



**TURBOFARMER II**

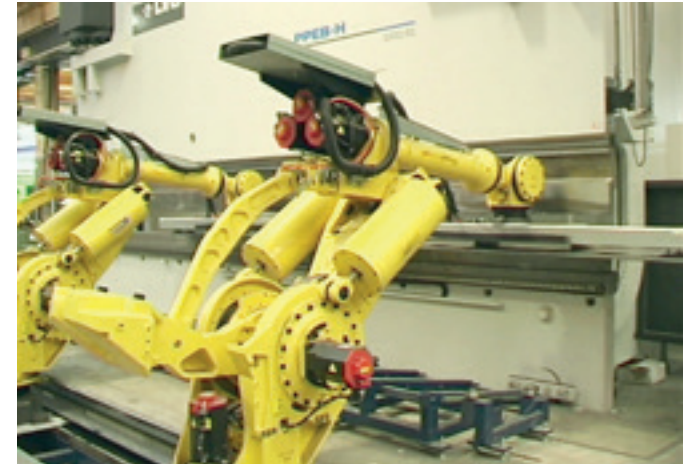








# THE MERLO GROUP



## Mission: innovative group

Safety  
Comfort  
Maximum performance

Merlo was established in 1964 with its first steps in the construction industry with products such as dumpers and self-loading concrete mixers. The first Merlo telehandler was produced in 1981, but the turning point came in 1987, an historic date for the «telehandler» as we know it today, with the motor parallel to the boom, opposite the cab.

This solution has been designed and patented by Merlo and has become the state of the art and standard for excellence. This setup provides a low center of gravity and excellent visibility in all directions, so much so that Merlo called the family «Panoramic», which soon became synonymous with avant-garde, versatile, manoeuvrable, efficient and safe telehandlers; undoubted advantages that have contributed to the success of the Merlo brand worldwide.

The range has expanded over time and enriched by new families dedicated to the agricultural sector, which now accounts for more than 60% of turnover.

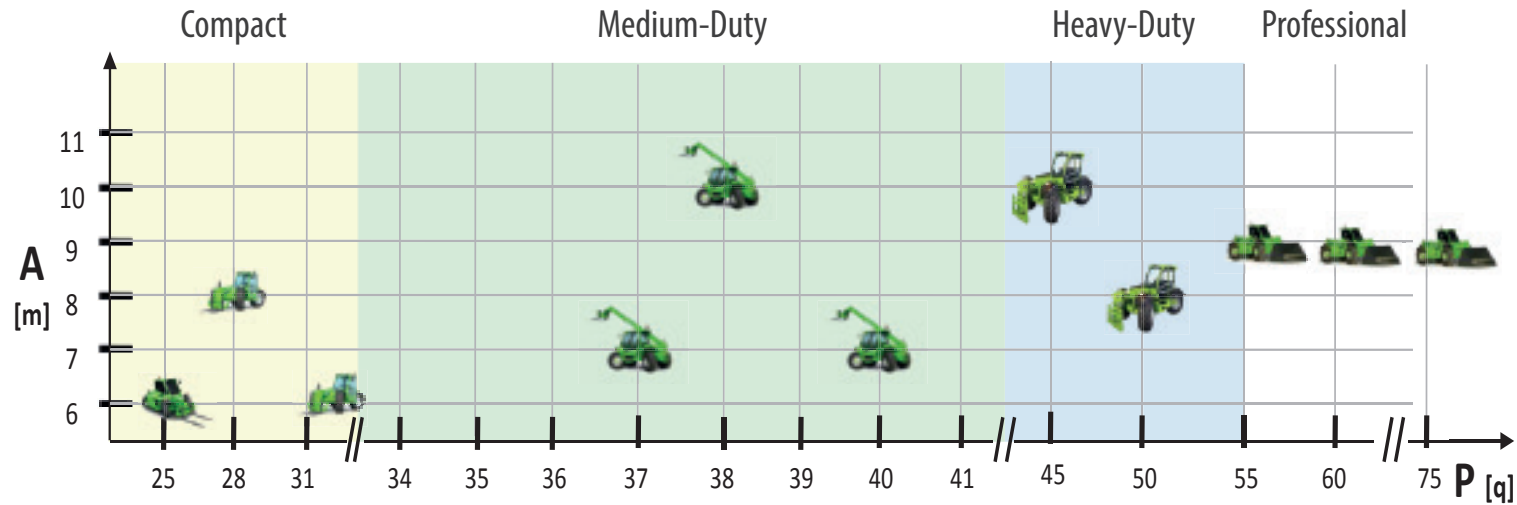
Overall, the range boasts fifty models, sold in over 60 countries through 7 sister companies and over 600 independent dealerships.

Merlo is one of the few industrial manufacturers to produce 90% of the components within the companies of the Group, all located in Cuneo (Piedmont, Italy) on a covered area of 230,000 m<sup>2</sup>.

Merlo employs highly qualified engineers with the aim of developing patented technologies and proprietary systems with the intent to maintain it's leading brand for innovation, performance, and complete safety. To maintain this innovative trend, the Company invests 8% of its turnover in R&D - Research and Development -.

The gold medal on innovation, awarded to the Hybrid 40.7 at the Agritechnica 2013, confirms the innovative capacity and at the same time expresses the desire to consolidate and expand the Merlo presence on world markets with cutting edge products and market leading innovative technology designed to reduce dependence on fossil fuels.

# The telescopic range for agriculture



## The classic Turbofarmer paves the way to Turbofarmer II



# Merlo puts its customer first

## The Turbofarmer designed and constructed according to a new formula following the finest Merlo tradition

Merlo was the first manufacturer to realise the potential of the telehandler for agricultural applications and in 1996 launched the Turbofarmer family.

Since then they have been the «best seller» of the Merlo range and are now part of the European agricultural mechanisation scenario that are rapidly gaining ground in areas of the world dedicated to agriculture, livestock, and for the recycling and handling of biomass for energy production.

The key to success is given both by the design of the Turbofarmer and in the engineering, manufacturing and quality, up to the sales and after-sales services.

With the adoption of diesel engines, according to the **Tier 4 Interim** standards, Merlo have decided to give continuity to the experience gained with the Turbofarmers, renewing the machine's architecture.

All models share the same technologies: in this way it is possible to automate the production so as to increase the level of quality for the end customer and provide the more compact telehandlers with the most innovative content.

The production facility in Cuneo (Italy) has been completely renovated to accommodate the new methodologies.

Each main part of the machine will be produced and assembled in subgroups and fully tested to ensure the highest quality before being transferred to the main line for final assembly, where the telehandler is completed, personalised and tested once again. The purpose of this product revolution is to speed up the order and assembly process, improve quality and efficiency, and make all content available at every level in order to keep Merlo among the leading brands in terms of product quality, innovation and par excellence manufacturing solutions.





Beyond comparison in the most demanding handling conditions





# New Merlo powertrain. Technology challenge

## State of the art engines and transmissions. A winning combination!

The new powertrains (diesel engine/transmission( installed on the all new ). Turbofarmer series, combine 2 new engines Tier 4 Interim (3.6 and 4.0 litre) and two distinct transmissions (2-speed and M CVTronic). The first engine reaches emission levels without DPF or AD Blue, thus providing minimal operating costs. The second, designed for those who require performance for heavy transport or demanding work loads combines the DOC (Diesel Oxidation Catalyst) and DPF (Diesel Particulate Filter), both of which avoid the use of urea (SCR), simplify management and reduce operating costs. The 3600 cc engine develops 120 HP and a torque of 480 Nm, while the 4,000 cc engine develops 156 HP and an impressive torque of 610 Nm. The two diesel engines adopted can be coupled to the transmission

M CVTronic, ideal for all those seeking to increase productivity and employ telescopic system also for work in the field or for road transport. In order to keep the radiator clean and efficient, both engines are equipped with reversable fans. A fan-drive system manages the fan rpm in order to maintain the liquid of the engine cooling system at the correct temperature. It also increases efficiency and prevents power absorption due to excessive fan rpm. When the diesel engine is switched on the fan turns at low rpm. The fan-drive system increases the fan rpm according to engine temperature.

The CVTronic consists of two hydrostatic motors (axial pistons type) which are fed by oil coming from a pump electronically managed. At low work speeds it offers maximum torque by acting in tandem. During transport, the second hydrostatic motor is automatically switched off and the oil from the pump feeds the hydrostatic motor which drives the main Turbofarmer up to 40 km/h, in a smooth and progressive manner, without torque interruption.

- ✓ 3.6 litre 120 HP and 480 Nm diesel engine.
- ✓ 4.0 litre 156 HP and 610 Nm diesel engine.
- ✓ CVTronic transmission offers the same functionality compared to CVT transmissions and the best operative efficiency and performance.
- ✓ At low speeds: two hydrostatic engines provide maximum torque for excellent towing capabilities.
- ✓ At high speeds: the oil delivered via pump feeds a single hydrostatic engine for maximum yield.
- ✓ M CVTronic/EPD: ensures high-level performance and savings of up to 3 l/h at same performance.
- ✓ No interruption of torque: maximum efficiency and driving comfort.
- ✓ Accelerator pedal: connected to the EPD to minimise diesel engine fuel consumption.





Unbeatable in field and haulage applications





# Doubles annual use by adopting PTO and the drawbar

## Turbofarmer increase in versatility by adopting the mechanical PTO system

Merlo offers a mechanical PTO and drawbar on all versions with the aim of reaching a multi-application machine, thus expanding vehicle versatility and annual yield. The PTO makes it possible to couple mixing trolley with the advantage of using a single vehicle for feed mixing and distribution.

The mechanical PTO conveys approximately 90% of power to the flywheel, making the telescopic handler a full-fledged mobile system that dispenses mechanical and hydraulic power. The towing hook, the trailer braking system, the PTO and the hydraulic spool valves are key specifications for the use of tools such as manure spreaders and spreader tank trucks.

The PTO can be connected to the pump for overhead sprinker irrigation, or for hay collection with roto-balers, as well as with sprayers, rakes and tedders. Disc plows and drawn seeders can be connected to the drawbar. Jack fitted tools can also be connected to the snap on coupling of the additional distributors as in the case of mowers to allow for mowing bar adjustment. Turbofarmer equipped with PTO, drawbar and consolidated towing hooks and trailer braking system greatly widens the mission of the telescopic handler, thus making it a full-fledged modern farming vehicle both versatile and efficient able to double annual output and decrease time for return on investment: all for the profit of your company.

- ✓ PTO rpm and machine speed are managed independently. Implement rpm are kept constant for maximum implement performance, whilst the machine can be driven at any speed from zero to 40 Kph for maximum versatility.
- ✓ Mechanical power take-off: state of the art design and functionality.
- ✓ PTO coupling: modulated coupling according to tool inertia, smooth and steady.
- ✓ Power available for PTO: 90% of power to flywheel. Ensures high performance.
- ✓ Speed to PTO: 540/1000 and interchangeable shafts with 6 and 21 splines. Tractor Std.
- ✓ D2 and D3 towing hook: 20 tonne towing capacity. Increased productivity.
- ✓ Trailer braking system: hydraulic or pneumatic as required. Maximum versatility.
- ✓ Drawbar: dedicated to drawn farm tools. Allows excellent versatility.
- ✓ Additional spool valves: for snap coupling. Maximum efficiency and versatility









# Safety comes as standard for all with the Merlo CDC system

Merlo, always an advocate for maximum safety, adopts the M CDC system as standard



The Dynamic Load Control is offered as standard on the Turbofarmer family.

A sensor located on each attachment produced by the Merlo Group, called the automatic equipment recognition, sends the specifications of the tool to the M CDC control unit, making the M CDC system operational.

The display shows the main operating parameters such as, the load weight, the cantilever, the tilt angle of the boom, and the stability index. The operator verifies the degree of safety by means of a bright dot that moves on the load diagram of the display that acts as a traffic light.

The operator must be very careful when the dot changes from green to yellow, because if the dot turns red, the critical point is reached and the hazardous movements will be blocked.

If the block occurs, the operator can continue the work by retracting the arm to the safety zone. For dynamic loader operations, the new parameters installed in the M CDC control unit enable quick and fluid operations in order to optimize productivity.

The M CDC system is operative at all times even with the vehicle moving, ensuring maximum dynamic safety that goes beyond the already stringent EN15000 standards.

- ✓ «State of the art» system: unparalleled performance, above the EN15000 standards.
- ✓ Covered by three international patents: original Merlo solutions worthy of being protected.
- ✓ Merlo attachments fitted with sensors. Greater operational and functional assurance.
- ✓ Attachment sensor: the control unit installs the load diagram for maximum operational safety
- ✓ Display: shows the main parameters in real time. The operator can make immediate decisions.
- ✓ User interface: the traffic light alerts on the safety status. Intuitive system.
- ✓ Spurious implements ( w/o sensor): the system provides manual selection, so that they can be used in full safety, providing max versatility.
- ✓ Weighing system: detects and stores the load being handled, even in automatic mode.
- ✓ Possibility to calibrate the weight of the attachment: greater ease of use and accuracy.





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1. Merlo CDC - Dynamic Load Control: the system, patented by Merlo, ensures maximum safety, beyond the EN15000 norm.
2. Reverse shuttle controls located on the joystick. Controls are duplicated at the steering wheel for user-friendly shuttling operations.
3. New display: it shows suitable and useful information.
4. A/C system: in line with the best automotive standards. Temperature reached in short time.
5. Inching-Control: for precise maneuvers.
6. Curved front screen: Operator can follow the boom till the maximum height is reached. Max visibility and safety.

1

1

3

4

4

2

5



# The new record setting cab, designed for maximum comfort

## Whatever the size, the new cab tailors to your comfort

A quick glance is all it takes to see that we are dealing with a new generation of driver's cab as what regards conception, design and ergonomics.

The cab is the largest on the market with an overall width of 1040 mm. Just take a seat to feel at ease. Excellent accessibility thanks to the 870 mm door, ergonomic seat, tilting steering wheel and superb visibility in every direction including top side.

The curved windscreen allows the operator to follow the load to its maximum height.

The digital display panel shows vehicle information, while the 8.5" display contains information on the M CDC system whose functions are selected using the automotive inspired knobs.

The EPD work modes are also easy to select, as is actioning the joystick with built-in reverse shuttle.

Two-stage ventilation features 8 vents for keeping feet warm and head cool, while an efficient defrost thaws vehicle windows and screens.

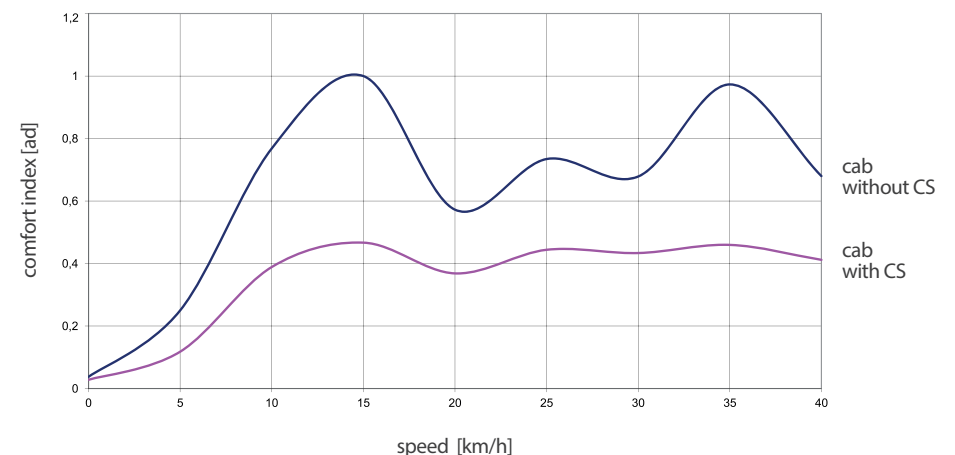
The cab is perceived as a high level of excellence designed to your specific needs.

The suspended cab "CS" featuring hydro-pneumatic suspensions has been designed to offer comfort and superior class. It is the only of its kind available on the telescopic handler market.

- ✓ Cab: new generation that aims for maximum ergonomics, visibility and safety.
- ✓ Curved windscreen: only one of its kind. The operator follows the load in a natural manner.
- ✓ Digital dashboard: dedicated to the vehicle, shows instant fuel consumption
- ✓ 8.5" display: dedicated to the M CDC system and featured on base model machines. Easy to read
- ✓ M CDC Features. The operator selects these using the knob in an easy and intuitive manner.
- ✓ EPD controls: three modes are selected using potentiometer for maximum efficiency of use and operating practicality
- ✓ Buttons: the right side panel houses the main buttons, intuitive interface
- ✓ Heating & air-con systems: Cab warm up (-10° to +25°) reached in halftime. Cooling down (+55° to +25°) timing reduced by 20% for top performance.



### Excellent Comfort









# Innovative Merlo solution as far as fuel saving is concerned

## EPD, innovative and efficient Merlo solution, able to save up to 3.65 l/h of fuel

The EPD system, under international patent, controls thermal engine rpm via the EPD control unit located between the accelerator pedal and diesel engine. The operator sets the desired cruising speed via the accelerator pedal, the control unit controls diesel engine rpm until reaching set cruising speed. In this manner, the control unit maximises performance by employing engine output power and torque in the most efficient way possible, thus minimising fuel consumption.

The EPD system provides three manually selected operating modes: Transport & Tow, aimed at attaining or maintaining the desired speed with minimum fuel consumption. In this mode the system ensures the torque needed to reach the speed set by the operator. In the Heavy Load mode the system provides the maximum torque and the operator can control it by means of the gas pedal, in order to prevent wheel slipping during operations like digging and snow clearance. The third mode known as "Inching" is helpful to maximise precision during moving operations. In addition, there is a second potentiometer which allows the operator to set the engine idling speed, which is particularly useful to set 540/1000 PTO rpm in order to maximize implement performance.

The system keeps the PTO rpm independently from the speed of the machine, allowing the operator to reach any speed from zero to 40 Kmp, by simply pressing the gas pedal.

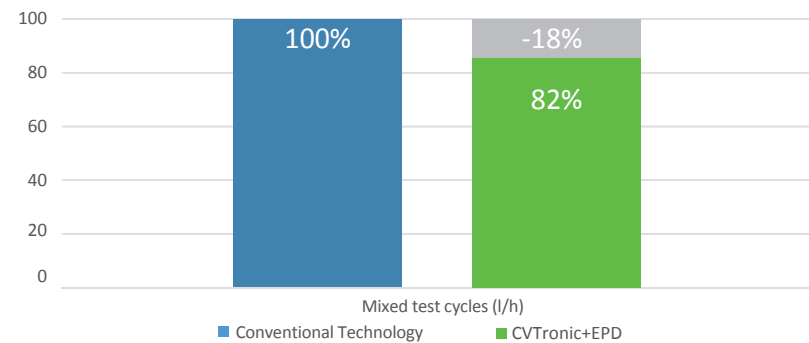
Merlo is the only telehandler manufacturer offering practical solutions for fuel saving and maximum versatility.

- ✓ Merlo patent: EDP is a proprietary technology patented to foster innovation.
- ✓ Energy saving: EPD allows for fuel economy, saving up to 3,65 l/h.
- ✓ Annual saving: estimating 1000 hours, savings total about 3,650 litres, or approximately 4,000 €.
- ✓ Objectives: EPD controls engine rpm with parameters set for maximum energy savings.
- ✓ EPD ECU: located between the diesel engine and accelerator pedal for direct control of engine rpm.
- ✓ Target speed: EPD allows cruising speed to be achieved automatically.
- ✓ Three manual selections: Transport & Tow, Heavy Load and Inching for maximum efficiency.
- ✓ PTO: the operator sets the ratio between engine rev and PTO rpm 540/1000.

### Merlo Technology CVTronic + EPD

Annual fuel saving: 3,65 l/h, equal to 4,000 €

Mixed test cycles: Haulage, Heavy handling and H.D. handling material



N.B. Considering 1,1 €/l fuel cost



The EPD system provides manual control of several parameters such as Transport & Tow aimed at achieving or maintaining the desired speed with minimum energy consumption, Heavy Load for maximum performance during special processes such as excavation or removal of snow and Inching.







# Versatility and advanced technology, the strength of the new Turbofarmer

## Thesis, antithesis and synthesis of a high-performance design

To give continuity to the overwhelming success of the Turbofarmer, Merlo engineers have kept some key features on the new family, such as the wheelbase, weight, compact size and the two engine options (120HP and 156HP) in order to ensure their undisputed versatility and high performance, the pride of Merlo products. The new TF42.7, TF38.10 and TF38.7 models offer a record load diagram. Just look at the TF42.7TT, the «tilt and shift» version, which can lift 4,200 kg up 7 meters, an outstanding performance that only the Merlo Turbofarmer can offer the market. To this record performance are added the technologies that Merlo is able to offer and that allow greater comfort, safety and productivity as well as lower fuel consumption.

Systems such as the EPD, for the reduction of fuel consumption (up to 18%), the M CDC for safety that exceeds the EN15000 standards, come as standard on the entire new range of Turbofarmers.

Dedicated versions have been designed for the «CS» - Suspended cab - version, a feature that only Merlo offers in the panorama of telehandlers, as well as the new M CVTronic, Merlo continuously variable transmission. The offer is completed with the «tilt and shift» versions.

Once again, a cutting-edge technology that no competitor is able to offer and that makes the Merlo telehandlers the most efficient and technological on the market.

- ✓ 12 versions with 7 and 10 meter booms, is the widest range on the market.
- ✓ Two 120 and 156 HP engines targeted on the type of work to be performed.
- ✓ Maximum load to the top, with one meter cantilever of the load. Record Performances.
- ✓ Reversible cooling fan. Clean engine radiator for maximum performance.
- ✓ New cab on «silent blocks» combined with two-speed gearbox. Maximum efficiency.
- ✓ New «CS» suspended cab combined with the new M CVTronic transmission. State of the art.
- ✓ Boom side-shift for precise load positioning, combined with the transverse tilt correction for maximum safety (TT versions).
- ✓ Boom suspension cushions the load for maximum operating comfort, significantly reducing the loss and damage of materials during handling (opt).
- ✓ Electronic active suspensions: maximum comfort and safety of the transported load (opt).
- ✓ Hydraulic system: Flow-Sharing, Load-Sensing or geared for maximum operational flexibility.
- ✓ Towing hooks and trailer braking systems: maximum versatility, performance and safety.





TECHNICAL DATA	TF 38.7	TF 42.7	TF 38.10
Unladen weight, with forks (kg)	7500	7600	7700
Maximum load capacity (kg)	3800	4200	3800
Maximum lift height (m)	7.1	7.1	9.6
Maximum reach (m)	3.6	3.6	6.3
Lift height at max. load capacity (m)	7.1	7.1	5.7
Reach at max. load capacity (m)	1.75	1.6	1.6
Load capacity at max. lift height (kg)	3700	4000	1400
Load capacity at max. reach (kg)	1750	1750	750
Engine turbo (Capacity/Cylinders)*	3.6/4	3.6/4 4.1/4	3.6/4 4.1/4
Engine Tier 4 Interim (kW/HP)*	90/122.4	115/156.4	90/122.4 115/156.4
Max speed (Kph)	40	40	40
Hydro-pneumatic Boom "BSS"	○	○	○
Fuel tank capacity (l)	150	150	150
Hydraulic gear pump (bar-l/min)*	210-94	-	210-94
Load-Sensing pump (bar-l/min)*	210-122	210-122	210-122
Hydraulic oil tank (l)	85	85	85
Cab: FOPS (ISO 3449) / ROPS (ISO 3471)	●	●	●
Electromechanical joystick	●	●	●
Hydrostatic transmission	●	●	●
Front and Rear diff.lock	○	○	○
"Dual Control" reverse shuttle (Joystick/volante)	●	●	●
Pedal Inching-Control	●	●	●
Permanent 4WD	●	●	●
All-wheel steering system	●	●	●
Automatic parking brake	●	●	●
Roof working light (2 + 2)	●	●	●
Gearbox type*	(2s / CVTronic)*	(2s / CVTronic)*	(2s / CVTronic)*
Suspended cab "CS"*	*	*	*
Tilting Chassis*	*	*	*
Mechanical PTO (540/1000)	○	○	○
Dynamic Load Control "M CDC"	●	●	●
Standard tyres	405/70-24	405/70-24	405/70-24
Homologation: Agricultural tractor	●	●	●

\* According to the versions. ● Standard. ○ Optional.

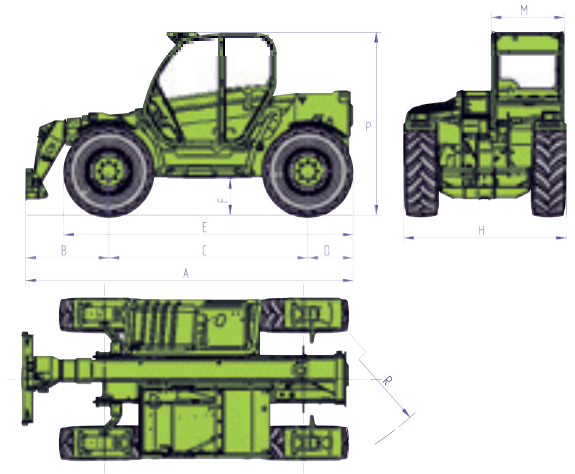
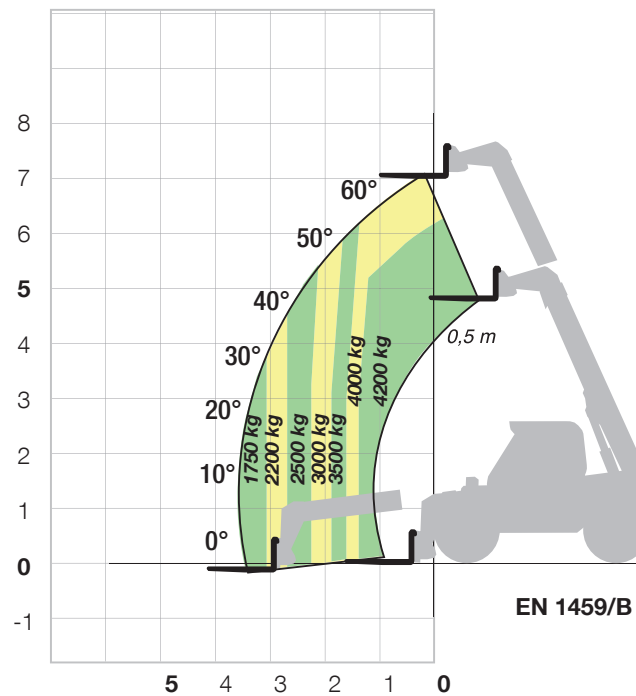
EUROPEAN MARKETS	TF 38.7	TF 42.7	TF 38.10
AGRICULTURAL TRACTOR HOMOLOGATION			
Mechanical trailer braking (kg)	5000	5000	5000
Progressive hydraulic trailer braking (kg)	-	-	-
Mixed braking and automatic hydraulic trailer braking (kg)	21000	21000	21000
Mixed braking and automatic air trailer braking (kg)	21000	21000	21000



# TECHNICAL DATA



## TF 42.7 WITH FORKS



DIMENSIONS		TF 42.7	
A (mm)	4487	F (mm)	500
B (mm)	1150	H (mm)	2250
C (mm)	2750	M (mm)	995
D (mm)	587	P (mm)	2530
E (mm)	3926	R (mm)	3985

## Not every 4-ton telehandler offers the same performance!

### Just Merlo ensures:

Flat load diagram: 4,000 kg at 7 metres. Record in its segment

Maximum load capacity: 4,200 kg

Load capacity at max. reach: 1,750 kg. Record in its segment

### Merlo Telehandler main advantages:

+ Safety + Productivity + Performance





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*The telehandlers illustrated in this document may be equipped with optional or special accessories that do not form part of the standard supply but which are available on request.  
In some countries certain models or attachments may not be available as a result of market restrictions or regulations. The technical data and other information in this document were correct at the time of printing;  
however, we reserve the right to modify our products, without prior notice, as part of our policy of continuous technical improvement.  
Your Merlo dealer will be pleased to provide you with the latest information on all our products and services.*