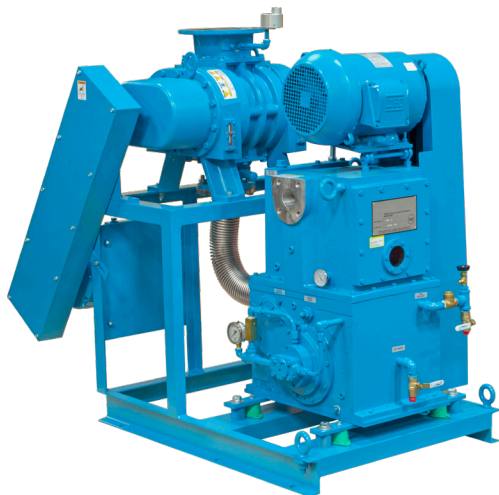


KINNEY®

Vacuum Pumps & Boosters

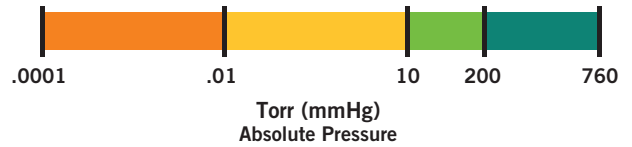
Kinney® Vacuum Solutions



Rotary Piston Pumps

Kinney rotary piston pumps are known for being some of the most rugged, reliable equipment capable of handling especially dirty processes. Kinney provides a 30-month warranty on all rotary piston pump models.

Vacuum Pumps Product Key



KT Single-Stage Rotary Piston Pump

- High pumping capacity at high and low pressures
- Triplex piston design: dynamically balanced and practically vibration free
- No metal-to-metal contact between pump piston and cylinder clearances are filled with oil
- Quiet operation

TYPICAL APPLICATIONS

» Heat Treating » Coating » Transformer Drying » Metallurgy

KT models include an integral, positive pressure lubrication system to insure reliable lubrication at all pressure levels. KT pumps are water-cooled. Optional air-cooling systems are available. Adjustable gas ballast valves are standard for handling water and other vapor loads. Optional factory-mounted oil filtration system lowers maintenance costs and increases uptime.

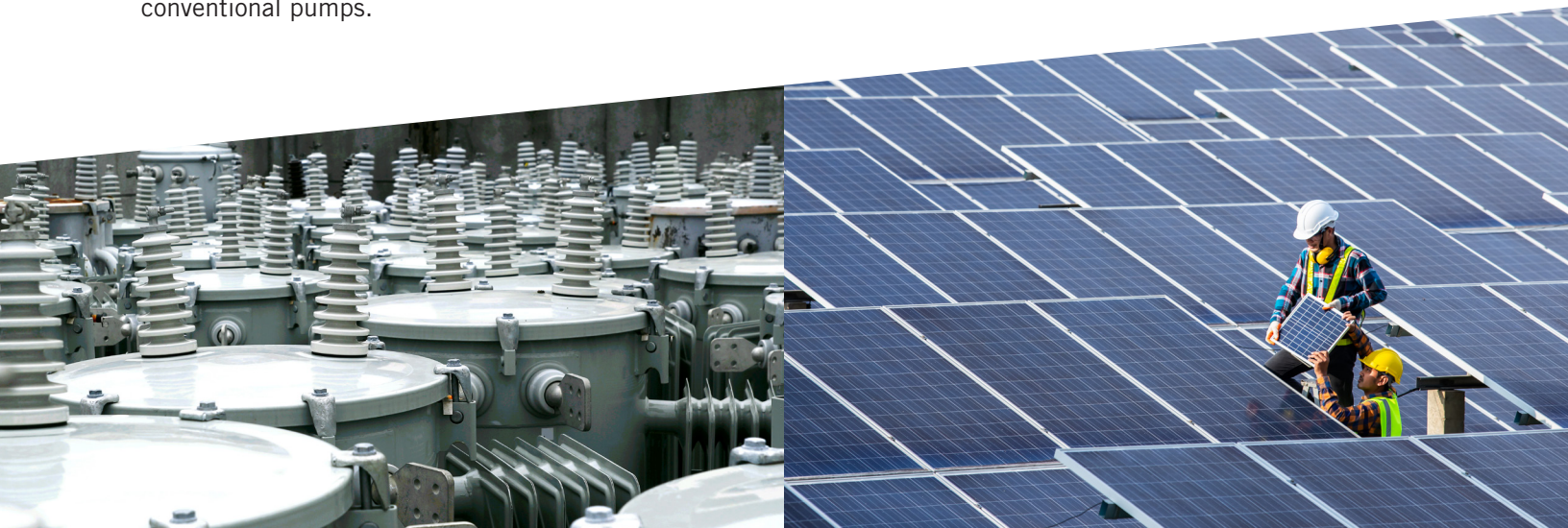


Single-Stage Oil-Sealed Rotary Piston

VIRTUALLY VIBRATION FREE OPERATION

Kinney Triplex Piston design offers dynamically balanced pistons making a virtually vibration free pump. As a result of these extremely low vibration characteristics, the installation cost of KT pumps are lower than those of conventional pumps.

Model	CFM / m3/hr	60Hz HP / 50Hz kW
KT-150C	150 / 255	7.5 / 6
KT-300D	400 / 510	15 / 11
KT-500D	500 / 850	30 / 22
KT-850D	778 / 1322	40 / 30



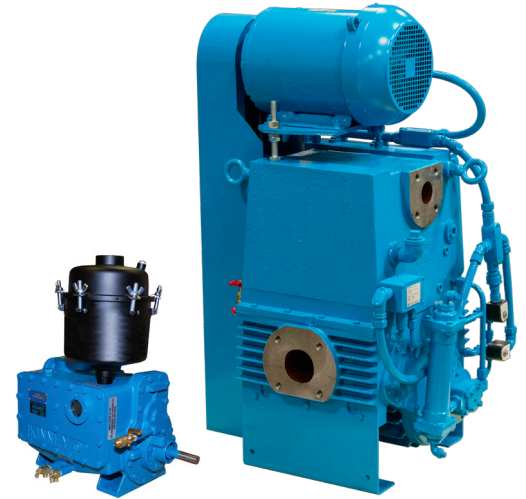
KC and KTC Two-Stage Rotary Piston Pumps

- Recommended for applications where operating pressure is below 0.1 Torr (0.13 mbar)
- Achieve lowest possible pressures from mechanical pumps
- No metal-to-metal contact between pump piston and cylinder clearances are filled with oil
- Unequaled durability, even in dirty applications

TYPICAL APPLICATIONS

- » **Liquid Gas Storage** » **Brake Fluid Filling** » **Silicon Crystal Growing** » **Evacuation**
(Refrigeration Systems)

KC and KTC pumps are air-cooled. KTC-112 is water-cooled with optional air-cooling systems. Adjustable gas ballast valves are standard for handling water and other vapor loads. KTC pumps feature triplex piston design: dynamically balanced and practically vibration free.



Two-Stage Oil-Sealed Rotary Piston

Model	CFM / m3/hr	60Hz HP / 50Hz kW
KC-5	5 / 8.5	0.33 / 0.25
KC-8	8 / 13.6	0.75 / 0.56
KC-15	15 / 25.5	1 / 0.75

Model	CFM / m3/hr	60Hz HP / 50Hz kW
KTC-21	21 / 36	1.5 / 1.1
KTC-60	60 / 102	3 / 2.2
KTC-112	107 / 182	7.5 / 5.6

KD and KDH Single-Stage Duplex Rotary Piston Pumps

- Absolute pressures down to the low micron range
- Belt-driven, low-speed rotary piston pumps
- No small orifices to plug up
- No metal-to-metal contact between pump piston and cylinder clearances are filled with oil
- Adjustable gas ballast permits handling of condensible vapors
- KD pumps are air-cooled. KDH pumps are water-cooled.

TYPICAL APPLICATIONS

- » **Drying Chambers** » **De-gasifiers** » **Filling Machinery** » **Evacuation**
(Process Chambers)

Kinney stands by its 100+ years of quality and durability in vacuum pump technology by offering the longest rotary piston pump warranty in the industry - 30 months!



Single-Stage Duplex Oil-Sealed Rotary Piston

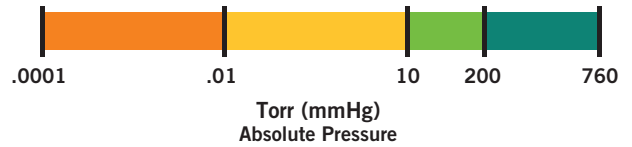
Model	CFM / m3/hr	60Hz HP / 50Hz kW
KD-30	33 / 56	1.5 / 1.11
KD-50	52 / 88	2 / 1.5

Model	CFM / m3/hr	60Hz HP / 50Hz kW
KDH-130	134 / 227	5 / 3.7
KDH-150	165 / 280	7.5 / 5.6

Liquid Ring Pumps

Customers can choose a custom or optimized liquid ring vacuum pump from Kinney and install with confidence it will do the job! Lean on our excellent service, support, and engineering expertise.

Vacuum Pumps Product Key



KLRC Two-Stage

- Can pull down as low as 4 Torr (5.3 mbar a)
- Low-pressure performance is limited by the vapor pressure of the sealing liquid: water, oil or process liquids
- Complete engineered system solutions available: instrumentation, controls, piping and valves
- Self-contained liquid recovery and recirculation are available
- Center-anchored tie rods allow access to either end of the pump without total disassembly
- Double mechanical seals available in models KLRC75 through KLRC525 to meet API Piping Plan Requirements



Two-Stage Liquid Ring

TYPICAL APPLICATIONS

- » **Chemical Processing** » **Deaeration** » **Crystallizers** » **Extruders**
- » **Vapor Recovery** » **Sterilization**

Available in standard, all iron construction (no yellow metals), and 316 stainless steel. Liquid ring pumps often require water-cooling, but air-cooling systems are available.

Model	CFM / m3/hr	60Hz HP / 50Hz kW
KLRC-75	71 / 99	5 / 3.7
KLRC-125	139 / 195	10 / 7.5
KLRC-200	170 / 244	15 / 11
KLRC-300	305 / 432	25 / 18.5

Model	CFM / m3/hr	60Hz HP / 50Hz kW
KLRC-525	550 / 779	50 / 37
KLRC-526	435 / 740	40 / 30
KLRC-950	875 / 1488	100 / 75
KLRC-951	790 / 1343	60 / 45



A Series Single-Stage

- Simplistic in design, rugged in construction
 - » Handles even slugs of liquid
- Unique axial flow design
 - » Allows pump to operate flooded without damage
- Built to run in the most severe of industrial conditions
- Flat power curve over entire vacuum range prevents motor overload
- No contact between operating components in the casing
- Pull down to 29 "Hg – 25 Torr (33 mbar a)
- Increased water handling capability prevents heat build-up
 - » Extends life of single mechanical seal
- Reduced stress on motor shaft and bearings
- Compact, close-coupled design eliminates need for interstage manifold/motor alignment



Single-Stage Liquid Ring

TYPICAL APPLICATIONS

- » Degasifiers
- » Sterilization
- » Gas Compression
- » Solvent Distillation
- » Evaporators
- » Extruders

A Series pumps are not as susceptible to cavitation compared to flat plate design because the flow path through the pump is an axial flow. This allows the velocity through the pump to be unchanged and carries the air out effortlessly. It is not unusual for these pumps to run 24/7 operation for years without maintenance.

Model	CFM / m3/hr	60Hz HP / 50Hz kW
A-5	10 / 17	1 / 0.75
A-10	15 / 26	1.5 / 1.1
A-15	22 / 37	2 / 1.5
A-20	35 / 59	3 / 2.2
A-75	75 / 128	5 / 3.7

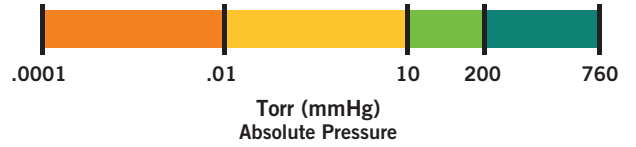
Model	CFM / m3/hr	60Hz HP / 50Hz kW
A-100	105 / 178	7.5 / 5.5
A-130	140 / 238	10 / 7.5
A-200	220 / 374	15 / 11
A-300	300 / 510	20 / 15



Rotary Vane Pumps

The KVO and KVA rotary vane vacuum pumps simple designs ensure the reliability and the durability that is required in the vacuum industry.

Vacuum Pumps Product Key



KVO Single Stage

- Ultimate vacuum down to 0.375 Torr (with standard gas ballast) / 0.075 Torr (without gas ballast)
- Equipped with a standard gas ballast valve that opens automatically to control water vapor handling
- Low Noise, advanced cylinder and cover designs allow sound levels as low as 67 dB(A)
- Premium oil separator system that removes virtually all oil from the air stream
- Oil-flooded, multi-vane vacuum pumps are air cooled and direct driven
- Easy maintenance with easy to access filter elements on the front of the machine without the need for special tools



Single-Stage Oil-Sealed Rotary Vane

TYPICAL APPLICATIONS

» Vacuum Packaging » Plastic Thermoforming » Food Processing » Central Vacuum Systems

Model	CFM / m3/hr	60Hz HP / 50Hz kW
KVO-50	35 / 60	2 / 1.5
KVO-75	49 / 84	3 / 2.2
KVO-100	71 / 120	5 / 3.7
KVO-150	106 / 180	5 / 3.7
KVO-200	141 / 240	7.5 / 6
KVO-300	212 / 360	10 / 7.5

Model	CFM / m3/hr	60Hz HP / 50Hz kW
KVO-400	283 / 480	15 / 11
KVO-500	388 / 660	20 / 15
KVO-700	494 / 840	25 / 18.5
KVO-900	586 / 995	30 / 22.3
KVO-1100	777 / 1320	40 / 30
KVO-1300	903 / 1534	40 / 30



KVA Single Stage

- Most models can achieve ultimate pressure levels near 0.1 mbar (75 microns)
- Compact design for easy installation
- Carbon composite vane material for long life
- Oil-flooded, multi-vane vacuum pumps
 - » Single stage, air cooled, and direct driven
- Oil level sight glass and vibration isolators
- TEFC high efficiency tri-voltage motor
 - » (208-230/460V 50/60)
- Models KVA 25-40 include spin-on oil filter and exhaust pressure gauge
- Ideally suited for clean or moderately contaminated application when suction filters are fitted to the pump



Single-Stage Oil-Sealed Rotary Vane

TYPICAL APPLICATIONS

» Vacuum Packaging » Plastic Thermoforming » Food Processing » Central Vacuum Systems

The KVA's simple design ensures the reliability and the durability that is required in the vacuum industry. Customers choose Kinney for competitive pricing, local distribution and service, and superior customer service.

Oil-sealed rotary vane vacuum pumps are simple, quiet, and efficient, offering a very attractive \$/CFM ratio when compared to other technologies. KVA pumps can last for years with proper maintenance, but are also affordable enough that they can be periodically replaced when used in toxic conditions.

Model	CFM / m3/hr	60Hz HP / 50Hz kW
KVA-12	7 / 12	0.75 / 0.55
KVA-21	15 / 26	1.0 / 0.75

Model	CFM / m3/hr	60Hz HP / 50Hz kW
KVA-25	21 / 36	2.0 / 1.5
KVA-40	28 / 48	2.0 / 1.5



Vacuum Boosters

Designed to handle the world's toughest applications, vacuum boosters are used to supercharge vacuum pumps to extend pump performance. This creates much faster pumping speeds and deeper vacuum levels.

- High-capacity gas volumes at high vacuum (50 Torr to micron range)
- May be used in conjunction with all types of vacuum pumps
- Designed to operate at 82 dB(A) or less at blank-off open field; motor and background noise excluded
- Heavy-duty drive shaft for either direct coupled or belt-driven applications
- Standard construction materials: cast iron end plates, housing, and port fitting with ductile iron rotors and shafts
- Special materials offered
 - » Stainless steel, carbon steel, ductile iron, Bi-Protec
- Special testing available
 - » Hydrostatic testing to 150 PSIG (10.35 bar g), seal leakage testing, noise testing

Vacuum Boosters Product Key

*Process Gas

16	AIR	GAS*	15
Vacuum Level "Hg vac	Process Medium	Pressure Level PSI	



TYPICAL APPLICATIONS

- » **Supercharging** » **Vacuum Drying** » **Dehydration** » **Packaging** » **Distillation** » **Vacuum Furnace**
 (Vacuum Systems)

Model	CFM / m3/hr
150	50-150 / 85-255
240	70-230 / 119-391
400	120-400 / 204-680
540	170-540 / 289
720	230-720 / 392-1223
850	270-850 / 459-1444
1200	400-1240 / 680-2107
1600	500-1600 / 850-2718

Model	CFM / m3/hr
1800	680-1800 / 1155-3058
2000	650-2000 / 1104-3398
2200	860-2300 / 1461-3908
2700	850-2700 / 1444-4587
2900	1130-3000 / 1920-5097
3200	800-3200 / 1359-5437
3600	1400-3360 / 2379-6116
4000	890-4000 / 1512-6796

Model	CFM / m3/hr
4200	1000-4200 / 2939-7646
4500	1730-4500 / 2939-7646
5400	1400-5700 / 2379-9684
6500	1400-3360 / 2379-6116
7300	1800-7400 / 3058-12573
7900	1800-8000 / 3058-13592
8000	2100-9500 / 3568-16141
10000	2800-10000 / 4757-16990

Add VSM Technology to Your Booster System to Increase Efficiency

VSM Technology integrates an electric motor with a built-in Variable Frequency Drive (VFD) to increase energy efficiency and reduce installation cost with process control options and built-in error proofing benefits.

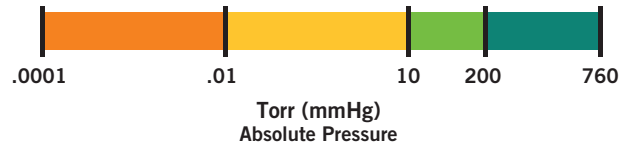
Available from 2 HP to 10 HP (standard shaft and C-face options). Includes remote keypad controller with RJ45 connection, Bluetooth® communication, and factory programming for application specific solutions by Kinney application program experts.



Rotary Dry Claw Pumps

The KVC dry claw is environmentally friendly with top of class efficiency. Dry, contact free operations which allows for minimal wearing of parts and maintenance needed with oil-free compression.

Vacuum Pumps Product Key



KVC Rotary Dry Claw

- Ultimate vacuum down to 75 Torr or 27" Hg Vacuum
- Dry, Contact free operation meaning no oil or sealing fluid in the compression chamber
- High Efficiency, top of class CFM/HP efficiency and low power consumption
- Low Noise, allow sound levels as low as 76 dB(A)
- Low maintenance with extended service intervals
- Air cooled



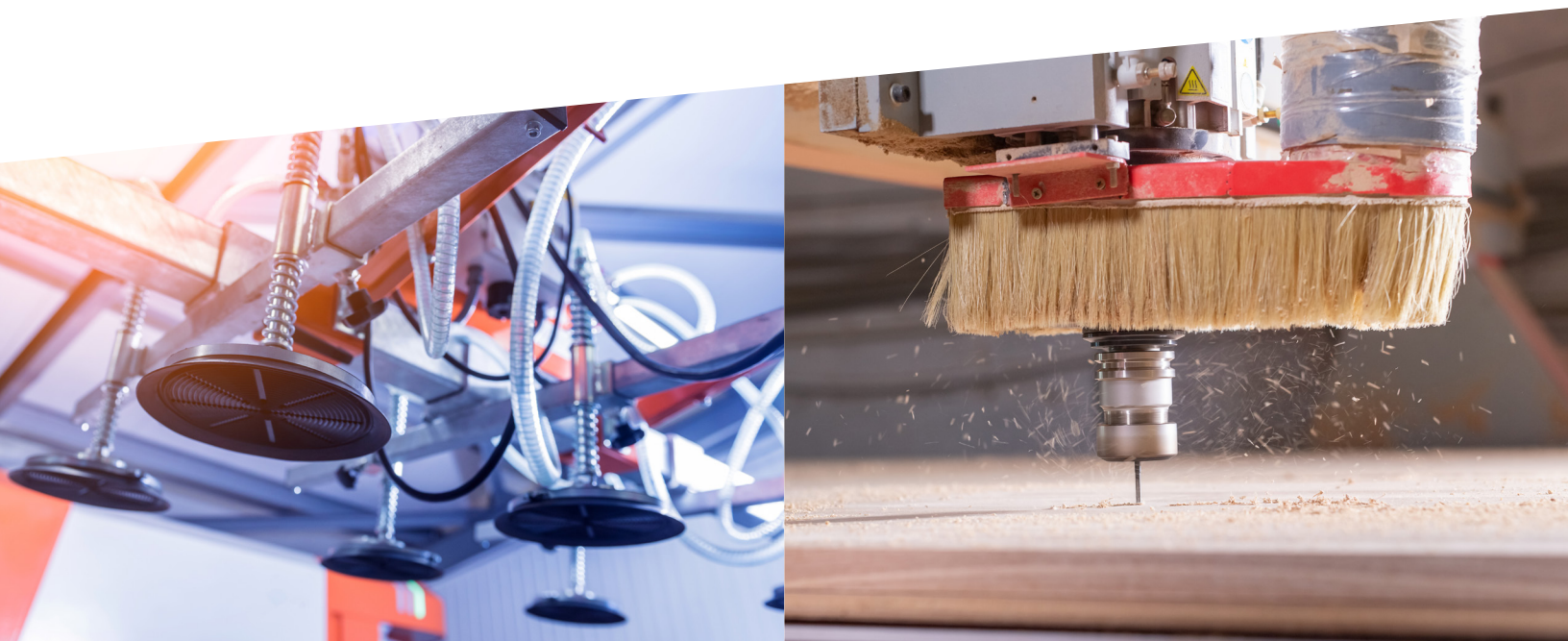
TYPICAL APPLICATIONS

- » Pick & Place
- » Food Packaging
- » Degasification
- » Thermoforming
- » CNC Router Tables
- » Central Vacuum Systems



Model	CFM / m3/hr	60Hz HP / 50Hz kW
KVC-60	43 / 72	2 / 1.1
KVC-100	71 / 120	3 / 2.2
KVC-150	106 / 180	5 / 3
KVC-251	150 / 255	7.5 / 4

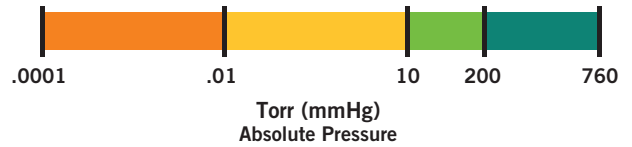
Model	CFM / m3/hr	60Hz HP / 50Hz kW
KVC-301	205 / 350	7.5 / 5.5
KVC-401	285 / 485	12 / 7.5
KVC-501	355 / 603	15 / 11
KVC-1000	671 / 1140	30 / 18.5



Dry Screw Pumps

Dry screw vacuum pumps are environmentally friendly as there is less oil to dispose of and maintain within their design. These pumps are more efficient than a liquid sealed model and are well suited for industrial and process applications.

Vacuum Pumps Product Key



KDP Screw-Type Dry Vacuum Pump

- Simple, robust design can handle process by-products
 - » Liquids, condensate, and even small particles
- No oil or water in contact with process
- No contact between operating components in the casing
- Full pumping speed from atmospheric pressure down to 1 Torr
 - » Ultimate pressure 0.1 Torr (.05 Torr on Model KDP-800)
- Quiet operation – less than 85 dB(A)
- Short gas path through the pump for quick discharge
- Extended shaft for either V-belt or direct drive
- Casing and rotors made of ductile iron, PEEK coated



TYPICAL APPLICATIONS

- » Vacuum Impregnation
- » Vapor Recovery
- » Vacuum Coating
- » Freeze Drying
- » Solvent Recovery
- » Degassing



50 HZ / DIRECT DRIVE

Model	CFM / m3/hr	HP / kW
KDP-150	71 / 120	7.5 / 5.5
KDP-330	159 / 270	15 / 11
KDP-400	194 / 330	20 / 15
KDP-800	388 / 660	30 / 22

60 HZ / DIRECT DRIVE

Model	CFM / m3/hr	HP / kW
KDP-150	88 / 180	7.5 / 5.5
KDP-330	194 / 330	15 / 11
KDP-400	235 / 400	20 / 15
KDP-800	459 / 780	30 / 22



SDV Variable Pitch, Screw-Type Dry Vacuum Pump

- Patented variable pitch rotor design increases efficiency and lowers temperatures
- No oil or water in contact with process gases
- Can handle both condensible vapors and some solids without leaving residue
- Capable of full pumping speed from atmospheric pressure to 1 Torr (1.3 mbar a)
- Can achieve ultimate vacuum as low as 0.01 Torr (0.013 mbar a)
- No metal-to-metal contact between operating parts
- Quiet operation

Complete model shown.
Includes accessories,
motor, and base.



TYPICAL APPLICATIONS

- » **Chemical Processing**
- » **Vapor Recovery**
- » **Distillation**
- » **Solvent Recovery**
- » **Crystallization**



Variable Pitch, Dry Screw

The SDV's space saving C-face motor design eliminates the need for motor coupling and guard. It features a short gas path through the pump for quick discharge and Niflon coated internals to reduce damage from corrosive or condensate gases.

50 HZ / DIRECT DRIVE

Model	CFM / m3/hr	HP / kW
SDV-120	59 / 100	5 / 3.7
SDV-200	88 / 150	5 / 3.7
SDV-320	157 / 267	10 / 7.5
SDV-430	211 / 358	15 / 11
SDV-800	368 / 625	20 / 15

60 HZ / DIRECT DRIVE

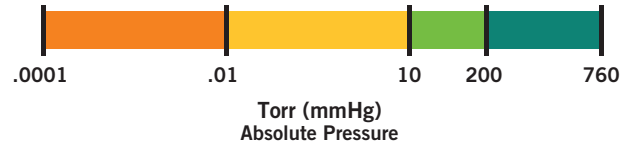
Model	CFM / m3/hr	HP / kW
SDV-120	71 / 120	5 / 3.7
SDV-200	106 / 180	5 / 3.7
SDV-320	188 / 320	10 / 7.5
SDV-430	253 / 430	15 / 11
SDV-800	441 / 750	20 / 15



Engineered Solutions

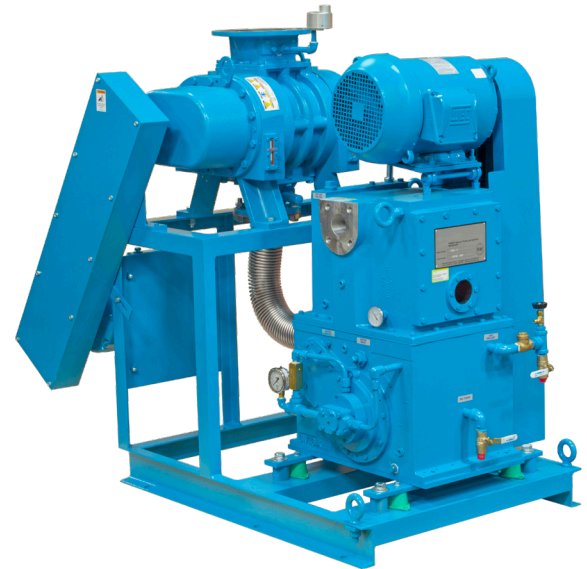
Kinney offers 100+ years of engineering experience and solid, hands-on care to every engineered project. Customers work directly with a project manager to develop custom solutions that efficiently meet the needs of the application.

Vacuum Pumps Product Key



Booster/Rotary Piston Vacuum Pumping Systems

- Pump high volumes at very low pressure
- High-capacity dry rotary lobe vacuum booster is matched to a smaller rotary piston vacuum pump
- For continuous operation below 1 Torr (1.3 mbar a), booster can increase pumping speed by a factor of 10 or more
- For operation at higher pressure with faster evacuations, booster may be approximately 2x the capacity of piston pump
- Performance ranges 200-12,000 CFM (340-20,388 m³/h) with ultimate vacuum levels as low as 0.2 microns
- Conventional system options:
 - » Direct driven or V-belt driven boosters
- Compact systems with close-coupled boosters are available
- Creates a higher capacity system with economy of scale



TYPICAL APPLICATIONS

- » Transformer Oil Drying
- » Vapor Coating
- » Vacuum Packaging
- » Vacuum Furnaces



Booster/Liquid Ring Vacuum Pumping Systems

- Ideal for pumping wet gas mixtures at low pressures
- Oil-filled systems avoid problems with corrosive contaminants and sealant liquid vapor pressures at higher temperatures
- Process liquid-filled systems prevent contamination of process gases with either water or oil

TYPICAL APPLICATIONS

- » Vapor Recovery
- » Chemical Processing
- » Dryers & Evaporators

A variety of two and three-stage systems are available, complete with instrumentation, condensers, partial or complete sealant liquid recovery and recirculation, piping, and valves.



Booster/Dry Screw Vacuum Pumping Systems

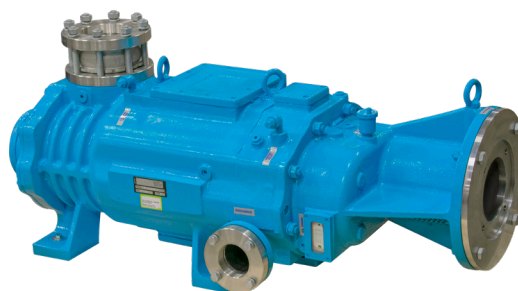
- Combine high pumping speed with deep vacuum levels and operate free of oil, water or other sealing liquids
- Flows range to 4,500 CFM (7646 m3/h) with vacuum levels to 10 microns and below

TYPICAL APPLICATIONS

- » Pharmaceutical Processing
- » Crystallization
- » Solvent Recovery
- » Chemical Processing
- » Dry Etching
- » Vapor Recovery
- » Semiconductor Processing

Complete engineered solutions are available and may include any combination of dry screw vacuum pumps, vacuum boosters, electric motors, direct or V-belt drive, coolant recirculation systems, instrumentation, controls, skid piping, and valves.

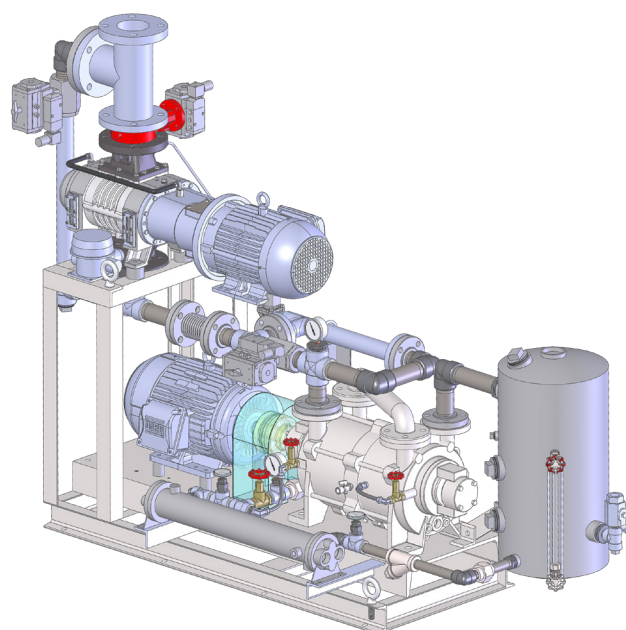
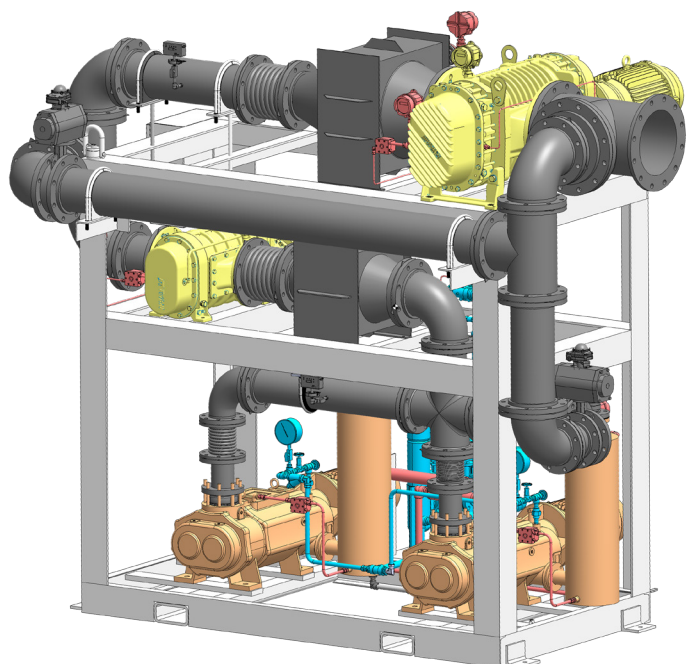
Bare shaft Dry Screw Vacuum Pump Shown.

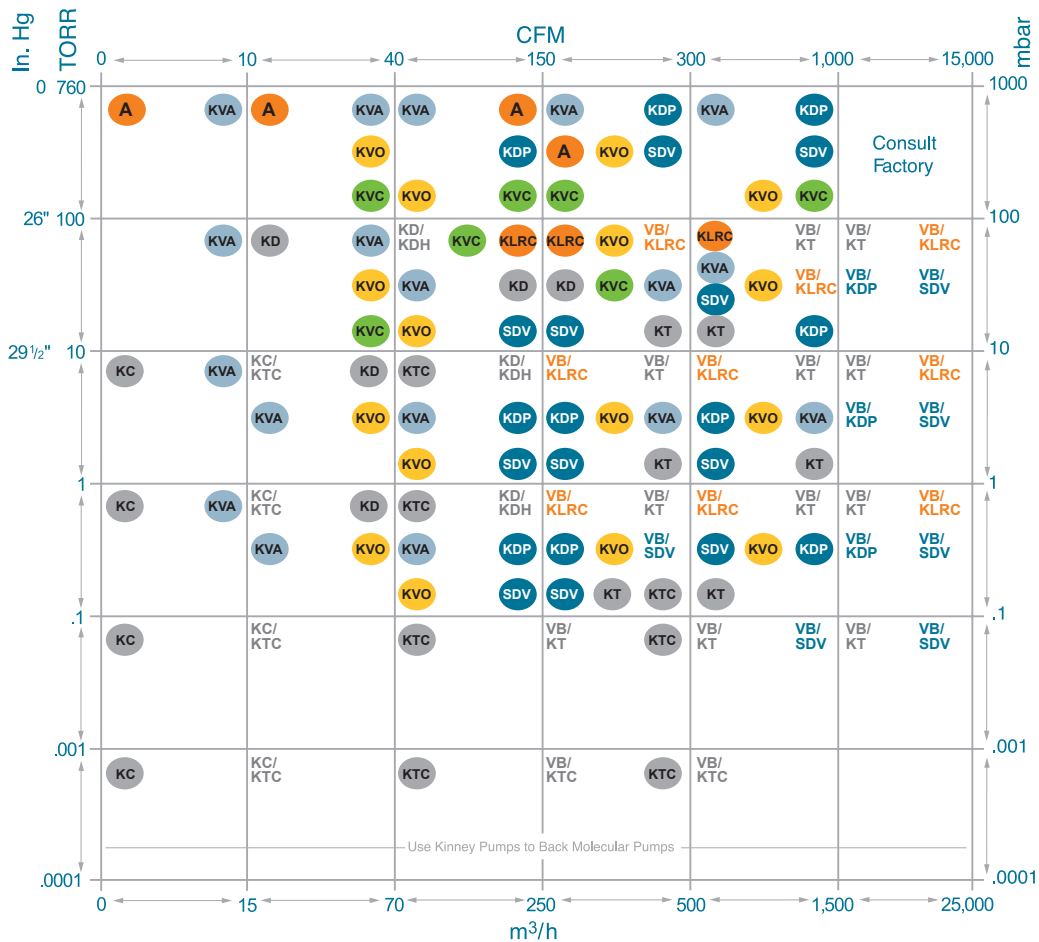


Dry Screw & Booster/Piston

Custom Engineered Solutions

Kinney application engineers are ready to help you select the best system and combinations of components for your specific needs. Custom engineered system solutions to 12,000 CFM are available with a combination of vacuum boosters/air ejectors and roughing pumps for any vacuum application. Contact your Kinney distributor or call 800-825-6937 for assistance.





Vacuum Pump Selector Guide

Step 1 | Vertical Scale

Locate the desired vacuum level in inches of mercury along the Y axis.

1 Torr = 1mm mercury absolute pressure

Step 2 | Horizontal Scale

Calculate and locate the required capacity in CFM or m³h along the X axis based on system volume, pump down time, gas load, and leakage.

Step 3 | Intersection

The box where the two lines intersect contains the possible pumps for selected pressure and capacity.

Selector Guide Example

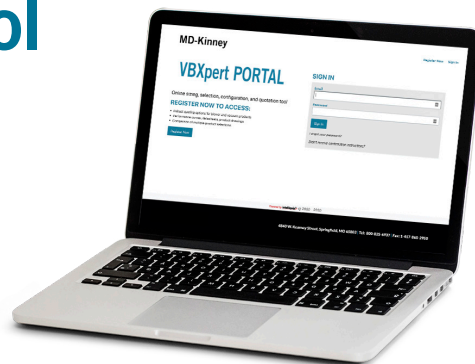
Please consult your Kinney sales representative for final product selection.

For 50 CFM and 80 Torr the selector guide indicates that KD, KDH, KVA, KLRC, KDP, and SDV pumps should be considered.

TO CONVERT INCHES OF MERCURY VACUUM TO TORR:
 Torr = (30 - inches of vacuum) x 25.4 at sea level
 e.g., 20 inches Hg = (30-20) x 25.4 = 254 Torr

VBXpert Online Sizing Tool

Gain online access to the most useful tool available for blower and vacuum sizing and selection! The easy-to-use interface prompts you to plug in technical specifications for your application and quickly calculates the best MD-Kinney product for you. Learn more at www.md-kinney.com.



KINNEY VACUUM

KV Lubrication

Kinney vacuum products are known worldwide for superior quality and performance. Superior quality and performance vacuum pumps require a lubricant explicitly designed to support highly efficient and dependable process operation. Kinney lubricants are specifically formulated for Kinney products and is the only lubricant recommended to ensure the highest quality of performance.

Service and Repair

MD-Kinney Springfield, Missouri, USA is here to help. Call 1-800-825-6937 or visit us online at www.md-kinney.com to be connected to a MD-Kinney application engineer.



Factory Certified Service & Repair Centers

MD-Kinney also has a network of Factory Certified Service Centers offering local support to our customers. All centers are staffed with factory-trained personnel to ensure your equipment performs to factory specifications. KVO Series repairs are only available via an Factory Certified Service Center.

TO FIND YOUR NEAREST FACTORY CERTIFIED SERVICE CENTER CALL US DIRECTLY AT 1-800-825-6937.



KINNEY®

CONTACT US

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Phone: (800) 825-6937

LOCAL CONTACT:

www.md-kinney.com