

PHE

Plant Hire Executive

The No. 1 UK monthly plant hire magazine

Reprinted from PHE
January 2009



MERLO

WORLD LEADER IN HANDLER DESIGN

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The magnificent Roto 40.25 MCSS is the flagship of the Merlo Roto range. Rugged and versatile, a Merlo handler is designed with innovation - and built to last.

Drivers love the precision and ease of use of the Merlo Roto MCSS, with features such as multi-position stabilisers, preset lift height and slew angles, hydrostatic transmission and a tilting cab module.

With its 145HP turbo engine and hydropneumatic suspension, the Roto 40.25 MCSS travels at up to 40 km/h.

Merlo invented the rotary telehandler concept and no other producer has the same experience, range and performance. With ten models and a host of attachments like this fully certified work platform, Rotos can do the jobs of several machines, reducing cost and increasing productivity!



PANORAMIC

MULTIFARMER

ROTO

DBM

Roto 40.25 MCSS
Max lift height 25.25m - Max lift capacity 4000 kg
Continuous 360 degree rotation
Merlin Continuous Slew Safety system

Specialising in solutions!

Nick Johnson reports from the Italian factory of Merlo where the family-owned company's investments in R&D and in-house manufacturing have made it more resilient to the current downturn than other plant makers.

Better placed

In recent years, the factories of an ever-increasing number of plant makers have become mainly machine assembly operations as the production of components (including fabrications) have been outsourced. But one company bucking this trend is Merlo. Its continued commitment to both in-house manufacture and high levels of automation now appear well founded.

A visit to Merlo's ever-growing factory at Cuneo in North West Italy – mid way between Turin and Nice (France) – is always fascinating. For not only is there the chance to meet the company's charismatic owner, Amilcare Merlo, but also to see the latest product developments and improved production processes.

At a time when other plant makers have been cutting staff and adopting extended short time working in response to the global downturn, the Merlo President appears more upbeat than many of his peers. He acknowledges the gravity of the current economic crisis, but contends that his company is well placed to weather the storm.

Engineering flair

Now aged 74, Amilcare Merlo remains committed to the continued development of the company he founded in 1964. His innovative engineering flair resulted in Merlo producing the first low boom, side engine telescopic handler in 1987 and the first 360° slewing Roto telescopic handler in 1991. These, and other significant technical developments, have allowed the company to grow and prosper.

As a family company, free of the need to satisfy the demands of external shareholders for big dividends, Merlo has been able to invest heavily in R&D (to maintain a stream of new models) and more factory automation (to make more of them, more efficiently, in-house). The Merlo President says that his company has been investing 8% of its turnover (which reached around €380 million in 2007) in R&D and another 8% in adding highly automated production equipment and processes. He still remains convinced that retaining such levels of investment in engineering and technology is the right way to continue to move forward.

The company installed its first production robot in 1972 and it now has 38 robots in operation together with 16 machining centres



Hirers like GT Lifting Services continue to develop the UK hire market for high lift, rotating telehandlers.



Merlo President Amilcare Merlo continues to invest heavily in R&D and more automated in-house component production.

and 11 automated cutting machines. The company is currently commissioning four more robots and three more automatic cutting lines to upgrade its axle production line.

Greater automation has enabled Merlo to increase machine production in a very cost effective manner. In 1994 the factory was making three machines a day with 160 production staff whilst last year the production level was 30 machines a day with only just over 390 people directly involved on the factory floor.

Amilcare Merlo says that the high level of automation means that his company is better able to cope with reduced demand than many other plant makers. "We can turn off robots rather than having to lose experienced staff."

The decision to retain a very high proportion of component production in-house now looks to be an increasingly wise one. The Merlo President says, "We can control our own component production – there is no risk of machine production being stopped because the external supplier of a vital component has gone out of business."

Armed with its high degree of automation, Merlo produces not only its own main fabrications but also its axles, booms, cabs and even all the company's hydraulic cylinders. It also makes the majority of the matched attachments for its machines.

New parts centre

Such has been the expansion of Merlo's Cuneo site that the factory now has a covered area of more than 150,000m². The latest developments include a new 12,000m² three storey spare parts and machine dispatch centre whose construction will commence early this year.

Within the main factory itself, in addition to the new axle machining and assembly area currently being commissioned, there is a new dedicated section for boom manufacture and another new area devoted to the production of cabs. There has also been a big investment during recent years in new hi-tech powder coating lines so that paint quality is now greatly improved.

There are separate new painting lines for the cabs and the booms and a much larger one for the chassis frames. The latter line, which opened in April 2007, is very impressive. Costing around €5 million it has 240m of track and it enables up to 32 chassis to be painted a day on a single shift.

Interestingly, the factory is organised into different business units such as booms and cabs which, as profit centres in their own right, supply the assembly lines. The new cab line has 12 work stations and it now enables up to 32 cabs to be produced a day on a single shift with only 12 people.

The corporate structure of the Merlo Group is arranged so that all R&D work is carried out by an internal company called Project, which employs around 80 people – mostly engineers with university degrees. Project has three divisions – covering machine design, prototyping and testing – and it operates from a modern research centre with a covered surface area of over 5,000m². The engineers also have a testing area of over 15,000m².

The practical results of this big investment in R&D can be seen in many areas of the machines. One simple but effective recent addition on the cabs is a durable polymer hinge on front and rear screens. These transparent hinge strips, which took two years to perfect, allow the panes of glass to be opened for ventilation whilst retaining maximum vision and a good seal.

The company also makes its own printed circuit boards that are specially designed to suit each model. Merlo's in-house electrical and electronic expertise has also enabled the company to produce the sophisticated MERlin Continuous Slew Stability system (MCSS) for its most technically advanced Roto 360° slewing telehandlers. This system actively analyses stabiliser leg pressure to continuously protect the machine from an overload situation.

Clever wear pad

Another interesting R&D project that has been incorporated into production machines is a new bi-composite wear pad. Optimised for both low friction and heat reduction, these pads work effectively on fully painted booms so there is no need for exposed steel strips that constantly need to greasing.

The creation of the new cab and boom lines has freed up more space for assembly. So Merlo is adding a third Roto assembly line to cater for the growing demand for this type of handler which, last year, accounted for 30% of the telehandlers made by the company.

The end of last year represented a milestone for both the Merlo factory in Italy and the Merlo UK subsidiary company in this country. During December the company beat its previous annual production record by making its 7,000th machine (of which 6,200 were telehandlers) and Merlo UK delivered its 7,000th machine since the joint venture company (in which Managing Director John Iles has a 50% stake) was formed in June 1993.

The 7,000th machine supplied by Merlo UK was a 25.0m Roto 40.25 MCSS – delivered through dealer



The new Roto 45.19 has 'banana' style stabilisers which result in the machine having a fixed load chart.



The extensive use of robots in the Cuneo factory will help Merlo cope with the economic downturn.



A specially produced circuit board ready to be fitted into a cab on the new cab production line.

CBL to GT Lifting Services. Established by Graham Trundell some six years ago, this hire company specialises in the supply of Merlo Rotos (with maximum lifting heights of 16.0m, 21.0m and 25.0m) together with 6.0 and 10.0 tonne conventional Merlos complete with matched attachments such as glass handling devices.

Another UK hire company which has also recently increased its fleet of Merlo Rotos is Scarborough-based Greenwood Plant which has purchased two more 40.25 MCSS machines. It has the largest UK hire fleet of these versatile machines that can be used with forks, a winch or a powered access platform

A good source of information and pictures of Rotos carrying out different tasks is the www.rotohire.com website. This has been produced by London-based plant operator Stephen O'Keeffe who has been driving Rotos for over ten years. He has clearly become an avid fan of what he describes as 'a great piece of engineering'.

The latest Rotos being developed by Merlo are the 4500kg capacity models 45.19 and 45.21 which provide maximum lifting heights of 18.7m and 20.8m respectively. Available later this year, they will provide simpler and less costly alternatives to the established 45.19 MCSS and 45.21 MCSS models.

Banana stabilisers

Powered by 88.0kW (120hp) Deutz engines rather than the 107.0kW (145hp) engines in the MCSS units, the new duo provide 600° (rather than continuous slewing) and a maximum road speed of 25km/h (instead of 40km/h). The big visual change is the use of fixed spread 'banana' type stabilisers rather than variable width, out and down stabilisers.

The ability to offer a wider range of Rotos, as well as heavy duty machines, will help Merlo UK to counter the downturn in demand for more conventional telehandlers in construction. Another valuable string to the bow is agriculture which last year accounted for over 55% of its sales. Here the company scores by being able to sell machines such as the Turbofarmer and the innovative Multifarmer – a dedicated tractor / handler combination.

This year will be tough for many plant makers. But the impression one gets from visiting the Merlo factory, and speaking with Amilcare Merlo, is that the self-sufficiency of this company should work well in its favour. ■

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The supremacy of ideas

TURBOFARMER

Farm telehandlers 100 - 120 - 140 HP
7m - 9.7m, 3400 - 4100kg capacity



DBM

Self-loading
concrete mixers



COMPACT

2m wide telehandlers
6.4m - 8.2m, 2800 - 3000kg capacity



ROTO

Rotary telehandlers
10m - 25.25m
3800 - 5000kg capacity



MULTIFARMER

Combined telehandler/tractor
6m - 8.55m, 3000kg capacity

PANORAMIC

Telehandlers 100 - 120 - 140 HP
7m - 16.7m, 3400 - 10,000kg capacity

