Mikron VX

MIKRON

Machining on 6 sides
from bar, wire or blank

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The Mikron VX is worldwide amongst the most precise and flexible production systems for the cost efficient production of high precision components on six sides.
Full CNC high precision rotary transfer machine with 10 or 12 workstations for the production of variable batch sizes.
Maximum workpiece dimensions up to 40x40x80 mm (optional 40x40x160).

THE MIKRON VX COMBINES THE BENEFITS OF "ON WIRE MACHINING" WITH THE FLEXIBILITY OF A MACHINING CENTER AND THE ACCURACY AND PRODUCTIVITY OF A TRANSFER MACHINE.

COMPLETE MACHINING ON 6 SIDES

- Pre-machining directly on bar/wire (out of cycle, parallel to the main process time): milling, turning, drilling, tapping, broaching, stamping, engraving, etc.
- Clamping of the workpiece on the machined surface for subsequent operations

SWISS PRECISION

- Table positioning: ± 2 µm
- Torque motor for reliable table accuracy with thermo-stabilization
- Double table bearing for highest stiffness
- Very rigid construction with short force lines circuit
- "In-Process measurement" for detecting reference areas, drill holes, contours, etc.
- Stable cutting tool coolant within ± 1°C

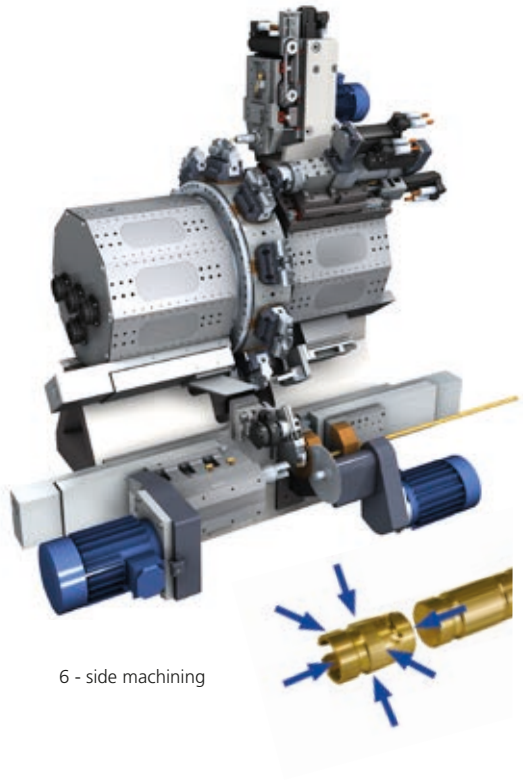
HIGHEST PRODUCTIVITY

- Up to 22 machining units working simultaneously (2 per station)
- Up to 3 spindles for each station which can be configu ed: horizontally, vertically , tangentially and angular
- Fast table indexing time: 0.40 seconds
- High performance spindles
- Double wire feeding available
- Multiple part clamping systems available

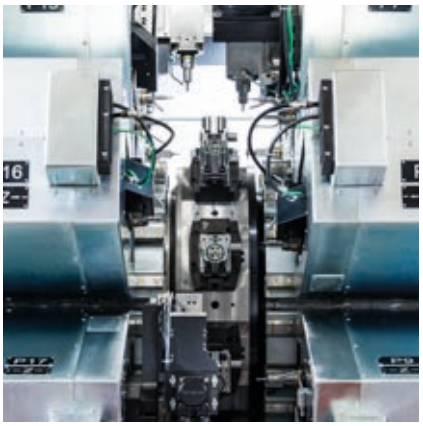
EXCEPTIONAL FLEXIBLE, RECONFIGURABLE & VERSATILE

- Clamping systems easily interchangeable. As option: measure-ment of the clamping system position and correction with CNC
- Standardized machining units for fast system reconfiguratio
- Diverse spindle types available - for any kind of operation: milling, drilling, deburring, tapping
- Up to 3 Spindles per station for a fast changeover

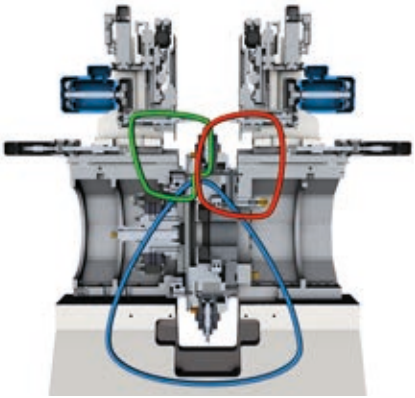
EXCLUSIVITY



6 - side machining



Up to 22 machining units simultaneously in action



Very short force lines circuit

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Loading/Unloading

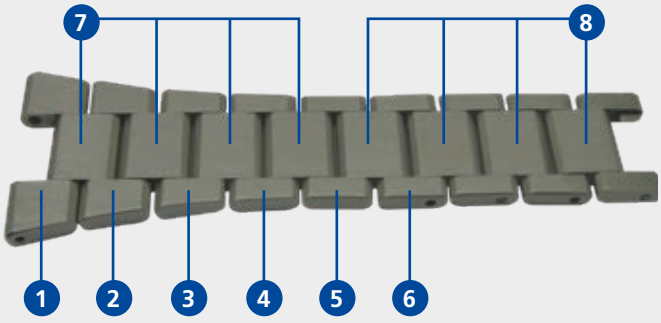
Different options available

Bar - feeding

Wire - feeding

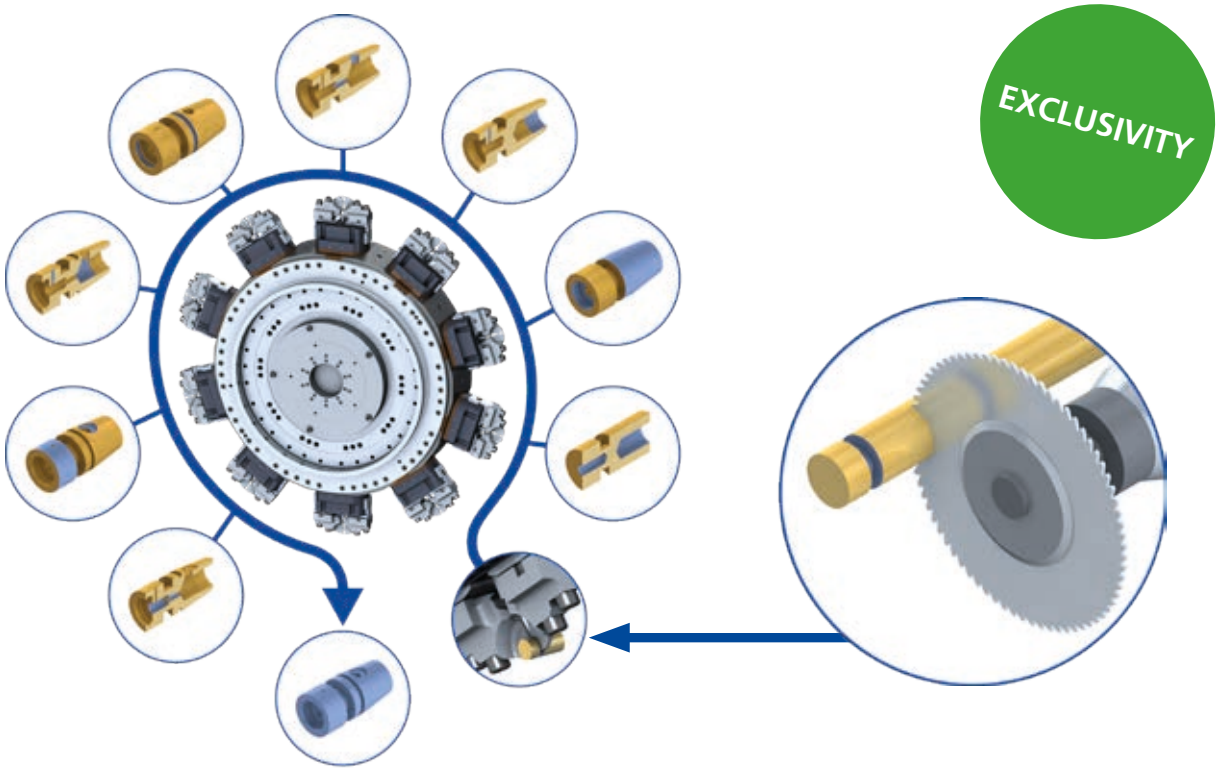
6 - axis robot

PRODUCTION OF DIFFERENT PARTS FROM ONE SINGLE WIRE OR BAR & UNLOADING INTO AN AUTOMATIC SORTING CONTAINER.



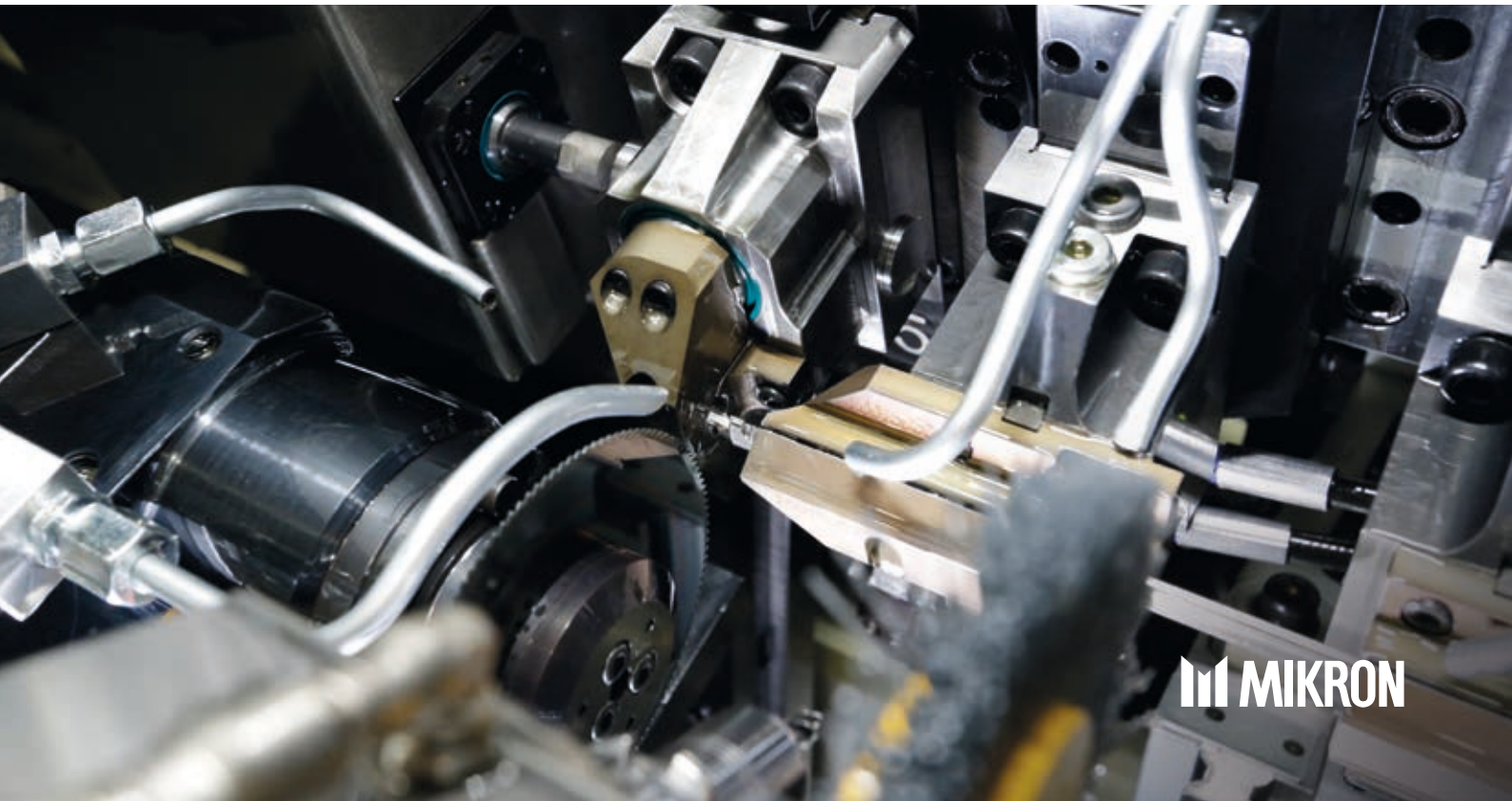
Complete machining on 6 sides

Pre-machining directly on wire or on bar stock



YOUR ADVANTAGES

- Complete & unattended production: Pre-machining directly on wire (or on bar stock) before the cut-off and subsequent clamping on pre-machined surface with machining of remaining operations, allows the complete & unattended production of ready to be assembled components.
- Up to 4 axis pre-machining parallel to the main processing time: milling, turning, drilling, tapping, broaching, stamping, engraving
- Heavy machining operations can be done directly on the bar (wire)

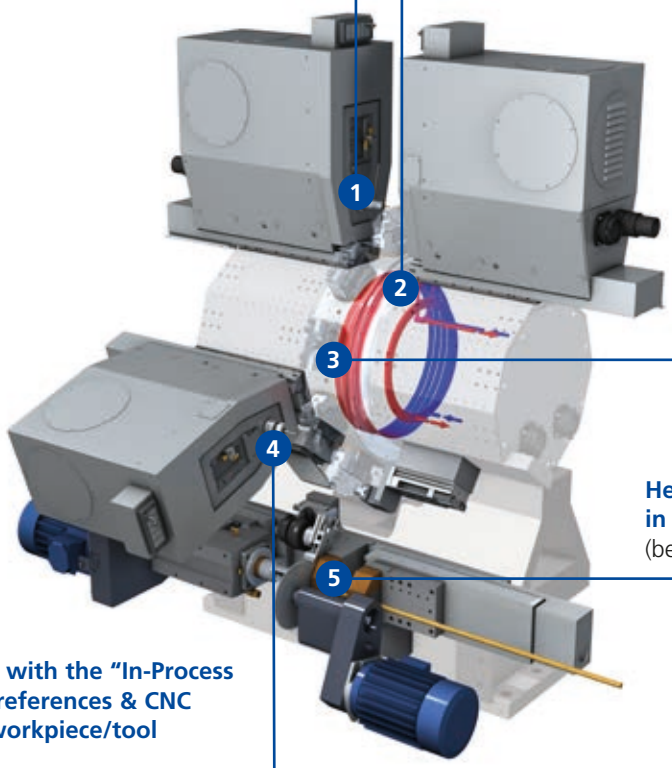


Highest Precision

Our company's tradition

Table
- For reliable table accuracy: Liquid cooled torque motor with thermo-stabilization
- Double bearing for highest stiffness
- Encoder with 0.0001° resolution
- Table position repeatability ± 2µm

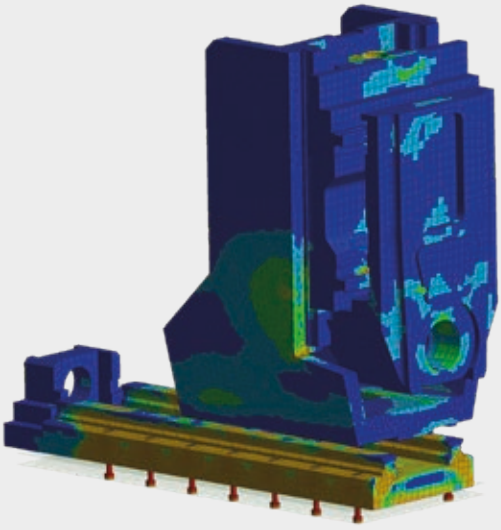
Stable cutting tools coolant temperature ±1°C



Hydraulic clamping systems with programmable clamping force for stable roughing and precise finishing

Heavy machining can be performed in the pre-machining station
(better clamping possibility)

Perfect µ-precision with the "In-Process Measurement" of references & CNC correction of the workpiece/tool zero points



MACHINING UNITS

- Machining units & spindles stiffness, with FEM calculated & confirmed in praxis
- Very rigid construction with short force lines circuit assure:
  - Minimal deformation during the machining
  - No thermal influence
  - Better surface finishin
- Encapsulated machining units:
  - No accumulation of chips to hamper operation
  - Higher accuracy & reliability of drive elements (guides, screws, motors, belts,..)


X
Y
Z
P13
P2
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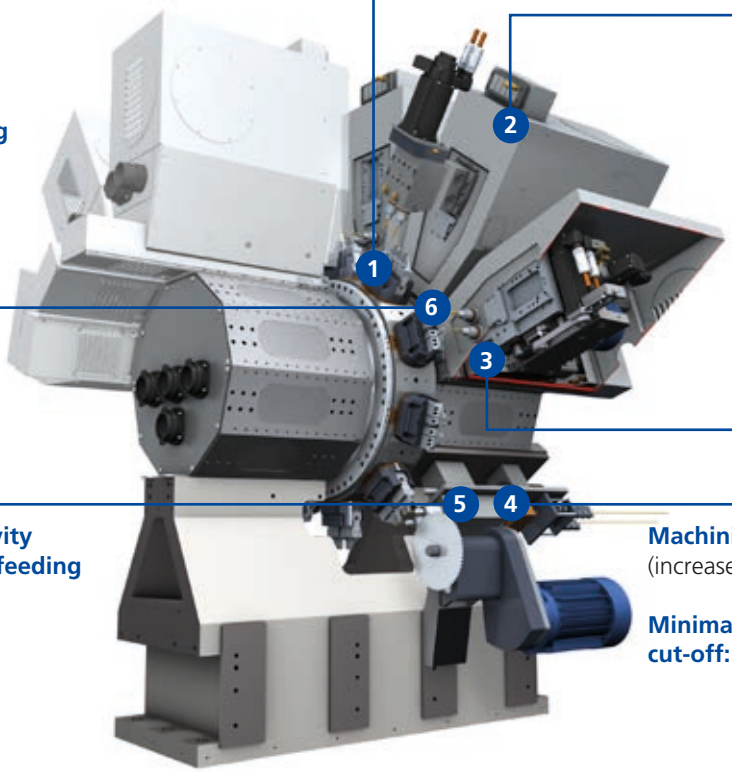
Productivity

10/12 stations for best cost per part performance

Fast Table indexing time: 0.40 seconds

Simultaneous machining of up to 22 machining units (up to 2 per station).

Hydraulic clamping system with programmable clamping force for high roughing performance

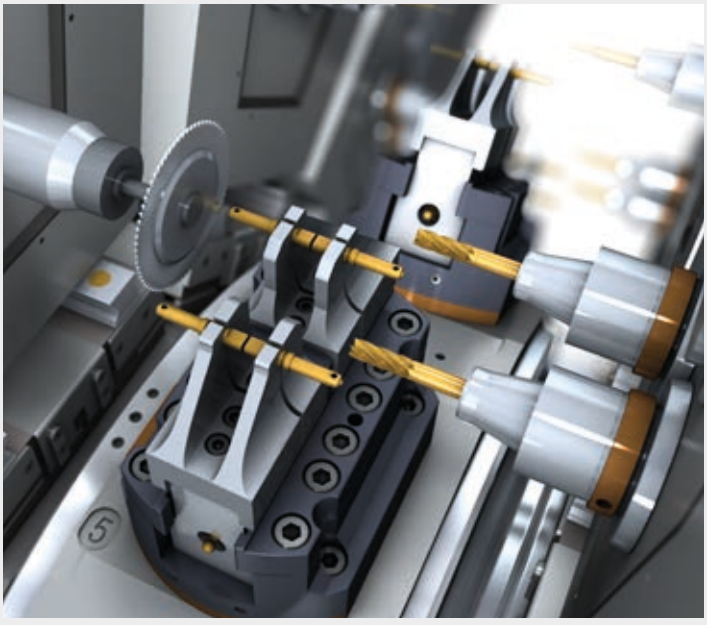


High performances spindles: Internal cooling pressure up to 80 bar

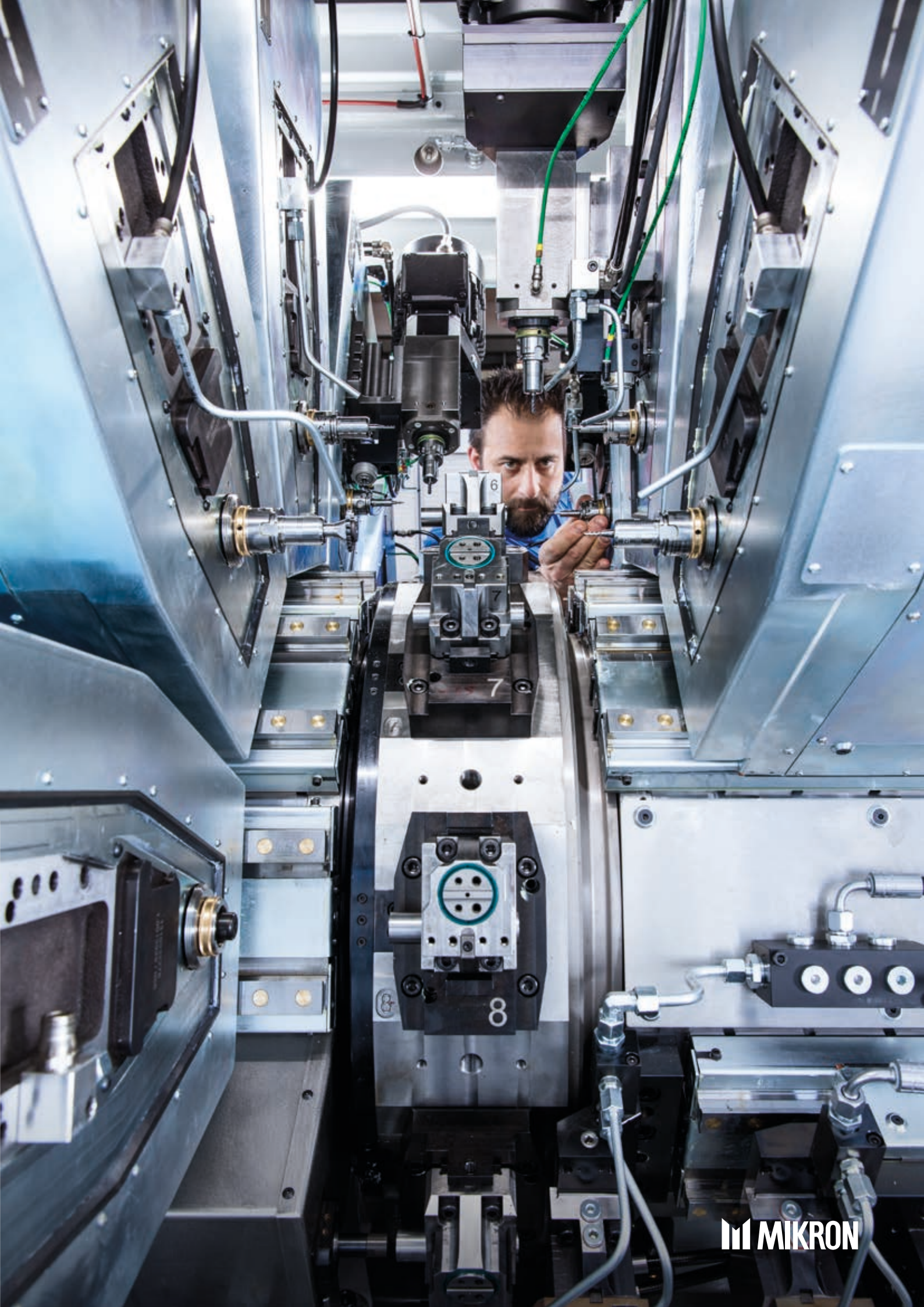
Doubled productivity with double wire feeding

Machining directly from coil possible (increased productivity vs bar stock)

Minimal waste of material after last cut-off: approx. 60 mm



QUADRUPLED PRODUCTIVITY:
Multiple part clamping, combined with double wire feeding.



MIKRON

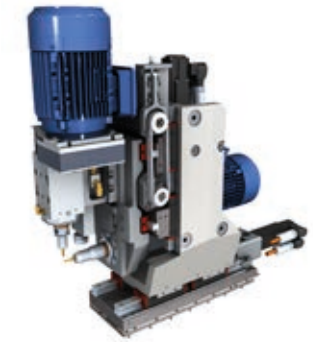
Exceptional flexible, reconfigurable & versatile

The ideal solution for machining of variable lot sizes

FLEXIBLE

- Fast changeover by simple CNC program management
- Clamping systems easily interchangeable. Measurement of the clamping position and correction with the CNC
- Production of different parts from one single wire or bar & unloading into an automatic sorting container
- Machining units equipped with vertical & horizontal spindles: Ready for the production of different parts at no changeover time.

CHANGE OVER TIME 2HRS



3 - axis CNC machining unit
with vertical & horizontal spindle

RECONFIGURABLE

- Standardized machining units for easy system reconfiguratio
- Transformation of each machining unit from horizontal to vertical possible…

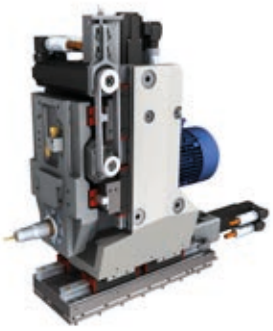
VERSATILE

- Diverse spindles options for any kind of operation - in any angle: Milling up to 4 axis / Turning / Drilling / Deburring / Rigid tapping / Broaching / Grooving, …

3 - axis CNC machining unit
with vertical spindle

Part with turning & milling operations

Part with 4axis milling operations



3 - axis CNC machining unit
with horizontal spindle

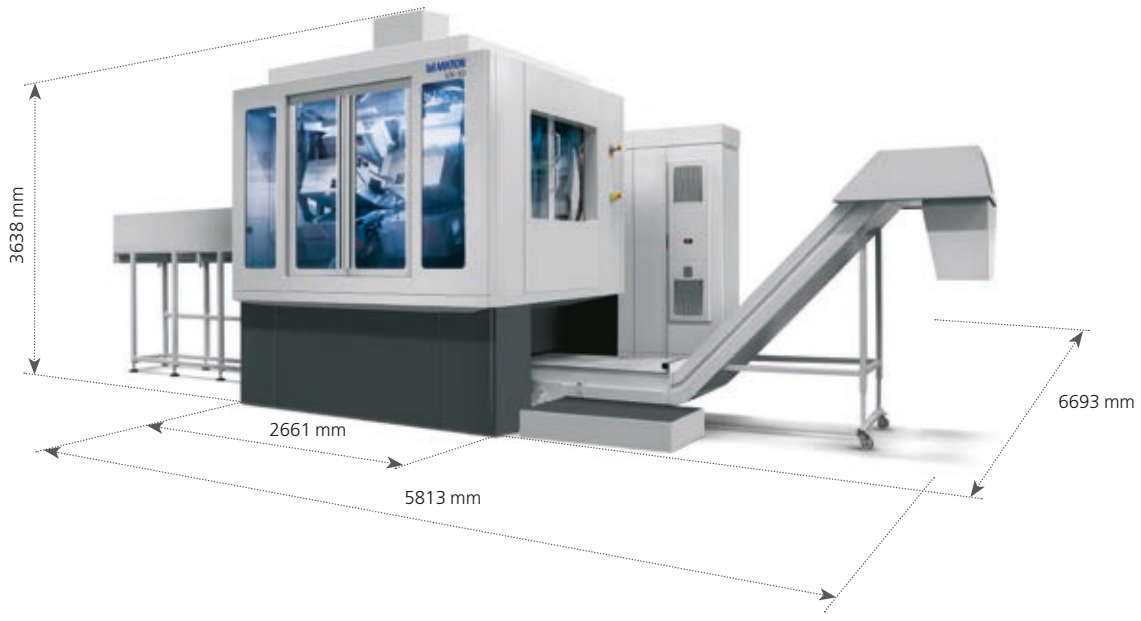
Part with complex operations

Part with internal & external groovings

3 - axis CNC machining unit
with free inclinable spindle

Mikron VX main technical data

Workpiece size		**VX-10**	**VX-12**
Approx. max blank dimension (with long Z axis version)	mm	40x40x80 (160)	40x40x80 (160)
Max wire Ø brass / steel	mm	14/11	14/11
Max Ø bar-stock	mm	25	25
Machine			
Number of station	/	10	12
Number of machining units (incl. premachining) working simultaneously	/	18	22
Max number of CNC machining units per station	/	2	2
Max number of tools on board	/	36	36
Table position repeatability	µm	±2.0	±2.0
Table indexing time	sec	0.4	0.4
Machining units			
CNC 3 axes machining unit; X/Y/Z strokes (long version)	mm	50x50x100 (215)	50x50x100 (215)
Max axis speed / acceleration (Z axis long version)	m/min m/s²	20/10 (6.5)	20/10 (6.5)
Machining spindles			
Turning unit: max power/max speed	kW/rpm	2.0/8'000	2.0/8'000
HP spindle: max power/max speed	kW/rpm	2.5/14'000	2.5/14'000
HS spindle: max power/max speed	kW/rpm	1.4/21'000	1.4/21'000
Double spindle: max power & max speed	kW/rpm	0.3/12'000 or 1.0/9'000 or 1.7/6'000	0.3/12'000 or 1.0/9'000 or 1.7/6'000
Internal cooling pressure	bar	80	80
Recess spindle: U stroke/max speed/resolution	mm/rpm/mm	1.9/500/0.2	1.9/500/0.2
Installation			
Approx power consumption	kW	12-25	12-30
Pressure of compressed air/consumption	bar/m³/h	6/15-30	6/15-30
Approx coolant capacity, type	l	3'500/oil or emulsion	3'500/oil or emulsion
Thermostabilisation of coolant	°C	±1	±1
Standard filtering system for steel. brass, nickelsilver,...		self cleaning drum 50 µm	self cleaning drum 50 µm
Optional filtering system aluminum or precious materials (e.g. gold)		paper filte	paper filte
Approx machine weight	kg	8'000	9'000



The technical data listed are not binding and may be changed at any time without notice.

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