

## AE Closure Pressure Vessels

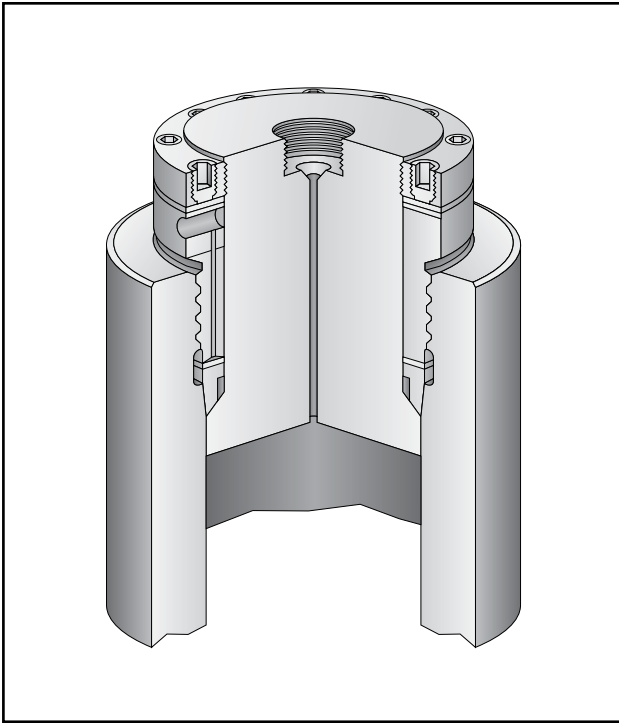
### At A Glance

Volumes: 100 ml to 2000 ml  
 MAWP: 10,500 to 30,000 psi @ 72°F  
 (724 to 2070 bar @ 22°C)  
 Materials of Construction: 316 Stainless Steel,  
 Alloy Steel, A-286

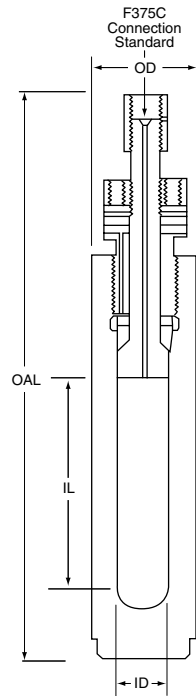
### Principle of Operation

The "AE" self-sealing (modified Bridgman) pressure vessel utilizes the Bridgman Principle of "unsupported area." The AE closure significantly improves the original Bridgman concept by utilizing an all-metal seal configuration. This not only permits very high temperatures, but also facilitates opening and closing the vessel.

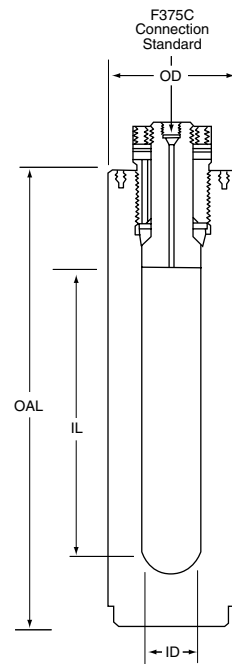
It works by harnessing the internal vessel pressure to reinforce the seal; the higher the pressure (within rated limits), the tighter the seal.



Model	Nominal Capacity	Dimensions: Inches (mm)			
		ID	OD	IL	OAL
AE 0010	100 ml	1.25	2.50	5.00	13.75
		(32)	(64)	(127)	(349)
AE 0025	250 ml	1.25	2.50	12.50	21.30
		(32)	(64)	(317.5)	(541)
AE 0050	500 ml	2.00	4.00	10.00	18.20
		(51)	(102)	(254)	(462)
AE 0100	1000 ml	3.00	6.00	8.94	20.00
		(76)	(152)	(227)	(508)
AE 0200	2000 ml	3.00	6.00	17.99	29.00
		(76)	(152)	(457)	(737)



100 ml and 250 ml vessel configuration



500 ml, 1 liter and 2 liter configuration

### Maximum Set Screw Torque (316 SS Construction)

Vessel Size	100 ml	250 ml	500 ml	1000 ml	2000 ml
Required Set Screw Torque	6 to 8 ft. lbs (0.83 to 1.1 KgM)	6 to 8 ft. lbs. (0.83 to 1.1 KgM)	15 to 17 ft. lbs. (2.1 to 2.4 KgM)	30 to 32 ft. lbs. (4.1 to 4.4 KgM)	30 to 32 ft. lbs. (4.1 to 4.4 KgM)



# MAWP vs. Temperature Ratings

Material (Body, Cover and Seal Ring)	Size	Order No. Suffix	°F (°C)	-20 to 100° (-29 to 37.8°)	150° (66°)	200° (93°)	250° (121°)	300° (149°)	350° (177°)	400° (204°)	450° (232°)	500° (260°)	550° (288°)	600° (316°)
Type 316 SS	100 ml 250 ml 500 ml	Add SS 11	psi (bar)	11,000 (758)	11,000 (758)	10,950 (755)	10,900 (752)	10,850 (748)	10,750 (741)	10,650 (734)	10,600 (731)	10,500 (724)	10,250 (707)	10,000 (689)
	1000 ml 2000 ml	Add SS 10	psi (bar)	10,500 (724)	10,500 (724)	10,500 (724)	10,450 (721)	10,300 (710)	10,250 (707)	10,050 (693)	10,025 (691)	10,000 (689)	10,000 (689)	10,000 (689)
A-286	All Sizes	Add AS 29	psi (bar)	28,800 (1986)	28,500 (1966)	28,450 (1962)	28,200 (1945)	27,850 (1921)	27,350 (1886)	26,500 (1828)	25,700 (1772)	25,200 (1738)	24,700 (1703)	24,350 (1679)
Alloy Steel	All Sizes	Add SL 30	psi (bar)	30,000 (2069)	30,000 (2069)	30,000 (2069)	30,000 (2069)	30,000 (2069)	30,000 (2069)	30,000 (2069)	30,000 (2069)	30,000 (2069)	30,000 (2069)	30,000 (2069)

Material (Body, Cover and Seal Ring)	Size	Order No. Suffix	°F (°C)	650° (343°)	700° (371°)	750° (399°)	800° (427°)	850° (454°)	900° (482°)	950° (510°)	1000° (538°)	1050° (566°)	1100° (593°)	1150° (621°)	1200° (649°)
Type 316 SS	100 ml 250 ml 500 ml	Add SS 11	psi (bar)	9,650 (665)	9,500 (655)	9,400 (648)	9,300 (641)	9,250 (638)	9,200 (634)	9,000■ (621)	8,850■ (610)	8,450■ (583)	7,800■ (538)	6,800■ (469)	4,400■ (303)
	1000 ml 2000 ml	Add SS 10	psi (bar)	9,650 (665)	9,500 (655)	9,400 (648)	9,300 (641)	9,250 (638)	9,200 (634)	9,000■ (621)	8,850■ (610)	8,450■ (583)	7,800■ (538)	6,800■ (469)	4,400■ (303)
A-286	All Sizes	Add AS 29	psi (bar)	24,000 (1655)	23,800 (1641)	23,650 (1631)	23,300 (1607)	23,000 (1586)	22,600 (1559)	22,000 (1517)	21,650 (1493)	21,150 (1459)	20,750 (1431)	20,000 (1379)	19,400 (1338)
Alloy Steel	All Sizes	Add SL 30	psi (bar)	30,000 (2069)	30,000 (2069)	23,650 (1631)	22,800 (1572)	21,500 (1483)	20,000 (1379)	◀ Alloy steel maximum 900°F (482°C)					

■ For operation above 900°F (482°C), A-286 Main Nut must be used.

## Ordering Guide

<b>AE</b>	<b>0010</b>	<b>SS</b>	<b>10</b>
		Material of	Pressure
AE-	Capacity in ml	Construction	psi (bar)
AE Vessel	0010 - 100 ml	SS-316 Stainless	10-10,500 (724)
	0025 - 250 ml	Steel	11-11,000 (758)
	0100 - 1000 ml	AS-A-286 Stainless	29-28,800 (1986)
	0200 - 2000 ml	Steel	30-30,000 (2069)
		SL -Alloy Steel	
		(SA723)	

## Supporting Information

MagneDrives®: (See Agitation Section of this catalog) (AG-SG)  
 Controls: (See Instrumentation Section of this catalog) (IN-SG)  
 Valves, Fittings and Tubing: See VFT catalog

## Features & Other Available Options

- Different connections available
- Other materials of construction
- Heaters
- Stands
- ASME Code stamp, CRN registration
- Consult factory to discuss your special requirements.



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