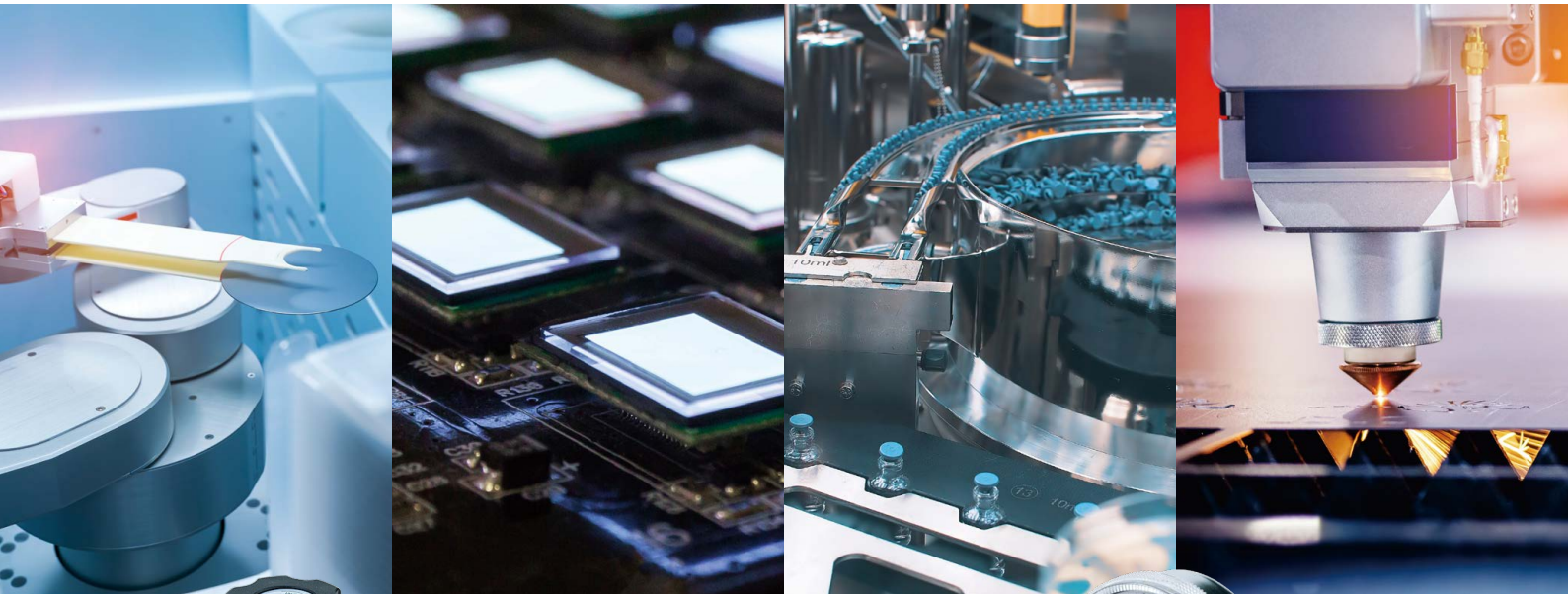


BEST AUTOMATION

Process Gas Equipment



Regulators



Flow Switches



Diaphragm Valves



CAT.ES100-88D

Regulators

For ultra high purity (UHP)

For UHP gas delivery in semiconductor and other clean industries



Regulators

For ultra high purity (UHP)

For UHP gas delivery in semiconductor and other clean industries

<Air Operated Type>



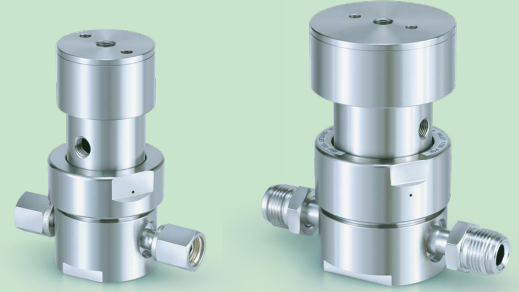
AP10PA/AP15PA

AP12PA/AP14PAT

New AP90PA/AP91PA

AP□PA Series

p. 67 to 76



AZ10PA/AZ15PA

AZ12PA/AZ14PAT

AZ□PA Series

p. 99 to 106

For general applications

For a wide variety of applications from semiconductor to general



New AK100

AK1700

AK1000/AK1500

AK1000T



BP1000

Back Pressure Regulator

BP Series

p. 137, 138



New AK1100

AK1200/
AK1300/
AK1400T

AK9200

AK Series

p. 107 to 126

<Air Operated Type>



AK10PA/AK15PA

AK12PA/AK14PAT

AK□PA Series

p. 127 to 134

Diaphragm Valves

For ultra high purity (UHP)

For UHP gas delivery in semiconductor and other clean industries



Diaphragm Valves

For ultra high purity (UHP)

For UHP gas delivery in semiconductor and other clean industries



New AZ3700



AZ3007



New AZ3000/AZ4000



New AZ4141



AZ3580/AZ4580



AZ3550/AZ4550



New AZ3571/AZ4571

Air operated type

AZ Series
p. 181 to 194



New AZ3800



AZ3650/AZ4650



New AZ3627



New AZ4150



New AZ3672/AZ3675/AZ4675

Manually operated type

AZ Series
p. 195 to 206

Diaphragm Valves

For general applications

For a wide variety of applications from semiconductor to general



New AK3000



New AK4000



AK3540



AK4542



New AK3571

Air operated type

AK Series

p. 209 to 218



AK4650



New AK3627



AK3659



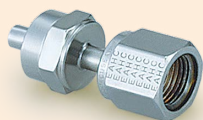
New AK3672/AK3675

Manually operated type

AK Series

p. 219 to 226

Check Valve



AP64

AP64 Series

p. 231, 232

Vacuum Generators



AP72



AP7



AP70

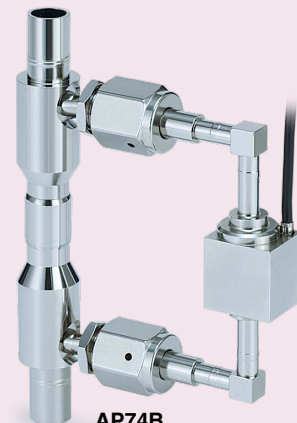


AP71

AP7, 70/71/72 Series

p. 233 to 238

Flow Switches



AP74B



AP74

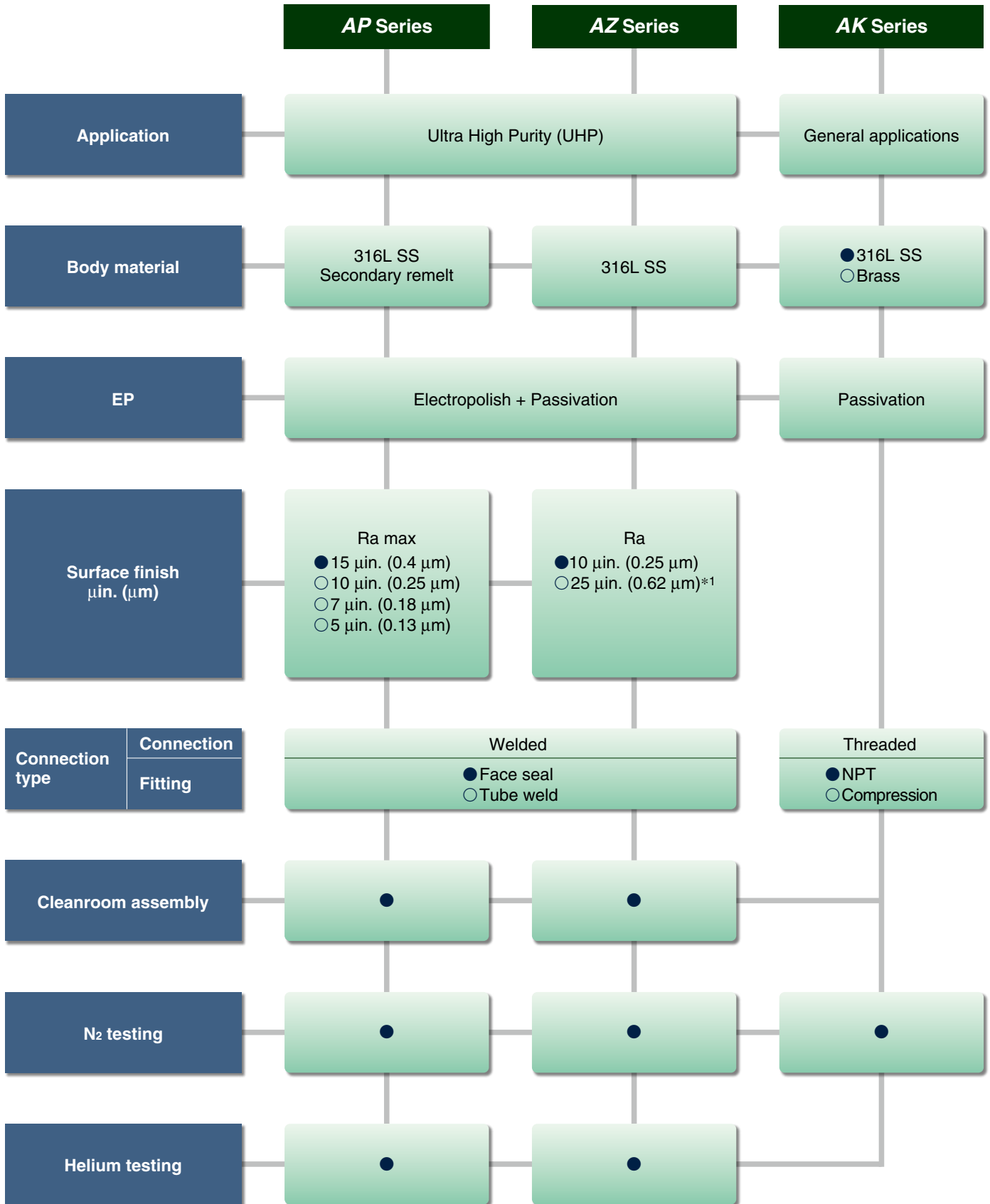
AP74/74B Series

p. 239 to 242

Series Features














● Standard

○ Selectable by model or option



*1 Optional finish not available on all AZ series

Regulator AP Series

Series			Application		Construction		Material		Max. inlet pressure		
			Distribution (Point of use)	Source (Cylinder)	Tied diaphragm	Springless	Body*1	Ni-Cr-Mo alloy internals	psig	MPa	
Single Stage (Compact)	AP500		●				316L VAR	○	● 150 ○ 3000	● 1.0 ○ 20.7	
	AP1000		●	△			316L VAR	○	300 3500	2.1 24.1	
Single Stage	AP1100		●	●*3			316L VAR	○	300	2.1	
	AP1500			●	●		316L VAR	○	● 3500 ○ 4500	● 24.1 ○ 31	
	AP1600		●				316L VAR	○	100 3500	0.7 24.1	
	AP1900			●	●		316L VAR	○	3500	24.1	
	AP1400T		●	●	●		316L VAR	●	300 2300 ● 2300 ○ 3000	2.1 15.9 ● 15.9 ○ 20.7	
	AP1200		●	●	●		316L VAR	○	1700 ● 1700 ○ 3000	11.7 ● 11.7 ○ 20.7	
	AP1300	 <i>New</i>	●				316L VAR	○	300	2.1	
	AP9000		●	●	●		316L	●	1700	11.7	
	AP9100		●	●	●		316L	●	800	5.5	
	AP9115		●	●	●		316L	●	250	1.7	
	AP9000 VSHR	 <i>New</i>	●	●	●		316L	●	● 3000	● 20.7	
	Two Stage	AP1700			●	●		316L VAR	○	● 3500 ○ 4500	● 24.1 ○ 31
		AP2700			●	●		316L VAR	○	3500	24.1

*1 316L VAR: 316L SS secondary remelt, 316L: 316L SS

*2 At 150 psig (1.0 MPa) inlet pressure. Figure varies depending on gas and operating pressures.

*3 For low vapor pressure gases





● Standard ○ Selectable by model or option

△ May be selected for source applications of inert gases, though tied diaphragm is recommended

	Delivery pressure			Flow, N ₂ *2 slpm	Connection size [inch]	Connection type		Page
	psig	MPa	Sub-atmospheric (Absolute)			Connection	Fitting	
	100 mmHg abs. to 10 psig	-88 kPa to 0.07 MPa	○	● 15 ○ 30 (HF opt.)	1/4	Welded	● Face seal ○ Tube weld	41
	0.5 to 10 0.5 to 30 1 to 60 1 to 100 2 to 150	0.0034 to 0.07 0.0034 to 0.2 0.007 to 0.4 0.007 to 0.7 0.014 to 1.0						
	0.5 to 10	0.0034 to 0.07	○	● 30 ○ 120 (HF opt.)	1/4 3/8	Welded	● Face seal ○ Tube weld	43
	1 to 30 2 to 60 2 to 100 5 to 150 5 to 300	0.007 to 0.2 0.014 to 0.4 0.014 to 0.7 0.034 to 1.0 0.034 to 2.1						
	100 mmHg abs. to 10 psig	-88 kPa to 0.07 MPa						
	1 to 30 2 to 60 2 to 100 5 to 150	0.007 to 0.2 0.014 to 0.4 0.014 to 0.7 0.034 to 1.0	●	0.5	1/4 3/8	Welded	● Face seal ○ Tube weld	45
	1 to 10	0.007 to 0.07	○	100	1/4 3/8			47
	1 to 30 2 to 60 2 to 100	0.007 to 0.2 0.014 to 0.4 0.014 to 0.7						
	1 to 10 1 to 30 2 to 60 2 to 100 5 to 150	0.007 to 0.07 0.007 to 0.2 0.014 to 0.4 0.014 to 0.7 0.034 to 1.0	●	100	1/4 3/8 1/2			51
	100 mmHg abs. to 30 psig	-88 kPa to 0.2 MPa	○	400	1/4 3/8 1/2			53
	1 to 30 1 to 60	0.007 to 0.2 0.007 to 0.4						
	2 to 100 5 to 150	0.014 to 0.7 0.034 to 1.0						
	1 to 30 1 to 60	0.007 to 0.2 0.007 to 0.4	○	● 800 ○ 1000 (HF opt.) ○ 1500 (FC opt.)	1/4 3/8 1/2 3/4			55
	2 to 100 5 to 150	0.014 to 0.7 0.034 to 1.0						
	1 to 30 2 to 60 2 to 100 5 to 150	0.007 to 0.2 0.014 to 0.4 0.014 to 0.7 0.034 to 1.0	○	1000	1/4 3/8 1/2 3/4			57
	5 to 100 Preset to 300	0.034 to 0.7 Preset to 2.1	○	2000	1/2 3/4 1	Welded	● Face seal ○ Tube weld	59
	5 to 100	0.034 to 0.7						
	5 to 150	0.034 to 1.0						
	5 to 100 Preset to 300	0.034 to 0.7 Preset to 2.1	○	4000	1/2 3/4	61		
	1 to 30 2 to 60 2 to 100 5 to 200	0.007 to 0.2 0.014 to 0.4 0.014 to 0.7 0.035 to 1.4	○	● 15 ○ 120	1/4 3/8	Welded	● Face seal ○ Tube weld	63
	1 to 30 2 to 60 2 to 100 3 to 120	0.007 to 0.2 0.014 to 0.4 0.014 to 0.7 0.021 to 0.8						

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Regulator SL Series

Series			Application		Construction		Material		Max. inlet pressure	
			Distribution (Point of use)	Source (Cylinder)	Tied diaphragm	Springless	Body*1	Ni-Cr-Mo alloy internals	psig	MPa
Single Stage (Compact)	SL5200		●		●	●	316L VAR	○	150	1.0
Single Stage	SL5500		●	●	●	●	316L VAR	○	3500	24.1
	SL5400		●	●	●	●	316L VAR	○	1000	6.9
	SL5800		●		●	●	316L VAR		300	2.1

*1 316L VAR: 316L SS secondary remelt, 316L: 316L SS

*2 At 150 psig (1.0 MPa) inlet pressure. Figure varies depending on gas and operating pressures.

Regulator AZ Series

Series			Application		Construction		Material		Max. inlet pressure	
			Distribution (Point of use)	Source (Cylinder)	Tied diaphragm	Springless	Body*1	Ni-Cr-Mo alloy internals	psig	MPa
Single Stage	AZ1000		●	△				○	300	2.1
									3500	24.1
	AZ1100		●	●*3				○	300	2.1
	AZ1500			●	●			○	● 3500 ○ 4500	● 24.1 ○ 31
	AZ1400T		●	●	●			●	300	2.1
									2300	15.9
	AZ1200		●	●	●			○	● 2300 ○ 3000	● 15.9 ○ 20.7
									1700	11.7
AZ1300		●						300	2.1	
AZ9200		●		●				300	2.1	

*1 316L: 316L SS, B: Brass

*2 At 150 psig (1.0 MPa) inlet pressure. Figure varies depending on gas and operating pressures.

*3 For low vapor pressure gases

● Standard ○ Selectable by model or option

△ May be selected for source applications of inert gases, though tied diaphragm is recommended

	Delivery pressure			Flow, N ₂ *2 slpm	Connection size [inch]	Connection type		Page
	psig	MPa	Sub-atmospheric (Absolute)			Connection	Fitting	
	100 mmHg abs. to 10 psig	-88 kPa to 0.07 MPa	○	● 30 ○ 130 (HF opt.)	1/4 3/8	Welded	● Face seal ○ Tube weld	77
	0.5 to 10 0.5 to 30 1 to 60 1 to 100	0.0034 to 0.07 0.0034 to 0.2 0.007 to 0.4 0.007 to 0.7						
	100 mmHg abs. to 30 psig	-88 kPa to 0.2 MPa						
	1 to 30 1 to 60 2 to 100	0.007 to 0.2 0.007 to 0.4 0.014 to 0.7						
	1 to 30 1 to 60 2 to 100	0.007 to 0.2 0.007 to 0.4 0.014 to 0.7		120	1/4 3/8 1/2	Welded	● Face seal ○ Tube weld	81
	1 to 30 1 to 60 2 to 100	0.007 to 0.2 0.007 to 0.4 0.014 to 0.7		200	1/4 3/8 1/2			83











● Standard ○ Selectable by model or option

△ May be selected for source applications of inert gases, though tied diaphragm is recommended

	Delivery pressure			Flow, N ₂ *2 slpm	Connection size [inch]	Connection type		Page						
	psig	MPa	Sub-atmospheric (Absolute)			Connection	Fitting							
	1 to 10	0.007 to 0.07		● 30 ○ 120 (HF opt.)	1/4 3/8			85						
	1 to 30 2 to 60 2 to 100 5 to 150 5 to 300	0.007 to 0.2 0.014 to 0.4 0.014 to 0.7 0.034 to 1.0 0.034 to 2.1												
	100 mmHg abs. to 10 psig	-88 kPa to 0.07 MPa							●	0.5	1/4 3/8			87
	1 to 30 2 to 60 2 to 100 5 to 150	0.007 to 0.2 0.014 to 0.4 0.014 to 0.7 0.034 to 1.0								● 30 ○ 120 (HF opt.)	1/4 3/8			89
	100 mmHg abs. to 30 psig	-88 kPa to 0.2 MPa							○	400	1/4 3/8 1/2	Welded	● Face seal ○ Tube weld	91
	1 to 30 1 to 60	0.007 to 0.2 0.007 to 0.4												
	2 to 100 5 to 150	0.014 to 0.7 0.034 to 1.0												
	1 to 30 2 to 60	0.007 to 0.2 0.014 to 0.4		● 800 ○ 1000 (HF opt.) ○ 1500 (FC opt.)	1/4 3/8 1/2			93						
	1 to 30 2 to 60 2 to 100 5 to 150	0.007 to 0.2 0.014 to 0.4 0.014 to 0.7 0.034 to 1.0		1000	1/4 3/8 1/2			95						
	1 to 30 2 to 60 2 to 100 5 to 150	0.007 to 0.2 0.014 to 0.4 0.014 to 0.7 0.034 to 1.0		2000	3/4 1			97						

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Regulator AK Series

Series			Application		Construction		Material		Max. inlet pressure	
			Distribution (Point of use)	Source (Cylinder)	Tied diaphragm	Springless	Body*1	Ni-Cr-Mo alloy internals	psig	MPa
Single Stage (Compact)	AK100		●	●			316L		300	2.1
									3000	20.7
Single Stage	AK1000		●	△			● 316L ○ B	○	300	2.1
									3500	24.1
	AK1000T		●	△			316L	○	300	2.1
									3500	24.1
	AK1100		●	●*3					300	2.1
	AK1500		●	●	●			○	● 3500 ○ 4500	● 24.1 ○ 31
	AK1400T		●	●	●		● 316L ○ B	●	300	2.1
									2300	15.9
	AK1200		●	●	●			○	● 2300 ○ 3000	● 15.9 ○ 20.7
1700									11.7	
AK1300		●						1700	11.7	
AK9200		●		●			○	● 1700 ○ 3000	● 11.7 ○ 20.7	
								300	2.1	
Two Stage	AK1700		●	●			● 316L ○ B	○	● 3500 ○ 4500	● 24.1 ○ 31
									300	2.1

*1 316L: 316L SS, B: Brass

*2 At 150 psig (1.0 MPa) inlet pressure. Figure varies depending on gas and operating pressures.

*3 For low vapor pressure gases















● Standard ○ Selectable by model or option

△ May be selected for source applications of inert gases, though tied diaphragm is recommended

	Delivery pressure			Flow, N ₂ *2 slpm	Connection size [inch]	Connection type		Page
	psig	MPa	Sub-atmospheric (Absolute)			Connection	Fitting	
	100 mmHg abs. to 10 psig 0.5 to 10	-88 kPa to 0.07 MPa 0.003 to 0.07						
	1 to 30 2 to 100 5 to 150	0.007 to 0.2 0.014 to 0.7 0.02 to 1.0	○	30	1/8 1/4	Threaded	● NPT ○ Compression	107
	0.5 to 10 1 to 30 2 to 60 2 to 100 5 to 150 5 to 200 5 to 300 10 to 500	0.0034 to 0.07 0.007 to 0.2 0.014 to 0.4 0.014 to 0.7 0.034 to 1.0 0.034 to 1.4 0.034 to 2.1 0.07 to 3.5		● 30 ○ 120 (HF opt.)	1/4 3/8		● NPT ○ Compression	109
	0.5 to 10 1 to 30 1 to 60 2 to 100 5 to 150	0.0034 to 0.07 0.007 to 0.2 0.007 to 0.4 0.014 to 0.7 0.034 to 1.0		120	1/4 3/8		● NPT ○ Rc ○ Compression	111
	100 mmHg abs. to 10 psig	-88 kPa to 0.07 MPa	●	0.5	1/4 3/8			113
	1 to 30 2 to 60 2 to 100 5 to 150	0.007 to 0.2 0.014 to 0.4 0.014 to 0.7 0.034 to 1.0		● 30 ○ 120 (HF opt.)	1/4 3/8	Threaded		115
	100 mmHg abs. to 30 psig 1 to 30 1 to 60 2 to 100 5 to 150	-88 kPa to 0.2 MPa 0.007 to 0.2 0.007 to 0.4 0.014 to 0.7 0.034 to 1.0	○	400	1/4 3/8 1/2		● NPT ○ Compression	117
	1 to 30 2 to 60 2 to 100 5 to 150	0.007 to 0.2 0.014 to 0.4 0.014 to 0.7 0.034 to 1.0		● 800 ○ 1000 (HF opt.) ○ 1500 (FC opt.)	1/4 3/8 1/2			119
	1 to 30 2 to 60 2 to 100 5 to 150	0.007 to 0.2 0.014 to 0.4 0.014 to 0.7 0.034 to 1.0		1000	1/4 3/8 1/2			121
	1 to 30 2 to 60 2 to 100 5 to 150	0.007 to 0.2 0.014 to 0.4 0.014 to 0.7 0.034 to 1.0		2000	3/4			123
	1 to 30 2 to 60 2 to 100 5 to 200	0.007 to 0.2 0.014 to 0.4 0.014 to 0.7 0.034 to 1.4		● 15 ○ 120 (HF opt.)	1/4 3/8	Threaded	● NPT ○ Compression	125

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Air Operated Regulator AP/AZ/AK Series

Series			Application		Construction		Material		Max. inlet pressure		
			Distribution (Point of use)	Source (Cylinder)	Tied diaphragm	Springless	Body*1	Ni-Cr-Mo alloy internals	psig	MPa	
Single Stage	AP10PA		●	△			316L VAR	○	3500	24.1	
	AP15PA			●	●			○	3500	24.1	
	AP14PAT		●	●	●			●	300	2.1	
	AP12PA		●	●	●			○	● 1700 ○ 3000	● 11.7 ○ 20.7	
	AP90PA		●	●	●			●	1700	11.7	
	AP91PA							●	800	5.5	
	AZ10PA		●	△				316L	○	3500	24.1
	AZ15PA			●	●				○	3500	24.1
	AZ14PAT		●	●	●				●	300	2.1
	AZ12PA		●	●	●				○	● 1700 ○ 3000	● 11.7 ○ 20.7
	AK10PA		●	△					● 316L ○ B	○	3500
	AK15PA			●	●			○		3500	24.1
	AK14PAT		●	●	●			●		300	2.1
	AK12PA		●	●	●			○		● 1700 ○ 3000	● 11.7 ○ 20.7

*1 316L VAR: 316L SS secondary remelt, 316L: 316L SS, B: Brass

*2 At 150 psig (1.0 MPa) inlet pressure. Figure varies depending on gas and operating pressures.

● Standard ○ Selectable by model or option



△ May be selected for source applications of inert gases, though tied diaphragm is recommended

	Delivery pressure			Cv*2	Flow, N2*2 slpm	Connection size [inch]	Connection type		Page
	psig	MPa	Sub-atmospheric (Absolute)				Connection	Fitting	
	7 to 150	0.05 to 1.0		● 0.09 ○ 0.15	● 30 ○ 120 (HF opt.)	1/4 3/8	Welded	● Face seal ○ Tube weld	67
	7 to 150	0.05 to 1.0		0.09	30	1/4 3/8			69
	100 mmHg abs. to 30 psig	-88 kPa to 0.2 MPa	○	0.45	400	1/4 3/8 1/2			71
	7 to 150	0.05 to 1.0							73
	7 to 150	0.05 to 1.0		● 0.65 ○ 1.1	● 800 ○ 1000 (HF opt.)	1/4 3/8 1/2 3/4	Welded	● Face seal ○ Tube weld	75
	10 to 100	0.07 to 0.7		3.0	5000	1/2 3/4 1			
	10 to 150	0.07 to 1.0		4.0					
	7 to 150	0.05 to 1.0		● 0.09 ○ 0.15	● 30 ○ 120 (HF opt.)	1/4 3/8	Welded	● Face seal ○ Tube weld	99
	7 to 150	0.05 to 1.0		0.09	30	1/4 3/8			101
	100 mmHg abs. to 30 psig	-88 kPa to 0.2 MPa	○	0.45	400	1/4 3/8 1/2			103
	7 to 150	0.05 to 1.0							105
	7 to 150	0.05 to 1.0		● 0.65 ○ 1.1	● 800 ○ 1000 (HF opt.)	1/4 3/8 1/2			
	7 to 150	0.05 to 1.0		● 0.09 ○ 0.15	● 30 ○ 120 (HF opt.)	1/4 3/8			Threaded
	7 to 150	0.05 to 1.0		0.09	30	1/4 3/8	129		
	100 mmHg abs. to 30 psig	-88 kPa to 0.2 MPa	○	0.45	400	1/4 3/8 1/2	131		
	7 to 150	0.05 to 1.0					133		
	7 to 150	0.05 to 1.0		● 0.65 ○ 1.1	● 800 ○ 1000 (HF opt.)	1/4 3/8 1/2			

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Back Pressure Regulator BP Series

● Standard ○ Selectable by model or option

Series	Body material*1	Operating pressure		Connection size [inch]	Connection type		Page
		psig	MPa		Connection	Fitting	
BP1000	 316L VAR	0.5 to 10 1 to 30 2 to 60 5 to 100 15 to 200 15 to 300	0.0034 to 0.07 0.007 to 0.2 0.014 to 0.4 0.034 to 0.7 0.1 to 1.4 0.1 to 2.1	1/4 3/8	Welded	● Face seal ○ Tube weld	135
	 ● 316 ○ B				1/4	Threaded	● NPT ○ Compression

*1 316L VAR: 316L SS secondary remelt, 316: 316 SS, B: Brass



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Diaphragm Valve AP Series (Air Operated)

	Series	Image	Application		Status		Body material*1
			Distribution (Point of use)	Source (Cylinder)	N.C.	N.O.	
Air Operated	AP3542		●		●		● 316L VAR ○ Ni-Cr-Mo alloy
	AP3540		●		●		
	AP3550		●	△	●		
	AP3580		●	△		●	
	AP3000			●	●		● 316L VAR ○ Ni-Cr-Mo alloy
	AP3002			●	●		
	AP3080			●		●	
	AP3004			●	●		
	AP3007			●	●		316L VAR
	AP4542		●		●		● 316L VAR ○ Ni-Cr-Mo alloy
	AP4540		●		●		
	AP4550		●	△	●		
	AP4580		●	△		●	
	AP4000		New	●	●		● 316L VAR ○ Ni-Cr-Mo alloy
	AP4141		New	●	●		316L VAR
	AP3113			●	●		● 316L VAR ○ Ni-Cr-Mo alloy
	AP3130			●	●		
	AP3700			●	●		316L VAR
	AP3708			●	●		
	Air Operated Two Step Mode	AP3571		●		●	
AP4571		●			●		

*1 316L VAR: 316L SS secondary remelt

*2 In accordance with SEMI F32

● Standard ○ Selectable by model or option
 △ Source applications for max. source pressure of 250 psig (1.7 MPa) or less

	Max. operating pressure		Cv*2	LOTO	Connection size [inch]	Connection type		Page										
	psig	MPa				Connection	Fitting											
	125	0.9	0.29		1/4 3/8	Welded	● Face seal ○ Tube weld	145										
	145	1	0.29	○														
	300	2.1	0.29															
	250	1.7	0.29															
	3000	20.7	0.23	○	1/4 3/8			Welded	● Face seal ○ Tube weld	149								
	3000	20.7	0.28	○														
	3000	20.7	0.23															
	3700	25.5	0.23	○	1/4						Welded	● Face seal ○ Tube weld						
	4500	31	0.23	○														
	125	0.9	0.5		1/4 3/8								Welded	● Face seal ○ Tube weld	147			
	125	0.9	0.5	○														
	300	2.1	0.5															
	250	1.7	0.5															
	3000	20.7	0.35	○	1/4 3/8					Welded					● Face seal ○ Tube weld	151		
	250	1.7	0.8		1/4 3/8 1/2	153												
	1300	9.0	1.0	○	1/4 3/8 1/2 3/4	Welded	● Face seal ○ Tube weld									155		
	3000	20.7	0.7	○														
	250	1.7	2.8		3/8 1/2 3/4											Welded	● Face seal ○ Tube weld	157
	250	1.7	2.8															
	125	0.9	0.29		1/4 3/8			Welded	● Face seal ○ Tube weld									159
	125	0.9	0.5															

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Diaphragm Valve AP Series (Manually Operated)

Series		Application		Knob	Body material*1	
		Distribution (Point of use)	Source (Cylinder)			
Manually Operated	AP3600		●	●	Multi turn round knob	● 316L VAR ○ Ni-Cr-Mo alloy
	AP3625		●	●	1/4 turn lever knob	
	AP3650		●	●	1/4 turn round knob with open/close indication window	
	AP3652		●	△	Round knob with a raised rectangular section and open/close indication window	
	AP3659		●	△	Pull twist round knob	
	AP3657			●	Pull twist round knob	
	AP3604			●	Multi turn round knob	316L VAR
	AP3624			●	Lever knob	
	AP3627			●	T handle	
	AP4600		●	△	Multi turn round knob	● 316L VAR ○ Ni-Cr-Mo alloy
	AP4625		●	△	1/4 turn lever knob	
	AP4650		●	△	1/4 turn round knob with open/close indication window	
	AP4652		●	△	Round knob with a raised rectangular section and open/close indication window	
	AP4659		●	△	Pull twist round knob	
	AP4657		●	△	Pull twist round knob	
	AP4150		●	△	Round knob with open/close indication window	316L VAR
	AP4157		●	△	Pull twist round knob	
	AP3100		●	●	Multi turn round knob	● 316L VAR ○ Ni-Cr-Mo alloy
AP3125	●		●	1/4 turn lever knob		
AP3150	●		●	1/4 turn round knob with open/close indication window		
AP3157	●		●	Pull twist round knob	316L VAR	
AP3800	●		△	Round knob		
AP3900	●		△	Pull twist round knob		

*1 316L VAR: 316L SS secondary remelt *2 In accordance with SEMI F32

● Standard ○ Selectable by model or option
 △ Source applications for max. source pressure of 250 psig (1.7 MPa) or less

	Max. operating pressure		Cv*2	LOTO	Connection size [inch]	Connection type		Page
	psig	MPa				Connection	Fitting	
	3000	20.7	0.29	○	1/4 3/8	Welded	● Face seal ○ Tube weld	163
	250	1.7		●				
	3000	20.7		●				
	3700	25.5	○	1/4	167			
	4500	31						
	● 300 ○ 3000	● 2.1 ○ 20.7	0.5	○				1/4 3/8
	250	1.7		●				
	● 300 ○ 3000	● 2.1 ○ 20.7		●				
	250	1.7	0.8		1/4 3/8 1/2			169
	250	1.7	0.8	●				
	3000	20.7	● 0.7 ○ 1.3		1/4 3/8 1/2 3/4	171		
	3000	20.7	1.0	○				
	1300	9.0	1.0					
	1300	9.0	1.0	●	3/8 1/2 3/4	173		
	250	1.7	2.8	●				

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Diaphragm Valve AP Series (Metal Seated)

Series			Application		Status or Knob	Body material*1
			Distribution (Point of use)	Source (Cylinder)		
Air Operated	AP3200		●		N.C.	316L VAR
	AP3202		●	△		
Manually Operated	AP3260		●		Multi turn round knob	
	AP3262		●	△		
	AP3225		●		1/4 turn lever knob	

*1 316L VAR: 316L SS secondary remelt *2 In accordance with SEMI F32

Metering Valve AP Series

Series		Application		Knob	Body material*1
		Distribution (Point of use)	Source (Cylinder)		
AP3672		●		Multi turn	316L VAR
AP3675		●			
AP4675		●			

*1 316L VAR: 316L SS secondary remelt *2 In accordance with SEMI F32
























● Standard ○ Selectable by model or option
 △ Source applications for max. source pressure of 250 psig (1.7 MPa) or less

	Max. operating pressure		Cv*2	LOTO	Connection size [inch]	Connection type		Page
	psig	MPa				Connection	Fitting	
	125	0.9	0.27		1/4 3/8	Welded	● Face seal ○ Tube weld	161
	508	3.5	0.27					
	125	0.9	0.27			Welded	● Face seal ○ Tube weld	175
	508	3.5	0.27					
	125	0.9	0.27					
	508	3.5	0.27					

	Max. operating pressure		Cv*2	Connection size [inch]	Connection type		Page
	psig	MPa			Connection	Fitting	
	145	1.0	0.02	1/4 3/8	Welded	● Face seal ○ Tube weld	177
	145	1.0	0.08				
	145	1.0	0.15				

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Diaphragm Valve AZ Series (Air Operated)

Series		Application		Status		Body material*1		
		Distribution (Point of use)	Source (Cylinder)	N.C.	N.O.			
Air Operated	AZ3542		●		●		316L	
	AZ3540		●		●			
	AZ3550		●	△	●			
	AZ3580		●	△		●		
	AZ3000			●	●		316L	
	AZ3002			●	●			
	AZ3080			●		●		
	AZ3004			●	●			
	AZ3007			●	●			
	AZ4542		●		●		316L	
	AZ4540		●		●			
	AZ4550		●	△	●			
	AZ4580		●	△		●		
	AZ4000				●	●		316L
	AZ4141			●	△	●		316L
	AZ3700			●	△	●		316L
	AZ3708			●	△		●	
	Air Operated Two Step Mode	AZ3571		●		●		316L
AZ4571			●		●			

● Standard ○ Selectable by model or option
 △ Source applications for max. source pressure of 250 psig (1.7 MPa) or less

	Max. operating pressure		Cv*2	LOTO	Connection size [inch]	Connection type		Page
	psig	MPa				Connection	Fitting	
	125	0.9	0.29		1/4 3/8	Machined Welded	● Face seal ○ Tube weld	181
	145	1.0	0.29	○				
	300	2.1	0.29					
	250	1.7	0.29					
	3000	20.7	0.23	○	1/4 3/8	Machined Welded	● Face seal ○ Tube weld	185
	3000	20.7	0.28	○				
	3000	20.7	0.23					
	3700	25.5	0.23	○	1/4	Welded	● Face seal ○ Tube weld	
	4500	31	0.23	○				
	125	0.9	0.5		1/4 3/8	Machined Welded	● Face seal ○ Tube weld	
	125	0.9	0.5	○				
	300	2.1	0.5					
	250	1.7	0.5					
	3000	20.7	0.35		1/4 3/8	Machined Welded	● Face seal ○ Tube weld	187
	250	1.7	0.8		1/4 3/8 1/2	Welded	● Face seal ○ Tube weld	189
	250	1.7	2.8		3/8 1/2 3/4	Welded	● Face seal ○ Tube weld	191
	250	1.7	2.8					
	125	0.9	0.29		1/4 3/8	Machined Welded	● Face seal ○ Tube weld	193
	125	0.9	0.5					

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Diaphragm Valve AZ Series (Manually Operated)

Series		Application		Knob	Body material*1	
		Distribution (Point of use)	Source (Cylinder)			
Manually Operated	AZ3600		●	●	Multi turn round knob	316L
	AZ3625		●	●	1/4 turn lever knob	
	AZ3650		●	●	1/4 turn round knob with open/close indication window	
	AZ3652		●	△	Round knob with a raised rectangular section and open/close indication window	
	AZ3659		●	△	Pull twist round knob	
	AZ3657		●	●	Pull twist round knob	
	AZ3604			●	Multi turn round knob	316L
	AZ3624			●	Lever knob	
	AZ3627			●	T handle	
	AZ4600		●	△	Multi turn round knob	316L
	AZ4625		●	△	1/4 turn lever knob	
	AZ4650		●	△	1/4 turn round knob with open/close indication window	
	AZ4652		●	△	Round knob with a raised rectangular section and open/close indication window	
	AZ4659		●	△	Pull twist round knob	
	AZ4657		●	△	Pull twist round knob	
	AZ4150		●	△	Round knob with open/close indication window	316L
	AZ4157		●	△	Pull twist round knob	
	AZ3800		●	△	Round knob	316L
	AZ3900		●	△	Pull twist round knob	

Metering Valve AZ Series

Series		Application		Knob	Body material*1
		Distribution (Point of use)	Source (Cylinder)		
AZ3672		●		Multi turn	316L
AZ3675		●			
AZ4675		●			

*1 316L: 316L SS *2 In accordance with SEMI F32

● Standard ○ Selectable by model or option
 △ Source applications for max. source pressure of 250 psig (1.7 MPa) or less

	Max. operating pressure		Cv ^{*2}	LOTO	Connection size [inch]	Connection type		Page
	psig	MPa				Connection	Fitting	
	3000	20.7	0.29		1/4 3/8	Machined Welded	● Face seal ○ Tube weld	195
	3000	20.7	0.29	○				
	3000	20.7	0.29					
	250	1.7	0.29					
	250	1.7	0.29	●				
	3000	20.7	0.29	●				
	3700	25.5	0.29		1/4	Welded	● Face seal ○ Tube weld	199
	3700	25.5	0.29	○				
	4500	31	0.29					
	● 300 ○ 3000	● 2.1 ○ 20.7	0.5		1/4 3/8	Machined Welded	● Face seal ○ Tube weld	197
	● 300 ○ 3000	● 2.1 ○ 20.7	0.5	○				
	● 300 ○ 3000	● 2.1 ○ 20.7	0.5					
	250	1.7	0.5					
	250	1.7	0.5	●				
	● 300 ○ 3000	● 2.1 ○ 20.7	0.5	●				
	250	1.7	0.8		1/4 3/8 1/2	Welded	● Face seal ○ Tube weld	201
	250	1.7	0.8	●				
	250	1.7	2.8		3/8 1/2 3/4	Welded	● Face seal ○ Tube weld	203
	250	1.7	2.8	●				

	Max. operating pressure		Cv ^{*2}	Connection size [inch]	Connection type		Page
	psig	MPa			Connection	Fitting	
	145	1.0	0.02	1/4 3/8	Machined Welded	● Face seal ○ Tube weld	205
	145	1.0	0.08				
	145	1.0	0.15				

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Diaphragm Valve AK Series (Air Operated)

Series		Application		Status		Body material*1		
		Distribution (Point of use)	Source (Cylinder)	N.C.	N.O.			
Air Operated	AK3542		●		●		316L	
	AK3540		●		●			
	AK3550		●	△	●			
	AK3580		●	△		●		
	AK3000			●	●		316L	
	AK3002			●	●			
	AK3004			●	●			
	AK3007			●	●			
	AK3080		●	●		●		
	AK4542		●		●		316L	
	AK4540		●		●			
	AK4550		●	△	●			
	AK4580		●	△		●		
	AK4000		●	●	●			316L
Air Operated Two Step Mode	AK3571		●		●		316L	
	AK4571		●		●			

● Standard ○ Selectable by model or option
 △ Source applications for max. source pressure of 250 psig (1.7 MPa) or less

	Max. operating pressure		Cv*2	LOTO	Connection size [inch]	Connection type	Page
	psig	MPa					
	125	0.9	0.29		1/4	● Compression ○ Rc ○ R ○ NPT	209
	145	1.0	0.29	○			
	300	2.1	0.29				
	250	1.7	0.29				
	3000	20.7	0.23	○	1/4	● Compression ○ Rc ○ R ○ NPT	213
	3000	20.7	0.28	○			
	3700	25.5	0.23	○			
	4500	31.0	0.23	○			
	3000	20.7	0.23				
	125	0.9	0.5		3/8	● Compression ○ Rc ○ R ○ NPT	211
	125	0.9	0.5	○			
	300	2.1	0.5				
	250	1.7	0.5				
	3000	20.7	0.35		3/8	● Compression ○ Rc ○ R ○ NPT	215
	125	0.9	0.29		1/4	● Compression ○ Rc ○ R ○ NPT	217
	125	0.9	0.5		3/8		

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Diaphragm Valve AK Series (Manually Operated)

Series	Application		Knob	Body material*1	
	Distribution (Point of use)	Source (Cylinder)			
AK3600		●	●	Multi turn round knob	316L
AK3625		●	●	1/4 turn lever knob	
AK3650		●	●	1/4 turn round knob with open/close indication window	
AK3652		●	△	Round knob with a raised rectangular section and open/close indication window	
AK3659		●	△	Pull twist round knob	
AK3657			●	Pull twist round knob	
AK3604			●	Multi turn round knob	316L
AK3624			●	Lever knob	
AK3627			●	T handle	
AK4600		●	△	Multi turn round knob	316L
AK4625		●	△	1/4 turn lever knob	
AK4650		●	△	1/4 turn round knob with open/close indication window	
AK4652		●	△	Round knob with a raised rectangular section and open/close indication window	
AK4659		●	△	Pull twist round knob	
AK4657		●	△	Pull twist round knob	

Metering Valve AK Series

Series	Application		Knob	Body material*1
	Distribution (Point of use)	Source (Cylinder)		
AK3672		●		316L
AK3675		●		
AK4675		●		

*1 316L: 316L SS *2 In accordance with SEMI F32

● Standard ○ Selectable by model or option
 △ Source applications for max. source pressure of 250 psig (1.7 MPa) or less

	Max. operating pressure		Cv*2	LOTO	Connection size [inch]	Connection type	Page
	psig	MPa					
	3000	20.7	0.29		1/4	● Compression ○ Rc ○ R ○ NPT	219
	3000	20.7	0.29	○			
	3000	20.7	0.29				
	250	1.7	0.29				
	250	1.7	0.29	●			
	3000	20.7	0.29	●			
	3700	25.5	0.29		1/4	● Compression ○ Rc ○ R ○ NPT	223
	3700	25.5	0.29	○			
	4500	31.0	0.29				
	● 300 ○ 3000	● 2.1 ○ 20.7	0.5		3/8	● Compression ○ Rc ○ R ○ NPT	221
	● 300 ○ 3000	● 2.1 ○ 20.7	0.5	○			
	● 300 ○ 3000	● 2.1 ○ 20.7	0.5				
	250	1.7	0.5				
	250	1.7	0.5	●			
	● 300 ○ 3000	● 2.1 ○ 20.7	0.5	●			

	Max. operating pressure		Cv*2	Connection size [inch]	Connection type	Page
	psig	MPa				
	145	1.0	0.02	1/4	● Compression ○ Rc ○ R ○ NPT	225
	145	1.0	0.08			
	145	1.0	0.15	3/8		

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● Standard ○ Selectable by model or option

Series	Body material*1	Max. operating pressure		Cracking pressure		Cv*2	Connection size [inch]	Connection type		Page	
		psig	MPa	psid	MPa			Connection	Fitting		
AP64		316L VAR	3500	24.1	3	0.023	0.4 max	1/4	Welded	● Face seal ○ Tube weld	231

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Series	Body material*1	Max. operating pressure		Modules*3	Check valve cracking pressure		Constant bleed	Connection size [inch]	Connection type		Page	
		in.Hg (Torr)	kPa		psid	MPa			Connection	Fitting		
AP7		316L	-26 (100)	-88		—	—		1/4 3/8	Welded	● Face seal ○ Tube weld	233
AP70		316L	-26 (100)	-88		—	—		1/4 3/8			
AP71		316L	-26 (100)	-88	●	3	0.023	○	1/4 3/8			235
AP72		316L VAR	-26 (100)	-88	●	3	0.023	○	1/4 3/8			237

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Series	Body material*1	Max. operating pressure		Flow, at 100 psig (0.69 MPa) N2 slpm	Connection size [inch]	Connection type		Page	
		psig	MPa			Connection	Fitting		
AP74		316L VAR	3500	24.1	2 5 10 25 50 100	1/4	Welded	239	
AP74B		316L	3500	24.1	225 350 500 950	1/2			● Face seal ○ Tube weld
			3000	20.7	1100 1650 2600	3/4		● Tube weld	241
			2200	15.2	3000 4000	1			
			1300	9.0	5000 6000	1 1/2			

*1 316L VAR: 316L SS secondary remelt, 316L: 316L SS

*2 In accordance with SEMI F32

*3 Monoblock vacuum generator, N2 supply valve and check valve