SERIES 3000 Double Pinch Angle Rolls

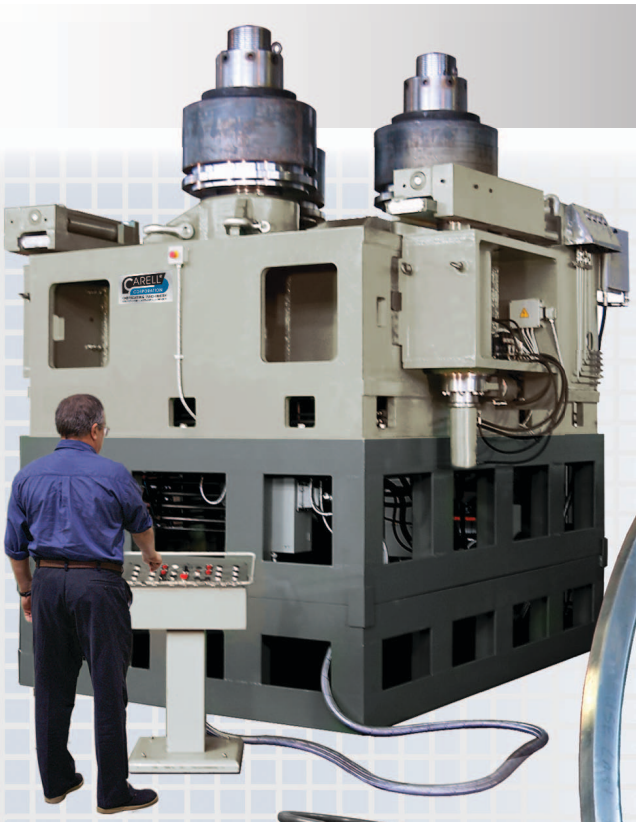
The Industry Standard for a…

New Generation of Highly Efficient and Versatile Machines with Unparalleled Standard Features

CARELL® CORPORATION
FABRICATING MACHINERY

Real Quality is Always Found in the Details. Compare for Yourself, Then Choose.

FIFTEEN MODELS
Capacities
from 1” to 10” ANGLE



The Ideal Choice for All Applications!

3000 SERIES

Double Pinch Angle Rolls

15 MODELS 1" TO 10" ANGLE

FEATURES

- Three driven rolls, smooth surfaced for optimal profile traction and surface finish
- Double Pinch Geometry permits pre-bending without removal from the machine
- Dual LED Digital Displays / Emergency stop
- Monolithic single weldment frames heavily reinforced at load points.
- Detached mobile control stand, low voltage controls
- Horizontal/vertical operation on models 302 thru 309
- NiCrMo Bending rolls hardened for optimal performance
- Top roll drive incorporates overload protection which allows differing roll speeds when bending tall sections
- Variable speed hydraulic drive train 306 - 315 with direct coupled hydraulic motors and planetary speed reducers. Electro-mechanical drive on 302- 305
- Shafts journaled in dual self-aligning high dynamic load roller bearings

Material guides adjust tri-directionally

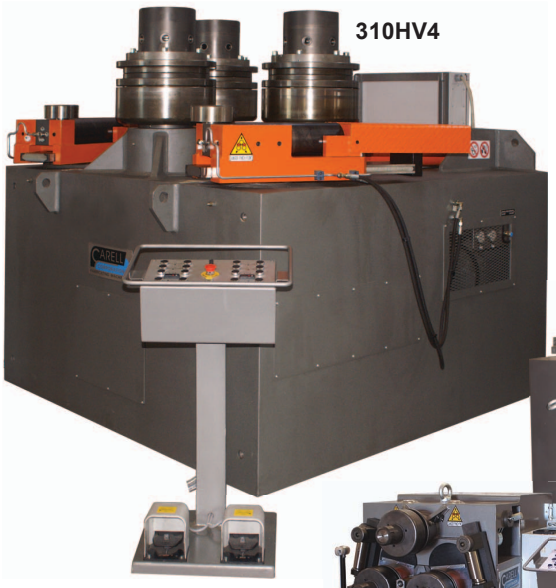
in/out up/down cw/ccw (50-300)

STANDARD EQUIPMENT

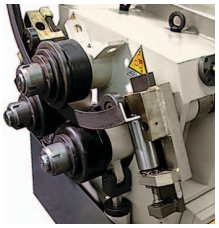
- LED Digital Displays on all 3000 Series Angle Rolls
- Telescoping Modular Multi-Component roll set specifically designed to bend standard sections including angle Leg-In/Out and Square/Rectangular Tube as well as other shapes in a variety of material types
- Tri-Directional Lateral Guides with cam rollers for improved Angle Rolling Performance

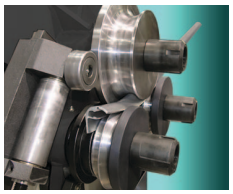
OPTIONS

- Rolls for tubes, pipes and special profiles
- Tooling for production of half tubes
- Overhead supports for coil production
- Compression and tension tooling for C channel, & I beam hard way bending
- NC & CNC Controls with various automation levels for repetitive jobs and production of variable radius bends and parts with multiple bends
- Powered lateral material guides on models 308-315
- LED digital displays for lateral guide movements

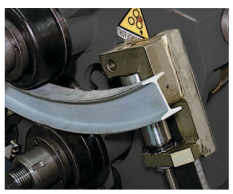


Lateral guides used for angle leg-in





Custom tooling for special sections made in-house for Rapid Turnaround



Standard rolls used to roll junior I beams EZ and Hard way

305HV with Coiling Attachment

CARELL® CORPORATION FABRICATING MACHINERY

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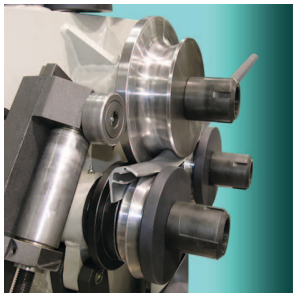

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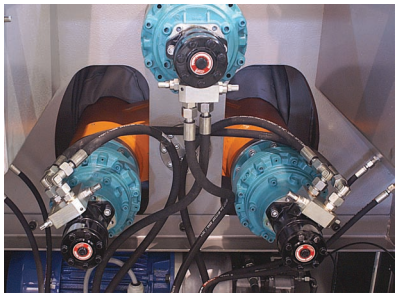
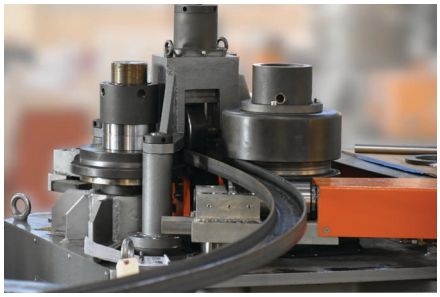
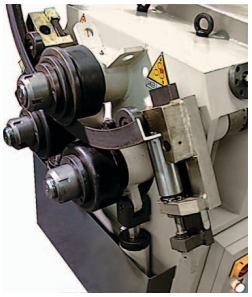


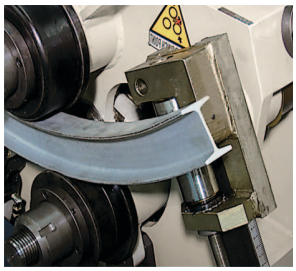
Direct coupled hydraulic motors and planetary speed reducers



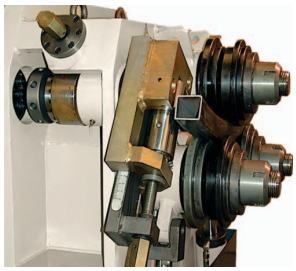
Tension tooling for hard way bending of beams



Lateral guides used for angle leg-in



Standard rolls used on junior beams EZ & HW

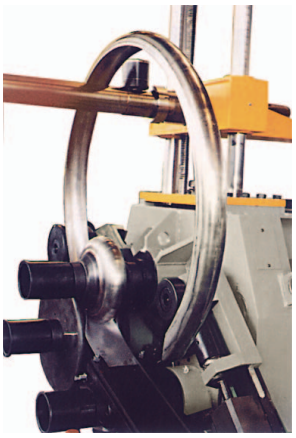


Standard rolls used to roll square tube

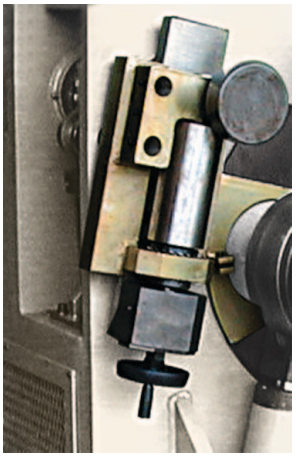
Special rolls for tube and pipe

TECHNICAL FEATURES

- **Three driven rolls, smooth surfaced for optimal profile traction and surface finish**
- **Double Pinch Geometry permits pre-bending of leading and trailing ends of the profile without removal from the machine**
- **Material guides tri-directionally adjustable**
  in/out up/down cw/ccw
- **Dual LED Digital Displays monitor bending roll positions (All Versions)**
- **Monolithic single weldment frames heavily reinforced at load points, stress relieved and CNC machined**
- **Detached mobile control stand with trailing lead, low voltage controls, Emergency stop**
- **With both Horizontal & Vertical operation on models 302 - 309**
- **Bending rolls in Nickel Chrome Molybdenum tool steel, hardened for optimal performance**
- **Top roll drive incorporates a torque limiting device for overload protection which allows differing roll speeds when bending tall sections**
  Models 302 - 305 mechanical clutch
  Models 306 - 315 hydraulic compensator
- **Variable speed hydraulic drive train 306 - 315 with direct coupled hydraulic motors and planetary speed reducers. Electro-mechanical drive on 302 - 305**
- **Shafts journaled in dual self-aligning high dynamic load roller bearings**



Special tooling for half tubes and powered overhead support for coils and spirals



Tri-directional lateral material guides standard
Tri-directional hydraulic powered: 308 - 315

306HV Shown in Horizontal & Vertical Operation

302HV
1" Capacity
Horizontal & Vertical Operation

OPTIONAL NC/CNC CONTROLS
allow complete flexibility & automation of the work cycle

312HV4
8" Capacity

Shown with Hard-Way Beam Bending Traction Tooling

NOTES: Chart indicates minimum suggested inside diameter with maximum profile size, using mild steels rolling generally in multiple passes .• Data is approximate specified inches u.n.o.• Custom tooling for some profiles may be required for volume production and minimum rolling diameters are limited to level of acceptable deformation .• The manufacturer and Carell Corp. reserve the right to revise design, construction and specifications without prior notice .• Ratings based on material yield of 36KSI. • Machines with extended shafts or shortened shafts are available .• We build totally custom geometries and configurations for highly specific manufacturing requirements • Call us you have questions on applications or capacities.

Series 3000 machines are designed compliant with EEC norms and bear CE plates. Units are designed to comply with ANSI B11.12.1996 standards. The employer of the operator is responsible for providing and insuring the usage of point of operation guards and/or properly applied and adjusted point of operation safety devices are required to meet OSHA, state and local safety requirements.

SERIES 3000 DOUBLE PINCH HYDRAULIC ANGLE ROLLS CAPACITIES & SPECIFICATIONS

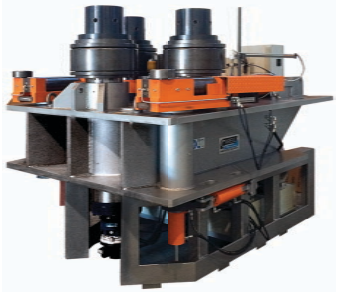
Series 3000 Model	302HV	303HV	304HV	305HV	306HV	307HV	308HV	309HV	310HV4	311HV4	312HV4	313HV4	314HV4	
Flats, Hard	2 x 5/16 Ø16	2-3/8 x 3/8 Ø20	2-¾ x ½ Ø28	3x5/8 Ø30	4x5/8 Ø42	4 x 1 Ø44	5-½ x ¾ Ø60	6x1 Ø60	6 x 1-½ Ø60	8 x 1-¼ Ø100	8x2 Ø100	10 x 2 Ø120	10 x 2-½ Ø120	
Flats, Easy	2-3/8 x 5/8 Ø18	3 x ¼ Ø18	4 x 1 Ø26	5 x 1 0 Ø26	6 x1 Ø30	7 x 1-3/8 Ø32	8x2 Ø42	9x2 Ø48	10 x 2-½ Ø60	12x2-½ Ø60	16 x 2-½ Ø76	18 x 2-½ Ø80	20 x 3 Ø90	
Square Bar	1 Ø12	1-¼ Ø18	1-½ Ø20	1-¾ Ø22	2 Ø26	2-½ Ø32	3 ½ Ø36	3-3/8 Ø48	3-¾ Ø60	4 Ø54	4-½ Ø66	5 Ø78	6 Ø90	
Angle, L-Out	2 x 3/16 Ø24	2 x ¼ Ø28	2-½ x 5/16 Ø30	3 x 3/8 Ø42	3-½ x 3/8 Ø48	4x½ Ø48	5 x ½ Ø60	5x5/8 Ø54	6 x ¾ Ø72	6 x 1 Ø96	8 x 1 Ø120	8 x 1 Ø80	8 x 1-¼ Ø80	
Angle, L-In	1-½ x 3/16 Ø18	2 x 3/16 Ø28	2 x 5/16 Ø30	2-½ x 5/16 Ø42	3 x 3/8 Ø40	4 x 3/8 Ø50	4 x ½ Ø48	5 x ½ Ø60	5x5/8 Ø60	6x1 Ø120	8x¾ Ø140	8 x 1 Ø100	8 x 1-1/8 Ø80	
Tee, L-Out	2 x ¼ Ø20	2-3/8 x¼ Ø24	2-½ x 5/16 Ø26	3 x 3/8 Ø34	3-½ x 3/8 Ø38	4x½ Ø54	4-½ x ½ Ø48	5 x ½ Ø60	6 x ½ Ø75	6 x 5/8 Ø96	7-½ x5/8 Ø96	8 x 5/8 Ø96	10 x ¾ Ø144	
Tee, L-In	1-½ x 3/16 Ø20	2 x 3/16 Ø22	2 x 5/16 Ø26	3 x 5/16 Ø36	3-½ x 5/16 Ø38	4 x 3/8 Ø60	4 x ½ Ø50	4-½ x ½ Ø60	5 x ½ Ø75	6 x ½ Ø96	7-½ x5/8 Ø96	8x5/8 Ø96	10x5/8 Ø144	
C, Legs-out	2 x 1-½ Ø16	3 x 1-¾ Ø24	4 x 1-¾ Ø28	5 x 2 Ø28	6 x 2-½ Ø30	7 x 2-½ Ø36	8x3 Ø36	10 x 3 Ø48	12x 3 Ø48	15 x 3-½ Ø48	16 x4 Ø60	18x4 Ø60	20 x 4 Ø72	
C, Legs-in	2x1 Ø20	2-½ x 1-5/8 Ø30	3 x 1-¾ Ø28	4 x 2 Ø36	5 x 2-½ Ø40	7 x 2-½ Ø48	8x3 Ø48	10 x 3 Ø60	12x 3 Ø60	15 x 3-½ Ø60	16 x4 Ø60	18x4 Ø60	20 x 4 Ø72	
Round Bar	1-3/16 Ø14	1-3/8 Ø16	1-¾ Ø20	2 Ø22	2-½ Ø30	3 Ø30	3-3/8 Ø40	3-½ Ø40	4-½ Ø60	5 Ø60	5-½ Ø60	6 Ø72	7 Ø90	
1 Pipe, Sch. 40	1-¼ Ø20	1-½ Ø20	2 Ø24	2-½ Ø32	3 Ø42	4 Ø45	5 Ø70	6 Ø120	6 Sch80 Ø100	8 Ø100	10 Ø160	12Ø160	12 Scd80 Ø200	
1 Round Tube	2 x 16Ga	2-3/8 x 14Ga	3 x 14Ga	3-½ x 14Ga	4-½ x 12Ga	5-½ x 10Ga	6-½ x 9Ga	7 x 3/16	8 x 3/16	10 x 3/16	12 x 3/16	14x3/16	14x 5/16	
2 Square Tube	1-½ x 14Ga	2 x 14Ga	2-¼x 11Ga	2-½ x 10Ga	3 x3/16	3-½ x ¼	4 x 5/16	5 x 5/16	5-½ x 5/16	6 x 3/8	7 x 3/8	8 x ½	10 x 7/16	
2 Recl. Tube	1-½x ¾x 13Ga	2 x 1-¼ x 12Ga	2-½x1-¼ x11Ga	3 x 1-½ x 10Ga	4 x 1-½ x 3/16	5 x 2 x 3/16	5-½ x 2 x 5/16	6 x 3 x ¼	7 x 3 x 5/16	8 x 3-½ x 3/8	8 x 4 x 3/8	10 x 4x ½	10 x 6 x ½	
I Beam EZ		S3 x 5.7 Ø24	S4 x 7.7 Ø30	S5x 10 Ø32	S6 x 17 Ø36	S7 x 20 Ø48	S8 x 23 Ø48	S10 x 35 Ø48	S 12 x 40 Ø48	S15 x 50 Ø48	S18 x 54 Ø72	S18 x 70 Ø80	S20 x 96 Ø86	
H Beam EZ					M4x 13 Ø72	W5x 16 Ø60	W6x20 Ø60	W8x24 Ø72	W8x31 Ø72	W10x45 Ø108	W10x54 Ø120	W12 x 72 Ø96	W18x 106 Ø120	
3 C, On Edge						C3 x 6 Ø96	C5x9 Ø140	C6x 13 Ø200	MC7 x 17 Ø250	C8 x 18.75 Ø300	C10 x25 Ø400	MC12 x 50 Ø450	C15 x 34 Ø600	
3 1 Beam HW						S5 x 15 Ø100	S6x 17 Ø120	S7x20 Ø150	S8x23Ø200	S8 x 23 Ø140	S10 x 35 Ø300	S12 x 50 Ø300	S15 x 50 Ø550	
3 H Beam HW							W4x 13Ø100	W5x 19 Ø100	W6x20 Ø180	W6x25 Ø120	W8x28 Ø300	W10 x 33 Ø400	W12 x 35 Ø500	

Section Modulus in3	0.20	0.40	0.61	1.10	1.5 - 2.26	2.8 - 4.9	4.3 - 7.4	6.2 - 10	9 - 15	14 - 21	20 - 36	28 -44	40 - 62	
Rolling Speed fpm	20	20	20	20	0-23	0-23	0-23	0-23	0-23	0-23	0-23	0-23	0-23	
Power Output HP	3.8	4	4.7	6.5	10	15	20	24	30	40	55	90	120	
Roll Diameters in	5.70	7.0	8.07	9.65	10.83	12.40	15.375	17	18.75	22	25.25	28.375	33	
Shaft Diameters in	1.57	1.97	2.36	2.76	3.54	3.94	5.3/4.7	6.3/5.3	7.3/6.7	8.5/7.9	9.8/9.1	11.6/10.7	12.6/11.8	
Approx. Weight lbs.	1,200	1,720	2,420	3,450	5,725	8,210	10,000	15,180	20,500	28,800	41,000	54,500	99,000	

LEGEND: (1) Set of 3 rolls required for each tube or pipe size, (2) Special rolls may improve results on these profiles, (3) Special Beam On-Edge Traction Device required



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