

A close-up photograph of a centrifuge rotor assembly. The rotor is black with several grey and red caps. In the foreground, a black tube with a grey cap is labeled '1' and 'ortoalresa Ns 220759/05'. To the right, several metal tubes are visible, each engraved with 'ortoalresa Ns 220607/02'. The background shows more of the rotor and some red caps.

**orto
alresa**
About centrifugation

General applications | Series MAGNUS 22



MAGNUS 22



As a floor standing equipment, Magnus 22 offers the maximum performance for your processes. Its design enables it to be installed in any space in the lab, avoiding the occupation of useful space. Its ergonomic design allows easy access to the rotor as well as traceability of the positioning to balance the load, and easy identification. Its colour TFT touch screen offers performance that enables, in addition to controlling the equipment by operational parameters, the possibility of exporting data for analysis and timer programmed operations. The autonomy provided by this equipment facilitates the automation of work cycles and modes. This also ensures traceability of the process, not leaving any parameter uncontrolled.

It has a wide range of accessories for 750 ml. tubes, microplates, microtubes and a large number of positions for the most commonly used 15 ml. conical, 50 ml. conical, 15 ml., 10 ml. and 5 ml. tubes for clinical applications.

Features

- TFT color touch screen, visible from more than 3 m.:
- Shows RPM and RCF, time, acceleration/deceleration values (PCBS) and unbalance location system (ULS).
- Speed programming in 10 RPM/10 xg steps.
- Real RCF values on screen based on accessories configuration.
- Count up/down from “0” or at “set RPM/RCF” for reproducible tests.
- Timer from 1 sec to 99 hours programmable in 1 sec. steps and hold position.
- PCBS: Progressive controlled acceleration and braking system up to 175 selectable ramps that prevents sample homogenization after separation.
- ULS: Unbalance location system indicating on the screen the number of the bucket which produces the unbalance switch off.
- Start delay: To program the time at which the cycle is to begin.
- Linked program: Permits the linking of up to 8 consecutive programmes without the need of user intervention.
- 100 programmable memories, with protection under password.
- Several acoustic and visual messages showing the situation of the device to the user.

Easy to use

- Microprocessor controlled. Connectivity.
- Induction motor maintenance free (brushless).
- Rotors and adapters list in memory.
- Noise level: below 60 dB.
- Start, stop, open lid and short spin with adjustable speed buttons.
- Possibility to block or modify the speed during the cycle.
- Automatic lid opening, programmable.
- Last values remain in memory.
- Automatic rotor recognition. Over-speed protection.



Max. Capacity 4 x 750 ml		Max. Speed 21.948 xg / 14.300 RPM	
Screen Type TFT		Version ✓ Ventilated	

EU Directives: 2011/65/EU, 2012/19/EU, 2014/30/EU, 2014/35/EU, 98/79/EC.
Standards: EN 61010-1, EN 61010-2-101, EN 61010-2-020, EN 61326-2-6, EN 61326-1.

Safety

- Lid provided with security systems:
 - Automatic lid lock system, motorized with double lock.
 - Emergency lid-lock release.
 - Locking and protection against opening along the run.
 - Lid dropping protection.
 - Port in the lid for calibration and operation checking.
- Unbalance detection and switch off.
- Protection safety ring between the centrifugation chamber and the housing.
- Chamber of centrifugation in stainless steel (easy cleaning).
- Rotors can be removed with the lid closed. Hermetic lids.
- Rotors and adapters autoclavable, easy to install by the user.
- Forced ventilation to reduce temperature increasing.
- Automatic disconnection for energy saving up to 8 h., with deactivation option.

Versions

	Dimensions (mm) (w x d x h)				Net Weight (Kg)	Voltage (V)	Frequency (Hz)	Consumption (W)
CE 230	530	640	870		116	220-230	50-60	1020
CE 231	530	640	870		116	110-120	50-60	1020



MAGNUS 22 R



The refrigerated version of our floor standing equipment offers the maximum performance for your processes. Its design enables it to be installed in any space in the lab, avoiding the occupation of useful space. Its ergonomic design allows easy access to the rotor as well as traceability of the positioning to balance the load and easy identification.

With a wide range of accessories that offer capacities for tubes of 750 ml., microplates, microtubes and a great number of positions for the more common use tubes of 15 ml. conical, 50 ml. conical, 15 ml., 10 ml., and 5 ml. for clinical applications. It also has a specific rotor for blood bags and tubes extraction. Its powerful refrigeration system enables it to maintain the minimum temperature of the chamber below 4°C regardless of the type of rotor and the speed selected. This characteristic gives the user confidence in traceability during the centrifugation cycle.

Features

- TFT color touch screen, visible from more than 3 m.:
- Shows RPM and RCF, time, temperature, acceleration/deceleration values (PCBS) and unbalance location system (ULS).
- Speed programming in 10 RPM/10 xg steps.
- Real RCF values on screen based on accessories configuration.
- Count up/down from “0” or at “set RPM/RCF” for reproducible tests.
- Timer from 1 sec to 99 hours programmable in 1 sec. steps and hold position.
- PCBS: Progressive controlled acceleration and braking system up to 175 selectable ramps that prevents sample homogenization after separation.
- ULS: Unbalance location system indicating on the screen the number of the bucket which produces the unbalance switch off.
- Start delay: To program the time at which the cycle is to begin.
- Linked program: Permits the linking of up to 8 consecutive programmes without the need of user intervention.
- 100 programmable memories, with protection under password.
- Several acoustic and visual messages showing the situation of the device to the user.

Easy to use

- Microprocessor controlled. Connectivity.
- Induction motor maintenance free (brushless).
- Rotors and adapters list in memory.
- Noise level: below 60 dB.
- Start, stop, open lid and short spin with adjustable speed buttons.
- Possibility to block or modify the speed during the cycle.
- Last values remain in memory.
- Automatic rotor recognition. Over-speed protection.



Max. Capacity 4 x 750 ml		Max. Speed 21.948 xg / 14.300 RPM	
Screen Type TFT		Version ✓ Refrigerated	

EU Directives: 2011/65/EU, 2012/19/EU, 2014/30/EU, 2014/35/EU, 98/79/EC.
Regulation n°: (EC) 1005/2009, (EU) 517/2014.
Standards: EN 61010-1, EN 61010-2-101, EN 61010-2-020, EN 61326-2-6, EN 61326-1.

Safety

- Lid provided with security systems:
 - Automatic lid lock system, motorized with double lock.
 - Emergency lid-lock release.
 - Locking and protection against opening along the run.
 - Lid dropping protection.
 - Port in the lid for calibration and operation checking.
- Unbalance detection and switch off.
- Protection safety ring between the centrifugation chamber and the housing.
- Chamber of centrifugation in stainless steel (easy cleaning).
- Rotors can be removed with the lid closed. Hermetic lids.
- Rotors and adapters autoclavable, easy to install by the user.
- Automatic disconnection for energy saving up to 8 h.

Refrigeration

- Maintains the refrigeration after the centrifugation process.
- Precooling program with rotor spinning and selectable temperature.
- Guarantees 4 °C at maximum RPM.
- Temperature range from -20°C (-4°F) to 40°C (104°F) in 1°C/1°F steps. Programmable in °C o °F.
- Temperature sensor inside the chamber.
- Gas R 449A HFO (CFC free).

Versions

	Dimensions (mm) (w x d x h)				Net Weight (Kg)	Voltage (V)	Frequency (Hz)	Consumption (W)
CE 236	530	640	870		137	220-230	50	1450
CE 237	530	640	870		137	110-120	60	1450

Accessories centrifuge Series Magnus 22
- Rotors & adapters

		 RT 279 (6)	 RT 278	 RT 299	 RT 277 (1) (4)	 RT 284 (4)	 RT 297 (4)(5)	 RT 283 (1)(2)(4)(5)
ROTOR		SWING OUT	SWING OUT	SWING OUT	SWING OUT	SWING OUT	SWING OUT	SWING OUT
Max. capacity		104 x 5 ml.	4 x 250 ml.	6 x 250 ml.	4 x 750 ml.	12/8/4 microtiter	10/6/2/2 microtiter	4 blood bags
RPM Max.		3.800	4.200	2.500	3.700	3.700	4.500	3.700
Radius (mm)		160	202	212	204	182 (3)	166	204
RCF Max. (xg)		2.583	3.984	1.481	3.122	2.786	3.758	3.122
Min. temp. at max. speed (°C)		0	1	-5	0	-4	4	0
SAMPLE VOLUME	Dim (mm) approx.	ADAPTERS Tubes Ref.	ADAPTERS Tubes Ref.	ADAPTERS Tubes Ref.	ADAPTERS Tubes Ref.	ADAPTERS Tubes Ref.	ADAPTERS Tubes Ref.	ADAPTERS Tubes Ref.
750 ml.	ø96 x 130	- -	- -	- -	4 RE 434	- -	- -	4 RE 434
500 ml.	ø90 x 120	- -	- -	- -	4 RE 310	- -	- -	4 RE 310
250 ml.	ø60 x 135	- -	4 RE 449	6 RE 530	4 RE 330	- -	- -	4 RE 330
100 ml.	ø48 x 100	- -	4 RE 327	6 RE 558	4 RE 409	- -	- -	4 RE 409
85 ml. (hs) / 80 ml. (hs)	ø38 x 112	- -	4 RE 498	6 RE 559	12 RE 500	- -	- -	12 RE 500
80 ml.	ø44 x 100	- -	4 RE 422	6 RE 560	8 RE 352	- -	- -	8 RE 352
50 ml.	ø34 x 100	- -	4 RE 334	6 RE 561	16 RE 317	- -	- -	16 RE 317
50 ml. conical	ø29 x 117	- -	4 RE 340	6 RE562	20 RE 472	- -	- -	20 RE 472
30 ml. / 30 ml. (hs)	ø25 x 98	- -	12 RE 312	18 RE 563	24 RE 322	- -	- -	24 RE 322
25 ml. conical	ø29 x 83	- -	4 RE 612	6 RE 616	20 RE 614	- -	- -	20 RE 614
15 ml.	ø16 x 100	- -	28 RE 376	42 RE 564	72 RE 348	- -	- -	72 RE 348
15 ml. conical	ø17 x 122	- -	20 RE 321	30 RE 565	52 RE 347	- -	- -	52 RE 347
15 ml. blood sample	ø16 x 132	- -	28 RE 376	- -	32 RE 441	- -	- -	32 RE 441
10 ml.	ø13 x 100	104 RE 309	40 RE 343	60 RE 566	100 RE 354	- -	- -	100 RE 354
10 ml. blood sample	ø16 x 107	- -	28 RE 376	42 RE 564	72 RE 348	- -	- -	72 RE 348
7/10 ml. blood sample	ø13 x 107	104 RE 309	28 RE 324	42 RE 567	72 RE 349	- -	- -	72 RE 349
5 ml.	ø13 x 75	104 -	40 RE 343	60 RE 566	100 RE 354	- -	- -	100 RE 354
5 ml. blood sample	ø13 x 82	104 -	28 RE 324	42 RE 567	72 RE 349	- -	- -	72 RE 349
10 x 100 mm	ø10 x 100	- -	52 RE 346	78 RE 568	144 RE 315	- -	- -	144 RE 315
Microtubes 1,5-2 ml.	ø11x42	- -	24 RE 440	36 RE 569	72 RE 426	144 RE 460	72 RE 401	72 RE 426
Microtubes 0,5-0,6 ml.	ø8x30	- -	24 RE 523	36 RE 570	72 RE 466	144 RE 584	72 RE 580	72 RE 466
Microtubes 0,2-0,4 ml.	ø6x45	- -	24 RE 458	36 RE 571	72 RE 524	144 RE 585	72 RE 581	72 RE 524
Microtiter plates	128x86x15/21/45	- -	- -	- -	12/8/4 RE 307	12/8/4 -	10/6/2 -	12/8/4 RE 307
Microtiter plates (h:80 mm)	128x86x80	- -	- -	- -	- -	- -	2 -	- -

(1) This rotor can be supplied with hermetic lids (RE 356).

(2) This rotor can fit adapters for blood bags (RE 308).

(3) Medium radius on bucket.

(4) Allows different configurations depending on the microplates height.

(5) Only available for refrigerated models.

(6) Available **RT 301** for 104 x 7/10 ml. bs and 10 ml.

HIGH SPEED													
		 RT 280		 RT 281		 RT 282		 RT 287		 RT 292			
ROTOR		ANGLE FIXED 45 °		ANGLE FIXED 45 °		ANGLE FIXED 30 °		ANGLE FIXED 45 °		ANGLE FIXED 30 °			
Max. capacity		8 x 50 ml.		4 x 100 ml.		4 x 250 ml.		30 x 1,5-2 ml.		6 x 85 ml			
RPM Max.		6.000		5.600		4.700		14.300		9.000			
Radius (mm)		149		138		153		96		112			
RCF Max. (xg)		5.997		4.838		3.779		21.948		10.142			
Min. temp. at max. speed (°C)		0		-1		-4		-1		1			
SAMPLE VOLUME		Dim (mm) approx.		ADAPTERS Tubes Ref.		ADAPTERS Tubes Ref.		ADAPTERS Tubes Ref.		ADAPTERS Tubes Ref.		ADAPTERS Tubes Ref.	
750 ml.		ø96 x 130		-	-	-	-	-	-	-	-	-	-
500 ml.		ø90 x 120		-	-	-	-	-	-	-	-	-	-
250 ml.		ø60 x 135		-	-	-	-	4	RE 449	-	-	-	-
100 ml.		ø48 x 100		-	-	4	RE 446	4	RE 327	-	-	-	-
85 ml. (hs) / 80 ml. (hs)		ø38 x 112		-	-	4	RE 380	4	RE 498	-	-	6	-
80 ml.		ø44 x 100		-	-	4	RE 338	4	RE 422	-	-	-	-
50 ml.		ø34 x 100		8	RE 448	4	RE 335	4	RE 334	-	-	6	RE 490
50 ml. conical		ø29 x 117		8	RE 375	4	RE 341	4	RE 340	-	-	6	RE 483
30 ml. / 30 ml. (hs)		ø25 x 98		8	RE 370	4	RE 332	12	RE 312	-	-	6	RE 493
25 ml. conical		ø29 x 83		8	RE 599	4	RE 597	4	RE 612	-	-	6	RE 600
15 ml.		ø16 x 100		8	RE 369	16	RE 316	28	RE 376	-	-	18	RE 485
15 ml. conical		ø17 x 122		8	RE 369	4	RE 339	20	RE 321	-	-	6	RE 484
15 ml. blood sample		ø16 x 132		8	RE 369	-	-	28	RE 376	-	-	-	-
10 ml.		ø13 x 100		24	RE 366	20	RE 320	40	RE 343	-	-	30	RE 497
10 ml. blood sample		ø16 x 107		8	RE 369	16	RE 316	28	RE 376	-	-	18	RE 485
7/10 ml. blood sample		ø13 x 107		8	RE 373	20	RE 320	28	RE 324	-	-	18	RE 503
5 ml.		ø13 x 75		24	RE 366	20	RE 320	40	RE 343	-	-	30	RE 501
5 ml. blood sample		ø13 x 82		8	RE 373	20	RE 320	28	RE 324	-	-	18	RE 492
10 x 100 mm		ø10 x 100		24	RE 367	36	RE 326	52	RE 346	-	-	-	-
Microtubes 1,5-2 ml.		ø11x42		24	RE 465	20	RE 408	24	RE 440	30	-	24	RE 494
Microtubes 0,5-0,6 ml.		ø8x30		24	RE 535	20	RE 519	24	RE 523	30	RE 428	24	RE 495
Microtubes 0,2-0,4 ml.		ø6x45		24	RE 526	20	RE 473	24	RE 458	30	RE 427	24	RE 496
Microtiter plates		128x86x15/21/45		-	-	-	-	-	-	-	-	-	-
Microtiter plates (h:80 mm)		128x86x80		-	-	-	-	-	-	-	-	-	-



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About centrifugation

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