



Document Number: SASoM/EQUIP/079.v2

Title: Operation of Brand Pipette Leak Testing Unit (PLT unit)

Version: v2

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Effective from:	19/12/2018
Valid to:	18/12/2023

SOP History		
Number	Date	Reason for Change
v1	19/12/2013	Original
V2	19/12/2018	Update

1.0 Purpose –

The purpose of this SOP is to outline the principles of the routine use of the Brand PLT unit in Laboratory 248 at the St Andrews School of Medicine (SASoM).

2.0 Scope –

This SOP applies to routine use and maintenance of the Brand PLT unit within the SASoM.

3.0 Responsibilities –

It is the responsibility of all users of the Brand PLT unit within the SASoM to comply with this SOP. This equipment can **ONLY BE USED by authorised users.**

4.0 Procedure –

The Brand PLT unit is used to determine if there is a potential leak problem with a single channel air-displacement pipette. Multi-channel pipettes can only be tested with an adapter which is not in the kit unit. Testing can be done with and w/o tips. Dynamic testing option is recommended. To avoid error messages, the PLT unit must be allowed to acclimate in the testing laboratory for a period of 2 hours before use.

Equipment Operation Procedure



The 'Back' button function is varied by pressing for long or short periods. Pressing for a short time leads back to a sub-menu in the next higher level of the menu hierarchy. Pressing the button for a long time leads directly to 'Ready' on the Start Menu.

A self-test must be performed before testing any pipettes. The Full Test must be carried out if machine has not been used for some time. Connect plug to mains. Call up the '**Main Menu**' by pressing or turning the control knob. Set to '**Self Test**' by turning the select knob. Press the 'Execute' button. The '**Self Test**' submenu appears on the display. Select '**Full Test**' by turning select knob. Press 'Start/Execute' button. The '**Self Test**' menu appears on the display. Prompt will appear to insert the blind plug. Press the provided black blind plug firmly into the adapter and press the 'Start/Execute' button. Six internal components are tested one after the other. The progress bar on the display indicates the test status. The LED indicator alternately blinks red and green during the test. On completion display will prompt to remove the plug. Remove plug and press the 'Execute' button. The system is aerated and the indicator will show the current pressure. The display will then change automatically to indicate whether the unit has passed the test. If an error has occurred the system stops and the appropriate code will display (see page 64 of operator's manual). The test can be repeated by pressing the 'Start/Execute' button. The 'back' button leads directly to the Main Menu.

It is recommended that pipette testing should be performed with a mounted, unused tip so that the entire pipette system is tested. If a leak is identified the pipette is then tested w/o a tip to determine whether the leak arises from the tip cone/tip coupling region. The adapter has to be changed for this test – see page 46 in operator's manual. A PE filter is fitted in the premounted adapter to protect instrument from moisture and contamination. Spare filters are available. Filter to be changed is squeezed from the pliable silicone adapter and replacement pushed into place.



Equipment Operation Procedure

To test an air-displacement pipette call up '**Main Menu**' as previously described. Select 'Pipette Type' by turning the select knob. Press 'Execute' button, 'Channels' submenu displays, set to '**Single Channel**' by turning select knob. Press 'Execute' button. '**Nominal Volume**' submenu is called up. Turn select knob to choose pipette volume to be tested. Ensure pipette is set at this volume. Press start/execute' button. '**Start**' submenu is called up. Press 'start/execute' button. Securely insert pipette, with tip attached, into the adapter. **TEST** displays and test pressure begins preparation. Just before End of preparation period the LED light shines 1 time red and 1 time green.

The progress bar then appears and during this time the pipette button must be depressed evenly 2-3times. The piston must return to the initial position before the measurement is finished. The LED indicator blinks orange. After the test is finished, the display indicates the leak rate that was determined and if the pipette passed the test the LED light will flash green and PASS on display. LED will flash red and FAIL will appear on display for a failed pipette. Refer to p49 in Operator's manual for guidance of what the vertical progress bars mean on the display and what to do in case of failure.

At end of testing procedure disconnect cable and carefully pack PLT back into storage case.

5.0 Personal protection –

Howie coat and gloves must be worn at all times.

6.0 Training –

All users have to be trained before using the Instrument by a designated person.

7.0 Related documents –

7.1



8.0 Approval and sign off –

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Signature: Date:

Management Approval:

Name:

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Signature: Date:

QA release by:

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