

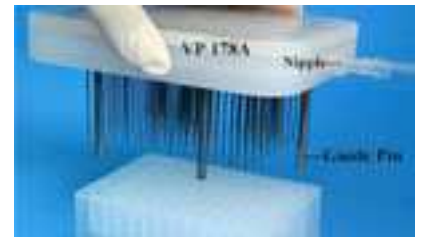


96 and 384 Aspirating Manifolds

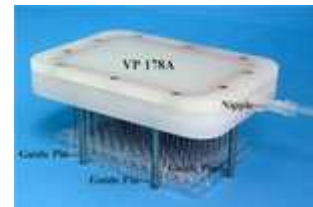
96 Well Microplate Fixed Height Aspiration Manifolds

VP 178A

One of our customers asked us to make an aspiration manifold that could remove liquid from both deep well and standard well microplates. The customer also was concerned that the tubes not touch the bottom of the wells. We were able to make some simple modifications to the VP 178 to accomplish this. This new aspiration manifold is the VP 178A. The guide pins of the VP 178A are adjusted so the tubes are positioned 1 mm above the well bottom. These manifolds are resistant to acids, bases and organic solvents as they are made with a rugged polypropylene body, stainless steel guide pins and stainless steel tubing. The guide pins form a cage and guide the manifold over the microplate so the alignment of the plates with the tubes is a snap. One of the end guide pins is shorter so once the tubes are in the wells they can be moved to the side of the wells for more complete aspiration. Custom versions can also be made with tubes or guide pins of different lengths.



The photo on the right illustrates how the VP 178A manifold can be used with any height 96 well microplate.



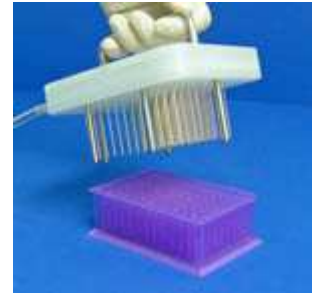
The manifolds can also be custom fitted with handles and the nipple outlets placed in other custom locations. Contact us for more details.



96 Tube Aspiration Manifold, tube length 45 mm, OD = 1.06 mm, ID = 0.66 mm, 19 gauge

VP 178A

VP 178A with handle.



*****NEW*****

Slanted 96 Tube Aspiration Manifold for Magnetic Bead Washing

VP 178D

The **VP 178D**** slant tube aspirator is designed to work in conjunction with our magnetic separation system VP 771E and the VP 381E to completely aspirate the liquid contents of 96 well microplates and not remove any of the captured magnetic beads. This first of its kind aspiration system has the aspiration tubes installed on a slant so they can be placed in the center of the well while lowering the manifold reaches the bottom it is slid into the sides of the wells thus aspiration will completely remove the liquid with disturbing the magnetic bead pellet.

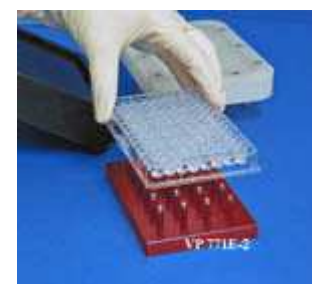
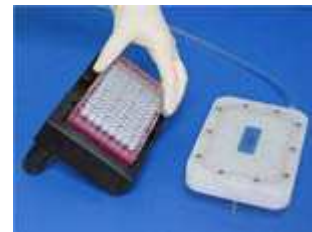
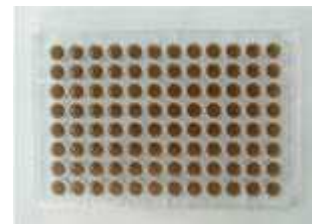
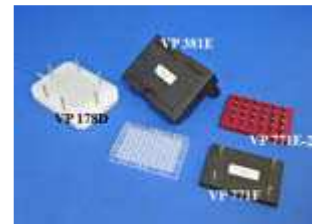
The microplate at the right illustrates uniformly distributed magnetic beads.

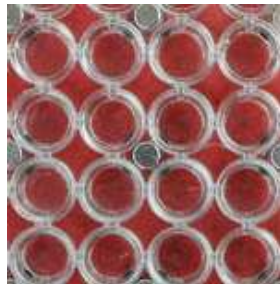
When the microplate is placed on the magnetic separation pegs (VP 771E) as illustrated straight below, the magnetic beads are quickly pulled to the sides of the wells as illustrated in the photo below and to the right. While most magnetic separation systems use an axial magnet field our magnetic field is oriented through the diameter of a very strong NdFeB magnetic cylinder. This orientation results in small very tightly packed clusters of magnetic beads on the well walls away from the bottom of the well. Magnetic capturing occurs in a very short time interval.

The magnetic separator and the microplate are placed on the VP 381E ramp registration to tip the contents in the wells and insure that the slanted tubes will be oriented to the lowest point in each well. Note the magnetic separation system naturally slides down to the bottom of the ramp leaving a 3 mm gap at the top.

The guide pins on the slant tube aspiration manifold register to alignment holes on VP 381E registration ramp so the tip of the slant tubes is positioned in the middle of the well.

Once the Slant Tubes are near the bottom of the wells, the magnetic separator block and the microplate can be pushed up 3 mm with your thumb or finger as indicated in the two photos below. This places the tip of the slant tube in the corner of the lowest part of the well. This is the ideal aspiration location as it is away from the magnetically captured beads. When your finger is removed the magnetic separator and the microplate slide down to middle of the well and then the Slant Tube Aspirator can be safely removed.

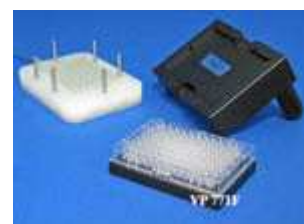




The photo on the top lustrates the tight localization of the magnetic bead pellet and the clearance of the slanted tubes.

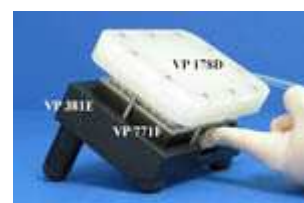
VP 771F

Some assay protocols require aspiration without magnetic bead separation. We have constructed a non-magnetic support (**VP 771F**) that has the same physical dimensions as the VP 771E to allow this operation using the same aspiration manifold and registration ramp.



96 Slant Tube Aspiration Manifold, vertical tube length 12.6 mm, OD = 1.06 mm, ID = 0.66 mm, 19 gauge, guide pins cut so tubes are 1 mm above well bottom

VP 178D



96 Well Microplate Adjustable Height Aspiration Manifolds

VP 177A

The **VP 177A**** is an adjustable height aspiration manifold. Because its legs are adjustable it can be used with any 96 well microplate and the distance the tubes are from the bottom of the well or pellet can be changed for each application. This makes the VP 177A very compatible with many applications and plates from different suppliers. The most economical system available for aspirating 96 well microplates.

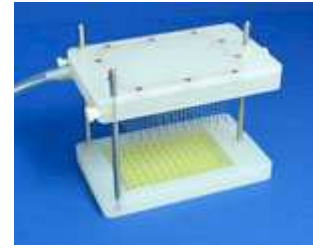
The VP 177A differs from the VP 177 gas evaporation manifold in the lower placement of the vacuum nipple and internal features in the manifold to prevent liquid from running into the plate after the vacuum is turned off.

The VP 177A can also be sterilized by autoclaving and used to aspirate



sterile media or culture fluid.

The photo to the right is a bottom view of the VP 177A's microplate registration system. The adjustment bar illustrated in the photo can be set by the user into one of two positions. The position illustrated positions the aspiration tubes in the middle of the wells. The second position allows the aspiration tubes to be slid in the X axis so the aspiration tube will touch the sides of the well and facilitate a more complete aspiration of the liquid in the wells.



A modified version of this manifold ([VP 177AD](#)) has been produced that can also be used to dispense sterile media or culture fluid.

We provide the system with a simple bubble level to help you set the system on the level. The Manifold is made of polypropylene, stainless steel tubes, an Polypropylene base and stainless steel guide rods. The whole system can be autoclaved for sterile applications.



96 Tube Aspiration Manifold, tube length 42mm, OD = 1.06 mm, ID = 0.66 mm, 19 gauge	VP 177A
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24 Well Microplate Adjustable Height Aspiration Manifolds

VP 177A-24

The VP 177A-24 was designed to function as a 24 well aspiration manifold. Glass vials in an aluminum block of SBS dimensions or 24 well microplates are registered to the manifold by the footpad.

The primary difference between the evaporation manifolds and aspiration manifolds is the location of outlet. Top of manifold for evaporation and side of manifold for the aspiration manifolds.



The height of the manifold is easily adjusted by loosening the thumb screws and sliding the manifold up or down on the stainless steel rods as shown in the photo on the right.



48 Well Microplate Adjustable Height Aspiration Manifolds

VP 177A-48

The VP 177A-48 was designed to function as a 48 well aspiration manifold. Glass vials in an aluminum block of SBS dimensions or 48 well microplates are registered to the manifold by the footpad.

The primary difference between the evaporation manifolds and aspiration manifolds is the location of outlet. Top of manifold for evaporation and side of manifold for the aspiration manifolds.



The height of the manifold is easily adjusted by loosening the thumb screws and sliding the manifold up or down on the stainless steel rods as shown in the photo on the right.

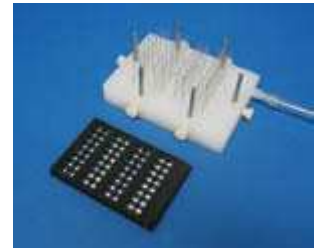


64 Well ProPlate Adjustable Height Aspiration Manifold

VP 178A-64

The **VP 178A-64** is an adjustable height aspiration manifold to be used with a Grace BioLab "ProPlate MicroArray System" with 64 wells.

This system contains four 16 well slides in a 64 well plate format (9 mm center to center spacing in the Y axis).



The thumb screws shown by the arrows are used to adjust the height of the height of the 6 guide pins and thereby adjust the distance from the tip of the aspiration tube and the bottom of the ProPlate wells.



The aspiration tubes are 45mm long. The guide pins are adjustable to raise the aspiration tubes 0.5mm to 5mm above the well bottom of the Grace Biolab ProPlate MicroArray System.



Advantages and limitations of our Deep Well 96 Microplate Aspiration systems.

VP 178A - Least expensive, Z height of aspiration tubes is fixed - Z height setting may not work on all Microplates. Z height must be set at the factory or use shims in the field. Can aspirate from middle or side of the well. Throughput - slower than VP 177A-1. Must be careful when registering to the Microplate.

VP 177A - Reasonable price. Easy to set the Z height. Works on all 96 well Microplates. Can aspirate from middle or side of the well. Throughput - much slower than VP 177A-1. Must be careful when registering to the Microplate.

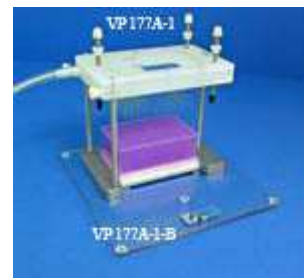
VP 177A-1 - Best value. Designed to aspirate from above the bottom of wells or at the bottom. The aspiration tip height can be adjusted precisely and leveled. Best for all around aspirations and will work with pelleted material. Works on all 96 well Microplates. Can aspirate from middle or side of the well. Throughput fast (20 seconds/plate). Registration of Microplate to system is easy and quick.

VP 179A and VP 178J - Expensive. Designed for very precise placement of the aspirating tubes in both Z, X and Y axis (used primarily for 384 well Microplates where precision placement X,Y and Z is very important). The aspiration tip height can be adjusted precisely and leveled. Best for all around aspirations and will work with pelleted material. Works on all 96 well Microplates. Can aspirate from middle or side of the well. Throughput fast (20 seconds/plate). Registration of Microplate to system is easy and quick.

96 Well Microplate Rapid Action Aspiration Manifolds

VP 177A-1

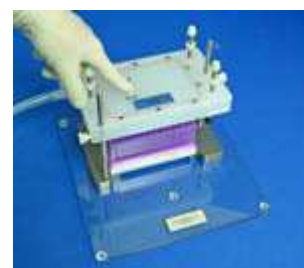
The **VP 177A-1** is a side loading manifold with springs that hold the 96 tube manifold up while the microplate is slid in from the side. Once in place, the manifold is pressed down by hand and tubes aspirate the liquid from the microplate. The bottom position of the tubes is determined by the 3 stop adjustment bolts. The adjustment on these bolts can be precisely determined for critical applications such as setting the distance above a pellet. If you are aspirating above a pellet this is the system for you. The flexibility of setting the lower Z position is very useful. This system is much faster and easier (one hand operation) to operate than the VP 177A shown above. If you have many plates to aspirate this is the system of choice.



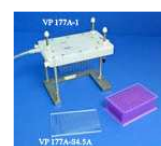
96 Tube Aspiration Manifold, tube length 42mm, OD = 1.06 mm, ID = 0.66 mm, 19 gauge	VP 177A-1
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The **VP 177A-1** can be used with standard 96 well plates, 96 well PCR plates. 96 Midi Plates and 96 deep well microplates and 96 tube blocks.

We provide the system with a simple bubble level to help you set the system on the level. The Manifold is made of polypropylene, stainless steel tubes, an aluminum base and stainless steel guide rods and springs. The whole system can be autoclaved for sterile applications.



One of our customers compared the VP 177A-1 aspirator to a Flick washing system and found the VP 177A-1 aspirator to be more sensitive and more reproducible. They also found that the VP 177A-1 is less likely to create potentially biohazardous aerosols. Click on the poster below to see the results of their study.



A Safe and Effective Way to Perform Wash Steps in the Tray Based FCXM Assay

A Major, D'Chair, D'Assoc, J'Assoc, B'Assoc and P'Coastal
 Microbiology Laboratory, University of Alberta, Edmonton, Alberta, Canada
 Published: December 2010; 10(10), 1000-1006



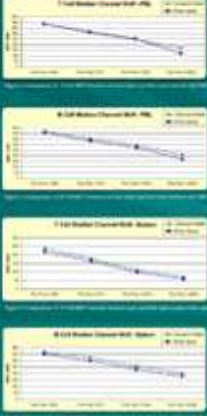
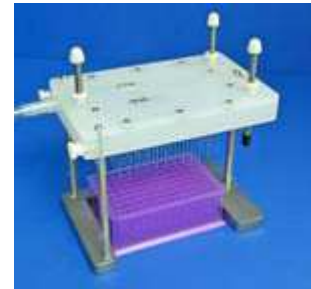
INTRODUCTION
 Our laboratory recently changed from a tube based to tray based method for flow cytometry research (FCXM). A 'Tik' wash method is commonly used in a tray FCXM; this technique may create potentially heterogeneous results in the laboratory. In our experience, technological or technological variation is a concern with the Tik wash method. We investigated the use of the VP 177A-1 Aspirator, Manifold for FCXM tray wash steps and performed a comparison between the Tik wash method and this vacuum manifold wash method.

MATERIALS and METHODS
 Washing the Vacuum Manifold
 A vacuum unit is attached from the manifold to the tray via flexible hose and vacuum tubing, ensuring airtight seal. The unit is then used to wash the manifold. The manifold is then washed with the vacuum manifold. The manifold is then washed with the vacuum manifold. The manifold is then washed with the vacuum manifold.

RESULTS
 Figures 1 and 2 show the results of the 1 and 8 cell microtiter plates from the FCXM research for both wash methods. Figures 3 and 4 show the results for use of the aspirator and manifold. The standard deviation (SD) of the vacuum washed microtiter wells was 4.4 versus 8.5 in the Tik wash method.
 The MCV of 11.8 x 10⁹ platelets was used with the vacuum wash method as compared to the Tik wash method.

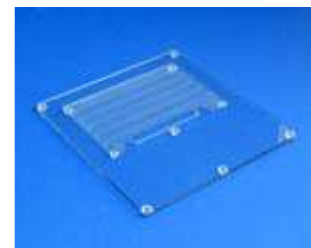
DISCUSSION
 Figure 1 through 4 demonstrate that the standard deviation of the vacuum wash method is comparable with the Tik wash method. These graphs also demonstrate that the sensitivity of the microtiter is equal or greater than the Tik wash method when the vacuum wash method is used. The calculated sensitivity also indicates a slight increase in sensitivity of the microtiter with the vacuum wash method.
 The lower standard deviation of the aspirator and manifold wash method may be more appropriate. The vacuum wash method has been in place in our laboratory since July, 2010. All patient sera are tested in duplicate and these results are shared, consistently to support this finding.
 Testing the need for use of the manifold is in progress and this method has been proven to be the most effective way to wash the manifold.

CONCLUSIONS
 Based on this small study, our laboratory chose to implement the vacuum wash method. These results show that this wash method is more sensitive and more reproducible. There is also less likelihood to create potentially biohazardous aerosols.

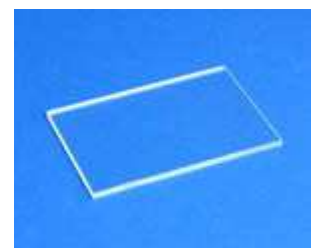
VP 177A-1B

The base unit is designed to facilitate the rapid processing of microplates through the aspiration Jig.



VP 177A-S4.5A

This spacer was designed to adjust the aspiration tubes 4.5 mm above the bottom of the well. Other spacers of varying thickness can be used or built for each application. This feature takes advantage of the Z adjustability of our Jigs. If you need a different thickness spacer just contact us for a custom one.



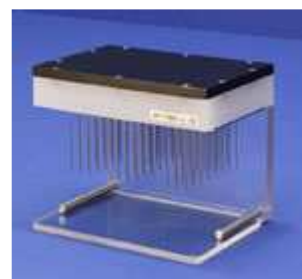
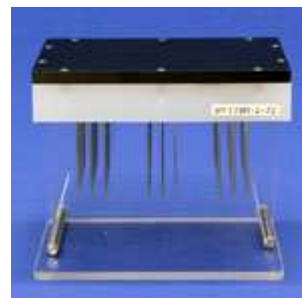
Robotic Mounted Aspiration Manifolds

72 Well Format

VP 178R-2-72

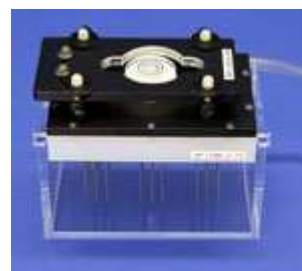
VP 178R-2-72 is an aspiration manifold with 72 stainless steel tubes, 42mm in length. The aspiration tubes are arranged in a pattern for use with a ProPlate Multi-array system from Grace BioLabs, a microplate format plate the holds three 24 well microarray slides.

This manifold can be attached to any [V&P robotic workstation mounting plate](#). See example below.

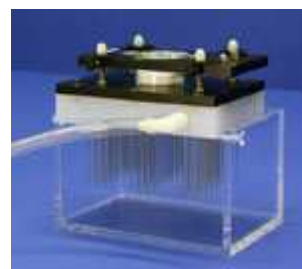


VP 178R-2-72 & BMPJANUS_SM

The BMPJANUS-SM is the mounting plate shown with VP 178R-2-72. This mounting plate allows for attachment any of the [V&P robotic aspiration manifolds](#) to the PE Janus. The BMPJANUS-SM attaches to the side of the multi-channel pipette head on the gripper motor, allowing for liquid removal by the aspirator without the pipette head being blocked by the aspiration manifold.



The BMPJANUS-SM mounting plate is adjustable in the Z direction with 4 individual thumbscrews that can be locked in position. This feature allows the operator to adjust the aspiration tubes to be same distance to microarray slide. A bubble level is included to assist in this adjustment.



96 Well Format

VP 178R

The VP 178R was designed to attach to most robotic platforms a bridge plate and one of our pin tool mounting plates.

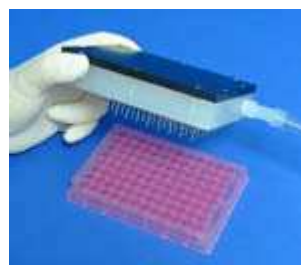
The cannulas are 42 mm long and can reach the bottom of deep well microplates. The outlet nipple is located on the long axis.



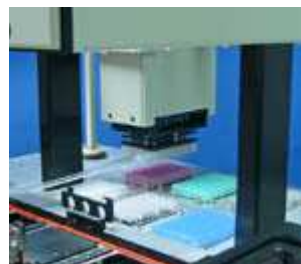
VP 178R-1

The VP 178R-1 was designed to attach to most robotic platforms a bridge plate and one of our pin tool mounting plates.

The cannulas are 13 mm long and can reach the bottom of standard microplates. The outlet nipple is located on the short axis.



The photo to the right illustrates a VP 178R-1 mounted on a Packard Mini-Track using a BMPMULTIMEK Mount.



The photo to the right illustrates a VP 178R-1 Mounted on a Cybio CybiWell 96 using a BMPCB96 Mount.



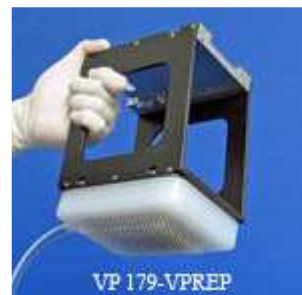
The photo to the right illustrates a VP 178R-1 Mounted on a V&P Pin Tool Robot using a BMPAPRICOT Mount.



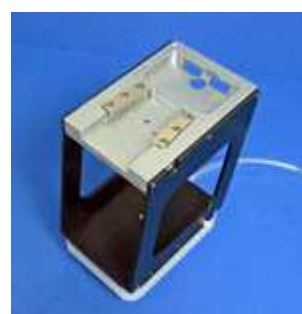
384 Well Format

VP 179-VPREP

The VP 179-VPREP was built for a customer who wanted to aspirate the effluent from magnetic bead assays performed in 384 well microplates using our Magnetic Separation Blocks. We worked with the engineers at Velocity 11 to incorporate a 384 aspiration manifold onto the Agilent (Velocity 11) V-PREP. The mating feature was made and customized by Agilent (Velocity 11) allows the V-PREP to recognize the manifold and control its X, Y and Z movements just like any V-PREP accessory.



The Agilent (Velocity 11) V-PREP mounting Fixture was attached to a customized 384 well aspiration manifold ([VP 179-BJ](#)) via a custom standoff (black) that accommodates for the height of V-PREP pipetting head and has a rotation adjustable plate.



The Photo on the right demonstrates the manifold on the V-PREP with a Agilent (Velocity 11) valve for controlling the vacuum to the manifold.



The Photo on the right demonstrates the manifold on the V-PREP.



The Photo on the right demonstrates the manifold on the V-PREP aspirating the wells of a 384 well microplate.



VP 179-R Robot Mounted 384 Aspiration Manifold

The photo to the right demonstrates the 384 aspiration manifold with a BMPZYMARK mount.



The photo to the right demonstrates the 384 aspiration manifold mounted to a CyBio Robot using a BMPCB mount.



The photo to the right demonstrates the 384 aspiration manifold mounted to our very own V&P Pin Tool Robot using a BMPAPRICOT mount.



Precision Adjustable X, Y and Z Jigs/Manifolds for Aspiration

VP 179A Manifold Positioning Jig

1 - Manifold Hold Down Bars	11 - Support Arm
2 - Shoulder Bold Heads	12 - Two-Way Valve
3 - Jig Slot	13 - Liquid Collection Bottle
4 - Manifold Hold Down Screws	14 - Bleed Tube
5 - X Positioning Screw	15 - Cap Hole
6 - Y Position Screw	16 - Manifold Feed Tube
7 - Z Thumb Screw	17 - Bottle Cap
8 - Z Arm	18 - Source Bottle
9 - Nylon Pressure Screw	19 - Bleed Valve Button
10 - Stop cock Valve	20 - Dispenser System



The **VP 179A** Manifold Positioning Jig provides a very flexible platform for registering microplates to either aspiration or dispensing manifolds. The designation of "J" in the part number of a VP 178 (96) or VP 179 (384) aspiration or dispense manifold indicate that it is Jig compatible. The VP 179A provides the mechanism to adjust the X, Y or Z position of manifold tubes to many different microplates. Polypropylene microplates are very difficult to make to exact tolerances because the plates shrink as they cool out of the mold. As each microplate manufacture may produce microplates with slight differences in dimension, it is often desirable to have the ability to precisely align the manifold to the microplate. This is especially true if you are trying to aspirate supernatants and not disturb pellets, monolayers or magnetic beads captured on a magnetic post.

The Microplate Jig can also be used to precisely position our straight or slant tube aspirators into the corner of a well thus avoiding a pellet of magnetically attracted beads and achieving the maximum efficiency in removing liquids from the microplate wells.

The photo on the right illustrates (7) the Z height adjustment knob. The Z height can also be adjusted by how far down in the slots the Manifold shoulder bolts (2) are positioned. These two Z positioning mechanisms provides great flexibility so both standard and deep well microplates can be accommodated by the same Jig.

The X (5) and Y (6) adjustments are illustrated on other photos on this page. They can even be used to compensate for small rotational errors.

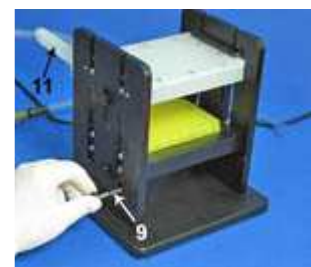
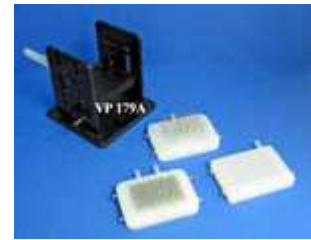
The photo on the right illustrates a simple tensioning device (9) used to pause and hold the Z arm (8). The photo also illustrates a vacuum hose support arm on the rear of the Jig.

For precise positioning of the Microplate to the manifold use one of our [Registration Plates](#) VP 903R-96, VP 903R-384 or VP 903R-1536. The 1mm corner spots provide an easy to hit target mark.

The versatility of the VP 179A Microplate Positioning Jig means you only have to buy a single Jig and can use it with all your (J) manifolds (96, 384, deep well, and slanted tube versions).

We also make a vacuum solenoid valve (VP 600) which will turn the vacuum on and off at the press of a button or remotely from a computer. This is useful when operating the system manually to speed up the throughput. Also when our manifolds are attached to a robot work station and the robot can send a signal to the VP 600 to turn the vacuum on and off.

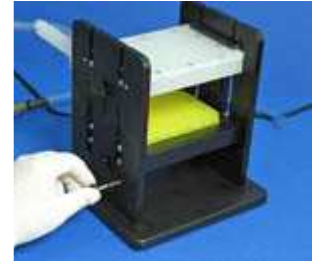
We are also working on making a large bore vacuum valve that can be operated with one hand unlike the stopcock (10) illustrated to the right which requires two hands.



VP 179A Jig Compatible Aspiration Manifolds

96 Well Aspiration Manifolds

VP 178BJ** One of our customers asked us to make an aspiration manifold that could be used to remove unbound reagents from 96 well microplates from different manufactures and consequently with different well depths. Our solution was to modify a VP 178B by putting shoulder bolts on it so it can adapt to the VP 179A Jig. The result is the **VP 178BJ**. These manifolds are resistant to acids, bases and organic solvents as they are made with a rugged polypropylene body and 19 gauge stainless steel tubing. The shoulder bolts register the manifold to the Jig and the Jig can be adjusted in all 3 axis (X, Y, and Z) for perfect positioning of the tubes in the wells. The alignment of the plates with the tubes is a snap.



This manifold can also be sterilized by autoclave and used to aspirate sterile media.

The **VP 178BJ** 96 tube aspirator is designed to work with the VP 179A Jig to completely aspirate the liquid contents of 96 well microplates. This aspiration system positions the aspiration tubes so they can be dropped down the center of the well and then slid into the corner of a well and completely remove the liquid.



VP 178EJ

The **VP 178EJ** slant tube aspirator is designed to work in conjunction with our magnetic separation system VP 771E and the VP 179A Jig to completely aspirate the liquid contents of 96 well microplates and not remove any of the captured magnetic beads. This first of its kind aspiration system has the aspiration tubes installed on a slant so they can be dropped down the center of the well and then slid into the corner of a well and completely remove the liquid with out disturbing the magnetic bead pellet.



This same system can also be used without the magnetic separation system to completely remove the liquid from the wells.

VP 178J

VP 178J One of our customers asked us to make an aspiration manifold that could remove liquid from both deep well and standard well microplates. The customer also was concerned that the tubes not touch the bottom of the wells. Our solution was to modify a VP 178A by putting shoulder bolts on it so it can adapt to the VP 179A Jig. This new aspiration manifold is the VP 178J.



These manifolds are resistant to acids, bases and organic solvents as they are made with a rugged polypropylene body and 19 gauge stainless steel tubing. The shoulder bolts register the manifold to the Jig and the Jig can be adjusted in all 3 axis (X, Y, and Z) for perfect positioning of the tubes in the wells. The alignment of the plates with the tubes is a snap. Once the tubes are in the wells they can be moved to the side of the wells for more complete aspiration.

This manifold can also be sterilized by autoclave and used to aspirate sterile media.

384 Well Aspiration Manifolds

VP 179BJ

VP 179BJ One of our customers asked us to make an aspiration manifold that could remove liquid from 384 standard well microplates and leave magnetic beads behind. The customer also was concerned that the tubes not touch the bottom of the wells. Our solution was to make a 384 aspiration manifold with 23 gauge 316 stainless steel (low magnetism) tubes and putting shoulder bolts on it so it can adapt to the VP 179A Jig. This new aspiration manifold is the **VP 179BJ**.



These manifolds are resistant to acids, bases and organic solvents as they are made with a rugged polypropylene body and 23 gauge stainless steel tubing. The shoulder bolts register the manifold to the Jig and the Jig can be precisely adjusted in all 3 axis (X, Y, and Z) for perfect positioning of the tubes in the wells. The alignment of the plates with the tubes is a snap. Once the tubes are in the wells they can be moved to the side of the wells for more complete aspiration.

This manifold can also be sterilized by autoclave and used to aspirate sterile media.

VP 179CJ

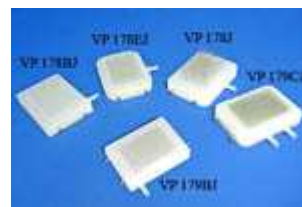
VP 179CJ One of our customers asked us to make an aspiration manifold that could be used to remove unbound reagents from 384 well microplates from different manufactures and consequently with different well depths. Our solution was to modify a VP 179C by putting shoulder bolts on it so it can adapt to the VP 179A Jig. The result is the **VP 179CJ**. These manifolds are resistant to acids, bases and organic solvents as they are made with a rugged polypropylene body and 20 gauge 316 stainless steel tubing (low magnetism). Because there are 384 tubes (20 gauge) a very high vacuum is required. To facilitate the vacuum requirements we have fitted the VP 179CJ with two large bore nipples. If you do not have a high vacuum source we recommend you use our VP 179BJ which uses 23 gauge tubing.



The shoulder bolts register the manifold to the Jig and the Jig can be adjusted in all 3 axis (X, Y, and Z) for perfect positioning of the tubes in the wells. The alignment of the plates with the tubes is a snap.

This manifold can also be sterilized by autoclave and used to aspirate sterile media.

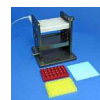
96 Tube Aspiration Manifold, vertical tube length 42 mm, OD = 1.07 mm, ID = 0.69 mm, 19 gauge, 302 s/s	VP 178J
96 Tube Aspiration Manifold, vertical tube length 13 mm, OD = 0.9 mm, ID = 0.6 mm, 20 gauge, 316 s/s	VP 178BJ
117 Tube Aspiration Manifold, 9 mm center to center spacing, Vertical tube length 13 mm, OD = 0.9 mm, ID = 0.6 mm, 20 gauge, 316 s/s	VP 178BJ-117
96 Slant Tube Aspiration Manifold, vertical tube length 12.6 mm, OD = 1.06 mm, ID = 0.66 mm, 19 gauge, 316 s/s	VP 178EJ
384 Tube Aspiration Manifold, vertical tube length 13 mm, OD = 0.64 mm, ID = 0.33 mm, 23 gauge, 316 s/s	VP 179BJ
384 Tube Aspiration Manifold, vertical tube length 13 mm, OD = 0.9 mm, ID = 0.6 mm, 20 gauge, 316 s/s	VP 179CJ



VP 179A Jig with Aspiration Manifolds for Magnetic Beads and 96 and 384 Magnetic Bead Separators

VP 178EJ

VP 178EJ The VP 179A Microplate Positioning Jig also functions very well with the VP 178EJ and the VP 771E 96 well Magnetic Bead Separation system to efficiently remove liquid supernatant from the wells and leave the magnetic bead pellet behind.



The VP 771E-2 with its 24 NdFeB magnetic posts quickly pellets the magnetic beads on the sides of the wells. The VP 771E-2 uses very strong 48 Megagauss Oersted Magnets to facilitate rapid capture of the magnetic beads.

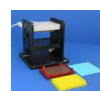


The VP 178EJ with its slanted tubes is placed in the middle of each well with the VP 179A Microplate Positioning Jig, the plate is raised until the manifold tubes are 0.5 mm from the well bottom and then the microplate slid so the tubes are in the corner of the well. Vacuum is applied and the liquid contents are completely removed without disturbing the magnetic bead pellet. The tubes are made from 316 stainless steel which is the least magnetic of all the stainless steel tubing. It is important to use 316 stainless steel when working in close proximity to magnetic beads.

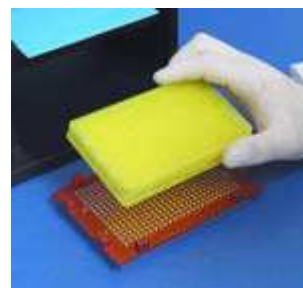
The VP 179A Microplate Positioning Jig may also be placed on an angle so the slanted tube is placed in the "low" side of the well to facilitate the maximum removal of liquid.

VP 179BJ

VP 179BJ The VP 179A Microplate Positioning Jig also functions very well with the VP 179BJ and the VP 771G-4 384 well Magnetic Bead Separation system to efficiently remove liquid supernatant from the wells and leave the magnetic bead pellet behind.



The VP 771G-4 with its 425 NdFeB magnetic posts quickly pellets the magnetic beads on four sides of each well. Because of the close proximity of the bead pellet to the manifold tubes it is important to place the tubes precisely in the middle of the wells and also to use 23 gauge low magnetic 316 stainless steel tubes in the VP 179BJ.



The VP 771G-4 uses very strong 48 Megagauss Oersted NdFeB Magnets to facilitate rapid capture of the magnetic beads.

VP 179BJ Aspiration Manifold and the VP 179A Manifold Jig working in conjunction with the VP 771G-4 magnetic block to trap and wash magnetic beads in a 384 well microplate.



[Download Video of VP 179BJ Dispensing](#)
(mpeg movie- 7.3MB)

The amount of vacuum necessary to operate our 96 and 384 well aspirators is between 20" and 28" of Hg or about 100 Tor. It is also necessary to have a large vacuum waste jar to accommodate the waste and hold a vacuum reserve. We recommend this jar to be at least 4 liters. You can also accommodate this volume with two 2 liter jars.

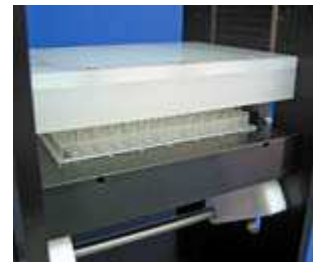
117 Tube Aspirator - for aspiration from in-between the wells

VP 178BJ-117

One of our customers asked us to make an aspiration manifold that could remove liquid from the area between the wells of a standard 96 well microplate. Our solution was to make a VP 178BJ with 117 aspirating tubes the **VP 178BJ-117** a 9 by 13 array. The VP 178BJ-117 has shoulder bolts on it so it can adapt to the VP 179A Jig.



These manifolds are resistant to acids, bases and organic solvents as they are made with a rugged polypropylene body and 13 mm long 20 gauge stainless steel tubes. The shoulder bolts register the manifold to the Jig and the Jig can be adjusted in all 3 axis (X, Y, and Z) for perfect positioning of the tubes between the wells. The alignment of the plates with the tubes is a snap.



The photo on the right illustrates the alignment of the tubes between the wells.



VP 179A Jig with Dispensing Manifolds

See this page for [Dispensing Manifolds](#) on Jigs



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