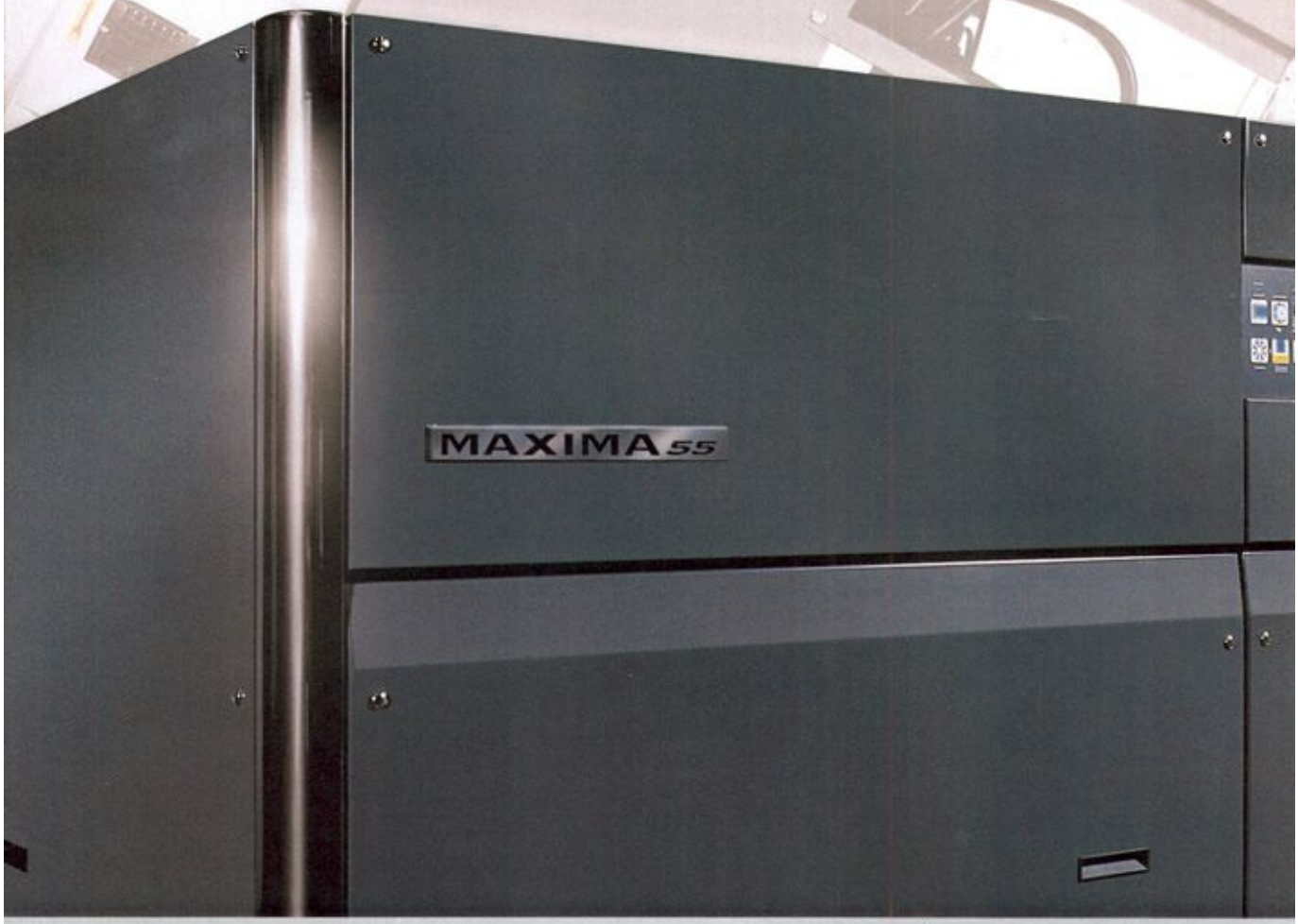
ENERGY SAVING

MAXIMA

ROTARY VANE COMPRESSORS



mattei®
BEST SOLUTIONS IN COMPRESSED AIR

TÜV
CERTIFIED PERFORMANCE

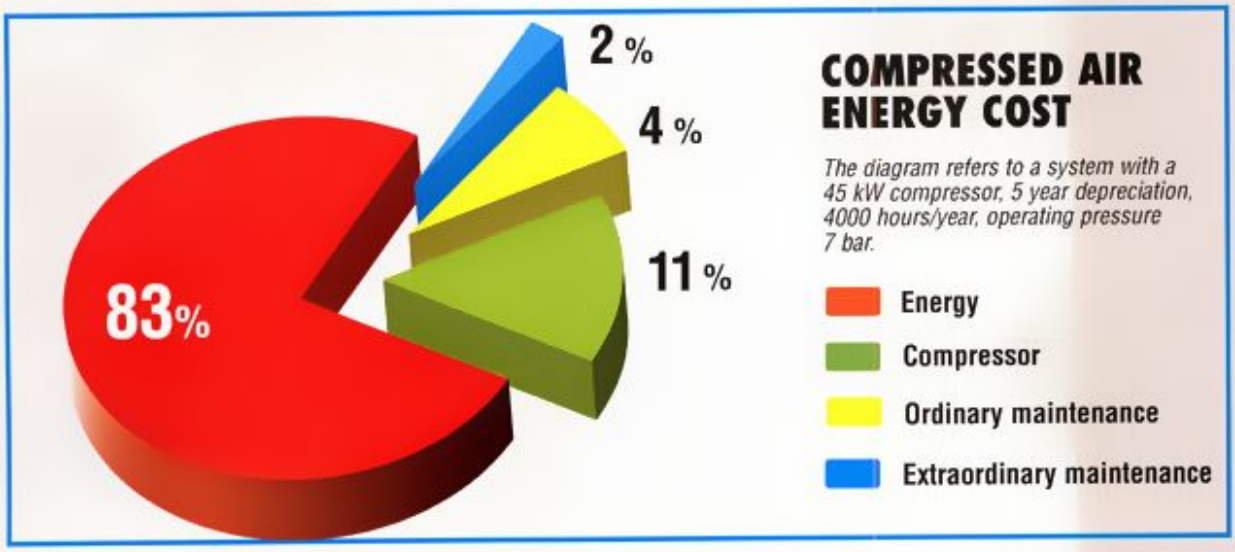
Qualified for Energy Technology List

REDUCING ENERGY CONSUMPTION FOR A BETTER WORLD

PROTECT THE ENVIRONMENT AND SAVE ENERGY WITH COMPRESSED AIR.

Greenhouse effect, ozone layer and the planet's changing climate are just a few of the issues that have interested public opinion in recent years bringing environmental protection and energy saving to light. Companies who rationally produce and use compressed air can contribute to environmental protection through energy savings, as well as decreasing their operation costs.

Many public agencies in Europe have established awareness campaigns aimed at compressed air users. Mattei, as a compressor manufacturer, is also fully aware and involved in environmental aspects and has based its research on the improvement of its compressors' efficiency in order to offer a greater saving on energy.



ENERGY COSTS ARE MORE RELEVANT 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 relevant but become secondary when compared to electric energy as illustrated in the diagram. The diagram underlies a clear truth: even a small percentage of saving in energy will produce important economic benefits.

EVALUATING EXACT NEEDS.

It is thus extremely 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 alternative with the lowest energy consumption. To determine exact air demand Mattei's technical staff is at your disposal to analyse your compressed air needs. This analysis involves the recording of current energy consumption on a daily or weekly basis.

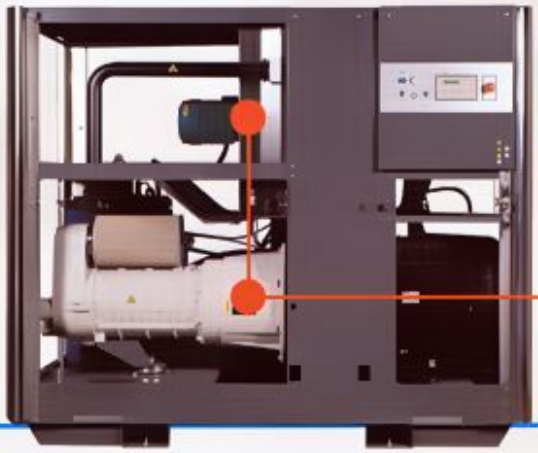
MAXIMA

THE NEW EFFICIENCY FRONTIER IN SINGLE-STAGE COMPRESSORS CERTIFIED BY TÜV

ONE OF THE PRIMARY AIMS OF EUROPEAN MANUFACTURING INDUSTRIES TODAY IS TO REDUCE PRODUCTION COSTS. THE EXPECTATION OF THESE INDUSTRIES, WHEN INVESTING IN NEW MACHINERY IS TO IMPROVE THEIR MANUFACTURING PROCESSES AT LOWER COSTS. TO SAVE ENERGY AND TO REDUCE MAINTENANCE COSTS IN COMPRESSED AIR PLANTS BECOMES A REAL COMPETITIVE ADVANTAGE FOR MANUFACTURING INDUSTRIES.

TECHNOLOGICAL RESEARCH IS AT THE BASE OF THE RESULTS OBTAINED BY MAXIMA:

ONLY 5.4 kW/m³/min



OPTIMA AND MAXIMA ARE TWO NEW PRODUCT RANGES DESIGNED BY MATTEI TO SATISFY THE NEED TO SAVE ENERGY AND REDUCE MAINTENANCE COSTS IN PRODUCTION PLANTS. THE OPTIMA RANGE OF COMPRESSORS IS THE SOLUTION WHICH ALLOWS THE HIGHEST ENERGY SAVINGS WHEN COMPRESSED AIR DEMAND IS VARIABLE. THE NEW MAXIMA RANGE IS THE BEST SOLUTION TO SAVE ENERGY IN FULL LOAD APPLICATIONS, THAT IS WHEN THE DEMAND FOR COMPRESSED AIR IS CONSTANT THROUGHOUT THE DAY.

LOW SPEED 1000 rpm

HOW HAS THIS EXCELENT EFFICIENCY BEEN ACHIEVED?

- First, the pumping unit's geometric design has been improved; excellent quality and adequate sizing have been the discriminating criteria in choosing materials, components and accessories; last but not least the compressor's rotational speed has been reduced to 1000 r.p.m.!
- These solutions together with the high efficiency obtained, offer other advantages for the global management of the machine.

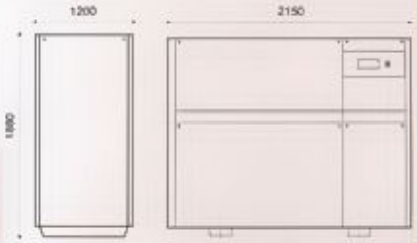
The compressor is directly coupled to a 6 pole electric motor which determines its low rotational speed which in turn enables:

- **HIGHER RELIABILITY**
- **LESS WEAR**
- **LESS VIBRATIONS**
- **NOISE LEVEL REDUCTION**

Consequently:

- **LOWER MAINTENANCE COSTS**
- **LONGER OPERATING LIFE**
- **LOWER NOISE POLLUTION**

DIMENSIONS



TECHNICAL SPECIFICATIONS

Model	MAXIMA	35	55	75
Working pressure (Max)***	bar		7	
Free air delivery*	m³/min	7,8	11,5	16
Electric motor	kW		55	75
Motor protection / Mains supply	V/Ph/Hz		IP 55 class F/400/3/50	
Starter			star-delta	
Drive			direct	
Rotational speed	rpm		990	
Oil chamber capacity	l		~50	
Oil carry-over	p.p.m.		≤ 3	
Air outlet temperature	K		10	
Condensate drain			electronic	
Sound pressure level	dB(A)**		68	70
Weight	kg	1730	1870	2000
Air outlet size			R 2"	

* As per ISO 1217:1996 enclosed "C" ** Sound pressure level as per Pneurop PN8NTC2.3 *** With Servovalve

HOW TO ANALYSE SPECIFIC ENERGY:

Specific energy is the result of the following calculation: $\frac{kW}{m^3/min}$

Where the kW is given by the ***absorbed power*** which is calculated as follows: $kW = \sqrt{3} * V * I * \cos\varphi / 1000$

N.B. the absorbed power is what the user is actually paying

MAXIMA performances conform with the 3rd version of norm ISO 1217 and are certified by the German organization TÜV.

When calculating specific energy in this way, the user will know exactly how many kW are needed to produce 1m³ of compressed air at a given pressure.

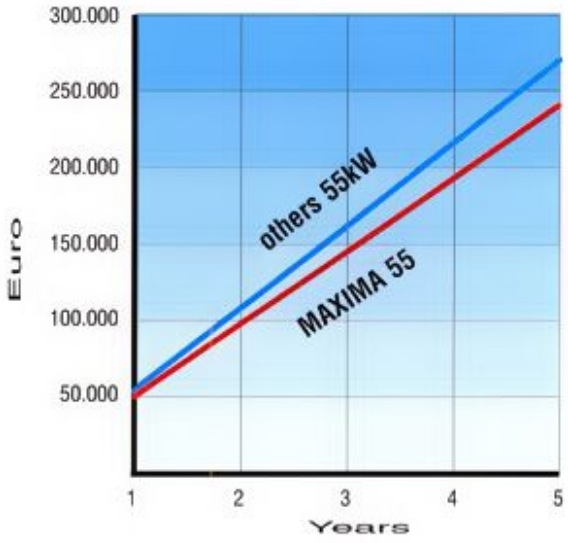
However, other companies might calculate specific energy taking into account the nominal power of the electric motor to which the compressor is coupled. This will only give a devious indication of specific energy, since the kW value excludes any consideration of motor efficiency and the power absorbed by the fan motor.
In addition to considering nominal power, other companies might use the air delivery value at the air end outlet, without aspiration valve and filter, air/oil separator, aftercooler, condensate separator and solenoid valve. This results in an increased m³/min value, which, however, does not represent the air available to the user at the package compressor outlet.

To illustrate these differences, the specific energy of MAXIMA 55 has been calculated in all three ways, as shown in the table:

Actual Specific Energy	Alternative A	Alternative B
Power absorbed / m³/min	Nominal Power / m³/min	Nominal Power / m³/min of air end alone
5.4 kW / m³ / min	4.78 kW / m³ / min	4.42 kW / m³ / min

Compressor information		MATTEI MAXIMA 55	COMPETITOR Other 55 kW
User information			
Required Pressure	(bar)	6	6
Required Flow	(m³/min)	10	10
Energy Cost	(Euro/kWh)	0.13	0.13
Installation information			
Hours Per Year	(Hours)	6240	6240
Annual Power Usage	(1000 kWh)	370	416
Power Saved	(1000 kWh)	46	
Total Power Cost	(Euro/Year)	48.075	54.066
Power Cost Saved		5.992	

Accumulated Total Cost (Power & Capital)			
1st Year	(Euro)	48.075	54.066
2nd Year	(Euro)	96.150	108.133
3rd Year	(Euro)	144.225	162.199
4th Year	(Euro)	192.300	216.266
5th Year	(Euro)	240.375	270.332



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Since 1994 Mattei operates with a quality system certification UNI EN ISO 9001