Customer Comments Re: Meta-Lax® Stress Relief

Summary

Specifics

rate go from 50% to zero and stay there."



"The Meta-Lax process is a proven substitute for 80-90% of heat treat stress relief applications."

U.S. Dept. of Energy



"Meta-Lax has performed flawlessly." U.S. Army



"The Meta-Lax process is our preferred choice of stress relief for many reasons." General Motors

| Summary | Specifics |
|---|--|
| "If there were any sacrifices in quality we'd know | "We've been able to reduce scheduling delays to |
| it. But our results with Meta-Lax have been just | around 5 hours with the actual stress relieving |
| excellent." | time taking just 1 to 1-1/2 hours." |
| Aalbers Tool & Mold | Gary Aalbers |
| "We couldn't get along without Meta-Lax." | , |
| 3 3 | "I fully expect to triple the life from this die." |
| Airtex | Ray Troup |
| "Six machining steps were required with heat | "We have used Meta-Lax since 1986. During this |
| treating. The sub-harmonic process required only | time our customers noticed that the service life |
| two. The resulting stress-relief quality was | of our molds has improved – sometimes |
| equivalent to that of heat treating." | doubled." |
| Build-A-Mold | Horst Schmidt |
| "I strongly recommend the Meta-Lax stress relief | "Meta-Lax has improved product quality by |
| process to others. It works for us." | 25%." |
| Chesapeake Machine | Dave Stover |
| | |
| "Since using Meta-Lax, our customers have | "Since using Meta-Lax, we have eliminated |
| reduced their maintenance costs since our parts | cracking in the last 600-700 cross tubes we |
| are lasting longer." | made. That's unheard of in our business!" |
| Corrosion Engineering | Jim Kelly |
| "We use Meta-Lax everyday on everything that we | "We cut the first 4140 ring without Meta-lax and |
| machine." | it split 2-3-inches. We Meta-lax treated the rest |
| | and they distorted only 1/8-in, a 94% reduction!" |
| Craftsman Tool | Terry Dinelli |
| "The Meta-Lax process is our preferred choice of | "Meta-Lax allows us to certify that thermal stress |
| stress relief for many reasons." | was present and that it was successfully |
| stress relief for many reasons. | neutralized yielding a true 100% quality |
| | component." |
| Conoral Motors | David Gruzin |
| General Motors | |
| "The machinists have never had a problem with | "Now we can weld and Meta-Lax stress relieve |
| controlling distortion of the bases that have been | three leveling fixtures in one day! You can't beat |
| Meta-Lax processed." | the convenience!" |
| Hammond Machinery | Butch Nyburg |
| "The results are super excellent. The difference is | "Die life, especially the fast failure dies, are |
| like day and night." | lasting twice as long." |
| Heick Die Casting | Clyde Hoffman |
| "No part is EDM'ed without first being Meta- | "Meta-Lax has eliminated all of our cracking and |
| Laxed." | wire pinching problems in the EDM room." |
| Hydro-Cam | Dick Averill |
| "We have been able to maintain our high standard | "Minco has an <i>on time every time</i> delivery policy. |
| of quality yet still cut corners." | Meta-Lax stress relief plays an important part ." |
| Minco Mold | Don Paulus |
| | |
| "I think of Meta-Lax as an extra trick up my sleeve | "Since we began using Meta-Lax, we have |
| for a higher quality product." | experienced the ability to hold dimensional |
| | tolerances on weldments and machined parts as |
| | never before." |
| NASA – Langley | Gerald Miller |
| "Meta-Lax reduces the amount of effort required in | "The parts that were stress relieved using Meta- |
| making a good product." | Lax were better than those that came from the |
| | oven." |
| Norton | Peter Wojnar |
| "We incorporate the Meta-Lax process on every | "Using the Meta-Lax process on cranks increases |
| engine which carries my name." | their life from a 10 race average to 30 races!" |
| Paul Pfaff Racing Engines | Paul Pfaff |
| | |
| "The Meta-lax process is a proven substitute for | "Meta-Lax improves the inconsistencies of the |
| 80-90% of heat treat stress relief applications." | previous resonant-vibration technology by using |
| | more efficient, more consistent "sub-harmonic" |
| | vibrational energy." |
| U.S. Department of Energy | David Crouch |
| "Meta-Lax has performed flawlessly." | "The results were astounding. We saw our scrap |
| • | rate as from FOO/ to zore and stay there " |

All customer comments were taken from pre-approved published articles.

Bonal Technologies, Inc.

U.S. Army – Watervliet Arsenal Tim O'Connor

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Customer Comments Re: Meta-Lax® Weld Conditioning

Summary Specifics

| Summary | Specifics | |
|---|--|----------------------------------|
| "We are completely satisfied with Meta-Lax. | "Motor mounts (for U.S. Navy mine sweepers) made of | |
| We've had no problems whatsoever. I give | stainless steel normally distorted 1-inch. But using | |
| Bonal a high recommendation." | Meta-Lax weld conditioning distortion was held to less | |
| | than 1/8-inch." | |
| Alloy Industrial | Rocky MacMillan | |
| "The Meta-Lax system made our engines | "We use Meta-Lax while welding aluminum and cast | |
| perform more consistent and longer than | iron. The welds come out smoother and it reduces the | |
| ever before." | time it takes to weld." | |
| Automotive Specialists | Keith Dorton | |
| "Based on our experience we have all kinds | "We Meta-Lax weld conditioned the I-beams and even | |
| of proof that Meta-Lax works." | amazed ourselves. When we popped them loose they | |
| or proof that weta 2ax works | stayed flat – no distortion!" | "After all the welding was |
| Fairfield Engineering | Rex Hogsett | complete they measured only 1/8- |
| "The welders really like it. Meta-Lax makes | "Finishing equipment may get a lot of pounding, but | inch corner to corner out of |
| their job easier and the distortion is a lot | there have not been any reports of premature | squareness [a 75% reduction]." |
| less." | cracking." | NASA |
| Hammond Machinery | Butch Nyburg | |
| "We found that using the Meta-Lax system | "Use of this process has helped us control the flatness | |
| during welding gave a better appearance to | of the aluminum platens, previously 1-in, now to 0.100- | |
| _ = = :: | inch TIR. That's a 90% reduction!" | 110 |
| the weld. The wetting action was better and porosity reduced." CL Hann | | |
| · · · · · · · · · · · · · · · · · · · | Pete Hann "We hold 0.001-inch flatness on the 136-inch finish | |
| "Meta-Lax has played an important role in | | |
| assisting us in reaching this high level of | machined part without any problems at all." | |
| precision expertise." | | |
| Hansen's Welding | Gary Hansen | |
| "The end result for us is a stronger weld and | "I can visually see much less panel distortion, which | "After 70-80 hours of Meta-Lax |
| a longer lasting and safer hull." | provides for a more eye-pleasing hull." | weld conditioning per mold there |
| Hike Metal Products | Andy Stanton | were NO CRACKS." WesTool |
| "We have been extremely impressed with | "We had a coal sorter, 12-ft x 30-ft, with 1,000 ft of | |
| the Meta-Lax technology." | weld. Before Meta-Lax we experienced 2-in distortion. | |
| | With Meta-Lax we got 3/8-in." | |
| Kanawha Mfg. | Carl Smith | |
| "We use Meta-Lax about 50% of the time for | "After all the welding was complete they measured | |
| stress relieving and 50% for weld | only 1/8-inch corner to corner out of squareness! | 0 |
| conditioning. The system is used on fixtures | Normally, even when using holding fixtures, welding | |
| and flyaway parts, from all sorts of shuttle | the gussets caused at least a ½-inch distortion." | |
| support fixtures and tooling to shuttle | | |
| landing gears and wheels." | | 11 20 19 |
| NASA – Dryden | Don Whitfield | "I've never been disappointed |
| "The quality of our welds is so much better, | "Our welds are 15 to 20% faster." | with Meta-Lax – ever." |
| it's like night and day." | | Weber Machine |
| Peninsula Metal Fab | Jim Scocca | 4 |
| "Meta-Lax has become an intricate part of | "We found that the distortion of the Meta-Lax welded | |
| our day to day business." | plates was noticeably smaller." | |
| Rob's Welding | Dean Shoup | 4 |
| "Meta-Lax weld conditioning has enabled us | "Now with Meta-Lax we hold the cores to about 0.005- | |
| to improve the quality of our weld repair." | inch distortion [a 75-85% reduction]." | |
| Tigmaster | Jeff Sukupchak | |
| "I've never been disappointed with Meta-Lax | "Meta-Lax was used during the welding of plow blades | |
| – ever." | up to 16-ft long. This resulted in reducing distortion | |
| | from 10-inch to 1/8-inch, a 99% reduction!" | |
| Weber Machine | John Sparovic | |
| "We utilized the Meta-Lax vibration during | "We were able to increase our weld speed by 25% and | |
| the welding and had no problems at all." | maintain the straightness because of the Meta-Lax | |
| | treatment." | |
| Western Steel & Metals | Hugh Winthrop | |
| "The Meta-Lax equipment paid for itself with | "After 70-80 hours of Meta-Lax weld conditioning per | |
| the first two jobs." | mold there were NO CRACKS! That's proof positive for | |
| | me!" | |
| WesTool | Bruce Kronk | |
| • 11 | | |

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