Murray Sheet Metal welcomes machine

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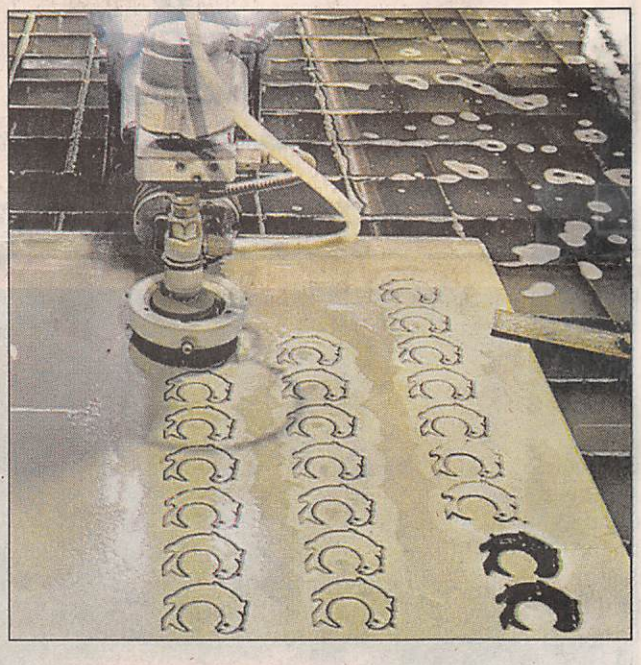

During a brief demonstration of the machine Friday, visitors were able to view what the machine was able to do as it worked its way through a sheet of aluminum.

PARKERSBURG – It is known as a WARDJet Z-2543 waterjet cutter.

It is a beast of a machine that uses water to cut through materials with pinpoint accuracy.

"It is best known as a controlled accelerated erosion process," said Randy Rogers, Murray Sheet Metal general manager, Friday during an open house to publicly display the machine. "The machine is much more accurate than the plasma machine we had before. It is quicker, cleaner and more accurate. There is a lower cost with the machine but with an improved quality."

The watercutter is capable of cutting steel, aluminum, stainless steel and galvanized light gauge up to 6 inches thick with tolerances to thousandths of an inch. It can also cut its way through wood, concrete, rubber, foam, acrylic, Lexan, plexi-glass and laminated glass.

"The machine just uses standard tap water," said Murray Sheet Metal shop superintendent Jim Bunner. "It is a mixture of water and garnet with very high pressure."

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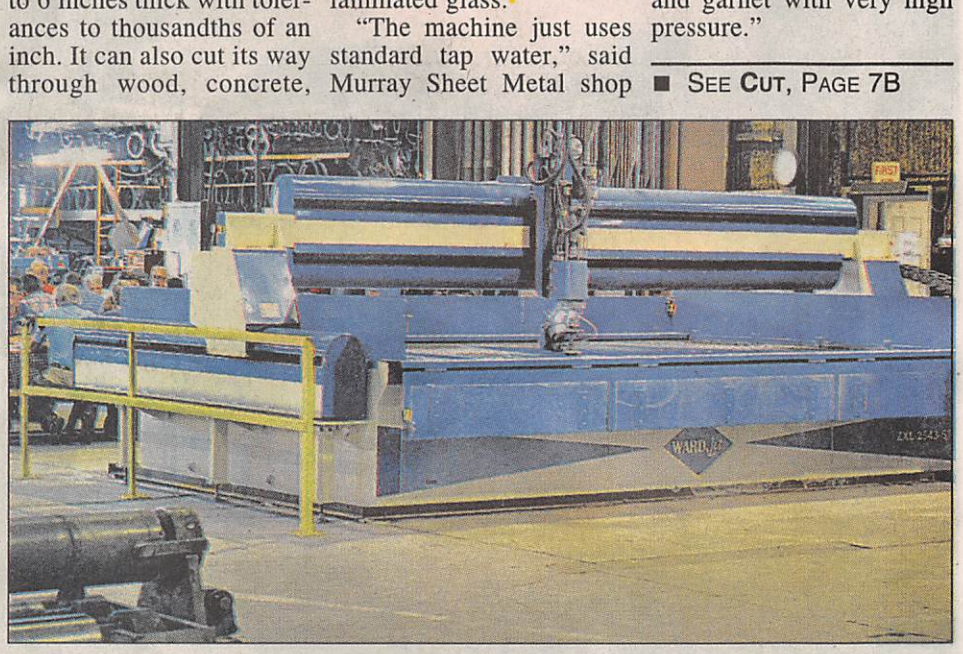

Photos by Jeff Baughan

The WARDJet water cutting machinery installed at Murray Sheet Metal is 14-by-8-by-3 feet. The machine projects a stream of water measuring 60,000 pounds per square inch cutting force.

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CUT

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The garnet is mined from Australia and mixes with the water "to form a mix somewhat comparable to an 80 mesh grit mix."

According to Bunner, the cutting time depends on the material and the thickness of the material, how deep and how many cuts are required. But the water moves through a nozzle which has an opening of 1/30,000 of an inch and produces 60,000 pounds per square inch of pressure.

"It uses about four gallons of water a minute to do the cutting," he said.

As Bunner is speaking, a large burst of steam arises from the bed of the cutter.

"The steam is caused by a quick flow of the material through the nozzle," he said. "The quick flow creates an instant friction but once the stream starts, it calms down and goes away. The steam itself is not very hot," he says and checks a gauge. "It's only 64.5 degrees and it just dissipates. It's not hot enough to burn anyone."

The machine itself is 14-by-8-by-3 feet .

"It can bevel anything from a 0-to-90 degrees," said Bunner. "It can cut just about anything solid they want to cut."

The mixture for the cutting stream is 95 percent water and 5 percent garnet.

"It is quite material friendly," Bunner said.

The garnet mix comes in 55-pound bags, which is used in eight hours of running the machine, he said. The good part of this is it's recyclable as well, he said.

"It was a sizeable investment," Rogers said. "But we know it will save time and money on countless applications with the improved quality over other fabrication methods for products like pipe fittings and flanges, duct transitions, chutes, dust collector parts and custom signs. It will allow us to serve many industries better."