



 BACCO **30** SP

TECHNICAL DATA SHEET

BACCO 30 SP

 MADE IN ITALY

INDEX

A. DESCRIPTION OF THE COMPONENTS	4
<ul style="list-style-type: none"> • Indoor unit; • Outdoor unit; • Electrical panel: • Digital controller; • Temperature and humidity measurement probe; 	
B. BACCO 30 SP TECHNICAL DATA	6
C. COMPONENTS AND VARIATIONS OF THE “BACCO SYSTEM”	8
<ul style="list-style-type: none"> • Adiabatic humidifier; • Dehumidifier; • Surface treatments on request; • Electrical resistor; • outdoor unit speed regulator 	
D. CONFIGURATION OF THE “BACCO SYSTEM”	9
E. OPERATION OF THE “BACCO SYSTEM”	10
F. ELECTRICAL ENERGY CONSUMPTION	11
<ul style="list-style-type: none"> • Indoor unit; • Outdoor unit; 	
G. DIMENSIONS OF THE SYSTEM COMPONENTS	12
<ul style="list-style-type: none"> • Indoor unit: front view; • Indoor unit: rear view; • Electrical panel; • Indoor unit: side view; • Outdoor unit: side view tubing outlet; • Humidifier; • Dehumidifier. 	

A.

DESCRIPTION OF THE COMPONENTS



DESIGN

modern and functional



OPERATION

automatic



AMBIENT VOLUMES

air conditioning volume 30 m³
(volume referring to a correctly insulated premises and with good energy efficiency)



DIGITAL CONTROLLER:

parameters programmable by the user;
- temperature
- humidity.



RELIABILITY

tested for 24/7 operation



CONSTRUCTION

in stainless steel

The BACCO 30 SP wine cellar cooling unit was designed and manufactured focusing on the quality of the materials, the care for detail and finishes. We all know that wine lovers with a cellar want to preserve their wine in optimal conditions and therefore in this context the “BACCO System” covers a fundamental role to create and maintain an ideal micro-climate by controlling and managing two main parameters; temperature and humidity.

The “BACCO SYSTEM” is an Italian product, on the market for approximately 15 years and each part was subjected, over the years, to continuous improvement to obtain a functional aesthetic, quality, reliability of the mechanics and performance.

The cellar is not a fridge, but a “technical premises” where maintaining an ideal micro-climate promotes slow refinement and ageing processes which over time enhance the flavours and the scents of your wine.

The BACCO air conditioning units, beside the name have a number that approximately refers to the volume of an ideal premises with low heat dispersion. This “number” must not be considered an absolute value, but purely approximate and refers to premises with good “energy performance”; we prefer to write that BACCO 30 SP has a cooling power of 1.3 Kw which for your cellar, even if of equal surface area, may or may not suffice according to the degree of thermal insulation of the premises and the temperature programmed. For example, masonry walls or glass windows alongside heated premises and/or external walls exposed to solar radiation can absorb and radiate such thermal power (heat) inwards to reduce/annul the cooling power of the air conditioning unit.

The BACCO 30 SP is composed of 3 individual pieces of equipment to connect to one another using copper tubing for refrigeration circuits and electrical cabling according to the instructions and assembly drawings in the “Installation, use and maintenance instruction manual” which is delivered in the packaging of the material purchased.

The yield of the air conditioning unit is strictly related to the energy efficiency of the premises, in particular the degree of insulation in the floor, the walls, the ceiling, any windows, glass walls and entrance door.

INDOOR UNIT

made entirely in brushed STAINLESS STEEL suitable for mounting on wall, inside the cellar, using the specific support bracket included in the supply. The indoor unit should be mounted inside the premises, up high about 15/20 cm off the ceiling and possibly on a short wall and on this model the electrical resistor can be mounted for operation.



OUTDOOR UNIT

tropicalized for 43°C operation, with perforated casing, in brushed STAINLESS STEEL, for heat dispersion. It can be mounted outside on the wall or floor. Externally, there are already an adequate quantity of delivery and return couplings for gas R452 for a line of 6-metre tubing. The outdoor unit should be positioned on the specific wall support brackets supplied.



ELECTRICAL PANEL

The control and command electrical panel is manufactured entirely in STAINLESS STEEL with an external brushed finish and can be assembled inside the cellar or outside at the entrance of the cellar.

The E.P. hosts the digital controller and the terminal board hosts the wired temperature/humidity measurement probe.



DIGITAL CONTROLLER

Measurement of the temperature and % of humidity is taken by the DIXELL microprocessor "digital controller" specifically for application on cooling units.

The temperature of the air is displayed in "red" on the top part, while the % of relative humidity is highlighted in "yellow" on the bottom part of the display. The digital controller is used to program automatic operation of the 4 main functions of the "Bacco system".

- cold production;
- hot production using an electrical resistor;
- premises humidification;
- premises dehumidification;



TEMPERATURE AND HUMIDITY MEASUREMENT PROBE

The DIXELL temperature and humidity measurement probe is used to measure the two parameters, interacting with the digital controller on the command and control electrical panel. The probe is connected to the electrical panel using a 3-metre long electric cable (STD length) to allow positioning of the probe in the point of the cellar most suitable for correct measurement. The black terminal measures the temperature and the sintered brass one measures the % of humidity.



B.

BACCO 30 SP TECHNICAL DATA (*)

suitable for a cellar premises	with a volume of approx. 30 m3 (**)
cooling unit cooling power	1303 w (cold only) at 25 °C external temperature and 5° evaporation temperature.
power supply voltage	220-240 V / 1 Ph / 50 Hz
cellar internal temperature	minimum 12°C (***) adjustable in increase
electrical absorption of utilities	See specific tables on page 9

ELECTRICAL PANEL

construction	AISI 304 brushed external finish
external dimensions	mm: L: 256x94x h 245
probes cable length	3 m. (can be increased on request)
electrical power supply cable length	3 m. and SCHUKO socket (cable to cut to measurement on site)

DIGITAL CONTROLLER

cellar internal air temperature	Programmable as you wish - digital reading
cellar internal % humidity	Programmable as you wish - digital reading

INDOOR UNIT

construction	AISI 304 brushed external finish
external dimensions	mm: L: 508x254xh252
Weight	12 kg
evaporator type	finned battery copper/aluminium cataphoretic paint
fan	D200 mm
air flow rate	approx. 300 m3/hour
wall-mounting bracket	Included in supply
sound level	54 dB(A) at 1 m
type of installation	On wall

condensate drain	tube diam. 12mm
------------------	-----------------

OUTDOOR UNIT

construction	External protection in AISI 304 brushed external finish
external dimensions	mm: L= 472x345xh 300
compressor	EMBRACO NEK 6210 GK
weight	27 kg
capacitor type	Finned battery copper/aluminium
fan	D254 mm
air flow rate	595 m3/hour
wall-mounting brackets	Included in supply
sound pressure	57 dB(A) at 1 m - 43 dB(A) at 5 m
condensate drain	Not planned
maximum electrical absorption	Variable, see table par. E
min/max external temperature of outdoor unit operation	from -5 to 43 °C
	from - 13 to 43°C with Fan Controller Danfoss

REFRIGERANT

gas type	R452a
charge	700 g (also sufficient for 6m cooling tube)
liquid/gas tubing diameter	Intake 1/4" – drainage 3/8"

DISTANCE PERMITTED BETWEEN INDOOR UNIT AND OUTDOOR UNIT	Approx. 20 metres of cooling tube, maximum
--	--

INSTRUCTION MANUAL	translation of original language
---------------------------	----------------------------------

(*) The technical data outlined may be subject to changes in light of continuous improvement of the performance, therefore Montec srl reserves the right to change them without any obligation of prior notification.

(**) Value referred to an adequately insulated premises, with particular reference to: walls, ceiling, floor, entrance door and windows; any glass doors and walls must be built using low emission glass.

The unit does not have a "dehumidification" function as standard and therefore it does not remove humidity beyond that normally extracted during operation of the compressor.

C.

COMPONENTS and VARIATIONS OF THE “BACCO SYSTEM”

The “BACCO SYSTEM” as clearly represented by the system configuration diagram (point D) is composed of an air conditioning unit and a group of accessory components used to maintain the ideal temperature °C and % of humidity, as the client wants for the well-being of his or her wine.

The standard “digital controller” mounted on the EP of the BACCO SYSTEM automatically manages all the components described below:

ADIABATIC HUMIDIFIER

Adiabatic humidifier produces a very fine mist that evaporates in the air in the premises humidifying it at the programmed %:

- Nominal weight: w 40;
- Humidifier weight: kg 4.30
- Dimensions: mm 302x339xh312.

Use water free of limescale because this would block operation of the humidifier components.

Furthermore, hardwater nebulised through evaporation creates very fine white dust that deposits on all surfaces of the premises.



DEHUMIDIFIER

The dehumidifier automatically removes excess humidity from the environment compared to that preset and receives switch on and off input from the digital controller. The condensate collection tray can be connected to a condensate drain to avoid manual emptying.

- absorbed power: 280 w in operation;
- daily dehumidification capacity: litres 11.4 in 24 h with 80% ambient humidity;
- dimensions: mm 340X320X H 500
- weight: kg 15.80



SURFACE TREATMENTS ON REQUEST

An alternative to the standard version with a surface finish in brushed stainless steel is possible. Ask, at a surcharge, for the “BLACK” version which includes painting of the indoor unit and the electrical panel.

The “BLACK” model is powder painted in DARK ANTRACITE which is the one with more shine and resistance. Additionally, it doesn't show fingerprints .

The delivery times can be prolonged by up to 4 weeks.



ELECTRICAL RESISTOR

The heating function operates through an automatic heating resistor as described in point E.

- Nominal weight: 1 Kw;

The electrical resistor cannot be mounted on the “BLACK” model.

OUTDOOR UNIT FAN SPEED REGULATOR

If the BACCO air conditioning unit is used in an external temperature under -5°C , you can integrate the outdoor unit with a speed regulator of the capacitor fan. The speed of the fan is regulated based on the internal pressure of the gas circuit and therefore will work as follows:

- automatic switch-on of the outdoor unit for cold request in wine premises;
- the compressor will start to work, while the fan remains off;
- then, the pressure of the circuit will increase and the gas switches on the capacitor fan;
- the duration of capacitor fan operation varies based on the cooling time of the gas circuit and therefore lowering of the pressure in the cooling circuit;
- the capacitor will continue to work until the request for cold in the wine premises stops.

Technical data:

- Power supply voltage: 220-240V
- manufacturer: DANFOSS SAGINOMIYA
- operation: automatic
- ambient temperature field: $-20^{\circ}\text{C} + 55^{\circ}\text{C}$ (operating tested by us at -13°C);
- degree of protection IP: IP54

The speed regulator remains inside the protective perforated shell of the components of the outdoor unit.



D.

CONFIGURATION OF THE "BACCO SYSTEM"

The "BACCO SYSTEM" can be organised and purchased in various combinations:

1. air conditioning unit only
(*cold only*);
2. air conditioning unit + humidifier (the classic version is the most requested on the market);
(*cold only + missing humidity increase compared to programming*)
3. air conditioning unit + dehumidifier;
(*cold only + lowering humidity*);
4. air conditioning unit + electrical resistor + humidifier;
(*cold+ hot + missing humidity increase*);
5. air conditioning unit + electrical resistor + dehumidifier
(*cold+ hot + lowering humidity*);
6. air conditioning unit + electrical resistor + humidifier + dehumidifier;
(*cold+ hot + missing humidity increase + lowering humidity*);
7. all the combinations can be equipped with "fan speed regulator" of the capacitor section for applications under -5°C ;

E.

“BACCO SYSTEM” OPERATION

Example of programming and operation of a “BACCO SYSTEM” organised as position 6 with everything

AIR CONDITIONING UNIT: with temperature programmed to 14°:

- **AIR CONDITIONING UNIT IN HOT MONTHS:** when the internal temperature of the cellar rises by over 2°C (to 16°C), the fan and the compressor switch on and having reached the temperature of 14°, the compressor and the fan stop (*);
- **AIR CONDITIONING UNIT IN COLD MONTHS:** under 12°C, the electrical resistor and the fan switch on and having reached the temperature of 14°, both the resistor and the fan stop (*).

(* in both cases, the fan can continue to work to meet the parameter value set of the humidity.

HUMIDIFIER/DEHUMIDIFIER: with a % of humidity set to 65%:

- When the % of relative humidity goes under 5% and therefore under 60%, the fan in the indoor unit and the humidifier work until approx. 65% is reached; have reached the percentage set, the fan and the humidifier switch off;
- When the % of relative humidity goes over 5% and therefore over 70%, the fan in the indoor unit and the dehumidifier work until approx. 65% is reached; having reached the percentage set, the fan and the dehumidifier switch off.

The fan can continue to work to meet the parameter value set of the temperature.



F.

ELECTRICAL ENERGY CONSUMPTION

The overall electrical consumption varies based on the efficiency of the premises allocated to store the wine, the temperature programmed in the cellar, the external temperature and the evaporation temperature of the outdoor unit.

INDOOR UNIT fan 8 W to 1300 rpm	OUTDOOR UNIT fan: 16 W
------------------------------------	---------------------------

Consumption refers to the external environmental situation read in the column marked.

Performances:

external ambient temperature 25°C

Evaporating Temperature °C	Cooling Capacity w	Power Consumption w	Corrent A	Efficiency	w/w
10	1481	635.00	3.78	2.33	
5	1303	596.25	3.58	2.22	
0	1134	541.00	3.39	2.1	
-5	974	499.00	3.23	1.95	
-10	822	460.00	3.08	1.79	
-15	679	423.75	2.96	1.6	
-20	544	390.00	2.85	1.39	

external ambient temperature 32°C

Evaporating Temperature °C	Cooling Capacity w	Power Consumption w	Corrent A	Efficiency	w/w
10	1294	684.00	3.98	1.89	
5	1141	629.06	3.74	1.81	
0	996	579.00	3.53	1.72	
-5	859	532.94	3.34	1.61	
-10	730	460.00	3.18	1.49	
-15	611	449.31	3.04	1.36	
-20	501	410.00	2.91	1.22	

external ambient temperature 43°C

Evaporating Temperature °C	Cooling Capacity w	Power Consumption w	Current A	Efficiency	w/w
5	901	693.88	4.00	1.30	
0	791	634.00	3.74	1.25	
-5	679	580.13	3.52	1.17	
-10	571	531.00	3.32	1.08	
-15	475	485.38	3.15	0.98	
-20	399	442.00	3.00	0.90	

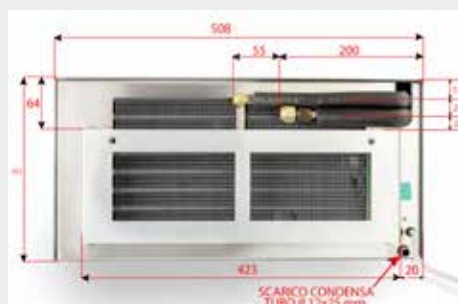
G.

DIMENSIONS of COMPONENTS

Indoor unit: front view



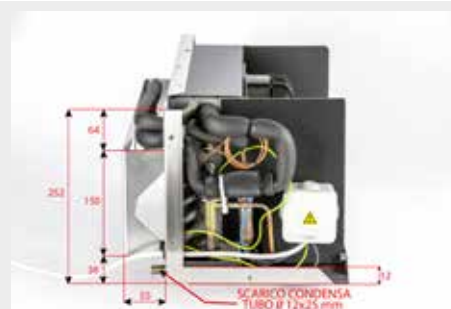
Indoor unit: rear view



Electrical panel



Indoor unit: side view



Outdoor unit: side view tubing outlet



Humidifier



Dehumidifier



produced by
MONTEC SRL



via dell'Artigiano Mel, 12
32026 BORGIO VALBELLUNA - BL

www.mon-tec.it
www.baccoclima.com