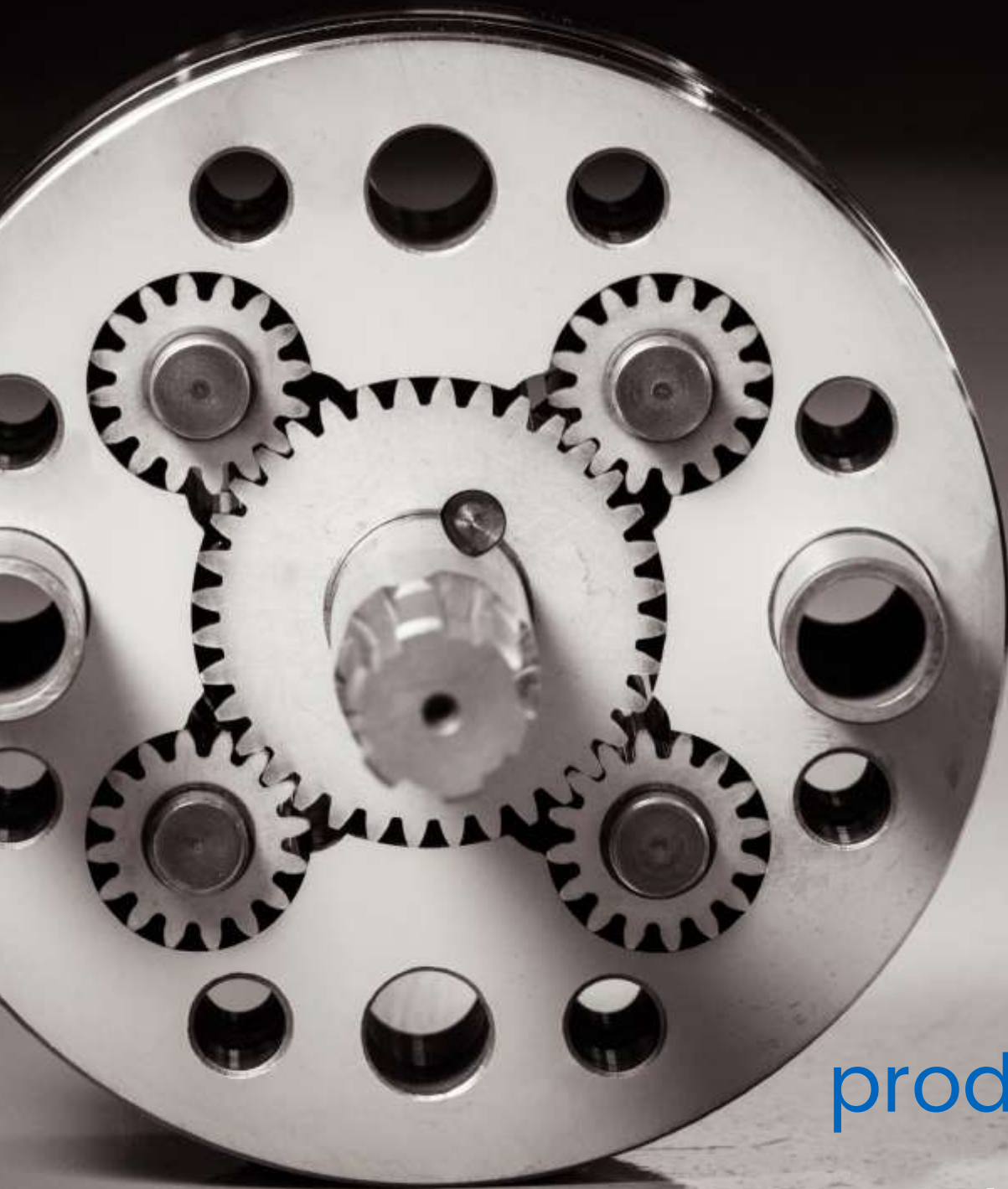


MVV
GEAR PUMPS

products
catalog

80 years
of mechanical
engineering



summary

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strong connection with our history

MVV stands originally for **Meccanico Vittorio Veneto**, from the idea of its founder Franco Marinotti, born in Ceneda (a district of Vittorio Veneto) in 1891.

During a life spent between Milan, the capital of business, and many other countries as a pioneer of exporting the "Made in Italy", he wanted to give to his fellow citizens the opportunity to **work and prosper** in an industrial reality structured like few others in the area.

He founded MVV in his hometown to fulfill SNIA's technical necessities, employing up to 200 people.

Since 1950, MVV acted as the **"mechanical branch"** for SNIA, manufacturing gear pumps and ancillaries for their spinning and chemical plants. **Countless pumps have been installed** all around the world in acrylic, caprolactam, nylon, polyester, viscose, and pulp & paper plants.

SNIA and SNIA Engineering developed many of the chemical processes still in use today, in many fields:

- 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 (Ceneda, Vittorio Veneto, 1891) started it all. The man was a brilliant politician and businessman, capable of fully understanding the international situation between the two wars and of exploiting the economic boom resulting from the second.



Cavaliere del Lavoro since 1937, in 1954 the University of Milan awarded him an honorary degree in agricultural sciences, in 1964 he was elected president of the Italian-Soviet Chamber of Commerce; on May 24, 1946, Umberto II had granted him the title of Count of Torviscosa. Marinotti was also an art expert and painter himself.

He was a convinced supporter of the internationalization of the Italian industry, becoming one of the first strong supporters of Made in Italy in the world.

feet firmly set in the present

With MVV always on its side, SNIA's reference list is enormous, and there are still plants active in many countries.

Unfortunately, SNIA did not have the flicker of many other companies who have been able to push the business towards the Far East and the company gradually saw its business and market lines reduced.

Still, its name resonates as one of the most successful business stories in Italy and Europe.

Subsequently, MVV added other industries to the textile one, developing pumps for

the chemical industry. In the '80s it earned its first contracts with big OEMs of the polyurethane, converting, and hot-melt industries.

MVV never suffered financially from SNIA bankruptcy, which happened in 2010.

In 2012, a pool of private investors, active in the sector of industrial pumps and mechanical engineering, acquired MVV making new investments, one for all moving to an owned industrial building in the nearby town of Orsago.

Since then, consistent investments have been made, both in machinery and people.

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.

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.

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.



MVV strongly believes in the experience and skills acquired in time, creating the know-how that marks the gap from our competitors.

our mission
is to build
relations

MVV
METERING SYSTEMS

looking forward to the future

Nowadays, MVV is a **young and growing company**. Its fleet of machine tools allows mechanical workings of the highest quality and precision.

Our Chief Engineer and our Sales manager have 20+ and 30+ years of experience in MVV, and are supported by younger resources, as well as our **skilled mechanichs** in the workshop.

The know-how is handed down **from generation to generation** ensuring the same quality and passion that make MVV one of the first gear metering pumps companies in the World.

While continuing to focus on OEMs and Engineering companies, in the recent years MVV established relations with the main industrial pumps distributors all around the Globe, ensuring the possibility to access to our precision dosing even to smaller companies and end-users.

The **assistance service** is enhanced every day with continuous support from our offices, with meetings, workshops and online courses, ensuring the customer never feels alone.

MVV is an **UNI EN ISO 9001:2015** certified company.



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 made of words, more and more. Social media have rediscovered and modified the meaning of some of them, giving or taking away their importance.

One of the words we love most is **dedication**, which can be translated into our “slavish desire” to satisfy the customer.

Flanked by a very wide range of hundreds of pump models, custom ones are on the agenda, every day. Our ability to “never say no” is our strength, and every now and then... our cross.



it's **all** about
microns

design

Pretty often, standards are not enough. Our R&D team designs and engineers daily new custom solutions for the most different pumping needs, using different materials and finding new paths for the most demanding applications.

If it doesn't exist, we make it.

after-sales service

Technical and sales departments work together to solve daily businesses. The key to success, beside product quality, is to be able to maintain long-term relations with constant brain stormings and exchange of ideas.

service and spare parts

Production plants cannot remain on hold. Every minute is precious, and our large warehouse is ready to supply shafts, spare parts and plates within a few hours.

If supplying spare parts is not enough, the service team will dismount and analyze the problem by making changes and repairs.

We provide service and spare parts also on other brand pumps.

test and calibration machines

We issue calibration certificates for all spinning pumps, and we tailor on your needs compact and precise calibration machines.

basic principles of MVV gear pumps

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

Forget about the standard high-speed gear pumps for lubricants. MVV gear pumps are **high precision dosing instruments**:

In a gear pump there are two (or more!) gears:

These gears rotate within the pump housing, creating a positive pressure that pushes the fluid through the pump, a process commonly referred to as **positive displacement**. The pumped product fills the space between the gear teeth and the pump housing and moves around the gear, with a "paddle wheel" - like principle.

The size of the gear teeth and the speed at which they rotate determines the quantity of product pumped and metered, **removing the need for a flow meter**.

Using **special and heat-treated materials** and only a few parts, MVV precision gear pumps maintain their **high wear resistance** and absolute dimensional stability, even under extreme temperatures, pressures and viscosities.

- 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 are considered "**active flow meters**". Being made with extremely tight tolerances (microns), they ensure the best dosing precision, with the highest efficiency. For efficiency, we intend the correspondence between their nominal capacity and the flow rate they give at a determined speed. So, if we run a 1cc/rev pump at 50 rpm, we expect to have a flow rate as close as possible to 50cc/min. This is quite simple, but we try to do this regardless of the pressure the pump has to generate. That's why **our pumps are considered to be linear**, and generally more precise than the flow meters used in the industry.

To achieve these results, we need to use very **hard abrasion-resistant steel** and reduce number of the internal parts to the minimum.

Hard means stable, that's why most of our pumps are made in heat-treated martensitic stainless steel. With an hardness of around 58 HRC, there's no need to use bushings, which would add errors in tolerances and therefore in efficiency. The three-plates assembly is aligned with dowels to allow close control of operating clearances and a perfect alignment of the plates, even at high pressures.

Not having self-lubricating parts such as bushings requires the pump to be lubricated by the pumped fluid. This means that it will be difficult to pump "dry fluids" such as water or solvents. It can be done, but reducing the load on the shaft (low speed and pressure).

viscosities

just an indication on common fluids

If you happen to stop by at our office, you will hear the word **viscosity** many times. After the needed flow rate, is the **first value** we ask our customers.

There is a **sweet spot** where the fluid, thanks to its viscosity, creates a protective film on all the internal surfaces of the pump. This film is a few microns thick, but keeps everything in **equilibrium**, lubricating the rotating parts and making the pump work flawlessly.

This chart will give 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 curves below clearly show how our pumps offer extreme linearity even at high pressures and low speeds.

Efficiency is over 99.5% in most cases.

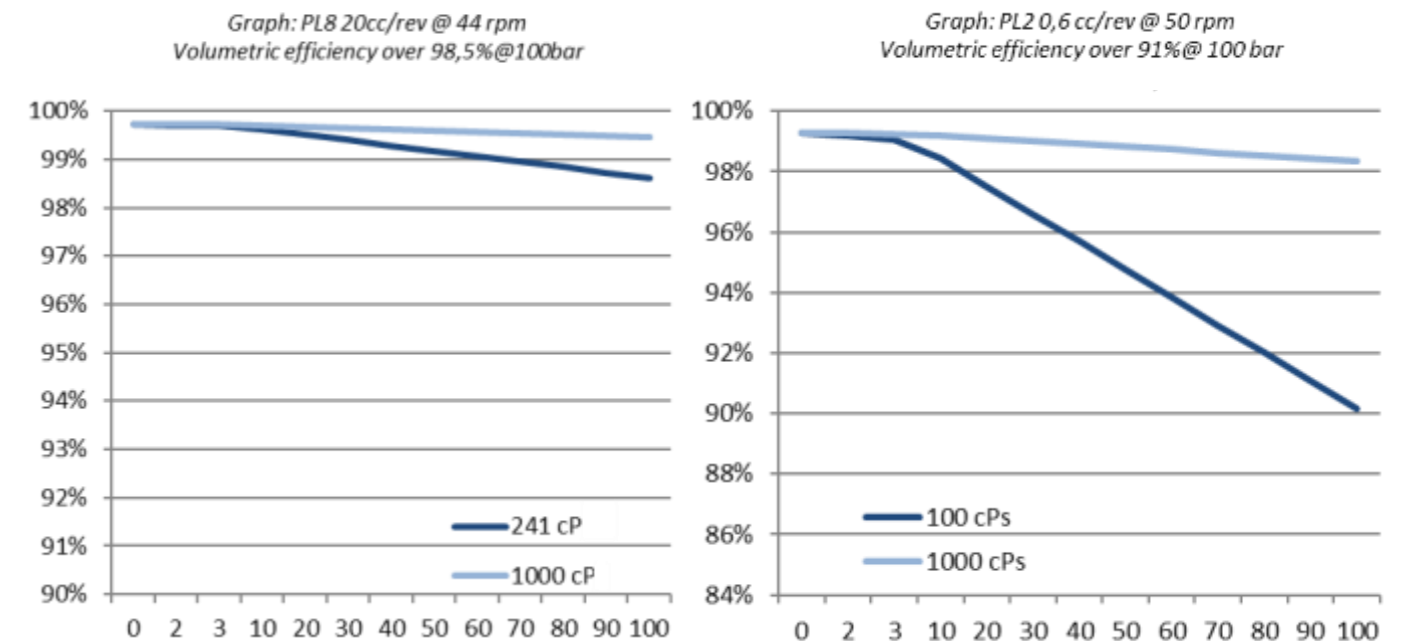
You will notice that these are two specific examples, with given viscosities and speeds. In fact, we generally do not provide flow curves: our pumps are considered to be **linear**, therefore you should only multiply the speed by the displacement of the pump.

The result will give a pretty close idea of the **expected flow rate**.

As you can see, regardless of the viscosity or the pressure.

Even with a low viscosity 100 cP fluid at **100 bar** with a small 0,6cc/rev pump, the efficiency is over 90%.

An unbeatable performance.



materials

“Steel” is a word with many meanings. We use the best European steels, accurately blended specifically for high demanding applications. Most of them are heat treated by the main Italian professional to ensure the highest hardness and wear resistance.

The selection of the best raw materials is crucial for the performances and life span 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® - Special controlled gas-nitriding treatment taking the superficial hardness to over 1000HV. Extremely good on stainless steels, it goes down in the substrate to around two cents. Made to last.

DLC - A modified carbon coating, similar to diamond, with improved load resistance capabilities. A hard and durable, metal-based (chromium nitride) layer offers the required surface hardness and improves the resilience of the overlapping, tribologically effective carbon coating. This coating creates a sort of “crust” over the substrate of around 2 microns thickness.

CHROME PLATING - Used to reduce friction, improve durability through abrasion tolerance and wear resistance in general, minimize galling or seizing of parts, expand chemical inertness to include a broader set of conditions (such as oxidation resistance), and bulking material for worn parts to restore their original dimensions. It measure between 65 and 69 HRC, depending on the substrate.

CHROME NITRIDE (CrN) Chemical compound of chromium and nitrogen with the formula CrN. It is very hard, and is extremely resistant to corrosion. CrN is used as a coating material for corrosion resistance and in metal forming and plastic moulding applications.



sealing methods

The selection of the most suitable shaft seal is done according to fluid knowledge and know-how. MVV offers many different solutions, from the most simple PTFE packing to the more complex Magnetic coupling or double mechanical seal. Customized and combined solutions are available.

gland packing (PTFE - graphite)

A PTFE braid or rings wrapped around the driving shaft, compressed and tightened with a nut or some screws. This is the most common and reliable seal in our range, compatible with high pressure applications. Easy and economical to service. Can be equipped with a greaser or with buffer fluid (below).



v-collar seal (PTFE - PE - carbon)

V-collars or chevron rings are a modern evolution of our old-fashioned packing. They share the same working principle, as they're shrunk and enlarged by the gland follower. With their "V" shape, they enlarge creating a number of lip-seals. They're available in several compounds, generally PTFE+PE and PTFE with Carbon fiber, used with slightly abrasive fluids. Can be supplied 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, avoiding the air to be sucked in from the shaft, acting as a real "barrier" for all the fluids sensible to humidity and oxygen. Widely used for Isocyanates and reactive chemicals. A transparent tube acts as small reservoir and level indicator. A corteco ring keeps the oil in place on the key side. On vacuum pumps is successfully used with bigger buffer fluid reservoirs. Available also with V-Collars.



lip seal pa6 (PTFE - Bz - carbon)

A standard energized lip seal made in a PTFE and carbon graphite compound. Resistant to over 200°C, is widely used in Hot-melt glues applications. As it's held in position with a flange, it's able to stand to pressures over 150 bar. Simple, economical and reliable. Works over 80-100°C.



Labyrinth seal

Known as "Viscoseal", it's one of the most recent additions in pumps for melt and polymers. A spiral is grooved in the internal part of the hub, so the polymer is gently taken away from the high temperature. Cooling down (with help of a gentle air blow), the polymer solidifies creating the seal. Practically serviceless and long lasting, it's the most used in mono and multi filament spinning and melt pumps. Often equipped with aluminum heat sinks.



single mechanical seal

Mostly used in chemical applications. The rotating part is in contact with the atmosphere and the static part is immersed in the process fluid, creating a thin lubricating film between the seal faces. Mostly used in MVV is 316 (or SiC)-Carbon-PTFE-FFKM



double mechanical seal

When no leak is allowed, it's better to move to a double mechanical seal. In MVV a tandem configuration is mostly used, with no need of pressurization of the barrier fluid. This configuration is not suitable when the fluid is toxic, abrasive or sticky. A simple reservoir can be provided with ancillary equipment to control the barrier fluid level.



magnetic coupling

The safest solution is surely the magnetic coupling. One magnet is fixed on the pump shaft, one on the motor shaft. Both are separated by a thin containment shroud, made of AISI316Ti or Hastelloy. The process fluid is totally isolated from the atmosphere. The excess heat is taken away by the fluid itself acting as a coolant, thanks to our Full-Flow system. Not suggested 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 are derived from the textile industry, where the pump is fixed on an heated plate inside a spinning beam. The ports are not threaded, and the connection and sealing are granted by the finishing of the surfaces.

For industrial applications, the market prefers flanges, threaded ports or special custom solutions (is not uncommon to see submerged pumps).

With its flexibility, MVV is able to provide tailored solutions for any application, developing custom baseplates and fixing solutions.

We can make adapter plates and shimmers to fit our pumps to our competitors' pump units.

foot mounting

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



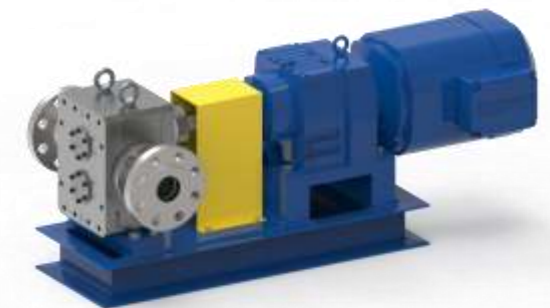
plate mounting

Solution for spinning and hot-melt pumps. The pump has no threaded connections and is fixed on a custom made flat lapped plate.



flange mounting

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



saddle mounting

Old-fashioned mounting system for acrylic pumps, nowadays used for carbon fibers production or for American made chemical pumps. The pumps are fastened by pushing the trunnions screwed in the saddle to the pump's inlet and outlet. The pump can be tilted around its axis, it disengages automatically if blocked.



tank mounting

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



accessories

In line with our taylor-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 build in MVV, otherwise are specifically bought.

electric heating

Most of our pumps can be electrically heated, with cartridges, plates or heating bands. The heating can be monitored and controlled by PT100 probes and thermostats.



fluid heating / cooling

Heating jackets and channels are available for our bigger pumps, but also for the small ones. Water, diathermic oil or steam can be used, according to the application.



connection plates / blocks

Many of our pumps have been originally engineered to be plate-mounted. For these pumps we can customize fixing plates which can be fitted with threaded ports, flanges and many accessories such as safety and control valves, heating circuits or probes.



flanges

Some applications require flanges instead of threads, we can engineer and propose custom piping and flanges according to the customer's needs. Standards and materials are decided together with the technical department.



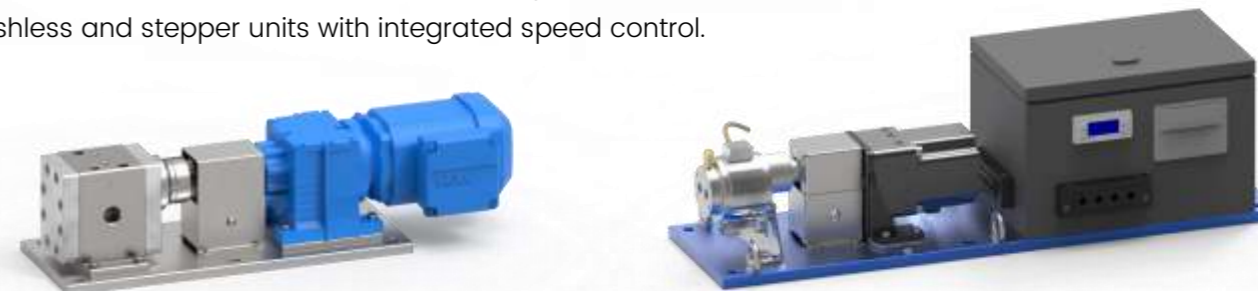
quenching systems

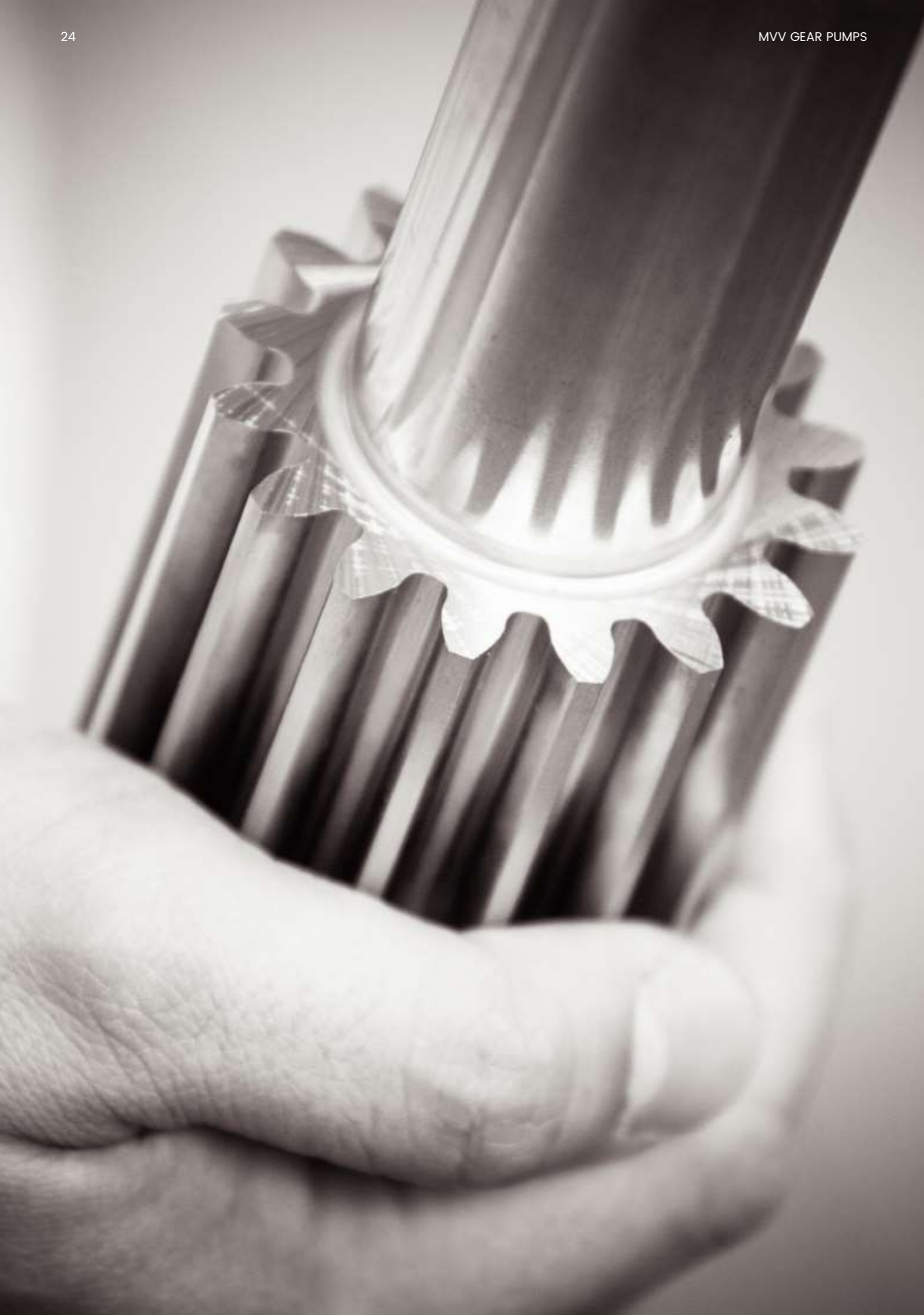
Custom reservoirs for double mechanical seals or special vacuum-proof combined sealing.



motor units

From standard asynchronous three-phase gear motor to more complex brushless and stepper units with integrated speed control.





before you continue

Remember what we tried to explain in the previous pages. Our pumps are **precision metering equipment**, therefore each aspect of the fluid, system and environment is essential to their proper functioning.

The following pages will give you a rough idea of our portfolio, but please, always remember to write or call us to help you in choosing the correct models and sizes.

The values indicated are indicative. The reason is simple: if your car does 200 km/h, it doesn't mean it can do them in all conditions. In the same way, a pump dosing a thin, non lubricant fluid at 10 rpm will never reach a high pressure value, and if pushed at 150 rpm it might seize.

There's more: the following models are **just a selection** of our most standard pumps. We can **customize** every aspect, and probably we've already done something similar to what you're looking for. Just ask, and we will take out something from our (many) drawers.

PL8

The PL8 is MVV's best selling pump. It's also the most affordable with good performance. Widely used in polyurethane applications. The cast iron body might not be suitable for corrosive fluids. This pump works perfectly with medium viscosity fluids and working pressures of up to 80 bar. It can resist to peaks of over 100 bar. It's installed in the heart of many of the multi-component polyurethane mixing machines produced in Europe and all over the world. The quality of many everyday products derives from its precision, from the sole of a **hiking boot** to the foam interior of a **car dashboard**.

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

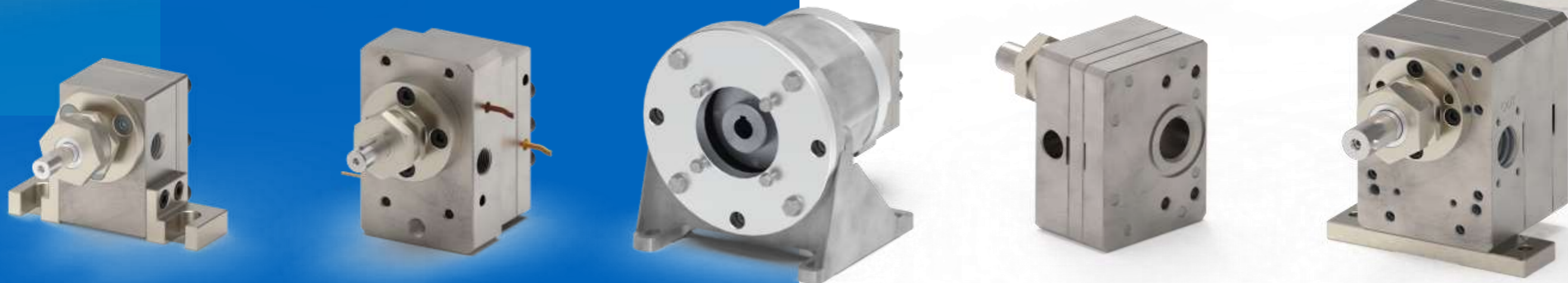
The PL2 can be considered a PL8 dressed for a party: thanks to the casing in heat-treated martensitic stainless steel is able to handle mildly corrosive fluids. It features a **bigger shaft** (16mm vs 12mm), a **bigger support plate** and **centering dowels**.

It's considered a "general purpose" pump, used widely for any dispensing application., mostly on **2K systems**.

Specific models are 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

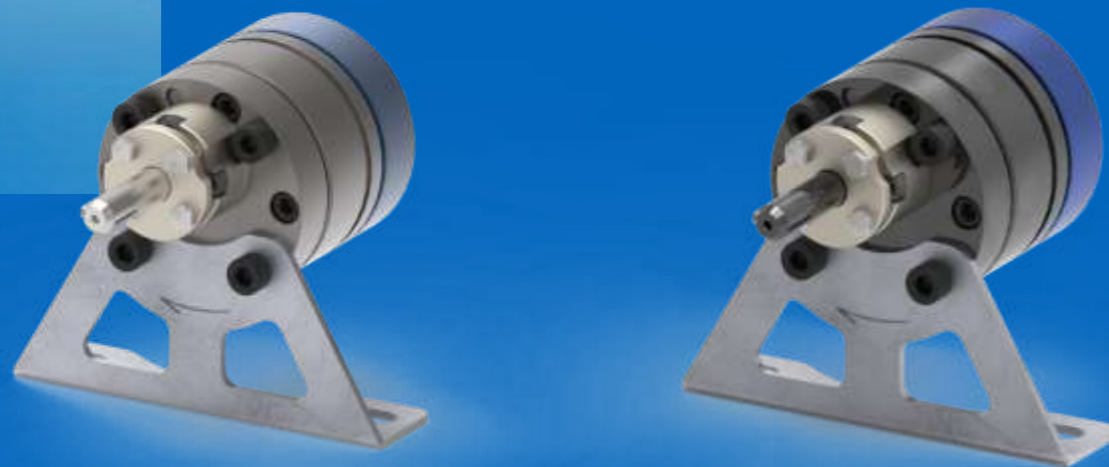
We like this pump a lot. Thanks to its simple yet rugged construction, it has been able to solve many of our customer's problems.

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

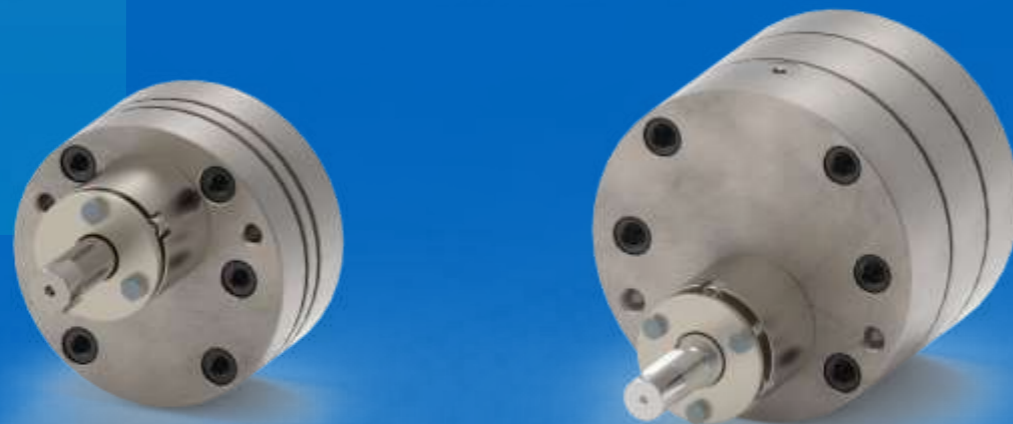
This pump is basically a PL2 with a different shape and a plus. O-rings between the plates, to be more safe about seeping of the fluids through them.

It can be easily mounted on a lantern. It became common in its **magnetic coupled** version, specially in dosing of aromas in the **tobacco industry**.

Many of our customers use them to dose thick resins for applications related to the **automotive industry**.

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

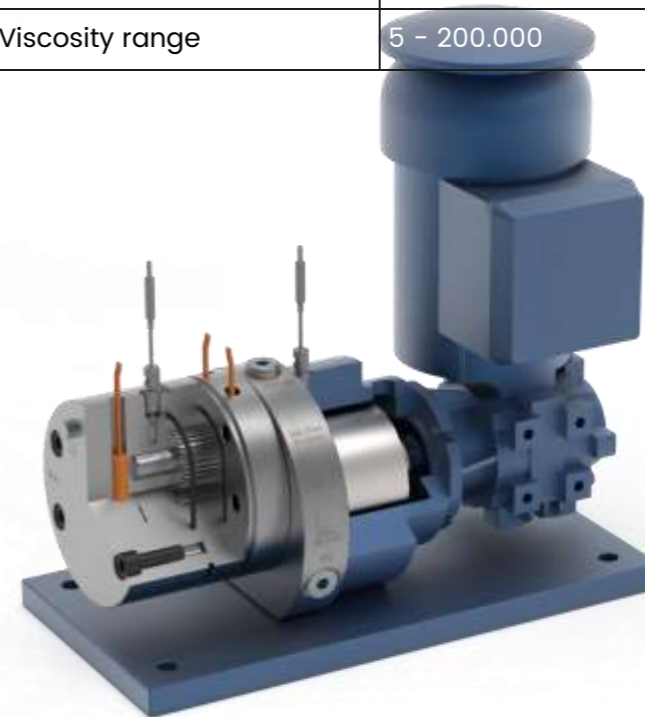


o-rings

- 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 it comes to pumping **low viscosity** liquids such as solvents and additives, our standard pumps can have some difficulty. For this reason we have designed a pump completely in **AISI316L** stainless steel, but with gears in a special very hard thermoplastic material: **PEEK**.

Which, when added with particular elements, reaches very high levels of hardness. This allows us to reach almost zero clearance, helping us to pump **1 cP fluids up to 30 bar**.

technical details

materials	I-04, PEEK
shaft seal	V-collars, 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



PLZ

We went for this shape as it's widely used on the other side of the pond. The North American market and its dosing 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

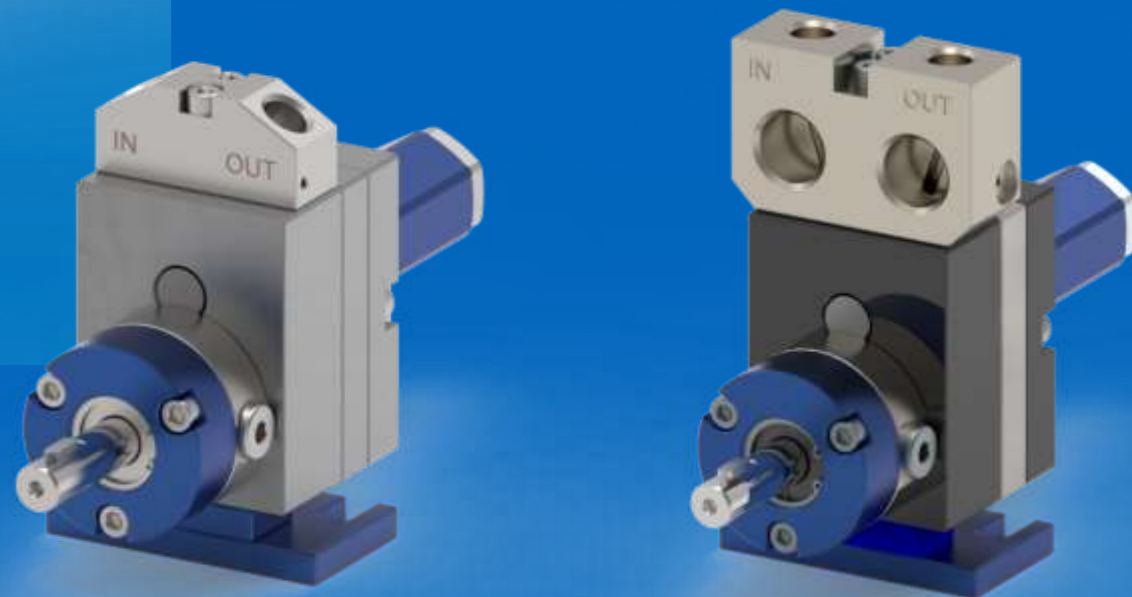
RCC

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

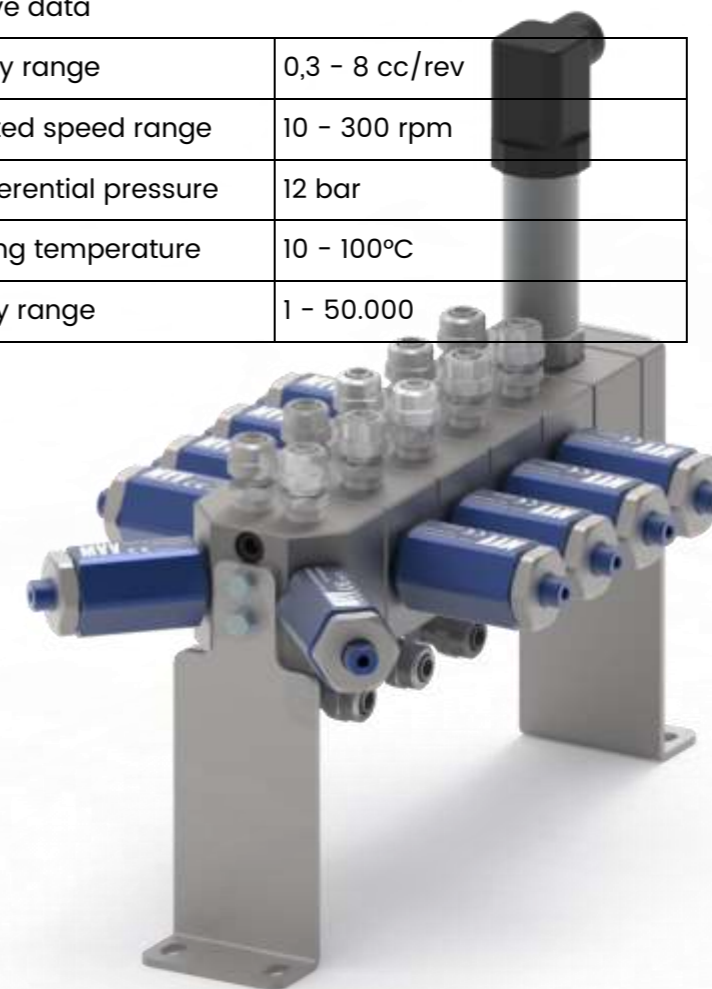


spray paint

- 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 the pressure and the viscosities are high, we have to switch to a different design: The bushings allow us to **discharge the forces** on a larger and stronger surface, the gear plate. PLE series is designed to work at low temperatures, mainly in applications where **thick resins** are dispensed. They're also used for polymer transfer in polymer reaction columns.

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

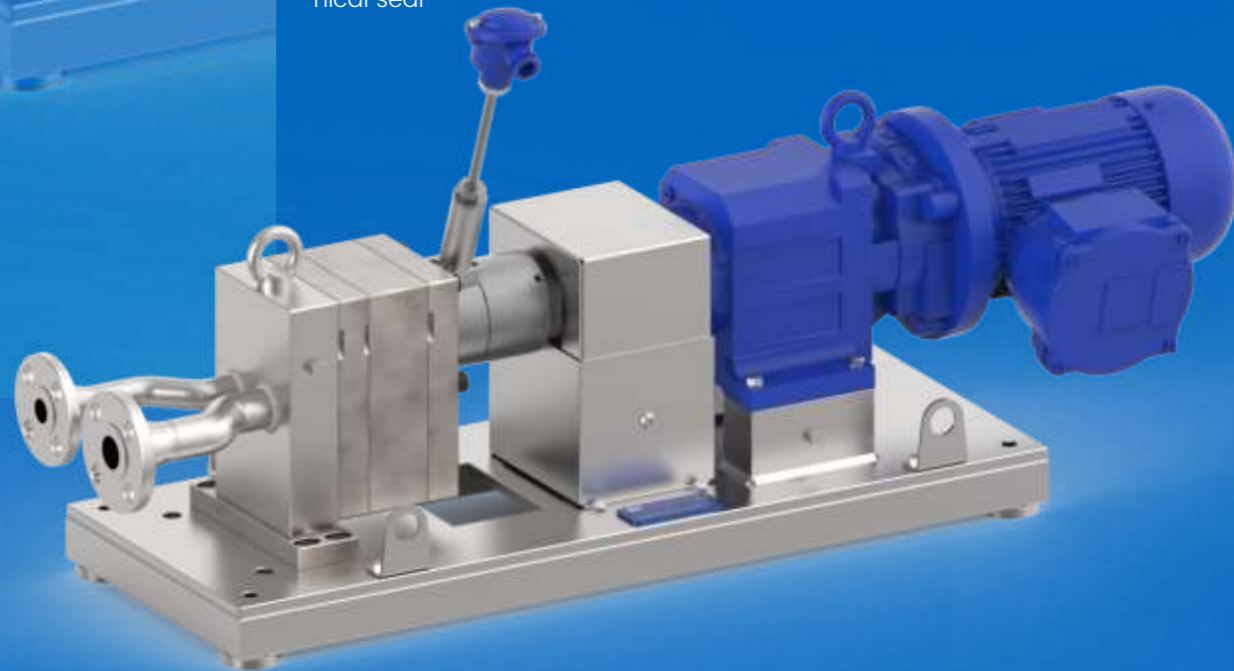


Performance data are indicative and are highly dependent on fluid and system properties.

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

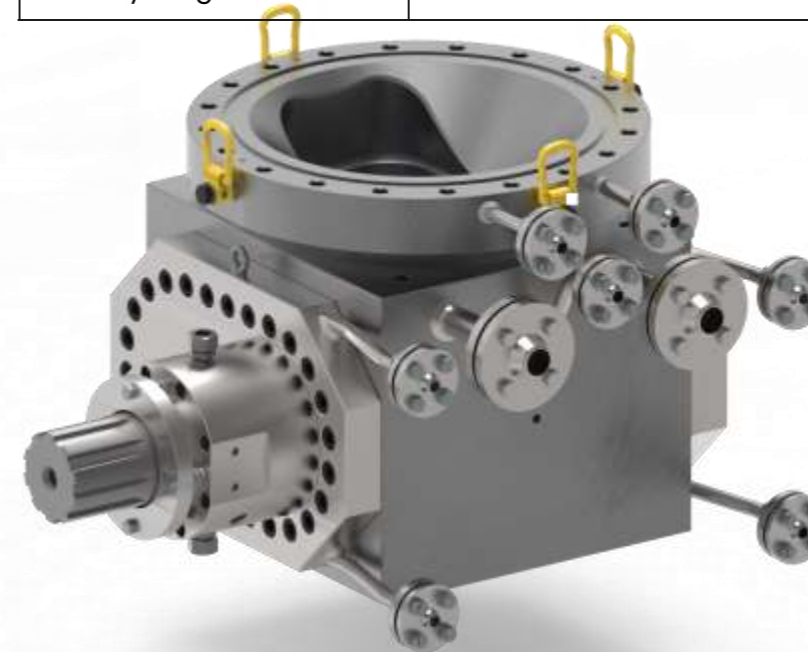


demanding applications

- 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 only motor-speed pump in MVV's range. This little pump is widely used for chemical transfer, cyclic operation and continuous production systems, both open ended and closed-loop. **PUG Series** gear pumps are well suited for pilot plants, vacuum systems, and metering applications. The possibility of choosing between AISI316L and Alloy20 opens the door to acids and 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

From SNIA's knowledge, we developed dozens of different models for almost any synthetic fiber.

Our multi-outlet spinning pumps are available with round or rectangular shapes and are perfect for manufacturing **endless filaments, carpet yarn, staple fibers, nonwovens, tire cord and industrial yarn** made from PETP, PA 6, PA 6.6 and PP.



textile

Planetary spinning pumps can be considered the heart of a spinning plant. Tight production tolerances, reliability and long life are the key words for a **high quality yarn**. MVV spinning pumps are available with dozens of designs, compatible with most spinning beams installed around the world.

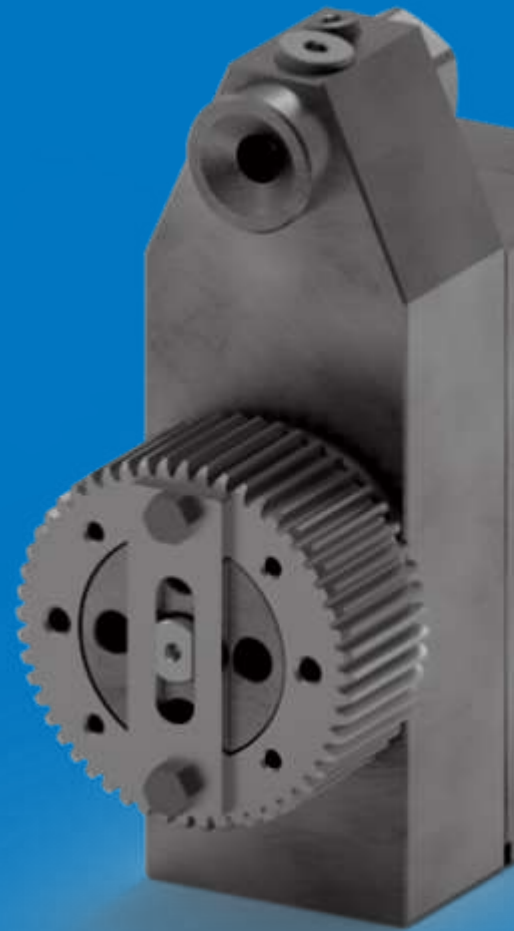


Performance data are indicative and are highly dependent on fluid and system properties.



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.



acrilyc 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 ensures the highest level of **confidentiality** from the first contact.

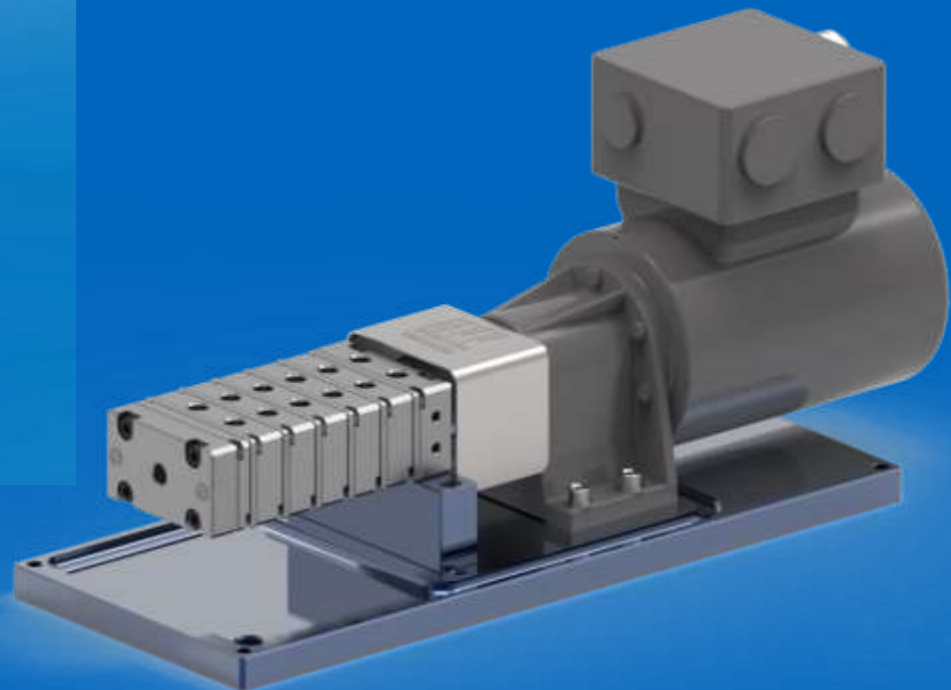


P94

P96

Multi outlet spin finishing pumps, designed for yarn lubrication. Available with geared motor for quick fitting into any existing spinning line.

These pumps are used to apply antistatic finish, adhesive or other additives, to avoid electrostatic charging and fiber breaks. The fibers get better properties such as better elasticity for the following processes. Furthermore, MVV pumps currently find a lot more applications to meter **low-viscosity media** such as water, organic solvents, perfume and oils.



spin finishing

- “Sandwich” construction, one 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



Round



Delta



Hollow-fiber



80 years of research in mechanics for textile give us the ability to supply the most suitable products and materials for our customers' specific requirements. We are specialized on **melt (dry) spinning spinnerets**. The holes are mirror-finished and all the dimensions are subjected to the strictest quality control procedures. Highly sensitive optical instruments are used to check size and finishing of the capillaries; their height is checked by the **most precise instruments** and by special tests made in our premises.

We manufacture cuspid-shaped spinnerets for melt-blown spinning.

Discretion is definitely one of our prides. From the first meeting or phone call all the drawings, hole patterns, shapes, surface finishing or materials will be kept in **strict confidence**. This is also why our customers choose us to process their **award-winning** high technology yarns.



spinnerets

holes shapes and details



TRILOBAL

$D_{\min} = 0,12\text{mm}$ (0,00472")

TOLERANCES

$D \pm 1\mu\text{m}$ (0,0000394")

Height $\pm 10\mu\text{m}$ (0,00394")



DELTA

Width_{min} = 0,07mm (0,00276")

TOLERANCES

Width $\pm 2\mu\text{m}$ (0,0000787")

Length $\pm 5\mu\text{m}$ (0,00197")

Height $\pm 20\mu\text{m}$ (0,000787")



ROUND

Side_{min} = 0,10mm (0,00394")

TOLERANCES

Side $\pm 2\mu\text{m}$ (0,0000787")

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 around the world, we have developed knowledge for different types of spinning. Whether it is polyester, polypropylene or polyethylene, we are at your side to develop spinning heads of all sizes with different heating methods, top or bottom loading.

engineering and welding

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

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

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

Upon request, spinning beams can be designed furnished with instruments for the **temperature and pressure control**, as well as with safety valves certified according to the standards and with freezing valves for maintenance operations even while the plant is operating.

The spinning beams made by MVV are tested to ensure compliance with the specific needs of each customer.

On request, all MVV's products can be provided with testing certifications according to **P.E.D. and ASME U-Stamp** standards.

MVV also assists the 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 meet the demands of the most demanding designers.

MVV is first of all a mechanical workshop: we create for our customers parts on their special design, special equipment and deep customizations, for the textile industry and any other industry.



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 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 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)





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