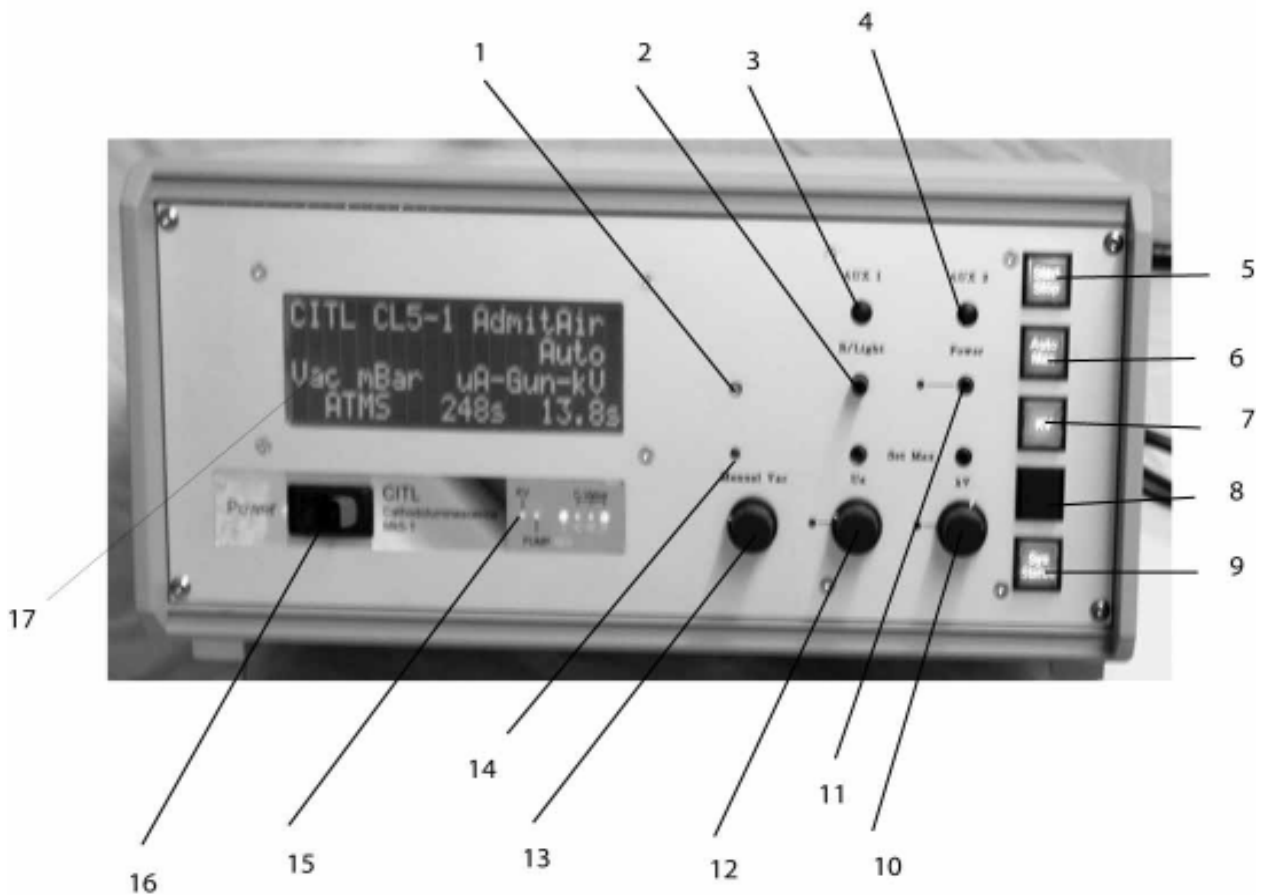




CL8200 Mk5-1 Optical Cathodoluminescence System Operating Manual

Cambridge Image Technology Ltd (CITL)
P.O.Box 21 Cambridge CB3 8TX. UK EU.



CL8200 MK5 Front Panel Controls

- | | |
|--|--------------------------------|
| 1) Sensor for auto backlight control | 14) computer reset button |
| 2) Set Backlight level | 15) status indicators |
| 3) Aux1 --Reserved function | left to right |
| 4) Aux2 --Reserved function | kV ON |
| 5) Start-Stop switch | Rotary Pump ON |
| 6) Automatic / Manual operation select | Auto /Manual selected |
| 7) kV ON/OFF switch | Control valve closing |
| 8) reserved for expansion | Control valve holding |
| 9) status / function switch | Control valve opening |
| 10) set kV rotary control | 16) Mains Power ON/OFF |
| kV limit led to left | 17) Information Display Screen |
| set max kV preset above | |
| 11) set max beam power | |
| power limit led to left | |
| 12) set uA rotary control | |
| uA limit led to left | |
| set max uA preset above | |
| 13) multi function rotary control | |
| normal funtion manual leak control | |
| secondary function info screen select | |

CL5 QUICK OPERATION INSTRUCTIONS



Switch Power on

1



To change preset gun setting use controls

2&3



Press STOP/START

4



Change mode to Auto
Press Auto/Man

5



When vacuum < 0.5mB

Press

KV 6

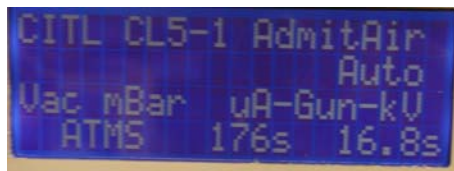
Unit operates automatically



To stop and change sample

Press STOP/START

4



To start again with same values

Press STOP/START

4



When vacuum < 0.5mB

Press

KV 6

Unit operates automatically



Diagnostic Information

This information is not required for normal operation of the equipment

To access the diagnostic screens press the system status button and then use the manual knob to cycle through the status screens.



Info 1 .

shows preset gun target values.

The number under Valve Pos shows the position of the vacuum leak valve.

Note you cannot use the manual control to change the valve position with the infoscreens showing ,



Info 2

This checks main internal voltage rails



Info 3.
This shows the operation of all the frontpanel rotary controls. Each should adjust between 0 and 92 . placing a finger over the photo sensor on the front panel should change the ba value.

Maintanance

Cleaning and care of Top plate window.

It is most important that the top plate viewing window is only replaced by an OEM original. It is your protection against x-rays and is not normal glass.

Cleaning.

The lead glass window is very soft and NO abrasives should be used.

Clean only with alcohol and a soft cotton bud. Its is better to clean frequently rather than let discoloration build up. The alcohol will soften the discolouration and cotton bud will remove the dirt. This is not an instant clean but can take several minutes.

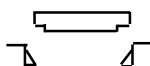
Instructions for replacing viewing windows in ccl8200 Chamber Top Plates

1) Removing old window

- a) Remove the Gun Cable and electron gun making sure you note how they come apart and carefully placing the components in a safe place.
- b) Heat the top plate round the existing window from the top using a hot air gun set to 200 deg C . Do not direct the gun directly at the window (as this may cause the windows to crack), but play the gun round the window.
- c) Using the wax supplied with the new window rub lightly on the top plate, if it starts to melt the top plate is hot enough.
- d) Turn the top plate over, You will need to use a cloth as it will be hot.
- e) Using a cocktail stick press on the underside of the window it will pop out.
- f) Turn the top plate right way up again and carefully remove any glass pieces that may exist round the window seat. You may need to re heat the window seat area to do this. It is best to remove most of the old wax at this point, as it is easy to miss a small fragment of glass and this will cause the new window not to seat correctly. A paper towel normally does this well.

Fitting the new window

- a) Heat the windows seat area with the hot air gun using the wax stick between applications of the heat to ascertain when it is hot enough. The wax should readily melt to the consistency of soft butter but not to a water state.
- b) Apply a thick layer of wax to the window seat.
- c) Carefully place the window in the seat. The small diameter downward.(Diagram A)
- d) Using your middle finger apply very light pressure to the window. So that it sits in the seat correctly slowly rotate your finger (and thus the window) by 20 degrees. Take Care not to press to hard as window may crack also the top plate is hot.
- e) If you have been successful a continuous black ring will be seen through the window.(Diagram B) If this ring is broken (Diagram C) carefully apply more heat with the heat gun to the top plate but not directly to the window. Then apply light pressure to the window again as above.
- f) Allow the top plate to cool for 30 Minutes.
- g) using a soft paper towel with a small amount of acetone or trichloroethane on it wipe the excess wax off and clean the window. On no account put either solvent directly on the window or top plate as it will destroy the vacuum seal.

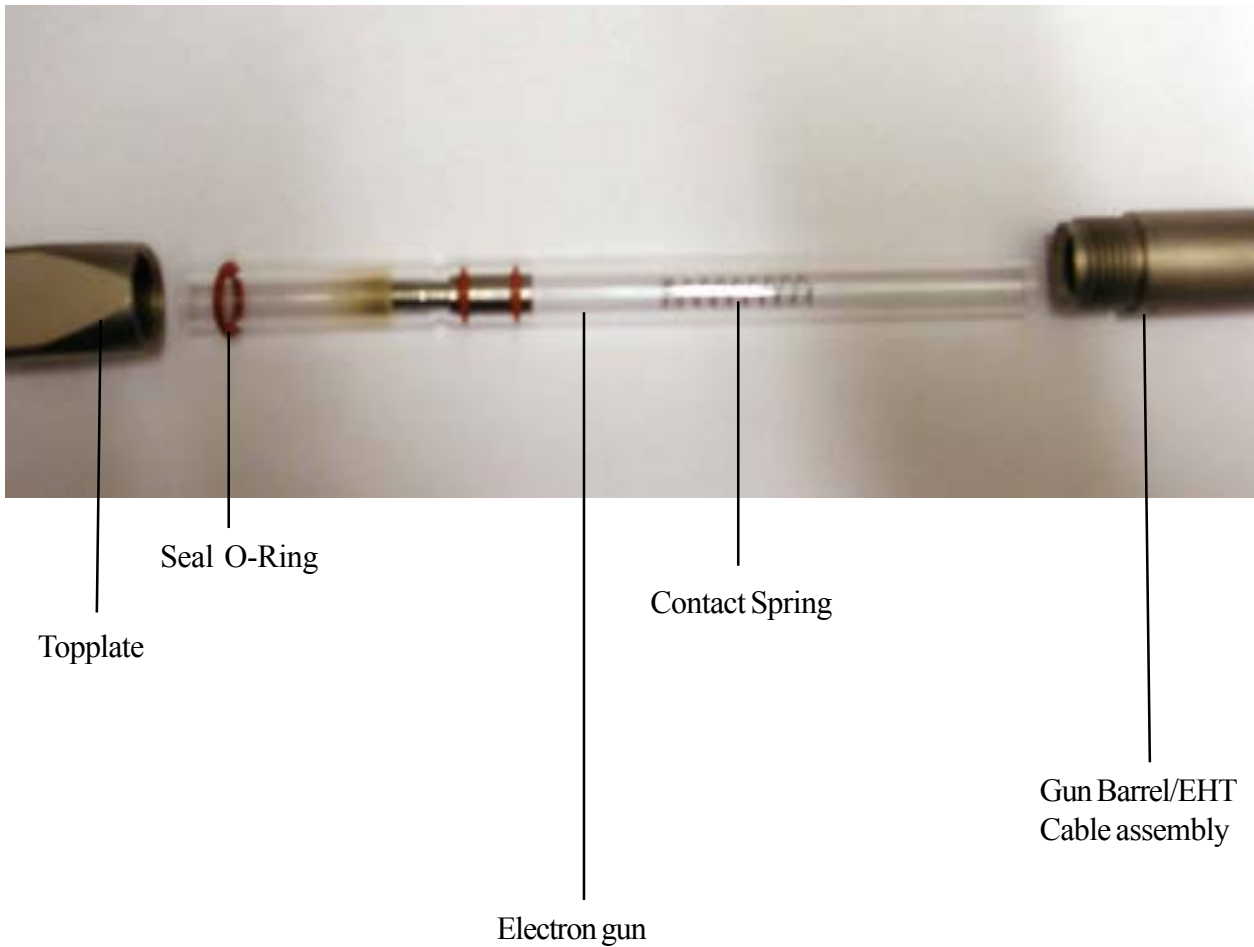


Right



Wrong

Changing the electron gun



The electron gun should be changed when the electron beam starts flashing or it exhibits a hollow beam rather than a uniform beam. There are two reasons for electron gun instability.

A) it is worn out.

B) It is contaminated with oil and volatiles from the geological samples.

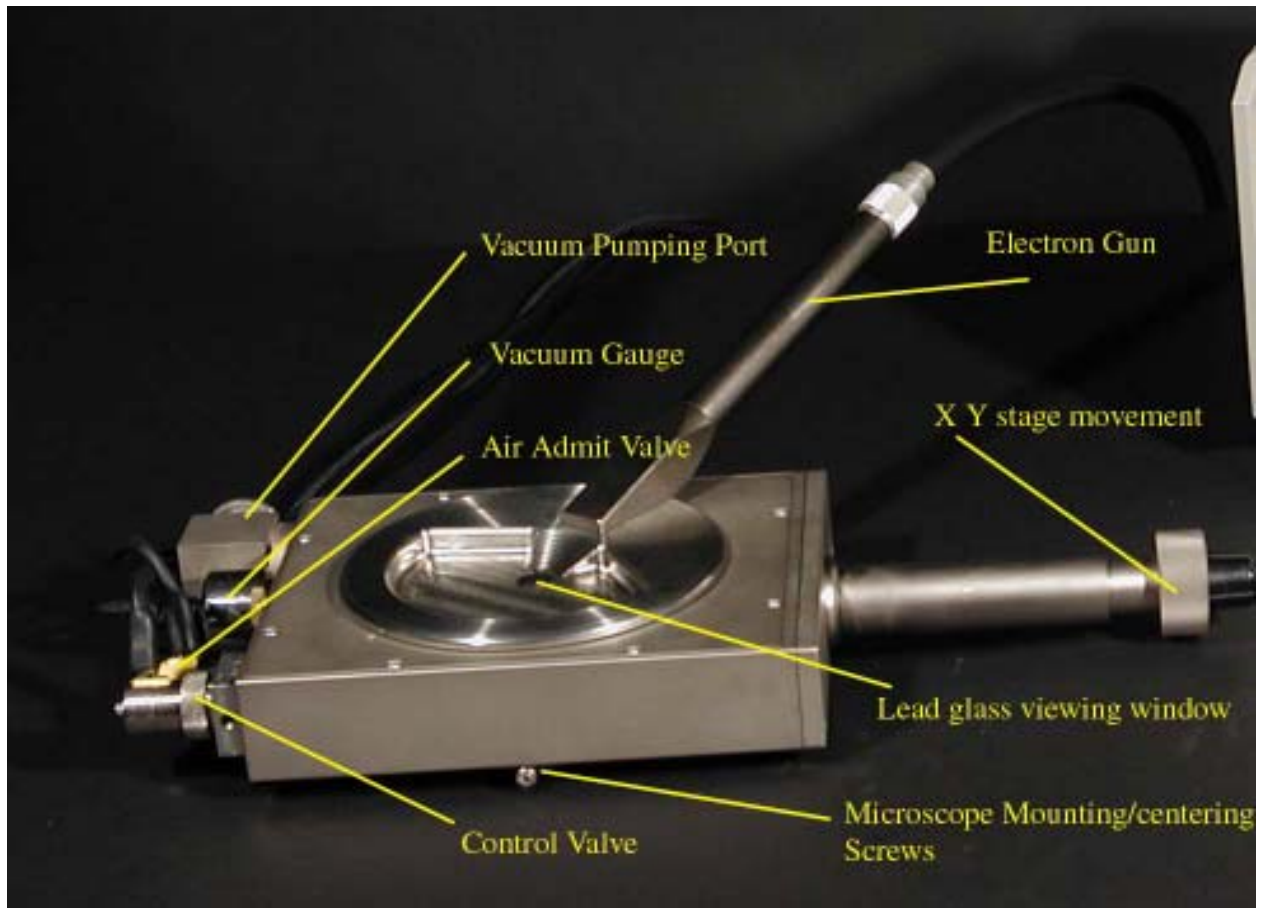
You can sometimes clean the volatiles by washing with alcohol.

When replacing the gun use the O-Ring supplied with the new gun for the Seal O-Ring. never use the old one.



RS232 & PSUs *Aux Supplies (Option)* *Vacuum Controller* *Vacuum Gauge* *EHT Regulator* *EHT Supply*

View of rear of control unit showing location of system boards.



CLMK5 Vacuum Chamber

