

How to Prepare Oil Injectors

When setting up manual injectors such as IM-9A/9B and IM-6/5B, you always need to fill oil (etc) in the syringe/tube/injection holder in order to enhance operation of the injectors. In this news, we will discuss types of oil used for the injectors, how to fill the injectors, and some tips in preparing the injectors.

Types of Oil Used

Generally, the following factors are considered when choosing oil; transparent, colorless, harmless, easily obtainable, immiscible with culture fluid, clearly visible interface between oil and culture fluid, viscosity, etc. Please also refer to Web News 008 about this topic.

The following are types of oil generally used.

◇Mineral oil ◇Silicone oil ◇Paraffin oil ◇Fluorinert etc.

Occasionally, distilled water is used in place of oil.

<Why You Must Fill Oil ? >

An oil injector that needs filling is full of air. Air does not transmit pressure as effectively as oil does. Air is compressed until there are several rotations of the operation knob. On the other hand, oil is not compressed and transmits pressure to the pipette tip, and ideal response from the injector is realized following operation of the knob.

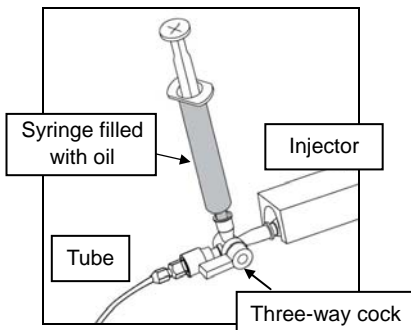
How to Fill Oil

You can facilitate filling the oil utilizing a three-way cock. The procedure for filling oil is as follows.

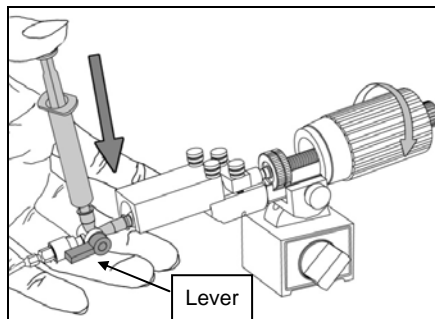
(The three-way cock is incorporated in the IM-9A/9B and IM-6/5B.)

Some people do not use a three way cock to fill oil. If you are interested in filling oil without the three-way cock, please refer to FAQ on our web site.

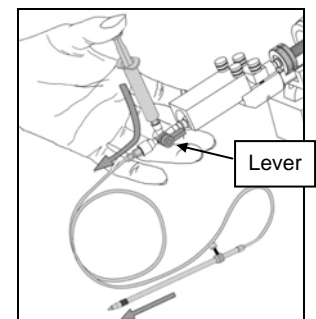
You can also refer to an instruction manual for details about how to fill oil.



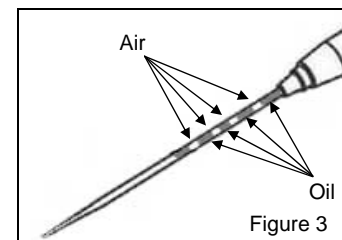
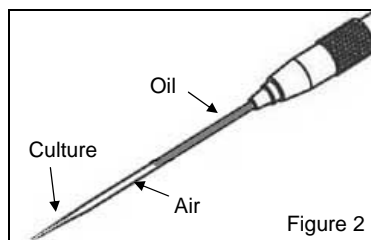
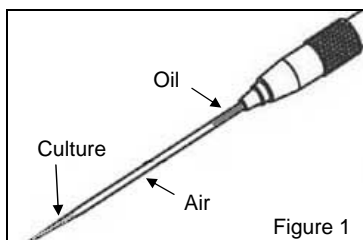
As shown, fix the three-way cock between the injector and tube, and also fix the syringe to the three-way cock.



Turn the lever of the three-way cock in the direction as shown, fill oil in the syringe on the injector.



Turn the lever of the three-way cock in the direction as shown, fill oil in the tube/injection holder.



Finally, put a micropipette on the injection holder to complete the procedure. You can change operability by mixing a layer of air between the oil and the culture. If you feel response of injector is too fast, you may add more air to delay the response. (See figure 1) Conversely, when response is too slow, you may reduce air to make it fast. You are encouraged to try it when necessary. (See figure 2)

If you get small alternate layers of air and oil in a micropipette as shown in figure 3, you need to change the pipette to a new one because it impairs the operation significantly.