



UK Flowtechnik

Specialists in flow metering, pumps, couplings
and process measurement equipment

Solutions for Fluid Technology

beinlich.*pump
systems*



PUMP SYSTEMS

DOSING + TRANSFER



PRODUCT OVERVIEW

4

ZPD

External gear pump

6

ZPDA

External gear pump

8

ECO.PUMP

External gear pump

10

DARTEC

External gear pump

12

VISCO.PUMP

Progressive cavity pump

14

SPECIAL OPTIONS

Custom solutions

BEINLICH PUMP SYSTEMS



UK FLOWTECHNIK – YOUR COMPETENT BEINLICH PARTNER

UK Flowtechnik Ltd. is a joint venture between the German e.holding company group and Flowtechnik, a subsidiary of Hydrotechnik UK Ltd. We supply and distribute flowmeters, instrumentation, specialist pumps, magnetic couplings and high-quality hydraulic components of the German quality brands Beinlich, VSE, DST and HBE on the British market.

CUSTOMER-SPECIFIC PUMP DESIGN

Beinlich is an international supplier of dosing and transfer pumps for industrial applications in process plants and offers a large selection of high capacity external and internal gear pumps, high pressure radial piston pumps and progressive cavity pumps. Beinlich has technical knowledge from more than 65 years in pump system technology.

In addition to standard pump series, Beinlich also designs innovative and efficient individual system solutions which are realised according to customer requirements for various demanding applications. In-house construction, development and production enable short development times and ensure a high level of quality.

APPLICATIONS FOR VARIOUS INDUSTRIES

With its high-precision gear pumps, Beinlich is one of the leading suppliers worldwide in adhesive bonding and dosing technology. Complete pump units or individual components manufactured by Beinlich

are applied in the chemical, dyes and paints, coatings, oil hydraulics, plastics, food and pharmaceutical industries among others, in two- and multi-component machines as well as in the shipbuilding, aircraft and aerospace construction.

INTEGRATED SYSTEM SOLUTIONS

By cooperating with our partner companies VSE and DST, Beinlich also develops integrated system solutions with flow meter and magnetic coupling according to customer request. By offering complete systems at a single source, we can achieve optimal performance for our clients.

QUALITY PRODUCTS AND EXCELLENT SERVICE

UK Flowtechnik, based in Nottingham, is your local partner for Beinlich standard pump series as well as customer-specific solutions. We provide distribution, application expertise, quality service and technical support. Starting from the first inquiry, we provide personal consultations tailored to each individual need.

We work closely with our customers from the initial inquiry stage onwards and can provide innovative solutions for the most demanding of applications. We have a wealth of experience in helping you choose the most effective solution for your application along with excellent technical knowledge and support. Our friendly team is always on hand to deal with your enquiry.

beinlich pump
systems

ZPD

EXTERNAL GEAR DOSING PUMP



Our most flexible line of external gear pumps, the ZPD has been used in countless applications the world over. The basis of its success stems from a platform of customization that rivals even the most competent competitors. Available in cast iron and stainless steel bodies, the ZPD flaunts 43 displacement sizes, 5 shaft seal options and multiple bearing and wear plate choices. ZPD gear pumps are specifically used for wide flow range metering applications and transfer applications. Volumetric efficiency values of over 90 % are typically achieved.

OPERATING CONDITIONS

SPEED

10 - 1,750 rpm
(Depending on the respective operating conditions)

PUMP PRINCIPLE

External spur gears

ROTATION

Clockwise (cw), right
Counterclockwise (ccw), left

VISCOSITY

0.8 - 1,000,000 mPa·s
(Depending on the respective operating conditions)

DISPLACEMENTS CC/REV

See chart on page 5.

TEMPERATURE

-20°C up to +150°C (standard version)
Special designs are available up to 350°C

OPERATING PRESSURE*

Operating pressure max. 200 bar
Varies with size and material specification.
See chart on page 5 for details.

MATERIALS

316 stainless steel body with 440B wear parts, or cast iron body with hardened steel wear parts.

COMMON APPLICATIONS

Metering of polyurethanes, isocyanate, polyol, catalyst, additives, silicones, adhesives, oils and diesel fuel

HIGHLIGHTS

- Low-pulsation and precise dosing of the medium being transferred
- High pressures
- Large flow range
- Multiple construction material options
- Multiple sealing options

* depending on rotation speed and viscosity

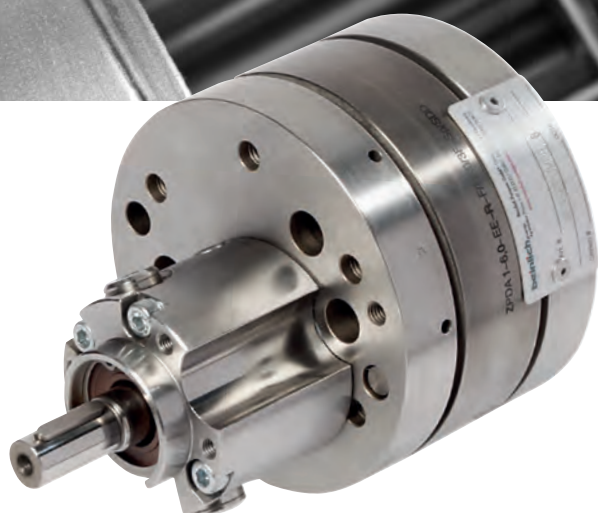
DISPLACEMENT SIZES & SPECIFICATION

Size	Displacements cc/rev	Operating pressure bar		Flowrate [l/min] at		
		KIS	KIN	1,750 rpm < 200 mPa·s	600 rpm < 2,000 mPa·s	300 rpm < 10,000 mPa·s
1	0.30	180	40	0.53	0.18	0.09
1	0.50			0.88	0.30	0.15
1	0.87			1.52	0.52	0.26
1	1.17			2.05	0.70	0.35
1	1.46			2.56	0.88	0.44
1	1.90			3.33	1.14	0.57
1	2.50			4.38	1.50	0.75
1	3.20			5.60	1.92	0.96
1	3.80			6.65	2.28	1.14
1	5.10			8.93	3.06	1.53
1	7.30	180	40	12.78	4.38	2.19
2	3.90			6.83	2.34	1.17
2	7.80			13.65	4.68	2.34
2	11.80			20.65	7.08	3.54
2	15.70			27.48	9.42	4.71
2	19.60			34.30	11.76	5.88
2	23.60	160	40	41.30	14.16	7.08
3	17.30			30.28	10.38	5.19
3	22.00			38.50	13.20	6.60
3	29.40			51.45	17.64	8.82
3	37.40			65.45	22.44	11.22
3	45.40			79.45	27.24	13.62
3	60.00	140	40	105.00	36.00	18.00
3	72.00			126.00	43.20	21.60
4	44.40	180	40	77.70	26.64	13.32
4	57.90			101.33	34.74	17.37
4	74.50			130.38	44.70	22.35
4	89.30			156.28	53.58	26.79
4	110.00			192.50	66.00	33.00
4	131.00			229.25	78.60	39.30
4	149.00			260.75	89.40	44.70
4	166.80			291.90	100.08	50.04
4	184.60	120	40	323.05	110.76	55.38
4	223.00			390.25	133.80	66.90
4	236.00			413.00	141.60	70.80
4	280.00			490.00	168.00	84.00
4	316.00			553.00	189.60	94.80
4	354.00			619.50	212.40	106.20
4	400.00	50	40	700.00	240.00	120.00
4	434.00			759.50	260.40	130.20
4	472.00			826.00	283.20	141.60
4	517.00			904.75	310.20	155.10

Sizes up to 2,600 cc/rev available on request.

ZPDA

EXTERNAL GEAR DOSING PUMP



The high-precision ZPDA dosing pumps are specifically designed for start stop dosing. The low pulsation gear design provides a constant flow with very rapid pressure build-up. Internal clearances based on fluid viscosities are held within a few microns to insure the highest efficiency possible, even at high differential pressures up to 200 bar. Depending on the application, DLC coatings are available for the wetted parts to provide additional corrosive resistance and abrasive particle resistance as well. Direct mounting of a VSE flow meter on the rear plate is also available for closed loop control.

OPERATING CONDITIONS

SPEED

1 – 200 rpm

(Depending on the respective operating conditions)

PUMP PRINCIPLE

Low pulsation external spur gears

ROTATION

Clockwise (cw), right

VISCOSITY

1 – 1,000,000 mPa·s

(Depending on the respective operating conditions)

DISPLACEMENTS CC/REV

ZPDA 1: 0.1 / 0.3 / 0.6 / 1.2 / 1.8 / 2.4 / 3.0 / 4.8 / 6.0

ZPDA 2: 6.0 / 10.0 / 12.0 / 16.0 / 20.0 / 22.0 / 26.0

TEMPERATURE

-20°C up to +150°C (standard version)

Special designs are available for deviating temperatures.

OPERATING PRESSURE*

Operating pressure max. 200 bar

MATERIALS

440B stainless steel

COMMON APPLICATIONS

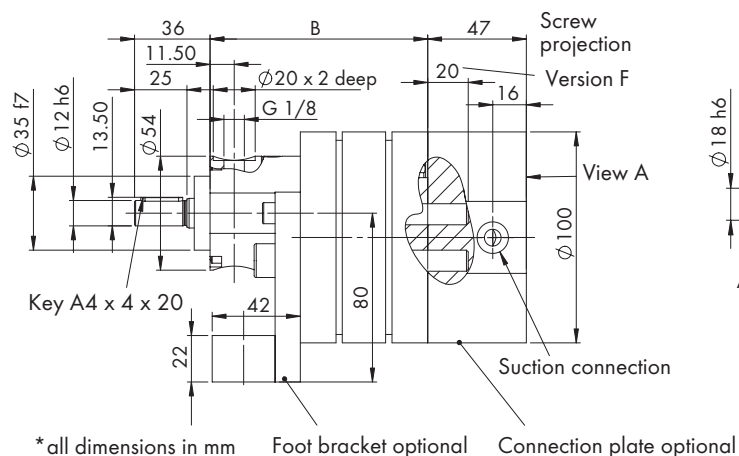
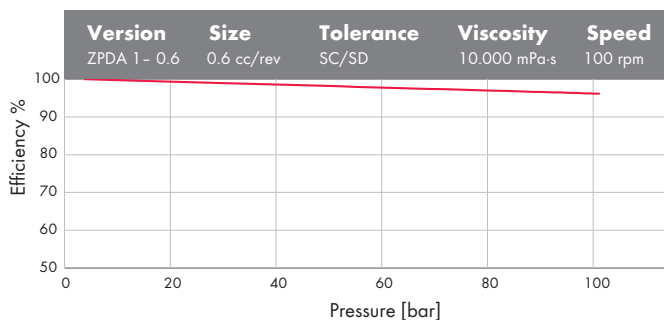
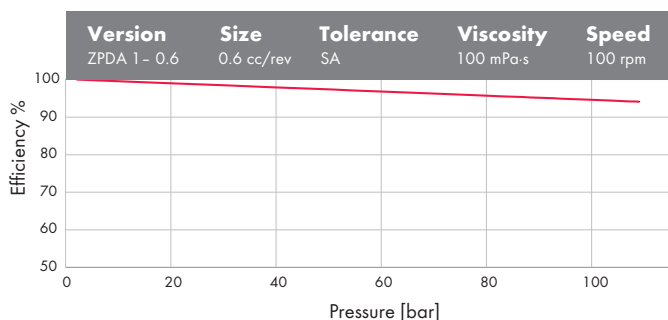
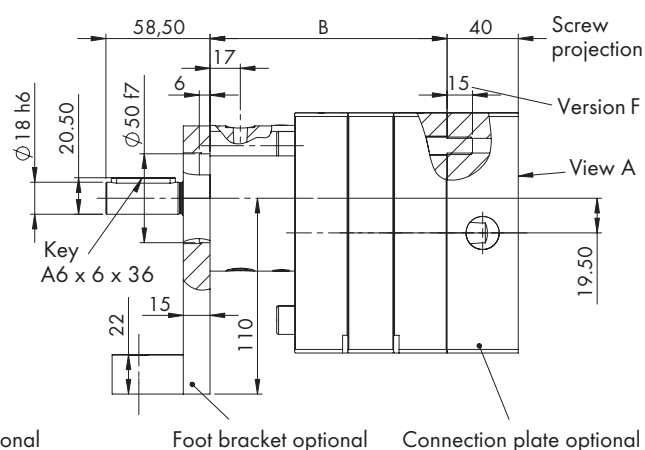
Dosing of polyurethanes, isocyanate, polyol, catalyst, additives, silicones, fuels, adhesives, oils, hotmelts, paints and ink

HIGHLIGHTS

- Low-pulsation and precise dosing of the medium being transferred
- High-precision "start-stop dosing"
- Rapid pressure build-up
- Option for direct mounting of VSE flow meter
- Corrosion/wear resistant coatings

* depending on rotation speed and viscosity

Size	Displacements cc/rev	Flowrate [l/min] at		Operating pressure	Dimension "B"
		1 rpm	200 rpm	max. bar	mm
1	0.1	0.0001	0.02	200	85.10
1	0.3	0.0003	0.06	200	89.30
1	0.6	0.0006	0.12	200	95.60
1	1.2	0.0012	0.24	200	91.20
1	1.8	0.0018	0.36	200	95.40
1	2.4	0.0024	0.48	200	99.60
1	3.0	0.003	0.60	200	103.70
1	4.8	0.0048	0.96	200	103.70
1	6.0	0.006	1.20	200	109.00
2	6.0	0.006	1.20	200	117.20
2	10.0	0.01	2.00	200	123.60
2	12.0	0.012	2.40	200	126.80
2	16.0	0.016	3.20	200	133.20
2	20.0	0.02	4.00	200	139.60
2	22.0	0.022	4.40	200	142.80
2	26.0	0.026	5.20	200	149.20

SIZE 1**SIZE 2**

ECO.pump

EXTERNAL GEAR DOSING PUMP



New to the Beinlich lineup, the ECO.pump boasts as a highly capable external gear pump at an economical price point. Competent at metering viscous media up to 200,000 mPa·s, the ECO.pump lends itself to many common applications. The stainless steel body and compact design allow the pump to be used as an in-line device and maintain a rust free integrity. Available with a variety of displacement sizes, the ECO.pump is the cost effective solution for your metering pump needs.

OPERATING CONDITIONS

SPEED

10 – 400 rpm
(Depending on the respective operating conditions)

PUMP PRINCIPLE

Low pulsation external spur gears

ROTATION

Clockwise (cw), right

VISCOSITY

10 – 200,000 mPa·s
(Depending on the respective operating conditions)

DISPLACEMENTS CC/REV

ECO.pump
0.15 / 0.3 / 0.6 / 1.2 / 1.8 / 2.4 / 3.0 / 4.8 / 6.0

TEMPERATURE

-20°C up to +100°C (standard version)
Special designs are available for deviating temperatures.

OPERATING PRESSURE*

Operating pressure up to 40 bar
Pressure max. 50 bar

MATERIALS

440B stainless steel or aluminium housing

COMMON APPLICATIONS

Dosing of media without fillers:
isocyanates, adhesives, silicones, polyols, hotmelts,
paints and oils

HIGHLIGHTS

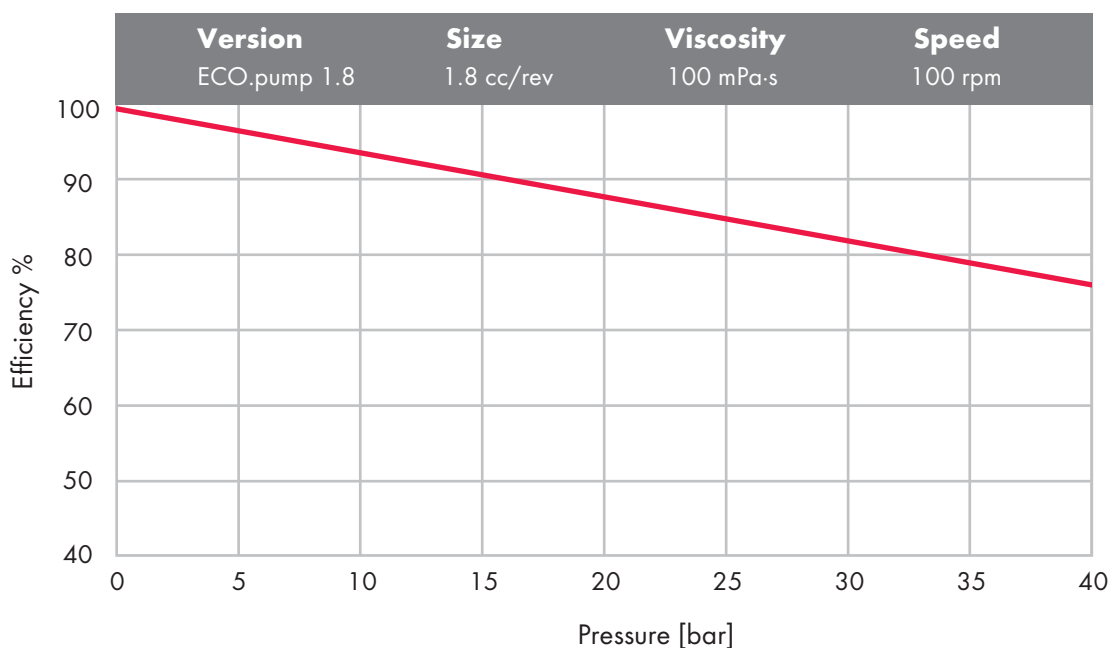
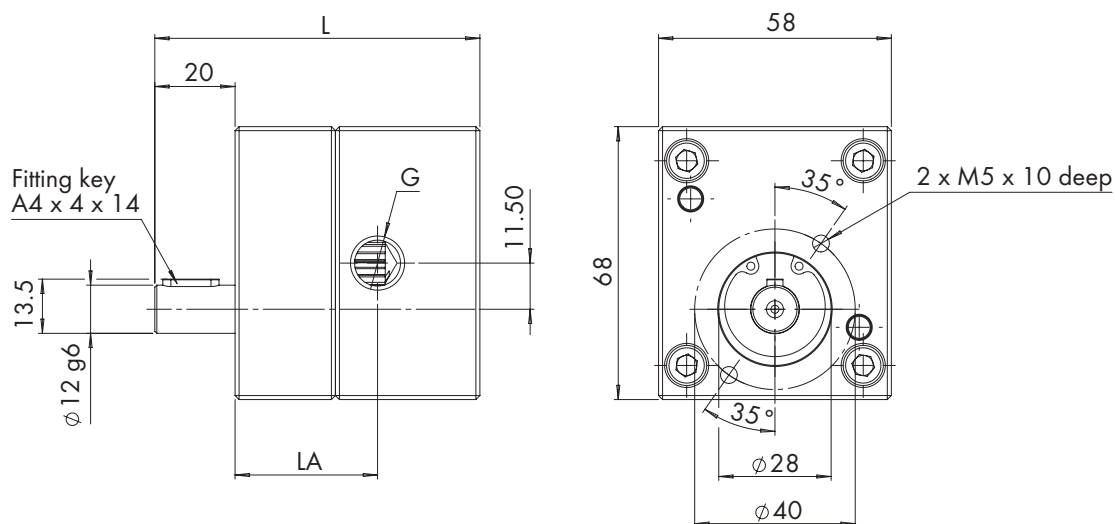
- Low-pulsation dosing of the medium
- Easy and fast assembly and disassembly
- Economical
- Light weight

* depending on rotation speed and viscosity

DISPLACEMENT SIZES & SPECIFICATION

Size	Displacements cc/rev	Flowrate [l/min] at		Operating pressure bar	Dimensions mm		
		10 rpm	400 rpm		L	LA	"G"
1	0.15	0.0015	0.06	40	81	35.5	1/4"
1	0.30	0.003	0.12	40	81	35.5	1/4"
1	0.60	0.006	0.24	40	81	35.5	1/4"
1	1.20	0.012	0.48	40	81	35.5	1/4"
1	1.80	0.018	0.72	40	81	35.5	1/4"
1	2.40	0.024	0.96	40	81	35.5	1/4"
1	3.00	0.03	1.20	40	81	36.5	3/8"
1	4.80	0.048	1.92	40	102	41.0	1/2"
1	6.00	0.06	2.40	40	102	41.0	1/2"

SIZE 1





DARTec®

EXTERNAL GEAR DOSING PUMP



The DARTec® gear dosing pump was specifically designed for high precision dosing of thermally reactive fluids. Its protected sealed needle bearing system eliminates material contact with bearings preventing shear and frictional heat in these areas normally associated with external gear pumps. Because of this innovation there is a notable reduction in the amount of solvent required to flush the pump and downtime between jobs. This also leads to overall improved efficiency, typically > 95%. The DARTec® is also available in a low weight construction (700 grams) and is optimal for use on 3 and 4 axis robot dispensing equipment.

OPERATING CONDITIONS

SPEED

1 - 400 rpm

(Depending on the respective operating conditions)

PUMP PRINCIPLE

Low pulsation external spur gears

ROTATION

Clockwise (cw), right

VISCOSITY

1 - 1,000,000 mPa·s

(Depending on the respective operating conditions)

DISPLACEMENTS CC/REV

DARTec®

0.1 / 0.3 / 0.6 / 1.2 / 1.8 / 2.4 / 3.0 / 4.8 / 6.0

TEMPERATURE

- 20°C up to +150°C

Special designs are available for deviating temperatures.

OPERATING PRESSURE*

Operating pressure max. 150 bar

MATERIALS

Stainless steel or low weight design

COMMON APPLICATIONS

UV-curable fluids, acrylics, organic peroxides, additives, thermally reactive fluids

HIGHLIGHTS

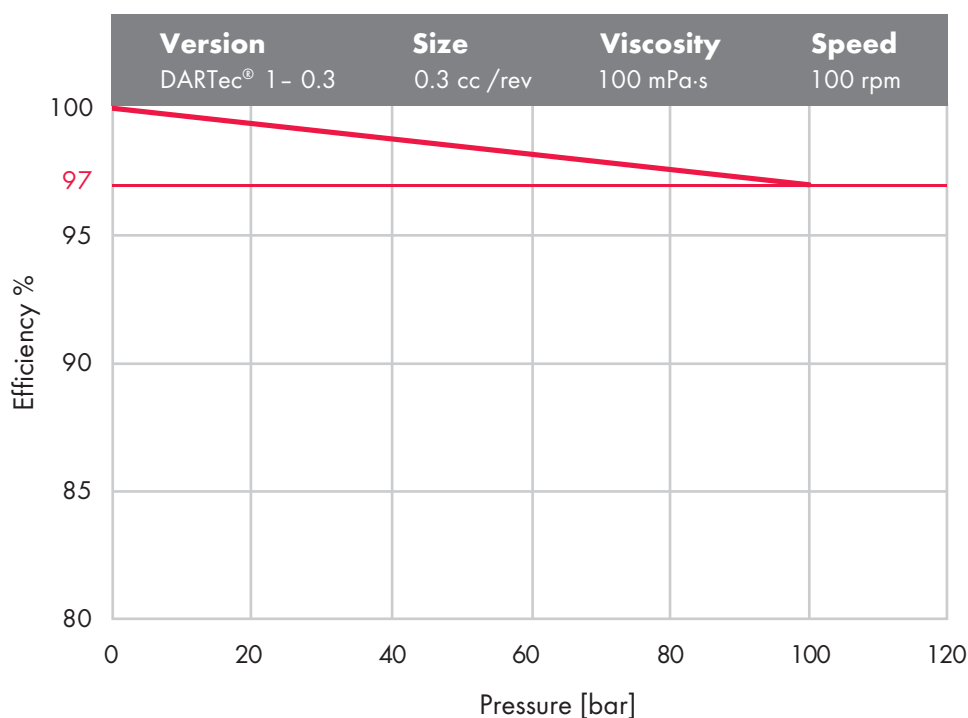
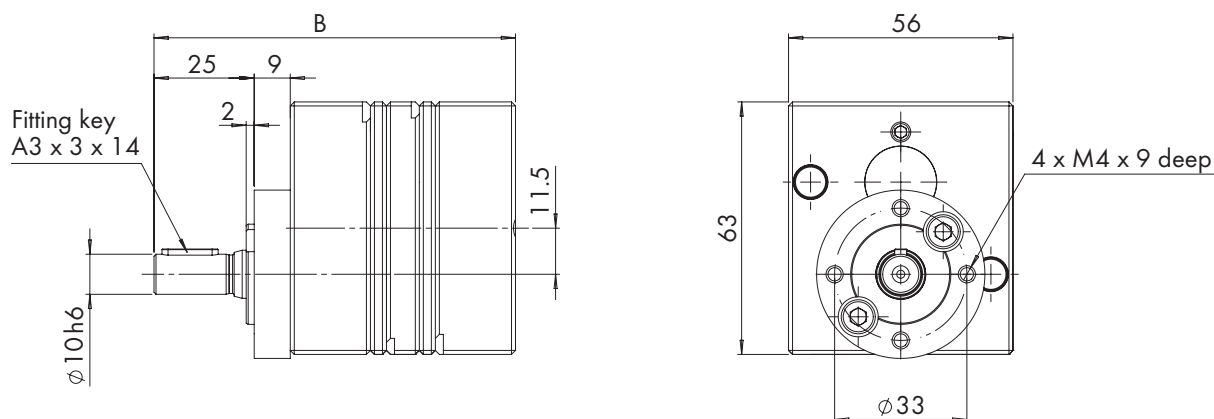
- Low-pulsation and exact dosing of the medium being transferred
- High-precision „start-stop-dosing“
- Low mass options
- High inlet pressure
- Highest efficiency of all Beinlich gear pumps

* depending on rotation speed and viscosity

DISPLACEMENT SIZES & SPECIFICATION

Size	Displacements cc/rev	Flowrate [l/min] at		Operating pressure max. bar	Dimension "B" mm
		1 rpm	400 rpm		
1	0.1	0.0001	0.04	150	84
1	0.3	0.0003	0.12	150	89
1	0.6	0.0006	0.24	150	95
1	1.2	0.0012	0.48	150	90
1	1.8	0.0018	0.72	150	94
1	2.4	0.0024	0.96	150	99
1	3.0	0.003	1.20	150	103
1	4.8	0.0048	1.92	150	103
1	6.0	0.006	2.40	150	108

SIZE 1





ViSCO.pump®

PROGRESSIVE CAVITY PUMP

The ViSCO.pump® is based on the volumetric principle of an endless (infinite) piston whereas the core components rotor and stator form a perfectly sealed metering chamber. The eccentric movement of the rotor allows for a low-shear motion of the medium from one chamber to the next chamber without squeezing the media. Dispensing proportional to speed, accuracy and repeatability is $\pm 1\%$. Its light weight space saving design is highly applicable for small 3 and 4 axis dosing robots. Well suited for filled media the ViSCO.pump® lends itself to countless applications where reliability and repeatability is a must.

OPERATING CONDITIONS

SPEED

Size 1	1 - 150 rpm
Size 2 + 3	1 - 400 rpm
Size 4	1 - 400 rpm

PUMP PRINCIPLE

Progressive cavity stator + rotor

ROTATION

Clockwise (cw), right (ViSCO.pump®)
Counterclockwise (ccw), left (ViSCO.mini®)

VISCOSITY

1 - 1,000,000 mPa·s

DISPLACEMENTS CC/REV

Size 1	0.01 / 0.05 / 0.15
Size 2	0.30 / 1.00 / 2.00
Size 3	4.00
Size 4	7.00 / 9.00 / 11.00

OPERATING PRESSURE*

Size 1	Inlet max. 6 bar	Discharge max. 10 bar
Size 2	Inlet max. 8 bar	Discharge max. 20 bar
Size 3	Inlet max. 8 bar	Discharge max. 20 bar
Size 4	Inlet max. 8 bar	Discharge max. 25 bar

MATERIALS

Stainless steel body & rotor, FKM stator
(FFKM also available)

COMMON APPLICATIONS

Dosing of filling compounds, coating of electronic components, protective coating of printed circuit boards, application of epoxy resin adhesives, bead dispensing, sealing, underfillings, dosing and metering, filling

HIGHLIGHTS

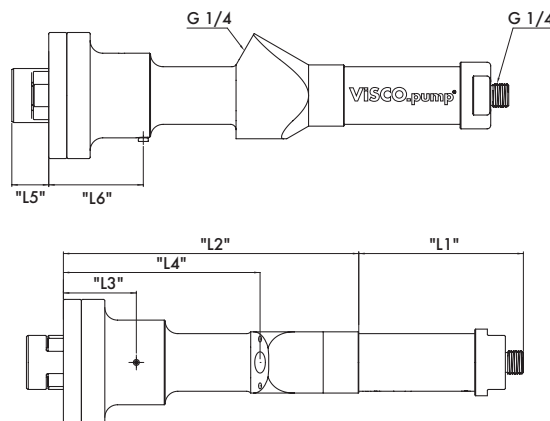
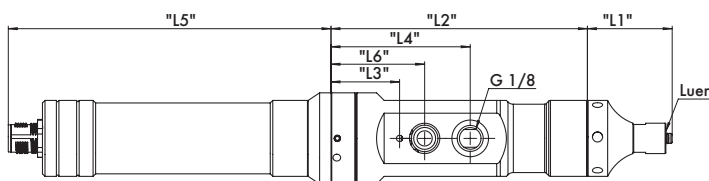
- High dosing accuracy, $\pm 1\%$ volumetric
- Continuous dosing
- Speed proportional transfer
- Valveless closed system
- Handles abrasive media
- Low pulsation and shear

* depending on viscosity

DISPLACEMENT SIZES & SPECIFICATION

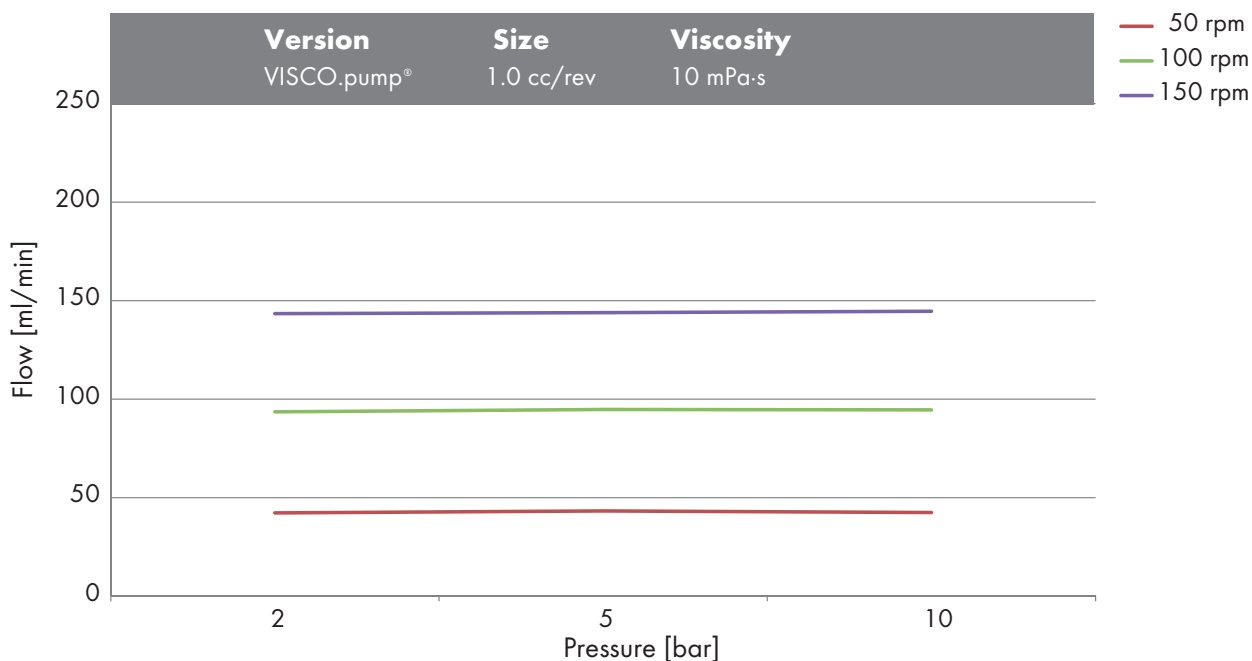
Size	Displacements cc/rev	Speed min. rpm	Speed max. rpm	Dimensions mm					
				L1	L2	L3	L4	L5	L6
1	0.01	1	150	49.1	79.3	26.8	64.2	6	36.1
1	0.05	1	150	49.1	79.3	26.8	64.2	6	36.1
1	0.15	1	150	77.4	88.8	26.8	73.7	1	36.1
2	0.30	1	400	91.4	164	40.5	109.2	20.5	52.5
2	1.00	1	400	111.4	164	40.5	109.2	20.5	52.5
2	2.00	1	400	134.4	164	40.5	109.2	20.5	52.5
3	4.00	1	400	179	154	40.5	105.9	20.5	52.5
4	7.00	*	*	*	*	*	*	*	*
4	9.00	*	*	*	*	*	*	*	*
4	11.00	*	*	*	*	*	*	*	*

* in process



ViSCO.mini®

ViSCO.pump®





SPECIAL OPTIONS

CUSTOM OEM SOLUTIONS

In direct cooperation with the customer and in a very short time, Beinlich develops and produces solutions which meet the demands and specific requirements of the application. Standard materials like steel or stainless steel can be used as well as special materials (e.g. titanium, PEEK).

Additionally, the customer can also choose from different shaft seals, e.g. mechanical contact seal with block chamber or a leakage free magnetic coupling, to achieve an optimum of efficiency.



DOSING UNIT WITH INTEGRATED FLOW METER

All Beinlich pumps can be delivered complete with motor, bell housing and coupling. Mounting of VSE flow meter on many sizes is also a standard option.



ABRASIVE MATERIAL PUMPS

15

KIG-SERIES METERING GEAR PUMP FOR ABRASIVE FILLED MATERIALS

- 0.25 – 517 cc/rev
- Pressure up to 150 bar
- Viscosities from 1 to 1,000,000 mPa·s
- Completely hardened parts
- Abrasive resistant coatings
- Ceramic wear parts
- Mechanical seal with barrier chamber and bearing support

For heavily filled applications with:

- Titanium dioxide
- Carbon black
- Granite sand
- Manganese dioxide
- Silicone
- Calcium carbonate
- Aluminium trihydrate



DRUM PUMPS

- 0.25 – 517 cc/rev
- Pressure up to 200 bar
- Viscosities from 1 to 200,000 mPa·s
- Speeds up to 100 rpm
- Block chamber solutions
- KIG version available
- Custom mounting solutions
- Speed control standard

