

GLOSSARY OF TERMS

WORD

DESCRIPTION

ACFM

Actual Cubic Feet Per Minute

AquaSeal™

DEKKER AquaSeal™ water-sealed liquid ring vacuum pump systems are designed to customer requirements for each application as full seal-liquid (in this case water) recovery systems or as partial or no seal-liquid recovery systems.

AquaSeal^{POWERGEN}

AquaSeal^{POWERGEN} condenser-exhauster systems designed by Dekker Vacuum Technologies, Inc. are full-recovery two-stage liquid ring vacuum pump packages, using water as the seal-liquid. The systems are particularly well-suited by taking advantage of the high condensing effect, which drastically reduces the water vapor content resulting in a lower inlet volume to the pump.

Area Classification

Classification of hazardous areas.

BTU

British Thermal Unit is defined as the amount of heat required to raise the temperature of one pound of liquid water by one degree Fahrenheit.

ChemSeal™

DEKKER ChemSeal™ solvent-sealed liquid ring vacuum pump systems are designed to customer requirements for each application, as full seal-liquid recovery systems for recovery of a variety of solvents.

CIP

Clean In Place. A technique where a heat exchanger is cleaned on-site instead of removing the heat exchanger to be cleaned or maintained off-site.

CSA

Canadian Standards Association

Custom-Engineered Systems

DEKKER custom-engineered systems are special packages designed to address any specific process conditions or problems a customer might have. The systems are designed, engineered and manufactured with performance in mind, as well as low-power consumption, space, noise and other customer requirements.

Duratex™

Duratex™ is a custom-formulated lubricant specifically designed for long life under the severe, demanding conditions usually encountered in recirculating systems such as rotary vane vacuum pumps and systems. They have a very low vapor pressure, making it an excellent lubricant for vacuum applications. Duratex lubricant is available in Standard and Synthetic in 32, 68 and 100 CS viscosities. DEKKER offers a comprehensive range of rotary vane vacuum pumps: lubricated pumps, lubricated pumps for saturated air (wet) service and oil-free (dry) rotary vane vacuum pumps. All pumps are of heavy-duty construction, compact design, and easy to install and low maintenance. Pumps are direct driven, air-cooled, and have a low noise level and long vane life.

DuraVane™

The DuraVane™ rotary vane vacuum pump systems designed by Dekker Vacuum Technologies, Inc. are available in simplex and multiplex configurations, as stack-mounted, base-mounted or tank-mounted units. Systems can utilize lubricated or dry (oil-free) rotary vane vacuum pumps, are used in standard industrial applications and can be built to NFPA99 specifications for hospitals and laboratories.

DX-5

The DEKKER patented DX-5 and DX-7 air/oil separator design features five stages of separation resulting in the best air/oil separation in the industry. Another advantage of the DX-5 and DX-7 separators is the structural design. The tank is cylindrical, resulting in superior strength which is very important on units operating with back pressure. This design also eliminates possible leaks associated with square tank designs.



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DX-7	The DEKKER patented DX-5 and DX-7 air/oil separator design features five stages of separation resulting in the best air/oil separation in the industry. Another advantage of the DX-5 and DX-7 separators is the structural design. The tank is cylindrical, resulting in superior strength which is very important on units operating with back pressure. This design also eliminates possible leaks associated with square tank designs.
EEPROM	An EEPROM (Electrically Erasable Programmable Read Only Memory) is a type of computer memory chip that retains its data when its power supply is switched off.
FLA	Full Load Amps. Also known as “nameplate amps,” it is the current you can expect under full load (torque).
H-I-M	Human Interface Module. Keypad used on Variable Frequency Drives (VFD).
HP	Horsepower
HullVac™	HullVac Rotary Piston Vacuum Pumps and Systems are engineered for a long life, top performance, low maintenance and ease of use. Available in single-stage with capacities up to 1280 CFM and two-stage with capacities up to 950 CFM. No center wall bearing means that the bearing will not be exposed to the pump oil which could be contaminated leading to reduced bearing life. Cage hinge Bars are in line thereby reducing wear. Improved exhaust valve design prohibits the possibility of worn valve components getting into the pumping chamber, which could result in major repairs. Robust Valve Wear Plates are hardened steel and provide longer life compared to plastic used by the competition. Improved O-Ring Sealing features an efficient design that reduces maintenance time and prevents leakage. The bottom of the valve deck contains an O-ring seal that is easy to replace. Other designs use paper seals which are inferior and disintegrate causing plugging
Ideal Gas Laws	The Ideal Gas Laws are used to convert between different pressures and temperatures and to convert mass flows to volume flows. The Ideal Gas Laws include: Boyle’s Law, Charles’ Law, Avogadro’s Law, and the General Gas Law.
IEC	International Electrotechnical Commission
Liquid Ring Compressor	Dekker Vacuum Technologies, Inc. offers TiTAN series high-efficiency single-stage liquid ring compressors as monoblock and bare shaft/pedestal models, covering a capacity range from 15 - 1,100 CFM (3 – 150 HP) with maximum pressure capabilities up to 29 psig. Stainless steel impellers are standard in compressors up to 20 HP. All models are designed for heavy-duty applications, are manufactured to ISO 9001 standards and feature mechanical shaft seals as standard. All compressors have only one moving part, low operating noise levels (68 – 80 dBA) and low maintenance. The biggest advantage of liquid ring compressors is that they can handle saturated gas mixtures and small amounts of liquid without damaging the internal parts of the compressor. All models are available in a variety of materials. Dekker Vacuum Technologies, Inc. offers large-capacity Maxima-K series single-stage liquid ring vacuum pumps in capacities ranging from 1,500 – 39,000 CFM (60 – 2,000 HP) with vacuum capabilities up to 29”. The advantage of the liquid ring design is the ability to handle large amounts of condensables. The condensing effect increases the actual pump capacity dramatically when handling saturated gas mixtures.



GLOSSARY OF TERMS (continued from page 2)

Maxima-C™

The Maxima-C™ design is a robust design which features conical porting instead of flat plate porting offered on the Maxima-K™. The cones are attached to the end housing of the pump and protrude into the impeller on both sides. Air enters the impeller in a radial direction versus axially when compared to the flat plate design. The primary benefit of this design is its ability to handle more seal liquid or liquid carryover through the suction compared to the flat plate design with less effect on power consumption and better performance when handling saturated inlet gas. The Maxima-C features a 20 blade shrouded rotor and heavy duty cones and bearings. Packed gland sealing is standard with optional mechanical seals available. Other features include removable bearing brackets, multiple inlet/discharge port configurations and a casing partition allowing for different operating pressures at each inlet port. The Maxima-C pumps are available in capacities ranging from 700 to 22,000 ACFM, multiple material configurations and are manufactured to ISO 9001:2008 quality standards. Bolt in replacements are available for the NASH™ CL™ series, 904™ series and AT™ series. Selection of Maxima-C versus Maxima-K depends on operating conditions and the most efficient operating point.

Maxima-K™

The Maxima-K™ design is a robust, single stage design which utilizes flat port plates mounted on each side of the impeller. The variable discharge port allows the pump to operate efficiently throughout the vacuum range. A heavy duty impeller features reinforcing rings to improve strength of the impeller blades and thus the durability of the pump. Packed gland sealing is standard, featuring a split ring gland for ease of maintenance; mechanical seals are optional. Access plates on both sides of the pump allow for quick access to evaluate clearance and perform boroscope inspection. The Maxima-K pumps are available in capacities ranging 1500 ACFM to 39,500 ACFM, are available in multiple configurations and are manufactured to ISO 9001:2008 quality standards. Bolt in replacements are available for the NASH™ (or Siemens) 2BE series. Selection of Maxima-K versus Maxima-C depends on operating conditions and the most efficient operating point.

MSDS

Material Safety Data Sheet. Now referred to as SDS (Safety Data Sheet).

Multiplex

A series of vacuum systems that are controlled by a common set of controls.

Multistage Systems

Dekker Vacuum Technologies, Inc. multistage vacuum pump systems are available in a capacity range from 50 – 10,000 CFM+. DEKKER has the ability to design and manufacture a wide range of multistage systems using one or more mechanical vacuum boosters backed by other vacuum pumps. Each system is specifically designed to meet customer's requirements for capacity, final pressure and materials of construction. DEKKER engineers have extensive experience in the sizing of these types of systems. DEKKER multistage vacuum pump systems provide an almost unlimited ability to handle the most difficult applications because of the wide variety of vacuum pump combinations possible. These systems are used in different industries, including chemical, pharmaceutical, sterilization and vacuum-packing of food products. Multistage systems are designed, engineered and manufactured with performance in mind, as well as low-power consumption, space, noise and other customer specific requirements.



GLOSSARY OF TERMS (continued from page 3)

NEMA	National Electrical Manufacturers Association
PLC	Programmable Logic Controller. A device that was invented to replace the necessary sequential relay circuits for machine control. The PLC works by looking at its inputs and depending upon their state, turning on/off its outputs.
Proclean	Proclean is DEKKER's devarnishing compound. Proclean 39V is used for devarnishing oil-sealed systems. Proclean 68D is used for devarnishing rotary vane vacuum pumps.
Rotary Vane Compressors	Dekker Vacuum Technologies, Inc. offers DuraVane oil-free rotary vane compressors, covering a capacity range from 2 – 71 CFM (0.25–5 HP) with maximum pressure capabilities up to 15 psig. The units are heavy-duty construction, with a small footprint and easy to install. All units are efficiently cooled by a powerful built-in centrifugal fan. The units feature fewer vanes than other oil-free rotary vane compressors and are constructed of a high-tech, self-lubricating composite vane material, resulting in longer vane life and less vane replacement.
RTD	Resistance Temperature Detectors
Scale-eX	DEKKER's descaling compound for water-sealed liquid ring pumps and systems.
SCFM	Standard Cubic Feet Per Minute. SCFM is measured at standard conditions (68°F at 29.92" Hg).
SDS	Safety Data Sheet
SF	Service Factor. A measure of capacity at which a motor can operate without overload or damage.
Sheave	A wheel or roller with a groove along its edge for holding a belt, rope or cable. One or more sheaves make up a pulley. The words sheave and pulley are often used interchangeably.
TEFC	Totally Enclosed Fan Cooled
TiTAN™	Dekker Vacuum Technologies, Inc. offers TiTAN™ series single-stage liquid ring vacuum pumps as motor-mounted, monoblock and bare shaft/pedestal models, covering a capacity range from 6 – 1,200 CFM. Stainless steel impellers are standard in pumps up to 20 HP. All models are designed for heavy-duty applications, are manufactured to ISO 9001 standards and feature mechanical shaft seals as standard. All pumps have only one moving part, low operating noise levels (68 – 80 dBA) and low maintenance. The biggest advantage of liquid ring vacuum pumps is that they can handle saturated gas mixtures and small amounts of liquid without damaging the internal parts of the pump. All models are available in a variety of materials. Titan series two-stage liquid ring vacuum pumps are available covering a capacity range from 15 - 2,000 CFM. All models are designed for heavy-duty applications, are manufactured to ISO 9001 standards and feature mechanical shaft seals as standard. Special designs with double mechanical seals are available on request. All pumps have only one moving part, low operating noise levels (66– 85 dBA) and low maintenance. The biggest advantage of liquid ring vacuum pumps is that they can handle saturated gas mixtures and small amounts of liquid without damaging the internal parts of the pump. All models are available in a variety of materials.



GLOSSARY OF TERMS (continued from page 4)

Torr	A unit of measure to describe vacuum level. One torr is equivalent to 1mm of mercury or 1/760th of 1 atmosphere or (760 - ("HgV x 25.4)). Named after Evangelista Torricelli, the Italian physicist and mathematician that is credited with the development of the mercury barometer, 760 millimeters of mercury came to be regarded as the "standard" atmospheric pressure.
USDA	United States Department of Agriculture
VFD	Variable Frequency Drive. May also be referred to as Adjustable Speed Drive (ASD), Variable Speed Drive (VSD), Micro-drive, AC Drive, Inverter Drive, or Inverter
Vmax™	Vmax™ oil-sealed liquid ring vacuum pump systems are available in a capacity range from 35 – 5,000 CFM and utilize DEKKER's patented high-efficiency DX-5 or DX-7 separator design, eliminating oil carry-over concerns.
Vmax ^{LT}	A compact oil-sealed vacuum system that incorporates Dekker Vacuum Technologies' patented DX-5 separator. It is economically priced to compete with rotary vane vacuum pumps for standard industrial applications where space is at a premium and reliability is crucial.
Vmax ^{MTH}	Vmax ^{MTH} oil-sealed vacuum pump/compressor systems for coal-bed methane gas recovery designed by Dekker Vacuum Technologies, Inc. are air-cooled (no cooling water required) and are particularly suitable to operate as a vacuum compressor that will not overheat. Maximum differential pressure capability is 18 - 30 psi depending on system model.
Vmaxol™	Vmaxol™ is DEKKER's specially formulated low vapor pressure sealing fluid. By using Vmaxol sealing fluid in the Vmax liquid ring vacuum systems, the systems can operate for 10,000 hours or more without an oil change while preventing corrosion and scale build-up. This results in maximum savings in overall operating and maintenance costs. Vmaxol is available in Standard, Food Grade Synthetic and Styrene.
Vmax ^{VFD}	Vmax ^{VFD} systems designed by Dekker Vacuum Technologies, Inc. are liquid ring vacuum pump systems using oil as the seal liquid. The systems operate with a VFD which reduces the speed of the vacuum pump when demand for vacuum decreases, resulting in substantial savings.

