PRODUCT INFORMATION

English

SERIES OPTIMA 30 - 200 kW

ROTARY VANE COMPRESSORS

OPTIMA
OPTIMA R
OPTIMA W
OPTIMA PLUS
OPTIMA R PLUS
OPTIMA W PLUS

THINK GREEN

SERIES
OPTIMA

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 devlopment 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.

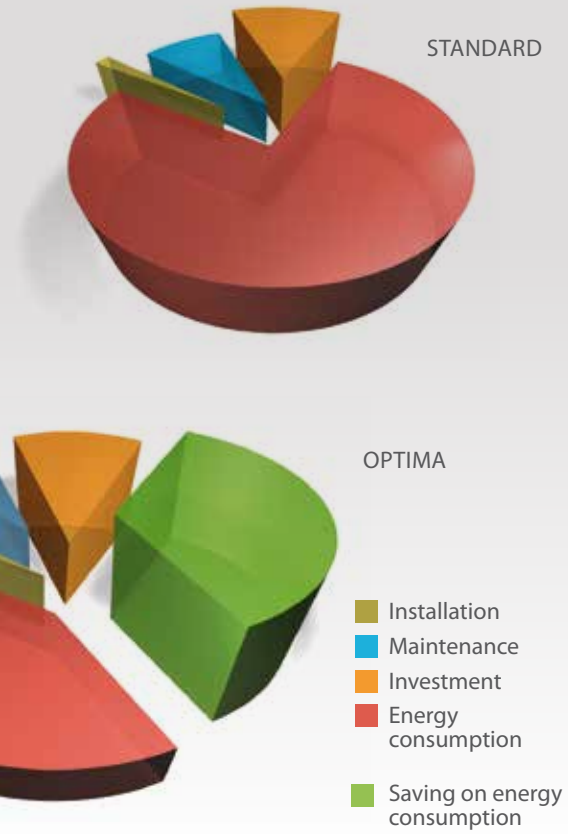
The best solution to save energy

To ensure maximum energy savings Mattei's OPTIMA range of variable speed compressors leverage mattei's exclusive linear kw-to-capacity efficiencies to match their operation to suit the load profile required by the compressed air system. The inverter adjusts the motor's rotational speed, adapting the air delivered by the compressor to the real demand. OPTIMA can save up to 35% of the annual operating costs.

IE3 HIGH EFFICIENCY MOTOR

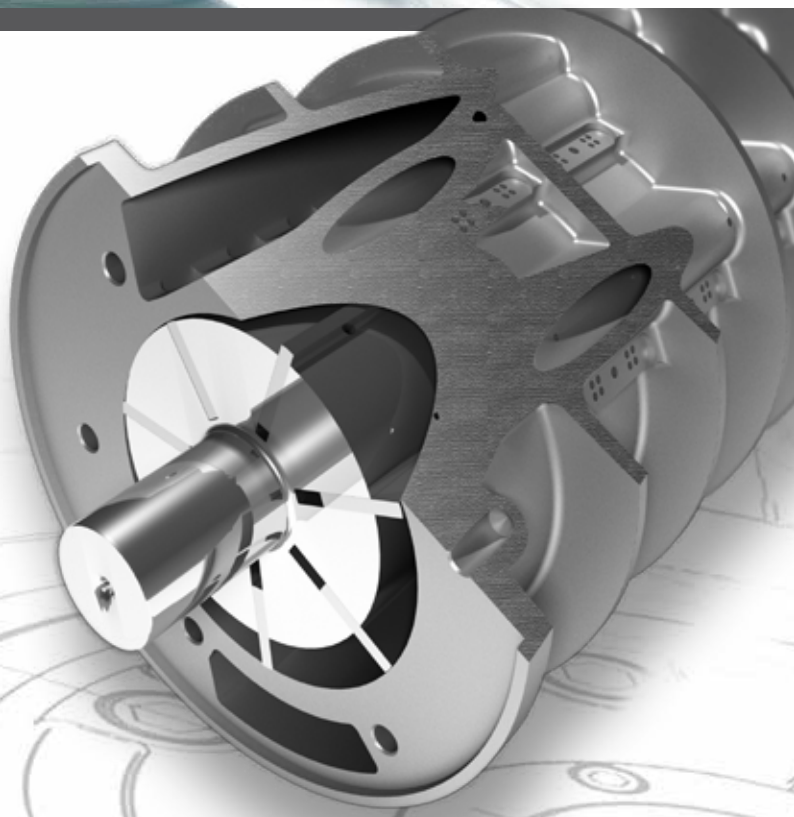
STATE-OF-THE ART INVERTER

EXCELLENT PERFORMANCE WITH DIRECT COUPLING



Simply different:

The compressor that makes the 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 airend. 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.

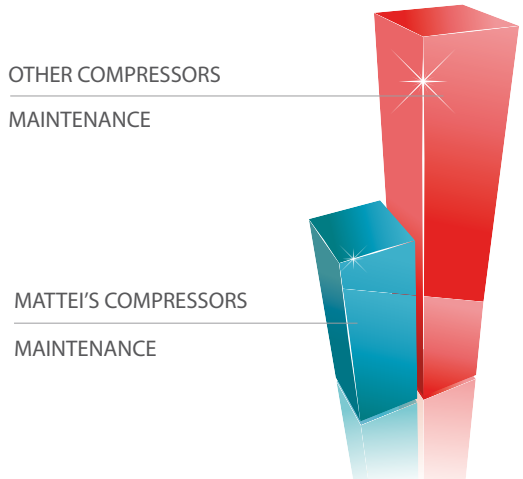
COMPRESSOR AND DRYER: ALL-IN-ONE

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.

LOW OPERATING COSTS: LOW MAINTENANCE

Mattei's rotary vane compressors are designed to achieve 100,000 hours operating 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.



A HIGH EFFICIENCY OIL SEPARATION

Oil is injected into the air during compression to cool, seal and lubricate. This oil is removed internally before it leaves the compressor. Separation of oil from air takes place in multiple stages. First separation occurs in the oil chamber as the air passes across a labyrinth, this removes 99.9% of the oil.

At the separator inlet the air flow has directional variations removing even more oil.

Finally the air flow passes through coalescing elements removing the final traces of oil to the level of 1 mg/$m^{3.}$

The inbuilt oil separation system delivers high quality air and extends separator life.

Evaluating compressed air

When selecting compressors it is very important to know the exact air needs of the user, together with the depreciation period and all other variables that will help to determine the option with the lowest overall cost of ownership.

Measuring the compressed air and energy consumption are essential to find out if changes in the equipment or servicing regime could be cost effective. There is no best compressor in absolute terms, but the best combination between the specific compressed air need and the compressor can always be found.

Control with Maestro^{xs}

All OPTIMA compressors are, as standard, fitted with a Maestro^{xs} electronic controller. Thanks to this device the compressors are programmed to work in two different operating modes: "Neutral Zone" and "PID". OPTIMA adjusts its operation to the load profile required by the system. The inverter modifies the motor rotational speed, adjusting the air flow supplied by the compressor to the actual requirement of the system.

In PID mode the controller uses the average of the set up values as the target pressure and strives to keep the pressure at this value, by increasing or reducing the rotational speed.

Compressors

OPTIMA series

One of the primary aims of competing in the global economy is to minimise production costs. Industry leaders expect maximum value and profitable returns when investing in new machinery that will improve their manufacturing process and lower their costs. As compressed air production tends to be the single largest consumer of electricity in a given manufacturing plant, saving energy and reducing maintenance costs offers real opportunities to improve profitability and thus, enhance the competitive advantage for the company. When selecting compressors it is very important to know the exact air needs of the user, together with the depreciation period and all other variables that will help to determine the option with the lowest overall cost of ownership. Measuring the compressed air and energy consumption are essential to find out if changes in the equipment or servicing regime could be cost effective. There is no best compressor in absolute terms, but the best combination between the specific compressed air need and the compressor can always be found.

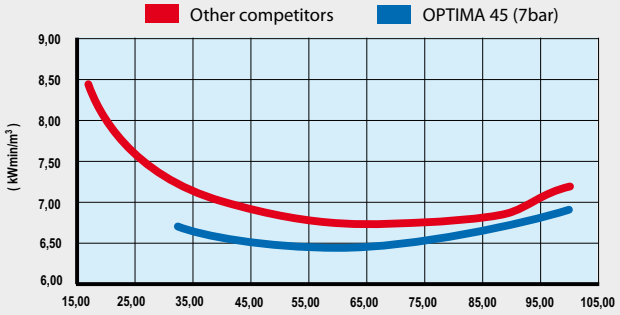
Energy efficiency

The energy efficiency and the compressed air cost partly depend on efficiency of the compressors used in the production processes and on their optimal configuration, but they are also influenced by other important factors:

- Quality of the cooling system
- Waste heat recovery
- Reduction of air leaks
- Maintenance quality

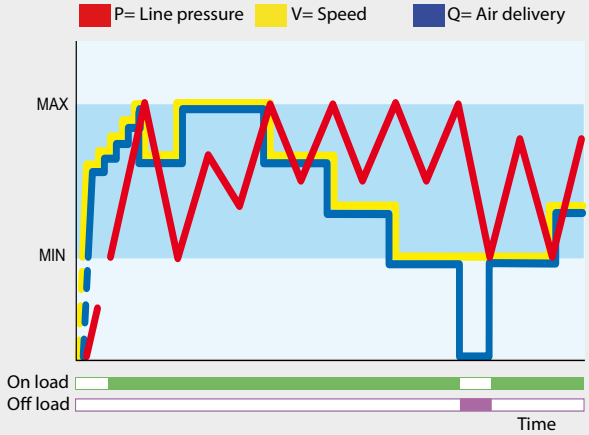
MATTEI INVERTER REGULATION SYSTEM

The Mattei inverter system always assures the highest energy savings. When the compressed air demand is between 100% and 40%, the compressor rotational speed reaches the highest efficiency, with an energy consumption much lower than traditional inverter systems.



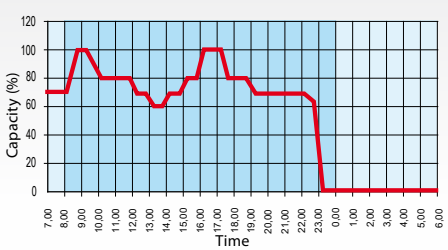
OPERATION

Optima operates within a range of pre-set maximum and minimum pressures. When reaching the maximum pressure, at the minimum rotational speed the shutdown of the intake valve occurs, the compressor is set "off load" and decompressed to 1.5 bar, to reduce the energy absorption further.
When the line pressure lowers to the minimum pre-set value it is reset to the "on load" condition and starts delivering air instantly, adapting the rotational speed to the air demand.

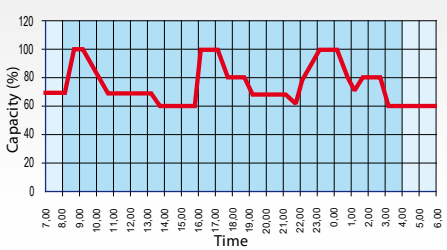


TYPICAL USER PROFILES

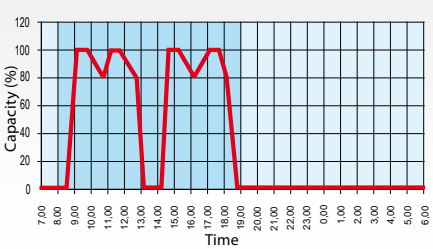
Profile 1: the unit runs 24 hours on 24 for 7 days a week with consumption variability between 70 and 100%.



Profile 2: this is represented by a unit running for 16 hours a day and 5 days a week. Air consumption varies from 70 to 100% of maximum air demand.



Profile 3: this profile represent an application with an eight-hour shift at constant consumption for five days a week. Air demand tends to stay around 90% of maximum requirement.



Technical data

400V-460V/50Hz-60Hz/3

	Model	Max. working pressure		F.A.D.		Sound pressure level	Power		Air receiver	Dimensions LxWxH						Weight	
		bar	psig	m³/min	scfm	db(A)	kW	hp	l	mm	ins	mm	ins	mm	ins	kg	lbs
OPTIMA	**OPTIMA 30**	7 ÷ 10	100 ÷ 150	2,86 ÷ 5,34	101 ÷ 189	66	30	40	-	1830	72	960	38	1670	66	820	1804
	OPTIMA 37	7 ÷ 10	100 ÷ 150	3,63 ÷ 6,48	128 ÷ 229	66	37	50	-	1830	72	960	38	1670	66	880	1936
	OPTIMA 45	7 ÷ 10	100 ÷ 150	4,28 ÷ 8,00	151 ÷ 283	66	45	60	-	1830	72	960	38	1670	66	940	2068
	OPTIMA 110	7 ÷ 10	100 ÷ 150	11,25 ÷ 20,06	397 ÷ 708	69	110	150	-	2350	93	1440	57	1980	78	2570	5654
	OPTIMA 132	7 ÷ 10	100 ÷ 150	13,19 ÷ 23,52	466 ÷ 830	69	132	175	-	2350	93	1440	57	1980	78	2700	5940
	OPTIMA 200	7 ÷ 10	100 ÷ 150	20,04 ÷ 35,51	708 ÷ 1254	75	200	250	-	2815	111	1780	70	2235	88	4750	10450
	OPTIMA 30 R	7 ÷ 10	100 ÷ 150	2,86 ÷ 5,34	101 ÷ 189	66	30	40	-	1830	72	960	38	1670	66	840	1848
	OPTIMA 37 R	7 ÷ 10	100 ÷ 150	3,63 ÷ 6,48	128 ÷ 229	66	37	50	-	1830	72	960	38	1670	66	900	1980
	OPTIMA 45 R	7 ÷ 10	100 ÷ 150	4,28 ÷ 8,00	151 ÷ 283	66	45	60	-	1830	72	960	38	1670	66	960	2112
	OPTIMA 110 R	7 ÷ 10	100 ÷ 150	11,25 ÷ 20,06	397 ÷ 708	69	110	150	-	2350	93	1440	57	1980	78	2670	5874
	OPTIMA 132 R	7 ÷ 10	100 ÷ 150	13,19 ÷ 23,52	466 ÷ 830	69	132	175	-	2350	93	1440	57	1980	78	2780	6116
	OPTIMA 200 R	7 ÷ 10	100 ÷ 150	20,04 ÷ 35,51	708 ÷ 1254	75	200	250	-	2815	111	1780	70	2235	88	4950	10890
	OPTIMA 30 W	7 ÷ 10	100 ÷ 150	2,86 ÷ 5,34	101 ÷ 189	66	30	40	-	1830	72	960	38	1670	66	840	1848
	OPTIMA 37 W	7 ÷ 10	100 ÷ 150	3,63 ÷ 6,48	128 ÷ 229	66	37	50	-	1830	72	960	38	1670	66	900	1980
	OPTIMA 45 W	7 ÷ 10	100 ÷ 150	4,28 ÷ 8,00	151 ÷ 283	66	45	60	-	1830	72	960	38	1670	66	960	2112
	OPTIMA 110 W	7 ÷ 10	100 ÷ 150	11,25 ÷ 20,06	397 ÷ 708	69	110	150	-	2350	93	1440	57	1980	78	2670	5874
	OPTIMA 132 W	7 ÷ 10	100 ÷ 150	13,19 ÷ 23,52	466 ÷ 830	69	132	175	-	2350	93	1440	57	1980	78	2780	6116
	OPTIMA 200 W	7 ÷ 10	100 ÷ 150	20,04 ÷ 35,51	708 ÷ 1254	75	200	250	-	2815	111	1780	70	2235	88	4750	10450

Sound pressure level at 1500 rpm

F.A.D. in accordance with ISO 1217 annex "E"

Sound pressure level according to ISO 2151, tolerance ± 3 dB(A)

400V-460V/50Hz-60Hz/3

	Model	Max. working pressure		F.A.D.		Sound pressure level	Power		Air receiver	Dimensions LxWxH						Weight	
		bar	psig	m^3/min	scfm	db(A)	kW	hp	l	mm	ins	mm	ins	mm	ins	kg	lbs
OPTIMA PLUS	**OPTIMA 30 PLUS**	7 ÷ 10	100 ÷ 150	2,86 ÷ 5,34	101 ÷ 189	66	30	40	-	1830	72	960	38	1670	66	910	2002
	OPTIMA 37 PLUS	7 ÷ 10	100 ÷ 150	3,63 ÷ 6,48	128 ÷ 229	66	37	50	-	1830	72	960	38	1670	66	975	2145
	OPTIMA 45 PLUS	7 ÷ 10	100 ÷ 150	4,28 ÷ 8,00	151 ÷ 283	66	45	60	-	1830	72	960	38	1670	66	1040	2288
	OPTIMA 110 PLUS	7 ÷ 10	100 ÷ 150	11,25 ÷ 20,06	397 ÷ 708	69	110	150	-	2950	116	1440	57	1980	78	3040	6688
	OPTIMA 132 PLUS	7 ÷ 10	100 ÷ 150	13,19 ÷ 23,52	466 ÷ 830	69	132	175	-	2950	116	1440	57	1980	78	3170	6974
	OPTIMA 30 R PLUS	7 ÷ 10	100 ÷ 150	2,86 ÷ 5,34	101 ÷ 189	66	30	40	-	1830	72	960	38	1670	66	930	2046
	OPTIMA 37 R PLUS	7 ÷ 10	100 ÷ 150	3,63 ÷ 6,48	128 ÷ 229	66	37	50	-	1830	72	960	38	1670	66	995	2189
	OPTIMA 45 R PLUS	7 ÷ 10	100 ÷ 150	4,28 ÷ 8,00	151 ÷ 283	66	45	60	-	1830	72	960	38	1670	66	1060	2332
	OPTIMA 110 R PLUS	7 ÷ 10	100 ÷ 150	11,25 ÷ 20,06	397 ÷ 708	69	110	150	-	2950	116	1440	57	1980	78	3120	6864
	OPTIMA 132 R PLUS	7 ÷ 10	100 ÷ 150	13,19 ÷ 23,52	466 ÷ 830	69	132	175	-	2950	116	1440	57	1980	78	3250	7150
	OPTIMA 30 W PLUS	7 ÷ 10	100 ÷ 150	2,86 ÷ 5,34	101 ÷ 189	66	30	40	-	1830	72	960	38	1670	66	930	2046
	OPTIMA 37 W PLUS	7 ÷ 10	100 ÷ 150	3,63 ÷ 6,48	128 ÷ 229	66	37	50	-	1830	72	960	38	1670	66	995	2189
	OPTIMA 45 W PLUS	7 ÷ 10	100 ÷ 150	4,28 ÷ 8,00	151 ÷ 283	66	45	60	-	1830	72	960	38	1670	66	1060	2332
	OPTIMA 110 W PLUS	7 ÷ 10	100 ÷ 150	11,25 ÷ 20,06	397 ÷ 708	69	110	150	-	2950	116	1440	57	1980	78	3120	6864
	OPTIMA 132 W PLUS	7 ÷ 10	100 ÷ 150	13,19 ÷ 23,52	466 ÷ 830	69	132	175	-	2950	116	1440	57	1980	78	3250	7150

Sound pressure level at 1500 rpm

F.A.D. in accordance with ISO 1217 annex "E"

Sound pressure level according to ISO 2151, tolerance ± 3 dB(A)

THINK GREEN

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