

The 72T Shot Peening Table from Viking

VIKING continues its growth path as it expands to offer peening equipment to the aircraft industry.

Viking has been making shot blast systems since the 70s but only ventured into precision peening applications in 2005 with a large conveyor system for airplane spars and structures. That machine is still in operation today. As the applications started to broaden, Viking increased its capability through dedication of an in-house expert to study the industry's technology and the specific equipment involved.

Viking now announces the release of its newest peening table—the 72T—for the Metal Finishing Company of Wichita, Kansas. The Metal Finishing Company is well known to the aircraft industry in Wichita and has been serving the industry since the 40s. Metal Finishing has four locations in Kansas and one in Mexico. It is approved with all the major aircraft suppliers. This is Metal Finishing's third Viking unit—the first was purchased in 2013.

The machine has the full capability of managing shot velocity, abrasive flow rate, and table speed with the use of a PLC and HMI control screen. Shot flow is displayed on the read-out in pounds per minute and is controlled through the MagnaValve 500-24 and FC-24 controller from Electronics Inc. Viking has successfully used the MagnaValve numerous times in the last few years with trouble-free service.

Abrasive velocity is very important for all Nadcap suppliers and this is displayed on the HMI control screen in wheel RPM (see image on page 44). It is also controlled from the HMI controller, and can be stored as a recipe along with the other parameters including table speed or it can be modified for a single job.

To maintain consistent abrasive size for repeatability, a two-step process is used. First the overhead airwash separation system is tuned to the chosen abrasive size to remove fines from the abrasive stream. A percentage is then pulled out of the storage hopper for additional classifying to assure that the proper size of abrasive is returned to the system. The classifier is a vibrator screen type that separates into three sizes: oversize, undersize and middlings, which only return to the bucket elevator for re-use.

Viking Blast and Wash System manufactures a broad range of specialized engineered and standard wheel type peening and blast cleaning equipment from its Rose Hill, Kansas-based manufacturing plant.



The 72T Shot Peening Table from Viking has been delivered to the Metal Finishing Company in Wichita, Kansas



The 500-24 MagnaValve and FC-24 Controller regulate the flow of steel shot in the 72T Shot Peening Table



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72T Shot Peening Table Blaster Specifications

The blast cabinet is constructed of 1/2" plate steel. A removable safety screen protects the abrasive system from oversize contaminants. The doors are gasketed to provide a positive seal during operation.

A pneumatically controlled latch locks the door "CLOSED" during the blast cycle. Cabinet is lined with 1/2" thick cast alloy plates with blast stream and manganese alloy on the other walls. The doors are made of manganese alloy.

The 72T has three VK PowerMax 1500, 20 horsepower, 15" diameter center-fed direct drive blast wheels lined with 1" thick cast chrome/moly perimeter planes and manganese steel front and back wear plates. Wheel components are dynamically balanced and matched to assure smooth operation. An adjustable pneumatic abrasive-metering valve controls the abrasive flow to the blast wheels.

Part loading access is achieved by one swing open-hinged doors exposing the entirety of the blast chamber.

Abrasive leakage is minimized with a positive gasket seal. The workload is supported on a 72" diameter steel table rotated by a two horsepower drive motor at 1-4 RPM variable. The table and abrasive resistant liner have slotted openings to drain abrasive into the recovery system. An initial abrasive charge of 2500 pounds will be required.

The air wash separation system consists of a two HP horizontal abrasive auger to feed abrasive into a vertical bucket elevator. The 5 HP vertical abrasive elevator delivers the abrasive shot into an adjustable 20" single lip separator. The cleaned abrasive is then deposited into the abrasive hopper for re-use. A refuse tube carries separated contaminants to a customer-supplied trash container. ●



The 72T Abrasive Classifier



The HMI Control Panel for the 72T