

technews

INFORMATION ON INNOVATIVE TECHNOLOGIES FROM THE MERLO GROUP

Special edition
Special edition
2010

MPR
THE LATEST EVOLUTION

A NEW CONCEPT FOR TOUGH TERRAIN TELEHANDLER

HYBRID PANORAMIC IT'S REALLY GREEN!

technews Special edition

Welcome to the first edition of technews, the magazine providing updates on the latest Merlo technology, products and application.

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100% Italian Passion.

Merlo technicians and engineers have always been motivated by innovation. That continually drives our research and technological development, responding daily to new challenges and providing new solutions to customer needs.

The unequalled range of telescopic handlers, self-propelled access platforms, self-loading concrete mixers, tracked carriers, off-highway tractors and heavy-duty tool carriers all share common goals to increase efficiency and time-saving.

Merlo's strength lies in its ability to manufacture cutting edge machinery, changing the way that people work!

Every design aims at increasing safety, comfort and performance.

That is why each new Merlo design sets a new standard for performance and in consideration for man and his environment.

Each new type joins an inexhaustible team, striving to overcome the most challenging obstacles in today's busy world!

A PANORAMIC FOR TOUGH TERRAIN

This new concept machine gives a new meaning to the term 'Rough Terrain Telehandler"!

All telehandlers should lift on firm, level ground. But, sometimes they need to cross much worse terrain to reach their loading area. That's no longer a problem for this tiny

Weighing only around 4000 kg, but with a Another common feature with the P 25.6 is. 75 kW turbo diesel engine inside it, this tracked baby will handle serious terrain.

The boom is similar to that used in the P 32.6 models, so has a single extension stage, with the mechanism internal and completely protected. The fork carriage is common to the P 25.6 so will accept Merlo attachments with ease. The maximum lift height is 5 metres, with a rated capacity foreseen at 2500 kg.

For extra stability, the newly designed chassis incorporates a front mounted hydraulic dozer blade

The tracked base is, of course, designed and made in-house, and features oscillating rollers for travel stability. The 450 mm wide rubber tracks will power the Tracked Panoramic at up to 15 kph.

Drive is fully hydrostatic, with two variable delivery pumps each driving a fixed flow motor attached to an epicyclic gearbox.

Track control and steering is completely independent

Only 1800 mm wide, like the new wheeled P 25.6, the Tracked Panoramic 25.5 will get into tight spaces. And, at only 3.5 metres long (without forks), it will spin around in no space at all!

naturally, the big, roomy cab you always find on Merlo machines.

There is no compromise in comfort, room or visibility in this, Merlo's newest concept telehandler





THE WORLD'S FIRST ECO-HANDLER

Care for the ecology of our planet is often Panoramic, so there's all the potential for claimed as a 'Mission Statement' by manufacturers.

Now, Merlo has shown that there are more than words to this Statement. Bauma 2010 sees no less than two radical design moves by Merlo. and noise emissions of capital plant. For larger telehandlers, the EcoPowerDrive transmission But, the Panoramic P 41.7 Hybrid delivers even recirculated back into battery charging. more - potentially, zero emissions for indoor use!

The Hybrid Panoramic

The result of co-operation with the Mechanical Department of Turin Polytechnic, and already subject to two Design Patents, the Merlo Hybrid system combines two power sources; a 55 kW Kubota diesel and a 50 kW brushless, permanent magnet electric motor/generator. The secret is in the power split system, heart of this hybrid drive.

In 'Diesel always on' mode, the transmission is fed by the diesel engine and the electric drive (from lithium batteries). That's potentially some 100 kW available to the two-speed drive. That's the same power to weight ratio as a conventional P 41.7 hydrostatic

traction and a maximum travel speed of 40 kph.

In 'Hybrid' mode, the diesel engine is available on demand, either as direct power or to charge the battery. The system chooses the showing the way forward in reducing exhaust method of greatest efficiency and least emissions. Power can split solely to the As with all Merlo designs, there is no driveline or partially to driveline and machine promises a 20% reduction in fuel consumption. hydraulics, and any excess power is

Thirdly, in 'Full Electric' mode, only the electric

motor provides drive and the diesel engine is turned off. This mode is ideal for indoor working inside buildings or tunnels, or anywhere where noise and exhaust emission must be minimised - working at night, for example. The autonomy is that given by

compromise in performance. This is a fully functional 4100 kg capacity telehandler, lifting to 7 metres. The only difference is that this telehandler is REALLY green!



THE CONFIDENCE TO BUILD

THE NEW ADVERTISING SLOGAN FOR THE MERLO GROUP REFLECTS ITS FOUNDER'S FAITH IN ITS FUTURE.

The history of the Merlo Group is one of achievement, marked by ideas and innovation. The Group has achieved success by meeting user requirements with ingenuity, technology and by making safety a priority. This is why Merlo is a leader in the telehandler sector and every machine is evidence of the Group's commitment to offering the best to its customers - compact and easy-to-handle machines of high performance but with unrivalled comfort, efficiency and safety. Over 90% of each of our products is manufactured in-house; the result of internal design, and engineering. We are committed to reinvest 9.5% of turnover, both this year and next, into R & D and industrialisation. This level of continuing investment is only possible because we are a self-funding, family owned company.

Winning choices

Our plant is a modern and efficient manufacturing facility that has few equals in the world.

This year, we will be making further progress into Just-in-Time methods, improving efficiency and creating more space for assembly.

It is obvious that automation reigns supreme in the plant. Structural steel fabrications, hydraulic components, mechanical, electric and electronic parts are all manufactured by automated processes and thoroughly checked at each stage.

The plant covers an area of over 150,000 square metres. Thanks to the continuous financial investment and organisational efforts, manufacturing output has more than quintupled in less than a decade.

We are faced with great technological challenges, and the Merlo Group is recognised as a world leader in the application of automation to the production of capital plant and equipment, freeing our core personnel to perform more purposeful and satisfying tasks.

The challenges ahead of us

A long-sighted strategy has always characterised the Merlo Group, which is why we can look to the future with confidence, and attend Bauma 2010 with high-tech solutions and products.

Unlike some other companies in the industry, the Merlo Group has total control of its own financial and manufacturing structure, and has built its development on a solid business foundation.

Totally family-owned, the Group has weathered the financial storm of recent years better than some competitors, and has kept on developing and growing despite this crisis, as shown by its huge investments in research & development and by the presentation of new models in each product group and even completely new types of machine at Bauma 2010.

Fought over for hundreds of years, the idea of depending only on ourselves is deeply ingrained in our very DNA. Today, it is providing every bit as useful as in our ancient history!

Merlo at Bauma 2010

Our confidence is reflected in the Merlo stand at Bauma 2010. It is almost twice as large as at the previous event. You'll preview the new Roto and Panoramic telehandlers, and newer, showing how versatile and effective Merlo's solutions can be when it comes to technological innovation.

Continuous investment in research and innovation, new models and technological development - this is Merlo's key to the future.



ANEW APPROACH TO WORKING AT HEIGHT

THE NEW MERLO MPR 15 AND 18 COMBINE RAPID TRANSIT, **ROUGH TERRAIN OPERATION** AND BIG CAPACITY.

New MPR 15/18 models are the latest evolution of suspension ensures excellent driving comfort and Merlo's rapid transit access platform concept.

All MPR models are compliant with EN 280 standards for powered access machines, and combine the benefits of a conventional self-propelled work platform with the off-road mobility of a telehandler, and roadability of a truck-mounted platform.

These new models add the practicality of high capacity applications with a larger deck. Performance and safety are ensured even in the most challenging situations.

Uncompromised safety

The core of the system is a new self-propelled chassis, fitted with a cab, telescopic boom and big platform. This concept provides the safety of eliminating conventional scaffoldings and mobile scaffold towers without the extended travel time of traditional selfpropelled platforms. It also obviates the limited off-road performance of truck-mounted platforms, significantly reducing time and labour costs.

Self-levelling hydropneumatic suspension

Proven for many years on other products, the Merlo

control, even at maximum speed. On-site, it gives stability and safety by providing frame tilt.

The suspension adjusts both side tilt (up to $\pm 9^{\circ}$ or 16%) and longitudinal tilt (up to $\pm 5^{\circ}$ or 9%).

Platform and controls

The 4m x 2m platform hydraulically slews ±180°. Standard equipment includes a 220 V outlet with a main switch at the bottom of the boom, and a hose for either air or water. Personnel access is through a front gate, whilst the rear can be opened to load materials.

CHARACTERISTICS AND PERFORMANCE	MPR 15	MPR 18
Total weight unladen (kg)	10800	11800
Maximum load capacity (kg)	1000	1000
Maximum working height (m)	15,6	18
Length (mm)	6300	3700
Width (mm)	2240	2240
Height (mm)	2920	2920
Turbo diesel engine (make/cylinder)	Deutz/4	Deutz/4
Tier 3 engine power (kW/HP)	74,9/102	74,9/102
Maximum speed (kph)	40	40



The operator can control any movement with the proportional controls available in the platform, including machine travel (with automatic maximum speed limiter) and the all-wheel steering. Driven from the platform, maximum speed is 6 kph with the boom stowed, and 1 kph with the boom raised to the full working height.

MPR 15 / MPR 18 HIGH PERFORMANCE IN ANY SITUATION



P 25.6 ULTRA-COMPACT PANORAMIC

TINY IN SIZE BIG IN PERFORMANCE!

Compact, robust and safe, Merlo's new Ultra-Compact P 25.6 is the ideal solution for work in very small spaces, where conventional telescopic handlers cannot get the job done.

The concept of a compact telehandler was first invented by Merlo back in 1991, when the revolutionary P 20.6 was introduced. Thanks to its original design and unrivalled performance, for years it was a standard in the industry.

With the introduction of this new P 25.6 the bar is set even higher, and once again confirms Merlo as the technological leader in the sector of compact telehandlers!

Safety and a compactness were the focus of the designers, leading to a machine which is tiny (only 1.8 metres wide and less than 2 metres tall), reliable and quick, but will lift as much as 2.5 tonnes and be able to lift to nearly six metres.

Even with this small footprint, the new model has exactly the same cab as other Merlo telehandlers - which means plenty of space, lots of handy storage compartments, and that incredible Merlo panoramic visibility.

The compact telescopic handler according to Merlo Innovative design and engineering has resulted in a particularly robust chassis, making the best use of its light weight.

Permanent four-wheel drive, all-wheel steer, extraordinary ground clearance with generous approach and departure angles, together with a

PANORAMIC P 25.6 TINY BUT A REAL PERFORMER

- Max load capacity 2,500 kg
- Max lift height 5.9 metres
- The widest cab in this machine class, compliant with ROPS, FOPS standards
- Tremendous visibility all around
- Boom extension mechanism housed entirely within the boom assembly
- Kubota 4-cylinder Euro 3 turbo Diesel engine, 55 kW (75 HP)
- Merlo designed and manufactured axles with epicyclic reduction gears
- Electronically controlled hydrostatic transmission
- 36 kph max travel speed
- Permanent four-wheel drive, 3 mode all-wheel steering



travel speed up to 36 kph, guarantee a superb driving experience in all conditions.

A low centre of gravity and good weight balance assure safe travelling performance and stability on all surfaces.

Yes, it is a diminutive size, but there is no compromise in performance, comfort or safety.

This is a Merlo, like any other!

AXLES

The rear axle is freely oscillating, adapting to levels even in extreme off-road conditions and ensuring maximum tyre grip, by reducing wheel spin. If necessary, an optional fully-locking rear differential is available.

CHARACTERISTICS AND PERFORMANCE	P 25.6
Total weight unladen, with forks (kg)	4500
Maximum load capacity (kg)	2500
Load centre (mm)	500
Maximum lift height (m)	5,9
Load capacity at maximum lift height (kg)	1750
Engine (make/cylinders)	Kubota/4
Tier 3 engine power (kW/HP)	55/75
Maximum speed (kph)	36



60.24 MCSS: MERLO'S BIGGEST ROTO

ROTO DEVELOPMENT
NOW CONCENTRATES UPON INCREASING UTILITY
BY IMPROVING REACH/LIFT PERFORMANCE.

The Roto continues to develop into a truly multipurpose machine – and a sector in which Merlo claim's world leadership having invented the concept in 1991!

This development brings new challenges – amongst them a demand for more lift capacity.

The new Roto 60.24 MCSS is the latest evolutionary step – the first in a new family of higher capacity machines.

The most popular lift height is in the 20-25 metres range, so this new 6-ton load capacity machine sets a new standard for on-site handling operations, and its total lift height of over 24 metres is exactly right.

Safety is constantly monitored throughout lifting operations by Merlo's exclusive MCSS system (Merlo Continuous Slew Safety), which controls and manages all the operating parameters of the machine.

Entirely developed in-house, it provides much greater flexibility and productivity than 'off the shelf' control systems.

Stronger and stronger

The Roto 60.24 MCSS is the latest Roto and it shares with its predecessors cutting-edge features designed to offer high performance and profitability.

An exclusive rotary coupling manufactured by Merlo, means that the turret rotates continuously, without restriction (although the MCSS system allows the driver to preselect a working arc if he wishes). This new model is equipped with a Load-Sensing hydraulic system, self-levelling hydropneumatic suspension, and stabilisers with independent extension and jacking, which can be configured to suit any stability footprint.

The cab can be tilted by up to 18 degrees to offer an unequalled loading view at maximum height.

The Roto concept

An integrated system for handling and lifting

Roto - rotary telehandlers, originally conceived by Merlo - increase operating versatility and offer all the benefits of a telescopic handler plus a lightweight lifting capability and the ability to safely place personnel into position at height.

True 'Jack of all trades' on site, they allow you to work throughout 360 degrees without once moving your machine.

With load capacities up to 6 tons and lift heights of over 31 metres. Put simply, that is the Roto!

Three distinct product families offer high profitability and versatility in site tasks that would normally require several specialised or larger machines.

Roto MCSS series

The best of cutting-edge technology and with the versatility of vertical outriggers. The benefits of automatic digital stability control and continuous turret rotation. 7 models.

- Roto 600 series

More conventional machines, which offer uncompromised performance and safety and a turret rotation of up to 600 degrees together with a unique automatic stabilising and levelling system. 2 models.

Roto 400 series

High-speed, compact and manoeuvrable machines with a turret rotation of 415 degrees. 5 models.

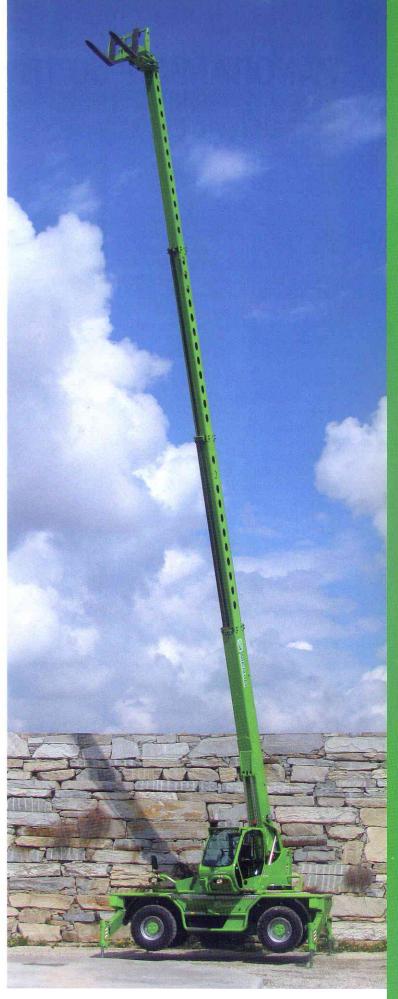
ROTO 60.24 MCSS

A NEW CLASS IN PERFORMANCE

- Tilting cab and continuous 360 degree turret rotation
- NEF 6-cylinder Euro 3 turbo Diesel engine, with intercooler, 130 kM (176 HP)
- Max load capacity 6,000 kg
- Lift height 23.9 metres
- MCSS continuous stability control system
- Merlin electronic control and diagnostic system
- Electronically controlled hydrostatic transmission maximum speed 40 kph
- Permanent four-wheel drive and three-mode steering
- Self-levelling hydropneumatic suspension
- Stabilisers with independent extension and jacking
- Load-Sensing hydraulic system

CHARACTERISTICS AND PERFORMANCE	60.24 MCSS
Total weight unladen, with forks (kg)	22000
Maximum load capacity (kg)	6000
Maximum lift height (m)	23.9
Load capacity at maximum lift height (kg)	3500
Tier 3 engine power (kW/HP)	130/176
Maximum speed (kph)	40





PANORAMIC P 50.18 HM

A NEW FLAGSHIP HAS JOINED THE MERLO RANGE OF HIGH LOAD CAPACITY TELEHANDLERS.

Success in the Canadian market led to a demand for higher capacity construction machines

Merlo designers have always had a clear goal - developing safe and comfortable machines. Safety and comfort are closely related to one another, as they improve working conditions. With the new Panoramic P 50.18 HM a third goal has been achieved - offering top performance. Its 5-ton load capacity and its 18-metre lift height ensure productivity in any application, even the most challenging ones.

that despite its impressive size, this is goodlooking machine and it has a wide and generous cab. All controls are arranged in such a way that they are extremely userfriendly, and can be easily operated and monitored thanks to the Merlin system, which electronically manages all the operating parameters of the machine. Both the driver's seat and the steering wheel can be adjusted, and the air conditioning system maintains an ideal temperature inside the cab.

This new model is powered by a NEF Tier 3 six-cylinder, water-cooled diesel engine with an aftercooled turbocharger. With an abundance of torque, the engine is combined with Merlo's traditional hydrostatic



PANORAMIC P 50.18 HM UNSTOPPABLE FORCE

- NEF six-cylinder Euro 3 intercooled turbo diesel engine 107 kW (145 HP)
- Max load capacity 5,000 kg
- Max lift height 18 metres

From the outside, it is immediately obvious transmission, giving infinitely variable speed demand, thus speeding handling and lifting up to the maximum 40 kph.

> variable displacement pump, which alters minimal effort. Safety, comfort and performance hydraulic oil delivery depending on the - just like every Merlo telehandler!

> operations. The controls are managed through The Load-Sensing hydraulic system uses a an electronic multifunctional joystick, for



CHARACTERISTICS AND PERFORMANCE	P 50.18 HM
Max load capacity (kg)	5000
Maximum lift height (m)	17.8
Engine (make/cylinders)	NEF/6
Engine power (kW/HP)	107/145
Maximum speed (kph)	40

THE CINGO REVOLUTION

THE LATEST CINGO MODEL HAS A QUICKLY-FITTED ACCESS PLATFORM FOR WORKING UP TO 9M HIGH.

The new M 12.2 adds a higher - 1200 kg - Cingo Handler, the tracked telehandler

The Cingo 2 range comprises eleven basic models, with load capacities ranging from 600 to 1,200 kg, powered by either diesel or petrol enaines delivering from 5 to 21 HP.

Like all the other models of the range, the new M 12.2 is equipped with the exclusive, patented attachment quick-coupling system, so various attachments can be interchanged on the carrier in only a few moments - amongst them dumper skips, excavators, drills, brush cutters, concrete mixers, telescopic handlers, access platforms, and many, many more.

All the models of the range are driven by a hydrostatic transmission with integral brakes on both tracks. These machines are designed to be easy to drive; either walking behind or riding.

Cingo PL 9.4 personnel platform

The Cingo PL 9.4 personnel platform is the first in a range of Cingo-based systems for safe working at height. Don't let its compact size mislead you, because its working height exceeds 9 metres and its load capacity is up to 120 kg!

It is fully dual-powered, with integral 220V electrical controls as well as diesel or petrol motor for external use.

Only 1 meter wide with the four hydraulic stabilisers stowed, it will enter through narrow doorways, yet still give a very useful 9.4 metres of working height. The boom gives a maximum outreach of 4m and a 1m vertical lift section helps to keep the closed length of the combination down to only 3.33m!

Rotation (deg)

payload to the top end of the acclaimed Cingo
The exclusive Cingo Handler system turns these machines into compact tracked telehandlers.

> The core of this system is the telescopic boom, which is designed to successfully meet the most challenging needs.

> The Cingo Handler system, which is available in two versions having a maximum load capacity of 200 kg and 400 kg respectively, can be rapidly fitted on tracked carriers, thus

making available a safe, easy-to-drive and extremely performing working tool.

Depending on the operations to be carried out, the telescopic boom can be equipped with a variety of interchangeable attachments. Thanks to a mechanical quick-coupling system, such attachments can be connected in just a few moments, thus turning the Cingo Handler into an excavating, hoisting, or transport system, with the added dimension of an excellent off-road mobility.



CHARACTERISTICS AND PERFORMANCE	CINGO M 12.2 1200		
Payload (kg)			
Honda petrol engine power (HP)	20		
Kubota diesel engine power (HP)	21		
Maximum speed (kph)	5.2		
Transmission	Hydrostatic		

CHARACTERISTICS AND FERFORMANCE		THE PARTY OF THE P	
Lift capacity (kg)	200	400	
Lift height (m)	3.4	2.9	
CHARACTERISTICS AND PERFORMANCE	PLATFO	PLATFORM PL 9.4	
Lift capacity (kg)	120 (1 pe	120 (1 person + 40kg)	
Working height (m)	!	9.4	
Max outreach (m)		4	
Rotation (deg)	±	±140	

3330 Overall length (mm) 1000 Overall width (on Cingo) (mm)

EPD ECOPOWERDRIVE

TECHNOLOGY CUTS DOWN ON FUEL AND NOISE.

The continuous development of hydrostatic engine speed. transmissions and the increased use of The achievable travel speed is not fixed, but the hydrostatic transmission electronics have allowed Merlo machines to depends on the load; and you need to The EcoPowerDrive system installed on Merlo combine great tractive force and excellent accelerate the engine to almost full speed if performance in terms of speed, while ensuring you want to get the maximum thrust (e.g. maximum control of both acceleration and while excavating). braking. The new EcoPowerDrive system In the new EcoPowerDrive system, however, (EPD) simultaneously manages both engine and transmission, offering a significant improvement in the overall performance of the machine, without any negative impact on its performance, manoeuvrability and user- ratio. The latter is determined with an friendliness.

In the traditional hydrostatic system, the transmission adjusts by setting a certain achievable travel speed per each rpm of

the driver simply defines the travel speed required through the accelerator pedal.

The control system automatically regulates the engine speed, as well as the hydrostatic algorithm which is always striving for peak efficiency; the diesel engine is run at the lowest possible speed, reducing noise and fuel consumption.

A new way to manage

machines offers a choice of three distinct operating modes.

The operator can decide whether to give preference to accuracy (by selecting "FINE" mode), fuel economy (the "ECO" function cuts fuel consumption and reduces noise) or maximum performance (when the "FULL POWER" function generates the maximum power the Diesel engine can develop).

The new management system becomes the sole controller of the whole machine, including the diesel engine, optimising overall



ECO POWER DRIVE INNOVATION INTO THE HYDROSTATIC TRANSMISSION MANAGEMENT



MERLO MOBILITY PROFESSIONAL FLEET CONTROL.

MerloMobility is a brand new tool for administering a fleet, utilising the power of GPS (currently Italy only).

As well as continuing location and tracking, the system permits constant monitoring of significant vehicle parameters and any alarms, plus remote intervention by the administrator. Access into MerloMobility is via wireless GPS, GPRS and UMTS networks, or simply and directly through any Internet access portal. It isn't necessary to install specialist, expensive software, MerloMobility is available through a normal Internet browser, on a PC or even a

Monitoring location and travel

A detailed map shows the exact location of all the vehicles equipped with MerloMobility. The movements of each can be tracked over a predetermined period of time.

Monitoring machine information

All important information about the fleet is stored within the system database and can be easily retrieved for analysis over the Internet, either manually or automatically.

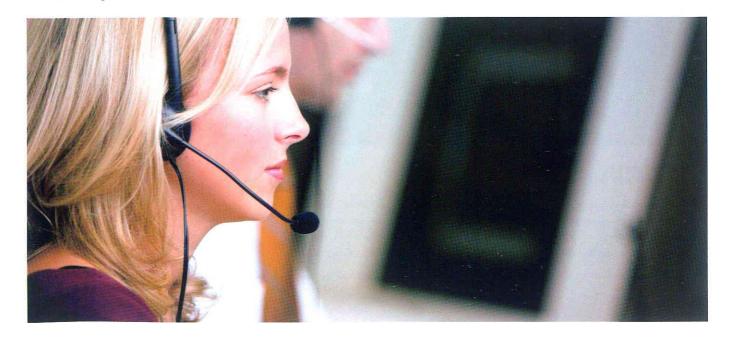
The database information can also be exported in Excel format for spreadsheet analysis.

Monitoring alarms and events

If the machine performs an unpermitted manoeuvre, or if it enters a prerestricted area, an alarm warns the administrator via Internet, email or SMS signal.



MERLO MOBILITY THE IDEAL SOLUTION TO:



- TYRE WEIGHT UP TO 5000 KG (DEPENDING ON THE TYRE HANDLER MODEL)
- CARRIAGE ROTATION UP TO 140°
- CLAMP ROTATION 350°
- TYRE DIAMETER FROM 1200 MM UP TO 3800 MM



Merlo Attachments Many machines in one

Merlo attachments are a great concept that has further enlarged the tremendous versatility of Panoramic telehandlers. Exactly as the new tyre handler does: it takes just a few moments to connect to the front carriage, and to meet alternate lifting, transport, loading/unloading and precision handling needs promptly and effectively.

The exclusive Tac-Lock attachment coupling system allows the hitching and locking operations to be controlled directly from the cab. The boom comes standard with a double-acting hydraulic service fitted with quick couplings, which provides the power for hydraulically-operated equipment.

Visit www.merlo.com for more information upon the many attachments available for Merlo telehandlers, some of them specifically designed for the individual application.



BUILDING WITH CONFIDENCE.

www.merto.com