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Complete  
Solution for  
Tube and Pipe



**Booster Tube Benders**  
Bending + Cutting Automation

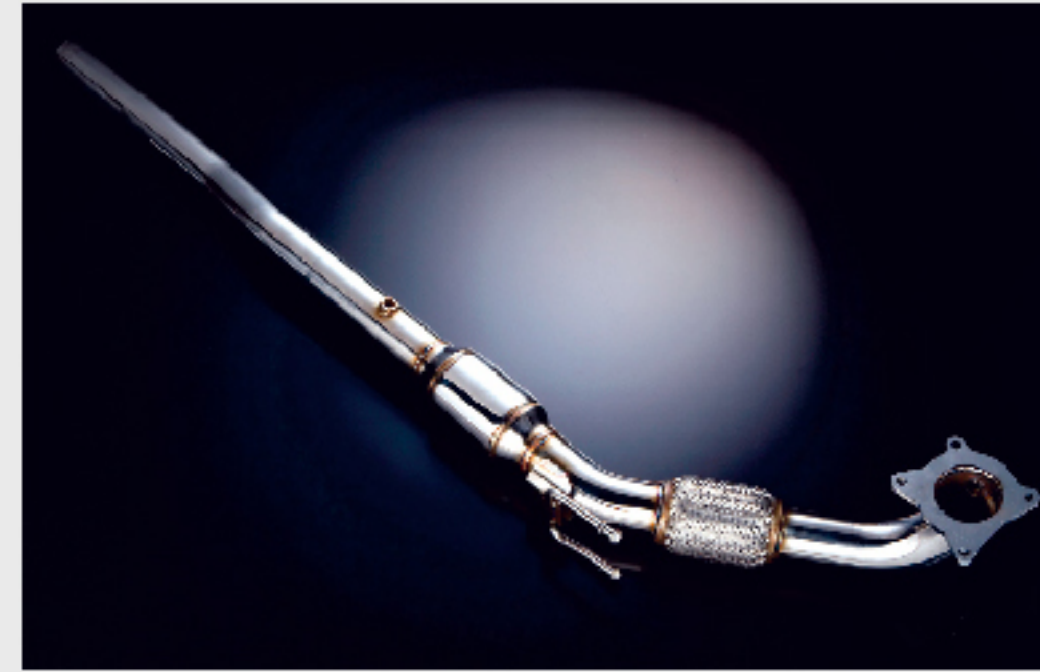


SR series - 4 ~ 7 Electric Axis + Small Radius Booster Bending + DBS Cutoff  
PT series - 4 ~ 12 Electric Axis + Wall Thinning Control + DBS Cutoff

# SR

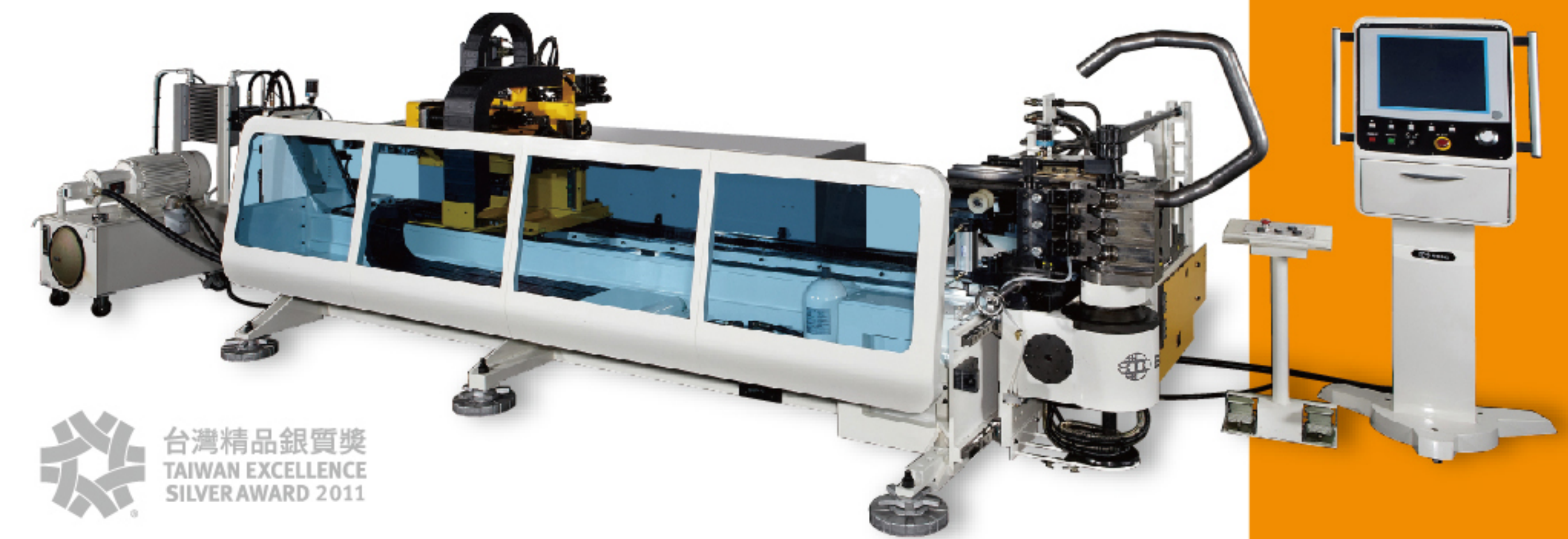
## Small Radius Booster Benders

SOCO introduces the most advanced and complete line of Booster Benders for the automotive industry. With machines ranging from O.D.50mm ~ 130mm, this line of booster benders fulfills all needs for the manufacturing of exhaust and tubular systems for cars, motorcycles, trucks and buses.



### SB-66X4A-3S-SR

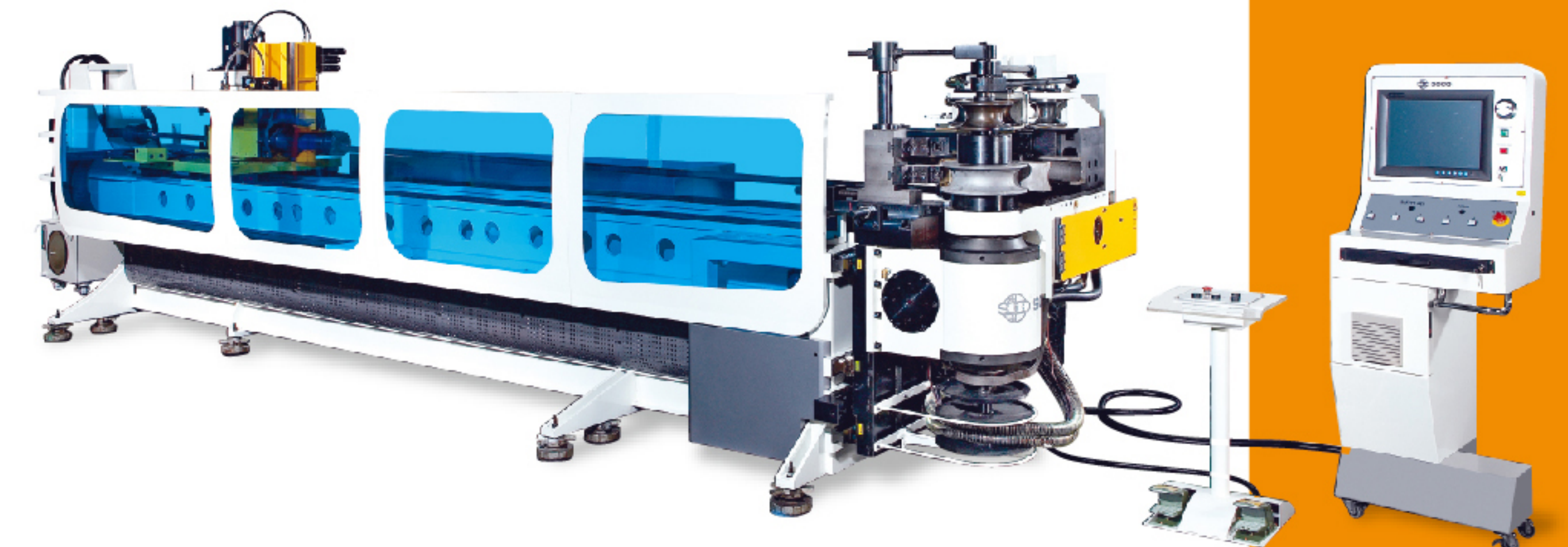
CNC tube bender with capacity up to  $\varnothing$  63.5mm, 4 electric axis and 1~ 3 stacks of tooling



台灣精品銀質獎  
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### SB-80X4A-3S-SR

CNC tube bender with capacity up to  $\varnothing$  76.2mm, 4 electric axis and 1~ 3 stacks of tooling



## SR series

### 4-7 Electric Axis + Small Radius Booster Bending + DBS Cutoff

- Ability to make 1D Bending + Draw Bending in the same machine
- Electric Servo Bending or Hydraulic Servo Bending
- Standard with 4 ~ 7 servo controlled axis
- May use from 1 ~ 6 bending stacks, applicable for complex, bend-in-bend parts
- On electric benders, uses SOCO patented **DGT** ( Direct Gear Transmission ) system for maximum bending efficiency and precision, minimizing transmission points and interference
- May use stackable, Multiple Pressure Dies ( 4 ~ 7 axis models )
- **2C** - SOCO DBS Cutting System ( Double Blade Shearing ) – Option for full automation and minimal cutting deformation, as well as smallest cutting radius to minimize waste between bends ( Optional )
- May program up to 4 different parts for Bending + Cutting on the same tube
- May use Internal or External collet system ( Optional )
- Built-in internet connection and self-diagnostics
- May be connected to SOCO Automatic Loading + Unloading Systems
- **IB** - Interference Zone Booster for short pieces ( Optional )

66mm range	80mm range	90mm range	130mm range
SB-66x4A-3S-SR (+2C)	SB-80x4A-3S-SR (+2C)	SB-90x4A-3S-SR (+2C)	SB-127x5B-2S-SR
SB-66x7A-MR-SR (+2C)	SB-80x7A-MR-SR (+2C)	SB-90x7A-MR-SR (+2C)	SB-130x5B-2S-SR

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

# PT

## Wall Thinning Control Booster Benders

This line of Booster Benders is specially used in the production of manifolds and converter inlet pipes within the automotive exhaust system, where the wall thinning ratio must be controlled to ensure that the tube can withstand the high system pressure.



Ø 50.8mm x 1.5t x 1D (Stainless)  
( 18% Wall Thinning Control )



### PT series

#### 12 Electric Axis + Wall Thinning Control + DBS Cutoff

- Booster benders capable of bending radiuses of 1xOD and controlling wall thinning during the bending process
- All Electric Bender models available ( 12 Electric Axis )
- Electric or Hydraulic Proportional Servo Bending
- Boosting power from 3 Tons ~ 22 Tons
- Enables Wall Thinning Rate down to 15% ~ 20% in 1D Bending
- On electric benders, this line uses SOCO patented **DGT** system ( Direct Gear Transmission ) for maximum bending efficiency and precision, minimizing transmission points and interference
- **2C** - SOCO DBS Cutting System ( Double Blades Shearing ) – Option for full automation and minimal cutting deformation, as well as smallest cutting radius to minimize waste between bends ( Optional )
- Standard with 4 ~ 12 servo controlled axis
- May use from 1 ~ 6 bending stacks, applicable for complex, bend-in-bend parts
- May use stackable, multiple pressure dies or single pressure die system ( Patented - 10~12 Axis model )
- Short / Last bend boosting system for parts which are bent close to the interference zones
- Clutch ( Automatic Transmission ) Feeding System, enabling shifting between high speed and high torque ( boosting ) for highest bending efficiency
- May program up to 4 different parts for bending + cutting on the same tube
- May use Internal or External collet system ( Optional )
- **IB** - Interference Zone Booster for short pieces ( Optional )

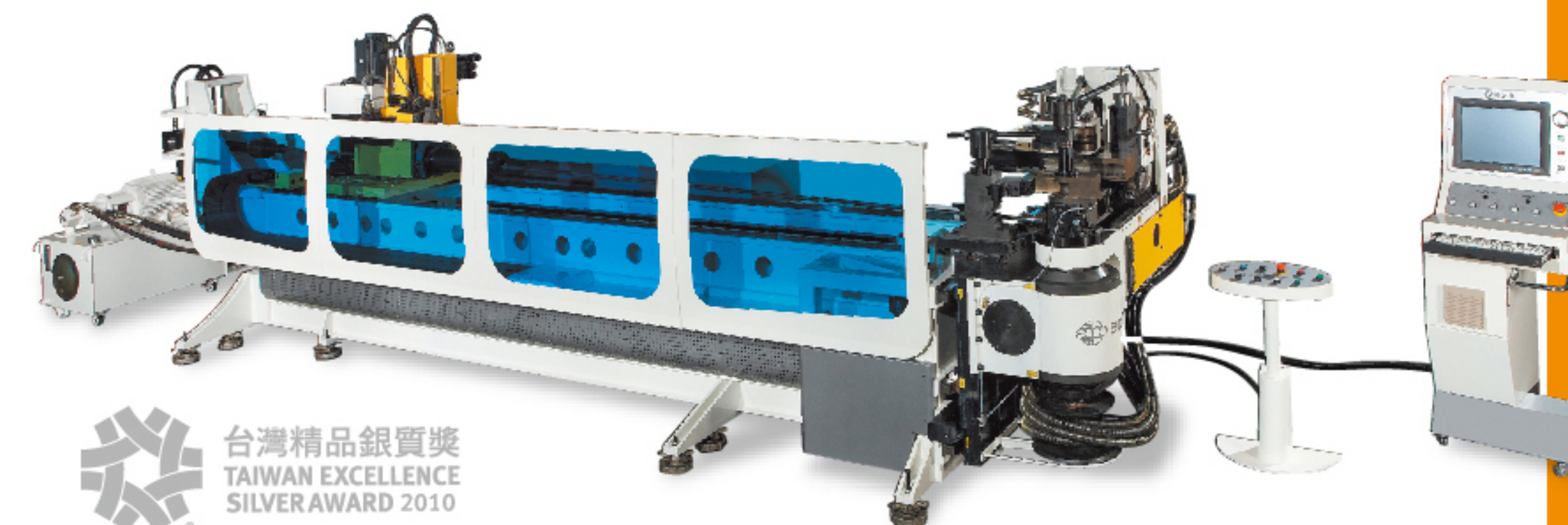
66mm range	80mm range	90mm range	130mm range
SB-66x4A-3S-PT(+2C)	SB-80x7A-MR-PT (+2C)	SB-90x10A-MR-PT (+2C)	SB-130x7B-2S-PT
SB-66x7A-MR-PT(+2C)	SB-80x10A-MR-PT (+2C)	SB-90x12A-MR-PT (+2C)	SB-130x8B-3S-PT
	SB-80x12A-MR-PT (+2C)		

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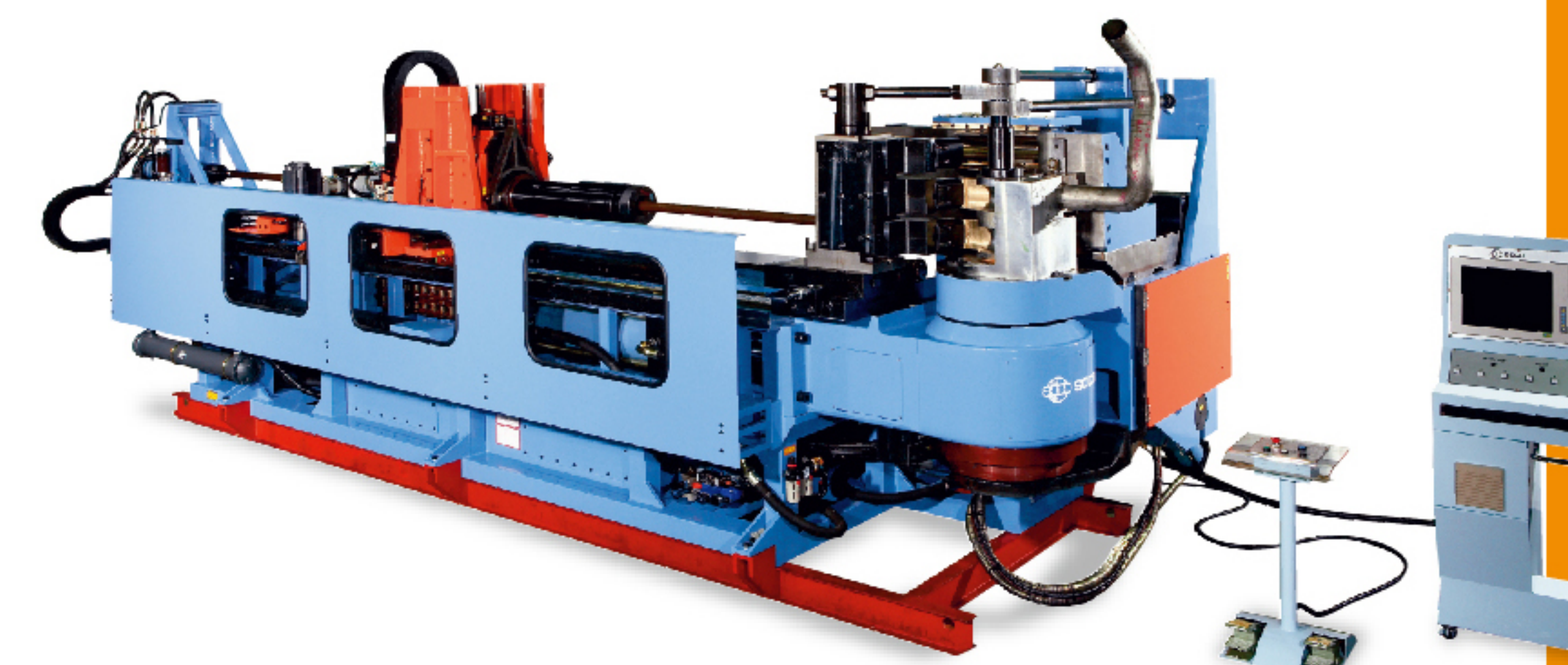
#### SB-66x7A-MR-PT+2C

CNC tube bender with capacity up to Ø63.5mm, 7 electric axis and 1~6 stacks of tooling. With SOCO DBS Cutting system



#### SB-80x12A-MR-PT+2C

CNC tube bender with capacity up to Ø 76.2mm, 12 electric axis and 1~ 6 stacks of tooling. With SOCO DBS Cutting system (All Electric Model)



#### SB-130x8B-3S-PT

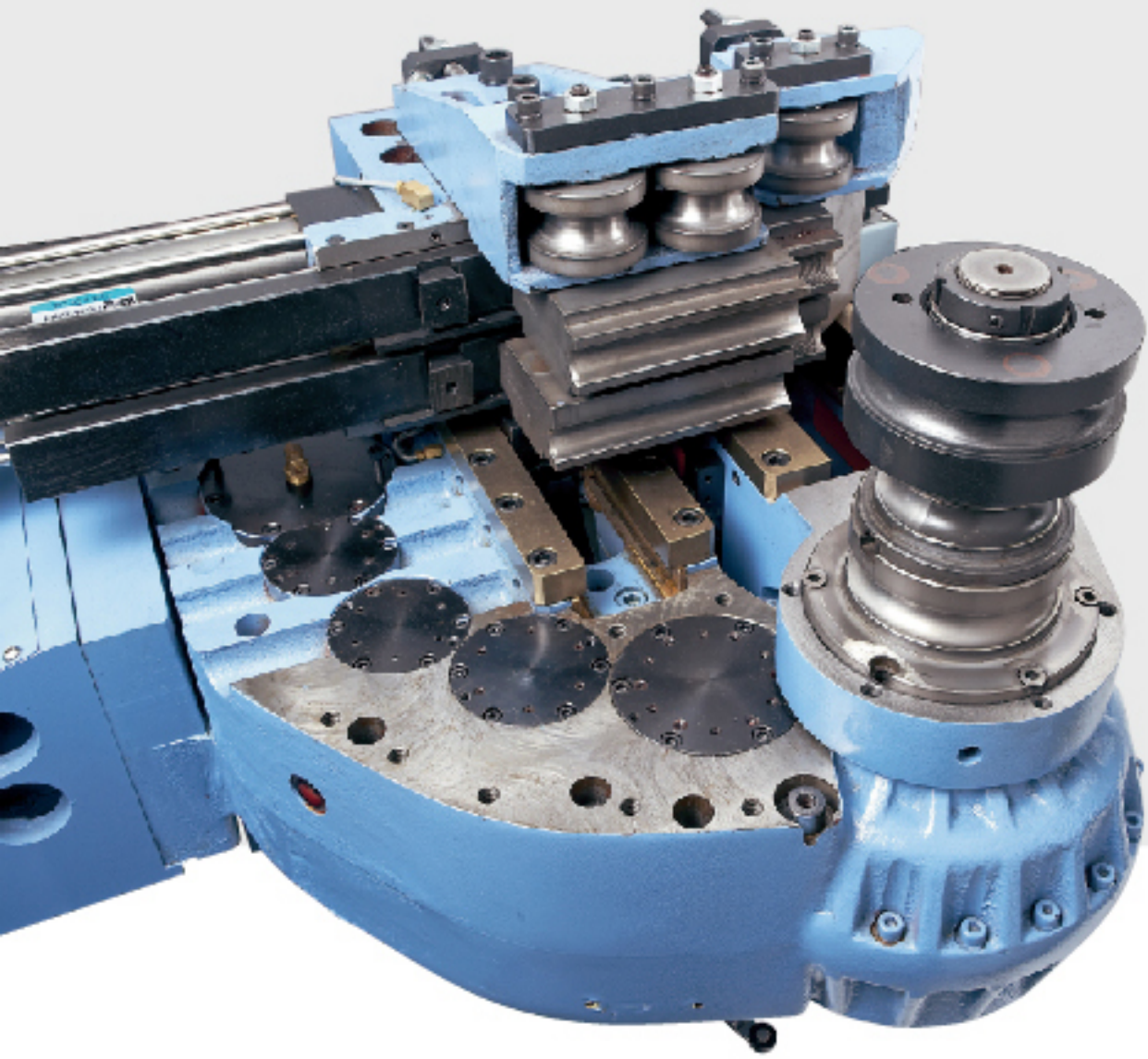
CNC Booster bender with capacity up to Ø 127mm, 8 axis and 1~ 3 stacks of tooling. Wall thinning control function.

## 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.

The Advantages of DGT

- Chain free transmission
- Built-in gearbox with direct connection to electric servo
- Highest transmission performance ( 90%+ efficiency ) against other gear based systems
- 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 (\*\*\*)
- Lowest maintenance



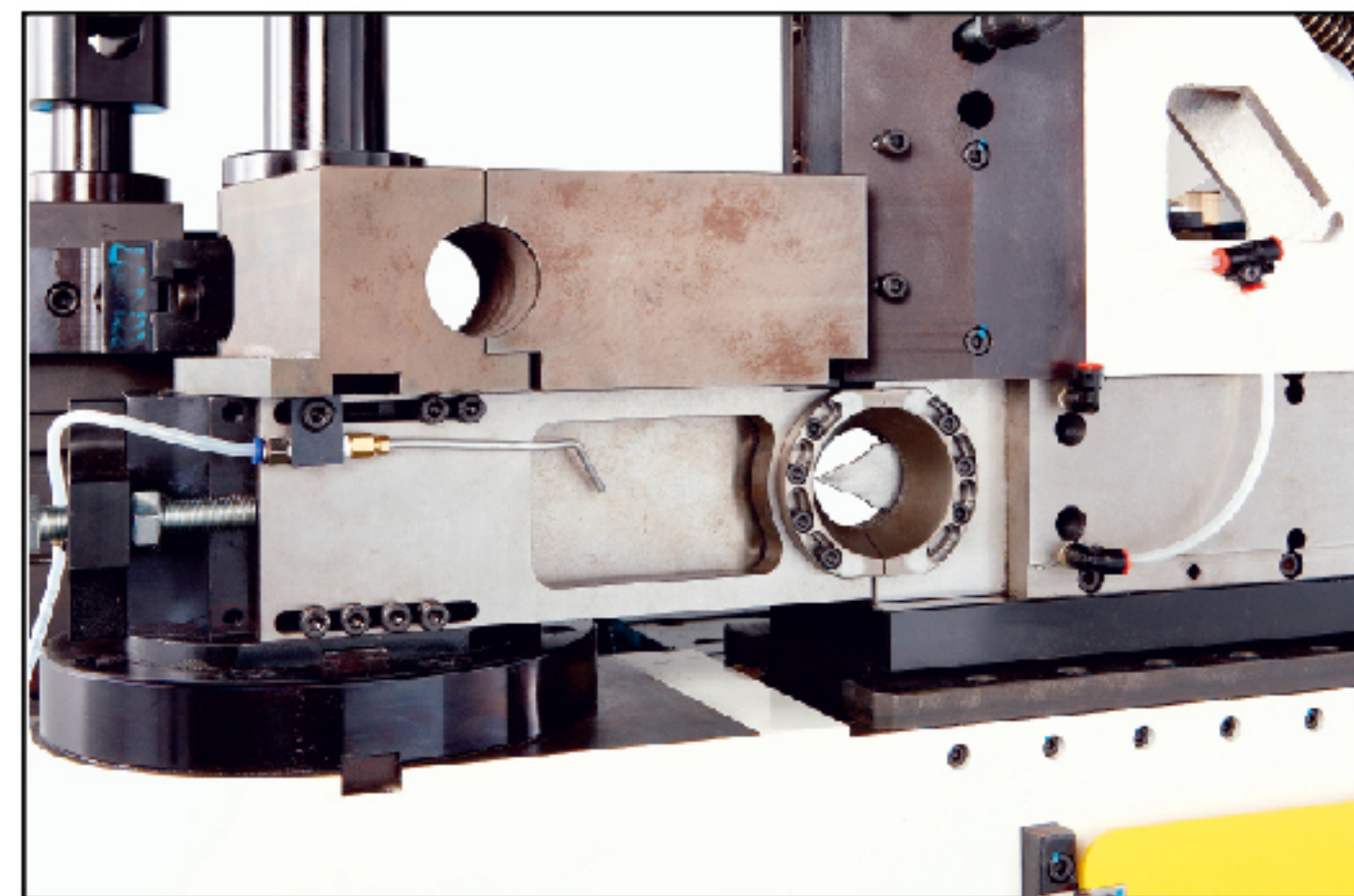
## 2C - The SOCO DBS System

This patented Double Blade Shearing System may be implemented on all SOCO Booster benders. Some of the features:

- The Double Blade Shearing System allows for automation of bending and cutting processes in one machine, from a single tube
- This system creates the least amount of cutting deformation, enabling the finished part to be immediately used for a subsequent process without having to calibrate or deburr it
- By bending and cutting continuously, there is virtually no waste between bends, saving vast amounts of material per year
- Savings on space, manpower, machinery and material, while increasing production rates
- Higher precision and quality in finished parts, as the bent part does not need to be manually taken to a separate machine to be cut into pieces on a semi-automatic saw
- The software allows for programming up 4 different parts on the same stock material, maximizing utilization of the complete tube.

## IB - Material Saving

Interference Zone Booster for short pieces



SOCO Patent - DBS System



DBS System - Perfect Cutting Face

Non-DBS System



SOCO Patent - IB for Material Saving

## Software and Operation Interface

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

Software Features:

- Bending + Cutting Interface
- Automatic Interference Zone Calculation
- Automatic Tube Length Calculation
- 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 / Teach Mode )
- Arc Radius calculator for large radius bending
- Carriage Booster 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

- SOCO 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

