Two years after it was founded in 1902, Kinney introduced the world's first rotary pump. Then in 1926, Kinney developed a vacuum pump for use in large commercial operations. Just as these pumps helped change the face of America by making it possible to mass produce products such as light bulbs, radio tubes, refrigerator and air conditioner components, constant research and innovative manufacturing techniques has continued to spearhead Kinney's leadership in the design and manufacture of oil-sealed rotary piston vacuum pumps.

And today, the remarkable long life and reliability of Kinney pumps is testimony to the soundness of the basic rotary piston principle with the elimination of metal-to-metal contact in the pumping chamber.

The Kinney line of oil-sealed piston pumps covers a wide range of sizes in both single stage and compound pump design and as part of Tuthill Vacuum & Blower Systems, our full line capability lets us service a host of major industries worldwide (see Application chart on pages 4-5). Our wide selection offers Kinney customers a highly reliable, single source for pumps as well as their installation, service and technical know-how. You can rely on the Kinney line!
**PRINCIPLES OF OPERATION**

The Efficiency and Long-Term Reliability of the Kinney Rotary Piston Pump is the Result of the Time-Tested Design.

1. The rotary piston does not spin on its axis. It moves in a circular path within the pumping chamber.
2. As it passes top dead center, it creates a constantly increasing internal space on the inlet or suction side.
3. ...and a constantly decreasing internal space on the pressure or discharge side.
4. A high-integrity seal is maintained between the suction and pressure sides by a film of oil that is captured between the piston and the cylinder.
5. There is no contact between the piston and the cylinder.
6. The oil film is maintained by oil dragged into the clearance by the moving piston which creates a hydrodynamic wedge.
7. At the end of compression cycle, the clearance volume is completely filled with oil, making very high compression ratios available.

These three facts, the oil seal, the filling of the clearance volume, and no contact between piston and wall, are what give the rotary piston pump its low blank off, high pumping speeds at low pressures and great durability.

**SINGLE-STAGE OR TWO-STAGE PUMPS**

Depending on your application and what vacuum level you need to attain, Kinney Pumps are available in either single-stage or two-stage design. The two-stage pumps will achieve a lower vacuum level due to the two piston chambers which are arranged in series with a connecting channel.
Kinney oil-sealed vacuum pumps are widely accepted as the standard equipment for applications requiring vacuum over a wide pressure range.

In research and engineering laboratories, Kinney pumps provide the versatility so essential to technological progress.

In production facilities, their ruggedness and compact design permit years of continuous and dependable use.

For the electric power industry, Kinney produces complete vacuum systems, both stationary and portable, air cooled and water cooled, for the evacuation, drying and filling of large transformers, for cable filling, drying and impregnation, and for power station condenser evacuation.

Shown here are a few of the many applications of Kinney vacuum pumps.

**Aerospace and Aviation**
Evacuation of environmental chambers and test apparatus. Vacuum coating and brazing. Evacuation of cryogenic equipment and vessels.

**Agriculture**
Vegetable cooling, produce and berry chilling, grain drying, fumigation, tobacco curing, maple syrup gathering.

**Air Conditioning and Refrigeration**
Kinney offers high vacuum pumps specifically modified for servicing refrigeration equipment including thorough vacuum drying, degassing and fast leak detection. Of special importance to manufacturers of air conditioning and refrigeration equipment is Kinney's wide range of experience in the custom design and manufacture of vacuum pumping carts for production line evacuation and drying of systems and components.

**Automotive**
Vacuum forming and veneering of interiors, decorative and protective coatings, vacuum filling of cooling and hydraulic systems, lamp production, air conditioning system evacuation, vacuum chucking and lifting, carburetor testing, battery drying, component leak testing, mirror coating.

**Biologicals and Drugs**
Freeze-drying, distillation and filtration of biologicals, drugs, vitamins and blood plasma.

**Chemical Processing**
Vacuum dehydration, deaeration, purification, distillation and synthesizing. Vacuum evaporation, drying, concentration, deodorizing and filtration.
Electrical & Electronic
Evacuation of incandescent bulbs, fluorescent, neon, electron and TV tubes, potting of electronic components, production of transistors and other semi-conductor devices. Vacuum coating, crystal growing and impregnation.

Food Processing
Vacuum sealing of bottles, cans and jars, film packaging of meats, poultry and cold cuts, deaeration of beverages, freeze drying of coffee, fruits, vegetables and other food products, vacuum evisceration.

Laboratories
House vacuum systems, chamber evacuation, research and development.

Lasers
Laser cooling and atmosphere control.

Metallurgy
Vacuum degassing, purification, melting, sintering, heat treating, welding, brazing, annealing and impregnation.

Nucleonics
Evacuation of nuclear reactors, accelerators, cyclotrons and bubble chambers.

Paper
Decorative and plastic coating, metallizing.

Petroleum and Petrochemicals
Vacuum distillation and refining, crude yield improvement, oil well evacuation, water deaeration for oil field flooding.

Plastics
Vacuum forming, molding and coating of plastic materials.

Textiles
Vacuum drying, dying, material handling and solvent extraction.

Miscellaneous
**SINGLE-STAGE ROTARY PISTON VACUUM PUMPS**

**KT-150, KT-300, KT-500, KT-850**

**HIGHLIGHTS**

- Fuel Pumping Speed Down to 1 Torr
- Operate Continuously at any Pressure up to 100 Torr
- Ultimate Pressure 10 Microns (McLeod Gauge)
- Quiet, Vibration-Free Operation
- Simple Installation. No Special Preparation Necessary
- No Metal-to-Metal Contact in Pumping Chamber
- Adjustable Gas Ballast Permits Handling of Condensable Vapors
- Unequalled Durability Even in Dirty Applications

**Typical Applications:** Vacuum Packaging, Vacuum Furnaces, Vacuum Coating

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>MODEL</th>
<th>KT-150</th>
<th>KT-300</th>
<th>KT-500</th>
<th>KT-850</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Displacement at Rated RPM (cfm/m³/hr)</td>
<td>150/255</td>
<td>300/505</td>
<td>490/840</td>
<td>780/1325</td>
</tr>
<tr>
<td>Motor HP (hp/kw)</td>
<td>7.5/6</td>
<td>15/11</td>
<td>30/22</td>
<td>40/30</td>
</tr>
<tr>
<td>Oil Capacity (gal/ltr)</td>
<td>6/23</td>
<td>10/38</td>
<td>15/57</td>
<td>28/106</td>
</tr>
<tr>
<td>Cooling Water (gpm/lpm) @ 60°F (16°C) @45 PSI (max)</td>
<td>1/4</td>
<td>2/6</td>
<td>3/9</td>
<td>4/13</td>
</tr>
<tr>
<td>Weight (lbs/kg) (Complete Pump Assy) - Dry</td>
<td>800/364</td>
<td>1525/693</td>
<td>2700/1225</td>
<td>4400/1996</td>
</tr>
<tr>
<td>Maximum Gas Ballast Flow (10%)</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td>Typical Blank-off Pressure with 5% GB (Torr/mbar)</td>
<td>2.0/3.0</td>
<td>2.0/3.0</td>
<td>2.0/3.0</td>
<td>2.0/3.0</td>
</tr>
<tr>
<td>Ultimate Pressure (McLeod Gauge) (Torr/mbar)</td>
<td>0.010/0.013</td>
<td>0.010/0.013</td>
<td>0.010/0.013</td>
<td>0.010/0.013</td>
</tr>
<tr>
<td>Typical Noise Level @ 10 Torr (dBA)</td>
<td>71</td>
<td>72</td>
<td>73</td>
<td>75</td>
</tr>
</tbody>
</table>

All specifications and dimensions subject to change without notice.

**PLUS FEATURES**

**TRIPLEX DESIGN MEANS VIRUTALLY VIBRATION-FREE**

Kinney KT Pumps have three sets of cams and pistons driven by a common shaft. One cam and piston set is no longer than the other two and the cams are set 180° apart. The dynamic forces produced by the rotation of the long cam and piston are balanced by opposing forces produced by the short cams and pistons on either side. The resulting out-of-balance force is very small, making it possible to mount the pump on springs or vibra-mounts which substantially reduce the dynamic forces transmitted to the floor.

See back page flap for Options and Accessories

**HIGH PRESSURE OIL PUMPS ASSURE PROPER LUBRICATIONS**

Pumps are lubricated by forced oil feed at all pressures. This forced feed ensures constant oil flow even at high suction pressures.

**NO ANCHOR BOLTS**

KT Pumps do not require lagging, anchor bolts or special foundations and may be located on any floor that will support their weight.
The above table is not for construction purposes. Consult TVBS for certified drawings.
**OIL-SEALED ROTARY PISTON PUMPS**
KT-170 LP, KT-275 LP, KT-505 LP, KT-840 VFP, KT-1350 VFP

**HIGHLIGHTS**
- Quiet, Vibration Free
- No Metal-to-Metal Contact
- Ultimate Pressure to 10 microns
- Full Pumping Speed Down to 1 Torr
- Compact Design, Easy Access for Maintenance
- Simple Installation

**Typical Applications:** Vacuum Packaging, Vacuum Furnaces, Vacuum Coating

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>MODEL</th>
<th>KT-170 LP</th>
<th>KT-275 LP</th>
<th>KT-505 LP</th>
<th>KT-840 VFP</th>
<th>KT-1350 VFP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Displacement at Rated RPM</td>
<td>cfm/m³/hr</td>
<td>100/170</td>
<td>162/275</td>
<td>300/505</td>
<td>490/840</td>
</tr>
<tr>
<td>Motor HP</td>
<td>hp/kw</td>
<td>5/3.7</td>
<td>10/7.5</td>
<td>15/11</td>
<td>30/22</td>
</tr>
<tr>
<td>Normal Pump Rotation</td>
<td>rpm</td>
<td>1150</td>
<td>1200</td>
<td>870</td>
<td>744</td>
</tr>
<tr>
<td>Oil Capacity</td>
<td>gal/ltr</td>
<td>2.6/10</td>
<td>4.5/17</td>
<td>10/38</td>
<td>15/57</td>
</tr>
<tr>
<td>Cooling Water (min) @ 60°F (16°C)</td>
<td>gpm/pm</td>
<td>1/4</td>
<td>1/4</td>
<td>2/6</td>
<td>3/9</td>
</tr>
<tr>
<td>Weight (Complete Pump Assy) – Dry</td>
<td>lbs/kg</td>
<td>750/340</td>
<td>900/408</td>
<td>1870/848</td>
<td>3650/1660</td>
</tr>
<tr>
<td>Maximum Gas Ballast Flow</td>
<td>10%</td>
<td>10%</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td>Typical Blank-off Pressure with 5% GB</td>
<td>Torr/mbar</td>
<td>2.0/3.0</td>
<td>2.0/3.0</td>
<td>2.0/3.0</td>
<td>2.0/3.0</td>
</tr>
<tr>
<td>Ultimate Pressure (McLeod Gauge)</td>
<td>Torr/mbar</td>
<td>0.010/0.013</td>
<td>0.010/0.013</td>
<td>0.010/0.013</td>
<td>0.010/0.013</td>
</tr>
<tr>
<td>Typical Noise Level @ 10 Torr</td>
<td>dBA</td>
<td>71</td>
<td>72</td>
<td>72</td>
<td>73</td>
</tr>
</tbody>
</table>

All specifications and dimensions subject to change without notice.

**PLUS FEATURES**

**TRIPLEX DESIGN MEANS VIRTUALLY VIBRATION-FREE OPERATION**

Kinney KT Pumps have three sets of cams and pistons driven by a common shaft. One cam and piston set is no longer than the other two and the cams are set 180° apart. The dynamic forces produced by the rotation of the long cam and piston are balanced by opposing forces produced by the short cams and pistons on either side. The resulting out-of-balance force is very small, making it possible to mount the pump on springs or vibra-mounts which substantially reduce the dynamic forces transmitted to the floor.

See back page flap for Options and Accessories

**HIGH PRESSURE OIL PUMPS ASSURE PROPER LUBRICATIONS**
Pumps are lubricated by forced oil feed at all pressures. This forced feed ensures constant oil flow even at high suction pressures.

**NO ANCHOR BOLTS**
KT Pumps do not require lagging, anchor bolts or special foundations and may be located on any floor that will support their weight.
**Dimensions**

**KT-170 LP, KT-275 LP, KT-505 LP**

**KT-840 VFP, KT-1350 VFP**

**PerformanCe Curves**

**Stronger 4-Piece Caged Slide Pins**

Slide pins in all Kinney Rotary Piston Pumps have 4-pieced caged construction, with end pieces that keep both segments in perfect alignment.

**Integral Oil-Mist-Eliminator Converts Oil, Provides Clean Discharge**

All Kinney KT Series Low Profile Pumps have as standard an integral three-stage oil-mist-eliminator, which captures and returns the oil to the oil reservoir.

The first stage is an impingement umbrella on which the largest oil droplets are removed. The second stage is a stainless steel pad, which collects small droplets. The third and final stage is a coalescing filter of glass fibers which removes all visible oil smoke from the discharge gas. Oil collected from all three stages automatically drains back to the oil reservoir.

### Performance Curves

**Typical Pumping Speed Curve**

- **Model KT-170LP, KT-275LP**
- **Model KT-505LP, KT-840VFP and KT1350VFP**

### Dimensions (Inches/Millimeters)

<table>
<thead>
<tr>
<th>Model</th>
<th>A</th>
<th>B</th>
<th>C Inlet</th>
<th>D Discharge</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>J</th>
</tr>
</thead>
<tbody>
<tr>
<td>KT-170LP</td>
<td>24.75</td>
<td>629</td>
<td>24.63</td>
<td>626</td>
<td>3&quot;</td>
<td>NPT</td>
<td>2&quot;</td>
<td>NPT</td>
<td>13</td>
</tr>
<tr>
<td>KT-275LP</td>
<td>28</td>
<td>711</td>
<td>25.5</td>
<td>648</td>
<td>3&quot;</td>
<td>ANSI</td>
<td>2&quot;</td>
<td>NPT</td>
<td>13.75</td>
</tr>
<tr>
<td>KT-505LP</td>
<td>35.25</td>
<td>895</td>
<td>33.88</td>
<td>861</td>
<td>4&quot;</td>
<td>ANSI</td>
<td>3&quot;</td>
<td>NPT/3&quot; ANSI</td>
<td>16.75</td>
</tr>
<tr>
<td>KT-840VFP</td>
<td>50</td>
<td>1270</td>
<td>67</td>
<td>1702</td>
<td>6&quot;</td>
<td>ANSI</td>
<td>4&quot;</td>
<td>ANSI</td>
<td>21</td>
</tr>
<tr>
<td>KT-1350VFP</td>
<td>59</td>
<td>1499</td>
<td>77.75</td>
<td>1975</td>
<td>8&quot;</td>
<td>ANSI</td>
<td>5&quot;</td>
<td>ANSI</td>
<td>24.25</td>
</tr>
</tbody>
</table>

### Performance Data

- **Pumping Speed in CFM**
- **Suction Pressure, Torr/MB**

<table>
<thead>
<tr>
<th>Model</th>
<th>Model KT-170LP</th>
<th>KT-275LP</th>
<th>KT-505LP</th>
<th>KT-840VFP</th>
<th>KT-1350VFP</th>
</tr>
</thead>
<tbody>
<tr>
<td>KT-170LP</td>
<td>0.001</td>
<td>0.010</td>
<td>0.100</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>KT-275LP</td>
<td>0.001</td>
<td>0.010</td>
<td>0.100</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>KT-505LP</td>
<td>0.001</td>
<td>0.010</td>
<td>0.100</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>KT-840VFP</td>
<td>0.001</td>
<td>0.010</td>
<td>0.100</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>KT-1350VFP</td>
<td>0.001</td>
<td>0.010</td>
<td>0.100</td>
<td>1</td>
<td>10</td>
</tr>
</tbody>
</table>
Kinney Piston Pumps are equipped with three features to handle high vapor loads.

First, the adjustable gas ballast valve can introduce air to the pumping chamber, which helps prevent vapor from condensing in the pump oil.

Second, Piston Pumps have a large oil capacity, which has a higher tolerance to contamination. The large reservoir can collect a significant volume of condensed liquid, which can be drained from the pump.

Third, Piston Pumps can operate as part of a vapor handling system, in which the oil reservoir is maintained under vacuum. This is made possible by the oil pump and the design of the oil reservoir to operate under vacuum. Vapor handling systems, which keep the oil dry, can operate in corrosive applications.

These are other quality features: a controllable gas ballast to permit the handling of condensable vapors and to minimize oil changes due to vapor contamination of the sealing oil. Models KD-30 and KD-50 are equipped with an oil mist eliminator, optional on model KDH-130 & KDH-150. Each pump operates within the rating of its standard TEFC motor throughout the entire operating pressure range.

### Specifications

<table>
<thead>
<tr>
<th>MODEL</th>
<th>KD-30</th>
<th>KD-50</th>
<th>KDH-130</th>
<th>KDH-150</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Displacement at Rated RPM</td>
<td>cfm/m/hr</td>
<td>33/56</td>
<td>52/88</td>
<td>134/227</td>
</tr>
<tr>
<td>Motor HP</td>
<td>hp/kw</td>
<td>1.5/1</td>
<td>2/1.5</td>
<td>5/3.7</td>
</tr>
<tr>
<td>Normal Pump Rotation</td>
<td>rpm</td>
<td>571</td>
<td>900</td>
<td>546</td>
</tr>
<tr>
<td>Oil Capacity</td>
<td>gal/ltr</td>
<td>1/3.8</td>
<td>3/11.4</td>
<td>6/22.7</td>
</tr>
<tr>
<td>Cooling Water (min) @ 60°F (16°C)</td>
<td>gpm/lpm</td>
<td>AC</td>
<td>AC</td>
<td>.75/3</td>
</tr>
<tr>
<td>Weight (Complete Pump Assy) – Dry</td>
<td>lbs/kg</td>
<td>200/91</td>
<td>230/104</td>
<td>755/331</td>
</tr>
<tr>
<td>Maximum Gas Ballast Flow</td>
<td>%</td>
<td>8%</td>
<td>6%</td>
<td>6%</td>
</tr>
<tr>
<td>Typical Blank-off Pressure with 5% GB</td>
<td>Torr/mbar</td>
<td>1.5/2</td>
<td>1.5/2</td>
<td>1/1.3</td>
</tr>
<tr>
<td>Ultimate Pressure (McLeod Gauge)</td>
<td>Torr/mbar</td>
<td>0.010/0.013</td>
<td>0.010/0.013</td>
<td>0.010/0.013</td>
</tr>
<tr>
<td>Typical Noise Level @ 10 Torr</td>
<td>dBA</td>
<td>75</td>
<td>80</td>
<td>70</td>
</tr>
</tbody>
</table>

All specifications and dimensions subject to change without notice.

### Plus Features

**High Vapor Handling**

Kinney Piston Pumps are equipped with three features to handle high vapor loads.

First, the adjustable gas ballast valve can introduce air to the pumping chamber, which helps prevent vapor from condensing in the pump oil.

Second, Piston Pumps have a large oil capacity, which has a higher tolerance to contamination. The large reservoir can collect a significant volume of condensed liquid, which can be drained from the pump.

Third, Piston Pumps can operate as part of a vapor handling system, in which the oil reservoir is maintained under vacuum. This is made possible by the oil pump and the design of the oil reservoir to operate under vacuum. Vapor handling systems, which keep the oil dry, can operate in corrosive applications.

---

**Stronger 4-Piece Caged Slide Pins**

Slide pins in all Kinney Rotary Piston Pumps have 4-piece caged construction, with end pieces that keep both segments in perfect alignment.

See back page flap for Options and Accessories
**TYPICAL PUMPING SPEED CURVE**

**MODEL**
- **KD-30** and **KD-50**
- **KD-50**
- **KD-30**
- **KDH-130, KDH-150**

**DIMENSIONS (Inches/Millimeters)**

<table>
<thead>
<tr>
<th>MODEL</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>KD-30</td>
<td>27 7/8</td>
<td>27 5/8</td>
<td>24 1/2</td>
<td>12 7/8</td>
<td>17 3/8</td>
<td>20 1/2</td>
</tr>
<tr>
<td></td>
<td>518</td>
<td>686</td>
<td>432</td>
<td>327</td>
<td>400</td>
<td>508</td>
</tr>
<tr>
<td>KD-50</td>
<td>28 7/8</td>
<td>32 1/2</td>
<td>24 1/2</td>
<td>12 7/8</td>
<td>17 3/8</td>
<td>20 1/2</td>
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<tr>
<td></td>
<td>727</td>
<td>826</td>
<td>622</td>
<td>327</td>
<td>441</td>
<td>508</td>
</tr>
<tr>
<td>KDH-130</td>
<td>38 7/8</td>
<td>39 1/4</td>
<td>33 5/8</td>
<td>20 1/2</td>
<td>30 13/16</td>
<td>28 5/16</td>
</tr>
<tr>
<td>KDH-150</td>
<td>987</td>
<td>997</td>
<td>854</td>
<td>508</td>
<td>783</td>
<td>719</td>
</tr>
</tbody>
</table>

**PERFORMANCE CURVES**

**TYPICAL PUMPING SPEED CURVE**
- MODEL KD-30 and KD-50
- MODEL KDH-130 and KDH-150
OIL SEALED TWO-_STAGE ROTARY PISTON VACUUM PUMPS
KC-5, KC-8, KC-15

HIGHLIGHTS

- Pumping Speed at Pressures Below 10 Microns.
  Lower than Attainable with Single-Stage Pumps
- Ultimate Pressure: .2 Microns (McLeod Gauge)
- Can Operate at Any Pressure up to Atmosphere
- Adjustable Gas Ballast Permits Handling of Condensable Vapors
- No Metal-to-Metal Contact in Pumping Chamber
- Unequaled Durability, Even in Dirty Applications
- Air-Cooled

Typical Applications: Refrigeration Systems, Liquid Gas Storage, Automotive Applications, Leak Detection

Kinney Series, two-stage vacuum pumps, are designed to achieve lower pressures than can be achieved with single-stage pumps. Two sets of cams and pistons, mounted 180° apart on a single shaft, operate in series. The two pumping chambers are connected by a channel, which serves as an oil supply duct for the high vacuum side of the pump and as a gas duct between the two stages. The high vacuum side is continuously sealed with vacuum oil from its own reservoir, the vacuum conditioning being provided by the roughing (2nd) stage. Functionally vibrationless, they are well suited for portable installations. Because there is no metal contact between the pump piston and cylinder, clearances are sealed and lubricated with oil. Units are equipped with a gas ballast valve to provide vapor-handling capability. Oil mist eliminators are standard. Each pump operates within the rating of its standard TEFC motor throughout its operating pressure range.

Wear is minimum. Units operate without repairs for many years. Pumps can be serviced easily in the field without special tools.

Specifically manufactured refrigeration units prepared for use with POE oil, compatible with Freon R134A are also available.

SPECFICATIONS

<table>
<thead>
<tr>
<th>MODEL</th>
<th>KC-5</th>
<th>KC-8</th>
<th>KC-15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Displacement at Rated RPM</td>
<td>cfm/m³/hr</td>
<td>5/8.5</td>
<td>8/13.6</td>
</tr>
<tr>
<td>Motor HP</td>
<td>hp/kw</td>
<td>.33/.25</td>
<td>.5/.38</td>
</tr>
<tr>
<td>Normal Pump Rotation</td>
<td>rpm</td>
<td>638</td>
<td>1022</td>
</tr>
<tr>
<td>Oil Capacity</td>
<td>qts/ltr</td>
<td>0.8/.76</td>
<td>0.8/.76</td>
</tr>
<tr>
<td>Weight (Complete Pump Assy) – Dry</td>
<td>lbs/kg</td>
<td>115/52</td>
<td>120/54</td>
</tr>
<tr>
<td>Maximum Gas Ballast Flow</td>
<td>15%</td>
<td>15%</td>
<td>15%</td>
</tr>
<tr>
<td>Typical Blank-off Pressure with 5% GB</td>
<td>Torr/mbar</td>
<td>0.020/0.027</td>
<td>0.020/0.027</td>
</tr>
<tr>
<td>Ultimate Pressure (McLeod Gauge)</td>
<td>microns/mbar</td>
<td>0.2/2.7x10⁻⁴</td>
<td>0.2/2.7x10⁻⁴</td>
</tr>
<tr>
<td>Typical Noise Level @ 10 Torr</td>
<td>dBA</td>
<td>75</td>
<td>78</td>
</tr>
</tbody>
</table>

All specifications and dimensions subject to change without notice.

SPECIAL SERVICE PUMPS

Kinney KC series pumps are ideally suited for tough, demanding applications. They can also be ordered for specific, special duty applications.

Refrigeration Service Pumps – these pumps are manufactured and tested using oil which is compatible with brake fluid. A special shaft seal design eliminates oil leakage due to brake fluid contamination in the pump.

Industrial Gas Distribution – these pumps are manufactured and tested using oil which is fire resistant.

See back page flap for Options and Accessories

Automotive Brake Line Filling Pumps – these pumps are manufactured and tested using oil which is compatible with brake fluid. A special shaft seal design eliminates oil leakage due to brake fluid contamination in the pump.
**Dimensions**

**KC-5, KC-8, KC-15**

**Pressure in Torr (MB MM HG ABS)**

<table>
<thead>
<tr>
<th>Model</th>
<th>KC-5</th>
<th>KC-8</th>
<th>KC-15</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.9</td>
<td>10.2</td>
<td>8.5</td>
<td></td>
</tr>
<tr>
<td>6.8</td>
<td>5.1</td>
<td>3.4</td>
<td></td>
</tr>
<tr>
<td>1.7</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

**Performance Curves**

**Typical Pumping Speed Curve**
- Models KC-5 and KC-8
- Models KC-15
**KINNEY® KTC**

**OIL-SEALED TWO-STAGE ROTARY PISTON VACUUM PUMPS**

**KTC-21, KTC-60, KTC-112**

**HIGHLIGHTS**

- Triplex Piston Design for Quiet, Vibration-Free Operation
- High Pumping Speed at Pressure Below 10 Microns, Lower than Attainable with Single-Stage Pumps
- Ultimate Pressure: .2 Microns (McLeod Gauge)
- Can Operate at Any Pressure up to Atmosphere
- Adjustable Gas Ballast Permits Handling of Condensable Vapors
- No Metal-to-Metal Contact in Pumping Chambers
- Unequaled Durability, Even in Dirty Applications

**Typical Applications:** Brake Filling Systems, Low Pressure Chemical Vapor, Silicon Crystal Growing, Air Conditioning

The KTC series two-stage high vacuum pumps are of “triplex” design, a single shaft with three sets of cams and pistons, one set larger than the other. Pumps in this series maintain lower pressures than are attainable with single-stage pumps. In operation, one of the smaller pumping chambers is in series with (backing) the other two, which function in parallel. A unique internal balancing technique reduces the magnitude of pump movement (deflection) to 0.0002” while simultaneously reducing the dynamic forces transmitted through the flexible mounting pads furnished with each pump to less than one pound. These pumps are vibration-free, air-cooled, (except the KTC-12 which is water-cooled), and equipped with an adjustable gas ballast providing vapor handling capability while reducing oil changes by preventing condensable vapors from contaminating the oil.

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>MODEL</th>
<th>KTC-21</th>
<th>KTC-60</th>
<th>KTC-112</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Displacement at Rated RPM</td>
<td>cfm/m³/hr</td>
<td>21/36</td>
<td>60/102</td>
</tr>
<tr>
<td>Motor HP</td>
<td>hp/kw</td>
<td>1.5/1.1</td>
<td>3/2.3</td>
</tr>
<tr>
<td>Normal Pump Rotation</td>
<td>rpm</td>
<td>1725</td>
<td>972</td>
</tr>
<tr>
<td>Oil Capacity</td>
<td>gal/ltr</td>
<td>5/1.9</td>
<td>2/7.5</td>
</tr>
<tr>
<td>Cooling Water (min) @ 60°F (16°C)</td>
<td>gpm/lpm</td>
<td>AC</td>
<td>AC</td>
</tr>
<tr>
<td>Weight (Complete Pump Assy) – Dry</td>
<td>lbs/kg</td>
<td>170/77</td>
<td>515/234</td>
</tr>
<tr>
<td>Maximum Gas Ballast Flow</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>Typical Blank-off Pressure with 5% GB</td>
<td>Torr/mbar</td>
<td>0.020/0.027</td>
<td>0.020/0.027</td>
</tr>
<tr>
<td>Ultimate Pressure (McLeod Gauge)</td>
<td>microns/mbar</td>
<td>0.2/2.7x10⁻⁴</td>
<td>0.2/2.7x10⁻⁴</td>
</tr>
<tr>
<td>Typical Noise Level @ 10 Torr</td>
<td>dBA</td>
<td>72</td>
<td>70</td>
</tr>
</tbody>
</table>

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**PLUS FEATURES**

**TRIPLEX DESIGN MEANS VIRTUALLY VIBRATION-FREE OPERATION**

Kinney Piston Pumps have three sets of cams and pistons driven by a common shaft. One cam and piston set is no longer than the other two and the cams are set 180° apart. The dynamic forces produced by the rotation of the long cam and piston are balanced by opposing forces produced by the short cams and pistons on either side. The resulting out-of-balance force is very small, making it possible to mount the pump on springs or vibramounts which substantially reduce the dynamic forces transmitted to the floor.

**NO ANCHOR BOLTS**

KT Pumps do not require lagging, anchor bolts or special foundations and may be located on any floor that will support their weight.

See back page flap for Options and Accessories
**HIGH VAPOR HANDLING**

Kinney KT Pumps are equipped with three features to handle high vapor loads.

First, the adjustable gas ballast valve can introduce air to the pumping chamber, which helps prevent vapor from condensing in the pump oil.

Second, KT Pumps have a large oil capacity, which has a higher tolerance to contamination. The large reservoir can collect a significant volume of condensed liquid, which can be drained from the pump.

Third, KT Pumps can operate as part of a vapor handling system, in which the oil reservoir is maintained under vacuum. This is made possible by the oil pump and the design of the oil reservoir to operate under vacuum. Vapor handling systems, which keep the oil dry, can operate in corrosive applications.

**STRONGER 4-PIECE CAGED SLIDE PINS**

Slide pins in all Kinney Rotary Piston Pumps have 4-piece caged construction, with end pieces that keep both segments in perfect alignment.
Customized Vacuum Pump Systems

All Kinney Piston Pumps can be combined with booster pumps, liquid ring pumps, or in a variety of customized pumping packages.

Please contact us.
CUSTOM ACCESSORIES

EXPLOSION-PROOF MOTORS
All Kinney piston pumps can be equipped with any special motor.

SPECIAL OILS
We can manufacture any of our pumps with special, application specific oils. Pumps will be manufactured from scratch with the precise oil to avoid contamination.

CUSTOM ACCESSORIES

OIL MIST ELIMINATOR
- 99.95% filtering efficiency
- Some w/oil storage capacity & built-in check valve

OIL FILTRATION SYSTEM
- Self-priming positive displacement pump
- Welded steel construction
- Epoxy-coated internals
- Variety of filtration element options
- Single or three-stage TEFC motors

AIR-COOLED HEAT EXCHANGER
- Available for KT & KTC models
- Bronze circulation pump w/closed-coupled TEFC motor
- Interconnection hoses
- Single or three-stage models available

ELECTRICAL CONTROL
- Custom engineered control panels

Many more available
Tuthill Vacuum & Blower Systems (TVBS) is a pioneer in the development of vacuum pump technology. Introduced in 1926, the Kinney® rotary piston vacuum principle still sets the industry standard for high performance, reliability, low maintenance and quiet operation in a mechanical vacuum pump design. These same performance features are demonstrated in all the TVBS vacuum pump product lines: liquid ring pumps, dry pumps, vane pumps and our main line of rotary piston pumps. In addition, all pump designs can be incorporated in complete TVBS-engineered vacuum systems.

For information and specifications on other Kinney Vacuum Pumps and Systems, please contact us at 1-800-825-6937.