LONG FOLDING MACHINES
THANK YOU, OTTO! Thalmann Maschinenbau AG dates back to the one-man business founded by OTTO THALMANN in the year 1948 in Frauenfeld. The simple locksmith and metalworking business has developed to become an internationally active engineering company with trend-setting ideas for innovative long folders and efficient solutions for the roofing, facade construction and sheet-metal working sector. The company head office has been based in Frauenfeld since 1960 and it is here where Otto’s sons, RUEDI, ROLF AND PETER THALMANN have continued to develop this aspiring enterprise further. Under the present management of Managing Director, MARCO CAPPELLO, the company particularly focuses on the advancement of product development and international orientation. As someone who has previously worked as an entrepreneur in various sectors of the sheet metalworking sector, Marco Cappello also believes in the consistent realisation of the corporate philosophy as a significant and motivating success factor. This includes: The highest DEMANDS ON QUALITY, enthusiastic CUSTOMERS, reliable SUPPLIERS, motivated EMPLOYEES, comprehensive SERVICES, sustainable GROWTH, and with a pronounced INVENTIVE TALENT bring genuine INNOVATIONS onto the market time and time again.

THALMANN INTERNATIONAL International expertise, regional proximity, professional advice and comprehensive worldwide service – we export our high-quality long folders from Switzerland to customers all over the world. We offer you the opportunity to view and extensively test Thalmann machines in showrooms at selected locations. Furthermore, we are a partner for life. With a host of after sales support and service offers, we are able to guarantee an all-round service over the lifetime of your machine, ranging from reliable onsite servicing or remote maintenance to the rapid delivery of machines and spare parts.

THALMANN MASCHINENBAU AG
One of the highlights is the worldwide unique control shaft technology developed by Thalmann. It guarantees maximum precision. Its kinetic drive concept, which ensures a synchronous distribution of force on the machine and which is comparable to the mechanical control used in the aircraft construction industry, was already included in the first Thalmann machine back in 1960. The power of all of the machine stands is distributed evenly to all the moving axes through a solid steel shaft and thus ensures unimpaired angle precision and parallelism of the folded parts along the entire length of the machine.

One of Thalmann’s outstanding innovations is the dynamic, fully-automatic upper-beam crowning system. It compensates and eliminates the effect of overbend of the profile ends. Instead of the manual or mechanical hydraulic adjustment system used thus far, Thalmann adapts silent and efficient servomotors on each of the stands for the infinitely-variable regulation of the upper beam. If crowning adjustment is needed in order to achieve an even folding angle regardless of the profile length, material type and sheet-metal thickness, targeted corrections can then be executed at each individual machine stand via an input window on the controller.

Through the simultaneous movement of several machine axes, this innovative technology increases production speed considerably while maintaining folding accuracy. The DFT reduces travel time and downtime to a minimum and thus allows an extremely smooth and highly dynamic folding process. This greatly increases productivity which extends the machine capacity substantially.

This exclusive VFD design principle developed by Thalmann engineers and included in the EC and TC models is a league of its own. Whereas the machine stands in conventional long folders work like oversized pliers as they clamp the metal sheet, the stands in these models are formed in the shape of “rigid C-frames”. Combined with the vertically arranged clamping beam mounted on the top part of the C-frame, this unique concept creates a huge pressing and clamping force - and the mechanical zero-point locking system eliminates the risk of an overload which would result in subsequent fissures. The VFD guarantees reliable clamping of the sheet-metal parts and is thus crucial for the evenly applied pressure on open or closed hems.

For us, Thalmann Maschinenbau AG, the term SWISS MADE is more than just a SEAL OF ORIGIN. A Swiss product is also a PROMISE OF QUALITY – for our CUSTOMERS and for our SELF-IMAGE. Each Thalmann machine contains a wealth of EXPERIENCE, sound ENGINEERING KNOWLEDGE, INNOVATION and great COMMITMENT. Since 1960 we have been developing and producing the highest quality LONG FOLDERS which count among the best in the world. To achieve this, many cogs need to interact – similar to the mechanism of a Swiss clock. Each individually assembled part must fulfill its task reliably. This is why we place the utmost importance on INDIVIDUAL QUALITY. Moreover, the true VALUE of a long folder can only be seen when it starts folding: with speed, precision and reliability. Our aim to improve day by day and consistently develop INNOVATIVE STRENGTH, which generates COMPETITIVE ADVANTAGES for our CUSTOMERS, shall remain our MOTIVATION in the future and continue to govern our company’s aspirations.
TZ LONG FOLDER

The innovative TZ model emerged as a synergy and further development of two preceding models, the THAKO and ZR series. The TZ unites the best elements of centuries of Swiss engineering skill and is now impressive in its own right through its numerous innovations. In particular, the INNOVATIVE VFD (Vertical Force Drive) DESIGN PRINCIPLE is second to none. The machine stands are formed in the shape of “rigid C-frames”. With its vertical tool alignment, the VFD produces a great amount of vertical clamping force for hemming. The integration of the globally unique kinetic CONTROL SHAFT TECHNOLOGY is not only clever from a technical viewpoint, but also offers real added value by distributing the output from all of the machine stands evenly over the clamping and folding beams. Additional free space and flexibility are provided by the newly designed CLAMPING BEAMS and the OFFSET FOLDING BEAM. With the most modern drive technology, the TZ provides measurably improved energy efficiency with considerably higher folding dynamics. Torsion-free profiles are created by a smooth-running, servo-drive-controlled DYNAMIC CROWNING system which impressively compensates for any edge-pressure effects which may occur. The NEW LONGITUDINAL SLITTER concept is detached from the folding beam and thus prevents disruptive influences during the folding process.
THE POSITIONING OF THE ELECTRICALLY-DRIVEN LONGITUDINAL SLITTER ON THE MACHINE BASE FRAME RELIEVES THE FOLDING BEAM MECHANICAL COMPONENTS. SINCE PROTRUDING GUIDANCE PARTS ON THE FOLDING BEAM ARE OMITTED, VALUABLE FORMING SPACE IS MADE AVAILABLE.

THE UNIQUE CONTROL SHAFT TECHNOLOGY DISTRIBUTES THE POWER FROM ALL OF THE C-FRAMES EVENLY OVER THE CLAMP AND FOLDING BEAM. BOTH CONTROL SHAFTS ON THE CLAMPING AND FOLDING BEAM HAVE DIRECT ENCODER MEASUREMENT. THIS KINETIC DRIVE CONCEPT ACHIEVES AN UNRIVALLED ANGLE PRECISION AND PARALLELISM OF THE BENT COMPONENTS ALONG THE ENTIRE LENGTH OF THE MACHINE.


CHARACTERISTICS

- Tool geometry with 270° free space
- Straight clamping beam with a 35° angle of inclination
- Straight folding beam geometry with a 15° inclination
- VFD (Vertical Force Drive) design
- Kinetic control shaft technology
- Energy-efficient hydraulic high-performance hydraulics
- Adjustable sheet supporting table
- Manually adjustable folding beam crowning
- Safety laser for clamping and cutting
- Graphic CNC touch-screen controller
- Remote maintenance using TeamViewer software

OPTIONS

- Detached automatic slitter
- Roll-forming unit for special profiles
- Side-adjustable spring-loaded finger back gauge
- Curved clamping beam geometry
- Offset folding beam geometry (as of version TZ 200)
- Tapered back gauge
- Automatic radius adjustment (standard from TZ 150)
- Dynamic crowning adjustment
- Folding beams with interchangeable tools
- HARDSION beam tools
- LED clamping line lighting

MODELS

<table>
<thead>
<tr>
<th>TZ125</th>
<th>TZ150</th>
<th>TZ200</th>
<th>TZ300</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. folding capacity</td>
<td>1.25</td>
<td>1.50</td>
<td>2.00</td>
</tr>
<tr>
<td>Working length</td>
<td>From 3.2 to 12.0 m****</td>
<td></td>
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<tr>
<td>Throat depths</td>
<td>1250 mm*****</td>
<td></td>
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<tr>
<td>Folding beam width</td>
<td>15/10 + add. rail 10 mm******</td>
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<tr>
<td>Max. folding angle</td>
<td>143°</td>
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<td></td>
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<tr>
<td>Folding accuracy</td>
<td>± 0.5°</td>
<td></td>
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</tr>
</tbody>
</table>

*At 600 N/mm² / 58 kpsi | **18 | 16 | 14 | 11 ga
***5 or 9.4 ft | ****47 ft | *****59 ft | ******8.9 ft
TD DOUBLE FOLDER Depending on the profile requirements, folding can also involve intricate rotation and turning. Depending on the profile length, material type and weight of the sheet-metal parts, this may require the involvement of several operators. By applying Thalmann DOUBLE FOLDER TECHNOLOGY, sheet-metal part handling can be completely omitted or reduced to an absolute minimum. Two folding beams are used to fold the sheet metal in two directions: Fully automatically, efficiently, fast and with high precision. With the innovative DYNAMIC FOLDING TECHNOLOGY (DFT), the folding speed and thus production output are increased considerably. Driven by the globally unique kinetic CONTROL SHAFT TECHNOLOGY – a mechanical controller which synchronizes the clamping and folding beam – the TD model delivers the highest precision and parallelism, even in complex parts. The MODULAR TOOL GEOMETRY ensures decisively more flexibility and folding space, the sophisticated GRIPPER SYSTEM guarantees a precise positioning of the sheet-metal parts even at a high operating speed and the INTERCONNECTED CONTROL TECHNOLOGY can be operated easily and intuitively – thus enabling reliable and economical handling.
FULLY-AUTOMATIC GRIPPER UNIT
Depending on the type (*Pelikan* or *Professional*), the gripper system positions the sheet-metal parts over a measuring range of 15 mm to 29 mm. *1.5* mm or *1.6* mm. The semi-automatic clamping positioning system is designed for cases in which the clamps need to be moved. During the folding process, this work step is programmed automatically. A sheet, already folded, can be completed in full automatic mode if its height does not exceed 28 mm (1.10”). Legs of greater dimension can be gauged using spring-loaded fingers.

AUTOM. BACK GAUGE SPRING-LOADED FINGERS
The fully-automatically pneumatically spring-loaded fingers are automatically activated when the smallest possible sheet-metal part is programmed. The fingers are switched on and off automatically once a tapered dimension is programmed. An additional, independently mobile gripper unit is automatically activated when the smallest possible sheet-metal parts up to the minimum measurement of 5 mm (0.19”) or a maximum 1193 mm (46.25”) can be gauged in parallel.

FULLY-AUTOMATIC RADIUS ADJUSTMENT
With the fully-automatic radius adjustment system, the clamping tools can be positioned precisely in accordance with the sheet thickness used, therefore achieving perfect folding radii. The material thickness can be defined in the controller. The adjustment value can also be adapted to suit the specific material, in order to enable the folding of larger radii. Adjustment is fully hydraulic.

FOLDING BEAM CROWNING
The folding beam crowning adjustment allows the folding tool to be adjusted individually if necessary. A crowning system is required in the manufacturing of highly precise profiles. If the effects of stress release and overbent of the profile ends need to be compensated, the adjustment can be adjusted individually for each of the machine stands.

TAPERED GRIPPER
An additional, independently mobile gripper unit is used for folding tapered profiles. It is switched on automatically once a tapered dimension is programmed. The maximum axis offset is 90 mm (3.54”). When the profile length is entered, the controller decides independently which gripper to use (*01-10*).

MULTI-SECTION GRIPPER FUNCTION
The multi-section gripper function allows several sheet-metal parts to be processed simultaneously and independently of each other. As a result, the loading and removal of the sheets can be managed by just one single operator, which significantly increases productivity.

MACHINE SAFETY CONCEPT
The safety concept is aimed at meeting user requirements for ease and reliable operation. Laser units for the clamping area and sliding device and a light grid system around the working area all protect against potential risks and ensure safety.

FOLDING BEAM WITH INTERCHANGEABLE TOOLS
The folding beam concept with one interchangeable tool offers high flexibility. Depending on the situation, it can be adapted to suit the requirements of the folded part. This innovative concept also allows special folding tools to be retrofitted, such as those made of tempered HARDOX steel.

CHARACTERISTICS
- Total geometry with 270° free space
- Offset folding beam geometry
- Fully-automatic gripper system
- Multi-section gripper function
- Kinetic control shaft technology
- High-performance hydraulics with oil cooler
- Remote maintenance using Teamviewer software
- Low-friction CDF supporting table
- Multi-zone folding beam crowning
- Graphic CNC touch-screen controller

OPTIONS
- Detached automatic starter
- Roll-forming unit for special profiles
- Back gauge spring-loaded fingers
- Double gripper unit
- Automatic tapered back gauge
- HARDOX beam tools
- Folding beams with interchangeable tools
- Super high-speed PRO-Hydraulic
- Fully-automatic sheet loading and draw-in table
- M-Guard remote maintenance system
- Automatic radius adjustment (standard from TD 200)

MODELS
- TD 125 | TD 150 | TD 200
- Max. folding capacity: 1.25 | 1.50 | 2.00 mm***
- Working length: From 3.2 to 12.0 m****
- Throat depths: 1210 mm*****
- Folding beam width: 10 + add. rail 10 mm******
- Max. folding angle: 143°
- Folding accuracy ± 0.5°

DFT (DYNAMIC FOLDING TECHNOLOGY)
This innovative technology, the simultaneous movement of several machine axes, increases the production speed considerably while maintaining the folding accuracy. The DFT reduces travel times and downtimes to a minimum and thus facilitates an extremely smooth and highly dynamic folding process, which results in a measurable increase in productivity and a substantial expansion of machine capacity. This DFT system by Thalmann provides you and your customers with a significant and sustainable additional value.
TC DOUBLE FOLDER

Internally and among experts, the TC is often affectionately and respectfully referred to as “Big Mama” – the given nickname probably due to its solid construction. The TC is made exclusively of individual high-quality parts, 11,564 to be precise, which are assembled by hand. The VFD DESIGN PRINCIPLE used in the TC is unparalleled. The machine stands are formed in the shape of “rigid C-frames” and combined with a vertical clamping tool infeed, turned into a combination of a long folder and a press. This results in a great amount of clamping and pressure capacity – which is a prerequisite for the precise processing of thick sheets. Its drive unit is no less impressive. The high-performance aggregate is the heart of the TC and uses two high-power hydraulic pumps and the most up-to-date double valve block technology for the direct supply of power. It goes without saying that “Big Mama” is also equipped with the latest generation of DFT DRIVE CONCEPT. In addition, the unique CONTROL SHAFT TECHNOLOGY guarantees a uniform transmission of the tremendous power to the machine. The TC 300 combines all of the attributes which are crucial factors to success nowadays in industrial sheet metal processing.
TC DOUBLE FOLDER

CHARACTERISTICS
- **VFD design principle**
- **Offset folding beam geometry**
- **Fully-automatic gripper system**
- **Multi-section gripper function**
- **Highly dynamic DFT drive**
- **Kinetic control shaft technology**
- **High-performance hydraulics with oil cooler**
- **Remote maintenance using Teamviewer software**
- **Low-friction CNS supporting table**
- **Multi-zone folding beam crowning**
- **Graphic CNC touch-screen controller**

OPTIONS
- **Detached automatic sitter**
- **Roll-forming unit for special profiles**
- **Back gauge spring-loaded fingers**
- **Double gripper unit**
- **Automatic tapered back gauge**
- **HARDOX beam tools**
- **Folding beams with interchangeable tools**
- **Mobile machine control desk**
- **Fully-automatic sheet loading and draw-in table**
- **M-Guard remote maintenance system**

MODEL
- **TC 300**
  - Max. folding capacity: 3.00 mm**
  - Working length: From 3.2 to 12.0 m***
  - Throat depths: 1250 mm****
  - Folding beam width: 10 + add. rail 10/20 mm******
  - Max. folding angle: 143°
  - Folding accuracy: ± 0.5°

**At 600 N/mm² / 58 ksi **
***11 ga *** 10.5 to 39.4 ft
****6.21 in *****0.39 + 0.39/0.78 in

DFT (DYNAMIC FOLDING TECHNOLOGY)
- This innovative technology, the simultaneous movement of several machine axes, increases the production speed considerably while maintaining the folding accuracy. The DFT reduces travel times and downtimes to a minimum and thus facilitates an extremely smooth and highly dynamic folding process, which results in a measurable increase in productivity and a substantial expansion of machine capacity. This DFT system by Thalmann provides you and your customers with a significant and sustainable additional value.

**AUTOMATIC GRIPPER UNIT**
The gripper system, equipped with a HARDER clamp finger, positions the sheet metal parts. A fully-automatic gripper system, with a maximum height of 300 mm (11.81") can be gauged in parallel. If the lowest possible gripper dimension of 25 mm (1.27") is not reached, the spring-loaded fingers are automatically programmed by the controller.

**STAINLESS STEEL SUPPORTING TABLE**
This sheet supporting table equipped with ball casters guarantees the energy-saving handling of heavy folded parts as well. To achieve a consistent performance and service life in the long term, the sheet support is manufactured solely of stainless steel.

**LOADING AID WITH GLIDING UNITS**
The bottom folding beam can be used as a loading aid for the easier material feed and is equipped with gliding units which allow the sheet metal to be introduced more easily.

**INGENIOUS TOOL GEOMETRY**
The clever tool geometry provides high-precision folding results - even with the smallest folds of as little as 5 mm (0.19”). A maximum of 1150 position sheet metal parts up to a minimum dimension of 3,00 mm (0.39 + 0.39/0.78 in)

**HIGH-PERFORMANCE HYDRAULIC UNIT**
The high-performance double pump hydraulics generate the driving force needed to operate the heavy-weight steel colossus. The most up-to-date double valve block technology is responsible for the direct supply of power. The standard oil cooler ensures constant operation, equally guaranteed when maximum load is applied.

**INDIVIDUAL FOLDING BEAM CROWNING**
The folding beam crowning settings allow the folding tool to be adjusted individually if necessary. A crowning system is required in the manufacturing of highly precise profiles in situations where the effects of stress release in the material or overbent of the profile ends need to be compensated. The settings can be adjusted individually for each of the stands.

**VFD (VERTICAL FORCE DRIVE)**
The exclusive VFD design principle by Thalmann provides the basis for a stable performance in industrial profile manufacturing. It ensures that folded parts are precisely positioned during processing.

**CLEVERLY DEVISED TOOL GEOMETRY**
The cleverly devised tool geometry offers additional folding space – a significant advantage in the manufacturing of industrial folded parts.

**LOADING AID WITH GLIDING UNITS**
This sheet supporting table equipped with ball casters guarantees the energy-saving handling of heavy folded parts as well. To achieve a consistent performance and service life in the long term, the sheet support is manufactured solely of stainless steel.

**STAINLESS STEEL SUPPORTING TABLE**
This sheet supporting table equipped with ball casters guarantees the energy-saving handling of heavy folded parts as well. To achieve a consistent performance and service life in the long term, the sheet support is manufactured solely of stainless steel.
CONTROLLERS BY THALMANN

The intuitively operated controller allows for quick and easy data entry. The software application developed in our company and customized for use in the sheet metal processing business offers nearly everything you could wish for. The tiltable and swivel-mounted control panel allows for ergonomic operation with all of the profile data being recorded quickly and straightforwardly using the multi-functional touch-screen controller. This information can be recorded directly on the machine, at an external computer workstation or on a tablet PC and immediately displayed in a folding sequence simulation. The data can be exchanged with the peripheral machinery via the USB drive, LAN or Wi-Fi. To guarantee that the machine is networked, Thalmann has integrated interfaces for Bendex software and the DXF data format in the controller. As a result, modern management of material and machine is guaranteed. If required, uncomplicated and reliable remote maintenance in real time is possible with a VPN connection.
CONTROLLERS BY THALMANN

FINGER DRAWING
Finger drawing using CAM on the touch-screen for quick and easy profile data entry.

FOLDING SEQUENCE SIMULATION
Folding sequence simulation with collision monitoring system for checking programmed profiles.

PROFILE MANAGEMENT
The simple profile management via catalogues guarantees an excellent overview and quick access to profile data.

3D VISUALISATION
Realistic 3D visualisation of sheet metal profiles and preview of the finished folded part.

PROFESSIONAL MODE
Detailed information about all of the recorded program steps and their folding progression.

MANUAL MODE
The manual mode allows individual folds to be created quickly and without major programming work.

CONTROLLER ATTRIBUTES OF THE DS 3000 AND DS 3001 | AMS PATHFINDER

- CNC controller with Windows 7 Professional operating system
- Touch-screen profile programming with folding sequence calculation
- Folder with categories and profile catalogue
- Automatic, semi-automatic and manual mode
- Management for over 10.000 profile variants
- Collision simulation program
- 3D visualisation of the profiles
- Input of geometry data
- Variable speeds
- Computer functions
- Status display showing the actual status of the machine controller

- 2-channel safety circuits
- Reference-point calibration entry
- Configuration inputs for control parameters
- Total and order-related time recording (ERP compatible)
- Data handling via USB or network (LAN/Wi-Fi)
- DP/ data import and interface to Bendex software
- Remote maintenance compatible with the integrated service tool
- Optional M-Guard remote maintenance software with VPN
- External profile programming via PC, laptop or tablet
- Control unit for loading table
- Dynamic crowning function

- DS 3000 for TD + TC Double Folder
- DS 3001 for TZ Long Folder

AUTO PRO

Have you ever had the irritating experience? You receive a client’s drawing of a finished part only to find that you still have to enter all the dimensions into the controller! Or you might have drawn a sketch showing the key dimensions on the construction site and wish to generate a folding program quickly and easily based on it. With AUTO PRO we have created the DXF data import on the controller and the CAM (Computer Aided Manufacturing). Almost all the drawings of the finished parts available in electronic form can be read into the controller with just a few manual entries, drawn and translated into a folding program. For this translation procedure, you can choose whether the controller should offer you a choice of solutions or whether you wish to determine the sequence of folding steps yourself.