



Low Mass Hot Suction Table

Hi, I am Robin Hodgson, the RH of RH Conservation Engineering, and conservator of furniture and wooden objects.

Ask attendees to introduce themselves, and write their names on a list or leave cards.

RH Conservation Engineering designs, manufactures and supplies the most innovative and technically advanced equipment for the conservation and preservation of our human and artistic cultural heritage, it's found world-wide in major collecting institutions, commercial and public conservation centres, as well as the studios of conservators in private practice.

As a conservator myself, I ensure all RH equipment meets the stringent requirements of our profession. I design each piece of RH equipment in conjunction with conservators in the particular areas of specialisation the equipment is to be used. This approach makes RH equipment as user friendly as possible, whilst offering the most efficient and appropriate treatment solutions.

When you deal with RH Conservation Engineering you are dealing with a colleague not sales personal.

If you have any questions or suggestions regarding my equipment, please contact me. One of the pleasures of my work is that I get to discuss with committed colleagues, the needs and possible solutions to problems we as professionals face.

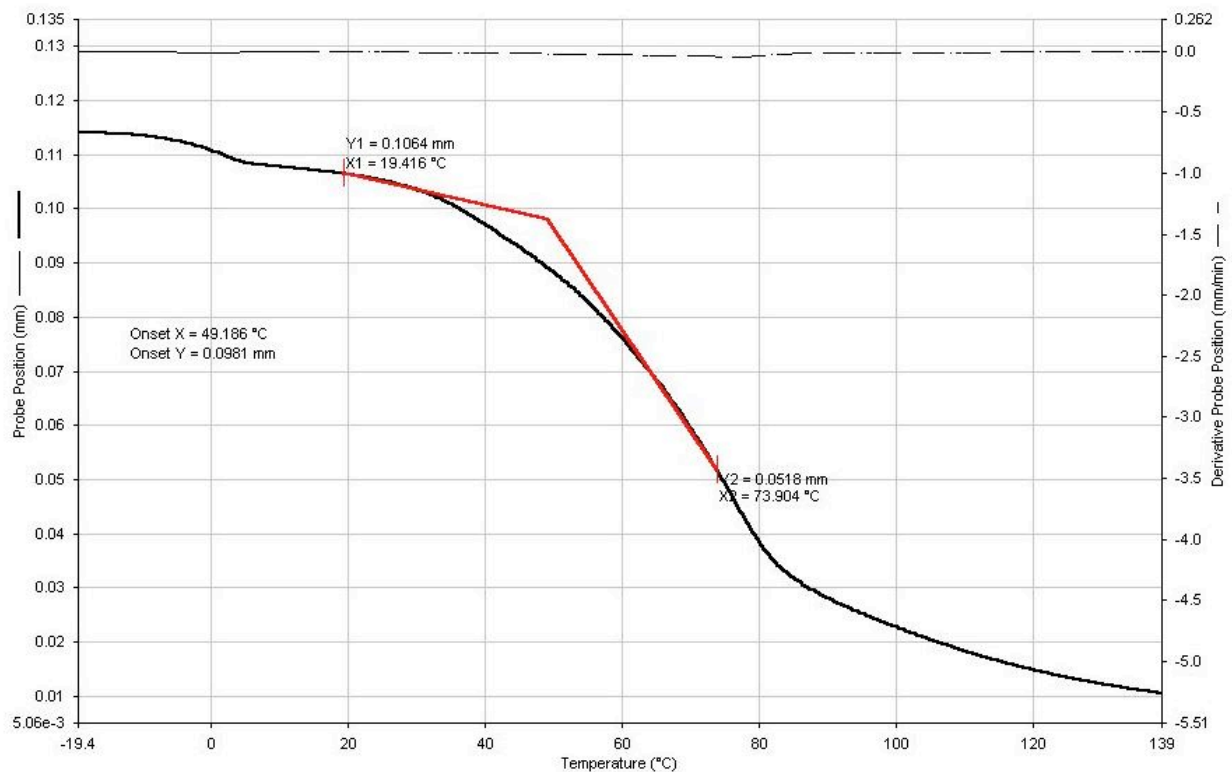
RH Conservation Engineering is proud of our online site, please explore it, bookmark it and come back from time to time as it is constantly evolving. The RH website contains video showing the use of RH equipment together with full text and image descriptions of my range. The US and Euro price list on the site are ex New Jersey and Buckinghamshire, UK, so there is only local freight to pay from there. I want you to experience as close to hand as possible, the benefits of using RH equipment, and not to forget, how it adds to the professional appearance of your workspace. Before you next purchase a piece of conservation equipment, I want you to be confident in choosing RH Conservation Engineering.



Low Mass Hot Suction Table

The genius of this table came from the aging of the indigenous art created in the 60's and 70's in Australia. With the introduction of acrylic paints in this genre, together with the increasing commercial demand for works on a portable support, acrylic on canvas, as in other parts of the world increased in this time. However, in the Australian indigenous work, natural ochres were frequently mixed in the commercial artist paints and there by reduced the medium to pigment ratio. This has brought about the early paint deterioration in these works. In response to this situation, together with the experience I had in converting a hot table from the 70's to a hot suction table, I realised that the existing technology of the hot suction table was not sufficient for acrylic works, or indeed I felt for paintings in oil medium either.

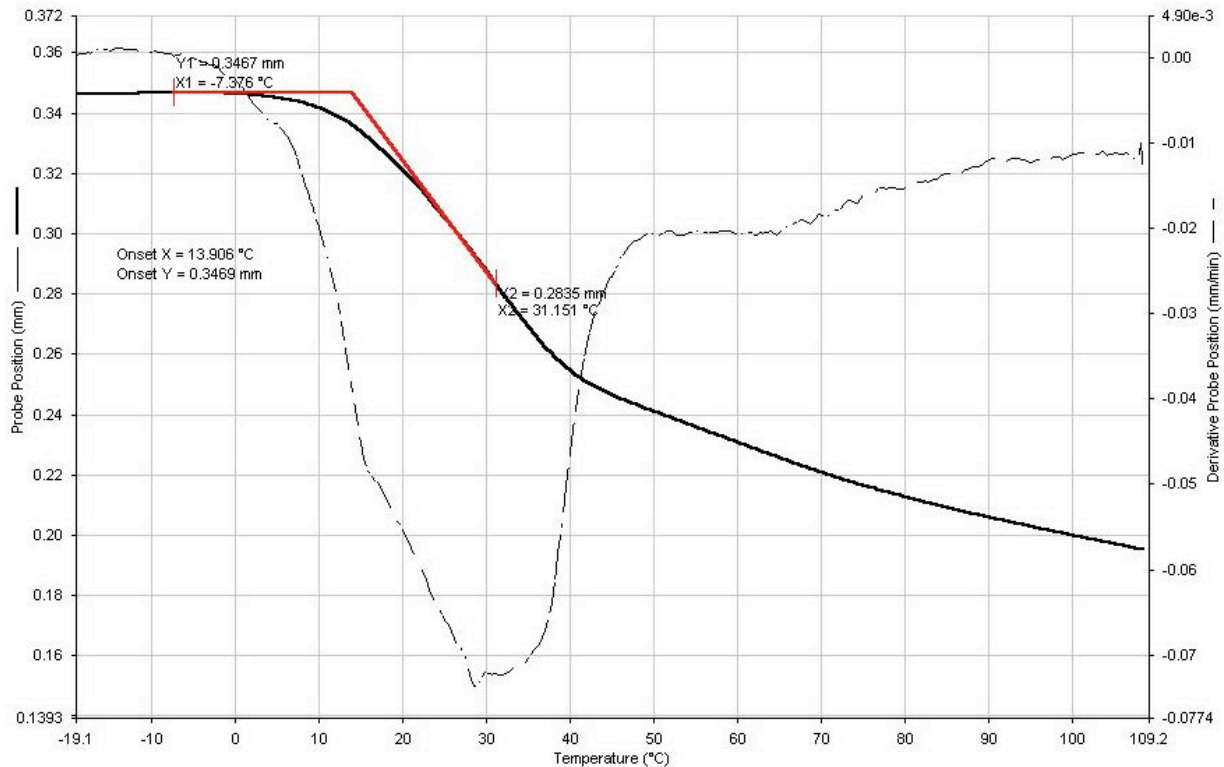
To start with, lets get to understand a basic difference in the thermal properties between an artists oil and acrylic mediums. This plot is the result of the determining the Tg of a sample of an aged oil medium, the Tg is indicated by the green line. This sample came from an oil painting on canvas from the 1987.





Low Mass Hot Suction Table

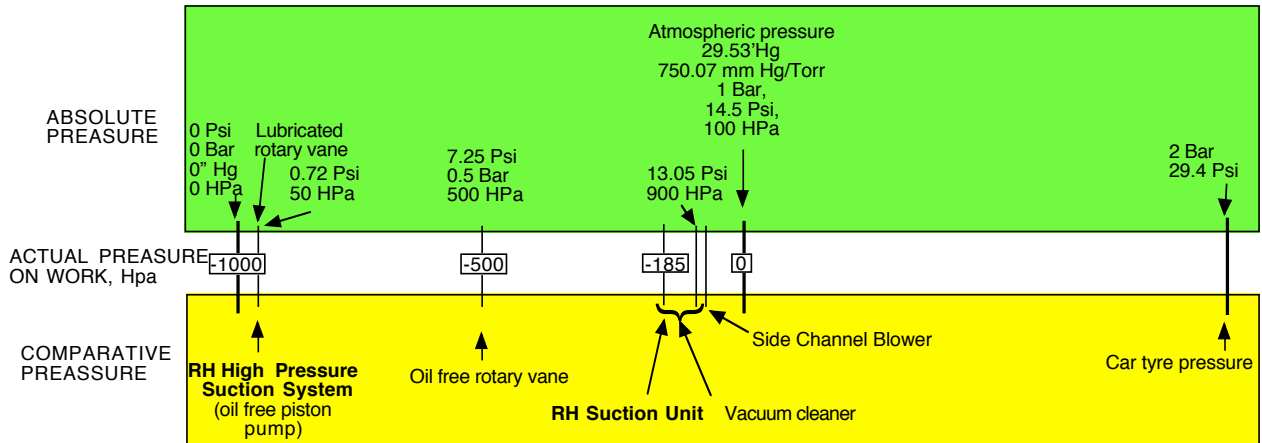
This plot is the results of the determining the T_g of a sample of an aged acrylic medium, Windsor & Newton Artist acrylic Colour, Cadmium Red PR108, it came from a sample panel prepared November 2003, the T_g is shown by the red line. Compare that with the green line of the previous test on the oil medium. From these results it can be clearly seen that where as a traditional oil bound medium will change phase from a solid to liquid at just under 50°C, the acrylic sample makes this change at just under 14°C. This demonstrates why structural treatments involving heat are so effective when dealing with acrylic media, however with it's very reactive nature, a new level of precision is required in these treatments.





Low Mass Hot Suction Table

Suction Treatment Vacuum Line



RH	Suction Treatment Vacuum Line	
	Drawn by: Robin Hodgson	Date 01-07-02
	Scale	



Low Mass Hot Suction Table

Explain principle of traditional hot lining table:

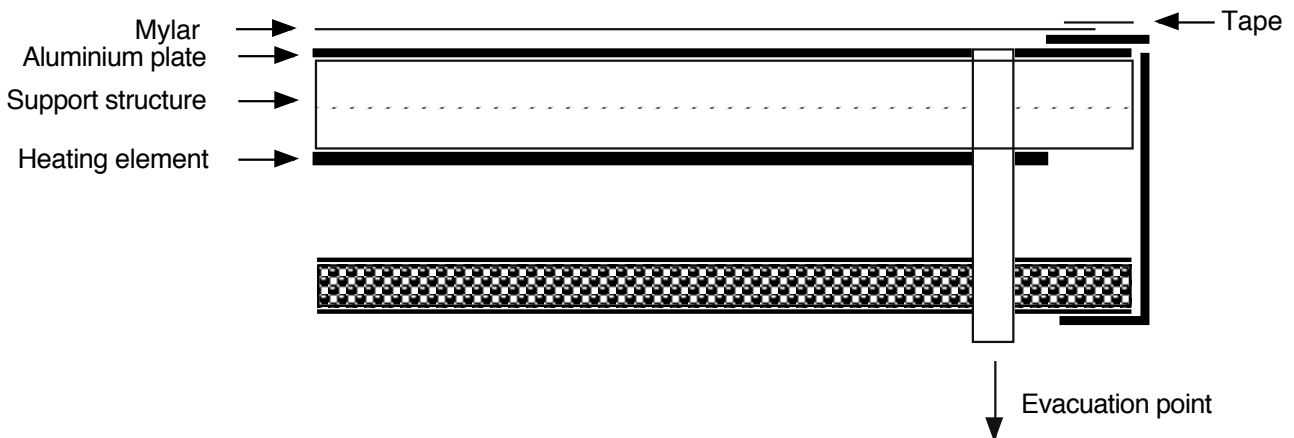
High mass to even out irregular heat.

High vacuum to evacuate air over long distances resulting in flattening of impasto.

Works treated are limited by the table size.

Suppliers had problems supplying large tables with a single joint free top.

Cross Section of traditional hot lining table.



	Traditional Hot Lining Table Schematic	
	Drawn by: Robin Hodgson	Date 07-08-02
	Scale 1:1	



Low Mass Hot Suction Table

Explain principle of traditional hot suction table:

Suction over the entire top surface.

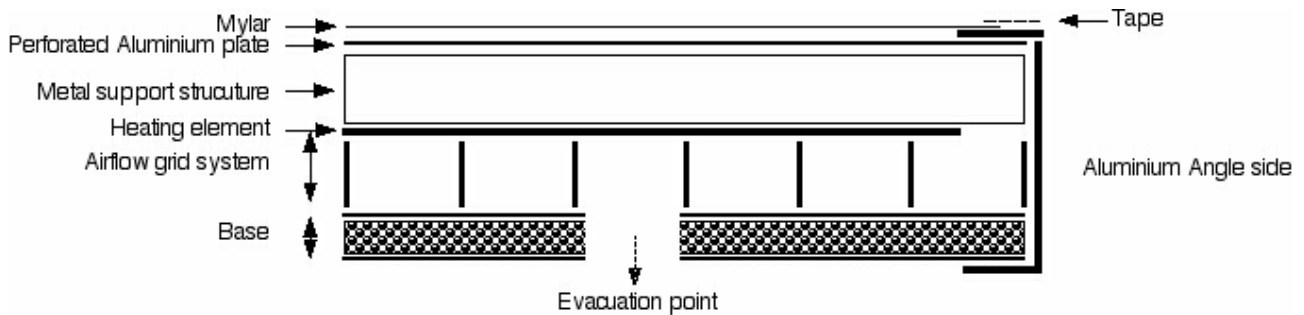
Mass to even out irregular heat but less than a traditional hot table and therefore uneven heat output.

Treatment size limited by table size.

Typically complicated to operate.

Suppliers have problems supplying large tables with joint free tops.

Cross Section of traditional hot suction table



	Traditional Hot Suction Table Schematic	
	Drawn by: Robin Hodgson	Date 01-07-02
	Scale 1:1	



Low Mass Hot Suction Table

Principle of The RH Low Mass Hot Suction Table:

Features this design offers:

- fast to heat up and cool down.
- possibility to treat oversize works.
- easy to operate.
- extremely uniform heat output & vacuum.
- Large table sizes with a single top.
- more affordable

Low mass, therefore quick heat up and cool down yet even heat output due to our unique heating system.

Very smooth canvas weave surface that is sympathetic to works, not hard and sharp with localised perforated holes.

Able to treatment oversize works in a “mosaic” pattern without impressions.

Even heat output with precise digital control.

Offers options for humidity treatments

Ease of operation.

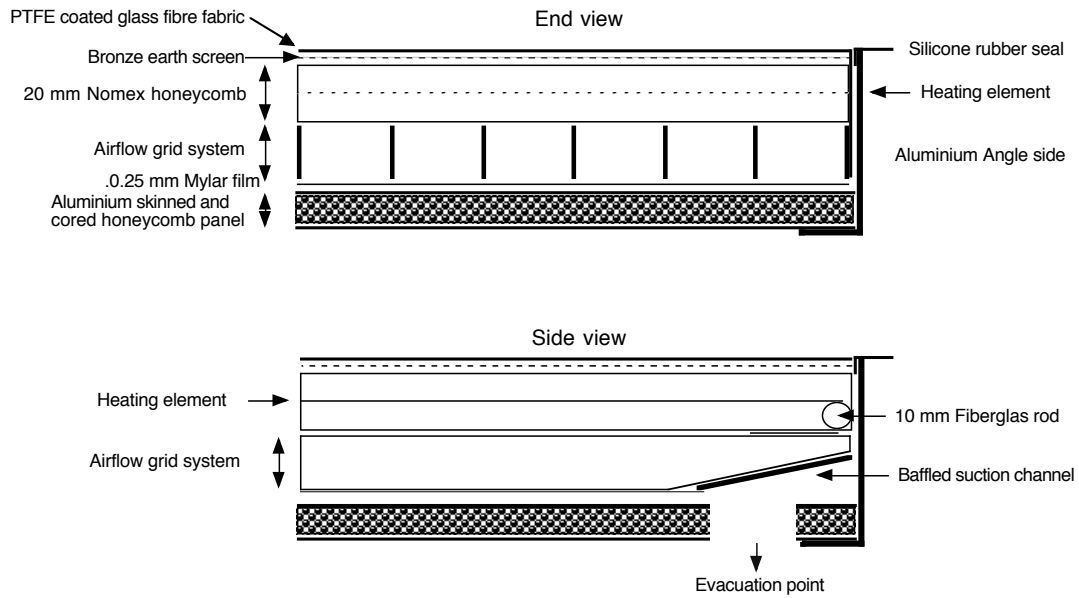
Precise vacuum control

Sizes up to 4.0 m x 2.4 m.



Low Mass Hot Suction Table

Low Mass Hot Suction Table Schematic



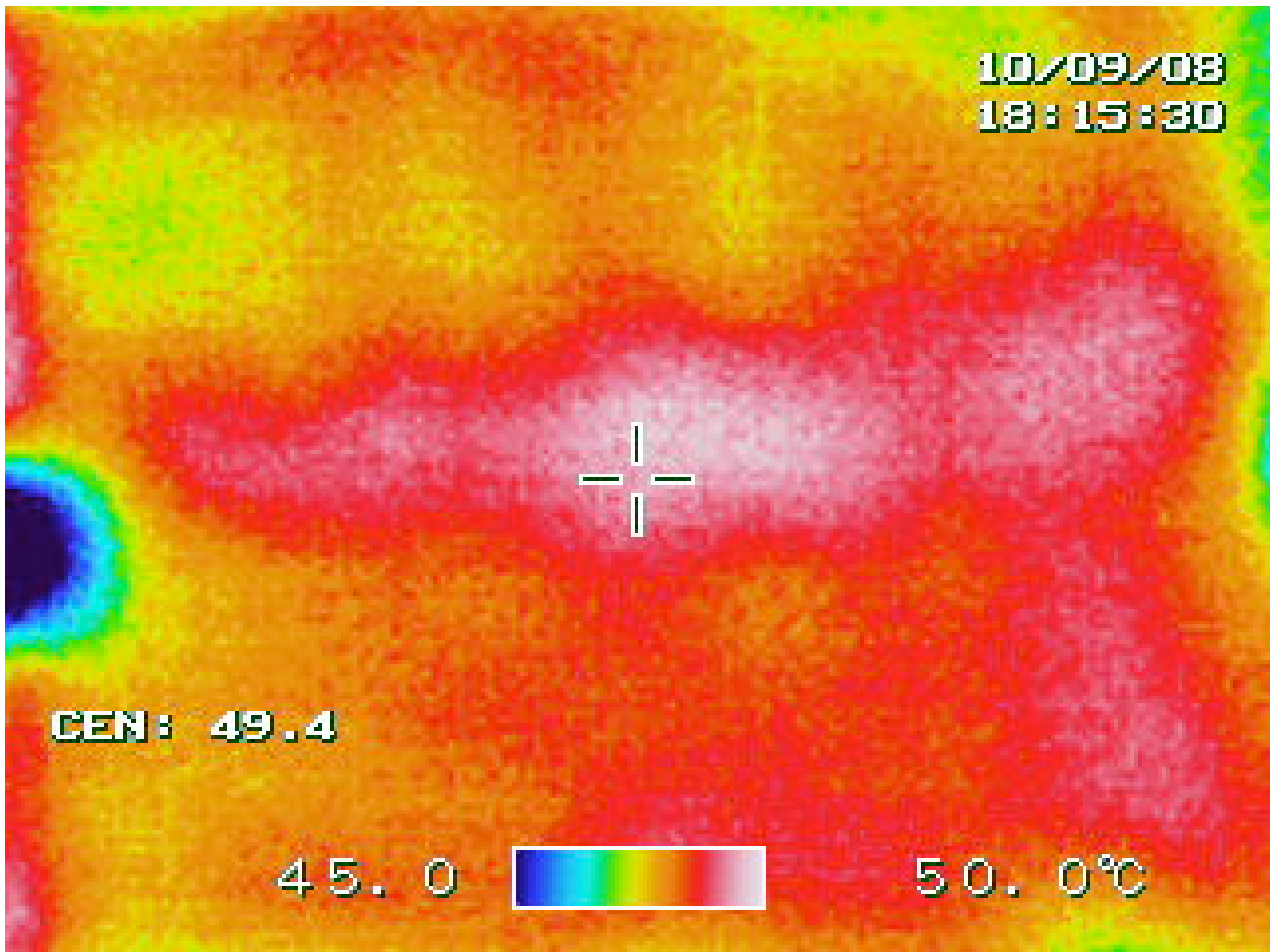


Low Mass Hot Suction Table

This is a thermal image of the top of an RH Low Mass Hot Suction Table in operation at 50°C, 160 Hpa with only the latex membrane on the top. This image was taken with a Mikron Infrared MikroSHOT B, 120 x 160 pixel sensor. As you can see from the rainbow bar on the lower side of the image, the variation is less than 3°C. With a canvas on the table, the insulating properties of the canvas reduce the variation by reducing the localised cooling. Something to note on this image is the cold area on the left hand end of the screen, this was an air leak due to an incorrectly fitted bung in the additional evacuation port on the underside of the table. No additional insulation would rectify the cooling due to the air leakage around the bung. However, refitting the bung resolved this. Utilising thermal imaging makes the diagnosis of the problem not only easy but also very accurate. As it is a non contact technique, the instrumentation involved doesn't effect the results. The temperature variation on the top is also effected by air currents passing over the top from the edge of the table, this causes the hotter spot in the centre as the heat is drawn there by the airflow in the "chimney effect. The insulating properties of the work diminish this, further insulation over the top stop this altogether. but of course it is not then possible to image the temperature of the top of the table.



Low Mass Hot Suction Table



What treatments can you do with the RH Hot Suction Table:

Linings naturally - full & strip, realignment of tears, using all adhesives, (hot and cold).

Relaxation-Humidification / Flattening treatments.

Consolidation treatments on cleavage in paint layers.

Removal of old linings.

Preparation of composite linings prior to lining of work



Low Mass Hot Suction Table





Low Mass Hot Suction Table

How to set up RH Hot Suction Table:

Connections in side of Hot Suction Unit

Connect hose to table and then to HSU and the cable from the table to the back of the Hot Suction Unit. How to set up RH Hot Suction Table:

This is the back of the Hot suction Unit,





Low Mass Hot Suction Table

Basic Operation:

How to turn on

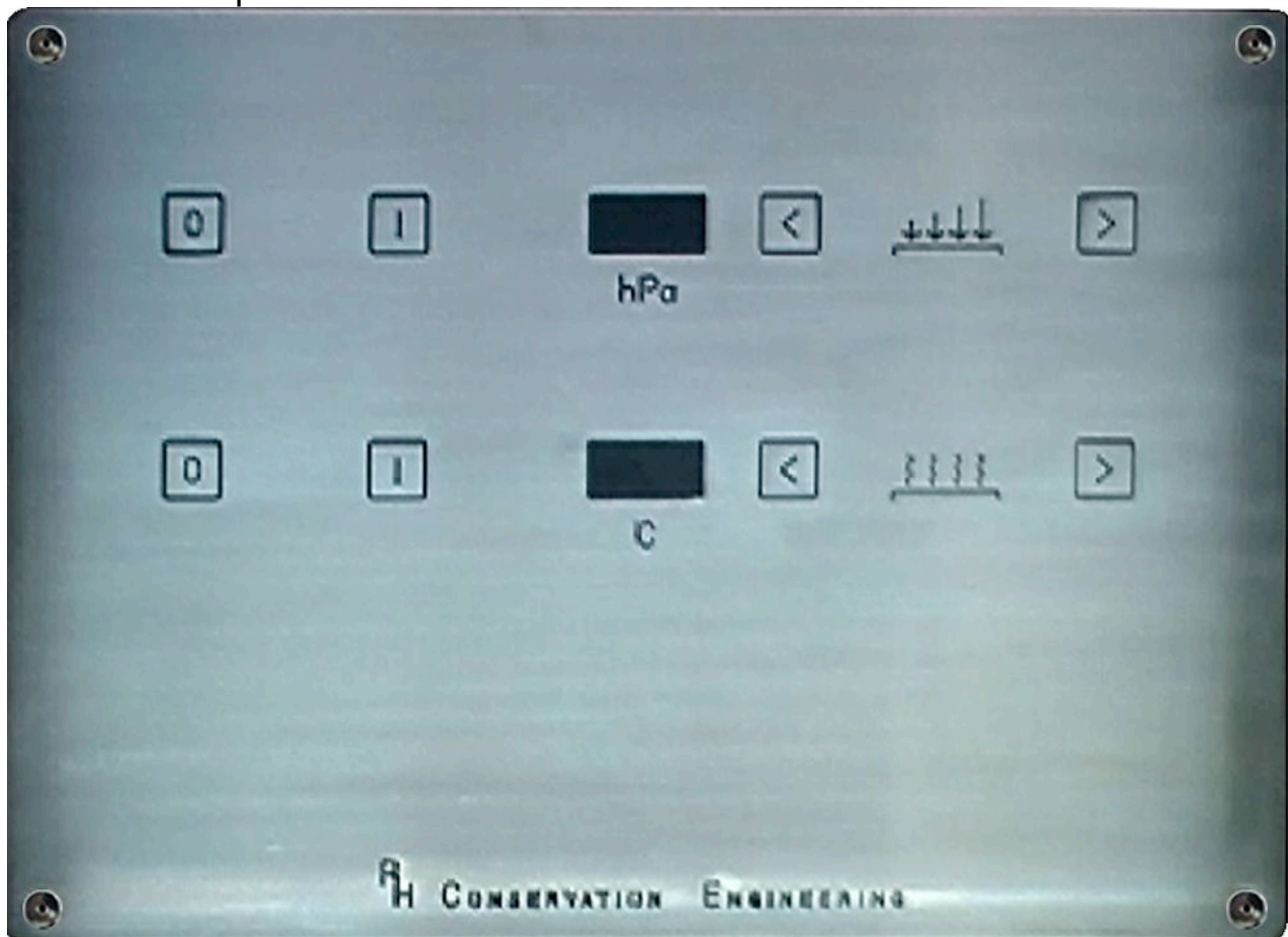
How to adjust vacuum

Readouts

How to adjust temperature.

Air leaks cause cooling due to low mass, use the lowest possible vacuum.

Pic of control panel





Low Mass Hot Suction Table

The temperature sensor, an, NTC (negative temperature coefficient) type thermistor is located in the very centre of the table. The weighs just 0.03 grms, the reason such a low mass sensor is that the mass of the sensor will effect the result. In the RH table, the temperature controller is calibrated to compensate for this effect. This is why non contact temperature sensing such as infrared imaging together with it's "snap shot" view are preferred as it doesn't effect the result.

The thermistor is located in the centre of the table to make is easy to ensure the work being treated is being included in the area being measured for surface temperature. When setting up the work, it id necessary to ensure at least one part of the work is located over centre of table.





Low Mass Hot Suction Table

Connect to P.C. & log

Outline of types of treatments of completed on the RH Hot Suction Table:



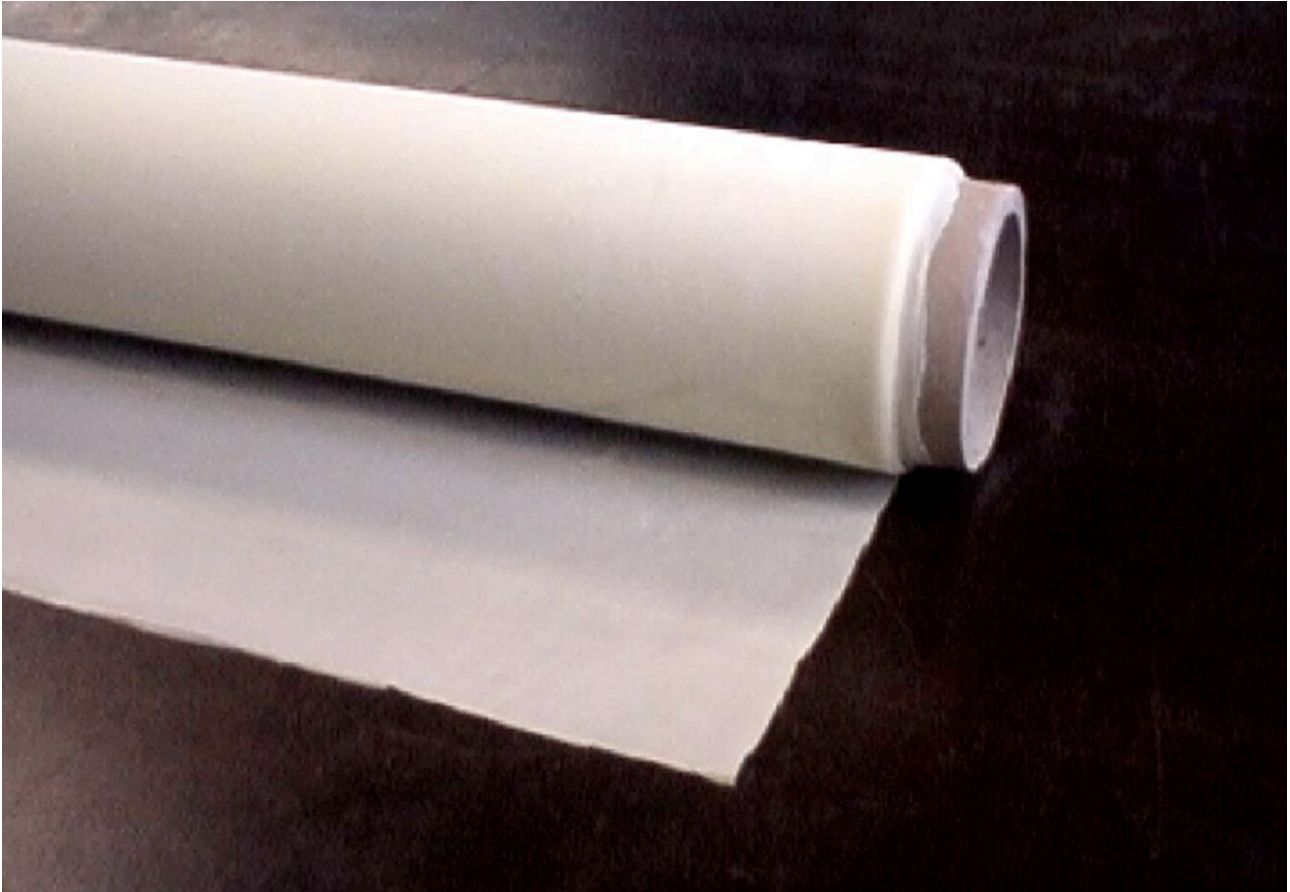


Low Mass Hot Suction Table

Choice of consumables: (Circulate samples)

Top covers - Latex, Mylar, Dartec, Reuse of Mylar

Use of blotters.



Cleaning:

Top surface.

SS control panel.

Anodising.

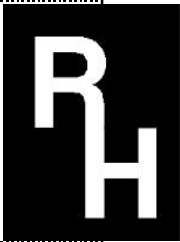


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Now, I ask you as a fellow conservator this bottom line question, "Why would you pay more for less"?

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RH Conservation Engineering

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