



MULTIBEND-CENTER

RAS 79.22-2

RAS 79.26-2

| Technical Data MULTIBEND-CENTER | RAS 79.22-2 | | RAS 79.26-2 | |
|------------------------------------------------|--------------|----------------|--------------|----------------|
| Working Length max. | 2160 mm | 85" | 2560 mm | 100" |
| Sheet Thickness max. (Mild Steel) | 2.0 mm | 14 Ga. | 2.0 mm | 14 Ga. |
| Sheet Thickness max. (Stainless Steel) | 1.5 mm | 16 Ga. | 1.5 mm | 16 Ga. |
| Sheet Thickness max. (Aluminum) | 3.0 mm | 0.125" | 3.0 mm | 0.125" |
| Finished Part Length min. (w/o corner tools) | 200 / 250 mm | 7.87" / 9.85" | 200 / 250 mm | 7.87" / 9.85" |
| Finished Part Length min. (w/ small corners) | 380 / 430 mm | 15" / 16.93" | 380 / 430 mm | 15" / 16.93" |
| Finished Part Length min. (w/ large corners) | 430 / 480 mm | 16.93" / 18.9" | 430 / 480 mm | 16.93" / 18.9" |
| Finished Part Width max. (outside) | 1500 mm | 59.06" | 1500 mm | 59.06" |
| Finished Part Width min. (inside) | 150 (140) mm | 5.91" (5.52") | 150 (140) mm | 5.91" (5.52") |
| Finished Four Sided Part Height max. * | 203 mm | 8" | 203 mm | 8" |
| Free Area Beside Corner Pieces (small / large) | 30 / 50 mm | 1.18/1.97" | 30 / 50 mm | 1.18/1.97" |
| Free Area In Front Of Upper Tools Up To | 60 mm | 2.36" | 60 mm | 2.36" |
| Folding Beam Travel Range | 180 deg. | 180 deg. | 180 deg. | 180 deg. |
| Working Height | 1000 mm | 39.4" | 1000 mm | 39.4" |
| Machine Width | 6900 mm | 272" | 7700 mm | 303" |
| Machine Length | 5400 mm | 213" | 5800 mm | 229" |
| Machine Height max. | 2300 mm | 91" | 2400 mm | 95" |
| Weight approx. | 14000 kg | 30865 lbs. | 17000 kg | 37480 lbs. |
| Drive Power max. | 25 kW | 33.5 hp | 25 kW | 33.5 hp |
| Average Power Consumption | 16 kW/h | 22 hp/hour | 16 kW/h | 22 hp/hour |

* For parts wider than 233 mm /9.18"

Modifications reserved. Pictures may show options.

<http://www.RAS-online.de>
e-mail: Info@RAS-online.de



D-71045 SINDELFINGEN
POSTFACH 369
TELEFON 0 70 31-863-0

D-71065 SINDELFINGEN
RICHARD-WAGNER-STR. 4-10
TELEFAX 0 70 31-863-185



RAS REINHARDT
MASCHINENBAU
G M B H

Superior Technology for Precision and Speed

It has been some time since the automatic folding system from RAS made the heart of a fabrication specialist swell. Back in 1990 RAS introduced its first MULTIBEND fully automated folding center. At that time the system was hydraulically driven. Since then servo-mechanic motors have replaced this traditional technology. Servo-mechanic drives offer consistent parts quality due to the fact that there are no oil temperature and pressure fluctuations. In addition, the RAS MULTIBEND-CENTER presents itself as the most maintenance-free "parts factory" available on the market today. This next generation shines brightly in the limelight: We are proud to introduce the RAS MULTIBend 79.22-2 and RAS 79.26-2 automated folding systems.

If you want to produce complex sheet metal parts regardless of batch size, with incredible throughput, total flexibility, amazing accuracy, and total repeatability, the MULTIBEND-CENTER will make your dreams come true!

The RAS MULTIBEND-CENTER continues to be the key player and trend-setter within automated folding technology using highly dynamic servo-motors, an ultra fast tool changer, scratch-free folding, innovative material flow components and the latest tool technology. Flexibility, speed and perfection have been always terms sheet metal specialists used to describe the MULTIBEND-CENTER.

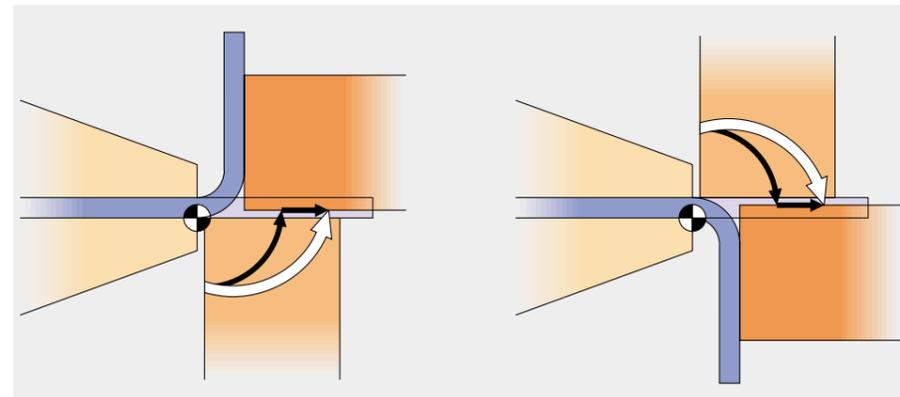
The extremely rigid and backlash-free servo-motors give unbelievable dynamics and speed to this folding system. Included with the drive concept, RAS has integrated proven elements like the very clever kinematics of the upper beam drive and the deflection-free bi-directional folding beam drive. These components assure the well-known reliability and lifetime precision of the RAS folding systems.

The MULTIBEND-CENTER offers limitless design flexibility and will produce unheard of part repeatability. Every bend on the MULTIBEND-CENTER is an exact replication, or "identical twin", of the original specifications.

The MULTIBEND-CENTER is so sophisticated that it will allow you to bend an incredible mix of parts, from the most basic to the most complex. With its ability to manipulate blanks to 1/1000th degree around a complete 360 degree arc, you can produce rectangles and even tapered workpieces with ease.

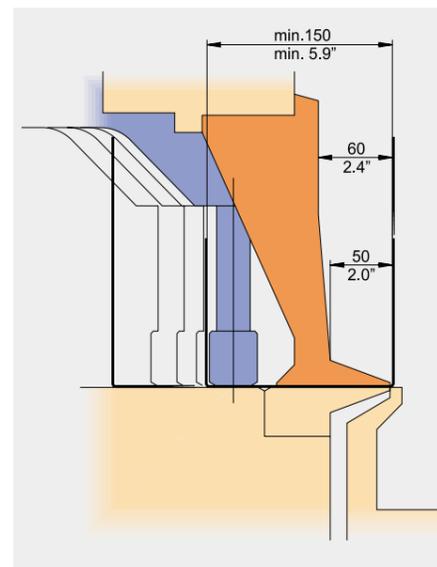
Design Flexibility Without Limits!

A single set of tools is all that is needed to create the parts shown on this page. With the patented 3D-motion control of the folding beam, the tool rolls away with the part. This results in scratch-free folding without any wear to the tools.



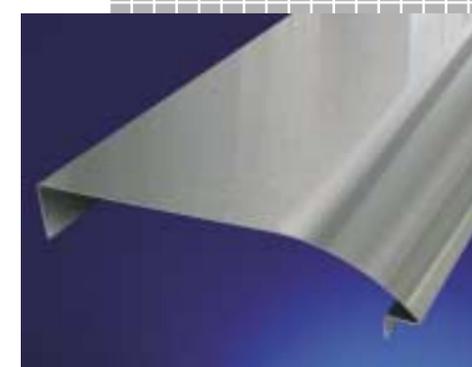
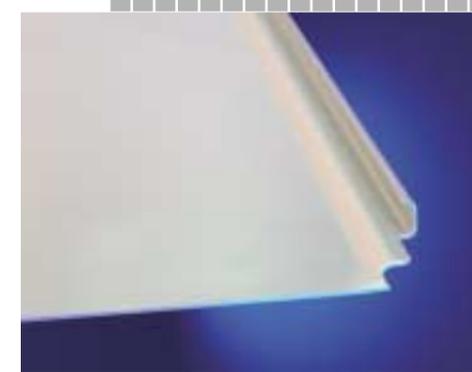
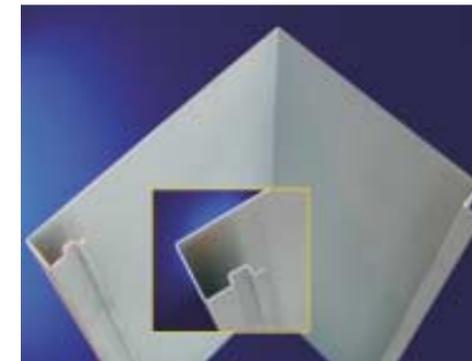
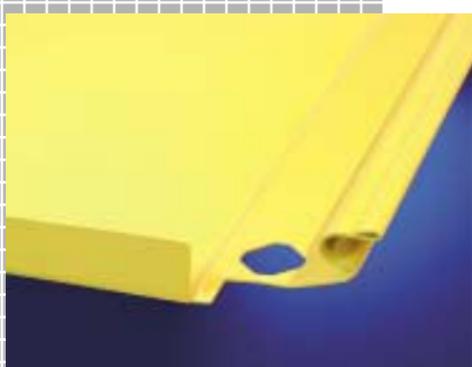
Folding up

Folding down



Large free space and a 203 mm (8") tool height are a quantum leap in your ability to create complex, highly profitable "designer" parts.

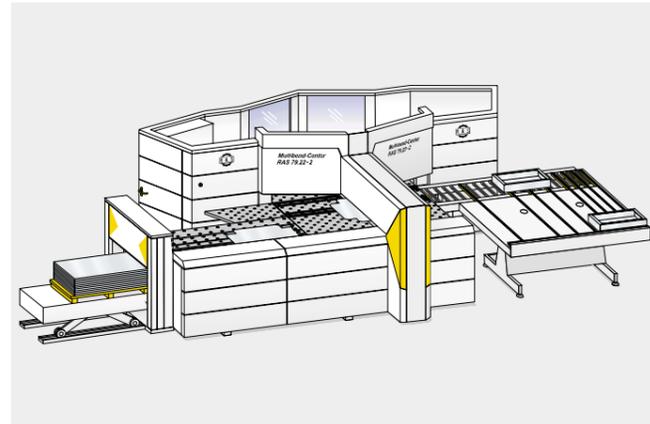
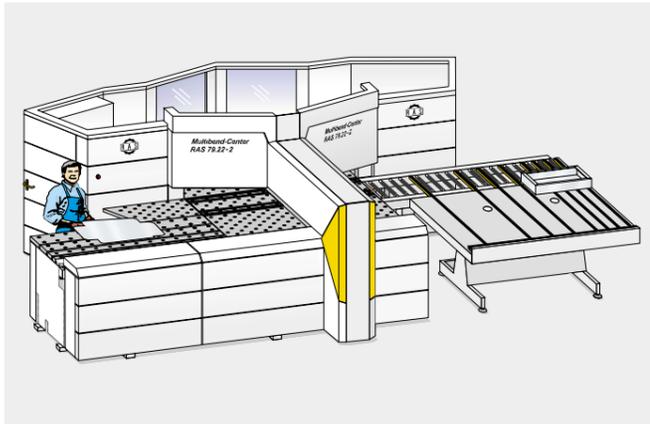
- Sensitive material surfaces
- Closed profiles
- Stand-offs
- Internal bend in cut-outs
- Hems
- Welding tabs
- Small offsets
- Very small flanges
- Hat profiles
- Bends close to the part center
- Last negative bends
- Tapered parts



Loading Systems: Versatile and Upgradeable!

With RAS modular loading options, you can start with a manual loading system and upgrade to full automation whenever you wish. Using the latest CAN-Bus technology, each configuration can be added by plug-and-play.

The decentralized structure of machine provides for wiring security and offers high flexibility for your production for – today and into the future. The system is totally modular.

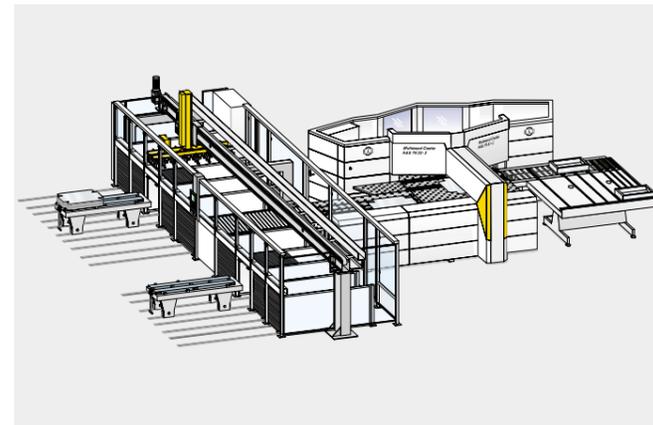
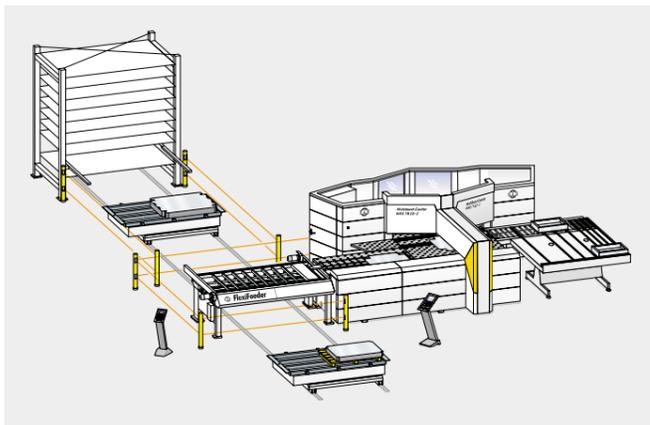


Manual Loading

If you prefer to operate the part fabrication cycle with a single operator, have limited floorspace or a limited budget, manual loading is an ergonomic and economic masterpiece. The finished part alternatively returns to the operator or can be transferred to the opposite side of the machine.

Blank-Feeder

If you often produce batches, this one-stack loading system is your best bet. A pallet with punched or lasered blanks sits on a scissor table. A single row of suction cups lifts the leading edge of the blank and the grippers grasp the blank and pull it into the folding center.



FlexiFeeder

A suction cup frame loads the blanks from a moveable scissor table, or from a pallet of an automated material management system. Transport belts move the part to the blank loading grippers. The FlexiFeeder is the best buy for materials with sensitive surfaces, or for blanks that are not accurately stacked.

Pick&Place-Feeder

If you are in the business of producing batch and kits, the Pick&Place Feeder is the right loading system for your operation. It translates into dramatically lower logistics costs, virtual elimination of the work-in-process inventory, and will bring the entire production sequence time to a minimum.

Material Handling: Quick and Accurate!

Precise scanning

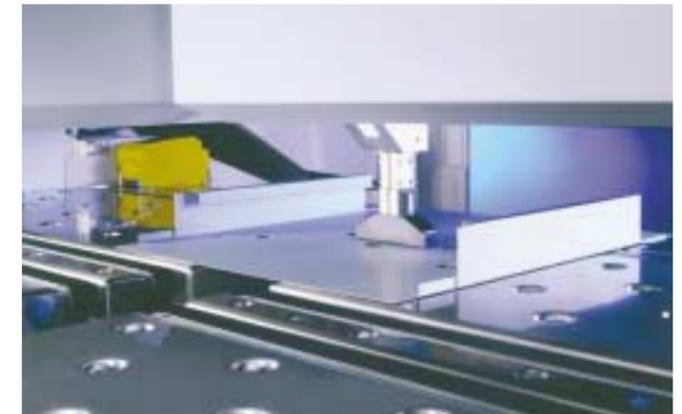
Once a blank is loaded into the MULTIBEND-CENTER the "Magic-Eye" Scanner optically measures the blank position. Precision measuring technology is able to scan the most complicated notches, oblique blanks and even very thin parts without touching the part itself. All of this happens simultaneously to the production time of the previous part and therefore without any delay from part to part. After the real blank position has been scanned, the loading and main manipulator automatically compensate for the offset. This insures accuracy of the part.



The "Magic-Eye" system scans the notch and/or edge of the blank.

Quick supply

After scanning, the blank arrives at the main manipulator. It clamps and positions the part during the entire folding cycle. With the blank being scanned outside of the folding area, the typical part-to-part time is just approximately 4 seconds. The main manipulator moves the blank at 2100 mm/s (83"/sec), while rotating it to an accuracy of 0.001 degrees at any angle. No operator can be this good, no matter how experienced! This results in precision parts ... extremely accurate and infinitely repeatable. Productivity goes up and the MULTIBEND-CENTER never gets tired!

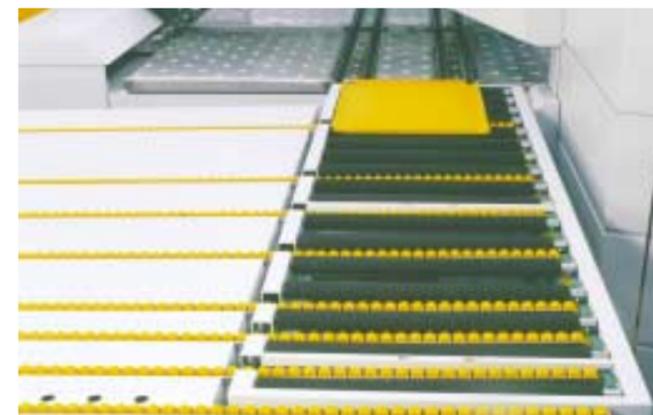


The main manipulator positions and rotates the blank with an accuracy of 0.001 degrees.

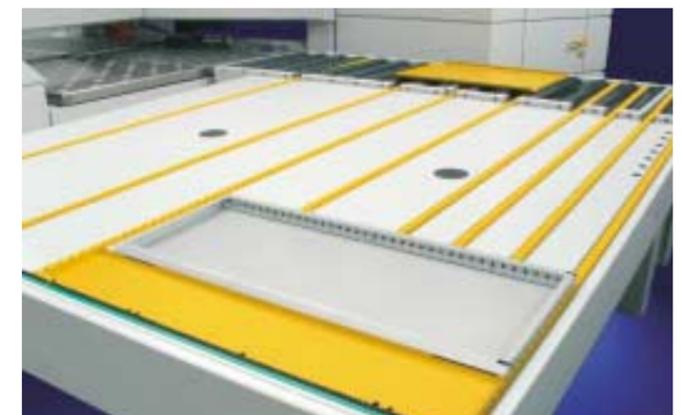
Reliably unloading

Finished workpieces can be unloaded to many different options. The MULTIBEND CENTER can deliver the part back to the operator or pass them through to the other side of the machine. The folding system can also auto-

matically direct the parts to an assembly area, a paint line or to welding station. Most often an operator will take the workpiece from a multiple finished part buffer.



The runout extension takes over the finished part at the end of the standard runout table.



Transport rolls coming out of the runout extension take over the finished workpiece and let it gently roll down the buffer area.

Folding Technology At Its Best

All of the RAS superiority comes into play at the bend line. The servo-mechanic driven upper beam clamps the blank to the lower beam. Then the folding beam moves to the programmed angle or automatically folds radii, tabs, hems, offsets, closed profiles – without any special tools, scratchfree and to perfection. **With RAS Folding Technology the impossible does not exist any longer!**

The robotically controlled tool system is what makes for incredible productivity, accuracy, repeatability and flexibility of this system. The **upper beam tooling** is segmented, which allows for any tool length, and extra deep boxes with a 203 mm (8") height capability. Open or closed hems and radii can be automatically produced in sequence without tool change. Two complete sets of upper beam tools are available right and left of the center tool.

The CNC automatically calculates the **fastest tool change strategy**. Tool change within a program cycle: no problem! Separate servo drives allow tool positioning with each tool change gripper independently and with lightning speed. For tapered parts tool setup can be different on the left and right hand sides of the machine.

Separate servo-motors for the left and right gripper, together with reduced tool weights, allow **very rapid tool change times**. The tool change most often is completed before the next part is positioned to the bend line. Additional tools that are not being used in the current program are stored in the tool magazine on the right and left sides of the bending line.

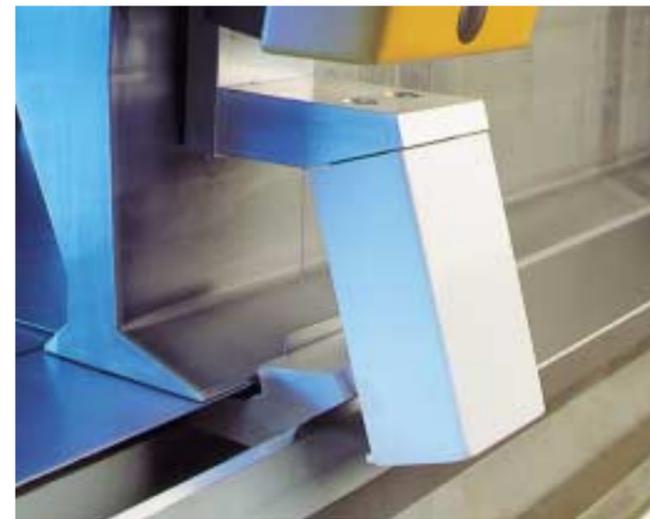
All of this magic by the MULTIBEND-CENTER is produced requiring half the drive power compared to typical hydraulic systems. This pays dividends day after day with lower power consumption. With the use of servo-motors, annoying oil leaks, temperature fluctuations and noise pollution are no longer issues.



The **segmented folding beam tools** offer even more design flexibility, if window bends, tapered parts or offset bends are required. Using basic segments and adapter pieces any tool length can be set up.

The **automatic tool clamping system** for the upper beam and the folding beam locks the tools in position as soon as the folding cycle has been started.

Programmable **roto-corner tools** automatically rotate in and out. This allows them to pass pre-bent side flanges and to dive precisely into the part to create high tolerance corners.



The system is complete with the unique **UpDown-Tools** for the folding beam. They are a premiere class high-tech state-of-the-art tooling innovation. A clever mechanism automatically allows the UpDown-Tools to change position within the folding cycle. In normal position these tools have the same height as all the other folding



Tabs used for spot welding are easily done with **specialized RAS tab tools**. The robotic tool changer places them at any position along the working length.



beam tools and are used for normal bends. In a second, the same tool collapses for parts with offset bends to the inside or tapered shapes. They can also come up above for welding tabs which should be bent with a one times material thickness offset.

