

CARE AND USE OF 96 CHANNEL MAGNETIC BEAD BUBBLE PADDLE RESERVOIR

Motor Control Unit VP 769-1 with VP 759-1 Series Direct Drive Bubble Paddle Reservoir

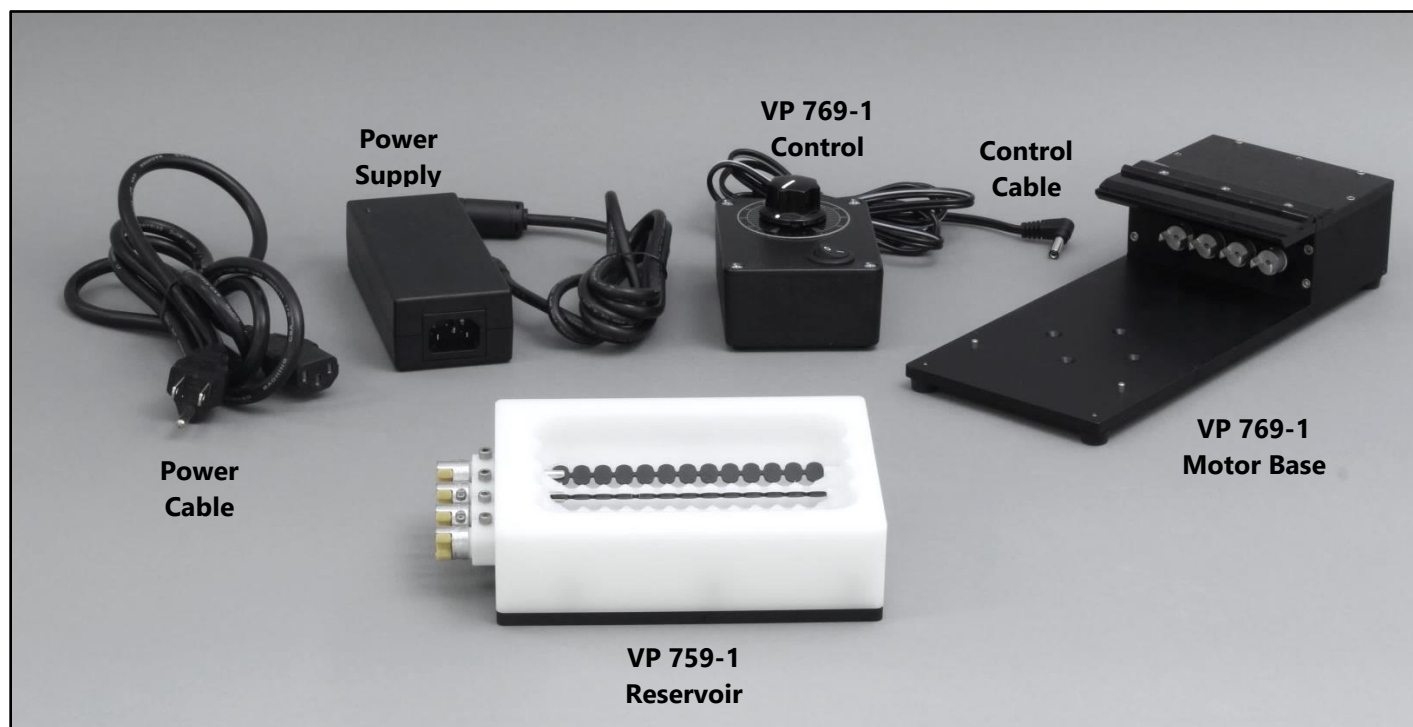


Figure 1. VP 769-1 Motor Control Unit shown with VP 759-1 Direct Drive Bubble Paddle Reservoir.

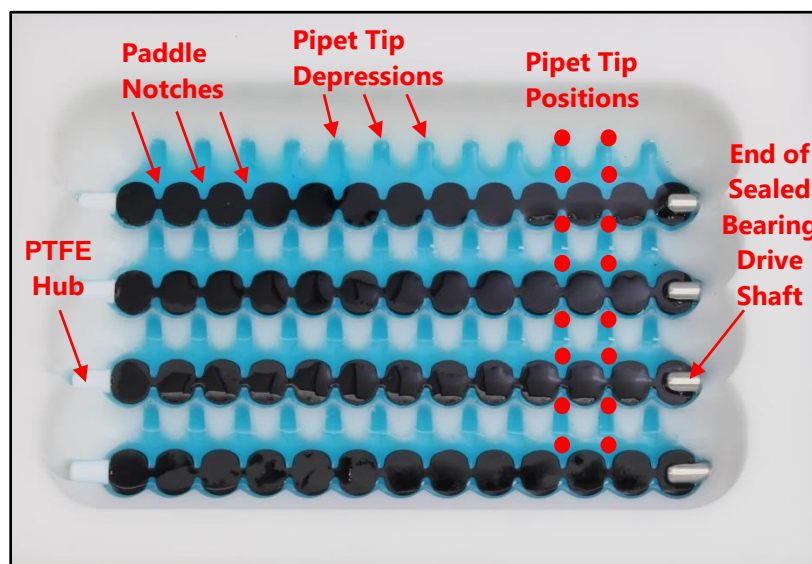


Figure 2. Close-up view of the Direct Drive Bubble Paddle Reservoir.

SET-UP

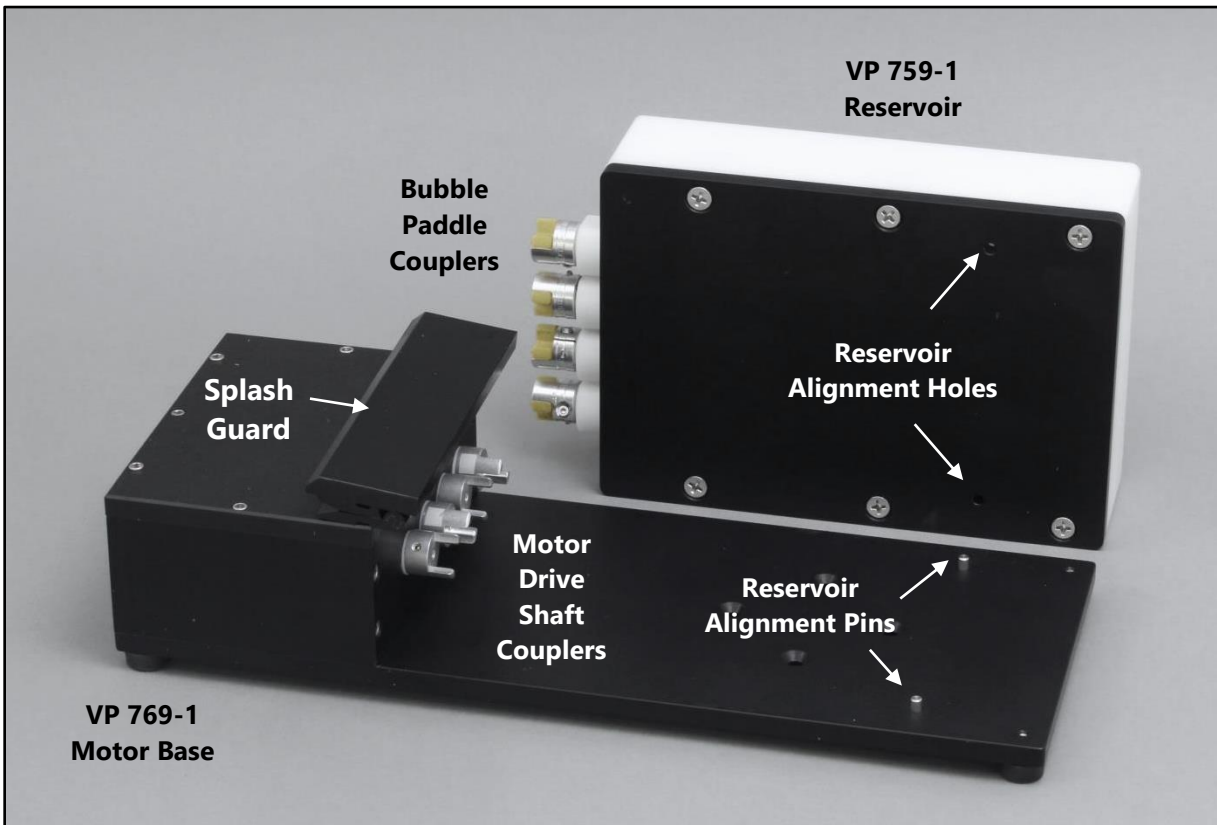


Figure 3. Features of VP 759-1 Direct Drive Bubble Paddle Reservoir and VP 769-1 Motor Base.

- 1) To connect the VP 759-1 Bubble Paddle Reservoir to the VP 769-1 Motor Base, first lift the splash guard from over the VP 769-1 drive shaft couplers. Since the splash guard is raised it is best if there is no liquid in the reservoir.

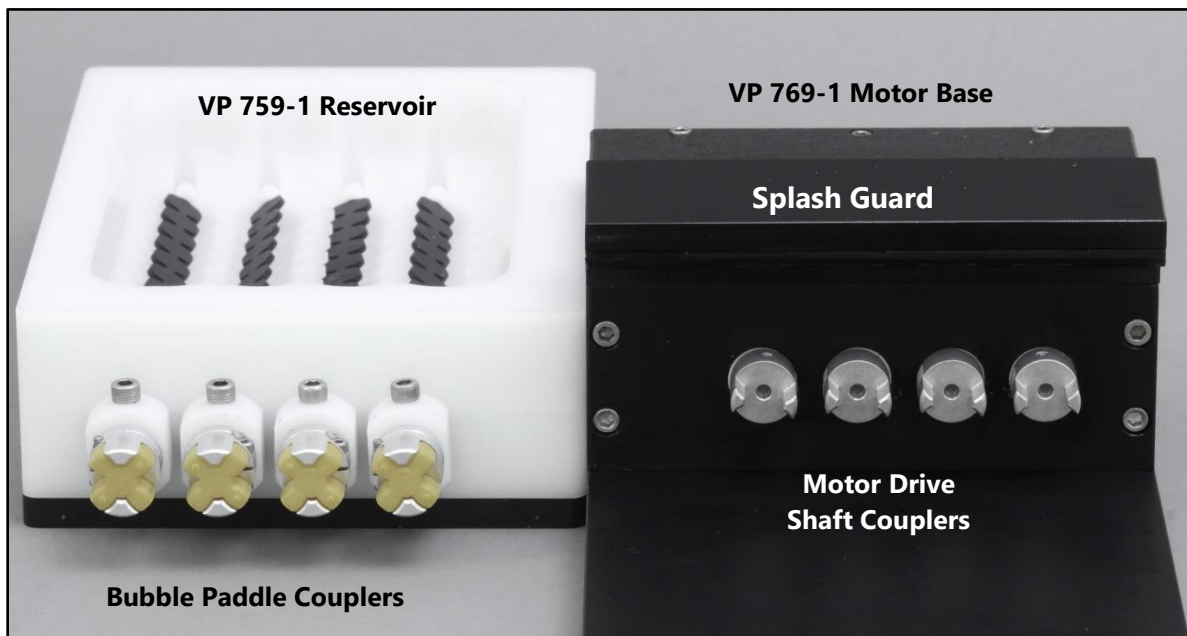


Figure 4. Couplers of VP 759-1 Direct Drive Bubble Paddle Reservoir and VP 769-1 Motor Base.

- 2) Turn the motor drive shafts so the two coupler prongs align with the grooves in the Bubble Paddle couplers on the VP 759-1 Reservoir (see Figure 4, page 2). Line up the reservoir with the base and slip the Bubble Paddle couplers onto the motor drive shaft couplers (see Figure 5a, 5b and 5c below). It helps to lift up slightly on the opposite end of the reservoir while pushing forward (see Figure 5c below). Once the couplers are engaged lower the reservoir so that the two alignment pins in the base are in the holes in the underside of the reservoir (see Figure 3, page 2).

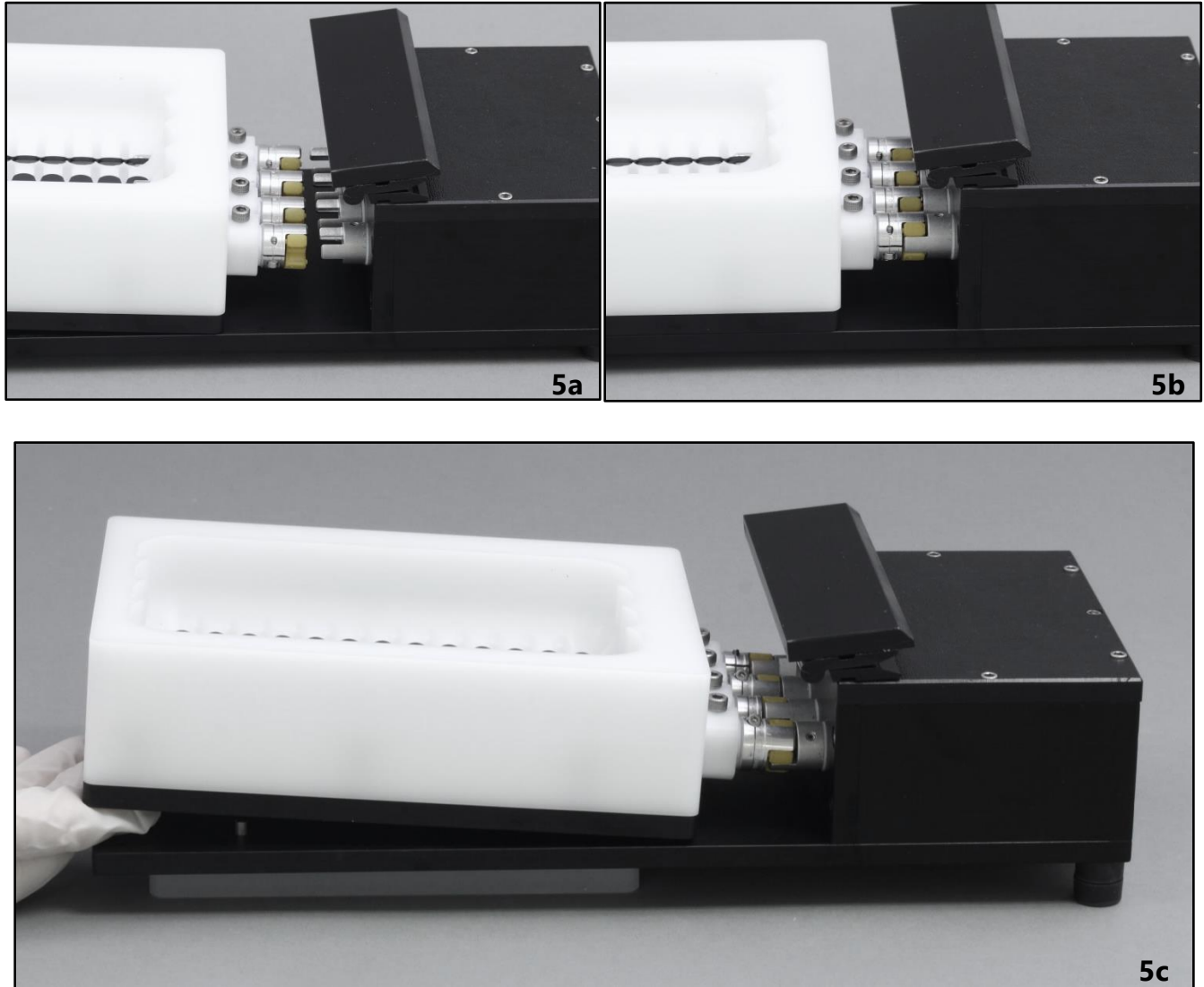


Figure 5(a-c). Engaging couplers of VP 759-1 Direct Drive Bubble Paddle Reservoir and VP 769-1 Motor Base.

- 3) Connect all of the cables as shown in Figure 6 (page 4). Make sure that On/Off switch is off when connecting power supply. Never directly connect power supply to motor base. Always connect through the control box.

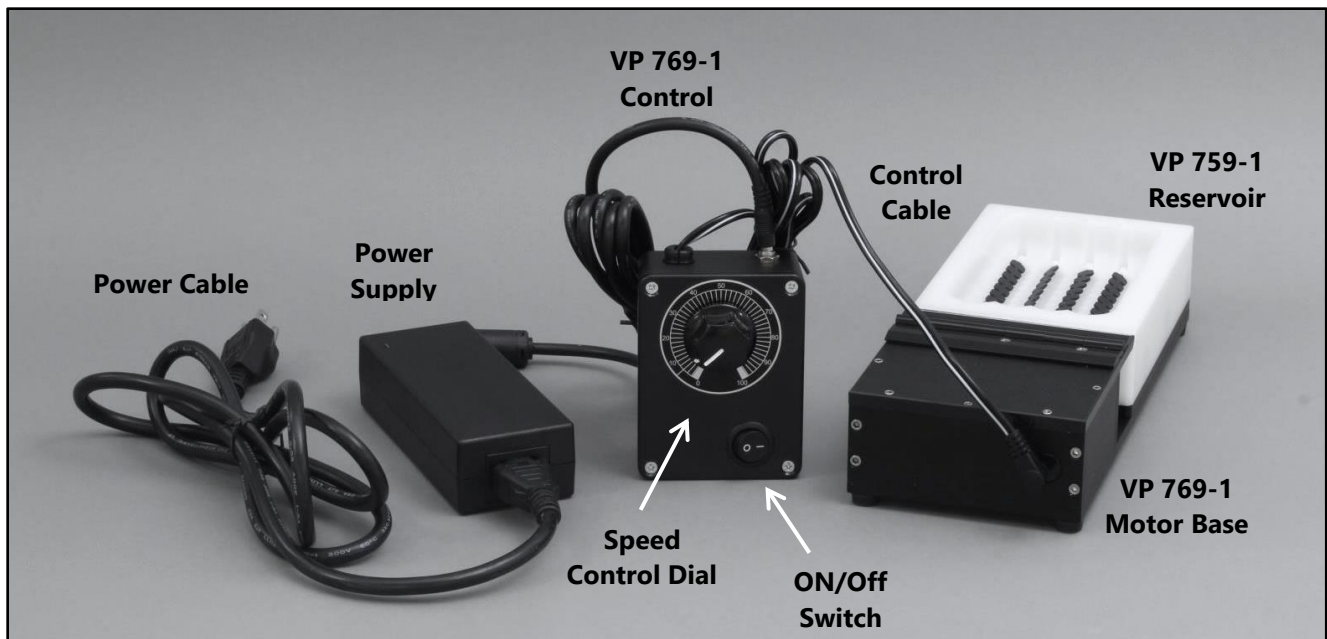


Figure 6. The VP 769-1 system shown with the cables attached and VP 759-1 Reservoir on Base.

- 4) To remove the VP 759-1 Reservoir from the VP 769-1 Motor Base, lift up slightly on the rear of the reservoir and pull directly away from motor. Do not lift too high, just enough to clear the alignment pins. Since the splash guard will be raised, it is best if there is no liquid in the reservoir (see figure 5C).
- 5) When using with automated liquid handlers, place the VP 769-1 Motor Base on the deck in a manner that allows for proper access of the VP 769-1 Reservoir by the pipet tips. Pipetting can be done with 8, 12 or 96 tips. Position the pipet tips in alignment with the notches in the Bubble Paddles and the depressions in the bottom of the Bubble Paddle Reservoir (see Figure 2, page 1).
- 6) To assist in this alignment with a deck that uses a SBS microplate carrier, order the Bubble Paddle Reservoir system with the VP 581B, a Polypropylene SBS sized adapter. Place the VP 769-1 motor assembly with the attached VP 581B on the robot deck in a microplate carrier (see Figure 7, below). Position the robot pipet tips as described above in step 5.

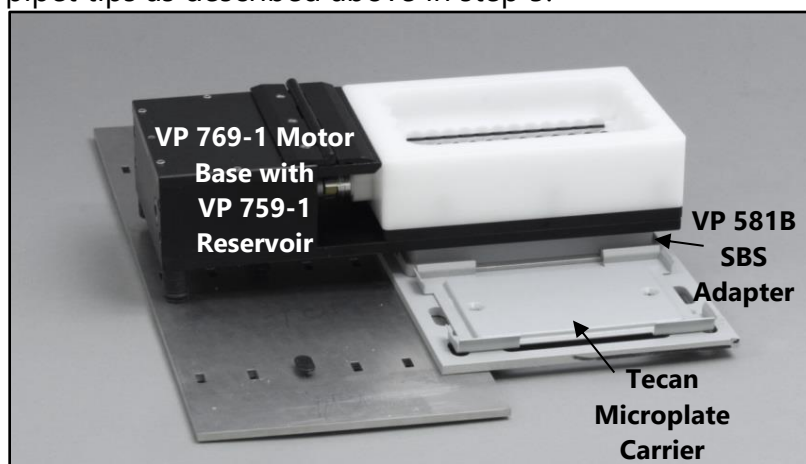
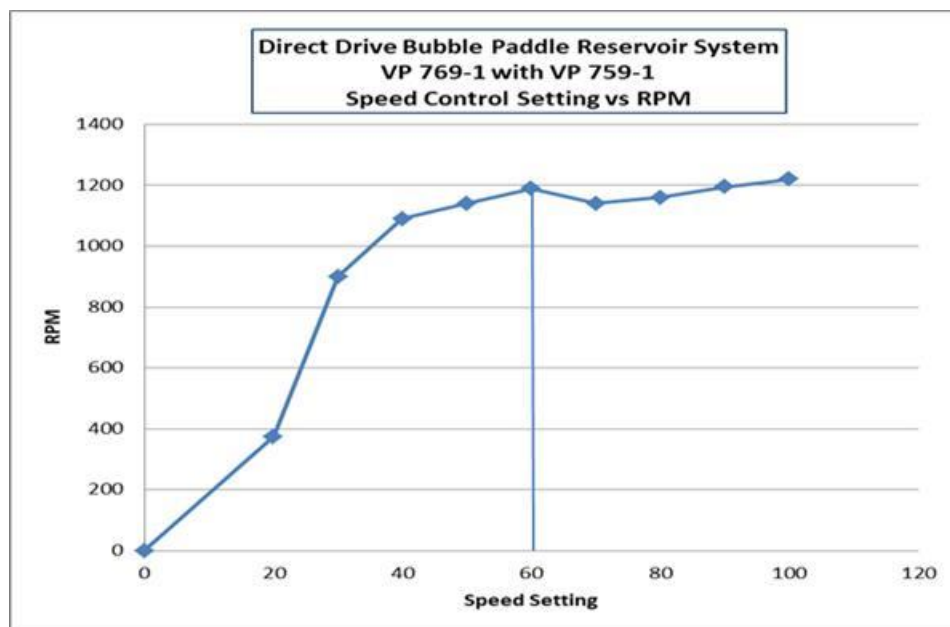


Figure 7. Bubble Paddle Reservoir positioned on a Tecan Evo microplate carrier using the VP 581B, a Polypropylene SBS sized adapter.

OPERATION

- 1) **Do not use the Speed Control Dial to stop the stirrer. Use the On/Off switch.**
- 2) **Do not operate dry as this will wear out the seal. Always operate with liquid.**
- 3) The maximum speed is 1,200 RPM and is set at the factory.
 - a) Operate at speeds and liquid levels that do not aerosolize the liquid. At lower liquid levels use slower speeds.
 - b) It is best to conduct tests to determine which speed setting is appropriate for the type of solution and volume being stirred. A short warm-up period (~30 min) is recommended. For most applications a speed setting of 20 on the control dial is optimum (400 RPM). See chart below of Speed in RMP versus Speed Control Setting. **A control speed setting higher than 60 does not increase the RPM speed of the Bubble Paddles but will shorten the motor life and is not recommended.**
 - c) **To lengthen the life of the seal**, operate at the lowest possible speed that keeps particles in suspension. In addition, only operate when necessary, as this will prolong the life of the seal.
 - d) **At speeds greater than 30 on the Speed Control Dial, runs longer than 6 hours are not recommended.**



CARE

1) Cleaning:

- a) The Bubble Paddle Reservoir can be cleaned with detergents and rinsed with distilled water. Follow with a rinse with an alcohol such as Ethanol or Isopropanol for easy drying. These operations should be done with the sealed bearings in place (see below for more information).
- b) The Motor Base and Control Unit can be wiped off with a towel dampened with a dilute detergent, followed by water and then alcohol (also with a dampened towel).

c) **DO NOT IMMERSE Motor Base and Control Unit in liquid of any kind!!**

2) Sterilization/Disinfection:

- a) Do not autoclave Reservoir, Motor Base or Control Unit.
- b) Disinfect Reservoir by filling with a 10% bleach solution and soaking for 5 minutes. Follow with sterile water rinses and a final rinse with an alcohol such as Ethanol or Isopropanol for easy drying

3) Removing and replacing Bubble Paddles can be done for cleaning or if paddle has been damaged.

- a) Remove VP 759-1 series Reservoir from the VP 769-1 Motor Base as described in step 3 (page 3).
- b) Turn the Bubble Paddle so that it is in a vertical position (see Figure 8b, page 4).
- c) Grasping the coupler gently pull the drive shaft ~4 mm out of the sealed bearing to release the Bubble Paddle (see Figures 8a and 8b). **DO NOT pull the drive shaft out all of the way out of the sealed bearing to release the Bubble Paddle.** This is not recommended because of the risk of damage to the seal in the bearing.
- d) Lift up in the far end of the Bubble Paddle (see Figure 8a and 8b). Pull Bubble Paddle out of the drive shaft slot by pulling away from the sealed bearing.

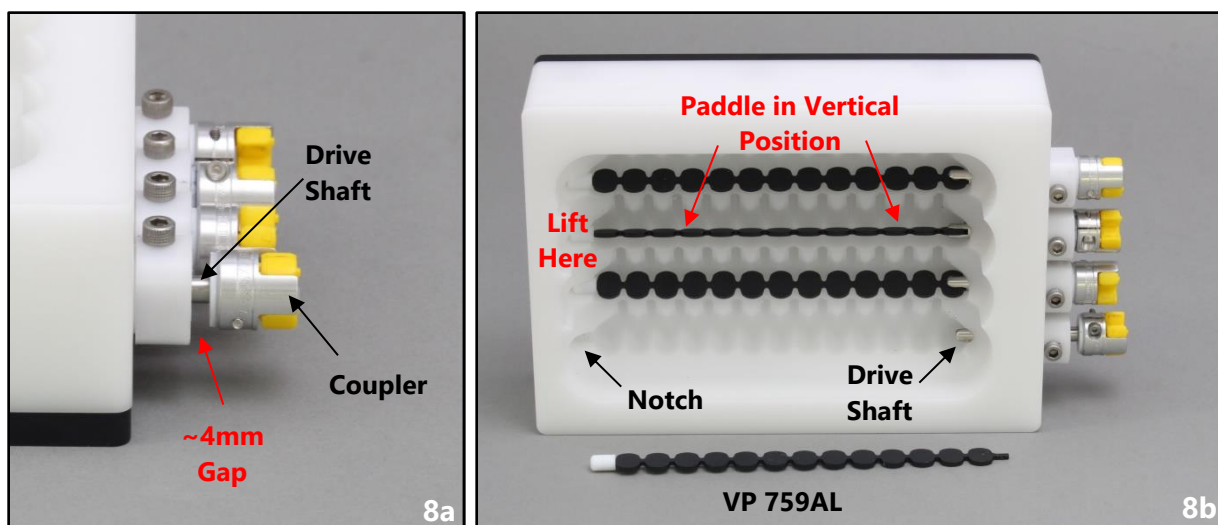
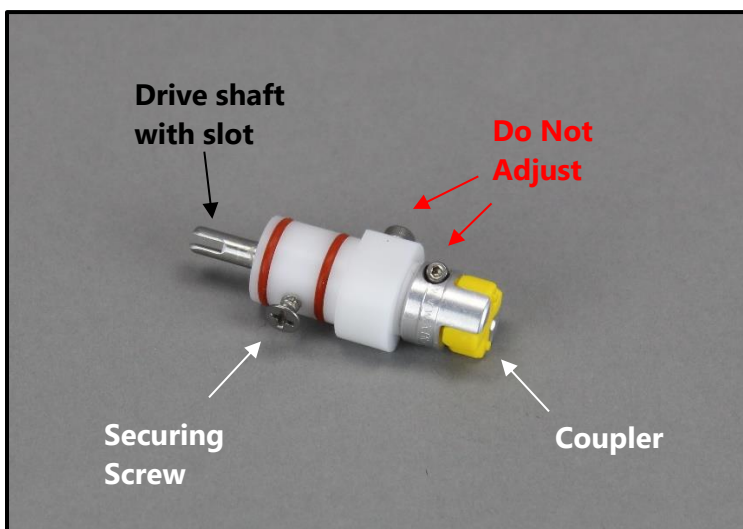


Figure 8. Replacement of Bubble Paddle (VP 759AL). Sealed bearing shown with coupler and drive shaft pulled out of bearing no more than ~4mm.

- e) To replace the Bubble Paddle, grasp the coupler to gently pull the drive shaft ~4 mm out of the sealed bearing. Place the end of the replacement Bubble Paddle without the Teflon hub into the drive shaft slot (see Figures 8a, 8b and 9).
- f) Gently place the hub end of the paddle into the contoured notch at the other end of the reservoir (see Figure 2, page one). Do not force into place. If necessary, grasp paddle near drive shaft and move slightly up and down until hub end falls into place
- g) Push the drive shaft back into the sealed bearing and turn the locking screw to secure the location of the sealed bearing to the Bubble Paddle and the drive shaft (see Figure 8b and 9).
- h) Replacement Bubble Paddles, VP 759AL and sealed bearing units VP 759-1S, are available.



**Figure 9. Replacement Sealed Bearing Unit VP 759-3S
For VP 759-1 reservoirs.**

ADDITIONAL STIRRER SPECIFICATIONS

Equipment Rating	120V~, 230V~, 5A, 50/60 Hz
Not to be used with power above this rating	
Ambient Environment:	Indoor use
Safety Approval:	CE Compliant

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.

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