

Powerful Stirring



...getting you **out of**
sticky situations

While you concentrate on research, we'll look after your support needs

As we want you to have more time to thoroughly concentrate on research, the whole Heidolph team enthusiastically provides you with extensive support and helps to reduce your workload.

- 24 hour service for all inquiries
- Individual application support
- Short delivery time for standard items
- After sales service provided by your local dealer
- More than 80 distributors worldwide
- Priority technical service
- Long-lasting service life of all products due to corrosion-resistant electronics and maintenance-free motors
- 3 year warranty

Powerful Stirring



- Highest Torque in its Class
- Constant Speed under Changing Loads
- Longevity in Challenging Environments

Outstanding Mixing Results

Summary:

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Technical specifications - Overhead Stirrers

Model	RZR 1	RZR 2020	RZR 2021	RZR 2041	RZR 2051 control	RZR 2052 control	RZR 2102 control	RZR 2102 control Z
P/N (230 V)	501-11000-00	501-20200-00	501-20210-00	501-20410-00	501-20511-00	501-20521-00	501-21021-00	501-21024-00
Power rating, motor input/output (W)	77/18	50/27	50/27	70/37	80/50	140/100	140/100	140/100
Number of speed gears	2	2	2	2	1	1	2	2
Speed range (rpm)	35 - 250 280 - 2,200	40 - 400 200 - 2,000	40 - 400 200 - 2,000	40 - 400 200 - 2,000	50 - 2,000	30 - 1,000	12 - 400 60 - 2,000	4 - 108 17 - 540
Speed indicator	scale	scale	digital	digital	digital	digital	digital	digital
Speed control	mechanic	mechanic	mechanic	mechanic	electronic	electronic	electronic	electronic
Torque, maximum (Ncm) - overload mode	100	400	400	520	20 40	90 180	200 400	700 800
Power reserve under overload (%)	-	-	-	-	200	200	200	200
Torque indicator (Ncm)	-	-	-	-	digital	digital	digital	digital
Overload protection	automatic cut-out	automatic cut-out	automatic cut-out	automatic cut-out	automatic cut-out features LED	automatic cut-out features LED	automatic cut-out features LED	automatic cut-out features LED
Motor protection	overheat protection reset by power switch	overheat protection reset by power switch	overheat protection reset by power switch	overheat protection reset by power switch	overheat protection reset by power switch	overheat protection reset by power switch	overheat protection reset by power switch	overheat protection reset by power switch
Viscosity up to (mPa s)	40,000	60,000	60,000	100,000	10,000	40,000	100,000	350,000
Stirring cap. H ₂ O up to (l)	20	25	25	40	40	100	100	100
Analog / digital interface	-	-	-	-	yes	yes	yes	yes
Shaft diameter up to (mm)	8	10	10	10	10	10	10	10
Ambient temp. range (°C)	0 - 40	0 - 40	0 - 40	0 - 40	0 - 40	0 - 40	0 - 40	0 - 40
Humidity up to (%)	95, no condensation	95, no condensation	95, no condensation	95, no condensation	95, no condensation	95, no condensation	95, no condensation	95, no condensation
Dimensions (w x h x d) (mm)	71 x 250 x 172	82 x 206 x 176	82 x 206 x 176	82 x 211 x 176	72 x 206 x 176	82 x 211 x 176	82 x 211 x 176	82 x 292 x 176
Stay bar size (dia. x l) (mm)	13 x 300	13 x 160	13 x 160	13 x 160	13 x 160	13 x 160	13 x 160	13 x 160
Weight (kg)	2.7	3.0	3.0	3.3	2.8	3.7	3.7	4.7
Protection class (DIN EN 60529)	IP 20	IP 40	IP 40	IP 40	IP 40	IP 40	IP 40	IP 40
Supply voltage * (V/Hz)	230 / 50 115 / 60	230 / 50 115 / 60	230 / 50 115 / 60	230 / 50 115 / 60	230 / 50 115 / 60	230 / 50 115 / 60	230 / 50 115 / 60	230 / 50 115 / 60

*Standard 230 V: Others upon request, please specify for order

The RZR Series



Powerful Stirring

Do you require an all purpose stirrer that provides the best mixing results even for very challenging applications?

The powerful RZR Series stirrers can accomplish the most demanding tasks while providing the highest safety and increased performance life

Your safety is our concern!

An over temperature sensor preventatively shuts off the unit in a dangerous heat up situation – particularly valuable for you in case of unattended continuous operation

The durable design of the RZR Series promotes longevity in an **aggressive environment**: The sealed housing protects against corrosion and ensures years of maintenance-free operation



2 gear stage design guarantees the **highest power** over the entire speed range

All units are designed for continuous **24 hour operation** – including difficult high viscosity applications or polymer research

These stirrers come with the **highest torque** in its class yielding 1st class results

Impellers

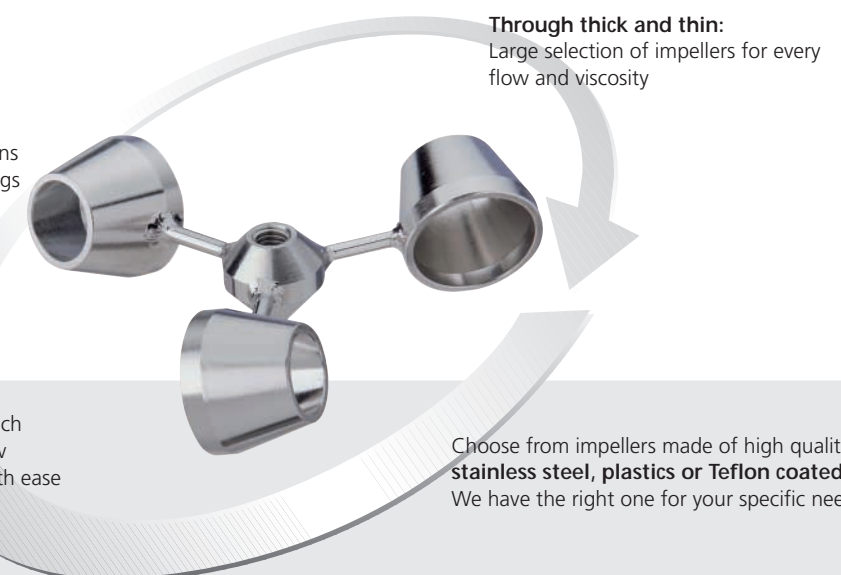
Have you been searching for an impeller which serves you for both standard applications and extremely challenging media?

You will be surprised to learn how easily this unique impeller line evenly mixes high viscosity media such as gels or tooth paste

Do you require **accessories for your stirring tasks**?

We provide stirrer guides for applications under vacuum or pressure, flex-couplings and flex-shafts that increase your available options

Reduce your process times by utilizing patented technology which creates turbulent flows and a new dynamic motion that stirs gels with ease



Through thick and thin:
Large selection of impellers for every flow and viscosity

Choose from impellers made of high quality **stainless steel, plastics or Teflon coated**: We have the right one for your specific needs

Your advantages - our Hei-lights

For your safety

- Important for continuous unattended operation: The motor will be switched off if a high thermal load situation occurs to increase safety in your lab and to **preventatively avoid accidents**
- Additional safety is provided by sparkless motors which **reduce incidents** in a **volatile environment**
- All models feature a smooth start operation which **prevents spills and splashing media**. The speed will ramp up slowly until your set rpm has been reached
- An optional shaft guard **prevents any accidents** involving contact with the impeller shaft running at high speeds
- Use an optional remote control via cable to start and stop your electronic stirrer outside a **closed fume hood**



Shaft guard



Remote control

For your ease of use

- A through-shaft design allows for adjusting of the impeller position to make **height adjustment more convenient** for you
- **Reduce your work time** and yield excellent mixing results in challenging high viscosity media
- Optional **software** programs for all electronic stirrers aid you in **automating your process** and software saves all data in electronic files
- Due to the **light weight design** all set-ups in your lab are easy and fast
- A **single grip** allows you to re-adjust the height of your stirrer on the optional telescope stand
- Our clear and **self-explanatory front panel** layout is for your ease of operation
- Use your lab space efficiently: The slim and space saving design allows to **fit in to any glassware set-up** nicely



Software

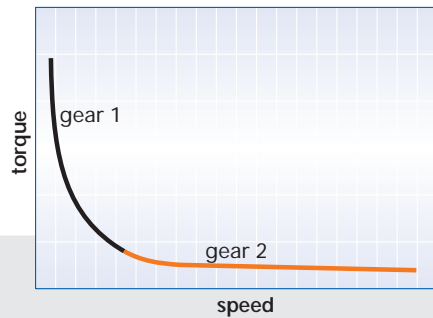
Sustainable economic benefits - increased efficiency

- Reduce your maintenance costs: The sealed housing protects your stirrer from aggressive fumes, liquids and vapors to prevent internal corrosion. This results in an **increased lifespan of 10 years** on average at a **reduced maintenance and repair cost**
- The high torque accounts for better mixing results in less time that **reduces your process time** and your work hours significantly
- Maintenance free motors **reduce repairs and down times** significantly to ensure years of continuous operation
- Patented impeller technology for demanding applications that mix gels and other similar media in shorter times which **reduces process cost and work hours**

Mechanical Stirrers

These models are ideal for standard stirring tasks. They are designed to mix and disperse media that require no-reproducible results of high viscosity applications under high speeds. The torque to speed graph is provided below to represent this dynamic relationship.

Stirrer line includes all standard features for safety, ease of use and increased efficiency plus:



Mechanical Stirrers

For Standard Applications

Both the RZR 2020 and 2021 are outstanding choices for all medium to high viscosity mixing tasks with a maximum viscosity of 60,000 mPa s



Model RZR 2021 features a bright digital display for accurate speed settings. Model RZR 2020 is designed for applications that do not require accurate settings and comes without a display.

A 2 gear stage design guarantees the highest power over the entire speed range of 40 - 2,000 rpm

A maintenance-free sparkless motor ensures 27 W output power and performs stirring torque peaks up to 400 Ncm

RZR 2021
P/N 501-20210-00

RZR 2020 (not shown)
P/N 501-20200-00

For High Viscosity

The model RZR 2041 is an excellent choice for any high viscosity mixing with a maximum viscosity up to 100,000 mPa s

This model features a bright digital display for accurate speed settings

A 2 gear stage design guarantees the highest power over the entire speed range of 40 - 2,000 rpm

A maintenance-free sparkless motor ensures 37 W output power and performs stirring torque peaks up to 520 Ncm

RZR 2041
P/N 501-20410-00



Electronic Stirrers

These models are ideal for any demanding stirring task in which the viscosity varies during the entire process either through reaction or due to mixing. Electronic stirrers maintain exact speed under changing load. The displayed torque gives information relating to the actual viscosity and all results are reproducible.

Stirrer line includes all standard features for safety, ease of use and increased efficiency plus:



All electronic stirrers accept 200 % peak overload for a limited period of time. Your process therefore will not be interrupted in an event such as short-term overload

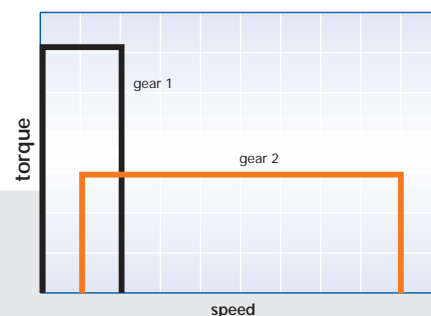
Calibrate your torque at the beginning or even during your process to monitor viscosity changes over time. Reproducible results made easy

Set your speed of choice on the self-explanatory panel or via digital interface from 30 – 2,000 rpm

Enhanced bright digital display for torque and speed

Constant speed under changing loads over the entire span of every gear setting

Shipment includes a 10 mm chuck as standard



Electronic Stirrers
Constant torque over entire speed range within each gear stage

Electronic Stirrers

For Standard Applications

Both RZR 2051 control and RZR 2052 control are 1 gear stage stirrers which hold speed constant under changing loads



RZR 2051 control: Accepts torque of 40 Ncm in an overload situation and 20 Ncm for continuous operation at speeds from 50 – 2,000 rpm. Viscosity range up to 10,000 mPa s

RZR 2052 control: Accepts torque of 180 Ncm in an overload situation and 90 Ncm for continuous operation at speeds from 30 – 1,000 rpm. Viscosity range up to 40,000 mPa s

Calibrate your torque at the beginning or even during your process to monitor viscosity changes over time

Speed control uses rheostat or interface

Enhanced bright digital display for torque and speed

RZR 2051 control
P/N 501-20511-00

RZR 2052 control (not shown)
P/N 501-20521-00

For High Viscosity

Both models RZR 2102 control and RZR 2102 control Z are 2 gear stage stirrers which hold speed constant under significant load changes such as sticky media like polymers for example

Choose between 2 options for gear setting and experience the power of the 100 W output motor which allows for torque of 400 Ncm in an overload situation and 200 Ncm for continuous operation at speeds from 12 - 2,000 rpm

Calibrate your torque at the beginning or even during your process to monitor viscosity changes over time

Speed control uses rheostat or interface

Viscosity range up to 100,000 mPa s



Planet gear (4:1 ratio) of the RZR 2102 control Z

RZR 2102 control
P/N 501-21021-00

RZR 2102 control Z
P/N 501-21024-00

RZR 2102 control Z features identical technical specifications as the RZR 2102 control except for

- Speed: 4 - 540 rpm
- Torque: 800 Ncm in an overload situation
700 Ncm at continuous operation
- An additionally flanged planet gear for extreme viscosities up to 350.000 mPa s

The RZR 2102 control Z does not feature the through-shaft design for impeller adjustment

Impellers

Selection parameters:

Precise working with an overhead stirrer depends on the right choice of the stirrer tool. When choosing a stirrer tool, you have to consider its different characteristics and their effects: e.g. the flow the tool causes in the medium, the tools adequate field of application depending on the speed range, and the execution of the tool according to the viscosity it is destined for.

Application examples:

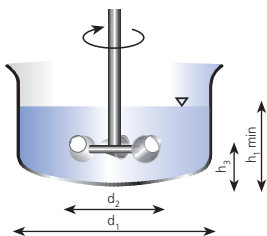
1. Gassing of liquids < 500 mPa s: Radial Flow Impeller
2. Homogenizing and suspending in liquids < 500 mPa s: Propeller-Type or Blade Impeller
3. Medium with a viscosity > 500 mPa s: Anchor-Type Impeller, Blade Impeller BR 13, VISCO JET®
4. Stirring of gel: VISCO JET®

Please ensure that for radial flow, blade, half-moon and VISCO JET® impellers the beaker size and position of your impeller complies with the guidelines below to accomplish superior mixing results

Operational guidelines

Position of the stirring tool

- In center
- Distance to the bottom (h_3/d_2): 0,3
- Diameter vessel (h_1/d_1)=1
- VISCO JET® diameter ratio (d_2/d_1): 0.4 - 0.6



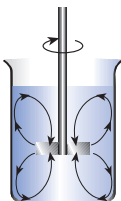
Circumferential speed

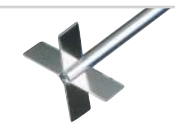





- 3 - 15 m/sec: Radial Flow Impeller
- 2 - 5 m/sec: VISCO JET®, Blade and Anchor-Type Impeller

Blade and Half-Moon Impeller

These impellers are recommended for applications which require an average speed

Models BR 12, BR 14 and HR 18 come with collapsible blade for narrow neck vessels



	Type	Blade size [mm]	Material	Length [mm]	Shaft dia. [mm]	P/N
	BR 10 Crossed Blade Impeller	50 x 12	stainless steel AISI 304	400	8	509-10000-00
	BR 11 Straight Blade Impeller	50 x 12	stainless steel AISI 304	400	8	509-11000-00
	BR 12 Pivoting Blade Impeller	60 x 15	stainless steel AISI 304	400	8	509-12000-00
	BR 13 Square Blade Impeller	70 x 70	stainless steel AISI 304	450	8	509-13000-00
	BR 14 Collapsible Blade Impeller	90 x 10	stainless steel AISI 304	400	8	509-14000-00
	HR 18 Half-Moon Impeller	65 x 18 x 3	PTFE	350	8	509-18000-00

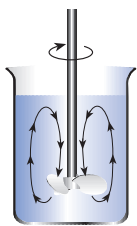
Propeller-Type Impeller




These impellers are recommended for applications which require an average or high speed

For mixing tasks with medium or high viscosity

Excellent mixing properties for homogenization and suspensions

These models create an axial flow



	Type	Prop. dia. [mm]	Material	Length [mm]	Shaft dia. [mm]	P/N
	PR 39 Pitched Blade Impeller	75	PTFE	350	8	509-39000-00
	PR 30 Pitched Blade Impeller	58	stainless steel AISI 304	400	8	509-30000-00
	PR 31 Ringed Propeller	33	stainless steel AISI 316Cb	400	8	509-31000-00
	PR 32 Ringed Propeller	45	stainless steel AISI 316Cb	400	8	509-32000-00
	PR 33 Ringed Propeller	66	stainless steel AISI 316Cb	400	8	509-33000-00

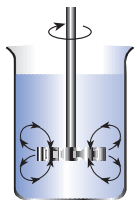
Radial Flow Impeller


These impellers are recommended for applications which require an average speed

For mixing tasks with little or average viscosity up to < 500 mPa s

Ideal for gassing of liquids

These impellers create a radial flow

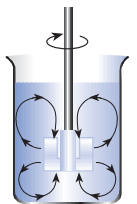



	Type	Ø Turbine size [mm]	Material	Length [mm]	Shaft dia. [mm]	P/N
	TR 20 Radial Flow Impeller	29	stainless steel AISI 316Cb	400	8	509-20000-00
	TR 21 Radial Flow Impeller	50	stainless steel AISI 316Cb	400	8	509-21000-00

Anchor-Type Impeller

These impellers are recommended for applications which require a low speed

For mixing tasks with medium or high viscosity



	Type	Blade size [mm]	Material	Length [mm]	Shaft dia. [mm]	P/N
	AR 19 Anchor-Type Impeller	60 x 40 x 5	PTFE	350	8	509-19000-00

VISCO JET® Impellers

The all-rounder for thick and thin

Reduce your process times significantly while performing the best mixing results ever

This technology allows for **de-gassing of gels** while preventing air intake and foaming



One system for literally all mixing tasks for low to high viscosity media

Patented cone-principle creates even at low speeds a **turbulent flow** which is unique to the VISCO JET®



Even with high-viscosity media and gels which naturally do not mix by using common impellers you will observe an immediate flow through the entire beaker

Type	Ø [mm]	Material	Length [mm]	Shaft dia. [mm]	Speed range [rpm]	For vessel dia. [mm]	P/N
VISCO JET® - 60 mm	60	stainless steel AISI 316Ti	500	10	200 - 800	80 - 150	509-16060-00
VISCO JET® - 80 mm	80	stainless steel AISI 316Ti	500	10	200 - 700	115 - 200	509-16080-00
VISCO JET® - 80 mm	80	impeller: plastic (POM) hub: brass shaft: polyamide coated	500	10	200 - 700	115 - 200	509-16081-00
VISCO JET® - 120 mm	120	stainless steel AISI 316Ti	500	10	120 - 500	170 - 300	509-16120-00
VISCO JET® - 120 mm	120	impeller: plastic (POM) hub: brass shaft: polyamide coated	500	10	120 - 500	170 - 300	509-16121-00

VISCO JET® - 60 mm
stainless steel



VISCO JET® - 80 mm
plastic (POM)



VISCO JET® - 120 mm
stainless steel



Application Examples

Worldwide the **only impeller** capable of completely mixing larger quantities of high-viscosity liquids and gels

Fields of use:

Beverage production, dairy products, food, sugar & candy production, chemistry/cetrochemistry, ceramics, water treatment, cosmetic, colorant/paint production and paper manufacture etc.

Principle of Functionality

The worldwide patented VISCO JET® Mixing System from INOTEC GmbH is the result of the so-called cone-principle.

Turbulent flows are created at the taper end by acceleration, displacement and retardation. These flows advance through the stirred medium and result in the new dynamic mixing motion.

See operational guidelines on page 12

Accessories



Universal Stand S2
Stand tube Ø: 25 mm
Length: 700 mm
Weight: 5.8 kg
P/N 570-12000-00



Stand S2 XXL
Stand tube Ø: 25 mm
Length: 1000 mm
Weight: 6.0 kg
(Recommended for RZR 2102 control Z)
P/N 570-12200-00



Telescope Stand
Stand tube Ø: 32 mm
Adjustable length:
725 - 1025 mm
Weight: 7.7 kg
P/N 570-12100-00



Clamp for stand S2, stand S2 XXL and telescope stand
Ø 13-32 mm
P/N 570-22000-00



Chuck 8 mm
for RZR 1
P/N 509-01000-00



Chuck 10 mm
stirrers
For RZR 2020 – 2102

For RZR 2102 control Z
P/N 11-001-001-56



Stirrer Guide (NS 29/32)
PTFE with adjustable seal, accepts Ø 8 mm shafts
P/N 509-09000-00



Flex-coupling
Chuck capacity Ø 5-8 mm
(Recommended for RZR 1)
P/N 509-03100-00



Flex-coupling
Includes clamping stud for stirrer shaft, accepts 10 mm dia. max.
P/N 509-03000-00



Shaft Guard
Material: PMMA
Adjusts between 187 mm and 312 mm
For RZR 2020 – 2102
P/N 509-08000-00



Flex-coupling
Comes with chuck. Not for RZR 2102 control Z
P/N 509-07000-00



Remote Control
With start/stop function
P/N 591-40000-00



Software Watch & Control
For all electronic stirrers. See below
P/N 592-20000-00

Computer aided lab environment

Accessories for all electronic stirrers

Software Watch & Control

This software has been designed to run equipment for nine well known international manufacturers: Heidolph Instruments, Gerhardt, Hettich, Ismatec, Julabo, Memmert, Mettler-Toledo, Prominent and WTW

It is possible to run units at a time of either one or two different manufacturers

Features for Heidolph electronic stirrers

- Set speed (rpm)
- Set gear stage (#1 or #2)
- Register and save actual speed (rpm) and actual torque (Ncm) as a digital file
- Set speed can be programmed as a ramp

Complete Packages at a Special Price

RZR 2020 package

This package includes:

- 1 RZR 2020 stirrer
- 1 PR 30 impeller
- 1 S2 stand and a clamp

P/N 501-20209-00



RZR 2052 control package

This package includes:

- 1 RZR 2052 control stirrer
- 1 PR 30 impeller
- 1 S2 stand and a clamp

P/N 501-20529-00



RZR 1

For simple mixing tasks

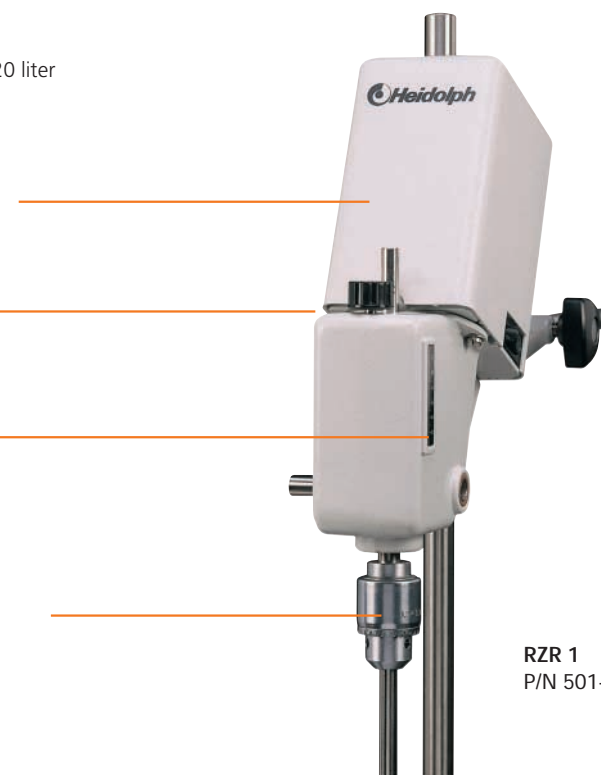
For media up to 40,000 mPa s and volumes of 20 liter

This model allows for torque up to 100 Ncm at a power of 18 W

Slim design fits nicely into your research environment

A manual scale for speed adjustments from 35 - 2,200 rpm

A 2 gear stage design allows for high torque at various speeds and provides excellent mixing in short times



RZR 1
P/N 501-11000-00

Intelligent Evaporation?



The
Hei-VAP
Series!



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