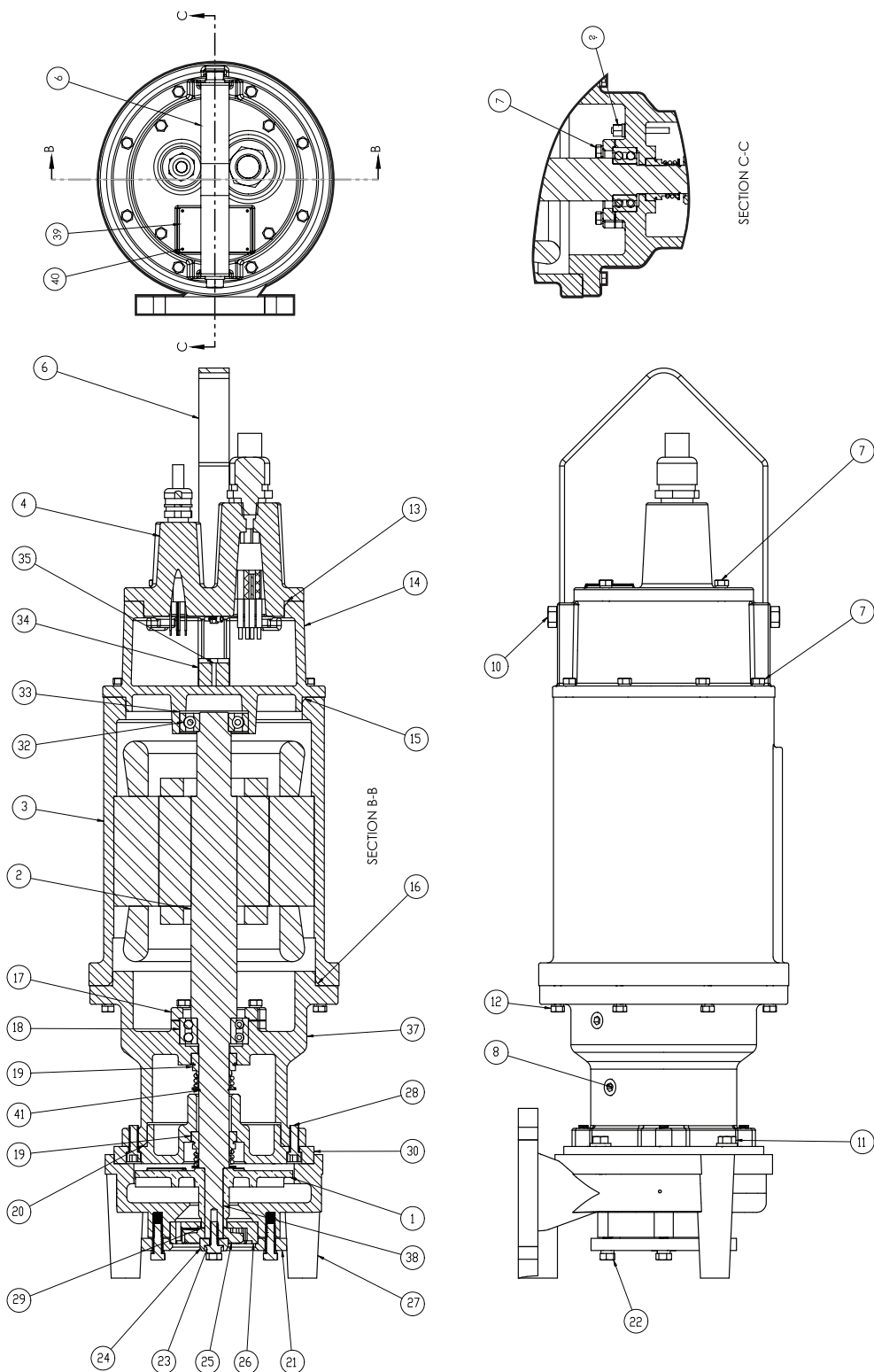


FIGURE 10

For Repair Parts, call 1-855 281-6830

please provide

- 1) Model Number,
- 2) Serial Number and
- 3) Part description from parts list



Grinder Pumps Model: AGP-HC750 Parts

No.	Part Description	Part No. for pump models			Qty
		AGP-HC750M3-35	AGP-HC750M4-35	AGP-HC750M6-35	
		7.5HP 230V 3PH	7.5HP 460V 3PH	7.5HP 208V 3PH	
1	Impeller	091AGP769	091AGP769	091AGP769	1
2	Rotor/Shaft Assembly	091LGP720	091LGP720	091LGP720	1
3	Housing/Stator Assembly	091LGP709	091LGP709	091LGP709	1
4	Cord Cap Assembly	091LGP312	091LGP311	091LGP312	1
5	Dielectric Oil	80002B01	80002B01	80002B01	
6	Lifting Handle	091LGP706	091LGP706	091LGP706	1
7	Hex Head Capscrew 5/16-18 x 1" SST w/Lockwasher	091LGP323	091LGP323	091LGP323	15
8	Pipe Plug-3/8 NPT, SST	091AGP035	091AGP035	091AGP035	2
10	Hex Head Capscrew 1/2-13 x 15/16" SST w/Lockwasher	091LGP325	091LGP325	091LGP325	2
11	Hex Head Capscrew 7/16-14 x 1-1/4" SST w/Lockwasher	091AGP011	091AGP011	091AGP011	4
12	Hex Head Capscrew 5/16-18 x 1-1/4" SST w/Lockwasher	091LGP326	091LGP326	091LGP326	8
13	O-Ring (2-255)	091LGP316	091LGP316	091LGP316	1
14	Connection cover	091LGP704	091LGP704	091LGP704	1
15	O-Ring (2-262)	091LGP317	091LGP317	091LGP317	1
16	O-Ring (2-266)	091LGP318	091LGP318	091LGP318	1
17	Bearing Retainer	091LGP302	091LGP302	091LGP302	1
18	Lower Bearing-Angular Contact	091AGP017	091AGP017	091AGP017	1
19	Mechanical Seal-Type 21	091AGP012	091AGP012	091AGP012	2
20	O-Ring (2-253)	091ANC213	091ANC213	091ANC213	1
21	Shredding Ring Cover	091AGP004	091AGP004	091AGP004	1
22	Hex Head Capscrew 3/8-16 x 2-1/16" SST w/Lockwasher	091AGP003	091AGP003	091AGP003	4
23	Hex Head Capscrew 5/16-18 x 1" SST Serrated Head	091AGPH03	091AGPH03	091AGPH03	1
24	Impeller Washer	091AGPH04	091AGPH04	091AGPH04	1
25	Radial Cutter	091AGPH06	091AGPH06	091AGPH06	1
26	Shredding Ring	091AGPH08	091AGPH08	091AGPH08	1
27	Volute	091AGP007	091AGP007	091AGP007	1
28	HexSocket Head Head Capscrew 3/8-16 x 1-1/8" SST	091AGP008	091AGP008	091AGP008	4
29	Shim	091AGPH07	091AGPH07	091AGPH07	1
30	Seal Plate	091AGP010	091AGP010	091AGP010	1
31	Moisture Sensor Assembly	091ANC032	091ANC032	091ANC032	1
32	Upper Bearing-Radial Ball (6306)	091LGP327	091LGP327	091LGP327	1
33	Wave Washer	091LGP328	091LGP328	091LGP328	1
34	Connection Terminal	091LGP330	091LGP330	091LGP330	1
35	#8-32 x 1-1/4" Rd. Hd. Machine Screw SST	091LGP331	091LGP331	091LGP331	2
36	Set Screw Electrical Connector	091LGP332	091LGP332	091LGP332	4
37	Bearing Housing	091LGP751	091LGP751	091LGP751	1
38	Impeller/Cutter Key	091AGP038	091AGP038	091AGP038	1
41	Snap ring (Inboard Seal)	091AGP014	091AGP014	091AGP014	1
*42	Leg Kit	091AGP037	091AGP037	091AGP037	1



Grinder Pumps Models: AGP-HC300, AGP-HC500 & AGP-HC750 Warranty

Retain Original Purchase Receipt for Warranty Eligibility

Limited Warranty

Manufacturer warrants to the original consumer purchaser ("Purchaser" or "You") that its products are free from defects in material and workmanship for a period of three (3) years from the date of the original consumer purchase. If, within three (3) years from the original consumer purchase, any such product shall prove to be defective, it shall be repaired or replaced at manufacturer's option, subject to the terms and conditions set forth herein. Note that this limited warranty applies to manufacturing defects only and not to ordinary wear and tear. All mechanical devices need periodic parts and service to perform well. This limited warranty does not cover repair when normal use has exhausted the life of a part or the equipment.

The original purchase receipt and product warranty information label are required to determine warranty eligibility. Eligibility is based on purchase date or original product – not the date of replacement under warranty. The warranty is limited to repair or replacement of original purchased product only, not replacement product (i.e. one warranty replacement allowed per purchase).

Purchaser pays all removal, installation, labor, shipping, and incidental charges.

Claims made under this warranty shall be made by returning the product to the retail outlet where it was purchased or to the factory immediately after the discovery or any alleged defect. Manufacturer will subsequently take corrective action as promptly as reasonably possible. No requests for service will be accepted if received more than 30 days after the warranty expires. Warranty is not transferable and does not apply to products used in commercial/rental applications.

General Terms and Conditions; Limitations of Remedies

You must pay all labor and shipping charges necessary to replace product covered by this warranty. This warranty does not apply to the following: (1) acts of God; (2) products which, in manufacturer's sole judgment, have been subject to negligence, abuse, accident, misapplication, tampering, or alteration; (3) failures due to improper installation, operation, maintenance or storage; (4) atypical or unapproved application, use or service; (5) failures caused by corrosion, rust or other foreign materials in the system, or operation at pressures in excess of recommended maximums.

This warranty sets forth manufacturer's sole obligation and purchaser's exclusive remedy for defective products. MANUFACTURER SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, OR CONTINGENT DAMAGES WHATSOEVER. THE FOREGOING LIMITED WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESS AND IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE FOREGOING LIMITED WARRANTIES SHALL NOT EXTEND BEYOND THE DURATION PROVIDED HEREIN.

Some states do not allow the exclusion or limitation of incidental or consequential damages or limitations on how long an implied warranty lasts, so the above limitations or exclusions may not apply to You. This warranty gives You specific legal rights and You may also have other rights which vary from state to state.



Honest, Professional, Dependable

1191 Commerce Parkway, Ashland, Ohio 44805
Telephone: 855 281-6830 • Fax: 877 326-1994
ashlandpump.com