# THREAD AND PROFILE ROLLING MACHINES

# TOOLS

Professional Partner for Cold Forming

ROLLWALZTECHNIK
ABELE + HÖLTICH GMBH

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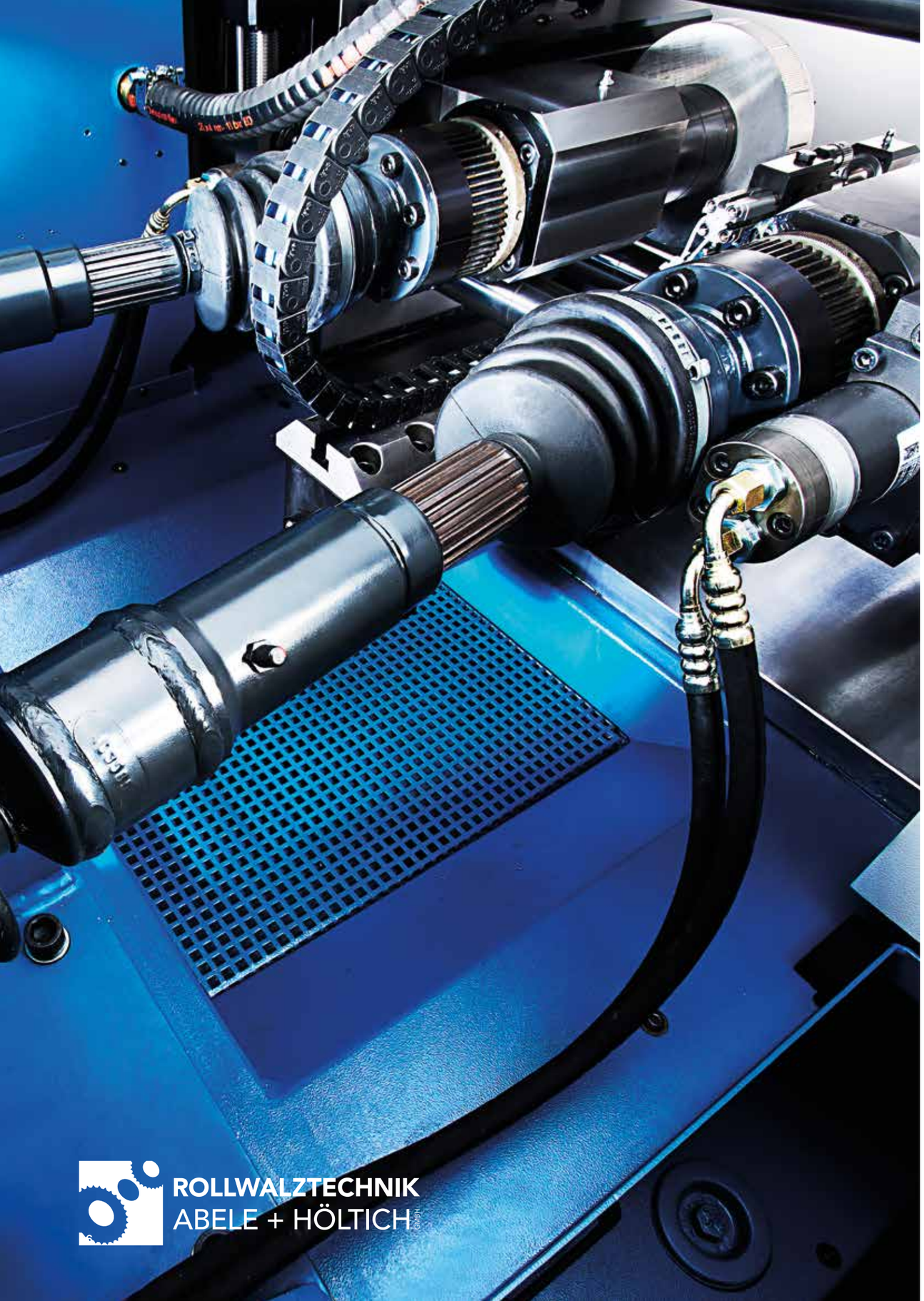


# PROFESSIONAL PARTNER FOR COLD FORMING

Rollwalztechnik Abele + Höltich GmbH in Engen, Germany, has been developing and producing machines for processing by means of thread rolling since 1982. The practical know-how of more than 650 machines which were realized in the Hegau area and the cooperation with our customers has led to a range of machines and tools which completely covers all thread and profile rolling related requirements.

With the combination of the most modern equipment and personal experience we constantly search and find new development and construction solutions in order to keep on maximizing the quality and durability of machines and tools.

Very important to us is the partnership approach to customers and suppliers. We think, act and work according to the principle: personal, human, fair – in the fields of cooperation, development, implementation and support.

However, our greatest strengths are our products. In contrast to conventional machinery, the thread and profile rolling machines by Rollwalztechnik convince with their flexible and service-friendly design. Talk to us. We are happy to show you the benefits of our machines for YOUR company.

We look forward to hearing from you.


# WE SUPPLY …

Universal Thread and Profile Rolling Machines
CNC and CNC/AC Machines
Symmetrical Machines
MDS – Flexible Rolling System
“Walzblock”
Tools
Further Product Range

ROLLWALZTECHNIK
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# UNIVERSAL THREAD AND PROFILE ROLLING MACHINES

RWT Thread and Profile Rolling Machines differ from conventional machines due to their advanced design, which was developed over many years of experience in the field of thread and profile rolling. The design of the RWT thread rolling machines allows a universal application of the rolling techniques with round tools, such as infeed rolling and through-feed rolling with swivelling roller spindles, and the combination of the two methods.

Due to the compact design of the machine structure as a closed roll frame, the rolling forces are reliably controlled.

The self-lubricating, asymmetrically arranged 3- or 4-way column guide prevents lifting of the moving carriages – an important prerequisite for increasing the lifetime of the rolling tools. A consistent assembly system for drive, control and hydraulic components using serial products from renowned German manufacturers guarantees problem-free repair or spare parts procurement and simplifies maintenance works.

The RWT machine concept offers further possibilities in the form of flexible adaptation to production tasks, e. g. by means of control extension, drive variations or additional assemblies and the integration of the roll frame in transfer systems.

We can offer a wide range of automation options, according to the type of workpiece. The basic principle for our machine program is universal application for all rolling tasks. This is ensured by the sophisticated concept and, where appropriate, can be realized by add-on assemblies and equipment.

| FEATURE | YOUR BENEFIT |
|---|---|
| Frame with tie-rod construction | maximum stiffness of the frame |
| Support of the roller spindle with full complement, cageless cylindrical roller bearings | maximum bearing capacity in minimum space |
| Guides of the carriages with maintenance-free, low-wear friction bearings | no need for a centralized lubrication system |
| Stable welded frame as substructure | flexible extension and add-on options |
| Hydraulics, electrics and coolant unit integrated into the machine as individual modular assemblies | service-friendly |
| Siemens PLC and operating panel with an easy to use interface | simple setup of the machine |
| Driven by robust, standard three-phase motors in connection with oversized worm gears | enough power for your rolling needs |


RWT 60X FR


RWT 12X FR





| | RWT 12X FR | RWT 20X FR | RWT 30X FR | RWT 50X FR | RWT 60X FR |
|---|---|---|---|---|---|
| Rolling force | 120 kN | 200 kN | 300 kN | 500 kN | 600 kN |
| Control | Siemens PLC | Siemens PLC | Siemens PLC | Siemens PLC | Siemens PLC |
| Speed | 15 – 120 rpm | 15 – 100 rpm | 10 – 80 rpm | 10 – 80 rpm | 10 – 80 rpm |
| Drive | 5,5 kW | 7,5 kW | 15 kW | 22 kW | 30 kW |
| Working stroke | 12 mm | 22 mm | 30 mm | 35 mm | 35 mm |
| Roll spindle Ø | 40/54 mm | 54/69,85 mm | 54/69,85/80 mm | 69,85/80 mm | 80/100 mm |
| Swivelling | ± 7° | ± 10° | ± 10° | ± 10° | ± 10° |
| Roll spindle arbor length | 80 mm | 125 mm | 175 mm | 220 mm | 220 mm |
| Tool Ø | 110 – 150 mm | 135 – 180 mm | 140 – 215 mm | 150 – 215 mm | 190 – 235 mm |
| Workpiece Ø | 2 – 40 mm | 2 – 60 mm | 3 – 75 mm | 5 – 100 mm | 5 – 120 mm |
| Pitch max. | 4 mm | 6 mm | 7 mm | 10 mm | 12 mm |
| Weight | 900 kg | 1300 kg | 2800 kg | 4000 kg | 5500 kg |

Maximum values can only be defined after workpiece inspection,
as the material strength and profile geometry determine the power requirement.

# CNC AND CNC/AC MACHINES

In order to meet the increasing demands of technology and ease of operation, we have developed a new control concept for our machines in cooperation with the Beckhoff company.

ROLLWALZTECHNIK
ABELE + HÖLTICH GMBH

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## ACCURACY

- +/- 1 µm for linear axis
- +/- 0,001° for rotatory axes
- +/- 0,002° for swivel axes

## DRIVE

- Robust three-phase drive in connection with series worm gears for 1-axis control
- Three-phase servo drive in connection with series worm gears from 3-axis control on

## THIS SYSTEM IS CHARACTERIZED BY THE FOLLOWING FEATURES

- Powerful PC with Intel processor
- Touch screen
- Control software based on Beckhoff TwinCAT with integrated Soft PLC
- Fully graphical user interface
- Digital drive technology
- Sercos fieldbus or EtherCAT
- Simple program input in tabular form
- PLC functions can be directly integrated into the CNC program flow
- Automatic plausibility check of the programs
- Programs can also be processed externally
- Optionally integrated monitoring strategy (e. g. rolling force monitoring)
- Optionally remote diagnosis and maintenance possible via Internet or modem

## IN ADDITION, THE MACHINES OFFER OF COURSE THE PROVEN ADVANTAGES OF THE PREVIOUS GENERATIONS:

- Available with a rolling force of 200 – 600 kN
- Frame with tie-rod construction for maximum roller frame stiffness
- Support of the roll spindle with full complement, cageless cylindrical roller bearings for maximum bearing capacity in minimum space
- Guides of the roller carriage with maintenance-free, low-wear friction bearings, thus eliminating the need for a centralized lubricating system
- Stable welded frame as substructure allows flexible extension and add-on options
- Hydraulics and coolant units integrated into the machine as modular, service-friendly assemblies
- Mobile electrical cabinet positioned next to the machine (only CNC/AC)
- CNC control: for 1 to 10 axes

## OUR CNC MACHINES ARE AVAILBALE AS

- CNC/FR machines with frequency converter and conventional motor driven rotational axis
- CNC/AC machines with a brushless motor for each rotational axis





| | RWT 20X CNC | RWT 30X CNC | RWT 50X CNC | RWT 60X CNC |
|---|---|---|---|---|
| Rolling force | 200 kN | 300 kN | 500 kN | 600 kN |
| Control | Beckhoff TwinCAT | Beckhoff TwinCAT | Beckhoff TwinCAT | Beckhoff TwinCAT |
| Speed | 10 – 100 rpm | 10 – 100 rpm | 10 – 100 rpm | 10 – 100 rpm |
| Drive [1] | 7,5 kW (2 × 11 kW) | 15 kW (2 × 18 kW) | 22 kW (2 × 25 kW) | 30 kW (2 × 25 kW) |
| Working stroke | 110 mm | 190 mm | 205 mm | 205 mm |
| Roll spindle Ø | 54/69,85 mm | 54/69,85/80 mm | 69,85/80 mm | 80/100 mm |
| Swivelling | ± 10° | ± 10° | ± 10° | ± 10° |
| Roll spindle arbor length | 125 mm | 175 mm | 220 mm | 220 mm |
| Tool Ø | 135 – 180 mm | 140 – 215 mm | 150 – 215 mm | 190 – 235 mm |
| Workpiece Ø | 2 – 60 mm | 3 – 75 mm | 5 – 100 mm | 5 – 120 mm |
| Pitch max. | 6 mm | 7 mm | 10 mm | 12 mm |
| Weight | 1400 kg | 2900 kg | 4100 kg | 5600 kg |

Maximum values can only be defined after workpiece inspection, as the material strength and profile geometry determine the power requirement.

1) The values in brackets apply for CNC/AC machines with 2 servo drives.


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# SYMMETRICAL MACHINES

The latest generation of thread rolling machines has a symmetrical design with two hydraulic servo cylinders. These machines are perfectly suited for automation applications, as the workpiece does not experience any center offset during machining.


RWT 20X CNC/AC sym

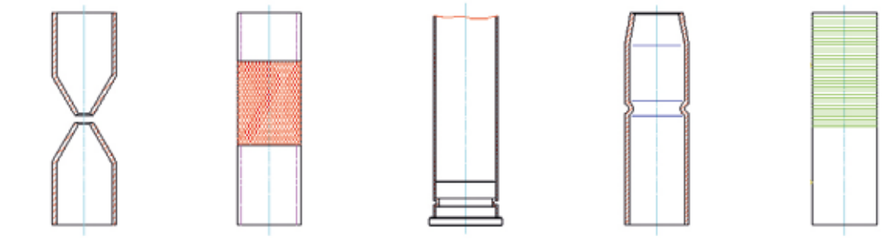
| | RWT 20X CNC sym | RWT 30X CNC sym | RWT 50X CNC sym | RWT 60X CNC sym | RWT 80X CNC sym | RWT 100X CNC sym |
|---|---|---|---|---|---|---|
| Rolling force | 200 kN | 300 kN | 500 kN | 600 kN | 1000 kN | 1000 kN |
| Control | Beckhoff TwinCAT | Beckhoff TwinCAT | Beckhoff TwinCAT | Beckhoff TwinCAT | Beckhoff TwinCAT | Beckhoff TwinCAT |
| Speed | 10 – 100 rpm | 10 – 100 rpm | 10 – 100 rpm | 10 – 100 rpm | 10 – 80 rpm | 10 – 80 rpm |
| Drive [1] | 7,5 kW (2 × 11 kW) | 15 kW (2 × 18,5 kW) | 22 kW (2 × 25 kW) | 30 kW (2 × 25 kW) | 37,5 kW (2 × 25 kW) | 45 kW (2 × 30 kW) |
| Working stroke | 2 × 80 mm | 2 × 100 mm | 2 × 100 mm | 2 × 100 mm | 2 × 100 mm | 2 × 100 mm |
| Roll spindle Ø | 54/69,85 mm | 54/69,85/ 80 mm | 69,85/80 mm | 80/100 mm | 110 mm | 110 mm |
| Swivelling | ± 10° | ± 10° | ± 10° | ± 7° | ± 7° | ± 7° |
| Roll spindle arbor length | 125 mm | 175 mm | 220 mm | 220 mm | 300 mm | 300 mm |
| Tool Ø | 135 – 180 mm | 140 – 215 mm | 150 – 215 mm | 190 – 235 mm | max. 300 mm | max. 300 mm |
| Workpiece Ø | 3 – 60 mm | 4 – 80 mm | 6 – 100 mm | 6 – 120 mm | 20 – 200 mm | 20 – 200 mm |
| Pitch max. | 6 mm | 7 mm | 10 mm | 12 mm | 16 mm | 18 mm |
| Weight | 2100 kg | 3500 kg | 4800 kg | 6500 kg | 11000 kg | 11000 kg |

Maximum values can only be defined after workpiece inspection,
as the material strength and profile geometry determine the power requirement.

1) The values in brackets apply for CNC/AC machines with 2 servo drives.

# MDS –
# FLEXIBLE ROLLING SYSTEM

Various machining tasks can be carried out with this new, particularly flexible machine concept. An interchangeable roller arrangement as well as additional equipment, CNC control and automatic feeding devices allow efficient production methods.



mould separation | knurling | connecting | radial moulding | burnishing

## FEATURES

- Particularly flexible machine concept also for assembly and pre-assembly
- Different installation positions of the roll frame are poss
- Guides of the carriage with maintenance-free, low-wear friction bearings
- Electrics and coolant units integrated into the machine as individual modular assemblies
- Driven by robust, frequency-controlled three-phase motor


RWT MDS CNC hy



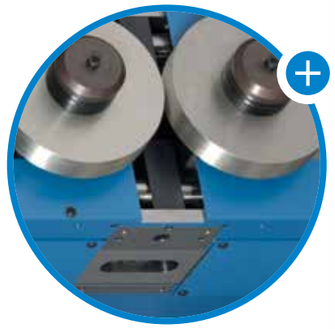


| | RWT MDS hy CNC | RWT MDS pn |
|---|---|---|
| Rolling force | 80 kN (hydraulic) | 9 kN (pneumatic) |
| Control | Beckhoff CNC | Siemens PLC |
| Speed | 10 – 120 rpm | 33 / 66 rpm |
| Drive | 4 kW | 1,5 kW |
| Working stroke | 100 mm | 30 mm |
| Roll spindle Ø | 40 / 54 mm | 40 mm |
| Roll spindle arbor length | 80 mm | 60 mm |
| Tool Ø | 120 – 150 mm | 80 – 120 mm |
| Weight | 1000 kg | 500 kg |

# “WALZBLOCK”

The “Walzblock” system is a compactly designed, powerful symmetrical 2-roller thread rolling machine. The installation position can be freely selected because the feed unit and the rotary drive are combined in one compact assembly.

This means that low-cost, efficient and flexible automation solutions can be realized. Furthermore, this rolling machine can also be integrated into other processing machines.

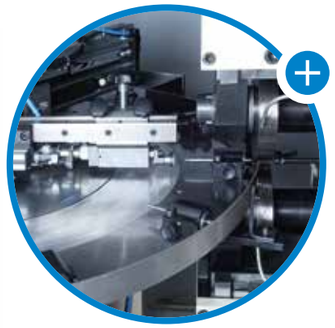


RWT WB12

## “WALZBLOCK”: APPLICATION EXAMPLE

- 12-fold indexing table
- Variable part length of 150 – 380 mm
- 46 parts per minute
- Minimum quantity lubrication
- The parts are picked up from a continuous conveyor belt, processed and placed again onto the conveyor belt.
- Turning wheel

RWT WB20







| | | RWT WB12 | RWT WB20 |
|---|---|---|---|
| Rolling force | max. | 120 kN | 200 k |
| Rolling force Ø | | 54 mm | 54 / 69,85 mm |
| Roll spindle arbor length | | 40 mm | 125 mm |
| Roll spindle distance | min.<br>max. | 162 mm<br>272 mm | 140 mm<br>250 mm |
| Workpiece Ø | min.<br>max. | 2 mm<br>50 mm | 2 mm<br>60 mm |
| Pitch max. | | 2,5 mm | 5 mm |
| Tool Ø | min.<br>max. | 160 mm<br>220 mm | 140 mm<br>215 mm |
| Working stroke | | 2 x 7,5 mm | 2 x 10 m |
| Rolling time | min.<br>max. | 0,01 sec<br>99 sec | 0,01 sec<br>99 sec |
| Speed | min.<br>max. | 5 rpm<br>100 rpm | 5 rpm<br>100 rpm |
| Drive | | 4,0 kW | 7,5 kW |
| Electrical connection | | 6,0 kW | 10,0 kW |
| Weight | | 1600 kg | 2000 kg |

Maximum values can only be defined after workpiece inspection, as the material strength and profile geometry determine the power requirement.

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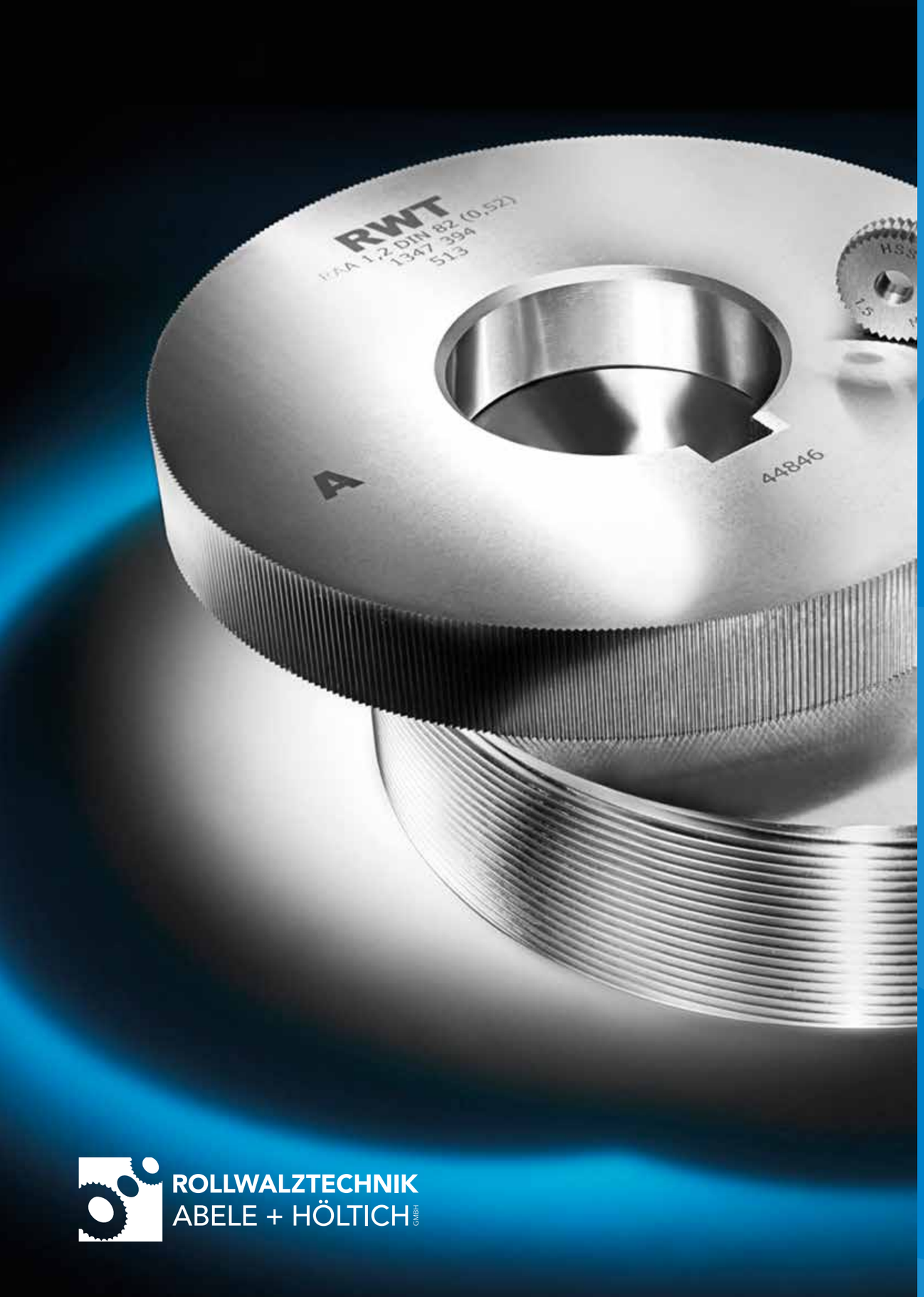


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# TOOLS

We supply thread rolling dies for all machine makes and systems. Due to many years of experience in the application technology of profile rolling and in the construction of thread rolling machines we supply tools with know-how.

# TOOLS


## THREAD AND PROFILE ROLLING DIES

For rolling high-strength and stainless materials up to strength class 12.9 we supply our “HFV” quality. There are special materials available for special applications (e. g. aerospace applications).

- for infeed and throughfeed method
- for thread profiles of all kinds
- for worm rolling
- for rolling special threads with a flank lead of up to 60 mm
- for ball screw rolling
- for burnishing cylindrical rods and profiles


## SPLINE ROLLING DIES

- for serrations and splines (e. g. DIN 5481, ASA, ANSI etc.)
- for helical gears
- for special gears (e. g. according to company standards of all automobile manufacturers)
- for knurls according to DIN 82 (in milled or ground version)

## AXIAL ROLLING HEAD DIES

- for all rolling head systems (e. g. Fette, Wagner, Alco, etc.)
- for thread profiles of all types
- for knurling
- for burnishing

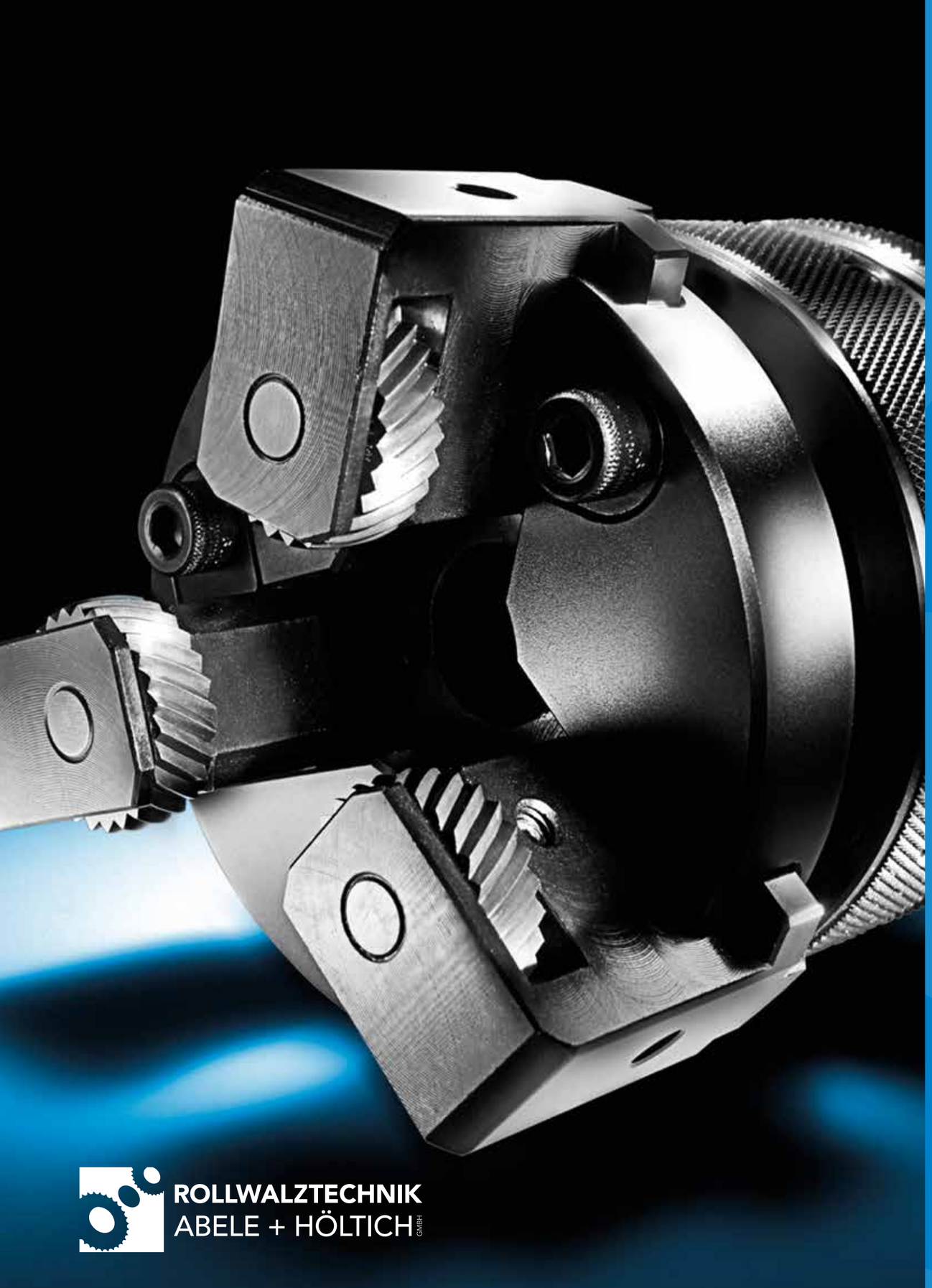
## TANGENTIAL ROLLING HEAD DIES

- for all rolling head systems (e. g. Fette, Wagner, Reed, Alco, Schütte, Gildemeister, Davenport, Landis etc.)
- for thread profiles of all types
- for knurling
- for burnishing

## RACKS

- for all machine makes (e. g. Ex-Cell-O, Fimat etc.)
- for spur gear
- or helical gears
- for threads and special profiles (e. g. oil grooves) of all kinds

For inquiries and orders we need drawings of the rolling bars and the workpiece. If no tool drawings are available, specify the type of machine and you will get a tool drawing for approval.



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# FURTHER PRODUCT RANGE

Beside of our normal machine range we develope special solutions in close cooperation with our customers.

Furthermore we supply suitable thread, profile and knurling tools from our comprehensive stock.

# FURTHER PRODUCT RANGE

## KNURLING HOLDERS

Our knurl holders are available in a large variety for cut knurling, forming, for external, internal and front knurls.

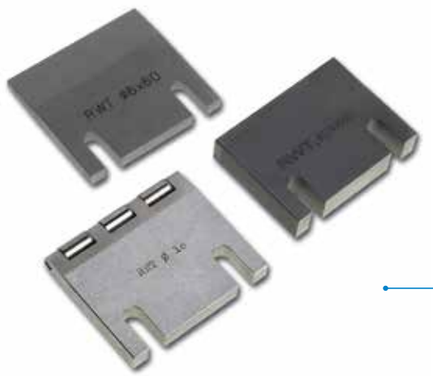
Ask for our complete catalogue or look at our web catalogue at **www.rollwalztechnik.de**




## KNURLING WHEELS

Our knurling wheels (e. g. DIN 403) are high precision products. The teeth are smooth milled. Upon request we supply the tools with lapped teeth for an optically superior knurl. The bore and the plane surfaces are ground. We use vacuum hardened HSS. For high demands it is possible to use high-alloy steels (e. g. M 42) or PM steels. For special applications we can nitride or TiN-coat the tools.

Ask for our complete catalogue or look at our web catalogue at **www.rollwalztechnik.de**




## CARBIDE WORK REST BLADES AND WORK REST BLADES WITH ROLLERS

For all makes of thread rolling machines for rolling stainless steel workpieces and large profiles



# SPECIAL MACHINES

Beside of their standard machines Rollwalztechnik Abele + Höltich GmbH also builds special-purpose machines according to customer's wishes.


## RWT K10

The RWT K10 is a calender which means that in contrast to normal thread rolling machines the rolling dies turn in opposite directions and not in the same one. Because of that parts can be drawn-in between the rolls.


## RWT MDS DUO

The RWT MDS Duo is made out of 2 MDS rolling frames which roll on both sides of one workpiece at the same time. For example end caps are fixed on a tube by rolling into a groove.

# ROLLWALZTECHNIK:
# FROM THE HEGAU AREA INTO THE WHOLE WORLD

For more than 25 years Rollwalztechnik Abele + Höltich has been exporting machines and tools from the Hegau area into the whole world. Experience, know-how and a team of motivated staff will make sure also in the future that it remains like that.

# MILESTONES

The company was founded in 1982 by Jürgen Abele and Hermann Höltich.

Milstones in our history were the development of the first CNC controlled machine at the beginning of the 90s, the establishment of our thread rolling refinishing department in 2003 and the building of our first 100 tons thread rolling machine in 2012.

We have patents for special developments such as our so called „Walzblock“ which is a very compact thread rolling unit, for the hydro dynamic brake system in the powertrain of our machines or a special thread rolling die design foor rolling thin walled work pieces with only 2 rolling dies.

**1982**

Hermann Höltich and Jürgen Abele founded the company.

**1988**

The first patented “Walzblock” was built – a compact, flexible rolling machine.

**1992**

The first CNC thread rolling machine was built.

**1995**

The first MDS machine with only one driven rolling die was built.

**1997**

Expansion by purchasing an adjoining property.

**2002**

Expansion: The contract rolling division was established and gets an own building.

**2007**

In cooperation with Beckhoff a new, modern CNC interface was developed.

**2012**

The first thread rolling machine with 100 tons of rolling pressure was delivered.

**2016**

The machine assembly shop is expanded which nearly doubles the space.

1980 1985 1990 1995 2000 2005 2010 2015

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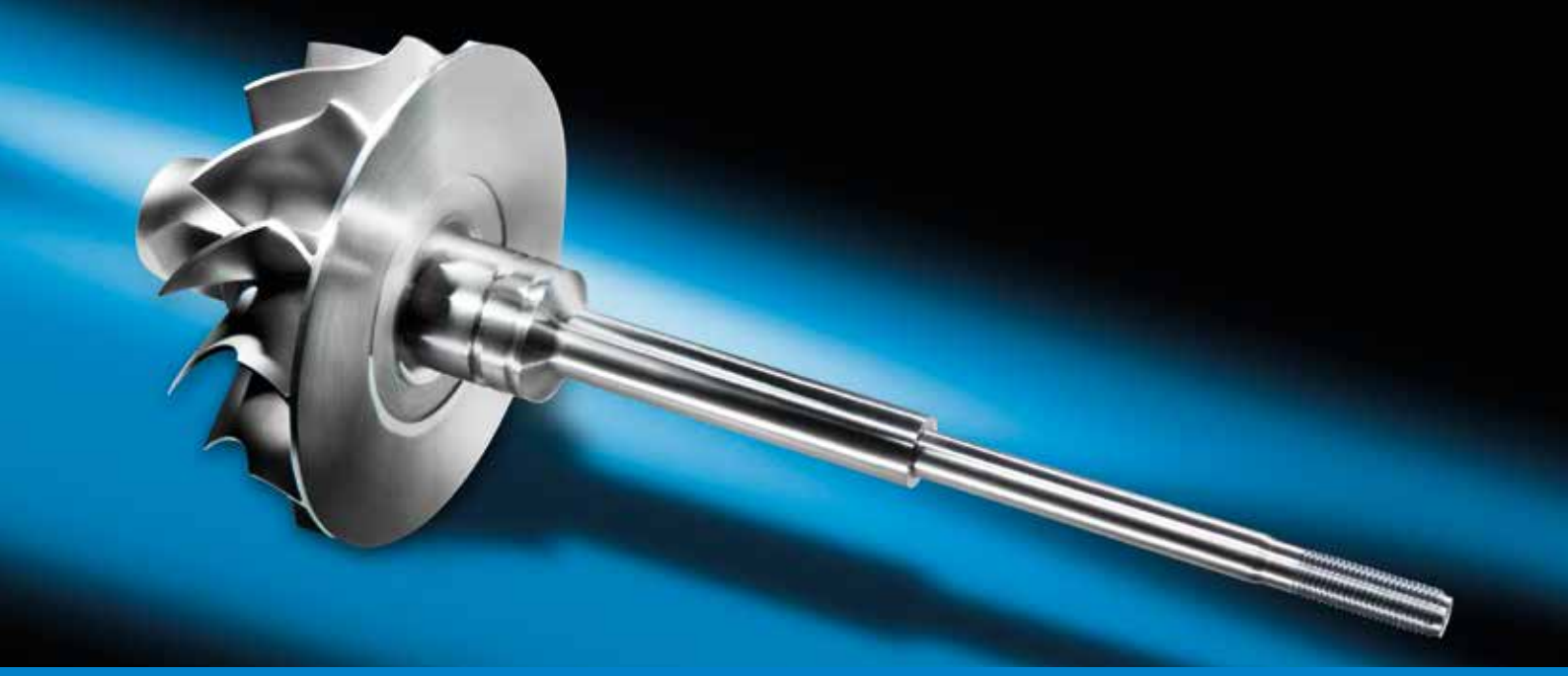

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