



GENERAL CLEANING PROCEDURES FOR V&P MANUAL PIN TOOLS

MONDAY MORNING or WEEKLY CLEANING:

Clean pins in 65°C Ultrasonic Cleaning Bath

1. Use 1:100 dilution of Micro90 Ultrasonic Cleaning Solution.
2. Immerse lower ½ inch of pins in bath for 1 minute.
3. Rinse pin tips under hot, running tap water for 30 seconds.
4. Rinse pin tips with dH₂O squirt bottle.
 - a. If liquid has splashed on float plate, rinse float plate with dH₂O squirt bottle.
5. Rinse pin tips with alcohol squirt bottle.
 - a. If liquid has splashed on float plate, rinse float plate with dH₂O squirt bottle.
6. Blot excess liquid with VP 522 Lint-Free Blotting Paper.
7. Dry pin tool briefly with portable hot-air dryer.

Clean pins in 1:3 dilution of VP 110 Pin Cleaning Solution.

1. Immerse lower ½ inch of pins in VP 110.
2. Move pins up and down through the meniscus 3-4 times.
3. Blot on VP 522 Lint-Free Blotting Paper.
4. Check wet spots on Blotting Paper for uniformity.
5. If spots are not uniform in size, continue to dip and blot a few more times until spots are uniform.
6. If spots are still not uniform after multiple dips and blots, slot pins may have dust or debris in the slots.
7. Rinse the pin tips under hot, running tap water. Scrub the pin tips with VP 425 Pin Cleaning Brush or VP 426 Pin Tip Cleaning Pad. Rinse again with hot, running tap water.
8. Dip pins into VP 110 again and blot to check spot size.
9. Once spot sizes are uniform, dip again in VP 110.
10. Move up and down through the meniscus 3-4 times.
11. Soak pins for 30 minutes.
12. Rinse pin tips under hot, running tap water briefly.
13. Blot pins on VP 522 Lint-Free Blotting Paper.
14. Dip into distilled H₂O.
15. Blot pins on VP 522 Lint-Free Blotting Paper.
16. Dip into alcohol.
17. Blot pins on VP 522 Lint-Free Blotting Paper.
18. Dry pins with portable hot-air dryer:
 - a. Hold pin tool in working position with pins pointing down.
 - b. Blow warm air, from below, up towards the pin tips.
 - c. Keep portable dryer moving across all of the pin tips.
 - d. Turn pin tool upside-down with pins pointing up.
 - e. All of the floating pins should have moved through the float holes and be resting on the top plate.
 - f. Blow warm air, from the sides, between the float plates and top plate.
 - g. Turn pin tool back to working position with pins pointing down.
 - h. If no pins remained stuck in the “up” position, then pin tool is ready to use.
 - i. If a few pins moved slowly or remained stuck in the “up” position, repeat blowing warm air from below and sides while rocking the pin tool upside-down to right-side up until all pins are moving freely.

DAILY CLEANING

Before starting an experiment and after finishing an experiment:

1. Dip pins into 1:5 dilution of VP 110 Pin Cleaning Solution.
2. Move up and down through the meniscus 3-4 times.
3. Blot pins on VP 522 Lint-Free Blotting Paper.
4. Dip into distilled H₂O, 2X.
5. Blot pins on VP 522 Lint-Free Blotting Paper.
6. Dip into alcohol, 2X.
7. Blot pins on VP 522 Lint-Free Blotting Paper.
8. Dry pins with portable hot-air dryer:
9. Hold pin tool in working position with pins pointing down.
10. Blow warm air, from below, up towards the pin tips.
 - a. Keep portable dryer moving across all of the pin tips.
 - b. Turn pin tool upside-down with pins pointing up.
 - c. All of the floating pins should have moved through the float holes and be resting on the top plate.
 - d. Blow warm air, from the sides, between the float plates and top plate.
 - e. Turn pin tool back to working position with pins pointing down.
 - f. If no pins remained stuck in the "up" position, then pin tool is ready to use.
 - g. If a few pins moved slowly or remained stuck in the "up" position, repeat blowing warm air from below and sides while rocking the pin tool upside-down to right-side up until all pins are moving freely.

CLEANING IN-BETWEEN TRANSFERS:

Set up three wash reservoirs in pipet tip lid boxes:

1. Wash Reservoir #1 will depend on the sample being transferred:
 - a. For nucleic acid and biological (cell) transfers, use 10% bleach.
 - b. For peptide and protein transfers, use 0.1% SDS.
 - c. For small molecule and compound transfers, use 100% DMSO.
2. Fill Wash Reservoir #2 with dH₂O.
3. Fill Wash Reservoir #3 with alcohol (ethanol, isopropanol or methanol).
4. Adjust the level of wash solution in each reservoir as follows:
 - a. The first reservoir should wash slightly higher on the pins than the high water mark from the mother and daughter plates.
 - b. The second wash reservoir should be slightly higher than the first reservoir.
5. The third wash reservoir should be slightly higher than the second reservoir.
6. Place two pieces of VP 522 Lint-Free Blotting Paper next to the first wash reservoir.
7. Place a single piece of VP 522 Lint-Free Blotting Paper next to the second and third wash reservoirs.

Cleaning after each mother-to-daughter plate transfer:

1. Blot the pins briefly on the first piece of Lint-Free Blotting Paper to remove excess sample from the pin tips and slots.
2. Dip pins into first wash reservoir.
3. Move pins up and down through the meniscus 3-4 times.
4. Blot pins on VP 522 Lint-Free Blotting Paper.
5. Dip pins into second wash reservoir.
6. Move pins up and down through the meniscus 3-4 times.
7. Blot pins on VP 522 Lint-Free Blotting Paper.
8. Dip pins into third wash reservoir.
9. Move pins up and down through the meniscus 3-4 times.
10. Blot pins on VP 522 Lint-Free Blotting Paper.
11. Dry pins with portable hot-air dryer.

V&P REPLICATOR CLEANING ACCESSORIES:

- Our **VP 110 Concentrated Pin Cleaning Solution** is used to clean the pin tips, removing any build-up or residues. VP 110 costs \$18.00 for 30 mls. Dilute 1:5 before using.
See http://www.vp-scientific.com/V&P_pincleaner.htm
- The **VP 425 Pin Cleaning Brush** is used to keep the replicator pins clean so they will carry the same amount of liquid each time. 2.4 cm nylon bristles. The VP 425 costs \$5.50.
See http://www.vp-scientific.com/pin_cleaning_accessories.htm
- The **VP 425A Pin Cleaning Brush** is used to keep the replicator pins clean so they will carry the same amount of liquid each time. For long pins, 8.5 cm nylon bristles. The VP 425 costs \$21.50.
See http://www.vp-scientific.com/pin_cleaning_accessories.htm
- The **VP 426 Pin Cleaning Pad** is used to keep the replicator pins clean so they will carry the same amount of liquid each time. 4 mm nylon bristles. The VP 425 costs \$6.00.
See http://www.vp-scientific.com/pin_cleaning_accessories.htm
- The **VP 522 Lint-Free Blotting Paper** is used to blot the replicator pins in between washes and transfers. Lint particles in the slots or pin tips from blotting onto standard paper towels will interfere with the loading and unloading of liquid. The VP 522 costs \$5.00 for a pack of ten or \$35 for a pack of 100.
See http://www.vp-scientific.com/blotting_membranes_wicking_papers.htm
- The **VP 420 Glass Alcohol Reservoir** is used in the sterilization of the replicators by flaming. Some labs use plastic reservoirs, but if flaming alcohol drops into them the plastic burns, dumping flaming alcohol all over the counter. This covered dish is useful for storing the alcohol as well as VP110 Pin Cleaning Solution (above) for reuse. The VP 420 costs \$11.00.
See http://www.vp-scientific.com/pin_cleaning_accessories.htm
- The heart of our **VP 540DB Heavy Duty Blotting System** is a super absorbent polypropylene pad that will hold up to 27ml of fluid before it is saturated. The pad comes in an Omni Tray with a single VP 540 Lint-Free paper on top. The blotted liquid is transferred from the Lint-Free paper to the pad and a barrier holds it in the pad. This super absorbent pad means you don't have to change blotters frequently. The VP 540DB comes 10/package and costs \$55.00.
See http://www.vp-scientific.com/wash_and_blot_stations_for_robot.htm#VP%20540DB