

Hei-FLOW Peristaltic Pumps

Continuous pumping,
precise dosing

Whether simple pumping or precise dosing. Even in interval mode, with pauses to fill small vessels – the Hei-FLOW series fulfills all your requirements. Thanks to the large selection of pump heads, the peristaltic pumps can be individually configured.





Leading Safety Standards

- Motors with soft start reliably protect against spraying medium: The speed is slowly increased to the set speed
- The spark-free motors guarantee additional safety
- High resistance to corrosive vapors and liquids thanks to protective class IP 55. Short-circuits, failures and accidents are prevented
- Additional safety during unattended continuous operation: To prevent overheating, the motor is switched off in the event of permanent overload
- With the optional foot switch, selected models can also be controlled in a closed extractor hood
- The medium to be conveyed only has contact with the inner side of the tubing and not with the pump itself



Superior Ease of Use

- The pumps of the Hei-FLOW series are self-priming and do not require seals or valves.
- Analog and digital interfaces, for example for connecting the remote control for easier operation
- Thanks to the high precision, minimum flow rates of only 0,005 ml/min can be conveyed
- The drive for a standard pump head can be converted to a multi-channel system in minutes
- The clearly arranged control panel is self-explanatory and makes everyday use easier
- Efficient use of valuable laboratory space: The pumps can be stacked two-fold
- Basically, the pump heads do not have to be cleaned as they pump contamination-free – this saves cleaning between two applications
- There are 3 pump types, each with two different gear stages – fast or powerful





Reduced Cost of Ownership

- The sealed housing reliably protects the pump against corrosion and increases the operational lifespan to more than 10 years. Maintenance and repair costs are reduced at the same time
- Complete packages with pump head and tubing spare from searching for compatible components and are available at an attractive price
- Maintenance free motors avoid downtimes and repair costs
- The matching tubing for every application - from certified materials for food (FDA) and pharmaceuticals to materials for organic media – everything is included in the large range of accessories



MADE IN
GERMANY

All Benefits at a Glance

3-year warranty on all devices and an average operational lifespan of 10 years

Precise Dosing and Dispensing

Motors with soft start reliably protect against spraying medium: The speed is slowly increased to the set speed

All models meet the high protective class IP 55. Corrosion and short-circuits are avoided

Highest precision even at minimum flow rates of 0.005 ml/min.

Analogue and digital interface: The optional foot switch allows operation behind closed hoods and facilitates filling-operations; your hands are free for other activities

Single or multi-channel operation possible in combination with the right accessories

Additional safety during unattended and continuous use: To prevent overheating from the outset, the motor is switched off in the event of permanent overload.

The pump head with convex-shaped rollers enables gentle pumping of cells and the processing of viscous media and particles

No contact between the medium and the pump: no danger of corrosion or jamming



Peristaltic pumps – single or multi-channel?

Whether efficiently pumping high volumes with flow rates of over four liters per minute or precise dosing of up to 12 samples at the same time: The modular design of the Hei-FLOW series makes individual configuration possible.

Single-channel pumps



Pump drive

Select Hei-FLOW model with 120 or 600 rpm Core oder Expert for volume transfer, Ultimate for dosing.



Single-channel pump head

SP Quick for a quick tubing change, SP Standard or SP Vario for the highest flow rates and with varying tubing wall thicknesses.



Hoses and accessories

Select according to desired flow rate and resistance, add accessories.



The single-channel pump is ready.

Configuration from page 46.

Multi-channel pumps



Pump drive

Select Hei-FLOW model with 120 rpm Core and Expert for continuous flow, Ultimate for dosing. Add adapter for multi-channel operation. The "Multi" models include the adapter.



Multi-channel pump head

Select according to the desired number of channels and flow rate.



Multi-channel cassette

Select the desired number to match the multi-channel pump head and the flow rate.



The multi-channel pump is ready.

Configuration from page 50.



Hoses and accessories

Choose to match the selected cassettes and according to durability, add accessories.

Hei-FLOW Core

The intuitive companion for simple pumping tasks

Hei-FLOW Core 120

For standard applications in the low speed range and powerful with greater torque with single-channel pump heads from 0.45 to 935 ml/min

Hei-FLOW Core 600

For single-channel standard applications in high speed range and flow rates from 2.6 to 4,500 ml/min*

- Analog control of pumping speed:
Type 120: from 10 to 120 rpm;
type 600: from 50 to 600 rpm
- Constant speed even under changing loads
- Conveying with an accuracy of ± 5 %
- Clockwise or counterclockwise change of conveying direction possible

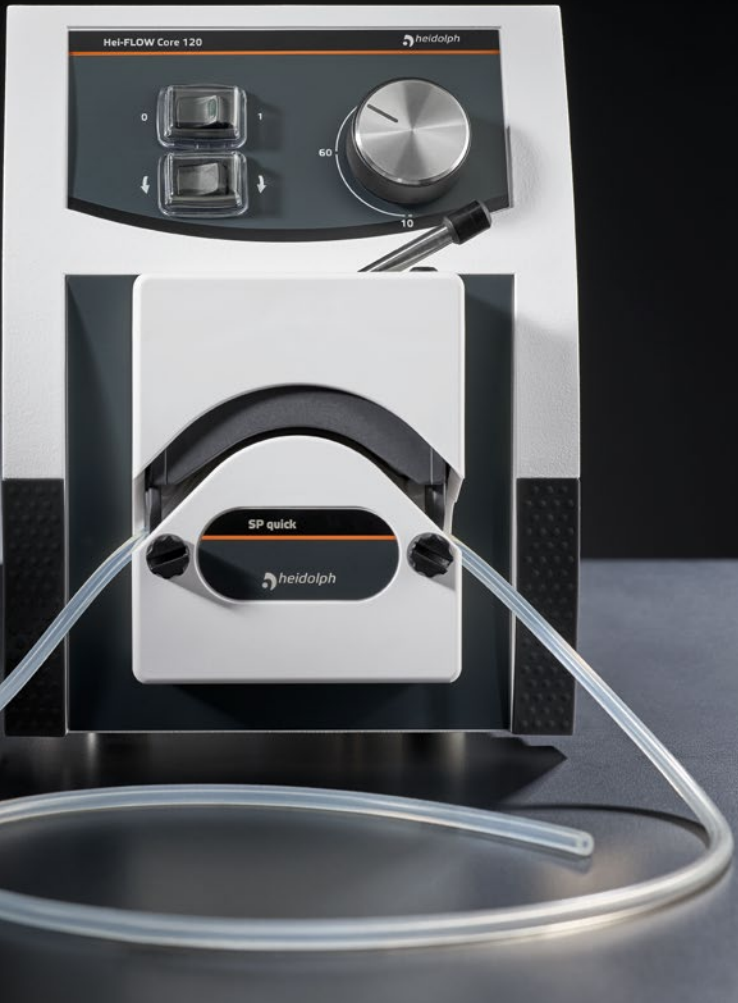
* with single-channel pump head

Hei-FLOW Core 120 Multi

incl. adapter for multi-channel pump heads



Flow rates between 0.005 and 277 ml/min are achieved with multi-channel pump heads. Simply convert with an adapter attachment and the appropriate pump head.



Model	P/N
Hei-FLOW Core 120	523-50010-00
Hei-FLOW Core 120 Multi	incl. adapter for multi-channel pump heads 523-50013-00
Hei-FLOW Core 600	523-50060-00

Hei-FLOW Expert

For reproducible pumping tasks

With analogue interface for Hei-FLOW control system of speed and direction of rotation as well as On/Off function.

Hei-FLOW Expert 120

With low speed range and powerful with greater torque from 0.45 to 935 ml/min

Hei-FLOW Expert 600

With high speed range for flow rates with single-channel pump heads from 2.6 to 4,500 ml/min

- Analog control of pumping speed:
Type 120: from 5 to 120 rpm;
type 600: from 24 to 600 rpm
- Constant speed even under changing loads by means of electronic speed control
- Pumping with an accuracy of ± 3.5 %
- Maximum speed button accelerates filling and emptying of tubes
- Change of flow direction in clockwise or counter-clockwise direction possible
- With the optional foot switch, can also be controlled in a closed fume hood

Hei-FLOW Expert 120 Multi

For even greater precision with adapter for multi-channel pump heads.
For flow rates from 0.005 to 277 ml/min



Multi-channel cassettes in three sizes available

See page 53.

Model	P/N
Hei-FLOW Expert 120	523-51010-00
Hei-FLOW Expert 120 Multi	incl. adapter for multi-channel pump heads 523-51013-00
Hei-FLOW Expert 600	523-51060-00

Hei-FLOW Ultimate

For highest demands - the precise pump for exact dosing

With digital display and analogue and digital interface. Individual calibration procedure of flow rate and volume possible.

- Control system of speed, direction of rotation and on/off function via analog interface for 0 to 10 V, 4 to 20 mA DC or digital via the integrated RS 232 interface
- Easy calibration procedure of conveying volume and flow rate
- Pump characteristics of the pump heads are stored in the program, digital indication in the display
- With change of flow direction in clockwise or counter-clockwise direction
- Process parameters are freely adjustable: Speed, tube diameter, dosing volume, interval dosing and pause times
- Conveying accuracy of ± 1% for Ultimate 120 and ± 2% for Ultimate 600, guarantees constant speeds even under load changes
- With button for maximum speed, accelerates filling and emptying of tubes

Hei-FLOW Ultimate 120

For higher precision in the low speed range for flow rates from 0.45 to 935 ml / min

Hei-FLOW Ultimate 600

With high speed range for flow rates with single-channel pump heads from 2.6 to 4,500 ml/min

Hei-FLOW Ultimate 120 Multi

Incl. adapter for multi-channel pumps for maximum precision at flow rates from 0.005 to 277 ml/min



Start and stop the dosing process with the optional foot switch – your hands are free for other tasks.

Model	P/N
Hei-FLOW Ultimate 120	523-52010-00
Hei-FLOW Ultimate 120 Multi	incl. adapter for multi-channel pump heads 523-52013-00
Hei-FLOW Ultimate 600	523-52060-00

Accessories for peristaltic pumps



Foot switch

For starting and stopping the conveying and dosing process for all Hei-FLOW Expert and Hei-FLOW Ultimate models.

P/N 526-14100-00



Adapter for multi-channel pump heads

For all 120 models from Hei-FLOW Core, Hei-FLOW Expert and Hei-FLOW Ultimate. Connection between pump drive and multi-channel pump head

P/N 526-16000-00



Tubing connector

For tubing sizes 0.2 – 2.8 mm

P/N 526-22000-00



RS 232 Cable

For connecting the Hei-FLOW Ultimate pumps with a PC

P/N 14-007-040-68

Technical Specifications

Hei-FLOW

Model	Hei-FLOW Core 120	Hei-FLOW Core 600	Hei-FLOW Expert 120	Hei-FLOW Expert 600	Hei-FLOW Ultimate 120	Hei-FLOW Ultimate 600
Flow rates of single-channel pumps	0.45– 935 ml/min	4.0– 4,500 ml/min	0.45– 935 ml/min	2.6– 4,500 ml/min	0.45– 935 ml/min	2.6– 4,500 ml/min
Flow rates multi-channel pumps	0.005– 277 ml/min	–	0.005– 277 ml/min	–	0.005– 277 ml/min	–
Flow rate accuracy*	±5 %	±5 %	±3.5 %	±3.5 %	±1 %	±2 %
Speed range	10–120 rpm	50–600 rpm	5–120 rpm	24–600 rpm	5–120 rpm	24–600 rpm
Speed seeting	scale	scale	Scale	Scale	digital	digital
Electronic speed control	digital	digital	digital	digital	digital	digital
Control accuracy motor	±0.5 %	±0.5 %	±0.5 %	±0.5 %	±0.5 %	±0.5 %
Select direction of rotation	right/left	right/left	right/left	right/left	right/left	right/left
Motor power	100 W	100 W	100 W	100 W	100 W	100 W
Supply power	100 W	100 W	100 W	100 W	100 W	100 W
Analogue interface	–	–	for speed 0–10 V / 4–20 mA Direction of rotation Start/Stop	for speed 0–10 V / 4–20 mA Direction of rotation Start/Stop	for speed 0–10 V / 4–20 mA Direction of rotation Start/Stop	for speed 0–10 V / 4–20 mA Direction of rotation Start/Stop
Digital interface	–	–	–	–	RS 232	RS 232
Flow rate indicator	–	–	–	–	digital	digital
Volume dosing	–	–	–	–	0.001– 9,999 ml	0.001– 9,999 ml
Interval dosing	–	–	–	–	0.001– 9,999 ml with pauses 0.1 s–750 h	0.001– 9,999 ml with pauses 0.1 s–750 h
Smooth start	–	–	–	–	yes	yes
Electronic brake	–	–	–	–	yes	yes
Connection for foot switch	–	–	yes	yes	yes	yes
Continuous operation hours/days	24 / 7	24 / 7	24 / 7	24 / 7	24 / 7	24 / 7
Motor protection**	thermal protection	thermal protection	electonic current limit and thermal protection	electonic current limit and thermal protection	electonic current limit and thermal protection	electonic current limit and thermal protection
Weight	7.6 kg	7.1 kg	7.6 kg	7.3 kg	7.7 kg	7.3 kg
Dimensions	w/d/h 166×256×225 mm	166×256×225 mm	166×256×225 mm	166×256×225 mm	166×256×225 mm	166×256×225 mm
Permissible ambient conditions	5–31 °C at 80 % rel. humidity, 32–40 °C linearly reducing up to max. 50 % rel. humidity	5–31 °C at 80 % rel. humidity, 32–40 °C linearly reducing up to max. 50 % rel. humidity	5–31 °C at 80 % rel. humidity, 32–40 °C linearly reducing up to max. 50 % rel. humidity	5–31 °C at 80 % rel. humidity, 32–40 °C linearly reducing up to max. 50 % rel. humidity	5–31 °C at 80 % rel. humidity, 32–40 °C linearly reducing up to max. 50 % rel. humidity	5–31 °C at 80 % rel. humidity, 32–40 °C linearly reducing up to max. 50 % rel. humidity
Protection class	DIN EN 60529 IP 55	IP 55	IP 55	IP 55	IP 55	IP 55

Supply voltage: 230 V. Other supply voltages on request.
* Conveying rate accuracy related to water without back pressure
** Thermal protection: Overheat protection

Single-channel Pump Heads

Configure Hei-FLOW models individually

Conveying and dosing for all kinds of applications. The sealed ball bearings protect against corrosion and ensure reliable continuous operation. With the versatile selection of pump heads for single-channel operation, the right solution can be configured for every application.



SP quick

For quick and easy tube change by means of a practical lever

- Low pulsation due to five rollers
- Sealed ball bearings
- Stainless steel rollers and roller supports
- Depending on the drive and tubing used, flow rates of 0.45 to 4,500 ml/min are possible.

For tube wall thickness 1.6 mm
P/N 527-11100-00

For tube wall thickness 2.5 mm
P/N 527-11300-00



SP standard

All-purpose for simple pumping tasks

- Sealed ball bearings
- Stainless steel rollers, polyamide roller carrier
- Depending on the drive and tubing used, flow rates of 3.3 to 4,300 ml/min are possible.

For tube wall thickness 1.6 mm
P/N 523-43010-00

For tube wall thickness 2.5 mm
P/N 523-43030-00



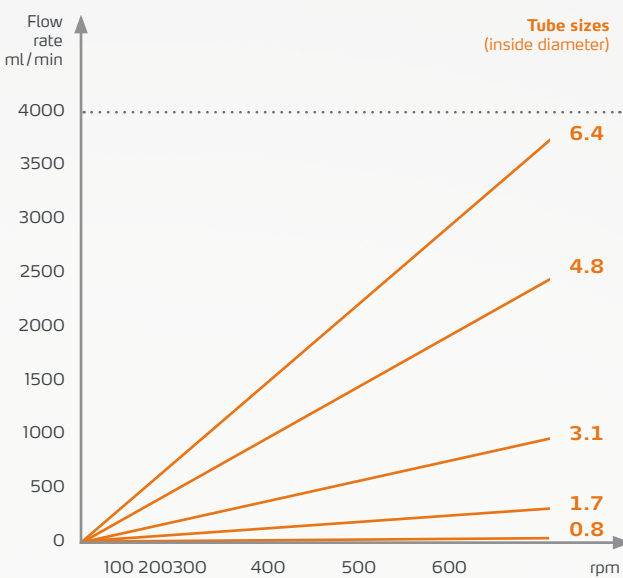
SP vario

Flexible for versatile use

- Rotor with adjustable roller distance, for adaptation to the tube wall thickness
- Sealed ball bearings
- Stainless steel rollers, aluminum coated roller carrier
- Depending on the drive and tubing used, flow rates of 3.3 to 4,300 ml/min are possible.

P/N 523-45110-00

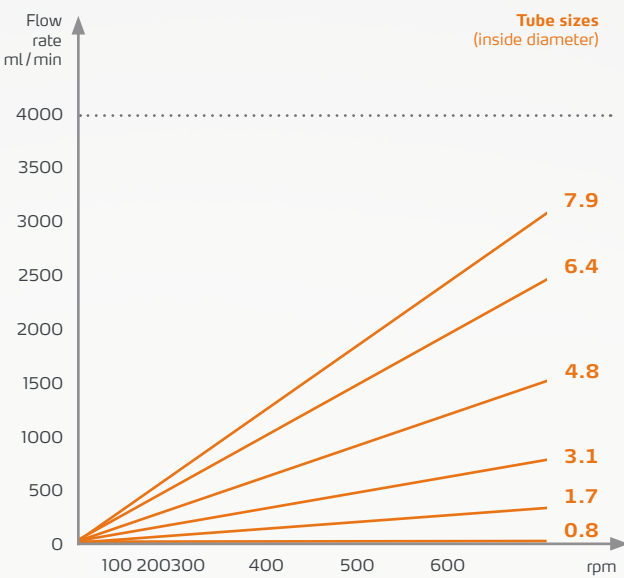
Flow rates for single-channel pump heads







SP standard SP vario







SP quick



Tube sizes for single-channel pump heads

Tube sizes					
Inside diameter	mm	0.8	1.7	3.1	4.8
Outside diameter	mm	4	4.9	6.3	8
Tube wall thickness (WT)	mm	1.6	1.6	1.6	1.6
Max. operating pressure (duration/short-term)	bar	0.7 / 1.7	0.7 / 1.7	0.7 / 1.7	0.5 / 1.5
Suction lift	mH ₂ O	8.8	8.8	8.8	8.8

Tube sizes					
Inside diameter	mm	6.4	4.8	6.4	7.9
Outside diameter	mm	9.5	9.8	11.3	12.9
Tube wall thickness (WT)	mm	1.6	2.5	2.5	2.5
Max. operating pressure (duration/short-term)	bar	0.5 / 1.5	0.8 / 1.8	0.8 / 1.8	0.8 / 1.8
Suction lift	mH ₂ O	6.7	8.8	8.8	8.8

Mean value of the flow rate
in combination with pump head and pump drive

SP quick		min.	max.	min.	max.	min.	max.	min.	max.
Hei-FLOW Core / Expert / Ultimate 600	ml/min	2.6	33	6	200	23	818	65	1,500
Hei-FLOW Core / Expert / Ultimate 120	ml/min	0.5	10	1.7	40	5.4	130	11.6	275

SP standard / SP vario		min.	max.	min.	max.	min.	max.
Hei-FLOW Core / Expert / Ultimate 600	ml/min	12	225	49	1,135	100	2,362
Hei-FLOW Core / Expert / Ultimate 120	ml/min	3.3	58.5	8.9	216	20.5	494

All flow rate data refer to Tygon® (standard) tubes and the medium water.

SP quick		min.	max.	min.	max.	min.	max.	min.	max.
Hei-FLOW Core / Expert / Ultimate 600	ml/min	96	2,074	77	1,885	98	2,556	163	4,500
Hei-FLOW Core / Expert / Ultimate 120	ml/min	17.2	407	14	280	26	480	35	684

SP standard / SP vario		min.	max.	min.	max.	min.	max.
Hei-FLOW Core / Expert / Ultimate 600	ml/min	160	4,290	109	2,442	193	4,304
Hei-FLOW Core / Expert / Ultimate 120	ml/min	33	797	26	481	37.4	936

All flow rate data refer to Tygon® (standard) tubes and the medium water.

Order numbers

Tubing (per meter)	P/N	P/N	P/N	P/N
Silicone	525-33000-00	525-34000-00	525-36000-00	525-30027-00
Viton®	525-53000-00	525-54000-00	525-56000-00	525-50027-00
PharMed®	525-23000-00	525-24000-00	525-26000-00	525-20027-00
Tygon® standard	525-63000-00	525-64000-00	525-66000-00	525-60027-00
Tygon® for hydrocarbons	525-73000-00	525-74000-00	525-76000-00	525-70027-00
Tygon® 2001 for food	525-83000-00	525-84000-00	525-86000-00	525-80027-00

Tubing (per meter)	P/N	P/N	P/N	P/N
Silicone	525-30028-00	525-35000-00	525-39000-00	525-32000-00
Viton®	525-50028-00	525-55000-00	525-59000-00	525-52000-00
PharMed®	525-20028-00	525-25000-00	525-29000-00	525-22000-00
Tygon® standard	525-60028-00	525-65000-00	525-69000-00	525-62000-00
Tygon® for hydrocarbons	525-70028-00	525-75000-00	525-79000-00	525-72000-00
Tygon® 2001 for food	525-80028-00	525-85000-00	525-89000-00	–

Multi-channel Pumps

More efficiency, even more possibilities

With the easily exchangeable cassettes, the throughput of the Hei-FLOW multi-channel pump can be increased to up to 12 simultaneously operated channels.

The following models are suitable for multi-channel operation: **Hei-FLOW Core/Expert/Ultimate 600**

Simply select the adapter and multi-channel pump head for the appropriate Hei-FLOW model and fit them with suitable cassettes and tubings.

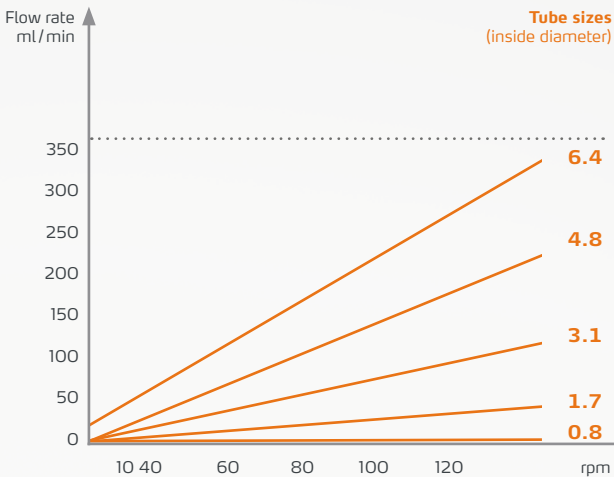
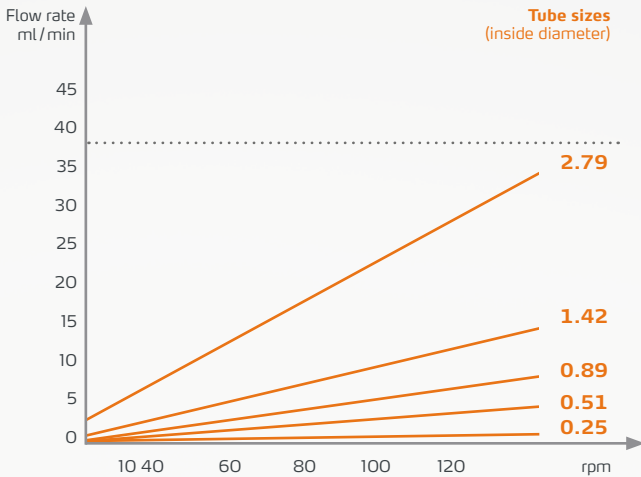
- When using tubes with different diameters per cassette, up to 12 individual pump volumes can be processed in one working part
- The tube can be changed easily and in a matter of seconds
- Pump heads with 8-roller system are also available to reduce pulsation
- A snap-action device makes inserting all cassettes child's play and even allows easy replacement during ongoing operation



Flow rates of individual tubing sizes for multi-channel pump heads

Multi-channel pump head C 4

For Cassette small



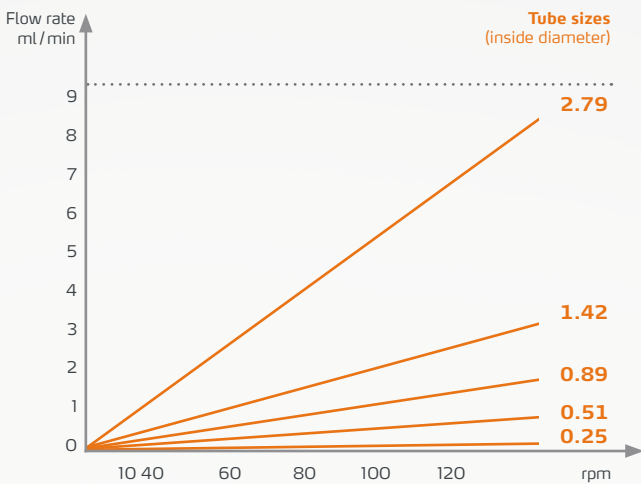
Multi-channel pump head C 8

For medium or large cassettes



Multi-channel pump head C 12

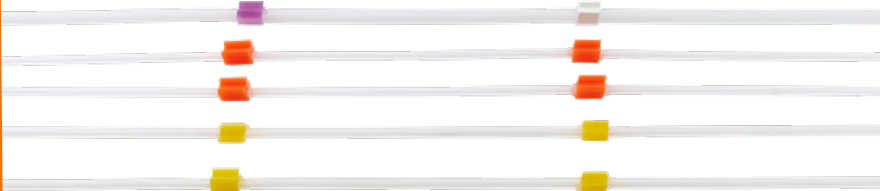
For Cassette small



Multi-channel pump heads

Easy to configure or retrofit

The brackets of the 2-stopper - tubings prevent the slipping of the tube when using the small cassette.



Precise dosing or customized pumping

Low-pulsation pumping with the C 4 and C 12 multi-channel pump heads thanks to the 8-roller system and high-precision dosing depending on the tubing configuration. The C 12 model is optimally equipped for the smallest volumes thanks to an integrated gear support – for flow rates from 0.005 – 54 ml/min. For Cassette small (C 4/C 12), Two-Stop tubing is required. For Cassette medium and Cassette large (C 8) tubing by the meter.



Multi-channel-pump head C 4

- Can be equipped with 4 x Cassette small
- 8 rollers for low-pulsation pumping

P/N 524-80420-00



Multi-channel-pump head C 8

- Can be equipped with 8 x Cassette medium or 4 x Cassette large
- 4-roller system

P/N 524-40810-00



Multi-channel-pump head C 12

- Can be equipped with 12 x Cassette small
- Due to integrated gear reduction ideal for pumping smallest volumes
- 8 rollers for low-pulsation pumping

P/N 524-81220-00

Multi-channel cassettes

Easily exchangeable cassettes even during the pumping process. The roller contact pressure is adjusted by means of an adjusting screw. Different tubing and sizes can be used in each cassette.



Cassette small

- Flow rates from 0.005 – 37.0 ml/min
- Suitable for tubes with 0.9 mm tube wall thickness
- Available tube diameters: 0.2/0.5/0.9/1.4 and 2.8 mm
- Special tube piece with 2 stoppers (length 40 cm) required for insertion into the cassette
- The tube is fixed by tube stoppers
- With tubing connectors and extension tubings, it is possible to extend the tubing length by the meter

Equipped with:

Multi-channel pump head C 4:
max. 4 x Cassette small

Multi-channel pump head C 12:
max. 12x Cassette small

P/N 524-90022-00



Cassette medium

- Flow rates from 0.22 – 25.0 ml/min
- Suitable for tubes with 1.6 mm tube wall thickness
- Available tube diameters: 0.8 and 1.7 mm
- Tubes available by the meter

Equipped with:

Multi-channel pump head C 8:
max. 8x Cassette medium

P/N 524-90021-00



Cassette large






- Flow rates from 1.0 – 277.0 ml/min
- Suitable for tubes with 1.6 mm tube wall thickness
- Available tube diameters: 1.7/3.1/4.8 and 6.4 mm
- Tubes available by the meter






Equipped with:

Multi-channel pump head C 8:
max. 4 x Cassette large

P/N 524-90010-00

Tubing sizes for multi-channel pump heads

Tube sizes						
Inside diameter	mm	0.25	0.51	0.89	1.42	2.79
Outside diameter	mm	2.05	2.31	2.69	3.22	4.59
Tube wall thickness (wt)	mm	0.9	0.9	0.9	0.9	0.9
Max. operating pressure (duration/short-term)	bar	0.5/1.5	0.5/1.5	0.5/1.5	0.5/1.5	0.5/1.5
Suction lift	mH ₂ O	7	7	7	7	7

Tube sizes						
Inside diameter	mm	0.8	1.7	3.1	4.8	6.4
Outside diameter	mm	4	4.9	6.3	8	9.5
Tube wall thickness (wt)	mm	1.6	1.6	1.6	1.6	1.6
Max. operating pressure (duration/short-term)	bar	0.7/1.7	0.7/1.7	0.7/1.7	0.7/1.7	0.5/1.5
Suction lift	mH ₂ O	8.8	8.8	8.8	8.8	6.7

Mean value of the flow rate
in combination with pump head and pump drive

Hei-FLOW Core 120 Hei-FLOW Expert 120 Hei-FLOW Ultimate 120		min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	max. number of cass.
Cassette small Pump head C 12	ml/min	0.005	0.11	0.01	0.54	0.03	1	0.10	3	0.29	9	12
Cassette small Pump head C 4	ml/min	0.02	0.49	0.08	2	0.24	6	0.60	14	2	36	4

All flow rate data refer to Tygon® (standard) tubes and the medium water.

Hei-FLOW Core 120 Hei-FLOW Expert 120 Hei-FLOW Ultimate 120		min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	max. number of cass.
Cassette medium Pump head C 8	ml/min	0.22	6.8	1	25							8
Cassette large Pump head C 8	ml/min			1	25	3.7	88.5	7.7	184	11	277	4

All flow rate data refer to Tygon® (standard) tubes and the medium water.

Order numbers

Tubing	P/N	P/N	P/N	P/N	P/N
Silicone					
Two-Stop tubing for Cassette small			525-30014-00	525-30015-00	525-30016-00
Extension tubes (by the meter)			525-30024-00	525-30025-00	525-30026-00
Viton®					
Two-Stop tubing for Cassette small			525-00014-00	525-00015-00	525-50016-00
Extension tubes (by the meter)			525-00024-00	525-00025-00	525-50026-00
PharMed®					
Two-Stop tubing for Cassette small	525-20012-00	525-20013-00	525-20014-00	525-20015-00	525-20016-00
Extension tube (by the meter)	525-20022-00	525-20023-00	525-20024-00	525-20025-00	525-20026-00
Tygon® standard					
Two-Stop tubing for Cassette small	525-60012-00	525-60013-00	525-60014-00	525-60015-00	525-60016-00
Extension tubes (by the meter)	525-60022-00	525-60023-00	525-60024-00	525-60025-00	525-60026-00
Tube connector (PTFE)	526-22000-00	526-22000-00	526-22000-00	526-22000-00	526-22000-00

Tubing	P/N	P/N	P/N	P/N	P/N
Silicone	525-33000-00	525-34000-00	525-36000-00	525-30027-00	525-30028-00
Viton®	525-53000-00	525-54000-00	525-56000-00	525-50027-00	525-50028-00
PharMed®	525-23000-00	525-24000-00	525-26000-00	525-20027-00	525-20028-00
Tygon® standard	525-63000-00	525-64000-00	525-66000-00	525-60027-00	525-60028-00
Tygon® for hydrocarbons	525-73000-00	525-74000-00	525-76000-00	525-70027-00	525-70028-00
Tygon® 2001 for food	525-83000-00	525-84000-00	525-86000-00	525-80027-00	525-80028-00

Tubing selection



Tygon® standard

General applications in the laboratory

- Non-toxic, non-oxidizing
- Good resistance to acids, lyes and inorganic media
- Very low gas permeability, long service life
- Thermoplastic soft PVC, transparent



Tygon® 2001 for food

Ideal for products with a high fat content

- Extremely resistant to chemicals, e.g. suitable for the use of polar solvents
- Contains no plasticizers or oils
- Particularly long service life
- Transparent for improved visual inspection
- Extremely flexible
- Thermoplastic, transparent



Tygon® for hydrocarbons

Especially for hydrocarbons, petroleum products and distillates

- Ideal for petrol, kerosene, fuels and lubricants, heating oil, cutting fluids and glycol-based coolants
- Ozone- and UV-resistant
- Thermoplastic soft PVC, yellow translucent



PharMed®

Ideal for medical, laboratory and research applications

- High flexural fatigue strength
- Non-toxic, biocompatible
- Very low gas permeability
- Well suited for acids and lyes
- Polypropylene-based thermoplastic elastomer with plasticizers, opaque beige



Silicone

For use in pharmacy and biology

- Extremely smooth inner surface (platinum plated) prevents possible bacterial growth
- Biocompatible, minimal adsorption and absorption
- Best flow properties, high temperature stability
- Absolutely inert, plasticizer-free
- Polydimethylsiloxane with silica earth and silicone additives, excellent contact pressure resistance, translucent white



Viton®

Excellent acid resistance - at high temperatures

- Low gas permeability
- Resistant to solvents and corrosive media
- Fluorocarbon rubber, thermoformed Viton B (67% fluorinated), opaque black

Complies with the following standards:
FDA (21 CFR 177.2601),
USP Class VI, ISO 10993,
10/ 204/EU

Temperature range:
-50 to +75 °C

Sterilization:
Autoclavable at 120 °C,
30 min. at 1 bar (takes on milky color)
or with ethylene oxide

Restriction:
Release of plasticizers possible

Complies with the following standards:
FDA (21 CFR 177.2600),
USP Class VI and GLP

Temperature range:
-78 to +71 °C

Sterilization:
Autoclavable, 30 min. at 1 bar,
sterilizable by radiation or
ethylene oxide

Complies with the following standards:
GLP

Temperature range:
-40 to +75 °C

Sterilization:
not recommended

Restriction:
Not suitable for strong lyes
and acids as well as food
and pharmaceuticals.

Complies with the following standards:
USP Class VI, GLP, USP and Ph. Eur.

Temperature range:
-51 to +135 °C

Sterilization:
Autoclavable or sterilizable by ethylene
oxide
or radiation

Restriction:
Release of additives possible

Complies with the following standards:
USP Class VI, GLP and NSF

Temperature range:
-80 to +200 °C

Sterilization:
Autoclavable, 30 min. at 1 bar
or sterilizable by radiation

Restriction:
Unsuitable for concentrated solvents,
oils, acids or diluted caustic soda,
relatively high gas permeability

Complies with the following standards:
GLP

Temperature range:
-30 to +205 °C

Sterilization:
not recommended

Restriction:
Limited service life

Tubing characteristics



Used with	Tygon® standard	Tygon® 2001 for food	Tygon® for hydrocarbons
Acids	good	excellent	good
Lyes	good	excellent	good
Solvents	not suitable	good	conditional
Pressure	good	good	good
Vacuum	good	good	good
Viscous media	excellent	good	excellent
Sterile media	conditional	good	conditional



Used with	PharMed®	Silicone	Viton®
Acids	good	conditional	excellent
Lyes	good	conditional	excellent
Solvents	not suitable	not suitable	varying, test recommended
Pressure	good	conditional	good
Vacuum	excellent	good	good
Viscous media	good	conditional	good
Sterile media	excellent	excellent	conditional

Tubing compatibility

	Chemical	P	S	T	TU	TK	V
A	Acetaldehyde	D	C	D	D	D	D
	Acetone	D	C	D	D	C	D
	Acetonitrile	D	D	D	D	B	D
	Acetyl bromide	C	D	D	D	C	–
	Acetyl chloride	C	D	D	D	C	A
	Aliphatic hydrocarbons	D	D	D	B	D	–
	Aluminum chloride, 53% i. w.	A	A	A	A	A	A
	Aluminum salts	A	A	A	A	A	–
	Aluminum sulfate, 50% i. w.	A	A	A	A	A	A
	Formic acid, 25% i. w.	A	A	A	C	A	D
	Ammonia, anhydrous	A	D	B	B	B	D
	Ammonium acetate, 45% i. w.	A	A	A	A	A	–
	Ammonium carbonate, 20% i. w.	A	A	A	A	A	–
	Ammonium chloride	A	C	A	A	A	A
	Ammonium hydroxide, 30% i. w.	A	D	A	C	A	B
	Ammonium nitrate	A	C	A	A	A	–
	Ammonium phosphate	A	A	A	A	A	–
	Ammonium sulfate	A	A	A	A	A	A
	Amylacetate	B	D	D	D	D	D
	Amylalcohol	D	D	D	A	A	A
	Amylchloride	C	D	D	D	D	–
	Aniline	C	D	D	D	D	D
	Aniline hydrochloride	C	D	D	D	D	B
	Aromatic hydrocarbons	D	D	D	D	D	–
	Arsenic salts	A	A	A	A	A	–
B	Barium salts	A	A	A	A	A	–
	Benzaldehyde	D	C	D	D	C	D
	Benzene	D	D	D	D	–	–
	Benzenesulfonic acid	D	D	D	D	D	A
	Hydrogen cyanide	A	A	A	A	A	A
	Lead acetate, 35% i. w.	A	A	A	A	A	–
	Boric acid, 4% i. w.	A	A	A	A	A	A
	Bromine, (anhydrous liquid)	D	D	D	D	D	A
	Hydrobromic acid, 20–50%	D	D	A	A	A	A
	Butane	A	A	A	A	B	A
	Butanol (Butyl alcohol)	D	B	D	D	A	A
	Butyric acid	B	D	D	C	D	–
C	Butyl acetate	B	D	D	D	D	D
	Calcium oxide	A	A	A	A	A	–
	Chlorobenzene, (Mono, Di, Tri)	D	D	D	D	C	A

	Chemical	P	S	T	TU	TK	V
	Chloroacetic acid 20% i. w.	B	A	A	D	A	D
	Chlorine gas, wet	D	D	B	B	C	B
	Chlorobromomethane	B	D	D	D	–	A
	Chloroform	D	D	D	D	C	A
	Chlorosulfonic acid	D	D	D	D	D	D
	Chromic acid, 20% i. w.	A	D	B	C	B	A
	Chromic acid, 50% i. w.	C	D	C	D	–	–
	Cyclohexane	D	D	D	C	D	A
	Cyclohexanone	D	D	D	D	C	D
D	Diesel	D	D	D	B	–	–
	Dimethylformamide	B	B	D	D	A	D
E	Iron II chloride 40% i. w.	A	A	A	A	A	B
	Iron II sulfate 5% i. w.	A	A	A	A	A	A
	Iron III chloride 43% i. w.	A	A	A	A	A	–
	Iron III sulfate 5% i. w.	A	A	A	A	A	–
	Acetic acid, 10% i. w.	A	A	A	A	A	–
	Acetic acid, (100% glacial acetic acid)	B	D	D	D	–	–
	Acetic anhydride	A	A	D	D	A	D
	Ethanol	A	B	D	B	A	A
	Ether	C	D	D	C	D	–
	Ethylenedichloride	C	D	D	D	D	B
	Ethyl acetate	B	D	D	D	D	D
	Ethylamine	D	C	D	D	B	–
	Ethyl bromide	D	D	D	D	C	–
	Ethyl chloride	C	D	D	D	D	A
	Ethylene chlorohydrin	A	B	D	B	A	A
	Ethylene glycol	A	A	A	A	A	A
	Ethylene oxide	A	D	A	A	A	D
F	Fatty acids	C	B	B	C	C	C
	Fluoroborate salts	A	–	A	A	A	–
	Hydrofluoric acid 50%	D	D	D	D	A	A
	Hydrofluoric acid, 10% i. w.	D	D	C	A	A	B
	Formaldehyde, 37% i. w.	D	C	D	D	C	D
	Freon 11	A	A	A	A	–	–
	Fruit juice	A	A	A	A	A	A
	Tannic acid, 75% i. w.	B	A	B	D	A	–
G	Glycerin	A	A	A	A	A	A
	Uric acid	A	A	A	C	A	–
H	Urea, 20% i. w.	A	A	A	A	A	–
	Hypochlorous acid, 25% i. w.	A	A	A	A	A	A

	Chemical	P	S	T	TU	TK	V
I	Hydrogen iodide, 7 % i. w.	B	B	A	A	A	–
J	Iodine solutions	A	C	A	A	A	–
K	Potassium cyanide, 33 % i. w.	A	A	A	A	–	–
	Potassium hydroxide, < 10 % i. w.	A	A	A	D	–	B
	Potassium iodide, 56 % i. w.	A	A	A	A	A	–
	Potassium carbonate, 55 % i. w.	A	A	A	A	A	–
	Kerosene	D	D	D	B	D	A
	Ketones	D	D	D	D	C	–
	Carbon disulfide	D	D	D	D	D	–
	Aqua regia (80 % HCl, 20 % HNO)	D	D	D	D	A	–
	Copper II chloride 40 % i. w.	A	A	A	A	A	–
M	Magnesium chloride, 35 % i. w.	A	A	A	A	A	A
	Magnesium sulfate, 25 % i. w.	A	A	A	A	A	–
	Manganese salts	A	A	A	A	A	–
	Methane	A	–	A	A	A	A
	Methanol	A	B	D	B	A	D
	Methyl ethyl ketones	D	D	D	D	C	D
	Lactic acid, 10 % i. w.	A	A	A	A	A	–
	Lactic acid, 85 % i. w.	B	D	D	D	–	–
	Mineral oil	D	D	C	A	D	A
	Monoethanolamines	C	D	D	D	D	D
N	Naphthalene	D	D	D	D	D	A
	Sodium bicarbonate, 7 % i. w.	A	A	A	A	A	A
	Sodium bisulfate	A	–	A	A	A	–
	Sodium borate	A	A	A	A	A	A
	Sodium dithionite	A	–	A	A	–	–
	Sodium ferrocyanide	A	A	A	D	–	–
	Sodium hydroxide, 10–15 % i. w.	A	A	A	D	A	B
	Sodium hydroxide, 30–40 % i. w.	A	C	C	D	A	B
	Sodium carbonate, 7 % i. w.	A	A	A	A	A	B
	Sodium nitrate, 3.5 % i. w.	A	A	A	A	A	–
	Sodium sulfate, 3.6 % i. w.	A	A	A	A	–	A
	Sodium sulfide, 13 % i. w.	A	A	A	A	A	–
	Nickel salts	A	A	A	A	A	–
	Nitrobenzene	D	D	D	D	C	–
O	Oils, animal	C	A	D	A	B	–
	Oleic acid	C	B	D	B	D	B
P	Perchlroethylene	C	D	D	D	D	A

Please note: All information is provided without guarantee. The user must ensure that the tubes are suitable for the desired application; appropriate tests may have to be carried out.

i. W. = in the water

	Chemical	P	S	T	TU	TK	V
	Perchloric acid, 67 % i. w.	A	D	C	D	A	A
	Phenol, i. w.	A	D	D	C	A	–
	Phosphoric acid, 25 % i. w.	A	D	A	A	A	A
	Phthalic acid, 9 % i.alc.	A	B	D	C	B	–
	Propanol (Propyl alcohol)	C	A	D	D	A	B
	Pyridine	C	D	D	D	C	D
Q	Mercury salts	A	A	A	A	A	–
S	Nitric acid, 10 % i. w.	A	C	A	D	A	A
	Nitric acid, 35 % i. w.	A	D	A	D	A	A
	Nitric acid, 68–71 % i. w.	D	D	D	D	D	–
	Nitrous acid, 10 % i. w.	A	B	A	C	A	–
	Hydrochloric acid, 10 % i. w.	A	D	A	A	A	A
	Hydrochloric acid, 37 % i. w.	B	D	A	D	A	B
	Sulphurous acid	A	A	A	A	A	A
	Sulfuric acid, 10 % i. w.	A	A	A	B	A	A
	Sulfuric acid, 30 % i. w.	A	B	A	B	A	A
	Sulfuric acid, 95–98 % i. w..	D	D	D	D	C	A
	Soapy water	B	A	A	A	A	A
	Silver nitrate, 55 % i. w.	A	A	A	A	A	A
	Silicone oil	C	D	B	A	B	A
	Stearic acid, 5 % i.alc.	C	D	D	B	B	–
T	Turpentines	D	D	D	B	A	A
	Carbon tetrachloride	D	D	D	D	D	A
	Toluene	D	D	D	D	C	A
	Trichloroacetic acid, 90 % i. w.	B	D	A	D	A	C
	Trichlorethylene	C	D	D	D	C	A
	Trisodium phosphate	A	A	A	A	A	A
W	Hydrogen peroxide, 10 % i. w.	A	A	A	A	A	A
	Hydrogen peroxide, 90 % i. w.	B	C	D	D	B	–
	Tartaric acid, 56 % i. w.	A	A	A	A	A	A
X	Xylene	D	D	D	D	C	B
Z	Zinc chloride, 80 % i. w.	A	A	A	A	A	A
	Tin salts	A	A	A	A	A	–

Hoses:

P = PharMed®
S = Silicone
T = Tygon® Standard
TU = Tygon® (Hydrocarbons)
TK = Tygon® 2001 (Food)
V = Viton®

Resistance:

A = very good
B = good
C = satisfactory
D = not suitable
– = not tested

Packages

Hei-FLOW peristaltic pumps



Hei-FLOW SILVER 1

- Hei-FLOW Core 120
- SP quick 1.6
- 1 m each Tygon and silicone tube (inside Ø 3.1 mm)

P/N 523-50019-00

Hei-FLOW SILVER 2

- Hei-FLOW Core 600
- SP standard 2.5
- 1 m each Tygon and silicone tube (inside Ø 6.4 mm)

P/N 523-50068-00

Hei-FLOW GOLD

- Hei-FLOW Expert 120
- SP quick 1.6
- 1 m each Tygon and silicone tube (inside Ø 0.8 mm)

P/N 523-51019-00

Hei-FLOW PLATINUM

- Hei-FLOW Ultimate 120
- SP quick 1.6
- 1 m each Tygon and silicone tube (inside Ø 0.8 mm)

P/N 523-52019-00



Best Service

For best results

Purchasing Heidolph Premium laboratory equipment is a decision for the leading quality, service and safety standards. **After process optimization and calibration procedure, it is also possible to ensure compliance with standards once defined and reliably reproducible results.** To this end, Heidolph has different service packages set up in accordance with EN 13306:2018 with annual preventive service measures and extremely short response times for permanently reproducible processes. Service agreements offer the opportunity to decide for yourself which services help to optimize and secure processes.

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To test the theoretical feasibility, we perform a test with your original product in our laboratory. You will receive initial results on the process speed and quality of the sample.



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Work successfully from day 1**
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Maximum performance**
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