

SEVEN STEPS TO CLEANING YOUR PRESS EFFECTIVELY

Proper cleaning and maintenance of your press and tooling is one of the easiest and most effective ways to ensure your press operates with optimum performance. To help stop unnecessary wear and untimely press failure, you need a thorough cleaning guide for your tablet press systems. If you are not already using the methods discussed below, implementation should begin immediately.

1. VACUUM OFF ALL EXCESS FORMULATION

Be sure to use powerful vacuums to remove all debris and stop possible contamination in other parts of your press. Although complete or major neglect is sometimes the cause of a press' failure, it is often the combination of multiple smaller cleaning failures. Figure 1 shows a turret well, which is under the upper cam body and carrier. It's one of the hidden areas of a press, and in this case, it's been poorly cleaned or not cleaned at all. By vacuuming regularly, you reduce the probability of unnecessary wear.

Figure 1. Excess formulation on die table.



2. EVALUATE THE CONDITION OF PARTS AND TOOLING

Tell your maintenance colleagues about any wear or damage to those parts or tooling so that they can fix or replace them before final cleaning and reassembly. That way, no one wastes time cleaning unusable items, and start-up will be smoother.

3. USE HOT WATER AND DETERGENT OR SOLVENTS AS NEEDED

To clean your press correctly, the first step is to use a non-alkaline cleaning solution, 95 percent isopropyl alcohol (IPA), or even a common dishwashing detergent. After choosing your noncorrosive cleaner, test the solubility to ensure the product will be removed. Don't get stumped by something simple. For example, sugar-based products can be removed easily with soapy water!



FIGURE 2. RUSTED UPPER TURRET SECTION

“ Be sure to follow standard safety practices. Don't just think about these cleaning practices, implement them now.”



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Whatever the cleaning solution is, use a lint-free cloth to wipe and dry the tablet press. It's imperative that you dry the press and tooling immediately to prevent corrosion and/or discoloration of the press, its components, and tooling.

One common detrimental cleaning practice is washing presses with pressurize water. This cleaning method can severely damage your tablet press and tooling. It greatly increases the likelihood of seizing, contamination, and premature component failure. This Figure 2 shows an upper turret section that rusted because water was used and the section wasn't properly dried.



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“Dedicate a set of brushes, lint-free cloths, and vacuum tools to each press to combat cross-contamination issues.”

Another commonly used, and equally poor practice, is the use of compressed air to remove formulation residue from the tablet press. This can easily push formulation into crevices, bearings, shaft housings and other areas where powder does not belong. Figure 3 shows a turret's spindle bearing contaminated with formulation, which can cause it to fail prematurely.

4. USE PUNCH-GUIDE BRUSHES AND DIE-SEAT CLEANERS PROPERLY

Stiff nylon brushes are perfect for removing debris from the punch guides. Just be careful that you don't damage the punch scraper seals. Use a special die-seat cleaning tool to clean the die pockets. Never push a punch-guide brush past the punch scraper seals. Depending on the amount of debris generated, it may be ideal to grab your vacuum again. This will ensure that debris does not fall into hidden areas again and create potential harm for your press.

5. RINSE ALL PREVIOUSLY WASHED PARTS WITH HOT WATER AND ISOPROPYL ALCOHOL

To clean your press correctly, use a mixture of 95 percent isopropyl alcohol (IPA) and hot water. Make sure to test the solubility to ensure any remaining product will be removed. When completing this step, you will flood the various parts of the tablet press to ensure that all parts received a wash.

Figure 3. Contaminated spindle bearing.





6. WIPE OFF ALL PARTS AND SURFACES WITH IPA

For this step, use a lint-free cloth to wipe the tablet press and pure IPA. The cloth should be dampened with IPA, but not soaked. In this step you are making sure that all reachable parts have been rubbed to remove debris, and cleaned with the IPA.

7. DRY ALL COMPONENTS IMMEDIATELY

It's imperative that you dry the press and tooling immediately to prevent corrosion and/or discoloration of the press, its components, and tooling.

CONCLUSION

Take the time to develop a thorough and structure maintenance program for your tablet presses. Including these seven steps in your program will greatly reduce the amount of stress on your presses and compression tooling, giving your equipment longer life. If you have any questions about how to design and implement a maintenance program, contact your Natoli Engineering representative or email us at tabletpress@natoli.com.

LUBRICATION WHEN NECESSARY

Of course there are a number of parts that should always receive lubrication after cleaning including the punches and turrets. If a press will sit idle for more than a week, apply a light coating of food-grade oil to the turret and other parts that could rust. Do the same on your tooling. This will help keep them from corroding and causing issues in the future.

