Lathe

Servoturn®

Conventional Precision Lathe with Servo Drive

**easier to operate, more powerful, more reliable,
more precise, for higher loads and reduced maintenance**

- Mineral-Casting Machine Frame
- Preloaded ball screws
- Electronic hand-wheels
- Axes are driven by servo motors
- Linear guides
- V const.
- Center width 1050 - 3000 mm
- Turning diameter over bed
  410 mm and 560 mm

Conventional turning rises to a new level of quality

The Servoturn® is operated like a conventional lathe, however, it integrates CNC technology elements that enable higher precision of turned parts, higher machining power, less wear and reduced maintenance.

Conventional turning is still quite in demand in industrial and commercial areas as well as in training shops of schools and universities.
The Servoturn was designed with strict focus on maintaining all conventional machining features that the experienced lathe operator is familiar with.

The aim was to free the operator of tedious tasks and to simplify operations in general.
The result is a significantly increased operating efficiency.
A High-end Lathe for conventional operation.

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Linear profile rail guides on Z and X

Certain conventional elements in the Servoturn® were replaced with CNC technology elements:

- The tool slide's compound rest features robust linear guides that are designed for high loads and torques. This ensures precise guidance of the turning tool at minimum wear.
  The tailstock features the same type of bearing for easy positioning with minimum force.

- The feed is controlled via a preloaded ball screw and is driven by a servo motor. The mechanical gear has been replaced by an electronic control.
  The tool slide can be moved manually via an electronic hand-wheel that provides sensitive response without requiring any force.

- The tool slide feed offers the same high precision and is driven by a servo motor with preloaded ball screw that moves in unison with the rotation of a second electronic hand-wheel. Both hand-wheels are designed and mounted the same way as in typical conventional lathes.

- The combination of linear guides, preloaded ball screw and servo motors allows for very high machining accuracy that is comparable to the quality level of CNC machines.

Intuitive operation

Servo drive technology - including "Teach-in" buttons that allow setting a limit stop at the current position

The Servoturn® features infinitely variable speed control for the main spindle (Servoturn® 410 up to 3000 rpm). In the V.const (constant cutting velocity) mode, maximal surface quality is achieved due to automatic adaptation of the spindle speed during face turning.

Just as in conventional lathes, tools are positioned via hand-wheels; the feed is controlled via a lever at the support, feed and thread leads are selected in fixed increments via a rotary switch at the headstock. Operation is quite simple and smooth, since all switches and levers will set electronic contacts.

Plus, the electronic drive technology provides additional possibilities similar to the manual functions of CNC machines:

- **Limit stops are set with highest accuracy electronically by the push of a button.** The work-intensive and interference-sensitive setting of mechanical fixed stops and the limited accuracy of mechanical feed couplings are eliminated.
- Longer positioning motions of the tool slide can be carried out for both axes via a practical joystick.
- An Override allows infinitely variable feed control to optimize the current turning process.

Even thread cutting is improved through this unique feed technology with easy operation and increased safety!

- The electronic limit stop can be used in the thread cutting mode.
- Always on the correct thread lead - with electronic accuracy.
- No change-gears, no feed gears.
- Easy selection of the desired increment.

Mineral-casting - an advanced material with superior properties

Our immense experience in the use of mineral-casting machine frames has been incorporated in the Servoturn design.

By using a mineral cast machine bed it was possible for the first time to create a conventional lathe with the highest degree of vibration damping.

Not only does this guarantee superior surface quality that normally cannot be achieved with conventional turning, it also results in a significant reduction of tool wear.

The new generation of "servo/conventional" lathes combines maximum precision and increased machining efficiency with ease of operation and high reliability plus the added benefit of reduced maintenance and wear.

Excellent vibration damping properties and thermal stability combined with advanced guide technology

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Servoturn® 560/3000

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Feeds are selected via 2 rotary switches

Rigid rests for shaft machining included in standard equipment

Specifications Servoturn®	410x1000	560x2000	560x3000
Working area			
Center width	1050 mm	2200 mm	3000 mm
Turning diameter over bed (max)	410 mm	560 mm	560 mm
Turning diameter over support (max)	250 mm	350 mm	350 mm
X axis travel	225 mm	316 mm	316 mm
Z axis travel	960 mm	2000 mm	2800 mm
Z1 axis travel	100 mm	100 mm	100 mm
Bed width	300 mm	350 mm	350 mm
Headstock			
Spindle speed	30 - 3000 rpm	25 - 1600 rpm	25 - 1600 rpm
Spindle bore	52 mm	80 mm	80 mm
Spindle mount	D1-6	D1 - 8	D1 - 8
Spindle taper	MT 6	MK 7	MK 7
Feed			
X / Z axis feed	0.01 - 2 mm/rev	0,01 - 2 mm/rev	0,01 - 2 mm/rev
Thread Cutting			
Thread cutting - metric	(24) 0.2 - 14 mm	(24) 0,2 - 14 mm	(24) 0,2 - 14 mm
Thread cutting, Whitworth	(24) 4 - 48 TPI	(24) 4 - 48 TPI	(24) 4 - 48 TPI
Tailstock			
Tailstock quill diam.	60 mm	75 mm	75 mm
Tailstock taper	MT 4	MK 5	MK 5
Tailstock quill stroke	150 mm	180 mm	180 mm
Drive capacities			
Headstock motor rating	5.5 kW / 400 V	7,5 kW / 400 V	7,5 kW / 400 V
Motor rating Y / Z axis	1 / 1.5 kW	1 / 1,5 kW	1 / 1,5 kW
Dimensions/Weight			
Dimensions (LxWxH)	2250 x 1260 x 1250 mm	3700 x 1260 x 1800 mm	4500 x 1260 x 1800 mm
Weight	2500 kg	4300 kg	5000 kg
Part No. with Position indicator	300 825	300 826	300 827

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Standard Equipment

- 3-axis position indicator
- 3-Jaw Lathe
- Quick-change tool holder with 1 magazine
- Steady rest 19-165 mm (Servoturn 560)
- Follow rest 16-95 mm (Servoturn 560)
- Coolant system
- Splatter guard
- Support guard
- Work lamp
- Operator manual

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Optional Servoturn® 410

- 3-jaw chuck, Ø 200 mm, Camlock 1-6, 4000 rpm	Part No. 146 372	- Knurling tool kit, angled, set	Part No. 108 521
- 4-jaw chuck, Ø 200 mm, Camlock 1-6, 4000 rpm	Part No. 146 472	- Turret MT 4	Part No. 105 050
- Clamped turning tools 16 / 20 / 24 mm, 9-piece set	Part No. 108 780	- Quick-adjusting hollow spindle bore stop, size 6 (46-58)	Part No. 103 020
- Indexable Insert Set 16/20/24 mm, 30-pc	Part No. 108 782	- Tool changer WBD 25x140	Part No. 103 292
- Coolant concentrate 5 L	Part No. 103 184	- Tool changer WBD 32x140	Part No. 103 294
- Live center MT 4	Part No. 106 755	- Oscillation elements LT 55	Part No. 103 322
- Live centers MT4, assorted set	Part No. 106 790	- Power Worker chip lift-off device	Part No. 123 040
- Knurl holder shaft H20, B14, 140 mm total	Part No. 108 520	- Accessory set, MT 4 (8 pieces)	Part No. 104 594

Optional Servoturn® 560

- 3-Jaw Lathe Chuck Cast-Iron 315 mm	Part No. 116 523	- Tool Holder WCD 40X170	Part No. 103 304
- 4-Jaw Lathe Chuck Cast-Iron 315 mm	Part No. 116 625	- Tool Holder WCD 45X170	Part No. 103 305
- 4-Jaw Face Plate Chuck 315 mm	Part No. 116 674	- Tool Holder WCH 50X160	Part No. 103 307
- Soft Jaw Pads 315 mm (3-Jaw Chuck)	Part No. 116 553	- Tool Holder WCJ 40X160	Part No. 103 308
- Soft Jaw Pads 315 mm (4-Jaw Chuck)	Part No. 116 653	- Tool Holder WCJ 50X160	Part No. 103 309
- Clamped Turning Tool Set 25 mm	Part No. 108 670	- Reduction Sleeve MT 5/2	Part No. 103 835
- Indexable Insert Set 25 mm, 30 pcs.	Part No. 108 675	- Reduction Sleeve MT 5/3	Part No. 103 840
- Tool Holder WCD 32X150	Part No. 103 301	- Reduction Sleeve MT 5/4	Part No. 103 845
- Tool Holder WCD 32X170	Part No. 103 302	- Live Center MT 5	Part No. 106 760
- Tool Holder WCD 40X150	Part No. 103 303	- Pivoted Mounts LK 66	Part No. 103 323

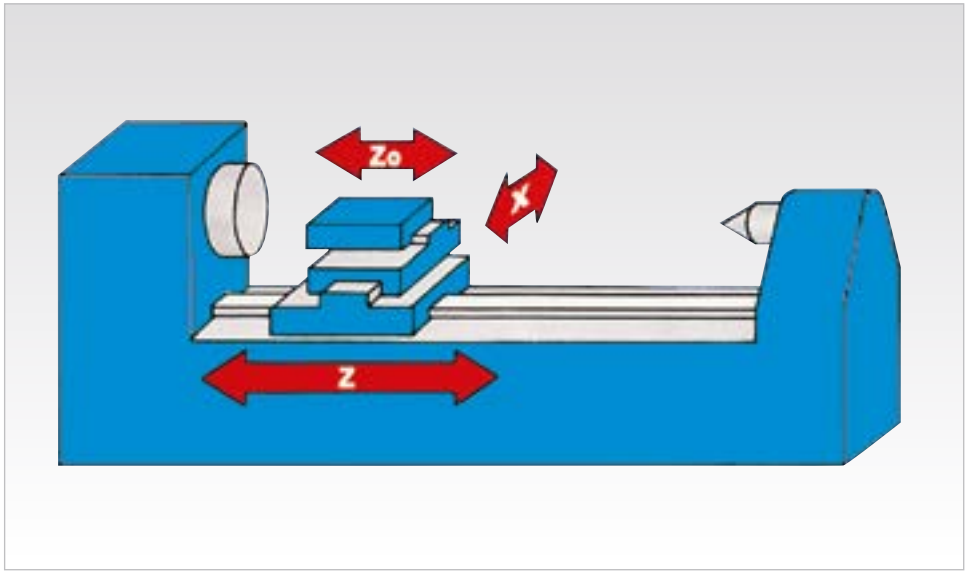
3-axis position indicator

X.pos 3 VC

for machines with constant cutting speed

- increased accuracy
- lower error rate
- higher operator safety
- significant time savings
- increased productivity
- easy to read display
- user-specific functions
- clear keyboard layout
- resolution 0.01 / 0.005 mm
- default coordinates
- maintains the axis position when the display is turned off
- storage for 10 tools
- radius / diameter toggle
- mm/inch conversion
- display of top slide (Z0) and bed slide (Z1) either individually or as differentiation/summation circuit for lathes

Position Indicators... an absolute necessity for all machine tools



CNC level accuracy and surface quality:
• face turning with automatically controlled constant cutting speed

Electronic support clamping:
• unintentional movements are impossible

Electronic stops for X and Z axis:
• precise and reproducible

LED Lighting Technology:
• excellent lighting is a must for good work

New base and much more:
• High-tech, yet extremely user-friendly!

Extremely quiet operation even at high chip removal rates (7 mm machining depth (radius) in 1.0721 free machining steel)

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