



THE GLOBAL LEADER IN TUBE AND PIPE BENDING

Pines specializes in custom Tube and Pipe bending machinery. Pines provides tooling, process technology, and tube bending solutions across a wide variety of industries.



All New CNC Tube Bending Machines

So what's new?

To meet the demand of the modern tube bender, Pines has designed a new range of CNC tube benders. Pines is the leader in rugged and reliable machinery. The new designs continue these vital benchmarks such as power, precision, speed and improved the performance to provide users with enhanced capabilities to match the demands of the 21st century. Now, Pines has extended the choice specifications and options while improving precision and reliability.

CNC 250 HD with base extension, Mandrel extractor, pipe loader and PDA Booster



More Rigid Bending Head

The distance between the bending head's upper and lower bearings is increased by 33%. The change provides greater stability of the bend die when bending heavy wall pipe or exotic material used in aerospace.



Wider Arms

The stationary arm is 50% wider to provide a more stable platform for pressure die boosting.

Larger Central Spindle

The bearings that support the spindle within the bend head are 16% larger in diameter.

The spindle has a 35% larger cross section. To provide for larger spindle bearings and increased accuracy of the bending function.



Rigid Tool Mount

Reduced the distance from the upper bearing to the center line of the tube by 33%. The change provides additional stability of the bend die when bending heavy wall pipe or exotic material used in aerospace.



Heavy Duty Bending Arms

Both the swing arm and stationary arms are built from one piece vertical members which are 200% thicker. This reduces the tendency of the arms to bend under heavy clamping pressure providing a stable platform for high clamping forces.

Increased Bending Speeds

Multiple pumps and motors provide faster bend arm and PDA speeds. Programmable flow and pressure controls provide unlimited options for various materials and wall thicknesses.

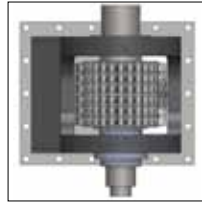
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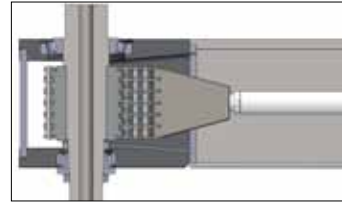
Pines CNC Machines



Die Force Measurement
Clamping and pressure die pressure settings monitored to reduce tool set up times.



CNC 150 6 strand Chain



CNC 150 Larger Spindle and Bearings



The new TS 2000 control console

BOLT-ON UPGRADES

- SWING AWAY WIPER DIE HOLDER
- PRESSURE DIE ASSIST
- DUAL STACK OPTION
- Y - AXIS BOOST
- X - AXIS SERVO SHIFT
- PROGRAMMABLE BENDING SPEED
- CLOCKWISE (R.H.) ROTATION
- 60 inch BASE Extension
- 120 inch BASE Extension
- Square Tube Package



Modular construction to allow for customer products, preferences and cost. Bolt on elements to accommodate special requirements like; extra-long tubes, minimum grip lengths, short end limbs, push bending for calendaring and short grip lengths etc.

All new TS 2000 CNC Control System

The new system increases response time and improves functionality and repeatability.

1. The use of Ethernet connection from PC to I/O system
2. Improved diagnostic reporting from the I/O system
3. Improved reliability

The New system has multi-language capability, expandability, and provides the user with traditional Pines' user friendly setup and programmability. Designed by people who know how to bend tube and pipe.

Pipe Machine Capacity

Specifications subject to change without notice

MODEL		CNC040	CNC075	CNC090	CNC120	CNC150	CNC200
Steel tubing, Y.P. to 40,000 PSI	Inches	1 1/2" x .109"	3" x .109"	3.5" x .109"	4.75" x .109"	6" x .165"	8 x .375
	Millimeters	28 x 2.75	75 x 2.75	90 x 2.75	120 x 2.75	150 x 4.2	203 x 9.5
Stainless steel, Y.P. to 60,000 PSI	Inches	1 3/8" x .065"	3" x .065"	4" x .065"	4" x .065"	4 1/2" x .083"	8 x .172
	Millimeters	35 x 1.65	75 x 1.65	090 x 1.65	120 x 1.65	113 x 2	203 x 4.3
Non-ferrous tubing, Y.P. to 25,000 PSI	Inches	1 1/2" x .188"	3" x .188"	3" x .188"	3" x .188"	6" x .250"	8" x .375
	Millimeters	38 x 4.75	75 x 4.75	90 x 4.75	100 x 4.75	150 x 6	200 x 9
Standard bend radius to center line	Inches	8	12"	14	18	24"	32
	Millimeters	200	300	350	450	600	900
Standard Max. tube length over mandrel	Inches	120"	120"	136	136	172"	172
	Meters	3	3	3.5	3.5	4.375	4.375
Standard Carriage Travel	Inches	72	72"	72	72	108"	120"
	Meters	1.85	1.85	1.85	1.85	2.75	3

BEND ANGLE REPEATABILITY

Carriage Travel (Y Motion)	Inches	± .005"	± .005"	± .005"	± .005"	± .005"	± .005"
	Millimeters	± .125	± .125	± .125	± .125	± .125	± .125
Collet Rotation (B Motion)		±.10 deg.	±.10 deg.	±.10 deg.	±.10 deg.	±.10 deg.	±.10 deg.
Bend Arm Rotation (C Motion)		±.10 deg.	±.10 deg.	±.10 deg.	±.10 deg.	±.10 deg.	±.10 deg.

STANDARD MACHINE SPECIFICATION

Bend Arm Rotation	Degrees	195°	195°	195°	195°	195°	195°
Collet Rotation	Degrees	360°	360°	360°	360°	360°	360°
Max. Bend Angle (+allowance for spring back)	Degrees	180°	180°	180°	180°	180°	180°
Over-Mandrel Tube Length	Inches	119	156	136	136	136	200
	Millimeters	3,023	3,962	3,454	3,454	3,454	5,080
Bending Arm Speed	RPM	30	20	21	7	6.0	3.4
Motor	HP	20	30	40	50	50	75
	Kw	15	22	30	37	30	30
Operating Pressure	PSI	3000	3000	3000	3000	3000	3000
	Bar	314	314	314	314	314	314
Weight	Pounds	2,750	4,400	8,000	15,000	30,000	60,000
	Kilograms	1,248	1,996	1,764	3,420	6,840	13,680