

GENERAL

The Powerex medical vacuum system is designed to create a suction system to remove unwanted fluids or gases from hospital/ laboratory working areas. The medical vacuum system package is compliant with the NFPA 99 requirements for Risk Category 1 systems. Each system is completely tested before shipment and includes:

- Multiple vacuum pumps and associated equipment
- AMSE air receiver
- Medical control panel

Each pump is factory piped to a common intake manifold. Vibration isolation pads are included with the system.

CLAW VACUUM PUMP

Each pump shall be a rotary claw type vacuum pump, and shall be direct-driven through a shaft coupling by a C-face, TEFC electric motor.

- Each vacuum pump shall be dry-running, featuring two claw-type, non-contacting rotors and shall not require any sealing fluid in the pumping chamber, assuring virtually maintenance-free operation.
- Each vacuum pump shall include an internal relief valve, and a built-in, anti-suck-back valve mounted at the pump inlet.
- Each pump within the system shall include a check valve, inlet and discharge flex connectors, a 5 micron inlet filter and a pump isolation valve.

MOTOR

The motor is continuous duty, C-face, TEFC, suitable for 208-230, or 460V, 3 phase, 60 hertz electrical operation.

AIR RECEIVER

The system shall include an ASME rated air receiver. The tank shall be equipped with a vacuum gauge, a sight gauge, by-pass valves, and a manual drain.

STANDARD HMI CONTROL PANEL

The control system provides automatic lead/lag sequencing and automatic alternation of all pumps in order to equalize the amount of usage among the available vacuum pumps. The HMI (Human Machine Interface) control system shall include:

- PLC controller and a color touch screen HMI (Human Machine Interface) panel which displays the operating status of the unit.
- UL508A listed control panel in a NEMA 12

enclosure. The panel door will include: the HMI touch screen, an audible and visual alarms with an acknowledge button, and an HOA switch for each pump

- Magnetic starters
- Vacuum transducer for process control
- Single point power connection
- Redundant 120Vac control transformers with fused primary and secondary protection
- System overload trip, high temperature conditions or maintenance intervals for the pump will result in visual and audible alarms.

OPTIONAL PBMI CONTROL PANEL

The PBMI control panel shall include all features of the standard HMI control panel with the addition of the gateway server card. The PBMI control system shall include:

- Building automation communication gateway with BacNet[®] protocol and Web server features. Web server s features include email notifications in case the system is in alarm or has achieved one its maintenance intervals and requires service.
- Ethernet port for connection to BacNet[®] server or direct connection to facility Ethernet for viewing of system operations and status via device IP-address

OPTIONAL VFD CONTROL PANEL

Variable Frequency Drive (VFD) control improves efficiency over a conventional “on/off” demand based system by more closely matching the pump speed to the changing load requirements. All VFD systems come standard with a HMI control panel; PBMI controls are an available upgrade. This option is not available with Basic controls. The VFD with Standard HMI control panel includes:

- PLC controller and a color touch screen HMI (Human Machine Interface) panel which displays the operating status of the unit.
- UL508A listed control panel in a NEMA 12 enclosure. The panel door will include: the HMI touch screen, an audible and visual alarms with an acknowledge button, VFD start/stop switch and an HOA switch for each pump
- Magnetic starters
- Vacuum transducer for process control
- Single point power connection
- Redundant 120Vac control transformers with fused primary and secondary protection
- System overload trip, high temperature conditions or maintenance intervals for the pump will result in

visual and audible alarms.

The VFD with PBMI control panel includes all the features of the VFD with Standard HMI control panel plus the following:

- Building automation communication gateway with BacNet[®] protocol and Web server features. Web server s features include email notifications in case the system is in alarm or has achieved one its maintenance intervals and requires service.
- Ethernet port for connection to BacNet[®] server or direct connection to facility Ethernet for viewing of system operations and status via device IP-address

OPTIONAL BASIC CONTROL PANEL

The control system provides automatic lead/lag sequencing and automatic alternation of all compressors in order to equalize the amount of usage among the available vacuum pumps. The Basic control system shall include:

- UL508A listed control panel in a NEMA 12 enclosure with the following accessories for each pump: Externally operable disconnect, magnetic starter with 3-leg overload protection, Hand/Off/Auto lighted selector switch, minimum run timer to prevent short cycling of the pump, and hour meter. Standard features shall also include:
- Main power on light, timed lead/lag pump alternation, a reserve pump in-use alarm with visual and audible indications, and redundant control circuit transformers with fused primary and secondary protection.
- Dry contacts on a labeled terminal strip for remote alarm monitoring and an acknowledge pushbutton for horn silencing.
- Control logic to start the lag pump automatically if the lead vacuum pump fails to operate.
- A high discharge air temperature shutdown alarm with visual and audible indicators and dry contacts.

AVAILABLE OPTIONS

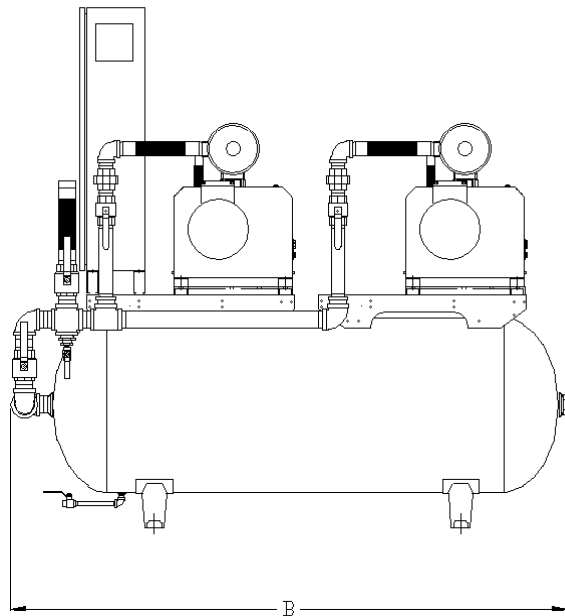
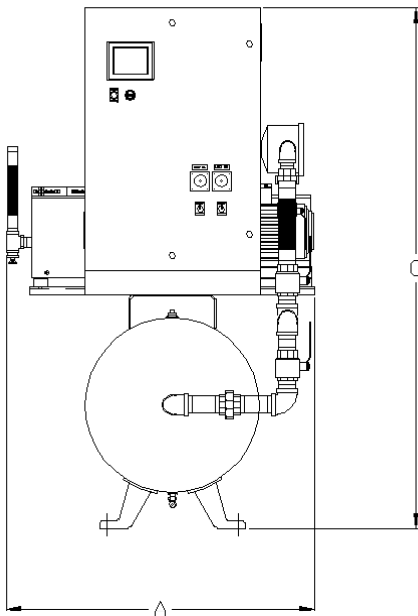
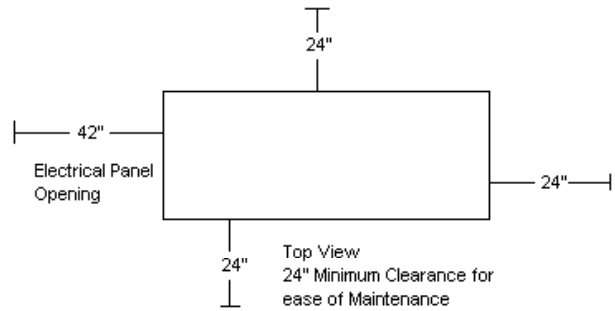
- Oxygen assured pumps - prepared for use in WAGD systems.
- Internal tank lining for corrosion resistance
- Variable Speed Drive Control Panel – with Standard HMI control or Optional PBMI controls



Claw Vacuum Tankmount Duplex with HMI/PBMI

Rev. 7/25/12

DIMENSIONS					
MODEL	DIM. A	DIM. B	DIM. C	Inlet	Outlet
CVTD0203	42"	71"	68"	1-1/2"	1"
CVTD0303	42"	71"	68"	1-1/2"	1"
CVTD0504A	43"	77"	72"	2"	1"
CVTD0504B	43"	77"	72"	2"	1"



Claw Vacuum Tankmount with HMI/PBMI										
MODEL	HP	SCFM @ 19" Hg Each	NFPA System Capacity ¹	TANK SIZE (Gal.)	BTU/HR ²	dB(A) ³ LEVEL	SYSTEM F.L.A.			SYSTEM WT. (LBS.)
							208V	230V	460V	
CVTD0203	2 (2)	16	16	80H	5,854	70	19	15.3	8.6	1,000
CVTD0303	3 (2)	21	21	80H	8,144	70	19	20.6	11.3	1,200
CVTD0504A	5 (2)	29	29	120H	12,725	79	27.2	26.2	14.1	1,400
CVTD0504B	5.4 (2)	38	38	120H	16,288	79	27.2	33	17.5	1,460

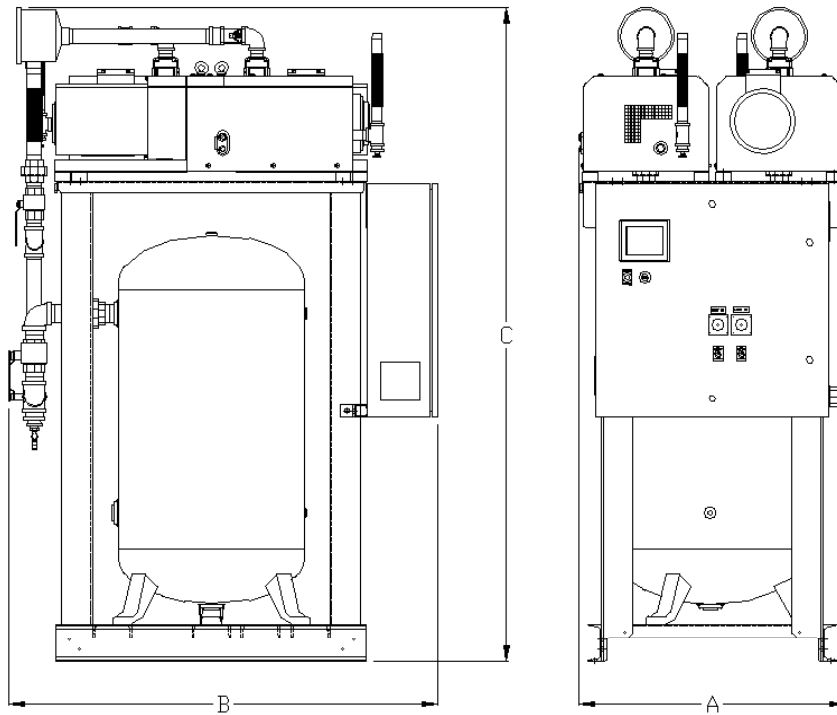
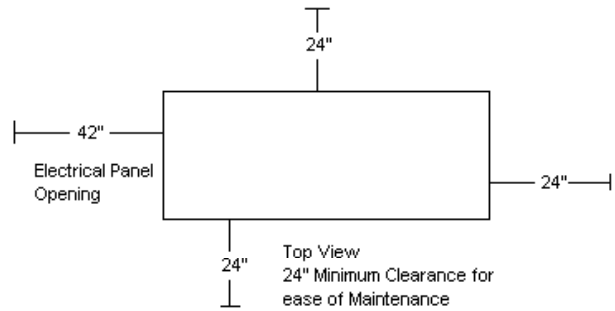
- Notes:
- 1- System Capacity is shown with one or more pumps in reserve per NFPA 99
 - 2- BTU/HR Levels are shown with reserve pump(s) on standby
 - 3- dB(A) is shown with one pump in reserve per NFPA 99
 - 4- 3 Year Limited Warranty



Claw Vacuum Tankmount Duplex with HMI/PBMI

Rev. 7/25/12

DIMENSIONS					
MODEL	DIM. A	DIM. B	DIM. C	Inlet	Outlet
CVTD0203V	35"	56"	82"	1-1/2"	1"
CVTD0303V	35"	56"	82"	1-1/2"	1"
CVTD0504AV	35"	56"	85"	2"	1"
CVTD0504BV	35"	56"	85"	2"	1"



Claw Vacuum Tankmount with HMI/PBMI										
MODEL	HP	SCFM @ 19" Hg Each	NFPA System Capacity ¹	TANK SIZE (Gal.)	BTU/HR ²	dB(A) ³ LEVEL	SYSTEM F.L.A.			SYSTEM WT. (LBS.)
							208V	230V	460V	
CVTD0203V	2 (2)	16	16	80V	5,854	70	19	15.3	8.6	1,300
CVTD0303V	3 (2)	21	21	80V	8,144	70	19	20.6	11.3	1,520
CVTD0504AV	5 (2)	29	29	120 V	12,725	79	27.2	26.2	14.1	1,650
CVTD0504BV	5.4 (2)	38	38	120V	16,288	79	27.2	33	17.5	1,720

- Notes:
- 1- System Capacity is shown with one or more pumps in reserve per NFPA 99
 - 2- BTU/HR Levels are shown with reserve pump(s) on standby
 - 3- dB(A) is shown with one pump in reserve per NFPA99
 - 4- 3 Year Limited Warranty