



ELECTRIC VEHICLE COMPRESSORS

Full electric and hybrid bus
and truck applications



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THE PRESSURE IS ON

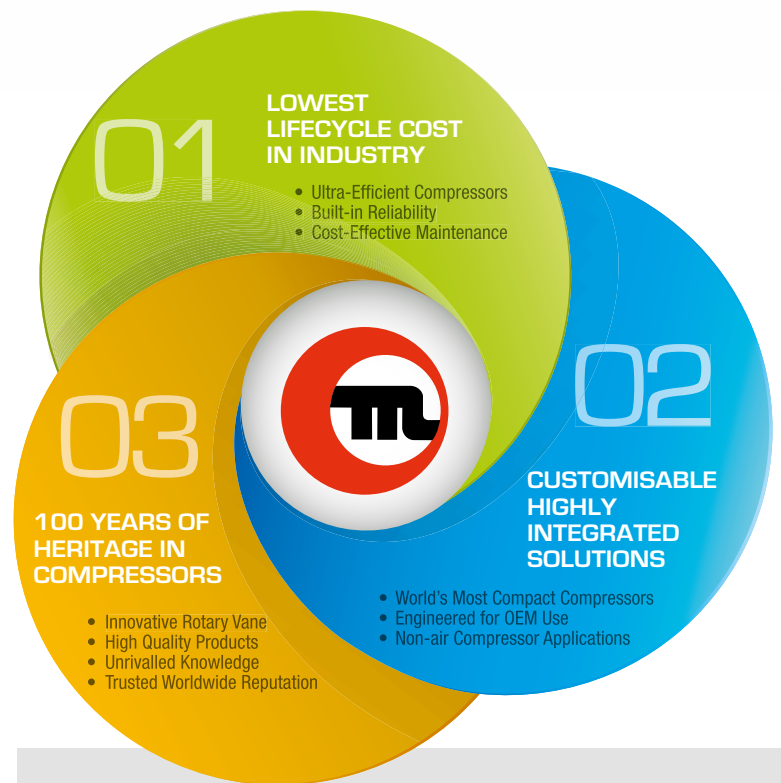
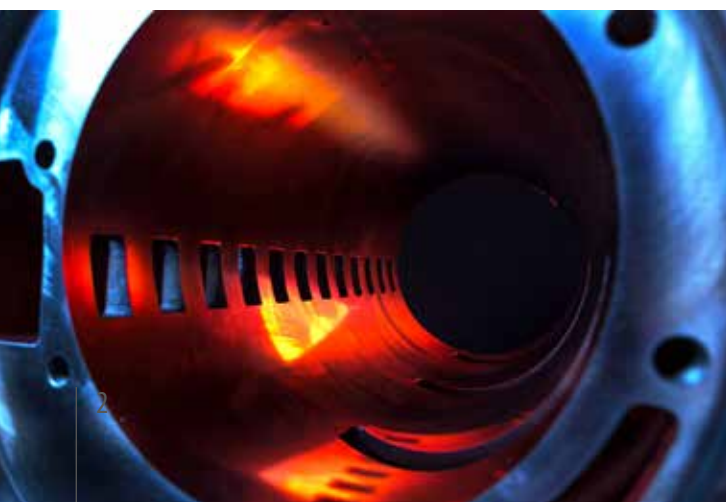
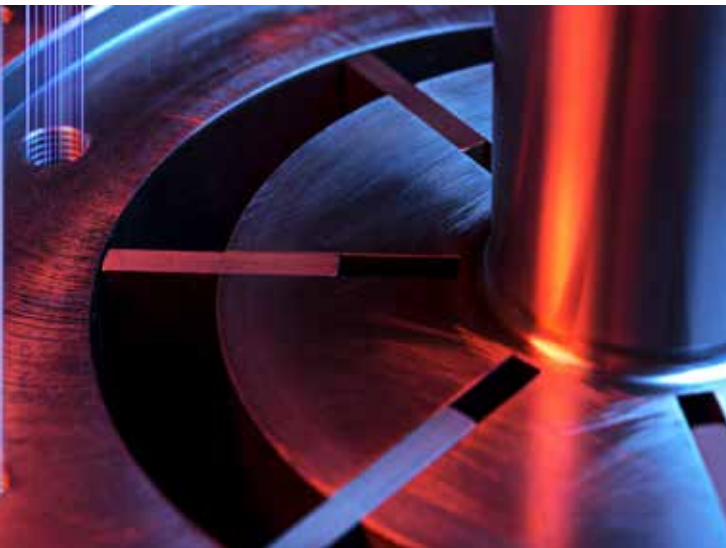
In 1958, Ing. **Enea Mattei SpA** leveraged its 39 years of reciprocating compressor manufacturing expertise to revolutionise how air was compressed.

Over half-a-century later, **Mattei** continues to turn the pressure on in air compressor applications around the globe.

From bare compressors to packaged systems we leverage the advantages found only in our proprietary rotary vane technology to boost your bottom line. Turn to **Mattei** for superior reliability, durability, efficiency, and ease of maintenance, all in a compact design ideal for localised packaging and many air compressor applications.

Quality as an integral part of all company functions and constant improvement to all production processes guarantees the maximum level of reliability and satisfaction. This, in brief, is the value and the meaning of **Mattei's** operational philosophy. A way of approaching the market and customers that makes **Mattei** an absolute point of reference in the compressed air sector.

Since 1994, **Mattei** has been operating with a Quality System certified by the DNV Institute under UNI EN ISO 9001 regulations.



MATTEI
VALUE
PROPOSITION



PERFECTLY ENGINEERED for electric vehicles

Mattei's new range of small compressors is designed to satisfy compressed air demand in those applications where the operating characteristics and reliability needs are higher than those available from other compressors on the market.

DURABLE AND QUIET

The electric vehicle compressors are robust, resistant to corrosion and are particularly compact and ideal for installation in small spaces.

The vane technology ensures safe and quiet operation even without a noise reducing outer canopy.



PATENTED ANTI - CONDENSATION SYSTEM

A unique and innovative anti-condensation system that prevents oil emulsification into compressor or oil chamber (available on some models)

LOW NOISE LEVEL

Up to half noise level than piston compressors

SIZE AND WEIGHT

Extremely small and compact compressor air system

LOW MAINTENANCE COST

Maintenance designed for the lowest lifecycle cost

Customizable maintenance intervals

ITALIAN ENGINEERING AND DESIGN

Full package capability to vehicle standards including electric motor, filters, mounting frame and air storage

Three stage air/oil separator for high quality compressed air

Direct drive

Stop / Start or continuous operation

Pure rotary motion delivers pulse free air

50 years of experience in transport applications

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ELECTRIC VEHICLE COMPRESSORS

Mattei air ends are ideally suited for all electric vehicle applications because of the pure smooth rotary vane compression principle. Mattei Rotary vane technology delivers high quality clean air, compact size and low noise level coupled with unrivalled reliability in the most demanding of environments.

Mattei design integration allows the compressor to be powered by any type of power system. One or more compressors of varying sizes and pressures are selected to suit the vehicles air requirements.

The compressors are compact and easy to install, offering reliable operation and constant performance throughout time.

MAIN FEATURES AND RANGE

Compression technology	Rotary Vane
Output	0% to 100%
Flow	60 - 800 l/min
Pressure	from 6 to 13 bar
Ambient Temp	- 35°C + 50°C
Sound pressure level	54 - 70 dBA
Coupling	Direct drive
Drive	Hydraulic drive
	DC Motor
	Asynchronous motors
	Permanent magnet motors
	Brushless
Voltage	12V - 820V
Frequency	33 - 100 Hz
Relative humidity	Up to 98%
Oil cooling	Air
	Water
Extra	High efficiency intake filters
	Dryers
	Soundproofing
	Anti vibration dampers
	Custom inverters
	Anticondensation valve



XT 65 Compressor



RVM Series

COMPRESSOR RUGGEDNESS, RELIABILITY AND PERFORMANCE OVER TIME

As the **Mattei** vane compressor is a self-adjusting, self balancing machine floating on two bush bearings and driven by a flexible coupling, it is not affected by external vibration, temperature and environmental conditions.

In electric vehicle applications there are currently Mattei compressors with over 35.000 hours of operation with the original factory fitted vanes and bushings.

This makes the compressor ideal for any onboard application. Also, there is no degradation of performance over the working life of the compressor.



MATTEI AIR COMPRESSORS' BENEFITS

- No condensation into lubricant
- Bespoke designs to suit application
- Fully integrated air ends, extremely light
- Whisper quiet operation, without vibrations
- 100% duty 24/7
- No fall off in air quality
- Direct drive
- External pressure adjustment
- Turn-key design, manufacture and project management
- Stop / Start or continuous operation
- Available with variable speed drive
- 50 years of experience in transport applications
- Compact and light weight package
- Cooler options – integrated radiator, remoted exchanger
- Water cooled
- Remote air filtering option
- Choice of speeds
- Full package capability to vehicle standards including electric motor, filters, mounting frame and air storage

RANGE

Rated power	1,1 to 7,5 kW
F.A.D.	60 to 850 l/min
Working pressures	from 6 to 13 bar
Voltage	12V - 820V
Frequency	33 - 100Hz
Extra	Custom Inverters

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MATTEI ELECTRIC VEHICLE APPLICATIONS

Full electric buses/truck
From 6 to 18 meters buses

Last mile electric urban delivery vehicles

Hybrid buses

Hybrid long haul trucks

Trolley buses

MATTEI'S EXCEPTIONAL PERFORMANCE IS THE SIMPLICITY OF THE ROTARY VANE PRINCIPLE:

- Quiet and vibration free
- Pure rotary motion delivers pulse free air
- Three stage oil separation for high quality compressed air
- Only one rotating part ensures long reliable life
- Intake modulation (servo control) only compress to the air demand
- Direct drive means NO BELTS AND PULLEYS

SAFETY / RELIABILITY

The integrated design, direct coupling, low rotational speed and the limited number of moving parts ensure Mattei's rotary vane air compressors remain safer, more durable and more reliable over time.

PRINCIPAL COMPONENTS

Rotor, blades, stator, end covers are manufactured from high quality cast iron. This means:

- No replacement required
- Totally reliable operation
- Long air end life
- Improved efficiency



VANE vs PISTONS and SCREW COMPARISON

SUMMARY OF CHARACTERISTICS	ROTARY VANE	PISTON	SCREW
Energy efficiency	HIGH	VERY LOW	LOW
Blow-hole or clearance volume	NO	YES	YES
Bearings	NO	YES	YES
Overhaul	NO	YES	YES
Performance degradation	NO	YES	YES
Compressor ruggedness	EXTREME	POOR	POOR
Pulse free air	YES	NO	YES
Noise level	LOW	HIGH	HIGH
Product lifetime	LONG	VERY SHORT	SHORT

AUTOMOTIVE PROJECT and MATTEI XT65

Mattei is proud to have taken part in the European Union Convenient project (**Complete Vehicle Energy-saving Technologies**) during which the new XT65 compressor was developed. Covered by four separate international patents, the XT65 has been specifically designed to increase reliability and energy efficiency whilst lowering maintenance costs, noise, weight, space envelope and cost. The **Convenient Consortium**, comprises three major EU truck manufacturers, ten Tier 1 and Tier 2 suppliers, and a network of nine research centers and Universities, representing the European excellence in the field of long distance transportation.

The **Convenient project** targets a 30% reduction of fuel consumption in vehicles for long-distance freight transport by developing an innovative heavy-duty truck prototype featuring a suite of innovative energy-saving technologies, including the electrified Mattei XT65 compressor for the brake system actuation. The prototype Trucks were presented in April 2016.

The **Mattei XT65** air compressor resulted in a reduction of 50% of energy consumed compared to a standard piston type Truck air compressor, resulting in significant fuel saving.

REFERENCES





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UNI EN ISO 9001:2015

