

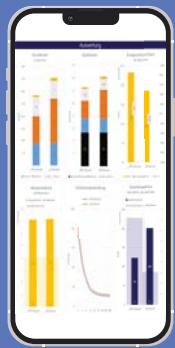


# Lean Your Production

Machining, automating, measuring ... lean & smart



Save Energy.  
More Output.  
Less costs.



## Overview

01/2024 | EN

Upgrade for your standard machine.  
Investment calculation. Highest productivity.  
Benchmark. All from a single source.



### Series 500



- Serial production of classical work pieces
  - Positioning, simultaneous machining, multifunctional
- Many workpieces individually clamped and machined on smallest space
- Turns standard VMC's into a highly productive machining cell thanks to ultra-short cycle times



### Series 900 DD



- Serial production of demanding workpieces
  - complete machining Mill-Turn, gear skiving, fast & safe
- Wide range of automatic workpiece clamping with integrated safety
- Turns standard VBZ into a unique production system in the smallest of spaces, often at half the price

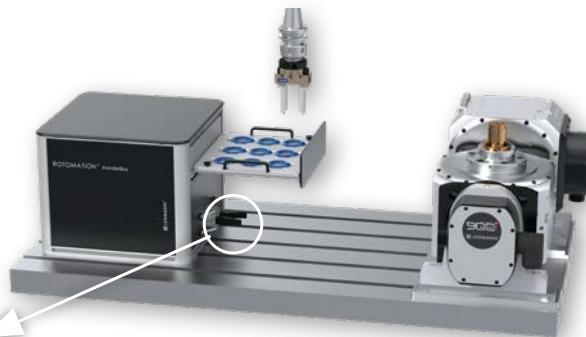




## ROTMATION

- Programming with machine CNC
- Unnecessary: door automation, automation interface, CE conformity, additional floor space, barrier
- Invest cheaply, produce unmanned, produce bravely

Automatic workpiece turner  
«partReverser»



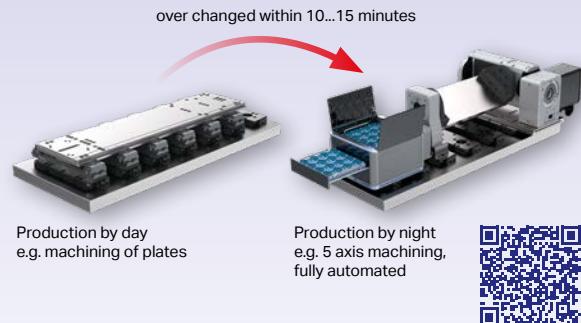
## MA-Q08 and EA-Q08 with Tablet

- Place & Play solution – simply position precisely
- For CMMs and other process optimization equipment to produce high quality parts
- Measure as produced, same workpiece holder as in the machine tool
- Ready for automation
- CNC software can be used on any standard MS PC without a separate tablet



## The correct machine concept The correct rotary table The correct automation

But: what is correct for YOU?

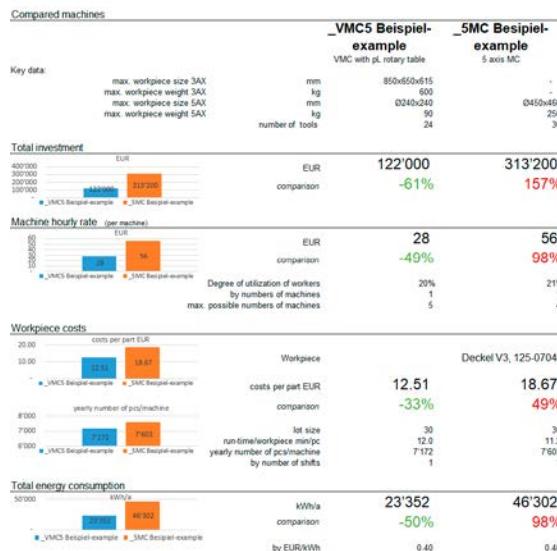


### eVestor MT (Machine Tool)

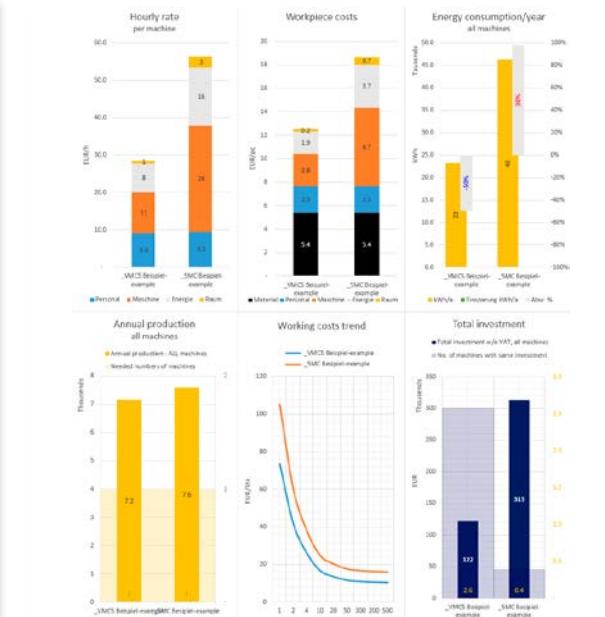
What is economically correct for my workpiece portfolio? With which concept can I best scale

(increase and decrease quantities)? What is my energy and CO2 balance?

The present report is based on the life cycle cost model, based on ISO 2864. The basis and benchmark is the ETH Zurich study on the topic "Evaluation of Machine Concepts for Five Axis Milling", 2022 at the chair of Prof. Dr. Konrad Wagner. In order to have the best possible practical approach, all relevant, variable calculation parameters are recorded for the respective customer and application.



A management summary provides important information in a quick overview



Clear graphics provide information on key issues



3 axis VMC with 4<sup>th</sup> oder 5<sup>th</sup> axis  
rotary table, for max. flexibility



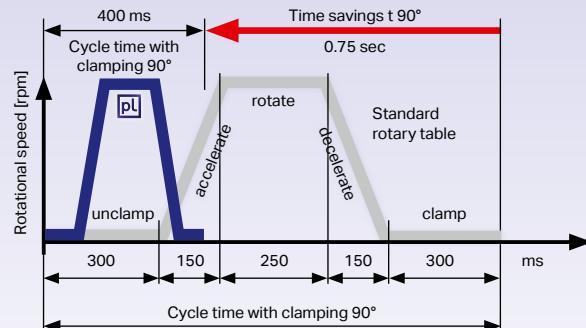
5 axis machining center, fix integrated

A number of different machines are available in a database for mutual comparison. A reliable and professional comparison provides answers to important questions.

#### Federal funding for energy efficiency in business

We also support you in applying for a subsidy (BAFA, Germany). An approved energy consultant uses the results of the eVestor MT to prepare the eligibility check (according to the BAFA funding program «Federal funding for energy efficiency in the economy – subsidy, module 4 – energy-related optimization of systems and processes»). By means of an application BAFAG's decision can be shortened to 4–6 weeks for early implementation of measures.

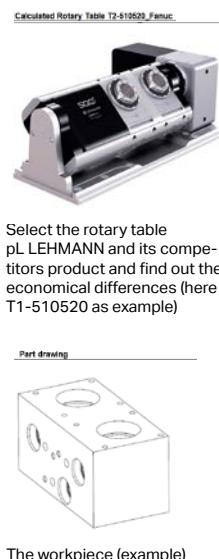
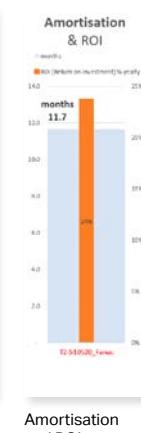
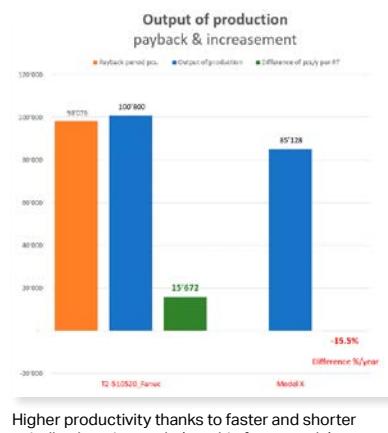
## pL rotary table rotates and clamps faster



### eVestor RT (Rotary Table)

3+ is the perfect machine concept, as found out by eVestor MT. But does the rotary table of pL LEHMANN the right one? How much costs cheap

investing? Which additional output can be realized with pL? How easy can I convince my boss?



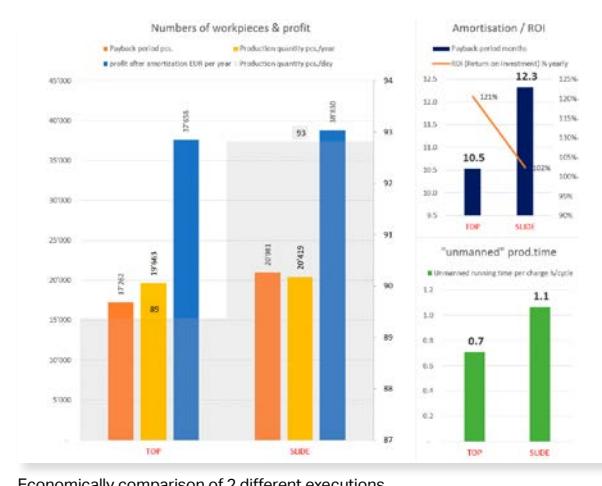
**For special cases:** an interesting participation model is available to get the lowest possible price

PLUS = participation on leading user system	
earn-out modell "PLUS"	
special offer for RT: -20% of competitor	
<b>24'920</b>	
Participation of pL	Duration of years
<b>50%</b>	<b>4</b>
of savings = EUR 5525	
real clamping cycles/	
<b>-20%</b>	<b>5'241'600</b>
tolerance	limited at upon value
clamping cycles/ly per RT	
<b>6'552'000</b>	
estimation, based on customers data	
An example calculation	

### eVestor RtB (ROTMATION transferBox)

Unmanned production without additional space around the machine. No door automation needed, no automation interface, no CE conformity, no additional footprint, no security barrier. 6 sides complete machining. But is it really economical? What variant is the right one for my needs?

	Version	TOP	SLIDE
Payback Period	months	<b>11</b>	<b>12</b>
Yearly Profit	EUR	<b>37'658</b>	<b>38'830</b>
Workpiece	name	<b>Stempel D63.5</b>	
Needed		<b>16 M functions</b>	



High value retention: can be modified at any time,  
only 4 sizes ø100 – 500 mm – over 290 standard  
configurations

## EA → TF TIP



## Diversity of products

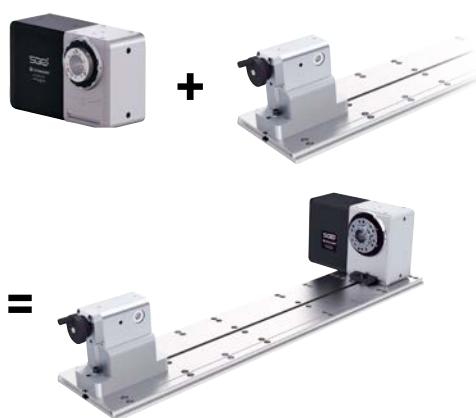
unique

- Wide range of applications for each size
- Lower storage costs, also in service (spare parts)
- Increased sales and service productivity

## EA → EA with rotoFIX



## EA → EA with longFLEX



**Attention!** Due to export control regulations,  
the conversion will only be carried out at headquarters.

Standard machine in stock, available at short notice,  
equipped with matching rotary table

**Highest level of flexibility** 

- Rotary table is available quickly and can be converted at any time
- If the needs change, the investment is not lost
- Pay in installments: First, the machine later the rotary table - can be retrofitted at any time



**TF TIP → T1 TAP**



**TF TIP → T1 TOP**

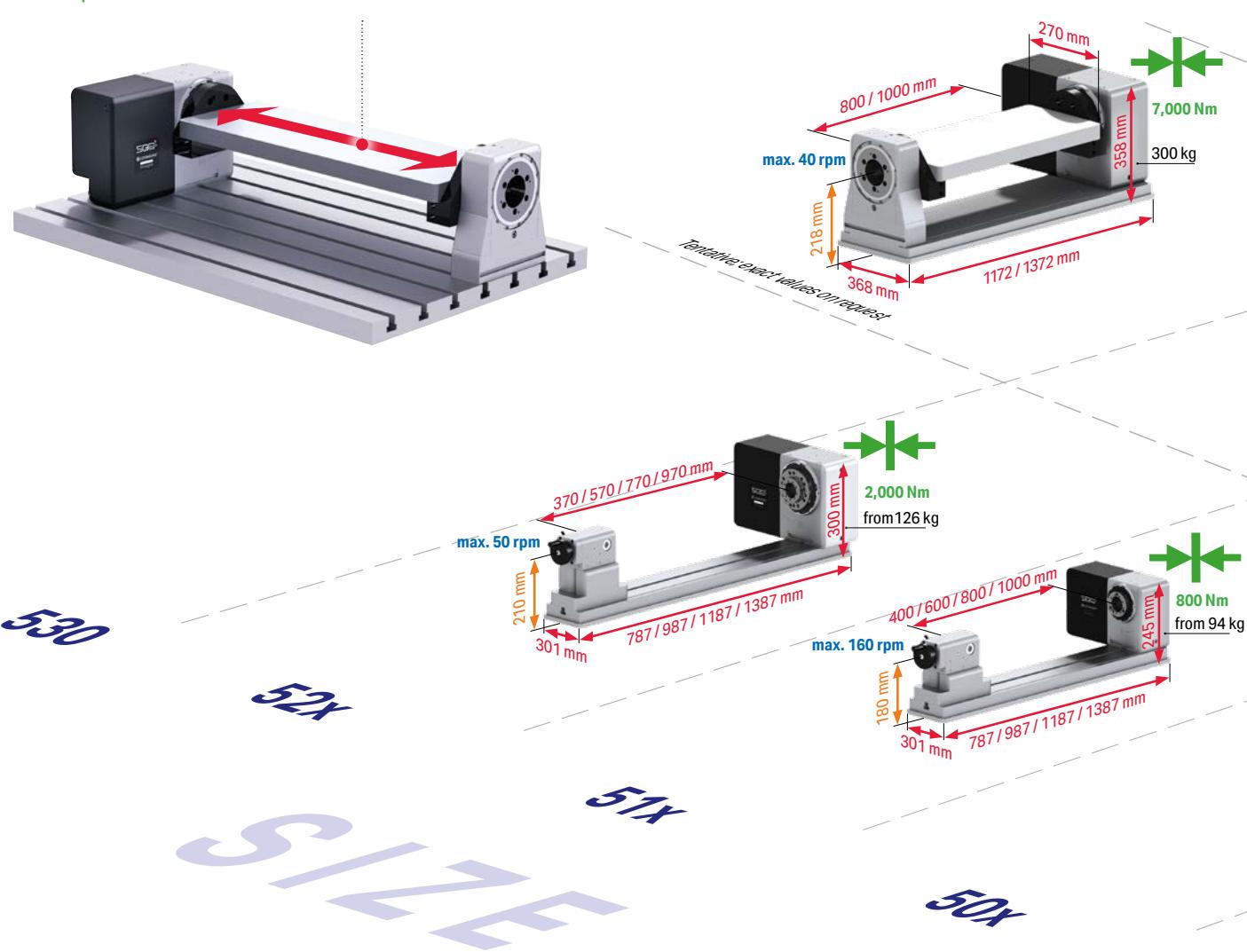


**T1 TAP → T1 TOP**





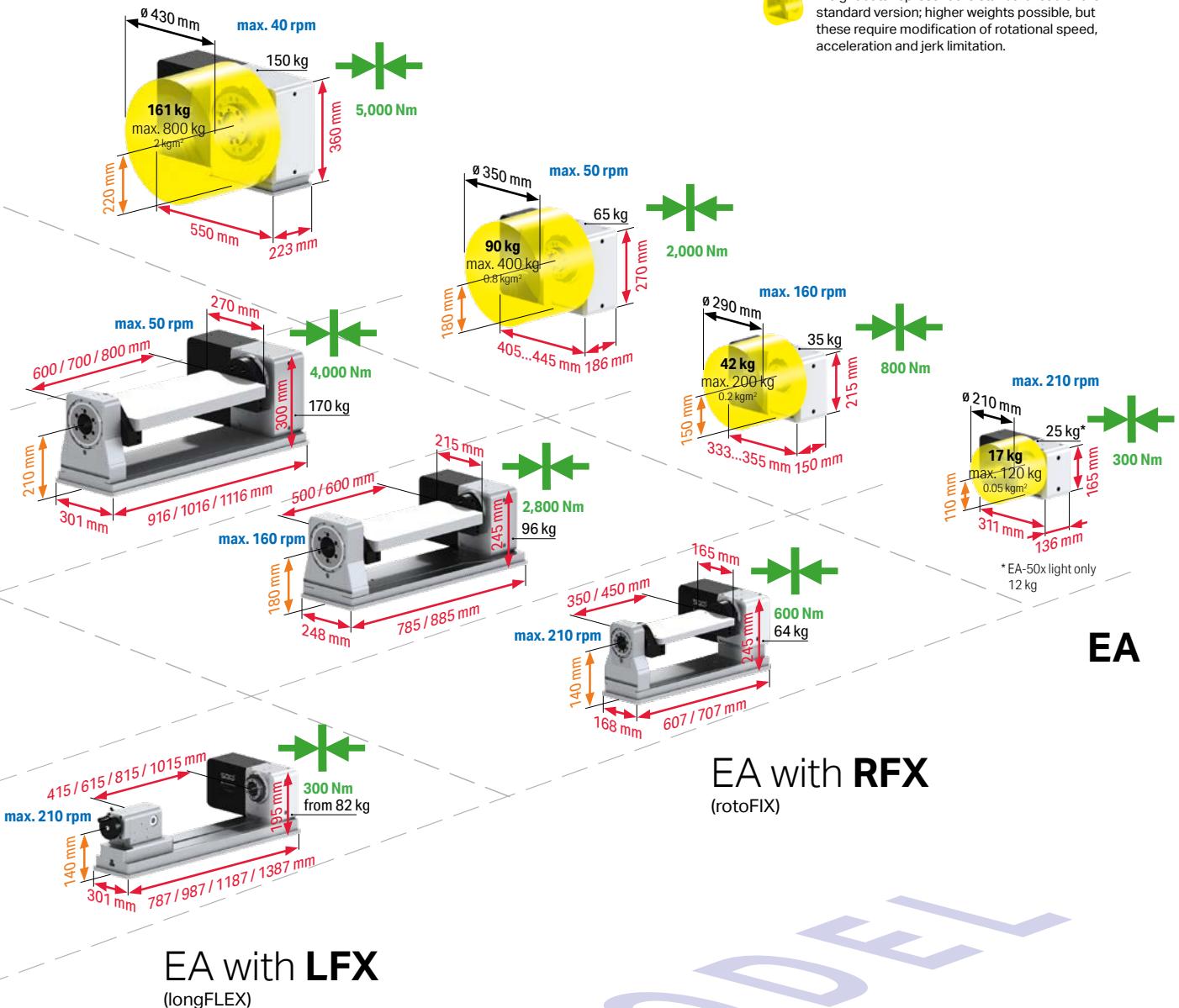
More space for  
workpieces and fixtures



## Facts

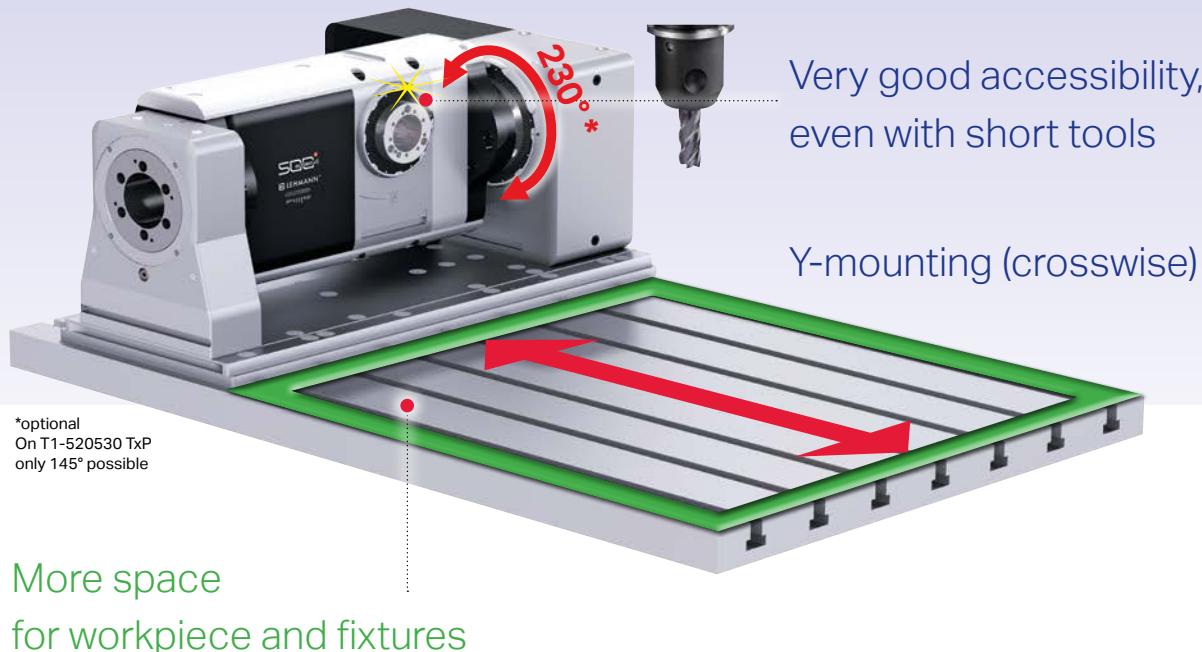
- High speed up to 210 rpm
- Steel base plates with hole pattern (matches a slot spacing of 100 mm and 125 mm)
- Cycle time for 90° as fast as 0.21 sec.

Weight data represent the standard load of the standard version; higher weights possible, but these require modification of rotational speed, acceleration and jerk limitation.



50x	507 (standard) or 508 (high speed)
51x	510 (standard) or 511 (high speed)
52x	520 (standard) or 521 (high speed)
EA	single-axis, single-spindle CNC rotary table
rotoFIX	modular clamping yoke system
longFLEX	modular shaft clamping system

## Overview of T-Series



**T1**

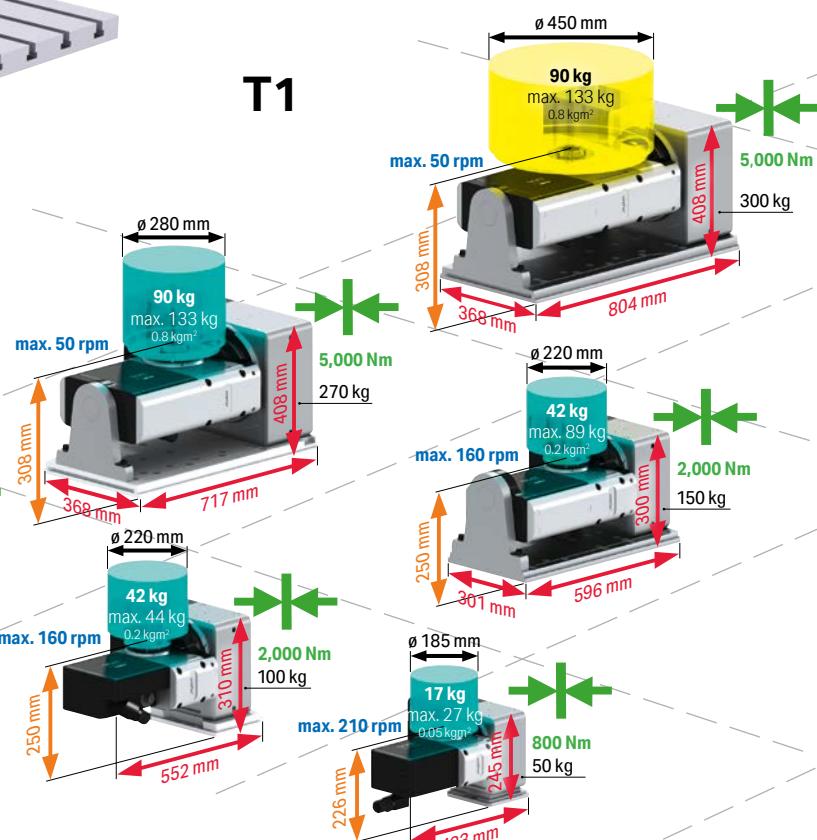
**T1**

**TF**

52x530

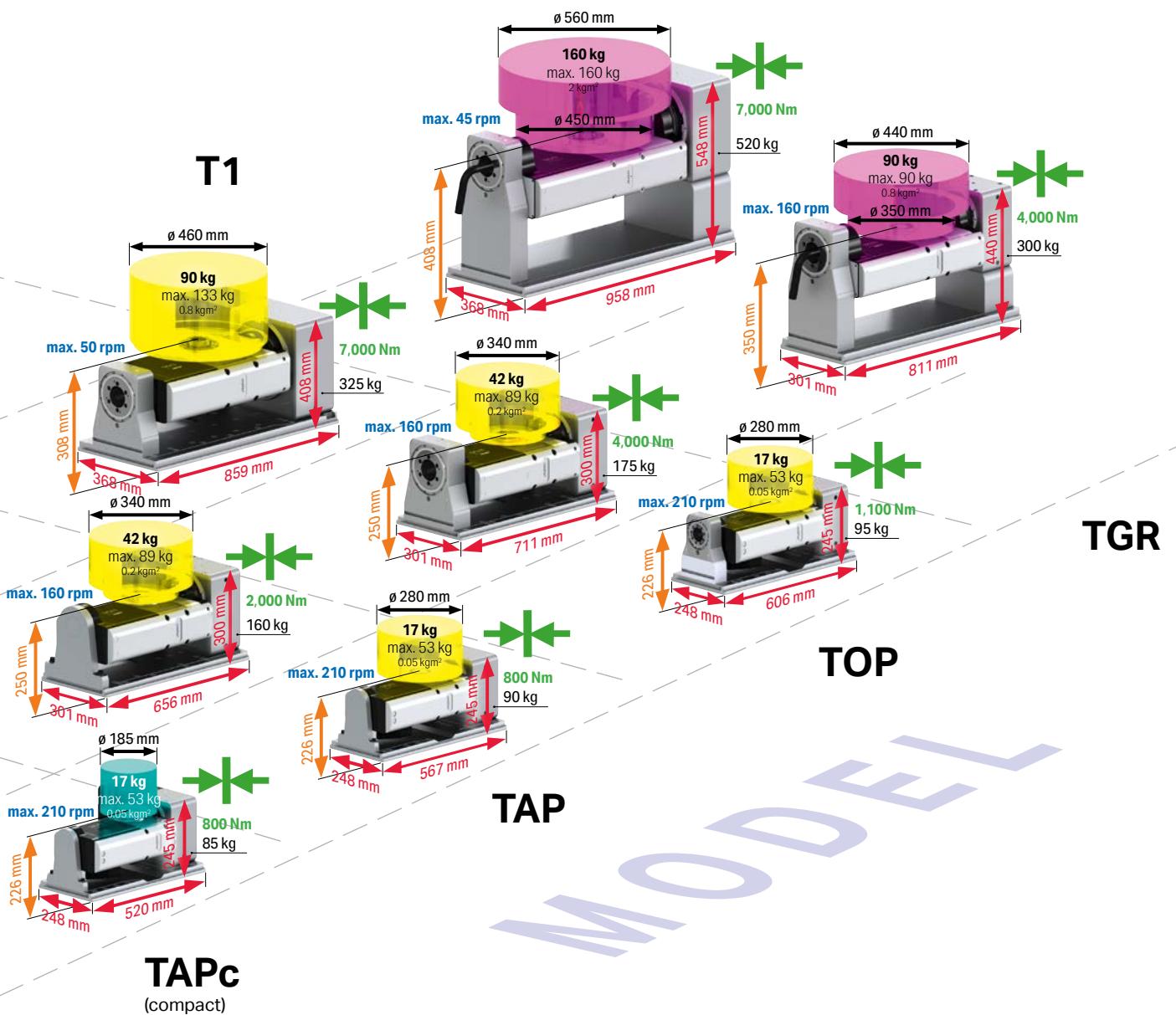
51x520

**SIZE**



## Facts

- Up to 150 % higher clamping torque in tilting axis
- Fewer variants – more solutions
- Larger workpiece Ø possible
- Spatially optimized arrangement of the dividing axis

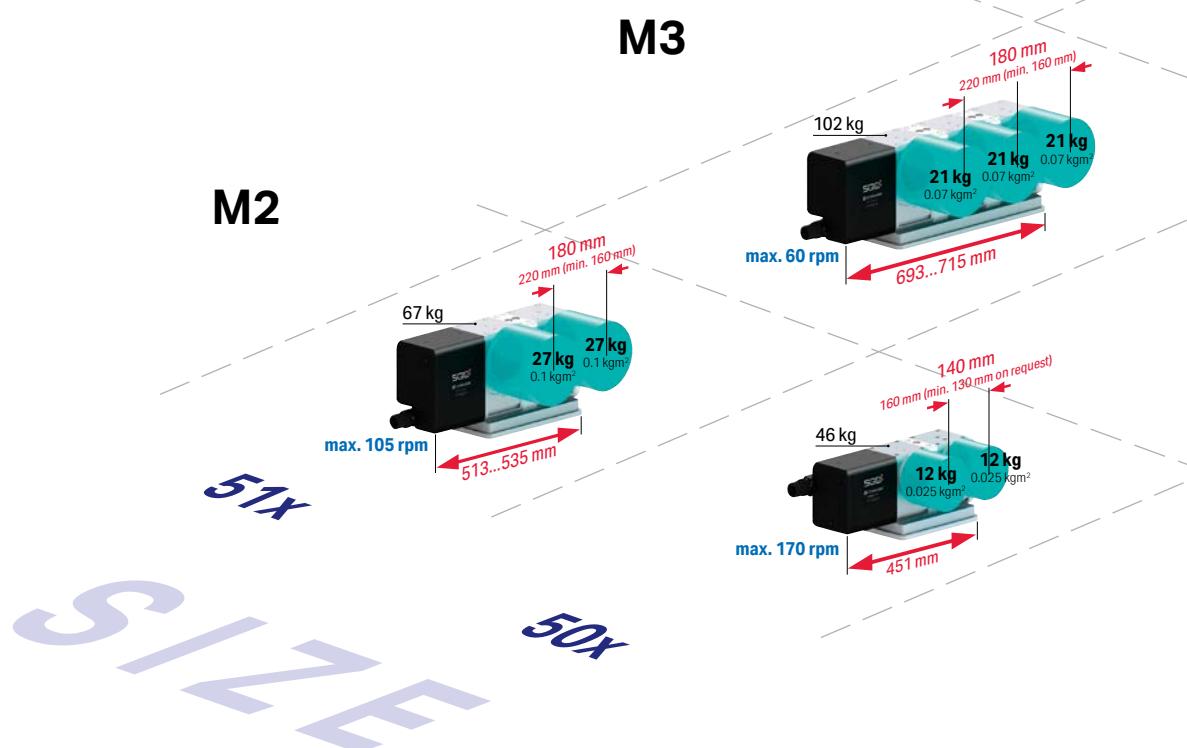
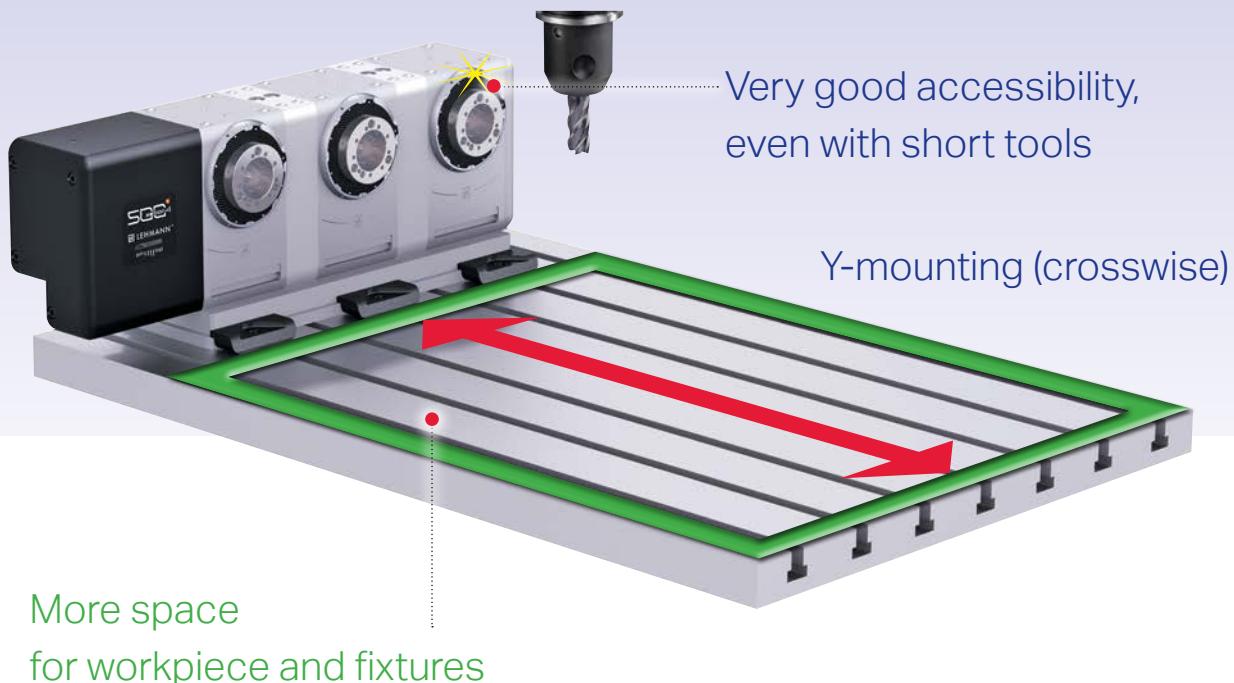


## TAPc (compact)



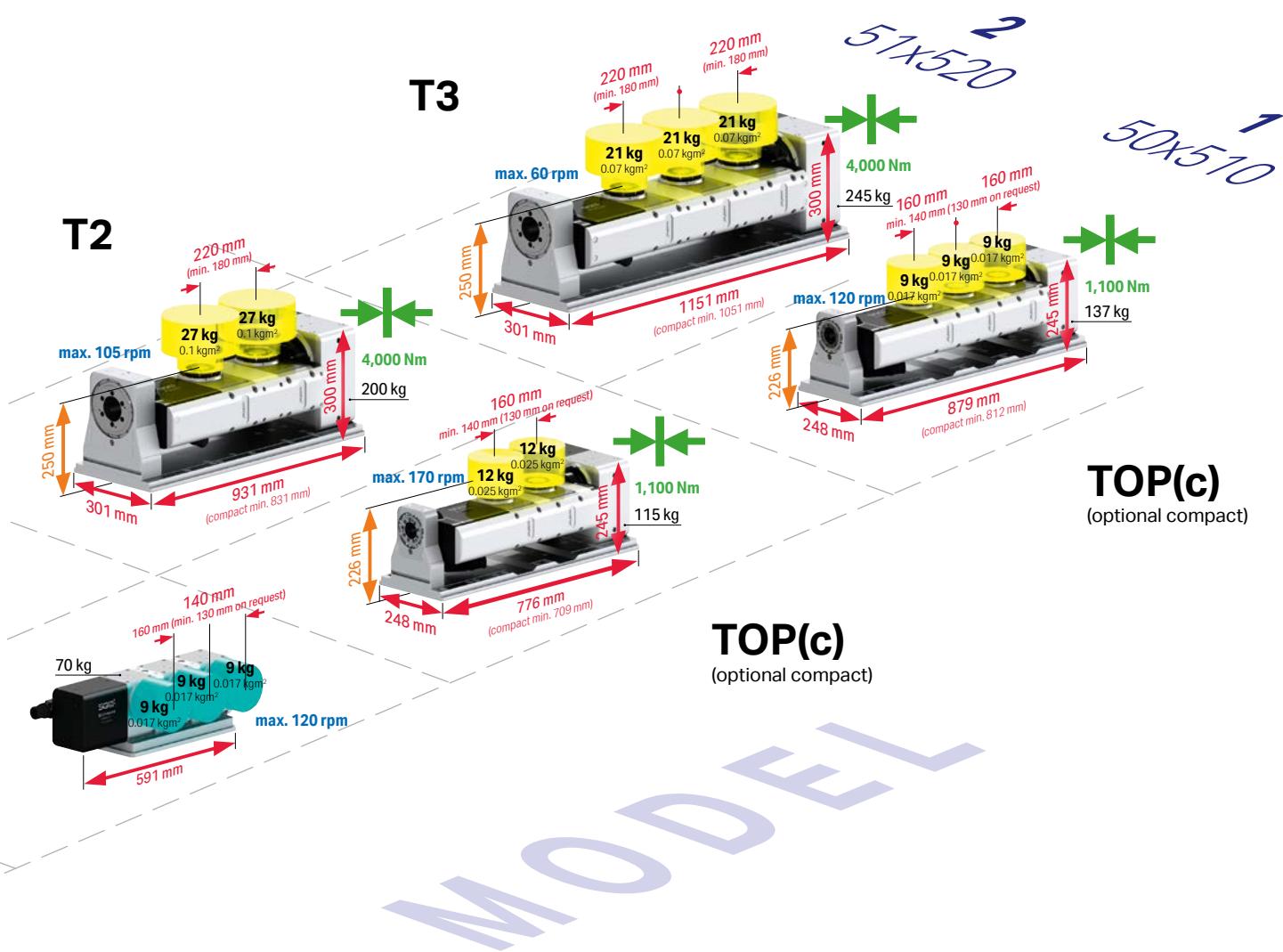
Weight data represent the standard load of the standard version; higher weights possible, but these require modification of rotational speed, acceleration and jerk limitation.

50x510	507510 (standard) or 508510 (high speed)
51x520	510520 (standard) or 511520 (high speed)
52x530	520530 (standard) or 521530 (high speed)
TIPc	Two-axis rotary table, no counter bearing, compact
TAPc	Two-axis rotary table, with supporting bearing, compact
TAP	Two-axis rotary table, with supporting bearing
TOP	Two-axis rotary table, with clamped counter bearing
TGR	Two-axis rotary table, with clamped counter bearing specifically for grinding applications



## Facts

- Up to 54 % higher clamping torque in tilting axis
- Fewer variants – more solutions
- Spindle distance min. 130 mm
- Spatially optimized arrangement of the dividing axis



Weight data represent the standard load of the standard version; higher weights possible, but these require modification of rotational speed, acceleration and jerk limitation.

50x 507 (standard) or 508 (high speed)

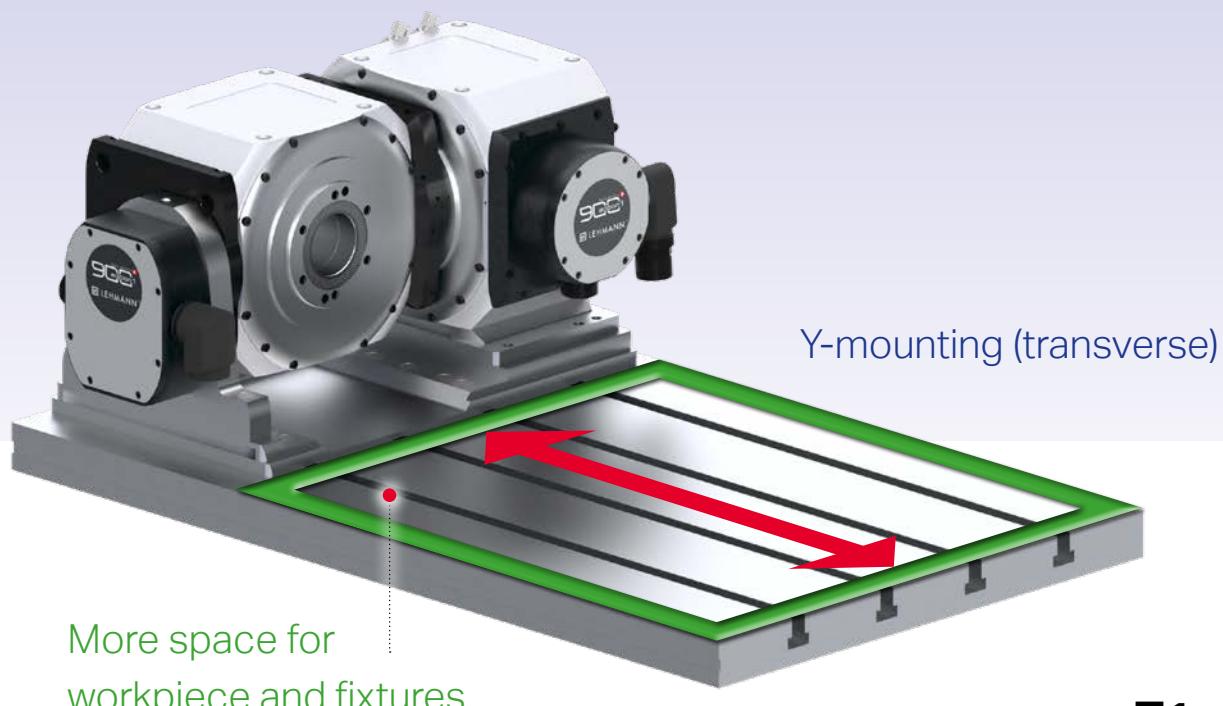
51x 510 (standard) or 511 (high speed)

M2 Single-axis, multi-spindle rotary table, 2-position

M3 Single-axis, multi-spindle rotary table, 3-position

T2 Two-axis multi-spindle rotary table, 2-position

T3 Two-axis multi-spindle rotary table, 3-position



**T1**



**915520**



**918**

**913520**



**915**

**913918**



**913**

**913915**

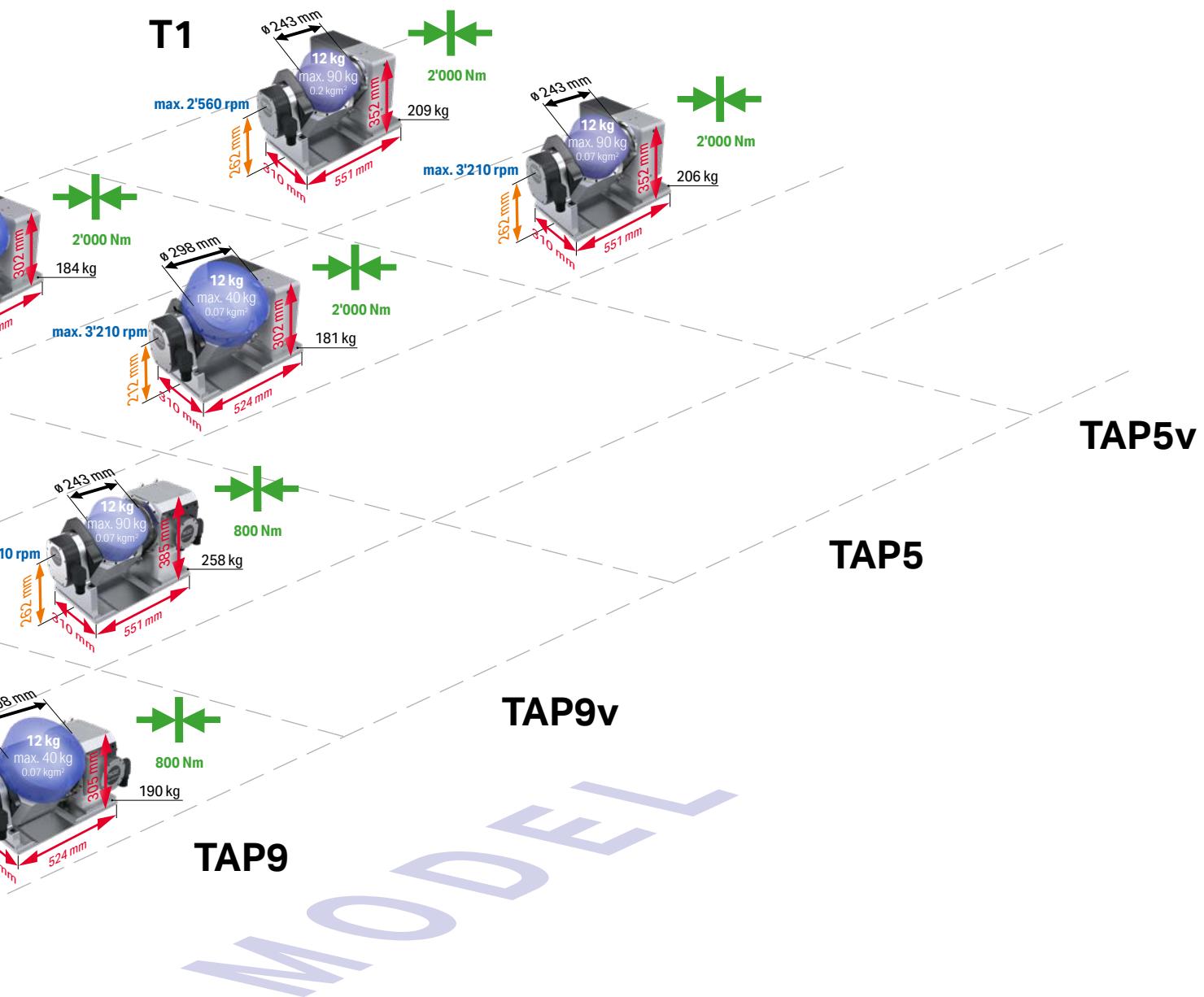


**EA**

**SIZE**

## Highlights

- For millturn applications (e.g. watch cases from bar stock)
- DD up to 3,000 rpm available (up to 5,450 rpm technically possible)
- Very compact
- For Siemens, Mitsubishi, HEIDENHAIN and Fanuc (if Fanuc measuring system: 100% Fanuc DDT-compatible)



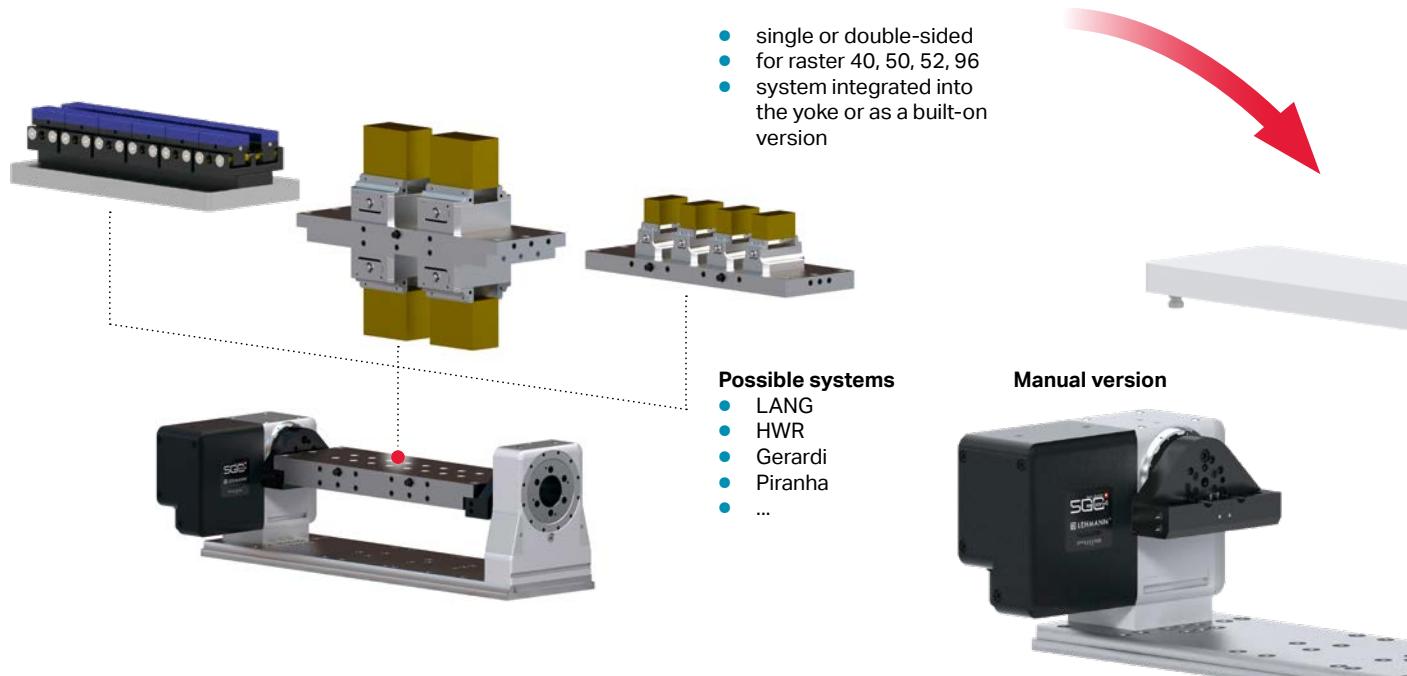
Weight data represent the standard load; higher weights possible, but require modification of rotational speed, acceleration and jerk limitation.

**EA** single-axis, single-spindle CNC rotary table  
**TAP** two-axis rotary table, with supporting bearing  
**TAPv** Two-axis rotary table, with support bearing, low-profile version (vario)

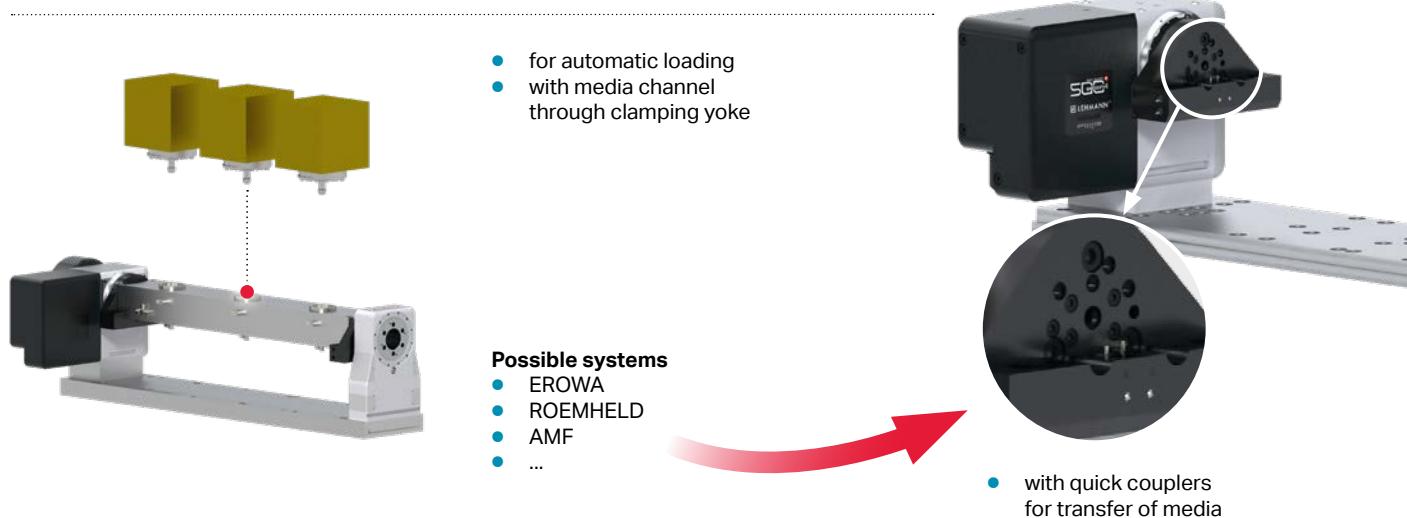
Feed max.: without flux weakening

Potentials of clamping yokes with integrated or built-on zero point clamping system

## Yoke with manual zero point clamping system

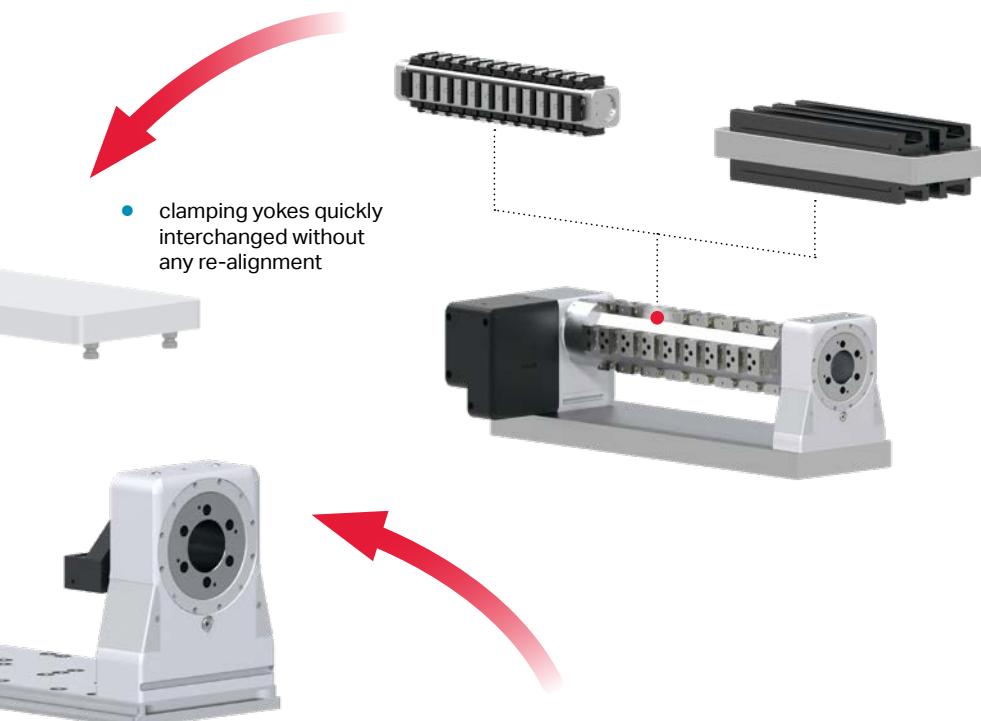


## Yoke with automatic zero point clamping system



Clamping yokes with hole pattern for individual mounting of clamping tools or with a flexibly adjustable rail system

### Yoke with rail system

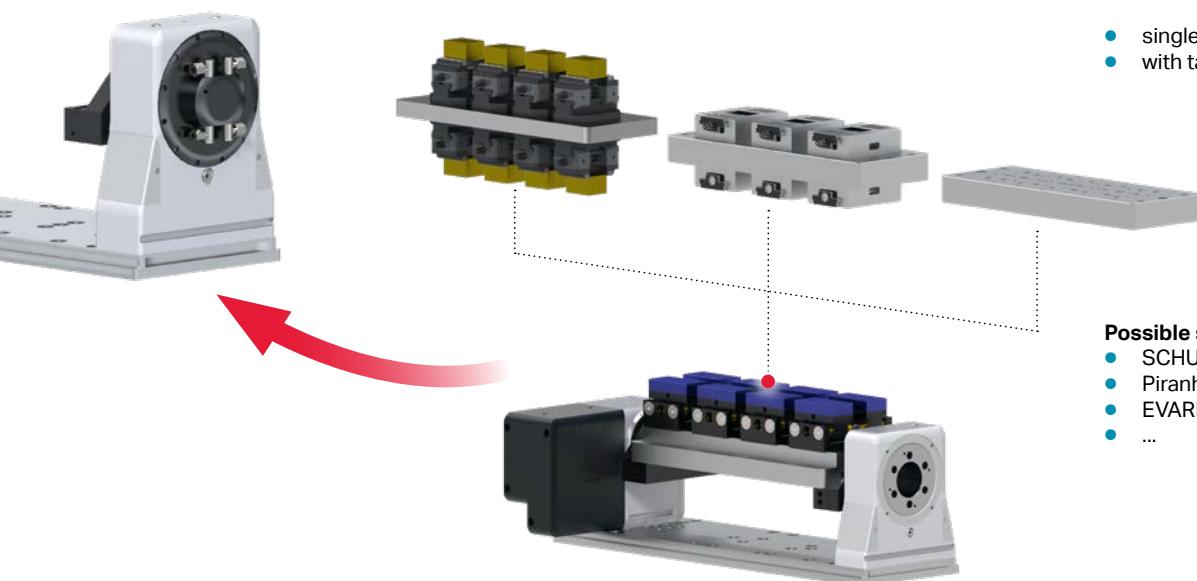


- vises moved without any re-alignment
- easily adaptable to suit part size

#### Possible systems

- SCHUNK
- TRIAG
- EVARD
- ...

### Yoke with bolted on clamping tools (manual or automatic)

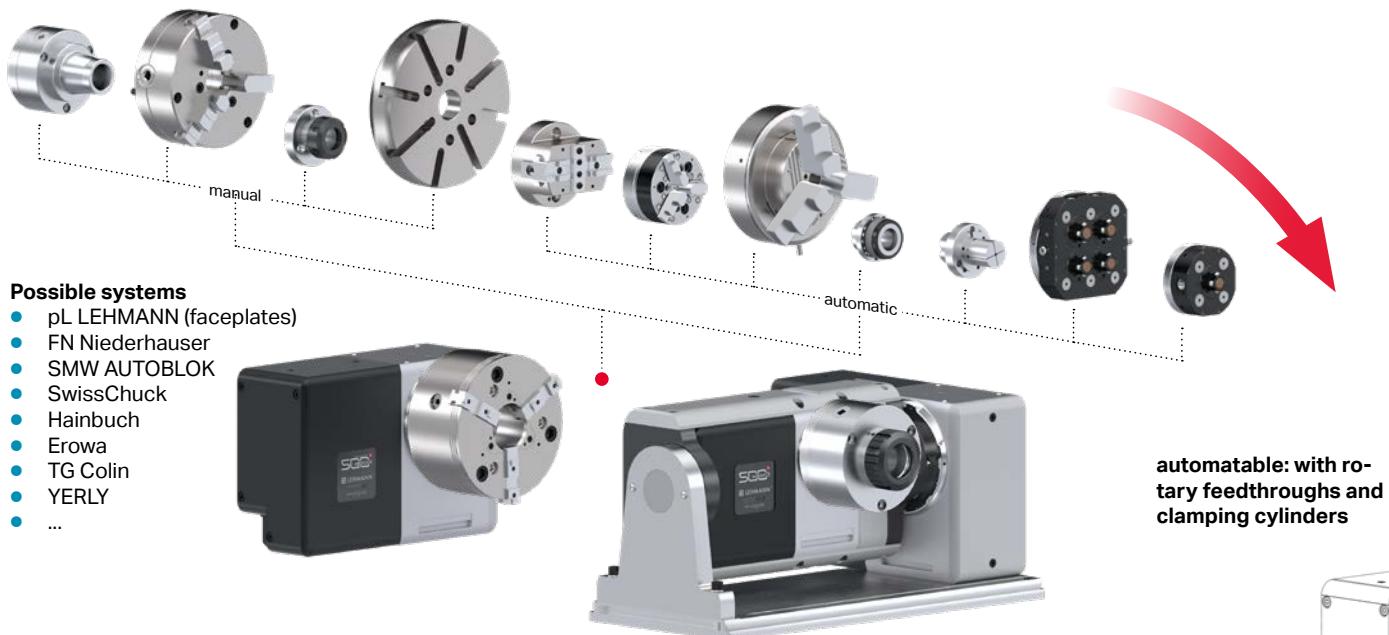


#### Possible systems

- SCHUNK
- Piranha
- EVARD
- ...

From manual clamping tools for single item production through to fully automated systems

## Faceplates, force clamp and jaw chucks, collet chucks



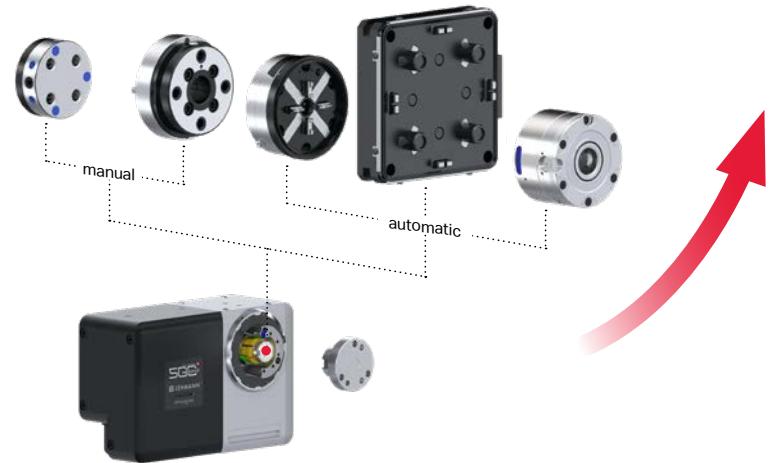
## Centric clamping unit



### Possible systems

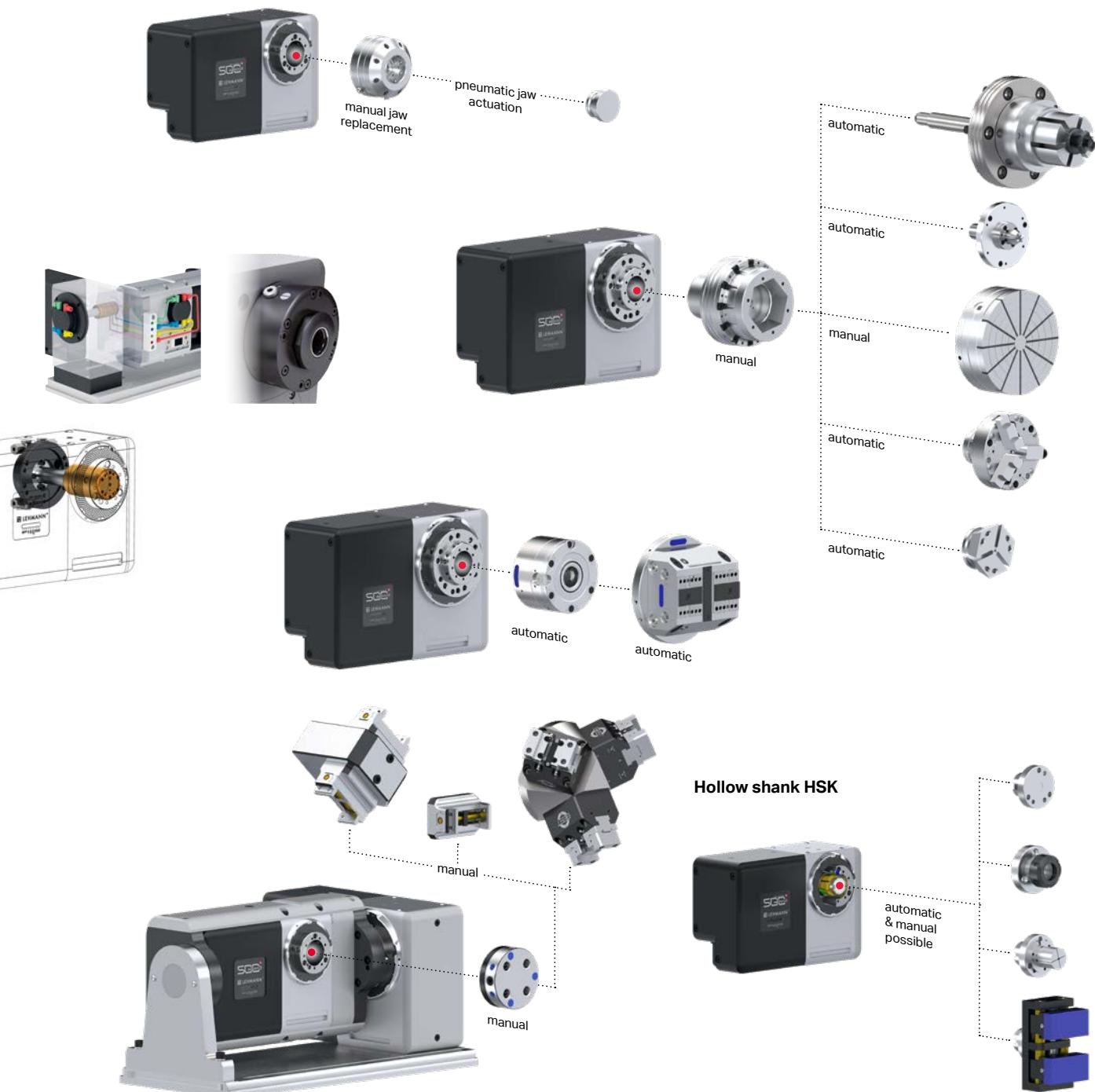
- SCHUNK
- LANG
- Gressel
- Piranha Clamp
- EVARD
- TRIAG
- ...

## Zero point clamping systems



Centering clamping unit for workpiece handling,  
built-on zero point clamping system for quick vise  
interchange

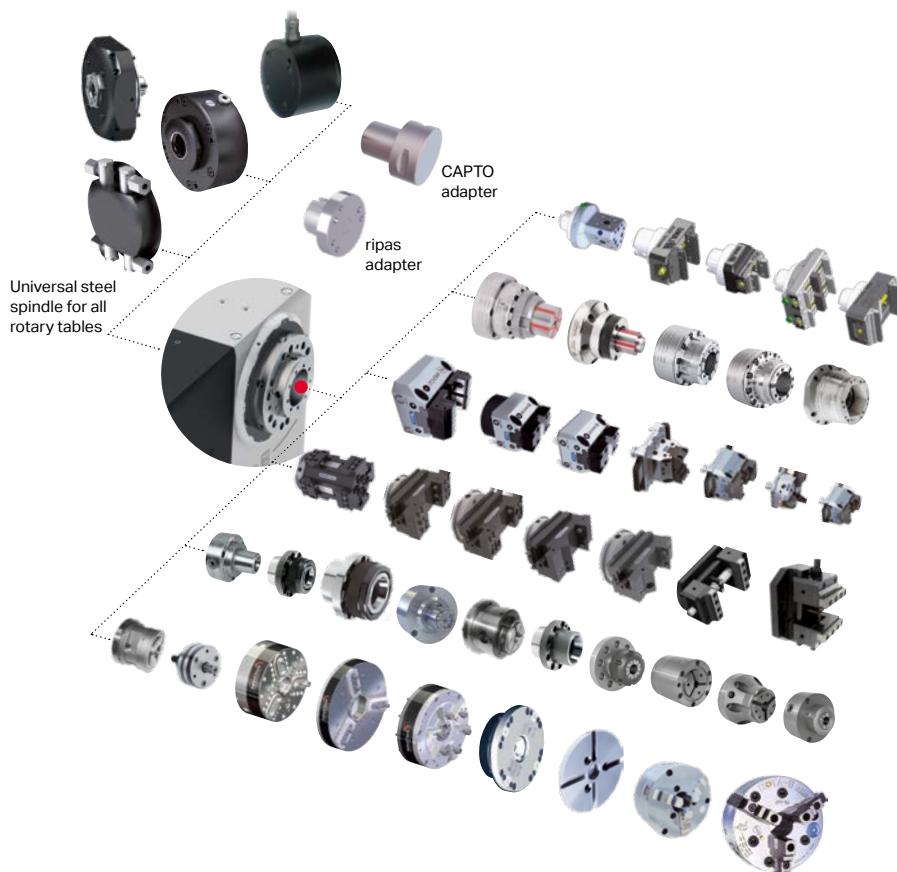
### Possible combinations



Extremely wide assortment for workpiece clamping.  
Standardized interface in front and rear:  
maximum universality

## Spindle accessories, rear

- Rotary unions **up to 250 bar**
- Hydraulic clamping cylinder **23 kN at 120 bar**
- Pneumatic clamping cylinder **11 kN at 10 bar**
- Angular position measuring systems **as precise as  $\pm 1$  arcsec**



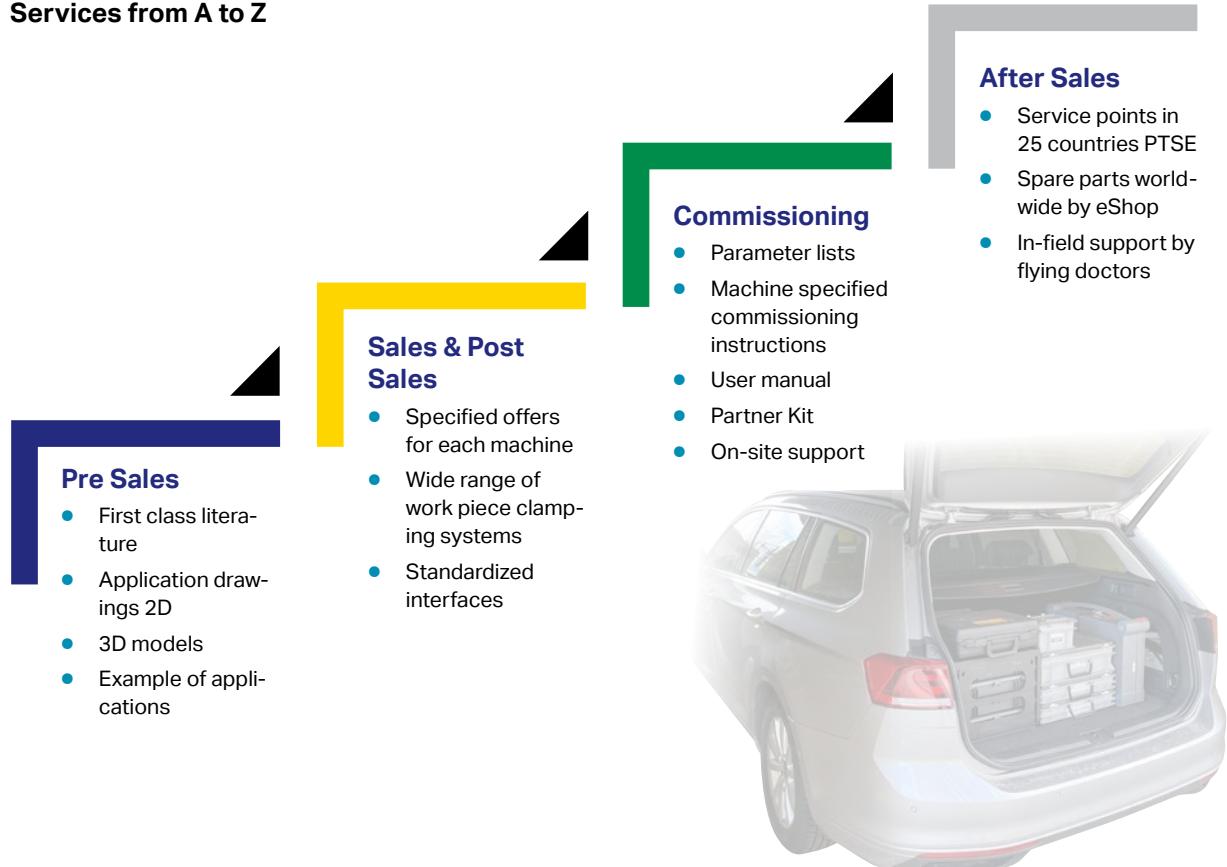
## Spindle accessories, front



Present in over 20 countries:  
from sales consultation to the final service

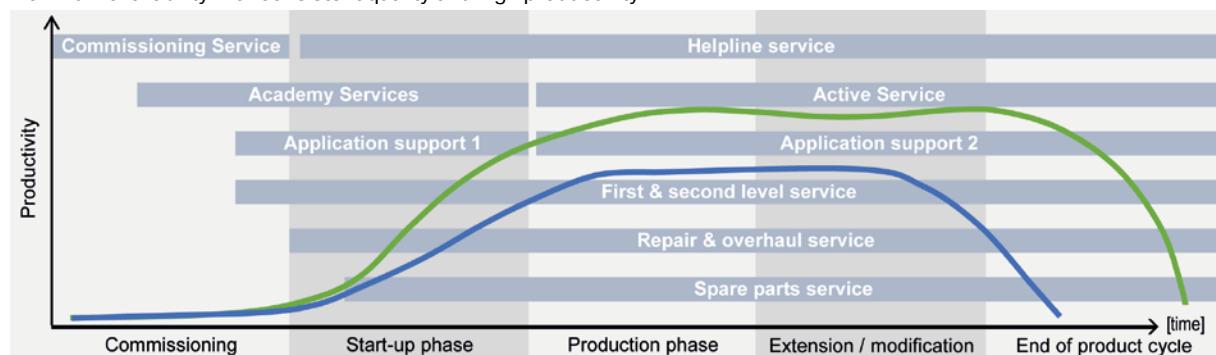


## Services from A to Z



## Increase productivity – Extend life cycle

Comprehensive and professional services throughout the product life cycle – maximum availability with consistent quality and high productivity.



— Productivity with LifeCycle service products from pL LEHMANN  
— Productivity without service support

## Interesting applications for increasing productivity

Provided on GF+ Machining Solutions, Akira Seiki, Almac, Amada Machine, AMS, AWEA, BFW, Blohm Jung, Bridgeport (Hardinge), Brother Milling, Chevalier, Chiron, DMG MORI, DN Solutions, Emco Famup, Fanuc Robodrill, Finepart, Feeler, Haas Automation, Hartford, Hasegawa, Hedelius, Hurco, Huron, Hwacheon, Hyundai WIA, ICON, Kitamura, Kondia, Leadwell, Makino, MAS, Mazak, Microlution, Mikron, Moore Tool, MT EVO, POSmill (Microcut), Quaser, Sauer (DMG MORI), Spinner, Stama, TongTai, Toyoda, Unitech, Willemin-Macodel, XYZ, YCM



T1-913915 – power skiving – Mechanics



T1-520520 – Milling/boring – Mechanics



TF-507510 – Milling/boring – Dental Technology



EA-510 rotoFIX – Milling/boring – Automotive



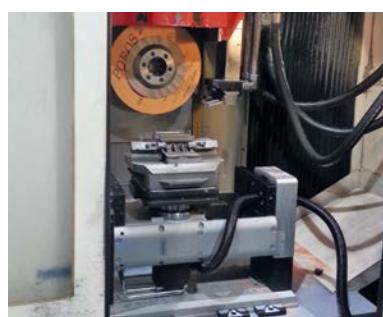
T2-507510 – Milling/boring – Automotive



T1-520520 – Milling/boring – Mechanics



EA-915



T1-520520 – Grinding – Aerospace/Turbines



EA-510 – Grinding – Mechanics



TF-507510 – Milling/boring – Medical technology



TF-507510 – Milling/boring – Watches/Micro Technology



T1-913915 TAP9 – Turning/Milling/boring

Additional interesting examples of applications can be found on our website [www.lehmann-rotary-tables.com](http://www.lehmann-rotary-tables.com) in the Download / Applications area



M2-510 – Milling/boring – Automotive



EA-510 – Milling/boring – Automotive



TF-507507 – Milling/boring – Dental Technology



T1-913915 TAP9 – Turning/Milling/boring – Mechanics



T1-510520 – Grinding – Aerospace/Turbines



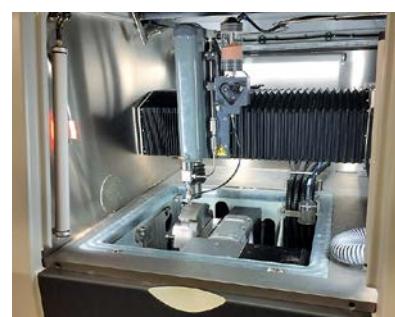
EA-510 rotoFIX – Milling/boring – Mechanics



T1-510520 – Milling/boring – Mechanics



T3-510520 – Milling/boring – Automotive



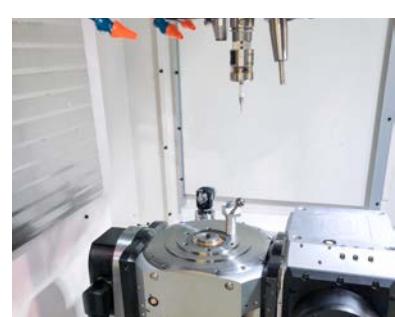
T1-507510 – Waterjet drilling – Aerospace/Turbines



EA-510 longFLEX – Milling/boring on horizontal center – Mechanics



EA-520 – Milling/boring – Mechanics



T1-913915 TAP9 – Turning/Milling/boring



ROTARY SOLUTIONS > MACHINE TOOLS & METROLOGY

#### Headquarters

PETER LEHMANN AG  
Bäraustrasse 43  
CH-3552 Bärau  
Phone +41 (0)34 409 66 66  
sales@plehmann.com  
www.lehmann-rotary-tables.com

#### Global network

##### Europe

- Austria
- Benelux
- Bosnia
- Bulgaria
- Croatia
- Czech Republic
- Denmark
- Estonia
- Finland
- France
- Germany
- Hungary
- Iceland
- Ireland
- Italy
- Kosovo

- Latvia
- Lithuania
- Macedonia
- Norway
- Poland
- Portugal
- Romania
- Russia
- Serbia
- Slovakia
- Slovenia
- Spain
- Sweden
- Turkey
- UK

##### America

- Brazil
- Canada
- Mexico
- USA

##### Asia

- China
- India
- Israel
- Japan
- Malaysia
- Singapore
- South Korea
- Taiwan
- Thailand
- Vietnam



● Headquarters

● direct sales

● pL SOLUTIONS® partner

● value added reseller & partner

More information (address, telephone number...) at [www.lehmann-rotary-tables.com](http://www.lehmann-rotary-tables.com)