



- Preserves the system components;
- Prevents vibrations and noise in the system;
- Reduced overall dimensions;
- Needs no maintenance.

PRODUCTION RANGE:

Code	Size
3072.04.00	G 1/2"

DESCRIPTION

The *RBM water hammer damper* is the ideal solution to prevent system problems caused by the “*water hammer*” phenomenon, which generated in pipelines during normal plant operation. For more information on the water hammer phenomenon and its effects, see the “*To know more*” section below.

THE PURPOSE:

The main function of the *water hammer damper* is to absorb the overpressures that are generated in the system, in case of sudden closure or opening a circuit.

In this way, the fluid pressure is maintained at constant and optimum operational values, below the maximum allowed.

The absorption of such overpressures avoids damage of the components that constitute the system, and at the same time allows a significant reduction of the noise that occurs in the pipes, caused by the vibrations due to the sudden closure of shut-off devices.

The water hammer damper is also used in systems for instantaneous production of DHW. In these systems, the use of the water hammer damper can solve the problems of damage to the exchanger.

If the temperature control fails, the volume of water inside the exchanger cannot expand (due to the sudden temperature increase) and this would lead to a sudden increase in pressure, resulting in risk of breakage of the exchanger.

The presence of the water hammer damper prevents this problem from occurring, absorbing the volume expansion.

USE:

As a general rule, *the water hammer damper should be installed close to the devices which, intercepting the fluid, cause the water hammer phenomenon.* The shorter the section of pipe separating *the water hammer damper* from the stop components, the shorter the system section exposed to the adverse effects (overpressures) that could cause serious damage to the hydraulic system.

It is advisable to install *the water hammer damper* on individual utilities or small groups of utilities.

In this respect, it can be applied directly under the sink, sanitarries, near shut-off valves, zone valves, solenoid valves, or on the sanitary distribution manifold.

TO KNOW MORE

The **water hammer** is an hydraulic phenomenon that occurs in a pipeline when a flow of liquid moving inside it is abruptly stopped by the sudden closure of a valve, or when a closed and under pressure pipeline is suddenly opened.

It consists in a shock wave of pressure that arises due to the inertia of a column of fluid moving that crashes against a wall, for example that of a suddenly closed valve.

The intensity of the blast and the maximum pressure of the wave can reach levels so high that the pipelines could explode.

The pressure is a function of the pipeline dimensions (length and diameter), speed and density of the fluid, and the closing time of the valve.

An example of a water hammer, which could happen in any home, occurs when you close a ball valve or cock with a sudden movement of the operating lever: you hear a thud followed by the vibration of the pipe.

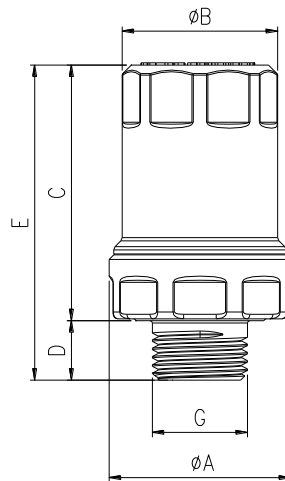
CONSTRUCTION FEATURES

- Body: Brass
- Spring: Stainless steel
- Piston: POM polymer
- Hydraulic seals: EPDM PEROX
- Threaded connections: M UNI-EN-ISO 228

TECHNICAL FEATURES

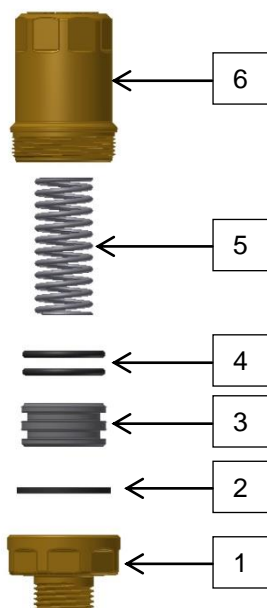
- Compatible fluid: Water
- Max operating pressure: 10 Bar
- Max operating temperature: 90 °C
- Start of active intervention: 3 Bar

DIMENSIONAL FEATURES



Code	Size G	Ø A [mm]	Ø B [mm]	C [mm]	D [mm]	E [mm]
3072.04.00	1/2"	39.7	34	56	13	69

COMPONENTS DESCRIPTION



- 1) Lower cap in brass
- 2) Flat gasket in EPDM PEROX
- 3) Piston in POM polymer.
- 4) O.R. gasket in EPDM PEROX
- 5) Spring in stainless steel
- 6) Spring-holding upper cap in brass

OPERATING PRINCIPLE / POSSIBLE APPLICATIONS

The main function of the *water hammer dumper* is to absorb the overpressures that are generated in the system, in case of sudden closure or opening a circuit.

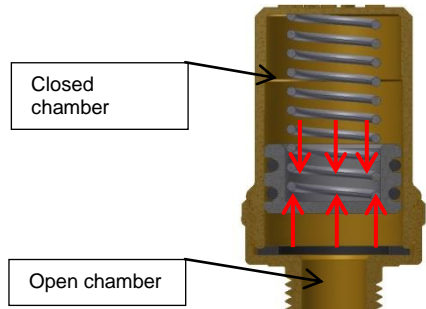
The RBM *water hammer dumpers* consist of a cylindrical body divided in two chambers (**open chamber and closed chamber**).

The **closed chamber** is the cornerstone of the system, and is one that acts as a dumper. It consists of a spring attached to a piston equipped with double O.R. sealing, all housed in an air chamber.

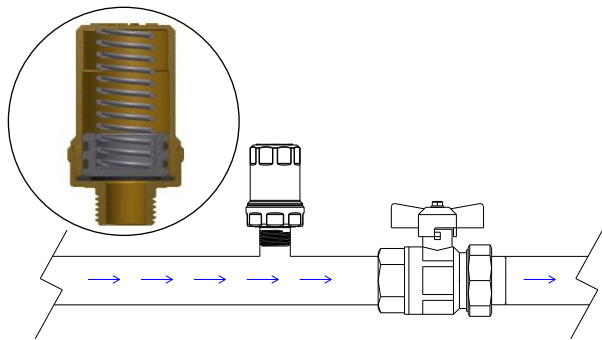
The **open chamber** is directly connected to the pipeline and is affected by changes in pressure in the hydraulic system.

The overpressures generated in the system create a push on the spring, causing the change of pressure in the air contained in the closed chamber.

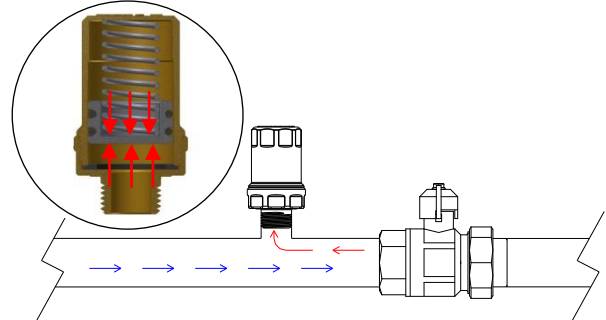
These opposing forces help absorb excess pressure.



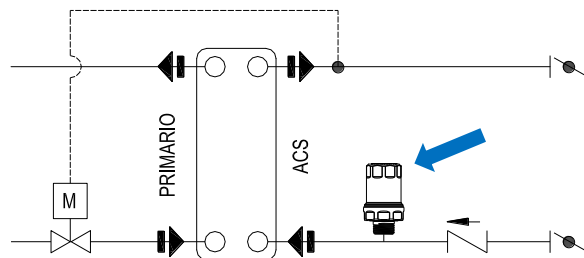
When the utilities are open, the pressure remains constant throughout the pipeline.



When the utilities are closed, the pressure increases along the whole pipeline, causing it to overpressure. The presence of the *RBM anti-water hammer* device absorbs the overpressure generated, avoiding the trigger of the water hammer phenomenon, preserving in this way all the components in the system.



The water hammer dumper is also used in systems for the instantaneous production of DHW. In these systems, the use of the water hammer dumper (as shown in the diagram below) can solve the problems of damage to the exchanger. If the temperature control fails, the volume of water inside the exchanger cannot expand (due to the sudden temperature increase) and this would lead to a sudden increase in pressure, resulting in risk of breakage of the exchanger. The presence of the water hammer dumper prevents the occurrence of this problem, absorbing volume expansion.

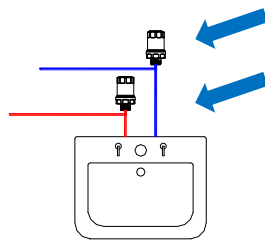


INSTALLATION

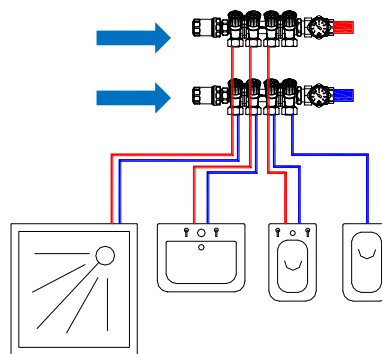
- As a general rule, the water hammer dumper should be installed close to the devices which, intercepting the fluid, cause the water hammer. The shorter the section of pipe separating the anti-water hammer device from the stop components, the shorter the system section exposed to the adverse effects (overpressures) that could cause serious damage to the hydraulic system.

It is advisable to install *the water hammer dumper* on individual utilities (Layout 1) or small groups of utilities (Layout 2).

In this respect, it can be applied directly under the sink, sanitaris, near shut-off valves, zone valves, solenoid valves, or on the sanitary distribution manifold.

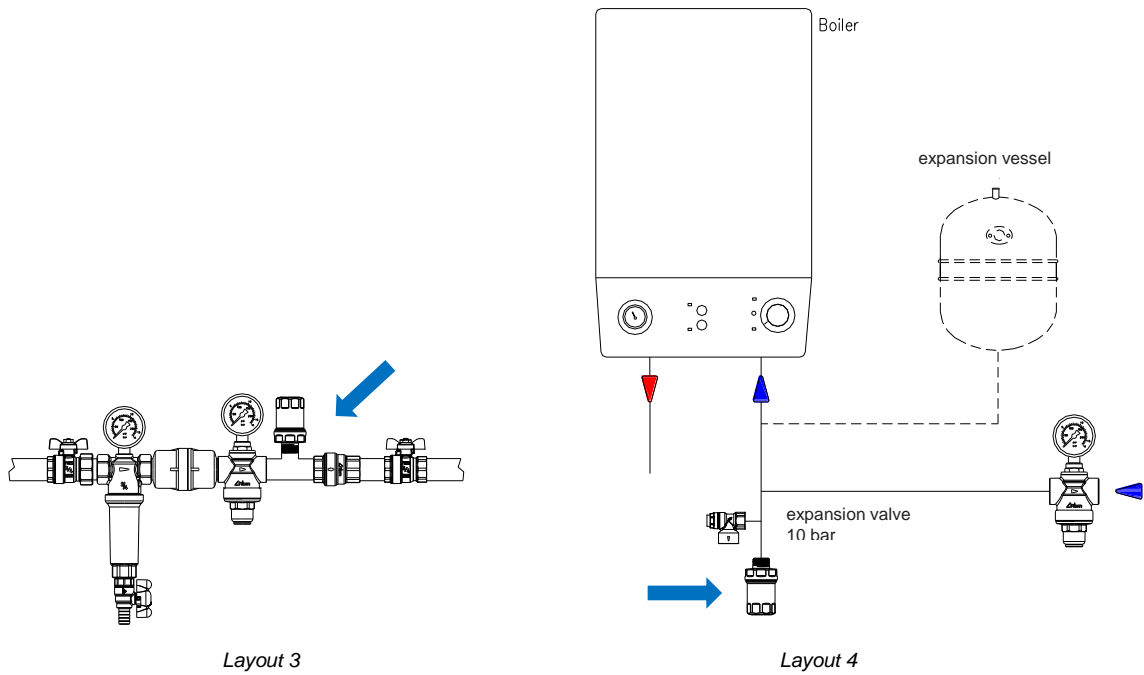


Layout 1

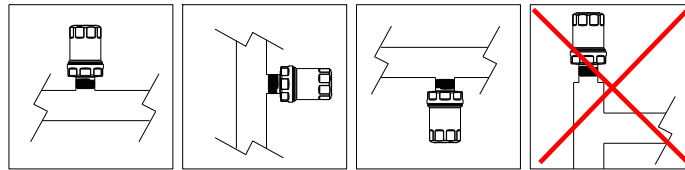


Layout 2

The following are further examples of possible uses of the water hammer damper:



- The water hammer damper can be mounted **vertically, horizontally and upside down**.
 Avoid installing in areas of the system where the formation of stagnant water is likely (dead zones), as subject to proliferation of bacterial colonies.



SPECIFICATION ITEMS

SERIES 3072

Water hammer damper. Brass body. Stainless steel spring. High-resistance POM polymer piston. Seals in EPDM PEROX. Threaded connection 1/2" M UNI-EN-ISO 228. Max operating pressure 10 Bar. Max operating temperature 90 °C. Start of active intervention 3 Bar. Fluid used: water.



RBM spa reserves the right to improve and change the described products and related technical data at any moment and without prior notice: always refer to the instructions attached with the supplied components; this sheet is an aid, should the instructions be extremely schematic. Our technical department is always at your disposal for any doubt, problem or clarification.

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