DAVtech

Volumetric System

DA 1000 V

Technologies for the study of fluid dispensing applications

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Concerned industrial sectors:

- medical
- aerospace
- automotive
- audio
- home appliances
- furnishing accessories
- mechanics and electromechanics
- electronics

Validation process

01 Planning
02 Design
03 Development
04 Test
05 Review
06 Project lunch

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DA 1000 V:

Advantages for R&D departments.

A **validation** process is usually a **long**, **complex** and **expensive** process.

The most important request that the R&D departments must satisfy is to **minimize potenti errors**, minimasing potential risks derived from imprecise design or human error, getting as close as possible to the **real conditions of use**.

This process requires an high investment in terms of time and economies, with the risk of still obtaining an approximate result once the process has been industrialized.

The system allows, during the test phase, a **considerable saving of resources** and is able to **dispense** fluids destined for the future production with **extreme precision and versatility**.

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3 main challenges for R&D departments

in experiences and technologies for the study of dispensing applications.

01 Need to test different fluids

02 Need for accuracy and precision

03 Need for an easy-to-use industrial solution

R&D CHALLENGES 3

Why is so important that these requirements are met?

- To define the **correct quantities** to apply and **put them in the project**
- For specification **draftings** with the right requests, tested and proven
- To simplify the **future industrialization** (with **cost reduction**)
- In order to **enhance the dispensing process**, which is fundamental in the development of new products where it is present

01 Need to test different fluids for new products validation test.

Direct dispensing by syringes

Suitable with syringes of products from 3-5 - 10 - 30cc, easy to replace thanks to the convenient fixing ring.

No-contact between fluid and dispenser

Ideal for aggressive and reactive fluids, ensuring product interchangeability without contaminating the dispenser mechanics: **>maintenance and cleaning (= product waste) eliminated.**

Can dispense fluids from 1 to 500000 cst

UV, anaerobic, cyano-acrylic glues, grease, sealant, solder paste, pre-mixed bi-component fluids, and more generally any single component fluid.

02 Need for accuracy and precision for the dispensing system.

Volumetric dispensing

Independent from temperature, viscosity and pressure changes of the product
> no need to set an equilibrium between time, pressure or viscosity parameters.

Dispensing mode

Able to dispense stitches, sequences or paths of product.

Dispensing of micro-quantity

From 0,04mm^3 of product.

Max precision

Dispensing process becomes a volumetric one, starting directly from the syringe, where the piston is moved by a linear actuator with stepper motor and encoder, managed in turn and dosage by its controller, with minimal margins of error **> quantity becomes objective.**

Suck back function

NO DRIP OR CONTAMINATION

Thanks to the piston complete with magnet we are able to retro-operate the product thrust pad.

03 Need for a solution that is easy to parameterize and guarantees repeatability.

Compact design

DA 1000 V dispenser is very light, with a weight starting from 120g, both for manual use and robots dispensing application, with high speed dispensing mode.

Easy interface with external devices

In addition to the management touch screen controller, it's possible to interface the device to PLCs, collaborative, anthropomorphic or Cartesian robots, thanks to the available inputs (potential free-contacts or communication protocols).

Controller e software proprietario

An easy-to-use controller, with 7 ”color touch screen, multilingual and the possibility of directly controlling the volumetric quantity of product to be dispensed from the panel, defining dispensing speed and consequently the possibility of evaluating the application cycle time.

Easy connection

100% electric operation with one cable.

Remote tele-service system

Integrated into the controller via Ethernet port.

DA1000V volumetric micro-dispensing system

Volumetric system for micro quantities dispensing application of fluids through syringes, with maximum precision. The system dispenses fluids from the syringe of the desired size by pushing a piston moved by a linear actuator, managed by a programmable controller that can be interfaced with other units (eg PLC).

Application fields

- Volumetric dispensing of solder paste
- Volumetric dispensing of premixed bi-component fluids
- Micro-quantity volumetric dispensing of low and high viscosity fluids

Features

- No compressed air needed
- With the controller you can manage dispensing flow, dispensing quantity and also dispensing sequences.
- Syringe from 3-5-10-30cc
- Total separation between fluid and actuator without risk of contamination
- Compact design for manual use or mounted in automatic machines, even with high-speed dispensing modes. (MAX.0.2 ms / step)

Technical data DA 1000 V

Syringe sizes	3cc	5cc	10cc	30cc
Weight (g)	118		300	
Viscosity (cPs)	1~500.000			
Screw Pitch (mm)	0.8	0.8	1.0	1.25
Step (mm/step)	0.0001		0.0001	0.0003
Dispensed volume / Step (cc)	0.0000073	0.0000128	0.0000250	0.000138

Technical data Controller

Controller	
Dimension	150x80x110
Weight (g)	932
Power	DC 9V/2A
Mode	Time, steady, sequenza
Display	3.5″ Touch screen
Interface	RS485 (MODBUS)
Input signal	Input signal
output signal	NPN Open Connector

DA1000V CONTROLLER Features

Main screen

Single main screen with grouping of all useful data.

Weight mode

Controller is able to automatically transform all calculation values (by the product specific weight) from mm^3 to mg.

Manual mode for editing dispensing parameters directly from the main screen

Pneumatic actuator homing

More languages available

Possibility to communicate via MODBUS TCP/IP

Recipes setting

Recipes that can be easily set and saved.

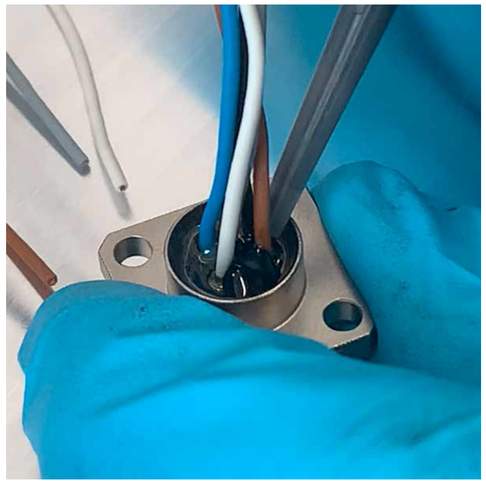
Controller Status

"INPUTS and OUTPUTS STATUS" overview directly from the controller.

EXAMPLES OF APPLICATION

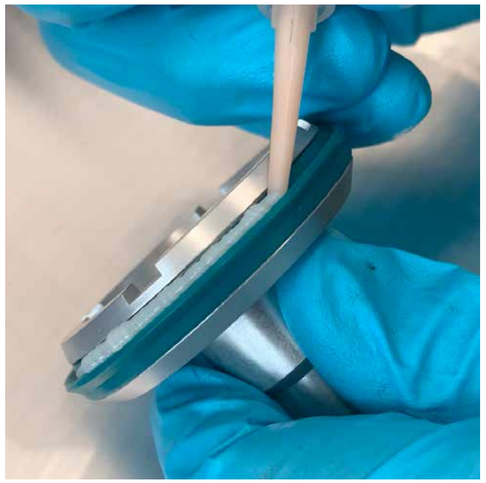
Solder pastes, conductive inks

- Electronic circuits
- Medical devices



Gap fillers

- Heatsinks
- PCB



Greases NLGI 0-1-2

- Valves
- Automotive components

Cyanoacrylate and anaerobic glues

- Generic bonding
- Taps
- Valves
- Mechanical components

Epoxy, silicone, and polyurethane resins

- Potting
- Bonding

etc.

DAV tech

DAV Tech: the best partner to entrust with technical development of dispensing systems for your production plants.

Dispensing devices for any kind of application, needle valve, diaphragm valve, spray or metering valves, until the PCP metering pumps. Dispense in an accurate, reliable and monitored way.

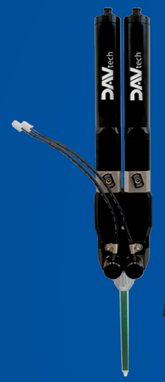
The valves and the spare parts are usually in stock, the 3D models available for designers. The possibility to do tests and a wide range of case histories are the background that give to the customers fast and reliable answers.

Dispensing devices

PCP
Volumetric pumps

005	015
050	150
500	1000

PDP
2K Volumetric pumps



005	015
050	150
500	1000

GP
Gear volumetric pumps

06	2
4	10

DA1000V
Volumetric manual dispensing system

3	5
10	30

E2K
Pre-filled twin cartridges dispenser

50	200
400	

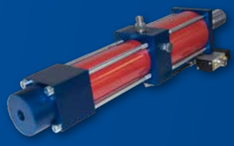
DA 400
Needle valve

DA 500
Needle valve

DAS 100
Spray valve

DA 250
Diaphgram valve

DAVS 100 -200
Spray Metering valve



DAV 700 · 800 · 900
Metering valve

DA 400 EV
Needle valve

DAS 30
Spray valve

DAS 100 EV
Spray valve

DAV 100 DAV 200
Metering valve

DAV 100 · 200 MAN
Manual Metering valve

DAJ 100
Electromagnetic valve

DA 400 MINI PEEK
Needle valve

DAS 50
Spray valve

DAS 200
Manual Spray valve

DAV 300 DAV 400
Metering valve

DAV 300 · 400 MAN
Manual Metering valve

DAVR
Contact-less dispensing system

Fluid feeding systems

Any kind of fluid can be feeded in the best way, according to the production process and the fluid features. Since the small cartridge to the 200 lt drum, a wide range of tanks, pumps and accessories, allow a monitored feeding of the fluid to the dispensing valves, without wastes, contamination and unnecessary transfers.

AIR BUBBLES
Detection and purging system

PRESSURIZED CARTRIDGE HOLDER

HYDRAULIC PRESSURE REDUCER

PT
Pressurized tanks

PP1-5
Follower plate pump

PP-25
PP-50
Follower plate pump

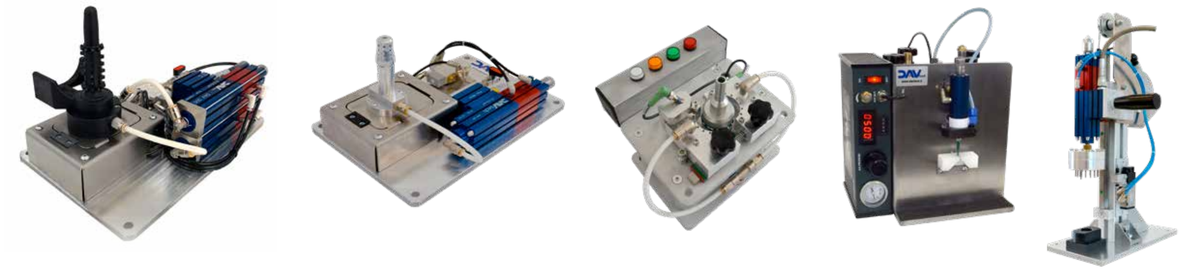
PP-200
Follower plate pump

PPE
Electric follower plate pump

PPE 2K
Electric follower plate pump

Dispensing stations

Manual dispensing stations, available for desktop application or with a structure, which integrate the fluid feeding (with pumps or tanks) and the dispesing with valves or metering pumps. The operation mode can be completely mechanic/ pneumatic or with small electric control panels and PLC.



2K Dispensing stations All our applications are based on volumetric proportioning systems managed by controllers and/or PLCs, this allows the process to be controlled with highest precision and to guarantee reliability.

Turn key robotic dispensing stations, tailor made on the customer specific needs, which can be integrated with vision system, data storage and production monitoring, weighing system, remote tele service following the philosophy of Industry 4.0.

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Parts, systems and automations for fluid dispensing.

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