HY-LIFT

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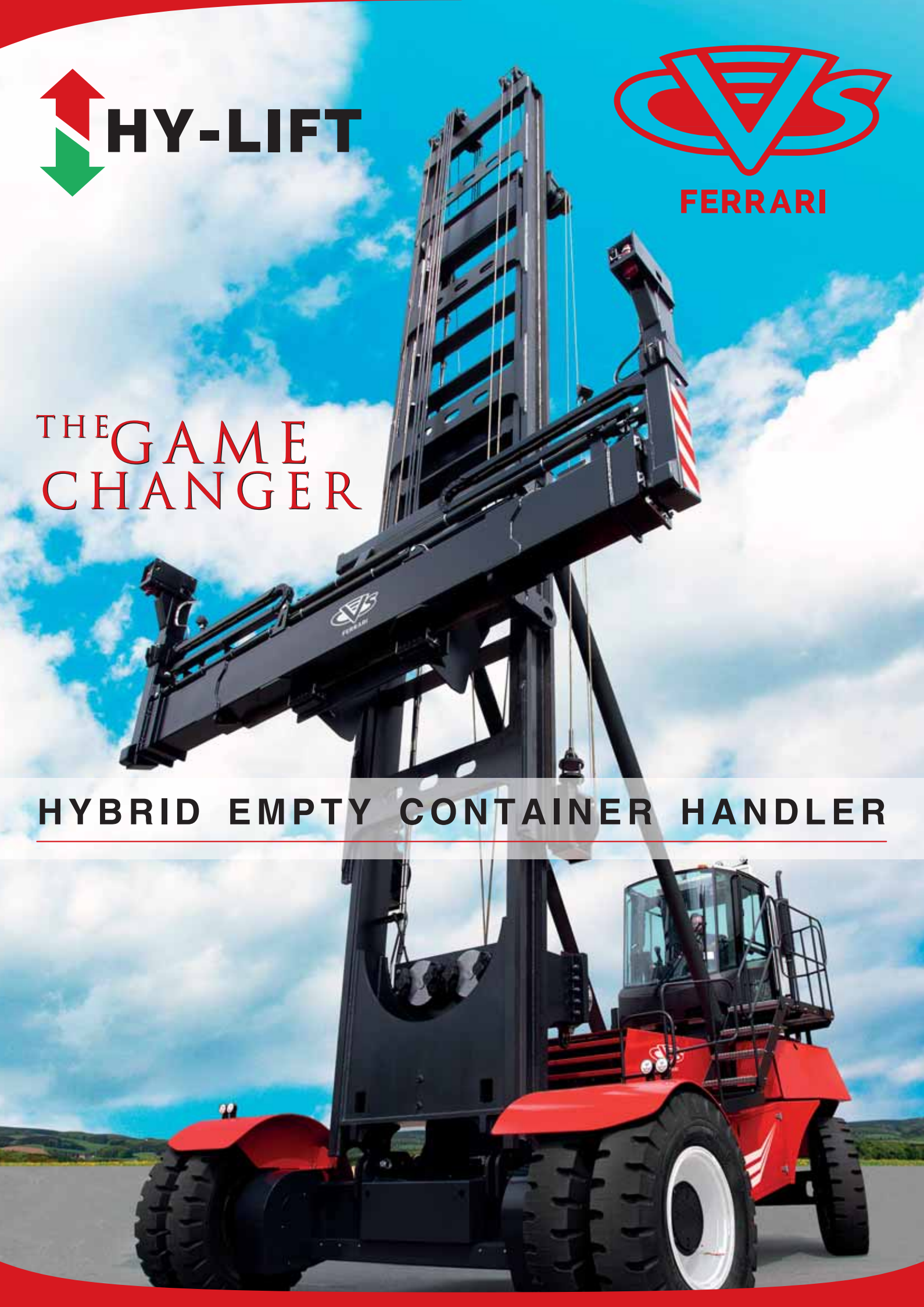
THE GAME CHANGER

HYBRID EMPTY CONTAINER HANDLER



With CVS FERRARI introducing HY-LIFT a new era has begun for container handling liftrucks. The redundancy of power hydraulics and their replacement with electric powered winches directly mounted on the mast, allied to several other new and re-invented energy saving and power recovery technologies, has made the unthinkable a reality. The validated and unconditional slashing of the Total Cost of Ownership and of the Environmental Impact of these machine is now a fact, thanks to this unique equipment destined to change both the life of the users and the course of the materials handling industry. HY-LIFT transforms otherwise wasted energy into major cash savings and borderline container handling businesses into sustainable, profitable ones. It forever eliminates maintenance cost icebergs and changes the focus from buying for less into making the business profitable. HY-LIFT is the GAME CHANGER of the container handling liftrucks sector.

THE RANGE

MODEL	CAPACITY	STACKING ABILITY
Single Stack Spreader		
HY08.6	8 Ton	1 over 5 x 8'6"
HY08.8	8 Ton	1 over 7 x 8'6"
Double Stack Spreader		
HY08.6DS	8 Ton	2 over 5 x 8'6"
HY10.6DS	10 Ton	2 over 5 x 8'6"
HY08.8DS	8 Ton	2 over 7 x 8'6"
HY10.8DS	10 Ton	2 over 7 x 8'6"

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–40%

LOWER TOTAL COST OF OWNERSHIP

THANKS TO

−40%

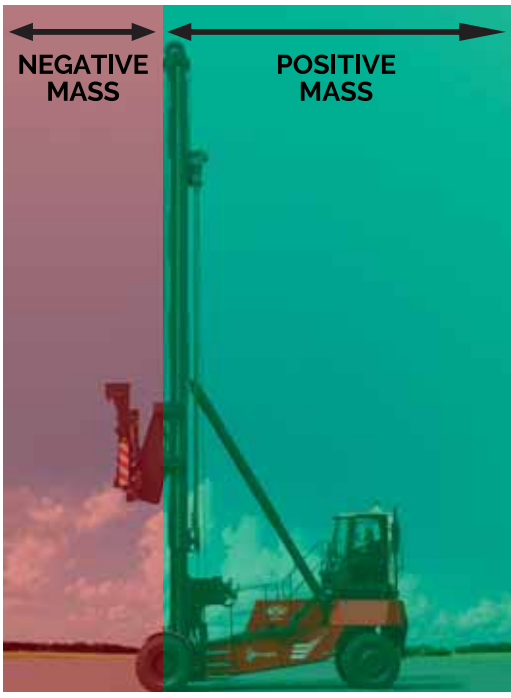
LOWER FUEL CONSUMPTION

HY-LIFT features many innovative energy saving design solutions and systems, but the hard-core of the extraordinary fuel efficiency of this machine is its ability to recover over 60% of the energy spent to lift the spreader and a great deal of inertial energy when breaking.

−35%

TIRES EXPENDITURE

HY-LIFT is built on radically new structural concept that has transformed the mast into a "positive" (stabilizing) mass, as opposed to being a "negative" (destabilizing) mass as it is in any conventional container handling liftruck. That makes the machine a lot more stable and a lot mightier at the same time. The lighter weight enables HY-LIFT to use smaller size and sensibly cheaper tires than what is used on equivalent traditional trucks. That results is much smaller tires consumption cost.



−50%

INVESTMENT IN CONSUMABLES

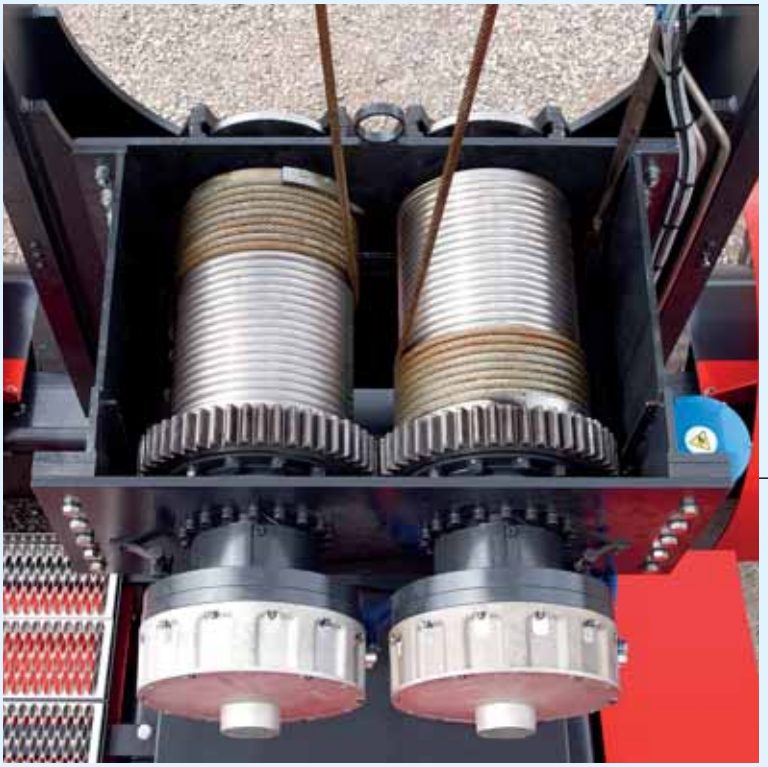
- NO HYDRAULIC OIL REPLACEMENT
- NO HYDRAULIC OIL FILTER REPLACEMENT
- NO TRANSMISSION OIL REPLACEMENT
- NO TRANSMISSION OIL FILTER REPLACEMENT
- NO DIFFERENTIAL OIL REPLACEMENT
- MINIMIZED ENGINE OIL AND FILTER COST

−70%

EXTRAORDINARY MAINTENANCE

- NO TRANSMISSION REPAIR OR OVERHAULING COSTS
- NO DIFFERENTIAL AND HALFSHAFTS BREAKDOWN AND REPAIR
- NO HIGH PRESSURE HYDRAULICS MAINTENANCE COSTS
- NO HYDRAULIC OIL LEAKS
- SLASHED LIFT MECHANISM MAINTENANCE COST

A NEW TECHNOLOGY



Lifting is achieved through electric motor driven winches reeling steel ropes. No power hydraulics are involved. HY-LIFT delivers maximum efficiency in energy use and recovery, high lifting speeds, total safety granted by three independent brake systems, along with drastically reduced maintenance costs. Total reliability.

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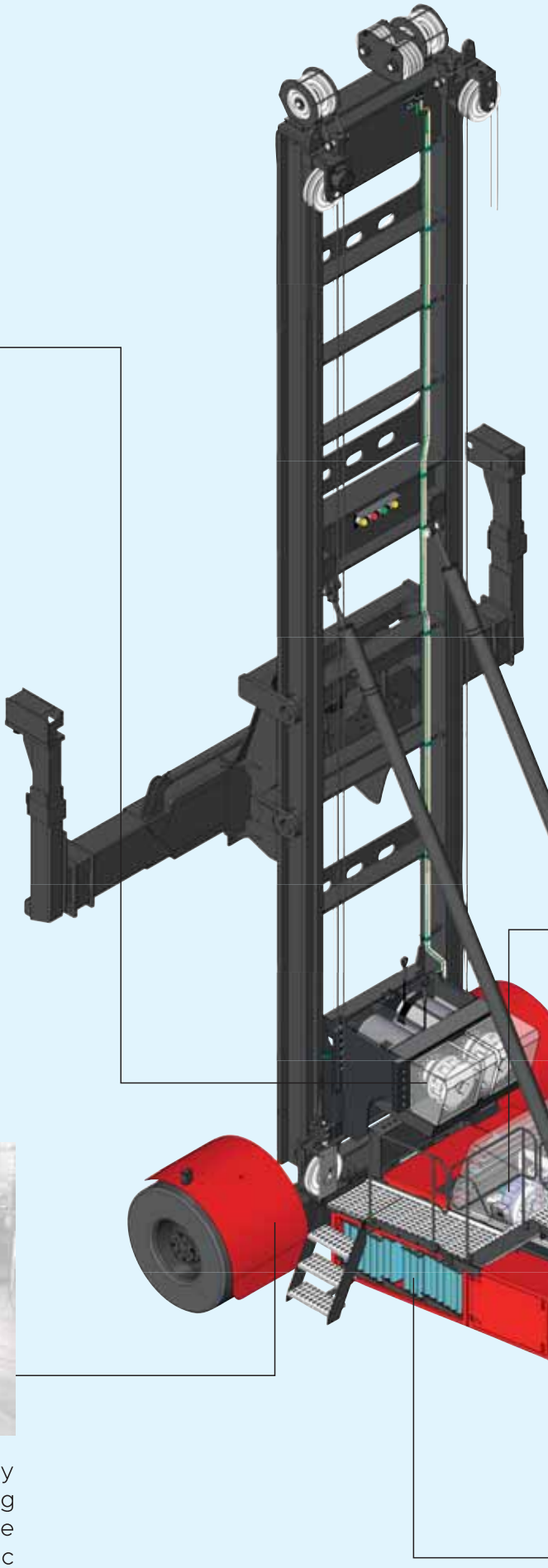
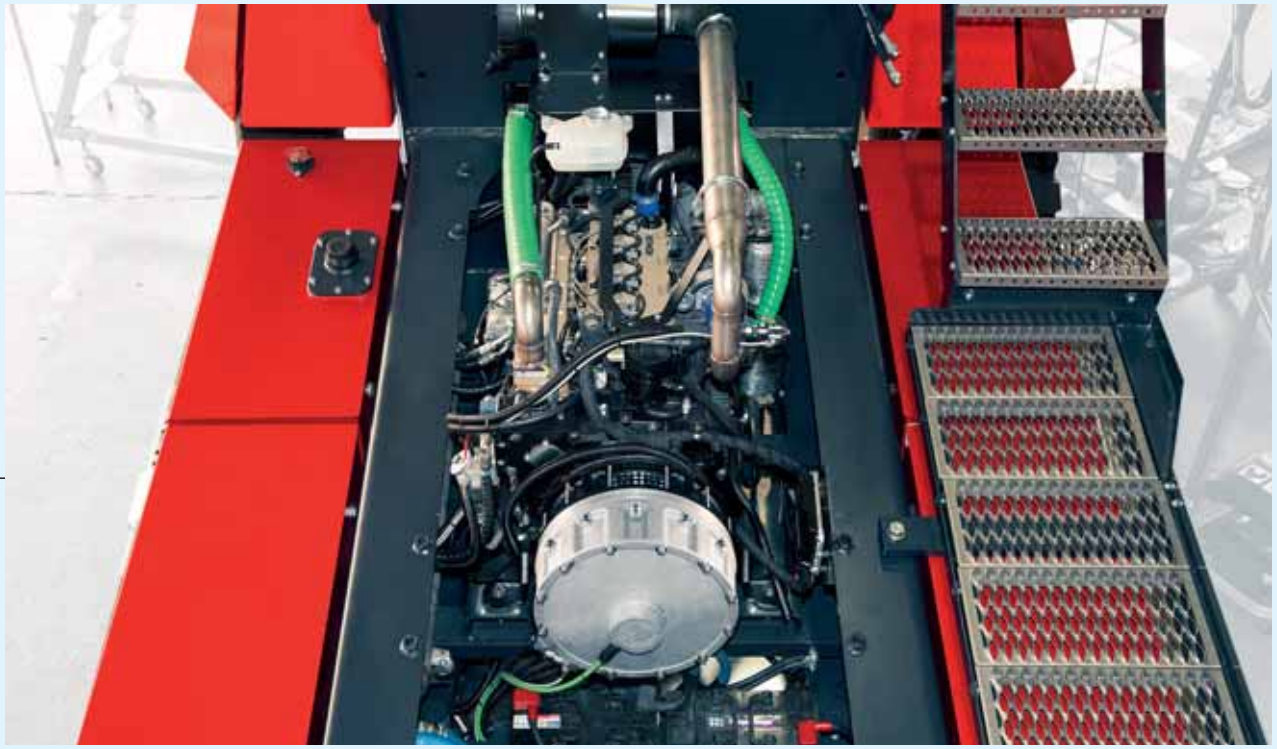
Drive is also electric motor operated. Motors are directly mounted at the wheels and are the same of those operating the winches. Inverters - one per each motor - provide responsive control and exceptional and progressive acceleration. The electric brake is supplemented by a wet disc brake system.



B R E A K S T H R O U G H



The primary power source of HY-LIFT is a small electric generator actioned by a 90 kW engine. This power pack delivers excellent durability due to regulated engine revolving regime plus low fuel consumption, reduced noise and lower emissions. Then factor in inexpensive maintenance and drastically reduced engine overhauling and replacement cost.

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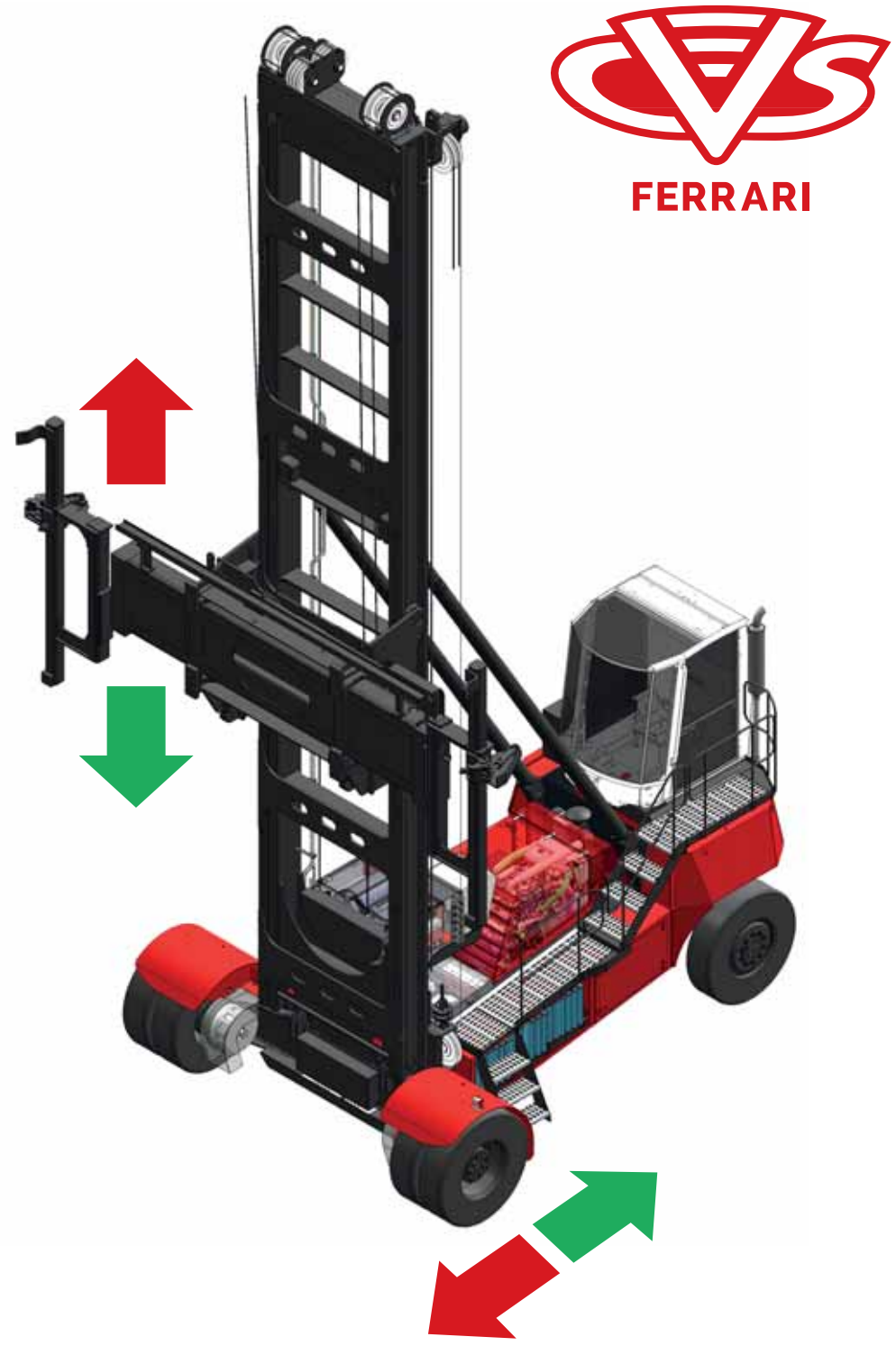
A second source of power is delivered to HY-LIFT by a rack of supercapacitors. Charged by the generator or by recovered energy captured when lowering and braking, the supercapacitor integrate the energy provided by the generator boosting the performances of the machine to levels equivalent to or superior to those of conventionally powered trucks. The supercapacitors come with a manufacturer design life of one million cycles.

GREAT ENERGY RECOVERING AND RECYCLING

The energy used to lift and drive, is in large part recycled by HY-LIFT as its electric winch and drive motors generate electric energy out of mast lowering and machine braking. The regenerated energy is stored in the supercapacitors. A sophisticated software managed by the machines' on board computer optimizes energy recycling, storage and usage, leading to **massive fuel savings.**



The on-board computer controls and shows the generated, spent and recovered energy flows; provides detailed evidence of consumed and saved fuel, as well as of state and level of supercapacitor charge.

GREENER, CLEANER, QUIETER, SAFER

HALFED NOX EMISSIONS

ALMOST NO EXHAUSTED OIL AND FILTERS TO DISPOSE

REDUCED NOISE PRESSURE

HY-LIFT is a gentle revolution in the container handling liftrucks world, because besides miniaturizing running costs this machinery massively reduces the environmental impact of this equipment typology. Noxious emissions are heavily reduced by HY-LIFT proportionally to the reduction of burnt fuel. With HY-LIFT. exhausted oils and filters to dispose are decimated whilst its running is the quietest ever. Its diesel engine is half the size of those of any comparable conventional power truck and it is the most fuel efficient in its class. The electric motors fitted by HY-LIFT are permanent magnet type, the most compact and silent breed of brushless motors that exist. HY-LIFT is the greenest liftruck that ever handled a container and besides making the business more profitable, it factually contributes to make the world a better place.

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UNPRECEDENTED STABILITY

HY-LIFT features a extra wide front axle with a best in class front track that, along its wide steer axle and extended wheelbase, deliver the best **LATERAL STABILITY** ever featured by a dedicated empty container handler. A unique and first ever **lateral stability electronic control system** automatically reduces drive speed based on actual stability reserve.

The innovative positioning of the mast behind the front wheels center gives HY-LIFT a superior **LONGITUDINAL STABILITY** over any comparable machine. A safety that is further enhanced by the electronic **longitudinal stability Load Moment Indicator and limiter** that is a standard feature of the safest ECH truck ever built.

The on-board computer of HY-LIFT monitors the lateral stability of the machine and automatically regulates drive speed to ensure maximum safety

HY-LIFT also features a longitudinal stability LMI. Drive speed, tilt and lift are limited according to residual stability reserve, to lift safety to levels never reached before

THE FASTEST LIFTING SPEEDS EVER

HY-LIFT is not only about incredible operational costs reduction, cleaner and safer operations. HY-LIFT is also the fastest truck on earth when lifting.

With lift and lowering speeds that are up to 30% faster than those of conventionally powered trucks, HY-LIFT sets new standards of productivity and further accelerates the return of investment of the user.

That is why HY-LIFT changes the speed gear of the Empty container businesses.

That is why HY-LIFT is the GAME CHANGER.

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