CARE AND USE OF
12-CHANNEL DIRECT DRIVE BUBBLE PADDLE "MINI" RESERVOIR

Motor Control Unit VP 767M-3-13 with Direct Drive Bubble Paddle Reservoir VP 758M-PTFE-13

Figure 1. The VP 767M-3-13 system shown with VP 758M-PTFE-13 Reservoir

VP 767M-3-13 Power Supply/Motor Unit for VP 758M-PTFE-13 Bubble Paddle Reservoir, black ABS motor enclosure, black anodized aluminum reservoir deck. Separate control unit with speed control and on/off switch. DC Motor, 110V/230V power supply, CE Compliant.

VP 758M-PTFE-13 Bubble Paddle Reservoir, PTFE, with ducted bottom for 12 pipettes. Includes black anodized aluminum paddle with 13 bubbles, sealed drive shaft. Mixes 15ml. Requires VP 767M-3-13.

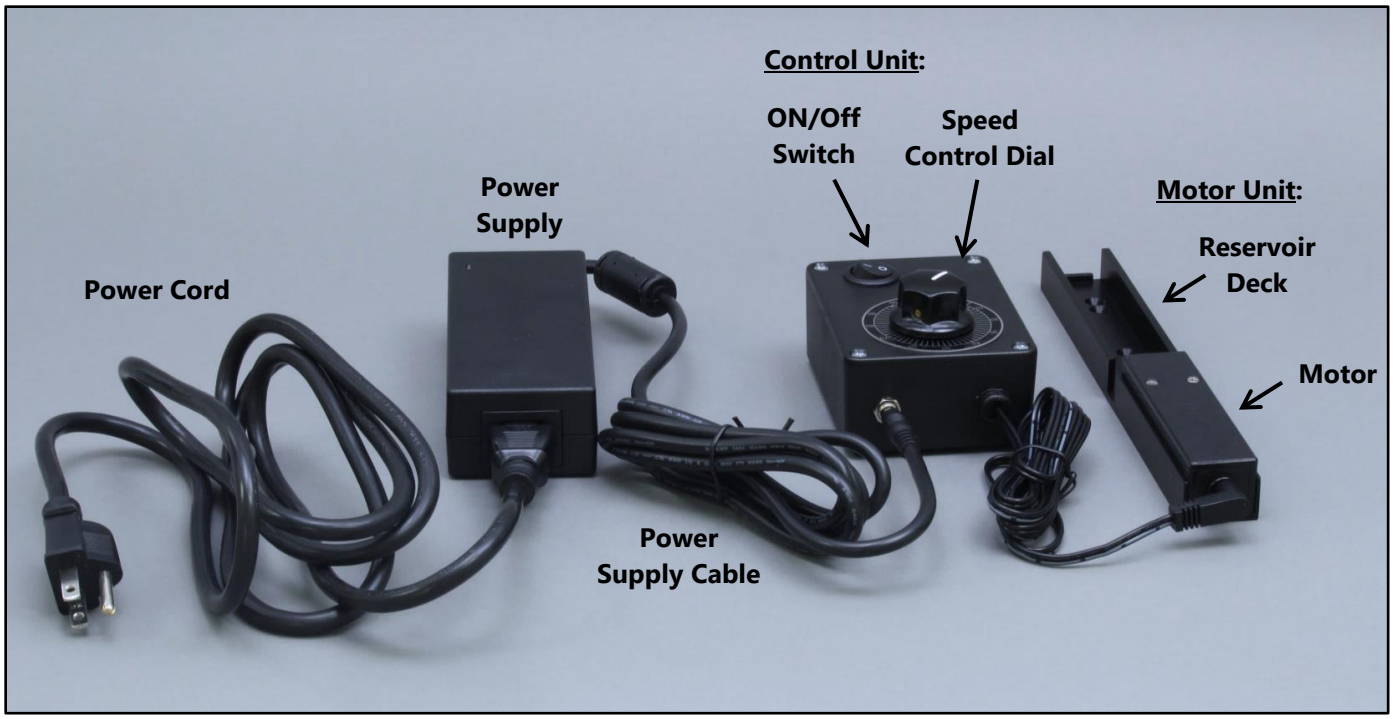

Figure 2. Parts of the VP 767M-3-13 system with the cables/cords connected

SETUP and OPERATION

1) To connect the VP 758M-PTFE-13 series Bubble Paddle Reservoir to the VP 767M-3-13 motor, turn the coupler portion of the sealed bearing unit so its notches align with the protrusions in the motor coupler on the VP 767M-3-13. Insert the sealed bearing end of the reservoir into the opening of the motor enclosure (it helps to lift up the other end of the reservoir while pushing it into the opening). Once the couplers are engaged lower the other end of the reservoir and it will slip into position in the reservoir deck. Do not force, if the sealed bearing coupler and motor coupler don't easily engage, re-check alignment.

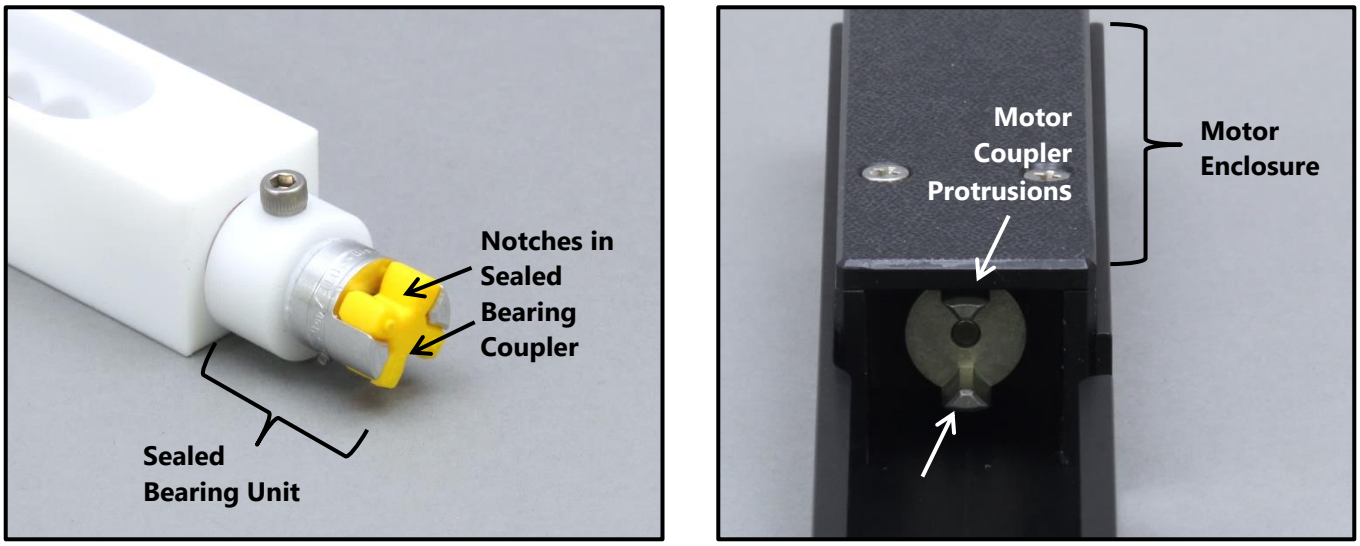

Figure 3. Sealed bearing end of VP 758M-PTFE-13 Bubble Paddle Reservoir (left) and opening in the motor enclosure of the VP 767M-3-13 motor, showing the motor coupler (right)

Figure 4. VP 758M-PTFE-13 Bubble Paddle Reservoir shown assembled with VP 767M-3-13 motor unit

2) Position the pipet tips to be aligned with the notches in the bubble paddles and the depressions in the sculpted bottom of the VP 758 series Bubble Paddle Reservoir (see Figure 5).

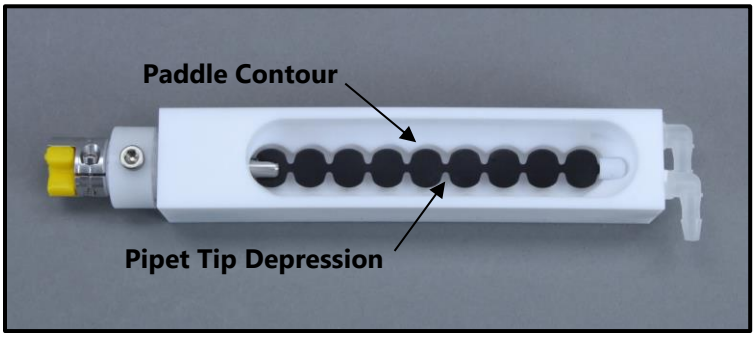

Figure 5. Close-up view of a Bubble Paddle Reservoir

3) If using with an automated liquid handler order the Bubble Paddle Reservoir system with the polypropylene SLAS-sized adapter, VP 581B (see Figure 6). Place the VP 767M-3-13 motor assembly with the attached VP 581B on the robot deck in a microplate holder (see Figure 7). Position the robot pipet tips as described above in step 2 above.

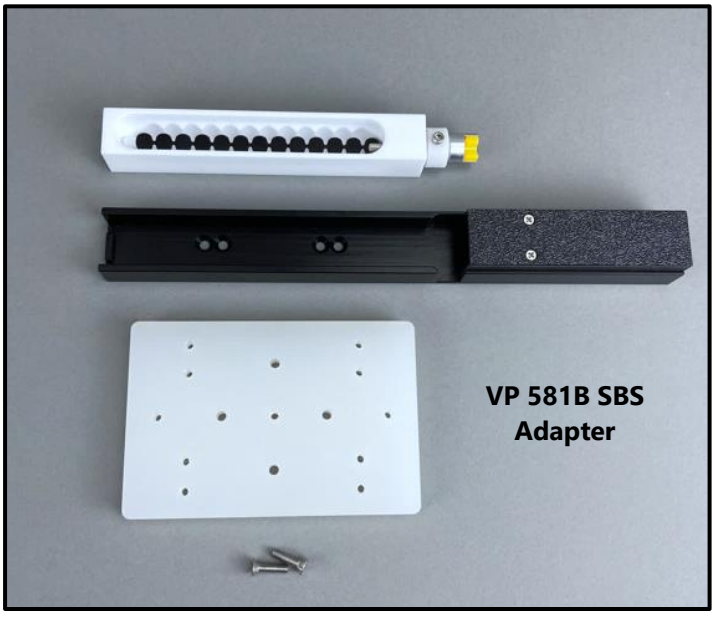

Figure 6. VP 581B, a polypropylene SLAS-sized adapter

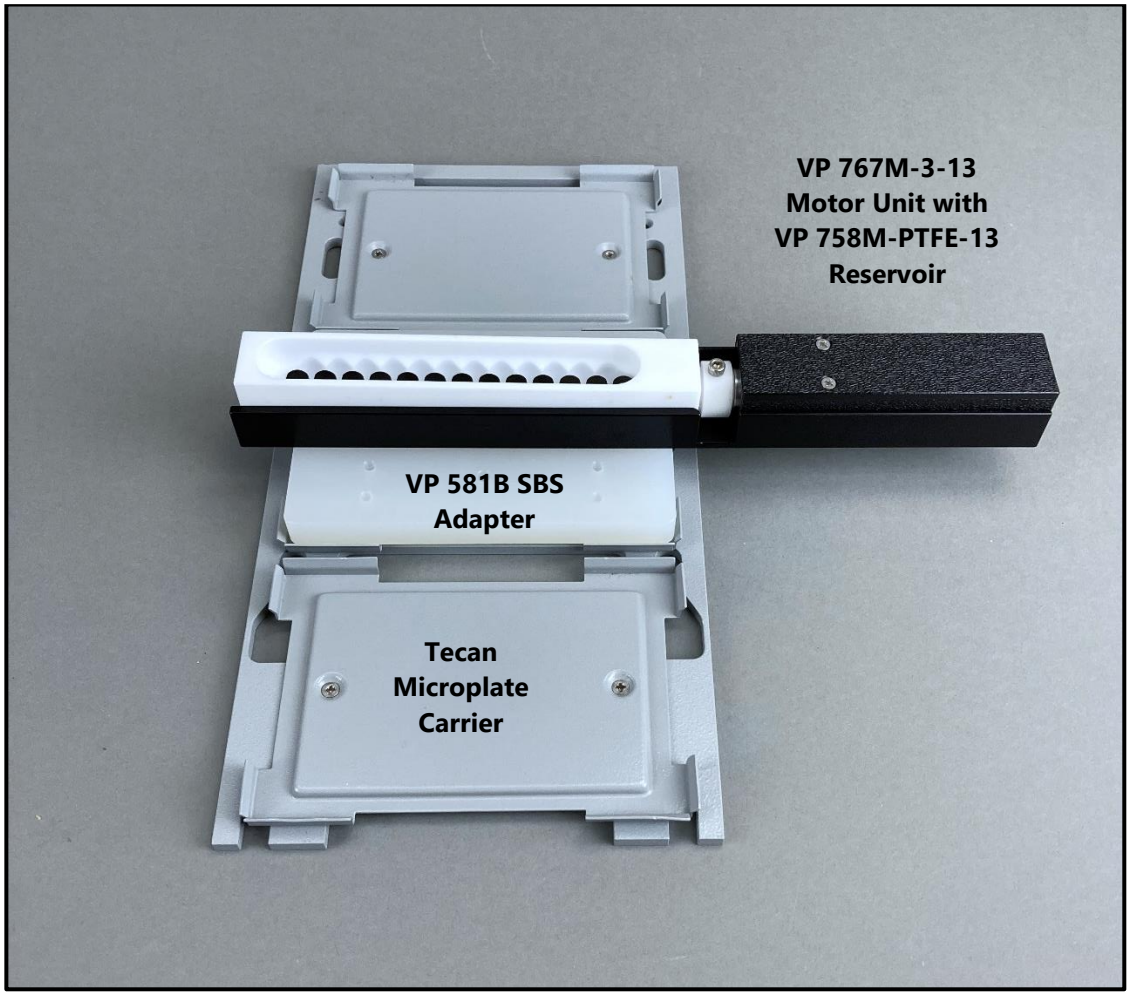

Figure 7. Bubble Paddle Reservoir positioned on a Tecan microplate carrier using the VP 581B, a polypropylene SBS sized adapter

4) To remove the VP 758M-PTFE-13 reservoir from the VP 767M-3-13 motor, lift the end of the reservoir opposite to the sealed bearing and pull slightly up and out.

5) **Do not use the speed controller to stop the stirrer. Use the on/off switch.**

6) **Do not operate dry as this will wear out the seal. Always operate with liquid.**

7) Operate at speeds and liquid levels that do not aerosolize the liquid. At lower liquid levels use slower speeds. The maximum speed is 1,500 RPM and is set at the factory.

8) To lengthen the life of the seal, operate at the lowest possible speed that keeps particles in suspension. In addition, operate only when necessary, as this will prolong the life of the seal.

CARE

1) The VP 758M-PTFE-13 Bubble Paddle Reservoir can be cleaned with detergents and rinsed with distilled water and then ethanol/isopropanol. These operations should be done while the reservoir unit is assembled (drive shaft and sealed bearing in place). Do not pull the drive shaft out of the sealed bearings to release the bubble paddle for cleaning. This is not recommended because of the risk of damaging the seal. The reservoir can also be disinfected by soaking in a 10% bleach solution for 5 minutes followed by sterile water rinses and a final rinse in alcohol.

2) Replacement sealed bearing units, VP 758M-3S, (see Figure 8) are available in the event the reservoir begins to leak. To remove the sealed bearing unit from the reservoir, remove the screw at the *bottom of the reservoir* and pull out the sealed bearing unit. It is secured in the reservoir by a friction fit from two O rings. The set screw at the top of the sealed bearing unit should **NOT** be removed.

3) Clean the bearing hole and apply a thin coat of silicone grease. Hand press a new VP 758M-3S into the reservoir. Insert and tighten the screw at the bottom of the reservoir to lock the sealed bearing unit in place. If desired, send the leaky sealed bearing unit to V&P for repair.

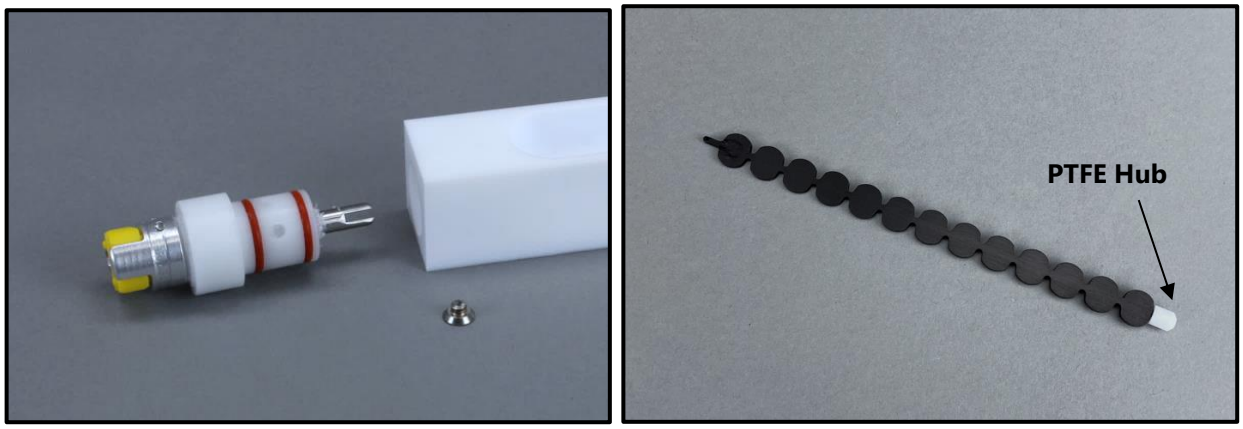

Figure 8. Replacement Sealed Bearing Unit (left) and Bubble Paddle (right)

4) Replacement Bubble Paddles VP 759AL-R are also available if necessary. **Caution: Doing this repeatedly, however, is not recommended because of the risk of damaging the seal.** If seal is damaged and the reservoir starts to leak, the Sealed Bearing Unit VP 758M-3S will have to be replaced (see steps 2 and 3 above).
   a) Remove VP 758M-PTFE-13 reservoir from the VP 767M-3-13 motor as described in step 4 on page 4.
   b) Turn the bubble paddle so that it is in a vertical position. Gently pull the coupler portion of the sealed bearing unit so that the drive shaft is partially out of the sealed bearing and the bubble paddle is released (see Figure 9a).
   c) Lift up the far end of the bubble paddle (see Figure 9b). Pull the bubble paddle out of the drive shaft slot by pulling away from the sealed bearing.

d) To replace the bubble paddle into the reservoir, insert the end that does not have the PTFE hub into the drive shaft notch (see Figure 9c). Gently place the hub end of the paddle into the contoured notch at the non-sealed bearing end of the reservoir (see Figure 9c). Do not force it into place. If necessary, grasp the paddle near the drive shaft and move slightly up and down until the hub end falls into place

e) Push the drive shaft back into the sealed bearing to lock the bubble paddle into the slot in the drive shaft (see Figure 9d).

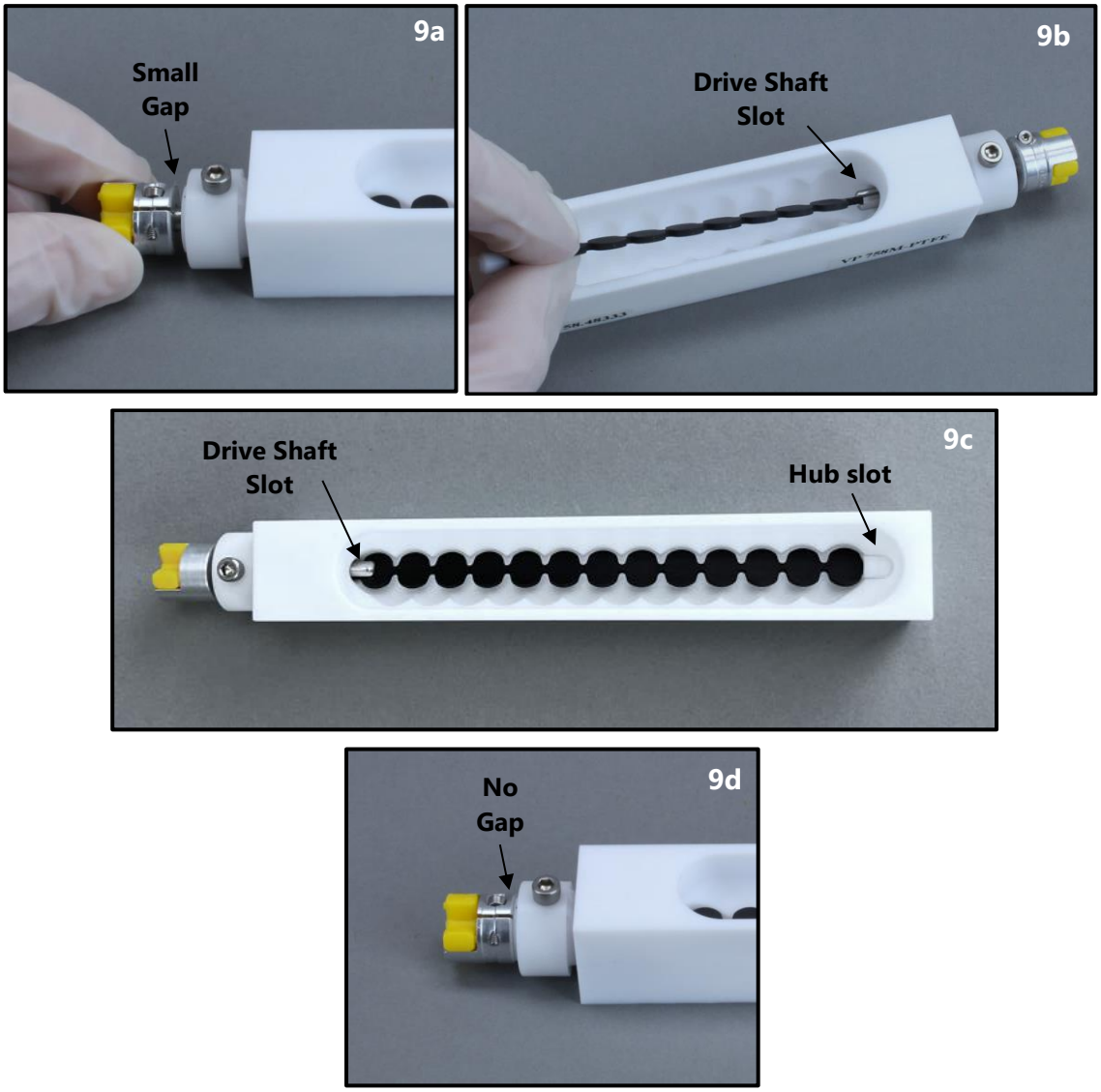

Figure 9a-d. Replacement of Bubble Paddle VP 759AL-R

SAFETY PRECAUTIONS

The use of motor controls, like that of all utilization of concentrated power, is potentially hazardous. The degree of hazard can be greatly reduced by proper design, selection, installation, and use, but all hazards cannot be completely eliminated.

The following safety precautions must be observed during all phases of installation, operation, service, and repair of this motor control product. Failure to comply with these precautions or with specific warnings elsewhere in this manual violates safety standards of design, manufacture and intended use of the products. V&P Scientific assumes no liability for the customer's failure to comply with safety requirements and practices.

WARNING
To avoid personnel injury caused by electrical shock, do not remove the motor cover when the power is ON.

CAUTION
Do not disconnect motor during operation. Otherwise, over-current breakdown may result.

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.

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.

Please keep the special shipping carton in case the unit needs to be shipped back to V&P Scientific. Contact V&P Scientific for return authorization and shipping instructions or for any other assistance at 858-455-0643 or sales@vp-sci.com.