

NOVADOS

DIAPHRAGM AND PLUNGER METERING PUMPS





SPXFLOW

SPX FLOW, Inc. (NYSE:FLOW) is a leading manufacturer of innovative flow technologies, many of which help define the industry standard in the market segments they serve. From its headquarters in Charlotte, North Carolina, it operates a sales and support network, centers of manufacturing excellence, and advanced engineering facilities, throughout the world. Its cutting-edge flow components and process equipment portfolio includes a wide range of pumps, valves, heat exchangers, mixers, homogenizers, separators, filters, UHT, and drying technology that meet many application needs. Its expert engineering capability also makes it a premium supplier of customized solutions and complete, turn-key packages to meet the most exacting of installation demands.

Incorporating many leading brands, SPX FLOW has a long history of serving the food and beverage, power and energy, and industrial market sectors. Its designs and engineered solutions help customers drive efficiency and productivity, increase quality and reliability, and meet the latest regulatory demands. In-depth understanding of applications and processes, state-of-the-art Innovation Centers, and advanced pilot/testing technology further assist in optimizing processes and reducing timescales to reliably meet production targets.

To learn more about SPX FLOW capabilities, its latest technology innovations and complete service offerings, please visit www.spxflow.com.

FOR MORE THAN 80 YEARS, SPX FLOW'S BRAN+LUEBBE BRAND HAS BEEN PROVIDING CUSTOMERS WITH HIGH QUALITY METERING, PROCESSING AND ANALYSING EQUIPMENT.

As part of the global SPX FLOW, Inc. , we are one of the world's most reputable manufacturers of metering and process pumps, process systems as well as analyzing technologies. Our engineers have comprehensive process and applications knowledge across a wide range of markets. This has resulted in product innovations and developments which harness the latest technology whilst meeting the highest quality standards.

> Bran+Luebbe®

NOVADOS - A Selection of Metering Pumps Beyond Compare

With NOVADOS metering pumps we offer a wide range for virtually all applications where liquids have to be metered or blended.

The product range comprises leak-free diaphragm pumps as well as plunger pumps.

Common design features

- Modular metering pump gears with built-in low noise worm gear
- Individual stroke length setting utilizing the z-shaped crankshaft
- Range of pumphead sizes to allow a flow range of between smallest 0.4 l/h up to largest 20,000 l/h on a single head
- Operating pressure up to 1,000 bar
- Manual or automatic flow rate adjustment



Horizontal metering pump
with diaphragm pumphead



Horizontal metering pump
with multiple diaphragm pumpheads



Vertical metering pump
with multiple plunger pumpheads



Advantages

FLEXIBLE

- Optimal capacity adaptation to widely varying production processes
- Variable stroke length for each pump allows independent flow rate adjustment of each pump component
- Variable speed drive allows flow rate variations while maintaining constant proportions

ECONOMICAL

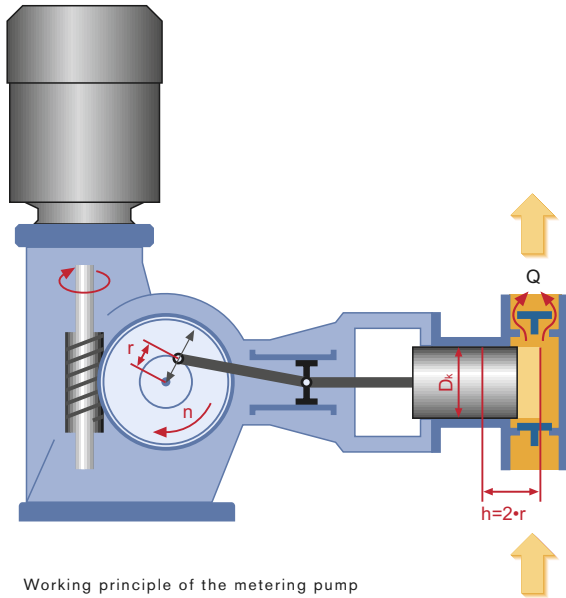
- Automation allows higher production efficiency to be achieved

ADAPTABLE

- Existing installations can be altered or expanded with extra pumps or automatic control



Concept of the Bran+Luebbe NOVADOS Metering Pumps



Working principle of the metering pump

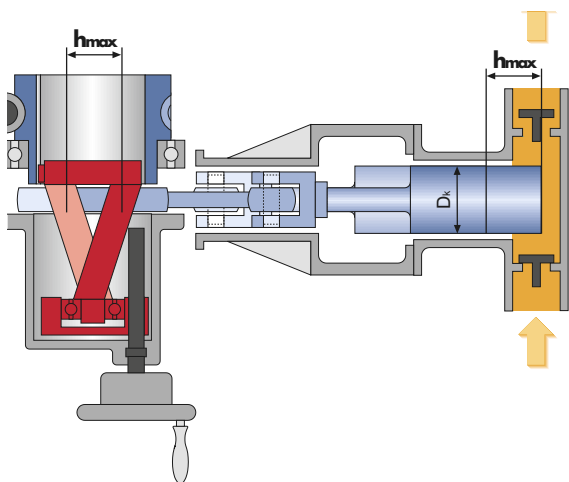
Working principle of the metering pump

Reciprocating pumps are normally comprised of a motor, gearbox and pumphead.

The gear reduces the motor speed and converts the rotary motion into a reciprocating movement of a plunger in the pumphead.

Flow rate of a reciprocating pump is defined by the plunger diameter, stroke length and stroking speed.

Setting the flow rate of a metering pump can be achieved by changing the speed of the drive motor or - as described below - via an adjustment of the stroke length.



Principle of a flow rate adjustment

Simply effective: Flow rate adjustment by the z-shaped crankshaft

Flow rate can be adjusted linearly between zero and maximum by altering the position of the z-shaped crankshaft. This design allows adjustment while the pump is operating or at standstill.

Bran+Luebbe NOVADOS metering pumps exceed the requirements of API 675 in terms of metering accuracy, linearity and reproducibility.

Plunger pumps

- Low investment costs
- Simple design
- Easy maintenance

Diaphragm pumps

A leak-proof pump is the right choice whenever product purity or sterility are imperative or when toxic liquids must be handled.

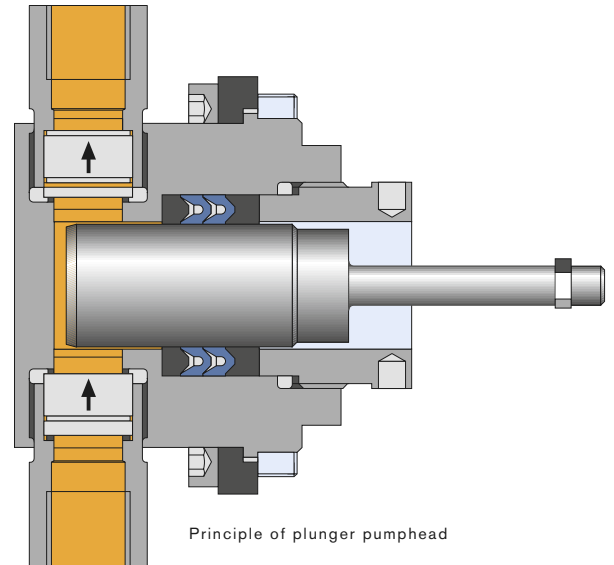
SPX Flow Technology offers a wide range of hydraulically actuated double diaphragm pumps.

The design of the pumphead ensures that the diaphragm cannot be damaged under critical conditions such as a blocked pipe or closed valves upstream or downstream of the pump.

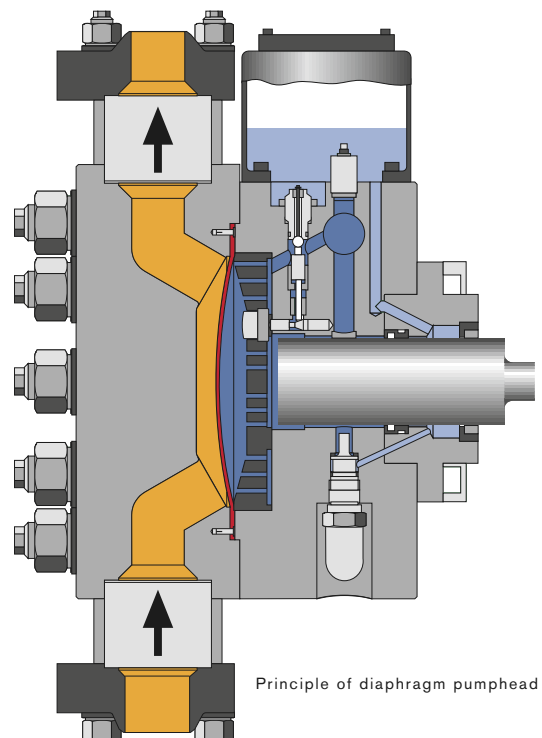
The freely deflecting diaphragm makes the pump suitable for the metering of slurries.

NOVADOS diaphragm pumps: features

- Diaphragm position control for maximum operating security
- Operating pressure (PTFE diaphragm) up to 400 bar
- Operating pressure (metallic diaphragm) up to 1000 bar
- Fluid temperature up to 150°C
- Safe dry-run capabilities
- High volumetric efficiency
- High metering accuracy
- Hermetically sealed by two diaphragm layers
- Diaphragm condition monitoring
- NOVALINK-CSM 2 Diagnosis interface as standard
- Specific customer requirements on request



Principle of plunger pumphead



Principle of diaphragm pumphead

Concept of the Bran+Luebbe NOVADOS Metering Pumps



Metering pump with double-acting diaphragm pumphead

Double-acting diaphragm pumps

The double-acting diaphragm pumphead offers the benefit of twice the flow rate on a single gearbox whilst maintaining the same metering accuracy

ADVANTAGES

- Doubled flow rate
- Less foot print required compared with conventional duplex pumps

Options for stroke length adjustment

MANUAL

- with integrated scale

ELECTRIC

- direct remote control
- with input signal 0/4...20 mA
- with electronic control card

PNEUMATIC

- with input signal 0.2 ... 1 bar
- with input signal 0/4 ... 20 mA



Metering pump with plunger pump head
and manual flow rate control

Options to suit special applications

PUMPHEAD OPTIONS (ON REQUEST)

- Heating or cooling jackets (valve heating possible)
- Quick-release valves
- Remote valves
- Optimised flow channels for slurries or viscous fluids

VALVE DESIGNS

- Ball valves (single, double or triple)
- Cone valves with or without spring
- Plate valves

MATERIALS OF CONSTRUCTION FOR

LIQUID-WETTED PARTS OF THE PUMP

- Housings of stainless steel 1.4571 or 1.4462 alternatively PVC or PVDF
- Diaphragms of PTFE or stainless steel 1.4310
- Plungers of stainless steel, ceramic, tungsten carbide
- Valves of stainless steel, plastic or hard metals
Special materials available upon request

Horizontal Combinations

Possible equipment combinations range from simplex pumps to multiplex pumps with different pumpheads, each of them can be controlled independently.



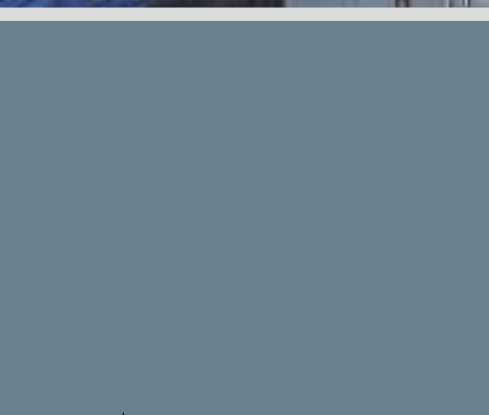
Metering pump with double-acting diaphragm pumphead and customized base frame



Customized multi-headed metering pump



Examples of horizontal combination



Our Service at a Glance



Start up

Regardless of location, on request our SPX FLOW technicians will assist with the installation and professional commissioning of your plant on site and ensure optimum adaptation of our pumps and systems to your production and processing environment. We ensure the full operational capability of our pumps and systems from the start.



Repair

Our experienced service team are available to carry out repairs using the original spare parts from the manufacturer.



Maintenance / Maintenance Contracts

The regular performance of maintenance work by qualified SPX FLOW technicians gives you the assurance of maximum availability of your systems. For this reason we offer maintenance contracts tailored to your needs. We support our products for the entire lifetime of the pump, including all major inspection and maintenance tasks - possible sources of errors are detected and eliminated at an early stage, so that production stops are largely avoided. Your advantage: As a maintenance customer you will enjoy priority in all service issues and receive a discount on spare parts.



Upgrades

We offer customisation of your pump through a conversion, in response to changes in production and process requirements. By using improved designs and new materials, we can optimise the pump performance and increase reliability. This will give you a reasonable alternative to the purchase of a new pump.





Diagnostic - Online / Offline / Remote

With our NOVALINK-CSM 2 system (Continuous Status Monitoring), we provide you with permanent or temporary fault analyses so that you avoid unplanned downtime through early detection of faults.

Advantages:

- Improved pump availability
- Planning of maintenance
- Optimization of production processes



Customer Support / Hotline

Consultation and support are important to us. As a customer you are our number one priority. We can support you if you have diagnostic error messages and assist you in the selection of spare parts. When determining maintenance intervals you can count on SPX FLOW to help.



Spare Parts

By exclusively using original spare parts of consistent high quality, we offer the security of your pump functioning accurately. A high availability of original spare parts in stock gives us the opportunity to supply many spare parts within 24 hours.



Training

Our training courses are practical and tailored to your needs and provide detailed knowledge about function, design and repair of our pumps and systems. Our training courses are intended for users, technicians or engineers.



THE PRODUCT RANGE: MORE EXAMPLES OF BRAN+LUEBBE PRODUCTS WITH HIGH QUALITY STANDARD, INNOVATION AND KNOW-HOW.



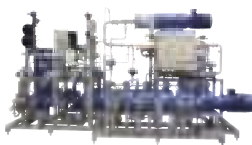
Metering pumps
for universal applications
in the low to medium
requirement range
ProCam
ProCam Smart
ProCam Hygienic



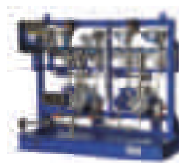
Process pumps
for large flow rates and
high operating pressures
NOVAPLEX
MEGANIZER
High pressure homogenizer



Dynamic in-line mixer
for gentle but intensive
mixing
PENTAX
PENTAX Hygienic



Process systems
as a complete solution for
increased productivity and
quality
AutoBlend
Metering and mixing systems



Oil & Gas systems
to aid oil & gas recovery
onshore and offshore
Solar Panel Packages
Chemical Injection Systems
Flow Control Device Panels



On-line analyzers
for use in water
and effluent treatment
PowerMon
PowerMon S
PowerMon Compact

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For more locations please visit: <http://www.spxflow.com/en/bran-luebbe/contact-us/>

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Design features, materials of construction and dimensional data, as described in this bulletin, are provided for your information only and should not be relied upon unless confirmed in writing. Please contact your local sales representative for product availability in your region. For more information visit www.spxflow.com.

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