Critical Point Dryers

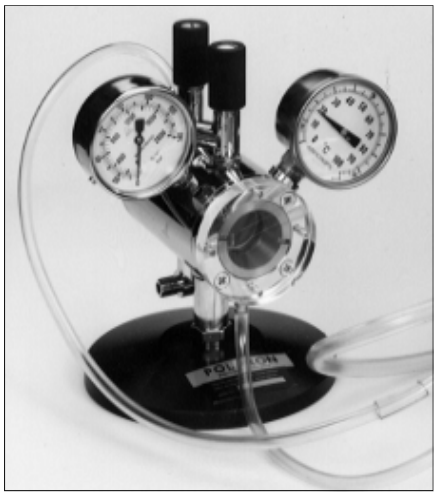
Critical Point Drying

This is the most commonly used method of drying samples prior to examination by SEM. Drying is done in a manner that will minimise damage due to the surface tension effects of drying that would otherwise result in the deformation and collapse of delicate tissue structure.

The method is to use the property of a liquid to change to a gaseous phase without a density change. The temperature and pressure at which this occurs is the critical point. Put simply, at the critical point liquid inside the specimen changes to gas in such a way that no stress is caused to the sample.

The choice of fluids is very limited and carbon dioxide is universally used today. With CO_2 a critical point of approx. 35°C can be achieved at a pressure of around 1200 psi. Therefore, if the water is replaced with liquid CO_2 and the temperature then raised to above the Critical Temperature the liquid CO_2 changes to vapour without change of density and therefore without surface tension effects which distort morphology and ultrastructure. Since liquid CO_2 is not sufficiently miscible with water it is necessary to use an intermediate fluid which is miscible with both water and CO_2 such as methanol, ethanol, amyl acetate or acetone.

Model E3100



Simple robust construction, easy to use and service. Features a horizontal sample chamber with large viewing window. Three pressure valves permit easy connection to the liquid CO_2 cylinder, liquid agitation and venting of the chamber. Every CPD is pressure tested to 2000 psi at an independent laboratory and a pressure-bursting disc is fitted to safeguard against misuse. There is a range of specimen holders available to accommodate most types of specimens (including very small), grids and cover slips.

The design of the **E3100** features a horizontal pressure chamber 64mm internal diameter x 100mm in length. Integral water jacket, removable rear door and front 25mm viewing window, temperature and pressure gauges, safety over pressure bursting disc, C133/3 tissue holder with baskets, flexible CO_2 connector and water hose.

C133/L Critical point dryer model **E3100**		each

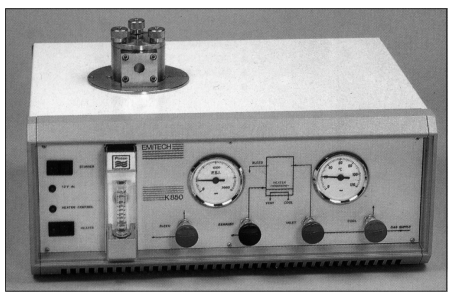
Accessories for C133/L

C133/01	Specimen holder for 3.05mm Grids	each
C133/08	Replacement safety bursting disc	each
C078/1	Porous specimen pots 12.7mm 15.7mm	pack 10
C080/1	Porous specimen pots 25.4mm x 25.4mm	pack 10

Accessories for C133/L
C133/L07 Specimen holder for tissue (boat)
C133/L08 Specimen holder for coverslips

Spares available - please ask

Model K850



Simple to operate, the **K850** is an alternative model to the CPD7501 when cooling water in **not available** or **desirable**, The **K850** is fitted with Thermoelectric Heating and adiabatic cooling and temperature control of +5°C on cooling, and +35°C on heating. The chamber is vertical with top loading to ensure specimens do not become uncovered during the drying process. There is a side viewing port to locate the meniscus for the correct level when initially filling the chamber. Normal operating temperature 35°C, pressure 1500 psi. The chamber is illuminated and has a side viewing port with protective shield. There is pressure monitoring with a pressure relief valve and rupture disc protection.

C207	Critical point dryer model K850	each

Accessories

C207/H	Specimen holder	each
C207/C	Porous specimen pots	pack 10

Critical Point Dryers - continued

Leica EM CPD300 Automated Critical Point Dryer

The drying of biological specimens such as pollen, tissue, plants, insects, as well as industrial samples, for example MEMS (Micro Electro Mechanical Systems) for SEM analysis can be prepared in the Leica EM CPD300 Critical Point Dryer, fully automatically.

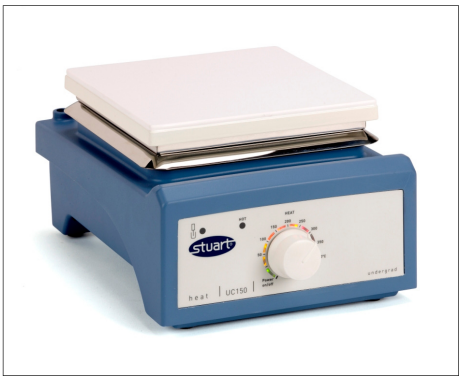
To ensure a low CO_2 consumption and a very short process time a new filler concept was developed. Special attention has been turned to safety by implementing software controlled cut-off functions and integrating a waste separator for safe and easy disposal of exchange fluid thus avoiding direct contact with the user. The drying of biological specimens in the Leica EM CPD300 Critical Point Dryer is fully automatic.

A wide selection of specimen holders is available to suit every sample.

CXXX EM CPD300 Critical point dryer

Hotplates & Magnetic Stirrers

Hotplate – Ceramic



US160 Energy efficient, fast response and accurate.
The glass ceramic top gives excellent chemical and temperature resistance, is easy to clean and stays cool at the edges. The cast aluminium body is shaped for stability and also helps deflect spills away from the controls and the user. The instrument is built to a very high standard with fitting for detachable retort stand situated on the back of the instrument.
The "Hot" warning light will flash whenever the plate temperature is above 70^{0}C and will operate even when the hotplate is turned off if the unit is still connected to the mains.
An independent safety circuit protects against overheating and internal electronic components are protected against corrosion.
The models featured have an analogue displayed temperature and speed control.

Maximum temperature 450°C. Heater power 500 watts. Plate area 15 x 15cm.
Overall dimensions – H12.2 x W17.2 x D25.0cm. Weight 2.2Kg.

H063	US160 Ceramic top hotplate 230v 50/60Hz	each
M131	Retort rod, plated mild steel 600 x 12.0mm dia.	each

Hotplate—Coated Aluminium/Silicon

UC150 Rugged and reliable hotplate with 15 x 15cm cast aluminium/silicon alloy top which will easily withstand the knocks of everyday use. The cast aluminium body is shaped for stability and also helps deflect spills away from the controls and the user. Fitting for detachable retort stand situated on the back of the instrument.
The "Hot" warning light will flash whenever the plate temperature is above 70^{0}C and will operate even when the hotplate is turned off if the unit is still connected to the mains.
Maximum temperature is 325°C with heater power of 700W.
Overall dimensions – H11.0 x W19.0 x D30.0cm. Weight 3.4Kg

H059	UC150 Hotplate	230v 50/60Hz	each
M131	Retort rod, plated mild steel 600 x 12.0mm dia.		each

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