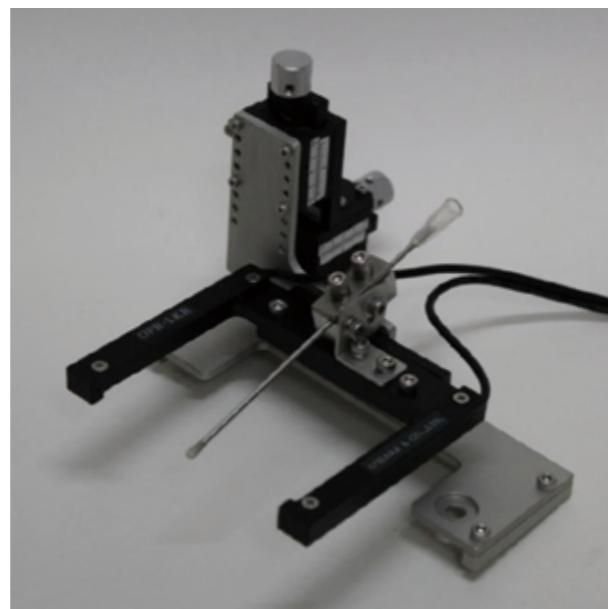


給水ユニット<学習記憶>  
Water-supply unit <learning memory>



This water pump & controller are able to dispense constant amount of water or liquid solution to the mouth of an animal as a reward of operant test. This pump can supply 1 - 7  $\mu$ l per one shot. Dispensing of water/liquid is controlled by 5 V TTL trigger signal. Both computer controlled and manual operation modes are supported. Water or liquid is dispensed without delay from trigger signal, dripless and no leakage by residual pressure, so accurate reinforcement is available.  
1回あたり1~7 $\mu$ lを供給するように設定することができます。残圧による垂れや漏れがなく、時間的な遅れのない報酬強化が可能です。

リッキングユニット<学習記憶>  
Licking unit <learning memory>



This sensor unit detects whether subject animal licks water/liquid dispensing spout or not. It uses infrared photo beam sensor. Our pump unit can be combined with the licking unit. A position adjuster, such as XZ slider can be also added.  
赤外線フォトビームセンサーを利用して、動物がスパウトを舐めた回数・時間を検知することができます。



匂い刺激提示ユニット<学習記憶>  
Odor test unit <learning memory>



Using this unit, 2, 4 or 6 kinds of odors can be presented. Odor type and duration can be controlled programmatically through 5V TTL signal. Air at installation place is filtered and used by this unit. Normally, only the filtered air flows in front of animal's nose. Based on TTL signal, electromagnetic valve opens and odor gets mixed into flowing air. Odor source can be placed in syringe filter or odor bottle. The exhaust air is released to atmosphere flowing through water & an activated carbon filter. All components which come in contact with odor are washable & interchangeable.  
2, 4, 6種の匂いをプログラブルに提示するための装置です。

