New generation of gear hobbing machines

Hanover (Germany), September 2017 – The newly developed LC 280 α gear hobbing machine provides Liebherr quality with maximum flexibility and short delivery times. The new development relies on tried-and-tested know-how – at the same time including many improved components.

In recent years the gear market has been experiencing a trend towards outsourcing. As a result of this shift, many suppliers are receiving orders for the soft machining of gears. “With the LC 280 α, Liebherr has developed a new generation of gear hobbing machines for such short-term requests”, reports Dr.-Ing. Hansjörg Geiser, Manager Development and Design, Gear Cutting Machines. “This gear cutting machine equipped with the well-known Liebherr quality offers maximum flexibility, maximum productivity, and is available to the customer at short notice.”

Flexibility thanks to diverse range of workpieces

The criteria for an investment decision regarding a new gear cutting machine are primarily quality, maximum flexibility, and at the same time maximum productivity with low procurement costs. For the user it is crucial which orders he can execute and how efficiently he can process these orders. The LC 280 α was developed precisely for these requirements. “It should offer the user the unique opportunity of being able to machine gears and shafts with a workpiece diameter up to 280 millimeters and a shaft length up to 500 millimeters. Most typical machining sizes required for a gear fall within this range”, says Hansjörg Geiser.

Wet and dry machining: new modular concept as successful basis

Some of the tried-and-tested components were adopted in the new development and many were improved. For example, the machine base was designed with a very steep bed which prevents a deposit of chips. In addition, an optional complete stainless steel housing was integrated which reduces the thermal influence of the hot dry chips on the machine bed to a minimum.

Increased performance
The hob head was also redesigned for increased flexibility and productivity. “It is now possible to machine workpieces up to a module of five millimeters”, explains Hansjörg Geiser. “The spindle speed was increased by 50 % to 2250 revolutions per minute compared with the previous model. At the same time, the shifting length increased to 200 millimeters and the maximum tool diameter increased to 150 millimeters.”

As a result of these improvements, tool life is increased considerably with the use of longer tools. Through the use of indexable carbide insert cutters, the process time for certain applications can be reduced by up to 30 % and the tool costs per workpiece can also be lowered. As a result, the unit costs can be reduced significantly.

**Automation system with ringloader**

The proven and fast ringloader system was further optimized. Now, workpieces up to a maximum of 15 kilograms can be automatically loaded and unloaded very quickly. This internal automation concept is as fast as a double-table machine and is characterized by high flexibility and efficiency. Set-up and maintenance costs can be dramatically reduced.

**Modern control system**

With the new touch user interface LHGe@rTec, operators can control the machine quickly and easily. It can be individually configured and supports the user with simple user guidance, which detects and eliminates faults and offers suggested values. It guides the user through the program step by step for process and retooling cycles.

**Short delivery times**

“In the supplier business it is all about fast order decisions, relocations or order extensions”, states Karl Sauterleute, Sales Manager at Liebherr-Verzahntechnik GmbH. “Liebherr can supply customers with the LC 280 α gear hobbing machine within three to four months.”
Captions
liebherr-gear-hobbing-machine-lc280alpha-11252.jpg
Liebherr is opening a new chapter in the evolution of gear hobbing.

liebherr-gear-hobbing-machine-lc280 alpha-170705.jpg
The gear hobbing machine LC 280 α.

Hall: 26
Booth: A72

Contact person
Thomas Weber
Marketing
Phone: +49 831 786-3285
E-mail: thomas.weber@liebherr.com

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