

Liquid Ring “Camel” Medical Vacuum Base Mount Modular System Triplex Expandable Quadruplex System (20 – 30 HP)

SPECIFICATION

Vacuum System

The triplex expandable to a quadruplex 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 quadruplex 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 with provisions for the future expansion module.

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 quadruplex 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)

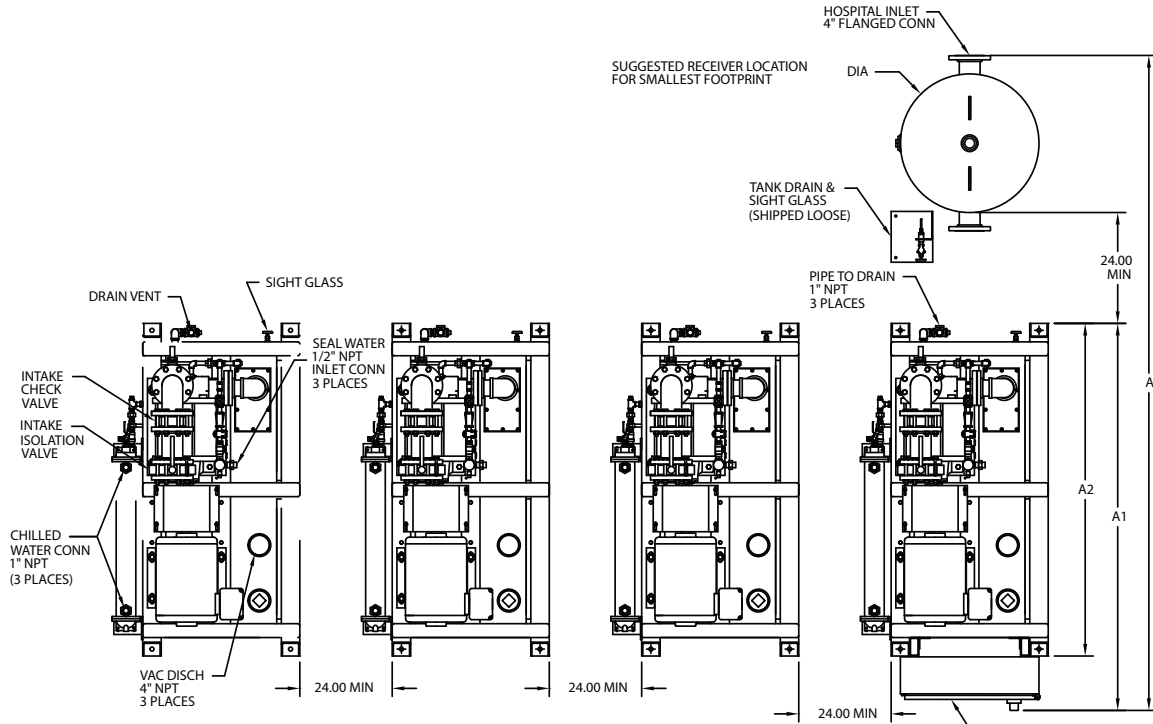
Intake flexible hose	3
Discharge flexible hose	3
Seal water flexible hose	3
Heat exchanger flexible hose	3
Vibration isolator	12



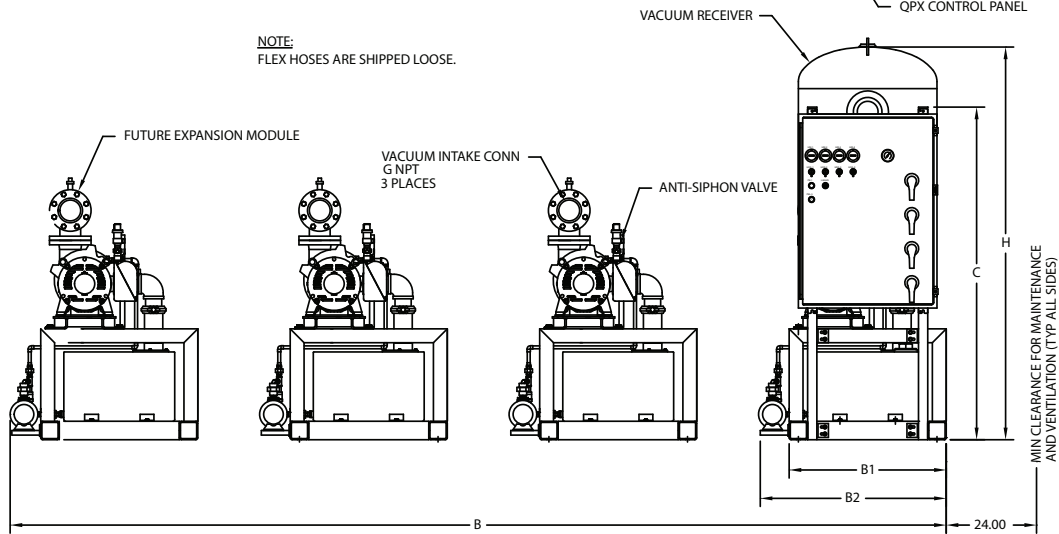
Vacuum System Specifications¹ (Expanded System)											
System Model No.	HP	Capacity² @19" Hg	Seal Flow³ (gpm)	Cooler Flow⁴ (gpm)	Noise Level⁵	Receiver⁶ (Gallons)	System FLA @ 60 hz⁷			Module Weight (lbs.)	
							208V	230V	460V	Vacuum⁸	Receiver
LVS-20T-RC220V-Q	20	246 scfm (369 scfm)	1	12	80 (82)	220*	245	213	107	5283 (6944)	565
LVS-20T-RC400V-Q	20	246 scfm (369 scfm)	1	12	80 (82)	400	245	213	107	5283 (6944)	650
LVS-30T-RC220V-Q	30	350 scfm (525 scfm)	1	15	76 (78)	220*	368	317	159	6021 (7928)	565
LVS-30T-RC400V-Q	30	350 scfm (525 scfm)	1	15	76 (78)	400	368	317	159	6021 (7928)	650

- Notes:**
1. Normal operating condition 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. All noise levels are shown in dB(A) with the reserve pump on standby
 6. * Indicates standard receiver.
 7. FLA is rated for expandable panel.
 8. Total weight for a 20 hp simplex module w/control panel (1961#) and 20 hp simplex modules (1661# ea.)
Total weight for a 30 hp simplex module w/control panel (2207#) and 30 hp simplex modules (1907# ea.)

Standard Configuration



NOTE:
FLEX HOSES ARE SHIPPED LOOSE.



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-Q	20	GL-80	220	142	84	72	215	34	41	72	4	85	30	124	
LVS-20T-RC400V-Q			400	148								101	36	126	
LVS-30T-RC220V-Q	30	GL-100	220	142	84	72	215	34	41	72	4	85	30	124	
LVS-30T-RC400V-Q			400	148								101	36	126	

20HP/220GAL SHOWN (DIA24-225X-SSB)

* SUGGESTED SYSTEM DIMENSIONS