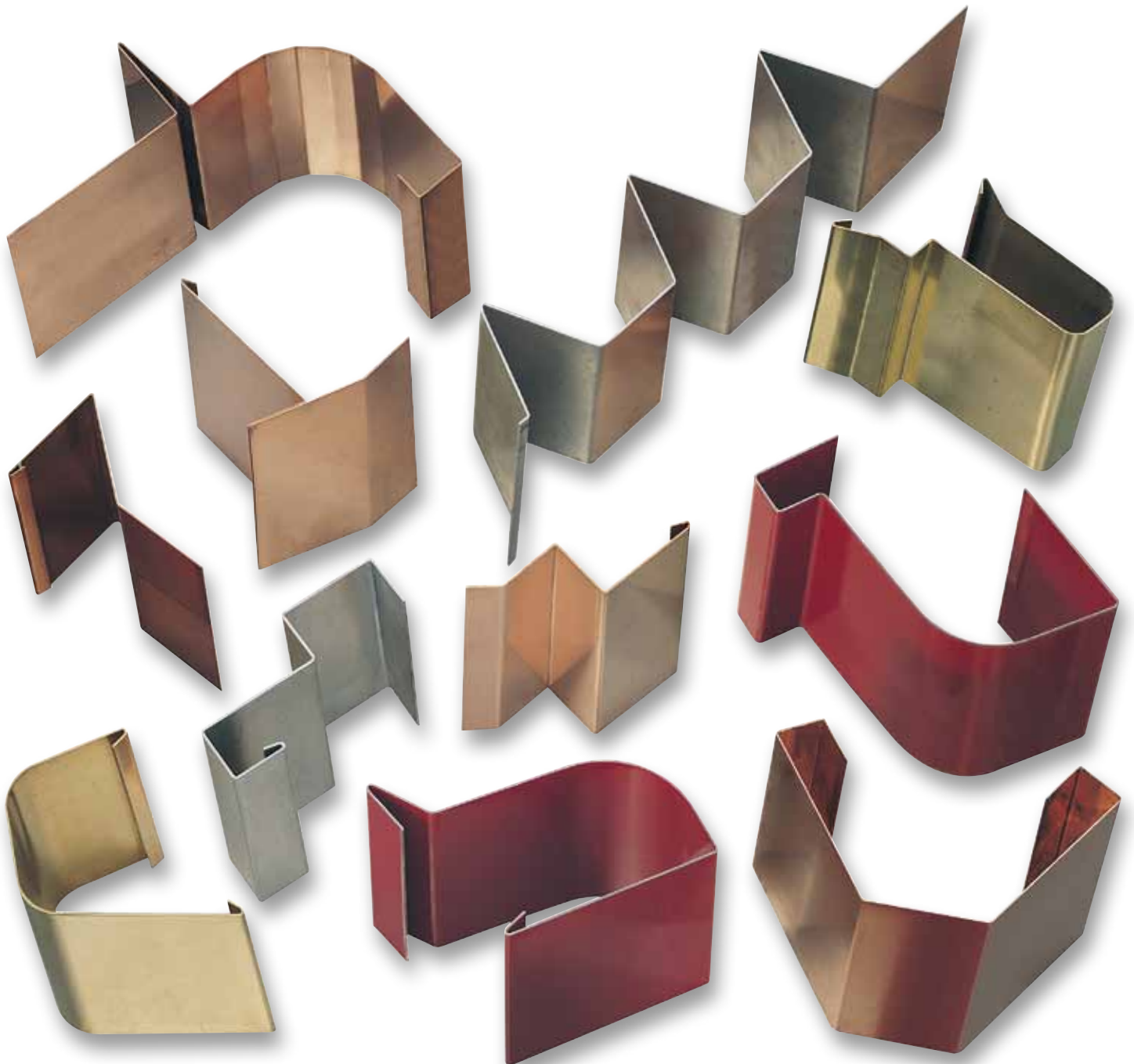


THALMANN

Swing-Folding Technology



A Company with Tradition and Vision

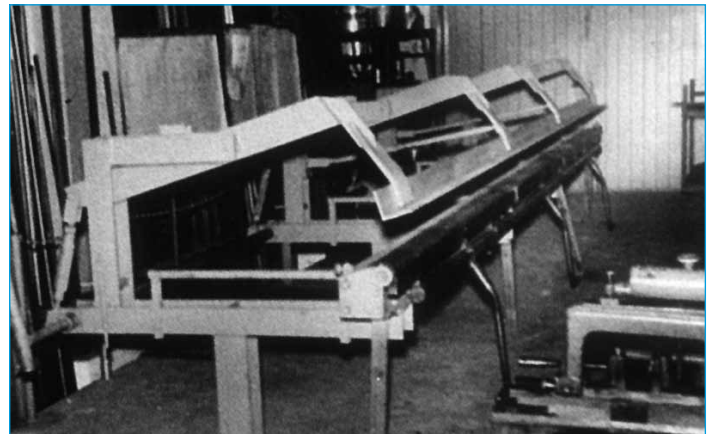
Thalmann Maschinenbau AG dates back to the one-man business founded by Otto Thalmann in 1948. The simple locksmith and metalworking business has expanded to become a major mechanical engineering company with trend-setting ideas in the sheet metal working sector; particularly so since the development and production of the world famous Thalmann bending machines in 1960. Since then, the company's head office and production plant have been based in Frauenfeld, Switzerland.

Thanks to large land reserves and the foresight of the company's founder, it was possible to extend the production and storage space to an area of 5500 m². State of the art equipment and production facilities as well as highly qualified manpower guarantee perfect quality work and delivery to deadline.

Particular attention is paid to the training of young people by offering regularly a variety of plant, machinery and mechanical engineering apprenticeships.



*Otto Thalmann †,
company founder*



First Thalmann Bending Machine «Standard» - 1960

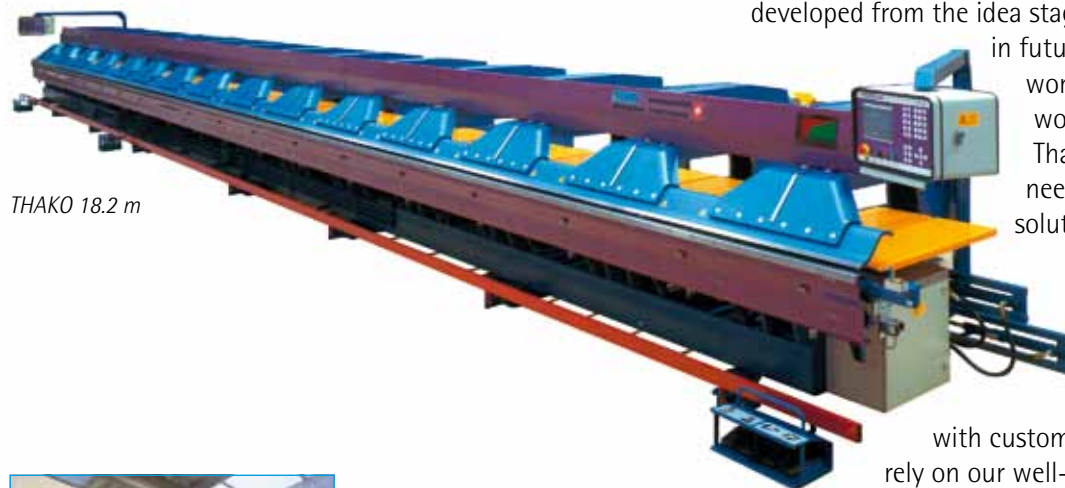


*Brothers Ruedi, Rolf and Peter Thalmann, directors of Thalmann
Maschinenbau AG*

The Solution to Modern Sheet Metal Working

Thalmann swing-folding technology

With the development of the first manually-operated, long length bending machine, in 1960, the swing-beam bending technology became Thalmann Maschinenbau AG's area of expertise. Simple manually operated machines were later followed by hydraulically-driven and combined machines for cutting and bending sheet metal. In addition to a wide range of standard types of bending machines up to 60 ft in length and with a bending capacity of a thickness of 11 ga steel (58 ksi), our considerable experience has also enabled us to develop and manufacture countless special machines, tailor-made for customer requirements, for rational sheet metal working.



THAKO 18.2 m



Machining center



Robot welder

Easy handling

The machines are operated by modern NC and CNC control panels which are continually adapted to the latest technology. Many years of experience and collaboration with the same Swiss electronic company has resulted in user-friendly, software-tested control panels.

As a pioneer in the field of long length bending machine construction, Thalmann AG is currently known throughout the world for excellent quality and longevity of their machines. Being awarded with the Bavarian State Gold Medal for excellent workmanship in 1987 is evidence of this.

New products and the further development of existing products is a constant theme at Thalmann AG. Building on our years of experience, new machines will continue to be developed from the idea stage to the production stage. Also

in future they will continue to simplify working practices in sheet metal-working plants and industries. Thalmann AG is the partner you need for competent and quick solutions to your problems.

Guaranteed Swiss quality

We guarantee the quality of our materials and workmanship with customer-friendly warranties. You can rely on our well-known after-sales and repair service even after the warranty period has expired.

Spare and replacement parts can be sent out at any time, or be installed by a mechanic, for all machines, no matter how old they are. Our employees at home and abroad are trained in all types of Thalmann machines and can carry out an efficient and comprehensive service.

Thalmann leads in health and safety records for bending machines. Even as far back as 1987 our safety standards were accredited with the GS identification number. With the introduction of the European Safety Standards all our machines are produced to conform to the latest standards and their safety has been attested with the CE safety mark. Further efforts are also made to increase the safety of bending machines. All models can be equipped with the recently developed front laser barrier on the clamp beam.

Thalmann Maschinenbau AG is certified according to SN EN ISO 9001:2000 since 1997.

The Panel-Beating Machine – The ZR Design

The ZR model is a newly constructed, sturdy and fully hydraulic swing-folding machine with standard lengths of 10.5 ft up to 39.37 ft; it was developed especially for the sheet metal workshops. This model can be adapted to requirements with a variety of accessories. The machine is manufactured in a clean welded structure and painted with a two-part hammered finish silver. The flanges are painted in a bright yellow, coated with a two-component lacquer. All drive shaft bearings are made from top-quality bronze. All other bearings subject to wear are tempered and ground. On the ZR – Model, the clamp beam and the bending flange are driven over separate camshafts in order to achieve exact parallel courses of motion.

Technical Data

Bending capacity	up to 16 ga steel (58 ksi) and 14 ga Al sheet (29 ksi)
Working lengths	10.50 ft / 13.78 ft / 20.99 ft / 28.22 ft / 32.81 ft / 39.37 ft
Throat depth	49.1 in
Bending flange width	0.59 in
Clamp beam opening	Maximum 7.87 in
Cutting capacity	16 ga steel (58 ksi) / 14 ga (29 ksi) Al sheet
Electrical connection	3 x 400 V+ N+ E 50 Hz (optional 60 Hz) Other voltages on request



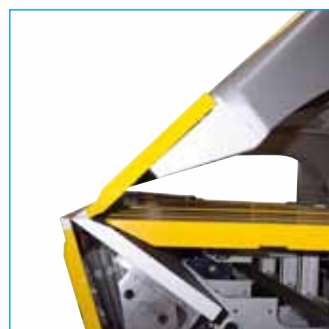
On coil gauge aligned inlaid depth of 4.10 ft



Easy regulation of the radius adjustment



Excellent clearance of the bending apron due to wide inclination angle



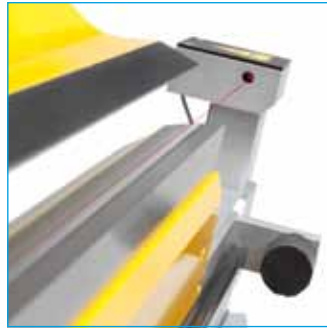
The ZR model series is applicable for almost all profiles, through the selectable flange geometry and maximum inclination of the clamping beam



Automatic cutter with quick lever thickness adjustment



Short length back gauge



Laser monitoring of the clamping range

Standard equipment

- Complete electrical and oil-hydraulic installation
- Safety equipment
- Integral leveling device
- Quick adjustment of clamp beam radius and angle position on each pedestal
- DS 3001 control panel
- Programmable back gauge
- Hydraulic system filled with required oil quantity
- Foot pedal operation of clamp beam and bending flange
- All-phase main switch
- Freely selectable clamping beam geometry curved (standard) or straight
- The machine needs only little maintenance work

Special accessories / special equipment

- Hydraulically-operated automatic cutter
- Adjustable cutting head with sheet support roller
- Bending flange width 0.4 inch + 0.4 inch additional track
- Laser monitoring of the clamping range
- Variable back gauge for short profiles



High Standards and Long Service Life – THAKO Models

The THAKO model, the Thalmann Company's flagship folder, was primarily designed for ambitious facade and roof constructors as well for the industry sector - it combines decades of experience, development and engineering of long-length folders. The ingenious design of the THAKO meets virtually all customer requirements and allows for increasing requirements in terms of efficiency, flexibility, durability and safety.

Individual selection of beam geometry, gripper systems for material handling, roll-former units as well as an insertion depth of up to 2000 mm and machine lengths of up to 18.2 meters are just a few of the highlights offered by this model range.

The unique Thalmann control shaft principle guarantees unrivalled accuracy and quality throughout the machine's entire life.

Technical Data

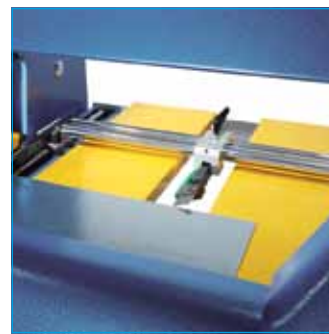
Model	THAKO 20	THAKO 30
Bending capacity steel 58 ksi	2.0 mm	3.0 mm
Working lengths	10.50 ft / 13.78 ft / 20.34 ft / 26.90 ft / 32.81 ft / 39.37 ft / 45.93 ft / 60.03 ft Other lengths on application	
Throat depth	39.3 in / 51.2 in / 59 in / 78.7 in	
Bending apron width	0.59 in + additional track 0.47 in Other configurations on request	
Clamp beam opening	maximum 5.91 in	
Cutting capacity steel 400 N/mm ²	16 ga steel / 14 ga Al sheet or	
	11 ga steel / 6 ga Al sheet	
Electrical connection	3 x 400 V + N + E 50 Hz Other voltages on request	



Easy regulation of the radius adjustment



Maintenance-free long life linkage



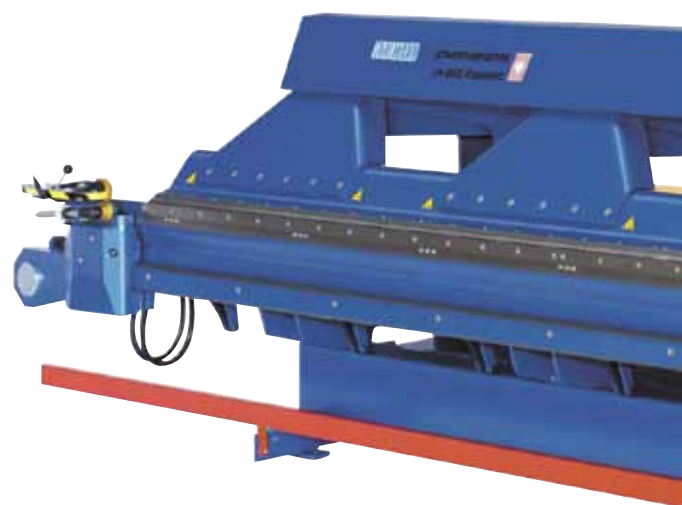
Variable back gauge for short profiles



Powerful automatic cutter with quick lever thickness adjustment

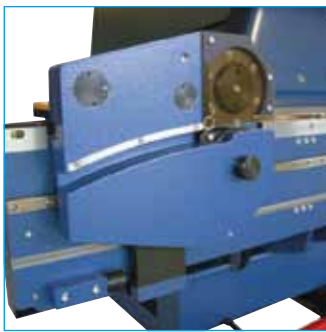


Laser monitoring of the clamping range





High productivity through gripper handling



11 ga hydraulically-operated automatic cutter



The roll-forming tool allows to realize totally new ideas

The following parts are standard equipment:

- Complete electric and oil-hydraulic installation
- Hydraulic system filled with required oil quantity
- Integral leveling device
- Three-phase main switch
- Automatic cutter attached to bending flange
- Adjustable cutting head with sheet support roller
- Modular support table
- Box with spare parts and material for machine maintenance
- Safety equipment in accordance with CE standards
- Blue hammered finish paint

Special equipment

- Automatic cutter for 11 ga sheet metal (58 ksi)
- Adjustable cutting head with sheet support roller
- Roll-forming unit
- Pneumatic gripper-system for part handling
- Laser monitoring of the clamping range
- Variable back gauge for short profiles
- Hydraulic radius adjustment through CNC controller
- High speed hydraulic for 30 % higher working speed
- Hardened and ground extra rail for clamp beam
- Individual selection of beam geometry



TD Double Bender – precise, fast, flexible and innovative

Now, the TD double benders also harness the advantages of double bending for large-scale operations of sheet metal, façade construction, and general bending with an economic yet top quality system – one bending flange above and one below enable bending from top down as well as from bottom up without having to rotate or turn the machined sheets. This facilitates the bending process and increases output. In this manner, the double benders are convincing with their precision, speed and flexibility as well as reliability and with a very wide spectrum of fabricable profiles.

Technical Data

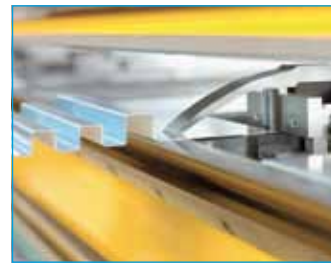
Model	TD 125	TD 150	TD 200
Standard Working Lengths	10 ft 6 in / 13 ft 9 in / 21 ft / 27 ft / 32 ft / 40 ft		
Standard Throat Depth	49.2 in		
Max. Bending Capacity	18 ga	16 ga	14 ga
Bending Flange Width	.472 in + .315 in additional rail		
Max. Bending Angle	143°		
Bending Speed	3.5 s for bending flange cycle of 143°		
Bending Accuracy	± 0,5°		



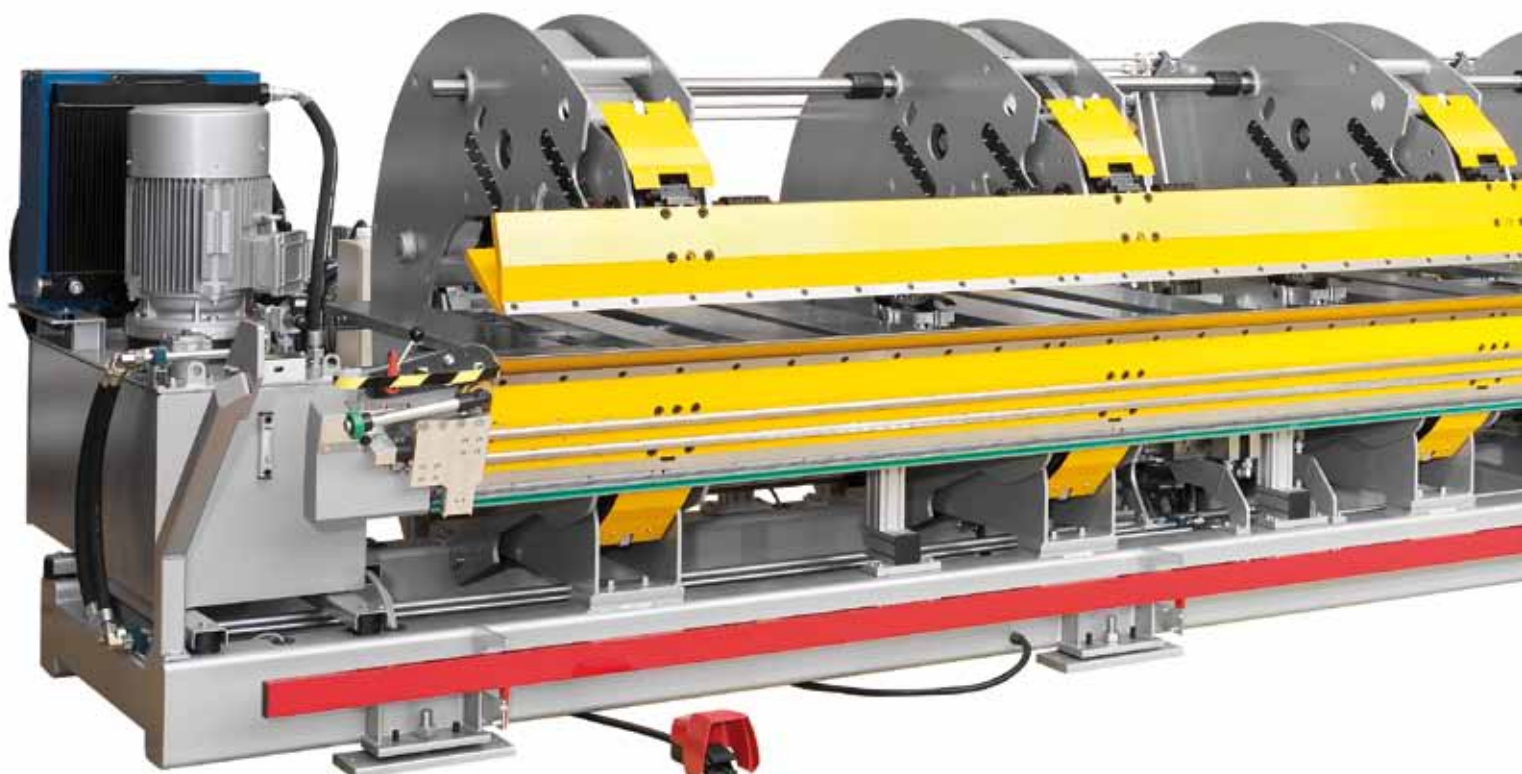
Longitudinal slitter with double guide for the highest of precision



Customised roll forming tool for special profiles



Individual customised gripper fingers for changing – Stop fingers for very low supporting surfaces of the plate of .196 inch - .945 inch



Maximum Precision

Maximum precision is taken care of by our unique Thalmann drive shaft technology. A mechanical control system synchronises all mechanical axes using a massive steel shaft and maintains constant operating pressure over the entire bearing length. This results in extremely precise bending – in case of profiles with 60 and more bends for e.g., the deviation from one side to the other is .08 in at the most, that is a max. of .0016 inch per bend. The double bender achieves an accuracy of $\pm 0.5^\circ$ for a max bending angle of up to 143° and requires only an astounding three seconds back and forth, thanks to the heavy duty hydraulics! Incidentally, outside the bending cycles an automatic unpressurised rotary operation helps save precious energy.



The clever beam geometry provides unrivalled flexibility



Laser monitoring of the clamping area for optimal accident prevention



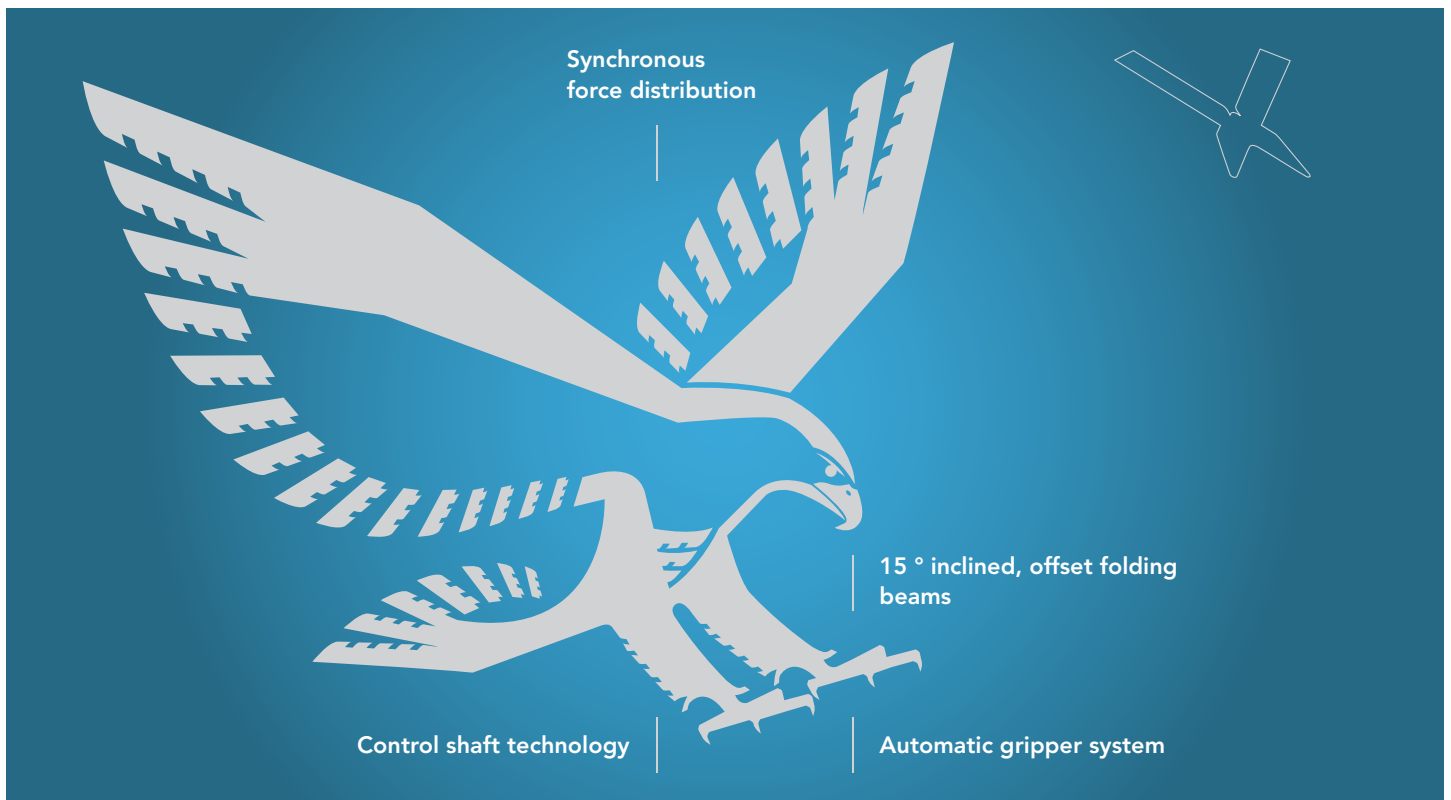
High Flexibility

Many slick features of the double bender facilitate manufacturing of profiles, which is not possible with other machines – the folding beams tilt to 15° directly increase clearance around the bent component and thus provide more flexibility for the portable bending solutions. A genuine competitive edge for the user. Thanks to the folding beams of .472 inch width with .315 inch removable extra rails, narrow Z bends are possible. The automatic gripper system can securely hold all types of sheets from the very narrow .945 inch width sheet to the commercial 49.2 inch width coil. We provide special gripper fingers designed for individual profiles on request. In order that even special profiles can be securely gripped and quickly manufactured, the gripper fingers are designed so that changeover is easy and quick. With optional gauge fingers, close gauging of .196 inch can be achieved. A special profile flange support provides a lot of free space in the machine.

Options

Following are the options available for the TD model series:

- Longitudinal slitter with double guide for the highest of precision
- Customised roll forming tool for special profiles
- Individual customised gripper fingers for changing
- Stop fingers for very low supporting surfaces of the plate of .196 inch – .945 inch
- Conical back gauge in fully automatic operation
- Aluminium spherical supporting table in the machine
- Individual, custom-tailored bending beam geometry
- Yet sturdier bending and clamping beams made of Hardox 174 ksi
- Additional stand assembly for better bending stability, allowing for the sheet metal machine to be converted to an industrial machine without considerable capital expenditure



TC-300 Double Bender – the Bending Machine with Two Bending Flanges

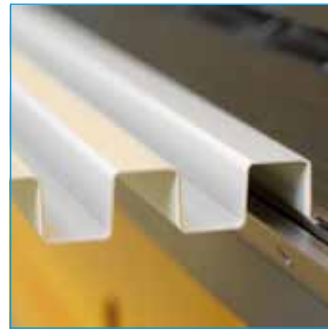
Sophisticated profiles in façade and roof construction often contain z-bends. On conventional bending machines such profiles must be repeatedly rotated and turned during the bending operation. With the double bender, such manual handling is a thing of the past. The sheet metal is held by grippers, which move the profile to its next position. Depending on requirements, the sheet metal is bent upwards or downwards according to the preset angle.

The bending flanges must exhibit high precision and an extremely accurate synchronous run in order to guarantee perfect dimensional and angle accuracy.

The machine has a modern and highly dynamic hydraulic drive system, enabling operation at high speeds, the bending flanges requiring less than 2 seconds to swivel out by 140 degrees. The speed can be automatically and infinitely reduced and adjusted to the metal profile lying outside the machine to avoid damage to the already bent profile. The recently developed DS 3000 controller with 15 inch touch screen is easy to use and operates with user-friendly software.

The TC-300 is available in lengths of 4.9 ft to 32.8 ft and inlaid depth up to 6.56 ft, whereby its modular concept allows the construction of even longer machines. This model has a bending capacity of 11 ga for sheet steel (58 ksi) and 26 ga for aluminium (32 ksi) respectively.

- High operating speeds thanks to maximum stability
- New synchronization system for even more precise bending
- User-friendly CNC equipment to satisfy the highest expectations



Minimal bends of 0.78 x 0.78 inch



Precise bending even with 11 ga sheet steel (58 ksi)



Back gauge finger with minimum working dimension of 0.19 inch



1.57 inch gripper-span to hold even bended parts





MAGNUM – Unique Wedge Cut Technology. Cutting and Bending up to 11 ga Sheet Thickness

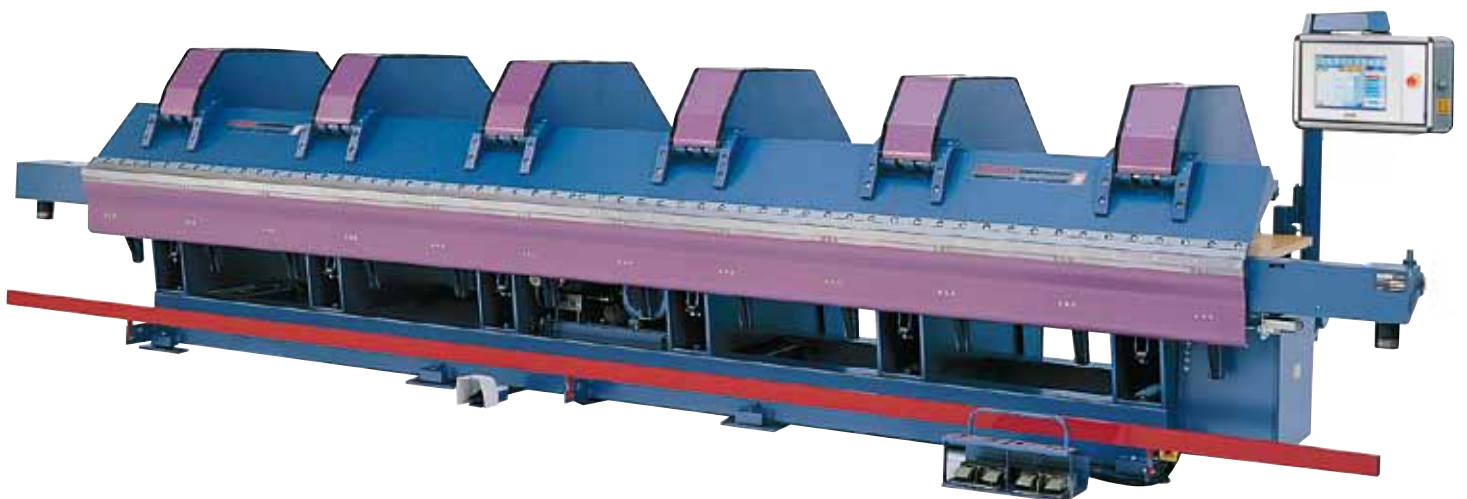
In addition to the already convincing swing-folding technology from Thalmann AG, we are introducing exclusive wedge cutting technology. With the development of these special shears, damaged sections from the strip belong definitely to the past. This patented slitting system leaves neither scratches nor deformations.

A Thalmann exclusive

The Swing-folding Machine with swivel-mounted clamp beam, assembled with shear blade and radius bar. Thus it is possible to use the shear blades on all four knife edges.

The radius bar is available in stock and can be supplied also in a tempered version.

- Bending capacity: 11 ga sheet metal (58 ksi)
- Shear capacity: up to 11 ga sheet metal (58 ksi)
- Working lengths: 9.8 ft, 13.1 ft, 16.4 ft, 19.7 ft, and 26.3 ft



Competitive in Price and Performance – The QUIK Model

This low-priced panel-beating model offers all strengths and skills of Thalmann machine and is available in different versions. The standard model is equipped with hydraulic clamp beam and bending flange, manual cutter and the control panel DS 2500.

Torsion shafts guarantees parallel course of motions for the clamp beam and the bending flange. The integrated synchronization and alignment system allows a readjusting at any-time.

CNC graphic controller and programmable back gauge are just some of the options that can be supplied for the QUIK model.

- DS 2500 control panel with 8x bending program
- Torsion shafts for the clamp beam and the bending flange
- Solid BOSCH-Hydraulic system
- Sturdy steel construction
- Built in leveling mounting
- 0.59 inch safety stop for clamp beam "lower" and end-to-end emergency-stop toe board

Special accessories / special equipment

- DS 3001 CNC graphic controller
- Programmable motorized back gauge
- Variable back gauge for short profiles
- Manual back gauge with LED display
- Hydraulically-operated automatic cutter instead of the manual cutter
- Bending flange width 0.4 inch + 0.4 inch additional track
- Laser monitoring of the clamping range

Technical Data

Working length	13.12 ft and 19.69 ft
Throat depth	39.3 in
Bending flange width	0.79 in, other configurations on request
Maximum bending capacity	19 ga Steel (58 ksi) / 16 ga Al sheet
Cutting capacity manual cutter	19 ga Steel (58 ksi) / 16 ga Al sheet
External measurements with 13.1 ft working length	16.4 ft x 4.92 ft x 4.59 ft / weight 3530 lb
External measurements with 19.7 ft working length	21.65 ft x 4.92 ft x 4.59 ft / weight 4630 lb
Electrical connection	3 x 400 V + N + E / 3.0 kW



Top modern cutting system for high dynamic working



User Friendly and Versatile – The Thalmann Controllers

The DS 2500 controller – simply and clear for QUIK, ZR, THAKO and MAGNUM models

- 8-times bending program
- Manual and automatic operating mode
- Preset of clamp beam opening and lower
- Diagnostic program
- Nominal value and actual value display



The DS 3001 graphic controller with touchscreen – versatile and easy to use

The 3-axis CNC controller manages: type and thickness of materials, flat projection, depth stop, bend angle, opening and lowering of the upper beam as well as the angle correction data and clamping pressure values. The nominal and actual values of each profile can be programmed and read on the computer screen.

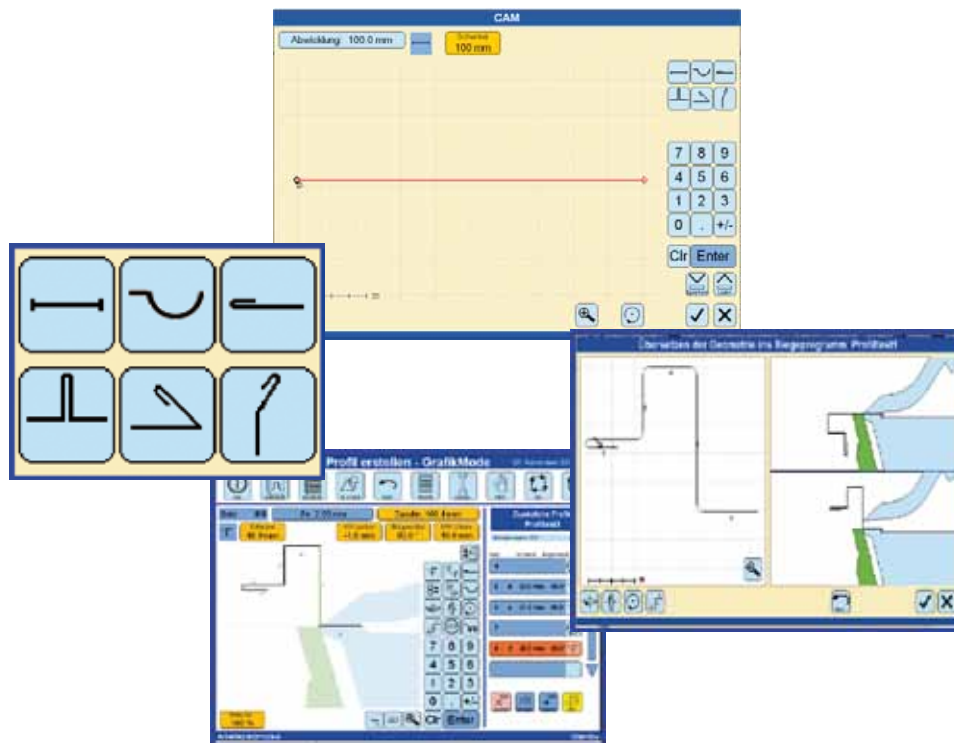
- CNC controller with Windows XP Professional operating system
- 15" TFT touchscreen with graphic navigation and 3D visualization
- Easy and user friendly programming and administration
- Manual and automatic operating mode
- Automatic axis displacement for cutting and bending
- Anti-collision and simulation program
- Archive with over 10'000 profile memory
- Total and order-related time recording
- Service and diagnostic program
- USB port and 2GB memory stick
- Pentium 4 Processor with SSD solid state drive
- Stand-alone software for external PC or laptop programming
- Software updates with no hardware replacement
- The control is even operable with working gloves



The DS 3000 controller for our double folder models

The newly-developed CNC control with 15-inch touchscreen colour display and user-friendly software offers a great ease of use. The bending programs can be written either on the machine, or at the remote programming station. The 7-axis CNC controller manages the upper beam, upper and lower bending beam, lower and upper folding beam displacement, the radius adjustment as well as the depth stop.

- Profile catalog with list of categories
- Manual, automatic and simulation operation
- Collision program
- Computer functions
- Variable speeds
- Time recording
- 3D visualization of profiles
- Service and diagnostic program
- Large tool catalog
- High performance-PC with Windows XP Professional operating system
- Software updates with no hardware replacement
- Stand-alone software for external PC or laptop programming
- Network-compatible
- Operating logs and much more



The idea

Have you ever had this irritating experience? You receive the drawing of a finished part from a client only to find that you still have to enter all the dimensions again into the control! Or perhaps you have made a sketch showing the key dimensions on the construction site and wish to generate a bending program quickly and easily on that basis?

To make your work easier, we have created the DXF-File-Import on the control and "CAM"

- Computer Aided Manufacturing. The first system enables you to read almost all finished component drawings available in electronic form into the control with just a few manual entries; with the second, you draw your finished component on the screen by inputting a small number of data items. This data is then translated into a bending program.

In other words:

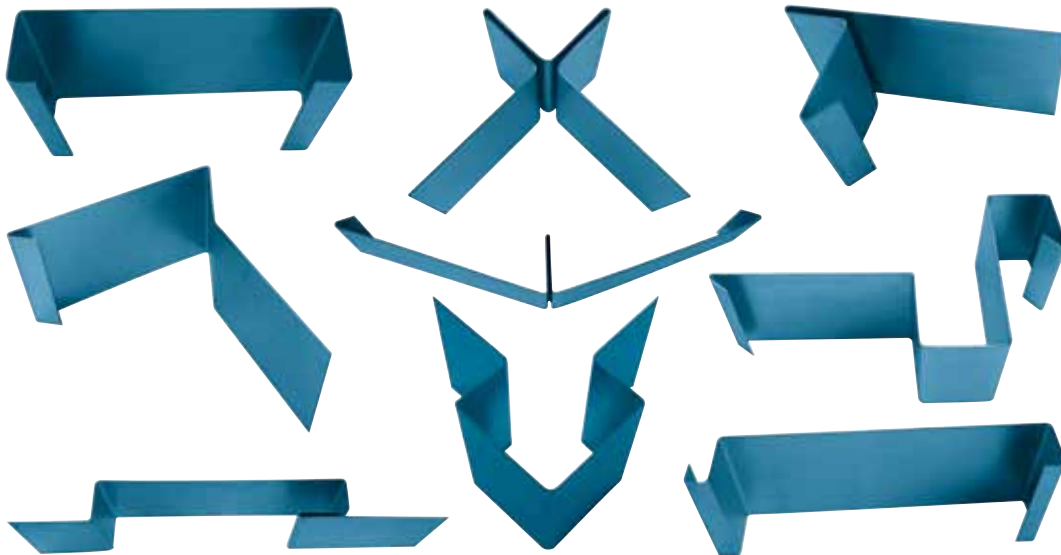
- you create a bending program from the CAD drawing of the final contour,
- you generate a finished component drawing directly on the screen and go on to translate this drawing into a bending program.

For this translation operation, you can choose whether the control is to "automatically" offer you a series of proposed solutions or whether you wish to determine the sequence of bending steps yourself. We describe this as the "manual" procedure.

The basic features of this new software are presented to you on the following pages.

Milestones of the Thalmann Maschinenbau AG

- **1948** Establishment of the company by Otto Thalmann †
- **1961** Patenting of the first long bending machine for the sheet metal forming business
- **1962** Market entrance in Austria and Germany
- **1965** Market entrance in Scandinavian market
- **1973** First deliveries to Australia
- **1974** Establishment of the Thalmann Konstruktionen AG
- **1978** Introduction to the market of the successful and strongest product line THAKO for 2-3 mm sheet metal
- **1981** Introduction to market of the product line PICO up to 1.5 mm sheet metal
- **1987** Receipt of the Bavarian State award (gold medal) for outstanding handcraft achievements relating to the THAKO 30 - 6.2 m
- **1987** Assignment of the GS label for industrial safety
- **1990** Introduction of the riser model QUIK on the market
- **1991** Name change to Thalmann Maschinenbau AG headquartered in Frauenfeld
- **1994** Handover of the company to Otto Thalmann' s four sons Peter, Rolf, Ruedi and Kurt
- **1994** Introduction to market of the MAGNUM model with world exclusive wedge cut technology
- **1995** CE-certified Machine delivered for the first time
- **1996** First steps in the Asian markets
- **1997** Certification according to SN EN ISO 9001:2000
- **1998** Delivery of the world-longest folding machine of 18.2 m
- **1999** Establishment and participation in the OMK GmbH company for the production of luggage scanners
- **2003** Delivery of the first Double Bender TC-300
- **2006** Expansion in the USA/CAN market
- **2007** Introduction to the market of the ZR product line as replacement for the PICO series
- **2009** Facelift ZR-Model
- **2009** New control software with CAM and DXF Import
- **2010** Introduction of the TD model into the market



THALMANN

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