DRILLING MACHINE

KDM 615

POWERFUL SOLUTIONS – PASSIONATE PEOPLE

CONTENT

- General Information
  - Features
  - Working Range
  - Technical Information
- **K**altenbach **D**rilling **M**edium 615
  - Standard Equipment
  - Optional Equipment
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  - Standard Equipment
  - Optional Equipment
- Measuring System
  - Standard Equipment
  - Optional Equipment
- Transport System
  - Standard Equipment
  - Optional Equipment

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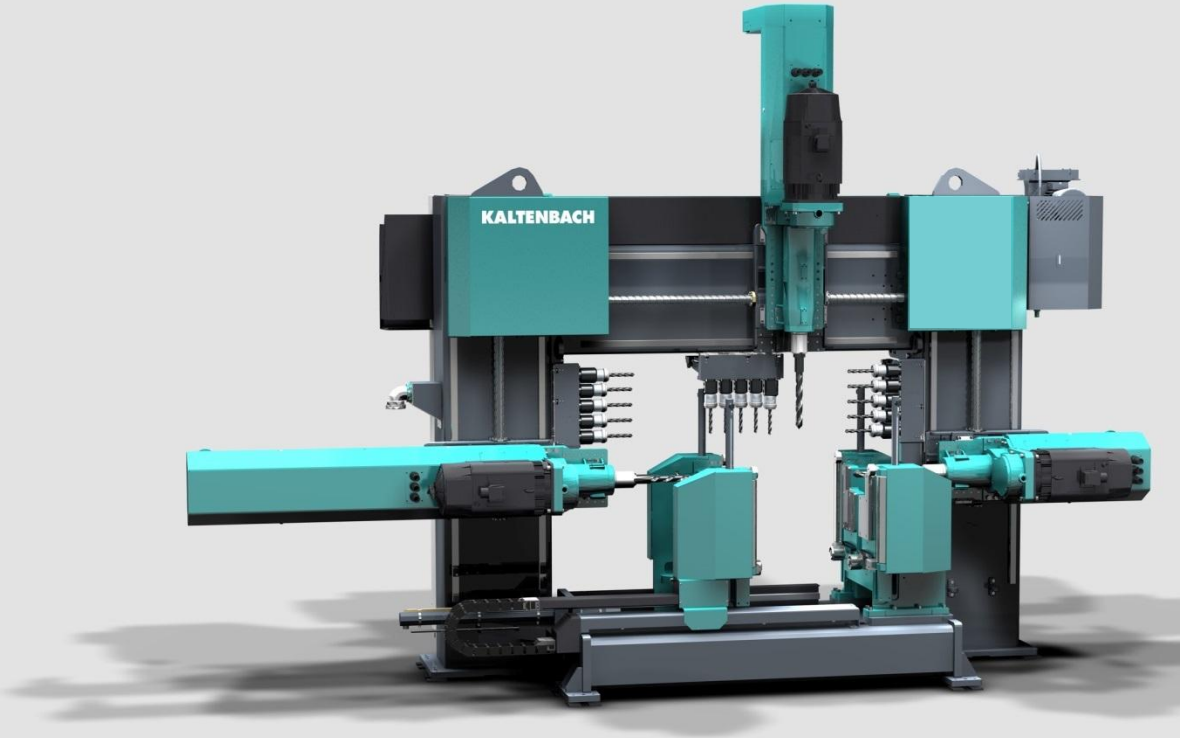

GENERAL INFORMATION

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KDM 615

- Machines built with **passion** and **experience**
- **Strong motors** for **fast and powerful processing**
- **Highest flexibility** regarding **processing technologies**
- **Indirect drive concept** for **high torque** and **less vibration**
- **Reliable tool holder** without wear parts
- **Lateral drill units** are mounted on machine portal for **less vibrations**
- Clamping with **large contact areas** for **longer tool lifetime**
- Long-lasting **high-quality** and **heavy** construction
- User-friendly software to **save time**
- Fast **service support** via webcam and helpdesk
- **Lower maintenance** and **personal costs**

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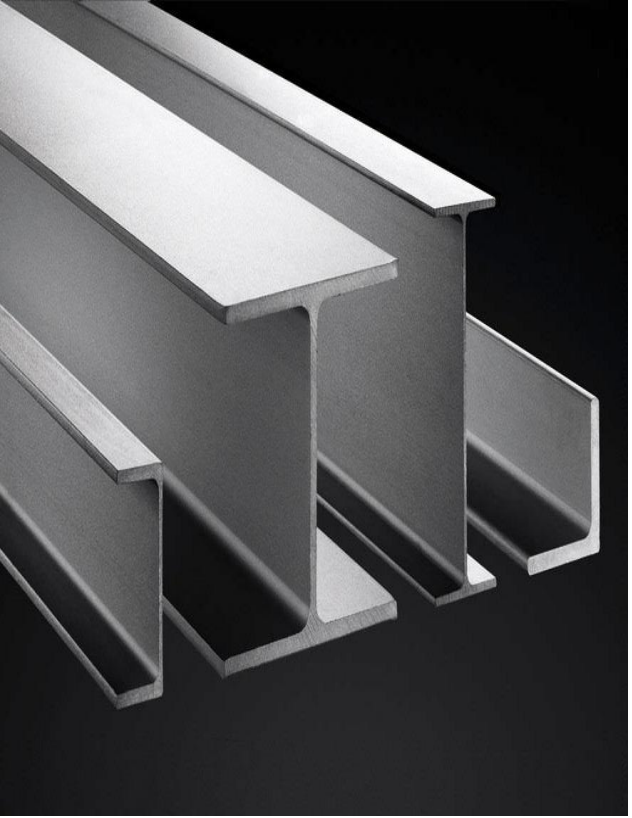

INPUT-DIMENSION

KDM 615

- Max. Working Range
  - 600 x 500 mm
- Min. Working Range
  - 50 x 5 mm

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TECHNICAL INFORMATION

KDM 615

- 3 Axis
- Processing
  - Rotation Speed 150-2500 RPM
  - Feed Rate 10-1500 mm/min
- Positioning
  - Rapid Approach 11.000 mm/min
  - Carriage Positioning 17.000 mm/min

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TECHNICAL INFORMATION

KDM 615

- Drive Performance
  - 3 Axis (each 29,5 kW) 88,5 kW
- Clamping devices
  - 1x Horizontal 22.600 N
  - 4x Vertical each 6.400N
- Tool Changer 3 x 5 Pieces = 15 Pieces

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TECHNICAL INFORMATION

KDM 615

- Weight: 6,5 t
- Machine Dimension: 4570x1700x3720 mm
- Working height above floor: 640 mm
- Compressed air connection: 8 bar
- Air consumption:
  - Without Contour Marking 1000 NL/min
  - With 3 Contour Marking Axes 2600 NL/min
  - With 4 Contour Marking Axes 3450 NL/min
- Electrical Power Supply: 400 V, 50 Hz

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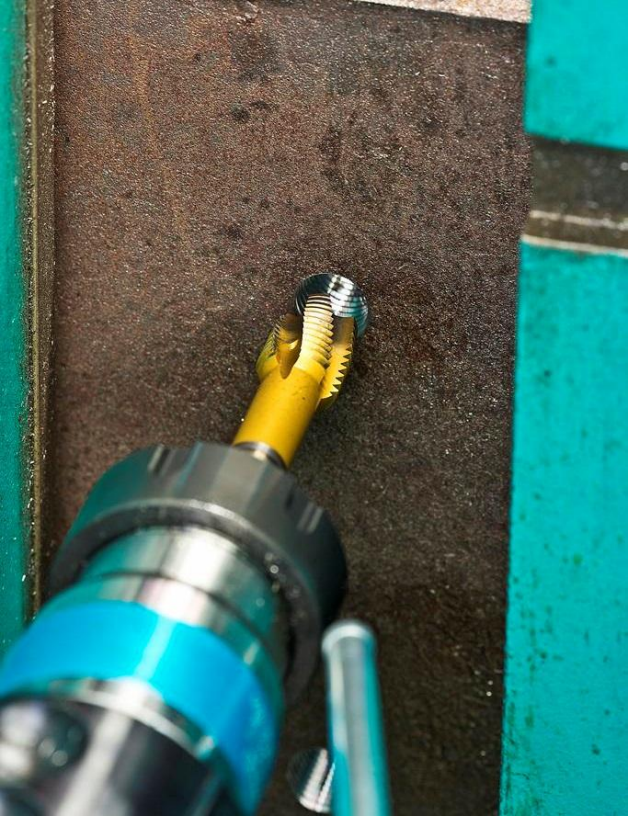

TECHNICAL INFORMATION

KDM 615

- Drilling
  - HSS 6,8 – 50 mm
  - Carbide 12,5 – 40 mm
  - Full Carbide 6,8 – 20 mm
- Milling
  - Diameter 12 - 16 mm
- Contour Marking
  - On 4 Axis
  - Characters, Lines, etc.
- Tapping

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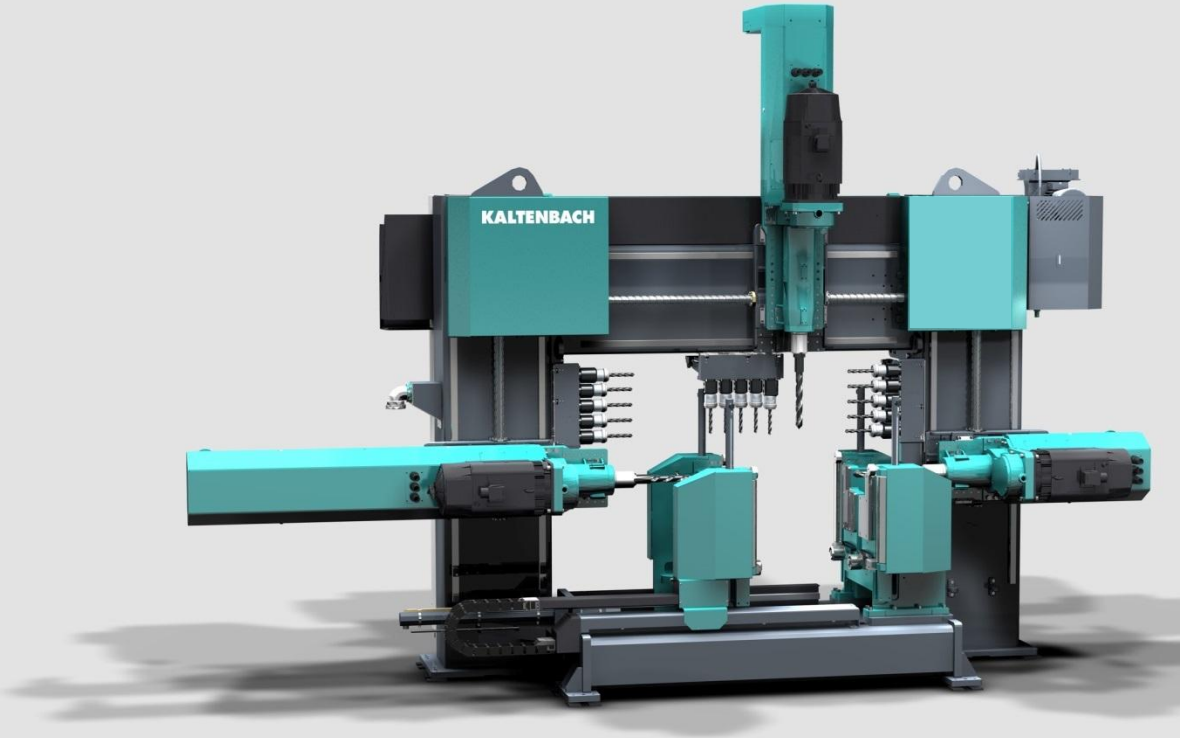

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STANDARD EQUIPMENT

- Stable machine gantry
  - 2 horizontal drill units
  - 1 vertical drill unit
- Drill carriages and spindles in sturdy design

✔ Long-lasting construction for highest requirements

✔ Stable construction for reducing vibration

✔ Less vibration for better processing quality and longer tool lifetime

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STANDARD EQUIPMENT

- Linear guide elements on the frame for high stiffness
- Spindle positioning and feed control via servo-motor and ball screw drive

✔ Fast and precise drill spindle positioning

✔ High production quality

✔ Long tool lifetimes due to constant feed rates

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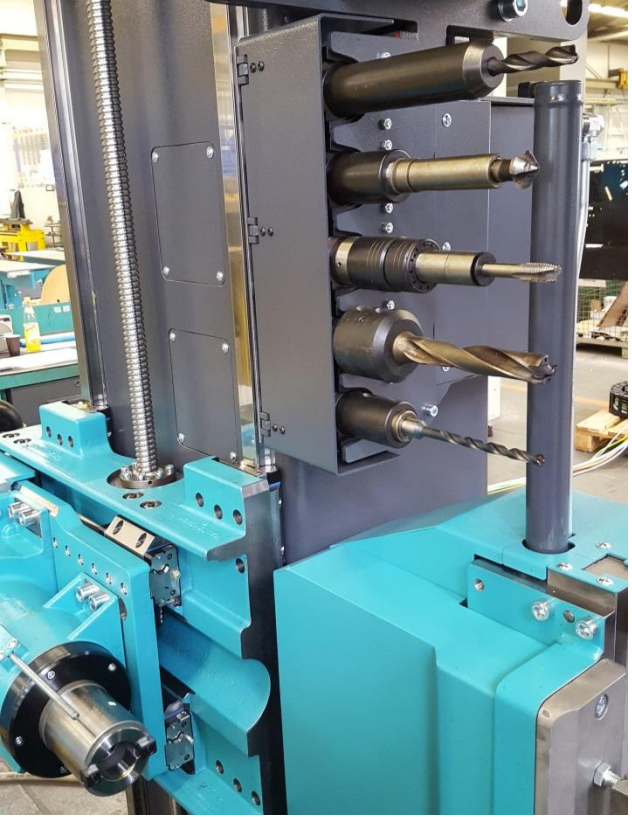


STANDARD EQUIPMENT

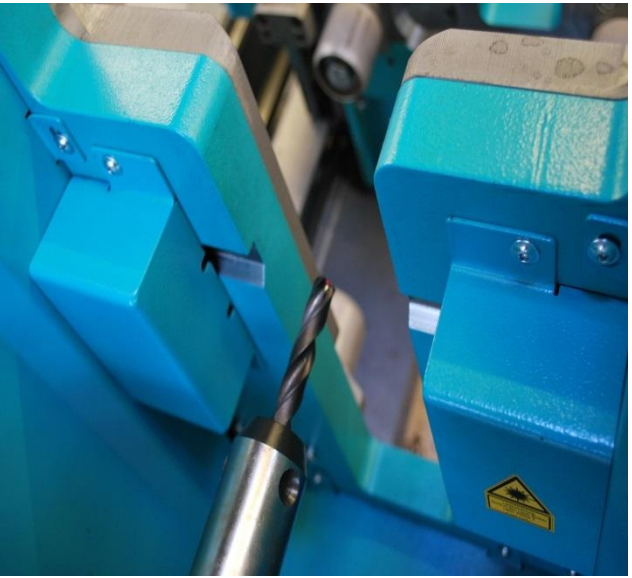
- Tool Changer with 5 tools per axis
  - Stable construction
  - Reliable tool holders
  - Tools fit only in one direction for higher process safety
  - Cover protect tool changer from dirt and chips

✔ Fast and automatic tool changer

✔ High operating comfort due to easy accessibility

✔ High process reliability

STANDARD EQUIPMENT



- Tool length measuring
  - Automatic tool measuring by self-cleaning laser
  - All kind of tools are measured on the fly
  - Tool are rotating during measuring – different geometries (e.g. milling tool) can be measured reliably

✔ High process safety

✔ Reduction of downtimes due to fast approach

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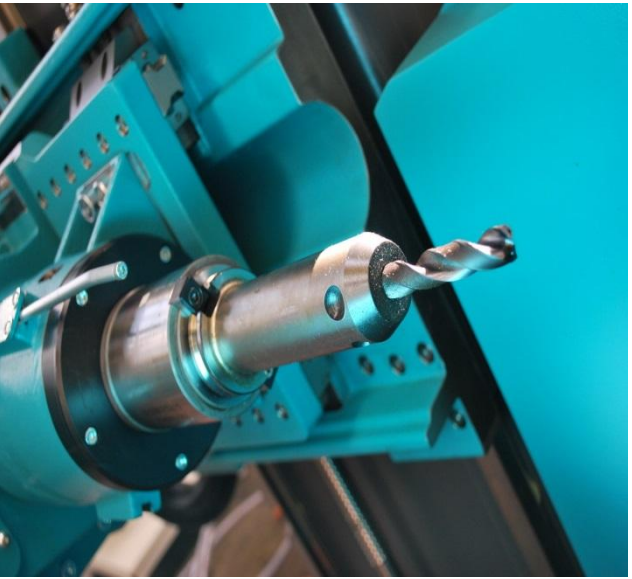
STANDARD EQUIPMENT



- Feed connected air cooling device for tools
  - Inside and outside cooling with minimal lubrication concepts
  - Cooling is only activated during processing
  - Fill level is monitored electronically

✔ Longer tool lifetime

✔ Cost reduction due to minimal lubrication concepts

✔ Less pollution of good pieces and chips

✔ Lower disposal costs

✔ Better environmental protection

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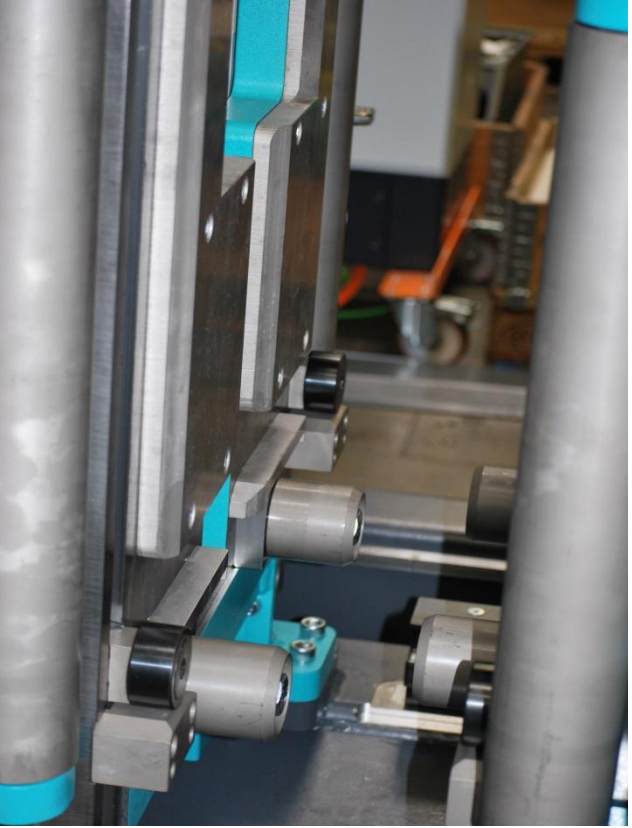

STANDARD EQUIPMENT

- Self-adjusting Clamps
  - 2 Horizontal Clamps & 4 Vertical Clamps
  - Automatic measuring and monitoring of material dimensions
  - Comparison of actual and programmed dimensions - Recalculation of processing positions or error message
  - Roller system on vertical and horizontal clamps to keep material moveable (only if milling or contour marking option is selected)

✔ High clamping power und big contact areas for perfect material fixation

✔ Less vibration lead to higher processing quality and longer tool lifetime

STANDARD EQUIPMENT

- Web sensing unit
  - Detection of actual web center line and deviations
  - Measurement is done with a tool, so processing can start directly after measuring

✔ High process safety

✔ Fully automated

✔ Low non-productive times

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STANDARD EQUIPMENT

- Automatic chip break function for shorter chips
  - Tool are pulled back in regularly time intervals
  - Smaller chips
  - Break function can be adjusted individually

✔ Easier chip removal

✔ Customized adjustments also during processing possible

STANDARD EQUIPMENT

- Chip container
  - Collection of chips in processing area
  - Container is on rollers
  - Manual disposal
  - Container can be pulled out on both machine sides

✔ Easy chip handling by hand possible

✔ Comfortable handling for less efforts

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STANDARD EQUIPMENT

- Heating und cooling device for hydraulic power pack
- Cooling device for switchboard cabinet
- First filling of Oil and Coolant

✔ Working in any surrounding

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OPTIONAL EQUIPMENT

- Chip conveyor for automatic chip removal
  - Replaces chip container
  - Drop height is 800 mm
  - Container has to be provided by customer

✔ Highest automatization

✔ Higher process safety due to less human interacting

OPTIONAL EQUIPMENT

- Hard stamping unit
  - Stamp up to 21 letter without material movement
  - Stamping power 6 t
  - Stamping depth 1 mm
  - Height of Characters 10 mm
  - Max. Length of title block 170 mm
  - Installation between drilling and sawing machine

✔ Parallel hard stamping and drilling

✔ Fastest marking option (about 1. sec per character)

✔ Marking visible even after painting and shot blasting

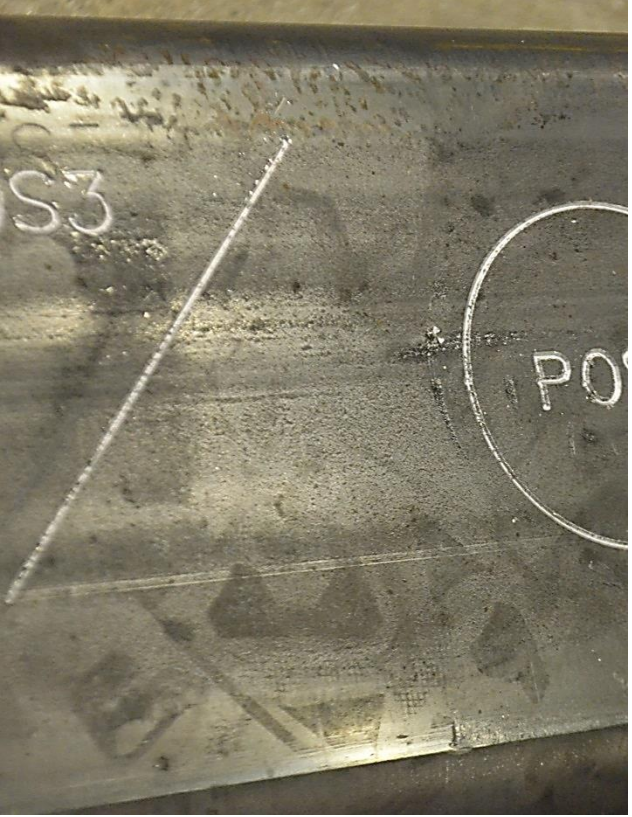
OPTIONAL EQUIPMENT

- Hard stamping unit
  - Number 0-9
  - Letters A-Z (without J,Q and O)
  - Full stop, stroke and hyphen

✔ Parallel hard stamping and drilling

✔ Fastest marking option (about 1. sec per character)

✔ Marking visible even after painting and shot blasting

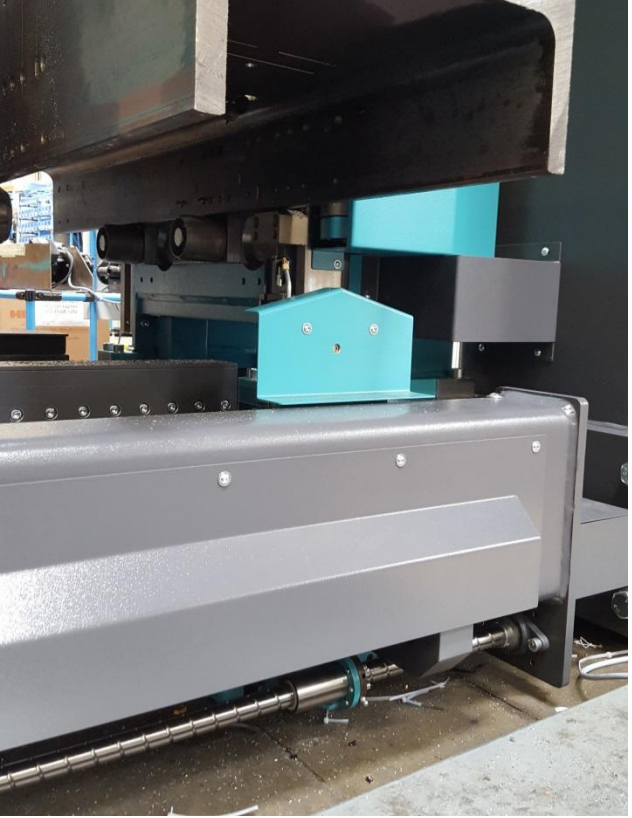


OPTIONAL EQUIPMENT

- Contour Marking – 3 Axes
  - Marking of letter, lines and figures
  - Marking from processing sides – W,Y,Z-Axis
  - Tool for each axis inclusive
  - Marking speed 15 – 130 mm/s
  - Marking depth 0,5 – 1,0 mm
  - Note: Length of infeed side <= Length of outfeed side

✔ Marking of every form

✔ Marking visible even after painting and shot blasting



OPTIONAL EQUIPMENT

- Contour Marking – 4th Axis
  - Additional CNC-axis, controlled by servo motor
  - Marking of letter, lines and figures
  - Tool for each axis inclusive
  - Marking speed 15 – 130 mm/s
  - Marking depth 0,5 – 1,0 mm

✔ Marking of every form

✔ Marking visible even after painting and shot blasting

OPTIONAL EQUIPMENT

- Contour Marking Tool
  - Carbide milling tool

✔ High performance marking due to carbide tool

✔ Optimized for Kaltenbach machines

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OPTIONAL EQUIPMENT

- Heating device for Operating Cabinet
  - Temperature exceeding 35°C

KDM615 M-7

- Cooling device for Operating Cabinet
  - Temperature less than 5°C

KDM615 M-8

- Heating device for Switchboard Cabinet
  - Temperature less than 5°C

KDM615 M-9

✔ Working in every surrounding

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OPTIONAL EQUIPMENT

- Milling of slotted holes - with contour marking

KDM615 M-10

- Milling of slotted holes - without contour marking

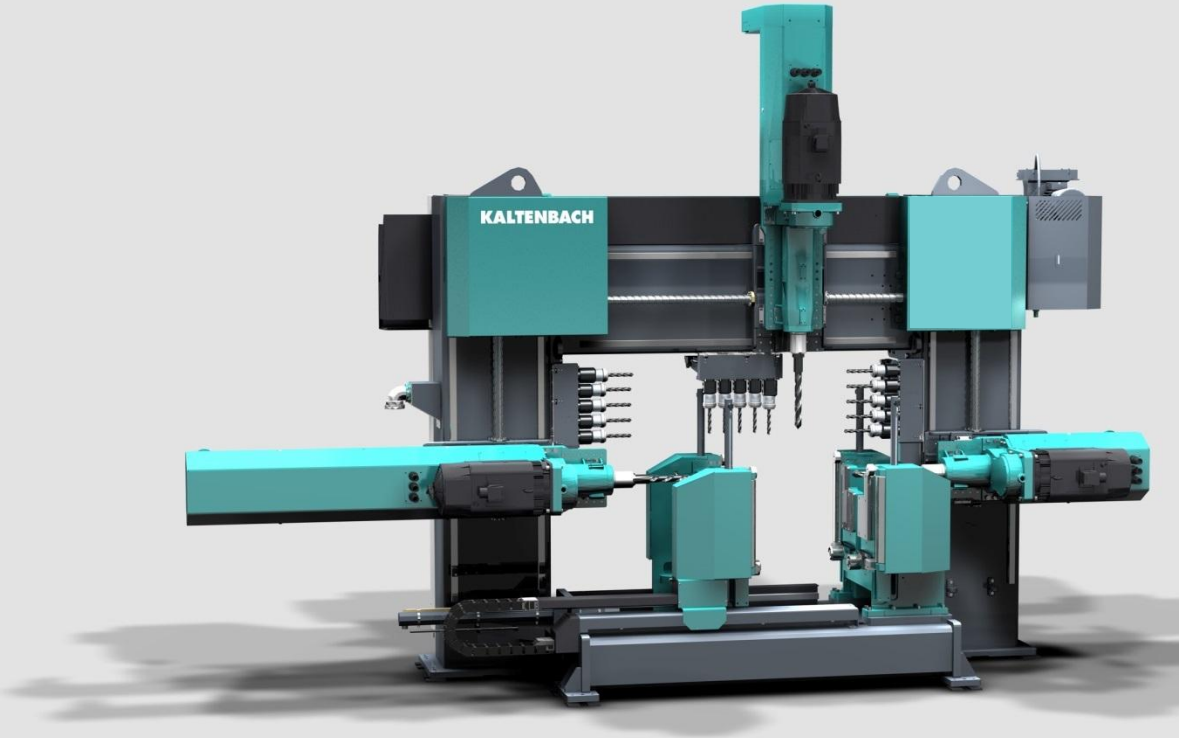
KDM615 M-11

✔ Powerful engine with high rotation rates for milling

✔ Solid spindle construction from Kaltenbach

✔ Spindle placed directly next to machine portal for perfect force transmission and best processing quality

✔ Internal and external cooling for longer tool life



SOFTWARE

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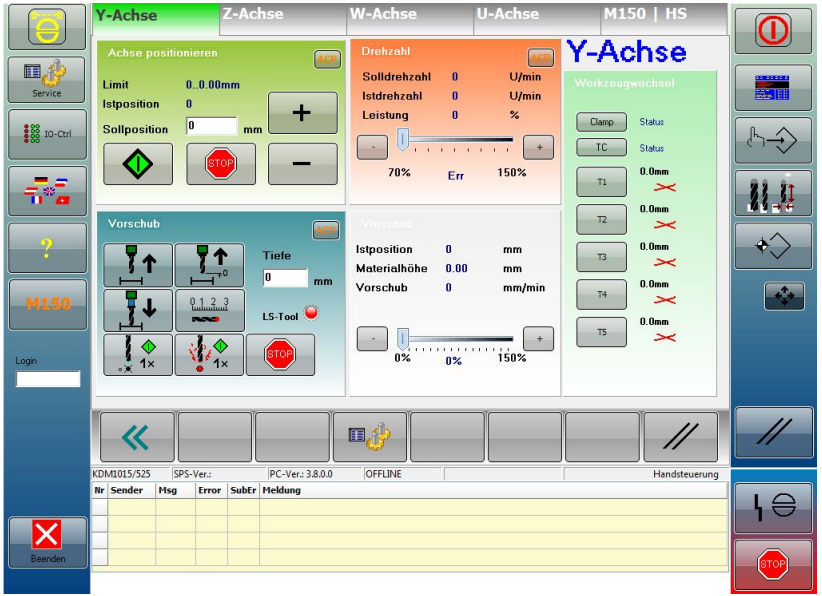
STANDARD EQUIPMENT



Manual machine control

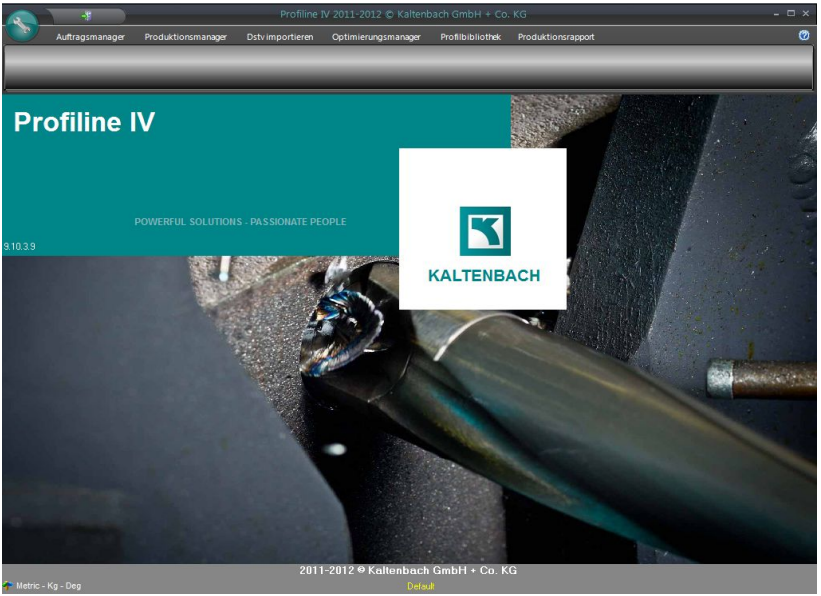
- Easy and intuitive structure
- Functions and features are represented by pictures
- Manual control of all machine components possible

✔ Easy and intuitive operation

✔ Fast learning of functionality possible

✔ High process reliability and operating comfort

STANDARD EQUIPMENT



General information about Profiline

- User-friendly, simple and fast programming
- Plausibility check for dimensioning and profile measurement
- Integrated norm databases for material and profiles
- Automatic calculation of safety areas and processing order

✔ Easy and intuitive operation

✔ High process reliability

✔ Full automation

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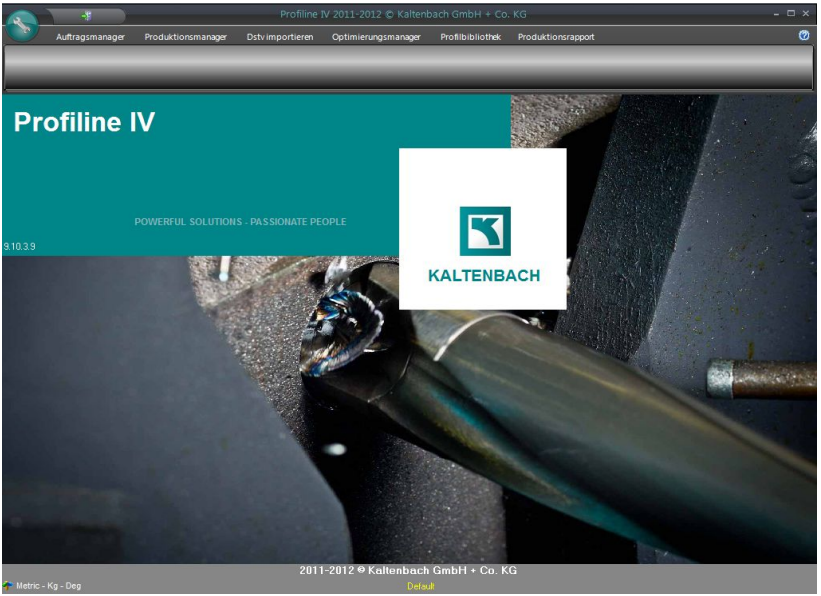
STANDARD EQUIPMENT



General information about Profiline

- Interface for DSTV and DSTV+ files
- Displays operations on material from all axis perspectives
- Programmable speed and feed rates
- Antivirus Protection

✔ High operating comfort

✔ Customized adjustments according customer´s tool supplier

STANDARD EQUIPMENT

Hardware

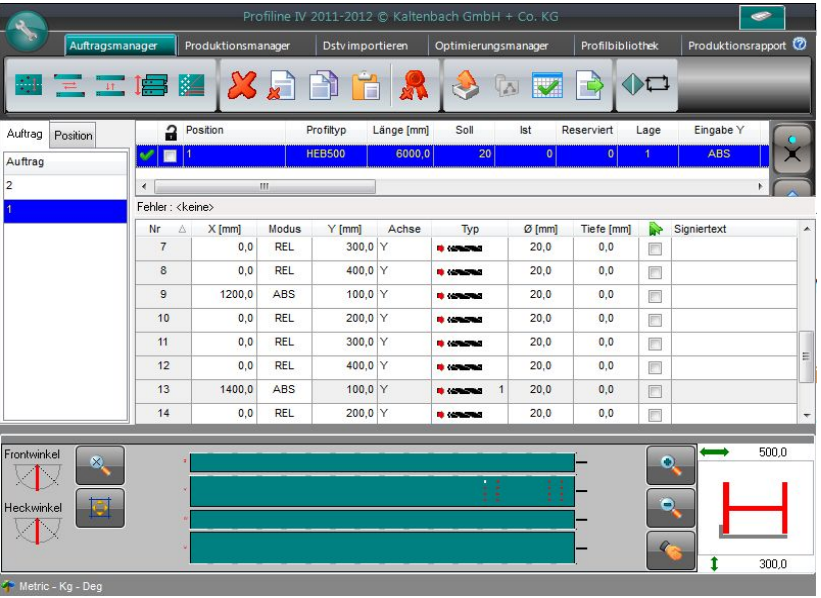
- Industrial PC in operation panel with touch screen
- Remote diagnosis via TeamViewer
- CNC control of all axis
- Network card
- All control components are from one supplier

✔ Protection of Hardware because of solid housing of operation cabinet

✔ Usability also in rough conditions

✔ Modern support activities

STANDARD EQUIPMENT



Profiline

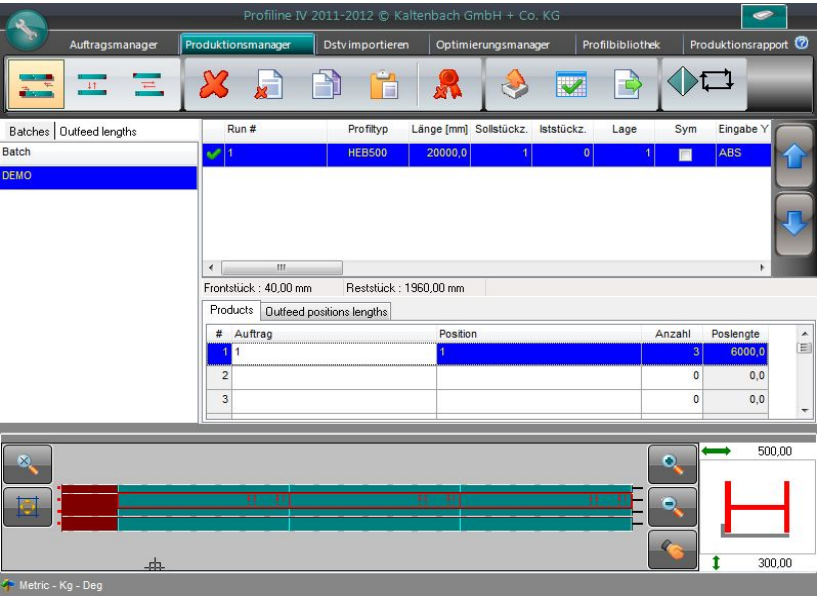
- **Order Manager**
  - Management of order and order positions (good pieces)
  - Features of good pieces can be defined
  - Processing operations and their position can be defined
  - Good piece with processing operations are visualized
  - Values for good piece specification can be entered manually or imported (see DSTV-Import)

✔ Clear software structure

✔ Easy and intuitive operation

✔ High process safety due to visualization

STANDARD EQUIPMENT



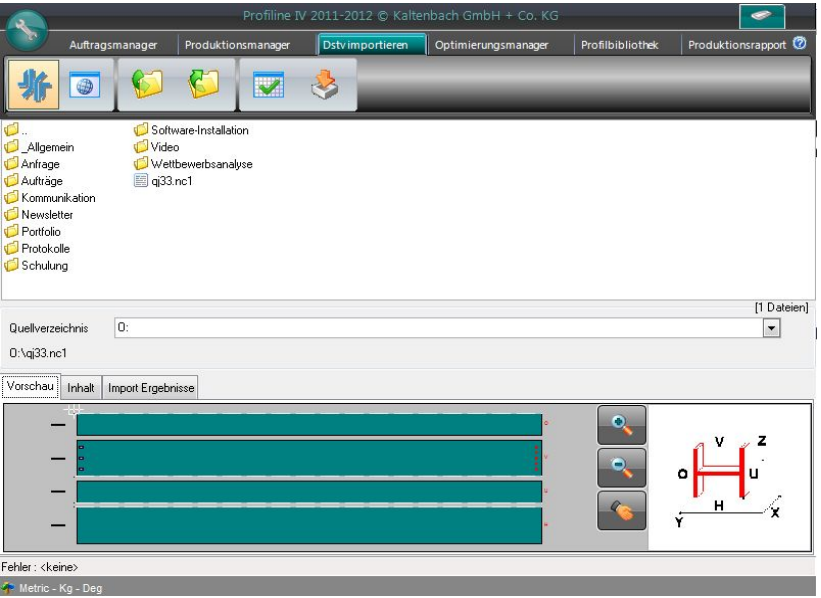
Profiline

- **Production Manager**
  - Input material can be specified
  - Match of good pieces (from order manager) and input material (from production manager)
  - Match can be done manually or automated (see optimization manager)
  - Nesting of good pieces on input material is visualized
  - Several information are provided (e.g. rest material, ...)

✔ Automated production in a few steps

✔ High process safety due to visualization

STANDARD EQUIPMENT



Profiline

- **DSTV-Import**
  - Import interface e.g. for data from CAD programmed
  - Part viewer
    - Visualization of good piece
    - DSTV-Code
    - Representation of coordinate system
  - Further import formats: DWG, DXF (only as single parts – not whole constructions)

✔ Import in a few steps

✔ Several file representations before the import

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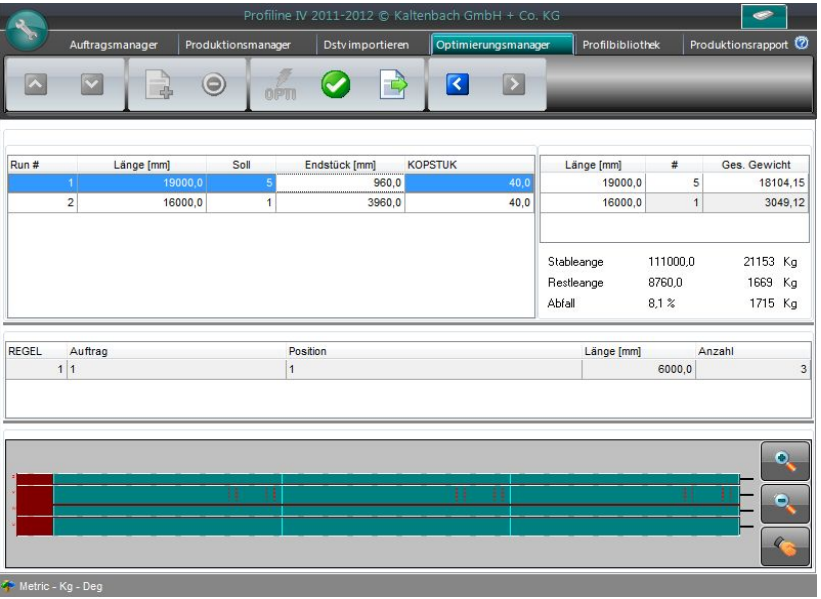
STANDARD EQUIPMENT



Profiline

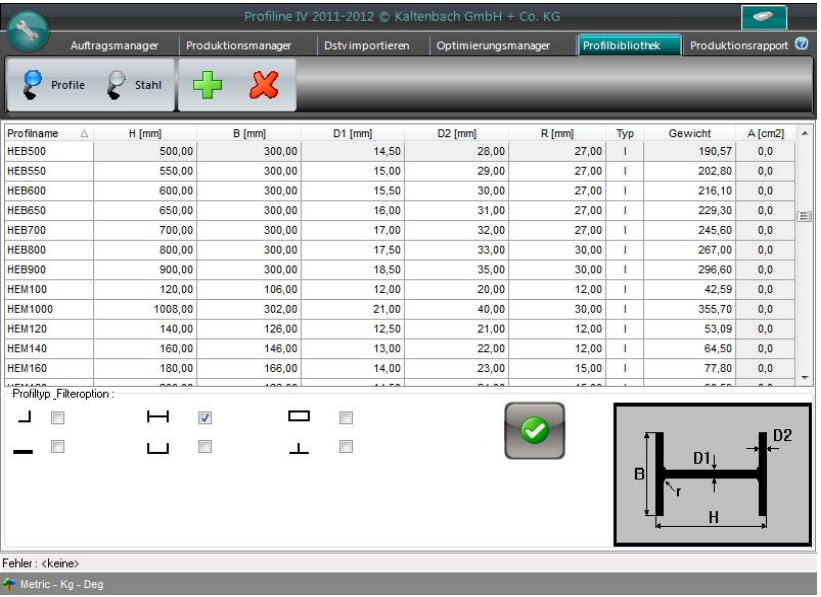
- **Optimization Manager**
  - Good pieces from all orders can be nested on raw material
  - Reduction of waste
  - Algorithm searches for perfect material usage

✔ Reduction of waste

✔ Several information provided (scrap rate, weight, …)

✔ Great material utilization in a few steps

STANDARD EQUIPMENT

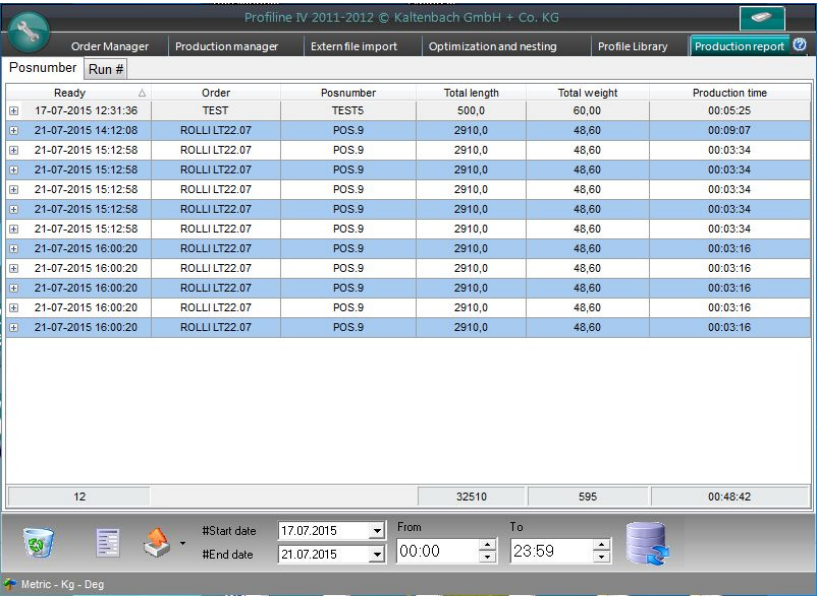


Profiline

- **Profile Library**
  - Overview about material dimensions and steel grades
  - Pre-defined list of internatial normed material
  - Material dimensions and steel grades can be added and deleted
  - Filtering options are provided
  - Meaning of dimension parameter are visualized

- ✔ Customized adjustments of databases
- ✔ Fast search and filter
- ✔ High process reliability due to visualization

STANDARD EQUIPMENT

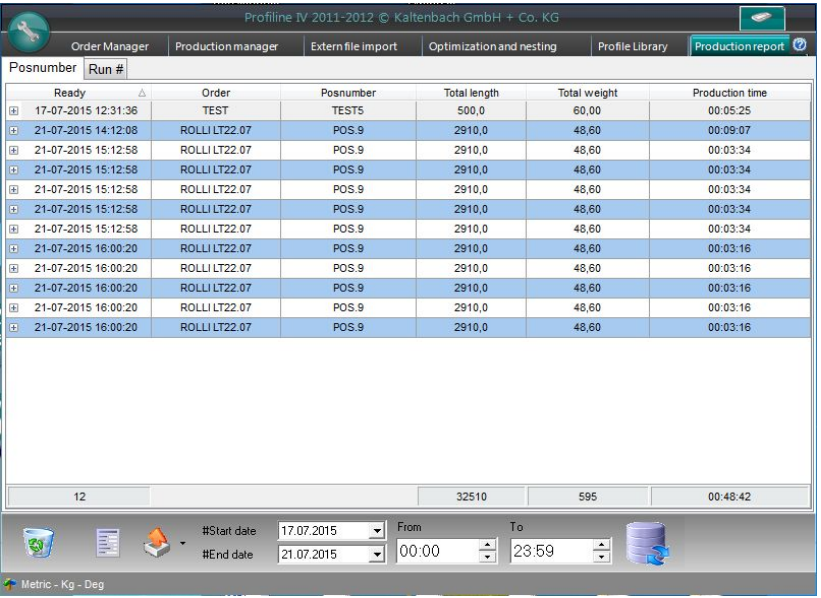


Profiline

- **Production Report**
  - Provides information about processing
    - Time stamp of finishing product, length, weight, production time
  - Several export formats (e.g. CSV, HTML, Word, …)

✔ Production data can be used for cost or order calculations

STANDARD EQUIPMENT

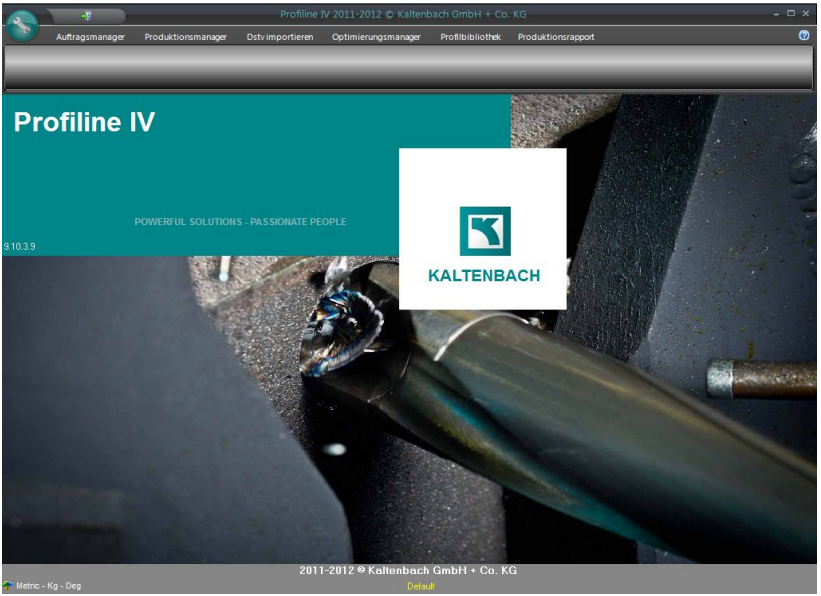


Profiline

- **Production Report (continuation)**
  - Detailed information regarding orders and raw material
  - Rough forecast of production time possible
  - Connection to ERP system via DSTV-Feedback-File

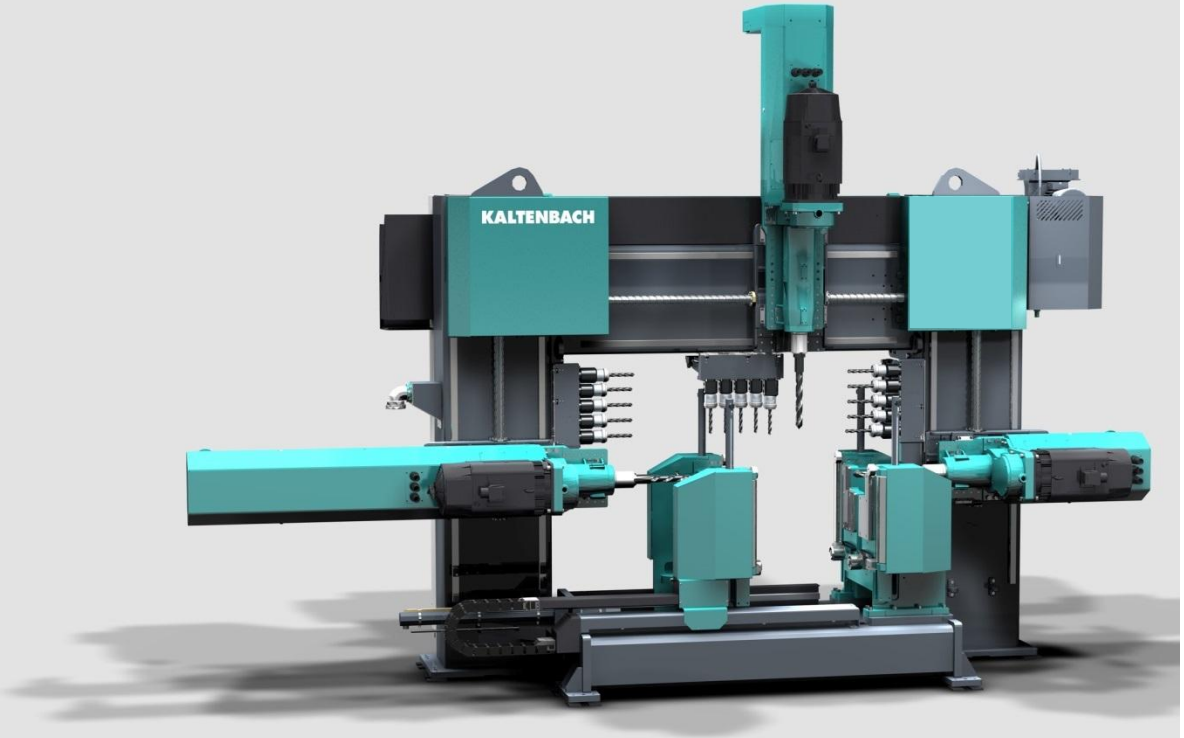
✔ Versatile analysis and forecast opportunities

OPTIONALE AUSRÜSTUNG



- Additional Profiline Software License (for Office)
  - Profiline Software for Office Computer
  - Parts can be programmed in office
  - Transfer of data via customer network to machine

✔ Higher machine utilization due to splitting of work steps



MEASURING-SYSTEM

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STANDARD EQUIPMENT

- Measuring Range (Standard) 12 m
- Positioning Speed 0-30 m/min
- Thickness Range for Gripper 2,5-40 mm
- Servo regulated positioning

✔ Fast and accurate positioning

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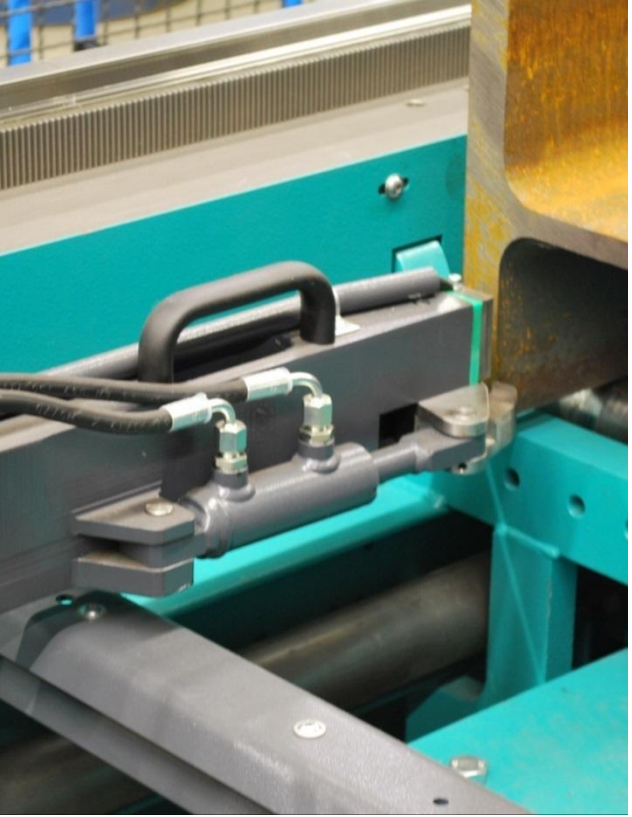


STANDARD EQUIPMENT

- Hydraulic height adjustment of clamping arm
- Automatic approach to profile end
- Electronic material contact recognition
- Length measuring via light barrier at front end
- Exchangeable pusher adapter instead of hydraulic gripper

✔ Fully automated material transport and length measuring

✔ Handling of a wide range of material possible

OPTIONAL EQUIPMENT

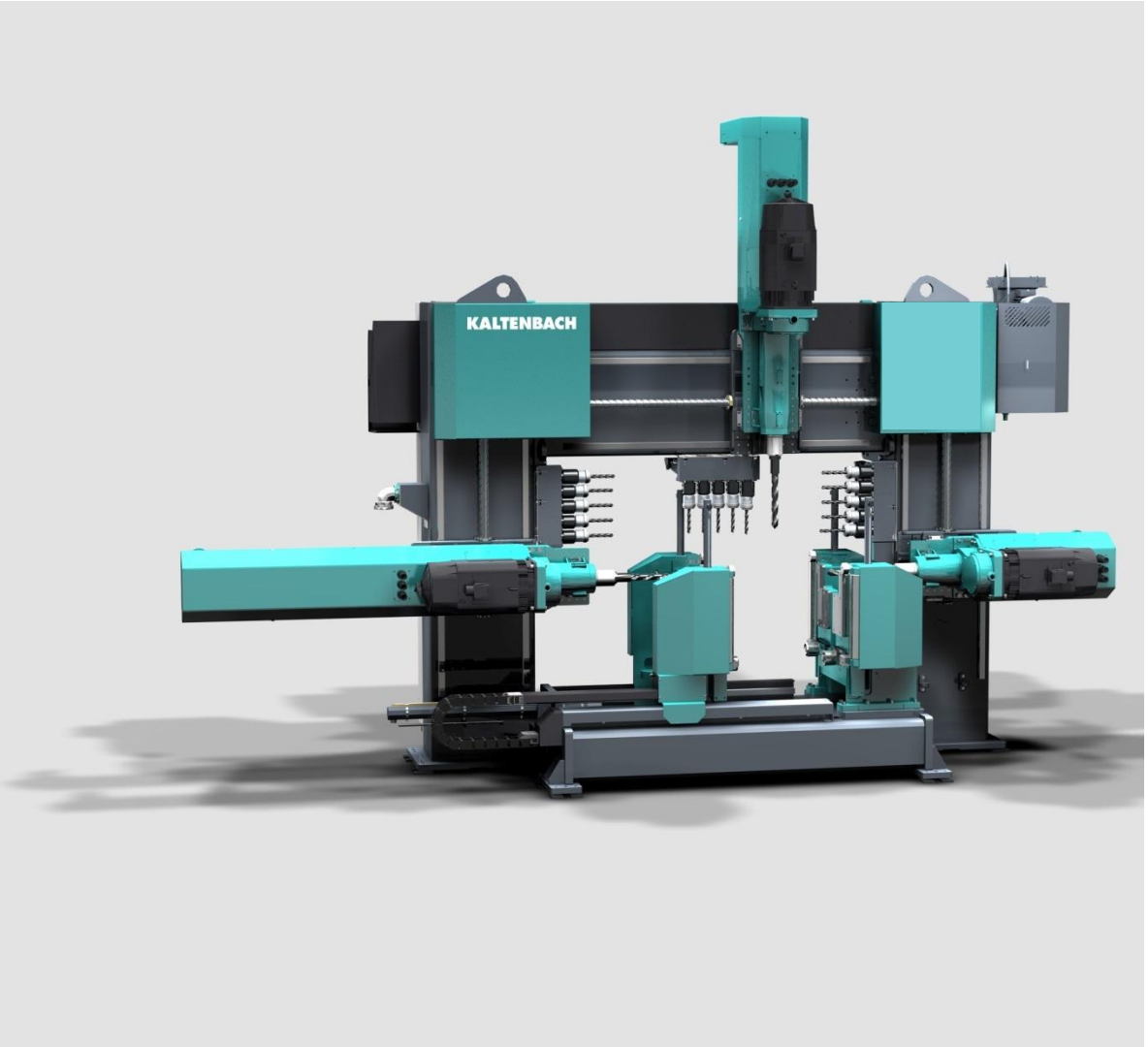
- Extension of measuring length by one meter

M151G-1

- Processing of flat material
  - For material thinner than 20mm
  - Support plates in the roller conveyor are installed

M151G-3

✔ For processing an even wider range of material



TRANSPORT-SYSTEM

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STANDARD EQUIPMENT

Roller Conveyor

• Working height	640 mm
• Roller diameter	77,4 mm
• Roller width	1130 mm
• Effective roller width	1020 mm
• Transport Speed	0-30 m/min
• Infeed roller conveyor length	2,2-12,0 m
• Outfeed roller conveyor length	2,2-12,0 m

STANDARD EQUIPMENT

- Cross Transport via Drag Chains
  - Transport speed 0-10 m/min
  - Reverse speed 0-30 m/min
  - Total length 3 m
  - Material length 2,2-12,0 m
  - Drag weight (per cross tansport) 4,5 t

✔ Cheapest cross transport opportunity

✔ Movement of single profile possible

✔ Quiet cross transport due to polyamide layer

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STANDARD EQUIPMENT

- Cross Transport via Lift and Carry System
  - Transport speed 0-10 m/min
  - Reverse speed 0-30 m/min
  - Total length 3 m
  - Lifting capacity 2 t
  - Lifting height 65 mm

✔ Moving several parts/batches together

✔ Quietest cross transport opportunity

✔ Material flow in both directions possible

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STANDARD EQUIPMENT

- Cross Transport via Hub Pins
  - Transport speed 0-10 m/min
  - Reverse speed 0-30 m/min
  - Total length 3 m
  - Material length 2,2-12,0 m
  - Drag weight (per cross tansport) 4,5 t

✔ Movement of single profile possible

✔ Material flow in both directions possible

✔ Quiet cross transport due to polyamide layer

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STANDARD EQUIPMENT

Cross Transport

- Drag Chains
  - Infeed
  - Outfeed

T13-SK-K1

T13-SK-L2

- Lift and Carry System
  - Infeed
  - Outfeed

~~T13-HW-K1~~

~~T13-HW-L2~~

- Hub Pins
  - Infeed
  - Outfeed

~~T13-QTP-K1~~

~~T13-QTP-L2~~

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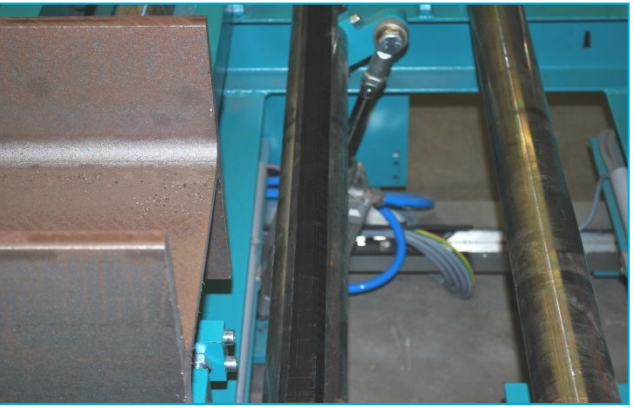

OPTIONAL EQUIPMENT

- Safety
  - Safety fence per meter — T13-2
- Cooling and Heating
  - Cooling device for switchboard cabinet — T13-3
  - Heating device for switchboard cabinet — T13-4
- Silencer — T13-5
  - Low noise cross transport
  - Additional pneumaical liftable rollers with a polyamid bar
  - Home position (upper picture= - material transport on roller conveyor
  - Extended position (lower picuture) - material transport on cross conveyor

THANK YOU FOR YOUR ATTENTION

POWERFUL SOLUTIONS – PASSIONATE PEOPLE

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