



Complete Solution for Tube and Pipe

CNC Electric Servo Tube Bender

3 ~ 6 Controlled Axes
Worldwide Patent - DGT



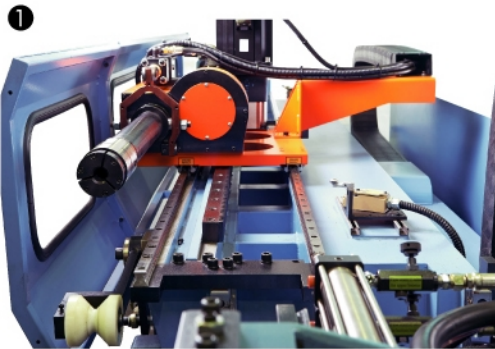
- ▲ A Series / 3 ~ 4 Electric Servo Controlled Axes
- ▲ V Series / Draw + Roll + 1D Bending
- ▲ MR & MRV Series / 6 Axes + 6 Bending Stacks + Draw + Roll + 1D Bending



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.

The Advantages of DGT

- Chain free transmission
- Built-in gearbox with direct connection to electric servo
- Highest transmission performance
- High bending accuracy ($\pm 0.05^\circ \sim \pm 0.1^\circ$)
- Low noise level
- Maximum Working Area = Minimal Interference
- Elongated neck for superior clearance
- Compact bending head
- Side carriage and bending head



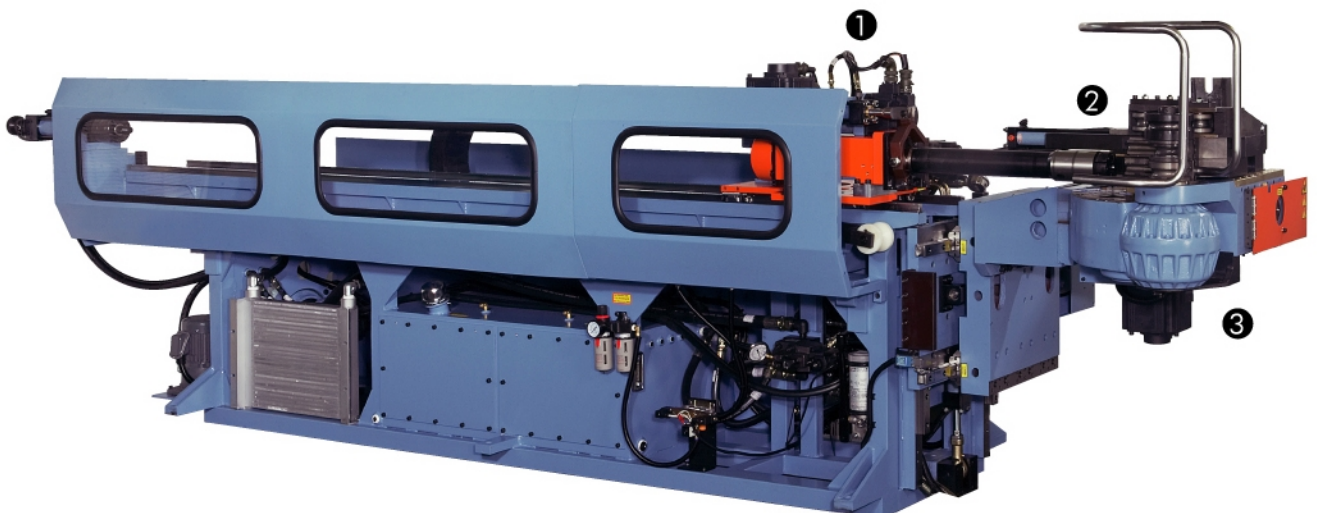
1 Side Carriage



2 DGT technology



3 Minimal Interference

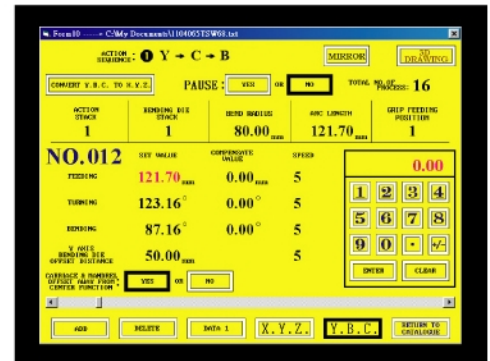


Software and Operation Interface

SOCO bending range is available with an Industrial PC (IPC) + Touch Screen.
Here are some of the features included:

Software Features :

- Automatic Springback compensation
- Recapturing function for short lengths
- Data entry for both XYZ and YBC coordinates
- XYZ to YBC coordinates conversion
- YBC to XYZ coordinates conversion
- Arm return programming mode (Overmode)
- Arc Radius calculator for large radius bending
- Carriage Boost settings' page for 1D Bending
- Ability to use Positive and Gripper Mode Feeding in the same part
- File management for parts and tooling
- Data storage of files (2 million files , 50 bends per file) (*)
- 3D display and rotation of parts
- Mirroring and image reversal of parts
- Elongation ratio + Cycle Time display for each bend
- Windows 2000 / XP platform
- Self diagnostics + Error messages display
- Connection and Auto compensation to CMM systems (**)
- Simultaneous opening of files (4 files at one time)
- Programmable mandrel extraction and mandrel lubrication
- Individually programmable axes
- Multiple built-in action and bending sequences
- Built-in Internet Connection for Remote troubleshooting



Options

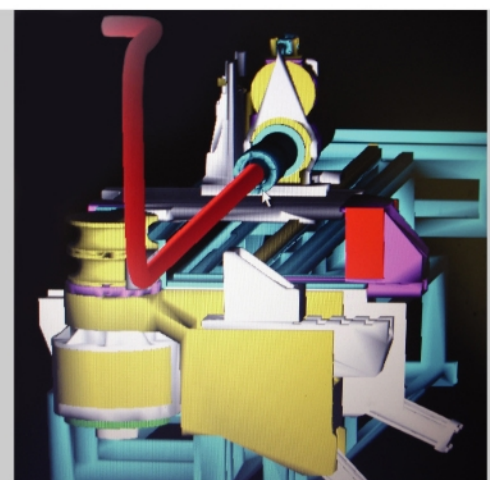
- Bending interference and collision simulator (***)
- Report System for Production Management
- Reading AUTOCAD files (with Auto LISP)
- Remote monitoring system of bending production

(*) May be extended upon request

(**) On most CMM, non-contact probe measuring systems

(***) On selected CNC tube bender models

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



CNC Electric Servo Tube Bender

A Series

3-4 Electric Servo Controlled Axes

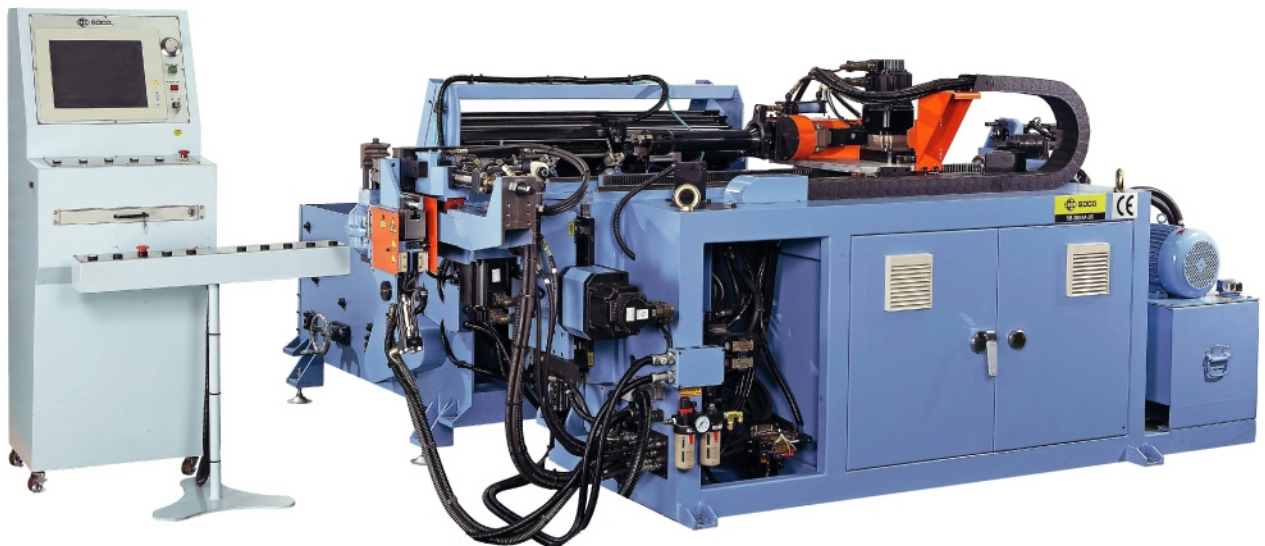
Equipped with 3 ~ 4 electric CNC axes, multiple bending stacks and the unique DGT technology, this line of SOCO tube benders can offer one of highest performance solutions available in the market.

Machine Features

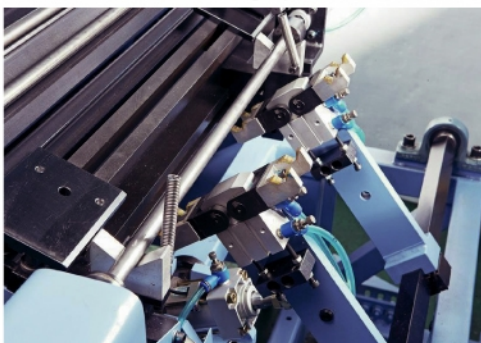
- With SOCO's unique DGT technology
- Rack pinion feeding
- Side positioned bending head and carriage
- Elongated bending neck
- Electric servo controlled axes
- Centralized greasing for sliding area
- 2 speeds, early mandrel extraction
- Automatic mandrel lubrication
- Touch Screen with IPC (Industrial PC)
- Single or multi-stacks
- Independent pressure die system for each bending stack
- Wiper die seat and lubrication

SB-20X4A-2S + AF20

CNC tube bender with capacity up to $\varnothing 20\text{mm}$. 4 electric axes and 1-2 stacks of tooling. Equipped with optional Automatic Loading System - AF20

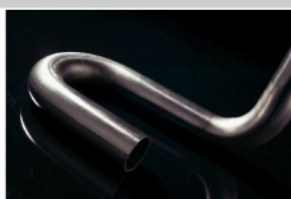
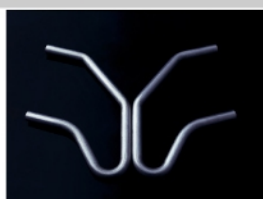
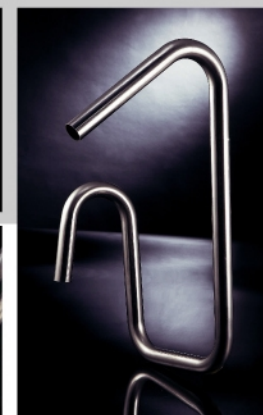
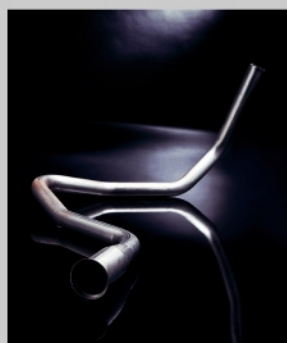
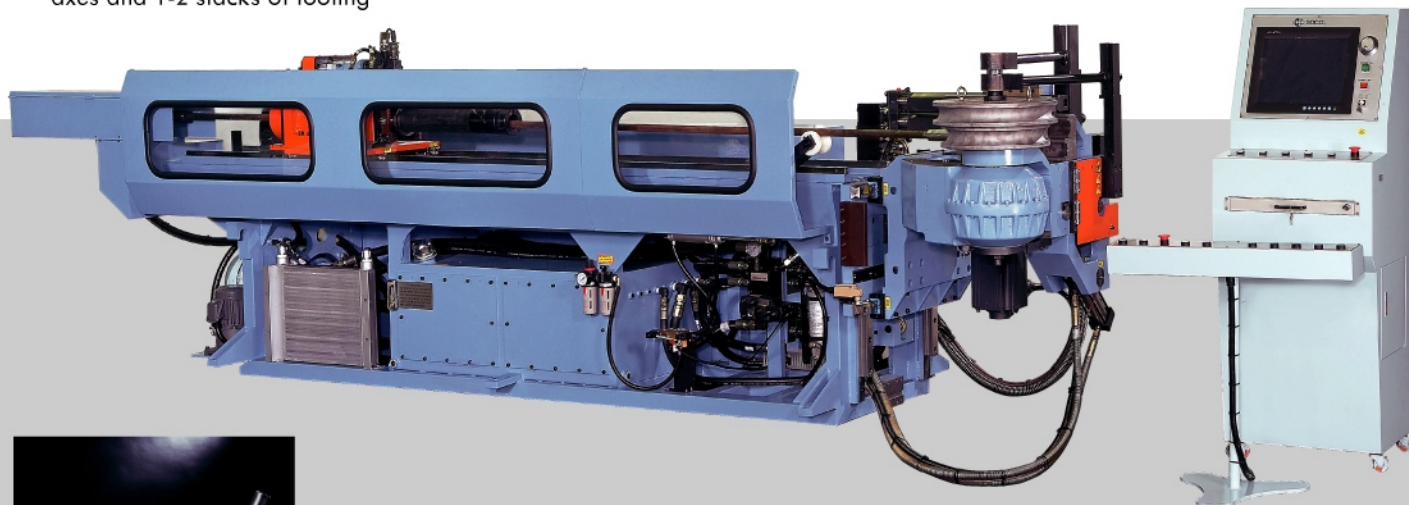


AF20 Automatic Loading System with Automatic Seam Detection



SB-51X4A-2S

CNC tube bender with capacity up to Ø50.8mm. 4 electric axes and 1-2 stacks of tooling



SPECIFICATIONS

Specifications / Model	SB-10X3A-1S SB-10X3A-2S	SB-20X3A-1S/2S SB-20X4A-2S	SB-30x3A-1S SB-30x4A-2S	SB-38X3A-1S SB-38X4A-2S	SB-51X3A-1S SB-51X4A-2S	SB-63X4A-1S SB-63X4A-2S	SB-76X4A-1S SB-76X4A-2S
Mild Steel Capacity (mm) (CLR 1.5D)	Ø10.0 X 1.2t	Ø20 X 1.2t	Ø30.0 X 1.5t	Ø38.1 X 3.2t	Ø50.8 X 2.5t	Ø63.5 X 2.5t	Ø76.2 X 2.0t
Stainless Capacity (mm)(CLR 1.5D)	Ø10.0 x 0.9t	Ø16 x 1.2t	Ø25.4 X 1.2t	Ø38.1 x 2.2t	Ø50.8 x 2.0t	Ø63.5 x 1.9t	Ø76.2 x 1.5t
Max. Tube Length With Mandrel (mm)	1650	2070	2670	3850	3850	3850	4600
Max. Draw Bending Radius (mm)	60	80	120	180	250	250	250
Max. Die Radius Difference (R1-R2) (mm)	25	30	38	50	75	75	80
Bending Accuracy	±0.1°	±0.1°	±0.1°	±0.1°	±0.1°	±0.1°	±0.1°
Rotation Accuracy	±0.1°	±0.1°	±0.1°	±0.1°	±0.1°	±0.1°	±0.1°
Feeding Accuracy (mm)	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1
Machine Dimension (mm) (LxWxH)	2200 X 900 X 1150	2780 X 950 X 1200	3380 x 950 x 1200	4700 X 1350 X 1220	4960 X 1300 X 1300	4960 X 1400 X 1400	5820 X 1910 X 1850
Gross Weight (Kg)	1000 1100	1250 / 1400 1400	1600 1700	2650 2850	3500 4000	4200 5000	6500 7500

CNC Electric Servo Tube Bender

V Series

4 Electric Servo Controlled Axes Draw + Roll + 1D Bending

The V series CNC tube benders combine Draw, Roll and 1D Bending technology. This combination allows 2 different fixed radiuses and multiple large roll bending radiuses in a single part, as well as a programmable carriage boost for CLR = 1D Bending. Coupled with Individual Pressure Die Systems assist in each draw bending stack, it brings superior performance and flexibility.

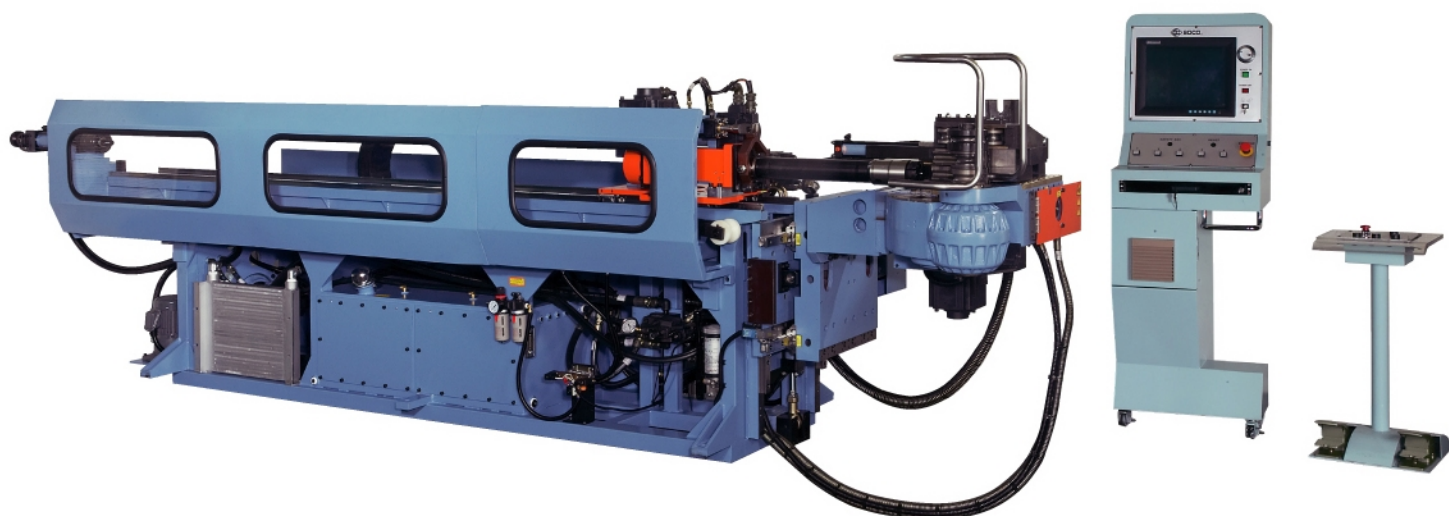
Machine Features

- With SOCO's unique DGT technology
- Rack pinion feeding
- SOCO Proprietary Operation Software
- 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

SB-38X4A-3SV

Capacity up to $\varnothing 38.1\text{mm}$, Draw and Roll bending, 4 electric axes and 3 stacks of tooling

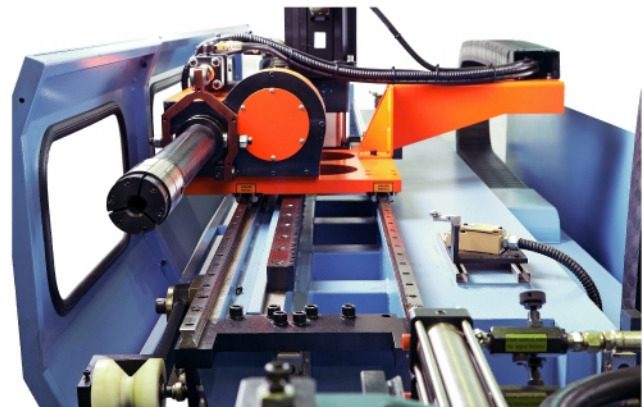
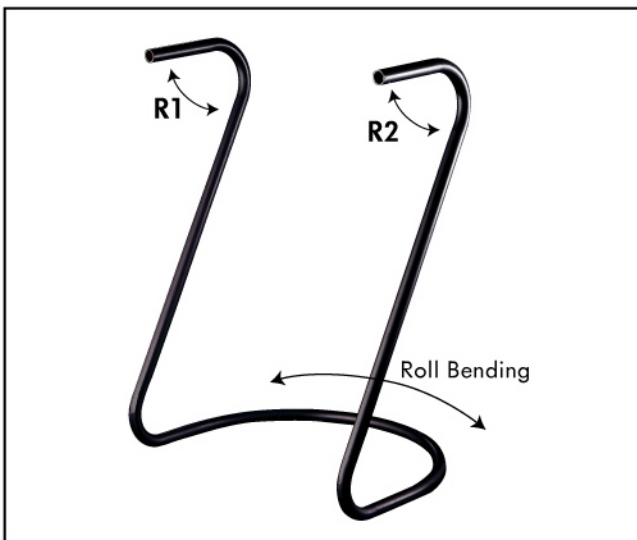


3 Stacks of Tooling / Draw and Roll Bending



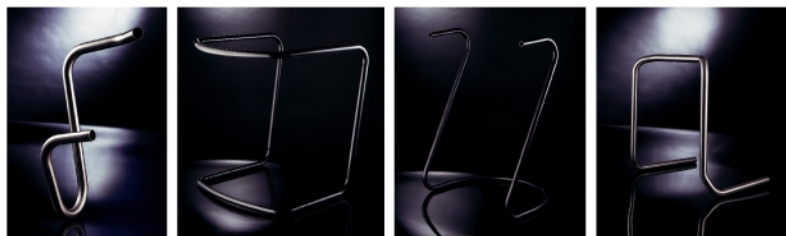
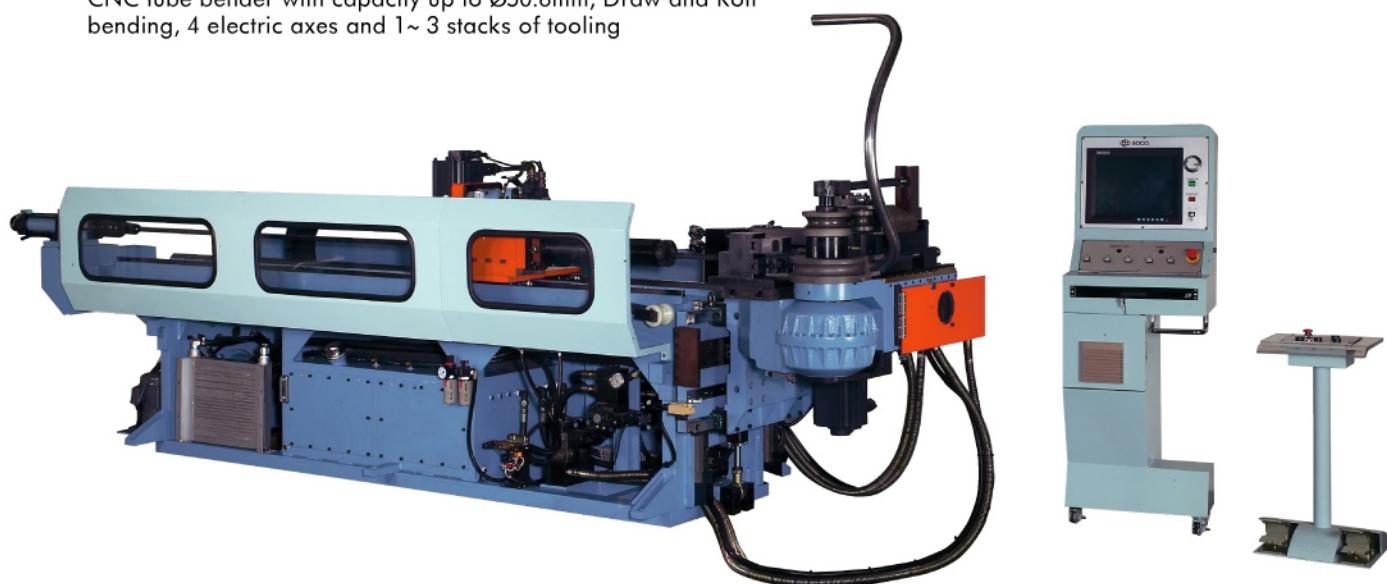
Draw + Roll +1D Bending

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



SB-51X4A-3SV

CNC tube bender with capacity up to $\varnothing 50.8\text{mm}$, Draw and Roll bending, 4 electric axes and 1~3 stacks of tooling



SPECIFICATIONS

Specifications / Model		SB-20X4A-3SV	SB-38X4A-3SV	SB-51X4A-3SV	SB-63X4A-3SV	SB-76X4A-3SV	
Mild Steel Capacity (mm)		$\varnothing 20 \times 1.2\text{t} \times \text{CLR } 1.5\text{D}$	$\varnothing 38.1 \times 3.2\text{t} \times \text{CLR } 1.5\text{D}$	$\varnothing 50.8 \times 2.5\text{t} \times \text{CLR } 1.5\text{D}$	$\varnothing 63.5 \times 2.5\text{t} \times \text{CLR } 1.5\text{D}$	$\varnothing 76.2 \times 2.0\text{t} \times \text{CLR } 1.5\text{D}$	
Stainless Capacity (mm)		$\varnothing 16 \times 1.2\text{t} \times \text{CLR } 1.5\text{D}$	$\varnothing 38.1 \times 2.2\text{t} \times \text{CLR } 1.5\text{D}$	$\varnothing 50.8 \times 2.0\text{t} \times \text{CLR } 1.5\text{D}$	$\varnothing 63.5 \times 2.0\text{t} \times \text{CLR } 1.5\text{D}$	$\varnothing 76.2 \times 1.5\text{t} \times \text{CLR } 1.5\text{D}$	
Max. Length Over Mandrel (mm)		2070	3850	3850	3850	4600	
Bending Radius	Draw Bending	Round Tube	1.5D ~ 4D	1.5D ~ 5D	1.5D ~ 5D	1.5D ~ 5D	1.5D ~ 3.3D
		Rectangular Tube	2.5D ~ 4D	2D ~ 5D	2D ~ 5D	2D ~ 5D	2.5D ~ 3.3D
	Roll Bending	Round Tube	6D ~ ∞	6D ~ ∞	6D ~ ∞	6D ~ ∞	8D ~ ∞
		Rectangular Tube	8D ~ ∞	7D ~ ∞	7D ~ ∞	8D ~ ∞	8D ~ ∞
1D Bending		YES	YES	YES	YES	YES	
Max. Draw Bending Radius (mm)		80	180	250	250	250	
Max. Bending Angle		190°	190°	190°	190°	190°	
Bending Accuracy		$\pm 0.1^\circ$	$\pm 0.1^\circ$	$\pm 0.1^\circ$	$\pm 0.1^\circ$	$\pm 0.1^\circ$	
Rotation Accuracy		$\pm 0.1^\circ$	$\pm 0.1^\circ$	$\pm 0.1^\circ$	$\pm 0.1^\circ$	$\pm 0.1^\circ$	
Feeding Accuracy (mm)		± 0.1	± 0.1	± 0.1	± 0.1	± 0.1	
Machine Dimension (mm) (L x W x H)		2780 X 950 X 1450	4700 X 1350 X 1220	5000 X 1400 X 1500	5820 X 1910 X 1850	5820 X 1910 X 1850	
Gross Weight (Kg)		1500	3600	4500	5500	7500	

CNC Electric Servo Tube Bender

MR and MRV Series

6 Electric Servo Controlled Axes Draw + Roll + 1D Bending

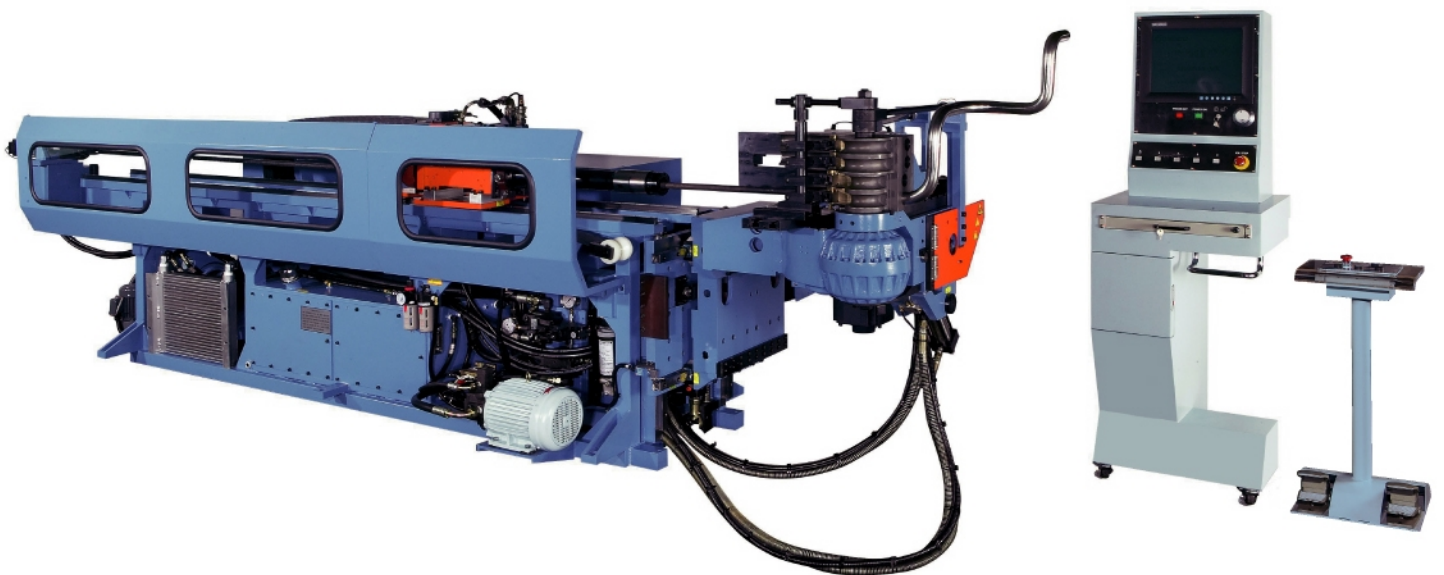
The MR and MRV series CNC tube bender equipped with multi-tooling can up to 6 tooling levels. Designed for bending complex parts with "0" straight clamping lengths, as well both small and large bending radiuses, it satisfies even the most demanding applications for the automotive, furniture, healthcare, among other industries.

The MR series allows up to 6 Draw bending stacks and "0" clamping lengths in bending.

The MRV series offers small radius bending + Roll bending + 1D Bending in the same machine.

SB-38X6A-MRV

CNC tube bender with capacity up to $\text{Ø}38.1\text{mm}$. Equipped with 6 electric servos, with up to 6 stacks of tooling with Draw, Roll and 1D tube bending





Machine Features:

- With SOCO's unique DGT technology
- 6 electric servo controlled axes
 - Feeding (Y)
 - Rotation (B)
 - Horizontal Head Movement (X)
 - Bending (C)
 - Pressure Die Assist (V1)
 - Vertical Head Movement (V2)
- All 6 axes may be simultaneously moved
- 1 ~ 6 bending stacks, allows the use of multiple stacks of compound tooling for short clamping distances and complex bends
- Programmable Boosting Force for 1D Bending (MRV models)
- Electric servo pressure die assist + Electric servo bending = Ideal combination for superior bending surface and accuracy, diminishing excessive elongation and variation of material length
- Ability to set different tooling diameters on the same machine, diminishing setup time when changing tube sizes
- Standard with Automatic Loading and Unloading system interfaces

SPECIFICATIONS

Specifications / Model		SB-38x6A-MR	SB-38x6A-MRV	SB-63x6A-MR	SB-63x6A-MRV	
Mild Steel Capacity (mm)		Ø38.1 X 3.2t x CLR1.5D		Ø63.5 X 2.5t x CLR1.5D		
Stainless Capacity (mm)		Ø38.1 X 2.2t x CLR1.5D		Ø63.5 X 2.0t x CLR1.5D		
Square Steel Tube Capacity (mm)		31.75 X 31.75 x 3.1t x CLR2.0D		50.8 X 50.8 x 1.6t x CLR2.0D		
Die Arrangement (mm)		Ø15.875 ~ Ø22.2 (6 Stacks) Ø22.2 ~ Ø28.575 (5 Stacks) Ø28.575 ~ Ø38.1 (4 Stacks)		Ø25.4 ~ Ø50.8 (4 Stacks) Ø50.8 ~ Ø63.5 (3 Stacks)		
Bending Radius	Draw Bending	Round Tube	1.5D ~ 5D		1.5D ~ 5D	
		Rectangular Tube	2D ~ 5D		2D ~ 5D	
	Roll Bending	Round Tube	-----	6D ~ ∞	-----	6D ~ ∞
		Rectangular Tube	-----	7D ~ ∞	-----	7D ~ ∞
1D Bending		NO	YES	NO	YES	
Max. Tube Length with Mandrel (mm)		3850		3850		
Max. Draw Bending Radius (mm)		180		250		
Max. Die Radius Difference (R1-R2) (mm)		30		75		
Bending Accuracy		±0.1°		±0.1°		
Rotation Accuracy		±0.1°		±0.1°		
Feeding Accuracy (mm)		±0.1		±0.1		
Machine Dimension (mm) (LxWxH)		4700 X 1350 X 1220		5000 X 1500 X 1550		
Gross Weight (Kg)		3600	3820	5200	5800	



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