

Liquid Ring “Camel” Medical Vacuum Base Mount Modular System

Triplex System (20 – 30 HP)

SPECIFICATION

Vacuum System

The triplex medical vacuum system is fully compliant with the latest edition of NFPA 99. The system consists of three steel framed simplex modules with an oil-free liquid ring vacuum pump coupled to a standard NEMA frame motor and a reservoir tank mounted on each module. A triplex system control panel is mounted on one of the modules. A standalone corrosion resistant receiver sized for appropriate demand is provided for the system. The system is completely tested prior to shipment. The installer, during installation, provides wiring and intake manifold piping between the modules.

Vacuum Pump

The pump is a Nash Vectra GL series oil-free, single-stage, positive displacement, cone-ported and non-pulsating liquid ring type. Materials of construction are all iron with steel shaft, ductile iron lobe, head, rotor and end plate. The shaft seals are standard internal mechanical seals, John Crane type 21.

Vacuum Pump Drive

The pump is direct driven. Torque is transmitted from the motor to the pump through a shaft coupling.

Vacuum Pump Motor

The motor is a continuous duty, NEMA rated, open drip proof, 1200 RPM with 1.15 service factor suitable for 208V or 230/460V, 60 hertz, 3 phase electrical service.

Intake Piping

Each vacuum pump has a factory piped intake with an intake check valve to prevent backflow through off-cycle units, a vacuum relief valve and an isolation valve. The installer, at installation, provides an intake manifold.

Re-circulation and Seal Water

The system includes a dielectric union, anti-siphon valve, strainer, solenoid valve, flow control valve and an orifice union. Under normal operation, the system does not use more than 1 gpm of seal water per operating pump. The system includes a reservoir sufficient for up to 48 hours of operation without a fresh water supply. The reservoir serves as a separator/silencer. A shell and tube heat exchanger is installed for each pump to remove the heat of compression. The chilled water requirement is:

- a) 20 HP vacuum system - 12 gpm chilled water/pump.
- b) 30 HP vacuum system - 15 gpm chilled water/pump.

Vacuum Receiver

The vacuum receiver is corrosion resistant, ASME Code stamped and rated for a minimum 125 PSIG design pressure. The receiver vessel includes a sight glass. All receiver piping and bypass valving are by the installer.

Control System

The triplex control system is NEMA 12 and U.L. labeled. The control system provides automatic lead/lag sequencing with circuit breaker disconnects with external operators for each vacuum pump motor, full voltage motor starters with overload protection, a 120V control circuit transformer for each motor circuit, visual and audible reserve unit alarm with isolated contacts for remote alarm, hand-off-auto lighted selector switches and runtime hourmeters. A programmable logic controller (PLC) controls the automatic sequencing of all vacuum pumps and automatic activation of reserve unit if required. The control system includes a manually adjustable minimum run timer to minimize starts and stops on the package. A vacuum gauge is provided in the control panel.

Accessories (shipped loose)

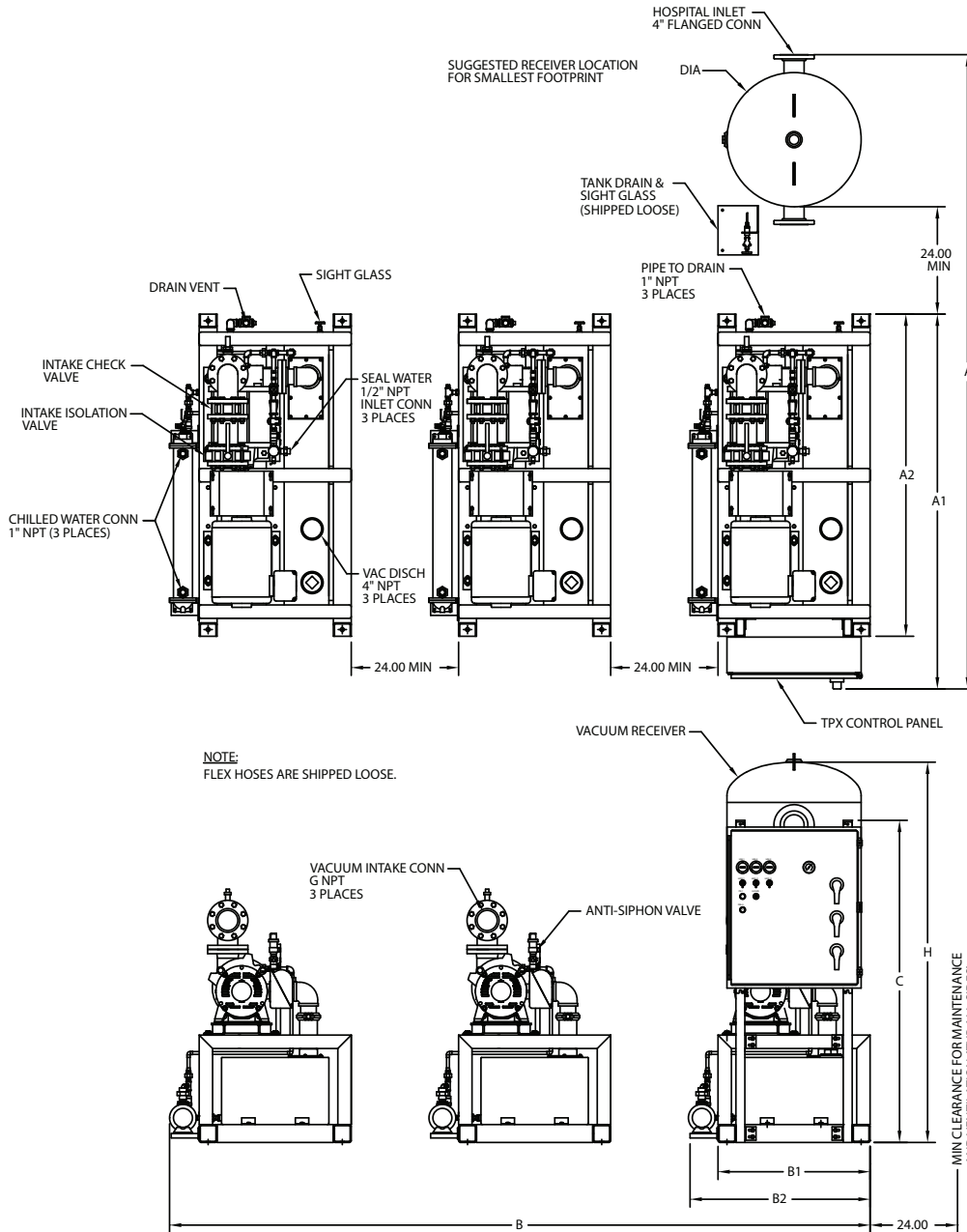
Intake flexible hose	3
Discharge flexible hose	3
Seal water flexible hose	3
Heat exchanger flexible hose	6
Vibration isolator	12



Vacuum System Specifications ¹											
System Model No.	HP	Capacity ² @19" Hg	Seal Flow ³ (gpm)	Cooler Flow ⁴ (gpm)	Noise ⁵ Level	Receiver ⁶ (Gallons)	System FLA @ 60 hz			Module Weight (lbs.)	
							208V	230V	460V	Vacuum ⁷	Receiver
LVS-20T-RC220V	20	246 scfm	1	12	80	220*	185	160	80	5251	565
LVS-20T-RC400V	20	246 scfm	1	12	80	400	185	160	80	5251	650
LVS-30T-RC220V	30	350 scfm	1	15	76	220*	276	238	119	5989	565
LVS-30T-RC400V	30	350 scfm	1	15	76	400	276	238	119	5989	650

- Notes:**
1. Normal operating conditions at a maximum ambient of 105°F. Consult factory for higher ambient conditions.
 2. All capacities are shown as NFPA system capacities (reserve vacuum pump on standby).
 3. Seal water flow rates should be at a minimum of 35 psi and with a maximum temperature of 80°F per pump. Contact factory for water quality requirements.
 4. Chilled water flow rates are based on a maximum inlet water temperature of 50°F per pump. For higher chilled water temperature, contact factory.
 5. Noise levels are shown in dB(A) and reflect two vacuum pumps in operation.
 6. * Indicates standard receiver
 7. Total weight for a 20 hp simplex module w/control panel (1929#) and (2) 20 hp simplex modules (1661# ea.)
Total weight for a 30 hp simplex module w/control panel (2175#) and (2) 30 hp simplex modules (1907# ea.)

Standard Configuration



COMPLETE SYSTEM MODEL NUMBER	UNIT (HP)	PUMP MODEL	RECEIVER (GALLONS)	DIMENSIONS (IN)								SQ FEET REQUIRED		
				A*	A1	A2	B*	B1	B2	C	G		H	DIA
LVS-20T-RC220V	20	GL-80	220	142	84	72	157	34	41	72	4	85	30	95
LVS-20T-RC400V			400	148								101	36	97
LVS-30T-RC220V	30	GL-100	220	142	84	72	157	34	41	72	4	85	30	95
LVS-30T-RC400V			400	148								101	36	97

20HP/220GAL SHOWN (DIA24-223-SSB)

* SUGGESTED SYSTEM DIMENSIONS