

CLEANING

FOR EXTENDED TOOL LIFE &
IMPROVED TABLET QUALITY



PROPER TOOL
CLEANING IS CRUCIAL

EXTEND TOOL LIFE

DECREASE PRESS DOWNTIME

REDUCE PRODUCTION-RELATED
COSTS

IMPROVE TABLET QUALITY

Tablet compression tooling is a significant investment for tablet manufacturers, and keeping tooling clean is an essential part of the tablet production process. Lack of cleanliness is the No. 1 cause of tablet press failure, and clean tooling is critical to the production of quality tablets. Dirty tools can cause tableting and product quality-related problems, including sticking and picking. Excessively worn or improperly maintained tools can create downstream production difficulties by creating a perception of poor quality to the consumer. Tablet manufacturers will receive the most use and highest quality tablets from their tooling if the tools are properly cleaned and maintained.



If you are not familiar with cleaning equipment or are new to your company's tool maintenance program, please consult with your Natoli representative or call our customer service department to discuss your cleaning needs.

PROTECT YOUR TABLET
COMPRESSION TOOLING
INVESTMENT

Dirty tooling may cause binding, which can damage tooling and tablet presses. Keeping tools clean can decrease premature tool wear and allow lubrication to be more effective as well as reduce the possibility of product cross contamination.

It is critical that tooling is thoroughly cleaned and dried to remove any oil or product residue from the tablet press. A cleaning procedure that involves minimal human interaction is recommended to ensure that tools are cleaned consistently and to reduce the potential for damage. The optimum procedure that meets these criteria is ultrasonic cleaning with an automatic dryer. Ultrasonic cleaning provides the tooling with increased exposure to cleaning solution, and hard-to-reach portions of the punch, including keys and embossing, are cleaned without the risk of damage. The advantage of using a dryer in conjunction with an ultrasonic cleaner is that it eliminates the potential for surface corrosion and discoloration.

PRODUCTS FOR MANUAL TOOL CLEANING
IDEAL FOR CLEANING SMALL QUANTITIES OF TOOLS

The durable and stable **Acetal Wash Basin** provides the safety and security that are paramount when hand cleaning a small number of tools. With deep channels to hold tooling in place, this tough thermoplastic wash basin is highly resistant to solvents and chemicals and has low moisture sensitivity and excellent fatigue-life.

Use **Natoli Alkaline Wash Solution** in the acetal wash basin to remove oils, greases, carbon residues, oxides, particulate matter, and other contaminants from steels, ceramics, glasses, and other compatible materials. Use as a standalone cleaner or as an alkaline wash solution booster.

Prior to returning tooling back into service or storage, use **PK-2** cleaner and corrosion inhibitor, which penetrates and leaves a food-grade film for extended protection.

MA 6032
PK-2



MA 6250
Acetal Wash Basin



MA 6026
Natoli Alkaline Wash Solution



MA 6018
Lint-Free Work Wipes Multi-purpose, heavy-duty cleaning cloths quickly absorb liquids, oils, and grease. Remains strong, even when wet.



SU 2545
H-1 Food-Grade Tooling Storage Protectant Prevents corrosion and discoloration of tooling. Ideal for long-term storage.



MA 5178
Tooling Storage Box with Lid and Insert Safely stores and protects punches and dies.

ULTRASONIC CLEANING: A CRITICAL STEP IN TOOLING MAINTENANCE

Ultrasonic cleaning is highly effective for removing all traces of product and/or contaminants from tablet compression tooling. The Tableting Specification Manual (TSM) states an ultrasonic bath is ideal for cleaning tooling. After cleaning, moisture from the operator's fingers can contaminate the tooling and cause rust, so it is recommended that the operator wear gloves while handling tooling. Beyond cleaning tools, an ultrasonic cleaner also can be used to clean press parts. This high-tech cleaning process saves time, reduces costs, and is better for the environment.

HOW ULTRASONIC CLEANING 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. The ultrasonic waves penetrate all surfaces of the tool, 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 the cleaning solution or rinse can cause corrosion or discoloration of the tooling.



Before Ultrasonic Cleaning



After Ultrasonic Cleaning

BENEFITS OF ULTRASONIC CLEANING



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 COSTS AND CLEANING TIME

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 15 minutes or less and requires little supervision, which frees up staff to spend time completing other tasks.

The most important cost savings, however, may be reduced wear and tear on tools. Ultrasonic cleaners provide superior cleaning without using abrasives to remove grime and do not create friction or wear during the cleaning process.



COMPLETES CLEANING VALIDATION PROCESS

Many tablet manufacturers must adhere to strict regulations and audit procedures that require them to ensure product contamination is removed from all components, including tooling for the tablet press. Ultrasonic cleaning is the best method to validate that all tooling is free of contaminants. Completing all steps in the ultrasonic cleaning process enables tablet producers to verify that tooling is clean and that the cleaning process is repeatable.



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TABLETOP ULTRASONIC WASH UNIT ELIMINATES MANUAL WASHING OF INDIVIDUAL TOOLS



*Cleans
up to 72
punches in
as little as
six minutes!*

FEATURES:

- 7-gallon (26.1 L) tank capacity
- Holds up to 72 punches / 38 dies
- All models are ETL / CSA approved
- Precisely controls time, heat, and power
- Tank dimensions: 19" x 11¾" x 8"

MA 6100
Digital Ultrasonic
Tabletop Unit

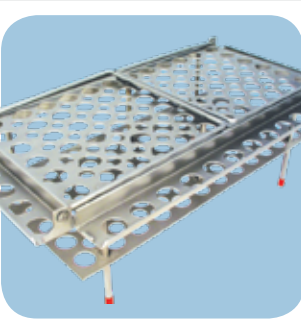
The **Tabletop Ultrasonic Cleaner** provides an effective and efficient method for cleaning tablet compression tooling by delivering alternating pulses of high- and low-pressure waves to ensure uniform cleaning.

The ultrasonic cleaner removes oils, grease, oxides, and particulates. It is especially beneficial for hard-to-clean areas such as key slots, punch cups, and die bores.

RELATED ACCESSORIES



MA 6026
Natoli Alkaline Wash Solution
Liquid detergent specially formulated for use in ultrasonic cleaners to remove contaminants.



MA 5082 B-Type & MA 5084
D-Type Stainless Steel Tray
with Handles Reduces risk of tool damage. Provides secure handling of punches and dies. Conveniently fits in ultrasonic cleaner.



SU 2545
H-1 Food-Grade Tooling
Storage Protectant Prevents corrosion and discoloration of tooling. Ideal for long-term storage.



MA 5178
Tooling Storage Box with Lid
and Insert Safely stores and protects punches and dies.

THE ULTIMATE, FULL-CYCLE ULTRASONIC CLEANING SYSTEM

**SAVES TIME AND LABOR —
WASH, RINSE, DRY IN AS LITTLE AS 20 MINUTES**

The **Natoli Stainless Steel 3-Piece Ultrasonic Cleaning System** allows for quick and easy transfer of tooling from the wash to rinse to drying tanks—a great time and labor saver! The entire cleaning cycle can be completed in about 20 minutes and provides a controlled consistency that validates the cleaning process.

MA 7640
3-Piece Ultrasonic
Cleaning System

The modular units are designed to work in conjunction with each other; however, they can be purchased or used individually to customize your cleaning procedure. The modular drying unit comes equipped with an air wand that can be used to remove excess water.



Easily place / remove stainless steel tooling trays



Air wand easily removes excess water

FEATURES:

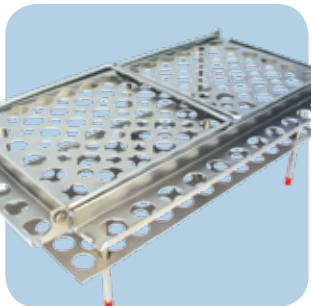
- All stainless steel construction
- Space-saving bifold tank covers
- Easy-access front panel controls
- Adjustable thermostats with digital display
- Automatic dryer shutoff
- Illuminated runtime cycle switch
- Individual unit dimensions: 32" x 30" x 34 ¾" (812.8 x 762 x 882.65 mm)
- Power supply: 240/1 phase

**Units may be purchased individually*

RELATED ACCESSORIES



**MA 6026
Natoli Alkaline Wash Solution**
Liquid detergent specially formulated for use in ultrasonic cleaners to remove contaminants.



MA 5082 B-Type & MA 5084 D-Type Stainless Steel Tray with Handles Reduces risk of tool damage. Provides secure handling of punches and dies. Conveniently fits in ultrasonic cleaner.



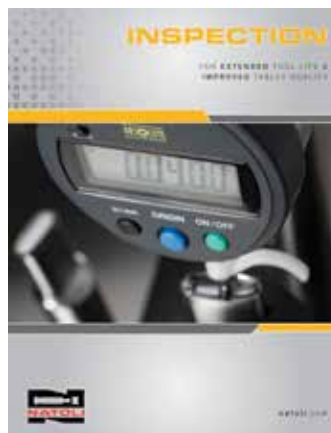
**MA 6036
Chem-Crest 77G Rinse Solution and Corrosion Inhibitor** Provides short-term oxidation protection during rinsing and drying applications. For use on steels only.



**SU 2545
H-1 Food-Grade Tooling Storage Protectant** Prevents corrosion and discoloration of tooling. Ideal for long-term storage.

*Please refer to natoli.com for most current model.
Upgrades and modifications available upon request.*

INSPECTION



POLISHING



Ask a
Natoli Sales
Representative
about Our Other
**Tooling
Maintenance
Brochures**

ENHANCE YOUR TOOLING MAINTENANCE PROGRAM WITH THESE NATOLI PRODUCTS AND SERVICES

CLEANING TRAINING

To arrange a one-on-one cleaning training session for your staff to learn both fundamental and advanced cleaning techniques and procedures **contact your Natoli representative today. Training classes are available on-site at your company or at one of our training facilities.**

CUSTOM SOP

A well-structured cleaning program can extend tool life, decrease press downtime, and increase high-quality tablet yields. Let Natoli help complete your tool maintenance program with a custom SOP to ensure your cleaning program is efficient, effective, and safe.



TABLET COMPRESSION ACCESSORIES CATALOG

Prolong tool life, maintain tablet quality, and increase productivity with the **industry's most comprehensive accessories catalog**. Natoli's newest edition of the Tablet Compression Accessories Catalog includes all the tablet manufacturing accessories needed to help keep your operation running efficiently and profitably.

The **FREE** catalog is available in printed and digital versions at **natoli.com**.



YOU DEMAND. WE DELIVER.

NATOLI ENGINEERING COMPANY

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