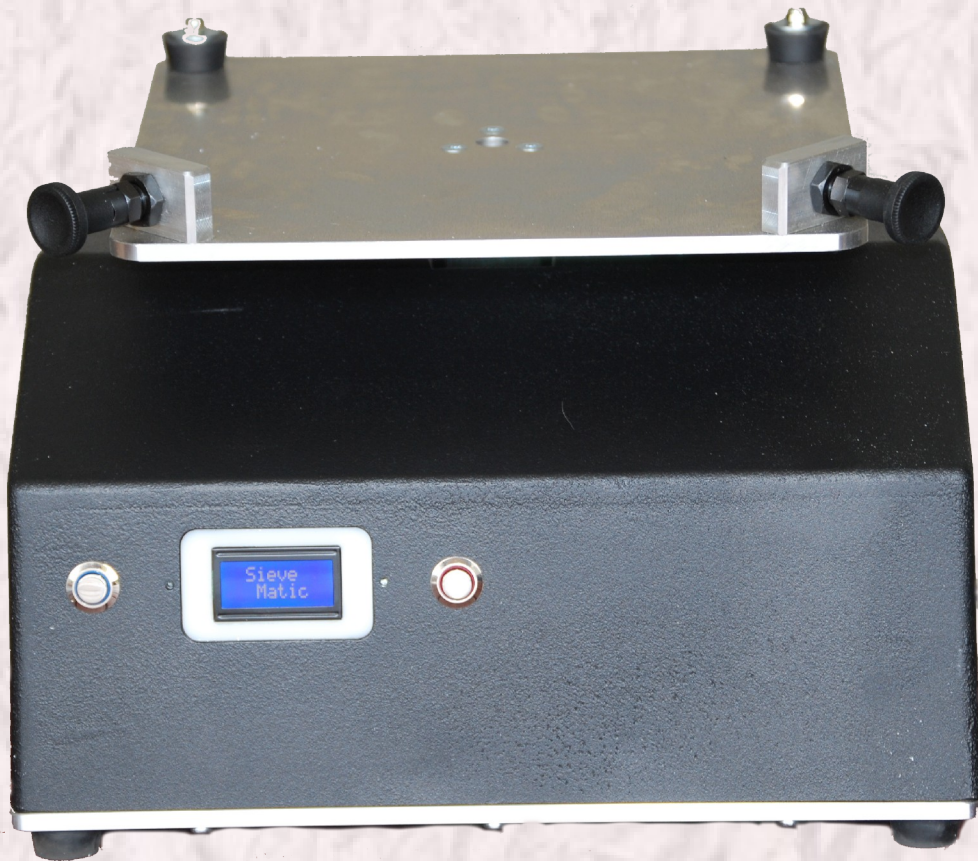


SieveMatic



A new generation in Screenings
assessment by mechanical means

Background

Analysis for the level of Unmillable Material or Screenings by hand-held sieve is one of the oldest and most simple tests applied to grains and pulses. This age-old process may seem simple but it has proven difficult to achieve rapid, reliable and reproducible results in practice. However, the recent application of technology to the test enabled a rapid improvement in its reliability from the introduction of more precisely defined sieves with accurately cut slots and the introduction of a mechanical action to the process. After this, a number of devices have entered the market and in mid



1990's, the sieving methodology, the *Agtator* device was introduced into the Australian grain testing market. Since this time, however, little further development has occurred with mechanical sieving devices despite rapid change within the marketing environment. Grain Trade Australia (GTA) is the peak industry body and it recognises the benefits of objective assessment of all measured quality parameters. A reference method is required for all Standards but industry allows for any field assessment method to be used providing it correlates to the respective reference method. For Screenings and Unmillable Material assessment in cereals, the documented industry quality standards have as their reference a mechanical device. So, it was in this context that SieveMatic was developed to provide a new, innovative and technologically advanced alternative to the existing technology applied to the objective assessment of Screenings and Unmillable Material in grains and pulses.

Technological Overview

SieveMatic is compact being 340mm (w) × 330mm (d) × 230mm (h) and weighs in at 16kg. As a mechanical screenings device, SieveMatic ticks all the boxes in relation to the reference methods as laid down by GTA for wheat and barley (which is also applied to other cereals and can be by default, pulses). Namely:

1. 40 shakes in 68 seconds;
2. Utilises the same mechanical action as the reference instrument;
3. Accommodates all 300mm sieve pans; and
4. Provides results that are statistically indistinguishable from the current reference method.

Internal company testing of SieveMatic has revealed that results from this process are highly reproducible with little spread about the mean in replicated analyses. Provided below is a graphical representation of a series of trials running SieveMatic in parallel with the current reference GTA method. From the tabulated results a clear statistically significant correlation exists between the reference method and SieveMatic with no discernible bias.

Internationally, SieveMatic also has the potential to be utilised within GAFTA & FGIS frameworks for methods requiring hand or mechanical sieving.

Features:

Styling & durability & electrical safety.

Manufactured from cast aluminium SieveMatic is distinctive with a brushed powder coated finish to ensure longevity in the most rugged of conditions. The internal mechanisms and electronic components have been independently audited to ensure compliance with relevant Australian and International electrical and safety standards. The electronics are also protected by an in-built power supply that is separately fused and similar to those used in desktop computers. SieveMatic also readily accommodates a range of voltage configurations to suit any international requirement.

“Soft-Start”

Pressing the start button to commence the test engages “Soft-Start” and the screen will gently and slowly pivot away from the user. This function has two benefits; firstly it is a safety feature as it allows the user ample time to move away from the instrument’s moving sieve plate. Secondly, “Soft-Start” also allows the commodity on the sieve to spread itself out across the entire screen before the test commences. From a methodological perspective this is a critical means to ensure an even and consistent approach to the process.



“Soft-Finish”

“Soft-Finish” is where, towards the completion of the test, the sieving action is slowed for the last shake such that the instrument comes to rest gently at near horizontal position (slightly inclined towards the operator). This action will not force any grain retained within the sieve slots to be dislodged due to any harsh forces stopping the circular action of the test method.

“Snooze-mode”

SieveMatic, if not utilised for more than 5 minutes, enters into “Snooze-mode” where the power is cut to the motor and the electronics which saves power and also ensures all electronic and mechanical parts do not overheat. To show the unit has entered “Snooze-mode” the LCD display will remain lighted but the back-light to the start button is dimmed. To recommence the test, simply requires the start button to be depressed.

Multi-mode Operation with easy to read back-light LCD screen

The easy to read LCD screen contains the analysis counter which, once the blue start button is depressed, projects the number of shakes remaining until completion. Of note, once the test has commenced, the progress of the sieving action cannot be interrupted; re-pressing the

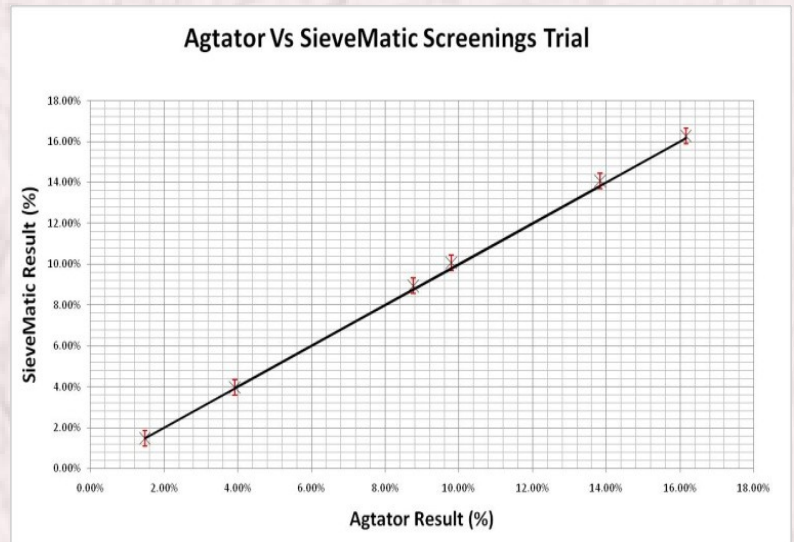


start button has no effect. By default, SieveMatic is set to 40 shakes but this can be readily changed by pressing and holding the red-button for 5 seconds until the mode is changed. At present, the second mode is for 20 shakes, but this can be tailored to suit individual needs.



Reference Method Validation

Internal company trials of SieveMatic show results which correlate highly with the current GTA reference method. The actual method to validate SieveMatic used a set of wheat samples covering a screenings range from below 2% to in excess of 16%. Results were measured multiple times on *Agtator* equipped with a certified 2.00mm sieve and then on SieveMatic with the same samples and certified sieve. The vertical error bars on the graphical representation of the trial results show a small spread around the mean SieveMatic result. This observation is confirmed by the smaller co-efficient of variation for the SieveMatic results when compared to those of the reference method. Independent verification of this relationship between the two methods is currently being undertaken.



Technical Specifications

Model	SieveMatic
Dimensions	340mm (w) × 330mm (d) × 230mm (h)
Weight	16kg
Power Requirements	220-240VAC, 50Hz
Power Consumption	45 Watts
Operating Temperature	+5°C to +45°C
Max weight capacity	2L of grain plus weight of sieve(s)
Other conditions	Keep level when operating

Further Information

For more details please contact us or our nearest distributor at the following:

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