

FORMING IDEAS

A publication of Brenco Industries Ltd

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Brenco Industries has been publishing the Forming Ideas newsletter since 2007. It is intended to educate and inform our friends, customers and suppliers through our own observations and experiences. Brenco is a quality provider of metal cutting, forming and fabricating solutions.



FUNKY FORMING



A Gate For Honour Ranch



Honour Ranch - a place of recovery and renewal for Canadian Armed Forces personnel, first responders, veterans and their families. In conjunction with Honour House in New Westminster, Honour Ranch opened last October near Ashcroft, BC. It serves the men and women of Canada's military, police, fire and ambulance services who, through their heroic efforts protecting our society, have succumbed to injury, both physical and emotional. Honour Ranch and Honour House provide support and services at no cost to their guests. Neither receive any direct funding and rely solely on contributions and donations.

The newly opened Honour Ranch needed an entrance gate that would provide a sense of peace, healing and self esteem for the men and women that call it home

for a few weeks. Brenco is a supporter of Honour House so it was without hesitation that we offered to build a gate. The design was achieved collaboratively between Brenco and directors of Honour Ranch. The maple leaves adorning the gate speak of the country they serve and the soft, radiused lines of the gate express a sense of tranquility. Thus, the courageous men and women that pass through these gates to begin their journey of healing, are made to feel safe, welcomed and valued.



PRESS BRAKES



*Left
Brenco's first
press brake.
Built by the
Cincinnati
Company in
1937.*



*Right
40 ton electric
press brake.
Ideal for small
parts requiring
a high degree
of accuracy.*

When Brenco opened for business in August of 1983, we had one press brake (top left) which we purchased from Dominion Bridge for seven thousand dollars. It was an old timer, built in 1937 and had a forming capacity of 240 tons. When this machine was built, engineering wasn't as advanced as it is now and metallurgy not as accurate so machines of this vintage were overbuilt as a precaution to failure.

This was a mechanical press brakes. Very simple design. No electronics, no hydraulics, just two electric motors. A large motor to drive a heavy flywheel which, through a brake / clutch assembly, moved the ram up and down on a fixed 3 inch stroke. To activate the ram, the operator pressed a foot pedal that simultaneously released the brake and engaged the clutch. A second smaller electric motor adjusted the position of the ram on the crankshaft. Only one bend angle could be done at a time without changing the position of the ram. These early press brakes were both highly inefficient and very dangerous. Although they haven't been built in decades, it surprised us to learn that there are a few listed for sale. Brenco retired its last one to the scrap yard a few years ago.

Hydraulics eventually took over from the mechanicals. They were far more efficient, flexible and safe. As computer technology progressed, CNC controllers were added to manage everything from stroke, front and back gauges, bed crowning and more. The addition of light and laser curtains vastly improved operator

safety.

Electric press brakes are a recent innovation in press brake design. They are extremely accurate and require very little maintenance. Currently, electrics are available only in smaller sizes and are considerably more expensive than their hydraulic counterparts.

Brenco operates nine press brakes. All are hydraulic with the exception of our elegant electric 40 ton machine. They range in capacity from 40 to 1000 tons and 3 to 24 feet in length. We also utilize precision ground tooling which is much more expensive than conventional tooling but carries the advantage of accuracy and longevity. Just as lasers have allowed for parts of greater geometric complexity, modern press brakes are able to make bends that wouldn't have been practical in the past in terms of complexity, accuracy and precision.



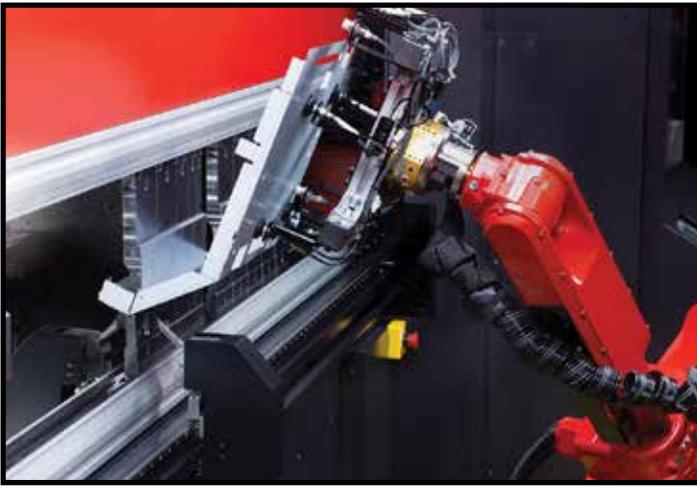
History Mystery



Since we're on the topic of press brakes in this edition of Forming Ideas, here's an oddity from the 1940's. This photo was taken at Western Bridge and Steel Fabricators (predecessor to Canron) in Vancouver. This large press would have commonly been used to straighten weldments and beams but in this case, appears to be configured as a press brake. The press is outfitted with a massive forming punch made of a casting attached to a welded support. The bottom die is adjustable by means of removable shims. While that is not uncommon, what's really odd is that the bed appears to be far too light for the size of the punch and die. Best guess is that it is only $\frac{1}{2}$ " to $\frac{3}{4}$ " thick. If you look closely, you'll see that it is deformed from applying too much pressure.



Two of our most recent acquisitions. Above is our 700 ton Ursviken press brake built in Sweden. Brenco operates 4 Ursviken machines. We like them for their quality and sophistication. On the right is our newest brake. Built right here in BC, this Accurpress 1000 ton, 24 footer is used to form the biggest, thickest, heaviest parts that we are asked to tackle.



BIZ BUZZ



“If robotic press brakes are so cool why doesn’t Brenco have one?”

There are a few reasons that we’ve chosen not to add a robotic press brake (otherwise known as a forming cell) to our array of brakes. We can best understand those reasons by exploring their advantages and disadvantages.

- Any shop owner that owns a press brake will tell you that it is difficult to recruit and train brake operators. A good argument for robotics.
- Robotic press brakes provide outstandingly consistent, accurate and efficient forming operations and they don’t require an operator.
- Programming of a single part can take hours which means the batch sizes must be large and preferably ordered repeatedly to be economically practicle. For small batches, it is faster and simpler to use a stand alone press brake.
- BC does not have a significant manufacturing base. The demand for parts that could be processed effectively in a forming cell is very low.
- Adding robotics can easily double the cost of a press brake. Unless it is operating on a regular basis, the investment is difficult to justify.
- There are limitations to part size, weight and geometry that can be handled by a robot.
- The forming is only as accurate as the cutting but this is a minor problem since parts that could be formed robotically would be cut with a laser.
- With a couple exceptions, the configuration of a robotic press brake can make manual operation awkward if not impossible.
- All that being said, advancements in this technology are happening fast. Companies like Bystronic and Amada are leading the way in reducing programming and set up time. There will come a day when robotic press brakes will be common place.

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for you since November 2007

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Believe it or not!

The first hydraulic press was called a Bramah Press after its inventor Joseph Bramah, of England. It was first used in the Tower of London. The patent for his invention was issued in 1795!



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