

Precision in all dimensions



# E-Series Precision Lathes with Automated Cycles

 **WEILER**

[www.weiler.de](http://www.weiler.de)

BLUECOMPETENCE  
Alliance Member

Partner of the Engineering Industry  
Sustainability Initiative

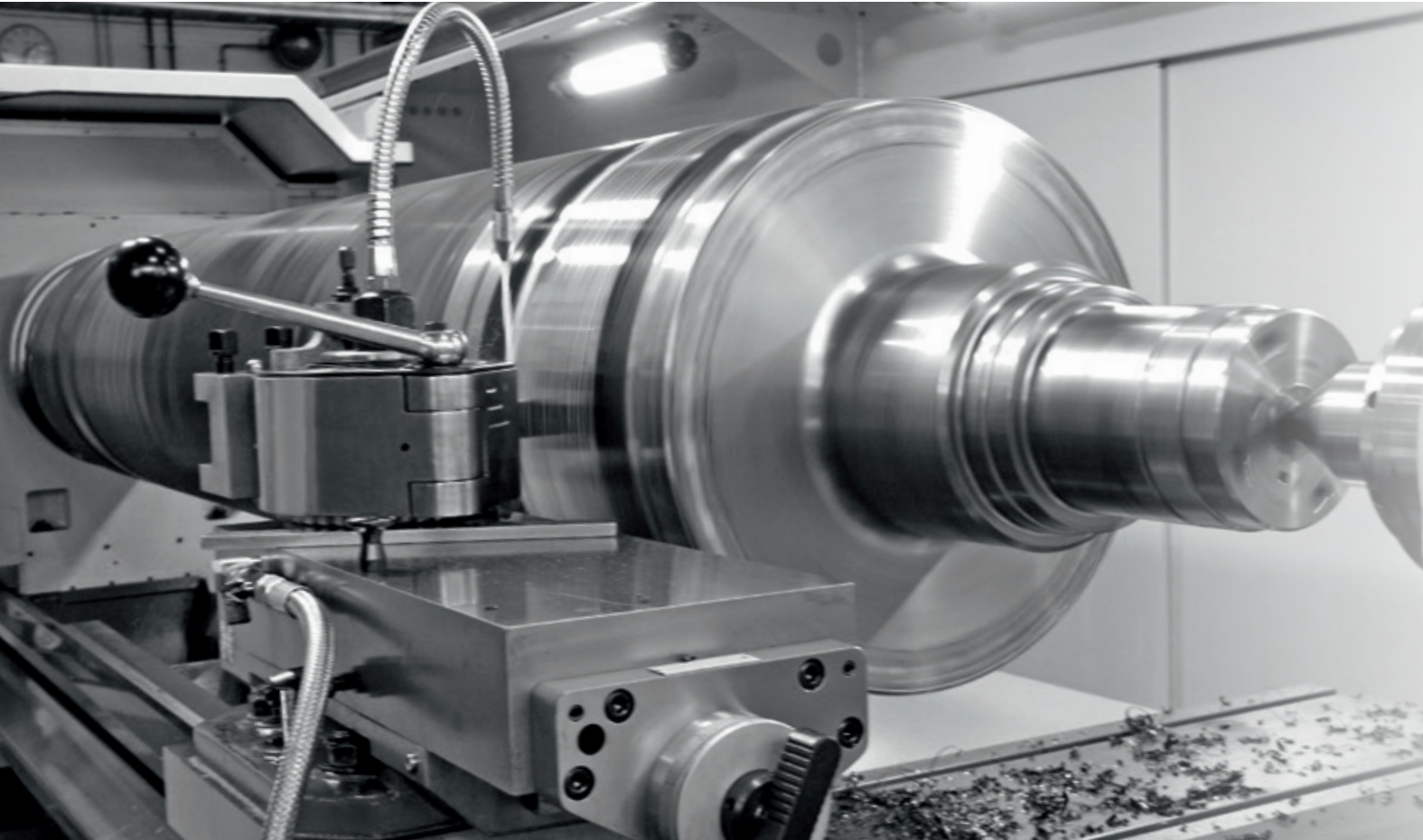
Service

Radial Drilling Machines

CNC Lathes

Cycle-Controlled Lathes

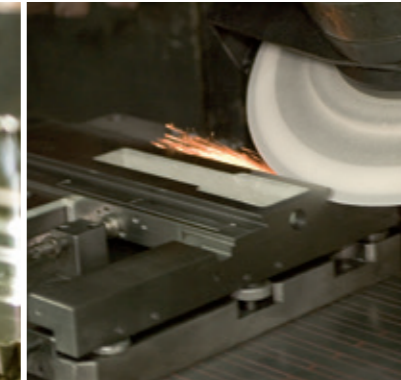
Manual / Servo Conv. Lathes



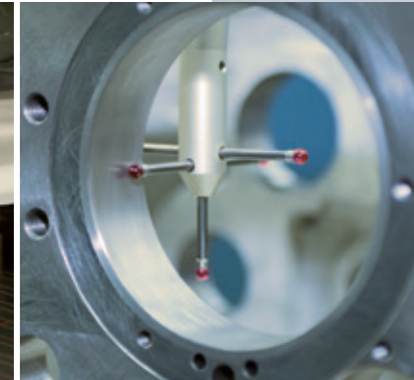
Grinding a machine bed



Gear wheel production / hobbing



Grinding the dovetail guides



Measuring the headstock housing



WEILER trusts in its own apprenticeship program



State-of-the-art assembly line for the conventional range



The company history of WEILER Werkzeugmaschinen GmbH goes back to 1938. From the very beginning, precision lathes named WEILER have earned themselves an excellent reputation amongst craftsmen as well as in industry. In 1990, VOEST-Alpine Steinel Werkzeugmaschinen GmbH acquired the company. Under the guidance of Friedrich K. Eisler, who took over the management of the company in 1991, WEILER became established in international markets. The VOEST Alpine product portfolio was included in the WEILER product range, and the company was restructured and moved to Emskirchen, near Nuremberg, Germany.

### New start under family ownership

Since 1995 WEILER became a family owned company, again with Friedrich K. Eisler as the sole managing shareholder. The entry to the management board of his two sons Mag. Alexander and Michael Eisler, MBA in 2002 signalled the next step in setting the course for the long-term development of the company. With this new orientation WEILER has become one of Europe's largest and best known manufacturers in its field. A company that can quickly and flexibly respond to individual customer needs.

### Fascinating Range

Conventional precision lathes and powerful CNC turning centers complete the extensive WEILER product range. It is one of the most varied on the market: no other lathe manufacturer can offer such variety from a single source. WEILER machines set the standard in vocational training facilities as well as in demanding industrial production environments.

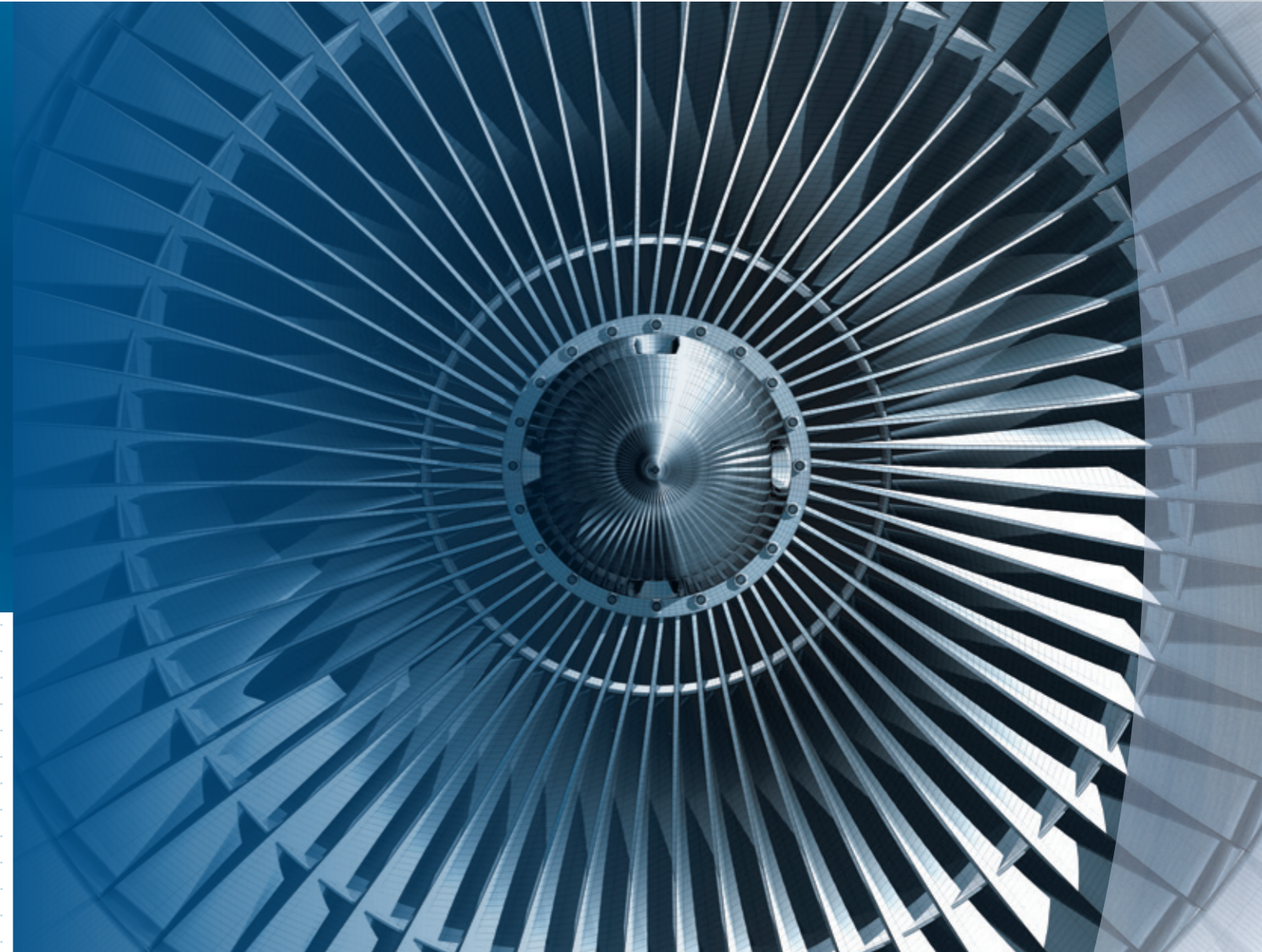
### A strong team ...

WEILER has its own apprenticeship program and currently employs 500 people. It develops and produces innovative and high quality WEILER lathes, ensures a high standard of service and provides an almost limitless supply of spare parts. A world wide installed machine base exceeding 150,000 units is proof of the outstanding acceptance of the machines built in Emskirchen.

### ... and a strong location

WEILER machines are developed and built in Germany. The high level of domestic content underlines our commitment to Germany as a manufacturing base. No other lathe manufacturer has such strong representation in Germany. An efficient and highly cost-effective production facility for large components in the Czech Republic completes WEILER's strategic manufacturing infrastructure.





## WEILER E-Series machines are masters of efficiency.

Their ergonomics, user-friendliness and long-term precision are the basis for fast and faultless results. The unsurpassed and easy-to-use WEILER developed graphical user interface (GUI) makes them unique.

This allows a number of cycles that are stored in the controller to be called at the touch of a button. These can then be run either individually or as part of an automated sequence. The returns for the user are shorter programming times and extremely efficient one-off and small batch production.

## Typical E-Series: up to 3 x more efficient!

Under the bottom line, each E-series machine can replace up to three conventional machines. There is also maximum efficiency in the power consumption – through effective use of the latest energy-saving drives.

## Demand the original!

WEILER is the inventor of the cycle-controlled lathe. Our experience, our quality-consciousness and software expertise reap benefits for you: in day-to-day operation and in your balance sheet.

## Energy efficiency – a WEILER priority

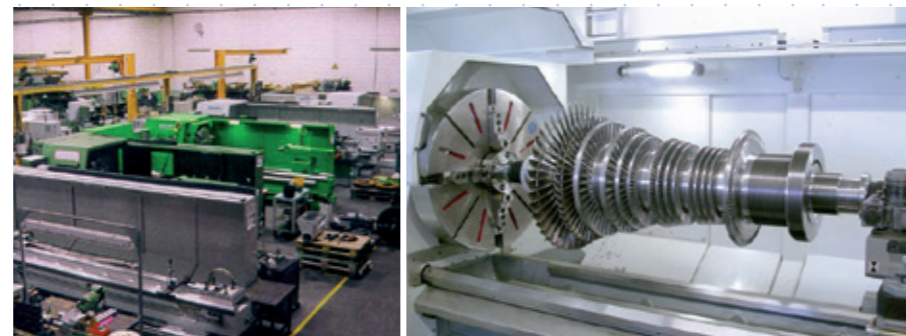
WEILER cycle-controlled lathes implement their energy saving potential through the integral **TIM** software.

Energy efficiency with **TIM** means:

- T**imer-controlled Emergency Stop operation from the standby mode according to the requirements of the operator
- I**ntelligent drive management with energy recovery: Dynamic energy management controls the flow of energy within the machine. Instead of pointlessly converting excess braking energy to heat, it is fed back into the supply network.
- M**achine status determines the energy management of ancillary components: Only the ancillary components that are required for the active machining process are powered up, all others are shut down.

Important applications for E-Series machines are the energy sector and oil industry. In addition to this, there is almost no other technical field that does not employ a WEILER E-Series lathe.

Impressively sized components are machined with the highest precision



Final assembly of the E90/E110/E120 range



## Fast and simple communication between man and machine

The 3 basic principles for working with all E-series machines:

- 1) Simple workpieces are processed in the same way as with a conventional machine, only more efficiently.
- 2) Elaborate parts are processed in the same way as with a conventional machine, only faster.
- 3) Complex parts are processed in the same way as with a CNC machine, only more easier.



Clear user interface with 15" screen and membrane keyboard with short-stroke keys

Even without prior programming knowledge, the smart WEILER software guides the operator through the program. Using automated cycles, you can control the E-Series like a "manually operated" machine. Or you can completely program the workpiece contour with the assistance of the geometry processor that can even automatically calculate the points of intersection. For further information, please refer to the separate WEILER control brochure.

### Data transfer interfaces

- ▶ V24 / RS232 (optional)
- ▶ USB
- ▶ Network compatible

### Manual turning

- ▶ Constant cutting speed
- ▶ Oriented "spindle stop"
- ▶ Turning against the stop on all axes
- ▶ Taper turning at any angle
- ▶ Radius turning
- ▶ Storable simple cycles

### Cutting cycle

- ▶ Powerful contour calculator for the calculation of non-dimensioned points of intersection
- ▶ Simple modification of existing workpiece contours
- ▶ Free definition of raw contours for forged and cast parts
- ▶ Monitoring of the tool angle

### Threading cycle

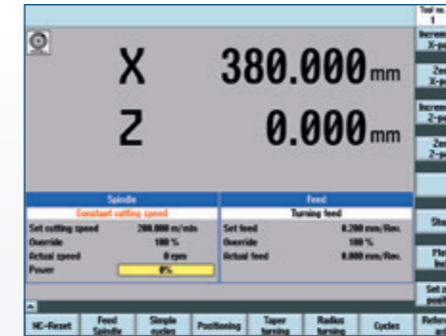
- ▶ Pitches: metric, inch, modular, DP
- ▶ Infeed types: flank infeed, API mode for oil-tight and gas-tight threads, trapezoidal threads
- ▶ Thread re-cutting: input through "teach-in" or also manual re-cutting

### DXF file import (optional)

- ▶ Workpiece contour extracted from fully imported drawings in the DXF format from a wide variety of CAD systems
- ▶ Free selection of layers and contour elements
- ▶ Mirroring and scaling of the workpiece contour

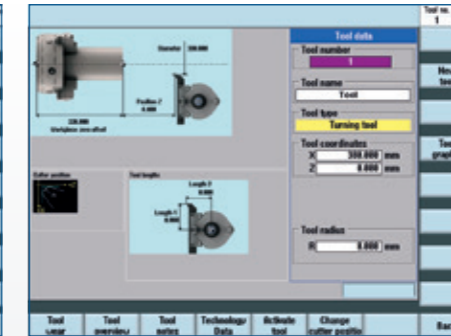
### DIN-ISO programming

- ▶ Creation, editing and processing of DIN-ISO programs



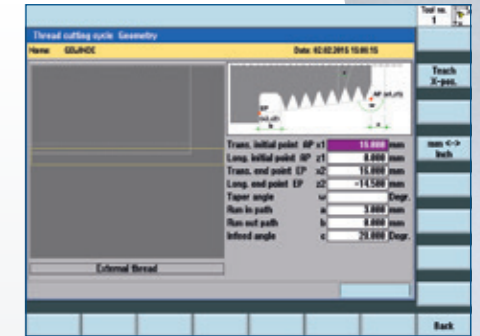
### Straightforward input and display of machine data

Machine and processing data are entered according to practical requirements and are clearly displayed.



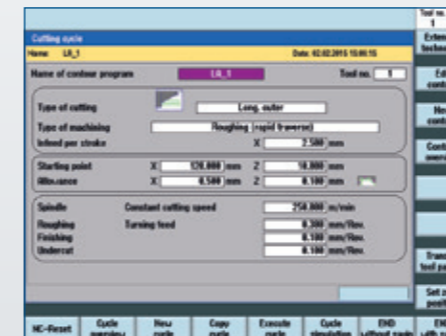
### Tool management

Simple, menu-controlled input and management of tool data with the capability of setting-up a user-specific technology database.



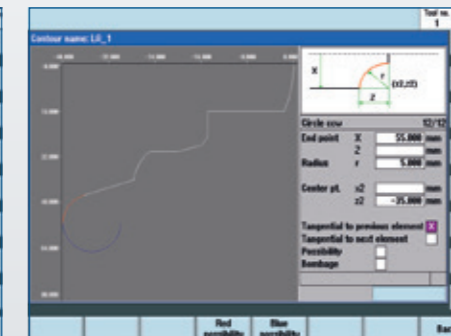
### Thread cutting cycle

Only little data is required for the input of the thread geometry.



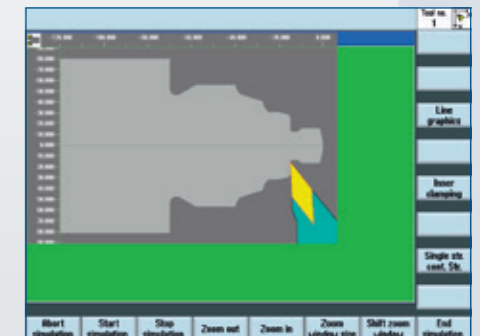
### Cutting cycle technology

Cutting is possible longitudinally and crosswise with any desired technology.



### Cutting cycle geometry

The contour is generated by stringing together simple contour elements. The calculation of the points of intersection occurs automatically.



### Simulation

The machining of the workpiece can be simulated through wire models or solid models.

### Grooving cycle

- ▶ Wide variety of machining technologies
  - Standard grooving
  - Step grooving
  - Turn cutting
  - Finishing of existing grooves
- ▶ Grooves on tapers or diminishing diameters
- ▶ Fast contour description without need for calculation

### Bolt hole drilling cycle (optional)

- ▶ To produce bore holes and threads, the drilling axis in X or Z can be selected.

### Graphic display

- ▶ Wire model simulation, solid model simulation

### Thread cutting cycle

- ▶ Picking up existing threads with stationary or turning workpiece
- ▶ Cutting of multiplex threads without starting point offset
- ▶ Cutting of almost all types of thread, e.g. API, degressive, progressive pitches
- ▶ Spindle rpm changes during machining possible

### Drilling / milling cycle (optional)

- ▶ Face milling (e. g. squares)
- ▶ Outer surface milling (e. g. parallel keyway)
- ▶ Hole pattern
- ▶ Engraving

### Raw part contour definition

- ▶ Simple input of the contour of precast workpieces enables efficient machining.

## E30: Compact with integral success glue

## E40: Ergonomic power pack



E30 x 750



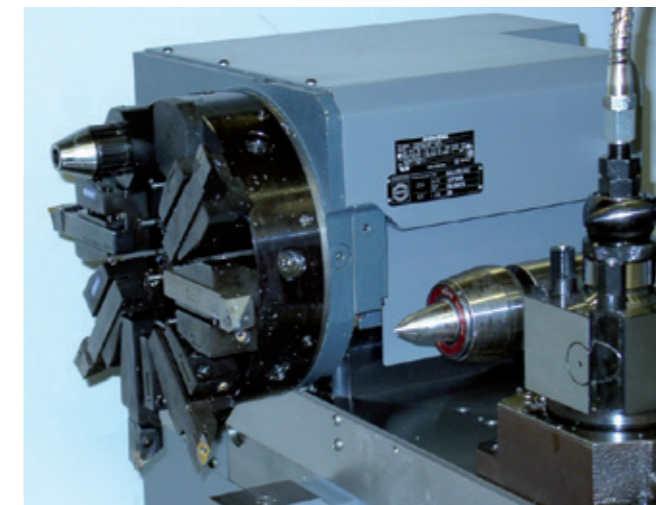
E40 x 1000

Even the smallest E-series machines already feature digital drive technology and are equipped with a state-of-the-art CNC controller as well as user-oriented WEILER software.

The machine

- ▶ Enables workpiece production with the utmost accuracy
- ▶ Offers high spindle speeds and very smooth running for extremely fine workpiece surfaces
- ▶ Enables high precision handling for manual turning operations through the operating panel with handwheels that moves together with the bed slides
- ▶ Ensures ergonomic machining through good accessibility
- ▶ Enables fatigue-free programming through a pivoted screen unit
- ▶ Offers a number of housing versions that are specific to demands

Technical Data		E30	E40
Distance between centres	mm	750	1.000
Swing over bed	mm	330	435
Swing over cross slide	mm	160	200
Cross slide travel	mm	180	260
Width of bed	mm	240	330
Drive power at 60 %/100 % duty cycle	kW	11/9	20/17
Max. torque at spindle	Nm	165	450
Spindle nose size acc. to DIN 55027	size	5	6
Spindle bore	mm	40,5	66
Spindle diameter in front bearing	mm	70	110
Speed range	min <sup>-1</sup>	1-4,500	1-3,500
Feed force longitudinal	N	6,000	10,000
Rapid traverse rate Z/X	m/min	8/4	8/4
Feed range	mm/rev	0.001-50	0.001-50
Thread cutting range	mm	0.1-2,000	0.1-2,000
Tailstock quill diameter	mm	50	65
Tailstock quill taper	MT	3	4
Weight approx.	kg	1,600	3,400
Acceptance accuracy	DIN	8605	8605



8 station disk turret with / without tool drive

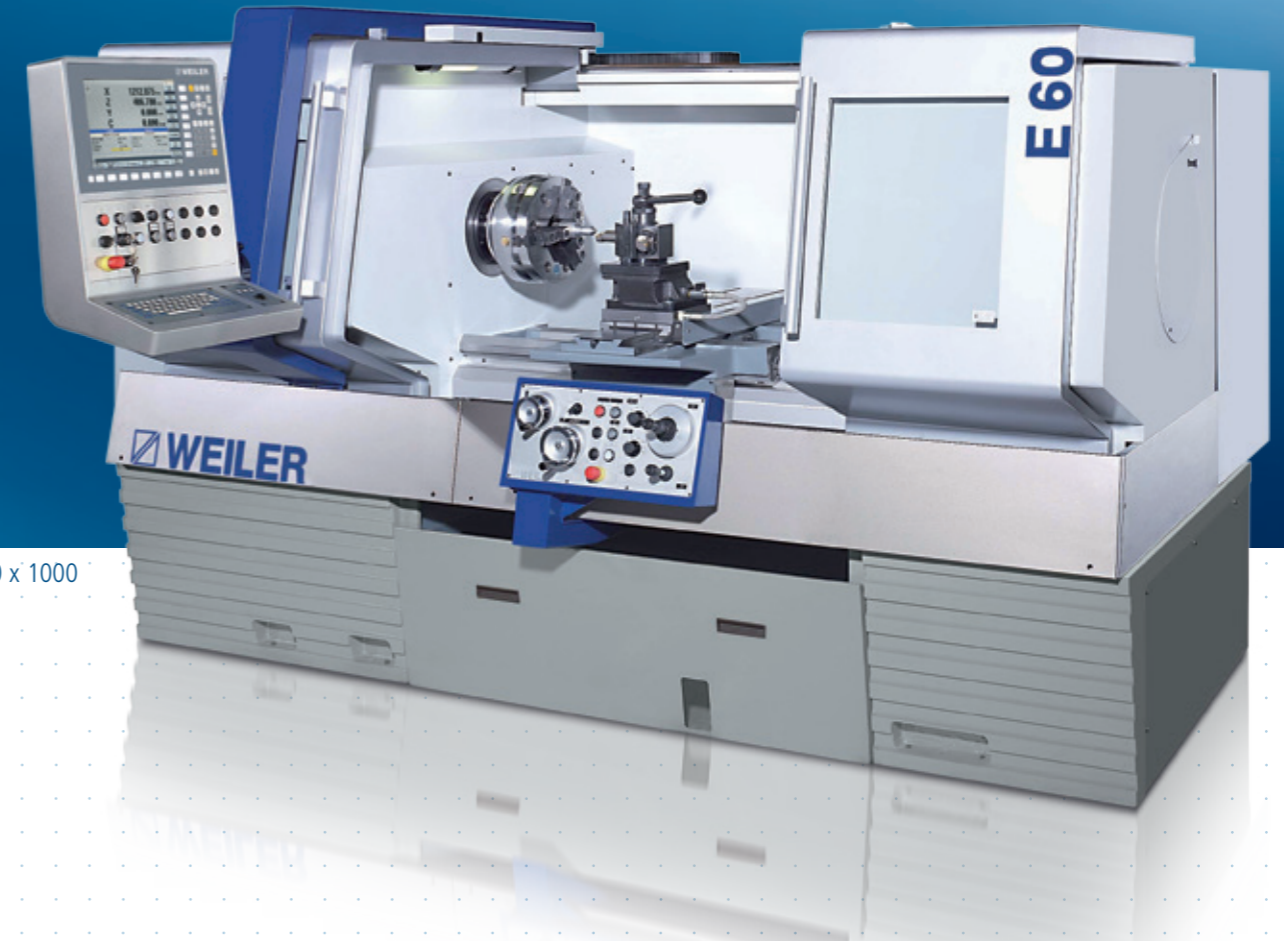
A particularly impressive feature of the WEILER E40 cycle controlled lathe is its tremendous cutting performance. This is enabled by the main drive with a power output of 20 kW and the newly conceived headstock with a spindle bore of 66 mm and heavy-duty bed with a width of 330 mm. The WEILER E40 combines this performance with excellent ergonomics: the controller can be swivelled as desired into any position; the working area and operating elements are "cleanly" separated from each other. Three sliding cover versions are available to provide a perfect match with the range of parts that are to be produced.

## E50<sup>HD</sup>: Power and precision in perfection

## E60: Strong concept and pure power



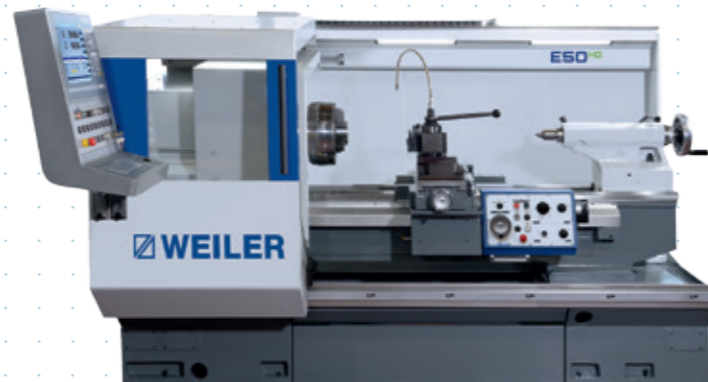
E50<sup>HD</sup> x 2000



E60 x 1000



The E50<sup>HD</sup> is the right choice when a machine for high-performance turning is needed. The E50<sup>HD</sup> combines power and precision and impresses even the most demanding of users through its small footprint, low energy consumption, excellent serviceability and an innovative, extremely user-friendly design.



The E60 impresses through a balanced machine concept with high cutting performance. This is achieved through a main drive with 25 kW power output in conjunction with a two-stage ZF gearbox.

The robust headstock, the strong main spindle with precision bearings and 83 mm spindle bore as well as the strongly ribbed bed with a width of 380 mm ensure optimum working results with respect to surface quality and precision.

The pivoted screen unit enhances ease of use for data input.

Technical Data		E50 <sup>HD</sup>	E60
Distance between centres	mm	1,000-2,000	1,000-2,000
Swing over bed	mm	570	650
Swing over cross slide	mm	340	400
Cross slide travel	mm	340	380
Width of bed	mm	350	380
Drive power at 60%/100% duty cycle	kW	20/17	25/20
Max. torque at spindle	Nm	1,300	1,700
Spindle nose size acc. to DIN 55027	size	8 (11)	8
Spindle bore	mm	83 (165)	83
Spindle diameter in front bearing	mm	120 (240)	120
Speed range	min <sup>-1</sup>	1-2,500 (1-1,200)	1-2,500
Feed force longitudinal	N	12,000	12,000
Rapid traverse rate Z/X	m/min	10/5	10/5
Feed range	mm/rev	0.001-50	0.001-50
Thread cutting range	mm	0.1-2,000	0.1-2,000
Tailstock quill diameter	mm	80	100
Tailstock quill taper	MT	5	5
Weight approx.	kg	3,800/4,300 (4,100/4,600)	5,200/6,400
Acceptance accuracy	DIN	8605	8605

# E70 and E80: User-friendly giants



E80 x 3000

The E70 and E80 feature the same ease of access and ease of use as the smaller machines.

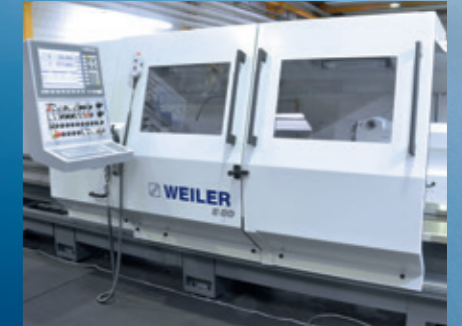
The machines of the 70 and 80 Series

- ▶ Are equipped with high output drives and mechanical headstock gearboxes to maximize torque
- ▶ Offer large spindle bores: 106 mm, 165 mm and 216 mm
- ▶ Even at this size have a high acceptance test accuracy (tool makers accuracy according to DIN 8605)
- ▶ Can be upgraded through a number of proven tool systems and optional features to further increase productivity

Technical Data		E70	E80
Distance between centres	mm	1,000-6,000	1,000-6,000
Swing over bed	mm	720	800
Swing over cross slide	mm	430	510
Cross slide travel	mm	410	410
Width of bed	mm	480	480
Drive power at 60 %/100 % duty cycle	kW	37/30	37/30
Max. torque at spindle	Nm	3,150	3,150
Spindle nose size acc. to DIN 55027	size	11 (15)	11 (15)
Spindle bore	mm	106	106
Other spindle bores	mm	165/216	165/216
Spindle diameter in front bearing	mm	150 (240)	150 (240)
Speed range	min <sup>-1</sup>	1-1,800	1-1,800
Feed force longitudinal	N	20,000	20,000
Rapid traverse rate Z/X	m/min	10/5	10/5
Feed range	mm/rev	0.001-50	0.001-50
Thread cutting range	mm	0.1-2,000	0.1-2,000
Tailstock quill diameter	mm	115	115 (140)
Tailstock quill taper	MT	6	6
Weight approx.	kg	4,500/ 9,000	5,000/ 9,500
Acceptance accuracy	DIN	8605	8605



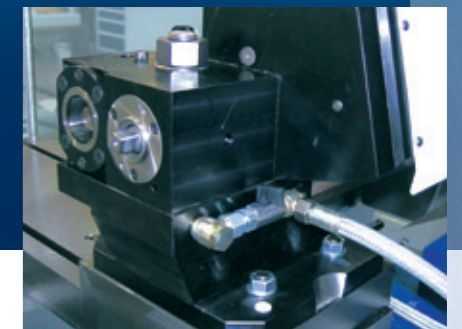
Version with separately moveable screen



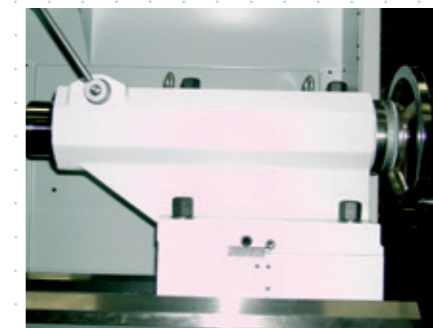
Version with additional sliding cover and splashguard



8 station disk turret with driven tools, 40 mm shank diameter



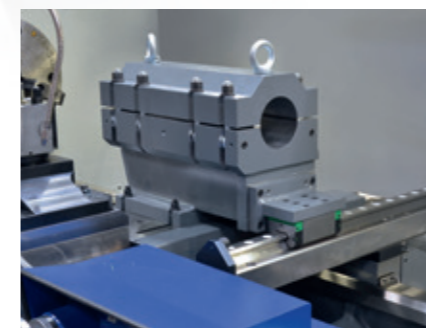
Tool holder head for turning, drilling and milling



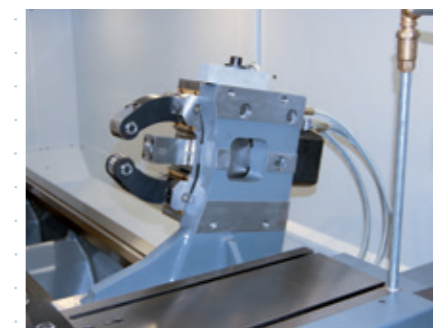
Heavy-duty tailstock with 140 mm quill diameter (E80 only)



Tailstock with hydraulically actuated quill



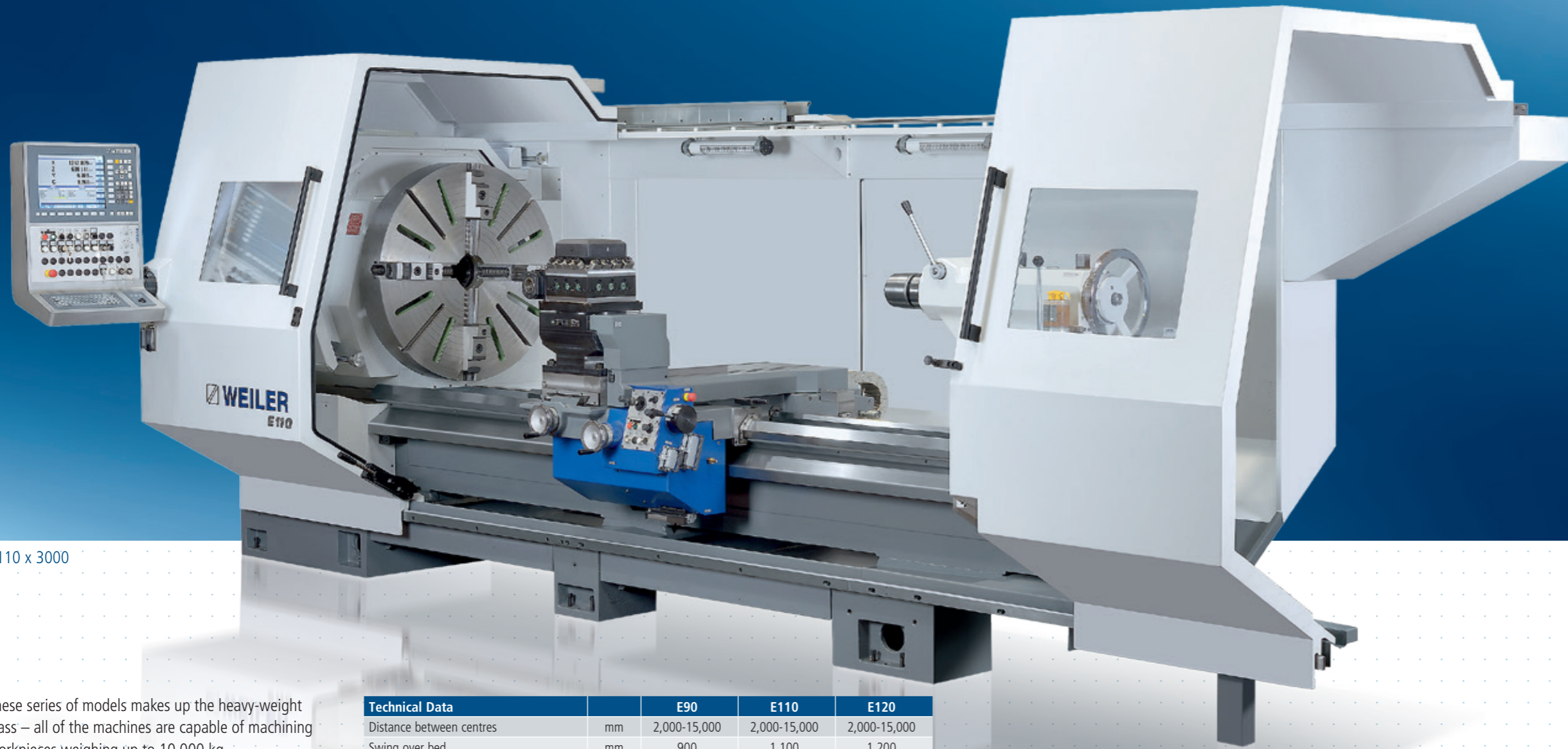
Heavy duty boring bar holder with additional support



Self-centering follower rest, hydraulically actuated



Steady rest, hydraulically actuated



E110 x 3000

These series of models makes up the heavy-weight class – all of the machines are capable of machining workpieces weighing up to 10,000 kg. Excellent accessibility and ease of operation are also key features of these models.

The machines of the 90 to 120 Series

- ▶ Are available for turning lengths of 2,000 mm to 15,000 mm and more
- ▶ Can be equipped with spindle bores of 128 mm, 165 mm, 262 mm and 362 mm
- ▶ Are equipped with high power drives and mechanical headstock gearboxes to maximize torque
- ▶ Can be upgraded through a number of proven tool systems and optional features to further increase productivity
- ▶ Have a high acceptance test accuracy for their size (accuracy according to DIN 8606)

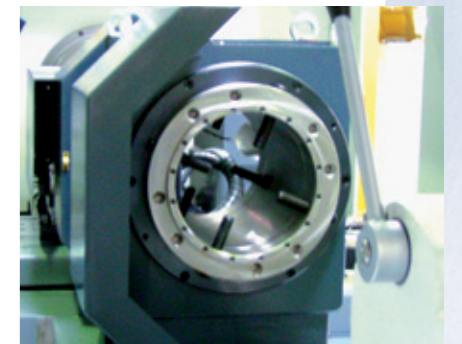
Technical Data		E90	E110	E120
Distance between centres	mm	2,000-15,000	2,000-15,000	2,000-15,000
Swing over bed	mm	900	1,100	1,200
Swing over cross slide	mm	530	730	830
Cross slide travel	mm	590	590	590
Width of bed	mm	600	600	600
Drive power at 60 %/100 % duty cycle	kW	45/37	45/37	45/37
Max. torque at spindle	Nm	6,000	6,000	6,000
Spindle nose size acc. to DIN 55027	size	11 (15/20)	11 (15/20)	11 (15/20)
Spindle bore	mm	128	128	128
Other spindle bores	mm	165/262/362	165/262/362	165/262/362
Spindle diameter in front bearing	mm	178/235/330/448	178/235/330/448	178/235/330/448
Speed range	min <sup>-1</sup>	1-1,120/1-900/1-700/1-500	1-1,120/1-900/1-700/1-500	1-1,120/1-900/1-700/1-500
Feed force longitudinal	N	20,000	20,000	20,000
Rapid traverse rate Z/X	m/min	10/5	10/5	10/5
Feed range	mm/rev	0.001-50	0.001-50	0.001-50
Thread cutting range	mm	0.1-2,000	0.1-2,000	0.1-2,000
Tailstock quill diameter	mm	140	140 (180)	140 (180)
Tailstock quill taper	MT	6	6 (metr. 100)	6 (metr. 100)
Weight approx.	kg	8,500/18,000	9,500/19,000	10,500/20,000
Acceptance accuracy	DIN	8606	8606	8606



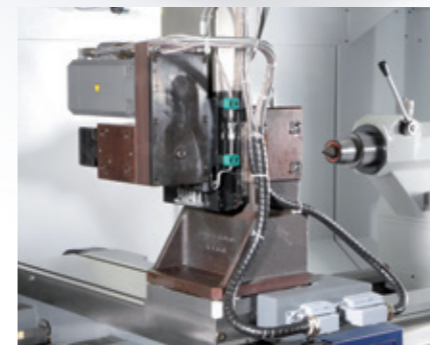
Heavy-duty boring bar holder with additional support and 160 mm bore



Tailstock with automated clamping and dedicated drive



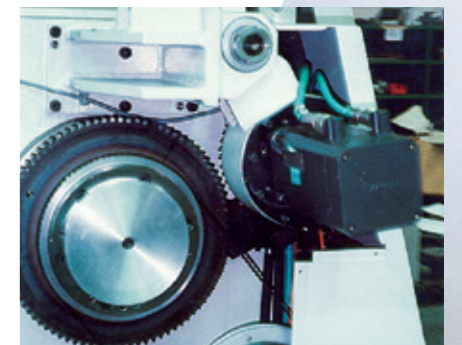
Ring steady rest with 270 mm diameter



200 mm stroke Y-axis (only with E110/E120)



Pneumatically actuated front-end chuck with steady rest



Retractable C-axis



# E150 / E175 / E200: Record holder in size and precision



E150 x 6000

The largest WEILER E-Series machines are absolute top class players when it comes to their weight as well as the dimensions of the workpieces that they can machine. They are also based on the proven Weipert concept that has been an essential part of the WEILER design for decades. Providing dedicated customer-specific solutions is one of our specialist areas.

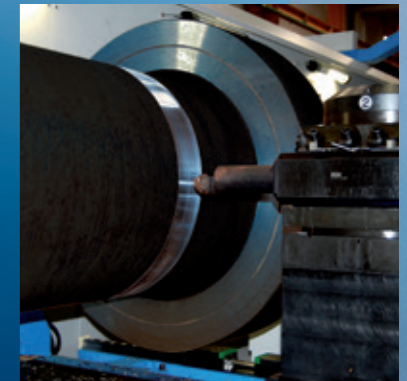
The machines of the 150 to 200 Series

- ▶ Are available for turning lengths of 2,000 mm to 15,000 mm and longer
- ▶ Can be equipped with spindle bores: 165, 262, 362 and 450 mm
- ▶ Are equipped with high output drives and mechanical headstock gearboxes with automatic shift to maximize torque
- ▶ Despite their size provide good accessibility and optimum chip and splash protection through various sliding guard solutions
- ▶ Can be upgraded with a number of proven tool systems and optional features to further increase productivity

Technical Data		E150	E175	E200
Distance between centres	mm	2,000-15,000	2,000-15,000	2,000-15,000
Swing over bed	mm	1,500	1,750	2,000
Swing over cross slide	mm	1,030	1,280	1,530
Cross slide travel	mm	790	790	790
Width of bed	mm	830	830	830
Drive power at 60 %/100 % duty cycle	kW	65/51	65/51	65/51
Max. torque at spindle	Nm	10,000	10,000	12,000
Spindle nose size acc. to DIN 55027	size	15	15	20
Spindle bore	mm	165	165	262
Other spindle bores	mm	262/362/450	262/362/450	362/450
Spindle diameter in front bearing	mm	235/330/448/584	235/330/448/584	330/448/584
Speed range	min <sup>-1</sup>	1-900/1-700/ 1-500/1-300	1-900/1-700/ 1-500/1-300	1-700/1-500/1-300
Feed force longitudinal	N	30,000	30,000	30,000
Rapid traverse rate Z/X	m/min	10/5	10/5	10/5
Feed range	mm/rev	0.001-50	0.001-50	0.001-50
Thread cutting range	mm	0.1-2,000	0.1-2,000	0.1-2,000
Tailstock quill diameter	mm	180	180	180
Tailstock quill taper	MT	100	100	100
Weight approx.	kg	16,000/ 30,000	18,000/ 32,000	20,000/ 34,000
Acceptance accuracy	DIN	8607	8607	8607



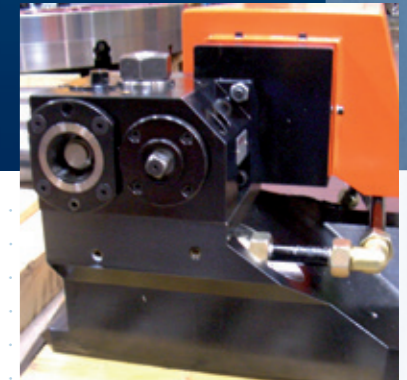
Machining of rolls



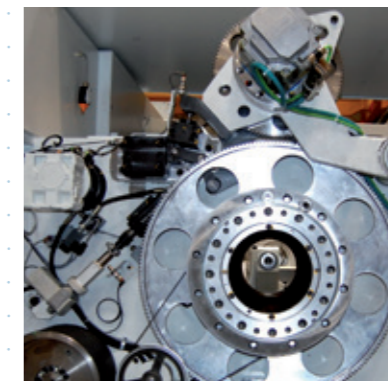
Cylinder machining



Steady rests for diameters up to 1,500 mm



Tool holder head for driven tools, Capto C8 holding fixture



Retractable C-axis



Y-axis with 200 mm travel



## WEILER 5 Point Service Plan

### 1 | Pre-sales technical consultancy

Which machine with which options is best for your needs? Is it better to buy a new WEILER or can your old WEILER be overhauled and brought up to date? Whatever is best for you – we will give you our objective advice.

### 2 | Extended warranty

Freely definable service and maintenance agreements make sure that your machine is available when you need it, they minimize the risk of unscheduled downtime and keep maintenance costs under control.

### 3 | Almost limitless service and spare parts supply

WEILER develops and produces in Germany. That is why we have complete control over all original equipment and spare parts for WEILER lathes. The exemplary availability of spare parts ensures that even after decades of service, a WEILER machine can maintain its pleasingly high value.

### 4 | Second life on demand

On request we can overhaul your WEILER machine down to the last screw and make it so that it is as good as new. This service starts with the exact measurement of the machine and ends with an acceptance test according to DIN standards.

### 5 | The WEILER precision check

Regardless of how long your WEILER has been in service: a precision check is always worth its while. We measure and analyse your machine and provide an objective statement regarding the current status as well as a free quotation of what is needed to restore the precision of your machine according to applicable DIN standards.

We don't perform cosmetic repairs!

#### What can we do to help you?

A number of things. WEILER Service is ready at all times to provide optimum advice, support and service for your machine.

Every WEILER lathe is designed to provide quality and efficiency right from the start and throughout decades of operation – regardless of whether in vocational training, manufacturing, production, maintenance and repair, prototyping – or any other field. A WEILER is never cheap but always worth a lot more than it costs.

#### That is why service pays off

To make sure that a WEILER keeps and increases its value, we have developed an extensive service concept that covers the complete life-cycle of the machine from acquisition through to recycling.

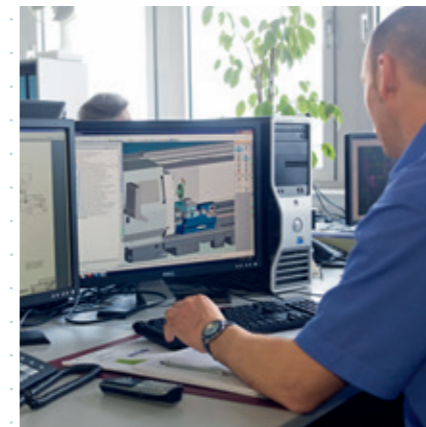
#### Managing values

"Something will only be as good as the way it is looked after" – this motto sums up the way that we view each WEILER that leaves our factory. We want our machines to give you their best, to work with absolute WEILER precision from the first day to the last.

That is why the service lifetime, high precision operation and profitability of our machines exceeds that of most other lathes – good service maintains the value of your WEILER.



Individual and objective advice from WEILER lathe specialists



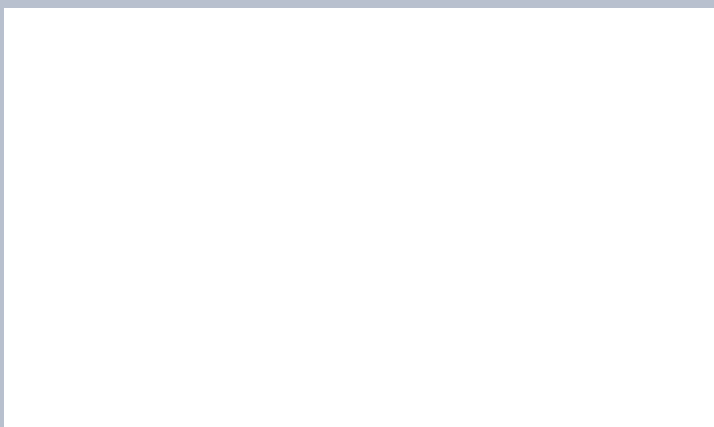
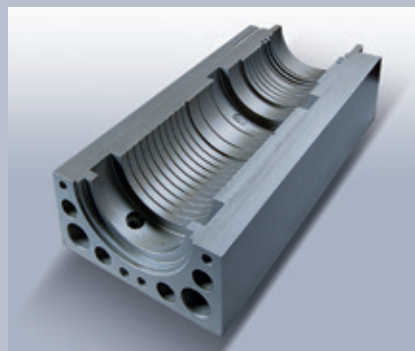
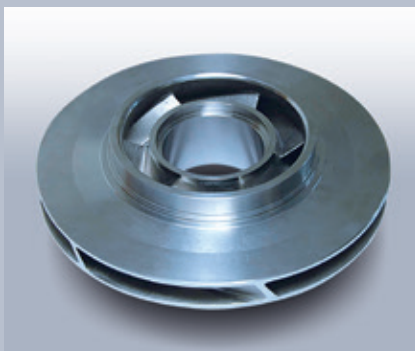
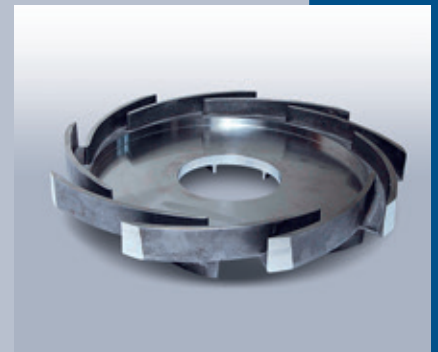
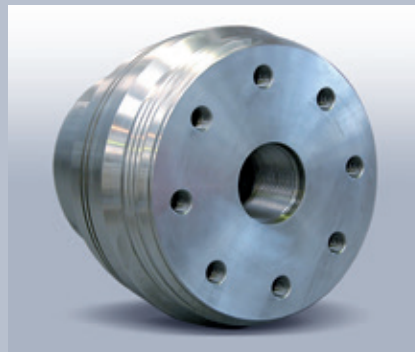
WEILER stands for expertise: from the initial design through to spare part supply



When after many years of hard use in production your WEILER looks like this ... we can turn it into this: as good as new!

# Technical Data

		E30	E40	E50 <sup>HD</sup>	E60	E70	E80	E90	E110	E120	E150	E175	E200
Distance between centers	mm	750	1,000	1,000-2,000	1,000-2,000	1,000-6,000	1,000-6,000	2,000-15,000	2,000-15,000	2,000-15,000	2,000-15,000	2,000-15,000	2,000-15,000
Swing over bed	mm	330	435	570	650	720	800	900	1,100	1,200	1,500	1,750	2,000
Swing over cross slide	mm	160	200	340	400	430	510	530	730	830	1,030	1,280	1,530
Drive power at 60%/100% duty cycle	kW	11/9	20/17	20/17	25/20	37/30	37/30	45/37	45/37	45/37	65/51	65/51	65/51
Max. torque at the spindle	Nm	165	450	1,300	1,700	3,150	3,150	6,000	6,000	8,000	10,000	10,000	12,000
Spindle bore	mm	40.5	66	83 -165	83	106-216	106-216	128-362	128-362	128-362	165-450	165-450	262-450
Speed range	min <sup>-1</sup>	1-4,500	1-3,500	1-2,500	1-2,500	1-1,800	1-1,800	1-1,120	1-1,120	1-900	1-900	1-900	1-700
Feed force longitudinal	N	6,000	10,000	12,000	12,000	20,000	20,000	20,000	20,000	20,000	30,000	30,000	30,000
Tailstock quill diameter	mm	50	65	80	100	115	115 (140)	140	140 (180)	140 (180)	180	180	180
Tailstock quill taper	MT	3	4	5	5	6	6	6	6	6	metr. 100	metr. 100	metr. 100



## WEILER

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