

## LEISTRITZ Production Technology

You never work alone



### Headquarter

Leistritz Produktionstechnik GmbH  
Leistritzstr. 1-11  
92714 Pleystein  
Germany  
T: +49 9654 89-0  
F: +49 9654 89-812  
E: [machinetools@leistritz.com](mailto:machinetools@leistritz.com)

### Technology- & Service Centers

Leistritz Advanced Technologies Corp.  
Allendale, USA

Leistritz Machinery (Taicang) Co., Ltd.  
Shanghai, China

Leistritz Machinery (Taicang) Co., Ltd.  
Jiangsu, China



[machinetools.leistritz.com](http://machinetools.leistritz.com)

LEISTRITZ

**POLYMAT® E**

Fully electric, non hydraulic CNC Machine Tool

# LEISTRITZ POLYMAT® E

The New Generation of Precision, non hydraulic CNC Machine Tools



## Ready for the future?

- Switch from hydraulic to electrical drive for your machine tool fleet
- No hydraulic system to maintain
- Reduces machine footprint
- Able to hold tight tolerance while maintaining speed thus resulting in lower costs

# BEST AVAILABLE TECHNOLOGY

## Lower Costs per Part

Leistriz POLYMAT® gives you more options in innovating your production line. By delivering precision without the need for hydraulics.

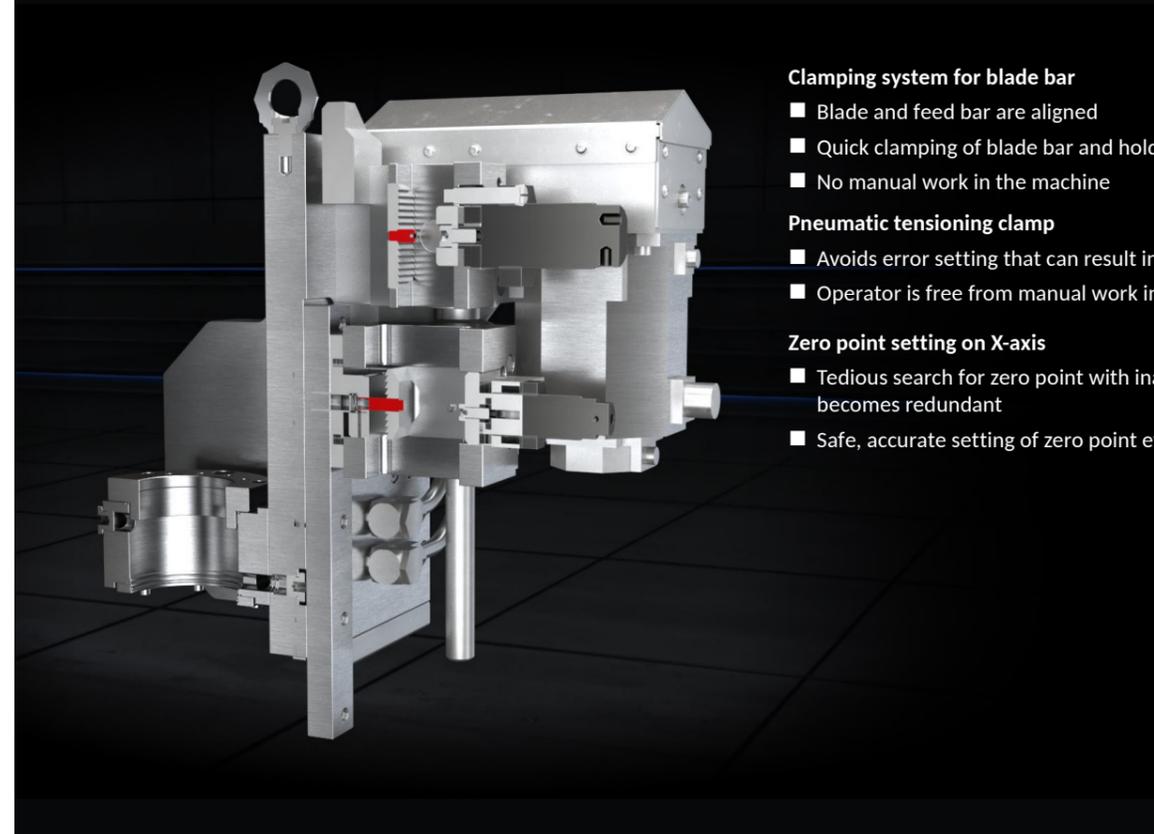
Leistriz POLYMAT® thus saves you the equipment periphery you would normally need. It reduces space consumption and lowers energy costs.

## Your Benefits

- Smart Options, interface for IoT connectivity
- Reduced feed times
- Higher cutting speeds
- Less space consumption, no hydraulic peripherals
- Significantly reduced energy consumption
- Lower noise pollution



# CLEVER EASY SAFE OPERATING



## Clamping system for blade bar

- Blade and feed bar are aligned
- Quick clamping of blade bar and holder
- No manual work in the machine

## Pneumatic tensioning clamp

- Avoids error setting that can result in damage or blade rupture
- Operator is free from manual work inside the machine

## Zero point setting on X-axis

- Tedious search for zero point with inaccurate “scratch” marking becomes redundant
- Safe, accurate setting of zero point even in blind holes

# SMART OPTIONS FOR IOT

## Optimise Efficiency

Operating data from the Leistriz POLYMAT® machine system are captured by the control system and can be accessed via the Leistriz OPC-UA interface. Deviations from the desired optimum are quickly identified, allowing the operator to optimise settings and improve efficient operations. Faults are predictively identified, avoiding disruptions and costly down times. Data safety is part of the deal. Promised. Parameters are set individually, enhancing you immediate flexibility.

## Your Benefits

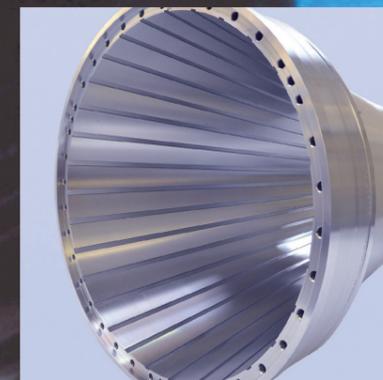
- Immediate availability of all operational data
- Deviation from set optimum visible in real time
- Warning and alarms set individually
- Preventive measures possible at a glance
- Improvement of specific operation steps
- 25% improvement in productivity achievable
- Cost reduction
- Higher speed
- Optimised quality



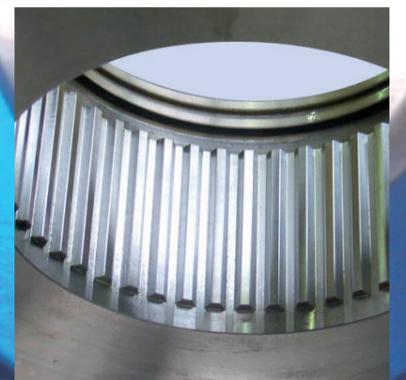
# THE PRIDE OF YOUR OUTPUT

Excellence and Precision in Series: Workpiece Scope

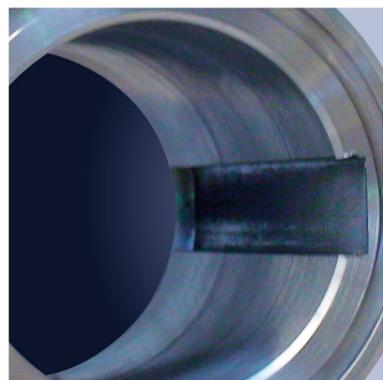
- Tangent key grooves
- Hexagonal profiles
- Helical grooves
- Blind hole grooves
- Lubrication grooves
- Spline profiles
- Involute profiles
- Feather keyway
- Blind hole keyway
- Helical keyway



■ Cone with keyways



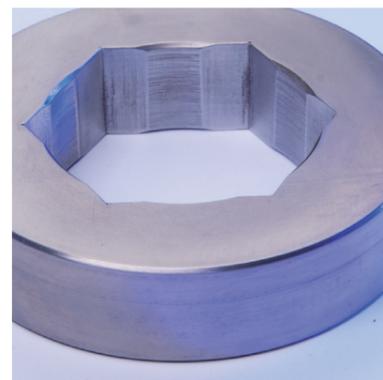
■ Involute profile



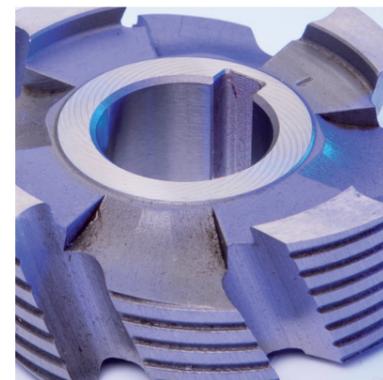
■ Blind hole keyway



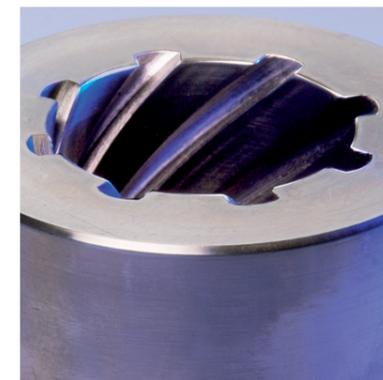
■ Oil groove



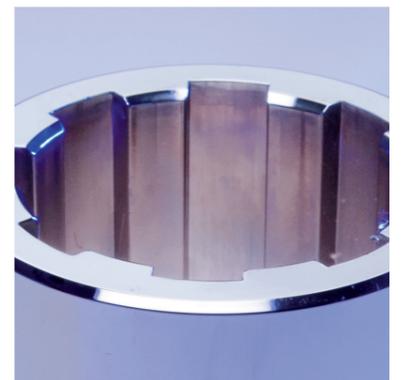
■ Hexagonal profile



■ Feather keyway



■ Helical keyway



■ Spline profile

# PERFORMANCE. OUTPUT. PRECISION. TECHNICAL DATA.

## Examples of Leistriz POLYMAT®E Machine Tools for Precision CNC Machining

### Technical Data POLYMAT®E

Application	Grooves, Profiles
Advantage	High speed
Groove width	2 – 70 mm / 0,08 - 2,76 in
Bore diameter	10 – 440 mm / 0,39 - 15,75 in
Cutting power	< 21 kN
Power connection	11 kW
Cutting speed, continuous	0 – 40 m/min
Constant return speed	< 40 m/min
Feed rate	0 - 5 mm / 0 - 0,20 in
Table dimension	840 x 840 mm / 33 x 33 in
Electrical power	400 V / 50 Hz
Lift control	directly on the spindle
Spindle brake	maintenance free
Periphery	intgrated in machine
Cooling	integrated (pump, piping, spray nozzle, tank)
Milling chips	collector tray outside for interruption free machining

	POLYMAT®E 70/400	POLYMAT®E 70/600	POLYMAT®E 70/800
Groove length	max. 400 mm / 15,75 in	max. 600 mm / 23,62 in	max. 800 mm / 31,50 in
Working table height	1320 mm / 51,97 in	1550 mm / 61,02 in	1780 mm / 70,08 in



### Savings

- No costs for hydraulic oil processing
- No disposal of hydraulic oil
- No hydraulic peripheral
- Less space needed
- Lower power consumption
- Reduced costs per part



GROOVE LENGTH  
up to 800 mm



NON HYDRAULIC  
Fully electric



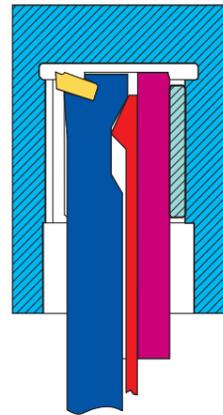
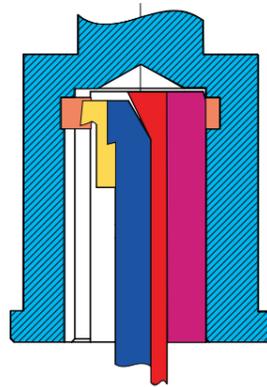
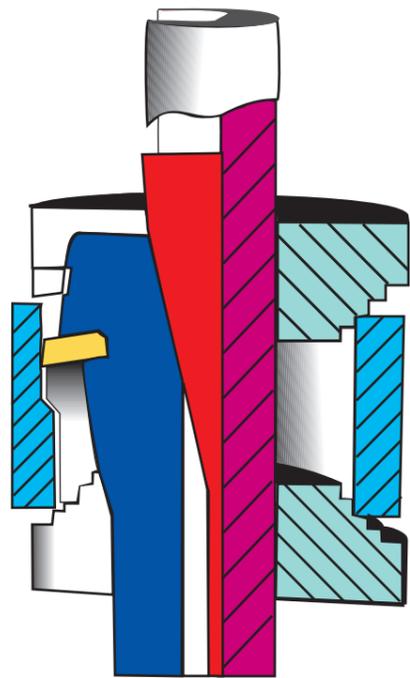
CUTTING SPEED  
40 m/min

# KEYSEATING - HOW IT WORKS

The keyseating process cuts a keyway in stepwise manner. A cutter is pulled vertically with a continual stroke movement along the borehole, combined with a horizontal thrust motion. The thrust is delivered after each stroke by a feed bar that thrusts the cutter in steps between the cutter guide bar and cutter bar.

To ensure gentle machining for the tool and workpiece, the cutter is automatically lifted off before the upward movement. The keyseating machines are equipped with a twin-column hydraulic guidance

system. The in-line arrangement of tool and tool slide creates a fully linear alignment of forces within the tool and machine system. This avoids lateral forces and leverage, so that the machine is extremely longlasting and virtually free of wear



■ Feed bar  
■ Cutter guide bar

■ Cutter  
■ Centerings

■ Cutter bar/holder  
■ Workpiece

■ Undercut



# TOOL SETS, CUTTERS AND CENTERING SETS

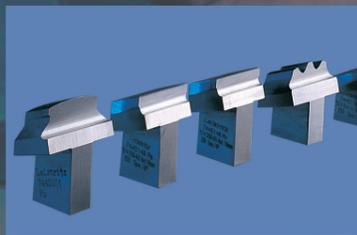
Each tool set covers a specific machining range:

- Keyway width
- Borehole diameter
- Keyway length

The respective tool must be selected to match the machining task. The cutter required for the cutting task is selected to match the defined tool set.



Cutter Type A



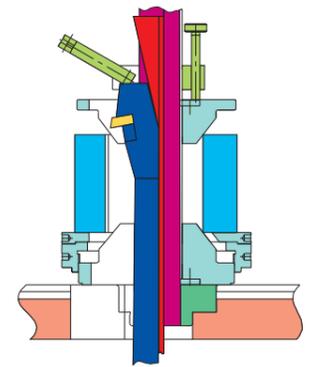
Cutter Type B



Cutter Type C

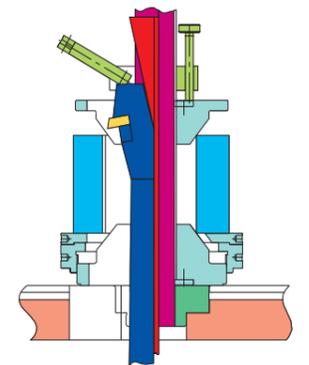
## Cone

The cone steplessly centers the workpiece against the bore chamfer, positively locating it relative to the cutter tool.



## Stepped bush

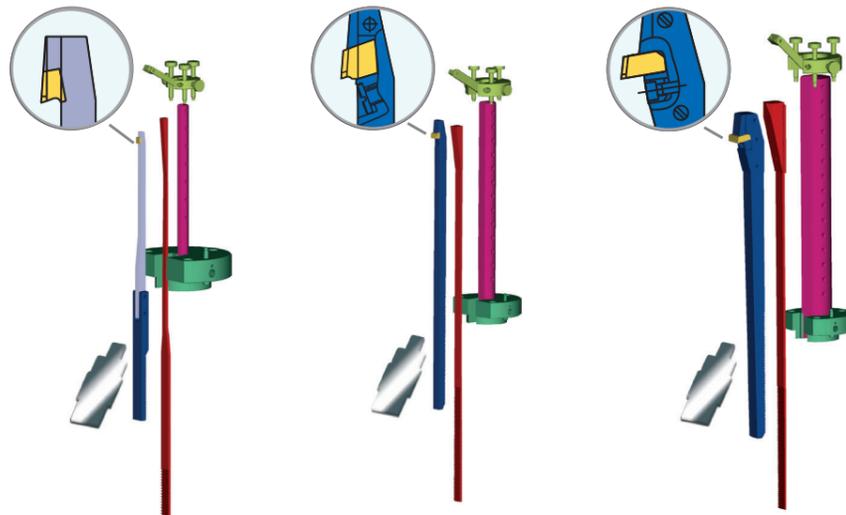
The workpiece is centered by its bore. The stepped bush clamps the top face of the workpiece and positively locates it relative to the cutter tool.



■ WC 2/3/4

■ WC 7

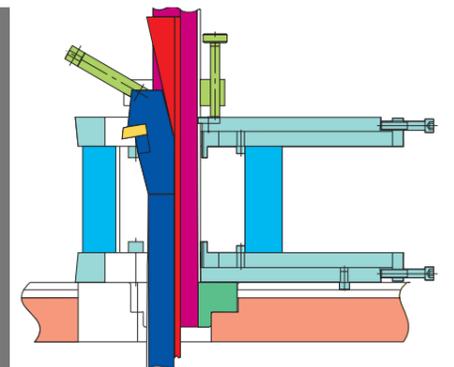
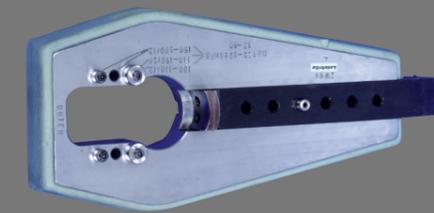
■ WC 9c/10/11



- Table insert bush
- Cutter guide bar
- Cutter
- Clamping piece
- Cutter bar/holder
- Feed bar
- Cutter shaft
- Centerings
- Chip remover

## Continuously adjustable

A three-point clamping system with fixed and adjustable clamping elements clamps the workpiece eccentrically and firmly by its bore.



### APPLICATION OF THE CENTERING SET FOR TOOL BORES

	WC 2/3/4			WC 7		WC 9c/10/11		
Keyway length, max.	100	100	150	500	1000	1200	1500	
Keyway width	2 - 3	3 - 6	6 - 12	12 - 22	22 - 50	56 - 100	56 - 125	
Borehole ø	10 - 13	13 - 20	20 - 40	40 - 85	80 - 230	200 - 500	230 - 750	
Cutter guide bar ø	10	13	20	40	85	110	140	

	WC 2/3/4			WC 7		WC 9c/9/10/11		
Cone (mm)	10,5 - 13	14 - 20	21 - 40	41 - 85	80 - 230	85 - 260	-	-
Stepped bush (mm)	-	14 - 20	25 - 40	45 - 85	80 - 230	90 - 200	-	-
Continuously adjustable (mm)	-	-	40 - 160	60 - 200	100 - 300	130 - 400	250 - 500	200 - 500 230 - 750

# YOU NEVER WORK ALONE. YOUR DIRECT LINE TO OUR SERVICE.

Leistritz Service for Machine Tools. Comprehensive. Reliable. Fast.



Leistritz Service accompanies you from commissioning to the start-up of your production line, repairs, spare parts and preventive maintenance to the optimization of your machines and systems. Smart Services online and on site helps to keep your production running like a clockwork. And stays running.

We train and coach your machine operators to maintain your manufacturing expertise and sharpen your competitive edge.

Service number:  
**+49 (9654) 89-880**

## Your Contact Person

**Patrick Schuka**  
Head of Sales Machine Tools  
T.: +49 9654 89-403  
M.: +49 172 8918914  
E.: pschuka@leistritz.com

**Thomas Kocher**  
Sales Manager Machine Tools  
T.: +49 9654 89-807  
M.: +49 171 1090630  
E.: tkocher@leistritz.com

**Stefanie Gehr**  
Sales Manager Machine Tools  
T.: +49 9654 89-596  
M.: +49 175 2253193  
E.: sgehr@leistritz.com

