LEAVING DOWNTIME IN THE DUST IMPROVES ROI

JM Performance Products' Spindle Cleaner and Restoration Kits ensure optimal daily productivity & less CNC Machine Breakdown

CNC spindle maintenance is treated as a dirty, boring, and often-overlooked job. A clean spindle is essential for proper taper contact between the spindle and v-flange toolholder. Build-up of chips, dust, and oil in the spindle can jeopardize taper contact and result in premature wear, repair downtime, and even CNC machine breakdown.

Ultimately, breakdowns cause production to stop and the ensuing costs are very high since no parts are being produced. The most cost-effective way to increase your daily CNC machine productivity is through proper maintenance, ensuring optimal toolholder-to-spindle contact. A breakdown's true cost can conservatively be projected between 5-to-15X simple maintenance costs.

It's important to note that all V-Flange tooling is designed to fit the spindle taper within tolerances of one-ten-thousandths (.0001") of an inch. Any debris, in the form of dust, grease, chips, or other contaminant left on the spindle, taper, or flange can cause poor T.I.R. (runout), poor tool life, and poor tolerances.

Recognizing that a clean, smooth spindle surface is essential for proper taper contact between the spindle and v-flange toolholder, JM Performance Products, Inc. (JMPP: Fairport Harbor, OH), a leading manufacturing innovator of CNC mill spindle optimization products since 2009, has developed its advanced Spindle Cleaner Kit and Spindle Restoration Kit.

The spindle cleaners and spindle restoration tapers are made from anodized aluminum that will not collapse in the spindle during use. They also come with removable handles that can be used with all cleaning and resurfacing head tapers.

CASE STUDY

S & S Tool, Inc. (Conneaut, OH), an established specialty CNC machining operation since 1985, had been experiencing ongoing crashes on their 5 CNC machines. President, Paul Sedmak noticed there were high spots in the spindle which caused the taper to sit unevenly. Seeking a swift solution to avoid repeated shutdowns, which could cost approximately $6,000 per machine, Sedmak contacted JMPP President, John Stoneback, who made an onsite visit and demonstrated the Spindle Cleaning Kit's simple process.

According to John Stoneback, the tool ran out .005" at 5 inches from the spindle face. When he inspected it, he noticed a notch at the large end, the result of a tool that had broken loose and gouged the spindle. Stoneback began by cleaning the spindle which was heavily coated with baked on coolant, perhaps .005" thick. The spindle hadn't been cleaned in 4 or 5 years. He then began resurfacing the spindle using the taper fitted with 40 Micron aluminum oxide strips.

When he initially began the process, it was extremely difficult to maintain the pressure of the taper in the spindle because every time the tapered fin of the head hit the gouged area, the resurfacing head would jump and push out against Stoneback's hand. He had to use the all-purpose cleaner to remove debris, including metal fragments, off the strips, but after about half an hour, he finally got smooth rotations. At that point, he used new strips to really shine the surface. A final cleaning with the cleaning head and towels left the spindle looking like new.

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Sedmak then used a master test bar and checked the TIR which was within .0001" out 10 inches. When you consider that it would have taken a day to pull the spindle, one or two weeks to regrind it, and yet another day to reinstall the spindle, a few hours of time saved S & S Tool a considerable amount of money in terms of down time and lost production.

According to Sedmak, "The results were readily apparent and we implemented the kit into our maintenance schedule immediately. We've been using it for over three years and won't go back. For a small investment, all of our machines run more efficiently, the tools run truer, and we're saving on cutter wear."

CONCLUSION

JMPP's Spindle Cleaner and Spindle Restoration kits provide an optimal maintenance solution to prevent toolholder/CNC machine performance issues. According to JMPP President, John Stoneback, "The main purpose of regular spindle maintenance is to ensure that all equipment required for production is operating at 100% efficiency at all times. Therefore, it's essential to implement a frequent spindle cleaning and restoration maintenance system that operators should conduct at least once per week."

Learn more about spindle optimization here: bit.ly/2zytf71