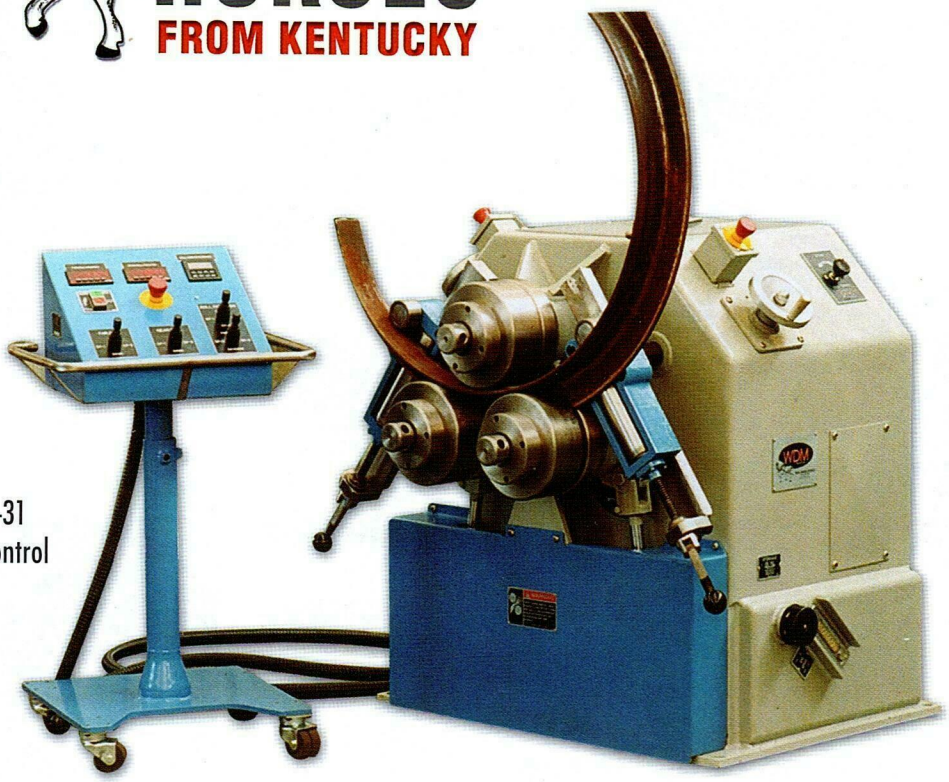
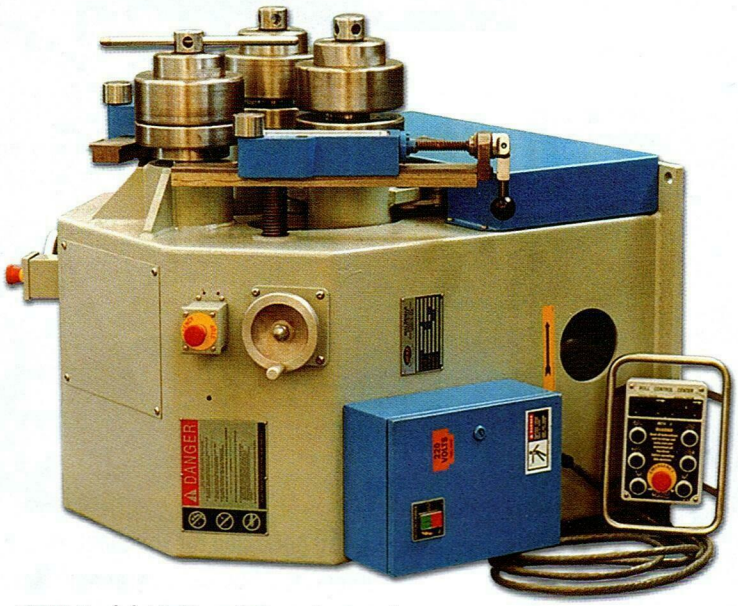
Hydraulic Angle and Section Bending Machines

WDM
MACHINE TOOLS

REAL
WORK
HORSES
FROM KENTUCKY



WDM Model AR-31
with 423-LP6 control



WDM Model AR-31 with Beta 3 control

Waldemar Design & Machine LLC

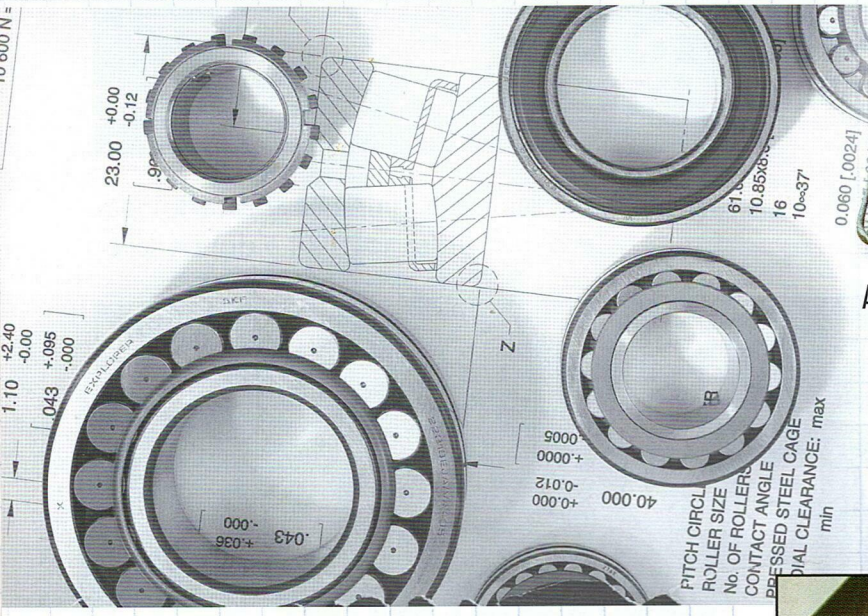
900 HIGHLAND DRIVE
SPENCER, TN 38585

931-946-8474

#AR-1

STRONG FEATURES OF WDM

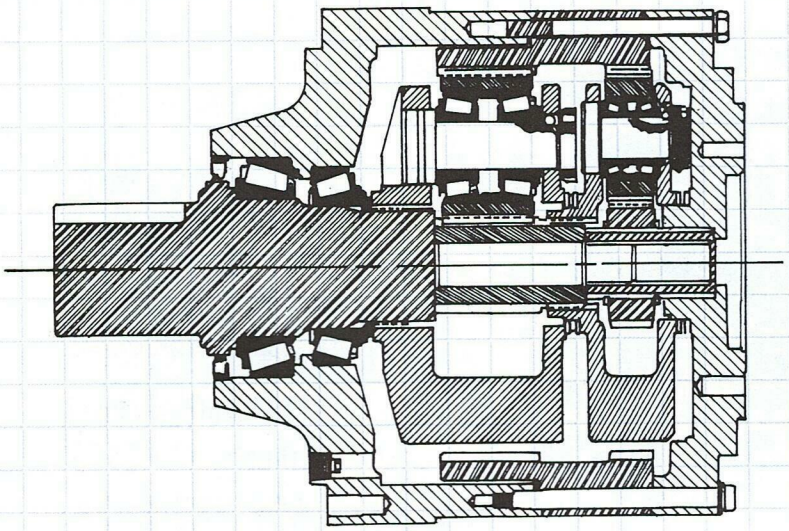
The frame is a weldment of heavy steel plates reinforced with gussets, braces, and bosses. After welding the frame is accurately machined and fitted with non metallic lube-for-life type sleeve bearings.



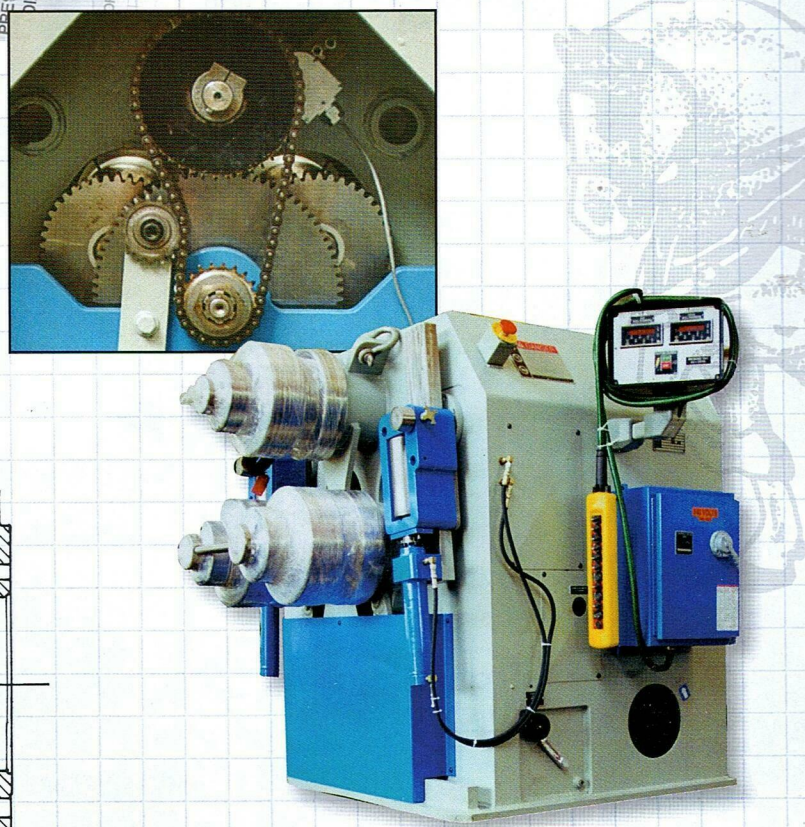
AR-41 with standard (AR-520) control in horizontal rolling position.

The roll shafts are heat treated alloy steel turning on SKF spherical roller bearings. The gears in the drive train most of which are cut in our own shop are heavy steel or alloy with a very strong tooth profile.

The hydraulic system is integrated into the machine frame and is of efficient, quiet design. Depending on machine size rolls are either individually driven and hydraulically equalized or all driven by one motor and mechanically equalized. The electrical system is built to NFPA 79 specifications and housed in Nema 12 or better enclosures.



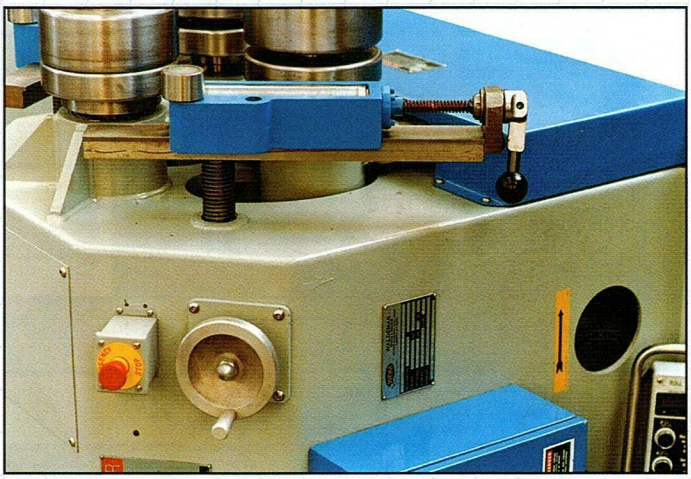
Planetary type drives used on some machines.



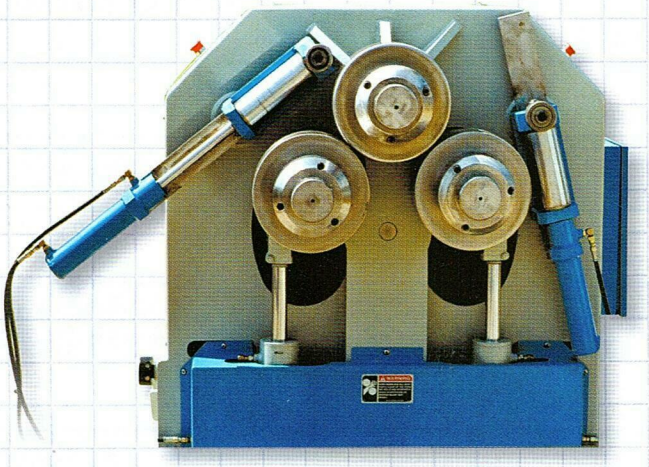
AR-50 packaged for shipment. Notice electrical enclosures and integrated hydraulic reservoir. Machine is setting in vertical rolling position.

ANGLE & SECTION BENDING ROLLS

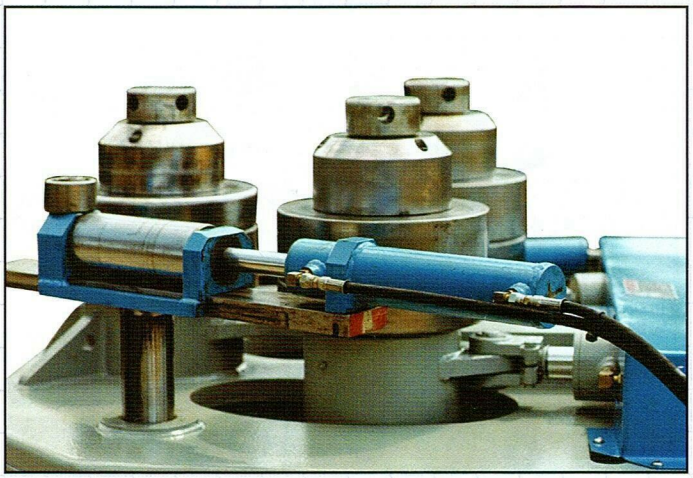
Guide roll systems, the key to successful angle bending. WDM machines have guide roll adjustment systems that allow the user to adjust the rolls in all ways necessary to obtain good work pieces. The small/economy machines have manual adjustments with clamps and jack screws. The larger machines have handwheel/worm gear arrangements. Machines 4x4 and larger have 6 way power guide rolls for optimal performance.



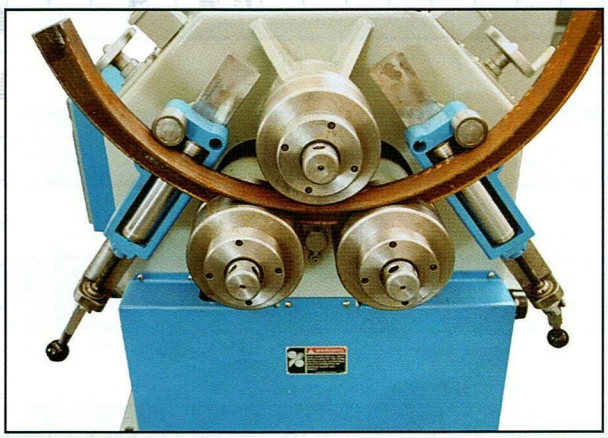
AR-31 - Guide roll area



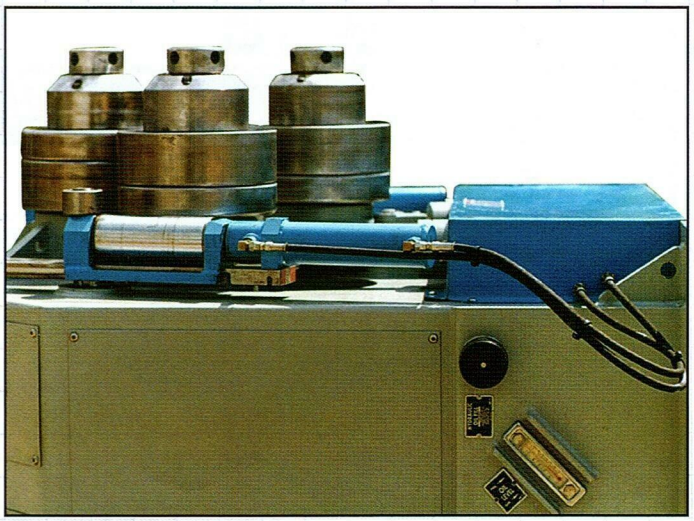
AR-41 (vertical position)



AR-41 - Guide roll area



AR-31 (vertical position)



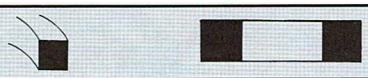
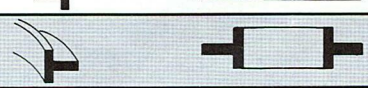
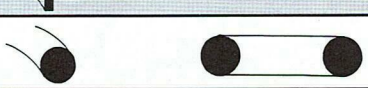
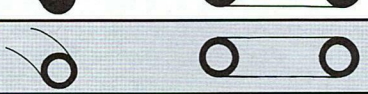
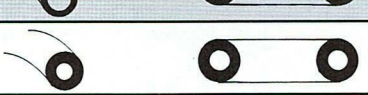
Model AR-41 (horizontal position)

MORE FEATURES, OPTIONS AND CONTROLS ON PAGE 6

CAPACITIES: WDM HYDRAULIC ANGLE

TO ORDER STATE THE FOLLOWING

- Model number
- Control number
- Power supply (volts, phase, other)
- Any special dies required (material size, spec, condition, etc.)
- Any special features
- Horizontal or vertical operation or both

	MODEL	22	23
	Standard HP	5	5
	Roll Diameter (inches)	7.0	7.5
	Weight, Approx. (lbs.)	2,000	2,500
	Bending Pressure (US tons)	15	15
	Main Shaft Diameter (inches)	1.88	2 1/2
	FPM Rolling Speed Approx.	14	0 - 22
	Machine LxWxH (inches)	-	-
	Machine Capacity	-	-
	Angle Leg Out* Minimum Diameter (inches)	2 x 2 x 1/4 26	2 x 2 x 3/8 26
	Angle Leg In Minimum Diameter (inches)	2 x 2 x 3/16 22	2 x 2 x 1/4 22
	Flat on Flat Minimum Diameter (inches)	3/4 x 3 1/2 x 6 22	3/4 x 4 5/8 x 6 20
	Flat on Edge Minimum Diameter (inches)	3/8 x 2 1/4 20	1/2 x 2 1/2 20
	Square Bar Minimum Diameter (inches)	1 1/4 16	1 3/8 16
	Tee Leg In Minimum Diameter (inches)	2 x 1 1/2 x 1/4 20	2 x 2 x 1/4 20
	Tee Leg Out Minimum Diameter (inches)	2 x 2 x1/4 22	2 x 2 x 1/4 20
	Round Bar* Minimum Diameter (inches)	1 3/8 14	1 1/2 15
	SCH. 40 Pipe* Minimum Diameter (inches)	1 1/2 16	1 1/2 16
	SCH 80 Pipe* Minimum Diameter (inches)	1 1/4 16	1 1/2 16
	SCH 120 Pipe* Minimum Diameter (inches)	1 1/4 16	1 1/2 16
	SCH XXH Steel Pipe* Minimum Diameter (inches)	1 16	1 1/4 16
	Round Tube* Minimum Diameter (inches)	2 3/8 x 14 ga 24	2 3/8 x 12 ga 24
	Square Tube* Minimum Diameter (inches)	1 3/4 x 10 ga 22	2 x 11 ga 22
	Rectangular Tube* Minimum Diameter (inches)	2 x 1 x 11 ga 18	2 x 1 1/4 x 11 ga 18
	Channel Flange Out* Minimum Diameter (inches)	C3 x 4.1# 18	C3 x 4.1# 18
	Channel Flange In* Minimum Diameter (inches)	C3 x 4.1# 22	C3 x 4.1# 18
	I-Beam on Flange* Minimum Diameter (inches)	-	-
	I-Beam on Web** Minimum Diameter (inches)	-	-

* Some small sizes may be rolled with standard universal dies with a sacrifice of work piece quality. For good quality, full capacity bends, order special dies.

BENDING ROLLS & ATTACHMENTS

31	41	51	61	80	90
7.5	15	20	25	60	75
9	12 1/2	15	18	24	30
3,800	5,900	8,400	13,000	38,000	58,000
24	40	55	100	220	300
3	5	6	6	8 1/2	10
0 - 22	0 - 22	0 - 24	0 - 24	0 - 28	0 - 28
38 x 40 x 38	48 x 50 x 58	48 x 60 x 80	48 x 68 x 80	110 x 92 x 92	120 x 98 x 100
-	-	-	-	-	-
3 x 3 x 3/8 30	4 x 4 x 1/2 42	5 x 5 x 1/2 50	6 x 6 x 5/8 89	8 x 8 x 5/8 100	8 x 8 x 1 98
2 1/2 x 2 1/2 x 3/8 30	4 x 4 x 3/8 36	4 x 4 x 1/2 46	5 x 5 x 5/8 89	6 x 6 x 1 90	8 x 8 x 3/4 80
3/4 x 6/4/ 1/2 x 1 24	1 1/4 x 6 22	1 3/4 x 8 38	2 x 9 40	2 1/2 x 10 50	3 x 12 60
5/8 x 3 20	7/8 x 4 40	1 x 5 44	1 1/2 x 5 48	2 x 6 x 50 50	2 x 8 80
1 3/4 16	2 1/2 34	3 32	3 1/2 36	4 40	5 60
T4 x 9.2 28	T4 x 13.5 40	ST5WF 30# 60	ST6WF50 72	WT6 x 66# 86	ST8WF39# 102
3 x 3 x 5/16 T4 x 9.2 42 28	WT x 12# T4 x 13 40	ST5WF x 30# 50	ST6WF50 72	WT6 x 66# 86	ST8WF39# 102
2 20	3 30	3 1/4 36	3 3/4 48	4 1/2 54	5 1/2 55
2 1/2 32	3 34	4 46	5 60	6 72	8 80
2 30	3 36	3 1/2 46	5 60	6 72	8 80
2 30	2 1/2 30	3 1/2 46	4 48	5 60	6 72
2 30	2 1/2 30	3 40	4 48	5 60	6 72
4 x 12 ga 48	5 x 12 ga 55	7 x 11 ga 78	8 x 11 ga 160	10 x 11 ga 200	12 x 3/16 180
2 1/2 x 11 ga 40	3 x 3/16 60	4 x 3/16 100	5 x 3/8 160	10 x 11 ga 200	12 x 3/16 180
3 x 1 x 11 ga 32	4 x 1 1/2 x 11 ga 52	5 x 2 x 1/4 80	6 x 2 x 3/16 96	7 x 2 x 3/16 140	8 x 4 x 3/8 200
C5 x 6.7 32	C7 x 14.75 36	C10 x 15.3# 70	C12 x 20.7 48	C12 x 30# 30	C15 x 50# 40
C5 x 6.7 32	C7 x 14.75 36	C10 x 15.3# 70	C12 x 20.7 48	C12 x 30# 30	C15 x 50# 40
S5 x 10# 40	W4 x 13 40	W10 x 19 48	W12 x 22 54	W10 x 33# 80	S15 x 50# 70
-	S4 x 7.7 48	S6 x 12 72	W5 x 19 96	S6 x 17.25# 48	S8 x 23# 144

** Special dies and beam on web attachment required.

- We reserve the right to make changes in design and specification without obligation.
- We welcome special applications. We will work with you on your unique projects.

STANDARD FEATURES

- Unitized steel construction
- Alloy steel shafts and arbors
- Total hydraulic operation
- Instant start-stop-reverse
- 2 speed / variable speed
- 1 set universal dies; rolls
  - Angle leg in and out
  - Tee bar leg in and out
  - Flats on edge and on flat
  - Square and small rounds
- Accurately machined and hardened dies
- 3 roll drive (all machines except 4 roll)
- Electrics to NFPA 79 specifications
- Low voltage control circuit 120 or 24 VAC
- Safety stop / emergency stop mushroom buttons
- Overload protection
- TEFC main motor
- Quiet integrated hydraulic system
- Painted haze grey epoxy and blue enamel
- Sealed spherical roller bearings on all main points
- Non-lube, minimum maintenance technology throughout
- Heavy gear drive with very strong and efficient tooth profile
- Most gears cut in our own shop
- Manufactured in Casey County, Kentucky, USA

STANDARD OPTIONS

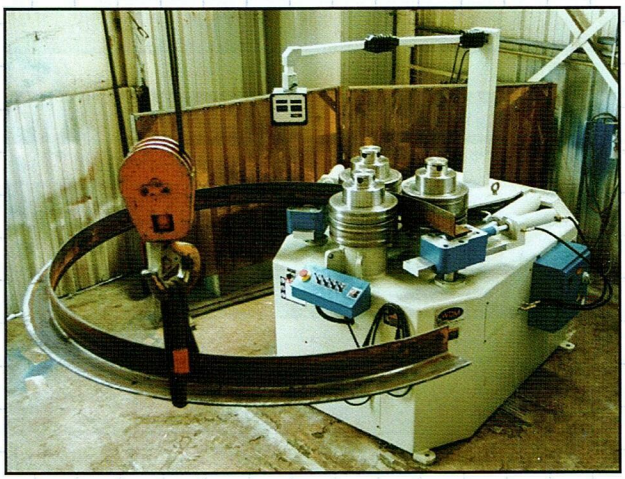
- SCM-HV control
- Alpha 3 control
- Beta 3 control
- AR-520 control
- Series 423-2-LP6 control
- Automatic and other control variations
- Special dies
- Special guides
- Overhead supports
- Non-electric version
- Special electrics
- Special paint
- High speed version

ROLLS & DIES

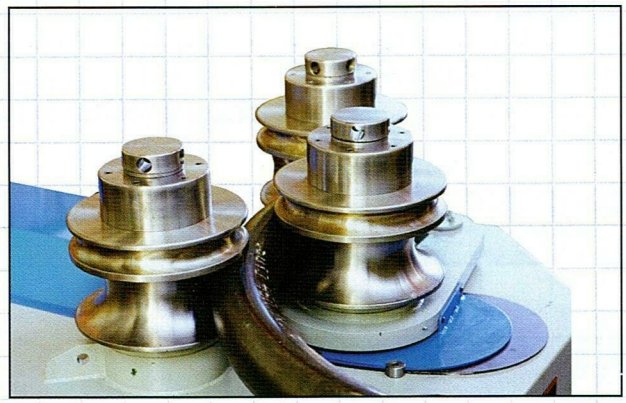
Hardened and ground universal rolls/dies are telescoping to allow for optimum adjustments with main cap screw. These rolls can be used to roll angles, leg in, leg out. Tees, leg in, leg out. Flat bars on flat and on edge. Square bars and small rounds.

Optional rolls are available for round tube, large rounds, channels and beams on web and flange, square and rectangular structural tube and many other special shapes and options including:

- Earth mover tire lock rings
- Profiling and radiusing half pipe from flat strip, stainless and carbon steel
- Aluminum extrusions for manholes and industrial louvers
- Formed steel and stainless steel sections for man holes and similar applications

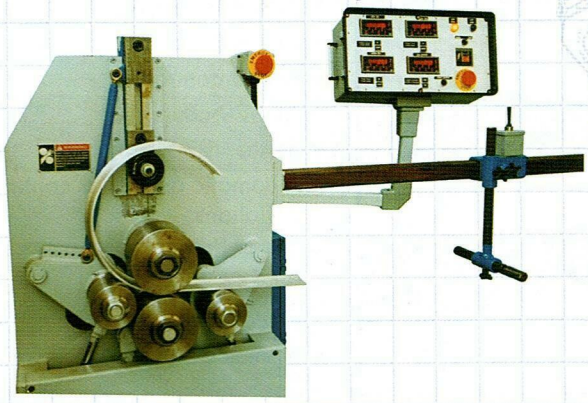


AR-60 H with special controls and enhanced universal dies to roll channels and beams on web. (Rolling 6 x 6 x 1/2 angle)



Pipe dies on PSPR-61 Section Roll (no guide rolls) rolling a large pipe section.

AR-22 with shim type die sets and manual adjust guide rolls.



AR-24 four roll with special aluminum extrusion dies, overhead support and automatic control.

SOME OTHER VARIATIONS...

AR-20 with manually operated overhead support, DRO, and pendant control, spiral rolling stainless steel tube.

CONTROLS

WDM offers a wide range of controls tailored for your unique requirements.

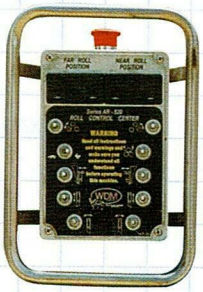
A. BETA 3 Pendant Control - Electric push button for bending roll adjustment and roll rotation. 2-LCD digital readouts to indicate roll position. ALPHA 3 Pendant Control is the same, less DRO's.

B. AR-520 Pendant Control - Heavy duty electric toggle switches for all power and speed functions on bending and guide rolls. 2-LCD digital displays show roll position. (for use on AR-41 & larger machines)

C. SERIES 423-2-LP6 - Provides 2 preset functions for each bending roll and 6 presets for rolling length on a roll around free standing console. (see front cover)

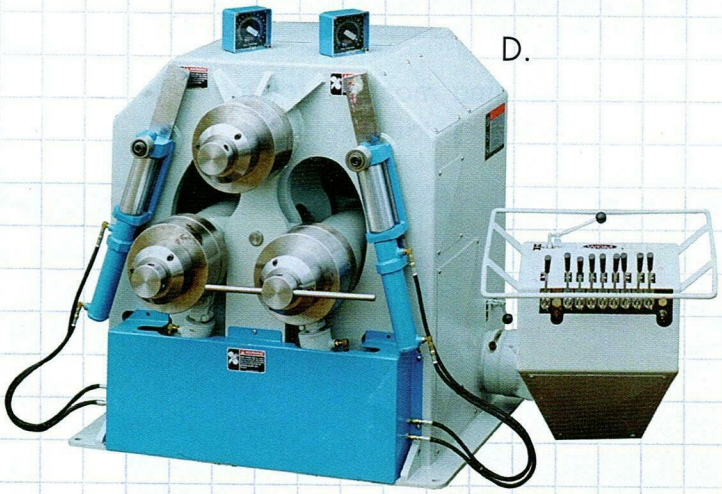
A.

B.



C.

D.

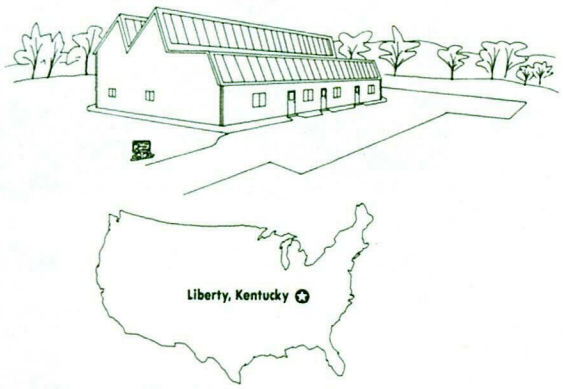


D. SCM HV - Provides excellent feel via its manual valves. Analog clock type indicators give accurate roll position indication. Can be used with electric or non-electric models.

Or we can make many variations or additions to suit your needs at minimal cost.

LOCATION AND SERVICE

Our plants in Liberty, Kentucky, houses our sales, engineering, manufacturing, R & D, parts, and accounting departments. We are represented in the USA, Canada, Central and South America by independent sales representatives and dealers.



Our location in east central United States puts us in close proximity to all major industrial areas in the eastern United States. Our machines are designed to use many standard off-the-shelf components that are readily available from industrial supply houses or from our stock.

WARRANTY

Waldemar Design & Machine warrants its products to be free from defects in material and workmanship for a period of one year from date of manufacture.

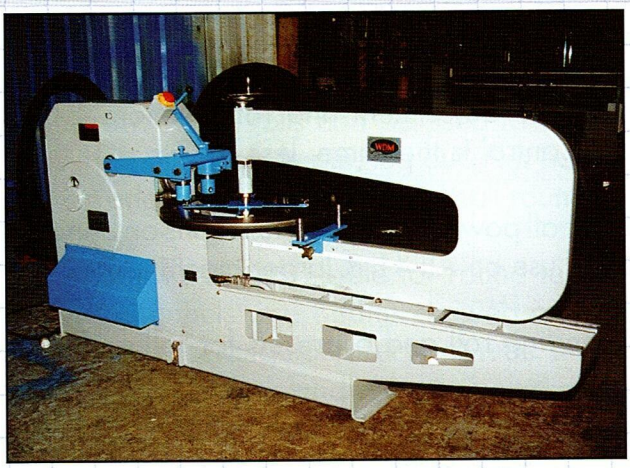
Waldemar's obligation is to replace, free of charge, any defective part of any product that its inspection shows to be defective, including the lowest priced round trip transportation to Waldemar's plant in Liberty, KY, from any point in the 48 contiguous states.

Waldemar shall not be liable for installation and removal expense, loss of time, manufacturing costs, labor, material, loss of profits, or consequential damages direct or indirect, because of defective products. There is no other warranty, express or implied.

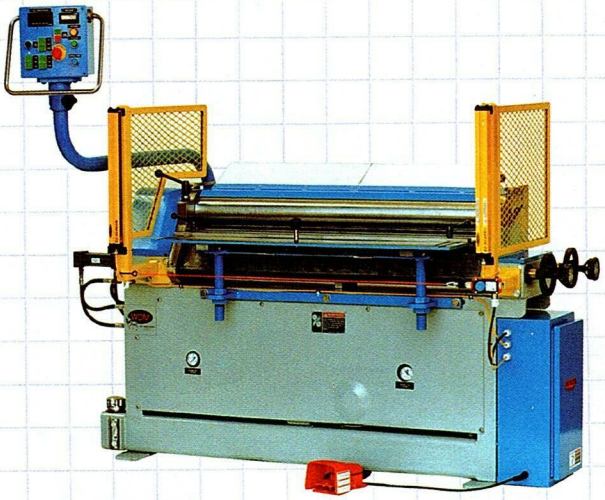
TRAINING

Waldemar Design & Machine strongly encourages the dealer and/or customer to visit our plant upon completion of the machine to receive free training on the machine operation and maintenance.

OTHER MACHINES BY WDM

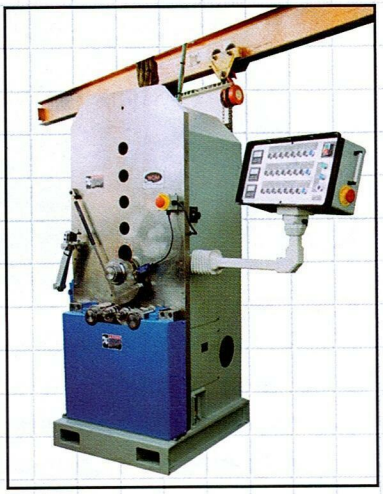


Special rotary flanging machine for making polished table tops for retail displays.

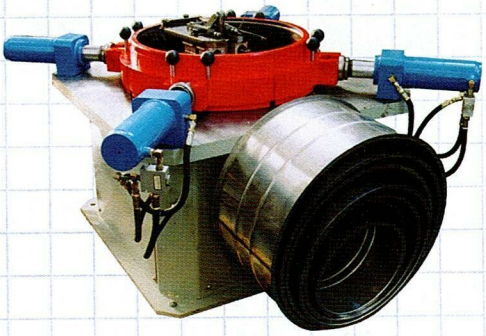


Machine for production forming of fan blades.

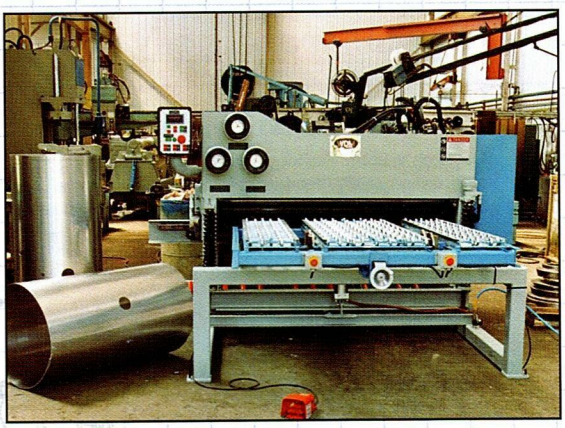
AR-40 with overhead support forming stainless steel half pipes in one pass.



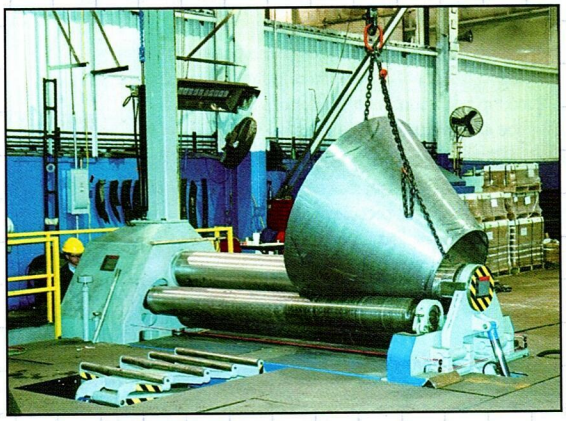
Specially designed and built machine to form orthopedic components for hip replacements.



High speed flange and bead forming machine for industrial and process ducts and vents.



Production roll for mobile fuel and air tanks.



3/4 x 10 Four Roll plate bending machine with side and overhead supports.