




## TESY VB 5038 D02 P2 Buffer Tank Instruction Manual

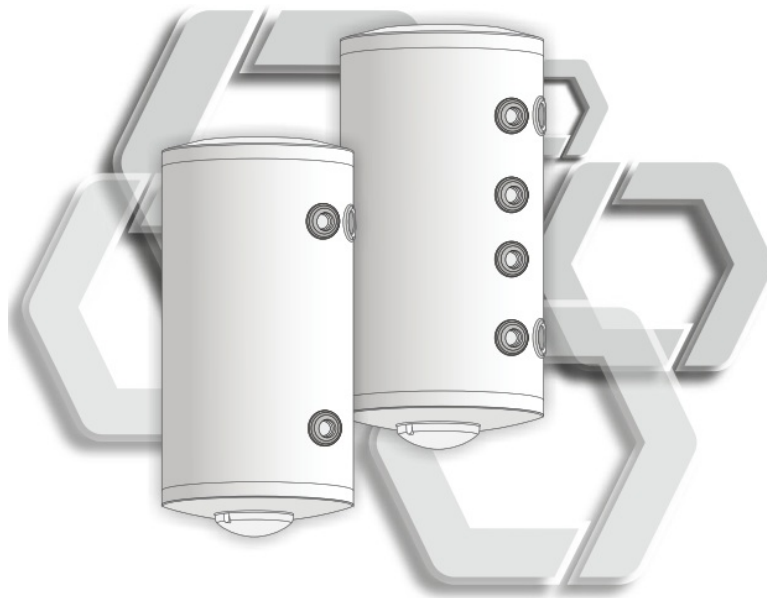
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# TESY

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**BUFFER TANK 10-12**

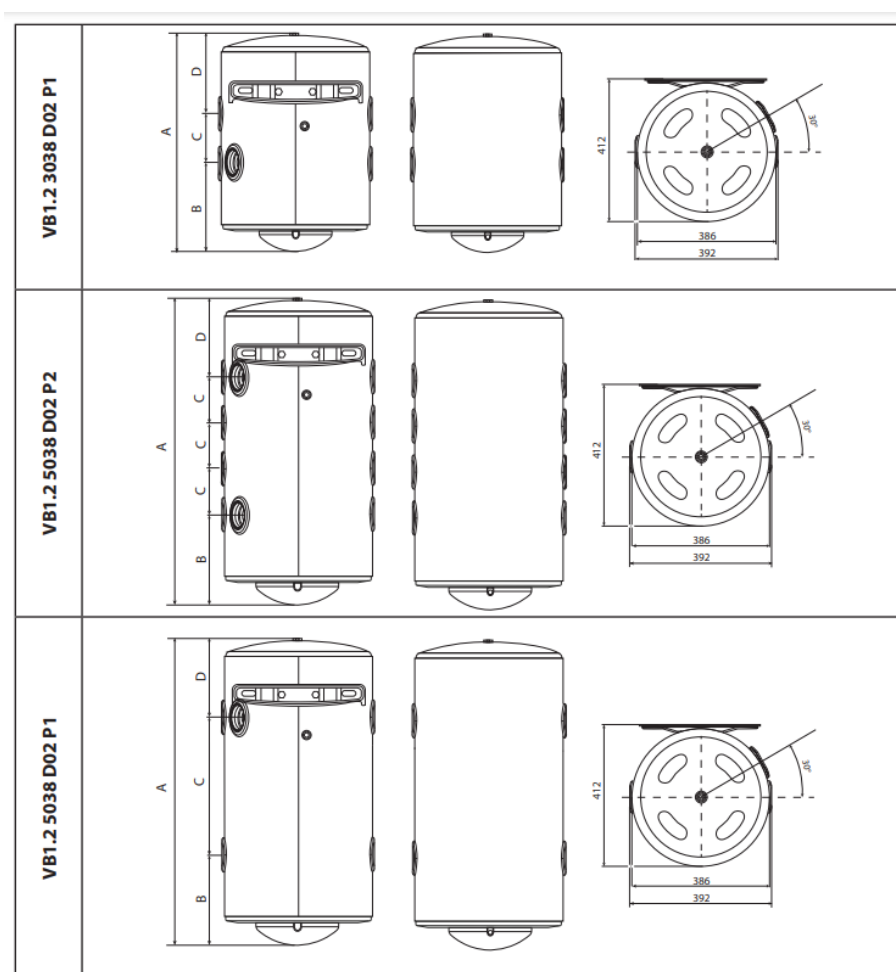
Instructions for use and storage



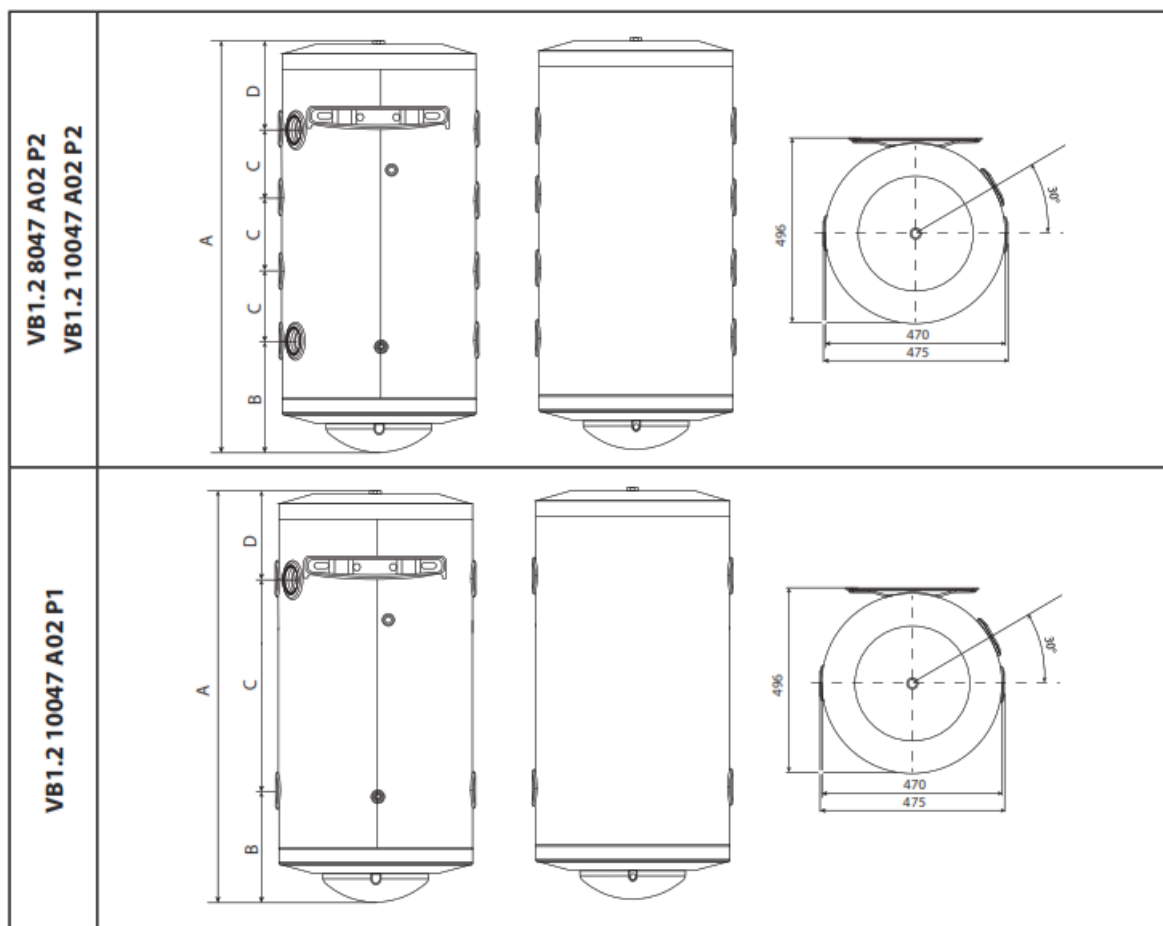
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## VB 5038 D02 P2 Buffer Tank

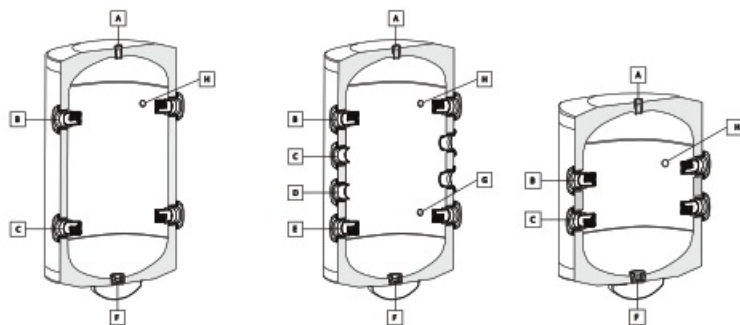


	A ±5 [mm]	B ±3 [mm]	C ±3 [mm]	D ±3 [mm]
VB1.2 3038 D02 P1	570	240	120	204
VB1.2 5038 D02 P2	808	240	120	204
VB1.2 5038 D02 P1	808	240	360	204

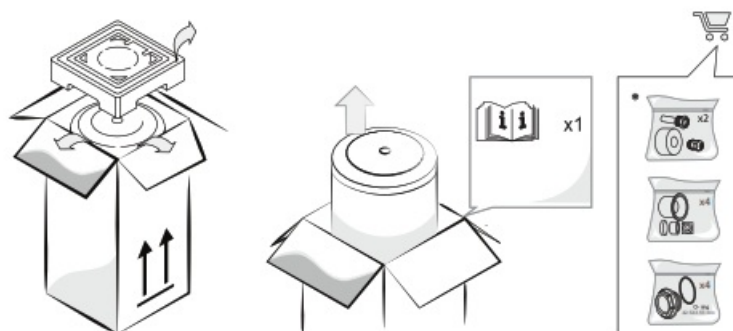


	A ±5 [mm]	B ±3 [mm]	C ±3 [mm]	D ±3 [mm]
VB1.2 8047 A02 P2	845	258	120	227
VB1.2 10047 A02 P2	985	253	170	221
VB1.2 10047 A02 P1	985	253	510	221

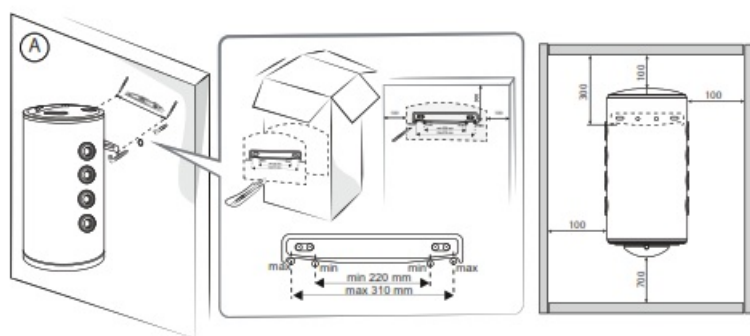
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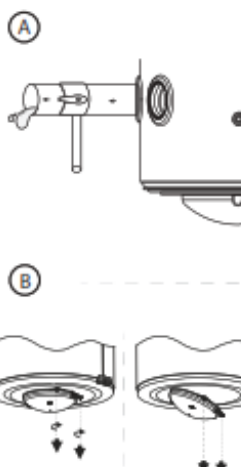
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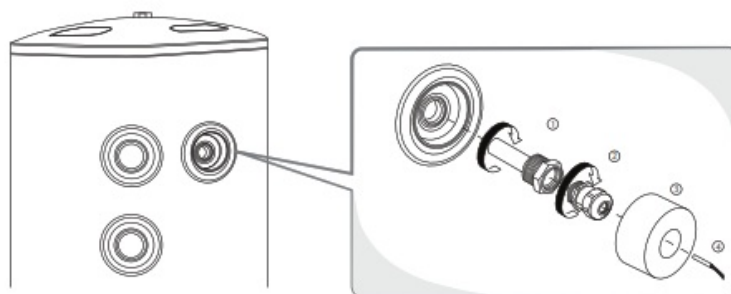


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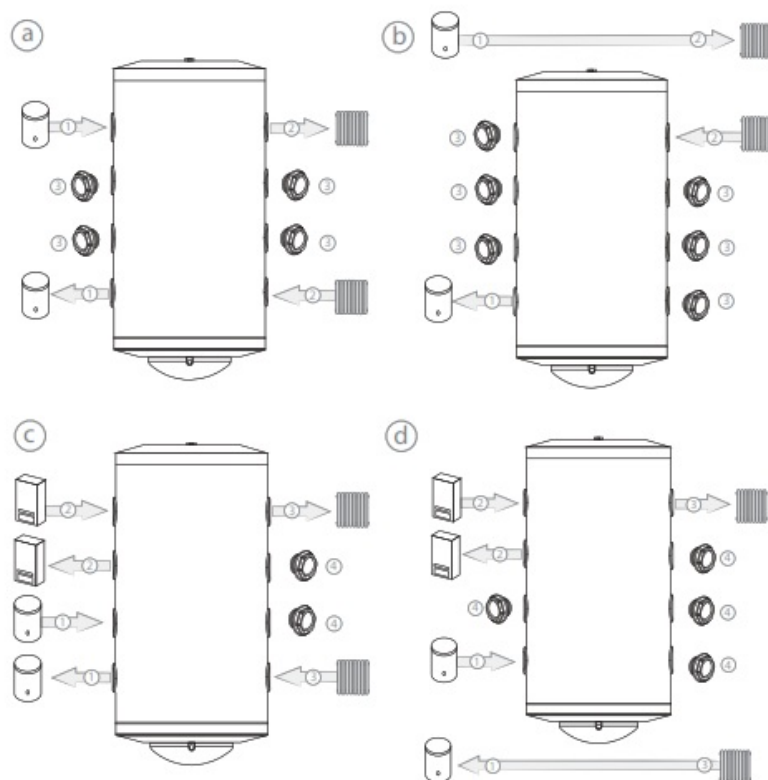


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## IMPORTANT RULES

1. This technical description and instructions manual was prepared in order to acquaint you with the product, further referred to as the buffer tank, and the conditions of proper installation and use. These instructions are intended for use by qualified technicians, who shall perform the initial installation, or disassembly and repairs in the event of a breakdown.
2. Following the current instructions will primarily be of interest to the consumer, but along with this, it is also one of the warranty conditions, pointed out in the warranty card, so that the consumer can benefit from the free warranty services. The producer is not responsible for damages in the buffer tank that have appeared as a result of operation and/or installation not corresponding to these instructions.
3. This manual is an integral part of the buffer tank. It must be kept with care and must follow the buffer tank if the latter is transferred to another owner or user and/or to another installation.
4. Read the instruction and tips very carefully. They will help you secure a safe installation, use and maintenance of your buffer tank.
5. The installation is at the buyer's expense and must be carried out by a professional technical person from the sector in accordance with instructions in the manual and current regulation.

**! Attention!** Improper installation and connection of the buffer tank may make it hazardous for the health and life of consumers. It may cause grievous and permanent consequences, including but not limited to physical injuries and/or death. Improper installation and connection of the buffer tank may also lead to damage to the consumers' property /damage and/ or destruction/, or to that of third persons, as a result of, but not limited to flooding, explosion and/or fire.

Installation, connection to the heating and cooling system, and putting into operation must be carried out by certified electricians and technical personnel certified in installation of this category of appliances, who have obtained their license in the state where the installation and commissioning of the appliance are carried out, and in compliance with its local legislation.

#### **Intended use**

The buffer tanks are used as accumulators, in cooling and heating systems, further referred to as installations. They are intended for operation in closed and heated rooms in systems with a maximum permissible working pressure of up to 0.6 MPa (6 bar). The buffer tanks are not enameled, so the heat carrier in these systems must be circulating water or a mixture of such with propylene glycol and anti-corrosion additives!

**! IMPORTANT!** The buffer tank is not intended for potable water systems.

#### **Mounting**

1. The buffer tank must only be mounted in premises with normal fire resistance.
2. The buffer tank must be installed in such a place that it will not be splashed with water or be near flammable objects.
3. The buffer tank is designed to operate only in closed and heated premises where the temperature is not lower than 4°C.
4. Mounting to a wall – the buffer tank is affixed to a wall via the mounting brackets attached to the unit's body. Two hooks are used for suspending the buffer tank (min. Ø 10 mm) set firmly in the wall (not included in the mounting set).

#### **Buffer tank connection to the heating and cooling systems**

1. We recommend the mounting of the buffer tank at close proximity to locations where hot water is used, in order to reduce heat losses during transportation.
2. The filling level of the system should be checked periodically.
3. The pipeline to the buffer tank must be protected from freezing.
4. If the temperature in the room is likely to drop below 0°C, the buffer tank must be drained.
5. Buffer tanks used in a closed system must be protected by a properly selected safety-return valve with a pressure not higher than the maximum working pressure of the tank.
6. The installation of an expansion vessel is mandatory. The capacity of the expansion vessel must be in accordance with the parameters of the system.
7. Before operation, the system must be air vented.
8. Do not block the outlet of the safety-return valve. If water continuously leaks from the safety-return valve, it means that the pressure in the system is too high or the safety-return valve is not working.
9. The discharge of the valve should point down. It is recommended to place a funnel to drain the water under the valve. You can also install a hose to drain the water when the safety-return valve is opened.
10. The manufacturer shall not be responsible for any safety valve failure caused by improperly installed valve and installation errors.
11. In order to prevent injury to user and third persons in the event of faults in the system, the buffer tank must be mounted in premises outfitted with floor hydro insulation and plumbing drainage. Don't place objects, which are

not waterproof under and near the buffer tank under any circumstances. In the event of mounting the buffer tank in premises not outfitted with floor hydro insulation, a protective tub with a plumbing drainage must be placed under the buffer tank

12. The manufacturer reserves the right to make any modifications and technical changes

**! Attention!** The connection of the buffer tank to a system must be carried out according to a project created by a competent and licensed engineer, executed by competent technical installers, in accordance with the regulatory requirements applicable in the territory of the country concerned. The existence of a SUCH PROJECT is a mandatory condition for the recognition of the manufacturer's warranty! All maintenance and installation work must be carried out in accordance with applicable health and safety regulations.

**Dear Clients,**

The TESI team would like to congratulate you on your new purchase. We hope that your new appliance shall bring more comfort to your home.

## TECHNICAL PARAMETERS

fig. 1

Model		VB 3038 D02 P	VB 5038 D02 P2	VB 8047 A02 P2	VB 10047 A02 P2
Heat storage volume -V	L	30	48	82	100
Maximum working pressure	MPa	0,6	0,6	0,6	0.6
Heat losses at zero load – S	W	32.	50.	54.8	61.3
Energy class		B	C	C	C
Maximum working temperature	°C	95	95	95	95
Minimum working temperature	°C	4	4	4	4

## DESCRIPTION AND PRINCIPLE OF WORK

### 1. Description of the buffer tank

The buffer tank consists of a body and protective plastic panel.

The body consists of a steel reservoir (water tank) and housing (outer shell) with thermal insulation placed in-between made of ecologically clean high density polyurethane foam reducing the heat losses to a minimum.

The steel reservoir is made of black steel.

**Figure 2 shows the connection pockets of the buffer tank:**

A – G ½" Air Ventilation valve

B – G1 ½" Hydraulic connection

C – G1 ½" Hydraulic connection

D – G1 ½" Hydraulic connection

E – G1 ½" Hydraulic connection

F – G1 ½" Pocket for heating element

G – G ½" Pocket for the temperature sensor

H – G ½" Pocket for the temperature sensor

## 2. Delivery package content (fig.3)

Quantity	Name
1	Buffer tank
1	Instruction

**! ATTENTION!** The heating element is not included in the set of the buffer tank! It can be purchased by the customer. In case that another heating element is used, it must be suitable for use in tanks without an internal ceramic coating and with built-in overheating protection. The technical parameters of the heater must be in accordance with the maximum operating temperature and the volume of the buffer tank in which it will be installed. The installation and commissioning of the heating element must be carried out by qualified electricians and technicians for the repair and installation of the buffer tanks, who have acquired their legal capacity in the territory of the country where the installation and commissioning of the appliance are carried out and in accordance with the statutory and arrangement. If the above conditions are not met, the manufacturer is not responsible for warranty and post-warranty service of the appliance.

## MOUNTING AND SWITCHING ON

**! Attention!** Improper installation and connection of the buffer tank may make it hazardous for the health and life of consumers. It may cause grievous and permanent consequences, including but not limited to physical injuries and/or death. Improper installation and connection of the buffer tank may also lead to damage to the consumers' property / damage and/ or destruction/, or to that of third persons, as a result of, but not limited to flooding, explosion and/or fire. Installation, connection to the heating or cooling system, and putting into operation must be carried out by certified electricians and technical personnel certified in installation of this category of appliances, who have obtained their license in the state where the installation and commissioning of the appliance are carried out, and in compliance with its local legislation.

1. The buffer tank is affixed to a wall via the mounting brackets attached to the unit's body. Two hooks are used for suspending the buffer tank (min. Ø 10 mm) set firmly in the wall. They are not included in the mounting set. The mounting bracket's construction designed for water heaters intended for vertical mounting is universal and allows a distance between the hooks of 220 to 310 mm fig. 4a.

**! Attention!** Risk of injury caused by the buffer tank tipping over if it is not properly fixed to the wall.

**! Attention!** In order to prevent injury to user and third persons in the event of faults in the system for providing hot water, the buffer tank must be mounted in premises outfitted with floor hydro insulation and plumbing drainage.

### When installing the buffer tank:

- Ensure that the water-supply connections can be easily accessed for mounting and checks.
- Ensure that no highly flammable parts come into contact with the components of the buffer
- Do not install the product above another unit that may damage it (e.g., above a cooker that produces steam and grease) or in a room with a high level of exposure to moisture or in a corrosive environment.
- Do not install the buffer tank below a unit from which liquids may flow.

## HYDRAULIC INSTALLATION

FIG. 9

### Hydraulic connections



**Note!** The connection of the buffer tank to a system must be carried out according to a project created by a competent and licensed engineer, executed by competent technical installers, in accordance with the regulatory requirements applicable in the territory of the country concerned! The existence of a SUCH PROJECT is a mandatory condition for the recognition of the manufacturer's warranty!

We recommend the mounting of the buffer tank at close proximity to locations where hot water is used, in order to reduce heat losses during transportation.

Elements for installation:

#### 1.1. Inlet and outlet pipes;

**Caution!** Risk of damage caused by contaminated lines. Foreign bodies, such as welding remnants, sealing residue or dirt in the water pipes, may cause damage to the buffer.

#### 1.2. Non-return valve.

#### 1.3. Return valve.

Its type should be defined by a legally competent engineers in accordance with the technical data of the buffer tank, the built system, as well as with local and European norms.

#### 1.4. Safety valve.

The installation must be protected by a suitably selected pressure relief valve not higher than the maximum working pressure specified for the system. The relief valve should be mounted so that the direction of the arrow on its body corresponds to the direction of water flow. In the case of installation according to other schemes, a qualified engineers shall calculate and determine the type of safety valves required.

**Important!** Between the buffer tank and the safety valve there must not be any kind of stop valves, taps or open expansion vessel. The presence of other /old/ safety return valves may lead to a breakdown of your buffer tank and they must be removed.

#### 1.5. Safety valve drainage pipe.

It should be executed in accordance with local and European safety norms and regulations! It must have a sufficient slope for the water to run off. The two ends must be open to the atmosphere and protected against freezing. When installing the pipe, take safety measures against burns when the valve start operating.

#### 1.6. Sewage

#### 1.7. Drainage tap

#### 1.8. Flexible drain connection.

#### 1.9. Expansion vessel.

In the steel reservoir there is no volume to accommodate the expansion of water due to its heating.



**Attention!** The presence of an expansion vessel is mandatory.

Its volume and type must be defined by licensed engineers and have to be in accordance with the system technical requirements, local and European laws, standards and technical norms. Its installation shall be carried out by a qualified technician in accordance with its operating instructions and current legislation Connections closed with a plug, as well as pipes and pipe joints to be insulated with insulation with thermal conductivity  $0.030 \text{ W/(mK)} < \lambda < 0.035 \text{ W/(mK)}$  and thickness as follows:

Inner diameter $\leq 22\text{mm}$	20 mm
Inner diameter $> 22\text{mm} \leq 35 \text{ mm}$	30 mm
Inner diameter $> 35\text{mm} \leq 100 \text{ mm}$	Equal to the inner diameter
Inner diameter $> 100\text{mm}$	100 mm
Connections, that are closed with a plug	$>25 \text{ mm} \leq 30 \text{ mm}$

### System check:

- Fill the installation with water.


- Check hydraulic connections. The connections of the buffer tank that will not be used should be suitably plugged. It is necessary to ensure weathertightness at a pressure of at least twice the nominal pressure of the buffer tank at the maximum operating temperature of the fluid.-fig.5
- Air ventilation of the buffer tank. Before air ventilating the buffer tank make sure that no appliances are connected to the electrical power supply. Instructions for air ventilation of the buffer tank – fig. 6
- Open the air ventilation valve (A) when filling the system with water to allow air to leave the buffer tank.
- Close the air ventilation valve as soon as water flows out (repeat this measures several times, if required).
- Check whether the air ventilation valve has weathertightness.

The first heating of the tank must be done in the presence of the installer to confirm the correctness of the entire installation.

### Draining the buffer tank

The draining of the buffer tank can be executed by opening the drainage valve.

The drain valve must be installed at the pocket for heating element or the lowest hydraulic connection. – see. fig. 7.

 **Important!** When draining, there must be taken measures to prevent damage from leaking water.

In the event that a drain valve will not be installed, install a plug so as to guarantee the tightness of the buffer tank.

### 4. Anti-corrosion protection

Corrosion protection of the non-enameled steel reservoirs is carried out by the inhibitors contained in the heat carrier of the system. The latter are indicated in the project of the installation, prepared by the company specialized in this activity, which has also made the selection of the specific buffer tank.

## ELECTRICAL CONNECTIONS

### 1. Connecting a temperature sensor

**Note!** If the temperature sensors kit is not included in the delivery set, it must be ordered additionally. If temperature sensors sleeve are not installed, you must mount plugs to guarantee the hermeticity of the buffer tank. Two temperature sensors must guarantee weathertightness.

Installation instructions for temperature sensor – fig. 8

- Screw the temperature sensors sleeve (1) into the Pocket for the temperature sensor.
- Screw the stuffing glands (2) into the temperature sensors sleeve (1).
- Use Insulation ring (3) to ensure reliable isolation of the sensor from external factors.
- Use a thermal conductivity lubricant to insert the temperature sensor (4) into the sensor sleeve (1).

## MAIN SCHEMES FOR HYDRAULIC CONNECTIONS

Before starting to work with the buffer tank, make sure that it is connected correctly to the relevant installations and is filled with water.

Example scheme 1

**fig.9.a where:**

1 Heat pump; 2 Circuit; 3 Plug

Example scheme 2

**fig.9.b where:**

1 Heat pump; 2 Circuit; 3 Plug

Example scheme 3

**fig.9.c where:**

1 Heat pump; 2 Boiler; 3 Circuit; 4 Plug

Example scheme 4

**fig.9d where::**

1 Heat pump; 2 Boiler; 3 Circuit; 4 Plug

## INSTRUCTIONS FOR PROTECTING THE ENVIRONMENT



Old buffer tanks contain precious materials and thus should not be thrown together with the household litter. We kindly ask you make your active contribution for protecting the resources and the environment by handing over the buffer tanks in the authorized buy-back stations (if such exist).

# TESY

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## Documents / Resources

	<p><b><a href="#">TESY VB 5038 D02 P2 Buffer Tank</a></b> [pdf] Instruction Manual VB 3038 D02 P, VB 5038 D02 P2, VB 8047 A02 P2, VB 10047 A02 P2, VB 5038 D02 P2 Buffer Tank, Buffer Tank, Tank</p>
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## References

- [Home](#)
- [TESY Homepage](#)

Manuals+