

Automatic Powder Trickler

by Adam MacDonald

Instructions for setup and use

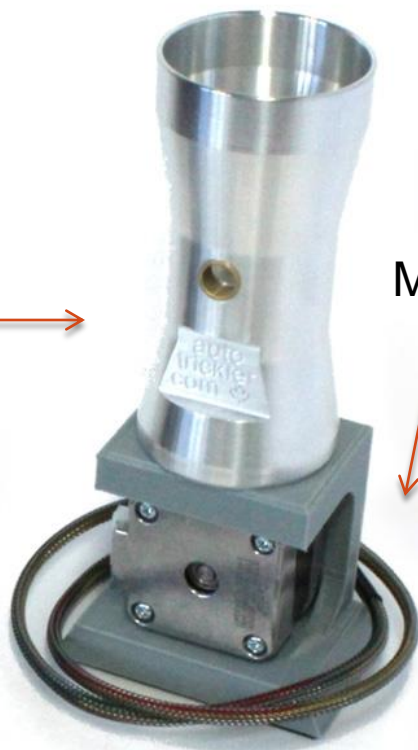
For Sartorius GD503

V2 – September 2016

For updated instructions and optimization guide, visit the website:
www.autotrickler.com

Parts

Trickler / motor



Motor wire



Electronics unit



12V Adapter



Pulley belt (3)



You will need:

- Sartorius GD503
- Powder tray
- Philips screwdriver



Trickler tube and handle



Tray holder

Assembly: trickler tube



The handle is already installed in your tube.

If necessary, it can be removed from the tube with a careful twisting and pulling motion.

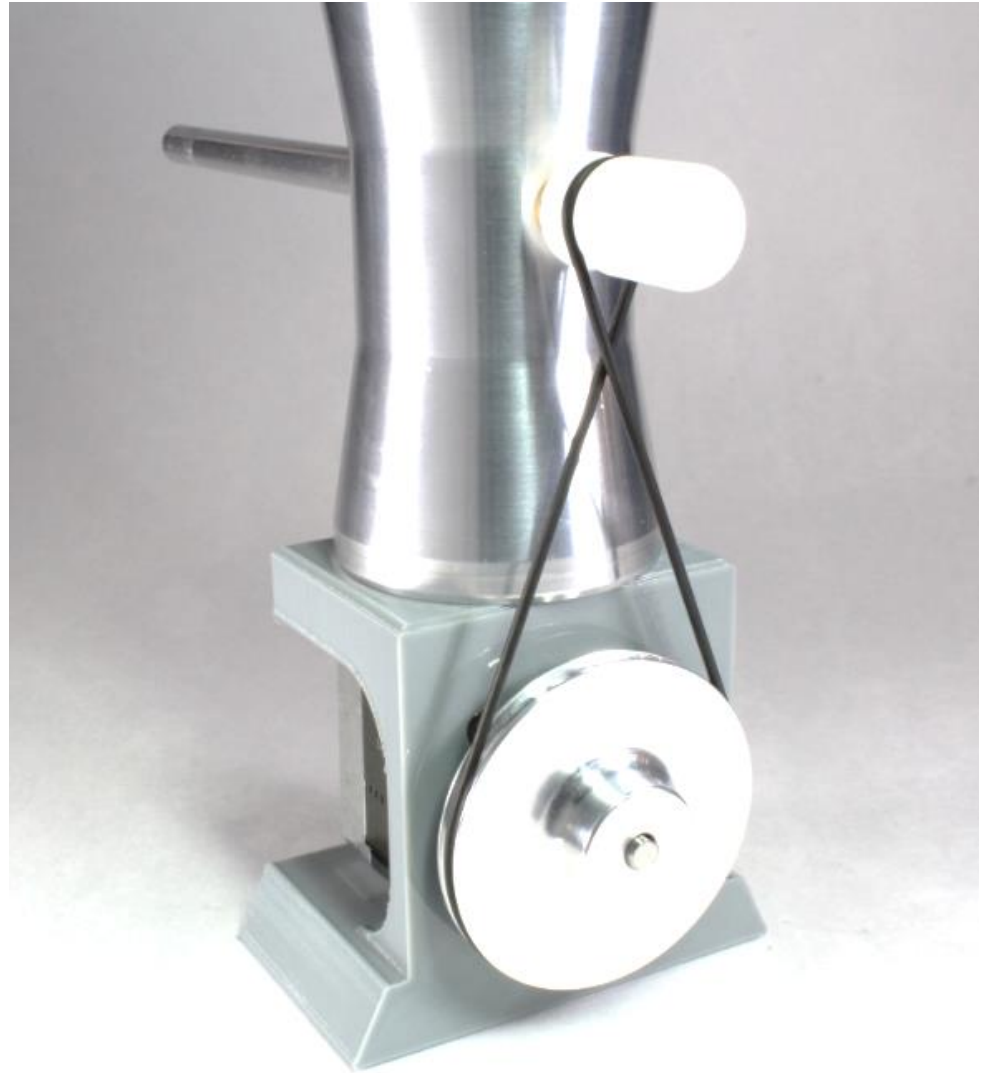
With the handle installed, insert the tube into the trickler.



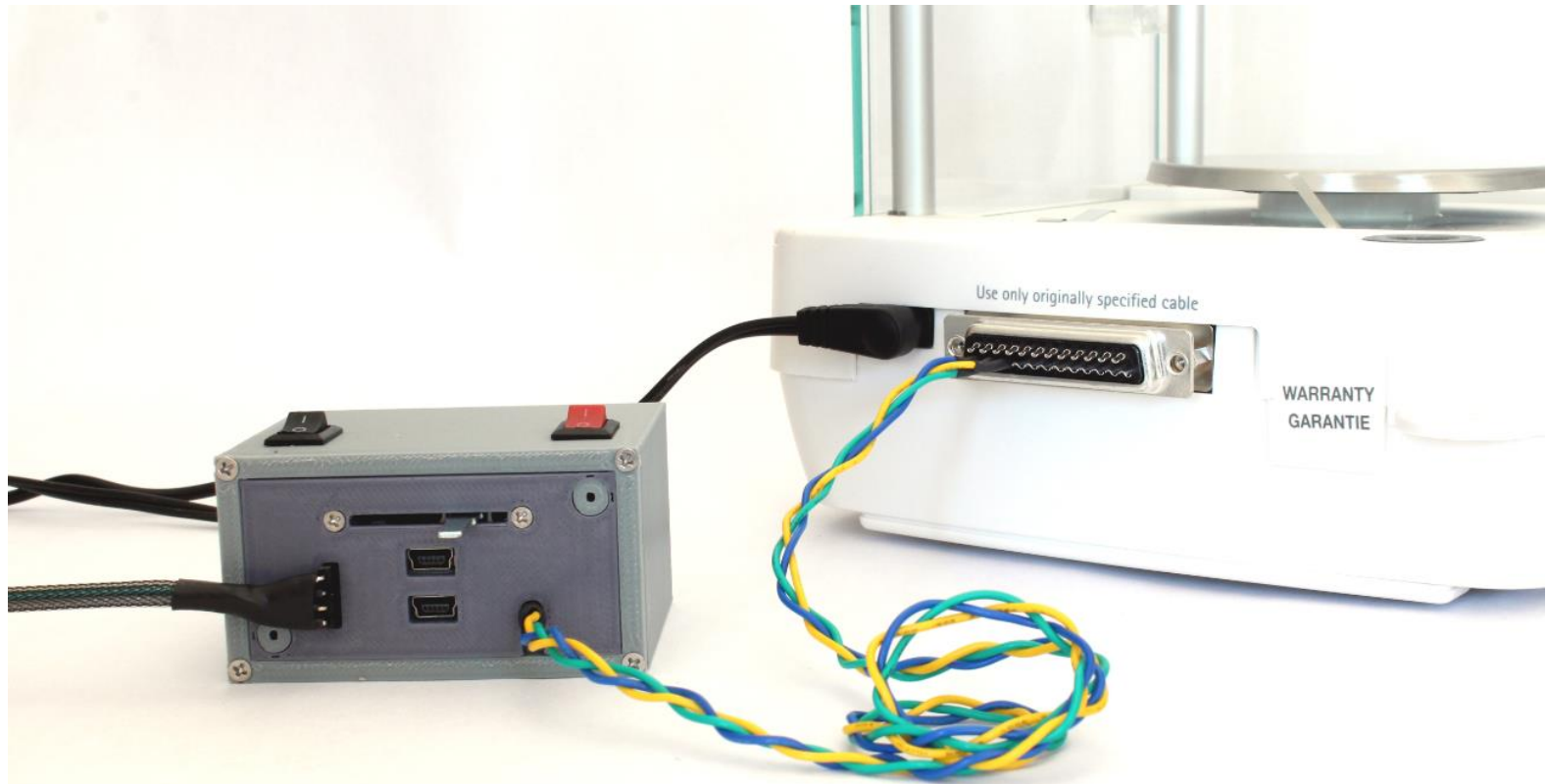
Assembly: pulley belt

Connect the pulley belt with a twist, as shown.

The twist is important to ensure correct direction and tension.



Assembly: electronics



- Ensure both toggle switches are in the off position (O).
- Plug the 25-pin connector into the back of the scale.
- Plug the motor into the electronics unit (in either orientation).
- Plug the 12V power adapter into the electronics unit.

Assembly: final

Peel the backing tape and attach the tray holder to the scale platform.

Place it so that you can easily scoop powder into the tray while the trickler is in position.

The trickler tube should be level. Slightly tilting the trickler will increase or decrease the flow rate.



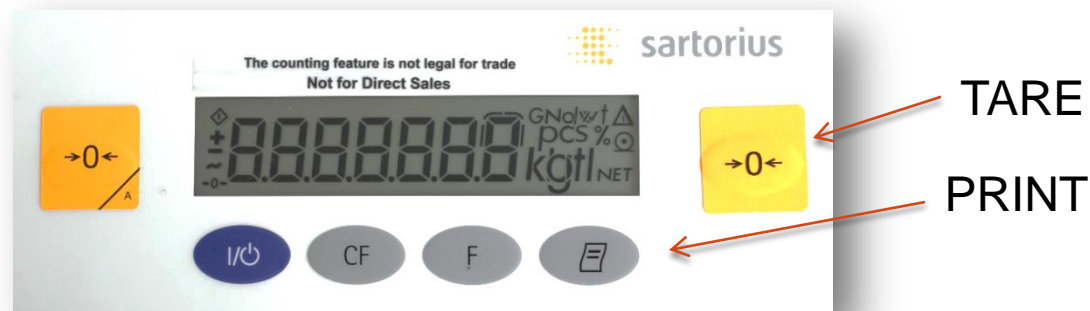
Ensure doors and windows are closed and the scale should easily be able to hold 1 milligram and trickle most efficiently.

Scale Configuration

To operate the trickler, a few scale settings need to be changed. The following few slides explain the process step-by-step.

To operate the scale menu:

- Turn the scale off and back on.
- While all display segments are visible, press TARE.
- Press TARE to switch between menu levels.
- Press PRINT to select and move to the next level.
- Hold PRINT for 2 seconds to select the new option.
- To go back, press PRINT repeatedly.
- To save changes and exit the menu, hold TARE for 2 seconds.



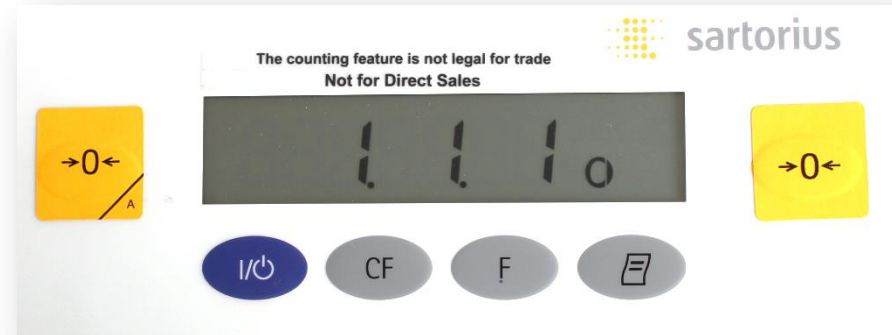
Refer to your GD503 manual for further details.

Scale Configuration

A 'o' mark will be displayed next to the menu option when selected.

Set the following options:

- 1.1.1 (fast response)
- 5.1.7 (9600 baud rate)
- 5.2.4 (even parity)
- 6.1.3 (automatic print without stability)
- 7.1.1 (print without data ID codes)
- 1.7.11 (primary unit grains)



Refer to your GD503 manual for further details.

Operation: starting

The BLACK toggle switch is power for the trickler. Leave it ON while in use. If the trickler behaves strangely, reset the trickler electronics using this switch.

The RED toggle switch is used to set the target and start/stop automatic dispensing.

To set a target weight and begin:

- Manually place a reference weight on the scale.
- Switch the red toggle switch ON.
- Wait at least one second for the unit “GN” to appear.
- Replace the empty pan.

Dispensing will start automatically from within 0.02 grains of zero weight.

If the empty pan remains slightly above zero weight, and there is no fallen powder on the scale, it is possible there was a little extra powder in the pan at the start of the previous charge. Check the previous charge and re-zero the scale.

Operation: stopping

To pause temporarily:

Lift the pan to pause dispensing.

Dispensing will resume automatically from a partial weight that is:

- Greater than 0.1 grains
- At least 0.1 grains below the target

If the weight goes over the target, remove a small amount of powder and allow the dispenser to resume and finish automatically.

To stop until started again:

Switch the red toggle switch OFF at any time to stop automatically dispensing.

The dispenser will remember your target weight.

Replace the empty pan and turn the red switch ON to resume with the previous target.

Or, place a new target weight manually and turn the red switch ON to use a new target.

Operation: rate adjustments

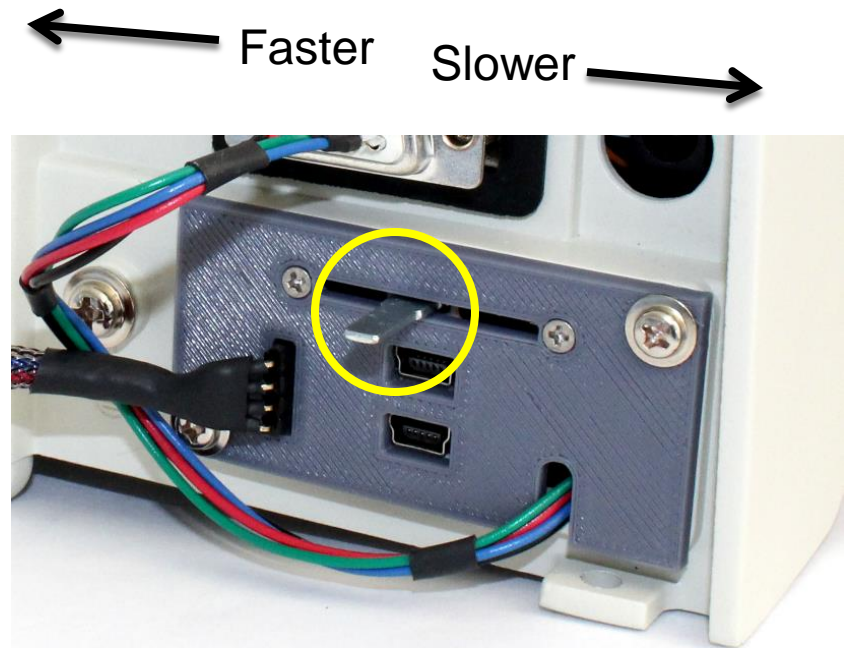
The flow rate is extremely sensitive to the tilt of the tube.

The trickler should dispense about 1 grain per second at full speed. Shim the base of the trickler mount to achieve this flow rate.

Adjust the slider to fine-tune for different powders.

Fine ball powders will require a faster setting, and heavy stick powders will require a slower setting.

This slider does not affect the maximum speed of the trickler. It only affects the ramp-down stage.



The trickler will be more consistent if the slider is near the middle. Adjust the tilt of the mount first, and use the slider for fine tuning.

Warnings / Warranty

WARNING: Ensure the tube is completely cleared of powder before switching to another powder.

ALWAYS VERIFY EACH CHARGE WEIGHT ON THE SCALE BEFORE LOADING POWDER INTO A CASE. This product is a tool for dispensing powder, not measuring. It does not prevent you from setting an unsafe target weight. It does not inform you that your charge is over the target or unsafe to fire. You are fully responsible for reading your scale and determining how much powder to put into your cases and into your firearm. Proper reloading practices must be used at all times. Do not use black powder or black powder substitutes. Black powder can be ignited by static discharge.

The Automatic Powder Trickler is warranted to be free from any defects in material or workmanship under normal use for the period of one (1) year from the shipping date. During the warranty period, any product or parts of the product that prove to be defective due to improper material or workmanship under normal use and maintenance will be repaired or replace at no charge to the user. This warranty is extended only to the original purchaser and is non-transferrable. This product is intended for non-commercial use. Any other use of this product will void this warranty.

If a defect appears in the product, contact Adam MacDonald (adamjmac@gmail.com) to arrange repair/replacement.