

NanoPure®

BALL VALVE

INSTRUMENT / UHP



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"NanoPure" is a brand of Gas Delivery Total Solution, belongs to King Lai Group, who was founded 1991 in Taiwan and expanded production facility in Kunshan, Jiangsu Province, China. Supplying tubing/piping and fitting materials service for Semiconductor, FPD, LED and Photovoltaic industries, the core idea of "NanoPure" is providing "Hygienic materials" with high quality components for gas delivery applications.

Gas supply and delivery is always the topic to study in Semiconductor processing. To ensure the accuracy of the processing, the purity of gas sources is the vital factors. Keeping the purity while the gas has been transferred into processing tools is highly monitored by process engineers.

"NanoPure" is composed of people who are specialist in stainless steels fabrication. By making sure the selection of finest materials, we provide finest products. The key point is how to control the quality of materials which makes big difference of welding quality while installing or welding assembly. There will be the potential impurity or inclusion in welding process. Therefore, electropolish is the solvable process for increasing reliability of stainless steel to against corrosion gases.

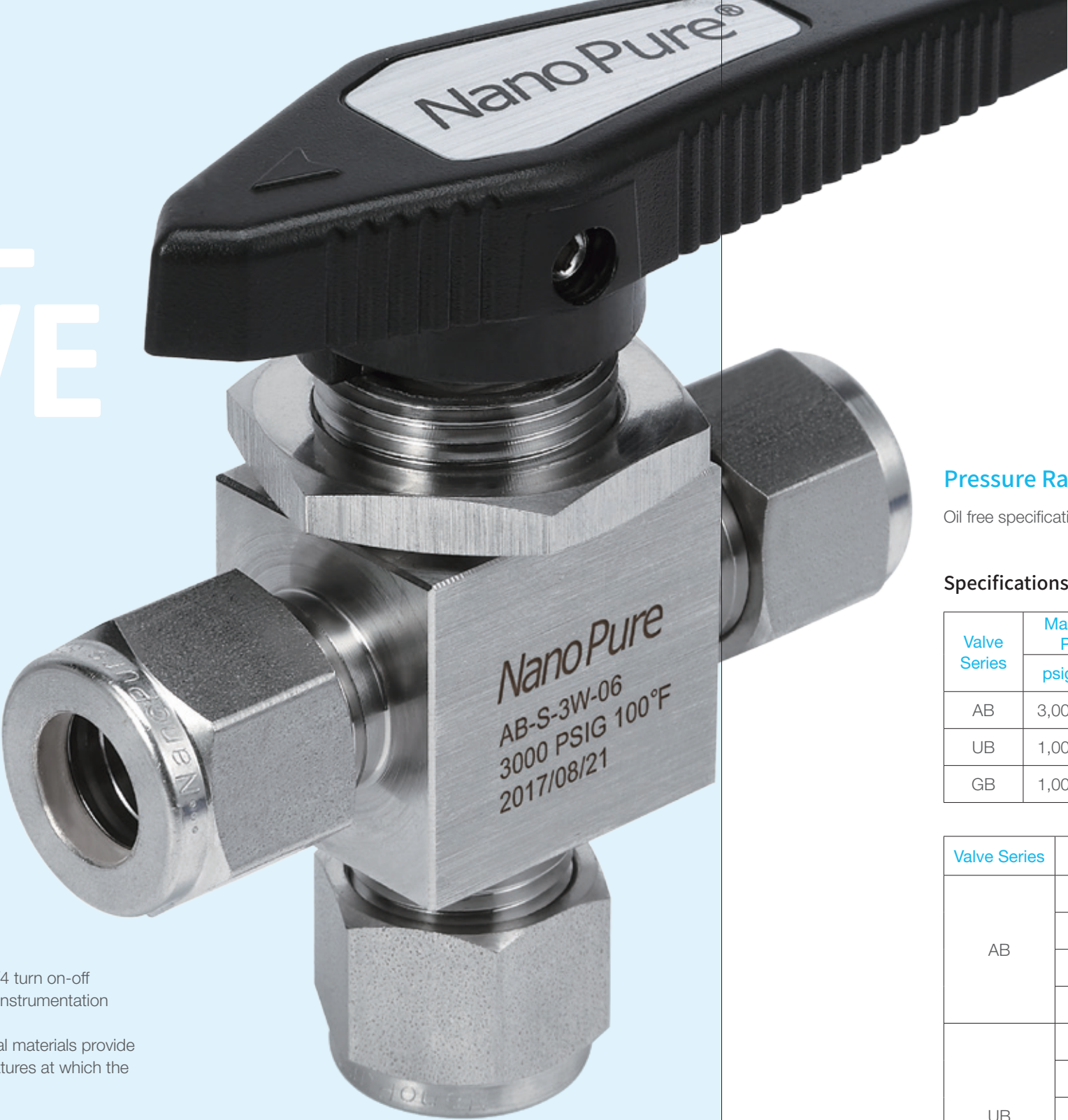
"NanoPure" aims to provide the highest quality products, so the quality control and uniformity are essential points to promise customers. In the meantime, we do put emphasis on the details of products such as dimension and tolerance which are important for quality control and therefore remain the high yield rate for assembly. Operational packages can be followed according to the customer's instruction, the ranging from normal standard clean package to Ultra High Purity clean room package.

"NanoPure" considers every single key processing during the fabrication.

Our goal is keeping continually improvement to reach customers' satisfaction!



BALL VALVE



Introduction

Nanopure® Ball Valves provide quick 1/4 turn on-off control of fluids utilized in process and instrumentation applications. A broad selection of valve seat, and seal materials provide a wide range of pressures and temperatures at which the valve may be used.

Features

- One piece & floating ball design provides seat wear compensation
- 316 stainless steel constructions available upon request
- Micro-finished ball provides a positive seal
- Low operating torques
- Positive handle stops
- Color coded handles

Pressure Rating and Tubing Selection

Oil free specification is also available, Non-standard connections can also be made upon request

Specifications

Valve Series	Max Working Pressure		Temperature Range		Type & Size of connector			
	psig	bar	°C	°F	SWG		NPT	VCR
AB	3,000	206	-53 to 148° C	-65 to 300° F	1/8" ~ 1/2"	3mm ~ 12mm	v	v
UB	1,000	70	-53 to 148° C	-65 to 300° F	1/8" ~ 3/4"	6mm ~ 20mm	v	x
GB	1,000	70	-53 to 148° C	-65 to 300° F	1/4" ~ 1"	6mm ~ 25mm	v	x

Valve Series	CV		Valve Body Materials	Packing Materials	Flow Patterns					
AB	1/8"	0.60	Stainless Steel	PTFE or PFA	Angle 2 Way Straight 2 Way 3 Way					
	1/4"									
	3/8"	1.50								
	1/2"	6.00								
UB	1/8"	0.70			Stainless Steel	PTFE or PFA	2 Way			
	1/4"									
	3/8"	2.2								
	1/2"	4.2								
	3/4"									
GB	1/4"							Stainless Steel	PTFE or PFA	2 Way
	3/8"									
	1/2"									
	3/4"									
	1"									

BALL VALVE



This Pressure versus Temperature chart reflects the maximum temperature range of indicated materials.

When combining seat and seal materials, the most restrictive temperature rating of the seats or seals becomes the limiting factor on valve temperature range.

Elastomeric stem packing and seals are recommended if the application subjects the valve to thermal cycling.

Please see pages 2 and 4 for maximum pressure ratings.

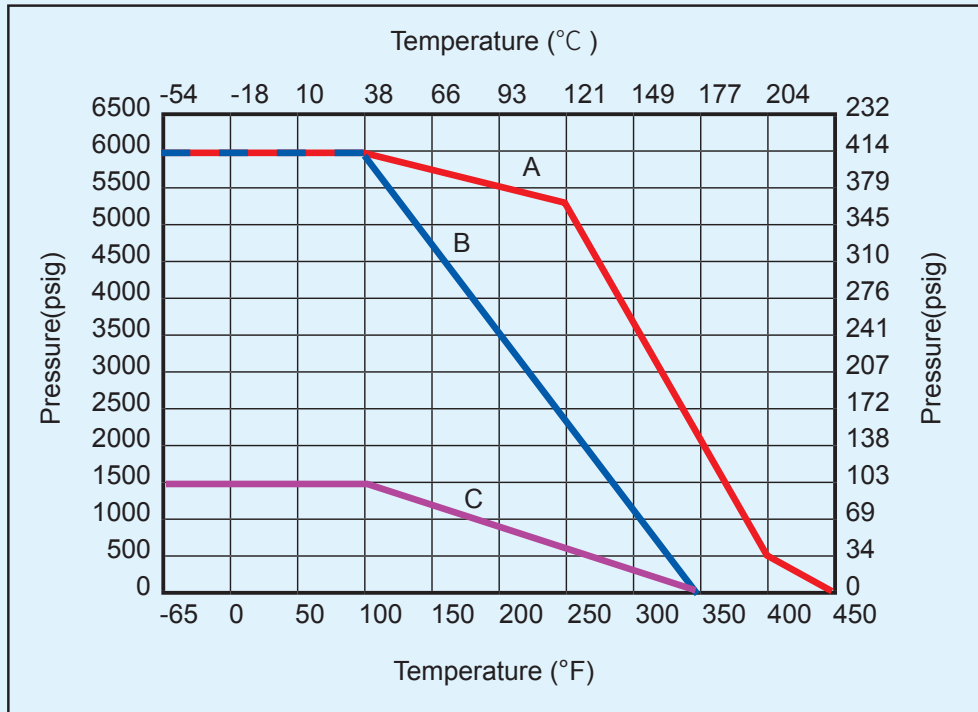
Oxygen Service Hazards:

ASTM G93 Standard Used in Oxygen-Enriched Environments, Level C

Temperature Ratings:

- PTFE: -65° F to 350° F (-54° C to 177° C)
- PCTFE: -65° F to 350° F (-54° C to 177° C)
- PEEK: -65° F to 450° F (-54° C to 232° C)

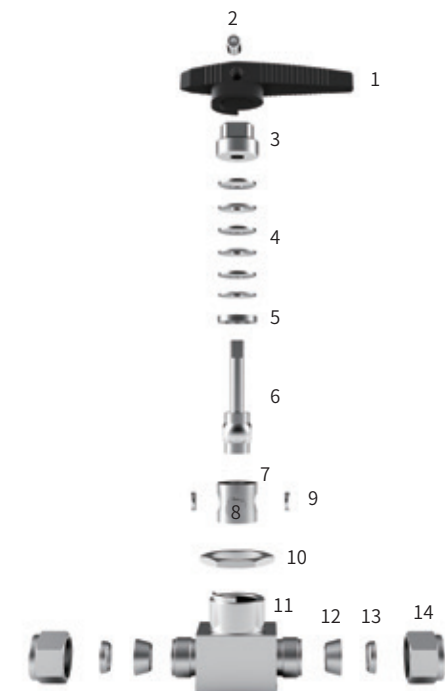
Pressure vs. Temperature



A – PEEK Seats B – PCTFE Seats C – PTFE Seats

AB SERIES
BALL VALVE

NanoPure®



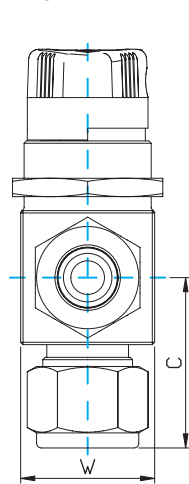
Component		Valve Body Materials Stainless Steel
1	Handle	Nylon
2	Set screw	SS 17-4 PH
3	Packing bolt	SS 316
4	Springs	SS 316
5	Gland	SS 316
6	BALL stem	SS 316
7	Packing	PTFE
8	Side rings	Fluorocarbon-coated
9	Side discs	SS 316
10	Panel nut	SS 304
11	Body	SS 316
12	Front Ferrule	SS 316
13	Back Ferrule	SS 316
14	Nut	SS 316

AB - S - 2W - 04

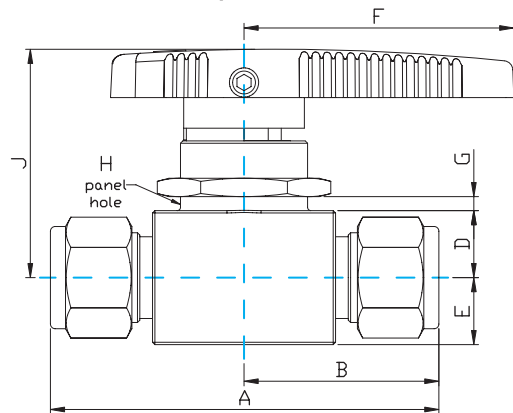
Ordering Information

Series	Body	Flow Patterns		In & Out Connector		
AB	S: SS 316	2W	2-Way	02	1/8"	SWG
		2WA	2-Way Angle	04	1/4"	
		3W	3-Way	06	3/8"	
				08	1/2"	
				3MO	3mm	
				6MO	6mm	
				8MO	10mm	
				10MO	10mm	
				12MO	12mm	
		04V	1/4"	VCR		
		08V	1/2"			
		M4	1/4"	MNPT		
		M6	3/8"			
		M8	1/2"			
		F2	1/8"	FNPT		
		F4	1/4"			
		F6	3/8"			
		F8	1/2"			

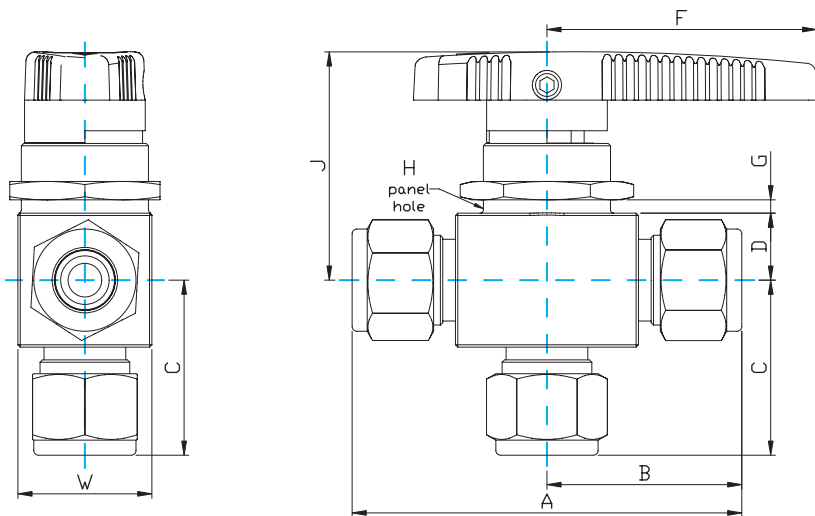
Angle Pattern



Straight Pattern



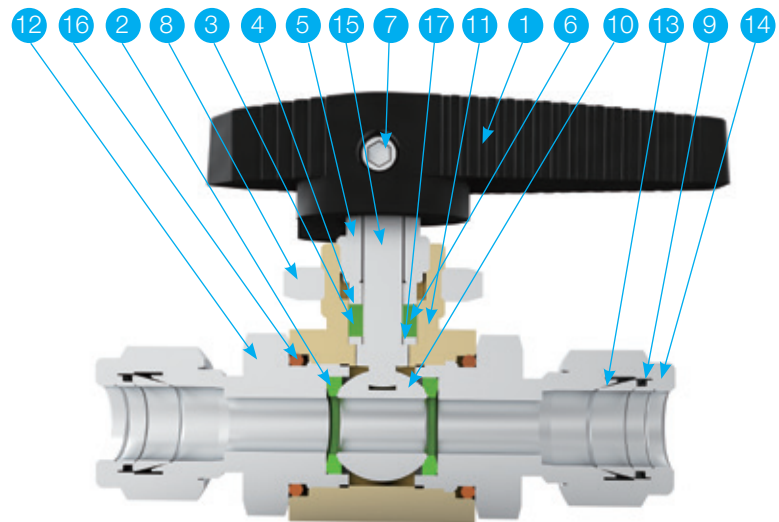
End Connection		C _v		Complete Ordering Number	Orifice in. (mm)	Dimensions in. (mm)									
Inlet/Outlet	Size	Straight	Angle			A	B	C	D	E	F	G	H	J	W
Fractional tube fittings	1/8 in.	0.2	0.15	AB-S-2W-02 AB-S-2WA-02	0.093 (2.36)	2.01 (51.1)	1.01 (25.7)	0.97 (24.6)	0.34 (8.6)	0.28 (7.1)	1.12 (28.4)	1/4 (6.4)	19/32 (15.1)	1.36 (34.5)	0.58 (14.7)
	1/4 in.	0.6	0.35	AB-S-2W-04 AB-S-2WA-04	0.125 (3.18)	2.21 (56.1)	1.1 (27.9)	1.07 (27.2)	0.34 (8.6)	0.28 (7.1)	1.12 (28.4)	1/4 (6.4)	19/32 (15.1)	1.36 (34.5)	0.58 (14.7)
	3/8 in.	1.5	0.9	AB-S-2W-06 AB-S-2WA-06	0.187 (4.75)	2.58 (65.5)	1.29 (32.8)		0.44 (11.2)	0.38 (9.7)	1.53 (38.9)	3/16 (4.8)	25/32 (19.8)	1.47 (37.3)	0.78 (19.8)
	1/2 in.	12	4.6	AB-S-2W-08 AB-S-2WA-08	0.406 (10.3)	3.92 (99.6)	1.96 (49.8)	1.74 (44.2)	0.69 (17.5)		3 (76.2)	3/8 (9.5)	1 1/2 (38.1)	2.43 (61.7)	1.5 (38.1)
Metric tube fittings	3 mm	0.2	0.15	AB-S-2W-3MO AB-S-2WA-3MO	0.093 (2.36)	2.01 (51.1)	1.01 (25.7)	0.97 (24.6)	0.34 (8.6)	0.28 (7.1)	1.12 (28.4)	1/4 (6.4)	19/32 (15.1)	1.36 (34.5)	0.58 (14.7)
	6 mm	0.6	0.35	AB-S-2W-6MO AB-S-2WA-6MO	0.125 (3.18)	2.21 (56.1)	1.1 (27.9)	1.07 (27.2)	0.34 (8.6)	0.28 (7.1)	1.12 (28.4)	1/4 (6.4)	19/32 (15.1)	1.36 (34.5)	0.58 (14.7)
	8 mm	1.5	0.9	AB-S-2W-8MO AB-S-2WA-8MO	0.187 (4.75)	2.46 (62.5)	1.23 (31.2)	1.2 (30.5)	0.44 (11.2)	0.38 (9.7)	1.53 (38.9)	3/16 (4.8)	25/32 (19.8)	1.47 (37.3)	0.78 (19.8)
	10 mm	6	2	AB-S-2W-10MO AB-S-2WA-10MO	0.281 (7.14)	3.07 (78)	1.53 (38.9)	1.43 (36.3)	0.56 (14.2)		2 (50.8)	3/8 (9.5)	1 1/8 (28.6)	2.07 (52.6)	1.12 (28.4)
	12 mm	12	4.6	AB-S-2W-12MO AB-S-2WA-12MO	0.406 (10.3)	3.92 (99.6)	1.96 (49.8)	1.74 (44.2)	0.69 (17.5)		3 (76.2)	3/8 (9.5)	1 1/2 (38.1)	2.43 (61.7)	1.5 (38.1)
Female NPT	1/8 in.	0.5	0.3	AB-S-2W-F2 AB-S-2WA-F2	0.125 (3.18)	1.63 (41.4)	0.81 (20.6)		0.34 (8.6)	0.28 (7.1)	1.12 (28.4)	1/4 (6.4)	19/32 (15.1)	1.36 (34.5)	0.58 (14.7)
	1/4 in.	0.9	0.75	AB-S-2W-F4 AB-S-2WA-F4	0.187 (4.75)	2.06 (52.3)	1.03 (26.2)		0.44 (11.2)	0.38 (9.7)	1.53 (38.9)	3/16 (4.8)	25/32 (19.8)	1.47 (37.3)	0.78 (19.8)
Integral male VCR fitting	1/4 in.	0.6	0.35	AB-S-2W-04V AB-S-2WA-04V	0.125 (3.18)	2.13 (54.1)	1.06 (26.9)	1.09 (27.7)	0.34 (8.6)	0.38 (9.7)	1.12 (28.4)	1/4 (6.4)	19/32 (15.1)	1.36 (34.5)	0.78 (19.8)
	1/2 in.	6	—	AB-S-2W-08V	0.281 (7.14)	2.88 (73.2)	1.44 (36.6)	—	0.56 (14.2)		2 (50.8)	3/8 (9.5)	1 1/8 (28.6)	2.07 (52.6)	1.5 (38.1)



End Connection		C _v	Complete Ordering Number	Orifice in. (mm)	Dimensions in. (mm)								
Inlet/Outlet	Size				A	B	C	D	F	G	H	J	W
Fractional tube fittings	1/8 in.	0.15	AB-S-3W-02	0.093 (2.36)	2.01 (51.1)	1.01 (25.7)	0.97 (24.6)	0.34 (8.6)	1.13 (28.7)	1/4 (6.4)	19/32 (15.1)	1.36 (34.5)	0.58 (14.7)
	1/4 in.	0.35	AB-S-3W-04	0.125 (3.18)	2.21 (56.1)	1.1 (27.9)	1.07 (27.2)	0.34 (8.6)	1.13 (28.7)	1/4 (6.4)	19/32 (15.1)	1.36 (34.5)	0.58 (14.7)
	3/8 in.	2	AB-S-3W-06	0.281 (7.14)	2.89 (73.4)	1.45 (36.8)	1.43 (36.3)	0.56 (14.2)	2 (50.8)	3/8 (9.5)	1 1/8 (28.6)	2.07 (52.6)	1.12 (28.4)
	1/2 in.	4.6	AB-S-3W-08	0.406 (10.3)	3.48 (88.4)	1.74 (44.2)		0.69 (17.5)	3 (76.2)	3/8 (9.5)	1 1/2 (38.1)	2.43 (61.7)	1.5 (38.1)
Metric tube fittings	3 mm	0.15	AB-S-3W-3MO	0.093 (2.36)	2.01 (51.1)	1.01 (25.7)	0.97 (24.6)	0.34 (8.6)	1.13 (28.7)	1/4 (6.4)	19/32 (15.1)	1.36 (34.5)	0.58 (14.7)
	6 mm	0.35	AB-S-3W-6MO	0.125 (3.18)	2.21 (56.1)	1.1 (27.9)	1.07 (27.2)	0.34 (8.6)	1.13 (28.7)	1/4 (6.4)	19/32 (15.1)	1.36 (34.5)	0.58 (14.7)
	8 mm	0.8	AB-S-3W-8MO	0.187 (4.75)	2.46 (62.5)	1.23 (31.2)	1.2 (30.5)	0.44 (11.2)	1.53 (38.9)	3/16 (4.8)	25/32 (19.8)	1.47 (37.3)	0.78 (19.8)
	10 mm	2	AB-S-3W-10MO	0.281 (7.14)	2.89 (73.4)	1.45 (36.8)	1.43 (36.3)	0.56 (14.2)	2 (50.8)	3/8 (9.5)	1 1/8 (28.6)	2.07 (52.6)	1.12 (28.4)
	12 mm	4.6	AB-S-3W-12MO	0.406 (10.3)	3.48 (88.4)	1.74 (44.2)		0.69 (17.5)	3 (76.2)	3/8 (9.5)	1 1/2 (38.1)	2.43 (61.7)	1.5 (38.1)
Female NPT	1/8 in.	0.3	AB-S-3W-F2	0.125 (3.18)	1.63 (41.4)	0.81 (20.6)		0.34 (8.6)	1.13 (28.7)	1/4 (6.4)	19/32 (15.1)	1.36 (34.5)	0.58 (14.7)
	1/4 in.	0.75	AB-S-3W-F4	0.187 (4.75)	2.06 (52.3)	1.03 (26.2)		0.44 (11.2)	1.53 (38.9)	3/16 (4.8)	25/32 (19.8)	1.47 (37.3)	0.78 (19.8)
Integral male VCR fitting	1/4 in.	0.35	AB-S-3W-04V	0.125 (3.18)	2.13 (54.1)	1.06 (26.9)	1.09 (27.7)	0.34 (8.6)	1.13 (28.7)	1/4 (6.4)	19/32 (15.1)	1.36 (34.5)	0.78 (19.8)

UB SERIES BALL VALVE

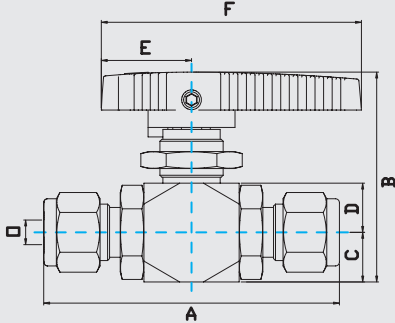
NanoPure®



No.	Part	QTY	Material
1	Handle	1	NYLON
2	Seal packing for ball	2	PTFE
3	Seal packing bottom for stem	1	PTFE
4	Packing	1	SS304
5	Gland nut	1	SS304
6	Stem bearing	1	PTFE
7	Hex socket cap screw	1	SS304
8	Panel nut	1	SS304
9	Back ferrule	2	SS316
10	Ball	1	SS316
11	Body	1	SS316
12	Body cap	2	SS316
13	Front ferrule	2	SS316
14	Nut	2	SS316
15	Stem	1	SS316
16	O-ring	2	VITON
17	Seal packing for stem	2	SS316

UB - S - 04

Series	Body	In & Out Connector		
UB	S: SS 316	02	1/8"	SWG
		04	1/4"	
		06	3/8"	
		08	1/2"	
		12	3/4"	
		3MO	3mm	
		6MO	6mm	
		8MO	10mm	
		10MO	10mm	
		12MO	12mm	
		16MO	16mm	
		18MO	18mm	
		20MO	20mm	
		M4	1/4"	MNPT
		M6	3/8"	
		M8	1/2"	
		F4	1/4"	FNPT
		F6	3/8"	
		F8	1/2"	

Size	Orifice	A	B	C	D	E	F	
1/4"	4.8	68.0	48.5	10.5	10.5	19.5	55.0	
3/8"	7.0	75.0	53.0	12.5	12.5	22.5	65.0	
1/2"	10.0	80.0	58.5	15.5	15.5	25.5	75.0	
3/4"	10.0	81.0	58.5	15.5	15.5	25.5	75.0	
6mm	4.8	68.0	48.5	10.5	10.5	19.5	55.0	
8mm	4.8	68.5	48.5	10.5	10.5	19.5	55.0	
10mm	7.0	75.0	53.0	12.5	12.5	22.5	65.0	
12mm	10.0	80.0	58.5	15.5	15.5	25.5	75.0	
16mm	10.0	80.0	58.5	15.5	15.5	25.5	75.0	
18mm	10.0	81.0	58.5	15.5	15.5	25.5	75.0	
20mm	10.0	83.0	58.5	15.5	15.5	25.5	75.0	
1/4" MNPT	4.8	72.0	48.5	10.5	10.5	19.5	55.0	
3/8" MNPT	7.2	75.0	53.0	12.5	12.5	22.5	65.0	
1/2" MNPT	10.0	85.0	53.0	12.5	12.5	25.5	75.0	
3/4" MNPT	10.2	86.0	58.5	15.5	15.5	25.5	75.0	
1/4" FNPT	4.8	70.0	48.5	10.5	10.5	19.5	55.0	
3/8" FNPT	7.2	73.0	53.0	12.5	12.5	22.5	65.0	
1/2" FNPT	10.0	83.0	58.5	15.5	15.5	25.5	75.0	

TESTING

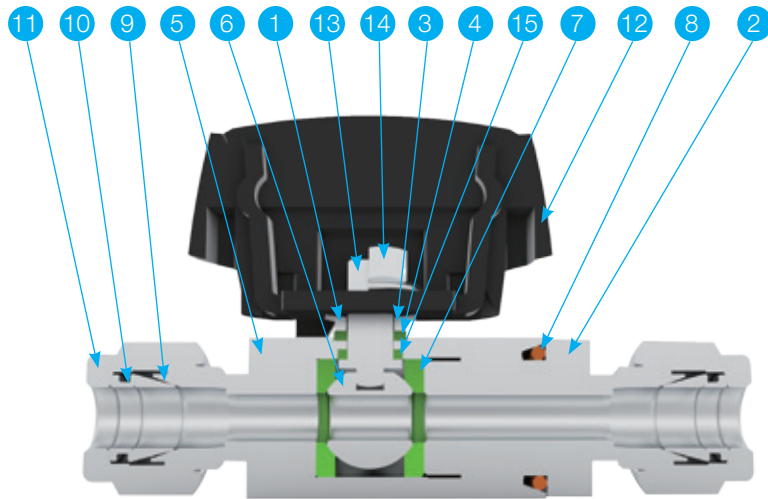
The UB Series design has been tested for Burst and Proof. Standard testing for each UB Series includes testing with nitrogen at 150 & 1000Psig.

Each valve is tested for leakage through the shell, packing and ball seats.

The maximum allowable leakage across the ball seats is 0.1 STD cc/min.

GB SERIES
BALL VALVE

NanoPure®



No.	Part	QTY	Material
1	Springs	1	ST.ST.316
2	Body cap	1	ST.ST.316
3	Stem washer	1	ST.ST.316
4	Seal packing for stem	1	PTFE
5	Body	1	ST.ST.316
6	Ball	1	ST.ST.316
7	Seal packing for ball	2	PTFE
8	O-ring	1	VITON
9	Front ferrule	2	ST.ST.316
10	Back ferrule	2	ST.ST.316
11	Nut	2	ST.ST.316
12	Handle	1	NYLON
13	Stem	1	ST.ST.316
14	Nut	1	ST.ST.304
15	Seal packing for stem	1	PTFE

GB - S - 04 - L

Series	Body	In & Out Connector			Handle	
GB	S: SS 316	04	1/4"	SWG	L	Lever
		06	3/8"		F	F Type
		08	1/2"			
		12	3/4"			
		16	1"			
		6MO	6mm			
		8MO	8mm			
		10MO	10mm			
		12MO	12mm			
		16MO	16mm			
		18MO	18mm			
		20MO	20mm			
		22MO	22mm			
		25MO	25mm			

GB Series Technical Parameter

Size	Orifice	A	B	C (Hex)	D	
1/4"	5.0	72.6	37.5	17.46	65.0	
3/8"	7.5	77.9	45.6	20.64	85.0	
1/2"	9.0	90.0	52.0	27.00	85.0	
3/4"	9.0	90.6	52.0	27.00	85.0	
1"	15.0	112.72	71.0	36.00	110.0	
6mm	5.0	72.6	37.5	17.46	65.0	
8mm	5.0	72.0	37.5	17.46	65.0	
10mm	7.5	77.5	45.6	20.64	85.0	
12mm	9.0	89.5	52.0	27.00	85.0	
16mm	9.0	93.5	52.0	27.00	85.0	
18mm	9.0	97.0	52.0	27.00	85.0	
20mm	9.0	99.0	52.0	27.00	85.0	
22mm	9.0	112.0	52.0	27.00	85.0	
25mm	15.0	117.0	71.0	36.00	110.0	



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