



TruBend Cell:

Top-class
automation.

The auto- matic route to success.

Contents

The automatic route to success. _____	2
Reasons for choosing TruBend Cell. ____	4
TruBend Cell 5000 _____	6
TruBend Cell 7000 _____	12
Software: Programmed for success. _____	18
TruServices: Service like no other. _____	19

TruBend Cell – cost-effective, automated bending.

TruBend Cell systems offer flexible and cost-effective solutions for every kind of automated bending. You can manufacture parts of any size in multiple shifts, using reliable processes.

TRUMPF supplies bending machines, bending tools and automation, all from a single source. We develop complete solutions including software, sensors, material flow, control, and state-of-the-art material handling technology, to ensure that your processes run reliably and productively. Customers all over the world trust our innovative products combining quality and precision, including an installed base of more than 15,000 TRUMPF press brakes.

TruBend Cell: Benefits at a glance.

- 1 Versatile range of components.
- 2 Low cost per part.
- 3 Offline programming of all functions.
- 4 Industry-proven sensor technology.
- 5 Customer-tailored automation.



TruBend Cell 5000

Productive all-purpose bending cell. The right choice for anyone seeking a high-output, flexible automation solution for the widest possible range of parts.



TruBend Cell 7000

Innovative high-speed bending cell. A compact system for economic and high-speed bending of small parts.

Reasons for choosing TruBend Cell.

Ultraproficient part handling.

TRUMPF BendMaster solutions feature practical mechanical and vacuum gripper systems that enable them to process parts of almost any size, at weights of up to 100 kg. The automatic gripper changing system makes it easy to switch between the two gripper types. An added advantage of these TRUMPF solutions is their flexible, modular design, which enables you to select your own customized set of grippers to suit your application needs.

■ Mechanical grippers

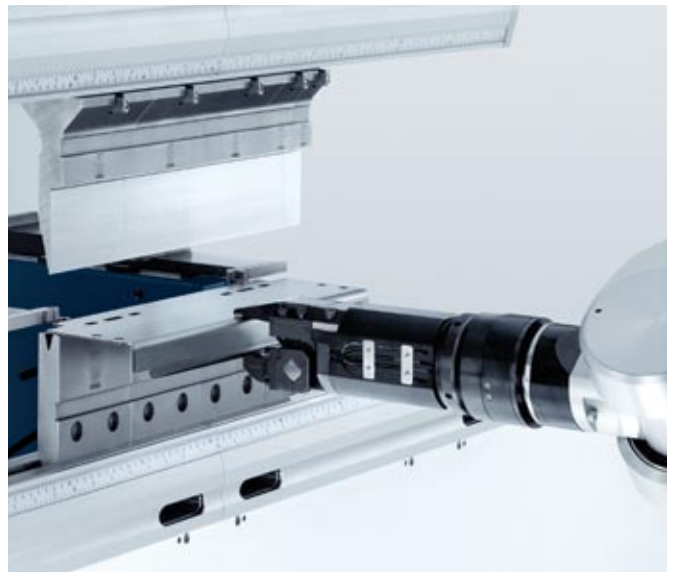
Mechanical grippers are used for the automated bending of small parts. Their ability to be displaced on a linear and a rotational axis reduces repositioning times.

■ Vacuum grippers

TRUMPF offers a wide range of vacuum grippers for large-dimension parts, including individually drivable, multicircuit suction cups and individually controllable, adjustable gripping arms.

Low-cost automation.

By integrating TruBend Cell in your manufacturing processes, you can shorten cycle times and operate multiple shifts with minimum personnel. The manufactured components are of consistently high quality, reducing the volume of rejects as well as rework requirements.



TruBend Cell 7000 with mechanical gripper.



TruBend Cell 5000 with vacuum gripper.

Sensors assure reliability.

■ **Sheet metal sensors**

These optical sensors detect the orientation of the blanks and ensure that the components are correctly positioned, even if they are not ideally stacked.

■ **Weight sensors**

The weight sensors immediately detect the presence of two or more metal sheets between the feed rollers. The sheets are then automatically separated.

■ **Back gauge sensors**

The back gauge fingers are equipped with smart sensors that guarantee fast, accurate positioning of the workpieces and consistently precise results.

Customer-tailored automation.

The configuration of your TRUMPF bending cell is customized to your specific needs. Depending on the type of components you produce, you can select the appropriate machine and associated handling technology from a variety of options.

The benefits of offline programming.

TRUMPF is the only company to offer offline programming of all functions in an automated bending package. Programs are compiled at an external workstation while the press brake is in use. This saves valuable time because there is no need for elaborate teaching routines.



BendMaster (60) collecting fine positioning data.



TruBend Cell 5000: sheet metal sensor.

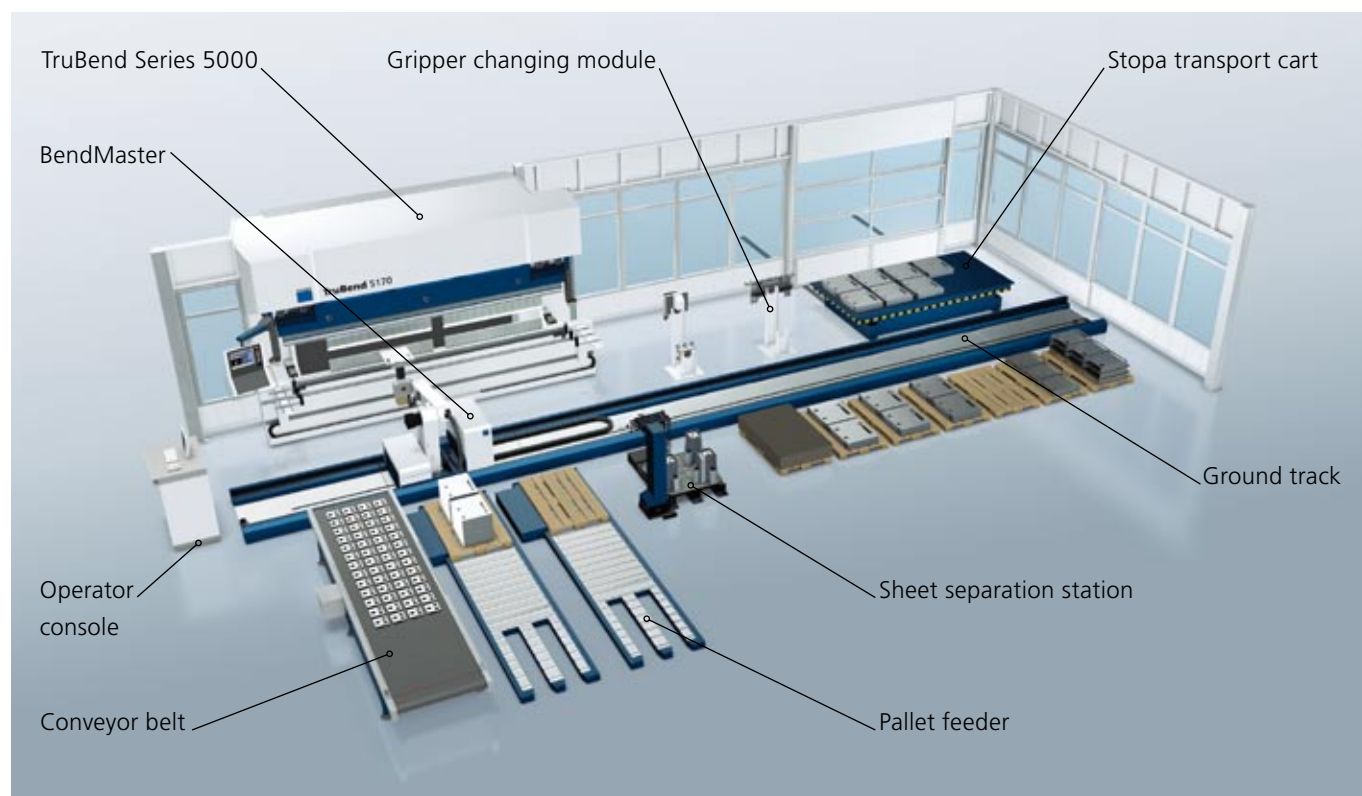
TruBend Cell 5000

TruBend Cell 5000:
Benefits at a glance.

- 1 Cost-efficient automation.
- 2 Wide range of applications.
- 3 Convenient offline programming.
- 4 Maximum process reliability.
- 5 Customized material flow.

Productive all-purpose bending cell.

TruBend Cell 5000 enables you to process parts cost-efficiently and increase productivity. The BendMaster relieves the operator of many onerous tasks, especially when processing large and heavy workpieces weighing up to 100 kg. The bulk of the work is handled by the machine – working around the clock if necessary. You can always rely on our automated bending solutions to produce parts of a consistently high quality.



Moving smoothly from one gripper to the next.

The automatic gripper changing system enables the TruBend Cell 5000 to expedite many different types of jobs in quick succession and in any order. It can even alternate between different gripper systems, depending on the size of the workpiece.

This can save a lot of time when manufacturing small parts: Sheet stacks are separated into individual sheets while the press brake is in operation. These are fed individually to the mechanical gripper. With the adjustable feeding unit, you can manufacture up to four types of parts in a single work session.

Two NC repositioning stations adjust the positioning in-line, as soon as a part needs to be reoriented.



Picture top left: Gripper control console.

Picture top center: Sheet feeding unit with rotating table.

Picture below center: Mechanical gripper adjustable on a horizontal and circular axis.

Picture top right: NC repositioning station.

TruBend Cell 5000



Automatic bending with angle sensor ACB.

Reliable processes, automatically controlled.

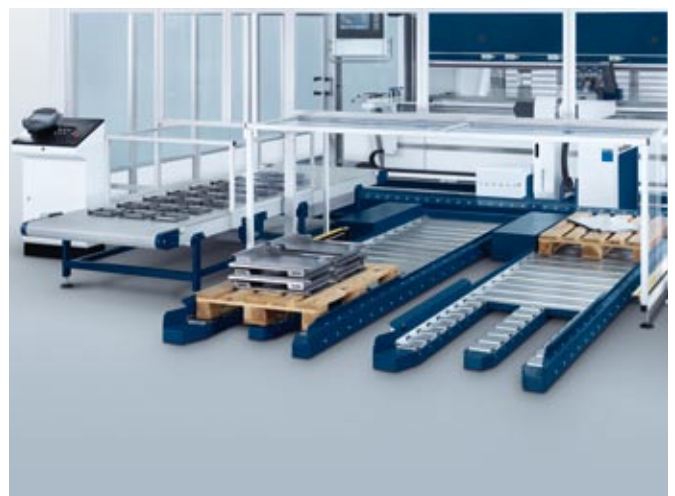
One of the greatest advantages of an automatic bending machine is that it enables you to run your manufacturing process nonstop, with the highest dependability and consistently high quality. A number of factors contribute to this capability:

- The sensors integrated in the 4- or 6-axis back gauge enable ultraprecise positioning and guarantee that the parts you produce are of a consistently high quality.
- The proven Automatically Controlled Bending (ACB) system ensures that all angles are measured to the same high accuracy – without manual intervention.
- End-to-end process simulation reduces the risk of rejects and defects from the outset, increasing productive time.

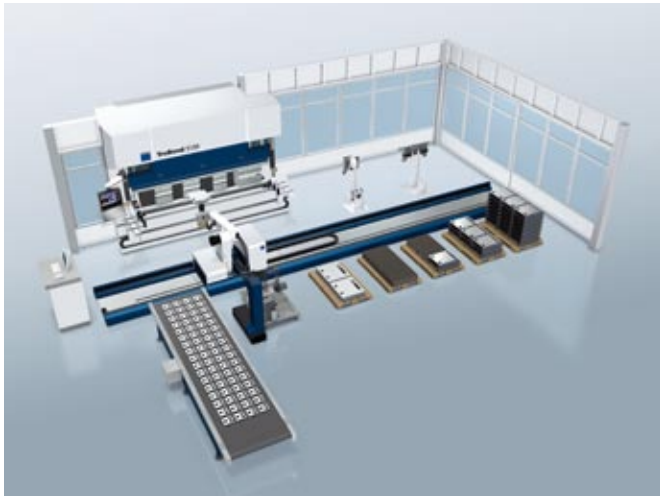
Almost any configuration imaginable.

When you work with TruBend Cell 5000, you can define your own material flow processes. You are at liberty to configure and arrange the feeding stations as you require. And you can increase productivity by using a conveyor belt to deliver discrete small parts to the machine.

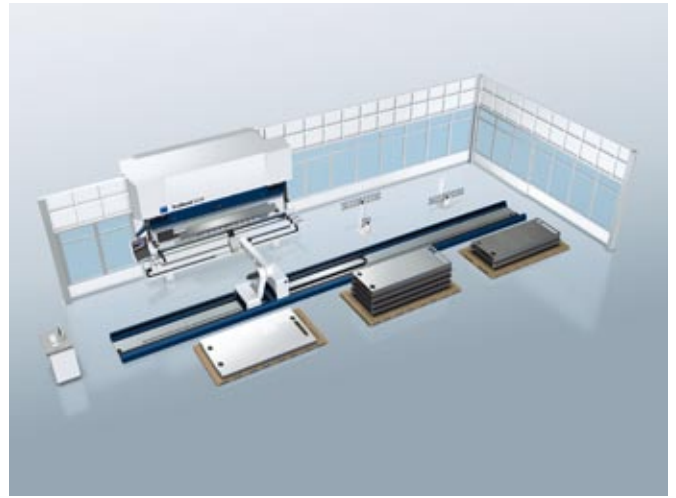
The loading stations deliver sheet stacks and unload finished components without interrupting the bending process. The required size of the system depends on the range of parts you need to handle. If desired, you can also link your bending cell to a warehouse facility.



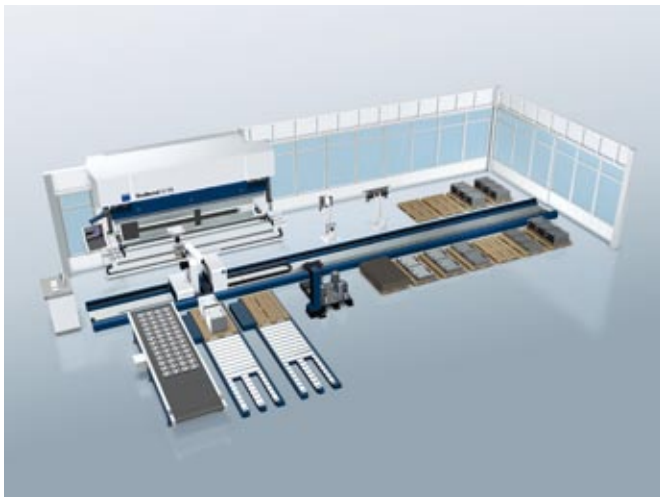
Conveyor belt and pallet feeder.



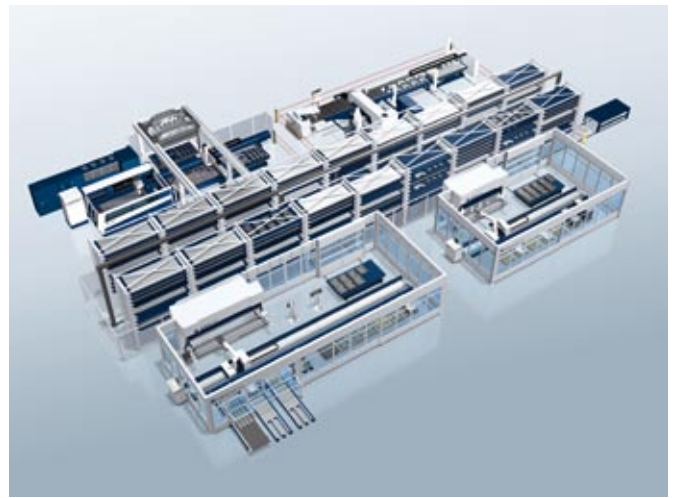
TruBend 5130, BendMaster (60), 10 m track length, sheet removal station, and gripper changing system.



TruBend 5230, BendMaster (150), 14 m track length, and gripper changing system.

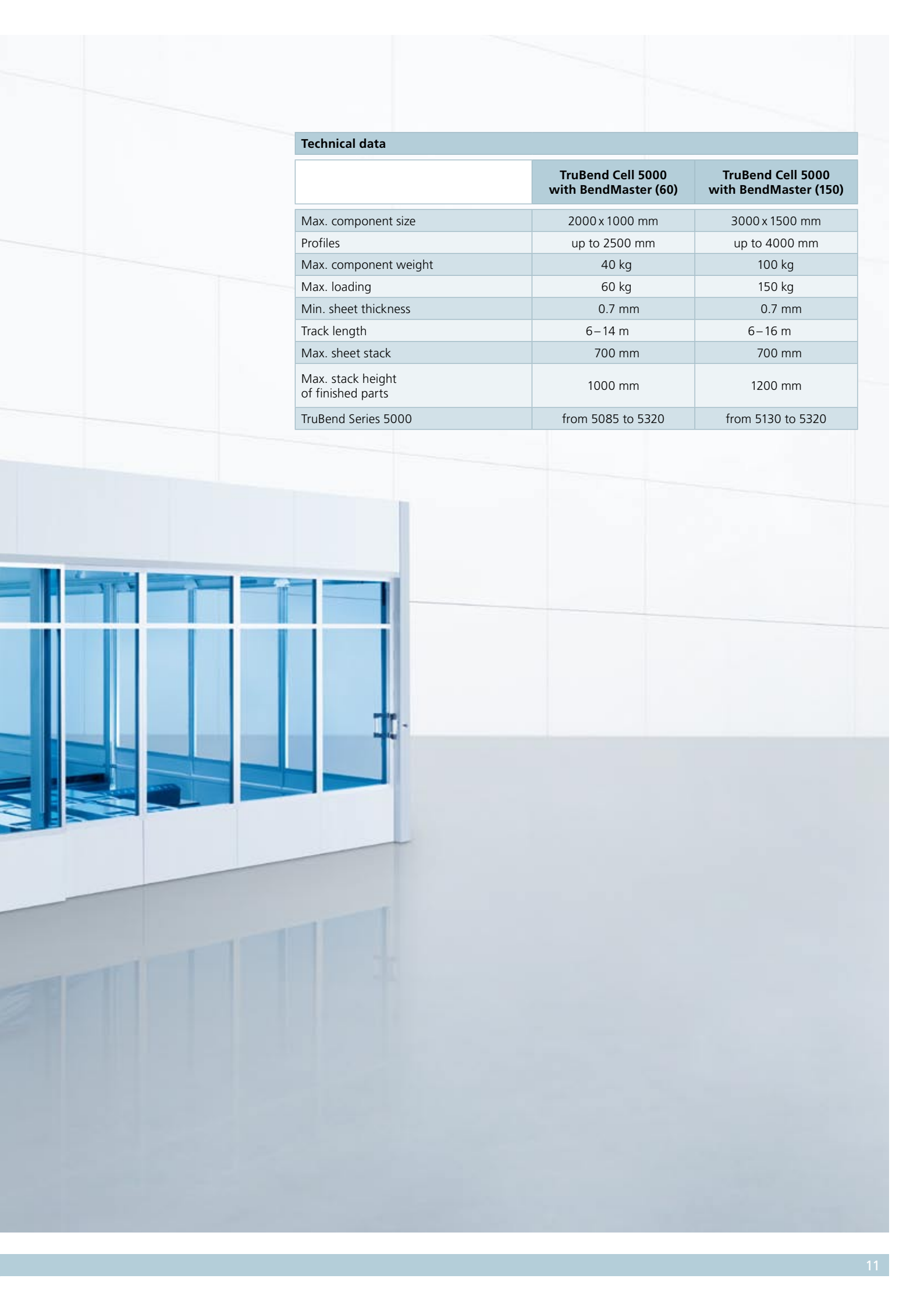


TruBend 5170, BendMaster (60), 14 m track length, conveyor belt, sheet stack feeder, sheet removal station with rotating table, and gripper changing system.



Twin configuration of TruBend Cell 5000 with link to storage system.





Technical data		
	TruBend Cell 5000 with BendMaster (60)	TruBend Cell 5000 with BendMaster (150)
Max. component size	2000 x 1000 mm	3000 x 1500 mm
Profiles	up to 2500 mm	up to 4000 mm
Max. component weight	40 kg	100 kg
Max. loading	60 kg	150 kg
Min. sheet thickness	0.7 mm	0.7 mm
Track length	6–14 m	6–16 m
Max. sheet stack	700 mm	700 mm
Max. stack height of finished parts	1000 mm	1200 mm
TruBend Series 5000	from 5085 to 5320	from 5130 to 5320

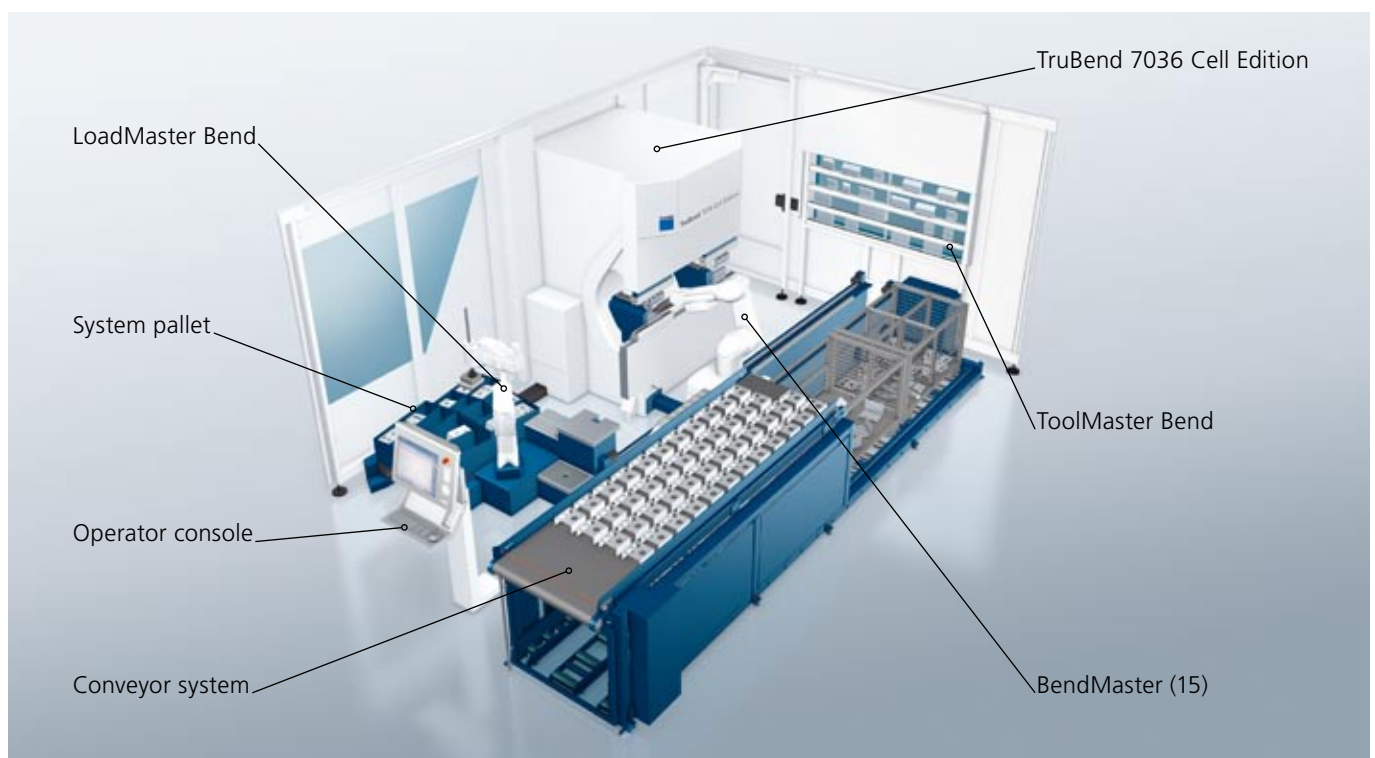
TruBend Cell 7000

TruBend Cell 7000:
Benefits at a glance.

- 1 Minimal costs per bend.
- 2 Easy setup.
- 3 Optimized material flow.
- 4 Convenient offline programming.
- 5 Compact complete system.

Innovative high-speed bending cell.

When it comes to the automatic bending of small parts, the TruBend Cell 7000 is the fastest system in the world. It owes its speed to the lightweight materials used in the back gauges and a highly dynamic drive concept. The cell's extremely high productivity when bending means that you can manufacture at much lower cost per part.





BendMaster (15)



The split tool clamp allows room for the gripper.



ToolMaster Bend.

Maximum productivity.

- Throughput of parts twice as high as that of conventional bending cells.
- TruBend 7036 Cell Edition is a dynamic bending unit with a press force of 36 t.
- High speed provided by acceleration applied to the ram by an electric torque motor.
- Traveling back gauges made of light weight materials enable parts to be positioned rapidly.
- An innovative ram that is split into two 510 mm sections provides clearance for gripper manipulation.

Effortless tool setup.

The **ToolMaster Bend** automatically sets up the appropriate tool – without having to change the gripper. Sensors detect the type of tool and its position. As a result, you can store the bending tools in any order in the ToolMaster Bend. The benefits of ToolMaster Bend are especially evident when dealing with small batches of parts: your machine can process different jobs in succession without manual intervention.

TruBend Cell 7000

Components to optimize material flow.

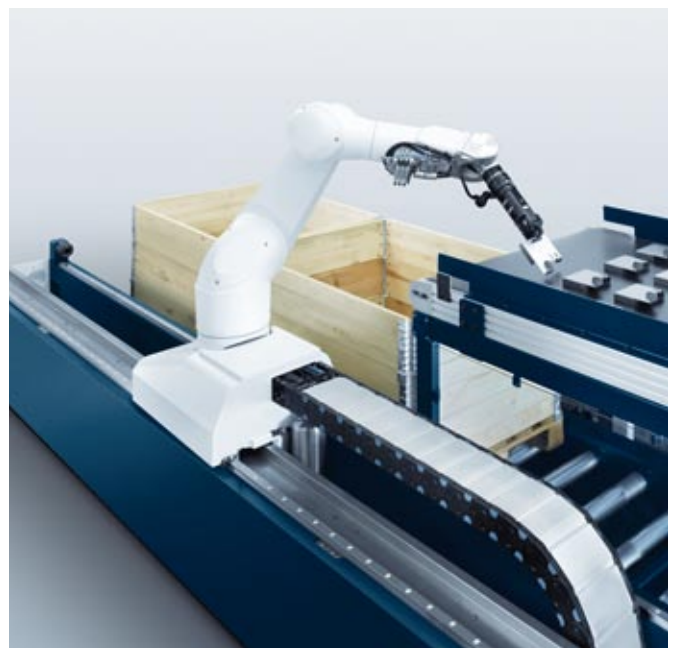
The **LoadMaster Bend** loads the sheets to the bending stations while the press brake is in operation. An integrated, optical sheet metal sensor detects the location of the blanks and feeds them in the right position to the BendMaster (15). The system pallets are equipped with a flexible arrangement of drop-in compartments that enables up to 24 different parts to be delivered to the machine.

A **conveyor system** collects the finished parts for storage. The parts can be placed in boxes with different-sized subdivisions that are then loaded onto pallets. Alternatively, a conveyor belt is available for parts that are vulnerable to scratching. The system's storage capacity is large enough that you can continue manufacturing for a very long time without the presence of an operator.

Additional advantages of TruBend Cell 7000 include its extremely low space requirements and its well thought-out operating environment. A major feature of its ergonomic design is that parts are loaded and unloaded on the same side of the machine.



LoadMaster Bend with system pallet.



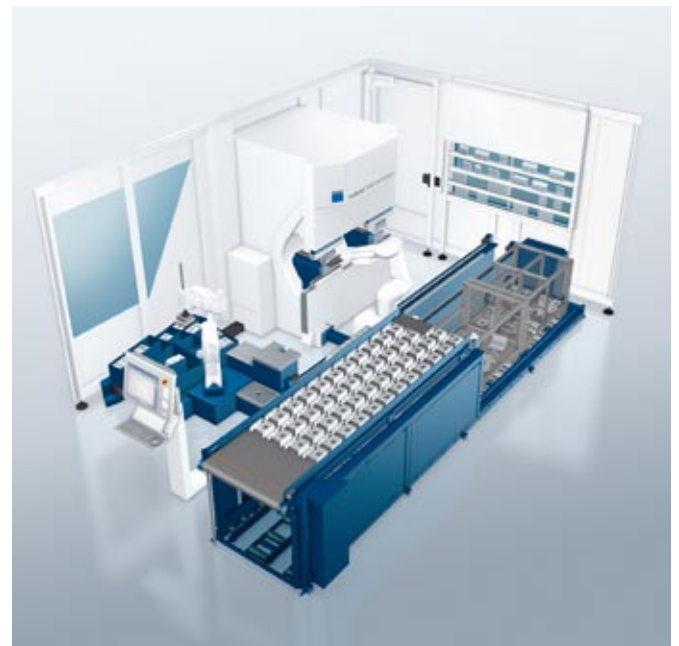
Conveyor system and pallet feeder.



Picture top left: TruBend 7036 Cell Edition, BendMaster (15), and LoadMaster Bend.

Picture below left: TruBend 7036 Cell Edition, BendMaster (15), LoadMaster Bend, ToolMaster Bend, and conveyor belt.

Picture below right: TruBend 7036 Cell Edition, BendMaster (15), LoadMaster Bend, ToolMaster Bend, and conveyor system.





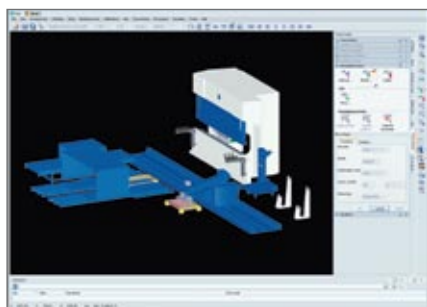


Technical data

	TruBend Cell 7000 with BendMaster (15)
Max. component size	500 x 380 mm
Max. sheet thickness	8 mm
Max. part weight	3 kg
Max. load	15 kg
Press force	360 kN
Working speed	up to 50 mm/s
Dimensions	5500 x 3870 mm

Software:

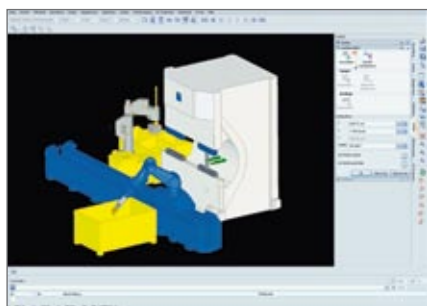
Programmed for success.



Programming bending cells during machine operation.

You can program easily and efficiently with TruTops Bend and an add-on module for bending cells. Both BendMaster and the bending machine use the same offline programming environment. Yet another feature that increases your productivity.

Automatic calculation functions support and optimize tool selection, determine the order of bending operations and the exact gripper position. Shortening factors are automatically taken into account, ensuring that you achieve the best quality right from the very first part.



It is important to define the right positioning strategy because this determines how much time is needed for each bending operation. Our software therefore, uses advanced algorithms to calculate the shortest travel distances, helping to reduce the overall processing time.

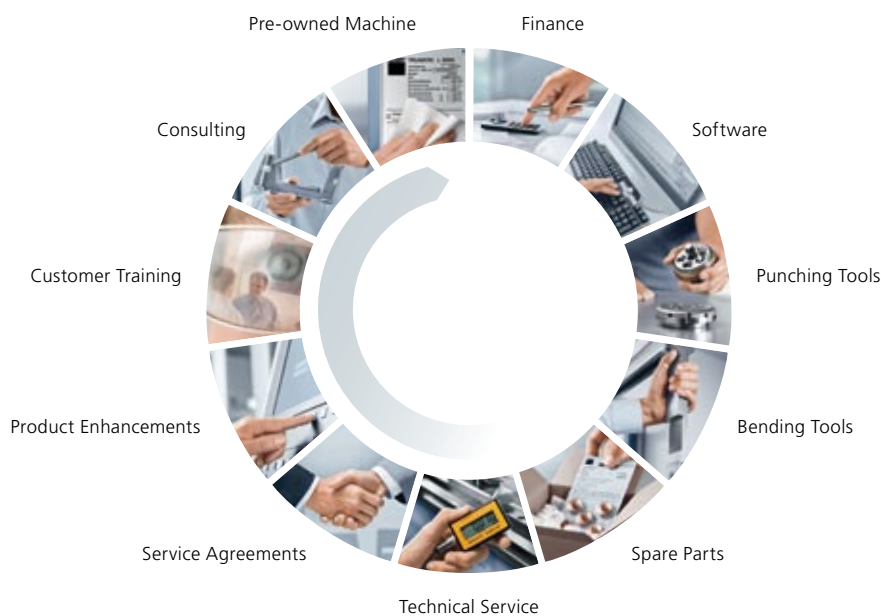
TruTops Bend: The benefits it offers.

- Best-quality parts as a result of integrated TRUMPF expertise.
- Outstanding process reliability with full 3-D simulation.
- Maximized productivity due to smart positioning strategy.
- Rapid programming of the bending machine and BendMaster.
- Familiar programming environment.

TruServices:

Service like no other.

Throughout the lifecycle of your machine.



Regardless of the TRUMPF technology you use, you will always get the best service. And, thanks to TRUMPF's award-winning spare parts logistics, all parts can be shipped to you in the shortest time possible. TRUMPF Leasing offers you individual financing solutions quickly and without a lot of paperwork. Our service technicians are highly trained and always available when you need them. A Service Agreement is the ideal way of ensuring the best usability of your machine.

Should your requirements change, we have flexible upgrading options and technical innovations that will make your machine even better. Our broad range of training courses with experienced trainers and hands-on practice will also give you a head start in understanding and operating your machine.



You can find out more about our services at www.trumpf-machines.com/services

The TRUMPF Group ranks among the world's leading manufacturers of production technology and industrial lasers. Technical and efficient solutions for our customers have been our focus since 1923. As a leading technology supplier, TRUMPF is a one-stop shop for all of your technology needs: machines, automation, storage technology and services.

TRUMPF is certified according to ISO 9001:2008
(for further information see www.trumpf.com/en/company/quality)

Ident no. 1645265_201209_F – Content subject to change without notice