



# AC SERIES

## AIR COMPRESSORS

15 through 350 SCFM



# AC SERIES HIGH-EFFICIENCY AIR COMPRESSORS

## Engineered for Superior Performance & Energy Efficiency



### WE BUILD A BETTER COMPRESSOR

Founder Enea Mattei believed there was a better and more energy efficient way to generate compressed air. So, he focused his engineering on the inherent advantages of rotary vane technology and engineered in:

- a) superior reliability
- b) maximum mechanical & electrical efficiency
- c) the most compressed air generated while consuming the least amount of electricity



In effect, Mattei redefined the process of compressing air when he invented his first rotary vane air compressor over 50 years ago.

### UNBEATABLE PERFORMANCE

AC Series air compressors offer our customers the next level of sophistication. Featuring quiet {as low as 68 dB(A)} cabinet enclosures, electronic controllers, energy saving soft-start Wye-Delta motor starters, TEFC motors, air-cooled aftercoolers and optional integrated refrigerated air dryers, we invite you to experience the revolution. Mattei rotary vane air compressors are truly in a class of their own and known for their dependable operation and low maintenance. AC Series raises the bar with unbeatable performance and energy savings with package flow rates from 15 to 350 SCFM.

## UNRIVALED PERFORMANCE AND DURABILITY

Today, Mattei continues to leverage advancements in technology, materials and within our exclusive airends (approximately 90% volumetric efficiency) to offer the best value in premium quality air compressors found anywhere on the planet.



Imagine “bearingless” Airends that carry a 10 Year Warranty as standard, and last up to 100,000 hours (2-3 times the life of rotary screws) without needing an overhaul, unrivaled super quiet operation, and the most energy stingy designs in the industry.

It's a fact; Mattei is in a class of its own. Want to protect productivity, increase profitability, and lessen your carbon footprint?

**Get your last air compressor first. Get a Mattei.**



*Get your last air compressor first. GET A MATTEI.*

## GET MORE FOR LESS

AC Series use our most advanced airend designs. Unlike typical rotary screw compressors, AC Series models use precision matched airends, direct-coupled to high efficiency motors that revolve at just 1,800 rpm, to deliver maximum energy efficiency and performance at design pressure. Thus, it is not uncommon to select a smaller HP AC Series model to meet the air demands of the customer.

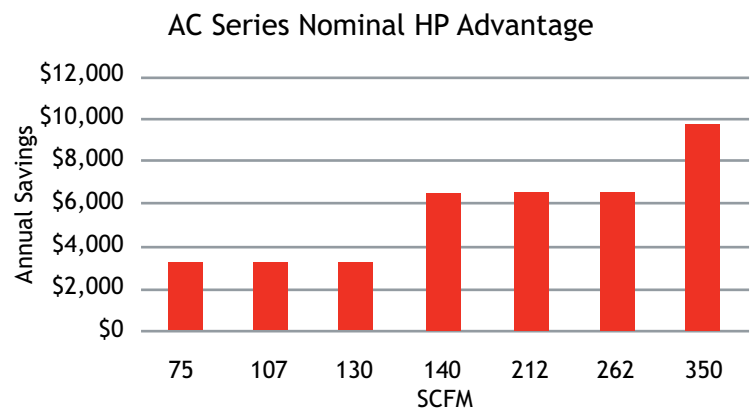


For example, say you need about 130 SCFM. MATTEI can offer you our traditional 30 HP ERC Series model (129 scfm) or, we can offer you our 25 HP AC Series rated at 130 SCFM. Each produces about the same volume of air, but that 5 HP difference saves you money the moment you turn it on – that's why upgrading to an AC Series just makes sense. AC Series helps you get more air for less energy. Lower your electric bill month-after-month, year-after-year.

*Get more for less. Get a MATTEI.*

Figure 1:

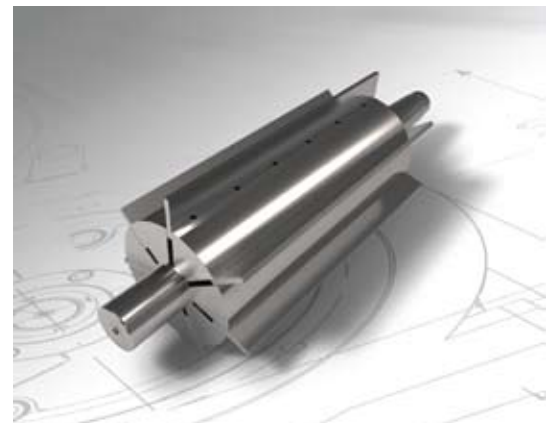
Potential energy cost savings from lower AC Series nominal motor HP ratings for comparable SCFM production. Assumes 8,760 hours/year, 10 cents/kWh.



Mattei compressors are designed to give constant top performance 24 hours a day, every day of the year. Extremely rugged and reliable, AC Series is designed for outstanding performance and efficiency.

*Rely on AC Series for:*

- Superior SCFM/HP performance
- Unaltered performance through time
- System friendly demand adaptable controls
  - Automatic Load/No Load
  - Load matching Modulation
  - Automatic with Modulation
- No wear of the compressor's moving mechanical parts
- Compact design
- Low oil volume and consumption
- Direct coupled compressor and motor
- Slow 1,800 RPM rotational speed
- Low maintenance
- Quiet operation



**WHY MATTEI®  
IS YOUR BEST CHOICE**

# AC SERIES AIR

## Sophisticated. S

### SIMPLY SUPERIOR

All MATTEI air compressors retain the same heritage of innovation, durability and reliability. AC Series are highly-efficient cabinet style air compressors that raise the bar in delivering superior value, unrivaled high-capacity performance and energy efficient operation.

AC Series must be compared on an SCFM basis – not based on HP. Why? Because, AC Series uses our most advanced airends to produce more SCFM per HP than typical rotary air compressors, so to do a fair comparison, you usually need to select the next smaller size. In fact, it is not uncommon to get the same level of SCFM output from the next smaller AC Series model.

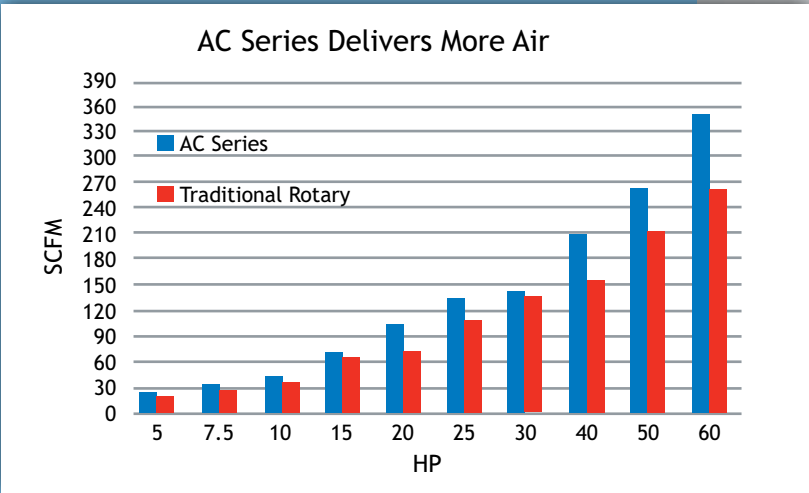


Figure 2:  
AC Series uses less nominal HP to deliver more SCFM.

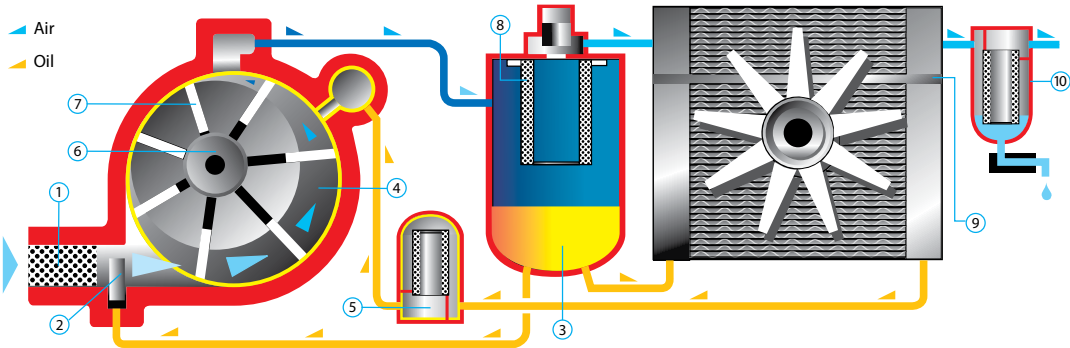


### HOW IT WORKS

Ambient air is drawn through a filter into the compression chamber consisting of a stator in which an eccentrically arranged rotor revolves at 1,800 rpm. An air intake valve automatically adjusts incoming air volume to match your control scheme. The rotor has longitudinal slots in which the vanes slide. Zero-wear vanes ride on a thin film of oil and

are held against the stator by centrifugal force. The air is compressed through the contraction in volume of each chamber formed by the vanes, the rotor and the stator wall. Sealing, cooling and lubrication are ensured by the oil injected into the chamber.

1. Pleated oversized 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 Separator & Drain (optional)





# COMPRESSORS

## Silent. Efficient.

*Get your money's worth.*  
GET A MATTEI.



### HIGH QUALITY COMPRESSED AIR

Mattei compressors have an exclusive and efficient oil separating system which occurs in three stages: in the initial stage most of the oil is separated in a labyrinth in the compression chamber; the flow then enters the separator chamber where a mechanical separation takes place through speed reduction and flow deviation; the last phase occurs through the separator element. Only 0.02% of the initial oil arrives to this final stage; this is the reason for which the average life of Mattei's separator element is 10,000 operating hours. Most importantly, this separating system guarantees a maximum oil residue of 3 ppm in Mattei's compressed air.

### YOU GET WHAT YOU PAY FOR

It is not uncommon to get over 100,000 hours of service life out of our airends without a rebuild. MATTEI vane technology features zero-wear Meehanite™ cast iron blades that ride on a thin film of lubricant thus, preventing wear to the blade or stator wall. The heart of the unit is the rotor which is supported by two (2) white metal Babbitt bushings and spins at only 1,800 rpm.

AC Series is also friendly to your wallet and the environment. Each vane unit holds very little lubricant (typically less than half that of a screw type compressor) which saves you a small fortune on oil changes and disposal costs. The oil filter is cleanable – yes, cleanable. The highly efficient mechanical air/oil separation chamber delivers high quality air to the air/oil separator filter thus, it sees very little lubricant and provides up to 10,000 hours of service, and low 1-3 ppm oil carryover.

*Get your money's worth. Get a MATTEI.*

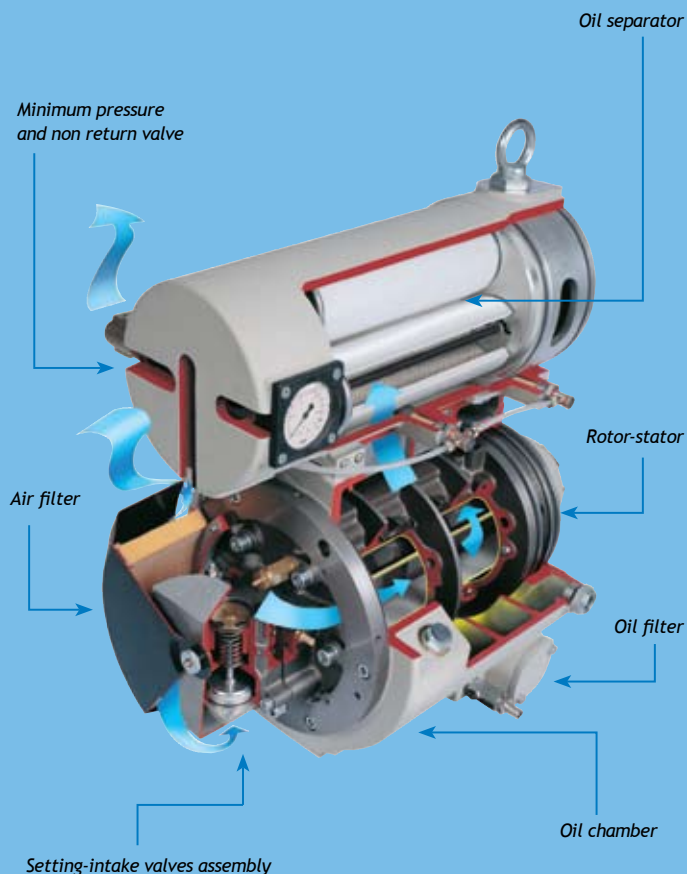


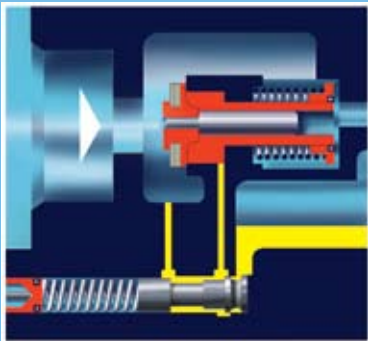
Figure 3:  
Airend Construction

# CAPACITY CONTROLS ADAPT TO YOUR DEMANDS

The layout and design of every air system is different. Some systems have very little air storage; some have an enormous volume of air storage. Some have small diameter air piping that is high in pressure drop; some have oversized piping to minimize pressure drop.

Thus, it is wise to select compressors with control schemes that can adapt to the demands and dynamics of your system. Mattei provides control flexibility to adapt to your system demands to help you save energy and prevent short-cycling and ambient oil misting problems created by inflexible control schemes and underutilized compressors.

Figure 4:  
MATTEI Air Intake Control Valve Illustration



## 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. Ideal for applications with little storage or continuous high air demands.

## ENERGY SAVING AUTOMATIC LOAD / OFF LOAD

Load/Off Load mode maintains line pressure within a minimum/maximum pressure range, and the compressor may stop and restart according to air demand. “Load” initiates when the minimum pressure setting is reached and the compressor deliver 100% of its capacity. “Off Load” initiates when the maximum pressure setting is reached, and the intake valve closed and sump is decompressed to allow for a significant reduction of the absorbed power consumption. Should the pressure continue to remain high, the compressor will stop. Ideal for applications with adequate storage or large variations in air demand.

## COMBINED ON/OFF LOAD AND MODULATION REGULATION

This regulation allows Mattei compressors to modulate within a set pressure range (for example,  $\pm 4-5$  psi). Should the air demand decrease, this regulation also allows the compressor to run off load and stop, with evident energy savings. Ideal for applications with little storage and large variations in demand



# ADVANCED SYSTEM CONTROLLERS

**MicroC:** Standard on Models AC 4 & AC 5

Programmable microprocessor based control and protection system which controls compressor operation and adapts to the specific requirements of the air distribution system. MicroC offers a variety of programming levels and special options for controlling and analyzing system operation and faults. Advanced programming and analysis levels are protected by digital codes to avoid unintentional tampering. MicroC has an integrated memory module that stores the operational settings and data in case of power outage.



Figure 5:  
MATTEI MicroC Controller



Figure 6:  
MATTEI MAESTRO XS Controller

**MAESTRO XS:** Standard on Models AC 7 and larger

State-of-the-art computerized controller, Maestro XS automatically controls, monitors and programs the compressor's operation, and can be connected to a PC for remote control. In addition to providing all of the features found in the MicroC, Maestro XS can become master of a multi-compressor compressed air plant, thus saving on the installation of a dedicated Master controller, if connected to other compressed air packages equipped with Maestro XS controllers.

Figure 7: **AC SERIES CONTROLLER FEATURES**

		MicroC	MAESTRO XS	
LED Display	Basic 3 character alphanumeric codes	X	—	
	Full text 4 lines of 20 characters	—	X	
Electronic Controller Features	Power "On"	X	X	
	Operation Hour Counters	Activation hours	X	X
		Run hours	X	X
		Loaded Hours	X	X
		Oil Change	X	X
	Service Counters	Separator Filter	X	X
		Automatic Restart after power failure	X	X
		Time/Day Compressor Start/Stop Settings	X	X
		Recordable Fault Events	5	20
	Alarm Coded Text with Icon based Signals	X	X	
Compressor Networking	Master & Slave Multi-Compressor Capable	—	X	
	Cascade, Sequence, Equalization of Run Hours	—	X	
Optional	Expansion Module for Managing Integrated Refrigerated Air Dryer	X	X	

## AC SERIES PRODUCT FEATURES

		AC4-5	AC7-45
Electronic Controller	MicroC	X	—
	MAESTRO XS	—	X
System Adaptable Air Inlet Controls	TEFC Motor	X	X
	Wye-Delta Motor Starter	X	X
	Constant Pressure Modulation	X	X
	Automatic On Load/Off Load	X	X
	Combined On/Off Load and Modulation	X	X
	100,000 Hour Airend Design Life	X	X
	Direct-drive 1,800 rpm Airend	X	X
Optional	10,000 Hour Air/Oil Separator Filter Design	X	X
	Cleanable Oil Filter	X	X
	Synthetic Rotor Oil 8000	X	X
	High Efficiency Air Intake Filter Kit	X	X
	Condensate Drain & Moisture Separator Kit	X	X
	Soundproofing Intake Air Duct	X	X
	Integrated Refrigerated Air Dryer	X	X
	Integrated Oil/Water Separator	—	X
	Integrated Heat Recovery Kit	—	X

## TECHNICAL FEATURES

Model <sup>1</sup>	Electric Motor Power		Free Air Delivery <sup>2</sup>			Voltage	Sound Pressure Level <sup>3</sup>	Air Outlet	Dimensions (inches)	Wt. (net)
	HP	kW	LX	HX	HHX					
			115 PSIG	150 PSIG	175 PSIG	AC	db(A)	Rp	L x W x H	lbs.
AC 4	5	4	26	22	15	208V, 230V, 460V, 575V /3 Ph/60 Hz	67	1/2"	40 x 24 x 33	298
AC 5	7.5	5.5	36	29	24		67	1/2"	40 x 24 x 33	309
AC 7	10	7.5	49	43	42		67	3/4"	49 x 24 x 41	462
AC 11	15	11	75	66	58		67	3/4"	49 x 27 x 41	506
AC 15	20	15	107	94	85		69	1"	47 x 31 x 59	981
AC 18	25	18	130	112	91		69	1"	47 x 31 x 59	981
AC 22	30	22	140	127	110		69	1"	47 x 31 x 59	992
AC 30	40	30	212	202	173		68	2"	47 x 31 x 59	1,764
AC 37	50	37	262	244	207		68	2"	72 x 38 x 66	1,830
AC 45	60	45	350	307	254		68	2"	72 x 38 x 66	2,073

Working pressure: 109 psig for 115 psig unit; 143 psig for 150 psig unit; 167 psig for 175 unit.

<sup>1</sup> Models AC 7 and larger carry ULc approval <sup>2</sup> F.A.D. in accordance with ISO 1217:1996, annex "C" <sup>3</sup> According to PN8NTC2.3; value measured at 1 m distance ±3

Mattei Compressors, Inc. reserves the right to change or replace the data contained in this publication, without notice.



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