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May 2007

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Honing Makes the Difference

Tara Rands, Brush Research Mfg. Co.

When it comes to rebuilding or servicing large pumps, valves and cylinder bores, honing can make all the difference in performance and service life. A ball-style hone device provides a highly efficient and portable solution.

Overhauling or servicing big pumps and valves means dealing with big bores. After installation in the field, valves and pumps often require maintenance to rid the inside diameter (ID) of foreign material, ranging from rust and corrosion to accumulated chemicals and biological matter. Improper cleaning and resurfacing of the IDs of those bores can mean fewer operating hours during servicing as well as degraded performance.

“With hydraulic and hydronic pumps and valves used in mills, petrochemical plants and process industries, critical tolerances sometimes similar to those of internal combustion engines – diesel, gasoline and natural gas powered – apply to pumps of many styles and applications,” says Patrick Sullivan, a veteran facilities management consultant.

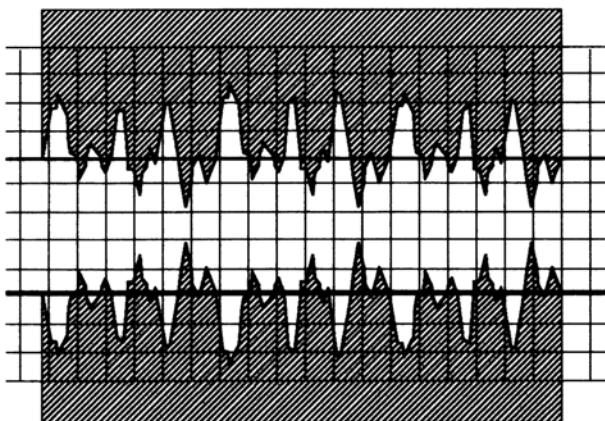
One of the most versatile and easy-to-use tools that is used throughout industry today to perform maintenance on cylindrical IDs is the flexible ball-style hone. Somewhat resembling a spinning bottlebrush, this tool is characterized by the abrasive globules that are permanently mounted to

flexible filaments that are attached to a center shaft. This extremely flexible, low cost tool can be used virtually anywhere for sophisticated surfacing, deburring, edge-blending, cleaning and rebuilding.

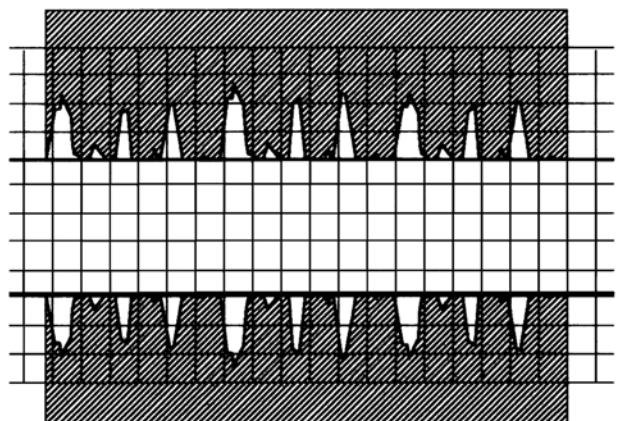
“In chemical, refining and wastewater operations, honing may be required to remove corrosion, or the formation of clay, wax or other solids may prevent proper valve operation or block lubricants,” Sullivan says.

The flexible ball-style hone produces a controlled surface condition unobtainable by any other method. It can deburr, clean out passages or provide IDs with a super-smooth plateau finish free of cut, torn and folded metal. Flexible ball-style hones come in various grit sizes and standard diameter sizes up to 36-in.

This type of tool is ideal for servicing large pumps and valves. The large submersible hydro pumps used to drain the flooded areas of New Orleans are good examples. Due to the massive amounts of silt and debris in the floodwaters, those pumps required frequent cleaning, and portable ball-style



Before Honing



After Honing

Buildup of wax or other solids may prevent proper valve conditions or block lubricants. Proper maintenance tools, like flexible ball-style hones, leave a super-smooth plateau finish.



Flexible ball-style hones are available in various grit sizes and diameter sizes.

hones were especially proficient at doing that in the field.

These tools are used for servicing a wide range of big bore installations, including hydroelectric, process industries and other situations where you have large pumps and valves. Other popular applications for this type of tool include the refinery, where valves and positive displacement pumps are key assets. Ensuring that they work correctly to keep processes flowing requires proper service, including efficient onsite maintenance whenever possible.

In metering tube applications, where ID tolerances are sometimes 0.001-in, a flexible hone can be highly useful in the fabrication, installation or servicing of tubes. Since the internal surface finish must be unrestricted in order to accurately measure and control the flow of massive amounts of fluids and gases, this tool ensures surface finishes are kept smooth and unobstructed.

“In some pumping applications you’re pulling fluids in through a suction valve and pushing it out of a discharge valve with a piston-type device,” says Clarence Mayers, Diesel Supply Company (Odessa, TX). “That action is similar to an internal combustion chamber, where the discharge has to stay ahead of the piston. If liquid in a pump runs around the piston ring and gets to the back side, then you aren’t going to move it – you’re just going to thrash it. So you need to have a smooth surface to get a good seal in the pump cylinder in order to prevent that. Using a flexible ball-style hone, you can make that ID smoother than glass.”

The abrasive globules each have independent suspension that is self-centering, self-aligning to the bore, and self-compensating for wear. Whether used for cleaning, deburring or plateau finishing, the tool provides a low-temperature abrading process that exposes the undisturbed base metal designed to produce a long wearing surface free of fragmented, amorphous or smeared metal from previous operations.

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