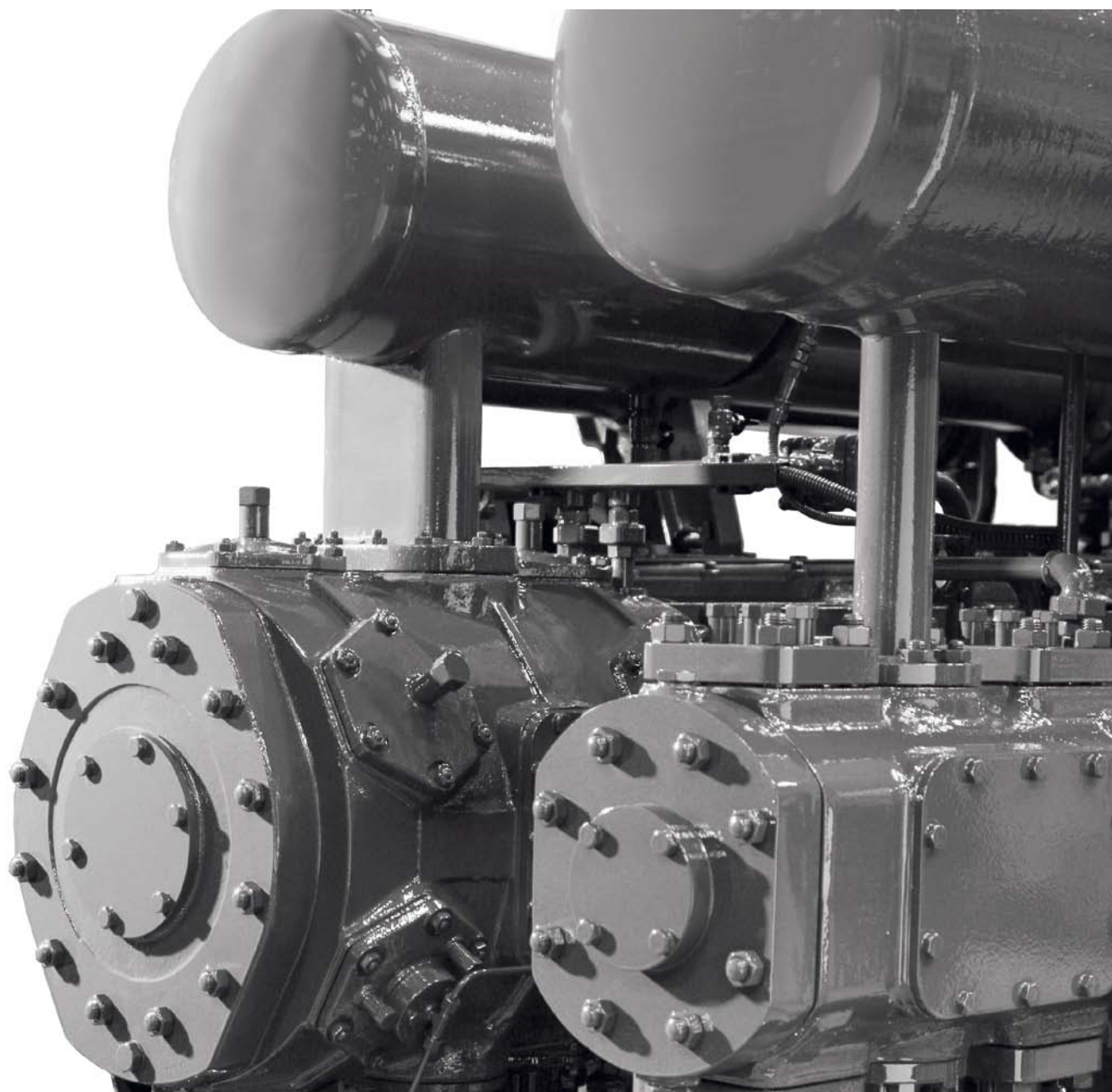


PET BLOW-MOULDING



RELIABLE BEYOND LIMITS



ABOUT ABC COMPRESSORS

Since its **foundation in 1943**, ABC has focused on providing **the most reliable compressors for different sectors and applications**. Its **global orientation** and the commitment for growth was shown from its early exports in the 50's to its latest geographical expansion, having delivered compressors in more than 120 countries.

Becoming a worldwide **benchmark in the piston compressor industry** has always been ABC's goal, and today it has turned into reality. The company is continuously expanding and consolidating as a global solution supplier, with more robust and efficient compressors. New assembly plants in China and Brazil, and the endless opening of new service outlets worldwide are the **best proof of such growth**.



ABC HEADQUARTERS SPAIN
EIBAR



ABC CHINA
WUJIANG



ABC BRAZIL
ITUPEVA

AIR AND GAS COMPRESSORS

ABC offers a **wide range** of reciprocating compressors and provides **tailored solutions** covering air and numerous industrial gases.



**PET BLOWING
CO₂ RECOVERY**



PETROCHEMICAL



**WASTE TREATMENT
BIOGAS**



**COGENERATION
NATURAL GAS**



INDUSTRIAL GASES



OTHER APPLICATIONS

CONFIGURATION

Piston compressors with up to 3 pairs of double-acting cylinders, with or without lubrication. Up to 6 stages of compression, mounted on a structural steel skid.

GASES

Air, Hydrogen, Nitrogen, Methane, Carbon dioxide, Freon, Natural Gas, Vinyl chloride, Methyl chloride, Ethylene, Propylene, Sulphur dioxide, Butadiene, Isobutene, Isobutane, Butane, Propane, Carbon monoxide, Synthesis gas, Biogas and Syngas... except for Oxygen and Acetylene.

POWER

Up to 1.200 kW

PRESSURE

Up to 150 bar

PET APPLICATION

ABC has been a **pioneering supplier of compressor packages for PET blow-moulding** since it was first developed in the early 1980s. ABC produces **made-to-order solutions**, adapting compressor packages to the requirements of each installation, whatever these may be, with painstaking design and engineering that ensures the robustness demanded by the PET process.

ABC has installed more than **2.500 compressor packages in 110 countries**, in cooperation with converters, bottlers and engineering companies. ABC installations are **supported world-wide by more than 100 field technicians**.



RELIABILITY

- Up to 5 years of guarantee.
- 24 hours x 365 days of operation.
- Service starting from 8.000 hours.
- Minimum vibration and noise.



ENERGY EFFICIENCY

- Market leader in kWh/Nm³.
- Lowest total cost of ownership.



ENDURANCE

- Total guarantee and efficiency in extremely demanding conditions.
- Maximum part durability.



EASY TO INSTALL

- Quick start up and mobility.
- No vibration isolation required.
- Reduced installation space.
- Training on site.

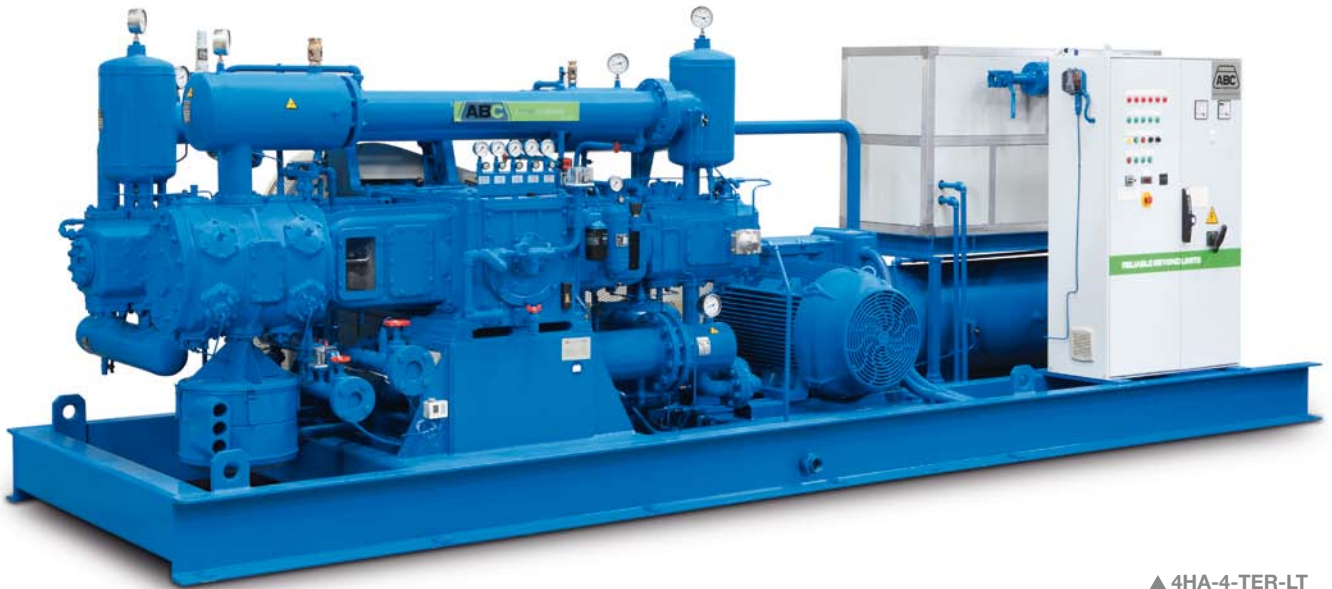
- Design with up to six horizontally-opposed cylinders.
- Low linear piston speed.
- Low operating forces, minimizing wear and tear on structural elements.
- Adaptation of standard monitoring and control systems for mechanical operating conditions: piston rod drop alarm and water solenoid valves.
- Integral factory test with all peripheral equipment.

- Four- or three-stage compression, according to client needs.
- Optimum adaptation of the frequency converter and the air re-injection system.
- Double acting cylinders.
- Isothermic cycle adjustment through correct cylinder and cooling combination.
- Large valve outlet opening surface area.

- In demanding conditions, the four-stage compression design is the only viable alternative.
- Coolers adapted to demanding conditions.
- Double acting cylinder construction, minimising air loss and maximising wearable part life.
- Low discharge temperatures, around 100 to 150°C for four-stage compression, ensures long life for valves, packings, rings and other elements subject to wear and tear.
- Motors (IP55) and cabinets (minimum IP54) protected from environmental incidents.

- Compressor packaged construction on a single skid with electrical, pneumatic, vent connections... factory prepared.
- Minimal water, electrical, vent connections.

TECHNICAL ATTRIBUTES



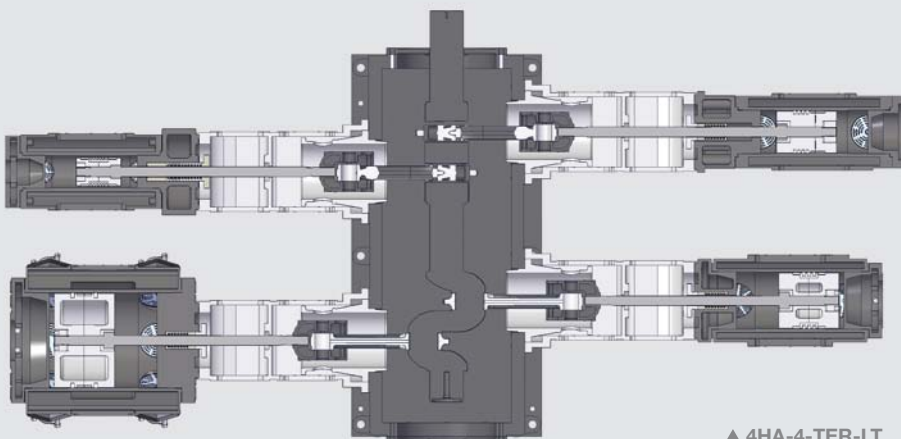
▲ 4HA-4-TER-LT
up to 860 m³/h

HORIZONTAL CONFIGURATION WITH OPPOSING CYLINDERS

ABC compressor construction starts with a robust frame and sump, providing generous pressurized lubrication to all crankshaft and rod bearings, and ending with double friction bearings on the drive side.

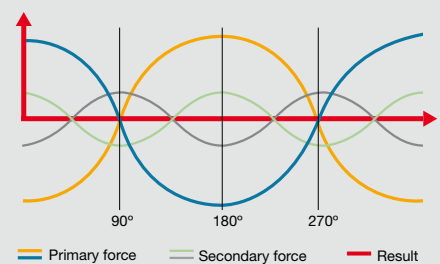
Cylinders are horizontally opposed, with crankpins displaced by 180°, cancelling out the inertia loads and virtually eliminating all vibration.

- The useful life of mechanical parts is significantly lengthened because they do not transmit excessive force or produce fatigue on structural parts of the compressor, ensuring stability of the pipes.
- No anti-vibration or special foundations are required, only 2 kg/cm² soil loading
- Compressor and all peripheral components are mounted on a single skid to form a complete self-contained, reliable air system.



▲ 4HA-4-TER-LT

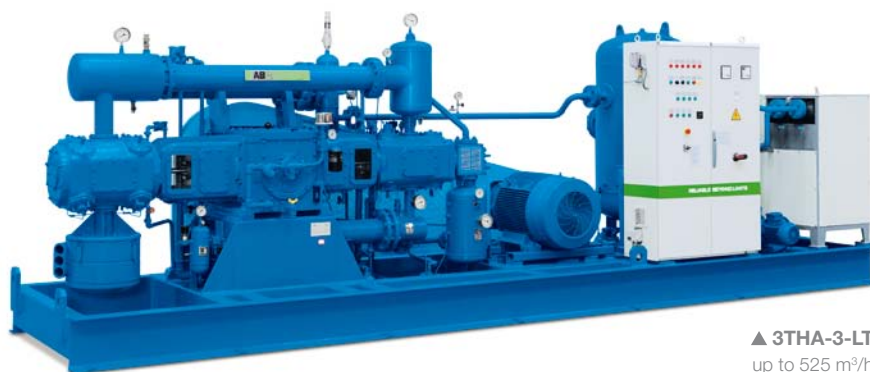
BALANCE OF FORCE AND TORQUE



COMPLETE COMPRESSOR PACKAGE

The compressor package is supplied complete with compressor, motor, electrical cabinet, air receiver, and refrigerated dryer, forming a compact but complete compressor system.

- Electrical connections and cabling, pneumatics, refrigeration, etc, are all factory prepared.
- Centralised control of the entire ensemble from a single panel.
- A single water input and output connection point.
- A single electricity supply.
- A single condensate removal point.
- No high pressure air flexible pipes needed.
- Integral testing, with peripherals, before shipment.
- Possibility of transport by container without disassembly.
- Quick, simple and safe start-up in the customer's plant with guaranteed success.
- Ample space between equipment for convenient maintenance.
- Complete package mobility, which provides easy relocation with minimal resources.



▲ 3THA-3-LT
up to 525 m³/h



▲ 3HA-4-TER-LT
up to 1.443 m³/h



Easy and safe mobility



100% inhouse machined parts

TECHNICAL ATTRIBUTES

ENERGY SAVING



EFFICIENT DESIGN

The compressor is **10% more efficient** than any other compressor on the market



FREQUENCY CONVERTER

Perfectly adapted, the ABC compressor provides **15% energy savings**



REINJECTION

Our four-stage reinjection process means a **50% saving in compression energy**



EFFICIENT DESIGN

With savings of up to 15% of real energy consumption, the ABC design gives optimum performance.

This energy savings guarantees the most competitive total operating cost (energy consumption + cost of the machine + maintenance), and has a significant impact on consumption, since energy costs are 80% of the total cost of the compressor throughout its useful life.

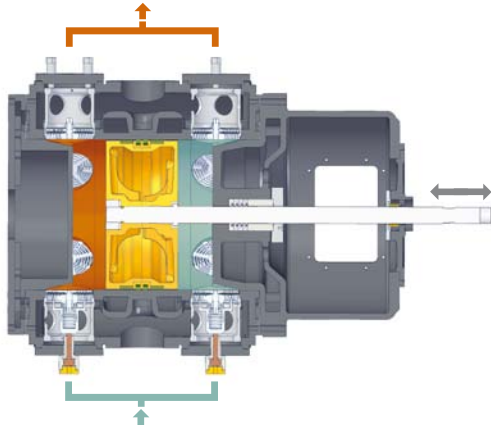
- Double-acting cylinders minimise leaks and premature wear and tear.
- With a wide range of double-acting cylinders, ABC is able to balance compression ratios, thereby improving efficiency and lowering energy consumption.
- Generous cooling between stages.
- Large stainless-steel valve outlet surfaces, reduces pressure drops.

- When unloaded, venting the intercoolers is not required, another way we increase efficiency and lower energy consumption.
- Up to four-stage compression design optimises the compression cycle facilitating the removal of the heat generated during the compression process.
- Adaptation of independent vents per stage, preventing leaks.
- Large-capacity air receiver for more precise regulation, extending the life of the valve unloaders.
- The soft starter is supplied on all ABC packages above 200 kW, and is optional for compressors of lower power. This eliminates inrush current, thereby avoiding costly "peak" charges.
- When coordinating systems with several compressors, ABC offers intelligent systems that make it possible to select and prioritise the start up of the compressors according to the demand for compressed air.

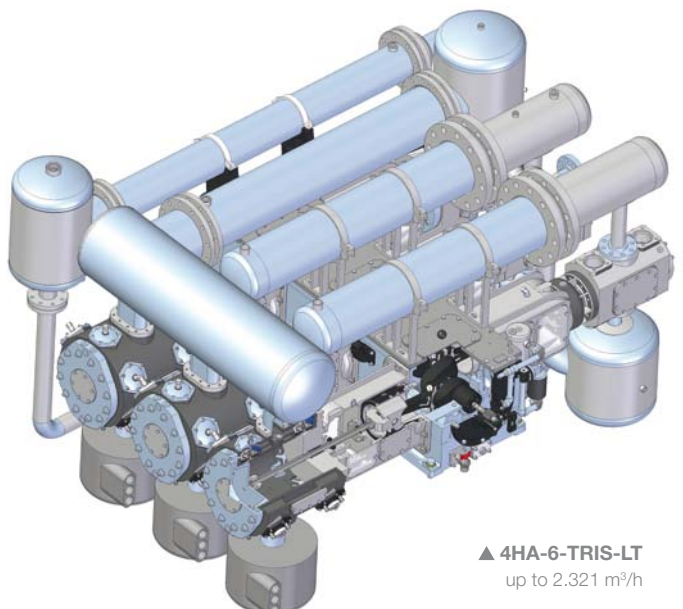
The ABC compressor can be furnished with optional energy saving systems which can be supplied with the compressor package, or retrofitted at a later date.

CYLINDER TYPES

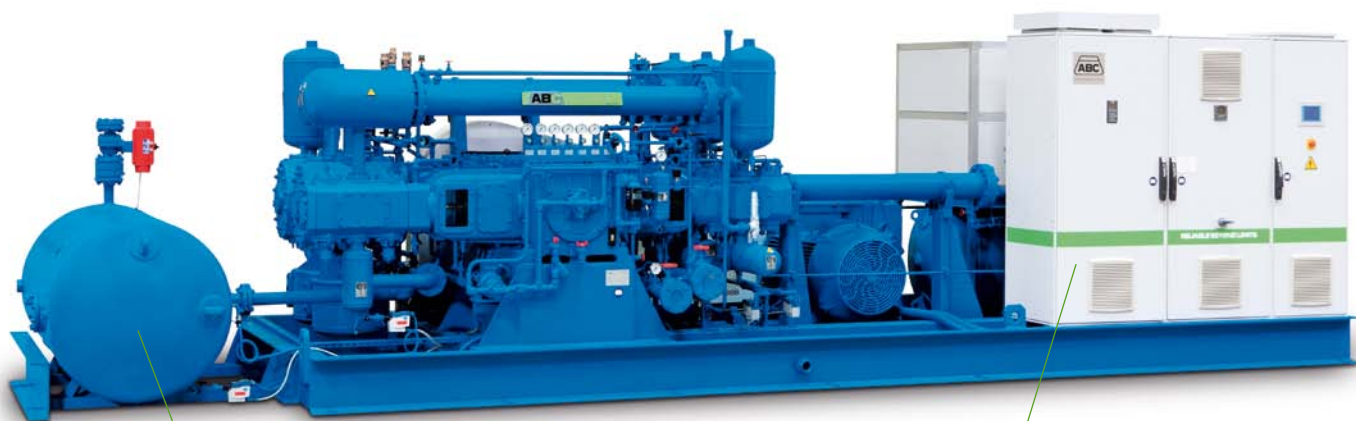
ABC Double Acting



- Lower energy consumption
- Without air leaks
- Lower temperatures in operation
- Longer durability of parts
- Better regulation



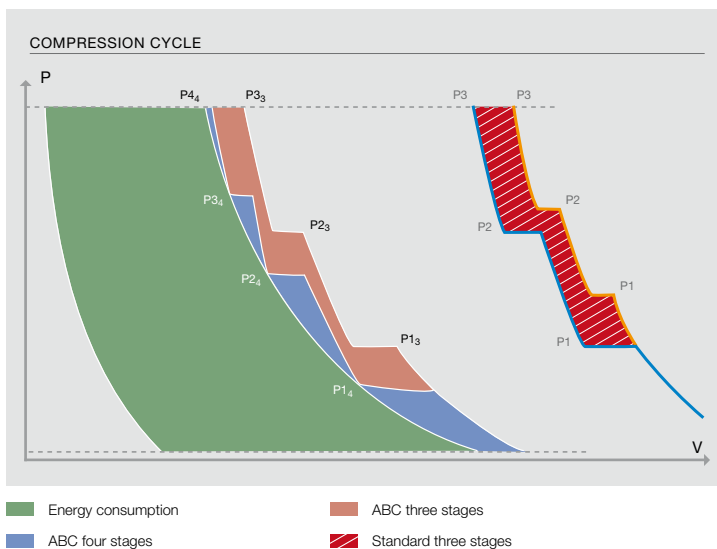
▲ 4HA-6-TRIS-LT
up to 2.321 m³/h



Reinjection system

Frequency converter

▲ 4HA-6-TER-LT
up to 1.700 m³/h

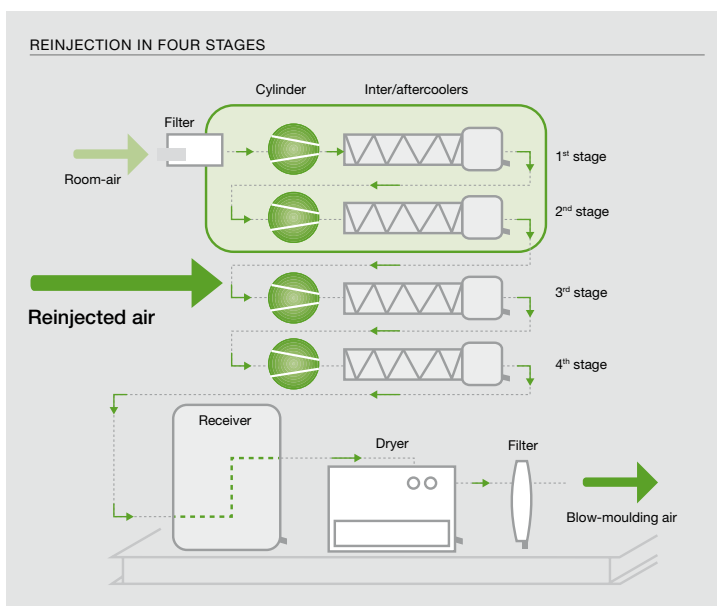


FREQUENCY CONVERTER

ABC offers variable speed drives, VSD, which make it possible to reduce or eliminate the compressor valve unloading which uses energy without producing compressed air.

The balanced mechanical design of the ABC compressor permits it to operate at a slow rotational speed, while maintaining sufficient lubrication to all mechanical parts and control of the rotational inertia forces.

ABC takes full advantage of the variable frequency converter features, allowing a wide range of capacity control of up to 50% of the speed range.



REINJECTION SYSTEM

When the customer opts for air recovery from the stretched blowing machine, ABC re-injects it inside the compressor with a subsequent energy saving. Additionally, thanks to four stages of compression, up to 50% of the energy required for compression is saved (re-injected into the 3rd stage), as opposed to the 33% saving achieved in the three-stage compression, where it is re-injected into the second stage.

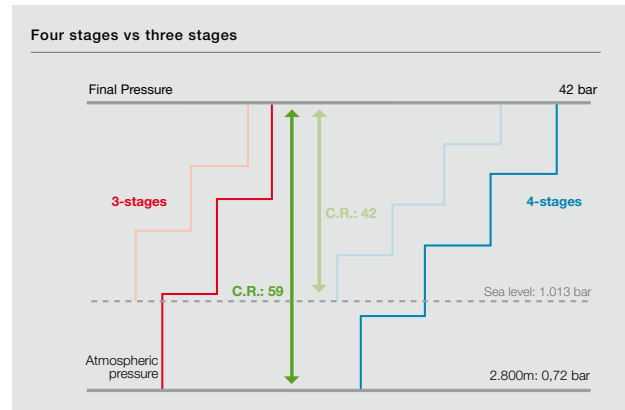
FOUR- OR THREE- STAGE COMPRESSION

Four-stage compressors have the most superior technical attributes; lower cylinder temperatures, less operating stress on structural elements, which immediately lengthens the useful life of valve, rings, gaskets, etc.

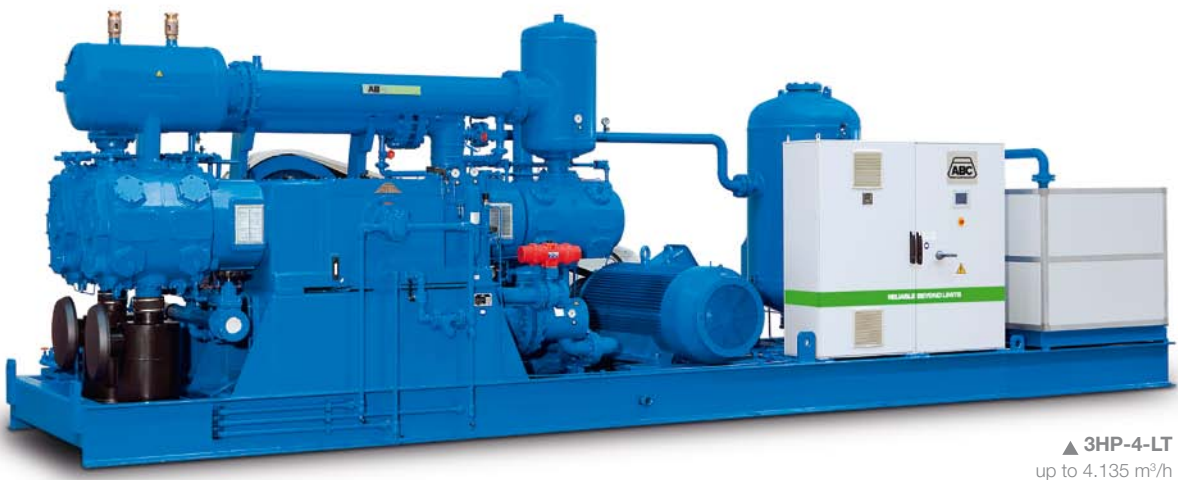
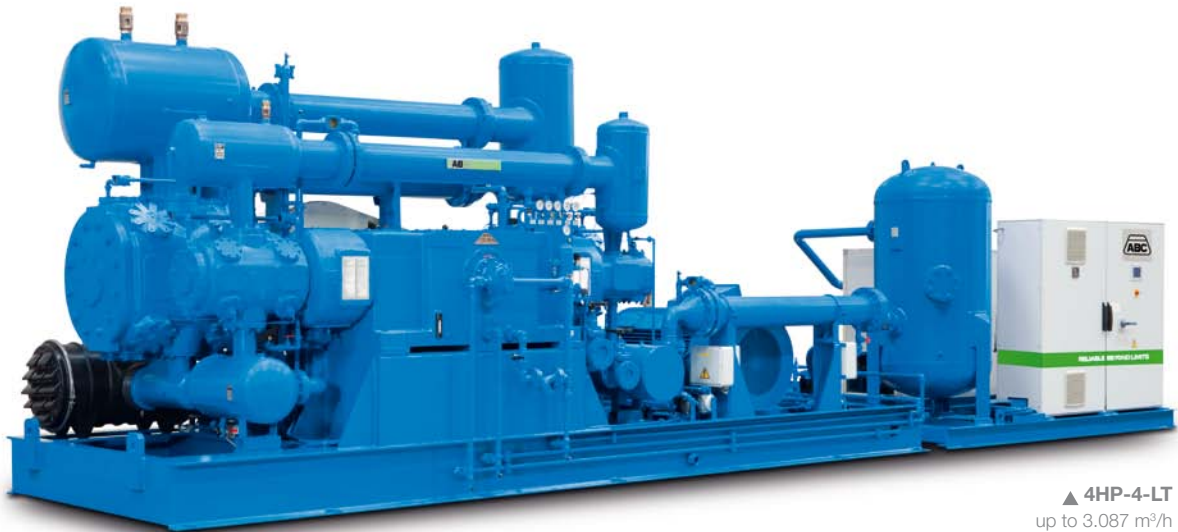
Depending on the location of the installation and the characteristics of the surroundings, the ABC compressor package is supplied in four- or three-stage configurations. The four-stage configuration is especially suitable for installation in the following circumstances:

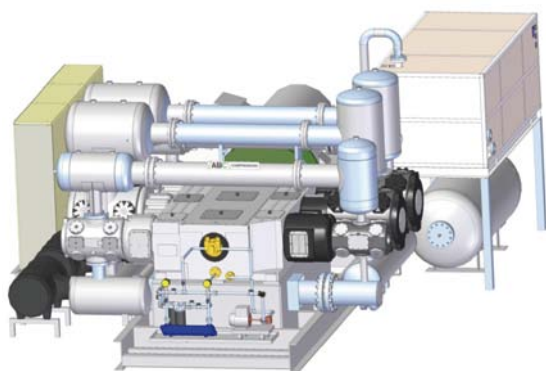
- High altitudes where ambient inlet pressure is low and a high compression ratio is encountered.
- High room temperatures due to the ambient conditions of the plant installation.
- Very demanding work conditions, where the equipment is subjected to tougher-than-usual conditions.

- Installations in which longer time between maintenance cycles is required.



C. R. = Compression Ratio

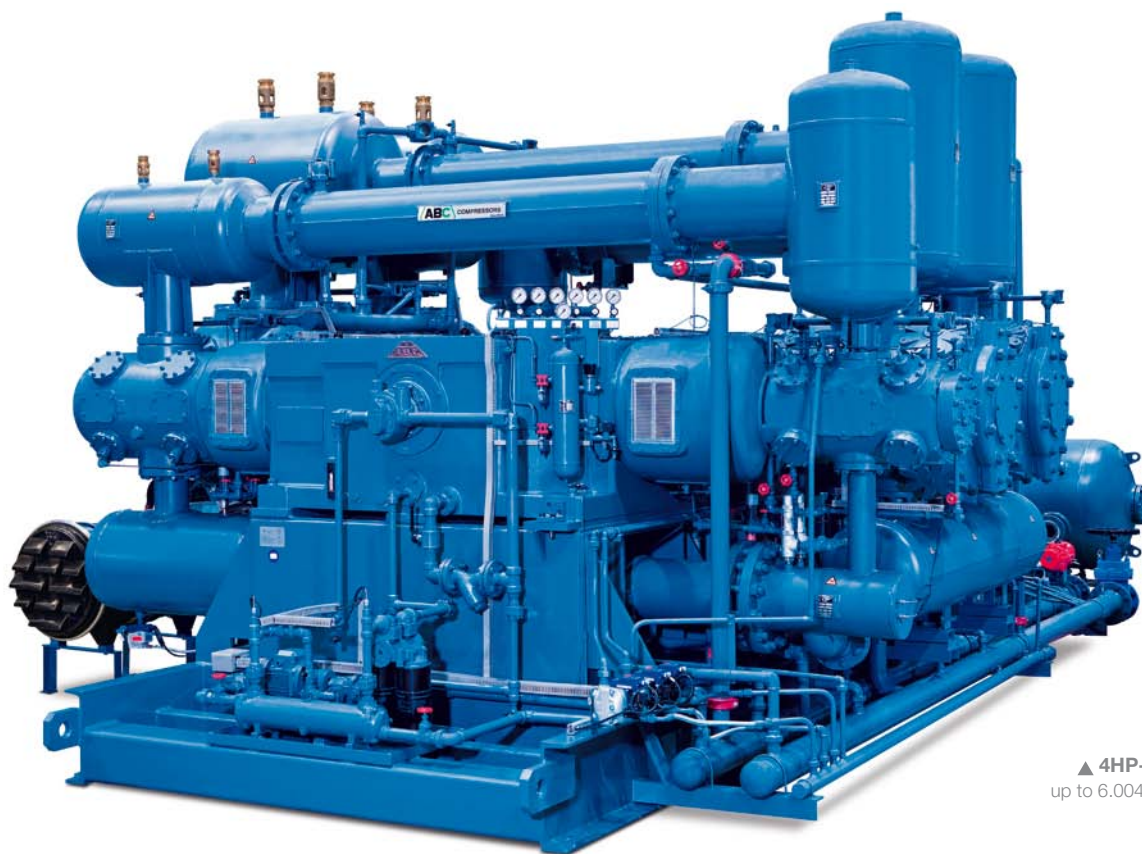




4HP-6-LT complete package

The 4HP-6-LT model, the largest in power and capacity of ABC, completes a cycle of market-adapted powers and products, becoming the largest reciprocating compressor of the PET market.

4HP-6-LT compressor, supplied with a **1.000 kW motor**, delivers **6.000m³/h flow**, more than the 80% above other large alternative machines of the market.



▲ 4HP-6-LT
up to 6.004 m³/h

CLOSED COOLING WATER SYSTEMS

For installations where cooling water isn't available or is of poor quality, ABC offers a complete line of packaged closed cooling water systems.

- Water/water: Closed-type cooling towers
- Water/air: Air-cooled radiators with no water consumption, including adiabatic types.

The control panel monitors and operates the cooling system according to the working requirements of the compressor.

Cooling systems include all pumps, valves, instruments and receiver necessary to monitor and control the coolant required for the entire compressor package... all mounted on a compact skid.

PET RANGE

FOUR- AND THREE-STAGE ATMOSPHERIC COMPRESSORS - 42 BAR

MODEL	STAGES	CYLINDERS mm	CAPACITY FAD* m³/h / cfm		ABSORBED POWER kW / HP		IP55	SOFT START	PLC + TOUCH SCREEN	FREQUENCY CONVERTER		REINJECTION SYSTEM	COMPLETE PACKAGE	
										CONVERTER	REGULATION UP TO, %		SET ON SKID**	FOOTPRINT m²
3THA-3-LT	3	250	315	186	51	70	✓	○	○	○	59	○	✓	9,6
		175	416	245	68	92								
		85	525	310	87	118								
4HA-4-TER-LT	4	310	613	362	96	130	✓	○	○	○	49	○	✓	12,2
		185	722	426	115	156								
		125	860	507	142	193								
3HA-4-LT	3	2x250	1.031	608	161	219	✓	○	○	○	46	○	✓	12,9
		160 95												
3HA-4-TER-LT	3	2x310	1.140	673	173	235	✓	○	○	○	46	○	✓	12,9
		185 105												
4HA-6-TER-LT	4	2x310	1.563	922	241	328	✓	✓	✓	○	49	○	✓	15,5
		2x185 140 95												
4HA-6-TRIS-LT	4	3x310	2.026	1.195	309	420	✓	✓	✓	○	49	○	✓	16,4
		240	2.243	1.323	350	476								
		165 115	2.321	1.369	365	496								
4HP-4-LT	4	580	2.650	1.564	394	535	✓	✓	✓	○	62	○	✓	31,9
		370	2.907	1.715	437	594								
		230 145	3.087	1.821	469	637								
3HP-4-LT	3	2x450	3.351	1.977	488	663	✓	✓	✓	○	56	○	✓	28,2
		300	3.758	2.217	553	752								
		175	4.135	2.440	614	834								
4HP-6-LT	4	2x580	5.400	3.186	786	1.068	✓	✓	✓	○	62	○	✓	46,7
		2x370 265 175												

Calculated for 50Hz frequency

* Sea level, 35°C, 40 bar

** Complete package: compressor, motor, receiver, dryer and electric cabinet on skid, with interconnected elements from origin.

✓ Included

○ Optional

30 bar range also available and **boosters** adapted to client's specific installation.

Learn more through your sales contact.

PERFECT BLOWN AIR QUALITY

The quality of the air exceeds the standard based on ISO 8573-1:

- Oils: Class 0
- Particles: Class 0
- Humidity: Class 4

- Lubrication-free cylinders guarantee 100% total absence of oil.
- Filtration system at the dryer outlet is standard, removing solid particles.

ABILITY

services

After more than 60 years in the market, ABC works to strengthen long-term relationships with clients, **supplying not only the best customized products, but also the complete service package for their whole life cycle.**

ABILITY NETWORK

Through a wide network of service offices in more than 20 countries, with more than **100 field technicians and stock of spares** strategically distributed throughout the world, ABC ensures the best technical support for the start-up, maintenance and monitoring of compressors.

ABILITY CONTRACT

In order to grant the best long-term operating guidelines of the compressors and to keep the maintenance cost controlled from the very beginning, ABC offers **“FULL SERVICE”**, maintenance contracts, with extended **guarantee up to five years.**

ABILITY EYE

ABC considers it important to help clients monitor their international compressor network quickly and efficiently. Consequently, **the REMOTE CONTROLLER Ability Eye**, with its three levels of surveillance, becomes the perfect tool to keep the compressor room under control.

Ability Services cover the **services from the initial design of compressor, its start-up to its operation**, providing the following range of services, as well as technical solutions:

ABILITY IMPROVER

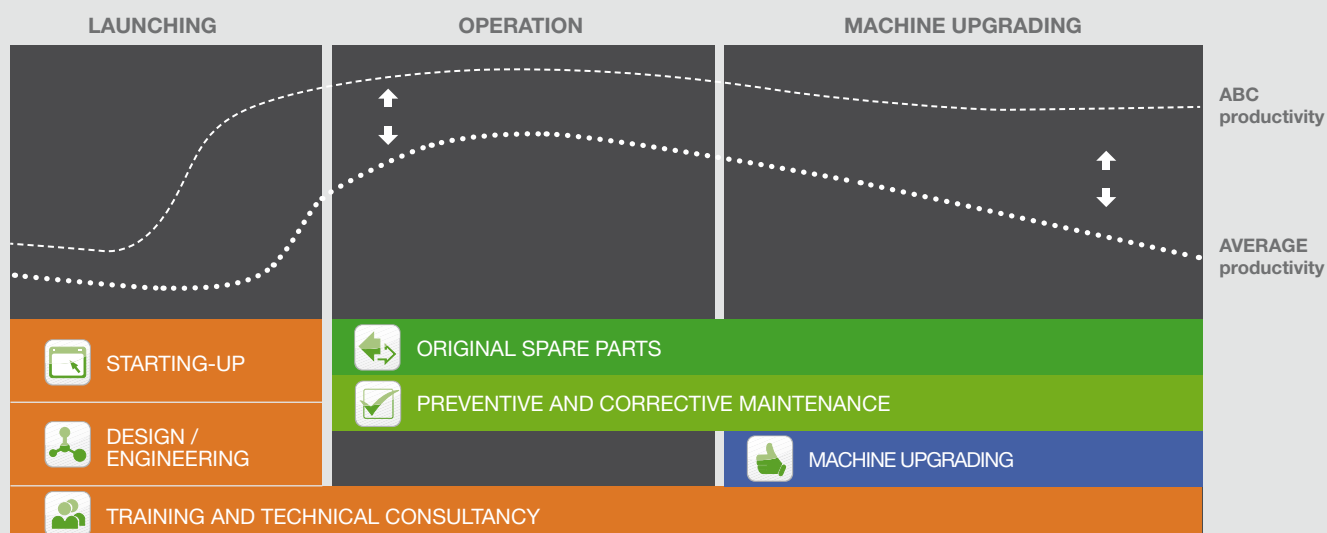
Its products and services are aimed at **optimizing clients’ air or gas compression system.** Improvement of regulation system, systems for coordination of batteries of machines, upgrading of compressors, energy saving methods, consultancy and plant audits.

ABILITY ACADEMY

ABC offers clients and field specialists **complete training programs**, to ensure that only the best technical guidelines are used when diagnosing and operating the compressors.



Energy audit



For additional information browse our Service Catalogue or visit our website
www.abc-compressors.com

HEADQUARTER

Eibar

Polígono Azitain nº 6 P.O.Box 87
20600 EIBAR (Guipúzcoa) SPAIN

Tel.: +34 943 820 400

Fax: +34 943 820 235

abc@abc-compressors.com

Contact with our **INTERNATIONAL NETWORK**
through:

www.abc-compressors.com

RELIABLE BEYOND LIMITS



02/2013



ARIZAGA, BASTARRICA Y CIA, S.A.

TOTAL QUALITY

ISO 9001

ISO 14001

OHSAS 18001