



PANORAMIC HIGH CAPACITY

The High Capacity Merlo Range



New high capacity families

Panoramic and HM

They have been updated to adopt the Tier 4 Final engines and are even more innovative, performing and safe, in line with the evolution of the Merlo product.
The Panoramic and HM families offer the following advantages:

- + **Comfort**
 - ➔ Largest cab in its category
 - ➔ Best comfort level
- + **Safety**
 - ➔ Cab compliant with ROPS and FOPS level II standards*
 - ➔ M CDC Dynamic load control as standard
- + **Versatility**
 - ➔ Tilt correction and standard boom side shift
- + **Efficiency**
 - ➔ Tier 4 Final Engines IVECO-NEF 170Hp with SCR System
 - ➔ -18% consumption with EPD (standard on HM)
 - ➔ CVTronic transmission (standard on HM)
 - ➔ Regenerative system (standard on HM)



- . Largest Cabin on the market (1010mm)
- . 10 Tons MAX lift capacity
- . Standard Frame Levelling and built-in Sideshift
- . CVTronic Variable transmission + EcoPowerDrive System, up to 18% improvement in fuel economy

* 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)

High capacity family

Technology at the top of the market

Innovative Merlo systems

- Levelling + boom side shift
- Tac-Lock rapid coupling of the attachments

Comfort

- Largest cab on the market 1010 mm
- Maximum comfort and excellent visibility

Safety

- M CDC Merlo dynamic load control
- Automatic attachment recognition
- Cab compliant with FOPS/ROPS

Hydraulic

- HM: Load-Sensing pump and electronic joystick and Flow-Sharing distributor, electronic accelerator on joystick and regenerative system

POWERTRAIN

HM

- Tier 4 Final Engines 170 HP
- CVTronic transmission
- EPD – Eco Power Drive – Savings: 18% diesel
- Regeneration system on lifting
- Electronic accelerator
- Flow -Sharing Distributor



High specifications for high performances

Even more advantages and benefits

| MODEL | ENGINE | | EPD | HYDRAULIC | | | CHASSIS | TRANSMISSION | | SAFETY DEVICES | JOYSTICK COMMAND | |
|-----------|-----------------------|-----------------------|-----------------|--------------|--------------|---------------------|------------------------|--------------|------------|--|--------------------|-----------------------------|
| | 101 HP - Tier 4 Final | 170 HP - Tier 4 Final | Eco Power Drive | Load Sensing | Flow Sharing | Regeneration system | Levelling + Side shift | 2 Speed | M CVTronic | M CDC + display + automatic attachment recognition | Electro-mechanical | Electronic with accelerator |
| HM | | | | | | | | | | | | |
| P120.10HM | X | X | X | X | X | X | X | | X | X | | X |



**Merlo CVTRONIC: acceleration
from 0 – 40 km/h without torque interruption
and the need for gear change**



Tier 4 Final engines

Higher performance and lower consumption

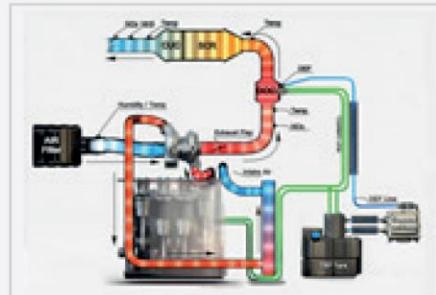
The High Capacity Duty models come equipped with Tier 4 Final engines. The engines provide an increase in performance with a reduction in displacements, so as to significantly reduce consumption (downsizing). Merlo selects the engines that power its telehandlers after thorough testing in order to offer its customers high performance, maximum efficiency, low fuel consumption and low maintenance.

HM models

4 cylinders, 125 kW/170HP, 4.5 litres at 2200 rpm.

SCR (Selective Catalytic Reduction)

The SCR system uses a catalyser that exploits a chemical reaction between the polluting agents and a mixture of Water and Urea, reducing the emissions. In practice, the urea decomposes the NOx nitrogen oxides into water vapour and simple nitrogen, two substances that are harmless to man and the environment. Urea consumption is about 5% of diesel consumption, and the tank is sized so that it is necessary to refill the AdBlue every other diesel refill.



NOTE: the urea is found on the market as AdBlue®



- High-performing and efficient engine
 - HM: 4.5 litres, 170 HP SCR post-treatment. High performance and low consumption
- (with SCR) to ensure low management costs

HM: Merlo CVTronic technology and EPD

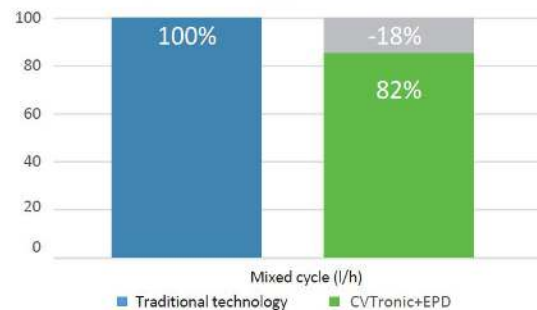
Merlo's own continuous variable transmission version

The CVTronic transmission follows Merlo's traditions in the hydrostatic field and ensures smooth acceleration without interrupting torque from zero to 40 km/h. The transmission comprises two axial piston hydrostatic engines powered by the electronically-controlled hydraulic pump. At low work speeds they offer maximum torque by acting in tandem, with a +12% increase compared 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 engine that pushes the HM telehandlers to maximum speed. The CVTronic M transmission is equipped with EPD, a system designed by Merlo that helps to reduce diesel consumption by 18%. The EPD's electronic control unit is placed between the gas pedal and the diesel engine injectors. The operator sets the desired speed and the EPD system manages the number of diesel revs according to the parameters set in the control unit, ensuring maximum efficiency, high performance and minimum consumption.



Reduction in consumption

Merlo CVTronic technology + EPD



- +12% torque at low speeds vs. conventional hydrostatic transmissions
- Smooth and progressive acceleration from 0-40 km/h without interruptions for a gear change
- -18% of consumption thanks to the EPD system

Engines & Transmissions

Higher performance and lower consumption

- The HM range is equipped with a Tier 4 Final engines: 125 kW/170HP
- Merlo hydrostatic transmission with **EPD (Eco Power Drive) as standard**
- As always Merlo telehandlers are equipped with hydrostatic transmissions for improved precision, safety and ease of use. The EPD can reduce fuel consumption by 18% giving a real yearly saving.
- The EPD Top has a "Speed control" **2** button that allows to save the movement speed of the machine and keep it constant. The Eco function, ideal for yard handling operations, limits the motor's rpm, thereby obtaining further savings.
- The rpm regulator allows the operator to set the minimum rpm desired **1**. This is very useful during bucket loading and when using attachments on the boom that constantly require a minimum flow of oil.
- The self-accelerating Joystick is adopted as standard, through which more speed of the boom's hydraulic movements is possible, thereby optimizing performance. The system activates beyond the threshold of 20% of the joystick's movements.



- With the EPD system consumption is reduced by 18% compared to traditional technologies
- Speed Control and ECO management as standard with EPD Plus and EPD Top
- Rpm management
- Tier 4 Final 125 kW/170 HP engines
- Self-accelerating system with joystick



Winning hydraulics

Practical and efficient systems



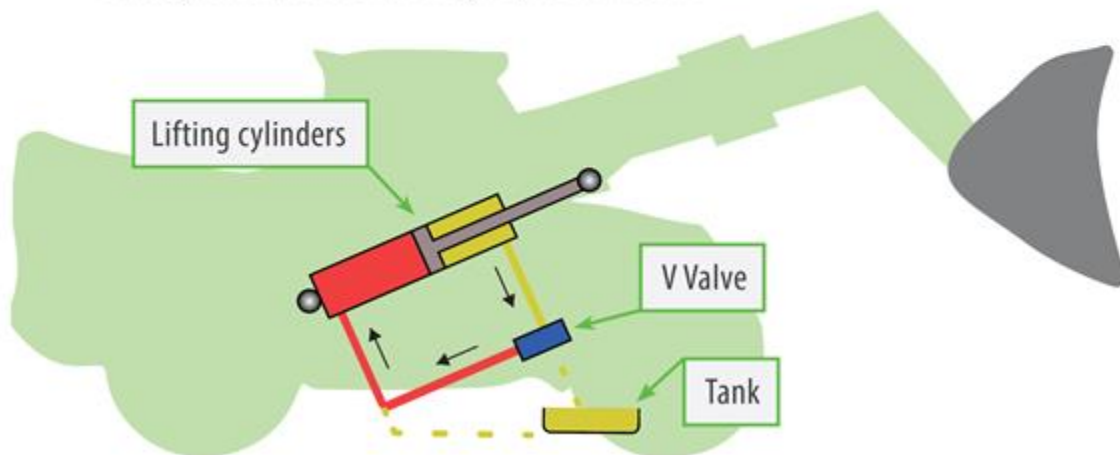
HM

REGENERATIVE SYSTEM

To improve productivity for the HM family, Merlo has adopted the regenerative system, designed to increase the boom's angular speed while handling loads. The system makes it possible to automatically increase the speed by 36% compared to similar systems without the regenerative function.

HOW IT WORKS

The boom lifting system is fitted with two dual effect cylinders, one of which is equipped with the regenerative system. The oil coming from the pump enters the cylinder's expansion chamber (in red in the diagram below), and since it is dual effect the oil in the opposite chamber is placed back into the pressure chamber (in yellow in the below diagram) instead of being discharged, being added to the oil from the pump, speeding up the filling of the cylinder and, as a result, the angular speed of the boom.



Regenerative
Hydraulic System

+36%

Boom rising
speed

- Panoramic and HM: standard Load Sensing pump:

HM: 119 litres/min

- HM: Flow Sharing
Allows three boom movements at the same time.
Increased productivity

- HM: regenerative system
Allows a 36% increase in the angular speed of the boom

The record-breaking cab is more up-to-date than ever

More space on board offered as standard

The Merlo cab is known for ease of access and for its inside space.

At 1010 mm, it is the widest in the category and allows maximum comfort in daily use.

The machine's architecture, the low centre of gravity and the tapered hood ensure excellent visibility in every direction. The operator can visually follow the load to its maximum height, thanks to the transparent top. The 770 mm door is fitted with a 180° opening window for better natural ventilation.

The controls are placed according to accurate ergonomic studies.

All information is available clearly and precisely with the new on board panel and the new display for the M CDC.



Standard specifications for HM models



HM: dual-Shuttle reverse shuttle buttons



HM: modular cab with new interior

- 1010 mm wide. The cab is the largest in its category
- Driver's side access made easier with a wide door (770 mm)
- 360° visibility. Low hood thanks to careful engine layout
- HM models equipped with armrest and Dual-Shuttle reverse shuttle (on the Joystick and the steering wheel)

Merlo 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 attachment used.

With the Merlo CDC system, the High Capacity models can automatically recognise the attachment fitted and consequently calibrates its performance in relation to specific load charts.

The operator can check at any time the dynamic equilibrium of the vehicle, thanks to the led on the screen.

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.



Automatic attachment recognition



Sensor on the attachment



Sensor on the carriage

- Safety beyond even EN15000 standards



- Automatic attachment* recognition

- Recognition and memory of the load*

- ROPS and FOPS protection, no impact on comfort

** Valid for attachments built in Merlo factories and fitted with the M CDC sensor

Axles and brakes, effective and efficient

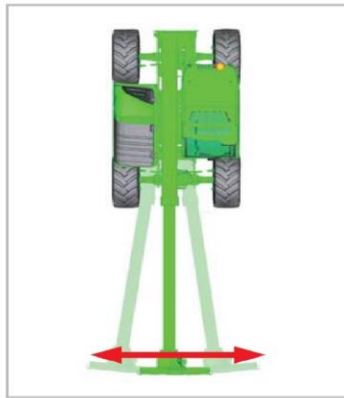
Added value for tangible benefits

The wet brakes axles adopted into the HM family are specific and structurally suited to support heavy loads.

The Parking brake system automatically engages when the engine is turned OFF.

The chassis built-in Frame Levelling allows the operator to adjust the chassis working level to improve the safety.

The Boom sideshift offers the maximum precision and time efficiency in load positioning.



- Automatic parking brake engagement system when engine switched off
- Three steering modes

THREE STEERING MODES WITH END-OF-TRAVEL RE-SYNCH

Four-wheel drive with hydraulic servo-assistance.



FRONT WHEEL STEERING



COORDINATED STEERING



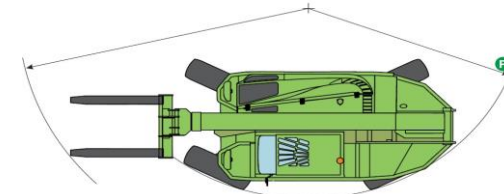
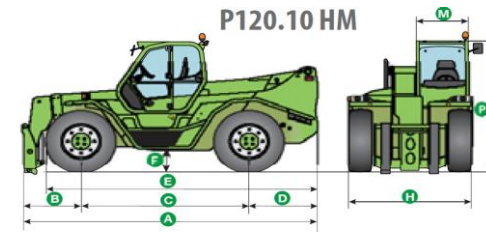
CRAB STEERING

TECHNICAL INFORMATION

P120.10HM

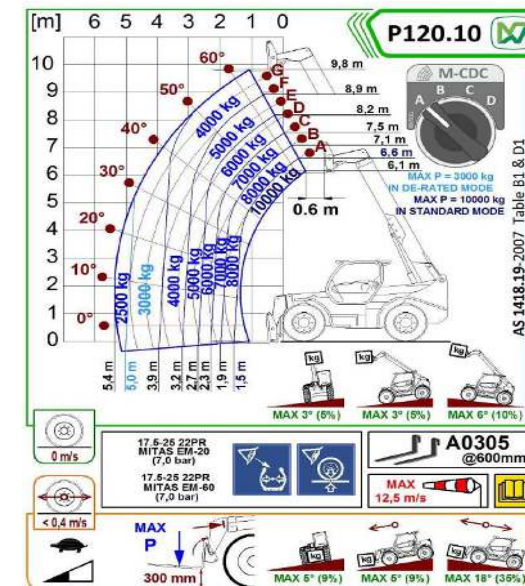
| | |
|---|----------|
| Total unladen mass, without forks (kg) | 15700 |
| Maximum capacity (kg) | 10000 |
| Lifting height (m) | 9,8 |
| Maximum reach (m) | 5,3 |
| Maximum operating height (m) | 6,9 |
| Maximum operating reach (m) | 1,3 |
| Capacity at maximum height (kg) | 7000 |
| Capacity at maximum reach (kg) | 2000 |
| Turbo motor (displacement/cylinders) | 4,5/4 |
| Tier 4 Final motor power (kW/CV) | 125/170 |
| Eco Power Drive (EPD) | Top |
| Maximum speed (km/h) | 40 |
| DEF tank (l) | 14 |
| Fuel tank (l) | 150 |
| Hydraulic Load-Sensing pump (bar-l/min) | 210/119 |
| Flow Sharing | ● |
| Regenerative device (+50% boom speed) | ● |
| Hydraulic oil tank (l) | 177 |
| FOPS (ISO 3449) and ROPS (ISO 3471) cab | ● |
| Electronic joystick | ● |
| Electromechanical joystick | - |
| Hydrostatic transmission | ● |
| Differential lock (Front - Rear) | ● |
| Reverse shuttle at steering wheel: | Dual |
| Inching-Control pedal movement control | ● |
| Permanent four-wheel drive | ● |
| Four-wheel steering | ● |
| Automatic parking brake | ● |
| Work headlights on cab (2 A + 2 P) | ● |
| Change of speed | CVTronic |
| Chassis levelling + side shift | ● |
| Dynamic load control M CDC + display + automatic attachment recognition | ● |
| Standard tyres | 17.5-25 |

● As standard. ○ On request.



DIMENSIONS P120.10 HM

| | | | |
|--------|------|--------|------|
| A (mm) | 5790 | F (mm) | 450 |
| B (mm) | 1210 | H (mm) | 2450 |
| C (mm) | 3240 | M (mm) | 1010 |
| D (mm) | 1335 | P (mm) | 2850 |
| E (mm) | 5235 | R (mm) | 4300 |





MERLO GROUP AUSTRALIA PTY LTD

120 Toongabbie Road, Girraween, NSW 2145

Tel. (02) 9688 0600

www.merloaustralia.com.au - info@merloaustralia.com.au

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