



OPERATOR/APPLICATIONS TRAINING

Basic Operator Training 4 to 5 day duration
(Depending on options)

Advanced Operator Training 3 day duration

MAINTENANCE TRAINING

Basic Maintenance Level 1 3 day duration

Advanced Maintenance Level 2 4 day duration

BYSOFT 6.4.1 TRAINING

Bysoft 6.4.1 Training 3 to 5 day duration
(Depending on options)

Operator and applications training can be conducted at the New York, Chicago or Los Angeles technical centers or at the customer's site. Maintenance training is available at the technical centers only. Bysoft 6.4.1 training can be conducted at the technical centers or at the customer's site. Course agendas, schedules and proposals are available upon request; in most states, training is a tax-deductible item.

If you would like additional training for your operators, programmers or maintenance staff, please contact Bystronic's Applications/Training Department at 631-231-1212 or via e-mail under training@bystronicusa.com.

contact us

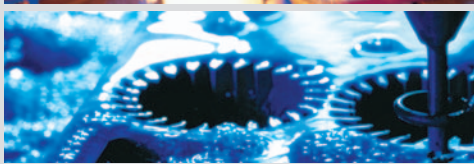
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Business Hours: Monday-Friday 8:30 AM to 5:00 PM EST
Laser Service: Monday-Friday 8:30 AM to 7:00 PM EST

We look forward to hearing from you!



- PAGE 2**
 - > Welcome Letter
 - > New Distributors
 - > Upgraded Automation
 - > Optimizing Shear Performance
- PAGE 3 & 4**
 - > Bystronic Now Offering a Full Range of CNC Press Brakes
 - > New Return Goods Program
- PAGE 5**
 - > Product Highlight: Byjet Waterjet Cutting System
- PAGE 6**
 - > Training Programs
 - > Contact Us

Bystronic Celebrates 25 Years in North America

March 22, 2003, marks the 25th anniversary of Bystronic's incorporation in the State of New York as a subsidiary of Bystronic AG, Switzerland. The creation of Bystronic Inc., in 1978, signaled the beginning of a long-term commitment to establish a permanent, full service sales and support network for the North American market.

After receiving its first major automotive contract in 1984 with Ford Motor Company, Bystronic rapidly gained a strong foothold in the North American Market. Bystronic lasers were introduced in 1990, and the Company's dramatic growth in the 1990's led to further expansion. The construction of a New York based headquarters and showroom was completed in 2002.

Revolutionary innovations, such as the CNC rotary axis introduced for laser machines in 1993 on the Bystar laser cutting system, fueled Bystronic's growth and reputation as an industry leader. In 1997, Hämmerle AG joined the Bystronic Group. The Hämmerle press brake effectively expanded Bystronic's reach into the forming side of

the fabrication market. This acquisition, followed by the acquisition of two other major press brake suppliers in 2002, allows Bystronic to offer their customers a complete range of press brakes from simple machines to the unique 3-point bending system.

Bystronic has offices/technical centers in Chicago, Los Angeles, New York, Greenville, and Mexico to provide customers with detailed service at the local level. These centers give our customers more access for demonstrations, training and sales/service support. Each center also has a unique set of capabilities that focus on the development of its particular local market area.

It has been an exciting 25 years for Bystronic in North America, but it is really only the beginning. As we celebrate this important milestone, we thank all of our loyal customers. We also wish to recognize our employees for their dedication in providing the highest level of product and customer service – creating the groundwork for Bystronic's next exciting 25 years!

Welcome...

The year 2002 was a busy one for Bystronic. We are pleased to take this opportunity to thank our valuable customers for helping us grow at a very respectable rate this past year despite the challenges of an economy that once again produced a significant drop in orders for the overall machine tool industry.

During this challenging year, Bystronic moved ahead on several significant expansion projects focusing on improving support for our customers. Investment in Technical Centers allows Bystronic to provide support to customers on a local level. Additionally, our newest branch, Bystronic Mexico, in Mexico City, will improve our support in that market area with the added bonus of a spare parts inventory for fast delivery.

Two strategic acquisitions now make Bystronic a major supplier in the press brake and shear markets. With a press brake model for every technology level, we are able to offer a forming solution for your specific manufacturing environment.

New products were introduced, including Byspeed, a high production laser offering customers a very fast and flexible laser processing system.

New material handling and automation systems offer greater flexibility to help you maximize your productivity and manufacturing efficiency. Bystronic continues to invest in research and development, so watch for more innovations throughout 2003!

***Bystronic...
focusing
on support
for our
customers.***

Even more focus is being placed on Services, Applications Support, and Training. Continuous improvement in these critical areas strengthens our foundation, enabling us to grow along with you. Your comments are very important to help us understand what we are doing well and where you think we can improve.

Once again, everyone at Bystronic thanks you for making this success possible. Enjoy this edition of our newsletter and please do not hesitate to contact us with comments or suggestions.

Bystronic Improves Market Coverage, Welcomes New Distributors

We are pleased to announce the assignment of new distributors for three important market areas.

Trimec is now responsible for Minnesota, N. Dakota, S. Dakota, Nebraska, and Central Canada. With many years of fabrication machinery experience and a strong commitment to customer service, Trimec has already made a positive impact in this important market area.

Sterling Machinery has given Bystronic a stronger presence in Texas and Arkansas. Their in-depth knowledge of laser processing systems and precision press brakes is key to their success.

Southland Machinery takes on the challenge of developing the Carolinas with Bystronic. We are looking forward to strong market coverage in this growing market area.

Please join us in congratulating these new representatives as we welcome them to the Bystronic Team.

Upgraded and Expanded Automation

Through good communication with our customers, Bystronic has reconfigured and expanded an already outstanding automation product line to allow for even greater flexibility and throughput. These latest models offer a variety of features depending on the application. The Bytrans Load/Unload system comes in several different configurations including a space saving Bytrans Line Short. A Bytrans Load/Unload system is also now available for the large format 4025-6.5 machines to handle large sheets.

The introduction of the Byspeed,

with its ability to match turret punch press productivity, has pushed the development of automation to even greater efficiency. Users now have the ability to configure more shelves in the towers to receive cut parts, and an additional off-load station can now be added to the Bycell, providing a choice to either immediately offload parts required for the next operation or store cut parts back in the tower for unmanned, "lights-out" operation.

Rake Angle Adjustment Optimizes Shear Performance

Optimum quality of cut and productivity in shearing is a function of proper blade gap and rake angle adjustment. Shearing thick materials requires a higher blade rake angle setting and a wider blade gap than when shearing thin materials.

Shears with a fixed rake angle can perform well in a limited range of materials, but to achieve good results in the full range of metals from 26 gauge through 1/4" or 14 gauge through 1/2" requires a machine with an adjustable rake angle like the Bystronic MK Series hydraulic guillotine shears. Rake setting 1 is correct for shearing material from 26 gauge through 16 gauge. Rake setting 2 is used for 14 gauge through 10 gauge steel, and rake setting 3 is optimum for shearing 3/16" to 1/4" mild steel on the MK6 machines. MK 13 machines also have an adjustable rake and can process mild steel up to 1/2" thick.

Bystronic MK Series shears are available in 10' or 13' cutting lengths and 1/4" or 1/2" mild steel cutting capacities. All models have a standard NC programmable back gauge along with a host of other standard features. For more information regarding precision shearing, please contact Peter Butchart, Product Manager.

Bystronic Now Offering Customers a Full Range of CNC Press Brakes

Sheet metal fabricating work today means tighter tolerances, greater cost emphasis, more complex and varied parts, and shorter production lead times. Fabricated parts can vary in design from simple bends to very complex 3D or box shaped parts.

Bend lines on the parts can be parallel to the tooling or require unparallel bends. The requirements of the parts may require different angles from one end to the other; for example, funnels, cones, or tapered parts. Some parts may require multiple setups or stages along the machine bed (lower beam). Angle accuracy on long bends will vary unless crowning devices are used. All these factors affect the setup times and handling of the parts by the operators. Material thickness differences and springback of material can affect the desired angle. To reduce these effects and increase the parts per hour rate that shop owners want, improvements are now available.



Bystronic offers three levels of CNC press brakes to address these high precision, high production requirements: the EP-Series, PR-Series, and the P-Series. All provide extreme accuracy, ease of operator use and reduced setup times. All three series are equipped with the Y1-Y2 hydraulic ram control technology and a heavy-

duty CNC back gauge as standard features. Additional features and options are available for each model.

Bystronic EP Series

The Bystronic EP Series press brakes offer advanced technology for precision sheet metal fabrication. Each model features a powerful CYBELEC DNC 1200, Windows based CNC control with color 3-D graphics for ease of use and maximum flexibility to meet demanding manufacturing challenges. Other standard features include 4 main CNC axis (Y1, Y2, X, R), plus CNC WILA crowning. (CNC crowning is not offered on the EP 5-55 model as it is not required due to the short bending length.) A state-of-the-art hydraulic system provides exceptional control of the Y1 and Y2 cylinders for accuracy and repeatability of the bending process. A robust design and use of high quality components throughout the machine ensures reliability, high productivity, and an excellent return on investment. This series is available in a variety of sizes ranging from 55 tons through 220 tons with bending lengths ranging from 5 feet through 13 feet.

Bystronic PR Series

Bystronic PR6 or PR8 Series press brakes represent the next level of technology for precision sheet metal fabrication. These models also feature the powerful CYBELEC DNC 1200, Windows based CNC control with color 3-D graphics for ease of use and maximum flexibility. The back gauge, however, can be configured as a 4 or 6 axes system, with 6 main CNC axes (Y1, Y2, X, R, Z1, and Z2) or 8 main CNC axes (Y1, Y2, X1, X2, R1, R2, Z1, Z2) and Dynamic Crowning.

PR stands for Pressure Reference. The Pressure Reference System is the

unique dynamic load sensing control at the center of the PR series press brakes that is able to measure the pressure needed by the sheet to bend the programmed part. High-resolution pressure sensors are mounted in strategic parts of the machine to measure the real pressure of the part during the bending cycle. The pressure sensor information is used by the DNC 1200 control to compensate and adapt the bending pressure and beam positions to produce extremely precise bends, all occurring during the actual bending process.

The standard features of the Pressure Reference System are as follows:

Dynamic Sideframe Deflection Compensation

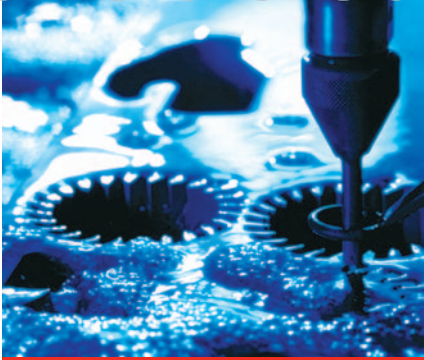
- ◆ Each side frame deflection is automatically monitored by a cylinder pressure sensor and individually compensated dependent on the real load measured, even under full off-center bending.
- ◆ This allows reduced set-up times and improved production.
- ◆ Multiple tool setups can be positioned along the length of the lower bed with the same accuracy at each position.



Dynamic Pressure Control

- ◆ The actual bending force is automatically adapted to each bend. The system can increase

product highlight



Bystronic Introduces Byjet

The full feature, high production waterjet cutting system

2002 was a pivotal year in the history of Bystronic in many ways, but perhaps one of the most important organizational changes that occurred last year is the creation of an entirely new division with the development of the waterjet business as its singular focus.

Bystronic has offered waterjet machines for many years, although we have never seriously introduced them into the North



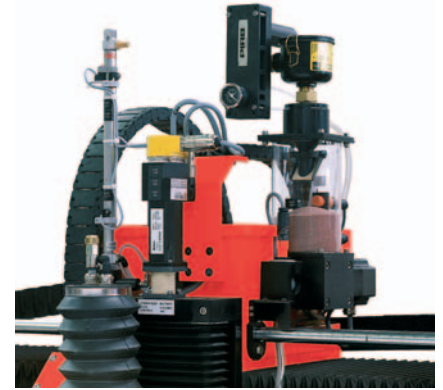
American market. That changed in the fall of last year, when Bystronic displayed the Byjet 3015 at both the IMTS and Fabtech trade shows and installed the unit in our new showroom in Hauppauge, New York.

The Byjet is a full feature, high production waterjet cutting system capable of processing a wide variety of materials with impressive quality and without introducing thermal effects. Several critical features separate the Bystronic waterjet from others in the market.

Bystronic's own pump system, closely integrated with our own CNC, allows full control over all aspects of the cutting process. Most importantly, two individually driven, phase delayed regulated pressure multipliers ensure constant pressure and volume flow. This results in optimum consistency in cutting and allows for cutting at higher rates while maintaining excellent edge quality. Full integration of the pressure system with the controller affords the user maximum control of the cutting process as well as water pressure, speed and abrasive flow.

Abrasive flow is introduced precisely via a CNC controlled feeder that draws the abrasive rather than forcing it. This technology eliminates "clogging" and allows the hopper to be filled without interrupting the cutting process.

The product line includes a range of machines starting with the 3015, for processing materials up to 5' x 10', and extends to oversize models with a cutting area as large as 10' x 39'. This full range



offers a model for virtually any serious, high production waterjet application. All models can be equipped with multiple heads and drill units for the pre-drilling of special materials such as laminates.

A specially sealed rotary axis unit is also available for the processing of tube materials, a unique advantage of the Bystronic system. The stainless steel chuck is designed for high reliability in demanding applications and allows efficient processing of tubes or profiles.

All of this technology is built onto a robust, stainless steel machine base and tank assembly. The heavy duty bridge is engineered for high speed, precise positioning and maximum strength to minimize deflection and resist distortion. Sharing the same technology as used in the laser machines, the Byjet drive system provides high accuracy and excellent processing performance. Bysoft programming software, with its powerful, user-friendly format, ties everything together with modules for nesting in flat sheets and the development of geometries for tube or profile processing.

Contact Frank Arteaga or your local representative to schedule a demonstration of the Byjet, waterjet cutting system.

or decrease the necessary bending force as compared to the programmed force (pressure).

- ◆ The force used is only the necessary force to bend the part.
- ◆ Reduced wear of hydraulic parts since the pressure is adapted to the needed force (load sensing).
- ◆ Parts with holes or perforated sheets will have reduced bending lengths. The PR system can adapt to the actual pressure needed and produce an accurate part, regardless of the position of the bend line on the part.

Dynamic Crowning

- ◆ The Pressure Reference System constantly controls the lower bed compensation providing the true compensation to make throughout the bending cycle in real time and under load.
- ◆ Results in work pieces of very high over-all accuracy (angle, flange-length, and shape).
- ◆ Automatic reaction of the system to variations in sheet length and/or quality.

Active Tool Protection

- ◆ Continuous pressure monitoring that allows virtually 0% cylinder pressure, and interrupts the working cycle of the upper beam if the pre-set tool safety limit is exceeded.

Temperature Compensation

- ◆ Integrated temperature sensing allows the CNC to monitor expansion of the frame and adjust ram position during the bottom of the bend cycle.

PR plus software

In addition to the standard features of the PR series, the press brake can be integrated with the optional PR plus software for Springback Deflection Compensation and thin sheet measurement detection.

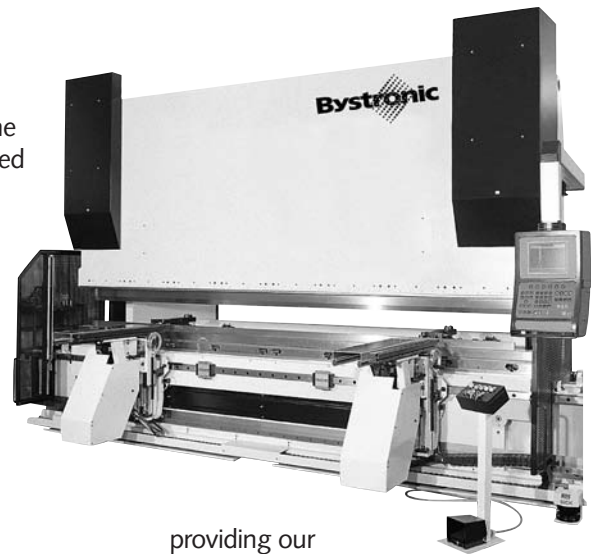
PR6 and PR8 models are available with capacity ranging from 66 tons through 350 tons, and bending lengths from 6 feet to 13 feet.

P-Series (3-point bending system)

The Bystronic P-series press brake uses the 3-point bending method that provides extreme accuracy, drastic reductions in setup time, long tool life and maximum flexibility. The 3-point bending system addresses basic press brake design elements to ensure high accuracy.

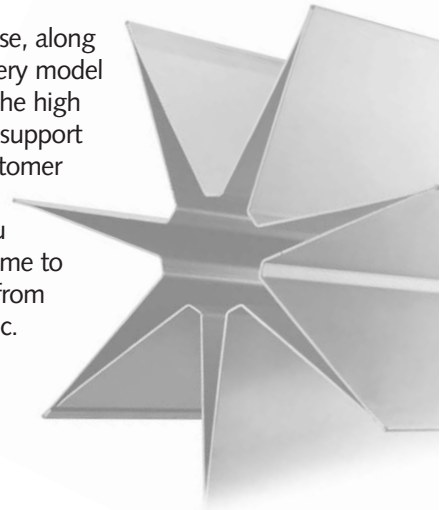
- ◆ Better control of the ram stopping point by providing a positive stop in the lower die that is automatically set by CNC and positioned with extreme accuracy and repeatability.
- ◆ Beam design using a hydrocushion, eliminating the effects of beam deflection altogether.
- ◆ High precision tooling system that is protected from damage or overload by the hydrocushion, virtually eliminating premature tool wear.

Bystronic now offers the right solution for every metal forming application,



providing our customers with a full and complete line of press brakes to support their individual manufacturing requirements. Each press brake includes Bystronic installation, programming training and application training. Offline programming software is included with each CNC model to allow programming at a computer or work station thereby reducing setup time and increasing the amount of time for bending at the press brake.

Of course, along with every model comes the high level of support and customer service that you have come to expect from Bystronic.



Customers Talk, Bystronic Listens!

New return goods program

Your comments have been heard! We are pleased to announce that we have implemented a new system for providing parts for service and preventive maintenance. It is no longer necessary to invoice for parts and preventive maintenance kits, then issue credit back to you for those items not used. The parts are now sent using an internal Bystronic account, and you are invoiced only for those parts that are billable at the end of the service visit.

While this eliminates unnecessary customer invoicing, we still request a purchase order at the time of scheduling to invoice non-warranty items if required for the service. In turn, we would appreciate your help in making sure that we receive back the defective parts or parts not used during the service as quickly as possible. We are confident that with your help the program will be a complete success. Thank you for your comments, keep them coming!