CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2021

DateRun: 08/11/2021

Experimenters: Justin Kiander

ClientType: Metal Working

ProjectNumber: Project #1

Substrates: Aluminum

PartType: Part

Contaminants: Buffing/Polishing Compounds

Cleaning Methods: Immersion/Soak

Analytical Methods: Visual

Purpose: The purpose of this experiment was to determine the effectiveness of steam cleaning both alone and paired with DGreeze 500 LO.

Experimental Procedure: Five mirror polished parts pre-soiled with buffing compound were obtained and cleaned in distinct methods. One set utilized cleaning with DGreeze 500 LO at 100% concentration followed by a steam rinse, while the other set was cleaned with pure steam. An Advanced Vapor Technologies MondoVap 2400 was utilized for the steam cleaning. A brief wipe (approximately 10 seconds) with a microfiber was used to dry as necessary. Photos of the cleaned parts are included with this report.

Results:

Part	Method	Effectiveness
1	Submersion in DGreeze 500 for 1 minute. Steam for 1 minute with Scraper Attachment	Was not effective at first, an additional minute of immersion and steam was conducted that greatly increased performance
2	Submersion in DGreeze for 1 minute. Steam for 1 minute with the Turbo Nozzle Attachment	Moderately Effective, some spotting at the bottom of the part
3	Submersion in DGreeze for 2 minutes. Steam for 2 minutes with the Scraper Attachment. 10 second wipe with microfiber towel.	Most effective method
4	Pure steam for 1 minute with Scraper Attachment	Not Effective
5	Pure steam for 5 minutes with Scraper Attachment	Not Effective

It was determined that pairing a steam rinse with immersion cleaning using DGreeze 500 LO was more effective than steam cleaning alone. The most effective method was 2 minutes of immersion in DGreeze followed by 2 minutes of steam cleaning using the scraper attachment of the MondoVap 2400 at medium strength. An extremely brief wipe was necessary to remove excess water but may not always be necessary. It was initially believed that a water stain was forming on the part following this cleaning process. However, the marking immediately vanished with wiping. This could be the same residue the company is observing in their current cleaning process.

Summary:

Conclusion: Upon completion of testing, it was determined that immersion cleaning followed by steam cleaning was superior to steam cleaning alone. The most effective method was 2 minutes of immersion followed by 2 minutes of steam cleaning with a brief wipe. Next steps would be to meet with the company for a demonstration to determine if this could improve their cleaning process.