

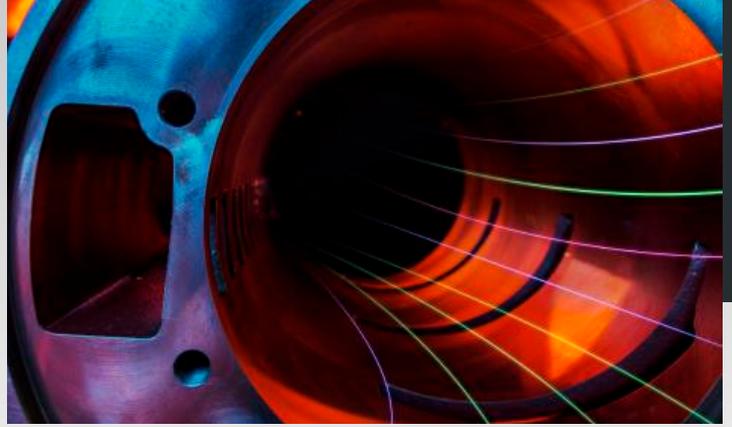


## DIRECT-DRIVE BLADE

BRINGING YOU THE FUTURE TODAY



DIRECT-DRIVE BLADE 15 | 18 | 22



## Mattei: over 90 years of research and reliability

Ing. Enea Mattei is a privately held 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 programs. Mattei's vision and interpretation of industry's changing needs, has consistently created innovative and technologically advanced products.



## 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.

## Direct-Drive BLADE Series

- ▶ **ROTARY VANE TECHNOLOGY**
- ▶ **MAXIMUM RELIABILITY**
- ▶ **ENERGY EFFICIENT**
- ▶ **LOW MAINTENANCE COSTS**
- ▶ **QUIET**
- ▶ **COMPACT**
- ▶ **OPERATING PRESSURES FROM 116 to 145 PSI**



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.

## 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.

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

## Direct-Drive BLADE Series

The Direct-Drive BLADE compressor range delivers industrial grade performance, and is the ideal solution for all compressed air applications.

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.

Direct-Drive BLADE Series features quiet operation and comes complete with:

- ▶ **AIR-COOLED AFTERCOOLER**
- ▶ **MOISTURE SEPARATOR AND ZERO LOSS CONDENSATE DRAIN (SHIPPED LOOSE)**
- ▶ **PHASE REVERSAL PROTECTION**
- ▶ **NETWORK READY**
- ▶ **WEEKLY AND TIME BASED START/STOP PROGRAM CAPABLE WITH REAL-TIME CLOCK**





## Direct coupling

The electric motor and the compressor are coupled directly by means of a flexible coupling and turn at only 1,800 rpm. Direct coupling improves energy efficiency by eliminating the energy losses caused by gears or V belts.



## A user-friendly controller

Maestro<sup>XB</sup> is a programmable controller that 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 analyzing operation and faults.

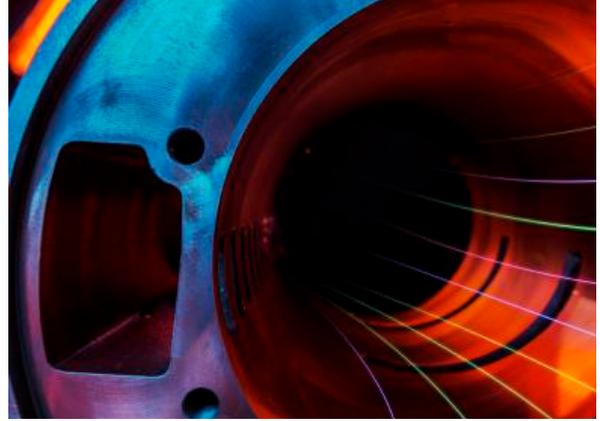


## High efficiency oil separation

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 1 ppm w/w. The over-sized separator element and the quality of the materials used guarantee longer working hours.





## OPERATIONAL MODE

The Direct-Drive BLADE Series features state-of-the-art electronic control devices to automatically control the compressor.

It begins with our exclusive hydraulically controlled inlet valve, which unlike competitive pneumatic control circuits, ensures consistent and reliable pressure regulation over time.

In addition, Direct-Drive BLADE Series compressors offer three modes of operation to best adapt operation and energy efficiency to meet the needs of your unique air demands.

### “Continuous” mode

The compressor automatically loads and unloads the compression cycle to adapt to your unique air demands. The process loads and unloads the compressor based on a pre-set minimum and maximum pressure range. When the maximum pressure is reached, the compressor closes the intake valve and is placed “under vacuum” and decompressed to reduce the absorption of energy. When the line pressure lowers to the minimum set point, the compressor is “loaded” and instantly delivers full capacity.

### “Automatic” mode

Automatic mode adds a countdown timer which engages once maximum pressure is achieved. It allows the motor to automatically turn off after a period of time if there is no air demand. Once pressure lowers to the minimum set point, the compressor re-starts and instantly delivers full capacity.

### “Modulation” mode

Modulation mode is a unique feature of Mattei rotary compressors and automatically controls incoming air volume to more precisely match inflow-to-outflow in allowing tighter pressure regulation to the network. A hydraulic control system is integrated into the intake valve and is controlled 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, it maintains pressure within 4 psi of the servo set point as the compressor delivers a variable and continuous flow of air corresponding to the network request. For lower pressures, the compressor delivers maximum capacity.



### REPLACING THE COUPLING ELEMENT

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



### OPTIONAL 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.



### OPTIONAL HEATER KIT

Designed to protect the compressor in installations subject to low ambient conditions down to +14°F. This option features an adjustable range thermostat that automatically turns on and off as required to keep the internal temperatures of the machine above freezing. The heat transmission inside the canopy is via natural air convection and radiation of the metal masses. Both physical phenomena determine a heat distribution from the bottom up, ensuring that all devices in the oil circuit (pipes, oil filter, oil cooler and expansion valve) are properly heated.



## Service

**Mattei** is present with its sales and service network in more than 40 countries in Europe, America, Africa, the Middle East, Asia and Oceania.

When you purchase a Mattei compressor you enjoy highly qualified **after sales service** all over the world that can respond quickly to any request for help. Technicians and engineers are at your complete disposal for advice, plant analysis, operational safety evaluation and to identify potential savings.

## Mattei Original Spare Parts

**Mattei Original Spare Parts and Mattei lubricants** are made to very high design standards and conform to exact technical specifications. Only Genuine Mattei original spare parts and lubricants allow you to be sure of maintaining, over time, the same levels of performance, reliability and safety of your Mattei product.

- ▶ Mattei Original Spare Parts are crucial to ensure the efficiency of your compressed air equipment
- ▶ Parts are always available in stock
- ▶ Parts are quality tested and conform to manufacturer's specifications
- ▶ Parts are designed for Mattei's recommended maintenance intervals





 Model									
	116 psig LX	145 psig HX	Sound Pressure level	Power	Energy	Length	Width	Height	Weight
	cfm	cfm	db(A)	hp	voltage	inch	inch	inch	lbs
<b>BLADE 15</b>	104	86	67	20	208,230/ 460,575/ 3ph/60hz	56.7	30.3	52.4	1,235
<b>BLADE 18</b>	112	92	67	25		56.7	30.3	52.4	1,268
<b>BLADE 22</b>	126	111	67	30		56.7	30.3	52.4	1,279

\*F.A.D in accordance with ISO 1217, annex "C" Sound pressure level according to ISO 2151, tolerance  $\pm 3\text{dB(A)}$

\*Working pressure: 108 psig for version 116 psig - 138 psig for version 145 psig



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