Rotavapor®
R-210/215

en

The R-210/215 Rotavapor® – the next milestone in the history of the rotary evaporator

Büchi Labortechnik, the inventor of the rotary evaporator, introduces the next generation of Rotavapor setting new standards for ease of use, safety and the provision of complete solutions for evaporation applications.

The evaporation of solvents is a routine process widely used in the laboratory. It is therefore all the more important that the instruments optimally support the user's working methods and are matched to the conditions and needs of the laboratory. The Rotavapor R-210/215 features the following advantages:

- Maximum safety for the user and the product
- Complete solution with vacuum controller, vacuum pump and recirculating chiller
- Properly thought out solutions for ease of operation and use
- Long-life seals provide practically maintenance-free operation and increase service life
- A wide range of glass assemblies covers numerous applications
- Compact assembly with small footprint
- Wireless contacts on the heating bath for both power supply and communications
- Proven Buchi quality

See the advantages of the Rotavapor for yourself and find out how you can make your work in the laboratory easier!

Impressive features

Along with a practical and ergonomic design, features such as robustness, durability and well-developed functionality are particularly important at Buchi. High quality products – and a determination to create continuous development and improvements are essential elements of our corporate identity.

Vapour ducting
A continuous vapour duct prevents cross-contamination and is particularly easy to dismantle and clean. The vacuum seal comprises a PTFE composite material and provides long service life and effective sealing. The proven Combi-clip elegantly solves the problem of simple flask removal and the taking out of the vapour duct.

Vapour and rotation display
The difference between the Rotavapor R-215 and the R-210 is the R-215's additional display of the vapour temperature and the rotation speed: a worthwhile investment for processes that require precise monitoring and reproducibility!

Quick-action jack
The quick action jack is easily operated by means of a button. In the event of a power failure the flask is automatically raised out of the heating bath to prevent thermal loading.

Heating Bath B-491
The heating bath, for water or oil covers a wide temperature range of 20–180 °C. A large, clear graphic display continuously displays the actual temperature and the temperature setpoint. The bath's small volume allows it to heat up quickly. Thanks to the cordless power supply it is not necessary to unplug connections when filling or emptying the bath. The high alloy stainless steel pan is easy to clean.

Heating Bath B-495
A bath for larger flasks of up to 5 litres is available as a special version. In addition an integrated water replenishment keeps the level in the bath constant.

Range of glass assemblies

Glass assembly A
- Diagonal condenser
- Can be used where height is limited
- For standard distillations
- Evaporating flask feed via stop-cock

Glass assembly V
- Vertical condenser
- Needs little space
- For standard distillations
- Evaporating flask feed via stop-cock
- Connection for vapour temperature sensor
- Auto distillation possible with stage probe and vacuum controller V-855

Glass assembly C
- Dry ice condenser
- For distillation of solvents with low boiling points
- Evaporating flask feed via stop-cock
- No cooling water necessary
- Maximum condensation due to low temperatures

Glass assembly S
- Vertical condenser with shut-off valve
- For distillations also with reflux
- Evaporating flask feed via stop-cock
- Connection for vapour temperature sensor
- Auto distillation possible with stage probe and vacuum controller V-855

Glass assembly CR
- Dry ice condenser
- For the distillation of solvents with low boiling points also with reflux
- Evaporating flask feed via stop-cock
- No cooling water necessary
- Maximum condensation due to low temperature

Glass assembly E
- Descending condenser with expansion vessel
- Ideal for distillations exhibiting foaming or bumping
- Evaporating flask feed via stop-cock
- Connection for vapour temperature sensor

Glass assembly BY
- Vertical condenser with additional double jacket for cooling
- Additional joint on the top of the condenser for flexible expansion
- For particularly efficient condensation
- Evaporating flask feed via stop-cock
- Connection for vapour temperature sensor

P+G coating

If required, all glass parts (except the evaporating flask) can be plastic coated (PLASTIC+GLAS).

The vacuum controller for optimal process control

Pressure is a crucial parameter in every evaporation process. The Vacuum Controller V-850/ V-855 for the display, control and regulation of the vacuum is an ideal supplement to the Rotavapor. All process parameters are always visible at a glance due to the direct fastening on to the Rotavapor. An RS-485 interface is used for communication and the supply of power to the vacuum controller. All connected units are detected automatically. The intuitive operating concept is suitable for a very wide range of applications and covers all your requirements, from the simple mainten-ance of the set vacuum to the automatic distillation of complex mixtures.

This vacuum controller features the following advantages:

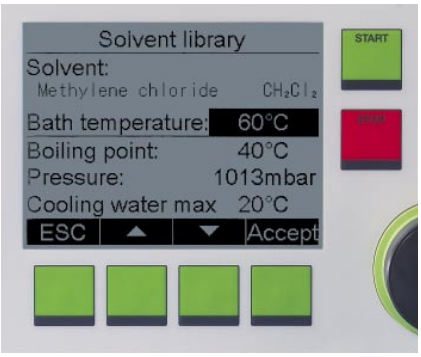
- Chemical-resistant precision pressure sensor with capacitive measuring principle
- Integrated ventilation valve that opens if there's a power failure and prevents over-pressure in the system
- Straightforward operation with rotary knob and large graphic display
- Menus available in 6 languages
- Innovative speed regulation in combination with the Vacuum Pump V-700 or V-710 provides a hysteresis-free, precise vacuum combined with quiet operation

Vacuum Controller V-850 functions

- Vacuum regulation to a specified set-point
- Library with 43 pre-determined solvents
- Timer function: process interruption after a set time
- Buchi wizard for quick configuration
- USB interface for data transfer, e.g. pressure, bath temperature, vapour temperature, for storage, evaluation and optimization
- Control of quick-action jack and rotation on the Rotavapor

Additional functions of the Vacuum Controller V-855

- EasyVac function (together with Vacuum Pump V-700/710): automatic process-control based on vapour pressure detection – it couldn't be easier!
- Automatic distillation with the unique stage probe.
- Programming function for pressure gradients for special distillation tasks: storage of up to fifteen process profiles with programmable gradients. Ideal for compounds that "bump" and for products that are difficult to distil, e.g. foaming extracts.
- Repeat function for reproducible repetition of a distillation: the pressure profile for a manual or automatic distillation is displayed and can be retrieved at any time.



The solvent library – the break-through in process configuration

An integrated solvent library, expandable by the customer, considerably simplifies the selection of the parameters. After the selection of the solvent used, the related parameters for an optimal distillation process are entered as default values as a function of the measured bath temperature! Other solvent parameters can be conveniently downloaded from the Büchi homepage (www.buchi.com).

Automatic distillation – the answer to complex distillation tasks

A stage probe installed in the Rotavapor's condenser detects the condensation limit and regulates the pressure accordingly. This patented measuring principle can be used with the Vacuum Controller V-855. This arrangement is particularly suitable for solvent mixtures and gentle distillation to dryness.

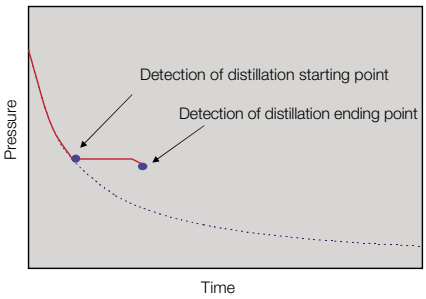
Rotavapor and vacuum controller – together in harmony

The **R-210/215 Advanced** combines the Rotavapor with the Vacuum Controller V-850 and is suitable for all standard Rotavapor tasks.

The **R-210/215 Professional** includes the Vacuum Controller V-855 and the stage probe for auto distillation (for condenser types V and S). The appeal of this arrangement is its versatility.

EasyVac – the simple alternative for your distillation tasks

The EasyVac vacuum module for the Vacuum Pump V-700 is a new concept for vacuum regulation during the distillation of single solvents. More than just simple: the process is started at the press of a button and automatically finds the distillation start point, controls the pressure in accordance with the vapour pressure curve and can determine the end point for a distillation. This method allows the gentle evaporation of individual solvents. With the EasyVac you are choosing exactly the right control unit for an automatic evaporation system – delegate your process settings and you will have more time for other tasks. Ordering information can be found in our brochure “Vacuum Solutions”.



Safety is paramount

The aspect of safety is increasingly important for work in the laboratory. Along with the actual protection of personnel, the safety of the process is a further important point for the product. In particular the Rotavapor features the following safety elements:

In the event of a power failure or a fault in the bath, the flask is automatically raised out of the heating bath to prevent overheating of the product.

Thanks to the integrated ventilation valve the evaporation can be stopped at any time at the press of a button. The valve is open when not powered so that overpressure in the system is prevented. Only PEEK and Kalrez® materials are used to ensure the highest possible chemical resistance.

The transparent safety guard is ideally matched to the design of the heating bath and is easy to fit. This accessory provides effective protection for the user against splashing or a possible flask breakage.

If required, all glass parts (except the evaporating flask) can be plastic coated. The P+G coating protects against mechanical damage and provides efficient protection against splinters.

Buchi – space saving solutions from a single source

Along with the Rotavapor and the vacuum controller, Buchi also markets PTFE diaphragm pumps and recirculating chillers, which are designed for optimum use with the Rotavapor. The results are complete solutions: complete evaporator systems that are designed to be suitable for the most common applications, making procurement particularly easy.

Vacuum Pump V-700
The Vacuum Pump V-700 is a chemical-resistant PTFE diaphragm pump for use in the laboratory for pumping all types of gases or vapours. With a capacity of 1.8 m^3/h and a final vacuum of less than 10 mbar, the pump is optimally suited to work with the Rotavapor and covers a wide range of laboratory applications.

Distillation Chiller B-741
The distillation Chiller B-741 is a low-cost recirculating chiller that is designed as the ideal replacement for cooling water for the Rotavapor. The chiller cools to a set temperature of 10°C and has a power rating of 500 W at 15°C. The compact design on castors ensures a space-saving set-up in the laboratory.

Suggestions for your evaporator system

1. The basic model for simple applications

Rotavapor R-210
Glass assembly A
Woulff bottle

Vacuum regulation
with needle valve

e.g.
Water jet pump/
in-house vacuum system
for vacuum source

2. The ingenious stand-alone system for automatic distillations

Rotavapor R-210
Glass assembly V

Vacuum Pump V-700
Vacuum Module V-801 Easy Vac
Woulff bottle

Cooling water valve

3. The professional stand-alone system as a complete solution

Rotavapor R-215
Professional (with V-855)
Glass assembly S
Woulff bottle

Vacuum Pump V-700
Secondary condenser
Cable RJ 45 2000 mm

Distillation Chiller B-741

4. The space-saving multiple system with 2 Rotavapors

Rotavapor R-215 Advanced
(with V-850)
Glass assembly V
Valve unit

Vacuum Pump V-700
Secondary condenser
2x cable mini-DIN 1500 mm

Accessories

Heating Bath B-491

Oval bath pan, incl. base with power supply. Also suitable for use as stand-alone heating bath for thermostatting.

	Order No.
B-491, 230 V	48200
B-491, 120 V	48201

Heating Bath B-495

Circular stainless steel pan for large evaporating flask up to 5 l including bath replenishment.

	Order No.
B-495, 230 V	48240
B-495, 120 V	48241

Protective shield

Effective protection against splashing or a possible flask breakage.

	Order No.
B-491	48052
B-495	48245

Bath cover

Considerable energy savings and no loss of water by evaporation when not in use.

	Order No.
B-491	48230

Valve unit for vacuum controller

Unit with condensate trap (Woulff bottle) and non-return valve with attachment for Rotavapor (not ne-cessary with V-700 in stand-alone system).

Order No. 47160

Vacuum valve for vacuum controller

For use with a central vacuum source or an uncontrolled pump.

Order No. 31353

Woulff bottle

For trapping particles and droplets for pressure equalization (recommended in stand-alone systems with V-700).

Order No. 47170

Vacuum control with needle valve

Setting of using a needle valve with simple display. For use in combination with vacuum Woulff bottle.

Order No. 47291

Remote Control RC-81

The remote control can be used to operate the vacuum controller and the Rotavapor: rotation, starting/stopping and raising and lowering of the flask.

Order No. 47230

Cooling water valve

Helps to save water, as the cooling water feed does not have to be manually switched on and off. The vacuum controller opens the cooling water feed only during distillation.

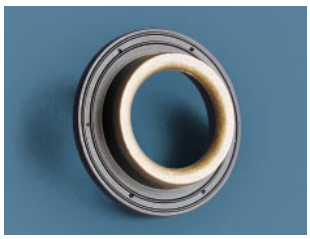
Order No. 31356

IQ/OQ Documentation

Official Buchi documents for the calibration of the rotary evaporator for stringent regulatory requirements.

Order No. 48250

Vacuum seal



Low abrasion vacuum seal in PTFE composite material for long service life and effective sealing.

Order No. 48021

Combine the modules to suit your individual needs

With the new Rotavapor® R-210/215, you can combine modular components to suit your needs. Choose the equipment options, the glass assemblies, and the other accessories here, and fill in the blank squares with the corresponding numbers.

23□□□□□□□

Display for rotation/vapour temperature
0 R-210 (without display)
1 R-215 (with display)
2 R-210 without heating bath
3 R-215 without heating bath

Voltage options
1 220–240 V
2 100–120 V

Joint options for evaporating flask
1 NS 29/32
2 NS 24/40
3 NS 29/42

Glass assembly options (including 1000 ml evaporating flask and receiving flask)
A Glass assembly A
V Glass assembly V */**
C Glass assembly C
S Glass assembly S */**
E Glass assembly E *
R Glass assembly CR
Y Glass assembly BY

* Vapour temperature measurement possible
** Auto-distillation possible

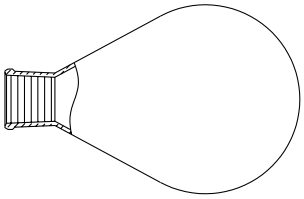
P+G
0 Glass assembly without plastic coating
1 Glass assembly with plastic coating

Vakuum controller
0 Without controller
1 Vakuum Controller V-850
2 Vakuum Controller V-855

Valve unit
0 Without valve unit
1 Woulff bottle for vacuum controller (for stand-alone system with V-700)
2 Valve unit for vacuum controller (not necessary in stand-alone system with V-700)

Glass accessories in proven Büchi quality

Evaporating flask



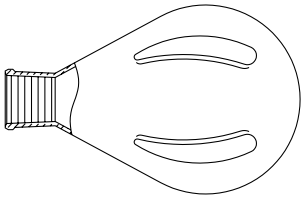
Pear-shaped evaporator flask, with standard joint

		Order No.
Std. joint	29/32	24/40
50 ml	00431	08750
100 ml	00432	08751
250 ml	00433	08754
500 ml	00434	08758
1000 ml	00435	00440
2000 ml	00436	08765
3000 ml	00437	08767
4000 ml	47991	47990

With P+G coating (up to 60 °C bath temperature)

Order No.	29/32	24/40
250 ml	25520	
500 ml	25322	25261
1000 ml	20729	20730
2000 ml	25323	25262
3000 ml	25324	25263
4000 ml	47993	47992

Drying flask

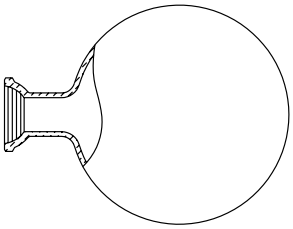


Special flask for drying powdery substances. The integrated baffles encourage thorough mixing and prevent crusting of the sample.

		Order No.
Std. joint	29/32	24/40
500 ml	00452	11579
1000 ml	00453	00420
2000 ml	00454	11580

Other standard joints on request.

Receiving flask



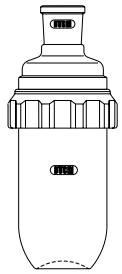
Round receiving flask with ball joint pan KS 35-20.
With or without P+G coating.

	Order No.	Order No.
	Normal	P+G
50 ml	00421	
100 ml	00422	
250 ml	00423	
500 ml	00424	25264
1000 ml	00425	20728
2000 ml	00426	25265
3000 ml	00427	25266

A special P+G-LT low temperature coating is used for glass assemblies C+CR.

	Order No.
500 ml	40774
1000 ml	40775
2000 ml	40776
3000 ml	40777

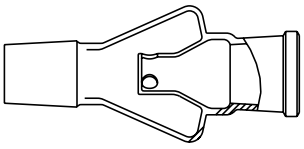
Beaker flask



The wide opening allows easy cleaning of the inside of the flask. Highly viscous or solid products can be filled or emptied easily and the large surface area simplifies the distillation of foaming products. Up to max. 60 °C bath temperature.

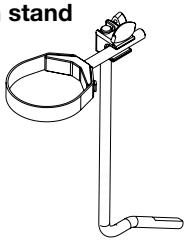
	Order No. Std. joint NS 29/32	Order No. Std. joint NS 24/40
Beaker flask 1500 ml (working capacity approx. 500 ml)		
Beaker flask complete	34230	34247
Beaker flask for powder drying	34269	34270
Beaker flask 450 ml (working capacity approx. 150 ml)		
Beaker flask complete	34764	34765
Beaker flask for powder drying	34767	34768

Reitmeyer adapters



	Order No.
NS 29/32	36576
NS 24/40	36577

Condenser bracket with stand



Bracket for glass assemblies (except A+E) for additional fixing to the Rotavapor R-210/215

Order No.	48180

Vapour ducting

For glass assembly A

	Order No.
NS 29/32	46964
NS 24/40	48068
NS 29/42	48072
NS 34/35	48074

For other glass assemblies (V, C, S, E, R, BY)

	Order No.
NS 29/32	46962
NS 24/40	48067
NS 29/42	48069
NS 34/35	48073

Technical data

	Rotavapor® R-210	Rotavapor® R-215	Heating Bath B-491	Heating Bath B-495
Dimensions (L x H x D)	550 x 575 x 415 mm	550 x 575 x 415 mm	285 x 240 x 300 mm	310 x 230 x 320 mm
Weight	16–18 kg (depending on glass assembly)	16–18 kg	4 kg (depending on glass assembly)	5 kg
Operating voltage	100–240 V	100–240 V	100–120 V or 220–240 V	100–120 V or 220–240 V
Frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Power consumption	60 W	60 W	1300 W	1300 W
IP class	21	21	21	21
Rotation speed	20–280 rpm	20–280 rpm		
Flask size	50–4000 ml	50–4000 ml		
Maximum flask capacity	3 kg	3 kg		
Controlled temperature range			20–180 °C (water and oil)	20–95 °C
Display	None	Rotation speed and vapour temperature	Actual and specified temperature, water/oil	Actual and specified temperature
Temperature deviation			± 2 °C	± 2 °C
Bath capacity			4 l	5 l
Approval	CE	CE	CE	CE

BÜCHI Labortechnik AG
Postfach
9230 Flawil 1
Schweiz
Tel. +41 71 394 63 63
Fax +41 71 394 65 65
buchi@buchi.com
www.buchi.com

BÜCHI Labortechnik GmbH
Postfach 10 03 51
45003 Essen
Deutschland
Freecall 0800 414 0414
Tel. +49 201 747 490
Fax +49 201 237 082
deutschland@buchi.com
www.buechigmbh.de

BÜCHI Labortechnik GmbH
Branch Office Netherlands
Postbus 142
3340 AC Hendrik-Ido-Ambacht
The Netherlands
Tel. +31 78 684 94 29
Fax +31 78 684 94 30
netherlands@buchi.com
www.buchi.nl

BÜCHI Italia s.r.l.
Centro Direzionale, Milano Fiori
Pal. A-4, Strada 4
20090 Assago (MI)
Italia
Tel. +39 02 824 50 11
Fax +39 02 57 51 28 55
italia@buchi.com
www.buchi.it

BUCHI (THAILAND) Ltd.
ASEAN Competence Center
300 Phaholyothin Road
Samsennai, Phayathai
Bangkok 10400
Thailand
Tel. +66 2 278 54 95
Fax +66 2 279 05 48
bacc@buchi.com
www.buchi.com

BUCHI SMP
Services Private Ltd.
201, Magnum Opus
Shantinagar Industrial Area
Vakola, Santacruz (East)
Mumbai 400 055,
India
Tel. +91 22 56 98 94 50
Fax +91 22 56 98 94 52
smplisp@vsnl.com
www.buchi.com

BUCHI Analytical Inc.
19 Lukens Drive
New Castle
Delaware 19720
USA
Tel. +1 302 652 3000
Fax +1 302 652 8777
us-sales@buchi.com
www.buchi-analytical.com

BUCHI Hong Kong Ltd.
1305, Hang Seng Mongkok Bldg.
677 Nathan Road
Kowloon, Hong Kong
China
Tel. +852 2389 2772
Fax +852 2389 2774
china@buchi.com
www.buchi.com

Nihon BUCHI K.K.
3F IMON Bldg.,
2-7-17 Ikenohata, Taito-ku,
Tokyo 110-0008
Japan
Tel. +81 3 3821 4777
Fax +81 3 3821 4555
nihon@buchi.com
www.nihon-buchi.co.jp

BUCHI UK Ltd
5 Whitegate Business Centre
Jardine Way
(off) Broadway
Chadderton
Oldham OL9 9QL
United Kingdom
Tel. +44 161 633 1000
Fax +44 161 633 1007
uk@buchi.com
www.buchi.co.uk

BUCHI Sarl
5, rue du Pont des Halles
Z.A. du Delta
94656 Rungis Cedex
France
Tél. +33 1 56 70 62 50
Fax +33 1 46 86 00 31
france@buchi.com
www.buchi.fr

We are represented by more than 100 distribution partners worldwide. Find your local representative at

www.buchi.com

Quality in your hands

92021 en 0601 / We reserve the right to make technical alterations / Quality system ISO 9001