

AIR COMPRESSORS
ROLLAIR®
125-150-180-220

P O W E R



E F F I C I E N C Y

AIR
Worthington
Creyssensac

ROLLAIR® 125-150-180-220

Robustness & Reliability

The modern ROLLAIR® compressor is the result of more than 30 years of continuous product development.

Our design and manufacturing policy is to produce a Quality Product combining Reliability, Low Maintenance and Energy Efficiency.

Our aim is simple : to produce a compressor that sets the standard for the compressed air industry.



ROLLAIR® 180

ROLLAIR® 125

Good design = high efficiency

Quality products start with good design.

At Worthington-Creysensac we use the latest computer aided design and testing techniques to prove the concept of our new products before the manufacturing process starts.

Each component is manufactured to the highest standards to ensure the total package performance is maintained with maximum reliability throughout its operational life.

At each stage of the manufacturing process components are tested to ensure material quality and tolerances are within the design specification.

Final assembly of our products is carried out in a modern factory environment using the latest assembly techniques. At the end of each production line is a final test cell to ensure product performance meets the original design specification.

Build quality = low maintenance

The ROLLAIR® compressor is supplied in an epoxy coated steel enclosure, which while aesthetically pleasing incorporates many practical design features to make the installation and maintenance of the package as simple as possible.

The vibration damped frame incorporates slots for a fork lift truck to allow easy movement of the compressor and large panels to improve maintenance access.

The excellent sound attenuation within the package results in low noise levels, enabling the package to be installed in a production area, increasing the number of installation opportunities.

All ROLLAIR® compressors are supplied filled with oil and have been run and tested according to our quality control procedures, ensuring they are ready for immediate operation.

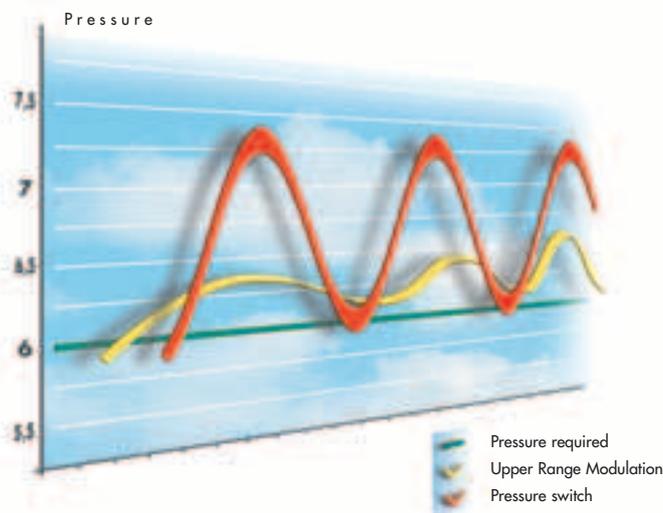
Automatic dual control for optimum efficiency

Accurate control

ROLLAIR® 125-220 compressors use conventional pressure sensors, but in a unique manner to allow upper range modulation. This system allows three different control methods to increase energy efficiency and operating flexibility.

Full load / No load control

Classical control method between a pressure band set accurately with pressure sensor, mostly efficient for the intermittent air usage. When the upper pressure limit is reached the compressor will reduce internal pressure, reducing power consumption to approximately 20 % of full load power.



Modulating control

This system throttles the air as it enters the compressor matching output to demand while maintaining a constant pressure within the network. This method of control is the most efficient form of regulation when the air usage is above 70 % of the compressor output.

The compressor will give a steady pressure into the system increasing reliability of down stream equipment. There is no need to go to a higher pressure to achieve an operating range as with load/no load control, reducing power consumption and lowering energy costs.

Air-end bearing life is also extended with the reduction in axial thrust generated with on/off load cycles.

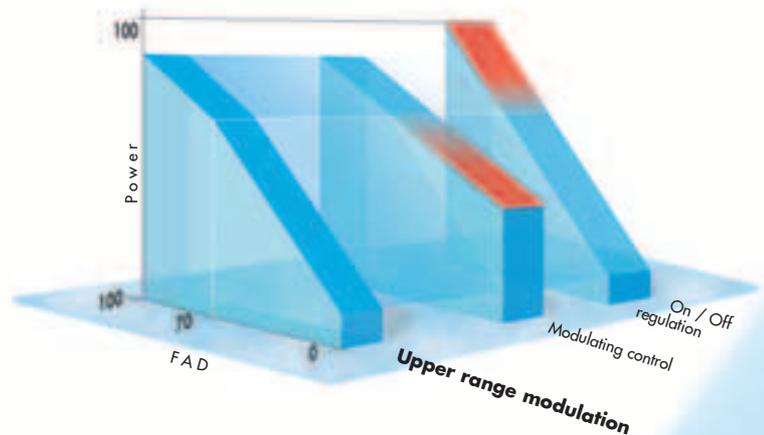
Upper range modulation

This compressor control system combines the best features of load/no load control and modulating control. The ROLLAIR® 125-220 regulation system will automatically change its method as air usage patterns change, ensuring maximum energy efficiency at all times.

Above 70 % of the compressor output, the control system will modulate.

When the demand of the system falls below 70 % the compressor will switch to load/no load control, reducing the power consumption.

Upper range modulation respects the customers needs to have efficient operation combined with extended component life.



Reduced on load / off load cycles :

- = Reduced wear on internal components
- = Increased reliability

Reduced pressure changes in the rotary screw element :

- = Longer bearing life
- = Lower maintenance costs

Automatic dual control :

- = Reduced power consumption
- = Lower electricity costs

Quality Filtration

The air inlet filter of a compressor may be simple, but its quality and durability are essential for efficient performance. The 2-micron pleated filter fitted to all Worthington Creyssensac compressors are designed to give maximum protection for the air/oil circuit while maintaining sufficient surface area for unobstructed airflow.

The encapsulated air filter offers several benefits with a pre cyclonic action to capture large dust particles, before the air passes through the high filtration media.

Air is drawn into the filter from a cool zone within the compressor to ensure maximum compression and cooling efficiency.



Reliable air inlet control

A very simple and reliable suction valve controls the air volume entering the compressor.

This valve allows three different control methods to ensure the compressor is always working at maximum efficiency under all operating conditions.

High efficiency screw element

The new ROLLAIR® 125-220 has the latest evolution of the asymmetrical profile rotary screw element. Combining proven technology with advanced materials and production methods, we have developed a new element that sets the standard for efficiency and reliability.



Safe and solid air & oil connections

FLEXMASTER® pipes are specially designed to combine all the benefits of both rigid and flexible pipes.

This solid metal pipe has all the advantages of increased durability for reduced maintenance costs, but also has an expansion joint to allow expansion and contraction resulting in fewer air and oil leaks for increased reliability.

ROLLAIR® 125-150-180-220

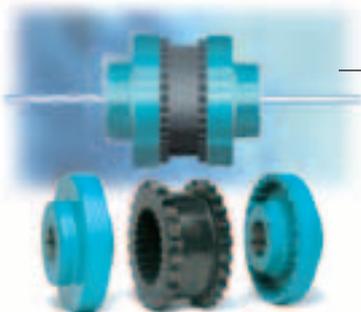
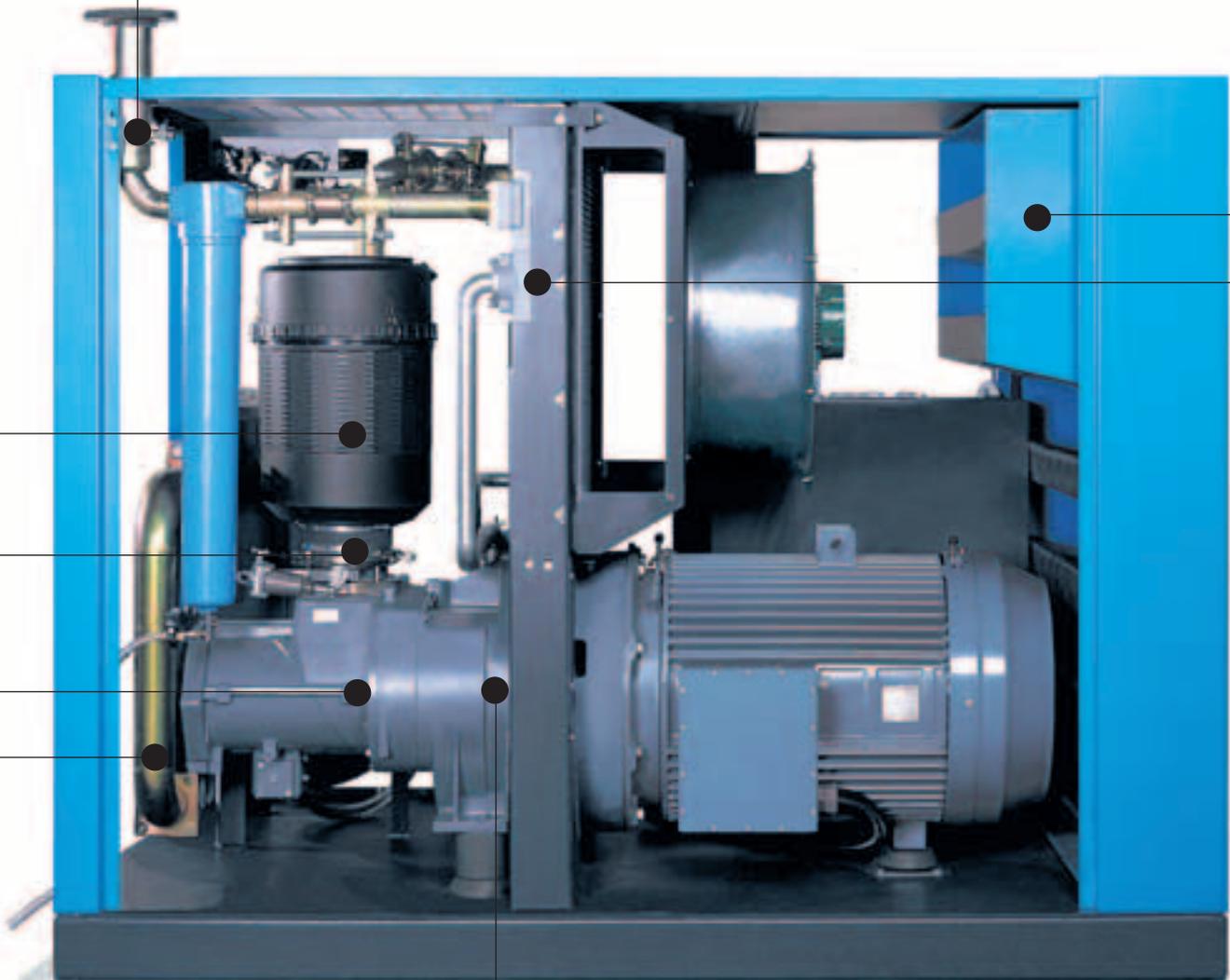
High quality features to match performance



Accurate pressure management

The pressure regulation is controlled at the outlet of the compressor package, ensuring the outlet pressure is in line with the working pressure required.

The highly accurate pressure transducer combined with the PCI07 and variable control inlet valve allows the compressor to work within a minimum pressure band resulting in significant energy savings compared to conventional regulation systems.



Superior drive efficiency

Gears combined with the SUREFLEX® coupling provide superior drive efficiency compared to belt drive systems. The gears used on the ROLLAIR® compressors require no maintenance and no periodic change.

A bell housing is fitted to guarantee perfect alignment between the motor and the air-end element : this combined with the SUREFLEX® coupling reduces vibrations and extends the life of the compression element.

Excellent ventilation

The cooling efficiency of a compressor is of vital importance to ensure long term reliability and operating efficiency.

The ROLLAIR® 125-220 compressors have been specially designed with large inlet baffles which optimise cooling air flow across the compressor package maximising energy efficiency and component reliability.

The inlet baffles contain sound absorbing material significantly reducing the sound level of the package, allowing increased installation opportunities.

Large cooling capacity

High efficiency aluminium type cooler blocks are designed with a large surface area reducing the air and oil fluid temperature to the minimum for maximum cooling efficiency.

Easy access for cleaning the coolers is possible thanks to the access panels located on each side of the cooler housing.



Low maintenance and maximum accessibility

Large access panels with removable supports ensure quick and easy access to all internal components for preventive maintenance and easy cleaning.

The air/oil separator housing is designed to allow quick and easy access to the separator cartridge, reducing downtime to a minimum.

The ROLLAIR® 125-220 compressors are equipped with a service monitoring system that provides a count down indication of when maintenance is due, allowing service work to be booked in advance and a flashing maintenance indicator if the service period is exceeded.



Variants

Water cooled
Energy recovery on oil circuit
Automatic restart
Oil re-heating system
External Inverter drive unit OPTIMAIR®

High pre-filtration panels
Inlet air pre-filtration
Capacity drain for zero air loss
Remote control
Link cable for 2 PCI 07

Connection to system of energy saving LEADAIR®

ROLLAIR® 125-150-180-220

Engineering excellence in a compact package

Modern design for efficiency

By utilising over 30 years of design, manufacturing and customer experience it has been possible to produce a product to operate in heavy duty industrial applications. The ROLLAIR® 125-220 has an optimum cooling balance to reduce stress on internal components which increases operating reliability and reduces maintenance downtime and costs.

The motor and compressor air intake are mounted behind the ventilation air inlet baffle in a cool zone. This improves compression efficiency and reduces power consumption in the motor.

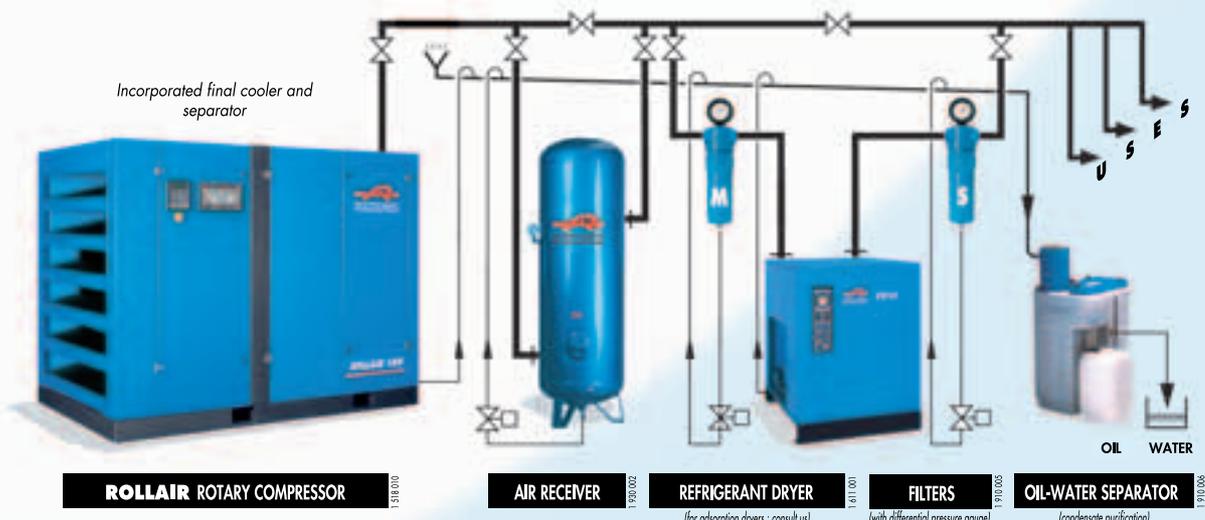


The motor and cooling air fans combine to improve ventilation air flow across the air/oil coolers.

The Air/Oil separator and oil filters are mounted in a warm zone within the compressor package, which prevents condensation forming in the oil circuit. This design feature extends component and filter life for improved performance and reliability.

The air inlet and outlet panels have been designed in order that the compressors can be installed with or without ductwork, increasing the number of installation possibilities and keeping installation cost to a minimum.

Example of installation for processing compressed air with a refrigeration dryer



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Reliable control for optimum efficiency

The ROLLAIR® 125-220 compressors are equipped with the PCI 07 service monitoring system to provide indications of when maintenance is due and to allow service work to be planned, avoiding unforeseen stoppages.

A fully comprehensive array of displays, warnings and faults are included. The system is user friendly and can be mastered in minutes.

Comprehensive monitoring



Display

- Package outlet pressure
- Element outlet oil temperature
- Total running hours
- On load running hours
- Load rate
- Hours before oil change
- Hours before air filter change
- Hours before oil filter change
- Hours before oil separator change
- Display of operating status
- Display of fault nature
- Last fault memory

Alarm for :

- Element outlet temperature
- Main motor overload fault
- Star contactor fault
- High pressure
- Restart without pressure
- Water flow detection (water version)
- Temperature sensor fault
- High temperature fault
- Low temperature fault
- Pressure sensor fault
- Fan motor overload fault
- Number of starts per hour
- Oil separator blockage detection

Control for :

- Regulating solenoid valve
- Condensate drain solenoid valve
- Star delta timer

Others :

General fault report	OPTION
Alarm report	OPTION
Remote control	OPTION
Last fault memory	8
On/off (timers)	1 to 56
Auto restart after power cut	OPTION

Safety devices

- High pressure sensor
- Safety valve
- Automatic blow down valve
- Minimum pressure valve
- Thermostatic bypass valve
- Element non return valve
- High temperature thermostat
- Motor thermal overloads
- Water supply detector.

With a **Real Time Clock Control**, the starting and stopping of the unit can be programmed through a maximum of 56 timers to set an operating schedule avoiding air production without air demand.

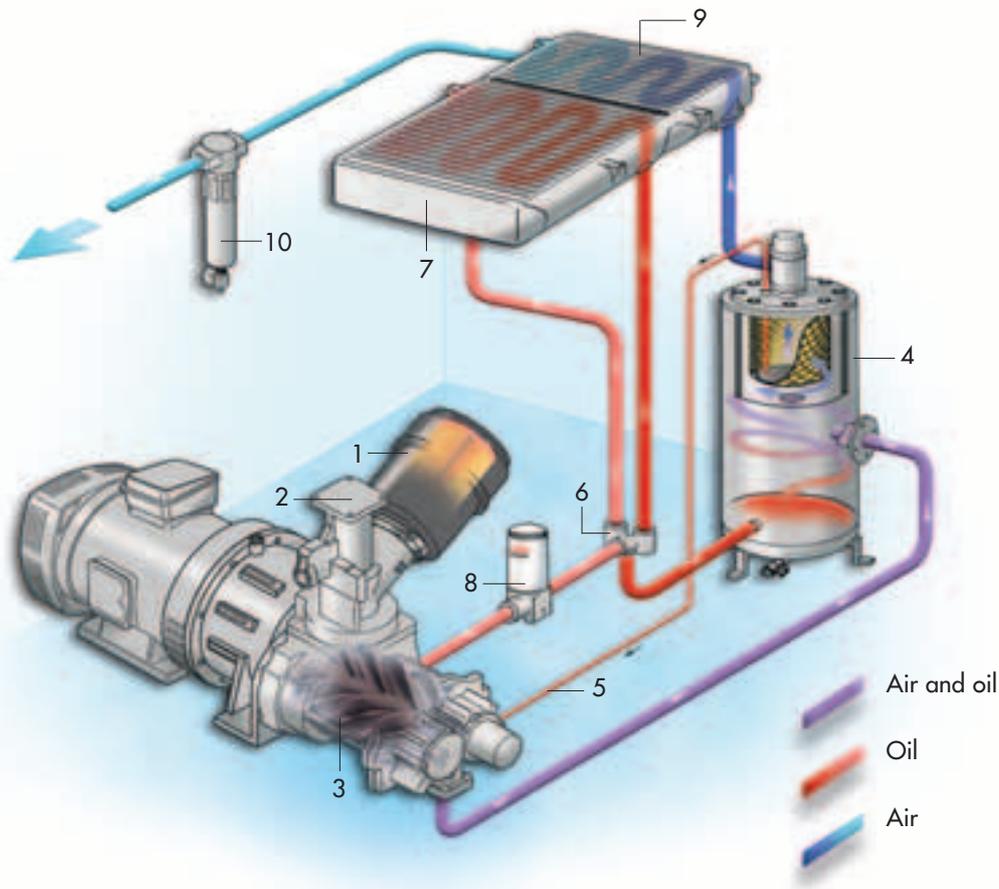
The PCI 07 is equipped with a serial port which when connected to another PCI 07 through the optional serial cable enables one compressor to control the operating cycle of a second compressor, eliminating the need for an external change-over switch.

ROLLAIR® 125-150-180-220

Precision Mechanics

- 1 Air is drawn through a high efficiency filter into the compression element.
- 2 The air entering the compression element is regulated by the pneumatically controlled inlet valve.

- 6 Thermostatic by-pass valve ensures optimum oil temperature before oil enters the coolers, to reduce the load on the motor on start up and improve lubrication of the air-end element.



- 3 Oil in the compression element performs three vital roles: cooling, lubrication and a seal between the rotor profiles. Ensuring peak performance with no loss in efficiency throughout the life of the compression element.
- 4 The three stage air/oil separation system is designed to provide a low residual oil content in the air below 3 ppm. The oil in the separator vessel, is separated by cyclonic action, weight, and finally filtered through a cartridge designed with a large filtration surface to ensure high air quality.
- 5 Residual oil inside the separator element is removed by the oil scavenge line and re injected into the rotary screw element, reducing oil carryover into the compressed air network.

- 7 Oil coolers with a large surface area maintain the correct operating temperature of the compressor.
- 8 Oil is filtered to remove contamination before being re injected into the air-end.
- 9 Air coolers reduce the temperature in the compressed air to 10 °C above ambient temperature causing water vapour to condense.
- 10 90 % of all water is removed by a cyclonic separator and drained by an electronic drain valve controlled by the PCI 07. This protects down-stream equipment from water contamination, increasing the reliability of pneumatic equipment and reducing product contamination.

The water cooled machines and energy recovery options have been designed with plated heat exchangers accurately sized according to water temperature specifications.

Technical Specifications

Version	Working pressure Bar eff.	* Output reduced to suction conds.		Motor power kW / Hp	** Acoustic level dB (A)	Air version : Cooling air Volume m³ / h	Water version : Water flow at 20 °C m³ / h	*** Compressed air output diameter "	Weight kg	
		m³ / h	Cfm						air cooled	water cooled
ROLLAIR® 125										
A	8	965	568	90 / 125	74	14 000	To be advised	2" PN16 DN50	2 250	1 950
B	10,5	803	473	90 / 125	74	14 000	To be advised	2" PN16 DN50	2 250	1 950
ROLLAIR® 150										
A	8	1 202	707	110 / 150	74	20 000	To be advised	3" PN16 DN80	2 550	2 000
B	10,5	1 026	604	110 / 150	74	20 000	To be advised	3" PN16 DN80	2 550	2 000
ROLLAIR® 180										
A	8	1 444	850	132 / 180	75	20 000	To be advised	3" PN16 DN80	2 685	2 650
B	10,5	1 242	731	132 / 180	75	20 000	To be advised	3" PN16 DN80	2 685	2 650
ROLLAIR® 220										
A	8	1 700	1 001	160 / 220	75	28 000	To be advised	3" PN16 DN80	2 900	2 760
B	10,5	1 476	869	160 / 220	75	28 000	To be advised	3" PN16 DN80	2 900	2 760

* as per ISO 1217 : 1996

** as per CAGI PNEUROP Norm at 1 metre

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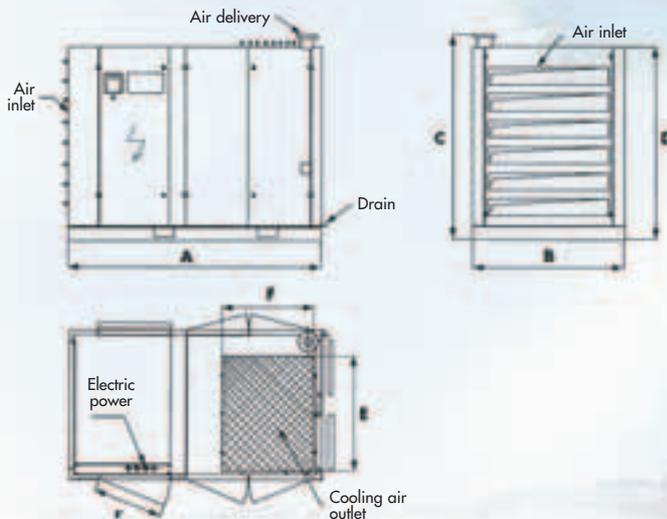
Performances measured on an operating ROLLAIR® at the unit's outlet : suction pressure 1b Abs, ambient temperature 20°C with delivery pressure A=7 bar for 8 bar version and B=9,5 bar for 10,5 bar version.

Air cooled version : IP55 ventilator motor - Water cooled version : Ø water inlet and water outlet : 1".

The temperature of the air leaving the final cooling unit is 10°C higher than the input temperature.

Please consult us for higher pressure levels.

Dimensional requirements



Ref. marks	Air cooled version			
	125	150	180	220
A	2 143	2 504	2 504	2 842
B	1 320	1 490	1 490	1 610
C	1 971	2 057	2 057	2 111
D	1 821	1 936	1 936	1 990

Ref. marks	Water cooled version			
	125	150	180	220
A	2 143	2 504	2 504	2 504
B	1 320	1 490	1 490	1 490
C	1 971	2 057	2 057	2 057
D	1 821	1 936	1 936	1 936

Ref. marks	Ducting opening drawing (calories extraction) Air cooled version			
	125	150	180	220
E	1 162	1 147	1 147	1 344
F	625	906	906	840
r	744	694	694	749

Dimensions in mm

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