

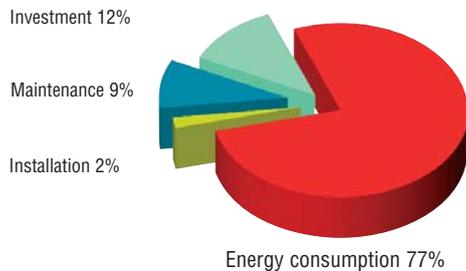


# 2000 AC Series



## 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.



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

## EFFICIENCY

Mattei's exclusive high technology airends have been reengineered to deliver even better performances in industrial applications. Reliability and efficiency are enhanced by the airend's extremely reduced rotational speed only 1500 rpm.



# Technology - Efficiency - Reliability

- The AC 2000 Series offers a flexible choice of setup. The basic differentiates itself and stands out for the absence of an independent of the compressed air system is guaranteed by a fan directly mounted solution is not only extremely essential in design but also energy efficient as the fan has been eliminated.
- For those applications in which environmental awareness is at its peak, it is equipped with a centrifugal fan. In fact, this solution offers an extremely low noise level the lowest in its category.
- The new design is essential and combines compactness, occupancy, accessibility to all components, of great advantage for an easy and



Version with centrifugal fan

## ENERGY SAVING

The range is equipped with energy saving EFF 1 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.



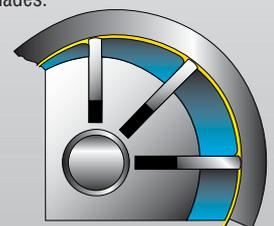
## DIRECT COUPLING



The electric motor and the compressor are coupled directly by means of flexible coupling and turn at only 1500 rpm. Direct coupling determines a remarkable "energy saving" because there are no energy losses caused by gears or V belts.

## BLADES DESIGNED FOR OVER 100,000 HOURS LIFE\*

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



\* with Mattei Rotoroil

# ability

version of the AC 2000 series electrically driven fan. The cooling is based on the main motor's shaft. This is effective, since the electric motor of

highest, Mattei offers the version with a very reduced sound level, amongst

requiring minimal space, and excellent for quick maintenance.

## PLUS VERSION



AC Plus version includes an integrated refrigerant dryer with ecological gas, allowing remarkable reduction in installation costs and space requirement.

### DRYER WITH ECOLOGICAL GAS

- EFFICIENT REFRIGERATING POWER PARTIALIZATION
- CONSTANT DEWPOINT
- MAESTRO CONTROL
- HIGH EFFICIENCY



Version with axial fan

### MAESTRO<sup>XS</sup>

The AC 2000 series is equipped with an exclusive state-of-the-art computerised controller, Maestro<sup>XS</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 Maestro<sup>XS</sup>, the unit can become master of a compressed air plant, thus saving on the installation of a superior controller. Maestro<sup>XS</sup> can be interfaced via web or cellular technology to provide remote service monitoring.



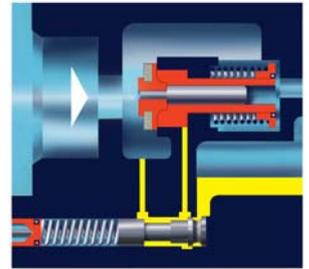
### RELIABILITY

These compressors are designed for industrial use and to deliver constant performances 24 hours a day and 12 months a year. Mattei compressors' running often exceeds 100,000 working hours.

### REGULATION SYSTEMS

#### MODULATION OPERATING MODE AT CONSTANT PRESSURE

Thanks to a modulating proportional intake valve that supplies air at constant pressure, these compressors can even work without a receiver. With this regulation air delivery is automatically adapted to the system demand.



#### ENERGY SAVING AUTOMATIC ON LOAD / OFF LOAD

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 line pressure reaches the minimum value the compressor will run on load delivering 100% of its capacity. When the pressure reaches the maximum value the compressor will run off load with the immediate closure of the intake valve, which sets off the rapid decompression phase, allowing a significant reduction of the absorbed power consumption. Should the pressure continue to remain high, the compressor will stop.

#### COMBINED ON/OFF LOAD AND MODULATION REGULATION

This regulation allows Mattei compressors to modulate within a set pressure range (for example, ± 0.3 bar). Should the air demand decrease, this regulation also allows the compressor to run off load and stop, with evident energy savings.

### 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.

#### MAINTENANCE MATTEI



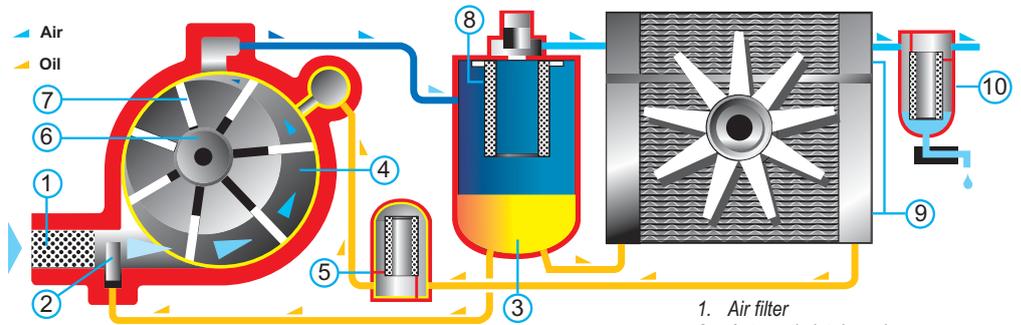
\* with Mattei Rotoroil

#### MAINTENANCE OTHERS



## OPERATION PRINCIPLE

The air is sucked through a filter and passes through a modulating proportional valve which regulates air delivery according to air requirement. This valve allows to maintain a constant working pressure. The air goes into the compression chamber where the stator, rotor and blades create a series of vanes (or volumes). The rotor rotates eccentrically to the stator and is characterised by vertical slots in which the blades are placed and are pushed against the stator's wall by centrifugal force. Lubrication and cooling are guaranteed by an efficient injection system which allows perfect hold and a lower lubricant consumption. A thin film of oil on the stator's wall avoids direct contact of the metal parts giving no wear.



During the rotation the compression occurs with the volume reduction of the spaces between the rotor-blades and the stator. The compressed air and oil mixture passes through various separating phases mechanical and coalescent, leaving less than 3mg/m<sup>3</sup> of oil in the air. The purified air leaves the compressor and is cooled in the radiator. The condensate which is produced is eliminated by a separator with an electronic condensate drain.

1. Air filter
2. Automatic intake valve
3. Oil chamber
4. Compression chamber
5. Oil filter
6. Rotor
7. Blades
8. Coalescing separator
9. Air/oil cooler (radiator)
10. Condensate drain (optional)

## TECHNICAL FEATURES

50 Hz L = 8 bar H = 10 bar HH = 13 bar - 60 Hz LX = 8 bar HX = 10 bar HHX = 13 bar

Model	Rated motor power kW	Free air delivery* m <sup>3</sup> /min						Sound pressure level**			
								With axial fan		With centrifugal fan	
		L	H	HH	LX	HX	HHX	dB(A)			
AC 30	30	5,62	4,67	3,67	6	5,7	4,9	74	76	66	68
AC 37	37	6,8	5,65	4,8	7,4	6,9	5,85	74	76	66	68
AC 45	45	8,28	7	5,85	9,9	8,7	7,2	74	76	66	68
AC 55s	55	-	8,9	7,1	-	10,8	9,5	74	76	68	70

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

(\*) Free air delivery as per ISO 1217: 1996 annex "C"

(\*\*) Sound pressure level as per PN8NTC.2.3: average value measured from a distance of 1 m

## OPTIONAL

### CONDENSATE SEPARATOR AND DRAIN KIT (Only for AC versions)

### HEAT RECOVERY KIT

Recoverable heat 80% of shaft power

### OIL-WATER SEPARATOR

Max oil content < 5 mg/l

## PLUS VERSION

### DRYER

Dew point

Refrigerant gas

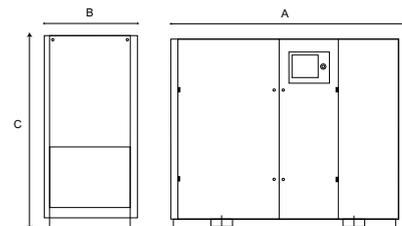
refrigerant

3 °C

R404A

## DIMENSIONS (mm) - WEIGHT (kg)

Modèle	A mm	B mm	C mm	Poids (kg)		Poids (kg) PLUS	
				Axial	Centrifuge	Axial	Centrifuge
AC 30	1830	960	1670	790	800	890	900
AC 37	1830	960	1670	820	830	920	930
AC 45	1830	960	1670	920	940	1010	1040
AC 55s	1830	960	1670	980	990	1070	1090



Ing. Enea Mattei SpA reserves the right to change the data contained in this catalogue at any moment and without notice.

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