

COMPACT DISPENSER

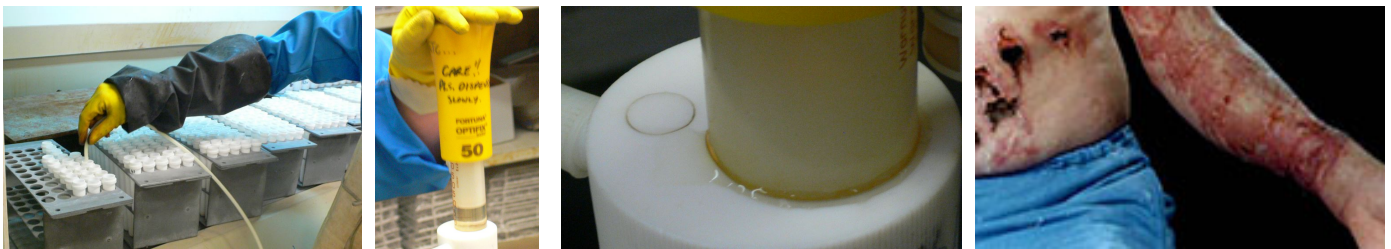
SAFE PUSH BUTTON AUTOMATED ACID DISPENSING

INTRODUCTION

Concentrated acid dispensing and sample digestion are labor-intensive, time-consuming, and **high-risk** repetitive tasks for laboratory personnel. In analytical laboratories around the world, staff is still exposed to potentially toxic and harmful gases and chemicals. Personnel often operate in 8 or 12-hour shifts in a 24/7 regime where **fatigue and weariness** can become issues. **Safety risks** involved are significant for individual operators, laboratory supervisors, and management.



In addition to health and safety concerns, repetitive, slow, synchronous manual movements and equipment wear are also causes of **inaccuracies** in the analytical results.



COMPACT DISPENSER

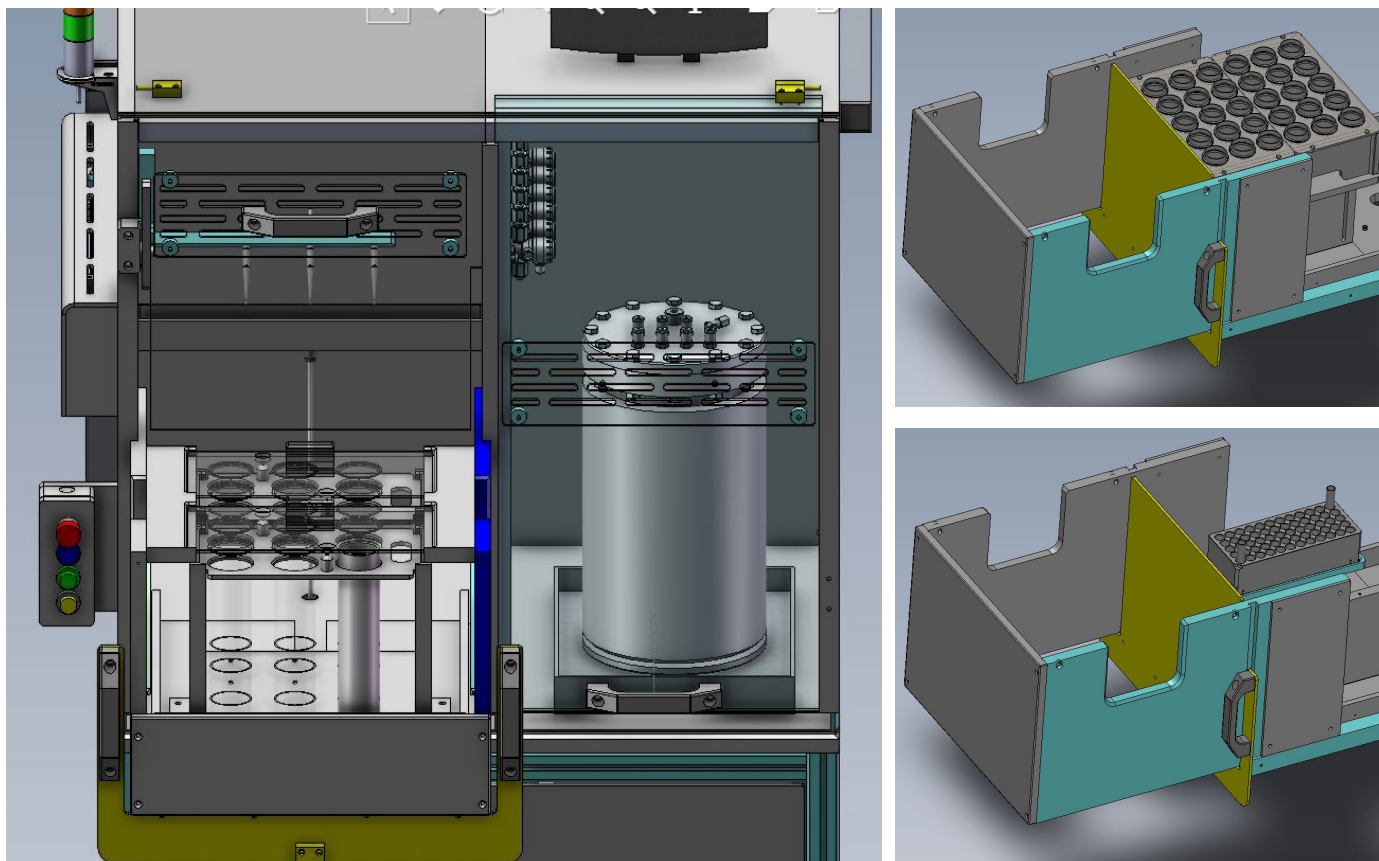
Nucomat has designed a modular unit for automated **acid dispensing** with **simple** pushbutton **operation**, requiring no expert knowledge. The **compact acid dispenser** is a mobile cart-based laboratory instrument that automates routine dispensing of concentrated acids.



Left: compact dispense; Right: 6 compact acid dispenser units in an analytical lab

It includes pneumatically operated refill pumps for uninterrupted operation from a **remote bulk container**. This allows for **continuous operation** from liter flasks in the laboratory up to **drums of 1000 liters** located outside the laboratory. An error signal will alert the operator when the external container runs empty. The amount of acid in the intermediate low-pressure drum inside the instrument is limited, and the refill procedure is controlled by scales beneath the intermediate drum. Robust pneumatically operated valves for low-pressure dispensing instead of pumps make the flow path virtually **maintenance-free**.

The device can be configured for different tube sizes and tube racks. The multi-channel acid dispense is performed **rapidly**. For continuous instrument **performance control**, the total amount of acid dispensed from the intermediate container is verified against the expected dispense cycle. If the dispense cycle is correct, a **green light** is lit. A **red light** immediately alerts for dispense errors.



Technical drawings of the compact dispenser.

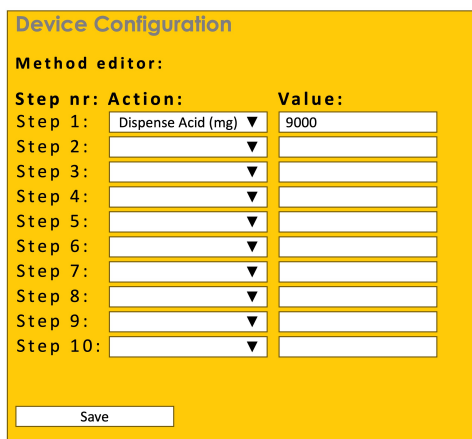
Calibration can be done manually or using an integrated **analytical loadcell** with milligram precision. System calibration is performed individually for each tube or valve line. Total acid consumption is recorded and can be logged to an external device. The pneumatic-driven valves and refill pump are selected for long-term operation on aggressive acids, with limited required maintenance. If the optional built-in loadcell is used, the unit can perform **gravimetric control** or calibration routines at any time during or between the sample preparation routines.

Dispensing **accuracy** RSV is better than **2%** for 500 mg and **0.5%** for 10 grams for concentrated and aqueous acid solutions.

A standard connection to a fume extraction duct will keep chemical fumes out of the lab.

SOFTWARE

The instrument has a web-based interface for instrument configuration and calibration from PC, tablet, or smartphone. Automatic methods can be easily programmed using the method configurator.



Step nr:	Action:	Value:
Step 1:	Dispense Acid (mg) ▼	9000
Step 2:	▼	
Step 3:	▼	
Step 4:	▼	
Step 5:	▼	
Step 6:	▼	
Step 7:	▼	
Step 8:	▼	
Step 9:	▼	
Step 10:	▼	

Save

Method configuration interface.

MODULAR PRODUCT SERIES:

The **Compact Dispenser** can be configured to meet the requirements of your application. The multi-channel, single acid dispenser. It can be customized for:

- Different tube sizes and racks
- A fume cover holder to protect the user from the acid vapours while moving the sample rack

See the **Compact Sample Preparation Unit** for:

- For **multi-acid** sample preparation procedures.
- For optional built-in heat **digestion** using a tunable infrared heater.

For gravimetric dispensing of powders, grains, or granulates, see the **Compact Powder Dosing Unit**

USER BENEFITS

- Excellent accuracy and precision; gravimetrically verified.
- Maximal operator safety, reducing the risk of injuries from exposure to fumes or spills.
- High speed performance: fill up to 60 tubes per minute, hands-off.
- Compatible with different standard or customised sample racks.
- Budget friendly.

TAILOR-MADE SOLUTIONS

In addition to our configurable products, Nucomat also builds turnkey automated systems based on your requirements (capacity, type of recipients, ...). Feel free to contact us.

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