

SERIES  
**AIR CENTRE 160 - 250 kW**

ROTARY VANE COMPRESSORS



AC  
AC R  
AC W  
AC PLUS  
AC R PLUS  
AC W PLUS

# SERIES AIR CENTRE

## About us



Ing. **Enea Mattei SpA** is an Italian company that has been producing air compressors since 1919. Over the years, the company has continually evolved and is today one of the world's foremost companies in the compressed air sector and the leader in the production of rotary vane compressors.

Behind the success of Mattei are the choices the company has made in terms of design, production and marketing, driven by the results of its continual and in-depth research and development programmes.

During these years of continual change, Mattei has been able to adapt to the requirements of the market and through the results of its research has created products that are always innovative and technologically advanced.



## Certified quality

Quality as an integral part of all company functions and constant improvement of all production processes so as to always guarantee the maximum level of reliability and satisfaction. This, in brief, is the value and the meaning of **Mattei's** operational philosophy. A way of approaching the market and customers that makes **Mattei** an absolute point of reference in the compressed air sector.

Since 1994, **Mattei** has been operating with a Quality System certified by the DNV Institute under UNI EN ISO 9001 regulations.





## Rotary vane compressors

### Series AIR CENTRE

High performance machines, proposed in the 160 - 200 and 250 kW versions at 8, 10 and 13 bar. These compressors are particular due to the presence of two air ends working in tandem. This feature allows a low rotational speed with advantages in terms of efficiency and maintenance costs.

These are a few of the 8000 series unique characteristics:

- ▶ Long-life blades
- ▶ Low energy consumption
- ▶ Low compressor rotational speed (only 1500 r.p.m.)
- ▶ Low maintenance costs and easy use



#### Energy saving

The range is equipped with high efficiency electric motors. The electric motor is directly coupled to the airend, allowing great advantages in overall efficiency of the compressed air unit, meaning less kW per m<sup>3</sup>/min. To achieve maximum performances, the AC 8000 Series is equipped with two compression units, working in tandem with an extremely low rotational speed. These two units are both driven by an high efficiency 4 poles electric motor.

#### Simple and economic maintenance\*

Maintenance operations only include changing the oil at predetermined intervals, cleaning or replacing the air filter and cleaning the radiator. The separator filters are substituted every 10,000 working hours, with significant savings. The absence of roller bearings helps to reduce significantly the cost for maintenance.

\*with Mattei V-Life

#### Blades designed for over 100,000 hours live\*

An oil film on the stator's inside surface prevents the moving parts from wearing out by avoiding a direct contact with the blades.

#### Energy costs are more important than the initial investment

The energy cost of a compressed air installation can reach 80% of total costs. All other costs such as ordinary and extraordinary maintenance or the buying cost are important but become secondary when compared to electric energy as illustrated in the diagram. The diagram underlines a clear truth: even a small percentage of saving in energy will produce important economic benefits.



- Installation 2%
- Maintenance 9%
- Investment 12%
- Energy consumption 77%

The diagram refers to a system with a 45 kW compressor, 5 year depreciation, 4000 hours/year, operating pressure 7 bar.



## Operating economy

The AC 8000 Series centres are regulated by the Full Load / Off Load Running system. This regulation maintains the line pressure within a range of minimum and maximum pressure set by the pressure switch and the compressor may stop and restart according to air demand. When the pressure reaches the maximum value the compressor will run off load with the immediate closure of the intake valve and the start of the decompression phase for a better operating economy.

## Cooling

The compressor is complete with two coolers, entirely made of aluminium and suitable to cool the oil and the compressed air.

An air flow, produced by two centrifugal fans placed inside the soundproof canopy flows through the coolers and cools the same. The compressed air cooling system is arranged for the fitting, externally to the soundproof enclosure, of a condensate separator and electronic drain with timer.

The compressed air outlet temperature is < 10 K over the ambient temperature.

## Air/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, due to slowing down and change of direction of the 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 consumption.

The large size of the filter and quality of materials ensure a long life of the filter itself.



## MAESTRO<sup>XS</sup>

### To have everything under control

With a view to energy saving, the communication inside a compressor room plays a decisive role.

It is absolutely essential to manage, control and immediately intervene in the operation of the system in order to prevent waste and unnecessary energy consumption.

For this reason, all of Mattei's Air Centre compressors are fitted as standard with a microprocessor command and control device.

The AC 8000 series is equipped with an exclusive state-of-the-art computerised controller, Maestrox<sup>s</sup>. This system automatically controls, monitors and programmes the unit's operation, and can be connected to a PC for a remote control.

If connected to other compressed air packages equipped with Maestrox<sup>s</sup>, the unit can become master of a compressed air plant, thus saving on the installation of a superior controller.

Maestrox<sup>s</sup> can be interfaced via web or cellular technology to provide remote service monitoring.



## How much can you save by recovering heat?

The possibility to use the energy recovered as hot water during an entire year depends on the use you make of it.

Up to 80% of the recovered heat can be used in your industrial building to produce hot sanitary water or for space heating.

It is even possible to recover up to 100% of the thermal energy if there is an industrial process that requires heat.

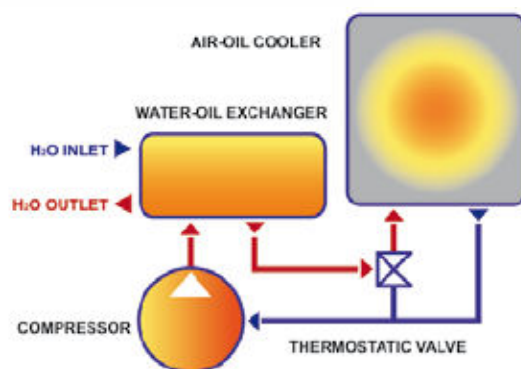
Absorbed electric energy = 100



## The flow








Instead of cooling down in the radiator, the hot oil coming from the compressor transfers its heat to water through a plate heat exchanger.

If the water cooling is insufficient the oil will also pass through the radiator, releasing part of the heat to the environment.



## Technical data

### 50 Hz

 Model	 Tension	 Air receiver								 Sound pressure level							 Weight	
			8 bar 115 psig L		10 bar 150 psig H		13 bar 175 psig HH				Length		Width		Height			
	V/f	kW	hp	m³/min	cfm	m³/min	cfm	m³/min	cfm	dB(A)	mm	inch	mm	inch	mm	inch	kg	lbs
AC 160	400/3	160	200	27,8	981,7	24,58	868	22,38	790,3	75	2670	105,2	1780	70,1	2235	88,1	4050	8910
AC 200	400/3	200	250	36,98	1305,9	31,12	1099	27,05	955,2	75	2815	110,9	1780	70,1	2235	88,1	4600	10120
AC 250	400/3	250	350	42,57	1503,3	37,99	1341,6	32,08	1132,9	75	2815	110,9	1780	70,1	2235	88,1	4800	10560
AC 160 R	400/3	160	200	27,8	981,7	24,58	868	22,38	790,3	75	2670	105,2	1780	70,1	2235	88,1	4250	9350
AC 200 R	400/3	200	250	36,98	1305,9	31,12	1099	27,05	955,2	75	2815	110,9	1780	70,1	2235	88,1	4800	10560
AC 250 R	400/3	250	350	42,57	1503,9	37,12	1341,6	32,08	1132,9	75	2815	110,9	1780	70,1	2235	88,1	5000	11000
AC 160 W	400/3	160	200	27,8	981,7	24,58	868	22,38	790,3	72	2670	105,2	1780	70,1	2235	88,1	4050	8910
AC 200 W	400/3	200	250	36,98	1305,9	31,12	1099	27,05	955,2	75	2815	110,9	1780	70,1	2235	88,1	4600	10120
AC 250 W	400/3	250	350	42,57	1503,3	37,99	1341,6	32,08	1132,9	75	2815	110,9	1780	70,1	2235	88,1	4800	10560

F.A.D. in accordance with ISO 1217, annex "C"

Sound pressure level according to ISO 2151, tolerance  $\pm 3$  dB(A)

Working pressure: 7,5 bar for version 8 bar - 9,5 bar for version 10 bar - 12,5 bar for version 13 bar



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