

eWORKER

Generation zero
of full-electric
telehandlers.





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Merlo headquarters

S. Defendente di Cervasca (CN)
Italy

- A - Electrical component production
- B - Hydraulic component production
- C - Frame production
- D - Cab production
- E - Axle production
- F - Motor configuration
- G - Machine assembly



Merlo The technological leader in operating machines

Merlo is an important family-run industrial group founded in Cuneo in 1964 that designs, produces and markets its own products under the Merlo and Treemme brands.

People and the territory are at the centre of the project; the Merlo Group is committed to respecting the environment and making the work of the operator (and everyone who is passionately dedicated to constantly improving the efficiency and performance of our products) more functional, safe and comfortable.

The product portfolio consists of a complete range of telehandlers, both fixed and rotating, self-loading concrete mixers (DBMs), Treemme implement-holders for municipal and forestry use, and multi-purpose tracked Cingo transporters.

All products in the Merlo range are characterised by innovation, technology and reliability, which have always been distinctive features of the Group and have gained market confidence.

Merlo S.p.A has always
been synonymous
with technological
innovation in the world of
telehandlers



Merlo presents

Generation Zero

Generation Zero is a highly innovative product concept which aims at revolutionising the world of material handling. After years of research into alternatives to heat engines and after the development of the world's first hybrid telehandler, in 2013 Merlo takes another step forward.



The range of highly innovative vehicles that represents a new zero point in the Merlo Group's technological research.

The first full-electric telehandler

eWorker: the first full-electric machine, is born. The progenitor of a generation destined to become an entire family of products, more and more green and technological.

The new range aims at reducing environmental impact and increasing driving comfort, manoeuvrability and performance. Product development has required considerable investment by the Group, including in terms of research and productivity. The new machines will be built in-house, thanks to the development of a production system integrated into a digitised platform, tailor-made and conceived in a high-tech perspective.

With Generation Zero, the Merlo Group is ready to write a new chapter in its long history of innovation, which stems from the desire to promote a more sustainable, environmentally friendly and future-oriented way of thinking and working.



**EMISSIONS
NOISE
FUEL CONSUMPTION**



Electric telehandler range: safety and respect for the environment

The continuous search for specific innovative solutions and technologies, to satisfy the needs of customers, has led Merlo S.p.A. to the creation of an exclusive range of telehandlers respectful of the environment, 100% powered by electric batteries.

These machines are designed to completely reduce noise levels and polluting emissions, increase manoeuvrability in confined spaces and drastically reduce operating costs.

The new range of electric models is the ideal tool for applications in closed environments such as stables, warehouses, materials sheds, industries and underground environments, ensuring operation and traction even in off-road situations for the needs of municipalities, agriculture, construction and landfills.

eWorker models

The new idea of handling



agriculture



fruit growing



breeding

Range consisting of two different models:

- eWorker 25.5-60: with configurations for construction, rental and industrial sectors;
- eWorker 25.5-90: with configurations for agricultural and livestock sectors.



plant nurseries



tunnels



industry



construction



storage



recycling

Hydraulic system:

The hydraulic pump of Load Sensing type, coupled to an electric motor, is fitted on the left-hand side of the machine, protected by a casing, with great accessibility for maintenance in any situation.

Cab:

The design is developed to maximise the comfort level of the operator and access to the driver seat. The left side of the cab can be removed to maximise ventilation during the summer months.

Telescopic boom:

Telescopic boom with two sections made with high-resistance material. ZM1 type carriage with standard Tac-Lock.

The 850 mm carriage width ensures boom accessibility in any situation.



Powertrain:

Transmission of eWorker is 100% electric and consists of a battery that directly powers the electric motors, so as to ensure generous and constant drive torque throughout the acceleration phase. Maximum speed of 25 km/h!

Battery:

The battery pack consists of lead-acid solutions. It is fitted on the right-hand side of the machine in lowered position to maximise the vehicle stability, and is dimensioned to ensure 8 hours of autonomy.

Safety

For Merlo, the operator and his/her safety are among the key objectives. This has pushed the group's research and development department to design a machine that represents a real turning point towards an even more efficient, safe and sustainable way of working.

Thanks to the fully electrical power supply, it is possible to work with peace of mind with a drastic reduction of noise and vibration and no pollutant emissions. In addition, the machine has been designed with the aim of operating at low voltage (48 V), reducing health risks.

Finally, the machine complies with all regulations for prevention against front tilt.



Telescopic boom

Boom consisting of a double "C" profile in high-strength steel with welds made along the neutral bending axis. Hydraulic hoses and electrical wires positioned inside the boom with a "cartridge" system, to protect against any possible impacts and easy extraction in case of maintenance. The L-shaped runner blocks are made of composite material to maximise efficiency and reduce impact and wear on the sliding surfaces.

The Merlo boom solution can offer:

- High accuracy with millimetric precision of movement control
- No bending of the structure
- Protection of the components and hoses against impacts



FOPS and ROPS protection

The cab ensures a high degree of safety thanks to its certification according to standards ROPS and FOPS. The FOPS protection, achieved through a shaped metal structure, ensures maximum load visibility in the operational phases and offers a high level of protection for the operator and the cab components in the event of accidental falling of objects or materials.



Anti-tilt system

All models are equipped with anti-tilt sensors integrated into the rear axle, ensuring maximum stability without compromising the machine performance. The dynamic stability of the machine, according to standard EN15000, is intrinsically ensured by the boom geometry, the diagram and the weight distribution.



Pre-arrangement for aerial work platform

The eWorker is optionally equipped with pre-arrangement for aerial work platform use (from the control panel up to 2 km/h, regardless of the aerial work platform height). This solution increases the level of active and passive safety devices during work at heights, and ensures greater machine versatility.



e-Holder and braking system

The braking system consists of two wet disc brakes installed inside the front wheel reducer, and an electric-hydraulic negative parking brake, that can be manually and automatically operated: e-holder. The latter engages when the machine stops and disengages when the machine is started by the accelerator pedal, assisting the operator during uphill starts and preventing the vehicle from moving when the accelerator pedal is released, so as to avoid unintentional movements and maintain the vehicle control.



No pollutant emissions

The new solution developed by Merlo allows to completely reduce pollutant level, for greater safety of the operator and those who work around the vehicle.

This solution has a great number of advantages, including:

- Suitable to work indoors (warehouses, greenhouses, etc.)
- No restrictions for its use in ecologically protected areas (historic centres, parks, etc.)
- Greater attention to environment and health



Performance

The eWorker telehandlers by Merlo are equipped with 100% electric transmission that can be used with four- or two-wheel drive.

This solution ensures:

- High precision and modulability of transfer speed
- High levels of power and torque to the wheels
- Unparalleled ease of use

This solution allows reaching a maximum speed of 25 km/h, ensuring millimetric adjustment of movements.



2WD traction

The 2WD models are equipped with two electric motors directly fitted on the front wheel reducers, ensuring front traction and reducing power required for transfers.

Maximum power 44 kW - 60 HP

Maximum speed: 25 km/h

This solution ensures maximum machine autonomy; the rear axle is free to oscillate up to 7 degrees, and the maximum pull force is 2.000 kg.



4WD traction

In addition to the two front motors, the 4WD models are equipped with an additional motor for rear traction. This allows discharging the driving force to the ground on all the wheels, ensuring traction in all circumstances, even in off-road conditions.

Maximum power 66 kW - 90 HP

Maximum speed: 25 km/h

The 4WD models have been designed to ensure maximum transmission performance in terms of off-road traction, the rear axle is free to oscillate up to 7 degrees, and the maximum pull force is 3.000 kg.



Steering

The eWorker only steers on the rear wheels, like lift carriers with forks. Making the most of the high steering angle of the wheels, that reaches 85°, the maximum encumbrance while steering is reduced to a minimum: 2.850 mm for 2WD models, 3.250 mm for 4WD models. In this way the eWorker ensures greater agility, manoeuvre and transfer speed, and the best steering radius in its category. A compact all-rounder!



Descent by gravity

This fully automatic solution allows the weight of the boom and load to be used for the lowering movement, significantly limiting the demand for hydraulic power and, consequently, consumption and noise, without reducing safety. Faster and more fluid movements allow for increased performance.

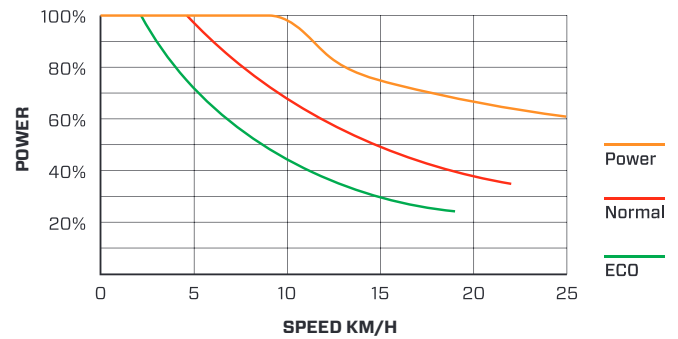


RRM

A unique and patented solution. The hydraulic couplings developed and manufactured by Merlo ensure:

- Quick assembly and disassembly
- Increased tightness of connections
- Increased component service life
- No risk of line twisting.

ACCELERATION CURVE



Transmission management

The transmission features three modes of use, depending on the customers' needs:

ECO: maximum saving, maximum attainable speed 19 km/h.

NORMAL: normal conditions of use, maximum attainable speed 22 km/h.

POWER: for maximum performance and power, maximum attainable speed 25 km/h.



Hydraulic system

The machine is configured with a variable displacement (Load Sensing) hydraulic pump, powered by an electric motor and controlled by a capacitive electronic joystick control able to ensure up to three simultaneous movements without any problems for the operator.

- Maximum pressure 210 bar.
- Maximum flow rate 42 l/min.

The system is completed by a rear service line (optional) and a line at the top of the boom (standard).



Road type-approval

The eWorker models, in both 2WD and 4WD version, are the only models with these dimensions that can be approved for road use and offer the possibility to achieve the approval for agricultural trailer towing.

To complete this configuration, it is possible to install the power socket, in the rear part of the machine, to control the trailer lights and the towing hook.

The maximum towing capacity is 2.000 kg.

Comfort

The cab design is developed to maximise the comfort level of the operator and access to the driver seat. Moreover, acoustic and thermal comfort has also been taken care of down to the smallest details, thanks to intensive research into the most innovative technical solutions and materials.

The left side and the overhead guard of the cab can be removed to maximise ventilation during the summer months. A large front windscreen, the side windows and the rear window ensure perfect internal brightness.

The window opens by 180° and can be locked in fully open position. The machine features only one step to make it easier to access and go in and out.



User interface and capacitive joystick

The high ergonomics of controls, the tilting steering wheel, armrest with adjustable position and a simplified user interface reduce operator fatigue and facilitate his/her work.

The capacitive electronic joystick control is able to detect the presence of the operator by means of a sensor without pressing the “dead man” button and also allows managing:

- Selection of travel direction
- Auxiliary hydraulic functions
- 4 hydraulic movements of the boom

Available as standard or as an option on other models in the range.



Workstation

The 100% electric solution allows drastically reducing the noise level of the machine and the vibration normally transmitted to the operator by the heat engine. This results in an optimal workstation for the operator, reducing fatigue and the risk of occupational diseases.



Heating

To ensure maximum operating comfort, the eWorker can be equipped with an electric heating system, in order to maintain and ensure suitable temperatures also in case of work in cold environments or with harsh climates. In addition, a heated front window is available that, using a small electrical heating element, prevents fogging in case of high humidity, ensuring visibility over the load and the manoeuvring area.



Display

The eWorker range is equipped with a digital display to give the user, at a glance, all information he/she needs to drive the vehicle and inform him/her of the battery charge status. Moreover, it allows setting the correct operating mode: ECO, NORMAL and POWER.



Lighting

The standard configuration of eWorker range features 4 LED lights fitted on the cab overhead guard, which allow adequately illuminating the work area for safe and easy operation even in poorly lit environments and outdoor at night. As an option, it is possible to configure the machine with road (front and rear) lights and lighting for the number plate holder, in line with road traffic approvals.



Boom suspensions

The active boom suspension system (BSS) is available as an option, which protects the load during transfer and maintains a high level of driving comfort on rough terrain. The suspension is automatically deactivated at low speed (below 3 km/h), for boom maximum precision and power.



Noise

Thanks to the quietness of the electric transmission, the absence of vibration caused by the heat engine and the implementation of a cab soundproofing system, the eWorker model offers an unparalleled work place in terms of comfort and quiet running! Moreover, the external noise levels are limited to 64dBA, facilitating communication between the driver and people working near the machine and reducing the noise impact in the work site and in the stables.

Efficiency

The energy required to power the machine's transmission and hydraulic movements is stored in a lead-acid battery pack supplied as standard, with optional Lithium solution, fitted on the right-hand side of the machine in lowered position.

This solution allows maximising accessibility for maintenance, facilitates battery pack replacement and increases the charging procedure ergonomics.



Battery duration

The battery pack is dimensioned so as to offer high autonomy of approx. 8 hours and a recharge time between 8 and 9 hours. This allows the eWorker to work without interruption throughout the work cycle, ensuring significant performance and efficiency.



Battery replacement

For customers who need to work all day, the eWorker is designed to allow battery replacement and eliminate waiting time for recharging.

A convenient quick release system allows removing a flat battery and replace it in just over 5 minutes. The access for removal is available on the right-hand side of the machine chassis.



Merlo carriage

Merlo machines have a carriage designed to ensure extraordinary performance with every implement, without compromising on lightness, which is essential for ensuring an exceptional lifting capacity.

Moreover, the maximum rotation greatly facilitates the loading and unloading of material with shovels. The Tac-lock device, which comes as standard on all the models, guarantees maximum operating comfort, allowing the implements to be hydraulically locked from the cab.

Regenerative braking

To maximise the machine efficiency and recover all available energy, the eWorker is equipped with a device used to recover braking energy.

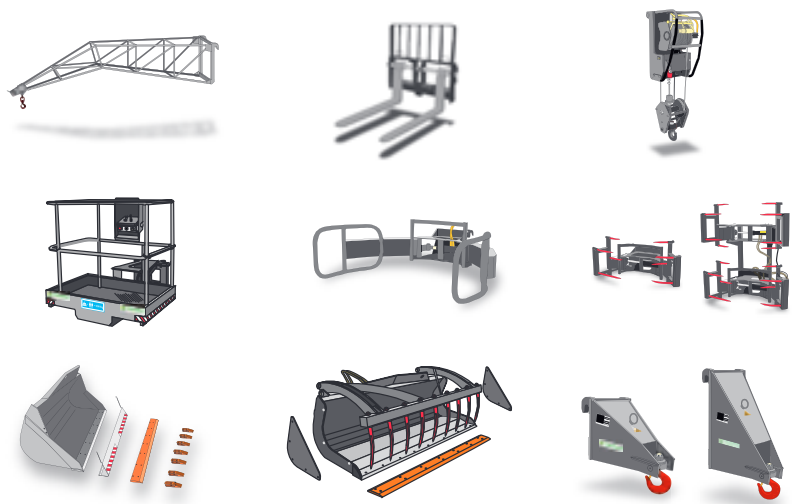
The regenerative braking system, unlike a conventional dynamic braking system, converts the kinetic energy of the machine into electric energy that is stored in the batteries. This slows down the machine and at the same time generates electrical energy immediately available for restarting.



Attachments

The attachments, which are designed and manufactured at the Merlo Group facilities, are the real operational tools used by Merlo telehandlers, and are designed to bring out the machines' performance and versatility in different operational situations.

The patented recognition of the attachments and the effective Tac-lock hydraulic locking system allow for quick tool changes to be performed, with the operating parameters being configured automatically for maximum safety.



Service & spare parts

Whoever buys a Merlo machine chooses a product that meets the highest standards of quality, reliability and innovation.

The customer can count on first-rate support and maintenance services offered by the Merlo Service network, and original spare parts subjected to continuous and rigorous quality controls.

Careful and periodic maintenance, combined with the use of original spare parts, will help your telehandler maintain its performance levels over time.



MerloMobility

The Merlo telehandler range offers exclusive technology, making their telehandlers even smarter and more connected. The customer, through the MerloMobility 4.0 connectivity system, can fully utilise the information detected by the machines and transferred to a portal.

MerloMobility is a flexible tool that allows the user to optimise the operational monitoring of their machines used in various sectors.



Technical characteristics

MODEL	EW25.5-60	EW25.5-90
Performance		
Unladen weight (kg)	4.950	4.950
Maximum load capacity (kg)	2.500	2.500
Lift height (m)	4,8	4,8
Maximum reach (m)	2,6	2,6
Load capacity at max. height (kg)	1.500	1.500
Load capacity at max. reach (kg)	900	900
Height - maximum load capacity (m)	3,4	3,4
Reach at max. load capacity (m)	1,15	1,15
Boom section	2	2

Powertrain

Motor	Electrical	Electrical
Battery (type and V)	Lead-acid - 48V	Lead-acid - 48V
Nominal capacity	960 Ah	960 Ah
Emissions	No emissions	No emissions
Max power (kW/CV)	44/60	66/90
Maximum speed (km/h)	25	25
Traction	2WD	4WD
Autonomy (hours)	8	8
Recharge time at 220 V (hours)	9	9
Recharge voltage	220 V / 400 V	220 V / 400 V
Battery charger	Yes	Yes

Hydraulic system

Hydraulic pump	Load Sensing	Load Sensing
Delivery/pressure (l/min-bar)	42/210	42/210
Hydraulic outlet on top of the boom	Yes	Yes
Rear hydraulic outlets	Optional	Optional

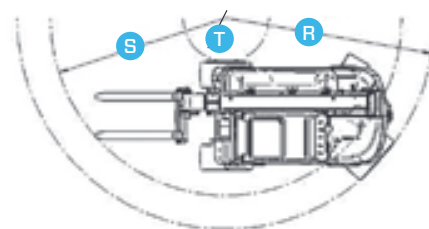
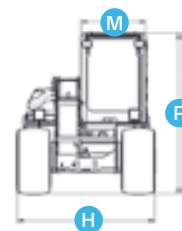
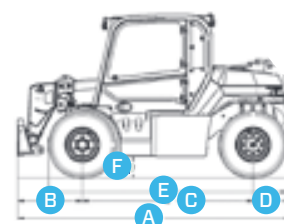
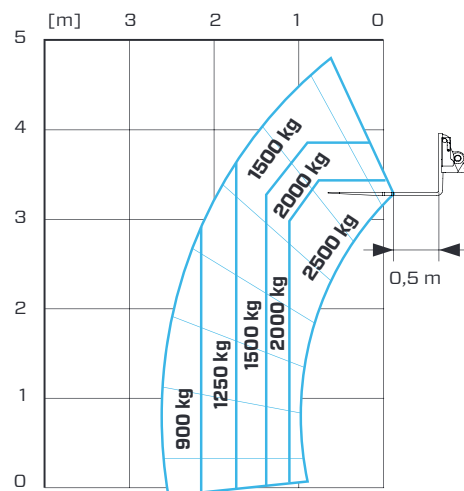
Cab

Closed cab	Optional	Optional
FOPS LEV I Cab - ROPS	Yes	Yes
Controls	Electronic joystick control	Electronic joystick control
Reverse shuttle	Dual reverse	Dual reverse

Configuration

Battery fast replacement	Yes	Yes
Tac-lock	Yes	Yes
Work lights on cab	Yes	Yes
Two floating forks	Yes	Yes
Boom suspension	Optional	Optional
Two steering wheels	Rear	Rear
Front standard tyres	10,0/75-15,3	10,0/75-15,3
Rear standard tyres	10,0/75-15,3	10,0/75-15,3
Optional tyres	7,5R15	7,5R15 31x15,5-15
Brakes	Front wet	Front wet
Automatic parking brake	Yes	Yes
Pre-arrangement for aerial work platform	Optional	Optional
Tractor type approval	Optional	Optional

EW25.5



DIMENSIONS	EW25.5-60	EW25.5-90
A (mm)	3.320	3.320
B (mm)	765	765
C (mm)	2.100	2.100
D (mm)	455	455
E (mm)	2.940	2.940
F (mm)	230	230
H (mm)	1.540	1.540
M (mm)	770	770
P (mm)	1.975	1.975
R (mm)	2.850	3.250
S (mm)	2.230	2.700
T (mm)	0	670

Your Merlo dealer

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