

ONE BATTERY. FLEXIBLE CHOICE OF MACHINERY.



ROBEL Battery Power

Quiet. Zero emission. Lightweight.

- **Compact & practical:** Batteries and chargers are totally interchangeable for the complete range of ROBELS battery tools
- **Quiet & ergonomic:** Low vibration and low noise emissions in line with noise protection regulations for urban areas
- **Zero emissions & clean:** No exhaust gases, unpleasant smells or pollution

www.robel.com

The New ROREXS –

Faster, Safer and More Efficient by Design

The ROREXS rail exchange system from Robel (picture 1) is one of the world's leading machines for the delivery and collection of long welded rails.

With over 50 years' experience and over 90 systems delivered worldwide, the German manufacturer has developed a global network of customers and a clear understanding of the most critical factors in the handling of long welded rails: safety, fast and reliable operation, and cost-efficient service. Fundamental to this aim is the development of automatic processes in order to:

- separate the worker from the rail
- eliminate any working at height
- maximise process speed
- maintain perfect rail quality at all times

Fully Automated System

Automation is key in driving improvement in safety, productivity



*Robel's ROREXS rail exchange system.
© ROBEL Bahnbaumaschinen GmbH*

and cost-efficiency. However, it is also important that the design is simple and reliable, allows easy maintenance and ensures dependable performance as well as built-in redundancy. The latest ROREXS is now controlled by

just two operators from the safety and comfort of the rail manipulator cab. Automation enables the safe remote operation of the rail clamping station, as well as the roller gates, end retaining wall and the satellite rail



The fully-automated satellite rail chute can be mounted on standard container wagons to facilitate the approval process

chute (picture 2). The operator no longer needs to venture on to the trackside near moving rail and machinery, or undertake tasks working at height on transport wagons. This has the additional benefit that operations can be undertaken under live overhead line offering significant cost and time savings as no isolation is required. In addition, with auto limiters on the rail manipulator and the assurance that no operators need go on to the track, single line operation with adjacent lines open to traffic at line speed is also possible.

Careful Handling and Maximum Capacity

The total capacity depends very much on the operator's permitted loading gauge, with a maximum of 50 rails. ROREXS loads and unloads UIC60/S49 rail from 30m up to 500m in length, handles all standard flat bottom sections up to 68kg/m and also accommodates prefabricated insulated rail joints. Rails are delivered with great care and precision across a 4m lateral range (2m either side of the track's centre line). A special new side-roller system

(picture 3) on the roller gates and spring-loaded chute wagon ensures the rails and any special coating are protected at all times and the rail is delivered in rolling-mill condition. Similarly, in the recovery operation, service rails are processed carefully and their condition stays well maintained creating the opportunity of onward cascading from primary to secondary routes.

Built-in Redundancy

At every stage of the working process the system allows for built-in redundancy with a manual backup for all operations. Roller gates could be manually operated with speed and efficiency, at ground level from either side of the train, with a hand drill on a worm drive system. Similarly, the clamping station, chute system and end walls are also quickly and efficiently managed manually if necessary.



The roller gate can be configured with up to five layers and has integrated side rollers for lower friction and protection of the rail surface coating.
© ROBEL Bahnbaumaschinen GmbH

Flexible Working Saves Time and Money

Planning a rail delivery depends on continuously varying factors and

trains quite often arrive on site in the wrong direction for offloading. Customers have therefore long called for an adaptable rail delivery train to offload rail from either end of the system. On ROREXS, the manipulator is quickly rotated through 180 degrees and the satellite chute is readily deployed from either end of the transport system to allow a dual-ended system for loading and offloading. The new automatic clamping station (picture 4) secures to the rail foot, rather than is traditional to the rail end, and is configured in the centre of the train. This provides the combined advantage of rapid and safe rail clamping and unclamping together with bi-directional working flexibility. Furthermore, for the manual system, which encapsulated the complete rail, the clamps had to match the rail section. Changing from UIC60 to S49 would therefore require the laborious process of changing over each individual rail clamp. With automatic clamping to the foot of the rail, however, different clamps are no longer required for different rail sections saving considerable time and effort.

Offloading Rail from Any Layer

A fully loaded transport system is usually deployed at multiple sites over several shifts with specific rail grades needed at each site. Traditional systems require the rail to be unloaded from the top down through subsequent layers. One failed shift could therefore impact the complete week's plan. The new clamping station allows for delivery from any level, not just from the top layer, giving the operator more freedom on rail grade selection.

Container Wagon Solution

The former chute wagon design of ROREXS required a special engineered wagon with channels running through the deck of the wagon. The latest design of the satellite chute system paves the way for the equipment to be attached directly on to a standard container wagon offering considerable customer savings.

This design update also gives the flexibility of equipment mounted on a twist lock-compatible frame attached to customer wagons. Alternatively, depending on customer specification, all equipment can be welded on to purpose-built wagons.

Faster, Safer and More Efficient

The automated ROREXS delivers time and labour savings both for site and depot operations. Traditional work processes typically required additional safety provisions with four operators working on the track and often at height.

With the fully automated systems

- **all operations take less time, with just two operators working from a remote position of safety**

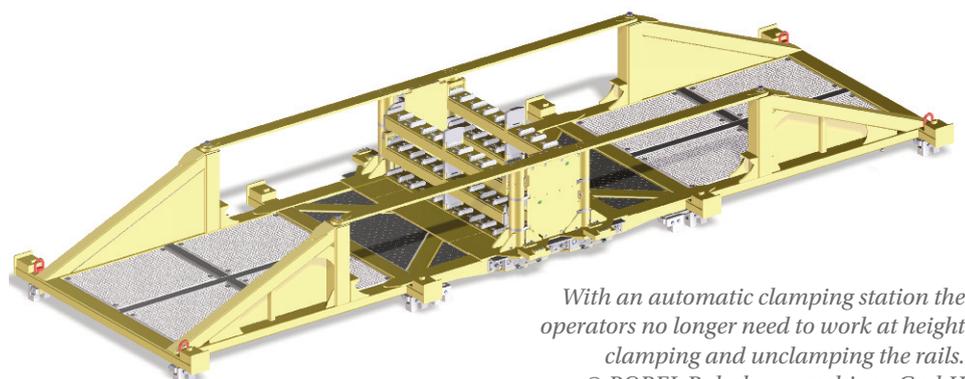
- **the unloading of a pair of long welded rails (approx. 200m) is now achieved in under 3 minutes and loading in 5 minutes**

A faster system with greater operational flexibility, reliability and in-built redundancy means fewer aborted shifts and more operational efficiency.

An Option for All Budgets and Operational Requirements

Depending on operational demands and customer budget, Robel refines the specification and level of automation to meet all requirements. For each element, be it roller gates, clamping, end wall, chute system or rail manipulator, the company can deliver a safe and efficient fully manual right through to a highly sophisticated fully automated solution.

Robel will also support a range of delivery models from conventional build and supply, build to lease and full service support including maintenance and operations.



*With an automatic clamping station the operators no longer need to work at height clamping and unclamping the rails.
© ROBEL Bahnbaumaschinen GmbH*