OIL-FREE SCROLL
MEDICAL AIR COMPRESSOR

Medical air compressor system is designed to provide continuous medical quality air.

AmcareMed oil-free scroll air compressor systems are designed and manufactured according to ISO 13485 and EN 61000 standards. Provide hospitals, nursing homes and other medical facilities with stable, reliable, clean and energy efficient compressed air.

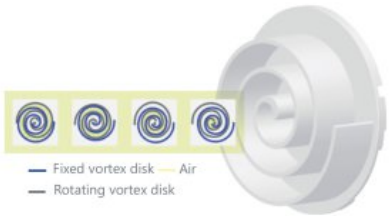
It consists of two or more air compressors, air tank, control system, dryer, filters, etc. With various filter and drying, remove harmful gases, bacteria, oil and water from compressed air. It is an ideal choice for the medical device industry and other occasions requiring clean compressor air.

FEATURES

- Provide 100% oil-free air
- High efficiency, low specific power and high energy efficiency
- Maintenance-free, the maintenance interval is not less than 10,000 hours
- Under standard working conditions, the vibration of main unit is less than 7.1mm/s
- The whole system is packaged and shipped for quick and easy installation, turn on the power to start running
- Compact structure, small footprint, can be installed wherever it is needed without restrictions
- All air compressor systems are 100% tested before despatch

SCROLL COMPRESSION PRINCIPLE

The scroll air compressor is a continuous positive displacement compressor consisting of a fixed involute vortex disk and an involute vortex disk that is eccentrically rotated. With the translational rotation of the vortex disk, the volume in each compression chamber constantly changes, achieving air suction and compression.



High quality scroll pump

The main unit structure is very compact, the number of main parts is 1/10 of the piston type, also less than the screw type air compressor. The low-pressure structure and the frame structure optimize the bearing force; Using asymmetric lines, the exhaust gas is continuously stable. The waist-type exhaust port avoids the energy loss of over-compression or under-compression.

Intelligent control system

The intelligent control system uses the liquid crystal display screen, can remote control and multiple hosts chain control. System adopts PLC control, display all status information. The number of compressor operating unit automatically increased and decreased while ensuring the required amount of compressed air so as to ensure the steady supply air to the system.

Perfect alarm monitoring system

Built-in alarm system, real-time monitoring of the system's operating status, when the local value exceeds the set range or system failure will trigger acoustic and optical alarm, the alarm signal can be output remotely.

SYSTEM PROCESS

PRODUCT STRUCTURE

1. Touch control panel
2. Motor
3. Scroll air pump
4. Suction filter

1.5/2.2/ 3.7/5.5kw

Simple and compact design, only covers 0.3m²

7.5/11/ 15/18.5kw

Equipped with 2-4 compressors and motors, can automatically adjust and operate according to air consumption.

22/30/37kw

Equipped with 6-10 compressors, can intelligently control the load ratio according to the supply pressure

MODEL

System	Model	Power		Capacity(@100PSIG))	Noise level DB(A)±3db
		KW Each	HP Each	m³/min	
Duplex	SMA02D	1.5 x 2	2 x 2	0.14	46
	SMA03D	2.2 x 2	3 x 2	0.25	48
	SMA05D	3.7 x 2	5 x 2	0.4	50
	SMA07D	5.5 x 2	7.5 x 2	0.6	59
	SMA10D	7.5 x 2	10 x 2	0.88	60
	SMA15D	11.2 x 2	15 x 2	1.2	61
	SMA20D	15 x 2	20 x 2	1.64	62
	SMA25D	18.5 x 2	25 x 2	2.04	62
Triplex	SMA15T	11.2x 3	15 x 3	2.4	66
	SMA20T	15 x 3	20 x 3	3.28	67
	SMA25T	18.5 x 3	25 x 3	4.08	67
Quadplex	SMA15Q	11.2 x 4	15 x 4	3.6	70
	SMA20Q	15 x 4	20 x 4	4.92	71
	SMA25Q	18.5 x 4	25 x 4	6.12	71

Note: 1. The unit is operated at an ambient temperature of 0-40 °C. Please contact our company for special environmental temperature requirements.

2. All flow calculations do not include spare equipment.

RECIPROCATING PISTON MEDICAL AIR COMPRESSOR

AmcareMed reciprocating piston air compressor unit contains two or more oil-free piston pumps.

The compressors are rotary, oil-less reciprocating, air-cooled design, provides clean & oil free air by using composite resin piston to reduce heat and increase service life.

The system is controlled with a PLC touch screen, equipped with three-stage filtration unit, automatically controlled drain valve, adsorption dryer, pressure sensors, dew point and carbon monoxide concentration alarms and air tank.

FEATURES

- Provide 100% oil-free air, and no oil will enter the compression chamber
- PLC controller ensures each compressor running time sequence and turn around working according pressure value
- The rotor is processed through multiple processes to ensure the accuracy and reliability
- Each stage of compression reduces the pressure ratio, reduces bearing load and extends the life of the host machine
- The trouble-free operation time of the equipment is not less than 50,000 hours.
- Wide range of exhaust gas, independent of pressure, can adapt to a wide range of pressure and cooling capacity

PRODUCT STRUCTURE

1. Piston air compressor
2. Electric control box
3. Air tank
4. Adsorption dryer
5. Filter

Unique oil-free compressor structure

Completely oil-free oil-less structure design, oil-free operation, greatly reduce the cost of air purification system, provide better air quality.

Special precision components

- Graphite gasket, high temperature, non-toxic and environmentally friendly
- Aluminum alloy cylinder with better cooling effects
- Fully sealed bearing, filled with special high-temperature grease to ensure continuous operation at high temperatures

Intelligent electric control box

- PLC + touch screen control
- Use film capacitance measuring gauge, high measurement accuracy, corrosion resistance, measurement results are not affected by the measured gas
- Achievable: Reliable protection of the air pump, automatic or manual control of the start and stop of the air pump, and the ability to modify the pressure set point

MODEL

System	Model	Power		Capacity(@100PSIG))	Noise level DB(A)±3db
		KW Each	HP Each	m³/min	
Duplex	PMA03D	2.2 x2	3 x 2	0.24	71
	PMA05D	4 x 2	5.3 x 2	0.45	74
	PMA07D	5.5 x 2	7.5 x 2	0.6	75
	PMA10D	7.5 x 2	10 x 2	0.9	76
	PMA15D	11.2 x 2	15 x 2	1.25	79
Triplex	PMA07T	5.5 x 3	7.5 x 3	1.2	76
	PMA10T	7.5 x 3	10 x 3	1.8	77
	PMA15T	11.2x 3	15 x 3	2.5	80
Quadplex	PMA07Q	5.5 x 4	7.5 x 4	1.8	77
	PMA10Q	7.5 x 4	10 x 4	2.7	78
	PMA15Q	11.2 x 4	15 x 4	3.75	81

Note: 1. The unit is operated at an ambient temperature of 0-40 °C. Please contact our company for special environmental temperature requirements.

2. All flow calculations do not include spare equipment.

AIR DRYER

AmcareMed air dryers could removes the oil-water mixture, impurities and moisture from air ensuring that air quality is in accordance with relevant international standards for oil residual content.

Adsorption Air Dryer

Adsorption air dryer uses the adsorbent cycle adsorption and regeneration to adsorb the moisture in the compressed air.

AmcaeMed dryer uses mature adsorption drying technology and molecular sieve filling technology, the equipment is stable in operation, low failure rate, beautiful appearance, and can effectively dry compressed air to - 4 0 ℃ ~ - 7 0 ℃ pressure dew point while reducing energy consumption.

Specifications

- Air inlet temperature: 2°C ≤ T ≤ 45°C
- Air inlet pressure: 4.5bar ≤ P ≤ 10bar
- Pressure drop 0.15bar
- 7-inch high-definition touch screen
- Purge lost: 5% to 6% of stated flows
- Pressure dew point: -40°C standard type
- Large capacity, more efficient adsorption
- Independent replacement, continuous drying effect

Correction factor

Correction factor for temperature changes						
Inlet temperature(°C)	25	30	35	40	45	50
Factor	1	1	1	0.9	0.8	0.67

Correction factor for pressure changes										
Inlet pressure(bar)	4	5	6	7	8	9	10	11	12	13
Factor	0.58	0.72	0.87	1	1	1.03	1.1	1.16	1.2	1.3

Model

Model	Flow (@7bar,35°C)		Dimension			Pipe Size	Weight
	m³/h	L/min	L / mm	W / mm	H / mm	G	Kg
DSA-30A	30	500	300	460	810	G1/4	36
DSA-48A	48	800	300	460	1120	G1/2	51
DSA-60A	60	1000	300	460	1300	G3/4	53
DSA-90A	90	1500	300	460	1450	G3/4	64
DSA-150A	150	2500	260	670	1120	G1	82
DSA-228A	228	3800	260	780	1120	G1	108
DSA-390A	390	6500	260	710	1720	G1-1/2	165

Refrigeration Air Dryer

Refrigerated dryers reduce the compressed air temperature by using refrigerant.

The water vapor in compressed air supersaturate at low temperatures and condense into liquid droplets, which are then separated from the compressed air by condensing water (including oil and dust) through air-water separation device.

Specifications

- Working pressure: 0.7-10Mpa (Use scope 0.7Mpa-1Mpa)
- Inlet temperature: maximum 45℃
- Ambient temperature: 2℃~38℃
- The temperature difference between the entrance and exit is 5-10℃
- Low pressure dew point: 3℃ (-22℃ atmospheric pressure dew point)
- High-efficiency aluminum plate heat exchanger unit, good heat dissipation effect and small pressure drop

Model

Model	m³/m	Connection Port Size	V	KW	H/ mm	W / mm	D / mm	KG
DSA-010F	1.0	G-3/4"	220/50	0.6	700	300	680	48
DSA-015F	1.5	G-3/4"	220/50	0.8	700	300	680	50
DSA-019F	1.9	G-3/4"	220/50	0.8	700	300	680	50
DSA-026F	2.6	G-1"	220/50	1.1	845	360	800	75
DSA-039F	3.9	G1-1/2"	220/50	1.1	1010	360	920	98
DSA-070F	7.0	G1-1/2"	220/50	1.4	1030	1050	540	140
DSA-085F	8.5	G1-1/2"	220/50	1.6	1030	1050	540	150
DSA-108F	10.8	G-2"	220/50	2.0	1160	1180	550	190
DSA-140F	14.0	G2-1/2"	380/50	2.8	1270	1420	590	240

Note: Please contact our company for special requirements.

Correction factor

Correction factor for operating pressure changes								
Inlet air pressure(bar)	4	5	6	7	8	10	12	14
Factor	0.77	0.86	0.93	1	1.05	1.14	1.21	1.27

Correction factor for dew point changes				
Dew point(℃)	3	5	7	10
Factor	0.91	1	1.1	1.26

Correction factor for inlet air temperature changes							
Air temperature(℃)	25	30	35	40	45	50	55
Factor	1.2	1.11	1	0.81	0.67	0.55	0.45

Correction factor for ambient temperature changes					
Ambient temperature(℃)	25	30	35	40	45
Factor	1	0.95	0.88	0.72	0.68

FILTER

Compressed air contains excessive moisture, oil, rust, dust and other impurities, which can damage the equipment and shorten the service life. Air filters can effectively remove moisture and dust from the air and provide pure compressed air.

For applications with high compressed air quality requirements, AmcareMed supply stainless steel filter with polished inner and outer surface to prevent corrosion and provide high filtration efficiency.

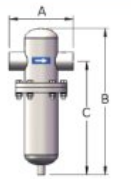
Specifications

- The same filter is available in a variety of interface sizes to meet different flow requirements.
- No pull rod design to save installation space and easy to disassemble
- deep-pleated filter element, larger filtration area and dust holding capacity, lower pressure drop
- Elbow design between the inlet and the filter element, pressure drop is smaller

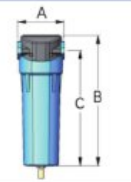
Technical Parameters

Degrees of filtration		Product Picture	Dust Removal	Oil removal	Initial pressure difference	Max. working temperature
M	Coalescing Filter		1μm	0.1ppm	0.08bar	100℃
H	High precision filter		0.01μm	0.01ppm	0.10bar	100℃
C	Activated carbon filter		-	0.003ppm	0.07bar	60°C

Bacterial Removal Filter Model

Model	Conn. Size BSP-F	Flow rate		Dimensions (mm)			Diagram
		m³/min	cfm	A	B	C	
ST0021	3/4"	0.6	21	159	258	186	
ST0053	3/4"	1.5	53	159	258	186	
ST0078	1"	2.2	78	159	323	251	
ST0102	1"	2.9	102	159	323	251	
ST0130	1-1/2"	4.9	130	194	380	293	
ST0200	1-1/2"	5.7	200	194	380	293	
ST0270	2"	7.7	270	194	460	373	
ST0380	2"	10.8	380	194	460	373	
ST0520	2-1/2"	14.8	520	250	622	522	
ST0770	2-1/2"	22	770	250	802	700	

F Series Gas-water Separator

Model	Conn. Size	Flow rate		Interface (mm)			Diagram
	inch(RP)/DN	m³/min	cfm	A	B	C	
F0045W	1/2"	1.3	46	95	207	174	
F0046W	3/4"	1.3	46	95	207	174	
F0100W	3/4"	2.8	99	95	267	235	
F0180W	1"	5.1	180	125	301	261	
F0181W	1-1/2"	5.1	180	125	301	261	
F0370W	1-1/2"	10.5	370	125	385	345	
F0515W	2"	14.6	515	170	504	455	
F0745W	2"	21.1	745	170	684	634	
F0900W	2-1/2"	25.0	1059	200	820	752	

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