

## SAM Phantom air bubble removal kit & procedure



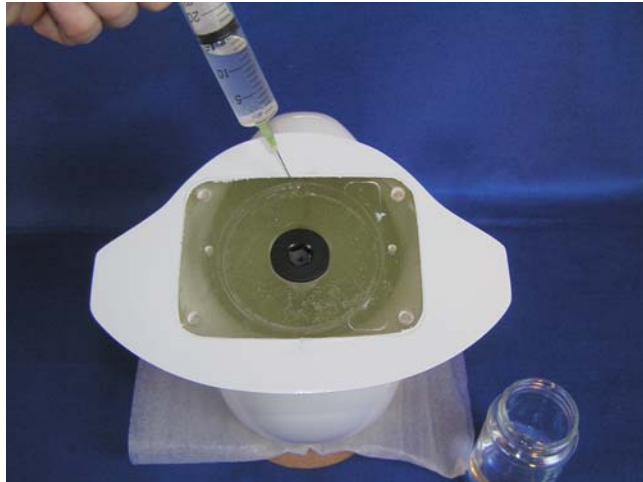
### Bubble removal kit consists of:

- 1 x 20ml Syringe and needles
- 1 x SAM Phantom Support base
- 1 x Combination plug wrench
- 1 x Carry case

### Procedure

1. Mount the SAM, head down, on cork support base with the face facing away from you. (as above)
2. To make the SAM stable, make sure you have the foam sheet between the SAM phantom support base and the SAM Phantom.
3. Remove plug and bleed screw, using a funnel fill the SAM with liquid.
4. Allow at least 30 minutes for the liquid to settle and the bubbles to rise through the fluid.
5. Insert the expansion plug into the SAM Phantom and tighten well (making sure not to over tighten)

6. Move the SAM phantom around (especially from left to right 45 degrees in a circular motion) until the smaller bubbles coalesce into one or two larger bubbles move them across the 'bubble trap ring'.
7. The bubbles should be able to be manoeuvred around the ring by carefully rocking from side to side and up and down, until they fill the ring and are below the 'bleed' hole.
8. Partially fill the 20mm syringe with fluid.



9. Slowly fill the air bubble through the 'bleed' hole with the 20 ml syringe.
10. Observe air bubbles escaping
11. Repeat the procedure.
12. Inspect for any residual bubbles; if any are over 13mm diameter repeat steps 7-10
13. With care and perseverance, it is possible to remove ALL air bubbles in around 10mins.
14. Carefully move phantom to position the base in the horizontal plane.
15. Replace the 4mm bleed screw wiping away any excess liquid displaced with absorbent material, tighten. (Tight enough to make seal, but not over tight).
16. Check for leaks from plug and bleed screw by standing SAM vertical on a clean sheet of absorbent paper.

**Important note:** To achieve the maximum effect of the expansion plug and to avoid stress to the phantom, the liquid and SAM should be at a constant working ambient temperature (20-22 Deg) for at least 3-4 hours prior to filling, and once filled stored at this temperature.