

Featured Company: Toyoda Machinery USA

Meta-Lax Tightens Tolerances

Get the spindles as round as humanly possible!
That's an order.

Toyoda Machinery USA/Grinders For Industry Div., of Wixom, Michigan, was doing a pretty good job of holding their spindles very close concentricity at 50-70 millions-inch. These spindles are critical to the integrity of the machining centers and grinders which Toyoda builds.

The spindles were made from either 8620 or 4620 material, varied from 3-in dia. x 36-in to 5-in dia. x 60-in, and were hardened and ground. Several grinding steps were needed which took between 8 to 12 hours. The tolerance was 75-millions-inch.

George Beal, Jr., Production Control Manager, decided to use Meta-Lax processing on these spindles after hardening. He had already witnessed impressive distortion control that Meta-Lax was able to achieve from the machine bases that they were rebuilding. After grinding the first spindle they checked for concentricity.

"We thought our machine was broken. It didn't move!", explained George. **In checking all the Meta-Lax treated spindles after grinding they recorded an outstanding 10-millions-inch (.000010-inch) concentricity or less.**



These 8620 grinder spindles, 4-in dia. x 36-in. are Meta-Lax treated to reduce distortion 80% to 10 millionths of an inch.

"THAT'S ROUND!", said George.

Their two Meta-Lax systems are constantly in use. **"We have tightened our tolerance to 15-millions-inch"**. George also noted, "We can grind the spindles complete in 6 to 8 hours.

It's not surprising that for 12 years now Toyoda has specified Meta-Lax stress relief on these spindles and many other critical components in their machining centers and grinders.

Article was **Customer Approved** Prior to Initial Publication.
Published Article Appeared in: Meta-Lax Facts Volume 4, No. 1.