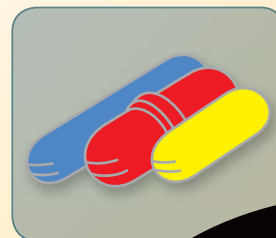


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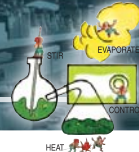
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**100% MADE
IN BRAZIL**



Class 300 Heating mantles with controllers



Model 102E

Model E controller

Aluminum body with epoxy finish, heating device easily substituted (non-disposable device) in fiberglass and nikel-chromium heating resistor; to be used with spherical bottom flasks and has maximum temperature of 300°C. Includes electronic power controller which acts by impulse with adjustable timing through a pilot lamp.

- Reinforced thermal isolation allowing maximum yield, safety and power saving
- Uniform heat distribution due to product quality, expressed in heat yield and perfect flask running

Specifications

Model	11E	12E	22E	52E	102E	202E
Capacity (L)	0.05	0.125	0.25	0.5	1	2
Power (W)	60	80	135	200	330	480
Voltage	115 or 230 V, 50-60 Hz					

Recommendations

Splash Guard for all heating mantles (page L4).

Class 300 Heating mantles



Model 102



Model 5003

Aluminum body with epoxy finish, heating device easily substituted (non disposable device) in fiberglass and nikel-chromium heating resistor; to be used with spherical bottom flasks and has maximum temperature of 300°C.

- Reinforced thermal isolation allowing maximum yield, safety and power saving
- Uniform heat distribution due to product quality, expressed in heat yield and perfect flask running
- **Models 1212, 1202, 2422 and 2402** with two heating areas
- **Model 5003** with three heating areas

Recommendations

For more duration of devices use Fisatom power controllers – *not included*:

- For mantles up to 6 lt. use the controller **Model 407** (page L6)
- For mantles from 10 lt. up to 24 lt. use the controller **Model 408** (page L6)
- For mantles up 50 lt. use 3 controllers **Model 407** (page L6)
- In processes needed of greater accuracy and control of temperature, use a digital controller **Model 411** (page L6)

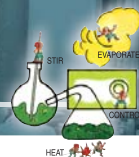
Attention

For mantles up to 12 L have the Ø according to the ISO 1773 and ASTM 1403 regulations.

Specifications

Model	11	12	22	52	102	202	302	642	652	602	1212	1202	2422	2402	5003
Capacity (L)	0.05	0.125	0.25	0.5	1	2	3	4	5	6	10	12	20	24	50
Diameter (mm)	51	69	86	105	131	168	192	208	225	236	280	297	345	371	510
Power (W)	60	80	135	200	330	480	570	600	660	750	1,320	1,500	2,000	2,250	4,000
Voltage	115 or 230 V, 50-60 Hz												230 V, 50-60 Hz		

On request we provide with opening in the bottom starting from the 642 model



Class 300 heating mantles with stirring

A set comprised of a heating mantle and a magnetic stirring device. Injected aluminum body, epoxy finishing, heat unit easy to replace (no disposal equipment) of fiberglass and nickel-chromium heating element, to be use with round-bottom balloons and 300°C maximum use temperature, and stirring device motor fitted in the chassis.

- Temperature and rotations are electronically controlled with rotation ranging from 100 to 1.800 r/min.
- Available in either 115 or 230 V, 50–60Hz
- Supplied with two oval magnetic bars for models **12M**, **22M** and three bars for models **52M**, **102M** and **202M**

Specifications

Model	12M	22M	52M	102M	202M
Capacity (ml)	125	250	500	1.000	2.000
Power (W)	105	160	225	355	520



Heating mantles for Beaker – low form and Kettle (reactor) – Class 300

Aluminum body, epoxy finishing, heating unit easy to replace (non-disposable equipment) in fiberglass and nickel-chromium resistance, for use with Beaker or Kettle (reactor), accommodating 80% of the flask height.

- Operates at temperatures of up to 300°C
- **Model 407** power controller included
- Available in either 115 or 230 V, 50-60 Hz

Specifications

Model	Beaker							Kettle – reactor		
	27	47	67	107	207	307	647	55	105	205
Diameter (mm)	70	80	90	105	132	152	160	95	108	140
Capacity (L)	0,25	0,4	0,6	1	2	3	4	0,5	1	2
Power (W)	135	180	220	330	480	570	600	200	330	480



Class 650 heating mantles

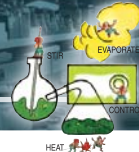
Aluminum body, epoxy finishing, heating element and quartz insulation for use with round-bottom flask and 500°C maximum use temperature.

- Power controller **model 407** included
- Available in 115 or 230 V, 50–60 Hz

Specifications

Model	23	53	103	203
Capacity (L)	0,25	0,5	1	2
Power (W)	300	470	600	850





Class 300 Heating mantles with funnel



Aluminum body with epoxy finish, heating device in fiberglass and nickel-chromium heating resistor; to be used with analytical form funnel in 60° angle (without tap) and has a maximum temperature of 300°C.

- For longer duration use power regulator **Model 407** or temperature controller **Model 411** (not included)
- Available in 115 or 230 V, 50-60 Hz
- Includes hook with silicon support for housing the mantle

Specifications

Model	22F	102F
Cap (cm)	9 to 13	14 to 20
Power (W)	135	330

Class 350 Heating mantles with shielded resistance – *with cooling*



Aluminum body with epoxy finish, heating device in fiberglass reinforced with stainless steel mesh and shielded heating element; to be used with spherical bottom flasks and has a maximum temperature of 350°C.

- For longer duration use power regulator **Model 407** or temperature controller **Model 411** (not included)
- Available in 230 V, 50-60 Hz
- Intercalated with copper serpentine allowing refrigerant circulation with temperatures up to -20° C. It is recommended cooler of liquids Fisatom **Model 850** (not included)

Specifications

Model	102K	202K	302K	652K
Capacity (L)	1	2	3	5
Power (W)	500	650	750	950

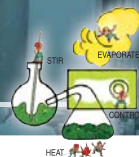
Splash Guards Protector



Protector against splashes designed in silicon to be used on Heating mantles. Helps to prevent damages caused by spillage of chemical products in the device and improves operational safety when working with flammable products.

- Maximum temperature of 200°C

Model	To be used with heating mantles
100.540	12, 12E, 22E, 12M, 22M, 27, 47
100.550	52, 52E, 102, 102E, 52M, 102M, 107, 207
100.510	202, 202E, 202M, 302
100.560	642, 652, 602
100.570	1212, 1202
100.580	2422, 2402



Class 300 Semi spherical Heating mantles with isolating tops

Anti-flammable body with elliptic opening allowing covering flasks of up to 3 necks flask, inner part in fiberglass and nikel-chromium heating resistor; to be used with spherical bottom flask, at a maximum temperature of 300°C.

- Available in 115 or 230 V, 50-60 Hz
- For longer duration use power regulator **Model 407** or temperature controller **Model 411** (not included)

Specifications

Model	108	208	308	658	1208	2408
Capacity (L)	1	2	3	5	12	24
Power (W)	135	200	200	335	600	750



Class 300 Spherical Heating mantles

With excellent flask heating, the device is composed of a 300 class heating mantle, aluminum body with epoxy finish, of simple substitution (non-disposable device) in fiberglass and nikel-chromium heating resistor; to be used with spherical bottom flasks at maximum temperature of 300°C, fixed by three loops.

- Available in 115 or 230 V
- For longer duration use power controller **Model 407**, **408**, **409** or temperature controller **Model 411** (not included)

Specifications

Model	109	209	309	659	1209	2409
Capacity (L)	1	2	3	5	12	24
Power (W)	465	680	770	995	2,100	3,000



Heating mantle tapes

Flexible tapes. Adequate for heating or keeping temperature of metallic or glass tubes. Ends with strings for tying and plug in.

- Made with fiberglass tissue with built-in heating element with double isolation
- For longer duration use power regulator **Model 407** or **409** (not included) appropriate to tape strength
- For adjusting tape compression consult web page

Model 5, Class 300 Standard

- Maximum temperature of use 300°C

Model 9, Class 200

- Maximum temperature of use 200°C
- Silicon cover, recommended for moisture or gaseous environments

Specifications - Models 5 and 9

Length (cm)	1.3	1.3	1.3	1.3	1.3	1.3*	2.5	2.5	3	3	3.2*	5	5	5*	5*
Compression (m)	0.60	1.20	1.80	2.40	5	10	1.2	1.80	2.40	5	10	1.20	1.80	2.40	5
Power (W)	100	200	300	400	830	1,660	400	600	800	1,660	3,000	800	1,200	1,600	3,330

* Only available in 230 V, the rest in 115 or 230 V, 50-60 Hz

Model 7, Class 300, round

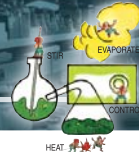
Used in applications of small diameter tubes and connections, made in fiberglass tissue with built-in heating element for double isolation.

- Flexible, ends with strings for tying and plug
- Maximum temperature of use 300°C
- For longer duration use power controller **Model 407** (not included)
- Available in 115 or 230 V, 50-60 Hz

Length (mm)	5	5
Compression (cm)	60	120
Power (W)	80	160



See in our web page how to calculate the ideal size of Fisatom thermal tapes for use.



Power Controller for heaters

Power control which acts by electrical impulses of variable time monitored by a pilot lamp. Ideal for heating mantles and tapes.

- For temperatures above 50° C
- Double voltage
- IP21 protection degree

Model 407

- For heaters with maximum load to 1,150 W in 115 V or 2,300 W in 230 V, 50-60 Hz

Model 408

- It gets two outlets for controlling mantles with two areas of up to 10A each
- For heaters with maximum load to 1,800 W in 115 V or 3,600 W in 230 V, 50-60 Hz

Model 409

- For heaters with maximum load to 1,800 W in 115 V or 3,600 W in 230 V, 50-60 Hz



model 407



models 408 and 409

Digital temperature controller – model 411

Temperature control based PID system with digital indication (environment + 5) up to 400°C, resolution of 0.1°C, accuracy $\pm 1^\circ\text{C}$, alarm, offset and auto-tuning, (adapts heating control to an specific process).

- Available in 115 V (maximum load to 1,150 W) or 230 V (maximum load to 2,300 W), 50-60 Hz
- IP21 protection degree

Includes:

- Support basis on bench;
- 14 cm back fixing rod for fixing support;
- Temperature probe in stainless steel with Pt100 sensor and flexible end (see below available versions).



model 411

Temperature probes



Stainless steel probe with versions 411S2, 411S3 and 411S4



Glass probe supplied with version 423

Available versions

- 411S2** With 304 stainless steel temperature probe of 25 cm
- 411S3** With 304 stainless steel temperature probe of 35 cm (standard supply)
- 411S4** With 304 stainless steel temperature probe of 45 cm
- 411V3** With glass temperature probe of 35 cm

Recommended options

Support 450-1

Aluminum base with epoxy finish, aluminum rod and leveling foot.



Clamp holder 470

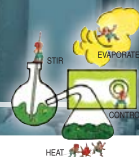
Manufactured in injected and treated aluminum. Makes possible fixing at 90° of both rods



- Conic joint in PTFE of 24/40 or 29/42)
- RBC Traceable calibration certificate
- Communication for Tablet (Android) via Bluetooth™



Fisatom heating mantles with Model R coupled regulator must not be used with Controller Models 407, 408, 409 and 411.



Hot plate Models 501, 502 & 503 – up to 360°C

Injected aluminum hot plate with embedded shielded resistance, making for uniform temperature across the plate extension, temperature controlled by capillary thermostat from 50 to 360°C, pilot lamp, built externally of epoxy lined aluminum sheet.

- Three-line cable with rubber ground wire as per the IEC regulation (prevents damages to the network when touching the hot plate)
- Available in either 115 or 230 V, 50-60 Hz
- Degree of protection IP23

Specifications

Model	501	502	503
Plate diameter (cm)	10	14	18
Power (W)	270	650	1.050

* The product temperature depends of the specific heat and by the amount.



model 501, 502 and 503

Square hot plates

Model 509 & 510 – up to 360°C

Injected aluminum hot plate with embedded shielded resistance, making for uniform temperature across the plate extension, temperature controlled by capillary thermostat from 50 to 360°C, pilot lamp, built externally of epoxy lined steel sheet.


- Three-line cable with rubber ground wire as per the IEC regulation (prevents damages to the network when touching the hot plate)
- Degree of protection IP23

Model 509 & 510 – up to 350°C with digital control

Injected aluminum hot plate with embedded shielded resistance, making for uniform temperature across the plate extension, temperature controlled by PID system, with digital display (environment + 5°C to 350°C), 0.1°C resolution, built externally of epoxy lined steel sheet.

- Three-line cable with rubber ground wire as per the IEC regulation (prevents damages to the network when touching the hot plate)
- Alarm and auto-tuning
- Degree of protection IP25

Optional

- Traceable RBC Calibration Certificate
- Bluetooth™ communication for tablet (Android) 

Specifications

Model	509	510	with digital display	
			509D	510D
W x D x H (cm)	31 x 31 x 18	62 x 31 x 18	31 x 31 x 18	62 x 31 x 18
Power (kW)	1,6	3,2	1,6	3,2
Voltage	115 or 230 V	230 V	115 or 230 V	230 V

* Temperature depends on **thermal capacity** and quantity.



model 509



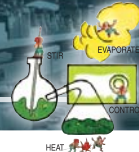
model 510



model 509D



model 510D



Multi position of round Hot plates – with two tests – up to 360°C



models 502-2 and 503-2

Hot plate of unbreakable injected aluminum, with shielded built-in heating element, allowing uniform temperature within the whole extension of the panel. Individual temperature control of the plate by capillary thermostat of 50 to 360°C, pilot lamp, steel external with epoxy finish cover.

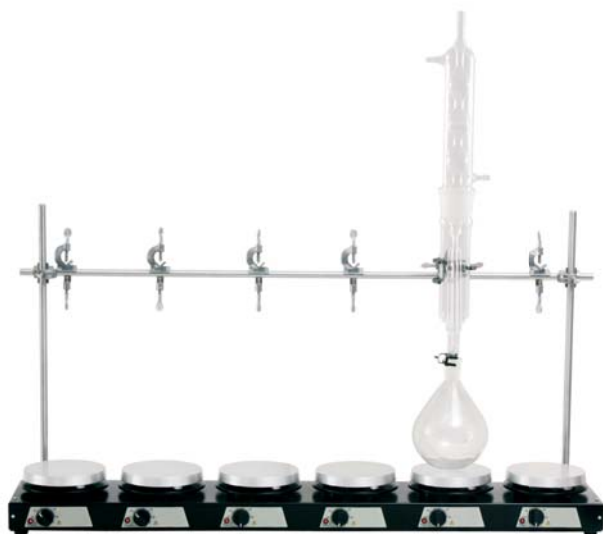
- Cable with ground connection covered in rubber, according to IEC standard (prevents damage to network when it is close to the heating plaque)
- IP23 protection degree

Specifications

Model	L x D x W (cm)	Tests	Power (kW)	Tension
502-2	34 x 20 x 10.5	2 x 1 L	1.3	115 or 230 V, 50–60 Hz
503-2	42.5 x 21 x 10.5	2 x 2 L	2.1	230 V, 50–60 Hz

* Temperature of product depends on quantities and specifics heats.

Multi position of circular top Hot plates – with 3 or 4 tests – up to 360°C



model 502-6

Ideal for Soxhlet extractors using flat bottom flasks. Hot plate of unbreakable injected aluminum, with shielded built-in heating element, allowing uniform temperature within the whole extension of the plate. Individual temperature control of the panel by capillary thermostat of 50 to 360°C, pilot lamp, steel external with epoxy finish cover.

- Cable with ground connection covered in rubber, according to IEC standard (prevents damage to network when it is close to the heating plaque)
- IP23 protection degree
- Includes 2 vertical support, a horizontal support with aluminum clamp holder. Glassware not included

Specifications

Model	L x D x W (cm)	Tests	Power (kW)	Tension
501-6	79 x 20 x 10.5	6 x 0,5 L	1.62	115 or 230 V, 50–60 Hz
502-3	50,5 x 20 x 10.5	3 x 1 L	1.95	
502-6	100 x 20 x 10.5	6 x 1 L	3.9	230 V, 50–60 Hz
503-3	61 x 21 x 10,5	3 x 2 L	3.15	
503-6	122 x 21 x 10.5	6 x 2 L	6.3	

* Temperature of product depends on quantities and specifics heats.

Multi position of Class 300 mantles (Extractor) – for 3 or 6 tests – up to 300°C



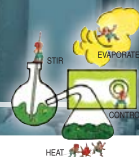
model 52-6

Steel cover body, epoxy finish, heating device of simple substitution (not disposable device) in fiberglass and chromed nickel heating element; to use with spherical bottom flasks at a maximum temperature of 300°C. Built-in individual power regulator.

- Includes 2 vertical support, a horizontal support with aluminum clamps holders
- Glassware not included

Specifications

Model	Capacity (L)	L x D x W (cm)	Power (W)	Tension
22-3	3 x 0.25	60 x 25 x 14	400	115 or 230 V, 50–60 Hz
22-6	6 x 0.25	115 x 25 x 14	810	
52-3	3 x 0.5	60 x 25 x 14	600	
52-6	6 x 0.5	115 x 25 x 14	1,200	
102-3	3 x 1	75 x 30 x 18	990	230 V, 50–60 Hz
102-6	6 x 1	140 x 30 x 18	1,980	



Magnetic stirrer (electronic)

Models 761-5 and 761-10

Magnetic stirrer (electronic, without mobile components).

- Stainless steel body and epoxy finish
- Digital indication of rotation
- Stirs tests of 800 ml each. electronic soft control
- Stirring range: 50 to 1,000 r/min
- IP 52 protection degree
- Double voltage: 115-230 V, 50-60 Hz
- Glassware not included

Specifications

Model	Dimensions L x D x W (cm)	Tests	Power (W)	Includes
761-5	11.3 x 59 x 4.7	5	25	5 stir bars 9x25
761-10	21.4 x 59 x 4.7	10	50	10 stir bars 9x25



model 761-10

model 761-5

Multi position magnetic stirrers

Models 752-3, 752-6 and 753-3 without heating

Stainless steel body, epoxy finish, set of 3 or 6 magnetic stirrers; linear electronic control of individual rotation, pilot lamp, 2 vertical support, a horizontal support, aluminum clamp holders.

- Available in 115-230 V, 50-60 Hz
- IP23 protection degree
- Glassware not included

Specifications

Model	Stirs up to	Ø of plaque	Rotation (r/min)	Power	Dimensions L x D x W (cm)	Includes stir bars Ø x length. (mm)
752-3	3 x 6 L	14 cm	100 to 1,800	90 W	50,5 x 22 x 10	3 pieces of 9 x 25
752-6	6 x 6 L	14 cm	100 to 1,800	180 W	101 x 22 x 10	6 pieces of 9 x 25
753-3	3 x 12 L	18 cm	100 a 1,800	120 W	63 x 26 x 14	3 pc. 9 x 25 / 3 pc. 11 x 37 3 pc. 11 x 52



model 752-3

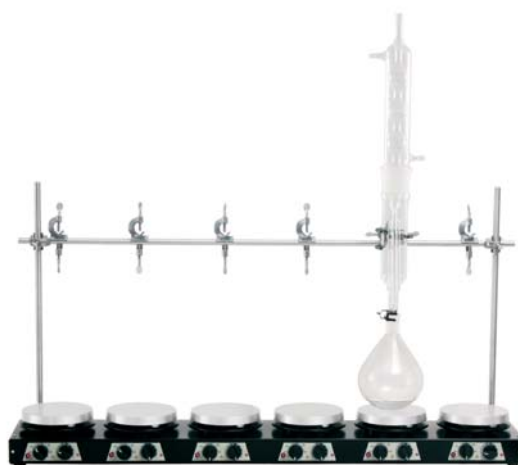
Models 752A-3, 752A-6 and 753A-3 with heating

Stainless steel body, epoxy finish, set of 3 or 6 heating panels in aluminum injected with built-in shielded heating element. Plate temperature controlled by capillary thermostat of 50 to 360°C*; linear electronic control of individual rotation, pilot lamp, 2 vertical support, a horizontal support, aluminum clamps holders.

- Cable with ground connection covered in rubber, according to IEC standard (prevents damage to network when it is close to the hot plate)
- Available in 230 V, 50-60 Hz
- IP23 protection degree
- Glassware not included

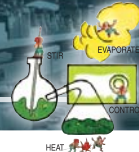
Specifications

Model	Stirs up to	Ø of plaque	Rotation (r/min)	Power	Dimensions L x D x W (cm)	Includes stir bars Ø x length. (mm)
752A-3	3 x 4 L	14 cm	100 to 1,800	2 kW	50.5 x 22 x 10.5	3 pieces of 9 x 25
752A-6	6 x 4 L	14 cm	100 to 1,800	4 kW	101 x 22 x 10.5	6 pieces of 9 x 25
753A-3	3 x 10 L	18 cm	100 to 1,800	3.15 kW	63 x 26 x 15	3 pc. 9 x 25 / 3 pc. 11 x 37 3 pc. 11 x 52



model 752A-6

* Temperature of product depends on quantities and specifics heats.



Magnetic stirrers



model 751



models 752,
753 and 754

Body of injected aluminum, epoxy finish. For greater duration and robustness; aluminum top, linear electronic control of stirring and pilot lamp.

- Available in 115 or 230 V, 50-60 Hz
- Optional:
 - Stir bars in several dimensions and bar retrievers (magnetic)
 - 30 cm back rod that facilitates fixing clamps and clamp holders
 - Clamps and clamp holders

Specifications

Model	751 *	752	753	754
Stirs up to	1 L	6 L	12 L	20 L
Ø of top	10 cm	14 cm	18 cm	18 cm
Height	4.5 cm	10 cm	11.5 cm	11.5 cm
Stir range (r/min)	50 a 1.200	100 a 1.800	100 a 1.800	120 a 1.500
Power	5 W	25 W	40 W	60 W
Includes stir bars Ø x length. (mm)	9 x 25	9 x 25	9 x 25 11 x 37 11 x 52	11 x 52 13 x 65 14 x 76
Protection degree	IP63	IP23	IP23	IP23

* Wholly electronic without mobile components.

Magnetic stirrers hotplate



models 752A,
753A and 754A

Modelos 752A, 753A e 754A

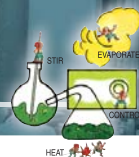
Body of injected aluminum and epoxy finish. For greater duration and robustness; aluminum heating plaque (unbreakable). Built-in shielded heating element that allows reaching uniform temperature along the top. With linear electronic control of stirring and pilot lamp.

- Cable with ground connection rubber covered, according to IEC standard (prevents damages to network when it is close to hotplate)
- On-off key (back)
- Available in 115 or 230 V, 50-60 Hz
- Optional:
 - Stir bars in several dimensions and bar retrievers (magnetic)
 - 30 cm back rod that facilitates fixing clamps and clamps holders.
 - Clamps and clamps holders

Specifications

Model	Stirs up to	Ø of top	Height	Stir range (r/min.)	Power	Temperature control of plate*	Type of control	Includes stir bars Ø x length. (mm)	Indication of stir and temperature	Protection degree
752A	4 L	14 cm	10 cm	100 to 1,800	650 W	50-360°C	Thermostat	9 x 25	Analogical	IP23
753A	10 L	18 cm	11.5 cm	100 to 1,800	1,100 W	50-360°C	Thermostat	9 x 25 11 x 37 11 x 52	Analogical	IP23
754A	14 L	18 cm	11.5 cm	120 to 1,500	1,110 W	50-360°C	Thermostat	11 x 52 13 x 65 14 x 76	Analogical	IP23

* Temperature of product depends on quantities and specifics heats.



Digital magnetic stirrers hotplate

Models 752E and 753E

Body of injected aluminum and epoxy finish. For greater duration and robustness; with aluminum top (unbreakable). Built-in shielded heating element that allows reaching uniform temperature along the top. With linear electronic control of stirring and pilot lamp.

- Digital control and indication of temperature of top and stirring
- Thermal fuse of safety
- Cable with ground connection rubber covered, according to IEC standard (prevents damages to network when it is close to hotplate)
- On-off key (back)
- Available only in 230 V, 50 or 60 Hz
- Optional:
 - Stir bars in several dimensions and stir bar retriever
 - 30 cm back rod that facilitates fixing grippers and nuts
 - Grippers and nuts



model 752E



model 753E

Specifications

Model	Stirs up to	Ø of top	Height	Stir range (r/min.)	Power	Temperature control tope*	Type of control	Includes stir bars Ø x length. (mm)	Indication of stirring and temperature	Protection degree
752E	4 L	14 cm	10 cm	120 to 1,200	650 W	50-300°C	Digital	9 x 25	Digital	IP22
753E	10 L	18 cm	11.5 cm	120 to 1,200	1,100 W	50-300°C	Digital	9 x 25; 11 x 37; 11 x 52	Digital	IP22

* Temperature of product depends on quantities and specifics heats.

Digital magnetic stirrers hotplate and temperature external control

Model 753D - Control of temperature top and product

Body of injected aluminum and top epoxy finish. For greater duration and robustness, with aluminum heating top (unbreakable). Built-in shielded heating element that allows reaching uniform temperature along the top. With linear electronic stir control and pilot lamp. It allows control of temperature in the top or the stirred product through the external sensor.

- Thermal fuse of safety
- Control of top temperature by PID system from 50° C to 300°C
- Equipped with external temperature stainless steel 20 cm probe, with Pt100 sensor, rod back of 30 cm, 3 magnetic bars of 9 x 25, 11 x 37, and 11 x 52 (Ø for compression in mm) and clamps **models 462 and 470**
- Cable with ground connection rubber covered, according to IEC standard (prevents damages to network when it is close to heating top)
- Alarm and auto-tuning (adapts heating control to a specific process)
- IP22 protection degree

Specifications

Model	Stirs up to	Ø of plaque	Height	Rotation strip	Resolution	Power	Tension
753D	10 L	18 cm	11.5 cm	120 a 1,200 r/min	50 r/min	1,100 W	230 V, 60 Hz

* Temperature of product depends on quantities and specifics heats.



model 753D



Stir bars

Chemical-resistant PTFE-coated magnetic bar, of high durability, no weld, single mold, preventing penetration of products inside (impermeable), non-disposable, with high-intensity alnico V magnets. Resistant to temperatures from -270 to +260°C



For viscous products

16 x 100 mm
13 x 80 mm
13 x 65 mm
10 x 50 mm
9 x 40 mm
9 x 30 mm



Triangular

14 x 15 x 50 mm
13 x 13 x 40 mm
10 x 10 x 25 mm



Standard

7 x 50 mm
7 x 40 mm
7 x 30 mm
7 x 25 mm
7 x 20 mm
5 x 15 mm
3 x 10 mm
3 x 5 mm



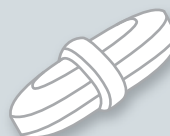
Egg-shaped

Recommended for round-bottomed balloons
500 ml or more - 14 x 40
250 ml - 10 x 30
50 ml - 8 x 20



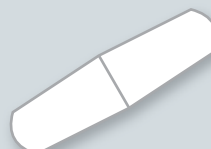
With spinning ring

16 x 80 mm
14 x 76 mm
11 x 52 mm
11 x 37 mm
9 x 25 mm



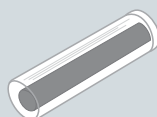
Octagonal

11 x 52 mm
11 x 37 mm
9 x 25 mm



Angular

14 x 61 mm
10 x 38 mm
8 x 22 mm



Glass

Coated glass
10 x 30 mm



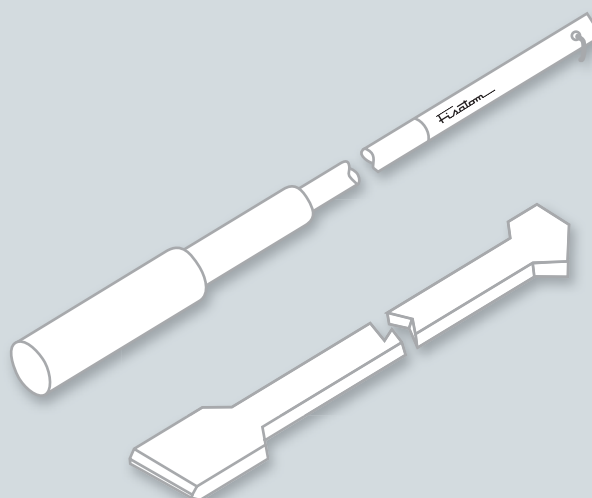
Colored

7 x 30 mm (blue)
9 x 25 mm (red)
7 x 20 mm (yellow)



Double stir bars

For test tubes
Ø 22 mm x 10 mm



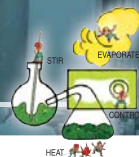
Stir bar retriever

13 x 350 mm

Spatula

20 x 20 x 260 mm

Tolerance of measures ± 1 mm



Thermostatic bath – model 550

Aluminum body with epoxy finish, Ø 25 x 12 high stainless steel container capable of holding up to 4 liters, controlled by capillary thermostat with control ranging from 50 to 120°C and $\pm 2^\circ\text{C}$ capacity, pilot lamp, 1200 W power.

- Internal platform supplied
- Degree of protection IP02
- Available in either 115 or 230 V, 50–60 Hz
- Optional: 4-ring cover



model 550

Thermostatic bath – model 553

Aluminum body with epoxy finish, Ø 25 x 12 high stainless steel container capable of holding up to 4 liters, controlled by capillary thermostat with control ranging from 50 to 120°C and $\pm 2^\circ\text{C}$ capacity, pilot lamp, power of 1200 W.

- Internal platform supplied
- Thermal insulation
- Degree of protection IP02
- Available in either 115 or 230 V, 50–60 Hz
- Optional: 4-ring cover



model 553

Thermostatic bath – model 557

Aluminum body with epoxy finish, Ø 25 x 12 cm high stainless steel container capable of holding up to 4 liters, thermal insulation, temperature controlled by PID system with digital display (environment $+5^\circ\text{C}$ to 175°C), stability of $\pm 0.5^\circ\text{C}$, alarm, auto-tuning, and resolution of 0.1°C .

- Power of 1200 W
- Internal platform supplied
- Degree of protection IP02
- Available in either 115 or 230 V, 50 or 60 Hz
- Optional: 4-ring cover



model 557

Thermostatic bath – model 558

Aluminum body with epoxy finish, Ø 24 x 11 cm high stainless steel semi-spherical container, capable of holding up to 3 liters, thermal insulation, temperature controlled by PID system with digital display (environment $+5^\circ\text{C}$ to 150°C), stability of $\pm 0.5^\circ\text{C}$, Pt100, alarm, auto-tuning, and resolution of 0.1°C .

- Power of 1000 W with built-in resistance (makes cleaning easier)
- Degree of protection IP02
- Available in either 115 or 230 V, 50 or 60 Hz
- Optional: 4-ring cover



model 558

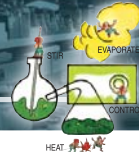
Thermostatic bath – model 555

With magnetic stirring, electronic rotation control from 150 to 1200r/min. Aluminum body with epoxy finish, Ø 25 x 12 cm high stainless steel container, capable of holding up to 4 liters, thermal insulation, controlled by capillary thermostat, control ranging from 50 to 120°C, and stability of $\pm 2^\circ\text{C}$.

- Power of 1200 W
- Internal platform and 3 magnetic bars supplied
- Degree of protection IP02
- Available in either 115 or 230 V, 50-60 Hz
- Optional: 4-ring cover



model 555



Rectangular heating baths – without circulation



model 562



models 572, 578 and 588

Heating baths with aluminum, body with epoxy finishing, 304 stainless steel rectangular tank, without joints, with round corners. Digital control of temperature by PID system, alarm, offset, auto-tuning (adapts heating control to a specific process), drainage and internal platform. Indicated for use with oil or distilled water.

Specifications

Model	562	572	578	588
Capacity (L)	6	20	20	30
Outer dimensions (cm) – L x D x H	24 x 41 x 23	59 x 41 x 22	59 x 41 x 22	60 x 41 x 28
Useful dimensions (without internal platform) (cm) – L x D x H	15 x 29 x 15	49 x 29 x 15	49 x 29 x 15	49 x 29 x 20
Useful dimensions (with internal platform) (cm) – L x D x H	15 x 29 x 12	49 x 29 x 12	49 x 29 x 12	49 x 29 x 18
Power (W)	900	1.400	2.000	2.500
Temperature range	(ambient + 5) up to 95 °C	(ambient + 5) up to 95 °C	(ambient + 5) up to 175 °C	(ambient + 5) up to 175 °C
Temperature control	Digital	Digital	Digital	Digital
Resolution °C	± 0.1	± 0.1	± 0.1	± 0.1
Stability °C	± 1	± 1	± 1	± 1
Cover cap	Included	Included	Optional	Optional
6 mouths cap	—	Optional	Optional	Optional
Racks for test tubes	Included code 200.290	Included 1-piece code 200.290	—	—
Support up to __ racks	1	4	—	—
Traceable calibration certificate RBC	Optional	Optional	Optional	Optional
Tension of use	115 or 230 V, 50 or 60 Hz	115 or 230 V, 50 or 60 Hz	230 V, 50 or 60 Hz	230 V, 50 or 60 Hz
Weight (kg)	5.6	8.1	8.1	9.2

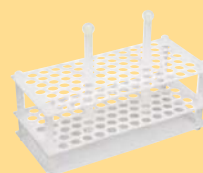
Accessories



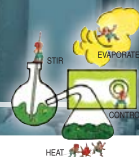
Cover cap 6 cm high:
code 260.470 (model 562) and
code 260.450 (other models)



6 mouths cap – code 260.440



Racks for test tubes:
For 21 tubes of 16 to 20 mm – code 200.270
For 48 tubes of 14 to 15 mm – code 200.280
For 81 tubes of 10 to 12 mm – code 200.290



Rectangular heated circulating baths

Heating baths with circulation pump, metallic body finished in epoxy (polyepoxide), stainless steel container, without joints, with round corners. Digital control of temperature by PID system, alarm, offset, auto-tuning (adapts heating control to a specific process), drainage and internal platform. Indicated for use with low viscosity oil or water.



models 577 and 587

Recommended options



Cover cap 6 cm height – code 260.630



4 mouths cap – code 260.430

Traceable calibration certificate RBC

Specifications

Modelo	577	587
Capacity (L)	20	30
Outer dimensions (cm) – L x D x H	36 x 57.5 x 36	36 x 57.5 x 42
Useful dimensions (without internal platform) (cm) – L x D x H	29 x 34 x 15	29 x 34 x 20
Useful dimensions (with internal platform) (cm) – L x D x H	29 x 34 x 12	29 x 34 x 17
Power (W)	1,500	2,200
Temperature range	(ambient + 5) up to 175 °C	(ambient + 5) up to 175 °C
Temperature control	Digital	Digital
Resolution °C	± 0.1	± 0.1
Stability °C	± 0.5	± 0.5
Cover cap	Opcional	Opcional
4 mouths cap	Opcional	Opcional
Bomba de circulação	6 L/min	6 L/min
Traceable calibration certificate RBC	Optional	Optional
Tension of use	230 V, 50 or 60 Hz	230 V, 50 or 60 Hz
Weight (kg)	10	13

Immersion thermostat with circulation – model 597

Allows fixing in receptacle with up to 3 cm thickness and 15 cm of minimum depth. Metallic body with epoxy finishing, protected against vapor, safety thermostat against lack of water, 6 L/min circulation pump. Temperature microprocessor control of temperature by PID system with digital indication, (ambient + 5 °C to 175°C), resolution of 0.1°C, stability of ± 0.5°C, Pt100, alarm, offset and auto-tuning (adapts heating control to a specific process). Indicated for use with low viscosity oil or water.

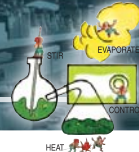
- Power 1,500 W
- Available in 230 V, 50-60 Hz

Optional:

- Traceable calibration certificate RBC



model 597



Refrigerated heating circulator bath



model 861

Model 861

Refrigerates or heats. Allows internal or external circulation with variable flow. Digital PID control of temperature with Pt100 probe. To be used with water or ethylene glycol.

- Metallic body with epoxy finishing, hermetic compressor with ecological gas and stainless steel container of 9 L with drainage.
- Temperature range: -20°C to 95°C .
- Resolution: 0.1°C , stability $\pm 0.5^{\circ}\text{C}$ to $\pm 3^{\circ}\text{C}$, depending on the product temperature
- Circulation of pump of 120 L/hr without load. Care 5.5 m with flow rate 0
- Useful space of container: 14 x 29 x 13 (length x depth x height)
- Heating power: 1,500 W
- Consumption of compressor: 620 W
- Dimensions: 38 x 50 x 53 (length x depth x height)
- Available in 230 V, 60 Hz
- Cap
- Weight: 36 Kg

Recommended options

Table-Lab Model 455R



Stainless steel platform and feet with dimensions 50 x 50 x 50 cm with 76 mm wheels with brakes.

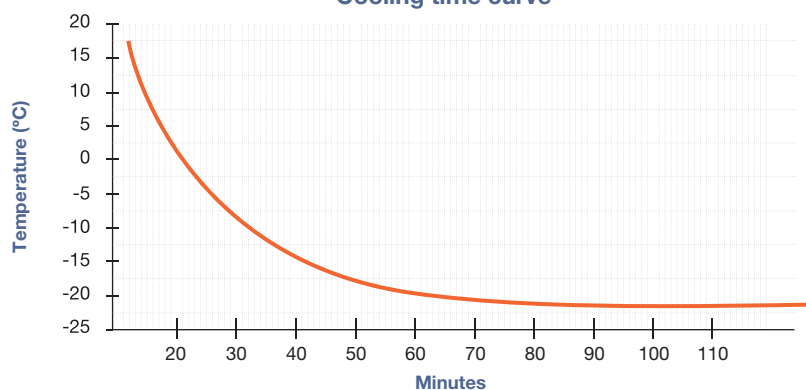
Immersion coil model 170.030



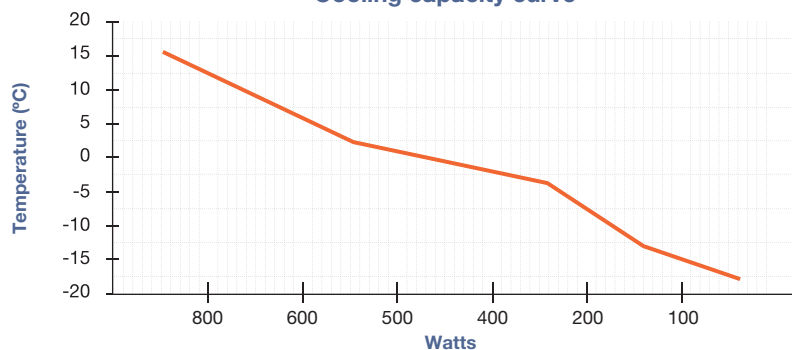
Allows fixing receptacle with up to 3 cm of thickness and 15 cm minimum depth.

Traceable calibration certificate RBC

Cooling time curve*



Cooling capacity curve*



* Tests with ethylene glycol solution/water (50%) at ambient temperature (20°C)

Disperser / homogenizer – Model 718

For dispersion of solutions up to 10 mPas in high rotation, digital tachometer and timer that turns off automatically the device after 5 minutes in use, with recharge possibility. Maximum rotation 10,000 r/min, depending on product viscosity. Device includes a 304 stainless steel element of dispersion.

- Capacity up to 1 L.
- IP40 protection degree
- Available in 230 V, 60 Hz

Recommended options

Fastening clamps 475

Tin band covered in epoxy, stainless steel rod and silicon strip (page L30).



Clamp holder 471

Manufactured with injected and treated aluminum (page L30).



Support 450-2

Epoxy covered aluminum base, stainless steel rod and leveling foot.



Dispersion elements available in stainless steel 304



Model 360.080 – Ø of element 9.5 mm with 1 mm opening, usable, of 55 to 80 mm of depth of product



Model 300.120 – Ø of element 25 mm with 1 mm opening, usable, of 55 to 100 mm of depth of product (*standard supply*)



Model 300.110 – Ø of element 25 mm with 3 mm opening, usable, of 55 to 100 mm of depth of product



Mechanical stirrers for aqueous solutions

Models 710 and 711

Mechanical stirrers for products with viscosity like water, indicated for stirring liquids, rotation adjustable by electronic circuit, body of injected aluminum and aluminum cap with epoxy finishing.

Specifications

Model	710	711
Stirs up to	1.5 L	6 L
Maximum viscosity	Up to 100 mPas	Up to 100 mPas
Rotation range	170 to 2.000 r/min.	170 to 2.000 r/min.
Noise level	51 dB-C	51 dB-C
Consumed power	25 W	40 W
Type of propeller supplied	Paddle Ø 5 cm	Naval Ø 6 cm
Propeller pole	Ø 6,3 x 180 mm	Ø 6,3 x 180 mm
Mandrel	Manual adjustment	Manual adjustment
Protection degree	IP43	IP43
Tension	115 or 230V, 50-60Hz	115 or 230V, 50-60Hz
Weight	0.6 kg	0.9 kg



model 710



model 711

Opcionais recomendados

Support 450-1

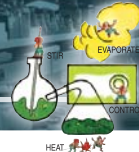
Epoxy covered aluminum base, aluminum rod and leveling foot.



Clamp holder 470

Manufactured with injected and treated aluminum. Makes possible fixing at 90° of both poles with Ø up to 16 mm.





Mechanical stirrers



model 715W



model 713DX



model 713W

Mechanical stirrers for liquids, creams, etc.; microprocessor, automatic torque compensation (rotation is constant independently of product viscosity). Digital tachometer and overloading alert. **Models 713DX and 713W** have timer/chronometer for time programming, allowing standard production

Specifications

Modelo	715W	713DX	713W
Stirs up to	20 L	25 L	25 L
Viscosity (mPas)	Middle up to 10,000	High rotation axis: middle up to 10,000 High torque axis: up to 100,000	
Rotation range (r/min)	170-2,000	High rotation axis: middle up to 170-5,000 High torque axis: 10-280	
Digital tachometer	Yes	Yes	Yes
Timer/Chronometer	No	Yes	Yes
Overload alert	Yes	Yes	Yes
Torque (approximate)	5 N.cm	High rotation axis: 5 N.cm High torque axis: 9 N.cm	
Noise level	51 dB-C	57 dB-C	57 dB-C
Useful power	16 W	16 W	16 W
Propeller type/supplied	Ø 9,5 x 280 mm – Naval Ø 6 cm		
Mandrel	Quick manual adjustment	Metallic with key	Quick manual adjustment
Protection degree	IP41	IP40	IP40
Tension	Double 115–230 V, 50–60 Hz		
Weight	2.1 kg	2.3 kg	2.3 kg
Polycarbonate protection for mandrels	—	Optional	—

Recommended options

Fastening clamps 475

Tin band covered in epoxy, stainless steel rod with Ø 13 x 200 mm of compression and silicon belt (maximum temperature of use 180°C). For fixing in support use also nut 470.



Clamp holder 471



Manufactured with injected and treated aluminum. Allows fixing both rods at 90°. A side with Ø 16 mm and another of 13 mm.

Mandrel protection

Manufactured in polycarbonate, only for use with **model 713DX**.



Support 450-2

Epoxy covered aluminum base, stainless steel rod and leveling foot.



Mechanical stirrers



model 722



model 723

Recommended optional

Fastening clamps 475

Tin band covered in epoxy, stainless steel rod with Ø 13 x 200 mm of compression and silicon belt (maximum temperature of use 180°C). For fixing in support use also nut 470.



Clamp holder 474



Manufactured with injected and treated aluminum. Allows fixing both rods at 90°. A side with Ø 16 mm and another of 19 mm.

Support 450-3

Epoxy covered aluminum base, stainless steel rod and leveling foot.



Mechanical stirrers for viscous products such as creams, gels, etc. Digital tachometer metallic body, white epoxy finishing, through axis allowing adjustment of rod height, with two stirring ranges allowing ideal selection for homogenous product, rod fixing mandrel.

Specifications

Model	722	723
Stirs up to	60 L	150 L
Viscosity (mPas)	High up to 80,000	High up to 100,000
Rotation range (r/min)	110 – 500 400 – 2,000	90 – 400 300 – 1,600
Digital tachometer	Yes	Yes
Type of control	Mechanical	Mechanical
Torque (approximate)	120 – 35 N.cm 500 – 130 N.cm	150 – 60 N.cm 750 – 210 N.cm
Noise level	66 dB-C	63 dB-C
Consumed power	255 W	350 W
Useful power	60 W	155 W
Propeller type/supplied	Ø 9,5 x 600 mm – Naval Ø 12 cm	
Mandrel	Metallic with key	
Protection degree	IP23	IP23
Tension	115 or 230 V, 50–60 Hz	
Weight	6.9 kg	7.8 kg



Mechanical stirrer with planetary stirring base



model 713DP

With Model 713DX

Designed for homogenization of greater quantities of creams and other products. Prevents repetitive movements. May be supplied separated from stirrer, becoming universal for any device.

- Network tension: double voltage in 115-230 V, 50-60 Hz
- Capacity for 5 kg of cream

The complete device includes:

- Revolving base with adjustable rotation control up to 50 r/min
- 304 stainless steel tank of 7.5 L, with handles for facilitating gripping
- Scraper in PTFE that avoids accumulation of material in the receptacle lateral sides
- Scraper and clamp holder support
- 9 cm anchor propeller, ideal for high viscosity products
- Mechanical stirrer **model 713DX** with 6 cm Ø naval propeller

All models include

- Stainless steel anchor propeller
- Scraper in PTFE



model 722P / 723P

With Models 722 and 723

Designed for homogenization of greater quantities of creams and other products. Prevents repetitive movements. May be supplied separated from stirrer, becoming universal for any device.

- Network tension: double voltage in 115-230 V, 50-60 Hz
- Capacity for 10 kg of cream for Model 722 and 12 kg of cream for **Model 723**

The complete device includes:

- Revolving base with adjustable rotation control up to 50 r/min
- 304 stainless steel tank of 14 L, with handles for facilitating gripping
- Scraper in PTFE that avoids accumulation of material in the receptacle lateral sides
- Scraper and clamp holder support
- 13 mm anchor propeller, ideal for high viscosity products
- Mechanical stirrer **models 722 and 723** with 12 cm Ø naval propeller



Access demo video
with QR code

Watch demo video of use of Planetary
Support stirrers in:

www.fisatom.com.br/base_de_agitacao_planetaria.html

Agitador mecânico com suporte planetário e aquecimento

With Model 713DX

With heating, designed for homogenization of greater quantities of creams and other products. Prevents repetitive movements. May be supplied separated from stirrer, becoming universal for any device.

- Network tension: 230 V, 50 or 60 Hz
- Capacity for 5 kg of cream
- Adjustable temperature of 50 to 90° C
- Heating power: 1,500 W

The complete device includes:

- Revolving base with heating and adjustable rotation control up to 50 r/min
- Alarm
- Scraper that avoids accumulation of material in the receptacle lateral sides. It reads product temperature to be shown in the controller
- 304 stainless steel tank of 7L, with handles for facilitating gripping
- 13 cm anchor propeller, ideal for high viscosity products
- Mechanical stirrer model 713DX with 6 cm Ø naval propeller

All models include

- Stainless steel anchor propeller
- Scraper in PTFE with temperature sensor



With Models 722 and 723

With heating, designed for homogenization of greater quantities of creams and other products. Prevents repetitive movements (LEER). May be supplied separated from stirrer, becoming universal for any device.

- Network tension: 230 V, 50 or 60 Hz
- Capacity for 10 kg of cream for Model 722 and 12 kg of cream for Model 723
- Adjustable temperature of 50 to 90° C
- Heating power: 1,500 W

The complete device includes:

- Revolving base with heating and adjustable rotation control up to 50 r/min
- Alarm
- 304 stainless steel tank of 7L, with handles for facilitating gripping
- Scraper that avoids accumulation of material in the receptacle lateral sides. It reads product temperature to be shown in the controller
- 13 cm anchor propeller, ideal for high viscosity products
- Mechanical stirrer **models 722 and 723** with 12 cm Ø naval propeller



model 713DPA



model 722PA / 723PA



Access demo video
with QR code



STIRRING

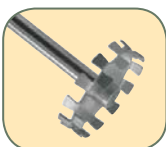
PROPELLER TYPE



PADDLE



CENTRIFUGE



NAVAL
3 PADDLES



ANCHOR



BLADE ⁽²⁾



BASCULE ⁽²⁾



NAVAL



NAVAL



BASCULE



AÇO INOX 304

PTFE ⁽³⁾

ECTFE ⁽³⁾

Mechanical stirrer models

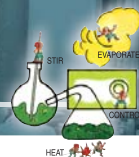
710	711	713 (all models)		715W	722 e 723
		High rotation axis	High torque axis		
Ø 5cm and Rod 18cm Code 200.040 ⁽¹⁾	—	—	Ø 10cm and Rod 28cm Code 200.380	—	Ø 10cm and Rod 60cm Code 200.390
—	—	Ø 3cm and Rod 28cm Code 200.350 Ø 5cm and Rod 28cm Code 200.360	—	Ø 3cm and Rod 28cm Code 200.350 Ø 5cm and Rod 28cm Code 200.360	Ø 8cm and Rod 60cm Code 200.370
—	Ø 6cm and Rod 18cm Code 200.120 ⁽¹⁾	Ø 6cm and Rod 28cm Code 200.430 ⁽¹⁾	Ø 8cm and Rod 28cm Code 200.440	Ø 6cm and Rod 28cm Code 200.430 ⁽¹⁾	Ø 8cm and Rod 60cm Code 200.450 Ø 12 cm and Rod 60cm Code 200.460 ⁽¹⁾
—	—	—	Ø 6cm and Rod 22cm Code 200.180 Ø 9 cm and Rod 28cm Code 200.160	—	Ø 13cm and Rod 62cm Code 200.190
—	—	Closed Ø 1,5cm Open Ø 10cm Rod 28cm Code 200.470	—	Closed Ø 1,5cm Open Ø 10cm Rod 28cm Code 200.470	—
—	—	—	For JC > 24/40 Ø 7cm and Rod 28cm Code 200.400 For JC > 34/45 Ø 9cm and Rod 28cm Code 200.410	—	For JC > 24/40 Ø 7cm and Rod 60cm Code 200.480 For JC > 34/45 Ø 9cm and Rod 60cm Code 200.420
—	—	Ø 7cm and Rod 28cm Code 200.720	—	Ø 7cm and Rod 28cm Code 200.720	Ø 7cm and Rod 35cm Code 200.730
—	—	Ø 6cm and Rod 28cm Code 200.490	—	Ø 6cm and Rod 28cm Code 200.490	Ø 12cm and Rod 60cm Code 200.500
—	—	—	For JC > 24/40 Ø 7cm and Rod 28cm Code 200.510 For JC > 34/45 Ø 9cm and Rod 28cm Code 200.530	—	For JC > 24/40 Ø 7cm and Rod 60cm Code 200.520 For JC > 34/45 Ø 9cm and Rod 60cm Code 200.540

All propeller models go with rod.

(1) Standard device supply.

(2) Type bascule and blade – For access in conic joints for round bottom balloons over 1L. Close for entering balloon.

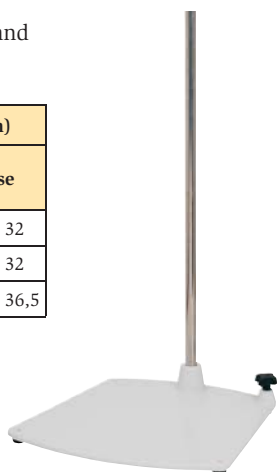
(3) Propeller in PTFE (manufactured in pure PTFE, resistant up to 250° C) or covered in ECTFE (manufactured in stainless steel 304 and covered in ECTFE, resistant up to 180° C). Maximum rotation 800 r/min.



Universal Support

Aluminum base with epoxy finishing and leveling foot.

Model	Shaft	Dimensões (cm)	
		Ø x Altura total	Base
450-1	Aluminum	1,3 x 50	23 x 32
450-2	Stainless steel	1,3 x 67	23 x 32
450-3	Stainless steel	1,9 x 67	37,5 x 36,5



Mechanical seals

Made of PTFE with a Ø 3/8" borehole (other passages can be ordered).

- Available for the conical joints below:

JC 24-40 – code 200.550

JC 29-42 – code 200.560

JC 34-45 – code 200.570

JC 45-50 – code 200.580

JC 55-50 – code 200.590



Rotate and draw system for removal of seal from reactor

Lab Lifts

For vertical positioning of equipment.

- Sturdy construction: base and platform are made of stainlesssteel and the arms are of brass



Model	Platform	Height (H)		Weight	Supports up to
		min.	max		
453-1	10 x 10 cm	4,5 cm	17 cm	0,9 kg	7 kg
453-2	20,5 x 20 cm	6,8 cm	35 cm	3,9 kg	10 kg
453-3	27,5 x 22 cm	6,8 cm	50 cm	5 kg	10 kg

PTFE Beakers

PTFE beakers are resistant to most chemical reagents, very low friction coefficient (no adherence). Easy to clean, unbreakable, autoclavable, and may be sterilized by any means.

- Supports temperatures ranging from -270°C to + 260°C
- Opaque white

Capacity	Height x Diameter *
50 ml	60 x 42 mm
100 ml	77 x 54 mm
150 ml	86 x 55 mm
250 ml	98 x 68 mm
400 ml	115 x 82 mm
600 ml	125 x 92 mm
1.000 ml	148 x 108 mm

* Average internal dimensions, without nozzle



Table-Lab model 455

Ideal for planetary stirrer, liquid cooler, and baths with refrigeration.

- Aluminum base with epoxy finishing and leveling foot
- Dimension: 47 x 49 x 50 cm
- 76 mm rollers with brake



model 455R

Table-Lab model 457 and 457R with protection

Identical to the 455 enhanced lateral protection model for planetary stirrer.

- Stainless steel platform and legs
- Dimensions: 50 x 50 x 100 cm
- Model 457** without caster
- Model 457R** with 76mm castors with brake



model 457

Rotary evaporator – models 802, 803 and 804

Rotary evaporator - model 802



Vacuum rotary evaporator, suitable for evaporative, concentration of solutions, recovery of solvents and rapid distillation of liquids. Composed of:

- Motor
- Heating bath
- Vertical condensation column with serpentine doubles
- Engine and glass assembly support provided
- Continuous feedback system and vacuum break
- Evaporation and condensation balloons with capacity of 1000ml
- Fully self-compensating PTFE coupling to wear allows vacuum up to 4mbar
- Available in either 115 or 230 V, 50-60 H
- A vacuum pump (not supplied) is required for operation, we recommend models with PTFE protection: **821T**, **822T**, **822TV**, **825T**, **826T**, **826TT** and **828T** (see pages L28 and L29)

Optional extras:

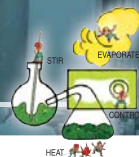
- Balloons from 100 to 2000 ml
- Other types of glass (page L26)
- For better operation:
 - Liquid cooler **model 850** (page L26)
 - Cooling bath **model 861** (page L16)
 - Temperature indicator (page L6)

Rotary evaporator with digital bath – model 803



Rotary evaporator with digital bath and motorized lifting – model 804





Rotary evaporator – models 802, 803 and 804

Specifications

Models		802	803	804
Bath	Temperature	50 a 120°C	50°C a 150°C	50°C a 150°C
	Precision	± 3 °C	± 1 °C	± 1 °C
	Control	Thermostat	Digital – PID	Digital – PID
	Digital Display	—	Yes	Yes
	Pt100 Sensor	—	Yes	Yes
	Alert	—	Yes	Yes
	Resistance	Apparent	Embedded	Embedded
	Capacity	4 L	3 L	3 L
	Thermal insulation	—	Yes	Yes
	Model	550	558	558
	Power	1.200 W	1.000 W	1.000 W
Motor (fully closed)	Digital tachometer	Yes	Yes	Yes
	Power	80 W	80 W	80 W
	Engine speed control	5 a 200 r/min	5 a 200 r/min	5 a 200 r/min
Support	Lifting stand	Manual	Manual	Electrical – 12W
Glassware	Compensator	Vertical (*)	Vertical (*)	Vertical (*)
	Evaporation flask	JC 24/40 – 1.000 ml (*)	JC 24/40 – 1.000 ml (*)	JC 24/40 – 1.000 ml (*)
	Condensing flask	JE 35/20 – 1.000 ml (*)	JE 35/20 – 1.000 ml (*)	JE 35/20 – 1.000 ml (*)
	Condensing	Exchange area 1.200 cm ²	Exchange area 1.200 cm ²	Exchange area 1.200 cm ²
Full power		1.280 W	1.080 W	1.092 W
Dimensions (L x D x W)		55 x 45 x 77 cm	55 x 45 x 77 cm	55 x 45 x 77 cm
Weight		13 kg	15 kg	16 kg

(*) Included in the supply, on request can be changed, balloons from 100 to 2000 ml, condenser per diagonal or optional cooling trap.

Recommended options

Liquid cooler “Chiller” – model 850

Suitable to be used with rotary evaporators. It uses ecological gas. Temperature adjustable from 8 to 20 C. See full description [page L26](#).



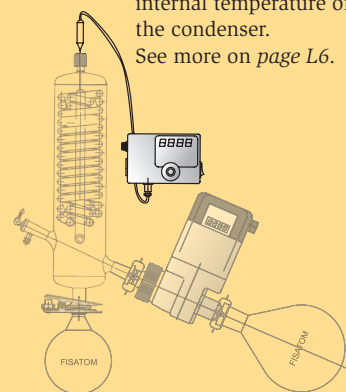
Vacuum pump

Vacuum pump with chemical resistance and vacuum control. See full description on [page L29](#).



Temperature Indicator – model 411

Easier way to read the internal temperature of the condenser. See more on [page L6](#).





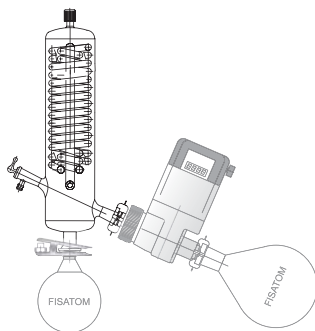
For Rotary Evaporators and Vacuum Pumps



Liquids cooler "Chiller" – Model 850

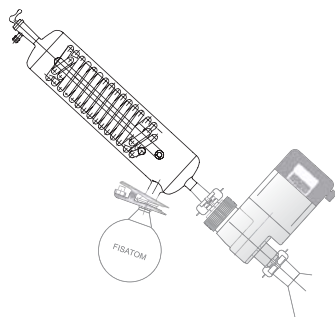
Closed circuit "Chiller" with external circulation, suitable for use with rotary evaporator or other equipment requiring refrigeration, hermetic compressor, ecological gas, circulating pump of 120 L / hour (without load), pressure 5.5 with flow rate 0, container with capacity of 6L, inlet and outlet for coolant, cooling power 780W at 10° C, temperature adjustable from 8° C to 20° C.

- Equipped with visual lever and digital thermometer
- Outer in Steel sheet in epoxy finishing electrostatic, resistant to corrosive chemical products and wheels for facilitating locomotion
- To be used at temperatures up to 28° C in the working place
- Motor power 450 W
- Available in 230 V, 60 Hz
- Dimensions 38 x 50 x 48 (length, depth, height)
- Weight 36 kg
- Optional:
 - Table-Lab (see page L23)
 - External coil (see page L16)



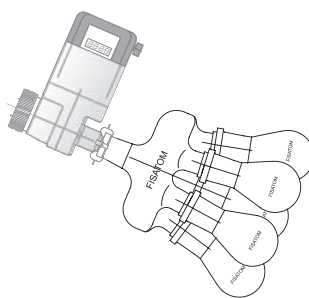
Vertical Condenser

For normal distillation.



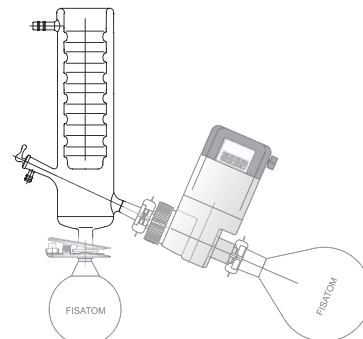
Diagonal Condenser

For normal or reflux distillation.



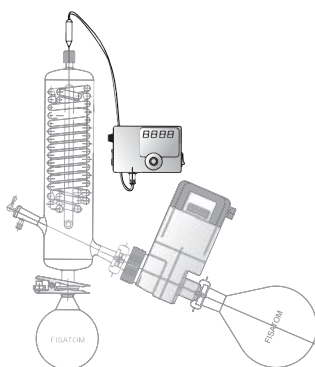
"Spider" type Evaporation Balloon

Comprised of a balloon distributor and five 50 ml balloons for multiple distillations.



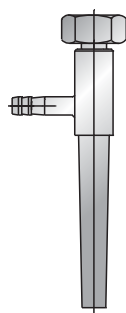
"Cooling-Trap" Condenser

For distillation of substances of low ebullition point, thermal sensitive products or lyophilization and drying by freezing (or, use refrigerator Model 850, above).



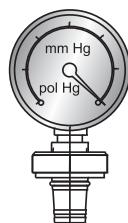
Temperature meter 411

With stainless steel probe facilitates reading internal temperature of condenser (page. L6).



Vacuum aspirator pump VAC 10

High yield, made of chromed brass, 3/4 screw thread.



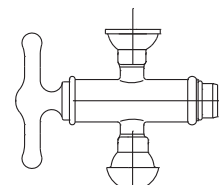
Analogical Vacuum gauge VAC 15

Graded in mm/Hg accompanied of J.C. 19/34 and remover.



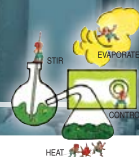
Gas washing Bottle TRAP 05

Of gases. Capacity for 500 ml.



Rotary evaporator valve REG 02

Interconnects condenser to balloon with product facilitating unloading in a continuous process.



Model 820



Model 825



Model 826



Model 828

Model 820

Vacuum/pressure pumps, for non-corrosive gases. Centrifugal, oil type, vacuum pressure regulators, manometer, vacuum, pressure gauge, inlet and outlet filters. Add 300 ml of oil. The parts in contact with the gases are manufactured in iron, brass and Celeron.

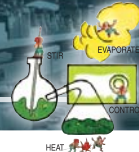
Models 825, 826 and 828

Vacuum pumps, for non-corrosive gases. Centrifugal, oil-free, a great option for the laboratory environment, with vacuum control and vacuum gauge. Require minimum maintenance, continuous operation. The elements in contact with gases are manufacture in aluminum, brass and Viton®.

Specifications

	Models			
	820	825	826	828
Type	Centrifugal Oil-lubricated pallets	Dry diaphragm 1 stage with aluminum chamber	Dry diaphragm 2 stage with aluminum chamber	Dry diaphragm 4 stage with aluminum chamber
Absolute vacuum – limit (mbar)	40	90	15	5
Relative vacuum ⁽¹⁾ (mm Hg / pol Hg)	740 / 29,1	700 / 27,5	758 / 29,8	765 / 30
Flow rate (L/min. / c ft/min.)	37 / 1,3	34 / 1,2	34 / 1,2	34 / 1,2
Output – workable pressure (kgf/cm ²)	1	0	0	0
Motor power (kW)	0,123	0,184	0,245	0,368
Resistant to chemicals	No	No	No	No
Loudness (db-C)	60–70	64–76	64–76	64–76
Vacuum regulator	Yes	Yes	Yes	Yes
Vacuum gauge	Analogical	Analogical	Analogical	Analogical
Pressure gauge	Analogical	No	No	No
Input filter	Yes	No	No	No
Output filter	Yes	No	No	No
Silencer	No	Yes	Yes	Yes
Degrees of protection	IP 55	IP 55	IP 55	IP 55
Available – network	115 or 230 V 50–60 Hz	115 or 230 V 50–60 Hz	115 or 230 V 50–60 Hz	115 or 230 V 50–60 Hz
Comments	Comes with 0,35 l of oil	—	—	—
Materials in contact with gases	Iron, Brass and Celeron	Aluminum and Viton®	Aluminum and Viton®	Aluminum and Viton®

(1) Measured at an altitude of 700 meters



Model 821T



Model 822T



Model 825T



Model 826T

With chemical resistance

Models 821T, 822T, 825T and 826T

Vacuum pumps with chemical resistance. Centrifugal, oil-free, silent, a great option for the laboratory environment in conjunction with rotary evaporators. Require minimum maintenance, continuous operation. The elements in contact with gases are manufacture in PTFE, ECTFE and Kalrez.

Specifications

	Models			
	821T	822T	825T	826T
Type	1 stage of PTFE chamber Dry diaphragm 1 Stage of ECTFE and Kalrez	2 stage of PTFE chamber Dry diaphragm 2 Stages of ECTFE and Kalrez	2 stage of PTFE chamber Dry diaphragm 2 Stages of ECTFE and Kalrez	2 stage of PTFE chamber Dry diaphragm 2 Stages of ECTFE and Kalrez
Absolute vacuum – limit (mbar)	130	30	90	15
Relative vacuum ⁽¹⁾ (mm Hg / pol Hg)	672 / 26,4	747 / 29,4	700 / 27,5	760 / 29,9
Flow rate (L/min. / c ft/min.)	18 / 0,72	18 / 0,72	34 / 1,2	34 / 1,2
Motor power (kW)	0,092	0,184	0,184	0,245
Resistant to chemicals	Yes	Yes	Yes	Yes
Loudness (db-C)	64-70	64-76	64-76	64-76
Vacuum regulator	Yes	Yes	Yes	Yes
Vacuum gauge	Optional	Analogical	Analogical	Analogical
Input filter	No	No	No	No
Output filter	No	No	No	No
Silencer	No	No	No	No
Degrees of protection	IP 55	IP 55	IP 55	IP 55
Available – network	115 or 230 V 50-60 Hz	115 or 230 V 50-60 Hz	115 or 230 V 50-60 Hz	115 or 230 V 50-60 Hz
Comments	Recommended for rotary evaporator	Recommended for rotary evaporator	Recommended for rotary evaporator	Recommended for rotary evaporator

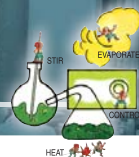
(1) Measured at an altitude of 700 meters

Clarification of relative and absolute pressure measurements:

Relative pressure: refers to atmospheric pressure (1.013 mbar)

Absolute Pressure: refers to absolute vacuum (0 mbar)

1 mbar = 100 pa = 0,75 mm Hg = 0,75 Torr = 0,0147 psi



Model 828T



Model 822TV



Model 826TV

With chemical resistance and high vacuum

Model 828T

Vacuum pumps with chemical resistance. Centrifugal, oil-free, silent, a great option for the laboratory environment in conjunction with rotary evaporators. Require minimum maintenance, continuous operation. The elements in contact with gases are manufacture in PTFE, ECTFR and Kalrez.

With chemical resistance and digital vacuum control

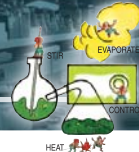
Models 822TV and 826TV

Vacuum pumps with chemical resistance. Centrifugal, oil-free, silent, the digital display control optimizes vacuum conditions automatically by adjusting the motor speed, only works when the vacuum is needed, saving energy and reducing noise and maintenance. a great option for the laboratory environment in conjunction with rotary evaporators Require minimum maintenance, continuous operation. The elements in contact with gases are manufacture in PTFE, ECTFR and Kalrez.

Especificações

	Models		
	828T	822TV	826TV
Type	4 stages of PTFE chamber Dry diaphragm 4 stages of ECTFE and Kalrez	2 stages of PTFE chamber Dry diaphragm 2 stages of ECTFE and Kalrez	
Absolute vacuum – limit (mbar)	5	35	35
Relative vacuum ⁽¹⁾ (mm Hg / pol Hg)	765 / 30	740 / 29	740 / 29
Flow rate (L/min. / c ft/min.)	34 / 1,2	18 / 0,72	34 / 1,2
Output – workable pressure (kgf/cm²)	0	0	0
Motor power (kW)	0,368	0,184	0,245
Resistant to chemicals	Yes	Yes	Yes
Loudness (db-C)	64–76	58-70	51-76
Vacuum regulator	Yes	Yes	Yes
Vacuum gauge	Analogical	Digital	Digital
Input filter	No	No	No
Output filter	No	No	No
Silencer	No	No	No
Degrees of protection	IP 55	IP 55	IP 55
Available – network	115 or 230 V, 50–60 Hz	230 V, 60 Hz	
Comments	Recommended for rotary evaporator		
Materials in contact with gases	PTFE, ECTFE and Kalrez	PTFE, ECTFE and Kalrez	PTFE, ECTFE and Kalrez

(1) Measured at an altitude of 700 meters



Three-prong clamps

Made of treated injected aluminum and prongs lined with PVC.



460 – opens 102 mm, and has a Ø 13 x 150 mm long stainless steel rod.

462 – opens 52 mm, and has a Ø 13 x 125 mm long stainless steel rod.

Rotating three-prong clamps

Fabricadas em alumínio injetado e tratado, com os dedos recobertos em PVC e com garra giratória para fixação em haste até 16mm.



461 – opens up to 102 mm.

464 – opens up to 52 mm.

Funnel support

Stainless steel shaft and PVC lined ring.



478-1 – Ø 50 mm ring.

478-2 – Ø 66 mm ring.

478-3 – Ø 100 mm ring.

478-4 – Ø 130 mm ring.

Straight tweezers, stainless steel fine tip



490 – length 150 mm.

Mini stainless steel spatulas

Total length of 150 mm, PVC lined cables.



491-1 – Shell-shaped
6 x 15 mm.

491-2 – Shell-shaped,
6 x 15 mm, lined with Halar*.

491-3 – Straight flat-shaped
4,5 x 40 mm.

491-4 – Straight flat-shaped
4,5 x 40 mm lined with Halar*.

491-5 – Shell-shaped
3 x 12 mm.

491-6 – Shell-shaped
3,5 x 12 mm lined with Halar*.

* The Halar lining is resistant to chemical products

Two-arm clamps

For Burettes, Balloon flasks, condensers. Made of treated injected aluminum and the prongs are lined with PVC.



463 – for Burettes, opens 4 to 17 mm and the stainless steel rod is Ø 6.5 and 120 mm long.

465 – opens 16 to 52 mm, and the stainless steel rod is Ø 13 and 125 mm long.

466 – features a rotating rod connector for fixation on the rod that may be up to 16mm long, opens 16 to 52 mm.

Taper clips



model 472

model 476

472 e 476 – Stainless steel fasteners, to attach 24/40 conical plugs.



473 – Stainless steel fastener to attach 35/20 spherical plugs with a blocker.

Two-rod connectors

Made of treated inject aluminum. Allow for 90° fixation of two rods.



470 – with Ø of up to 16 mm.

471 – one side with Ø of up to 16 mm and the other side of 13 mm.

474 – one side with Ø of up to 16 mm and the other side of 19 mm.

Fastening clamps



475 – Brass clamp lined with epoxy, Ø 13 x 200 mm long stainless steel rod and silicone strap (withstands temperatures of up to 180°C). Developed to fasten Beakers of up to 500 ml suspended or recipients from 80 to 80 and 250 mm in Ø diameter resting on the bench, may also be used in association with the mechanical stirrer, with the purpose of holding the vessel still.

Dry Melt Point Determiners – model 431

- Operational range from 50°C to 300°C with possibility of adjusting the heating power
- Compact and ergonomic design – takes little space and provides the user with a comfortable posture
- Optical System with more increase (4x) for easier reading of the melting point of 3 samples at the same time with intense led lighting (does not require any change of lamp)
- Quick cooling system (by ventilation), quickly makes the equipment ready for new tests
- Quick heating
- Safety timer that switches off heating and switches on ventilation 30 minutes after heating has begun
- Holds up to 3 capillary tubing of Ø 1.5 x 75mm
- Available in either 115 or 230 V, 50–60 Hz
- Power: 50 W
- Rapid heating: from 20 to 200 ° C in 6 minutes (maximum power) and from 20 to 300° C in 21 minutes
- Supplied with 150 capillaries, thermal paste and mercury thermometer with RBC traceable calibration certificate



model 431

Dry Melt Point Determiners – model 431D

Modelo 431D

- Operational range from 50°C to 300°C with possibility of adjusting the heating power
- Compact and ergonomic design – takes little space and provides the user with a comfortable posture
- Optical System with more increase (4x) for easier reading of the melting point of 3 samples at the same time with intense led lighting (does not require any change of lamp)
- Digital temperature display
- Programmable approach alarm
- Records 3 points for future reading (memory)
- Quick cooling system (by ventilation), quickly makes the equipment ready for new tests
- Quick heating
- Safety timer that switches off heating and switches on ventilation 30 minutes after heating has begun
- Holds up to 3 capillary tubing of Ø 1.5 x 75 mm
- Available in either 115 or 230 V, 50–60 Hz
- Power: 50 W
- Optional: Calibration Certificate

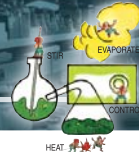


model 431D

Items included – models 431 and 431D

- 150 capillaries
- Thermal paste
- Mercury thermometer with traceable calibration certificate RBC





Vortex tube Shaker – model 772



model 772

Pressure actuation for test tubes up to Ø 2.5cm, with design that makes it difficult to get liquids inside. Stirring platform in Viton, aluminum base, stable and compact with non-slip PVC feet. Automatic activation when the tube is pressed in the platform or continuous operation with fixed velocity at 2800 r/min, horizontal orbital movement.

- Dimension: 15 x 15 x 15 cm
- Temperature of use: 5°C to 40°C
- Consumption 40 W
- Degree of protection IP42
- Available in 115 or 230 V, 50 – 60 Hz

Vortex tube Shaker – model 774



model 774

Pressure actuation for test tubes up to Ø 2.5cm, with design that makes it difficult to get liquids inside. Stirring platform in Viton, aluminum base, stable and compact with non-slip PVC feet. Automatic activation when the tube is pressed in the platform or continuous operation with controllable speed up to 2500 r/min, horizontal orbital movement.

- Dimension: 15 x 15 x 15 cm
- Temperature of use: 5°C to 40°C
- Consumption 40 W
- Degree of protection IP42
- Available in 115 or 230 V, 60 Hz

Vortex type Shaker – model 775



model 775

With infrared drive

For test tubes up to Ø 2.5 cm, with a design that makes it difficult to get liquids inside. Stirring platform in Viton, aluminum base, stable and compact with non-slip PVC feet. **Automatic infrared operation** when the tube is approached to the platform or continuous operation with **controllable speed** up to 2800 rpm, horizontal movement.

- Dimension: 15 x 15 x 15 cm
- Temperature of use: 5°C to 40°C
- Consumption 40 W
- Degree of protection IP42
- Available in 115, 60 Hz

Reciprocal and orbital agitator – “Shakers”

Model 785 with horizontal reciprocal movement

Model 786 with horizontal orbital movement – Kline type



Access demo video
with QR code



Agitation with 20mm track, compact and quiet stroke, with 9Kg of maximum capacity. Aluminum body and steel platform with epoxy paint. Controlled rotation from 20 to 200 r / min. Digital tachometer for control of the rotation and timer of up to 99 hours and 59 minutes turning off automatically the equipment. Supports for containers are individual and with a magnetic attachment that allows a wide variety of combinations.

- Accompany 9 supports for Erlenmeyer of 250 ml
- Table dimensions: 34 x 34 cm
- Degree of protection IP42
- Available in either 115 or 230 V, 50 – 60Hz
- Weight 12 Kg



Allows a wide variety of
combinations

Recommended options

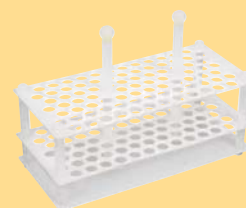


Erlenmeyer support, housing up to:

- | |
|--------------------------------|
| 4 pieces of 1,000 ml per table |
| 9 pieces of 500 ml per table |
| 9 pieces of 250 ml per table |
| 25 pieces of 100 ml per table |
| 36 pieces of 50 ml per table |



Pear-type hopper holder
holds up to 3 pieces of
250 ml per table



Test tube stand, accommodates
up to 3 parts for 21 tubes of
18 to 20 mm – code 200.220



Vertical orbital shaker – model 780



model 780

Ideal for synthesizing “peptides” with 360° vertical circular stirring.

- Adjustable revolution from 5 to 210 r/min.
- Digital display showing the revolution
- Programmable timer for automatic deactivation
- Supplied with 4 clamps and 4 250 ml balloons with lid and support
- Support with epoxy coated aluminum base, stainless steel rod and leveling foot
- Power 70 W
- Bivolt 115 – 230 V, 50 – 60 Hz

Fulcontrol



model 500



model 500F

Heater for high temperatures (replaces flame heater).

- Refractory ceramic heating element, Nikel-chromium resistance, easy replacement set, housed in a frame
- Fixing rod
- Reversible ceramic holder with support for 500-1000 ml balloons, among others, or 500, 600, 800ml Kjeldahi bottles
- Adjustable power from 10 to 800 W
- Bivolt 115 – 230 V, 50 – 60 Hz

Model 500 – Traditional 14 x 14 x 30 cm

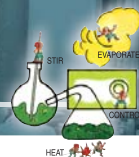
Model 500F – Lower cost, ø 15 x 14,5 cm

Water still – model 534



model 534

- Reinforced aluminum casing (prevents rust), protected against broken glass in case of accident, boiler and condenser made of borosilicate glass and quartz lined heating unit to prevent pyrogenesis
- Water entry gauge and discharge drain
- Produces 4 L / hour of distilled water with consumption of 54 L / hour of water due to refrigeration
- Protected against water shortage and overheating
- Minimum network pressure: 3 m water column
- Available in 230 V, 3500 W, 50-60 Hz



Modular system for water treatment that can be configured as required by a demineralising, carbon and germicidal cartridge options

Demineralizer model 670C

- Comprised of support for attachment to a wall with Rotameter, water conductivity display in about 10 $\mu\text{S}/\text{cm}$ and meter which may accommodate up to 3 cartridges and holding a mixed bed cartridge **model 670**
- Available in 115 or 230 V, 50-60 Hz
- Supplied with connection hoses and expansion bolts



model 670C

Activated coal cartridge model 680

- Eliminates 98% of organic bodies and all the chlorine, odors and colors
- Can be used together with the **mod. 670C**
- Saturation estimated at about 400 hours of operation
- The incoming water pressure must be at least 3m and maximum 25 m water column ($2.5 \text{ kg}/\text{cm}^2$)



model 680

Demineralising cartridge model 670

- Eliminates all the ionized bodies (anions and cations – except silica and CO_2) – estimated saturation between 500 to 3000L depending on the inflowing water source, not regenerating
- Included in the supply of the **model 670C**
- Production of 50L / hour
- The incoming water pressure must be at least 3 m and maximum 25 m water column ($2.5 \text{ kg}/\text{cm}^2$)



modelo 670

Germicide cartridge model 690

- Can be used together with the **model 670C**
- With ultraviolet light to eliminate microorganisms from the water
- Lamp radiation: 253.7 nm
- LED lit switch
- Approximate life span of the U.V. lamp: 8000 h



model 690

Advantages of the Fisatom water purification equipment

Result	Water still	Desmineralizador		
	of Glass and Quartz Model 534	Mixed Bed Resin Cartridge Model 670C	Activated Coal Cartridge Model 680	Germicide Cartridge Model 690
Conductibility	5 $\mu\text{S} / \text{cm}$	Above 0,1 $\mu\text{S} / \text{cm}$	—	—
PH	Below 7,0 (acid)	7,0 (neutral)	—	—
Calcium	Traces	0,0	—	—
Iron	0,0	0,0	—	—
Silica	Traces	Traces	—	—
Chlorine	0,0	Does not remove	Removes totally	—
Chlorides	Traces	0,0	—	—
Dissolved gases	Traces	Traces	—	—
Pyrogenesis	Absent	—	—	—
Microorganisms	Removes	Traces found in the supply water	—	Removes



Supplied stand uses up to 3 cartridges

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Technical characteristics may be modified without previous notice. Photographs are only illustrative.



Fisatom

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Since 1962 our clients are one of the most important parts of our products development, your contribution is keys for innovations. Thanks for your support and the opportunity to work with you.