BRONZE VALVES

Primary Pressure Sustaining Valve : Model DPS

MODEL DPS 20mm

TYPICAL INSTALLTION of 20mm

MODEL DPS 100mm

●Operating Conditions:

MODEL		DPS										
Nominal Size	mm	20	25	40	50	65	80	100	150	200	250	300
	inch	3/4	1	1-1/2	2	2-1/2	3	4	6	8	10	12
Applicable Fluid		Water										
Working Temperature		0 to 60°C										
Working Pressure (inlet)		0.05 to 1.6MPa / (0.05 to 0.5MPa)*										
Set PressureRange		※ 0.05 to 0.1MPa(*), 0.1 to 0.35MPa(*), 0.35 to 0.55MPa										
Shell Test Pressure		2.4MPa / (1.0MPa)*										

※Choice of spring range. ( )* or (*) shows the body material of plastic.

●Basic Application:

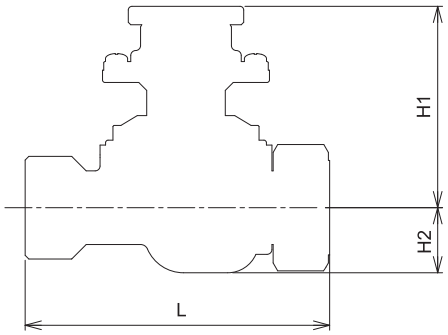
DPS are installed generally before the water meter to recover the essential water distribution efficiency by sustaining primary pressure.

●Features:

1. Model DPS is specially developed to stabilize supply pressure at the water distribution network.
2. Nominal size 20~40mm are pilot valve integrated type for space saving.
3. Every size of Model DPS are designed as full bore.
4. The primary pressure setting is easy to change on site by adjusting thread or bolt.
5. Bronze/ lead free bronze prevents red rust contamination of potable water.

BRONZE VALVES

Primary Pressure Sustaining Valve : Model DPS

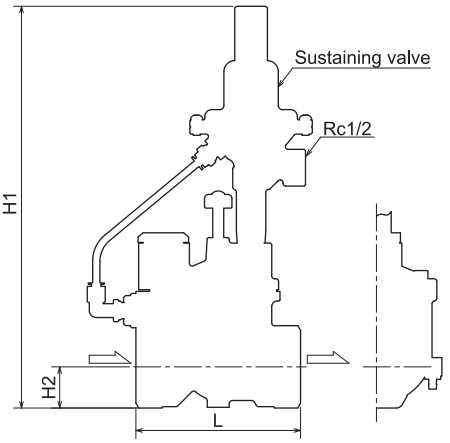


THREADED END JIS(BSP) 20 to 40mm

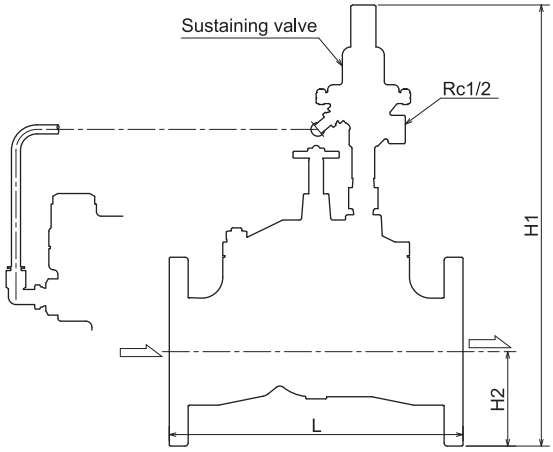
●Dimensions: Threaded end

unit:mm

Connection Standard:JIS B 0203 & BS21					
Nom.size		L	H1	H2	END
mm	inch				
20	3/4	105.5	82	22	3/4”
25	1	114.5	84.5	26	1”
40	1-1/2	140	120	38	1-1/2”
50	2	140	308	37	2”



THREADED END JIS(BSP) 50mm



FLANGED END JIS10K(PN16) 65mm to 300mm

●Dimensions: Flanged end

unit:mm

Connection Standard:JIS B 2240 & ISO7005-3(BS4504)					
Nom.size		L	H1	H2	FLANGE
mm	inch				
65	2-1/2	250	396	87.5	JIS10K
80	3	280	423	92.5	
100	4	340	447	105	
150	6	460	540	140	
200	8	642	735	222.5	
250	10	630	670	200	
300	12	750	735	222.5	
65	2-1/2	254	401	92.5	PN16
80	3	284	430.5	100	
100	4	348	452	110	
150	6	464	542.5	142.5	
200	8	650	742.5	230	
250	10	630	672.5	202.5	
300	12	750	742.5	230	

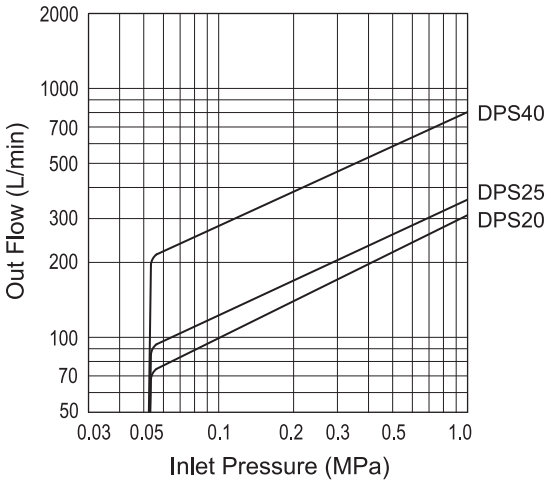
BRONZE VALVES

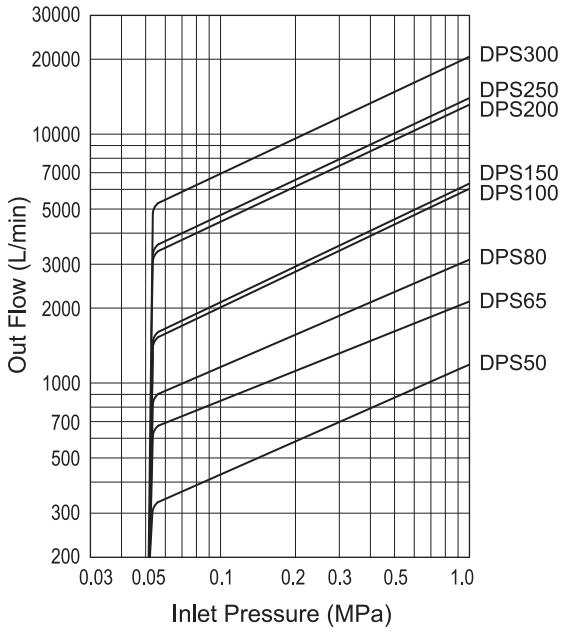
Primary Pressure Sustaining Valve : Model DPS

●Materials of bronze valve:

Description	Material	Description	Material	Description	Material
Body	Bronze	Strainer holder	Brass	Guide	Bronze
Cover	Bronze	Resister A	Brass/Plastic	Strainer	Stainless Steel
Diaphragm	EPDM	Resister B	Brass/Plastic	Vaccum holder	Brass
Spring	Stainless Steel	Cap	Brass	Resister C	Brass
Adjustable Spindle	Brass	Orifice	Bronze	Seat	Stainless Steel

●Flow Characteristics:





About primary pressure sustaining valve 1:

Most of waterworks utility in many countries where the economic development / growth are advancing, are facing following problems.

Large-scale companies (=large water consumers) which have been newly joined in the existing same water distribution block, have starting their business activity one after another.
In addition, the water usage of the individual by the improvement of living level is also increasing year by year.

Due to such a phenomenon, 'the residents complaint against the unstable water supply pressure and amount', and 'non-revenue water' has been highlighted as a problem related to the water-distribution.
And the high investment cost is required to solve them.
Many water works utilities are facing the problem of 'N.R.W' and higher investment costs for distribution. The total consumption of water in big cities is increasing year by year.

Therefore, the waterworks utility shall sequentially advance the new pipe laying and the replacement or the installation of the water distribution pump to solve the above problem.
For example, huge budget will be necessary for the replacement of pumps at the main distribution pump-station and pipe diameter expansion of the distribution pipe also requires a lot of time.

However, if waterworks utility considers the introduction of the pressure sustaining valve, they will notice that the investment amount is much cheaper compared with the above-mentioned previous, ordinary methods.

And, pressure-sustaining-valve system enables the stabilized water distribution, like a fully automatic controlled blood pressure control system.
Pressure-sustaining-valve starts to act as similar in the autonomic nervous system of the blood pressure control system in our body after installation.
Those can resolve the water distribution and related problems.

About primary pressure sustaining valve 2:

In the water distribution network which lost its water distribution balance due to the water consumption indicates the water shortage, or the lost-timing of watersupply, such as the so-called peak problem.
The above-mentioned problem can be solved by installing pressure-sustaining-valve enables to regain the distribution balance, due to restoring the original water-distribution pressure gradient by the time-sharing of water-supply/distribution.

In addition, the water supply pressure shortage at the water supply end district occured by the extension of the water distribution pipe, which is due to the increase of water supply taps, will be solved by setting a new distribution pressure gradient.

If the lack of water supply pressure at hills district occurred by the overall consumption increase against water supply in the same water distribution block, it will be solved to restore the water supply pressure to the hilly area by changing the distribution pressure gradient at the low zone.

In this way, by just installing pressure-sustaining-valves, the distribution pressure gradient in the water supply network is managed to set and vary at the desirable level.
It enables to achieve the distribution of optimal water distribution pressure.

And optimum re-distribution pressure for the water distribution enables to save energy of the water distribution pump and by choosing a smaller pump diameter and cutting a big budget of updating pumps.
Moreover, previous water leakage becomes a visual water leakage on the ground surface.
Therefore, it can be expected to advance to solve the non-revenue water problems that including the unknown water.

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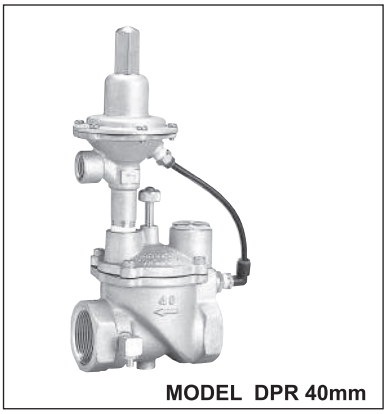
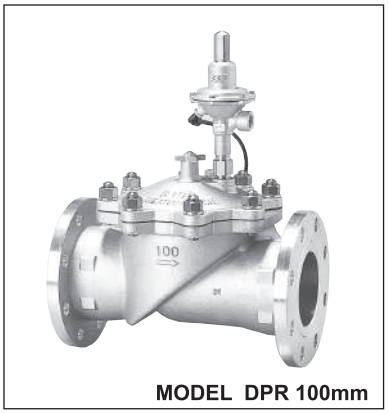
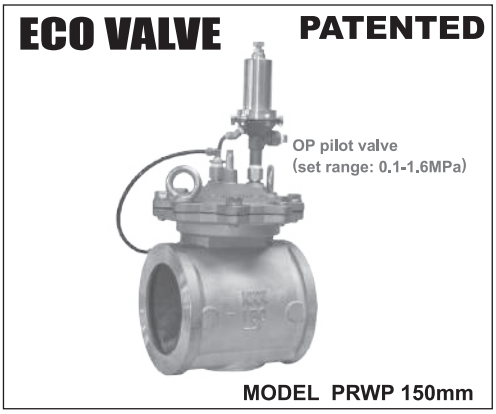
2019. 10

BRONZE VALVES

Pump Pressure Relief Valve : Model DPR/ PRWP


MODEL DPR 40mm


MODEL DPR 100mm



MODEL PRWP 150mm

●Operating Conditions:

MODEL	DPR / PRWP
Applicable Fluid	Water
Working Temperature	0 to 80°C
Working Pressure (inlet)	above 0.05 to 1.6MPa
Set Pressure (outlet) ※1	100～350kPa, 350～550kPa, 550～750kPa, 750～1200kPa
Shell Test Pressure	2.4MPa

※1 Choice of spring range

●Basic Application:

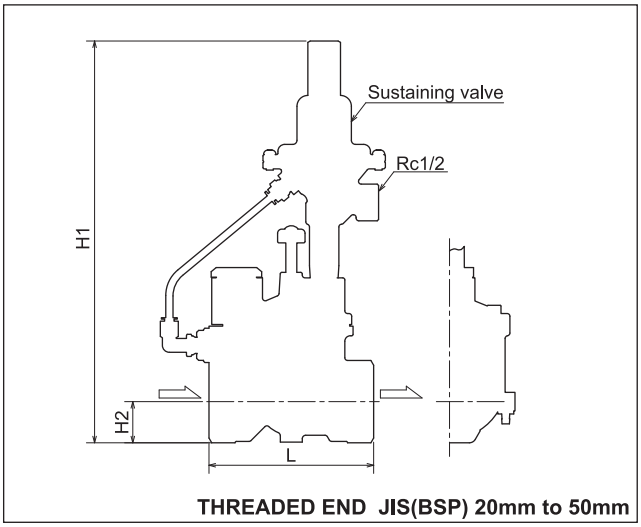
Pressure Relief Valves DPR/PRWP are used in pump rooms for sprinkler system to relieve the extra pressure from the fluctuations in pump outlet pressure.

●Features:

1. PRWP has been designed as wafer style for easy installation by reducing its weight by 50% and successfully shortening previous installation time by 50%.
2. Main parts are made of bronze and stainless steel to prevent rust contamination.
3. The open degree of the main valve is manipulated by adjustable spindle to control water flow.
4. Simple disassembly and assembly features easy maintenance.
5. DPR/PRWP can be installed either vertically or horizontally.

BRONZE VALVES

Pump Pressure Relief Valve : Model DPR/ PRWP

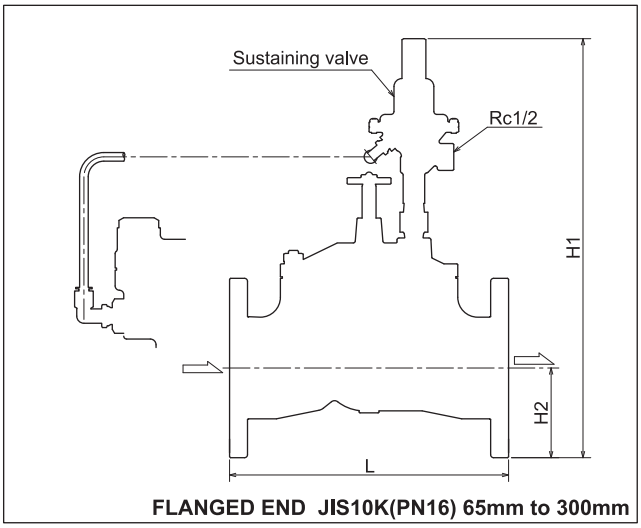


THREADED END JIS(BSP) 20mm to 50mm

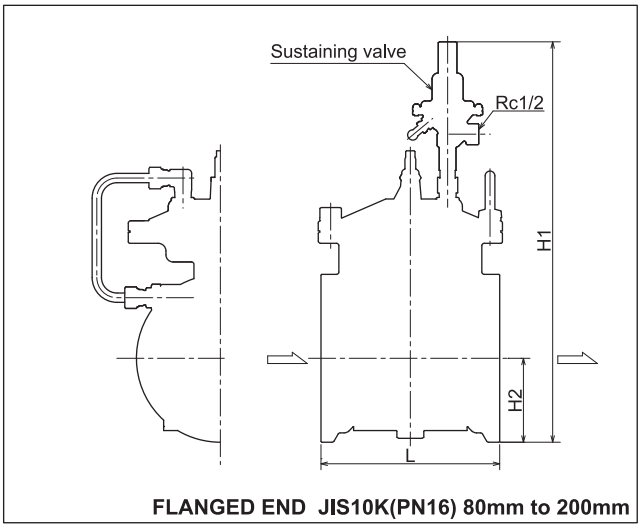
●Dimensions: Threaded end

unit:mm

Connection Standard:JIS B 0203 & BS21					
Nom.size		L	H1	H2	END
mm	inch				
20	3/4	90	267	19	3/4”
25	1	100	269	21	1”
32	1-1/4	110	291	26	1-1/4”
40	1-1/2	120	295	30	1-1/2”
50	2	140	308	37	2”



FLANGED END JIS10K(PN16) 65mm to 300mm



FLANGED END JIS10K(PN16) 80mm to 200mm

●Dimensions: Flanged end

unit:mm

Connection Standard:JIS B 2240 & ISO7005-3(BS4504)					
Nom.size		L	H1	H2	FLANGE
mm	inch				
65	2-1/2	250	396	87.5	JIS10K
80	3	284	423	92.5	
100	4	344	447	105	
150	6	460	540	140	
200	8	510	570	165	
250	10	630	670	200	
300	12	750	735	222.5	
65	2-1/2	250	401	92.5	PN16
80	3	284	430.5	100	
100	4	344	452	110	
150	6	460	542.5	142.5	
200	8	510	575	170	
250	10	630	672.5	202.5	
300	12	750	742.5	230	

●Dimensions: Wafer end

unit:mm

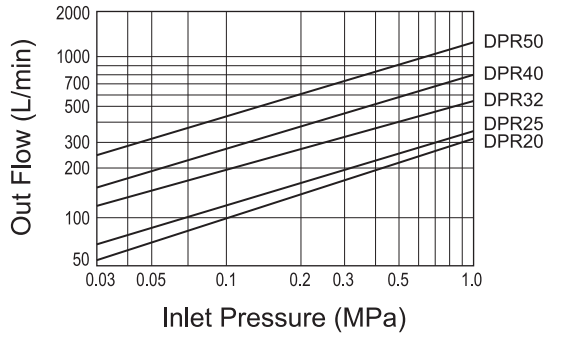
Connection Standard:JIS B 2240 & ISO7005-3(BS4504)					
Nom.size		L	H1	H2	END
mm	inch				
65	2-1/2	160	(386)	61	JIS10K
80	3	180	(430)	66	
100	4	190	(453)	78.5	
125	5	225	(496)	94	
150	6	230	(518)	108	
200	8	310	(599)	134	
65	2-1/2	250	(388)	62.5	PN16
80	3	284	(434)	70	
100	4	344	(455)	80	
125	5	344	(498)	96	
150	6	460	(518)	108	
200	8	510	(601)	135.5	

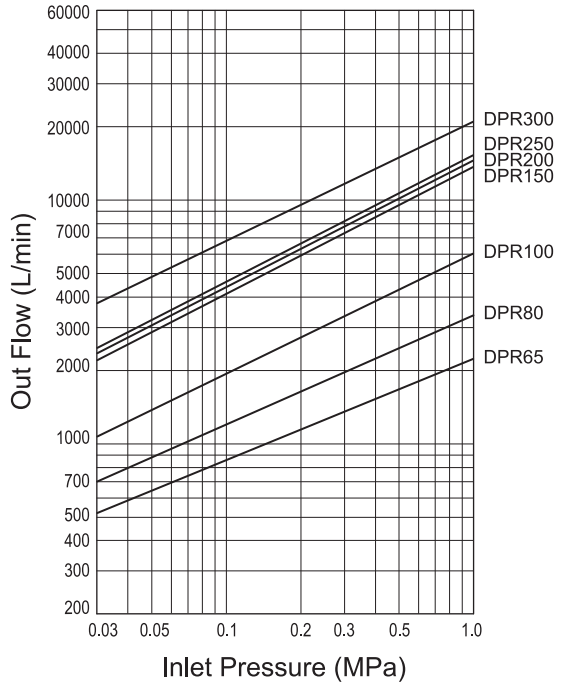
Pump Pressure Relief Valve : Model DPR/ PRWP

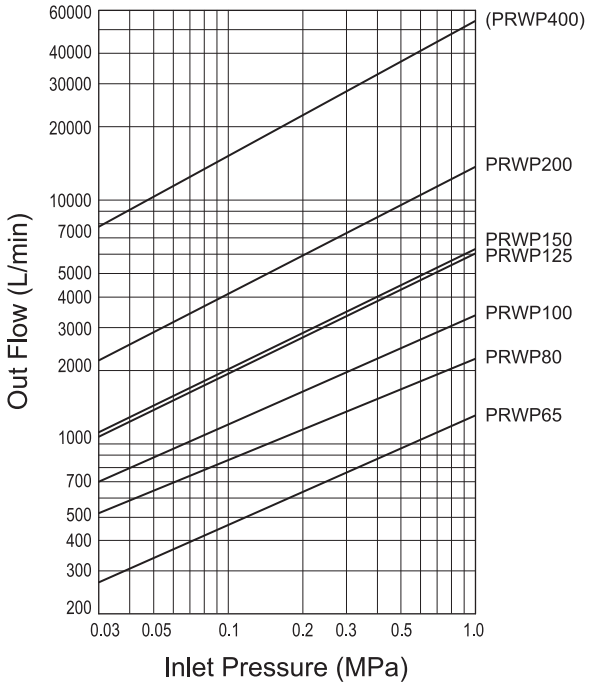
●Materials:

Description	Material
Body	Bronze
Cover	Bronze
Diaphragm	EPDM
Spring	Stainless Steel
Adjustable Spindle	Brass
Cap	Brass
Strainer	Stainless Steel
Seat	Stainless Steel

●Flow Characteristics:

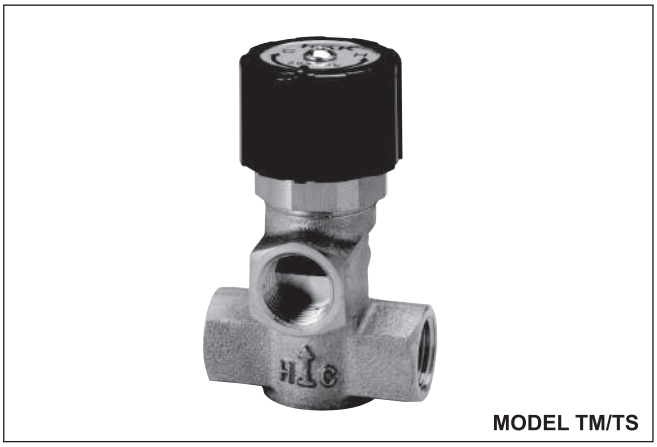






BRONZE VALVES

Automatic Mixing Valve : Model TM
Automatic Selector Valve : Model TS



MODEL TM/TS

●Operating Conditions:

MODEL		TM			TS		
Nominal Size	mm	15	20	25	15	20	25
	inch	1/2	3/4	1	1/2	3/4	1
Applicable Fluid		Water (Cold/Hot)					
Temperature Control Range		30 to 50°C			———		
Control Temperature		———			68 ± 2°C		
Water Diversion Performance		———			0 to 1.5L/min(0.75MPa)		
Shell Test Pressure		1.75MPa			2.4MPa		
Flow Rate(L/min) ※Pressure Difference is 0.2MPa between P_1 and P_2.		20	33	80	———		
Working Pressure	Cold Water	0.02 to 0.6MPa			0 to 1.6MPa		
	Hot Water	0.02 to 0.3MPa(15,20mm) 0.02 to 0.2MPa(25mm)					

※Cold Water Pressure ≥ Hot Water Pressure

●Basic Application:

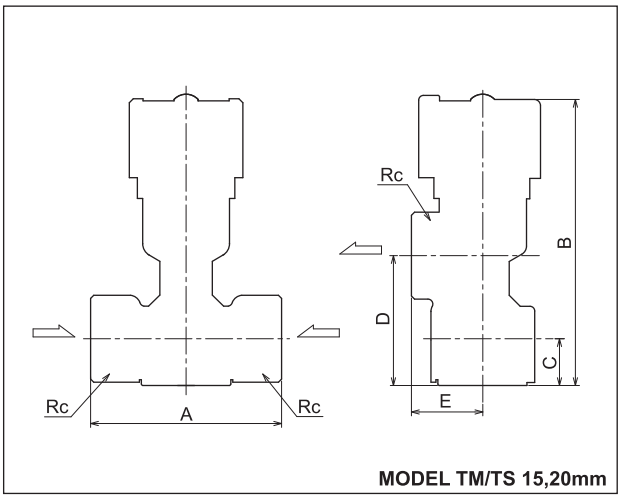
<Automatic Mixing Valves>
Automatic mixing valves are used in hot water supply systems of hotels, beauty salons, heated swimming pools, floor heating units and central heating systems.
<Automatic Selector Valves>
Automatic selector valves are used in boiler systems to prevent heat loss.

●Features:

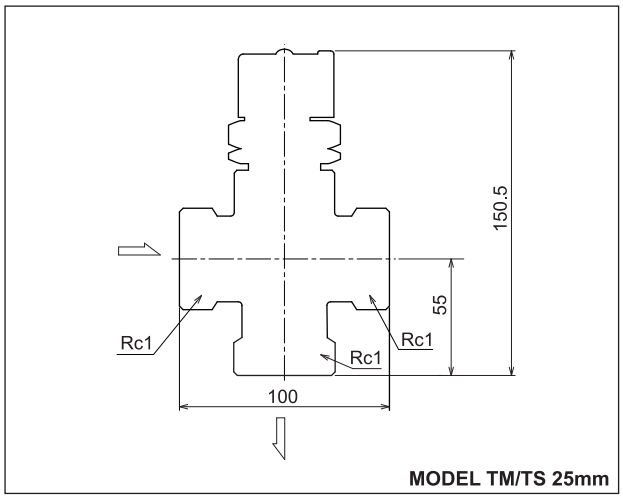
1. The automatic mixing valve's thermal wax element automatically adjusts hot/cold water downstream flow to a desired temperature by the actuating of the wax element.
2. The thermal wax element automatically selects the downstream port by desired temperature.
3. The open/close operations are controlled by the thermal wax element directly so there is no wiring required.
4. Bronze prevents rust contamination of the water.

BRONZE VALVES

Automatic Mixing Valve : Model TM
Automatic Selector Valve : Model TS



MODEL TM/TS 15,20mm



MODEL TM/TS 25mm

●Dimensions:

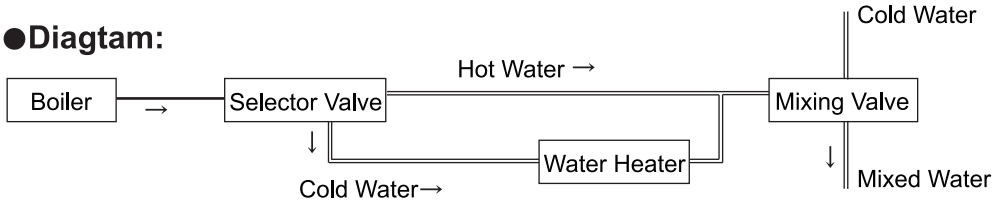
unit:mm

Nom.size		A	B	C	D	E
mm	inch					
15	1/2	60	86	15	38.5	24
20	3/4	70	96.5	17	47.5	26

●Materials:

Description	Material
Body	Bronze
Disc	Brass
Thermo Pellet	———————
Piston	Stainless Steel
Valve Seat	Brass

●Diagtam:



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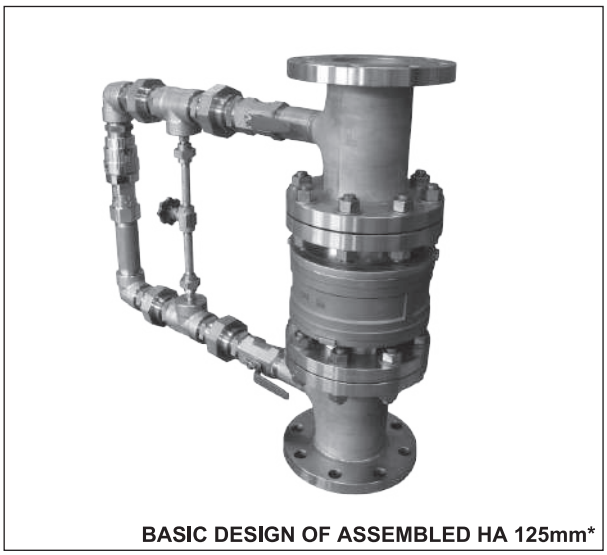
Water Hammer Eliminator : Model HA

MODEL HA 50mm



BASIC DESIGN OF ASSEMBLED HA 125mm*

*Locally Assembled product

●Operating Conditions:

MODEL		HA	
Nominal Size	mm	20	50
	inch	3/4	2
Applicable Fluid		Water	
Working Temperature		0 to 60°C	
Working Pressure (inlet)		above 0 to 5MPa	
Shock Elimination Ability		30MPa	

●Basic Application:

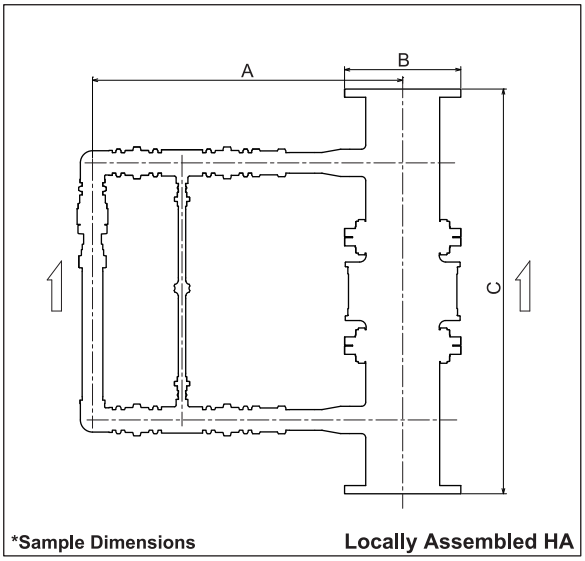
The Water Hammer Eliminator HA, the key component of the Assembly, was engineered for use in high-rise buildings to eliminate the back pressure of water hammering caused by stopping of the booster and transfer pumps. It can be widely used for the piping systems in industrial plants, high-rise buildings, water suppliers and hospitals.

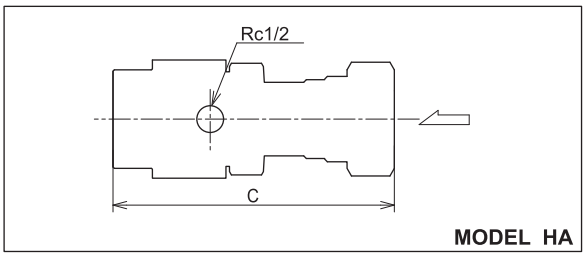
A check valve should be installed just after the pump, also ensure that the HA Assemble is installed downstream of the first check valve. When the pump stops, the HA can successfully release water hammer pressure by discharging water from the drain port. The HA drain should be connected to a water tank or discharged to a floor trap connection.

●Features:

1. HA can successfully eliminate the noise of water hammering in 0.02 seconds.
2. HA is able to release the extra pressure of water-hammer to protect pipes, pumps, valves, fittings and other equipment from damage.
3. HA is more durable than conventional water hammer arrestors.
4. HA doesn`t need extensive water volume or pipe size/length calculations before installation.
5. 20mm HA can be used for 20mm through 80mm pipes.
6. 50mm HA can be used for 100mm and over pipes.

Water Hammer Eliminator : Model HA





● Materials:

Description	Material
Water Hammer Eliminator SIZE: 3/4" & 2"	Bronze
Backup Check Valve	Bronze, SS304

● Dimensions: MODEL HA

unit : mm

Connection : JIS B 0203 & BS21			
Nom.Size		L	Connection
mm	inch		
20	3/4	(181)	Rc 3/4
50	2	(214)	Rc 2

○ Local Materials:

Flange, Fitting, and Pipe	Selected by Locally
Silent Check Valve	
Ball Valve	
Needle Valve	

○ Sample Dimensions: MINIMUM

unit : mm

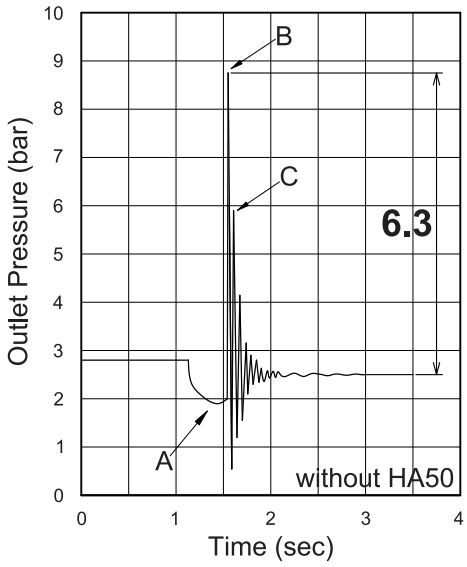
Connection : JIS B 2220				
Nom.Size		A	B	C
mm	inch			
100	4	(750)min.	ϕ210	(670)min.
150	6	(850)min.	ϕ280	(880)min.
Flange		JIS 10K		

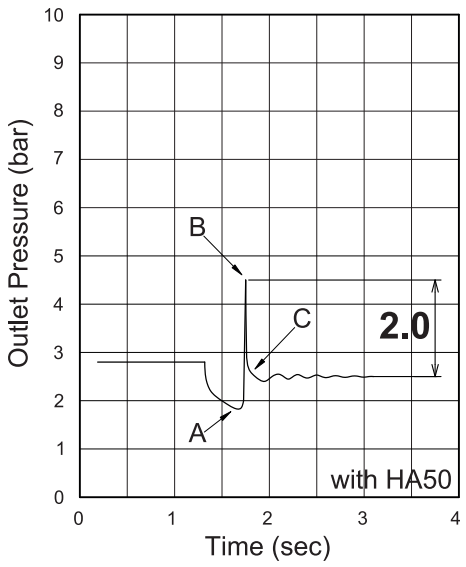
unit : mm

Connection : ISO7005-1(BS 4504)				
Nom.Size		A	B	C
mm	inch			
100	4	(750)min.	ϕ220	(670)min.
150	6	(850)min.	ϕ285	(880)min.
Flange		PN16		

● Water Hammer Characteristics:

Test Conditions : 1. Velocity in pipe 2m/sec 2. Vertical pipe lenght 20m (Nominal size 2", Flow rate 236L/m)





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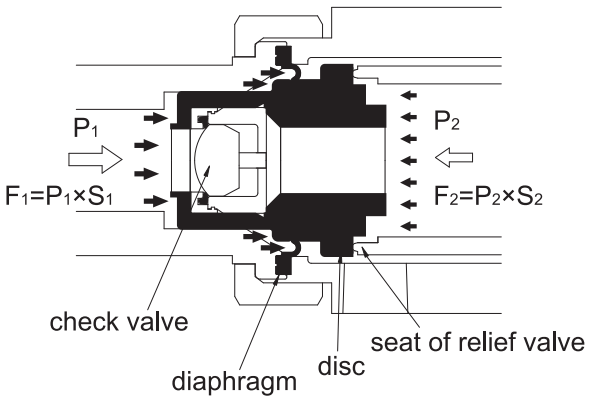
HA Operating Principles:

HA allows up to 0.2 bars of pressure difference between the check valve chamber and the relief valve.
HA relief valve starts to discharge water to the atmosphere when the downstream pressure of HA becomes 0.2 bars higher than the upstream pressure

1. Normal Condition (Booster/Transfer Pumps is operating):
   Downstream pressure after the check valve is lower than upstream pressure before the check valve.

2. Hammer Condition (Pump is stopped):
   The weight of downstream water suddenly causes back flow. Backflow water punches the check valve seat causing the first noise, or shock, of water hammering.

3. Eliminate Condition (Just after first shock):
   If the first shock is bigger than 0.2bars, then the HA relief valve unit starts to discharge extra pressurized water to the atmosphere in 2/100 of a second until the downstream pressure becomes the same as upstream pressure.

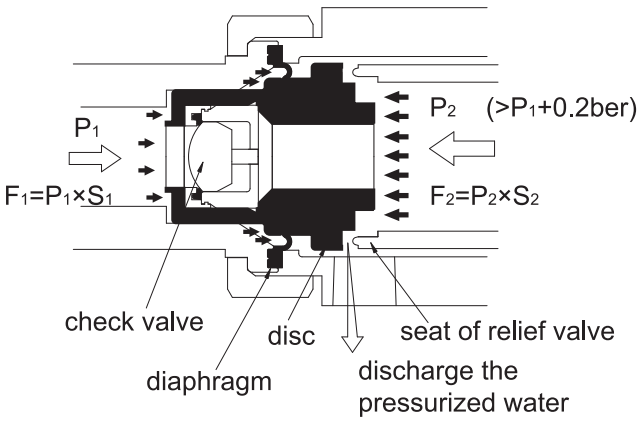


$F_1=P_1\times S_1 > F_2=P_2\times S_2$

⇩

HA relief valve is closing.

FIG1.Nominal condition



$F_1=P_1\times S_1 < F_2=P_2\times S_2$

⇩

HA relief valve is opening.

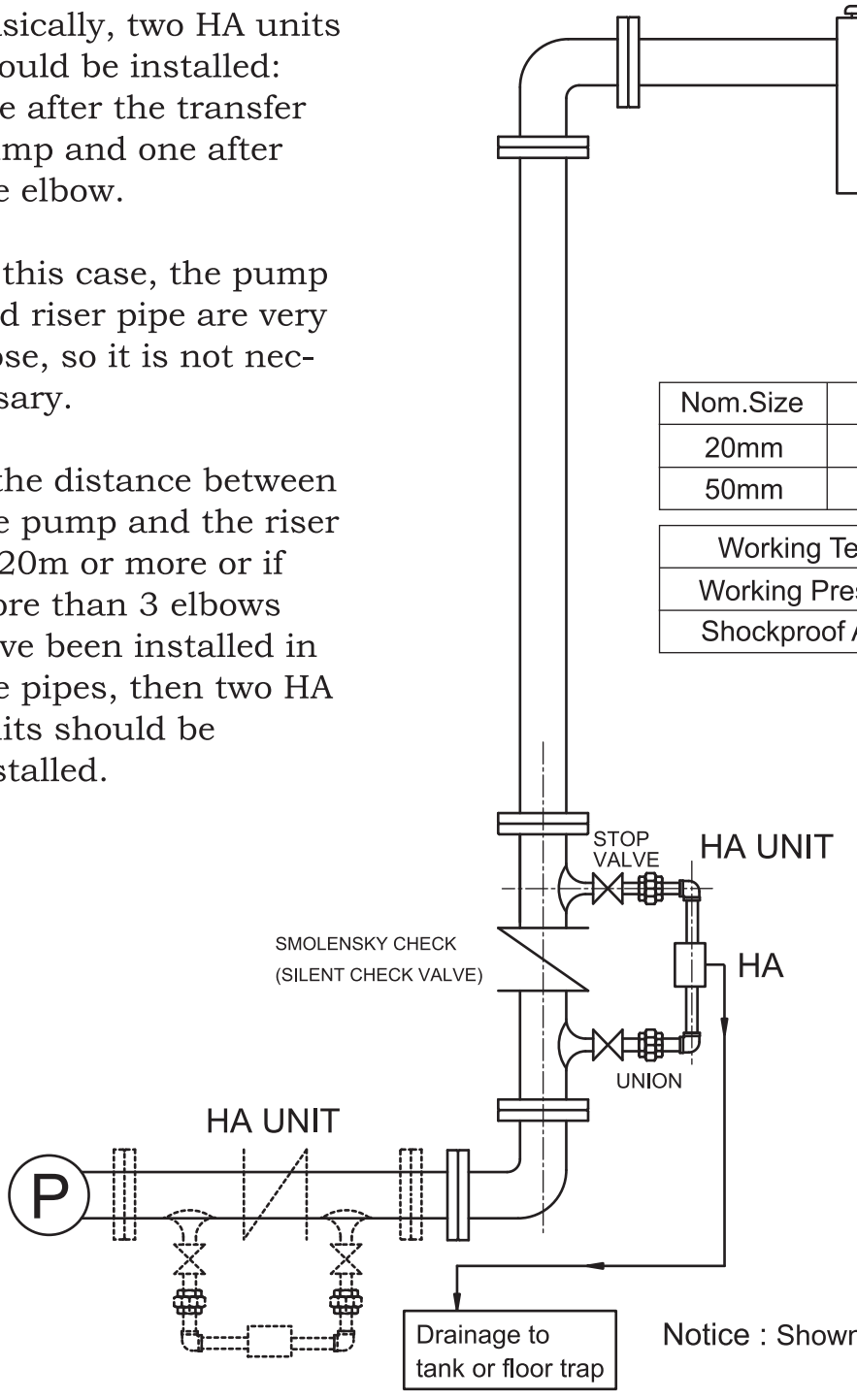
FIG2.Eliminating condition

MODEL : HA
INSTALLATION PIPINGDIAGRAM

Basically, two HA units should be installed: one after the transfer pump and one after the elbow.

In this case, the pump and riser pipe are very close, so it is not necessary.

If the distance between the pump and the riser is 20m or more or if more than 3 elbows have been installed in the pipes, then two HA units should be installed.



Nom.Size	Applicable Pipe Size
20mm	20 through 80mm
50mm	100 mm and above

Working Temp.	Max.60℃
Working Pressure	5MPa
Shockproof Ability	30MPa

Notice : Shown is the case for a 4” riser.

Differences Between a Conventional Pump Room and a HA Unit Pump Room

Conventional System

1. FIG.1 needs a lot of space for the pressure tanks.
2. The pressure tanks need yearly maintenance and are very expensive.
3. The pressure tanks can not prevent water hammering caused by check valve damage.

HA Unit System

1. In FIG.2, not much space is needed for the pump room.
2. One HA unit is enough to replace several pressure tanks!!
3. The HA unit can eliminate water hammering even when a check valve is damaged.

HA Unit: Achieves Extraordinary Cost Savings!!!

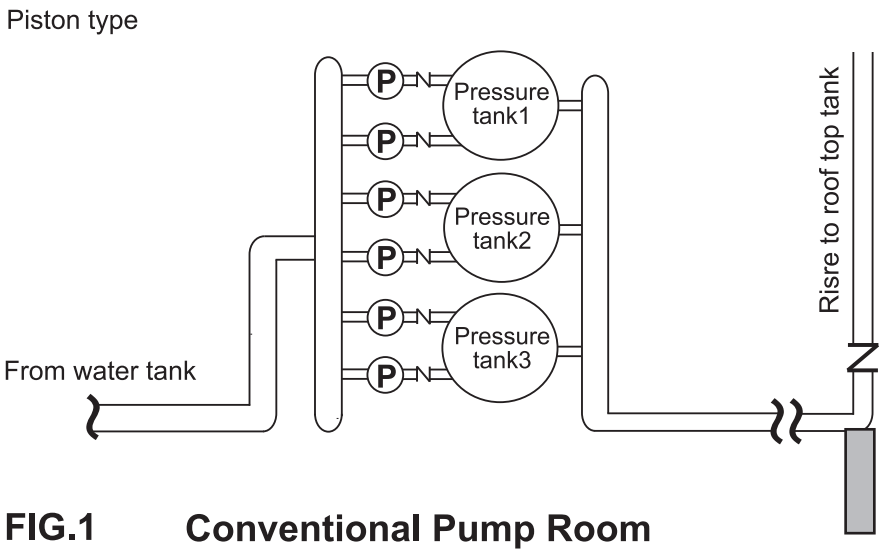


FIG.1 Conventional Pump Room

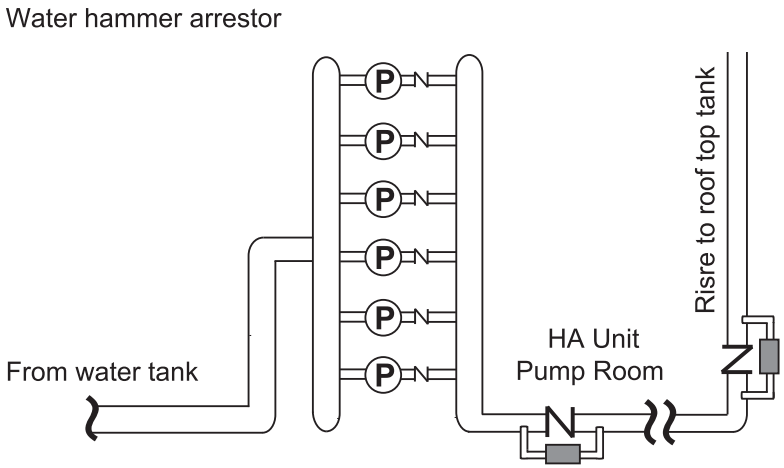


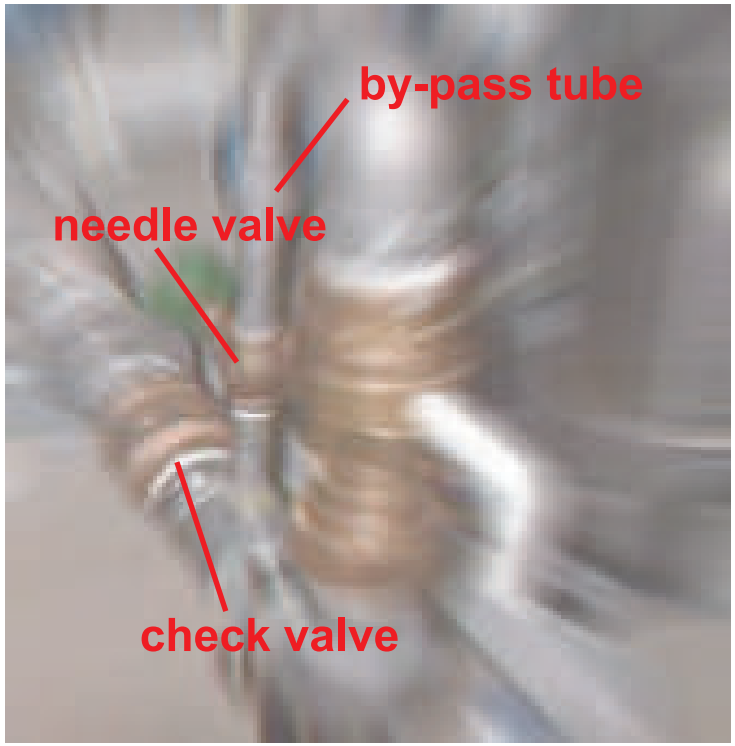
FIG.2 New style of Pump Room

A more compact pump room as a result of choosing the HA UNIT.

View of a more compact pump room.

Side view of pump room.

Back side view of pumps.



In the case of HA units being installed near the pump, flow of inertia causes a vacuum before the check of the HA units. The 5m distance between the pump and the HA units is called the "Inertia Zone" In this case, please install the optional HA unit.

View of optional HA unit.

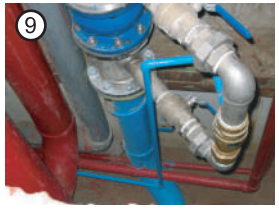
View of standard HA unit.

View of optional HA unit

BRONZE VALVES

ALL PHOTOS: CAIRNHILL CREST CONDOMINIUM

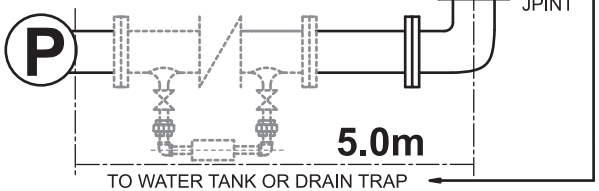
KANE manufactured by

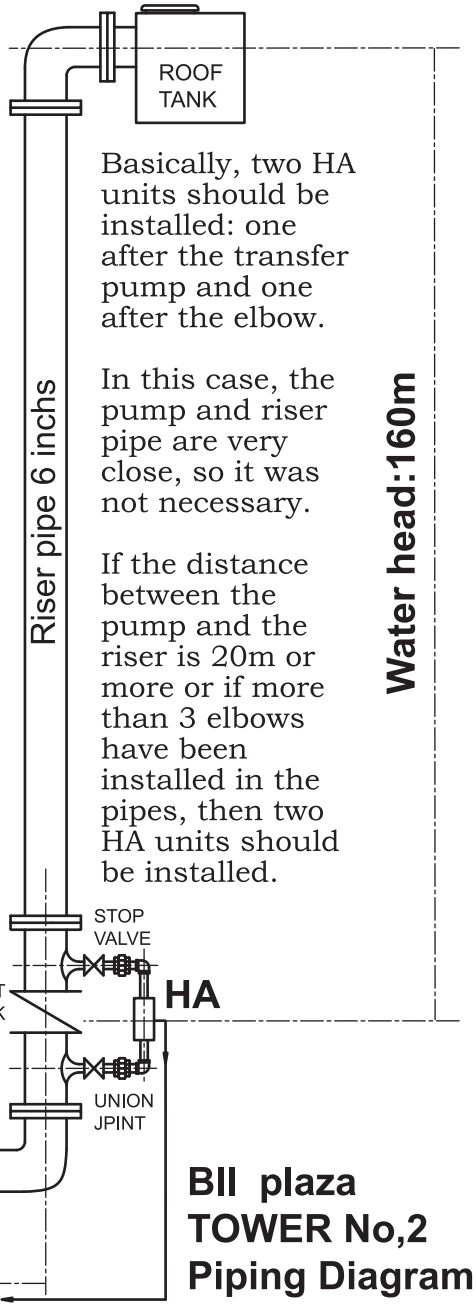


1. A landmark and symbol of the Jakarta office district.
2. Tower BII-2 has 40F of offices and shops.
3. Tower BII-2 is named Plaza BII.
4. View of BII tower entrance.
5. View of its gorgeous lobby
6. Explaining the HA solution.
7. View of pipe-shaft from B1F.
8. View of HA unit on the riser.
9. Can see the botom of the riser.
10. View of drain pipe from HA.
11. View of HA unit from B2F.
12. View of pump room inside B2F.
13. Supply pipe to riser from pump.
14. 3 stages of high speed pumps.
15. Pump stops and HA starts to drain in seconds.
16. Drain has already stopped in 2-3 seconds.
17. Happy after solving the water-hammer problem.

HA unit

Pump Specifications:
Multi stage centrifugal pump
2,185L/min x 196m x 130 KW





Basically, two HA units should be installed: one after the transfer pump and one after the elbow.

In this case, the pump and riser pipe are very close, so it was not necessary.

If the distance between the pump and the riser is 20m or more or if more than 3 elbows have been installed in the pipes, then two HA units should be installed.

BII plaza TOWER No,2 Piping Diagram

Job Ref. of Major Project

- **BII PLAZA TOWER 28.12.2003**
  Office Tower 3Towers 40F
- **Mediterania Garden Residences**
  Gorgeous Apartment 8T 32F
- **Kelapa Gading Square Ⅱ**
  Urban Redeveloping 14T 35F
- **The Peak Residence**
  High-Rise Apartment 4T 35+55F
- **Central Business Pluit**
  Mega Complex 4T 24F
- **Novotel Hotel**
  Hotel 1T 3F
- **Medilranian Lagon**
  Big Resort
- **Meditarenia Resident 2**
  Gorgeous Apartment 4T 28F
- **Jakarta City Tower**
  Office Tower 1T 33F
- **City of Tomorrow Apartment**
  Gorgeous Condo 2T 20F
- **Menara Palma**
  Office Tower 1T 35F
- **Senayan Square**
  Commercial Tower 1T 23F
- **RS. Sentosa**
  Hospital 1T 7F
- **Bellagio Mansion**
  Deluxe Apartment 1T 34F
- **Housing Development Board Singapore Gov. Flat**
  Gov. Flat Ave. 35F
- ○ **Marina View Resort**
  Resort Residence 1T 46F
- **Nagoya Lucent Tower**
  Commercial Tower 1T 46F
- **Saeki City Water Resevoir**
  Water Reservoir
- **Meditarania Resident Marina**
  Deluxe Apartment 4T 35F
- **The Pakubuwono Residence**
  High-End Apartment 5T 35F
- **Sudirman Park**
  Gorgeous Condo 2T 46F
- **Pondok Indan Mall Ⅱ**
  Big Shopping Mall 1T 5F
- **Setiabudi Residence**
  Gorgrous Condo
- **Lindeteves**
  Gorgeous Condo
- **Sudirman Condominium**
  Gorgeous Condo 1T 34F
- **Blok M Square**
  Shopping Mall 1T 10F
- **Regata Apartment**
  Gorgeous Apartment 4T 32F
- **Water Palace Surabaya**
  Deluxe Condo 1T 20F
- **Swiss Bell Hotel**
  Hotel 1T 10F
- **Suhid Sudirman Apartment**
  Gorgeous Condo 1T 40F
- **Senayan City**
  Mega Complex 3T 32F
- **Casablanca Mansion**
  Deluxe Apartment 1T 12F
- **Taman Palm**
  Deluxe Apartment
- **Tubetu Woodworking Plant**
  Factory

Pressure Vacuum Breaker : Model QB

MODEL QB 15mm

● Operating Conditions:

Product Type		Pressure vacuum breaker
Installation Type		In-line
Check valve unit		mounted
MODEL		QB
Nominal Size	mm	15
	inch	1/2
Applicable Fluid		Water
Working Temperature		0 to 85°C
Working Pressure (inlet)		0 to 1.6MPa

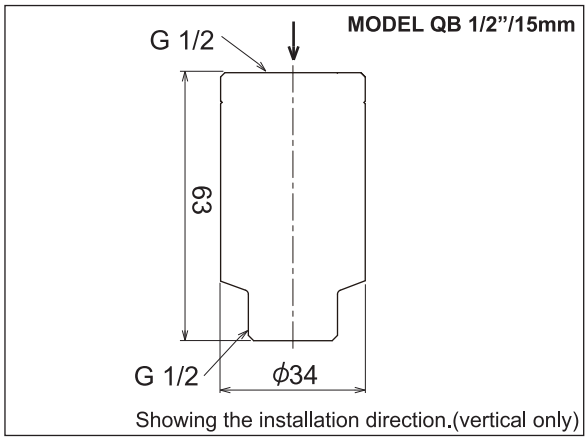
● Features:

1. Model QB is designed as a pressure vacuum breaker to install to upstream side of the Kitchen, Toilet and Bath room where the terminal stop functions are incorporated with their shower head.
2. Model QB is an in-line type of the backflow prevention device, and is not only incorporating a check valve function but also incorporating a dynamic check valve chamber. This shows that Model QB has two functions as conventional vacuum breaker and check valve.
3. Model QB can prevent backflow contamination of washing machine, garden sprinkler system etc.

BRONZE VALVES

Pressure Vacuum Breaker : Model QB

●Dimensions:



●Materials:

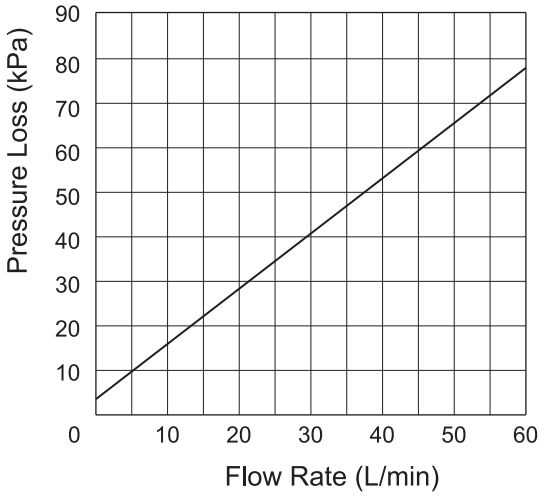
Description	Material
Case	Bronze
Cap	Bronze
Vacuum disc	Silicon
Check Valve	Synthetic resin
Check disc	Silicon
Spring	Stainless Steel

●Typical applications:

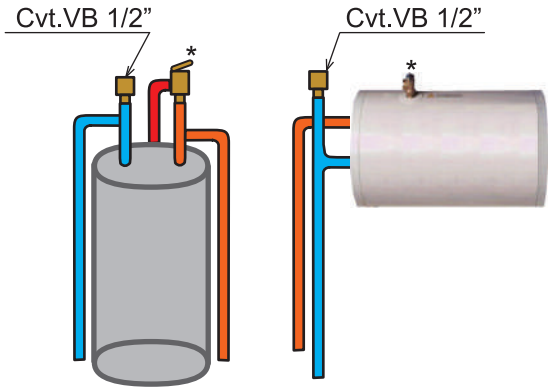
◇Pressure Vacuum Breaker

Causion: *2
From floor/ water level.to QB shall be kept at least 150mm.

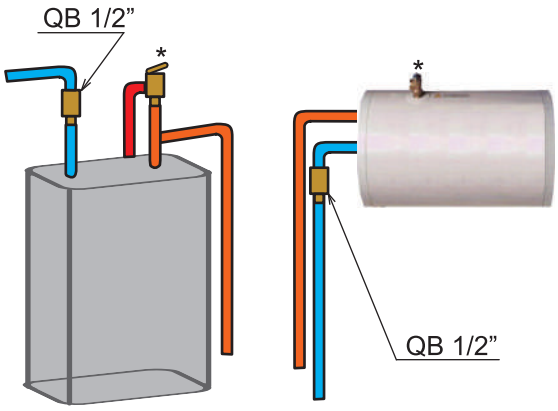
●Pressure Characteristics: QB



◇Conventional Vacuum Breaker (without check function)



◇Pressure Vacuum Breaker (check valve incorporated)



*Pressure/ Thermal Relief Valve

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