MEDIUM CAPACITY
Telehandlers
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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 center 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 telescopic handlers, both fixed and rotating, DBM self-loading concrete mixers, Treemme municipal and forestry tool carriers and Cingo multi-purpose tracked 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.
The Medium Capacity telehandlers are the focal point of the range produced by Merlo. The technical architecture, applied to these models, translates to unique and very versatile, top-performing and user-friendly machines. Making the most of our telescopic, operating speed, nimbleness and agility performance, our machines are suitable for all sectors: from industrial to mining, from earthmoving to husbandry, through construction and agriculture. These models are incredibly versatile and will support you in your everyday work, from logistics to handling, through storage. Moreover, they offer the opportunity to tow heavy trailers, also on public roads.
Versatile and affordable

The Medium Capacity telehandler range consists of two families of models available in multiple versions. This allows customers to choose the right option. The main features are:

- Compact and highly maneuverable models
- Lift capacity up to 9259 lbs.
- Lift height up to 33 feet.
- Merlo interface for use with over 40 attachments.

**USER INTERFACE:**
In-cab display for viewing all the operating parameters. Ergonomic Joystick controls with integrated travel-direction selector switch. Cursors and controls are designed to maximize ease of implementation.

**POWERTRAIN:**
Hydrostatic transmission with permanent four-wheel drive, 136 and 143 HP engines and maximum speed of 25 mph. Exclusive position of the side and longitudinal engine.

**BOOM SIDE-SHIFT:**
Load positioning correction device without the need to move the machine, nor alter balance and safety of the operator. Unique on the market.

**TELESCOPIC BOOM:**
Heights of 22.9 and 32.8 (ft.in.) with load-bearing capacities from 8377 to 9259 lbs. Exclusive design that ensures lightness, precision and durability. ZM2 implement-holder carriage equipped with hydraulic Tac-lock locking system, controllable from the cab.

**CAB:**
FOPS (Level II) and ROPS certified. The cab is designed to maintain the maximum level of ergonomics while ensuring excellent protection for the operator. The 3.3 (ft.in.) width and the wide glass surface ensure unparalleled comfort and full visibility.

**HYDRAULIC SYSTEM:**
Sized hydraulic system to minimize maneuvering times. Variable displacement (Load Sensing) hydraulic pump and Flow Sharing distributor, for maximum efficiency, excellent performance, and perfectly smooth operation.

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SAFETY

The exclusive Merlo cab is compliant with the ISO 3449 FOPS (Level II) and ISO 3471 ROPS standards, thus ensuring category-leading safety levels. Merlo’s patented ASCS (Adaptive Stability Control System) is capable of recognizing the attachment being used as well as measuring the magnitude of the load being handled, ensuring operators’ safety. Through the digital display (optional), customers can check all the operating parameters within which the safety system will intervene by slowing down and stopping any problematic movements. Depending on the implement in use, the system is able to vary the response of the machine and the speed of movements. Machine safety is enhanced by an automatic parking brake management system, which brakes the machine if the engine switches off in order to avoid unintentional movements.

MERLO 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 maximize 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.
Compared to market standards, the frame is characterized by small dimensions, allowing to minimize the overall floor space occupied by the machine. Furthermore, it is equipped, on the outside, with an exclusive steel belt (made from a steel section bar). Designed to maximize structural strength and ensure excellent torsional strength, the underside of the body is completely secured by steel sheets, in order to protect all components from possible impacts during off-road driving.

TF42.7 and TF38.10 telehandlers, with the TT designation, are equipped with leveling corrector. This solution is made with two hydraulic cylinders positioned between the frame and the axle, and is able to absorb the transverse inclinations of the ground up to 8%. This ensures a vertical lifting of the load and minimizes the risks of lateral instability of the machine.

A metallic structure, positioned above the glass roof, makes it possible to achieve the most stringent level of certification in terms of protection: FOPS level II. This certification guarantees:

- Perfect comfort in the cab.
- Excellent visibility of the load.
- Maximum operator safety.
- The structure can be easily dismantled for more thorough cleaning of the roof.

FOPS PROTECTION

FRAME

LEVELING
The ASCS (Adaptive Stability Control System) safety system ensures perfect risk prevention of the machine tipping over frontally when handling a load. The system regulates the speed and maximum degree of movement according to three operating parameters:

- Handled load: lbs. of material lifted.
- Load position: reach, boom extension and carriage rotation
- Implement in use: automatically recognized by the ASCS system.

When the operational stability limit is reached, the system first reduces the speed of the arm and then stops movement completely. All movements towards a position under safer conditions are permitted during this phase. This simplifies the use of the machine even for less experienced users.

The ASCS can be optionally equipped with a 10.1” color display that allows the operator to view all operating parameters in real time. The high-brightness display has an integrated sensor for automatic adjustment according to external light conditions. In this way, a simple reading of the stability conditions is always ensured, shown in a load diagram that updates, in real time, according to the load being handled and the implement in use. At any time the customer can see at what point the safety system will be triggered.

Independent control of each hydraulic movement allows the identification of movements potentially unsafe in the event of an ASCS intervention. In these situations, a pop-up message shows the customer all the movements allowed which are not detrimental to the stability of the vehicle. Finally, the display continuously shows the inclinometer to maximize the safe use of the machine.
**WORKING AREA SETTING**

A special function, accessible via the display, allows the operator to set the geometric working limits. Adjustment can be made either in accordance with the Cartesian axes (maximum and minimum height and extension) or in accordance with the relative movements of the arm (maximum and minimum lift and extension). This solution makes it possible to simplify and increase safety during repetitive work and in confined spaces, such as inside a warehouse.

**MOVEMENT SPEED SETTING**

The ASCS system uses the display to customize the speed of individual movements of the telescopic boom and the attachments in use according to the needs of individual operators as well as the operations to be carried out. Up to nine different setups can be stored.

**FREE ZONE**

By equipping the machine with a bucket, which is recognized accordingly, the working free zone is automatically activated. A working area of up to 3.2 (ft.in.) of reach and 10° of lift. Within this area it is possible to operate without the control system blocking the movement of the implement in case of overload, facilitating digging operations and ensuring perfectly smooth movements.

**MEMORIZING HANDLED LOADS**

The ASCS display allows the reading of the load being handled, either manually or automatically, whenever the telescopic boom is raised beyond the degrees of inclination pre-set by the operator. The average tolerance on the measured values is ±5% because these can vary depending on the dynamic conditions of the machine. The system can store up to 1,000 different readings, displaying the total and the last 20 values.
PERFORMANCE

Merlo telehandlers are equipped with the latest generation of electronically controlled hydrostatic transmission, which, combined with the four-wheel drive that is always engaged, ensures:

- Excellent braking capacity when the accelerator is released
- High levels of power and torque to the wheels
- Unparalleled ease of use

To complete the transmission, models are equipped with a two-speed mechanical gearbox or MCVTronic continuously variable gearbox. These allow them to reach a maximum speed of 25 mph, without compromising precision of movement, ensured by millimetric adjustment of any movements performed.

HYDRAULIC SYSTEM

These are the only models on the market equipped with two separate circuits for hydraulics and hydrostatics. The hydraulic circuit consists of a load sensing variable displacement pump combined with a flow-sharing electronically controlled hydraulic distributor for ease of use and up to three simultaneous movements without difficulty. In order to increase versatility and performance, the machines can be equipped with continuous proportional delivery. The hydraulic distributor is mounted to the real frame to reduce vibrations and heat transfer to the cab. At the same time, it increases accessibility for maintenance.

ENGINES

These models feature engines with power ratings ranging from 136 to 143HP, which, in accordance with the original Merlo design concept, are installed in a longitudinal direction on the right side of the frame. This ensures maximum accessibility to the components during scheduled and/or extraordinary maintenance operations.
Merlo’s continuously variable CVTronic smart transmission combines the advantages of hydrostatic transmissions with the same performance and yield as a traditional CVT system. Compared to a conventional hydrostatic transmission, the CVTronic provides:

- A 12% increase in torque.
- Reduced consumption thanks to its excellent efficiency.
- Ease of use, thanks to the elimination of gear changes.

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.

The axles, manufactured in-house by the Merlo Group, are available in two versions: axles with epicyclic reducers, to maximize machine compactness, and axles with portal reducers, to increase ground clearance. Both versions are equipped with four downsized dry disc brakes to ensure high braking capacity and a high level of efficiency that minimizes machine consumption. All bearings and bushings are designed to ensure a longer service life and reduce the need for maintenance.

The system is built into the machine frame (TT models) and allows for the lateral movement of the telescopic boom to ensure precise load positioning, with no need for additional maneuvering, thereby saving time, reducing stress, and improving the machine’s productivity. The side-shift control is located on the joystick and is proportional to maximize efficiency.

The Fan Drive is a technology that allows you to change the engine fan’s rotation direction from venting, which cools the radiators, to blowing, which cleans the radiators. It also eliminates dust and residues collected during the work phase, while maintaining the system’s performance and efficiency unaltered. In addition, with Fan-drive technology, the fans will be able to change their rotation speed according to the temperature of the liquids, thus reducing the noise and power consumption of the cooling system.
An unprecedented design guarantees maximum functionality and comfort; the information provided to the driver and the controls of the various systems and devices are grouped for optimal ergonomics. The reverse shuttle on the steering wheel is also present on the Joystick.

1. ASCS Display (OPT)
2. Capacitive joystick
3. Steering wheel and transmission controls
4. Transmission display
5. Pedal control unit
6. Accessory compartment and air conditioning controls

ComFORT

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. In terms of environmental performance, the entry of dust into the passenger compartment is prevented thanks to the cab’s ISO 10263-3 compliant pressurization*

The Merlo cab is also an extremely comfortable and practical workplace, thanks to the following features:

- 3.3 (ft.in.) of width and excellent roominess
- Large glass surface of 46 sq. ft.
- Vibration-damping Silent-blocks, which reduce noise and vibrations.

The set-up is complete with a fabric seat with mechanical suspension. Optionally, the machine can be equipped with air-suspension, raised-back and heated seats.

**NOTES:**

* pressurization level not approved for use of pesticides, work in hazardous environments, with asbestos, etc.
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 2 mph), for boom maximum precision and power.

Merlo machines have a carriage that is designed to offer maximum performance in terms of excavation and protection of the main parts, all without compromising on lightness, which is essential for ensuring an exceptional lifting capacity. The maximum rotation greatly facilitates the loading and unloading of material with buckets. The Tac-lock device, which comes standard on all the models, guarantees maximum operating comfort by allowing the implements to be hydraulically locked directly from the cab.

The models in this range can be fitted with the exclusive and patented Suspended Cab (CS). By equipping the machine with this unique solution, the cab is fitted with an active hydropneumatic suspension, which can be controlled directly by the operator with an electric switch. When the suspension is active, the total displacement of the passenger compartment is 4.3 (in.) (-2.3 / +1.9 (in.)); a condition that, at low frequencies, provides for a drastic reduction in vibrations and stresses inside the passenger compartment, thereby facilitating transport and work operations, even on uneven ground.
The machines can be optionally equipped with the system for regulating and delivering a constant flow of oil to the implements. This solution allows the oil flow to be precisely and specifically adjusted from 0 to maximum flow rate at each of the 4 auxiliary hydraulic outlets at the top of the boom.

All telehandlers in this range are equipped with the innovative capacitive electronic joystick control. This instrument is able to detect the presence of the operator’s hand by means of a capacitive type sensor, avoiding the use of a special physical control (“dead man” button) in order to enable the hydraulic movements of the machine. With the joystick it is possible to control all the main hydraulic movements of the machine and implements, with up to 4 independent hydraulic movements on the implement as standard.

The models in the “medium capacity telehandler” range have been enhanced with the cruise control system called Speed Control. This tool allows the operator to select the desired transfer speed and, once Speed Control is activated, the machine will work to maintain a constant speed without the need for further intervention. Pressing the brake pedal or the direction selector will stop the machine.

In combination with the 10.1” color display of the ASCS system, it is possible to equip the machine with an automatically-operated rear camera, when the reverse gear control is engaged. Images from the rear of the telehandler are shown directly on the in-cab display.

The camera can also be activated manually from the ASCS menu.
Merlo telehandlers are all fitted as standard with road lights and a rear number plate lighting system. In addition, the Medium Capacity range is equipped, as standard, with additional front and rear lights mounted in the upper part of the cab. This solution allows an optimal view of the area in which work is being performed, even in limited light conditions. Finally, optional boom-mounted lights are available to illuminate the load at every stage of lifting.

The Merlo cab is equipped with three window cleaning wipers as standard. A front one, for cleaning the windscreen, which can be operated at two speeds depending on the volume of rain. An upper one for cleaning the glass roof and a rear one for cleaning the rear window.
Merlo telehandlers are the most compact and lightweight models on the market. Excellent maneuverability is ensured by the 4-wheel steering system and the three steering modes, able to reduce maneuvering times and space for decreased fuel consumption.

- Less maneuvering space needed.
- Greater productivity.
- Reduced impact on the ground and fuel consumption.

In order to ensure efficient management of the attachments, all the models feature a double-acting hydraulic service line and an electrical socket for machine-implement communication located at the top of the boom.

The improved visibility on the market ensures efficiency in movement and safety for customers, reducing stress for operators who perform numerous maneuvers during the working day. A careful study of the positioning of the cab and boom, as well as a detailed bonnet design and a large glass surface, ensure fast, safe and precise operations.
THREE STEERING WAYS
This exclusive solution adopted on the axles guarantees the maximum steering angle to perform maneuvers in tight spaces.

front wheel steering

pivot steering

crab steering

TOWING
In order to maximize the efficiency and versatility of these models, it is possible to homologate the machine as an agricultural tractor, allowing it to tow trailers on public roads. Different trailer hooking and braking solutions are available to suit different customer requirements. Similarly, solutions are available for the power supply of the towed component. The maximum limit is 35 tons, depending on the range or hook and brake solution adopted.

BATTERY SWITCH
As a standard feature, the tele-handlers in this range come equipped with an electric and automatic battery switch to improve the efficiency and life of the batteries. Removing the key from the ignition switch starts the process of disconnecting the machine’s electrical circuit. With the circuit off, simply insert the keys into the control panel again to reactivate the batteries.

EPD AND AUTO-REVVING JOYSTICK
The exclusive and innovative EPD (Eco Power Drive) is a Merlo patented system for the electronic control and regulation of the engine and transmission. The EPD automatically controls and adjusts engine speed, hydrostatic pump flow rate and hydrostatic engine displacement according to operating conditions to maximize efficiency and reduce RPM, ensuring a reduction in fuel consumption of up to 18%. Finally, the EDP provides for the control of the engine speed proportionally to the use of the joystick (the greater the inclination of the joystick, the greater the engine revolutions). This feature further optimizes machine consumption, allowing idle speed to be maintained for longer while maximizing responsiveness for material handling.

DECREASED FUEL CONSUMPTION
Merlo EPD technology

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<tr>
<th>RPM</th>
<th>Mixed Cycle (g/h)</th>
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MERLO EPD TECHNOLOGY
MEDIUM CAPACITY TELEHANDLER RANGE

The “Medium Capacity” telehandler range consists of models with lifting capacities between 8400 lbs. and 9250 lbs. and lifting heights of up to 32.8 (ft.in.) The strength of this range lies in its broad selection of products, which allows the customer to choose from among various exclusive technological options, like the suspended cab, the boom side-shift system and the continuously variable transmission, thus meeting all the end users’ various operational needs.
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 & 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 telehandlers even smarter and more connected. The MerloMobility 4.0 connectivity system allows the customer to make use of all the information collected by the machines and transferred to the dedicated portal. Merlo Mobility is a flexible tool that allows the user to optimise the operational monitoring of their machines used in various sectors. The MerloMobility system is available as an option on all other Merlo models.