

HFR

THE UNIVERSAL GENIUS
FOR ALMOST ALL SIZES...



Section Bending Machines

Table of Contents

| | |
|---|----|
| We at HAEUSLER | 3 |
| Universal Section Bending Machines Type HPR | 4 |
| 4-roll Section Bending Machines Type VPR | 7 |
| Beam and Tube Bending Machines Type BB | 8 |
| Section Bending Machines Type PRV | 10 |
| HAEUSLER Tube Bending Machines | 11 |
| HAEUSLER Special Bending Machines | 12 |

We at HAEUSLER

HAEUSLER is one of the world's leading companies in the field of metal forming. With more than 80 years of experience we have always been and still are pioneers in developing innovative bending machines. What once started as a small locksmith's shop in 1936 is now a successful, future-oriented family business in the field of metal bending, forming and general assembly technologies. Our goal is to provide our customers with first class one-off machines, innovative custom solutions and entire highly efficient production lines. All designed and manufactured at HAEUSLER.



Left
HAEUSLER-Main Office in Duggingen, Switzerland
Right
German plant in Rheinfelden-Herten, Germany

Know-how of HAEUSLER

The current lines of HAEUSLER Section Bending Machines are the result of over 60 years of experience. Their design has been strongly influenced by customer feedback as well as our constant effort to improve our products.

Section Bending at HAEUSLER offers 6 product lines:

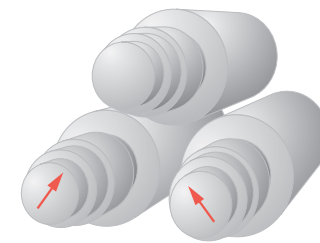
- Section Bending Machines Type HPR, with bending capacities of up to 1 700 cm³ using symmetrical or asymmetrical bending roll setups, these are universally usable machines for almost every kind of section bending work.
- 4-rolls Section Bending Machines Type VPR: their 4-rolls-setup allows to constantly pinch the workpiece between the middle rolls, thus allowing for very good torque transmission, a high level of automation as well as advantages when bending special sections.
- Beam Bending Machines Type BB allow the bending of the biggest commercially available beams over their x-x- and y-y-axes as well as tubes and flat bars with a bending capacity of up to 14 000 cm³. Special designs allow section bending of materials with even bigger yield strength.
- Equipped with an adjustable geometry the Section Bending Machines Type PRV offer an especially broad bending range and are therefore often used for special applications.
- Tube Bending Machines Type RBM bend tubes to almost any type of coiled geometries and are highly customized to meet the customers' requirements.
- For special bending applications HAEUSLER offers different unique solutions beyond standard machines so that almost any physically possible bending problem can be solved.

The universal Section Bending Machine Type HPR

The range of standard design HAEUSLER HPR universal Section Bending Machines covers a bending capacity from 50 to 1700 cm³ section modulus for all commercially available section types like U-, I-, T-, L-, flat and round sections as well as tubes. Additionally a big variety of special sections can be processed by this machine type.

Our standard HPR machines are equipped with a set of universal bending rolls. Optionally special bending rolls and auxiliary equipment can be adapted to meet specific bending requirements. The symmetrical/asymmetrical arrangement of the bending rolls allows for optimal conditions during bending, profiling or flanging.

Machine concept of the HAEUSLER HPR



Range of performance
Section modulus
50 to 1700 cm³
Other values on request

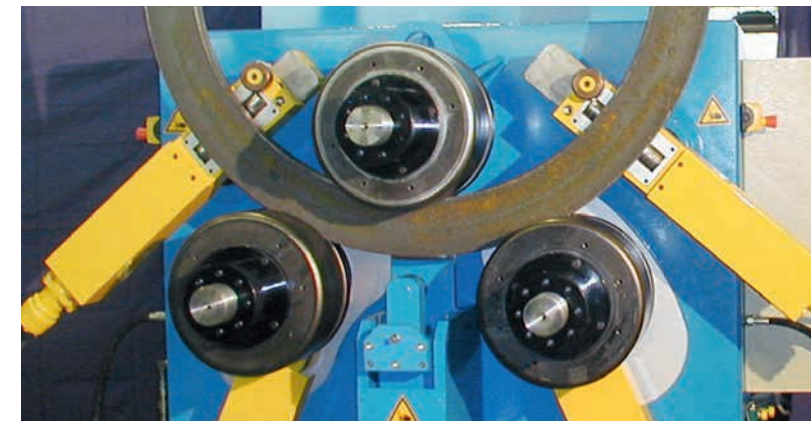
Advantages

- Each of the 3 bending rolls is directly powered by a hydraulic motor and is equipped with a maintenance-free planetary transmission gear with automated speed compensation.
- Hydraulic positioning of the bending rolls.
- Hydraulic positioning of the pressure roll supports in all three directions (Settings controlled from control panel).
- Machines sizes of up to a section modulus of 330 cm³ can be mounted vertically and horizontally.
- The generously dimensioned bending rolls run on automatically lubricated spherical roller bearings.
- Using optional equipment, production of multi-start tube coils, one step profiling, bending of half-pipes and production of complex sections from strip or coil can be realized.

HPR machine sizes

For bending U-, I-, T-, L-, flat and round sections, tubes and special sections

Section Bending Machine
HPR 150



Section Bending Machine
HPR 330


























Section Bending Machine
HPR 7000

Special construction
for bending of beams
up to a section modulus
of 8000 cm³



Capacity Chart

| Section | HPR 65 max. dimensions | HPR 150 max. dimensions | HPR 330 max. dimensions | HPR 700 max. dimensions | HPR 1100 max. dimensions | Tools | HPR 1700 max. dimensions | Tools |
|---|---------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|-------|-----------------------------|-------|
|  | 120 x 120 x 12 Ø 1200 | 150 x 150 x 16 Ø 1500 | 160 x 160 x 19 Ø 1800 | 200 x 200 x 28 Ø 2000 | 200 x 200 x 28 Ø 1800 | 1 | 200 x 200 x 28 Ø 1800 | 5 |
|  | 110 x 110 x 12 Ø 1400 | 140 x 140 x 15 Ø 1800 | 160 x 160 x 19 Ø 2000 | 200 x 200 x 28 Ø 3000 | 200 x 200 x 28 Ø 2300 | 1 | 200 x 200 x 28 Ø 2300 | 5 |
|  | 120 x 120 x 12 Ø 1200 | 150 x 150 x 16 Ø 1500 | 160 x 160 x 19 Ø 1400 | 200 x 200 x 28 Ø 1800 | 200 x 200 x 28 Ø 1600 | 1 | 200 x 200 x 28 Ø 1600 | 5 |
|  | 110 x 110 x 12 Ø 1400 | 140 x 140 x 15 Ø 1800 | 160 x 160 x 19 Ø 1800 | 200 x 200 x 28 Ø 2700 | 200 x 200 x 28 Ø 2300 | 1 | 200 x 200 x 28 Ø 2300 | 5 |
|  | 120 x 25 Ø 1200 | 160 x 30 Ø 1500 | 200 x 30 Ø 1500 | 250 x 60 Ø 3000 | 300 x 60 Ø 3500 | 1 | 300 x 80 Ø 3000 | 1 |
|  | 70 x 70 Ø 1000 | 90 x 90 Ø 1500 | 110 x 110 Ø 1500 | 150 x 150 Ø 2500 | 180 x 180 Ø 3000 | 1 | 200 x 200 Ø 3000 | 1 |
|  | max. Ø 80 mm Ø 1000 | max. Ø 100 mm Ø 1200 | Ø 125 mm Ø 1200 | Ø 180 mm Ø 2500 | Ø 200 mm Ø 2500 | 1 | Ø 230 mm Ø 3000 | 1 |
|  | 120 x 60 x 6 | 120 x 120 x 8 | 180 x 180 x 10 | 240 x 240 x 13 | 260 x 260 x 13 | 1 | 300 x 300 x 13 | 1 |
|  | UPN 120 Ø 4000 | UPN 160 Ø 8000 | UPN 200 Ø 10000 | UPN 300 Ø 15000 | UPN 350 Ø 18000 | 1+2 | UPN 400 Ø 25000 | 1+2 |
|  | IPN 120 Ø 2600 | IPN 160 Ø 4000 | IPN 200 Ø 5000 | IPN 300 Ø 10000 | IPN 340 Ø 10000 | 1+2 | IPN 400 Ø 13000 | 1+2 |
|  | IPE 120 Ø 2600 | IPE 160 Ø 5000 | IPE 200 Ø 6000 | IPE 300 Ø 12000 | IPN 330 Ø 14000 | 1+2 | IPN 400 Ø 17000 | 1+2 |
|  | | HEA 120 Ø 4000 | HEA 180 Ø 5500 | HEA 240 Ø 12000 | HEA 260 Ø 13000 | 1+2 | HEA 320 Ø 16000 | 1+2 |
|  | | HEB 120 Ø 3500 | HEB 160 Ø 4000 | HEB 200 Ø 6000 | HEB 240 Ø 7500 | 1+2 | HEB 300 Ø 10000 | 1+2 |
|  | | | HEM 120 Ø 3000 | HEM 160 Ø 4000 | HEM 200 Ø 4500 | 1+2 | HEM 220 Ø 5000 | 1+2 |
|  | 230 x 30 Ø 1000 | 280 x 40 Ø 1000 | 380 x 50 Ø 1400 | 450 x 70 Ø 1500 | 500 x 80 Ø 1400 | 1+3 | 600 x 90 Ø 2500 | 1 |
|  | UPN 200 Ø 1200 | UPN 300 Ø 1500 | UPN 380 Ø 1800 | UPN 400 Ø 2200 | UPN 400 Ø 2200 | 1+3 | UPN 400 Ø 2200 | 1 |
|  | UPN 200 Ø 1000 | UPN 300 Ø 1300 | UPN 380 Ø 1650 | UPN 400 Ø 1800 | UPN 400 Ø 1800 | 1+3 | UPN 400 Ø 1800 | 1 |
|  | IPN 200 Ø 1200 | IPN 300 Ø 1500 | IPN 360 Ø 1700 | IPN 500 Ø 2200 | IPN 500 Ø 2200 | 1+3 | IPN 500 Ø 2200 | 1 |
|  | IPE 200 Ø 1200 | IPE 300 Ø 1800 | IPE 360 Ø 2000 | IPE 500 Ø 2400 | IPN 550 Ø 2500 | 1+3 | IPN 600 Ø 2700 | 1 |
|  | HEA 120 Ø 1500 | HEA 180 Ø 2200 | HEA 240 Ø 2900 | HEA 320 Ø 3600 | HEA 400 Ø 3600 | 1+3 | HEA 600 Ø 3600 | 1 |
|  | HEB 100 Ø 1200 | HEB 160 Ø 1900 | HEB 200 Ø 2400 | HEB 280 Ø 3400 | HEB 320 Ø 3600 | 1+3 | HEB 500 Ø 3600 | 1 |
|  | | HEM 120 Ø 1500 | HEM 140 Ø 1800 | HEM 220 Ø 2700 | HEM 280 Ø 3500 | 1+3 | HEM 300 Ø 3700 | 1 |
|  | OD 127 X 5,6 Ø 1500 | OD 168,3 X 7,1 Ø 3000 | OD 219,1 X 7,1 Ø 4000 | OD 298,5 X 10 Ø 8500 | OD 355,6 X 11 Ø 10000 | 4 | OD 406 X 12,5 Ø 12000 | 4 |
| max. section modulus | 50 - 65 cm ³ | 80 - 150 cm ³ | 200 - 330 cm ³ | 415 - 700 cm ³ | 680 - 1100 cm ³ | | 1100 - 1700 cm ³ | |
| min. bending-Ø | 500 mm | 550 mm | 600 mm | 700 mm | 800 mm | | 900 mm | |

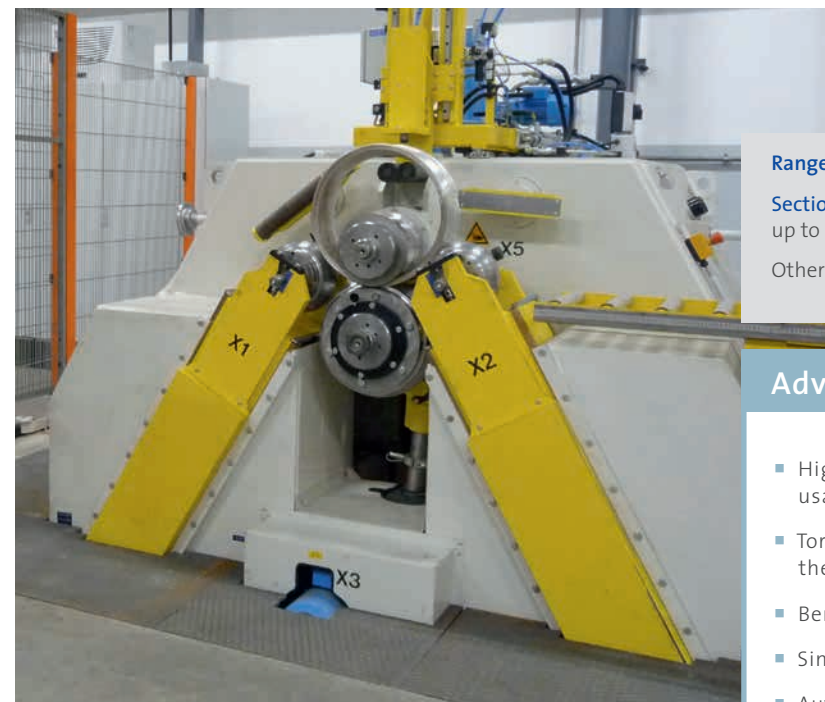
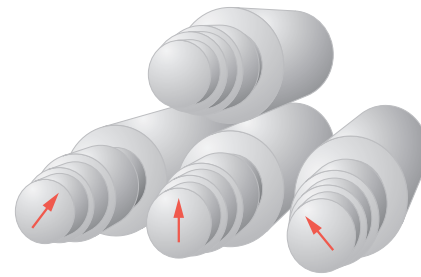
All values for regular structural steel; 1 with universal bending rolls; 2 with pulling unit; 3 with additional rings; 4 for each tube diameter one set of bending rolls; 5 with special tools



4-roll Section Bending Machine Type VPR

For customized requirements in profiling and bending HAEUSLER is a market leader in the development of custom machines. These products are developed in close cooperation with our customers. A prime example for this is the HAEUSLER VPR. These section bending machines are equipped with 4 bending rolls and allow the profiling and bending in one step (keyword: serial production).

Machine concept of the HAEUSLER VPR



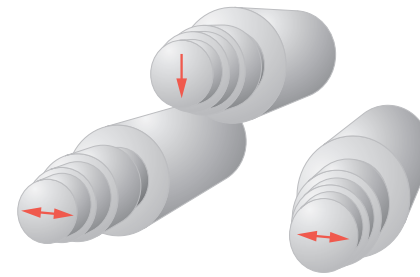
Range of performance
Section modulus
up to 200 cm³
Other values on request

- Advantages**
- Highest level of automation and therefore usable in serial production
 - Torque transmission always warranted through the active pinch between upper and lower roll
 - Bending of elliptical workpieces
 - Simple calibration of apple and pear shapes
 - Automatical minimization of straight ends

Beam and Tube Bending Machine Type BB

The standard Beam and Tube Bending Machines Type BB offer a section modulus from 2 500 up to 14 000 cm³. On request their bending power can be increased considerably. In connection with the Section Bending Machines Type HPR HAEUSLER covers the complete range of section modulus up to 14 000 cm³ with standard machines.

Machine Concept of the HAEUSLER BB

















This type of machine is usually used for the bending of the biggest commercially available steel beams over their x-x- and y-y-axes as well as for pipes with diameters up to 610 mm. Such components are used in the construction of stadiums, train stations, airports, bridges etc.



Range of performance
Section modulus
from 2 500 to 14 000 cm³
Other values on request

- Advantages**
- Each of the 3 bending rolls is directly powered by a hydraulic motor and is equipped with a maintenance-free planetary transmission gear with automated speed compensation.
 - Hydraulic repositioning of the bending rolls and pressure roll supports from control panel.
 - Vertically and horizontally adjustable hydraulic pulling unit to guide and support U- and I-sections during bending over their x-x-axis.
 - The bending shafts are generously dimensioned to minimize deflection and run on automatically lubricated spherical roller bearings.
 - The Beam and Tube Bending Machines Type BB are equipped with a set of standard bending rolls that are able to bend flat, rectangle, U- and I- sections over their x-x- and y-y-axes without modifications.

Capacity Chart

| Section | BB 2.5/180 max. dimensions | BB 5/350 max. dimensions | BB 9/450 max. dimensions | BB 14/550 max. dimensions | Tools |
|---|-------------------------------|-----------------------------|-----------------------------|------------------------------|-------|
|  | 250 x 170 Ø 5 000 | 300 x 200 Ø 5 000 | 350 x 250 Ø 6 000 | 400 x 300 Ø 10 000 | 1 |
|  | UAP 300 Ø 35 000 | UAP 300 Ø 35 000 | UAP 300 Ø 35 000 | UAP 300 Ø 35 000 | 1 + 2 |
|  | IPE 500 Ø 33 000 | IPE 600 Ø 38 000 | IPE 600 Ø 38 000 | IPE 600 Ø 38 000 | 1 + 2 |
|  | HEA 400 Ø 25 000 | HEA 600 Ø 35 000 | HEA 900 Ø 62 000 | HEA 1000 Ø 70 000 | 1 + 2 |
|  | HEB 360 Ø 12 000 | HEB 500 Ø 25 000 | HEB 800 Ø 45 000 | HEB 1000 Ø 60 000 | 1 + 2 |
|  | HEM 280 Ø 9 000 | HEM 400 Ø 11 000 | HEM 700 Ø 37 000 | HEM 1000 Ø 55 000 | 1 + 2 |
|  | UPN 400 Ø 3 500 | UPN 400 Ø 3 500 | UPN 400 Ø 5 500 | UPN 400 Ø 7 000 | 1 |
|  | UPN 400 Ø 3 500 | UPN 400 Ø 3 500 | UPN 400 Ø 5 500 | UPN 400 Ø 7 000 | 1 |
|  | IPN 600 Ø 4 000 | IPN 600 Ø 4 000 | IPN 600 Ø 5 500 | IPN 600 Ø 7 000 | 1 |
|  | IPE 600 Ø 4 000 | IPE 600 Ø 4 000 | IPE 600 Ø 5 500 | IPE 600 Ø 7 000 | 1 |
|  | HEA 800 Ø 4 000 | HEA 1000 Ø 4 000 | HEA 1000 Ø 5 500 | HEA 1000 Ø 7 000 | 1 |
|  | HEB 800 Ø 4 000 | HEB 1000 Ø 4 000 | HEB 1000 Ø 5 500 | HEB 1000 Ø 7 000 | 1 |
|  | HEM 800 Ø 4 000 | HEM 1000 Ø 4 000 | HEM 1000 Ø 5 500 | HEM 1000 Ø 7 000 | 1 |
|  | Ø 406 * | Ø 508 * | Ø 508 * | Ø 508 * | 3 |
| max. section modulus | 2 500 cm ³ | 5 000 cm ³ | 9 000 cm ³ | 14 000 cm ³ | |
| min. bending-Ø | 2 800 mm | 3 300 mm | 5 500 mm | 7 000 mm | |

All values for regular structural steel; 1 with standard bending rolls; 2 with pulling unit; 3 for each tube diameter one set of bending rolls; * Bending radius depending on wall thickness



Section Bending Machine Type PRV

HAEUSLER developed this machine type for the Russian air and space industry at the beginning of this millennium. The machine has been further developed ever since and by 2011 is being used by customers around the globe.

The machine's main characteristic is the free positioning of its side rollers. That's especially beneficial when bending complex contours as it helps minimizing unwanted cross-section deformation.

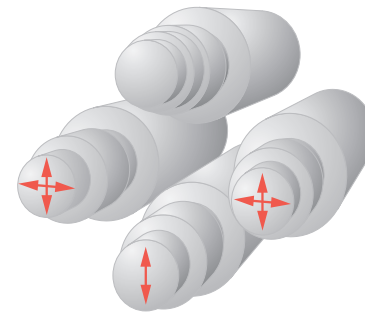
When to use a big side roll distance

- Bending of large sections
- Bending with lower bending forces

When to use a small side roll distance

- For maximum section guidance
- For maximum backspring control when working with high-tensile materials
- For minimal flat ends

Machine concept of the HAEUSLER PRV



Range of performance
Section modulus
up to 1700 cm³
Other values on request

Advantages

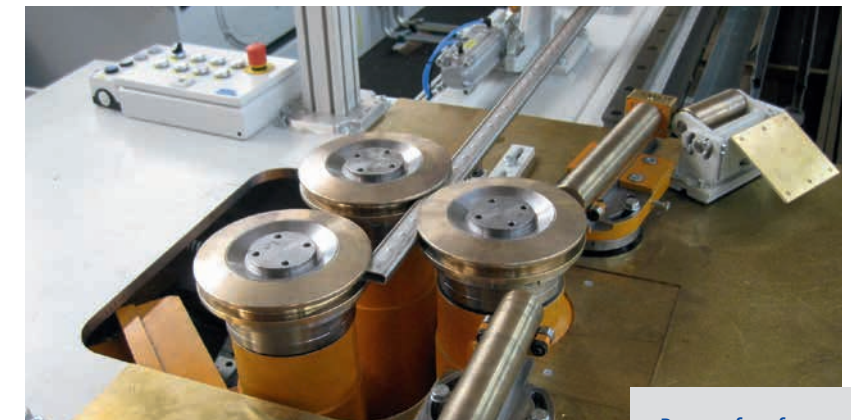
- Free positioning of the side rolls independent of the desired bending radius
- Automated minimization of the straight ends
- Torque transmission always warranted through the active pinch between upper and lower tool
- High level of automation
- Bending of elliptical workpieces
- 3-dimensional bending of reinforced sections (airplane construction) with optional 3D bending head

HAEUSLER Tube Bending Machines

Besides the standard section bending machines (also useable for tube bending) HAEUSLER also offers specific tube bending machines. These machines can bend almost any kind of coiled tubes (multi starter, cone shaped or with variable pitch).

Tube Bending Plant RBA

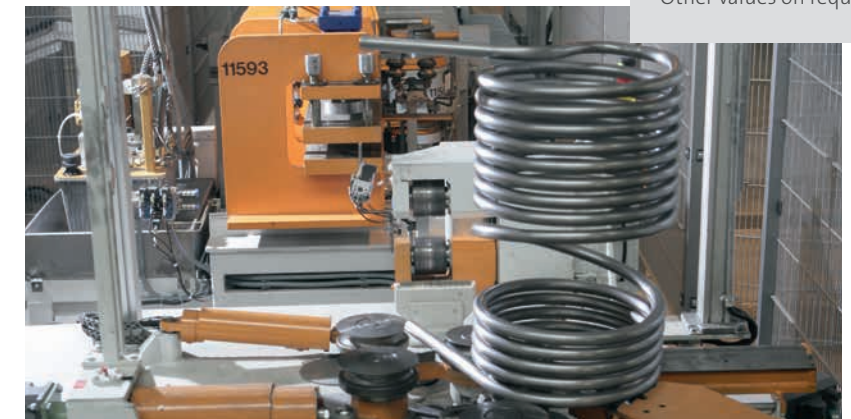
For thin walled square tubes with automatic bending thorn insertion



Range of performance
Tube diameter
up to 60 mm
Other values on request

Tube Bending Machine RBM

For coiled tubes with variable pitch



HAEUSLER Special Bending Machines

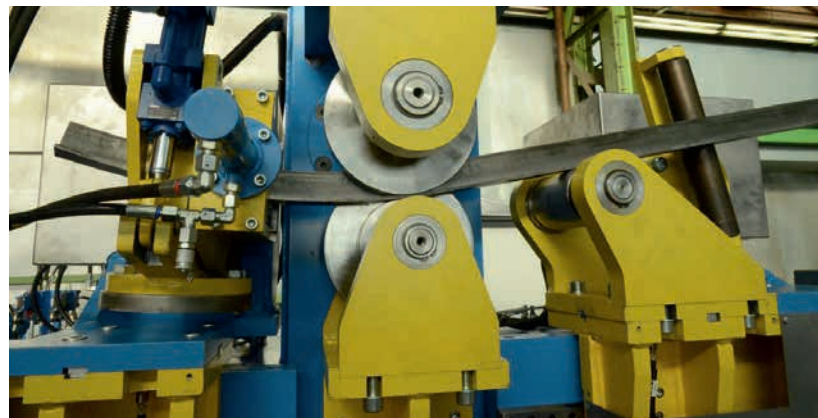
A short selection of special HAEUSLER machine designs

Mine Support Section Bending Plant



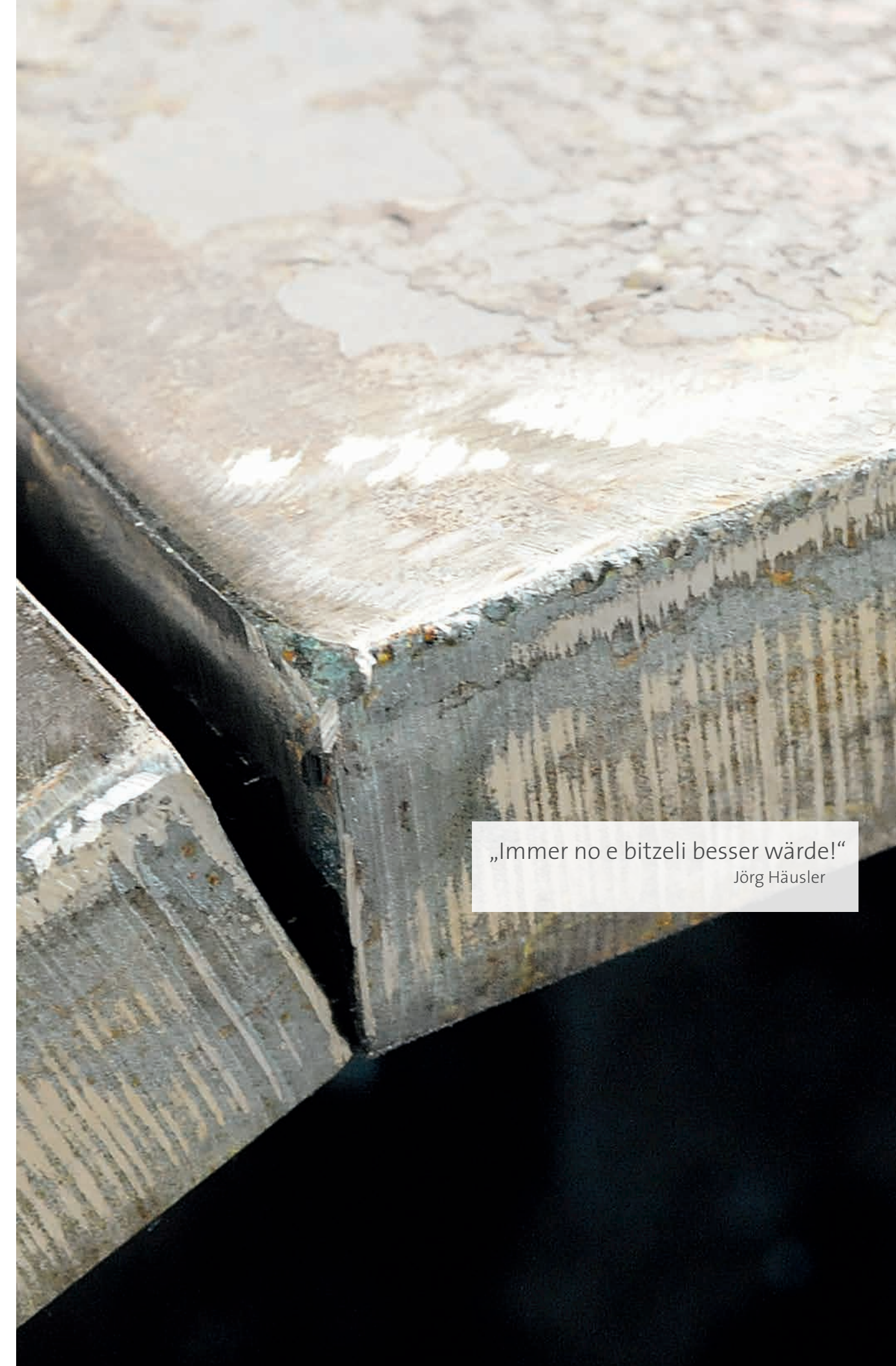
3D-Bending head

Optional equipment for 3-dimensional bending of reinforced sections in plane construction



Tube Wall Bending Machine

For the construction of heat exchangers



„Immer no e bitzeli besser wärde!“
Jörg Häusler



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