



## The Merlo Group

2 | 3

## N° 1 for technology and safety

The Merlo brand has always been synonymous with advanced technology in the telehandler field and our history, since 1964, is hallmarked by experience based on determination and passion. The development of complex products, from the idea to the result, from design to sales, means being able to propose orientations for the most competitive markets. The outcome of our efforts are compact, easy to handle telehandlers ensuring incomparable operating performance, comfort, efficiency and safety. At Agritechnica 2013, three important awards were received that clearly demonstrate the technological and innovative superiority of our products:

- Turbofarmer 42.7 Hybrid: Gold Medal for innovation at Agritechnica.
- Turbofarmer II: Machine of the year 2014 in the "handling and logistics" category.
- Multifarmer: Selected as a "milestone" in agriculture.

The new modular Medium Duty and Compact Turbofarmer range was named «Machine of the Year» 2015 at Sima 2015 in the handling and logistics sector.

Automated boom bending workstation

- Over 1.100 employees
- Surface area of 300,000 m<sup>2</sup> of which 220,000 m<sup>2</sup> are indoors
- 90% exports
- 600 dealers all over the world
- 8% of turnover invested in Research & Development
- 54 manufacturing robots





## Modular Turbofarmer range

### The telehandler in agriculture according to Merlo

We were the first to launch a range of telehandlers dedicated to agriculture in 1996.

Today, we proudly present the new generation developed on the strength of experience acquired in 50 years of operations.

- + Comfort
- Largest cab in its category
- ✓ Suspended cab (CS), a unique and patented solution
- ✓ Pressurized cab\*
- + Performance <
- ✓ 136 HP engines (Euro Stage IV Tier 4 Final)
  without DPF
- + Efficiency
- ✓ -18% consumption with standard Eco Power Drive (EPD)
- + Versatility
- Frame levelling and boom lateral movement system (TT version)
- ✓ Mechanical PTO (optional)
- + Safety
- ✓ Cab compliant with ROPS and FOPS level II standards\*\*
- M CDC Merlo's Dynamic Load Control
- \* According to the ISO 10263-3 standard, models with Load-Sensing, not approved for pesticides.
- \*\* EN ISO 3449/2008, protection level II (highest protection level provided by the norm and equivalent to the fall of a 227 kg object from 5.22 metres)



- CS suspended cab: the only one in its category
- EPD -18% consumption
- TT versions: versatility and precision, not found anywhere else
- 4.2 tons at 7 metres (version P 42.7 TT)

## **New Merlo Turbofarmer family**

**Concentrated technology** 

#### **Innovative Merlo systems**

- Tilting + lateral movement of the boom
- Tac-Lock rapid coupling of the attachments

#### Lifting capacity

- Booms from 7 to 10 metres
- Capacities ranging from 3.8 to 4.2 tons

#### Comfort

- Largest cab on the market 1010 mm
- Standard cab on silent-block
- CS cab with hydropneumatic suspensions

#### **Safety**

- M CDC Merlo's Dynamic Load Control
- Cab compliant with FOPS/ROPS

### **Hydraulic system options**

- Load-Sensing (LS) pump with electromechanical joystick
- LS Pump + Flow-sharing
- + Electromechanical joystick or electronic optional (standard on CS)

### **Towing versatility**

- Tow hook up to 21 tonnes
- Drawbar
- Hydraulic connections (2 opt.)
- Trailer braking (Pneu/Hydr.)

### **Efficiency – Powertrain**

- Tier 4 Final engine 136 HP
- Merlo 2-speed hydrostatic transmission
- CVTronic transmission (dedicated versions, CS and TT)
- EPD standard on all versions, EPD Top as an option.



#### Versatility in the field

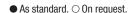
- Mechanical PTO (optional)
- Speed 540/1000

6 | 7 THE NEW RANGE

## The Turbofarmer range

## A version for every requirement

		CAB									
		SUSPENSION		FINISHING		FRAME		TRANSMISSION		SAFETY	
	MODEL	Steady	Suspended - CS	STANDARD	PREMIUM	Fixed	Tilting + Shift - TT	2 speed	MCVTronic	CDC Light	CDC Display
TF42.7	TF42.7-140	•		•	0	•		•		•	0
	TF42.7 CS-140		•	•	0	•		•		•	0
	TF42.7 CS-140 CVTRONIC		•	•	0	•			•	•	0
	TF42.7 TT-140	•		•	0		•	•		•	0
	TF42.7 TT CS-140		•	•	0		•	•		•	0
	TF42.7 TT CS-140 CVTRONIC		•	•	0		•		•	•	0
TF38.10	TF38.10-140	•		•	0	•		•		•	0
	TF38.10 CS-140		•	•	0	•		•		•	0
	TF38.10 CS-140 CVTRONIC		•	•	0	•			•	•	0
	TF38.10 TT-140	•		•	0		•	•		•	0
	TF38.10 TT CS-140		•	•	0		•	•		•	0
	TF38.10 TT CS-140 CVTRONIC		•	•	0		•		•	•	0





### **Broad product offering:**

- Available in 2 models and 12 different versions
- 2 boom lengths 7 and 10 m
- 2 capacities 3.8 and 4.2 tons
- 1 engine available 136 HP Tier 4 Final



ENGINES & TRANSMISSIONS

## **Engines & Transmissions**Higher performance and lower consumption

- The Turbofarmer range is equipped with a Tier 4 Final engine 100 kW/136 HP 3.6 litres at 2300 rpm, torque 500 Nm at 1600 rpm
- ✓ Two hydrostatic transmissions are available: two speeds and a unique stepless Merlo CVTronic
- Merlo's hydrostatic transmissions have an oil circuit that is completely independent of the boom's oil circuit resulting in assuring maximun performance and longer oil's life (with two separate tanks)
- Fan Drive 1 is a standard feature that allows you to change the rotation direction of the fan, from suction to blowing
- ✓ Eco Power Drive (EPD) is a standard feature that automatically controls the engine speed when driving, according to operating conditions. Moreover, EPD Plus, also standard, adds Heavy Load Eco ② and Speed Control ③ modes capabilities
- Speed control mode allows the forward speed of the machine to be memorized and to keep it constant (ideal for yard handling operations or road transport)
- All models with an electronic joystick (standard on CS) has the EPD Top system, which adds to the EPD Plus version the automated control of the diesel revs according to the movement of the joystick. The greater the inclination given to the joystick, the higher the rpm of the engine
- The rpm selector allows
  the operator either to set minimum
  engine speed to be keept
  (selector in position a)
  or to set a maximum engine
  speed while operating the joystick
  in proportional inclination mode
  (selector in position b)





- Tier 4 Final 100 kW/136 HP engine
- Fan Drive as standard to ensure the radiators are always clean
- EPD system: consumption is reduced by 18% compared to traditional technologies
- EPD Top guarantees boom responsiveness while keeping consumption to a minimum



10 | 11 MERLO CVTRONIC

### Merlo CVTronic

## Merlo's own continuous variable transmission version

The CVTronic transmission follows Merlo's traditions in the hydrostatic field and ensures smooth acceleration without interrupting torque from 0 to 40 km/h.

The transmission comprises two axial piston hydrostatic motor (2X) powered by the electronically-controlled hydraulic pump.

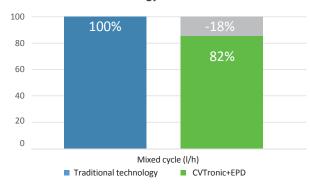
At low work speeds, they function in conjunction to provide maximum torque, with an increase of + 12% with respect to conventional hydrostatic transmissions.

During transport, the second hydrostatic engine is automatically disengaged from the control system and the oil from the pump powers the main hydrostatic motor that pushes the Turbofarmer to maximum speed.





Merlo CVTronic technology + EPD



- Over 12% torque increase at low work speeds vs conventional hydrostatic transmissions
- Accelerations from 0-40 km/h, smooth and progressive without interruptions for a gear change
- 18% fuel consumption reduction thanks to the EPD system



### **Comfort record**

## Pressurized cab\*

#### **AIR FLOW VENTILATION SYSTEM**

## World exclusive cab with suspensions

The new cab was developed to ensure record-breaking comfort for our users.

At 1010 mm, it is the largest in its category, yet even acoustic and thermal comfort involved detailed design; the cab is also pressurised\* to prevent dust entering the cockpit.

The air flow has been specialy designed for being distributed evenly inside the driver's cab and reach all areas in an optimal manner. The optional air conditioning system is completely new and was developed based on automotive standards, halving the warm-up and cool-down times, guaranteeing an optimal temperature in all conditions. The new Merlo cab can now reach an internal temperature of 22°C with an external temperature of 43 °C and full sunlight and an internal temperature of 26°C with an external condition of -15 °C and no solar irradiation.

The inlet vent is located on the side of the cab away from potential sources of dust and dirt. Moreover, it is also available a suspended cab, something only Merlo offers in the field of telehandlers: the pneumatic suspensions provide the best comfort in its class.



**CS** hydropneumatic suspended cab which can be activated by the operator. The only one of its kind on the market.



**BSS** hydropneumatic suspension of the boom (optional), which can be activated by the operator, automatically deactivates under 3 km/h to ensure maximum precision in the positioning of the loads.



Pneumatic seat for improved comfort.



- 1010 mm wide. The cab is the largest in its category
- 8 versions equipped with CS suspended cab
- 3 dB of interior noise; sound levels halved in comparison with the previous generation of machines

<sup>\*</sup> According to the ISO 10263-3 standard, not approved for pesticides.



# Premium cab Feel like in your car

The standard cab and the Premium cab are dimensionally identical and both compliant with the highest safety specifications ROPS and FOPS (level II). The Premium cab it is a perfect match for customers looking for automotive interior cab finishing. In fact it fits all uprights covered by finishing, new designed steering wheel and roof sun-blind. Air condition and five automatic ventilation flows selection are available as an optional in all models. Merlo CDC display, joystick type and EPD control type are features that enriche the product content of the Turbofarmer range and can be standard or optional depending on specific model configuration chosen. Moreover in the Premium cab the outside rear top spoiler (that eventually lodge the air conditioning system) matches colorwise Merlo's green. Please ask your local dealer for more details.

14 | 15 MERLO CDC

## CDC - Merlo's Dynamic Load Control Safety as standard for everyone

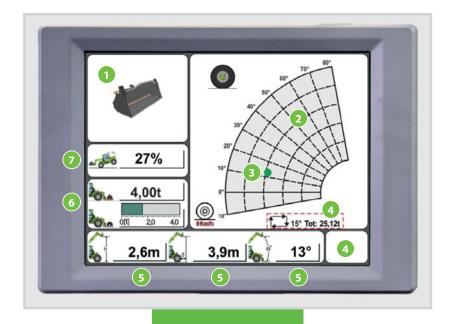
The Merlo Group considers safety as an absolutely essential value and this is why it invented the M CDC system. The objective is to allow every operator to work in total safety by fully exploiting the potential of the telehandler and the equipment used.

The operator can check at any time the dynamic stability of the vehicle, thanks to the dot ③ on the screen in the M CDC Display (optional) or the traffic light on the front upright in the M CDC Light version.

For manoeuvres that may give rise to a telehandler stability risk, the M CDC system will block the boom and prevent any further movements that may worsen the situation.



The traffic light indicator on the right side pillar provides a fast and clear information about the machines stability

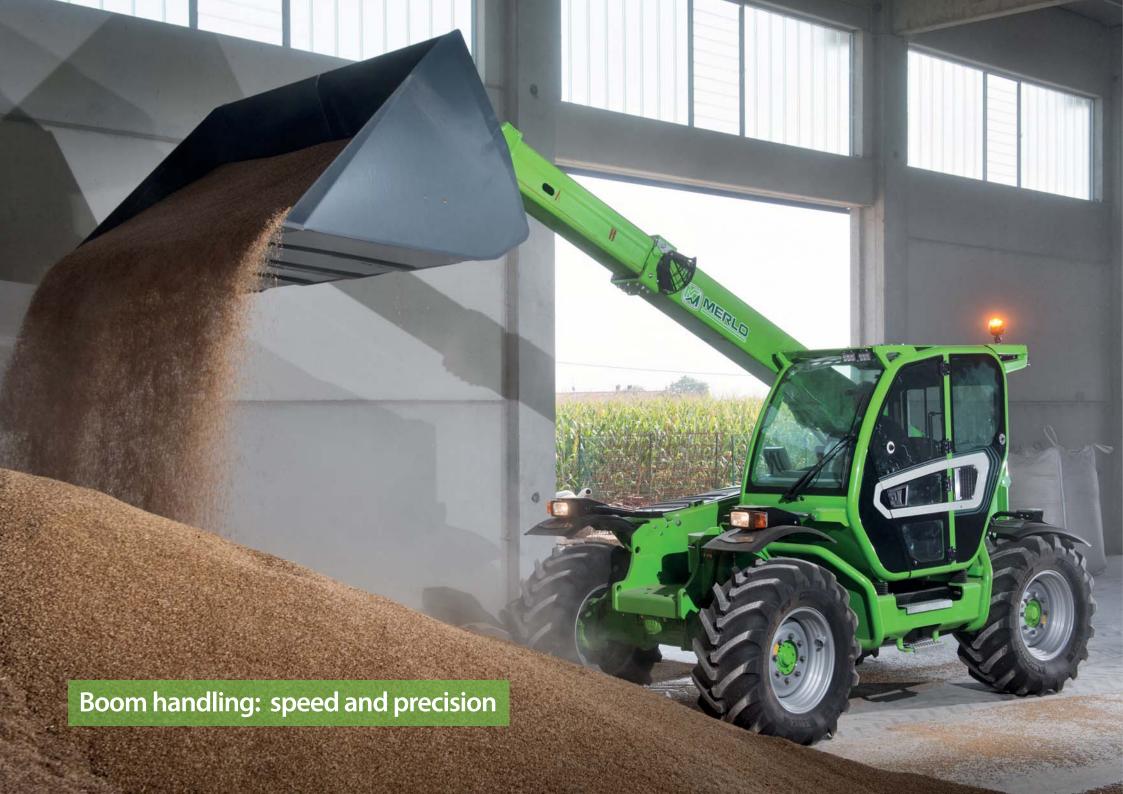


## **CDC** Display\*

All the safety information is clearly shown in the colour awesome 8.5" display. An indicator on the load chart informs the operator about the dynamic stability of the telehandler and the M CDC avoids risks for the longitudinal equilibrium of the balance by blocking boom movement if needed.

- 1. Equipment in use
- 2. Boon work area
- **3.** Current boom-load positioning (represented with a colored dot)
- 4. Load detection menu
- **5.** Operating parameters
- **6.** Work information
- 7. Stability index

<sup>\*</sup> A Merlo unique feature available as an option in all models.



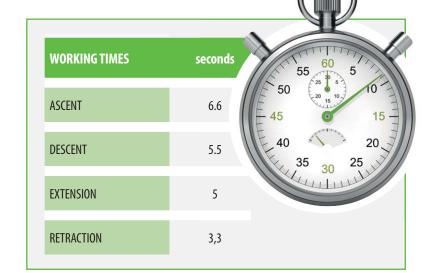
## Merlo precision and technology Being unique is our trademark

Merlo produces the booms mounted on its telehandlers in-house and has developed unique technologies to make them strong yet lightweight, protect handling mechanisms against accidental blows and allow users to position the load in the most precise manner possible.

- ✓ Boom sheet metal welded on the boom's neutral bending axis
- ✓ Cartridge protected handling system inside the boom, thanks to a patented solution that is easy to access if maintenance is needed
- ✓ Tac-Lock: hydraulic attachment clamping system from the cab
- ✓ Tilting: system for correcting tilt, built into the chassis, allowing the operator to correct ground slopes and work in complete safety (TT version)

✓ Movement: the boom can be moved sideways by the operator so that the load can be positioned with maximum precision, comfort and time-saving.
Shift range 530 mm (TT version)







- Lighter but stronger booms: automated welding on the neutral axis, area with less strain
- Extension mechanism well-protected inside the boom
- TT versions: unique tilting and boom lateral movement system



18 | 19 TOWING HOOKS & PTOs

## Towing hooks & PTOs Telescopic versatility!

We are determined to ensure that Merlo telehandlers are increasingly multi-purpose in order to maximise return on investment for our clients. The new Turbofarmer range takes this concept to even higher limits. As well as conventional handling, logistics and maintenance applications typical of telehandlers, the new Turbofarmers allow you to use them even for towing, thanks to the towing hook type-approved for 21 tons and the pneumatic and hydraulic trailer braking system.

Moreover a mechanical PTO is available as an optional to allow towing operations with *unifeed* mixer trucks, rotary balers, seeders and sprayers.





- Towing hook of 21 tons with pneumatic and hydraulic braking
- Rear hydraulic connections
- Braking system, hydraulic or pneumatic
- Mechanical PTO 540/1000 that can be selected from cab
- Net power at the PTO 115 HP



**AXLES & BRAKES** 20 | 21

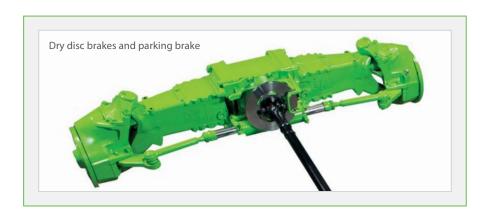
## Axles and brakes, effective and efficient **Real benefits**

Our Turbofarmer telehandlers are equipped with axles that have been conceived, designed and constructed in-house. There are two types, both made of cast iron and with cascade reducers, for which we assure sturdiness, excellent steering performance and "best in class" ground clearance.

All of our Turbofarmer telehandlers are equipped with 4 dry disc brakes that allow for consistent reduction of friction and, thus, fuel consumption in comparison to oil bath discs.

The parking brake is automatically engaged when the engine is switched off.

The operator can also engage it at will when the engine is running for stationary work on slopes. Ground clearance from 460 to 510 mm (405/70-24 and 460/70-R24 tyres) to nimbly get around any obstacles.



#### **THREE STEERING MODES:**



FRONT WHEEL STEERING

#### **COORDINATED STEERING**



#### **CRAB STEERING**





Parking brake selector and steering mode selector



- Axles conceived, designed and produced in-house by Merlo
- Up to 510 mm clearance off the ground, the best in its category
- Three steering modes
- Dry brakes to reduce friction and consumption
- Automatic parking brake system engagement as engine switches off

## Automatic equipment recognition as standard

Merlo CDC system features an advanced and smart sensor that automatically recognises the attachment fitted and consequently calibrates its performance in relation to specific load charts.



Sensor on the attachment



Sensor on the carriage



22 | 23 ATTACHMENTS

## Developing multi-purpose solutions

## More efficiency and productivity thanks to Merlo design

Merlo adopts simple and effective guidelines in the evolution of its products.

From conception to development, everything is studied, designed and created in the Group's research centre. This simple "rule" also applies to attachments.

Backed by years of experience, Merlo's engineers have developed a wide range of attachments, divided by type and load capacity.

This way of working makes possible to offer a wide portfolio of well tested and interchangeable equipment that save time and fatigue.



Rear exterior camera (optional) let you see behind the telehandler, and it is automatically activated with the reverse gear to be shown on CDC Display









HOOKS/LIFTING BOOMS



GRIPPERS FOR BALES



GRIPPERS FOR WRAPPED BALES



MULTI-PURPOSE LOADER
WITH CLAW



PLATFORMS







#### **TRAINING CENTRE**

The Merlo Training and Research Centre (CFRM) has made safety training and instruction in the use of the machine its mission. The CFRM provides training courses for operators of personcarrying overhead platforms, forklift trucks, telehandlers, cranes, earthmoving machinery, agricultural and forestry tractors, snow ploughs and urban cleaning vehicles.

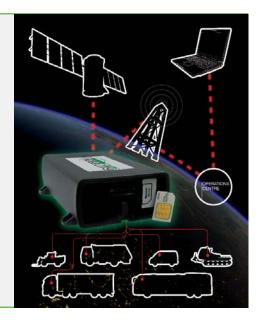


### Countries where Merlo is a market leader



#### MOVIMATICA MERLO INFOMOBILITY

Is the new system, conceived and built within the Merlo Group, for managing vehicles remotly: it enables GPS radio-localisation in real time, monitoring operation and use, receive and manage malfunction or burglar alarms and also send commands for handling events via the internet.



24 | 25 A WORLD OF ITS OWN

## THE MERLO WORLD

## In a globalised world, the customer always comes first!

From excellent products to excellent service. In 2008, Merlo has adapted its production process to meet the needs of the ISO 9001 quality control system. The process is perfected and improved continuously.

At the same time, the foundations have been laid to put the Customer first, implementing investments aimed at Services such as Financing, Aftersales training, Spare parts and Telematic Means such as remote diagnostics, thanks to the Merlo Mobility project.

Automatic spare parts warehouse	2011	2014		
Storage volume	1000 m <sup>3</sup>	10.000 m <sup>3</sup>		
Filling	100%	85%		
Percentage of codes managed	50%	86%		
Percentage of order lines managed	65%	94%		
Pick-up time	90"	30"		
Number of codes	8.000	17.000		

#### **NEW PARTS CENTRE**

The new spare parts warehouse covers an area of 7,000 m<sup>2</sup>, with storage capacity for of 10,000 m<sup>3</sup> for a total of 20,000 different codes. Furthermore, it can automatically manage 94% of the order lines that are processed daily, with an average withdrawal time of 30" per line.

The first fill per order line is over 99% with delivery times for urgent orders within 24 hours.

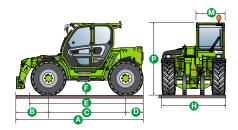


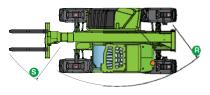


TECHNICAL DATA	TF 42.7 140	TF 42.7 CS 140	TF 42.7 CS 140 CVTronic	TF 42.7 TT 140	TF 42.7 TT CS 140	TF 42.7 TT CS 140 CVTronic	TF 38.10 140	TF 38.10 CS 140	TF 38.10 CS 140 CVTronic	TF 38.10 TT 140	TF 38.10 TT CS 140	TF 38.10 TT CS 140 CVTronic
Total unladen mass, without forks (kg)	7450	7450	7450	7900	7900	7900	7900	7900	7900	8350	8350	8350
Maximum capacity (kg)	4200	4200	4200	4200	4200	4200	3800	3800	3800	3800	3800	3800
Lifting height (m)	7,1	7,1	7,1	7,1	7,1	7,1	9,6	9,6	9,6	9,6	9,6	9,6
Maximum reach (m)	3,7	3,7	3,7	3,7	3,7	3,7	6,3	6,3	6,3	6,3	6,3	6,3
Maximum operating height (m)	6,2	6,2	6,2	7,1	7,1	7,1	5,6	5,6	5,6	8,6	8,6	8,6
Maximum operating reach (m)	1,5	1,5	1,5	1,5	1,5	1,5	1,6	1,6	1,6	1,6	1,6	1,6
Capacity at maximum height (kg)	3500	3500	3500	4200	4200	4200	1500	1500	1500	3000	3000	3000
Capacity at maximum reach (kg)	1600	1600	1600	1600	1600	1600	700	700	700	700	700	700
Turbo engine (displacement/cylinders)	3.6/4	3.6/4	3.6/4	3.6/4	3.6/4	3.6/4	3.6/4	3.6/4	3.6/4	3.6/4	3.6/4	3.6/4
Tier 4 Final engine power (kW/CV)	100/136	100/136	100/136	100/136	100/136	100/136	100/136	100/136	100/136	100/136	100/136	100/136
Maximum speed (km/h)	40	40	40	40	40	40	40	40	40	40	40	40
BSS - Hydro-pneumatic boom suspension	0	0	0	0	0	0	0	0	0	0	0	0
Fuel tank (I)	140	140	140	140	140	140	140	140	140	140	140	140
LS - Hydraulic Load-Sensing pump (bar-I/min)	210/150	210/150	210/150	210/150	210/150	210/150	210/150	210/150	210/150	210/150	210/150	210/150
Fan Drive Pump (I/min)	46	46	46	46	46	46	46	46	46	46	46	46
Flow Sharing Distributor	0	•	•	0	•	•	0	•	•	0	•	•
Hydraulic oil tank (I)	110	110	110	110	110	110	110	110	110	110	110	110
FOPS (ISO 3449) and ROPS (ISO 3471) cab	•	•	•	•	•	•	•	•	•	•	•	•
Electromechanical joystick	•	-	-	•	-	-	•	-	-	•	-	-
Electronic joystick	0	•	•	0	•	•	0	•	•	0	•	•
Hydrostatic transmission	•	•	•	•	•	•	•	•	•	•	•	•
Differential lock (A-P)	0	0	0	0	0	0	0	0	0	0	0	0
Dual Control Reverse Shuttle (joystick/steering wheel)	•	•	•	•	•	•	•	•	•	•	•	•
Inching Control progress control from pedal	•	•	•	•	•	•	•	•	•	•	•	•
Permanent four-wheel drive	•	•	•	•	•	•	•	•	•	•	•	•
Four-wheel steering	•	•	•	•	•	•	•	•	•	•	•	•
Automatic parking brake (when the engine switches off)	•	•	•	•	•	•	•	•	•	•	•	•
Work headlights on cab (2 A $+$ 2 P)	•	•	•	•	•	•	•	•	•	•	•	•
LED work headlights on cab	0	0	0	0	0	0	0	0	0	0	0	0
Transmission	2 speeds	2 speeds	CVTronic	2 speeds	2 speeds	CVTronic	2 speeds	2 speeds	CVTronic	2 speeds	2 speeds	CVTronic
CS - Suspended cab	-	•	•	-	•	•	-	•	•	-	•	•
TT - Frame leveling + Boom lateral movement	-	-	-	•	•	•	-	-	-	•	•	•
EPD - Eco Power Drive	Plus	Тор	Тор	Plus	Тор	Тор	Plus	Тор	Тор	Plus	Тор	Тор
Mechanical PTO (540/1000)	0	0	0	0	0	0	0	0	0	0	0	0
Dynamic Load Control M CDC LIGHT	•	•	•	•	•	•	•	•	•	•	•	•
Standard tyres	405/70-24	405/70-24	405/70-24	405/70-24	405/70-24	405/70-24	405/70-24	405/70-24	405/70-24	405/70-24	405/70-24	405/70-24
Type approval as an agricultural tractor	0	0	0	0	0	0	0	0	0	0	0	0

26 | 27 THE DATA

## TECHNICAL INFORMATION

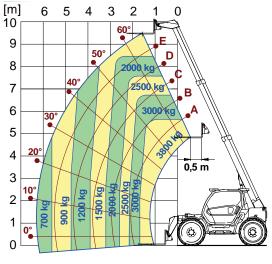




TURBOFARMER II DIMENSIONS						
A (mm)	4487					
B (mm)	1150/1100*					
C (mm)	2750/2800*					
D (mm)	587					
E (mm)	3926/3976*					
F (mm)	460					
H (mm)	2250					
M (mm)	1010					
P (mm)	2465**					
R (mm)	3985					
S (mm)	4800					

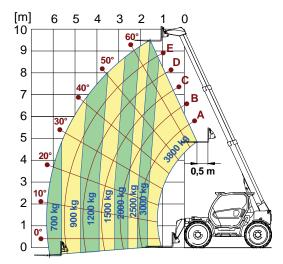
<sup>\*</sup> TT version \*\* CS version with deactivated cab

#### **TF 38.10 WITH FORKS**

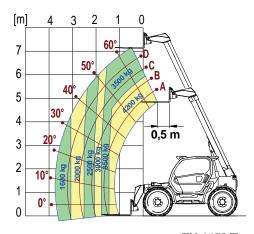


EN 1459/B

#### **TF 38.10 TT WITH FORKS**

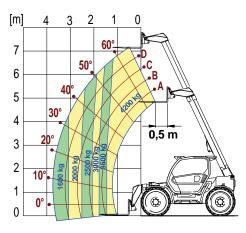


#### **TF 42.7 WITH FORKS**



EN 1459/B

#### **TF 42.7 TT WITH FORKS**



EN 1459/B

EN 1459/B

## OVER 50 YEARS OF CONSTANT COMMITMENT TO WORKING TOGETHER WITH YOU

- 1964 Establishment of the Merlo Group
- 1966 DM and DBM: the first dumper and the first self-loading concrete mixer
- 1981 SM: the world's first telescopic handler
- 1987 Panoramic: the world's first telehandler with side engine
- 1991 Roto: the world's first telehandler with rotating turret
- 1996 Turbofarmer: the first telehandler in Europe type-approved as an agricultural tractor
- 1998 P20.6: the ultra-compact telehandlers
- 2000 Multifarmer: the first agricultural tractor with telescopic boom
- 2001 MM: the first forestry attachment-carrier
- 2010 Hybrid: the first diesel/electric hybrid telehandler
- 2012 Modular: a new concept of telescopic handler
- 2013 Three important awards at the Agrittechnica in Hanover:

  Hybrid 42.7: gold medal for technological innovation

  Turbofarmer Il range: "machine of the year 2014"

  Multifarmer 40.9: "a milestone in agricultural machinery"
- 2015 New modular Medium Duty and Compact Turbofarmer named "machine of the year" 2015 at Sima in Paris















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The Telehandlers outlined in this documentation can be equipped with optional or special accessories that are not included in standard equipment but only on request.

In certain countries, not all models or attachments may be available because of market or regulatory restrictions.

Technical data and information are up-to-date at the time of printing this documentation. Merio reserves the right to make modifications arising from natural technological evolution without any obligation on its part.

Your trusted Merio Dealer will be delighted to provide you with all updates concerning our products and services.