

Atlas Copco

Air & Industrial Gas Compressors

A complete offering for high pressure applications



Sustainable Productivity

Atlas Copco



Table of contents

Atlas Copco: Serving the industrial gas industry	4
Atlas Copco: All the capabilities you need	6
A solution for any job	8
Air	10
Carbon Monoxide (CO)/Carbon Dioxide (CO₂)	12
Nitrogen (N₂)	14
Helium (He)	16
Hydrogen (H₂)	18
Methane/Biomethane (CH₄)	20
Completing the offer	22
Products	24
HX/HN Compressor Range	25
ZD Compressor Range	26
DX/DN Compressor Range	27
DM Compressor Range	28
CU/CT/CN/CS Compressor Range	29
CU/CT and GA + CU/CT Compressor Range - Seismic Surveying	30
FBR/BBR/VIP Compressor Range	31
B & D Compressor Range	32
GG Gas Screw Compressor Range	33
S 100-750 and B Refueling Stations	34
Rhino BBR/FBR/VIP Refueling Stations	35
Atlas Copco certifications	36
Peace of mind	37
Contacts	38

Atlas Copco

Serving the industrial gas industry

Atlas Copco is an industrial group with world-leading positions in compressors, construction and mining equipment, power tools and assembly systems. Established in 1873, the company is based in Stockholm, Sweden, and has a global reach spanning more than 170 countries. At Atlas Copco, compression is not a word, it is a passion. Based on its strength and worldwide success in oil-free screw technology, Atlas Copco broadened its scope of technologies to serve more customers worldwide for new applications. To this purpose, Atlas Copco integrated world-renowned specialists, each of them with a strong reputation, healthy brand and in-depth customer commitment, in line with Atlas Copco's own vision.

With a comprehensive product offering, obtained through strategic acquisitions, Atlas Copco gained the experience and expertise to be a trusted partner for the industrial gas industry. We supply reliable equipment for many challenging applications. We know our business and we know yours. When we work with our customers, we have one goal in mind: sustainable productivity.

Based on our company roots in compression technology, strengthened by the acquisition of some leading manufacturers for high-pressure industrial gas compressors and world leaders in the fields of natural gas and hydrogen vehicle refueling systems, we have built our expertise and expanded our portfolio. We have grown to become a premier, reliable end-to-end partner for industrial gas.

Benefits of working with Atlas Copco

- World-leading player in air/gas compression
- More than 130 years of experience
- Presence in 170 countries
- Extensive global service network
- No compromises on quality
- Highly trained personnel
- Complete range of solutions and services

Atlas Copco Crépelle: Specialist in high-pressure oil-free compressors for air and industrial gas applications

Founded in 1837, Crépelle is renowned for the design & manufacture of compressors. Pioneering oil-free piston technology in the early 1960s, Crépelle became a reference in the compression world. The company's R&D department has developed many innovative air and gas applications. The company entered the Atlas Copco Group in 1997. Atlas Copco Crépelle is now a leader in oil-free high-pressure piston technologies up to 100 bar, with numerous references in the air and gas market.



GreenField: Specialist in high-pressure gas compressors for CNG and hydrogen vehicle refueling, for seismic and industrial gas applications

With its origins in Sulzer Burckhardt (founded in 1844), GreenField was formed after the integration of the Mannesmann Anlagenbau portfolio of CNG filling stations. It became a strategic goal for the company to invest in gases such as biomethane and other eco-friendly applications. Greenfield joined the Atlas Copco Group in 2007. The company is particularly strong in high-pressure compressors up to 350 bar for gas production systems, filling systems for storage and transport, gas recovery, evacuation of pipelines, natural gas/biogas and hydrogen filling stations.



Intermech: Leading provider of high-pressure compressors for CNG vehicle refueling stations

Founded in 1978, Intermech was dedicated to CNG compressors. It rapidly developed new models including W and flat twin horizontal machines as well as models with a pressurized crankcase: a great success on the market. Intermech also pioneered mother/daughter systems for CNG refueling stations. Intermech joined the Atlas Copco Group in 2006.



Cirmac: Specialist in upgrading equipment for biogas

Cirmac was acquired in 2010 to further extend Atlas Copco's capabilities beyond compressors. The company specializes in biogas upgrading systems for the renewable energy industry and gas treatment systems for the oil, gas and chemical industries. Cirmac also delivers gas purification and nitrogen generation systems for the oil, gas and petrochemical industries, both onshore and offshore.



Gas Purification Group: Atlas Copco's equipment and expertise for gas purification and nitrogen generation systems

Atlas Copco has built expertise and expanded its product portfolio over decades of research to include gas purification and generation systems such as dryers, filters, PSA and membrane systems.



Atlas Copco: All the capabilities you need

Driven by innovation

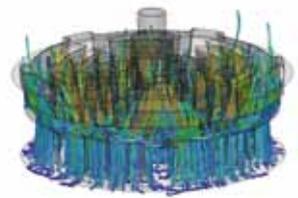
R&D is an ongoing process within Atlas Copco for the benefit of our customers and as a foundation for future growth. Components and materials are continuously optimized and the most recent technological evolutions are implemented when they add value for customers. This results in energy-saving solutions, easier maintenance, longer life of internal components and of course the development of new products.

Unrivaled experience

With more than 150 years of experience in reciprocating machines and the cumulated field experience in the specific markets of the Crépelle, Greenfield and Intermech sectors, both in air and gas applications, we have expertise you can rely on for every project.

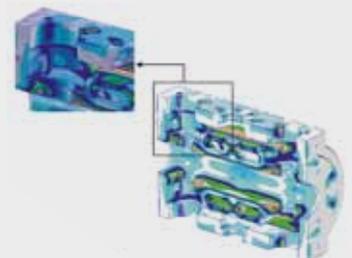
Know-how and creativity

Atlas Copco has developed its own proprietary software for powerful compressor calculations. As a market leader in screw and piston technologies, the calculations also include the combination of both technologies for an optimized result. Atlas Copco engineers dimension the compressor, element by element, for a custom designed solution. The compressor calculation software utilizes all the customer specifications in order to provide the optimum definition of the machines. Atlas Copco engineers can define the performances (flow, pressure), power (adiabatic, polytropic, mechanical), temperatures, compressibility factors on the intake and discharge of each stage, volumetric efficiency, valve velocity rates and API valve calibrations. The software allows multi-service and multi-stage thermodynamic computations. It also incorporates calculations for cold gases and gas transfer times.



Mechanical calculations of reciprocating machines:

- Residual efforts brought to the center of the crankshafts.
- Efforts at all points (piston crankshaft, crankpin, piston rod, crosshead, bearing).
- Inertia flywheels and cyclic irregularities.
- Inertia forces and pressure on piston rods.
- Reverse rod loading.



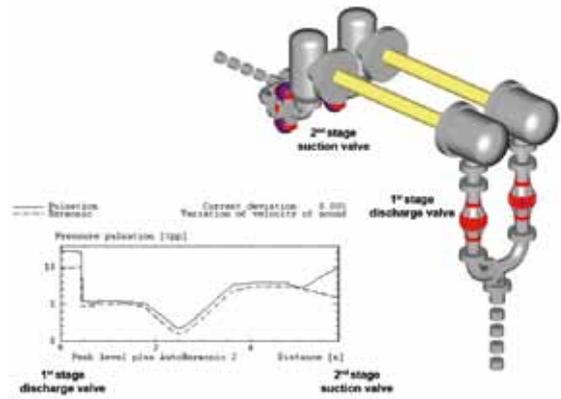
Contract handling

Experienced engineers handle contracts and form the indispensable interface with the client throughout production. Progress meetings are held as part of the certification to initiate manufacturing and procurement processes. Strict and regular follow-up is established. Upon request our engineers carry out:

- Pulsation studies.
- Torsional analyses.
- Modal analyses.

They are also capable of carrying out finite element computations and precise model calculations:

- Structural computations.
- Cinematic study of the connecting rod/crankshaft system.
- Dynamic study of the drive-shaft.
- Dynamic behavior of valves.
- Selection of materials and equipment according to the specific application.



Laboratory

All production entities use several cells dedicated to tests to make the necessary measurements (performances, flows) and test the new products and innovations. Test benches comply with ISO 1217.



Customer oriented

The entire organization is based on customer satisfaction. This is valid from the initial translation of customer needs and specifications into a quotation, to the final commissioning by process specialists.



A solution for any job

Atlas Copco offers all the compressor technologies for the industrial gas industry, supported with solutions for gas treatment and purification. This enables us to provide a safe, reliable and economical solution for each specific application.

Typical applications

- Bottling plants for industrial gases
- Electrolysis plants for hydrogen production
- Helium and carbon dioxide (CO₂) recovery systems
- NGV/CNG (natural gas) refueling stations
- Hydrogen fueling stations
- Hydropower plants
- Seismic research
- Gas production plants
- Air separation plants
- Air-blast circuit breaker systems

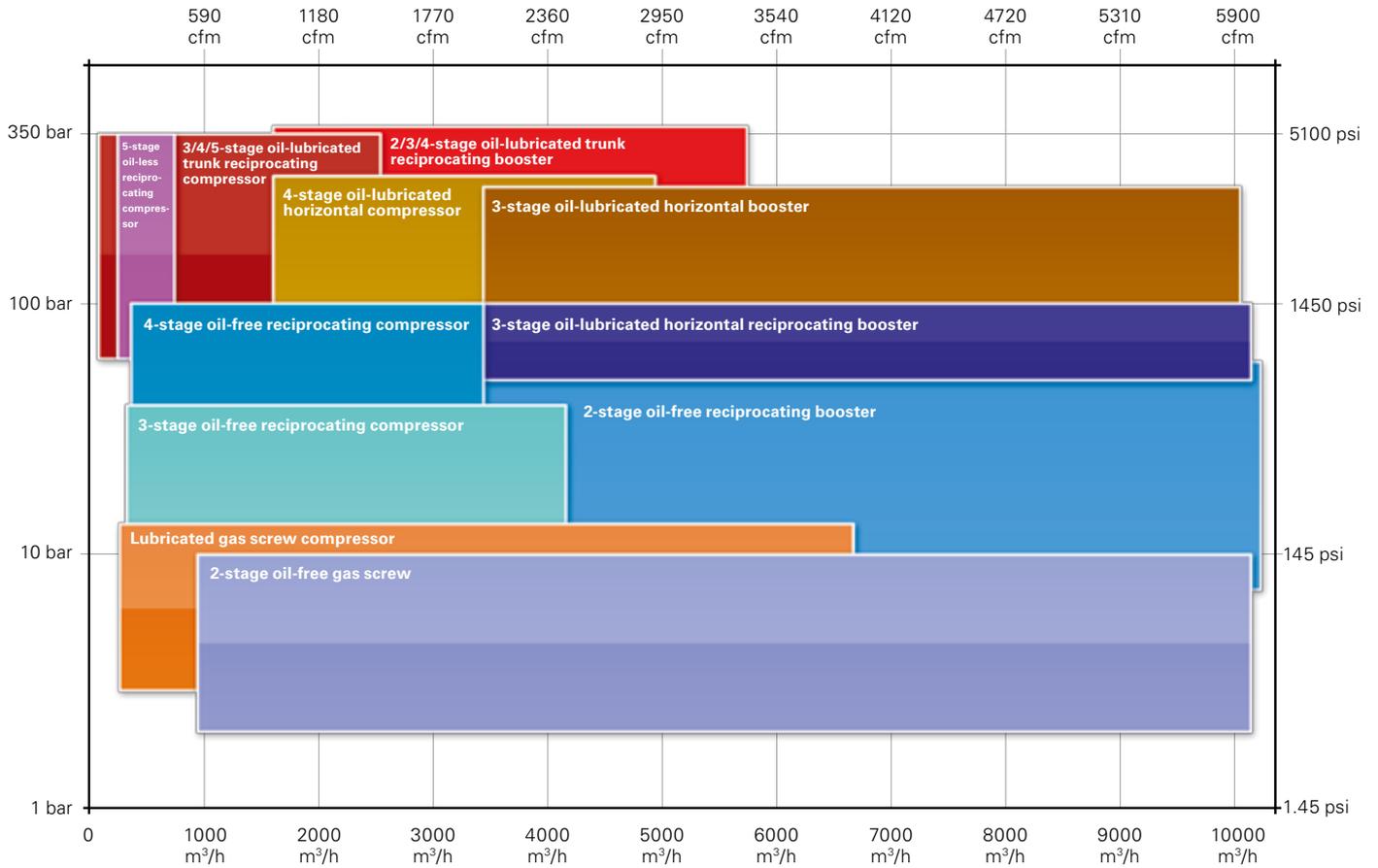
Handled gases

- Air
- Nitrogen
- Helium
- Natural gas
- Methane
- Argon
- Rare gases
- Hydrogen
- Carbon monoxide
- Carbon dioxide
- Oxy-helium mix (heliox)
- Nitrous oxide

TECHNOLOGY	Compressor type	Air	N ₂	CO/CO ₂	He	H ₂	Ar	No	Ch ₄	Biomethane
Oil-free screw	ZR	X	X	X			X			
Oil-free screw and piston	ZD	X	X							
Centrifugal	ZH	X	X							
Oil-injected screw	GG								X	X
Oil-free reciprocating	DX/DN	X	X							
	HX/HN	X	X	X		X	X		X	X
Oil-less reciprocating	DM					X			X	
Oil-lubricated reciprocating horizontal type	BBR/FBR	X	X						X	X
Oil-lubricated reciprocating trunk type	CS	X	X						X	
	CN/CU/CT	X	X	X	X	X	X	X	X	X
	B/D	X	X		X	X			X	X

Atlas Copco Reciprocating and Screw Gas Technology

Methane – Nitrogen – Carbone dioxide – Hydrogen – Process air – Argon – Helium



- 2-stage oil-free gas screw
- Lubricated gas screw compressor
- 4-stage oil-free reciprocating compressor
- 2-stage oil-free reciprocating booster
- 3-stage oil-free reciprocating compressor
- 3-stage oil-lubricated horizontal reciprocating booster
- 3-stage oil-lubricated horizontal booster
- 4-stage oil-lubricated horizontal compressor
- 2/3/4-stage oil-lubricated trunk reciprocating booster
- 3/4/5-stage oil-lubricated trunk reciprocating compressor
- 5-stage oil-less reciprocating compressor

Air

Air is an essential resource in all types of industries. Requirements in terms of quality, pressure and flow vary considerably depending on the application. Atlas Copco, as a world leader in compressed air, has an extended portfolio of oil-free and lubricated compressors covering most applications. We consistently offer quality products and the best support worldwide, from material definition up to commissioning and after-sales support. Whatever your needs, we have the right solution for you. On the following pages you can get a glimpse of our varied applications.

- ▶ Air separation plant
- ▶ Power plants
- ▶ Seismic research
- ▶ Pipelines & desalination plants
- ▶ Metal factories
- ▶ Aeronautics & car industry
- ▶ Breathing air
- ▶ Geothermy
- ▶ Turbine dewatering
- ▶ Circuit breakers



Desalination plants

Atlas Copco compressors were selected to keep surge vessels under pressure and protect the pumping stations from water hammer damage. Oil-free compressors were required as the air in the surge vessels is in contact with potable water. The compressors needed to be able to work in desert environments with high ambient temperatures. The compressors chosen delivered air from atmospheric pressure to respectively 80 bar (1160 psi), 77 bar (1117 psi) and 64 bar (928 psi) with flow rates ranging from 100 to 1500 Sm³/h (60-890 scfm). In another example, for a flow of 823 Nm³/h (490 scfm) at 12.5 bar (181 psi), the main compressor is electrically driven and the standby compressor is driven by a diesel engine.

AIR										
MODEL	Piston	Screw + piston	Oil-free	Oil-lubricated	Inlet pressure		Discharge pressure		Flow	
					(bar A)	(psi A)	(bar G)	(psi G)	(m ³ /h)	(cfm)
ZD		X	X		1	14.5	25-42	360-610	720-3800	424-2237
DX/DN	X		X		6-25	87-360	12-42	175-610	270-10200	160-6000
HX/HN	X		X		1-40	14.5-580	10-100	145-1450	130-15000	77-8830
FBR/BBR	X			X	1.5-60	22-885	250-310	3600-4500	410-7000	240-4120
CU/CT	X			X	1-19	14.5-280	<350	<5100	<1700	<1000
CN	X			X	1-1.35	14.5-20	<350	<5100	<86	51
B/D	X			X	1.5-3	22-45	17-500	250-7300	40-510	25-300
GA+CU/CT SEISMIC	X	X		X	1	14.5	150-220	2200-3200	<1800	<1060
CS	X			X	1	14.5	<350	<5100	<180	<106



Seismic applications

Chosen for their sturdiness, small footprint and reliability on vessels, our seismic compressors are used as an energy source for airguns. They are widely used for offshore seismic exploration (deep water, shallow water, transition zones and vertical seismic profiles) to determine if there is an oil or gas reservoir. Our CU/CT compressors have been specially designed for this application. They are air- or water-cooled (fresh water or sea water cooling), with an electric or diesel motor drive. They are adapted to a ship's inclination up to 22.5° (Lloyd's verified). They can be used with an Atlas Copco GA compressor at inlet.



Oil & gas

Air is a vital application in the oil and gas industry. For example, our HX/HN series compressors were selected by a refinery in China for their performance as oil-free compressors and their adaptability to the environment. Each machine delivers a flow of oil-free air of 700 Nm³/h (450 scfm) at 9.2 bar (134 psi). The compressors cope perfectly with ambient temperatures between -1°C and 55°C (30°F-131°F), and are conform to API 680.



Aeronautics

In the aircraft manufacturing industry, our CN compressors have been selected for compression from atmospheric pressure up to 200 bar (2900 psi) with a high-pressure breathing air filtration set. The compressors are used to test components and create atmospheric conditions for pilots and planes. The dry clean air is required inside the climatic chambers which simulate real and harsh conditions for a supersonic aircraft pilot. The compressors were selected for their reliability and for the local Atlas Copco support.



Tests

Another application concerns maintenance tests where we have, for example, boosters in the high-pressure network delivering 5500 Nm³/h (3500 scfm) of dry air at a pressure of 31 bar (450 psi), working downstream from three Atlas Copco ZR compressors in the medium-pressure network.



Carbon monoxide (CO)/ carbon dioxide (CO₂)

CO is a colorless and tasteless gas which is slightly lighter than air and highly toxic, while CO₂ is a slightly toxic, odorless and tasteless gas. They can be released by combustion (coal) or formed by fermentation, or decomposition of organic produce. They are also prepared through several industrial processes. Being a greenhouse gas, CO₂ is often captured and stored to preserve the environment. Atlas Copco has extensive expertise in CO and CO₂ compression, as the following examples show.

- ▶ Generating & recovery plants
- ▶ Chemicals/fertilizers
- ▶ Food beverages/breweries
- ▶ Lasers/medical
- ▶ Welding
- ▶ Storage bottles
- ▶ Capture & sequestration
- ▶ Oil fields
- ▶ Metallurgy



Fertilizers/greenhouse farming

Greenhouse solutions push innovation by recuperating heat and CO₂ for environmentally-friendly sustainable farming. When greenhouse farmers decided to work with heat and pure CO₂, they decided to install a dedicated pipeline from the nearby fertilizer plant. Atlas Copco was chosen to design and install the compressors to boost the gas from 1 to 7 bar (14.5-101 psi) for transportation purposes. The main requirement was that the CO₂ had to remain 100% pure and dry and fully operational at all times. The installation includes a complete Atlas Copco solution with four ZR oil-free screw compressors and four XDE dryers to remove the moisture down to a Pressure Dew Point (PDP) of -10°C (14°F) using the compression heat of the ZR.

CO/CO ₂										
MODEL	Piston	Screw	Oil-free	Oil-lubricated	Inlet pressure		Discharge pressure		Flow	
					(bar A)	(psi A)	(bar G)	(psi G)	(m ³ /h)	(cfm)
ZR		X	X		1-1.5	14.5-22	4-10	58-145	100-500	59-294
HX/HN	X		X		1-40	14.5-580	5-100	73-1450	160-10700	95-6298
CU/CT (CO)	X			X	1-19	14.5-276	220	<3190	75-1000	44-588
CU/CT (CO ₂)	X			X	1-19	14.5-276	170	<2470	75-960	44-565



Oil & gas

Atlas Copco has supplied a CO₂ compressor to a petroleum plant in Asia (HN series with API design). This 4-stage machine is compressing wet CO₂ from an inlet pressure of 1 to 26 bar (15-377 psi) with a flow rate of 1000 Nm³/h (589 scfm). The compressor has a stainless steel inlet separator, valves and tube bundles in the inter- and after-coolers. It is fitted with direct drive for the motor and has been especially designed to take into account the reduced floor space requirements.



Steel plant

For a steel production process, Atlas Copco has supplied a booster of the HX series for CO₂ and nitrogen compression from an inlet pressure of 0.5 to 2 bar (7-29 psi) to a discharge pressure of 15 bar (218 psi) for a capacity of 410 Nm³/h (240 scfm). Stainless steel is used for the pressure vessels, coolers and belt protection.



Chemicals

Atlas Copco has supplied a carbon monoxide compressor for use in an industrial application. This 4-stage CT machine continuously compresses CO to a discharge pressure of 151 bar (2190 psi) from an inlet pressure of 13.7 bar (189 psi) developing 1010 Nm³/h (594 scfm) with a 200 HP/2300 V motor. It is air-cooled and skid-mounted and has a PLC controlled electric panel. All relief and blow-down valves are piped back to the suction inlet to eliminate any gas loss.



Nitrogen (N₂)

Nitrogen is a colorless, odorless and tasteless gas that constitutes 78% vol. of ambient air. It is widely used in industry mainly for its inerting, blanketing and cryogenic properties. Atlas Copco supplies complete solutions with oil-free or lubricated compressors for wet to bone-dry nitrogen, with a wide variety of inlet pressures. Atlas Copco's complete offer includes generators, filters and dryers.

- ▶ Gas reformers
- ▶ Electronics
- ▶ Steel industry
- ▶ Cable production
- ▶ Fertilizers
- ▶ Food & Beverage
- ▶ Pharma
- ▶ Chemistry
- ▶ Rubber industry
- ▶ Plastics



Steel plant

Variable speed drive was a strong asset and benefit for a customer in a steel plant who required a nitrogen compressor with variable flow. The Atlas Copco solution was a complete oil-free ZD with variable flow from 1000 to 2000 Nm³/h (590-1200 scfm). From 1 bar (14.5 psi) at the inlet, the discharge pressure can be adjusted between 25 and 42 bar (363 and 610 psi). The nitrogen dew point is -80°C (-292°F). This ZD is CLASS 0 certified by TÜV, which indicates the highest purity class within ISO 8573-1. There is no risk of pollution of the nitrogen during the compression process, while the Variable Speed Drive (VSD) version allows for energy savings up to 35%.

N ₂										
MODEL	Piston	Screw + piston	Oil-free	Oil-lubricated	Inlet pressure		Discharge pressure		Flow	
					(bar A)	(psi A)	(bar G)	(psi G)	(m ³ /h)	(cfm)
ZDXtend		X	X		1-1.5	14.5-22	25-40	360-580	720-3800	424-2237
DX/DN	X		X		6-25	87-360	12-42	175-610	270-10200	160-6000
HX/HN	X		X		1-40	14.5-580	10-100	145-1450	130-10700	77-6300
FBR/BBR	X			X	1.5-60	22-885	250-310	3630-4500	410-7000	240-4120
CS	X			X	1	14.5	<350	<5100	<180	<106
CN	X			X	<1.35	14.5-20	<350	<5100	16-60	9.5-35
CT	X			X	1-19	14.5-276	<350	<5100	270-1220	160-718
CU	X			X	1-19	14.5-276	<350	<5100	55-490	32-288
B/D	X			X	1.5-3	22-45	17-500	250-7300	40-510	25-300



Offshore

For an offshore application in Norway, we supplied our CU compressors with a discharge pressure of 351 bar (509 psi), inlet pressure of 7 bar (101 psi) and a flow rate of 50 m³/h (30 cfm). The requirements included a small footprint, and enhanced safety in order to work in a petroleum-rich environment. The compressor is part of our range of lubricated compressors for pressures up to 500 bar, which has several hundred references worldwide.



Chemical plant

A customer in a polyethylene plant in the Philippines selected several boosters of our DX/DN range for the compression of 800 Nm³/h (471 scfm) of nitrogen with dewpoint -100°C (-148°F) from 7 to 36 bar (101-522 psi). These boosters are installed on a concrete baseplate for easy transportation and handling, and vibration-free operation.



Cable production

Nitrogen is also used in the production process of High Tension cables to prevent oxidization and to ensure high-quality, reliable end products. Atlas Copco supplied a major Saudi Arabian company with a total solution that includes our nitrogen generators (PSA system), ZR screw compressors with CD desiccant dryers, and downstream in the process nitrogen boosters delivering 300 Nm³/h (177 scfm) from an inlet pressure of 6 bar (87 psi) to a discharge pressure of 20 bar (290 psi).



Helium (He)

Helium is a colorless, odorless, tasteless and non-toxic inert gas. Traces of helium are present in ambient air (0.000525% only). On an industrial scale, it is extracted from helium-rich natural gas using low temperature liquefaction. Being a rare and non-renewable gas, helium is widely recovered through fractional distillation columns. High purity is required in many applications. Our compressors with pressure-tight crankcases avoid any contamination with ambient air. The five compression stages ensure moderate compression temperatures thus reducing contamination with lubricated oil.

- ▶ Gas production/extraction/recovery
- ▶ Cylinder filling
- ▶ Electronics/semiconductors
- ▶ Cooling (cryogenic applications)
- ▶ Medical
- ▶ Nuclear
- ▶ Metallurgy
- ▶ Welding
- ▶ Airship
- ▶ Diving



Superconducting magnets

Helium's low boiling point makes it ideal to cool superconducting magnets in research institutes. To save resources and funds at the end of the cooling process, the helium gas is collected in a balloon, compressed, purified and re-used. A Japanese customer chose an Atlas Copco reciprocating compressor model CN for the recycling of helium. With a flow of 40 Nm³/h (24 scfm) and a discharge pressure of 147 bar (2130 psi), the CN compressor proved to be the ideal compressor for this demanding application.

He								
MODEL	Piston	Oil-lubricated	Inlet pressure		Discharge pressure		Flow	
			(bar A)	(psi A)	(bar G)	(psi G)	(m ³ /h)	(cfm)
CN	X	X	1-1.35	14.5-20	<350	<5100	17-50	10-29
CU	X	X	1-19	14.5-280	<350	<5100	110-320	65-188
CT	X	X	1-19	14.5-280	<350	<5100	320-650	188-382
B/D	X	X	1.5-3	22-45	17-500	246-7300	40-510	25-300
CN breathing air / heliox	X	X	1-1.35	14.5-20	<230	<3300	<65	<38



Gas companies

For one of its plants, a leading gas production company chose our CU compressors with inlet pressure of 1 bar (14.5 psi) to a discharge pressure of 350 bar (5080 psi), for a flow rate of 208 m³/h (122 cfm).



Cylinder filling/industries

We have supplied numerous compressors of our CU/CT and B/D models for helium cylinder filling to many gas companies worldwide for various applications. Due to its unique properties, helium is ideal for many uses, for example:

- ▶ Liquid cooling of LT superconductors (low boiling point).
- ▶ Leak detection (small molecular size).
- ▶ Gaseous cooling/fibre optics (high specific heat and thermal conductivity).
- ▶ Heat transfer medium in fusion reactors (radiologically inert).
- ▶ Metal arc welding for aluminum or plasma arc welding for titanium (highest ionization potential).

Our compressors are chosen for their superior efficiency, high quality components and their tight crankcase. Our expertise in this field is a major asset that counts for our customers.



Cylinder filling/medical/diving

Heliox is a mixture of 79% helium and 21% oxygen which is used in medical applications because of its low density. Heliox generates less airway resistance than air and requires less mechanical energy to ventilate the lungs. Heliox is also used as breathing gas for deep sea diving. High-pressure tube trailers of cylinders are used to transport helium to end customers. Numerous gas companies have purchased our CN and CU helium compressors. As an example, these CU compressors with a flow of 220 Nm³/h (130 cfm) from a suction pressure of 1.07 bar (15 psi) to a discharge pressure of 301 bar (4365 psi) were sold for helium compression (among the 300 helium compressors delivered worldwide).



Hydrogen (H₂)

Hydrogen is a colorless, odorless and non-toxic gas. It is the lightest and simplest of all gases and is very abundant. It is a reactive gas and enters into chemical combination with many other gases or elements. It is also the gas with the most energy-dense fuel properties per mass. Hydrogen can be produced as gas or liquid. It is produced either from fossil fuels (coal, methane, biomass, natural gas) through the processes of steam reforming and gasification; or through water electrolysis or thermochemical water splitting. Many new developments around hydrogen make it a gas with great opportunities for the future.

- ▶ Gas reformers
- ▶ Electrolyzers
- ▶ Food industry
- ▶ Oil industry
- ▶ Petroleum refinery
- ▶ Chemical industry
- ▶ Pharma
- ▶ Steel industry
- ▶ Electronics
- ▶ Glass industry



Oil & gas

A compressor was delivered to a refinery in Spain for the compression of hydrogen and hydrocarbons. It has an inlet pressure of 24 bar (350 psi), a discharge pressure of 57.2 bar (830 psi) and a capacity of 13 150 Nm³/h (7740 scfm). Features include Eexd protection; IEC 7915 area classification zone 2; and a Group IICT3 explosion-proof electrical and control device.

H ₂										
MODEL	Piston	Oil-free	Oil-less	Oil-lubricated	Inlet pressure		Discharge pressure		Flow	
					(bar A)	(psi A)	(bar G)	(psi G)	(m ³ /h)	(cfm)
HX/HN	X	X			1-40	14.5-580	10-80	145-1160	160-10700	95-6298
DM	X		X		<40	14.5-580	<450	<6500	30-225	18-132
CN (for electrolytic)	X			X	<1.35	14.5-19.6	25-350	360-5100	16-56	9.5-33
CU	X			X	<19	14.5-280	15-300	218-4350	55-490	32-288
CT	X			X	<19	14.5-280	15-300	218-4350	270-1220	160-718
B/D	X			X	1.5-3	22-45	17-500	250-7300	40-510	25-300



Wind turbines/hydrogen storage/ biomass power plant

To supply hundreds of households with electricity and heat, a generation plant was built, with, in the first phase, three wind turbines, a biomass generating plant and a hydrogen generating plant/storage facility. For this application, several of our CN compressors were selected, on the basis of their extensive and successful operation in water electrolysis applications.



Cylinder filling

Our DM compressors are particularly suited for hydrogen compression. Their hermetically sealed crankcase eliminates any possible emission of gas in the atmosphere. For example, for a hydrogen compression application, a company in the USA purchased our DM compressors with an inlet pressure of 3.2 bar (46 psi) to a discharge pressure of 456 bar (6600 psi) for a flow of 27.9 Nm³/h (16.5 scfm). For a major company producing compressed and liquefied gas in Serbia, we delivered DM compressors for hydrogen filling and storage at a pressure of 301 bar (4350 psi) from an inlet pressure of 21 bar (305 psi) with a capacity of 100 Nm³/h (60 scfm).



Oil & gas

Our HX/HN range is very popular for hydrogen compression. As an example, for a gas plant in Russia we supplied several oil-free HN boosters for the compression of 848 Nm³/h (500 scfm) of hydrogen from 3.52 to 27 bar (51-400 psi). UOP specifications were met and the compressors conform to API 618. Another example concerns compressors selected by a Chinese petroleum company for the compression of hydrogen and caustic sodium hydroxide. A first series of machines with an inlet pressure of 1.1 bar (16 psi) and a discharge pressure of 3.2 bar (47 psi) delivers 2151 Nm³/h (1266 scfm) while the other series delivers 1540 Nm³/h (900 scfm) for a discharge pressure of 30 bar (435 psi).



Methane/Biomethane (CH₄)

Numerous countries are involved in the development of biomethane (renewable energy) for reinjection and distribution. When upgraded to gas network specifications, methane/biomethane can be injected in the gas grid for use by customers. Another widespread application for the gas is fuel for cars, buses and truck refueling stations. Atlas Copco has an extensive experience in the supply of high-pressure compressors and CNG stations for these applications.

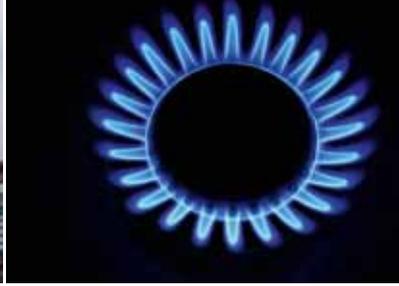
- ▶ CNG fueling stations
- ▶ Reinjection
- ▶ Cogeneration
- ▶ Gas transfer
- ▶ Gas storage
- ▶ Generating plants



Natural gas bus & car fueling stations

The Atlas Copco BBR/FBR range is greatly appreciated by our customers especially in Asia where numerous bus and car CNG fueling stations are in operation. These BBR/FBR units can be supplied with electric or gas engines. The Variable Inlet Pressure (VIP) model is extremely efficient and offers energy savings when used with high flow rates at low inlet pressures. It matches the trailer pressure and avoids costly regulation and re-compression.

CH ₄										
MODEL	Piston	Screw	Oil-free	Oil-lubricated	Inlet pressure		Discharge pressure		Flow	
					(bar A)	(psi A)	(bar G)	(psi G)	(m ³ /h)	(cfm)
GG		X		X	1.1-2	16-29	7-17	101-232	<920	542
HX/HN	X		X		1-40	14.5-580	5-100	73-1450	160-10700	95-6300
CU	X			X	1-19	14.5-280	<350	<5100	<910	<535
CT	X			X	1-19	14.5-280	<350	<5100	<1700	<1000
DM	X			X	39	566	<300	<4355	30-225	18-132
FBR/BBR	X			X	1.5-60	22-885	250-310	3600-4500	410-7000	240-4120
B/D	X			X	1.5-3	22-45	17-500	250-7300	40-510	25-300



Pipelines

For the preparation of pipelines before cleaning, the gas is transferred from one section to another. The residual gas, instead of being blown off to the atmosphere, can easily be handled by our screw compressor. It can also be used to bring the pipeline pressure to the desired value. In this typical application, our Atlas Copco gas screw compressor is the ideal choice. Variable Speed Drive is a major asset providing flexibility and energy savings.



CNG refueling stations

The unrivalled experience of Atlas Copco in CNG refueling stations makes it difficult to select only one example. Numerous stations have been delivered worldwide where CNG biofuels are promoted, in countries such as Germany, Switzerland and Austria as well as in countries with harsh temperature conditions such as Russia. Based on CU/CT or DM compressors, and dedicated to CNG compression with a tight crankcase, they are delivered with concrete or metallic frames. Stations include one or two compressors. The cylinders can be supplied inside or outside the frames, while mother/daughter systems are also available.



Town gas storage & transfer

Within Atlas Copco's experience the three natural gas oil-free compressors (HX/HN range) that we delivered to China for town gas transport and storage rank extremely high. From an inlet pressure of 1.9 to 4.9 bar (27.5-71 psi) to a discharge pressure of 3.2 to 13.1 bar (46-190 psi), each machine delivers a gas flow of 4099 to 8298 Nm³/h (2400-4900 scfm). For gas transfer, we have also supplied many oil-free compressors of smaller sizes for the loading and unloading of barges and ships on inland waterways.



Completing the offer

Atlas Copco also provides compressors for gas and process applications, air and nitrogen purification applications. In addition, a wide range of filters completes the Atlas Copco portfolio.

Atlas Copco Gas & Process



Oil-free centrifugal air compressors ZH/HA/H	
Power	Electric, steam turbine up to 2750 kW (3690 hp)
Inlet pressure	Atmospheric
Discharge pressure	Up to 13 bar (190 psi)
Flow range	Up to 450 m ³ /min (16000 cfm)
Applications	Instrument air, petrochemical & hydrocarbon process air



Oil-free centrifugal gas compressors SC/TP/CT/Componder	
Power	Electric, steam turbine up to 40 MW
Inlet pressure	40-80 bar
Discharge pressure	Up to 200 bar (2900 psi)
Flow range	Up to 6800 m ³ /min (250000 cfm)
Applications	Oxygen service, fuel gas boosting, petrochemical industry, process industry, air separation, LNG transport

Atlas Copco Purification Group



Nitrogen generation units	
Type	Membrane or pressure swing adsorption (PSA) technology
Specifications	Flow up to 85 m ³ /min (3000 cfm) Nitrogen purity up to 99.99%
Inlet pressure	Up to 24 bar (350 psi)



Gas dehydration & purification units CDE/BDE/XDE/FDE	
Type	Desiccant, membrane and refrigerant type dryers, purification units for air, H ₂ , N ₂ , O ₂ , CO ₂ , CH ₄ , CNG, etc.
Specifications	Flow up to 100000 m ³ /h (59000 cfm)
Dewpoint	Down to -100°C (-148°F)
Inlet pressure	Up to 200 bar (3000 psi)



Air filters DD/PD/QD Air dryers FD/BD/CD/MD/ND	
Type	Particulate, coalescing or active carbon filters Refrigeration, adsorption, membrane or desiccant dryers
Specifications	Oil content down to 0.003 mg/m ³
Dewpoint	Down to -70°C (-94°F)
Inlet pressure	Up to 35 bar (510 psi)

Atlas Copco Rental

Atlas Copco supplies compressors for all rental applications. We provide especially adapted compressors in containers or trailers for indoor or outdoor applications. They are used in a variety of applications such as pipeline cleaning, PET blowing and geothermy.



Cirmac biogas upgrading equipment

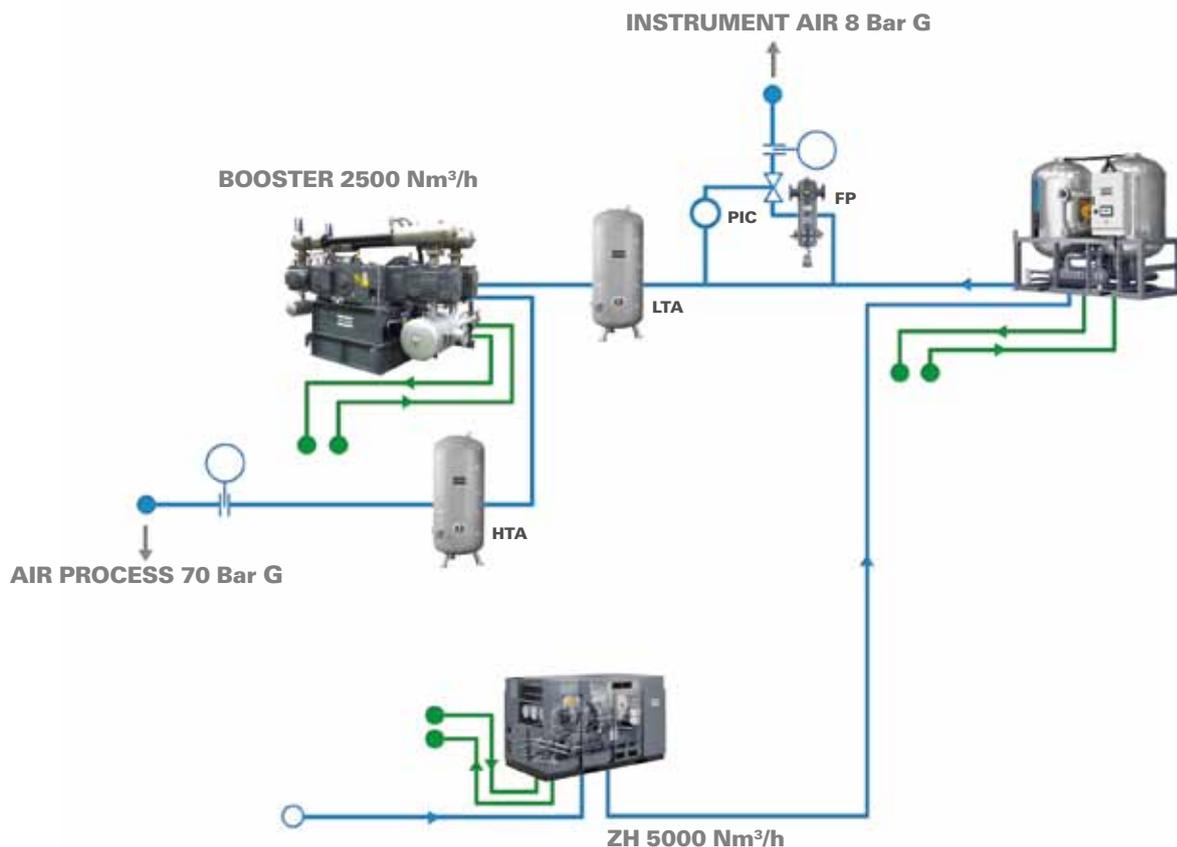
For biogas processes, we also supply upgrading systems and injection stations.

- ▶ Raw gas: 945 m³/h (556 cfm) from Co-digester.
- ▶ Product gas: 645 m³/h (380 cfm) injected into the gas grid.



Example

Atlas Copco has supplied a complete solution for the nitrogen production process. A ZH compressor handles 5000 Nm³/h of atmospheric air for compression up to 8 bar. The airflow is then separated into two different processes: 2500 Nm³/h are used for air at 8 bar while 2500 Nm³/h are sent to the two HN Atlas Copco reciprocating boosters for oil-free compression up to 70 bar. Atlas Copco pressure receivers, filters and dryers completed the installation.



Product intro page

The following pages highlight Atlas Copco's complete range of air and industrial gas compressors. Each page describes the key features and benefits of the product range.



HX/HN Compressor Range

The HX/HN range is a great asset in the air and gas process sectors where thousands of machines are in operation worldwide in different areas (including refinery zones, sandy atmospheres and high temperatures) with a great operational autonomy and high reliability.

- ▶ **Technology:** reciprocating oil-free piston.
- ▶ **Gas handled:** air, N₂, H₂, CO/CO₂, CH₄, Ar.
- ▶ **Range:**
 - Inlet pressure: up to 40 bar (580 psi).
 - Discharge pressure: up to 100 bar (1450 psi).
 - Capacity: up to 15000 m³/h (8830 cfm).
 - Power: up to 560 kW.
- ▶ **Main features:** API 618 - 1 to 4 compression stages.



Your benefits



Oil-free

- PTFE piston rings and long-distance pieces ensure that the compression chambers are perfectly oil-free.



Built to last

- A sturdy design, low piston speeds, low inter-stage temperatures preserving the inner parts of the machines, allied to high-quality components make the HX/HN a reliable machine for industrial use 24/7.
- The horizontal design ensures a low level of vibrations.

API 618

API 618 designed

- Safe for process applications.



Easy to manage and maintain

- The Elektronikon® system provides information in your own language for easy management and offers all the service parameters and indications for easy maintenance.
- Remote control is available on request.



Energy saving

- The HX/HN reciprocating technology ensures excellent volumetric efficiency and economic operation in terms of energy.



Customization

We can also adapt containers or provide complete packages including dryers, filters and control panels. The HX/HN compressors can work in difficult environments: outdoor, indoor, refineries, deserts, high inlet temperature conditions and sandy environments. We can adapt a wide variety of regulation systems to adjust the flow rate according to the real utilization of the machine: by stepped regulation (valve unloading); by-pass valve; variable speed drive; or a combination of the above solutions.

ZD Compressor Range

A high-quality air or nitrogen supply is a critical resource in high-pressure applications. Completely developed in-house, Atlas Copco's ZD high-pressure compressor is a unique combination of oil-free screw and piston technologies.

- **Technology:** oil-free screw and reciprocating piston.
- **Gas handled:** air, N₂.
- **Range:**
 - Inlet pressure: atmospheric.
 - Discharge pressure: 25-42 bar (360-610psi) (45 bar/652 psi upon request).
 - Capacity: 720-3800 m³/h (424-2237 cfm).
- **Main features:** 4 compression stages, air purity: Class 0, Variable Speed Drive versions and air-cooled versions available.
- **Medium pressure and high pressure** can be handled separately.



Your benefits



Built to last

- High quality, reliable components, low inter-stage temperatures.



Energy saving

- Screw technology + condensate-free booster: low energy consumption.
- 4 compression stages: best of thermodynamics.
- Variable Speed drive: 35% energy saving compared to fixed speed drive.
- Adapted to reinjection.



Silenced

- Silencing canopy.
- Can be installed in the core of your workplace (no separate compressor room needed).



Appreciated by your maintenance team

- Easy maintenance via Elektronikon®: all service parameters and indications in your own language.
- Remote control available on request.
- Easy transport & relocation: no foundations, slots for forklift.



Saving in investment, maintenance, floor space

- Combining two networks by adapting the size and number of medium pressure and high pressure machines according to your process requirements saves in investment, maintenance and energy.



CLASS 0 AS PER ISO 8573-1

When high-purity air or nitrogen is needed, only a certified compressor can give the guarantee of purity. Class 0 is the most stringent class as per ISO 8573-1 and guarantees perfectly oil-free air, close to purity. The ZD compressor has been tested by the independent certifying authority TÜV and approved as a certified Class 0 compressor.

DX/DN Compressor Range

The Atlas Copco DX/DN range benefits from the experience of the HX/HN range and the new developments of the ZD range.

- ▶ **Technology:** oil-free reciprocating piston.
- ▶ **Gas handled:** air, N₂, Ar, PDP down to -200°C (-328°F).
- ▶ **Range:**
 - Inlet pressure: 6-25 bar (87-360 psi).
 - Discharge pressure: 12-42 bar (175-610 psi).
 - Capacity: 270-10200 m³/h (160-6000 cfm).
 - Power: up to 315 kW.
- ▶ **Main features:** 2 compression stages, oil-free quality Class 0 as per ISO 8573-1, concrete base plate, Variable Speed Drive version.



Your benefits



Oil-free

- PTFE piston rings and long-distance pieces for perfectly oil-free compression chambers.
- The highest purity level as per ISO 8573-1.



Built to last

- Sturdy design and high quality components make it a reliable unit designed for 24/7 industrial service.
- Low vibration level: horizontal design (balanced forces), concrete base plate, low center of gravity and integrated pulsation dampers.
- Low piston speeds and low inter-stage temperatures.



Easy to manage and maintain

- Easy maintenance via Elektronikon®: all service parameters and indications in your own language.
- Remote control available on request.
- Long service intervals.
- Silenced canopy (option).



Easy transport, installation and relocation

- Fitted on a concrete base plate.
- No special foundations are required.
- No anti-vibration pads are needed.
- Slots are integrated for easy transport and handling.



Energy saving

- Reciprocating technology for excellent volumetric efficiency and economic operation in terms of energy.
- Extra energy savings with Variable Speed Drive version.

Nitrogen unit

The N₂ D-booster is perfectly adapted to N₂ compression with:

- Adapted piston speeds
- Specific piston rings and packing rings
- Leakage collection
- Safety valves

It can be delivered with or without canopy.



DM Compressor Range

The DM compressor range features the revolutionary GreenField technology with hermetically sealed and pressure-tight crankcases which makes it the right choice for all industrial gases.

- **Technology:** oil-less trunk piston technology.
- **Gases handled:** CH₄, H₂.
- **Range:**
 - Inlet pressure: up to 40 bar (580 psi).
 - Discharge pressure: up to 300 bar (5100 psi) for CH₄ & 450 bar (6530 psi) for H₂.
 - Capacity: up to 225 m³/h (132 cfm).
 - Power: up to 37 kW.
- **Main features:** 2-5 compression stages, tight crankcase, oil-less compression, air-cooled.



Your benefits



Safe for gas applications

- No gas losses to the atmosphere thanks to pressure-tight crankcase and hermetically sealed compressor motor unit with magnetic coupling.
- Oil-less technology: no oil contamination to the gas or the environment.
- Adapted to difficult environments zone 2 (zone 1 in option), PED ATEX conformance.



Built to last

- Long life reliability, high availability, continuous operation.
- Low vibration level thanks to scotch yoke drive and anti-vibration pads.
- Trunk piston design: less wear on parts.



Compact, air-cooled, easy to install

- Small floor space required (only 0.7 m²) with space-saving vertical design: packaged compressor unit on its own base plate.
- Simple installation: air-cooled, no special foundations, fully assembled, piped and cable.
- Perfectly suited for CNG stations.



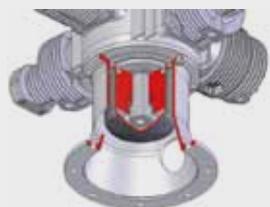
High efficiency

- Low pressure ratio per stage, energy saving.
- Combined concentric in/outlet valves.
- Single-acting piston with small cylinder clearance.



Low maintenance & utility cost

- Low valve temperatures and fewer valves for lower maintenance costs.
- Low discharge and inter-stage temperatures.
- Crankshaft driven oil pump and cooling air fan.
- Good accessibility for easy maintenance, extended service intervals.



Hermetically sealed crankcase

DM crankcase tightness is ensured by a tight carbon fiber enclosure between the rotor and the stator of the magnetic coupling. This ensures 100% sealing of the gas in all conditions.

CU/CT/CN/CS Compressor Range

The CU/CT/CN compressor range features GreenField high pressure technology. This technology is renowned worldwide for its reliability and efficiency for the compression of industrial gases and specific applications such as breathing air, seismic air or gases for refueling stations.

- ▶ **Technology:** oil-lubricated reciprocating piston.
- ▶ **Gas handled:** air, N₂, He, Ar, rare gases, H₂, CO, CO₂, oxyhelium mix, nitrous oxide, CH₄, upgraded biogas.
- ▶ **Range:**
 - Inlet pressure: CN up to 1.35 bar (20 psi), CU/CT up to 19 bar (280 psi).
 - Discharge pressure: CU/CT/CN/CS: 350 bar (5100 psi).
 - Capacity: CN up to 86 m³/h (51 cfm), CU up to 885 m³/h (521 cfm), CT up to 1700 m³/h (1000 cfm).
 - Power: CU 110 kW, CN/CT 200 kW.
- ▶ **Main features:** up to 5 compression stages, pressure-tight crankcase, breathing air series, seismic air series.



Your benefits



Safe for your gas processes

- Pressure-tight crankcase: no gas losses to atmosphere.
- No gas contamination from atmosphere (gas purity).



Reliable and simple, compact design

- Robust design and field-proven reliability for heavy-duty service.
- Valves designed for severe conditions in high-pressure gas compressors.
- Compressors fitted on base plate bedded on vibration dampening elements.



Flexibility

- Water- or air-cooled versions on CT /CU ranges.
- V belts providing versatile speed selection.



High volumetric efficiency

- 2-5 stages: low pressure ratio per stage, low discharge temperatures for maximum cylinder charge.
- Combined concentric in/outlet valve configuration for high volumetric efficiency and lower energy cost.



Low maintenance

- Low valve temperatures and fewer valves.
- Trunk piston technology with single acting compressor.
- Crankshaft driven oil pump and cooling air fan.
- PLC control for easy maintenance and safety (optional).



CS range: for air, heliox mix, N₂ and CNG

This specific range features air-cooled 2- to 4-stage compression piston compressors with discharge pressures up to 350 bar (5100 psi) and flow rates up to 180 m³/h (106 cfm) - motor power up to 45 kW.

- Extremely compact.
- High-efficiency cooling system, maintenance-free oil and water separator.
- Micro-filter at high-pressure gas outlet.
- Efficient, economic and easy maintenance.

CU/CT and GA + CU/CT Compressor Range - Seismic Surveying

CU/CT compressors (GreenField technology) can be delivered as stand-alone units or combined with an Atlas Copco lubricated GA screw compressor to form a complete package.

- ▶ **Technology:** oil-lubricated screw and reciprocating piston or reciprocating piston stand-alone.
- ▶ **Gas handled:** air.
- ▶ **Range:**
 - Inlet pressure: atmospheric.
 - Discharge pressure: 150/220 bar (2200/3200 psi).
 - Capacity: 174-1682 m³/h (102-990 cfm).
 - Power: up to 410 kW.
- ▶ **Main features:** adapted to installation on board of seismic vessels.



Your benefits



Adapted to marine applications

- Deep water exploration: airguns for seismic research.
- Shallow water exploration.
- Transition zone.
- Offshore/onshore Vertical Seismic Profile (VSP).



GA compressors

To reach flows up to 1500 m³/h (883 cfm), a lubricated "marine" type GA compressor can be adapted upstream from the CU or CT compressor.

- Energy saving: most efficient compressor on the market.
- Several starter types: star/delta or DOL or soft starter.
- Marine motor with reduced starting current, avoiding stress on generator system.
- Easy operation: control panel with adapted alarms and safety systems.
- Smallest footprint on the market: mounted on oil-containing frame, fully interconnected, no extra pipework needed.
- Elimination of condensates with high performance aftercooler, separator and electronic drain.
- Integrated dryer (option): high protection of equipment downstream.
- High performance inlet air filter for elimination of dust particles.



CU/CT compressors

- Small footprint, optimized skid with vibration absorbers and flexible connection pipes for vibration-free operation.
- Air-cooled and water-cooled models depending on size.
- Closed loop fresh water/seawater cooling.
- Sophisticated compressor and master control system programmed to your specific needs and seismic application.
- Diesel or electrical engine drive.
- Low maintenance requirements.
- Adapted to marine applications.



Lloyd's tested

Our CU and CT seismic compressors have been tested for shipboard use (inclination angle 22.5 degree). Tests have been witnessed and verified by Lloyd's Register.



FBR/BBR/VIP Compressor Range

Our FBR/BBR compressors (Intermech technology) are in operation in numerous countries worldwide. Our design philosophy is to meet market demands with the highest possible quality. The result is higher efficiency, improved reliability and a focus on safety.

- ▶ **Technology:** horizontal, balanced piston reciprocating technology.
- ▶ **Gases handled:** air, N₂, CH₄, biomethane.
- ▶ **Range:**
 - 250-310 bar (3600-4500 psi).
 - Inlet pressure FBR: 1.25-61 bar (18-885 psi).
 - Flow FBR: 1060-7000 m³/h (624-4120 cfm).
 - Inlet pressure BBR: 1.25-60 bar (18-885 psi).
 - Flow BBR: 340-3450 m³/h (200-2084 cfm) (electrically driven) & 340-2360 m³/h (200-1390 cfm) (gas driven).
 - Power: up to 450 kW.
- ▶ **Main features:** 2-4 compression stages, pressurized crankcase, air-cooled.



Your benefits



Compressor: safe & economical gas applications

- Sealed pressurized crankcase.
- Synthetic piston rings on all stages: energy-saving and low friction.
- Efficient piston rod seals for increased tightness to cylinder.
- Virtually vibration-free, easy to package: compact 4-point mounting design.
- Oil top-up without depressurizing crankcase.
- Versatile: accepts any inlet pressure, adapted to large flows.
- Design codes: API 618, 660, 11 P TJ, NZS 5425.
- Option (FBR): adapted to climates down to -20°C (-4°F).



Driver: economical & adapted to your needs

- Adapted to electric motor or gas prime movers.
- Direct drive: lower energy costs, simpler to maintain.
- No power transformer or generating set needed.

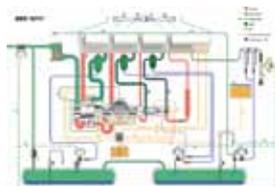


Efficient cooling

- Air-cooled heat exchangers: outlet temperature around 10°C (50°F) above ambient, simpler installation, no need for water, no risk for freezing, corrosion and water fouling.
- Efficient: cool and dense gas is produced ensuring safe filling of storage cylinders or increased flow for filling trailers.
- Reliable: only ASME designed heat exchanger coils with straight seamless, expanded, L-finned tubes are used.

Effective filtration

- Twin final coalescent filters ensure gas purity (removal of aerosols to <5 ppm).
- Possible residential/hospital grade muffler.



Robust package

- Robust steel frame available.
- Integrated oil tank, no need for foundations.
- Plug & play, optional remote monitoring.



Pressurized crankcase rated up to 40 bar (580 psi)

- Crankcase rated up to 40 bar (580 psi): no gas losses to the atmosphere (ecological and economical).
- Gas savings from 0.3% up to 5% possible over brand new compressors with unsealed crankcase and much more if the unsealed compressor is older with more leakages.

B & D Compressor Range

The B & D compressors (GreenField technology) are perfectly suited for gas applications. The high customization in the package arrangements and their small and compact configuration meet demanding requirements.

- ▶ **Technology:** lubricated trunk type piston.
- ▶ **Gases handled:** air, N₂, He, H₂, CH₄.
- ▶ **Range:**
 - Inlet pressure: 2 bar (30 psi) (B), 0.6 bar (9 psi) (D).
 - Discharge pressure: 500 bar (7250 psi).
 - Capacity: 40-187 m³/h (25-110 scfm) (B), 238-510 m³/h (140-300 cfm) (D).
 - Power: up to 150 kW.
- ▶ **Main features:** up to 6 compression stages, pressurized crankcase.



Your benefits



High volumetric efficiency

- Combined concentric in/outlet valve: lower energy costs.
- Low compression ratio per stage.
- Low discharge temperatures allow maximum cylinder charge.



Safe for gas applications

- Trunk piston technology.
- Pressurized crankcase for inlet pressures up to 2.0 bar(a)/30 psi(a) (B), up to 1.4 bar(a)/20 psi(a) (D).



Adapted to your requirements

- Higher inlet pressures acceptable with scavenger cylinder.
- Electric motor, natural gas engine, or diesel engine drive.
- Water cooled or air-cooled, air or water ASME heat exchangers.
- Packaged to your needs, with or without canopy.



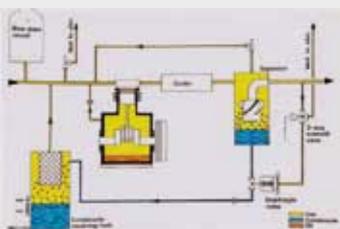
Field proven ruggedness and reliability

- Designed for continuous and intermittent duty: numerous references in the field.



Space-saving & easy to maintain

- All inclusive, on base plate, no special foundation, small space requirements.
- Good accessibility, single and dual crankcases on one skid.
- Low compression ratio per stage, maximum cylinder charge.
- Combined concentric in/outlet valve: lower energy costs.
- Low valve temperatures and fewer valves: lower maintenance costs.



Trunk piston technology

- Ensures complete tightness to and from atmosphere.
- Ensures gas purity.
- Safe, economical, ecological.

GG Gas Screw Compressor Range

The Atlas Copco GG gas screw compressor is an innovative single stage water-cooled compressor specially designed for gas applications. Innovative and cost-saving, the Variable Speed Drive allows users to regulate the capacity of the compressor and keep the inlet pressure constant.

- ▶ **Technology:** oil-lubricated screw.
- ▶ **Gas handled:** methane, biomethane, natural gas.
- ▶ **Range:**
 - Inlet pressure: 1.4 bar(a)/20.3 psi(a).
 - Discharge pressure: 7-16 bar(a)/101.5-232 psi(a).
 - Capacity: up to 920 m³/h (540 cfm).
 - Power: up to 132 kW.
- ▶ **Main features:** gas screw compressor, Variable Speed Drive technology available.



Your benefits



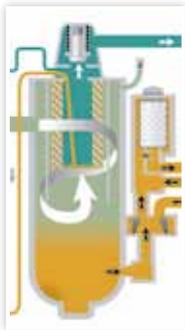
Smart capacity control

- Capacity control: 25-100% with Variable Speed Drive.
- Variable Speed Drive ensures smooth and efficient capacity control and keeps inlet and outlet pressures constant.



Efficient and cost saving

- High-efficiency direct drive with flexible coupling, star-delta, soft starter or VSD.
- State-of-the-art rotor profile maximizes the gas flow with minimum energy requirements.



Safe & tight

- Tight to gas: specific bearing arrangements for gas usage.
- Protected by efficient mechanical shaft seal, no gas leakage to the atmosphere.
- Tight to oil: high efficiency oil filtration and separation (centrifugal effect, gravity, coalescence).
- Filtration: inlet gas filtration on request.
- Fully compliant to CE (other codes upon request).



Operator-friendly management

- Control panel with clear indications (colored tactile screen) with extra information and alarms for safety in gas applications.
- Easy installation and limited maintenance.
- Fitted on skid, compact design, all-inclusive.
- Field replaceable mechanical shaft seal.
- Easy access for maintenance.



Gas screw technology

Highly efficient rotor profile and precision manufacturing for consistent performance and energy savings.

S 100-750 and B Refueling Stations

Atlas Copco provides total solutions from a comprehensive study of the station layout to the delivery of the complete units and service. We supply complete mother/daughter systems.

- ▶ **Technology:** refueling stations for cars, buses, trucks, ferries, special vehicles.
- ▶ **Compressor models:** CU, CT, DM, B types.
- ▶ **Cubicle:** concrete building or sheet metal housing.
- ▶ **Gas handled:** CNG/NGV compressed natural gas, biogas or H₂.
- ▶ **Filling times:** up to 450 cars, 90 trucks or 45 buses per day.
- ▶ **Main features:** Single or dual stations available.



S 750/S 750-skid: refueling stations

- GreenField CU compressors (drive: electric motor).
- Lubricated trunk-piston technology, air-cooled, with sealed crankcase.
- Inlet pressure: 1-19 bar (<280 psi), delivery rate: up to 1720 m³/h (1000 cfm), working pressure: 270 bar (3920 psi).
- Compact, dual or single arrangements.
- Storage gas cylinders: maximum 56 (S 750 Skid) (4480 liters/1000 gallons).
- Other configurations (CT) and H₂ or biogas models upon request.



S 100 refueling stations

- GreenField DM compressors (drive: electric motor with magnetic coupling).
- Oil-less trunk, piston technology, air-cooled, with sealed crankcase.
- Inlet pressure: 1-19 bar, delivery rate S 100 DUO-1: up to 225 m³/h (133 cfm), S 100 DUO-2: up to 450 m³/h (265 cfm), working pressure: 270/290 bar (3930/4220 psi).
- Compact.
- Storage gas cylinders: maximum 42 (3400 liters/900 gallons).



B refueling stations

- GreenField B compressors.
- Lubricated trunk-piston technology.
- Inlet pressure: up to 1.1 bar (16 psig), discharge pressure: up to 310 bar (4500 psi), delivery rate: up to 210 m³/h (125 cfm).
- Drive: electric motor.
- Compact.
- Single or dual arrangements as standard.
- Numerous configurations upon request.



Wide experience

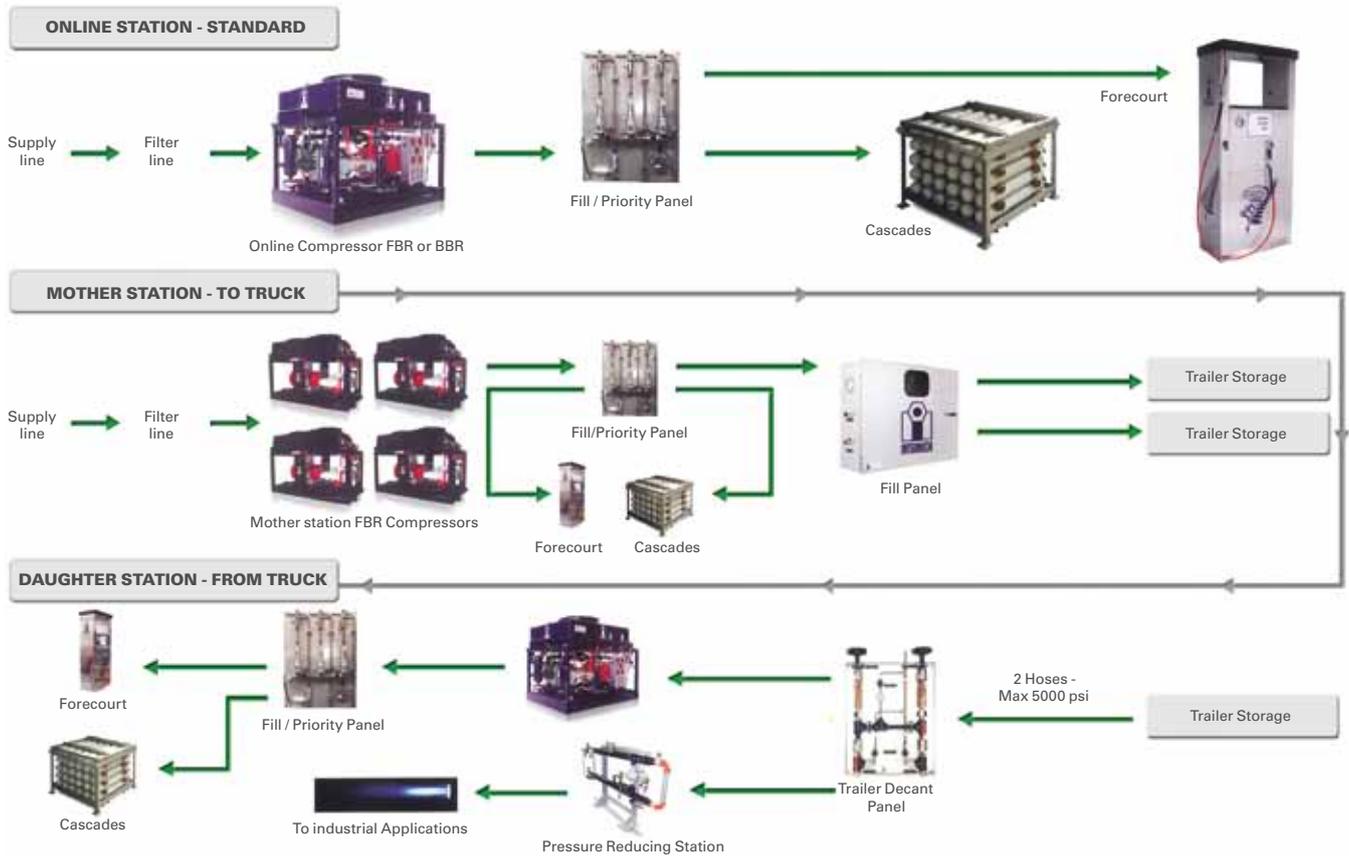
GreenField compressors (originally Sulzer) have an unrivalled experience in the field for all CNG and hydrogen fueling stations for cars and buses. We can provide customized solutions with adapted PLC systems. Our stations are always tested and certified by a third party.

Rhino BBR/FBR/VIP Refueling Stations

Our Intermech Rhino BBR/FBR stations are appreciated for their quality, safe operation, smooth running and compact design. They are built around BBR/FBR compressors with pressurized crankcases ensuring no gas loss (economical, ecological and safe). They are complete units, plug & play and easy to install. Dynamic balancing of compressors ensures vibration-free operation. Maintenance is easy and limited. High versatility of solutions (electric, diesel or gas engines), options for very low temperatures -20°C (-4°F), and remote control option make them suitable for your needs. Numerous references worldwide are proof of their reliability.



- ▶ **Technology:** complete mother/daughter on-line stations with high pressure, lubricated piston compressors.
- ▶ **Gas handled:** CNG, biogas.
- ▶ **Range:**
 - Inlet pressure: 0.25-60 bar (3.6-870 psi).
 - Discharge pressure: 250-310 bar (3600-4500 psi).
 - Capacity: 7000 m³/h (4120 cfm).
- ▶ **Main features:** full package, vibration-free, air-cooled, gas, diesel or electrically driven. Direct driven, pressurized crankcase, horizontal, 2 throws, up to 1800 rpm, simple design, no foundation required, very small footprint. Engine is NFPA 37 certified Altronic Ignition. Motors are EXD or EXE rated.



VIP models: Variable Inlet Pressure

The Intermech VIP models are 2-stage Rhino BBR electrically driven compressor packages especially designed for daughter station service. They are meant for the unloading of trailers into vehicle cylinders. The VIP (Variable Inlet Pressure) package utilizes the pressure of the trailer gas to reduce daughter station power requirements instead of regulating to lower pressures and re-compressing. They do not require pressure reducing nor a regulator. This makes your station cheaper to purchase and operate and more environmentally friendly. The maximum discharge pressure of the Intermech VIP is 250 bar (3600 psi) and the minimum inlet pressure is 15 bar (218 psi). Flow varies from 4000 to 600 m³/h (2355 to 353 cfm).

Atlas Copco certifications

Quality is the main driver at the heart of the organization and is a daily commitment.

Our organization has received the following certifications:

- ▶ ISO 9001 for the quality of the organization.
- ▶ ISO 14001 for environmental commitment.
- ▶ OHSAS 18001 for safety.

All our compressors are factory tested in approved test benches. This guarantees the high quality of the equipment.

Our products have received the following certifications:

- ▶ CE Certification PED Module D and Module H (compressors), Module H1 (stations).

Our oil-free compressors ZD and D have received the Class Zero certification:

- ▶ As per ISO 8573-1 certified by TÜV for the highest class of air purity.

Our seismic compressors are certified by Lloyds for ship inclination 22.5°.

With thousands of machines worldwide, our compressors are adapted to meet most of the international mechanical and electrical code approvals.



Peace of mind



At Atlas Copco, our responsibility does not stop when the product is delivered. An extensive portfolio of exclusive aftermarket products and services is designed to give you maximum added value – no hidden costs, no surprises and minimized risk to your processes. Guaranteed serviceability within 24 hours ensures optimum availability and reliability of your compressed air systems with the lowest possible operating costs. We deliver this complete service guarantee through our extensive aftermarket organization.

Activity	Product*
Genuine parts	Atlas Copco Service kits & oils
Extended warranties	AIRXtend
Service contracts	ServicePlan
System audits	AIRScan™
Remote monitoring	AIRConnect™
Energy saving	AIROptimizer™
Product improvements	Upgrade programs

* More information is available from your local Atlas Copco customer center.

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Atlas Copco has over 80 customer centers around the world and is present in 170 markets.
For more details please refer to www.atlascopco.com.

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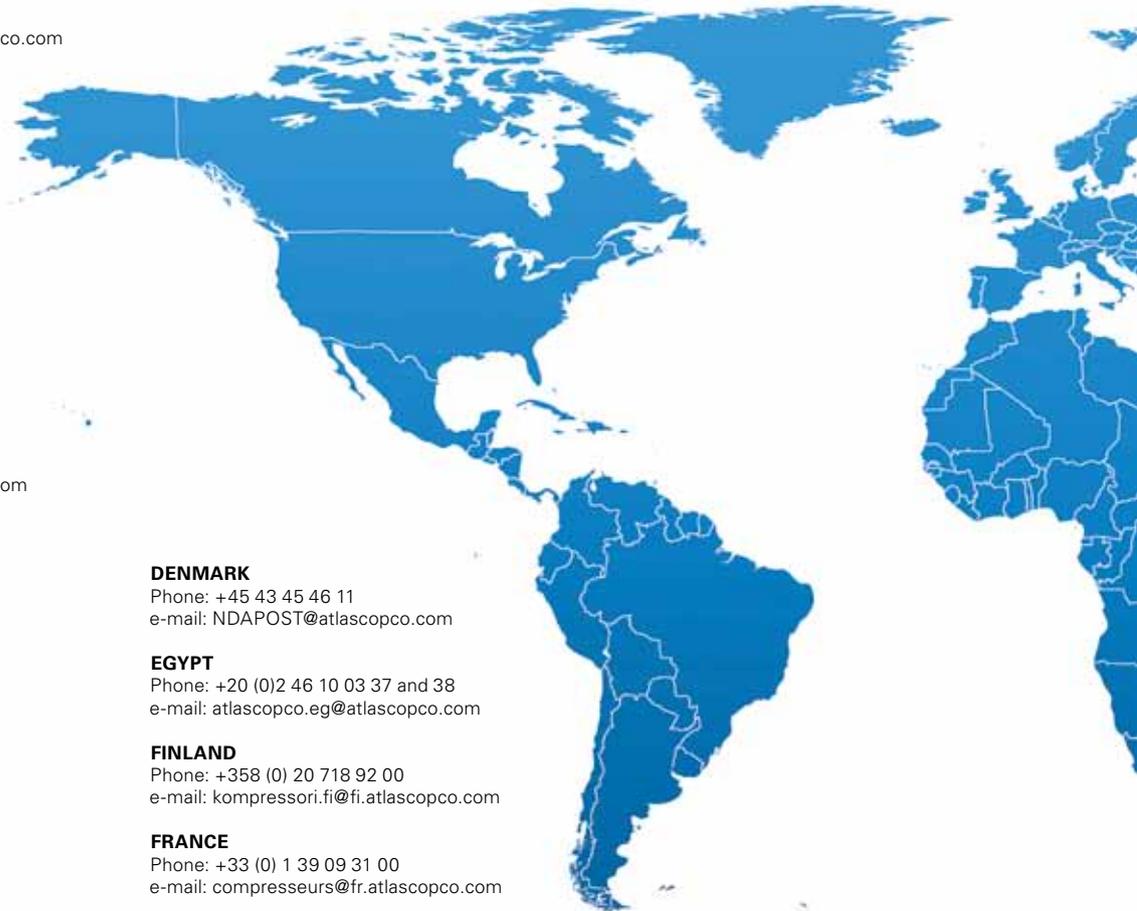
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Driven by innovation

With more than 135 years of innovation and experience, Atlas Copco will deliver the products and services to help maximize your company's efficiency and productivity. As an industry leader, we are dedicated to offering high air quality at the lowest possible cost of ownership. Through continuous innovation, we strive to safeguard your bottom line and bring you peace of mind.



Building on interaction

As part of our long-term relationship with our customers, we have accumulated extensive knowledge of a wide diversity of processes, needs and objectives. This gives us the flexibility to adapt and efficiently produce customized compressed air solutions that meet and exceed your expectations.



A committed business partner

With a presence in over 170 countries, we will deliver high-quality customer service anywhere, anytime. Our highly skilled technicians are available 24/7 and are supported by an efficient logistics organization, ensuring fast delivery of genuine spare parts when you need them. We are committed to providing the best possible know-how and technology to help your company produce, grow, and succeed. With Atlas Copco you can rest assured that your superior productivity is our first concern!

