

Piranha

Pro2 Series

Two-Cylinder Synchronous Press Brake



Piranha Pro2 Series

Pro2 Advantages

The Piranha Pro2 is a fully scalable series of economical and highly productive press brakes. From simple, long run bending applications to complicated short run work, the Pro2 can be configured and customized to meet your needs.

Synchronous Technology

The Pro2 is designed for control and precision. Using two cylinders, electronically synchronized to maintain repeatability, the Pro2's ram stays parallel, even in cases where the pressing load is not in the center of the bed.

Here's how it works—the ram initially comes down at high speed, on its own weight, controlled by two proportional valves (one on each cylinder) that control the flow of oil into the top of each cylinder. This approach speed is adjustable, and can be controlled by the CNC control.

Once the ram reaches the area immediately above the work piece, the CNC control stops the ram. Actuation of the foot switch starts the ram again,



only at a much slower pressing speed (adjustable through the CNC). During this process, the CNC control constantly monitors input from **two high precision linear encoders** to determine the exact position on each side of the ram, and it adjusts the flow of oil to each cylinder so that parallelism is maintained. If more pressure is placed on one cylinder because of off-center loading, this simple system compensates by updating its position and compensating at high speed intervals.

The result is a parallel ram that provides high quality, repeatable bends.

The ram travels down to the pre-programmed bottom of the stroke. Upon reaching this point, the ram delays momentarily, and then reverses direction and retracts at high speed.

Programmable Tilt

In some cases, it is desired to bring the ram down in a slightly tilted condition (for fade-out work). With the Pro2, this is simple—just program the ram to its desired tilt. The ram will form the part in the tilted condition, and return to parallel at the end of each stroke.



Productivity and Scalability

When doing short run work, a **graphical CNC control** allows the operator to quickly program a part. The simple-to-use operator interface lets the operator quickly program bend length and angle, and select the appropriate tool from the **tooling library**. The control does the rest. If your parts are more complex, a 3-dimensional graphics control is available so that you can easily program, visualize the bend, and avoid collisions. When economy and simplicity are the driving factors, a non-graphical CNC control is also available. **The Pro2 offers a control that fits your needs best.**



The Pro2 comes standard with a single axis (X) back gauge. When doing multiple bends sequentially (stage bending), the optional CNC controlled R-axis moves the back gauge fingers up and down in order to contact the work piece at the most appropriate location (such as a raised flange). Similarly, multiple tool set-ups will require fingers

Scalability

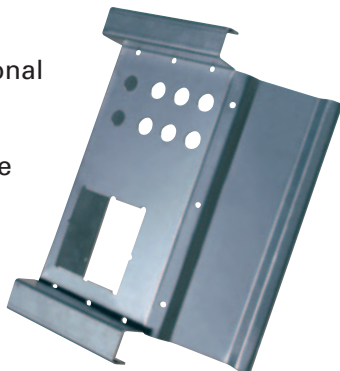
CNC Controls • Back Gauges • Point-of-Operation Guarding • Tooling Style
Hydraulic Clamping • Crowning



at each tool location. For long runs, this can be accomplished simply by adding additional fingers. For short runs, this may be better accomplished by adding CNC controlled fingers (Z1 and Z2 axes) to the back gauge. For some applications additional X and R axes may be required to a maximum of X1, X2, R1, R2, and Z1, Z2 (6-axis back gauge). In any event, **every Pro2 model can be scaled to accept any back gauge, from a single axis (X) to a fully automated 6-axis gauge.**

Each Pro2 has the ability to use precision tooling. However, by using sectional precision tooling, and hydraulic clamping, you can turn your press brake into a **highly productive bending center** for short run production.

Additional high productivity features can be



added to maximize your investment. For example, today's safety equipment actually allows your press brake to be more productive. By integrating point-of-operation guarding, **operators can stage bend parts quickly without letting go of the part.**

With the Pro2, you can produce parts, simple or complex, in one operation, avoiding multiple set-ups and unnecessary handling.

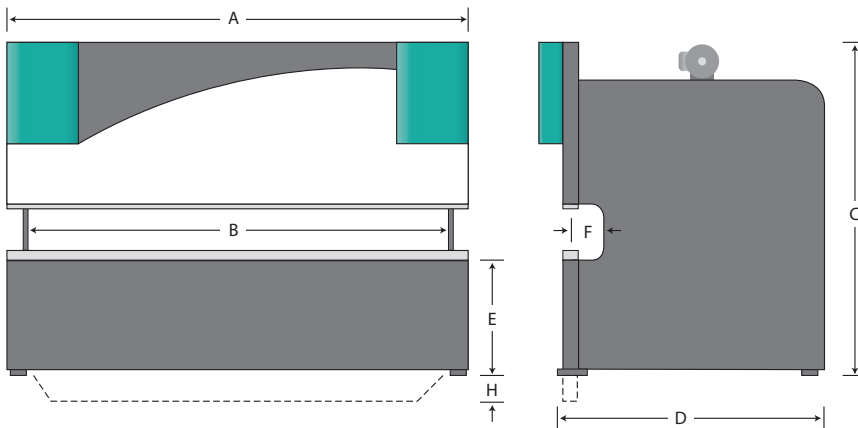
Economics

Your Pro2 press brake is designed for maximum flexibility. By combining any of the above features, you can turn your Pro2 into a highly productive workhorse for almost any application. Investing in new machinery is all about getting a high return on that investment. **The Pro2 is an economical machine with features that you normally see on high end, expensive brakes...**and with Piranha's scalability, you can purchase only those features that will offer you a fast return on your investment.

Specifications

		Pro2 Comparison Chart														
Pro2 Model	Floor	A	B	C	D	E	F	H	Open Height	Shut Height	Stroke	Rapid Approach	Press Speed	Return Speed	Ship Weight*	Motor HP
65-6 F	Flush	72"	52"	80"	36"	34"	8"	0"	14"	6"	8"	100	25	150	5,800	7.5
65-8 F	Flush	96"	76"	81"	37"	34"	8"	0"	14"	6"	8"	100	25	150	7,000	7.5
100-8 F	Flush	96"	76"	86.5"	48"	34"	10"	0"	14"	6"	8"	140	25	210	8,600	10
100-10 F	Flush	120"	100"	86.5"	48"	36"	10"	0"	14"	6"	8"	140	25	210	10,500	10
100-12 F	Flush	144"	124"	86.5"	48"	38"	10"	0"	14"	6"	8"	140	25	210	13,200	10
200-10 F	Flush	120"	100"	108"	70"	38"	10"	0"	14"	6"	8"	210	25	225	18,500	20
200-12 F	Flush	144"	124"	108"	70"	38"	10"	0"	14"	6"	8"	210	25	225	21,500	20
200-14 F	Flush	168"	148"	108"	70"	38"	10"	0"	14"	6"	8"	210	25	225	24,500	20
200-16 B	Below	192"	172"	108"	70"	38"	10"	11"	14"	6"	8"	210	25	225	26,500	20
200-16 F	Flush	192"	172"	108"	70"	38"	10"	0"	14"	6"	8"	210	25	225	28,000	20
250-10 F	Flush	120"	100"	120"	75"	38"	10"	0"	16"	8"	8"	190	20	225	28,200	30
250-12 F	Flush	144"	124"	120"	75"	38"	10"	0"	16"	8"	8"	190	20	225	32,000	30
250-14 B	Below	168"	148"	120"	75"	38"	10"	11"	16"	8"	8"	190	20	225	34,200	30
250-14 F	Flush	168"	148"	120"	75"	38"	10"	0"	16"	8"	8"	190	20	225	35,600	30
325-10 F	Flush	120"	100"	124"	80"	40"	10"	0"	18"	8"	10"	190	18	190	29,500	30
325-12 F	Flush	144"	124"	124"	80"	40"	10"	0"	18"	8"	10"	190	18	190	33,800	30
325-14 B	Below	168"	148"	124"	80"	40"	10"	12"	18"	8"	10"	190	18	190	36,400	30
325-14 F	Flush	168"	148"	124"	80"	40"	10"	0"	18"	8"	10"	190	18	190	38,500	30
325-16 B	Below	192"	172"	124"	80"	40"	10"	12"	18"	8"	10"	190	18	190	40,000	30
325-16 F	Flush	192"	172"	124"	80"	40"	10"	0"	18"	8"	10"	190	18	190	43,000	30
500-12 B	Below	144"	126"	126"	95"	40"	12"	12"	20"	10"	10"	210	18	200	55,500	40
500-12 F	Flush	144"	126"	126"	95"	40"	12"	0"	20"	10"	10"	210	18	200	58,300	40
500-14 B	Below	168"	148"	126"	95"	40"	12"	13"	20"	10"	10"	210	18	200	59,200	40
500-14 F	Flush	168"	148"	126"	95"	40"	12"	0"	20"	10"	10"	210	18	200	64,800	40
500-16 B	Below	192"	172"	126"	95"	40"	12"	15"	20"	10"	10"	210	18	200	61,900	40
500-16 F	Flush	192"	172"	126"	95"	40"	12"	0"	20"	10"	10"	210	18	200	68,750	40

*Approx. weight in lbs.



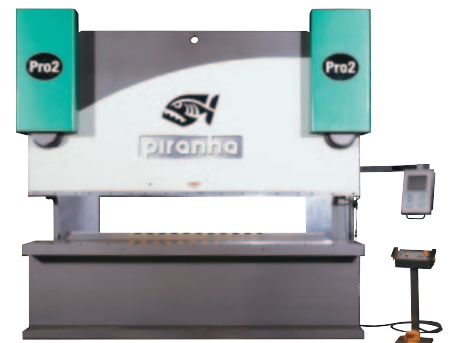
Extended capabilities such as additional Open Height, Throat Depth and Ram Stroke are available upon request.



100-10



200-12



500-12

Complete Line of Press Brakes

65 ton through 500 ton • 6 to 16 ft. Bed Size

Approximate Pressure in Tons per Linear Foot Required to Make 90° Air Bend on Mild Steel (60,000 PSI Tensile Strength) with Various Width Die Openings																								
Thickness of Metal		Width of V Die Opening																						
Gauge	Inches	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6	7	8	10	12
20	.036	3.1	2.3	1.7	1.4	1.1																		
18	.048	5.3	4.0	3.0	2.5	2.2	1.7	1.3																
16	.060	9.6	7.1	5.6	4.5	3.8	2.8	2.2	1.8	1.5														
14	.075		11.9	9.2	7.6	6.3	4.7	3.5	3.0	2.5	2.1	1.8												
12	.105				16.7	13.1	9.7	8.0	6.5	5.6	4.6	4.1	3.2											
11	.120					19.2	14.2	11.1	9.0	7.5	6.3	5.5	4.4	2.9										
10	.135						18.6	14.5	11.9	9.9	8.5	7.3	5.8	4.0										
3/16	.188							27.4	23.1	19.3	16.4	14.3	11.2	7.5	5.7	4.4								
1/4	.250									39.4	33.3	29.5	22.7	15.4	11.4	9.0	7.4	6.1						
5/16	.313											50.4	39.8	27.0	19.7	15.3	12.7	10.5	7.7					
3/8	.375												61.1	42.3	30.9	24.0	19.6	16.3	12.3	9.5				
7/16	.438													61.7	45.8	35.4	28.6	24.4	17.3	14.8	11.2			
1/2	.500														85.2	63.6	48.8	39.7	33.3	24.6	19.4	15.9	13.1	
5/8	.625															110.0	86.2	70.0	58.3	43.1	33.3	27.4	23.3	16.9
3/4	.750																110.0	93.0	68.7	53.5	43.6	36.5	27.1	21.0
7/8	.875																	137.0	104.0	80.7	64.6	52.9	39.7	31.6
1	1.000																		143.0	113.0	91.2	76.2	56.3	44.2

■ Suggested die openings for material up to 1/4" is 8 times material thickness

■ Suggested die openings for materials above 1/4" is 10 times material thickness

Bending pressures for other materials as compared to mild steel on chart are as follows:

- **Soft Brass** – 50% of pressure shown
- **Aluminum Alloys (Heat Treated)** – same as steel
- **Stainless Steel** – 50% more than shown
- **Soft Aluminum** – 50% of pressure shown
- **Chrome Molybdenum** – 100% more than shown

Steels greater than 60,000 PSI require additional tonnage and/or wider die openings

All of the above bending pressures are nominal and represent average conditions. These values are dependent upon the radii of the dies, the yield strength of the material, the temper of the material, direction of grain, etc. Therefore, a safety factor of at least 20% should be added when selecting a press for a given job.

Control Systems

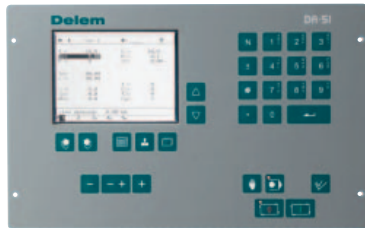
Control Options for Easy Operation

Rugged reliability and ease of operation are built into every standard and optional Delem control. Each control, whether for two axis or up to six axis back gauge control, is designed for simple, fast operation.

You choose the level of job automation that best suits your application needs.

Delem DA-51 CNC Control

- Numerical one page programming
- 500 Program capacity with up to 25 bends per program
- Tool library
- Controls Y1, Y2, crowning, plus two back gauge axes.



Delem DA-56 CNC Graphical Control

- Graphical 2D interface
- Graphical bend sequence simulation
- Collision check
- Developed length calculation
- Automatic bump bending calculation
- Expanded product and graphical tool library—2 MB
- USB, RS-232 and network interface
- Controls Y1, Y2, crowning, plus two back gauge axes.



Delem DA-66W CNC Graphical Control

- Graphical 2D interface
- Graphical bend sequence simulation
- Collision detection
- Developed length calculation
- Automatic bump bending calculation
- Expanded product and graphical tool library—4 MB
- USB, RS-232 and network interface
- Controls Y1, Y2, crowning, plus six back gauge axes.



Delem DA-69W CNC Graphical Control

- Graphical 3D interface
- Graphical bend sequence simulation
- Collision detection
- Developed length calculation
- Automatic bump bending calculation
- Expanded product and graphical tool library—6 MB
- USB, RS-232 and network interface
- Controls Y1, Y2, crowning, plus six back gauge axes.



Total Control

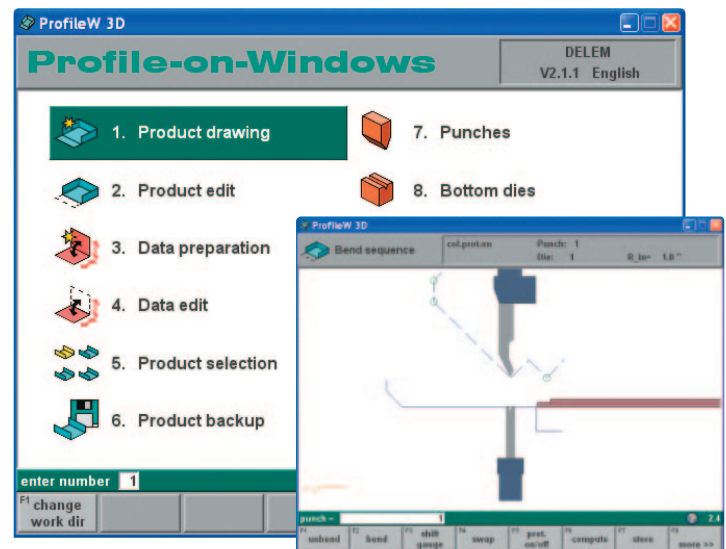
Bend Angle • Back Gauge • Crowning • Speed • Bend Sequence

Offline Programming Packages For Higher Productivity

Offline software packages maximize production time and efficiency offering both 2D and 3D systems with available DXF conversion. Either package can be used with any of the available graphical controls (DA-56, DA-66W, DA-69W)

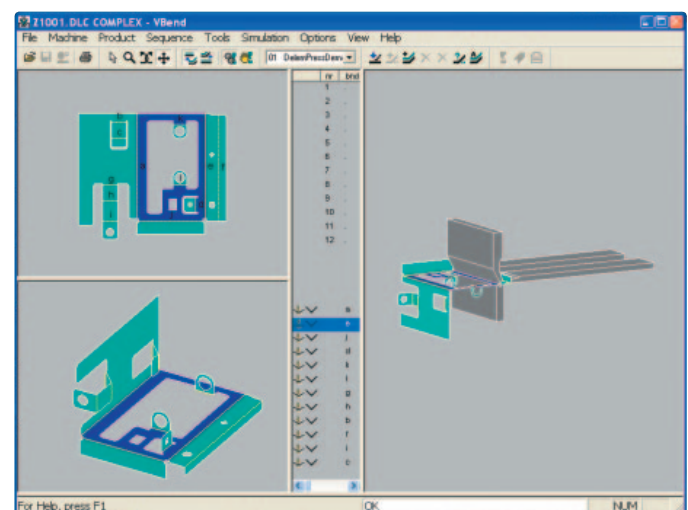
Delem Profile W—an easy off-line solution for fast programming of products and tools without using machine time

- User interface similar to the CNC Control
- Tool Selection
- Graphical product programming and program generation
- Auto bend sequence calculation
- Collision detection
- Machine set-up preparation
- Production time calculation



Delem V Bend—easily, quickly construct products as a 2D profile or 3D view

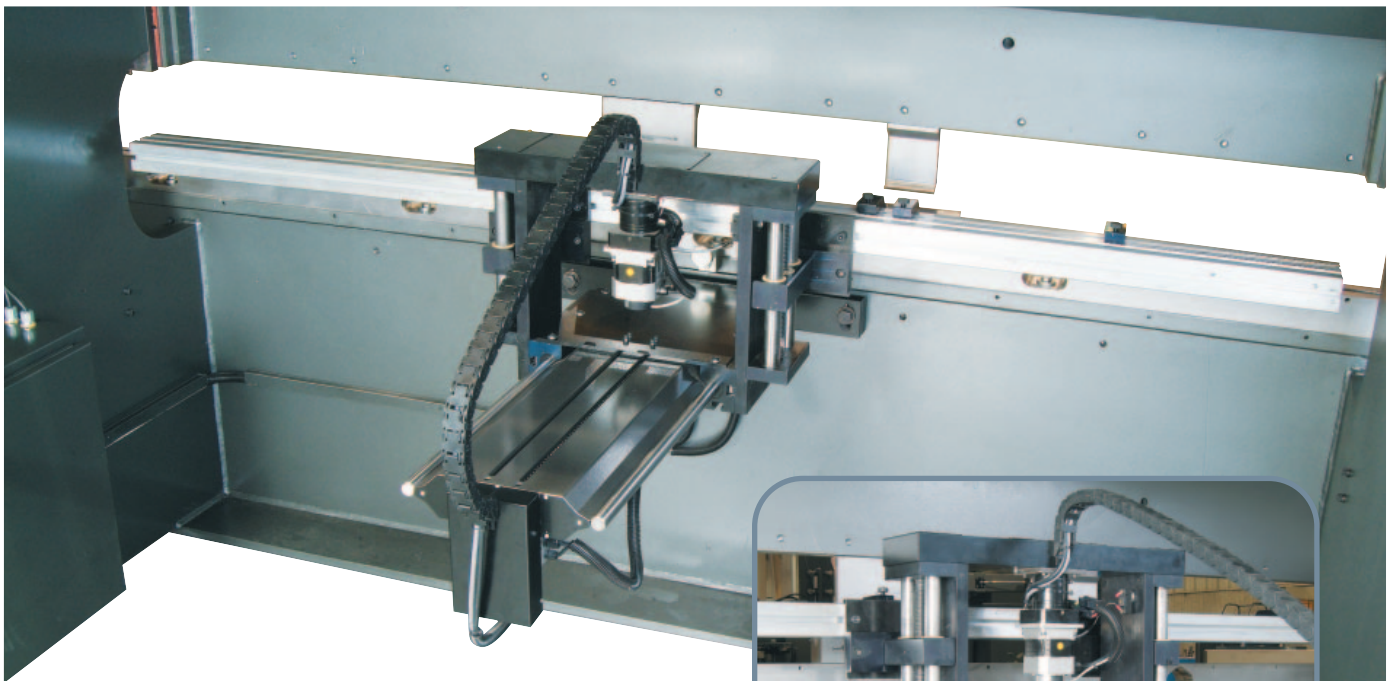
- 3D Programming flexible bend sequence generation
- Virtual real time simulation
- VDraw drawing package option available
- Collision detection
- Parametric tool definition
- Special tool operations (hemming, radius, etc.)
- Special back gauge finger support
- User definable bend allowance tables
- Automatic or manual positioning of all axis
- Customized press brake modeling to fit your press brake
- DXF conversion available



Back Gauge Systems

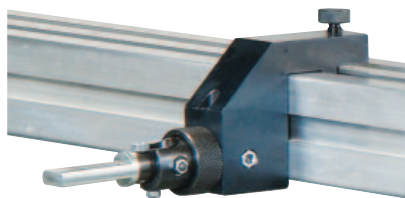
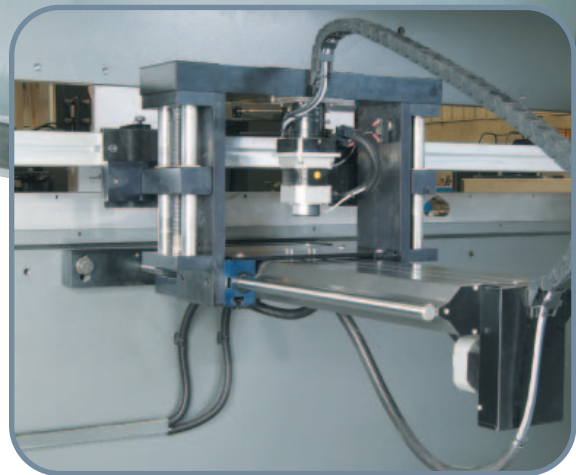
Back Gauge Options for Automatic Multiple Axis Control

Affordable back gauge options—from entry level to highly automatic—add to your Pro2 productivity. All of the options integrate with the Delem controls for simple operation.



Standard Back Gauge System (shown with optional powered R-axis)

- Standard equipment on 65 and 100 ton models
- Designed for systems up to 8 ft.
- Available up to 4-axis (X, R, Z1, Z2)
- Single X-Drive mounted to bed
- Repeatability +/- .001
- Flip-up, micrometer adjustable fingers



HD Back Gauge System (not shown)

- Designed for systems up to 16 ft.
- Available up to 6 axis
- Dual X-Drive floor mounted
- Repeatability +/- .001

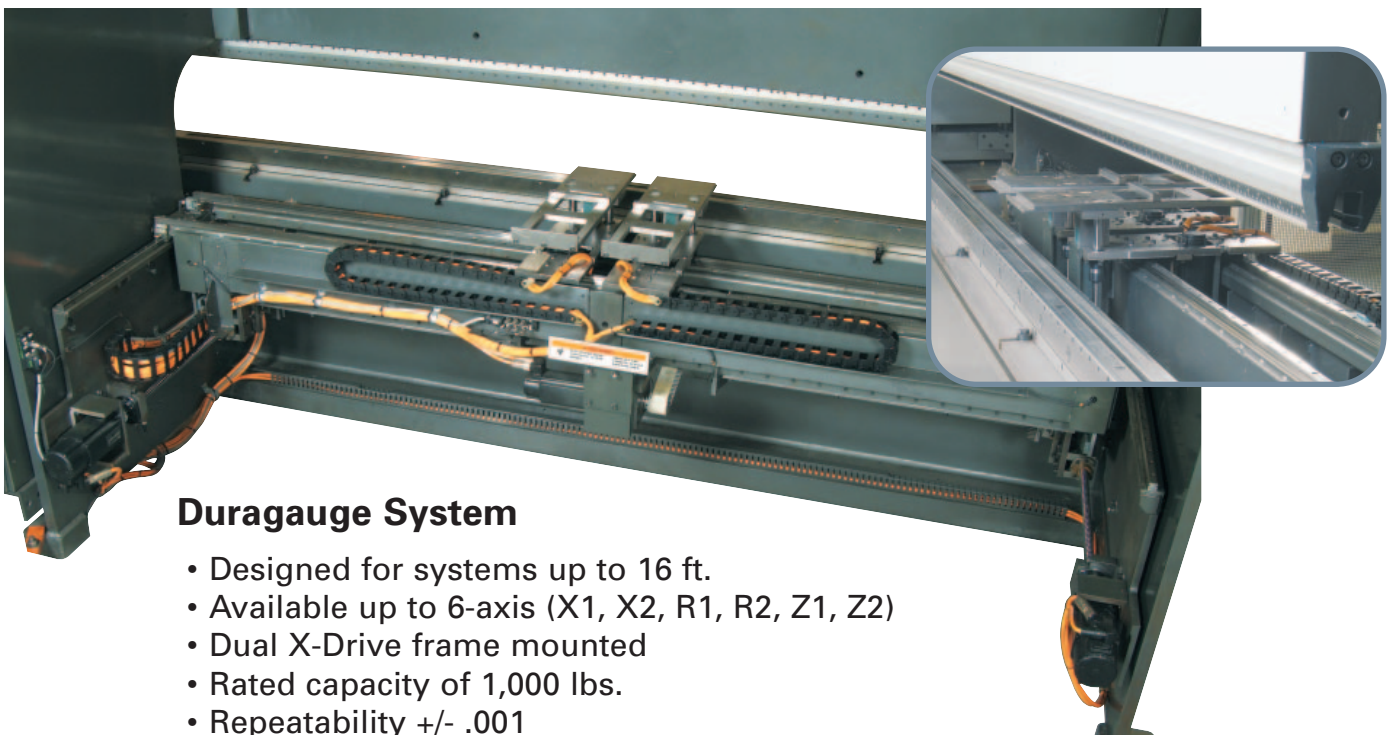
Wide Selection

Single- or Multi-Axis • Capacity • Mounting



Deluxe Back Gauge System (shown with manual R-axis)

- Standard equipment on 200 ton and larger models
- Designed for systems up to 16 ft.
- Available up to 4-axis (X, R, Z1, Z2)
- Dual X-Drive frame mounted
- Repeatability +/- .001
- Flip-up, micrometer adjustable fingers



Duragauge System

- Designed for systems up to 16 ft.
- Available up to 6-axis (X1, X2, R1, R2, Z1, Z2)
- Dual X-Drive frame mounted
- Rated capacity of 1,000 lbs.
- Repeatability +/- .001
- Wide, stepped finger can accept parts up to 48" wide

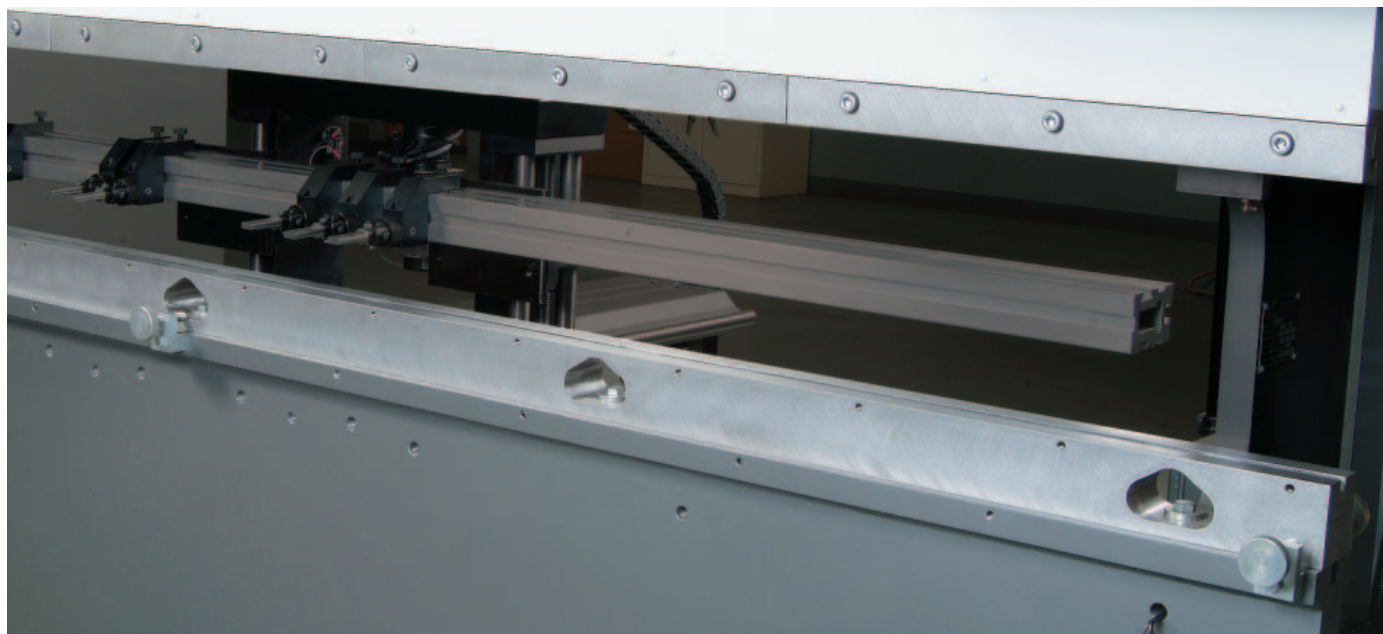
Tool Clamping Systems

Tooling for Flexibility and Speed

The Pro2's ram accepts American style punch tooling as standard. However, many other tooling styles are supported as well. The standard ram adapter has manual, spring loaded clamps that make it easy to load and unload tooling.



Stage bending of a part with nine bends shows flexibility of even the most basic Pro2.



Standard manual, spring-loaded clamping on the ram, and optional precision die rail. Die rail is 3" tall (shown with Standard back gauge and optional additional fingers).

Flexible Tooling Options

High Precision • Fast Set-up • Crowning • Clamping



Optional hydraulic clamping and CNC controlled crowning. Precision sectional style tooling offers fast setup and reduction in overall tooling inventory.

When hydraulic ram clamping is desired for faster set-ups, the Pro2 offers options to accept American, European, or Wila New Standard style tooling. Hydraulic clamping is integrated directly through the CNC control, and is activated by a push button located on the operator's pedestal. Hydraulic clamping allows tools to be removed, replaced, or relocated on the ram quickly.



Precision Tooling Systems are one of many tooling options on the Pro2.

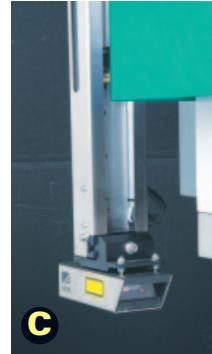


The Motorized Crowning System allows the CNC control to adjust the amount of crown.

Several optional die holding systems complete the Pro2's tool clamping systems. An economical precision die rail with manual clamping is available as the basic solution. In addition, manual and CNC crowning systems are available with both manual and hydraulic clamping. Crowning systems quickly compensate for bed deflection in heavy tonnage applications, and eliminate the need for time-consuming shimming.

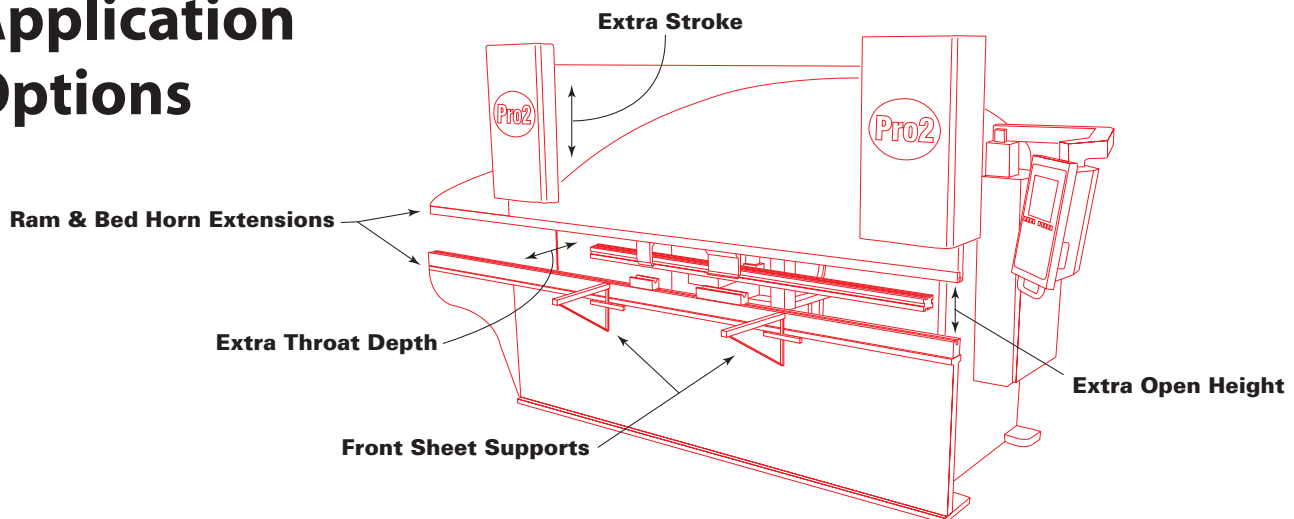
Accessories & Enhancements

Guarding Options



- A) Pro Series machines come standard with a dual palm, foot actuated operation that meets ANSI Standard B11.3 for point of operation protection. Additional pedestals are available for when two operators work together.
- B) Light Curtains (optional)—Light curtains are available to enhance point of operation protection when dual palm buttons are not practical.
- C) Lazer Safe (optional)—The Lazer Safe guarding relies on three laser beams close to the tip of the punch that instantly stop the motion of the ram when an obstruction is sensed. This system can be used as a productive alternative to other point of operation guards.
- D) Rear Enclosure—Optional equipment that restricts access to the rear of the brake.

Application Options



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