

# Bolted Closure

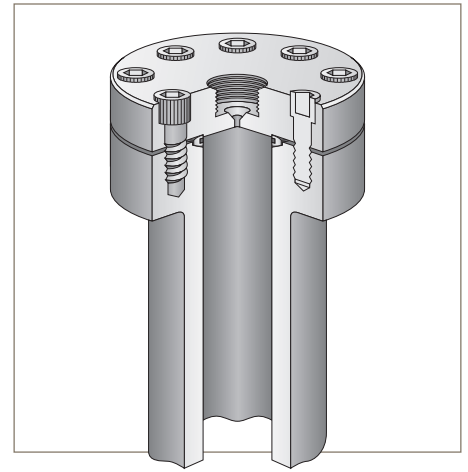
## Pressure Vessel

**Volume:** 300 ml to 7.57 L

**Vessel MAWP\*:** 2,000 to 6,000 psi @ 72°F (138 to 413 bar @ 22°C)  
(Reduced pressures available up to 1,400°F)

**Material of Construction:** 316 Stainless Steel

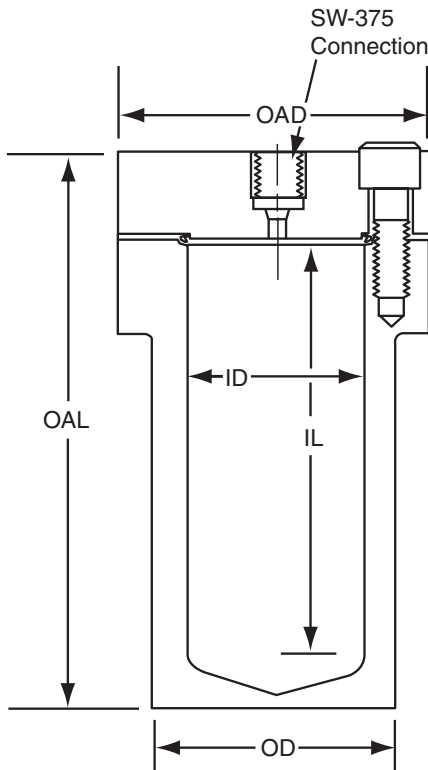
\* Maximum Allowable Working Pressure



### Principle of Operation:

The Parker Autoclave Engineers Bolted Closure (confined gasket) pressure vessels are widely accepted for their simplicity, ease of assembly and flexibility. Particularly suited to applications calling for agitation, they are full-opening with the entire vessel I.D. available for cover openings and connections. Additional openings can be machined in the body flange and bottom of vessel. Parker Autoclave Engineers Bolted Closure vessels feature the Gasche™ confined gasket design for reliable sealing even at very high temperatures. It is shaped to effect a tight metal-to-metal seal on the body and cover and is reusable over many openings and closings of the vessel.

### General Specifications:



Model Drawing #	Nominal Capacity	Dimensions - inches (mm)				
		ID	OD	IL	OAL	OAW
BC0030SS0510A-2496	300 ml	1.81" (46)	2.56" (65)	7.13" (181)	9.50" (241)	4.13" (105)
BC0100SS0610A-2497	1000 ml	3.00" (76)	4.38" (111)	9.06" (230)	12.25" (311)	5.56" (141)
BC0200SS0510A-2498	2000 ml	3.50" (89)	5.00" (127)	13.00" (330)	16.56" (421)	6.44" (163)
BC0378SS0510A-2500	3.78 L	5.00" (127)	7.12" (181)	12.00" (305)	17.03" (433)	8.88" (225)
BC0757SS0510A-2502	7.57 L	5.00" (127)	7.12" (181)	24.00" (610)	28.75" (730)	8.88" (225)
BC0378SS0310A-2499	3.78 L	5.00" (127)	6.25" (159)	12.00" (305)	16.06" (408)	8.12" (206)
BC0757SS0310A-2501	7.57 L	5.00" (127)	6.25" (159)	24.00" (610)	28.00" (711)	8.12" (206)
WB0757SS0310A-5877	7.57 L wide body	6.50" (165)	8.06" (205)	14.00" (365)	18.79" (477)	10.50" (267)

**NOTES:**

Wrench flats are supplied on 300 ml and 1 Liter bodies at bottom to aid in tightening bolts.

Alloy steel cap screws supplied with order number above. For Type 316 SS cap screws, see table on page 2.  
Other inside lengths can be supplied on special order; consult factory for availability.



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## MAWP vs. Temperature Rating (standard 316 SS body, cover and seal ring)

ALLOY STEEL (B-16) CAP SCREWS	Model	°F	to 100°	200°	300°	400°	500°	600°	650°	700°	800°	850°	900°	950°	1000°	1050°	1100°
		°C	to 37.8°	93°	148°	204°	260°	315°	343°	371°	426°	454°	482°	510°	537°	565°	593°
	BC0030SS05	psi (bar)	6000 (414)	6000 (414)	5925 (409)	5850 (400)	5850 (400)	5400 (372)	1075 (74)	5250 (362)	5125 (353)	5075 (350)	5000 (345)	4975 (343)	3925 (271)	2250 (155)	1000 (69)
	BC0100SS06	psi (bar)	6000 (414)	6000 (414)	5925 (409)	5825 (402)	5825 (402)	5825 (402)	5800 (400)	5650 (390)	5500 (379)	5450 (376)	5400 (372)	5325 (367)	3650 (252)	2075 (143)	925 (63)
	BC0200SS05	psi (bar)	5750 (396)	5750 (396)	5625 (388)	5525 (381)	5525 (381)	5525 (381)	5500 (379)	5350 (369)	5225 (360)	5150 (355)	5125 (353)	5050 (348)	3825 (264)	2175 (150)	975 (67)
	BC0378SS05 BC0757SS05	psi (bar)	5750 (396)	5750 (396)	5625 (388)	5525 (381)	5525 (381)	5525 (381)	5500 (379)	5350 (369)	5225 (360)	5150 (355)	5125 (353)	5050 (348)	4075 (281)	2325 (160)	1025 (70)
	BC0378SS03 BC0757SS03	psi (bar)	3450 (238)	3450 (238)	3375 (233)	3300 (228)	3300 (228)	3300 (228)	3300 (228)	3200 (221)	3125 (215)	3100 (214)	3075 (212)	3000 (207)	2050 (141)	1175 (81)	525 (36)
	WB0757SS03 wider body	psi (bar)	3600 (248)	3600 (248)	3525 (243)	3450 (238)	3450 (238)	3450 (238)	3450 (238)	3350 (231)	3275 (226)	3225 (222)	3200 (221)	3175 (219)	2600 (179)	1475 (102)	650 (44)

TYPE 316 STAINLESS STEEL (B-8M) CAP SCREWS	Model	°F	to 100°	200°	300°	400°	500°	600°	650°	700°	800°	850°	900°	950°	1000°	1050°	1100°
		°C	to 37.8°	93°	148°	204°	260°	315°	343°	371°	426°	454°	482°	510°	537°	565°	593°
	BM0030SS04	psi (bar)	6000 (414)	5750 (396)	5225 (360)	4750 (327)	4475 (309)	4225 (291)	4100 (283)	4050 (279)	3925 (271)	3900 (269)	3850 (265)	3825 (264)	3800 (262)	3750 (259)	3675 (253)
	BM0100SS04	psi (bar)	6000 (414)	5350 (369)	4850 (334)	4425 (305)	4150 (286)	3925 (271)	3825 (264)	3750 (259)	3650 (252)	3625 (250)	3575 (246)	3550 (245)	3525 (243)	3475 (240)	3425 (236)
	BM0200SS04	psi (bar)	5750 (396)	5600 (386)	5075 (350)	4625 (319)	4350 (300)	4100 (283)	4000 (276)	3925 (271)	3825 (264)	3775 (260)	3750 (259)	3725 (253)	3675 (253)	3650 (252)	3575 (246)
	BM0378SS04 BM0757SS04	psi (bar)	5750 (396)	5750 (396)	5425 (374)	4925 (340)	4625 (319)	4375 (302)	4250 (293)	4175 (288)	4075 (281)	4050 (279)	4000 (276)	3975 (274)	3925 (271)	3900 (269)	3825 (264)
	BM0378SS02 BM0757SS02	psi (bar)	3525 (243)	3000 (207)	2725 (188)	2475 (171)	2325 (160)	2200 (152)	2150 (148)	2100 (145)	2050 (141)	2025 (140)	2025 (140)	2000 (138)	1975 (136)	1950 (134)	1925 (133)
	WM0757SS03 wider body	psi (bar)	3600 (248)	3600 (248)	3425 (236)	3125 (215)	2950 (203)	2775 (191)	2700 (186)	2650 (183)	2600 (179)	2550 (176)	2550 (176)	2525 (174)	2500 (172)	2475 (171)	2425 (167)
	Model	°F	1150°	1200°	1250°	1300°	1350°	1400°									
		°C	612°	649°	677°	704°	732°	760°									
BM0030SS04	psi (bar)	3150 (217)	2375 (164)	1775 (122)	1325 (91)	1000 (68)	725 (50)										
BM0100SS04	psi (bar)	3075 (212)	2450 (169)	1775 (122)	1350 (93)	975 (67)	725 (50)										
BM0200SS04	psi (bar)	3225 (222)	2425 (167)	1800 (124)	1350 (931)	1025 (70)	750 (51)										
BM0378SS04 BM0757SS04	psi (bar)	3225 (222)	2450 (169)	1800 (124)	1350 (93)	1000 (68)	800 (55)										
BM0378SS02 BM0757SS02	psi (bar)	1725 (119)	1375 (94)	1000 (68)	750 (51)	550 (37)	400 (27)										
WM0757SS03 wider body	psi (bar)	2000 (138)	1525 (105)	1125 (77)	825 (56)	625 (43)	500 (34)										

CAUTION: Sensitization occurs over the temperature range from 850° F to 1475° F (454° C to 802° C). This is a harmful grain boundary condition affecting corrosion resistance of austenitic alloys.

## Special Materials: Pressure vs. Temperature

Material		316 SS (standard)	Hastelloy-B	Hastelloy-C	Titanium	Inconel	Monel	Nickel
Temperature Rating at MAWP		@650°F (343°C)	@650°F (343°C)	@650°F (343°C)	@600°F (316°C)	@650°F (343°C)	@650°F (343°C)	@600°F (316°C)
Vessel Number		Maximum Allowable Working Pressure						
BC0030	psi (bar)	5400 (372)	6000 (414)	6000 (414)	1875 (129)	6000 (414)	4325 (298)	3300 (228)
BC0100	psi (bar)	5800 (400)	6000 (414)	6000 (414)	2000 (138)	6000 (414)	4625 (319)	3525 (243)
BC0200	psi (bar)	5500 (379)	6000 (414)	6000 (414)	1925 (133)	6000 (414)	4450 (307)	3400 (234)
BC0378 BC0757	psi (bar)	5500 (379)	6000 (414)	6000 (414)	1925 (133)	6000 (414)	4425 (305)	3375 (233)
BC0378 BC0757	psi (bar)	3300 (228)	5625 (322)	4675 (322)	1175 (810)	4150 (286)	2700 (186)	2075 (143)
WB0757 wider body	psi (bar)	3450 (238)	5750 (396)	4925 (340)	1200 (827)	4225 (291)	2775 (191)	2100 (145)

## Removable Liners:

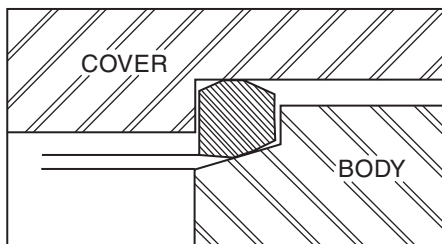
Most Bolted vessels are available with welded loose-fitting liners of 16-gage material. When ordering, specify Type 316 ss ("SS"), titanium ("TI"), Inconel ("IN"), nickel ("NI"), Hastalloy® B ("HB"), Hastalloy® C ("HC"), Monel ("MO"), or glass ("GL").

## Recommended Cap Screw Torque

Vessel Catalog Order Number	Recommended Torque	
	For Normal Conditions	To Deform New Gasket in a Used Body and Cover
BC0030SS05	40 ft lbs (5.5 KgM)	50 ft lbs (7.0 KgM)
BC0100SS06	60 ft lbs (8.0 KgM)	90 ft lbs (12.0 KgM)
BC0200SS05	100 ft lbs (14.0 KgM)	125 ft lbs (17.0 KgM)
BC0378SS05	275 ft lbs (38.0 KgM)	350 ft lbs (48.4 KgM)
BC0757SS05	275 ft lbs (38.0 KgM)	350 ft lbs (48.4 KgM)
BC0378SS03	150 ft lbs (21.0 KgM)	190 ft lbs (26.0 KgM)
BC0757SS03	150 ft lbs (21.0 KgM)	190 ft lbs (26.0 KgM)
BC0757SS03 wider body	215 ft lbs (30.0 KgM)	235 ft lbs (32.0 KgM)

Torque values above are recommended when vessel is to be operated at full rated pressure; lower torque may be used for lower pressure operation.

## Optional O-Ring Gasket:



## Optional O-Ring Chart:

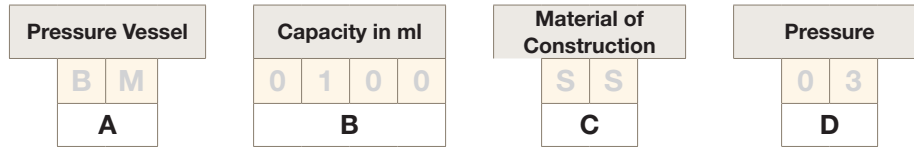
Material	Max. Temperature	
	° F	° C
Buna N	250°	(121°)
EFR	300°	(149°)
Silicone	400°	(204°)
* Viton®	450°	(232°)
PTFE Encapsulated * Viton®	450°	(232°)
* Kalrez®	500°	(260°)

\* Products are registered trademarks of Dupont Dow Elastomers.

# The Gasche™ Gasket

Parker Autoclave Engineers Bolted Closure vessels feature the Gasche™ confined gasket design for reliable sealing even at very high temperatures. It is shaped to effect a tight metal-to-metal seal on the body and cover and is reusable over many openings and closings of the vessel.

## Ordering Guide:



Part Number Example: **BM0100SS03** (example selections indicated in yellow below)

A - Pressure Vessel	
<b>WB</b>	Wider Body
<b>BM</b>	B8M Cap Screws

B - Capacity	
<b>0030</b>	300 ml
<b>0100</b>	1000 ml
<b>0200</b>	2000 ml
<b>0378</b>	3.78 L
<b>0757</b>	7.57 L

C - Material of Construction	
<b>SS</b>	316 Stainless Steel
<b>HB</b>	Hastelloy® C276
<b>HC</b>	Hastelloy® C276
<b>TI</b>	Titanium
<b>IN</b>	Inconel
<b>MO</b>	Monel
<b>NI</b>	Nickel

D - Pressure: psi (bar)	
<b>03</b>	3000 (207)
<b>05</b>	5000 (345)
<b>06</b>	6000 (414)

\* Pressure rating will vary based on temperature and material of construction

\* Hastelloy® is a registered trademark of Haynes International, Inc.

## Features and Available Options:

- Different Connections
- Other Materials of Construction
- Heaters and Furnaces
- Stand (Bench or Floor Style)
- ASME Code Stamp, CRN Registration
- Liners
- Consult Factory to discuss your specific requirements

## Supporting Information:

Please refer to the following sections of the catalog for complimentary products and additional technical details.

- **“MagneDrives®”** - (Agitation Section, Bulletin AG-SG)
- **“Controls”** - (Instrumentation Section, Bulletin IN-SG)
- **“Complete Systems”** - (Stirred Reactor Section, Bulletin SR-SG)
- **“Valves, Fittings, Tubing”** - (VFT Catalog, [www.autoclave.com](http://www.autoclave.com))

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Bulletin PV-BC

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