What's New in Version 2.41

Update Type

V2-41T1U2-41T1-X.stf contains the following upgrade details.
1. Controller Firmware V2.41
2. HMI Touchscreen 2.41 (User Interface)
3. Profile Export pro-forma to suit version 2.41
This update includes all the patches (if any) applied to previous versions.

Purpose

Version 2.41, was the result of several users reporting unstable results with 2.40 and it was quickly determined that this was generally with SuperTrickler Gen 2 machines. V2.41 has made two changes to resolve these problems and at the same time we added a few features for good measure.

Technical Note

V2.41 is dynamically very different than previous versions below V2.30 and will require some significant changes to the profile settings that operators will be use to and it is recommended to reset your exiting profiles and allow the system to relearn them. Once this has taken place you can look at optimizing them should you feel the need, take your time when optimizing, as your previous knowledge may no longer apply.

IMPORTANT: If you are upgrading from version 2.20 or less then please download and read the V2.40 What's new release notes (especially the Roll Back Strategy).

Install

1. With the SuperTrickler **powered on** and from the main sub menu, remove the Micro SD card (tweezers are a great help).
2. Copy the V2-41T1U2-40T1-X.stf file on the root (top level) directory of the Micro SD card.
3. Reinsert the card back into the SuperTrickler.
4. The system should automatically take you to the Upgrade screen. (System – Setup - System Core – Firmware Update)
5. Press & Hold the Start button for several seconds until the process starts.

## Changes are from the previous Version 2.40 firmware

Deep Settings
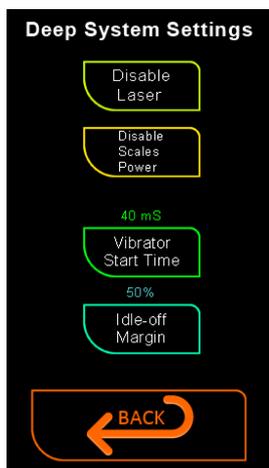
- The Auto Vibrator Timeout has been removed. The system now uses a median average to determine when the minimum speed is operating at required speed. This new system has shown to be more stable than time-based monitoring.

- **Idle-off Margin** default has been changed from 10% to 50%. This was the cause of almost all V2.40 issues with SuperTrickler Gen 2 machines or Gen 1 with an aluminum vibrator tube. We found any machine that has high vibration setting (min > 60) also required a greater difference for the idle speed. This may still need improving even more over time, based upon user feedback.

Other Changes

We pride ourselves on listening to our users, and where practical will implement improvements and ideas as we move forward. In version 2.41 we decided to also include a few of these features along with some changes now, that will set the stage for our future plans.
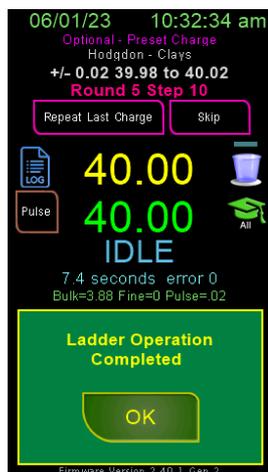
- Ladder completed message. Upon the completion of the ladder program, a message will now display highlighting the completion. This was a user request.

- The SuperTrickler Generation is now also displayed at the bottom of the charge page.

- The statistic will no longer register on a failed charge if a Required Overthrow has taken place.

- If the unit has been in sleep mode or powered down and the actual power is cycled, a screen will now flash up to inform the operator the machine is returning to sleep (sleep or power down mode).

Pulse Dithering

- Pulse Dither 'Normal' has been replaced with 'Medium' to better reflect the setting.

- The dithering strength selection has changed from a rotation key press to an Up Down selection.

The new Function screen.

The statistics hold to reset button has now been replaced with a single touch 'F' function key. Pressing this will bring a function page to allow you to select what function or functions you would like to carry out.

The new function screen is designed for some current functions but also for some future plans, where the use can operate what function they wish to carry out, then press OK to initiate the functions and close the screen. Cancel will simply ignore the selections and close the screen.
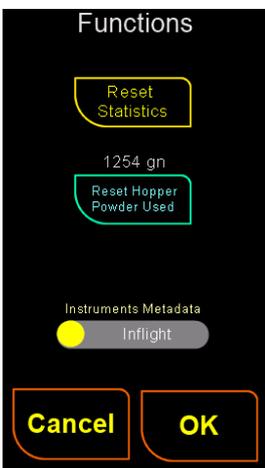
The statistics reset has been moved from holding the reset key on the charge screen to function key, when you select the reset function it will highlight as being selected but will not reset, until OK is pressed, allowing the operator to deselect the function.

The Reset Hopper Powder Used, is part of the Hopper Alert system (see below), this can be reset at any time. The value displayed is the current Hopper Alert Powder Used amount value. The operation is identical to the above statistics reset.

The Instrument Metadata Selection has been moved from the sub menu, options charge screen to the function screen. This now makes changing the selection when fine tuning quick and convenient. Again to initiate the change the OK key must be pressed else all functions selections will be ignored.

Hopper Powder Alert (new system)

We have introduced a new system that can monitor the amount of powder used and will issue an alert when the target amount of powder has been used. The system is theoretical and does not directly monitor the powder in the hopper. The target value is set individually in each profile (preset or powder) under the More Settings….

When a charge is successful, the powder used is added to the register. When the register reaches the value set by the profiles Powder Level Alert a warning will be issued, as the cup is removed from the pan.

The alert can be turned of by simply setting a value of zero or pressing the OFF key on the keypad.

The powder usage register is automatically reset at the start of each session, or when a new powder or preset is selected.

The value can also be reset manually at anytime within the new function menu on the charge screen or when the alarm is activated.

NOTE: From above, on the function screen, the current value is displayed, so that you can monitor the amount of powder used to determine when you notice a characteristic change in the dispensing behavior.

Why does the dispensing behavior change? Powder is granular, as a result when the hopper is full, the weight of the powder compresses the grains at the bottom of the hopper and where the powder enters the vibrating and rotating tubes. With a full hopper this compression is high and this reduces the flow properties of the powder, as the powder is used the weight reduces and the powder begins to flow more rapidly. It gets to a point where the flow characteristics are such that they fall outside of the profiles controlling factors and the number of overthrows rises.

The Hopper Powder Alert will activate when the threshold is reached and the empty powder cup is returned. At this point the Auto (if selected) is suspended and a warning screen will pop up with reset options.

When the alarm pops up, you can select Snooze, this will add 300 grains to the target threshold. The alert will disappear and normal operations will continue.

You can also top up the powder in the hopper and press the 'Reset Hopper Powder Used' this will intern enable the OK button to confirm the reset. This method assumes a fully topped up hopper and will continue operations until the powder used register again reached the target threshold.

Remember: Each target threshold must be set in the profile. The default for NEW profiles is set at 1500 grains and existing profiles should have a value of 0 or OFF.

A guide to Hopper Volumes

- It takes approximately 700gr to cover the powder baffle at the bottom of the hopper.
- If the powder is 75mm or 3" below the top there is approximately 2000gr in the machine.
- f the powder is 50mm or 2" below the top there is approximately 4000gr in the machine.
- If the powder is 25mm or 1" from the top there is approximately 7000gr in the machine.

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