

PINES BENDING SELECTION CHARTS

ROTARY BENDING MACHINES

MAXIMUM BENDING CAPACITY	MODELS												
	¾	1	1¼	2	3	4	6	A-3 AIRCRAFT	A-6 AIRCRAFT	A-8 AIRCRAFT	1400	C-2 COMPACT	C-4 COMPACT
Non-Ferrous Tubing Y.P. to 25,000 Psi	1½"OD x .065" wall	1¾"OD x .120" wall	3"OD x .065" wall	3½"OD x .120" wall	5½"OD x .148" wall	6"OD x .250" wall	8"OD x .250" wall	3½"OD x .120" wall	6"OD x .250" wall	8"OD x .250" wall	1¼"OD x .065" wall	3"OD x .083" wall	5½"OD x .200" wall
Steel Tubing Y.P. to 40,000 Psi	1¾"OD x .065" wall	1¾"OD x .072" wall	2¾"OD x .072" wall	3½"OD x .083" wall	5½"OD x .095" wall	6"OD x .165" wall	8"OD x .165" wall	3½"OD x .083" wall	6"OD x .165" wall	8"OD x .165" wall	1¼"OD x .065" wall	2¾"OD x .092" wall	5½"OD x .148" wall
I.P.S. Extra Heavy Pipe	¾"	1"	1¼"	2"	3"	4"	6"	2"	4"	6"	—	—	—
Stainless Steel Tubing Y.P. to 60,000 Psi	1¼"OD x .065" wall	1¾"OD x .065" wall	1¾"OD x .065" wall	3"OD x .065" wall	4½"OD x .083" wall	4½"OD x .250" wall	5½"OD x .500" wall	3"OD x .065" wall	6"OD x .125" wall	8"OD x .250" wall	¾"OD x .065" wall	2½"OD x .065" wall	4½"OD x .120" wall
Steel Bar-Round Y.P. to 40,000 Psi	¾" Dia.	¾" Dia.	1¾" Dia.	1¾" Dia.	2¾" Dia.	3½" Dia.	5" Dia.	1¾" Dia.	3½" Dia.	5" Dia.	¾" Dia.	1½" Dia.	2¾" Dia.
Max. Radius—Standard Extra	10" 18"	10" 18"	12" 24"	12" 24"	30" 48"	30" 48"	42" —	20¾" —	24" —	42" —	8½" —	36" —	36" —
Max. Tube Length over Mandrel Stand. Extra	9'-11"	9'-11"	7'-5"	7'-5"	13'-6"	13'-6"	12'	8'	12'-6"	12'	5'	as required	as required
Bending Arm Speed Average Maximum	27 RPM	17 RPM	Std. 11 RPM Spec 22 RPM	Std. 5.5 RPM Spec 11 RPM	3.8 RPM	2.3 RPM	.69 RPM	5.5 RPM	2.3 RPM	.69 RPM	24 RPM	1.8 RPM	.46 RPM
Motor HP**—220-440-3-60	5	5	7½	7½	15	15	20	7½	15	20	3	5	5
Floor Space	4' x 12'	4' x 12'	5' x 10½'	5' x 10½'	11' x 17'	11' x 17'	15' x 22'	8' x 20'	11' x 28'	15' x 30'	4' x 8'	2' x 7'	3' x 11'
Net Weight Approx.—lbs.	2750	2750	4500	4500	12,000	12,000	26,000	7,000	17,000	35,000	1400	2400	7000

NOTE: Counter-clockwise rotating of bending arm when viewed from above is standard. Clockwise rotation available at extra cost. Extended base for special tube length, long arms for special radius, and special RPM of bending arm available at extra cost.

All machines have variable speed control of bending arm, magnetic-type motor starter with overload and low-voltage protection as standard equipment.

BENDING PRESSES

MODEL	HI-SPEED 3-T SERIES 443-50	5-T		6-T SERIES 446	20-T SERIES 452	30-T SERIES 453	40-T SERIES 454
		SERIES 443-54 ONE TUBE	SERIES 443-55 TWO TUBES				
Typical production—bends per hour	1500	1000	1800	1700 to 2500	700 to 900	700 to 900	500 to 700
Tube Size Range—outside diameter	Up to 1"	Up to 1¼"	Up to 1"	ONE TUBE—Up to 1¾" TWO TUBES—Up to 1"	½" to 2"	½" to 3"	½" to 3½"
Maximum Capacity—steel tubing	1" OD x .065" wall	1¼" OD x .065" wall	1" OD x .065" wall	ONE TUBE—1¾" OD x .065" wall TWO TUBES—1" OD x .065" wall	2" OD x .083" wall	3" OD x .125" wall	3½" OD x .125" wall
Max. Bend Angle—normal tooling —special tooling	140° 165°	140° 165°	110° 110°	95° 95°	165° 165°	165° 165°	165° 165°
Centerline Radius Range* permitting bends to max. angle— Maximum Minimum	3½" C.L.R. 2 to 3 x wk. dia.	3½" C.L.R. 2 to 3 x work dia.		4½" C.L.R. 2 to 3 x work dia.	10" C.L.R. 5" C.L.R.	10" C.L.R. 4" C.L.R.	10" C.L.R. 4½" C.L.R.
Motor HP—220-440-3-60**	15 H.P.	15 H.P.		20 H.P.	20 H.P.	TWO— 20 H.P. ea.	TWO— 20 H.P. ea.
Height—overall —floor-to-dies	60" 40"	60" 40"		82" 38"	92" 40"	97" 39½"	101" 39½"
Floor space—incl. overhang, less gauging	26" x 80"	26" x 80"		63" x 73"	40" x 85"	49" x 89"	54" x 101"
Net Weight—Approximate, lbs.	2800	3300		5000	8500	14,500	18,700

*Maximum angle for bends outside range of centerline radii shown will be proportionally reduced.

**In most instances, motors used on standard machines operate on 190 through 240 volts (or 390 through 480 volts), 3-phase, 50 or 60 cycle electric current. Additional charge for other motors may be required.

Specifications subject to change without notice.

For information on machines or work not shown above, or for recommendations on parts you are considering, send prints, samples, or specifications to Pines . . . no charge or obligation.