

PANORAMIC 1214 - XG



The supremacy of ideas.

# PANORAMIC

P 38.14

P 38.13

P 38.12

P 37.12



### **Frame levelling and stabilisers**

P 38.14 PLUS

P 38.14

P 38.13 PLUS

P 38.13

P 38.12 PLUS

P 38.12

### **Frame levelling**

P 37.12 PLUS

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PLUS models are equipped with turbocharged engine and feature 40 kph travel speed.

# DEFINING SUPREMACY



## **The cutting edge of technology**

The PANORAMIC handler range clearly demonstrates Merlo's innovation and technology. The unequalled performance, the Load-Sensing hydraulic system, boom side-shift and frame levelling devices together with the unique BSS and EAS suspension systems add up to another incomparable solution from Merlo,

making an extremely competitive product in the marketplace. A further demonstration of Merlo's dedicated commitment to the design of high-tech machinery, the result of ongoing research and development, and the experience acquired during forty years of leading the handler market.

# EXCLUSIVE FEATURES

## Power where it is needed

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

## 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.

## Boom side-shift

The Merlo's exclusive integral chassis side-shift mechanism gently and precisely swings the telescopic boom and load into position.

## Proportional controls

The operator controls through proportional levers all the boom movements and the auxiliary services.

## Frame levelling

The chassis can be hydraulically tilted, relative to the front axle, ensuring truly vertical lift on uneven surfaces.

## Front stabilisers (on some models)

Two independently operated hydraulic stabiliser legs assure the necessary stability for working on any terrain.

## Side mounted engine

The 4 cylinder Euro 2 engine is side-mounted for visibility, stability and ease of service access.

## 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.

## EAS and BSS suspension

Merlo boom or electronic active axle suspension assure the best operator comfort and most efficient load carrying.



The front and rear windows and upper door section can be opened for 'natural' ventilation.

The periphery of the PANORAMIC is protected against impact damage by a solid 'Ring of Steel', which is an integral part of the chassis.

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



The PANORAMIC handler family includes models in the 12m and 14m class, with lifting capacities up to 3800kg. Their exclusive features ensure maximum performance and ease of operation in even the toughest of applications.

**Outstanding safety**

As a standard fitting, the longitudinal stability control mechanism locks the telescopic boom if the machine's stability limits are approached (key-selected feature).

**Convenient operator controls and clear instrument panel**

All controls are accessible and convenient to operate. In front of the operator is a comprehensive instrument display, which can be read in all lighting conditions.

**Total visibility**

The PANORAMIC continues Merlo's legendary 360° visibility around the machine, 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 redesigned driver's seat (with optional air suspension) that ensures excellent comfort.

**Unequaled manoeuvrability**

Merlo's design concept integrates all the components into an exceptionally compact package. The resulting excellent manoeuvrability and precision are further enhanced by a powerful engine and precise hydrostatic transmission.

**Maximum accessibility**

The side mounted engine and careful positioning of the transmission and hydraulic systems ensure excellent accessibility for maintenance. Technicians can work in total safety with their feet firmly on the ground.

**Plastic fuel tank**

The fuel tank is formed from plastic, which is more resistant to damage than metal, and easier to service.

**Standard battery isolator**

All models are equipped with a manual battery isolator switch. As an option, an automatic type is available.



**The PANORAMIC range offers much more**

- The largest cab currently available on the handler market
  - 4 cylinder naturally aspirated engine (64kW - 86HP) or turbocharged (74.5kW - 101HP)
  - Load-Sensing hydraulic systems
    - Integral boom side-shift
    - Frame levelling mechanism
  - Front independently controlled stabilisers
- Electronically controlled hydrostatic transmission
  - 2-speed mechanical gearbox
- Permanent 4 wheel drive and 3 steer modes
  - Maximum travel speed 40kph (PLUS models)
  - BSS boom suspension or EAS active front axle suspension



The front stabilisers assure the necessary stability for working on any terrain.



Boom sections slide on adjustable low-friction pads



The 'disappearing' boom ensures an excellent 360° visibility.



# THE WINNING CONCEPT



## Spacious and comfortable cab - a new standard to beat

The PANORAMIC cabin has been designed around the driver – a modern synthesis of comfort and safety. The cab frame conforms to ISO 3449 (FOPS) and ISO 3471 (ROPS) standards of protection and both steering wheel and seat are fully adjustable, to guarantee the best position for sitting and being able to reach all driving controls without a hand leaving the wheel. The control layout is highly ergonomic and the generous cab interior is the widest on the current market. Optional sun blinds on the overhead window and the upper part of the windscreen keep the sun from the operator's head and eyes.

Excellent cool and hot air ventilation is provided through face and foot level vents, with a manually-controlled air conditioning system available as an option.

- 1 Main instrument panel
- 2 Finger-Touch forward/reverse direction lever
- 3 Control levers
- 4 Stability control system indicator
- 5 Personal storage

The option air conditioning system ensures a very agreeable environment for the operator!

The optional joystick provides proportional control of all functions for easy and precise use.

Fully adjustable forwards and backwards, the new Merlo seat also features seat back and seat angle adjustment to comfortably accommodate any driver.



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

- 995mm interior working width
- 360° all-round visibility
- Structure complies with ISO 3449 (FOPS) and ISO 3471 (ROPS) standards
- Thinner window sealing to increase the practical glass area
- Ergonomic controls with intuitive actions
- Multi-purpose joystick for all boom controls (optional)

### **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 to hand**

Inside the cab are a number of boxes and shelves for personal storage.

### **Sound-reduction**

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

### **More comfort**

As an option, a weight-adjustable air suspension seat isolates the driver from the majority of external vibrations, ensuring productive and safe working, especially during road travel.

### **Hydrostatic transmission - today's most advanced technology**

This type of transmission is rapidly becoming the norm for small, mobile equipment. It provides precise and accurate control, even at high engine power and at travel speeds up to 40kph.

An electrically selected, two-speed gearbox connects the hydrostatic motor output to the conventional main power line.

The Inching-Control pedal proportionately reduces travel speed whilst maintaining high engine speed for hydraulic operation e.g. during loading operations.

Directional control is by a Finger-Touch forward/reverse selector mounted on the steering column, such that the driver's hand does not have to leave the wheel.

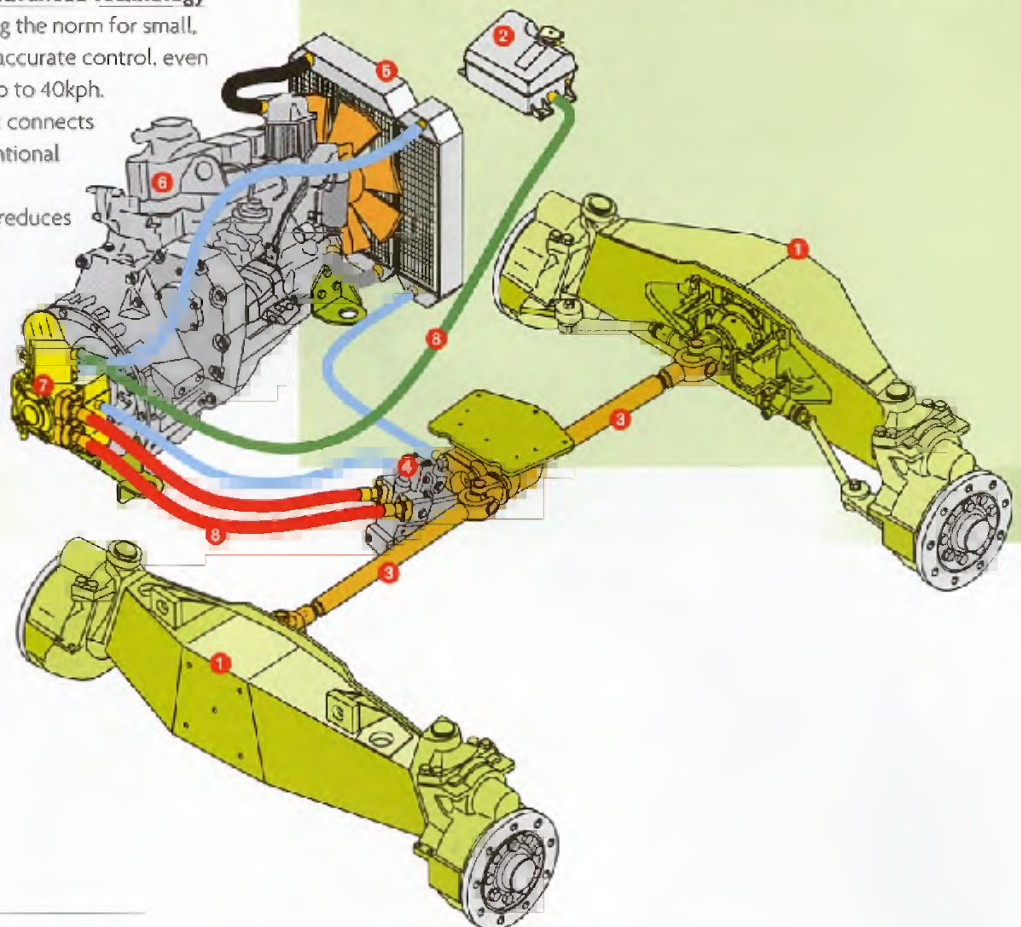


### **Side-mounted engine**

All models in this PANORAMIC family are fitted with a 4-cylinder Perkins low emission (Euro 2) engine. Water-cooled, the naturally aspirated version develops 64kW (86HP) while the turbocharged one develops 74.5kW (101HP) at 2400rpm.

Not surprisingly, with the high level of power and torque available, the speed and the performance have to be experienced to be believed.

The engine is mounted to the right side of the chassis, ensuring safe, easy access and maintenance from ground level. Its weight balances that of the cab, assisting Merlo's traditional high stability.



- 1 Axle
- 2 Hydrostatic oil reservoir
- 3 Propshaft
- 4 Hydrostatic motor
- 5 Heat exchangers
- 6 Diesel engine
- 7 Hydraulic pump
- 8 Pipes

# TECHNOLOGY AT WORK



## Two Merlo suspension systems

PANORAMIC machines can be fitted with one of two Merlo suspension systems to reduce driver fatigue and improve payload transport. These are an Electronically-controlled hydropneumatic Active Suspension for the front axle (EAS) or a hydraulic Boom Suspension System (BSS). Both systems provide efficient reduction in dynamic stress upon the vehicle and load, independent of the payload carried and without operator involvement.

Merlo suspension systems add greatly to driver comfort and can significantly reduce whole body vibration levels, increase dynamic stability, reduce payload lost in transit, improve roading performance, speed and productivity.

PANORAMIC	P 37.12 <sup>(2)</sup>	P 38.12 <sup>(2)</sup>	P 38.13 <sup>(2)</sup>	P 38.14 <sup>(2)</sup>
BSS suspension <sup>(1)</sup>	●	●	●	●
EAS suspension <sup>(1)</sup>	-	●	-	●

<sup>(1)</sup> Both systems cannot be fitted to the same machine

● Optional

<sup>(2)</sup> All versions

## BSS

The BSS suspension system includes hydro-pneumatic accumulators fitted to the lift service hydraulic cylinder of the telescopic boom, providing an effective dampening action against any strain transmitted to the payload during travelling.

## EAS

The Electronic Active Suspension system can be fitted to PANORAMIC models fitted with the side-shift/levelling front axle. The EAS system utilises the axle's levelling cylinders (the tilt function is not effected). The active suspension works by integrating a system of hydropneumatic accumulators with a microprocessor electronic control device.

1 Lift service hydraulic cylinder

2 Gas accumulators

### BSS

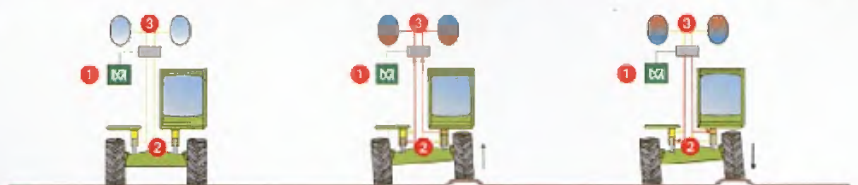


1 Microprocessor

2 Levelling cylinders

3 Gas accumulators

### EAS



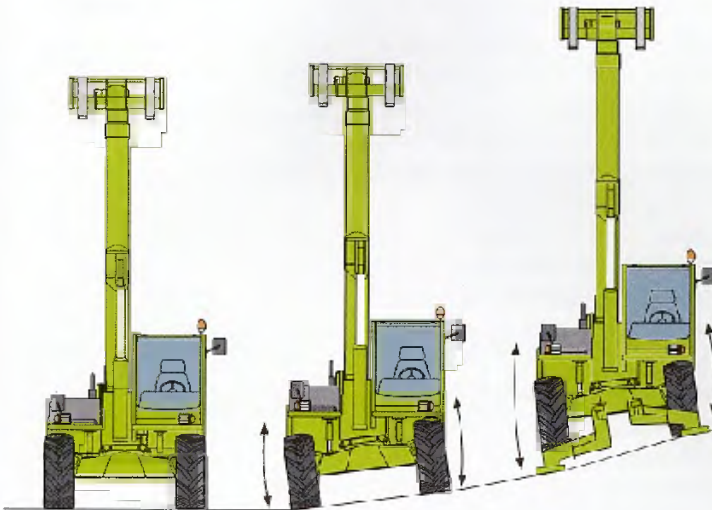


### Frame levelling

Acting hydraulically upon the front axle, frame levelling allows the chassis to be tilted relative to the front axle, ensuring truly vertical lift on uneven surfaces. In conjunction with boom side-shift and stabilisers, frame levelling ensures the best handler use in all conditions.

PANORAMIC	P 37.12 <sup>(1)</sup>	P 38.12 <sup>(1)</sup>	P 38.13 <sup>(1)</sup>	P 38.14 <sup>(1)</sup>
Frame levelling				±10%

<sup>(1)</sup> All versions



### Hydraulic stabilisers

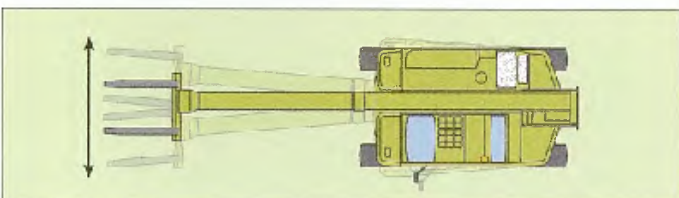
Hydraulic independent control. In retracted position the best possible visibility is obtained; in working position side shifting and frame levelling can still be operated. Compact design ensures site access.

### Boom side-shift - a Merlo exclusive

The integral chassis side-shift mechanism gently swings the upper part of the chassis, and with it, the telescopic boom across the longitudinal axis of the machine. The load can be precisely placed without repositioning the machine. Using the side-shift mechanism in no way detracts from the performance or stability of the PANORAMIC as it is an integral part of the design, not a mere attachment, and produces the following maximum sideways displacement.

PANORAMIC	P 37.12 <sup>(1)</sup>	P 38.12 <sup>(1)</sup>	P 38.13 <sup>(1)</sup>	P 38.14 <sup>(1)</sup>
Side-shift	mm ± 330	± 330	± 340	± 345

<sup>(1)</sup> All versions



### Total safety

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

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

### Load-Sensing hydraulic system

This device acts to vary the hydraulic oil flow delivery automatically adapting it to the needs of the hydraulic service elements being used.

The delivery is always equal to that requested by the joystick stroke so that power dissipation is reduced to a minimum. Making it highly cost effective in terms of reduced consumption rates and greater component duration.

The maximum operating capacity is 108lpm and the working pressure is 210bar.

### The telescopic boom

The sections comprising the telescopic boom are constructed of U-shaped steel fabrications welded together longitudinally close to their neutral axis.

The hydraulic extension mechanism, hydraulic hoses and electrical cables are totally enclosed within the boom for maximum protection against damage.

### 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.

An independent disc parking brake is located on the main transmission shaft.

It is a spring operated automatic locking type which is hydraulically unlocked on subsequent start-up.

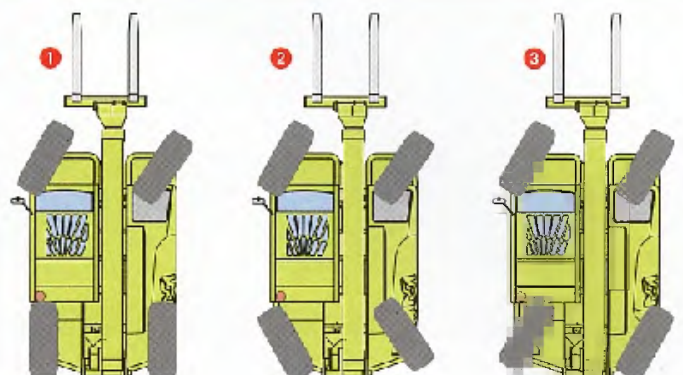
The operator is also free to engage the park brake as required.

### 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).



# PERFORMANCE AND DIMENSIONS

## Cab

- Complies with ISO 3449 (FOPS) and ISO 3471 (ROPS) standards.
- Lever controls or optional '4 x 1' electro-mechanical joystick with roller-operated proportional control.

## Boom

- Telescopic, with sections sliding on adjustable low-friction pads.
- Hydraulic extension mechanism, hydraulic pipes and electrics are totally enclosed within the boom assembly to ensure maximum protection and reliability.
- Integral boom side-shift mechanism.

## Quick-attach 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.

## Frame levelling

- Hydraulically operated from the cab.

## Front stabilisers

- Independently controlled with automatic lock when the boom exceeds the preset safety angle.

## Forks

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

## 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

- Direct injection, water cooled, 4 cylinder Perkins Euro 2 diesel engine producing 64kW-86HP (naturally aspirated) and 74.5kW-101HP (turbo) at 2400rpm (97/68/CE).

## Transmission

- Hydrostatic with electronically controlled variable displacement pump.
- Continuous and automatic speed variation, from zero to maximum speed, solely with the accelerator pedal.
- Two-speed mechanical range gearbox.
- Inching-Control pedal to proportionately reduce travel speed whilst

maintaining high engine speed for hydraulic operation e.g. during loading operations.

- Finger-Touch system makes it possible to change between forward and reverse direction with the driver keeping both hands firmly on the steering wheel.
- Permanent four-wheel drive.
- Portal axles ensuring excellent ground clearance.

## 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

- Variable delivery Load-Sensing pump.
- Maximum operating capacity: 108lpm.
- Working pressure: 210bar.

## Electrics

- 12V system with 100Ah battery and 90A alternator.
- Full road lighting and rotating beacon.
- Manual battery isolator switch (optional automatic switch).

## Service capacities

- Hydraulic oil: 105 litres
- Diesel fuel: 155 litres
- Hydrostatic oil: 12 litres
- Engine oil: 8.5 litres
- Coolant: 12 litres

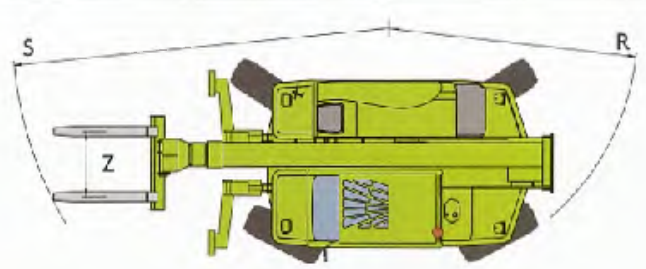
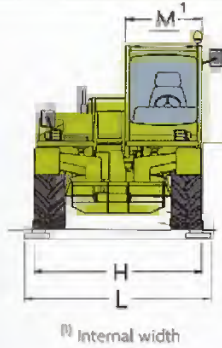
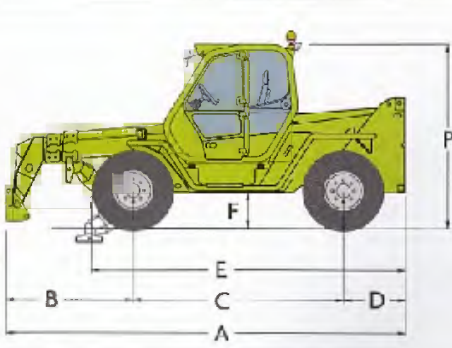
## Tyres

- 400/70-20,

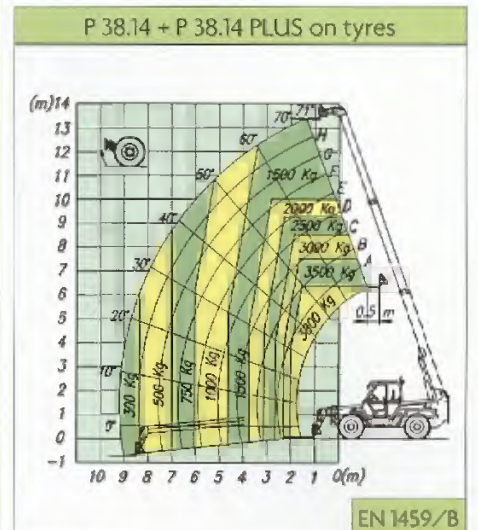
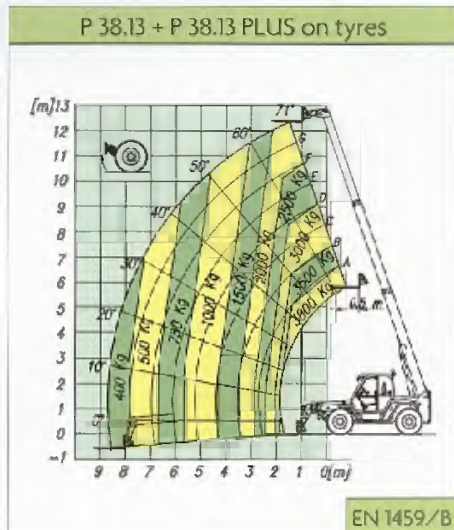
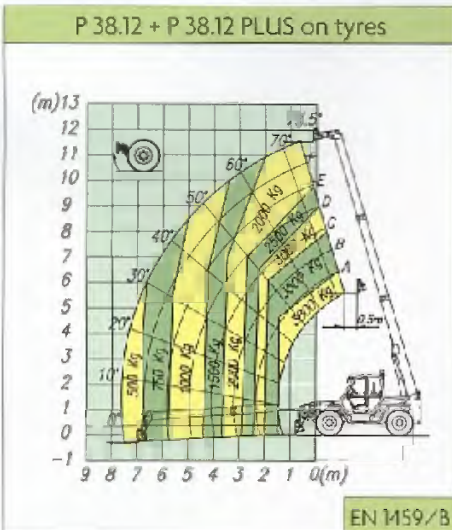
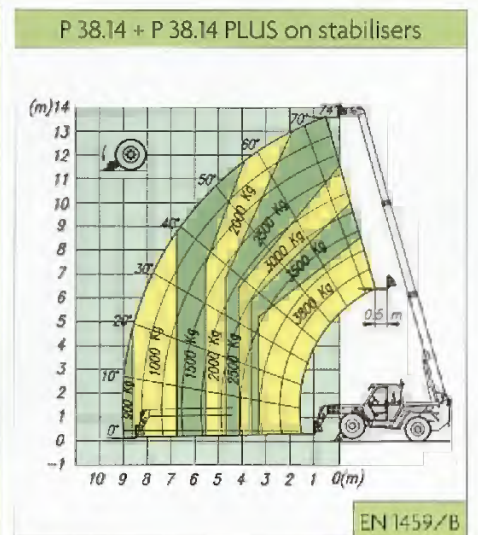
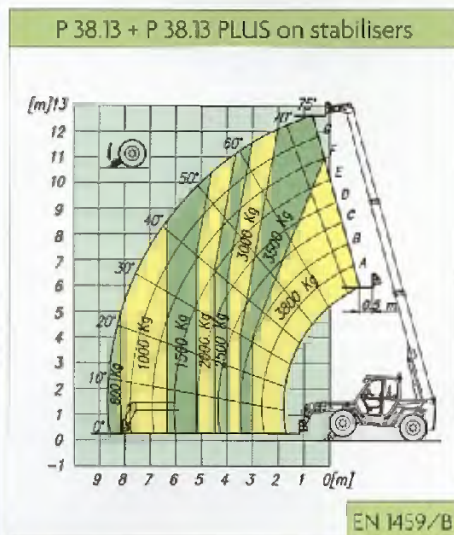
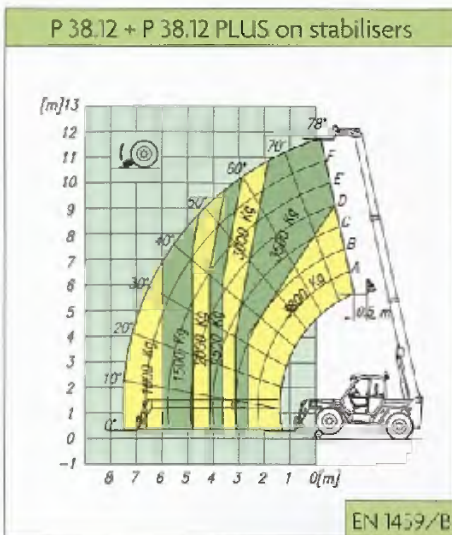
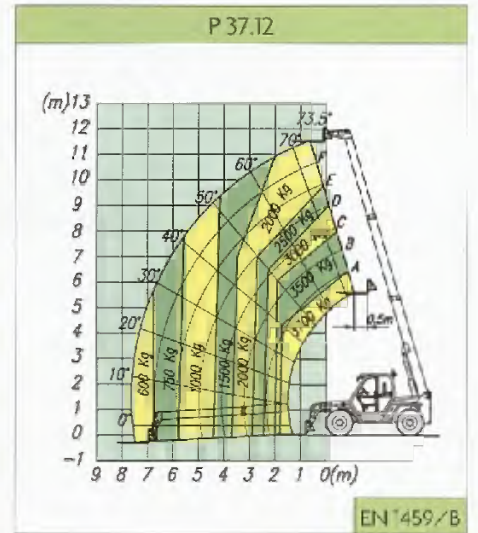
## Available options

- Front and/or rear axle differential lock.
- Automatic battery isolator.
- Manual control air conditioning.
- Windscreen wiper on the roof window.
- Three working lights on the cab (two front lights and one rear).
- Pneumatic seat.
- Roof and front window mounted sun blinds.
- BSS boom suspension system or EAS front axle suspension.

PANORAMIC	FRAME LEVELLING				FRAME LEVELLING + STABILISERS				
	P 37.12	P 37.12 PLUS	P 38.12	P 38.12 PLUS	P 38.13	P 38.13 PLUS	P 38.14	P 38.14 PLUS	
<b>Weight</b>									
Total empty weight (with forks)	kg	8700	8700	8650	8650	8650	8650	8900	8900
<b>Performance</b>									
Rated maximum load	kg	3700	3700	3800	3800	3800	3800	3800	3800
Maximum lift height	m	11.5	11.5	11.6	11.6	12.6	12.6	13.6	13.6
Maximum forward reach	m	7.6	7.6	7.6	7.6	8.6	8.6	9.1	9.1
Lift height at full capacity	m	6.2	6.2	9	9	11	11	8	8
Reach at full capacity	m	1.8	1.8	2.7	2.7	3	3	3.3	3.3
Capacity at full lift height	kg	2000	2000	3500	3500	3500	3500	2500	2500
Capacity at full forward reach	kg	600	600	1000	1000	800	800	900	900
Low emission (Euro 2) engine		nat. aspirated	turbo	nat. aspirated	turbo	nat. aspirated	turbo	nat. aspirated	turbo
Power at 2400rpm (97/68/CE)	kW/HP	64/86	74.5/101	64/86	74.5/101	64/86	74.5/101	64/86	74.5/101
<b>Speed ratios</b>									
1 <sup>st</sup> gear	kph	7	11	7	11	7	11	7	11
2 <sup>nd</sup> gear (self-limiting maximum speed)	kph	25	40	25	40	25	40	25	40



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<b>Dimensions</b>					
A	mm	4850	4850	5240	5590
B	mm	1285	1285	1675	1540
C	mm	2750	2750	2750	2750
D	mm	815	815	815	1300
E	mm	4100	4100	4100	4585
F	mm	480	480	480	480
H	mm	2220	2220	2220	2220
L	mm	-	2420	2420	2420
M	mm	995	995	995	995
P	mm	2440	2440	2440	2440
R	mm	3920	3920	3920	3920
S	mm	4900	4900	4940	5040
Z	mm	850	850	850	850





### Help is always nearby

Day after day, choosing a Merlo product brings the advantages of the most advanced technology and the practicality of safe and comfortable equipment, of which the very best can be expected.

Merlo Service ensures a close and continuing bond with the customer, provided by a worldwide network of more than 500 Service Centres guaranteeing experienced and trained technical assistance close at hand.

### Building professionalism

Evidently, carelessness and a lack of respect for the basic principles of safety are often the causes of accidents with lifting equipment, often through the lack of an adequate training scheme. The close link between training and safety is a part of everyone's experience and must be continually updated as part of our professional development, a role for which the new Merlo Research and Training Centre is admirably suited.



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