

BLOOD  
line

# HAEMO



**Blood banks**  
Flexibility and reliability for blood management



**APPARECCHI  
SCIENTIFICI**

*Technologies for life sciences*



# the Company

KW is one of the most dynamic and innovative companies, leader in the design and production of controlled temperature devices down to  $-90^{\circ}\text{C}$ , which stands out for its high reliability, wide range and customization capabilities. The company has a strong experience in the scientific equipment segment, also with "medical devices" certification, and a large network of sales and after-sales service centers. Thanks to the continuous investments in organization and technologies, KW has achieved a significant improvement in positioning as a leader in the sector.



## Industry 4.0

The company adopts the principles of interconnection of resources to offer the highest quality of processes and products. The devices are equipped with monitoring and connection systems that allow remote support and maintenance. The "KW total assistance" service (thanks to our worldwide service network, where present) allows to delegate the management of the machines to ensure maximum safety of storage.

# mission

The Company aims at a continuous improvement of products and process performances to offer the best technological solutions to the medical field, technical-scientific research and industry sectors.

# HAEMO – HAEMO (HR)

Blood banks



KW Apparecchi Scientifici developed a new line of blood bank refrigerators that offers solutions of different capacities to meet all market needs. The devices are certified as a Class IIa Medical Device for the storage of blood and its derivatives.

# HAEMO

## structure and system

**Reversible door** (even after installation) with anti-fog glass and rare gas chambers, magnetic gasket, automatic closing and safety lock (optional electric lock with access via PIN or RFID tag). Equipped with an ergonomic handle that is easy to open with one hand. When the door is opened, the ventilation fan is automatically stopped, to improve the stability of the internal temperature.

**Insulation** obtained on single body foamed cabinet, free of thermal bridges and joints. Insulation with high density polyurethane foam ( $\lambda=18\text{mW}/\text{m}^{\circ}\text{K}$ ) and totally ecological. Average thickness up to 80mm, uniform on all sides to ensure an optimal temperature for a better preservation of the product, less dispersion and greater energy savings.

**Internal drawers** in AISI 304 stainless steel, freely extendable, anti-tipping, removable, sliding on telescopic stainless steel guides. Possibility of internal dividers for housing the bags and plastic front to improve the visibility of the content.

**Automatic electric defrost** with evaporation of condensation water. Defrosting is managed in a smart way, thanks to an electronic controller and a specific firmware that manages the heat exchange between the refrigerant and the recirculation air.

**Ventilated refrigeration** with uniform temperature thanks to a hermetic compressor, very silent, with high efficiency and low energy consumption. Air condensation, for maximum reliability even in critical environmental conditions thanks to a tropicalized refrigeration system. Monobloc condensing unit for minimum internal dimensions, for maximum internal cleaning and to facilitate maintenance activities. Ecological refrigerant (R290), natural and environmentally friendly with ODP=0 and GWP=0, refrigerant system compliant with the F-GAS regulation to reduce the environmental footprint.

**External structure** and door in pre-painted steel sheet or in AISI 304 stainless steel (Optional), for better hygiene and cleaning of the device. Internal structure in AISI 304 stainless steel or pre-painted steel sheet (Optional).

**Several temperature and malfunction alarms** (remotely controlled by dry contacts) to maximize the safety of the contained material. Thanks to the backup battery (up to 72 hours), the controller remains operational even in the event of a power failure, recording the internal temperature and activating the alarms.

**Integrated safety thermostat** to avoid freezing or overheating of the stored material (anti-icing and overheating functions).

# HAEMO

main features



Medical device systems  
certified under  
international regulation

**93/42 – 2007/47/CE Class IIa**

for blood and its derivatives  
management.

- Vertical solutions with one or two doors for maximum flexibility
- Capacity from 400 to 1.500 liters
- Excellent insulation with PUR foam (up to 80mm)
- Solid or tempered double layer anti-fog glass door
- Internal LED light
- Internal/External pass-through hole for additional data logger
- Automatic electric defrost with condensation water evaporation
- Use of two independent probes (PT100), one for temperature recording and alarms one for temperature on/off regulation
- Weekly cycle chart disk recorder (Optional)
- Remote contacts to be connected to control systems
- Four pivoting wheels, two with brake
- Double system version (TG) available for maximum reliability

# HAEMO (HR)

## structure and system

**Reversible door** (even after installation) with anti-fog glass and rare gas chambers, magnetic gasket, automatic closing and safety lock (optional electric lock with access via PIN or RFID tag). Equipped with an ergonomic handle that is easy to open with one hand. When the door is opened, the ventilation fan is automatically stopped, to improve the stability of the internal temperature.

**Insulation** obtained on single body foamed cabinet, free of thermal bridges and joints. Insulation with high density polyurethane foam ( $\lambda=18\text{mW}/\text{m}^{\circ}\text{K}$ ) and totally ecological. Average thickness of 65mm, uniform on all sides to ensure an optimal temperature for a better preservation of the product, less dispersion and greater energy savings.

**Internal drawers** in AISI 304 stainless steel, freely extendable, anti-tipping, removable, sliding on telescopic stainless steel guides. Possibility of internal dividers for housing the bags and plastic front to improve the visibility of the content.

**Automatic air defrost** without any heat input during the defrost cycle. This is possible due to the special adopted technology on the evaporator. Automatic evaporation of condensation water.

**Ventilated refrigeration** with uniform temperature thanks to a hermetic compressor, very silent, with high efficiency and low energy consumption. Air condensation, for maximum reliability even in critical environmental conditions thanks to a tropicalized refrigeration system. Ecological refrigerant (R600a), natural and environmentally friendly with ODP=0 and GWP=0, refrigerant system compliant with the F-GAS regulation to reduce the environmental footprint.

**External structure** and door in pre-painted steel sheet, for better hygiene and cleaning of the device. Internal structure in AISI 304 stainless steel.

**Several temperature and malfunction alarms** (remotely controlled by dry contacts) to maximize the safety of the contained material. Thanks to the backup battery (up to 72 hours), the controller remains operational even in the event of a power failure, recording the internal temperature and activating the alarms.

**Integrated safety thermostat** to avoid freezing or overheating of the stored material (anti-icing and overheating functions).

## HAEMO (HR) main features

- Capacity from 150 to 400 liters
- Excellent insulation  
with 65mm of PUR foam
- Solid or tempered double  
layer anti-fog glass door
- Internal LED light
- Internal/External pass-through  
hole for additional data logger
- Automatic air defrost with  
condensation water evaporation
- Use of two independent probes  
(PT100), one for temperature recording and alarms,  
one for temperature on/off regulation
- Pre-painted steel basket
- Weekly cycle chart disk recorder (Optional)
- Remote contacts to be connected to control systems
- Four pivoting wheels, two with brake

Medical device systems  
certified under  
international regulation

**93/42 – 2007/47/CE Class IIa**

for blood and its derivatives  
management.





## controller

Thanks to the integration capabilities of our controllers and Cloud management is possible to control and assist remotely the complete network of systems. Safety is granted by email/notification alerts in case of any fault or problem.

## HTS

- 5" or 7" TFT touch screen display
- Data Logger capabilities for temperature and alarms
- Internet connectivity
- Wi-Fi capabilities
- Cloud management
- USB port



## Optional

- LAN connection
- Electric lock for door opening with PIN/badge
- Wi-Fi router
- GSM module

Cloud management  
of blood banks  
equipped with  
HTS controller



## alarms and special functions

The system is equipped with several alarms to maximize the safety of the stored material. All alarms include an acoustic and visual signal on the controller display. The temperature alarm system is independent from the regulation and control system and the temperature reading, recorded with a dedicated probe, is managed by a second dedicated processor.

### Following alarms are available:

- Min/max temperature
- Open door with customizable activation delay
- Power fault with backup battery
- High condensation pressure
- Low charge of backup battery
- Faulty probe
- Faulty compressor
- High condensation temperature and dirty condenser

## Several special functions are available to maximize device performance and reliability:

### Safety control

The refrigerator keeps working even in case of temperature probe's fault

### Disaster recovery

The refrigerator keeps working even in case of a CPU fault

### Info test

The functional test of the refrigeration equipment is performed at the end of the production process and/or after important maintenance activities

### Environmental adaptability

Condenser fan speed modulation within a range of temperatures or pressures

### Energy saving

Economic management of power consumption (Night & Day) with the possibility of raising the set point temperature during the night by a predefined value. This function guarantees an average energy saving of 15% compared to standard use



**technical specifications**

		HAEMO 400V	HAEMO 400C	HAEMO 700V	HAEMO 700C	HAEMO 1500V	HAEMO 1500C
<b>TECHNICAL CHARACTERISTICS</b>							
CAPACITY		363lt	363lt	597lt	597lt	1315lt	1315lt
TEMPERATURE RANGE		+4 ±2°C	+4 ±2°C	+4 ±2°C	+4 ±2°C	+4 ±2°C	+4 ±2°C
REFRIGERANTS	R290	X	X	X	X	X	X
	R455a	X	X	X	X	X	X
POWER SUPPLY		230V/50Hz	230V/50Hz	230V/50Hz	230V/50Hz	230V/50Hz	230V/50Hz
ELECTRICAL POWER (T AMB. 25°C)		385W	385W	385W	385W	570W	570W
		4,16kWh/24h	4,16kWh/24h	4,16kWh/24h	4,16kWh/24h	6,16kWh/24h	6,16kWh/24h
NOISE LEVEL (SOUND PRESSURE LEVEL, 1M)		<54dB(A)	<54dB(A)	<54dB(A)	<54dB(A)	<56dB(A)	<56dB(A)
<b>STRUCTURE</b>							
INTERNAL SURFACE	AISI 304 Stainless Steel	X	X	X	X	X	X
	White Pre-painted Steel Sheet	Optional	Optional	Optional	Optional	Optional	Optional
EXTERNAL SURFACE	White Pre-painted Steel Sheet	X	X	X	X	X	X
	AISI 304 Stainless Steel	Optional	Optional	Optional	Optional	Optional	Optional
EXTERNAL SIZES	Insulation 60mm	600 x 620 x 1900	600 x 620 x 1900	710 x 800 x 2030	710 x 800 x 2030	1420 x 800 x 2030	1420 x 800 x 2030
	Insulation 80mm	-	-	740 x 800 x 2300	740 x 800 x 2300	1460 x 800 x 2030	1460 x 800 x 2030
INTERNAL SIZES LXPXH MM		500 x 530 x 1370	500 x 530 x 1370	590 x 670 x 1510	590 x 670 x 1510	1300 x 670 x 1510	1300 x 670 x 1510
WEIGHT		125Kg	120Kg	155Kg	150Kg	230Kg	220Kg
INSULATION (PUR Foam)	60mm	X	X	X	X	X	X
	80mm	-	-	Optional	Optional	Optional	Optional
DEFROST SYSTEM		Electric/Hot Air	Electric/Hot Air	Electric/Hot Air	Electric/Hot Air	Electric/Hot Air	Electric/Hot Air
DOORS	DOOR TYPE	Glass	Solid	Glass	Solid	Glass	Solid
	DOORS	1	1	1	1	2	2
INTERNAL CHARACTERISTICS	SHELVES/DRAWERS	6	6	7	7	14	14
	DRAWERS SIZES LXP MM	420 x 510	420 x 510	505 x 835	505 x 835	505 x 835	505 x 835
	MAX BAGS (450ML)	198 (33x6)	198 (33x6)	504 (72x7)	504 (72x7)	1008 (72x14)	1008 (72x14)
CONTROLLER	HTS	X	X	X	X	X	X
CONNECTIVITY	WI-FI	Optional	Optional	Optional	Optional	Optional	Optional
	TCP/IP (MODBUS PROTOCOL)	Optional	Optional	Optional	Optional	Optional	Optional

# HAEMO TWIN GROUP



		HAEMO 700V TG	HAEMO 700C TG	HAEMO 1500V TG	HAEMO 1500C TG
<b>TECHNICAL CHARACTERISTICS</b>					
CAPACITY		597lt	597lt	1315lt	1315lt
TEMPERATURE RANGE		+4 ±2°C	+4 ±2°C	+4 ±2°C	+4 ±2°C
REFRIGERANTS	R290	-	-	-	-
	R455a	X	X	X	X
POWER SUPPLY		230V/50Hz	230V/50Hz	230V/50Hz	230V/50Hz
ELECTRICAL POWER (T AMB. 25°C)		385W	385W	570W	570W
		4,16kWh/24h	4,16kWh/24h	6,16kWh/24h	6,16kWh/24h
NOISE LEVEL (SOUND PRESSURE LEVEL, 1M)		<54dB(A)	<54dB(A)	<56dB(A)	<56dB(A)
<b>STRUCTURE</b>					
INTERNAL SURFACE	AISI 304 Stainless Steel	X	X	X	X
	White Pre-painted Steel Sheet	Optional	Optional	Optional	Optional
EXTERNAL SURFACE	White Pre-painted Steel Sheet	X	X	X	X
	AISI 304 Stainless Steel	Optional	Optional	Optional	Optional
EXTERNAL SIZES	Insulation 60mm	710 x 800 x 2030	710 x 800 x 2030	1420 x 800 x 2030	1420 x 800 x 2030
	Insulation 80mm	740 x 800 x 2300	740 x 800 x 2300	1440 x 800 x 2030	1440 x 800 x 2030
INTERNAL SIZES LXPXH MM		590 x 670 x 1510	590 x 670 x 1510	1300 x 670 x 1510	1300 x 670 x 1510
WEIGHT		170Kg	165Kg	240Kg	230Kg
INSULATION (PUR Foam)	60mm	X	X	X	X
	80mm	Optional	Optional	Optional	Optional
DEFROST SYSTEM		Electric/Hot Air	Electric/Hot Air	Electric/Hot Air	Electric/Hot Air
DOORS	DOOR TYPE	Glass	Solid	Glass	Solid
	DOORS	1	1	2	2
INTERNAL CHARACTERISTICS	SHELVES/DRAWERS	7	7	14	14
	DRAWERS SIZES LXP MM	505 x 835	505 x 835	505 x 835	505 x 835
	MAX BAGS (450ML)	504 (72x7)	504 (72x7)	1008 (72x14)	1008 (72x14)
CONTROLLER	HTS	X	X	X	X
CONNECTIVITY	WI-FI	Optional	Optional	Optional	Optional
	TCP/IP (MODBUS PROTOCOL)	Optional	Optional	Optional	Optional

# HAEMO (HR)

		HAEMO 180V (HR)	HAEMO 180C (HR)	HAEMO 310V (HR)	HAEMO 310C (HR)	HAEMO 400V (HR)	HAEMO 400C (HR)
<b>TECHNICAL CHARACTERISTICS</b>							
CAPACITY		150lt	150lt	300lt	300lt	400lt	400lt
TEMPERATURE RANGE		+4 ±2°C	+4 ±2°C	+4 ±2°C	+4 ±2°C	+4 ±2°C	+4 ±2°C
REFRIGERANTS		R600a	R600a	R600a	R600a	R600a	R600a
POWER SUPPLY		230V/50Hz	230V/50Hz	230V/50Hz	230V/50Hz	230V/50Hz	230V/50Hz
ELECTRICAL POWER (T AMB. 25°C)		120W	130W	150W	160W	150W	170W
		1,3kWh/24h	1,49kWh/24h	1,6kWh/24h	1,78kWh/24h	1,6kWh/24h	1,81kWh/24h
NOISE LEVEL (SOUND PRESSURE LEVEL, 1M)		<45dB(A)	<45dB(A)	<45dB(A)	<45dB(A)	<45dB(A)	<45dB(A)
<b>STRUCTURE</b>							
INTERNAL SURFACE	AISI 304 Stainless Steel	X	X	X	X	X	X
EXTERNAL SURFACE	White Pre-painted Steel Sheet	X	X	X	X	X	X
	AISI 304 Stainless Steel	-	-	-	-	-	-
EXTERNAL SIZES LXPXH MM		650 x 670 x 1110	650 x 640 x 1100	670 x 670 x 1830	670 x 640 x 1830	670 x 670 x 2080	670 x 640 x 2080
INTERNAL SIZES LXPXH MM		520 x 470 x 670	520 x 470 x 670	530 x 460 x 1400	530 x 460 x 1400	530 x 460 x 1660	530 x 460 x 1660
WEIGHT		60Kg	50Kg	80Kg	70Kg	100Kg	90Kg
INSULATION (PUR Foam)		65mm	65mm	65mm	65mm	65mm	65mm
DEFROST SYSTEM		Hot Air	Hot Air	Hot Air	Hot Air	Hot Air	Hot Air
DOORS	DOOR TYPE	Glass	Solid	Glass	Solid	Glass	Solid
	DOORS	1	1	1	1	1	1
INTERNAL CHARACTERISTICS	SHELVES/DRAWERS	3	3	5	5	6	6
	DRAWER SIZES LXP MM	480 x 360	480 x 360	480 x 360	480 x 360	480 x 360	480 x 360
	MAX BAGS (450ML)	96 (32x3)	96 (32x3)	160 (32x5)	160 (32x5)	192 (32x6)	192 (32x6)
CONTROLLER	HTS	X	X	X	X	X	X
CONNECTIVITY	WI-FI	Optional	Optional	Optional	Optional	Optional	Optional
	TCP/IP BOARD (MODBUS PROTOCOL)	Optional	Optional	Optional	Optional	Optional	Optional



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