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WHITEPAPER

WHY YOU SHOULD BE USING ULTRASONIC CLEANING

Clean punches and dies are essential to maintaining the integrity and efficiency of your tooling investment, as well as the quality of your product. Ultrasonic cleaning has long been considered the most effective, nondestructive way to clean tools – from medical instruments to tablet tooling. The Tableting Specification Manual (TSM) states, "An ultrasonic bath is ideal for cleaning tooling." This high-tech cleaning process also saves time, reduces cost, and is better for the environment.

WHY CLEANING IS IMPORTANT

Dirty tools can cause tool binding, which can result in damage to the tooling and the tablet press. Keeping tools clean will decrease the chance of premature tool wear and allow lubrication to be more effective and the machine to run more efficiently – which will increase product yield.

HOW IT WORKS

Ultrasonic cleaners use high-frequency pressure waves to cause cavitation to agitate a liquid (usually cleaning solution and/or water, which in turn creates tiny bubbles that loosen and remove debris. This action is highly effective for removing all traces of product and/or contaminants from tooling. The ultrasonic waves penetrate all surfaces of the tool,

Natoli Engineering offers an Ultrasonic Cleaning System with wash, rinse and dry units, as well as a tabletop model.

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including hard-to-clean areas such as key slots, cups, and die bores, and cause debris such as oil, grease, and biological residue to break up and disperse. In addition to using an ultrasonic wash unit, it's also critical that tools are rinsed and dried properly because any residue left from cleaning solution or water can cause corrosion or discoloration of the tooling. Thorough drying is extremely important to the cleaning process. The TSM states, "After cleaning, tooling must be handled carefully to prevent moisture from the operator's fingers remaining on the tooling and causing rust."

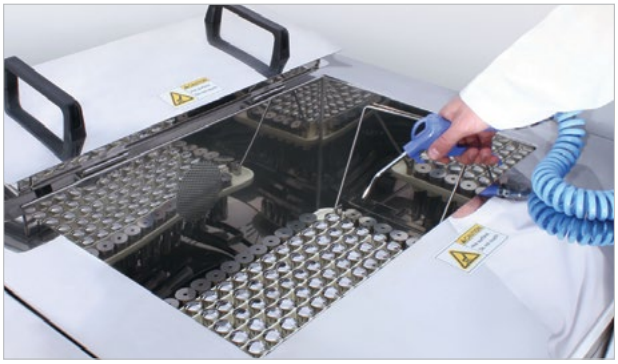
BENEFITS

MORE EFFECTIVE CLEANING

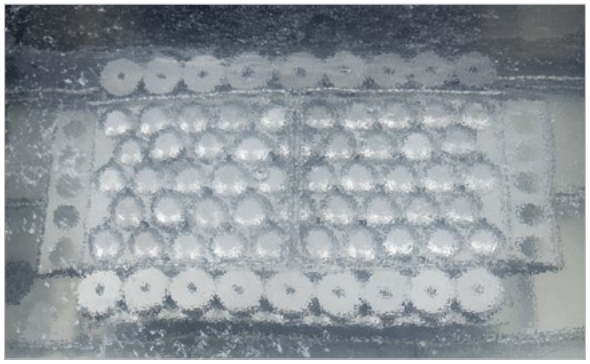
Ultrasonics clean more effectively and thoroughly than manual scrubbing, which can be ineffective on heavily soiled tooling and can cause damage to delicate surfaces. Using ultrasonic waves to clean will remove material even tightly adhered to surfaces.

REDUCED COST

Not only does ultrasonic cleaning save labor costs, it also completes the cleaning cycle in less time. A typical cleaning cycle for moderately soiled tools can last 10 minutes or less and requires little supervision, which frees up staff to spend time completing other tasks.



Proper drying prevents rust, which can severely damage your tooling.



Ultrasonic cleaning quickly and easily provides a safe, thorough cleaning of your punches and dies.

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As mentioned, the most important cost savings may be reduced wear and tear on tools. Ultrasonic cleaners provide superior cleaning without using abrasives to remove grime, and they don't create friction or wear during the cleaning process. This means tools receive a better cleaning through a more delicate delivery than with manual processes.

ENVIRONMENTALLY FRIENDLY

Ultrasonic cleaning offers multiple environmental benefits. New-generation models require much less energy and are more efficient to run than older models. The machines also require less water to clean more tools than manual cleaning, and the FDA-approved cleaning solution is environmentally friendly and non-ozone depleting.

A BETTER CLEANING SOLUTION

Punches and dies are a big investment that should be protected by careful handling and thorough cleaning. Ultrasonic cleaners truly offer a better cleaning solution than other methods. In addition to saving time and reducing costs, they deliver the safest, most efficient cleaning process.

BEFORE ULTRASONIC CLEANING

AFTER ULTRASONIC CLEANI