

# IKA®

## RV 10 Rotary Evaporator



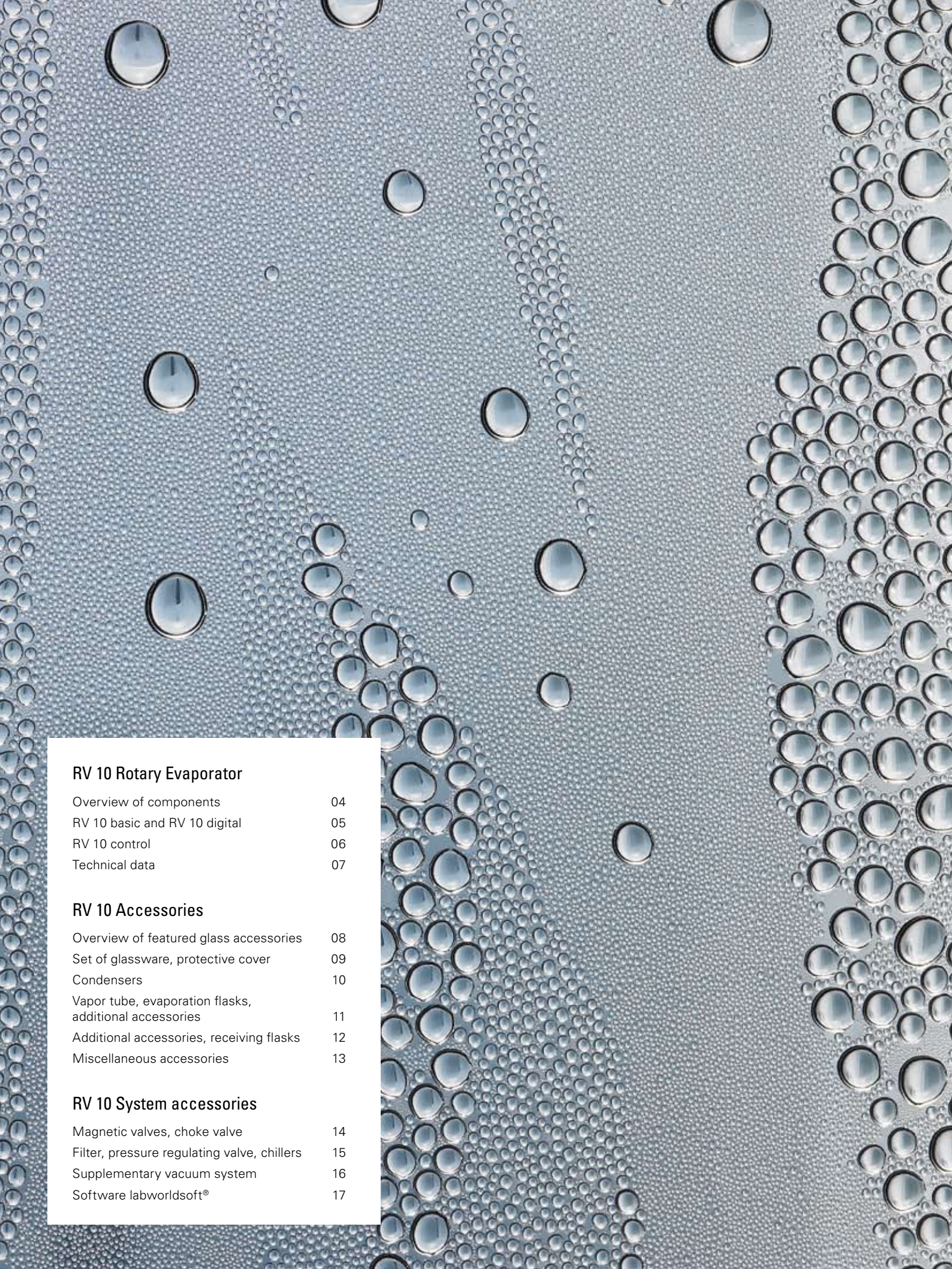
  
product  
design  
award  
2009



Designed  
to work perfectly

**VWR**   
Supplier Partnerships for Customer Solutions



The background of the entire page is a close-up photograph of numerous water droplets of various sizes. These droplets are resting on a surface with a fine, regular grid or mesh texture. The lighting creates highlights and shadows on the droplets, giving them a three-dimensional appearance. The overall color palette is cool, with various shades of blue, grey, and white.

## RV 10 Rotary Evaporator

Overview of components	04
RV 10 basic and RV 10 digital	05
RV 10 control	06
Technical data	07

## RV 10 Accessories

Overview of featured glass accessories	08
Set of glassware, protective cover	09
Condensers	10
Vapor tube, evaporation flasks, additional accessories	11
Additional accessories, receiving flasks	12
Miscellaneous accessories	13

## RV 10 System accessories

Magnetic valves, choke valve	14
Filter, pressure regulating valve, chillers	15
Supplementary vacuum system	16
Software labworldsoft®	17



# You can change states of aggregation. Or the way you work with them.

With the new RV 10 range of rotary evaporators, IKA® has confirmed that there is always room for improvement, even when it comes to one of the oldest of chemical processes: distillation. The RV 10 Rotary Evaporators set new standards for safety, efficiency and ease of use. Great attention is paid to the issue of safety, from the Basic version upwards. Every model features a lifting mechanism that raises the evaporator piston out of the heating bath in case of power failure. The comprehensive safety features also include interval operation, smooth start, end position recognition for the evaporator piston, and a timer function. The Digital version also provides a digital temperature display and an RS 232 interface. For fully automated distillation, IKA® offers the Control version complete with integrated vacuum controller, USB interface and graphical display.

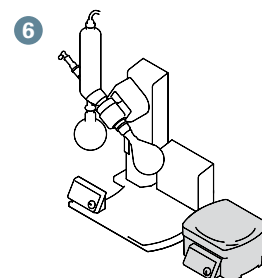
**10** Years  
Lifetime  
warranty\*

– No spare part costs during lifetime  
– No repair costs during lifetime  
\* 10 years, glassware and wearing  
parts excluded



## Overview of components

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>❶ Diagonal or vertical glassware</li> <li>❷ Various flask sizes</li> <li>❸ Vacuum connection plus Woulf bottle</li> <li>❹ Adjustable height limit</li> <li>❺ Two displays for optimal view</li> </ul> | <ul style="list-style-type: none"> <li>❻ Heating bath can be used separately</li> <li>❼ Can be moved by 150 mm to accommodate different flasks</li> <li>❽ Motorised height-adjustable lift</li> <li>❾ Choice of angle               <ul style="list-style-type: none"> <li>– Ergonomic carrying handles on heating bath</li> <li>– Lift raised automatically in case of power outage</li> <li>– Highly solvent-resistant PTFE seal</li> </ul> </li> </ul> |
|--|---|



## RV 10 basic and RV 10 digital

The basic system and the digital system complete with glassware set



### RV 10 basic

The RV 10 basic rotary evaporator with integrated HB 10 heating bath is the basic version of IKA®'s new distillation system. The RV 10 basic is available with either diagonal or vertical glassware, and as either a coated or an uncoated model.

- Analogue heating bath with adjustable safety circuit, „stand alone“ operation is possible, pivoting safety hood as an accessory
- Safe and simple operation by means of ergonomically shaped control unit in the front
- Motorised lift (stroke 140 mm) with „safety stop“ function, if the power cuts out the evaporator flask is automatically lifted out of the heating bath
- Adjustable end position recognition to protect the glass from breaking
- Speed range from 20 to 270 rpm
- Smooth start from 100 rpm
- Digital speed display
- Moves right and left in interval operation for the drying process
- Timer function for time lapse control
- Heats up quickly because of optimised bath volumes
- Push-off mechanism to loosen tightly fitting flasks

RV 10 basic		
Model	Description	Ident-No.
RV 10 basic V	with heating bath HB 10 basic and vertical glassware RV 10.1	531-0295
RV 10 basic V-C	with heating bath HB 10 basic and vertical glassware, coated RV 10.10	531-0289
RV 10 basic D	with heating bath HB 10 basic and diagonal glassware RV 10.2	531-0294
RV 10 basic D-C	with heating bath HB 10 basic and diagonal glassware, coated RV 10.20	531-0288



### RV 10 digital

IKA®'s RV 10 digital combines the performance, reliability and versatility of the RV 10 basic with the precision of an accurate digital temperature control. The perfectly coordinated data transfer between the heating bath and the drive unit as well as the option of remote operation from a PC ensure results that can be reproduced any time.

Properties as RV 10 basic, with the following additional functions:

- Digital water/oil heating bath with integrated carrying handles
- Temperature control of the heating bath by a micro controller
- Digital temperature display
- Infrared interface for data transfer from the heating bath to the drive unit
- RS232 interface for PC remote operation with labworldsoft®
- Automatic operation with labworldsoft®

RV 10 digital		
Model	Description	Ident-No.
RV 10 digital V	with heating bath HB 10 digital and vertical glassware RV 10.1	531-0293
RV 10 digital V-C	with heating bath HB 10 digital and vertical glassware, coated RV 10.10	531-0287
RV 10 digital D	with heating bath HB 10 digital and diagonal glassware RV 10.2	531-0292
RV 10 digital D-C	with heating bath HB 10 digital and diagonal glassware, coated RV 10.20	531-0286

## RV 10 control

The fully automated rotary evaporator complete with glassware set



### RV 10 control

The RV 10 control is the flagship of the new rotary evaporator series by IKA®. It offers all the functions of the RV 10 basic coupled with the advantages of the RV 10 digital. But the IKA® RV 10 control goes one step further. Like the RV 10 digital, it can be precision controlled via the RS 232 interface for remote PC operation with IKA®'s labworldsoft and is thus ideal for automatic operation. And that's not all: the control functions also enable completely automatic distillation both for volume-based processes and full drying depending on the area of application. The expandable solvent library also allows you to incorporate new processes in the future – safely, reliably and with a full log.

### Functions and benefits

- Integrated vacuum controller with central display for automatic distilling and ramp programming
- Integrated solvent library, which can be extended by the user
- Distillation specific parameters stored for standard distillation
- Automatic transfer of measurements and distillation type with one key press
- Programmable volume controlled distillation
- Automatic boiling point recognition
- Colour graphic display for safe and comfortable operation
- Display of distillation curves
- Multiple languages
- Automatic ventilation at the end of the test
- Cooling water switched off automatically at the end of the test
- Integrated cooling water monitoring
- Heating bath safety management: automatic heating bath monitoring with distillation stop in case of temperature errors
- Heating bath switched off automatically at the end of the test
- USB interface

RV 10 control		
Model	Description	Ident-No.
RV 10 control V	with heating bath HB 10 control and vertical glassware RV 10.1	531-0291
RV 10 control V-C	with heating bath HB 10 control and vertical glassware, coated RV 10.10	531-0285
RV 10 control D	with heating bath HB 10 control and diagonal glassware RV 10.2	531-0290
RV 10 control D-C	with heating bath HB 10 control and diagonal glassware, coated RV 10.20	531-0284

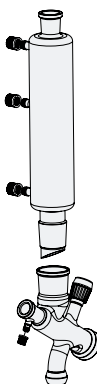
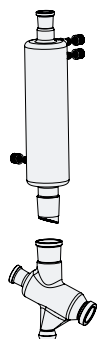
	RV 10 basic	RV 10 digital	RV 10 control
Variants	RV 10 basic V RV 10 basic V-C RV 10 basic D RV 10 basic D-C	RV 10 digital V RV 10 digital V-C RV 10 digital D RV 10 digital D-C	RV 10 control V RV 10 control V-C RV 10 control D RV 10 control D-C
Cooler type	V=vertical V-C=vertical coated D=diagonal D-C=diagonal coated	V=vertical V-C=vertical coated D=diagonal D-C=diagonal coated	V=vertical V-C=vertical coated D=diagonal D-C=diagonal coated
Cooling surface	1200 cm <sup>2</sup>	1200 cm <sup>2</sup>	1200 cm <sup>2</sup>
<b>Drive</b>			
Motor type	brushless DC drive motor	brushless DC drive motor	brushless DC drive motor
Motor rating input	50 W	50 W	50 W
Speed range	20 to 270 rpm	20 to 270 rpm	20 to 270 rpm
Speed display	digital	digital	digital
Right and left movement / interval operation	yes	yes	yes
Smooth start	yes	yes	yes
Head angle adjustable	0 to 45°	0 to 45°	0 to 45°
Stroke displacement	140 mm, motorised	140 mm, motorised	140 mm, motorised
Setting of lower end stop	60 mm, contact-free	60 mm, contact-free	60 mm, contact-free
Vacuum controller	accessories	accessories	integrated
<b>Heating bath</b>			
	<b>HB 10 basic</b>	<b>HB 10 digital</b>	<b>HB 10 control</b>
Temperature range	RT to 180 °C	RT to 180 °C	RT to 180 °C
Heating power	1300 W	1300 W	1300 W
Controller	capillary tube controller	micro controller	micro controller
Temperature display	scale	digital	digital
Setting accuracy	scale	1 K	1 K
Control deviation	± 5 K	± 1 K	± 1 K
<b>Required accessories for an existing vacuum</b>			
Magnetic valve in-house vacuum	<sup>1)</sup>	<sup>1)</sup>	RV 10.4001
Magnetic valve laboratory vacuum	<sup>1)</sup>	<sup>1)</sup>	RV 10.4002
Pump control incl. magnetic valve	<sup>1)</sup>	<sup>1)</sup>	RV 10.4003
<b>General data</b>			
Dimensions without glassware (W x D x H)	530 x 410 x 570 mm	530 x 410 x 570 mm	530 x 410 x 570 mm
RV 10 diagonal (W x D x H)	890 x 410 x 670 mm	890 x 410 x 670 mm	890 x 410 x 670 mm
RV 10 vertical (W x D x H)	680 x 410 x 990 mm	680 x 410 x 990 mm	680 x 410 x 990 mm
Weight of evaporator incl. heating bath without glass parts	20 kg	20 kg	21,5 kg
Permitted ambient temperature	5 to 40 °C	5 to 40 °C	5 to 40 °C
Protection class acc. to DIN EN 60529	IP 20	IP 20	IP 20

<sup>1)</sup> no accessories required for vacuum pump connection (vacuum level must be controlled on the external system)

# Overview

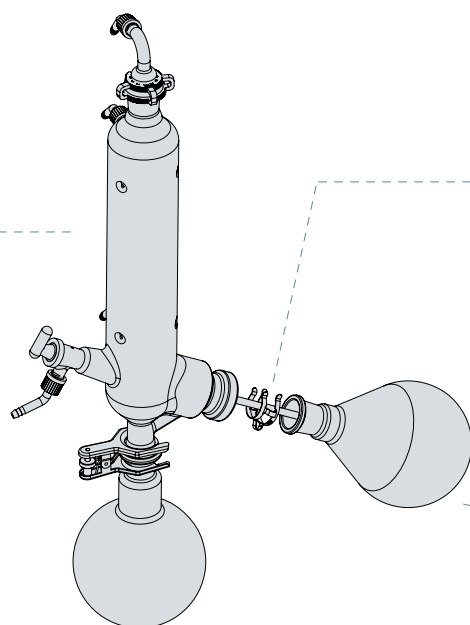
08

Featured glass accessories



**Condenser**  
Page 10

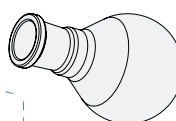
**Set of glassware**  
Page 09



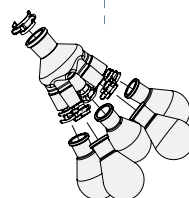
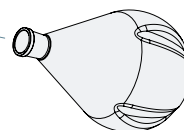
**Seal**  
Page 13



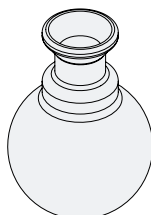
**Evaporation flask**  
Page 11



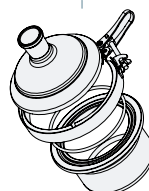
**Powder flask**  
Page 11



**Distilling spider**  
Page 12



**Receiving flask**  
Page 12



**Evaporation cylinder**  
Page 11



# RV 10 Glassware accessories

Set of glassware, protective cover

09

General data	
Condenser type	vertical
Cooling surface	1200 cm <sup>2</sup>
Model	Ident-No.
RV 10.1 Set of glassware, vertical	531-3476
RV 10.10 Set of glassware, vertical, coated	531-3478

## RV 10.1 Set of glassware, vertical

Vertical condenser for all standard distillations, compact. The solvent to be distilled can be continuously fed in through the PTFE inlet tube.

A 1000 ml evaporator and 1000 ml receiving flask are included.

Also available with coating. Condenser and receiving flask coated for shatter protection (accessory: HB 10.2 Protective cover).

! Glassware included in package.



General data	
Condenser type	diagonal
Cooling surface	1200 cm <sup>2</sup>
Model	Ident-No.
RV 10.2 Set of glassware, diagonal	531-3477
RV 10.20 Set of glassware, diagonal, coated	531-3479

## RV 10.2 Set of glassware, diagonal

Diagonal condenser for all standard distillations. The solvent to be distilled can be continuously fed in through the PTFE inlet tube.

A 1000 ml evaporator and 1000 ml receiving flask are included.

Also available with coating. Condenser and receiving flask coated for shatter protection (accessory: HB 10.2 Protective cover).

! Glassware included in package.



General data	
Material	Polycarbonate
Model	Ident-No.
HB 10.1 Shield for heating bath	531-0299

## HB 10.1 Shield for heating bath

For optimal protection against splashes of hot liquid.



General data	
Material	Polycarbonate
Model	Ident-No.
HB 10.2 Protective cover for heating bath	531-0298

## HB 10.2 Protective cover for heating bath

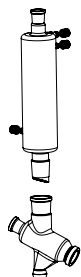
Essential accessory if it is not possible to work in an extractor hood. Protects the user against splashes of hot liquid and in the event of the evaporator flask breaking.

! Should be used with the coated glass version.



# RV 10 Glassware accessories

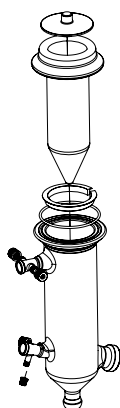
## 10 Condensers



### RV 10.3 Vertical-intensive condenser with manifold

Vertical-intensive condenser with double jacket and manifold for particularly efficient condensation. The solvent to be distilled can be continuously fed in at the manifold using the PTFE inlet tube.

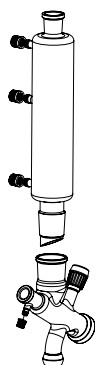
Also available with coating. Condenser and receiving flask coated for shatter protection (accessory: HB 10.2 protective cover).



### RV 10.4 Dry ice condenser

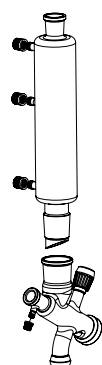
Dry ice condenser for distilling low-boiling solvents. The solvent to be distilled can be continuously fed in through the PTFE inlet tube. Cooling by dry ice, no cooling water required. Max. condensation thanks to low temperatures. Also available with coating. Condenser and receiving flask coated for shatter protection (accessory: HB 10.2 protective cover).

! Not possible with autodistillation mode on RV 10 control.



### RV 10.5 Vertical-condenser with manifold and cut-off valve for reflux distillation

The solvent to be distilled can be continuously fed in through the PTFE inlet tube. Also available with coating. Condenser and receiving flask coated for shatter protection (accessory: HB 10.2 protective cover).



### RV 10.6 Vertical-intensive condenser with manifold and cut-off valve for reflux distillation

The manifold features a condensate cover and an outlet channel which prevent the condensate from coming into contact with the seal. The solvent to be distilled can be continuously fed in through the PTFE inlet tube. Also available with coating. Condenser and receiving flask coated for shatter protection (accessory: HB 10.2 protective cover).

#### General data

Condenser type	vertical-intensive
Cooling surface	1400 cm <sup>2</sup>

#### Model

Model	Ident-No.
RV 10.3 Vertical-intensive condenser with manifold	531-0460
RV 10.30 Vertical-intensive condenser with manifold, coated	531-0461

#### General data

Condenser type	Dry ice condenser
Cooling surface	620 cm <sup>2</sup>

#### Model

Model	Ident-No.
RV 10.4 Dry ice condenser	531-0462
RV 10.40 Dry ice condenser, coated	531-0463

#### General data

Condenser type	vertical
Cooling surface	1200 cm <sup>2</sup>

#### Model

Model	Ident-No.
RV 10.5 Vertical-condenser with manifold and cut-off valve for reflux distillation	531-0464
RV 10.50 Vertical-condenser with manifold and cut-off valve for reflux distillation, coated	531-0465

#### General data

Condenser type	vertical-intensive
Cooling surface	1400 cm <sup>2</sup>

#### Model

Model	Ident-No.
RV 10.6 Vertical-intensive condenser with manifold and cut-off valve for reflux distillation	531-0466
RV 10.60 Vertical-intensive condenser with manifold and cut-off valve for reflux distillation, coated	531-0467

# RV 10 Glassware accessories

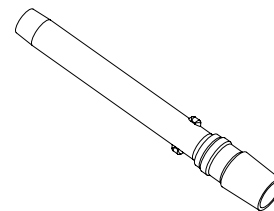
Vapor tube, evaporation flasks, additional accessories

11

General data	
Material	Borosilicate glass
Model	Ident-No.
RV 10.70 Vapor tube	531-0468

## RV 10.70 Vapor tube NS 29/32

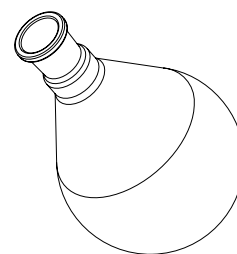
For all glassware.



General data	
Volume (in ml)	50, 100, 250, 500, 1000, 2000, 3000
Material	Borosilicate glass
Model	Ident-No.
RV 10.80 Evaporation flask, 50 ml	531-3004
RV 10.81 Evaporation flask, 100 ml	531-3005
RV 10.82 Evaporation flask, 250 ml	531-3006
RV 10.83 Evaporation flask, 500 ml	531-3007
RV 10.84 Evaporation flask, 1000 ml	531-3008
RV 10.85 Evaporation flask, 2000 ml	531-3009
RV 10.86 Evaporation flask, 3000 ml	531-3010

## Evaporation flask NS 29/32

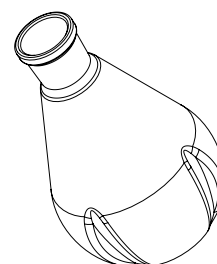
The flask, which is made of high quality borosilicate glass, is available in seven different sizes.



General data	
Volume (in ml)	500, 1000, 2000
Material	Borosilicate glass
Model	Ident-No.
RV 10.300 Powder flask, 500 ml	531-3025
RV 10.301 Powder flask, 1000 ml	531-3026
RV 10.302 Powder flask, 2000 ml	531-3027

## Powder flask NS 29/32

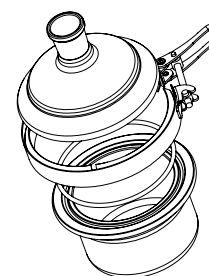
The flask, which is made of high quality borosilicate glass, is available in three different sizes.



General data	
Volume (in ml)	500, 1500
Material	Borosilicate glass
Model	Ident-No.
RV 10.400 Evaporation cylinder, 500 ml	531-3028
RV 10.401 Evaporation cylinder, 1500 ml	531-3029

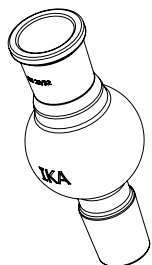
## Evaporation cylinder NS 29/32

The cylinder, which is made of high quality borosilicate glass, is available in two different sizes.



# RV 10 Glassware accessories

## 12 Additional accessories, receiving flasks



### RV 10.500 Foam brake NS 29/32

The rising foam produced bursts in the glass ball extension. This stops foam from entering the receiving flask.

**Note:** when using a 3 litre evaporation flask, a RV 10.3000 Extension plate is required.

#### General data

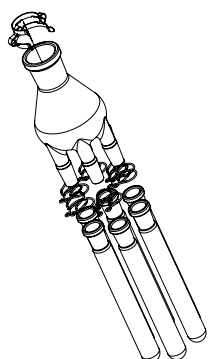
Material borosilicate glass

#### Model

RV 10.500 Foam brake

#### Ident-No.

531-3000



### Distilling spider with distilling sleeves NS 29/32

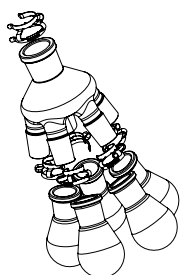
For simultaneous distillation in 6, 12 or 20 distilling sleeves, included with purchase.

#### General data

Material borosilicate glass

#### Model

Model	Ident-No.
RV 10.600 Distilling spider with 6 distilling sleeves	531-3001
RV 10.601 Distilling spider with 12 distilling sleeves	531-3002
RV 10.602 Distilling spider with 20 distilling sleeves	531-3003
RV 10.610 Distilling sleeve, 20 ml	531-0676



### Distilling spider with 5 flasks NS 29/32

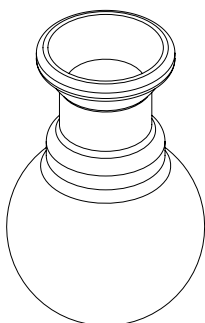
For simultaneous distillation in 5 evaporation flasks, included with purchase.

#### General data

Material borosilicate glass

#### Model

Model	Ident-No.
RV 10.606 Distilling spider with 5 flasks, 50 ml	531-3011
RV 10.607 Distilling spider with 5 flasks, 100 ml	531-3012
RV 10.90 Evaporation flask, 50 ml	531-0674
RV 10.91 Evaporation flask, 100 ml	531-0675



### Receiving flask KS 35/20

The flask, which is made of high quality borosilicate glass, is available in six different sizes, either coated or uncoated.

#### General data

Volume (in ml)	100, 250, 500, 1000, 2000, 3000
Material	borosilicate glass uncoated/coated

#### Model

Model	Ident-No.
RV 10.100 Receiving flask, 100 ml	531-3013
RV 10.101 Receiving flask, 250 ml	531-3014
RV 10.102 Receiving flask, 500 ml	531-3015
RV 10.103 Receiving flask, 1000 ml	531-3016
RV 10.104 Receiving flask, 2000 ml	531-3017
RV 10.105 Receiving flask, 3000 ml	531-3018
RV 10.200 Receiving flask, coated 100 ml	531-3019
RV 10.201 Receiving flask, coated 250 ml	531-3020
RV 10.202 Receiving flask, coated 500 ml	531-3021
RV 10.203 Receiving flask, coated, 1000 ml	531-3022
RV 10.204 Receiving flask, coated, 2000 ml	531-3023
RV 10.205 Receiving flask, coated, 3000 ml	531-3024

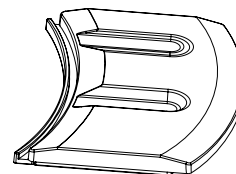


General data	
Dimensions (W x D x H)	200 x 270 x 27 mm
Model	Ident-No.
RV 10.3000 Extension plate	531-0672

### RV 10.3000 Extension plate

Accessories required when using the RV 10.500.

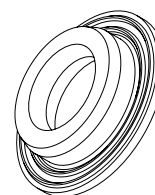
**!** Note: Allows the heating bath to be moved 150 mm horizontally. Accessory required when using the RV 10.500 Foam brake and 3 litre evaporation flask.



General data	
Material	FKM with PTFE- coating
Model	Ident-No.
RV 06.13 Seal	531-0296

### RV 06.13 Seal

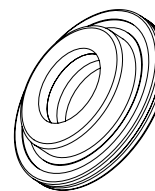
Ideal for standard distillation procedures.



General data	
Material	PTFE
Model	Ident-No.
RV 06.15 Seal	531-0297

### RV 06.15 Seal

Particularly solvent-resistant. Included in delivery.

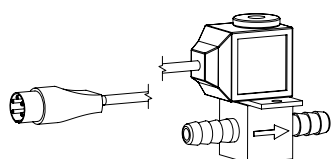


# RV 10 System accessories

## Magnetic valves, choke valve

	RV 10 basic	RV 10 digital	RV 10 control
<b>Required accessories for an existing vacuum</b>			
Magnetic valve in-house vacuum system	<sup>1)</sup>	<sup>1)</sup>	RV 10.4001
Magnetic valve laboratory vacuum	<sup>1)</sup>	<sup>1)</sup>	RV 10.4002
Pump control incl. magnetic valve	<sup>1)</sup>	<sup>1)</sup>	RV 10.4003
<b>Recommended accessories for tap water (faucet) connection</b>			
Choke water valve	–	–	RV 10.5001
Filter	–	–	RV 10.5002
Pressure regulating valve	RV 10.5003	RV 10.5003	RV 10.5003
<b>Supplementary vacuum system</b>			
Vacuum system	VP 8 vac, VP 2 autovac	VP 8 vac, VP 2 autovac	please contact your VWR sales representative
<b>Additional chiller system</b>			
for one rotary evaporator	RC 10 basic, RC 10 digital	RC 10 basic, RC 10 digital	RC 10 basic, RC 10 digital
for two rotary evaporators	RC 10 duo	RC 10 duo	RC 10 duo

<sup>1)</sup> no accessories required for vacuum pump connection (vacuum level must be controlled on the external system)



### RV 10.4001 Magnetic valve in-house vacuum

Industrial vacuum source for many different in-house users; usually fixed pipes.

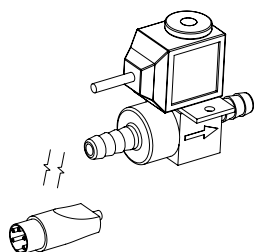
! Accessory required for an existing vacuum.

#### General data

Power	24 V / 9 W
<b>Model</b>	<b>Ident-No.</b>
RV 10.4001 Magnetic valve in-house vacuum	531-3487

#### Accessory for

■ RV 10 control



### RV 10.4002 Magnetic valve laboratory vacuum

Vacuum pump installed at laboratory with several similar users e.g. 2 rotary evaporators / 1 pump.

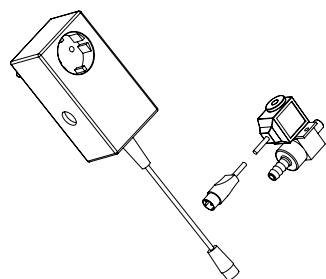
! Accessory required for an existing vacuum.

#### General data

Power	24 V / 9 W
<b>Model</b>	<b>Ident-No.</b>
RV 10.4002 Magnetic valve laboratory vacuum	531-3485

#### Accessory for

■ RV 10 control



### RV 10.4003 Pump control incl. magnetic valve

One rotary evaporator at one pump / tabletop operation. Pump stops when the set pressure is reached and automatically switches back on again.

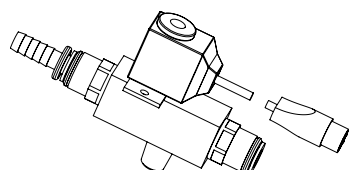
! Accessory required for an existing vacuum.

#### General data

Power magnetic valve	24 V / 6 W
Power pump control	100–240 V, 50 / 60 Hz
<b>Model</b>	<b>Ident-No.</b>
RV 10.4003 Pump control incl. magnetic valve	531-3486

#### Accessory for

■ RV 10 control



### RV 10.5001 Choke water valve

To regulate the water flow. The integrated magnetic valve closes/opens the water circuit during automatic distillation.

! Accessory recommended for tap water (faucet) connection.

#### General data

Power	24 V / 6 W
Connection diameter	10 mm
<b>Model</b>	<b>Ident-No.</b>
RV 10.5001 Choke water valve	531-3488

#### Accessory for

■ RV 10 control

# RV 10 System accessories

Filter, pressure regulating valve, chillers

15

General data	
Mesh thickness	100 µm
Connection diameter	10 mm
Pressure	max. 11 bar
Model	Ident-No.
RV 10.5002 Filter	531-3489

## Accessory for

RV 10 control

General data	
Connection diameter	10 mm
Pressure	max. input 25 bar, max. output 1 bar
Model	Ident-No.
RV 10.5003 Pressure regulating valve	531-0673

## Accessory for

RV 10 basic RV 10 digital RV 10 control

General data	
Fixed work temperature	7 °C
Cooling power	500 Wat 15 °C
Max. pump capacity	8 lpm and 600 mbar
Dimensions (W x D x H)	30 x 40 x 45 cm
Model	Ident-No.
RC 10 basic Recirculating chiller	462-0137

## Accessory for

RV 10 basic RV 10 digital RV 10 control

General data	
Setable work temperature	-10°...+40 °C
Cooling power	500 W at 15 °C
Max. pump capacity	8 lpm and 600 mbar
Dimensions (W x D x H)	30 x 40 x 45 cm
Model	Ident-No.
RC 10 digital Recirculating chiller	462-0138

## Accessory for

RV 10 basic RV 10 digital RV 10 control

General data	
Setable work temperature	-10°...+40 °C
Cooling power	1000 W at 15 °C
Max. pump capacity	11 lpm and 1000 mbar
Dimensions (W x D x H)	40 x 40 x 45 cm
Model	Ident-No.
RC 10 duo Recirculating chiller	462-0139

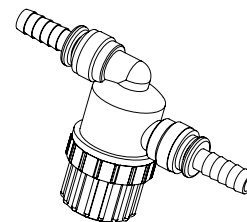
## Accessory for two rotary evaporators

RV 10 basic RV 10 digital RV 10 control

## RV 10.5002 Filter

To prevent contamination of the water pipes. With removable filter for easy cleaning.

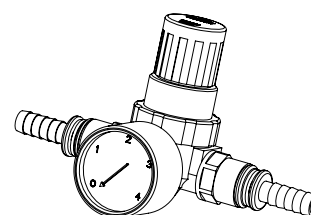
! Accessory recommended for tap water (faucet) connection.



## RV 10.5003 Pressure regulating valve

For adjusting the cooling water pressure when operating at the water pipe.

! Accessory recommended for tap water (faucet) connection.



## RC 10 basic Recirculating chiller

## RC 10 digital Recirculating chiller



## RC 10 duo Recirculating chiller

The RC 10 duo Recirculating chiller is standard supplied with two outlets for direct connection of two rotary evaporators on the chiller.

# Supplementary vacuum system

16 To be used with the RV 10 basic and RV 10 digital



## Chemically-resistant Vacuum System VP 8 vac

Economical system for manually controlled and gentle distillation. Useful for most of all standard applications wherever 8mbar max vacuum suits to. Combined with the manual vacuum regulation, the closed system configuration enables a smooth evaporation in order to reduce solvent loss.

- The vacuum pump is gas-tight, 100 % oil-free, maintenance-free and quiet.
- The pump can be removed from the system without using tools just by pulling two fastenings bars.
- All parts of the pump head in contact with gases being pumped are resistant against aggressive substances (materials: PTFE, FFKM, PVDF).
- New valve system is very tolerant of water vapour and condensates.
- The suction level of the pump can also be regulated at any time during the process.
- The fine adjustment valve allows the vacuum to be regulated precisely by turning the valve knob.
- Pump can be switched off once the required vacuum level has been achieved.
- The separator collects particulate matter and droplets. This protects the pump from contamination and ensures maximum performance of the pump. The separator is made of a specially treated glass and features implosion protection.
- The high performance condenser enables condensable components in the vapour to be separated out and hereby removed from the atmosphere and at the same time protecting the environment. The condensate is collected in a glass flask.

VP 8 vac				
Model	Flow	Max Vac	Application	Ident-No.
VP 8 vac, EU plug	1,2 m <sup>3</sup> / h	8 mbar	For low boiling solvents	181-0156
VP 8 vac, UK plug	1,2 m <sup>3</sup> / h	8 mbar	For low boiling solvents	181-0157
VP 8 vac, CH plug	1,2 m <sup>3</sup> / h	8 mbar	For low boiling solvents	181-0158
Accessory for				
<input type="checkbox"/> RV 10 basic <input type="checkbox"/> RV 10 digital				



## Chemically-resistant Vacuum System VP 2 autovac

The new chemistry pumping unit VP 2 autovac with vacuum controller meets the demands of modern rotary evaporations exceptionally. The hysteresis-free vacuum control prevents boiling retardation and foaming, therefore ensures a constantly high process safety. This unique control enables detection of vapour pressure and adjustment of the vacuum level to the process requirements fully automatically without any user programming.

The vacuum controller is easy to operate with clear text menus, jog wheel and integrated venting valve. It allows always a simple manual intervention during the distillation process. The heart of this extremely compact system VP 2 autovac is an outstanding chemically resistant diaphragm pump with ultimate vacuum of 2 mbar and excellent 4 mbar in heavy duty operation (gas ballast operation for permanent internal cleaning) for high boiling point solvents. The separator at the inlet, made of glass with a protective coating, retains particles and liquid droplets. For safe and reproducible operation with complex applications ten fully configurable programs can also be edited and stored. Each program can for up to ten time and pressure steps, with control functions such as venting, pumping and vacuum ramp.

- outstanding chemical resistance and superior vapor tolerance
- exceptionally high performance even at low vacuum
- excellent ultimate vacuum even in gas ballast operation – heavy duty operation
- whisper quiet and ultra low vibration
- automatic adaptation of the vacuum level throughout the process for unattended operation, and short process times due to hysteresis-free vacuum control
- controls process vacuum, cooling water, and venting to demand

VP 2 autovac				
Model	Flow	Max Vac	Application	Ident-No.
VP 2 autovac, EU, UK, CH plug	1,7 m <sup>3</sup> / h	2 mbar	For low up to high boiling solvents	181-0159
Accessory for				
<input type="checkbox"/> RV 10 basic <input type="checkbox"/> RV 10 digital				



## labworldsoft®

With this laboratory software, you can network up to 64 laboratory devices simultaneously via one PC. That makes the automation of your laboratory experiments and processes possible. Measurements and processes may be run independently from one another. This helps to avoid long waits and you increase your productivity. The communication between PC and laboratory device is performed via the serial interface RS 232 (COM1 or COM2).

With the help of plug-in cards and Ethernet RS 232 servers, up to 64 laboratory devices can be used simultaneously via one PC. All laboratory instruments can be controlled independently from each other and the measured values (speed, temperature, torque, pH, etc.) can be documented separately.

### Networking, monitoring

With labworldsoft® you can network up to 64 laboratory instruments simultaneously via one PC. From sample preparation to synthesis, all steps of research and development in the lab can be automated using labworldsoft®.

### Controlling

Desired temperature and speed sequences can be precisely controlled by means of freely selectable ramp functions. The ramp functions can be graphically generated, stored, and then loaded again at any time.

### Recording, evaluating

labworldsoft® enables a fast and easy recording of many physical parameters which are required in the laboratory, such as pH, conductivity, temperature, torque, weight, pump rates etc.

### Exporting

Data recorded using labworldsoft® can be directly written to an Excel sheet or exported to any standard application at a later stage.

### Storing / reproducing measured data

Do your test arrangements repeat themselves? With labworldsoft® all test arrangements can be stored. The stored data is available to reproduce the test, at a mouse click. The reproducibility of tests is warranted within the scope of ISO 9000 and within GLP.

### Documentation

For documentation purposes, all measuring results as well as the measurement flowcharts can be printed or plotted according to GLP, ISO and QA.

### Hard- and software requirements:

Pentium 90 with at least 16 MB RAM, and a mouse.

VGA display: monochrome with at least 16 levels of grey or color. Windows 95/98/2000/NT/ME/XP/Vista.

### Accessories:

PCI 8.2 Plug-in card, PC 4.1 RS 232 Server, DC 2 DATACONTROL, DA 2 DATACONTROL, IO 2 DATACONTROL

For more information and a download of your free trial version please visit:

[www.labworldsoft.com](http://www.labworldsoft.com)



Manufactures with interface devices compatible to labworldsoft®:

- |                    |                  |
|--------------------|------------------|
| - Ahlborn          | - Kern           |
| - B. Braun Biotech | - KNF            |
| - Martin Christ    | - Knick          |
| - Corning Inc.     | - Labovisco      |
| - Ehret            | - Lauda          |
| - Eyela            | - Metrohm        |
| - Fluid            | - Mettler-Toledo |
| - Fritsch          | - MLT            |
| - Gerhardt         | - PolyScience    |
| - GFL              | - Sartorius      |
| - Harvard          | - Scaltec        |
| - Heidolph         | - Sigma          |
| - Hermle           | - Telab          |
| - Huber            | - Thermo Haake   |
| - IKA®             | - Thermo Neslab  |
| - Ilmvac           | - Troemner       |
| - Infors           | - Vaccubrand     |
| - Ismatec          | - yellowline     |
| - Julabo           |                  |

Interfaces to additional devices from other manufacturers will soon be available.

Please ask for a current reference list.

labworldsoft®	
Model	Ident-No.
labworldsoft®	441-2127

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