

CNC BENDING MACHINE

— 2025 —



ROLL BENDING
TUBE BENDING
STRETCH BENDING
FREE BENDING

高谱[®]

Company Profile

G Clef Bending is established in 2012, specialized in providing profile bending solutions for customers all over the world.

Our business range covers roll bending, stretch bending, tube bending and free bending machines which is mainly applied in electric vehicles and aerospace.

Company Business Philosophy

Core Mission: Create more of the art of bending in this world!

Core Values: Integrity management, specialized technology and always be diligent!

Stability makes high efficiency !

The most important thing is to improve the consistence of the bending profiles and not relying on any operating experience.

Factors that affecting the stability of bending profiles:

unstable material properties, temperature, skill of operator and the performance of the machine.

Machine should adapt to above factors and output stable products to create more values for the users.

G-CNC-A12T

2D/3D Profile Roll Bending Machine

● Technical Data

Hydraulic Power: 12T
Y/Z-axis Repositioning Accuracy: 0.01mm
Y/Z-axis Stroke: 165/100mm
Shaft Diameter: 50mm
Shaft Length: 180mm
Torque: 1700N.m
X-shaft Distance: 180-380mm
Individual Roller Speed: 1-20rpm, CVT
Roller Drive: Asynchronous motor
Power Supply: 3-Phase, 380V, 50Hz, 8.8KVA
Weight: 1000Kg
Dimension(L*W*H): 1400*675*1360mm



Product Showcase



Code Jump

Application and Bending Capacity

Electric vehicles, rail transportation, escalators, aerospace, lighting, furniture, doors and windows, curtain wall, bathroom hardware and fitness equipment.

Profile max cross-sectional area: 60*60*3mm.

Min. bending radius: section height* 5-8.



G-CNC-A20T

2D/3D Profile Roll Bending Machine



● Technical Data

Hydraulic Power: 20T

Y/Z/U-axis Repositioning Accuracy: $\leq 0.01\text{mm}$

Y/Z/U-axis Stroke: 220/60mm

Shaft Diameter: 80mm

Shaft Length: 370mm

Upper/Lower Roller Torque: 1500/480N.m

X-shaft Distance: 240-590mm

Individual Roller Speed: 0-14rpm, CVT

Roller Drive: Servo motor

Power Supply: 3-Phase, 380V, 50Hz, 10.5KVA

Weight: 2400Kg

Dimension(L*W*H): 1824*1150*1640mm



Product Showcase



Code Jump

Application and Bending Capacity

Electric vehicles, rail transportation, escalators, aerospace, lighting, furniture, doors and windows, curtain wall, bathroom hardware and fitness equipment.

Profile max cross-sectional area: 100*100*3mm.

Min.bending radius: section height* 5-8.



G-CNC-A30T

2D/3D Profile Roll Bending Machine



• Technical Data

Hydraulic Power: 30T
Y/Z-axis Repositioning Accuracy: 0.01mm
Y/Z-axis Stroke: 300/100mm
Shaft Diameter: 105mm
Shaft Length: 325mm
Torque: 7100N.m
X-shaft Distance: 296-776mm
Individual Roller Speed: 1-15rpm, CVT
Roller Drive: Servo hydraulic motor
Power Supply: 3-Phase, 380V, 50Hz, 20KVA
Weight: 2300Kg
Dimension(L*W*H): 1665*1250*1750mm



Product Showcase



Code Jump

Application and Bending Capacity

Electric vehicles, rail transportation, escalators, aerospace, lighting, furniture, doors and windows, curtain wall, bathroom hardware and fitness equipment.

Profile max cross-sectional area: 100*100*3mm.

Min.bending radius: section height* 5-8.



G-CNC-A45T

2D/3D Profile Roll Bending Machine

• Technical Data

Hydraulic Power: 45T
Y/Z-axis Repositioning Accuracy: 0.01mm
Y/Z-axis Stroke: 420/100mm
Shaft Diameter: 105mm
Shaft Length: 380mm
Upper/Lower Roller Torque: 6500/ 3300N.m
X-shaft Distance: 387-807mm
Individual Roller Speed: 1-10rpm, CVT
Roller Drive: Servo hydraulic motor
Power Supply: 3-Phase, 380V, 50Hz, 38.5KVA
Weight: 3500Kg
Dimension(L*W*H): 1970*1300*2200mm



Product Showcase



Code Jump

Application and Bending Capacity

Electric vehicles, rail transportation, escalators, aerospace, lighting, furniture, doors and windows, curtain wall, bathroom hardware and fitness equipment.

Profile max cross-sectional area: 220*120*3mm.

Min. bending radius: section height* 5-8.

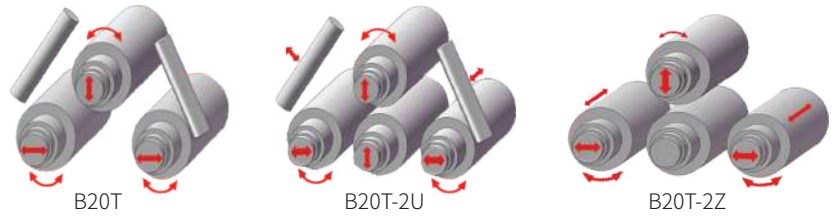


G-CNC-B20T

2D/3D Profile Roll Bending Machine

• Technical Data

Hydraulic Power: 20T
Y/U-axis Repositioning Accuracy: 0.01mm
Y/U-axis Stroke: 255/100mm
Shaft Diameter: 80mm
Shaft Length: 250mm
Torque: 3396N.m
X-shaft Distance: 278-538mm
Individual Roller Speed: 0-14rpm, CVT
Roller Drive: Servo motor
Power Supply: 3-Phase, 380V, 50Hz, 10.3KVA
Weight: 1200Kg
Dimension(L*W*H): 1249*1134*1432mm



Product Showcase



Code Jump

Application and Bending Capacity

Electric vehicles, rail transportation, escalators, aerospace, lighting, furniture, doors and windows, curtain wall, bathroom hardware and fitness equipment.

Profile max cross-sectional area: 80*80*3mm.

Min. bending radius: section height* 5-8.



G-CNC-B30T

2D/3D Profile Roll Bending Machine

• Technical Data

Hydraulic Power: Max 30T
Y/U-axis Repositioning Accuracy: 0.01mm
Y/U-axis Stroke: 330/100mm
Shaft Diameter: 80mm
Torque: 6600N.m(upper/lower roller: 3400/1600N.m)
Shaft Length: 315mm
X-shaft Distance: 280-762mm
Individual Roller Speed: 1-14rpm, CVT
Roller Drive: Servo hydraulic motor
Power Supply: 3-Phase, 380V, 50Hz, 20KVA
Weight: 2400Kg
Dimension(L*W*H): 1575*1400*950mm



Product Showcase



Code Jump

Application and Bending Capacity

Electric vehicles, rail transportation, escalators, aerospace, lighting, furniture, doors and windows, curtain wall, bathroom hardware and fitness equipment.

Profile max cross-sectional area: 100*100*3mm.

Min. bending radius: section height* 5-8.



G-CNC-B45T

2D/3D Profile Roll Bending Machine



Technical Data

Hydraulic Power: 45T
Y/U-axis Repositioning Accuracy: 0.01mm
Y/U-axis Stroke: 500/150mm
Shaft Diameter: 105mm
Shaft Length: 330mm
Torque: 12000N.m
X-shaft Distance: 400-1510mm
Individual Roller Speed: 1-10rpm, CVT
Roller Drive: Servo hydraulic motor
Power Supply: 3-Phase, 380V, 50Hz, 31KVA
Weight: 3000Kg
Dimension(L*W*H): 2170*2075*1800mm



Product Showcase



Code Jump

Application and Bending Capacity

Electric vehicles, rail transportation, escalators, aerospace, lighting, furniture, doors and windows, curtain wall, bathroom hardware and fitness equipment.

Profile max cross-sectional area: 150*100*3mm.

Min. bending radius: section height* 5-8.

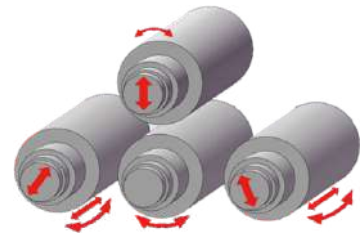


G-CNC-F25T

3D Profile Roll Bending Machine

• Technical Data

Hydraulic Power: 25T
1-9 Shaft Repositioning Accuracy: 0.01mm
Individual Roller Speed: 1-11rpm, CVT
Shaft Diameter: 100mm
Shaft Length: 220mm
Roller Drive: 15KW
Torque: 5510N.m
Power Supply: 3-Phase, 380V, 50Hz, 21KVA
Weight: 4800Kg
Dimension(L*W*H): 2700*2200*2200mm



Product Showcase



Code Jump

Application and Bending Capacity

Electric vehicles, rail transportation, escalators, aerospace and ships.

Profile max cross-sectional area: 80*80*3mm.

Min. bending radius: section height * 5-8.



G-CNC-X25T

14 Axis 3D Profile Roll Bending Machine

● Technical Data

Hydraulic Power: 25T

Profile cross-sectional area: 85x85mm (Max.)

Axis Repositioning Accuracy : $\pm 0.01\text{mm}$

Upper/Lower Roller Torque: 5000/3500N.m

Upper/Lower Shaft Diameter: 110/80mm

Shaft Length: 220mm

X1 Stroke: 170mm

X2, X3 Stroke: 200mm

X4, X5 Roll Speed: 0-10rpm, Servo control

X6, X7 Stroke: 80mm

X8, X9 Stroke: 150mm, Angle $\pm 15^\circ$

X10-X14 Anti-twist Device: In/Out stroke 60mm,
L/R stroke 150mm,
Lifting stroke 150mm,
Swing angle $\pm 90^\circ$,
Rotate angle $\pm 360^\circ$

Product Showcase



Code Jump



Application and Bending Capacity

Electric vehicles, rail transportation, aerospace and ships.



G-CNC-T30T

3D Profile Roll Bending Machine

● Technical Data

Hydraulic Power: $\leq 35T$

Axis Repositioning Accuracy: $\leq 0.03mm$

Upper/Lower Roller Torque: 3200/1600N.m

shaft Distance: 310-910mm

Shaft Length: 220mm

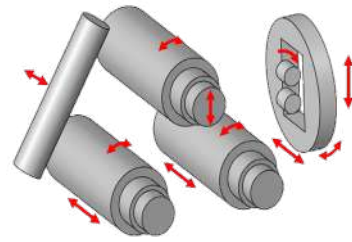
X1, X3 Roll Speed: 0-10rpm, Servo control

X4 Y Axis Stroke: 400mm

X5, X6 X Axis Lifting: 40mm

X7 Support Roller Lifting: 140mm

X8-X11 Anti-twist Device: In/Out stroke 230mm,
Lifting stroke 225mm,
Swing angle 60° ,
Rotate angle 360°



Product Showcase



Code Jump

Application and Bending Capacity

Electric vehicles, rail transportation, escalators, aerospace, lighting, furniture, doors and windows, curtain wall, bathroom hardware and fitness equipment.

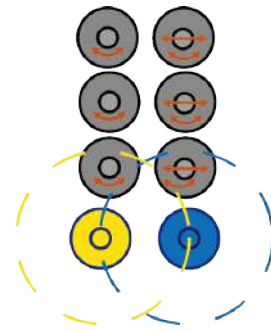


G-CNC-Y08T

2D Profile Roll Bending Machine

● Technical Data

Hydraulic Power: 8T
Profile cross-sectional area: 50*50mm (Max.)
Repositioning Accuracy: 0.01mm
Shaft Diameter: 35mm
Shaft Length: 82mm
Swing Angle: $\pm 100^\circ$
Bending Roller Stroke: 160mm
Torque: 2350 N.m
Dimension(L*W*H): 2237*1630*1784mm



Product Showcase



Code Jump

Application and Bending Capacity

Electric vehicles, rail transportation, escalators, aerospace, lighting, furniture, doors and windows, curtain wall, bathroom hardware and fitness equipment.

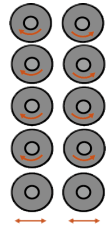


G-CNC-S10T-S

Profile Reversal Roll Bending Machine

Technical Data

Hydraulic Power: 10T
Profile cross-sectional area: 50*50mm (Max.)
Repositioning Accuracy: 0.01mm
Shaft Diameter: 35mm
Shaft Length: 82mm
Bending Roller Stroke: 160mm

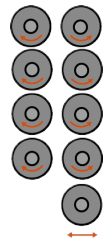


G-CNC-S10T-D

Profile Roll Bending Machine

Technical Data

Hydraulic Power: 10T
Profile cross-sectional area: 50*50mm (Max.)
Repositioning Accuracy: 0.01mm
Shaft Diameter: 35mm
Shaft Length: 82mm
Bending Roller Stroke: 160mm



Product Showcase

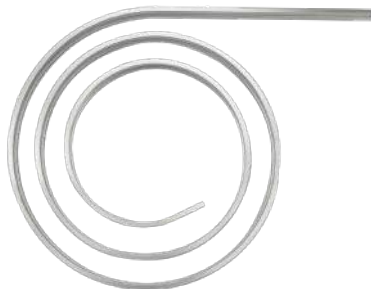
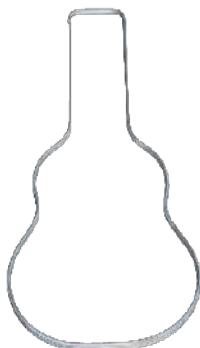


Code Jump

Application and Bending Capacity

Electric vehicles, rail transportation, escalators, aerospace, lighting, furniture, doors and windows, curtain wall, bathroom hardware and fitness equipment.

Profile max cross-sectional area: 50*50*3mm.
Min. arc radius: section height * 5-8.



Operation System PC10

Independent Research and Development

1. Input CAD or STP drawing to generate program automatically.
2. Very easy to achieve the desired arc radius by entering values accordingly.
3. One-time or multiple bending for Von Karman curve, ellipse and spiral creation.
4. Bending system can be operated offline and connected to the EMS system.
5. 17-inch touch screen, friendly and succinct Man-machine dialogue interface.



Arc Meter ARC50

Radius measuring tool

Model No.	Min.Radius	Max.Radius
ARC50/130	92mm	2000mm
ARC50/300	457mm	11000mm
ARC50/500	1257mm	30000mm



GR-CNC-A50D

12-axis CNC Tube Bending Machine

• Technical Data

Bending Capacity: $\phi 50 \times 3\text{mm}$

Bending Way: 1. single radius with single layer tooling

2. multi-radius with single layer tooling (like ellipse)

3. Eccentric bending

Bending Radius: max: unlimited, min: 2 times of profile diameter

Bending Angle: any

Tube Feeding Length: 3500mm

File Storage Capacity: over 10,000,000 programs

Programming: 1. Input DXF or STP drawing

2. Enter values accordingly



Product Showcase



Code Jump

Application and Bending Capacity

Electric vehicles, rail transportation, escalators, aerospace, lighting, furniture, doors and windows, curtain wall, bathroom hardware and fitness equipment.



GR-CNC-A89D

12-Axis Profile Tube Bending Machine

• Technical Data

Bending Capacity: $\phi 89 \times 3\text{mm}$

Bending Way: 1. single radius with single layer tooling

2. multi-radius with single layer tooling (like ellipse)

3. Eccentric bending

Bending Radius: max: unlimited, min: 2 times of profile diameter

Bending Angle: any

Tube Feeding Length: 3500mm

File Storage Capacity: over 10,000,000 programs

Programming: 1. Input DXF or STP drawing

2. Enter values accordingly



Product Showcase



Code Jump

Application and Bending Capacity

Electric vehicles, rail transportation, escalators, aerospace, lighting, furniture, doors and windows, curtain wall, bathroom hardware and fitness equipment.



GR-CNC-A114D

12-Axis Profile Tube Bending Machine



Product Showcase



Code Jump

Application and Bending Capacity

Medical apparatus and instruments, rail transportation, aerospace and ships.

Cross-sectional area: 270*122*21mm

Cross-sectional area: 135*110*15.5mm



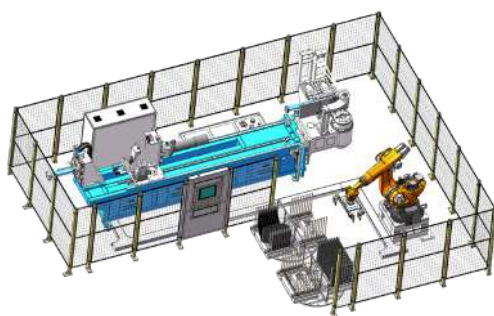
Axis Parameter(GR-CNC-A89D for Ref.)

Servo control, repositioning Accuracy $\leq 0.02\text{mm}$.

*All axes can move independently or linkage in any combination.

Axis	Stroke	Speed	Pressure/Torque
X1, Material Feeding(Y)	$\leq 5200\text{mm}$	$\leq 250\text{mm/s}$	25000N
X2, Material Rotation(B)	$\pm 360^\circ$	$\leq 120^\circ/\text{s}$	500N.m
X3, Bending(C)	190°	$\leq 10^\circ/\text{s}$	31640N.m
X4, Nose Lateral Movement(X)	$\leq 500\text{mm}$	$\leq 80\text{mm/s}$	250000N
X5, Nose Longitudinal Movement(G)	$\leq 500\text{mm}$	$\leq 80\text{mm/s}$	110000N
X6, Bending Die Rotation	Unlimited	$\leq 10^\circ/\text{s}$	1700N.m
X7, Clamp Die	250mm	$\leq 95\text{mm/s}$	500000N
X8, Clamping Pressure Die	250mm	$\leq 95\text{mm/s}$	500000N
X9, Pressure Die Displacement	$\leq 650\text{mm}$	$\leq 250\text{mm/s}$	150000N
X10, Mandrel Displacement	$\leq 600\text{mm}$	$\leq 100\text{mm/s}$	100000N
X11, Vertical Material Supporting Bar	$\leq 200\text{mm}$	$\leq 100\text{mm/s}$	4000N
X12, Tube Clamping	$\leq 20\text{mm}$	$\leq 100\text{mm/s}$	1000N

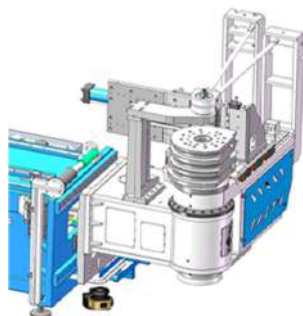
Tube Bending Work Station



3D Digital Scanner



Eccentric Bending Tooling



Checking Fixture



Operation System PC30

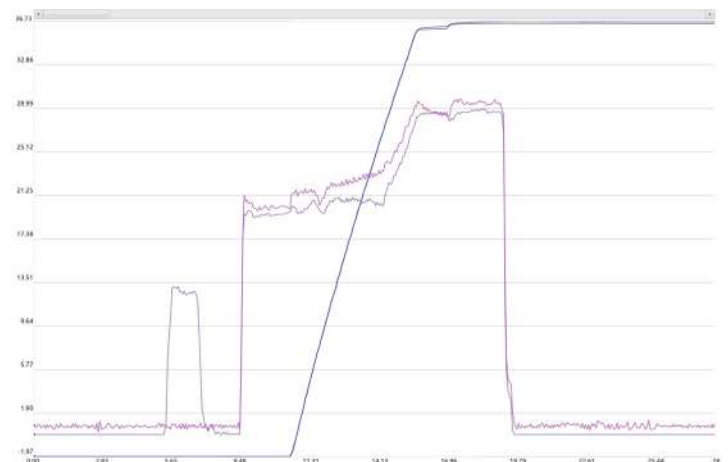
Independent Research and Development

1. 12 axes all driven by servo, all motions are digitalized.
2. Unique Eccentric design for tooling set, multi-radius bending can be finished on a one stack tooling, max arc radius reaches to 5000mm.
3. Clamping pressure feedback in real time.
4. Easy to learn, no experience is required for operators.



Cycle Time Curve

Curve to show all the trends:
profile elongation, stretching power, bending
angle, working pressure, temperature...



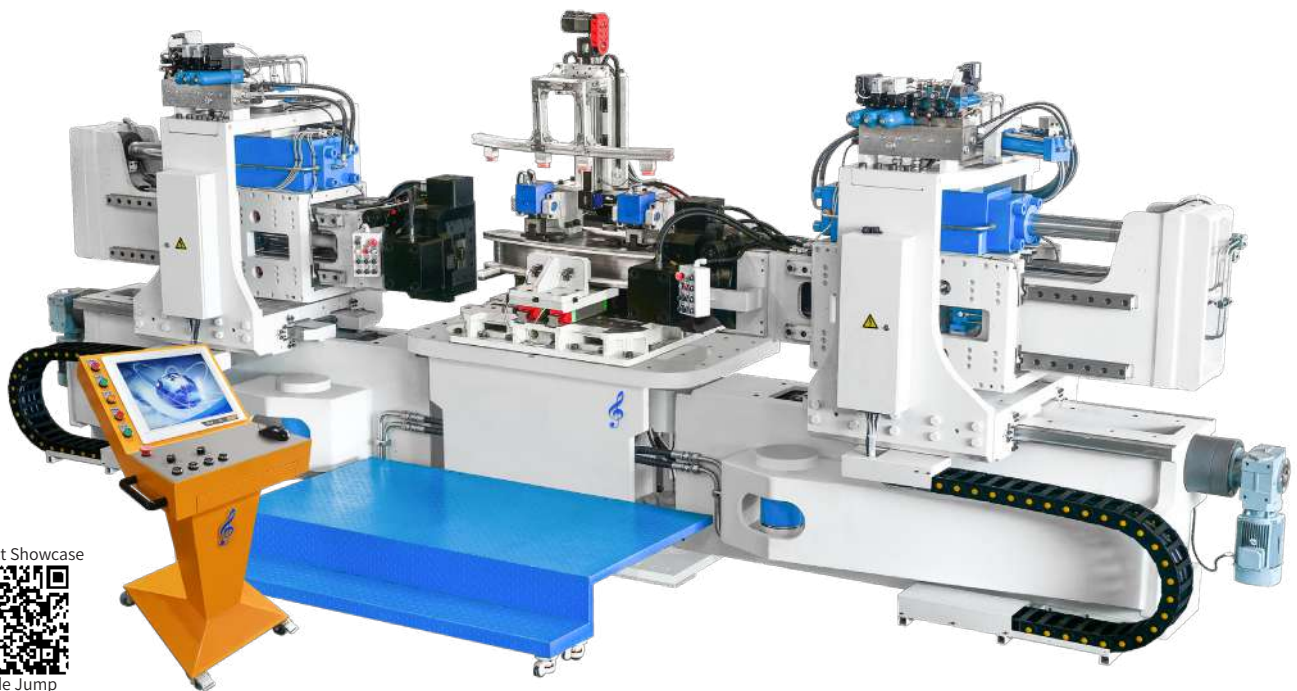
Bumper Beam Stretch Bending Machine

● Technical Data

Model: SFM-CNC-B2D55T-2500
Stretch Power: 35T, 55T, 85T
Max. Profile Length: 1.8m
Position Accuracy: 0.01mm
Controllable Stretch Power: 0.5 to 85T
Jaw Position Reset: Servo control
Mandrel Stroke: 800mm(customizable)

● Production Data

Cycle Time: 35-55s
Qualification Rate: 99%
Tolerance: datum points $< \pm 0.5\text{mm}$, Flatness $< \pm 0.5\text{mm}$
Positioning: End induction or positioning hole by drilling
Clamping Area Length: 30-80mm
Depth of Clamping Scratch: 0.3-0.5mm
Working Time: 7*24h



Product Showcase



Code Jump

Application

Bumper beams



Universal Stretch Bending Machine

● Technical Data

Model: SFM-CNC-A2D55T-4500

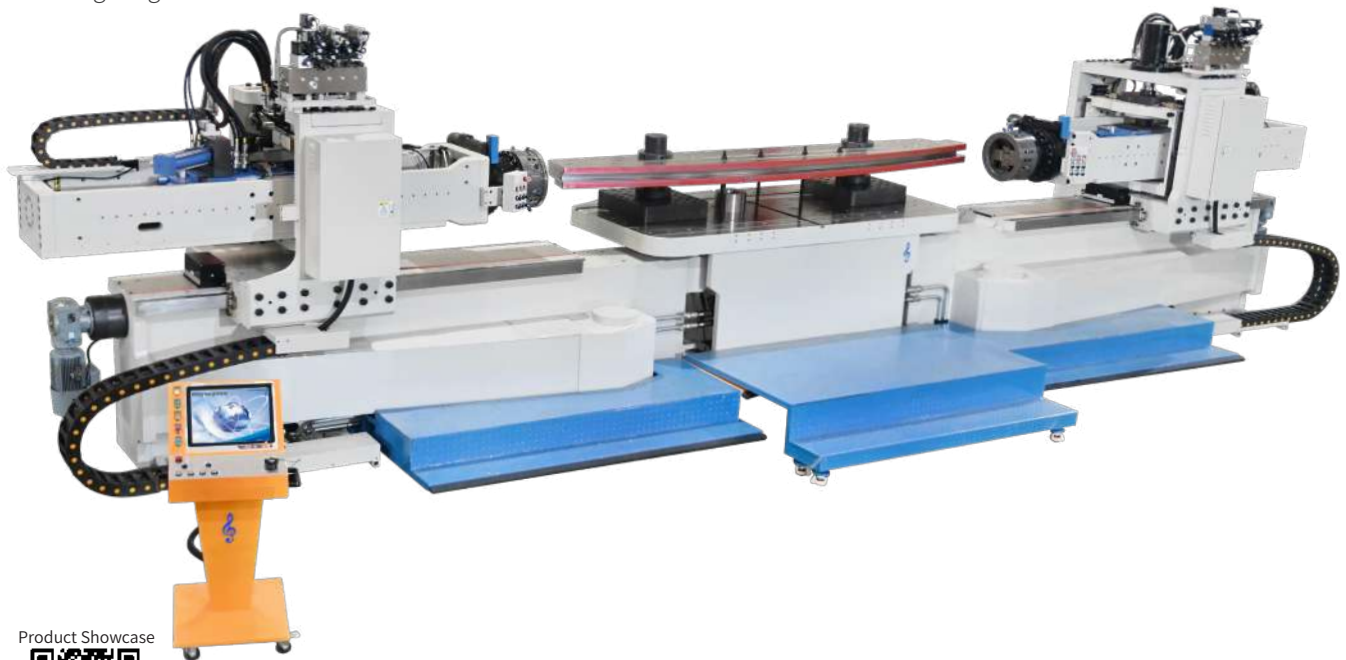
Stretch Power: 20T, 35T, 55T, 85T, 100T and 120T

Max. Profile Length: 4.5m, 6m, 8.5m, 11m and 13m

Position Accuracy: $\pm 0.01\text{mm}$

Jaw Rotating Torque: 6600N.m

Jaw Lifting Height: 200mm



Product Showcase



Code Jump

Application

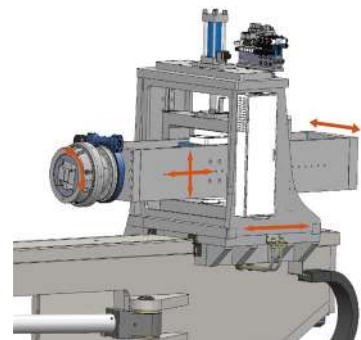
Aerospace, curtain wall and escalator.



Round Jaw



Square Jaw



Frame construction

3D Stretch Bending Machine

● Technical Data

Model: SFM-CNC-A3D20T-3500
Stretch Power: 2T, 8T, 20T, 35T
Max. Profile Length: 3m
Position Accuracy: $\pm 0.01\text{mm}$
Controllable Stretch Power: 0.5 to 35 T
Jaw Position Reset: Servo Control
Mandrel Stroke: 800mm (customizable)

● Production Data

Cycle Time: 20-30s
Qualification Rate: 99%
Tolerance: datum points $< \pm 0.5\text{mm}$
Positioning: positioning hole by drilling
Clamping Area Length: 30-50mm
Working Time: 7*24h



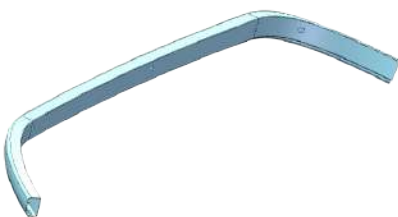
Product Showcase



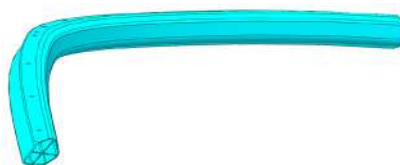
Code Jump

Application

Electric vehicles and aerospace.



3D Roof Rack

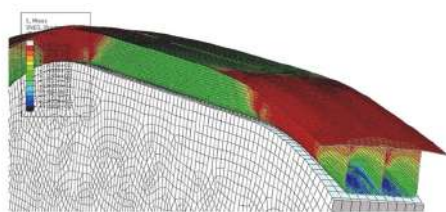


A Pillar

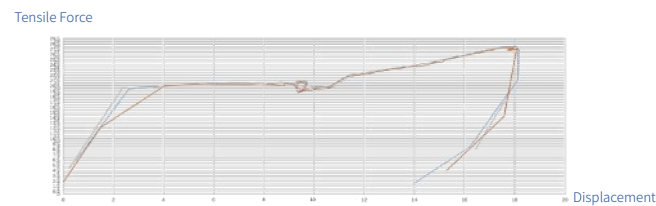


Window Channel

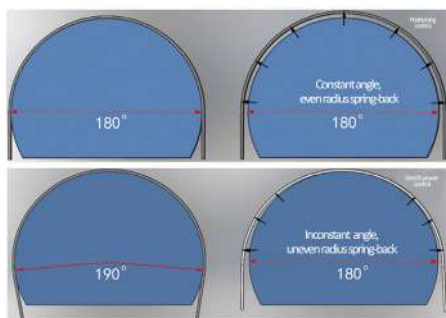
CAE Analysis



Stress-strain Curve

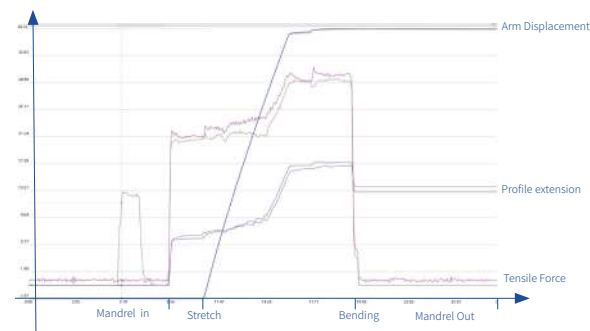


Spring back Control

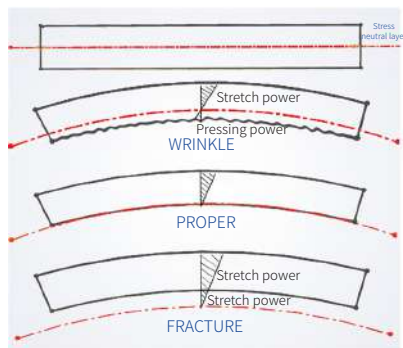


Cycle Time Curve

Changes for profile elongation, bending angle and bending force in a cycle time.

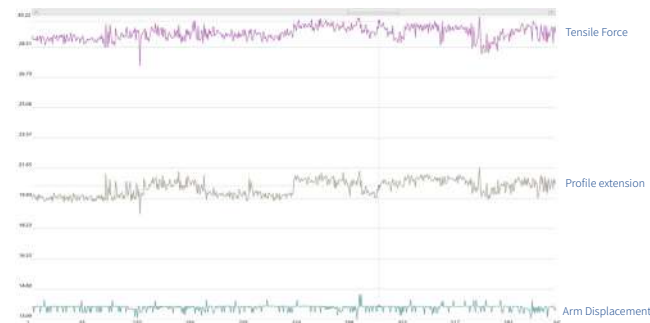


Neutral Line Control



General Trend

The variation pattern of all parameters for machine and profile.



Checking Method

- 1. Checking fixture for detecting the curvature of profiles
- 2. Digital inspection, scanning contours and comparing with original files
- 3. Flexible Coordinate Inspection Tool, High Precision Contact Inspection



Standard Checking Fixtures



Handheld 3D Scanner

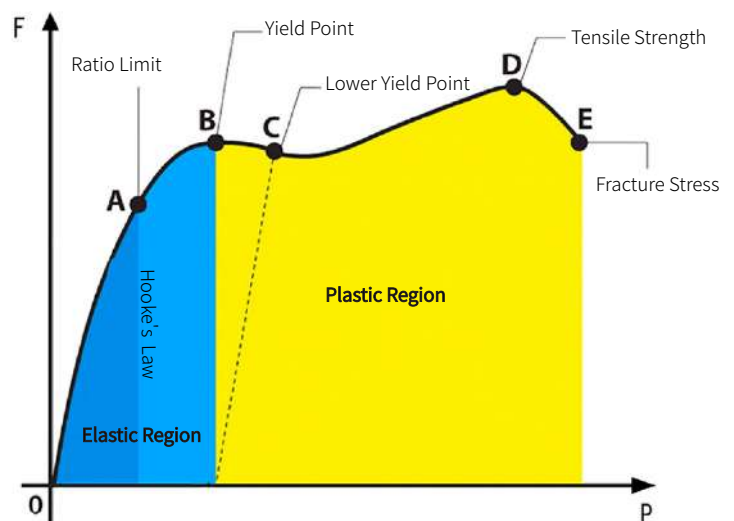
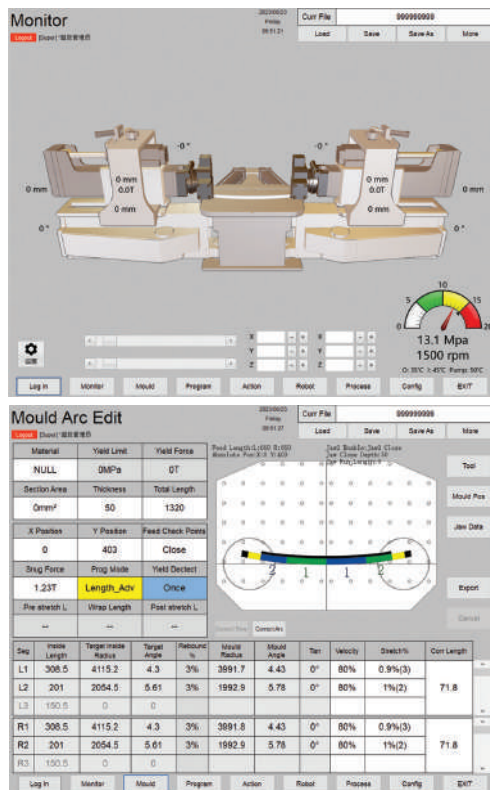


Flexible Coordinate Inspection Tool

Operation System PC20

Independent Research and Development

1. More than 16 axes servo control system to control the tensile force and displacement accurately in real time.
2. Tension mode and displacement mode are both available.
3. The profile yield point is detected automatically and bending parameter is self-adjust.
4. The system is able to read STP drawing and generate tooling parameter automatically.
5. No experience is needed for operator. All bending steps are digitalized and graphical.

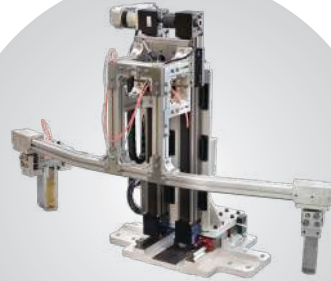


Additional Components

- User can design mould/ tooling independently.
- Tooling as a whole set which can be replaced partially or integrally.
- Tooling deviation can be compensated by adjusting the spring back rate from the program.



Tooling Core



Gripper



Mandrel



Square Jaw



Tooling

Auto-Mandrel
CNC Drilling
Dust Collection
Reversal Bending

Laser Marking
Profile Automatic Centering
Anti-Proofing

Stretch Bending Work Station

Cycle Time: $\leq 36s$

Qualification Rate: 99%

Working Capacity: 7*24h

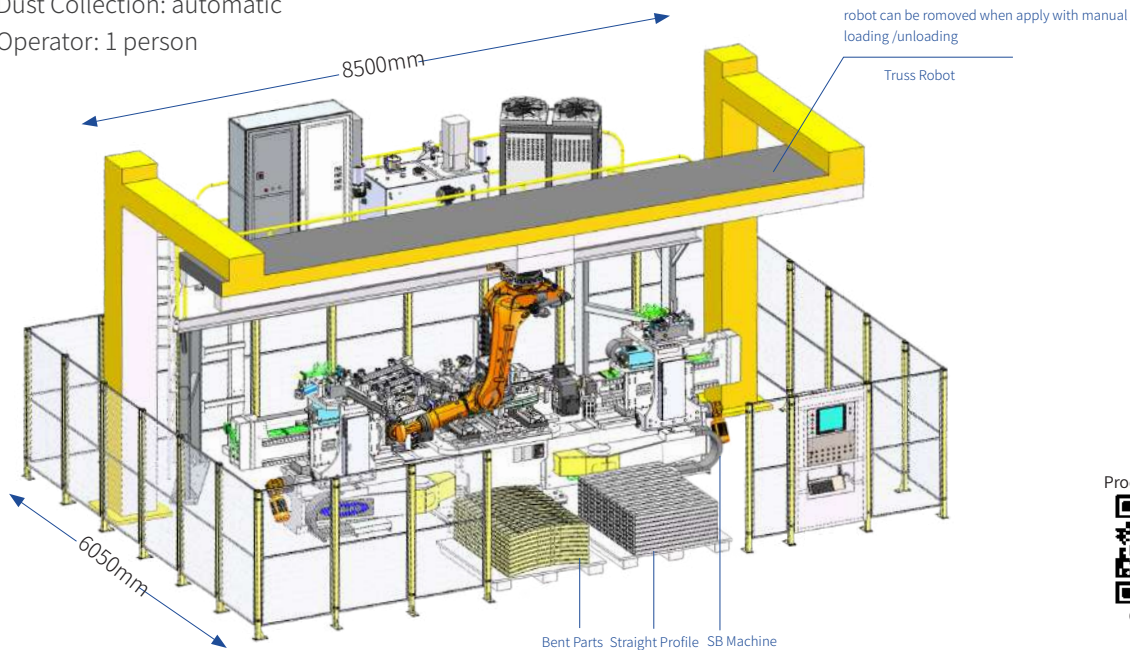
Tooling Changing: 60-120min

Dust Collection: automatic

Operator: 1 person

1. Compliant with CMK standards

2. Manual or robot loading and unloading are both available



Product Showcase



Code Jump

Automotive Bumper Stretch Bending And CNC Drilling Work Station

Compliant with CMK standards

Cycle Time: $\leq 34s$

Qualification Rate: 99%

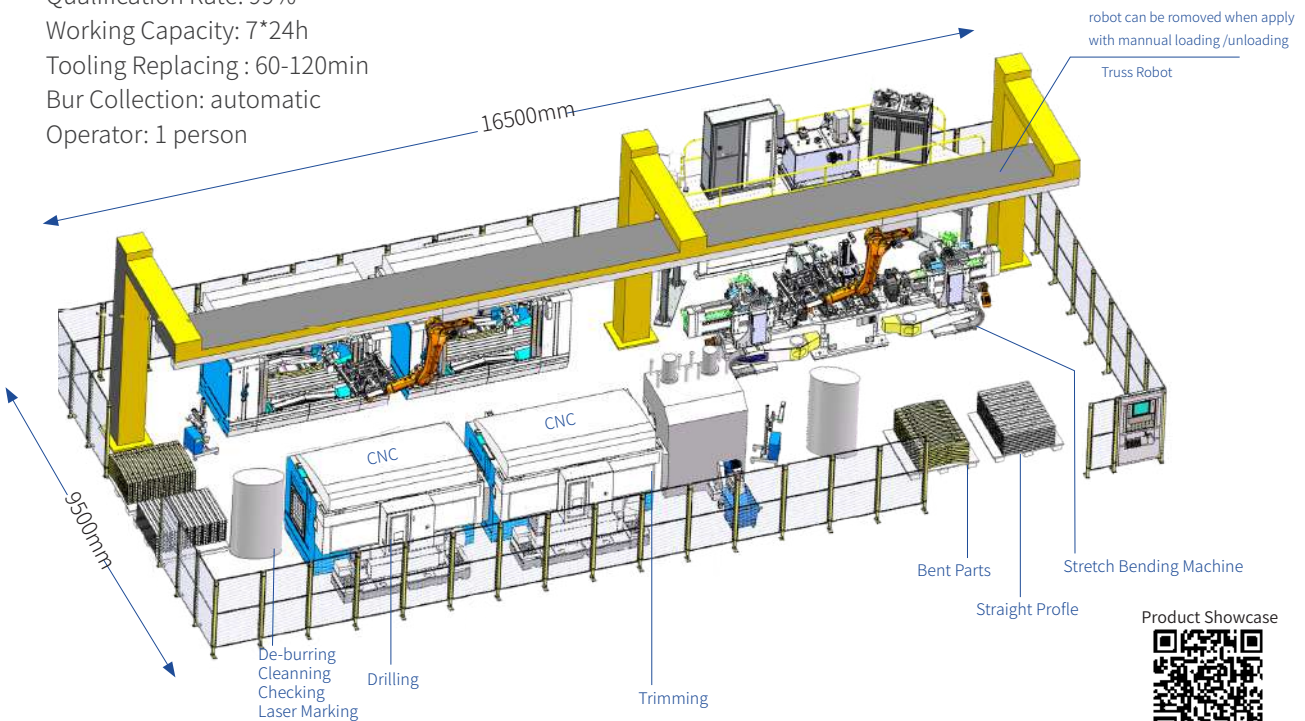
Working Capacity: 7*24h

Tooling Replacing : 60-120min

Bur Collection: automatic

Operator: 1 person

robot can be removed when apply with manual loading /unloading



Product Showcase



Code Jump

Free Bending

● Technical Data

Axis Nos.	Spec Model	-30	-60	-90
		Bending Capacity		
3	FB3	φ6-32mm	φ20-60mm	φ50-90mm
5	FB5			
6	FB5			
Power supply	3P 380V	100A	170A	200A
Net Weight		6.2T	9T	12.5T

Min. Bending Radius: 3D (T=3, carbon steel)
Material: Steel, aluminum profile etc.
Feeding Speed: 200mm/s
Bending Angle: ±180°
Max. Length: 4000mm, 2000-6000mm optional
Programming: by reading STEP drawing
Control System: G Clef



Application

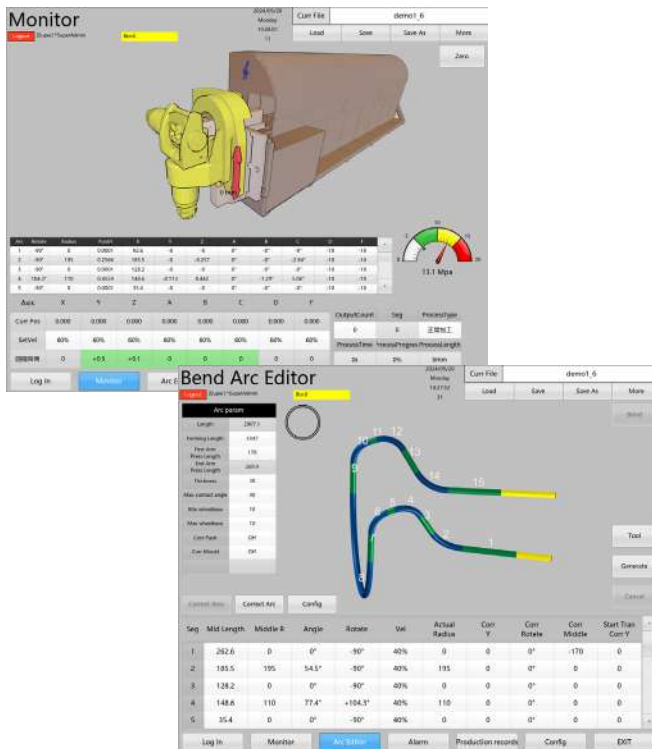
Aerospace, furniture, curtain wall and art decoration.



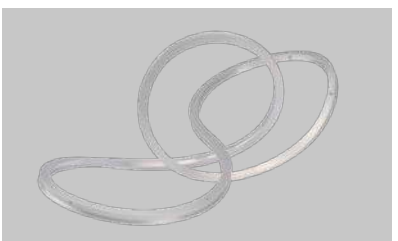
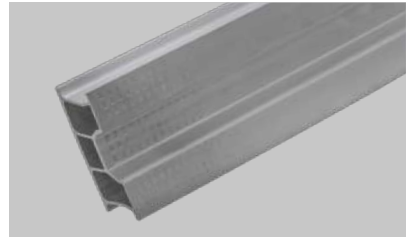
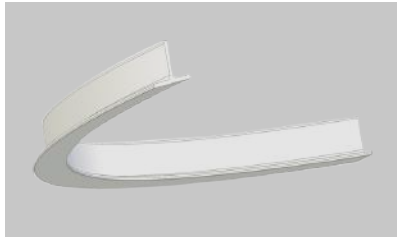
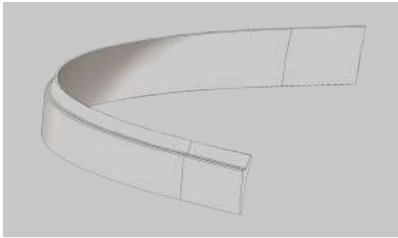
Operation System PC40

Independent Research and Development

1. System can read STP 3D drawing and generate program automatically.
2. All bending steps are digitalized and graphical.
3. All positions are adjustable, very easy to debug.
4. Good consistency of bending workpiece profile to reduce material waste.
5. No experience is needed for operator.



Sample Showcase



owners

Certificates



Customer List



All logo icons belong to the brand



Registered / Enregistré 11/09/2023

No 018814936

**EUROPEAN UNION INTELLECTUAL PROPERTY
OFFICE
CERTIFICATE OF REGISTRATION**

This Certificate of Registration is hereby issued for the European Union trade mark identified below. The corresponding entries have been recorded in the Register of European Union trade marks.

**OFFICE DE L'UNION EUROPÉENNE POUR LA
PROPRIÉTÉ INTELLECTUELLE
CERTIFICAT D'ENREGISTREMENT**

Le présent Certificat d'Enregistrement est délivré pour la marque de l'Union européenne identifiée ci-joint. Les mentions et les renseignements qui s'y rapportent ont été inscrits au Registre des Marques de l'Union Européenne.



*The Executive Director / Le Directeur
exécutif*

Christian Archambeau



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