

# Gladly paying the price for **quality**

**Bub Enterprises** goes all out to keep premium motorcycle pipes looking premium



**H**arley-Davidson owners would sooner trim out their bikes with pink lace and a sash than fit them with cut-rate aftermarket exhaust pipes.

So when Dennis Manning, owner of aftermarket exhaust pipe manufacturer Bub Enterprises, decided to open a new factory a little more than a year ago, he needed two new tube bending machines that would do several things well.

First and foremost, he needed service that helped him solve problems quickly. Second, he needed machines that wouldn't sacrifice quality but could keep up with a business growing fast enough to compete at the Bonneville Salt Flats. Third, he needed benders sturdy enough to endure the beating that a full work

schedule could dish out.

Manning surveyed the market and settled on the model 2E CNC bending machine from Horn Machine Tools (HMT). To stay flexible, he decided to put one in his new facility in Janesville, Wis., 70 miles southwest of Milwaukee, and keep the other at his original facility in Grass Valley, Calif.

"That gives me a left and a right bender at each location," Manning says. "We built the Wisconsin floor exactly with the same machinery we had [in California]. We can generate parts here

and send them back there to have them manufactured or vice versa."

#### **Service-oriented**

Manning makes no secret of why he called HMT owner Kent Horn when he wanted to buy. Horn had made an impression on Manning a long time ago, showing up the very next day after Manning put in a repair call for a tube bending machine Horn hadn't even sold to him. That kind of service is exactly what an operation needs when it is going great guns, Manning says.

"No matter how much you pay for a machine, if you don't have someone willing to help you when you really need it and service it, the machine's not worth anything," says Manning, who has been in the motorcycle aftermarket business for 28

years. "We've got a heck of a deal here—we've got two full-time benders in two plants going like [crazy]. When benders break down and you don't have a Kent Horn, you're in trouble.

"You can have the best machinery in the world, and it still can have a problem because it's only a machine," he says. "That's why the backup is so paramount here."

### Good and fast

The 2E classifies as a hybrid because of the combination of electric servomotors and hydraulic components it uses. Horn designed the 2E with a high-powered servomotor to drive the bend arm while also cycling the hydraulics used for its clamping faster than the electric cycle.

In addition, rather than requiring an operator to manually loosen bolts and crank screws to adjust the pressure and position of the pressure die holder, the 2E uses a hydraulic cylinder to accomplish it. The cylinder is controlled by a proportional valve functioning as a hydraulic servo control that communicates with the machine's CNC through a feedback loop.

"With an electric-drive bend arm, you're able to achieve higher speeds and still maintain accuracy," Horn says. "With a hydraulic-powered bend arm, you tend to lose some of the accuracy once you try to start running it really fast.

"Also, the repeatability is better on the electrics," he says. "The hydraulics, with varying temperature and oil conditions and the condition of all the components in a hydraulic system, can give you some variation."

Variation part to part is not what Bub is after. Manning's line of exhaust products stretches from ATVs to sport bikes to top-of-the line motorcycles from Harley, Honda and Yamaha. With high-end features such as machined exhaust inlets, oversized heat shields and chrome billet end caps, Bub's pipes are designed to appeal to the serious enthusiast. List price on a set of Jug Hugger exhaust pipes for a late-model Harley-Davidson Softail is \$599.

"You don't want junk," Manning says. "We command a high price; we make a premium part. The bending has to look like it was done on a Horn rather than over a rock."

All of Bub's pipes are mild steel, most

of it 18 gauge ranging from 1 in. OD up to 2.5 in. OD. To maintain quality, Manning decided to purchase all new tooling "because my thinking was, I didn't want to put used tooling on a new machine," he says. "We wanted the highest possible quality so we didn't compromise on the tooling.

"Aside from performance and all the other features, surface quality is everything," he says. "When you chrome something, you don't want to chrome a piece of dirt. You want it to be nice."



To achieve that kind of surface quality, the HMT 2E's pressure die assist is set up on a servo, which follows the bend die and is automatically timed to it. That feature keeps the pressure die moving with the workpiece at the same speed. "If a person adjusts it, they can tend to retard it or advance it, allowing it to slip by, causing scratches on the tube," Horn says. The servo pressure die adjusts for position automatically, so operators don't have to try to gauge how much pressure to put on it, preventing over or under clamping.

In addition, the 2E uses a low-interference bend head design that places the gearbox below the bend head. Positioning the gearbox there keeps the bend head compact and allows for tighter-radius bends than some other servo-machine designs, which create a larger bend head by integrating the electric drive head with it.

"When you're bending tubes on tight radiuses on things like exhaust pipes,

often you'll have to make a bend, and then at the very next bend, the tube has to be rotated down," Horn says. "Then you have a large interference in that bend head area (if you have a machine with an integrated electric drive head), and it's impossible to do it."

Manning notes that the 2E's ability to communicate with his CMMs also is a plus. "Having a bender that interfaces with a CMM is an absolute necessity now," he says.

Another feature of the Horn machines that lends to their repeatability is solid construction, Manning notes. "It's really a robust machine," he says. "Where everybody else is a half-inch, he's an inch. When in doubt, make it stout. This machine's going to have some longevity to it. It's not a feeble piece."

"My business has been going crazy for the last six or seven years," he says. "We almost



doubled every year for a couple years there. We're bending a lot of tube. The exhaust pipe business in motorcycling is one of the biggest aftermarket [businesses] there is."

Manning confides that other benders would have cost him less. But just like his pipes, making an investment in quality wasn't even a question. "There's no compromise. If you want to start compromising your product, compromise the machinery." **FFJ**

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