

# Plunger Seal Replacement

Ovation M



## When to replace:

VistaLab Technologies recommends that the Ovation pipette's plunger seal be replaced if any of the following symptoms are present:

- Damage from caustic vapors
- Build up of dried liquids aspirated into pipette
- Seal leaks caused by damage to cylinder
- Liquid leaks out of tip
- Liquid is observed inside air tube or cylinder

## Plunger Seal Kit includes:

- 5/64" Allen Key
- Replacement Cylinder
- Replacement Plunger Seal
- Replacement Air Tube Connector Cap
- Energizing O-Ring
- Instructions

Refer to the chart below to determine the appropriate kit.

Description	Catalog No.
Plunger Seal Kit for Ovation M models dispensing 0.2-2 $\mu$ L	9070-1001
Plunger Seal Kit for Ovation M models dispensing 1-10 $\mu$ L	9070-1002
Plunger Seal Kit for Ovation M models dispensing 2-20 $\mu$ L	9070-1003
Plunger Seal Kit for Ovation M models dispensing 10-100 $\mu$ L	9070-1004
Plunger Seal Kit for Ovation M models dispensing 20-200 $\mu$ L	9070-2005
Plunger Seal Kit for Ovation M models dispensing 100-1000 $\mu$ L	9070-3006

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## Replacing a Plunger Seal:

1. Loosen the two captive screws from the bottom surface of the pipette base, using a 5/64" Allen Key, until you can lift the base from the body. (see Figure 1)
2. Remove the air tube from the rubber air tube connector cap on the bottom of the cylinder by gently pulling it from the circular hole. (see Figure 2)
3. To remove the cylinder, push the cylinder inwards and rotate it counterclockwise until the tabs on the cylinder align with the open slots of the clear gearbox shell. (see Figure 3)
4. Remove the plunger seal on the bottom of the metal plunger by first pushing down on the plunger button to expose more of the metal shaft. Then remove the plunger seal by sliding it off (see Figure 4). (Note: If the seal remains stuck to the cylinder top, pop it loose with a tooth pick or fingernail. Avoid scratching the plunger with metal tools)
5. Replace the existing plunger seal with the new plunger seal. Push down on the plunger button to expose more of the metal plunger. Then fit the inner circle of the seal onto the metal plunger and slide it on until it reaches the base of the gearbox (see Figure 5)



Figure 1: Screws on base connecting to body

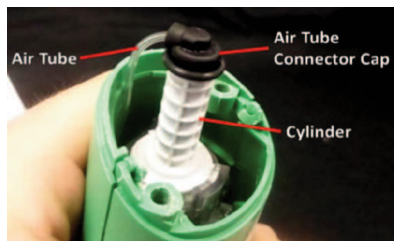


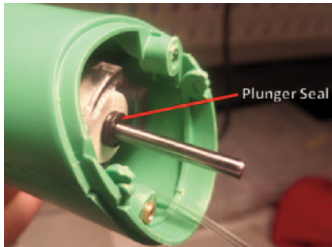
Figure 2: Air tube inserted into connector cap on bottom of cylinder



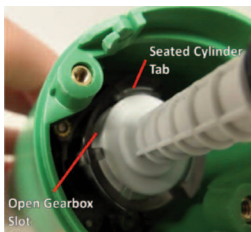
Figure 3: Unlocked cylinder with tabs in the open slots



*Figure 4: Plunger seal on metal plunger shaft*



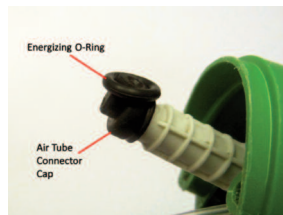
*Figure 5: Properly seated plunger seal*



*Figure 6: Locked cylinder with tabs seated on shell*

6. Gently release the plunger button and place the new cylinder provided such that the tabs on the cylinder align with the open slot in the clear gearbox (see Figure 3).
7. Push the cylinder inwards and rotate it clockwise so that the tabs on the cylinder sit locked atop the inside of the clear gearbox (see Figure 6).
8. Place the new rubber air tube connector cap over the small end of the cylinder and push down so that the connector cap is seated firmly on the cylinder (see Figure 7 on back).
9. Slide the new O-Ring over the air tube connector cap so that it sits firmly over the base of the connector cap (see Figures 8 and 9 on back).
10. Reinsert the air tube by pushing the exposed end into the circular opening on the air tube connector cap (see Figure 2). (Note: You may need to rotate the connector cap to allow the air tube to reach the circular opening. You will feel two small “bumps” when pushing the air tube in to indicate that it has been fully inserted. You should be able to feel the back inside wall of the connector cap if you push any further. )

11. Verify that you have correctly inserted the air tube into the connector cap by using the pipette. Confirm that no leaks occur and that the pipette is functioning normally.
12. Fit the base to the body so that it fits neatly onto the front and back cover and that the screws fit into the holes. Use the 5/64" Allen Key to tighten the screws until snug and the two halves are connected. DO NOT over tighten the screws (See Figure 1).
13. Verify pipette performance.



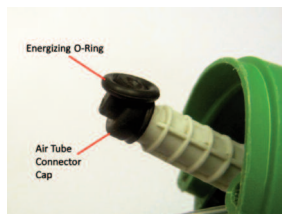
*Figure 7: Air tube connector cap seated on bottom of cylinder*



*Figure 8: Sliding O-Ring on*



*Figure 9: O-Ring seated on connector cap*



*Figure 10: O-Ring incorrectly seated*