

EHRT

PRECISELY FITTING BUSBARS

easy to program – quickly produced!

Tradition and innovation

For over 60 years, EHRT has been manufacturing and developing continuously punching and bending machines for copper, aluminium and other metal bars. Our traditional values – high quality, accuracy and stability – lead not only to a long service life, but also to the well-known reliability of all EHRT machines. We also offer a wide variety of specialized tools to provide you with a production process of the highest flexibility.

Inspired by your wishes as well as our motivation to integrate new functionalities, we develop our punching and bending machines and tailor them to individual requirements. Our aim is to equip you with a complete solution so that your production runs efficiently.

Benefit from our experience!

Your EHRT-Team

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The unique EHRT software

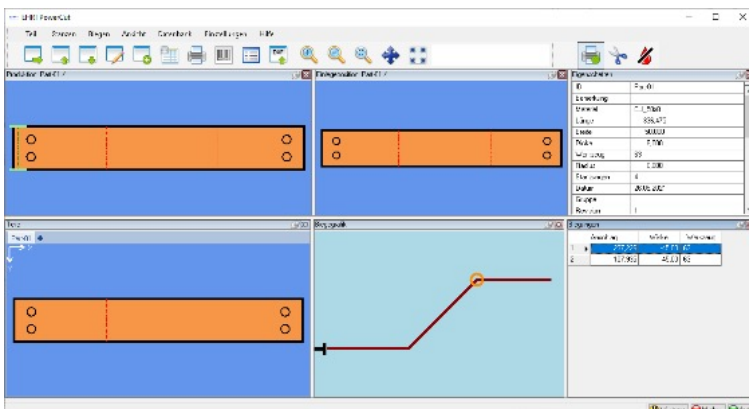


By sharing only one data record for each workpiece with PowerCut and PowerBend, the use of EHRT punch and bending machine becomes the perfect combination in terms of accuracy and productivity. With our exclusive PunchPRO production planning software, you can minimise waste in the manufacturing process and make the work process highly efficient.

In detail

EHRT PowerCut and PowerBend

With the EHRT PowerCut software for the punching machine and PowerBend software for the bending machine, you are guided step by step through the programming, from the entry of the workpiece geometry to the creation of the respective NC code.

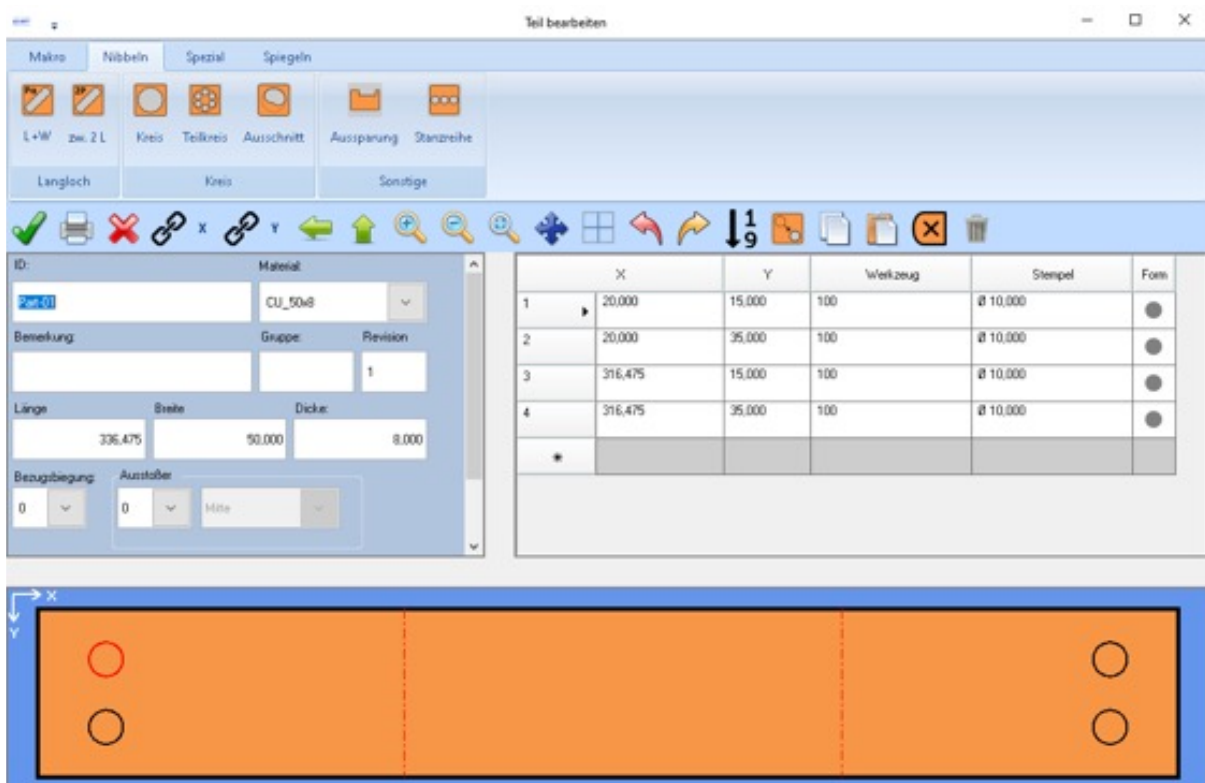


→ Complex manual calculations are eliminated, because the shortening due to bending is automatically taken into account by our software when positioning the press cuts.

→ An efficient and error-free transition from the CAD design to the machine can be managed with an integrated DXF interface. Both press cuts and bends can be transferred.



For manual programming, many special functions are available to facilitate programming: bevelling, notching, rounding, nibbling. The EHRT software automatically checks the program for collisions before forwarding it to the controller. Incorrect operation is thus largely ruled out.



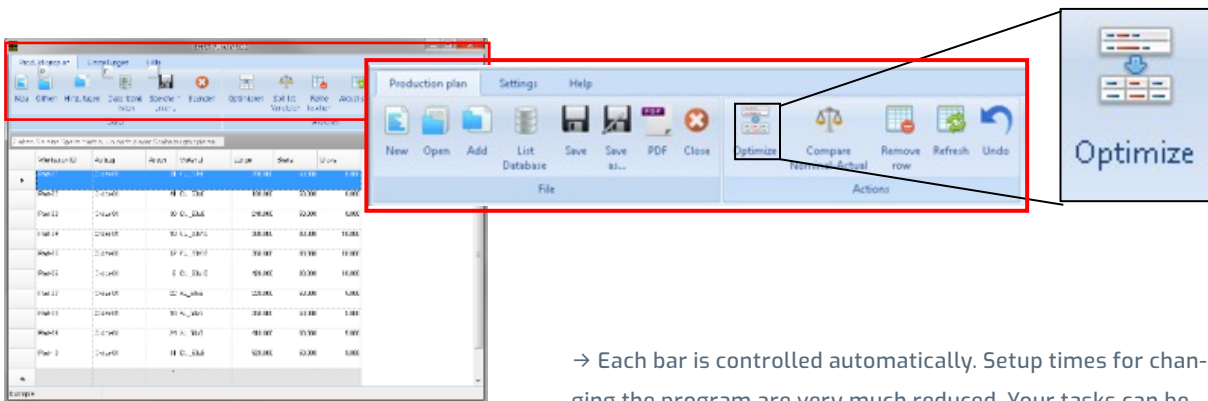
Your advantages:

- All data are located centrally and safely in one database.
- The same data with the same processing software are available to you, whether directly at the machine or at an office workstation, where they can be transferred to the machine if necessary.
- The result is seamless continuity from design to the finished part.
- Due to the intuitive user guidance of the EHRT software, the machine operator can enter or change his data and thus start production faster than with conventional systems.
- On account of the accuracy of the system (calculation/positioning), the first part produced is already correct and usable.

In detail

EHRT PunchPRO

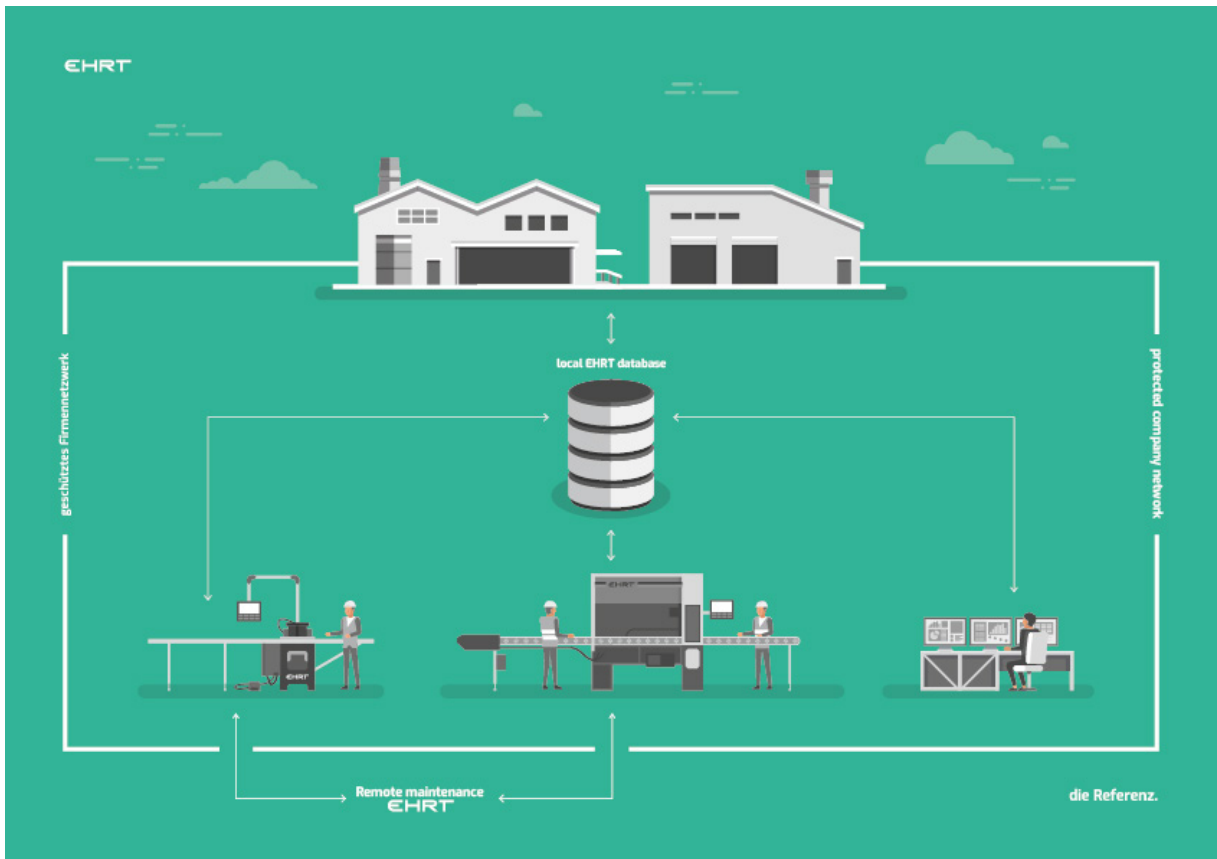
The EHRT PunchPRO production planning software plans your production jobs in whole work shifts. The software is very simple to use. With just one click, the parts you need are organised and distributed over the flat bars with optimal use of the raw material.



→ Each bar is controlled automatically. Setup times for changing the program are very much reduced. Your tasks can be initiated from your ERP system and imported into PunchPro to be prepared for production. The prioritisation of urgent orders is always possible and quickly done. Reports on past production are created automatically. Your production planning staff will always know what has been produced and what will be produced next.

Your advantages:

- You keep track of things: all process data are continuously collected, visualised and can be evaluated
- You save material costs: through the optimised use of the raw material and the resulting avoidance of unnecessary waste
- You save time: your employees can access all current job data at any time



→ You will make the work process highly efficient with our software

EHRT punching machines

The EHRT punching machines guarantee you fast and accurate processing of busbars and other metal bars. With tools for holes, slots, bevels and more, our punching machines are perfect for small and medium batch sizes. The tremendous accuracy of the machine corrections in combination with small manufacturing tolerances guarantees optimum quality from the very first component. All EHRT punching machines are modularly constructed, from manual operation to fully automatic manufacturing.

EHRT punching machines are generally characterised by their flexibility. The extremely short setup and programming times are particularly convincing when used for small and medium-sized batches, for example when you are producing only two to four identical parts, but more than 100 in total.



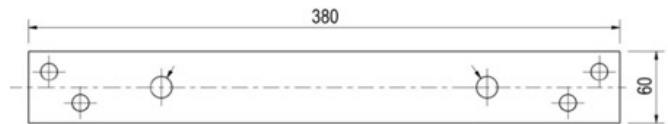
Thanks to MultiTool technology, the machines can be equipped with a great many tools simultaneously and the 4 to 6 metre long copper bars are processed with no further setup times. Each punch can be positioned with maximum accuracy thanks to the EHRT software and the Beckhoff controller employed.

Punching isn't simply punching

We have designed our machines so that not only copper, but also aluminium and other metal bars can be punched. We supply special dies for the production of steel bars up to 8 mm in thickness and a lubrication system for the production of aluminium so that the punching process runs safely. Different widths are set directly on the machine. The width and thickness are conveyed to the machine via the programming and measured by sensors. If the wrong size is set or inserted, the software assists the machine operator with a warning message. Here, too, the focus is on process safety.

High speeds as standard

The machines from the Standard Line punch in approx. 2 seconds per hole. To produce a component that has the dimensions and properties of this pattern, approx. 17 sec are required - including tool change and parting cut.



EHRT FlexPunch compact

For copper production up to 400 t/year
4 tool stations, up to 10 tools

EHRT FlexPunch

For copper production up to 400 t/year
10 tool stations, up to 28 tools



EHRT Holecut Professional

For copper production over 1000 t/year (24/7)



Comparison:

EHRT FlexPunch compact	EHRT FlexPunch	EHRT Holecut Professional
Can be equipped with up to 10 tools through the use of Multi-Tools.	Can be equipped with up to 28 tools through the use of Multi-Tools.	Bis zu 37 Werkzeuge (HC80) oder 42 Werkzeuge (HC60) können durch den Einsatz von MultiTools bestückt werden.
Possibility to use up to 1 thread-forming station (also retrofittable)	Possibility to use up to 2 thread-forming stations (also retrofittable)	Möglichkeit des Einsatzes von bis zu 2 Gewindeform-Stationen (Auch nachrüstbar)
Optional: Integrated stroke control of the punching cylinder. In this way, we offer you tools that can be configured as you wish for a wide range of applications.	Optional: Integrated stroke control of the punching cylinder. In this way, we offer you tools that can be configured as you wish for a wide range of applications.	Standardmäßig integrierte Hubsteuerung des Stanzzylinders. Damit bieten wir Ihnen Werkzeuge, die für verschiedenste Anwendungen beliebig konfiguriert werden können.
Optional: 1 workpiece ejector possible with up to 3 ejection positions for parts sorting Use of sorting belts possible with up to 6 ejection positions for parts sorting.	Optional: 1 workpiece ejector possible with up to 3 ejection positions for parts sorting Use of sorting belts possible with up to 6 ejection positions for parts sorting.	Standard 1 workpiece ejector possible with up to 3 ejection positions for parts sorting Use of sorting belts possible with up to 6 ejection positions for parts sorting.

Your advantages:

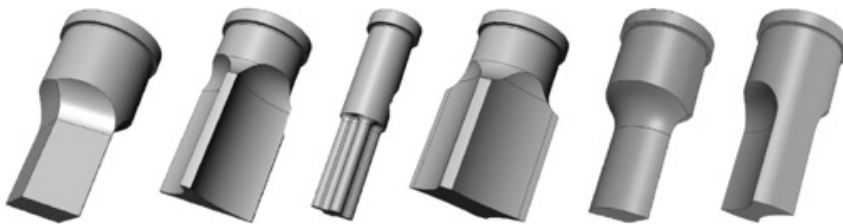
- Low tooling times through the use of MultiTools
- Equipping with a large number of tools
- Simple operation via touch display
- Remote maintenance, training and support are possible via TeamViewer. Software updates can also be installed simply and quickly. Your gain is reduced production downtime.
- Detection of punching strokes for individual tools, identifying when a tool change is required.

Always the right tool



With the automatic tool changing system, you always have the right tool in the right place. A tool change is done in less than a minute without screwing and the machine can continue producing. Setup times remain short.

Always the right punch



Special tools are required for good and precise results when punching thick material. Strong springs to clamp the material and precise punch guides allow small punching diameters (up to **60% of the material thickness** → e.g. 6 mm round hole in 10 mm thick copper) and small cutting clearances. This is the only way to reduce stresses in the material and rework to a minimum.

Of course, you can have different shapes of punches manufactured individually so that they round off or bevel the workpieces at the end. Notches are also possible, as is countersinking in round holes for countersunk head screws.

Burr-free thread forming



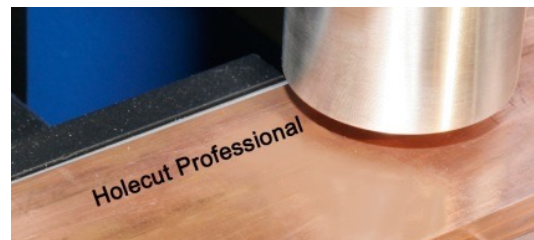
You use the EHRT SingleTap like a separate tool. After pre-punching the threaded core hole with simultaneous indentation of a small depression from above and below, this tool forms a thread in the soft copper. The material is compacted at this point and can absorb high torques. The time-consuming and cost-intensive work of inserting press-fit nuts into pre-drilled holes is eliminated.

Marking

Workpieces can be marked within production as well as for your customers in such a way that each workpiece or batch can be clearly identified.



Needle embosser



Inkjet printer



Label printer and handheld scanner

Sorting

The automated sorting function in which an ejector pushes the different workpieces to three different positions.

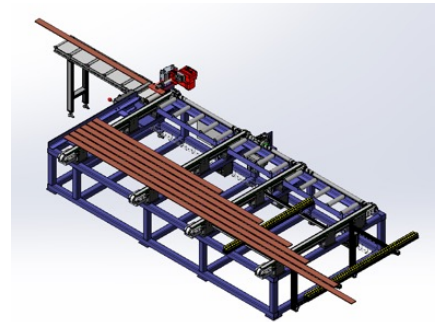


Automation

While the punching process can already be automated very well with our Standard Line punching machines, we can further optimise your production process:

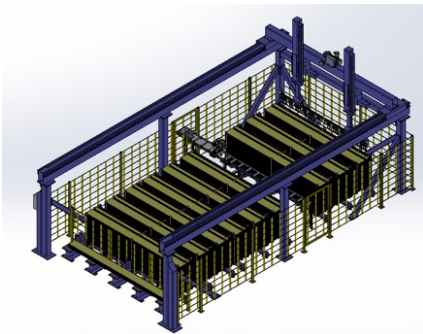
AMZ – automatic material feeder

- EHRT conveying table for bars up to 4.2 m or up to 6.0 m in length
- Conveyor belts transport the bars requested by the software to the machine.
- Depth of the table approx. 1,800 mm – thus with a material width of 50 mm, for example, 36 bars can be placed, which are automatically drawn in and punched



Your advantages:

- Automatic feeding of bar material => personnel deployment is reduced/avoided
- In conjunction with the EHRT PunchPRO software, the AMZ continuously feeds the placed material without interruption.
- Possibility to place various material sorts (thickness/width) and to process them in succession
- By starting the jobs with PunchPRO, production during break times and even a whole work shift without personnel is possible



Gantry storage system with automatic material feeder

- Feeder and central store for up to 30 different material cross-sections
- Complete overview of your own copper or aluminium resources
- More efficient production planning
- Up to 160 tonnes of copper can be stored and processed
- In conjunction with the EHRT PowerCut machine software and the EHRT PunchPRO production planning software
 - => smooth, consistent, simple => each part is manufactured at the right time and in the right quantity
- Material lengths of the bars 2,200 – 4,200 mm or 2,200 – 6,000 mm

Your advantages:

- Automatic feeding of bar material to the machine => personnel deployment is reduced/avoided
- Pallet with material is placed in the loading area and automatically stored
- Possibility to place various material sorts (thickness/width) and to produce them in succession
- Various function can be selected as desired: load, unload, deliver, reload
- Stock recording possible on the machine and in the office
- Reorder levels can be entered and displayed. This leads to optimised order quantities.
 - => lower capital commitment and storage costs
- Right material, at the right time and in the right place for non-stop production by starting jobs with PunchPRO: A job is loaded once and the machine processes it continuously until the end.
- Current jobs are displayed to the operator
- Punching jobs and storage jobs can be executed simultaneously; however the punching job always takes priority

EHRT bending machines

The EHRT bending machines are extremely powerful. Individual parts and small batches can be bent just as precisely and cost-effectively as series parts. With different tools, the material can be bent in all directions and axes, such as flat, edge, torsion and offset bending. Virtually all bending radii and bending distances are possible with the EHRT bending machines.

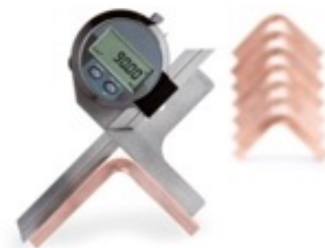


Simplicity is speed

The machine operator programs or reads the workpiece data. He immediately sees on the screen in which position he must place it against the side stop and in which order he must bend it. Incorrect operation is virtually ruled out. The tool change is achieved in a few seconds via a simple plug-in system.

Resilience compensation

Copper and aluminium in particular have the property that their internal structure changes due to aging and weathering. This changes the resilience of the material and makes bending with conventional machines inaccurate. For that reason, EHRT invented and has continuously further developed the electronic bending tool. During bending, the angle is measured and the resilience is compensated by the corresponding post-bending. This guarantees tolerances of 0.2° without the need for prior test bending.



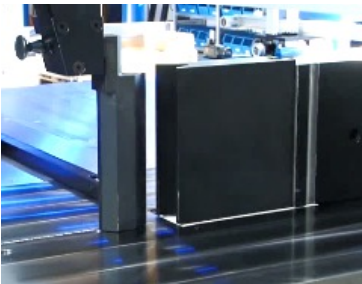
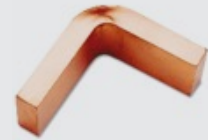
In addition, pivot pins avoid marks on the material during bending and enlarge the electrical contact surface. You save money by eliminating significant post-processing steps.

Bending tools



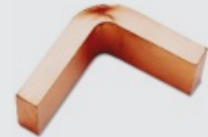
Electronic bending tools

- Bending over flat side
- Electronic angle measurement
- Resilience compensation
- Accuracy right from the first part



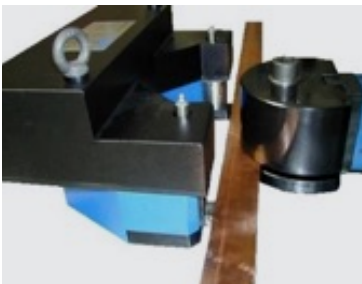
Mechanical bending tools

- Bending over flat side
- Without resilience compensation and without pivot pins
- Therefore, smaller bending distances are possible



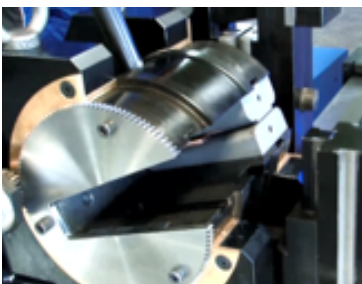
Offset bending for tight bends

- Tighter spacing between two bends
- Both lengths are exactly parallel
- Two bends with one stroke
- you save time



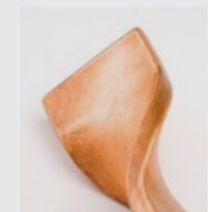
Edge bending

- For material widths up to 120 mm with the EB 40
- For material widths up to 60 mm with the EB 20
- Including 1 tool set for 1 dimension



Torsion bending

- For twisting the bars up to 90°
- Material thicknesses 3 - 15 mm
- Material widths 20 - 120 mm
- Including 1 tool set for 1 dimension
- For EB 40 only



Your advantages:

- Touch display for the operator
- Intuitive operation using the PowerBend operating software developed by EHRT
- Remote maintenance, training and support are possible via TeamViewer. Software updates can also be installed simply and quickly. Your gain is reduced production downtime.
- Closed shapes and tight U-bends can be bent simply and quickly
- Simple tool change within seconds (short setup times)
- Long leg lengths of up to 2000 mm can be bent
- Simple handling due to open design on the bending punch
- Automatic calculation of the stretched bending length
- CNC-controlled side stop as standard
- Reduced space requirement in production due to compact design
- Ideal for the production of individual parts, small batches and series production
- Different types of bending are freely selectable (offset bending/flat bending/edge bending)
- The operator is guided automatically through the bending program. Intuitive, visualised display of the bending program (production waste is minimised)
- If resilience compensation is selected, additional material savings are achieved by eliminating test bends. No imprints on the material.

- Additional advantage of using a Professional Line:
 - Saving of up to 70% energy due to servo-electric drive
 - Low noise (no hydraulics)
 - Low maintenance: no oil needs to be checked and changed

Pay-Per-Use machine financing

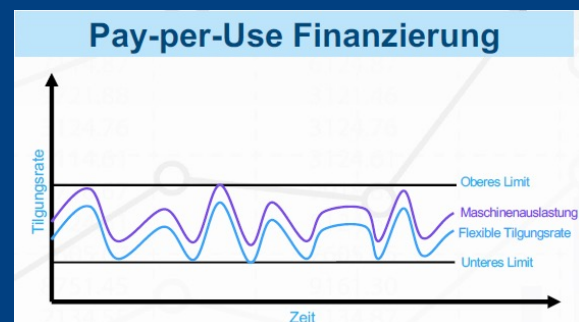
Finance for the future of your company! Would you like to strengthen your current position and the future prospects of your company in competition in national and international markets? Then we have the right solution for you. Pay-per-Use!

EHRT has entered into cooperation with financing partners to be able to broker you the attractive and stress-free „Pay-per-Use“ financing model for the purchase of EHRT machines.

Pay-Per-Use is a usage-based financing model that makes it easier for you to invest in new, modern machines. This is an end-to-end securely encrypted solution, consisting of the combination of a modern financing model and the latest „Industrial Internet of Things“ (IIoT) technology.

More transparent financing costs

With an accurate financing price per output quantity, the total cost can be calculated accurately. The advantages of this successfully tested finance solution in connection with EHRT machines will raise your company to the next level.



Your advantages:

→ **Change from CAPEX to OPEX**

You can realise accounting and tax advantages in which machines are shifted from an investment to an operating expense.

→ **Optimisation of cash flow**

The actual use of the machine has an influence on the repayment amount.

Lower production quantities mean a lower repayment rate, while with higher production quantities a correspondingly higher rate is incurred.

Use state-of-the-art machine technology now to reduce your process times and production costs.

Why wait any longer?

Stay in touch

We look forward to helping you produce your products faster, more accurately and more efficiently.

If you have any further questions or requests, please do not hesitate to contact us.

Thank you very much!

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