

PRESS RELEASE



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Electric tube bending machine speeds innovation at leading Motocross exhaust pipe manufacturer

** software-configurable tube bender cuts prototyping cycles from days to hours*

Madera, CA, August 20, 2007 --- Installation of an all-electric tube bending machine has helped White Brothers, the official developer and supplier of 4-stroke exhausts to Factory Yamaha, to bring its bending process in-house and slash the time it takes to prototype new designs.

The Unison Breeze machine has allowed the company to replace a sub-contracted prototyping fabrication process that used to take up to two weeks, with turnaround times now measured in hours. The much greater control over the bending process the company has achieved is also helping the development team to experiment more, and produce optimum shapes for its customers more rapidly.

White Brothers is renowned as an innovator in high performance exhaust systems for Motocross motorcycles and all-terrain vehicles. Its range includes replacement silencers, and complete exhaust systems with shaped head pipes. Expert attention to the shape, diameters and angles used in the flow path ensure that the company's unique exhausts deliver more power for riders. The products also reduce weight substantially — one exhaust employs titanium tubing and a carbon fiber shell for example, for an ultimate combination of strength and weight reduction.

The equipment installed at White Brothers is a 3-inch (76 mm) multi-stack all-electric tube bender from Unison's Breeze range. The machine is used for both development purposes, and for a majority of the regular production. Conventionally, a multi-stack tooling arrangement is used to allow complex shapes to be produced without tool changes. However, White Brothers exploits this feature to additionally speed up production, by fitting combinations of bending dies that allow the most common types of head pipe to be fabricated without reconfiguration. In combination with the software-controlled configuration process of the all-electric machine, this allows batch changeovers in minutes. In this way, the company often manages to fabricate batches of as many as 10 different product lines before stopping the machine to swap tooling.

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When bringing the tube bending process in house, White Brothers opted for an all-electric architecture. Whereas most tube benders today are powered hydraulically, and need to be carefully set up for each bending task by a skilled fitter, Unison's machine employs electric servo motors to control the bending process. This provides very precise bending under software control, allowing each operation to be configured automatically from downloaded design data, and replicated precisely again and again, as required. The technology is well suited to White Brothers' batch production environment where exhaust pipes are often fabricated in relatively small quantities of 50 or so. The inherent accuracy and repeatability offered by the Unison machine, which relies on closed-loop axis control techniques and is immune to variations in temperature, etc, means that the first part made is usually correct, and the rest of the batch can be run immediately.

Unison's US distributor Horn Machine Tools and its Californian representative, Swartz Industrial Sales, assisted White Brothers in specifying the machine. Commenting on the application, Bill Swartz said: "This application demonstrates the virtues of all electric tube bending technology well. The software controlled nature of the machine allows it to support the different demands of both R&D and production users well. It repeatedly produces parts that are bent to very fine accuracies in order to fit into jam-packed motorcycle frames, in small batches, and using very expensive tubing materials such as titanium and stainless steel— where any significant level of scrap would be very costly indeed."

More information:

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