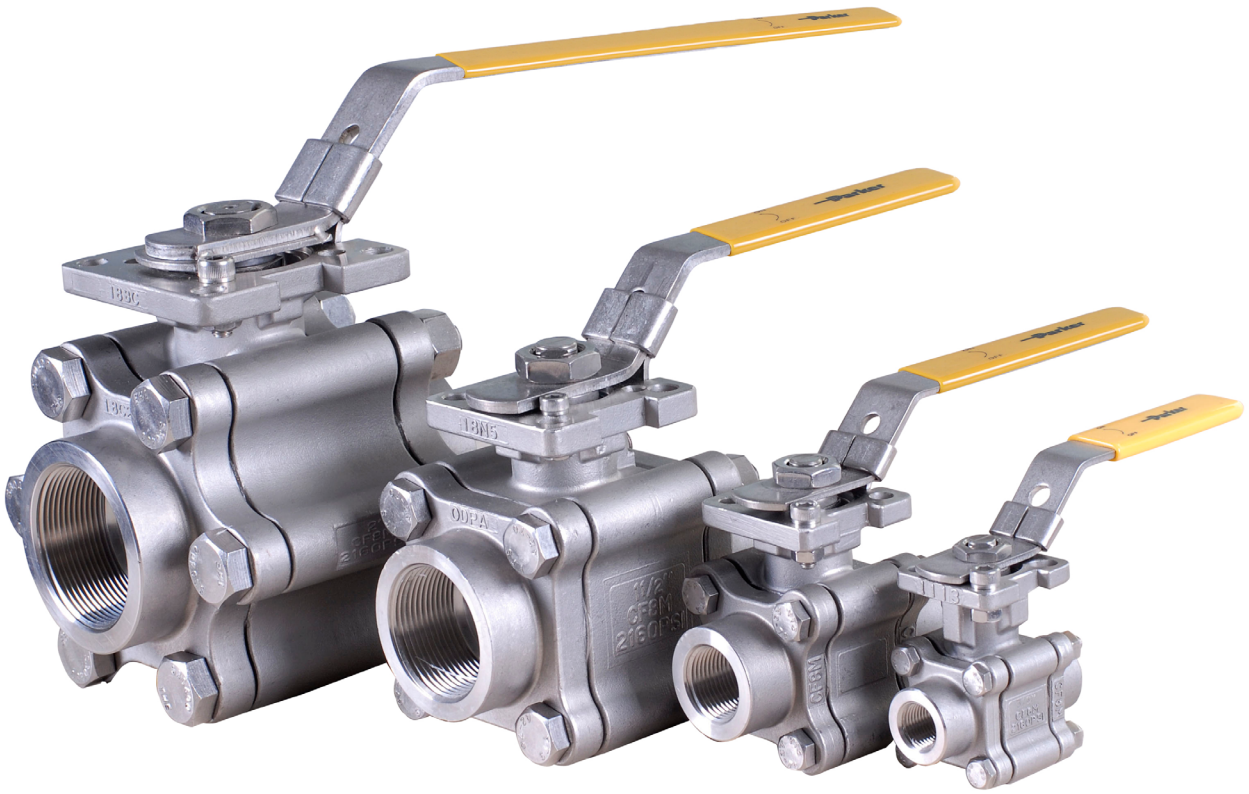

TPB Series
Three-Piece Ball Valves

Catalog 1002C-C

September 2012

aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding

Parker

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Contents

Introduction

Parker's three-piece TPB Series Ball Valves are durable valves that can handle the pressure and piping loads. The center section can swing out quickly and easily to replace seats, seals and the ball without major disruption to the piping system. The TPB Series is designed with its blow out resistant stem and standard locking lever handle for applications ranging in size from 1/4" to 4", and provides total shut off capability for services up to 2160 psig (149 bar).

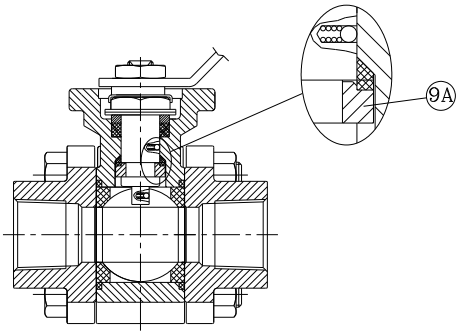
Model Shown: 16PSW-TPB16L-PK-G-SS

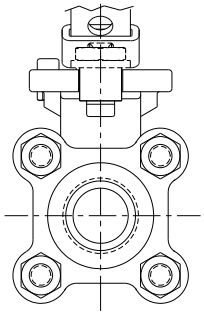
Features

- Free floating ball design allows for seat wear compensation
- Self-compensating stem seal
- Body & end flanges quality investment casting
- Valve construction & thickness follow ASME B16.34
- Full bore & Std. bore design
- Blow out resistant stem
- Fully enclosed body bolting
- ISO-type direct mounting design
- Positive handle stops, with locking device
- Anti-static device for stainless steel valve
- 100% factory tested

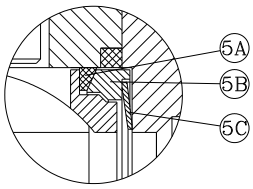
Specifications

Size ..... 1/4"-4"
End Connections ..... Female Thread NPT / BSPT / BSPP
..... Tube Socket weld/ Pipe Socket weld / Pipe Butt weld
Body Materials ..... Stainless Steel (ASTM A351 CF8M)
Seat Materials ..... TFM™
..... PEEK
..... Metal (SS 316+Stellite)
Stem Packing & Body Seal Materials ..... TFM™
..... Graphite
Pressure Ratings ..... 2160 psig (149 bar)
Temperature Ratings — Seats:
TFM™ Seats ..... -50°F to 450°F (-46°C to 232°C)
PEEK Seats ..... -50°F to 600°F (-46°C to 316°C)
Metal Seats ..... -20°F to 842°F (-29°C to 450°C)
Temperature Ratings — Stem Packing & Body Seal:
TFM™ Seals ..... -50°F to 450°F (-46°C to 232°C)
Graphite Seals ..... -50°F to 842°F (-46°C to 450°C)

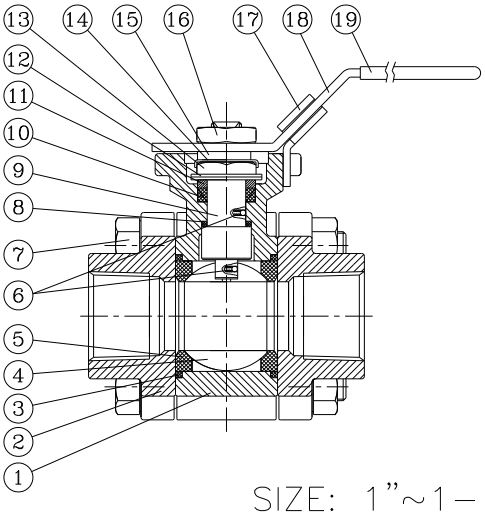


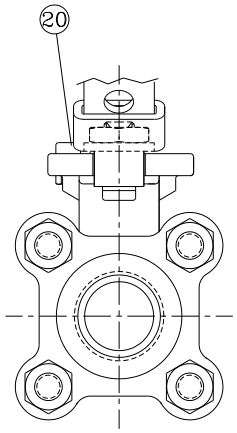


SIZE: 1/4"~3/4"

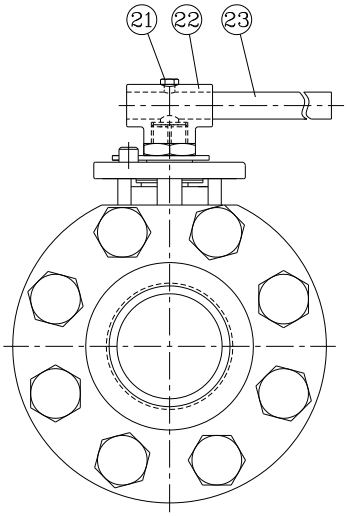


Only For Metal Seat





SIZE: 1"~1-1/2"



SIZE: 2-1/2"~4"

Materials of Construction

Item #	Part	Material
1	Body	ASTM A 351 Grade CF8M
2	End Flanges	ASTM A 351 Grade CF8M
3	Body Seal	TFM™ / Graphite
4	Ball	ASTM A 276 Type 316 / Hard Alloy
5	Seat	TFM™ / PEEK / Metal(316+Stellite)
6	Anti-Static	ASTM A 276 Type 316
7	Bolts	SS 304
8	Thrust Washer	PEEK / Graphite
9	Stem	ASTM A 276 Type 316
10	Stem Packing	TFM™ / Graphite
11	Gland Washer	ASTM A 276 Type 304
12	Disk Washer	ASTM A 666 Type 301
13	Stem Nut	SS 304
14	Nut Stop	ASTM A 276 Type 304
15	Space Washer	ASTM A 276 Type 304

Item #	Part	Material
16	Handle Nut	SS 304
17	Locking Device	ASTM A 276 Type 304
18	Handle	ASTM A 276 Type 304
19	Sleeve	Plastic
20	Stop Pin	ASTM A 276 Type 304

**** For Size 1/4"~3/4"** (Add **9A**)

9A	Half Split Ring	ASTM A 276 Type 316

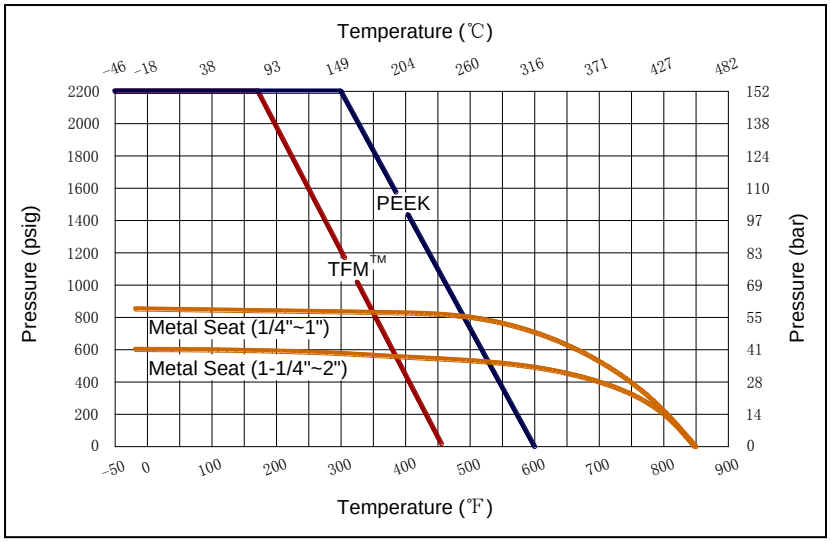
**** For Size 2-1/2"~4"** (Replace **17**, **18**, **19** with **21**, **22** & **23**)

21	Set Bolt	SS 304
22	Lever Head	ASTM A 351 Grade CF8
23	Lever	Steel Pipe

**** For Metal Seat** (Add **5A**, **5B** & **5C**)

5A	Seat Seal	Graphite
5B	Seat Housing	ASTM A 276 Type 316
5C	Seat Disk Washer	Inconel X750

Pressure vs. Temperature



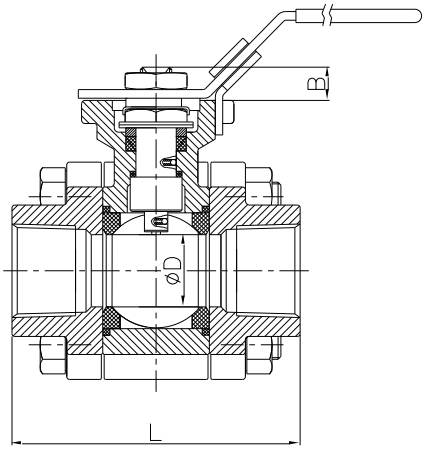
Recommended Operation Torque
(With Safety Factor)

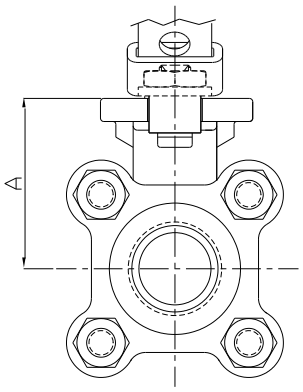
Size			1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
Torque	N.m (At 2000 Psi)	TFM™ Seat	10	10	11	13	18	25	55	121	--	--	--
		PEEK Seat	19	19	21	44	50	77	88	127	254	387	605
	N.m (At 600 Psi)	Metal Seat (SS 316+Stellite)	17	17	17	22	31	50	143	149	--	--	--

Note: 1. The data above are provided with safety factor for operation.
2. TFM™ seat and metal seat do not apply to the valve in 2-1/2" ~4" size.

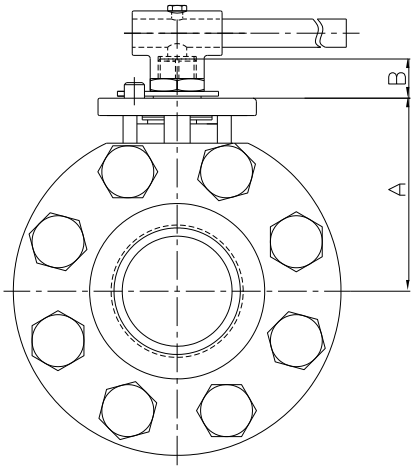
Dimensions

Basic Part Number	Size	A	B	C	D	d1	d2	E	F	H	L	PSW		PBW1(SCH. 40)	
												S	T	OD	ID
TPB4L	1/4"	46	9.5	130	11	6.0	6.0	36	42	9	66.5	14.2	11.1	14.0	9.2
TPB6L	3/8"	46	9.5	130	12.5	6.0	6.0	36	42	9	66.5	17.5	11.1	17.0	12.7
TPB8L	1/2"	48	9.5	130	15	6.0	6.0	36	42	9	70	21.8	12.7	21.3	15.9
TPB12L	3/4"	53	12	155	20	6.0	6.0	42	50	11	92	27.1	14.3	26.7	20.6
TPB16L	1"	59	12	155	25	6.0	7.0	42	50	11	105	33.8	15.9	33.3	26.6
TPB20L	1-1/4"	62	14.5	205	32	7.0	9.2	50	70	14	111	42.5	17.5	42.2	35.1
TPB24L	1-1/2"	70	14.5	205	38	7.0	9.2	50	70	14	124	48.7	18.3	48.5	40.5
TPB32L	2"	90	19	300	50	9.2	11.4	70	102	17	150	61.1	21.3	60.5	52.4
TPB40L	2-1/2"	105	18	350	63.5	9.2	11.4	70	102	17	165	73.9	22.2	73.2	62.7
TPB48L	3"	119	25	400	78	11.4	13.5	102	125	22	195	89.9	25.4	89.2	78.0
TPB64L	4"	144	25	380	99	11.5	13.5	102	125	22	245	115.2	32	114.5	102.2

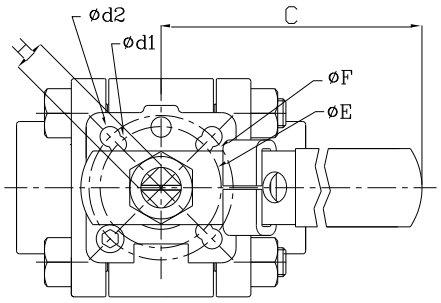


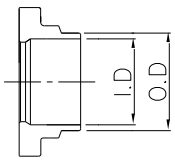


SIZE: 1/4"~2"

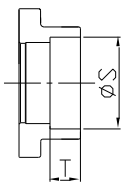


SIZE: 2-1/2"~4"





PIPE BUTT WELD



PIPE SOCKET WELD

How to Order

The correct part number is easily derived from the following number sequence. The seven product characteristics required are coded as shown below.

Example: 8F - TPB8L - T - T - SS Describes a TPB8L Two-Way Ball Valve with 1/2" female NPT end connections for inlet and outlet ports, TFM™ seats, TFM™ stem packing & body seals, and CF8M stainless steel construction.

8	F	—	TPB8	L	—	T	—	T	—	SS
Port Size	Inlet / Outlet Ports		Valve Series	Valve Configuration		Seat Material		Stem Packing & Body Seal		Body Material
4	**F** - Female NPT		**TPB4**	**L** - 2 Way		**T** - TFM™		**T** - TFM™		**SS** - Stainless Steel (ASTM A351 CF8M)
6	**TF** - Female BSPT		**TPB6**							
8	**PF** - Female BSPP		**TPB8**			**PK** - PEEK		**G** - Graphite		
12	**W** - Tube Socket Weld		**TPB12**							
16	**PSW** - Pipe Socket Weld		**TPB16**			**M** - Metal (SS 316+Stellite)				
20	**PBW1** - Pipe Butt Weld (SCH. 40)		**TPB20**							
24			**TPB24**							
32			**TPB32**							
40			**TPB40**							
48			**TPB48**							
64			**TPB64**							

Note: 1. TFM™ is a modified PTFE that maintains the exceptional chemical resistance and other main properties of conventional PTFE, but has a significantly improvement of mechanical properties and heat resistance properties.
2. TFM™ seat and metal seat do not apply to the valve in 2-1/2" ~4" size.
3. The valves with metal seat must match graphite stem packing and graphite body seal.

How to Order Options

	Examples
More Optional Material of Body —	
Hastelloy C276 **–** Replace the body material suffix **SS** with **HC**.	8F-TPB8L-T-T-**HC**
Monel 400 **–** Replace the body material suffix **SS** with **MA**.	8F-TPB8L-T-T-**MA**
NACE compliant materials —	
Add the suffix **–NC** to the end of the part number to order directly on the valve.	8F-TPB8L-T-T-SS-**NC**
Fire Safe Design —	
Add the suffix **–FS** to the end of the part number to order directly on the valve.	8F-TPB8L-M-G-SS-**FS**

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