



Medical Air Systems  
Product Selection Guide



Oil-less Scroll...

Oil-less Reciprocating...

Enclosed Scroll...

## WHY POWEREX?

### **SERVICE**

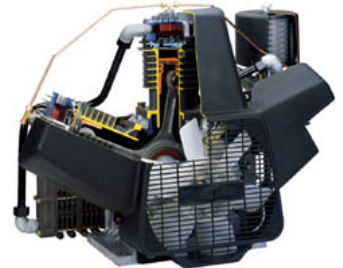
Powerex has an extensive network of trained sales and service dealers—over 220 authorized service centers throughout the United States, Canada, the Middle East, Central and South Americas.

In order to maintain a high level of service, we offer our distributors the chance to participate in our in-house training sessions to be up-to-date on our product offerings, installation and start-up procedures and troubleshooting solutions.

### **ENGINEERING**

Due to our vertical integration and full in-house engineering staff, Powerex has the ability to customize both electrical control panels as well as the mechanical portion of the system to meet a wide variety of customer needs.

Thanks to our continuous process improvement policy and how easily our Sales, Customer Service, Engineering and Production teams can communicate with each other and our end customers, we are constantly figuring out ways to improve our current products and add new products to our standard offerings.



### **INNOVATION**

Powerex was the first company to package NFPA 99 compliant scroll systems. Today, we design and manufacture multiple NFPA 99 compliant product lines—Vacuum, Air, and Instrument Air.

We were the first company to utilize composite piston technology, now standard on all Powerex reciprocating compressors. Powerex also introduced the first dry scroll to the US oil-less compressor market in 1989. The scroll pump's completely dry compressor chamber along with the low noise and minimal vibration invites applications or locations not considered with reciprocating compressors.

### **QUALITY**

Powerex is a highly integrated operation where we not only assemble systems, but we also manufacture many of the major components. From compressors, UL control panels, desiccant dryers, monitors to air receivers, we control quality at every stage of design and manufacturing. All of our facilities are ISO 9001 certified.

Unlike our competition, we have used the same compressor brand for decades and also retain the same company ownership since our inception. This allows us to maintain quality and provide consistency in our product offerings year after year.

## Medical Air System Design

**Powerex has multiple system configuration options to meet your specification.**

**Three configuration types:**

- Skid Mount
- Medical Enclosed Scroll
- Horizontal Tank Mount

- All systems are fully compliant with the latest edition of NFPA 99
- Includes:
  - Multiple compressors
  - ASME receiver
  - UL listed control panel (HMI, PBMI or Basic)\*
  - Air purification system
  - Carbon monoxide monitor
  - Dew point monitor
  - All interconnecting piping and wiring
  - Vibration isolation pads and flex connectors
- Manufactured in ISO 9001 certified facilities

## **Why Medical Enclosed Scroll?**

The sound enclosure cabinet used on our medical enclosed scroll air systems helps reduce noise levels and allows the compressors to be installed right at the point of use!

**Skid Mount Configuration**



**Horizontal Tank Mount Configuration**



**Medical Enclosed Scroll Configuration**



## Control Panel Options: HMI, PBMI or Basic

**Powerex offers three different control panel options for our Medical Air Systems—HMI controls as our standard and optional PBMI or Basic controls\*.**

**Standard HMI Control Panel:**

- PLC controller and 6" color HMI (Human Machine Interface) touch screen displays the operating status of the unit
- UL508A listed and labeled, NEMA 4/12 enclosure
- Visual and audible alarms for:
  - System overload trip
  - High temperature conditions
  - Service intervals
- Panel door includes:
  - Audible and visual alarms
  - HOA switch for each pump
  - 3-position dryer switch
- Dryer maintenance notifications at service intervals
- Integrated dew point and carbon monoxide monitors
  - Dew point and CO readings displayed on touch screen
  - Audible and visual high dew point and CO alarms



**Optional PBMI Control Panel:**

- All features of the standard HMI control panel
- Building automation gateway with BacNet® protocol
- Email notifications for alarms and service alerts

**Powerex Building Management Integrator (PBMI)**



**Optional Basic Control Panel:**

- UL508A listed and labeled, NEMA 12 enclosure
- Timed lead/lag compressor alternation
- Reserve compressor in use alarm—visual and audible
- Redundant control circuit transformers,
- Dry contacts for remote alarm monitoring
- Each compressor provided with:
  - Hand/Off/Auto selector switch
  - Magnetic starter with 3 leg overload protection
  - High temperature shutdown - visual and audible
  - Hour meter
  - Compressor run light
- Dew point monitor with LCD dew point display
- Carbon monoxide monitor with LCD display of CO concentrations

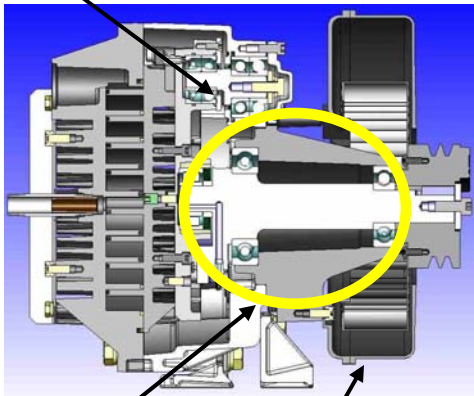
\* Control panel options vary per system. Please consult your Sales Representative.

## Oil-Less Scroll Technology



Powerex introduced the first dry scroll to the US oil-less compressor market in 1989. Our technology and expertise in clean, dry air systems is unmatched. Powerex manufactures compressors, air receivers, control panels, air dryers, dew point monitors, and more, to provide a total system approach to your air compressor needs. All facilities are ISO9001 registered so you can be assured of the highest quality. The enclosed scroll compressors feature compact footprints, energy efficient operation, low maintenance, and environmentally friendly design, all in one complete package. These scroll pumps are used in our medical scroll multiplex systems and our medical scroll enclosure systems.

Patented grease-able pin crank bearings



Cast Iron

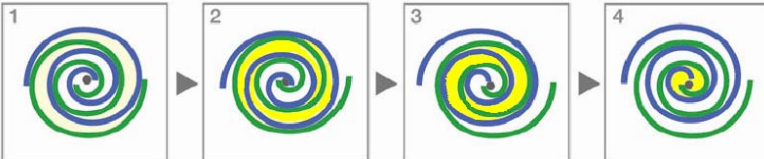
High flow cooling fan

### TECHNOLOGY AND INNOVATION

The best ideas seem so simple. The rotary design has few moving parts making it reliable and easier to maintain. The self lubricating tip seals, and absence of a gearbox means the pump is truly 100% oil free.

As the leaders in scroll pump technology, our latest design incorporates several innovative features:

- Main bearings are housed in durable cast iron instead of aluminum which prevents fretting and premature failure of the bearing race. This pump can be operated at 100% duty with confidence.
- A patented bearing re-grease feature also allows maintenance from the front side of the pump.
- The patented tip seal design yields the highest flow rates and longevity of any other dry scroll compressor.
- The improved efficiency and cooling results in lower operating temperatures.
- Extremely low vibration



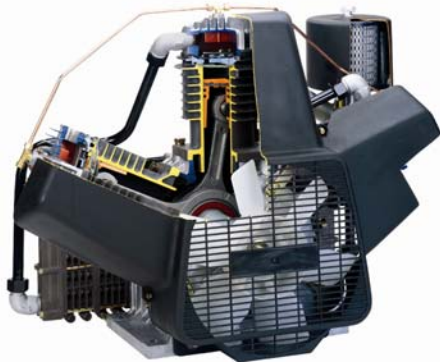
### COMPRESSION PRINCIPLE

As the orbiting scroll orbits from No. 1 to No. 4 position, a crescent-shaped cavity is gradually reduced, compressing the air and exhausting it through the final discharge point at the center.

## Oil-Less Reciprocating Piston Technology

### TECHNOLOGY AND INNOVATION

We were the first company to utilize composite piston technology, now standard on Powerex oil-less reciprocating compressors. This self-lubricating composite piston technology increases ring life and reduces temperature providing reliability for years to come. Our oil-less reciprocating compressors are single stage 1 through 3 HP and two stage 5 through 15 HP. These oil-less reciprocating piston compressors are used on our medical reciprocating package systems and our medical reciprocating tankmount duplex systems



Features and benefits include:

- No oil anywhere
- Composite piston reduces bearing heat
- Dual cooling flywheel and fan
- Corrosion resistant coating extends valve and ring life
- NFPA 99 compliant

## Enclosed Scroll Models

Model	SCFM @ 50 PSIG*	HP	Tank (Gal.)
<b>Duplex Systems</b>			
MSED1003	33.2	10 (2)	80
MSED1503	49.8	15 (2)	80
MSED2005	66.4	20 (2)	200
MSED3006	99.6	30 (2)	240
MSED4006	132.8	40 (2)	240
<b>Triplex Systems</b>			
MSET1003	66.4	10 (3)	80
MSET1505	99.6	15 (3)	200
MSET2006	132.8	20 (3)	240
MSET3006	199.2	30 (3)	240
MSET4006	265.6	40 (3)	240
<b>Quadplex Systems</b>			
MSEQ1506	149.4	15 (4)	240
MSEQ2006	199.2	20 (4)	240
MSEQ3007	298.8	30 (4)	400
MSEQ4007	398.4	40(4)	400



**MSE 40 HP Module**

## Medical Scroll Multiplex Systems (With HMI, PBMI or Basic Controls)

Model	SCFM @ 50 PSIG*	HP	Tank (Gal.)
<b>Duplex Systems</b>			
MTSD0303	9.5	3 (2)	80 H
MTSD0503	16.6	5 (2)	80 H
MSD0203	6.0	2 (2)	80 V
MSD0303	9.5	3 (2)	80 V
MSD0503	16.6	5 (2)	80 V
MSD1004	33.2	10 (2)	120 V
MSD1504	49.8	15 (2)	120 V
<b>Triplex Systems</b>			
MST0503	33.2	5 (3)	80 V
MST1005	66.4	10 (3)	200 V
MST1505	99.6	15 (3)	200 V

**MSTD System**



Model	SCFM @ 50 PSIG*	HP	Tank (Gal.)
<b>Quadplex Systems</b>			
MSQ0504	49.8	5 (4)	120 V
MSQ1005	99.6	10 (4)	200 V
MSQ1505	149.4	15 (4)	200 V
<b>Pentaplex System</b>			
MSP1505	199.2	15 (5)	200 V
<b>Hexaplex System</b>			
MSH0504	83.0	5 (6)	120 V
MSH1506	249.0	15 (6)	240 V
<b>Nine Pump System</b>			
MSN0505	132.8	5 (9)	200 V

**MST 15 HP System**



## Medical Reciprocating Tankmount Duplex (with Basic controls)

Model	SCFM @ 50 PSIG*	HP	Tank (Gal.)
<b>Duplex Systems</b>			
MTD0103	3.4	1 (2)	80 H
MTD0203	8.3	2 (2)	80 H
MTD0303	11.3	3 (2)	80 H
MTD0304	11.3	3 (2)	120 H
MTD0504	18.6	5 (2)	120 H
MTD0505	18.6	5 (2)	200 H
MTD0756	29.0	7.5 (2)	240 H
MTD1006	36.2	10 (2)	240 H
MTD1506	50.9	15 (2)	240 H



**MTD System**

## Medical Reciprocating Package Systems (With HMI, PBMI or Basic Controls)

Model	SCFM @ 50 PSIG*	HP	Tank (Gal.)
<b>Duplex Systems</b>			
MPD0308	11.3	3 (2)	80
MPD0508	18.6	5 (2)	120
MPD0608	21.4	7.5 (2)	120
MPD0758	29.0	7.5(2)	120
MPD1008	36.2	10 (2)	200
MPD1508	50.9	15 (2)	200
<b>Triplex Systems</b>			
MPT0508	37.2	5 (3)	200
MPT0608	42.8	7.5 (2)	200
MPT0758	58.0	7.5 (3)	200
MPT1008	72.4	10 (3)	240
MPT1508	101.8	15 (3)	240

**MPD System**



\*SCFM @ 50 PSIG is shown with one compressor in reserve per NFPA 99

## Medical Desiccant Air Dryer Package



- Includes:
  - Redundant set of desiccant dryers, filters, regulators and safety relief valves
  - Dew point monitor
  - Carbon monoxide monitor
- The dryer removes moisture and contaminants from the compressed air
- Air is treated to provide air quality exceeding the specification of NFPA 99
- Email notifications for dryer, dew point and carbon monoxide alarms and service alerts on systems with HMI or PBMI controls

## Medical Desiccant Air Dryers

- Pressure swing adsorption technology with a repressurization cycle
  - In fixed cycle mode, total cycle time is 4 minutes, or 2 minutes per tower
  - In variable cycle mode, the total cycle time can be increased up to 120 minutes
- Manufactured in-house
- Dryer includes:
  - Self-cleaning ceramic switching valve
  - Automatic purge saver—dew point dependant
  - Differential pressure indicators for both inlet and outlet filters
  - Purge muffler
  - Tower pressure gauges
  - Regulators with gauges
  - Isolation ball valves

**Medical Desiccant Dryer Package (includes Air Dryer, CO Monitor and Dew Point Monitor)**

## Carbon Monoxide and Dew Point Monitors



### Carbon Monoxide Monitor

- Compact design
- Digital display
- User programmable alarms and relays
- Audible and visual Alarms
- High capacity relays
- Flow Meter for Confirmation of Airflow
- Integrated on systems with HMI or PBMI controls



### Dew Point Monitor

- Auto calibration
- Polymer sensor technology
- Visual and audible alarms
- Dew point purge control
- Integrated on systems with HMI or PBMI controls

## Other Accessories and Options

- Powerex Building Management Integrator (PBMI) controls
- Premium warranty
- Non-fused disconnect box
- Laboratory system packaging
- Receiver sizes 20— 600 Gallon
- Seismic spring mounts
- Laboratory system packaging
- Sterile filters
- -40° F dew point dryers
- Activated carbon filters
- Slide base for each motor
- Basic Controls

**FOR MORE INFORMATION, CONTACT YOUR LOCAL DISTRIBUTOR OR POWEREX SALES REPRESENTATIVE.**



Telephone: (888)769-7979 Fax: (513)367-3125  
www.powerexinc.com

Distributed by: