Shakers & Peristaltic Pumps

ROBUST ACROBATS

Don't compromise

Heidolph Premium laboratory equipment stands for reliability, precision, and efficiency. Your demand drives us to provide the fastest service, individual support, and quality without compromise. So that you can keep your head clear to successfully drive forward the research work for your company, organization or institution. Briefly: "research made easy".

That's why "Made in Germany" is much more than a marketing strategy for us: It's part of our corporate philosophy.

Our location in Germany enables us to develop and manufacture reliable laboratory equipment for years of continuous use with an average service life of more than 10 years. This makes your purchase a worthwhile investment in the future.

All Heidolph products are developed and manufactured at our Schwabach headquarters in Nuremberg; they go through a multi-stage quality checks. Powerful, maintenance free motors ensure constant results even in continuous operation, preventing downtime and costly repairs.

For us, premium service means: individual and application-related advice, competent and professional installation and instruction as well as the shortest possible repair and delivery times – simply "research made easy".

MADE IN
GERMANY

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

Multi-stage quality checks in development and production

Premium service according to the "research made easy" principle

Test our devices before you decide!

Schedule an appointment for an online demo presentation from our showroom.

Contents

Hei-MIX Shakers

Always in Motion

Suspending in a flash, homogeneously emulsifying, gently mixing or incubated shaking – the right solution for any requirement. The Hei-MIX series offers numerous options with different types of motion, loading capacities and versatile accessories for shaking and mixing.

Leading Safety Standards

- All platform shakers have rubber mats on the top plate, giving vessels a secure hold
- For guaranteed safety during unattended and continuous use, all devices have an integrated overheat protection, which switches the device off in an emergency situation
- In order to categorically rule out any accidents, all devices have a low center of gravity and do not start to slide even on a damp work surface
- The temperature-insulated drive prevents heating of the platform and thus harm to thermolabile samples
- Large range of accessories with attachments for all common vessels – eliminating the need for decanting

Superior Ease of Use

- Versatile working with many different types of motion and vessel sizes: A wide range – from vortexer to large platform shaker – offers customized solutions
- In addition, an extensive range of accessories and numerous attachments for all common vessels are available to choose from
- With six different types of motion – from one- to three-dimensional – the right solution is available for every application
- For special applications, many types of motion can be selected in addition to the desired amplitude
- 3 different weight classes are available:
  compact 2-kg models, 5-kg incubator-compatible models or 10-kg models for highest sample throughput
- The clearly arranged control panel is self-explanatory and makes everyday use easier
- No compromise: The wide range of shakers and mixers devices in combination with the matching accessories offers the right solution for every application

Reduced Cost of Ownership

- A worthwhile investment: All products have maintenance- and spark-free motors and are excellently suited for years of continuous use
- The sealed housing reliably protects against corrosion and, on average, increases the operational lifespan to more than 10 years while simultaneously reducing maintenance and repair costs
- The modular concept Incubator 1000 for simultaneous mixing, shaking and temperature control increases the sample throughput and simultaneously reduces process times

Absolutely Versatile

The overall concept for successful research offers countless individual solutions due to its combination possibilities.

reciprocating

vibrating / vortexing

rocking

overhead

orbital

wave

Six different shaking movements – from one- to three-dimensional. Individual motions additionally vary in their movement amplitudes and tilt angles.

Incubator 1000 – the modular incubation system for platform shakers

- The temperature of the individual application can be controlled simultaneously
- Making effective use of valuable laboratory space: The modular concept requires significantly less space than any other comparable system
- The platform shaker can be integrated into a reasonably priced incubation system in no time at all – more on page 30
- No matter how large the vessels are – three different incubation hoods leave all options open for maximum flexibility

Absolutely versatile: With the wide range of shakers and combination possibilities with the matching accessories there is the right solution for every application.

MADE IN GERMANY

All Benefits at a Glance

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

Multifarious Possibilities

By having a low center of gravity the shakers will not slip even on a damp work surface

The right shaker for individual applications: with different types of motion and three different weight classes

Only the 1000 series shakers can be combined with the Incubator 1000

Access in seconds: The hinged incubator hood remains in any position without locking

Full visual reaction control through the transparent PETG incubation hood, which does not allow condensation to form

For applications in microbiology: A temperature-insulated drive prevents heating of the platform and thus harm to thermolabile samples

All models are equipped with overheating protection, which switches off the device in an emergency situation – important for temporally unrestricted continuous operation.

Shakers for all tasks – versatile and individual

With the wide range of accessories for different applications and vessels and the modular Incubator 1000 concept, the platform shakers can be individually configured.

Overhead Shakers

Robust devices for applications in biochemistry up to water and sediment analysis according to DIN EN 12457-4.

Vortexer

Whether in test tubes or centrifuge tubes, even with different diameters and tubes: The strong shaking movement guarantees excellent mixing results without exception.

Platform Shakers

The wide range of platform shakers offers the right solution for many vessels and applications - whether powerful and fast or quiet and gentle. Even for highly sensitive samples, such as in cell research: The temperature-insulated drive prevents heating of the platform and thus thermal harm to the sample.

Reax 20

Corresponds to the specifications according to DIN EN 12457-4. Also suitable for mixing cylinders or wide-neck bottles up to 270 mm in height and diameter of max. 136 mm.

Reax 2

Fully flexible loading with the universal adapter for vessels with a high of 50 to 160 mm or with the adapter for 20 test tubes. Loading capacity 1 kg

Reax top/Reax control

The shaking orbit of 5 mm reliably and quickly achieves an even distribution. Reax control with electronic speed control – the speed remains constant even in the low range and during load changes.

Multi Reax

Process multiple samples at the same time with attachments for 12 or 26 vessels.

Titramax 100/101/1000

First-class mixing results in multi-well plates.

Vibramax 100/110

Can be combined in many ways with tension rollers, holding clamps or the attachment for up to 49 test tubes.

Rotamax 120

The compact one with a loading weight of up to 2 kg.

Unimax 1010/1020

With model 1010 additional tempering by Incubator 1000 or a high loading weight up to 10 kg with the Unimax 2010.

Duomax 1030

With 5° tilt angle and compatible with Incubator 1000 for gentle tempering.

Promax 1020/2020

The temperature controlled model 1020 with a loading weight of 5 kg; Promax 2020 with a loading weight of 10 kg.

Polymax 1040/2040

Models with 5° tilt angle for increased sample throughput.

Overhead Shakers

Reax

For small to very large tasks

With quick-release technology for easy change and use of a wide range of vessels: from analyses to incubation.

Reax 2

- Fully flexible loading with the universal adapter for 50 to 160 mm high vessels or the optional adapter for 20 test tubes. Loading capacity 1 kg
- Individually and continuously adjustable speed from 20 to 100 rpm

Accessories see page 26

Model			P/N
Reax 2			541-21009-00
Reax 20/4	for up to 4 bottles	1–16 rpm	541-20004-00
Reax 20/8	for up to 8 bottles	1–16 rpm	541-20008-00
Reax 20/12	for up to 12 bottles	1–16 rpm	541-20012-00
Reax 20/4	for up to 4 bottles	2–32 rpm	541-20004-01
Reax 20/8	for up to 8 bottles	2–32 rpm	541-20008-03
Reax 20/12	for up to 12 bottles	2–32 rpm	541-20012-02

To the adapter selection

Reax 20 for 4, 8 or 12 bottles

- Also for mixing cylinders or wide-neck bottles with 160 to 270 mm height and max.136 mm Ø
- With individually and continuously adjustable speed from 1 to 16 rpm or 2 to 32 rpm and in different sizes for 4, 8 or 12 bottles at the same time

Test Tube Shakers Vortexer

Fast, even distribution, even with solid parts and highly viscous media – ideal for the short-term operation.

Reax top

The standard model

- For short-term operation: In this mode, the shaking movement is triggered by pressure on the test tube tray
- The shaker orbit of 5 mm reliably and quickly achieves an even distribution
- The continuous operation mode guarantees a permanent shaking movement
- Fastest mixing due to the high speed of 2,500 rpm
- A test tube tray with up to 20 mm Ø is already included in the scope of delivery. Optional test tube trays with up to 50 mm Ø expand the range of applications

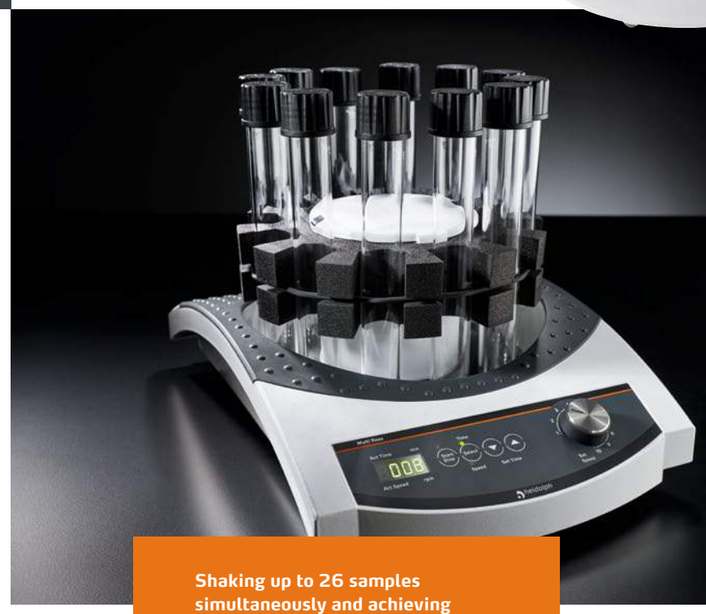
Accessories see pages 26/27

Reax control

Properties such as Reax top, supplemented by:

- Scale for setting an exact target speed from 0 to 2,500 rpm
- Electronic speed control for better results, even in the low range. Even with load changes, the speed remains constant

Model	P/N
Reax top	541-10000-00
Reax control	541-11000-00
Multi Reax	545-10000-00



Multi Reax

The all-rounder

- Scope of delivery with two holding devices: One device for 12 vessels/sample containers, each with a diameter of 16 to 32 mm and one for 26, each with a diameter of 10 to 16 mm Ø
- Excellent mixing results are achieved with the 3 mm shaker orbit, even with large samples containing solids.
- Stepless speed adjustment from 150 to 2,000 rpm on the digital display
- Timer function up to 999 minutes for automatic termination of the shaking function

Shaking up to 26 samples simultaneously and achieving excellent mixing results.

Platform Shakers

Vibramax

For gentle to vigorous mixing

Multiple possibilities through combination with tension rollers and holding clamps as well as optional test tube attachments with up to 49 samples simultaneously.

Vibramax 100

- The space-saving model with a loading weight of 2 kg is ideal for vessels of all kinds
- Excellent mixing results are achieved with the 3 mm shaking orbit, even with large samples with solid content
- The speed can be individually and continuously adjusted from 150 to 1,350 rpm for gentle to powerful mixing
- A versatile range of attachments and tension rollers provides countless combination options
- The timer function for up to 120 minutes automatically terminates the shaking function after the functional sequence of the set time has expired and an acoustic signal sounds.

Model	P/N
Vibramax 100	544-21200-00
Vibramax 110	544-31200-00

Accessories see page 27

Vibramax 110

- With a shaker orbit of 1,5 mm for gentle mixing
- The speed is from 150 – 2,500 rpm individually and continuously adjustable
- Timer function as with Vibramax 100

Titramax

Compact, powerful and temperature-controlled

First-class mixing results in multi-well plates, even with samples with solid content.

Titramax 100

- The space-saving model with a loading weight of 2 kg is ideal for four multi-well plates
- With the shaker orbit of 1,5 mm, excellent mixing results are achieved in a gentle manner
- The speed can be individually and steplessly adjusted from 150 to 1,350 rpm
- The timer function up to 120 minutes ends the shaking function automatically after the functional sequence of the set time has elapsed and an acoustic signal sounds

Titramax 101

With the larger shaker orbit of 3 mm, this model delivers excellent mixing results even with samples containing solids.

Titramax 1000

For an increased sample throughput: Larger model with top plate for 6 multi-well plates and 5 kg loading weight. Compatible with incubator system 1000.

Model	P/N
Titramax 100	544-11200-00
Titramax 101	544-11300-00
Titramax 1000	544-12200-00

Also available as all-inclusive package, see page 32.

For Incubator 1000

More on the Incubator 1000 from page 30.

Rotamax

The compact one – space saving and versatile

Rotamax 120

- Space-saving model with a loading weight of 2 kg
- With a wide range of attachments for an individual combination - with up to 16 Erlenmeyer flasks of 25 ml
- The speed can be from 20 to 300 rpm individually and continuously adjusted – for gentle to powerful mixing
- The timer function for up to 120 minutes automatically terminates the shaking function after the functional sequence of the set time has expired and an acoustic signal sounds

Even when space is limited achieve the best results with the compact 20 mm Orbit shaker.

Model	P/N
Rotamax 120	544-41200-00

Accessories see page 27

Duomax

The versatile one – for Petri dishes, culture bottles, staining dishes and all standard vessels

Cell cultures are moved evenly and constantly. The tilting movement ensures excellent results, whether staining, washing or cell culture.

Duomax 1030

- Compact, medium-sized model with a loading weight of 5 kg
- Can be integrated into the modular incubator and is therefore ideal for applications that require temperature control
- Model with a tilt angle of 5° for a gentle motion amplitude
- The speed can be adjusted individually and continuously from 2 to 50 rpm – ideal for all common standard vessels.
- The timer function up to 120 minutes ends the shaking function automatically after the functional sequence of the set time has elapsed and an acoustic signal sounds

Accessories see page 28

Model		P/N
Duomax 1030	Tilt angle 5°	543-32205-00

Unimax

The resilient one – ideally suited for Erlenmeyer flasks of different sizes

Unimax 1010

- Compact, medium-sized model with a loading weight of 5 kg
- This shaker can be integrated into the modular incubator and is therefore ideal for applications that need to be temperature controlled
- With the 10 mm Orbit, your samples are optimally kept in motion, especially in Erlenmeyer flasks.
- The speed can be from 30 to 500 rpm individually and continuously adjusted – for gentle to powerful mixing
- The timer function for up to 999 minutes automatically terminates the shaking function after the functional sequence of the set time has expired and an acoustic signal sounds

The slow and uniform rotational movement of the Unimax models keeps the samples gently in motion.

Accessories see page 28

Model	P/N
Unimax 1010	543-12310-00
Unimax 2010	542-10020-00

Also available as all-inclusive Unimax package with Incubator 1000, see page 32.

Unimax 2010

For an increased sample throughput

- The large Model with a usable area of 39 × 34 cm and 10 kg loading capacity for increased sample throughput
- For gentle mixing, the speed can be individually and continuously adjusted from 20 to 400 rpm
- Optionally available with multi-tier design for an above-average sample throughput with low space requirement

Accessories see page 29

Promax

The specialists – ideal for phase separation with steplessly adjustable shaking intensity

With the right shaking intensity: the Promax models are particularly suitable for separation in separatory funnels.

Promax 1020

- Compact, medium-sized model with a loading weight of 5 kg
- Can be integrated into the modular incubator and is therefore ideal for applications that require temperature control
- A diverse range of accessories and attachments for separating funnels or Erlenmeyer flasks offers countless possible variations
- The stroke of 32 mm achieves the ideal movement for separating funnel
- The speed can be from 30 to 250 rpm individually and continuously adjusted – ideal for separation
- The timer function for up to 999 minutes automatically terminates the shaking function after the functional sequence of set time has expired and an acoustic signal sounds

For Incubator 1000

Accessories see pages 28/29

Model	P/N
Promax 1020	543-22332-00
Promax 2020	542-20020-00

Promax 2020

For an increased sample throughput and larger vessels. With a loading weight of 10 kg, a stroke of 20 mm and speeds between 20 and 400 rpm – ideal for larger quantities.

Polymax

The one with temperature-control – compatible with the modular incubation system

Three-dimensional movements for the best results – e.g. staining of electrophoresis gels.

For Incubator 1000

Accessories see pages 28/29

Model		P/N
Polymax 1040	Tilt angle 5°	542-20020-00
Polymax 2040	Tilt angle 5°	542-40005-00

Technical Specifications

Hei-MIX

Model		Reax top	Reax control
Motion		circular vibrating	circular vibrating
Rotation speed range		100–2,500 rpm	0–2,500 rpm
Rotation speed setting		memory scale	speed scale
Orbit/stroke		5 mm	5 mm
Operating mode		automatic or continuous	automatic or continuous
Timer		–	–
Power input		51 W	51 W
Weight		2.8 kg	2.8 kg
Dimensions	**w/d/h**	134×172×105 mm	134×172×105 mm
Platform size	**w/d**	–	–
Accessories included		–	–
Max. load		–	–
Overheat protection		self-resetting	self-resetting
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
Protection class	**DIN EN 60529**	IP 22	IP 22

Model		Titramax 100	Titramax 101
Motion		circular vibrating	circular vibrating
Rotation speed range		150–1,350 rpm	150–1,350 rpm
Rotation speed setting		speed scale	speed scale
Orbit/stroke		1.5 mm	3 mm
Tilt angle		–	–
Operating mode		timer or continuous	timer or continuous
Timer		yes	yes
Power input		31 W	31 W
Weight		5.5 kg	5.5 kg
Dimensions	**w/d/h**	245×310×125 mm	245×310×125 mm
Platform size	**w/d**	220×220 mm	220×220 mm
Accessories included		space for 4 plates multi-well plates	space for 4 plates multi-well plates
Max. load		2 kg	2 kg
Overheat protection		self-resetting	self-resetting
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
Protection class	**DIN EN 60529**	IP 30	IP 30

Standard supply voltage: 230 V. Other supply voltages on request.

Model	Reax 2	Reax 20/4	Reax 20/8	Reax 20/12
	overhead	overhead	overhead	overhead
	20–100 rpm	1–16 rpm*	1–16 rpm*	1–16 rpm*
	memory scale	speed scale	speed scale	speed scale
	–	–	–	–
	–	–	–	–
	–	–	–	–
	27 W	280 W	280 W	280 W
	5.2 kg	23 kg	28 kg	33 kg
	510×180×235 mm	490×520×465 mm	770×520×465 mm	1050×520×465 mm
	universal adapter	–		
	1 kg	30 kg		
	self-resetting	self-resetting		
	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
	IP 21	IP 21	IP 21	IP 21

Model	Titramax 1000	Duomax 1030	Rotamax 120
	circular vibrating	rocking	orbital
	150–1,350 rpm	2–50 rpm	20–300 rpm
	speed scale	speed scale	speed scale
	1.5 mm	–	20 mm
	–	5°	–
	timer or continuous	timer or continuous	timer or continuous
	yes	yes	–
	31 W	115 W	33 W
	6.5 kg	8 kg	5.5 kg
	320×375×125 mm	320×375×185 mm	245×310×125 mm
	290×258 mm	290×258 mm	220×220 mm
	space for 6 plates multi-well plates	rubber pad with edge bead	rubber pad
	5 kg	5 kg	2 kg
	self-resetting	self-resetting	self-resetting
	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
	IP 30	IP 40	IP 30

* On request also with 2 – 32 rpm.

Technical Specifications

Hei-MIX

Model		Unimax 1010	Unimax 2010	Promax 1020	Promax 2020
Motion		orbital	orbital	reciprocating	reciprocating
Rotation speed range		30–500 rpm	20–400 rpm	30–250 rpm	20–400 rpm
Rotation speed setting		digital	digital	digital	digital
Orbit/ stroke		10 mm	20 mm	32 mm	20 mm
Operating mode		timer or continuous	timer or continuous	timer or continuous	timer or continuous
Timer		yes	yes	yes	yes
Power input		50 W	115 W	50 W	115 W
Weight		8 kg	16 kg	8 kg	16 kg
Dimensions	**w/d/h**	320×375×125 mm	426×435×135 mm	320×375×125 mm	426×435×135 mm
Platform size	**w/d**	290×258 mm	390×340 mm	290×258 mm	390×340 mm
Accessories included		rubber pad with edge bead	rubber pad with edge bead	rubber pad with edge bead	rubber pad with edge bead
Max. load		5 kg	10 kg	5 kg	10 kg
Overheat protection		self-resetting	self-resetting	self-resetting	self-resetting
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
Protection class	**DIN EN 60529**	IP 40	IP 20	IP 40	IP 20

Model		Polymax 1040	Polymax 2040	Multi Reax	Vibramax 100	Vibramax 110
Motion		wave	wave	circular vibrating	circular vibrating	circular vibrating
Rotation speed range		2–50 rpm	2–50 rpm	150–2,000 rpm	150–1,350 rpm	150–1,250 rpm
Rotation speed setting		speed scale	digital	digital	speed scale	speed scale
Tilt angle		5°	5°	3 mm	3 mm	1.5 mm
Operating mode		timer or continuous	timer or continuous	timer or continuous	timer or continuous	timer or continuous
Timer		yes	yes	yes	yes	yes
Power input		115 W	115 W	50 W	31 W	46 W
Weight		8 kg	16 kg	9.8 kg	5.5 kg	12.2 kg
Dimensions	**w/d/h**	320×375×195 mm	426×435×208 mm	270×410×172 mm	245×310×125 mm	245×310×125 mm
Platform size	**w/d**	290×258 mm	390×340 mm	–	220×220 mm	140×140 mm
Accessories included		rubber pad with edge bead	rubber pad with edge bead	attachment for 12 or 26 vessels	rubber pad	rubber pad
Max. load		5 kg	10 kg	1.5 kg	2 kg	2 kg
Overheat protection		self-resetting	self-resetting	self-resetting	self-resetting	self-resetting
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
Protection class	**DIN EN 60529**	IP 40	IP 20	IP 30	IP 30	IP 30

Standard supply voltage: 230 V. Other supply voltages on request.

Accessories

For Reax 2

Adapter for 20 test tubes

For max. 20 test tubes with Ø 10 – 18 mm,
loading capacity 1 kg

P/N 549-21000-00

For Reax 20

Tension plate for caps

For standard vessels with Ø 77 mm (small)

P/N 11-001-001-51

For standard vessels with Ø 94 mm (large)

P/N 11-001-001-81

Attachment

0.5 l for 4 × 0.5 l bottles

P/N 549-27000-00

1.0 l for 4 × 1.0 l bottles

P/N 549-26000-00

For Reax top / Reax control

Test tube tray, large

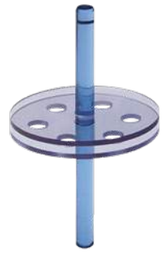
For flasks up to 50 ml

P/N 549-19000-00

Test tube holding device

For secure holding of test tubes
in continuous operation

P/N 549-20000-00



Attachment for 10 test tubes

For max. 10 reaction vessels with Ø 10 mm,
length up to 60 mm

P/N 549-01000-00

Test tube stand

For max. 6 Eppendorf vessels (1,5 ml)

P/N 549-04000-00

For Vibramax 100 / Rotamax 120

Tension roller attachment

Tension roller attachment with two tension rollers

P/N 549-81000-00

Tension roller

Additional tension roller, suitable for the attachment

P/N 11-001-001-08

Perforated platform 100

With universal perforation for use with holders for
Erlenmeyer flasks

P/N 549-59100-00

Holding clamps see page 28/29

For Vibramax 110

Test tube attachment

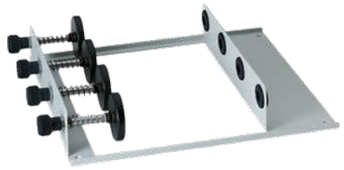
12 mm
for max. 49 test tubes with Ø 12 mm, length up to 80 mm

P/N 549-82000-00

16 mm
for max. 36 test tubes with Ø 16 mm, length up to 80 mm

P/N 549-83000-00

For Duomax 1030 / Unimax 1010 / Promax 1020 / Polymax 1040



Erlenmeyer attachment

For up to 22 Erlenmeyer flask	25 ml	549-72000-00
For up to 14 Erlenmeyer flask	50 ml	549-73000-00
For up to 9 Erlenmeyer flask	100 ml	549-74000-00
For up to 5 Erlenmeyer flask	250 ml	549-75000-00
For up to 4 Erlenmeyer flask	500 ml	549-76000-00
For up to 2 Erlenmeyer flask	1000 ml	549-77000-00

Separatory funnel attachment

Suitable for 4 conical separatory funnels, each 50 ml or 100 ml

P/N 549-7800-00

Frame with tension roller

Tension roller attachment with two tension rollers

P/N 549-70000-00

Spare tension roller

Additional tension roller, matching the tension roller attachment

P/N 549-71000-00

Perforated platform 1000

With universal perforation for use with clamps for Erlenmeyer flasks and separatory funnels

P/N 549-59200-00

For Unimax 2010 / Promax 2020 / Polymax 2040

Frame tension roller

For attaching the tension rollers to secure any kind of vessel (see design Promax 2020, page 20)

P/N 549-50000-00

Separatory funnel clamp

250, 500, 1000 ml for perforated platform 2000
max. 4 (250 ml), 3 (500 ml) or 3 (1000 ml) holders per perforated platform

P/N 549-57000-00

2000 ml for perforated platform 2000
max. 2 holders per perforated platform

P/N 549-61000-00

Spare tension roller

Together with the base frame for securing any kind of vessel (order at least 2 pieces)

P/N 549-58000-00

Multi-tier attachment

For multi-tier design incl. perforated platform 2000

P/N 549-62000-00

Perforated platform 2000

For use with clamps for Erlenmeyer flasks and separatory funnels

P/N 549-59000-00

Clamps

Size	Erlenmeyer flasks	for perforated platform 100		for perforated platform 1000		for perforated platform 2000	
		Max. configuration	P/N	Max. configuration	P/N	Max. configuration	P/N
1	25 ml	16	549-51000-00	20	549-51000-00	36	549-51000-00
2	50 ml	16	549-52000-00	20	549-52000-00	36	549-52000-00
3	100 ml	8	549-53000-00	14	549-53000-00	23	549-53000-00
4	250 ml	5	549-54000-00	8	549-54000-00	12	549-54000-00
5	500 ml	3	549-55000-00	4	549-55000-00	9	549-55000-00
6	1000 ml	2	549-56000-00	4	549-56000-00	5	549-56000-00
7	2000 ml	–		2	549-63000-00	3	549-63000-00

Incubator 1000

The unique modular system combines everything in one: Mixing, shaking, temperature-control – without any additional heating cabinet. Suitable for the platform shaker models of the 1000 series Duomax 1030, Polymax 1040, Titramax 1000, Unimax 1010 and Promax 1020.

Heating module

The heating module gently heats the circulating air up to 65 °C. The integrated air circulation fan ensures even heat distribution within the incubation hood.

Platform Shakers

Selecting a compatible model of the 1000 series.

Transparent hood

Stepless locking, without condensation (PETG). Three sizes to choose from.

That's all it takes for a space-saving incubation system.

Incubator 1000 module

Three options: A flat hood for multi-well plates, a high hood for standard vessels and an XL hood for Erlenmeyer flasks up to 2.000 ml.

Heating module for Incubator 1000

With 300 W heating power for the fastest heating times up to 65 °C. The electric circulating air heating with an extremely quiet fan guarantees the lowest noise level. The temperature accuracy is ±2 °C up to 50 °C or ±4 °C over 50 °C.
Separate, digital display for continuous monitoring of set and actual values. With overheat protection to avoid thermal harm

P/N 549-90010-00

Flat incubation hood

For small vessels and multi-well plates
The flat hood has a low height of 163 mm and is perfectly suited for multi-well plates, Petri dishes, culture flasks and Erlenmeyer flasks from 25 to 100 ml

P/N 549-90040-00

High incubation hood

For medium-sized vessels
The high hood has a height of 267 mm and is ideally suited for 500 ml Erlenmeyer flasks or tall vessels

P/N 549-90030-00

High incubator hood XL

For large vessels
The incubation hood XL has a height of 428 mm and is suitable for 2.000 ml Erlenmeyer flasks

P/N 549-90060-00

Packages

Hei-MIX

Titramax
ALL-INCLUSIVE PACKAGE

- Titramax 1000
- Heating module Incubator 1000
- Flat incubation hood

P/N 544-12209-00

Unimax
ALL-INCLUSIVE PACKAGE

- Unimax 1010
- Heating module Incubator 1000
- High incubation hood

P/N 543-12319-00

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

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

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

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

Multi-channel pump head

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

Adapter

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 cassette

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

Hoses and accessories

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

The multi-channel pump is ready.

Configuration from page 50.

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

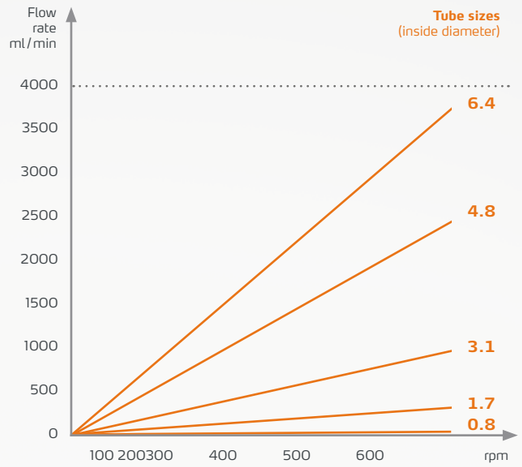
SP vario

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.

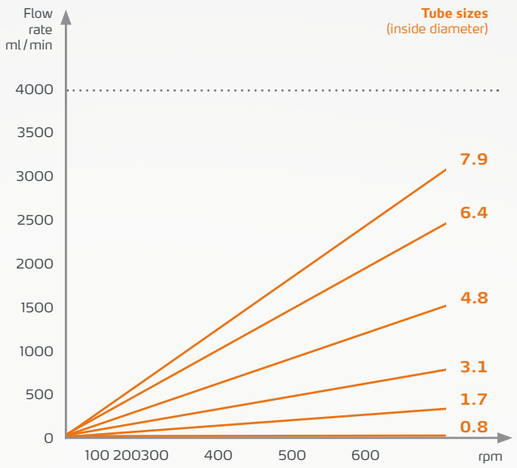
P/N 523-45110-00

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_2O**	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_2O**	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**

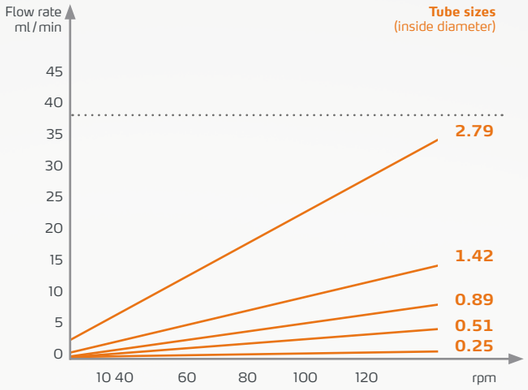
Simply select the adapter and multi-channel pump head for the appropriate Hei-FLOW model and fit them with suitable cassettes and tubings.

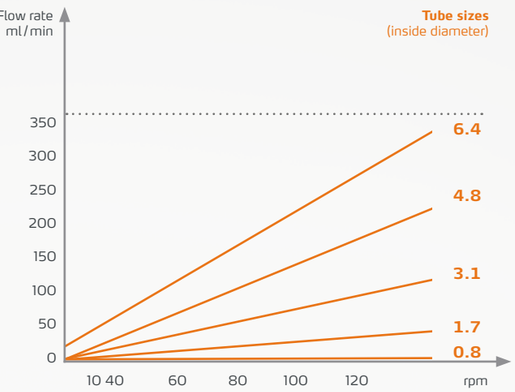
- When using tubes with different diameters per cassette, up to 12 individual pump volumes can be processed in one working part
- The tube can be changed easily and in a matter of seconds
- Pump heads with 8-roller system are also available to reduce pulsation
- A snap-action device makes inserting all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



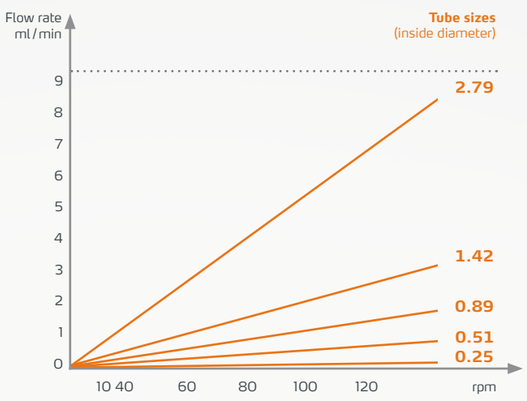


Multi-channel pump head C 8

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. 12 x 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. 8 x 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_2O**	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_2O**	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

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

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

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

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

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.

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

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

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

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

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:
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	–
	Butyl acetate	B	D	D	D	D	D
C	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
G	Tannic acid, 75 % i. w.	B	A	B	D	A	–
	Glycerin	A	A	A	A	A	A
H	Uric acid	A	A	A	C	A	–
	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	Perchlorethylene	C	D	D	D	D	A

	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

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

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.

Before the purchase

Initial application counseling
for all customers & interested parties
We address the individual requirements of your project, check the theoretical feasibility and find the best equipment combination for optimal results.

First application testing
for all customers & interested parties
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.

Advanced application testing
optional and individual
We offer additional tests in our laboratories, tailored to your requirements and given parameters. The costs are billed by the hour.

External analyses for verification
If you do not have the facilities for analyses, we can commission an external laboratory to do so. We determine viscosity, residual moisture and composition of your sample.

After the purchase

Training
Work successfully from day 1
After receiving your laboratory device, we support you with the commissioning and ensure optimal handling of the devices in individual application training sessions.

Optimal processes
Maximum performance
Our application specialists adjust your installed new devices in an optimal and application-specific manner. We are also happy to help you to increase the performance of processes that are already running.

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Paid service

Detailed information and other services also available online on www.heidolph.com

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