

**USE OF V&P PIN TOOLS WITH
ROTATIONAL ADJUSTMENT FEATURE**

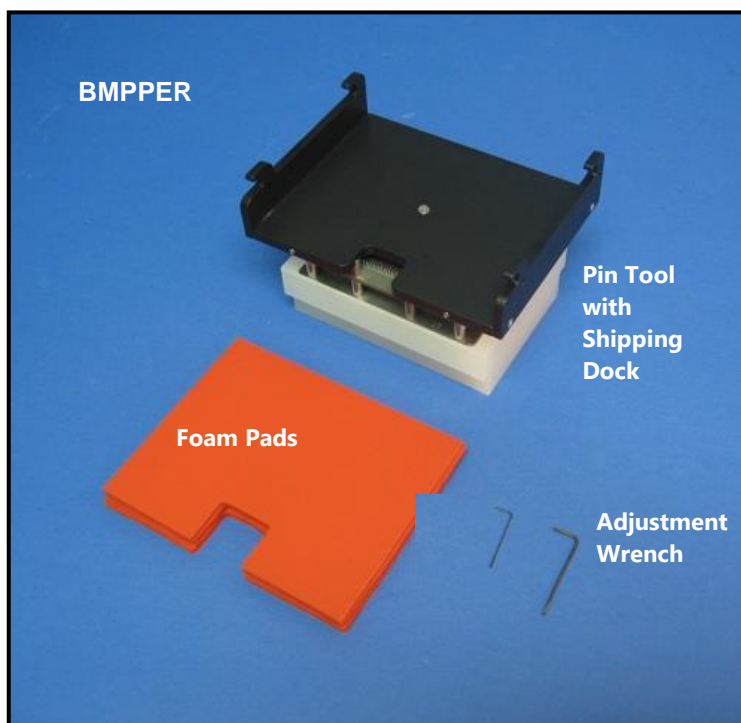


Figure 1. Pin Tool with Mounting Plate with Rotational Adjustment, BMPPER. Shown with Docking Station for Robot Pin Tools and Foam Pads for BMPPER and BMPMULTIMEKR use only.

A selection of V&P’s Mounting Plates for Pin Tools have been modified to be rotationally adjustable. This feature allows for fine rotational adjustments to be made for a 1536 Pin Tool so the pins are placed in the centers of the wells. This is essential when using a Pin Tool with 1536 well plates. It is also recommended for use with the 384 Pin Tools when positional accuracy is required.

V&P Scientific Mounting Plates with Rotational Adjustment for Use with 1536 Pin Tools:

BMPHAMAMATSUR	Mounting Plate with Rotational Adjustment for Hamamatsu instruments, includes Hamamatsu Mid Plate
BMPMULTIMEKR	Mounting Plate with Rotational Adjustment for Multimek, Sagian Multipette and CCS liquid handlers, includes Foam Pads
BMPPER	Mounting Plate with Rotational Adjustment for Platetrak, Minitrak, EP3 and JANUS liquid handlers, includes Foam Pads
BMPMIDR	Mounting Plate with Rotational Adjustment for Tecan MCA96 and MCA384, Caliper, Apricot, and PlateMate liquid handlers
BMPVELOCITY11RB-1	Mounting Plate with Rotational Adjustment for Velocity 11 Bravo & V-Prep liquid handlers.

Parts of the Rotational Mounting Plate:

The Rotational Mounting Plate comprises two parts, as shown in Figure 3a: the Robot Mounting Plate and the Rotation Plate to which the Pin Tool is attached. The Pin Tool is shipped assembled with the Rotation Plate. For those BMPs with a larger Mounting Plate, e.g., the BMPPER hook mount as shown in Figure 1, this larger part is shipped in a separate box labeled with the particular BMP name. The photo in Figure 2 below shows the location of the four Adjustment Screws and the Pin Tool Attachment Screw on the Mounting Plate that are part of every Rotational BMP. The Attachment Screw is also the pivot point for rotation. For those Rotational BMPs with a larger Mounting Plate shipped separately, first attach the Mounting Plate over the Rotation Plate, tightening the Attachment Screw so it is snug but still able to rotate. Figure 3b illustrates the bottom of the Mounting Plate with Rotation Plate. The 0.0625" Adjustment Wrench used for making the rotational is provided with the Mounting Plate.

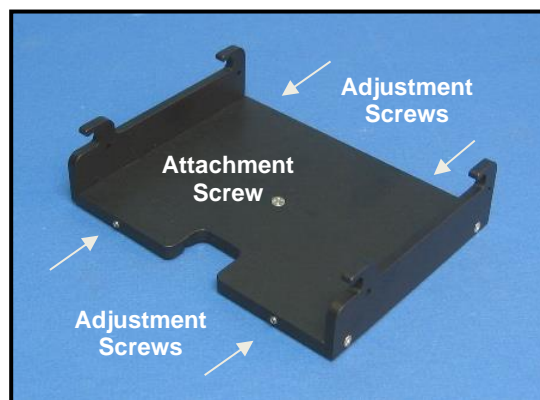


Figure 2. Mounting Plate with Rotational Adjustment, BMPPER, shown without Pin Tool attached.

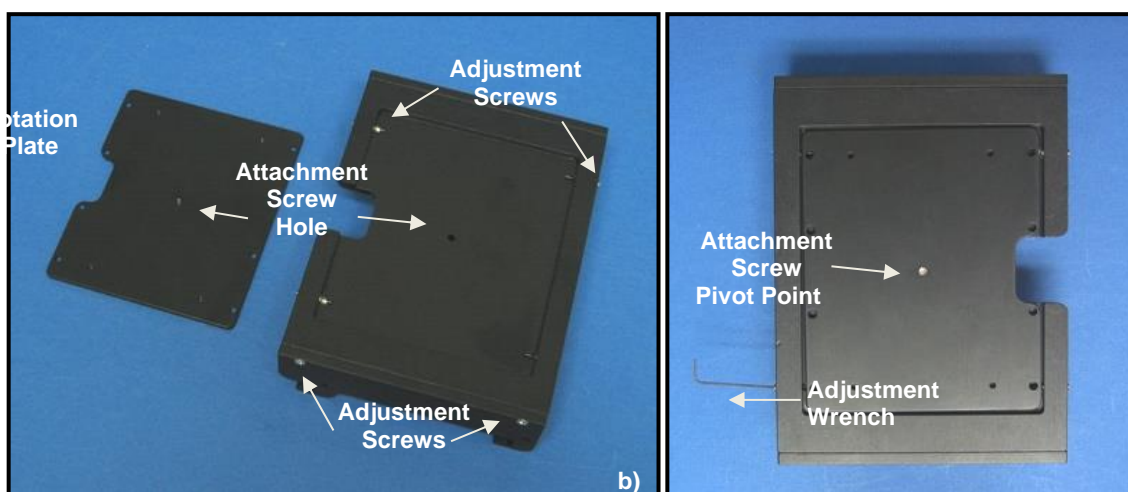


Figure 3. a) Separate parts of the Mounting Plate with Rotational Adjustment, BMPPER. b) Bottom of the Mounting Plate shown with Adjustment Wrench.

Adjusting Rotation of Pin Tool:

1. Attach or pick up the Pin Tool using the multi-channel head of the robotic workstation according to the manufacturer's instructions.
2. Place an alignment tool such as V&P's SBS Registration Plates, VP 903R-96, VP 903R-384 or VP 903R-1536, into a microplate location on the deck. These tools facilitate the alignment of the Pin Tool using the white spots (1mm diameter) in the 4 corner well positions (see Figure 4 below).
3. Lower the Pin Tool over the Registration Plate so that the pins just touch the surface. Lift the Pin Tool just enough to not touch, but close enough to see which direction the pin tool needs to be adjusted.
4. Adjust rotation with the 0.0625" Adjustment Wrench for the Adjustment Screws. In order move the rotation plate in a given direction by tightening one Adjustment Screw might require the loosening of the Screw in the opposite position.
5. Check the pin alignment with the 4 spots on the SBS Registration Plate by touching the Pin Tool to the surface.
6. When tightening the Adjustment Screws, ensure that the Rotation Plate is held firmly against the bottom of the Mounting Plate. This is also important when attaching the Pin Tool to the Mounting Plate. Failure to do so may result in the Rotation Plate separating from the Mounting Plate bottom as the Adjustment Screw is tightened, which could affect vertical alignment of the Pin Tool. Vertical alignment (how well the Pin Tool is level) can also be evaluated using the VP 903R Registration Plates.

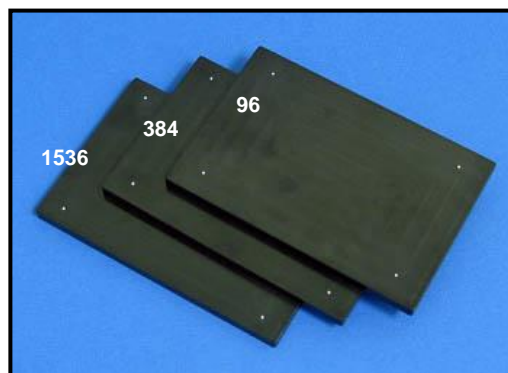


Figure 4. SBS Registration Plates, VP 903R-1536, VP 903R-384 and VP 903R-96

Warranty:

V&P Scientific, Inc. warrants this product to be free from defects in material and workmanship when used under normal laboratory conditions for one year. This warranty begins from the date of delivery by V&P Scientific.

In the event this product fails under normal laboratory conditions within the specified period of time because of a defect in material or workmanship, V&P Scientific will, at its option, repair or replace the product. Damage to the product caused by user negligence is not covered.

Please keep the special shipping carton in case the unit needs to be shipped back to V&P Scientific. Please contact V&P Scientific at the address below for return authorization and shipping instructions.

This warranty is made in lieu of other warranties expressed or implied including the warranties of merchantability and fitness for a particular purpose. V&P Scientific shall not be liable for loss or damages arising from the use of these products nor for consequential damages of any kind.

If technical assistance is required, contact V&P Scientific, Inc. at 858-455-0643 or sales@vp-sci.com.