

NEW SEQUENCING CENTER FOR MOTOR ASSEMBLIES AT THE MAN TRUCK & BUS AG, NÜRNBERG

Lean logistics takes a giant leap forward

Aided by Ingenics, the MAN Truck & Bus AG in Nürnberg opened a new sequencing center, using lean logistics for the optimal supply of its assembly lines.



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At Ingenics, logistics planning plays an increasingly important role, due to the vital meaning of logistics to modern manufacturing operations and its ultimate impact on overall corporate success. By using the lean philosophy to design comprehensive supply chains that work hand-in-hand with all material and information flows, production processes and value-added processes – at Ingenics we analyze, plan, and realize state-of-the-art logistics structures. In addition, Ingenics also provides full-service implementation support, which includes project team training and the establishment of a continuous improvement program.

The MAN Truck & Bus AG in Nürnberg, Germany produces motor units for trucks and buses. Here, Robert Kothmayer has worked routinely over the

past year as a consulting engineer to support MAN's new sequencing center, which will dramatically improve the supply of its motor assembly lines. The overall concept for this new sequencing center was created by Dr. Jens Nitsche, an Ingenics Partner and Business Unit Director.

In terms of warehousing techniques, here unique site-variable solutions were created, for example: Fully-automated loading of small component carriers (SCC) which a SCC commissioner can now deliver directly from a shuttle without interim storage. Plus, automated depalletization was developed as another MAN-specific solution, which was offered by the supplier of the automated small component storage (ASCS) system. "The pre-packaged SCC's are handled using suction grips and placed individually on a conveyor tray. Plus, even the tray handling is fully-automated," explained Robert Kothmayer.

Systematic optimization efforts

Even before Ingenics began working on the project, MAN had begun its systematic optimization efforts. "Originally, our working materials were supplied using the push-principle, from our high storage racks to the assembly line. And storage shelves next to the assembly line were kept fully packed," says Fabian Leitschuh, the MAN Project Manager for the sequencing center.

But with that system, potential optimizations had already been exhausted. Therefore, the assembly line storage shelves were removed and rather than using forklifts, regularly scheduled resupply routes were introduced - to provide assembly lines with sequential deliveries. To minimize traffic and bottlenecks, the SCC distribution was done according to the milkrun principle. "But we soon saw, that our logistic capability wasn't sufficient to sequentially supply the entire assembly line," adds Fabian Leitschuh. "So we brought Ingenics on board, once we'd decided to build the new sequencing center." →





i About the MAN Truck & Bus AG

The MAN Truck & Bus AG is the largest subsidiary within the MAN Group and is an international producer of utility and transport vehicle solutions. MAN Truck & Bus produces trucks with total weights between 7.5 and 44 tons, heavy utility vehicles with load capacities up to 250 tons, municipal and touring buses (completed units and chassis) as well as diesel and natural gas motors. In addition, MAN Truck & Bus offers its customers extensive in-house services.



→ The project assessment for the new sequencing center showed that the available 50 m² of the construction site could only fulfill the center's working space requirement of 110 m² if a two-story construction was used. After deciding to use an ASCS with narrow aisle spacing, the request for bids and a comparison of offers for warehousing equipment was conducted (narrow aisle shelving, lift equipment, supply transporters, etc.).

Today, the new MAN sequencing center is a reality: 65,000 carrier stations are available in the ASCS. Robots unpack pallets and set the SCC's on resupply conveyors. Plus, the available space is optimally used. "Without Ingenics, we would have lacked the necessary ASCS expertise," thinks Fabian Leitschuh. "And just producing the bidding documentation was a major job." In fact, MAN's entire project management team considered Ingenics' consultant to be essential - because he always maintained a good standing with MAN employees as an outside consultant, then no one could accuse him of partiality or of having organizational tunnel vision. ■

Additional information and advice



Your personal point of contact at Ingenics will be happy to answer any questions:

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Dr. Jens Nitsche, Ingenics Partner and Business Unit Director, explains the key optimizations in Ingenics lean logistics philosophy:

› Preparation:

Innovative concepts for timely, task-oriented operations, streamlined techniques, 2-container Kanban, visualization etc.

› Plant layout planning:

Decisions for/against multilevel construction, short pathways

› Material flows:

Straight-lined, minimal resource changes, avoiding interfaces, conveyor techniques only when essential, forklift-free production

› Load carriers:

Optimized/standardized