TRUMPF

TruBend

Think ahead.
Bend better

Attention to every detail

Innovative ideas drive bending forward – therefore it drives your company forward too. TRUMPF bending machines impress with functions that save resources, make operation easier and ensure precise quality – from the very first part. Whether it's laser-measured angles, energy-saving hydraulics or fully automatic tool changes – find out more about how you can make your bending production even more successful on the following pages.

Comprehensive:
- Choose from the largest bending portfolio on the market

Modern:
- Digital functions provide precise results

Simple:
- Fun operation that is easy to learn

FACTS AND INNOVATIONS

HIGHLIGHT FUNCTIONS

MACHINES

AUTOMATION

TECHNICAL DATA

SERVICES

You can't bend the facts

Bending sheet metal with 1,100 tons of press force precisely to 0.3°?
TRUMPF TruBend machines make it possible. This page shows fascinating facts and illustrates
what you can bend under optimum conditions.

30%
Weight savings with
weight reduction tools

TRUMPF has delivered over

336 mi.
of bending tools to date

Material support up to

30°
with help of Bending Aids

Bending with

1,100 tons

of force

0.3°
of guaranteed angular
accuracy with ACB

Precise positioning to

0.00008 inches

Backgauge positioning speeds of

4,100 ipm

Work preparation → **Setup** → **Production**

Be better prepared for bending

Programming is essential when it comes to bending. Programs such as TecZone Bend simulate the bends in 3D and automatically check feasibility. This decreases the mental effort you need to put in, saves time and avoids rejects.

Change tools quickly

Setup is a part of bending. It is faster and easier with the automatic tool changer, tools with a lightweight design, and automatically prepared and optimized setup plans.

Produce production

It all depends on the angles. Whether you bend manually or automatically – intelligent functions ensure precision and productivity in your production.

Innovations
for your success

You want to know what's in it for you before you invest. On the following pages you can
find the most important functions of the TruBend family sorted according to the benefits:
part variety, quality, productivity, ergonomics, programming and tools.
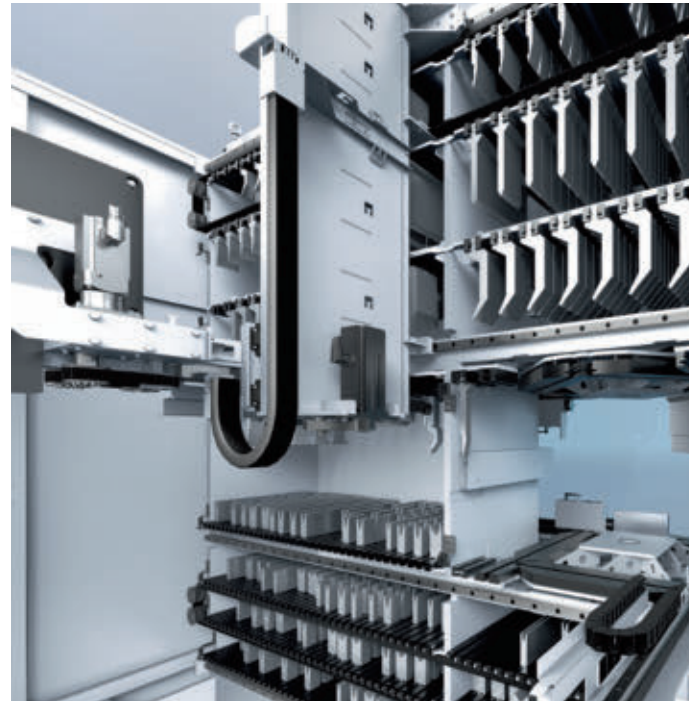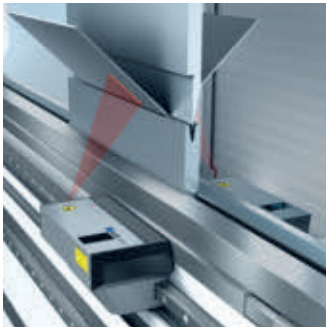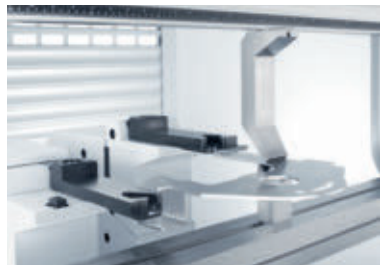
Producing the complete spectrum of products

Whether you are bending small or oversized parts: use the widest range of machines on the market to meet your requirements.

Any geometry

Regardless of whether it's thick, thin, large or small parts – with bending machines from TRUMPF you can produce an enormous part variety. Due to the large range of TruBend machine variants, you can process any component geometry cost-efficiently and in top quality. You benefit from:

- Various tonnages and bending lengths
- A large material range from Aluminum to Hardox
- Precise positioning of your parts with 2-, 4-, 5- or 6-axis backgauge systems

Any part size

If you normally bend large parts, the increased open height option might be of interest for you. In contrast, the TruBend Series 7000 and the automatic TruBend Cell Series 7000 are specialized for small parts. Bend with flexibility:

- With a press force of up to 1,100 tons
- Parts of up to 317 inches in bending length
- Box heights of up to approx. 20.4 in.

Depending on the machine, you can bend box heights of up to 20.4 in.

Bend complex parts with high precision.

!

Through thick and thin
Does the sheet thickness vary from batch to
batch? No problem – the Thickness Controlled
Bending (TCB) function automatically compen-
sates for variations. Sensors detect the actual
thickness of each sheet and adjust the pressing
depth of the upper tool accordingly. This means
that you can achieve precise angles regardless of
the sheet thickness – without loss of productivity,
calibration and programming effort.

Precise angles from the very first part

Perfect angles are critical when it comes to part quality. If they are right from the first part, you prevent rejects and don't waste time or material. You have to be able to rely on your parts being identical during series production. You don't want to have to rework your parts at the end. With the help of Automatically Controlled Bending, this concern is eliminated.

Precise angles right away

Numerous factors influence angle precision when bending, for example, fluctuating strengths in the material or springback. The solution: automatic angle measuring systems from TRUMPF – they enable you to bend accurately from the very first part. ACB stands for "Automatically Controlled Bending." The ACB system records the angle and springback during the bending process. This is fed back into the control so the desired angle is bent. The two ACB Laser and ACB Wireless systems complement one another; one system may be more appropriate than the other depending on the application.

Tactile process: ACB Wireless
The user-friendly system measures and corrects angles using two sensor disks that are integrated into the upper tool. These sensor disks come into contact with the inner surface of your bending part during bending. In doing so, together with sensors, they measure the precise angle electronically and ensure that it is perfect. The control and the angle measuring system communicate wirelessly here.

Optical process: ACB Laser
Without any setup required – with ACB Laser you can use a non-contact, optical system for angle measurement. This means that two measuring units move in front of and behind the bending line independently of one another. Each unit consists of a laser and a camera. The laser projects a line onto the sheet metal; the camera detects this line and calculates the angle of the bending part in real time.
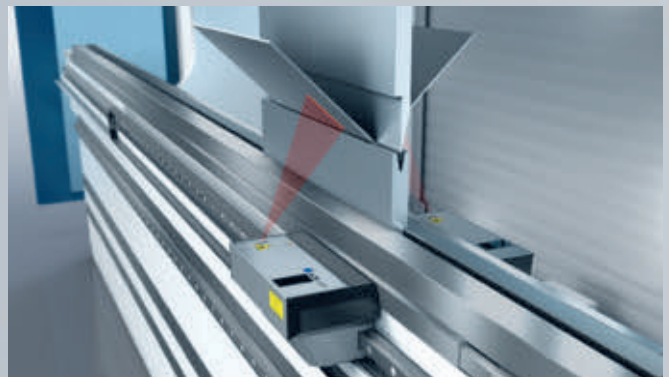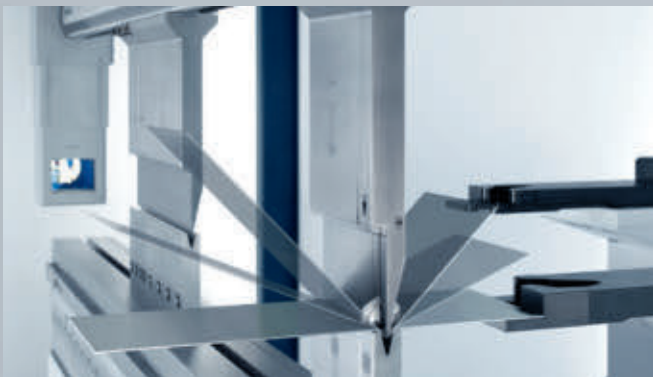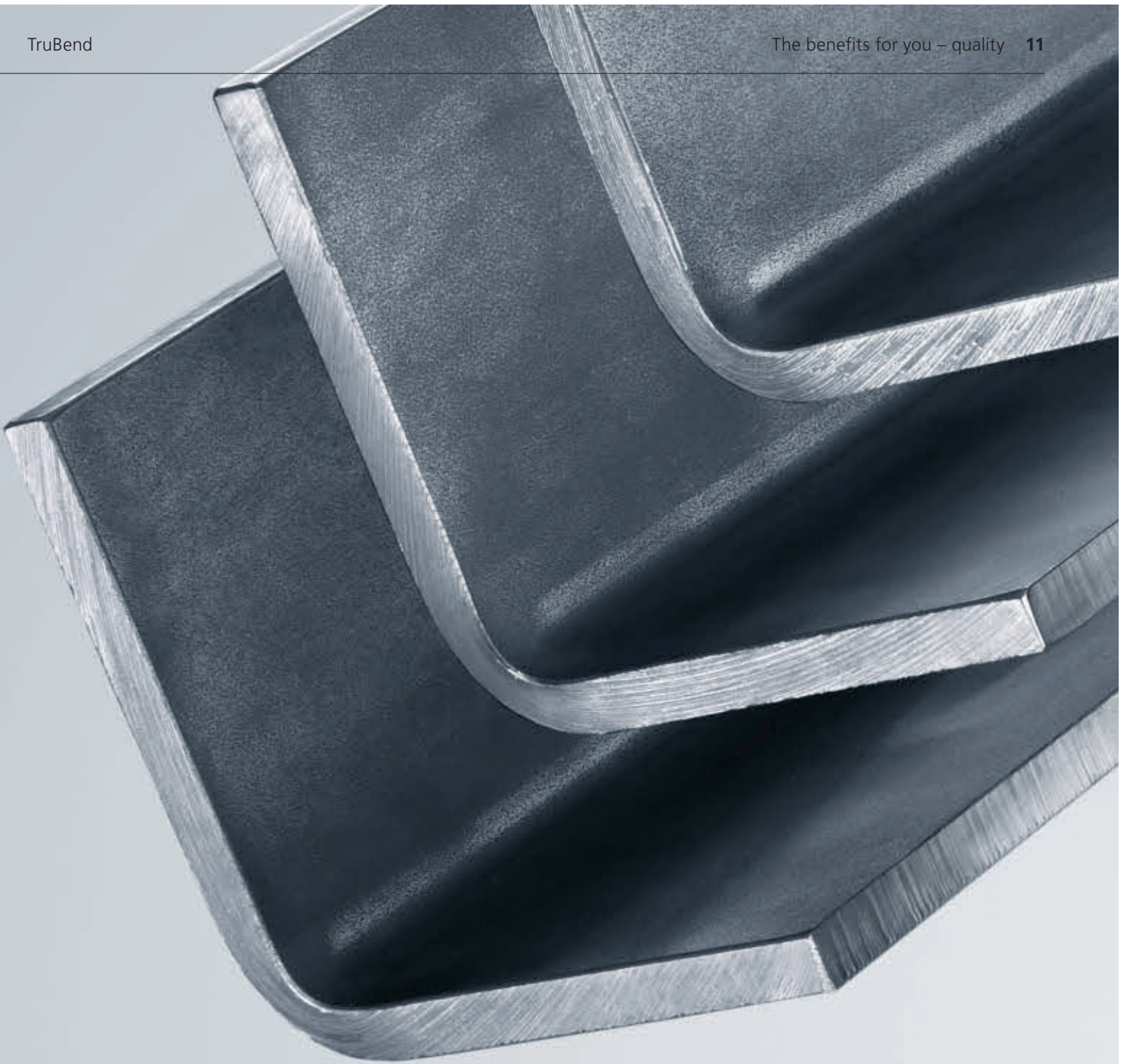
Strengths of ACB Wireless

- Particularly suitable for:
  – Short flanges
  – Reflecting surfaces
  – Interior tabs
- Quick station bending
- Quick multi-point measurement

Strengths of ACB Laser

- Particularly suitable for:
  – Acute and obtuse angles
  – Thick sheet metal
  – Large radii
- No set-up required
- System is suitable for all tools
- Use of special tools possible
- Low interference contour
- Completely mark-free
- Quick multi-point measurement

- High speed   ■ Perfect angles   ■ Various bending methods possible
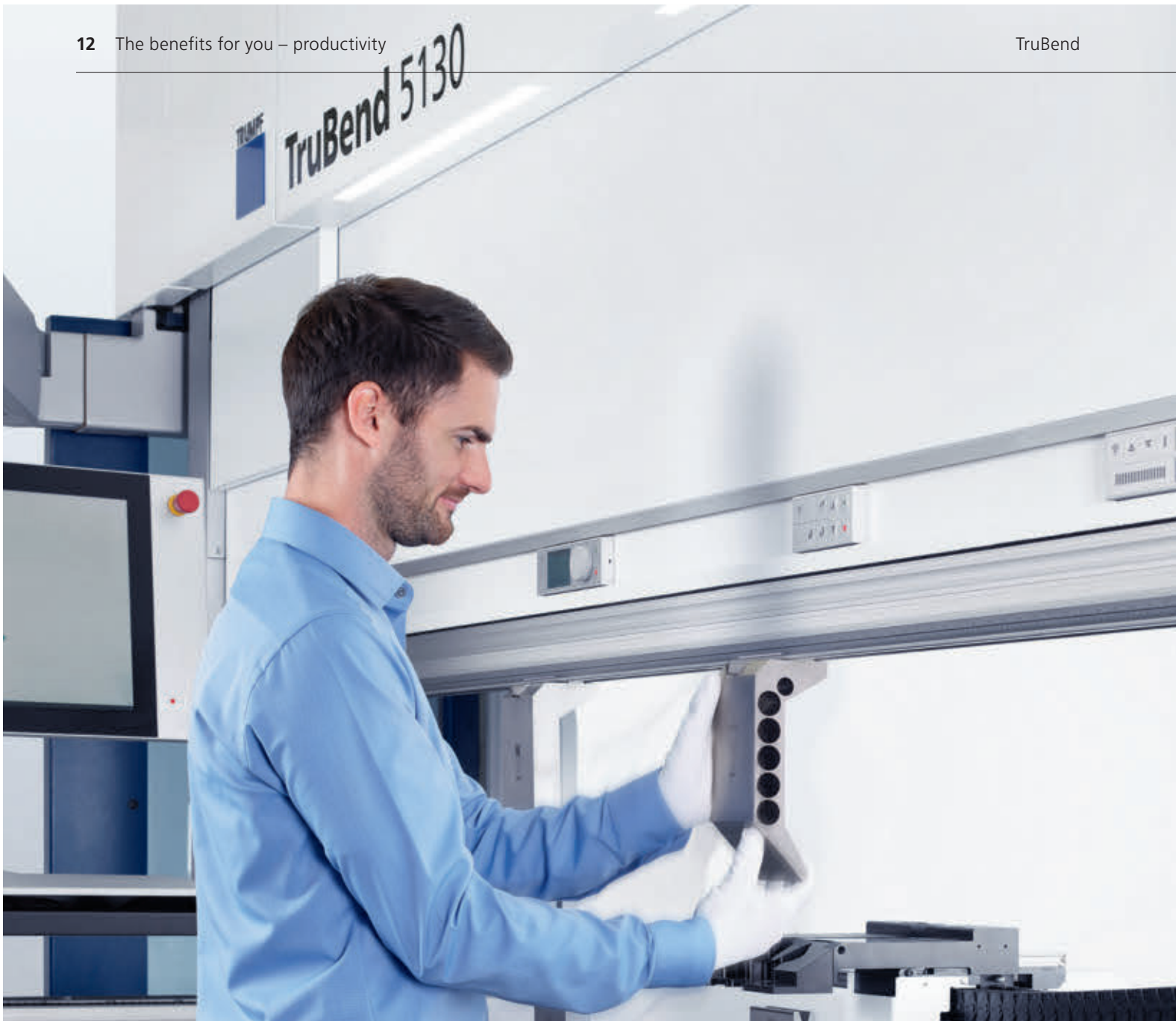
Reducing setup times

From machine functions to the software components – reduce your setup times
to a minimum. You can achieve this with the aid of our unique bending concept. Read more
about some of the options TRUMPF has to offer.

Lightweight bending tools:
30% less weight

With the Safety-Click safety mechanism you can change the upper tools from TRUMPF quickly and safely. The operator simply clamps the tool into and out of the machine clamp from below. Patented lightweight bending tools from TRUMPF weigh around 30% less than conventional upper tools but are just as durable and resilient. This means that the operator doesn't have to lift heavy loads and can set up more efficiently.

Tool Indicator:
Precise positioning

Due to the LED bar in the upper tool clamp, you can set up in no time – it shows you exactly where the tool stations have to be placed. It also visualizes which tool station the next bend is to guide the operator.

BendGuard:
Automatic safety

Due to the BendGuard, you no longer have to adjust any safety devices manually on your bending machine. For the CNC-controlled variant, the BendGuard moves independently to the height of the set-up tools. This means that you avoid errors and setup time.

ToolMaster:
Automatic tool changes

The ToolMaster automatically sets up your bending machine for every new program. An invaluable benefit, especially in case of small lot sizes, as you save time and effort. Find out more about the functions and benefits of the ToolMaster on pages 36 and 37.

ToolShuttle:
Ergonomic tool changes

Manual setup made easy? This can be achieved with the ToolShuttle. You can ergonomically move the tools from the tool magazine to the setup position via a moving table – this makes handling easier, particularly of large and heavy tools. Your tools are also secure in the ToolShuttle – the closed storage prevents corrosion and keeps tooling clean.

Tool Setup Optimizer:
Optimizing the setup process

You can save even more time now thanks to the Tool Setup Optimizer: While TecZone Bend is swiftly generating the bending programs for your bending parts, the Tool Setup Optimizer then checks which parts can be bent using the same tools and which tool stations can be best combined in which manner – and all in just a few seconds. This means that you change the setup of as few tools as possible, saving time and energy.

The ToolShuttle allows you to set up heavy tools quickly and simply.

During set up the Tool Indicator shows precisely where the bending tools have to be used.

Bending is team work

The team made up of human and machine is critical to success during bending. If the operator is at ease, the machine can deliver its full potential. A bending machine from TRUMPF therefore does everything it can to make the operator's work easier. Starting with a quiet drive, optimum illumination and the adjustable screen, to intelligent highlights such as the Mobile Control Pro – ease of operation and ergonomic design ensure bending is more fun and bring relief to the bending specialist physically. A few examples:

MobileControl: For less time spent moving around

The smart helpers MobileControl and MobileControl Pro ensure that you spend less time moving around. As movable operating units in a rail on the press beam, they include the most important functions, meaning that you can change the machine parameters in an instant – without constantly having to go to the control panel.

Bending aid: Lifting made easy

Over time, bending large and heavy parts has a negative impact on the health of even the strongest operators. The bending aid from TRUMPF prevents the problem before it starts. It aids bending of weights of up to 661 lbs, relieves the operator in the case of angles of up to 30°, and can be automatically adjusted in height.

Part Indicator: For minimal rejects

The Part Indicator shows to the operator on the screen how they should position the bending part. The next insertion position is then always shown. A colored marking indicates whether the part has been placed correctly. This reduces rejects, particularly in the case of inexperienced operators.

Wireless foot switch: For safe operation

Safety is important for ensuring that every operator can work optimally. The wireless foot switch provides increased freedom of movement and eliminates tripping hazards.

Intuitive operation and programming

With TRUMPF, benefit from the enormous potential for time savings when controlling and programming your bending machine. Touchpoint Bend combines the advantages of state-of-the-art multi-touch technology and industrial control. This makes operating your bending machine as simple and intuitive as using a tablet or smartphone. Programming 25 parts in 18 seconds? TecZone Bend makes it possible. Benefit from the quickest and simplest bending programming currently on the market.

A dialog between operator and machine

Touchpoint Bend is the simple interface for operating your bending machine. Navigation follows an intuitive logic. The displays are reduced to their essentials; realistic 3D visualizations with collision check make processing easier. The right solution is therefore achieved for each application – from simple to complex components. The integrated aid also makes machine operating easier; it can be called up using twofinger operation and simple touch gestures such as swiping.

TecZone Bend is the quickest and simplest programming system for manual and automated bending machines and a great help for any operator. This means that you can carry out programming either at the machine or offline. The TRUMPF software can switch seamlessly between these two aspects. The TRUMPF software automatically generates program proposals, including NC programs, based on 2D and 3D data. It calculates your bending programs in seconds – including collision check in real time, dismantling assemblies, managing setup plans, and much more. Prioritization of tools reduces work outlay and increases the productive operating time of your machine. The optional Tool Setup Optimizer greatly improves the setup process.

Touchpoint Bend: simple and intuitive operation.

Call up the programs easily using the 2D code scanner.

Access the right program automatically

Access the right bending program in an instant with the 2D code scanner. The scanner, which is connected to the machine, reads a bar code or Data Matrix Code from paper and automatically loads the program. This saves you entry and search outlay.

The right tool for any application

Your bending machine provides top performance every day. All components have to interact to ensure this. This is why we don't just provide detailed advice, but also produce all tools ourselves – durable, precise and perfectly coordinated to your TruBend machine. Choose from the widest range of tools on the market. Our specialists also develop special tools to suit any requirement.

Durable with built-in added value
Wear-resistant working areas make your tools particularly durable. This is why laser beams harden them where it matters – on the surface. The interior remains elastic to ensure that the tool does not splinter during overload. High-quality coatings such as LASERdur AL and LASERdur ZN prevent unwanted adhesion of aluminum or zinc due to abrasion of the sheet metal. This means that there are outstanding glide characteristics and no marks or imprecision. Your tools are also corrosion-resistant and do not have to be cleaned.

Bend without leaving any trace
When bending aesthetic parts it is particularly important that you do not leave any marks on the sheet metal. You can achieve this with the RollBend tool. It enables you to create small flange lengths, as well as moldings and holes close to the bending line, without causing deformation. You can easily combine it with standard dies.
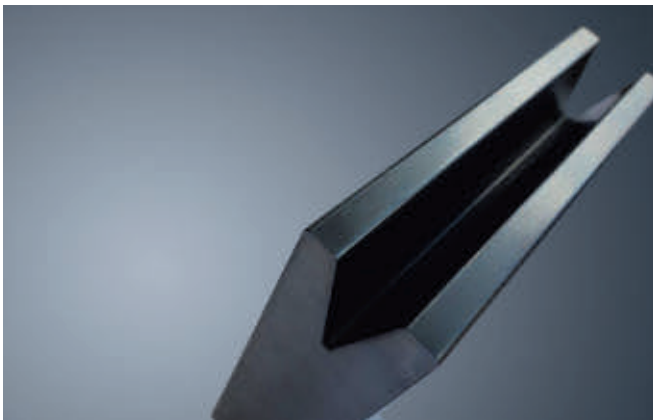
Ensure your tools have a high level of surface hardness and outstanding glide characteristics – the LASERdur AL and LASERdur ZN hardening processes.
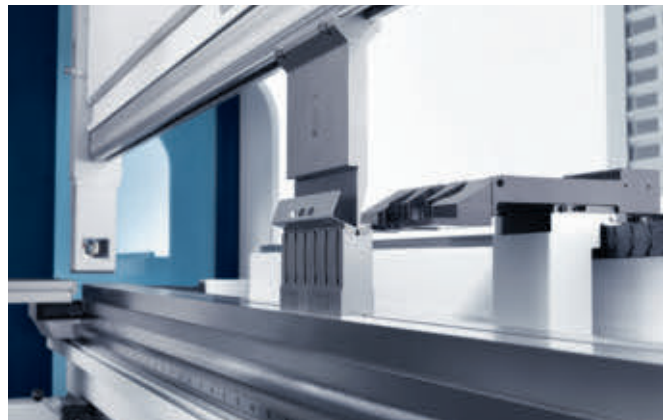
With the RollBend tool you can create short flange lengths, as well as moldings and holes close to the bending line, in a low-mark manner and without causing deformation.

For perfect combination with your machine, we produce all bending tools ourselves. You can obtain more than 150 upper and lower tools– as a set or individual parts. We develop, test and produce special tools in accordance with your specifications for particular requirements.

You can find **more information about TRUMPF bending tools** at www.trumpf.com/s/hup25d

Bending machines for your requirements

Whether you are a specialist for small or large parts, want to be a jack of all trades, or rely on fully automatic bending cells – you have the choice. On the following pages, you can find bending machines with intelligent functions for every requirement – to ensure you're always on the right track when it comes to bending.

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Find more information on TruBend machines
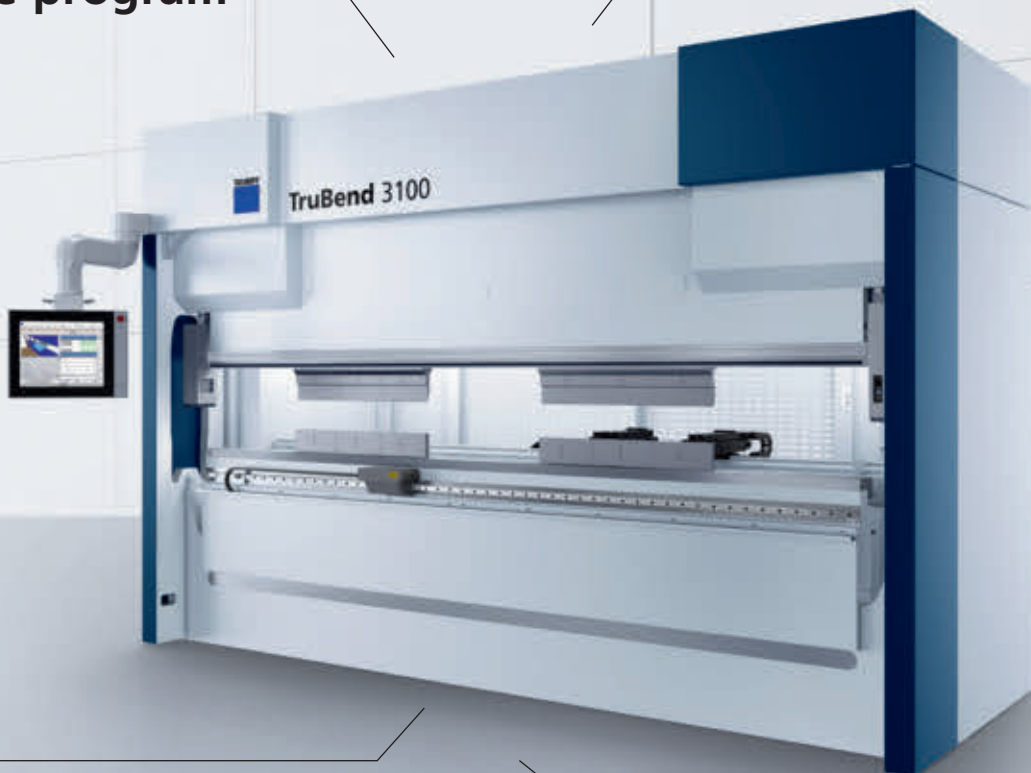at www.trumpf.com/s/hup25d

TruBend Series 3000

The cost-efficient standard machine – combines top TRUMPF quality with simple operation and an attractive price-performance ratio.

02

Compact design

01

Simple program-ming

TruBend 3100

03

Flexible setup

04

Precise angles

01

Simple programming

You can also produce cost-efficiently with low capacity utilization with the machines from the TruBend Series 3000. Furthermore, you benefit from top safety standards. You can carry out graphical programming directly at the controls. Tool data in DXF format can be imported quickly. TecZone Bend, the quick and easy programming system, is also available as an offline version.

The state-of-the-art multi-touch controls are clearly organized, straightforward and self-explanatory.

02

Compact design

The compact architecture with hydraulic drive ensures a symmetrical transmission of forces. The entire bending length can be used without limitations due to the O frame design. The crowning system guarantees uniform, precise angles, even with large bending lengths.

The 2-, 4- or 5-axis backgauge makes the machine quick and precise.

03

Flexible setup

The tool handling is well thought-out – self-centering tools reduce setup times; wear-resistant tool clamps ensure quality in the long run. You can set up upper tools of up to 30 lbs from the front of the machine with the aid of Safety-Click. Tools can also be rotated 180 degrees for maximum flexibility.

04

Precise angles

The TruBend Series 3000 is the only machine in its class with which you receive the ACB Laser angle measuring system. The laser and camera automatically check whether all angles are correct during the bending operation. The non-tool-based measurement system means no marks, no setup outlay and top part quality without rejects.

!

More information about the impressive functions of the TruBend Series 3000:

- System for perfect angles (page 10/11)
- TecZone Bend offline programming (page 16)
- 2D code scanner (page 17)

Find more information about the TruBend Series 3000 at www.trumpf.com/s/kx4t6m

TruBend Series 5000

The productive all-round machine – with its high number of benefits and functions during programming, setup and operation, you achieve unrivalled productivity during production.

02

Flexible expansion

01

Makes your designs a reality

TruBend 5320

03

Ergonomic control

04

Easy to operate

01

Makes your designs a reality

The sophisticated angle measuring systems such as ACB Wireless and ACB Laser ensure precise angles from the very first part – regardless of the material properties. It is user-friendly, saves rejects and increases your productivity, as it reduces   outlay for part run in. Choose the right solution for every application – the two independent angle measuring systems can be combined with one another.
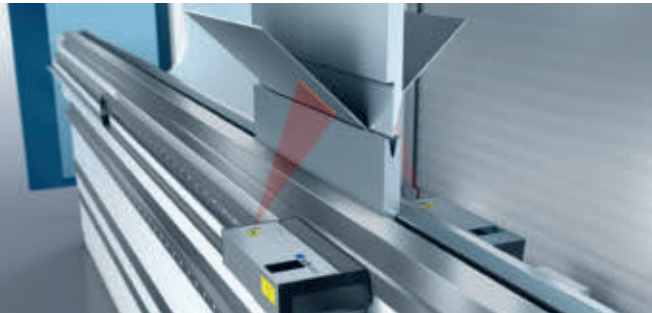
Precise angles due to laser measurement – ACB Laser.

02

Flexible expansion

Your machine grows with you – with the ToolMaster tool changer you can set up your press brake tooling automatically. You can further automate the TruBend with fully automatic robotic bending. You can also upgrade it to the automated bending cell TruBend Cell 5000.

The ToolMaster now includes even more tools.

03

Ergonomic control

The third generation of the TruBend Series 5000 makes the operator's daily work easier due to a variety of innovations. This includes comfortable and ergonomic control via wireless foot switch. With the MobileControl system, you can save walking time, which is a great advantage when it comes to a 161 inch bending machine.

The wireless foot switch puts an end to tripping.

04

Easy to operate

The Bending Aid supports the bending of parts up to 30 degrees. Included are automatic height adjustment which provides valuable assistance to operators. It helps when bending heavy or large parts. You can choose between either plastic, brushes or rollers as support. The Part Indicator position assists operators with correctly inserting parts into the machine. A visual assistance helps ensure mirrored parts are bent correctly and are placed in the correct spot.
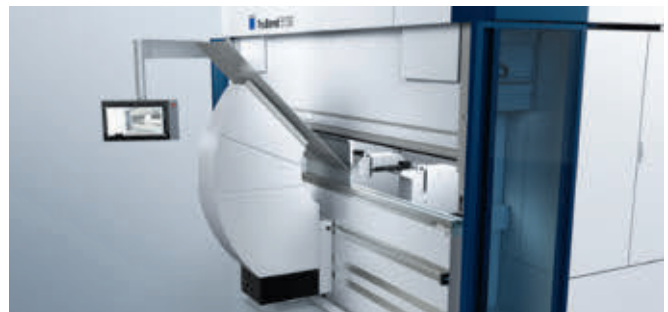
The bending aid – supports the operator.

BendGuard Automatic safety

Adjusting the safety device manually? Not anymore. Due to the CNC control, the BendGuard Automatic moves automatically to the tool height of the set-up upper tools. This means that you save two additional manual interventions, and therefore valuable setup time. A possible safety-relevant source of error is also eliminated.
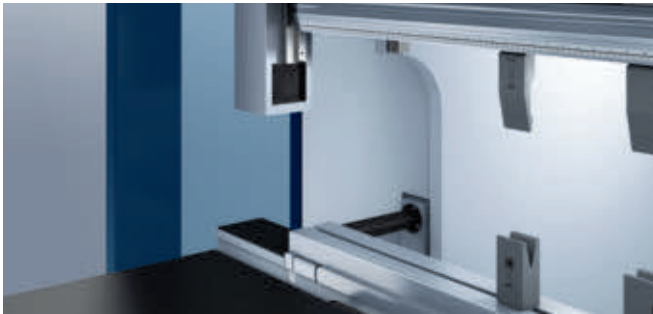
The CNC-controlled BendGuard Automatic.

Efficient and economical

The speed-controlled servo drive On-Demand Servo Drive precisely provides your TruBend machine with the energy that it needs. It only runs during the bending process. This means, in between, the hydraulics stop and do not use any energy. This means that it is economical, quick and quiet. If the press beam has to cope with a large pressing depth, the On-Demand Servo Drive supports it with increased working speed.

The On-Demand Servo Drive works energy-efficiently, quickly and quietly.

Clearance

Due to the low deflection of the press beam, the 4-cylinder drive ensures a high level of precision over the entire bending length. Its flat design with a small cylinder diameter provides more edge clearance in front of the machine. The minimal contact surface prevents transfer of heat to the machine frame. The drive works electro-hydraulically and thus particularly and dynamically, quietly and in an energy-saving manner.
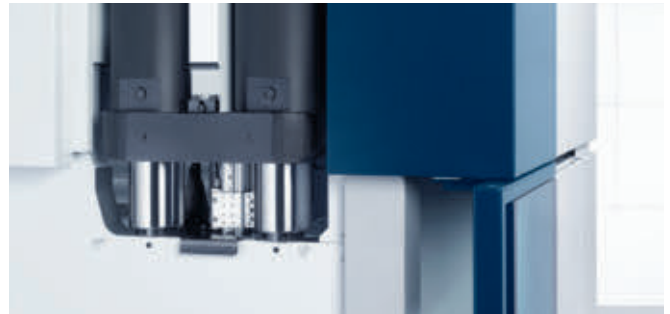
4-cylinder drive technology for top precision.

Universal bending

You can bend a universal spectrum of parts with the TruBend Series 5000. The open machine architecture allows large box heights and greater part flexibility. With the help of the lower tool displacement, you can use special lower tools if required, for example to create folds or Z bends at a station – this can be done quickly, without retooling. The 6-axis backgauge with its gauge fingers that are independent from one another support maximum part variety.

Flexible production due to 6-axis backgauge.

Smart and intuitive

Operate your bending machine as easily as your smartphone – TRUMPF combines the benefits of state-of-the-art multi-touch technology and industrial control in the Touchpoint TruBend. Intuitive operation, even possible with gloves, is reminiscent of tablets or smartphones. The displays focus on the essentials and therefore make handling easier.

An additional screen gives you a better overview.

A boost

With the TecZone Bend software you can use the fastest and simplest programming system for bending machines on the market. It allows you to program off line and stream line the bending operation.

Shop floor programming with TecZone Bend.

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More information about the impressive functions of the TruBend Series 5000:

- Thickness Controlled Bending (page 9)
- System for perfect angles (page 10/11)
- Tool Indicator (page 13)
- BendGuard (page 13)
- ToolMaster (page 13)
- MobileControl (page 15)
- Bending aid (page 15)
- Part Indicator (page 15)
- Wireless foot switch (page 15)
- MagicShoe (page 15)
- Touchpoint Bend (pages 16/17)
- TecZone Bend shop floor programming and offline programming (page 16)
- 2D code scanner (page 17)

Find more information about the TruBend Series 5000 at www.trumpf.com/s/tuf5yq

TruBend Series 7000

The ergonomic high-speed machine – it bends small and medium-sized parts under top work conditions in a space-saving and highly productive manner.

01

High output with top quality

02

Quick and safe
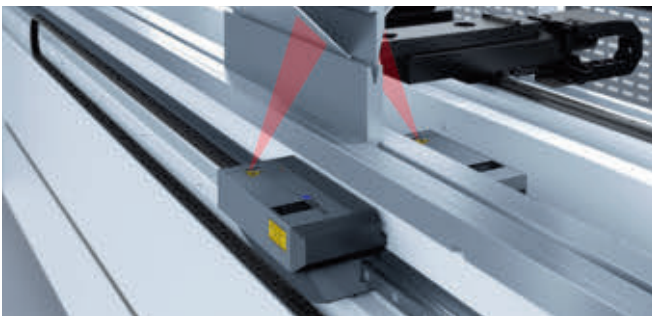
03

Efficient Layout

04

Comfortable operation

01

High output with top quality

Energy-saving and highly productive – the directly driven torque motor produces a high torque even at a low revolution speed. This means that you can use large press forces at the same high working speed. The mass-reduced backgauge also ensures a high level of drive dynamics. You create the ideal conditions for maximum productivity along with the angle measurement systems.

Its backgauge makes the machine particularly dynamic.

02

Quick and safe

Manual adjustment of the safety device is now a thing of the past due to the BendGuard Automatic. With the help of the CNC control, the BendGuard moves independently to the height of the set-up tools. You save the usual manual interventions and valuable setup time, and can work safely and error free.

Automatic safety with the BendGuard Automatic.

03

Efficient layout

Small and compact – with its small installation area, the TruBend Series 7000 is suitable for a wide range of products. When bending small and extremely small parts, the machine is a big help – due to the geometry of the gauge finger, you can also position parts with very small flanges with ease. Due to its ergonimic design, production has never been simpler with tool storage and production part trays built into the machine.

04

Comfortable operation

If things are good for the bending operator, things are good for the bending process – the TruBend Series 7000 is the first press brake to receive an ergonomics certificate. The operator works ergonomically with a sitting and standing aid; they can adjust the support table individually. The sitting and standing aid as well as the swiveling control are easy on the spine. LED lighting ensures top visibility in the work area. A laser that projects the line to be bent onto the sheet metal part provides intelligent assistance.

!

More information on the impressive functions of the TruBend Series 7000:

Find more information about the TruBend Series 7000 at www.trumpf.com/s/47yokz

TruBend Series 8000

The flexible large-format machine – with up to 1,100 tons of press force, it bends small, large, or extra-large parts with power and precision.

01

Bending complex parts

02

Simple setup

03

Quick installation

04

Powerful bending

01

Bending complex parts

The TruBend Series 8000 processes large parts in a flexible and precise manner with the help of the LCB (Laser Controlled Bending, similar to ACB Laser) laser-based angle measuring system version. With a particularly large usable open height and throat depth, 317 inches of bending length, and up to 1,100 metric tons of press force, even high-tensile materials and long flanges are no problem. You can bend smaller workpieces on multiple tool stations; the machine can even achieve Z bends perfectly – a true all-rounder.
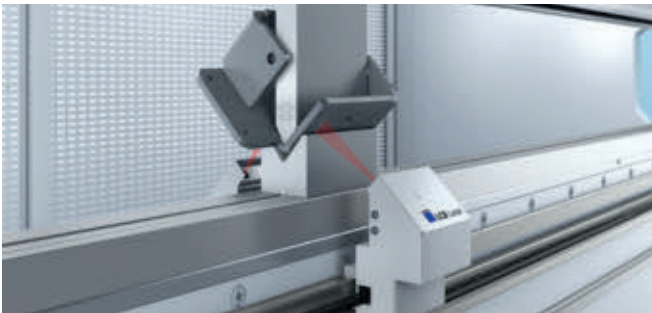
LCB (Laser Controlled Bending) – the laser-controlled goniometer version of the TruBend Series 8000.

02

Simple setup

Large bending parts require large tools. Despite this, the TruBend Series 8000 can be set up quickly and easily due to the ToolShuttle – the operator moves the tools from the tool magazine directly into the machine. The ToolShuttle has over 1260 inches of load capacity and stores your tools so that they are well protected.

The ToolShuttle sets up your tools quickly and ergonomically.

03

Quick installation

Surface-mounted versions of up to 236 inches save you from needing expensive foundations. This therefore doesn't just reduce the investment required, you can also operate the machine independently for higher production on smaller parts.

04

Powerful bending

However, the crowning system and tool clamps of the TruBend with capabilities of up to 600 tons per foot. The automatic crowning system provides high productivity and precise angles over the entire bending length. If you want to have even more control, the crowning system can be adjusted point by point in 9.8 inch increments.

!

More information on the impressive functions of the TruBend Series 8000:

- System for perfect angles (page 10/11)
- ToolShuttle (page 13)
- TecZone Bend offline programming (page 16)
- 2D code scanner (page 17)

Find more information about the TruBend Series 8000 at www.trumpf.com/s/7e30pl

Tandem version of the TruBend Series 8000

Operate two perfectly attuned machines individually or together as one machine – for double the press force and double the bending length.

Large format in duplicate – for any situation
Do you bend both 240 in. or 310 in. long parts as well as short sheets? Then you need a flexible solution – the tandem version of the TruBend Series 8000. Two machines act synchronously and thus double the bending length and press force here. You can achieve longer flange lengths due to a large throat depth and can increase your part variety. You can also use each machine individually, meaning that you have two machines available for short parts. The result: more capacity, more productivity, more orders processed.

Easy to operate over 310 in. too
You can even save money during installation due to the surface-mounted installation. Clever helpers such as MobileControl, the multi-touch control or the bending aids are also there to support you in the tandem design – they make working over long distances easier and allow you to produce with efficiency.

Productive and reliable over the whole length
You can carry out two different bending operations with one tool using the lower tool displacement, even in tandem mode. This increases your part variety and saves setup time and investment costs. The BendGuard ensures safe working across the entire tandem bending length.

TruBend 8400

When is your tandem day?

A tandem machine is worthwhile even if you only occasionally bend oversized parts. Simply use the machine as a tandem machine on certain days; the two machines can produce independently of one another during the rest of the week.

Special machines

Do you have very special requirements when it comes to bending length, press force, backgauge, open height or tool system? Due to decades of experience in building customized bending machines, we will help you in developing special machines.

Flexible Automation

You produce particularly cost-efficient production with an automatic bending cell – around the clock if required. Reduce your cycle times and bend with minimal personnel effort. The continuous high quality production saves reworking and stream lines assembly.

1. The right machine
Your TRUMPF bending cell suits you – choose the right machine type and the right machine size depending on the range of components.

2. Automatic setup
Automatically set up your bending machine for each new program with the ToolMaster tool changer. An invaluable advantage. You save time and effort.

Why TruBend Cell?
To ensure that your processes run efficiently and reliably, we develop comprehensive solutions made up of bending machines, bending tools and automation. This also includes software, sensor systems, material flow and state-of-the-art gripping technology.

Keep a tight grip on your production
With its vacuum gripping technology, it reliably handles components of up to 220.5 lbs in weight and up to 157 in. length. The nimble pivoted-jaw gripper moves the small components. It skillfully removes small parts at the sheet removal station and provides them parallel to production. The gripper flexibility will ensure the right solution for your production needs.

Reliability due to sensors
Sensors ensure reliable material handling. This ensures consistent quality. The sheet sensor identifies blanks that are not centered – ensuring stable part pick up every time, even with misaligned stacks. Weight sensors ensure that only individual sheets are lifted. The sensors in the backgauge system ensure accurate flange lengths during lights out production.
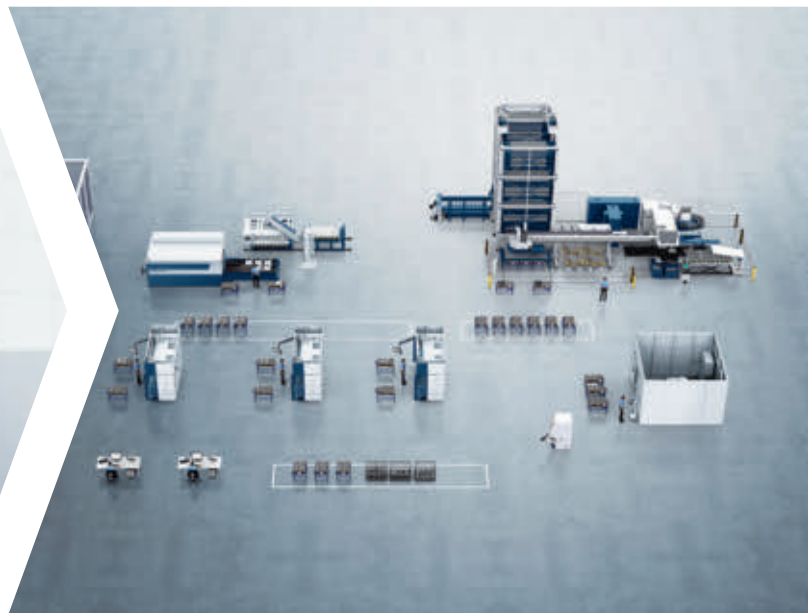
3. Produce automatically
Process a wide range of components with low part costs and high reliability standards. The universal offline programming saves time – create programs parallel to production at the workstation.

4. Complete customization
We also provide customized options when it comes to system technology and robotics. Do you require multiple robots or want to connect handling equipment? Are you looking for a solution for unusual circumstances? Simply contact us; we will be happy to advise you.

Find more information about automation for bending machines at www.trumpf.com/s/uda429

ToolMaster

Make searching for and loading tools a thing of the past: the tool changer automatically sets up your bending machine for the next job – the new generation is faster than ever. This doesn't just save time and effort, it also increases your productivity.

Change tools automatically

Retooling a bending machine during each program change is laborious. The ToolMaster carries out these setup operations for you. You are able to load it parallel to production through a door. It uses standard tools, ACB tools, tools with adapters and has space for up to 213 ft. of tools on average.

You can carry out other tasks while the ToolMaster automatically sets up your tools. This really pays off, particularly when it comes to small lot sizes. A further benefit – searching and walking times are eliminated completely. Its positioning accuracy makes station operation easier for you. Additionally, closed storage protects your tools from dirt and corrosion.
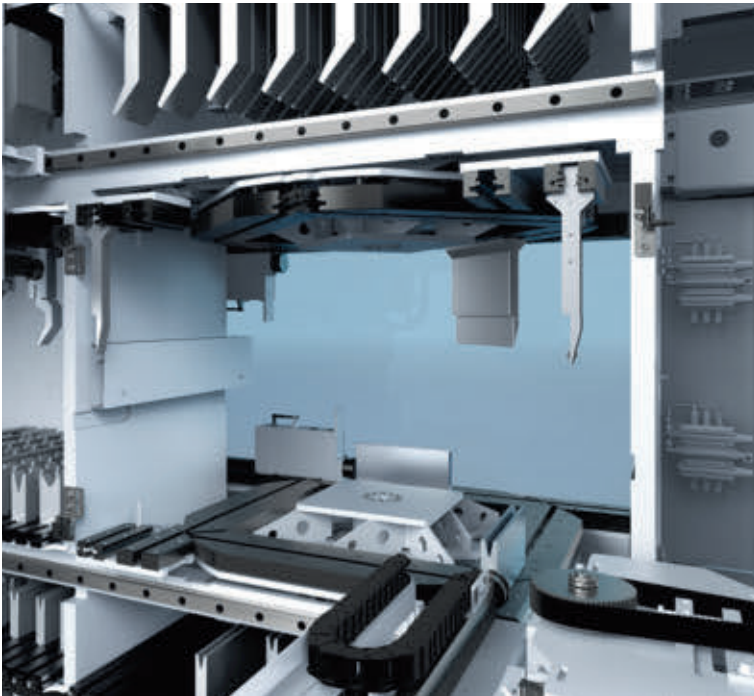
Depending on the component, upper tools have to be set up so they are rotated. The rotary unit of the ToolMaster carries this out effortlessly
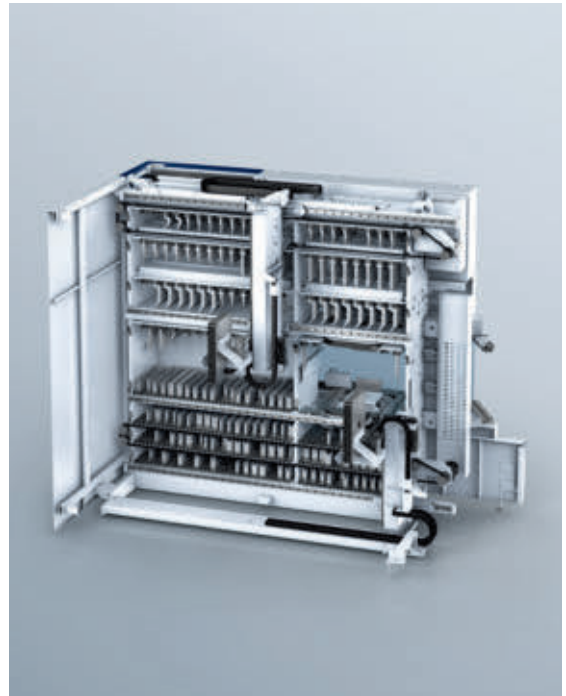
The ToolMaster uses standard tools; you can also use ACB and custom tools, as well as tools with an adapter.

The ToolMaster is able to simultaneously load tooling segmentation into the rotary unit as the TruBend setup is being completed.

Due to the integrated parking position for the bending aid or support brackets, you can use the space in front of the bending machine optimally depending on the component.

Find more information about the ToolMaster
at www.trumpf.com/s/o8wite

TruBend Cell 5000

Productive universal bending cell: the ideal solution for anyone who values productive and flexible automation for the widest possible range of parts.

01

Produce reliably

02

Perfect programming

04

03

Easy regripping

Shape the material flow

01

Produce reliably

The big advantage with automatic bending – you can produce reliably and with consistent quality around the clock. This is ensured by a range of factors. The sensor system in the 4-axis or 6-axis backgauge positions your components with precision down to the millimeter. The angle measurement systems ACB Laser and ACB Wireless ensure good parts throughout the production run.

You can bend the perfect angles automatically due to ACB Laser and ACB Wireless.

02

Perfect programming

The programming software TecZone Bend is exciting: You can use it to generate bending programs within the shortest time. Based on 2D and 3D part files, TecZone Bend provides the entire programming recommendation, including the NC code. You can easily modify the program at any time and, for example, redefine the picking-up process for the sheet even further or adapt the unstacking strategy. Replace conveyor belts, output pallets or redefine stack heights with just one click.
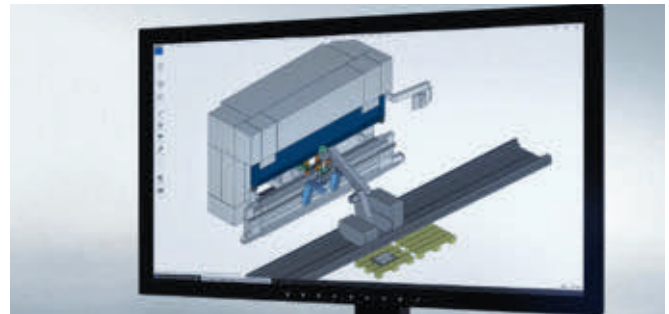
Faster programming with TecZone Bend.

03

Easy regripping

Flexibility with grippers – this is how your TruBend Cell 5000 processes the widest range of orders. Depending on the component size, you can combine different gripping technologies for this purpose. You save plenty of time during small part production – blanks are separated parallel to production and transferred over to the pivoted-jaw gripper. Up to four component types in one operation can be produced using the rotating sheet removal station, including regripping consoles.

The gripper quickly places the sheet metal on the regripping station, regrips it and lifts it up again.

04

Shape material flow

Want maximum freedom? You can shape the material flow of your TruBend Cell 5000 according to your requirements using conveyor belts and pallet conveyors. A conveyor belt for removal of small, non-stackable parts also increases your productivity. Without interrupting the bending operation, the pallet conveyor loads blanks or unloads finished workpieces. If required, you can also connect your bending cell to a storage system.

Individually determine the material flow.

Keep a tight grip on your production

Do you need speed and maximum productivity? Should your TruBend Cell 5000 also reliably handle large and heavy parts? The flexible gripper design helps you with a wide range of applications. This means that the pivoted-jaw gripper with its additional axes works highly productively. The mechanical gripper with rotational axis helps produce small parts efficiently. It even holds parts that the suction cup cannot grab. For larger parts, the suction gripper can deal with a range of dimensions and reliably process large and heavy parts. You can even design and build suction or magnetic grippers yourself.

Gripper changing console

Sheet removal station with rotary table

Pivoted-jaw gripper with moving and rotary axis

BendMaster (60) with fine-position recognition

Go with the flow
How long should your floor track be? How many pallets of parts would you like to
produce spaces? A bending cell can be tailored precisely to your components and
your production volume. This page shows some installation versions.
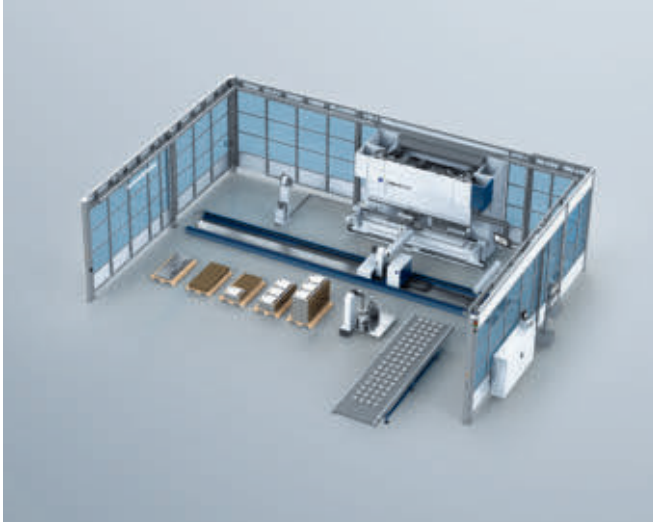
TruBend 5130 with BendMaster (60), 33 ft. path, sheet removal station,
conveyor belt and gripper changing console.
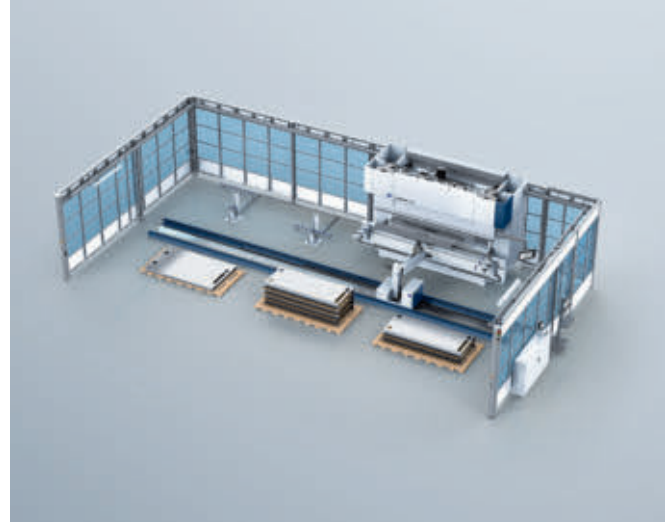
TruBend 5230 with BendMaster (150), 46 ft. path and gripper changing con-
soles.
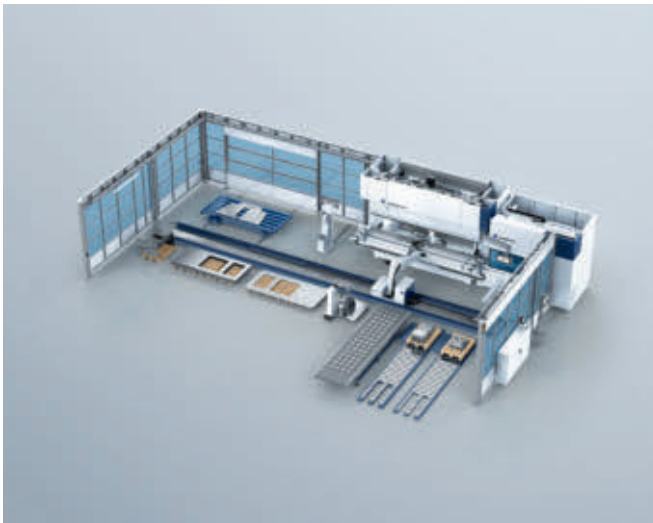
TruBend 5170 with BendMaster (60), 39 or 46 ft. path, sheet removal station
with rotary table, two gripper changing consoles, ToolMaster, conveyor belt
and two pallet conveyors.
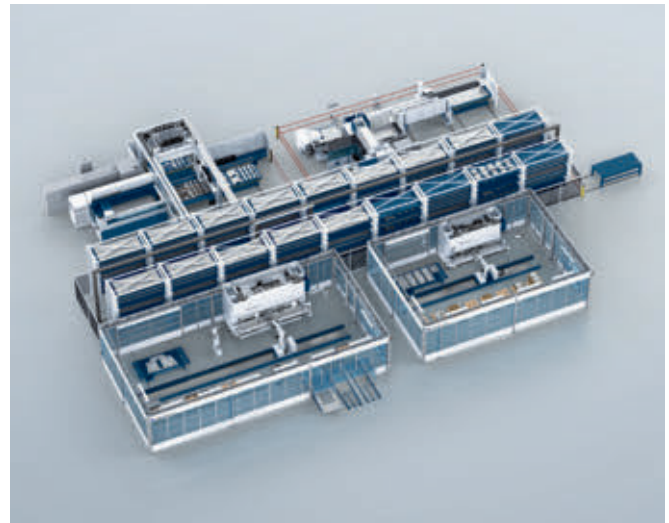
TruBend 5170 with BendMaster (60), 39 or 46 ft. path, sheet removal station
with rotary table, two gripper changing consoles, conveyor belt and two pallet
conveyors with storage connection.

Find more information about the TruBend Cell 5000
at www.trumpf.com/s/sqlo04

TruBend Cell 7000

The innovative high-speed bending cell – you can bend small parts dynamically
and with the high efficiecy with the quickest system in the world.

02

01

Productive

Cost efficient

03

Compact

04

Optimum material flow

01

Cost efficient

The part throughput of a TruBend Cell 7000 is twice as high as in a conventional bending cell. Two robots working in sync make the bending cell dynamic. From the divided tool clamp and tool changer to offline programming – the interplay of innovative functions enables cycle times of just four to six seconds per bend. This allows you to bend with unparalleled low part costs.

High part quantities produced in no time – that is the TruBend Cell 7000.

02

Productive

The tool clamp of the TruBend Cell 7000 is divided so that the robot arm of the BendMaster can grip directly through it. This minimizes regripping and allows your cell to work quickly and productively. The pivoted-jaw gripper is available in multiple versions; which one is most suitable for you depends on your applications.

The tool is correctly picked up and quickly positioned.

03

Compact

With an installation area of just 220 by 150 inches, the TruBend Cell 7000 fits in any production. In addition to the space-saving installation, operation has also been thought out to the smallest detail. You can load and unload your bending cell easily from the same side.

Perfectly attuned – machine and BendMaster.

04

Optimum material flow

Two synchronized robots operate your machine at the same time – the ToolMaster sets up automatically and the Load-Master Bend loads quickly, reliably and parallel to production. With the aid of a conveyor system, the system pallets provide up to 24 unique drop off locations. Finished parts are placed into boxes or dropped off onto the pallet conveyor. The gentle   conveyor belt is suitable for scratch-prone parts. The part loading is a large enough area that you can produce without an operator for extended periods of time.

A conveyor system is available for storing finished parts.

Optimum processes

Robotic helpers ensure a smooth material flow around your bending cell. The ToolMaster changes tooling automatically with the correct tools. The sensor system identifies the tool type and its position. This means that you can arrange the bending tools in the ToolMaster in any manner. It pays off especially with small lot sizes – your machine processes different orders without you having to deploy staff. The LoadMaster doesn't just load your system with blanks parallel to pro-

duction. An integrated sheet sensor also measures the blanks optically and transfers them to the BendMaster in exactly the correct position. Finished parts land on a conveyor system; from there they are either transferred into boxes or are placed on the conveyor. You can produce without an operator over a long period of time due to the large raw material capacity. The TruBend Cell 7000 is also space-saving and can be loaded and unloaded from the same side.
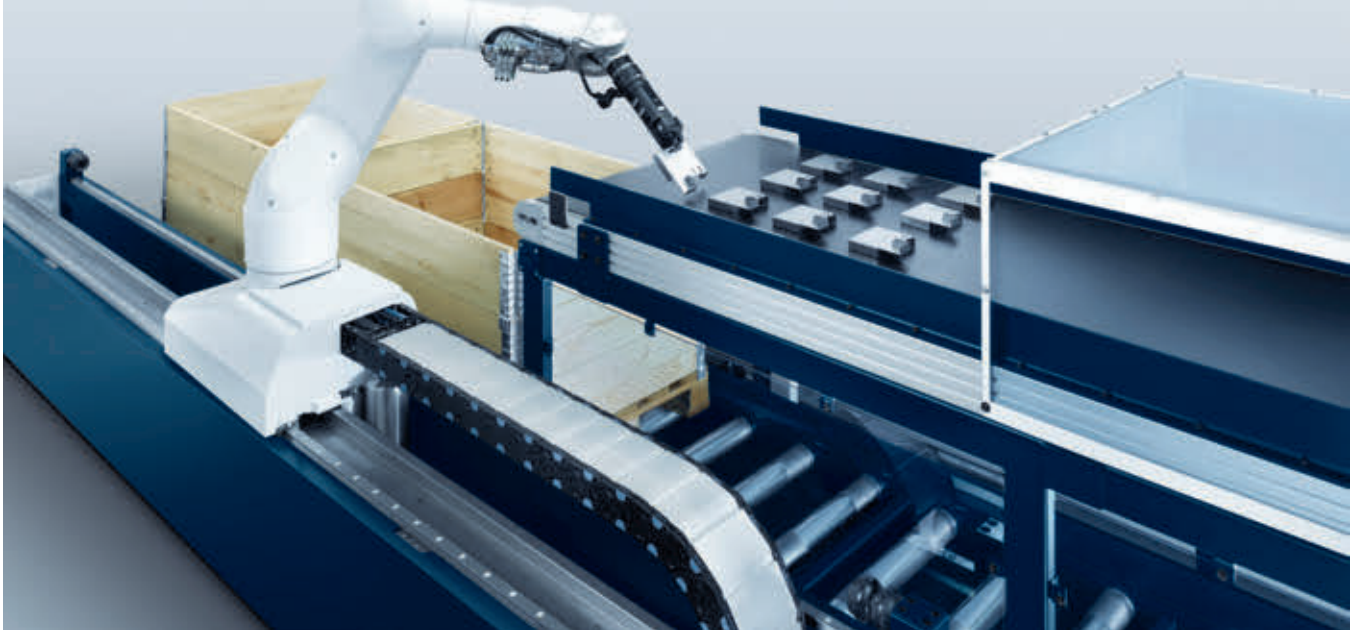
Conveyor system with conveyor belt and pallet conveyor

ToolMaster

LoadMaster with system pallet

Arranged according to your requirements
Whether you want to have your finished parts sorted into boxes or dropped off on a gentle conveyor belt – all components of your TruBend Cell 7000 can be put together perfectly in accordance with your requirements. This page shows possible versions as examples.

TruBend 7036 Cell Edition with BendMaster (15) and LoadMaster.

TruBend 7036 Cell Edition in combination with BendMaster (15), LoadMaster, ToolMaster and conveyor belt.
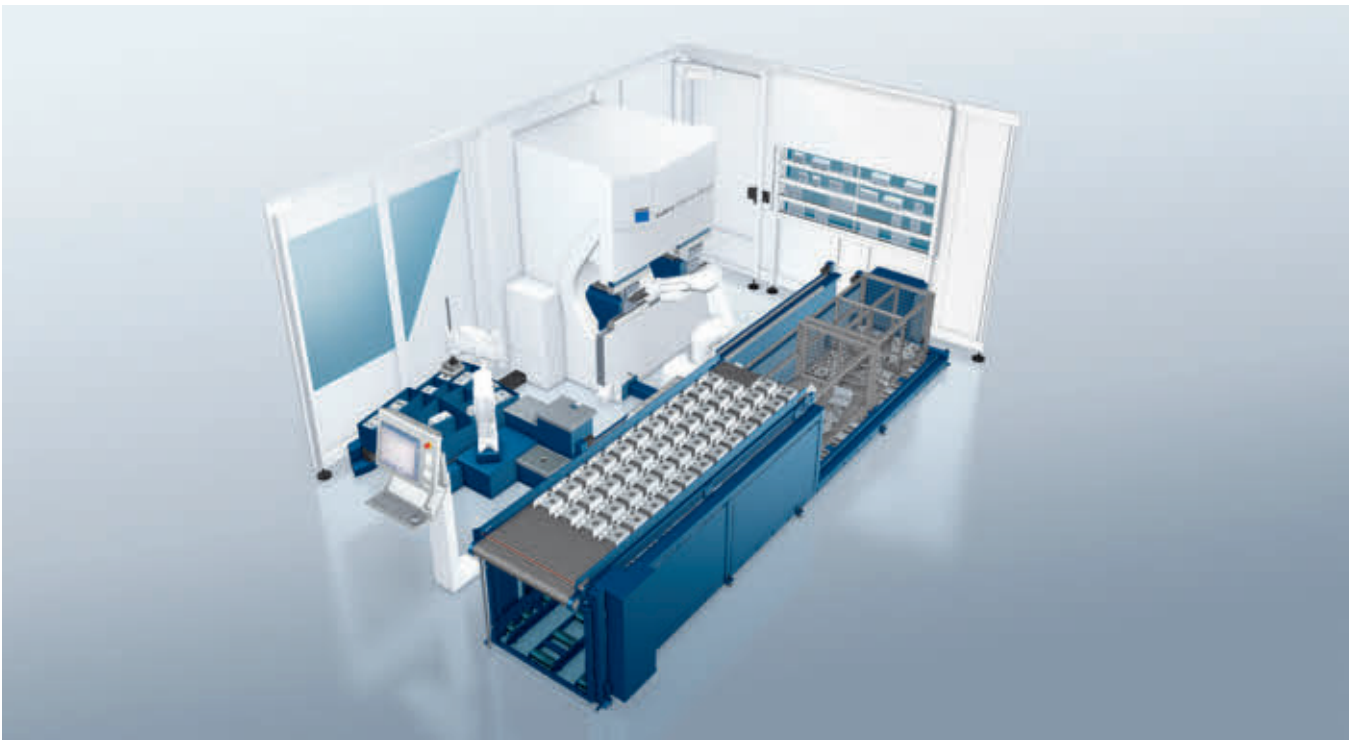
TruBend 7036 Cell Edition, BendMaster (15), LoadMaster, ToolMaster and conveyor system.

Find more information about the TruBend Cell 7000
at www.trumpf.com/s/isranm

Technical data

We have summarized the most important technical data
of the TruBend machines for you on the following pages.

TruBend 3066, TruBend 3100, TruBend 3170

		TruBend 3066	TruBend 3100	TruBend 3170
Press force	t	67.3	102	173.4
Bending length	in.	80.3	120.5	160.6
Width between columns	in.	93.1	133.2	173.4
Max. table/press beam distance	in.	18.5	18.5/24.4[1]	24.4
Usable open height with manual and hydraulic tool clamp	in.	13.8	13.8/19.7[1]	19.7
Usable open height with TRUMPF QuickClamp	in.	17	17/22.8[1]	22.8
Working height[2]	in.	41.3–42.1	41.3–42.1	41.3–42.1
Press beam inclined position	in.	± 0.12	± 0.26	± 0.3
Speeds[3]				
Y axis rapid traverse[4]	in./s	7.9	7.9	6.7
Max. Y axis operation	in./s	0.6	0.6	0.6
Y axis return speed	in./s	7.9	7.9	6.7
X axis	in./s	19.7	19.7	19.7
R axis	in./s	7.9	7.9	7.9
Z axis	in./s	39.4	39.4	39.4
Precision				
Y axis	in.	0.0004	0.0004	0.0004
X axis	in.	0.002	0.002	0.002
R axis	in.	0.004	0.004	0.004
Traverse paths				
Y axis stroke	in.	0.31	0.31/13.8[1]	13.8
X axis traverse path	in.	23.6	23.6	23.6
Max. stop range in X direction	in.	33.9	33.9	33.9
R axis traverse path	in.	5.9	5.9	5.9
Control		T3500T	T3500T	T3500T
Dimensions and weight				
Length x width	in.	101.9 x 64.7	142 x 64.7	183 x 64.7
Height	in.	93.3	93.3/107.1[1]	115.2
Weight	lbs	12456.1	16975.6/18298.4[1]	33069.3

[1] With increased open height (option).
[2] With lower tool height of 4 in. Working height varies depending on the height of the material being set up on the machine.
[3] Traverse speed can be freely programmed.
[4] With BendGuard (option).
Subject to alteration. Only specifications in our offer and order confirmation are binding.

TruBend 5085, TruBend 5130, TruBend 5170, TruBend 5230, TruBend 5320

		TruBend 5085	TruBend 5130	TruBend 5170	TruBend 5230	TruBend 5320
Press force	t	86.7	132.6	173.4	234.5	326.3
Bending length	in.	87 / 107.1[1]	127.2	127.2 / 167.3[1]	127.2 / 167.3[1]	174
Width between columns	in.	68.9/89[1]	106	106 / 144.9[1]	106 / 144.9[1]	144.9
Max. table/press beam distance	in.	19.9/29[1]	19.9/29[1]	29	29	29
Usable open height	in.	15.2/24.2[1]	15.2/24.2 [1]	24.2	24.2	24.2
Throat depth	in.	16.5	16.5	16.5	16.5	16.5
Working height[2]	in.	43.1 – 43.9	43.1 – 43.9	43.1 – 43.9	43.1 – 43.9	43.7 – 44.5
Press beam inclined position	in.	± 0.4	± 0.4	± 0.4	± 0.4	± 0.4
Speeds[3]						
Y axis rapid traverse	in./s	8.67	8.67	8.67	8.67	8.67
Y axis press operation[4]	in./s	max. 0.98[4]	max. 0.98[4]	max. 0.98[4]	max. 0.98[4]	max. 0.98[4]
Y axis return speed	in./s	8.7	8.7	8.7	8.7	8.7
X axis[5]	in./s	39.4 /68.9	39.4 /68.9	39.4 /68.9	39.4 /68.9	39.4 /68.9
R axis	in./s	13	13	13	13	13
Z axis[5]	in./s	68.9/98.4	68.9/98.4	68.9/98.4	68.9/98.4	68.9/98.4
Precision						
Y axis	in.	0.0002	0.0002	0.0002	0.0002	0.0002
X axis	in.	0.0015	0.0015	0.0015	0.0015	0.0015
R axis	in.	0.003	0.003	0.003	0.003	0.003
Traverse paths						
Y axis stroke	in.	8.5/17.5[1]	8.5/17.5[1]	17.5	17.5	17.5
X axis traverse path	in.	23.6	23.6	23.6	23.6	23.6
Max. stop range in X[5]	in.	33.9/39.4	33.9/39.4	33.9/39.4	33.9/39.4	33.9/39.4
R axis traverse path	in.	9.8	9.8	9.8	9.8	9.8
User interface		Touchpoint Bend	Touchpoint Bend	Touchpoint Bend	Touchpoint Bend	Touchpoint Bend
Dimensions and weight[6]						
Length x width	in.	118.9 x 70.9 139 x 70.9[1]	156.7 x 70.9	156.7 x 74.8 195.7 x 74.8[1]	163.4 x 81 202.4 x 81[1]	204 x 81
Height	in.	93.5 / 111.6[1]	93.5 / 111.6[1]	118.1	126	126
Weight	lbs	17637/19180.2[1]	23589.46/26014.5[1]	31195.4/39352.5[1]	37919.5/43761.8[1]	51588.2

[1] Second value for the enlarged design respectively (option).
[2] With lower tool height of 4 in. Working height varies depending on the height of the material being set up on the machine.
[3] Traverse speed can be freely programmed.
[4] With working speed of 0.4 in./s.
[5] Depending on the selected backgauge.
[6] Data relates to the basic machine without options.
Subject to alteration. Only specifications in our offer and order confirmation are binding.

TruBend 7036, TruBend 7050

		TruBend 7036	**TruBend 7050**
Press force	t	36.7	51
Bending length	in.	40.2	60.2
Width between columns	in.	36.7	51.4
Max. table/press beam distance	in.	16.5	19.9
Usable open height	in.	11.6	15.2
Throat depth	in.	6	9.8
Working height[1]	in.	45.3	45.3
Press beam inclined position	in.	n/a	n/a
Speeds[2]			
Y axis rapid traverse	in./s	8.7	8.7
Y axis press operation	in./s	max. 0.98[3]	max. 0.98[3]
Y axis return speed	in./s	8.7	8.7
X axis	in./s	59	59
R axis	in./s	29.5	29.5
Z axis	in./s	86.6	86.6
Precision			
Y axis	mm	0.002	0.002
X axis	in.	0.008	0.008
R axis	in.	0.0024	0.0024
Traverse paths			
Y axis stroke	in.	4.7	8.5
X axis traverse path	in.	9.4	9.4
Max. stop range in X	in.	19.7	19.7
R axis traverse path	in.	6.02	6.02
User interface		Touchpoint Bend	Touchpoint Bend
Dimensions and weight[4]			
Length x width	in.	74.8 x 52.8	95.3 x 71.1
Height	in.	93.7	101.6
Weight	lbs	7716.2	12125.4

[1] With 4 in. die height.
[2] Traverse speed can be freely programmed.
[3] Dependent on the die width and application.
   Dependent on local regulations.
[4] Data relates to the basic machine without options.
Subject to alteration. Only specifications in our offer and order confirmation are binding.

TruBend 8230, TruBend 8320, TruBend 8400, TruBend 8500, TruBend 8600, TruBend 8800, TruBend 81000

		TruBend 8230	TruBend 8320	TruBend 8400	TruBend 8500	TruBend 8600	TruBend 8800	TruBend 81000
Press force	t	234.5	326.3	407.9	509.9	611.8	815.8	1019.7
Bending length	in.	159.4/198.8/ 238.2	198.8/ 238.2	159.4/198.8/ 238.2	159.4	159.4/198.8/ 238.2	238.2/277.6/ 317	277.6/317
Width between columns	in.	120.1/159.4/ 198.8	159.4/198.8	120.1/159.4/ 198.8	120.1	120.1/159.4/ 198.8	198.8/238.2/ 277.6	238.2/277.6
Surface-mounted design		Yes	Yes	Yes/yes/–	Yes	–	–	–
Max. table/press beam distance[2]	in.	32.3/40.2[1]	32.3/40.2[1]	32.3/40.2[1]	32.3/40.2[1]	32.3/40.2[1]	32.3/40.2[1]	32.3/40.2[1]
Usable open height	in.	26.6 /34.4[1]	26.6 /34.4[1]	26.6 /34.4[1]	26.6 /34.4[1]	26.6 /34.4[1]	26.6 /34.4[1]	26.6 /34.4[1]
Throat depth	in.	16.5/24.4[1]	16.5/24.4[1]	16.5/24.4[1]	16.5/24.4[1]	16.5/24.4[1]	16.5/24.4[1]	16.5/24.4[1]
Working height	in.	45.9	45.9	42/45.9/ 42	42	40	40	38
Press beam inclined position	in.	± 0.4	± 0.4	± 0.4	± 0.4	± 0.4	± 0.4	± 0.4
Speeds								
Y axis rapid traverse	in./s	8.7	6	6.7	6.3	4.7	5.5	4
Y axis press operation	in./s	0.4	0.4	0.4	0.4	0.35	0.4	0.31
Y axis return speed	in./s	8.7	4.7/6	6.7	6.3	4.7	5.5	4
X axis[3]	in./s	39.4	39.4	39.4	39.4	39.4	39.4/31.5/ 31.5	31.5
R axis[3]	in./s	7.9	7.9	7.9	7.9	7.9	7.9/5.5/ 5.5	5.5
Z axis[3]	in./s	39.4	39.4	39.4	39.4	39.4	39.4/31.5/ 31.5	31.5
Precision								
Y axis	in.	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004
X axis[3]	in.	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008
R axis[3]	in.	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Traverse paths								
Y axis stroke	in.	19.7/27.6[1]	19.7/27.6[1]	19.7/27.6[1]	19.7/27.6[1]	19.7/27.6[1]	19.7/27.6[1]	19.7/27.6[1]
X axis traverse path[3]	in.	23.6	23.6	23.6	23.6	23.6	23.6	23.6
Max. stop range[3] in X	in.	39.4	39.4	39.4	39.4	39.4	39.4	39.4
R axis traverse path[3]	in.	7.9	7.9	7.9	7.9	7.9	7.9	7.9
Control		T8000T multi-touch	T8000T multi-touch	T8000T multi-touch	T8000T multi-touch	T8000T multi-touch	T8000T multi-touch	T8000T multi-touch
Dimensions and weight available on request								

[1] Values for the enlarged design (option).
[2] Values for tool clamp with max. load of 3000 kN/m.
[3] Values apply to 2-, 4- and 5-axis backgauge.
Subject to alteration. Only specifications in our offer and order confirmation are binding.

2 x TruBend 8230 (4 m), 2 x TruBend 8320 (3 m), 2 x TruBend 8400 (4 m), 2 x TruBend 8500 (4 m), TruBend Cell 5000 with BendMaster (60), TruBend Cell 5000 with BendMaster (150), TruBend Cell 7000 with BendMaster (15)

Tandem system		2 x TruBend 8230 (0.16 in.)	2 x TruBend 8320 (0.12 in.)	2 x TruBend 8400 (0.16 in.)	2 x TruBend 8500 (0.16 in.)
Press force	t	2 x 234.5	2 x 326.3	2 x 407.9	2 x 509.9
Electrical connection (approx.)	kVa	2 x 35	2 x 44	2 x 53	2 x 62
Bending length	in.	318.9	240.2	318.9	318.9
Width between columns	in.	120.1	80.7	120.1	120.1
Throat depth	in.	32.3	32.3	32.3	32.3
Length	in.	361.8	283.9	364.2	365.7

The TruBend Series 8000 is available in four designs, whereby the left and right machine types are always the same. Other lengths/tonnages available on request. Subject to alteration. Only specifications in our offer and order confirmation are binding.

		TruBend Cell 5000 with BendMaster (60)	TruBend Cell 5000 with BendMaster (150)
Max. component size	in.	78.7 x 39.4	118.1 x 59.1
Profiles	in.	up to 98.4	up to 157.5
Max. component weight	lbs	88.2	220.46
Max. carrying capacity	lbs	132.3	330.7
Min. sheet thickness	in.	0.03	0.03
Path length	ft.	19.7–46	19.7–52.5
Max. blank stack	in.	27.6	27.6
Max. stack height for finished parts	in.	39.4	47.2
TruBend Series 5000		5130 to 5230	5170 to 5320

Subject to alteration. Only specifications in our offer and order confirmation are binding.

		TruBend Cell 7000 with BendMaster (15)	
Maximum component size	in.	19.7 x 15	
Maximum sheet thickness	in.	0.24	
Max. component weight	lbs	6.6[1]	
Max. carrying capacity	lbs	33.1	
Press force	t	36.7	
Working speed	in./s	up to 2	
Dimensions	in.	216.5 x 152.4	

Subject to alteration. Only specifications in our offer and order confirmation are binding.
[1] At reduced speed.

Spotlight: Panel bending

In addition to die bending, TRUMPF provides another technology – panel bending. This allows you to achieve multidimensional workpieces with minimum flange lengths, high boxes, small profiles, formed sections, recesses, diverse radii and multiple negative bends quickly and with flexibility.
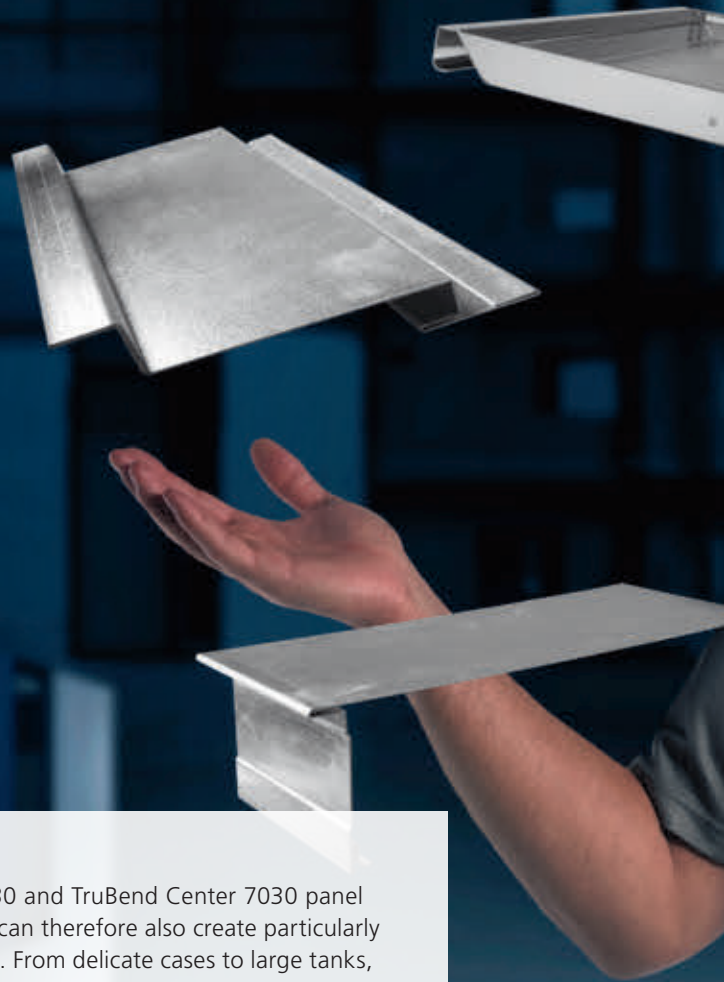
Whether it's partially or fully automatic – with the TruBend Center 5030 and TruBend Center 7030 panel benders, you can exploit the widest range of parts on the market. You can therefore also create particularly complex components in addition to the traditional panel bending range. From delicate cases to large tanks, components for the widest range of industry branches and applications are created.
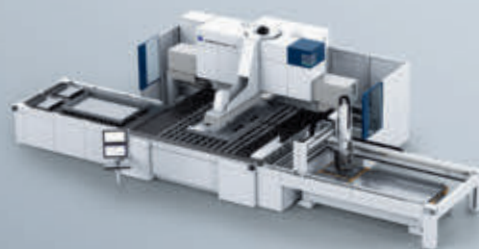
Find more information about the TruBend
Center 7030 at www.trumpf.com/s/fk8ucb
**Find more information about the TruBend
Center 5030** at www.trumpf.com/s/lyphtf

TruServices.
Your Partner in Performance

To ensure your future success, you need services that definitely put you ahead of the pack for the long term. Whether that means creating the best conditions for successful production, or using your TRUMPF bending machine perfectly to adapt to changes with flexibility – together we'll find ways to sustainably maximize your value creation. As a reliable partner, we will provide you with comprehensive solutions and service packages for your requirements – so that you can produce cost-efficiently and at a constantly high level.

〉 EMPOWER

If you want to create the best conditions for successful production, we will support you in this. With the BendGuide app from TRUMPF you can calculate the most important bending parameters (such as press force, press force table, box height, flange length, die width, open height control, inner workpiece radius or workpiece height) quickly and easily.

〉 IMPROVE

If you want to gradually focus your production on maximum value creation, we will achieve your goal together. Use our comprehensive training program to expand your knowledge and get a competitive edge. Our experienced trainers share their tips and tricks with you when it comes to bending machines and take you to the next level in the field of bending.

〉 SUPPORT

If flexibility and system availability in ongoing operation are a must for you, we are there for you. The Technical Service and the TRUMPF service networks will assist you. Simply contact us; you can even do this via the Service app.

Find more information about TruServices
at www.trumpf.com/s/services

Passion is
what drives us

Whether it's production and manufacturing technology,
laser technology or material processing – we develop
highly innovative products and services which are
suitable for industry and absolutely reliable. We put
everything we've got into giving you a compelling
and competitive edge – expertise, experience and
a lot of passion.

Lasers for manufacturing technology

Whether on a macro, micro or nano level – we have the right laser and the right
technology to produce innovatively and cost-efficiently in every industrial application.
Beyond the technology itself, we support you with system solutions, application
knowledge and consulting.

Power supplies for high-tech processes

From semi-conductor manufacturing to solar cell production – with our RF and MF
generators, the current for induction heating, plasma and laser excitation is given a
defined frequency and power – with high reliability and repeatability.

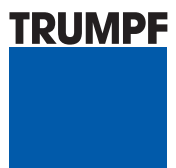**Machine tools for flexible sheet metal and tube processing**

Whether it's laser cutting, punching, bending or laser welding – we offer tailor-made
machines and automation solutions, including consulting, software and services
for all processes in flexible sheet metal processing – so you can reliably manufacture
your products to exacting quality standards.

Industry 4.0

The TruConnect range of solutions links humans and machine by information. It
covers all steps in the production process – from the offer right through to the ship-
ping of your parts.

TruConnect
Your Smart Factory