

Germ Test

- *Simultaneous testing of both sample halves.*
- *At least SIX sample tests with independent start times can be conducted together.*
- *Process temperature continuously monitored in the test vessel.*
- *All equipment powered via a single mains input*
- *Quiet vacuum pump can be sited away from work surface*
- *A control unit allows simple evacuation of the test vessel to 850 mbar*
- *Extremely economical and efficient 350 watt heater module (aprox 200 watts if using 110V ac)*

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Testing malting barley (and other seeds) for a viable germ has never been simpler. This cost-effective solution has been developed in conjunction with end users to meet the need for fast turn-round testing in one space efficient unit.

The thermostatically controlled test vessel maintains $40 \pm 2^\circ\text{C}$ using negligible power. The thermostat is limited to 50°C so that overheating of the test salts is not possible. One button of the control unit allows temporary energization of the vacuum pump whilst the other button allows evacuation or venting of the test vessel. Once evacuated, the efficient vacuum seals maintain negative pressure throughout the test.

The vacuum pump is small, very quiet, requires no oil and is virtually maintenance-free. It takes about 5 seconds to achieve its max 25" Hg (850 mbar). It is supplied with sufficient pipe-work and cable to allow under-bench mounting.



The thermometer continually monitors the temperature of the test fluid. It is a compact battery powered unit that turns it's display off after 10 minutes to conserve power. Typical battery life is about 5000 hours. One press of the ON/OFF button restores the display.

The heater is marked with a steady state 40°C set point on the thermostat, although a typical range of $\pm 2^\circ\text{C}$ can be expected. The test vessel will hold up to SIX double test slides at once and there could be regular adding and removal of individual slides. This will obviously remove heat from the test vessel and drag the temperature down. It may therefore be necessary to edge the thermostat up a little during the working day to achieve speedy restoration of the test temperature. However, at the end of each day set it back to 40°C. The system has been designed to be left on continuously and in its 40°C idle mode, the 350 watt heater is on for about a minute each hour. There is a physical fixed stop on the thermostat that limits system temperature to about 50°C.



The test process is manually controlled. When the fluid temperature is correct (at or just above 40°C) insert a maximum of 2 slides and place the lid on the test vessel. Press the VAC PUMP ON button and hold it to keep the pump running, then press the OPEN VAC VALVE to evacuate the test vessel. The vacuum will quickly settle to about 25”Hg., at which point, release the OPEN VAC VALVE to seal the vacuum in the test vessel and then release the VAC PUMP ON to stop the vacuum pump. The vacuum may drop very slowly but should still be above 15”Hg after the ten minute test period. Releasing the vacuum can be done in one of two ways. Press the OPEN VAC VALVE button several times OR press the vent button next to the temperature indicator on the test vessel lid.

After 3 or 4 minutes it will be OK to introduce another 2 slides and reseal the test vessel. After another 3 or 4 minutes it will be OK to introduce slides 5 and 6.