

# Small investment, **BIG PAYOFF**



## New plasma torches provide numerous benefits for **Astralloy Steel Products**

**W**ith a change to a different plasma head, Astralloy Steel Products Inc., Birmingham, Ala., increased cutting productivity by 25 percent at its Masury, Ohio, location. The company also gained benefits that affected its bottom line, including reduced labor for deburring plasma cut parts and higher overall quality.

Astralloy Steel Products, a division of ArcelorMittal, Luxembourg, is a steel service center primarily offering wear- and impact-resistant steels, including

armor plate, says John Mattocks, branch manager. “We primarily offer heavy plate to the mining industry. Our other clients include companies in the forestry indus-

try that handle pulp and paper products and some heavy-equipment builders. We sell throughout the United States and Canada.”

Astralloy purchased three plasma systems for specialty cutting work for its customers. One customer requires the company to burn a 32-degree angle on its plate stock over the entire profile. Mattocks says the cut speed and quality needed improvement, and because of the poor cut quality, the company also needed a secondary grinding operation to eliminate dross buildup on the plate.

“We are cutting  $\frac{3}{4}$  in. and above, and when we’re doing a bevel cut, our actual cut thickness is between  $\frac{7}{8}$  in. and  $1\frac{1}{4}$  in. We needed a better cost-effective solution and the ability to cut even thicker plate,” he says.

Mattocks reviewed options to produce a better cut, and eventually Hassler Machine, Birmingham, Ala., one of the company’s local equipment distributors, introduced him to American Torch Tip Co., Bradenton, Fla.

“We thought of purchasing a new, more-powerful CNC plasma cutting system, but in these times, a large capital outlay in the six figures was not an option,” says Mattocks. Astralloy bought four of ATTC’s PHD2000, High-Definition Plasma Conversion Kit plasma heads. “We have three machines here, and two of them we converted over to the ATTC systems. We have two plasma heads on each unit making a double-head system. This doubles our productivity for making identical parts,” he says.

Mattocks took advantage of ATTC’s free 30-day trial, says Bill Schriver, ATTC sales manager. The kit includes a torch, backend and consumables, and the only setup requirement is changing the torch.



Cut quality improved for Astralloy Steel Products with American Torch Tip cutting torches.

**American Torch Tip torches increased productivity by roughly 25 percent for Astralloy Steel Products.**

“We didn’t have to change anything on our gantry or processor,” Mattocks says. “Obviously, if we liked it, a torch-for-life program—meaning a free torch if we break ours under normal operating conditions—blew our mind.”

### High-definition cutting

With its conversion to the ATTC system, Astralloy improved cutting capacity and diminished its rework using a conventional plasma head, says Schriver. “Our PHD technology converts a conventional plasma system to a high-definition-style cut quality without the capital investment that often the plasma equipment manufacturers require.

“With our conversion, we were able to improve Astralloy’s cut quality to the point they didn’t have to do a lot of rework or secondary operations on their bevel-cut parts. And they did it without a \$50,000 to \$70,000 capital investment that’s often required to move to a high-definition plasma system from a conventional one.”

Another benefit Mattocks notes is “by using the same ATTC head on our plasma systems’ torches, all of our consumables are now the same. Now, we don’t have to worry about different part numbers and segregating all our maintenance parts so one piece doesn’t get used on another torch,” he says.

Schrive also says companies often will have two different plasma systems, one conventional and one high-definition. This means they have two sets of consumables because they have two power supplies, and they have to manage multiple inventory sets for the two systems.

“Our torch design allows us to put it on

different plasma systems,” says Schriver. “This allows a company to carry one set of inventory for consumables that can be used in two different power supplies. If someone forgets to purchase parts for one machine, they can use their backup parts for the other one that has the same plasma head on it.”

### Boosting productivity

Astralloy purchased the torch heads in January. “We’ve had some good experiences with them,” Mattocks says. “Admittedly, we had some bumps in the road. We had a learning curve with our settings, gas pressures and speeds, but ATTC was really helpful in tuning our system. Now, we haven’t had a lick of a problem whatsoever.”

The new torches have increased productivity by about 25 percent, says Mattocks. “It’s primarily due to a slight increase in speed, and we have longer consumable life, so we aren’t taking the machine down [as often] to change them out,” he says.

There is very little grinding time to remove slag and dross on the underside of the parts that the company’s other plasma heads were producing, says Mattocks. “Once we had the settings to make these new heads work properly, grinding time was cut back by 75 percent, from eight hours down to two,” he says.

Even though the company offers plate steel from ¼ in. to 6 in. thick, its plasma torches only are used to cut up to 1-in. plate. “Precision from these torch heads is very good,” says Mattocks. “It’s no problem for us to hold a ½ in. tolerance on any cut.” This tolerance is much tighter than any of the company’s other parts require, he says. Its standard burning tolerance is  $\pm \frac{1}{8}$  in.



The company had cost savings by buying these heads, says Mattocks. “They offered a 100 percent warranty no matter what. If someone crashes the torch or breaks it, they send us a new one. If we burn out an electrode or nozzle and it affects the torch, they send us a new one. Our operators are very conscious of how the machine handles with these new heads, and we’re getting very good life out of all the consumables.”

Changing over the torches took only 15 minutes, says Mattocks. “All we had to do was change a couple of hoses. But after this was accomplished, changing out consumable parts takes a matter of minutes,” he says.

Asked how a conventional plasma system offers high-definition cutting, Schriver says, “We’re able to accomplish high-definition cutting through the technology of our torch and consumables. We offer a greater constriction of the arc, which gives us an improved cut quality through the torch and consumables compared to the ancillary improvement that you might get in a power supply.

“Our high-definition plasma takes a conventional process and increases the speed, decreases the bevel angle and improves surface finish. This generally means you have far less dross on the surface and a smaller kerf. Our system improves all these factors when moving away from a conventional plasma system. It’s just composed of a torch body, quick-disconnect head and consumables,” he says. **FFJ**

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