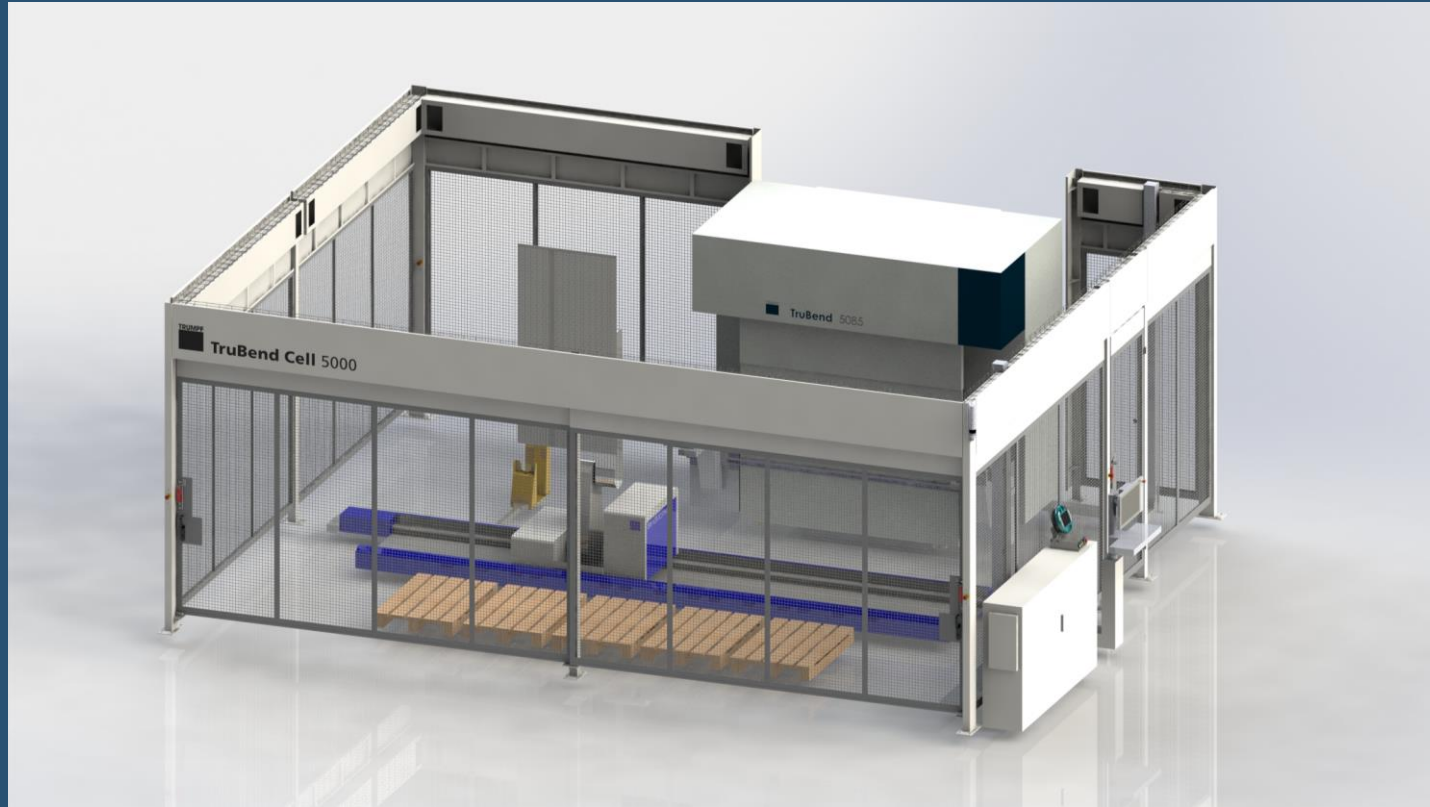
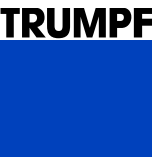




TruBend Cell 5000 Lean Edition

Julian Schorpp | Sales Engineer Automated Bending | julian.schorpp@trumpf.com



BendMaster – Technical data

The bending specialist

	BendMaster (60)
Ideal sheet size	up to 1200 x 800 mm / 47“ x 31“
Max. sheet size	2000 x 1000 mm / 79“ x 39“
Max. part weight	40 kg / 88 lbs
Max. load	60 kg / 132 lbs
Min. sheet thickness	0,7 mm / 0.027“
Track length	6 m / 20 ft
Max. blank stack	700 mm / 27.5“
Max. stack height of finished part	1000 mm / 39.3“
TruBend series 5000	5085 (X)

BendMaster – Main dimensions

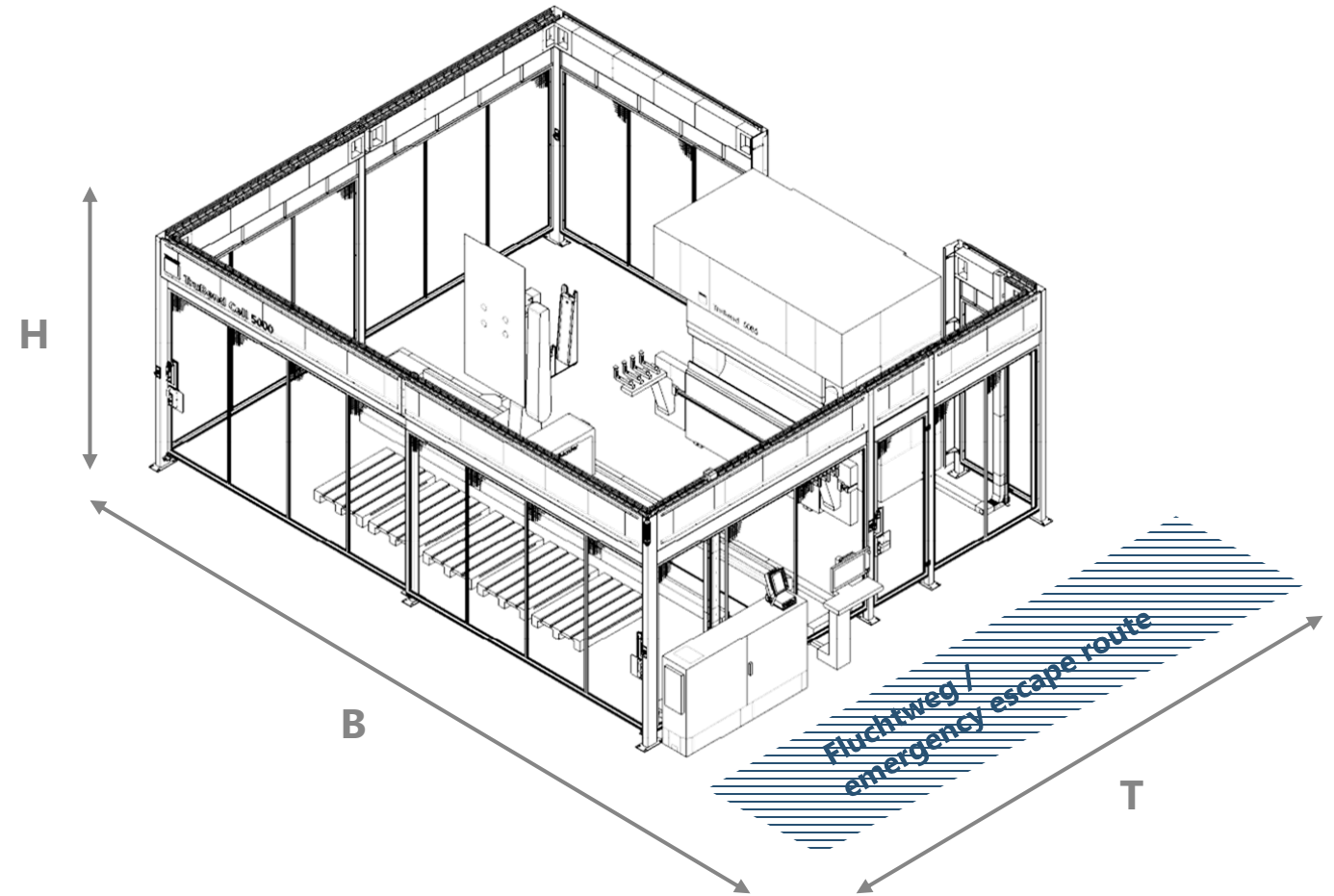
Maße:

B = ca. 10,350 mm / 34 ft

T = ca. 7,000 mm / 23 ft

H = ca. 3,550 mm / 11.6 ft

The dimensions are approximate. For the precise dimensions see the layout.



Standardkonfiguration TruBend Cell 5000 Lean Edition

- TruBend 5085 (X)
- BendMaster (60 kg payload)
 - Sheet sensor
 - Double sheet detection
- 6 m track length
- 4-axis back gauge incl. sensors
- Regripping station
- Joblist
- Intermediate layers
- Gripper change



BendMaster with sheet sensor



Sample picture: 4-axis back gauge incl. sensors



Regripping station

BendMaster

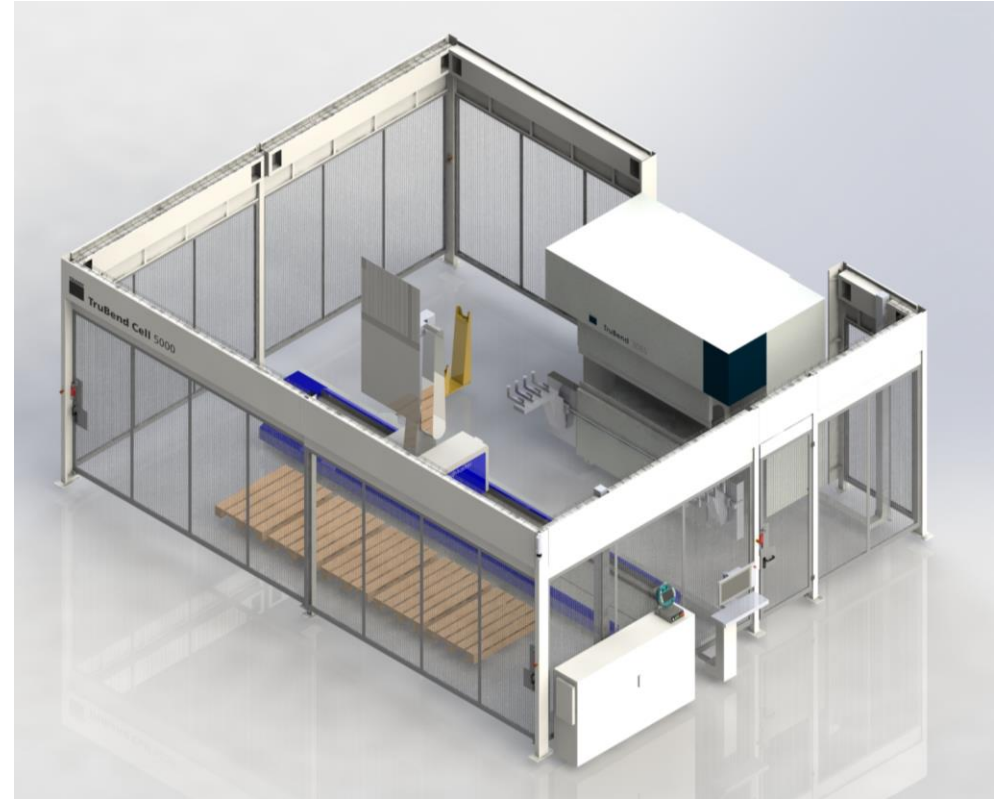
The bending specialist

Customer benefits:

- Parts up to 40 kg / 88 lbs and 2m / 79" can be processed
- Optimal freedom of movement for complicated or large part geometries
- Optimal approach for all bending stations

Description:

- The BendMaster was especially developed for bend processing



Sheet sensor

Picking up vacuum parts with precision

Consisting of:

- 2 cameras
- 4 LED flash sources
- Laser diode module

Description:

- Rough detection of sheet stack
- Stack height detection
- Fine detection of single sheets



Sheet sensor

Picking up vacuum parts with precision

Customer benefits:

- High process reliability and part quality
- No centering station / No setup effort

Description:

Rough position detection (once per stack)

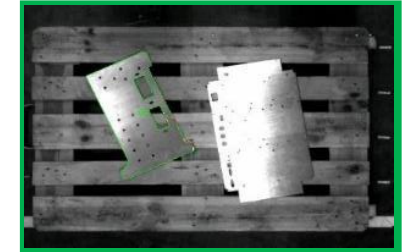
- The sensor detects the part geometries
- Comparison with loaded bending program

Height measurement

- Height measurement of the sheet stack
- Maximizing of the approach speed

Fine position detection (for every piece)

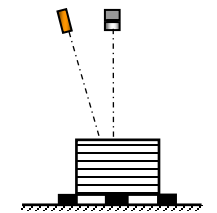
- The sensor detects the exact position of the top blank
- The gripper picks up the blanks in the correct position



Rough position detection



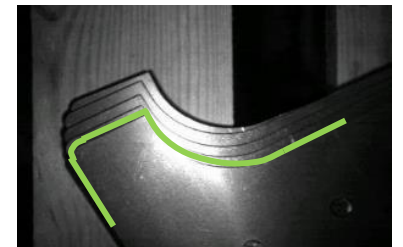
Sheet sensor



Height measurement



Fine storage detection



4-Axis backgauge incl. sensors

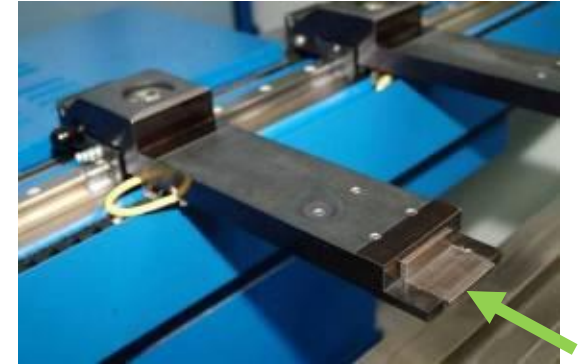
Correct positioning

Customer benefits:

- Process reliability
- Exact parts and consistent quality

Description:

- 4-Axis backgauge as standard installed
- An additional backgauge sensor has been installed on the TruBend machine.
- This sensor ensures that the component is properly aligned on the backgauge. Only then is the start release given to the press beam.
- The stopping force is continuously adjustable, e.g. for small or large parts



Sample picture: Standard: 4 axis back stop with sensor

Regripping station

Reliable regripping

Customer benefits:

- The regripping consoles are used to reposition the blanks, if clamp regripping (between the bending tools) is not possible.
- Low regripping times due to dynamic travel motion
- Flexible suction cup positioning
- Reliable regripping

Description:

- NC controlled regripping consoles
- The component is held by vacuum
- One arm is movable, the second arm is stationary



Gripper arms

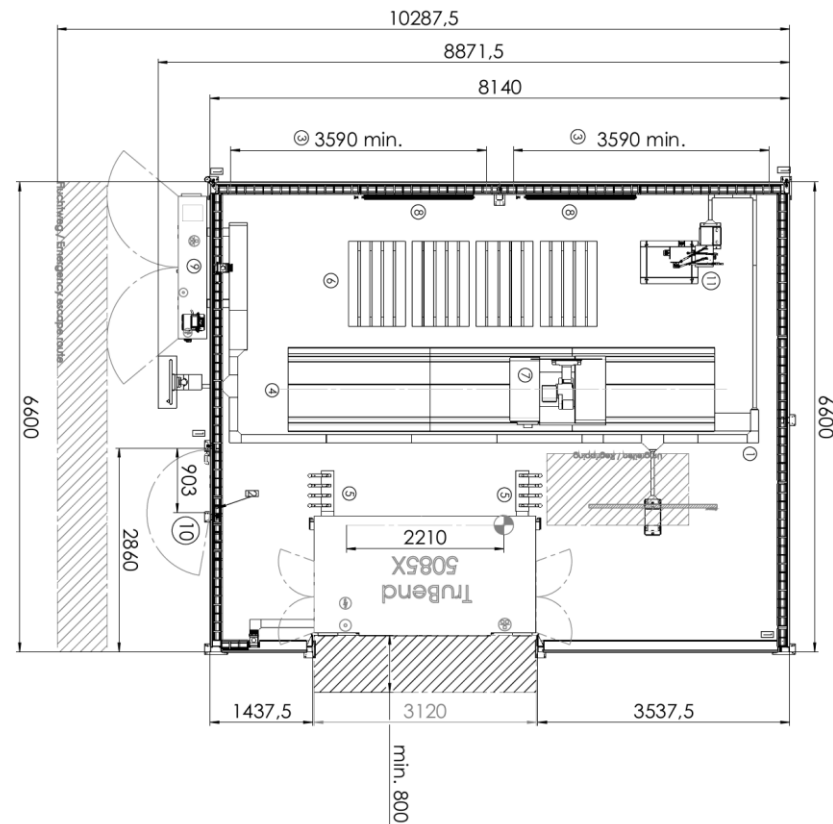
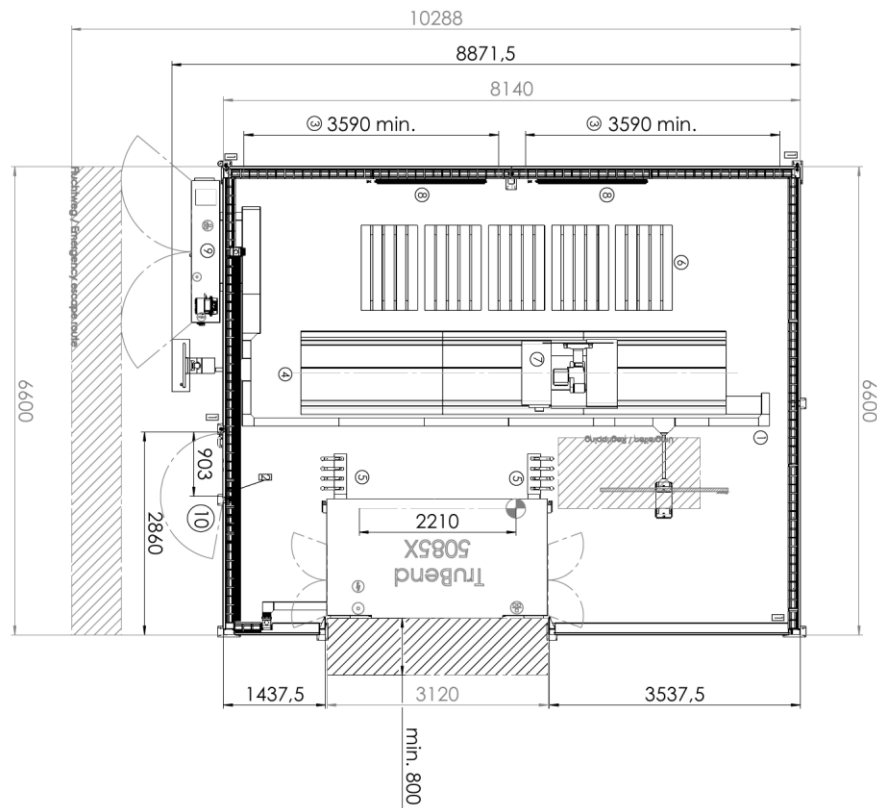


Regripping process

Standard layouts

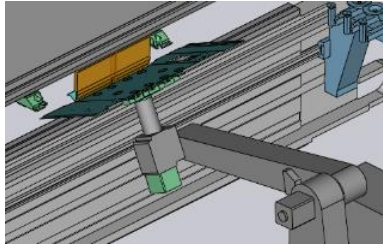
Choose one of the two pre-optimized layouts:

- Standard layout for maximum flexibility
- Standard layout with small parts package



Highlights of TecZone Bend

Machine package TruBend Cell 5000 Lean Edition (B23)



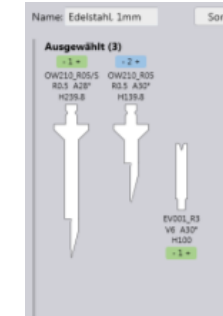
Simple operation



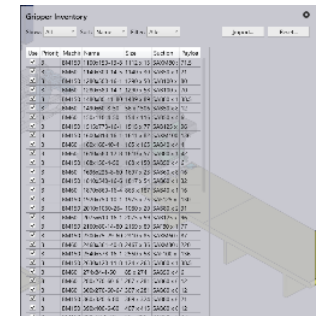
Automatic calculation of various parts
(only for TecZone Bend Standalone)

	P	1	2	3	4	5	6	7	D1
Oberwerkzeug		✓	✓	✓	✓	✓	✓	✓	
Unterwerkzeug		✓	✓	✓	✓	✓	✓	✓	
Hinteranschlag		✓	✓	✓	✓	✓	✓	✓	
Maschine	✓	✓	✓	✓	✓	✓	✓	✓	✓
ACB		○	○	○	○	○	○	○	
Roboter	✓	✓	✓	✓	✓	✓	✓	✓	✓
Greifermodul	✓	✓	✓	✓	✓	✓	✓	✓	✓
Zelle	✓	✓	✓	✓	✓	✓	✓	✓	✓
Werkstück					◀				

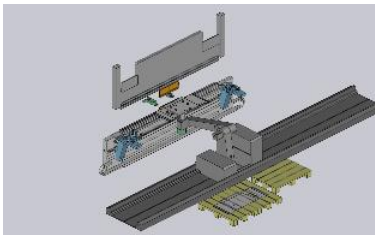
Central overview



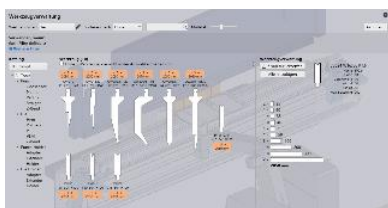
Tool prioritization



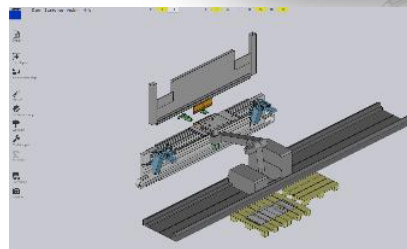
Gripper prioritization



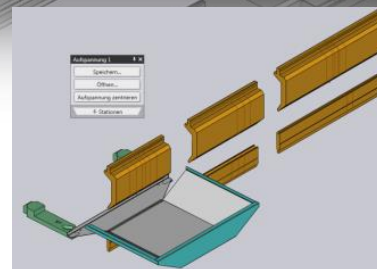
Maximum performance



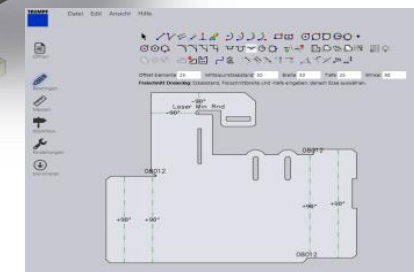
Favorite tool list



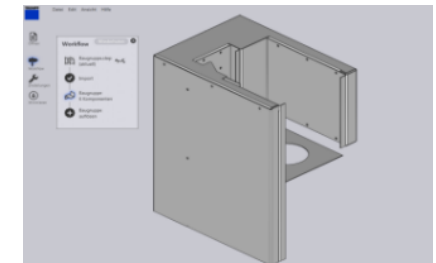
Real time collision check



Management of setup
plans



2D-Data correction (in TruTops
Boost done by TecZone Design)



ACB – Automatically Controlled Bending

Angle measuring also inside the automated cell

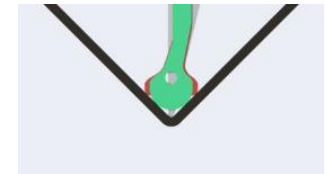
Advantages for the customer:

- Exact angles from the very first part
- No rejects
- Higher productivity because no run-in costs
- User-friendly

Description:

- The right solution for any application
- Choice of different bending methods
- High angular accuracy ($\pm 0.3^\circ$) → Availability with BendMaster 80%*

**Parts with standard sheet thickness, die width, material, angle*



ACB Wireless

Gripper change module

Automatic change

Customer benefits:

- Different jobs can be processed automatically without manual intervention
- Long run times
- Flexibility in part processing

Description:

- Automatic change possible thanks to pneumatic gripper coupler
- 1 gripper change module with 2 gripper deposits is included (fixed position)



Multigripper

Recommendation

- **Customer benefits:**

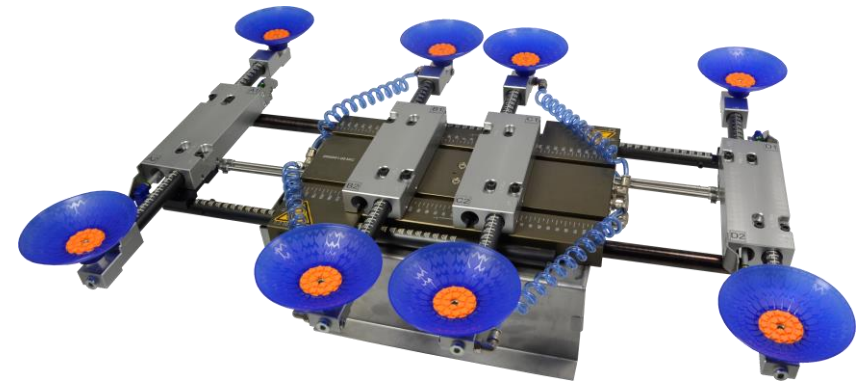
- Reduced setup time
- Easy handling
- Reduced number of grippers (wide range of parts can be produced)

- **Description:**

- Quick adjustment of the gripper arms
- Full support within TecZone Bend / TruTops Boost
- Single suction cup activation (Multigripper Medium)
- Rotary unit for optimized cycle time (Multigripper Small)
- Different suction cups mountable
- Multigripper Small: 140x120 – 240x240mm / 5.5x4.7" – 9.4x9.4"
- Multigripper Medium: 495x310 – 1105x580mm / 19.5x12.2 – 43.5x22.8"



Multigripper Small
(max. 6kg / 13lbs part weight¹)



Multigripper Medium
(max. 52kg / 115lbs part weight²)

1: 6 kg part weight at full dynamics; prerequisite: use of all vacuum cups and SAXM 60
2: 38 kg part weight at full dynamics; prerequisite: use of all vacuum cups and SAXM 80

Description mechanical gripper

Produce smaller parts faster

Customer benefits:

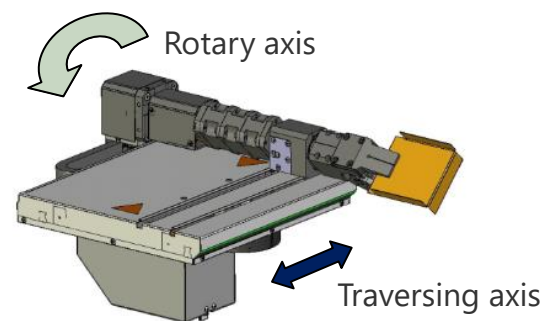
- High productivity through additional axes
- Process parts which cannot be held by vacuum cups
- Minimizes the need for regripping

Description:

- Linear and rotary axis



Sample picture – application example

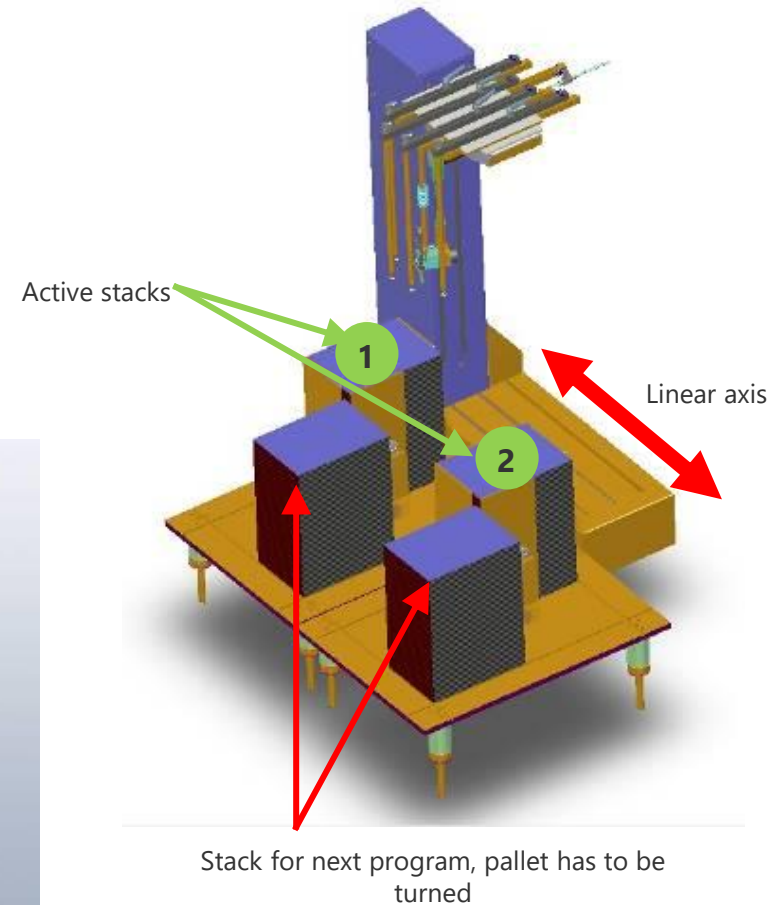
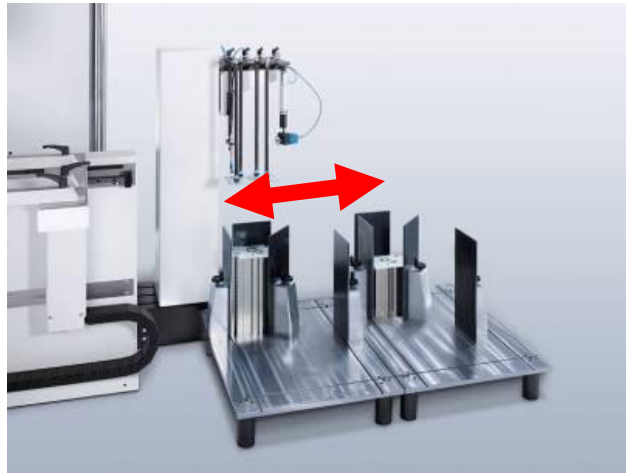


	Max part size	Max. part weight	Max. sheet thickness	Axes
BendMaster (60)	297 x 210 mm 11.7" x 8.2"	1.5 kg 3.3 lbs	6 mm 0.236"	Traversing axis and rotary axis

Sheet removal station with linear axis

Description:

- Stack height: 400 mm / 15.7"
- Sheet centering with plates
- Incl. double sheet detection
- Incl. double sheet separation
- Two active stacks can be used



BendMaster (60)

Kinematics – Stacking height

