



# PRECISION DISPENSING IN THE AEROSPACE INDUSTRY

Maximum process reliability in automated applications  
with adhesives, sealants, core fillers and much more.





# TECHNOLOGY – MAXIMUM PRECISION IS OUR CLAIM

ViscoTec stands for process-safe handling of low to highly viscous, abrasive, pressure and structure-sensitive, shear-sensitive and solids-laden fluids. This viscosity-independent dispensing makes it possible to dose with a high degree of safety. Systems are always designed to customer specifications.

## CORE COMPETENCE

Decisive for the quality of our products: A perfectly matched geometry between stator and rotor, and the selection of a suitable elastomer for the stator. The various elastomers are proprietary formulations. They enable optimal and long-lasting operation.

## MADE IN GERMANY

All processes are developed and implemented at ViscoTec's headquarters in Töging. They follow the distinctive quality feature 'Made in Germany' and the 'think global, act local' approach.

## OUR TECHNOLOGY

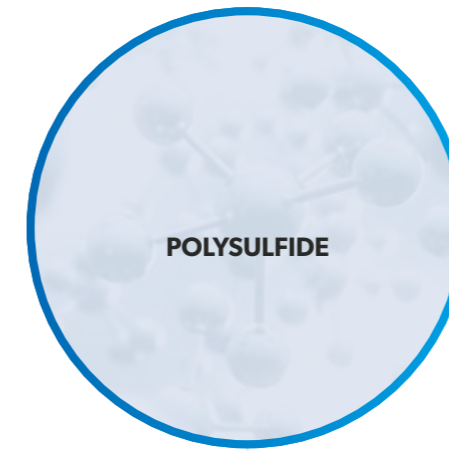
Volumetric dispensing and filling systems are based on the **ENDLESS PISTON PRINCIPLE** and are used for low to high viscosity liquids.

At the centre of each application there is a purely volumetric dispensing pump. The interaction of rotor and stator results in a delivery and metering characteristic that resembles an endlessly moving piston.

The resulting pressure-stable, linear pump characteristic curve provides a clear correlation between the ratio of rotation, time and flow rate. Any volume can be dispensed and a dosing accuracy of  $\pm 1\%$  (depending on the material) can be achieved at the pump outlet.



# MATERIALS & THEIR REQUIREMENTS



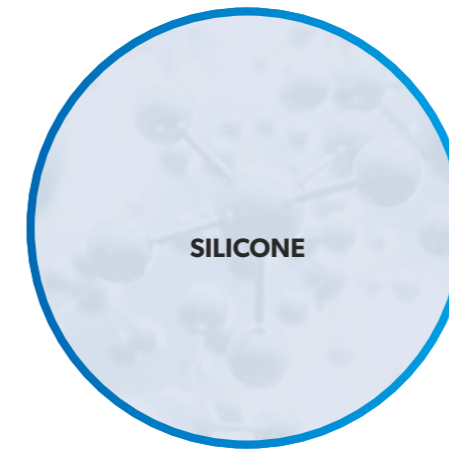
**POLYSULFIDE**

eg. sealant applications



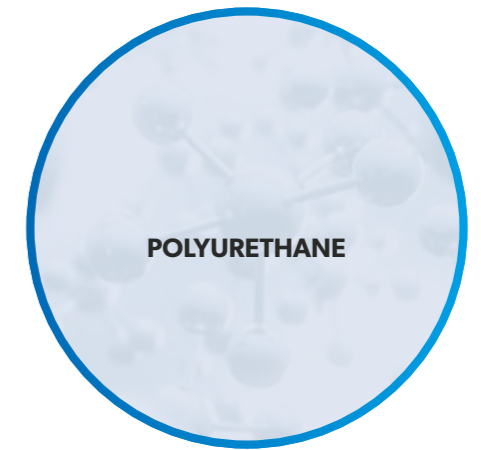
**EPOXY RESIN**

eg. seals, fillings



**SILICONE**

eg. adhesive applications



**POLYURETHANE**

eg. potting applications

## PROPERTIES

- Fillers
- Compressibility
- Rheological particularities
- Mixing ratio
- Viscosities

## MORE SPECIFICALLY

- > Flame retardants, glass hollow spheres
- > Polymer hollow spheres
- > Thixotropy
- > Up to 100:1 with short pot lives
- > Up to several million mPas

## DISPENSING PROPERTIES

- Shear sensitive processing
- Low pressure dispensing
- Viscosity independent dispensing
- Adjustable mixing ratio
- Suitable for highly viscous fluids



# PRODUCT PORTFOLIO

Efficient product handling for the emptying, supplying and dispensing of 1-component and 2-component materials – including intuitive control technology. Our products are specially adapted to the material to be processed and integrated into your production process.

## MATERIAL EMPTYING SYSTEMS

Continuous and constant product supply for seamless, uninterrupted production.

Container size: 180 ml – 1,000 l  
Emptying capacity: up to max. 4 l/min  
Viscosities: up to 7,000,000 mPas



ViscoMT-CM



ViscoMT-D



ViscoMT-XS

## MATERIAL PREPARING SYSTEMS

Individual preparation of the dispensing material (buffering, degassing): Homogeneous and air-free or bubble-free fluids and pastes for a reliable dispensing process.

Container size: 2.5 l / 3.5 l / 15 l / 25 l  
Emptying capacity: up to max. 1 l/min  
Viscosities: up to 2,000,000 mPas



ViscoTreat-Im



ViscoTreat-R



ViscoTreat-I

## DISPENSERS AND PUMPS FOR DISPENSING, COATING, SPRAYING AND FILLING APPLICATIONS

Reliable, accurate, automatic and repeatable: For precise material handling and maintaining an accurate mixing ratio.

Volume flow: 0.1 ml/min – 20 l/min  
Min. dispensing quantity: 0.001 ml  
Mixing ratio: 1:1 to 100:1  
Areas of application: coating, filling, 2-component dispensing, potting, spraying



RD-EC Spray



ViscoDuo-VM

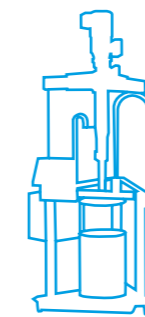


vipro-DUOMIX

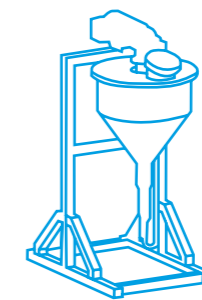


## MODULAR SYSTEM

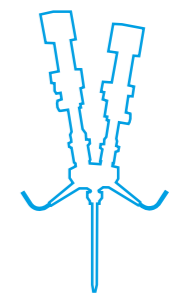
Based on our process know-how, your system will be individually adapted to your process – including engineering and consulting.



Material emptying



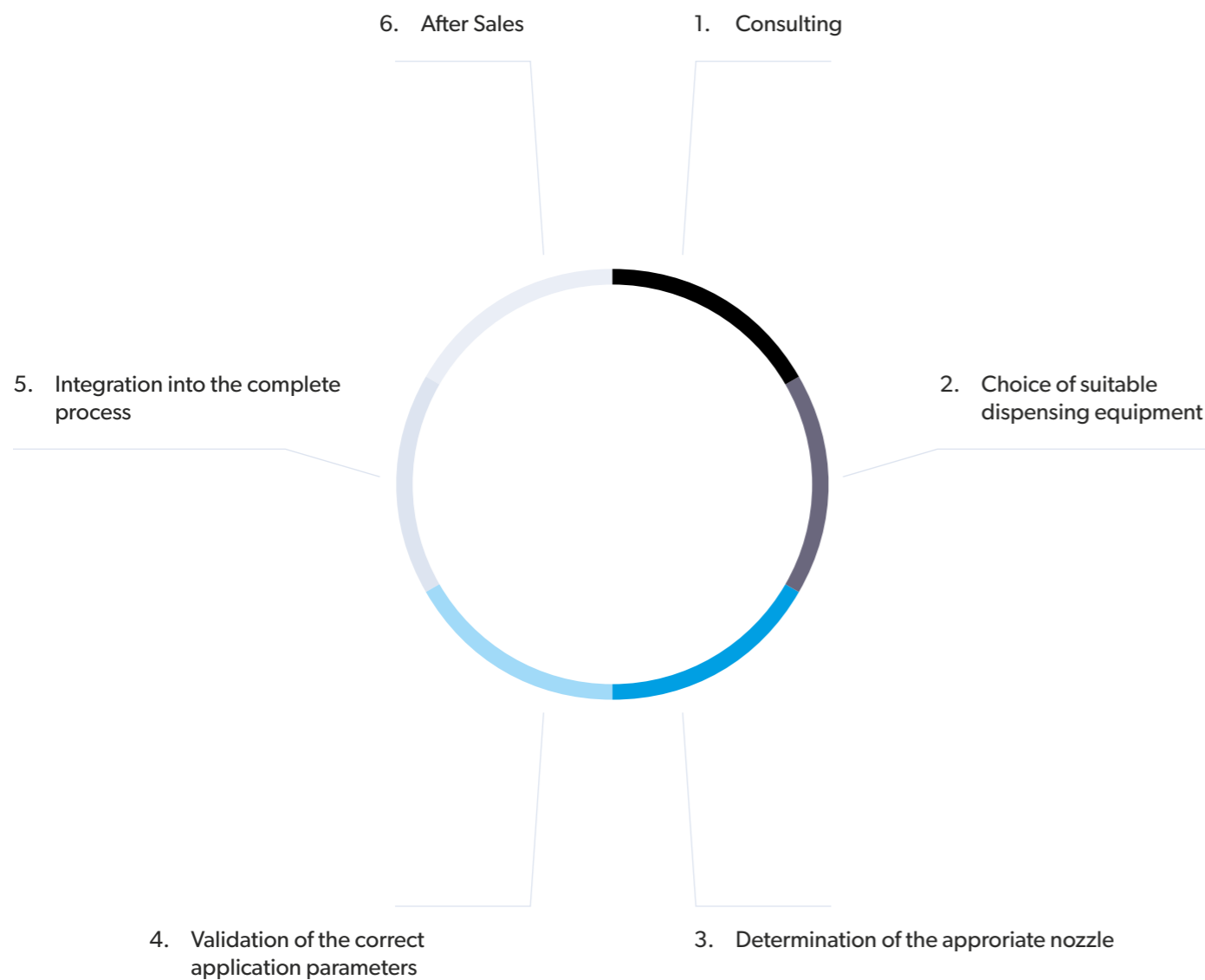
Material preparing



Dispensing



# ENGINEERING & CONSULTING SERVICES



## 1. CONSULTING

Solutions with conceptual consulting and process development lead to optimal results. We listen to your requirements and requests and offer our extensive experience – as our customer, this saves you time and resources.



## 2. CHOICE OF SUITABLE DISPENSING EQUIPMENT

Every application and every process has a binding specification. Fulfilling these specifications and responding to the individual requirements of the customer is an important milestone in the design of our systems.



## 3. DETERMINATION OF THE APPROPRIATE NOZZLE

Maximum precision can only be achieved in combination with the correct nozzle. Our increasing experience in the field of nozzle development enables us to meet even the highest requirements.



## 4. VALIDATION OF THE CORRECT APPLICATION PARAMETERS

We support our customers in defining the right process parameters. Trials in our laboratories and the knowledge we have acquired over decades, help us find solutions.



## 5. INTEGRATION INTO THE COMPLETE PROCESS

To be able to offer the customer a functioning overall system, we focus on the interfaces. Only in this way can our products be perfectly integrated into the existing process.



## 6. AFTER SALES

In order to support our customers after the implementation of a system, we offer a wide range of after sales services – suited to the life cycle of the systems.



## AN OVERVIEW OF THE APPLICATIONS



### SEALING & BONDING OF CFK STRUCTURES

- Material emptying from any container
- Correct mixing ratio
- Maximum process stability



### SEALING THE WING SHELL

- For any sealing seam contours
- Fulfilment of narrow tolerance windows
- Suitable for compressible materials



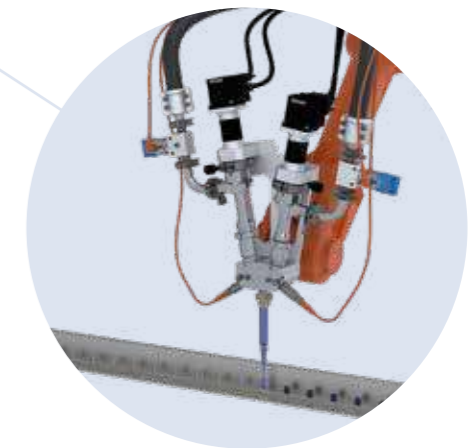
### APPLICATION OF SURFACE COATINGS

- Spray application in the  $\mu$ -range
- Spraying of primers, promoters, lacquers and top coats
- Gentle material handling



### FILLING OF SANDWICH STRUCTURES

- For inserts, edges & structural reinforcements
- Processing from large containers
- No material waste



### SEALING OF RIVETS & SCREWS

- For various sealing caps
- Process-safe dispensing
- No pre-forming or moulding of seal caps is necessary



## SEALING OVER THE COURSE OF TIME

Whether Edge Sealing, Fillet Sealing, Cap Sealing or Interface Sealing – mostly premixed-frozen or 2-component cartridges (injection barrier cartridges) are used for the manual activity of sealing.

They contain a specified amount of resin and hardener. In most cases, however, this quantity is not sufficient and causes increased material wastage.

With ViscoTec's automated solution, the two components to be dosed can be purchased separately in larger containers and mixed as required.



## POSSIBILITIES & OPPORTUNITIES WITH VISCOTEC

### SIMPLE OPTIMIZATION: FILL CARTRIDGES AS REQUIRED



- ✓ Optimal purchasing conditions
- ✓ Minimal material waste due to demand-oriented dispensing (no throwing away of mixed cartridges)
- ✓ Reduced logistical effort
- ✓ Simple implementation into the overall process
- ✓ Homogeneous mixing
- ✗ Still manual application, therefore no improvement regarding human error and reworking

### CURRENT SITUATION IN THE INDUSTRY



- ✓ No investment
- ✓ No change to the process
- ✗ Massive logistical effort
- ✗ High material costs due to smaller containers
- ✗ High material waste due to the consumption not being in line with demand
- ✗ Slow process speed due to manual application (taping of the component, cleaning after application, reworking)
- ✗ Risk of poor mixing quality

### MAXIMUM EFFICIENCY: FULLY AUTOMATED IN HIGHEST QUALITY



- ✓ Optimal purchasing conditions
- ✓ 100 % material consumption in line with demand
- ✓ Complete automation is possible
- ✓ Compliance with precise specifications
- ✓ No human error
- ✓ Significant increase in the previous cycle time is possible
- ✗ Higher one-off investment costs

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