



AF COMPRESSORS

**ENERGY
SOBRIETY**



8 & 10 BAR



**The world leader
of PET oil free piston
compressors**

Innovation and tradition in compressed air industry since 1870

AF compressors is the global leader in supplying high quality, oil free piston compressors for the PET blow moulding market. Along with our main factory and headquarters in Belgium, we have world class production centers in Kunshan, China and Pune, India to support these thriving markets.



CUTTING-EDGE SOLUTIONS

Laboratory for research and development in Liege. Constant cooperation with scientific associations from UCL and ULiege universities.

State of the art test bench to confirm air capacity to ISO 5167-2003 and ISO 1217-2009 standards.

THE STRONGEST AND MOST EFFECTIVE SERVICE NETWORK IN THE WORLD FOR OIL FREE RECIPROCATING AIR COMPRESSORS

AF are constantly strengthening their market presence and consolidating their position as global leader by offering an ever higher level of service worldwide.

As a long-term partner, we provide first-rate support through local offices, spare parts hubs and a team of 150 specialised engineers.



4 0 0 U N I T S / Y E A R | + 8 0 0 0 U N I T S | + 1 8 5 C O U N T R I E S

Global organisation



ATELIERS FRANÇOIS IN BELGIUM
Historical factory in Liege since 1870



AF USA INC.
Atlanta GA. Established 1995. Distribution center



AF MIDDLE EAST FZE IN UAE DUBAI
Distribution center



SERVICE HQ IN BELGIUM
Distribution center in Liege



3 production sites:
machines and all spare parts

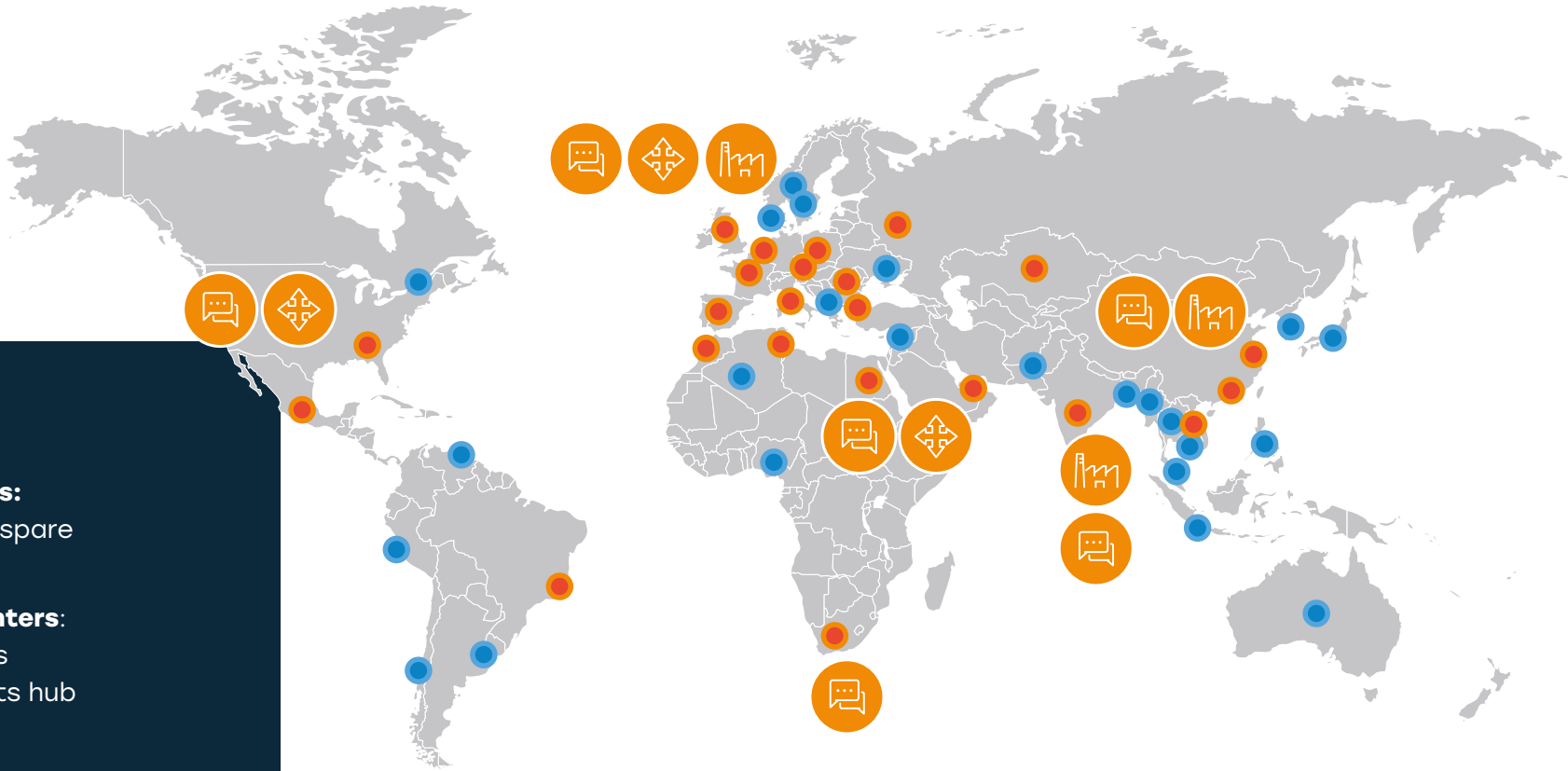
3 distribution centers:
main components and all spare parts hub

+150 specialised engineers

15 subsidiaries:
commercial and technical support

20 official agencies:
spare parts available from stock

6 training centers



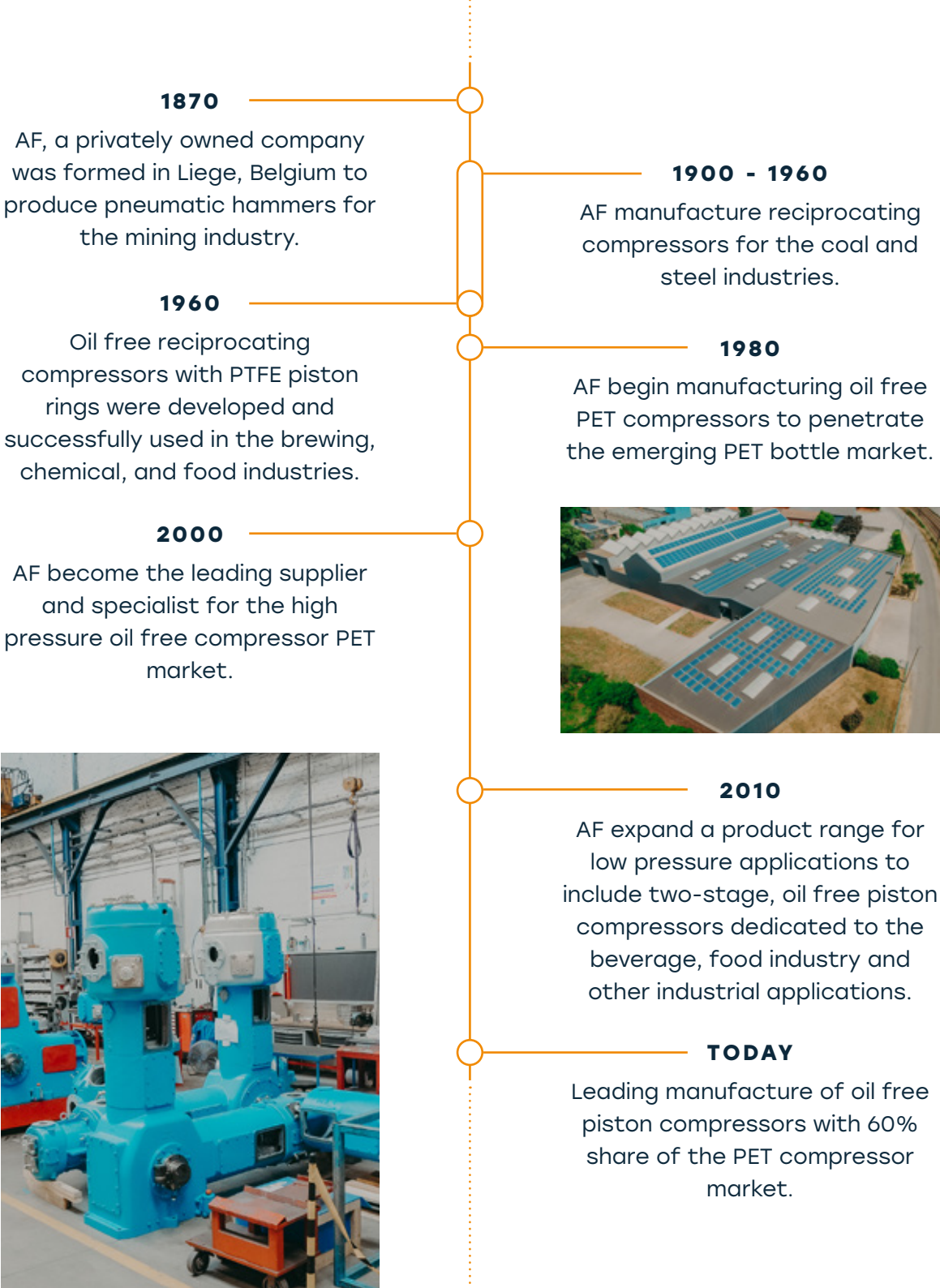
● *AF subsidiaries commercial and technical support*
● *AF official agencies*

Algeria	China	Lebanon	Philippines	Thailand
Argentina	Czech Republic	Luxembourg	Poland	Trinidad & Tobago
Australia	Denmark	Malaysia	Romania	Tunisia
Austria	Egypt	Mexico	Russia	Turkey
Bangladesh	Finland	Morocco	Serbia	UAE-Dubai
Belgium	France	Myanmar	South Africa	Ukraine
Brazil	Germany	Nigeria	South Korea	United Kingdom
Cambodia	India	Norway	Spain	USA
Canada	Indonesia	Pakistan	Sweden	Vietnam
Chile	Kazakhstan	Peru	Switzerland	

A 150-year legacy

AF's experience and legacy have provided a solid foundation for our company to become the leading supplier of high quality compressed air systems.

Our customers include the most renowned blow moulding manufacturers and major beverage producers of soft drinks, water, juices, teas, and other applications where dependable compressed air is required.



Efficiency in sobriety



ENERGY, PERFORMANCE AND OPERATING COSTS: PISTON IS STILL THE BEST!

Features

- Efficient design like the '40 bar AF compressor', 2 stages, oil free, robustness, long-lasting efficiency.
- Low speed, fewer parts, less wear, long lasting and reliable technology.

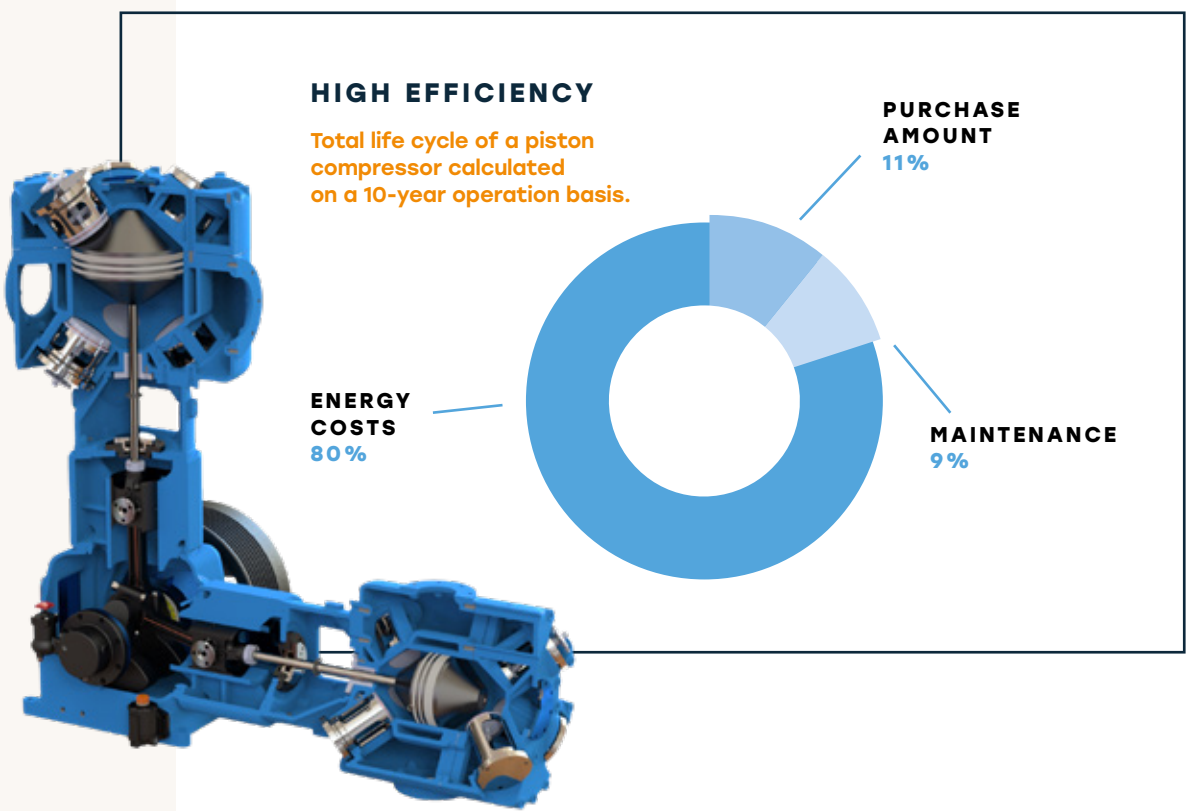
Benefits

- Direct money savings. Low costs for maintenance. Lower energy consumption. Short and long term pay back.
- EASY and SIMPLE mechanics to maintain.
- Quick return on investment.
- Long lasting performance and low operational costs compared to other technologies.

ELECTRICAL MOTOR / SERVICE FACTOR 1.0

AF motors always use a service factor (SF) of 1.0 hence only consuming the indicated nominal power.

$P = 200 \text{ kW} \times 1.0 = 200 \text{ kW}$



A complete range of capacities

2-stage oil free piston OPC compressors

OPC
RANGE

8 & 10 bar

7.2 → 54.5 m³/min



Consult the detailed range capacities for 6 to 16 bar OPC compressors.

OPC 45-75
8 & 10 BAR



Nominal capacity from **7.0 to 13.8 m³/min FAD** (247 to 486 CFM).

- Motor power from **45 to 75 kW**
- Motor service factor 1.0
- capacities ISO 1217.

OPC 90-132
8 & 10 BAR



Nominal capacity from **15 to 23 m³/min FAD** (530 to 812 CFM).

- Motor power from **90 to 132 kW**
- Motor service factor 1.0
- capacities ISO 1217.

OPC 160-220
3, 6-4 BAR



Nominal capacity from **39.8 to 46.5 m³/min FAD** (1407 to 1642 CFM).

- Motor power from **160 to 220 kW**
- Motor service factor 1.0
- capacities ISO 1217.

OPC 160-200
8 & 10 BAR



Nominal capacity from **24.2 to 32.1 m³/min FAD** (855 to 1134 CFM).

- Motor power from **160 to 200 kW**
- Motor service factor 1.0
- capacities ISO 1217.

OPC 250-355
8 & 10 BAR



Nominal capacity from **38.5 to 58 m³/min FAD** (1360 to 2048 CFM).

- Motor power from **250 to 355 kW**
- Motor service factor 1.0
- capacities ISO 1217.

OPC M3
16 BAR



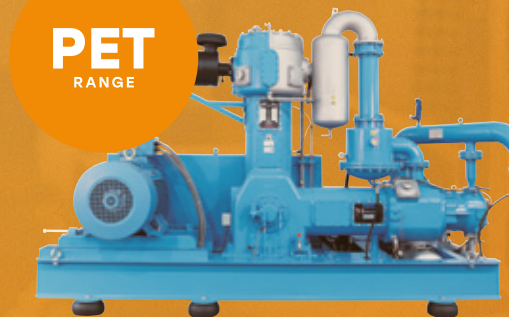
Nominal capacity from **2.8 m³/min FAD** (100 CFM).

- Motor power from **30 kW**
- Motor service factor 1.0
- capacities ISO 1217.

15 – 40 bar

3-STAGE OIL FREE
PISTON COMPRESSORS

PET
RANGE



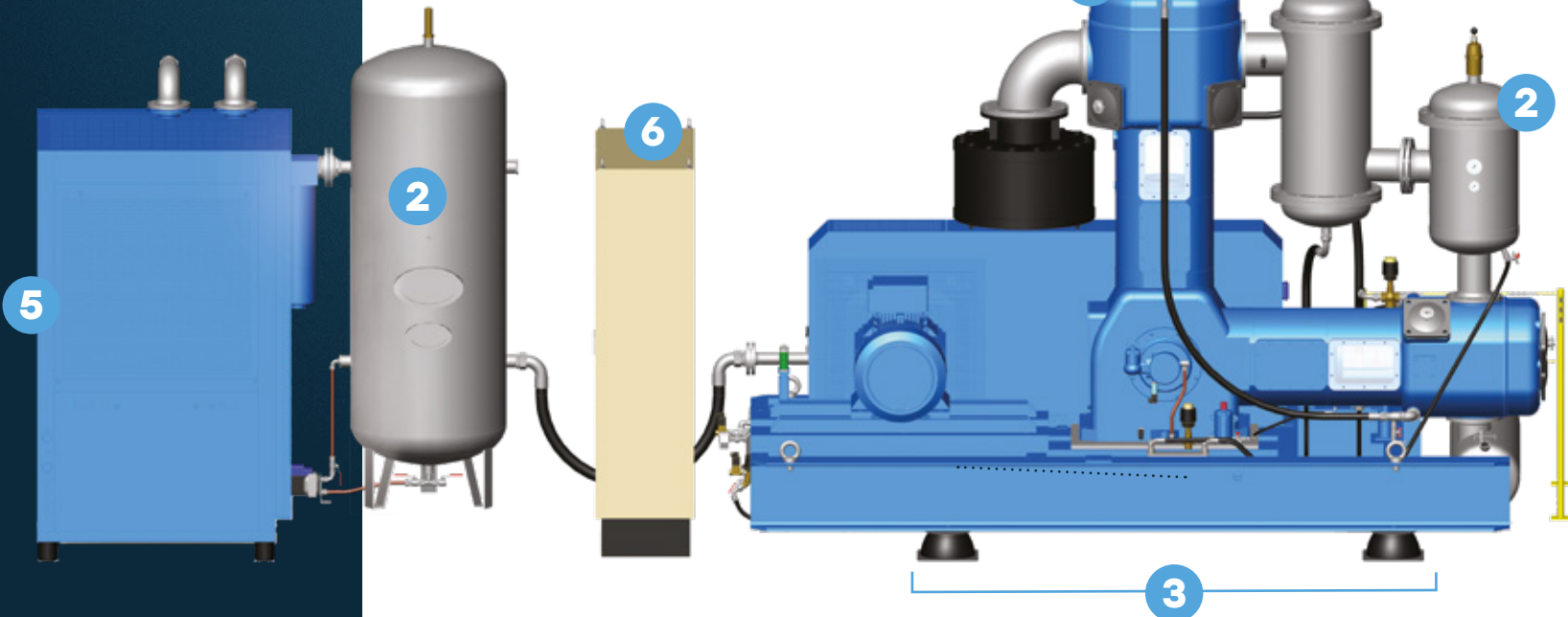
See our PET Range brochure to discover the detailed range of capacities for 15-40 bar PET compressors.



More info:
sales@afcompressors.com

Turnkey solutions

Easy to install and operate. Turnkey packages designed for Food and Beverages and for any 8 & 10 bar oil free air applications.



1 Compressor Bare Unit

2 stages, 2 cylinders,
2 piston rod assemblies.
Electric motor & V-belt transmission.

2 Air Receiver & Pressure Vessels

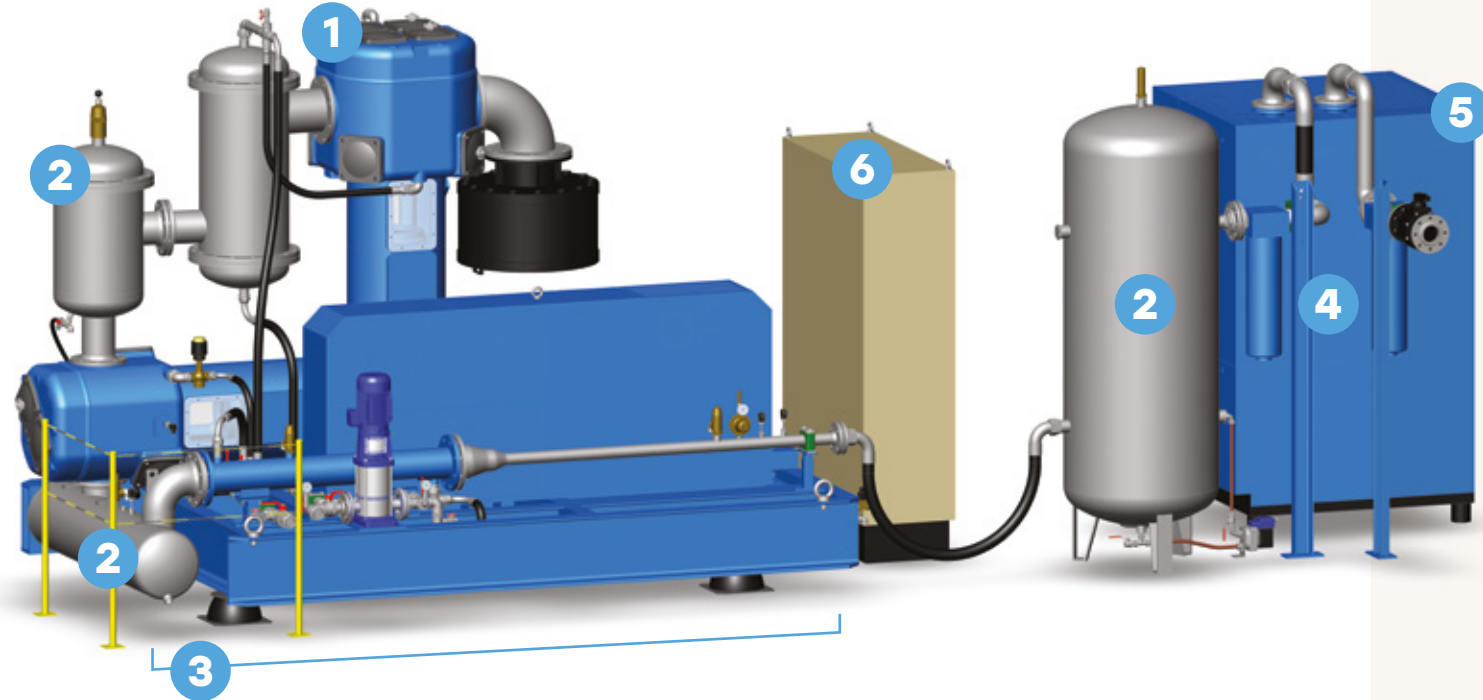
Hot galvanised, nickel plated.
Package equipped with Bekomat drain system.

4 Air Filtration

Pre-filter, dust filter, optional submicronic filtration,
0,01µ activated carbon for odour removal.

5 Air Dryer

- Refrigerative dryer. Stainless steel air or water-cooled condenser, automatic draining system. Dew point down to +3°C.
- Heatless regenerated adsorption dryer. Average compressed air consumption of 15-20%. Dew point down to -40°C, or even -70°C.
- Heating regenerating adsorption dryer with purge cooling. Average compressed air consumption of 2-3%. Dew point down to -40°C.



3 Anti-Vibration Mounts

Skid mounted on anti-vibration mounts. No specific foundation.

6 Control Cabinet

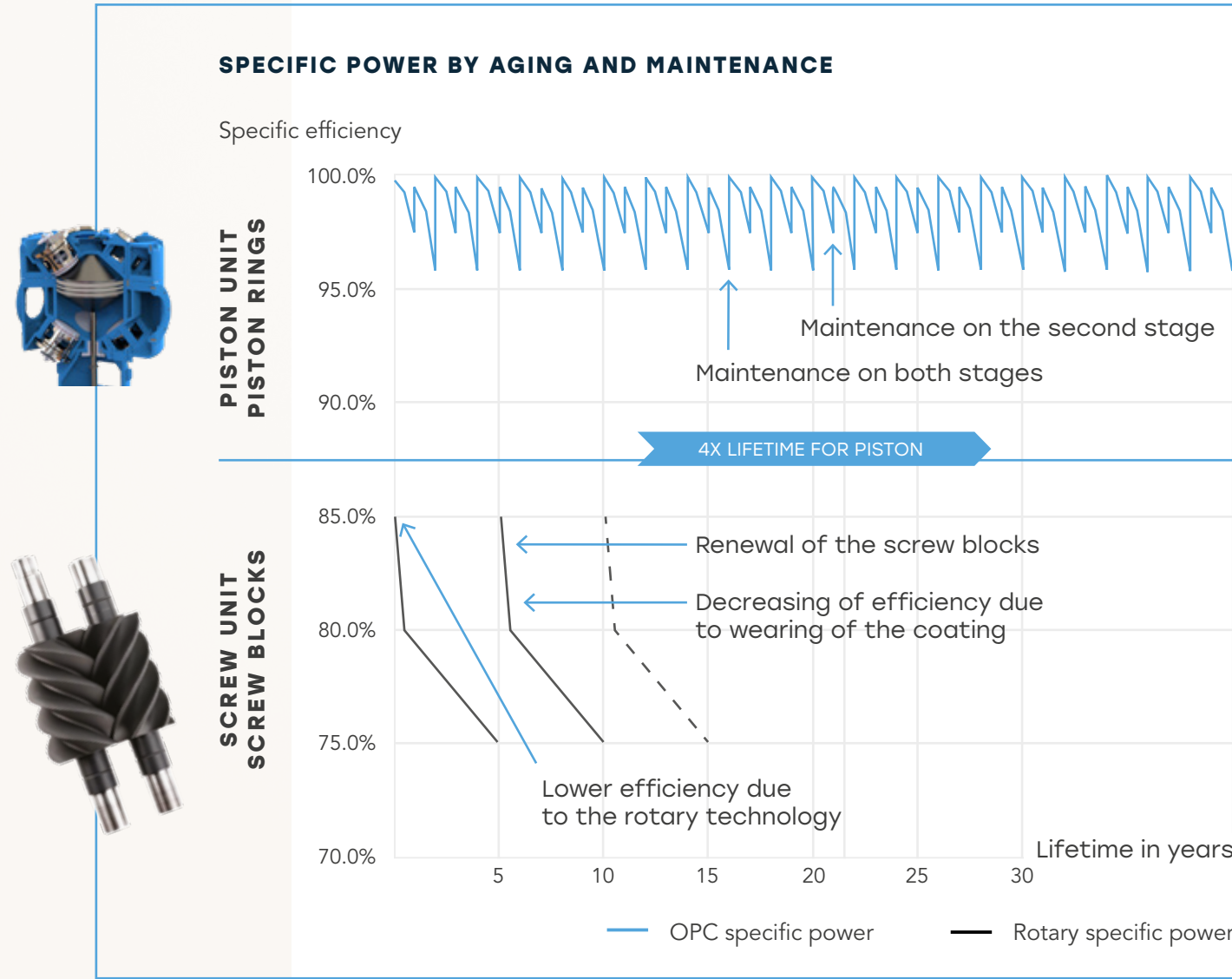
Fully interconnected with the whole compressor package. Includes star/delta starter and PLC controller.



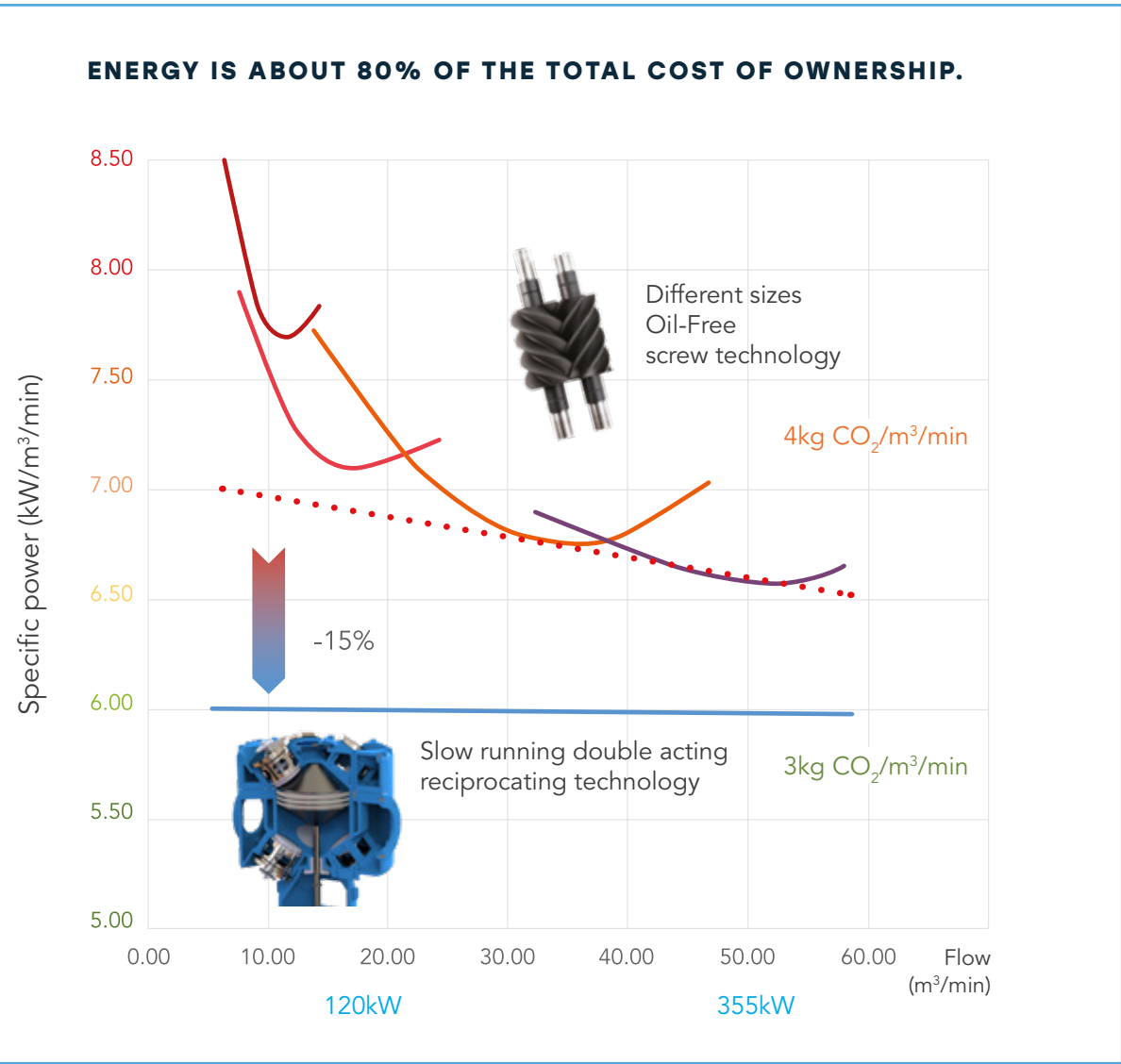
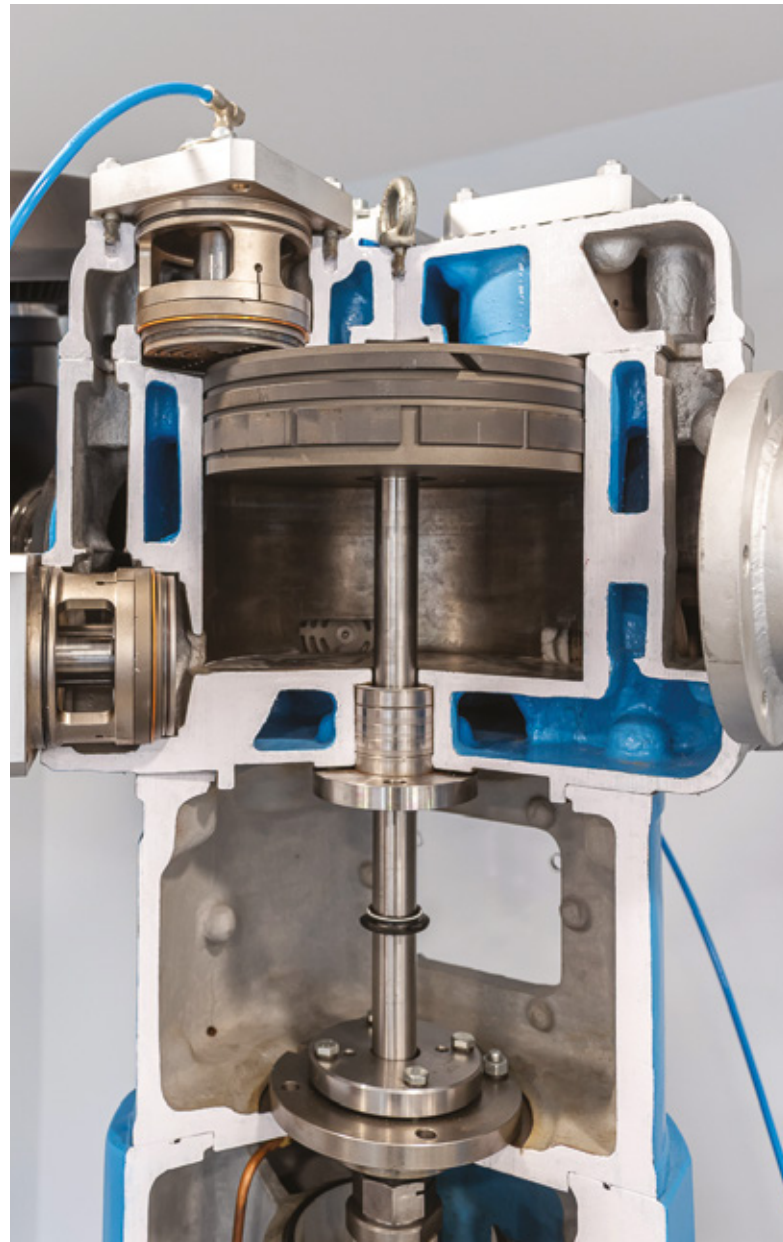
Long lifetime, Long lasting performances

8000 hours and **16000 hours** are respectively the maintenance intervals for the two stages of the piston compressor.

When dully maintained the machine keeps performing like new with a guaranteed long lifetime and supreme reliability.



Performance using oil free technology



Technical features

for any site conditions



Separate cooling systems



A – EVAPORATIVE CLOSED CIRCUIT COOLING TOWERS

For temperatures above 36°C.

Cooling capacities are selected to suit the local site wet bulb temperature to provide the most efficient cooling system.

Option: two-speed fan motor for winter and summer, antifreeze protections, heat tracing.

The tower and the water pump are controlled by the compressor's electrical cabinet.

B – RADIATOR COOLING SYSTEMS

Other selections for temporary heat peaks up to 36°C and 40°C during some hours per day. These specific versions are equipped with an automatic spray with thermostatic control.

'Deep cold' selections for temperatures down to – 45°C and electrical heaters on motors.

The radiator fans and water pump are controlled by the compressor's electrical cabinet.

Separate cooling systems are supplied with:

- Water circulating pump, expansion tank and accessories for the inlet/outlet connections of the cooling system.
- Glycol, when required and suitable to site conditions.



Protection for hot and cold environments



A – PROTECTION FOR HOT TEMPERATURES

Oil cooler for ambient temperatures exceeding 40°C.

Water-cooled condenser for refrigerated air dryer for ambient temperatures above 40°C.

Air conditioning for electrical cabinets for ambient temperatures above 40°C.

B – PROTECTION FOR COLD TEMPERATURES

Oil warming for inside temperatures between 1 and 5°C.

Optimal operating in hot and tropical areas



Due to the heavy duty structure and high efficiency cooling system, our compressors operate up to ambient temperatures of 50°C.

Expensive chilled water is not needed, even in the Middle-East conditions.



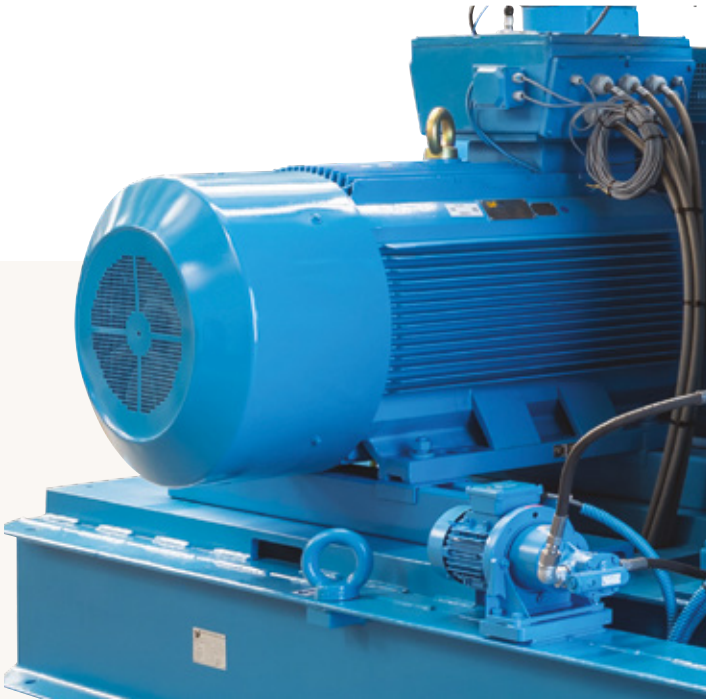
Electrical motor / Service factor 1.0



The electrical motor nameplate shows a service factor (SF).

This motor SF is the percentage of overloading the motor can handle for short periods when operating normally within the correct voltage tolerances.

AF motors always use a **service factor of 1.0** hence only consuming the indicated nominal power.





SF 1.00 :
P= 200 kWx1,0= **200 kW**

Equal required
compressor flow
m³/min - cfm



SF 1.15 :
P= 200 kWx1,15= **230 kW**

AC Induction Motor			
HIGH EFFICIENT			
ORD. NO.	1LA0264SE41	S	NO
TYPE	R62ESD	FRAME	280T
H.P.	30.0	SERVICE FACTOR	1.15
AMPS.	35.0	VOLTS	460
R.P.M	1765	HERTZ	60
DUTY	CONT. 40 C.AMB	DATE CODE	
CLASS	F	NEMA CODE	G
INSUL	DESIGN B	NEMA NOM. EFF.	93.0
SH. END BRG	540001K38	OPP. END BRG	500C03JPP3
Made in Mexico			

Electrical options



Motors can be selected for your specific application and conditions:

- Motor protection degrees from IP-23 to IP-55 for hot and dusty environments.
 - Efficiency class available from IE1, IE2, IE3 & IE4.
 - Internal heaters to prevent condensate under tropical conditions.
 - A variety of voltages and frequencies are available from our standard panels being 400V/3/50Hz or 440-480V/3/60Hz. Other voltages include 380V/3/50Hz or 60Hz, 575V/3/60Hz...
 - Soft Starter.
 - Smart Inverter Starter.
 - Fully Packaged Frequency Inverter.
- are available in lieu of the standard star/delta starter.



Certifications & equipment options



A – AIR RECEIVER OPTIONS

All codes and certifications are available: CE-PED, ASME VIII, TR CU suiting to Russia, CRN for Canada, SELO code for China, NR13 for Brazil, etc.

B – ADDITIONAL AIR RECEIVERS

Additional low pressure air receivers are available from 1,000 to 10,000 liters, hot galvanised with accessories including safety valve and Bekomat drain system.

Additional receivers are shipped loose for remote mounting.

C – SUBMICRONIC AND ACTIVATED CARBON FILTRATION

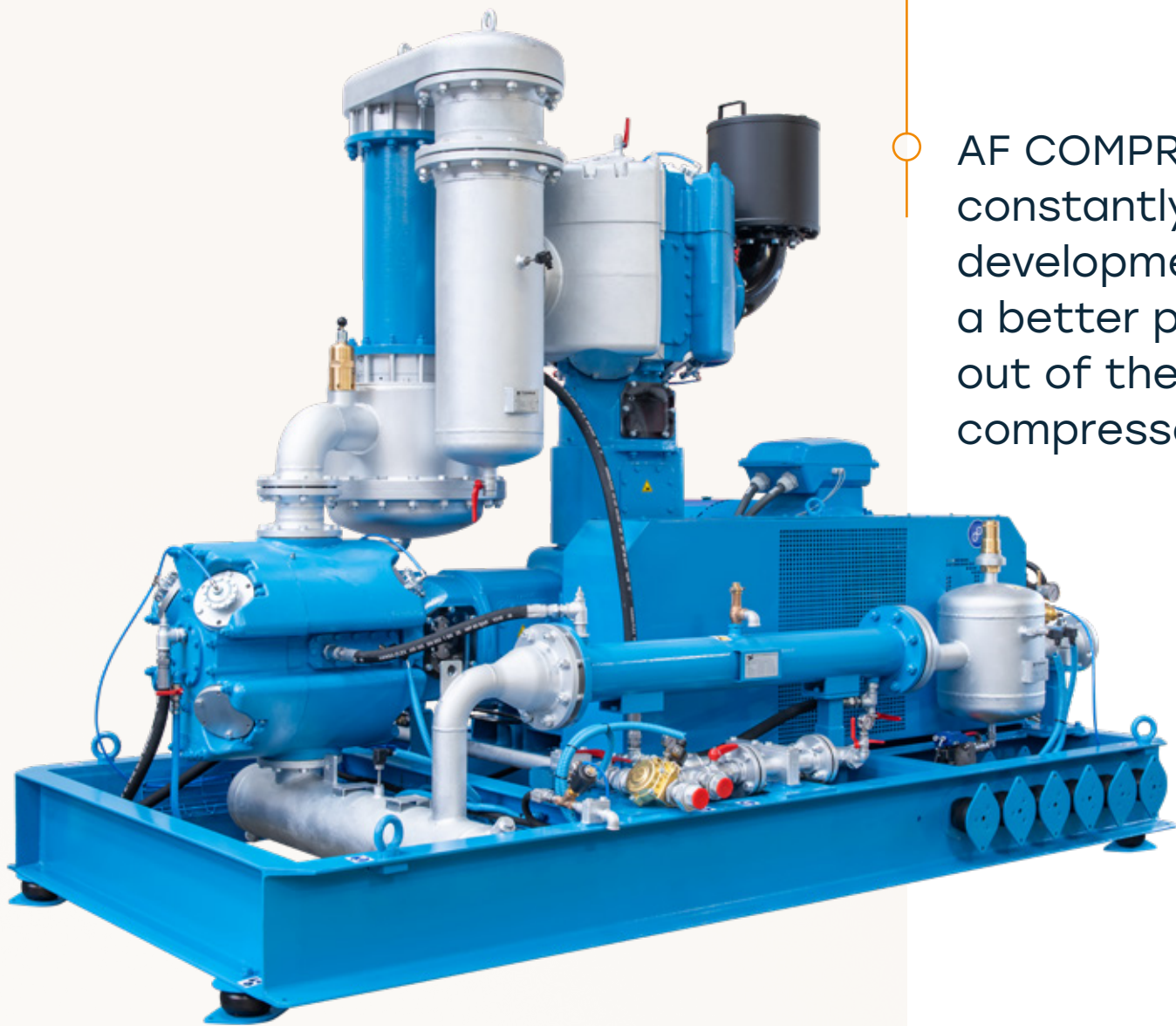
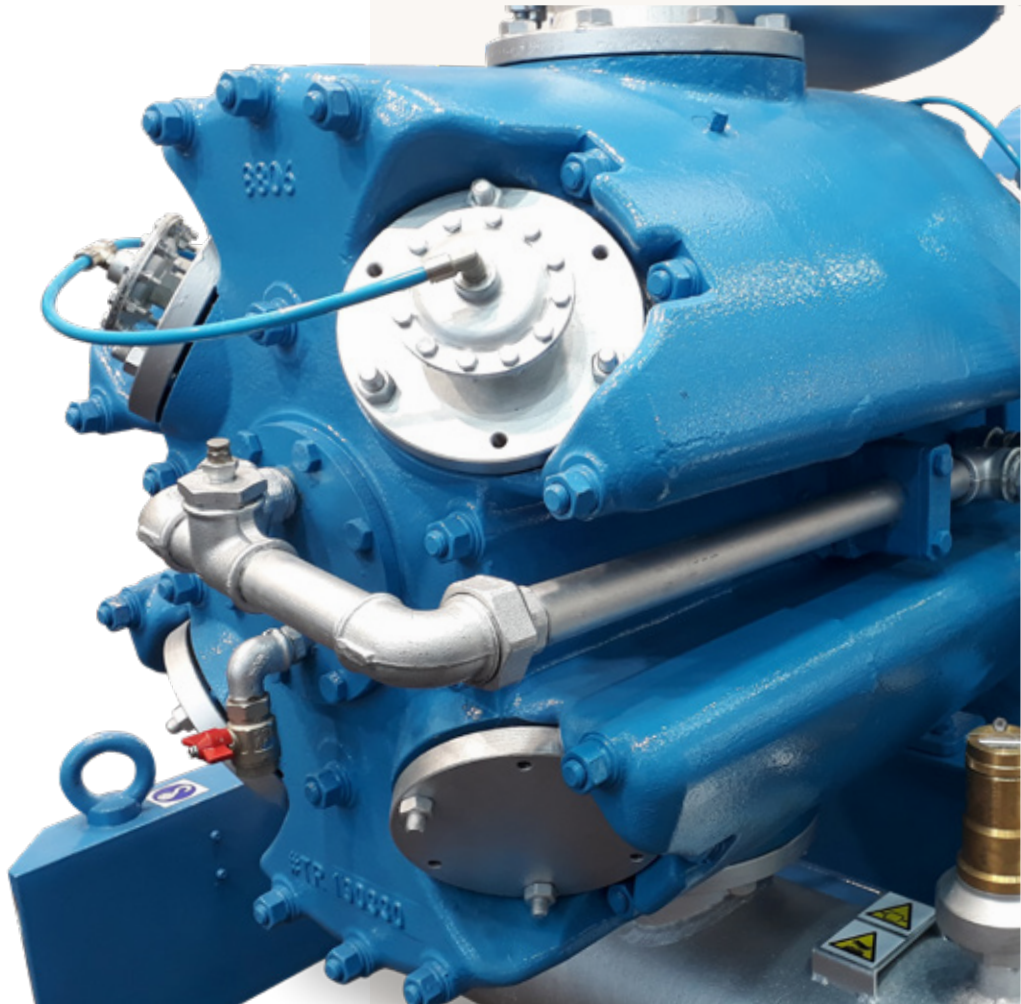
Activated carbon filter with either stainless steel or cast aluminum housings.

Filters provide submicronic particle filtration down to 0.01 micron and odour removal.

Filters are located at the outlet of the air dryer with AF supplied counter flange.

D – MISCELLANEOUS

Condensate drain collector, non-return valves, pressure reducers, etc.



AF COMPRESSORS is constantly driving the development to create a better performance out of the oil free piston compressors

Available options

for energy & cost savings



Regulation



SIS

Smart Inverter Starter

AFS

Adjustable Air Flow System

FREQUENCY INVERTER

Full Size Pack

Controlling



MULTI-COMPRESSOR CONTROLLER

MONITORING & MANAGEMENT

Recovery



HRS90

Heat Recovery System – 90°C

HRS40

Heat Recovery System – 40°C

Design

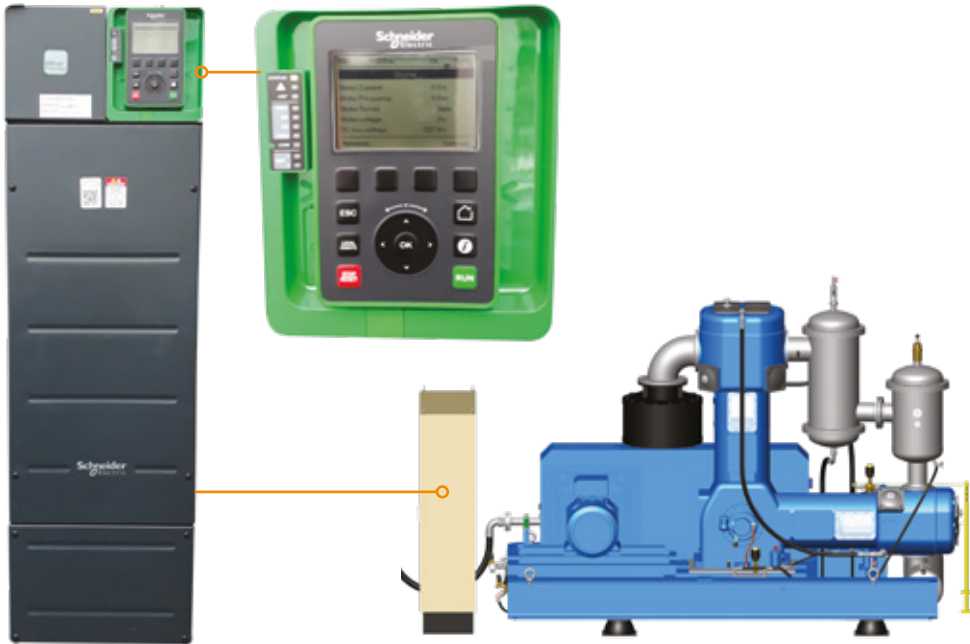


CONTAINER SOLUTIONS

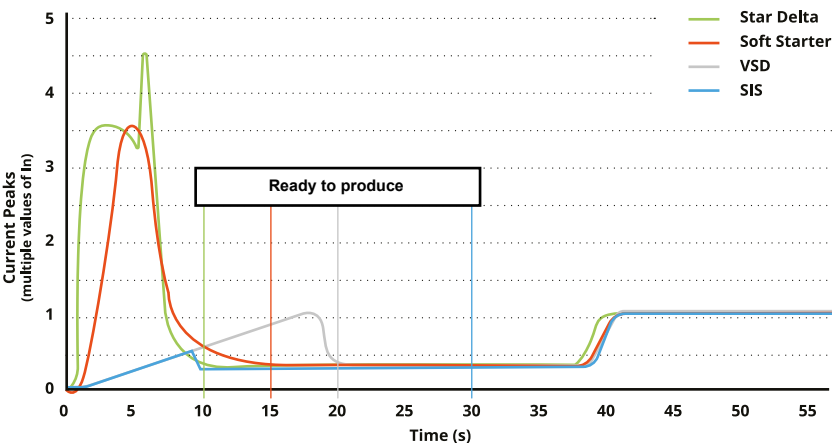
Regulation

SIS: Smart Inverter Starter

The Smart Inverter Starter (SIS) is a specific frequency inverter electrical cabinet designed for starting purposes. SIS will start up your compressor whilst keeping the network current below the overall nominal full load current. The system enables the compressor's main motor to be started very smoothly. It will reduce current peaks and voltage drops during start-up. It will also reduce high "cold" torques on the entire mechanism during a "hard" start (as it is with a star-delta starter).



STARTING CURVES

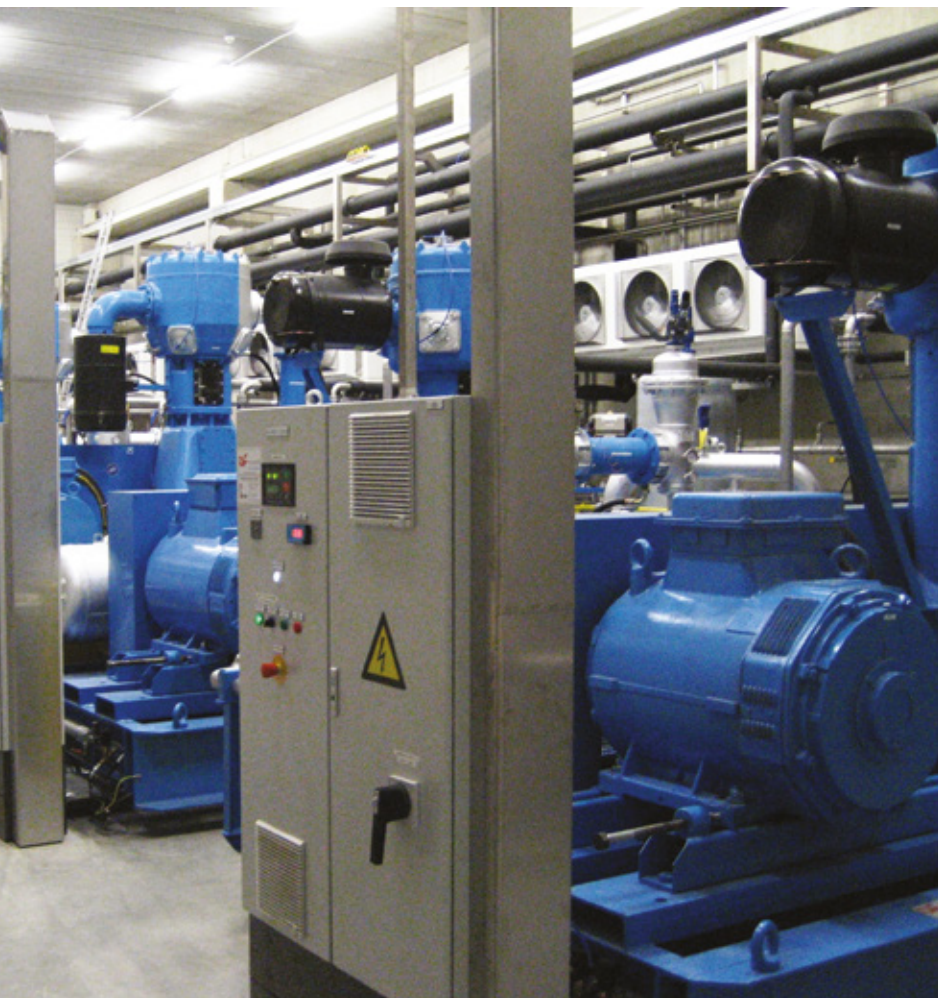


KEY BENEFITS

- Electrical cabinet with frequency inverter for starting, rated at 1/3 of the nominal current of the compressor motor.
- Electrical pre-lubrication pump on medium to large size compressors.
- Standard electrical motor.

FEATURES

- No visible current peaks in the power supply, unlike star/delta or soft starters.
- The starting current of SIS can even be lower vs. a regular VSD.
- Full load power never exceeds 100 % of rated power.
- Above off load time can be as short/long as needed.
- No special VSD motor (bearings/insulation/...) required.
- No Low Harmonic Filter required.
- No shielded cabling required.



Frequency inverter full size package

Following to your air consumption profile the proper use of a Variable Speed Drive (VSD) allows to increase the efficiency of the compressor by decreasing the speed and the power consumption.

KEY BENEFITS

- Starting current of max 1,2 times nominal.
- Power factor ($\cos \varphi$) between 0,95 and 1,0.
- Smooth start-up - no stress on the motor, mechanic or belts.
- Reduces off-load times.
- Potential energy savings if air demand is fluctuating and especially during low demand.

FEATURES

- Frequency inverter electrical cabinet.
- Specific motor. Isolated bearings...
- Electrical pre-lubrication pump.
- Shielded cabling... other protection device.
- Line Harmonic Filters, optional.



**INCREASING EFFICIENCY,
DECREASING POWER
CONSUMPTION.**



**DECREASING THE SPEED
= INCREASING THE SAVINGS**

AFS: Adjustable Air Flow System

AFS is a 0-50-100 % air flow regulation system, fully automatic, delivering approximately half the capacity by off-loading one side of each stage.

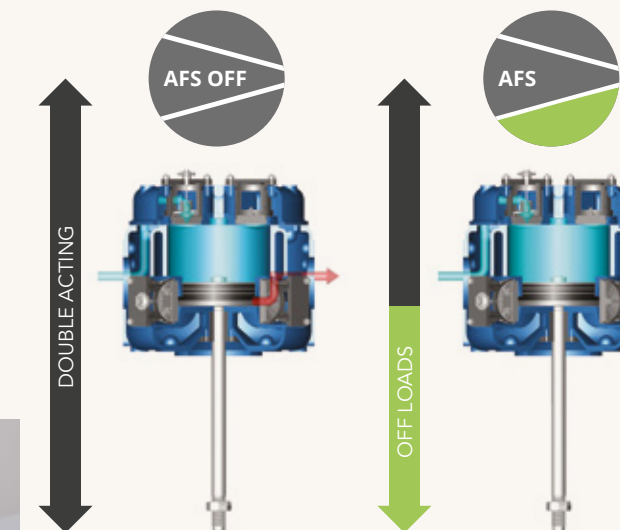
HOW DOES IT WORK?

FOR 100% AIR CAPACITY

Both double acting cylinders compress air on each side of the piston producing 100% of the rated capacity.

FOR 55% AIR CAPACITY

AFS automatically unloads one side of each cylinder to match air flow required by the factory needs.



Savings are
immediate
and start from
day one

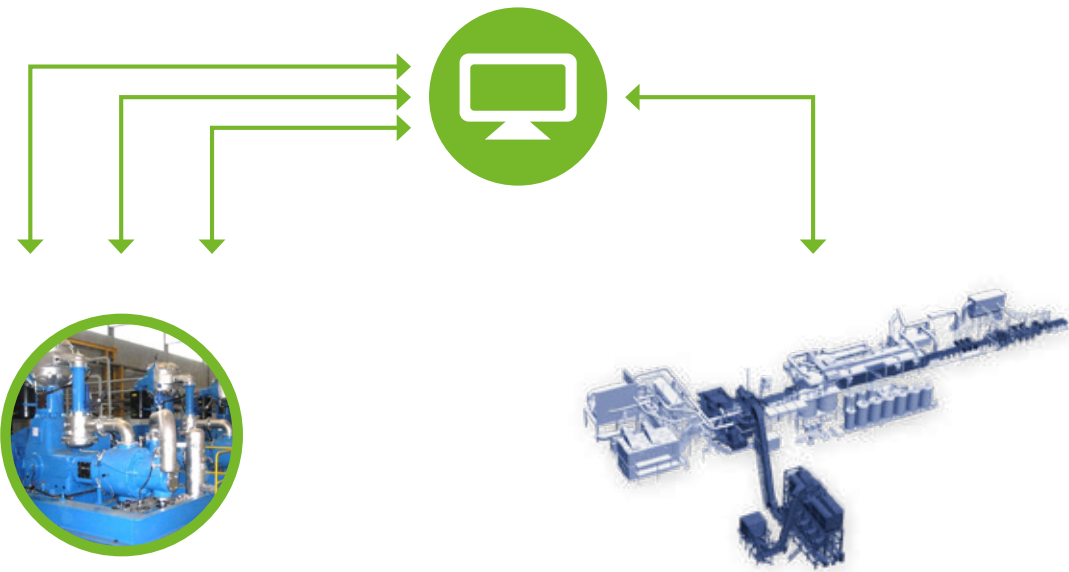


Controlling



Multi-Compressor Controller

Automatic selection of the exact compressor(s) to match the specific air requirement. Compressors are connected to the same pneumatic network, with collector or air receiver.



KEY BENEFITS

- Reduces off-load times.
- Smaller power consumption bands.
- Selects the most suitable unit to meet fluctuating air demands.
- Balanced running hours and maintenance.

INSTALLATION

- Compressors connected to the same pneumatic network, with manifold or air receiver.

SIEMENS DELTA S8 AND S12

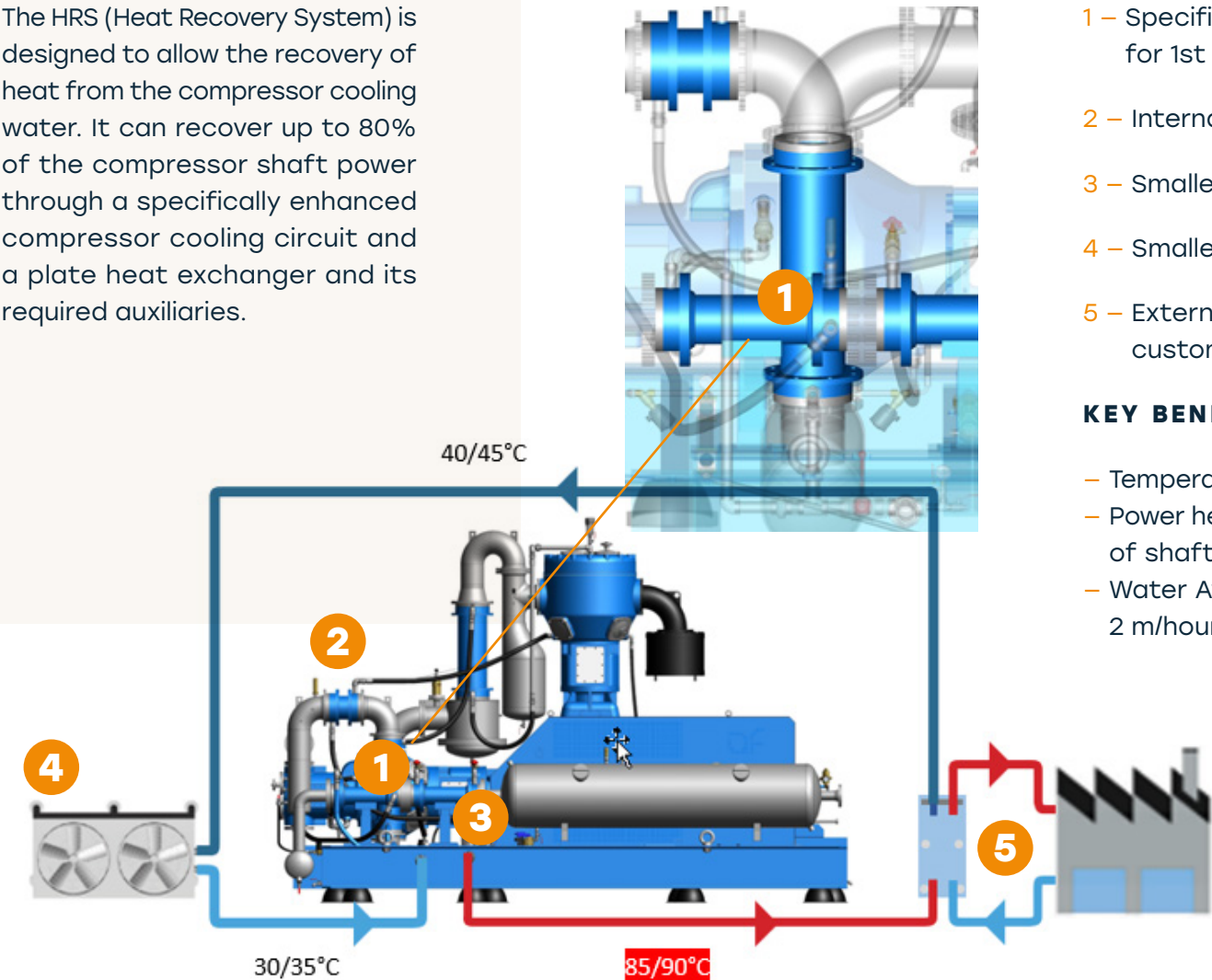
- Communication with any PLC.
- Works with any energy saving device.
- Data visualisation / each compressor.
- Acquisition system.



Recovery

Heat Recovery System

The HRS (Heat Recovery System) is designed to allow the recovery of heat from the compressor cooling water. It can recover up to 80% of the compressor shaft power through a specifically enhanced compressor cooling circuit and a plate heat exchanger and its required auxiliaries.



HRS-90: Heat Recovery System 90°C

- 1 – Specific double cooler 2nd and 3rd stage. Special design for 1st stage intercooler.
- 2 – Internally adapted water circuit.
- 3 – Smaller water pump with frequency inverter, "VSD".
- 4 – Smaller separate water cooling system.
- 5 – External Heat Exchanger Kit for easy connection to the customer system.

KEY BENEFITS

- Temperature 30-35°C water in - between 85-90°C water out.
- Power heat recovered @ 8 bar on load is ca.160 kW = ca.80% of shaft power.
- Water Available quantity of water for Heat Recovery is ca. 2 m/hour water flow.

*features based on L5 model/200kw



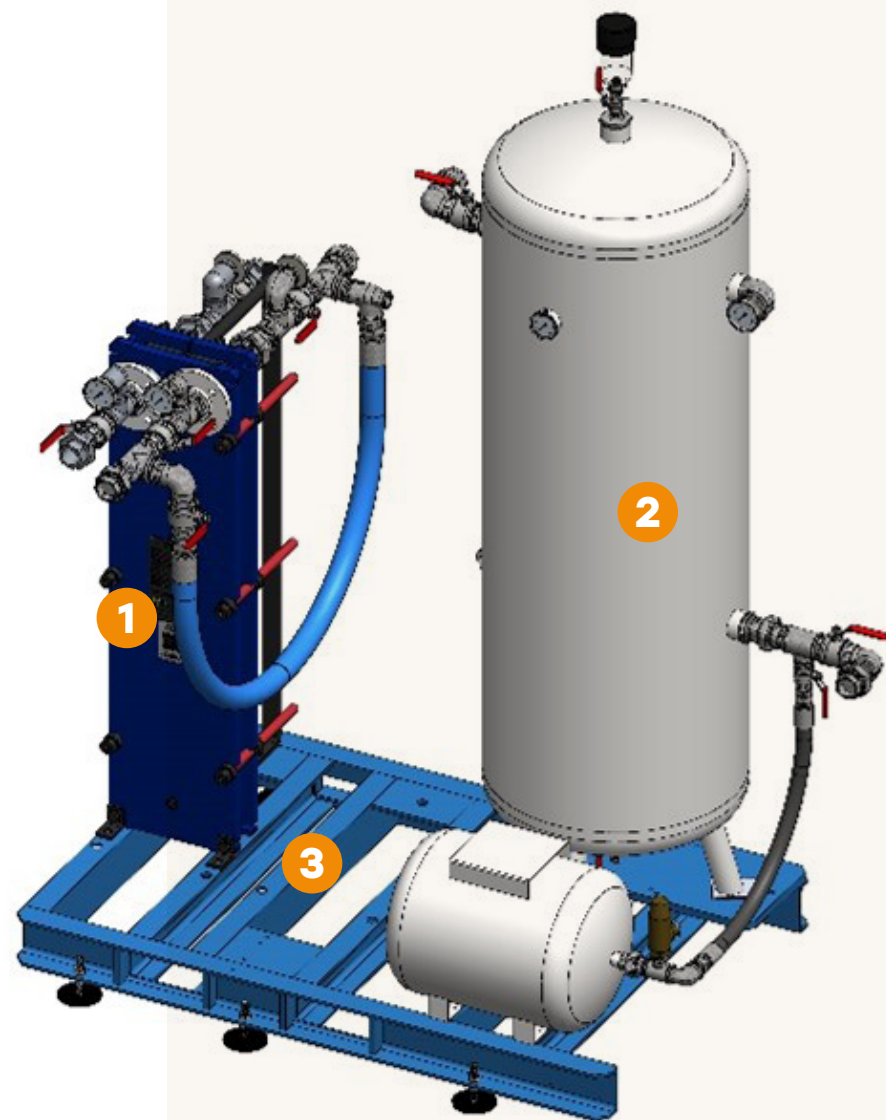
ONE YEAR OPERATION,
6000 RUNNING HOURS
@ 0.05 € / KW HEAT
= 48.000 € SAVINGS



HRS-40: Heat Recovery System 40°C

External skid Heat Recovery System 40°C with stainless steel plate exchanger.

- 1 – Stainless steel heat exchanger, dismantable, with connecting flanges & water piping.
- 2 – 500 l water receiver, vertical with accessories mounted on the skid.
- 3 – Ready to use system, fully connected with expansion vessel and valves, temp.gauges...
- Skid with plug and play connecting points, supplied loose with adaptable feet for easy connections to the water circuit of the customer.





Container solutions



PRODUCT OVERVIEW

The concept includes a 8 or 10 bar AF compressor housed and designed to run inside a mobile container. This plug & play solution allows installation in any condition, indoors or outdoors, particularly for plants that lack indoor space. The AF container solution integrates all the equipment needed to supply compressed air to the customer's production, with the cooling system installed outside.



- COMPRESSOR PACKAGE**
- OPC90 / 110 / 132 compressor
 - Electrical panel with VSD
 - Receiver & dryer
 - Cooling system (optional)
 - Full parameter control
 - Easy remote communication

CONTAINER SOLUTION

- Standard 20' container
- Additional lockable doors
- Stand-alone electrical panel
- Ventilation & heating systems



The world leader of PET oil free piston compressors



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