

FLEX-HONE®

**Brush
Research
Mfg.**



**Field
Application
Report**

Field Report No. 105 of a series describing Flex-Hone applications.

Valve maker cuts deburring costs with flexible honing tool

A leading manufacturer of air valves has developed a new method of honing burrs created during the molding of the aluminum body for a quick-exhaust valve. The new system incorporates a special deburring tool in a drill motor. Results indicate that the system has generated high cost savings over previous methods.

Humphrey Products, Kalamazoo, MI, manufactures a wide variety of valves for a cross-section of industrial uses. It was with the company's line of quick-exhaust valves that management was experiencing cost problems.

In the past, the aluminum body of the valve was molded by an outside vendor and shipped to Humphrey's plant for finishing and assembly. The part would first go through manual inspection and then onto a milling operation to rework the diaphragm sealing area.



Operator can eliminate inside flashing in seconds. Parts then go to final assembly.

From there the piece would be transported to the vibrator department. The part would go into a vibratory finishing machine with steel media for polishing and removal of the external parting line created during casting.

At the same time, Humphrey was using the steel media to remove the flashing on the inside parting line. It was at this point that the company was experiencing costly producing problems. During the finishing process the steel media lodged into the 8mm diameter, 3/4-in. deep hole in the valve's body. According to company spokesman Roger Mayette, the company was losing between 100 and 150 parts during atypical run of 3,000, an unacceptable 5%.

Looking for a solution, the company adopted an innovative deburring finishing tool known as Flex-Hone®. Manufactured by Brushexcessive ring wear. This system, he concludes, is one example of how Mercury Marine's engineering has been a standard setter in the outboard industry. Research Manufacturing Co., Inc., Los Angeles, CA, the tool consists of a resilient-based hone with abrasive laminated to the ends of high-density nylon filaments. The 180-grit silicon carbide hone is rotating in a right hand direction at approximately 400rpm.

The new system at Humphrey operates much as before, but now the parts are taken from external vibratory finishing process to the Flex-Hone deburring station. Here an operator takes each body and runs it through the deburring tool to remove the inside flashing.

As a result of using the Flex-Hone system, Mayette says the company achieved highly cost-effective results over the steel media deburring method. He points out that it is essential for the inside flashing to be removed. Any potential problem with valve failure is avoided by the thorough removal of loose flashing.

