



# BLADE

BRINGING YOU THE FUTURE TODAY



## Mattei: over 90 years of research and reliability

Ing. Enea Mattei SpA is an Italian company that has been manufacturing air compressors since 1919. Since then the company has continually evolved and is now 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. Mattei's vision and interpretation of industry's changing needs, has consistently created innovative and technologically advanced products.

- ▶ **UNLIMITED BLADE LIFE**
- ▶ **NO THRUST BEARINGS**
- ▶ **BUSHINGS NOT SUBJECT TO WEAR**

## BLADE: the ideal solution for your business

The BLADE compressor range, with operating pressures 10 bar (for **BLADE 1-2-3** version), from 8 to 13 bar (for **BLADE 4÷11** and **15÷22** version) and from 7÷10 bar (for **BLADE 15÷22 i** version with Inverter), is the ideal solution for the needs of small and medium sized companies as well as artisan businesses. The rotary vane technology ensures high quality compressed air, an extremely compact aircend and low noise levels. All combined with undisputed product reliability for any application.

With BLADE, maintenance costs will be significantly less than those of our competitors' traditional compressors. This is due to the reduced maintenance requirements and the competitive price of original spare parts.

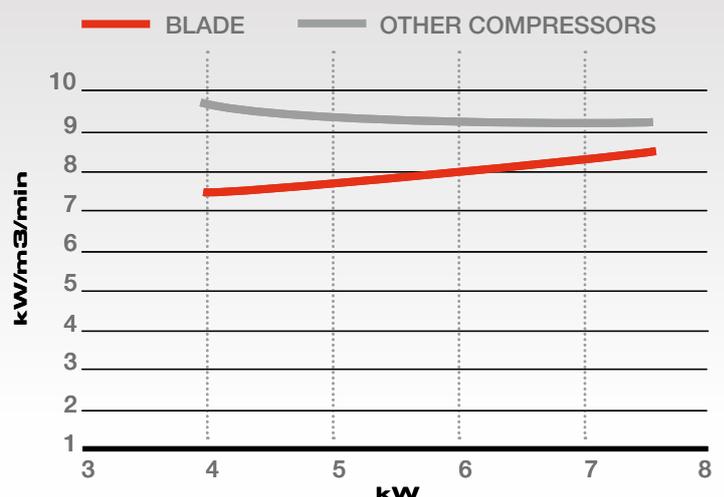
## Rotary Vane Technology. Choose the Best - Choose Mattei

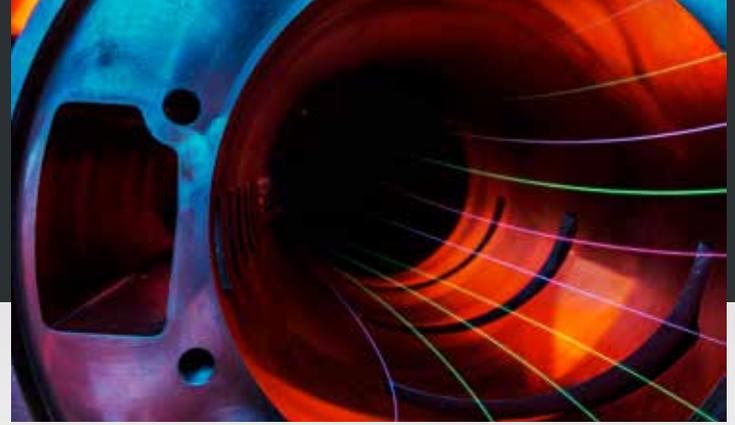
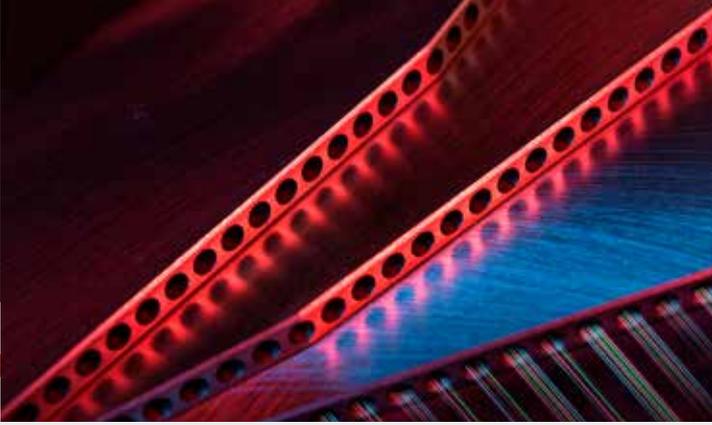
Maximum efficiency of the air compression process, excellent reliability and low maintenance costs are just some of the key benefits that Mattei rotary vane technology offers. The vane compressor is a positive displacement rotary compressor consisting of a stator cylinder in which a rotor is eccentrically mounted. The rotor has slots in which the specially profiled blades are free to slide, riding on a thin film of oil which provides lubrication and a perfect seal between the blades and the stator wall during rotation.



## Unrivalled efficiency

Rotary vane technology allows MATTEI BLADE compressors to be 20% more efficient compared to our competitors' compressors.





## Quietly Efficient and Robust

When compared to other compressors the BLADE's very low rotational speed, a distinctive feature of a Mattei compressor, means more air, greater reliability, reduced energy consumption and quiet operation.

## Maximum efficiency, minimum noise



- ▶ ROTARY VANE TECHNOLOGY
- ▶ MAXIMUM RELIABILITY
- ▶ EFFICIENT
- ▶ LOW MAINTENANCE COSTS
- ▶ QUIET
- ▶ COMPACT



### A USER-FRIENDLY CONTROLLER

MAESTRO<sup>XB</sup> is a programmable controller which regulates the operation of the compressor to suit the specific requirements of the air distribution system. It has different programming levels and special options for controlling and analysing the operation and faults.



### THE BLADES: A REAL ADVANTAGE

Mattei's precision engineered cast iron blades, guaranteed for 100,000 hours, ensure optimum performance and efficiency throughout the life of the compressor.



### RELIABILITY AND LONGEVITY

Mattei airends rotate slower than other types of compressors and their blades slide frictionless on a thin film of oil which ensures complete reliability. Mattei machines also have fewer moving parts than other compressors and as the rotor runs on bushes, it has a virtually unlimited lifespan.

# BLADE Series

## BLADE 1 | 2 | 3

With their technologically innovative design, **BLADE 1 ÷ 3** series compressors are a guarantee of quality, efficiency and reliability. Models are available with power from 1,5 to 3 kW, on bases or on 90 and 200 litre receivers. All BLADE series compressors have a pressure switch for Start-Stop operation.

### SAFETY AND PROTECTION

BLADE series compressors fully conform to all safety and protection regulations.

All compressors have:

- an auxiliary low tension electrical circuit for complete safety;
- a thermostat that automatically switches off the motor if the air-oil mixture inside the compressor overheats;
- a safety pressure exhaust valve that automatically discharges surplus compressed air into the atmosphere if pressure gets too high;
- Thermal protection that automatically stops the motor if too much current is absorbed.



BLADE



BLADE S 90 Litres



BLADE S 200 Litres

## Innovations and Advantages

### ADJUSTMENT

The BLADE 1,5 - 3 kW compressor series to achieve maximum energy saving is operated in the "Automatic" mode. During operation the compressor delivers air within a preset maximum/minimum pressure range. When reaching the maximum pressure the intake valve closes and the compressor stops. When the line pressure decreases and reaches the minimum set value the compressor starts again and delivers air instantly.

### 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. The electric motor is directly coupled to the air end, allowing great advantages in overall efficiency of the compressed air unit, meaning less kW per m<sup>3</sup>/min.





The BLADE model requires a receiver to be connected, of a minimum 90 litres for the BLADE 1 and BLADE 2 models and a minimum of 200 litres for the BLADE 3 model.

Model	Tension	Rotational speed	Receiver	Motor		Air delivery			Air intake volume of an equivalent piston compressor		Maximum pressure		Noise level	Dimensions	Weight
				kW	hp	l/min	m <sup>3</sup> /h	cfm	l/min	cfm	bar	psig			
	Volt/H/Ph	r.p.m.	L	kW	hp	l/min	m <sup>3</sup> /h	cfm	l/min	cfm	bar	psig	dB(A)	LxWxH (mm)	kg
<b>230/1</b>															
<b>BLADE 1</b>	230/50/1	1500	-	1,5	2	160	9,6	5,65	250	8,83	10	150	64	720x360x480	49
<b>BLADE S 1 90l</b>	230/50/1	1500	90	1,5	2	160	9,6	5,65	250	8,83	10	150	64	1000x450x950	76
<b>BLADE S 1 200l</b>	230/50/1	1500	200	1,5	2	160	9,6	5,65	250	8,83	10	150	64	1050x600x1160	121
<b>BLADE 2</b>	230/50/1	1500	-	2,2	3	240	14,4	8,48	360	12,71	10	150	64	720x360x480	55
<b>BLADE S 2 90l</b>	230/50/1	1500	90	2,2	3	240	14,4	8,48	360	12,71	10	150	64	1000x450x950	82
<b>BLADE S 2 200l</b>	230/50/1	1500	200	2,2	3	240	14,4	8,48	360	12,71	10	150	64	1050x600x1160	127
<b>400/3</b>															
<b>BLADE 1</b>	400/50/3	1500	-	1,5	2	160	9,6	5,65	250	8,83	10	150	64	720x360x480	50
<b>BLADE S 1 90l</b>	400/50/3	1500	90	1,5	2	160	9,6	5,65	250	8,83	10	150	64	1000x450x950	77
<b>BLADE S 1 200l</b>	400/50/3	1500	200	1,5	2	160	9,6	5,65	250	8,83	10	150	64	1050x600x1160	122
<b>BLADE 2</b>	400/50/3	1500	-	2,2	3	240	14,4	8,48	360	12,71	10	150	64	720x360x480	53
<b>BLADE S 2 90l</b>	400/50/3	1500	90	2,2	3	240	14,4	8,48	360	12,71	10	150	64	1000x450x950	80
<b>BLADE S 2 200l</b>	400/50/3	1500	200	2,2	3	240	14,4	8,48	360	12,71	10	150	64	1050x600x1160	125
<b>BLADE 3</b>	400/50/3	3000	-	3	4	320	19,2	11,3	450	15,89	10	150	70	720x360x480	51
<b>BLADE S 3 200l</b>	400/50/3	3000	200	3	4	320	19,2	11,3	450	15,89	10	150	70	1050x600x1160	123

# BLADE Series

## BLADE 4 | 5 | 7 | 11

The design and operation of **BLADE 4 ÷ 11** compressors ensures the correct operating temperature is quickly and effectively reached. This is important in order to extend the operating life by preventing condensation from forming in the system.

Mattei's design of the BLADE compressor makes preventive maintenance operations simple and quick. Motor to compressor transmission is achieved through dual high efficiency "V" belts, the tension of which is ensured by a sliding belt tensioner. This feature reduces belt wear to a minimum, extending its operating life and simplifying maintenance. Compressor maintenance is further assisted by specific service kits specifically designed to speed up the process.



**COMPLETE WITH  
RECEIVER IT TAKES  
UP ONLY**

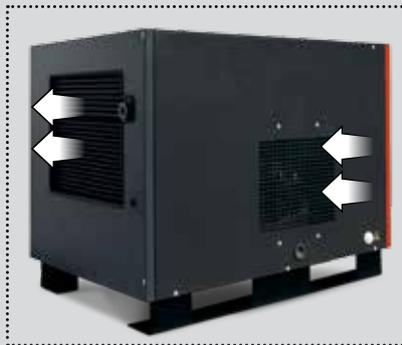


**1,00  
SQUARE  
METER**



### ENERGY SAVING

When the maximum pressure is reached, the compressor is placed "under vacuum" and decompressed to reduce the absorption of energy, and the intake valve closes. The number of stops and subsequent starts is therefore reduced, which helps increase the life span of the compressor and its electric motor.



### EFFICIENT COOLING

Two aluminium radiators efficiently cool both the oil and compressed air. Cooling is an important factor during the compressed air production process, as it helps to increase system efficiency and reliability.



### HIGH EFFICIENCY OIL SEPARATION

Mattei's very efficient and integrated multi stage oil/air separation system means exceptionally low lubricant consumption and a residual oil carryover of just 3 mg/m<sup>3</sup>. The large filter element and the quality of the materials used guarantee a long working lifespan.

# 4 | 5 | 7 | 11

## BLADE SE Packaged version with receiver and dryer

Extremely compact, simple and  
inexpensive to install.  
Ideal for clean and dry compressed air.



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

Model	8 bar 115 psig L		10 bar 150 psig H		13 bar 175 psig HH		Noise level dB(A)	Motor		Receiver l	Dimensions LxWxH (mm)	Weight kg
	m <sup>3</sup> /min	cfm	m <sup>3</sup> /min	cfm	m <sup>3</sup> /min	cfm		kW	hp			
BLADE 4	0,63	22	0,6	21	-	-	61	4	5,5	-	950x730x800	180
BLADE 5	0,902	32	0,825	29	0,733	26	62	5,5	7,5	-	950x730x800	185
BLADE 7	1,085	38	1,025	36	0,9	32	64	7,5	10	-	950x730x800	195
BLADE 11	1,7	60	1,52	54	1,42	50	67	11	15	-	950x730x800	260
BLADE S 4	0,63	22	0,6	21	-	-	61	4	5,5	270	1530x730x1340	250
BLADE S 5	0,902	32	0,825	29	0,733	26	62	5,5	7,5	270	1530x730x1340	260
BLADE S 7	1,085	38	1,025	36	0,9	32	64	7,5	10	270	1530x730x1340	265
BLADE S 11	1,7	60	1,52	54	1,42	50	67	11	15	270	1480x730x1340	330
BLADE SE 4	0,63	22	0,6	21	-	-	61	4	5,5	270	1530x730x1340	280
BLADE SE 5	0,902	32	0,825	29	0,733	26	62	5,5	7,5	270	1530x730x1340	285
BLADE SE 7	1,085	38	1,025	36	0,9	32	64	7,5	10	270	1530x730x1340	295
BLADE SE 11	1,7	60	1,52	54	1,42	50	67	11	15	270	1480x730x1340	360

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 8 bar - 9.5 bar for version 10 bar - 12.5 bar for version 13 bar



# BLADE Series

## BLADE / BLADE i | 15 | 18 | 22

The **BLADE** compressor range, with operating pressures **from 8 to 13 bar** and **from 7 to 10 bar (for BLADE i version)**, is the ideal solution for the needs of small and medium sized companies as well as artisan businesses.

The rotary vane technology ensures high quality compressed air, an extremely compact airend and low noise levels. All combined with undisputed product reliability for any application.

Available in the silenced **BLADE/BLADE i**, **BLADE Plus** (with dryer kit) and **BLADE R** (with heat recovery kit) versions, they feature automatic control of air flow at constant pressure and an aftercooler.



### REPLACING THE ELASTIC ELEMENT

BLADE 15 ÷ 22 has been designed in a way that makes it possible to replace the elastic element without having to dismantle the rotor-stator unit.



### ENERGY RECOVERY

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.



### PLUS VERSION: DRYER WITH ECOLOGICAL GAS

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.

- Efficient refrigerating power partialization
- Constant dewpoint
- Maestro<sup>XB</sup> control
- High efficiency



## 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.



## A user-friendly controller

Maestro<sup>XB</sup> is a programmable controller which regulates the operation of the compressor to suit the specific requirements of the air distribution system. It has different programming levels and special options for controlling and analysing the operation and faults.



## A high efficiency oil separation

The separation of the oil from air is carried out in several stages and allows an exceptionally low oil carryover. After the compression cycle the air-oil mixture reaches the separator tank, most of the lubricant is collected here due to the change in air speed and the cyclonic action as it enters the tank. The air with the remaining oil residue is then filtered in the coalescing separator.

The complete system ensures that the residual oil content is less than 3 mg/m<sup>3</sup> of air, the over-sized separator element and the quality of the materials used guarantee longer working hours.



# OPERATIONAL MODE

## BLADE 15 ÷ 22

The BLADE 15÷22 compressor series have state-of-the-art electronic control devices to automatically control the compressor operating states.

### “Continuous” mode

The compressor supplies air that falls within a pressure minimum and maximum. When the maximum pressure is reached, the compressor is placed “under vacuum” and decompressed to reduce the absorption of energy, and the intake valve closes. When the line pressure lowers to the minimum set, the compressor is “loaded” and instantly recovers delivery.

### “Automatic” mode

This allows the compressor to work continuously with the additional possibility of automatically stopping in the absence of required air.

### “Modulation” mode

A feature of the Mattei rotary compressors is that the airflow is adjusted and adapted to the network requests by the hydraulic control system that is integrated into the intake valve and done using a servo valve.

The compressor has a maximum pressure, set by the servo valve regulation system, to which air is no longer delivered. For pressures below the maximum, in a range of 0.3 bar, the compressor delivers a variable and continuous flow corresponding to the network request. For lower pressures, the compressor delivers maximum capacity.

## BLADE 15 ÷ 22 *i* with Inverter

### Mattei Inverter regulation system

The **BLADE *i*** version, fitted with an INVERTER, is currently the most flexible product in the MATTEI range of industrial compressors.



### OPERATION

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.

## BLADE

Model	8 bar 115 psig L		10 bar 150 psig H		13 bar 175 psig HH		Sound pressure level db(A)	Power		Length		Width		Height		Weight	
	m <sup>3</sup> /min	cfm	m <sup>3</sup> /min	cfm	m <sup>3</sup> /min	cfm		kW	hp	mm	inch	mm	inch	mm	inch	kg	lbs
<b>400 / 50 / 3</b>																	
<b>BLADE 15</b>	2,69	95	2,21	78	2,02	71	65	15	20	1440	56,7	770	30,3	1330	52,4	560	1232
<b>BLADE 18</b>	3,26	115	2,65	94	2,41	85	65	18,5	25	1440	56,7	770	30,3	1330	52,4	575	1265
<b>BLADE 22</b>	3,74	132	3,21	113	2,60	92	65	22	30	1440	56,7	770	30,3	1330	52,4	580	1276
<b>BLADE 15 R</b>	2,69	95	2,21	78	2,02	71	65	15	20	1470	57,9	770	30,3	1330	52,4	580	1276
<b>BLADE 18 R</b>	3,26	115	2,65	94	2,41	85	65	18,5	25	1470	57,9	770	30,3	1330	52,4	595	1309
<b>BLADE 22 R</b>	3,74	132	3,21	113	2,60	92	65	22	30	1470	57,9	770	30,3	1330	52,4	600	1320
<b>BLADE 15 PLUS</b>	2,69	95	2,21	78	2,02	71	65	15	20	1460	57,5	770	30,3	1330	52,4	620	1364
<b>BLADE 18 PLUS</b>	3,26	115	2,65	94	2,41	85	65	18,5	25	1460	57,5	770	30,3	1330	52,4	635	1397
<b>BLADE 22 PLUS</b>	3,74	132	3,21	113	2,60	92	65	22	30	1460	57,5	770	30,3	1330	52,4	640	1408
<b>BLADE 15 R PLUS</b>	2,69	95	2,21	78	2,02	71	65	15	20	1470	57,9	770	30,3	1330	52,4	640	1408
<b>BLADE 18 R PLUS</b>	3,26	115	2,65	94	2,41	85	65	18,5	25	1470	57,9	770	30,3	1330	52,4	655	1441
<b>BLADE 22 R PLUS</b>	3,74	132	3,21	113	2,60	92	65	22	30	1470	57,9	770	30,3	1330	52,4	660	1452

F.A.D. in accordance with ISO 1217, annex "C" | Sound pressure level according to ISO 2151, tolerance  $\pm$  3dB(A) | Working pressure: 7,5 bar for version 8 bar - 9,5 bar for version 10 bar - 12,5 bar for version 13 bar

## BLADE i

Model	7 ÷ 10 bar		Sound pressure level db(A)	Power		Length		Width		Height		Weight	
	m <sup>3</sup> /min	cfm		kW	hp	mm	inch	mm	inch	mm	inch	kg	lbs
<b>400 - 460 / 50 - 60 / 3</b>													
<b>BLADE 15 i</b>	1,68 ÷ 2,65	59 ÷ 94	66	15	20	1440	56,7	770	30,3	1330	52,4	575	1265
<b>BLADE 18 i</b>	2,01 ÷ 3,18	71 ÷ 112	66	18,5	25	1440	56,7	770	30,3	1330	52,4	590	1298
<b>BLADE 22 i</b>	2,27 ÷ 3,59	80 ÷ 127	66	22	30	1440	56,7	770	30,3	1330	52,4	600	1320
<b>BLADE 15 i R</b>	1,68 ÷ 2,65	59 ÷ 94	66	15	20	1470	57,9	770	30,3	1330	52,4	595	1309
<b>BLADE 18 i R</b>	2,01 ÷ 3,18	71 ÷ 112	66	18,5	25	1470	57,9	770	30,3	1330	52,4	610	1342
<b>BLADE 22 i R</b>	2,27 ÷ 3,59	80 ÷ 127	66	22	30	1470	57,9	770	30,3	1330	52,4	620	1364
<b>BLADE 15 i PLUS</b>	1,68 ÷ 2,65	59 ÷ 94	66	15	20	1460	57,5	770	30,3	1330	52,4	635	1397
<b>BLADE 18 i PLUS</b>	2,01 ÷ 3,18	71 ÷ 112	66	18,5	25	1460	57,5	770	30,3	1330	52,4	650	1430
<b>BLADE 22 i PLUS</b>	2,27 ÷ 3,59	80 ÷ 127	66	22	30	1460	57,5	770	30,3	1330	52,4	660	1452
<b>BLADE 15 i R PLUS</b>	1,68 ÷ 2,65	59 ÷ 94	66	15	20	1470	57,9	770	30,3	1330	52,4	655	1441
<b>BLADE 18 i R PLUS</b>	2,01 ÷ 3,18	71 ÷ 112	66	18,5	25	1470	57,9	770	30,3	1330	52,4	670	1474
<b>BLADE 22 i R PLUS</b>	2,27 ÷ 3,59	80 ÷ 127	66	22	30	1470	57,9	770	30,3	1330	52,4	680	1496

F.A.D. in accordance with ISO 1217 annex "E" | Sound pressure level at 1500 rpm



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