

Big and Built to Last

96" Five-Axis CNC Shot Peen Index Table System by Engineered Abrasives™

WHEN A CUSTOMER needed a new machine, they first reviewed Engineered Abrasives' standard line of machines. The customer liked the robustness of the equipment but needed a bigger version of Engineered Abrasives' largest machines. So began the construction of the "largest Five-Axis CNC Shot Peen Index Table System ever built," said Mike Wern, President of the Illinois-based OEM.

Robust and Versatile

The machine is designed to be a tireless workhorse, able to shot peen large gear sets on a 24/7 schedule and allow changes in component and media sizes.

The high-volume machine will peen the gear root radius and tooth faces of large rack and pinion gear sets (averaging 500 lb.) for bulldozers, excavators and other heavy-duty equipment. In addition to its size, the machine has other unique capabilities and features. The machine was engineered for the quick changeover of gear sets without additional nozzle setup or media changeovers. The 48" Sweco separator for dual medias was elevated and placed in a noise-deadening enclosure for a sound level of less than 80 dB. It screens 100 percent of the media with a five-deck screening system and a lift for quick screen changes. Two continuous-operation pressure vessels move and reclaim two sizes of cut wire shot. Two MagnaValves were installed on each vessel.

The index unit—a precision Camco index drive with overload clutch—has 4-axis on the robot arm (designed by Engineered Abrasives) and 1-axis on the spindles. The OEM's engineering staff developed new servo parameters to accommodate the axis of the large parts.

Three semi-trucks will deliver the machine this summer and Engineered Abrasives will install, test and provide training for the new equipment. ●



Looking down at the two pressure pots, the two elevators and the Sweco separator. The Sweco is housed in a foam-padded enclosure to reduce noise. Each pressure vessel has two MagnaValve media valves and the Sweco screens 100 percent of the media with a five-deck screening system.



Main Control Panel

Engineered Abrasives designs and builds their control panels.



Pressure pot screenshots on the GE Fanuc control panel.



Magna Valve FC controllers help operators monitor shot flow rates.



The back of the control panel, the dust collector and multiple access doors.



The cabinet was built to withstand high-volume peening. The cabinet roof is 1½" steel plate with 1" polyurethane liner. Cabinet walls are ½" steel plate with 2" foam and ¼" polyurethane liners. The 96" diameter rotary table has 1½" of polyurethane bonded to 1½" aluminum plate and bolted to a 1" precision steel plate.