



471 US Hwy 250 East, Ashland, Ohio 44805
PH: 419-207-9400 FX: 419-207-8031

**INSTALLATION AND SERVICE INSTRUCTIONS
AND REPAIR PARTS LIST FOR 1/2HP
SUBMERSIBLE SEWAGE PUMPS “KE5-A/M & KW5-
A/M”**



MODELS: 1/2hp “KE” & “KW” Series

KE5-A

- 115 Volt, 1- Phase, Automatic

KE5-M

- 115 Volt, 1-Phase, Manual

KW5-A

- 115 Volt, 1-Phase, Automatic

KW5-M

- 115 Volt, 1-Phase, Manual

Read all instructions in this manual before operating pump. Most accidents can be avoided by using COMMON SENSE.

Please Read This Before Installing Or Operating Pump.
This information is provided for **SAFETY** and to **PREVENT EQUIPMENT PROBLEMS**. To help recognize this information, observe the following symbols:



IMPORTANT! Warns about hazards that can result in personal injury or indicates factors concerned with assembly, installation, operation, or maintenance which could result in damage to the machine or equipment if ignored.

CAUTION! Warns about hazards that can or will cause minor personal injury or property damage if ignored. Used with symbols below.

WARNING! Warns about hazards that can or will cause serious personal injury, death, or major property damage if ignored. Used with symbols below.



Hazardous fluids can cause fire or explosions, burns or death could result.



Extremely hot - Severe burns can occur on contact.



Biohazard can cause serious personal injury.



Hazardous fluids can cause hazardous pressure, eruptions or explosions could cause personal injury or property damage.



Rotating machinery Amputation or severe laceration can result.



Hazardous voltage can shock, burn or cause death.

Only qualified personnel should install, operate and repair pump. Any wiring of pumps should be performed by a qualified electrician.



WARNING! - 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.



WARNING! - To reduce risk of electrical shock, always disconnect the pump from the power source before handling or servicing. Lock out power and tag.

Prevent large articles of clothing, large amounts of chemicals, other materials or substances such as are uncommon in domestic sewage from entering the system.

During power black-outs, minimize water consumption at the home(s) to prevent sewage from backing up into the house.

Always keep the shut-off valve completely open when system is in operation (unless advised otherwise by the proper authorities). Before removing the pump from the basin, be sure to close the shut-off valve. (This prevents backflow from the pressure sewer.)

Keep the control panel locked or confined to prevent unauthorized access to it.

If the pump is idle for long periods of time, it is advisable to start the pump occasionally by adding water to the basin.



CAUTION! Pumps build up heat and pressure during operation-allow time for pumps to cool before handling or servicing.



WARNING! - DO NOT pump hazardous materials (flammable, caustic, etc.) unless the pump is specifically designed and designated to handle them.

Do not block or restrict discharge hose, as discharge hose may whip under pressure.



WARNING! - DO NOT wear loose clothing that may become entangled in the impeller or other moving parts.



WARNING! - 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.

Do not exceed manufacturers recommendation for maximum performance, as this could cause the motor to overheat.

Secure the pump in its operating position so it can not tip over, fall or slide.

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.



Submersible Pumps are not approved for use in swimming pools, recreational water installations, decorative fountains or any installation where human contact with the pumped fluid is common.

Do not remove cord and strain relief. Do not connect conduit to pump.



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. Various government agencies have determined that leaded copper alloys should not be used in potable water applications. For non-leaded copper alloy materials of construction, please contact factory.

KEEN PUMP is not responsible for losses, injury or death resulting from a failure to observe these safety precautions, misuse, abuse or misapplication of pumps or equipment.

WARNING!

THE PUMP MUST BE WIRED BY A QUALIFIED ELECTRICIAN, USING AN APPROVED STARTER BOX AND SWITCHING DEVICE.

DANGER!

HAZARDOUS MOVING PARTS. To reduce risk of injury, disconnect power before servicing. Never put fingers near impeller or in pump inlet when pump cord is connected or pump is operating.

For use with maximum 140 degrees F liquid.

DANGER!

In the initial installation, before sewage is admitted to the basin, there is no danger on entering the basin. **AFTER SEWAGE HAS BEEN IN THE BASIN, THERE IS DANGER.** Sewage water produces methane and hydrogen sulfide gasses, both of which are highly poisonous. A breathing device may be required. Never enter the basin unless cover is open and outside blower is used to force fresh air into the basin. Also the worker in the basin must wear a harness attached to the surface so he can be pulled out in case of asphyxiation. **NEVER WORK ALONE!**

WARNING!

Do not exceed working load limit of lifting chain, cable or rope. Do not use lifting chain, cable or rope where failure could result in loss of life.

Examine all lifting devices, chain, cable or rope for damage before and after each lift. Do not use any lifting devices that are not rated for and designed to lift the weights involved with these pumps. **DO NOT LIFT PUMP BY POWER CORD.**

Do not install or remove pump with person(s) in the basin.

This pump is designed to handle materials which could cause illness or disease through direct exposure. Wear and use protective clothing when working on the pump or piping.

WARNING!

Any wiring to be done on pumps should be done by a qualified electrician.

NEVER operate a pump with a power cord that has frayed or brittle insulation.

NEVER let cords or plugs lay in water.

NEVER handle connected power cords with wet hands.

NEVER be in contact with the liquid being pumped while pump cord is connected to electrical supply.

Only qualified personnel should install, operate or repair pump.

***** **USE AND CARE** *****

DO NOT pump hazardous material not recommended for pump. **NEVER** introduce:

- Explosives
- Flammable Material
- Lubricating Oil and/or Grease
- Chemicals, Solvents, etc.
- Gasoline
- Any Petroleum Product

Regulatory agencies advise that the following items should not be introduced into any sewer:

- Glass
- Metal
- Diapers
- Clothing, socks, rags, etc.
- Plastic objects (toys, utensils, etc.)
- Sanitary napkins or tampons

DO NOT pump without safety devices in place.

For hazardous locations, use pumps listed and classified for such locations.

DO NOT use non-explosion rated pumps in locations considered hazardous in accordance with the National Electric Code, ANSI/NFPA 70-1993.

IMPORTANT!

KEEN PUMP is not responsible for losses, injury or death resulting from failure to observe these safety precautions.

PUMP SPECIFICATIONS

DISCHARGE	1-1/2" NPT, Vertical KE / 2" NPT, Vertical KW
LIQUID TEMPERATURE	120 degrees F (Continuous) 140 degrees F. (Intermittent)
MOTOR HOUSING	Cast Iron, ASTM A-48, Class 30
CORD CAP	Cast Iron, ASTM A-48, Class 30
VOLUTE	Cast Iron, ASTM A-48, Class 30
SEAL PLATE	Cast Iron, ASTM A-48, Class 30
IMPELLER	Ductile Iron, ASTM A-48, Class 35B Vortex with Pump-out Vanes, Dynamically Balanced
SHAFT	416 Stainless Steel
SHAFT SEAL	Mechanical (Motor) Carbon – Rotating Face Ceramic – Stationary Face Buna-N – Elastomer 300 Series Stainless Steel – Hardware
BEARING (UPPER)	Single Row, Ball, Oil Lubricated
BEARING (LOWER)	Single Row, Ball, Oil Lubricated
HARDWARE	300 Series Stainless Steel
O-RINGS	Buna-N
CORD	14 AWG, Type SJTO or SJTOW 20' Length Standard
CORD ENTRY	Compression Grommet – Outer Jacket Seal Spade Connector – Inner Wire
MOTOR (SINGLE PHASE)	1/2 HP, 3450 RPM, 60 Hz 115 volts, single phase Includes Overload Protection in the Motor. Oil Filled, Class B Permanent Split Capacitor

TROUBLESHOOTING

The troubles listed below are potential problems involving the pump. Other troubles can occur from faulty control box operation. Consult control box instructions for troubleshooting list involving the control box.

PROBLEM

Pump will not run.

PROBABLE CAUSE

Tripped breaker, blown fuse, poor electrical connection, interruption of power, improper power supply.

Float switch defective or restricted.

On single phase pumps, electronic start switch or capacitors blown.

Overload in motor tripped.

Solid material lodged in pump inlet.

Pump runs, but does not pump liquid from basin.

Pump impeller may be air locked. Start and stop pump several times to purge air. Check to ensure vent hole in volute is open and clean.

Lower "OFF" float may be set too low, allowing air into pump.

Pump inlet or valves in discharge pipe may be clogged.

Discharge valve may be closed.

Pump hums, but does not run.

Incorrect voltage.

Pump inlet plugged.

Pump delivers low volume of water.

Low voltage.

On three phase pumps, motor running backwards.

Discharge restricted.

Check valve stuck closed or installed backwards.

Pump motor damaged / worn.

Pump may be air locked.

Pump is noisy.

Pump cavitation due to low discharge pressure.

Pump cycles frequently.

Check valve stuck closed or installed backwards.

Ground water entering basin.

Fixtures are leaking.

Pump will not turn off.

Float switch defective or movement restricted.

H-O-A switch in panel is in "HAND" position.

Pump may be air locked.

Excessive inflow / pump not sized for the application.

Grease and solids accumulated in basin and will not pump out.

Pump "ON" switch may be set too high.

Debris may have accumulated around lower float weight causing pump to turn off too soon. Clean debris away from weight and cord.

Circuit breaker trips.

Electrical short to ground.

Check troubleshooting in control panel before pulling pump.

Check all electrical cords for damage.

Pull pump and take resistance readings of motor to determine if problem is in the pump or control box.



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Limited Warranty

During the time periods and subject to the conditions hereinafter set forth, Keen Pump will repair or replace to the original user or consumer, any portion of your new Keen product which proves defective due to defective materials or workmanship of Keen Pump. Contact your closest authorized Keen Pump representative or distributor for warranty service. At all times, Keen Pump shall have and possess the sole right and option to determine whether to repair or replace defective equipment, parts or components. Damage caused by acts of GOD or conditions beyond the control of Keen Pump is not covered by this warranty.

WARRANTY PERIOD:

12 months from date of installation / 18 months from date of manufacture, which-ever occurs first. Start-up reports may be required to support warranty claims. Warranty effective only if Keen Pump supplied or authorized control panels are used. Single phase pumps must utilize Keen Pump supplied start components.

THIS WARRANTY WILL NOT APPLY:

- (1) To defects or malfunctions resulting from failure to properly install, operate or maintain the product in accordance with printed instructions provided.
- (2) To failures resulting from abuse, accident or negligence.
- (3) To normal maintenance services and the parts used in conjunction with such service.
- (4) To products which are not installed in accordance with applicable local codes, ordinances and good trade practices.
- (5) The product is used for purposes other than for what it was designed and manufactured.
- (6) If 3 phase motors are installed on a single phase power supply using a phase converter or if 3 phase power is supplied by only two transformers, making an open Delta system.

WARRANTY EXCLUSIONS:

Keen Pump specifically disclaims the implied warranties of merchantability and fitness for a particular purpose after the termination of the warranty period set forth herein. No warranties or representations at any time made by any representatives of Keen Pump shall vary or expand the provision hereof.

LIABILITY LIMITATION:

In no event shall Keen Pump be liable or responsible for consequential, incidental or special damages resulting from or related in any manner to any Keen Pump product or parts thereof. Personal injury and/or property damage may result from improper installation. Keen Pump disclaims all liability, including liability under this warranty, for improper installation. Keen Pump recommends following the instructions in the installation manual. When in doubt, consult a professional. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

LABOR, ETC, COSTS:

Keen Pump shall in no event be responsible or liable for the cost of field labor or other charges incurred by any customer in removing and/or reaffixing any Keen Pump product, part or component thereof.

RETURNED OR REPLACED COMPONENTS:

Any item to be replaced under this Warranty must be returned to Keen Pump, or such other place as Keen Pump may designate, freight prepaid.

This warranty gives you specific legal rights and other rights which may vary from state to state.

In the absence of suitable proof of this purchase date, the effective date of this warranty will be based upon the date of manufacture. Example: 0105 = Month-Year = January, 2005