



products  
catalog



## summary

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80 years  
of mechanical  
engineering



# strong connection with our history

MVV originally stood for **Meccanico Vittorio Veneto**, which was the idea of its founder, Franco Marinotti. Marinotti was born in Ceneda, a district of Vittorio Veneto, in 1891. Throughout his life, he divided his time between Milan, the capital of business, and various other countries, as he played a pioneering role in exporting the **"Made in Italy"** concept. His aim was to provide his fellow citizens with opportunities to work and thrive in an industrial setting that was structured like few others in the area.

In his hometown, Marinotti established MVV to **meet the technical needs of SNIA**, employing up to 200 people. Since 1950, MVV has acted as the **"mechanical branch"** for SNIA, manufacturing gear pumps and related equipment for their spinning and chemical plants.

Countless pumps produced by MVV have been installed worldwide in acrylic, caprolactam, nylon, polyester, viscose, and pulp & paper plants. SNIA and SNIA Engineering have **developed numerous chemical processes that are still utilized in various industries today.**

- Nylon
- Caprolactam
- Acrylic
- Polyester
- Viscose and Rayon
- Pulp and paper
- Chemicals
- Industrial plants

1917

Financier Riccardo Gualino founds in Turin the *Società Navigazione Italo Americana* (SNIA), with Giovanni Agnelli as Vice President

1920

The name *Società Navigazione Industriale Applicazione Viscosa* (SNIA Viscosa) is given when mass production of rayon started

1922

Franco Marinotti is a manager leading the industrial relations between Russia & Italy

1925

SNIA is the most capitalized Italian company, traded on NY & London Exchange. Produces 24 tons/d of artificial fibers (11.1% WW)

1931

F. Marinotti becomes General Manager of the SNIA Group

1942

F. Marinotti opens MVV in his birth town Vittorio Veneto

1950

Manufacturing of the first pumps line for man-made fibers. MVV is the "mechanical branch" of SNIA Engineering

**Franco Marinotti** was the driving force behind it all. He possessed remarkable political and business acumen, allowing him to grasp the international situation during the interwar period and capitalize on the economic boom following World War II.



In recognition of his achievements, Marinotti was awarded the prestigious title of "Cavaliere del Lavoro" (Knight of Labour) in 1937. The University of Milan further honored him in 1954 by granting him an **honorary degree** in agricultural sciences. Marinotti's talents extended beyond business, as he was also an expert in art and a painter in his own right.

His commitment to the internationalization of the Italian industry was unwavering, making him one of the earliest champions of the renowned Made in Italy brand across the globe. His influence extended beyond business ventures, as he assumed the role of President of the Italian-Soviet Chamber of Commerce in 1964. Additionally, on May 24, 1946, he was bestowed with the title of Count of Torviscosa by Umberto II.

Through his brilliance and foresight, Franco Marinotti left an **indelible mark** on the business landscape, playing a vital role in shaping the success of MVV and promoting the **prestige of Italian industry** worldwide.





# feet firmly set in the present

Thanks to the longstanding **partnership between MVV and SNIA**, the latter boasts an **impressive portfolio** of references, with active plants in numerous countries. However, unlike some other companies that expanded their operations into the Far East, SNIA did not possess the same level of foresight, resulting in a gradual reduction of its business and market presence. Nevertheless, **SNIA remains one of the most successful business stories** in Italy and Europe.

In response to changing market dynamics, **MVV diversified its operations** beyond the textile industry and ventured into pump development for the chemical sector. In the 1980s, it secu-

red contracts with major original equipment manufacturers (OEMs) in the **polyurethane, converting, and hot-melt industries**. Despite SNIA's bankruptcy in 2010, MVV managed to navigate through the financial impact unscathed.

In 2012, a group of private investors with expertise in industrial pumps and mechanical engineering acquired MVV. This acquisition brought **new investments**, including the relocation to a **privately owned** industrial building in the nearby town of Orsago. Since then, MVV has made **significant investments in machinery and personnel**, strengthening its position in the market.

1968  
SNIA Viscosa joined with *Bombrini Parodi Delfino* in SNIA BPD (Colleferro)

1983  
FIAT (now part of the FCA group) takes control of SNIA

1985  
Launch of the pumps for polyurethane industry

1994  
Extension of the products portfolio with Chemical pumps

2012  
70° year of M.V.V.  
*Meccanico Vittorio Veneto*  
M.V.V. is bought by new investors and becomes MVV.



At MVV, we firmly believe in the value of experience and the skills acquired over time. They have played a crucial role in developing our unique know-how, which sets us apart from our competitors.

2013  
MVV leaves the historical location of Vittorio Veneto and moves to a new owned plant in Orsago, a nearby town.

2015  
New milling machines and gear finishing machines acquired.  
Huge investments on quality control.

2018  
Acquisition of a nearby warehouse dedicated to spinning beams assembling.

2022  
Acquisition of a new Zeiss measuring machine and of a new KastoTwin cutting machine. Installation of 300kW of solar panels.



our mission  
is to build  
relations



## looking forward to the future

Today, MVV is a **dynamic and growing company** with a modern fleet of high-quality machine tools. This enables us to deliver precision mechanical work. Our team includes experienced professionals such as our Chief Engineer and Sales Manager, who have over 20 and 30 years of experience at MVV, respectively. They are supported by a **skilled group of mechanics** in our workshop. Our **unique know-how** is passed down from generation to generation, ensuring the same level of quality and passion that has made MVV a **leading company in the gear metering pump industry**.

While our focus remains on **OEMs and engineering companies**, we have also established relationships with major **industrial pump distributors** worldwide. This allows us to provide our precision dosing solutions to smaller companies and end-users. We continuously strive to improve our **assistance service** through regular meetings, workshops, and online courses, ensuring that our customers always receive the support they need.

MVV is proud to be a **UNI EN ISO 9001:2015 certified company**, demonstrating our **commitment to quality and continuous improvement**.





# know how

Our idea of “engineering” is a mixture of direct dialogue, transversality, teamwork, knowledge and skills.

But, most of all, what makes us MVV is our dedication.

Our world is undergoing a transformation influenced by language, and the impact of social media has altered the meaning of numerous words, either amplifying or diminishing their significance.

At MVV, we hold the word **"dedication"** in high regard, defining it as an unwavering commitment to satisfying our customers. With a wide range of pump models at our disposal and custom projects filling our daily agenda, we take pride in our ability to embrace the mindset of "never saying no," even though it can sometimes present challenges and burdens.

Despite the obstacles we face, we consistently strive to provide the best solutions that align with our customers' requirements and exceed their expectations.

# it's all about microns

## design

At MVV, our dedicated R&D team goes above and beyond industry standards to design and engineer custom solutions on a daily basis, catering to diverse pumping requirements. Working with various materials, we explore new avenues to meet even the most challenging applications. When a solution doesn't exist, we take it upon ourselves to create it. Our philosophy is simple: If it doesn't exist, we make it.

## after-sales service

In addition to delivering high-quality products, our success lies in cultivating and nurturing long-term relationships. Our technical and sales departments collaborate closely, engaging in constant brainstorming and idea exchange to address daily challenges.

## service and spare parts

We maintain a large warehouse stocked with spare parts, shafts, and plates to minimize potential downtime in production plants. If supplying spare parts isn't sufficient, our service team is readily available to analyze and resolve any issues through repairs or replacements. Our services extend beyond our own pumps to include other brands as well.

## test and calibration machines

Ensuring accuracy and precision is paramount to us. That's why we provide calibration certificates for all spinning pumps, guaranteeing their reliability. Moreover, we customize compact and precise calibration machines to meet your specific needs.

# basic principles of MVV gear pumps

A few parts and extreme precision. This is the formula for exceptional performances.

At MVV, we have **revolutionized the concept of gear pumps**: instead of standard high-speed gear pumps, we have designed precision gear pumps that serve as **high-precision dosing instruments**. These gear pumps incorporate two or more gears that rotate within the pump housing, creating a positive pressure that propels the fluid through the pump. This process, known as **positive displacement**, ensures accurate and consistent dosing.

As the product being pumped enters the gear pump, it fills the space between the gear teeth and the pump housing. It then moves around the gears, resembling a **"paddle wheel" effect**. The size of the gear teeth and the speed of their rotation determine the precise quantity of product pumped and metered, **eliminating the need for an additional flow meter**.

Our precision gear pumps are engineered with **specialized materials** and undergo **advanced heat treatment** processes. This results in outstanding **wear resistance and dimensional stability**, even when operating under **extreme temperatures, pressures, and viscosities**. Despite their simplicity, with only a few parts, our gear pumps deliver **exceptional performance and unmatched precision**.

- Tight tolerances and clearances (a few microns)
- Extreme accuracy in continuous pulseless stream dispensing or shot dosing.
- Linear flow with changes in operating speeds, pressures, and temperatures.
- Hardened materials: great wear resistance and possibility to handle abrasive or corrosive fluids.
- Low cost: only three moving parts.
- Capable of dosing extremely high viscosities (over 2.000.000 cP).
- Widely customisable solutions.

## flow and behavior

The main reason to push our knowledge and capability of surface finishing to the maximum is essentially **efficiency**.

### The "active flow meter" concept:

MVV pumps have gained a reputation for their **exceptional precision dosing**, thanks to their remarkable **tight tolerances** that measure only a few microns. This level of precision makes them function as **"active flow meters,"** providing optimal dosing accuracy and efficiency.

Unlike conventional flow meters, our pumps deliver a **consistent linear flow** regardless of the generated pressure, ensuring the highest degree of accuracy achievable.

To achieve such precision, we employ **hard and abrasion-resistant steel**, minimizing the number of internal components required. This approach enhances stability and minimizes tolerance errors that could affect overall efficiency. Typically, our pumps are constructed from **heat-treated martensitic stainless steel**, achieving a **hardness of approximately 58 HRC**. This eliminates the need for bushings that could compromise alignment and control of operating clearances.

It's important to note that since our pumps do not incorporate self-lubricating parts such as bushings, they rely on the pumped fluid for lubrication. As a result, pumping "dry fluids" like water or solvents can present challenges. However, it is possible to pump such fluids by reducing the load on the shaft through operating at low speed and pressure.





# viscosities

just an indication on common fluids

During a visit to our office, you will frequently hear the word "viscosity" being mentioned. It is one of the **crucial parameters** we inquire about from our customers, right after determining the required flow rate.

Viscosity plays a vital role in pump operation, particularly in finding the optimal performance range. At a certain viscosity level, the **fluid forms a protective film** on the internal surfaces of the pump. This film, which is just a few microns thick, maintains equilibrium by lubricating the rotating parts and facilitating smooth pump operation. It acts as a safeguard, ensuring that the pump operates **flawlessly and efficiently**.

This chart will giive you a rough idea of the viscosities of common fluids.

| Material                    | Viscosity          |
|-----------------------------|--------------------|
| Water (20°C)                | 1-5 cP             |
| Alcohol 90°                 | 3-7 cP             |
| Ethylene glycol             | 15 cP              |
| Corn oil                    | 65 cP              |
| Motor oil SAE 30            | 150-200 cP         |
| Motor oil SAE 40            | 250-500 cP         |
| Glycerin                    | 1000 cP            |
| Honey                       | 3000-5000 cP       |
| Chocolate syrup             | 10000 cP           |
| Mustard or ketchup          | 50000-70000 cP     |
| Toothpaste                  | 300000 cP          |
| Caulking compound (silicon) | 1000000-5000000 cP |

# and curves

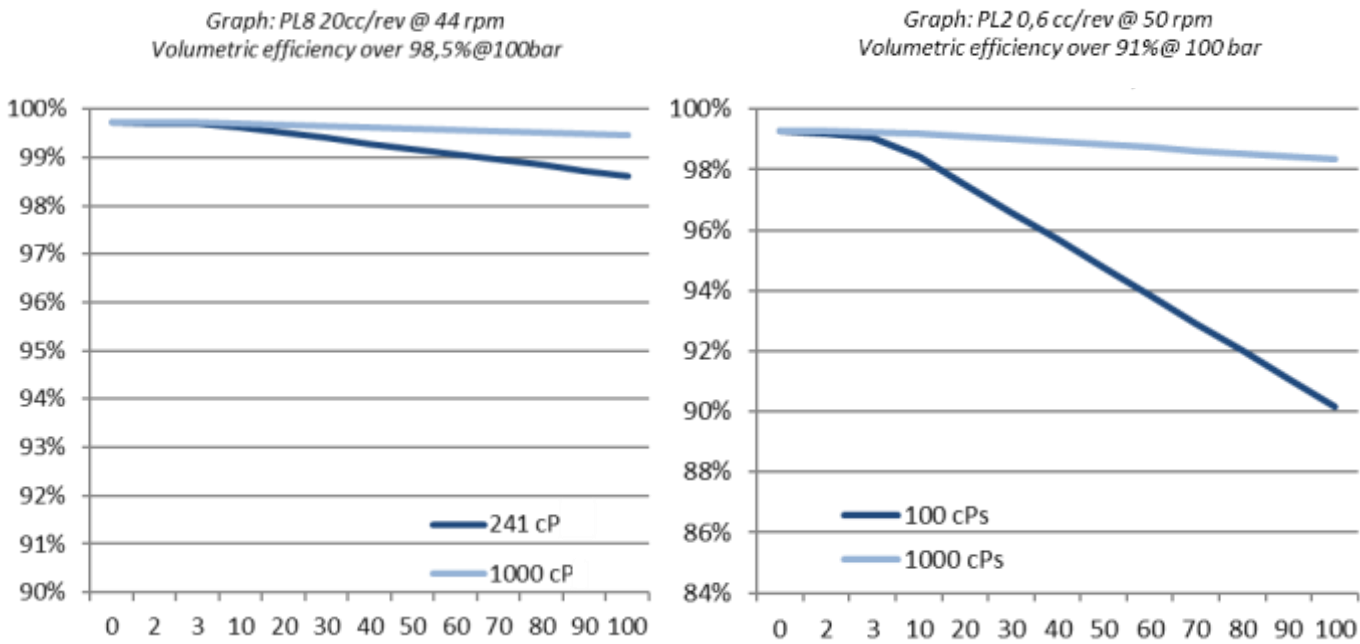
Here is a chance to take a closer look at what we are most proud of: the efficiency of our gear pumps.

The provided curves clearly demonstrate the **exceptional linearity** of our pumps, even under high pressures and low speeds. With **efficiency exceeding 99.5%** in most cases, our pumps deliver outstanding performance.

Please note that these curves represent two specific examples, considering predefined viscosities and speeds. Typically, we do not provide extensive flow curves as our pumps are known for their linearity. To estimate the expected flow rate, you can multiply the speed by the pump's displacement, which will provide a close approximation.

**Our pumps maintain their performance consistency regardless of the viscosity or pressure.**  
For instance, even with a low viscosity fluid of 100 cP at 100 bar, using a small 0.6cc/rev pump, the efficiency remains above 90%.

This remarkable performance sets our pumps apart, offering unbeatable reliability and precision.







# materials

The use of the word "steel" can be ambiguous, as it can refer to many different types and qualities of steel. At our company, we use only the highest quality European steels that are carefully selected and blended for high-demand applications. To ensure the highest levels of hardness and wear resistance, the majority of our steels are heat-treated by leading Italian professionals. We understand that the selection of the best raw materials is critical for achieving optimal performance and longevity of our products.

Below, a representation of our mainly used steels and alloys, together with some high performance thermopolymers and fluoropolymers, used for aggressive chemicals and harsh environments.

| Reference | Description  |
|-----------|--|
| R-02      | High performance HSS alloyed with tungsten, vanadium and chromium. Heat treated  |
| I-12      | Stainless steel high in chromium, with molybdenum and vanadium. Rust and acid - proof steel. Heat treated                          |
| CI        | Cast iron, nickel coated   |
| I-42      | Cr-Ni-Cu hard stainless steel  |
| I-04      | Molybdenum-bearing austenitic stainless steel—AS316L   |
| I-09      | Chromium molybdenum nitriding steel  |
| S-20      | Nickel-iron-chromium austenitic alloy—Alloy 20   |
| S-S3      | Cobalt base alloy—Stellite 3   |
| S-C276    | Acid resistant nickel alloy—Hastelloy C276   |
| PEEK PVX  | High performance PEEK with 10% PTFE, graphite and carbon fibers. Generally used for bearings, has superb tribological performances |
| PEEK CF30 | PEEK 30% carbon fiber filled. Extremely stable and rigid. Generally used for gears   |
| GFPTFE    | 25% fiber - glass filled PTFE. Extremely good chemical resistance, poor wear resistance  |
| Carbon    | Carbon graphite compound. Used for bushings and wearplates for high temperatures   |

# and coatings

Sometimes, our treated steel itself is not enough: we can offer a variety of high performance coatings according to the specific application. Here are some:

NITREG ® - This specialized gas-nitriding treatment is carefully controlled to achieve a surface hardness exceeding 1000HV. It offers excellent performance on stainless steels and penetrates the substrate to a depth of approximately two cents. Designed for long-lasting durability.

DLC - An enhanced carbon coating similar to diamond, providing improved load resistance. The metal-based layer (chromium nitride) delivers the required surface hardness and enhances the resilience of the carbon coating, resulting in a protective "crust" with a thickness of around 2 microns.

CHROME PLATING - Applied to reduce friction, enhance durability by improving abrasion tolerance and wear resistance. It also minimizes issues like galling or seizing of parts and expands chemical inertness, including resistance to oxidation. Additionally, it can be used as a bulking material for worn parts, restoring their original dimensions. Chrome plating measures between 65 and 69 HRC, depending on the substrate.

CHROME NITRIDE (CrN) A chemical compound consisting of chromium and nitrogen, with the formula CrN. It possesses exceptional hardness and exhibits remarkable resistance to corrosion. CrN is utilized as a coating material for corrosion resistance and finds applications in metal forming and plastic molding processes. .



# sealing methods

The choice of the appropriate shaft seal is based on our extensive fluid knowledge and expertise. MVV provides a wide range of solutions, ranging from simple PTFE packing to more sophisticated options such as magnetic couplings or double mechanical seals. We also offer customized solutions and the ability to combine different seal types to meet specific requirements.

## gland packing (PTFE - graphite)

The PTFE braid or rings are tightly wrapped around the driving shaft and compressed, then secured with a nut or screws, creating a highly dependable seal. This type of seal is widely recognized for its compatibility with high-pressure applications and its ease of maintenance, making it a cost-effective choice. Additionally, it can be equipped with a greaser or buffer fluid to enhance its functionality.



## v-collar seal (PTFE - PE - carbon)

V-collars or chevron rings represent a modern advancement from traditional packing solutions. Operating on a similar principle, these collars are compressed and expanded by the gland follower. Their unique "V" shape allows them to expand and create multiple lip-seals. They are available in various compounds, typically PTFE+PE and PTFE with Carbon fiber, making them suitable for use with mildly abrasive fluids. Can be equipped with buffer fluid.



## gland packing/v collar with fluid barrier PL2 (PTFE - glycerine)



This seal is an evolution of our standard packing. A fluid barrier is placed after the packing, preventing air from being sucked in from the shaft and acting as a real "barrier" for all fluids sensitive to humidity and oxygen. It is widely used for isocyanates and reactive chemicals. A transparent tube serves as a small reservoir and level indicator. A Corteco ring keeps the oil in place on the key side. It is successfully used with larger buffer fluid reservoirs on vacuum pumps. It is also available with V-Collars.



## lip seal pa6 (PTFE - Bz - carbon)

A standard energized lip seal made of PTFE and carbon graphite compound is available. It can withstand temperatures over 200°C and is commonly used in hot-melt glue applications. It is held in place with a flange, which allows it to withstand pressures over 150 bar. This seal is simple, economical, and reliable and can work well at temperatures over 80-100°C.



## labyrinth seal

Known as "Viscoseal," this is one of the most recent pump designs for handling melts and polymers. A spiral is grooved on the internal part of the hub, so the polymer is gently taken away from the high temperature. After cooling down (with the help of a gentle air blow), the polymer solidifies, creating the seal. It is practically maintenance-free and long-lasting, making it the most widely used in mono and multi-filament spinning and melt pumps. Often equipped with aluminum heat sinks.



## single mechanical seal



Mostly used in chemical applications, this seal is designed such that the rotating part is in contact with the atmosphere while the static part is immersed in the process fluid, creating a thin lubricating film between the seal faces. The materials most commonly used in MVV for this type of seal are 316 (or SiC)-Carbon-PTFE-FFKM.



## double mechanical seal



When absolutely no leakage is permitted, it is recommended to use a double mechanical seal. MVV typically employs a tandem configuration, which does not require pressurization of the barrier fluid. However, this configuration may not be appropriate for toxic, abrasive, or viscous fluids. An additional reservoir can be supplied with auxiliary equipment to manage the level of the barrier fluid.



## magnetic coupling



The safest solution is certainly the magnetic coupling. One magnet is fixed on the pump shaft, and the other is fixed on the motor shaft. Both are separated by a thin containment shroud made of AISI316Ti or Hastelloy, which totally isolates the process fluid from the atmosphere. The excess heat is dissipated by the fluid itself, acting as a coolant, thanks to our Full-Flow system. However, this type of coupling is not recommended for abrasive, filled, or sticky fluids.



## sealing coupler

Used only for spinning pumps, it's a precursor of the mechanical seal. The pressure built up in the gear chamber pushes the HSS coupler towards the hub flange creating a tight seal. The process polymer lubricates the whole hub.





# mounting and fixing

From the first metering pumps saddle or trunnion mounted to the most customized solutions, MVV is able to offer the widest range of fixing and mounting methods.

Many pumps have been adapted from the textile industry, where they are fixed on heated plates inside spinning beams. In such applications, the ports are not threaded, and connection and sealing are achieved through surface finishing. However, for industrial applications, it is preferred to use flanges, threaded ports, or special custom solutions. Submerged pumps are also not uncommon.

At MVV, we understand the diverse needs of our customers and offer flexible solutions tailored to their specific applications. We can provide customized baseplates and fixing solutions, as well as develop adapter plates and shims to ensure compatibility with our competitors' pump units.

## foot mounting

Standard mounting solution for common baseplates. With integrated or custom bracket. Pumps have threaded ports or flanges.



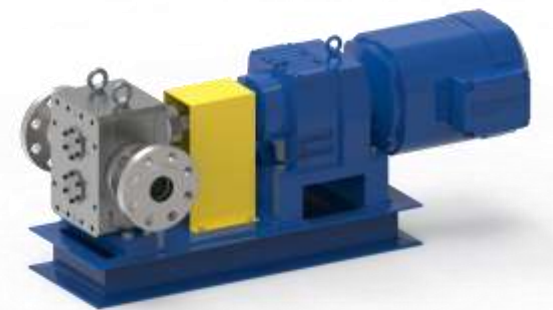
## plate mounting

For spinning and hot-melt pumps, a specialized solution is implemented. The pump is securely fastened onto a custom-made flat lapped plate, ensuring precise alignment and stability. This unique mounting method eliminates the need for threaded connections, providing a seamless and reliable setup.



## flange mounting

Generally used for extrusion pumps, the flanges are used to sustain the pump.



## saddle mounting

Saddle mounting is an old-fashioned system that was originally used for pumps for acrylic dope, but is still used today in certain applications such as carbon fiber production or with American-made chemical pumps. The pump is fastened by pushing the trunnions screwed into the saddle against the pump's inlet and outlet. The pump can be tilted around its axis and will automatically disengage if it becomes blocked.



## tank mounting

These pumps are mounted directly under the tank: generally used in polymer reaction processes.



# accessories

In line with our tailor-made philosophy, we can dress up our pumps with some bells and whistles.

Most of our models can be supplied with many different attachments and accessories. Most of them are designed and built in MVV, otherwise are specifically bought.

## electric heating

Most of our pumps can be electrically heated using cartridges, plates, or heating bands. The heating process is monitored and controlled through PT100 probes and thermostats.



## fluid heating / cooling

Heating jackets and channels are available for pumps of all sizes, ranging from small to large. These jackets and channels can be utilized with water, diathermic oil, or steam, depending on the specific application requirements.



## connection plates / blocks

Many of our pumps have been specifically designed for plate mounting. We offer customized fixing plates that can be equipped with threaded ports, flanges, and various accessories such as safety and control valves, heating circuits, and probes. These customizable fixing plates provide flexibility and convenience for integrating our pumps into your specific system or application.



## flanges

Some applications require flanges instead of threads, and we can provide custom piping and flanges tailored to the customer's needs. The standards and materials for these custom solutions are determined in collaboration with our technical department.



## quenching systems

We offer custom reservoirs specifically designed for double mechanical seals or specialized vacuum-proof combined sealing applications. These reservoirs are tailored to meet the unique requirements of each system, ensuring optimal performance and reliability.

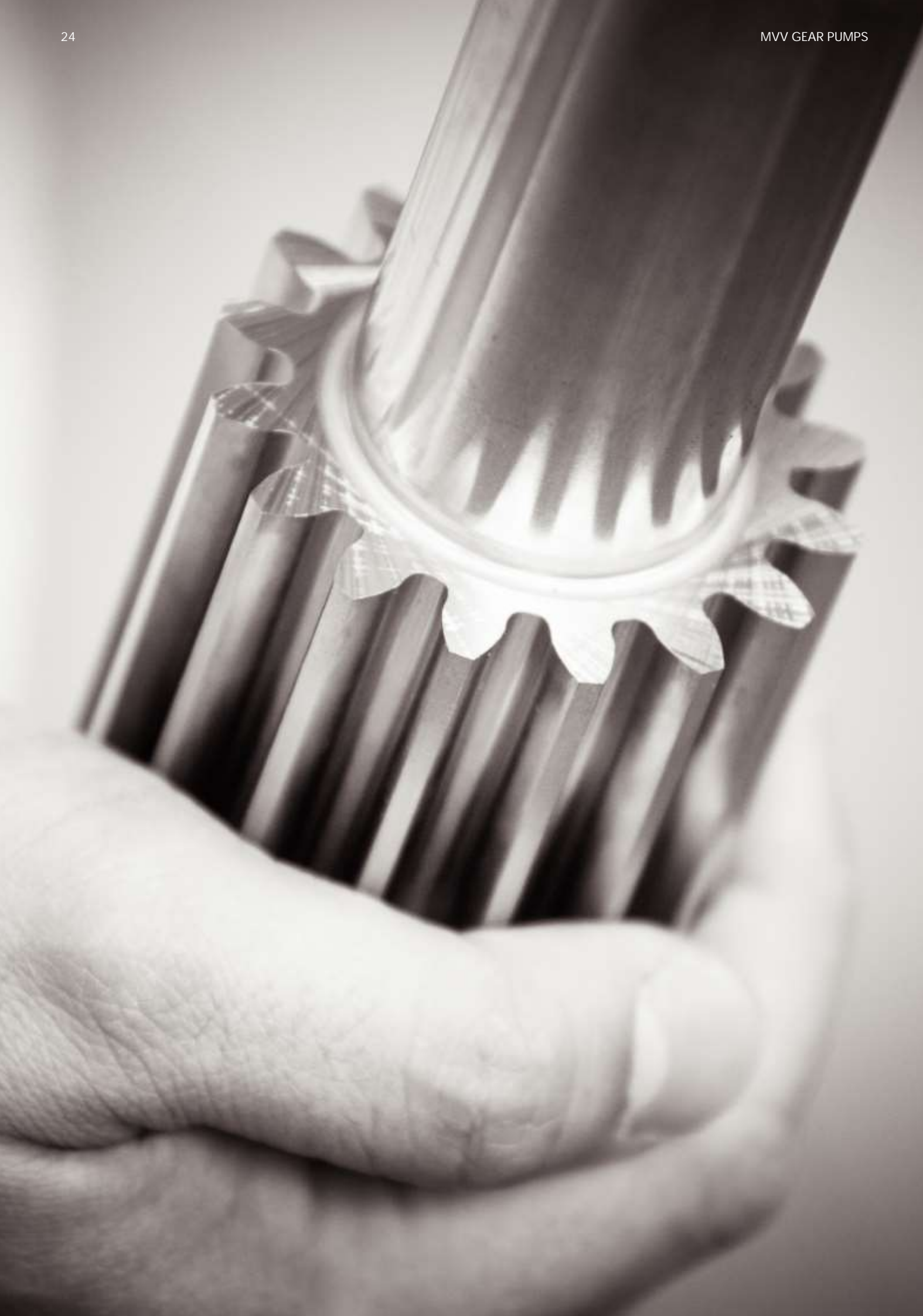


## motor units

Our range of motor options spans from the standard asynchronous three-phase gear motor to more advanced solutions such as brushless and stepper motors with integrated speed control.







## before you continue

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As we have explained in earlier pages, our pumps are precision metering equipment, and therefore, **every aspect of the fluid, system, and environment is crucial to their proper functioning.**

The following pages provide a rough idea of our portfolio, but please remember to **contact us for assistance** in choosing the appropriate models and sizes.

The values indicated are indicative for a reason: just as a car that can reach 200 km/h under ideal conditions may not always perform at that level, a pump that doses a thin, non-lubricant fluid at 10 rpm will never achieve high pressure, and if pushed to 150 rpm, it may seize.

Furthermore, the following models are **merely a selection** of our most standard pumps. We can **customize every aspect**, and we have likely already produced something similar to what you are looking for. Just let us know, and we will search through our (many) options to find the best fit for your needs.

# PL8

The PL8 is MVV's best-selling pump, known for its good performance and affordability. It is widely used in polyurethane applications, but its cast iron body may not be suitable for use with corrosive fluids. This pump is ideal for medium viscosity fluids and can handle working pressures of up to 80 bar, withstanding peaks of over 100 bar. It is a key component in many multi-component polyurethane mixing machines produced in Europe and around the world, and its precision is responsible for the quality of many everyday products, from the soles of hiking boots to the foam interiors of car dashboards.

## technical details

|            |   |
|------------|---|
| materials  | CI, I-09, I-12  |
| shaft seal | PTFE packing, Fluid barrier, O-Rings, Mechanical seal, V-collars, Magnetic coupling |
| options    | Fluid heating, electric heating, Atex   |



# the best seller

- Polyurethanes
- Silicons
- Bonding agents
- Process applications
- Oils
- Resins
- Additives
- Pigments
- 2K systems

## Indicative data

|                           |                  |
|---------------------------|------------------|
| Capacity range            | 0,3 - 120 cc/rev |
| Suggested speed range     | 10 - 250 rpm     |
| Max differential pressure | 80 bar           |
| Operating temperature     | -20°C +180°C     |
| Viscosity range           | 20 - 100.000 cP  |



Performance data are indicative and are highly dependent on fluid and system properties.



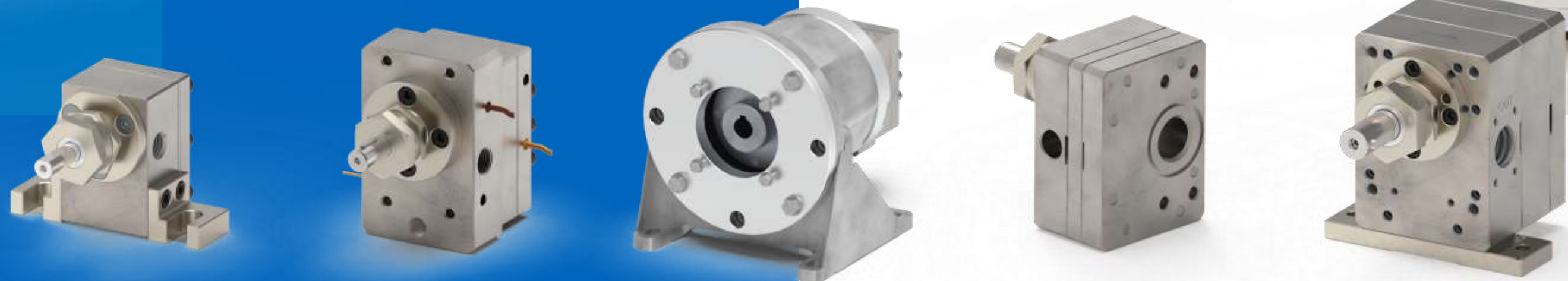


# PL2

The PL2 can be considered as the PL8 dressed up for a party: with a casing made of heat-treated martensitic stainless steel, it is able to handle mildly corrosive fluids. It features a larger shaft (16mm compared to 12mm), a bigger support plate, and centering dowels. It is considered a "general purpose" pump and is widely used for any dispensing application, mostly in 2K systems. Specific models are also available for the solventless lamination (converting) industry.

## technical details

|            |   |
|------------|---|
| materials  | I-09, I-12  |
| shaft seal | PTFE packing, Fluid barrier, O-Rings, Mechanical seal, V-collars, Magnetic coupling |
| options    | Fluid heating, electric heating, Atex   |



# stainless precision

- Polyurethanes
- Silicons
- Converting
- Process applications
- Glues
- Resins
- Additives
- Plasticizers
- 2K systems

## Indicative data

|                           |                  |
|---------------------------|------------------|
| Capacity range            | 0,1 - 120 cc/rev |
| Suggested speed range     | 10 - 250 rpm     |
| Max differential pressure | 100 bar          |
| Operating temperature     | -20°C +180°C     |
| Viscosity range           | 20 - 200.000 cP  |



Performance data are indicative and are highly dependent on fluid and system properties.

# PAL

We like this pump a lot. Thanks to its simple yet rugged construction, it has been able to solve many of our customers problems.

Thanks to the High Speed Steel base and the optional DLC coating, this pump is able to handle difficult fluids, high or low viscosity.

A real problem solver.

## technical details

|            |   |
|------------|---|
| materials  | R-02, I-09, I-12  |
| shaft seal | PTFE packing, Fluid barrier, O-Rings, Mechanical seal, V-collars, Magnetic coupling |
| options    | Fluid heating, electric heating, DLC  |



# when nothing else works

- Colorants, pigments, dyes
- Liquid masterbatches
- Slightly abrasive fluids
- Plaster, pastes, resins

## Indicative data

|                           |                 |
|---------------------------|-----------------|
| Capacity range            | 0,3 - 30 cc/rev |
| Suggested speed range     | 10 - 250 rpm    |
| Max differential pressure | 100 bar         |
| Operating temperature     | -20°C +200°C    |
| Viscosity range           | 1 - 2.000.000   |



Performance data are indicative and are highly dependent on fluid and system properties.



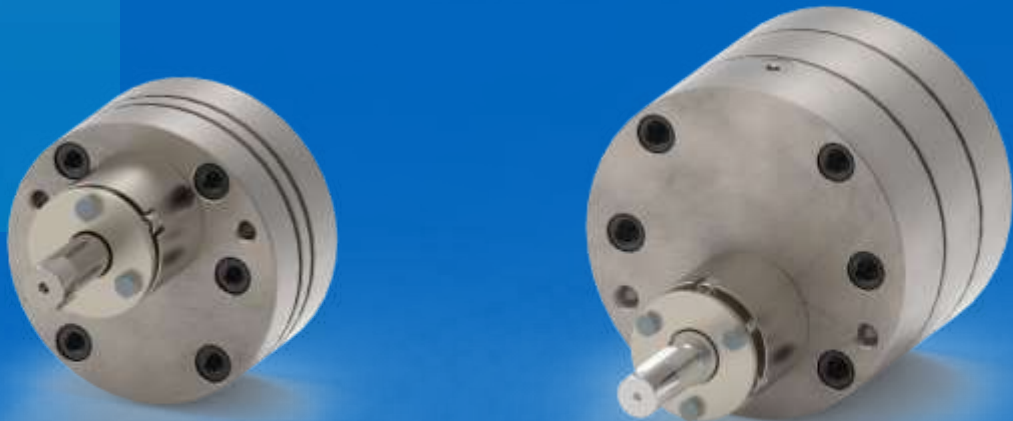
# PLB

This pump is essentially a PL2 with an added feature - O-rings between the plates for enhanced safety against fluid leakage. It can be easily mounted on a lantern and is commonly used in its magnetic-coupled version, particularly for dosing aromas in the tobacco industry. Many of our customers also use it to dose thick resins for applications in the automotive industry.

In addition, its connection-on-the-back construction creates a less complex path for the fluid, avoiding two 90° bends and feeding the fluid directly into the gear chamber. This design helps reduce the chances of clogging and provides a smoother flow, making the pump easier to clean and maintain.

technical details

|            |   |
|------------|---|
| materials  | I-09, I-12  |
| shaft seal | PTFE packing, Fluid barrier, O-Rings, Mechanical seal, V-collars, Magnetic coupling |
| options    | DLC, Nitreg, heating, Atex  |



# o-rings

- Polyurethane
- Silicons
- Bonding agents
- Process applications
- Oils
- Resins
- Additives

Indicative data

|                           |                  |
|---------------------------|------------------|
| Capacity range            | 0,3 - 200 cc/rev |
| Suggested speed range     | 10 - 250 rpm     |
| Max differential pressure | 80 bar           |
| Operating temperature     | -20°C +160°C     |
| Viscosity range           | 5 - 200.000      |



Performance data are indicative and are highly dependent on fluid and system properties.

# PL4

When pumping low viscosity liquids such as solvents and additives, our standard pumps may face difficulties. To address this, we have designed a pump with gears made of a special thermoplastic material, PEEK, in addition to AISI316L stainless steel construction. This unique material, when combined with specific additives, achieves high levels of hardness, enabling us to pump fluids as low as 1 cP at pressures up to 30 bar with almost zero clearance

technical details

|            |                                     |
|------------|-------------------------------------|
| materials  | I-04, PEEK, special alloys          |
| shaft seal | Mechanical seal, magnetic coupling  |
| options    | Electric heating, DLC coating, Atex |



# low viscosities

- Additives
- Solvents
- Water
- Low viscosity fluids
- Low lubricity fluids

Indicative data

|                           |                 |
|---------------------------|-----------------|
| Capacity range            | 0,6 - 25 cc/rev |
| Suggested speed range     | 10 - 500 rpm    |
| Max differential pressure | 30 bar          |
| Operating temperature     | 10 - 80°C       |
| Viscosity range           | 1 - 1000 cP     |



Performance data are indicative and are highly dependent on fluid and system properties.





# PLZ

We went for this shape as it's widely used on the other side of the pond. The North American market and its doosing equipment manufacturers are more than happy to have a high quality replacement for their pumps.

Widely used in the personal care industry.

technical details

|            |                 |
|------------|-----------------|
| materials  | I-09, I-12      |
| shaft seal | Mechanical seal |
| options    | Atex            |



# drop it in!

- Polyurethane
- Silicons
- Converting
- Process applications
- Glues
- Resins
- Additives
- Plasticizers

Indicative data

|                           |                 |
|---------------------------|-----------------|
| Capacity range            | 0,3 - 9 cc/rev  |
| Suggested speed range     | 10 - 250 rpm    |
| Max differential pressure | 100 bar         |
| Operating temperature     | -20°C +160°C    |
| Viscosity range           | 10 - 200.000 cP |



Performance data are indicative and are highly dependent on fluid and system properties.



# PA6 PA7

Engineered for the textile industry, this pump has been modified through the years also thanks to our OEM customers of the hot-melt industry. Nowadays is a totally reliable, precise and sturdy gear metering pump for high temperatures and high pressures, quickly and easily available.

technical details

|            |                                   |
|------------|-----------------------------------|
| materials  | R-02, I-12                        |
| shaft seal | PTFE packing, Lip seal, V-collars |
| options    | Increased clearances, DLC coating |



# hot melt

- Hot-melt glues
- Resins
- Bonding agents
- Can be mounted on follower plates

Indicative data

|                           |                  |
|---------------------------|------------------|
| Capacity range            | 0,3 - 120 cc/rev |
| Suggested speed range     | 10 - 250 rpm     |
| Max differential pressure | 100 bar          |
| Operating temperature     | 10 - 300°C       |
| Viscosity range           | 50 - 500.000     |



Performance data are indicative and are highly dependent on fluid and system properties.



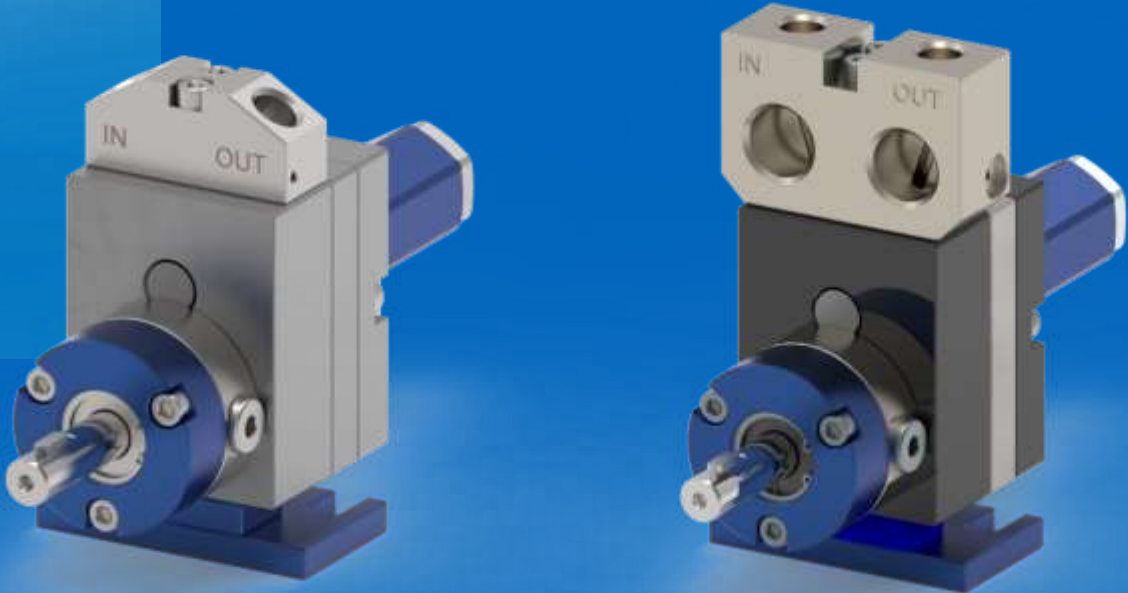
# PLV RCC

This shape is very common in the spray paint industry, mostly for automotive. This is MVV's version, available with different materials and coating options. It's suitable for slightly abrasive fluids such as pigments, colorants, **carbides, oxides...**

The RCC color change system allows quick change from one color to another by opening and closing the corresponding pneumatic valve.

technical details

|            |                                     |
|------------|-------------------------------------|
| materials  | I-09, I-12, PTFE, PEEK              |
| shaft seal | Fluid barrier, O-Rings              |
| options    | DLC, Nitreg, pressure sensors, Atex |

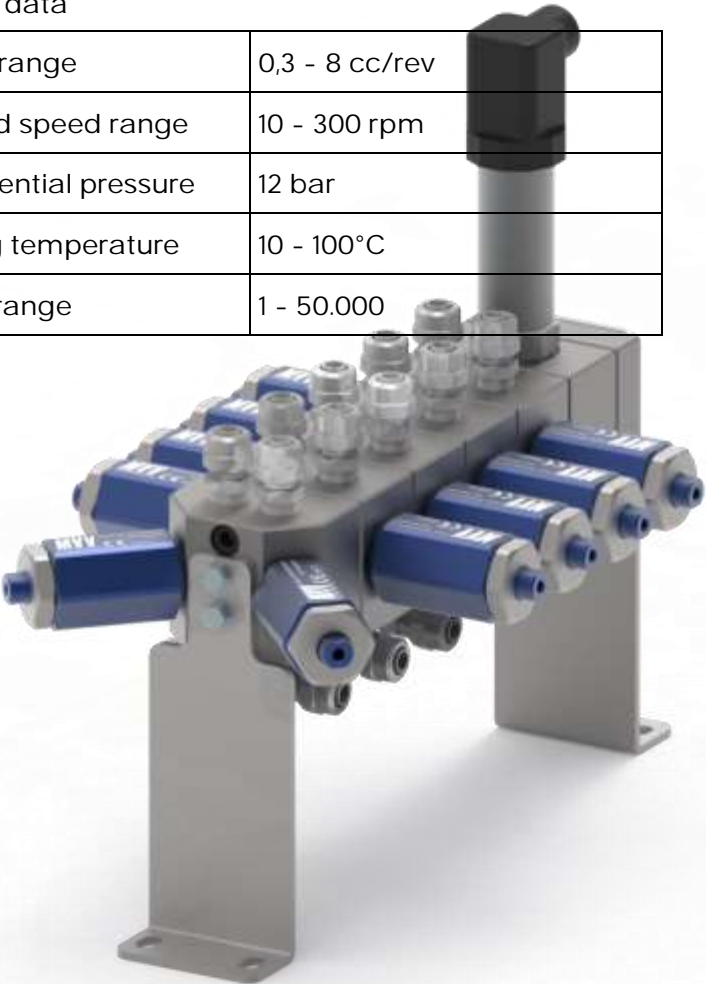


# spray paint

- Spray paint
- Solvents
- Mounted on robot arms or in white rooms
- RCC allows the quick color change between 12 colors
- Easy flushing

Indicative data

|                           |                |
|---------------------------|----------------|
| Capacity range            | 0,3 - 8 cc/rev |
| Suggested speed range     | 10 - 300 rpm   |
| Max differential pressure | 12 bar         |
| Operating temperature     | 10 - 100°C     |
| Viscosity range           | 1 - 50.000     |



Performance data are indicative and are highly dependent on fluid and system properties.

# PLE

When dealing with high pressures and viscosities, a different design is required. The PLE series features bushings that allow for the discharge of forces on a larger and stronger surface, such as the gear plate. This design is ideal for low-temperature applications, particularly when dispensing thick resins, and is often used for polymer transfer in polymer reaction columns, or for handling carbon fiber dope precursors (PAN+DMSO).

technical details

|            |   |
|------------|---|
| materials  | I-09, I-12, R-02  |
| shaft seal | PTFE packing, Fluid barrier, O-Rings, Mechanical seal, V-collars, Magnetic coupling |
| options    | DLC, Nitreg, heating  |



# polymers

- Automotive industry
- Glazing
- Resins dispensing
- Polymer reaction vessels
- Thick and abrasive fluids metering
- Synthetic and man-made fibers
- Carbon fibers and aramides

Indicative data

|                           |                   |
|---------------------------|-------------------|
| Capacity range            | 0,3 - 2000 cc/rev |
| Suggested speed range     | 5 - 100 rpm       |
| Max differential pressure | 350 bar           |
| Operating temperature     | -20°C +160°C      |
| Viscosity range           | 50 - 2.000.000 cP |



Performance data are indicative and are highly dependent on fluid and system properties.





# PAE booster pumps

With the same principles of the PLE, but with different materials: the use of tool steels increases the temperature resistance. These pumps are used for melted polymers, and high-temperature polymer reactions. PAE pumps can be heated electrically or through an appropriate fluid, maintaining the process temperature. A full range of small pumps is available, from 0,3 to 30 cc/rev pumps, able to be mounted directly on 3D-Printing robot arms.

technical details

|            |   |
|------------|---|
| materials  | R-02, I-12  |
| shaft seal | PTFE packing, Fluid barrier, O-Rings, Mechanical seal, V-collars, Magnetic coupling |
| options    | DLC, Nitreg, heating  |



# extrusion

- Melt
- Masterbatch injection
- 3D printing
- Monofilament production
- Polymer reaction
- Designed to reduce the pulsation downstream extrusion equipment to highly increase its efficiency

Indicative data

|                           |                   |
|---------------------------|-------------------|
| Capacity range            | 0,3 - 2000 cc/rev |
| Suggested speed range     | 10 - 80 rpm       |
| Max differential pressure | 400 bar           |
| Operating temperature     | 10 - 350°C        |
| Viscosity range           | 50 - 2.000.000 cP |



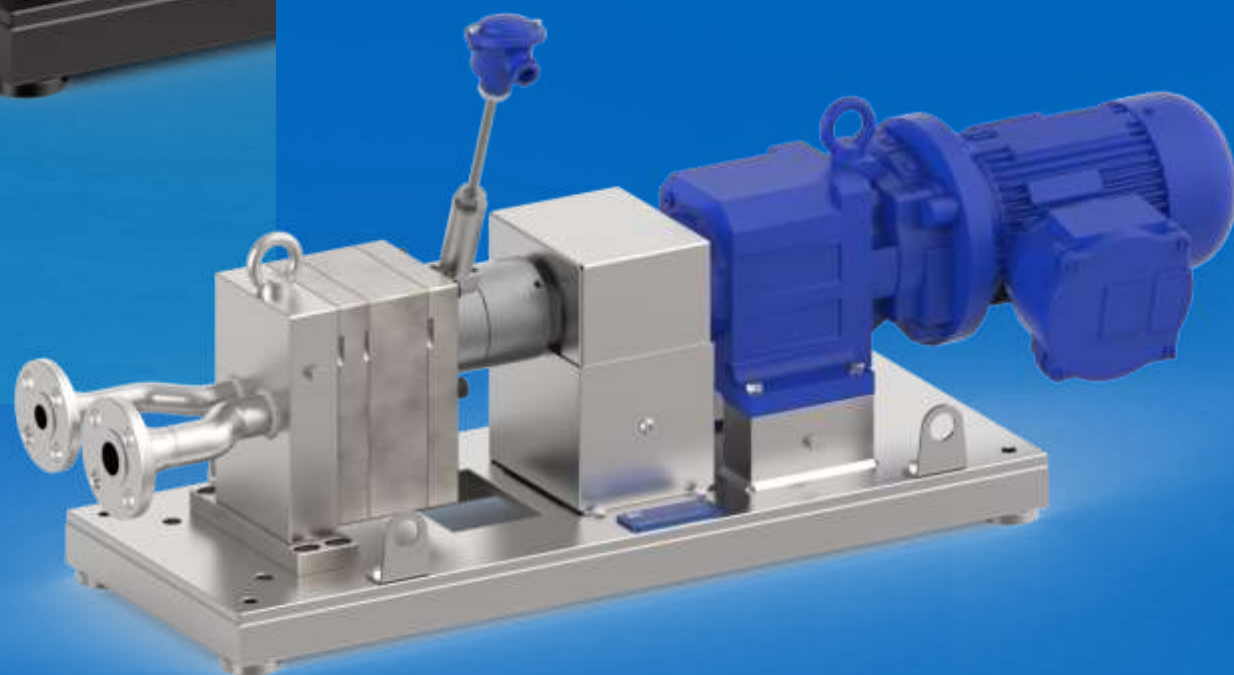
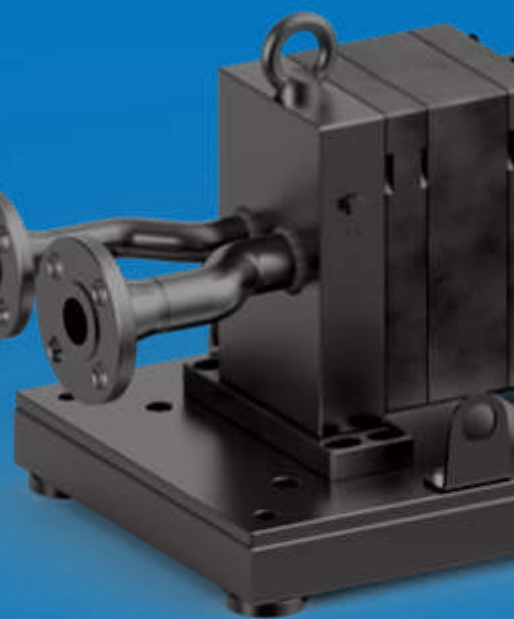
Performance data are indicative and are highly dependent on fluid and system properties.



# custom pumps

We're not always able to satisfy our customer with our standard pumps. Our technical sales consultants, together with our technical department will be pleased to analyze your requirements and develop a dosing solution to fill your needs.

100 cc/rev pump for Atex zone 1, with Ex temperature sensor on double mechanical seal

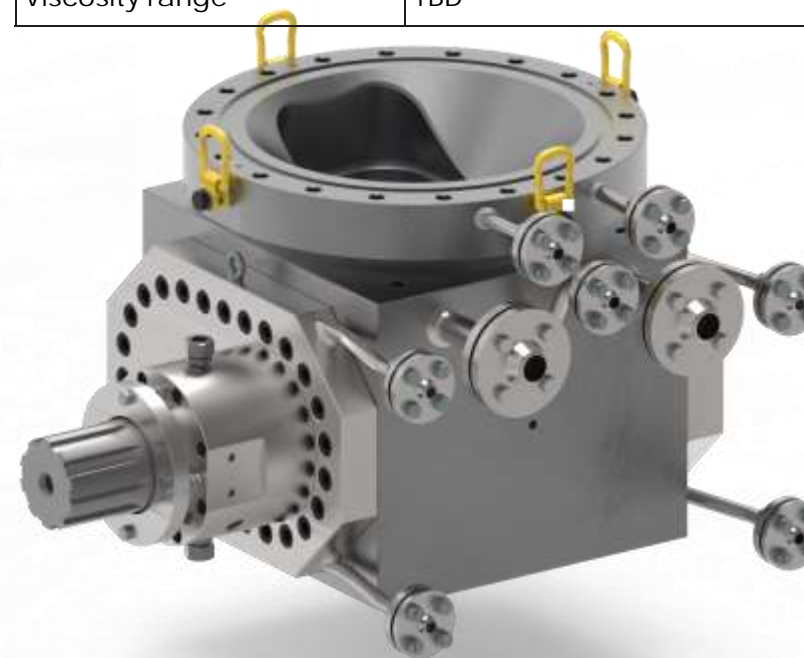


# demanding applications

- Custom designed to meet every and each customers' needs
- Wide choice of materials and surface treatments
- Full customization with ancillary equipment such as sensors and heating circuits
- Able to handle slurries and abrasives

## Indicative data

|                           |                     |
|---------------------------|---------------------|
| Capacity range            | 0,015 - 2500 cc/rev |
| Suggested speed range     | 1 - 2000 rpm        |
| Max differential pressure | TBD                 |
| Operating temperature     | Over 400°C          |
| Viscosity range           | TBD                 |



Performance data are indicative and are highly dependent on fluid and system properties.





# PUG

The PUG Series gear pump is the only motor-speed pump in MVV's range. This compact pump is commonly used for chemical transfer, cyclic operation, and continuous production systems, including open-ended and closed-loop applications. The PUG Series is ideal for pilot plants, vacuum systems, and metering applications. The option to choose between AISI316L and Alloy20 materials makes it suitable for use with acids and other aggressive chemicals.

technical details

|            |  |
|------------|--|
| materials  | I-04, A20, PEEK, GFPTFE, Carbon                  |
| shaft seal | PTFE packing, Mechanical seal, Magnetic coupling |
| options    | Fluid heating, Atex                              |



# chemicals transfer

- Metering or transfer applications
- Dosing of acid and caustic solutions
- solvent recovery
- molten sulfur
- Low viscosity, low lubricity
- Low cost
- Low maintenance
- Repeatability

Indicative data

|                           |                |
|---------------------------|----------------|
| Capacity range            | 1 - 52 cc/rev  |
| Suggested speed range     | 100 - 1750 rpm |
| Max differential pressure | 12 bar         |
| Operating temperature     | -20°C +160°C   |
| Viscosity range           | 1 - 10.000     |



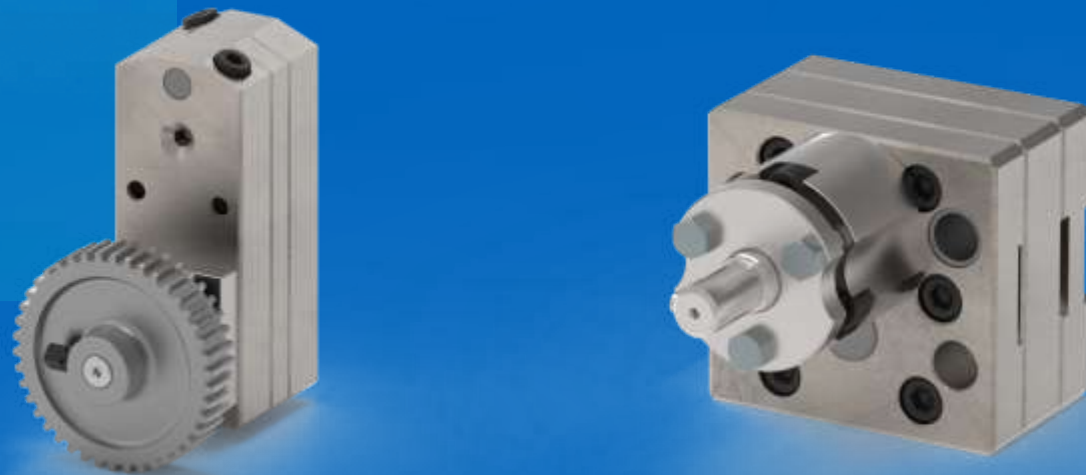
Performance data are indicative and are highly dependent on fluid and system properties.

# single stream polymer metering

Generally used for monofilaments, single stream spinning pumps are used to process melted polymers such as PA, PL, PP, PET, PC, and many others.

Special versions are available able to process PEEK and PTFE based polymers.

Some of these pumps are private labeled to be standard gear metering pumps, used for general chemistry applications.



# textile

- High speed steel alloyed with tungsten, vanadium and chromium
- The highest resistance to wear and extreme working conditions
- Heat treated up to 68 HRC
- Labyrinth self-sealing polymer seal
- Strong and robust, up to 700 bar



Performance data are indicative and are highly dependent on fluid and system properties.





# multi stream planetary

Based on SNIA's knowledge, we have developed dozens of different models suitable for processing nearly any synthetic fiber.

Our multi-outlet spinning pumps are available in round or rectangular shapes and are perfect for manufacturing endless filaments, carpet yarns, staple fibers, nonwovens, tire cords, and industrial yarns made from materials such as PETP, PA 6, PA 6.6, and PP.



# textile

Planetary spinning pumps play a critical role in spinning plant operations, and the key to high-quality yarn is tight production tolerances, reliability, and a long service life. At MVV, we offer a wide range of spinning pump designs that are compatible with most spinning beams installed around the world. Our planetary spinning pumps are engineered to meet the highest standards for performance and reliability, ensuring smooth and consistent yarn production. With dozens of designs to choose from, we can provide the ideal spinning pump for your specific application needs.



Performance data are indicative and are highly dependent on fluid and system properties.



## special single stream

MVV offers complete solutions for feeding and spinning carbon fiber precursors. High technology materials are used to achieve the best efficiency and repeatability on the delicate spinning process. MVV has a huge background on prepolymers thanks to SNIA Engineering and its projects still active around the World.



## acrylic dope precursors

From the small capacity of the spinning pumps to the bigger dope feeding pumps: Polyacrylonitrile (**PAN**) in solvent solution, with about 20% of PAN in 80% solvent like DMAc (Dimethylacetamide) or DMSO (Dimethylsulfoxide) is transferred with big pumps up to 2000 cc/rev.

MVV is able to certify the pump units according to the location of the plant: CCC, EAC, Atex, TR/CU certifications are available on request.

MVV prioritizes confidentiality and ensures the highest level of discretion from the first point of contact."



Performance data are indicative and are highly dependent on fluid and system properties.



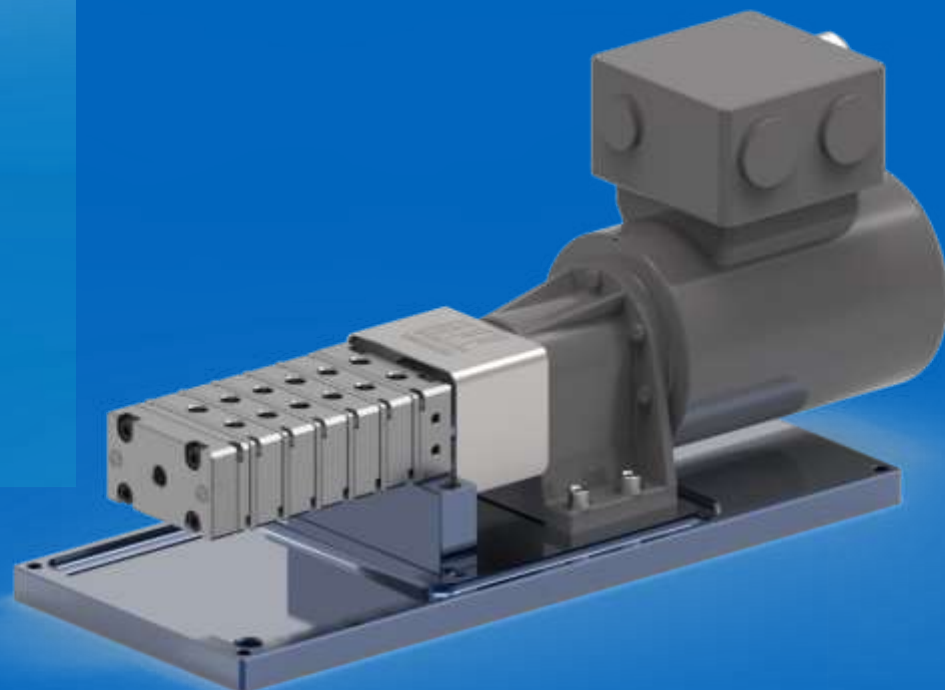


# P94

# P96

Multi-outlet spin finishing pumps are designed for yarn lubrication and are available with a geared motor for quick fitting into any existing spinning line. These pumps are used to apply antistatic finish, adhesive, or other additives to prevent electrostatic charging and fiber breaks. The fibers obtain better properties, such as improved elasticity for subsequent processes.

Additionally, MVV pumps have a wide range of applications for metering low-viscosity media, including water, organic solvents, perfume, and oils.



## spin finishing

- “Sandwich” construction, one inlet—multiple outlet configuration. Up to 12 outlets.
- Centering pins and mechanical machining precision ensure unparalleled dosing repeatability and accuracy.
- Core tempered martensitic stainless steel at 58HRC ensures high mechanical and chemical resistance.
- Lip seals as standard



Performance data are indicative and are highly dependent on fluid and system properties.





## spinnerets

TriHobal



With **80 years** of research in textile mechanics, we have the expertise to provide our customers with the most suitable products and materials for their specific requirements. Our specialization is in manufacturing **melt (dry) spinning** spinnerets, with mirror-finished holes and strict quality control procedures for all dimensions.

Round



We use highly sensitive optical instruments to ensure the size and finishing of the capillaries, and conduct special tests in our premises to verify their height with the most precise instruments.

Additionally, we produce **cuspid-shaped** spinnerets for **melt-blown** spinning.

Delta



The emphasis on **discretion** is one of our main points of pride. From the initial meeting or phone call, we ensure that all drawings, hole patterns, shapes, surface finishes, and materials are kept in the strictest confidence. This commitment to **confidentiality** is why our customers trust us to process their award-winning high-technology yarns.

Hollow-fiber





# spinnerets

holes shapes and details



TRILOBAL  
 $D_{\min} = 0,12\text{mm}$  (0,00472")  
 TOLERANCES  
 $D \pm 1\mu\text{m}$  (0,0000394")  
 $\text{Height} \pm 10\mu\text{m}$  (0,00394")



DELTA  
 $\text{Width}_{\min} = 0,07\text{mm}$  (0,00276")  
 TOLERANCES  
 $\text{Width} \pm 2\mu\text{m}$  (0,0000787")  
 $\text{Length} \pm 5\mu\text{m}$  (0,00197")  
 $\text{Height} \pm 20\mu\text{m}$  (0,000787")



ROUND  
 $\text{Side}_{\min} = 0,10\text{mm}$  (0,00394")  
 TOLERANCES  
 $\text{Side} \pm 2\mu\text{m}$  (0,0000787")  
 $\text{Height} \pm 20\mu\text{m}$  (0,000787")

other shapes



# spinning beams

a long history in spinning engineering

Since the time of SNIA Engineering and its countless references worldwide, we have developed expertise in various types of spinning.

Whether it's polyester, polypropylene, or polyethylene, we are here to assist you in developing spinning heads of all sizes, incorporating different heating methods and offering top or bottom loading options.

## engineering and welding

MVV manufactures spinning beams for synthetic fibers such as **nylon, polyester, polypropylene and spun-bond**, following **customer specifications**.

Utilizing the latest manufacturing technologies, spinning beams can be heated by conduction using diathermic oil and electric resistances, or by induction with diathermic oil vapor.

**Modern insulation solutions** ensure the highest safety levels near the heat sources.

Spinning beams can be designed with instruments for **temperature and pressure control**, safety valves certified to standards, and freezing valves for maintenance operations even while the plant is operating.

All MVV products are tested to ensure compliance with specific customer needs and can be provided with testing certifications according to **P.E.D.** and **ASME U-Stamp** standards upon request.

MVV also assists customers who want to switch from vapor heating to electrical heating on existing systems, ensuring a painless **revamping** of older plants.



# spin packs

confidentiality and competence

Our mechanical workshop produces spin packs in co-engineering or based on the customer's design. In addition to technology and finishes, we ensure the strictest confidentiality and are fully available for the signing of non-disclosure and mutual confidentiality agreements.

The experience gained in past years in different industrial application, makes MVV the ideal partner and supplier of special components from drawing or tailor-engineered parts. Spinning packs, changing filters, block distributors, dynamic mixers and other parts.

The expertise and machining ability combined with the close collaboration with the network of leading companies in the area, help to give added value MVV offering.

MVV is often required to supply reduced lots of parts in special high-tech materials, tiny tolerances, special processes. Most of the time engineering is the highest cost. Our agile and multi-skilled team is able to quickly and accurately assess the work cycle. The combination of passion and expertise makes MVV extremely competitive in small lot production (i.e. 1-10 pcs even for demanding components)



# special and custom equipment

Our team of engineers and mechanics is able to meet the demands of even the most discerning customers and designers.

At MVV, we specialize in creating custom parts and equipment based on our customers' specific designs and requirements, serving not only the textile industry but also various other industries.



# after sales

advice, expertise and service

## MAINTENANCE

MVV offers in house maintenance with different service levels. First, a visual check is performed both externally and, after disassembly, on the different parts. This first analysis gives information regarding components status and allows double checking the of customer's failure report. Parts are then accurately washed and to determine the operating level of maintenance. There are substantially two levels: first is a revision, so grinding of all contact plane surfaces. Second level is a revamping, substitution of irreparably worn parts. The pump is then tested with at rated capacity and pressure and certified with an additional 12 months-warranty.

## SPARE PARTS

MVV offers a fast-track spare parts service for all its products. Contact MVV Sales Department for the availability.

## TECHNICAL ADVICE

Our Engineers are able to offer technical support for the proper installation and operation of our products and for off the relevant ancillaries. Technical support before or during offer stage often generates dialogue for a new engineered solution. Support and competence are the cornerstone of our customer care.

## DISTRIBUTORS

Although our typical customer is the OEM, we cooperate with the most important fluid handling experts, worldwide. We strongly support our distributors with on-site training and coaching, together with constant online sales and technical support.

Ask [sales@mvv.it](mailto:sales@mvv.it) for the closest dealer to you.

# capabilities and certificates

It's important to be recognized: MVV invests its efforts to maintain the following international certifications:



ISO 9001:2015



EAC



ATEX and TR/CU 012/2011



CE

PED 2014/68/EU (Pressure Equipment Directive)

3.1 Materials certificate

FDA (for elastomers)





