

Dosing Technology

Emptying – Conveying – Dosing



Applications and Products – Perfectly Matched

You've got the application, we've got the solution

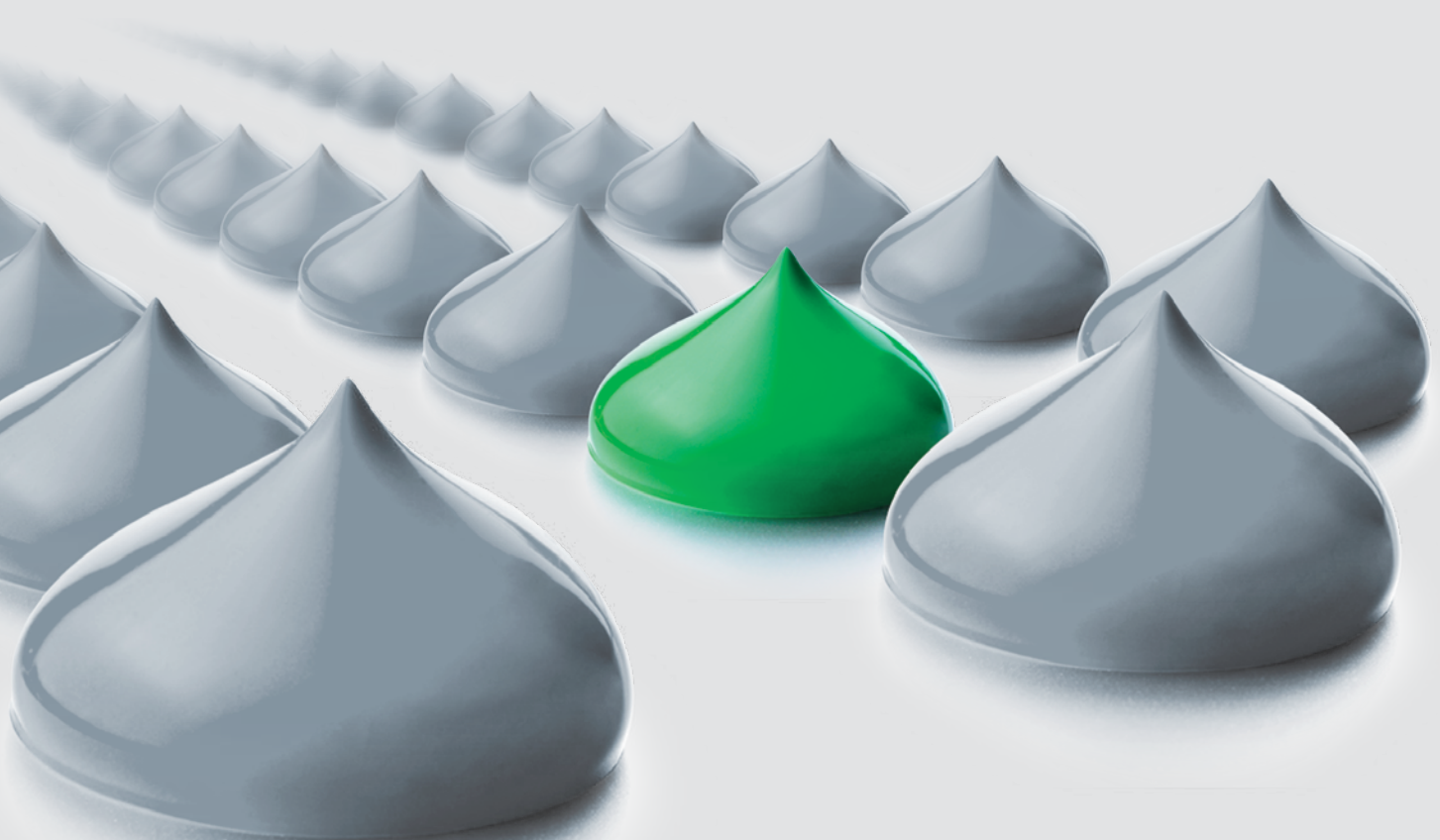
As a truly global producer of progressing cavity pumps NETZSCH Pumpen & Systeme GmbH has been developing, manufacturing and selling NEMO® progressing cavity pumps worldwide for more than six decades. Those are the heart of the NETZSCH barrel emptying and dosing systems.



Operating Principle NEMO®

Our products are operating, amongst others, in the following industries:

- Food
- Industrial goods
- Cosmetics
- Electrical equipment
- Chemical Industries
- Electronic Packaging
- Consumer goods



Product Range

NETZSCH Barrel Emptying Units

Standard units for the emptying of barrels from 1 l to 200 l. Special barrel emptying units, up to 1000 l on request. Capacities from ca. 6 ml up to ca. 10 m³/h. Clean emptying, residues <1 % without liner.

NETZSCH Dosing Systems

For best co-ordination/synchronization between emptying and dosing we offer complete dosing systems consisting of a barrel emptying unit, control system, buffer storage and application unit.

NEMO® Dispenser

Capacities from ca. 0.05 ml up to 9 ml chamber volume per revolution, dosing accuracy +/- 1 %.

NETZSCH Control Systems

From simple start/stop control up to complex control for 2 component dosing; designed for each individual application.

NETZSCH Buffer Vessel

Buffer Volume ca. 1.0 l; delivers a constant feed pressure for the dispenser to ensure the highest

levels of dosing accuracy. Also enables barrel changes without interrupting the production process.

NETZSCH Application Units

Simple valves, dispensers and 2C-mixing heads

NETZSCH Automatic Dosing Units

Tailor made solutions for applications ranging from simple dosing to fully automated solutions.

How fortunate to be able to choose

Through continuous product research and development coupled with unrivalled process know-how NETZSCH has gained its reputation as a trendsetting problem solver for the most difficult applications, especially in the field of dosing. A high value is placed on the continuous improvement of positive displacement pump technology in general, as well as on the further development of existing dosing components to meet continually rising customer demands and legal regulations.

Always the right product

NEMO® pumps belong to the group of rotary positive displacement pumps. They consist of two conveying elements, the rotor and the fixed stator, in which the rotor rotates. For each individual application, the most technically suitable pump is chosen. Your advantages are pump types and series, which are ideally matched to your specific application.

We are where you are

With more than 1,600 employees at five development and production sites as well as 30 sales offices, a co-operation partner (in Japan) and another 200 NETZSCH representatives NETZSCH Pumps & Systems is close to you wherever you are.

NETZSCH Barrel Emptying Units for Dosing without Dripping

Characteristics and Typical Components

NETZSCH barrel emptying units draw themselves towards the bottom of the barrel and empty barrels and containers in chemical, pharmaceutical and food industries with the absolute minimum of product wastage. The heart of the barrel emptying unit is a NEMO® progressing cavity pump. When the pump is started a vacuum is created below the follower plate, which at the same time creates a light pressure on the media to guarantee a consistent suction into the pump. Versions: Frame in stainless steel, other materials optional, mobile or stationary.

Large Range of Capacities

- Capacities from approximately 6 ml/min to 10 m³/h

Barrel Sizes

- Barrels between 0.5 l to 200 l as standard
- Special barrels up to 1000 l

Wide Range of Applications

NEMO® barrel emptying units are predominantly used for media with the following properties:

- Low to very high viscosity
- Dilatant, thixotropic or having a viscous structure
- Shear and pressure sensitive
- Highly abrasive
- Lubricating and non-lubricating
- Adhesive and gel like

Advantages

- Continuous or intermittent emptying
- Complete discharge, residues < 1–2 %
- No pressure or flow hiatus
- Low pressure on the follower plate in the barrel
- Emptying of conical barrels
- Low pressure conditions in the system
- Continuously adjustable discharge capacity through the speed of the drive
- Dosing directly from the barrel



The follower plate, with soft lip sealing, presses tightly against the wall of the barrel ensuring almost complete emptying of the container.



The linear guide rail system, used to adjust the height of the pump, can be easily cleaned and accommodates various container sizes.



The standard control panel with frequency inverter is conveniently located, and allows for user-friendly adjustment of product delivery.



NBE 200



NBE 20

NEMO® Dispensers

For the highest dosing accuracy

Characteristics and Typical Components

NEMO® dispensers guarantee very precise dosing and high repeatability. As a result of these qualities NEMO® dispensers are being used for various applications in the cosmetic industry, in the chemical industry, in the production of consumer goods or industrial goods, electrical equipment or electronic packaging.

Wide Range of Applications

NEMO® dispensers are mainly used for media with the following properties:

- Low to very high viscosity
- Dilatant, thixotropic or having a viscous structure
- Shear and pressure sensitive
- Highly abrasive
- Lubricating and non-lubricating
- Adhesive and gel like

Large Range of Capacities

- Capacities between approximately 0.05 ml/rev. and 9 ml/rev.

S Geometry

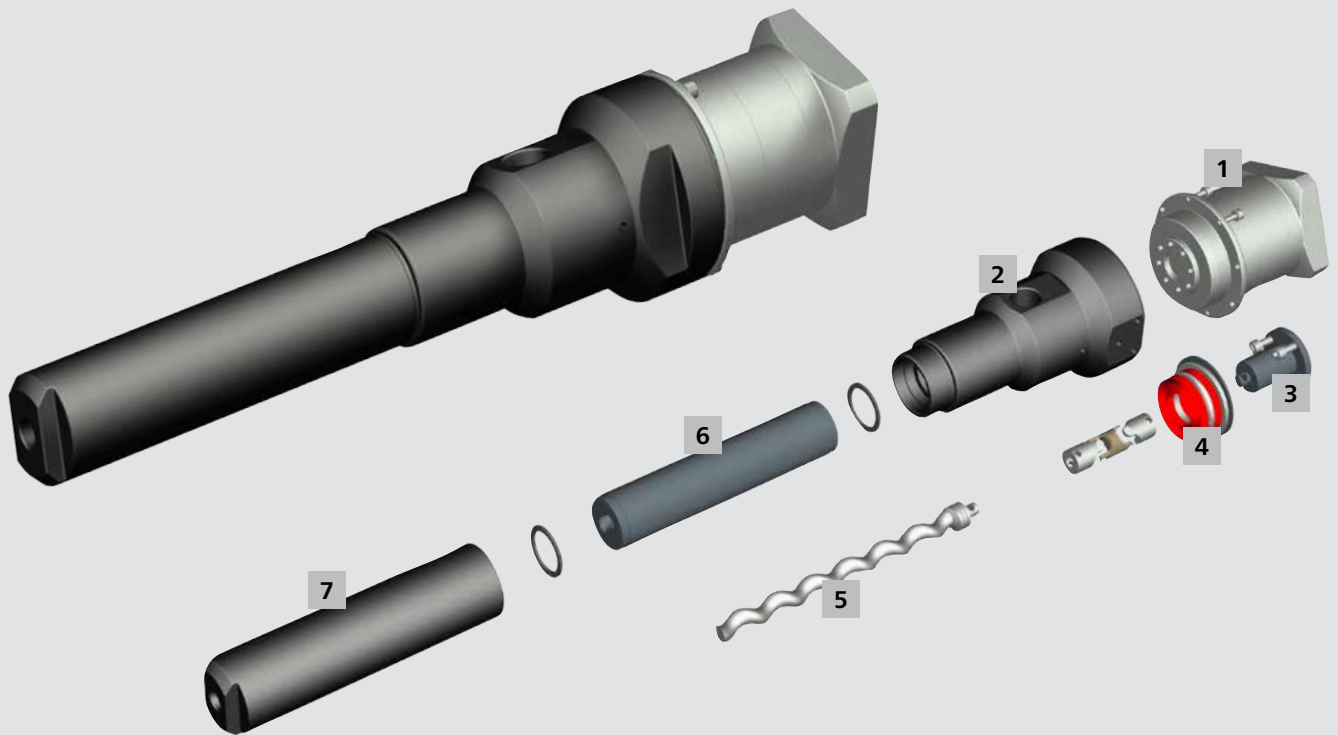
The S geometry which is used for dosing applications has the following qualities:

- Very smooth conveyance
- Compact dimensions despite high Number of stages
- Large cross section rotor inlet
- Conveyance of compacted media
- Conveyance of large solid particles
- Particularly suitable for metering
- Optimally suitable for dosing

Advantages

- Capacity directly proportional to pump speed
- Dosing accuracy $\pm 1\%$ volumetric above 90° rotor rotation
- Dosing accuracy nearly independent of temperature and viscosity of the media
- Eliminates dripping through adjustable suck back system
- Highly dynamic application of the media through servo technology
- Maintenance friendly quick release system for simple assembly and disassembly
- Simple integration with a robotic system
- Optional heating
- Valve free dosing method





1 Drive

Planetary gear with reinforced bearing

2 Pump Housing

Manufactured from aluminium

3 Drive Shaft

With robust bearing for precise true-running of shaft

4 Shaft Sealing

Twin lip seal for highest vacuum pressure load

5 Rotor

In wear and corrosion resistant versions

6 Stator

In various qualities for highest durability and abrasion resistance

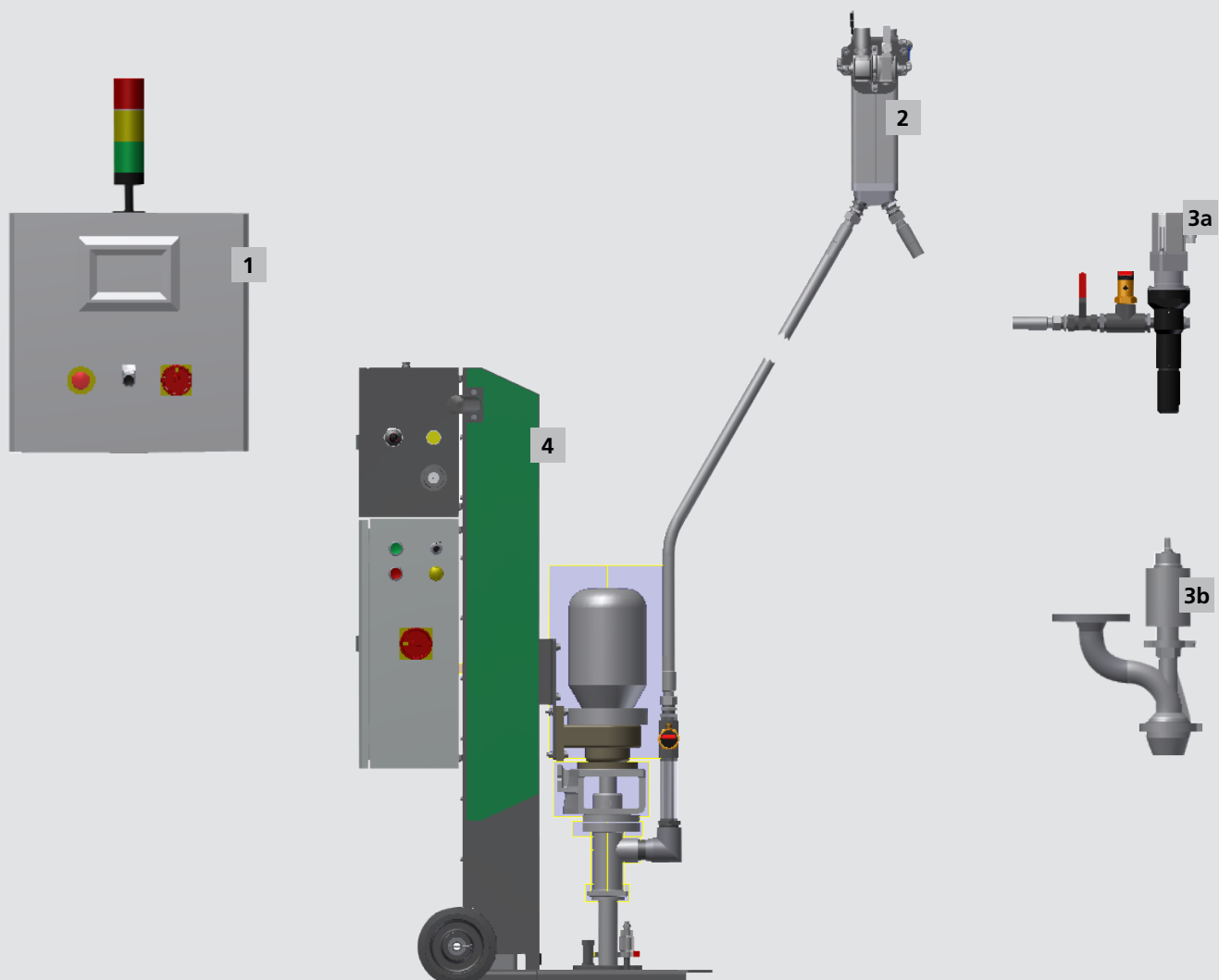
7 End connection

Manufactured from aluminium

NETZSCH Dosing Systems – always the perfect solution through modular construction

Dosing Systems

As a complete dosing solution we offer you an optimally co-ordinated dosing system consisting of a barrel emptying unit, control system, buffer storage and a variety of application units.



1 Dosing Control

The control system plays a vital part in the correct and reliable operation in any dosing application. The NEMO® dosing control unit with its innovative, modular construction is capable of meeting even the most complex customer demands. From simple start/stop up to the most comprehensive of 2C control units, we offer the right solution for each application.

Visualisation

Simple, clear user screen with touch panel, complete with mimic diagram of the plant, displaying all important process parameters at a glance. Error message as clear text. User interface in English or German, other languages on request.

Installation

Available in all common installation types such as free standing and wall mounted control cabinets as well as console units.

Parameterisation

The servo controller parameters of the dispensers can be set via touch panel, no additional software is required. Simple switching between the various control parameters.

2 Buffer Storage

The buffer storage vessel provides a constant pressure on the suction port of the dispenser to achieve the highest metering accuracy. It compensates for any pressure fluctuations and also allows a change of barrel without interrupting the process. The buffer storage volume is approximately 1.0 l.

3 Application Unit

3a Dispenser

Dispenser for highest dosing accuracy, details see p. 6 and p. 7

3b Valve

Valve for middle to low dosing accuracy.

4 Barrel Emptying Unit

Dosing systems are available for barrel emptying units in various sizes, details see p. 4 and p. 5.

Accessories

- Heated and unheated hoses for all applications
- Nozzles and dosing needles, coated and uncoated
- Fittings

NETZSCH Automatic Dosing Units – Automated solutions from one source

You've got the Application, we've got the Solution

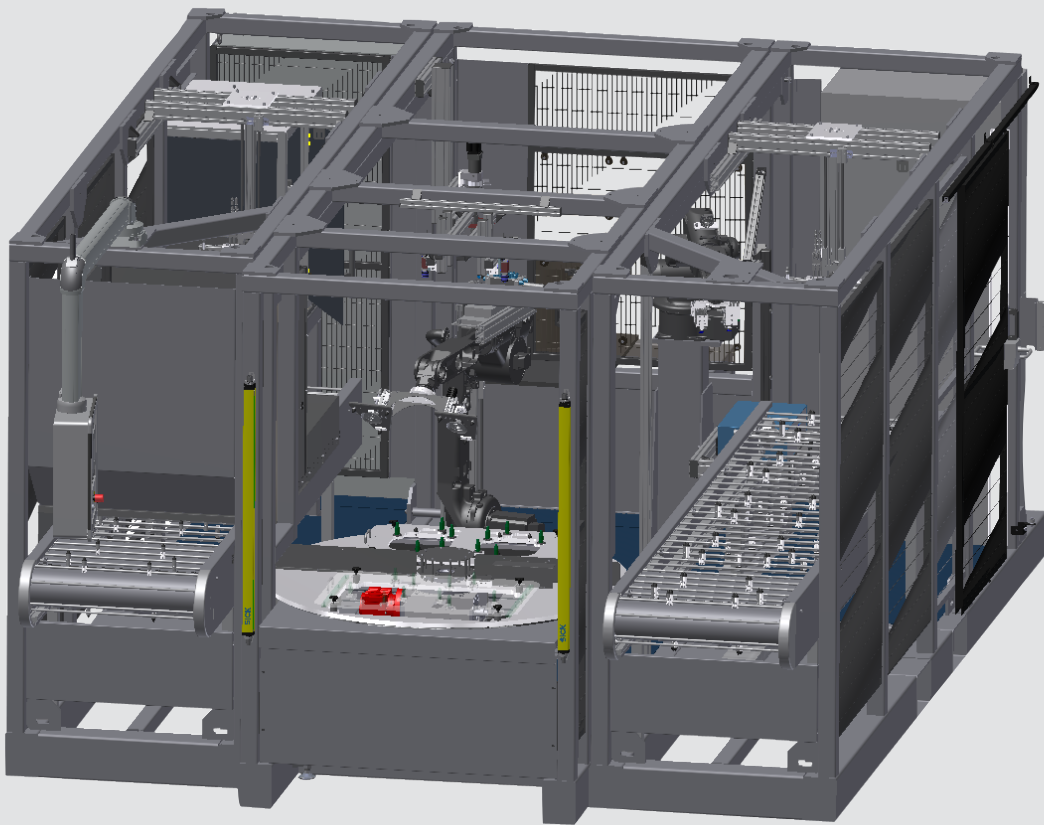
Due to continuous development and consequent implementation of process expertise, NETZSCH belongs to the trend-setting problem solvers for the most difficult applications, from dosing technology to automatic application. Our products integrate seamlessly into your process regardless of whether it is six axis or linear. We offer customised solutions for your requirements.

Benefits

- Project planning and implementation of automated technical solutions, from simple dosing to fully automated solutions
- Optional process visualisation, data log and data archiving
- Customised solutions for your dosing tasks

Product Advantages

- Combination of dosing technology and automatic application
- Application with six axis or linear robots
- Clear interfaces for integration in complete range



Automatic dosing unit in which a dispenser applies an adhesive to a component.

The NETZSCH Group is a mid-sized, family-owned German company engaging in the manufacture of machinery and instrumentation with worldwide production, sales, and service branches.

The three Business Units – Analyzing & Testing, Grinding & Dispersing and Pumps & Systems – provide tailored solutions for highest-level needs. Over 2,700 employees at 140 sales and production centers in 27 countries across the globe guarantee that expert service is never far from our customers.

The NETZSCH Business Unit Pumps & Systems offers with NEMO® progressing cavity pumps, TORNADO® rotary lobe pumps, screw pumps, macerators/grinders, dosing systems and equipment custom built and challenging solutions for different applications on a global basis.

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