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FIMO

ENEAgreen 4.0
Wind of change

ENEAgreen 4.0 is the first cooling system for presses oil in ceramic industry to use the variable ventilation technology, designed and manufactured by FIMO and distributed by INTER SER in several extra-European countries. ***ENEAgreen 4.0 improves production process, increases plant efficiency and lowers costs.***

The new ENEAgreen cooling system is the evolution of the ENEAplus project and the jewel in FIMO's crown. We've been designing and building oil cooling machinery for forty years. The system has been completely redesigned for greater performance and energy saving, making it durable, consistent, simple, compact, quiet and clean. It's true that perfection doesn't exist but we're getting closer. Much closer.

ECONOMIC
ENEAgreen is the cooling system with the highest energy saving currently available on the market.

PERFORMING
The new design and the ventilation, managed by PLC, allow superior performances and usage in harsh environments even at temperatures above 45°C!

CONSTANT
Thanks to variable ventilation, the press oil temperature is kept low and constant. It reduces consumption of hydraulic components and seals.

SILENT
The new variable ventilation system ensures an enormous noise reduction.

SELF-CLEANING
The PLC controls the automatic inversion of electric fans, ensuring cleanliness and maintaining performances over time.

RELIABLE
ENEAgreen has been designed to last over time, running 24 hours.

INTEGRATED
ENEAgreen 4.0 features the DELTA ENERGY SYSTEM, for remote controlling and monitoring, interconnected to company system and also to your smartphone!

EFFICIENT
Variable ventilation fans managed by PLC and, in version 4.0, permanent magnet synchronous motors IE5 READY: the all-highest performance of tomorrow is already here!

HIGHER PERFORMANCE
The new design of the cooling fins, the revamped structure of the oil circuit, the updated size of the cores and the new VARIABLE VENTILATION electric fans all help provide superior performance.

A MORE CONSISTENT TEMPERATURE
Thanks to the VARIABLE VENTILATION system, the oil temperature is kept constant, which allows your machine to work at its optimum capacity.

HIGHER ENERGY SAVINGS
Saving energy and protecting the environment have always been our guidelines. With ENEAgreen, we are the first company to have introduced the VARIABLE VENTILATION system.

QUIETER
The system is quieter thanks to the new VARIABLE VENTILATION electric fans. The speed of the cooling fans is controlled by the oil temperature.

CLEANER
ENEAgreen is a self-cleaning system! The designed inversion of its electric fans means the core is constantly and automatically cleaned. This keeps the same consistent performance over time. It also guarantees the highest efficiency in any environment.

A LONGER-LASTING SYSTEM
The shape and interior of ENEAgreen has been given a completely revamped design. Pressure drops are a thing of the past, thereby maintaining a structure that lasts longer over time.

EASIER AND MORE COMPACT
The new size of ENEAgreen brings immediate benefits in terms of transport, positioning and connection. The ENEAgreen system is completely factory assembled. It's compact, easy to install and ready to use right away.

THE SMART NEXT-GEN SOLUTION FOR GREATER EFFICIENCY

FIMO ENEAgreen systems offer an exceptional level of sustainability, minimising the total cost of ownership. You can choose from two exclusive series of oil cooling systems, so you'll undoubtedly find the right solution for your needs with maximum added value. Designed to work even in the toughest environments, these cooling systems guarantee your production will be efficient.

NEW PEAKS IN SUSTAINABILITY
The ENEAgreen family lets you achieve sustainable productivity through lower running costs and maximum output. The high-efficiency motors controlled by an inverter, along with the high-efficiency radiator, minimise running costs.

COMPARISON-PROVEN PERFORMANCE
The design of our equipment guarantees exceptional performance thanks to the combination of high-efficiency motors with newly designed high-volume rotors and a revamped high-heat exchange FIMO radiator element, which allows for significant energy savings. Internal pressure drops from the outlet entrance are optimised. The efficiency of the smart controls of the cooling system and FIMO algorithms allows for further energy savings.

NEW MILESTONES IN RELIABILITY
The reliability of the ENEAgreen range starts with the cleaner radiant beam, the lower oil pressure when leaving the element, the oversized radiator and a built-in patented variable-speed motorised fan. The screw oil pump is designed for the most demanding uses under harsh temperatures. All the electrical panels are protected for installation outdoors and prevent the conduction of electricity, which increases the life of the electrical components.

ENEAgreen DEFINITIVE ENERGY SAVING

Exclusive built-in variable-speed drive technology for an average energy saving of 30%.

- Flexible adjustment of the oil flow rate from 200 to 800 l/min.
- Automatic adjustment of the variable ventilation from 10 to 60 Hz.
- The smart control unit with high-definition display adjusts the cooling system to minimise the energy required.

Over 80% of the life cycle cost of an air/oil cooling system is taken up by the energy that it consumes. But that's not all, oil cooling can account for a major part of an installation's total electricity costs. To reduce these costs, FIMO was the first company to develop variable ventilation (VV) drive technology in the oil cooling sector for presses in the ceramics industry.
VV technology guarantees a significant energy saving, protecting the environment for future generations. Thanks to continuous investment in this sector, FIMO offers a complete range of variable ventilation (VV) cooling systems currently available on the market.

WHY CHOOSE ENEAgreen VARIABLE-SPEED DRIVE TECHNOLOGY?

An average energy saving of 30% during fluctuating cooling requirements with a wide adjustment range.
- The control unit controls the speed of the motor and the fans with a high-efficiency inverter.
- Problems with current surges upon start-up of the fans are a thing of the past.
- System leaks are minimised thanks to the lower pressure
- Compliant with EMC Directives (89/336/EE2).

AN AVERAGE ENERGY SAVING OF 30%

ENEAgreen Variable Ventilation technology closely monitors oil cooling requirements automatically adjusting the speeds of the motor and cooling fans.
This process leads to an average energy saving of 30%.

The relative cost to the life cycle of a cooling system can be reduced, on average, by 22%.

The reduced system pressure of ENEAgreen installations also minimises wasted energy from the oil flow.

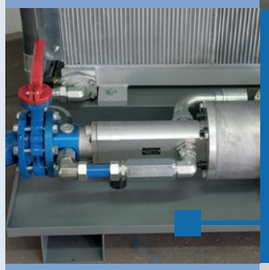
TOTAL RUNNING COSTS OF COOLING SYSTEMS

- Investment
- Maintenance
- Energy
- Energy saving With ENEAgreen

THE HIGH-EFFICIENCY RADIANT BEAM IN RUSTPROOF ALUMINIUM ALLOY CASING IS DESIGNED AND MADE EXCLUSIVELY FOR ENEAGREEN PERFORMANCE.

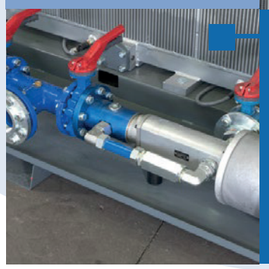
THE VARIABLE VENTILATION HIGH-PRESSURE ELECTRIC SUCTION FANS START UP AUTOMATICALLY AND RUN SILENTLY.

FULLY AUTOMATIC BYPASS VALVE FOR LOW TEMPERATURES.



DUAL CAPACITY ELECTRIC SCREW PUMP WITH THREE SPECIAL STEEL ROTORS AND VITON SEALS.

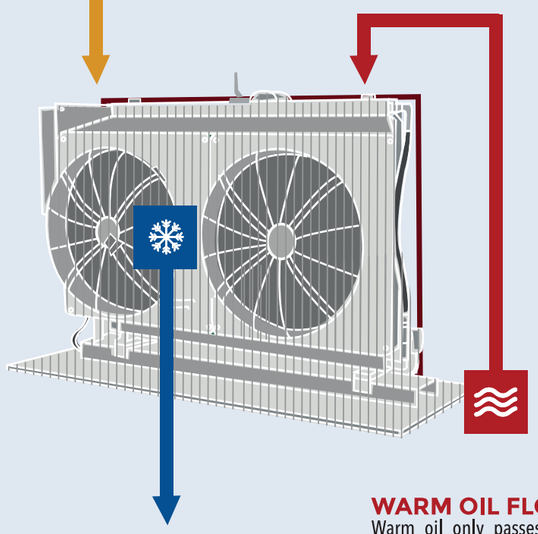
CONTROL PANEL WITH PLC FOR SETTING AND MONITORING OIL TEMPERATURE DATA.



MECHANICAL SAFETY AND PRESSURE SWITCH FOR ELECTRICAL SAFETY.

START-UP

ENEAgreen receives a start-up command from the press or its control panel.
It will now do everything it needs to do simply and automatically to keep the temperature of your oil at the required level.



COOLING

The innovative VARIABLE VENTILATION automatically regulates the cooling power and, when the ambient temperature becomes particularly harsh up to 48 °C, the motor pumps automatically double their flow rate.

WARM OIL FLOW

Warm oil only passes through ENEAgreen when the temperature reaches 35 °C. Thanks to this device, ENEAgreen is also the top choice for cold environments, keeping the circuit pressure low even when temperatures get close to zero.

With its completely redesigned size, the ENEA GREEN cooling system keeps the temperature of the lubricant steady. It's much quieter and saves you energy and therefore money. It's easier to transport, fitted with a self-cleaning system and delivered as one pre-assembled ready-to-use unit. It's true that perfection doesn't exist but once again we've gone very close.

ENEAgreen 4.0
A STEP FORWARD IN MONITORING AND CONTROL

The next-gen DELTA ENERGY operating system (optional) offers a wide range of control and monitoring functions that increase the efficiency and reliability of the cooling system.
The technical features of ENEAgreen 4.0 mean it can be included on lists of "digitised" goods and can be connected to the company production management system.

EASE OF USE

- 7" high-definition colour touchscreen.
- Switch the machine on or off.
- Change the operating parameters.
- Monitor the main parameters and operating status.

IT CAN DISPLAY:
- Input oil pressure
- Output oil pressure
- Input oil temperature
- Output oil temperature

ONLINE & MOBILE MONITORING

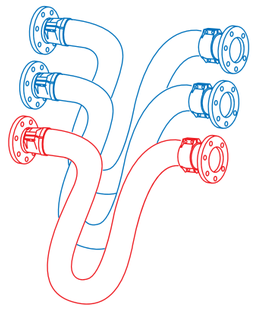
Online monitoring of the cooling system, including information on the operating status, all pressure and temperature values, alarm displays, while also letting you check and change operating parameters.

THE APP WORKS ON COMPUTERS OR MOBILE PLATFORMS AT THE SAME TIME!

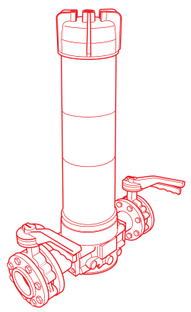
NEW VERSION 7.0

ACCESSORIES FOR YOUR COOLING SYSTEM

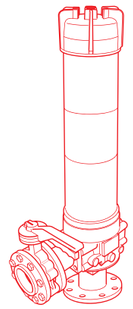
KIT 3 FITTED FLEXIBLE HOSES 3"
MEX0514



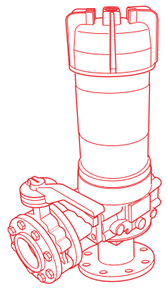
INPUT COMPLETE FILTER
90 MICRON
ENEAgreen 1VLWP-2VLWP - **MEX0510**



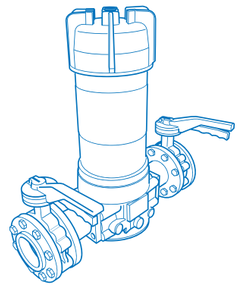
INPUT COMPLETE FILTER
90 MICRON
ENEAgreen 1VLHP - **MEX0509**



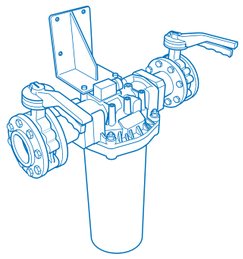
INPUT COMPLETE FILTER
90 MICRON
ENEAgreen 2VLHP - **MEX0511**



OUTPUT COMPLETE FILTER
25 MICRON
ENEAgreen 2VLHP - 2VLWP - **MEX0512**

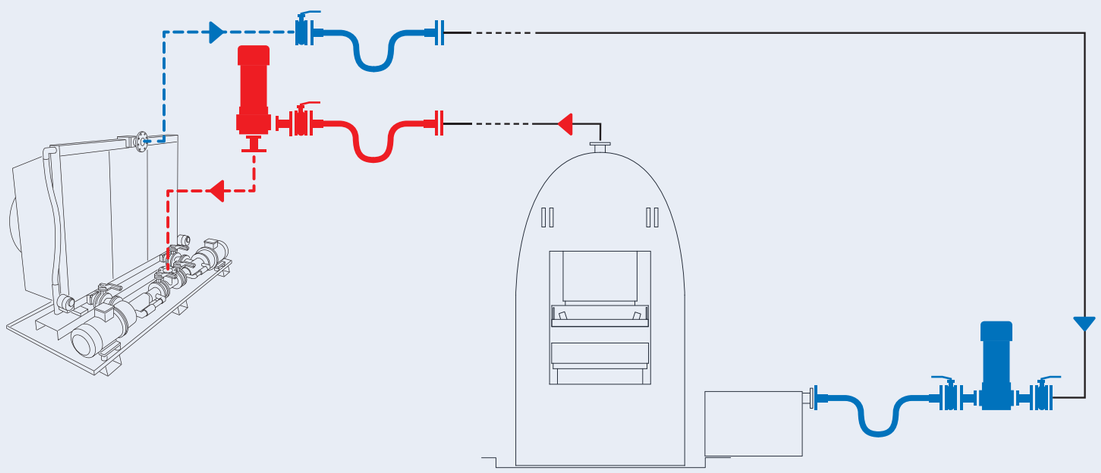


OUTPUT COMPLETE FILTER
60 MICRON
ENEAgreen 1VLHP - 1VLWP - **MEX0508**



The moveable filtration units are perfect for filling and topping up hydraulic and lubrication fluids. Flow rate 33 l/min. Max pressure 5 bars. Single-phase/three-phase electric motors.

Filters are essential components for smooth operation of the cooling system and for protecting the press components against impure particles.



ENEAGREEN TECHNICAL SPECIFICATIONS

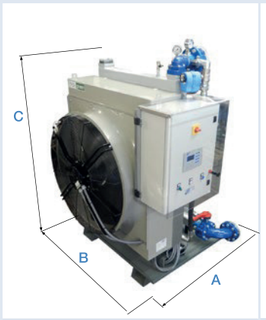
MODEL		1VL HP	1VL WP	2VL HP	2VL WP	3VL HP	3VL WP
Capacity (1)	kCal/h	150.000	150.000	310.000	310.000	465.000	465.000
Electric fans	n.	1	1	2	2	3	3
Max installed power	Kw	10,00	2,58	20,16	5,16	22,74	7,74
Average absorbed power	Kw	7,33	1,31	14,66	2,62	15,97	3,93
Oil pump flow rate	l/min	200-400	n.d.	200-800	n.d.	200-800	n.d.
Motor protection	IP	55	55	55	55	55	55
Operating pressure	bar	2-8	2-8	2-8	2-8	2-8	2-8
Static testing pressure	bar	30	30	30	30	30	30
Oil content in the machine	l	40	40	80	80	120	120
Auxiliary control voltage	Vac	24	24	24	24	24	24
Empty machine weigh	kg	500	400	1000	730	1400	1150
Connections	DN80-3"	DN80-3"	DN80-3"	DN80-3"	DN80-3"	DN80-3"	DN80-3"

PIPE DIAMETER

		1VL HP	1VL WP	2VL HP	2VL WP	3VL HP	3VL WP
Pipes > 200mt		2.1/2"	2.1/2"	3"	3"	3"	3"
Pipes 200-300 mt		3"	3"	3"	3"	3"	3"
Pipes > 300 mt		3"	3"	4"	4"	4"	4"

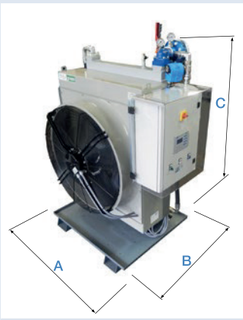
Operating voltages VAC 400/50 - 380/60 - 440/60 - 460
(1) Refer to Amb T 30°C and Oil T 45°C for the max oil flow rate
(2) Refer to the annual average in Italy

SIZES AND FITTINGS



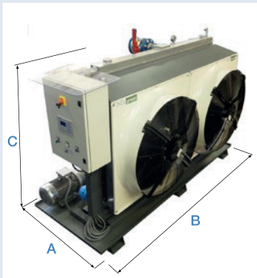
Model	1VL - HP
A (mm)	1.400
B (mm)	1.650
C (mm)	2.100

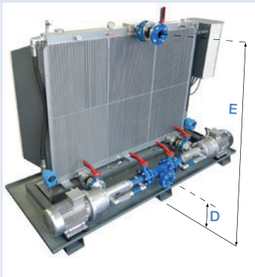
Hydraulic connection	
D (mm) entrance	260
E (mm) exit	1.900



Model	1VL - WP
A (mm)	1.400
B (mm)	1.350
C (mm)	2.100

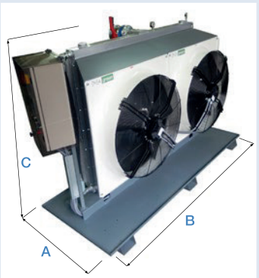
Hydraulic connection	
D (mm) entrance	270
E (mm) exit	1.900

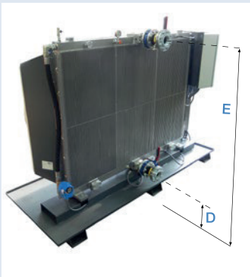




Model	2VL - HP
A (mm)	1.400
B (mm)	2.900
C (mm)	2.000

Hydraulic connection	
D (mm) entrance	260
E (mm) exit	1.750





Model	2VL - WP
A (mm)	1.200
B (mm)	3.000
C (mm)	2.000

Hydraulic connection	
D (mm) entrance	270
E (mm) exit	1.780