

Heidolph
Research made easy



Research made easy

Overhead Stirrers

Technical specifications

Model	RZR 2020	RZR 2021	RZR 2041	RZR 2051 control	RZR 2052 control	RZR 2102 control	RZR 2102 control Z
P/N	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)	50/27	50/27	70/37	80/50	140/100	140/100	140/100
Number of speed gears	2	2	2	1	1	2	2
Speed range (rpm)	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	digital	digital	digital	digital	digital	digital
Speed control	mechanic	mechanic	mechanic	electronic	electronic	electronic	electronic
Torque, max. (overload mode) (Ncm)	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 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
Viscosity, max. (mPa s)	60,000	60,000	100,000	10,000	40,000	100,000	350,000
Stirring cap. max., H ₂ O (l)	25	25	40	40	100	100	100
Analog / digital interface				yes	yes	yes	yes
Shaft dia., max. (mm)	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
Max. rel. humidity (%)	95, no condensation	95, no condensation	95, no condensation	95, no condensation	95, no condensation	95, no condensation	95, no condensation
Dimension (w x h x d) (mm)	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
Size, stay bar (dia. x l) (mm)	13 x 160	13 x 160	13 x 160	13 x 160	13 x 160	13 x 160	13 x 160
Weight (kg)	3.0	3.0	3.3	2.8	3.7	3.7	4.7
Supply voltage *	230 V / 50 Hz 115 V / 60 Hz	230 V / 50 Hz 115 V / 60 Hz	230 V / 50 Hz 115 V / 60 Hz	230 V/50/60 Hz 115 V/50/60 Hz	230 V/50/60 Hz 115 V/50/60 Hz	230 V/50/60 Hz 115 V/50/60 Hz	230 V/50/60 Hz 115 V/50/60 Hz
Protection class (DIN EN 60529)	IP 40	IP 40	IP 40	IP 40	IP 40	IP 40	IP 40

*others upon request, please specify for order

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

The team at Heidolph is dedicated and committed about delivering the highest quality product and services to its customers, allowing you to concentrate on research. Take the walk with us and see for yourself.

- 24 hour service for all inquires
- Individual application support
- Short delivery time for standard equipment
- After sales service provided by your local dealer
- More than 80 distributors worldwide
- Priority technical service
- 3 year warranty



Overhead Stirrers

Preferred use of Heidolph overhead stirrers includes mixing, homogenizing, suspending, gas intrusion and recirculation of high viscosity substances. Electronic stirrers allow the monitoring of reaction progress as a function of viscosity changes. Continuous documentation of speed / torque is standard on these items.

Your benefit:

- **Sealed housing**
Ensures long life performance and protection
- **Maintenance-free motor with smooth start feature**
No maintenance costs
Splash free due to smooth start feature
- **Highest torque**
Ability to mix high-viscosity mediums
- **Safety overheat protection**
Allows for unattended work



Mechanical Stirrers

These are the standard stirrers for all kinds of simple tasks.
The two-speed gear allows a high torque at low rotation speed.

- Mechanical speed setting
- Stepless transmission
- Speed range: 40 - 2,000 rpm
- Designed for continuous operation
- Motor cut-out feature in a permanent overload situation
- Long performance life
- Clear front panel layout for ease of operation
- Low-noise design
- Maintenance and spark-free condenser motor
- Superior torque at low speed
- RZR 2021 and RZR 2041 with their digital displays are the first choice for advanced requirements
- Variable height adjustment of the stirrer tool
- Delivery includes 10.5 mm chuck

RZR 2020 / RZR 2021

RZR 2020 same as RZR 2021, except for digital display

- Power input: 50 W
- Power output: 27 W
- Torque: 400 Ncm max. at 40 rpm
- Viscosity range: up to 60,000 mPa s
- Speed range: 40 - 2,000 rpm
- Light weight for ease of handling
- Slim-line space-saving design
- RZR 2021 features digital display for reproducible settings

RZR 2021
P/N 501-20210-00

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

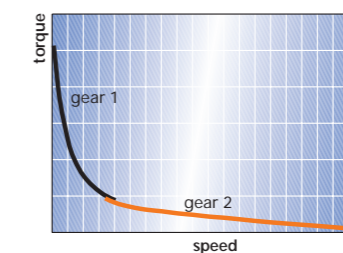


RZR 2041
P/N 501-20410-00

RZR 2041

The powerful standard stirrer

- Power input: 70 W
- Power output: 37 W
- Torque: 520 Ncm max. at 40 rpm
- Viscosity range: up to 100,000 mPa s
- Speed range: 40 - 2,000 rpm
- High power and torque
- Digital speed display for advanced requirements



Mechanical stirrers
High torque at low speed

Electronic Stirrers

Electronic Stirrers are especially suitable for applications in which the viscosity varies during process, either through reaction or due to mixing. The displayed torque gives evidence of the actual viscosity.

- Encapsulated housing, partly sealed against aggressive substances
- Max. torque available on speed range
- Monitoring of viscosity changes
- Smooth start prevents spilling of media
- Accepts 200 % peak overload
- Enhanced digital display of torque and speed
- Speed control uses rheostat or interface
- Excellent mixing properties even of high viscosity substances
- Maintains exact speed even under changing load
- Torque calibration
- Easily reproducible settings
- Designed for continuous operation
- Variable height adjustment of the stirrer tool
- Delivery includes 10.5 mm chuck

For your safety:

- Set speed displayed at standstill, improves safety
- Light weight for ease of handling
- Shaft guard available (optional)
- Automatic motor cut-out in a continuous overload situation

Analog & RS 232 interface (standard)

- Analog interface
 - 0-10 volts data OUT
 - Record speed
 - Record torque
- RS 232 serial interface (standard)
 - Record speed and torque
 - Pre-set speed
 - Pre-set speed range (RZR 2102)



RZR 2051 control
P/N 501-20511-00

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

RZR 2051 control

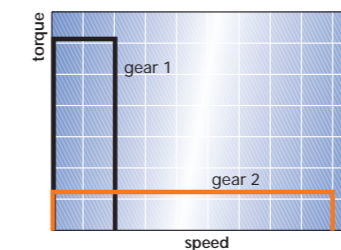
Single speed gear, high speed

- Power input: 80 W
- Power output: 50 W
- Torque:
 - 40 Ncm max. (peak overload)
 - 20 Ncm (continuous)
- Viscosity range: 10,000 mPa s max.
- Speed range: 50 - 2,000 rpm

RZR 2052 control

Single speed gear, high torque

- Power input: 140 W
- Power output: 100 W
- Torque:
 - 180 Ncm max. (peak overload)
 - 90 Ncm (continuous)
- Viscosity range up to 40,000 mPa s
- Speed range: 30 - 1,000 rpm



Electronic stirrers
Max. torque available on speed range

RZR 2102 control

2-speed transmission covers a wide speed range at high torque

- LED for speed range selected
- Power input: 140 W
- Power output: 100 W
- Torque:
 - 400 Ncm max. (peak overload)
 - 200 Ncm (continuous)
- Viscosity range 100,000 mPa s max.
- Speed range 12 - 2,000 rpm



RZR 2102 control
P/N 501-21021-00



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

Computer aided lab environment

Accessories for all Electronic Stirrers

Software Watch & Control

P/N 592-20000-00

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

It is possible to run **2 units at a time** of either **one or two different manufacturers**.

Features:

- Set speed (rpm)
- Set gear stage (#1 or #2)
- Register actual speed (rpm) and actual torque (Ncm)
- Display actual speed, torque and diagram
- Set speed can be programmed as a ramp

Watch & Control is suitable for Profibus technology.

Profibus Application

Profibus MasterCard

P/N 593-10000-00

The MasterCard is a hardware component required by your PC to enable communication. This hardware is not required if you already have a MasterCard built into your PC.

Profibus Interface PBI

P/N 591-42000-00

This interface is required to run equipment in a Profibus system. The interface PBI "translates" RS 232 signals into Profibus signals and vice versa.



Interface Remote Control

P/N 591-40000-00

Start and stop commands from remote control box



Interface Extension

P/N 591-41000-00

Interface extension
Pre-set speed 4 - 20 mA
Integrate stirrer in process automation

Interface Cable

P/N 14-007-045-17

Cable to connect the RS 232 interface with your PC.
Length: 3 m

Stirrer Tools

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 tool's adequate field of application depending on the speed range, and the execution of the tool according to the viscosity it is destined for.

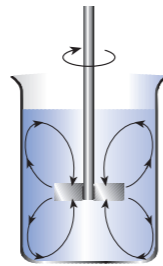
Application examples:

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

Blade and Half-Moon Impeller

Action:

- Middle speed range
- For stirring of liquids with low up to middle viscosity
- BR 12, BR 14 and HR 18 comes with collapsible blade for narrow neck vessels
- Diameter ratio (d_2/d_1): 0.5



	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

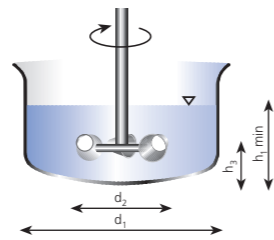
Installation guidelines for best mixing results:

Position of the stirring tool

- In center
- Distance to the bottom (h_3/d_2): 0.3
- Diameter vessel (h_1/d_1): 1

Circumferential speed

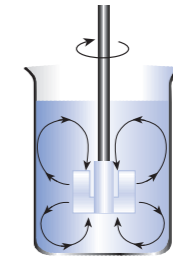
- 3 - 15 m/sec: Radial Flow Impeller
- 2 - 5 m/sec: Visco Jet, Blade and Anchor-Type Impeller



Anchor-Type Impeller

Action:

- Low speed range
- For mixing of liquids with middle up to high viscosity
- Diameter ratio (d_2/d_1): 0.4 - 0.8

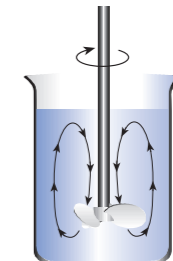


	Type	Blade size [mm]	Material	Length [mm]	Shaft dia. [mm]	P/N
	AR 19 Anchor-Type Impeller	60 x 40 x 5	PTFE	350	8	509-19000-00

Propeller-Type Impeller

Action:

- For medium to high viscosities
- Ideal for homogenizations and suspensions
- Generates primarily axial flow
- Diameter ratio (d_2/d_1): 0.1 - 0.5

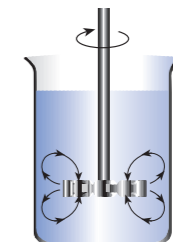


	Type	Prop. dia. [mm]	Material	Length [mm]	Shaft dia. [mm]	P/N
	PR 39 Pitched Blade Impeller	75	PTFE	350	8	509-39000-00
	PR 30 Pitched Blade Impeller	58	stainless steel AISI 304	400	8	509-30000-00
	PR 31 Ringed Propeller	33	stainless steel AISI 316Cb	400	8	509-31000-00
	PR 32 Ringed Propeller	45	stainless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

Action:

- Ideal for the gassing of liquids
- For medium to high viscosities
- Generates primarily radial flow
- Diameter ratio (d_2/d_1): 0.2 - 0.35



	Type	Turbine dia. [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

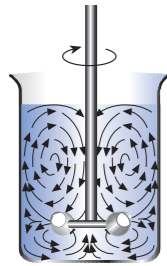
VISCO JET® Mixing System

Through thick and thin

VISCO JET® homogenizes low and high-viscosity liquids in vessels by creating dynamic flow conditions.

Your advantages:

- Only one system for nearly every mixing task
- No air intake
- No foaming
- Degassing of the medium
- No heating
- Careful and gentle mixing
- Short mixing periods
- Less power consumption through low mixing speed



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/Petrochemistry, 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.

- Diameter ratio (d_2/d_1): 0.4 - 0.6

Type	Impeller dia. [mm]	Material	Length [mm]	Shaft dia. [mm]	Speed range [rpm]	For vessel dia. [mm]	P/N
VISCO JET® - 60 mm	60	stainless steel (AISI 316Cb)	500	10	200 - 800	80 - 150	509-16060-00
VISCO JET® - 80 mm	80	stainless steel (AISI 316Cb)	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 316Cb)	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

Accessories



Universal Stand S2

P/N 570-12000-00
base size: 425 x 420 mm
stand tube dia.: 25 mm
length: 700 mm
weight: 5.8 kg



Universal Stand S2 XXL

P/N 570-12200-00
base size: 425 x 420 mm
stand tube dia.: 25 mm
length: 1000 mm
weight: 6.0 kg
(Recommended for RZR 2102 control Z)



Telescope Stand

P/N 570-12100-00
base size: 425 x 420 mm
stand tube dia.: 32 mm
vertical displacement:
725 to 1025 mm
weight: 7.7 kg



Fastening Clamp

P/N 570-22000-00
dia.: 13 - 32 mm



8.5 mm Chuck

P/N 509-01000-00
chuck capacity: 0.5 - 8.5 mm
hard-chrome
(fits RZR 1)



10.5 mm Chuck

P/N 509-02000-00
chuck capacity: 0.5 - 10.5 mm
hard-chrome
(fits RZR 2020-2102)
P/N 11-001-001-56
(fits RZR 2102 Z)



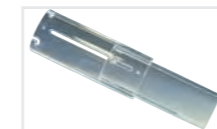
Stirrer Guide (NS 29/32)

P/N 509-09000-00
material: PTFE with recocking
PTFE/iton seal, accepts 8 mm
dia. shaft



Flex-coupling

P/N 509-03000-00
includes clamping stud for
stirrer shaft accepts 10 mm
dia. max.



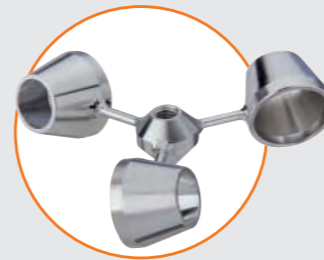
Shaft Guard

P/N 509-08000-00
material: PMMA
adjusts between abt. 187 mm
and 312 mm (vertical)
(fits RZR 2020 - 2102)



Flex-shaft

P/N 509-07000-00
comes with chuck 8.5 mm
max. torque 150 Ncm
(not recommended for
RZR 2102 control Z)



Complete Packages at a special price

Package RZR 2020

The package includes:

- Overhead stirrer RZR 2020
- PR 30 propeller
- Stand S2 & clamp

P/N 501-20209-00

Package RZR 2052

The package includes:

- Overhead stirrer RZR 2052
- PR 30 propeller
- Stand S2 & clamp

P/N 501-20529-00



Call or write for free service

- Application information
- Reference list
- Trials or demonstrations
- Literature



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