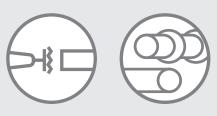


ENDFINISHING MACHINES AND CENTERS









GOOD REASONS FOR ...



CHAMFERING · CENTER · FACE MILLING · THREAD DRILLING

HIRSCHEIDER

- + More than **40 years of experience** in machine tools
- + End finishing machines and centres
- + Unique selling point: vertical bed
- + Strong for special solutions with a high degree of automation
- + Modular structure
- + Parts handling either using portal or robot
- + Service and remote maintenance
- + **Synergy effects** (assembly, construction, software, start-up) through integration into the Pütz Group



- + Established in 1988, approximately 90 employees
- + Many years of industrial experience
- + Central capital base / local flexibility with the greatest degree of freedom and responsibility

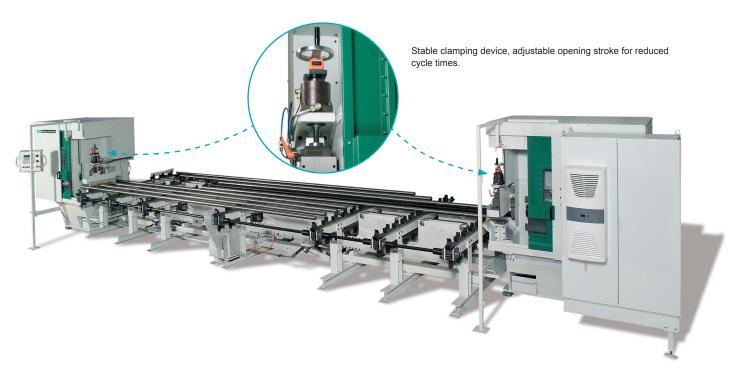
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Endfinishing machine for facemilling and chamfering of both ends of rods





With our Enduro V 400 you save precious time!

Processing operations, such as milling, drilling, centring and thread cutting are carried out on both ends, in one work cycle, and without manual intervention. Custom requests are possible at any time.

Technical details:

Workpiece diameter ranges	15 – 8 mm 20 – 120 mm
Workpiece length ranges	2 000 – 6 000 mm 2 000 – 8 000 mm 2 000 – 12 000 mm

Possible operations:

- Squaring
- Turning round ends
- OD-turning
- Thread rolls
- Bevelling
- Centring
- Thread cutting
- Face milling



Details:



For squaring and bevelling: Longitudinal slide unit with a combination tool head



For use with thread cutting or rolling heads: Longitudinal slide unit

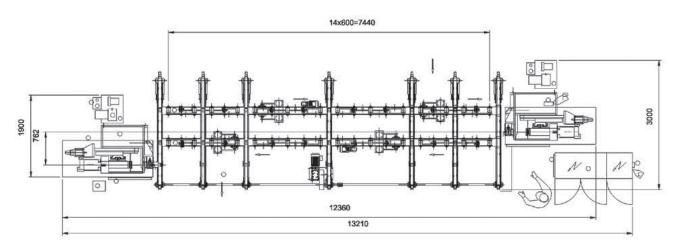


For face milling and chamfering: Cross slide unit



Step chain belt with a longitudinal roller conveyor and left-aligned workpiece limit stop for processing the first side, and a right-aligned workpiece limit stop for processing the second side

Required space:



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Endfinishing machines and end machining centers, as vertical bed solution, for machining of workpieces from 10 – 150 mm diameter





The **Enduro V 500 series** are designed with excellent features. The most important is the use of a "Modular Structure" design. These economical machines can be used for many applications. From "one-of" parts to complete complex machining of workpieces.

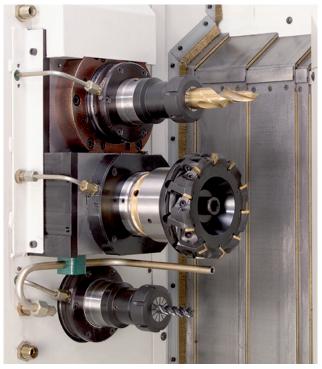
All Enduro machines are based on a completely new machine concept, consisting of two vertically superimposed guideways with working spindles and clamping devices mounted in the working area. This unique design permits, especially for dry machining, a trouble-free chip flow directly into the chip disposal area below.

Technical details:

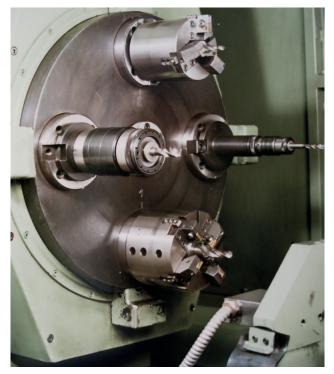
Workpiece diameter	10 – 150 mm
Workpiece length	80 - 500 / 800 / 1 200 / 1 600 / 2 000 / 2 600 / 3 200 / 4 000 / 6 000 / 12 000 mm
Total power consumption	approx. 30 kW
Machine weight	approx. 11 000 – 18 000 kg
Spindle drive	11 kW
Tool adapter	HSK 63
Rapid feed rate of feed units	25 m/min.



Details:



Machining units with 1, 2 or 3 spindles



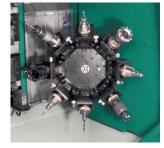
Rigid machining unit with 4-fold disc magazine



Tool magazines, executed as 8- or 16-fold disc magazines



Automatic tool changer with double gripper



Machining units with 4-, 6-, 8-fold turrets for shortest chip to chip time

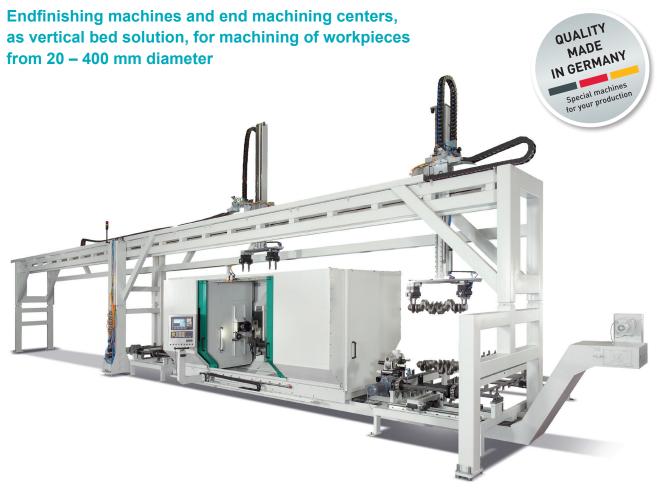


Central working clamping devices, for 3-point or 4-point clamping

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The **Enduro V 800 series** are designed with excellent features. The most important is the use of a "Modular Structure" design.

All Enduro machines are based on a completely new machine concept, consisting of two vertically superimposed guideways with working spindles and clamping devices mounted in the working area. This unique design permits, especially for dry machining, a trouble-free chip flow directly into the chip disposal area below.

Technical details:

Workpiece diameter	20 – 400 mm
Workpiece length	140 – 1 200 / 1 600 / 2 000 / 2 600 / 3 200 / 4 000 / 6 000 / 12 000 mm
Total power consumption	approx. 70 kW
Machine weight	approx. 25 000 – 75 000 kg
Spindle drive	25 kW
Tool adapter	HSK 100
Rapid feed rate of feed units	25 m/min.



Details:



Machining unit with two spindles



CNC controlled facing head with integrated electronical balancing system



Central working clamping devices, for 3-point or 4-point clamping



Automatic tool changer with double gripper



Additional magazines up to 80 tools



Tool magazines, executed as 8-, 16-, 24or 32-fold chain magazine

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ENDFINISHING MACHINES AND CENTERS



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