

## **MS32-6**

*CNC multi-spindle automatic lathe  
for high productivity and short cycle  
and setup times*

# INDEX



*better.parts.faster.*

## INDEX CNC multi-spindle automatic lathe: high flexibility, shorter setups and reduced cycle times

With the INDEX MS32-6 multi-spindle automatic lathe, which can be configured according to individual needs, INDEX offers a machine concept that meets all requirements and the highest demands.

Six main spindles, up to two swiveling synchronized spindles and up to twelve tool carriers, which can be freely configured as cross slides X/Z, grooving slides X or drilling slides Z, allow highly productive production possibilities.

The new INDEX quick-clamping system, patented W-serration and ergonomic front-opening work area minimize setup times.

Maximum dynamic response and minimum secondary processes and downtime further reduce cost per part.



**Flexible, highly productive and quick to set up –  
the machine concept of the INDEX MS32-6**

- Highly dynamic cross slide with sliding guide (X axis)
- Non-wearing Z axis, thanks to quills with hydrostatic support
- Grooving and boring slide for maximum cutting performance with minimum machining time
- Freely accessible work area, making setup particularly easy
- Quick tool setup with the INDEX quick clamping system and its W-serration
- Chuck part machining with loading and unloading by linear or robot handling units
- Extremely fast swiveling synchronous spindles with C axis - the swivel arm is locked in its working position by a three-piece Hirth coupling providing for maximum rigidity
- Up to 6 tools per swiveling synchronous spindle for rear-end machining



## The core: it's original when it originates from INDEX

### Our hallmark: the spindle drum

The compact spindle drum ensures maximum precision in each and every position through the use of a Hirth coupling. The core is composed of six fluid-cooled motorized spindles integrated in the spindle drum. An infinitely variable speed range, high tractive force, compact design, low maintenance, and the latest synchronous drive technology – these are the criteria that make an INDEX CNC multi-spindle automatic lathe stand out.

### Independent speeds

During machining, it is always possible to program the optimum speed, which can still be varied even during tool engagement, for each spindle position and each cutting edge of the tool.

The results are optimized chipping, maximum surface quality, short production times per piece, and extended tool life.

You can also machine high-strength materials that, until now, were hardly suitable for multi-spindle machines. It is possible to make speed changes during drum indexing, thus avoiding any additional secondary times.

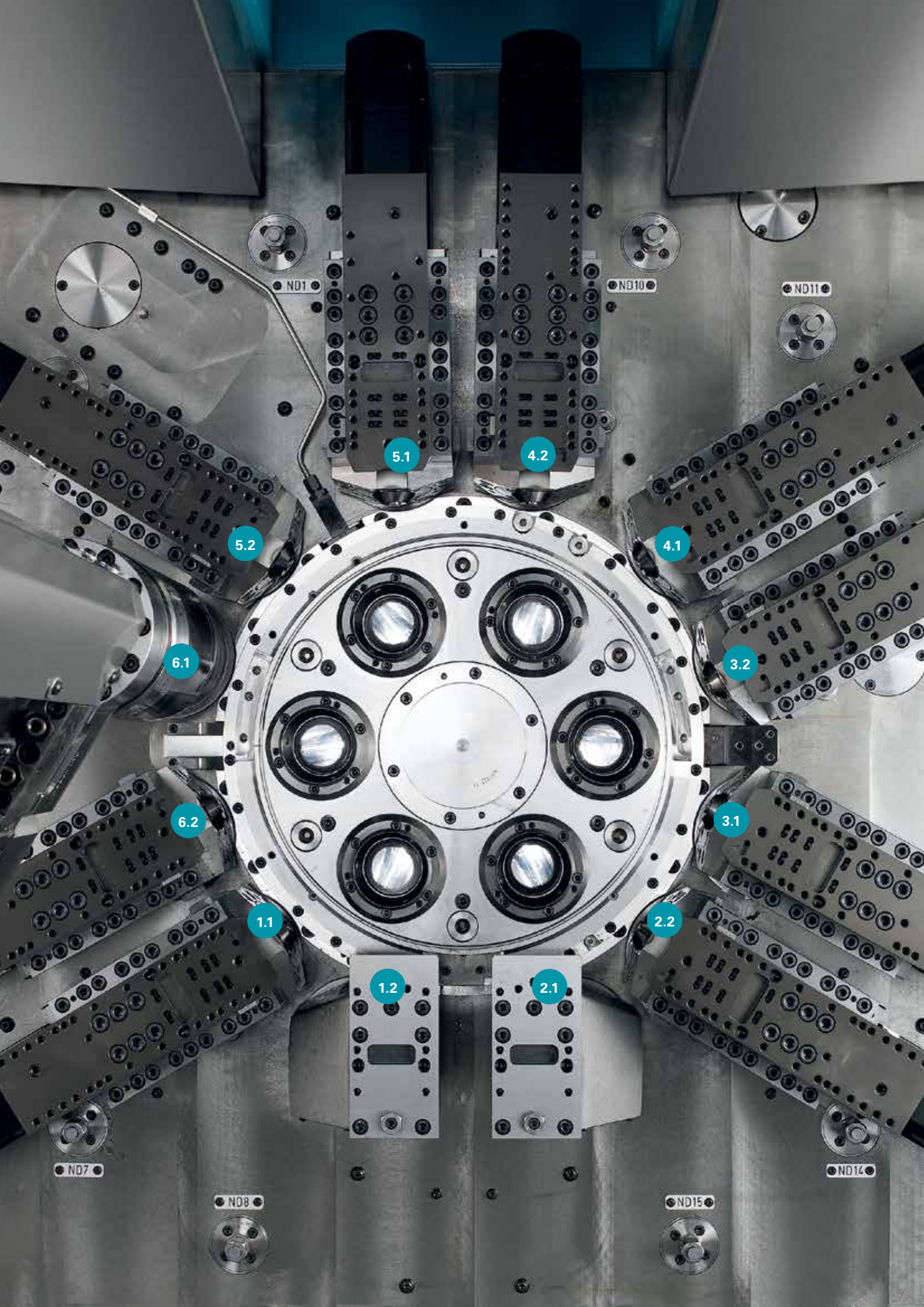
### More than just turning

INDEX CNC multi-spindle automatic lathes with live tooling, C axis, and Y axis give you access to entirely new processes, such as:

- off-center drilling and tapping
- inclined bores
- cross drilling
- contour milling
- gear hobbing
- polygon turning
- use of stationary turrets with up to 2 tools







ND1

ND10

ND11

5.1

4.2

5.2

4.1

6.1

3.2

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1.1

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ND7

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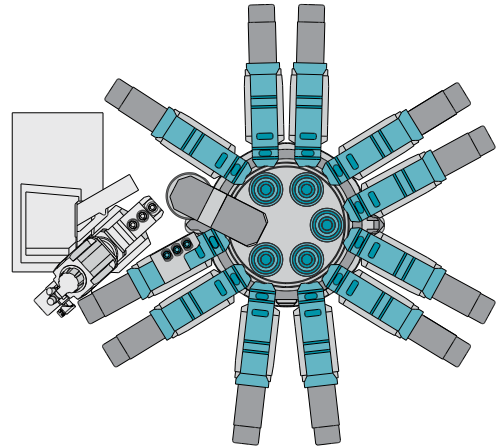
## Precise, fast, and flexible

### Versatility is a strength of the INDEX MS32-6. Whether complex parts or varied processes are involved almost anything is possible

- A maximum of 12 tool carriers with 1 or 2 travel axes
- Y axes (optional)
- 1 or 2 synchronous spindles
- Variable use of tool carriers for internal and external machining
- Use of several tools per tool carrier possible
- Cross machining with live tools
- C axis and polygon turning for extended fields of application

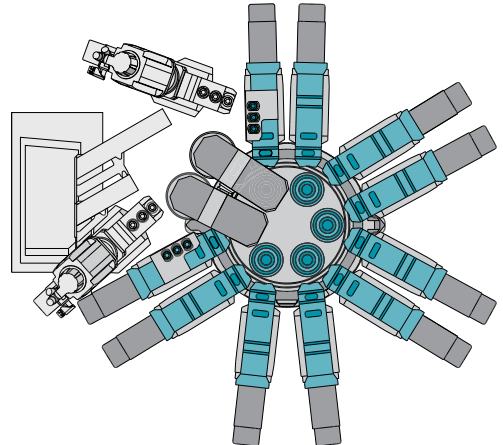
### Rear-end machining with swiveling synchronous spindle

- Up to 6 tools, 2 of which are live
- Fast swiveling motion and hydraulic locking of the swiveling synchronous spindle by means of a Hirth coupling
- Efficient chip flow, as machining takes place outside the main work area
- Numerous machining options using live tools in conjunction with C and Y axes, and also with an electronic shaft



### The double three-spindle machine for maximum work output

- Additional part production time reduction as a result of the simultaneous manufacturing of 2 workpieces
- 10 tool carriers with 1 or 2 axes (optionally also Y axis)
- 2 swiveling synchronous spindles
- 2 back-boring slides (optional) each with 3 tools, of which up to 2 are power-driven tools



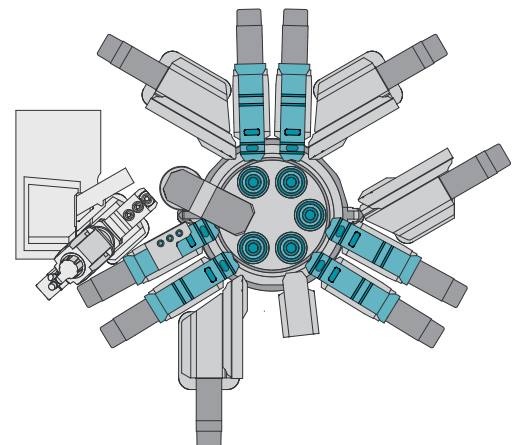
### The same configuration level as a 6-spindle machine with simultaneous rear-end machining in two spindle positions

- Front-end machining on 4 main spindles
- Simultaneous cut-off-end machining on 2 swiveling synchronous spindles

### Grooving machine variant

In place of full equipment with all cross slides, the INDEX MS32-6 can be fitted with grooving or boring slides in any spindle position required by the customer.

This makes the CNC multi-spindle automatic lathe a truly cost-effective alternative to cam-controlled multi-spindle machines.



# The tool holders

## Changing tool holders

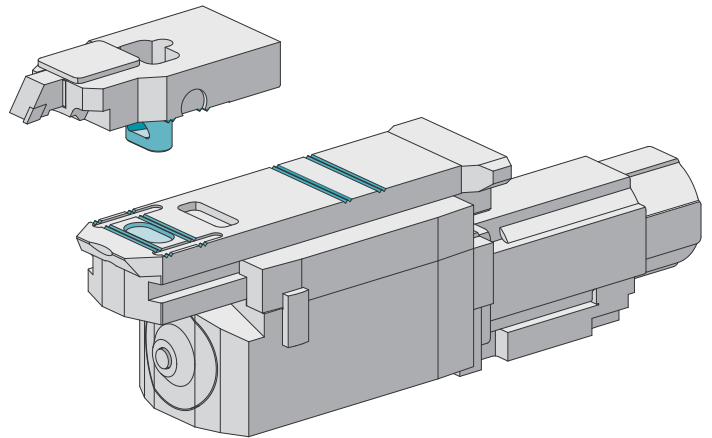
The tool slides of the INDEX MS32-6 are equipped with the newly developed INDEX quick-clamping device.

- Tool holders can now be changed twice as quickly as with conventional systems.
- Previous tool holders with dovetail mounting can still be used.

## The INDEX W-serration principle

The patented INDEX W-serration ensures high repeat accuracy for the cross slides when tools are changed:

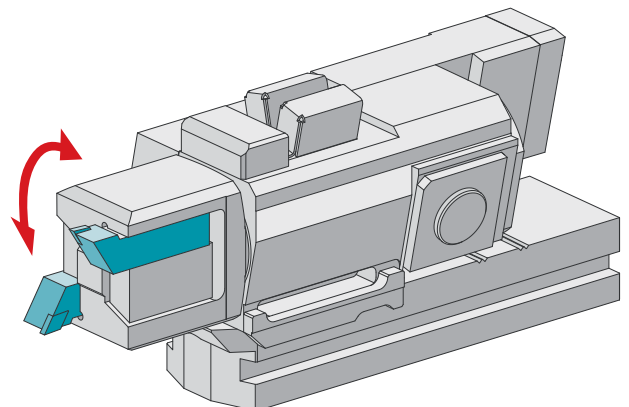
- Short setup/changeover times
- Extended life of cutting inserts
- Suitable for stationary and live tools
- Measuring on an external presetting unit is possible



## Increased efficiency with the twin turret

Another new development that increases efficiency is a twin turret with stationary tools that can be mounted on the slides in five spindle positions.

- Hydraulically actuated
- Quick tool change
- Enables, for example, roughing and finishing in one spindle position
- Allows use of duplicate tools in one spindle position to double tool service life





# Simply more possibilities

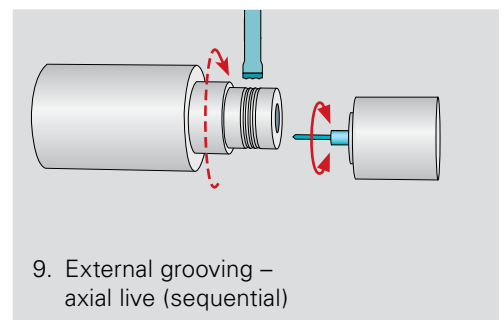
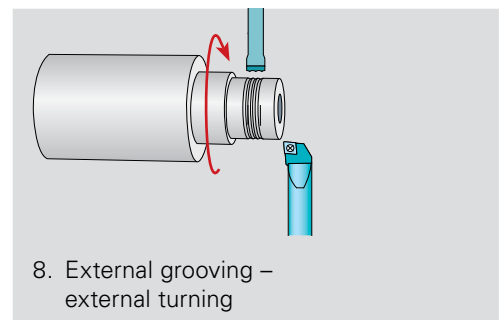
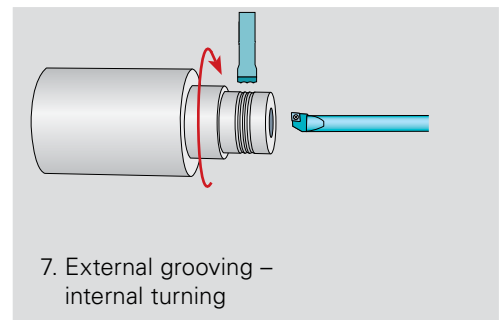
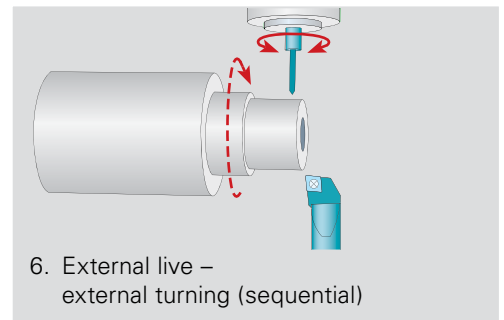
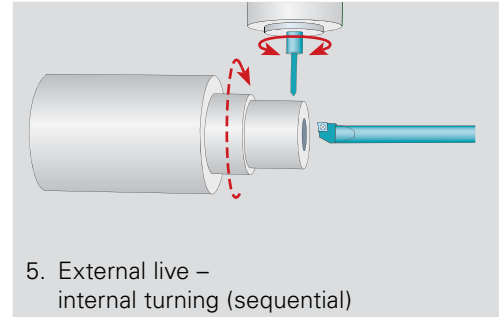
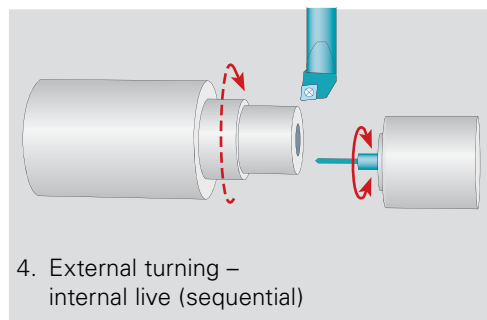
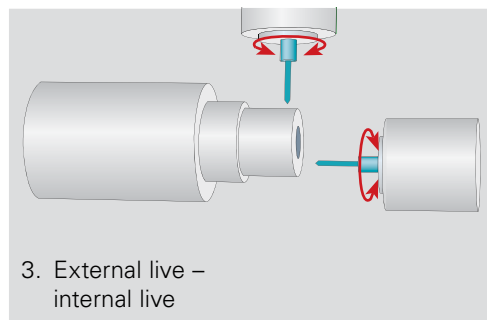
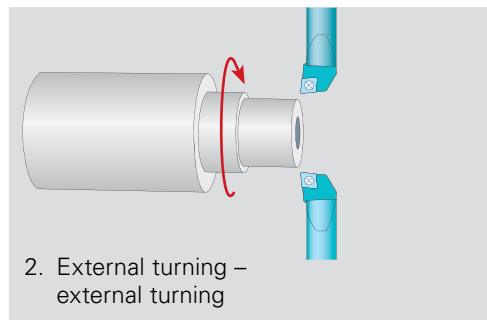
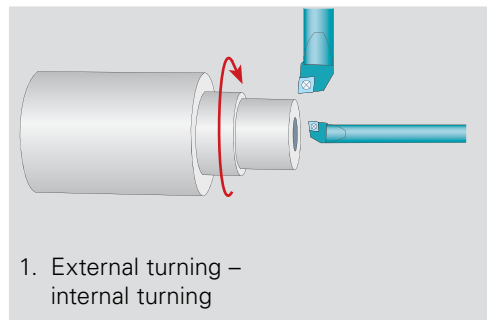
**The work area – virtually limitless machining capabilities for each spindle position**

The tool carrier arrangement in the work area, without longitudinal sliding block, allows more than one tool to be used on each spindle. Machining operations are therefore determined only by the tool holder. The result is that all production steps in all spindle positions can be freely defined. Another advantage: They have free chip flow.

**Performance as we understand it**

Maximum productivity and cost-effectiveness of multi-spindle automatic lathes, combined with the precision and flexibility of CNC single-spindle lathes, is the formula for success of the INDEX MS32-6 multi-spindle automatic lathes.

Machining examples:



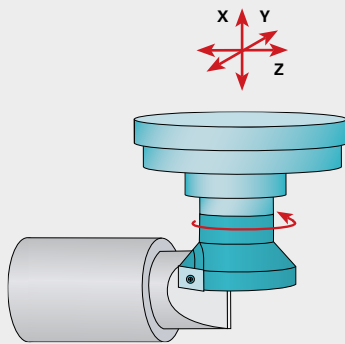


## For the most diverse technologies

### Milling

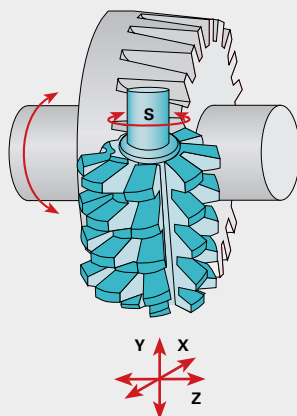
Milling with a live tool in the following variants:

- Side milling cutter in conjunction with C-axis operation (transmit function)
- End milling cutter in conjunction with Y-axis operation
- Plunge milling (see diagram)



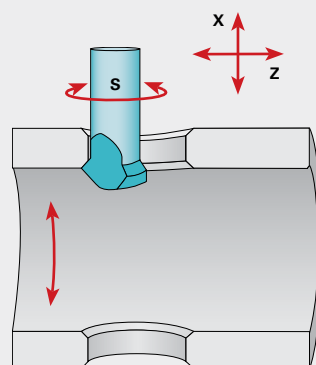
### Gear cutting, gear hobbing

- Coupled with electronic precision
- Maximum stability
- Gears in correct position relative to other surfaces or shaped elements
- Any angular offset can be programmed
- Greater tool service life as a result of shifting with Y axis

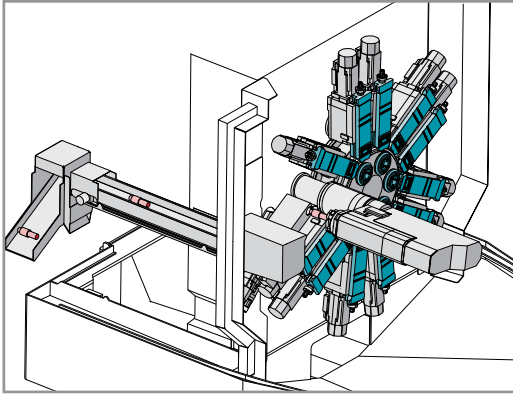


### Elliptical deburring of cross-drilled holes

Uniform deburring (even chip removal) of cross-drilled holes based on interpolation of the C axis, X axis, and Z axis with live tooling.

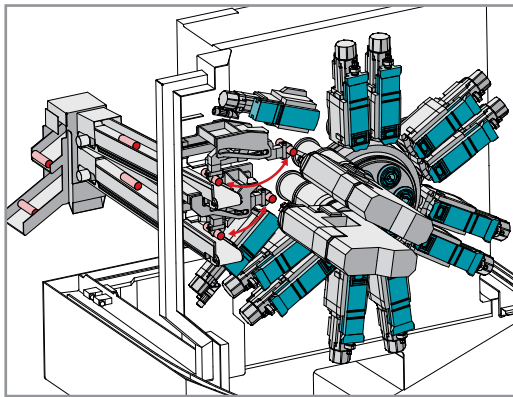


# Workpiece handling systems



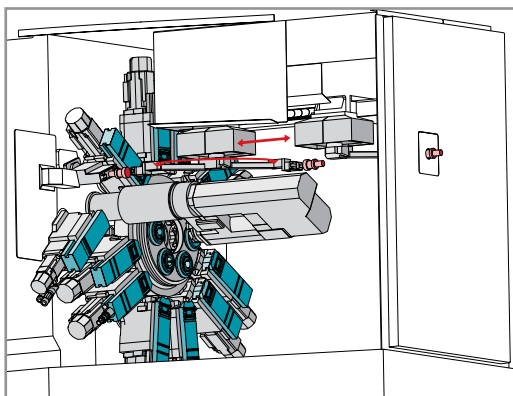
## Stationary workpiece removal device with integral parts conveyor

The workpieces fall onto the internal conveyor belt through a chute and are then deflected 90° by a second chute to reach an external conveyor belt



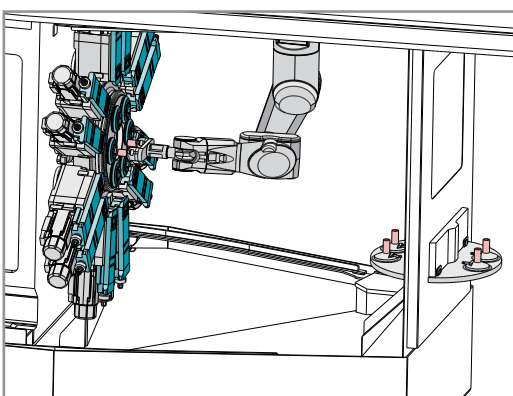
## Position-aligned workpiece removal with integral parts conveyor

The workpieces are removed from position 6 or positions 6 and 5 by the synchronous spindle and are aligned in position to the internal conveyor belt for parts that are not to be ejected.



## Position-aligned workpiece removal with intermediate gripper and linear shuttle

Very rapid, damage-free, position-oriented removal by a linear and rotary motion. The transfer of the workpieces first takes place from the synchronous spindle to the intermediate gripper. Then the linear shuttle transfers the workpieces to the external handling system. This procedure takes place during secondary processing time.



## Parts feed and removal by a 6-axis robot via the swivel disk to the external handling system

The workpiece handling system for chuck parts and bar segments can be used for 6-spindle machining with and without synchronous spindle, and also for double 3-spindle machining. A version 3 x OP10 (first side) and 3 x OP20 (second side) with external reversing station are also possible.







## The cockpit for easy integration of the machine in your business organization.



### Focus on production and control – Industry 4.0 included.

The iXpanel operating concept provides access to networked production. With iXpanel, your staff always has all relevant information for efficient production right at the machine. iXpanel is already included as standard and can be individually extended. You can use iXpanel as you wish for your business organization – that's Industry 4.0 tailored to your needs!

### Future-proof.

iXpanel integrates the latest control generation SIEMENS S840D sl. Use iXpanel intuitively through an 18.5" touch monitor.



### Productive.

Machine performance is maximized by optimally tuned processes in machine cycles with easily understandable user screens. In addition, technology cycles are provided for frequently recurring machining operations, ensuring safe machine operation and optimum machining quality.

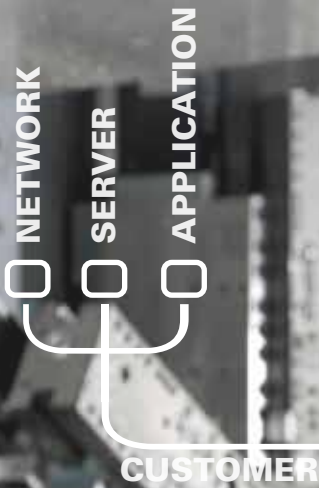
### Intelligent.

The machine always starts with the control home screen. Other functions can always be displayed on a second screen, and the operator can already enjoy direct, activity-related assistance in the standard version, such as work-piece drawings, setup lists, programming tools, documentation, etc., right at the machine.

### Virtual & open.

With the optional VPC box (industrial PC), iXpanel opens up the world of the virtual machine and of simulation directly at the control system (VM on Board). Thanks to the VPC-box (option), the machine can also be integrated easily and fully into IT networks and structures. You determine what additional applications are used on the VPC box!





18.5" TOUCHSCREEN MONITOR

**STANDARD** included as standard

**OPTION**

Industry 4.0 features



Order documents



Customer data



Workpiece counter



Production Status



Drawings



Setup sheet



Notes



Information center



Maintenance & care



User management



Technology computer



Programming help



VPC Box



Virtual machine 3D simulation



VirtualPro programming studio



Custom applications

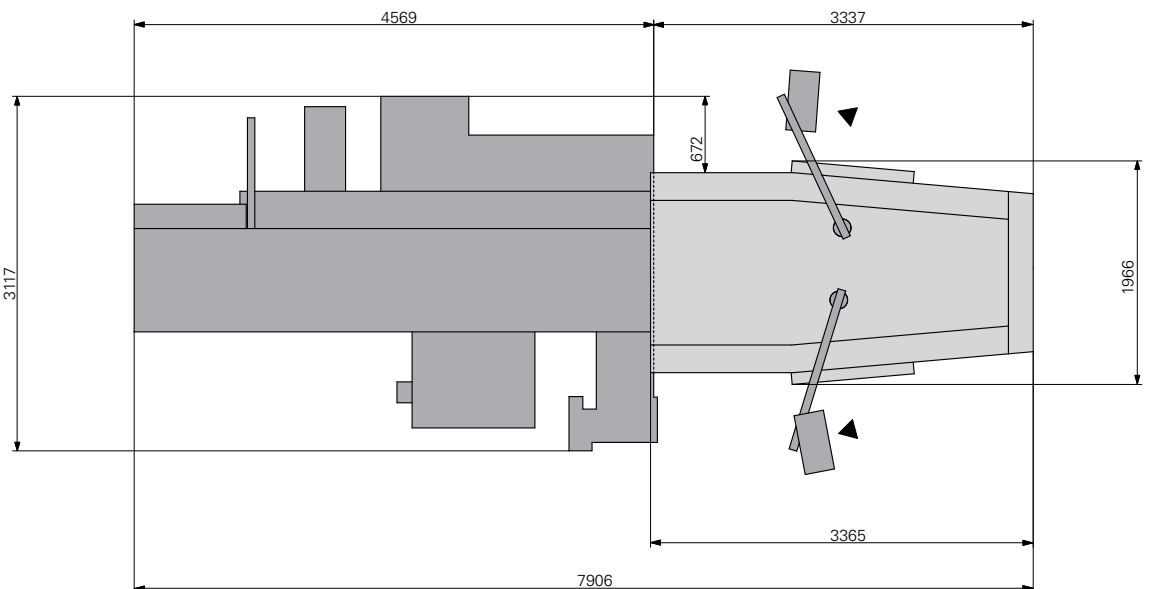
+ many more standard features

## Technical data

<b>Work spindles</b>		<b>6</b>
Max. bar diameter	mm	32
Speed *	rpm	8,000
Power (at 100%/25% duty cycle)	kW	10.5/19
Torque (at 100%/25% duty cycle)	Nm	22/40
<b>Tool carrier / cross slide</b>	<b>max.</b>	<b>12</b>
Slide travel X	mm	72
Slide travel Z	mm	100
Slide travel Y	mm	34
<b>Tool carrier / grooving slide</b>	<b>max.</b>	<b>5</b>
Slide travel X	mm	72
<b>Tool carrier / boring slide</b>	<b>max.</b>	<b>5</b>
Slide travel Z	mm	100
<b>Swiveling synchronized spindles</b>	<b>max.</b>	<b>2</b>
Max. clamping diameter	mm	40
Speed $N_{max}$	rpm	8,000
Speed $N_{rated}$	rpm	6,000
Power (at 100%/40% duty cycle) and $N_{rated}$	kW	10/14
Torque (at 100% / 40% duty cycle) and $N_{nom}$	Nm	16 / 22
Synchronized spindle swivel angle	degrees	126 / 132
Slide travel Z	mm	130
Max. number of tools for rear-end machining		6
<b>Back-boring slide</b>		
Tool carriers for rear-end machining		1/2
Slide travel X	mm	82
Number of tools for rear-end machining		3
of which are live		2
<b>Dimensions, mass, and connected power</b> (at maximum equipment level, without bar guide or loading magazine)		
Weight	kg	approx. 6,800
Length	mm	3,365
Width	mm	1,966
Height	mm	2,854
Connected power		34-74 kW, 40-87 kVA, 400 V, 50 Hz or 460-480 V, 60 Hz
<b>Control</b>		
Siemens S840D Solution Line, with teleservice, spindle stop, C-axis as standard		
<b>Options</b>		
Polygon turning, gear hobbing, tool monitoring, Y-axis, transmit function		

\*Speed limitations are necessary, depending on bar diameter, bar guide, and workpiece clamping.

INDEX MS32-6  
Loading magazine  
INDEX MBL 3300



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