

# The CNC Gear Hobbing Machines LC 60 - 130



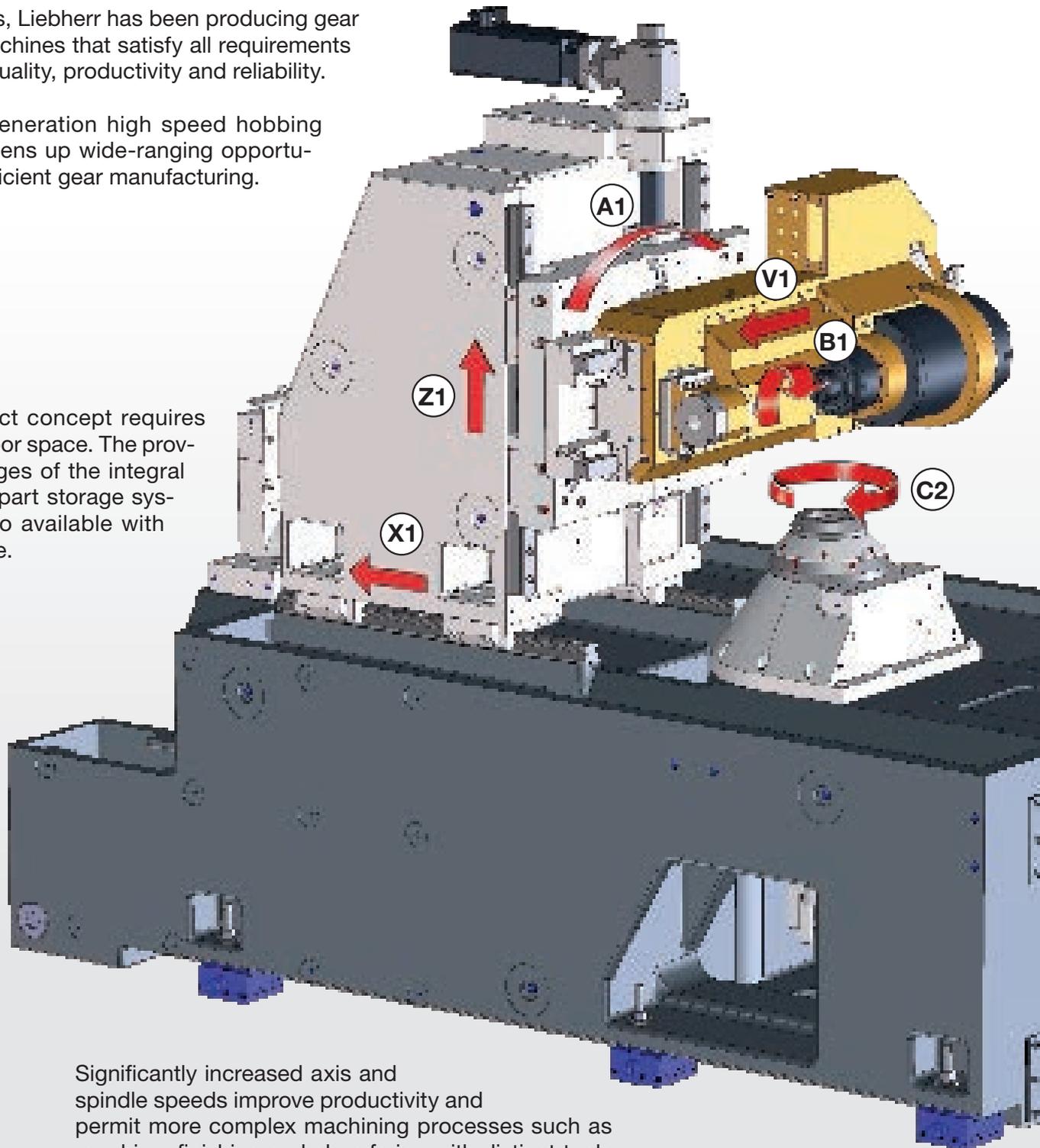
**LIEBHERR**

# The CNC Gear Hobbing Machines LC 60, 100, 130

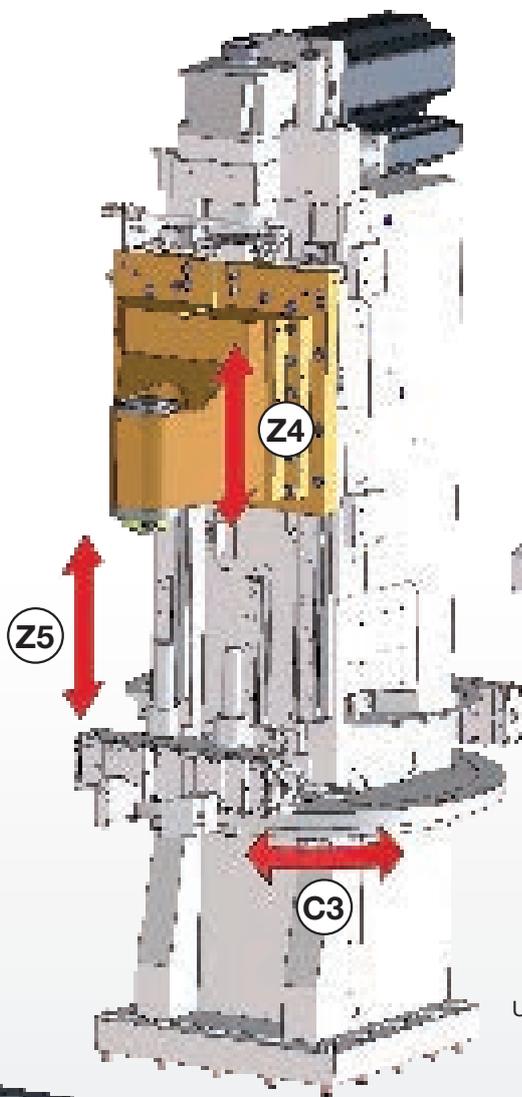
For decades, Liebherr has been producing gear hobbing machines that satisfy all requirements relating to quality, productivity and reliability.

This new generation high speed hobbing machine opens up wide-ranging opportunities for efficient gear manufacturing.

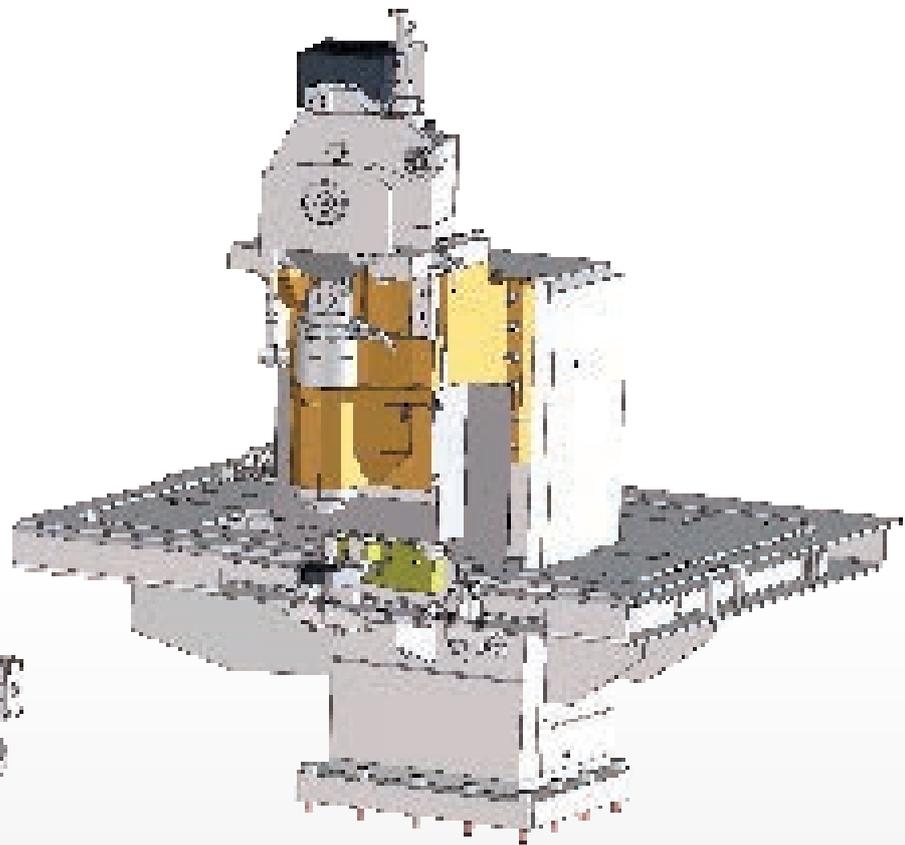
The compact concept requires 20% less floor space. The proven advantages of the integral loader and part storage system are also available with this machine.



Significantly increased axis and spindle speeds improve productivity and permit more complex machining processes such as roughing, finishing and chamfering with distinct tools in one setup.



Universal ringloader



High-speed swivel loader  
(optional for LC 60)



The tool spindle speed maximum of 7000 RPM allows cutting speeds up to 1700 m/min.  
Table speeds up to 1400 RPM enable the use of high number multi-start hobs to reduce cutting time.

The workpiece loading time of the high-speed swivel loader for wheels up to 60 mm has been reduced to 1.4 seconds, resulting in a chip-to-chip time of less than 3 seconds. The more flexible ringloader enables a chip-to-chip time of 4.4 seconds

- A1 - Swivel motion tool
- B1 - Rotary motion tool
- C2 - Rotary motion work piece
- C3 - Rotary motion ringloader
- V1 - Tangential travel tool
- X1 - Radial travel main column
- Z1 - Axial travel tool
- Z4 - Vertical travel tailstock arm
- Z5 - workpiece pocket

# Customer Expectations

Intensive information exchange with our customers throughout the world and extensive practical experience with our existing generation of machines had a major impact in the development of this machine.

For example - The new machine enclosure, an improved chip flow for the dry cutting process, and a very rigid deburring unit.



Work area enclosure



Optimized chip removal



Deburring unit



Machine development focused on the following criteria:

- Minimized set-up time
- Ease in operation
- Reduced complexity

As a consequence, the quick-change gripper system, an automatic counterbearing for faster tool change and the 2-station ringloader are now standard features.



High-speed 2-station swivel loader (LC 60)



Automatic counterbearing



Quick-change grippers

# Customer Benefits

The development of this machine focused on high availability with minimum maintenance requirements.

Maintenance tasks have been greatly reduced (e.g. by using a grease lubrication system for the guideways).

Separate areas for the electric, hydraulic and pneumatic components are clearly identified and easily accessible.

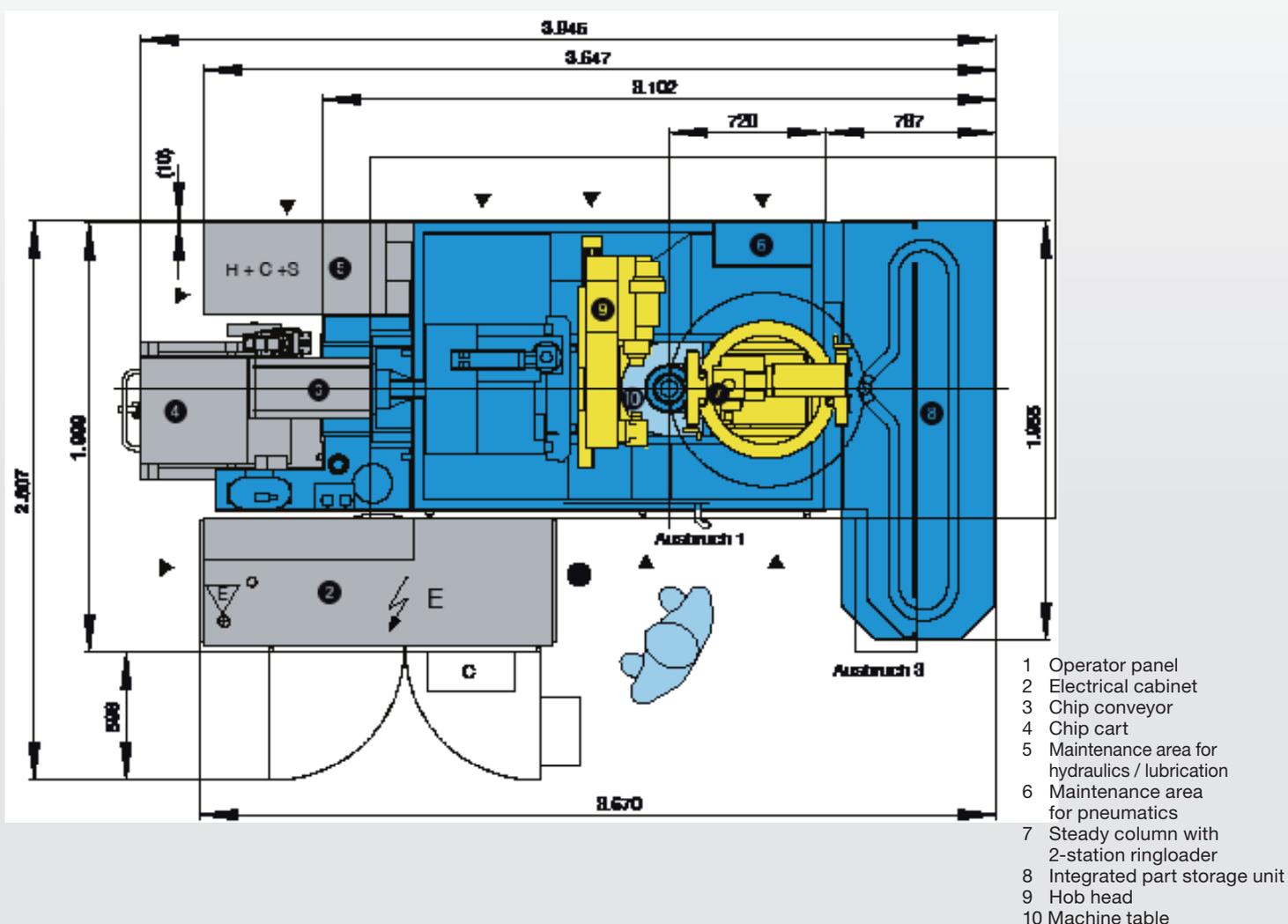


Hydraulic/Lubrication area



# Technical data

		LC 60	LC 100	LC 130
Max. workpiece diameter	mm	60	100	130
Max. nominal module for steel	mm		2.75	
Hob slide travel (axial)	mm		200	
Table diameter	mm		125	
Table speed	rpm		1,400	
Center distance hob/work table	min. mm		10	
	max. mm		150	
Hob head swivel angle	degrees		+/-45	
Max. shift travel	mm		160	
Max. hob diameter	mm		80	
Max. hob length/max. toothed length	mm		285/190	
Rapid traverse, axial	mm/min		7,500	
Rapid traverse, radial	mm/min		10,000	
Rapid traverse, tangential	mm/min		15,000	
Rapid traverse, A-axis	%s		30	
Hob spindle speed	rpm		7,000	
Drive power, hob spindle	kW		15	
Weight of machine with tailstock column	Approx. kg		10,000	



# Machine Tools and Automation Systems by Liebherr

With around sixty years of experience in the field, Liebherr is one of the world's leading manufacturers of CNC gear cutting machines, gear cutting tools and automation systems. These innovative products are the result of advanced ideas, highly qualified employees and the latest manufacturing systems at each of their locations. They are characterised by economy, ease of use, quality and reliability in combination with a high degree of flexibility.

Liebherr employs approximately 1,200 people in the field of machine tools and automation technology and has production facilities in Kempten and Ettlingen (Germany), Collegno (Italy), Saline (Michigan, USA) and Bangalore (India). They are supported by expert and reliable marketing and service specialists at a large number of locations worldwide.

## System Solutions for Gear Cutting Machines

The Liebherr range in the field of gear cutting machines includes gear hobbing machines, gear shaping machines and hobbing and profile grinding machines, all noted for their high degree of stability and availability. Liebherr can supply all technologies required for the manufacture of high-quality gears and is continuously developing these technologies. Particular importance is attached to the energy efficiency of the machines.

Gear cutting machines from Liebherr are supplied to renowned manufacturers of gears and gearboxes as well as large-scale slewing rings worldwide. They are in demand primarily from the automotive and construction machinery industries and also increasingly from the windpower industry for the manufacture of gears for wind turbines.

## High-Quality Gear Cutting Tools

Liebherr manufactures high-quality precision tools for the soft and hard machining of gears and all Liebherr gear cutting machines are fitted with these tools. The range also includes Lorenz stock tools and products customised for specific applications.

## Automation Systems for a Wide Range of Applications

Liebherr has a wide range of products for linear portals, pallet-handling systems, conveyor systems and robot integration for projects in all areas of production and can provide above-average availability of systems.

[www.liebherr.com](http://www.liebherr.com)



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