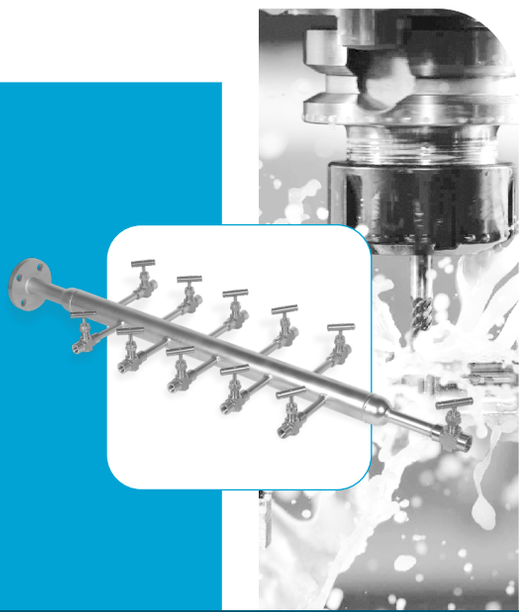
PANAM®

ENGINEERING BEYOND LIMITS

Air Headers

Maximum Working Pressure upto 6000 psi (414 bar)



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Introduction

PANAM® has emerged as renowned name in global market for 'Instrumentation Fittings & Valves'. Since its inception in 1998 to present day, **PANAM®** has added new product every year and has broadened its product portfolio and its clientele base by supplying to potential customers worldwide. Key core values like Timely Delivery, Quality Consistency, Product Improvisation and After Sales Service has been instrumental in the phase wise evolution of company. Continuous improvement is the key to success, Customer feedback are taken with positive attitude and product are constantly groomed to a new quality and performance level to cope up with the competition. Our products are known for providing high-quality, high-reliability, low-cost options for the oil and gas industry. Over the year, the company has evolved from a product based company to a complete system solution provider. Over the coming years the entity of the company will attain state of the art operational efficiency for maintaining a competitive edge, with the advent increase in the utilization of its products in oil, gas and power sector.

PANAM® is having state of the art manufacturing facility span over an area of 65,000 sqft with a fleet of CNC Machines, VMC Machines, Semi-Automatic Lathe Machines, High Pressure Test Bench with SCADA Control, Configuration Centre for Transmitters and dedicated R&D Team.

PANAM® offers a large variety of Air Headers from Stainless Steel & Other Alloys. **PANAM®** offers Air Headers in different configurations - with flanged connection, inlet thread or weld connection, drain outlet, with a number of outlets for welding, or thread connections including NPT tapered, ISO (BSPT) tapered, ISO (BSPP) parallel, metric thread. Outlets can be of **PANAM®** ball valves or needle valves series.

The product meets and even exceeds the requirements of ASME and MSS Series Standards. All materials are supplied in compliance with ASTM Specifications and verified by NABL approved third party laboratories.

Air headers are subject to 100% factory testing, comply with NACE MR0175 and NACE MR0103, with Heat Code Traceability. Maximum working pressure up to 6000 psi (414 bar)

Contents

Features

- Maximum Number of Outlets - 20.
- Minimum Number of Outlets - 4.
- SS316 as a standard material of construction. Other materials are available upon request.
- Radiographic Testing & Liquid Penetrate Testing of Welds.
- Maximum Working Pressure up to 6000 psi (414 bar).
- Maximum Working Temperature up to 648° C (1200° F).
- Leak-tight performance testing for every valve under nitrogen condition at the maximum working pressure.
- Ball Valves & Needle Valves available for distribution lines and drain port.
- A choice of high-quality valves and end connections, all manufactured by **PANAM®**

General Information

An air distribution header is characterized by an inlet on one end, a drain on the other end, with multiple outlets on the sides. The inlet of the air header can be of **PANAM®** ball valve or needle valve series for cutting off the process medium from all outlets of the air headers (this to be stated while ordering and identifying the types of valves). Air headers pipe made from the stainless steel thick-walled seamless tube is welded to the inlet of the air header.

The air header pipe can have up to 20 outlets.

Outlets of the air headers can have different threaded connections, weld connections, **PANAM®** compression fittings, and factory pre-installed ball or needle valves.

On the opposite side from the inlet connection, the air header can have a drain outlet with a threaded connection, a weld connection, **PANAM®** compression fitting, as well as factory-installed ball / needle valve or plug.

Pressure Ratings

The pressure ratings of air header assemblies are based on the ratings of the distribution pipe, inlet flange and the valves selected for the inlet, outlet and drain. The component with the lowest pressure rating at any given temperature limits the pressure rating. The valve with the most restrictive pressure rating limits the temperature rating. The working pressure of the air header manifold assembly will be determined by its component with the lowest pressure rating.

These components may include following:

- Inlet Valve or Flange • Distribution Pipe • Outlet Valves • Drain Valve • Threaded or Welded Connection

For pressure temperature ratings of ASME B16.5 flanges, see ASME B16.5 (2013) Table 2-2.3 & Table F2-2.2.
For Pressure temperature ratings of EN 1092-1 flanges, see EN 1092-1 (2007) + A1 (2013) Table G.4.1-4 for PN 16, Table 4.1-5 for PN 25, Table G.4.1-6 for PN 40 & Table G.4.1-8 for PN 100.

Temperature Ratings

Temperature ratings of air header assemblies are based on the ratings of the distribution pipe, inlet flange and the valves selected for the inlet, outlet and drain. The component with the lowest temperature rating at any given temperature limits the temperature rating. The valve with the most restrictive temperature rating limits the temperature rating.

The temperature rating depends on the working temperature of the seat & packing materials of inlet, outlet & drain valves.

a) Ball Valves with Delrin Seats up to 85° C (185° F)
b) Ball Valves with PCTFE up to 149° C (300° F)
c) Ball Valves with modified PTFE up to 204° C (400° F)
d) Ball Valves with PEEK up to 232° C (450° F)
e) Needle Valves with PTFE Packing up to 232° C (450° F)
f) Needle Valves with PEEK Packing up to 315° C (600° F)
g) Needle Valves with Grafoil up to 648° C (1200° F)

Types and Sizes of End Connections

Part	Type	Size	Standard
Inlet Connection	Male NPT	½" To 1"	ASME B1.20.1
	Female NPT		BS 21, ISO 1-7/1, EN 10226-1
	Male BSPT		BS 2779, ISO 228-1
	Female BSPT		EN 10272-5 Grade 1.4462
	Male BSPP	1/2" To 2"	Standard PANAM® Tube Socket Weld Connections
	Female BSPP	1/2" To 2"	Standard PANAM® Pipe Socket Weld Connections
	Flange	1" To 2" Class 150, Class 300, Class 600	ASME B16.5
		PN 16, PN 25, PN 40 & PN 100	EN 1092-1
Distribution Pipe	Seamless Stainless Steel Pipe	1" To 2" SCH 40, SCH 80 & SCH 160	ASTM A312
Outlet Connection (Threaded/Needle Valve, Ball Valve)	Male NPT	1/4" To 1"	ASME B1.20.1
	Female NPT		
	Male BSPT		BS 21, ISO 7/1, EN 10226-1
	Female BSPT		
	Male BSPP		BS 2779, ISO 228-1
	Female BSPP		
	Fractional Tube Fitting	1/4" To 1"	Standard PANAM® Tube Fitting 6mm, 10mm & 12mm
		6mm, 10mm, 12mm	
Drain Connection (Valve, Plug & Thread)	Female NPT	1/4" To 1/2"	ASME B1.20.1
	Male NPT		
	Female BSPT		BS 21, ISO 7/1, EN 10226-1
	Male BSPT		

1. Size and types listed are standard. Other sizes and types are available upon request, refer to the ordering information.
2. Valves at Inlet Connections are available upon request.

Testing

Each Air Header is tested in a nitrogen gas chamber at 250 psi (17.2 bar) to ensure that there is no detectable leak with the specified leak detection method. The tightness test of welds shall be carried out in accordance with Article 5 of ASME BPVC 6. Acceptance shall be carried out in accordance with ASME BPVC Section 8 Section 1 Appendix 8.

Radiographic Testing of Welds as per ASME BPVC Section V Article 2 & Acceptance as per ASME BPVC Section VIII Division 1 UW-51.

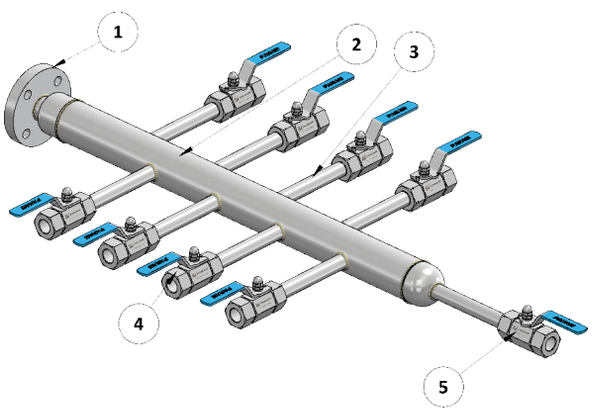
Selection of Air Header

The first step in selecting an Air Header is determining the number & location of branch outlets. In standard air distribution header, branch outlets are available on both sides. Air Headers with branch outlets on only one side are available upon request. Standard **PANAM®** Air Header is not provided with a general-purpose pressure gauge but it is available upon request. The air header can be ordered with or without a drain valve on the opposite end to drain the system. A variety of **PANAM®** valves are available to meet temperature and pressure requirements of specific applications.

a) **PANAM®** Instrumentation Ball Valves

b) **PANAM®** Instrumentation Needle Valves

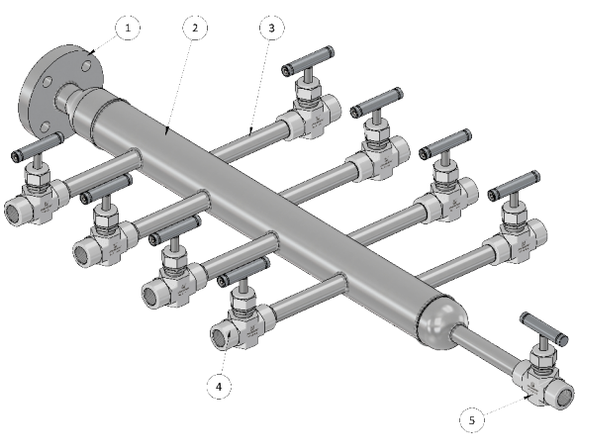
Ball Valve Series Air Header



Standard Material of Construction

No	Component	Material
1	Inlet Flange	ASTM A 182 SS316
2	Distribution Pipe	ASTM A312-TP316
3	Outlets	ASTM A479-316 SS
4	Distribution Ball Valves	ASTM A479-316 SS
5	Drain Ball Valves	ASTM A479-316 SS

Needle Valve Series Air Header



Standard Material of Construction

No	Component	Material
1	Inlet Flange	ASTM A 182 SS316
2	Distribution Pipe	ASTM A312-TP316
3	Outlets	ASTM A479-316 SS
4	Distribution Needle Valves	ASTM A479-316 SS
5	Drain Needle Valves	ASTM A479-316 SS

Ordering Information

PAH-32-40-8-150SR-10-BV-8-NF-Y-SG

PANAM®	Air Header
	Air Header

Pipe Size	
16	NPS 1 (DN25)
32	NPS 2 (DN50)

Wall Thickness	
40	SCH40
80	SCH80
160	SCH160
XXS	XXS

Inlet Size	
4	1/4”
8	1/2”
12	3/4”
16	1”
20	1-1/4”
24	1-1/2”
32	2”
DN 8	DN 8
DN 15	DN 15
DN 20	DN 20
DN 25	DN 25
DN 32	DN 32
DN 40	DN 40
DN 50	DN 50

Inlet Type	
NM	NPT Male
NF	NPT Female
RM	BSPT Male
RF	BSPT Female
GM	BSPP Male
GF	BSPP Female
PSW	Pipe Socket Weld
TSW	Tube Socket Weld
150SR	Class 150RF Serrated Flange (ASME B16.5)
150SM	Class 150RF Smooth Flange (ASME B16.5)
300SR	Class 300RF Serrated Flange (ASME B16.5)
300SM	Class 300RF Smooth Flange (ASME B16.5)
600SR	Class 600RF Serrated Flange (ASME B16.5)
600SM	Class 600RF Smooth Flange (ASME B16.5)
900SR	Class 900RF Serrated Flange (ASME B16.5)
900SM	Class 900RF Smooth Flange (ASME B16.5)
1500SR	Class 1500RF Serrated Flange (ASME B16.5)
1500SM	Class 1500RF Smooth Flange (ASME B16.5)
PN16SR	PN 16RF Serrated Flange (EN1092-1)
PN16SM	PN 16RF Smooth Flange (EN1092-1)
PN25SR	PN 25RF Serrated Flange (EN1092-1)
PN25SM	PN 25RF Smooth Flange (EN1092-1)
PN40SR	PN 40RF Serrated Flange (EN1092-1)
PN40SM	PN 40RF Smooth Flange (EN1092-1)
PN100SR	PN 100RF Serrated Flange (EN1092-1)
PN100SM	PN 100RF Smooth Flange (EN1092-1)

Continuous product development from time to time necessitate changes in the details contained in this catalogue. PANAM® reserves the right to make such changes at their discretion and without prior notice. For safe operation it is important to select the correct air header. Engineering departments of end-users shall be responsible for correct selection of air headers, their technical characteristics, material compatibility, correct installation, operation and maintenance. PANAM® shall not be responsible for incorrect product selection, installation, operation or technical service.

10-BV-8-NF-Y- - - - -SG

Outlet Qty.
4*
6*
8*
10*
12*
14*
16*
18*
20*

Outlet Type	
BV	Ball Valve
NV	Needle Valve
P	Male BSPT
T	Female BSPT

Outlet Size	
4	1/4”
8	1/2”
12	3/4”
16	1”
M06	6 mm
M10	10 mm
M12	12 mm

Outlet Connection Type	
NM	NPT Male
NF	NPT Female
RM	BSPT Male
RF	BSPT Female
GM	BSPP Male
GF	BSPP Female
OD	Compression PANAM® Tube Fitting

Plug After Outlet	
	No
Y	Yes

Drain Type	
	Same As Outlet
BV	Ball Valve
NV	Needle Valve
P	Plug
T	Threaded

Drain Size	
	Same As Outlet
4	1/4”
8	1/2”
12	3/4”
16	1”
M06	6mm
M10	10mm
M12	12mm

* While ordering an air header with one-sided arrangement of outlets, the index L is added to number of outlets.
For example: 6L - 6 outlets located on one side.

Drain Connection Type	
	Same As Outlet
NM	NPT Male
NF	NPT Female
RM	BSPT Male
RF	BSPT Female
GM	BSPP Male
GF	BSPP Female
OD	Compression PANAM® Tube Fitting

Plug After Drain	
	Same As Outlet / No
Y	Yes

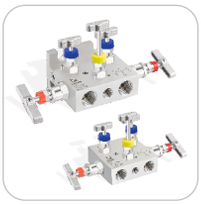
Optional	
SG	NACE MR-01-75

Notes

Notes

Notes

Other Products


2-3-5 VALVE MANIFOLDS


BELLOW SEAL VALVES


GAUGE ROOT VALVES


NEEDLE VALVES


HP NEEDLE VALVES


BALL VALVES


HP BALL VALVES


DOUBLE BLOCK & BLEED VALVES


MONO FLANGE VALVES


CHECK VALVES


RELIEF VALVES


FILTERS


TUBE FITTINGS


PIPE FITTINGS


HP PIPE FITTINGS


SWIVEL FITTINGS


JIC FITTINGS


WELD FITTINGS


HIGH PRESSURE FITTINGS


GAUGE SAVERS


PRESSURE GAUGES


TEMPERATURE GAUGES


PRESSURE TRANSMITTERS


TEMPERATURE TRANSMITTERS


PRESSURE REGULATORS


CONDENSATE POTS


AIR HEADERS


GRAB SAMPLING SYSTEM


PRE-FABRICATED HOOK UPS


FLANGE ADAPTERS


SWIVEL GAUGE ADAPTERS


THERMOWELLS


BLEED PLUGS


DIE-ELECTRIC FITTINGS


TUBING

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