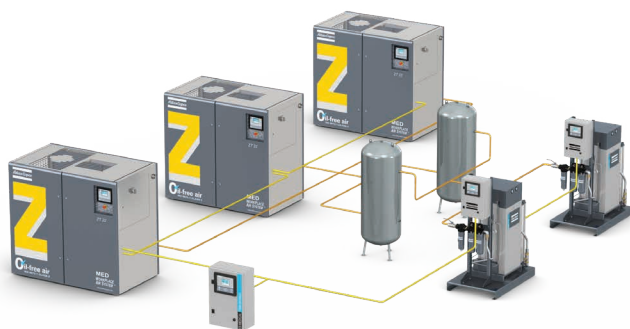




MEDICAL AIR PLANT

uAIR Series (7-145 l/s / 15-307 cfm)



Atlas Copco

A photograph of a surgeon in a green surgical cap and blue scrubs, standing in an operating room. He is holding a stethoscope to his chest. In the background, there are medical equipment, a drip chamber, and blue surgical drapes.

ATLAS COPCO SETS A NEW MEDICAL STANDARD

When it comes to oil-free compressed air for your patients, you cannot afford to compromise. Atlas Copco is the world's first compressor manufacturer to receive certification for a new industry standard of air purity: ISO 8573-1 CLASS 0.

A range of benefits

Our Medical Air Plant uAIR gives you total control over your installation, full integration into your Building Management System, and compliance with the medical alarm and monitoring requirements specified in ISO 7396-1. Atlas Copco's Medical Air Plant is suitable for continuous and frequent start/stop operation and supports different pressure levels, while 11 bar is also available. It provides reliable, high-quality air for a variety of applications.

Medical air applications:

- Mechanical ventilation and anesthesia.
- Drug delivery via a nebulizer.
- Testing and drying of medical devices.

Surgical air applications:

- Pneumatic surgical tools (drilling, reaming, sawing, dissecting, tapping and screwing).
- Pneumatic ceiling pendant operation.
- Testing of medical devices.
- High-speed high torque motors.



MEDICALLY CERTIFIED

The medical sector is more tightly regulated than ever before. Atlas Copco's Medical Air Plant is pre-certified to international regulations including Pharmacopoeia and quality norms such as ISO 13485. Pre-certification simplifies organization and inspection by regulatory bodies, saving the hospital time and money. Medical Air Plant complies with:

- Medical Device Directive MDD 93/42/EEC.
- EN ISO 7396-1 and ISO 14971.
- Health Technical Memorandums HTM 02-01 and HTM 2022.

Furthermore, it is designed and manufactured according to ISO 9001, ISO 14001 and the ISO 13485 quality management system.

Ultra-reliable and energy-efficient

The Atlas Copco Medical Air Plant is based on specially designed, medical compressors and dryers and provides an uninterrupted air supply in critical situations. Every compressor/dryer is subjected to comprehensive Quality Assurance controls, and is fully tested prior to dispatch. As Atlas Copco manufactures all components in-house, the functions of each component are fully used. With regards to redundancy, the Medical Air Plant complying with ISO 7396-1 and HTM 02-01 is provided with at least two standby compressors and one backup purifier. Our plant complying with HTM 2022 comes with at least one standby compressor.

Unsurpassed purity

Atlas Copco's Medical Air Plant is engineered to provide certified medical air, even in situations where the air intake may contain high concentrations of ambient pollution. The multi-stage filtration system ensures patient safety in 'worst case', but real life pollution scenarios. With the assurance of worldwide after-sales and service, our air plant systems offer the complete solution for all critical medical air applications.



CLEAN AIR IS A CHOICE YOU MAKE – CHOOSE OIL-FREE



Oil-free air is used in all kinds of industries where air quality is paramount. These applications include food and beverage processing, pharmaceutical manufacturing and packaging, chemical and petrochemical processing, semiconductor and electronics manufacturing, the medical sector, automotive paint spraying, textile manufacturing and many more. In these critical environments, contamination by even the smallest quantities of oil can result in damage to your hard-won professional reputation, failure of equipment, unacceptable risks and downtime.

CLASS	Concentration total oil (aerosol, liquid, vapor) mg/m ³
0	As specified by the equipment user or supplier and more stringent than class 1
1	< 0.01
2	< 0.1
3	< 1
4	< 5

Current ISO 8573-1 (2010) classes (the five main classes and the associated maximum concentration in total oil content).

CLASS 0 MEANS:

- ✔ Zero risk for patients.
- ✔ Zero risk of contamination to hospital pipelines.
- ✔ Zero risk of damage to expensive equipment (e.g. anesthesia machines).
- ✔ Zero risk of damaging your hospital's hard-won professional reputation.

First in oil-free air technology

Over the past sixty years Atlas Copco has pioneered the development of oil-free air technology, resulting in a range of air compressors and blowers that provide 100% pure, clean air. Through continuous research and development, Atlas Copco achieved a new milestone, setting the standard for air purity as the first manufacturer to be awarded ISO 8573-1 CLASS 0 certification.

Eliminating any risk

As the industry leader committed to meeting the needs of the most demanding customers, Atlas Copco requested the renowned TÜV Rheinland institute to type-test its range of oil-free compressors and blowers. Using the most rigorous testing methodologies available, all possible oil forms were measured across a range of temperatures and pressures. The TÜV found no traces of oil at all in the output air stream.

Core technology

Atlas Copco masters each compression principle and offers you the most reliable oil-free compressors designed for medical purposes.

Standard industrial air compressors should not be used when producing medical air.



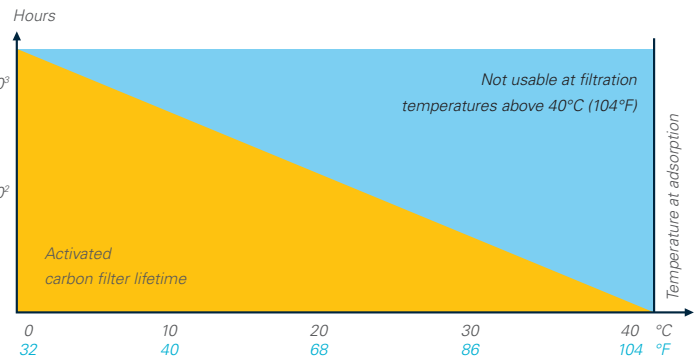
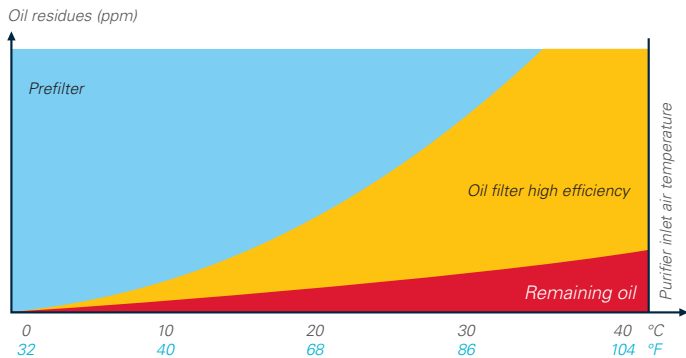
When ambient temperature rises, oil-filtering drops out

One aspect influencing the efficiency and purity of air systems is temperature. When using oil-injected compressors with oil removal filters, oil carry-over through filter media increases exponentially according to the temperature at the filtration interface.

Filter performance is often specified at 20°C (68°F). If the ambient temperature in the compressor room increases to 30°C (86°F), the compressor outlet temperature could be 40°C (104°F) with the oil carry-over 20 times the specified value.

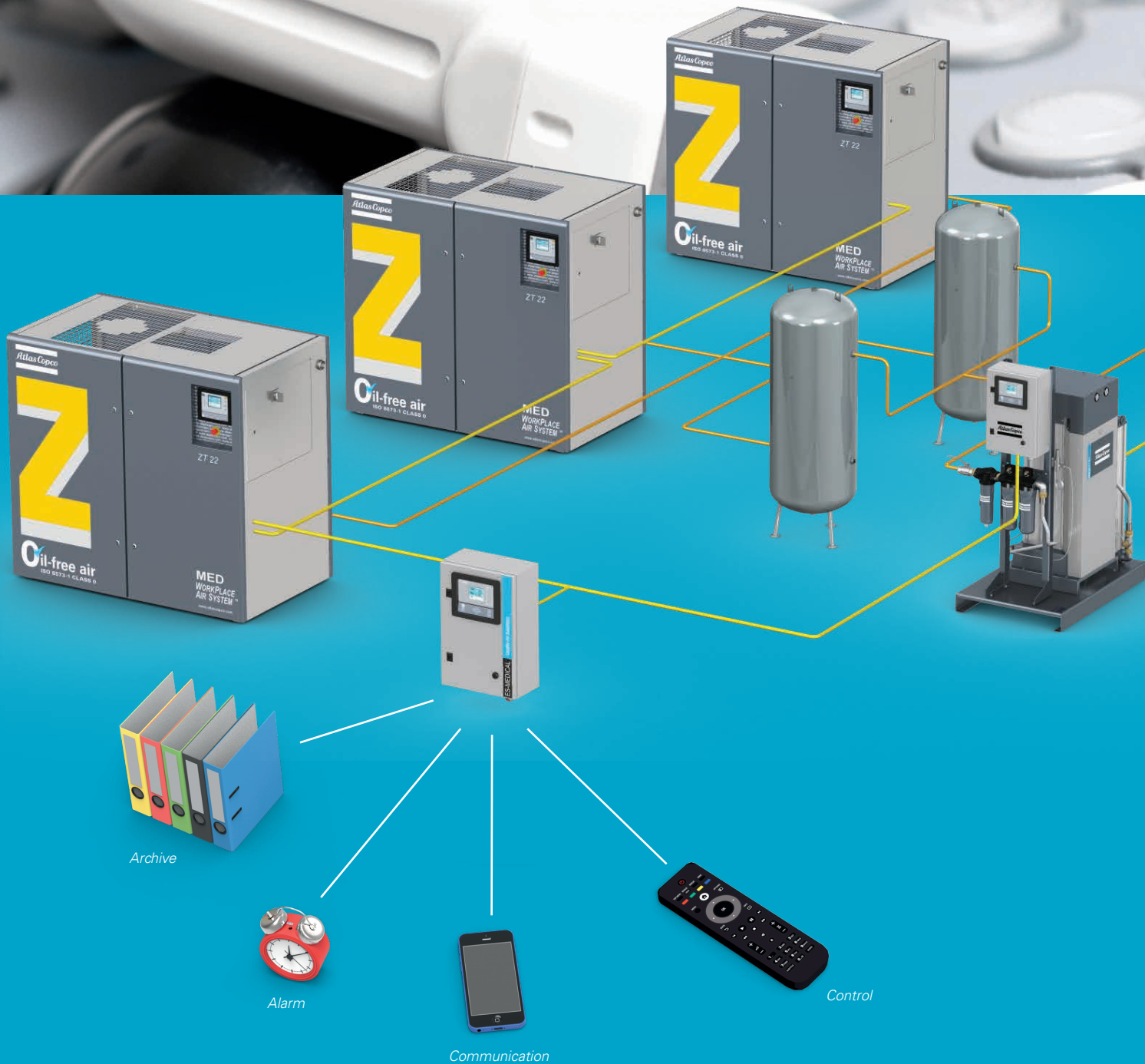
Such temperatures are not unusual even in colder countries, where the compressor room temperature is substantially higher than that outside.

An increase in temperature from 20°C (68°F) to 40°C (104°F) can cut filter life-time from 1000 hours to about 50 hours. That is why the usage of oil-free compressors is so important in medical applications.



QUALITY COMPONENTS FOR RELIABLE AIR

We supply the widest range of dedicated medical oil-lubricated and oil-free compressors. Together with the MED+ dryer, oil-free compressors provide pure, uncompromised quality medical air. Our oil-free compressors are specially designed to be part of Medical Air Plant.



FEATURES AND BENEFITS

Oil-free Class 0

- Based on oil-free class 0 compressors.
- Support for different oil-free compressors (piston, scroll, tooth, water-injected etc.) for extended flexibility.

Full compliance with ISO 7396-1

- Complete medically certified package, air quality according to Pharmacopeia.
- Proven redundancy and safety level.
- Factory tested as complete package.
- Supplied legal commissioning procedure.

Ready to use

- Compact and modular design.
- Simple startup and maintenance.

Complete solution from one manufacturer

- One service technician can perform all maintenance.
- One contact person for all responsibilities.
- Worldwide stock of spare parts.

Advanced monitoring and alarms

- Full compliance with ISO 7396-1, Chapter 6 "Monitoring and Alarm Signals"
- Monitoring both "Medical" and "Surgical" air lines.
- Full integration with Building Management System and external systems.

Alarm systems

- Remote monitoring and connectivity functions.
- Easy readout of CO/CO₂/flow sensors.

Cost savings

- Low installation and running costs.
- VSD technology for up to 35% energy savings.
- Active/Passive mode of purifiers, saving 50% working time.

User-friendly central controller

- 5.7-inch high-definition color display with clear pictograms and LED indicators.
- Internet-based visualization using a simple Ethernet connection.
- Increased reliability: new, multilingual user interface and durable keyboard.
- Graphical indication of service plan.



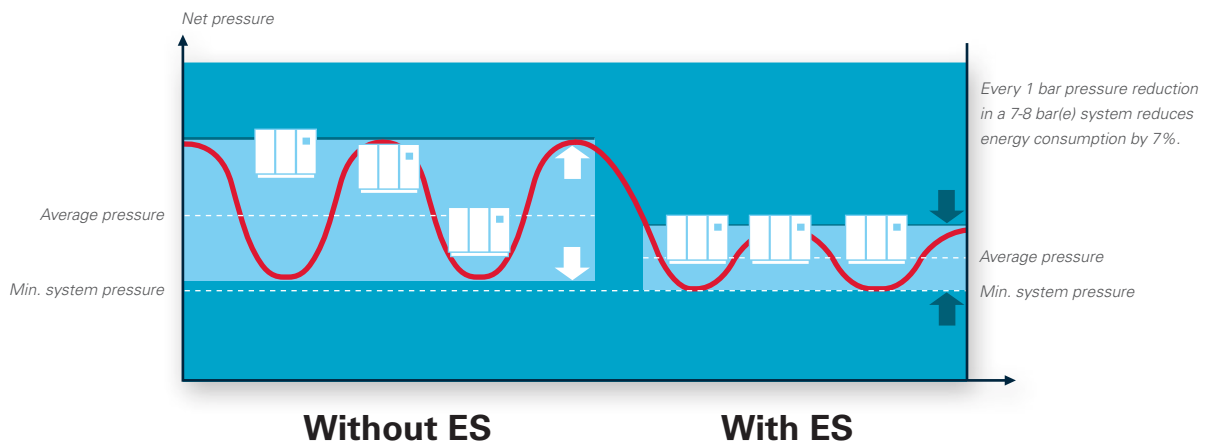
ES-MEDICAL CENTRAL CONTROLLER

The advanced ES-Medical Central Controller offers a single point of control for your whole Air Plant, ensuring all compressors and purifiers provide optimum performance. The result is high quality and consistency of air supply, and a completely dependable and energy-efficient network, giving you peace of mind and keeping your costs to a minimum.



Monitoring and alarms

ES-Medical Central Controller supports all monitoring and alarm functions required by ISO 7396-1 to give you fast and simple integration with your Building Management System. CO, CO2 and flow sensors are available as optional equipment to further enhance your system.



Reduced pressure band

Without a central controller, a multiple machine installation has to work in a pressure cascade with a large pressure band. The ES-Medical Central Controller keeps your network running within a narrow, pre-defined pressure band. This increases the stability of the process and optimizes overall energy consumption.



VSD: Driving down energy costs

Our range of VSD compressors is the ideal solution for the fluctuating air demand typical for hospitals. By monitoring the outlet pressure, the air flow is adjusted to the demand. Energy savings of up to 35% become a reality thanks to the high turndown ratio and the new fan saver cycle.

Total compressor lifecycle cost

- Energy
- Investment
- Energy savings with VSD
- Maintenance

The most efficient way to deliver air at all times

The ES-Medical Central Controller selects the "best combination" according to your fluctuating demand, enabling maximum energy savings.



Equalizing running hours

Comprehensive and flexible machine sequence control lets installed machines work in groups, allowing running hours to be equalized. The ES-Medical Central Controller ensures that system running hours are equal across all machines. This drastically reduces service costs because all machines can be serviced in the same visit.

Excellent connectivity

Using our new Gateway™ Profibus/Modbus Module you can connect to extensive monitoring and status information to get the most out of your Medical Air Plant.



A clear overview

The ES-Medical Central Controller comes with a 5,7" high-definition color display that gives you an overview of your Air Plant System at a glance. The alarms required by ISO7396-1 appear on the home screen, while the detailed status of the compressors and dryers can be found in individual screens. The compressor screen indicates the running compressors and which compressor is next to start. The dryer screen shows the active and stand-by dryer and even displays which dryer tower is adsorbing and regenerating. Monitoring your system has never been easier.



Reliable software

Nowadays virtually all devices around us include software. Atlas Copco is one of the first manufacturers to develop the Medical Air Plant and its software parts according to the strict medical software standard EN62304. Now you can rest assured: stability is guaranteed.

Save dryer running time

At any given moment only one purifier is active and running in the Medical Air Plant. This means you save on consumables, use less drying cycles, require less maintenance. A standby purifier is available at any time.



MED+ ADVANCED MEDICAL PURIFIER

Atlas Copco's Medical Air Plant with MED+ air purifiers provides the ultra-clean air you require. The MED+'s innovative filtration system is the most advanced medical air solution, while a small footprint allows you to make the most of the space available. The MED+ offers unparalleled air purity through 7 stages of active purification. Challenge tests conducted by an external company ensure the MED series meets international regulations. Excelling in these 'worst case scenarios' of ambient air quality, the MED+ gives you peace of mind in real life conditions.



	European Pharmacopoeia
O ₂	20.4% < x < 21.4%
CO ₂	<500 ppm
CO	<5 ppm
SO ₂	<1 ppm
NO _x	<2 ppm
Water vapor	ADP -45°C (-49°F) / PDP -31°C (-23°F)
Oil vapor	<0.1 mg/m ³
Dust particles	Not specified
Taste and odor	Taste and odor free

Simple and user-friendly management

Our advanced Mk5 controller on the ES-Medical Central Controller with its large, 5.7-inch color display gives you a powerful and simple tool for managing your complete installation. Several access levels enable you to set the required security level.

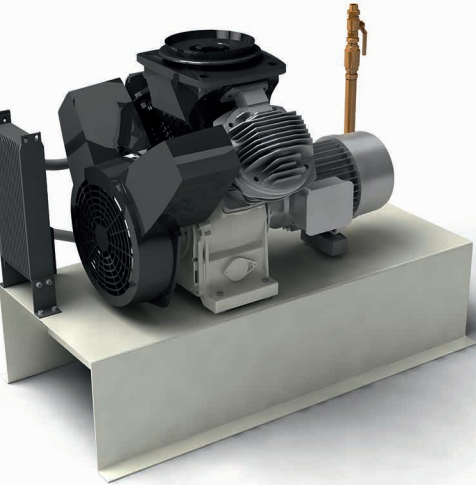


Monitor your plant online

Thanks to the ES-Medical Central Controller, you can control and monitor your complete compressed air network over the LAN (Ethernet/Profibus/Modbus) to get the most out of your Medical Air Plant. Features include warning indications, compressor shutdown warning and maintenance scheduling.

OIL-FREE COMPRESSORS FOR MEDICAL USE

Choose from premium oil-free compressor series to find the compressed air solution that perfectly matches your specific requirements. With products that are built to perform according to the latest medical standards ISO 7396-1 and HTM, Atlas Copco commits to keeping your healthcare environment running in the most efficient and safe way.



Oil-free piston compressors*

LF-MED

Working pressure: 4-10 bar

Capacity: 8-15 l/s

Installed power: 4-7.5 kW

** Oil-less compressors with pressures up to 13 bar and up to 20 kW are also available.*

Oil-free scroll compressors

SF-MED

Working pressure: 4-10 bar

Capacity: 3-30 l/s

Installed power: 2-22 kW



Oil-free water lubricated compressors

AQ-MED*

Working pressure: 4-13 bar

Capacity: 22-115 l/s

Installed power: 15-55 kW (= < 30kW only VSD)

** Only for ISO 7396-1.*

Oil-free tooth compressors

ZT/ZR-MED*

Aircooled/Watercooled: ZT/ZR

Working pressure: 4-10 bar (>22 kW – 8.6 bar)

Capacity: 30-138 l/s

Installed power: 15-55 kW

** For HTM: Only ZT with pressures up to 10 bar, a capacity of 30-45 l/s and power up to 22kW are available, also as VSD.*



Class 0

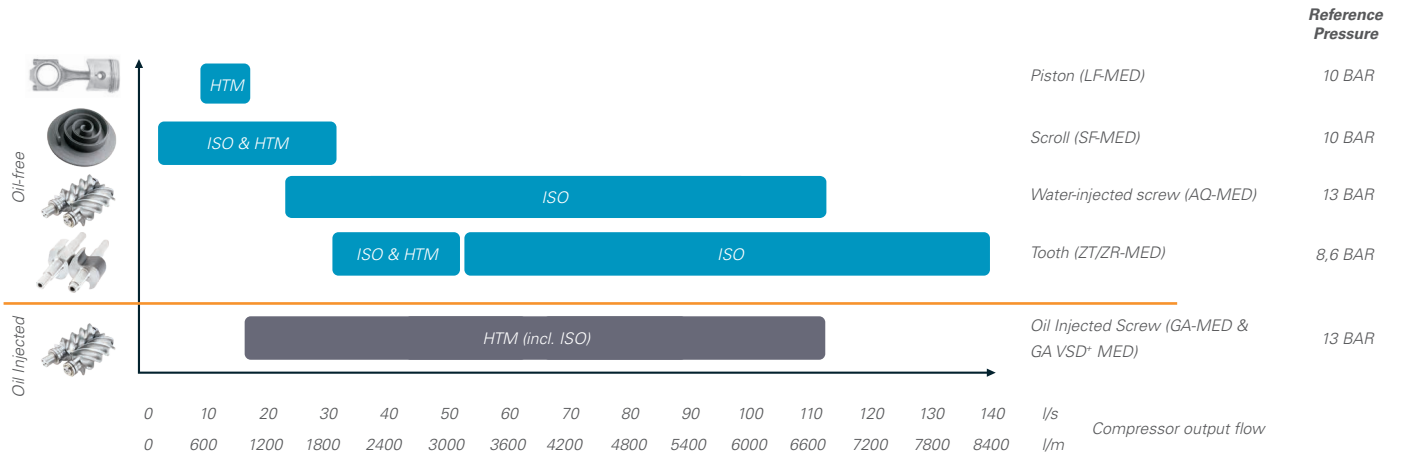
Our oil-free air compressors have been tested by TÜV Rheinland and certified Class 0 on oil content according to ISO 8573-1:2010. The results were clear: even in a fairly polluted environment,

at high ambient temperatures and at various pressures, our Class 0 compressors delivered air without any traces of oil.

Medical Air Plant selection

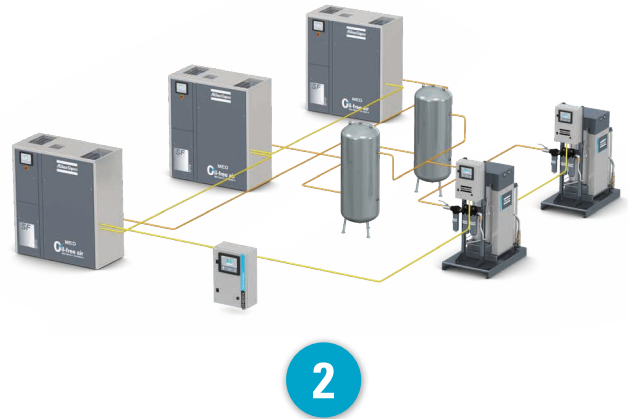
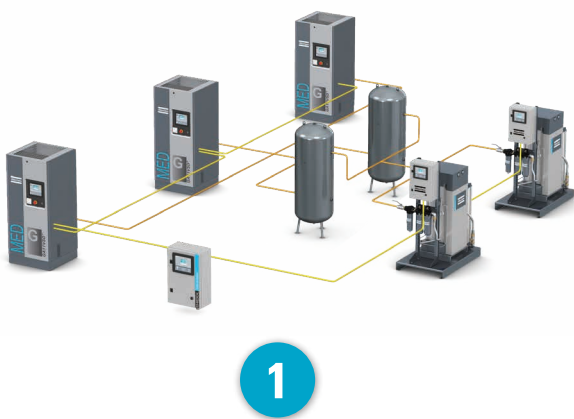
Choose from premium compressor technologies to find the compressed air solution that perfectly matches your specific requirements. With products that are built to perform according

to the latest medical standards ISO 7396-1 and HTM, Atlas Copco commits to keeping your healthcare environment running in the most efficient and safe way.



Modular building blocks

Open architecture gives you the possibility to create any type of Medical and Surgical Air Plant according to your requirements.



Each and every hospital is different and has its own requirements and limitations. Atlas Copco introduces a new level of flexibility. No more fixed combinations of equipment, oversized compressors, dryers or complexity with air plant upgrade.

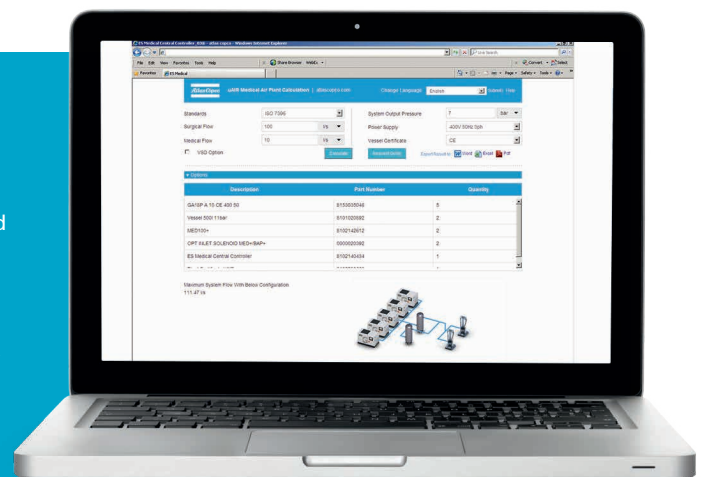
We provide you the power to set up a plant according to your needs. With our new concept of building blocks you can combine a setup which will match your requirements.

TECHNICAL SPECIFICATIONS

TYPE	Plant output pressure	Flow at 50 Hz		Compressor		Dryer		Vessel	
	bar	l/s	lpm	Type	Q-ty	Type	Q-ty	Type	Q-ty
Medical Air Plant based on oil-free piston compressors									
uAIR-LF	8	6.9	414	LF 5-MED	3	MED 7 ⁺	2	250	2
	8	8.2	494	LF 7-MED	3	MED 15 ⁺	2	250	2
	8	12.7	764	LF 10-MED	3	MED 15 ⁺	2	250	2
	8	16.7	1000	LF 7-MED	4	MED 25 ⁺	2	250	2
	8	25.4	1523	LF 10-MED	4	MED 25 ⁺	2	500	2
	8	38.2	2291	LF 10-MED	5	MED 45 ⁺	2	1000	2
	8	50.0	2999	LF 10-MED	6	MED 65 ⁺	2	1000	2
Medical Air Plant based on oil-free scroll compressors									
uAIR-SF	8	2.1	126	SF 2-MED	3	MED 7 ⁺	2	250	2
	8	4.6	276	SF 4-MED	3	MED 7 ⁺	2	250	2
	8	5.7	342	SF 6-MED	3	MED 7 ⁺	2	250	2
	8	8.5	512	SF 8-MED	3	MED 15 ⁺	2	250	2
	8	12.2	734	SF 11-MED	3	MED 15 ⁺	2	250	2
	8	18.0	1079	SF 15-MED	3	MED 25 ⁺	2	500	2
	8	25.1	1505	SF 22-MED	3	MED 25 ⁺	2	500	2
	8	36.9	2213	SF 15-MED	4	MED 45 ⁺	2	1000	2
	8	47.74	2843	SF 22-MED	4	MED 65 ⁺	2	1000	2
	8	55.8	3347	SF 15-MED	5	MED 65 ⁺	2	1000	2
	8	74.3	4459	SF 22-MED	5	MED 80 ⁺	2	1500	2
	8	100.3	6019	SF 22-MED	6	MED 100 ⁺	2	2000	2
Medical Air Plant based on oil-free tooth compressors									
uAIR-ZF	8	25.4	1523	ZT 15-MED	3	MED 25 ⁺	2	500	2
	8	29.9	1796	ZT 18-MED	3	MED 35 ⁺	2	500	2
	8	37.0	2219	ZT 22-MED	3	MED 45 ⁺	2	1000	2
	8	48.2	2891	ZT 15-MED	4	MED 65 ⁺	2	1000	2
	8	60.8	3647	ZT 18-MED	4	MED 65 ⁺	2	1000	2
	8	75.8	4549	ZT 22-MED	4	MED 80 ⁺	2	1500	2
	8	90.7	5443	ZT 18-MED	5	MED 100 ⁺	2	1500	2
	8	109.1	6546	ZT 22-MED	5	MED 145 ⁺	2	2000	2
	8	118.8	7128	ZT 18-MED	6	MED 145 ⁺	2	2000	2
	8	133.3	8000	ZT 22-MED	6	MED 145 ⁺	2	2000	2

Build up your air plant on-line

By using the latest technologies in the medical sector we are able to build an Air Plant precisely to match your demand. We give you freedom of choice to select any flow according to your local regulations and limitations. Moreover, our on-line configurator will propose the best combination of elements according to medical standards like ISO 7396-1, HTM 02-01 or HTM 2022. Size your medical air plant on our on-line configurator:



TYPE	Plant output pressure	Flow at 50 Hz		Compressor		Dryer		Vessel		
	bar	l/s	lpm	Type	Q-ty	Type	Q-ty	Type	Q-ty	
Medical Air Plant based on oil-free water-injected screw compressors										
uAIR-AV	8	31.6	1898	AQ 15 VSD MED	3	MED 35 ⁺	2	500	2	
	8	36.4	2183	AQ 18 VSD MED	3	MED 45 ⁺	2	1000	2	
	8	43.9	2631	AQ 22 VSD MED	3	MED 65 ⁺	2	1000	2	
	8	64.2	3851	AQ 15 VSD MED	4	MED 65 ⁺	2	1000	2	
	8	74.6	4477	AQ 18 VSD MED	4	MED 80 ⁺	2	1500	2	
	8	93.3	5595	AQ 22 VSD MED	4	MED 80 ⁺	2	1500	2	
	8	107.3	6438	AQ 18 VSD MED	5	MED 100 ⁺	2	2000	2	
	8	140.8	8448	AQ 22 VSD MED	5	MED 145 ⁺	2	3000	2	
	11	24.7	1485	AQ 15 VSD MED	3	MED 25 ⁺	2	500	2	
	11	29.2	1751	AQ 18 VSD MED	3	MED 35 ⁺	2	500	2	
	11	39.3	2357	AQ 22 VSD MED	3	MED 35 ⁺	2	1000	2	
	11	50.4	3025	AQ 15 VSD MED	4	MED 45 ⁺	2	1000	2	
	11	59.3	3557	AQ 18 VSD MED	4	MED 65 ⁺	2	1000	2	
	11	76.7	4602	AQ 22 VSD MED	4	MED 80 ⁺	2	1500	2	
	11	92.2	5532	AQ 18 VSD MED	5	MED 80 ⁺	2	1500	2	
11	110.4	6623	AQ 22 VSD MED	5	MED 145 ⁺	2	2000	2		
11	156.2	9371	AQ 22 VSD MED	6	MED 145 ⁺	2	3000	2		
Medical Air Plant based on oil-injected screw compressors										
uAIR-GF	8	8.9	536	GA 5 MED	3	MED 15 ⁺	2	250	2	
	8	14.4	866	GA 7 MED	3	MED 15 ⁺	2	250	2	
	8	21.4	1283	GA 11 MED	3	MED 25 ⁺	2	500	2	
	8	31.3	1880	GA 15 MED	3	MED 35 ⁺	2	500	2	
	8	38.6	2315	GA 18 MED	3	MED 45 ⁺	2	1000	2	
	8	42.1	2525	GA 22 MED	3	MED 65 ⁺	2	1000	2	
	8	54.0	3239	GA 26 MED	3	MED 65 ⁺	2	1000	2	
	8	63.6	3815	GA 15 MED	4	MED 65 ⁺	2	1000	2	
	8	79.0	4741	GA 18 MED	4	MED 80 ⁺	2	1500	2	
	8	89.7	5383	GA 22 MED	4	MED 100 ⁺	2	1500	2	
	8	105.2	6312	GA 26 MED	4	MED 145 ⁺	2	2000	2	
	8	135.5	8130	GA 22 MED	5	MED 145 ⁺	2	3000	2	
	11	7.1	426	GA 5 MED	3	MED 7 ⁺	2	250	2	
	11	11.4	684	GA 7 MED	3	MED 15 ⁺	2	250	2	
	11	17.3	1041	GA 11 MED	3	MED 25 ⁺	2	500	2	
	11	27.6	1659	GA 15 MED	3	MED 25 ⁺	2	500	2	
	11	32.9	1973	GA 18 MED	3	MED 35 ⁺	2	500	2	
	11	40.7	2444	GA 22 MED	3	MED 35 ⁺	2	1000	2	
	11	47.6	2857	GA 26 MED	3	MED 45 ⁺	2	1000	2	
	11	52.5	3149	GA 15 MED	4	MED 65 ⁺	2	1000	2	
	11	66.7	4000	GA 18 MED	4	MED 65 ⁺	2	1000	2	
	11	80.1	4806	GA 22 MED	4	MED 80 ⁺	2	1500	2	
	11	93.4	5602	GA 26 MED	4	MED 100 ⁺	2	1500	2	
	11	115.5	6929	GA 22 MED	5	MED 145 ⁺	2	2000	2	
	11	141.0	8459	GA 26 MED	5	MED 145 ⁺	2	3000	2	
	uAIR-GV	8	15.2	914	GA 7 VSD ⁺ MED	3	MED 15 ⁺	2	250	2
		8	22.6	1355	GA 11 VSD ⁺ MED	3	MED 25 ⁺	2	500	2
8		29.0	1742	GA 15 VSD ⁺ MED	3	MED 35 ⁺	2	500	2	
8		45.3	2717	GA 18 VSD ⁺ MED	3	MED 45 ⁺	2	1000	2	
8		53.2	3191	GA 22 VSD ⁺ MED	3	MED 65 ⁺	2	1000	2	
8		66.0	3959	GA 26 VSD ⁺ MED	3	MED 65 ⁺	2	1000	2	
8		70.8	4249	GA 30 VSD ⁺ MED	3	MED 80 ⁺	2	1500	2	
8		83.8	5029	GA 37 VSD ⁺ MED	3	MED 100 ⁺	2	1500	2	
8		88.7	5323	GA 18 VSD ⁺ MED	4	MED 100 ⁺	2	1500	2	
8		103.6	6216	GA 22 VSD ⁺ MED	4	MED 145 ⁺	2	2000	2	
8		130.0	7800	GA 26 VSD ⁺ MED	4	MED 145 ⁺	2	2000	2	
8		144.4	8664	GA 30 VSD ⁺ MED	4	MED 145 ⁺	2	3000	2	
11		11.4	684	GA 7 VSD ⁺ MED	3	MED 15 ⁺	2	250	2	
11		18.8	1131	GA 11 VSD ⁺ MED	3	MED 25 ⁺	2	500	2	
11		23.2	1395	GA 15 VSD ⁺ MED	3	MED 25 ⁺	2	500	2	
11		37.0	2219	GA 18 VSD ⁺ MED	3	MED 35 ⁺	2	1000	2	
11		45.7	2743	GA 22 VSD ⁺ MED	3	MED 45 ⁺	2	1000	2	
11		52.4	3143	GA 26 VSD ⁺ MED	3	MED 65 ⁺	2	1000	2	
11		59.9	3593	GA 30 VSD ⁺ MED	3	MED 65 ⁺	2	1000	2	
11		74.6	4475	GA 37 VSD ⁺ MED	3	MED 65 ⁺	2	1500	2	
11		93.1	5586	GA 22 VSD ⁺ MED	4	MED 80 ⁺	2	1500	2	
11		110.4	6622	GA 26 VSD ⁺ MED	4	MED 100 ⁺	2	2000	2	
11		117.0	7019	GA 30 VSD ⁺ MED	4	MED 145 ⁺	2	2000	2	
11		146.4	8783	GA 37 VSD ⁺ MED	4	MED 145 ⁺	2	3000	2	
11		166.5	9989	GA 26 VSD ⁺ MED	5	MED 145 ⁺	2	3000	2	

COMMITTED TO SUSTAINABLE PRODUCTIVITY

We stand by our responsibilities towards our customers, towards the environment and the people around us. We make performance stand the test of time. This is what we call – Sustainable Productivity.



www.atlascopco.com

