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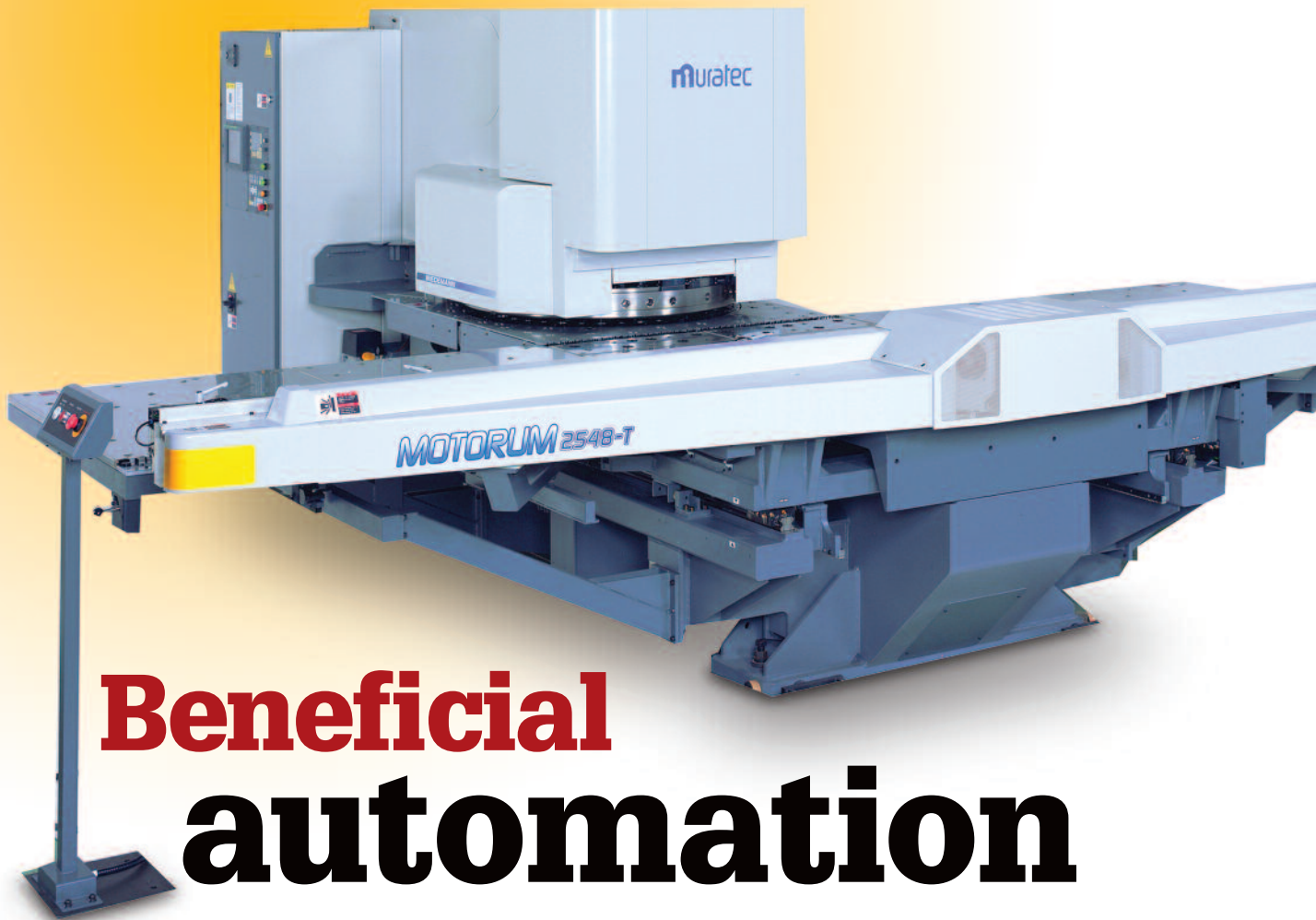
READY, SET, **WAIT**

Fabricators and OEMs
brace themselves
for the hurdles
ahead in 2011



INSIDE

Lights-out manufacturing with **MURATEC**
punch presses can improve product flow and
increase production



Beneficial automation

For D & R Specialties Inc., Navasota, Texas, lights-out part production using its turret punch presses and load/unload automation is nothing new, as the company has been operating with it for nearly five years. What is significant, however, is the change in thinking it took to produce parts this way.

Though load/unload automation for a turret punch press can add up to \$150,000 to the base equipment's cost, the system can pay for itself in several years, says Gary Pasket, co-owner of D & R Specialties. This return-on-investment time varies depending on how often the equipment is used.

Lights-out manufacturing with turret punch presses can improve product flow and increase production

D & R Specialties offers part fabricating and machining. "A strong point for our company is the fact that we do so many different processes in-house. We offer machining, fabricating and welding along with powder coating. For a lot of our customers, we are a one-stop shop because we can do a wide variety of parts," he says.

This also helps the company control costs and part quality, as it doesn't have to pay outside vendors and can oversee all components. D & R Specialties serves the industrial electronics industries, largely building electrical enclosures, brackets or other components. Some enclosures are used on mass-transit systems and might be

part of an auxiliary power unit or a propulsion system for the cars.

From four to three

The company originally had four turret punch presses from Murata Machinery USA Inc., Charlotte, N.C. Some of them were Weidemann machines, which later became Muratec-brand turret punches. Murata Machinery is a manufacturer of automated material-handling systems, machine tool technology and textile machinery. The Muratec brand includes an extensive product line.

"As our volume for fabricated sheet metal increased, our 25-piece orders were

turning into 100-piece ones in the late 1970s,” says Pasket. “We had to figure out how we would increase our production. We started looking for a CNC turret punch press. We looked at several brands that were available. However, Murata, at that time named Weidemann, had just introduced their Centrum turret-punch-press line, and we were very impressed with it.

“It was just such a robust and very smooth operating punching machine. We bought our first one in 1985. Then from 1985 to 2000, we acquired four Murata Centrum punch machines. The Centrum 2000 introduced us into auto indexing, which proved to be very handy,” he says.

In 2005, Pasket purchased a Muratec Motorum series turret punch press, which he already was familiar with because he traded two of the company’s Centnums in for a Motorum 2044 punch press. It had a larger turret for more tooling and an extra auto-index station. Most importantly, it had a load/unload system on it. This was the company’s first attempt at automation, and it proved successful.

“After about six months, the load/unload system on our Motorum proved to us how much it increased productivity. It led us to purchasing a new Muratec punch press with a load/unload system to take the place of two of our other punches. At one time, I had four Centrum turret-punch presses all manually operated, and today I have two load/unload systems and one manual punch press. With these three presses, we’re producing twice the volume of the four machines,” says Pasket. The company has a Muratec Motorum 2044 CNC turret punch with 30 tool stations and an auto index and two Muratec Motorum turret punches, a 2548 and a 2048, both with 55 tool stations, auto indexes and FIG-1250 load/unload systems.

Fast part movement

Murata’s load/unload system allows an operator to program the turret punch press’s CNC software using a schedule that al-



Top: D & R Specialties uses Muratec Motorum series equipment. Bottom: A punched part ready for assembly.

lows the press to punch and form different types of material, thicknesses and sheet sizes up to 4 ft. by 8 ft. (other sizes are available). Material has to be stacked properly so the machine picks up the correct sheet for the program that’s running.

Sheet metal is stacked on a pallet first, according to the program, so the CNC control knows which sheet is coming up for punching. The pallet then is placed on a cart that moves into place beneath the punch press’s loader. Suction cups lift one sheet at a time. After detecting and confirming it only has one sheet, the punch checks for correct sheet thickness. A track-and-rail system then carries the sheet to the punch press. It lowers the material to the punch table, where work holders grip it and sensors detect its presence. The suc-

tion cups let go, the loader moves out of the way and the punch starts.

When punching is done, the sheet is positioned toward the back of the punch press, closer to the throat and off to the side. The punch’s work holders release it, and the unloader carries it to a stack.

“Many times we’ll load four jobs into a punch, and since these machines have expanded tooling capabilities to handle 55 tools, we can load up four different jobs with four different sizes of material on a stack. As long as the CNC program schedule knows which program number and

Turret Punch Press

how many sheets you want to punch, the machine can just keep working until it runs out of material,” says Pasket.

Although the last 1.5 years have been slow for the forming industry with lower volumes, Pasket says both load/unload punch systems are running four to five hours daily after the shop closes.

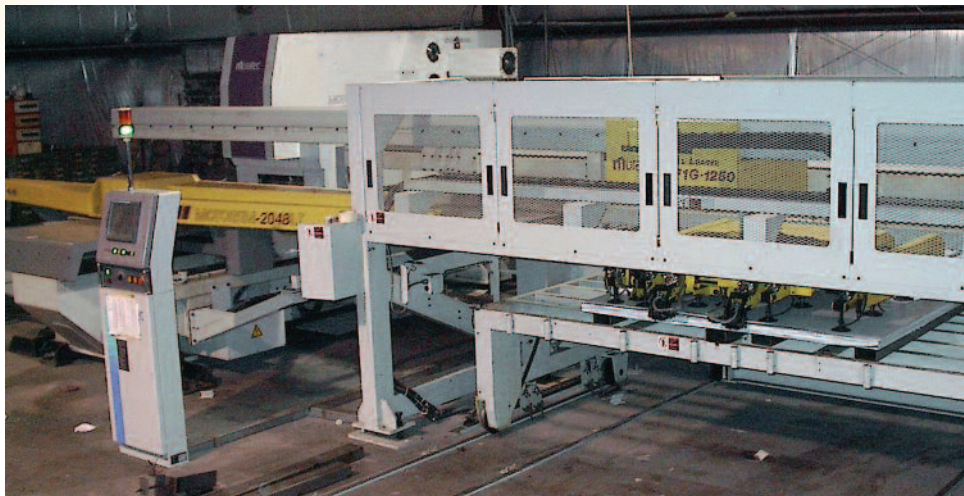
D & R Specialties has 50 employees in a 47,000 sq. ft. shop. An average lot size is around 200 pieces. The company forms sheet metal ranging in thickness from 22-gauge to 7-gauge steel. Parts range in size from $\frac{3}{8}$ in. square up to about 4 ft. wide by 10 ft. long.

With the flexibility of the turret punches and the ability to cut out material on them using a Wilson Wheel from Wilson Tool, White Bear Lake, Minn., Pasket says, “if I was looking into the future, we would probably be purchasing more automation and not necessarily a laser system. Along with investing so much in the tooling for our machines, their reliability, and the exceptional service and support we get from the team at Murata, it really doesn’t make a lot of sense to be looking at different manufacturers.”

Automation can benefit a company, says Lloyd Keller, sales manager at Murata. “Typically, one out of five machines that we sell has automation with it. Companies recognize that automation eliminates labor, especially at a time when it’s difficult to find operators. Rather than hiring an operator, they can add a load/unload system for roughly \$150,000 for a punch press.

“Typically, we ask them how many shifts they run. If a company runs one shift, and they want to increase production capacity, then we tell them they should start a second or third shift when they don’t have automation. But often the owner will say, ‘No, I don’t want to do that,’ or ‘I don’t want to invest in it.’ So we tell them they could put an automatic load/unloader on the turret punch for lights-out production. This isn’t too hard to justify either because of its fast payback.”

Murata recognizes the importance of automation. Therefore, each of its punch presses is automation ready. “We’re seeing automation as the direction of industry to eliminate labor,” Keller says. “Another aspect of this is the sheet size. If you’re an



operator trying to move a 5 ft. by 10 ft. sheet of material around, it isn’t easy. You really need two people, so a loader makes sense. The automation will give you greater control over your parts and your run-time, too. You will know exactly what your processing time is for a finished part. This offers a lot of value when you’re trying to schedule parts, too. You can put a pallet of sheet metal in the punch, and within an hour, you have finished parts.” **FFJ**

Above: D & R Specialties has increased production by using a turret punch press material-handling system that allows it to run lights-out. **Below:** The company uses a Motorum 2048Lt to produce parts for the industrial electronics industries.

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