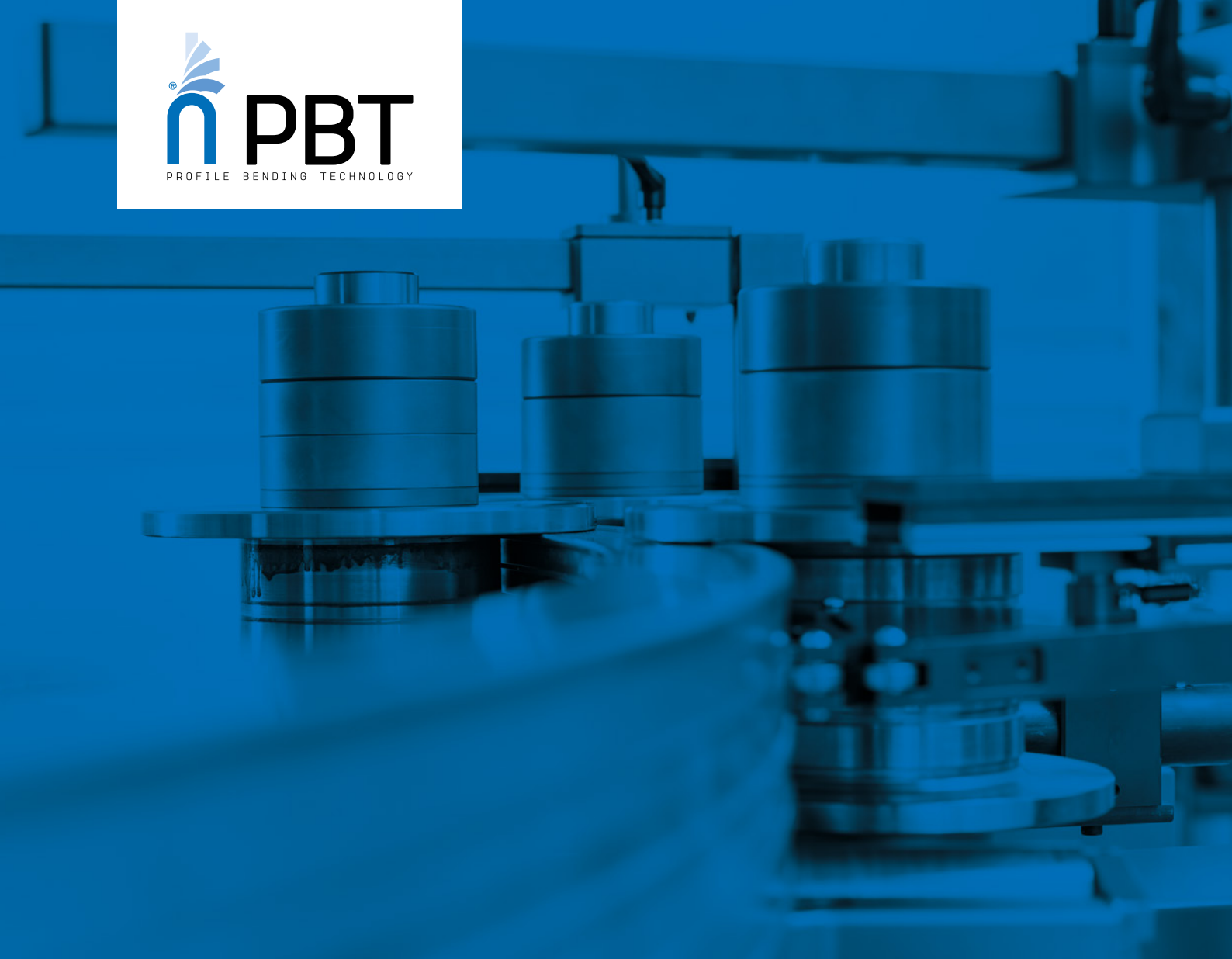




High-precision
profile bending machines
for the most challenging
applications

Innovative Bending Technology – Over 35 Years of Expertise

At the Swiss company PBT AG, we develop and produce profile bending machines and digital control systems that satisfy the highest requirements in quality and technical performance. Through the use of intelligent processes, our technologies have been setting industry standards since 1991, and are used in practically all segments of the metalworking industry: automotive, aerospace, window and building façade engineering, conveyor technology, and much more.

Our Commitment as a Solutions Provider

We see ourselves not just as a machine manufacturer, but as a partner to our customers. Every bending requirement is considered holistically – from the material and profile geometry to integration into production processes. Based on this approach, we develop modular machine concepts, custom tools, and tailored automation solutions – for single units, small series, or complex industrial projects. From planning and prototyping to series production, training, and commissioning, we support every project phase and continue to provide consulting even afterward.

Global presence

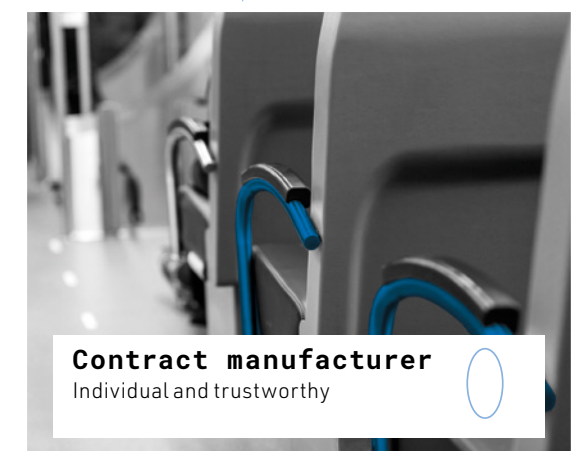
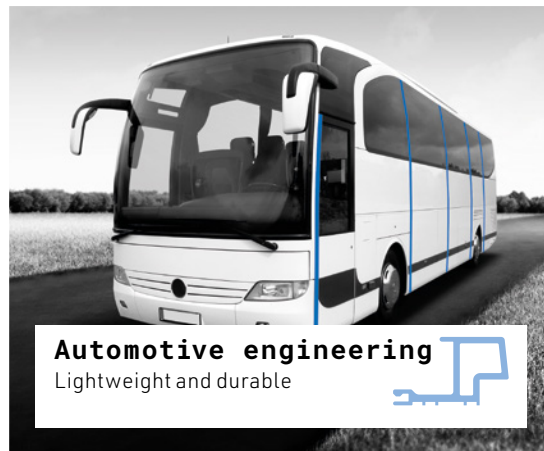
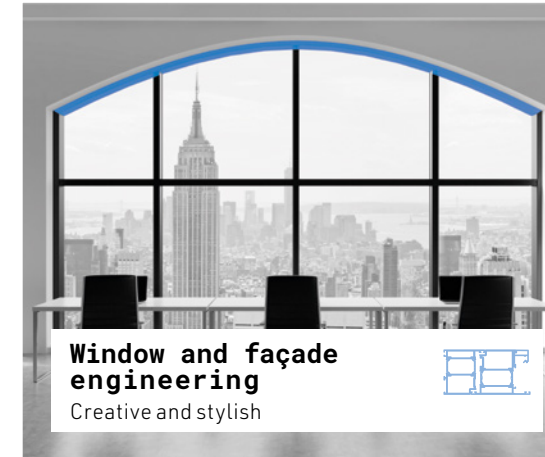
Development, distribution and service for production facilities around the globe. We deliver our services and products from the two main locations of PBT AG – Weinfelden in Switzerland and Siegen in PBT Germany GmbH (formerly INDUMASCH GmbH). Selected service partners in many European, American and Asian countries supplement our requirement for the highest service quality.

Made in Switzerland.



Industry solutions

Custom-fit solutions for efficient production of curved profiles.
Various industries and sectors that require the highest production quality components put their trust in the precision of PBT profile bending machines.
See an overview of application examples here.



R1017



Our profile bending machines

- Are flexible, high-precision, economical, fast and efficient
- Stand out for their high performance and versatility
- Allow fast programming without the need for programming skills, increase productivity and flexibility, and are intuitive to operate
- Permit uncomplicated tool changes
- Allow the use of special tools for steel, stainless steel and aluminium profiles
- Offer numerous additional equipment and expansions
- Can be produced as individual custom machines where required



R 1950



Our control systems

Manual

The manual version has a Siemens panel, which serves as the basis for the retrofit-compatible tablet versions TEACH-IN and TABLET350. This panel shows the operator the current X-axis position of the feed roller, with a position detection precision of 0.01 mm. The speeds of the feed roller and the rolling speed can be modified by the operator as required, from crawling speed to rapid traverse. As an additional function, the Siemens panel allows a variable front stop to be set on the X-axis. This simplifies the implementation of a recurring bending radius in series production. All axes are operated using touch controls.

TABLET Teach-in

The TABLET Teach-in control system allows small and large series to be manufactured automatically. The programming takes place in teach-in mode, i.e. the operator teaches the machine a single time using touch controls, and then the program can be repeated as often as desired. The program directory allows existing data to be accessed and changed. This TABLET Teach-in control system shows the operator the current X-axis position of the feed roller with a position detection precision of 0.01 mm, as well as the Y-axis position for the corresponding component length. The speeds of the feed roller and the rolling speed can be modified by the operator as required, from crawling speed to rapid traverse.

Tablet350

The PC-based control system for 3-roller bending machines was developed by PBT, and in 1995 it was the first to offer the capability of controlling bending tasks using software.

The TABLET350 was derived from the uncompromising PC400 control system, and offers its main functions in an elegant format: bending programs can be created, managed and controlled using the tablet, without the need for programming skills. Illustrated control elements facilitate intuitive operation during everyday work, while the graphic display of the programmed workpiece with bending radii and bending lengths allows visual inspection of the programmed data. The communication with the bending machine takes place via WiFi. Data backups take place using a convenient USB port located on the outside of the control unit.

The tablet can be mounted on the machine using the supporting arm supplied, and can be adjusted for optimal operation. If greater freedom of movement is required, the wireless data transmission makes it possible to move around freely in the room with the TABLET350.

PC400

A detailed description of the full version of the control system variant PC400 can be found on the following pages.

PC400

Convenient creation and saving of bending programs

The PC-based control system for 3-roller bending machines was developed by PBT, and in 1995 it was the first to offer the capability of controlling bending tasks using software. The PC400 is currently the most advanced and flexible control system on the market, and offers countless advantages for small and large series production processes.

Whether integrated into a network or as an individual work station, as a 3D version or with the addition of a mandrel, the new PC400 control system can be individually configured.

On the basis of a high-performance Windows PC with a state-of-the-art multi-touch display, bending programs can be created, managed and controlled intuitively on the moveable control terminal, without the need for programming skills. Here the graphic display of the programmed workpiece allows visual inspection of the programmed data. The hardware is network-compatible and can easily be integrated into the existing IT infrastructure.

Flexible, efficient and economical

The control programs generated allow up to 25 different segments to be arranged in any sequence and bent in one or more passes. Subprograms for the creation of ellipses, handrails for spiral staircases, "Napoleon curves", S-curves or special shapes are already available as standard.

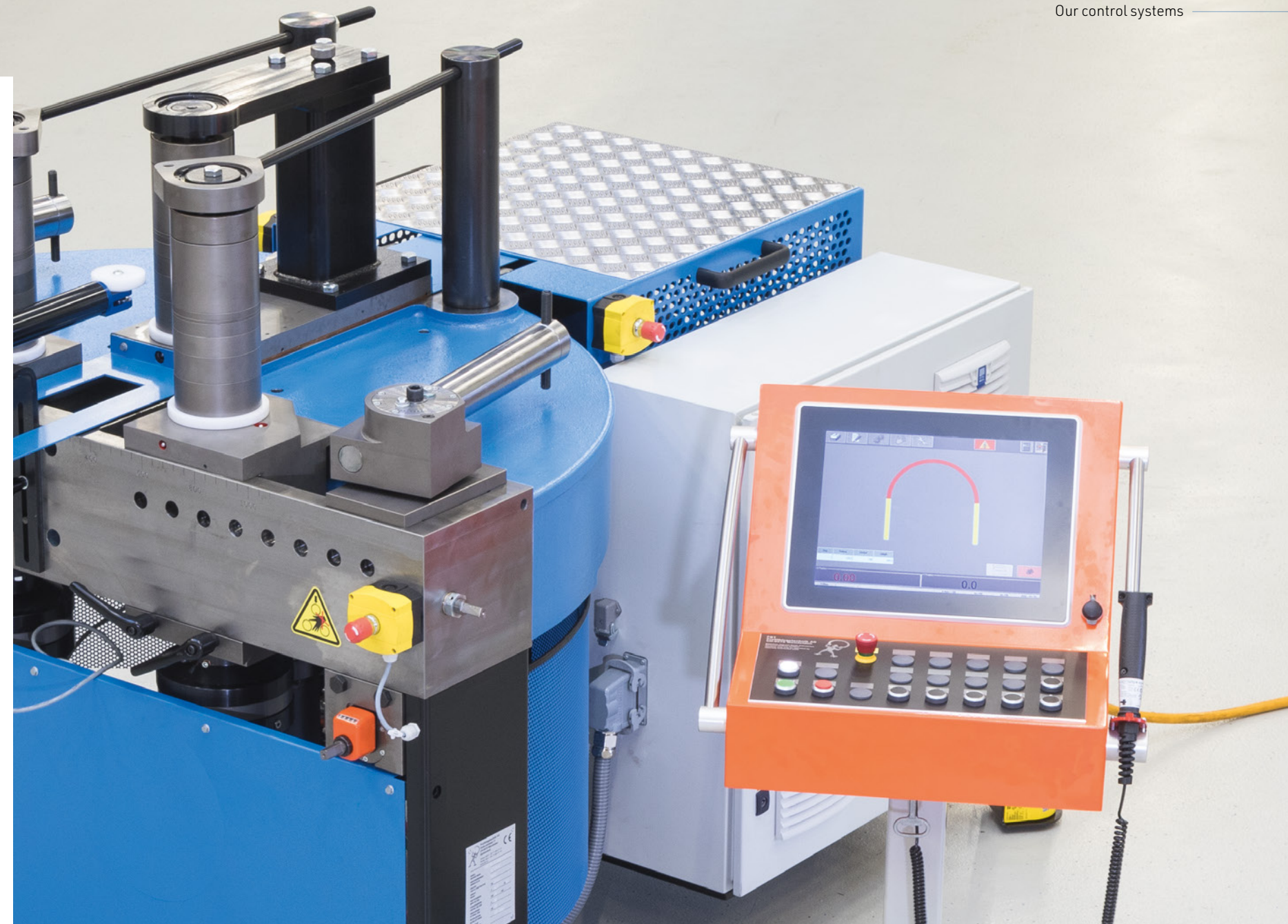
By means of precise control of the X and Y-axis, perfect transitions are achieved between radii and straight sections. Non-conformances caused by the machine are excluded through the continuous regulation of the axis position during bending, from individual parts to large-scale series production. Unavoidable non-conformances in programmed data, which can result e.g. from different material elasticities, are corrected in the software by entering actual manufactured values – consistent repeat precision and low reject rates are thus ensured.

Open and expandable

With the PC400 control system, an open system has been created, such that the control system can be individually expanded through the use of standard components.

The PC400 can be expanded at any time through the use of options such as the automatic radius measuring system, Z-axes for bending into the third dimension, or the integration of a mandrel bending unit with a feed system.

The control panel communicates with a Siemens S7-1200. This allows the programming of other digitally controlled processes in the manufacturing sequence.



Benefits

- Performance of the bending process in one or more passes - even where there are different radii within a component
- Material catalogue / springback diagrams can be created for all profiles - up to and including automatic radius measurement
- All software tools / subprograms included
- Assignment and access of PDF documentation (image/text) for creation of workpieces using a corresponding program
- Optional interface with CAD software for the creation of programs based on design data
- Workplace-independent creation, management and data backup of programs by means of network integration
- Direct support from PBT experts thanks to the remote maintenance capability



Mandrel bending device

MBD4 CNC-controlled

- Profile feed unit 6 m version
- Compressive force approx. 4000 kg
- For bending hollow profiles up to approx. 2.5 x profile width in one pass.
- Servo technology with CNC-controlled mandrel and feed unit (booster).
- Guarantees slip-free bending even of small radii in one pass.



Automatic radius measurement system

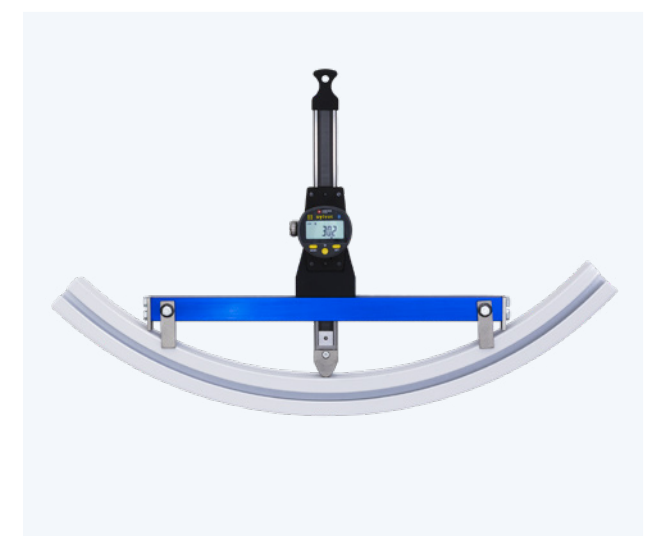
- Fully automatic radius measurement based on our PC400 control systems
- The pneumatic gauge heads can be positioned variably to the right and left of the bending rollers
- Measurement of one or more different radii in the same profile is possible
- Continuous and cyclical measurement of the actual manufactured radius possible
- After measurement of the actual manufactured radius, automatic correction takes place until nominal radius is reached



Supporting roller controlled

(Z-axis) for 3D bending
(right and/or left)

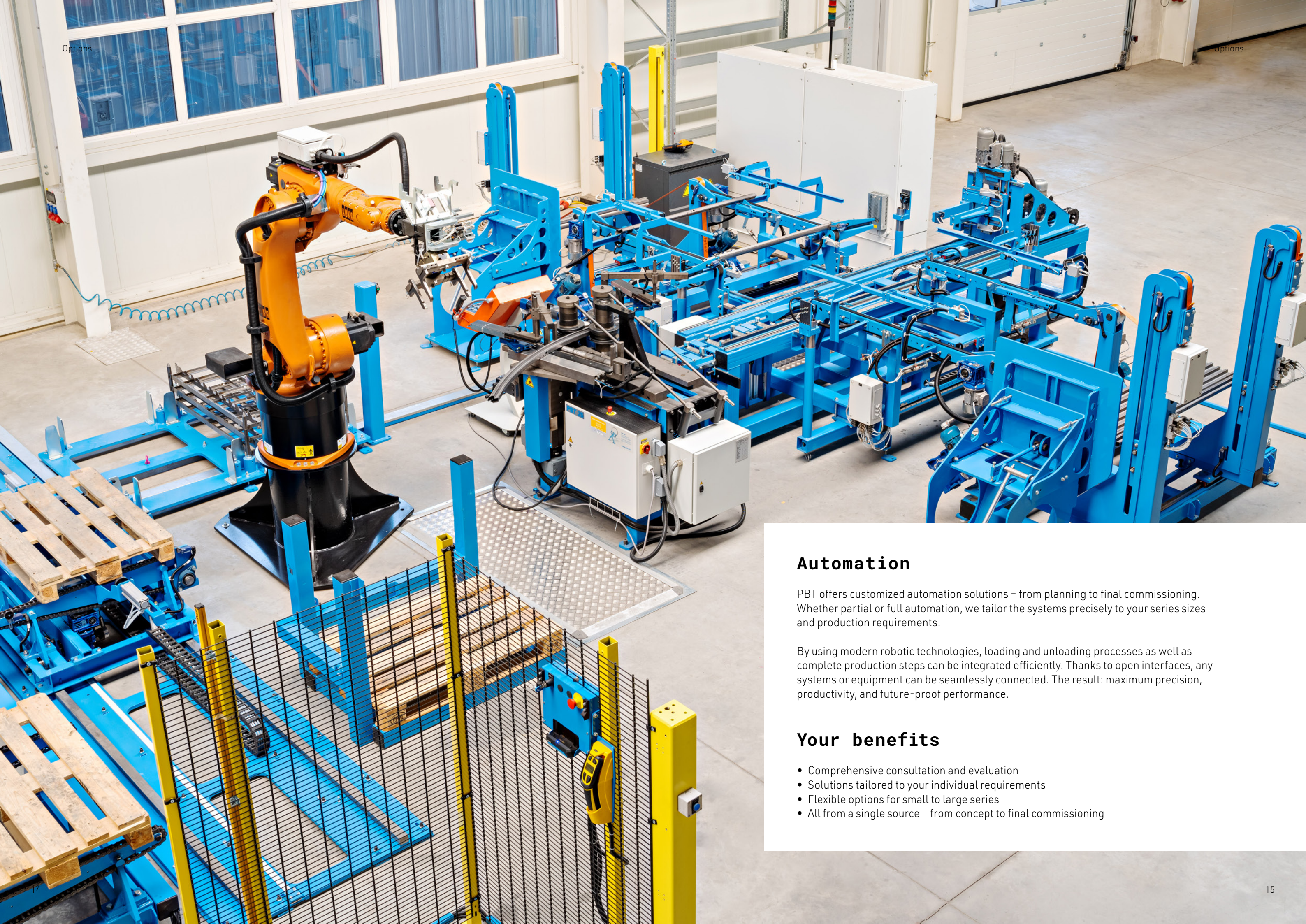
The controlled supporting roller additionally makes it possible to bend with a gradient. With the associated software, it is simple to programme and bend 3D elements.



Manual Radius Measuring Device

2.0

- Direct display of the radius on the device
- Three chord lengths: 100 mm, 300 mm, 500 mm
- Data transfer manually or wireless (wifi-version)
- Simple and precise Operation



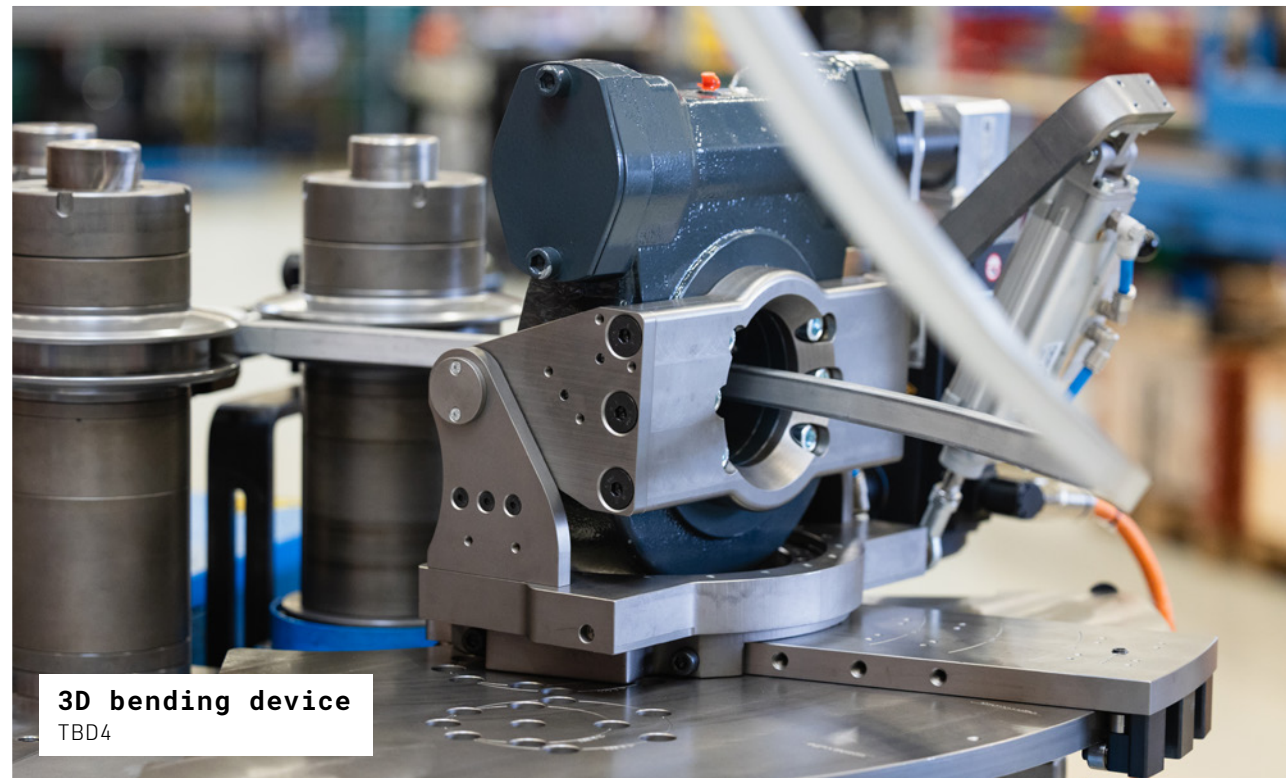
Automation

PBT offers customized automation solutions – from planning to final commissioning. Whether partial or full automation, we tailor the systems precisely to your series sizes and production requirements.

By using modern robotic technologies, loading and unloading processes as well as complete production steps can be integrated efficiently. Thanks to open interfaces, any systems or equipment can be seamlessly connected. The result: maximum precision, productivity, and future-proof performance.

Your benefits

- Comprehensive consultation and evaluation
- Solutions tailored to your individual requirements
- Flexible options for small to large series
- All from a single source – from concept to final commissioning



3D bending innovation

As a leader in three-roll bending, we continuously develop our products and solutions. The demands on profile geometries and bending solutions are constantly increasing, particularly in the field of three-dimensional bending processes. We continuously optimize our products to meet market requirements.

TBD4

- Suitable for standard profiles up to 50×50 mm and special profiles up to 70×70 mm (depending on tensile strength and radii)
- Application: standard and special profiles, 3D bending and rotation
- Compatible machines: PBT15 PC400, PBT25 PC400 with CNC Z-axes
- High flexibility for customer-specific bending tasks



TBD20

- Suitable for standard profiles up to 170×100 mm and special profiles up to 200×200 mm (depending on tensile strength and radii)
- Application: standard and special profiles, 3D bending and rotation
- Compatible machine: HELIX



Tool Engineering & Bending Tests

With over 35 years of experience in tool design, material selection, and validated testing, we deliver reliable solutions precisely tailored to your needs. Comprehensive in-house testing ensures success at the customer site, minimizes risks, and provides full transparency. Tools are custom-designed for your profiles; initial tests are often refined to achieve the highest bending quality. Feasibility is always verified before any investment.

Your benefits

- Personal and direct consultation
- Assessment of your profile's bendability
- Modification of cross-sections for optimal bending performance
- Engineering, production, and testing all in-house
- Expertise in tool/profile materials, coatings, lubricants, and other influencing factors

R 1950

References

International companies in a wide range of industries benefit from the cost-effectiveness, precision and reliability of our machinery and services.

Here are a selection of our customers:

Agrikon, Airbus, Albixon, Alcan, Asas, Audi, Barnshaws, Bestbend, Biegetechnik Steinrücken, BMS, Brökelmann Aluminium, Bürstner, CWA Constructions, Die Bahn, esa, Fendt, Fritzmeier, HMT, Holden, Hydro, Hyundai, Jaguar, Jansen, Kersten Europe, Linde, Lugstein, LS Lederer, Mercedes-Benz, Metallgestaltung Eickhoff, Obru, Pemat, Porsche, Proas, Rexroth, Ronal Group, Sadeff, SAPA, Schaeffler Group, Schüco, Siemens, Sjolund A/S, Still, Thyssen Krupp, Voest Alpine, Volkswagen, Walter Mauser, Welser Profile, XAL



R 6278



Product example 1

Automotive engineering / wind deflector



Product example 2

Conveyor technology / transport systems



Product example 3

Utility vehicle engineering / cab profiles



Product example 4

Conveyor technology / cladding sheet



Product example 5

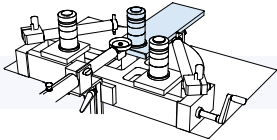
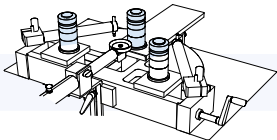
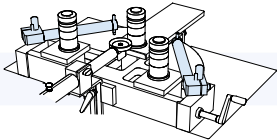
Cooling spiral



Product example 6

Exhibition stand construction

Our profile bending machines

		ARKUS12®
X-Achse		
Force X-axis		12 t
Positioning accuracy of the X-axis		0,01 mm
Drive of X-axis		Valve controlled hydraulics
Stroke of X-axis		200 mm
Max. insertion width		135 mm with roll ring D105 60 mm with bending device
Hydraulic oil volume		7 litres
Y-axis		
Shaft drive; individually driven!		Electric motors, clean and low noise
Dynamic speed control of the shafts		1 – 30 rpm
Max. torque per shaft		500 Nm
Shaft height		110 mm (optionally 220 mm)
Shaft diameter Ø		40 mm
Shaft supports		optionally
Front shaft distance		256 (optionally 80) – 518 mm
Z-axis		
Manual Z-axis (static)		serie
Cranked Z-axis (dynamic)		optionally
CNC-controlled Z-axis (dynamic)		optionally 4 t
Control / Software:		
Machine control	Manuell / Tablet Teach-In / TABLET350 / PC400	
Operating system	Windows 10	
General technical data:		
Connection	3 x 400 VAC, 16 A	
KW	2 kw	
Length / width / height	905 mm / 950 mm / 1125 mm	
Weight	540 kg	
Transportability of the machine	Pallet truck	

PBT15®	PBT25®	PBT35 Servo Wide®	HELIX Servo®
15 t	27 t	35 t	65 t
0,01 mm	0,01 mm	0,01 mm	0,01 mm
Valve controlled hydraulics	Valve controlled hydraulics	SERVOHydraulics	SERVOHydraulics
300 mm	265 mm	390 mm	445 mm
263 mm with roll ring D105 238 mm with roll ring D130	243 mm with roll ring D150	293 mm with roll ring D150 (optionally 350 mm with roll ring D150)	415 mm with roll ring D220
17 litres	17 litres	9 litres	9 litres
Electric motors, clean and low noise	Electric motors, clean and low noise	SERVO DRIVE - 100% torque at any speed	SERVO DRIVE - 100% torque at any speed
1 – 20 rpm	1 – 22 rpm	1 – 16 rpm	1 – 8 rpm
800 Nm	1600 Nm	3000 Nm	9000 Nm
275 mm	300 mm	400 mm	500 mm
40 mm 65 mm	105 mm	105 mm	130 mm
series	series	series	series
110 - 800 mm	200-1000 mm	360-1120/1400 mm	630-1330 mm
series	series	-	-
optionally	optionally	optionally	-
optionally 2 t	optionally 2 t or 4 t	optionally 4 t	serie 4 t
PC400	Manuell / Tablet Teach-In / TABLET350 / PC400	PC400	PC400
Windows 10	Windows 10	Windows 10	Windows 10
3 x 400 VAC, 20 A	3 x 400 VAC, 32 A	3 x 400 VAC, 32 A	3 x 400 VAC, 62 A
4 kw	7 kw	15 kw	34 kw
1400 mm / 1450 mm / 1370 mm	1680 mm / 1250 mm / 1390 mm	1970 mm / 1860 mm / 1420 mm	2520 mm / 2240 mm / 1760 mm
1275 kg	1150 kg	2250 kg	5500 kg
Pallet truck	Pallet truck / Drawbar	Crane	Crane

Production examples

												
ARKUS12®	mm	70/12	100/10	30/30	30	50/50/5	50/50/5	60/60/7	60/60/7	60/60/7	UNP 80	UNP 80
	R min.	300	150	150	150	300	400	400	400	400	400	400
PBT15®	mm	100/15	200/10	40/40	40	60/60/6	60/60/6	70/70/7	70/70/7	70/70/7	UNP 140	UNP 140
	R min.	1.500	300	500	500	300	300	400	400	400	800	800
PBT25®	mm	120/15	300/15	60/60	60	80/80/8	80/80/8	80/80/8	80/80/8	80/80/8	UNP 180	UNP 180
	R min.	1.000	300	500	500	600	1.500	500	500	500	600	600
PBT35 Servo Wide®	mm	120/15	260/20	80/80	80	100/100/10	100/100/10	100/100/10	100/100/10	100/100/10	UNP 200	UNP 200
	R min.	600	350	700	700	800	1.000	600	900	750	600	600
HELIX Servo®	mm	200/30	260/30	100/100	80	120/120/12	120/120/12	130/130/14	130/130/14	130/130/14	UNP 260	UNP 260
	R min.	2.000	450	1.000	500	1.000	1.500	750	1.000	750	1.000	1.000

										
-	1-PE 80	2" [60]	50/50/3	60/30/4	-	-	-	-	-	Aluminium 30/20/2
-	500	300	300	500	-	-	-	-	-	200
IPE 80	IPE 120	3" [88,9]	100/40/4	100/40/4	Steel 70/50/2	Steel 90/50/2	Aluminium 70/50/2	Aluminium 100/70/2	Aluminium 30/20/2	
1000	1000	500	1.000	1.000	500	500	200	600	200	
IPE 120	IPE 160	4" [114]	160/60/4	160/60/4	Steel 70/50/2	Steel 90/50/2	Aluminium 70/50/2	Aluminium 100/70/2	Aluminium 30/20/2	
800	500	600	1.000	1.500	300	300	200	300	200	
IPE 160	IPE 180	Ø 180	100/100/10	160/60/4	Steel 70/50/2	Steel 90/50/2	Aluminium 70/50/2	Aluminium 100/70/2	Aluminium 30/20/2	
1.500	500	1.000	600	1.000	300	300	200	300	200	
HEA 200	HEB 180	Ø 219	250/150/10	180/80/6	-	-	-	-	-	
3.000	2.000	2.000	1.750	1.750	-	-	-	-	-	



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