

WHITEPAPER

BUFFING VS. DRAG FINISHING

{ One of the surest and most inexpensive ways to maintain tablet quality and reduce tooling and operating cost is to correctly refurbish and polish your punches. Maintaining the quality of your punches helps to eliminate tablet defects such as picking, sticking, capping, lamination etc. Learning how to properly polish your punches can help to solve all of these issues while significantly reducing costs by increasing tool life, in many cases up to 80 percent.

PROPER POLISHING

Tablet tooling is a considerable investment for your company. Quality tooling and a proper maintenance program is also integral to producing high-quality tablets efficiently. Over time, tooling loses its luster and can develop nicks, scratches and/or a wear pattern commonly called J-hook. These imperfections can cause quality issues such as tablet capping, laminating, sticking, picking, and unnecessary down time in production.

It's not just polishing, but refurbishing, that permits tools being put back into service, and extending tool life while maintaining tablet quality.

Although there are numerous ways to polish and refurbish punches, the best method is to use a large unsewn cotton buff wheel. A 400 grit stone can be used for restoring land and removing nicks from the punch cup if the wear condition is severe. Restoring land is one of the most important procedures in tool refurbishing. Once a procedure is adapted to routinely refurbish land, you will immediately recognize an increase in tooling life and appreciate the cost savings compared to other common methods such as drag finishing.





DAVE PERRY
Assistant Plant Manager &
Polishing Expert
Natoli Engineering Company

“ Polishing can smooth out nicks and bring shine back to punch cups. A clean, smooth surface will release product better, produce better finished tablets, and reduce problems during production.”

J-HOOK

A common punch tip wear pattern called J-hook routinely causes lamination and capping. When J-hook forms, if the tools are not properly refurbished, they must be discarded and replaced. This is unfortunate as the procedure to restore the punch tip to remove the J-hook takes merely seconds per punch and at the same time polishes the cup to a mirror luster.

There are other common methods of polishing tools, such as using a drag finisher. Although drag finishing is considered an automated polishing process, you often won't receive the results you need compared to polishing using the unsewn cotton wheel—in fact, you can cause damage to your tooling if you aren't conservative with your use of a drag finisher which can result in tool binding, excessive cam wear and tablet discoloration. Using a drag finisher also will not restore land to the punch, nor will it help the tool perform as new. Although drag finishing is considered an “automated” process, it doesn't restore punch tip land therefore will not correct issues such as capping and laminating. An experienced technician can polish tools as quickly and more thoroughly than a drag finisher, in the same amount of time on a polishing station.



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“ By restoring the punch tip land, you're extending the life to the tool. You're giving strength back to the cup, and you'll make better tablets.”



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“ Press operators need to communicate any production difficulties or observations to tooling maintenance personnel so they can address any problems. If your tablets are sticking, you should visually inspect your tools for nicks and other signs of damage. If you see small nicks or reduced luster, you should remove the tooling and refurbish so you can get back up and running in a productive and efficient manner.”

Each organization should develop a Standard Operating Procedure to determine when to polish tools. Tools in more intense production situations may need refurbishing more often. Communication is very important, as well as teamwork.

If there are no concerns related to tablet finish, capping, laminating or sticking during a batch run, then the suggested practice to justify tool refurbishing is to visually inspect if refurbishing is required. Refurbish if necessary, then oil and properly store the tooling if they will not be immediately put back in service. Don't refurbish tools if it is not clearly indicated understanding polishing is a form a controlled wear. Unneeded refurbishing can adversely affect the life of the punches.

Proper training is the key to successful tool refurbishing. An experienced, well-trained technician can reduce cost by quickly putting tools that would normally be discarded back in service.

Although refurbishing tooling on site saves downtime, shipping, and the cost of paying someone else to refurbish your tooling, it must be understood that not all tool wear conditions are repairable. It's best to check with your tooling manufacturer if you experience tool damage that your trained polishing expert is unsure of repairing.

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BRAND NEW PUNCH

**ROUNDED
TIP O.D.**



**ROUNDED
RELIEF**



NEW PUNCH DRAG FINISHED



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“ Hands-on training is essential. You have to get a feel for the amount of pressure that’s required. Without proper training, you can destroy your tools pretty quickly.”

The benefits are clear - if you want to receive better performance from your tools, increased tooling life, reduce downtime which equates to better output, and maintained tablet quality then consider refurbishing tools on site. With proper training, you will be able to extend tool life and receive a higher quality tablet. You’ll also save money by reworking tools rather than purchasing new.

Natoli offers in-depth, hands-on training and has all the most popular polishing products available for purchase in our accessories catalog – including a CE compliant polishing station, all types of polishing compounds, and hard to find support products. Contact us to learn more!



BUFFING VS. DRAG FINISHING

	Buffing	Drag Finishing
Refurbishes punch cup	Yes	No
Polishes entire punch	Yes	Yes
Eliminates capping due to tip wear	Yes	No
Requires training	Yes	No
Extends punch life	Yes	No