



## Successful TDM-User

### TDM's Data and Graphic Generator brings digital tool management to Liebherr

**In the quiet town of Biberach, Germany, the TDM software has been revolutionizing the Liebherr Company's world since January 2005. What began simply as a pilot project for drive train production is now earmarked for expansion to other areas of Liebherr in Biberach.**



Liebherr needs many tools to produce its drive mechanisms for construction cranes, industrial cranes, dump trucks, and other products. The Liebherr plant in Biberach currently uses up to 5000 tools. Liebherr's tool logistics are controlled by software from TDM Systems

The digitally organized production is the in-house prestige project at Liebherr's Drive Train Area in Biberach. „What we're aiming at", says Project Manager Robert Piesche, „is to set in motion a system of central tool data management with automated tool dispensers and cross-departmental availability of 2D & 3D tool data." TDM's Tool Management System has already brought the whole process of tool procurement and tool preparation under one roof. Today, stocks in the tool crib and in the Production and Repair Areas can be called up at any time, so that it is almost impossible for any tool to be ordered too often. Tool dispensation has been centralized and automated: TDMstoreasy from TDM Systems controls the vending machines, paternoster and lift systems and ensures that they always have the needed tools and items ready at every moment. The soon-to-be implemented interface between Top-Solid (CAM) and TDM will also improve NC programming by providing uniform tool data. In order to keep manual, time-consuming entry of data to a minimum, Liebherr makes use of the TDM Data and Graphic Generator.

At the production plant in Biberach, around 1750 Liebherr employees produce vehicular cranes and turret cranes, along with drive mechanism components and high-technology control systems. About 100 CNC machines are available for the production of drive mechanisms, large roller bearings, and cranes, 60 of them alone in the

drive mechanism area. This plant supplies other plants of Liebherr. All kinds of casting materials and steel are processed for the drive mechanisms and control systems of cranes and construction machinery. Up to 5000 tool assemblies are used to drill, mill and turn the components. This involves around 20,000 tool items.

#### Shorter search times, greater transparency, less redundancy of orders

Given this diversity of tools, it is not always easy to maintain an overview. One difficulty, for example, was caused by the time required to search for tools. It was often the case that a tool was not found at all because it had disappeared into a drawer somewhere in the plant. Unnecessary duplication of tool orders was the result. Another disadvantage: there was only one main crib for tools, and each tool in it was marked with an ID-number specified by Liebherr itself. If for example a milling cutter went out of the main crib in the direction of the tool dispenser, it became „black market" stock, since the idnumber could no longer be tracked. Transparency was also lacking among the components, which were not procured via Central Materials Management and Control. „Every tool holder and every tool mount in the tool dispenser was unregistered," says job

preparation expert Piesche, „we didn't even know in detail which tools were being used with which machines. That was one of our suggestions for improvement to Management."

#### Clear-Cut Classification

Robert Piesche and his team of CNC programmers and process planning engineers began introducing TDM Systems software in January 2005. In addition to the TDM Base Module, the Drive Mechanism Area now uses the TDM Tool Crib Module for tool dispensing and plans to implement the TDM Ordering Module as well. To ensure that top-quality tool data are available, Liebherr enters the data of turning and milling tools into the database with the TDM Data and Graphic Generator (TDM 3D). When entering tool data, Liebherr's TDM project team classifies tools according to TDM's user-oriented Class and Group Structure. „When creating a new tool entry, for example for a tool from Coromant, we simultaneously include the idnumber," says Piesche. It's important for each tool to have its own identification number so that the TDM software can later be expanded to include other plant areas as well. Every drill bit or milling cutter will be listed with the same number in all plants. A tool sheet is automatically issued containing all important information: all compo-



Planning digital production and the Factory of the Future at Liebherr in Biberach (left to right): Process Planning Engineer Bernhard Stuchlik, CNC Programmer Gerhard Hagel and Robert Piesche, Director of Production Scheduling flank TDM's Marketing Director Daniela Rudolf. Currently, all eyes are on the optimization of tool organization. TDM's Tool Management System, its new Data and Graphic Generator, and TDMstoreasy for automatic ejection of indexable inserts are in the center of attention

