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SOCO Machinery Co., LTD
E: sales@soco.com.tw | T: +866-4-23591888 | F: 866-4-23592386
No.3 Jingke E. Rd., Nantun Dist., Taichung City 40852 Taiwan



TUBE BENDING

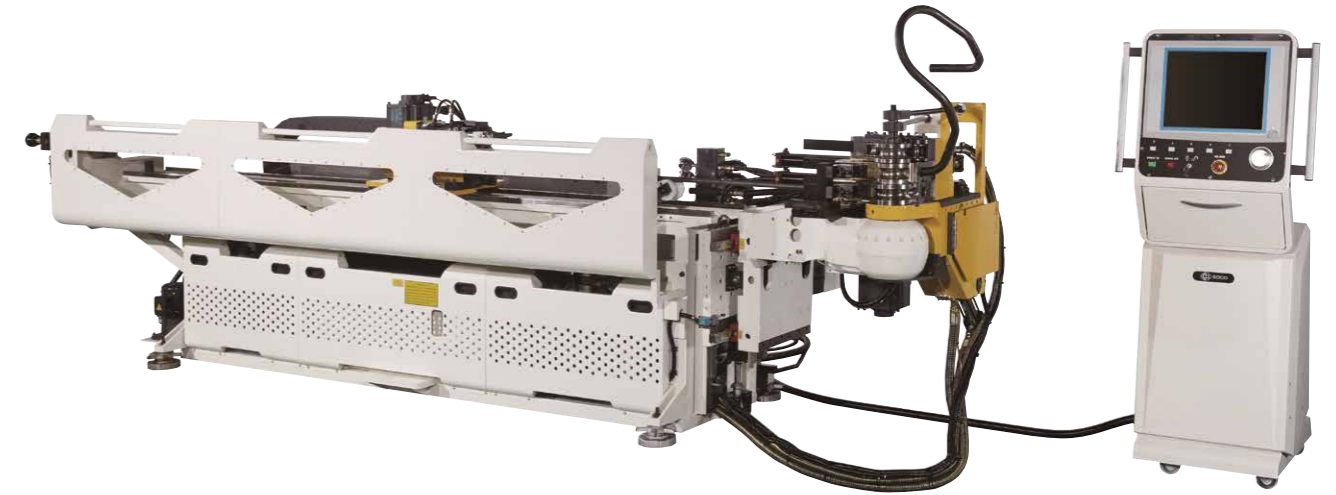
SOCO. VALUE IN PROCESS.

A&V SERIES BENDERS

Draw + Roll + 1D Bending

DGT

DGT stands for Direct Gear Transmission and it's SOCO's patented bending system that brings you efficient and stable bending processes, offering the highest accuracy and repeatability in draw and roll bending.



THE ADVANTAGES OF DGT ▶

- Chain free transmission
- Built-in gearbox with direct connection to electric servo
- Highest transmission performance (90%+ efficiency)
- High bending accuracy ($\pm 0.05^\circ \sim \pm 0.1^\circ$)
- Lowest noise level
- Maximum Working Area = Minimal Interference
- Superior Clearance: Elongated, Compact + Offset Bending Head

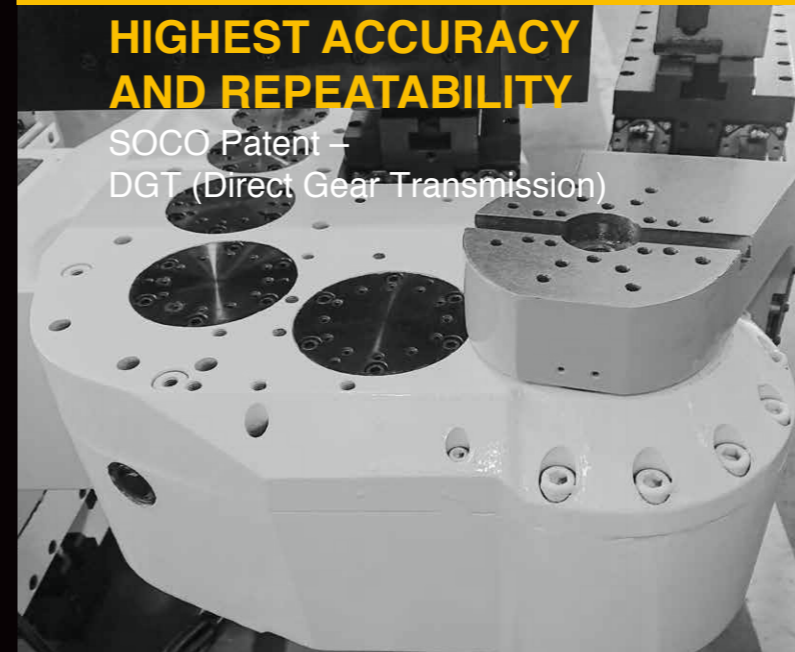
SOCO Patent- DGT

HIGHEST ACCURACY AND REPEATABILITY

SOCO Patent –
DGT (Direct Gear Transmission)

Advanced DGT

SOCO's unique DGT technology (Direct Gear Transmission) is the worldwide patented bending system that brings you the most efficient and stable bending process, offering the highest accuracy and repeatability in draw and roll bending.



SOCO i2[®] CNC CONTROLS

The Most Powerful + User Friendly
Tube Bender Software in the World

Internet Ready + Real Time Access
Design a complete new part from scratch in less than 5 minutes

FOR THE OPERATOR AND PRODUCTION

- Windows Based system with Graphic Intuitive Interface and Map Navigation to all screens.
- Automatic Springback Compensation + Recapture for Short Lengths.
- Simultaneous running of multiple bending files for producing complete product sets.
- PDI Zone Recapture : Carriage moves into the PDI Zone for completion of short length bends with minimal material waste.
- 「Overmode / Teach Mode」 offers easy setup of each programmable axis to avoid interferences between bends.
- Action Sequences: Multiple built-in sequences for automatic offset moves between bends.

FOR R&D + PARTS DESIGN

- 3-Step Programming allows the creation of a new part from scratch in minutes.
- SOCO CAD Reader (+): Ability to open 3D CAD files (.step) and automatically fill in coordinates and tube data.
- SOCO Bending Simulator (+): Bending Simulation and Collision Detection software.
- CMM Interface (+): Ability to connect to AICON / CMM measuring systems for automatic parts compensation and reverse engineering .
- Data entry for both XYZ and YBC coordinates and XYZ <-> YBC conversion.
- Dedicated Carriage + PDA Booster and Torque Setting page.

- SOCO VRM: Arc Radius Measuring for quick setup of large radius parts.
- Offline i2 Controls for development, simulation, and data analysis in an office setting (+).

FOR SERVICE AND MAINTENANCE

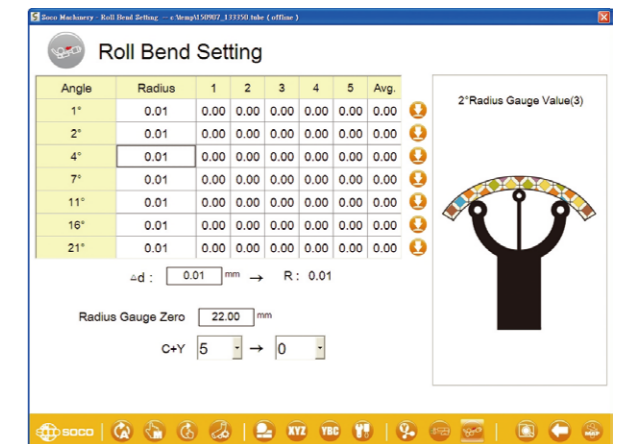
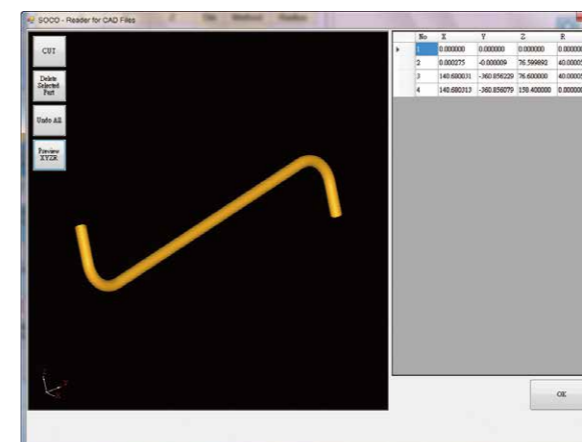
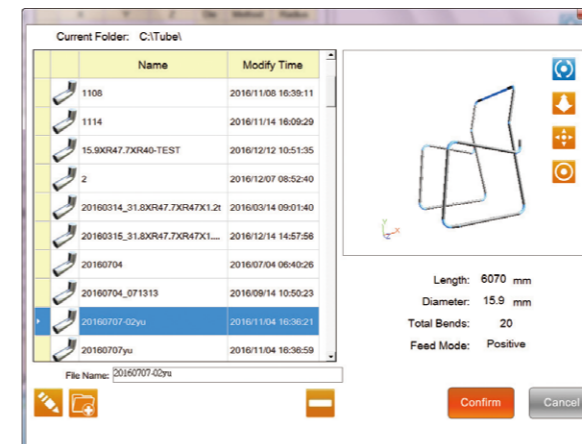
- SOCO IRMS: Live Support and trouble shooting from Anywhere, Anytime
- Connect using any mobile device, computer, or laptop (Windows, iOS, or Android) from any location with Internet access
- On-Screen access to bending files, with full ability to read, edit, and troubleshoot programmed parts
- Self-diagnostics : Error message display with potential solutions
- Machine Maintenance Scheduling System (+).

FOR MANAGEMENT

- SOCO's Production Reports : Generate complete production reports by time frame, machine, and operator (+)
- Ability to Connect to Internal Data Backup and 3rd Party Cloud Storage Systems
- Tooling Management System : Independent tool library and Tooling life tracking
- User Permissions Control : 3 security levels + ability to create over 1,000 user IDs

(*) On select machine models

(+) Optional



A SERIES

3 - 4 Electric Axis | Draw Bending



Equipped with 3 ~ 4 electric CNC axis, multiple bending stacks and the unique DGT technology, this line of SOCO tube benders can offer one of highest performance solutions available in the market.

SB-19X3A-2S

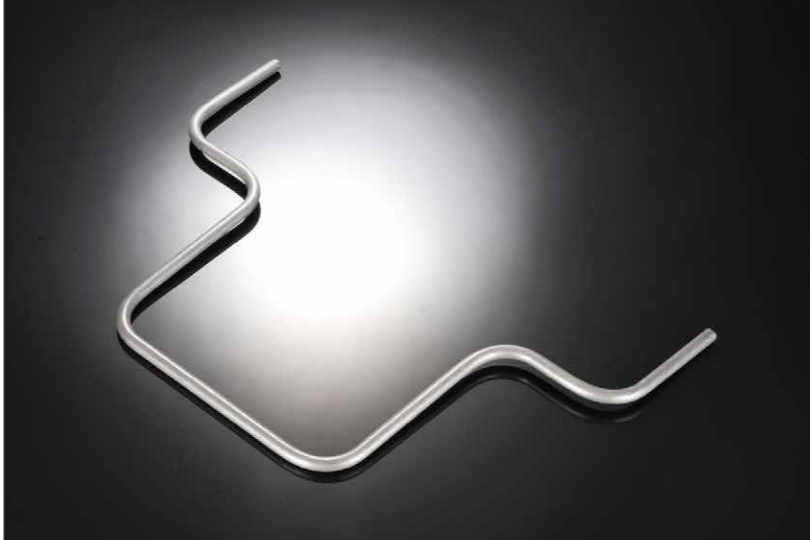
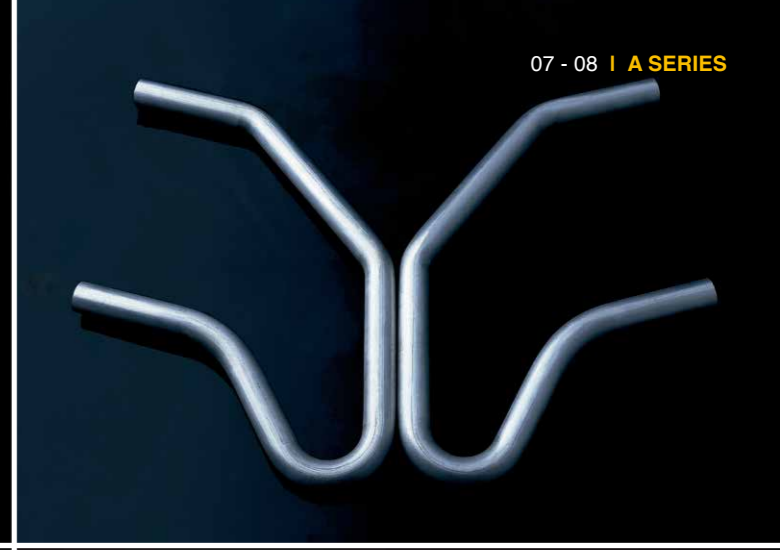
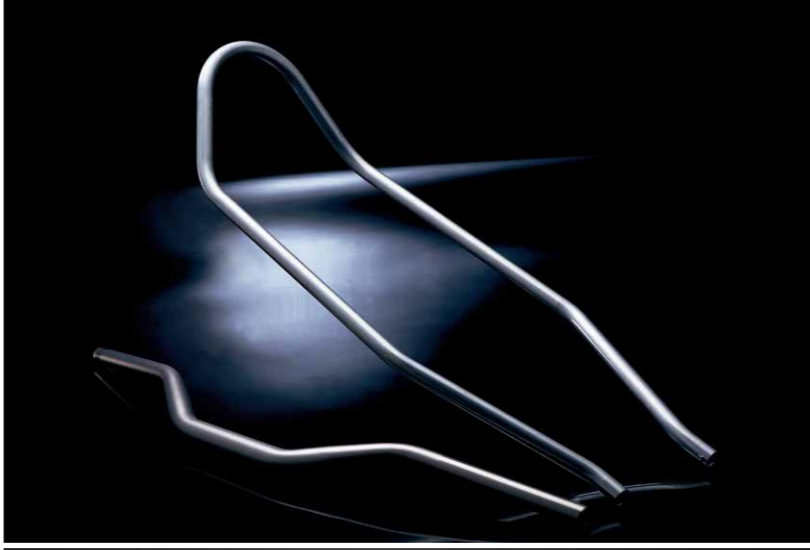
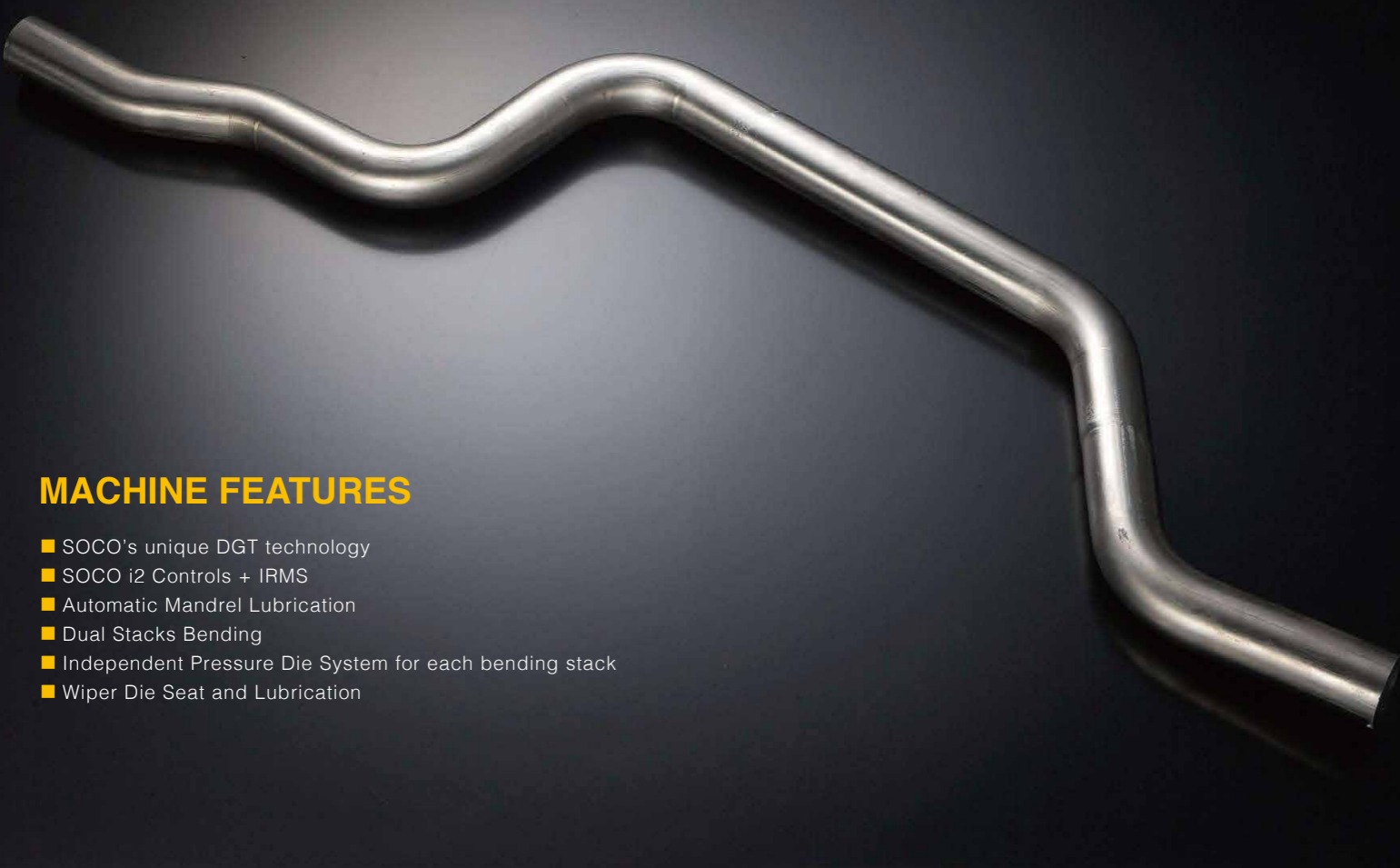
CNC tube bender with capacity up to Ø19.05 mm (mild steel).
4 electric axis and 1~2 stacks of tooling



SB-30X4A-2S

CNC tube bender with capacity up to Ø30mm.
4 electric axis and 1~2 stacks of tooling





MACHINE FEATURES

- SOCO's unique DGT technology
- SOCO i2 Controls + IRMS
- Automatic Mandrel Lubrication
- Dual Stacks Bending
- Independent Pressure Die System for each bending stack
- Wiper Die Seat and Lubrication

Specifications / Model	SB-19X3A-2S	SB-30X4A-2S	SB-39X4A-2S	SB-51X4A-2S	SB-63X4A-2S	SB-80X4A-2S	SB-90X4A-2S	SB-100X4A-2S	SB-131X4A-2S
Mild Steel Capacity (mm)(CLR 1.5D)	Ø19.05 X 1.0t	Ø30.0 x 1.5t	Ø38.1 x 3.2t	Ø51 X 2.8t	Ø65 X 2.5t	Ø80 X 2.0t	Ø90 X 2.2t	Ø101.6 x 3.0t	Ø127 x 3.5t
Stainless Capacity (mm)(CLR 1.5D)	Ø16 x 1.0t	Ø25.4 x 1.2t	Ø38.1 x 2.2t	Ø51 x 1.9t	Ø65 x 1.5t	Ø80 x 1.3t	Ø90 x 1.5t	Ø101.6 x 2.0t	Ø127 X 2.5t x CLR 1.0D
Max. Tube Length With Mandrel (mm)	2300	2670	3850	3700	3700	4600	4600	4600	5700
Max. Draw Bending Radius (mm)	80	120	180	250	250	250	250	300	350
Max. Bending Radius Difference(R1-R2)	30	38	50	75	75	80	80	100	140
Bending Accuracy	± 0.05 - ± 0.1°	± 0.05 - ± 0.1°	± 0.05 - ± 0.1°	± 0.1°	± 0.1°	± 0.1°	± 0.1°	± 0.1°	± 0.1°
Rotation Accuracy	± 0.05 - ± 0.1°	± 0.05 - ± 0.1°	± 0.05 - ± 0.1°	± 0.1°	± 0.1°	± 0.1°	± 0.1°	± 0.1°	± 0.1°
Feeding Accuracy (mm)	± 0.05 - ± 0.1	± 0.05 - ± 0.1	± 0.05 - ± 0.1	± 0.1	± 0.1	± 0.1	± 0.1	± 0.1	± 0.1
Machine Dimension (cm)(LxWxH)	310 x 90 x 120	357 x 95 x 120	480 x 134 x 128	500 X 150 X 150	500 X 180 X 205	700 X 240X 210	700 x 260 x 210	760 X 280 X 240	871 X 350 X 240
Gross Weight (Kg)	1400	2400	3500	4500	5000	8000	8543	15000	20630

* Due to continuous improvements and designs; the manufacturer reserves the right to modify or make any changes of all models without notice.

V SERIES

4-11 Electric Axis | Draw+Roll+1D Bending



The V and MRV Series CNC Tube Benders combine Draw, Roll and 1D Bending technologies. This combination allows for multiple draw (fixed) and large roll bending radii in a single part, as well as a programmable carriage boost for CLR = 1D Bending. Coupled with either Individual Pressure Die Assists in each draw bending stack or Servo Driven PDA systems, it brings superior performance and flexibility.

SB-63X9A-MRV – ALL ELECTRIC

CNC tube bender with capacity up to Ø 63.5mm,
Draw and Roll bending. 9 electric axis and 6 stacks of tooling.



SB-80X11A-MRV – ALL ELECTRIC

CNC tube bender with capacity up to Ø 76.2mm,
Draw and Roll bending. 11 electric axis and 6 stacks of tooling.



SB-131X4A-3SV

CNC tube bender with capacity up to Ø 127mm, Draw and Roll bending.
4 electric axis and 3 stacks of tooling.



MACHINE FEATURES

- With SOCO's unique DGT technology
 - SOCO i2 controls
 - Multi-stacks for Draw and Roll (Large Radius) bending
 - Programmable Boosting Force for 1D Bending (*)
 - Ability to bend parts with "0" straight lengths
 - Programmable arc lengths for large radiuses
 - Roll Bending springback compensation settings
 - Special bending compensation and data storage fields
 - Low noise level with highest transmission performance
- (*) in accordance to material's elongation ratio

Draw + Roll +1D Bending

The technology can create a part which has multiple draw bending radiuses (R1 & R2), while creating a larger radiuses through the roll bending process. Coupled with a settable carriage booster, it allows bending radiuses as small as 1 X OD.

Specifications / Model	SB-20X4A-3SV SB-20X6A-MRV	SB-31X4A-3SV SB-31X9A-MRV	SB-39X4A-3SV SB-39X9A-MRV	SB-51X4A-3SV SB-51X9A-MRV	SB-63X4A-3SV SB-63X9A-MRV	SB-80X4A-3SV SB-80X11A-MRV	SB-90X4A-3SV SB-90X11A-MRV	SB-100X4A-3SV SB-100X11A-MRV	SB-131X4A-3SV SB-131X11A-MRV	
Mild Steel Capacity (mm)(CLR 1.5D)	Ø20 x 1.2t	Ø30.0 x 2.0t Ø30.0 x 1.5t (MRV)	Ø38.1 x 3.2t	Ø51 x 2.8t	Ø65 x 2.5t	Ø80 x 2.0t	Ø90 X 2.2t	Ø101.6 x 3.0t	Ø127 x 3.5t	
Stainless Capacity (mm)(CLR 1.5D)	Ø16 x 1.2t	Ø25.4 x 1.6t Ø30.0 x 1.0t (MRV)	Ø38.1 x 2.2t	Ø51 x 2.0t	Ø65 x 1.5t	Ø80 x 1.3t	Ø90 x 1.5t	Ø101.6 x 2.0t	Ø127 x 2.5t x CLR1.0D	
Max Roll Bending Capacity (Steel)(mm)	Ø20 x 1.2t x CLR11D	Ø30 x 1.0t x CLR8D	Ø32 x 1.0t x CLR10D	Ø50.8 x 2.5t x CLR6D	Ø63.5 x 2.5t x CLR12D	Ø76.2 x 2.0t x CLR15D	Ø88.9 x 2.0t x CLR10D	Ø101.6 x 3.0t x CLR15D	Ø127 x 3.5t x CLR12D	
MR Die Arrangement (mm)	6 Stacks	Ø4 ~ Ø7	Ø5 ~ Ø10	Ø15.9 ~ Ø22.2	~ Ø 19.05	~ Ø 25.4	~ Ø 31.8	~ Ø 24	~ Ø31.8	~ Ø63.5
	5 Stacks	Ø7 ~ Ø10	Ø10 ~ Ø15	Ø22.2 ~ Ø28.5	Ø19.05 ~ Ø25.4	Ø25.4 ~ Ø31.8	Ø31.8 ~ Ø50.8	Ø25 ~ Ø39	Ø31.8 ~ Ø50.8	Ø63.5 ~ Ø82.5
	4 Stacks	Ø10 ~ Ø15	Ø15 ~ Ø20	Ø28.5 ~ Ø38.1	Ø25.4 ~ Ø31.75	Ø31.8 ~ Ø44.5	Ø50.8 ~ Ø76.2	Ø40 ~ Ø51	Ø50.8 ~ Ø76.2	Ø82.5 ~ Ø101.6
	3 Stacks	Ø15 ~ Ø20	Ø20 ~ Ø30	~ Ø38.1	~ Ø31.75 ~ 50.8	Ø44.5 ~ Ø63.5	~ Ø76.2	Ø52 ~ Ø89	Ø76.2 ~ Ø101.6	Ø101.6 ~ Ø127
Max. Tube Length With Mandrel (mm)	2070	3170	3850	3700	3700	4600	4600	4600	5700	
Max. Draw Bending Radius (mm)	80	150	180	250	250	250	250	300	350	
Max. Bending Radius Difference(R1-R2)	30	38 (3SV) / 30 (MRV)	50	75 (3SV) / 50 (MRV)	75 (3SV) / 50 (MRV)	80 (3SV) / 50 (MRV)	80 (3SV) / 50 (MRV)	100 (3SV) / 50 (MRV)	140 (3SV) / 50 (MRV)	
1D Bending	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Machine Dimension (cm) (LxWxH)	3SV Types	278 x 95 x 145	415 x 134 x 128	480 x 134 x 128	500 x 150 x 150	500 x 180 x 205	700 x 240 x 210	700 x 260 x 210	760 x 280 x 240	871 x 350 x 240
	MRV Types	300 x 95 x 130	389 x 95 x 146	505 x 160 x 120	500 x 180 x 205	500 x 190 x 205	700 x 240 x 240	700 x 260 x 210	760 x 280 x 240	819 x 330 x 253
Gross Weight (kg)	3SV Types	2000	2750	4100	4500	5100	9000	9900	15000	22000
	MRV Types	2000	2600	4100	4500	5500	9000	12500	15000	19000

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(1) Depends on Arc Radius and Tube Specification

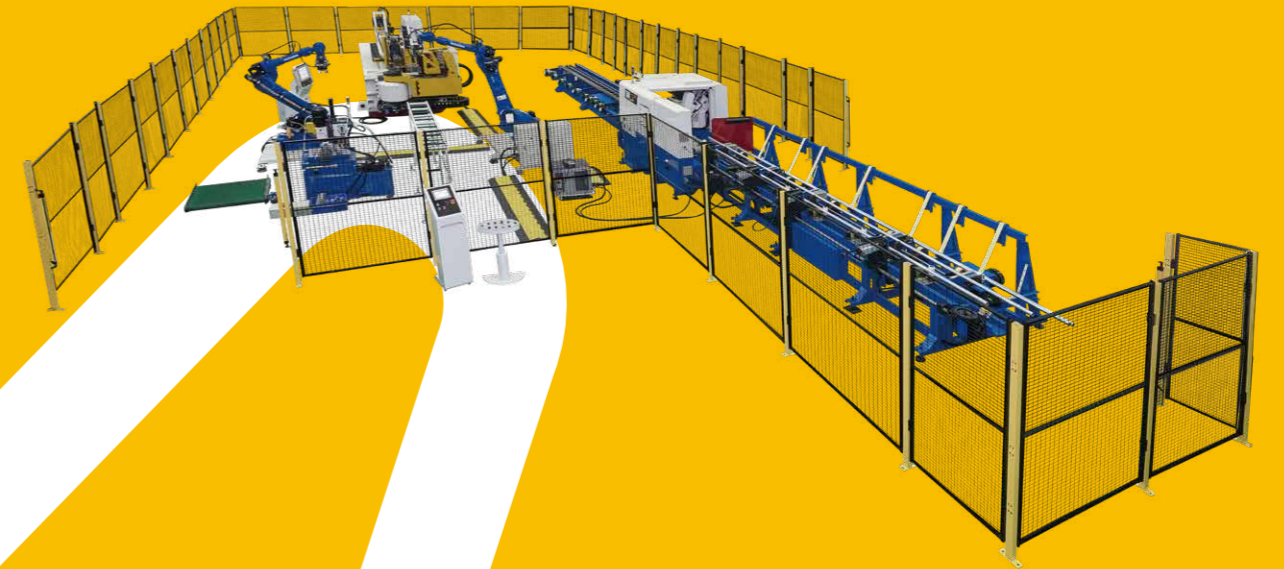
BENDING CELL FOR PRE-FORMED PARTS

Tube Bender A Series equipped with automatic loading and unloading, and handling robot, and universal magazine.



TUBE BENDING + CUTTING AUTOMATION CELL

Automation Cell equipped with loading and unloading, mandrel tube bending, dynamic, straight and angle tube cutting.



MULTI-BENDER AUTOMATION CELL

Two Tube Bending Sets V Series, with handling robot and automatic loaders.



AUTOMATION

Automated tube fabrication manufacturing cells offer manufactures increased productivity without increasing labor. Automated bending cells also offer unparalleled repeatability, making them an often-ideal solution for large volume production.