Flexible Deburring Grinding Solutions for Slabs, Blooms, Billets and Ingots
In Brief: Facts About BRAUN

**BRAUN – experts for cutting and grinding solutions**

- 1848: foundation of company – family-owned enterprise for the production of files and forged commodities
- 1965: start of BRAUN’s cutting and grinding machine business
  - cutting and grinding machines are BRAUN’s core business
  - expert know-how developed in more than 50 years
  - continuous and controlled R & D for optimizing existing /developing new designs and processes
  - strategic cooperation with leading suppliers of cutting and grinding tools

**Abrasive cutting**

**High-pressure grinding**

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In Brief: Facts About BRAUN

**BRAUN today**

- Technology leader for high-performance cut-off, high-pressure grinding and deburring grinding facilities
- From planning engineering (feasibility studies, ...) to integrated turn-key installations
- Life time service support (OEM spare parts, remote service support via modem, equipment health checks, preventive maintenance service, predictive maintenance solutions, trouble shooting support, revamping, upgrading & modernization, etc.)
- World-wide sales & service network (BRAUN hubs in Austria, USA and PR China + 26 authorized agents for 45 countries on all 5 continents)

Some of our top references
Deburring Grinding of Edges at Slab Ends

Condition of torch-cut product ends

- Burr strips
- Metal powder incenses
- Slag reflow
- Local slag baths
Basic Principles of Deburring

Removal of burr and other flaws from product ends

→ Conventional deburring methods

- Scarfing
- Deburrers with rotating hammers
- Deburrers with shear knives

→ BRAUN’s deburring grinding technology

- Highly flexible applicability
  (not only edges at head and tail ends of slab but also faces at head and tail ends of slab and other areas of product surface can be ground)
- Good environmental compatibility
- No impact on metallurgical structure of product
- Excellent reliability

→ Superior to other deburring methods
Key Features of Deburring Grinding

The grinding tool

- ABRASIVE LAYER
- BEVELED RINGS
- FINE GRIT CENTRE

Basic structure of hot-pressed grinding wheel
Deburring Grinding of Edges at Slab Ends

BRAUN deburring grinding machine, type ES 4 P

Deburring grinding machine

Swivel-mounted grinding head
Deburring Grinding of Edges at Slab Ends

BRAUN deburring grinding machine, type ES 4 P

360 ° Rotatable Grinding Head
Deburring grinding of head and tail ends of slab

BRAUN deburring grinding machine, type ES 4 P →
BRAUN deburring grinding machine, type ES 4 P

**Process Description and Technical Data**

- Deburring grinding process: dry, hot or cold
- Motor power: 45 kW, 1500 – 3000 rpm
- Wheel position: 90 ° to grinding direction
- Wheel diameter: 406 mm (16 in)
- Grinding pressure: up to 400 kg (adjustable)
- Infeed speed: 80 mm / s
- Grinding depth: abt. 1.2 mm
- Total cycle time: abt. 4 min for both upper and lower edge of 2000 mm wide x 300 mm thick slab

Possible grinding positions

Technical data
Possible grinding cycles with deburring grinding machine, type ES 4 P:

- 2 grinding passes on the bottom surface adjacent to the lower edge of the cut slab end
- 1 grinding pass on the lower edge of the cut slab end
- 2 grinding passes on the top surface adjacent to the upper edge of the cut slab end
- 1 grinding pass on the upper edge of the cut slab end
- Several grinding passes (depending on slab thickness) on the face of the slab

High flexibility and additional features of deburring grinding machine compared to conventional deburring methods
Deburring Grinding of Longitudinal Edges of Slabs

Burr formation at longitudinal edges

Burr (resulting from traverse grinding of complete slab top surface) at longitudinal edges of slab
Deburring Grinding of Longitudinal Edges of Slabs

BRAUN deburring grinding machine, type ES 2 R

Industrial robot with grinding wheel

Grinding of lower and upper edges while slab is moving

speed grinding on the top 200mm/s

speed grinding on the bottom 100mm/s

workpiece max. 50mm/s
Deburring grinding facility with 2 deburring grinding machines, type ES 2 R
→ Removal of burr from all 4 longitudinal edges from hot slabs (while slabs are being transported on roller table)

View on outlet area of deburring grinding facility →
Deburring Grinding of Longitudinal Edges of Slabs

BRAUN deburring grinding machine, type ES 2 R

Alternating deburring grinding of upper and lower longitudinal edge of moving slab
Deburring Grinding of Longitudinal Edges of Slabs

BRAUN deburring grinding machine, type ES 2 R

Longitudinal slab edge after deburring grinding (1 pass)

Also double chamfer (2 passes) possible
Deburring (Chamfering) Grinding of Round Ingots

**BRAUN deburring grinding machine, type ES 2 R**

Chamfering grinding of head end of remelt ingot after cutting

Electrode with 45 ° chamfer →
Deburring (Chamfering) Grinding of Round Ingots

BRAUN deburring grinding machine, type ES 2 R

Chamfering grinding of rotating stainless steel electrode after cutting
Integrated, tailor-made solutions for deburring grinding of slabs, blooms, billets and ingots are available and can be adapted to specific product and quality requirements.

BRAUN’s flexible design concepts allow retrofitting of deburring grinding machines on existing continuous casting lines, conditioning lines and other process equipment (e.g. abrasive cut-off machines).

Based on specific know-how and experience in grinding, in combination with focused R & D, BRAUN was able to develop robust, reliable and innovative solutions for deburring of semi-finished steel products.

Expert know-how makes the difference.
For Further Information, Please Contact…

… the experts for cutting and grinding solutions

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Thank you very much for your attention!