Customer Testimonial

Featured Company: Hammond Machinery, Inc.

Metal Finishings Made Smooth With Meta-Lax

The definition of metal finishing is as diverse for different industries as the components within each industry. For fabrications it means clean and prime and for machined components it means filing or stoning edges. But for mass production parts, like castings, extrusions, and stampings, a labor intensive metal finishing operation would be impractical, yet skipping it would spell doom.

Hammond's twelve station rotary index machine automatically deflashes and shank mills 450 connecting rods per hour.

Hammond Machinery, Inc., in Kalamazoo, Michigan, has made a specialty in providing the world with sophisticated automated metal finishing equipment. Today's metal finishing equipment may look much like a machining workcenter. They may have a several station turret, each station being computer controlled as the parts are deflashed, deburred, buffed, polished, and then carried to the loading station.

An important part of the manufacturing of the critical components of metal finishing machinery is stress relief. The bases need to be machined to close tolerances and must resist cracking even though they are subjected to constant pounding.

In the past Hammond used the heat treat method but since 1993 have switched to the Meta-Lax stress relief and weld conditioning method. The bases that are stress relieved are usually 1018 or 1020 hot rolled steel weighing up to about 5000 pounds. Thicknesses of the plates range from 1/4-inch to 1-1/2-inches. The bases would be sent out for stress relief after fabrication and again, if machined, between rough and finish machining. Many times the heat would cause treatment distortion which would require a secondary straightening operation to correct. Although straightening was always annoying it was taken for granted.

Since incorporating Meta-Lax into their manufacturing procedures Butch Nyburg, Plant Supervisor, has noticed that their whole operation is smoother. For example, Butch said "When we used to send out our leveling fixtures for thermal stress relief it would take one week to stress relieve and flatten them and get them back in our plant. Now we can weld and Meta-Lax stress relieve three leveling fixtures in one day! You can't beat the convenience!" Butch added.

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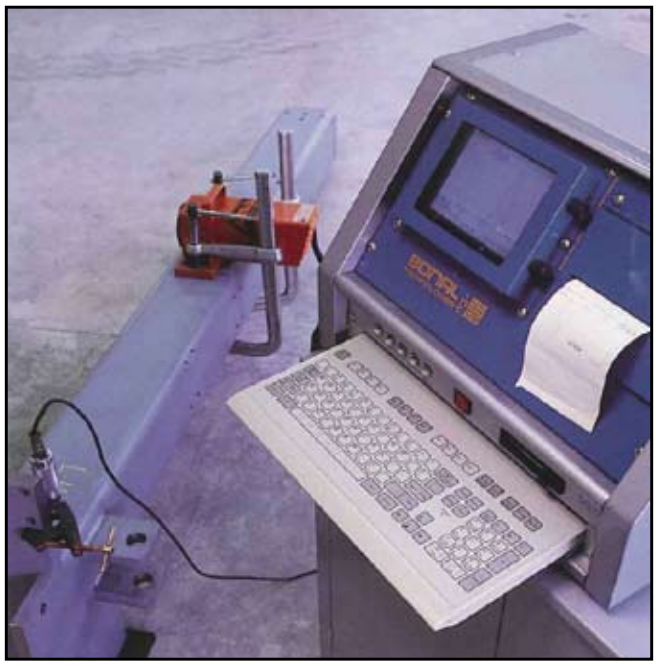
When asked if he noticed any difference in "quality," Harry Bishar, Welder, simply gave another example, "On our turrets, we would weld them back-to-back and then send them for thermal stress relief. They would need to be straightened.

After straightening they would be returned to us still 1/4-inch out of flatness. Now we Meta-Lax weld condition the turrets back-to-back. After the welding is complete and after cool down we break them apart and the distortion is only 1/16 inch!

Imagine that, we don't need any additional stress relief, we eliminated straightening, and the distortion is much less than before even after straightening!"



The Meta-Lax process performed on a support beam.

CNC equipment currently used in their manufacturing. With the Model 2600 the operator sets the part up on rubber pads, types in job data information, then lets the computer take over and complete the Meta-Lax stress relief automatically. The computer stores all information on disk for future retrieval if desired.

In using Meta-Lax during welding (weld conditioning Harry explains that the computer finds and maintains the "sweet-spot" throughout the welding process. "The welders really like it. Meta-Lax makes their job easier and the distortion is a lot less."

"The computer cost more money to begin with but it paid for itself within a year. We're glad we went this way," said Butch.

Butch also said that the machinists have never had a problem with controlling distortion from the bases that have been Meta-Lax processed. Although the finishing equipment may take a lot of pounding there have not been any reports of premature cracking. "The system has done a great job for us," said Butch.

Hammond chose Bonal's computerized Model 2600 Meta-Lax system. It was a logical compliment to the CNC equipment currently used in their manufacturing. Next time you hold a piece of silverware turn a door knob, adjust the ring on your finger, see a musical instrument, or help your kid start his little die casted toy car, remember that it was Hammond's equipment that probably put the finishing touches on it.

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