

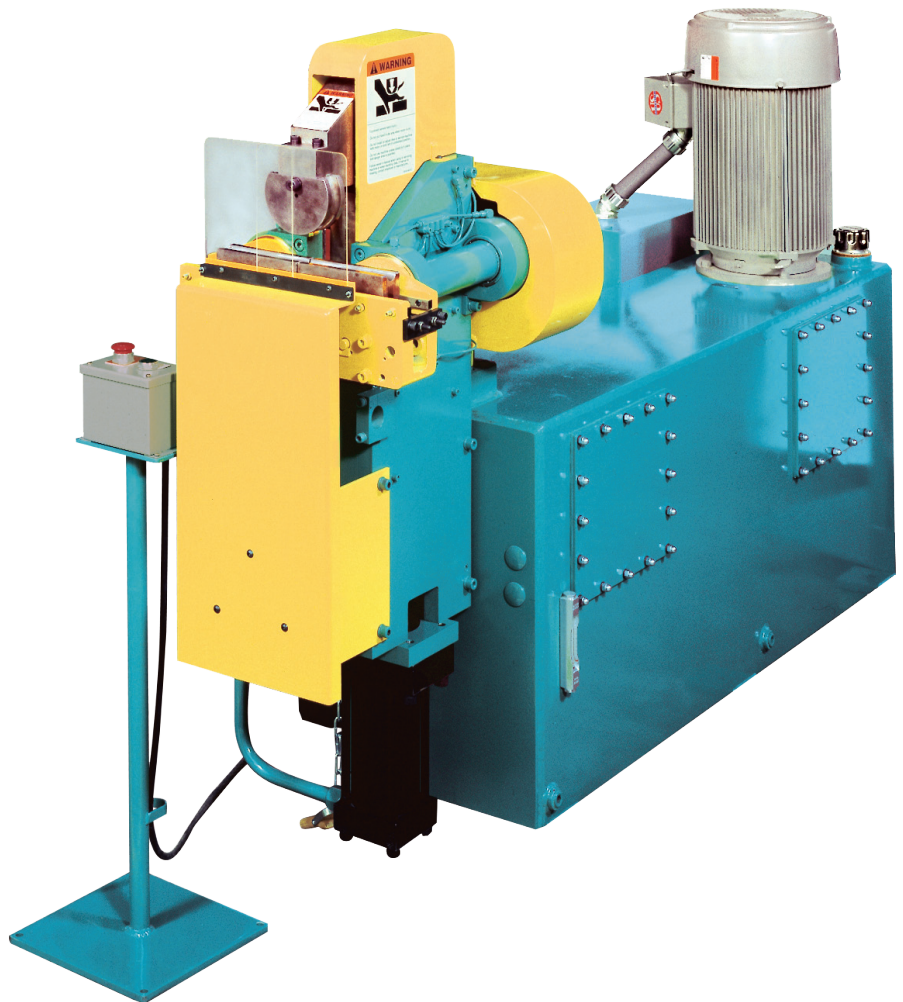


*Pines specializes in custom Tube and Pipe processing machinery. Pines provides tooling, process technology, and tube bending solutions across a wide variety of industries.*

## High Capacity Vertical Compression Benders

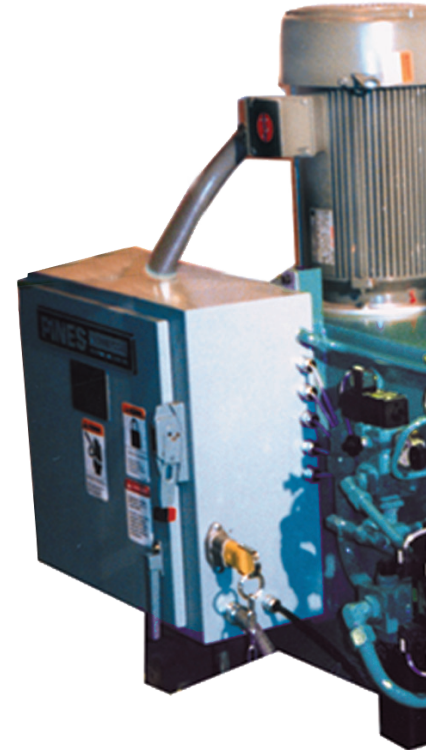
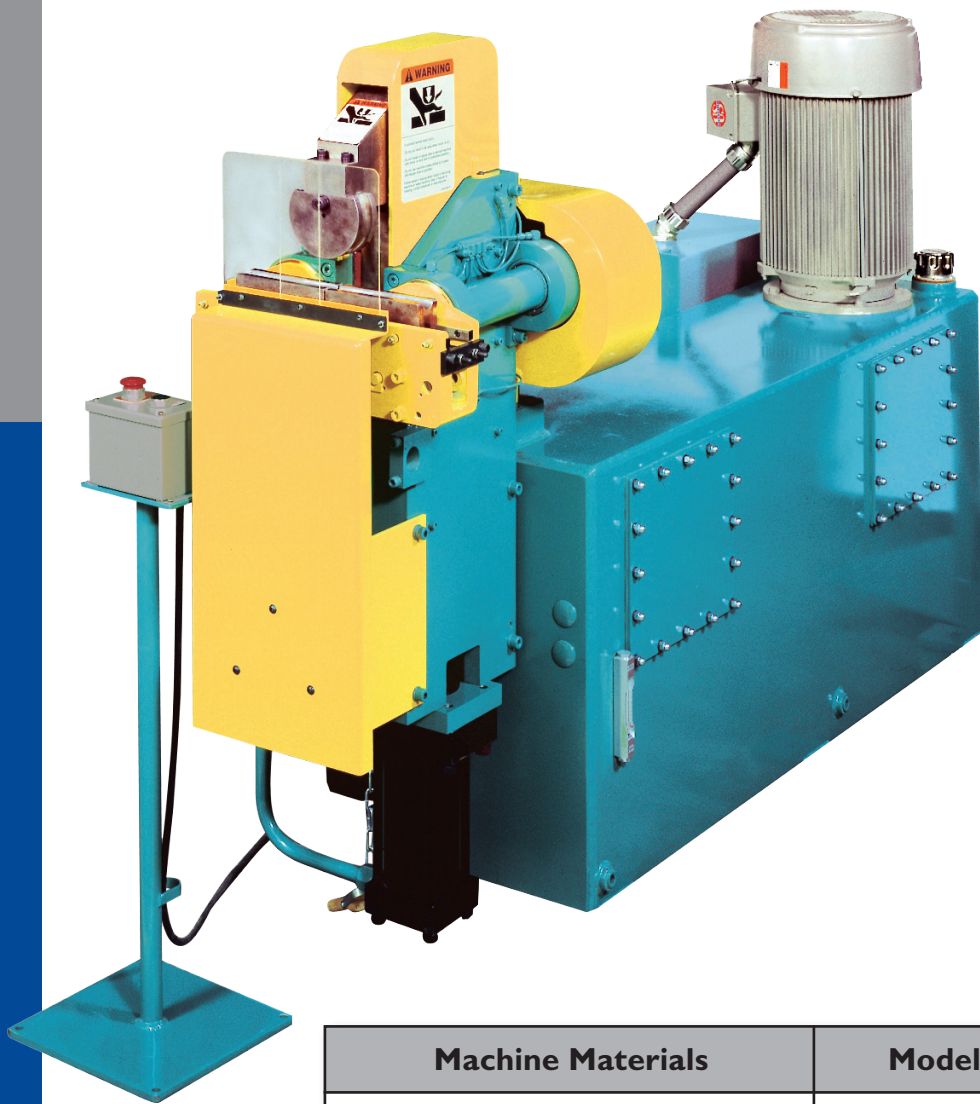
### Feature Highlights

- High Production Capability
- Digital Dial-A-Bend® 7 PLC Control to Facilitate Rapid Set-up
- 2 Bends Per Stroke on Model 5T
- Bend Repeatability Within  $\pm 1/4$  Degree
- Progressive Bending Capability
- Remote Operator Stand
- Compact Design



PINES® MODEL 3-T and 5-T, HIGH CAPACITY VERTICAL BENDERS are equipped with hydraulically cushioned wing dies, PLC COLOR TOUCH SCREEN DIAL-A-BEND® 7 CONTROL (DAB-7), die holders, variable ram speed, variable wing die pressure control, automatic lubrication, and all electrical and hydraulic controls. The Model 5-T also includes an outboard wing die cushion assembly, wing die holder extensions, and necessary piping to permit bending two tubes at once. Both models are self-contained with a hydraulic oil reservoir incorporated in the base and are equipped with a water cooled heat exchanger, 20 HP electric motor, hydraulic pump, and all necessary valves.

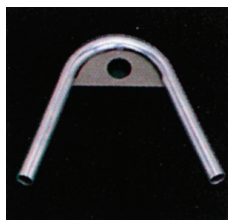
# Model 3T Vertical Compression Bender



Machine Materials	Model 3T	Model 5T
BENDS PER HOUR	1,000	1,300 (2 at a time)
Maximum Bend Angle, Normal Tooling	140°	100°
Maximum Bend Angle, Special Tooling	165°	
Maximum Centerline Radius For 90° Bend Or Less	4 1/2"	4 1/2"
Minimum Centerline Radius	2 to 3x tube diameter	2 to 3x tube diameter
Horsepower	20 HP	20 HP
Height	60"	60"
Footprint (Floor Space Required)	30" X 80"	30" X 85"
Weight	2,900 lbs.	3,100 lbs.

## Typical Industry Applications:

**True Radius**  
Furniture



**Collapse**  
Furniture

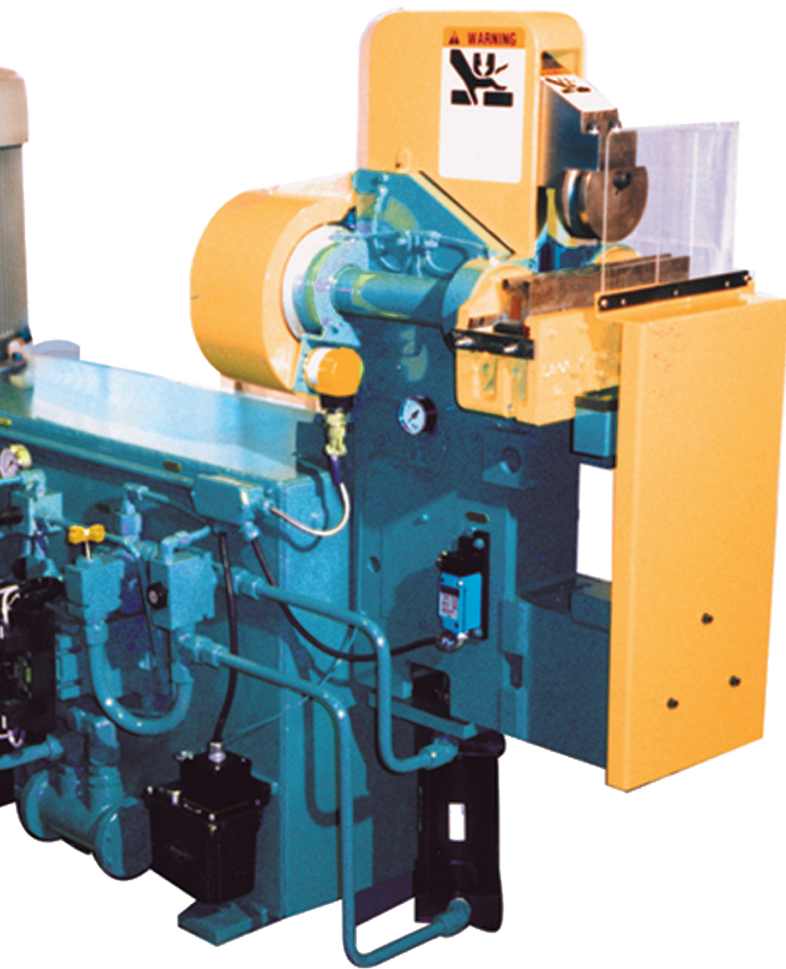


**Crush**  
Furniture



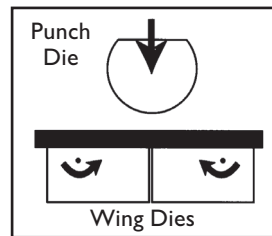


# Model 5T Vertical Compression Bender

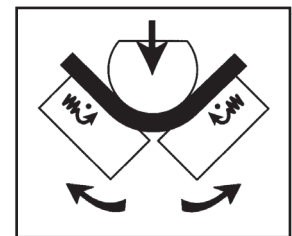


Model 5T with 2 at a Time Capability

## Vertical Compression Bend Cycle



Start of Cycle

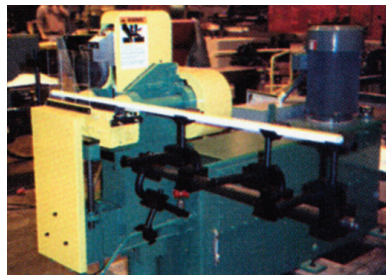
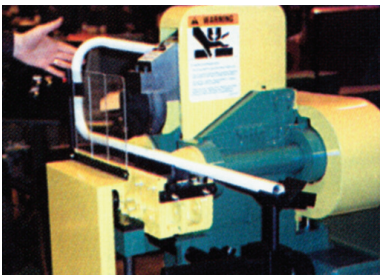


End of Cycle

Machine Materials	Model 3T	Model 5T	Model 14T
ROUND TUBING:			
Non-Ferrous, 25,000 p.s.i. O .D. x Wall	1 1/4" x .083"	1" x .072" (two)	1 1/2" x .095"
Mild Steel, Y.P. 40,000 p.s.i. O .D. x Wall	1 1/4" x .065"	1" x .065" (two)	1 1/2" x .065"
Stainless, Y.P. 60,000 p.s.i. O .D. x Wall	1 1/4" x .049"	1" x .049" (two)	1 1/2" x .049"
Square Tube, Mild Steel	1" x .065"	7/8 x .035" (two)	1 1/4" x .065"
Round Bar, Mild Steel	3/4"	5/8" (two)	1"
Square Bar, Mild Steel	9/16"	1/2" (two)	3/4"
Maximum Section Modulus*, Mild Steel	.072	2 @ .036	.120
Maximum Horizontal & Vertical Dimensions	1 1/4"	2 x 1 1/4"	1 3/4"

\*Section Modulus is a measure of comparative section strength.

All Pines machines are covered by patents issued and pending.

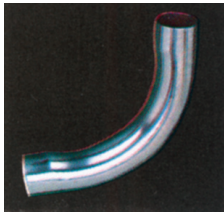


## Machine Options: Stops & Gauges

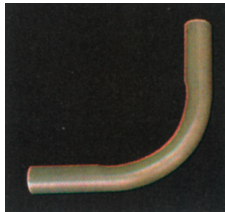
Universal plane of bend and distance between bend stops. These bar mounted stops determine the spacing and planes of successive bends.

# Model 14T Vertical Compression Bender

The Pines Model 14T has all of the features and benefits of the Model 3T and Model 5T while offering the added advantage of being able to manage heavier material. Allowing fast, high volume progressive bending, the Model 14T is widely used in industries including automotive, plumbing, and furniture.



**True Radius**  
Automotive



**True Radius**  
Furniture

Machine Specifications	Model 14T
BENDS PER HOUR:	
Single Tube	600
Two Tubes	900
Maximum Bend Angle	150°
Maximum Centerline Radius For 90° Bend Or Less	5 1/2"
Minimum Centerline Radius	2 to 3x Tube Diameter
Horsepower	20 Hp (40 Hp Optional)
Height	58"
Footprint (Floor Space Required)	33" x 88"
Weight	4,000 Lbs.



## Digital Dial-A-Bend® 7 PLC

Pines Numerically Controlled machines are equipped with a Dial-a-Bend 7 PLC (DAB-7) control and features state of the art PLC using Mitsubishi controls. The large 7" color touch screen allows for easy programming and machine operation. The PLC is network ready and will allow real time monitoring from a remote PC. It has user friendly functionality and can store up to 200 different bending programs with alpha-numeric part numbers. Program memory is searchable to speed the retrieval of stored part programs.

### Feature Highlights:

- Enhanced User Interface
- Touch Screen Display
- Bending Program Storage & Recall
- Programs Up To 32 Bends Per Part
- Electronic Self Diagnostics Program
- Programmable Spring-back Calculations
- 2 Button remote stand
- Additional Safety Features Available (Safety Scanner or Mat)
- Easy Set Up and Operation
- 200 part storage
- 12ft Umbilical Cable

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