Project Name: Roya Sedra -Riyadh
Subject: BOQ
PR #: BPR12613848

Line	Item	Line Description	Quantity	UOM
3	1010150031320	**Brass Hose Bib ½ inch- (Albion-watts-KIDS) with Vacuum Breaker:** Albion- Ø1/2" ART 1225 NPT 125PSI Lead Free Brass Female Hose Bib Tap With ART 1250 Fem/Male 125 PSI Lead Free Brass Hose Vacuum Breaker or **Any Brand with Equal Specs (See attached Data Sheet)**	60.	PCS
14	1010150020339	**DN100 (4") flanged mechanical float valve:** 'ASA6100400 (15 NOS IN 01 WEEK & REST IN 04 WEEKS) Albion- Ø4'' Art 6100 PN16 WRAS Ductile Iron Modulating Float Control Valve. **Brand: Albion or Equivalent Specs** (See attached Data Sheet)	18.	PCS
18	1010010582702	**Anti vortex plate 4 inhes:** Supply & Fabrication of HDG Antivotex Plate: (2 Weeks from date of Advance Payment) Model: AHAM - HDGMCS-AVP-100 Material Specifications: → Sch. 40 Pipe, Size 4" (100 mm) and Length 690MM as per the Client site requirement . → Mild Steel, Slip on Flanged as per PN16 (No's - 2) → Sch. 40 Carbon Steel Short Radius Elbow (No's - 1) → Vortex inhibitor - Plates thickess 10 mm → Finish - Hot dip galvanized as per ASTM A123 / BS EN ISO 146 **or Any Brand with Equivalent Specs** (See attached Data Sheet)	18.	PCS

Project Name: Roya Sedra -Riyadh
Subject: BOQ
PR #: BPR12613848

Line	Item	Line Description	Quantity	UOM

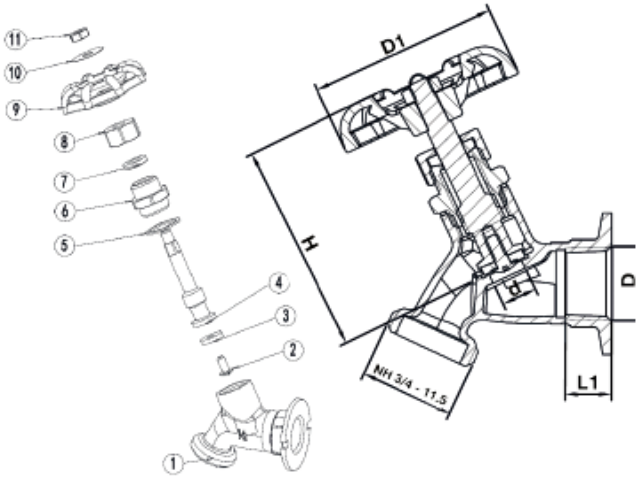
ART 1225

Lead Free Brass Hose Bib Taps



Features

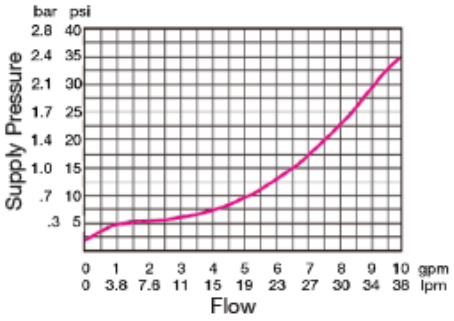
- Female threads NPT (ANSI B1.20.1)
- Male threads 3/4" NHT

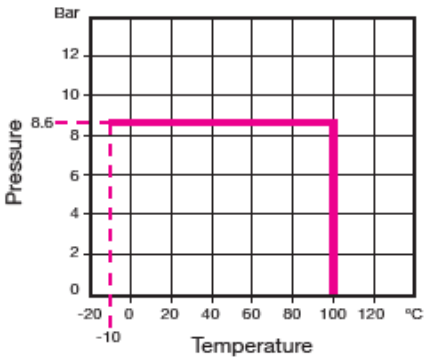


Technical data
Max pressure: 125psi (8.6 Bar)
Working temp: -10°C to +100°C

DN	1/2"	3/4"
D1	53	53
d	10	10
L1	13.5	13.5
H	60.2	60.2
Kgs	0.21	0.23

N.	Part Name	Materials
1	Body	Lead Free Brass C46500
2	Screw	Brass
3	Gasket	EPDM
4	Stem	Lead Free Brass C46500
5	Gasket	PTFE
6	Bonnet	Lead Free Brass C46500
7	Gasket	EPDM
8	Nut	Brass
9	Handwheel	Cast Iron
10	Gasket	Aluminium
11	Nut	Steel Q235





V1. Dimensions in mm
This data sheet is designed as a guide and should not be regarded as wholly accurate in every detail. We reserve the right to amend the specification of any product without notice.

Project Name: Roya Sedra -Riyadh
Subject: BOQ
PR #: BPR12613848

Line	Item	Line Description	Quantity	UOM

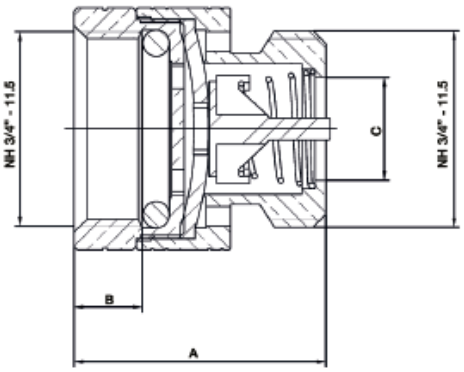
ART 1250

Lead Free Brass Vacuum Breaker



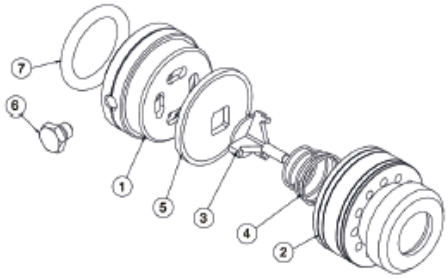
Features

- Male / Female NHT threads
- Conforms to ANSI A1 12.1.13 ASSE standard 1011
- Anti tamper screw
- Manual drain feature

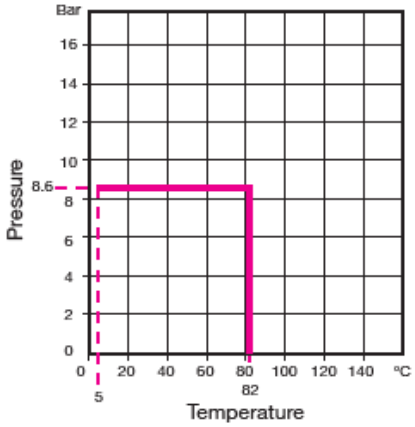


Technical data
Max pressure: 125psi (8.6 Bar)
Working temp: 5°C to +82°C

DN	3/4"
A	34.3
B	9.3
C	14.0
Kgs	0.11



N.	Part Name	Materials
1	Body	Lead Free Brass C46500
2	Bonnet	Lead Free Brass C46500
3	Core	POM
4	Spring	Stainless Steel
5	Gasket	NBR
6	Screw	Brass
7	O-Ring	NBR

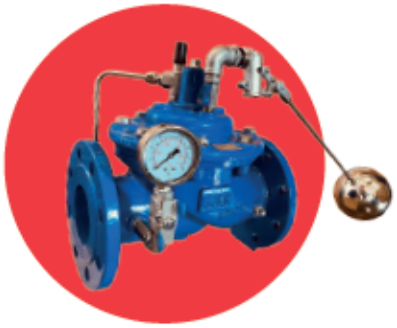


V1. Dimensions in mm
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Project Name: Roya Sedra -Riyadh
Subject: BOQ
PR #: BPR12613848

Line	Item	Line Description	Quantity	UOM

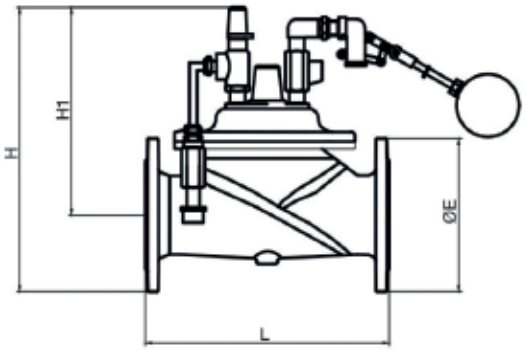
ART 6100 PN16 Modulating
PN16 Float Control Valve



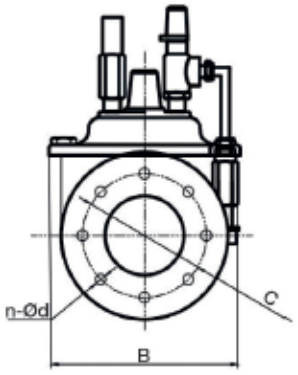
Features

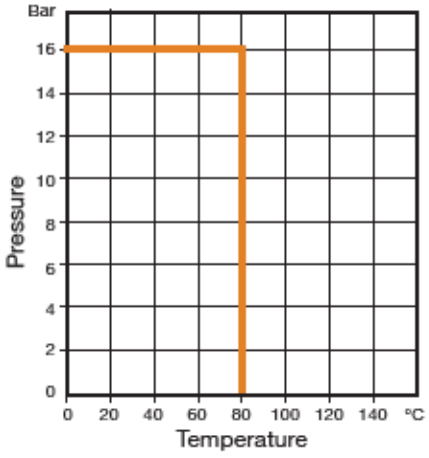
- Automatic Control Valve
- Suitable for potable water applications
- Conforms to BS EN558-1 Series 1
- Flange conforms to BS EN1092 PN16
- Available flanged PN25
- Stainless Steel pilot tubing and valves
- Copper float option
- Fully WRAS Approved valve - Cert No. 2104026

Technical data
Max pressure: 16 Bar
Minimum differential pressure: 5PSI (0.035MPa)
Working temp: 0°C to +80°C



DN	50	65	80	100	125	150	200	250	300
L	230	290	310	350	400	480	600	730	850
E	165	185	200	220	250	285	340	405	460
C	125	145	160	180	210	240	295	355	410
n-Ød	4-19	4-19	8-19	8-19	8-19	8-23	12-23	12-28	12-28
B	164	194	218	252	286	348	476	574	662
H	335	355	370	390	420	455	510	575	630
H1	242	252	270	280	295	313	340	372	400
Kgs	13	17	23	30	65	69	132	315	420





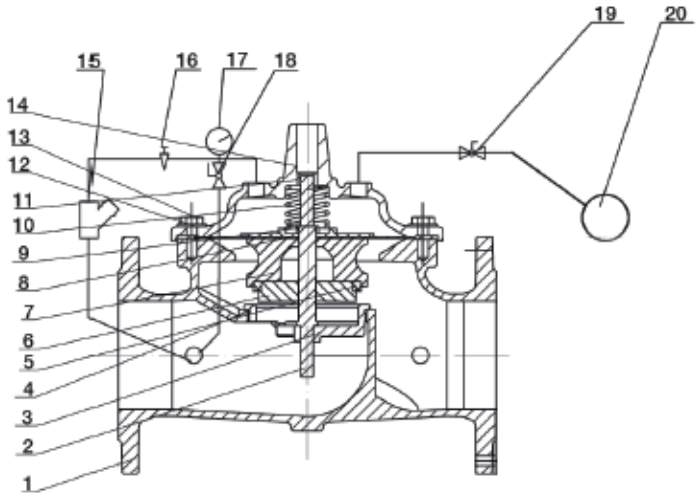
V2. Dimensions in mm

Pg. 1/3

Project Name: Roya Sedra -Riyadh
Subject: BOQ
PR #: BPR12613848

Line	Item	Line Description	Quantity	UOM

ART 6100 PN16 Modulating



N.	Part Name	Materials
1	Body	Ductile Iron
2	Stem	Stainless Steel 304
3	Seat	Stainless Steel 304
4	O-Ring	NBR
5	Disc Ring	NBR
6	Disc Retainer	Ductile Iron
7	Disc Guide	Ductile Iron
8	Diaphragm	EPDM
9	Diaphragm Washer	Ductile Iron
10	Spring	Stainless Steel 304
11	Cover Bearing	Stainless Steel 304
12	Screw	Stainless Steel 304
13	Washer	Stainless Steel 304
14	Cover	Ductile Iron
15	Strainer	Stainless Steel 304
16	Needle Valve	Stainless Steel 304
17	Pressure Gauge	Stainless Steel 304 (Glycerin Filled)
18	Ball Valve	Stainless Steel 304
19	Ball Valve	Stainless Steel 304
20	Float Control Valve	Stainless Steel 304

Classified as: Internal

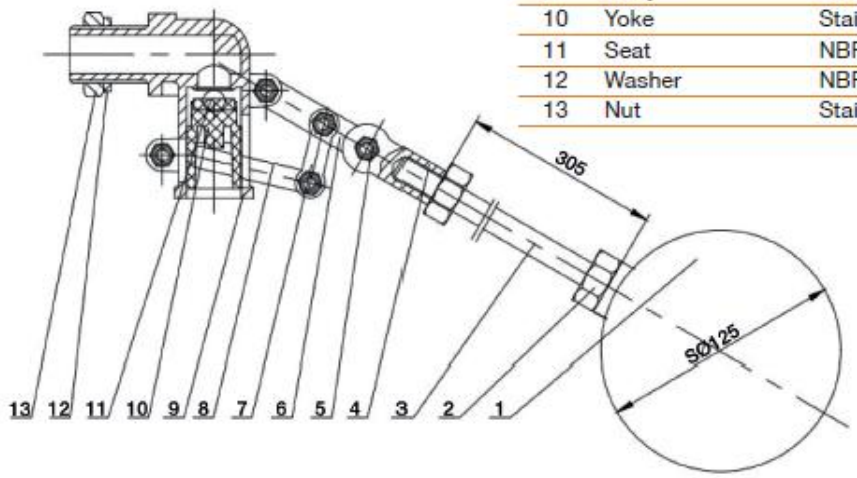
Project Name: Roya Sedra -Riyadh
Subject: BOQ
PR #: BPR12613848

Line	Item	Line Description	Quantity	UOM

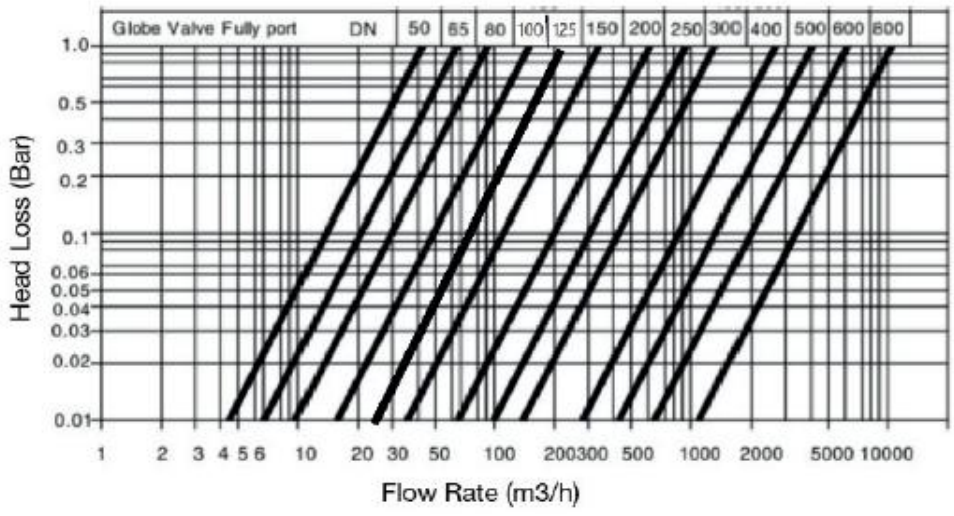
ART 6100 PN16 Modulating

Pilot Valve Detail - ART 6150

N.	Part Name	Materials
1	Float Ball	Stainless Steel 304
2	Nut	Stainless Steel 304
3	Rod	Stainless Steel 304
4	Level Holder	Stainless Steel 304
5	Screw / Nut	Stainless Steel 304
6	Arm	Stainless Steel 304
7	Level	Stainless Steel 304
8	Seat Holder	Stainless Steel 304
9	Body	Stainless Steel 304
10	Yoke	Stainless Steel 304
11	Seat	NBR
12	Washer	NBR
13	Nut	Stainless Steel 304



Flow curve of the main valve at fully open status



V2. Dimensions in mm

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Classified as: Internal

Project Name: Roya Sedra -Riyadh
Subject: BOQ
PR #: BPR12613848

Line	Item	Line Description	Quantity	UOM

ANTI-VOTEX PLATES

In accordance with NFPA 20 & 22

About Anti-Vortex Plates:

A vortex is a "Turbulent Flow" that must be controlled to prevent damage to rotating parts. A vortex is a region formed in a fluid when the fluid's flow rotates around an axis line and the fluid flows in a swirling motion at a high velocity towards pump intake.

AHAM Anti-vortex Plates aid to diminishing the speed of a fast moving turbulent flow and smoothen it into a laminar flow, thus reducing wear and tear. AHAM Anti-vortex Plates also aid to prevent cavitation (small liquid-free zones such as bubbles or voids) in the fluid. Cavitation can create dents, shock waves and imbalance in the moving parts. Once cavitation affects a surface it tends to erode at an accelerating rate. This makes the surface prone to stress corrosion.

To avoid these issues **AHAM Anti-Vortex Plates** are recommended to installed in the suction line of fire pumps to control the turbulence in flowing water. They are simple in design and very effectively controlling the velocity of the fluid thus preventing cavitation and damage to the impellers. Also it supports off duty conditions when static pressure reduces at the suction along with elevation of the water side level in the tank.

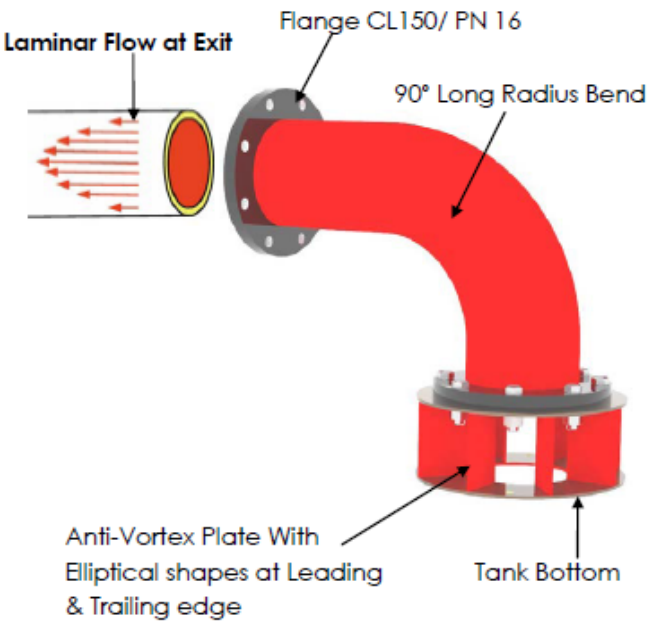
Features

- Anti-Vortex Plate design is in accordance with NFPA 20/22
- Where a tank is used as the suction source for a fire pump, the discharge outlet of the tank shall be equipped with an assembly that controls vortex flow in accordance with NFPA 22. i.e. Recommended to use Anti-Vortex Plate.
- Anti-Vortex plates are provided with Elliptical shapes at leading & trailing edge for getting streamlined flow.
- The water velocity at the Anti-Vortex Plate is maintained below 1m/Sec limit for maximum flow condition
- The minimum distance above the bottom of the tank shall be 152 mm (6 Inch).

Material:

Mild Steel (Standard)

SS 304/SS316 (Optional)



Project Name: Roya Sedra -Riyadh
Subject: BOQ
PR #: BPR12613848

Line	Item	Line Description	Quantity	UOM



Anti-Vortex Plate: Grooved Design



Anti-Vortex Plate: Flanged Design

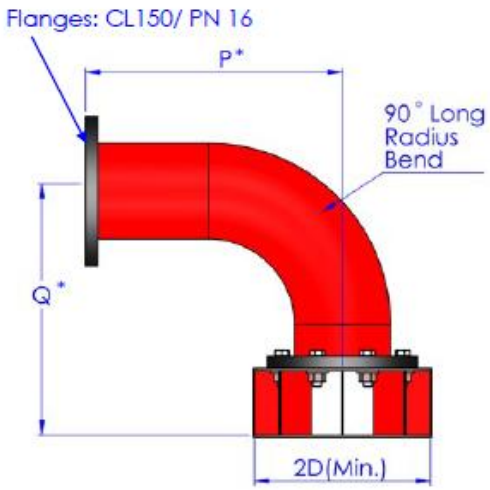
AHAM offers two types of Anti-Vortex plate design to suit Client requirements:

1. Fully assembled **Anti-Vortex Plates with Flanged design**
2. **Anti- Vortex Plates with Grooved Design** to suit site conditions

Selection of Anti–Vortex Plate:

- The sizes indicated in the table below shall be used as a minimum size of the suction pipe & Anti-Vortex Plate .
- Below table shows dimensions for standard Anti-Vortex Plate Design off the Shelf available with **AHAM**

Pump Rating (GPM)	Min. Suction Size (Inch)	P* (mm)	Q* (mm)
300	4	406	252
400	4	406	252
450	5	406	290
500	5	406	290
750	6	457	331
1000	8	558	405
1250	8	558	405
1500	8	558	405
2000	10	660	481
2500	10	660	481
3000	12	762	557
3500	12	762	557



- Depending upon site requirements AHAM provides **Custom build Anti-Vortex plates** Assembly.

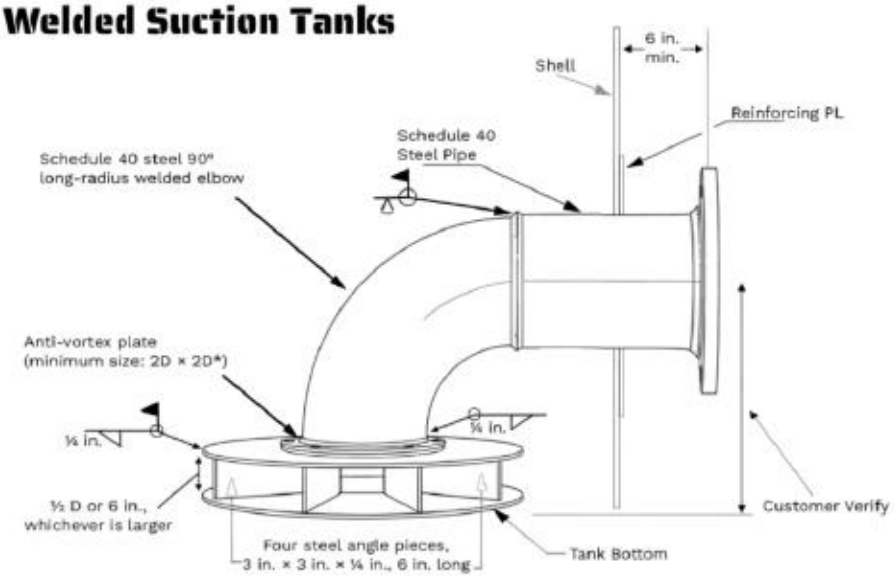
(P* & Q* dimensions are as standard scope & can be varied to suit client requirement)

- *For higher capacities contact* AHAM

Project Name: Roya Sedra -Riyadh
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PR #: BPR12613848

Line	Item	Line Description	Quantity	UOM

Suction Nozzle with Anti-Vortex Plate for Welded Suction Tanks



For SI units, 1 in. = 25.4 mm.
A 48 in. × 48 in. plate is commonly used and suitable for nearly all installations.
For welding details and reinforcement requirements, refer to AWWA D100.

Based on NFPA 20 & 22



Sizes of Anti-Vortext Pate:
The most common and preferred option is the large, standard-sized screen (48 in x 48 in), as it accommodates suction pipes of all fire pump sizes effectively.

Installation Dimensions:
Mounted at a height equal to half the diameter of the discharge pipe or 152 mm above the tank bottom, whichever is greater.

Dimension of Plate.
The setup must include a horizontal steel plate with a width no less than twice the diameter of the elbow fitting's outlet.