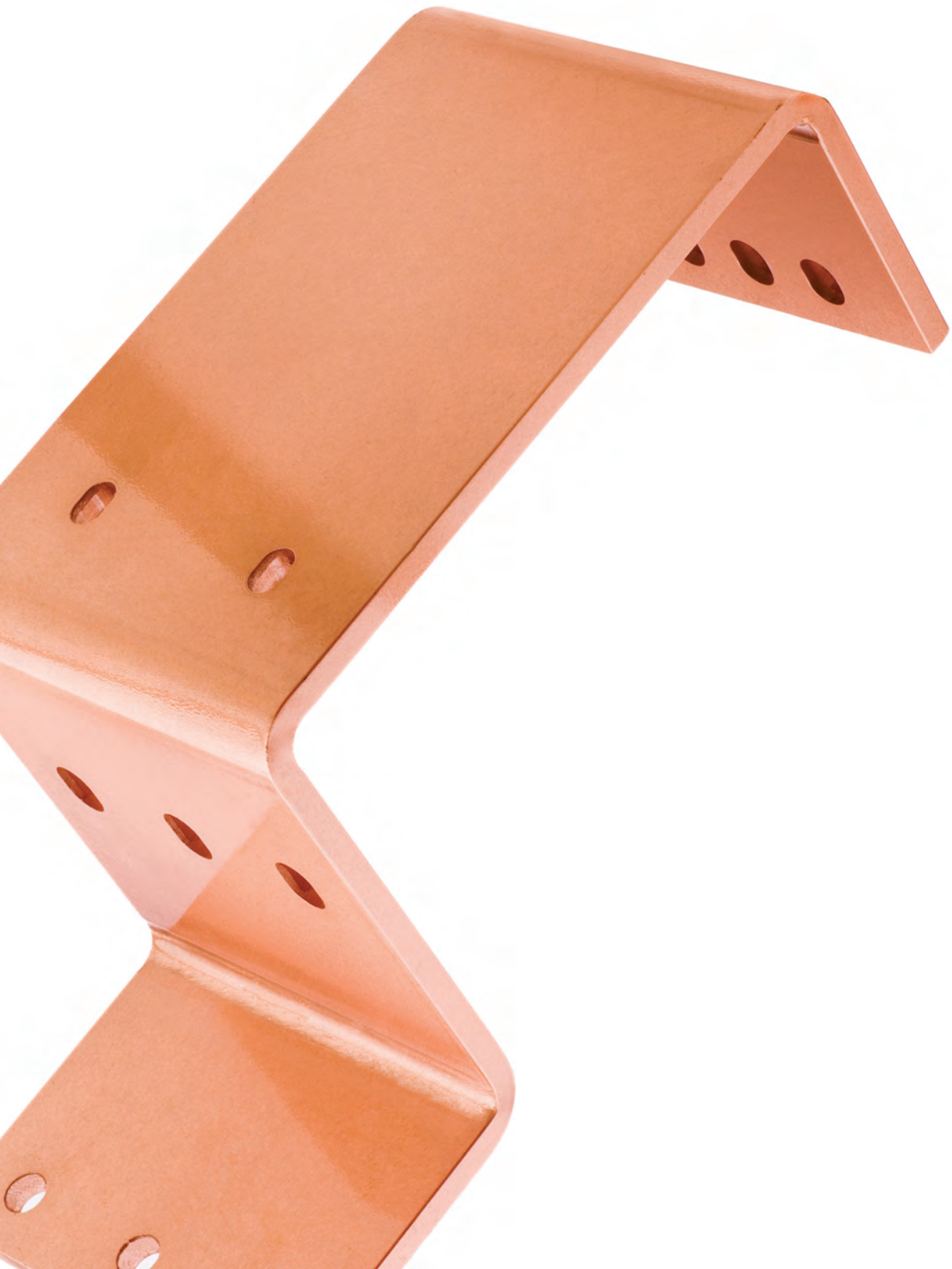
EHRT

EXPECT PERFORMANCE

OUR STANDARD SOLUTION



Success from tradition and innovation

For over 50 years, EHRT has developed and assembled punching and bending machines for copper, aluminum, and steel bus bars.
Encouraged by the needs of our customers and our passion to design new functionalities, we provide high end CNC machines, which are tailored to your requirements.

Our traditional values of accuracy and reliability lead to our well known long life cycle and robustness of all EHRT machines. On the other hand, we live our spirit of innovation every day, which means that we take new paths to improve the production of punching and bending.
Since EHRT's beginning, our engineers have realized that a reliable and intuitive interface between the user and the machine was required. This interface is our own design, already in third generation and based on Windows technology. Thus programming of work pieces becomes so quick that efficiency and quality of our client's production can be increased significantly.

We are proud to have invented the patented exact measuring system for angles more than 30 years ago. In the actual version, we can guarantee a bending accuracy of 0.2°.
And still, we strive for inventing new solutions which can improve the way of your production. So please, let us support you with the most flexible and productive machines for punching and bending.

Thomas Ehrt and Richard Neuhoff
(Managing Directors)

EHRT – if flexibility matters

Customized solutions – made by plenty of useful components

You want to punch and bend flat bars of copper, aluminum or steel.
Our Standard Line machines offer you the best solution.

Mass customization

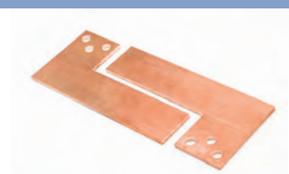
Our solutions are based on a modular construction, so we can easily and economically adapt our machines to your needs. It is very important for us that all of our components will match perfectly to each other. As a result, you will have the highest efficiency and safety of your investment. And because we like to give you the complete solution, you can consider us as your one stop shop.

Complexity becomes clear

We develop our machines and our software in-house, so we can guarantee that the handling is user friendly and always focused on the work piece.
The software automatically recognizes all situations of the machine and show them to the operator for his further decisions.

Amazingly flexible

The quick and easy handling, along with high accuracy of the machine, allows you to produce one single part of a job with the first piece. Set up times and scrap material are reduced to maximize utilization of raw material.
Your production will run efficiently.



Software

The EHRT software includes all steps, from designing the work piece on the screen to generating the pure NC code for the machine. The heart of the software is the central database. Here is where all data of the work pieces are stored and can be loaded from each machine and the office PC. All data will be synchronized as soon as a change is made. The whole process of planning and production will be consistent and without any gaps.

What is important?

The work piece is the center of attention. Every punched hole and bend of the work piece are visualized as a picture on the screen.
The operator always has the control of what he wants to produce ("what you see is what you get").
The steps of programming can be changed or deleted without starting the program. You can easily change from Millimeter to Inch and vice versa, as well as choosing another language.

Bending and punching as one process

Although bending and punching will be done at two different machines, those two processes stick together. The EHRT bending software automatically calculates the total length of your work piece and then provides exact dimensions of punched features when combined with the EHRT punching software.

Software knows the machine – the machine knows the software

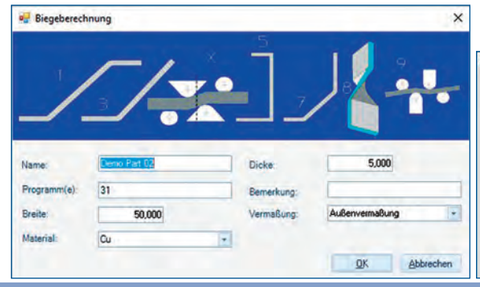
The EHRT software has implemented all possibilities and limits of the machine. The user can concentrate on his work pieces, his process and will be notified in time if any production step exceeds limits of the machine.

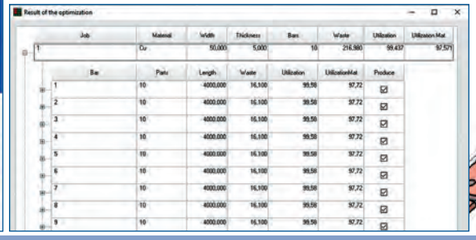
In the office or at the machine

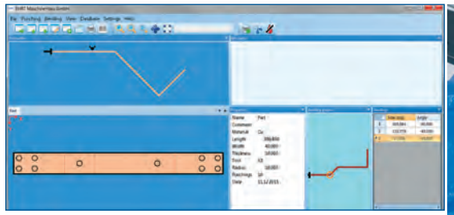
Choose where you want to work:
directly at the machine or prepare all steps and orders at your desk, so that the machine can run. With our central database, you are free to get the actual data anywhere. And with the identical software design, you always have the same look and feel.

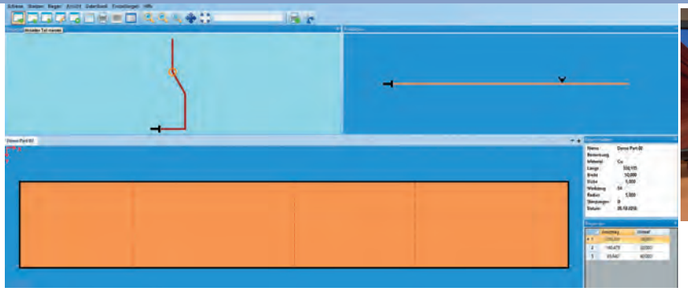
Quick to your results

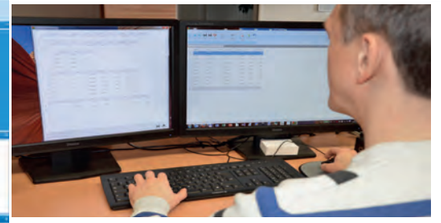
We designed several functions in the EHRT software to save your time.
Mirroring allows you to program one punching hole and duplicate it at the right places easily. Macros give you the chance to combine a complex set of programs. By just calling one defined macro, the operator will start his production quickly.
macro, the operator will start his production quickly.











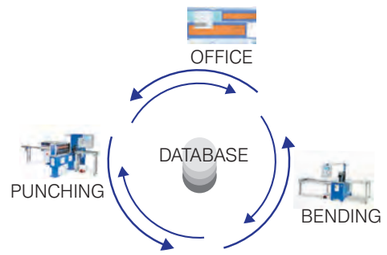
EHRT – if efficiency matters

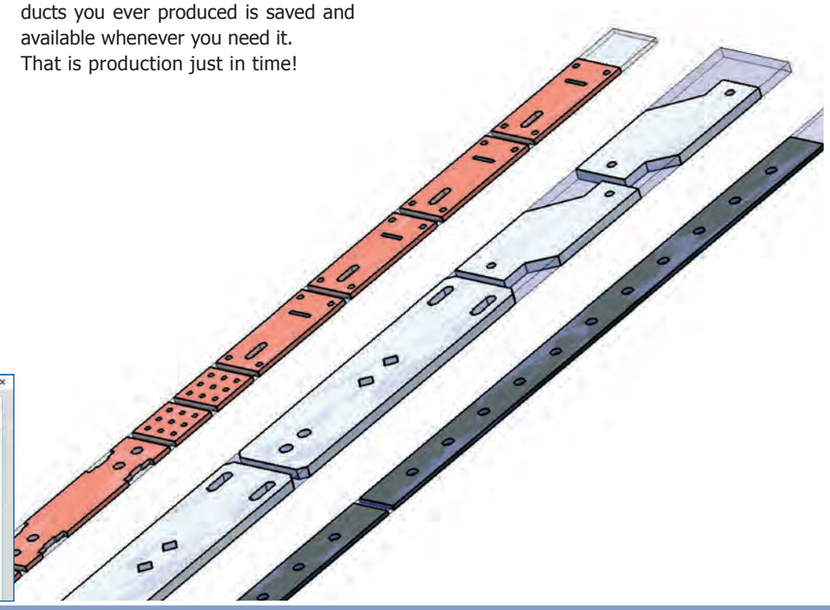
PunchPRO - Save your money by optimization

Do you have plenty of different work pieces you want to produce easily and efficiently?
With the EHRT production software, PunchPRO, you can organize your jobs. Just by one click your parts will be spread virtually on the bars – with optimized utilization of the raw material. You save money by avoiding scrap. Each bar will be handled automatically. Setup times for changing the programs are reduced to zero.
Your jobs can be collected in your ERP system, imported into PunchPRO and prepared with one click for the production. Single changes for urgent orders are always easily possible. Reports about the recent production will be generated automatically for the production planners, so they always know what has been produced and what will be produced next.

The EHRT database - All information always available

Our customers usually handle thousands of work pieces every year. Some parts become difficult to produce again because the information to this part is not available or hard to find. Gathering "old" information takes too much time and programming the part again is not efficient.
A better way is the central database of EHRT, which uses up-to-date technology. All information for the production of the parts is stored in this database. You have access to this database from all EHRT machines or from the PC in the office. The amount of storable products is unlimited. The information of all products you ever produced is saved and available whenever you need it.
That is production just in time!





PUNCHING

The EHRT Holecut Standard Line is optimized for the economic production of bars. Its high values are the flexibility of handling and accuracy.
Especially if you produce small or medium ranges of parts, the extreme short setup times will impress you and give you a competitive advantage.

How does it work?

After programming the work piece and entering the total length of the raw material, the software will calculate the number of parts. This number can of course be changed to the amount of parts you really want to produce. The bar has to be loaded into the machine. Now you can start the machine with the foot pedal and it will automatically punch all the holes and cuts as programed. In the end, it comes out of the machine by the conveyor belt – ready for the next production step.

Punching for many purposes

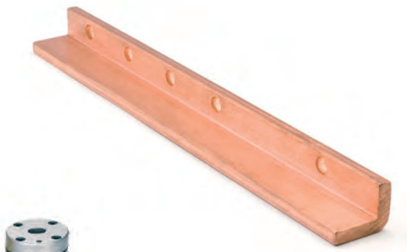
We designed the punching machines for a wide range of materials. You can punch copper, aluminum and steel with it. Concerning the material dimensions, you are very flexible: different widths and thicknesses can be easily handled with the Standard Line machines.

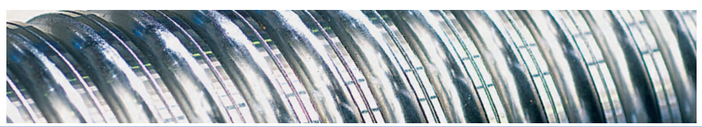
Always the right tool

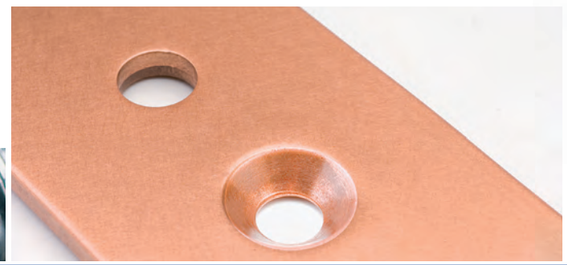
Once the necessary tools are loaded into the machine tool rail, the software automatically chooses the right tool for the requested hole. Changing the tools can be done in less than 60 seconds. Setup times are low and your machine can continue earning your money.

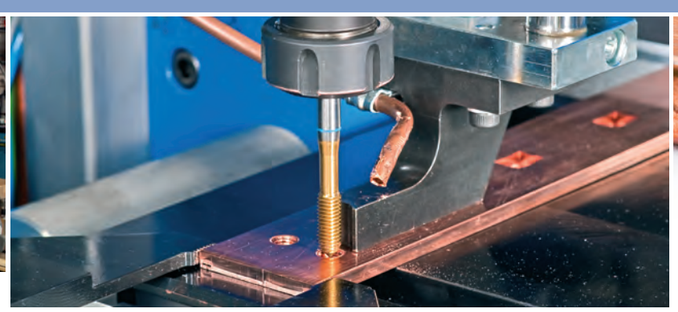
Special tools for you

The EHRT tools consist of strong spring packages, which hold down the work piece in an effective manner. Exact punch guides (strippers) and dies with small clearances. With this combination, very sharp and clean punch holes can be made, so warping and reworking of the material can be reduced to a minimum. And you can even punch very small holes - down to 50% of material thickness.
Thick materials can be punched with excellent quality by using special tools.









EHRT – if speed matters

Software in particular

If you program manually, you'll have the choice of several functions that will make your work more convenient and faster:

- Chamfering
- Notching
- Rounding
- Nibbling

The EHRT Software automatically checks all programs concerning the danger of collisions before it will be handed over to the machine control. Thus operating errors can be reduced to a large extent.

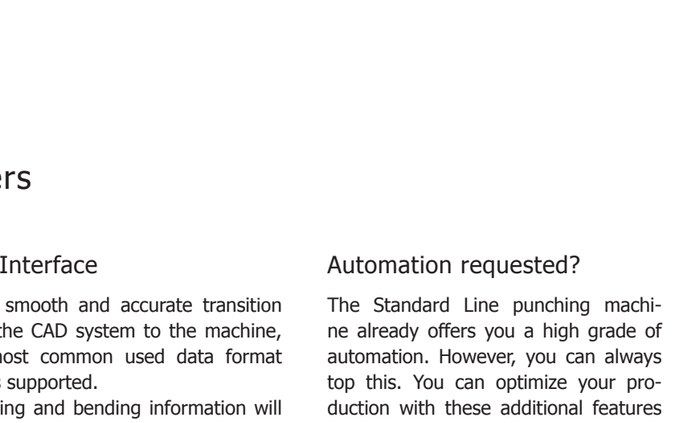
DXF Interface

For a smooth and accurate transition from the CAD system to the machine, the most common used data format DXF is supported.
Punching and bending information will be transferred.

Automation requested?

The Standard Line punching machine already offers you a high grade of automation. However, you can always top this. You can optimize your production with these additional features which fit to your needs:

- Automatic feeding system with raw material
- Sorting functions at the exit end of the machine
- Thread forming
- Profile punching
- Different methods of marking work pieces
- Variation of the punching speed



Bending

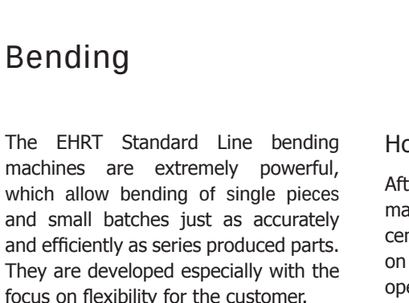
The EHRT Standard Line bending machines are extremely powerful, which allow bending of single pieces and small batches just as accurately and efficiently as series produced parts. They are developed especially with the focus on flexibility for the customer.
With a big variety of tools, you can easily bend the bars in almost every direction. For example along the flat and the edge side, as well as it is possible to twist the bars. Furthermore, we develop tools for offsets.
In this case, you save time because you get two bends with one stroke.
Nearly all radii and bending distances can be made with these machines. With CNC side stop, the big work bench and the EHRT software the Standard Line is suitable for serial production. Since we assemble our machines in a modular system, we can offer our customers machines for their individual purposes.

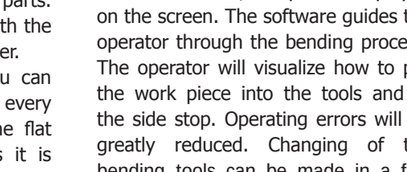
How does it work?

After programming the work piece manually or importing the data from the central database, the part is displayed on the screen. The software guides the operator through the bending process. The operator will visualize how to put the work piece into the tools and at the side stop. Operating errors will be greatly reduced. Changing of the bending tools can be made in a few seconds due to the simple EHRT plugin system.

Our Highlight:
the Spring-back Compensation

Copper and aluminum can change their qualities by aging and weathering, so bending conditions can change from material to material. And every material tends to spring back after being bent.
Therefore, EHRT has invented an electronic bending tool with the spring back compensation over 30 years ago and consequently enhanced during the past years. The customer should be enabled to bend every material with the same accuracy and short setup times.
During the bending process, the angle is measured permanently by the electronic tool. Due to the material characteristics, which are stored in the database, the EHRT software calculates the spring back compensation, and as a result, the required final stroke. A bending accuracy of 0.2° can be guaranteed. No adjustments are required.
Material scrap amounts will drop considerably. Furthermore EHRT uses turning bending bolts. The surface of the work pieces will stay without any scratches, and the electrical requirements to these parts can be secured.





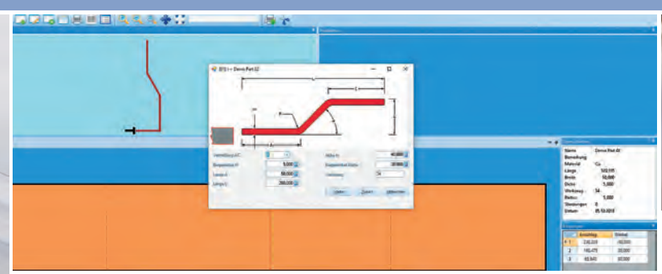
EHRT – if accuracy matters

Small U-Bends

For tight and narrow U-bends, the bending tool can be turned around. The stroke movement is then performed by the bending prism. The material in this case moves toward the operator. Bends with openings from 40mm are possible.

Offset Bending

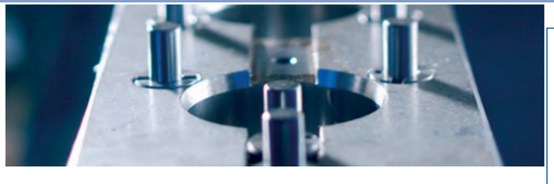
The EHRT offset bending tools allow very narrow bending distances. With special designs, work pieces can be produced without marks and with the guarantee that the surface will be parallel to each other.
The EHRT software has already implemented the function of offset bending, so that programming is as easy as the other work pieces.

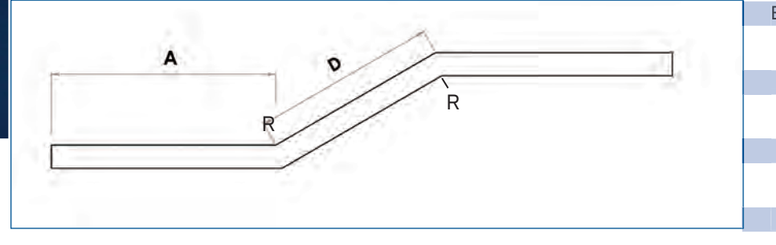


Technical specifications

	HoleCut 40-6 CNC	HoleCut 40-10 CNC
Punching Force	400kn	
Hydraulic Pressure	max. 280 bar	
Punching System	Hydraulic, oil volume 160l, Viscosity 46	
Stroke Rate	80/min; optional up to 240/min	
Dimensions of work piece		
Width	15 - 200 mm	
Thickness	3 - 10 mm (Steel); 3 - 16 mm (copper / aluminium)	
Length	30 - 6000 mm	
Oddment Length	min. 40 mm	
Number of punching tools	6	10
Hole Diameter	max. 32 mm	
Regrind of		
Punch and die plate	each max. 3 mm	
Positioning Speed	X-axis: 80m/min	
Axis Acceleration	4 m/s²	
Positioning Accuracy	+/- 0,05mm	
Production Accuracy	+/- [0,1 mm + (L/4.000)]	
CNC Control	Beckhoff	
Computer	Industrial PC with Windows 7 or later	
	Software PowerCut with MS Access, or SQL database for large data sets	
Electrical Standards	according to UL Standard	
Fuse Protection	60 A (Class J)	
Finishing	RAL 5010 Gentian Blue; Doors and Coverings RAL 7035 Light Grey	
Safety Installations	All danger zones are secured according to CE standards The safety-related control technology fulfills Control Category 2	

	EB 20 CNC	EB 40 CNC	EB 60 CNC
Press Capacity	200kn	400kn	600kn
Stroke	max. 200 mm; 8,0 inch	max. 200 mm; 8,0 inch	350 mm; 13,5 Inch
Benders (e.g. copper)			
Flat	max. 160 x 20 mm	max. 200 x 20 mm	max. 260 x 20 mm
Upright	60 x 10 mm	120 x 10 mm	
Torsion	---	125 x 10 mm	max. 160 x 10 mm
Bending System	Hydraulic		
Working cylinder	up	down	up
Hydraulic Pressure	280 bar		
Bending Accuracy	+/- 0,2°		
Rapid Movement	10 mm/s; 0.4 Inch/s		
Creep speed	5 mm/s; 0.2 Inch/s		
Return Stroke	adjustable		
Working Height	900 mm; 34 Inch		
Electrical Standards	according to UL standard		
Fuse Protection	15 A (class CC)	25 A (class CC)	25 A (class CC)
Side stop	CNC controlled		
Computer	PC with Windows 7 or later		
Software	PowerBend Central workpiece management with modern MS database Access or MS SQL		
Network ready	yes		
Finishing	RAL 5010 Gentian Blue; Doors and Coverings RAL 7035 Light Grey		
Safety Installations	All danger zones are secured according to CE standards The safety-related control technology fulfills Control Category 2		





Bending capacities and minimum distances

Tool size	A min (in mm)	Dmin (in mm)	Rmax (in mm)	Rmin (in mm)	EB 20 CNC	EB 40 CNC	EB 60 CNC
34	20	38	5	3	160 x 5	200 x 5	260 x 3
50	27	45	12	8	160 x 8	200 x 8	260 x 8
63	33	62	15	10	160 x 10	200 x 10	260 x 10
90	47	85	20	12	160 x 15	200 x 15	260 x 12
130	70	110	30	15	160 x 20	200 x 20	260 x 15

EHRT Maschinenbau GmbH
Im Kettelfeld 8 | D-53619 Rheinbreitbach | Germany

Phone: +49 (0) 22 24/92 48 - 0
Email: info@ehrt.de

Fax: +49 (0) 22 24/92 48 24
www.ehrt.de

Sales
Phone: +49 (0) 22 24/92 48 - 30
sales@ehrt.de

Service
Phone: +49 (0) 22 24/92 48 - 40
service@ehrt.de

Update 01/2017