

Horn Machine Tools, Inc wins Unison \$2.5 million order for tube bending machinery for USA's future aircraft carriers



** servo control & laser measurement promise 'most accurate ever' tube bending machines*

Scarborough, UK, 8th December --- Unison has won an order worth over \$2.5 million dollars, to supply tube-bending machinery to Northrop Grumman Newport News for aircraft carrier production.

This is the largest order Unison has ever received, and was secured in conjunction with the company's USA partner, **Horn Machine Tools, Inc. Madera, California USA**

The order is for three of Unison's Breeze machines, to bend tubes of up to six inches in diameter, plus tooling and spares. Delivery will start in April 2007.

Each aircraft carrier includes hundred of miles of tubing for the ship's systems, and the machinery will provide the shipbuilder with the means to fabricate the shaped tube parts required. As each section of the aircraft carrier is built, the data for each part in that section will be downloaded automatically from the design database.

Unison's machines have been chosen because of their 'all-electric' nature. 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 machines employ 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 ideal for the small batch production environment of shipbuilding, where many component parts are fabricated in very small quantities, and often in quantities of just one.

Unison will also fit each of the three machines with a special laser measurement system. These will automatically measure the final dimensions of each part as it is fabricated, and compare it against the specification to check that it is within tolerance. This process will ensure that any minor variations in the tubing shape - which can be caused by variations in temperature or material composition, for example - are compensated for automatically. The process will help to ensure that the design dimensions of the ship are maintained with great precision, so that each section of the aircraft carrier (which are typically over 300 yards in length) interfaces perfectly as it is integrated.

This combination of servo control and the laser measurement means that these machines will probably be the most accurate tube benders ever produced.

Energy saving is a further major factor in winning the order. Unison's machines only consume a significant amount of energy when they are actually performing a bend. A hydraulic bender, by contrast, typically consumes energy all of the time, as the system's hydraulic fluid has to be maintained at a high pressure. As a result, all-electric operation is expected to reduce the power consumption for these machines by as much as 90% compared to similar hydraulic benders.

Commenting on the order, Unison's managing director Alan Pickering said: "An aircraft carrier is just about the most complex product that mankind has ever made. The sheer scale and precision of the engineering operations at Northrop Grumman Newport News is breathtaking, and to have our machinery selected to help with such a task is a tremendous accolade. We are extremely proud to be associated with this organisation."

Unison is currently expanding the workforce at its Scarborough headquarters to assist with the order.

Background information on Northrop Grumman Newport News

For more than a century, Northrop Grumman Newport News has designed, built, overhauled and repaired a wide variety of ships for the US Navy and commercial customers. Today, Newport News is the USA's sole designer, builder and refueler of nuclear-powered aircraft carriers and one of only two companies capable of designing and building nuclear-powered submarines. The company also provides after-market services for a wide array of naval and commercial vessels.

With vast facilities located on more than 550 acres along two miles of waterfront in Newport News, Virginia, the Newport News sector employs about 19,000 people, many of whom are third and fourth generation shipbuilders.

More information: <http://www.nn.northropgrumman.com>