

CARE AND USE OF 12 CHANNEL DIRECT DRIVE BUBBLE PADDLE RESERVOIR

Motor Control Unit VP 767-5A with VP 758-5 Series Direct Drive Bubble Paddle Reservoirs: VP 758-5PP, VP 758-5PTFE

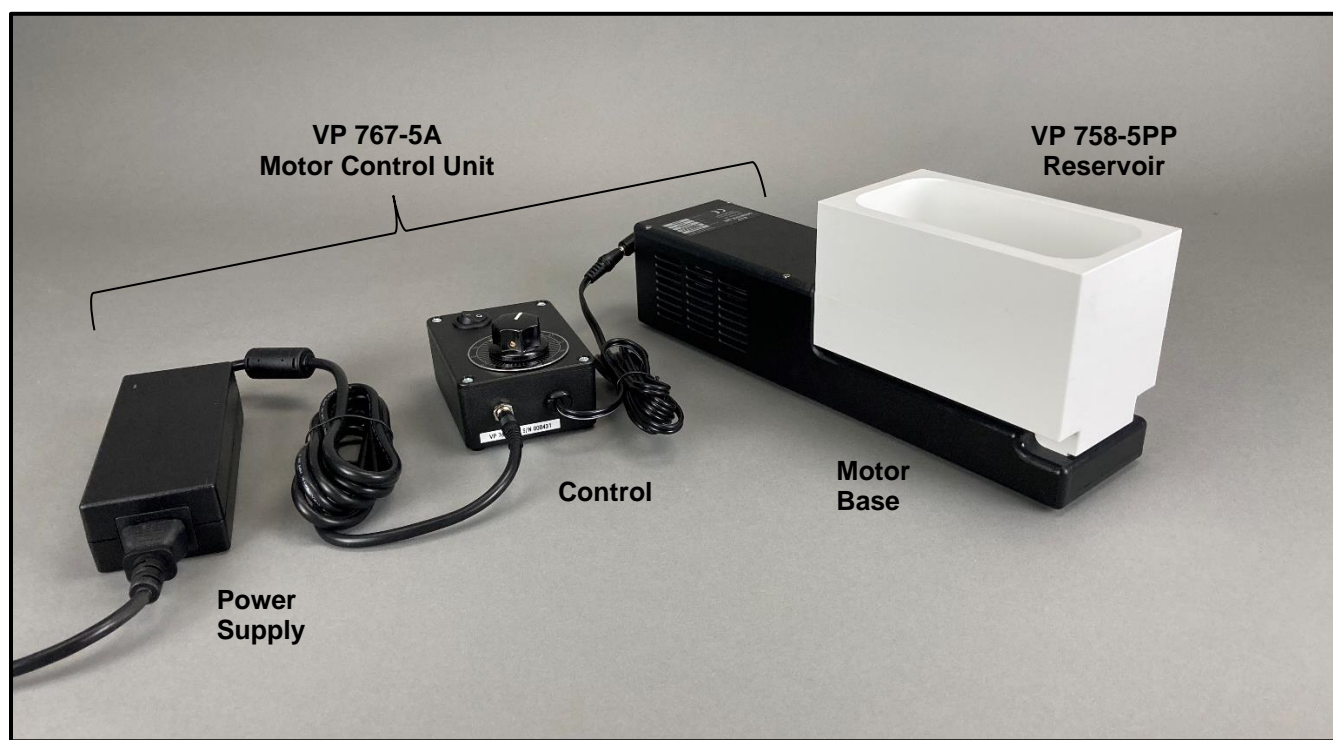


Figure 1. The Direct Drive Bubble Paddle Reservoir System is composed of a VP 767-5A Motor Control Unit and a VP 758-5 series Bubble Paddle Reservoir. VP 767-5A includes Motor Base, Control, and Power Supply as shown above.

VP 767-5A MOTOR BASE and CONTROL, Single Coupling from Motor to Sealed Bearing Shaft, Black ABS Enclosure, DC Motor, 120/220 Volts, 50/60 Hz, CE Compliant, Mates to VP 758-5 Series Bubble Paddle Reservoirs

VP 758-5PP BUBBLE PADDLE RESERVOIR, Sealed Bearing Shaft Powered, 8 or 12 Channel, Polypropylene Reservoir, Sculpted Bottom, with 1 Bubble Paddle, 13 Bubbles/Paddle, Black Anodized Aluminum, Mates to VP 767-5A, Mixes 450 mL

VP 758-5PTFE BUBBLE PADDLE RESERVOIR, Sealed Bearing Shaft Powered, 8 or 12 Channel, PTFE Reservoir, Sculpted Bottom, with 1 Bubble Paddle, 13 Bubbles/Paddle, Black Anodized Aluminum, Mates to VP 767-5A, Mixes 450 mL

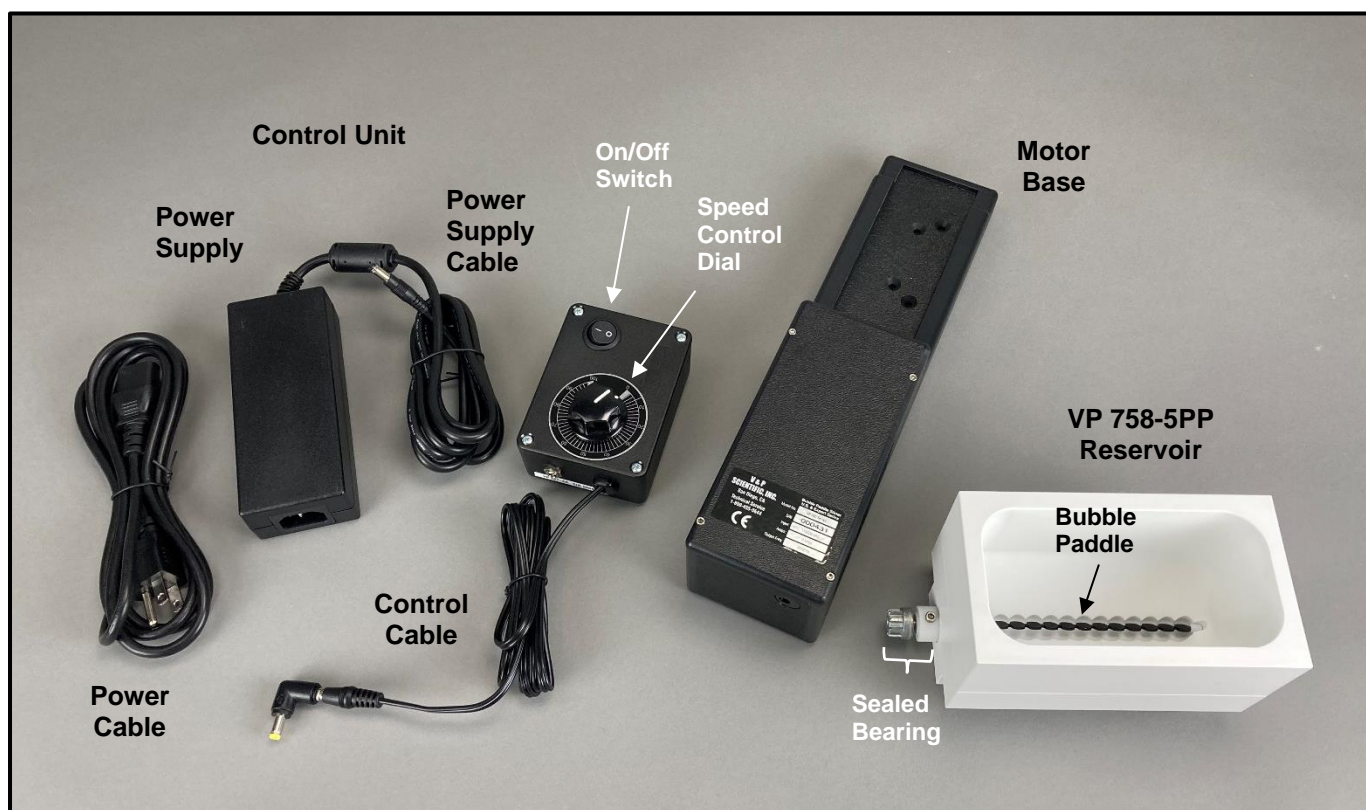


Figure 2. Parts of the VP 767-5A Motor Control Unit shown unassembled. Compatible with any of the VP 758-5 series Direct Drive Bubble Paddle Reservoirs listed on previous page.

OPERATION

- 1) To attach the VP 758-5 series Bubble Paddle Reservoir to the VP 767-5A motor, turn the Sealed Bearing Coupler so that its spokes align with the slots in the motor coupler on the VP 767-5A Motor Base. To slip the Sealed Bearing Coupler into the slots on the motor coupler, it helps to lift slightly up on the end of the reservoir opposite of the Sealed Bearing while also gently pushing toward the motor. Once the coupler is engaged press down on the lifted end of the reservoir and it will “snap” into position.
- 2) If using with an automated liquid handler, place the VP 767-5A motor assembly on the deck using the robot-specific locating features. Position the pipet tips to be aligned with the notches in the bubble paddles and the depressions in the VP 758 series Bubble Paddle Reservoir (see Figure 3).

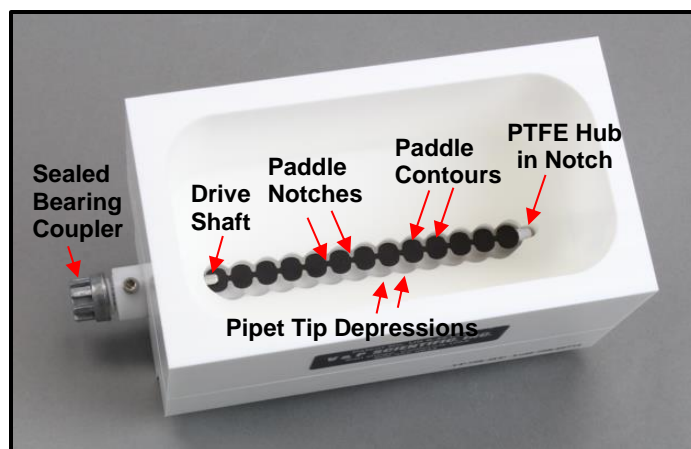


Figure 3. Close-up view of the 12 channel Bubble Paddle Reservoir features.

- 3) Alternatively, if using a robot that uses a SLAS microplate holder, order the Bubble Paddle Reservoir system with a VP 581B, a polypropylene SLAS sized adapter. Place the VP 767-5A motor assembly with the attached VP 581B on the robot deck in a microplate holder (see Figure 4). Position the robot pipet tips as described above in step 2.

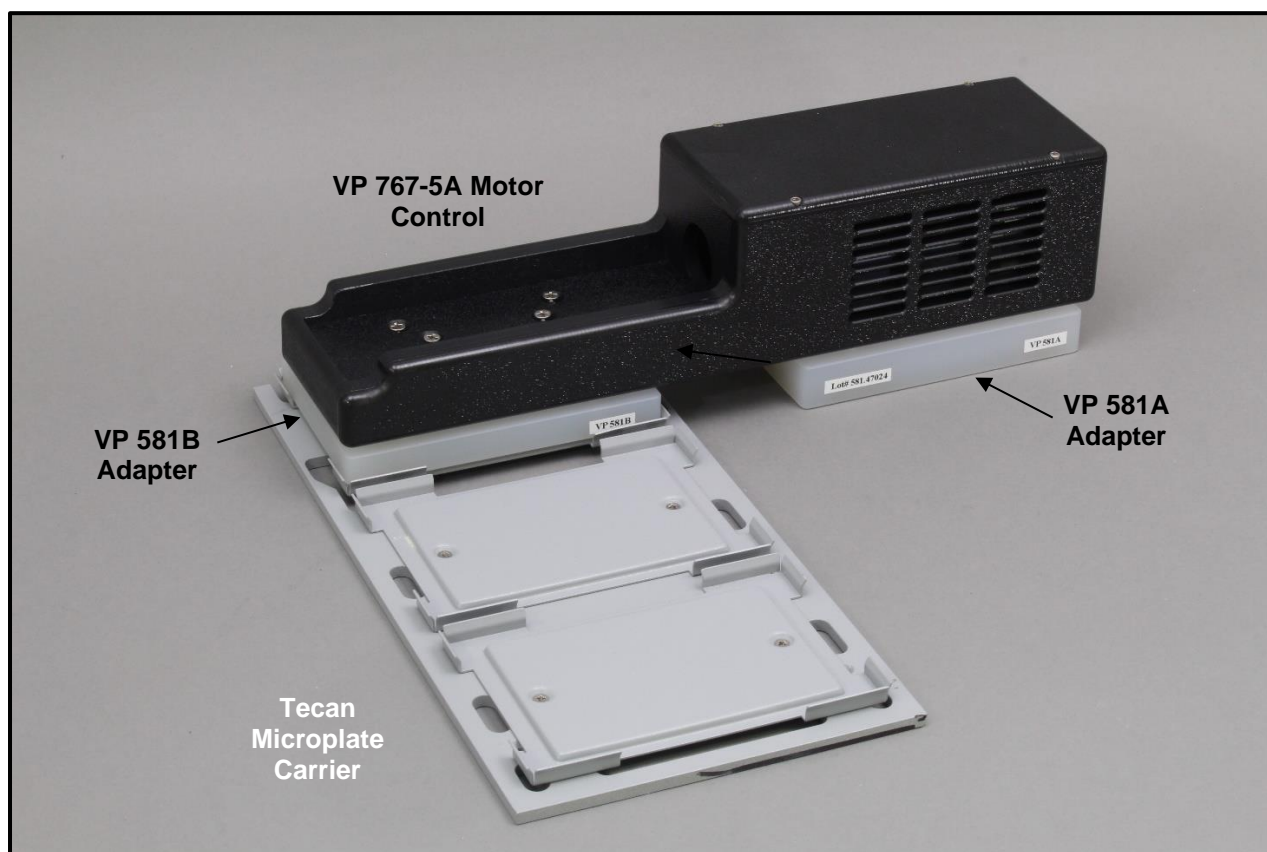


Figure 4. Bubble Paddle Reservoir positioned on a Tecan liquid handler microplate carrier using two polypropylene SLAS-sized adapters VP 581B and VP 581A.

- 4) To remove the VP 758-5 series Reservoir from the VP 767-5A motor, lift slightly up on the end of the Reservoir opposite to the Sealed Bearing and pull out.
- 5) The VP 767-5A motor is powered by a DC Motor speed controller. The auto-switchable controller is powered by 110 or 240 VAC at 60 or 50 Hz.
- 6) **Do not use the speed controller to stop the stirrer. Use the on/off switch.**
- 7) **Do not operate dry as this will wear out the seal. Always operate with liquid.**
- 8) 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.
- 9) To lengthen the life of the seal, operate at the lowest possible speed that keeps particles in suspension. In addition, operate only when needed as this will prolong the life of the seal.

CARE

- 1) The VP 758 series Bubble Paddle Reservoir can be cleaned with detergents and rinsed with distilled water and or ethanol/isopropanol. It can also be sterilized by autoclaving if necessary. 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. 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 an additional rinse in alcohol.
- 2) Replacement sealed bearing units (VP 758-3S, see Figure 5) are available in the event the reservoir begins to leak. To remove 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 758-3S into the reservoir. Line up the slot on the drive shaft with the end of the bubble paddle. Insert and tighten screw at bottom of reservoir to lock the sealed bearing unit in place. Send the leaky sealed bearing unit to V&P for repair.



Figure 5. Replacement Sealed Bearing Unit (VP 758-3S)

- 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 reservoir starts to leak, the Sealed Bearing Unit (VP 758-3S) will have to be replaced (see steps 2 and 3 above).
- a) Remove VP 758-5 series Reservoir from the VP 767-5A motor as described in step 4 on page 3.
 - b) Turn the bubble paddle so that it is in a vertical position. Gently pull the drive shaft partially out of the sealed bearings to release the bubble paddle (see Figure 6a, next page).
 - c) Lift up the far end of the bubble paddle (see Figure 6b, next page). Pull bubble paddle out of the drive shaft slot by pulling away from the sealed bearing.
 - d) Place the end of the replacement bubble paddle that does not have the Teflon hub into the drive shaft notch. Gently place the hub end of the paddle into the contoured notch at non-bearing end of the reservoir. Do not force into place. If necessary, grasp paddle near drive shaft and move slightly up and down until hub end falls into place
 - e) Push the drive shaft back into the sealed bearings to lock the bubble paddle into the slot in the drive shaft (see Figure 6c, next page).

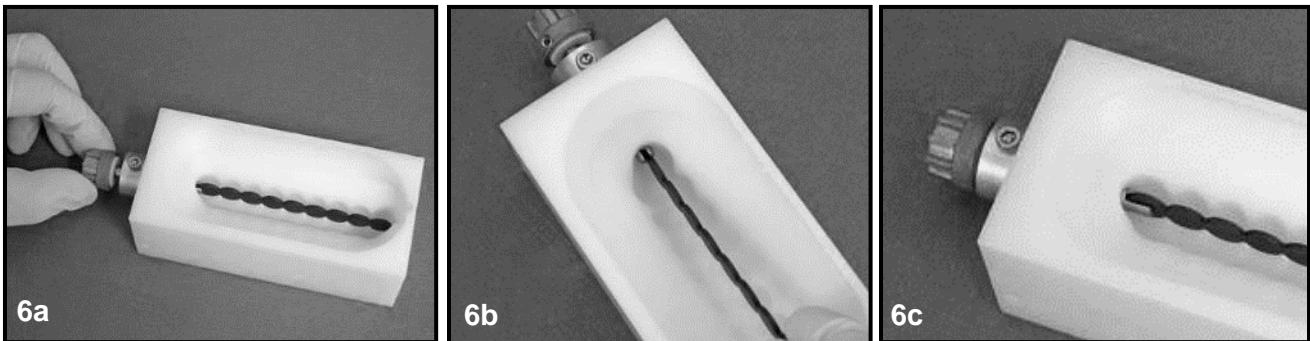


Figure 6(a-c). Replacement of Bubble Paddle (VP 759AL-R), see steps above.

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 cover of the controller when the power is ON.
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CAUTION

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