

# ENERGYA SERIES



A ZOOMLION COMPANY

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**ENERGYA**  
SERIES

## **MORE THAN A RANGE, AN ECOSYSTEM.**

CIFA confirms itself as an avant-garde reality for technological innovation, thanks to products that actively contribute to safeguarding the ecosystem while ensuring maximum efficiency. The innovative vision of CIFA engineering research ranges in areas that are unprecedented in the concrete transport and laying sector, capable of affirming a philosophy, as well as offering solid, reliable and high performance machines. In fact, CIFA machines are ready to travel the roads of the future, perfectly consistent with the developments of an ever greater sensitivity towards the environment. A precise responsibility, which sees progress moving together with the concreteness of work.

Efficiency in sustainability: this is the commitment of a range of machines unique in the world.

CIFA has brought the concept of electric hybrid into the world of construction sites, with dedicated solutions capable of offering multiple advantages: less consumption, less emissions, greater respect for the environment. For all these reasons the range is called Energya: making the best use of the energy potential of two systems (electric and diesel) to return them with an eco-sustainable ethic. The offer also includes the possibility of using Natural Gas (NGR) on the diesel engine to achieve maximum performance in



terms of savings and ecology. CIFA's Energya translates into precise and tireless solutions a precise idea of sustainability, started with the transport of concrete (truck mixer), continued with casting (spritz) and implemented with a transporting and casting machine (truck mixer pump).

Electric and Diesel together  
to work in the future. Today.

**THE FIRST AND THE ONLY  
PLUG-IN HYBRID RANGE  
IN THE WORLD**



less  
emissions



less noise



greater respect  
to the environment



more savings.  
more sustainability  
more freedom of  
movement

## MULTIPLE BENEFITS FOR WORKERS AND THE ENVIRONMENT

The technical-operational principle of the Energya range, based on the possibility of the hybrid use of electricity, leads to significant reductions in consumption and environmental impact in work scenarios and a concrete attention to the environment. In fact, both during the loading operations in the batching plant and in the unloading phases on the construction site, the diesel

engine of the truck can be switched off and, in case of the truck mixer and truck mixer pump, the drum is driven with the electric motor connected to the battery. While during the transport phase, when necessary, the diesel engine recharges the electric battery, thus ensuring operating autonomy to the truck mixer.



less consumption -30%  
less emissions -95%  
less noise -10dB \*



No compromise on  
performance

The diesel  
engine can be  
switched off  
under various  
operating  
conditions.

\* Real data based on the analysis of a year of work of the Energya truck mixer



Drastic reduction in fuel consumption and maintenance costs.

## A SMART INVESTMENT THAT IS REPAID BY USE.

In designing the machines of the innovative Energya range, CIFA aimed to achieve a drastic reduction in fuel consumption. Under typical operating conditions on the construction site, savings can reach 30% compared to the traditional machine. The hybrid formula shows all its operational economic viability and allows

a simpler amortization of the investment, thanks also to the fact that, during all the operational phases (in the plant and in the movements, as well as on site), the diesel engine of the vehicle is subjected to less wear, thus also reducing maintenance costs.

\* calculation based on one year of work of the Energya truck mixer (250 days of work with an average of 56 km of journey per day).



up to 30% fuel savings:  
6,000 liters/year saved\*



higher efficiency



lower maintenance costs



reduction  
of noise



no exhaust  
gases

## ZERO EMISSIONS ON-SITE AND IN CLOSED ENVIRONMENTS.

The advantages that Energya ensures to people and the environment become even more relevant when working conditions involve using the machines within closed environments, such as a shed or a gallery, where every noise is amplified and where the exhaust gases represent a threat to the well-being of the operators. In electric mode the perceived decybels are halved (up to 10 dB less). In fact, using the electric power, the noise of the diesel engine in the loading and unloading phases is completely eliminated.



Maximum freedom of  
movement and greater quality  
of the air breathed in the tunnel.



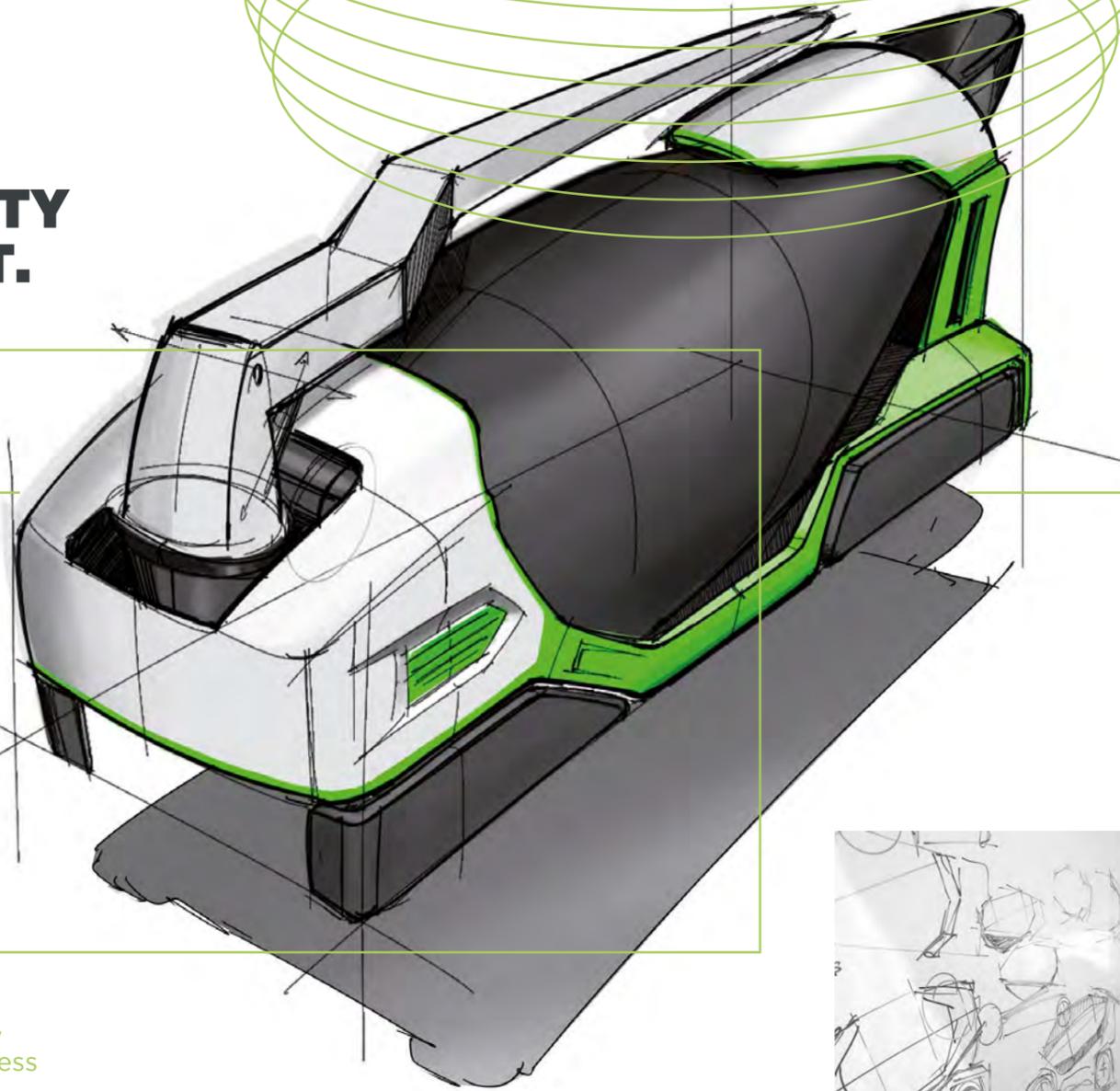
1 hour  
recharge time

## RECHARGE DURING LOADING.

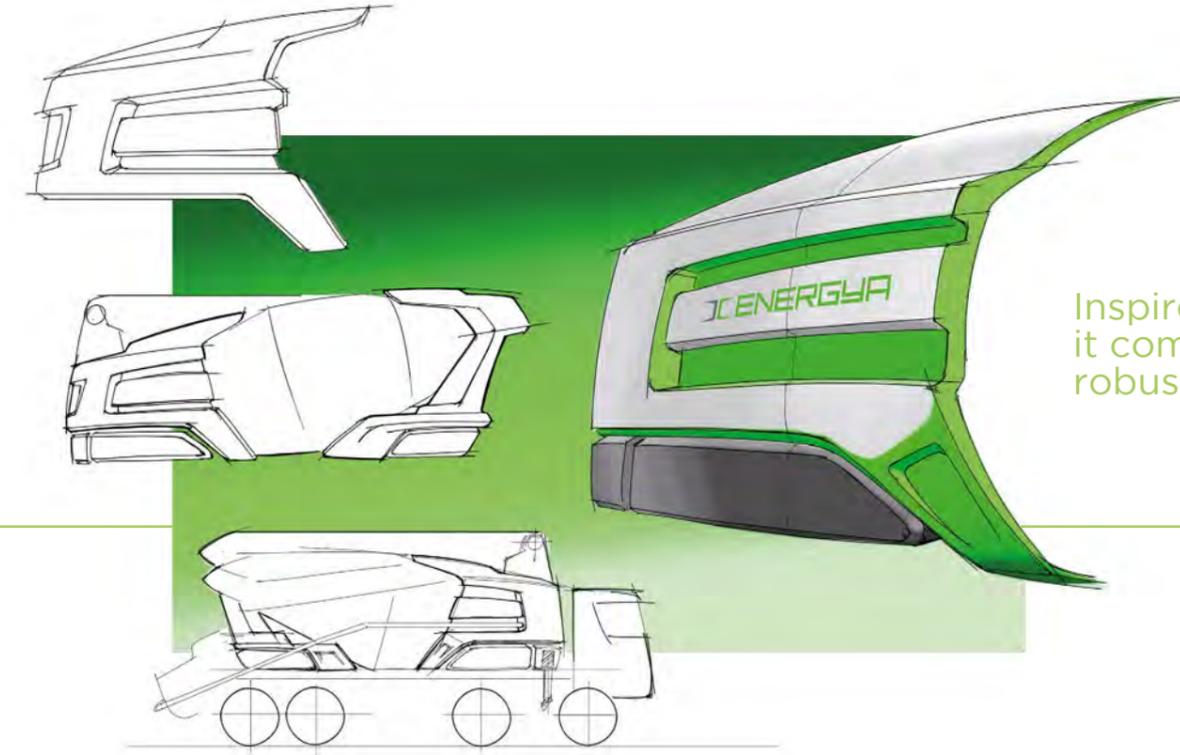
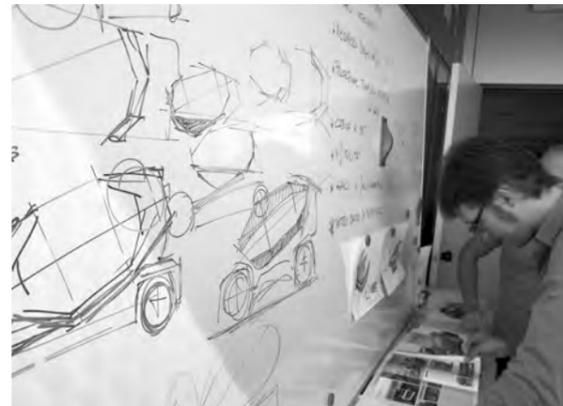
In CIFA Energya machines the functions of drum rotation or concrete pumping are driven by an electric induction motor that receives energy from a lithium ion battery. Charging times vary depending on the technologies used to restore vitality to the batteries: only 1 hour (high speed plug-in) using the special quick charge column designed by CIFA and installed at the batching plant. About 8 hours from any 220v industrial outlet, easily available even on site. In case of public recharging columns, the time varies according to the available power. It is also important to remember that the Energya machines are equipped with KERS (Kinetic Energy Recovery System), a system that during the vehicle deceleration phase allows the recovery of the energy to be sent to the batteries.



# DESIGN IS CONSISTENT WITH ORIGINALITY OF THE PROJECT.



functionality and robustness



Inspired by aeronautical lines, it combines functionality and robustness.



reddot award 2014 winner

ENERGYA E9 WINS RED DOT DESIGN AWARD



reddot award 2017 winner

SPRITZ CSSE WINS RED DOT DESIGN AWARD



The international team of designers who created the CIFA hybrid range was inspired by aerospace vehicles: essentiality and rigour of the shapes that enhance the functionality and solidity of the vehicle. Robust, powerful and at the same time slim in the profiles and lines.

The Energya range has also been designed with special materials and technological solutions in mind. A pleasant aesthetic impact combined with a dialogue with the rational and intuitive vehicle.

## SO MUCH AUTONOMY ZERO PROBLEMS.

The operating scheme of the Energya range machines highlights the rationality of the functional principles, structured on the synergy between traditional and electrical technology. Particular attention is paid to the transformation of mechanical energy into electricity, with the storage of this energy. At the same time, the CIFA technology allows the optimization of the passage from electrical energy into mechanics for the movement of vital organs for the machine operation, such as for example the rotation of the drum in the cement mixer. To constantly monitor and manage the operating functions and the energy status of the batteries, the Energya range is equipped with specific control interfaces: in the cabin and outside.



HOME / MAIN DISPLAY

The best synthesis between traditional technology and electrical technology.

COLOUR CAMERA  
Upon request



BATTERY MANAGEMENT



REAR MONITOR



MAIN MENU



REAR MOBILE PANEL





THE FIRST HYBRID  
PLUG-IN TRUCK  
MIXER.

# ENERGYA E9

The drum is operated by the electric  
motor connected to the battery.

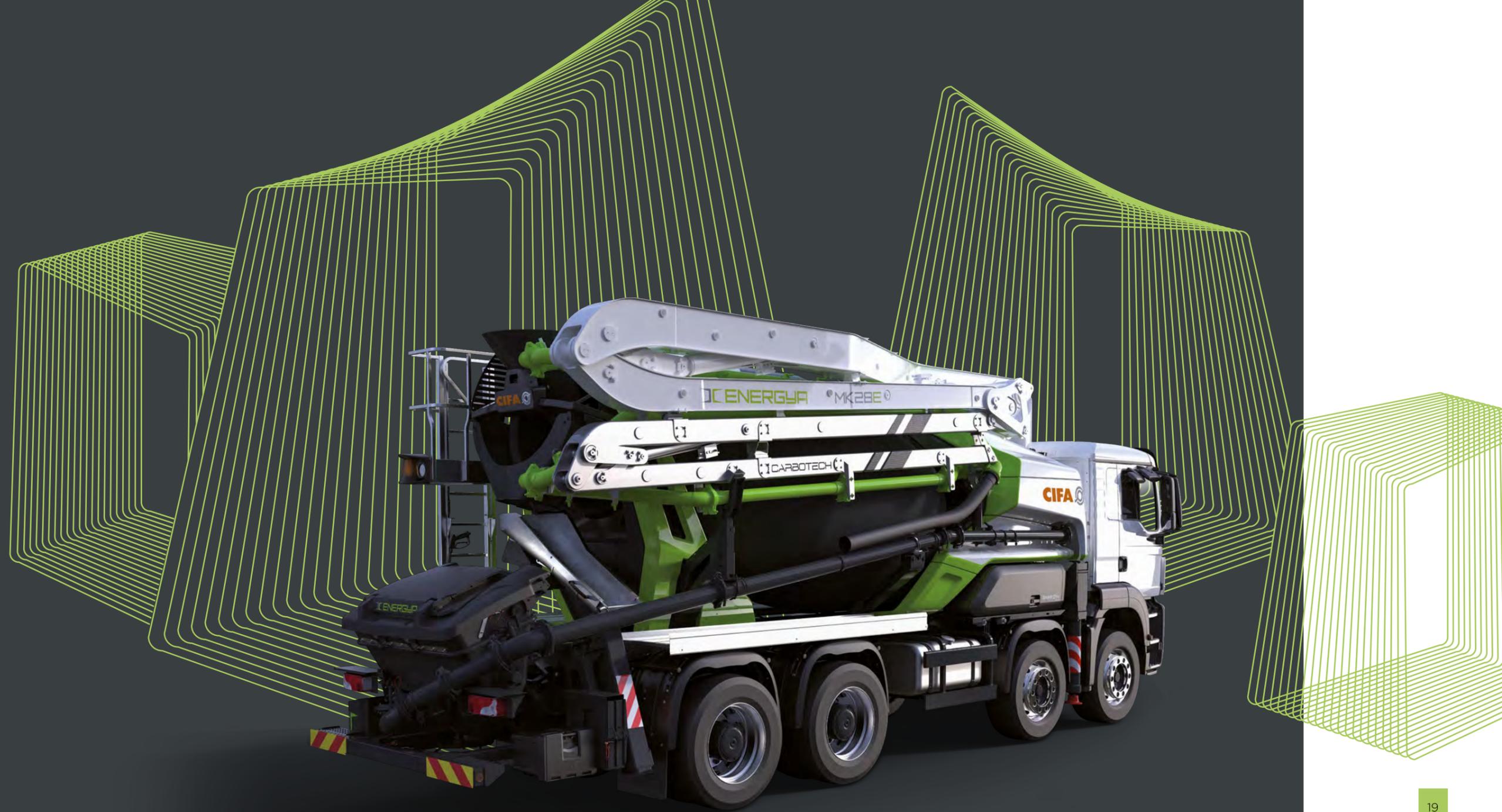
The first machine ever with hybrid technology in the concrete transport sector, the ENERGYA SERIES truck mixer is based on an innovative drum handling system that combines the advantages of traditional and electrical technology. In traditional cement mixers the movement of the drum is generated by a hydraulic system; in the ENERGYA series of truck mixers, on the other hand, it is generated by an electric induction motor that receives energy from a lithium ion battery. Thanks to the electrical operation, new opportunities are opening up for the transport of concrete, particularly in densely populated historic centres and in increasingly frequent scenarios, where the eco-sustainability of the building is an added value in the offer to the market.

THE FIRST HYBRID PLUG-IN  
TRUCK MIXER PUMP.

# ENERGYA MK28E

The electrically managed functions concern the drum rotation phases, stabilization, arm opening / closing and pumping.

The Energya truck mixer combines the popular and well-known engineering and operational features of the Magnum truck mixer pump, a machine "invented" by CIFA, with the advantages of hybrid technology. Thousands of Magnums have transported and cast millions of cubic meters of concrete around the world. CIFA has also designed and applied the carbon fiber technology to the structure of the boom, further evolving the concept of truck mixer pump. And now, with Energya, a new world record is set. A totally innovative truck mixer that offers less fuel consumption, less noise, less pollution, greater freedom of movement.





100%  
savings  
on fuel



100%  
electric  
mode



ZERO  
emissions

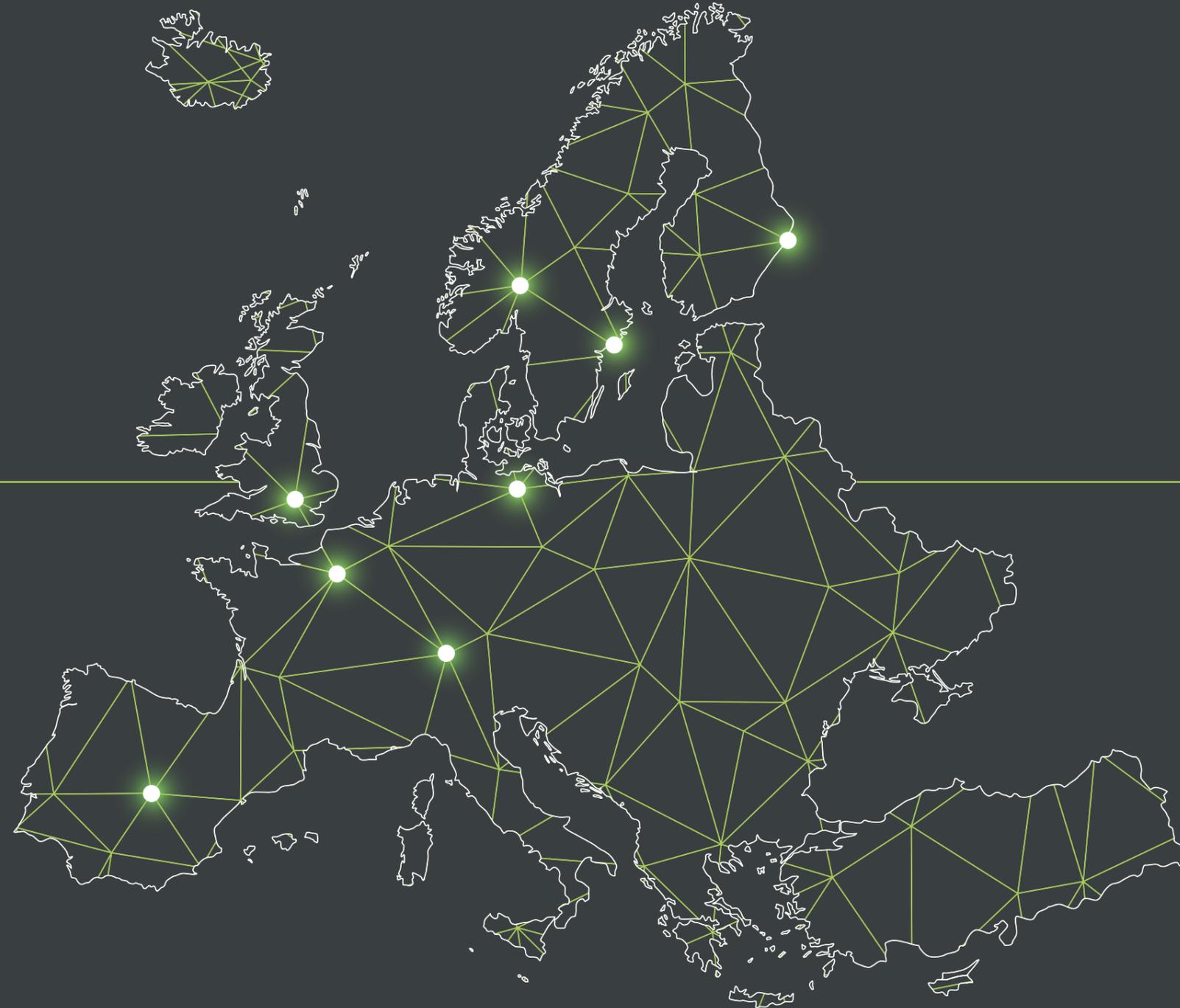


THE FIRST HYBRID SPRITZ.

# ENERGYA CSSE

The vehicle can operate in electric mode during all the processing phases.

CIFA's innovative Spritz CSSE brings the great advantages of hybrid technology to workplaces that are particularly "sensitive" from an eco-environmental point of view, first of all the tunnels and construction sites conditioned by closed spaces. The two electric motors can work both for the vehicle's traction system and for the hydraulic system of the pumping unit, without any fuel consumption or CO<sub>2</sub> emissions. The two electric motors are connected directly to each individual axis, which makes it possible to overcome any kind of roughness in tunneling scenarios in complete efficiency and in full respect of the environment in tunnels. The pumping unit is specially designed by CIFA to reduce wear and vibration. The dosing system is also exclusive to CIFA: it is suitable for any type of liquid accelerating additive and is equipped with an electronically controlled peristaltic pump. The electronic components of the system are integrated into the main electrical panel.



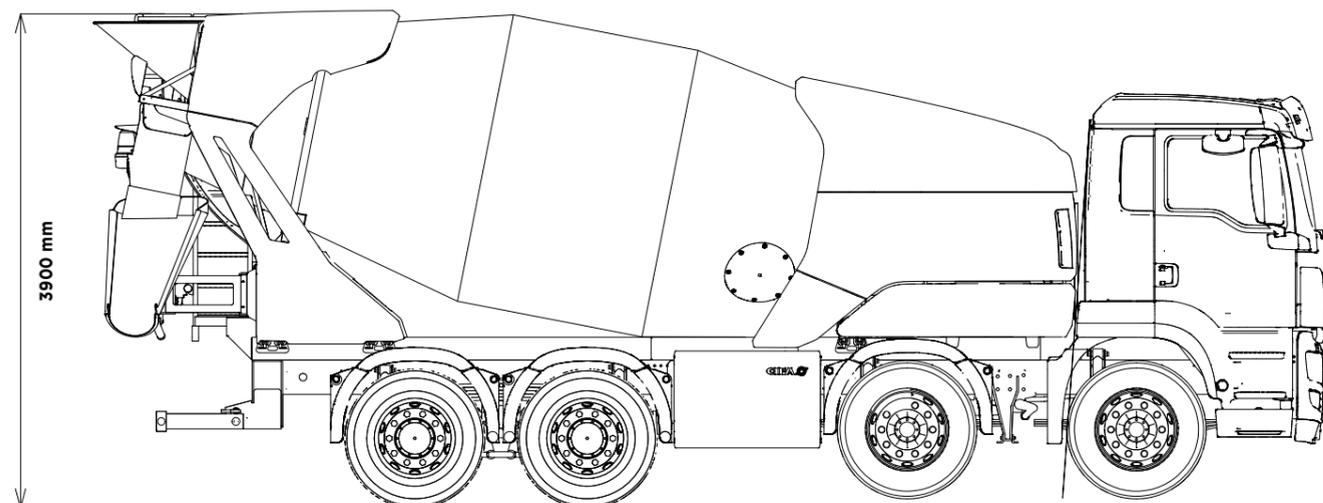
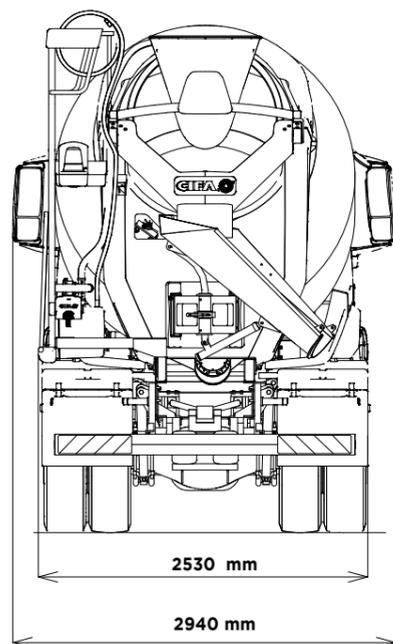
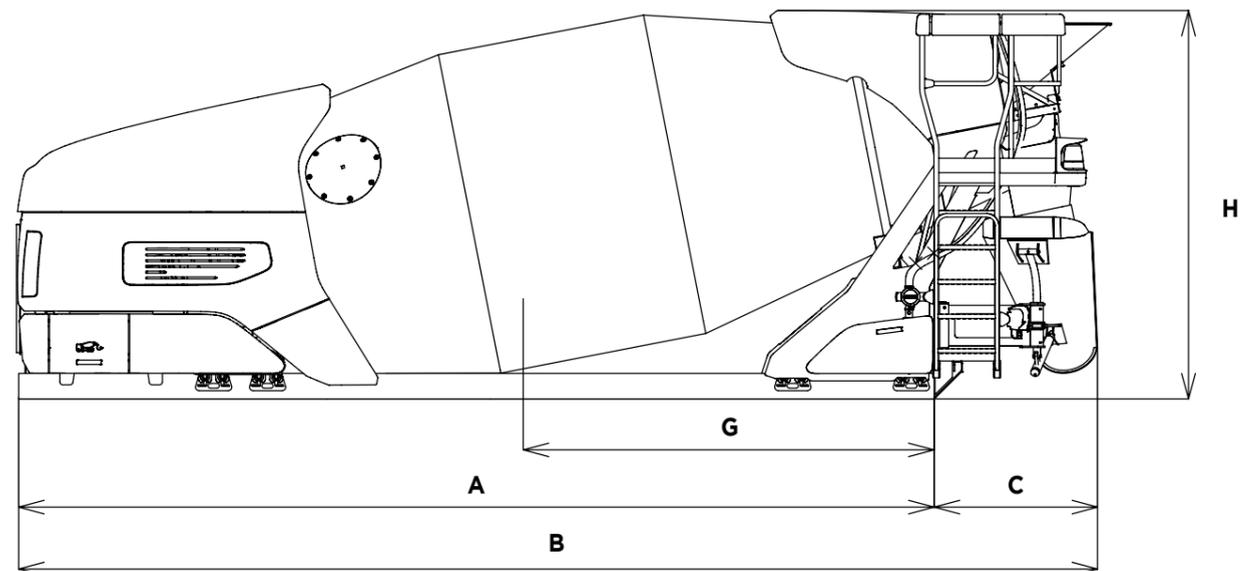
At work on construction sites throughout Europe.

## ENERGYA

### A RANGE WHICH IS ALREADY OPERATIONAL

The machines of CIFA's Energya range are already operational on many job sites throughout Europe. The demanding and diverse working conditions have confirmed the efficiency and sustainability qualities that characterize the line "on field". The significant reduction in emissions is particularly appreciated on sites located in the historic centers of cities such as, for example, Paris, London, Berlin, Madrid, Stockholm, Oslo. The same principles of attention to the environment are an added value in Alpine scenarios, where the reduction of CO<sub>2</sub> introduced into the atmosphere is combined with the reduction of noise levels. The experience gained demonstrates how the Energya line is a winning response to the growing demand for an increasingly "green" approach in the sector of technologies applied to construction.





\* CIFA standard frame  
 \*\* Weights may vary ± 5% according to DIN 70200

# ENERGYA

## E9

DRUM		
Nominal capacity	m <sup>3</sup>	9
Geometric volume	m <sup>3</sup>	15.9
Filling ratio	%	56.3
Water line	m <sup>3</sup>	10.2
Rotation speed	r.p.m.	0 ÷ 14
Diameter	mm	2300
Rollers	n	2
Water meter scale	/	0 ÷ 500
Water tank capacity	/	300
Water tank type		aluminum pressurized

DRIVEN BY		
Electric motor		◆

DIMENSIONS		
A - min. length of frame	mm	6450
B - min. length of mixer	mm	7655
C - overhang	mm	1205
G - center of gravity	mm	2895
H - max. height *	mm	2755
Max width	mm	2355
Total weight (empty) **	Kg	4900

TRUCK SPECIFICATION		
Truck axles	n	4 axles

CHARGING MODES		
Standard charging mode through on-board charger		Single-phase 220V - 16A
High speed charging mode		Three-phase 400V - 32A
Battery		Lithium-ion 28,1 kWh/100Ah

### PRODUCT DESCRIPTION

ENERGYA is the new CIFA plug-in Hybrid truck mixer adopting the latest technologies to decrease fuel consumption, pollution and noise. The system allows the full energy management in all working conditions and the choice and the set up of components maximize the general efficiency of the system. Conventional hydraulic system is replaced by electric transmission with high efficiency. The system allows to rotate the drum with diesel engine off, without exhaust emission and with very low noise in the working area during the charging and discharging phases. Emission and noise reduction make ENERGYA very useful in all areas where high respect for the environment is the first choice.

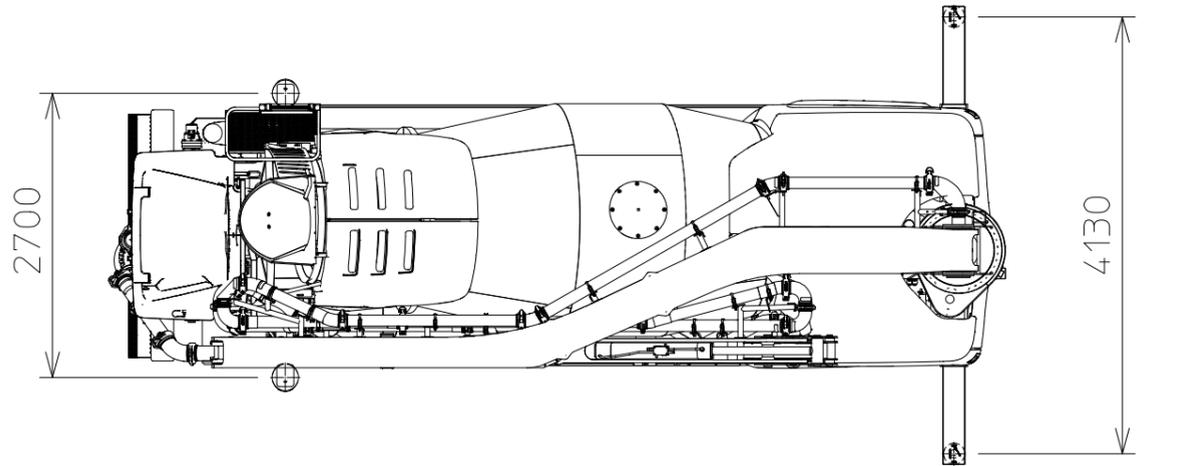
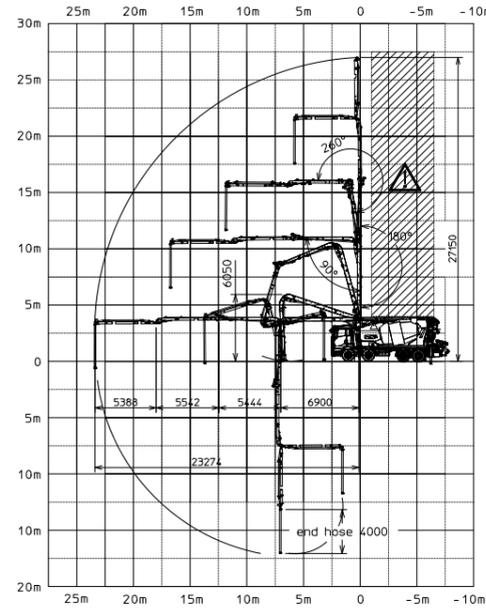
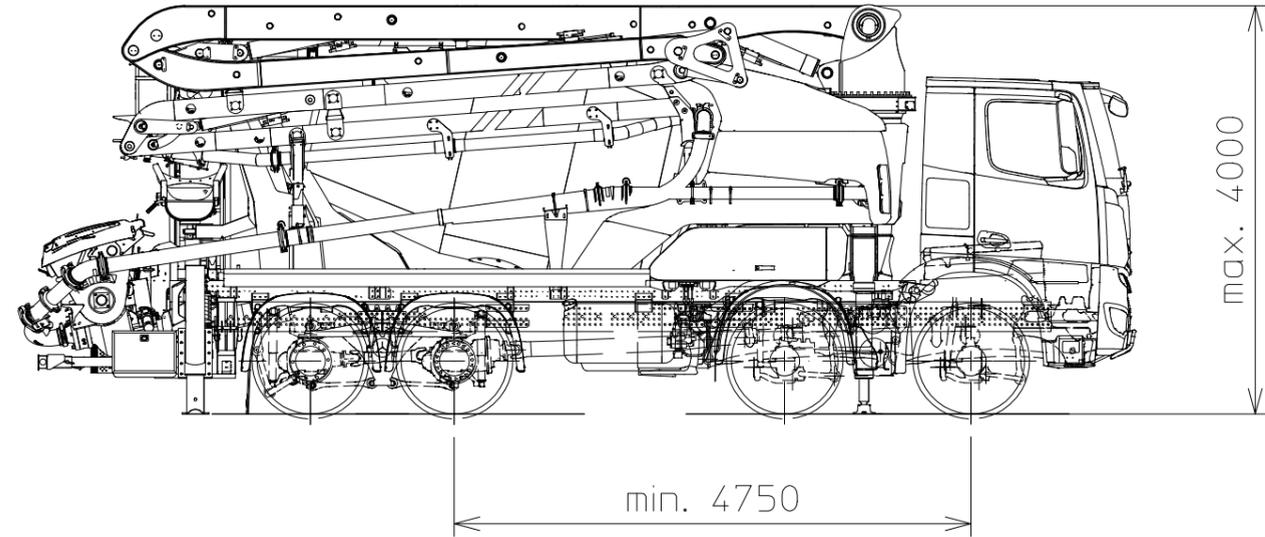
### STANDARD EQUIPMENT

- Basic frame, straight or shaped, made profile according to truck manufacturer specifications
- Drum design according to DIN459 norm with large loading volume with high water line
- Drum and blades made of 450 HB steel
- Wear protected blades
- Two rollers diam. 250 mm with special off road support, completely bolted for an easy maintenance and adjusting
- Pressurized aluminum water tank capacity 300 l
- Two washing nozzles (one at ground level by quick joint and one on ladder platform)
- Concrete manometer for concrete consistency shown in displays
- Two light additional chutes in iron-plastic material, with supports for their fixing
- Special design charging hopper and discharging hopper and chute for a fast and smooth charging and discharging, completely bolted for a better and simple maintenance
- Wear plates on charging hopper and discharging chute
- Discharging chute driven by manual cylinder
- No. 2 quick joint water fillers on sides of front supporting frame
- Cyclist guard twin bars and protection tilting rear bar (standard EEC area)
- Fiber-glass back protection on rear support easy to clean
- Two strong armed swivel chute system
- Polymer rear mono-axle mudguards with rubber mudflaps
- Sliding aluminum ladder
- Two man holes on the drum and two safety drum locking systems
- Water meter
- Electronic control system, including one control panel in the cab and one control panel with 3m cable placed in the mixer rear side to control the drum during the road transfer and operations
- Special design including fiber-glass covers
- LED rear light

### MAIN OPTIONS

- Aluminum pressurized water tank (500 l)
- 2 additional aluminum chutes
- Additive pressurized tank (50 l)
- Additional LED rear light
- Rear camera
- Discharging chute driven by electric cylinder
- Energya Fast Charge charging station 300V DC current

Technical data and characteristics subject to modifications without notice.



**BATTERY**

Technology	Lithium-ion
Voltage	288 V
Capacity	36 kWh/125Ah

**CHARGING MODE**

Standard charging mode	single phase 220V – 16A
High speed charging mode	400Vac (Three phase) – 35kW

# ENERGYA MK28E

**CONCRETE MIXER TECHNICAL DATA**

Model	RH 80	
Nominal capacity	m <sup>3</sup>	7
Drum geometric volume	m <sup>3</sup>	12,8
Filling ratio	%	55
Max. drum speed	r.p.m.	14
Pressurized water tank capacity	/	600
Liter-counter scale	/	0-500

**PUMPING UNIT TECHNICAL DATA**

Model	PB607EPC	
Max. theoretical output	m <sup>3</sup> /h	61
Max. pressure on concrete	bar	31
Max. number of cycles per minute	n°	12
Concrete cylinders (diam. x stroke)	mm	200 X 1000
Concrete hopper capacity	l	400
"S" valve diameter	"	7

**PLACING BOOM TECHNICAL DATA**

Model	MK28H	
Pipeline diameter	mm	100
Max. vertical reach	m	27,150
Max. horizontal distance	m	23,274
Section numbers		4
1st section opening angle		90°
2nd section opening angle		180°
3rd section opening angle		260°
4th section opening angle		251°
Rotating angle		-240° / +240°
End hose length	m	4

**PRODUCT DESCRIPTION**

ENERGYA is the new CIFA plug-in Hybrid truck pump mixer adopting the latest technologies to decrease fuel consumption, pollution and noise. The system allows the full energy management in all working conditions and the choice and the set up of components maximize the general efficiency of the system. Conventional hydraulic system is replaced by electric transmission with high efficiency. The system allows to rotate the drum, the boom, the stabilization, the pumpin unit with diesel engine off, without exhaust emission and with very low noise in the working area during the charging and discharging phases. Emission and noise reduction make ENERGYA very useful in all areas where high respect for the environment is the first choice.

**STANDARD EQUIPMENT**

- Placing boom MK28E, 4 sections, pipeline diameter 100 mm, "Z" folding system
- 3rd and 4th boom sections made of light and resistant CIFA CARBOTECH composite material
- Chassis at extremely high torsion absorption, calculated according to Finite Elemental Methods (FEM)
- Great loading capacity drum with elliptic bottom, in high wear resistant steel of 450 HB (3mm)
- 600 Pressurized water tank
- Aluminum hose/pipe holder on both sides with polymer rear mono-axle mudguards with rubber mudflaps
- Boom control by proportional distributor
- One proportional radio remote control Hetronic with display with 20 mt cable
- One proportional radio remote control Hetronic without display with 20 mt cable
- Vibrator on the concrete hopper grid with remote control
- Centralized lubrication system for pumping unit
- Oil automatic lubrication system for pumping pistons
- Additional manual lubrication system for pumping unit
- LED lights for pumping unit hopper
- Accessories for cleaning and washing
- Automatic adjustment feeler of truck-mixer discharge into hopper
- Concrete pipes on the frame in double thickness with crome carbide inserts in high wear resistant CIFA Long Life Hard LLH
- Concrete pipes on the boom in double thickness with crome carbide inserts in high wear resistant CIFA Long Life Hard LLN
- Long life wear plate and cutting ring with hard carbide inserts
- Hopper cover and style carterure in fiberglass

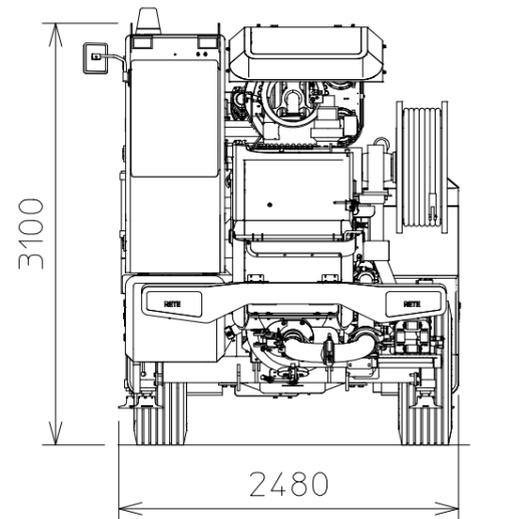
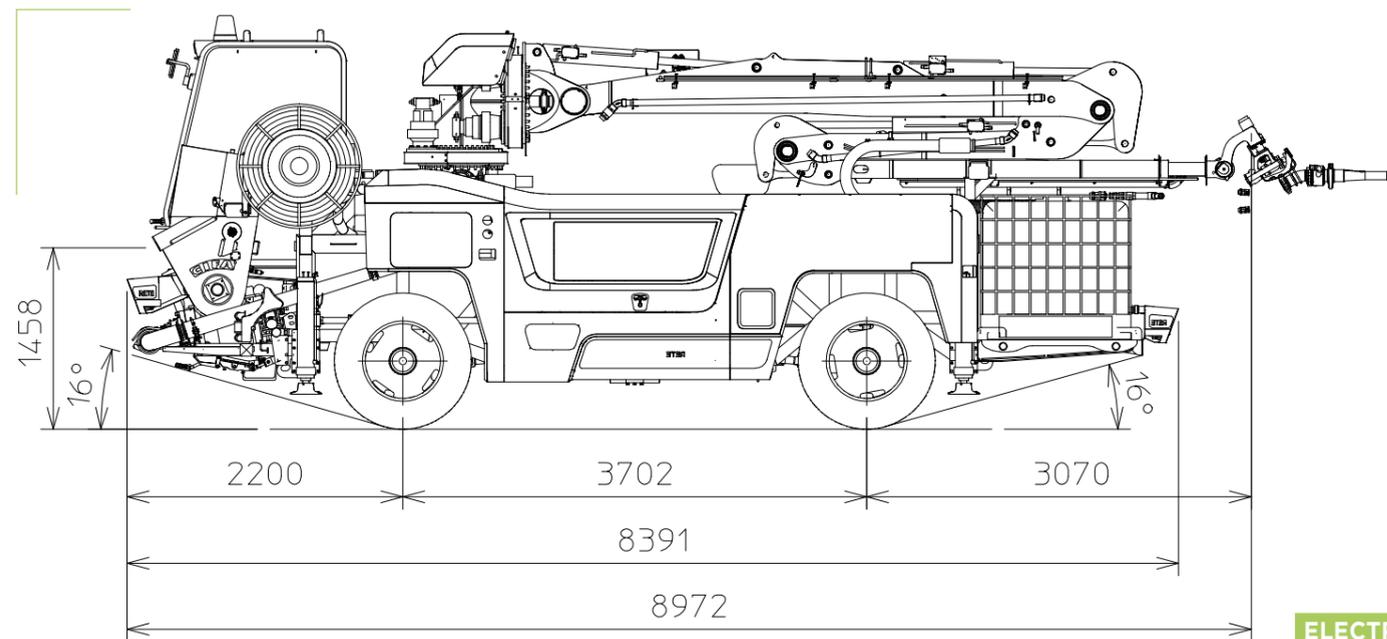
**ELECTRO-HYDRAULIC FUNCTIONS**

- Drum rotation
- Stabilization
- Boom opening / closing
- Pumping phase
- Services

**CONTROL SYSTEM**

- Smartronic
- LSC Light stability control
- LCD monitor
- Drum data
- Pumping unit data
- Working hours
- Diagnostic

Technical data and characteristics subject to modifications without notice.



#### ELECTRICAL DEVICES

Installed power	kW	50
Voltage	V	96
Battery energy	kW*h	19
Standard charging mode (on-board)	3-phase 380V/400V - 18A	
Standard charging time (on-board)*	h	2

\* from 0% to 100% of charge

#### PUMPING UNIT TECHNICAL DATA

Model	PAS 307	
Theoretical output (Min + Max)	m <sup>3</sup> /h	5 + 30
Max. pressure on concrete	bar	65
Max. number of cycles per minute	n°	16
Concrete cylinders (diam. x stroke)	mm	200 X 1000
Hopper capacity	l	300

# ENERGYA CSSE

#### PLACING BOOM TECHNICAL DATA

Model	CSSE	
Turret vertical rotation angle		±180°
Turret horizontal rotation angle		±180°
1st section lifting angle		+90° -5°
2nd section lifting angle		180°
3rd section lifting angle		270°
3rd section telescopic extension	m	1,8
Longitudinal nozzle rotation		180°
Transversal nozzle rotation		±90°
Boom longitudinal sliding stroke	m	3,7

#### DOSING SYSTEM TECHNICAL DATA

Model	Uniflix H1	
Theoretical output (Min + Max)	l/min	1 ÷ 21
Max pressure	bar	13
Accelerator tanks	l	2 X 1000

#### TRUCK CHASSIS TECHNICAL DATA

Model	Shottruck 2	
Installed power	kW	50
Turning circle	m	5,2
Wheelbase	m	3,7
Coupling angle		16,5°
Outlet angle		18,5°
Truck tyres		16 x 24
Net Weight (dry)	Kg	16000
Max. Weight	Kg	17500

#### DESCRIZIONE

ENERGYA CSSE is the new CIFA plug-in Hybrid Spritz System vehicle, adopting the latest technologies to increase work efficiency and reduce fuel consumption, costs, pollution and noise. CSSE allows for lower consumption. The vehicle can operate in electrical mode during all the working stages: traction, pumping, boom handling, additive dosing, water pump and carriage services. If the vehicle is connected to the mains during the pumping stage, it can simultaneously operate and charge its batteries, thereby further extending its operating life. Plus, it is fitted with Kers, the braking energy saving system that allows you to increase the residual charge.

#### STANDARD EQUIPMENT

- Driving cab
  - Chassis
  - Uniflix H1.0 dosing system
  - Concrete pump
  - Electrical system
  - carrier:
  - Shotcreting operations:
  - Nozzle brush movement
  - Diesel power unit
- FOPS certification reversible driving position  
4 wheel drive  
4 wheel steering  
axles planetary type, Comer 2 speeds  
peristaltic pump with hydraulic drive  
electronic management  
flow control  
electric operated  
proportional flow regulation  
electric vibrator fitted to the grid
- 24 V  
battery 2 x 120 Ah  
front lights 2 x 55 W  
rear lights 2 x 55 W  
batterie 2 x 120 Ah  
2 electric motors 25 kW, liquid cooled  
working lights N°6 x 45W-4800 lumen xenon  
working lights on hopper N°1 x 70W
- Deutz F4L2011  
three-phase synchronous alternator 400/230 Volt, 50 Hz  
max. measuring current: 5Aca continuous / 10Aca per 30 sec.  
max. measurement voltage: 500Vca Phase/Phase  
12 Vcc / 150mA max.  
air cooled,  
power 30 kVA  
standard silencer  
fuel tank 100 l

#### MAIN OPTIONS

- ROPS certification
- Rear view camera

Technical data and characteristics subject to modifications without notice.