

**ISMR SAYS:**

The ability to produce accurate, aesthetic parts, reduce costs and protect its tooling investment, are keys to helping Bradley Corporation maintain its lead in a constantly changing industry

Focus on mechanical/hydraulic presses

# One step ahead

Bradley Corporation uses AIDA's unitised frame straightside NSU press to shorten lead times and reduce product costs

**W**hen Bradley Corporation invented the group hand-washing fixture, more than eighty years ago, the company established a standard of excellence that has turned it into a leading manufacturer of non-residential plumbing fixtures and washroom accessories.

Known for the quality and durability of its products, Bradley serves a diverse international customer base. To maintain its edge in today's lean economy, Bradley implemented AIDA's unitised frame straightside NSU.

## Refining practices and saving cost

This manufacturing solution makes it possible for the company to refine its lean manufacturing practices, says AIDA.

Headquartered in Menomonee Falls (Wisconsin), Bradley's product line features a complete range of plumbing fixtures and washroom accessories as well as toilet partitions and solid plastic lockers. The company provides total washroom or locker room solutions that are attractive, vandal-resistant and cost effective.

Especially suited for appliance applications like Bradley's (as well as automotive, lighting, HVAC, furniture, hardware and farm and garden machinery industries), the NSU was designed and manufactured at AIDA's headquarters in the US for high performance, multi-purpose work.

"AIDA installed and integrated the NSU and the ancillary equipment we required," said Brian



Boeck, manufacturing engineer for Bradley. "The quick installation helped us save time by getting us into production faster."

The NSU operates as a stand-alone work centre to produce stainless steel component parts for downstream assembly cells. The components are then assembled into end-level washroom accessories products such as towel dispensers, waste receptacles or tissue dispensers. Running a large number of small to medium-sized batches from stainless steel coil stock, the NSU operates 80 hours a week and produces parts for about 30,000 assemblies per month.

"The NSU's bed size and load capacity helped us to shorten lead times and reduce product costs by making it possible for us to build new stamping dies that eliminate the need for secondary operations," added Boeck. By giving Bradley

the space it needed to accommodate larger dies, stamping operations could be completed in one die (saving the company time and material handling).

"Its open access also made it easy for us to accomplish a high quantity of die changes in less time," Boeck said. "And, although it's early yet, we've already noticed some decrease in die wear which is mainly due to the good deflection characteristics of the press."

"A 0.08mm per metre bed and slide deflection rating under full load provides customers like Bradley with extended tool life and more accurate parts while minimising part burr, noise and vibration," AIDA told ISMR.

## Extending the die life

"Die life is also extended with our exclusive ball and socket connection design, a feature taken from stamping equipment such as the PMX and integrated into the NSU minus the added cost," AIDA continued. "The NSU's advanced ball-type suspension eliminates the large maintenance costs traditionally associated with wrist pin slide connection technology."

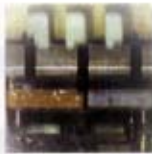
AIDA's ball and socket suspension allows press equipment to withstand the rigours of heavy

Above: The NSU's massive one-piece frame, the rigidity of the press and its low clearance minimises elongation during parts production for improved accuracy



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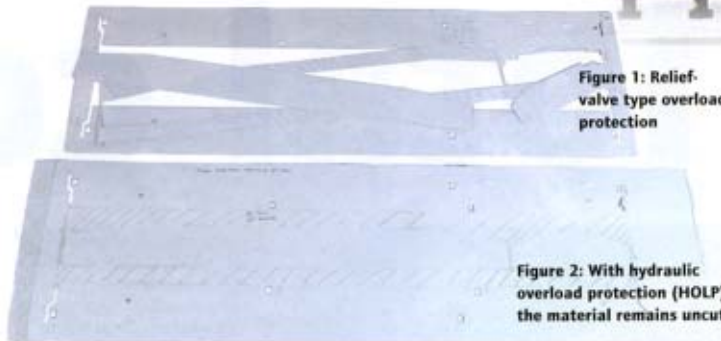
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**Below: Open access allowed Bradley to accomplish a high quantity of die changes in less time**

stamping by providing an increased surface area to transmit high forces. The ball design's load-carrying area is over two times greater than the wrist pin, providing significantly higher reverse load capacity and reducing wear on the suspension components. The suspension maintains a full load-carrying area riding on a near zero-clearance oil film. As a result, press maintenance costs are significantly reduced.

The ball socket design is also a key component of AIDA's Hydraulic Overload Protection (HOLP).

"Die protection is especially important to us due to the investment we are making in new dies," Boeck told ISMR.



**Figure 1: Relief-valve type overload protection**

**Figure 2: With hydraulic overload protection (HOLP), the material remains uncut**

AIDA's Hydraulic Overload Protection system (HOLP) operates 'seven to ten times faster than other systems currently available on the market', says the press manufacturer. The slide connection itself is config-

ures," AIDA added. "Its massive one-piece frame, the rigidity of the press and its low clearance minimises elongation during parts production for improved accuracy."

**Meeting new challenges**

The NSU's rigidity also helped Bradley meet a second key production challenge. "The nature of our work demands highly aesthetic appearance-critical parts," said Boeck. "The NSU has worked well in helping us to achieve that objective."

"The NSU's rigidity and accuracy stabilises the ram during each stroke, allowing the press to produce parts in polished and brushed stainless steel without marks or scratches," added AIDA. "We were also able to help automate multiple machines, to make job set-up easier and provide third party control, which gave Bradley the flexibility it needed in the pressroom."

"We were familiar with the Omni Link 5000 control and AIDA was able to provide us with the Link control we needed," Boeck confirmed to ISMR.

For Bradley, the ability to produce accurate, aesthetic parts, reduce costs and protect its tooling investment, are keys to helping the company maintain its lead in a constantly-changing industry. **ISMR**



**Left: The NSU's bed size and load capacity helped Bradley to shorten lead times and reduce product costs by giving it the space needed to accommodate larger dies. As a result, stamping operations could be completed in one die, saving the company time and material handling.**

During testing of a new die, the company put the NSU's advanced HOLP design to the test against a 200-tonne stamping press equipped with a relief-valve type overload protector (see Figure 1). When Bradley positioned the new die on the press with the relief-valve type overload protector and initiated the stroke, the tonnage exceeded press capacity and released the overload protector. While the press was protected, the ram still traveled far enough to complete the cuts and stamp the part.

"When we put the new die on the NSU and initiated the stroke, the HOLP reacted so rapidly that the material remained uncut," said Boeck (see Figure 2). "That showed us that not only would our press be protected but our dies as well."

ured to operate as a high-speed valve, eliminating pressure relief valves and large hydraulic flow systems found on older design presses with wrist pin and saddle bushing connections. As a result, die and press components are protected beyond the level provided by conventional presses.

"Metric-rated, the NSU gives users 10% more capacity than other unitised frame straightside

**EDITOR'S NOTE**

AIDA has over 85 years of experience in the metalforming industry and devotes 5% or more of its consolidated sales to research and development.

Exporting presses to more than 50 countries, AIDA offers a range of prod-

ucts from 30 to 4000 tonnes including gap, straightside, progressive die, high-speed up to 2500 strokes per minute, transfer and cold forming presses as well as press automation and total turnkey packages.