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# German Technology made in Brazil

/// presentado por Natalia Casadiego

/// IKA Brasil

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## Campinas- São Paulo- Brazil


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## Lab dancer

/// Test Tube Shaker

**TOUCH FUNCTION!**


Attractively designed, test tube shaker.
Designed for mixing small test samples with a touch function.

- Small, compact and reliable
- For small containers up to 30 mm in diameter, e.g. test tubes, centrifuge tubes, Eppendorf beakers
- **Fixed speed (2800 rpm)**
- Excellent mixing action

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## Vortex 3

///Vortex shaker suitable for short-time operation


Different applications thanks to 3 interchangeable attachments and 7 inserts: Eppendorf tubes, microtiter plates, Erlenmeyer flasks 250 ml etc...

VG 3.3 + VG 3.36

- Shaking movement: orbital
- Orbital diameter: 4 mm
- Infinitely adjustable speed range: 500 - 2.500 rpm

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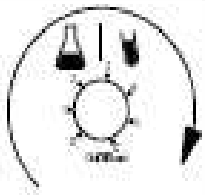
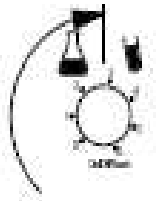
# Attention!

Falcon 15ml – 50 ml

| | Designation | Description | Id.- No. | Touch Mode | Continuous Mode | Range of speed |
|---|---|---|---|---|---|---|
|  | V 3.1 Standard attachment | For test tubes and small vessels upto diameter 30 mm | 33 412 00 | X | X |  |
|  | V 3.2 One- hand attachment | 88 mm-plate attachment with rubber pad | 33 423 00 | X | X | |
|  | V 3.3 Universal attachment | 150 mm-plate attachment with rubber pad | 33 424 00 | - | X |  |

Petri dish

# MS 3 Digital

/// Compact, universal small shaker suitable for shaking tasks with all small vessels and microtiter plates


- Speed Range: 0- 3000 rpm ( mode A, B)
- Shaker Diameter: 4.5 mm
- Timer with countdown function
- Continuous or touch operation (with standard attachment)

**Scope of Delivery:**

MS 3.1 Standard attachment | MS 3.3 Universal attachment | MS 3.4 Microtiter attachment | MS 1.21 One-hand insert | MS 1.32 Test tube insert

## MS 3 Digital

Customer want to ensure, whether we could use MS 3.5 to shake, the PCR plates would not fly out

MS 3.5

# KS 501 Digital

/// Low profile laboratory orbital shaker with large mounting surface and load capacity of up to 15 kg.

AS 501.1

- Infinitely variable speed control from 0-300 rpm
- Digital display
- Orbital diameter 30 mm
- Ideal for vessels with a volume of more than 250 ml, e.g. round flasks, Erlenmeyer flasks, culture flasks and bottles
- Ideal for biological and microbiological growth tests and for production of stock solutions
- Timer function
- **Integrated USB and RS 232 interface!!!→ New!**

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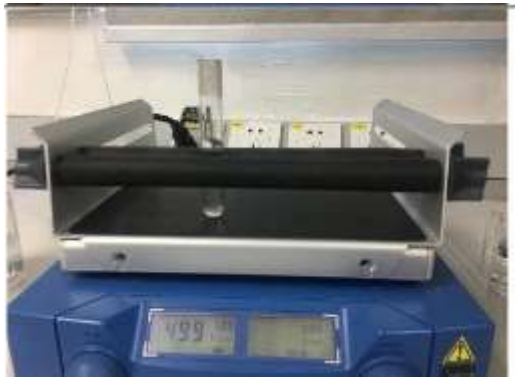
10 ml de Penicilin

KS 130 Digital



Test Tube

KS 130 Digital

Test Tube 30 ml

KS 130 Digital

20 ml Bottle

KS 130 Digital

8 bottles – 250 ml/ Filled with 200 ml

KS 260

# Magnetic Stirrers

Resources

Price

**Lab disc / Color squid / Topolino**

Pequenos volumes
Sem aquecimento
Sem display

**RH basic/digital**

ext. Sensor: **ETS-D**
Interface: **no**
Timer / Counter: **no**
Display: **LED**

**C-MAG basic**

ext. Sensor: **ETS-D**
Interface: **no**
Display: **LED**

**RCT basic**

ext. Sensor **PT1000 / ETS-D**
Interface: **não**
Timer / Counter: **no / no**
Display: **LED**

**C-MAG digital**

ext. Sensor: **PT1000**
Interface: **no**
Display: **LCD**

**RET basic**

ext. Sensor **PT1000 / ETS-D**
Interface: **não**
Timer / Counter: **no / no**
Display: **LED**

**RET control-visc**

ext. Sensor **PT100**
Interface: **USB / RS232**
Timer / Counter: **Si / S**
Display: **TFT**

**C-MAG HS 7 Control**

ext. Sensor **PT1000**
Interface: **USB / RS232**
Timer / Counter: **Si/ Si**
Display: **LCD**

**RCT Digital**

ext. Sensor **PT1000**
Interface: **USB / RS232**
Timer / Counter: **Si / Si**
Display: **LCD**

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## Color Squid

///Small magnetic stirrer with glass surface


- Digital speed display (LED)→ the client can see the current rpm
- Electronically controlled motor for more capacity
- Higher speed range from 0 - 2.500 rpm
- Max. stirring quantity 1 l
- Stirring quantity max. per stirring position (H2O): 1 L
- Speed range: 0 - 2500 rpm

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# C-MAG HS Series

/// Magnetic stirrer with heating and ceramic heating plate

| Technical Data | HS 4 | HS 7 | HS 10 |
|---|---|---|---|
| Temperature | 50 - 500 °C | 50 - 500 °C | 50 - 500 °C |
| Set-up plate material | Vidro-cerâmica | Vidro-cerâmica | Vidro-cerâmica |
| Set-up plate dimensions | | | |
| Stirring quantity max. per stirring position (H2O) | 5 Lts | 10 Lts | 15 Lts |
| Speed range | 100 – 1500 rpm | 100 – 1500 rpm | 100 – 1500 rpm |
| Connection for ext. temperature sensor | no | ETS-D5 | ETS-D5 |

| Item No. | Qty. | Description |
|---|---|---|
| | 1 | **IKA C-MAG HS 4 / HS7 / HS10** |
| 3378000 | | ETS D5 |
| 2437700 | 1 | H 44 |
| 1545100 | 1 | H 16V |
| 3547700 | 1 | H 38 |

ETS-D5

H 38 Holding rod

H 44 Boss head clamp

H 16 V Support rod

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## ETS-D5

///Electronic contact thermometer

•Incl. stainless steel sensor H 62
•Recomended  with :RCT Basic Safety Control, RET Basic Safety Control and RET Basic Safety Control- DIN 12878, class 2
•Temperature Measurement Range: - 50°C -450 °C
•Accuracy of temperature measurement±0.2 + tolerance PT1000 (DIN IEC 751 Class A) K

•Advantages:
there is no relevant technical difference between the two devices; the HS7 digital is actually an HS7 basic with the ETS-D5 built into the device, same hardware, same software. The devices should therefore not differ in terms of control behavior for similar applications.

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**Coming soon!**

## CMAG HS Digital

\\\Hotplate made of ceramic glass


- HS 4 Digital
- HS 7 Digital
- HS 10 Digital
- Heating Temperature range: 50-500°C
- Directly connection for a PT 1000 temperature sensor enable a precise temperature control (included in delivery)
- Control accuracy in medium +/- 0,5 K (in combination with PT 1000)

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# Comparing C-MAG HS with CMAG HS 7 Digital

Copy of HS7 Basic VS HS7 Digital Performance Exp test results.xlsx

•Advantages:
there is no relevant technical difference between the two devices; the HS7 digital is actually an HS7 basic with the ETS-D5 built into the device, same hardware, same software. The devices should therefore not differ in terms of control behavior for similar applications.

1. promote **CMAG HS 7 Basic (only main unit)** according to the budget→ ETS-D5 will upgrade your device with direct and accurate control of sample temperature

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## CMAG HP Series

\\\Hotplate made of ceramic glass

- HP 4
- HP 7
- HP 10
- Heating Temperature range: 50-500°C

C-MAG HP 7 + ETS-D5+
Eurostar 400 Control
preparing Polymer

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## Application

The cliente want to do the red wine distillation test with the HP7

C-mag HP7

500ml Block

C-mag adapter

| Heating time | Initial Volume | Final Volume |
|---|---|---|
| 45 minutes | 150 ml | 62 ml |

Sample preparation:

100 ml→ Ethanol 12%

50 ml→ Agua

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## RCT Basic

/// The bestseller in laboratories: Strong motor for a higher range of speeds, additional temperature control mode for faster heating of medium

| | |
|---|---|
| Speed range | **50 - 1500 rpm** |
| Heating temperature range | Room temp. + device self heating - 310 °C |
| Set-up plate material | Aluminium alloy |
| Set-up plate dimensions | **Ø 135 mm** |
| Stirring quantity max. per stirring position (H2O) | **20 Litros** |
| Heat output | **600 W** |

**Included on delivery PT 1000.60+ H 100**

PT 1000.60 Temperature sensor, stainless steel

Tips: **RET Basic** Stainless steal set-up

## 5-10-15 Position Magnetic Stirrers

///Digital magnetic hotplate stirrer, designed for synchronous heating and stirring

Versions RT 5 / RT 10 / RT 15➔ Volume/Position: 0,4 Lts

The magnetic coil technology provides noiseless and consistent stirring on all positions. The surface temperature is infinitely adjustable up to 120 °C, producing a maximum medium temperature of 70 °C (depending on the used vessel). Speed remains constant, even when load changes

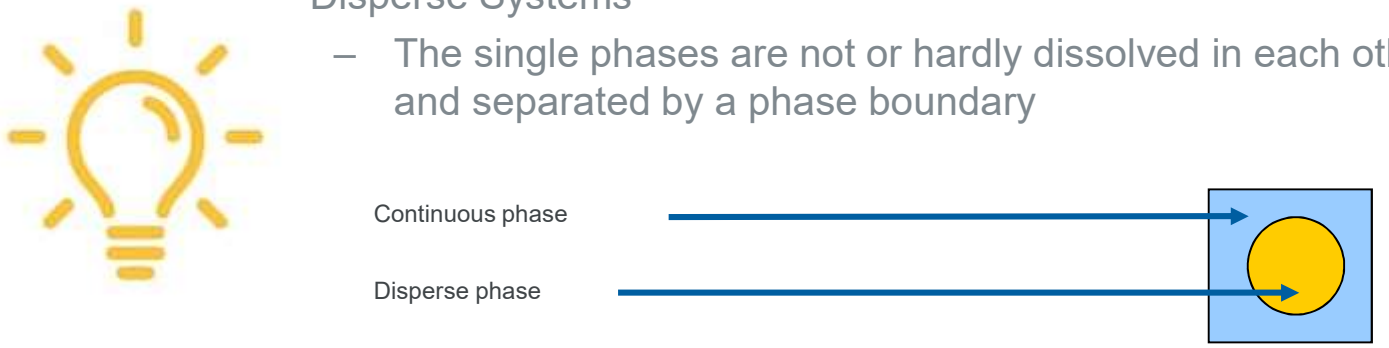
# Overhead Stirrers

| Mixing | | Disperse phase | | |
|---|---|---|---|---|
| | | Solid | Liquid | Gas |
| Continuous phase | Solid | Solid mixing | Extrusion | Fluidisation |
| | Liquid | Suspension | Emulsification | Aeration |
| | Gas | Swirling | Atomization | Gas mixture (homogeneous) |

IKA Overhead Stirrers

Disperse Systems

– The single phases are not or hardly dissolved in each other and separated by a phase boundary



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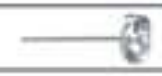
# RW 20 digital

/// The bestseller in the laboratory

| | |
|---|---|
| Rpm 1 | 60 - 500 rpm |
| Rpm 2 | 240 – 2000 rpm |
| Stirring quantity max. per stirring position (H2O | **20 litros** |
| Speed display | **Digital** |
| Viscosity max. | **10,000 cps** |
| **Potencia do motor** | **70/35 W** |
| Torque max. at stirring shaft | **150 ncm** |

| Part Number | Package |
|---|---|
| 3593000 | RW20 Digital |
| 3160100 | R1826 Stand |
| 2657700 | R182 |
| 3008600 | RH3 |

# Elements Stirrers

| Stirrer typ | Design | flow | | | task | | | | | speed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | axial | radial | tang-ential | homogen-ization | Suspen-sion | Emulsifi-cation | aeration | heat exchange | low | medium | high |
| Propeller stirrer |  | × | | | × | × | | | × | | × | × |
| Centrifugal stirrer |  | × | | | × | × | | | × | | × | × |
| Dissolver stirrer |  | | × | | | | × | × | | | × | × |
| Paddle stirrer |  | | | × | × | × | | × | | × | × | |
| Anchor stirrer |  | | | × | | | | | × | × | | |
| spiral stirrer |  | × | | | × | | | | × | × | × | |
| Blade stirrer |  | | × | | × | | × | × | × | | × | × |
| Turbine stirrer |  | × | | | | × | × | | | × | × | × |
| Moebius stirrer |  | × | | | | × | × | | | × | × | |

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## Eurostar 60 Digital/ Control

/// Universally used strong laboratory stirrer for quantities up to 40 l (H2O

Stirring quantity max. (H2O): 40 l
Max. Viscosity: 50,000 mPas
Speed range: 0/30 – 2000 rpm
Max. torque at stirring shaft: 60 Ncm

Digital vs Control:

- LED vs TFT
- Intermittent operation only control version
- Temperature Sensor: PT 1000 only control,versio..
- Torque Trend, Timer, Temperature Measurement: only control

## Application


70L electronic slurry, using Eurostar 200 control and R1342 propeller, 1200RPM continuous operation for 1 week.

# Grinding & Dispersing

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# Analytical Mill

/// Batch mill

Impact grinding of hard, brittle or non-elastic grinding materials with high-grade stainless steel beater. This beater can be used for a Mohs hardness up to 6 .
Cutting grinding for pulverizing soft, fibrous materials with a cutting blade

| Item No. | Qty | Description |
|---|---|---|
| **2900000** | **1** | ***IKA***. Including: (1) A11.1 stainless stea(1) A11.5 chambre 80 ml |
| | | **Accesories :** |
| **2904600** | **1** | **A11.1** spare beater(hasta 5 Mohs) |
| **2905200** | **1** | **A11.2** cutting blade (fibrous grinding materials) |
| **2983000** | **1** | **A11.3** beater(9 Mohs) |
| **2904100** | **1** | **A11.4** chamber 250ml (Acero Inox. 316 Makrolon) |
| **2983100** | **1** | **A11.5 chamber** 100ml (Acero Inox. 316 Makrolon) |

Speed max: 25000 rpm
Speed max: 80 ml
Power-ON time: 1 min
Power-OFF time: 10 min

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**Coming soon!**

## Tube Mill control

/// Patented!

Larger cover for larger grinding chamber
- From 40 ml to 100 ml

Less cleaning costs
- Batch mill with disposable grinding chambers
- Eliminate possibility of cross-contamination
- Eliminate the effort of cleaning

Continuous monitoring of grinding tests
- Thanks to transparent chamber and cover

USB interface
- Control and document all parameters

MT 40 MT 100

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# TUBE MILL 100 control

## Accesories

Included on delivery scope

| Tube | | | Feature | Benefit |
|---|---|---|---|---|
| Disposible tube | MT 40.10<br>MT 40.100 | MT 100.10<br>MT 100.50 | - disposible<br>- transparent<br>- cyro | - time saving without cleaning<br>- no contamination<br>- facilitated Observation |
| Multi-use tube | MMT 40.1 | MMT 100.1 | - Inside of metal<br>- changeable coupling and sealing | - multi-use |
| Steril tube | MT 40.10 steril | MT 100.10 steril | - sterilized with gamma radiation | - aseptic condition, i. the absense of living organisms |
| Disposible tube with titan cutter | MTT 40.10 | MTT 100.10 | - beater made of Titanium<br>- gray bottom compared to standard tube | - suitable for elemental or heavy metal impurities monitor |
| Disposible tube with curved cutter | MT 40P.10<br>MT 40P.100 | | - Curved beater | - create vortex<br>- effective flow |

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## Application

Milling Chocolate with A11 and Tube Mill

| Trial no | Sample+Weight | Device Used | Coolant | Speed | Process Time |
|---|---|---|---|---|---|
| 1 | Silik Oreo (30.1g) | Tube mill 100 + MT 40.10 | Dry ice | 10000 RPM | 30 sec |
| 2 | Silik Oreo (33.5g) | A11 mill + A 11.1 blade | Liquid nitrogen | 28000 RPM | 20 sec |


Tube mil results

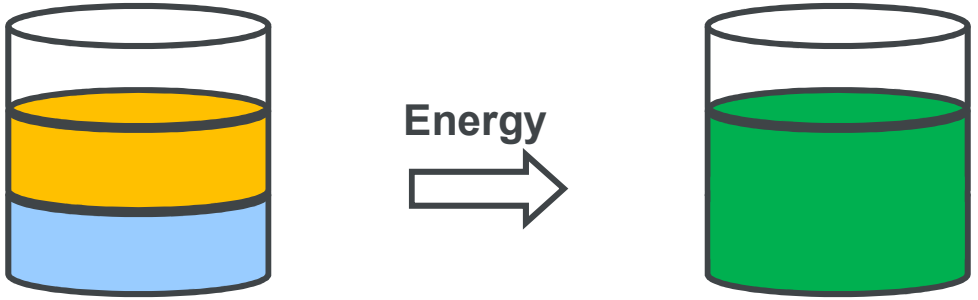
A11 results

/// Dispersing

# Unit operation
/// Mixing and homogenising

› Mixing:

– The process of introducing power into a system, usually for the purpose of producing greater material uniformity




› Homogenising:

– The process of introducing power into a system in order to achieve a specific level of uniformity

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# Disperse Systeme (Dispersion)

/// Two or more mixable phases

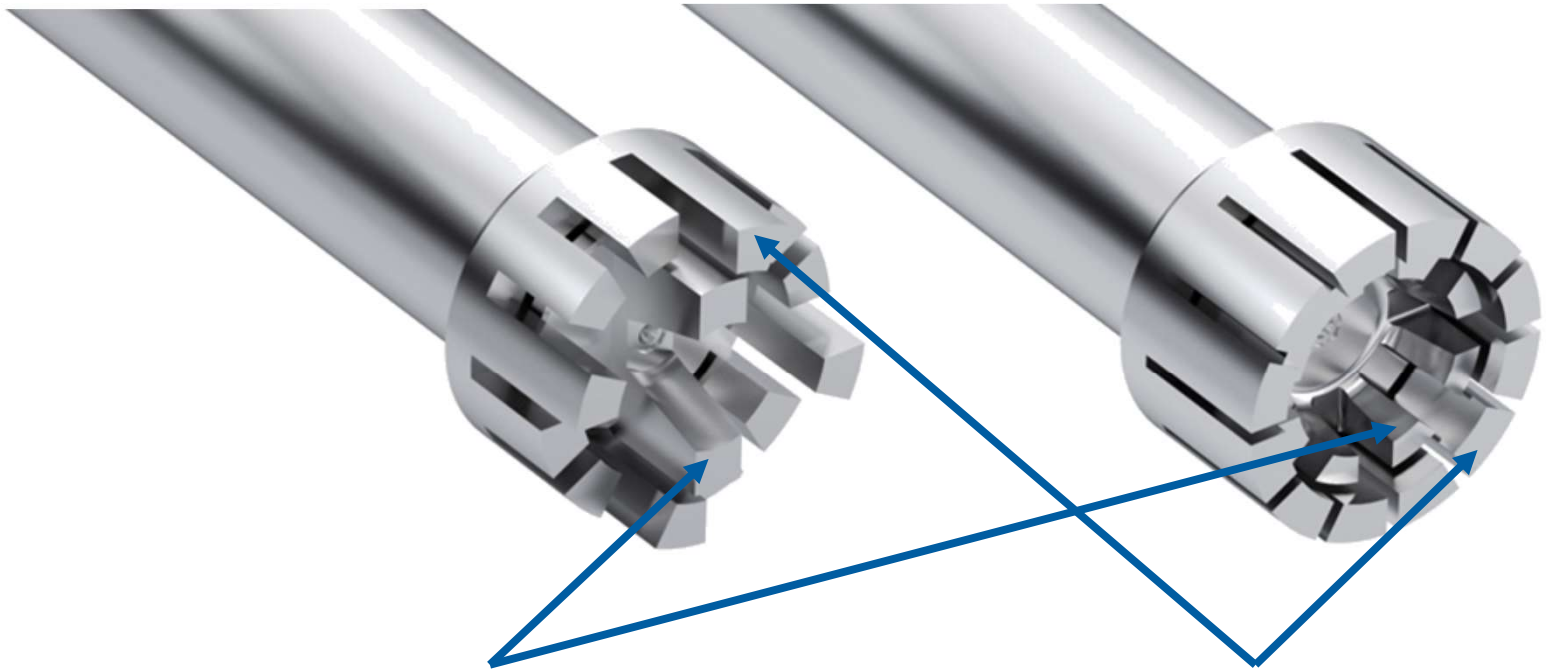
› Classification of disperse systems according to physical state

| Dispersion | | Disperse phase | | |
|---|---|---|---|---|
| | | Solid | Liquid | Gas |
| Continuous phase | Solid | Dry mixable Media: Granite, | Kneadable media | Porous solid: building material |
| | Liquid | Suspension: milk | Emulsion: hand cream | Foam: soap foam |
| | Gas | Aerosol: dust, smoke | Aerosol: mist, spray | Gas mixture (always homogeneous) |

IKA Ultra-Turrax-Device

# Rotor-stator system

/// Structure

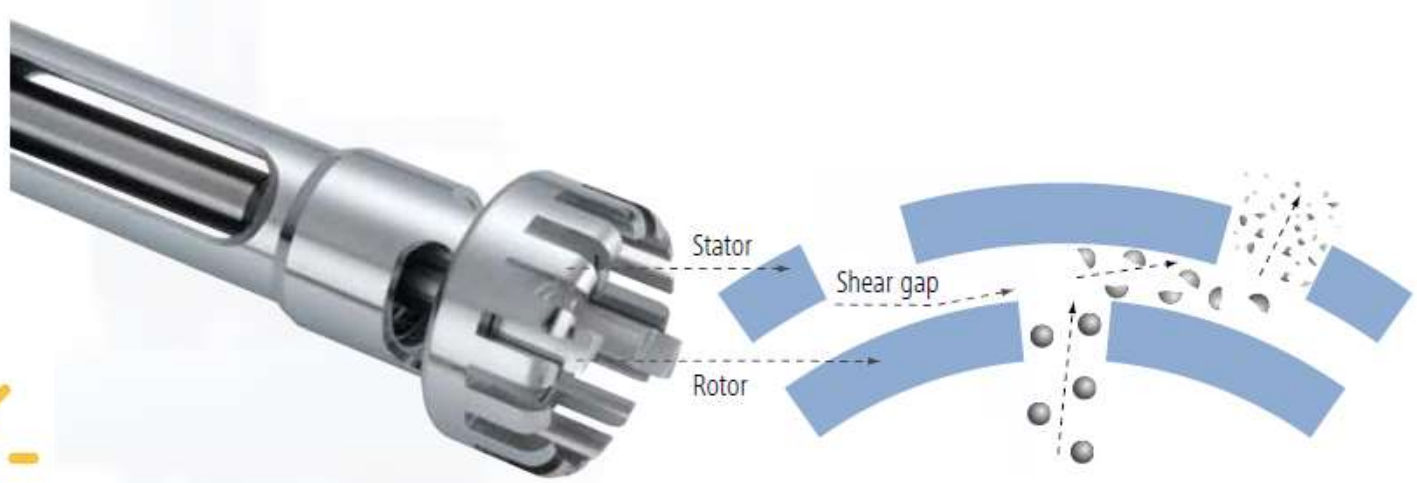


The moving part:
The rotor

The static part:
The stator

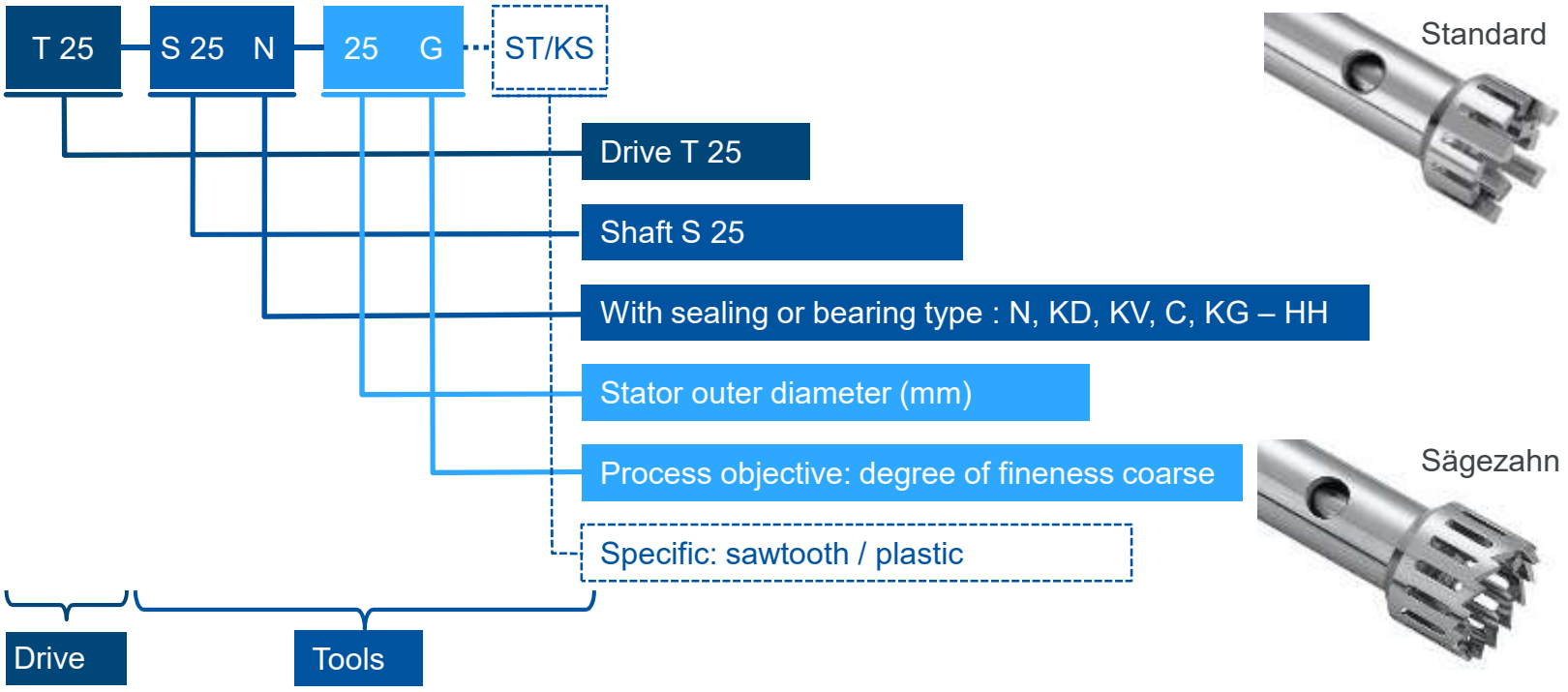
## Rotor-stator system

/// Principle




IKA dispersing technology works by using the rotor-stator principle. The system consists of a rotor within a stationary stator. Due to the high circumferential speed, the medium to be processed is drawn axially into the dispersion head and then forced radially through the slots in the rotor-stator arrangement. The high speed and minimal gap between the rotor and stator produces extremely strong shear forces which results in better dispersion.

# IKA Dispersers
/// Nomen clature





Standard


Sägezahn

***Configuration of IKA dispersers***

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# Dispersers: Ultraturrax IKA


**T10 Basic**
**0,5-100 ml**

reddot design award winner 2012

**T18 Digital**
**1-1500 ml**

**T 25 Digital**
**1-2000 ml**

reddot design award winner 2012

**T 50 Digital**
**0,25-30 litros**

**UTTD**
**20-50 ml**

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## Element Disperser Made in Brazil

| Ident. Number | Item Description | Product Group | Purchasing Country |
|---|---|---|---|
| 3370100 | S 10 N - 10 G | Dispersers | IKA BRASIL |
| 3304000 | S 10 N - 5 G Dispersing element | Dispersers | IKA BRASIL |
| 1004640 | S 18 N - 19 G | Dispersers | IKA BRASIL |
| 593400 | S 25 N - 18 G | Dispersers | IKA BRASIL |
| 1713800 | S 25 N - 25 F Dispersing element | Dispersers | IKA BRASIL |
| 1713300 | S 25 N - 25 G | Dispersers | IKA BRASIL |
| 3003900 | S 50 N - G 45 F | Dispersers | IKA BRASIL |
| 3003000 | S 50 N - G 45 G | Dispersers | IKA BRASIL |
| 3003300 | S 50 N - G 45 M | Dispersers | IKA BRASIL |

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## T 10 Basic

**T 10 basic | T 10 standard**

| Dispersing element | S 10 N – 5 G | S 10 N – 8 G | S 10 N – 10 G |
|---|---|---|---|
| Ident. No. | 0003304000 | 0003305500 | 0003370100 |
| Working range | 0.5 – 10 ml | 1 – 50 ml | 1 – 100 ml |
| Stator diameter | 5 mm | 8 mm | 10 mm |
| Rotor diameter | 3.8 mm | 6.1 mm | 7.6 mm |
| Gap between rotor and stator | 0.1 mm | 0.25 mm | 0.2 mm |
| Min. / max. immersion depth | 20 / 75 mm | 20 / 95 mm | 20 / 100 mm |
| Shaft length | 92 mm | 115 mm | 115 mm |
| Materials in contact with medium | PTFE, AISI 316L | PTFE, AISI 316L | PTFE, AISI 316L |
| pH range | 2 – 13 | 2 – 13 | 2 – 13 |
| Suitable for solvents | yes | yes | yes |
| Max. temperature | 180 °C | 180 °C | 180 °C |
| Sterilization methods | all methods | all methods | all methods |
| | 1 | 2 | 3 |

Clue!

# T 18 Digital

| | T 18 digital | |
|---|---|---|
| **Dispersing element** | **S 18 N – 10 G** | **S 18 N – 19 G** |
| Ident. No. | L004639 | L004640 |
| Working range | 1 – 100 ml | 10 – 1500 ml |
| Stator diameter | 10 mm | 19 mm |
| Rotor diameter | 7.5 mm | 12.7 mm |
| Gap between rotor and stator | 0.35 mm | 0.4 mm |
| Min. / max. immersion depth | 25 / 70 mm | 35 / 170 mm |
| Shaft length | 108 mm | 204 mm |
| Materials in contact with medium | PTFE, AISI 316L | PTFE, AISI 316L |
| pH range | 2 – 13 | 2 – 13 |
| Suitable for solvents | yes | yes |
| Max. temperature | 180 °C | 180 °C |
| Sterilization methods | all methods | all methods |

# T 25 Digital

| | T 25 digital | | | T 25 digital | | |
|---|---|---|---|---|---|---|
| **Dispersing element** | **S 25 N – 8 G** | **S 25 N – 10 G** | **S 25 N – 18 G** | **S 25 N – 25 G** | **S 25 KV – 25 G** | **S 25 N – 25 F** |
| Ident. No. | 0001024200 | 0000594000 | 0000593400 | 0001713300 | 0002466900 | 0001713800 |
| Working range | 1 – 50 ml | 1 – 100 ml | 10 – 1500 ml | 50 – 2000 ml | 50 – 2000 ml | 100 – 2000 ml |
| Stator diameter | 8 mm | 10 mm | 18 mm | 25 mm | 25 mm | 25 mm |
| Rotor diameter | 6.1 mm | 7.5 mm | 12.7 mm | 17 mm | 17 mm | 18 mm |
| Gap between rotor and stator | 0.25 mm | 0.35 mm | 0.3 mm | 0.5 mm | 0.5 mm | 0.5 mm |
| Min. / max. immersion depth | 27 / 85 mm | 22 / 85 mm | 40 / 165 mm | 40 / 165 mm | 40 / 225 mm | 40 / 165 mm |
| Shaft length | 108 mm | 105 mm | 194 mm | 194 mm | 270 mm | 194 mm |
| Materials in contact with medium | PTFE, AISI 316L | PTFE, AISI 316L | PTFE, AISI 316L | PTFE, AISI 316L | FFPM / SIC, AISI 316L | PTFE, AISI 316L |
| pH range | 2 – 13 | 2 – 13 | 2 – 13 | 2 – 13 | 2 – 13 | 2 – 13 |
| Suitable for solvents | yes | yes | yes | yes | yes | yes |
| Max. temperature | 180 °C | 180 °C | 180 °C | 180 °C | 220 °C | 180 °C |
| Sterilization methods | all methods | all methods | all methods | all methods | wet chemical | all methods |

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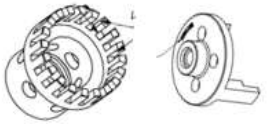
# T 50 Digital

G:



M:

F:

| | T 50 digital | | |
|---|---|---|---|
| **Dispersing element** | **S 50 N – G 45 G** | **S 50 N – G 45 M** | **S 50 N – G 45 F** |
| Ident. No. | 0008003000 | 0008003300 | 0008003900 |
| Working range | 0.5 – 20 l | 0.5 – 15 l | 0.25 – 10 l |
| Stator diameter | 45 mm | 45 mm | 45 mm |
| Rotor diameter | 36 mm | 40.5 mm | 40 mm |
| Gap between rotor and stator | 0.5 mm | 0.25 mm | 0.5 mm |
| Min. / max. immersion depth | 70 / 250 mm | 70 / 250 mm | 70 / 250 mm |
| Shaft length | 300 mm | 290 mm | 290 mm |
| Materials in contact with medium | PTFE, AISI 316L | PTFE, AISI 316L | PTFE, AISI 316L |
| pH range | 2 – 13 | 2 – 13 | 2 – 13 |
| Suitable for solvents | yes | yes | yes |
| Max. temperature | 180 °C | 180 °C | 180 °C |
| Sterilization methods | all methods | all methods | all methods |

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| PN | Descrição | Chave plana (25001829)  | Chave do eixo (25001830)  | Chave plana para geradores finos (25005638)  | *NOVO* Silentstream (3754000)  |
|---|---|---|---|---|---|
| 0593400 | S 25 N - 18 G | X | X | | X |
| 0594000 | S 25 N - 10 G | X | X | | |
| 1024200 | S 25 N - 8 G | X | X | | |
| 1713300 | S 25 N - 25 G | X | X | | X |
| 1713800 | S 25 N - 25 F | | X | X | X |
| 2348000 | S 25 KV - 18 G | X | | | X |
| 2404000 | S 25 KV - 25 F | | X | X | X |
| 2466900 | S 25 KV - 25 G | X | | | X |
| 2563000 | S 25 KV - 25 G-IL | X | | | |
| 2830200 | S 25 KV - 25 F-IL | X | X | X | |
| 3304000 | S 10 N - 5 G | X | X | | |
| 3305500 | S 10 N - 8 G | X | X | | |
| 3370100 | S 10 N - 10 G | X | X | | |
| 4446500 | S 10 N - 8 G - ST | | X | | |
| 4446700 | S 10 N - 10 G - ST | X | X | | |
| 4446900 | S 25 N - 8 G - ST | X | X | | |
| 4447100 | S 25 N - 10 G - ST | X | X | | |
| 4447300 | S 25 N - 18 G - ST | X | X | | X |
| 4447500 | S 25 N - 25 G - ST | X | X | | X |
| 20008825 | S 25 KV 2802 | X | | | |
| 20015397 | S 25 KV - 26 LR | X | | | |

/// Separation:
Rotary Evaporator made in Brazil

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# IKA Rotary Evaporators Overview

**Used for manual and standard distilling applications.**
/// **The Beginner: RV 3 V** with the new 4 liter heating bath for temperatures of up to 100 °C

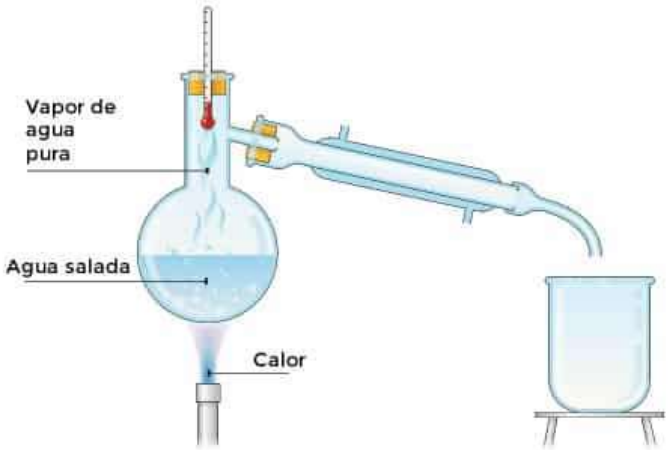
**Combining both simplicity and steady support through the lift mechanism.**
/// **The Athlete: RV 8** with the new 4 l heating bath for water and **oil** application for temperatures of up to 180 °C

**Coming soon!**

**The high-end full automatically controlled version with the 3 liter heating bath for temperatures of up to 180 ° C.**
/// **The Pioneer: RV 10 auto pro V** with HB 10 heating bath and IKA Vacstar digital pump

# Fundamentos de Destilación

El propósito de una destilación es separar materiales diferentes dentro de una cierta mezcla basándose en sus respectivas volatilidades, (puntos de ebullición), a través del proceso de evaporación y condensación (**liquido** para **gaseoso** y **gaseoso** de vuelta al **líquido**).



# Fundamentos de Destilación

1. Mezcla a ser destilada

2. Mezcla colectada después e la condensación

3. Condensador  dónde ocurre la circulación del água refrigerante del sistema- Condensación

4. Entrada del vacío ( presión negativa)

5. Adición automática de producto ( opcional)

6. Rotación del frasco de evaporación

# Fundamentos de Destilación

## Por que necesitamos de un baño de calefacción?

*Evaporación es generada en parte por aumento de temperatura.*

## Que efecto tiene el vacío en el sistema y por que lo necesitamos?

*Cuanto mayor el vacío más reducimos la temperatura necesaria del baño de calefacción para generar la destilación, que por su vez, es acelerada. El vacío también reduce las chances de dañar algunos materiales sensibles al calor.*

## Que efecto la velocidad de la rotación del frasco de destilación tiene sobre el experimento?

*Esa función aumenta la superficie de contacto de la muestra, de esa forma, aumentando la velocidad y eficiencia de la evaporación.*

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## RV 3 Eco

El Iniciante

- Baño de calentamiento de 4 Lts hasta 100°C
- Operación ambidiestra y con una sola mano del elevador manual.
- Velocidad a escala con potenciómetro

### Caracteristicas técnicas

- Desplazamiento: 150 mm
- Velocidad: 20-300 rpm
- Temperatura de calentamiento: temp. ambiental - 99 °C
- Superficie de Condensación: 1500 cm3

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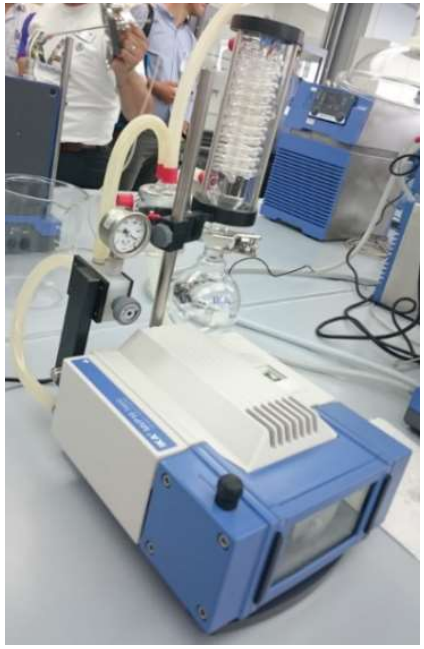
## Puntos Importantes para recordar:

### Target Group:

- Investigación y desenvolvimiento-Farma
- Laboratorios independientes
- Producción e Ingenieria
- Control de calidad

### Principales Aplicaciones:

- Química
- Farmacéutica
- Biotecnología
- Académico

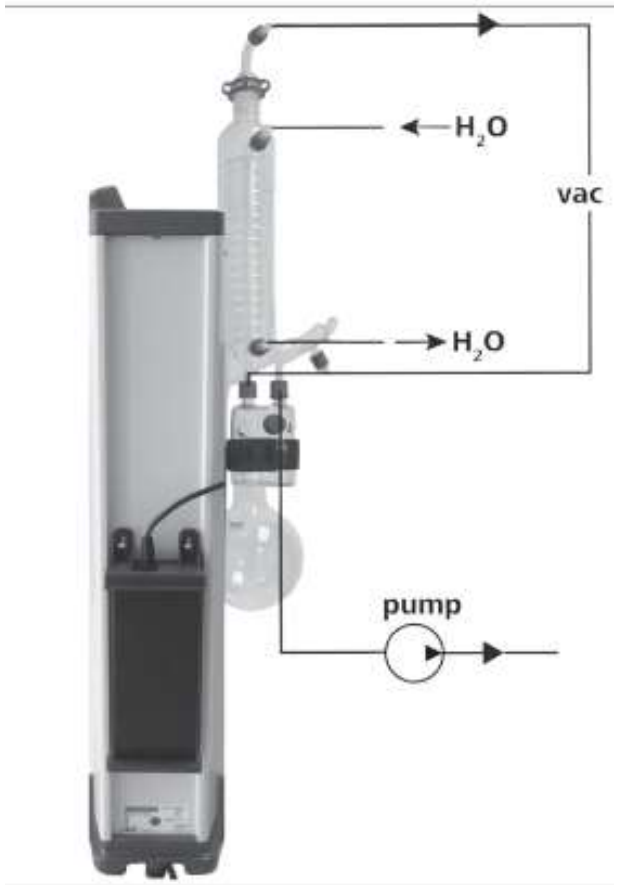


✘ Sistema de control de vacío integrado?

✘ Protección extra o trampa para solventes?

RV 3.4 Woulff bottle

## Conexiones RV 3




## Vacío- bomba

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## RV 10 auto y RV 10 auto Pro

El Buque Insignia

- Baño de calentamiento de 4 Lts hasta 180°C
- Operación intuitiva con menú de navegación
- Procesos automáticos- elevador electrónico

### Caracteristicas técnicas

- Desplazamiento: 140 mm
- Velocidad: 5-300 rpm
- Superficie de Condensación: 1500 cm3
- Interfaces: RS 232-USB
- Rotación horaria y antihoraria
- Parada de seguridad integrada

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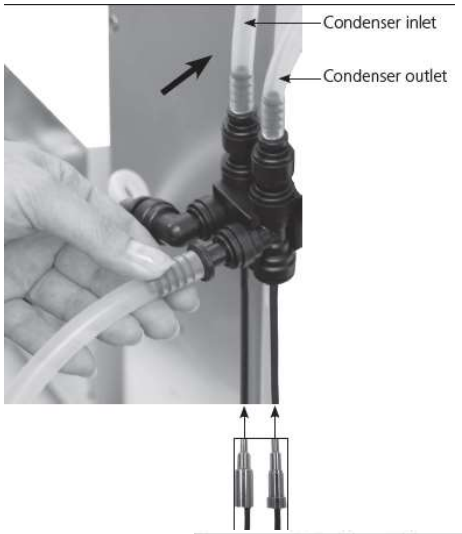
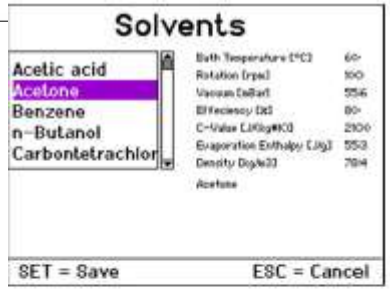
## Puntos Importantes para recordar:

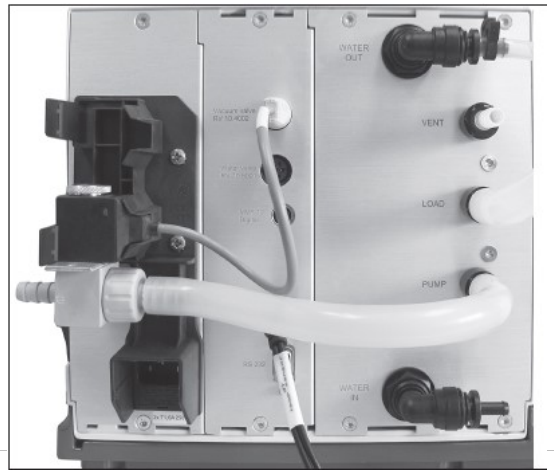
+ Sistema de medición de temperatura?

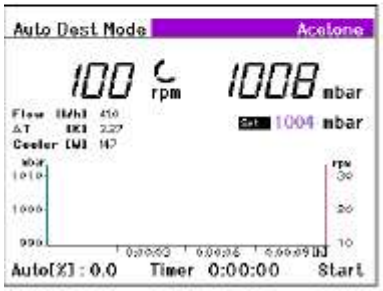



+ Biblioteca de Solventes




+ Control de vacio integrado?

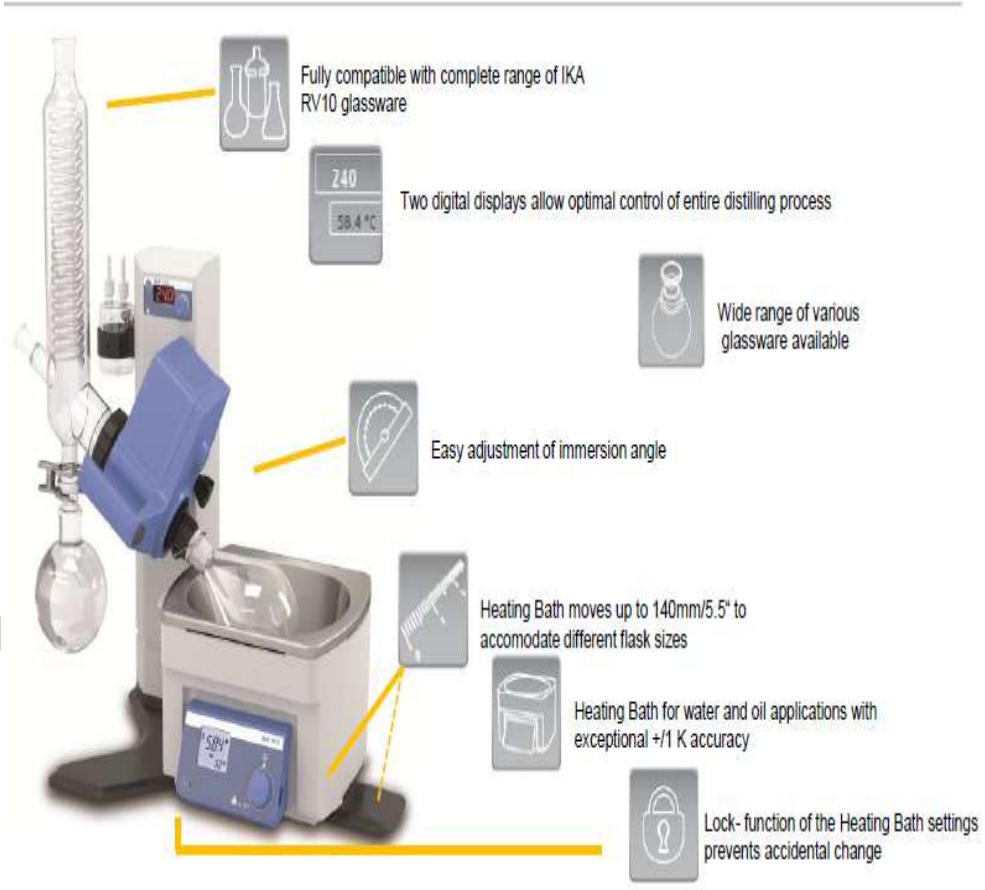





+ Display y rampas?

## Versiones Intermediarias
RV 8

- Equipado con una elevación semi-automática fácil- Función elevación-extracción de seguridad integrada.
- Control óptimo a través de las pantallas digitales
- Funcionamiento sencillo para el usuario y destilación del disolvente necesario con exactitud.
- En todos los paquetes RV 8 se incluye una botella Woulff.



## Versiones Intermediarias

RV 10 Digital

- Baño de calentamiento de agua / aceite universal
- Elevador motorizado con función de parada de emergencia
- Interfaz RS 232
- Volumen del baño de calentamiento optimizado para un calentamiento rápido
- Arranque suave
- Rotación a Intervalo a izquierda-derecha
- Función de temporizador
- Circuitos de temperatura de seguridad
- Mecanismo de liberación para soltar la cristalería fija

# Aplicaciones

1. **Reciclaje de Solventes comunes en el laboratorio:** puede fácilmente ser empleado para extraer acetona pura de la acetona utilizada en laboratorio. El circuito de seguridad ajustable, las tapas y alzas de seguridad son características esenciales para dar el soporte necesario en el trabajo da reciclaje de disolventes.

**2. Extracciones: aceite de planta** o cualquier substancia semejante. No importa cual el **tamaño** de la muestra, el condensador para reflujo asegura los mejores resultados.

Retención de sobras de metanol na fabricação de Biodiesel

**3.Concentración de activos:** Elevando la concentración de agentes médicos como aceite de eucalipto es muy seguro y fácil cuando se trabaja con el evaporador RV 10. Especialmente cuando se trata de muestras caras y debe evitarse los tan comunes “impactos”. Con el nuevo sistema RV 10 de desconexión automática y mecanismo de elevación del frasco de evaporación aseguran que impactos no ocurran.

**4. Secado de polvos (Principalmente en la área farmacéutica):** intervalos entre rotación horaria y anti-horaria. Así es optimizado el secado de polvo para todos los tipos de pigmentos y polvos considerando su frasco específico.

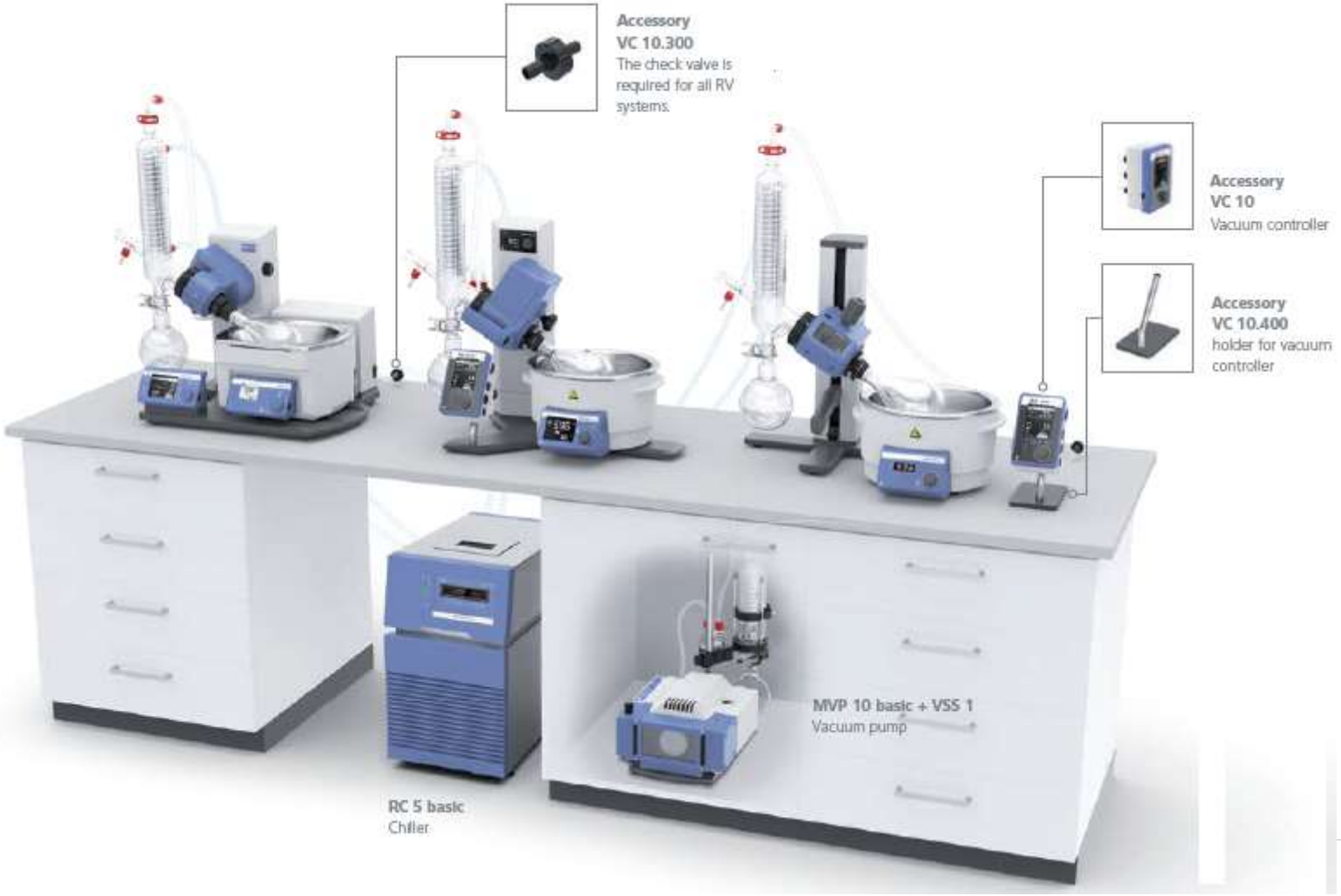
**5. Separación de mezclas no azeutrópicas (que no se separan):** agua y acetona, Algunas de las características únicas del RV 10 son la alta precisión de las configuraciones de temperatura del.

**6. Destilación de substancias sensibles a temperatura a través del vacío:** Con la precisión del RV 10 y constante control del sensor de temperatura del baño, la destilación de substancias sensibles a temperatura es fácilmente realizada a través del vacío. Un ejemplo es la destilación de ajenjo, lo cual, por medio del vacío, conserva el aroma.

## Comparación

PC_RV_20181212-EN.xlsx

# IKA: TODO LO QUE NECESITAS EN UN SOLO LUGAR



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# Gracias!
# Obrigada!
# Thank you!

**Dudas, preguntas?**
**Escribanos: sales@ika.net.br**