

# Swing-out Ball Valves



# Swing-out Ball Valves

## SWB 320 Series



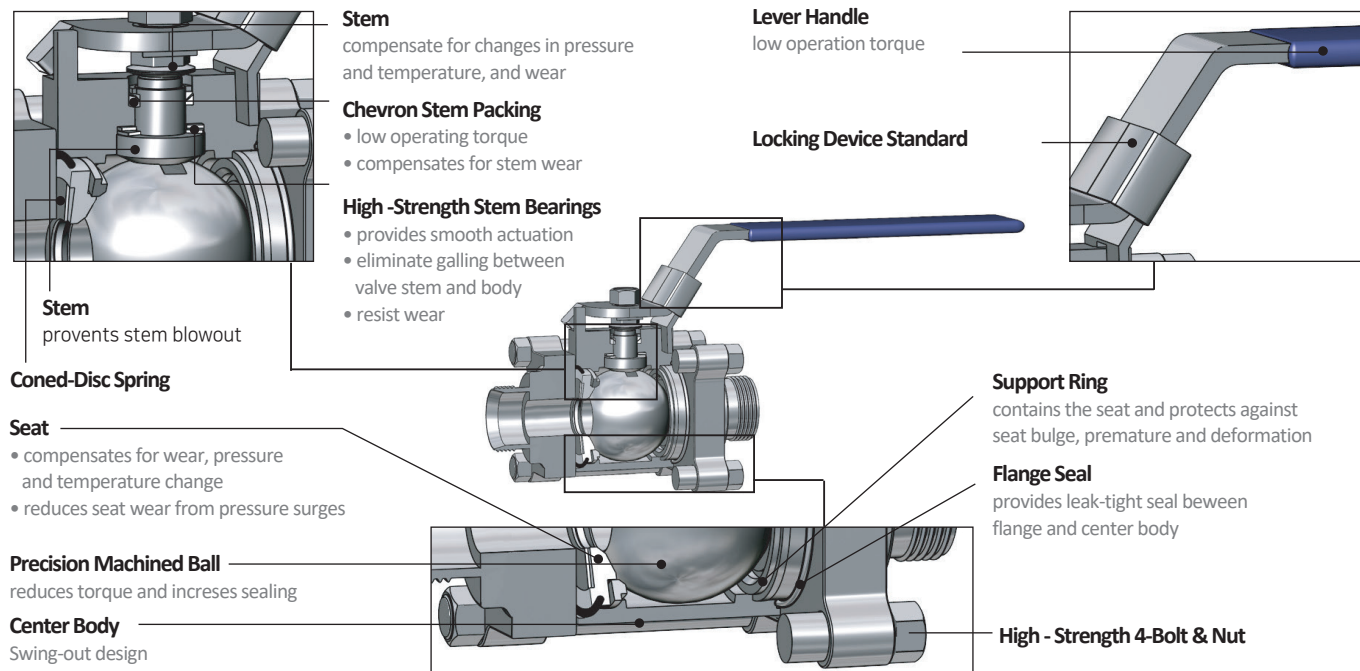
# SWB 320 Series

## Specifications

Pressure Rating up to 3000 psig (206 bar) at 100°F (37°C) / Temperature Range from -20°F (-28°C) to 450°F (232°C)

## Testing

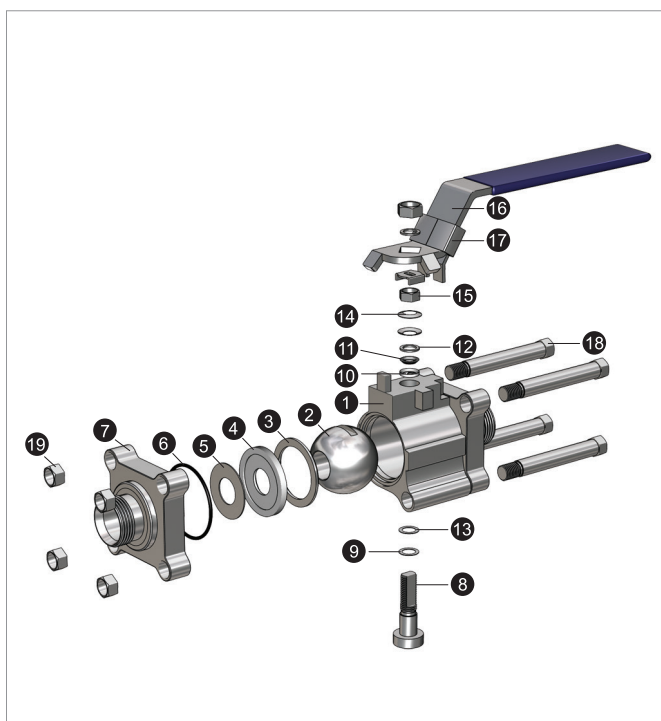
- Each valve is tested with nitrogen at 1000 psig (69 bar) to maximum allowable leak rate of 0.1 SCCM.
- Hydrostatic shell test is performed at 1.5 times the working pressure (optional).



## Materials of Construction

Component		Valve Body Materials Material / ASTM Specification	Q'TY
*1	Body	CF8M / A351	1
*2	Ball	CF8M / A351	1
*3	Support Ring	SS316 / A276	2
*4	Seats	Reinforced PTFE	2
*5	Seat Spring	Strain Hardned 316 SS / A240	2
6	Flange Seal	PTFE	2
7	Flange	CF8M / A351	2
*8	Stem	SS316 / A276	1
*9	Stem Bearing	PEEK	1
*10	Lower Packing	Reinforced PTFE	1
*11	Upper Packing	Reinforced PTFE	1
12	Packing Support	SS316 / A276	1
13	Packing Gland	SS316 / A276	1
14	Stem Spring	Stainless Steel	3
15	Packing Nut	Stainless Steel	2
16	Handle	Stainless Steel	1
17	Locking Device	Stainless Steel	1
18	Flange Bolt	A193/B8M	4
19	Flange Nut	A194/8M	4

\* Wetted components

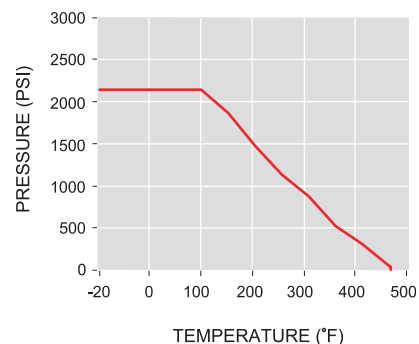


- Components can limit the pressure and temperature ranges of the valve. Please consult BMT (SUPERLOK) sales representative for your specific application.

## Pressure - Temperature Rating

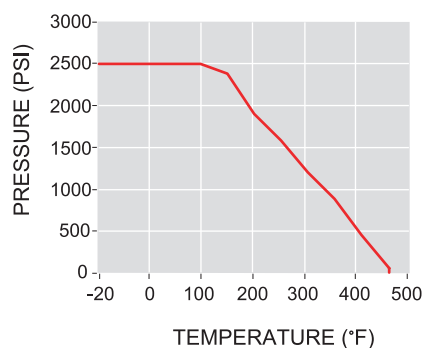
### Reinforced PTFE Seats (R-PTFE) : Standard

Series	Pressure - Temperature Rating	
	Temperature °F (°C)	Working Pressure psig (bar)
SWB 320	-20 to 100 (-28 to 37)	2200 (151)
	150 (65)	1850 (127)
	200 (93)	1500 (103)
	250 (121)	1150 (79.2)
	300 (148)	800 (55.1)
	350 (176)	560 (38.5)
	400 (204)	330 (22.7)
	450 (232)	100 (6.8)



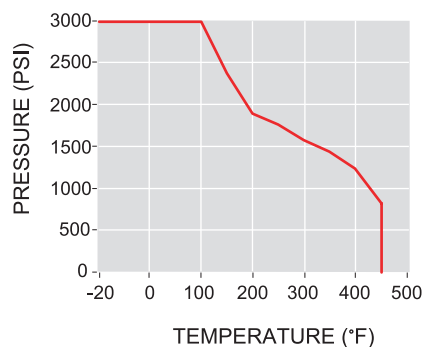
### Carbon / Glass PTFE Seats : option

Series	Pressure - Temperature Rating	
	Temperature °F (°C)	Working Pressure psig (bar)
SWB 320	-20 to 100 (-28 to 37)	2500 (172)
	150 (65)	2430 (167)
	200 (93)	1870 (128)
	250 (121)	1620 (111)
	300 (148)	1240 (85.4)
	350 (176)	860 (59.2)
	400 (204)	480 (33.0)
	450 (232)	100 (6.8)



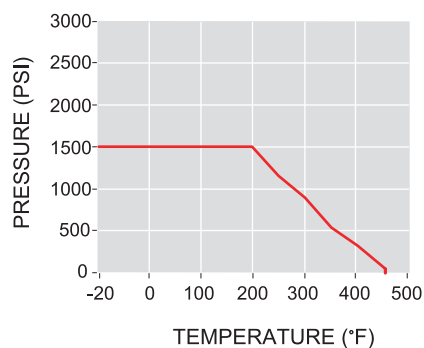
### PEEK Seats : option

Series	Pressure - Temperature Rating	
	Temperature °F (°C)	Working Pressure psig (bar)
SWB 320	-20 to 100 (-28 to 37)	3000 (206)
	150 (65)	2420 (166)
	200 (93)	1870 (128)
	250 (121)	1770 (121)
	300 (148)	1600 (110)
	350 (176)	1430 (98.5)
	400 (204)	1260 (86.8)
	450 (232)	800 (55.1)

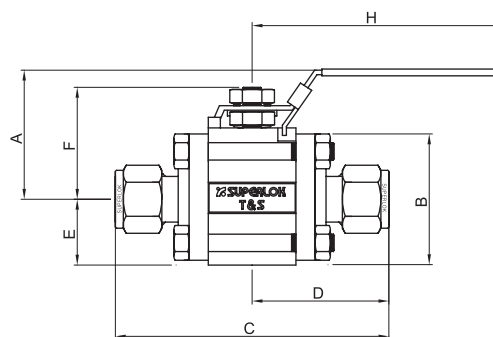
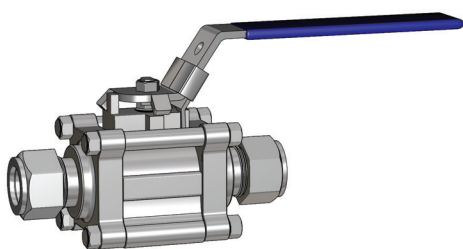


### Virgin PTFE Seats : option

Series	Pressure - Temperature Rating	
	Temperature °F (°C)	Working Pressure psig (bar)
SWB 320	-20 to 100 (-28 to 37)	1500 (103)
	150 (65)	1500 (103)
	200 (93)	1500 (103)
	250 (121)	1150 (79.2)
	300 (148)	800 (55.1)
	350 (176)	560 (38.5)
	400 (204)	330 (22.7)
	450 (232)	100 (6.8)

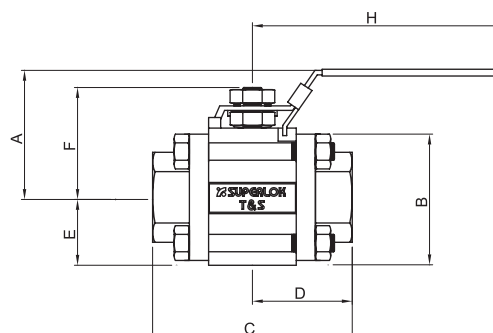
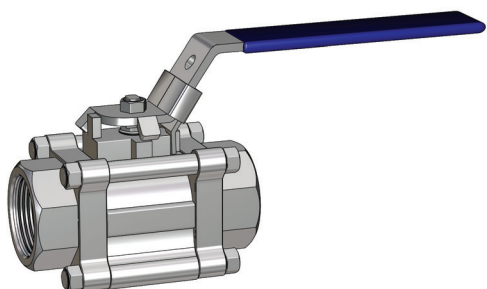


## Table of Dimensions



### SUPERLOK Tube End Connection

Part No.	Orifice in.(mm)	Cv	End Connection	Dimension						
				A	B	C	D	E	F	H
SWB3201	S4	0.188 (4.8)	1/4 " Superlok	47.7	33.0	80.8	40.40	16.75	31.8	57.2
	S6	0.281 (7.1)	3/8 " Superlok							
	S6M	0.188 (4.8)	6mm Superlok							
	S8M	0.250 (6.4)	8mm Superlok							
	S10M	0.281 (7.1)	10mm Superlok							
SWB3202	S8	0.411 (10.4)	1/2 " Superlok	64.8	44.5	103.8	51.90	22.25	44.2	111.0
	S12	0.516 (13.1)	3/4 " Superlok							
	S12M	0.411 (10.4)	12mm Superlok							
SWB3203	S16	0.875 (22.2)	1 " Superlok	79.0	62.0	136.7	68.35	31.0	61.9	149.4
	S25M		25mm Superlok							
SWB3204	S24	1.250 (31.8)	1-1/2 " Superlok	102.0	77.7	192.6	96.3	38.9	79.8	232.0
SWB3205	S32	1.500 (38.1)	2 " Superlok	106.0	88.1	252.0	126.0	44.2	85.3	232.0

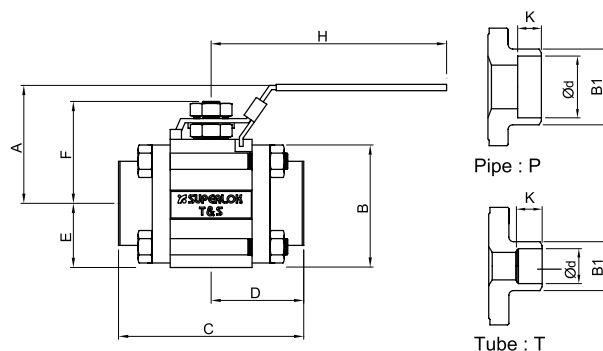
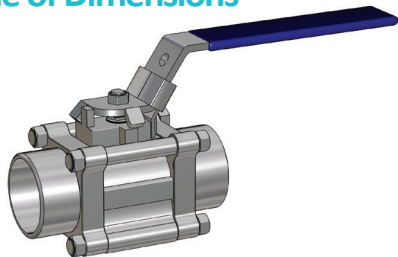


### Female Pipe Thread End Connections

Part No.	Orifice in.(mm)	Cv	End Connection	Dimension						
				A	B	C	D	E	F	H
SWB3201	F2N	0.281 (7.1)	1/8 " Female NPT	47.7	33.0	55.4	27.70	16.75	31.8	57.2
	F4N		1/4 " Female NPT							
	F4R		1/4 " Female PT							
SWB3202	F6N	0.516 (13.1)	3/8 " Female NPT	64.8	44.5	68.9	34.45	22.25	44.2	111.0
	F8N		1/2 " Female NPT							
	F8R		1/2 " Female PT							
SWB3203	F12N	0.875 (22.2)	3/4 " Female NPT	79.0	62.0	92.0	46.0	31.0	61.9	149.4
	F16N		1 " Female NPT							
	F12R		3/4 " Female PT							
	F16R		1 " Female PT							
SWB3204	F20N	1.250 (31.8)	1-1/4 " Female NPT	102.0	77.7	112.2	55.6	38.9	79.8	232.0
	F24N		1-1/2 " Female NPT							
	F24R		1-1/2 " Female PT							
SWB3205	F32N	1.500 (38.1)	2 " Female NPT	106.0	88.1	125.4	62.7	44.2	85.3	232.0
	F32R		2 " Female PT							

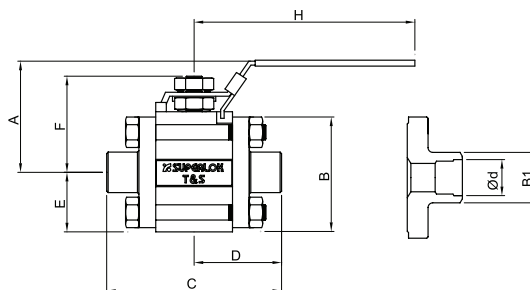
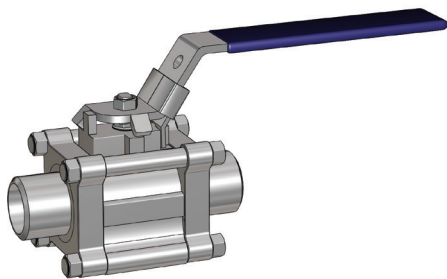
- Dimensions and Drawings are for reference only and are subject to change without prior notice.
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- Sizes, pressure classes, and end connections not listed are available upon request.
- Dimensions shown with SUPERLOK nuts finger-tight, where applicable.

## Table of Dimensions



## Socket weld end connections

Part No.		Orifice in.(mm)	Cv	End Connection	Dimension										
					ød	B1	A	B	C	D	E	F	H	K	
SWB3201	SW4T	0.188 (4.8)	1.2	1/4 " Socket Weld	6.50	13.70	47.7	33.0	55.4	27.70	16.75	31.8	57.2	7.1	
	SW6T	0.281 (7.1)	3.8	3/8 " Socket Weld	9.70	17.10								7.9	
SWB3202	SW8T	0.411 (10.4)	7.5	1/2 " Socket Weld	12.90	21.30	64.8	44.5	68.9	34.45	22.25	44.2	111.0	9.7	
	SW12T	0.516 (13.1)	13.6	3/4 " Socket Weld	19.20	26.70								11.2	
	SW8P	0.516 (13.1)	15.0	1/2 " Socket Weld	21.80	31.20								9.7	
SWB3203	SW16T	0.875 (22.2)	40.0	1 " Socket Weld	25.65	33.40	79.0	62.0	92.0	46.00	31.00	61.9	149.4	16.0	
	SW12P		36.0	3/4 " Socket Weld	27.20	42.16								12.7	
	SW16P		42.0	1 " Socket Weld	33.90	45.30									
SWB3204	SW20T	1.125 (28.6)	80.0	1-1/4 " Socket Weld	32.00	42.20	102.0	77.7	112.2	55.6	38.9	79.8	232.0	15.7	
	SW24T	100.0	1-1/2 " Socket Weld	38.30					19.1						
	SW20P	1.250 (31.8)	90.0	1-1/4 " Socket Weld	42.70	62.20			114.4	57.2					
	SW24P		100.0	1-1/2 " Socket Weld	48.80				116.4	58.2				12.7	
SWB3205	SW32T	1.500 (38.1)	130.0	2 " Socket Weld	51.10	70.10	106.0	88.1	125.4	62.7	44.2	85.3	232.0	19.1	
	SW32P			2 " Socket Weld	61.20	75.10		86.8		43.2	16.0				



## Butt weld end connections

Part No.	Schedule	Orifice in.(mm)	Cv	End Connection	Dimension								
					ød	B1	A	B	C	D	E	F	H
SWB3201	BW4P	0.188 (4.8)	1.2	1/4 " Butt Weld	10.40	13.70	47.7	33.0	52.4	26.20	16.75	31.8	57.2
SWB3202	BW8P	0.516 (13.1)	15.0	1/2 " Butt Weld	17.10	21.30	64.8	44.5	68.9	34.45	22.25	44.2	111.0
SWB3203	BW12P	0.875 (22.2)	36.0	3/4 " Butt Weld	22.45	26.67	79.0	62.0	92.0	46.00	31.0	61.9	149.4
SWB3203	BW16P		40.0	1 " Butt Weld	27.90	33.40			88.9	44.45			
SWB3201	BW4P	0.188 (4.8)	1.2	1/4 " Butt Weld	9.20	13.70	47.7	33.0	52.4	26.20	16.75	31.8	57.2
SWB3202	BW8P	0.516 (13.1)	15.0	1/2 " Butt Weld	15.80	21.30	64.8	44.5	68.9	34.45	22.25	44.2	111.0
SWB3203	BW12P	0.875 (22.2)	36.0	3/4 " Butt Weld	20.93	26.67	47.7	62.0	92.0	46.00	31.0	61.9	149.4
SWB3203	BW16P		40.0	1 " Butt Weld	26.60	33.40			88.9	44.45			
SWB3201	BW4P	0.188 (4.8)	1.2	1/4 " Butt Weld	7.70	13.70	79.0	33.0	52.4	26.20	16.75	31.8	57.2
SWB3201	BW6P	0.281 (7.1)	3.8	3/8 " Butt Weld	10.70	17.10							
SWB3202	BW8P	0.411 (10.4)	7.5	1/2 " Butt Weld	13.90	21.30	64.8	44.5	68.9	34.45	22.25	44.2	111.0
SWB3202	BW12P	0.516 (13.1)	13.6	3/4 " Butt Weld	18.80	26.70							
SWB3203	BW16P	0.875 (22.2)	40.0	1 " Butt Weld	23.90	33.40	79.0	62.0	88.9	44.45	31.00	61.9	149.4
SWB3204	BW24P	1.125 (28.6)	100	1-1/2 " Butt Weld	42.70	48.30	102.0	77.7	113.2	56.60	38.90	79.8	232.0
SWB3205	BW32P	1.500 (38.1)	130	2 " Butt Weld	54.80	60.30	106.0	88.1	121.4	60.70	44.20	85.3	
SWB3204	BW24P	1.125 (28.6)	100	1-1/2 " Butt Weld	40.90	48.30	102.0	77.7	113.2	56.60	38.90	79.8	232.0
SWB3205	BW32P	1.500 (38.1)	130	2 " Butt Weld	52.50	60.30	106.0	88.1	123.4	61.70	44.20	85.3	
SWB3204	BW24P	1.125 (28.6)	100	1-1/2 " Butt Weld	38.10	48.30	102.0	77.7	115.8	57.90	38.90	79.8	232.0
SWB3205	BW32P	1.500 (38.1)	130	2 " Butt Weld	49.30	60.30	106.0	88.1	129.6	64.80	44.20	85.3	

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- Unless otherwise specified, all dimensions are in millimeters.

- Sizes, pressure classes, and end connections not listed are available upon request.

- Dimensions shown with SUPERLOK nuts finger-tight, where applicable.

## Ordering Information

Example :

**S W B 3 2 0 2 - S 1 2 - P E - O H**

1
2
3
4
5

• 316 Stainless Steel is standard body material.

### 1. Valve Series

- ☐ SWB3201
- ☐ SWB3202
- ☐ SWB3203
- ☐ SWB3204
- ☐ SWB3205

### 2. Port Type

- ☐ **S** = SUPERLOK Tube Fitting
- ☐ **F** = Female Thread
- ☐ **BW** = Butt Weld
- ☐ **M** = Male Thread
- ☐ **SW** = Socket Weld
- ☐ **SA** = SANITARY

### 3. Port Size

#### Tube O.D Designator

Tube O.D (inch)	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2
Designator	4	6	8	12	16	20	24	32
Tube O.D (mm)	6	8	10	12	20	25	32	38
Designator	6M	8M	10M	12M	20M	25M	32M	38M

#### Pipe Thread Designator

Size (inch)	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2
Screwed BSPT	2R	4R	6R	8R	12R	16R	20R	24R	32R
Screwed NPT	2N	4N	6N	8N	12N	16N	20N	24N	32N

#### Socket Weld & Butt Weld Designator

Size (inch)	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2
Tube	4T	6T	8T	12T	16T	20T	24T	32T
Pipe	4P	6P	8P	12P	16P	20P	24P	32P

### 4. Seat Material

- ☐ **(Blank)** = GLASS15% PTFE (T1)
- ☐ **PE** = PEEK
- ☐ **PT** = PTFE
- ☐ **T2** = GLASS25% PTFE
- ☐ **T3** = CARBON15% PTFE
- ☐ **T4** = CARBON25% PTFE

### 5. Option

- ☐ **OH** = Oval Handle

#### Actuator

- ☐ **P1** = Single Acting - 90° Turn
- ☐ **P2** = Single Acting - 180° Turn
- ☐ **P3** = Double Acting - 90° Turn
- ☐ **P4** = Double Acting - 180° Turn



# BMT Co., Ltd.

## | Head Quarter & 1st Factory

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## | 2nd Factory

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## Fittings & Valves

### INDUSTRIAL

Instrumentation Tube Fittings

i-Fitting®

Ball/Plug Valves

Double Block & Bleed Valves

Manifold/Gauge Valves

Globe/Needle Valves

Cryogenic Valves

Check/Relief/Excess Flow Valves

High Pressure Valves

### ULTRA HIGH PURITY

Weld & Metal Face Seal Fittings

Bend Fittings

Diaphragm Valves

Bellows Valves

Check Valves

Clean Ball Valves

Regulators

## Electric & Energy

### PRODUCT & SOLUTION

Compact Switchboard

Motor Control Center (MCC)

Smart Distribution Board

Energy Management System (EMS)

### COMPONENTS (BMT PATENTED)

*MCBS* (Molded Case Busbar System)

*MCPD* (Molded Case Power Distributor)

*Smart-eye* (AC/DC Meter)