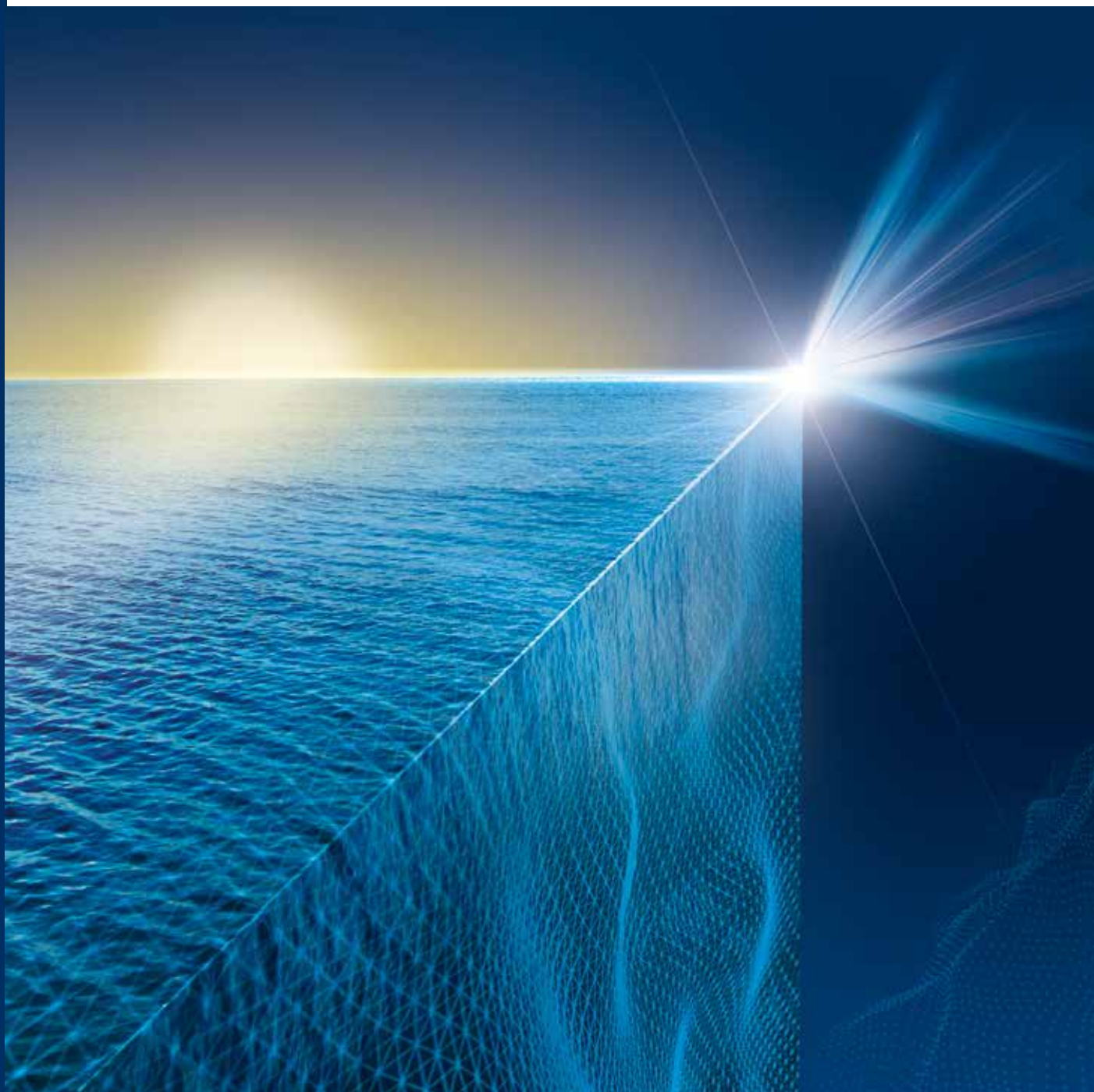


# tecnocut e-pump

hybrid intensifier



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CMS SpA manufactures machinery and systems for the machining of composite materials, carbon fibre, aluminium, light alloys, plastic, glass, stone and metals. It was established in 1969 by Mr Pietro Aceti with the aim of offering customized and state-of-the-art solutions, based on the in-depth understanding of the customer's production needs. Significant technological innovations, originating from substantial investments in research and development and take-overs of premium companies, have enabled constant growth in the various sectors of reference.

# tecnocut e-pump

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# TECNOCUT E-PUMP

# CHARTING NEW HORIZONS

-95%

■ 95% HYDRAULIC COMPONENTS

-37%

■ 37% ELECTRICITY CONSUMPTION

+31%

⊕ 31% EFFICIENCY

+35%

⊕ 35% HP SEAL LIFE

-91%

■ 91% HYDRAULIC OIL

-41%

■ 41% WORK FREQUENCY



# TECNOCUT E-PUMP

## HYBRID INTENSIFIER



LEARN MORE

**TECNOCUT E-PUMP** is the latest innovation in the range of CMS intensifiers created as a continuation of the quest by CMS for efficiency, performance, energy consumption and low environmental impact in the world of pressure intensifiers for waterjet cutting applications.

This new project was carried out entirely in the CMS engineering department and has given rise to an innovative product that combines the power density of a hydraulic pump with the energy efficiency of a direct-drive mechanical architecture.

The simplicity of the system translates into a significant reduction in components: up to 95% compared to a conventional hydraulic intensifier. Tecnocut e-pump exploits an **electrohydrostatic** unit connected directly to long-stroke pressure multiplier cylinders, achieving an operating efficiency of more than 31% compared to hydraulic intensifiers.

The intensifier has an on-board intelligence with portable tablet (Wi-Fi) and touch display for monitoring and controlling operating parameters and performing diagnostics on hydraulic and high-pressure components.

Tecnocut e-pump can be installed on any cutting table, even third-party ones.

### KEY BUYER BENEFITS

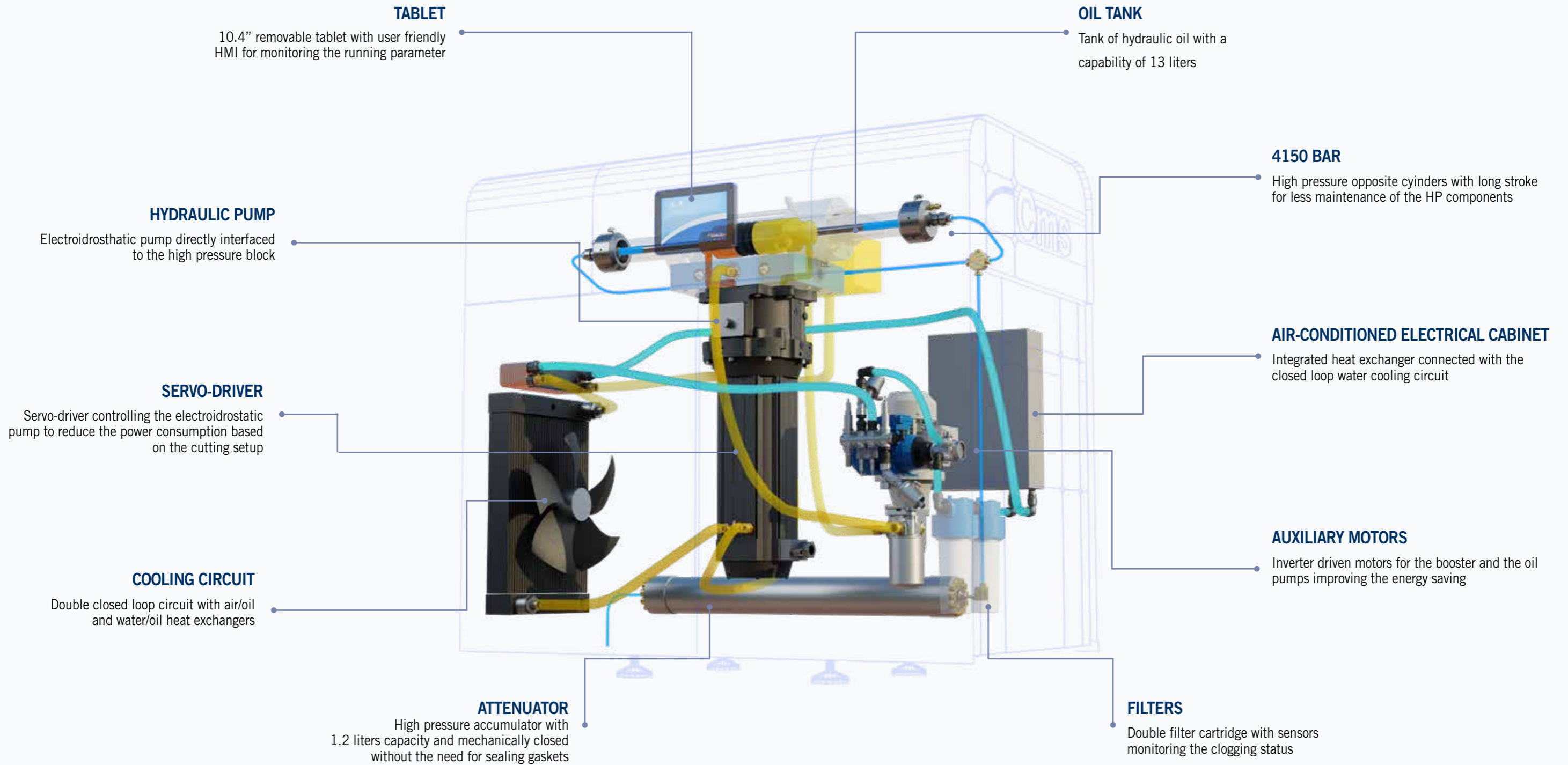
- + High efficiency level: up to 31% more than conventional intensifiers.
- + Low maintenance, thanks to the use of 95% fewer hydraulic components.
- + Minimal use of hydraulic oil: -91% compared to conventional systems, with the benefit of lower environmental impact
- + Electricity consumption up to 37% lower due to a combination of cutting cycles and fast, closed-head movements



# TECNOCUT E-PUMP

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## TECHNICAL FEATURES



# TECNOCUT E-PUMP

# TECNOCUT E-PUMP

## STANDARD ACCESSORIES

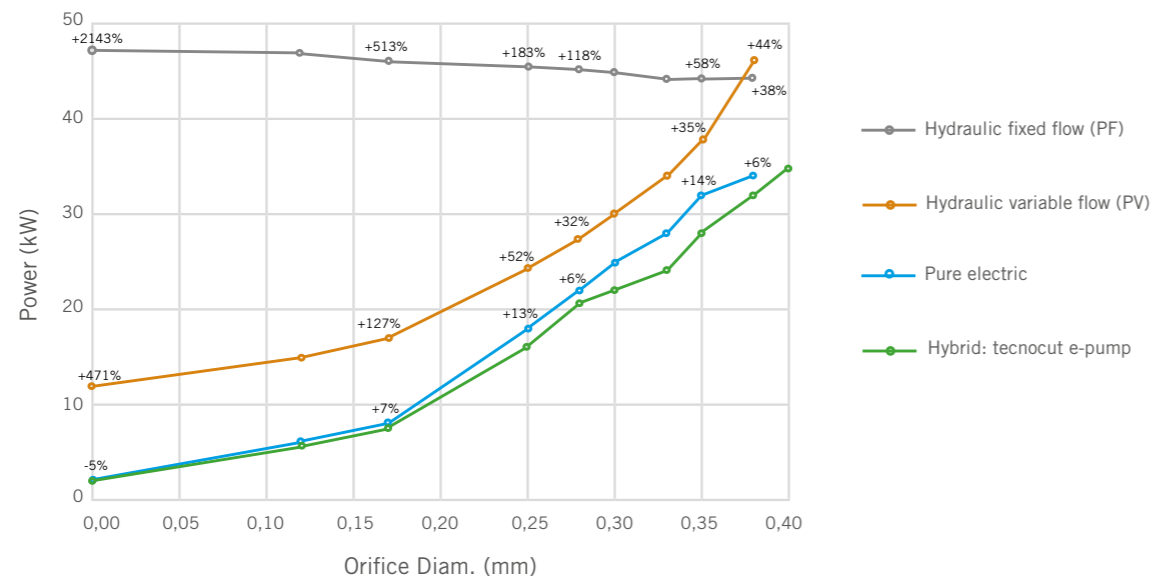
### VERY HIGH EFFICIENCY

The innovative tecnocut e-pump technology guarantees 31% better efficiency compared to a conventional hydraulic intensifier, partly due to a 95% reduction in hydraulic components and the direct hydraulic unit interface to eliminate pressure losses and long-term wear.

### MAXIMUM ENERGY SAVINGS

-37% electricity consumption due to a combination of cutting cycles and rapid movements. The hybrid double-acting pressure pump with direct connection is optimized to reduce consumption, thanks to the use of a brushless servomotor controlled by an inverter.

The primary motor and auxiliary motors controlled by inverters allow tecnocut e-pump to adapt better to the working conditions and eliminate starting current peaks.



POWER CONSUMPTION OF INTENSIFIERS AT 3800 BAR: HYBRID VS ELECTRIC VS HYDRAULIC							
ORIFICE (MM)	HYBRID E-PUMP (KW)	PURE ELECTRIC (KW)	HYDRAULIC VARIABLE FLOW (PV) (KW)	HYDRAULIC VARIABLE FLOW (PF) (KW)	POWER CONSUMPTION PE VS E-PUMP	POWER CONSUMPTION PV VS E-PUMP	POWER CONSUMPTION PF VS E-PUMP
0,38	32	34	46	44,3	6%	44%	38%
0,35	28	32	37,8	44,2	14%	35%	58%
0,33	24	28	34	45	17%	42%	88%
0,28	20,7	22	27,4	45,2	6%	32%	118%
0,25	16	18	24,3	45,3	13%	52%	183%
0,17	7,5	8	17	46	7%	127%	513%
0	2,1	2	12	47,1	-5%	471%	2143%

### WI-FI TABLET WITH WEB HMI

The intensifier is controlled by an industrial PLC in the electrical cabinet in order to interface with CMS cutting tables, as well as third party ones.

The HMI control interface is accessible from the 10.4" Wi-Fi tablet and offers:

- remote diagnostics
- power management and control
- management and control of the cycle number per cylinder
- electronic cutting pressure control



### REMOTE MANAGEMENT

The intensifier web interface is accessible remotely via computer or smartphone to view operation, see any alarms and activate the emergency STOP command when necessary.

LED bar on the front panel with operating state (cycle start-up, start/stop, emergency) managed by the PLC.



# TECNOCUT

# E-PUMP



# TECNOCUT E-PUMP

## STANDARD ACCESSORIES



### BOOSTER PUMP

Inverter-powered booster pump for the inlet water supply, to optimize consumption by adapting to the mains water flow and pressure as well as to the cutting cycle (open/closed head). It is compatible with frequencies of 50 Hz and 60 Hz.



Double filter cartridge made of wound and pleated propylene, 10 microns and 1 micron respectively, to filter sediments from the incoming mains water. Sensors monitor the clogging status, indicating when replacement is required with a warning on the control panel.



### AIR-CONDITIONED ELECTRICAL CABINET

Heat exchanger for the electrical cabinet built into the frame for a smaller footprint and connected to the closed-loop cooling circuit with the cutting water for greater efficiency and lower mains water consumption.

### INCREASE YOUR PRODUCTIVITY

Tecnocut e-pump can generate a water flow rate of up to 5 l/min at 3700 bar, offering extreme versatility in multi-head configurations for abrasive and pure waterjet cutting applications with a single intensifier. For processes that require a high water flow rate, multiple tecnocut e-pump can be connected in parallel to ensure higher productivity.

### LOWER NOISE

The hybrid solution significantly reduces noise in the working environment compared to hydraulic solutions. The average noise level is 70 dB at the maximum working pressure.



### CENTRAL SEAL LEAKAGE COLLECTION SYSTEM

An external manifold to collect leaks from HP seals, for easy and quick diagnostics without the need to open the covers. Depending on the location of the leak, it is possible to identify on which side it is and whether it is from static or dynamic seals. Two status green leds identify the running multiplier.



### COMPLETE SAFETY

Tecnocut e-pump is equipped with a safety valve to instantly dump the water from the high-pressure circuit in the event of pump shutdown or emergency activation.



### CLOSED-CIRCUIT OIL COOLING

Double closed-loop oil cooling circuit with air and water heat exchangers, which allow tecnocut e-pump to operate at environment temperatures up to 40°C with mains water inlet temperatures up to 25°C. The water cooling circuit only intervenes when the preset temperature threshold is exceeded, reducing consumption compared to competitors' conventional systems.

# TECNOCUT

# E-PUMP

# TECNOCUT E-PUMP

## TECHNICAL DATA & POWER CONSUMPTION



TECHNICAL SPECIFICATIONS *	
POWER CONSUMPTION (0.38 ORIFICE AT 3800 BAR)	30 kW
MAXIMUM POWER CONSUMPTION WITH CLOSED HEAD	2.4 kW
MAXIMUM OPERATING PRESSURE	4130 bar
MAXIMUM WATER FLOW RATE AT 3700 BAR	5 l/min
MAXIMUM ORIFICE DIAMETER AT 3700 BAR	0.40 mm
OVERALL DIMENSIONS L X W X H	1666x906x1529 mm
WEIGHT	1400 Kg
VOLTAGE (THREE-PHASE)	400 V 50/60 Hz
OIL TANK CAPACITY	13 L
PRESSURE ATTENUATOR CAPACITY	1.15 L
CYLINDER STROKE	200 mm
REQUIRED INLET WATER TEMPERATURE (ACCEPTABLE MIN - MAX)	5 - 25 °C
NOMINAL ENVIRONMENT TEMPERATURE (ACCEPTABLE MIN - MAX)	5 - 40 °C
NOMINAL NOISE	70 db

\* BFT Technology. The technical data may vary with different configurations





**C.M.S. SPA**  
via A. Locatelli, 123 - 24019 Zogno (BG) - IT  
Tel. +39 0345 64111  
[info@cms.it](mailto:info@cms.it)  
[cms.it](http://cms.it)

a company of **scm**group