



APPARECCHI
SCIENTIFICI



WR-KWAP (Platelet incubator/agitator)



BLOODline

Medical devices for
transfusion centres





BloodLine

WR-KWAP (Platelet incubator/agitator)



WRV 700 HPL+ agitator



New Touch Screen
7" TFT Display

Control HPL



Touch Technology



W96RT HPL + agitator

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KW Apparecchi Scientifici has developed a new line of platelet incubators/ agitators that offers solutions with many capacities in free-standing and bench-top models.

They are certified as **Medical Device**, in accordance with CEE Directive 93/42 and subsequent amendments and integrations. They are provided with their own power lead to be able to be inserted in the corresponding KW incubator or in another thermostating appliance.

INCUBATOR SPECIFICATIONS: T SET +22°C ±2°C

Incubator - Control HPL

Model	Ver.	Meas. Ext. WxDxH (cm)	Meas. Int. WxDxH (cm)	Capacity	Bags 450 ml.	Stability T	Uniformity T	Power	Weight (kg)
W96RT HPL	T	69x62x110	60x47x80	260 lt	Max 96	≤ ± 1°C	≤ ± 1,5°C	650W	70
WRV700 HPL	F	70x80x200	59x67x151	700 lt	Max 340	≤ ± 1,5°C	≤ ± 2°C	750W	130
WRV1500 HPL	F	140x80x200	120x67x151	1500 lt	Max 680	≤ ± 1,5°C	≤ ± 2°C	900W	210

T = bench-top version F = free-standing version Power Supply V230/1/50 Hz

Agitator specifications:

Model	Mis. Est. WxDxH (cm)	Capacity bags	Shelves	Power (W)	Weight (kg)
KWAP48	49x42x40	48	8	450	30
KWAP54	49x42x44	54	9	600	50
KWAP96	49x42x68	96	16	450	50
KWAP108	49x42x74	108	18	600	80
KWAP180	49x49x74	180	18	600	80

The incubators model **WRV 700 HPL** and **WRV 1500 HPL** can contain two or more agitators by using additional special shelves.



KWAP108

INCUBATOR/AGITATOR

INCUBATOR	KWAP48	KWAP54	KWAP96	KWAP108	KWAP180
W96RT	N.1	N.1	N.1	/	/
WRV 700 HPL	MAX N.2	MAX N.2	MAX N.2	MAX N.2 (*)	MAX N.2 (*)
WRV 1500 HPL	MAX N.4	MAX N.4	MAX N.4	MAX N.4 (**)	MAX N.4 (**)

* Incubator model **WRV 700 HPL**: n.2 agitator KWAP108 ----> Total capacity bags= 204

* Incubator model **WRV 700 HPL**: n.2 agitator KWAP180 ----> Total capacity bags= 340

** Incubator model **WRV 1500 HPL**: n.4 agitator KWAP108 ----> Total capacity bags= 408

** Incubator model **WRV 1500 HPL**: n.4 agitator KWAP180 ----> Total capacity bags= 680

Power Supply V230/1/50 Hz



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Structure and system

External structure and door in sheet steel prepainted or plastic-coated in zinc. Insulation with polyurethane expanded in situ with a density of 40 kg/mc. The higher capacity model is fitted with a **led light** that turns on when the door is opened. **GREEN ICE project.**

Internal chamber and shelves in AISI 304 stainless steel; with rounded edges. The transparent door allows observation of the platelets without altering the internal T. The door is key-lockable for the utmost safety. All incubators are easy to clean and decontaminate.

The heating is obtained with special heating elements with low thermal density, for maximum temperature stability; cooling is achieved by a special KW designed evaporator; all heat exchangers are placed in an area separated from the internal chamber, in order to create a very uniform temperature control in the working volume.

The temperature control flow is driven by a high efficiency helical fan.



The refrigeration system is composed of an air condensing unit, with expansion by means of a capillary tube. There is plenty of condensing surface to allow it to function correctly even at very high ambient temperatures (> +32°C) and/or in environments with little ventilation and poor air exchange.

There is a device that collects and evaporates the condensation water.

The refrigerants used are non-toxic, non-flammable, non-explosive and above all eco-friendly (ODP=0).

Adjustable overtemperature controller, in conformity with DIN 12880 with separate sensor (protection class 3.1) and with heating exclusion, in case of failure; for maximum security.

Temperature regulation and controls HPL

CONTROLLER I-KW SMART CONTROLLER



ETHERNET



Display	TFT Touch screen 7.0" wide
Power supply	from Power Board
Dimensioni	197x122x50 mm
Front ports	USB - Slot per SIM Card e SD Card
Ports	Ethernet
Slot	for modem GSM
CPU	Atmel® at91 sam9261 256 Mb flash
	Operating System Linux 2.6.33

Electronic digital controller with microprocessor, **I-KW SMART CONTROLLER** for temperature programming and control. Display visual reporting about the machine operating conditions with a summary window for temperature, and output values.

Total connectivity, traceability and security

Ensuring the maximum connectivity and traceability, the new controller will be able to fully satisfy the needs of pharmaceutical companies and research centers.

Machines with I-KW Smart controllers will be able to count on a total connectivity with the surrounding environment through a series of standard devices; USB port, SD and SIM card slot, Wi Fi connection, Ethernet, RS 485 port with Modbus protocol. The Wi Fi connection will enable the device to be visible in the LAN of the lab, the research center or the industrial lab. Also, it displays a temperature-time graph without using an instrument dedicated to this aim. With the data download (**USB PORT**) through **Tracer software**, it is possible to produce graphs and tables about any registered data.

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Innovation in the user's interface

- **Touch menu with multiple windows and temperature graph.**
- Registration in real time of the operating variables on SD card.
- USB interface on the front panel for the download of thermo-registration data and updates.
- SQLite format registrations with application for PC for temperature/humidity graph visualization.
- Possibility to touch-open the security port (with password).

This system is already available in 5 languages:
Italian, English, German, French, and Spanish.



Accesses control and facilitated maintenance.

Devices equipped with the new controller can also have a controlled access: **the electronic key is optional** (the user can customize the numeric code) **and associated to an electric lock for a controlled opening or, as a personal device, to use badges or transponders, or finger-passes, with the storage of fingerprints. This new controller can guarantee a very friendly use and maintenance of devices.**

Also, the controller has new functions aimed to contribute to energy saving and global warming decrease, with lower CO2 indirect atmospheric emissions.

The controller is set to easily and at low cost accept further updates, so to upgrade to the new technologies and answer the growing needs requested by health, pharmaceutical and industrial Standards and Directives.

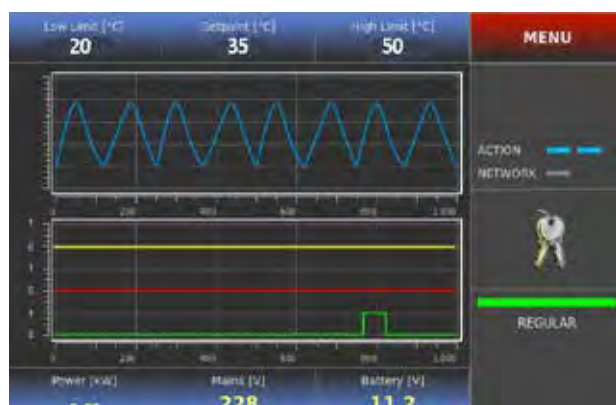
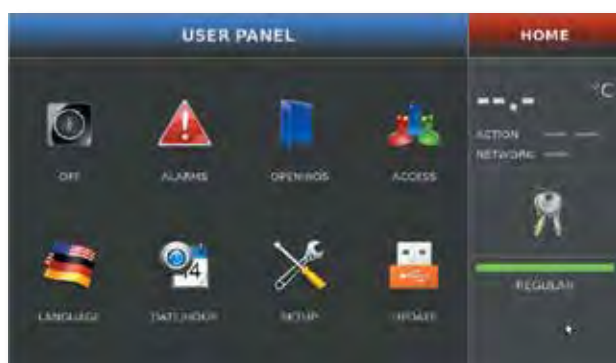
Display for setting and reading temperature and humidity values:

I -KW The graphic video interface shows a **TFT 7" touch screen** color display; ARM 9 microprocessor technology, the same used for smartphones and working with Linux operative system; touch menu with multiple windows and temperature graphs;

On / Off: the access is controlled by the user with a pass-worded electronic key.

Control system:

Control, registration, supervision, full traceability of any parameters and events, full connectivity with the environment, very high operating and access security. **Use of two RTD Pt 100 Ohm independent probes:** the first for temperature alarms and the second for regulation. Automatic regulation of temperatures and alarms; registration in real time of the operating variables on SD card; USB interface on the front panel for the download of thermo-registration data and updates; **Ni - MH buffer battery, power back-up and recharge circuit. (48h of autonomy)**





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Set point and alarm threshold modifications:

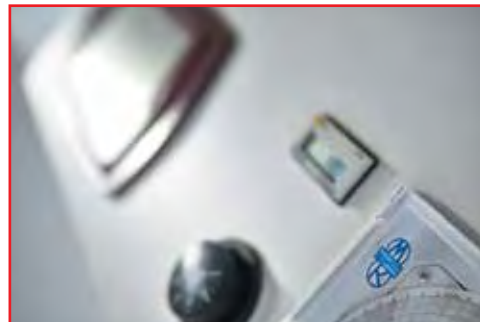
controlled modification through the electronic key with password against intrusions, fortuitous handling and better traceability:

Access to the menu sensible data and parameters:

controller access to the software through the use of the electronic key with password for the highest security and compliance with lab standards and procedures.

As previously explained, the user can verify the machine and the working conditions through:

- **Dynamic bar-graph to visualize the present value of ambient temperature (in centigrade degree decimals) and the value of the set point**



ALARMS:

Audiovisual alarm for min/max temperature on the internal temperature;

Audiovisual alarm for failure power; Alarm for open door; Alarm for broken probes;

There is an automatic registration for each alarm: HT (High T), LT (Low T), black out, alarm for Critical Temperature; day/month/year/time (minutes for the alarm start); alarm duration (for HT and LT) day/month/year/time (minutes for the blackout start); the same automatic registration will apply for humidity alarms!!

Alarms are audible and visual and it is possible to mute the buzzer through a button on the panel.

The audible alarm is delayed when the machine is started and for the door opening.

The delay is programmed. The visual alarm is always active.

Door opening: Registration in memory: n° of daily openings, n° of critical openings, opening total time

Monitored fault list: faulted temperature probe, compressor times, obstructed condenser, faulted power grid, thermal protection ... and many other functions...

AGITATORS:

Structure and system

The linear alternative agitators **KWAP54** (54 bags - 9 shelves), **KWAP96** (96 bags - 16 shelves), **KWAP48** (48 bags - 8 shelves), **KWAP 108** (108 bags - 18 shelves) and **KWAP 180 models** (180 bags - 18 shelves) allow the organised storage of human blood platelets in plastic bags.



KWAP48

All the shelves are made of AISI 304 stainless steel.

Each unit is characterized by alternate movement and suspended on guides having linear pads; this ensures that the movement is silent and of high reliability. The upper part moves from side to side with a course of 16mm. at the maximum frequency of 116 strokes. Each shelf has an "open" surface that allows for a ventilation. The agitator has plastic feet, suitable for placement on the work bench or on the right support.

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Each shelf may be extracted in order to reach them, while the motor is in movement, without any disturbance to the agitation of the platelets. Furthermore each shelf has a posterior "STOP" that impedes the complete discharge for eventual errors and permits an almost horizontal position suitable to loading the bags without any intervention of the user.

When the shelf has to be removed entirely for cleaning, it must be raised in order to by-pass the "STOP". On the inferior frontal of the appliance there is the command panel with the ON-OFF switch for power supply, having visual signalling.

TEMPERATURE REGULATION AND CONTROLS

The agitator has its own power supply and power lead to be able to be inserted in the corresponding KW incubator, or in another thermostating appliance. On the front panel there is the main O/I switch with warning light.



-PLATELET AGITATOR MOVEMENT ALARM (Standard)

All the agitators are fitted with a movement alarm, obtained through a special sensor positioned inside the agitator itself. Should agitating be interrupted following a failure, an alarm is activated on the incubator for the utmost product safety.

The alarm is cut off when the incubator door is opened and the agitator movement is stopped for operator safety.

-PLATELET AGITATOR OSCILLATION SPEED VARIATOR (Optional)

The agitator platelet KWAP is equipped with the **speed controller oscillation**, obtained by external knob unit.

The adjustment is divided into

10 speed when set:

- 0 = 6rpm 12 strokes,
- 1 = 8rpm 16 strokes,
- 2 = 15rpm 30 strokes,
- 3 = 22rpm 44 strokes,
- 4 = 27rpm 54 strokes,
- 5 = 28rpm 56 strokes,
- 6 = 39rpm 78 strokes,
- 7 = 45rpm 90 strokes,
- 8 = 53rpm 106 strokes,
- 9 = 55rpm 110 strokes,
- 10 = 58rpm 116 strokes.

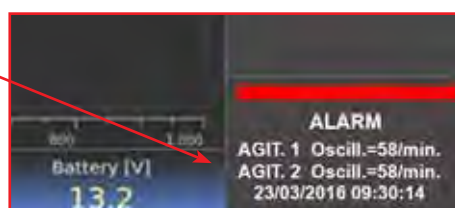


In the incubators/agitators it is possible to install:

- **Pt 100 sensor**, class A, for connection to a wireless data logger (Spy KW) or to another T monitoring system.
- **Personal Key**, with electronic lock, for controlled access and traceability, also with RFID board and badge (transponder).
- Internal-external **connection holes**
- **Disk recorder with weekly cycle**

-STROKE COUNTER (Optional)

Displays strokes.





○ 2015

New controller and new KW image

○ 2006

Rapid freezer for plasma -85°C

○ 2006

Control **NEW ICE AGE KW CONTROL®**

○ 2001

Medical Project® series

○ 1990

Biological Bank -85°C®

○ 1985

KW Apparecchi Scientifici S.r.l.

○ Anni '70

First **vertical** freezer -85°

○ 1961

First **horizontal** freezer -85°

○ 1953

KW (kalt/warm) Officine Meccaniche



ISO 13485:2012



ISO 9001:2008



ISO 14001:2004

Made in Italy

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