

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.

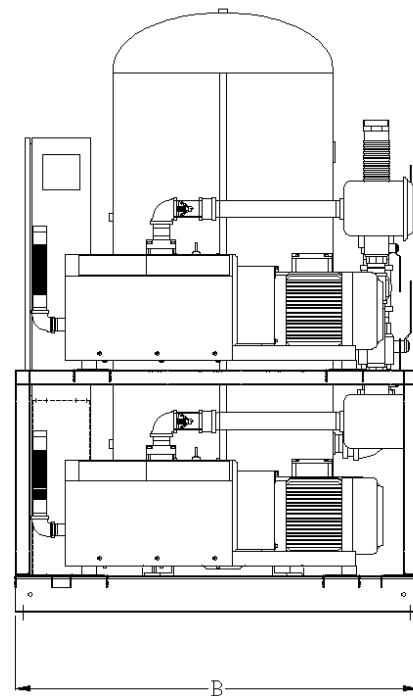
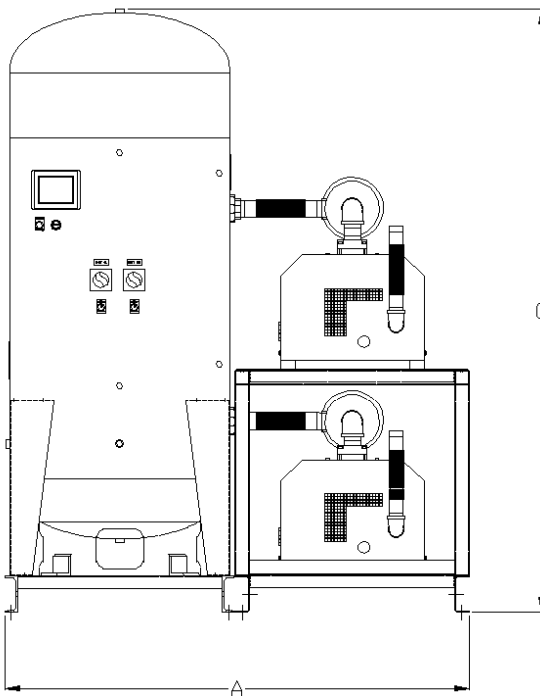
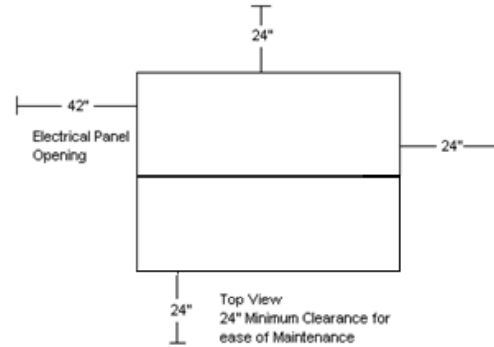
AVAILABLE OPTIONS

- 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 Package with HMI/PBMI

Rev. 3/22/13

DIMENSIONS					
MODEL	DIM. A	DIM. B	DIM. C	Inlet	Outlet (X2)
CVPD0504A	66"	55"	76"	2"	1"
CVPD0504B	66"	55"	76"	2"	1"
CVPD0754A	66"	55"	76"	2"	1"
CVPD0754B	66"	55"	76"	2"	1"
CVPD1005	66"	57"	83"	3"	2"



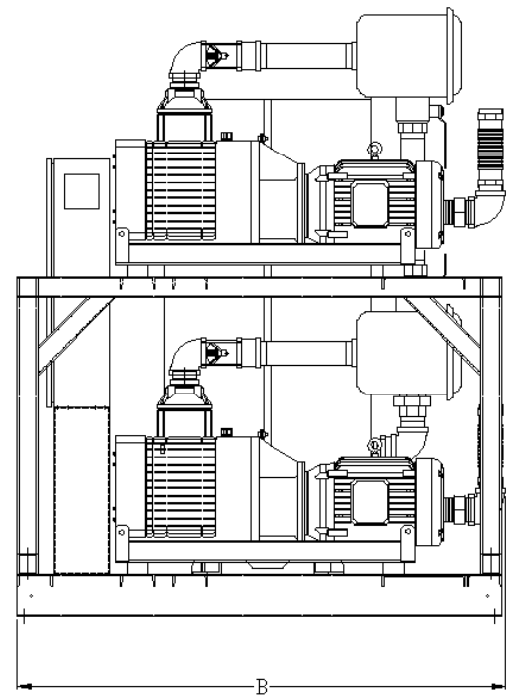
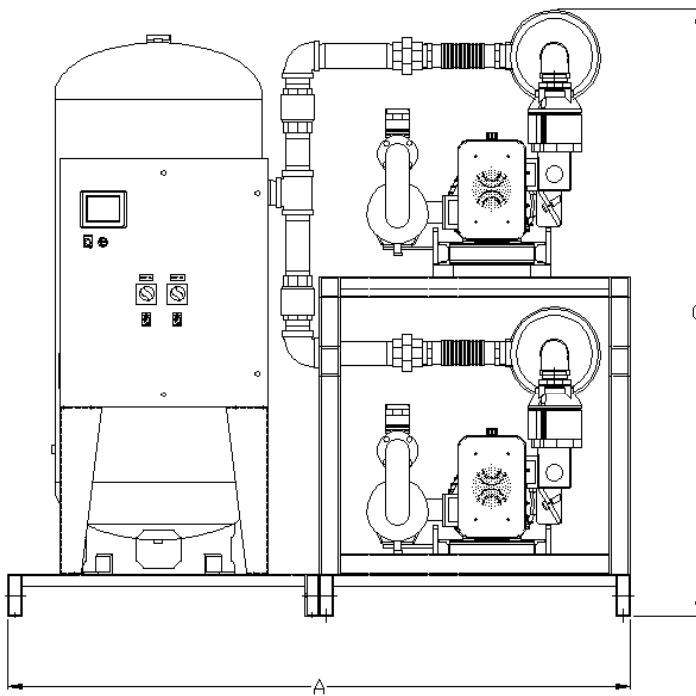
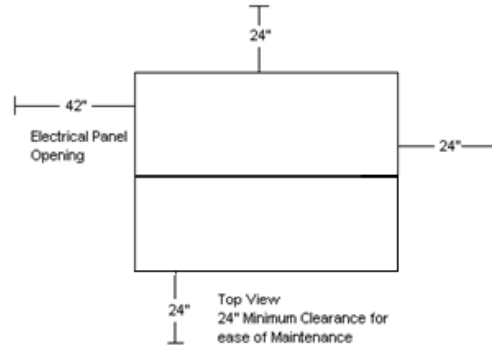
Claw Vacuum Package											
MODEL	Old HP	New HP	SCFM @ 19" Hg Each	NFA System Capacity ¹	TANK SIZE (Gal.)	BTU/HR ²	dB(A) ³ LEVEL	SYSTEM F.L.A.			SYSTEM WT. (LBS.)
								208V	230V	460V	
CVPD0504A	5 (2)	5 (2)	29	29	120 V	8,670	79	27.2	26.2	14.1	2,200
CVPD0504B	5.4 (2)	6.4 (2)	38	38	120 V	11,271	79	27.2	33	17.5	2,250
CVPD0754A	6.4 (2)	7.0 (2)	52	52	120 V	12,572	79	40	35.2	18.6	2,550
CVPD0754B	7.4 (2)	9.1 (2)	65	65	120 V	15,173	79	40	47.2	24.6	2,700
CVPD1005	8.7 (2)	10 (2)	87	87	200 V	21,675	83	54.8	49.6	25.8	3,100

- 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 Package with HMI/PBMI

Rev. 7/25/12

DIMENSIONS					
MODEL	DIM. A	DIM. B	DIM. C	Inlet	Outlet
CVPD1505	90"	71"	88"	3"	3"



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	
CVPD1505	15 (2)	129	129	200V	38,175	85	78	72	37	3,400

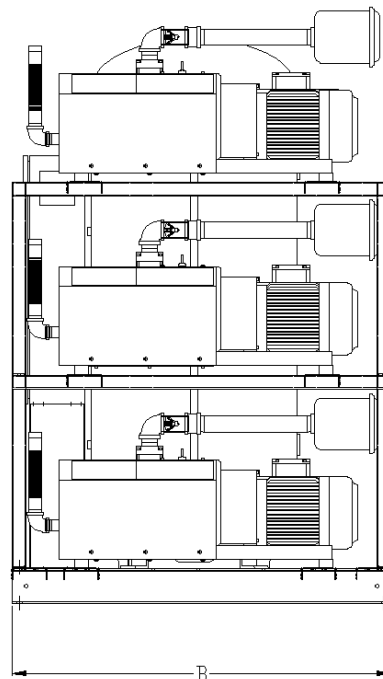
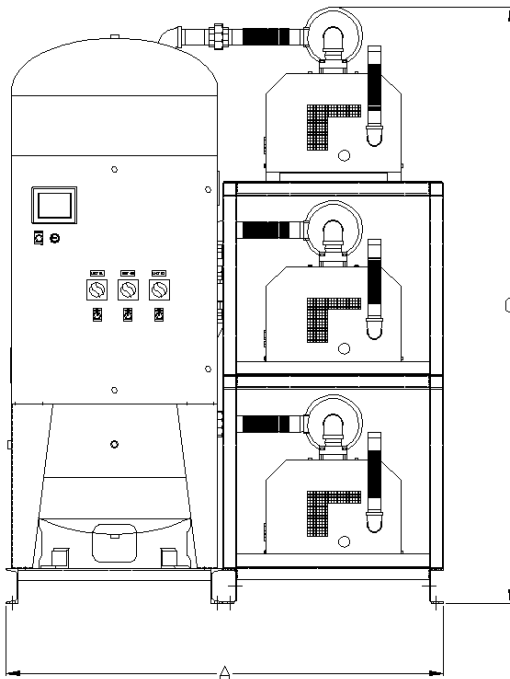
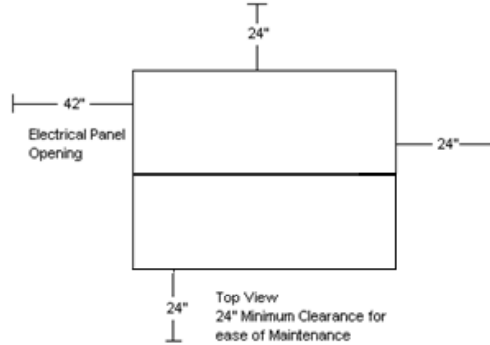
- Notes:
- 1- System Capacity is shown with one or more pumps in reserve per NFPA 99
 - 2 - BTU/HR Levels are shown with reserve pump(s) on standby
 - 3 - dB(A) is shown with one pump in reserve per NFPA 99
 - 4 - 3 Year Limited Warranty



Claw Vacuum Package with HMI/PBMI

Rev. 03/22/13

DIMENSIONS					
MODEL	DIM. A	DIM. B	DIM. C	Inlet	Outlet (X3)
CVPT0504A	66"	55"	85"	2"	1"
CVPT0504B	66"	55"	85"	2"	1"
CVPT0755A	66"	55"	87"	2"	1"
CVPT0755B	66"	55"	87"	2"	1"



Claw Vacuum Package with HMI/PBMI

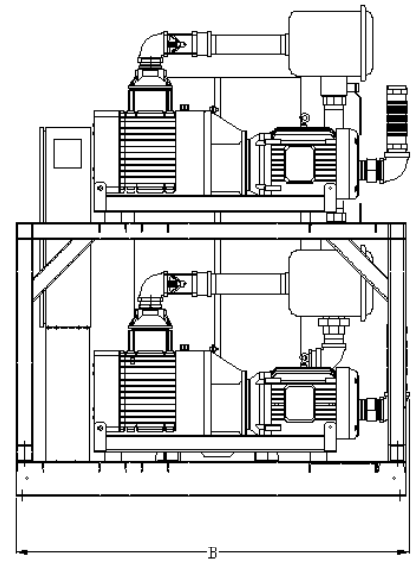
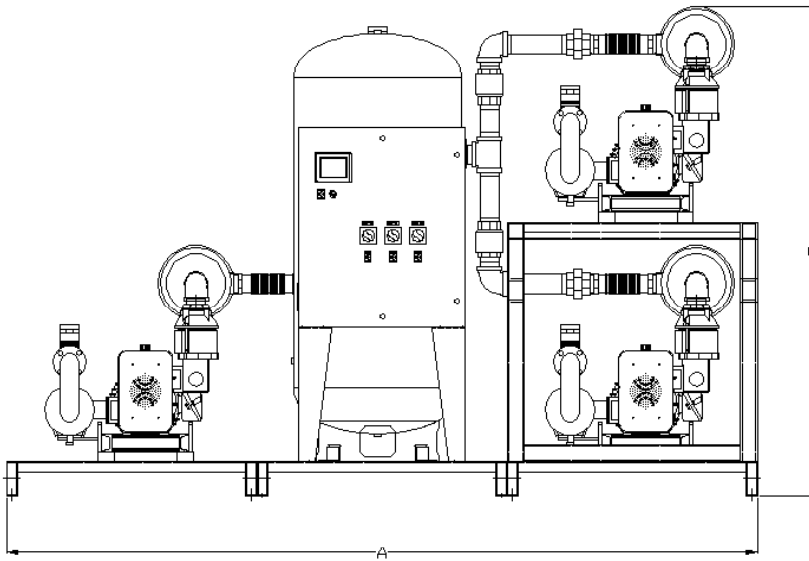
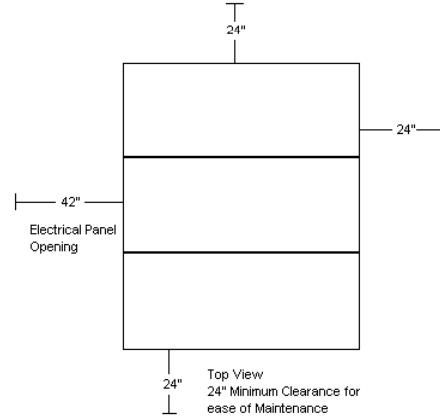
MODEL	Old HP	New HP	SCFM @ 19" Hg Each	NFPA System Capacity ¹	TANK SIZE (Gal.)	BTU/HR ²	dB(A) ³ LEVEL	SYSTEM F.L.A.			SYSTEM WT. (LBS.)
								208V	230V	460V	
CVPT0504A	5 (3)	5 (3)	29	58	120V	17,340	82	39.8	38.3	20.2	2,750
CVPT0504B	5.4 (3)	6.4 (3)	38	76	120V	22,542	82	39.8	48.5	25.2	2,900
CVPT0755A	6.4 (3)	7.0 (3)	52	104	200V	25,144	82	59	51.8	26.9	3,650
CVPT0755B	7.4 (3)	9.1 (3)	65	130	200V	30,346	82	59	69.8	35.9	3,850

- 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 Package with HMI/PBMI

Rev. 03/22/13

DIMENSIONS					
MODEL	DIM. A	DIM. B	DIM. C	Inlet	Outlet (X3)
CVPT1005	98"	57"	83"	3"	2"
CVPT1505	135"	70"	88"	4"	3"



Claw Vacuum Package with HMI/PBMI											
MODEL	Old HP	New 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	
CVPT1005	8.7 (3)	10 (3)	87	174	200V	43,350	86	81.2	73.4	37.7	4,150
CVPT1505	15 (3)	15 (3)	129	258	200V	76,350	88	116	107	54.5	4,550

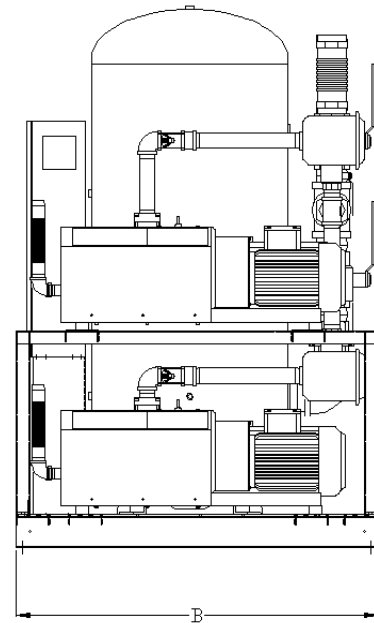
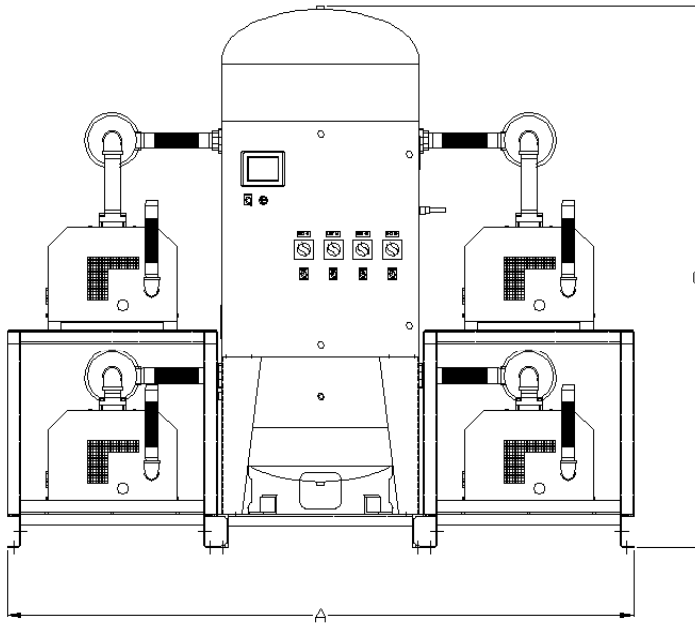
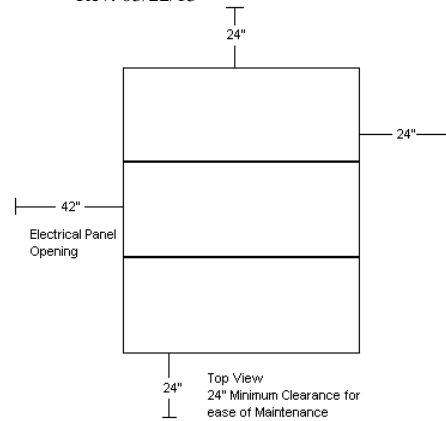
- Notes:
- 1- System Capacity is shown with one or more pumps in reserve per NFPA 99
 - 2- BTU/HR Levels are shown with reserve pump(s) on standby
 - 3- dB(A) is shown with one pump in reserve per NFPA 99
 - 4- 3 Year Limited Warranty



Claw Vacuum Package with HMI/PBMI

Rev. 03/22/13

DIMENSIONS					
MODEL	DIM. A	DIM. B	DIM. C	Inlet	Outlet (X2)
CVPQ0505A	98"	55"	83"	3"	1"
CVPQ0505B	98"	55"	83"	3"	1"
CVPQ0755A	98"	55"	83"	3"	1"
CVPQ0755B	98"	55"	83"	3"	1"
CVPQ1005	98"	60"	83"	4"	2"



Claw Vacuum Package with HMI/PBMI											
MODEL	Old HP	New 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	
CVPQ0505A	5 (4)	5 (4)	29	87	200 V	26,010	84	52.4	50.4	26.2	3,500
CVPQ0505B	5.4 (4)	6.4 (4)	38	114	200V	33,813	84	52.4	64	33	3,600
CVPQ0755A	6.4 (4)	7.0 (4)	52	156	200V	37,716	84	78	68.4	35.2	4,300
CVPQ0755B	7.4 (4)	9.1 (4)	65	195	200V	45,519	84	78	92.4	47.2	4,500
CVPQ1005	8.7 (4)	10 (4)	87	261	200V	65,025	88	107.6	97.2	49.6	4,900

Notes:

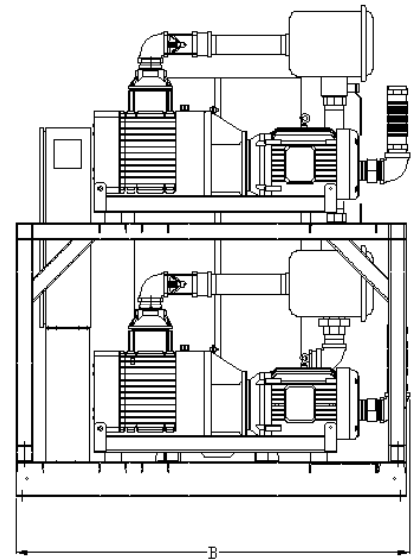
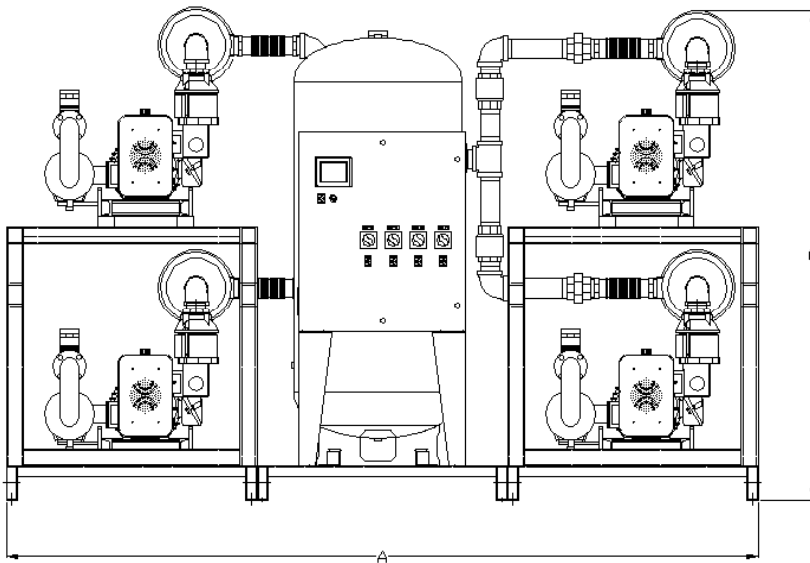
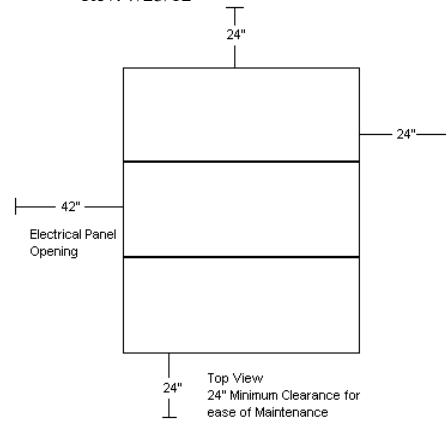
- 1- System Capacity is shown with one or more pumps in reserve per NFPA 99
- 2 - BTU/HR Levels are shown with reserve pump(s) on standby
- 3 - dB(A) is shown with one pump in reserve per NFPA 99
- 4 - 3 Year Limited Warranty



Claw Vacuum Package with HMI/PBMI

Rev. 7/25/12

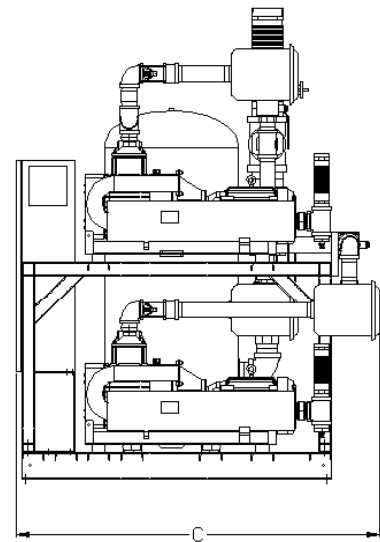
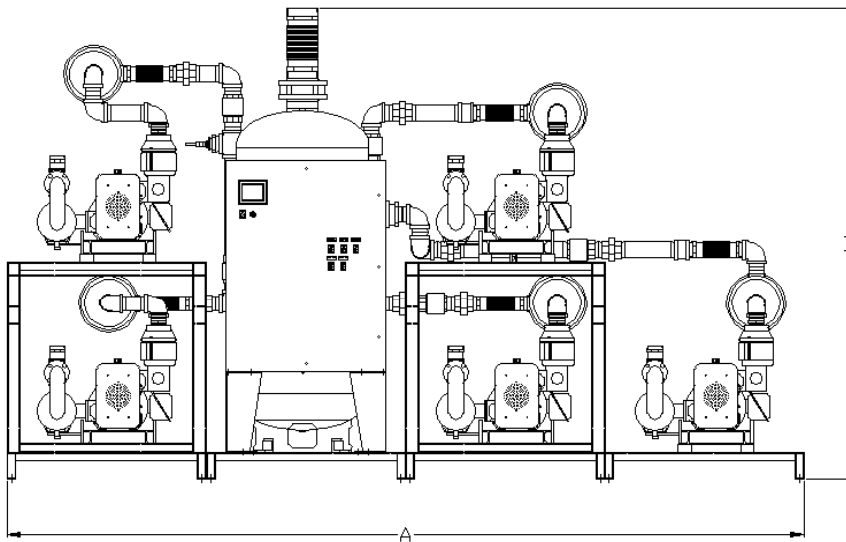
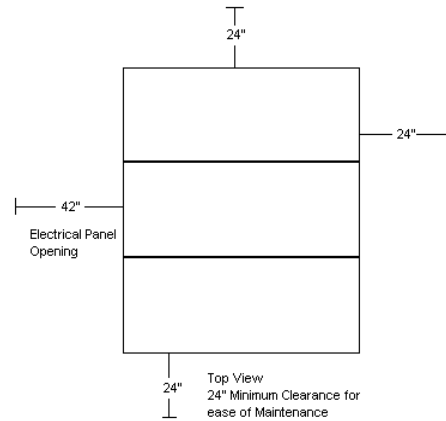
DIMENSIONS					
MODEL	DIM. A	DIM. B	DIM. C	Inlet	Outlet
CVPQ1505	135"	71"	88"	4"	3"



Claw Vacuum Package 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	
CVPQ1505	15 (4)	129	387	200V	114,525	90	154	142	72	5,400

- 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

DIMENSIONS					
MODEL	DIM. A	DIM. B	DIM. C	Inlet	Outlet (x5)
CVPP1505	180"	83"	107"	6"	3"



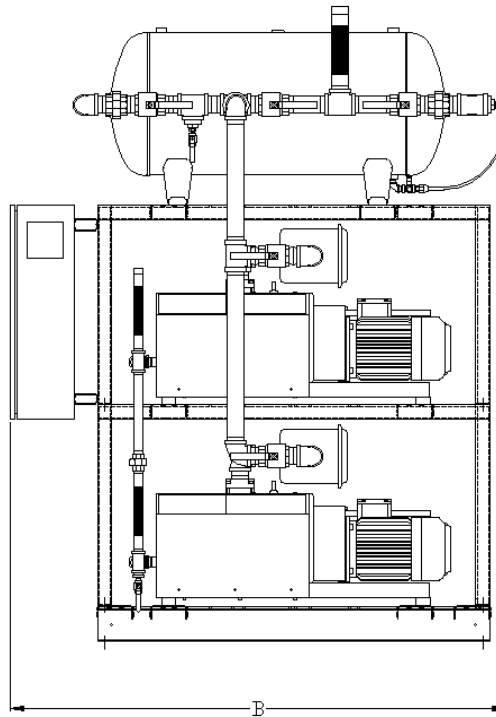
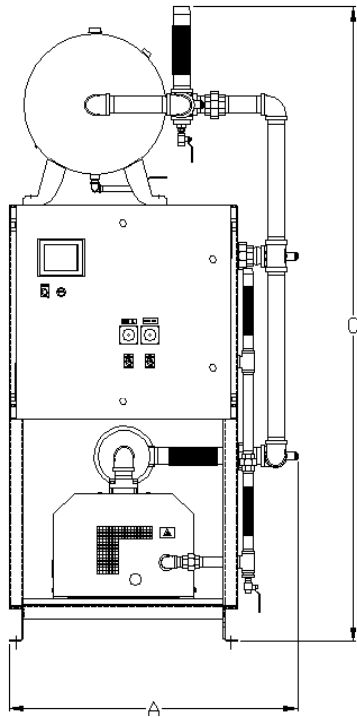
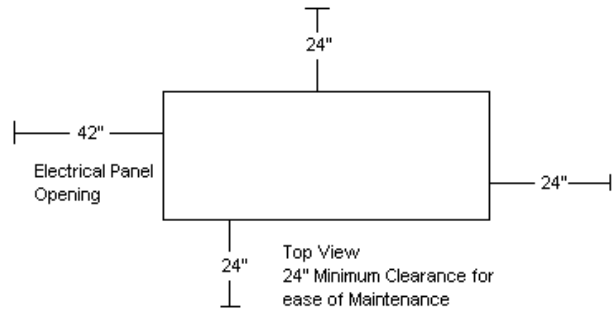
Claw Vacuum Package										
MODEL	HP	SCFM @ 19" Hg Each	NFPA System Capacity ¹	TANK SIZE (Gal.)	BTU/HR ²	dB(A) ³ LEVEL	SYSTEM F.L.A.			SYSTEM WT. (LBS.)
							208V	230V	460V	
CVPP1505	15 (5)	129	516	200V	152,700	91	192	177	89.5	8,500

- 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 NFP A99
 - 4 - 3 Year Limited Warranty

Claw Vacuum Tankmount Duplex with HMI/PBMI

Rev. 9/19/12

DIMENSIONS					
MODEL	DIM. A	DIM. B	DIM. C	Inlet	Outlet
CVPDT0502A	40"	70"	89"	2"	1"
CVPDT0502B	40"	70"	89"	2"	1"
CVPDT0752A	41"	70"	89"	2"	1"
CVPDT0752B	41"	70"	89"	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		
CVPDT0502A	5 (2)	29	29	60	12,725	79	27.2	26.2	14.1	1,860	
CVPDT0502B	6.4 (2)	38	38	60	16,288	79	27.2	33	17.5	1,910	
CVPDT0752A	7.0 (2)	52	52	60	17,815	79	40	35.2	18.6	2,130	
CVPDT0502B	9.1 (2)	65	65	60	23,160	79	40	47.2	24.6	2,145	

- 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