

MULTIFARMER - XG



The supremacy of ideas.

# MULTIFARMER

**30.9 TOP2**

**30.6 TOP2**

**30.9 CLASSIC2**

**30.6 CLASSIC2**



Protected by a number of patents



Homologated in Europe as an agricultural tractor with up to 20 tonnes towing capacity (depending upon local road regulations).

# VERSATILITY AND EFFICIENCY



## **The cutting edge of technology**

The MULTIFARMER family of telescopic boom tractors clearly demonstrate Merlo's innovation and technology.

The range delivers excellent performance, both as telescopic handler or as a traditional tractor.

Equipped with a full power mechanical PTO and a rear three-point linkage, easily visible from the cab, MULTIFARMER adds the flexibility of true tractor performance to the traditional high productivity of all Merlo handlers. TOP2 models incorporate the MERlin® digital control system for electronic draft control of the

rear-three point linkage and full PTO torque monitoring - a true high-tech advance in efficiency, reliability and safety.

These unique features, together with an aftercooled 4-cylinder turbocharged diesel engine, have made the MULTIFARMER range both popular and competitive.

They further demonstrate Merlo's dedicated commitment to the design of high-tech farm machinery, the result of ongoing research and development, and the experience acquired during forty years of leading the handler market.

# EXCLUSIVE TECHNOLOGY

## **Outstanding versatility**

The front tool-holder carriage, complete with its Tac-Lock hydraulic locking system, ensures instant interchange of attachments - directly controlled from the cab.

## **Total protection**

The extension mechanism of the boom is totally enclosed, ensuring maximum protection and reliability.

## **Power at the right moment**

Two\* standard hydraulic services provide for control of attachments hitched to the rear of the machine.  
\*Varies by territory

## **Towing homologation**

All available models are homologated within Europe as farm tractors, with trailer towing capacity of up to 20 tonnes where permitted by national road regulations.

## **Power where it is needed**

A double-acting hydraulic service with quick-connectors is standard equipment, for powering hydraulically operated attachments.

## **Excellent ground clearance**

The 'portal' type axles, designed and built by Merlo, ensure better ground clearance than traditional designs and were conceived exclusively for use on Merlo telescopic handlers.

## **Oscillating and selective-locking axles**

This unique engineering concept ensures that both handler and tractor operations are undertaken in complete safety.

## **40 kph travel speed**

The electronically controlled hydrostatic transmission ensures a rapid and stable travel speed.

## **Three-point rear linkage**

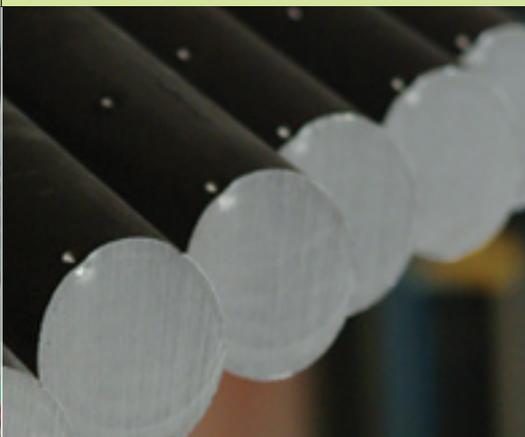
4300 kg capacity rating and hydraulic servo-assisted controls facilitate the use of many types of agricultural implement.

## **Full power PTO**

The rear mechanical PTO provides two speed ratios (540 and 1000 rpm), for the operation of powered agriculture implements.

The MERlin system (TOP2 version) provides computerised control of all machine functions, with great advantages in terms of efficiency, safety and productivity.

The machine is surrounded by a solid 'Ring of Steel', protecting against impact damage.



Models in the MULTIFARMER range are available in two build levels: TOP2 for those who require all the versatility offered by its electronic MERlin control system, and CLASSIC2 for those who prefer more traditional control systems. Exclusive features common to all models ensure maximum performance and ease of operation in even the toughest of applications.

**Outstanding safety**

The standard (key selected) longitudinal stability control device locks the telescopic boom if the machine's stability limits are approached.

**Convenient operator controls and clear instrument panel**

All controls are easily accessible and convenient to operate. The TOP2 series features a digital instrument panel with 'virtual' analogue dials for the easy and immediate monitoring of all normal machine functions. Models in the CLASSIC2 range are equipped with the traditional type of analogue dashboard instruments and warning lights.

**Total visibility**

Excellent visibility all around the machine and particularly of both front and rear working areas.

**Maximum comfort**

The operator has the advantage of the widest handler cab currently available on the market, together with a driver's seat (with air suspension in the TOP2 version) which ensures excellent comfort, particularly in open field conditions.

**Greatest manoeuvrability**

Merlo's design concept integrates all the components, and results in exceptionally compact machine. A powerful engine uses the resulting excellent manoeuvrability and precision to best effect.

**Maximum accessibility**

The side mounted engine and careful positioning of the transmission and hydraulic systems, ensures excellent accessibility and facilitates maintenance. Service personnel can operate in total safety with their feet firmly on the ground.

**High productivity**

With its high operating speed, great precision, flexibility and outstanding performance, the MULTIFARMER will produce the highest productivity in even the most difficult conditions.



**The MULTIFARMER range offers much more**

- Towing agricultural trailers weighing up to 20 tonnes (where permitted)
  - The widest cab currently available on the handler market
    - 85 kW (115 HP) 4-cylinder aftercooled turbo engine
    - Double gear pump hydraulic system
      - Rear three-point linkage
    - Rear full power mechanical-drive PTO (plus optional front PTO)
      - Frame levelling system
  - MERlin electronic control and diagnostics device (TOP2 version)
    - Electronically controlled hydrostatic transmission
      - Permanent four wheel drive and steer
- Change-on-the-Go 2-speed gear box with electronic synchronisation
  - Maximum travel speed of 40 kph (self-limiting)



In Merlo, our specialisation in telescopic handlers guarantees continuing research into even the smallest details of design and production.



# INSTRUMENTS AND CONTROLS



## **Spacious and comfortable cab - a very exclusive workplace**

The MULTIFARMER cab was designed with operator comfort firmly in mind.

The seat can be swivelled through 20°, so that the operator needs not turn his head to see and monitor the operation of rear-mounted attachments. The forward/reverse control can be operated without the operator removing his hands from the steering wheel. Layout of the rear linkage and telescopic boom controls comply with the latest operator comfort and ergonomic standards. Inner cab dimensions are the largest currently available on the handler market.

- ❶ MERlin digital control system display
- ❷ Push-buttons for interactive controls
- ❸ Finger-Touch forward/reverse direction lever
- ❹ Fast/slow drive range selector
- ❺ Multi-purpose joystick
- ❻ Lighting control

The inching pedal permits infinite control of ground speed, irrespective of the engine speed, speeding many handling operations.



The electrically controlled Change-on-the-Go ratio gearbox is operated by two handy push-button controls on the side of the steering column.



The electro-hydraulic 'Finger-Touch' reverser allows the operator to reverse driving direction without even taking his hands off the steering wheel.



### **The ultimate in handler cab comfort**

- 995 mm interior working width
- 360° all-round visibility
- Structure complies with farm tractor standards and with ISO 3449 (FOPS) and ISO 3471 (ROPS)
- Ergonomic controls with easy operation
- Multi-purpose joystick for telescopic boom control
- Air conditioning with automatic temperature control (TOP2)
- MERlin digital control system (TOP2)
- 20° swivel seat

### **Easy access**

Cab access is by means of a fully-opening, two section door (the upper section can be locked open), and is further facilitated by self-cleaning steps. The floor is flat and obstacle-free.

### **Everything under control**

The operator is able to monitor the major machine parameters at any time and select information categories of particular interest.

### **Just the right temperature**

The automatic climate control air conditioner (TOP2) allows the operator to choose his most comfortable temperature.

### **Sound-reduction**

An exceptional degree of cab sound-proofing results from detailed studies in active and passive sound-reduction engineering.

### **Music at hand**

The stereo hi-fi system (standard on the TOP2 version) enhances productivity by ensuring that the operator is both attentive and relaxed.



### **Tradition fights back**

The CLASSIC<sup>2</sup> version features a dashboard with traditional analogue instruments, rather than the LCD display. The operator is continually aware of all major machine parameters.

- 1 Main dashboard panel
- 2 Rev counter/speedometer
- 3 Hour meter
- 4 Stability control system indicator
- 5 Electrical system switches

A single joystick control allows the operator to operate the main boom functions without having to coordinate a number of different levers.



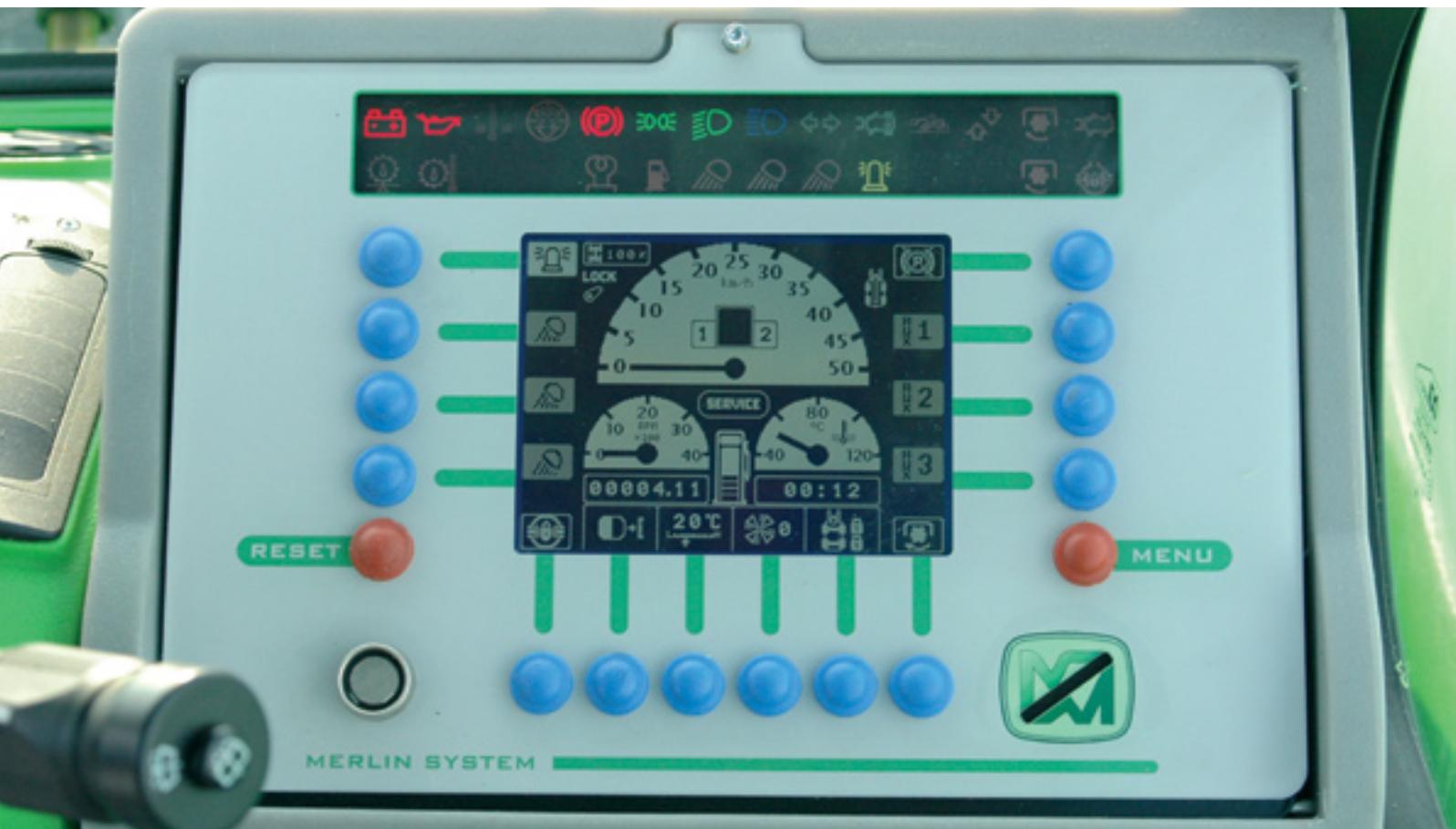
The highly effective ventilation system, with its anti-pollen filter, ensures the best possible cab pressurisation to reduce dust ingress.



The wide glass surface area of the cab ensures truly panoramic visibility. The front and rear windows, and the upper door section, can be opened for 'natural' ventilation.



# THE MERLIN SYSTEM



The MERlin® system (Merlo Local Interactive Network) opens up a new dimension of computerised control for all machine functions. The traditional dashboard is replaced by a very functional LCD display panel showing all the information the operator requires. At the heart of the system is a computer which continually monitors and processes all the information coming to and from the main components. And, which then displays all the main operating parameters in real-time.

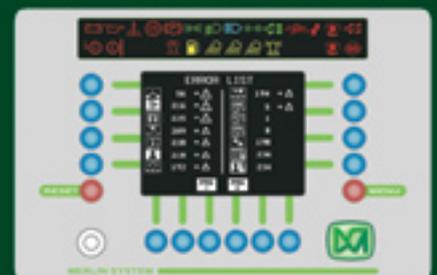
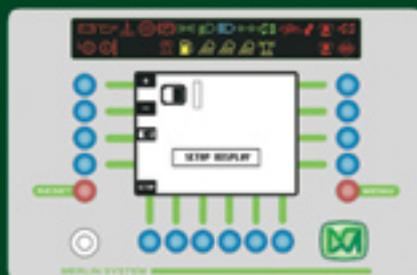
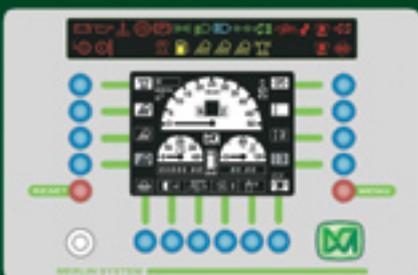
- It is an integral part of all safety systems.
- It provides a clear and comprehensive data display.
- It is an advanced remote diagnostics instrument.
- It is an anti-theft immobiliser.

The control software offers a variety of different interactive operation and technical menus which can be selected according to the activity intended.

**Main Menu**  
Continuous display of main machine parameters - environmental temperature controls - activation of auxiliary equipment.

**Setup Menu**  
Basic settings for the display screen.

**Monitoring Menu**  
The operator is able to instantly check the real time status of many components, with system abnormalities displayed as error codes.



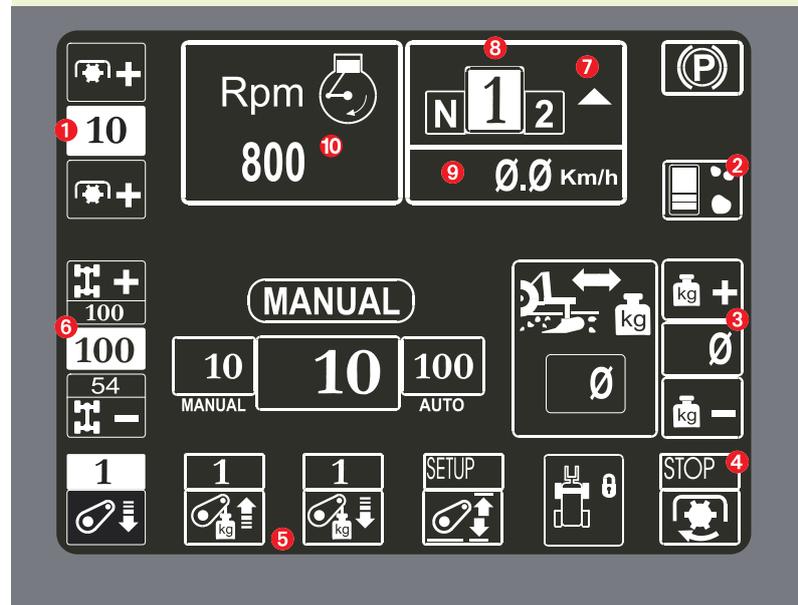
## Control of the PTO and three-point linkage

The MERlin® system permits the real-time monitoring of all functional parameters, including those of the PTO and rear three-point linkage. Using the programming unit controls, the operation of these mechanisms can be programmed and memorised, providing an invaluable working tool on the farm.

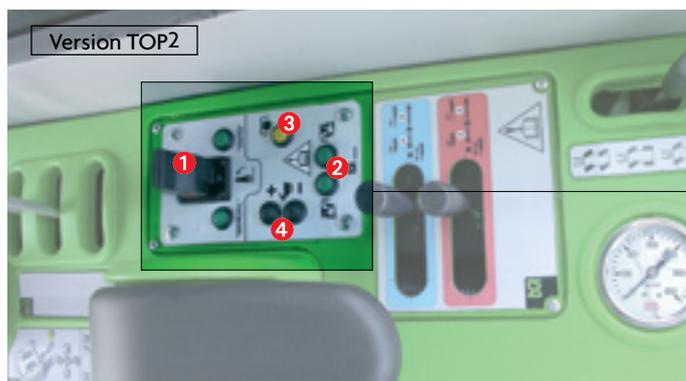
The command and control system is both simple and reliable using any kind of equipment. When using the PTO, it allows regulation of the maximum torque output to suit the particular attachment in use, ensuring automatic cut-off whenever these values are exceeded. Both required engine and travel speeds can be independently programmed, to ensure maximum working efficiency 'in field'.

According to the task, ground conditions, and attachment chosen, it is possible to accurately preset the working parameters of the three point linkage. All settings, such as raising and lowering speeds, prolonged strain sensitivity, sudden-strain reaction, linkage position memory or float activation, are easily made with the very logical setup system.

This control system offers great advantages and makes full advantage of the machine's potential, whatever the operating conditions.



- 1 Limitation of the maximum torque transmitted by the PTO
- 2 Sudden strain sensitivity adjustment
- 3 Prolonged strain sensitivity setting
- 4 PTO on/off switch
- 5 Rear linkage settings
- 6 Machine travel speed adjustment
- 7 Driving direction indicator
- 8 Selected travel speed ratio
- 9 Travel speed (kph)
- 10 Engine rev counter



- 1 Rear linkage control
- 2 Frame levelling control
- 3 PTO on/off switch
- 4 Machine travel speed adjustment

### Service Menu

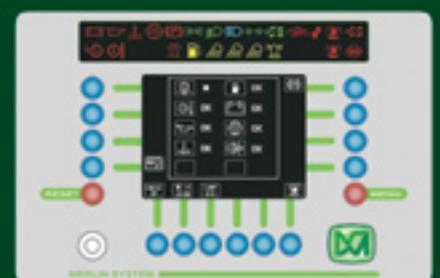
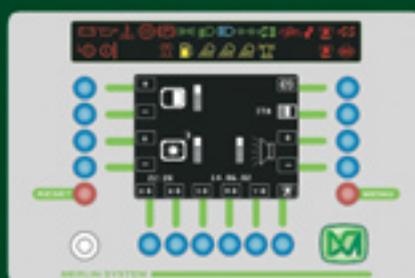
A 'black box' recording the data coming from the various systems and also reminding the operator of maintenance and service timetables.

### Screen Regulation Menu

More complex adjustment of the screen display to compensate for ambient lighting conditions.

### General Control Menu

Summarises diagnosis of the various on-board systems and indicates the functional status of each part.



# TECHNOLOGICAL ADVANTAGES



The rear towing hook may permit the towing of trailers and agricultural implements with a towing mass of up to 20 tonnes, where local transport regulations permit.

## **Merlo's unique 'two-in-one' telescopic handler and farm tractor**

The MULTIFARMER concept has revolutionised agricultural materials handling with high tech engineering - enhancing the potential of a telescopic handler and transforming it into a true multi-purpose operating system - by offering the same efficiency and operating performance of a traditional farm tractor.

### **A simple, yet reliable hydraulic capacity**

The rear hydraulic linkage has a load capacity of 4300 kg, making it ideal for the handling of even heavy implements; operated by external button controls located behind the cab.

### **Rapid and easy tool attachment**

The Category II three point linkage is fully adjustable and it is complete with quick couplings.

## **Two-speed option for high performance**

The rear PTO has two speeds (540 and 1000 rpm) and a 6-spline shaft, in order to fully exploit the engine power and operate a wide range of agricultural implements for harrowing, sowing, sprinkling, mowing, shredding and spreading etc.

### **Optional front PTO**

To operate front attached equipment, an optional mechanical front PTO is also available - which operates at 1000 rpm with a 6-spline shaft.

### **Additional hydraulic services**

Two hydraulic services are rear mounted on all models (with a third optional service also available\*) with quick-connector couplings.

\* detail of standard and optional equipment may differ by territory

Materials handling



Cleaning



Towing



### **The BSS suspension system**

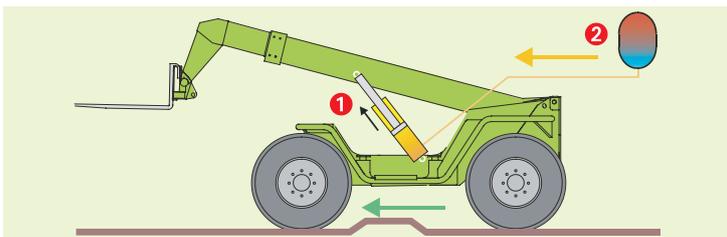
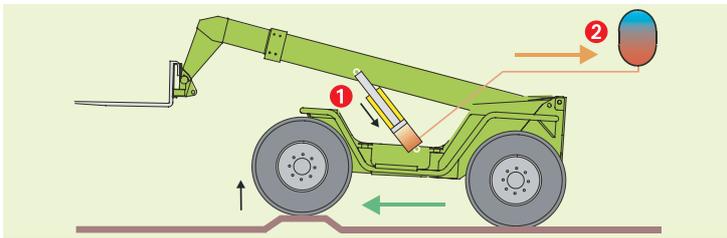
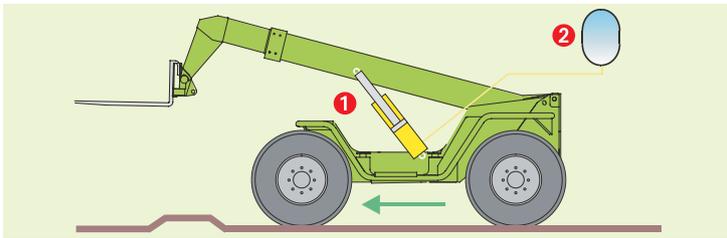
All MULTIFARMER models can be fitted with the innovative Merlo Boom Suspension System, BSS.

Effective suspension is ensured irrespective of the load, which means that the operator needs not be concerned with its adjustment.

The BSS system provides a more comfortable drive, whilst improving the vehicle dynamics, thereby ensuring greater stability and performance, with clear advantages in terms of working safety, speed and productivity.

### **BSS**

The BSS suspension system includes hydro-pneumatic accumulators which act on the hydraulic lifting cylinder of the telescopic boom; providing an effective dampening action against any strain transmitted to the payload during travel.



- ❶ Lifting hydraulic cylinder
- ❷ Gas accumulator

### **Total safety**

The longitudinal stability control system includes a key-operated function that activates an automatic lockout if the movements of the boom approach stability limit levels.

The operator is also notified with audible and visual warning signals.



### **The telescopic boom**

The two sections comprising the telescopic boom (three in the case of MULTIFARMER 30.9) are constructed of U-shaped steel fabrications welded together longitudinally in the vicinity of their neutral axis. The hydraulic extension mechanism provides simultaneous and progressive extension or retraction of all hydraulic sections. All parts of the extension mechanism, its hydraulic hoses and electrical cables, are mounted internally within the boom to provide the greatest protection against accidental damage.

Feeding



Seeding



Silaging



# WINNING FEATURES



## Side-mounted engine

The MULTIFARMER range is fitted with a water-cooled 4-cylinder Deutz low emission (Euro 2) aftercooled turbo engine rated at 85 kW (115 Hp) at 2400 rpm.

It provides both high power and enhanced torque through its entire operating range.

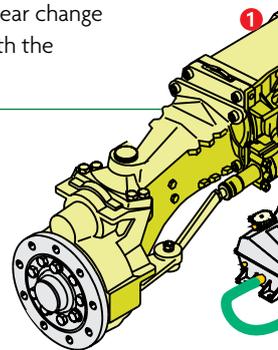
The engine is mounted on the right side of the chassis, ensuring safe, easy access and maintenance from ground level.

Access is further enhanced by its ability to be swung sideways out from under the engine cowling.

Once again, Merlo innovation has been the first to adopt this high-tech solution to easy maintenance.

The choice of a hydrostatic transmission ensures the highest performance, together with precise manoeuvring and instant braking. Continuous and infinite speed adjustment is smoothly achieved at all times.

A Shift-on-the-Go electronically synchronised gear change allows High/Low speed range to be selected with the machine moving.



- 1 Axle
- 2 Hydrostatic oil tank
- 3 Propshaft
- 4 Hydraulic motor
- 5 Heat-exchanger
- 6 Diesel engine
- 7 Hydraulic pump
- 8 Hoses

The water and hydraulic fluid heat exchangers are easily cleaned after removing the quickly-detachable anti-straw protection grilles.



The engine can be swung away from the chassis for easy maintenance.



## **Hydrostatic transmission - the high-tech solution**

### **Simplicity of use**

Very simple to use, there is little maintenance and it is highly reliable, bringing enhanced operator comfort as well as significant running economies.

### **Design freedom**

Being connected by pipes, the transmission components may be located to best suit the design requirements of the machine, rather than having to comply with the design limitations of propeller shafts of a traditional transmission. Freed from these restrictions, Merlo designers could improve on other aspects such as visibility, weight distribution and stability, producing a light and compact overall package.

### **System protection**

The closed and pressurised transmission circuit almost totally eliminates the risk of any oil contamination.

### **Instant, effective braking effect**

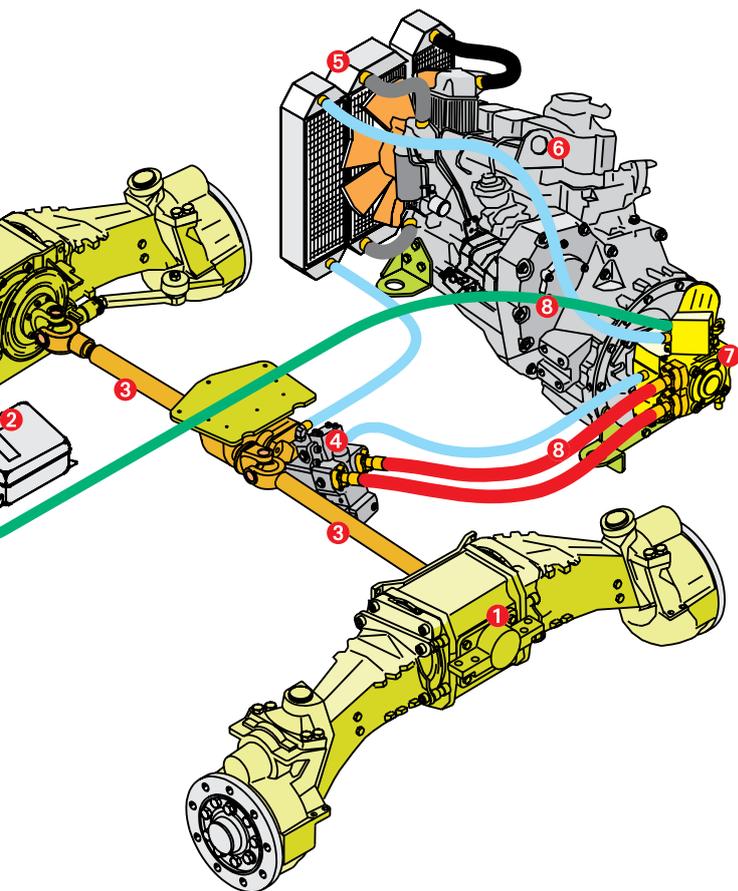
Thanks to the highly effective dynamic braking effect, there is little need to use the service brakes in normal operations.

### **Maximum operator comfort**

The availability of continuous and infinite speed variation via the accelerator pedal obviates the need for constant gear changing (as with the traditional system transmissions) leaving the operator free to concentrate on the work at hand.

### **Effortless control**

The operator can change the travel direction without even removing his hands from the steering wheel, by flicking the Finger-Touch control, while speed adjustment is made simply by using the accelerator pedal.



## **Four wheel braking**

Transmission braking is immediately available, simply by releasing the accelerator pedal. In addition, 4 large hydraulic service disc brakes are located on the exit shafts of the differential, inside the axle casings.

The braking system has two independent hydraulic circuits for safety and ease of operation.

When tractor homologation is required the machine is fitted with a suitable trailer braking system.

An independent disk parking brake is located on the main transmission shaft. It is a spring operated automatic locking type which is unlocked on subsequent start-up. The operator is however free to operate the lock function according when required.

## **Oscillating axles**

The MULTIFARMER axle configuration is another exclusive Merlo innovation. Both are of 'portal' design (produced in-house), which means that the axle centres are raised above the mid point of the wheel, producing an exceptionally high ground clearance, compared to traditional axle designs.

Uniquely, both axles are centrally pivoted and provided with hydraulic locking mechanisms.

When the driver selects 'Handler Mode', the rear axle is left free to oscillate and the front axle is blocked, as in a conventional handler and providing the maximum lifting stability.

The front axle can still be adjusted to provide 'frame levelling' to ensure a truly vertical lift. In this, 'Handler Mode', the rear PTO is automatically isolated.

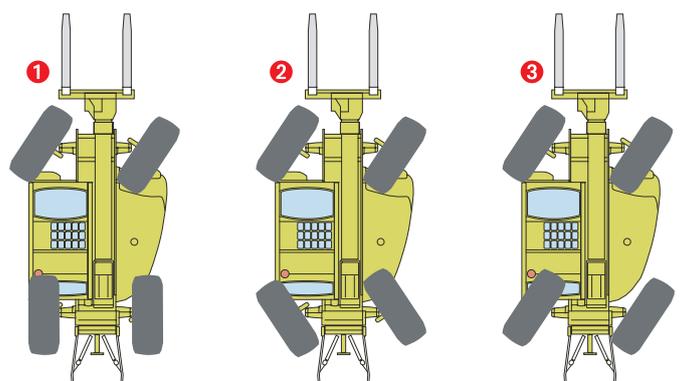
If, however, the driver selects 'Tractor Mode', then the rear axle is locked and the front left free to oscillate, as is the case in a traditional tractor. In addition, the rear PTO is activated and the rear axle can be levelled for implement operation. Should the driver raise the boom above a preset safety angle, the front axle will be automatically locked to guarantee stability. In the TOP2 version, the driver can chose to lock both front and rear axles.

The two locking cylinders incorporate electrically released safety blocking valves, working throughout their stroke.

## **Three steering modes**

The four drive wheels are all steered using a hydraulic servo-assisted system. The operator has a choice of three steering modes, as well as automatic wheel re-synchronisation in the event of misalignment.

- 1 Front wheel steer (for road use).
- 2 All wheel steer (for best manoeuvrability).
- 3 Crab steer (for sideways motion).

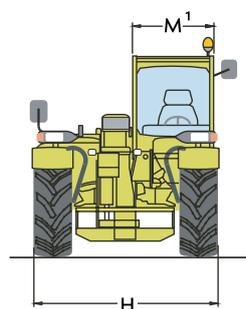
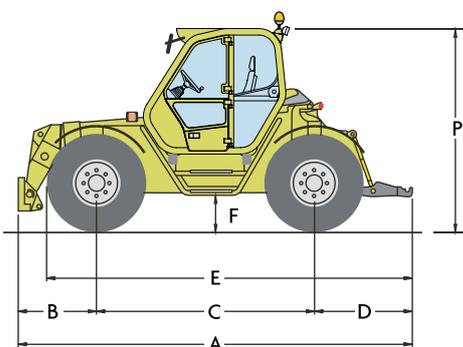


# CHARACTERISTICS AND PERFORMANCE

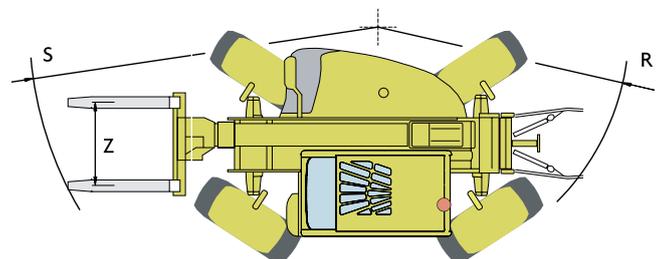


MULTIFARMER		30.6 TOP2/CLASSIC2	30.9 TOP2/CLASSIC2
<b>Weight</b>			
Total empty weight (with forks)	kg	6550	6650
<b>Performance</b>			
Rated maximum load	kg	3000	3000
Maximum lift height	m	6	8,55
Maximum forward reach	m	3,15	5,6
Lift height at full capacity	m	6	7,5
Reach at full capacity	m	1,3	1,7
Capacity at full lift height	kg	3000	2500
Capacity at full forward reach	kg	1500	600
Total carriage rotation	degrees	140	140
Tear-out force with 800 l bucket	kg	4300	4300
Drawbar pull (on the dynamometer)	kg	6000	6000
Low emission (Euro 2) engine		4 cylinder turbo with aftercooler	
Power at 2400 rpm (97/68/CE)		85 kW (115 HP)	
Mechanical rear PTO	rpm	540/1000	540/1000
Optional mechanical front PTO	rpm	1000	1000
Three-point linkage lifting capacity	kg	4300	4300
<b>Speed ratios</b>			
1 <sup>st</sup> gear	kph	16	16
2 <sup>nd</sup> gear (self-limiting maximum speed)	kph	40	40

		30.6 TOP2 /CLASSIC2	30.9 TOP2 /CLASSIC2
<b>Dimensions</b>			
A	mm	4900	5130
B	mm	980	1220
C	mm	2700	2700
D	mm	1220	1220
E	mm	4560	4560
F	mm	430	430
H	mm	2250	2250
M	mm	995	995
P	mm	2495	2495
R	mm	3900	3900
S	mm	4700	4900
Z	mm	850	850



(1) Internal width



### Cab

- Complies with Agricultural Tractor Directive and ISO 3449 (FOPS) and ISO 3471 (ROPS) standards.
- Multi-purpose '4 x 1' Joystick control

### Boom

- Telescopic, with two sections (three in the MULTIFARMER 30.9) sliding on adjustable low-friction pads.
- Hydraulic extension mechanism totally enclosed within the boom assembly to ensure maximum protection and reliability.

### Tool-carrier carriage

- The Tac-Lock quick attachment fitting system is hydraulically controlled from the cab.
- Standard double-acting hydraulic service, with quick couplings, for the operation of hydraulically powered attachments.

### Forks

- Floating type: length 1200 mm. Section 130 x 50 mm.
- Fork spacing is manually adjustable between 450 and 1050 mm.

### Rear PTO

- Mechanical two-speed 540/1000 rpm.

### Steering

- Four drive/steer wheels, with automatic wheel synchronisation in the event of any misalignment and selection of three steering modes from the cab.

### Engine

- 4 cylinder diesel turbo aftercooled Deutz low emission engine (Euro 2), with electronically regulated direct injection, water cooling and power rating of 85 kW (115 HP) at 2400 rpm (97/68/CE).

### Transmission

- Hydrostatic with electronically controlled variable displacement pump.
- Continuous and automatic speed variation, from zero to maximum speed, via the accelerator pedal.
- 2-gear speed change Shift-on-the-Go.
- Inching-Control system providing infinitely variable control of travel speed, irrespective of the engine speed.
- Finger-Touch system makes it possible to change between forward and reverse direction even when moving, with the driver keeping both hands firmly on the steering wheel.
- Permanent four-wheel drive.
- Portal axles ensuring excellent ground clearance.

### Differential locking

- Electric button (TOP2 version) and pedal control system on rear axle
- Additional front axle differential lock option.

### Braking system

- Disk service brakes on all 4 wheels, hydraulically operated and acting on the differential output shafts.
- Disk parking brake with automatic locking feature and hydraulic release control, acting on the main transmission shaft.

### Hydraulic system

- Twin hydraulic gear pump.
- Maximum operating capacity: 107 l/min.
- Working pressure: 210 bar.

### Electrics

- 12 V system with 100 Ah battery and 90 A alternator.
- Full road lighting and rotating beacon.
- Three working lights on the cab (two front lights and one rear).

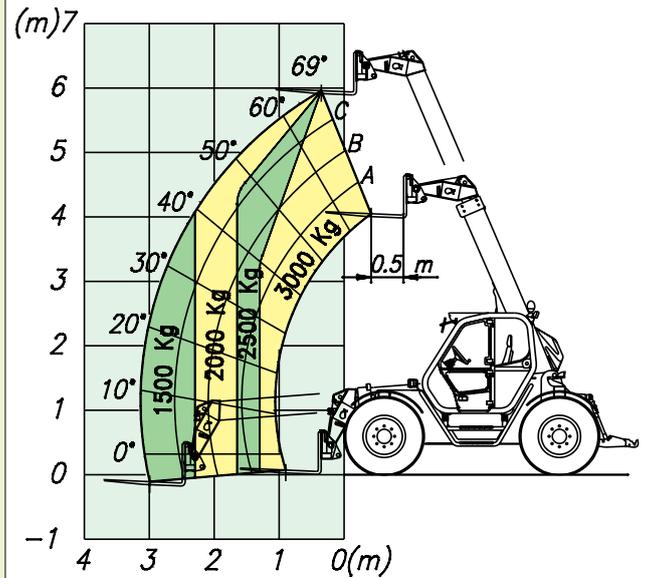
### Capacities

- Hydraulic oil: 105 l
- Diesel fuel: 155 l
- Hydrostatic oil: 12 l
- Engine oil: 8,5 l
- Coolant: 12 l

### Tyres

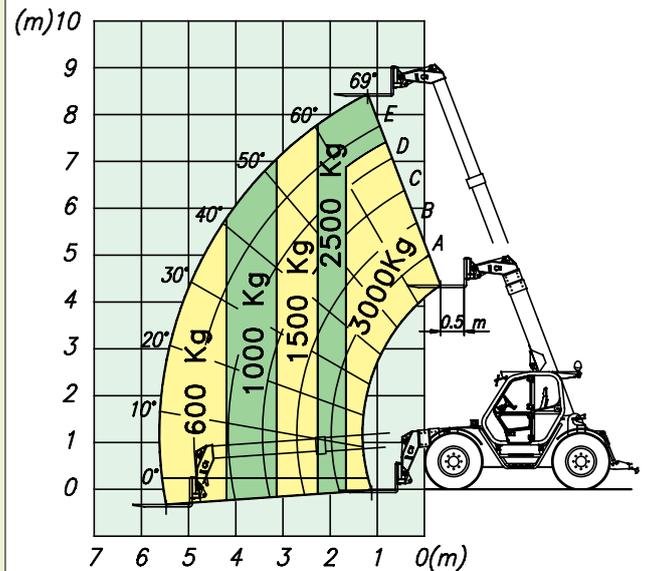
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MULTIFARMER 30.6 TOP2 – 30.6 CLASSIC2



EN 1459/B

MULTIFARMER 30.9 TOP2 – 30.9 CLASSIC2



EN 1459/B

### Equipment and options\*

	TOP2	CLASSIC2
MERlin® digital control system	■	-
Rear three point linkage	■	■
Dual rear-mounted double acting hydraulic services	■	■
Air or hydraulic trailer braking system	●	●
Rear Power-Take-Off (PTO) 540/1000 rpm	■	■
Front PTO 1000 rpm	●	●
Rear axle differential lock	■	■
Front axle differential lock	●	●
Climate control	■	● <sup>(1)</sup>
Top screen wash/wipe	■	●
Supplementary front and top screen guard	●	●
Three cab-mounted working lights (two front, one rear)	■	■
Two boom-mounted working lights plus one to cab rear	■	●
Air suspension seat	■	●
Anti-theft with immobiliser	■	-
Radio (some markets)	■	●

<sup>(1)</sup> Manual control air conditioning

■ Standard ● Option

\* Detail of standard and optional equipment may differ by territory



**Our winning combination: a perfect mix of ideas, design and production**

'Merlo' is synonymous with advanced technology in the world of telescopic handlers and operated plant, and its history is one of ideas and innovation. Not without reason do Merlo machines represent the perfect integration between the most diverse handling problems and the most innovative and productive technical solutions.

It means focussing on a single project and studying the overall market place, on ideas and results, on designing to win, proposing innovative solutions, anticipating applications and possible changes in a very competitive market.

This winning attitude is demonstrated by the drive for an integrated production process, in modern construction methods, automatic processes, integrated electronics, robotics and in many, many other ways.

The will to always maintain a closer bond with our users is reflected in programmes for training and updating personnel, in after sales service, and in the confidence of our dealers and salesmen.

The result is a range of compact and productive machines assuring unequalled levels of comfort, efficiency and safety.

That is why Merlo has become the international reference for handlers, world leader in handler design.



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COMPANY  
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SYSTEM CERTIFIED BY DNV  
**=ISO 9001:2000=**

MERLO has a policy of continual product research and development and specifications are subject to change without notice. Models illustrated may include attachments and options that are not standard.

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