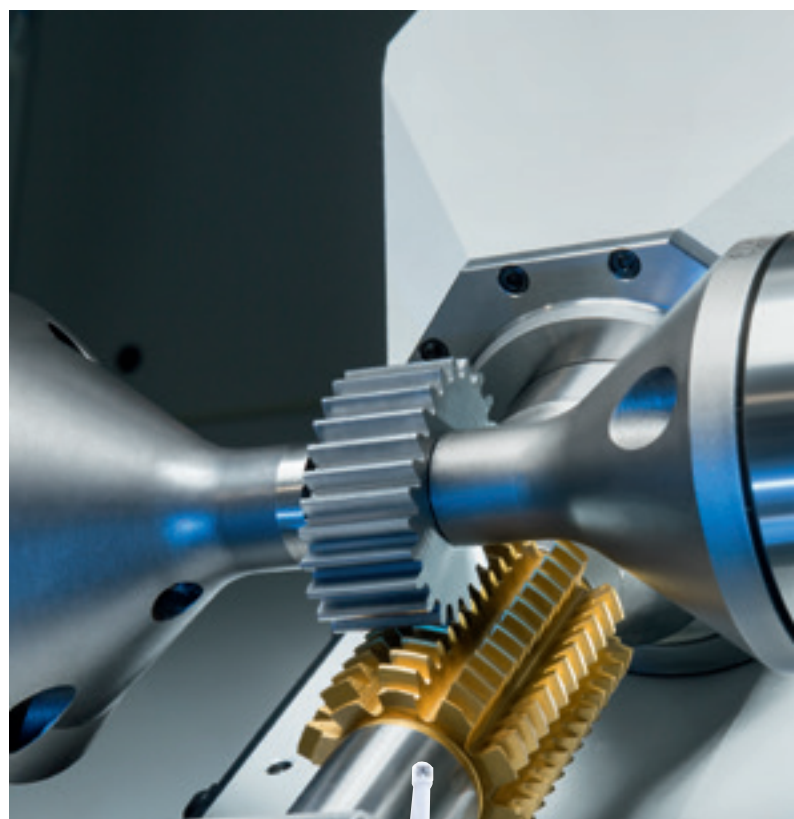


# HORIZONTAL GEAR HOBBING AND WORM MILLING MACHINE EMAG KOEPFER HLC 150 H



*The illustrations shown may require special equipment*

# HORIZONTAL GEAR HOBBIING AND WORM MILLING MACHINES

## Horizontal gear hobbing machine for maximum productivity.

The HLC 150 H is an very universal and flexible gear cutting machine. The special construction principle with the "virtual Y-axis" enables an particularly large swivel angle of the hob head, along with the simultaneous use of modern drive technology.

Therefore, in addition to spur and helical gears, also worms can be machined efficiently by means of the single index milling process.

Thanks to the large center distance between the main spindle and the hob spindle, the machine covers an uncompareable range of workpieces. With hobbing, for example, the spectrum ranges from small pinions mod. 0.5 mm with a diameter of less than 10 mm to helical gears up to module 3.5 mm with a diameter of 150 mm.

Direct-driven and water-cooled workpiece and hob spindles guarantee long tool life, and optionally available quick-clamping systems shorten set-up times during series production and also, when it comes to machine small batches.

Depending on the range of workpieces and the desired level of autonomy, the user can choose from a large variety of different automation options. These range from hand-loaded machines to stand-alone solutions to full integration into manufacturing systems.



## TECHNOLOGIES IN THE HLC 150 H



**Hobbing**



**Single Index  
Milling/Skiving**



**Conikron Hobbing**



**Skiving**



**ChamferCutting**

# NE EMAG KOEPFER HLC 150 H



## BENEFITS OF HLC 150 H

- + Uncompareable range of applications including pinions, shafts, spur and helical gears, worm gears and worms
- + Drive technology with outstanding performance data for high-performance machining
- + Excellent value for money



There is a gantry loader in high speed execution or with linear grippers available for automation.

## RANGE OF WORKPIECES FOR THE HLC 150 H

HLC 150 H – flexible and versatile gear and shaft manufacturing solution in one machine. This high-performance machine has the capability to produce a huge variety of workpieces with a maximum length of up to 500 mm – from gear shafts, pinions, planetary gears, wormgears and worms.



# HORIZONTAL GEAR HOBBING AND WORM MILLING MACHINE

- » FANUC control unit
- » Extensive range of workpieces due to innovative compound slide design and "virtual Y-axis"
- » Worm milling operations are possible due to the large hob head swivel angle
- » Different linking options including TrackMotion
- » Gear hobbing machine with impressive performance data
- » Optionally available quick clamping systems and NC-controlled auxiliary tools for optimizing set-up times

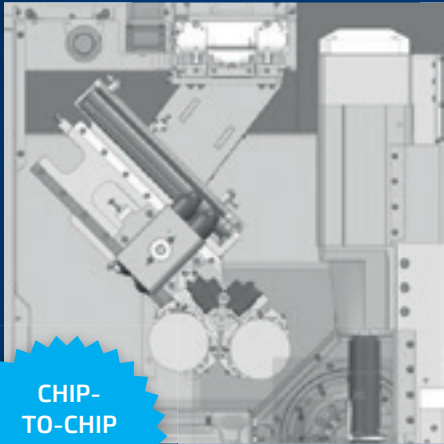
## TECHNICAL DATA

Max. module	mm	3
	inch	0.1
Max. workpiece diameter	mm	150
	inch	6
Max. workpiece length	mm	500
	inch	20
Hob head swivel angle		-45/+135°
Max. tool diameter	mm	120
	inch	4.5
Shifting range	mm	220
	inch	8.5
Max. hob head rev./min.	rpm	4,000
		(optional 12,000)
Power rating (100% duty cycle)	kW	28
	hp	38
Torque (100% duty cycle)	Nm	140
	ft-lb	103



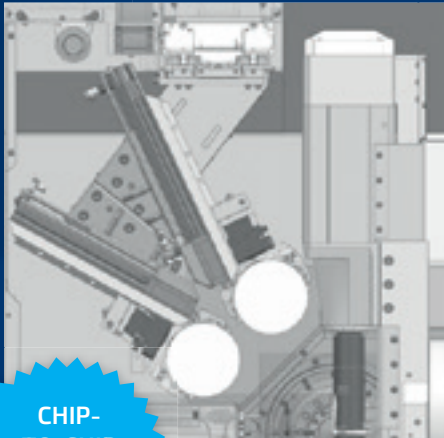
# THE AUTOMATION OF THE HLC 150 H

High-speed loading system with double rotary gripper (up to 2 kg/4 lbs)



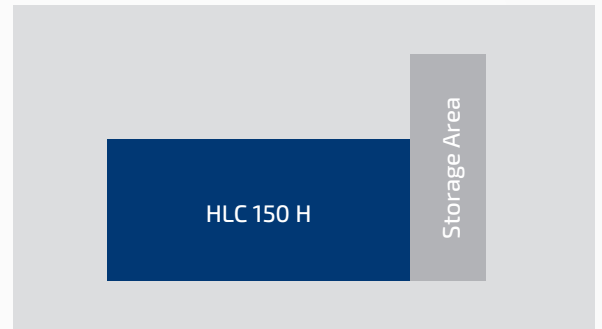
CHIP-TO-CHIP TIMES < 4 SEC

Linear gripper in V layout (max. 10 kg/22 lbs)

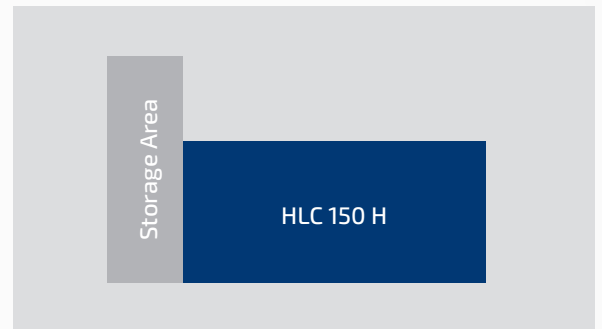


CHIP-TO-CHIP TIMES < 7 SEC

## MODULAR AUTOMATION SYSTEM



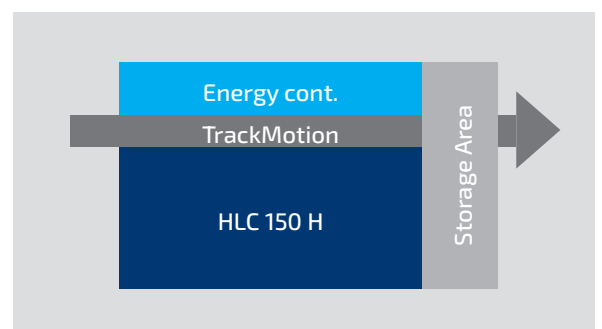
Raw and finished part storage area on the right



Raw and finished part storage area on the left



Raw part storage area on the left and finished part storage area on the right (or vice versa)



Connection to TrackMotion automation system

# MACHINING EXAMPLE FOR EPS SYSTEM (ELECTRIC POW

1

## EPS WORM GEAR

- + External diameter of up to 150 mm / 6 in
- + Nylon requires a deep bed filter in order to evacuate of the chips or vacuum extraction unit for dry machining



2

## STEERING WORM

- + Hob head can be swiveled from  $-45^{\circ}$  to  $+135^{\circ}$
- + Cutting tools with inserts
- + Use of milling cutters with inserts up to 120 mm / 5 inch in diameter is possible
- + **High torque for worm milling**



3

## STEERING PINION

- + High rigidity for skiving (hard machining)
- + **High hob speed for pre-hobbing (soft)**



# ER STEERING) COMPONENTS



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All EMAG  
Locations



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