

VKB hydronic systems



Tank insulated with anti-condensate elastomere



The VKB units are buffer storage tanks with accessories (without circulation pump) designed in order to significantly reduce the set-up time for the conditioning and cooling devices.

With all hydraulic components which are indispensable for the correct functioning of the hydraulic circuit for the distribution of chilled water. The components can be coupled with all kind of water coolers. The units consist of an insulated buffer tank, an expansion vessel, a safety valve, a deaerator, a fill/discharge valve and a manometer.

The VKB units are enveloped in a supporting structure in a varnished steel base and with varnished steel panels. They are designed to guarantee an easy inspection and maintenance of the components. The tank, which is hydraulically inserted between the cooling station and the fan-coils, makes the water content in the entire installation increase, by increasing the pause between the shutdown of the compressor and the next start-up. In this way, the number of start-ups is significantly reduced, which improves the life span and performance of the compressor. The broad range of storage tanks makes it possible to meet every requirement. Every unit is assembled in our factory and tested to guarantee our trustworthiness.

Available versions

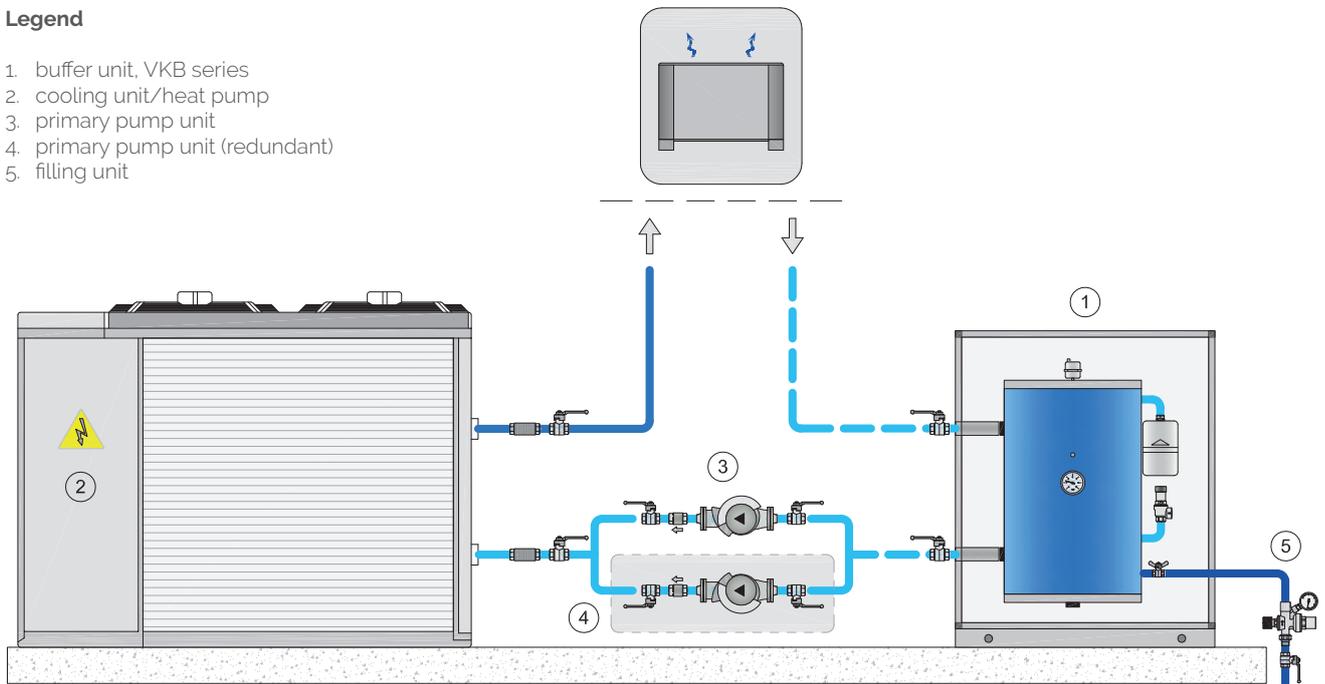
The VKB units are available with the following capacity: 200, 300, 500, 750, 1000 and 1500 liters.

Solutions with the VKB unit

Typical installation for conditioning devices. This makes it possible to optimize the functioning of the thermal source by stabilizing the return temperature in the cooling device.

Legend

1. buffer unit, VKB series
2. cooling unit/heat pump
3. primary pump unit
4. primary pump unit (redundant)
5. filling unit

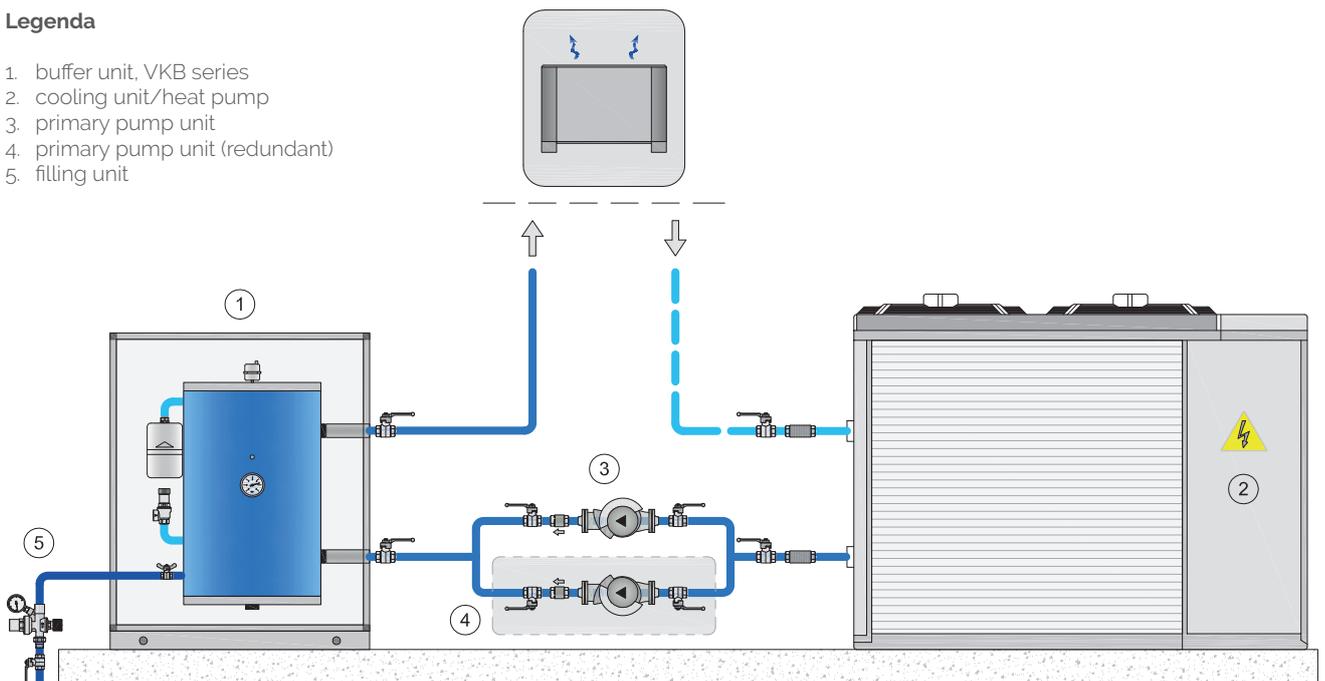


Solutions with the VKB unit

Typical installation for devices for industrial processes, in particular when a very accurate temperature control is needed.

Legenda

1. buffer unit, VKB series
2. cooling unit/heat pump
3. primary pump unit
4. primary pump unit (redundant)
5. filling unit



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VKB Description of the main components

1. Storage tank

The storage tank is made of varnished carbon steel plates and is insulated with closed cell elastomere. This type of insulation, refinished in thick PVC, guarantees an excellent resistance to condensate formation.

2. Fill up valve

This valve refills the hydraulic circuit in the demand peak phase as well as during normal functioning.

3. Safety valve

Calibrated at 3 bar and with canalised discharge. It protects the unit from possible overpressure.

4. Automatic valve for air discharge

Placed on the upper part of the unit, it discharges air from the unit.

5. Discharge valve

It discharges air from the lowest point of the tank to make drainage possible.

6. Supporting structure

The base is made of thick steel plates varnished with RAL 7042. The frame is made from aluminium and the sides of galvanized and varnished steel plates which are resistant to atmospheric agents. All this makes it possible for the VKB to be installed in non-technical spaces and in places exposed to atmospheric agents.

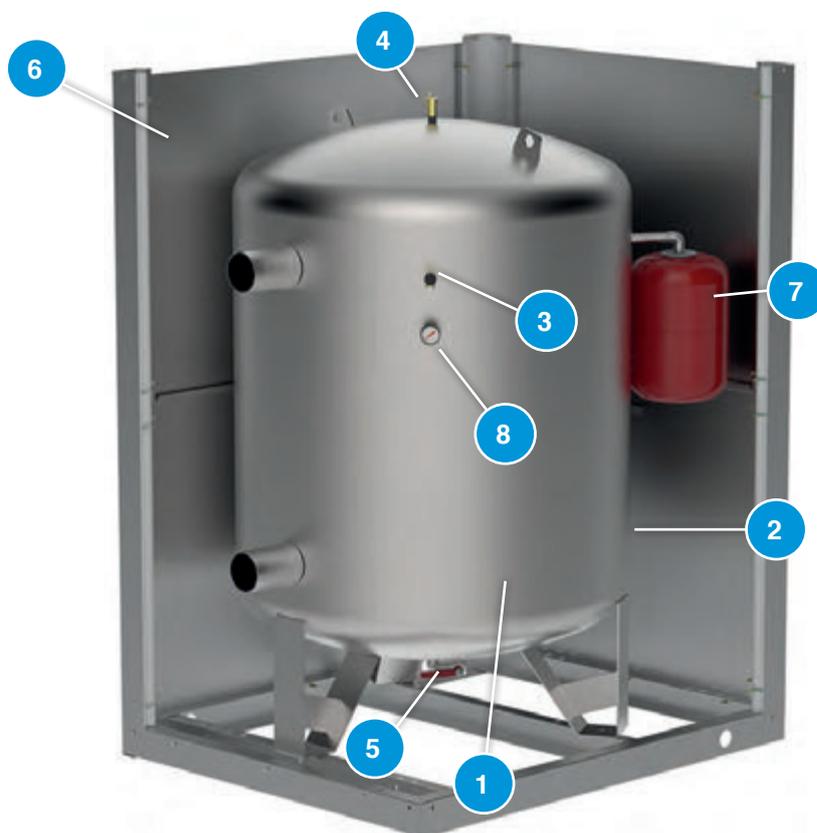
7. Expansion vessel

Supplied with a membrane, preloaded nitrogen and with dimensions that can absorb varying volumes of liquid derived from the various temperatures.

8. Manometer

This device is placed on the tank and indicates the internal pressure.

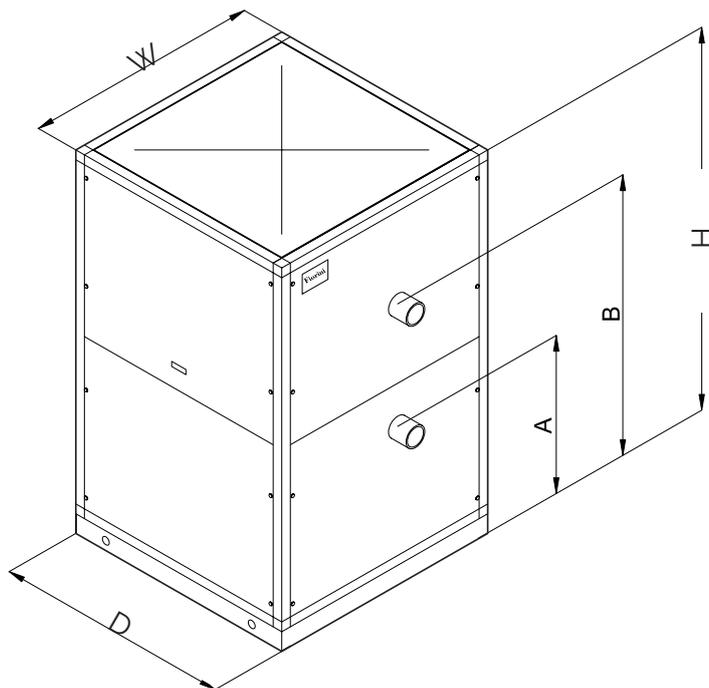
components	
1	storage tank
2	fill-up valve
3	safety valve
4	automatic discharge valve
5	discharge
6	supporting structure
7	expansion vessel
8	manometer



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capacity l	Capacity of the expansion vessel l	Calibration of the expansion vessel bar	Calibration of the discharge valve bar	Hydraulic couplings inch	H mm	W mm	D mm	A mm	B mm
200	8	1.5	3	2"	1576	684	684	230	990
300	8	1.5	3	2"	1950	1200	1200	450	1320
500	12	1.5	3	3"	1950	1200	1200	490	1540
750	24	1.5	3	3"	1950	1200	1200	490	1540
1000	24	1.5	3	4"	1950	1200	1450	640	1460
1500	2x24	1.5	3	4"	1950	1200	1450	640	1460

capacity l	codice	prezzo
200	838050011	
300	838050012	
500	838050013	
750	838050014	
1000	838050015	
1500	838050016	



VKB

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Normal user conditions

The unit is designed to be connected with conditioning devices and coupled to a chiller which takes the heat from the device thanks to an increase in the thermal nominal standard (7-12°C). The average operating temperature is approximately 10°C and the operating pressure varies between 0.5 and 2.5 bar. The flow depends on the overall functioning of the installation – the cooling unit, indicated by the intersection between the characteristic curve of the pump and the characteristic curve of the installation. The VKB group is designed to function as a heat pump, but it can also function in relatively high temperatures, with a maximum of 50°C and with a max pressure of 3 bar. If the VKB is operative in an environment with low winter temperatures, it is recommended to use anti-freeze gel or resistance. Alternatively, we recommend the emptying of the hydraulic circuit, in order to prevent the water from being frozen.

Protective devices

The VKB is protected from possible functioning errors thanks to the installation of two devices, also in the standard version: the expansion vessel and the safety valve. The expansion vessel, preloaded, intervenes when there is an excessive dilation of the fluid in the installation. In case of a wrong manoeuvre or other events which cause overpressure, the safety valve, calibrated at 3 bar, is automatically activated.

Purpose

This type of buffer tank is designed for medium-sized cooling systems. It is installed between a refrigerator and the device and can be used in installation in places exposed to bad weather.

Operating load

The operating load of the tank is determined on the grounds of the external weather conditions and the specific requirements of the client. Those are taken in consideration during the design phase of the unit.