

SERIES  
**AIR CENTRE 4000**

ROTARY VANE COMPRESSORS FROM 55 TO 90 kW



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

# SERIES QC 55-75-90



## 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.

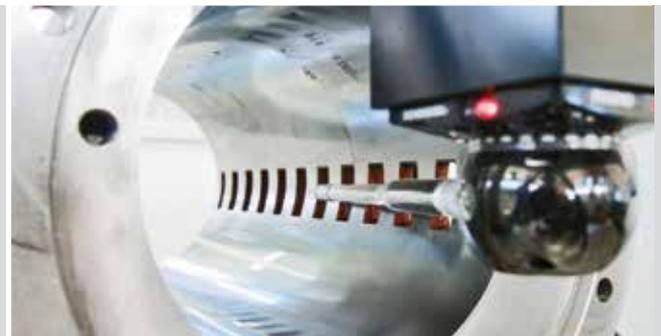
During these years of continual change, Mattei has been able to adapt to the requirements of the market and through the results of its research has created products that are always innovative and technologically advanced.



## 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.



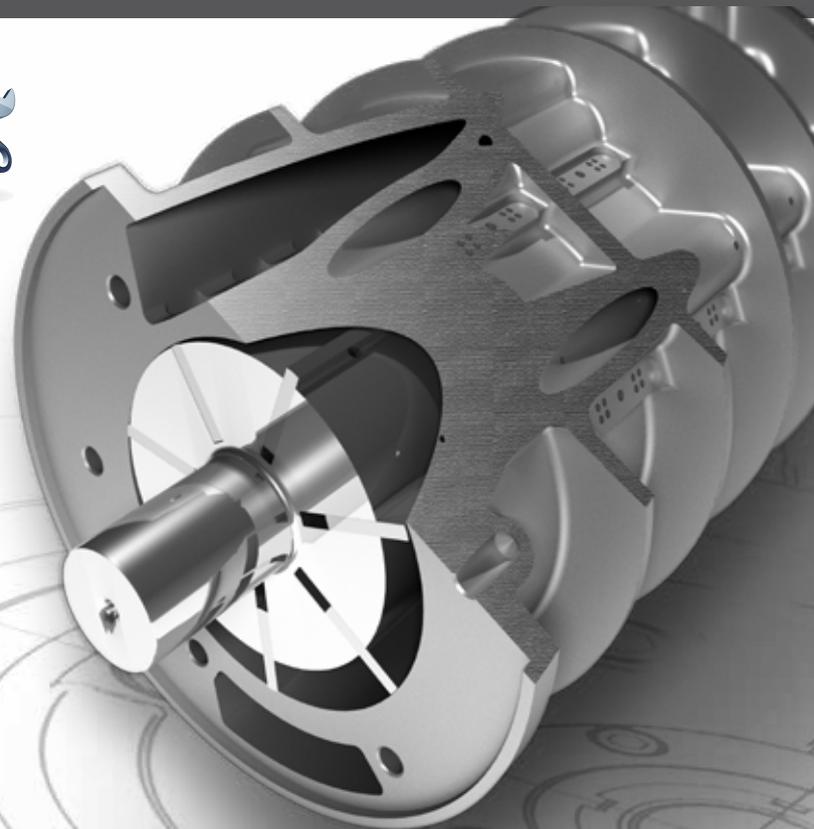
# Simply different

## The compressor that makes a difference



### MATTEI'S COMPRESSORS

Mattei's rotary vane air compressors are the result of continuous innovation and advanced design capabilities. The low rotational speed of the compressor unit found only in vane technology, the high volumetric efficiency and the complete absence of roller or thrust bearings, result in energy savings of **over 15%** compared to other rotary compressors.



### EFFICIENCY 1:1

All Mattei's compressors have a 1:1 ratio between the electric motor speed and that of the airoend. This means greater energy efficiency and higher performances.

Compared to other technologies, rotary vane compressors guarantee a superior internal air seal, together with a consistent and long lasting performance.

### SAFETY / RELIABILITY

The integrated design, direct coupling, low rotational speed and the limited number of moving parts ensure Mattei's rotary vane air compressors remain safer, more durable and therefore more reliable over time.

### LOW OPERATING COSTS: LOW MAINTENANCE

Mattei's rotary vane compressors are designed to reach 100,000 hours life without the need to replace any blades or other metal parts. The long operating life of a Mattei compressor is assured by high quality machining which is the essence of rotary vane air compressors.

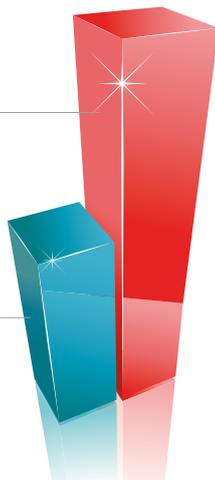
### SIMPLICITY

Mattei's rotary vane air compressors are quiet and can be located almost anywhere. They are quickly installed and take up a limited amount of space.

Their accessible design makes maintenance operations simple and straightforward.

OTHER COMPRESSORS  
MAINTENANCE

MATTEI'S COMPRESSORS  
MAINTENANCE



### QUALITY OF THE AIR

All Mattei's compressors are fitted with a generously sized filtering system, which guarantees quality compressed air suitable for any use. Mattei's very efficient, multi-stage oil separation system produces an exceptionally low lubricant carry-over.

# SERIES AC 55-75-90

## Series AIR CENTRE Rotary Vane Compressors

Mattei's Air Centre series compressors are complete and efficient machines that are ideal for any type of industrial application.

### DIRECT COUPLING

Mattei has always produced compressors in which the electric motor, which turns at a speed of only 1,500 rpm, is directly coupled to the compression unit by means of a flexible joint. This direct, in-line coupling results in considerable energy saving as there are no losses due to the presence of pulley wheels and drive belts.

### SOFT - START

Motor soft starter allows a reduction of the load and torque in the power train and electrical current surge of the motor during start-up.

This reduces the mechanical stress on the motor and shaft, as well as the electrodynamic stresses on the attached power cables and electrical distribution network, extending the lifespan of the system.



### AUTOMATIC FLOW RATE CONTROL

As well as the classic "ON/OFF OPERATION" mode, all of the models, from the AC 55 to the AC 90, are fitted with the special modulating proportional intake valve which allows air supply at a constant pressure and even offers the possibility of working without an air storage tank.

### COMPRESSOR AND DRYER: ALL-IN-ONE

The plus version includes the integrated installation of a direct expansion refrigeration dryer, which is air cooled and filled with environmentally friendly gas.

The combination of a Mattei rotary vane air compressor with an integrated dryer and where applicable mounted on an air receiver is the ideal solution for a complete and compact system.

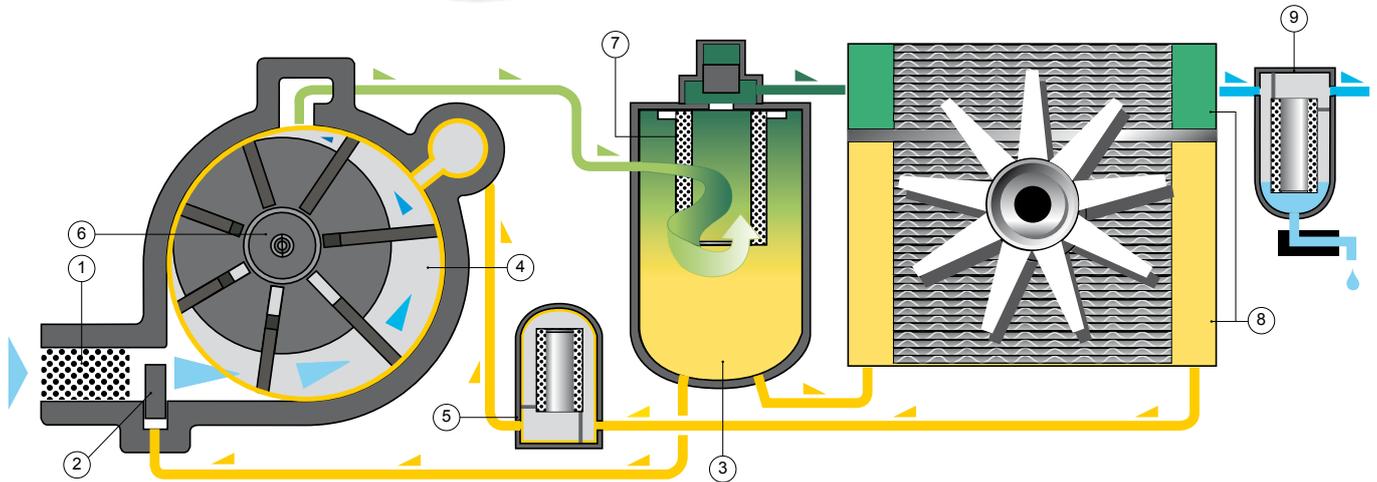
### A HIGH EFFICIENCY OIL SEPARATION

The separation of the lubrication oil from the compressed air takes place in multiple stages. A first separation occurs in the oil chamber as the air passes through a labyrinth path, then it continues at the separator inlet (before the filter) where the air flow slows down passing through a series of directional variations, and finally through the coalescing filter. Due to this superior separation system the oil carry over is extremely low, leading to improved separator life, greater protection for the application and reduced operating costs.

### DURABLE AND QUIET

AIR CENTRE compressors are epoxy powder coated and corrosion and scratch resistant. In addition they are lined internally with a thick layer of high-quality soundproof material and equipped with a high efficiency cabinet pre-filter. This filtering device prevents the radiator and main air filter from premature clogging caused by impurities in the intake air, thus providing additional cost savings.

## Flow diagram



1. Air intake filter
2. Intake valve
3. Oil chamber
4. Compression chamber
5. Oil filter

6. Rotor
7. Coalescing separator
8. Air - Oil radiator
9. Condensate drain

## 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: Maestro<sup>XS</sup>.

## Microprocessor control system

Maestro<sup>XS</sup> is programmable controller, which regulate the compressor's operation and adapt this to the specific requirements of the air distribution system.

They have 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<sup>XS</sup> have an integrated memory module that stores the operational settings and data in case of a power failure.

## MAESTRO<sup>XS</sup> Features and functions



- Ergonomic control panel with quick access keys to main menus.
- Menus access keys, start, stop and reset led keys.
- Semi-graphic LCD display with illuminated text.
- 24 Vdc digital inputs.

- Digital dry contacts output up to 230 Vac and up to 24 Vdc.
- Interfaces:
  - RS485 for intercommunication with other MAESTRO devices.
  - RS485 (optional) to communicate with the supervising PC and network.
- Analogue data display (line pressure, chamber pressure, oil temperature, outgoing air temperature) and general data (alarms, operating messages, machine state, maximum and minimum pressure, last start and stop times).
- Hour counter to display the enabled, working and load times and maintenance notices.
- Events database to store alarms and blocks, with alarm intervention
- Events database to store alarms and blocks, with alarm intervention indication, alarm intervention time, machine state.
- Multi-language user interface.
- Weekly and hourly programmable start and stop times.
- Immediate reading of the compressor operating data on the display.
- Basic and advanced parameters programming for an optimal operation of the compressor.
- Storage of up to 20 malfunctioning events.
- Storage of the last 20 programme modifications.
- Control of the integrated dryer.
- Machine start and stop remote control.
- The feedback (as standard), through dry contacts, of the following machine states: enabled compressor, working compressor, loaded compressor, blocked compressor.

# SERIES

# QC 55-75-90

## Always caring about our customers' requirements

### WORLDWIDE CONSULTANCY AND ASSISTANCE

Mattei operates worldwide with its sales and assistance network, providing a wide service range.

By purchasing a Mattei compressor you can rely on a qualified after-sales service, able to answer any request for assistance in very short time scales.

### SIMPLE AND ACCESSIBLE MAINTENANCE

Large hinged doors and easily removable panels allow complete and easy accessibility for all maintenance and intervention operations. The compressor requires no special foundations and its base has suitable lifting points for ease of installation.



## Energy recovery from compressed air

In a lubricated and air-cooled compressor, about 80% of its absorbed power is wasted as heat in the oil. The heat absorbed by the oil during the air compression process is transferred to the air flow, that goes through the cooler and is dispersed to the atmosphere.

The mechanical energy used for compression is wasted as follows:

- about 80% for oil cooling;
- about 10-12% transferred to the compressed air as heat;
- about 2-3% in compressed air as energy;
- the rest due to heat radiation.



Recovered thermal energy  $\geq 80$

Mattei offers for its compressors a heat recovery system that allows water to be heated for industrial process or sanitary use.

The "Heat Recovery" kit is totally integrated into the oil cooling circuit, making the unit independent from the oil temperature control and protected from any possible malfunctions, such as water flow reduction and overheating.



Absorbed electric energy = 100

## 50 Hz - 400V/3

Model	Flow rate						Sound pressure level	Power		Air receiver	Dimensions						Weight	
	8 bar 115 psig L		10 bar 150 psig H		13 bar 175 psig HH			kW	hp		Length		Width		Height		kg	lbs
	m <sup>3</sup> /min	cfm	m <sup>3</sup> /min	cfm	m <sup>3</sup> /min	cfm					mm	inch	mm	inch	mm	inch		
AC 55	10,67	376,8	9,5	335,5	8,37	295,6	68	55	75	-	2420	95,3	1245	49,1	1890	74,5	1680	3696
AC 75	14,32	505,6	12,66	447	11,18	394,8	68	75	100	-	2420	95,3	1245	49,1	1890	74,5	1780	3916
AC 90	16,79	592,9	14,12	498,6	12,49	441	68	90	125	-	2420	95,3	1245	49,1	1890	74,5	1880	4136
AC 55 PLUS	10,67	376,8	9,5	335,5	8,37	295,6	68	55	75	-	2420	95,3	1245	49,1	1890	74,5	1840	4048
AC 75 PLUS	14,32	505,6	12,66	447	11,18	394,8	68	75	100	-	2420	95,3	1245	49,1	1890	74,5	1940	4268
AC 90 PLUS	16,79	592,9	14,12	498,6	12,49	441	69	90	125	-	2420	95,3	1245	49,1	1890	74,5	2040	4488
AC 55 R	10,67	376,8	9,5	335,5	8,37	295,6	68	55	75	-	2420	95,3	1245	49,1	1890	74,5	1730	3806
AC 75 R	14,32	505,6	12,66	447	11,18	394,8	68	75	100	-	2420	95,3	1245	49,1	1890	74,5	1830	4026
AC 90 R	16,79	592,9	14,12	498,6	12,49	441	68	90	125	-	2420	95,3	1245	49,1	1890	74,5	1930	4246
AC 55 R PLUS	10,67	376,8	9,5	335,5	8,37	295,6	68	55	75	-	2420	95,3	1245	49,1	1890	74,5	1890	4158
AC 75 R PLUS	14,32	505,6	12,66	447	11,18	394,8	68	75	100	-	2420	95,3	1245	49,1	1890	74,5	1990	4378
AC 90 R PLUS	16,79	592,9	14,12	498,6	12,49	441	69	90	125	-	2420	95,3	1245	49,1	1890	74,5	2090	4598
AC 55 W	10,67	376,8	9,5	335,5	8,37	295,6	68	55	75	-	2420	95,3	1245	49,1	1890	74,5	1680	3696
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AC 75 W PLUS	14,32	505,6	12,66	447	11,18	394,8	68	75	100	-	2420	95,3	1245	49,1	1890	74,5	1940	4268
AC 90 W PLUS	16,79	592,9	14,12	498,6	12,49	441	69	90	125	-	2420	95,3	1245	49,1	1890	74,5	2040	4488

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 L 8 bar - 9,5 bar for version H 10 bar - 12,5 bar for version HH 13 bar

**Air Centre 4000 Series** is available in 4 layouts:

- AC** Silenced version.
- plus** Version with integrated refrigerant dryer.
- R** Version with energy recovery system.
- W** Watercooled version.

All models are equipped with air aftercooler, synthetic oil filling (Mattei V-Life).

## Options Air Centre 4000

### Condensate drain and separator kit

The kit is composed of a condensate separator and a timed electronic drain.

### Maestro<sup>XS</sup> converting serial board

It allows the communication with the protocol Modbus.

### Oil-water separator kit

Oil-water separator kit fitted inside the soundproofing enclosure, to ensure separation of oil from the condensate water.

## Mattei original spare parts and lubricants

Mattei Original Spare Parts and Mattei V-life lubricants are made to very high design standards and conform to precise technical specifications. Only Mattei original spare parts allow you to be sure of maintaining over time the same levels of performance, reliability and safety of your Mattei product.

- Mattei Original Spare Parts are indispensable for the efficiency of your compressed air equipment
- Parts are always available in stock
- Quality tested and conforming to manufacturer specifications
- Suitable for Mattei's recommended maintenance intervals.





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