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TRAVAINI PUMPS® USA

Liquid Ring & Rotary Vane Vacuum Pumps and Systems



TRO200V-1A



TRO300V-1A



TRO400S-1A



TRO500S-1A

DynaSeal® Liquid Ring Vacuum Systems

www.travaini.com

pompetravaini



DynaSeal®

The versatile, reliable vacuum pump system designed with the customer in mind.

Travaini Pumps, USA, is one of the world's leading manufacturers of liquid ring vacuum pumps and systems. The simplicity in design offers excellent reliability and low maintenance. Environmental laws and severe restrictions on water usage together with the ever-increasing costs of disposal created the need for a closed loop system. Travaini answers this need with the DynaSeal® system offering years of experience and know-how in the application of different sealing fluids other than water to achieve solutions for a broad variety of harsh environments.

Twenty (20) years ago, our engineers realized the need for environmentally friendly, waterless systems when they developed the first air-cooled, closed loop, liquid ring vacuum pump system using oil as the sealing liquid.

Today, thousands of our vacuum pumps installed in those first systems are still operating after thousands of hours of trouble-free operation. – “A Proven Design”.

DynaSeal® Benefits

DynaSeal® Standard Specifications:

≥ 15" Hg Vacuum; 60-110˚ F Ambient Temperatures; 180˚ F Inlet Gas Temperature Max; 180˚ F Discharge Gas/Oil Temperature; If conditions differ, consult factory for recommended design modifications.

200˚ F Inlet Gas – Consult factory.

Capacity Range Standards

15-1000 ACFM. Larger systems available upon request.

Low Noise Level.

Unlike rotary screw vacuum pumps, which run at rotor speeds as high as 9000-rpm, DynaSeal® systems operate at conservative speeds (1750-rpm) resulting in low noise levels (75-80 dBA at 3-ft.) acceptable to the environment without the need for sound enclosures.

Minimal Maintenance.

DynaSeal® systems typically only require an oil change and replacement of discharge filter every 10,000 hours under normal operating conditions. No other maintenance is required except for periodic greasing of bearings.

Not affected by carry-over of soft solids or liquids.

DynaSeal® systems can handle carry-over of soft solids and liquids without damage to the system components. We do, however, recommend to install an inlet filter/strainer or knock-out pot in those applications where a high carry-over of either solids or liquids is expected.

Designed for continuous operation.

DynaSeal® systems are designed for continuous operation over the full vacuum range without overheating.

Automatic Temperature Control.

Prevents low temperature operation, reduces accumulation of water and other liquids in the reservoir and decreases the risk of bacteria growth. This optional feature is very important in hospital and other intermittent duty applications.

Low Vibration.

DynaSeal® systems require no special foundations or anti-vibration mountings as a standard.

High-Quality Manufacturing Standards.

Travaini pumps are manufactured under ISO 9001 quality control standards.

Quality Control

DynaSeal® systems are a "proven design". Combine this with our inline quality procedures and outgoing inspection, and you have a system that is unparalled in quality and reliability.

Custom Solutions

DynaSeal® systems can be provided in single or multiple system configurations with programmable controllers to meet your specific requirements. Explosion proof designs are available for those stringent environments. Wide range of materials including stainless steel, copper, etc. are also available.

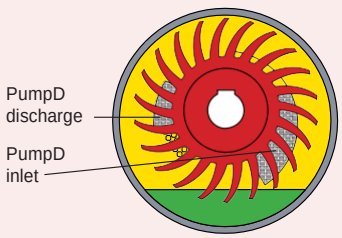


Figure 1D

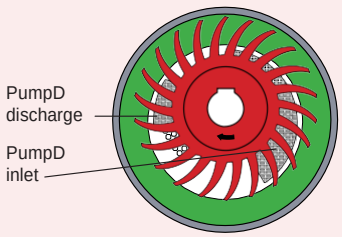


Figure 2

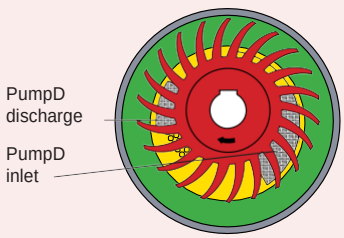


Figure 3

Principle of Operation

A multi-bladed impeller mounted on a shaft is positioned eccentrically in a cylindrical housing, partially filled with liquid. Portplates with inlet and discharge openings are positioned on each side of the impeller (Figure 1). As the impeller rotates, centrifugal force pushes the liquid outward, forming a liquid ring (Figure 2). Looking at the YELLOW area of the impeller chambers (Figure 3), we see that on the right hand side, from the top down, the chamber volume increases as the liquid ring moves outward, creating a vacuum in the impeller chamber. On the left hand side, the volume decreases as the liquid moves inward, increasing the pressure in the chambers until the discharge takes place through the discharge opening. A continuous flow of fresh sealing liquid is supplied to the pump.

Seal Fluid Technology

In our ongoing search for better solutions, we can offer alternative sealing fluids that are environmentally friendly. Unlike other types of vacuum pumps, our liquid ring design requires no internal lubrication because there is no metal to metal contact between rotating and stationary parts and the bearings are located external to the pumping chamber. This allows for more diversity when choosing the sealing fluid because the lubricating properties of the fluid are not critical.

The Travaini DynaSeal® system offers a simple, low maintenance design with low noise and vibration levels, as well as reduced operating costs.

Count on Travaini for in-depth experience, technology and innovation. Our extensive inventory of pumps and replacement parts can, in most instances, be shipped the same day. Superior service is our #1 goal.

DynaSeal®, you can't beat the system.

DynaSeal®

Air-cooled Liquid Ring Vacuum Systems



Made in the USA. DynaSeal® systems are designed, built, and tested at our facility in Yorktown, Virginia.

Typical System Features & Options

PUMP DESIGN Offers high efficiency, reliability and minimum maintenance. External bearings and ample clearance between rotating parts eliminate the need for internal lubrication.

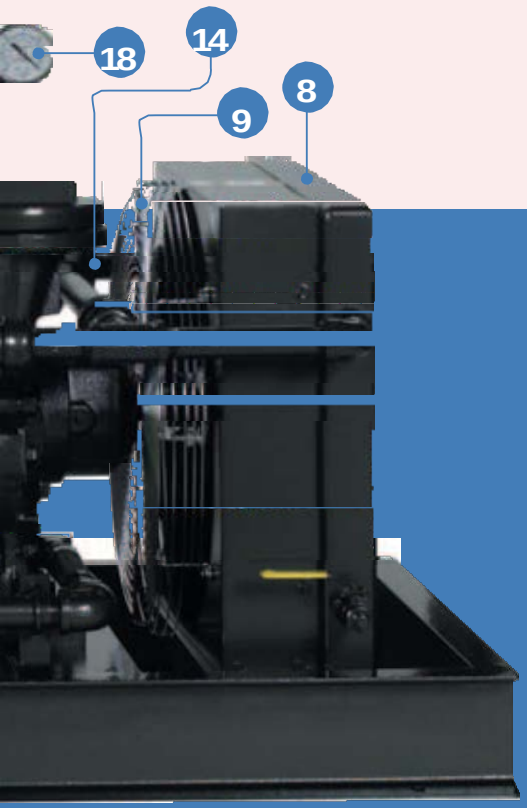


12 electrical control panel complete with magnetic starter and overload protection, 110-volt control circuit and hour meter as standard. Wiring to motor and control switches is completed at the factory. Variable Freq. Drive/Soft Start optional.

3 HIGH TEMPERATURE SWITCH Shuts unit down at 225˚F in case oil flow to unit is interrupted.

4 BACK PRESSURE GAUGE Shows condition of demister element and if element requires service. It also indicates back pressure from the discharge piping system.

5 AIR/OIL SEPARATOR Includes a highly efficient demister element to remove oil mist from discharge air. Exhaust is 99.9% oil-free.



6 OIL RESERVOIR Mounted overhead for positive oil flow pressure and sized for adequate oil capacity, cooling and efficient separation by internal baffles. A sight gauge is included for visual confirmation of adequate oil level.

7 INLET CHECK VALVE Properly sized and suitable for vacuum to protect process from inadvertent backflow of oil.

8 HIGH EFFICIENCY AIR-COOLED HEAT EXCHANGER Allows system to operate at moderate temperatures with ambient temperatures as high as 110˚. Water-cooled units are also available.

9 PUMP OR MOTOR-MOUNTED COOLING FAN Provides high air flow for maximum cooling without the need for a separate fan motor, except for units of 50-hp and larger which have electric-drive fan units.

10 TEMPERATURE GAUGE Allows monitoring of system operation.

11 MONOBLOCK MOTOR MOUNTING DESIGN Standard up to 50-hp, eliminates misalignment problems by flange mounting to a standard NEMA C-face motor. (TEFC motors with a 1.15 service factor are standard) a heavy-duty flexible coupling ensures trouble-free service.

12 MANUAL UNLOADER VALVE WITH FILTER SILENCER (OPTIONAL) Aids in vacuum unloading and/or relief of the pump prior to start-up and shutdown. (Auto electric unloading–optional)

13 VACUUM RELIEF VALVE WITH SILENCER (OPTIONAL) Field adjustable to control maximum vacuum level.

14 TEMPERATURE CONTROL VALVE (OPTIONAL) Minimizes time required to reach operating temperature and maintain same temperature throughout operation.

15 HIGH AND LOW OIL LEVEL SWITCH (OPTIONAL–NOT SHOWN) To protect pump from loss of oil.

16 DYNASEAL® OIL (NOT SHOWN) is a custom formulated lubricant specifically designed for long life under the severe, demanding conditions normally encountered in recirculating systems such as liquid ring vacuum pumps.

17 INLET FILTER (OPTIONAL) High efficient filter available in paper or polyester filtration media.

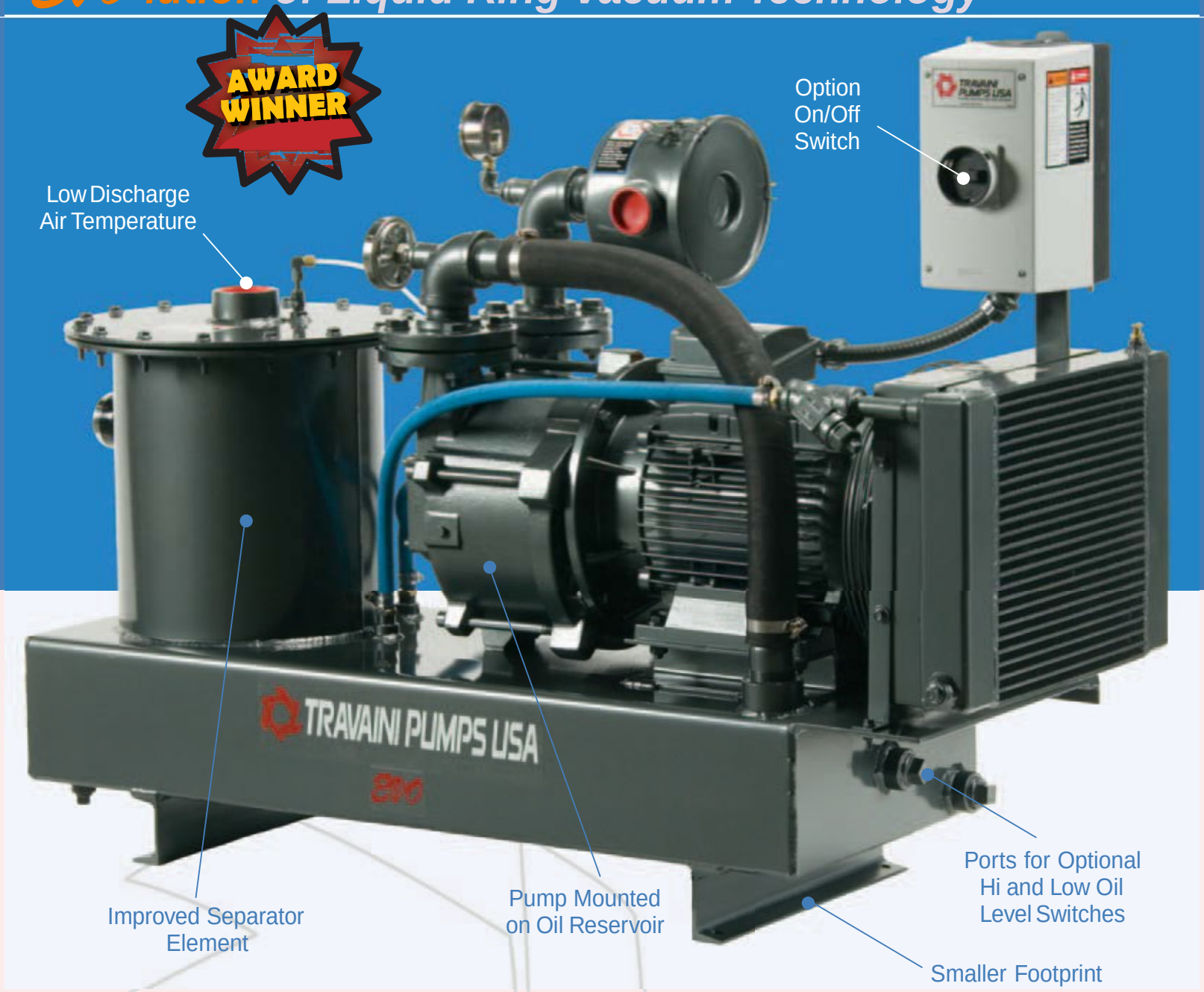
18 VACUUM GAUGE allows monitoring of system operation.

EXPLOSION PROOF DESIGNS ARE AVAILABLE.

DynaSeal® Systems are used extensively in industries such as:

- Hospitals, healthcare and pharmaceutical
- Solvent and vapor recovery
- Soil remediation
- Wood working and wood impregnation
- Electronics and semi-conductors
- Printing and paper converting
- Food and meat processing
- Plastics, automotive and aircraft
- Sterilization and impregnation
- Plus numerous others

EVO® lution of Liquid Ring Vacuum Technology



Travaini Pumps USA, Inc. introduces the first in a new series of products—the *EVO*® Dynaseal® system. Our concept was to create a vacuum system that provided superior vacuum for CNC Router tables in a smaller, more maintenance friendly package. Our *EVO*® carries a smaller footprint, runs quieter, and is cooler than most vacuum technology. In addition *EVO*® is tolerant of some soft solids being ingested into the system. Finally, our *EVO*® is stackable so router shops won't use premium floor space for their vacuum systems and can upgrade their capability in the future.

AWFS 2007 Sequoia Award for Product Innovation for Machinery under $50,000

Standard DynaSeal® Models

System Model	Nominal Capacity ACFM	Motor HP	Maximum End Vacuum in. Hg	Approximate Dimensions (in) L x W x H	Approximate Weight (Lbs)
EVO 5M**	70	5	29	48 x 18 x 33	750
EVO 7.5M**	105	7.5	29	48 x 18 x 33	800
EVO 10M**	150	10	29	48 x 18 x 33	860
TRO050H	50	5	29.5	38 x 17 x 40	435
TRO075S	75	5	27	43 x 17 x 40	530
TRO110V	110	7.5	29	55 x 25 x 51	920
TRO140H	140	10	29.5	55 x 25 x 51	1005
TRO160V	160	10	29	65 x 26 x 51	1070
TRO200V	200	15	29	65 x 26 x 56	1300
TRO200H	200	15	29.5	65 x 26 x 56	1325
TRO250H	250	20	29.5	65 x 26 x 56	1350
TRO300V	300	20	29	65 x 26 x 56	1355
TRO300H	300	25	29.5	65 x 26 x 56	1430
TRO400S	380	25	28	83 x 35 x 64	1900
TRO425H	425	40	29.5	83 x 35 x 64	2250
TRO600V	600	40	29	83 x 35 x 64	2150
TRO700S*	700	50	26	80 x 63 x 58	3550
TRO750H*	750	50	29.5	80 x 63 x 58	3750
TRO900S*	900	60	26	80 x 63 x 58	3650
TRO950H*	950	60	29.5	80 x 63 x 58	4016
TRO1000S*	1000	75	26	80 x 63 x 58	3750
TRO1050H*	1050	100	29.5	80 x 63 x 58	4302

*PUMPS ARE V-belt driven.
**Not available in XP design.

DynaSeal® Standard Specifications:

≥ 15" Hg Vacuum; 60-110˚ F Ambient Temperatures; 180˚ F Inlet Gas Temperature Max; 180˚ F Discharge Gas/Oil Temperature; If conditions differ, consult factory for recommended design modifications.

- Explosion proof designs are available upon request.
- Larger capacity systems are available upon request.
- DynaSeal® systems are available in multiple pump configurations with a wide range of optional accessories.
- DynaSeal® systems can be customized per O.E.M. specifications and for special applications.
- DynaSeal® systems are sold and serviced through a nation-wide distributor network.



TRAVAINI PUMPS® USA

Liquid Ring & Rotary Vane Vacuum Pumps and Systems

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Continuing research of TRAVAINI PUMPS USA results in product improvements; therefore any specifications may be subject to change without notice.

PRINTED IN USA

F:/MVUOTGB4

Bulletin #DS0701

DATE November, 2008