



Material Changeover Procedure

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1 Purpose

This document defines the standard procedure for transitioning between different materials in an industrial Tritone machine. The goal is to ensure process stability, prevent contamination, and maintain product quality during material changeovers.

2 Safety

Safety Instructions must be followed when maintaining the Dominant AM System.

When handling printing mold materials, building materials, washing and waste fluids, or any chemicals, you must wear protective gloves.

Protective goggles must be worn when handling these materials due to the danger of splashing (risk of eye damage).

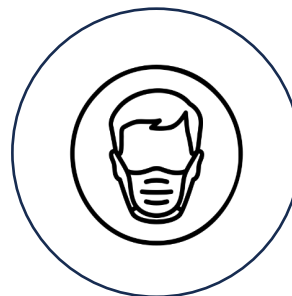
When emptying the vacuum cleaner or dust collector, you must wear protective to prevent inhalation of dangerous materials.



Gloves



Protective glasses



Protective Mask



Safety Gloves

3 Time estimation

The machine preparation process for transitioning between materials requires shift, equivalent to ~3.5 – 5.5 working hours

Note

The estimated time was based on a complete process without dedicated parts.
The use of dedicated parts for material may reduce the replacement time

Activity	Cleaning [min]	Dedicated Part [min]
Print station	10	10
* Applicator	90	30
Cutter Assy	60	60
Cleaning Unit	20	20
Material supply	20	20
* Tray table	60 for Dominant 40 for DIM	10
Vacuum Cleaner	30	30
Pre- Drayer/Drayer	10	10
Treatment Station	20	20
Inspection	15	15
Total	~5.5	~3.5

- The calculation is based on a dedicated applicator and dedicated trays for each material.
- This operation is performed automatically by the operator and can run concurrently with other activities

4 Machine Maintenance Procedures

4.1 Print station

1. Clean the printing Plate thoroughly, Clean/remove any dried mold material using a using a plastic spatula and a lint free polyester cloth.

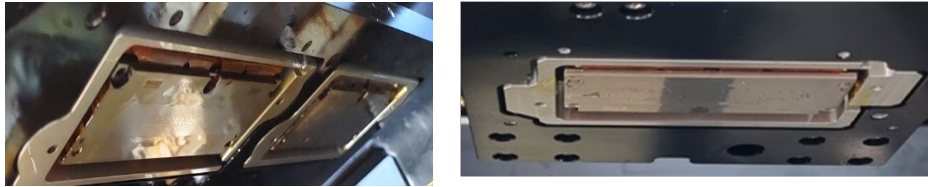


Figure 1: PH's Plate

2. Clean the wax collection tray under the print head.



Figure 2: Mod waste

3. Vacuum all dust and debris from the printing zone.

4.2 Material Station

The material station area must be cleaned thoroughly, with focused attention on all individual units within the station

1. Applicator
2. Material delivery line
3. Cutter
4. Vacuum cleaner

4.2.1 Applicator

Note Ideally use different, dedicated Applicator for metals and ceramics
If the above is not possible, follow these deep-cleaning steps:

Perform thorough cleaning and replace all consumable components in the Applicator

1. Wash stirrer rod and teeth with water and grease soap.
2. Replace the black sealing sponge under the shutter. Verify that it is pressed up against the white end seals after replacing it.
3. Replace all four of the white sponges (two on each side).
4. Replace all four of the rod seals (two on each side). Be careful not to lose/break the inner spacer in the mechanism.
5. Replace the inner black spacer if needed (=broken)
6. Clean any non-replaced parts of the stirrer assembly.
7. Remove front plate and knife to clean any material residue.
8. Replace the blade

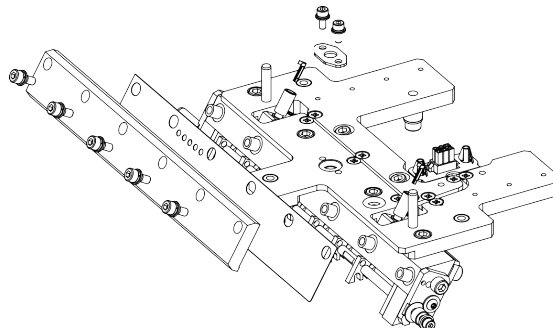


Figure 3: Applicator assembly

9. Clean the paste chamber from any material residue.

10. Replace Air/Paste Adapter the O-ring.

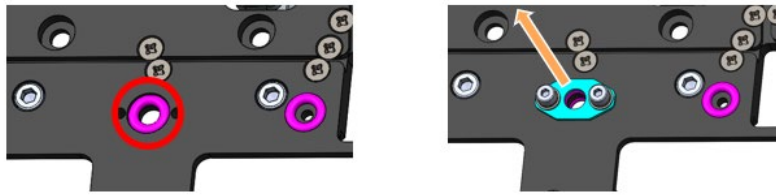
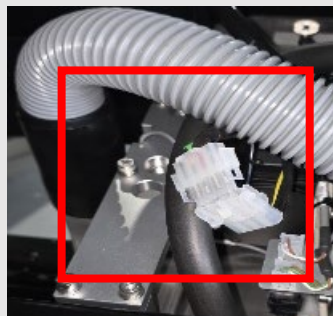


Figure 3.1: Applicator O-rings

4.2.2 Cutter Blades (Deep Cleaning)

Note Ideally use different, dedicated Cutter assembly for metals and ceramics
If the above is not possible, follow these deep-cleaning steps:

Caution The cutter blades are extremely sharp. The interlocks should be activated before performing these steps. In addition, disconnect the connector located above the cutter.



Power Molex connector to cutter

1. Lower the Z-tray by using the GUI.
For better access to the cutter remove the aluminum cover held with four screws (See Picture Figure 4)
2. Remove the vacuum cleaner air intake on the cutter assembly and clean it.
(See Picture Figure 4)
3. Use a plastic spatula (or hard brush – **not a metal brush**) to scrape off any excess material from each blade.
4. Use Protective gloves and clean the **edge and groove** of each cutter blade, and the **cutter body** using a nylon brush with ISOPAR-L.
ISOPAR can be used to clean. After using ISOPAR, wipe the cutter with IPA.
5. Use air pressure and plastic scraper to clean the surrounding parts of the cutter (bearings, back aluminum cover).
6. Examine the cutter blades, verify they are not damaged.

7. Replace cutter cleaning brush.

(See Picture Figure 4)

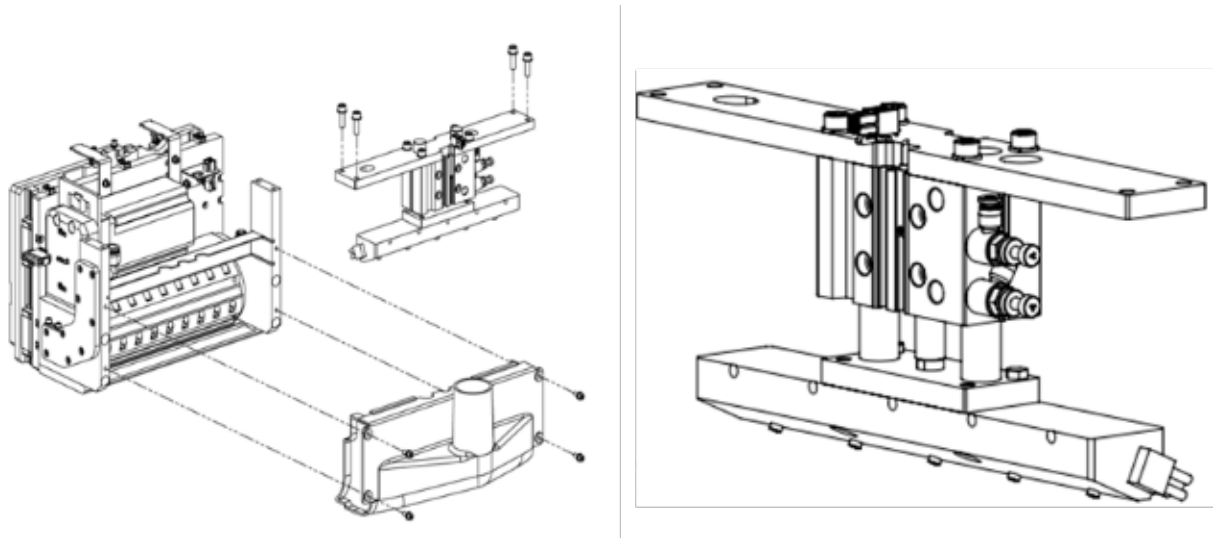


Figure 4: Cutter assembly

4.2.3 Cleaning unit

1. Check the cleaning unit system, clean any dry paste and verify that it is not damaged.
2. Clean the bearing rubber sponge
3. Replace the Ribbon cleaning strip

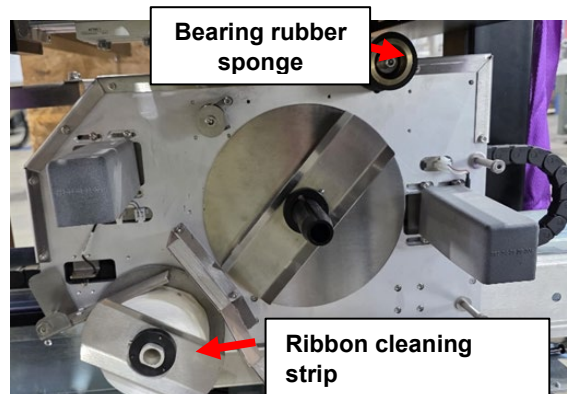


Figure 5: Cleaning Unit

4.2.4 Material supply line

Note Ideally use different, dedicated Tube for each material.
If the above is not possible, follow these deep-cleaning steps:

1. Verify that the tube insertion area is clean. If not, clean with water and IPA.
2. Replace the tube assembly and ensure it is clean.

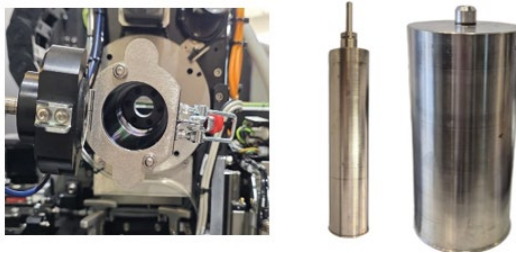


Figure 6: Tube Assembly

3. Replace Dispenser plunger (use different, dedicated Dispenser plunger for each material).



Figure 7: Plunger

4. Replace silicone tube and swivel assembly (use dedicated Tube for each material)



Figure 8: Silicone Tube & Swivel

5. Verify that the pinch valve area is clean

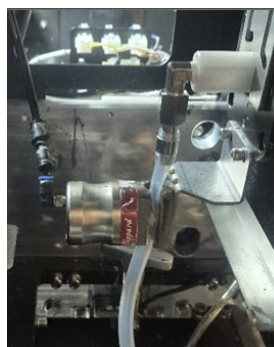


Figure 9: pinch valve

4.2.5 Vacuum Cleaner

4.2.5.1 Vacuum Cleaner - Type CYCLOVAC

1. Open the vacuum cleaner by opening the two black latches on the top of the vacuum and ensure that the filter bag (marked **A**) changes the filter bag.
2. Check the inner protection filter. If the filter is dirty, clean it with air. It is not necessary to remove the inner protection filter (marked **B**).



Figure 10. Vacuum cleaner

3. Clean the dust controller (separator unit).

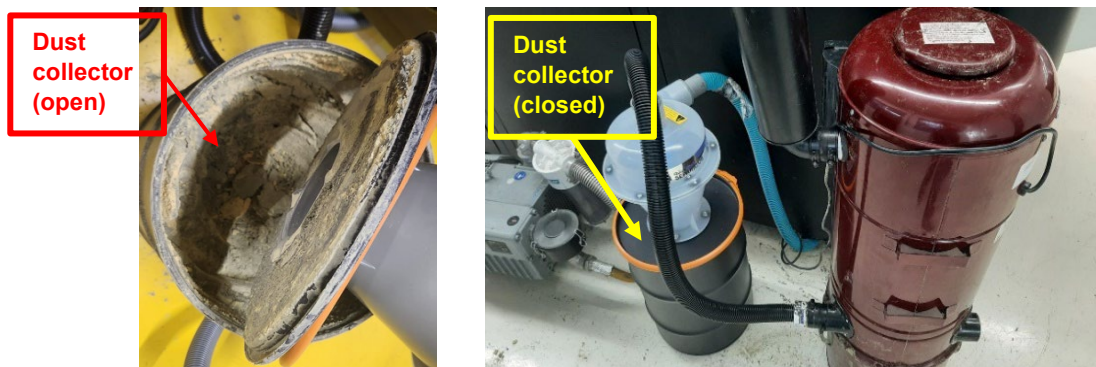


Figure 11. Dust controller (separator)

4.2.5.2 Vacuum Cleaner - Type DELFIN

1. Open the bottom of the cyclonic separator and empty out the contents in accordance with regulations.
2. Open the dust collector from the top part of the vacuum cleaner and empty its contents.
Make sure to dispose of all materials in accordance with local regulations.
3. When cleaning the vacuum cleaner dust collector (marked **B**), first shake the filter by playing with the lever marked **A**.
4. Empty the compartment marked **B** and dispose of its contents in accordance with local regulations.
5. Empty the cyclonic separator marked **C**.

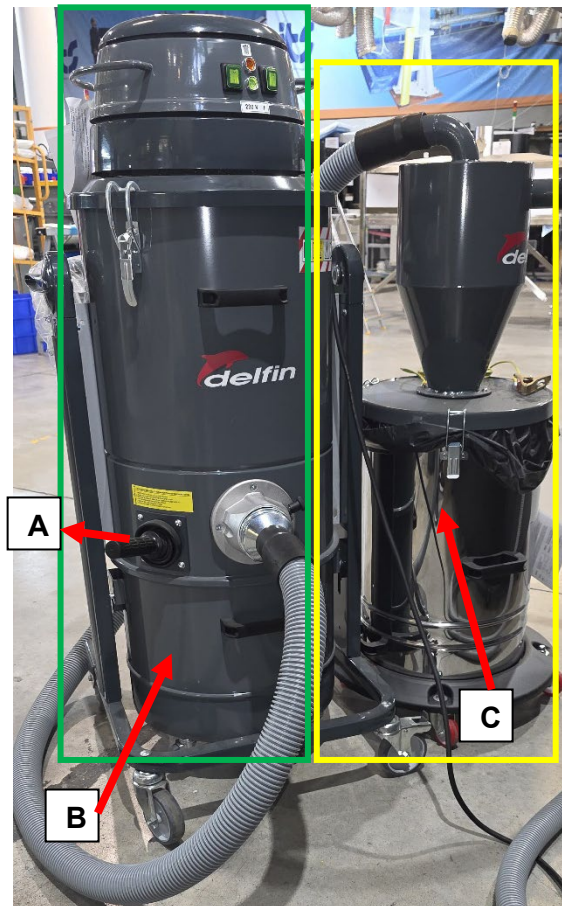


Figure 12. Type DELFIN

6. Power off the vacuum cleaner.



Figure 13. Type DELFIN Power

7. Disconnect the tube below



Figure 14. Type DELFIN tube

8. Place the red cup instead.



Figure 15. Type DELFIN Red cup

9. Power ON the vacuum cleaner from the main GUI

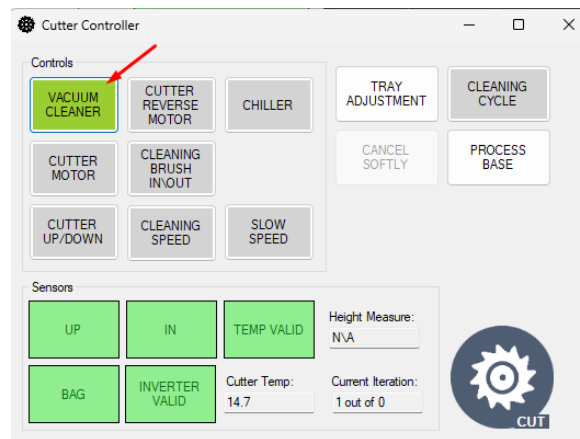


Figure 16. vacuum cleaner GUI

10. Power on the vacuum cleaner



Figure 17. vacuum cleaner Power

11. Shake 6 times the block small door to active and release the vacuum



Figure 18. Block small door

12. Power off the vacuum cleaner from the main GUI

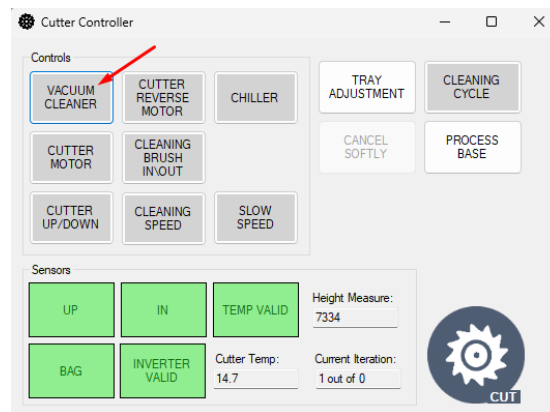


Figure 19. Vacuum cleaner Power

13. Return tube to vacuum cleaner



Figure 20. Vacuum cleaner tube

14. Open the cover to the vacuum bag.

15. Check the vacuum filter by removing the vacuum bag from the internal space.

4.2.5.3 Vacuum Cleaner Type Quatro

1. Remove the vacuum bag from the vacuum cleaner.
2. Release the panel at the back and take the filter out
3. Check that the filter is clean. If not, clean with air pressure in a well-ventilated area
4. Replace vacuum bag

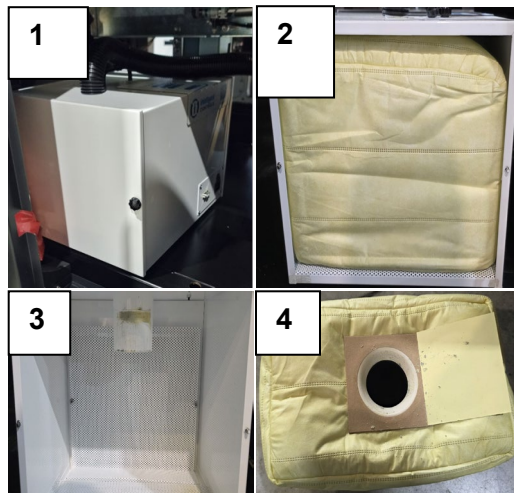


Figure 21. Vacuum cleaner Type Quatro

4.3 Pre- Drayer/Drayer

Clean the heating elements area thoroughly using a vacuum cleaner. Additionally, remove all chips and debris from the station area.



Figure 22. Pre-Drayer/Drayer station

4.4 Treatment Station

1. Visually clean the O-ring of the treatment station cap (lid), if it looks damaged or worn-out replace it.
2. Clean the internal chamber walls of the treatment station cap and the glass at the top.
 - a. Lower the Z-table to the lowest position
 - b. Use a plastic scraper to remove the fine dust particles from the sides and top of the chamber
 - c. Wipe the walls and the glass with IPA
 - d. Visually check that everything is clean and that the glass does not streak marks on it

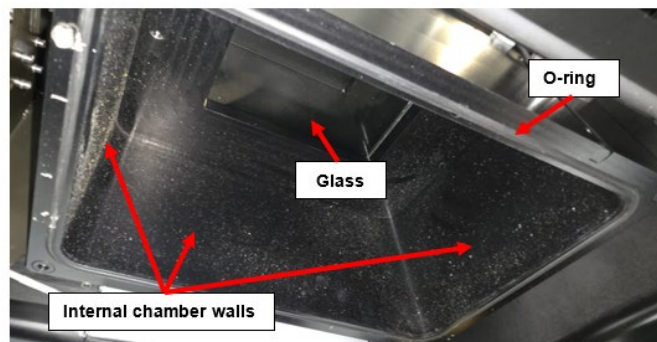


Figure 23. Treatment station

4.5 Inspection

4.5.1 Dominant

1. Ensure the test station area is thoroughly cleaned using a vacuum and wiping with IPA to remove all chips and loose parts

4.5.2 DIM

1. Ensure the test station area is thoroughly cleaned using a vacuum and wiping with IPA to remove all chips and loose parts
2. Clean the internal chamber walls of the treatment station cap and the glass at the top.
 - a. Lower the Z-table to the lowest position
 - b. Use a plastic scraper to remove the fine dust particles from the sides and top of the chamber
 - c. Wipe the walls and the glass with IPA

- d. Visually check that everything is clean and that the glass does not streak marks on it

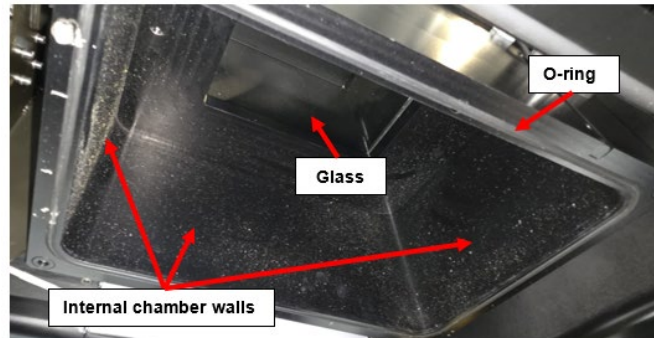


Figure 24. DIM Treatment station

4.6 Clean Z-Trays and machine area

1. Clean the stage Z axis area of any dry paste with a vacuum cleaner wipe with IPA if necessary.
2. Clean the Z-tray from dry paste and debris.
3. The entire machine environment, both internal and external, must be thoroughly cleaned using a vacuum cleaner designed for removing chips and residual material wipe with IPA if necessary.

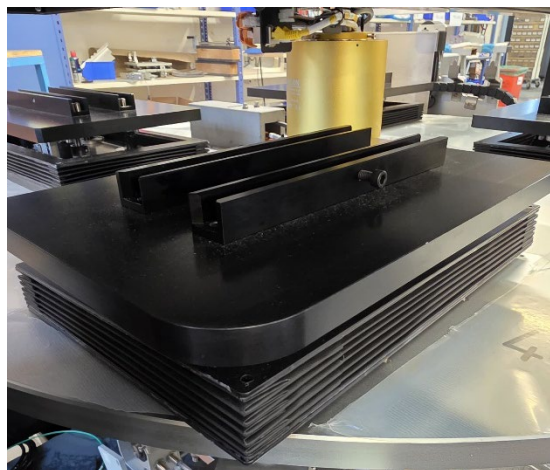


Figure 25. Z-Trays

5 Peripheral Equipment

5.1 Base Tray Cleaning

Note Ideally use different, dedicated trays sets for each material.
If the above is not possible, follow these deep-cleaning steps:

1. Make sure the tray is cleaned from any past & Mold material residue.
2. Use compressed air and/or a metal scraper to discard most of the remaining material of the plate.
3. Submerge the plate in a heptane bath, and scrape with a dedicated metal scraper, for a deep clean and removal of any material residue wipe with IPA if necessary.

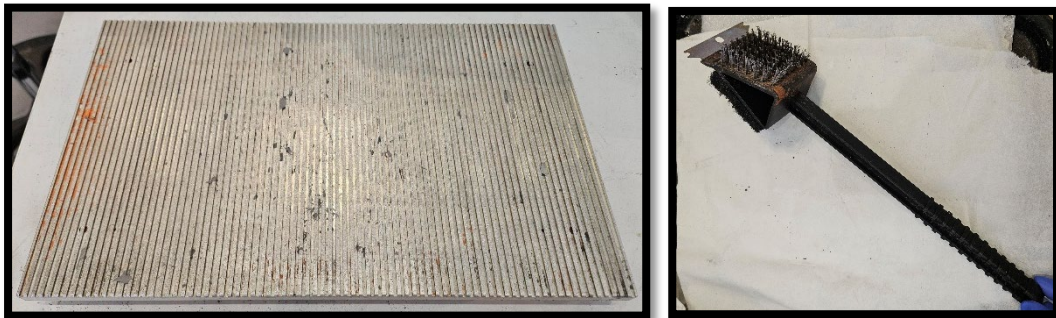


Figure 26. Base Tray

5.2 Mold base unit

1. Clean all surfaces and walls to remove any mold residue
2. The silicone frames must be thoroughly cleaned



Figure 27. Mold base unit

5.3 Demolding oven & LOMI

1. Make sure all demolding oven and LOMI internal surfaces are cleared from any paste & mold residue.
2. Clean LOMI door from paste & mold residue.
3. Focus on the door seal area and windows when cleaning.
4. Ensure all accessories and adapters are cleaned thoroughly



Figure 28. Lömi unit

5. Demolding” cycle cleaning
 - a. Clean the Lömi container and the shelfe jig.
 - b. Close the Lömi door and partially fill the container (about one third of the maximal volume is enough).
 - c. Activate the “Demolding” cycle for about an hour (till the max temperature of the solvent is reached).
 - d. Drain the solvent and clean the container again.

5.4 Ultrasonic bath

Note Ideally use different, dedicated trays & adapter sets for each material.
If the above is not possible, follow these deep-cleaning steps:

1. Draining the Tank
 - a. Turn off and unplug the unit.
 - b. Allow the solution to cool if heated.
 - c. Drain the tank using the designated drain valve or by carefully pouring out the liquid.
2. Removing Residue
 - a. Rinse the tank with clean water to remove loose contaminants.
 - b. Use a soft, non-abrasive cloth or sponge to wipe internal surfaces.
 - c. For stubborn residues, use a mild detergent compatible with stainless steel.
3. Rinsing
 - a. Thoroughly rinse the tank with deionized (DI) or distilled water to prevent mineral deposits.
4. Drying
 - a. Dry the tank with a lint-free cloth or allow it to air dry completely before refilling.

5.5 Part cleaning

Use different, dedicated brushes for metals and ceramics for cleaning parts



Figure 29. Brushes

6 Revision History

Date	Comments	Revision
September 02, 2026	First Release	1.0

