

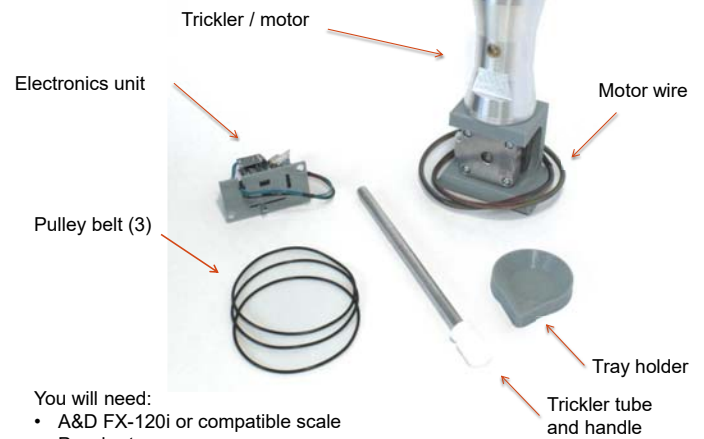
Automatic Powder Trickler

by Adam MacDonald

Instructions for setup and use
For A&D FX-120i/200i/300i
V2 – January 2017

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

Parts



You will need:

- A&D FX-120i or compatible scale
- Powder tray
- Philips screwdriver

Assembly: trickler tube



Slide the tube into the trickler as shown.

Turn by hand to ensure it spins freely.



Assembly: pulley belt

Connect the pulley belt with a twist, as shown.

The twist is important to ensure correct direction and tension.



Assembly: electronics



Remove power from the scale.

Remove the metal cover plate from the rear of the scale.

If there is a connector taped to your metal plate, pull it off and push it back inside the scale.

Insert the electronics and attach the connectors as shown.

The wires should not interfere with operation of the slider.

The motor cable can be installed in either direction.

Finally, restore power to the scale.



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.

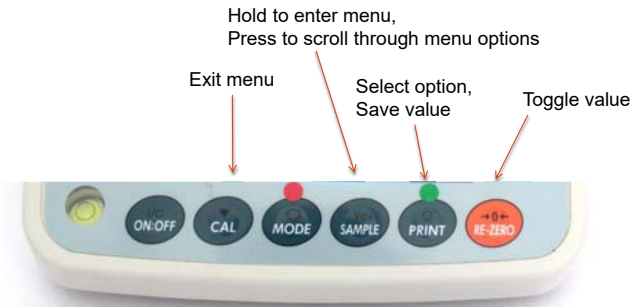
It is recommended to use the rear and side wind panels, and cover the top with a sheet of paper.

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.



Refer to your A&D FX-120i manual for further details.

Scale Configuration

bASFnC → SPd = 2

Set the refresh rate to 20 times per second.

- Press and hold SAMPLE to enter the menu.
- Press SAMPLE repeatedly until **bASFnC** is displayed.
- Press PRINT to select the setting.
- Press SAMPLE repeatedly until **SPd** is displayed.
- Press RE-ZERO repeatedly until **2** is displayed.
- Press PRINT to set the value.
- Press CAL to exit the menu.



Scale Configuration

dout → Prt = 5

Set the print key to wait for a stable reading.

- Press and hold SAMPLE to enter the menu.
- Press SAMPLE repeatedly until **dout** is displayed.
- Press PRINT to select the setting.
- Press SAMPLE repeatedly until **Prt** is displayed.
- Press RE-ZERO repeatedly until **5** is displayed.
- Press PRINT to set the value.
- Press CAL to exit the menu.



Scale Configuration

Sif → bps = 5

Set the serial port baud rate to 19200.

- Press and hold SAMPLE to enter the menu.
- Press SAMPLE repeatedly until **Sif** is displayed.
- Press PRINT to select the setting.
- Press SAMPLE repeatedly until **bps** is displayed.
- Press RE-ZERO repeatedly until **5** is displayed.
- Press PRINT to set the value.
- Press CAL to exit the menu.



Scale Configuration

Sif → btPr = 2

Set the serial port mode to 8N1.

- Press and hold SAMPLE to enter the menu.
- Press SAMPLE repeatedly until **Sif** is displayed.
- Press PRINT to select the setting.
- Press SAMPLE repeatedly until **btPr** is displayed.
- Press RE-ZERO repeatedly until **2** is displayed.
- Press PRINT to set the value.
- Press CAL to exit the menu.



Scale Configuration

RESPONSE = FAST

- Press and hold MODE until **RESPONSE** is displayed.
- Press MODE repeatedly until **FAST** is displayed.
- Press PRINT to store the setting.
- Press CAL to exit the menu.



Scale Configuration

Set primary unit to **grains (GN)** and secondary unit to **grams (g)**

- Hold **SAMPLE** to enter menu
- Press **SAMPLE** repeatedly until 'Unit' is displayed
- Press **PRINT** to select 'Unit'
- Press **SAMPLE** repeatedly until 'GN' is displayed
- Press **REZERO** to enable 'GN'
 - The stabilization indicator will appear
- Press **SAMPLE** repeatedly until 'g' is displayed
- Press **REZERO** to enable 'g'
 - The stabilization indicator will appear
- Press **PRINT** to save
- Press **CAL** to exit menu



To check, turn the scale off and on and the unit should be **GN**. Then press **MODE** repeatedly and it should switch between **GN** and **g**.

Operation: starting

Start and stop dispensing using these buttons:

- **PRINT** = **Start** button
- **MODE** = **Stop** button



Apply a sticker or label to the scale for reference.

Place the empty pan on the scale and press the Re-Zero button.

To set a target weight and begin:

- Manually add your target powder charge to the scale (scoop/trickle by hand).
- Press **Start**. This will save your target.
- Replace the empty pan.

From zero, the trickler will start running at full speed. Now scoop some of your charge into the pan.

For consistency, try to let the trickler ramp down from at least 3 grains under the target each time.

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:

Press the **Stop** button at any time to stop automatically dispensing.

The dispenser will remember your target weight.

Replace the empty pan and press **Start** to resume with the previous target.

Or, place a new target weight manually and press **Start** to use a new target.

Operation: adjustments

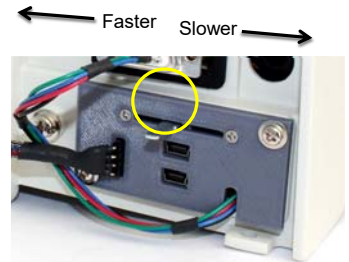
The flow rate is extremely sensitive to the tilt level of the tube.

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

Start with the slider in the middle and dispense a few charges.

If it overshoots, move the slider to the slower setting. If it takes a long time to finish, move the slider to the faster setting.

If you find you need the slider far to one side, recheck the tilt of the trickler.



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

Operation: tips

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

The dispenser can operate in either grains or grams.

Grams provide slightly more resolution (0.001 grams ~ 0.015 grains).

Recommended practice:

- place your target weight in grains
- press **MODE** to switch the active unit to grams
- press **Start** to set target and operate in grams
- accept any weight within 0.001 grams

An advanced operation guide is available on the website:
www.autotrickler.com

Warnings / Warranty

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.