	QUOTATION R OTARY AIR COMPRESSOR BLADE 7 LX		Power (kW) 7,5
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Mattei rotary vane compressors are the result of 90 years of investments in research and development to improve performance and lessen the impact on the environment. Designed for industrial continuous operation, they provide consistent performance, reliability, functionality and ease of maintenance.



The “Blade 7 LX” single stage rotary vane compressor is a completely stand-alone, air cooled stationary air centre powered by an electric motor. Accurate design down to the smallest detail, high level of design and assembly, good quality of components and machining high technology place Mattei compressors at the highest position in the market. Blades are designed for over 100.000 hours life.



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REFERENCE CONDITIONS according to ISO 1217 :1996 annex "E"

- Intake pressure	bar (a)	1
- Air inlet temperature	°C	+ 20
- Relative humidity	%	0

PERFORMANCE

- Air end	single stage rotary vane compressor	
- Nominal rotor speed	r.p.m.	2400
- Free air delivery at the working pressure (according to ISO 1217:1996 annex "C")	m ³ /min	1,085
- Maximum working pressure	bar (r)	8
- Working pressure	bar (r)	7,5
- Oil cooling		by air
- Compressed air cooling		by air
- Maximum oil carry-over	mg/m ³	≤ 3
- Shaft absorbed power at working pressure	kW	7,28
- Total off-load power	kW	2,07
- Fan rated power	kW	0,14
- Compressed air outlet temperature	°C	< 35
- Min/max acceptable ambient temperatures	°C	+1 / +40
- Sound pressure level at 1 metre (according to ISO 2151 ± 3 dB(A))	dB(A)	64

ELECTRIC MOTOR

prime electric motor asynchronous – three phase - 2 poles – short circuit winding

- Insulation	class	F
- Efficiency in compliance with IE2		≥ 89,5%
- Protection	IP	55
- Rated power	kW	7,5
- Voltage as per IEC 38	Volt	460
- Frequency	Hz	60

MAIN SIZES

- Length	mm	940
- Width	mm	720
- Height	mm	790
- Weight	kg	215
- Air outlet size	Rp	¾ "
- Condensate drain outlet size (optional)	Ø mm	10



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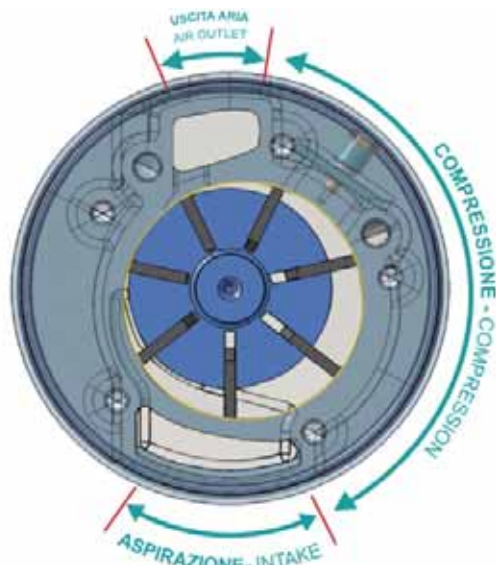
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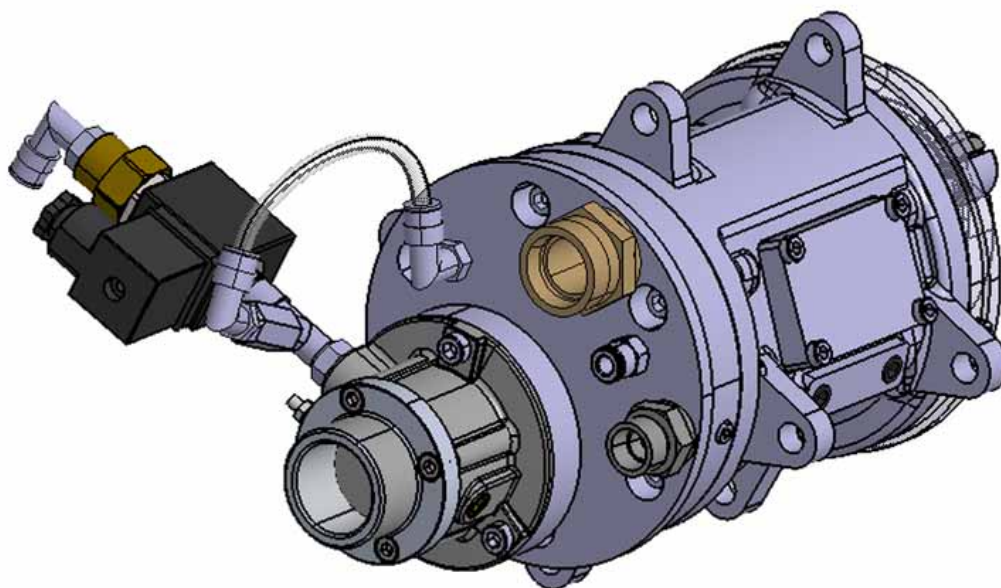
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OPERATING PRINCIPLE



The vane compressor is a volumetric rotary compressor. It consists of a cylinder (stator) in which a rotor, mounted eccentrically and tangential with it rotates, and two end covers. The rotor has longitudinal slots in which the vanes slide. The vanes are pushed against the stator by centrifugal force. Sealing of the moving parts, cooling and lubrication are provided by an efficient injection of oil through proper ports, due to the pressure difference between the compression chamber and the oil receiver. No pump for fluid circulation is needed. An oil film on the inner surface of the stator prevents direct contact of the moving parts and avoids any wear. In the vane compressor there are no axial thrusts pushing the rotor against the end covers. Therefore there is no need for thrust bearings. The decrease in volume of the pockets formed by the stator, rotor and

vanes produces a continuous, pulse-free, compression.





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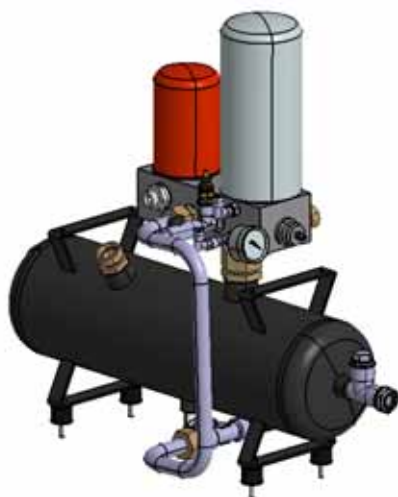
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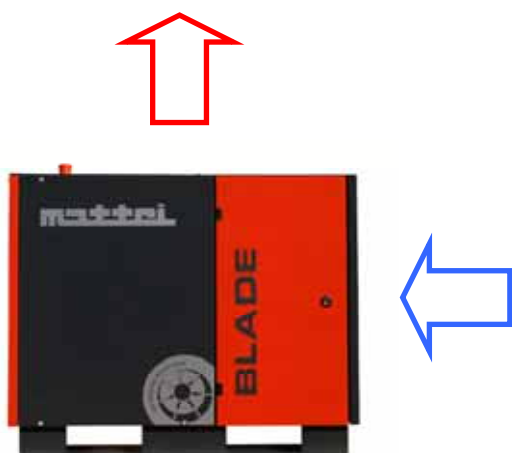
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OIL SEPARATION



The air/oil separation occurs in different stages and ensures exceptionally low oil consumptions. The main mechanical separation occurs in the oil receiver, before the filter. This mechanical separation works via the continuous changes of direction of the air flow. The last separation occurs through the coalescing filter, removing the remaining oil vapours from the air. This particular oil separation system brings to a very reduced oil carry over. The large size of the filter and quality of materials ensure a long life of the filter itself.

COOLING



The compressor is complete with two coolers, widely sized, entirely made of aluminium and suitable to cool the oil and the compressed air. An air flow, produced by the axial fan placed inside the soundproof canopy, flows through the coolers and cools the same.



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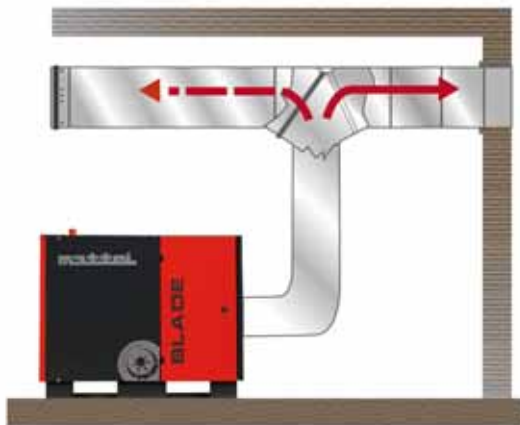
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HEAT RECOVERY

As described in the previous paragraph, an air flow produced by the fan cools the oil and the compressed air. The heat removed creates a flow of hot air which can be suitably used to heat living quarters during the winter season.



On average, 1 kW installed power allows to heat about 30 cubic meters space by 1 K.

TRANSMISSION

Motor-compressor transmission takes place through high efficiency trapezoidal belts, the tension of which is ensured by a sliding belt tensioner system.

The sliding belt tensioner system and the quality of the belts ensure their long unctioing life. Special maintenance kits further simplify the operations of programmed maintenance.





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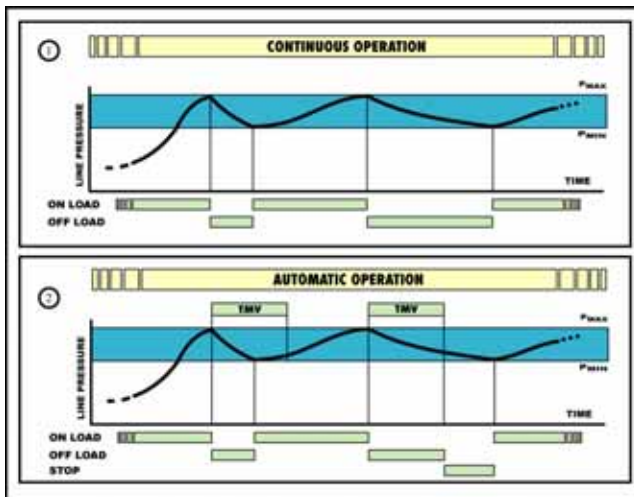
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CAPACITY REGULATION

To achieve maximum energy saving the compressor can be operated in two modes which can be selected through the control panel.



In “Continuous” operation the compressor delivers air within a preset maximum/minimum pressure range. When reaching the maximum pressure the intake valve closes. The compressor runs “off-load” and is decompressed to 2 bar to reduce the energy absorption. When the pressure decreases and reaches the minimum value, the compressor goes back to “load” and starts delivering air instantly.

In “Automatic” operation a further function is added to the previous one. This allows the compressor to stop automatically in case of no air demand.

ELECTRIC STARTER

In metallic box – IP 64 - including:

- Star/delta starter
- Motor protection (through thermal relay)
- 110 V transformer for auxiliary circuits
- 24 V transformer for Maestro XB controller
- Protection fuses for transformer auxiliary and primary circuits
- Emergency button
- Safety blocks:
 - compressor high temperature - motor overload - emergency stopping – microdoor.



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MICROPROCESSOR CONTROL AND PROTECTION SYSTEM " MAESTRO XB"

Maestro XB is a programmable system which controls the compressor operation and adapts this to the specific requirements of the air distribution system.

It has different programming levels and special options of controlling and analysing the operation and faults.

Advanced programming and analysis levels are protected by digital codes to avoid unintentional tampering.

Maestro XB has an integrated memory module that stores the operational settings and data in case of an electricity cut out.



Hardware:

- Ergonomic control panel with keys for quick access to the main menu.
- Access keys to menu, start, stop and reset.
- "LCD" display, lighted text – 2 lines for 16 letters.
- Supply 24 V AC 50/60Hz.
- Digital inputs 12 V DC.
- Digital outputs with volt free contacts up to 230V AC and up to 24V DC.
- Pressure analogue signal (4-20mA).
- Temperature analogue signal (NTC).
- Interfaces:
 - o RS485 to communicate with PC supervisor and the network.

Software:

- Simple use based on menu structure.
- Possibility of updating.
- Displaying of:
 - o Analogue data:
 - line pressure, oil temperature.
 - o General data:
 - alarms, operative messages, machine status, maximum and minimum pressure.
 - o Hour counter:
 - display of on/off times, operation, load, maintenance times.
 - o Events storing:
 - alarms and blocks storing, with indication of event number, machine status and configuration, event code, working hours, pressure line, oil temperature.



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The device allows the following:

- Multilingual user interface. (IT-EN-FR-DE-ES-CZ-PL-PO-RU)
- Start/stop weekly and hourly programming (option).
- Immediate reading on the display of compressor operational data:
 - o Compressor on/off, operation and load hours
 - o Line pressure.
 - o Oil temperature
- Programming of basic parameters (accessible by the user) for optimal compressor operation:
 - o Compressor control mode: local/remote
 - o Operating mode (continuous, automatic, modulation)
 - o Pressure checking (with pressure probe)
 - o Setting of maximum and minimum operating pressures (3 pressure ranges available)
 - o Setting of off load operating time
 - o Setting of separator element change and oil change times.
- Advanced programming, password protected, allows only qualified technician to change the parameters not directly accessible by the user.
- Status check of controller/machine inputs and outputs to detect possible failures in the compressor electrical system and/ or in the safety and protection devices.
- Storing of up to 20 fault events.
- Remote control for machine starting and stopping.
- Remote control, through volt free contacts, of the following machine states:
 - o Compressor allowed to operate (Option)
 - o Tripped compressor (Standard)

Note

MAESTRO XB, connected to Mattei SuperVisor device (Optional), allows:

- The remote monitoring through Modbus protocol.

STANDARD EQUIPMENT

The compressor is supplied complete with:

air intake filter - air pressure gauge - minimum pressure and non return valve in the air circuit - overpressure safety valve - thermostatic valve in the oil circuit - oil filter - oil level indicator - and Mattei Rotoroil 8000 F2 synthetic lubricant.



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SOUNDPROOFING CANOPY



All components described before are enclosed in a soundproofing canopy in sheet steel, epoxy powder painted.

The canopy has the pre-filter to prevent intake of gross particles which could clog the radiators and the air filter.

Detachable hinged door and panels allow easy access for the routine maintenance.

The base has openings to allow easy handling.

INSTALLATION

The compressor is supplied ready-to-use and needs no foundations.

Once placed in position, only the electrical connections and air connections have to be arranged.

The electrical supply should be: 3 phases + earth.

The on/off switch and the protecting fuses are not included in the supply.

The compressor must be placed in a well ventilated area away from any heat source and the air should not contain flammable gases or solvents that could be drawn in. In case of doubts, please contact our Technical department. If the compressor is installed in the open, a roof or other suitable covering must protect the equipment from atmospheric agents.

OPTIONAL EQUIPMENT

The compressor can be personalised, based on the requirements, by purchasing specific accessories, like:

- **Condensate drain and separator kit** code IF54A36884 to be fitted externally to the soundproofing enclosure, ensuring separation and draining of the condensate from the after cooler.
- **Maestro XB expansion module** code AC40B24983 it allows the remote signalling of on/off controls by means of volt free contacts. It allows hourly programming of the compressor starts/stops. If more compressors are connected (maximum 4) it allows the on/off sequence management.



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PACKING

Standard packing includes: fixing on wooden pallet, a polythene cover and a cardboard box.

DOCUMENTATION

The compressor is supplied complete with:

- no. 1 Operating and maintenance instructions
- no. 1 EC declaration of conformity with Machines Directive
- no. 1 Commissioning report
- no. 1 Certificate of Conformity
- no. 1 Maintenance schedule
- no. 1 Wiring diagram (inside the Electric Panel)

CERTIFICATIONS

Ing. Enea Mattei S.p.A. has been certified by DNV with the Quality System Certificate, conforming to UNI EN ISO 9001 standard.