

Z-LIFT

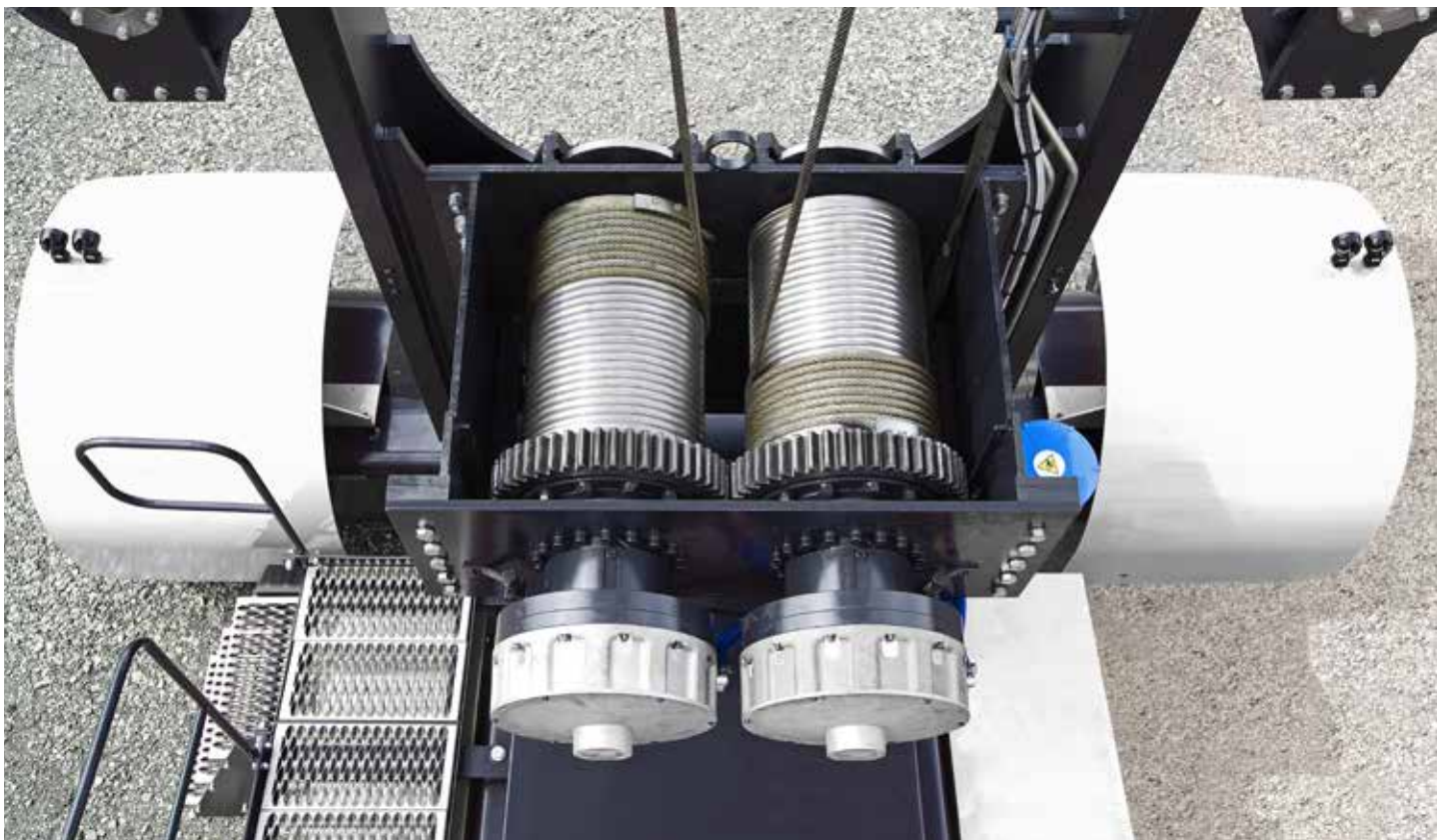
***THE QUIET
REVOLUTION***

ZERO EMISSIONS

***ENERGY
RECYCLING***

**FULL ELECTRIC EMPTY
CONTAINER HANDLER**





After having successfully pioneered the hybrid powering for mastless container handling trucks, CVS FERRARI has applied its unique and winning **energy recycling** technology to the fully electric version of its Empty Container Handling mastless truck. A technology implementation that has taken the ECH machine concept to a different level of efficiency, thus giving birth to the perfect synthesis between environment protection and economic convenience. **ZE-LIFT** is in fact the first ever **zero emissions** ECH that recovers and recycles up to 40% of the total energy it requires to operate. **Recycled energy is clean and free.** Recycled energy is not fossil fuels burning generated. Recycled energy does not release CO2 and dangerous particulates in the atmosphere. Recycled energy costs nothing and propels as grid drawn paid electricity. Recycled energy thins out recharging needs and extends working autonomy.

THE RANGE

MODEL	CAPACITY	STACKING ABILITY	MAST TYPE
Single Stack Spreader			
ZE08.6	9 ton	1 over 5 x 8'6" 1 over 4 x 9'6"	Single Stage
ZE10.8	9 ton	1 over 7 x 8'6" 1 over 6 x 9'6"	Two Stage
Double Stack Spreader			
ZE11.7DS	11 ton	2 over 6 x 8'6" 2 over 5 x 9'6"	Two Stage
ZE08.8DS	8 ton	2 over 7 x 8'6" 2 over 6 x 9'6"	Two Stage



ZE-LIFT comes with the exclusive **CVS FERRARI** electric lifting gear that delivers the highest lift speed and acceleration ever seen in ECH machines and that also slashes maintenance as compared to that of hydraulic powered lifting trucks.

THE QUIET REVOLUTION

**ENERGY
RECYCLING**

ZE-LIFT

*UP to 40%
TOTAL ENERGY
RECYCLING
and SAVING*

ZERO EMISSIONS



HIGHER PERFORMANCES MINIMAL RUNNING COST ZERO EMISSIONS

The first gain comes from saving. That is why ZE-LIFT is designed to save energy even before recovering it. The elimination of the power hydraulics and of the mechanical drive chain is such that power transmission losses are minimized. The same happens when the recycled energy is transferred to the battery bank to be stored. The **Single Stage 6 High Stacking Mast** is a brilliant engineering solution that eliminates the energy expenditure for the lift of a heavy mobile mast section. The **Automatic Lift Height Selector**, whilst easing and speeding up operations, is improving the energy usage and the efficiency of the power regeneration system.

ZE-LIFT

**ENERGY
RECYCLING**



ZE-LIFT'S UNIQUE LIFT AND DRIVE TECHNOLOGY ELIMINATES COMPLETELY POWER HYDRAULICS AND MECHANICAL DRIVE LINE AS WELL AS REPLACING LIFTING CHAIN WITH EXTREMELY CHEAPER AND MUCH MORE DURABLE STEEL CABLES.

MAINTENANCE IS THIS WAY MINIMIZED, BRINGING THE RUNNING COST OF THIS ELECTRIC ENERGY SUPER EFFICIENT TRUCK TO A TINY FRACTION OF THOSE OF CONVENTIONAL MACHINES. ALL THIS WHILST COMPLETELY ELIMINATING CO2 AND PARTICULATE EMISSIONS



CVS FERRARI



***ECOLOGY'S FRIEND
ECONOMY'S BOOSTER
EARNINGS' MACHINE***

EXTREME ENERGY EFFICIENCY



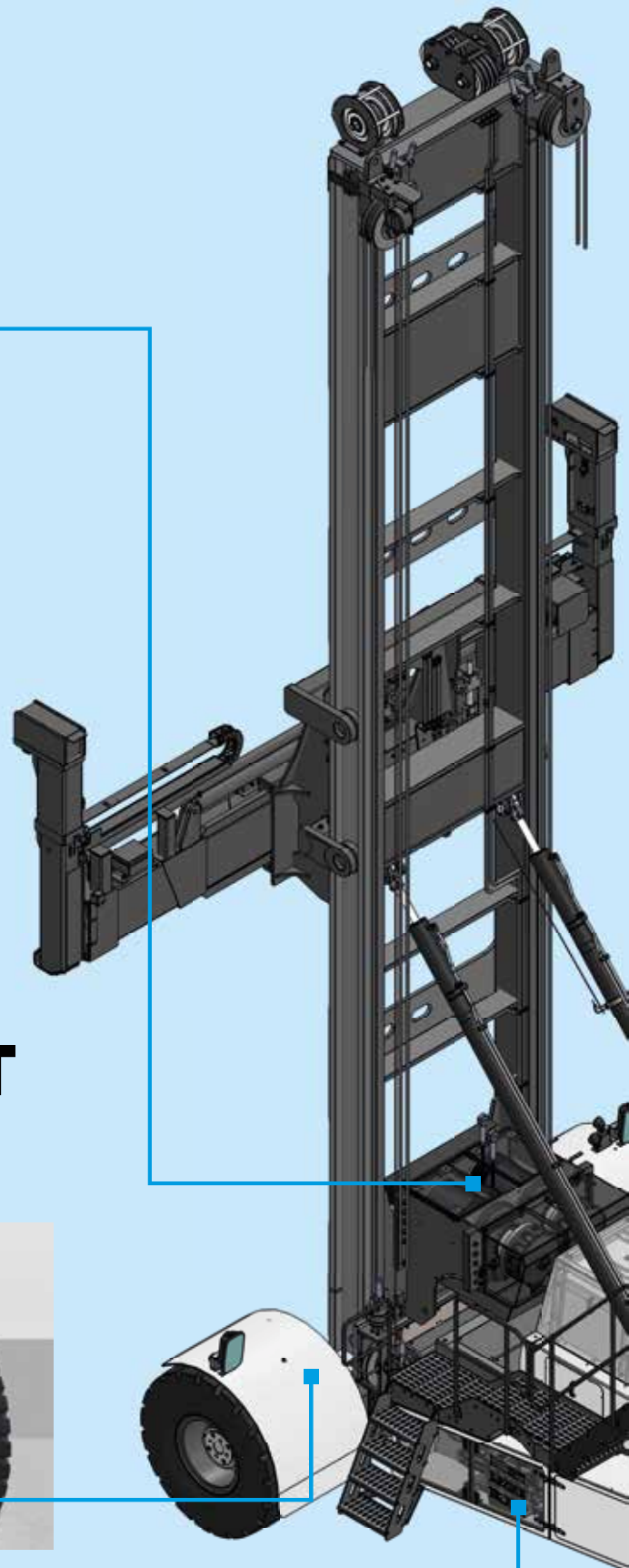
Lifting is accomplished by **Electric motors** driven winches reeling steel ropes. No power hydraulics are involved. **ZE-LIFT** delivers **maximum efficiency** in energy use and recovery, high lifting speeds, and total safety granted by three independent brake systems. All along with drastically **reduced maintenance costs** and **amazing reliability**.



ZE-LIFT



Electric motors directly mounted at the **wheels** eliminate the energy loss typical of conventional mechanical motion transmission. **Inverters** - one per each motor - provide responsive control and **exceptional** and **progressive acceleration**. The electric brake is supplemented by a wet disc brake system that renders the driver's feel the same of driving a truck with mechanical transmission.

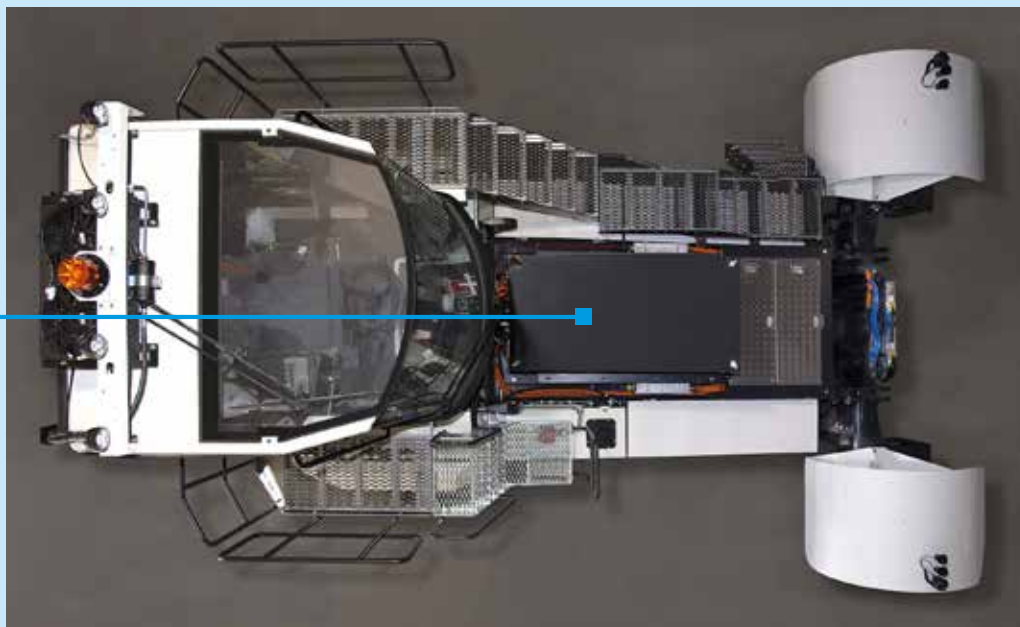


ENERGY RECYCLING

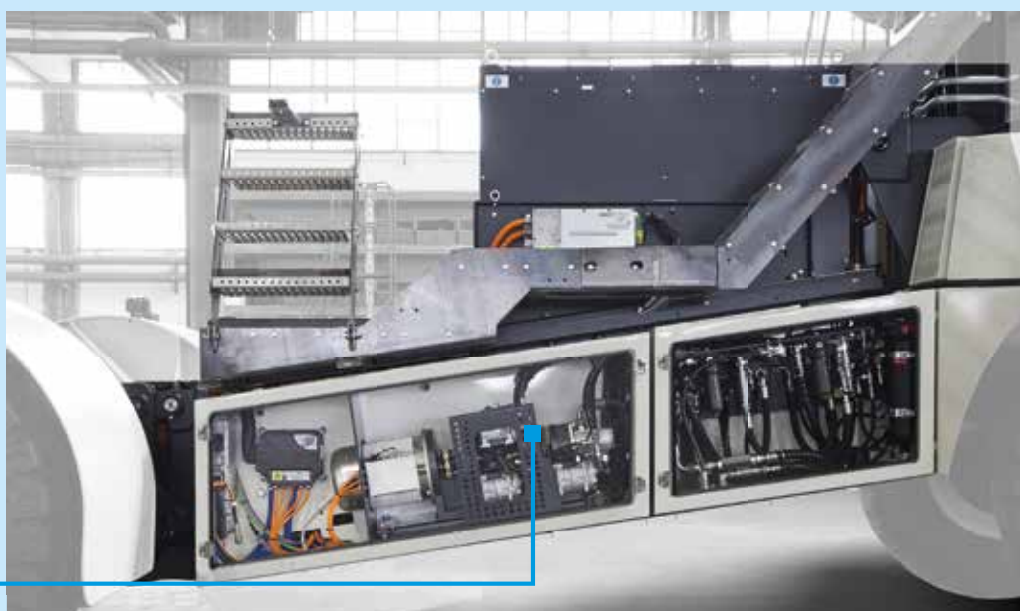
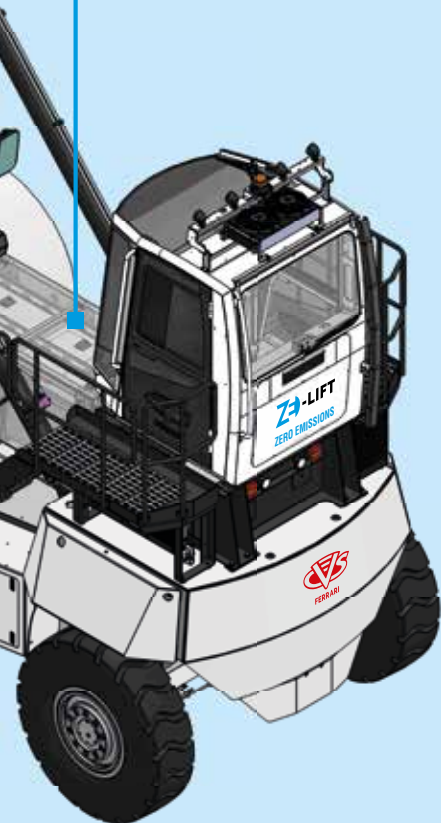
BATTERY OPTIONS:

Regular Size 205 kWh

Large Size 336 kWh

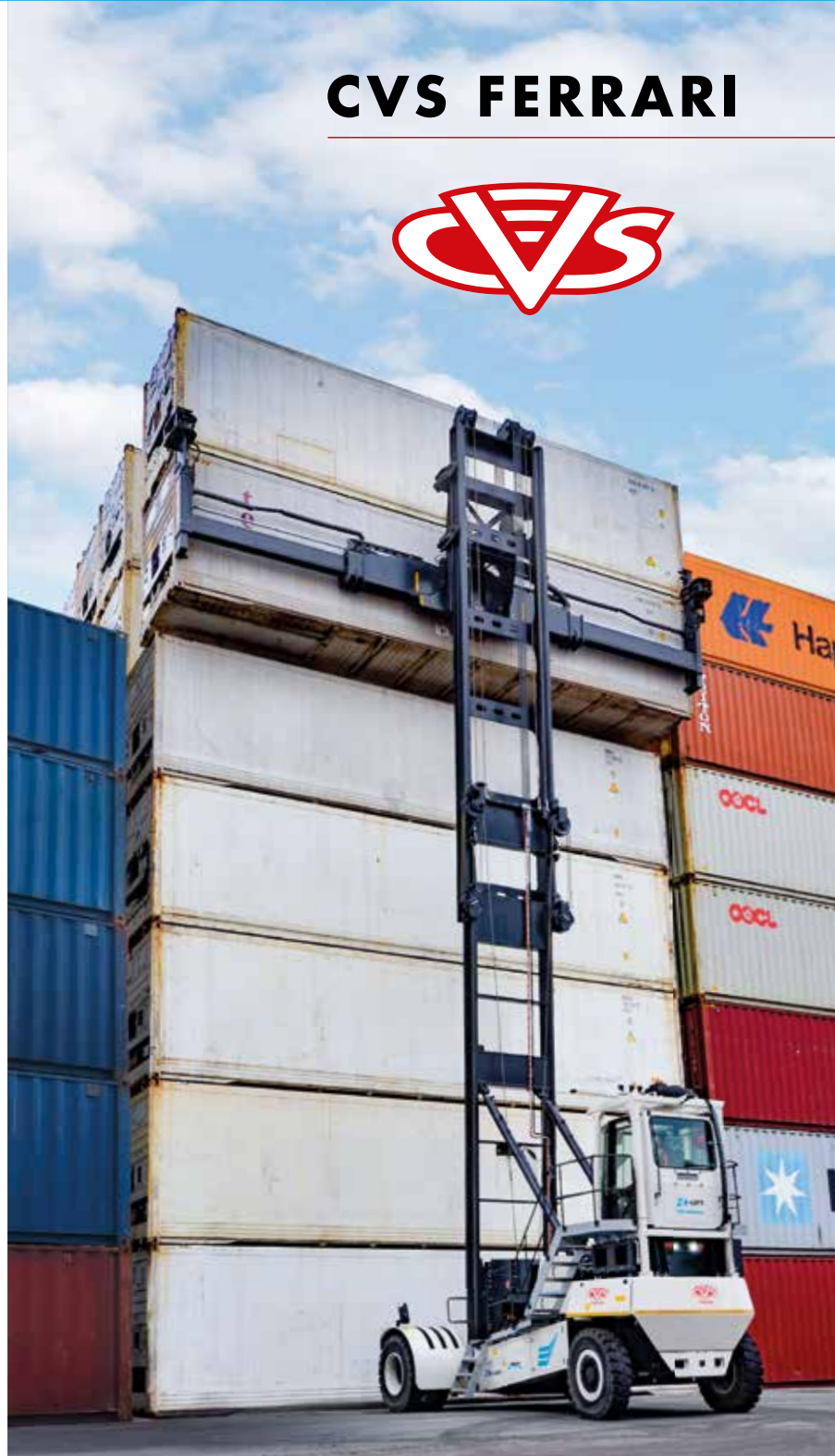


ZE-LIFT is powered by reliable efficient **Lithium Iron Phosphate ions batteries**, that besides taking energy from the grid also captures and stores the recycled energy generated by the machine itself, off the spreader lowering and truck braking. This substantially increases the amount of energy it delivers between recharges. When served by **High Power Fast Chargers** the battery of ZE-LIFT takes short time for its complete or opportunity charges, these last ones capable to extend the already long durability of the larger available battery size, up to a full two shifts stint. The **LiFePo** chemistry of the battery is **intrinsically safe** and the cells are heated to properly operate in any climate environment. **An advanced Battery Management System (BMS)**, interconnected to the **standard Remote Monitoring System (RMS)** of the machine, ensures that the efficiency and correct state of use of the battery is at all times under active watch.



STABLE AND SAFE LIKE NO OTHER

ZE-LIFT's unique structural architecture gives this machine unmatched static and dynamic longitudinal stability as its mast is laying behind the center of the front wheels, thus becoming a positive, stabilizing mass. Then, its extra wide front and steer axles grant this machine the best lateral stability in the marketplace. The absence of lift cylinders and chains clear the visibility for the driver as no other conventional machine can do. There is no empty container handle as productive and safe as ZE-LIFT.



CVS FERRARI



ZE-LIFT

**ENERGY
RECYCLING**



Besides its intrinsic superior stability, ZE-LIFT comes with a unique and **standard Load Moment Limiter** with indicators in cab, that constantly monitors **longitudinal and lateral stability** and that ensures that the truck never overreaches nor overspeed, when critical stability limits are approached. Driving and cornering speed, as well as lifting and tilting speed are limited along with lifting height and tilt angle, based on instantaneously measured and displayed stability reserve.



The Double box spreader options has 11 ton capacity, such to handle 2 x 40' reefer containers in full safety. The "fill-in pin" that enables the safe handling of single 45' box is a standard feature, as well has the 2nd container presence sensor and related side clamps interlocks and drive speed restrictions.



**POWERFUL
PERFORMANT
PRODUCTIVE**

**ZERO
EMISSIONS**

THE ENERGY RECYCLING ADVANTAGE

CVS FERRARI

THE ENERGY
RECYCLED
BY ZE-LIFT
IS A FORM OF

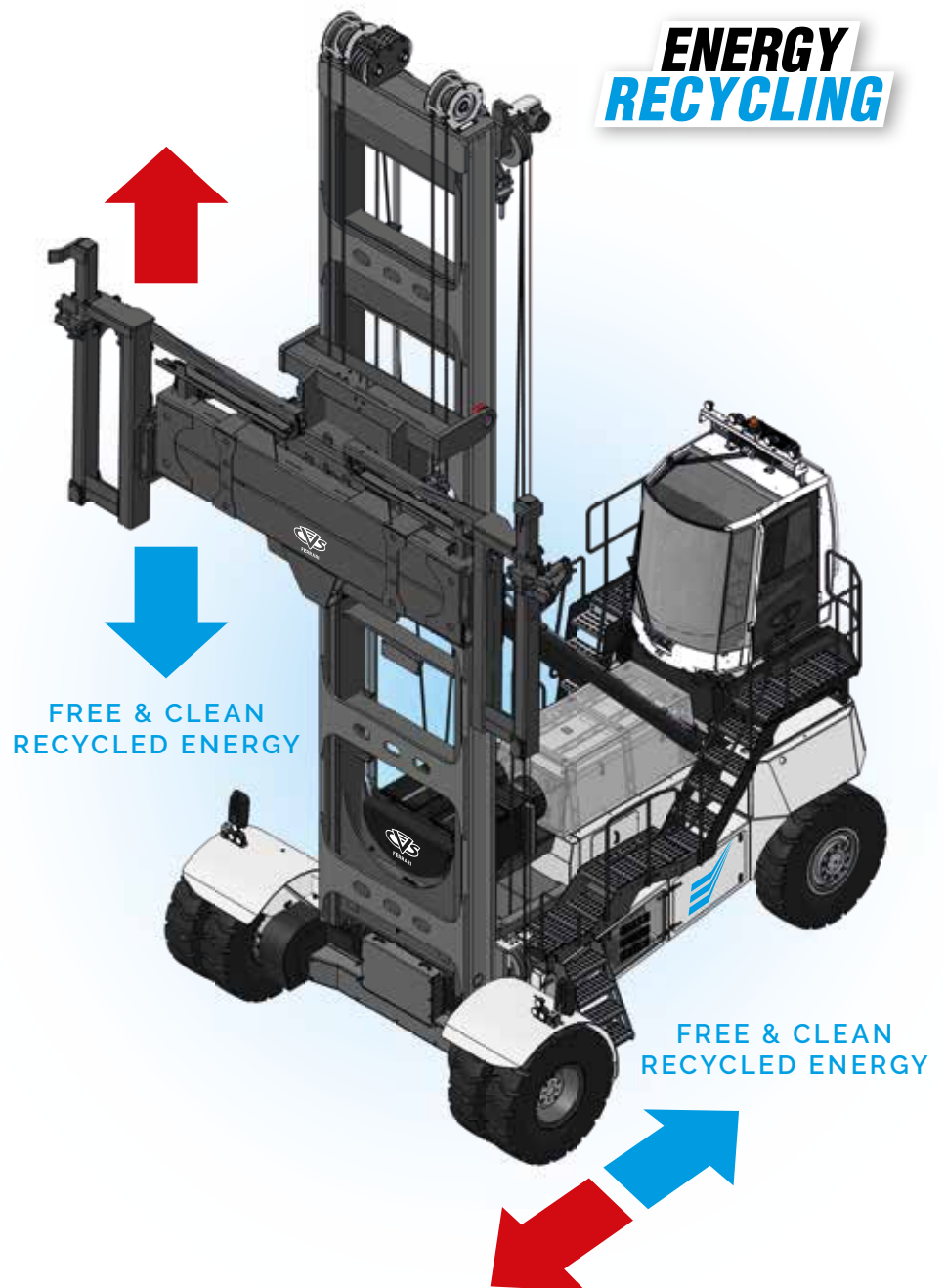
RENEWABLE
ENERGY

BECAUSE IS

FREE
&
CLEAN

Every drop of recycled energy is energy that is not generated by the grid, that does not come - even in minimum part - from the burning of fossil fuel, that has not been produced emitting CO2 and particulate. Furthermore the **recycled energy is copious source of electric power at zero cost**. The like of sun or wind, it is totally free for the user and **represents a massive discount that averages to 40% of the electric bill**. This is the incredibly valuable advantage of the recycled energy, a real bridge towards the promised land of total sustainability in container handling operations. Recycled energy is the solution that makes economically convenient the green transition. **Recycled energy is a true form of zero costs renewable energy** that keeps flowing out the machine itself the more the truck works and generates income for its owner.

**ENERGY
RECYCLING**



The on-board computer monitors the energy flows incoming and outgoing the battery and keeps full recording of the recycled energy.

THE MACHINE OF RECORDS

Z⁺-LIFT

ZERO EMISSIONS

- *up to 10 continuous working hours battery duration*
- *25% faster than conventional machines*
- *up to 40% saving in total consumed energy*
- *75% saving in maintenance cost*
- *100% elimination of CO₂ and particulate emissions*



FERRARI

**ENERGY
RECYCLING**



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