Premium Laboratory Equipment

Laboratory and Magnetic Stirrers

# Gentle but powerful





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### 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. This allows you to focus purely on your research, your company, and the millions of people worldwide. In short: research made easy.

For us, "Made in Germany" is far more than just a marketing strategy. It is part of our company philosophy.

Our location in Germany allows us to develop and produce reliable laboratory equipment with an average operational lifespan of 10 years or more. For you, this means that every purchase is an investment in the future.

All Heidolph products are developed and manufactured at our Schwabach headquarters in Nuremberg, where they undergo multi-stage quality checks in development and production. Even in continuous operation, our powerful, no-maintenance motors ensure consistent results and prevent downtimes and expensive repairs.

To us, premium service means cost-free installation and training, the shortest possible repair and delivery times and individual expert advice – 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

#### Free product-demo!

You can thoroughly test our devices with a non-binding and free demo to ensure that our products meet all your requirements.

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#### Hei-TORQUE Overhead Stirrers

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#### Hei-PLATE Magnetic Stirrers

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## Hei-TORQUE Overhead Stirrers **Powerful Stirring**



Small and light, easy to use, high torque, precise setting options and an interface for documentation purposes: The Hei-TORQUE series offers a suitable solution for any requirement. Ideal for mixing larger quantities, high viscosities or also for applications in reactor systems. Available in different performance classes depending on the model.







## Leading Safety Standards

The individually adjustable start-up reliably prevents splashing, as the speed is slowly ramped up to the selected speed

- The optionally available stirrer shaft guard protects against accidents with the fast-rotating impeller
- The spark-free motors guarantee the highest level of safety
- To prevent overheating, the motor is switched off in the event of permanent overload - this is an important feature for unattended continuous operation
- The safety-oriented start/stop touch-function rules out inadvertent start-up
- No splashing liquids thanks to the adjustable speed limitation
- With the quick-action chuck, no additional tools are required as the impeller can be quickly clamped and safely removed.
- The open safety ring of the quick-action chuck prevents inadvertent start-up during a tool change
- A triple audible engagement confirms the maximum clamping force after tightening and thus the secure seating of the stirring tool



### Superior Ease of Use

- The uniquely high torque achieves fast and excellent mixing results even when processing highly viscous media
- The speed is kept constant even when there are strong fluctuations in viscosity
- State-of-the-art motors achieve maximum performance at minimum noise level
- Searching for the chuck key is a thing of the past: With the quick-action chuck, the impellers can be easily replaced with just one hand – without the need for tools
- Whether you require impellers made of stainless steel, plastic or with Teflon coating: You will most certainly find a suitable product even for very special applications. To position the impeller correctly at a height of your choice, the stirrer shaft can simply be routed through the housing
- With just one swift move at the optional telescope stand, the laboratory stirrer can be repositioned
- Stirrer couplings, flexible shafts and seals to enable stirring under vacuum and pressure extend the application range
- Outstanding product design with glass display and touch elements for intuitive control and durability, awarded the iF DESIGN AWARD
- The standard RS 232 and USB interfaces of the Hei-TORQUE Precision models permit precise documentation of the process flow. The free Hei-Control Software is included in the scope of delivery













### Reduced Cost of Ownership

 The sealed housing reliably protects the laboratory stirrer from corrosion. On average, this increases the operational lifespan to more than 10 years and reduces maintenance and repair costs

• The high torque guarantees best stirring results and thus considerably shortens process times

• Maintenance-free motors avoid downtimes and repair costs

 Special stirring tools which are able to mix even large quantities of gel shorten process times and improve results

• The sealed glass user interface increases the leak tightness of the housing thus protecting electronics and mechanics

 No unnecessary extra costs: comprehensive software is included free of charge with all Hei-TORQUE Precision models

 All devices are suitable for continuous operation without time restrictions – even when handling highest viscosities

 Achieve first-class results even in polymer research: high-performance motors are the distinguishing feature of these laboratory stirrers

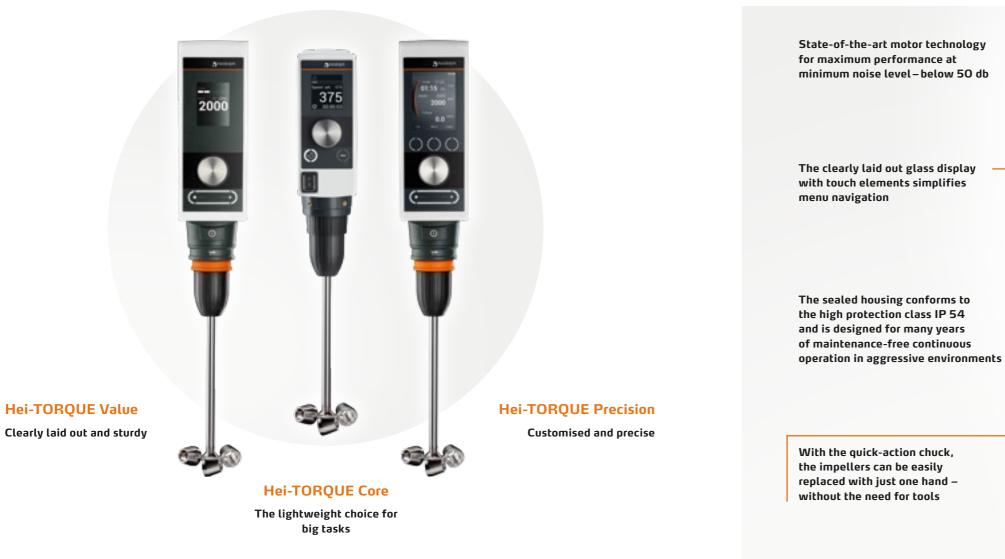
 Also suitable for use in aggressive environments: the sealed housing guarantees many years of maintenance-free operation

MADE IN GERMANY

## All Benefits at a Glance

The Hei-TORQUE Series

Small and light, easy to use, high torque, precise setting options and an interface for documentation purposes: The Hei-TORQUE series offers a suitable solution for any requirement.



Free Hei-Control Software is included with all Hei-TORQUE precision models to ensure reliable automation of all processes.

All Hei-TORQUE models are compatible with the ViSCO JET<sup>®</sup> stirring systems.

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

## **Powerful Stirring**



The overtemperature protection reliably prevents accidents due to overheating – especially in continuous operation without time restrictions

Increased safety due to individual performance monitoring: start-up intensity, maximum rotation speed and maximum torque are adjustable

The sealed glass user interface increases the leak tightness of the housing thus protecting electronics and mechanics

Safety-oriented start/stop touch-function rules out inadvertent start-up

USB and RS 232 interface for process documentation and reproducible results

VISCO JET<sup>®</sup> impellers mix media that cannot be mixed with conventional technology - complete circulation is even reached when processing gels

## Hei-TORQUE Core

### The lightweight choice for big tasks

The exceptionally light and compact design allows for integration in closed systems, such as fume hoods, reactors, or production systems. Suitable for up to 25 l of low- to medium-viscosity media.

#### Compact design:

- Light weight at 2,300 g
- Dimensions (w/d/h): 70×195×282 mm

#### Easy to use:

- Control knob for rotation speed, pushing starts or stops the function
- Timer function
- "Max" button for short-term operation at maximum speed

#### Performance features

- Torque up to 40 Ncm
- Speed range up to 2,000 rpm
- Viscosity up to 10,000 mPas

The large diameter of the chuck (10.5 mm) allows you to use even large impellers and VISCO JET<sup>®</sup> stirring tools. This facilitates a wide variety of applications, such as homogenization, dispersing, the dissolving of agglomerates, and many more.

In reactor systems, the torque can alternatively also be deflected via the flexible shaft, so that the overhead stirrer can be placed next to the actual set-up.

Model		P/N
Hei-TORQUE Core	40 Ncm	501-60410-00



375

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heida

Speed set: 375 375 2 00:00:03

### Hei-TORQUE Value

## The reliable overhead stirrer for standard applications

The Hei-TORQUE Value models are characterized by their clearly laid out display and great ease of operation. They perform stirring tasks quickly and reliably.

#### Clearly structured operation:

- Indication of torque tendencies to detect changes in viscosity
- Modern digital 2.4" display for intuitive operation
- Safety-oriented start/stop touch-function prevents inadvertent start-up

#### Forceful stirring in three performance classes:

- 100 Ncm for up to 60,000 mPas
  200 Ncm for up to 100,000 mPas
  400 Ncm for up to 250,000 mPas
  (2-gear stage design)
- Constant speed even under changing loads
- Speed range up to 2,000 rpm
- Minimum noise level at maximum power

The sealed glass user interface increases the leak tightness of the housing thus protecting electronics and mechanics.

Model		P/N
Hei-TORQUE Value 100	100 Ncm	501-61010-00
Hei-TORQUE Value 200	200 Ncm	501-62010-00
Hei-TORQUE Value 400	400 Ncm	501-64010-00



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The optionally available telescope stand almost completely compensates for the weight of the overhead stirrer. Makes it easy to change vessels or tools in no time at all.

### Hei-TORQUE Precision

### The professional overhead stirrer for demanding applications

Power Ranges

The Hei-TORQUE Precision models are ideal for demanding tasks that have to be reproducible and documentable. The huge number of additional features allows for perfect adjustment of the stirring operation to your individual application.



Model		P/N
Hei-TORQUE Precision 100	100 Ncm	501-61020-00
Hei-TORQUE Precision 200	200 Ncm	501-62020-00
Hei-TORQUE Precision 400	400 Ncm	501-64020-00

#### Digital 3.2" display for precise working:

- Ramp function, favorites memory, interval mode
- Graphical representation of process flow, torque indicator
- Timer/countdown/clock

#### Forceful stirring in three performance classes:

- 100 Ncm for up to 60,000 mPas 200 Ncm for up to 100,000 mPas 400 Ncm for up to 250,000 mPas (2-gear stage design)
- Speed range up to 2,000 rpm
- Constant speed even under changing loads
- Change of rotation direction with the Precision 100 / 200

#### Individually adjustable parameters:

- Intensity of start-up from gentle to fast
- Speed limitation avoids unintentionally high speeds and splashing media
- Torque limitation prevents breakage of glass stirrers due to overloading
- USB and standard RS 232 interface for easy process documentation

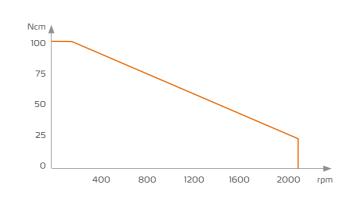
#### Optional: Standard RS 232 Cable

The Hei-Control Software is included in the scope of delivery and is available for free download at www.heidolph.com

### 40 Ncm

Power dynamics of the models:

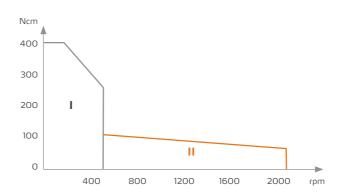
Hei-TORQUE Core

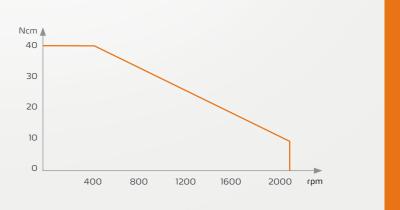


### 200 Ncm

Power dynamics of the models:

- Hei-TORQUE Value 200
- Hei-TORQUE Precision 200

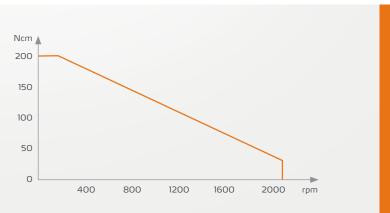




### 100 Ncm

Power dynamics of the models:

- Hei-TORQUE Value 100
- Hei-TORQUE Precision 100



### 400 Ncm

Power dynamics of the models:

- Hei-TORQUE Value 400
- Hei-TORQUE Precision 400

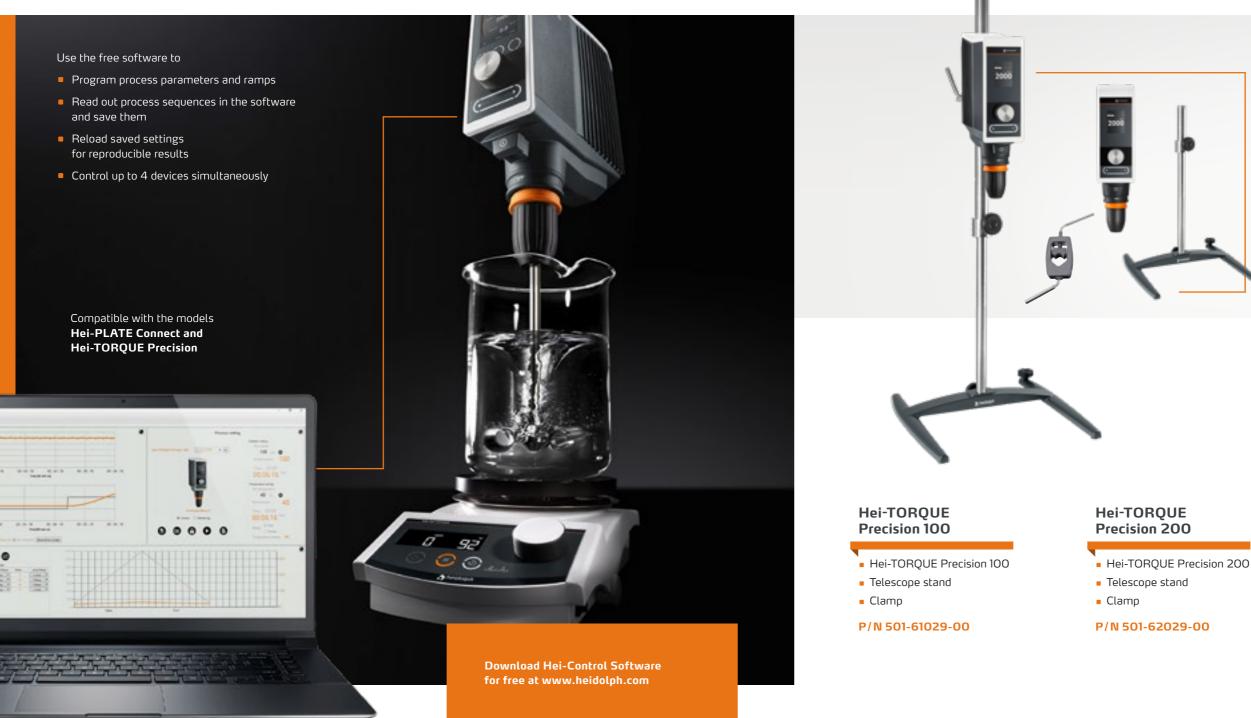
A 2-gear stage design guarantees a high torque over the entire speed range.

### Hei-Control Software

### Packages Hei-TORQUE Overhead Stirrers

The Hei-Control Software is able to simultaneously control the magnetic stirrer Hei-PLATE and the overhead stirrer Hei-TORQUE Precision for the purpose of automating and reproducing stirrer processes. It enables the programming and visualization of process parameters as well as the export of captured data.

To offer a perfect complete solution for powerful stirring and easy operation in the laboratory, the Hei-TORQUE series was expanded by various product packages.



Each Hei-TORQUE package contains a telescope stand and a corresponding clamp to ensure ideal use on laboratory benches.

#### Hei-TORQUE Value 100

- Hei-TORQUE Value 100
- Telescope stand
- Clamp
- P/N 501-61019-00

#### Hei-TORQUE Precision 400

- Hei-TORQUE Precision 400
- Telescope stand
- Clamp
- P/N 501-64029-00

### Technical Specifications

### **Overhead Stirrers**

Model	Hei-TORQUE Core	Hei-TORQUE Value 100	Hei-TORQUE Value 200	Hei-TORQUE Value 400	Hei-TORQUE Precision 100
Power rating Motor input/output	105/75W	90/50 W	120/80 W	150/90 W	90/50 W
Number of gear speeds	1	1	1	2	1
Speed range	20–2,000 rpm	10–2,000 rpm	10–2,000 rpm	10–400 rpm (gear speed I) 20–2,000 rpm (gear speed II)	10–2,000 rpm
Change of rotation direction	-	-		_	yes
Rotation speed indicator	digital	digital	digital	digital	digital
Control panel	monochrome 2.4"	monochrome 2.4"	monochrome 2.4"	monochrome 2.4"	colour 3.2"
Speed control	electronic	electronic	electronic	electronic	electronic
Max. torque	40 Ncm*	100 Ncm	200 Ncm	400 Ncm	100 Ncm
Torque indicator	Symbol	Symbol	Symbol	Symbol	Value
Behaviour in case of overload	Automatic cut-out with display				
Motor protection	Temperature monitoring software				
Max. viscosity	10,000 mPas	60,000 mPas	100,000 mPas	250,000 mPas	60,000 mPas
Max. volume H <sub>2</sub> O	251	50 l	50 l	100 l	50 l
Analogue/digital interface	-	-	-	_	USB and RS 232
Permissible duty cycle	Continuous operation				
Counter / timer	yes	-	-	_	yes
Stirrer shaft diameter max. Ø	10.5 mm				
Dimensions device w/d/h	70×195×282 mm**	86×247×340 mm**	86×247×340 mm**	93×247×340 mm**	86×247×340 mm**
Dimensions support rod Ø×w	13×160 mm				
Weight	2.3 kg	4.4 kg	5.1 kg	5.3 kg	4.4 kg
Permissible ambient conditions	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80 % rel. humidity, 32–40 °C decreasing linearly up to max. 50 % rel. humidity
Protection class DIN EN 60529	IP 42	IP 54	IP 54	IP 54	IP 54

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

\* 65 Ncm for short-term overload operation

\*\* Height from upper edge of device to lower edge of chuck with jaws completely retracted

#### Hei-TORQUE Precision 200

### 120/80 W

### 1

10–2,000 rpm

yes

digital

colour 3.2"

electronic

200 Ncm

Value

Automatic cut-out with display

Temperature monitoring software

100,000 mPas

50 l

USB and RS 232

Continuous operation

yes 10.5 mm

86×247×340 mm

13×160 mm

5.1 kg

5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity

IP 54

#### Hei-TORQUE Precision 400

150/90 W

2

10–400 rpm (gear speed I) 20–2,000 rpm (gear speed II)

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digital

colour 3.2"

electronic

400 Ncm

Value

Automatic cut-out with display

Temperature monitoring software

250,000 mPas

100 l

USB and RS 232

Continuous operation

yes

10.5 mm

93×247×340 mm\*\*

13×160 mm

5.3 kg

5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity

IP 54

## Stirring Tools

## Blade / Half-Moon Impellers

Precise working with an overhead stirrer critically depends on the right choice of stirring tool. These stirring tools differ in the type of flow they cause in the medium, in the speed-dependent field of application and in their design to suit different viscosities.

The following applies to all stirring tools: optimum mixing results are achieved if the vessel size and positioning of the stirring tool are perfectly matched.

- Primary flow direction is tangential
- These impellers are particularly recommended for applications which require average to high speeds
- For mixing tasks with low to medium viscosity

### Material Stainless steel

(V4A/AISI 316L)

## **BR 11 Straight-Blade Impellers**

Blade size 50 × 12 mm

Blade size

50 × 12 mm

Material Stainless steel (V4A/AISI 316L)

### **BR 12 Pivoting-Blade Impellers**

With tilting blades for narrow neck vessels

Blade size 60 × 15 mm

Material Stainless steel (V4A/AISI 316L)

#### BR 13 Square-Blade Impellers

Blade size 70 × 70 mm

Material Stainless steel (V4A/AISI 316L)

### BR 14 Collapsible-Blade Impellers

With collapsible blade for narrow neck vessels

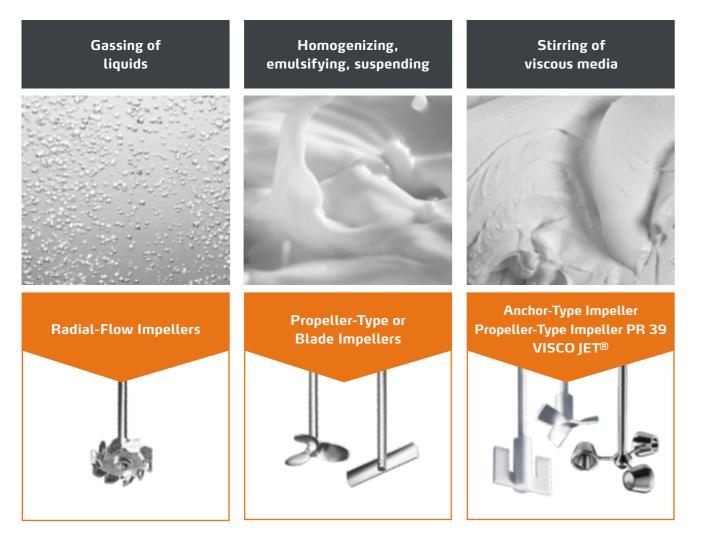
Blade size Material Stainless steel (V4A/AISI 316L) 90 × 10 mm

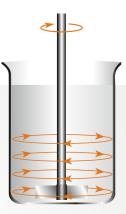
### HR 18 Half-Moon Impellers

With tilting blades for narrow neck vessels, ideally suited for stirring in round bottom flasks

Blade size Material 65 × 18 × 3 mm PTFE

### For each application the correct stirring tool





#### **BR 10 Cross-Blade Impellers**

Length	Ø stirrer shaft	Speed	P/N
400 mm	8 mm	2,000 rpm	509-10000-00

Length	Ø stirrer shaft	Speed	P/N
400 mm	8 mm	2,000 rpm	509-11000-00

Length	Ø stirrer shaft	Speed	P/N
400 mm	8 mm	2,000 rpm	509-12000-00

Length	Ø stirrer shaft	Speed	P/N
450 mm	8 mm	800 rpm	509-13000-00

Length	Ø stirrer shaft	Speed	P/N
400 mm	8 mm	800 rpm	509-14000-00

Length	Ø stirrer shaft	Speed	P/N
350 mm	8 mm	800 rpm	509-18000-10

### Propeller-Type Impellers

- Primary flow direction is axial
- These impellers are particularly recommended for applications which require average to high speeds
- For mixing tasks with low to high viscosity
- Excellent mixing properties for homogenization and suspensions

### PR 30 Pitched-Blade Propeller

Ø propeller	
58 mm	

Material Length Stainless steel (V4A/AISI 316L)

400 mm

Ø stirrer shaft 8mm



Ideal for gassing of liquids and for emulsifying



Radial-Flow Impellers

• These impellers are particularly recommended for applications

Primary flow direction is radial

which require average to high speeds

• For mixing tasks with low to average viscosity

Material Stainless steel (V4A/AISI 316L)



### **PR 31 Ringed Propeller**

Ø propeller 33 mm

Material Stainless steel (V4A/AISI 316L)

Ø stirrer shaft 8 mm

P/N max. rpm 2,000 rpm 509-31000-00

#### Ø propeller Material Stainless steel 45 mm (V4A/AISI 316L)

PR 32 Ringed Propeller

Length Ø stirrer shaft 400 mm 8 mm

Length

400 mm

P/N max. rpm 2,000 rpm 509-32000-00

### PR 33 Ringed Propeller

6	<b>J - - - - - - - - - -</b>		
Ø propeller	Material	Length	Ø stirrer s
66 mm	Stainless steel (V4A/AISI 316L)	400 mm	8 mm

shaft

8mm

P/N max. rpm 509-33000-00 800 rpm

#### PR 39 Pitched-Blade Impeller

Perfect mixing results even at high viscosities Material

PTFE

Ø propeller 75 mm

Length 350 mm

Ø stirrer shaft max. rpm 800 rpm

P/N 509-39000-10 For mixing tasks with high viscosity



## Anchor-Type Impeller



## TR 21 Radial-Flow Impeller

Ø turbine

28 mm

Ø turbine 50 mm

Material Stainless steel (V4A/AISI 316L)

### Primary flow direction is tangential This impeller is particularly recommended for applications which require a low to average speed



#### TR 20 Radial-Flow Impeller

Length 400 mm Ø stirrer shaft 8mm

Speed 2,000 rpm

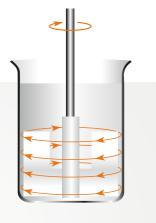
P/N 509-20000-00

Length 400 mm

Ø stirrer shaft 8mm

Speed 2,000 rpm

P/N 509-21000-00



Length 350 mm Ø stirrer shaft 8mm

Speed 800 rpm P/N 509-19000-10

## VISCO JET<sup>®</sup> Stirring System

## VISCO JET<sup>®</sup> Stirrers

#### The all-rounder for thick and thin

The VISCO JET<sup>®</sup> stirring system from VISCO JET Rührsysteme GmbH is based on the so-called cone principle. Turbulences are generated by the dynamic pressure at the displacer inlet and by the accelerated flow within the displacer (so-called nozzle effect). These turbulences collide during the circular movement of the stirring tool and lead to the revolutionary mixing movement.

- Reduced process times with clearly improved mixing results
- The stirring principle achieves complete degassing of the medium – frothing and air ingress are effectively prevented
- Even with media that cannot be mixed with conventional impellers, complete circulation is achieved
- Even at low speeds, the special shape triggers a unique flow with its own inherent dynamics
- A system for virtually any stirring task involving low to high viscosity media
- Also compatible with the compact Hei-TORQUE Core, as it also features a large-diameter chuck (10 mm)

The only impeller world wide capable of completely mixing larger quantities of high-viscosity liquids and gels.



#### VISCO JET<sup>®</sup> – 60 mm Ø

Material Length Stainless steel 500 mm (V4A/AISI 316L)



VISCO JET <sup>®</sup> – 80 mm Ø			
Material	Length	Ģ	
Stainless steel (V4A/AISI 316L)	500 mm	]	



#### VISCO JET<sup>®</sup> – 120 mm Ø Material Length Stainless steel 500 mm (V4A/AISI 316L)



VISCO JET<sup>®</sup> - 80 mm Ø (POM) Length 500 mm 10

Material

POM\*



Material Length Øs 500 mm 10

\* Stirring device: Plastic (POM), hub: brass, shaft: polyamide-coated



#### Fields of use

- Beverage production, dairy products
- Food, sugar and confectionery production
- Chemistry, petrochemistry, ceramics, water treatment
- Pharmaceuticals, cosmetics production
- Paint and varnish production
- and many more



#### Material Length ø

Stainless steel 500 mm 10 (V4A/AISI 316L)

#### VISCO JET<sup>®</sup> CRACK – 120 mm Ø (without illustration)

Material Length Stainless steel 500 mm (V4A/AISI 316L)

One stirrer shaft is always included in the scope of delivery



Ø stirrer shaft	Ø Vessel
10 mm	80–150 mm

Speed 200–800 rpm P/N 509-16060-00

Ø stirrer shaft Ø Vessel 115-200 mm 10 mm

Speed 200–700 rpm

P/N 509-16080-00

Ø stirrer shaft Ø Vessel P/N Speed 120–500 rpm 509-16120-00 10 mm 170-300 mm

ø

ð Vessel	Speed	P/N
L15–200 mm	200–700 rpm	509-16081-00

#### VISCO JET<sup>®</sup> – 120 mm Ø (POM) (without illustration)

stirrer shaft	Ø Vessel	Speed	P/N
) mm	170-300 mm	120–500 rpm	509-16121-00

### VISCO JET<sup>®</sup> CRACK – 80 mm Ø

Í stirrer shaft	Ø Vessel	Speed	P/N
0 mm	115-200 mm	200–700 rpm	509-17080-00

Ø stirrer shaft	Ø Vessel	Speed	P/N
10 mm	170–300 mm	120–500 rpm	509-17120-00

### Further Accessories



Universal Stand S2

Stand tube Ø 25 mm, height 700 mm, leg distance 370 mm, weight 5.8 kg

P/N 570-12000-00



For stand S2, S2 XXL and telescope stand, Ø 13 – 32 mm

P/N 570-22000-00



Stand S2 XXL

Stand tube Ø 25 mm, height 1.000 mm, leg distance 370 mm, weight 6.0 kg

#### P/N 570-12200-00



**Flex Coupling** With clamping spigot, for stirrer shafts with Ø 10 mm

P/N 509-03000-00

Flexible Shaft

1,300 mm overall length

P/N 509-07000-00

Incl. chuck,



#### **Telescope Stand**

Stand tube Ø 32 mm, height 725 mm to 1,025 mm, leg distance 370 mm, weight 7.7 kg

#### P/N 570-12100-00



#### Stirrer Guide (NS 29/32)

For stirrer shafts with Ø 8 mm, ground PTFE core; suitable for vacuum, perfect guide for stainless steel and glass stirrer shafts

#### P/N 509-09000-00



Shaft Guard

For Hei-TORQUE, made of PMMA, incl. adapter set, height-adjustable from approx. 187 – 312 mm

#### P/N 509-08100-00

**Adapter set** (without illustration) To fasten the stirrer shaft guard on the Hei-TORQUE Overhead Stirrer

P/N 11-002-501-02



RS 232 Cable 9-pin, for Hei-Connect and Hei-TORQUE Precision models

P/N14-007-040-72

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