# Hydronic Kits
# VKB



# Hydronic systems
# VKB 2.0

The VKB 2.0 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.

**Standard equipment**

**Capacity:** from 250 to 1.500 l
**Tank material:** carbon steel
**Fluid types:**
- water
- Ethylene glycol up to 40%
- Propylene glycol up to 40%

**Insulation:** anti-condensate elastomer
**Execution:** Layout 1

**Standard equipment usage limit**

| Fluid temperature | Environment temp. | Max. pressure |
|---|---|---|
| 5°C / +60°C | 10°C / +40°C | 3 bar |

Complete 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/drain valve and a manometer.

The VKB 2.0 units are enveloped in a supporting structure in a galvanized steel and powder coated panels and base. 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.

**Accessories**: See pag. 146 for the list of available accessories




**Special equipment usage limit available on configurator (see page 108)**

| Fluid temperature | Environment temp. | Max. pressure |
|---|---|---|
| -20°C / +60°C | -20 / +40°C | 3 bar |

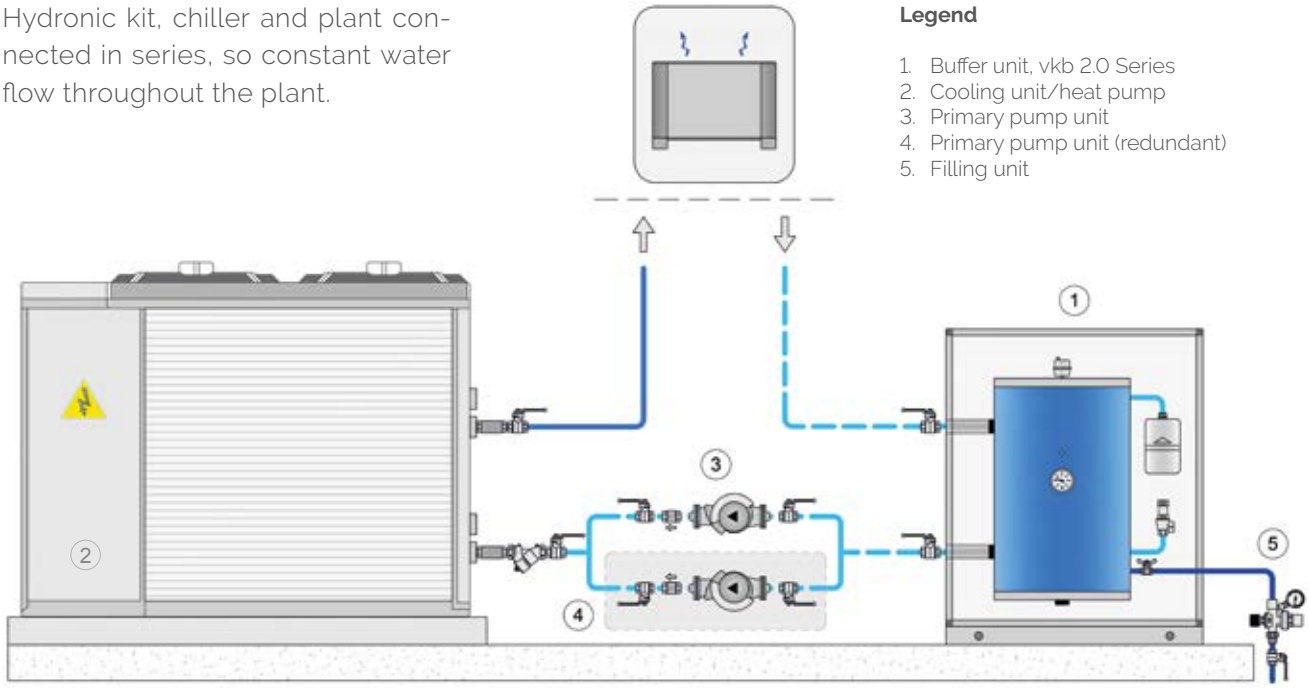
Upon request, it is possible to produce versions with special equipment to operate at temperatures and pressures outside the standard usage limits. These equipments include, for example, increased insulation, antifreeze kits, stainless steel connections and tank.

# Hydronic systems
# VKB 2.0 Layout 1 STANDARD

Hydronic kit, chiller and plant connected in series, so constant water flow throughout the plant.

**Legend**

1. Buffer unit, vkb 2.0 Series
2. Cooling unit/heat pump
3. Primary pump unit
4. Primary pump unit (redundant)
5. Filling unit

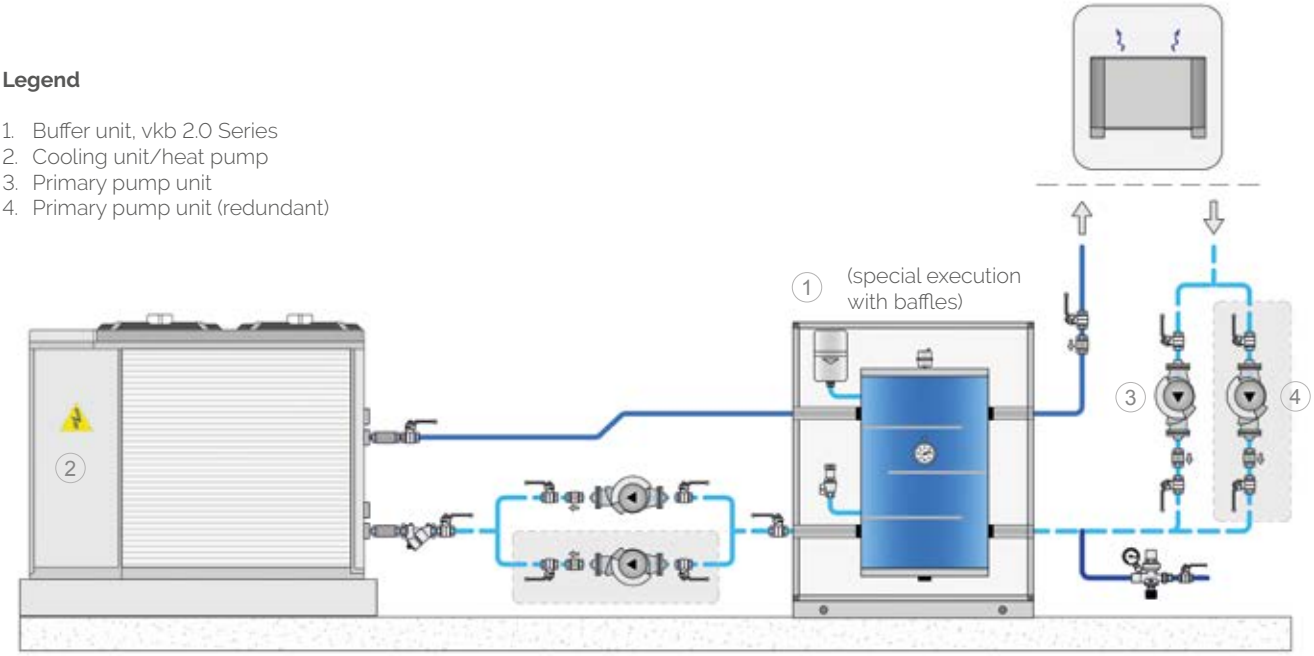



# Hydronic systems
# VKB 2.0 Layout 2 SPECIAL VERSION

Hydronic Kit and Chiller create the primary circuit, Hydronic Kit and Plant create the secondary circuit. Hence, the two circuits have independent flow rates. The VKB shown below is a special execution with baffles.

**Legend**

1. Buffer unit, vkb 2.0 Series
2. Cooling unit/heat pump
3. Primary pump unit
4. Primary pump unit (redundant)

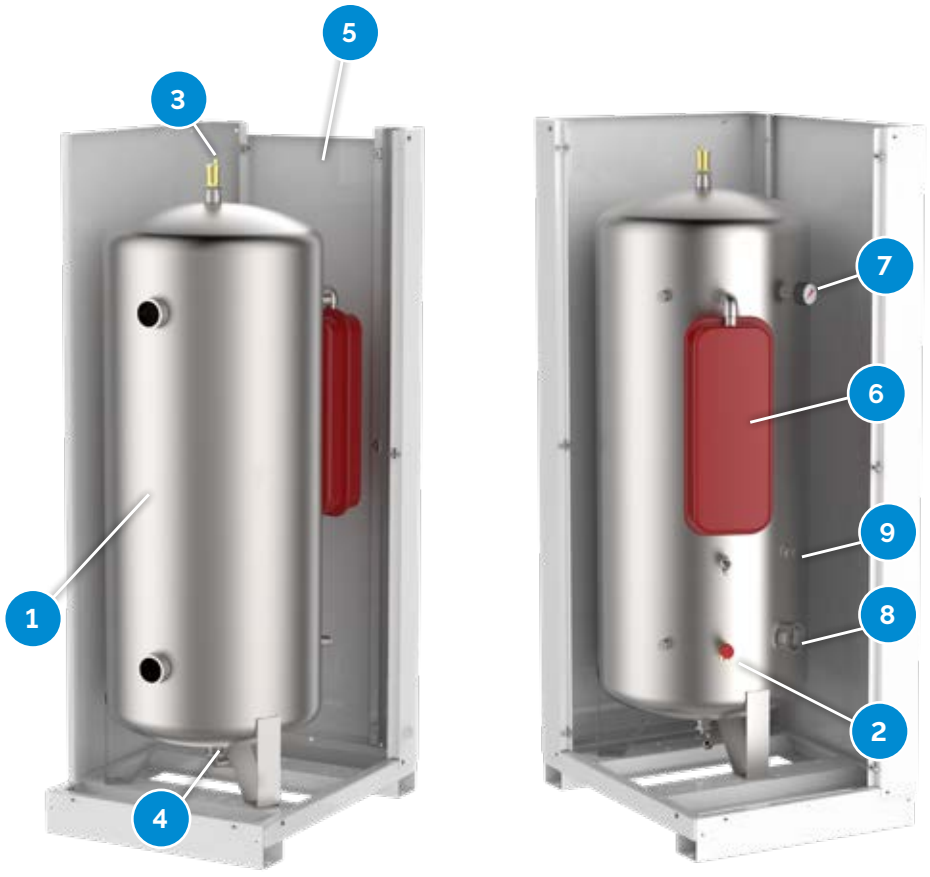


# Hydronic systems
# VKB 2.0

### VKB 2.0 Description of the main components

- **Storage tank**
  The storage tank is made of varnished carbon steel plates and is insulated with closed cell elastomer . This type of insulation, guarantees an excellent resistance to condensate formation.
- **Fill up valve**
  This valve refills the hydraulic circuit in the demand peak phase as well as during normal functioning.
- **Safety valve**
  Calibrated at 6 bar and with canalised drain. It protects the unit from possible overpressure.
- **Automatic valve for air drain**
  Placed on the upper part of the unit, it drains air from the unit.
- **Drain valve**
  It drains air from the lowest point of the tank to make drainage possible.
- **Supporting structure**
  The base is made of thick steel plates varnished. The basement and panels are made in galvanized steel and powder coated which are resistant to atmospheric agents. All this makes it possible for the VKB 2.0 to be installed in non-technical spaces and in places exposed to atmospheric agents.
- **Expansion vessel**
  Supplied with a membrane, preloaded nitrogen and with dimensions that can absorb varying volumes of liquid derived from the various temperatures.
- **Manometer**
  This device is placed on the tank and indicates the internal pressure.

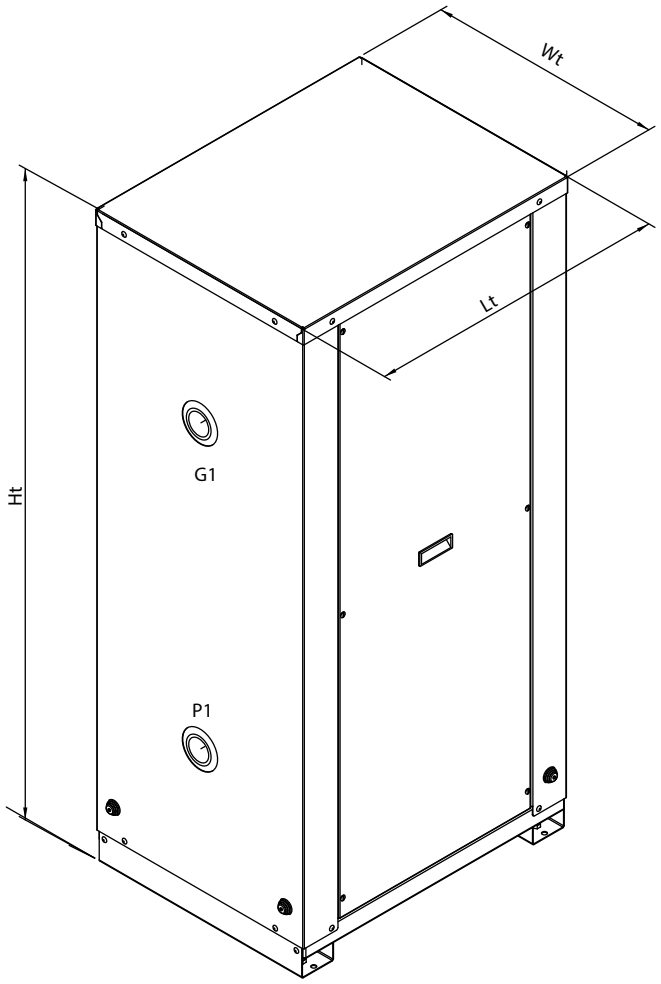
| Components | |
|---|---|
| 1 | Storage tank |
| 2 | Safety valve |
| 3 | Automatic safety valve |
| 4 | Drain |
| 5 | Supporting structure |
| 6 | Expansion vessel |
| 7 | Manometer |
| 8 | Predisposition for electrical resistance |
| 9 | Predisposition for thermostat |



# Hydronic systems
# VKB 2.0

| Capacity l | Vessel l | Vessel calibration bar | Safety valve bar | Couplings inch | Wt mm | Lt mm | Ht mm | P1 mm | G1 mm |
|---|---|---|---|---|---|---|---|---|---|
| 250 | 12 | 1 | 6 | 2" | 590 | 750 | 1600 | 420 | 1220 |
| 500 | 18 | 1,5 | 6 | 3" | 750 | 1000 | 1850 | 420 | 1470 |
| 1000 | 25 | 1,5 | 6 | 4" | 1100 | 1100 | 1850 | 610 | 1410 |
| 1500 | 2x25 | 1,5 | 6 | 4" | 1200 | 1200 | 1950 | 650 | 1450 |

| Capacity l | Code | Price | Dimensions with packaging mm | Weight kg |
|---|---|---|---|---|
| 250 | 838050090X | | 625x785x1670 | 95 |
| 500 | 838050091X | | 800x1050x1920 | 155 |
| 1000 | 838050092X | | 1150x1150x1920 | 255 |
| 1500 | 838050016 | | 1250X1250X2020 | 313 |




**Couplings legend**

| | |
|---|---|
| **G1** | From plant<br>Threaded connection |
| **P1** | To energy source<br>Threaded connection |

# Hydronic systems
# VKB 2.0 accessories

## 1 From threaded to flanged galvanized connections

The codes and prices below are for single item. The adapter must be screwed onto the existing connection. The adapter is not welded on the ferrule, for special executions ask for a quote.



| Original connection | Transformed connection uni-en pn 16 | Code | Price |
|---|---|---|---|
| 1"1/2 | DN 40 | 838081200X | |
| | DN 50 | 838081201X | |
| 2" | DN 50 | 838081202X | |
| | DN 65 | 838081203X | |
| 2"1/2 | DN 65 | 838081204X | |
| | DN 80 | 838081205X | |
| 3" | DN 80 | 838081206X | |
| | DN 100 | 838081207X | |
| 4" | DN 100 | 838081208X | |
| | DN 125 | 838081209X | |

## 2 From threaded to Grooved galvanized connections

The codes and prices below are for single item.
The adapter must be screwed onto the existing connection. The adapter is not welded on the ferrule, for special executions ask for a quote.



| Original connection | Transformed connection | Code | Price |
|---|---|---|---|
| 1"1/2 | 1"1/2 | 838081211X | |
| | 2" | 838081212X | |
| 2" | 2" | 838081213X | |
| | 2"1/2 | 838081214X | |
| 2"1/2 | 2"1/2 | 838081215X | |
| | 3" | 838081216X | |
| 3" | 3" | 838081217X | |
| | 4" | 838081218X | |
| 4" | 4" | 838081219X | |
| | 5" | 838081220X | |

## 3 Electrical resistor

IP 65 Protection



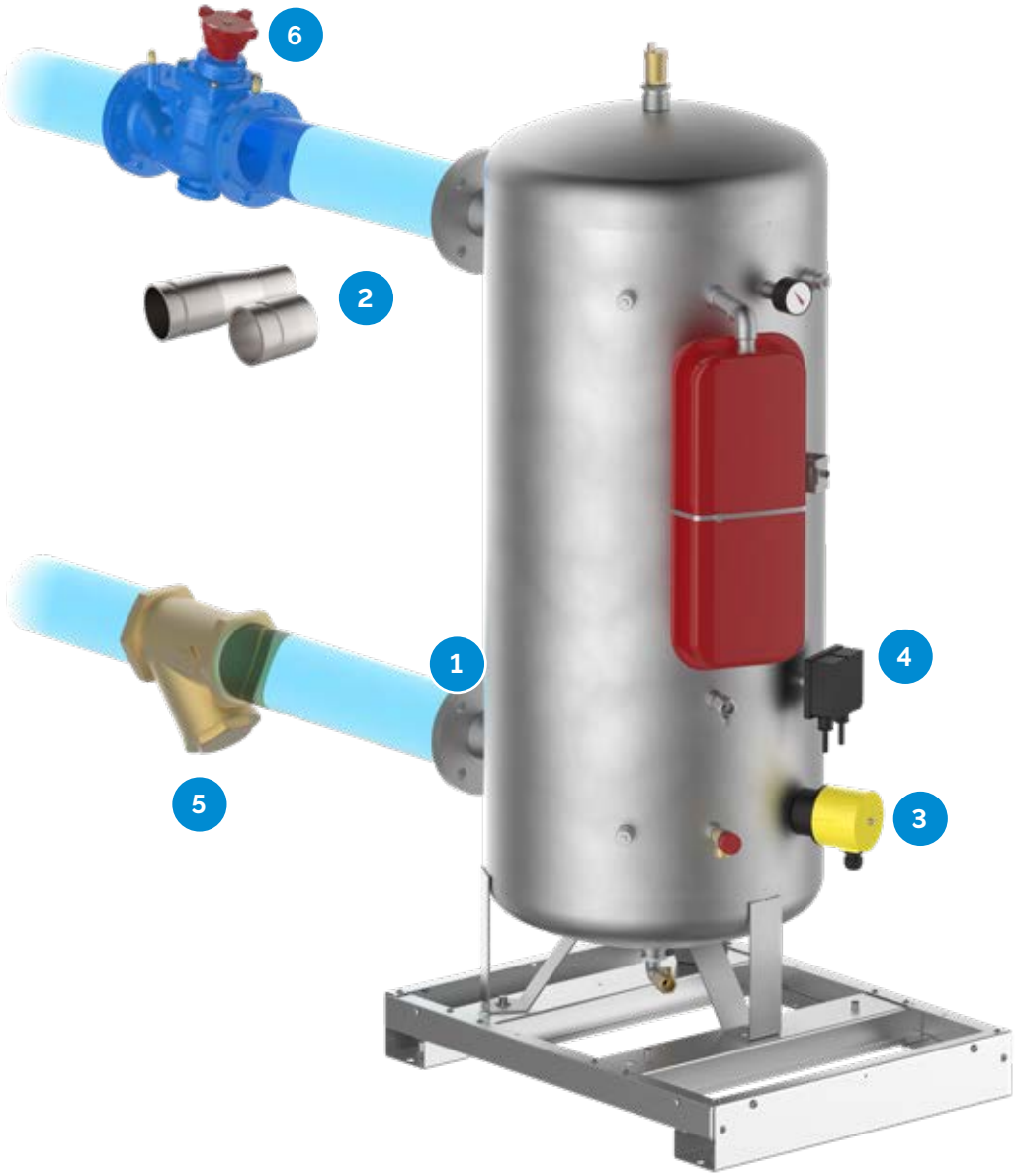
| Power W | Voltage V | Element number | Connection diameter inch | Length mm | Code | Price |
|---|---|---|---|---|---|---|
| 1300 | 230/380 | 3 | 2" | 220 | C24100008 | |
| 2000 | 230/380 | 3 | 2" | 290 | C24100009 | |
| 3000 | 230/380 | 3 | 2" | 340 | C24100010 | |
| 4000 | 230/380 | 3 | 2" | 390 | C24100012 | |

## 4 Temperature controls



| Description | Temperature range | Safety range | Code | Price |
|---|---|---|---|---|
| Thermostat | 0 ÷ 90 °C | - | C22010004 | |
| Bithermostat | 0 ÷ 90 °C | fix 100 °C | C22010006 | |
| Antifreeze Bithermostat | -30 ÷ 30 °C | 0 ÷ 90 °C | C22010007 | |

# Hydronic systems
# VKB 2.0 accessories




**5** **Filter (special version)**
Mesh filter, with 1000 micron holes, can be placed outside the unit to protect the pumps from any impurities in the equipment.
**see page: 133**

**6** **Balancing valves (special version)**
Valve can be connected externally to balance the flow within the circuit.
**see page: 133**

**Tailored connections (special version)**
Flangiate (in various materials), Grooved (in various materials), Larger
**see page: 133**

**Stainless steel execution**
In projects where the fluid temperature is between -11°C and -20°C, the hydronic kits are produced in a special configuration by replacing the standard hydraulic components with components suitable for working at low temperatures by exploiting the characteristics of the stainless steel material.
**see page: 133**

**Increased insulation**
This increased insulation compared to the standard allows the use of the kit in particularly harsh temperature conditions (from +4°C to -20°C), avoiding the formation of ice or condensation.
**see page: 133**



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