
CALEFFI WATER HAMMER ARRESTER



WARRANTY

If any material defect arising from the manufacturing process is found in a new tap or valve Waterware Services Ltd. will undertake to repair or replace it (at its option). This undertaking will not apply if:

1. The defect is brought to Waterware's attention later than 5 years from the date of manufacture.
2. Failure by any person to follow installation instructions or installation in an environment outside the recommended limitations or relevant NZ and or Australian Standards and local plumbing codes. No installation should proceed without installation instructions and claims instructions were missing are not accepted as a means of avoiding this condition.
3. Evidence cannot be produced which confirms that the relevant tap or valve was purchased from a known customer of Waterware Services Ltd.
4. Repair work is undertaken without prior arrangement with Waterware Services Ltd.
5. Normal maintenance requirements, refer to specific product maintenance guides.

Waterware Services Ltd. shall in no way be liable for any loss, damage (direct, indirect or consequential), cost or expense suffered or incurred by the purchaser. Obligations accepted by Waterware Products Ltd. are.....

..... in addition to all other rights and remedies had by the Purchaser in law in respect of the valve and does not limit the right the Consumer may have under the Consumers Guarantee Act 1993.

..... subject to the exceptions and conditions previously listed. All expressed or implied conditions, statements or warranties as to the quality or fitness on any purpose of a tap or valve or otherwise are hereby expressly excluded to the fullest extent permitted by law except under conditions and warrants which cannot be legally excluded by law and which are intended in the contract for the supply of the valve by the Trade Practises and any other Act of Law.

WH525040

Function

Water Hammer phenomenon occurs in closed pipes when the fluid is accelerated or decelerated very quickly, due to the rapid closure of valves or taps or as a consequence of a circulation pump stopping. The effect consists in the propagation of over and under pressures along the pipes, which may result in noise and damage to the whole system. The water hammer arrestor, when installed close to single-lever mixing taps, solenoid valves, call valves, etc., prevents such negative effects.

Materials

Body: brass EN 12165 CW617N, chrome plated

Damping element: high resistance polymer

Spring: steel

Seals: EPDM

Performance

Medium: water

Maximum working pressure: 10bar

Maximum medium temperature: 90°C

Maximum water hammer pressure: 50bar

Operating start pressure: 3bar

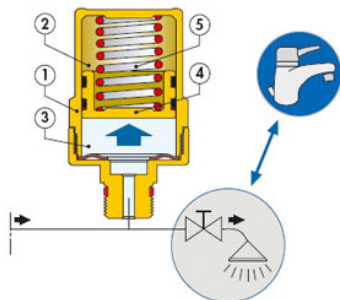
Connections: 1/2"M with PTFE seal

Operating Principle

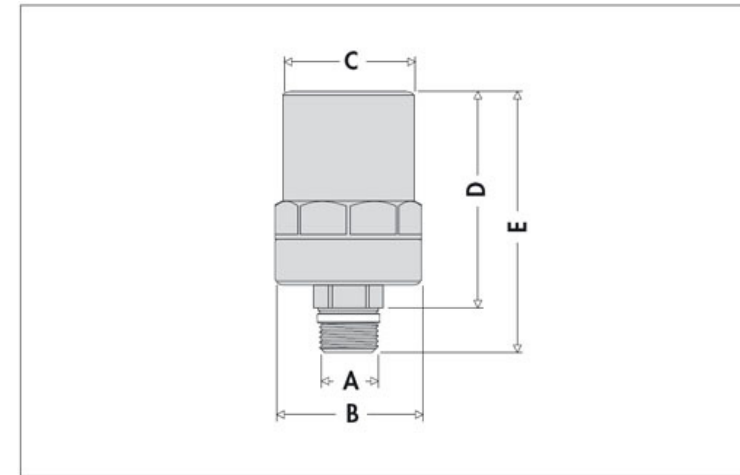
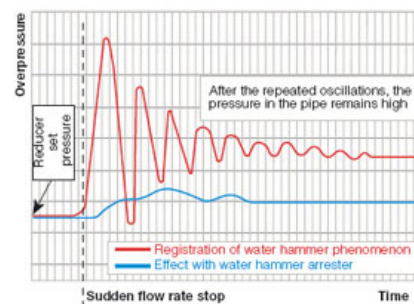
The Caleffi 525 series water hammer arrestor is composed of a cylinder (1) divided into two chambers (2) and (3) by a piston with two O-ring seals (4). The closed chamber (2) contains air and acts as a damper due to the compressibility of the air. The open chamber (3) is connector directly to the pipe and fills with the system water. The water thrust on the piston is counteracted both by the air pressure variation in the chamber (2) and by the contrast spring (5) housed behind the piston in the air chamber.

The oscilloscope graph reveals the following:

- Speed of the pressure increases
- Oscillatory character of the phenomenon
- Continuance of high pressure in the pipe even after the water hammer
- Effectiveness of the water hammer arrestor



Water hammer arrestor - effectiveness

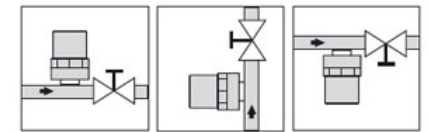


Code	A	B	C	D	E	Weight (kg)
525040	1/2"	Ø 52	Ø 46	74	89	0,492

Installation

To obtain the best results for damping water hammer it is advisable to take the following measures when Series 525 arresters are fitted:

- Installation at the inlet of the distribution network or a pressure reducer. The pressure reducer must maintain the pressure in the system at the value of 3 to 4 bar which is considered the optimum value both for the efficiency of the arrestor and proper functioning of the sanitary components.
- Reducing the speed of the water in the piping. This should be achieved first of all by giving the correct dimensions to the pipework making up the system.



The Series 525 water hammer arrestor should be fitted as near as possible to the piece of equipment which causes the rapid halting of the water flow. It can be fitted either in horizontal or vertical position. Unlike pneumatic appliances it does not require any maintenance.

Installation recommendations

The Caleffi 525 series water hammer arrestors are designed for single service installation (under wash hand basins) or small groups of services, such as in a bathroom supplied by a domestic manifold. For larger scale water hammer problems, the solutions are different and must be designed to fit the particular case. Once possible solution to water hammer may be to install an expansion vessel to act as an arrestor.