STATION MODEL: KPCG21-24x48

PUMP MODEL: KEEN KPCG21

VOLTAGE: 230

PHASE: 1

TANK DIMENSIONS: 24” DIAMETER X 48” DEEP
PUMP
The KEEN KPCG series Progressive Cavity grinder pumps feature the best performance (high pressure and flow), combined with unique industry leading design features and materials of construction. This provides the most reliable, longest service life, progressive cavity pump in the industry. The KPCG pump can move wastewater through miles of piping network and is designed for use in pressure sewer applications.

Dependable, consistent flow rates, regardless of varying system operating pressures and vertical elevation differences makes the KEEN KPCG the pump of choice. Designed to deliver 8.5 GPM at 180’ operating heads, the KPCG can produce even higher operating heads at reduced flow rates.

The KPCG-21 series pump features:
- Strong, 1HP, 208/230 Dual Volt Motor
- Potted Cord Cap Assembly
- Dual Silicon-Carbide Shaft Seals
- 3 Bearings
- Pressed-In Motor
- Scratch-resistant, Hardened Chrome Finish Rotor
- Wear-resistant, Special Compound Stator
1. **Watertight Cable Entrance**
Agency-approved, watertight strain relief cord grip with compression grommet protects outer cord jacket. Epoxy-filled inner cord cap provides anti-wicking moisture protection to the motor even if power cable is cut or damaged.

2. **Modular Pump Design**
Commonality of parts across the Keen product line minimizes the amount of parts required for servicing. Heavy-duty ASTM A48, Class 30 cast iron components.

3. **Strong Motor**
Powerful high-torque motor for reliable pump operation. Pressed stator securely holds motor and efficiently transfers heat. Class F insulation with overload protection in oil-filled chamber for cool operation and long motor life.

4. **Oil**
KEEN I.C.E. ensures industry-low operating temperatures. Synthetic blend with wear-additives, specifically engineered for submersible pump motors.

5. **3-Bearing Support**
Motor / Pump shaft securely held with upper and lower ball bearing plus additional sleeve bearing in lower seal chamber. Long 50,000 hour B-10 bearing life.

6. **Double Mechanical Seal Protection**
Dual silicon carbide mechanical shaft seals provide twice the moisture protection for the motor. Dual seals are housed in a secondary oil-filled seal chamber. Tougher silicon carbide seals better handle sand, grit and abrasive materials.

7. **Moisture Detection**
Seal leak probe signals alarm in control panel for scheduled maintenance.

8. **High Performance Pump Design**
Full-lobe design produces higher pressures and flows. Hardened chrome-finish rotor is scratch and abrasion resistant, not damaging the stator. Stator features open inlet design, EPDM material for improved wear, detergent and heat resistance. Thick stator wall and encapsulating liner for improved strength and longer life.

9. **Proven Grinder Assembly**
Hardened (Rockwell 58-60) 440C SST grinder assembly has 30+ years proven field experience. The reversible grinder ring and grinder impeller effectively reduce solids into a fine slurry, easily passable in a piping system without concerns of clogging. Highly efficient 7,400 cuts/second.

10. **Easy Piping Connection**
Removable 1-1/4"NPT connection flange for simple and easy connection to discharge piping.

11. **Accessories Included**
Stainless steel lifting handle included with the pump.
## General

**Pump Model**: KPCG-21

## Motor Data

<table>
<thead>
<tr>
<th>HP / Power Supply</th>
<th>1HP / 1 φ, 208 / 230V, 60 Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Load Amps 208V</td>
<td>9 Amps</td>
</tr>
<tr>
<td>Start Amps 208V</td>
<td>Amps</td>
</tr>
<tr>
<td>Full Load Amps 230V</td>
<td>8 Amps</td>
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<tr>
<td>Start Amps 230V</td>
<td>Amps</td>
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<tr>
<td>Poles / Rated Speed</td>
<td>4 P / 1750 rpm</td>
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<tr>
<td>Insulation Class</td>
<td>F Class</td>
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<tr>
<td>Start Capacitor</td>
<td>216 ufd, 250 VAC</td>
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<tr>
<td>Run Capacitor</td>
<td>20 ufd, 370 VAC</td>
</tr>
</tbody>
</table>

## Pump Data

| Date | 03/24/2015 |
| Discharge Flange | 1-1/4" NPT, Vertical |
| Grinder Ring | 26 Slots |
| Impeller Type | Progressive Cavity |

START KIT SK-1-001 includes:
Start & Run Capacitors, Relay, and Mounting Hardware

## Performance Curve

*Performance with clear water and ambient temp 20°C (68°F)*
WETWELL
PANEL
POWER CIRCUIT
115/230V - 1PH

PUMP MOTOR MUST HAVE INTERNAL OVERLOAD PROTECTION.

NOTES:
1. MAIN POWER DISCONNECT PROVIDED BY INSTALLER.
2. MAIN POWER TO BE 30A MIN. AND #10AWG WIRE.
3. FLOAT SWITCHES TO BE RATED 2 AMP AT 120V MINIMUM.
4. DASHED LINES INDICATE ITEMS NOT CONTAINED IN THE PANEL.
5. REQUIRED TORQUE FOR TERMINAL BLOCK SCREWS IS 16 in-lbs.
6. FIELD WIRING MUST BE A MINIMUM OF 60° COPPER WIRE.

CHANGES TOLERANCES DRAWN BY DATE
F DECIMALS .XXX = ±.005 12/08/14
E .XX = ±.010
D FRACTIONAL
C X/X = ±1/64
B ANGLES X' = ±1/2'
A

MATERIAL SPECIFICATION:
AS NOTED

SCHEMATIC, ELECTRICAL
SIMPLEX
CONTROL FLOATS
FLOAT SWITCH – CONTROL DUTY
2900 MERCURY SERIES – NARROW ANGLE FLOAT SWITCH

GENERAL
DESIGNED FOR ACCURATE LIQUID LEVEL CONTROL IN MANY APPLICATIONS INCLUDING
SEWAGE ENVIRONMENTS. THE FLOAT SWITCH CAN BE UTILIZED TO SIGNIFY SPECIFIC
WATER LEVELS OR FOR DIRECT ALARM ACTUATION.

SWITCH VARIATIONS
NORMALLY OPEN (N/O)
THE CONTACTS ARE OPEN (OR OFF) IN THE HANGING POSITION. AS THE FLOAT
RISES 1" (5°) ABOVE HORIZONTAL, THE CONTACTS BECOME CLOSED AND
ACTUATE (TURN ON) THE SWITCH. THIS FLOAT IS GENERALLY USED IN PUMP DOWN
APPLICATIONS.
NORMALLY CLOSED (N/C)
THE CONTACTS ARE CLOSED (OR ON) IN THE HANGING POSITION. AS THE FLOAT
RISES 1" (5°) ABOVE HORIZONTAL, THE CONTACTS BECOME OPEN AND ACTUATE
(TURN OFF) THE SWITCH. THIS FLOAT IS GENERALLY USED IN PUMP UP
APPLICATIONS.
SINGLE POLE, DOUBLE THROW (SPDT)
A VARIATION OF THE PREVIOUSLY LISTED SWITCHES. THIS FLOAT SWITCH CAN BE
WIRED TO OPERATE AS EITHER (BUT NOT BOTH) A NORMALLY OPEN OR NORMALLY
CLOSED SWITCH BASED ON THE USER’S NEED.

SWITCH SPECIFICATIONS
2900 SERIES MERCURY FLOAT SWITCHES ARE DESIGNED TO OPERATE UNDER THE
FOLLOWING PARAMETERS.
- MINIMUM OPERATING TEMPERATURE - 32 DEGREES F.
- MAXIMUM OPERATING TEMPERATURE - 170 DEGREES F.
- ELECTRICAL RATING - 10 AMP – 120 VAC, 3 AMP – 240 VAC
- ACTUATION POINT - 1" ABOVE / BELOW HORIZONTAL.

POWER CORD SPECIFICATIONS
CONDUCTOR CORD – PHYSICAL - CHLORINATED POLY ETHYLENE.
ELECTRICAL FOR N/O OR N/C SWITCH - 18 AWG 2, TYPE SJOOW-300 VOLT.
ELECTRICAL FOR SPDT SWITCH - 18 AWG 3, TYPE SJOOW-300 VOLT.

FLOAT SPECIFICATIONS
DURABLE POLYPROPYLENE MATERIAL CONSTRUCTION.
SOLID POLYURETHANE FOAM INTERIOR.
LEAK PROOF, SHOCK PROOF, AND IMPACT RESISTANT.
RESISTANT TO SEWAGE AND WASTEWATER APPLICATIONS.
FOR USE WITH INTRINSICALLY SAFE CIRCUITS.

CORD WEIGHT
ZINC PLATED CAST IRON – 1.22 LBS.
SPLIT WEIGHT DESIGN ALLOWS FOR EASY ADJUSTMENT.
DESIGN ALLOWS FOR SECURE AND PERMANENT ATTACHMENT TO CORD.

CONERY MFG INC 1380 ENTERPRISE PARKWAY ASHLAND, OH 44805
info@conerymfg.com PH (419) 289-1444 FAX (419) 281-0366
2900 SERIES B1,B2

FLOAT WEIGHT

4 MIN. 6 MAX.

STANDARD

MINI

\( \varnothing \frac{3}{8} \)

\( \frac{3}{4} \)

\( \frac{7}{8} \)

ALL INFORMATION CONTAINED IN THIS DRAWING IS CONFIDENTIAL AND PROPRIETARY TO CONERY MFG, INC.

<table>
<thead>
<tr>
<th>CHANGES</th>
<th>TOLERANCES</th>
<th>DRAWN BY</th>
<th>DATE</th>
<th>MATERIAL SPECIFICATION:</th>
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<tbody>
<tr>
<td>F</td>
<td>DECIMALS .XXX = ±0.005, .XX = ±0.010</td>
<td>D. MIDDLETON</td>
<td>03/18/04</td>
<td>NARROW ANGLE FLOAT SWITCH</td>
</tr>
<tr>
<td>E</td>
<td>FRACTIONAL</td>
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</tbody>
</table>
NOTE: ALL ELECTRICAL DIAGRAMS SHOWN ARE EXAMPLES ONLY, CONSULT WITH LOCAL ELECTRICAL AUTHORITIES AND CODES. DO NOT USE THESE PRODUCTS IN GASOLINE, VOLATILES, OTHER COMBUSTIBLES.

FOR PUMP DOWN USE
(NORMALLY OPEN FLOATS)
FOR PUMP UP USE
(NORMALLY CLOSED FLOATS)
FOR SPDT FLOATS
GREEN – N/O
WHITE – COMMON
BLACK – N/C

TYPICAL 2 PUMP USES

TYPICAL MOUNTING

FLOAT 4
FLOAT 3
FLOAT 2
FLOAT 1

HIGH WATER ALARM
(NORMALLY OPEN FLOAT)

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CHANGES | TOLERANCES | DRAWN BY | DATE
---|---|---|---
F | DECIMALS .XXX = ±.005 | D. MIDDLETON | 03/18/04
E | | |
D | FRACTIONAL .XX = ±.010 |
C | X/X = ±1/64 |
B | ANGLES X' = ±1/2' |
A | |

MATERIAL SPECIFICATION:
NARROW ANGLE FLOAT SWITCH

SPECIFICATION SHEET
MERCURY FLOAT

SCALE: NONE
PART NO. 2900 SERIES B1,B2
USER INFO
GRINDER STATION USER GUIDE

Congratulations on your purchase of your new grinder pump system. With proper care and by following a few simple guidelines your grinder pump will give you many years of dependable service.

Use and Care

The grinder pump station is designed to handle routine, domestic sewage. Solid waste materials should be thrown in the trash. While your station is capable of accepting and pumping a wide range of materials, regulatory agencies advise that the following items should not be introduced into any sewer, either directly or through a kitchen waste disposal:

- Glass
- Metal
- Diapers
- Socks, rags or cloth
- Plastic objects (e.g., toys, utensils, ect.)
- Sanitary napkins or tampons.
- Mop strings
- Cooking Oils
- Dental floss

In addition you must NEVER introduce into any sewer:

- Explosives
- Flammable Material
- Lubricating Oil and/or Grease
- Strong Chemicals
- Gasoline

General Information

Your home wastewater disposal system is part of a low pressure sewer system. The key element in this system is the grinder pump station. The basin collects all wastewater from the house. The solids in the sewage are then ground to a small size suitable for pumping in the collection system. The grinder pump generates sufficient pressure to pump this slurry from your home to wastewater plant or utility pump station.
General Alarm

Your grinder pump station will provide a visual flashing red light alarm anytime the level in the storage tank is higher than normal level. If you find your pump station with this condition stop water use immediately and call your utility provider as soon as possible. If water use is continued, a blockage can occur in the plumbing system. This doesn’t necessary indicate a major problem, but service may be required.

Power Failure

Your grinder pump cannot dispose of wastewater or provide an alarm signal without electrical power. If electrical power service is interrupted, keep water usage to a minimum.

Maintenance

When properly installed and used as outlined above the grinder pump requires very little maintenance. It may however, require some cleaning of the level sensors at some point. Any local service provider that is familiar with grinder stations can do this basic cleaning. This cleaning is important as pump station operation will stop if the level sensors are allowed to build enough grease to obstruct proper movement.

Warranty

Your grinder pump is furnished with a factory warranty against defects in material or workmanship for a period of one year.

If you have a claim under the provisions of the attached warranty, please contact your utility directly as they will route the service through the proper provider.
WARRANTY
KEEN PUMP Co. Inc.
1661 Cleveland Ave., Ashland, Ohio  44805
(419) 207-9400

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