Atlas Copco

High-pressure oil-free air piston compressors
P 37 - P 275 / 25 to 40 bar / 37 to 275 kW

Sustainable Productivity

Atlas Copco

Proven reliability
at the lowest operational cost

By combining the right mix of innovation, high-tech components and a simplified, user-oriented design, Atlas Copco's P compressor range is ready to be your partner for excellence. P compressors give the highest possible quality and reliability for your process, while offering the lowest possible operational costs.

PET bottle production

High-pressure oil-free performance

For PET bottle production, the total absence of oil or pollutants in process air is critical. Atlas Copco's P compressors not only deliver high-quality air; they offer the reliability, efficiency and high productivity you expect from your equipment.

Hydro power

Superior technology as a first choice

Hydro electricity is a renewable source of energy with rapid rate of growth worldwide. The sturdiness and uptime operation of the P compressors make them the first choice in the process of turbine dewatering and hydraulic circuit pressurizing.

Aeronautics

High-pressure that can be trusted

Test benches in the aeronautic industry require the best compressed air technology available. With their sturdy construction and trusted delivery of high-pressure oil-free air, P compressors are the ideal solution for these environments.

Food and non-food sectors

Filling a wide variety of requirements

High-pressure oil-free air is used in many sectors, such as PET containers for pharmaceuticals, cosmetics, home care products and food and solar energy and electronics. With their steady oil-free air flow, our P compressors are best equipped to serve these markets.

A customer centric approach

When looking into a new investment you study the delivered air quality, the reliability of the equipment and the energy savings it brings. Atlas Copco has taken these elements into account at design level. The result is a product which is focused on you as a customer: a complete solution without hidden costs.

Protecting your reputation and production

In many critical applications, oil contamination of the air supply causes serious productivity issues and increases costs. Focusing on the protection of these applications as well as today's increasing quality demands, Atlas Copco offers high quality oil-free air.

Keeping your production up and running

A reliable supply of compressed air is essential to ensure production continuity. Every P compressor is designed for 24-hour-a-day operation, year after year. Proven horizontal technology and carefully selected components have been integrated to guarantee an extended lifetime and trouble-free operation.

Easy control and maintenance

A properly managed compressed air network allows you to save energy, reduce maintenance, decrease downtime and improve product quality. Atlas Copco's advanced control and monitoring systems make sure all compressors provide optimum performance for your process.

Driving down costs

From installation to energy usage and maintenance, P compressors help you reduce costs in a number of areas. The P provides the optimum combination of high Free Air Delivery (FAD) with low energy consumption. In addition, the advanced Elektronikon® controller ensures your compressed air network matches your precise needs, optimizing energy usage and minimizing costs.

Oil-free technology to rely on day after day

Designed to meet the most stringent demands and ensure round-the-clock industrial operation, Atlas Copco's P compressor range is the result of decades of experience in oil-free manufacturing.

Optimum safety: eliminating any risk

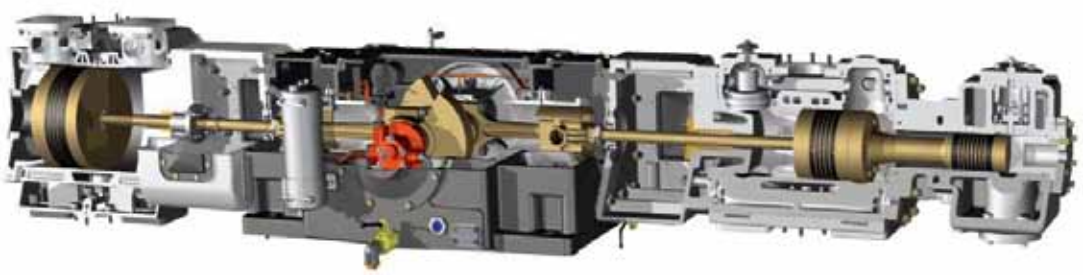
In the food and beverage sector, you simply cannot afford to take any risks with your end product. Even the best filters can deteriorate at some point. Your brand image and reputation is at stake. Atlas Copco offers the oil-free technology you are looking for:

- Completely oil-free chambers with PTFE® piston rings & long distance pieces with wiper rings.
- No risk of contamination, damaged products or losses from operational downtime.
- Reduced maintenance costs as there is no need for oil filtration.
- Air quality as per ISO 8573 Class 1.

Superb reliability: a field-proven technology

Atlas Copco's P compressors are designed for industrial use 24 hours a day. Many factors contribute to their reliability:

- Horizontal design with balanced opposed arrangement, keeping vibrations to an extremely low level.
- Skid fixed with chemical bolts on a normal industrial floor, without the need for anti-vibration blocks. The mechanical vibrations pass on the ground. This eliminates skid vibrations which is safer for the motor and mobile parts.
- Smooth repartition of forces and reduced specific friction loads preserve the piston rings and wear bands.
- Excellent cooling with oversized coolers, water pipings and an efficient water separator ensure limited valve outlet temperatures and piston temperatures. This results in low temperatures on the rings, valves and air packings, thus limiting wear and increasing maintenance intervals.



The latest state-of-the-art equipment

Uniting a range of proven technologies, the robust P compressor offers you Atlas Copco's renowned knowledge in a class-leading design.

Valves

- Strictly selected for long life duration of components and performance integrity.
- Reduced power losses thanks to stainless steel plate and wide port area.

Piston rings

- PFTE® piston rings built for extended lifetime.
- Smooth repartition of wear for extra reliability.

Packing rings

- High-quality packing rings for increased durability.

Electrical cubicle IP 54

- Conforms to all international electrical specifications.
- Includes star-delta starter to reduce current peak with thermal protection and Elektronikon® controller.
- Fitted on compressor base plate.

Elektronikon® management system

- Multilingual, clear and easy to manage.
- Continuous monitoring of your compressor:
  - Operating status: Status warning indication to ensure early detection and rectification of potential problems.
  - Service indication: Maintenance countdown function to indicate air and oil filter change.
  - Shutdown protection: Stops the compressor before any damage can be done.

A customer centric approach

Designed to meet the most stringent demands and ensure round-the-clock industrial operation, Atlas Copco's P compressors are the result of decades of experience in oil-free manufacturing. Our range, based on two frame sizes and configurations with 3 and 4 compression stages, offers the right solution for your specific application.

3 stages to serve you best at all times

- With tandem cylinder on the 3rd stage.
- Highly compact machine.
- Complete package including electric cubicle and interconnecting pipings.
- Metallic frame, no vibration pads required.
- Easy access for maintenance.
- Time- and cost-saving installation: no dismantling for transport, no need to re-assemble on site.
- All components are at human height.
- 2 frame sizes.

4 stages: Advanced cutting-edge technology

With the addition of an oil-free air screw unit in the first stage, the P 180 to P 275 compressors come as 4-stage machines. This innovative approach results in unrivalled benefits, maximizing flow in compact plug & play units. The screw element in the first stage produces 100% oil-free air, certified Class 0, as per ISO 8573-1.

State-of-the-art oil-free screw element

TEFC IP55 motor

Integrated gearbox

Air inlet filter

Maximized advantages

The new P compressor range up to 4 stages is designed to be the best companion for your process at all times. It supplies a steady and reliable airflow under difficult conditions in cold, warm or hazardous environments. It also cumulates numerous benefits ensuring a low cost of ownership and maximizing advantages in terms of life long economical operation.

Energy savings

Reciprocating technology is thermodynamically extremely efficient in terms of energy. Compression ratios and inter stage temperatures are low.

Low maintenance

- Limited number of moving parts.
- Quick and simple maintenance procedures.
- Easy spare part management and low maintenance costs thanks to standardization throughout the compressor range.

Plug & play

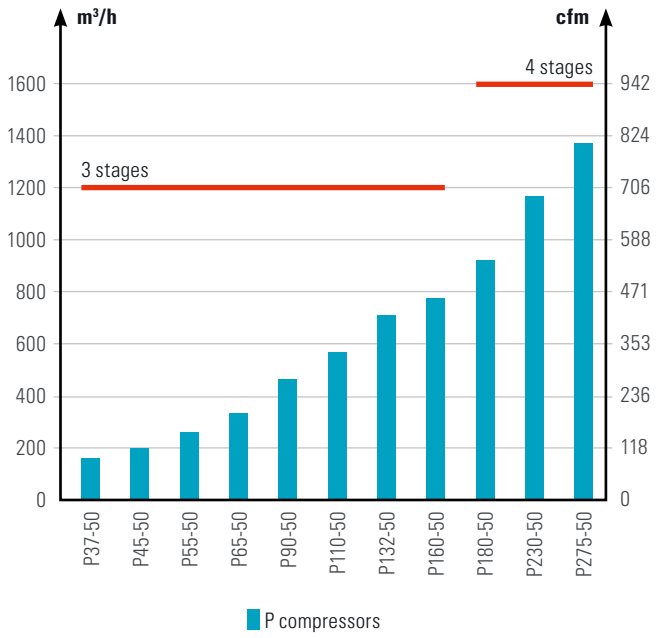
P compressors come as complete units on skid including all interconnection pipings and wirings.

Easy installation

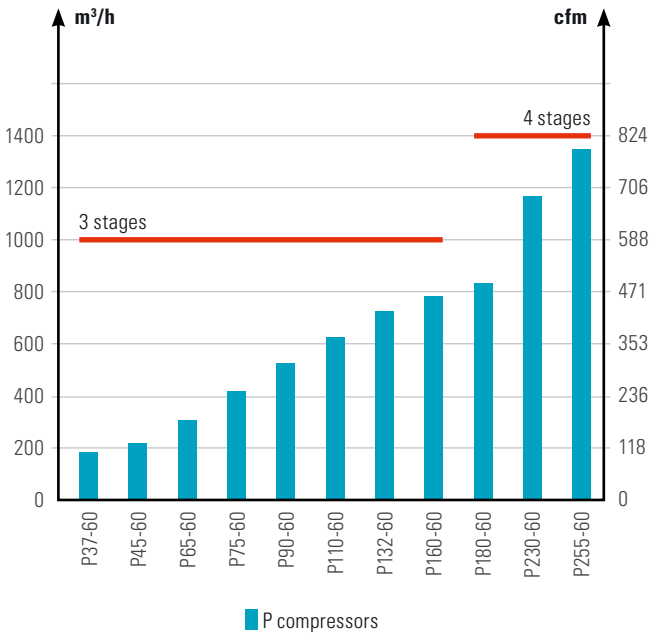
- Compact compressor.
- Reduced handling and installation costs.

Range overview

50 Hz



60 Hz



Driving down costs

A main requirement for your business nowadays is to reduce costs. The right air compressor can be a substantial source of savings for your production process. Piston technology offers, by design, a number of energy-saving features. You can keep energy costs down to a minimum, now and in the long run.

Adapting pressure to save energy

In PET bottle production, the required air pressure changes, depending on the size and shape of the bottles being produced. You can adjust the pressure with the Elektronikon® controller to the required value between 25 bar (362 psig) and 40 bar (580 psig) to suit the demand. This allows you to optimize energy usage and drive down energy costs.

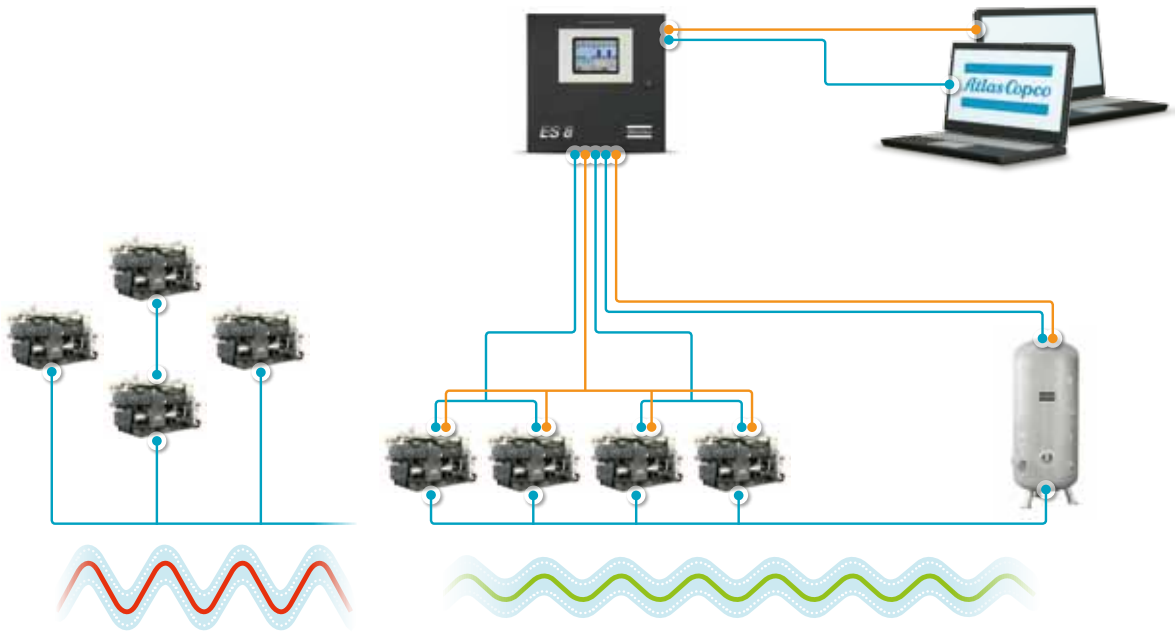
Compressor room management

Closer control through advanced technology

To manage your compressor in the most cost-efficient way and obtain the highest return on investment, Atlas Copco provides you with next-generation energy saving control systems. ES controllers keep your network running within a narrow, predefined pressure band. This increases the stability of the process and provides significant cost savings through energy reduction and maintenance optimization. ES8 is able to closely manage up to 8 mixed sized compressors.

Enhanced remote control

When remote control is required, the communication modules for MODBUS and PROFIBUS allow for integration in plant control system. With the addition of one ComBox, an Elektronikon® installation can be accessed directly from a PC or via an existing building management system, using a choice of protocols.



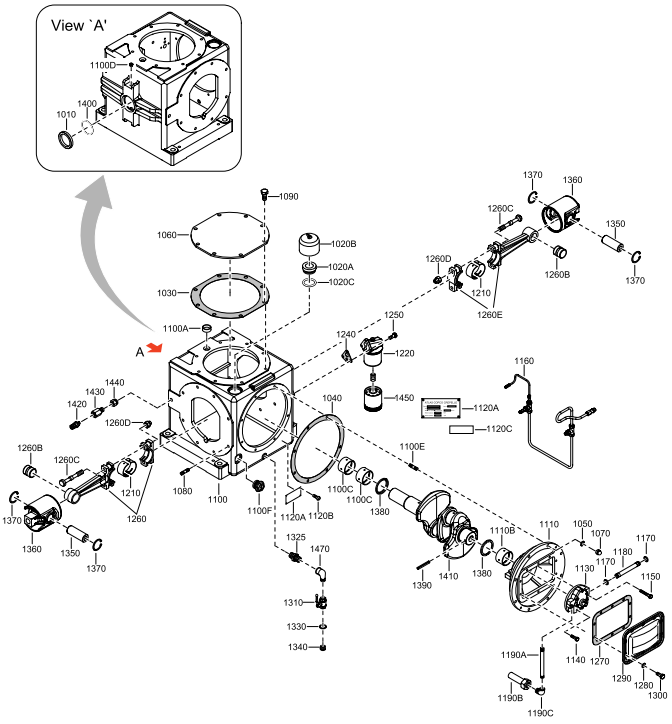
Keeping installation costs to a minimum

Every P compressor is delivered fully assembled. With no reassembly of components on site, installation is fast, straightforward, safe and without any unwelcome surprises. P compressors can be fixed to a suitable industrial floor using chemical bolts. This eliminates skid vibrations and preserves the motor and mechanical parts.

Reducing maintenance costs

For our customers' benefit, P compressors are specially designed to simplify maintenance on site, helping to reduce costs:

- **Simple from the start:** maximum standardization of components, including cylinders, valves and packings, throughout the range for simpler spare parts management, faster deliveries and reduced costs.
- **Easy access to all parts:** horizontal layout for full accessibility to all components at an optimal height, particularly the cylinder heads and valves.
- **Easy spare part ordering:** a clear overview of all parts allows for quick and safe ordering of the components needed. Quick deliveries make sure you can keep stock to a minimum.



The complete high-tech oil-free package

As every installation has its own particulars and operating conditions, it is essential to obtain the right air quality and most suitable cooling for the highest protection at the lowest costs. At Atlas Copco we have defined a number of options and accessories that will provide you with the best possible service.

High-pressure refrigeration dryer

- Pressure dew point of 3°C (25°F).
- Designed for nominal pressures between 20 and 45 bar (290-653 psi).
- Environmentally friendly refrigerant.

High-pressure filters

- Highly efficient fine filter: filtration up to 0.1 micron.
- Active carbon filter: oil vapor & odor removal filter down to 0.005 mg/m³ oil carry-over.

40 bar pressure vessel

- Volume: 500-3000 liters (132-792 gallons).
- Safe design for applications up to 45 bar (653 psi).

Airblast cooling unit

- Efficient cooling of the closed loop water circuit.
- Temperature approach: 5-15°C (41-59°F).
- Maximum water temperature: 70°C (158°F).

Cooling tower

- Efficient cooling of the closed loop water circuit.
- Ambient temperature: between -35°C and +40°C (-31°F and +104°F).
- Maximum water temperature: 80°C (176°F).

Water pump skid

- Optimization of the flow in the compressor closed loop circuit.
- Joining of all functions for the operation of the cooling unit or tower.

Open heat exchanger

- Optimization of the flow to bring the cooling circuit to the correct temperature.
- Suitable for difficult site conditions.

Optimize your system

To further optimize your compressor's performance or to tailor it to your production environment, optional features or complete engineered solutions are available. Contact us at www.atlascopco.com.

Scope of supply

Air circuit

- Compression unit with oil-free compression chambers
- High-performance intake filter
- Stainless steel separator

Cooling circuit

- Oversized coolers providing excellent cooling
- Pulsation damper at cylinder outlets with anti-corrosion coating
- Condensate separator fitted at each cooler outlet with automatic drains

Connections

- Inlet and outlet flanges for air and water

Electrical components

- Electric motor (oversized to accept all peaks at the maximum design value of 45 bar (653 psi))
- Pressure and temperature electronic transmitter for alarm & indication on control panel
- Pre-wired electrical cabinet equipped with Elektronikon® monitoring system

Framework

- Common base plate and interconnection pipings and wirings

Mechanical approval

- ASME, CE, GOST and SELO (other codes on request)

Additional features & options

- Main switch
- Compressor room management systems

Technical specifications*

Model	Discharge pressure		Flow		
	bar(e)	psig	l/s**	m³/h**	cfm**
50 Hz					
P 37-50	40	580	45	162	96
P 45-50	40	580	58	209	123
P 55-50	40	580	72	259	153
P 65-50	40	580	89	320	189
P 90-50	40	580	125	450	265
P 110-50	40	580	159	572	337
P 132-50	40	580	190	684	403
P 160-50	40	580	217	781	460
P 180-50	40	580	247	889	523
P 230-50	40	580	328	1181	695
P 275-50	40	580	381	1372	807
60 Hz					
P 37-60	40	580	52	187	110
P 45-60	40	580	69	248	146
P 65-60	40	580	90	324	191
P 75-60	40	580	119	428	252
P 90-60	40	580	150	540	318
P 110-60	40	580	183	659	388
P 132-60	40	580	205	738	434
P 160-60	40	580	218	785	462
P 180-60	40	580	234	842	496
P 230-60	40	580	323	1163	684
P 255-60	40	580	367	1321	778

* *Reference conditions*
Ambient temperature & cooling water: 20°C, 68°F
Suction pressure: 1 bar(e) (14.5 psig)
Relative humidity: 0%

** *Reference conditions according to ISO 1217, Edition 4, Annex C stipulating the Free Air Delivery measurement at the outlet of the package, net of all losses.*

Standard limitations:
Altitude: 1000 m (3200 feet)
Standard equipment: up to 50°C (122°F) ambient temperature