

GENERAL

The Powerex Skid Mount Scroll Medical Air System is designed to provide medical breathing air for hospital and medical institutions. This system meets NFPA 99 requirements for Risk Category 1 systems. Each system is completely tested before shipment and includes:

- Multiple oil-less scroll air compressors and associated equipment
- Corrosion resistant air receiver
- Redundant medical desiccant air dryers with purge control
- Medical control panel
- Dew point and CO monitors

The only field connections required will be system intake, exhaust, and power connection at the control panel. All interconnecting piping, wiring, and vibration isolation pads are included with the system.

OILLESS SCROLL COMPRESSOR PUMP

Each compressor shall be belt driven oil-less rotary scroll single stage, air-cooled construction with absolutely no oil needed for operation. Direct drive compressors shall not be used.

- The rotary design shall not require any inlet or exhaust valves and shall be rated for 100% continuous duty
- Tip seals shall be of a composite PTFE material and be rated for 10,000 hours operation.
- Compressor bearings shall be external to the air compression chamber and shall all be serviceable for extended compressor life. Bearing maintenance shall not be required until 10,000 run hours. Compressors with bearings that are not accessible for service have a limited life span and shall not be accepted. Compressors shall have an integral radial flow fan for cooling and shall not require any additional electric cooling fans.
- Each compressor shall have flexible connectors on intake and discharge, an electric drive motor, a discharge check valve, an air-cooled aftercooler and a high discharge temperature shut down switch.
- Each compressor module shall have an isolation valve and a moisture separator with automatic drain.

MOTORS

Each compressor shall be belt driven by an ODP, NEMA construction motor. Belt guards that meet OSHA requirements shall be provided.

AIR RECEIVER

The system shall include an ASME air receiver rated for 200 PSI MAWP. The tank shall be equipped with:

- A pressure gauge and a safety relief valve
- By-pass valves to allow tank isolation without system shutdown
- An automatic electronic tank drain with manual override

The receiver shall be internally lined with an FDA approved material for corrosion resistance.

INTAKE FILTERS

Duplex systems of 5 HP or below have individual pump filters. Otherwise, the medical air system shall include a dual inlet filter system with one filter on-line and one filter in reserve to enable servicing of the filter elements without shutting down any of the air compressors units or disrupting service to the facility. The inlet filter system shall be located on the compressor package and plumbed up-stream of the compressor pumps.

DESICCANT AIR DRYERS

Each desiccant dryer shall be sized for the peak calculated system demand to provide a pressure dew point to meet NFPA 99 standards.

- Dryer controls shall include a re-pressurization cycle to prevent shocking of the desiccant bed prior to switching towers.
- An integral purge saving control system shall be provided and shall suspend the purge air loss during periods of low demand. When the dryer is in purge control mode, the tower switching valves shall not operate, and only one desiccant bank shall be on-line. Dryers continue to operate the switching valves in the fixed cycle.

FILTRATION AND PRESSURE REDUCING STATION

Each filter/dryer/regulator assembly shall be plumbed with bypass valves to enable service without disrupting air flow to the facility. Each assembly also includes a sample air port. The filtration systems consist of two stages of filtration.

- The first stage of filtration shall include dual pre-filters with element change indicators and automatic condensate drains, installed up-stream of the air dryers.
- The second stage shall include dual particulate filters with element change indicators installed downstream of the air dryers.
- A dual set of pressure reducing valves with pressure gauges shall be installed downstream of the final filters and shall be adjusted to an outlet pressure of 55 psig.

STANDARD CONTROL SYSTEM

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 compressors. The control system shall include:

- UL508A listed control panel in a NEMA 12 enclosure with the following accessories for each pump: H-O-A switch, a magnetic starter with 3 leg overload protection, a high temperature shutdown with audible and visual alarm, an hour meter and a compressor run light. Standard features also include:
 - PLC controller or a timing alternator, a reserve compressor in-use alarm with visual and audible alarms,

and redundant control circuit transformers with visual indication of a main transformer failure.

- Dry contacts on a labeled terminal strip for remote alarm monitoring and an acknowledge pushbutton for horn silencing.
- Control logic to start the lag compressor automatically if the lead compressor fails to operate.
- Dew point monitor equipped with an LCD dew point display and high dew point alarm with dry contacts for remote monitoring. The dew point sensor (probe) shall be installed so that the monitored airflow is downstream of the pressure regulator assembly. The sensor shall include an auto calibration feature to ensure the accuracy of the dew point measurement without the need to return the sensor to the factory for calibration.
- Carbon monoxide (CO) monitor in an enclosure with LCD display of CO concentrations. The monitor shall continuously display the CO content of the discharge air and shall provide audible and visual high CO alarms. High alarm is set at 10 ppm per NFPA99. Dry contacts are provided for remote monitoring of the high CO alarm.

OPTIONAL PBMI CONTROL SYSTEM

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 compressors. The PBMI control system shall include:

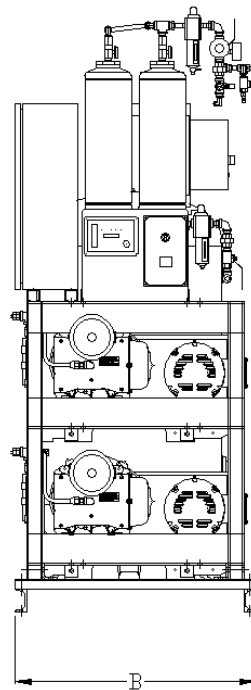
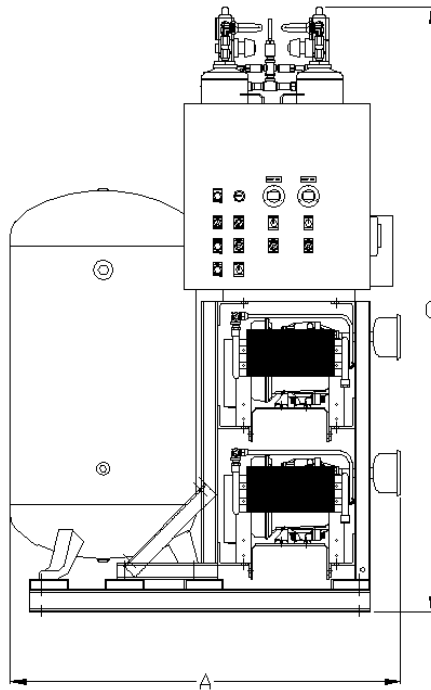
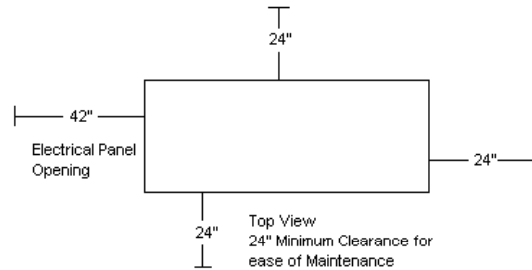
- UL508A listed control panel in a NEMA 4/12 enclosure. The panel door will include: an audible and visual alarms with an acknowledge button, a HOA switch for each pump, and a 3-position dryer switch.
- PLC controller and a color touch screen HMI (Human Machine Interface) panel which displays the operating status of the unit.
- System overload trip, high temperature conditions or maintenance intervals for the pump will result in visual and audible alarms.
- Dryer maintenance notification at set run-hour intervals
- Integrated dew point and carbon monoxide monitors. The touch screen will display dew point and CO readings and provide audible and visual high dew point and CO alarms.
- Building automation communication gateway with BacNet[®] protocol and Web server features. Web server features include email notifications in case the system is in alarm or has achieved one of its maintenance intervals and requires service.



Medical Scroll Skid Mount Package Duplex

Rev. 2/8/12

DIMENSIONS					
MODEL	DIM. A	DIM. B	DIM. C	Inlet	Outlet
MSD0203	47"	31"	78"	3/4"	1/2"
MSD0303	47"	31"	78"	3/4"	1/2"
MSD0503	47"	31"	78"	3/4"	1/2"



Medical Scroll Skid Mount Package - Duplex										
MODEL	HP	SCFM @ 100 PSIG ^(1,3)	NFPA System Capacity ¹	TANK SIZE	BTU/HR ²	dB(A) ⁴ LEVEL	F.L.A./MOTOR*			SYSTEM WEIGHT
							208V	230V	460V	
MSD0203	2	5.7	5.7	80 gal.	5,082	70	7.5	6.8	3.4	1,050
MSD0303	3	8.8	8.8	80 gal.	7,638	70	10.6	9.6	4.8	1,100
MSD0503	5	15.2	15.2	80 gal.	12,730	72	16.7	15.2	7.6	1,300

- Notes:
- 1- System Capacity is shown with one or more compressors in reserve per NFPA 99
 - 2- BTU/HR Levels are shown with reserve compressor(s) on standby
 - 3- Powerex recommends using performance ratings in SCFM (Standard Cubic Feet per Minute) when sizing medical air systems.
 - 4- dB(A) is shown with one compressor in reserve per NFPA99
 - 5- 3 Year Limited Warranty

*NEC (National Electric Code) F.L.A./motor listed. Actual values are less than stated. If actual values are needed, please contact the factory.

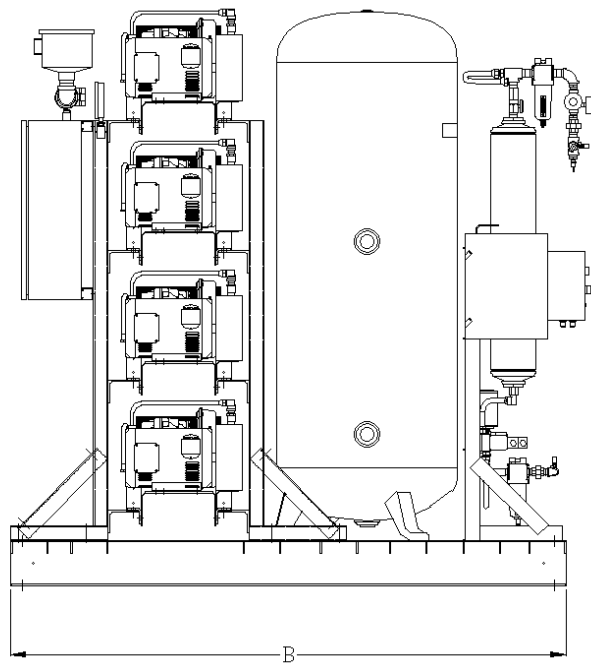
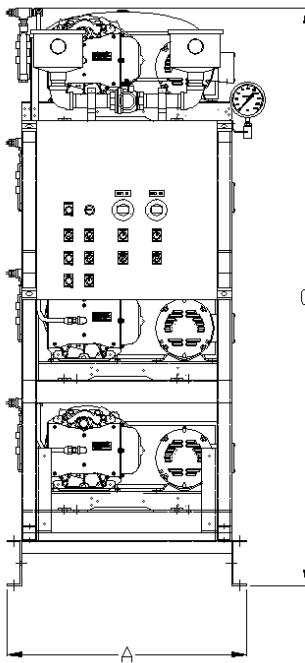
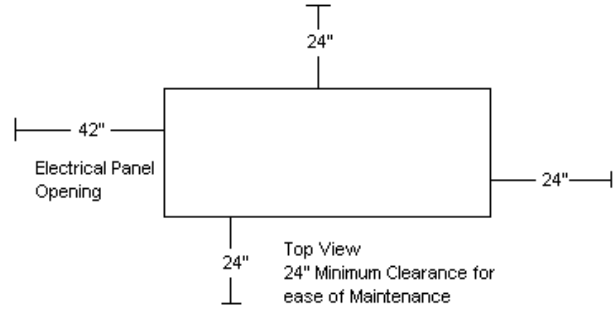


Medical Scroll Skid Mounted Packages

Duplex

Rev. 2/8/12

DIMENSIONS					
MODEL	DIM. A	DIM. B	DIM. C	Inlet	Outlet
MSD1004	35"	78"	77"	1-1/2"	3/4"



Medical Scroll Skid Mount Package - Duplex										
MODEL	HP	SCFM @ 100 PSIG ^(1,3)	NFPA System Capacity ¹	TANK SIZE	BTU/HR ²	dB(A) ⁴ LEVEL	F.L.A./MOTOR*			SYSTEM WEIGHT
							208V	230V	460V	
MSD1004	10	30.4	30.4	120 gal.	25,470	75	30.8	28	14	1,800

- Notes:
- 1- System Capacity is shown with one or more compressors in reserve per NFPA 99
 - 2 - BTU/HR Levels are shown with reserve compressor(s) on standby
 - 3 - Powerex recommends using performance ratings in SCFM (Standard Cubic Feet per Minute) when sizing medical air systems.
 - 4 - dB(A) is shown with one compressor in reserve per NFPA99
 - 5 - 3 Year Limited Warranty

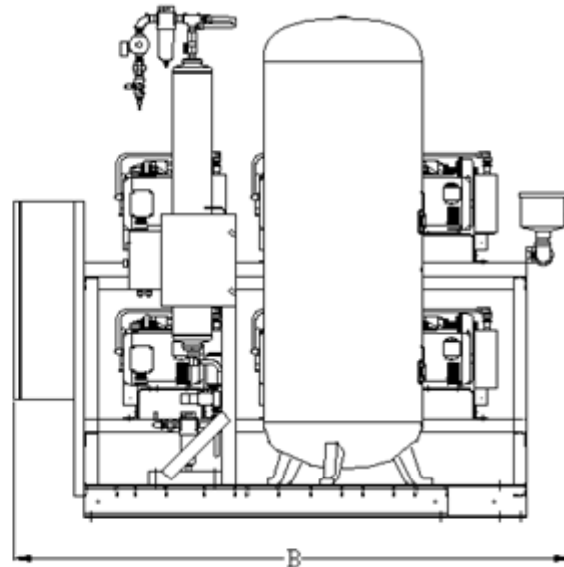
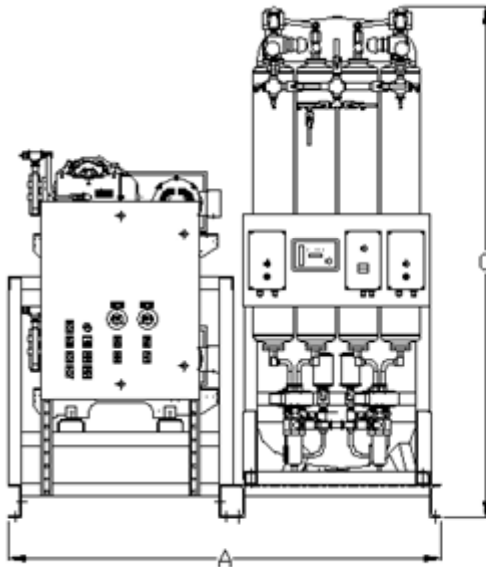
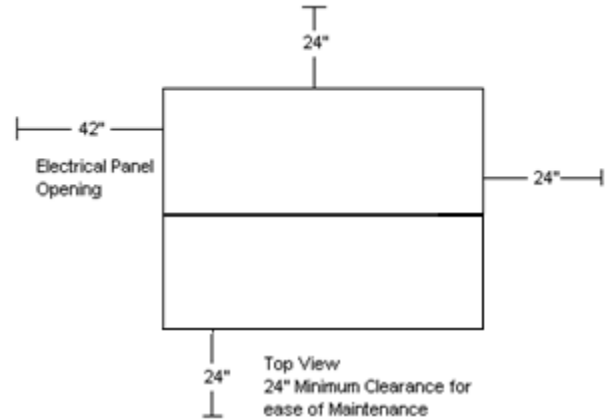
*NEC (National Electric Code) F.L.A./motor listed. Actual values are less than stated. If actual values are needed, please contact the factory.



Medical Scroll Skid Mount Package Duplex

Rev. 2/6/12

DIMENSIONS					
MODEL	DIM. A	DIM. B	DIM. C	Inlet	Outlet
MSD1504	66"	85"	78"	1-1/2"	3/4"



Medical Scroll Skid Mount Package - Duplex										
MODEL	HP	SCFM @ 100 PSIG ^(1,3)	NFPA System Capacity ¹	TANK SIZE	BTU/HR ²	dB(A) ⁴ LEVEL	F.L.A./MOTOR*			SYSTEM WEIGHT
							208V	230V	460V	
MSD1504	15	45.6	45.6	120 gal.	38,205	77	46.2	42	21	2,300

- Notes:
- 1- System Capacity is shown with one or more compressors in reserve per NFPA 99
 - 2 - BTU/HR Levels are shown with reserve compressor(s) on standby
 - 3 - Powerex recommends using performance ratings in SCFM (Standard Cubic Feet per Minute) when sizing medical air systems.
 - 4 - dB(A) is shown with one compressor in reserve per NFPA 99
 - 5 - 3 Year Limited Warranty

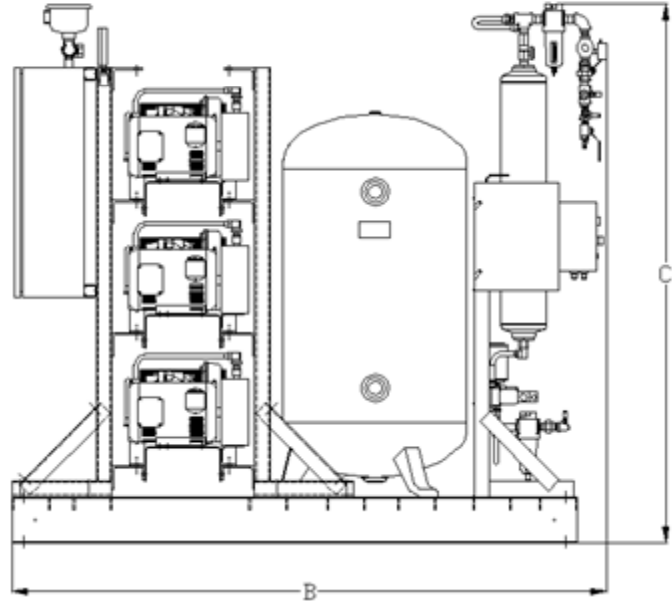
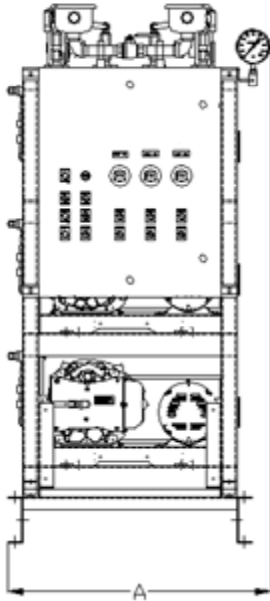
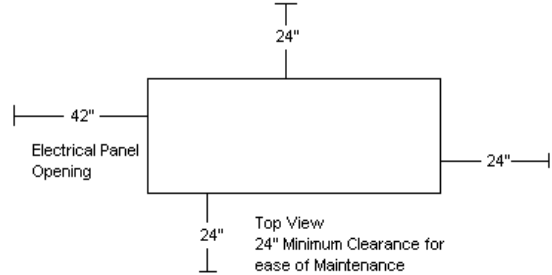
*NEC (National Electric Code) F.L.A./motor listed. Actual values are less than stated. If actual values are needed, please contact the factory.



Medical Scroll Skid Mounted Packages Triplex

Rev. 2/6/12

DIMENSIONS					
MODEL	DIM. A	DIM. B	DIM. C	Inlet	Outlet
MST0503	35"	78"	71"	1"	3/4"



Medical Scroll Skid Mount Package - Triplex										
MODEL	HP ¹	SCFM @ 100 PSIG ^(1,3)	NFPA System Capacity ¹	TANK SIZE	BTU/HR ²	dB(A) ⁴ LEVEL	F.L.A./MOTOR			SYSTEM WEIGHT
							208V	230V	460V	
MST0503	5	15.2	30.4	80 gal.	25,470	72	16.7	15.2	7.6	1,650

- Notes:
- 1- HP and System Capacity is shown with one or more compressors in reserve per NFPA 99
 - 2 - BTU/HR Levels are shown with reserve compressor(s) on standby
 - 3 - Powerex recommends using performance ratings in SCFM (Standard Cubic Feet per Minute) when sizing medical air systems.
 - 4 - dB(A) is shown with one compressor in reserve per NFPA99
 - 5 - 3 Year Limited Warranty

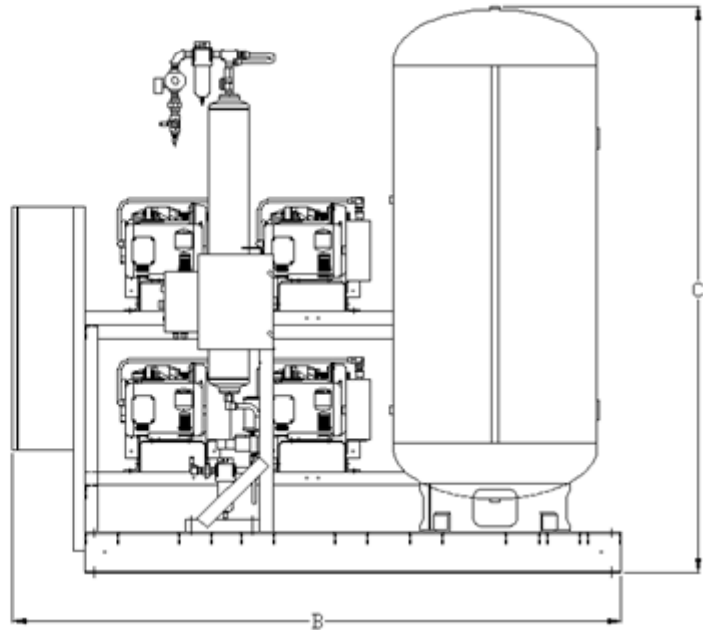
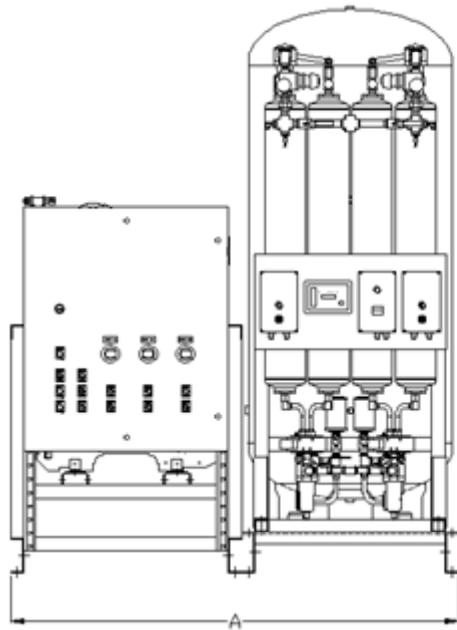
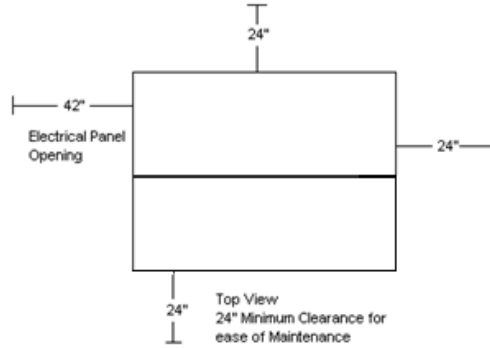
*NEC (National Electric Code) F.L.A./motor listed. Actual values are less than stated. If actual values are needed, please contact the factory.



Medical Scroll Skid Mounted Packages Triplex

Rev. 2/6/12

DIMENSIONS					
MODEL	DIM. A	DIM. B	DIM. C	Inlet	Outlet
MST1005	66"	90"	84"	1-1/2"	1"
MST1505	66"	90"	84"	2"	1-1/2"



Medical Scroll Skid Mount Package - Triplex										
MODEL	HP	SCFM @ 100 PSIG ^(1,3)	NFPA System Capacity ¹	TANK SIZE	BTU/HR ²	dB(A) ⁴ LEVEL	F.L.A./MOTOR			SYSTEM WEIGHT
							208V	230V	460V	
MST1005	10	30.4	60.8	200 gal.	50,940	75	30.8	28	14	2,800
MST1505	15	45.6	91.2	200 gal.	76,410	77	46.2	42	21	3,900

- Notes:
- 1- System Capacity is shown with one or more compressors in reserve per NFPA 99
 - 2- BTU/HR Levels are shown with reserve compressor(s) on standby
 - 3- Powerex recommends using performance ratings in SCFM (Standard Cubic Feet per Minute) when sizing medical air systems.
 - 4- dB(A) is shown with one compressor in reserve per NFPA 99
 - 5- 3 Year Limited Warranty

*NEC (National Electric Code) F.L.A./motor listed. Actual values are less than stated. If actual values are needed, please contact the factory.

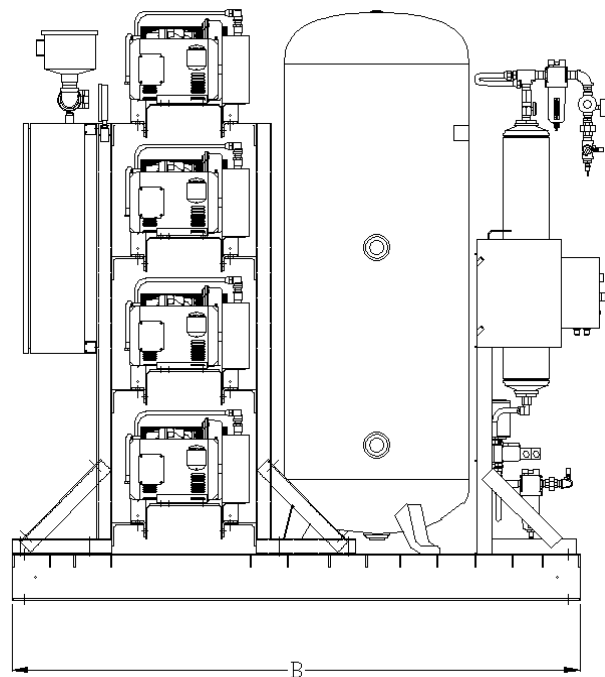
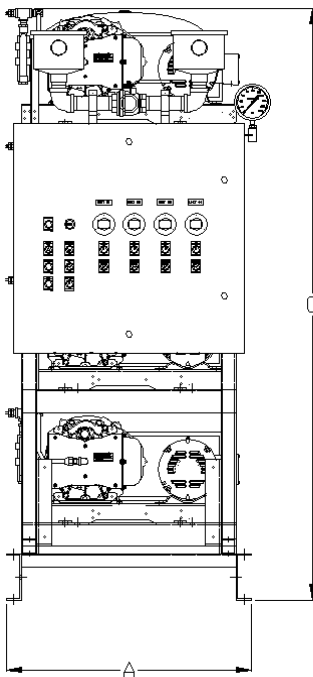
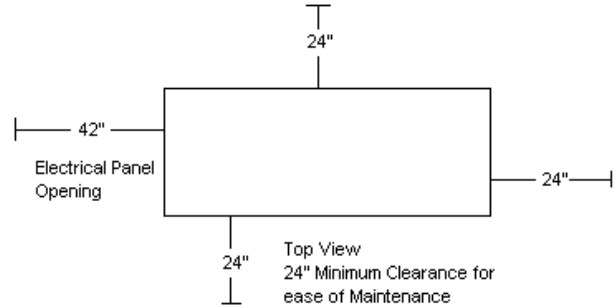


Medical Scroll Skid Mounted Packages

Quadplex

Rev. 2/8/12

DIMENSIONS					
MODEL	DIM. A	DIM. B	DIM. C	Inlet	Outlet
MSQ0504	36"	78"	79"	1-1/2"	3/4"



Medical Scroll Skid Mount Package - Quadplex										
MODEL	HP ¹	SCFM @ 100 PSIG ^(1,3)	NFPA System Capacity ¹	TANK SIZE	BTU/HR ²	dB(A) ⁴ LEVEL	F.L.A./MOTOR*			SYSTEM WEIGHT
							208V	230V	460V	
MSQ0504	5	15.2	45.6	120 gal.	38,190	72	16.7	15.2	7.6	1,800

- Notes:
- 1- HP and System Capacity is shown with one or more compressors in reserve per NFPA 99
 - 2 - BTU/HR Levels are shown with reserve compressor(s) on standby
 - 3 - Powerex recommends using performance ratings in SCFM (Standard Cubic Feet per Minute) when sizing medical air systems.
 - 4 - dB(A) is shown with one compressor in reserve per NFPA 99
 - 5 - 3 Year Limited Warranty

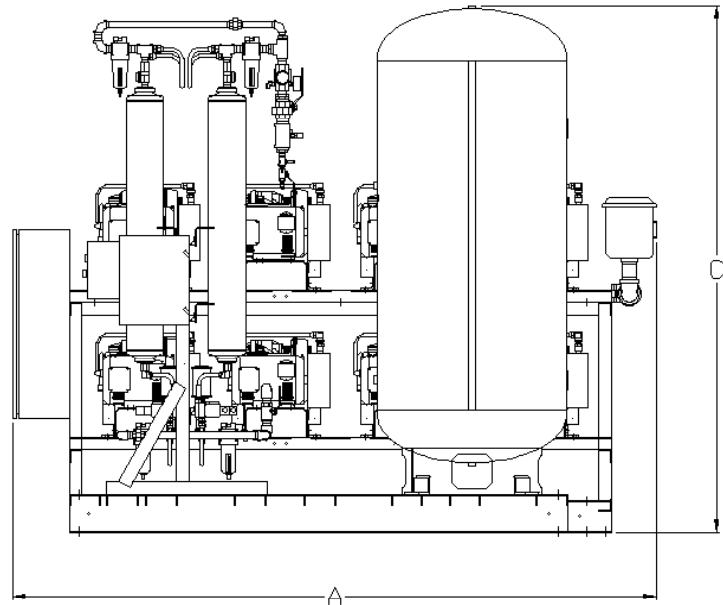
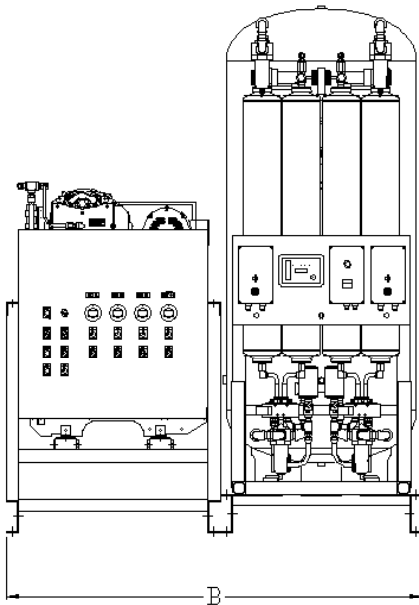
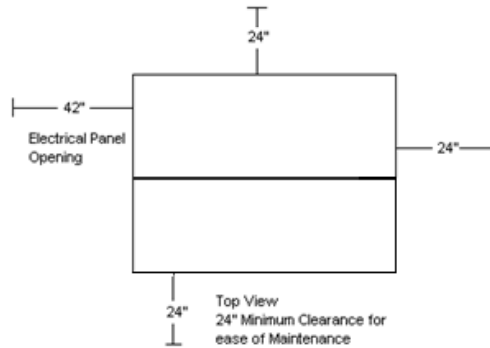
*NEC (National Electric Code) F.L.A./motor listed. Actual values are less than stated. If actual values are needed, please contact the factory.



Medical Scroll Skid Mounted Packages Quadplex

Rev. 2/6/12

DIMENSIONS					
MODEL	DIM. A	DIM. B	DIM. C	Inlet	Outlet
MSQ1005	104"	66"	84"	2"	1-1/2"
MSQ1505	104"	66"	84"	2"	1-1/2"



Medical Scroll Skid Mount Package - Quadplex										
MODEL	HP ¹	SCFM @ 100 PSIG ⁽³⁾	NFPA System Capacity ¹	TANK SIZE	BTU/HR ²	dB(A) ⁴ LEVEL	F.L.A./MOTOR*			SYSTEM WEIGHT
							208V	230V	460V	
MSQ1005	10	30.4	91.2	200 gal.	76,380	75	30.8	28	14	3,350
MSQ1505	15	45.6	136.8	200 gal.	114,570	77	46.2	42	21	4,200

- Notes:
- 1- HP and System Capacity is shown with one or more compressors in reserve per NFPA 99
 - 2- BTU/HR Levels are shown with reserve compressor(s) on standby
 - 3- Powerex recommends using performance ratings in SCFM (Standard Cubic Feet per Minute) when sizing medical air systems.
 - 4- dB(A) is shown with one compressor in reserve per NFPA99
 - 5- 3 Year Limited Warranty

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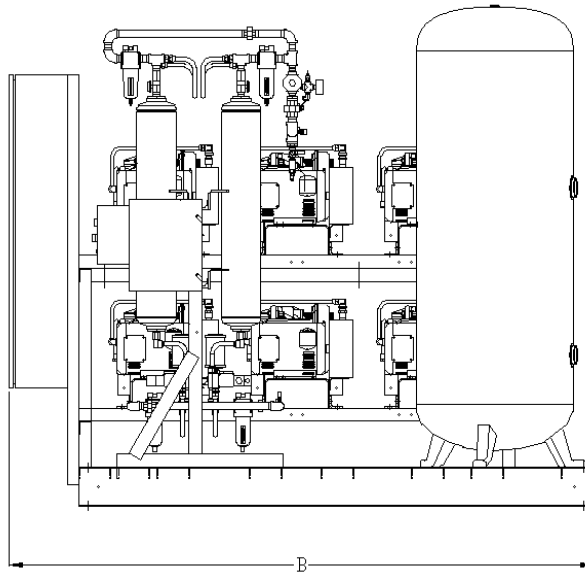
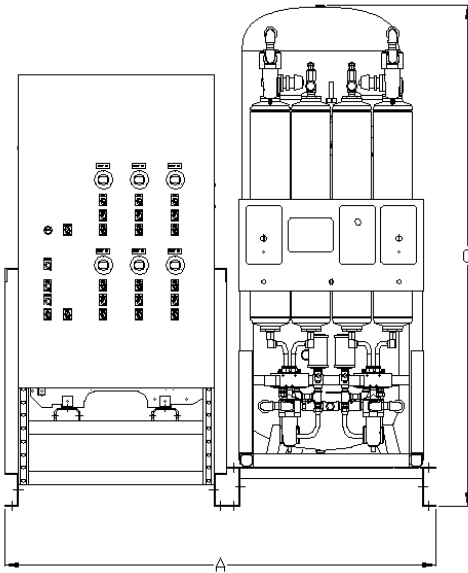
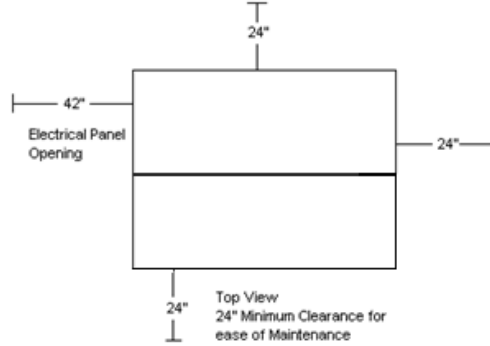


Medical Scroll Skid Mounted Packages

Multiplex

Rev. 2/8/12

DIMENSIONS					
MODEL	DIM. A	DIM. B	DIM. C	Inlet	Outlet
MSH0504	66"	88"	77"	1-1/2"	1-1/2"



Medical Scroll Skid Mount Package - Multiplex										
MODEL	HP ¹	SCFM @ 100 PSIG ^(1,3)	NFPA System Capacity ¹	TANK SIZE	BTU/HR ²	dB(A) ⁴ LEVEL	F.L.A./MOTOR*			SYSTEM WEIGHT
							208V	230V	460V	
MSH0504	5	15.2	76	120 gal.	63,675	79	16.7	15.2	7.6	3,650

- Notes:
- 1- HP and System Capacity is shown with one or more compressors in reserve per NFPA 99
 - 2- BTU/HR Levels are shown with reserve compressor(s) on standby
 - 3- Powerex recommends using performance ratings in SCFM (Standard Cubic Feet per Minute) when sizing medical air systems.
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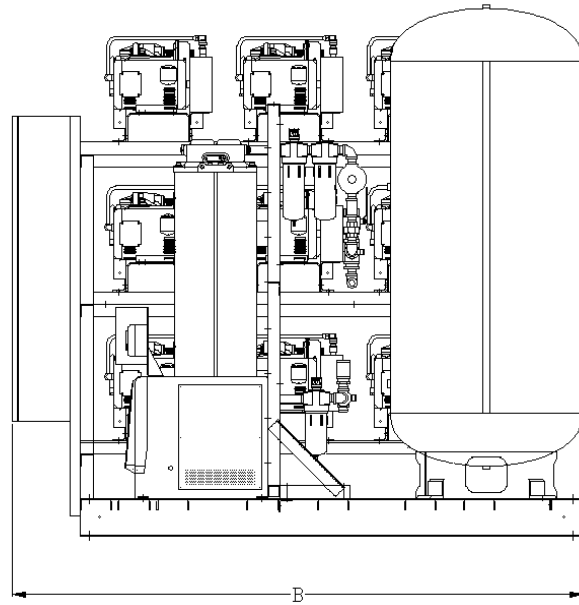
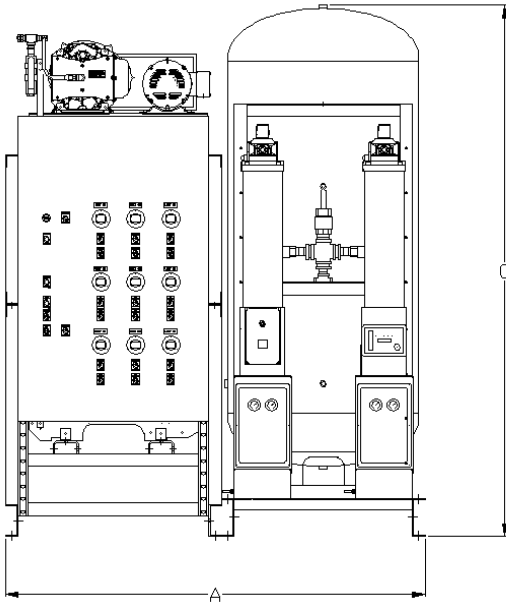
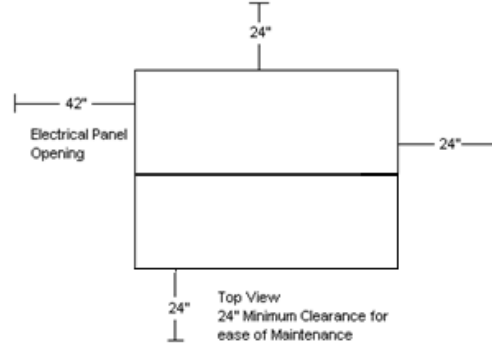


Medical Scroll Skid Mounted Packages

Multiplex

Rev. 2/8/12

DIMENSIONS					
MODEL	DIM. A	DIM. B	DIM. C	Inlet	Outlet
MSN0505	66"	88"	84"	2"	1-1/2"



Medical Scroll Skid Mount Package - Multiplex										
MODEL	HP ¹	SCFM @ 100 PSIG ^(1,3)	NFPA System Capacity ¹	TANK SIZE	BTU/HR ²	dB(A) ⁴ LEVEL	F.L.A./MOTOR*			SYSTEM WEIGHT
							208V	230V	460V	
MSN0505	5	15.2	121.6	200 gal.	101,880	81	16.7	15.2	7.6	4,050

- Notes:
- 1- HP and System Capacity is shown with one or more compressors in reserve per NFPA 99
 - 2- BTU/HR Levels are shown with reserve compressor(s) on standby
 - 3- Powerex recommends using performance ratings in SCFM (Standard Cubic Feet per Minute) when sizing medical air systems.
 - 4- dB(A) is shown with one compressor in reserve per NFPA 99
 - 5- 3 Year Limited Warranty

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