POWEREX® MEDICAL

Laboratory Scroll Compressor System
with Premium Control Panel

Specification

General

The Powerex Laboratory Open Scroll Air Compressor System is designed to provide clean, dry air for applications where the quality of the compressed air is critical. The standard unit is rated for a maximum of 145 PSIG. Each system is completely tested before shipment and includes:

- Multiple oil-less scroll air compressors and associated equipment
- Corrosion resistant air receiver
- Desiccant air dryers with purge control
- Control panel
- Dew point monitor

Open Scroll Air Compressor System

The package shall include multiple oil-less scroll air compressors and associated equipment. 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. The rotary design shall not require any inlet or exhaust valves and shall be rated for 100% continuous duty.

Tip seals shall be of composite PTFE material and be rated for 8,000 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 8,000 run hours. Compressors shall have an integral radial flow fan for cooling.

Each compressor shall have flexible connectors on intake and discharge, two discharge check valves, and a high discharge temperature shut down switch.

An air-cooled aftercooler is provided with a dedicated cooling fan to provide a maximum approach temperature of 15 degrees F above ambient.

Unloader valve is provided on the discharge for loadless startup and shutdown.

Each compressor module shall have a safety relief valve, an isolation valve, and a moisture separator with automatic drain.

Motor

Each compressor shall be belt driven by an ODP, NEMA construction motor. OSHA approved belt guards 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.
- A sight gauge
- 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 pump/motor assembly.

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

Premium Control Panel

The control system provides automatic lead/lag sequencing and automatic alternation of all compressors to equalize the amount of usage among the available compressors. The Premium Control Panel shall include additional 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 indicator.
- Motor soft-starters provide improved torque control on pumps during start-up and shutdown.
- High resolution, color touch screen HMI 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, and dew point monitor.
- PLC controller with control logic to start the lag compressor automatically if the lead compressor fails to operate, a low system pressure alarm with visual and audible alarms, and redundant control circuit transformers with visual indication of a main transformer failure.
- Integrated dew point monitor. The touch screen will display dew point readings and provide audible and visual high dew point alarms.
- Ambient temperature monitoring with alert/alarm, and data logging capabilities.
- Dryer maintenance notifications and service alerts at set run- hour intervals.
- BacNet/IP communication via Ethernet port.
- Dry contacts on a labeled terminal strip for remote alarm monitoring and an acknowledge pushbutton for horn silencing.

Plex Isolation

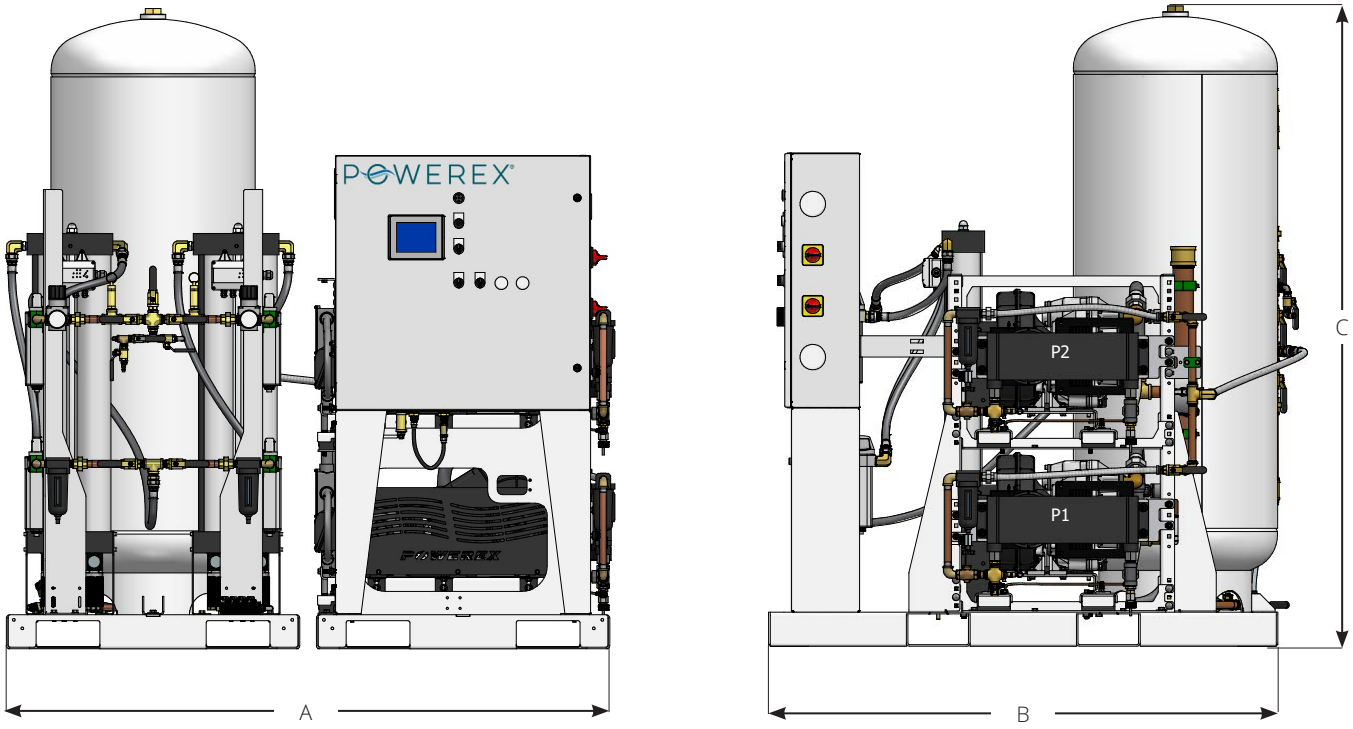
Plex Isolation provides improved safety during maintenance operations. Each plex is provided with a disconnect located on the side of the control panel. With the disconnect in the off position, the specific plex is electrically isolated from the system, with incoming power and control voltage disconnected. The alarms related to the isolated plex are disabled until electricity is restored.

Air Purification Package

The air purification package shall consist of the following: dual desiccant air dryers, dual filter and regulator bank with sample ports, and dew point monitor with alarms, and all bypass piping. Piping to be brass, stainless, or type K copper, and cleaned for medical air use. All components shall be mounted piped and wired to the air receiver.

Base Model Configuration

Dimensions					
Model	Dim. A	Dim. B	Dim. C	Inlet	Outlet
LSD15C5	71.0″	59.9″	81.9″	3.0″	1.5″
LSD20C5	71.0″	59.9″	81.9″	3.0″	1.5″



Notes:
- Allow a minimum of 36″ in front of control panels for maintenance and ventilation. All other sides require 24″ clearance.

Laboratory Scroll Compressor System*									
Model	HP	SCFM @ 145 PSIG / *100 PSIG	Tank Size (gal)	BTU/Hr	dB(A) Level	System F.L.A.			System Weight (lbs)
						208V	230V	460V	
LSD15C5	15(2)	67.2	200	76,334	77	80	71.2	37	2675
LSD20C5	20(2)	124.8*	200	101,778	79	108	98	50	3125

Notes:
*Table specifications are defined at sea level conditions with all pumps in operation. Consult factory for installations above 3,000 ft.