

Specification

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.

Oil-less 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 8,000 hours operation for 7.5 and 10 HP pumps, and rated for 10,000 hours operations for 2, 3, and 5 HP pumps.
- 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 8,000 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, a fan-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.
- A sight gauge.
- By-pass valves to allow tank isolation without system shutdown.

- An automatic electronic tank drain with manual override.
- The receiver shall be internally lined for corrosion resistance.

Service Slide

The service slide enables easy maintenance access to each pump and motor basemount without having to remove them from the system.

- Unique maintenance friendly base mount slide design.
- Allows safe access to important system components necessary for improved pump life.
- Allows faster component replacement time.

Motor Slide Base

Maintenance feature designed for easy adjustment of belt tension from the motor side on the basemount assembly.

- Robust single screw linear belt tension adjustment.
- Custom compact design.

Intake Filters

Every system has a remote inlet with one filter per pump. Each filter/compressor may be isolated to enable servicing. Only the compressor being serviced must be shutdown. 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.

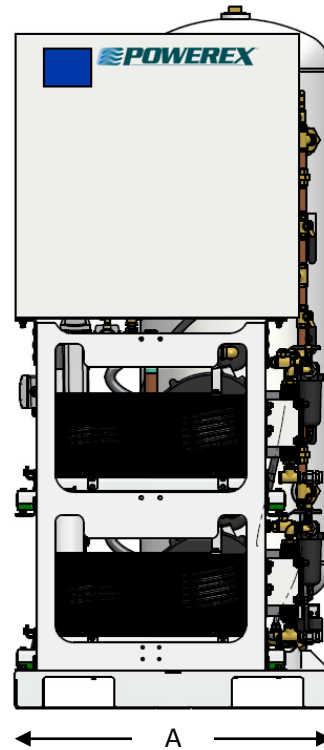
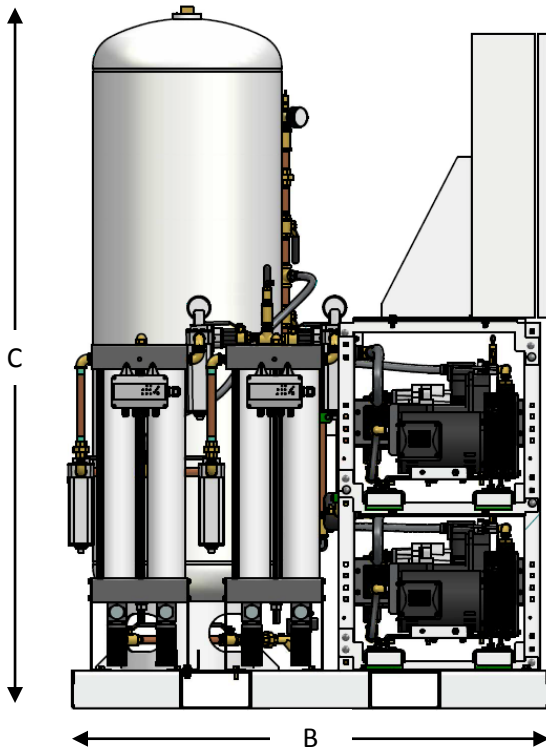
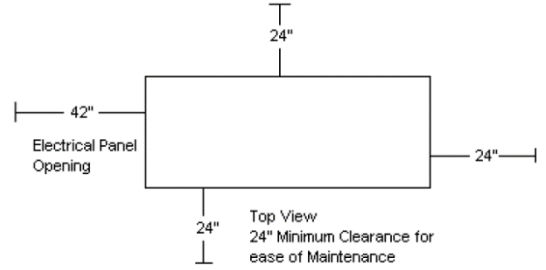
- The first stage of filtration shall include dual pre-filters with element change indicators and automatic condensate drains, installed up-stream of the air dryers.
- The second stage shall include dual particulate filters with element change indicators installed downstream of the air dryers.
- A dual 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.

Premium NFPA Control Panel

This 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 Premium NFPA Control Panel shall include a gateway server card and all features listed below:

- UL508A listed control panel in a NEMA 12 enclosure with the following accessories for each pump: a HOA 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:
- A color touch screen panel which displays the operating status of the unit. The touch screen will display pump status, pump faults, pump run hours, system pressure, system alarms and service alert notifications for the pumps, dryers, dew point and CO monitors.
- Building automation communication gateway with BacNet® protocol.
- Ethernet port for connection to BacNet® server or direct connection to facility Ethernet for viewing of system operations and status via device IP-address.
- PLC controller with control logic to start the lag compressor automatically if the lead compressor fails to operate, 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.
- 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.
- Dryer maintenance notifications and service alerts at set run-hour intervals.

Dimensions					
Model	Dim. A	Dim. B	Dim. C	Inlet	Outlet
MSD02A3	33.5"	50"	74"	1"	0.5"
MSD03A3	33.5"	50"	74"	1"	0.5"
MSD05A3	33.5"	50"	74"	1"	0.5"

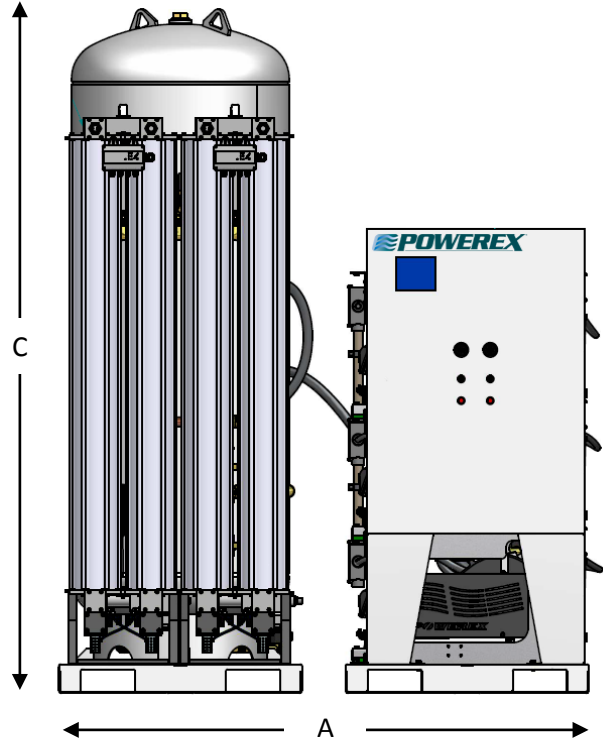
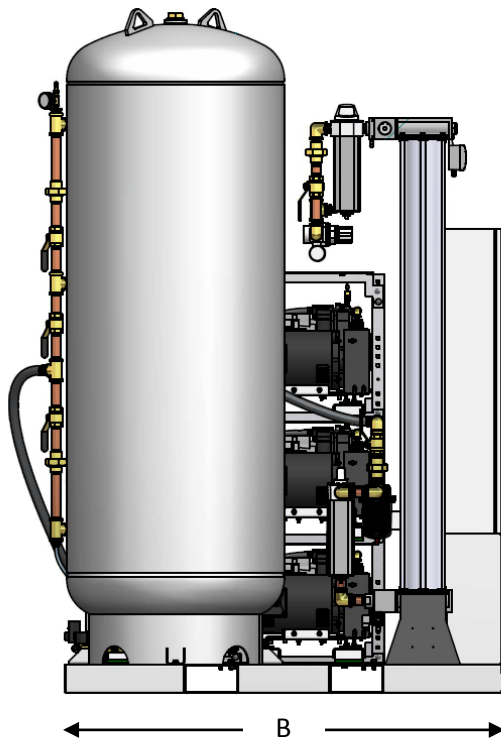
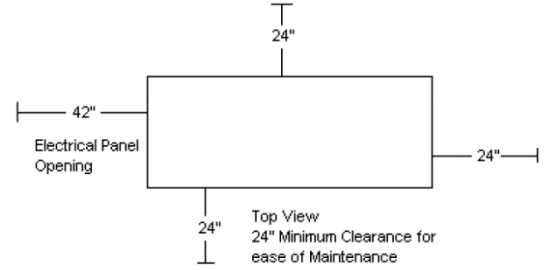


Medical Scroll Skidmount Package Duplex with Premium Controls										
Model	HP	ICFM @ 50 PSIG ^(1,6)	SCFM @ 50 PSIG ^(1,3)	Tank Size (gal)	BTU/Hr ⁽²⁾	dB(A) Level ⁽³⁾	System F.L.A.			System Weight (lbs)
							208V	230V	460V	
MSD02A3	2 (2)	6.8	6	80	5090	62	14.4	13.3	7.9	1050
MSD03A3	3 (2)	10.8	9.5	80	7635	66	19.1	17.4	9.7	1100
MSD05A3	5 (2)	18.4	16.6	80	12725	70	30	27.4	14.7	1200

Notes:

- 1 – ICFM and SCFM values @ 50 PSIG are shown with one compressor in reserve per NFPA 99.
- *Powerex recommends using performance ratings in SCFM (Standard Cubic Feet per Minute) when sizing medical air systems.
- *ICFM is standardly defined within the Medical Air Compressor Industry.
- 2 – BTU/Hr levels are shown with reserve pump(s) on standby.
- 3 – dB(A) levels are shown with one pump in reserve per NFPA 99.
- 4 – 3 Year Limited Warranty.
- 5 – Drawing is representative and not exact.

Dimensions					
Model	Dim. A	Dim. B	Dim. C	Inlet	Outlet
MSD10A4	73"	51"	75"	1.5"	1"
MSD10A5	73"	51"	83"	1.5"	1"
MSD10A6	73"	51"	95"	1.5"	1"
MSD15A4	73"	60"	75"	2"	1.5"
MSD15A5	73"	60"	83"	2"	1.5"
MSD15A6	73"	60"	95"	2"	1.5"

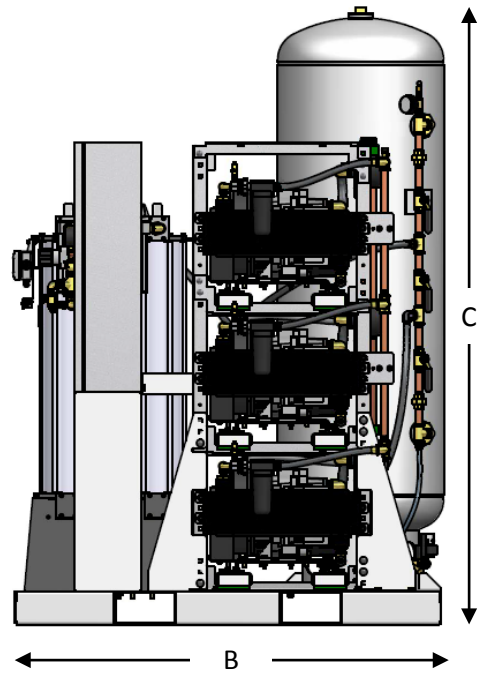
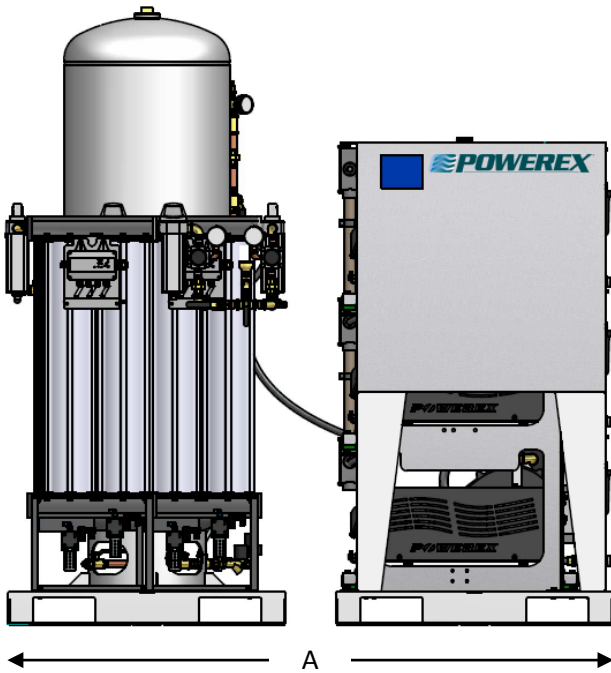
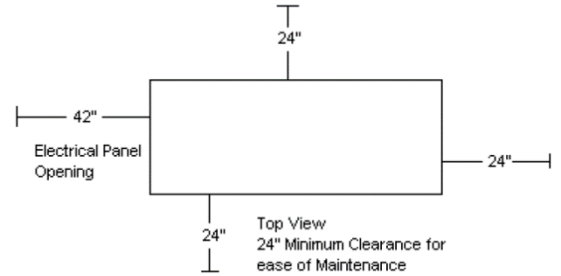


Medical Scroll Skidmount Package Duplex with Premium Controls										
Model	HP	ICFM @ 50 PSIG ^(1,6)	SCFM @ 50 PSIG ^(1,3)	Tank Size (gal)	BTU/Hr ⁽²⁾	dB(A) Level ⁽³⁾	System F.L.A.			System Weight (lbs)
							208V	230V	460V	
MSD10A4	10 (2)	34.1	31.6	120	25445	82	55	50	26	2150
MSD10A5	10 (2)	34.1	31.6	200	25445	76	55	50	26	2400
MSD10A6	10 (2)	34.1	31.6	240	25445	76	55	50	26	2450
MSD15A4	15 (2)	55.2	49.8	120	38175	78	86	78.2	40	2800
MSD15A5	15 (2)	55.2	49.8	200	38175	78	86	78.2	40	3050
MSD15A6	15 (2)	55.2	49.8	240	38175	78	86	78.2	40	3100

Notes:

- 1 – ICFM and SCFM values @ 50 PSIG are shown with one compressor in reserve per NFPA 99.
- *Powerex recommends using performance ratings in SCFM (Standard Cubic Feet per Minute) when sizing medical air systems.
- *ICFM is standardly defined within the Medical Air Compressor Industry.
- 2 – BTU/Hr levels are shown with reserve pump(s) on standby.
- 3 – dB(A) levels are shown with one pump in reserve per NFPA 99.
- 4 – 3 Year Limited Warranty.
- 5 – Drawing is representative and not exact.

Dimensions					
Model	Dim. A	Dim. B	Dim. C	Inlet	Outlet
MST03A3	73"	51"	74"	1.5"	1"
MST05A3	73"	51"	74"	1.5"	1"
MST05A4	73"	51"	75"	1.5"	1"

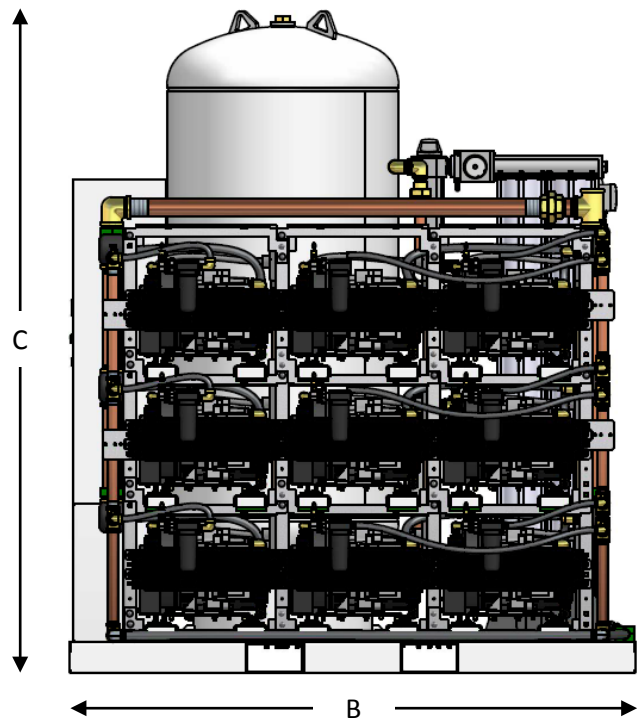
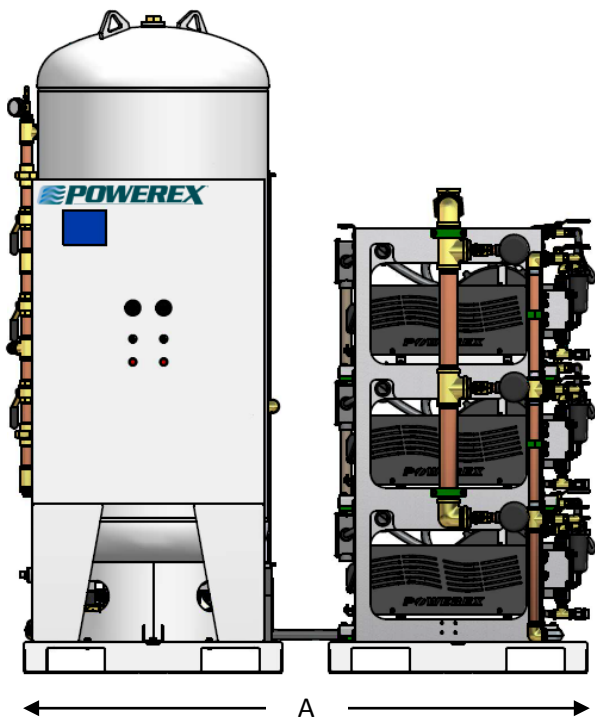
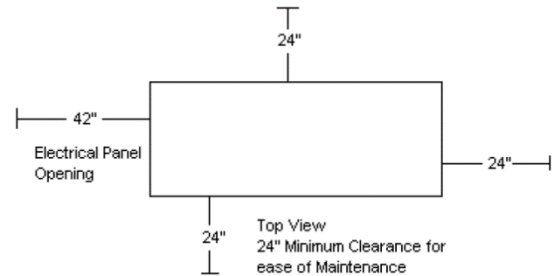


Medical Scroll Skidmount Package Triplex with Premium Controls										
Model	HP	ICFM @ 50 PSIG ^(1,6)	SCFM @ 50 PSIG ^(1,3)	Tank Size (gal)	BTU/Hr ⁽²⁾	dB(A) Level ⁽³⁾	System F.L.A.			System Weight (lbs)
							208V	230V	460V	
MST03A3	3 (3)	21.6	19	80	11455	72	27.9	25.4	13.7	1400
MST05A3	5 (3)	36.8	33.2	80	25450	75	44	40.1	21	1750
MST05A4	5 (3)	36.8	33.2	120	25450	75	44	40.1	21	1800

Notes:

- 1 – ICFM and SCFM values @ 50 PSIG are shown with one compressor in reserve per NFPA 99.
 - *Powerex recommends using performance ratings in SCFM (Standard Cubic Feet per Minute) when sizing medical air systems.
 - *ICFM is standardly defined within the Medical Air Compressor Industry.
- 2 – BTU/Hr levels are shown with reserve pump(s) on standby.
- 3 – dB(A) levels are shown with one pump in reserve per NFPA 99.
- 4 – 3 Year Limited Warranty.
- 5 – Drawing is representative and not exact.

Dimensions					
Model	Dim. A	Dim. B	Dim. C	Inlet	Outlet
MST10A4	73"	60"	75"	2"	1.5"
MST10A5	73"	60"	83"	2"	1.5"
MST15A4	73"	85"	75"	2"	1.5"
MST15A5	73"	85"	83"	2"	1.5"
MST15A6	73"	85"	95"	2"	1.5"

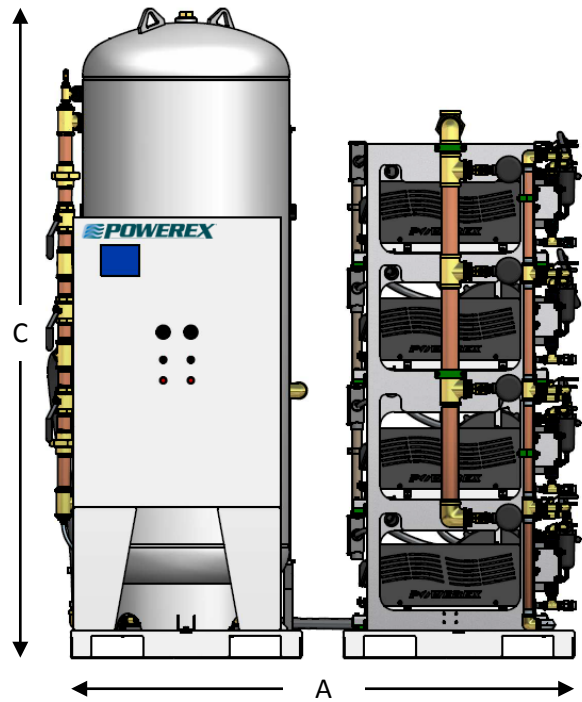
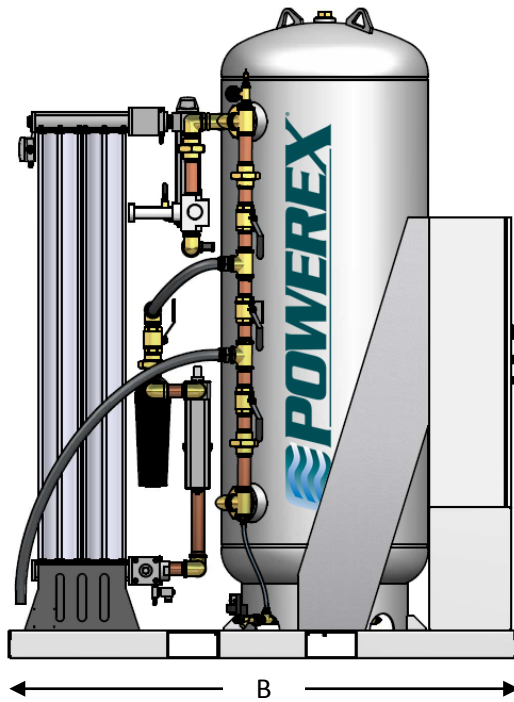
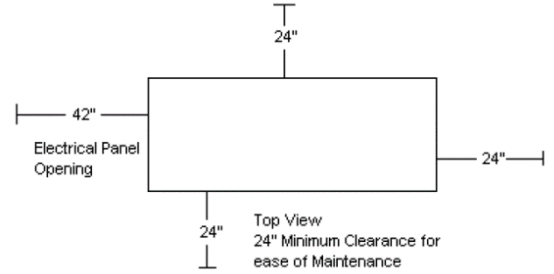


Medical Scroll Skidmount Package Triplex with Premium Controls										
Model	HP	ICFM @ 50 PSIG ^(1,6)	SCFM @ 50 PSIG ^(1,3)	Tank Size (gal)	BTU/Hr ⁽²⁾	dB(A) Level ⁽³⁾	System F.L.A.			System Weight (lbs)
							208V	230V	460V	
MST10A4	10 (3)	73.6	66.4	120	50900	78	86	78.2	40	3000
MST10A5	10 (3)	73.6	66.4	200	50900	78	86	78.2	40	3200
MST15A4	15 (3)	110.4	99.6	120	76350	80	128	116.3	59	3970
MST15A5	15 (3)	110.4	99.6	200	76350	80	128	116.3	59	4200
MST15A6	15 (3)	110.4	99.6	240	76350	80	128	116.3	59	4300

Notes:

- 1 – ICFM and SCFM values @ 50 PSIG are shown with one compressor in reserve per NFPA 99.
- *Powerex recommends using performance ratings in SCFM (Standard Cubic Feet per Minute) when sizing medical air systems.
- *ICFM is standardly defined within the Medical Air Compressor Industry.
- 2 – BTU/Hr levels are shown with reserve pump(s) on standby.
- 3 – dB(A) levels are shown with one pump in reserve per NFPA 99.
- 4 – 3 Year Limited Warranty.
- 5 – Drawing is representative and not exact.

Dimensions					
Model	Dim. A	Dim. B	Dim. C	Inlet	Outlet
MSQ05A4	73"	51"	75"	1.5"	1"
MSQ10A5	73"	60"	83"	2"	1.5"
MSQ10A6	73"	60"	95"	2"	1.5"
MSQ15A5	73"	85"	83"	2"	2"
MSQ15A6	73"	85"	95"	2"	2"

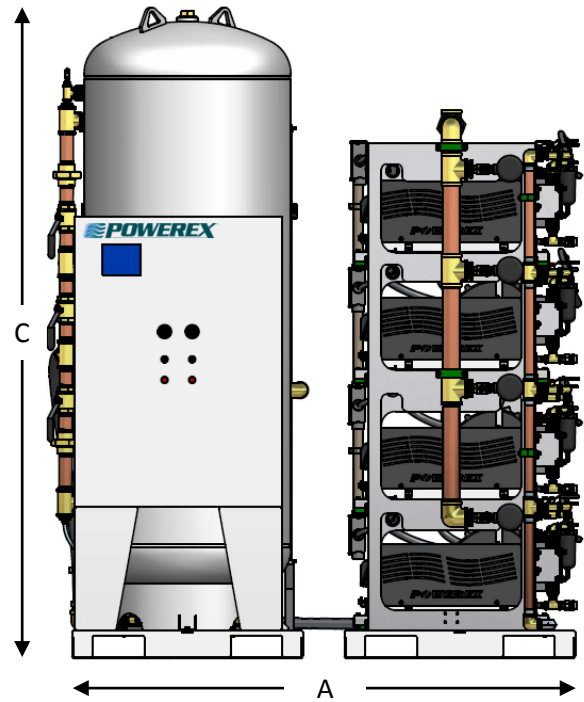
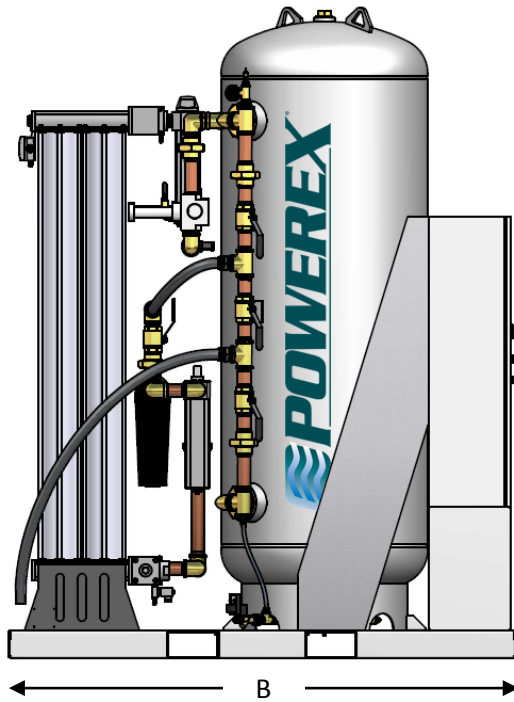
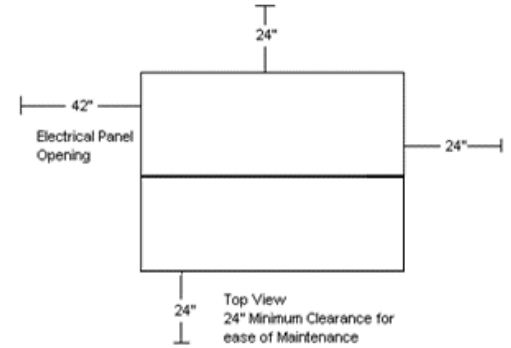


Medical Scroll Skidmount Package Quadplex with Premium Controls										
Model	HP	ICFM @ 50 PSIG ^(1,6)	SCFM @ 50 PSIG ^(1,3)	Tank Size (gal)	BTU/Hr ⁽²⁾	dB(A) Level ⁽³⁾	System F.L.A.			System Weight (lbs)
							208V	230V	460V	
MSQ05A4	5 (4)	55.2	49.8	120	38175	77	58	52.8	27.3	2200
MSQ10A5	10 (4)	110.4	99.6	200	76350	80	114	103.6	52.6	3800
MSQ10A6	10 (4)	110.4	99.6	240	76350	80	114	103.6	52.6	3900
MSQ15A5	15 (4)	165.6	149.4	200	114525	82	170	154.4	78	5600
MSQ15A6	15 (4)	165.6	149.4	240	114525	82	170	154.4	78	5700

Notes:

- 1 – ICFM and SCFM values @ 50 PSIG are shown with one compressor in reserve per NFPA 99.
- *Powerex recommends using performance ratings in SCFM (Standard Cubic Feet per Minute) when sizing medical air systems.
- *ICFM is standardly defined within the Medical Air Compressor Industry.
- 2 – BTU/Hr levels are shown with reserve pump(s) on standby.
- 3 – dB(A) levels are shown with one pump in reserve per NFPA 99.
- 4 – 3 Year Limited Warranty.
- 5 – Drawing is representative and not exact.

Dimensions					
Model	Dim. A	Dim. B	Dim. C	Inlet	Outlet
MSP15A5	73"	85"	83"	2"	2"
MSP15A6	73"	85"	95"	2"	2"

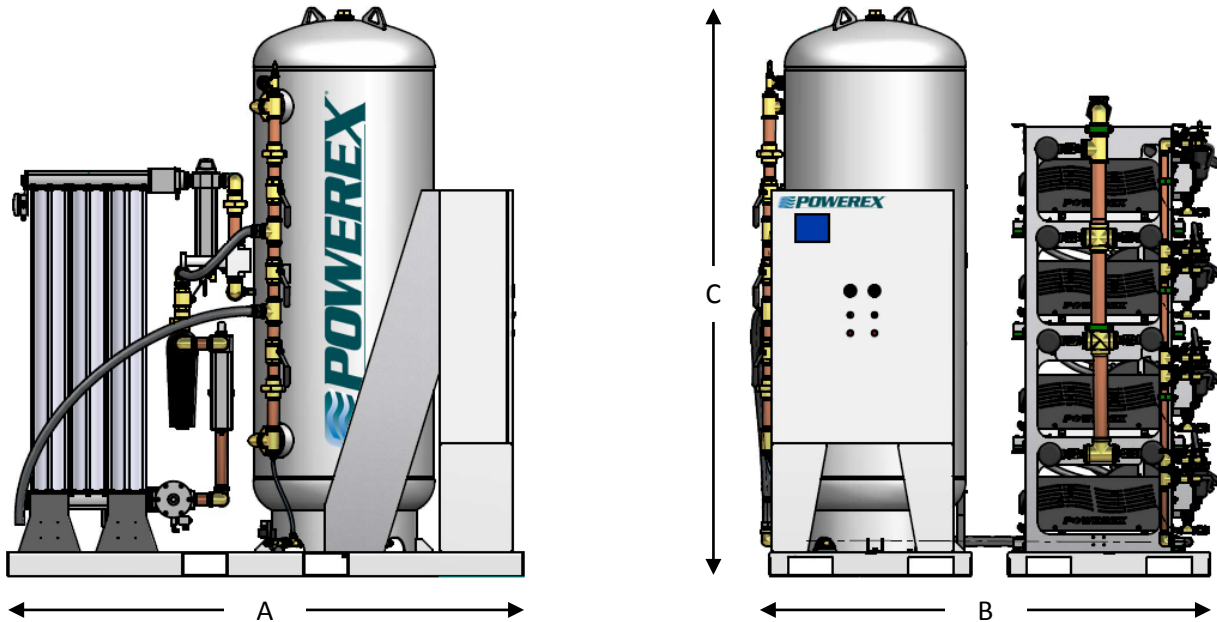
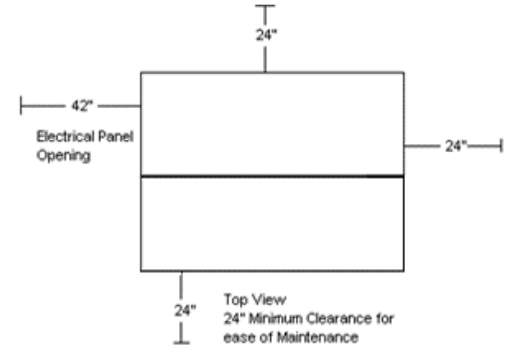


Medical Scroll Skidmount Package Pentaplex with Premium Controls										
Model	HP	ICFM @ 50 PSIG ^(1,6)	SCFM @ 50 PSIG ^(1,3)	Tank Size (gal)	BTU/Hr ⁽²⁾	dB(A) Level ⁽³⁾	System F.L.A.			System Weight (lbs)
							208V	230V	460V	
MSP15A5	15 (5)	220.8	199.2	200	152700	83	212	192.5	97	6500
MSP15A6	15 (5)	220.8	199.2	240	152700	83	212	192.5	97	6700

Notes:

- 1 – ICFM and SCFM values @ 50 PSIG are shown with one compressor in reserve per NFPA 99.
- *Powerex recommends using performance ratings in SCFM (Standard Cubic Feet per Minute) when sizing medical air systems.
- *ICFM is standardly defined within the Medical Air Compressor Industry.
- 2 – BTU/Hr levels are shown with reserve pump(s) on standby.
- 3 – dB(A) levels are shown with one pump in reserve per NFPA 99.
- 4 – 3 Year Limited Warranty.
- 5 – Drawing is representative and not exact.

Dimensions					
Model	Dim. A	Dim. B	Dim. C	Inlet	Outlet
MSH05A4	73"	60"	75"	2"	1.5"
MSH05A5	73"	60"	83"	2"	1.5"
MSH10A6	73"	85"	95"	2"	2"
MSH15A5	112"	85"	83"	2" x2	2"
MSH15A6	112"	85"	95"	2" x2	2"

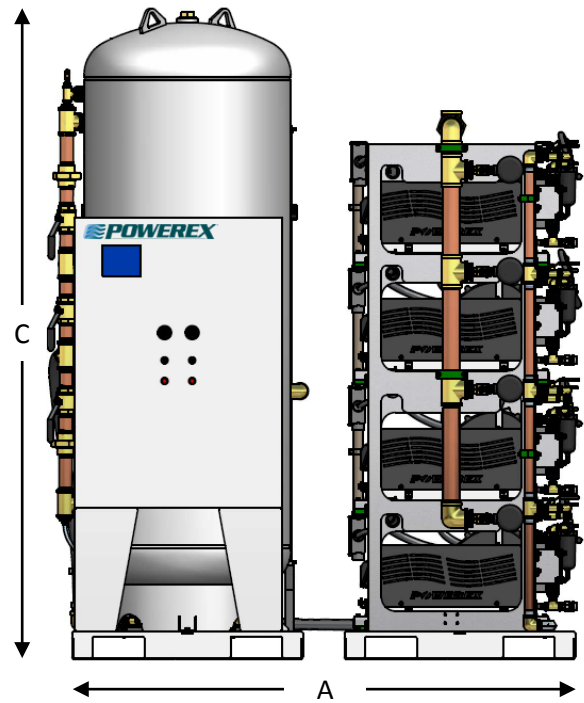
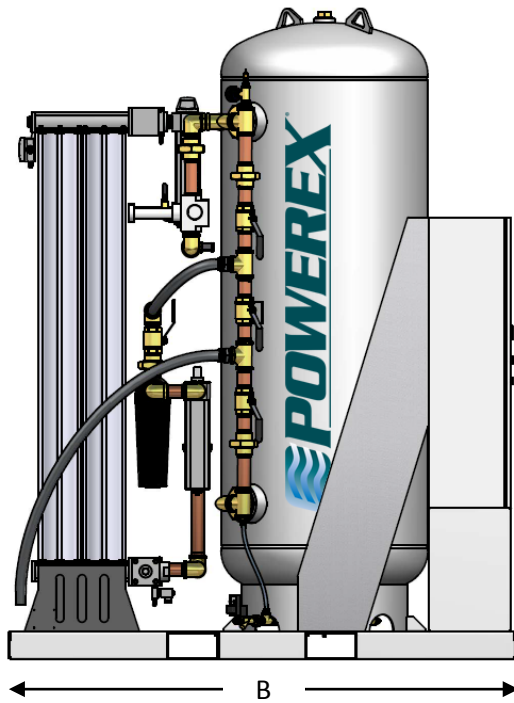
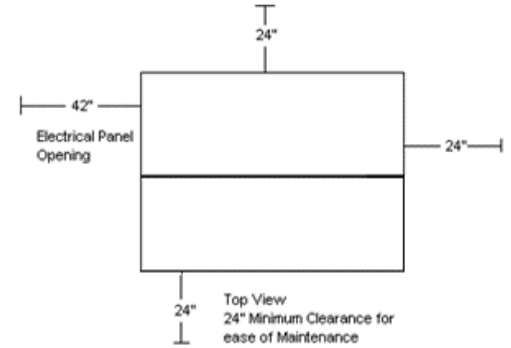


Medical Scroll Skidmount Package Hexaplex with Premium Controls										
Model	HP	ICFM @ 50 PSIG ^(1,6)	SCFM @ 50 PSIG ^(1,3)	Tank Size (gal)	BTU/Hr ⁽²⁾	dB(A) Level ⁽³⁾	System F.L.A.			System Weight (lbs)
							208V	230V	460V	
MSH05A4	5 (6)	92	83	120	63625	78	86	78.2	40	3000
MSH05A5	5 (6)	92	83	200	63625	78	86	78.2	40	3200
MSH10A6	10 (6)	184	166	240	114525	82	170	154.4	78	5700
MSH15A5	15 (6)	276	249	200	190875	84	254	230.6	115.9	7750
MSH15A6	15 (6)	276	249	240	190875	84	254	230.6	115.9	7850

Notes:

- 1 – ICFM and SCFM values @ 50 PSIG are shown with one compressor in reserve per NFPA 99.
- *Powerex recommends using performance ratings in SCFM (Standard Cubic Feet per Minute) when sizing medical air systems.
- *ICFM is standardly defined within the Medical Air Compressor Industry.
- 2 – BTU/Hr levels are shown with reserve pump(s) on standby.
- 3 – dB(A) levels are shown with one pump in reserve per NFPA 99.
- 4 – 3 Year Limited Warranty.
- 5 – Drawing is representative and not exact.

Dimensions					
Model	Dim. A	Dim. B	Dim. C	Inlet	Outlet
MSN05A5	73"	85"	83"	2"	1.5"



Medical Scroll Skidmount Package Multiplex with Premium Controls										
Model	HP	ICFM @ 50 PSIG ^(1,6)	SCFM @ 50 PSIG ^(1,3)	Tank Size (gal)	BTU/Hr ⁽²⁾	dB(A) Level ⁽³⁾	System F.L.A.			System Weight (lbs)
							208V	230V	460V	
MSN05A5	5 (9)	147.2	132.8	200	101880	80	128	116.3	59	4750

Notes:

- 1 – ICFM and SCFM values @ 50 PSIG are shown with one compressor in reserve per NFPA 99.
*Powerex recommends using performance ratings in SCFM (Standard Cubic Feet per Minute) when sizing medical air systems.
*ICFM is standardly defined within the Medical Air Compressor Industry.
- 2 – BTU/Hr levels are shown with reserve pump(s) on standby.
- 3 – dB(A) levels are shown with one pump in reserve per NFPA 99.
- 4 – 3 Year Limited Warranty.
- 5 – Drawing is representative and not exact.