

Lead Free **WATER HAMMER ARRESTORS**



The noise from pipes is caused by shocks of high speed water flowing in the pipe system when a fixture is suddenly closed. A sudden stop of water flowing at a given pressure and velocity causes water surges or spikes, which are called a water hammer.

HNL Water Hammer Arrestors are designed to eliminate this effect and help to enjoy long and trouble-free life of pipe systems.

WATER HAMMER ARRESTERS

Copper Body Piston Type Water Hammer Arresters

SPECIFICATION | Pre- charged hard drawn copper surge pressure absorber with teflon piston, EPDM O- ring seals, and Lead Free Adaptor male NPT & BSP connection.

OPERATING PRESSURE | Designed to operate on all domestic and commerical lines upto 150 PSI working pressure.

TEMPERATURE RANGE | 33°F to 180°F (0.5°C to 82°C)

INSTALLATION | May be installed in new or existing plumbing systems with a standard pipe tee.

CONSTRUCTION

Bodies : Hard drawn copper with custom internal mirror finish.

Seal Lubricant : Dow-Corning Silicone compound #111 FDA or equivalent approved for use in portable water system.

Piston : Teflon

Seals : 'O'rings, (2) EPDM



Pipe Sizing (Select One)		
Suffix	Description	
A	Conn, Size 1/2" (13), Height 4-7/8"(124)	<input type="checkbox"/>
B	Conn, Size 1" (25), Height 7-3/8"(187)	<input type="checkbox"/>
C	Conn, Size 3/4" (20), Height 6-7/8"(175)	<input type="checkbox"/>
D	Conn, Size 1-1/4" (32), Height 10-3/4"(273)	<input type="checkbox"/>
E	Conn, Size 2" (51), Height 14-7/8"(378)	<input type="checkbox"/>
F	Conn, Size 1-1/2" (38), Height 11-1/2"(192)	<input type="checkbox"/>

	Technical Data					
	A	B	C	D	E	F
Fixture Unit	1-11	12-32	33-60	61-113	114-154	155-330
"A"connection	1/2"(15)	3/4"(20)	1"(25)	1-1/4"(32)	1-1/2"(40)	2"(50)
"B"height	151	185	224	253	323	284
"C"diameter	3/8"(24)	1-7/8"(48)	2-3/16"(57)	2-11/16"(66)	3-5/16"(85)	3-5/16"(85)

WATER HAMMER ARRESTERS

For better life and environment!

Water Hammer Arrestors LEAD FREE*

Size : 1/2" -1" (15~25mm)

What is Water Hammer?

The noise from banging pipes is caused by shocks of high speed water flowing in the piping system when a fixture is suddenly closed. Sudden stoppage of the water (a non-compressible Liquid) flowing at a given pressure and velocity causes a surge or spike of water and is called water hammer.

When this occurs, a pressure wave travels back through the piping until it finds a point of relief.

The water hammer arrestors are designed to eliminate this effect with Lead Free* requirements.

Dishwashers, clothes washers, fast closing positive shutoff valves incorporated in the system all contribute to creating water shock which is not only annoying but Dishwashers, clothes washers, fast closing positive shutoff valves incorporated in the system all contribute to creating water shock which is not only annoying but damaging to pipes and appliances. The WATER HAMMER ARRESTORS incorporate a precharged, permanent sealed air chamber to absorb the shock. The sealed air chamber prevents the loss of air to the water and insures long and trouble-free Life.



Threaded

■ Features

- NPT solid hex brass adapter end connection for easy installation
- Approved for installation with no access panel required
- May be installed in new or existing plumbing systems with a standard pipe tee vertically, horizontally or at any angle.
- PDI Listed (PDI WH201)
- Air pre-load is 60psi (4.2 bar)
- Factory air charged and permanently sealed

■ Pressure-Temperature

Max. Pressure : 350psig

Operating Pressure : Designed to operate on all domestic and commercial lines 150 psi (10.6bar) working pressure.

Temperature Range : 33°F (0.5°C to 82°C)

■ Materials Description

Body : Copper barrel

Piston : Polypropylene

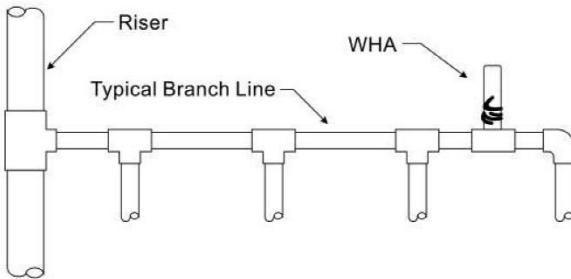
Adapter : Lead Free* Brass

O-ring : EPDM

WATER HAMMER ARRESTERS

For better life and environment!

■ Sizing and Placement

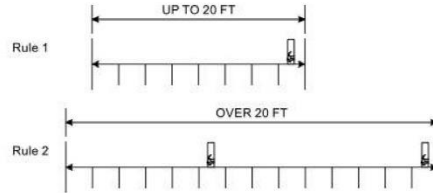


As shown, it has been established that the preferred location for the water hammer arrestor is at the end of the branch line between the last two fixtures served.

The location of the water hammer arrestor shown above applies to branch lines that do not exceed 20 ft. (6m) in length, from the start of the horizontal branch line to the last fixture supply on this branch line.

When the branch line exceeds the 20ft.(6m) length, an additional water hammer arrestor should be used.

This practice is best defined by two rules which have been established to cover the placement of water hammer arrestors.



Rule 1 covers multiple fixture branch lines which do not exceed 20ft.(6m) in length.

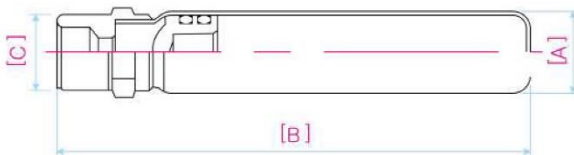
Explanation Fixture-unit sizing and selection table is used to select the required PDI unit (water hammer arrestor).

Rule 2 covers multiple fixture branch lines which do exceed 20ft.(6m) in length.

Explanation Fixture-unit sizing and selection table is used to select the required PDI unit(water hammer arrestor).

The sum of the fixture units rating of units X and Y shall be equal to or greater than the demand of the branches.

■ Dimensions-Weight



SIZE	DIMENSION					
	A		B		C	Weight
	in	mm	in	mm	in	(kgs)
THREADED						
A	1 1/8	28.58	5 15/16"	151	1/2	0.17
B	1 1/8"	28.58	7 5/16"	185	3/4"	0.22
C	1 5/8"	41.28	8 11/16"	224	1"	0.46
D	2 1/8"	53.94	10 3/16"	253	1 1/4"	0.81
E	2 1/8"	53.94	11 3/16"	323	1 1/2"	1.40
F	2 5/8"	66.64	12 15/16"	284	2"	2.0

Sizing and Selection Table

PDI SYMBOL	SIZE in mm	MODEL Threaded	FIXTURE Unit
A	1/2 15	A	1-11
B	3/4" 20	B	12-32
C	1" 25	C	33-60
D	1 1/4" 32	D	61-113
E	1 1/2" 40	E	114-154
F	2" 50	F	155-330

■ Fixture Units Sizing Information

FIXTURE	TYPE OF SUPPLY CONTROL	WEIGHT IN FIXTURE UNITS			
		PUBLIC C.W.	H.W.	PRIVATE C.W.	H.W.
WATER CLOSET	FLUSH VALVE	10	-	6	-
WATER CLOSET	FLUSH TANK	5	-	3	-
PEDESTAL URINAL	FLUSH VALVE	10	-	-	-
STALL OR WALL URINAL	FLUSH VALVE	5	-	-	-
STALL OR WALL RINAL	FLUSH TANK	3	-	-	-
LAVATORY	FAUCET	1 1/2	1 1/2	1	1
BATHTUB	FAUCET	2	3	1 1/2	1 1/2
SHOWER HEAD	MIXING VALVE	2	3	1	2
BATHROOM GROUP	FLUSH VALVE CLOSET	-	-	8	3
BATHROOM GROUP	FLUSH TANK CLOSET	-	-	6	3
SEPARATE SHOWER	MIXING VALVE	-	-	1	2
SERVICE SINK	FAUCET	3	3	-	-
LAUNDRY TUBS(1-3)	FAUCET	-	-	3	3
COMBINATION FIXTURE	FAUCET	-	-	3	3

WATER HAMMER ARRESTERS



CYLINDER Type(Threaded Connection)



CYLINDER Type(Sweat Connection)



CYLINDER Type(Laundry & Valve)

THE INFLUENCE OF WATER HAMMER

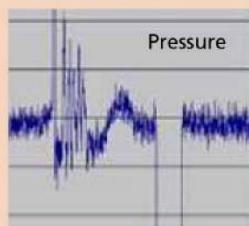
- Damage, vibration and noise in the piping line
- Leakage and loosening of piping line
- Damage to Valves and Gauges
- Weakening pipe hanger and support
- Damage to tank and boiler
- Reducing equipment durability

APPLICATION STANDARDS

- approved by ASSE 1010-1996
- ANSI/ASME A 111.26.1M-1984
- PDI-WH201-1992
- SPS-KARSE B 0021-0183:2016

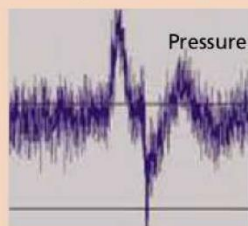
PERFORMANCE TEST

Analysis hydraulic shock wave in a pipe when open



Before Installation

t(Time)



After Installation

t(Time)



WATER HAMMER ARRESTERS

	Current Conventional Type of WHA	New Type of WHA We developed
Picture of Whole Body		
Picture for the Connection part		
Characteristics	<ol style="list-style-type: none"> 1. Soldering type for Connection 2. Comparatively Unstable structure 3. Not sanitary for drinkable water 	<ol style="list-style-type: none"> 1. Nut-Tightening type for Connection 2. Mechanically Stable structure 3. Sanitary as not using soldering material

WE DEVELOPED NEW TYPE OF WHA WHOSE CHARACTERISTICS ARE AS BELOW,

1. Nut-tightening Type instead of Soldering process
2. Thus mechanically more stable than conventional type
3. Not using soldering material is sanitarly safe for drinkable water
4. Patent registration for worldwide for this technology
5. Cost saving and easy expandability in case of T-Connection



Your Reliable Partner

Phone : +82-708-7471-007
E-mail : hello@hnl-global.com
Web site : www.hnl-global.com