



**DE-GROOT** LABORATORY EQUIPMENT LTD.  
דה-גרוט ציוד מעבדות בע"מ



## Grooved Pin Liquid Transport System

The ultimate in ease and speed of liquid transfer  
Precision grooves and capillary action determine the delivery volume  
Save by eliminating pipette tips

### Applications

- Make serial dilutions
- Transfer liquids, cultures, RNA, DNA, or PCR reactions
- Screen libraries

### Features

- 96 stainless steel replicator pins
- Precision grooves provide great pin to pin accuracy
- Can be alcohol, water or bleach cleaned for rapid reuse
- Light weight delrin base lessens handling fatigue
- Sculpted delrin handle assures positive grip
- Four "standoff adjustment bolts" determine pin depth, and keeps pin from touching plate bottom
- Transfer volumes depend upon liquid surface tension

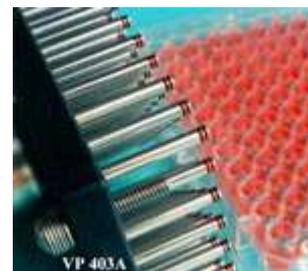


### VP 403A

22 mm Long Grooved Pin Replicator, delrin base pin diameter = 3.18 mm, ~7 ul grooved delivery volume

#### Technical Documents:

[Care & Use- Delrin Grooved Pin Replicators](#)



### VP 403B

13mm Long Grooved Pin Replicator, light weight delrin base, (not autoclaveable or flameable) pin diameter = 2.77 mm, ~5 ul grooved delivery volume

#### Technical Documents:

[Care & Use- Delrin Grooved Pin Replicators](#)



## VP 403D1

22mm Long Grooved Pin Replicator, light weight delrin base, (not autoclaveable or flameable), pin diameter = 2.77 mm, ~3 ul grooved delivery volume

### Technical Documents:

[Care & Use- Delrin Grooved Pin Replicators](#)



## VP 403D2

22mm Long Grooved Pin Replicator, light weight delrin base, (not autoclaveable or flameable), pin diameter = 2.77 mm, ~5 ul grooved delivery volume

### Technical Documents:

[Care & Use- Delrin Grooved Pin Replicators](#)

## VP 408B

57 mm Long Grooved MULTI-BLOT™ Pin Replicator (Deep well replicator) aluminum base, autoclavable and flameable, pin diameter = 1.58 mm, ~3 ul grooved delivery volume

### Technical Documents:

[384 Library From 96 Well Plates Manual Double Positive Block Pool Scheme Manual](#)  
[384 Well Library from Deep 96 Well Plates](#)  
[Deep Well Library Replication Manual](#)  
[Care & Use of Grooved Long Pin Replicators](#)



## VP 403E

21mm Long Grooved Pin Replicator, delrin base, pin diameter = 3.18 mm, ~20 ul grooved delivery volume

If you are transferring DNA, cDNA or other materials in hydrophobic solutions you will find that using our new V&P Pin Cleaning Solution will greatly increase the precision of delivery. For an explanation see the [FAQ page](#) and the [V&P Pin Cleaning Solution page](#).



**Technical Documents:**  
[Care & Use- Delrin Grooved Pin Replicators](#)



## VP 403F

41 mm Long Grooved Pin Replicator (96 Deep well Replicator), aluminum base, autoclaveable and flammable, pin diameter = 2.77 mm, ~6 ul delivery volume

**Technical Documents:**  
[Care & Use of Grooved Long Pin Replicators](#)



## 24 Grooved Pin Replicator

### VP 224A

57 mm Long Grooved Pin Replicator (24 Deep well replicator), aluminum base, autoclaveable and flameable, pin diameter = 6.35mm, ~50 ul grooved delivery volume

**Technical Documents:**  
[Care & Use of Grooved Long Pin Replicators](#)



### VP 224B

57 mm Long Grooved Pin Replicator (24 Deep Well Replicator), aluminum base, autoclaveable and flameable, pin diameter = 6.35mm, ~90 ul grooved delivery volume

**Technical Documents:**  
[Care & Use of Grooved Long Pin Replicators](#)



## Cleaning Pins

The most important aspect of using pin tools is to start with clean pins and then keep them clean so they will consistently deliver the same volume. We recommend our [Pin Cleaning Solution \(VP 110\)](#) to clean the pin of protein and other residue buildup before you start an assay. To quickly and efficiently remove the previous transfer from the pin we have a wide variety of manual and robot wash reservoirs ranging from disposable polypropylene reservoirs ([VP 576D](#)) to reusable [wash](#)

[reservoirs, flowing reservoirs and fountains](#) to clean 96, 384 and 1536 pin tools. The robot wash stations are also adapted so the [blotting station](#) is part of the washing station thus reducing the cleaning cycle time and the number of robot stations required for the cleaning process. We also have other [independent blotting stations \(VP 540D\)](#) and [VP 522](#).

Integral to the cleaning process of all pins is the blotting step between baths. Lint particles in the slots or on pin tips, from standard paper towels, will interfere with the loading and unloading of liquid. We have solved this problem. The [VP 540DB](#) blotting system is a tray with the standard microplate foot print that contains a super absorbent polypropylene pad covered by a Lint Free Blotting Paper. We strongly recommend that you use this or our other [lint free blotting systems](#).

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