

ConsolidatedTM 19000 Series Safety Relief Valve

ASME and PED certified, the 19000 Series Safety Relief Valve provides superior capacity and blowdown performance on all media types



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Conversion Table

All the USCS values are converted to metric values using the following conversion factors:

USCS Unit	Conversion Factor	Metric Unit
in.	25.4	mm
lb.	0.4535924	kg
in ²	6.4516	cm ²
ft ³ /min	0.02831685	m ³ /min
gal/min	3.785412	L/min
lb/hr	0.4535924	kg/hr
psig	0.06894757	barg
ft lb	1.3558181	Nm
°F	5/9 (°F-32)	°C

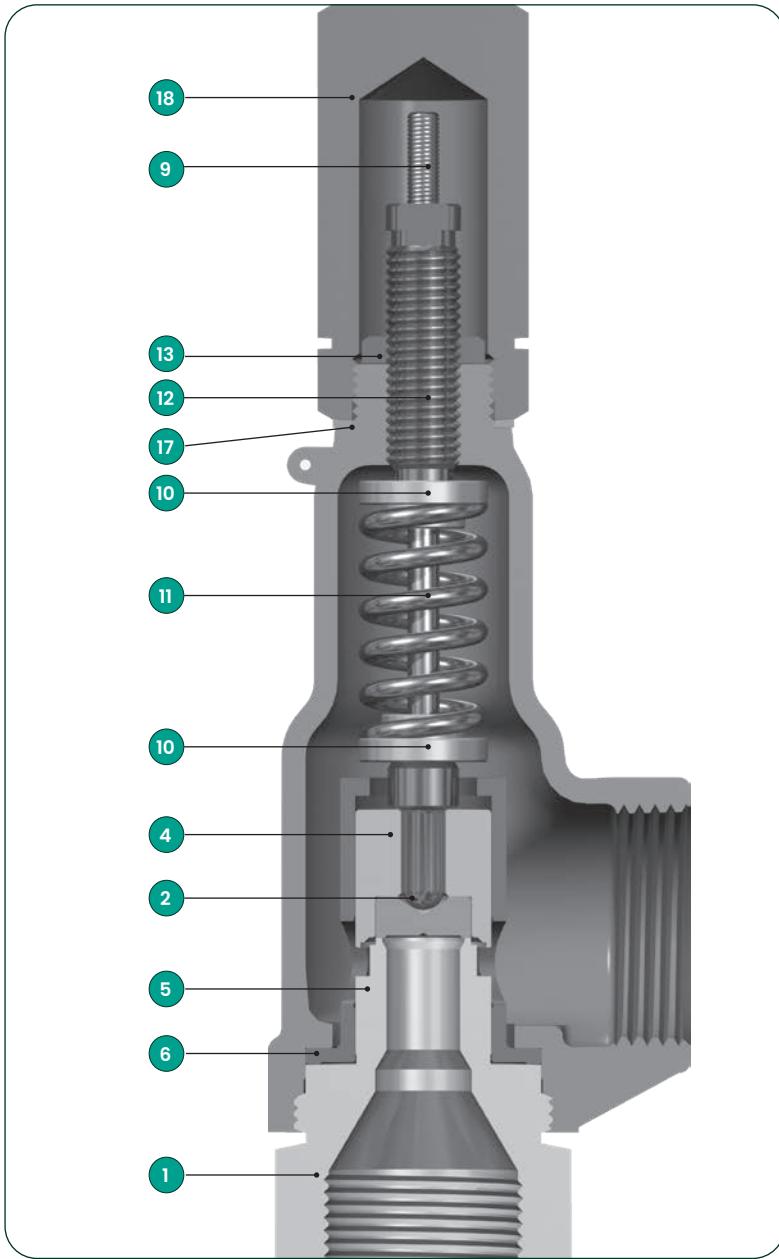
Scope of Design

Standard Inlet and Outlet Connections and Pressure Classes																						
Orifice		Pressure Range					Valve Type	Inlet				Outlet										
in ²	cm ²	psig		barg		in	mm	Type	Size		in	mm	Type									
		min	max	min	max				in	mm												
0.096	0.619	5	290	0.34	19.99	19096L	0.5	MNPT	1	25.4	FNPT	FNPT	FNPT	FNPT								
							0.75	19.05														
							1	25.4														
							0.5	MNPT														
		291	2000	20.06	137.90	19096M	0.75	19.05														
							1	25.4														
							0.75	19.05														
							0.5	12.7														
0.096 BP	0.619	50	2000	3.45	137.90	19096M-BP	0.75	19.05	1	25.4	FNPT	FNPT	FNPT	FNPT								
							1	25.4														
							0.5	12.7														
							0.75	MNPT														
		291	2000	20.06	137.90	19110M	0.75	19.05														
							1	25.4														
							0.5	MNPT														
							0.75	19.05														
0.110	0.71	5	290	0.34	19.99	19110L	0.5	12.7	1	25.4	FNPT	FNPT	FNPT	FNPT								
							0.75	19.05														
							1	25.4														
		291	2000	20.06	137.90	19110M	0.5	12.7														
							0.75	19.05														
							1	25.4														
							0.75	19.05														
0.110 BP	0.71	50	2000	3.45	137.9	19110M-BP	0.5	12.7	1	25.4	FNPT	FNPT	FNPT	FNPT								
							0.75	19.05														
							1	25.4														
		291	2000	20.06	137.9	19126L	0.75	19.05	1	25.4	FNPT	FNPT	FNPT	FNPT								
							1	25.4														
							0.75	19.05														
0.126	0.813	5	290	0.34	19.99	19126L	0.75	19.05	1	25.4	FNPT	FNPT	FNPT	FNPT								
							1	25.4														
							0.75	19.05														
		291	2000	20.06	137.90	19126M	0.75	19.05														
							1	25.4														
0.126 BP	0.813	2001	8000	137.96	551.58	19126H	0.75	19.05	1	25.4	FNPT	FNPT	FNPT	FNPT								
							1	25.4														
		75	2000	5.17	137.9	19126M-BP	0.75	19.05														
							1	25.4														
							0.75	MNPT														
0.226	1.458	5	290	0.34	19.99	19226L	11	25.4	1	38.1	FNPT	FNPT	FNPT	FNPT								
		291	2000	20.06	137.90	19226M																
0.226 BP	1.458	2001	6400	137.96	441.26	19226H																
		195	2000	13.44	137.9	19226M-BP	1	25.4														
							1	25.4														
0.357	2.303	5	290	0.34	19.99	19357L	1.5	38.1	2	50.8	FNPT	FNPT	FNPT	FNPT								
0.567	3.658	5	290	0.34	19.99	19567L	2	50.8	2.5	63.5	FNPT	FNPT	FNPT	FNPT								
0.567	3.658	291	1000	20.06	68.95	19567M																

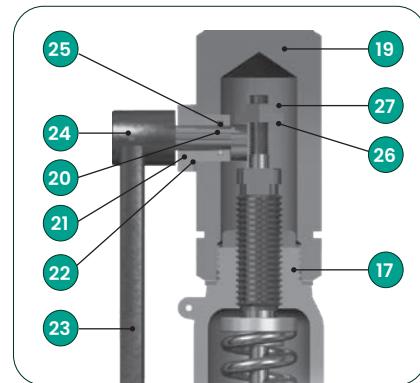
Materials

19000 Metal Seat Valve

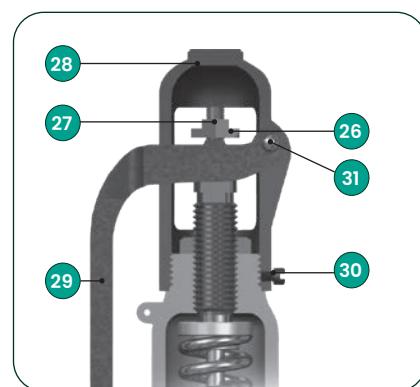
19000 Threaded End Connection



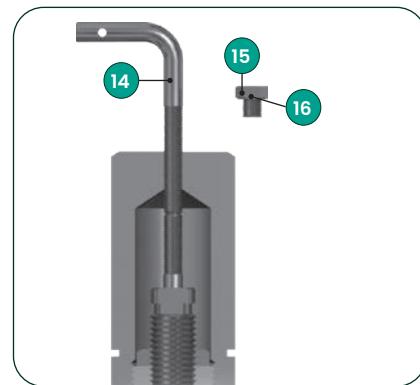
Packed Lever



Plain Lever



Cap with Gag



Note: Body (Integral Cast Flange Design), nozzle (Integral Cast Flange Design), bonnet gasket (Integral Cast Flange Design), studs and nuts (Integral Cast Flange Design), base locknut (Socket Weld Flange with Locknut Design), inlet and outlet extensions, inlet and outlet flanges not shown for flanged options. Socket Weld connections not shown.

Materials- 19000 Metal Seat Valve

19000 Metal Seat Valve – Standard Materials

Ref. No.	Part	Material (-cc)
Base		
1	19000L	ASME SA479 316 SS
	19000M	ASME SA479 316 SS
	19000H	ASME SA479 316 SS ⁽¹⁾
Disc		
2	19000L and M	316 Stainless Steel
	19000L and M (steam) ⁽²⁾	616 Stainless Steel
	19000H	Inconel X-750
Disc Holder		
4	Metal Seat 19000L	316 Stainless Steel
	Metal Seat 19000M	316 Stainless Steel
	Metal Seat 19000H	316 Stainless Steel
5	Guide	316 Stainless Steel
6	Bonnet	ASME SA216 WCC CS
Spindle		
9	Metal Seat 19000L	316 Stainless Steel
	Metal Seat 19000M	316 Stainless Steel
	Metal Seat 19000H	Inconel X-750
10	Spring Washer	Carbon Steel
Spring		
11	19000Lc	17-7 PH Stainless Steel
	19000Lt	Inconel X-750
	19000Mc	17-7 PH Stainless Steel
	19000Mt	Inconel X-750
	19000Hc	17-7 PH Stainless Steel
	19000Ht	Inconel X-750
12	Adjusting Screw	316 Stainless Steel
13	Adjusting Screw Locknut	316 Stainless Steel
14	Gag Bolt	Carbon Steel
15	Sealing Plug	Carbon Steel
16	Sealing Plug Gasket	Soft Iron
17	Cap Gasket	Soft Iron
18	Screwed Cap	Carbon Steel
19	Packed Cap	Carbon Steel
20	Cam Shaft	410 Stainless Steel
21	Bushing	416 Stainless Steel
22	Bushing Gasket	Soft Iron
23	Packed Lifting Lever	Malleable Iron
24	Drive Pin	Steel (Ni-Plated)
25	O-Ring	Viton 70
26	Release Nut	Carbon Steel
27	Release Locknut	Carbon Steel
28	Plain Lever Cap	Malleable Iron
29	Plain Lifting Lever	Malleable Iron
30	Cap Screw	Carbon Steel
31	Lever Pin	Carbon Steel
32	Inlet Extension (not shown)	316 Stainless Steel
33	Inlet Flange (not shown)	ASME SA105 Carbon Steel
34	Outlet Extension (not shown)	316 Stainless Steel
35	Outlet Flange (not shown)	ASME SA105 Carbon Steel
36	Body - Integral Cast Flange Design (not shown)	ASME SA216 WCC CS
37	Nozzle - Integral Cast Flange Design (not shown)	ASME SA479 316 SS
38	Bonnet Gasket - Integral Cast Flange Design (not shown)	Monel
39	Body Studs - Integral Cast Flange Design (not shown)	ASME SA193 B7 Alloy Steel
40	Stud Nuts - Integral Cast Flange Design (not shown)	ASME SA194 2H Carbon Steel
41	Base Locknut - Socket Weld Flange with Locknut Design (not shown)	316 Stainless Steel
42	Outlet Neck Flange - Socket Weld Flange with Locknut Design (not shown)	ASME SA216 WCC CS
43	Inlet Nipple Extension (optional)	316 Stainless Steel
44	Outlet Nipple Extension (optional)	Carbon Steel

NACE Material Variations

N1 material variation is the same as the CC material variation, except for all springs, which will be Inconel X750, and the disc material for applications where the temperature is $\geq 251^{\circ}\text{F}$ or steam, which will be Inconel X750.

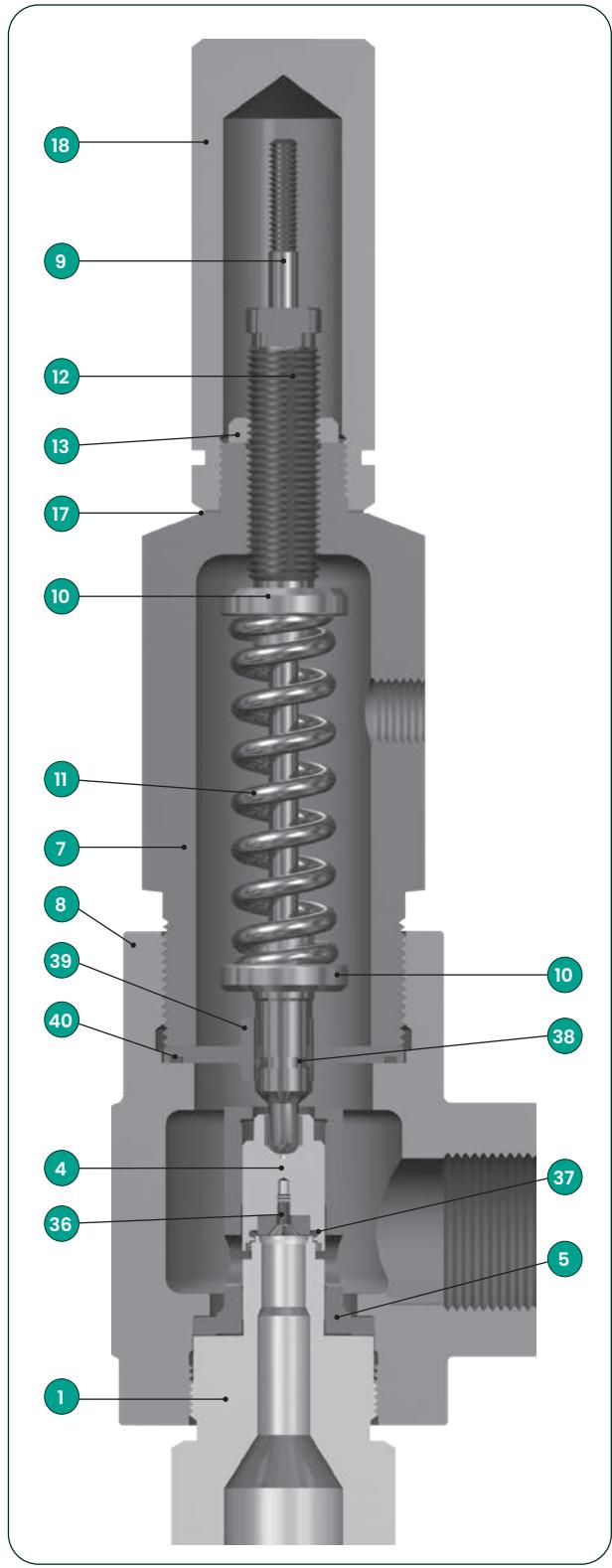
N2 material variation is the same as the S4 material variation, except the disc material for applications where the temperature is $\geq 251^{\circ}\text{F}$ or steam, which will be Inconel X750. All disc holders and springs will be Inconel X750.

1. Stellite or equivalent seats.
2. Supplied for steam service at and above 251°F (122°C).

Materials

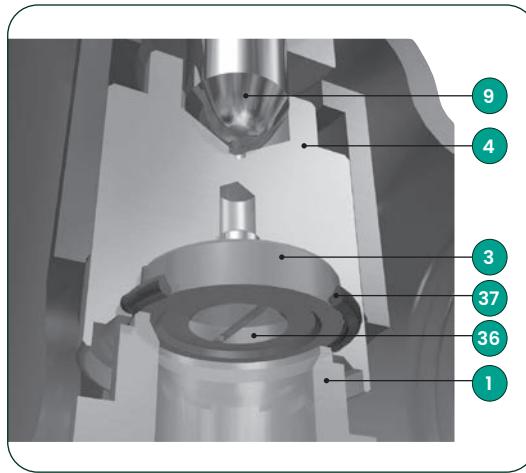
19000M-BP

19000M-BP

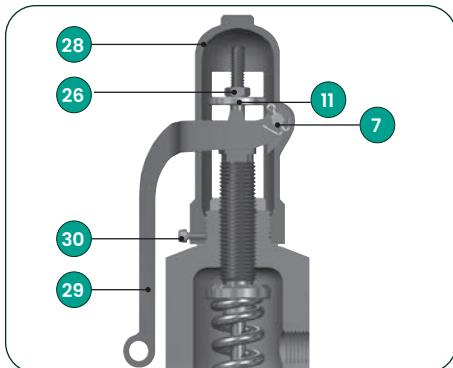


19000DA

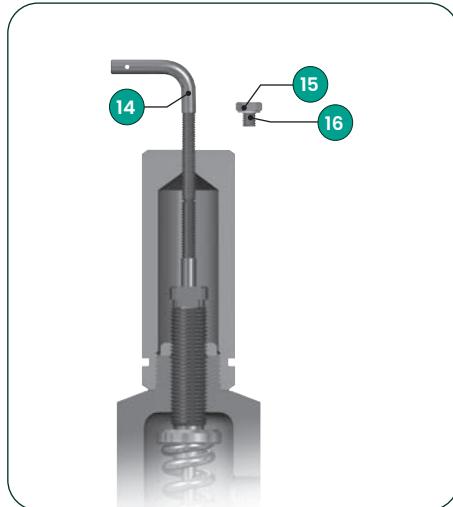
19000DA



Plain Lever



Cap with Gag



Note: Inlet and outlet extensions, inlet and outlet flanges not shown for flanged option. Socket Weld connections not shown.

Materials – 19000M-BP

19000M-BP – Standard Materials		
Ref. No.	Part	Material (-cc)
1	Base	
	19000L	ASME SA479 316 St.St.
	19000M	ASME SA479 316 St.St.
	19000H	ASME SA479 316 St.St. ⁽¹⁾
3	O-Ring Retainer	
	19000L	316 Stainless Steel
	19000M	316 Stainless Steel
	19000H	316 Stainless Steel
4	Disc Holder	
	19000L	316 Stainless Steel
	19000M	Inconel X-750
	19000H	Inconel X-750
5	Guide	316 Stainless Steel
7	Bonnet Top	ASME SA105 Carbon Steel
8	Bonnet Bottom	ASME SA105 Carbon Steel
9	Spindle	
	19000L	316 Stainless Steel
	19000M	Inconel X-750
	19000H	Inconel X-750
10	Spring Washer	Carbon Steel
11	Spring	
	19000Mc	17-7 PH Stainless Steel
12	Adjusting Screw	316 Stainless Steel
	13	Adjusting Screw Locknut
14	Gag Bolt	Carbon Steel
15	Sealing Plug	Carbon Steel
16	Sealing Plug Gasket	Soft Iron
17	Cap Gasket	Soft Iron
18	Screwed Cap	Carbon Steel
26	Release Nut	Carbon Steel
27	Release Locknut	Carbon Steel
28	Plain Lever Cap	Malleable Iron
29	Plain Lifting Lever	Malleable Iron
30	Cap Screw	Carbon Steel
31	Lever Pin	Carbon Steel
32	Inlet Extension (not shown)	316 Stainless Steel
33	Inlet Flange (not shown)	ASME SA105 Carbon Steel
34	Outlet Extension (not shown)	316 Stainless Steel
35	Outlet Flange (not shown)	ASME SA105 Carbon Steel
36	O-Ring Retainer Lockscrew	316 Stainless Steel
37	O-Ring Seat Seal	Select
38	Spindle O-Ring	Same as O-Ring Seat Seal ⁽²⁾
39	Backup Plate	316 Stainless Steel
40	Backup Plate O-Ring	Same as O-Ring Seat Seal
41	Inlet Nipple Extension (optional)	316 Stainless Steel
42	Outlet Nipple Extension (optional)	Carbon Steel

NACE Material Variations

N1 material variation will be the same as the CC material variation, except for the spring, which will be Inconel X750.

N2 material variation will be the same as the S4 material variation, except for the spring, which will be Inconel X750.

Soft Seat Material Temp. Limits

Material	Temperature Limits			
	°F		°C	
	min.	max.	min.	max.
Nitrile	-45	+300	-43	+149
Ethylene/ Propylene	-70	+500	-57	+260
Fluoro-Carbon	-15	+400	-26	+204
Fluoro-Silicone	-100	+350	-73	+177
Neoprene	-45	+300	-43	+149
Silicone	-65	+437	-54	+225
Teflon	-300	+505	-184	+263

19000DA – Standard Materials

Ref. No.	Part	Material (-cc)
1	Base	
	19000L	ASME SA479 316 St.St.
	19000M	ASME SA479 316 St.St.
3	19000H	ASME SA479 316 St.St. ⁽¹⁾
	O-Ring Retainer	
	19000L	316 Stainless Steel
	19000M	316 Stainless Steel
	19000H	316 Stainless Steel
4	Disc Holder	
	19000L	316 Stainless Steel
	19000M	Inconel X-750
	19000H	Inconel X-750
9	Spindle	
	19000L	316 Stainless Steel
	19000M	Inconel X-750
	19000H	Inconel X-750
36	O-Ring Retainer Lockscrew	316 Stainless Steel
37	O-Ring Seat Seal	Select

1. Stellite or equivalent seats.

2. Not to be Teflon.

Corrosive Service Materials

Stainless Material Variations			
Part	Stainless Steel Valve Construction		
	S2	S3	S4
Base			
19000L, 19000M	ASME SA479 316 SS	ASME SA479 316 SS	ASME SA479 316 SS
19000H	ASME SA479 316 SS ⁽¹⁾	ASME SA479 316 SS ⁽¹⁾	ASME SA479 316 SS ⁽¹⁾
Body (Integral Cast Flange Design)	ASME SA216 WCC CS	ASME SA351 CF8M SS	ASME SA351 CF8M SS
Nozzle (Integral Cast Flange Design)	ASME SA479 316 SS	ASME SA479 316 SS	ASME SA479 316 SS
Base Locknut (Socket Weld Flange with Locknut Design)	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
Disc (MS)			
19000L M	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
19000L and M (steam) ⁽²⁾	616 Stainless Steel	616 Stainless Steel	616 Stainless Steel
19000H	Inconel X-750	Inconel X-750	Inconel X-750
O-Ring Retainer (DA and BP)			
19000L, 19000M	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
19000H	Inconel X-750	Inconel X-750	Inconel X-750
Disc Holder (BP-Soft Seat only)			
Metal Seat; 19000L, 19000M, 19000H, Soft Seat; 19000L	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
Soft Seat; 19000M, 19000H	Inconel X-750	Inconel X-750	Inconel X-750
Guide, Outlet Extension	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
Bonnet (DA and MS)	ASME SA216 WCC CS	ASME SA351 CF8M SS	ASME SA351 CF8M SS
Bonnet Top and Bonnet Bottom (BP only)	ASME SA105 Carbon Steel	ASME SA479 316 SS	ASME SA479 316 SS
Body Studs (Integral Cast Flange Design)	ASME SA193 B7 Alloy Steel	ASME SA193 B8M SS	ASME SA193 B8M SS
Stud Nuts (Integral Cast Flange Design)	ASME SA194 2H Alloy Steel	ASME SA194 8M SS	ASME SA194 8M SS
Bonnet Gasket (Integral Cast Flange Design)	Monel	Monel	Monel
Spindle (BP-Soft Seat only)			
Metal Seat; 19000L, 19000M, Soft Seat; 19000L	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
Metal Seat; 19000H, Soft Seat; 19000M, 19000H	Inconel X-750	Inconel X-750	Inconel X-750
Spring Washer	Carbon Steel	Carbon Steel	316 Stainless Steel
Spring (BP-19000M only)			
19000Lc	17-7 PH Stainless Steel	17-7 PH Stainless Steel	316 Stainless Steel
19000Lt, 19000Mt, 19000Ht	Inconel X-750	Inconel X-750	Inconel X-750
19000Mc, 19000Hc	17-7 PH Stainless Steel	17-7 PH Stainless Steel	Inconel X-750
Adjusting Screw, Adjusting Screw Locknut	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
Gag Bolt, Sealing Plug	Carbon Steel	316 Stainless Steel	316 Stainless Steel
Sealing Plug Gasket, Cap Gasket, Bushing Gasket	Soft Iron	Monel	Monel
Screwed Cap, Packed Cap, Cap Screw	Carbon Steel	316 Stainless Steel	316 Stainless Steel
Cam Shaft	410 Stainless Steel	316 Stainless Steel	316 Stainless Steel
Bushing	416 Stainless Steel	316 Stainless Steel	316 Stainless Steel
Packed Lifting Lever	Malleable Iron	316 Stainless Steel	316 Stainless Steel
Drive Pin	Steel (Ni-Plated)	303 Stainless Steel	303 Stainless Steel
O-Ring	Viton 70	Viton 70	Viton 70
Release Nut, Release Locknut, Lever Pin	Carbon Steel	316 Stainless Steel	316 Stainless Steel
Plain Lever Cap, Plain Lifting Lever	Malleable Iron	316 Stainless Steel	316 Stainless Steel
Inlet Extension, Inlet Nipple Extension (optional)	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
Inlet Flange	ASME SA105 Carbon Steel	ASME SA182-F316 ⁽³⁾	ASME SA182-F316 ⁽³⁾
Outlet Nipple Extension (optional)	Carbon Steel	316 Stainless Steel	316 Stainless Steel
Outlet Flange	ASME SA105 Carbon Steel	ASME SA182-F316 ⁽³⁾	ASME SA182-F316 ⁽³⁾
Outlet Neck Flange (Socket Weld Flange with Locknut Design)	ASME SA216 WCC CS	ASME SA351 CF8M SS	ASME SA351 CF8M SS
Backup Plate, O-Ring Retainer Lockscrew	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
O-Ring Seat Seal, Backup Plate O-Ring, Spindle O-Ring ⁽⁴⁾	Select	Select	Select

1. Stellite or equivalent seats.
2. Supplied for steam service at and above 251°F (122°C).
3. or SA479-316 Stainless Steel.
4. Not to be Teflon.

Corrosive Service Materials

Monel Material Variations

Part	Monel Valve Construction				
	M1	MB	M2	M3	M4
Base					
19000L, 19000M	ASME SB164 N04400				
19000H	ASME SB446 N06625 ⁽¹⁾				
Body (Integral Cast Flange Design)	ASME SA216 WCC CS	ASME SA216 WCC CS	ASME SA216 WCC CS	ASME SA494 M35-1	ASME SA494 M35-1
Nozzle (Integral Cast Flange Design)	SB164 N04400				
Base Locknut (Socket Weld Flange with Locknut Design)	Monel	Monel	Monel	Monel	Monel
Disc (MS)					
19000L and M	Monel	Monel	Monel	Monel	Monel
19000L and M (steam) ⁽²⁾ , 19000H	Inconel X-750				
O-Ring Retainer (DA and BP)					
19000L, 19000M	Monel	Monel	Monel	Monel	Monel
19000H	Inconel X-750				
Disc Holder (BP-Soft Seat only)					
Metal Seat; 19000L, 19000M, 19000H	316 Stainless Steel	Monel	Monel	Monel	Monel
Soft Seat; 19000L	Monel	Monel	Monel	Monel	Monel
Soft Seat; 19000M, 19000H	Inconel X-750				
Guide	316 Stainless Steel				
One Piece Bonnet (DA and MS)	ASME SA216 WCC CS	ASME SA216 WCC CS	ASME SA216 WCC CS	ASTM A494 M35-1 NiCu Alloy	ASTM A494 M35-1 NiCu Alloy
Bonnet Top and Bonnet Bottom (BP only)	ASME SA105 CS	ASME SA105 CS	ASME SA105 CSI	ASME SB164-N04400	ASME SB164-N04400
Body Studs (Integral Cast Flange Design)	ASME SA193 B7 AS	ASME SA193 B7 AS	ASME SA193 B7 AS	Monel K500	Monel K500
Stud Nuts (Integral Cast Flange Design)	ASME SA194 2H CS	ASME SA194 2H CS	ASME SA194 2H CS	Monel K500	Monel K500
Bonnet Gasket (Integral Cast Flange Design)	Monel	Monel	Monel	Monel	Monel
Spindle (BP-Soft Seat only)					
Metal Seat; 19000L, 19000M	316 Stainless Steel	316 Stainless Steel	Monel	Monel	Monel
Metal Seat; 19000H	Inconel X-750				
Soft Seat; 19000M, 19000H	316 Stainless Steel	316 Stainless Steel	Monel	Monel	Monel
Spring Washer	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel	Monel
Spring (BP-19000M only)					
19000Lc, 19000Mc, 19000Hc	17-7 PH SS	17-7 PH SS	17-7 PH SS	17-7 PH SS	Monel
19000Lt, 19000Mt, 19000Ht	Inconel X-750				
Adjusting Screw, Adjusting Screw Locknut	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	Monel	Monel
Gag Bolt	Carbon Steel	Carbon Steel	Carbon Steel	316 Stainless Steel	316 Stainless Steel
Sealing Plug, Screwed Cap	Carbon Steel	Carbon Steel	Carbon Steel	Monel	Monel
Sealing Plug Gasket, Cap Gasket	Soft Iron	Soft Iron	Soft Iron	Monel	Monel
Packed Cap	Carbon Steel	Carbon Steel	Carbon Steel	N/A	N/A
Cam Shaft	410 Stainless Steel	410 Stainless Steel	410 Stainless Steel	N/A	N/A
Bushing	416 Stainless Steel	416 Stainless Steel	416 Stainless Steel	N/A	N/A
Bushing Gasket	Soft Iron	Soft Iron	Soft Iron	N/A	N/A
Packed Lifting Lever	Malleable Iron	Malleable Iron	Malleable Iron	N/A	N/A
Drive Pin	Steel (Ni-Plated)	Steel (Ni-Plated)	Steel (Ni-Plated)	N/A	N/A
O-Ring	Viton 70	Viton 70	Viton 70	N/A	N/A
Release Nut, Release Locknut	Carbon Steel	Carbon Steel	Carbon Steel	N/A	N/A
Plain Lever Cap, Plain Lifting Lever	Malleable Iron	Malleable Iron	Malleable Iron	N/A	N/A
Cap Screw, Lever Pin	Carbon Steel	Carbon Steel	Carbon Steel	N/A	N/A
Inlet Extension	Monel	Monel	Monel	Monel	Monel
Inlet Flange, Outlet Flange	ASME SA105 CS	ASME SA105 CS	ASME SA105 CS	ASME SB564 ⁽³⁾	ASME SB564 ⁽³⁾
Outlet Ext., Outlet Nipple Ext. (optional)	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	Monel	Monel
O-Ring Retainer Lockscrew	Monel	Monel	Monel	Monel	Monel
Outlet Neck Flange (Socket Weld Flange with Locknut Design)	ASME SA216 WCC CS	ASME SA216 WCC CS	ASME SA216 WCC CS	ASME SA494 M35-1	ASME SA494 M35-1
O-Ring Seat Seal, Backup Plate O-Ring, Spindle O-Ring ⁽⁴⁾	Select	Select	Select	Select	Select
Backup Plate, Inlet Nipple Ext. (optional)	Monel	Monel	Monel	Monel	Monel

1. Stellite or equivalent seats.
2. Supplied for steam service at and above 251°F (122°C).
3. SB164-N04400.
4. Not to be Teflon.

Corrosive Service Materials

Hastelloy Material Variations

Part	Hastelloy Valve Construction			
	H1	H2	H3	H4
Base				
19000L, 19000M	ASME SB574 NI0276	ASME SB574 NI0276	ASME SB574 NI0276	ASME SB574 NI0276
19000H	ASME SB446 N06625 ⁽¹⁾	ASME SB446 N06625 ⁽¹⁾	ASME SB446 N06625 ⁽¹⁾	ASME SB446 N06625 ⁽¹⁾
Body (Integral Cast Flange Design)	ASME SA216 WCC CS	ASME SA216 WCC CS	ASME SA494 CWI2MW	ASME SA494 CWI2MW
Nozzle (Integral Cast Flange Design)	SB574 NI0276	SB574 NI0276	SB574 NI0276	SB574 NI0276
Base Locknut (Socket Weld Flange with Locknut Design)	Hastelloy	Hastelloy	Hastelloy	Hastelloy
Disc (MS)				
19000L and M	Hastelloy	Hastelloy	Hastelloy	Hastelloy
19000L and M (steam) ⁽²⁾ , 19000H	Inconel X-750	Inconel X-750	Inconel X-750	Inconel X-750
O-Ring Retainer (DA and BP)				
19000L, 19000M	Hastelloy	Hastelloy	Hastelloy	Hastelloy
19000H	Inconel X-750	Inconel X-750	Inconel X-750	Inconel X-750
Disc Holder (BP-Soft Seat only)				
Metal Seat; 19000L, 19000M, 19000H	316 Stainless Steel	Hastelloy	Hastelloy	Hastelloy
Soft Seat; 19000L	Hastelloy	Hastelloy	Hastelloy	Hastelloy
Soft Seat; 19000M, 19000H	Inconel X-750	Inconel X-750	Inconel X-750	Inconel X-750
Guide	316 Stainless Steel	Hastelloy	Hastelloy	Hastelloy
Bonnet (DA and MS)	ASME SA216 WCC Carbon Steel	ASME SA216 WCC Carbon Steel	ASME SA194 CWI2MW NA ⁽³⁾	ASME SA194 CWI2MW NA ⁽³⁾
Bonnet Top and Bonnet Bottom (BP only)	ASME SA105 Carbon Steel	ASME SA105 Carbon Steel	ASME SB574-NI0276	ASME SB574-NI0276
Body Studs (Integral Cast Flange Design)	ASME SA193 B7 AS	ASME SA193 B7 AS	Hastelloy	Hastelloy
Stud Nuts (Integral Cast Flange Design)	ASME SA194 2H CS	ASME SA194 2H CS	Hastelloy	Hastelloy
Bonnet Gasket (Integral Cast Flange Design)	Monel	Monel	Monel	Monel
Spindle (BP-Soft Seat only)				
Metal Seat; 19000L, 19000M	316 Stainless Steel	Hastelloy	Hastelloy	Monel
Metal Seat; 19000H, Soft Seat; 19000M, 19000H	Inconel X-750	Inconel X-750	Inconel X-750	Inconel X-750
Soft Seat; 19000L	316 Stainless Steel	Hastelloy	Hastelloy	Hastelloy
Spring Washer	Carbon Steel	Carbon Steel	Carbon Steel	Hastelloy
Spring (BP-19000M only)				
19000Lc	17-7 PH Stainless Steel	17-7 PH Stainless Steel	17-7 PH Stainless Steel	Hastelloy
19000Lt, 19000Mt, 19000Ht	Inconel X-750	Inconel X-750	Inconel X-750	Inconel X-750
19000Mc, 19000Hc	17-7 PH Stainless Steel	17-7 PH Stainless Steel	17-7 PH Stainless Steel	Inconel X-750
Adjusting Screw, Adjusting Screw Locknut	316 Stainless Steel	316 Stainless Steel	Hastelloy	Hastelloy
Gag Bolt	Carbon Steel	Carbon Steel	316 Stainless Steel	316 Stainless Steel
Sealing Plug, Screwed Cap	Carbon Steel	Carbon Steel	Hastelloy	Hastelloy
Sealing Plug Gasket, Cap Gasket	Soft Iron	Soft Iron	Monel	Monel
Packed Cap, Cap Screw, Lever Pin	Carbon Steel	Carbon Steel	N/A	N/A
Cam Shaft	410 Stainless Steel	410 Stainless Steel	N/A	N/A
Bushing	416 Stainless Steel	416 Stainless Steel	N/A	N/A
Bushing Gasket	Soft Iron	Soft Iron	N/A	N/A
Packed Lifting Lever, Plain Lifting Lever	Malleable Iron	Malleable Iron	N/A	N/A
Drive Pin	Steel (Ni-Plated)	Steel (Ni-Plated)	N/A	N/A
O-Ring	Viton 70	Viton 70	N/A	N/A
Release Nut, Release Locknut	Carbon Steel	Carbon Steel	N/A	N/A
Plain Lever Cap	Malleable Iron	Malleable Iron	N/A	N/A
Inlet Ext., Inlet Nipple Ext. (optional)	Hastelloy	Hastelloy	Hastelloy	Hastelloy
Inlet Flange, Outlet Flange	ASME SA105 Carbon Steel	ASME SA105 Carbon Steel	ASME SB574-NI0276	ASME SB574-NI0276
Outlet Ext., Outlet Nipple Ext. (optional)	316 Stainless Steel	316 Stainless Steel	Hastelloy	Hastelloy
Outlet Neck Flange (Socket Weld Flange with Locknut Design)	ASME SA216 WCC CS	ASME SA216 WCC CS	ASME SA494 CWI2MW	ASME SA494 CWI2MW
O-Ring Retainer Lockscrew (DA and BP)	Hastelloy	Hastelloy	Hastelloy	Hastelloy
O-Ring Seat Seal Spindle O-Ring, Backup Plate O-Ring ⁽⁴⁾	Select	Select	Select	Select
Backup Plate (BP only)	Hastelloy	Hastelloy	Hastelloy	Hastelloy

1. Stellite or equivalent seats.
2. Supplied for steam service at and above 251°F (122°C).

3. For slip-on flanged and socket weld flange with locknut design 19000 valves, bonnets must be made from barstock ASME SB574 UNS NI0276.
4. Not to be Teflon.

Corrosive Service Materials

Alloy 20 Material Variations				
Part	Alloy 20 Valve Construction			
	A1	A2	A3	A4
Base				
19000L, 19000M	ASME SB473 N08020	ASME SB473 N08020	ASME SB473 N08020	ASME SB473 N08020
19000H	ASME SB446 N06625 ⁽¹⁾			
Body (Integral Cast Flange Design)	ASME SA216WCC CS	ASME SA216WCC CS	ASME SA351 CN7M	ASME SA351 CN7M
Nozzle (Integral Cast Flange Design)	SB473 N08020	SB473 N08020	SB473 N08020	SB473 N08020
Base Locknut (Socket Weld Flange with Locknut Design)	Alloy 20	Alloy 20	Alloy 20	Alloy 20
Disc (MS)				
19000L and M	Alloy 20	Alloy 20	Alloy 20	Alloy 20
19000L and M (steam) ⁽²⁾ , 19000H	Inconel X-750	Inconel X-750	Inconel X-750	Inconel X-750
O-Ring Retainer (DA and BP)				
19000L, 19000M	Alloy 20	Alloy 20	Alloy 20	Alloy 20
19000H	Inconel X-750	Inconel X-750	Inconel X-750	Inconel X-750
Disc Holder (BP-Soft Seat only)				
Metal Seat; 1900L, 1900M, 1900H	316 Stainless Steel	Alloy 20	Alloy 20	Alloy 20
Soft Seat; 19000L	Alloy 20	Alloy 20	Alloy 20	Alloy 20
Soft Seat; 19000M, 19000H	Inconel X-750	Inconel X-750	Inconel X-750	Inconel X-750
Guide	316 Stainless Steel	Alloy 20	Alloy 20	Alloy 20
Bonnet (DA and MS)	ASME SA216 WCC CS	ASME SA216 WCC CS	ASME SA351 CN7M	ASME SA351 CN7M
Bonnet Top and Bonnet Bottom (BP only)	ASME SA105 Carbon Steel	ASME SA105 Carbon Steel	ASTM B473 N08020	ASTM B473 N08020
Body Studs (Integral Cast Flange Design)	ASME SA193 B7 AS	ASME SA193 B7 AS	Alloy 20	Alloy 20
Stud Nuts (Integral Cast Flange Design)	ASME SA194 2H CS	ASME SA194 2H CS	Alloy 20	Alloy 20
Bonnet Gasket (Integral Cast Flange Design)	Monel	Monel	Monel	Monel
Spindle (BP-Soft Seat only)				
Metal Seat; 1900L, 1900M, Soft Seat; 19000L	316 Stainless Steel	Alloy 20	Alloy 20	Alloy 20
Metal Seat; 1900H, Soft Seat; 19000M, 19000H	Inconel X-750	Inconel X-750	Inconel X-750	Inconel X-750
Spring Washer	Carbon Steel	Carbon Steel	Carbon Steel	Alloy 20
Spring (BP-19000M only)				
19000Lc	17-7 PH Stainless Steel	17-7 PH Stainless Steel	17-7 PH Stainless Steel	Alloy 20
19000Lt, 19000Mt, 19000Ht	Inconel X-750	Inconel X-750	Inconel X-750	Inconel X-750
19000Mc, 19000Hc	17-7 PH Stainless Steel	17-7 PH Stainless Steel	17-7 PH Stainless Steel	Inconel X-750
Adjusting Screw, Adjusting Screw Locknut	316 Stainless Steel	316 Stainless Steel	Alloy 20	Alloy 20
Gag Bolt	Carbon Steel	Carbon Steel	316 Stainless Steel	316 Stainless Steel
Sealing Plug, Screwed Cap	Carbon Steel	Carbon Steel	Alloy 20	Alloy 20
Sealing Plug Gasket, Cap Gasket	Soft Iron	Soft Iron	Monel	Monel
Packed Cap, Cap Screw, Lever Pin	Carbon Steel	Carbon Steel	N/A	N/A
Cam Shaft	410 Stainless Steel	410 Stainless Steel	N/A	N/A
Bushing	416 Stainless Steel	416 Stainless Steel	N/A	N/A
Bushing Gasket	Soft Iron	Soft Iron	N/A	N/A
Packed Lifting Lever, Plain Lifting Lever	Malleable Iron	Malleable Iron	N/A	N/A
Drive Pin	Steel (Ni-Plated)	Steel (Ni-Plated)	N/A	N/A
O-Ring	Viton 70	Viton 70	N/A	N/A
Release Nut, Release Locknut	Carbon Steel	Carbon Steel	N/A	N/A
Plain Lever Cap	Malleable Iron	Malleable Iron	N/A	N/A
Inlet Ext., Inlet Nipple Ext. (optional)	Alloy 20	Alloy 20	Alloy 20	Alloy 20
Inlet Flange, Outlet Flange	ASME SA105 Carbon Steel	ASME SA105 Carbon Steel	ASME SB462 ⁽³⁾	ASME SB462 ⁽³⁾
Outlet Ext., Outlet Nipple Ext. (optional)	316 Stainless Steel	316 Stainless Steel	Alloy 20	Alloy 20
Outlet Neck Flange (Socket Weld Flange with Locknut Design)	ASME SA216 WCC CS	ASME SA216 WCC CS	ASME SA351 CN7M	ASME SA351 CN7M
O-Ring Retainer Lockscrew (DA and BP)	Alloy 20	Alloy 20	Alloy 20	Alloy 20
O-Ring Seat Seal (DA and BP), Backup Plate O-Ring Spindle O-Ring (BP only) ⁽⁴⁾	Select	Select	Select	Select
Backup Plate (BP only)	Alloy 20	Alloy 20	Alloy 20	Alloy 20

1. Stellite or equivalent seats.

2. Supplied for steam service at and above 251°F (122°C).

3. or SB473-N08020.

4. Not to be Teflon.

Corrosive Service Materials

Duplex Material Variations

Part	Duplex Valve Construction ⁽¹⁾			
	D1	D2	D3	D4
Base				
19000L, 19000M	Duplex	Duplex	Duplex	Duplex
19000H	Duplex ⁽²⁾	Duplex ⁽²⁾	Duplex ⁽²⁾	Duplex ⁽²⁾
Body (Integral Cast Flange Design)	ASME SA216 WCC CS	ASME SA216 WCC CS	Duplex	Duplex
Nozzle (Integral Cast Flange Design)	Duplex	Duplex	Duplex	Duplex
Base Locknut (Socket Weld Flange with Locknut Design)	Duplex	Duplex	Duplex	Duplex
Disc (MS)				
19000L and M	Duplex	Duplex	Duplex	Duplex
19000L and M (steam) ⁽³⁾ , 19000H	Inconel X-750	Inconel X-750	Inconel X-750	Inconel X-750
O-Ring Retainer (DA and BP)				
19000L, 19000M	Duplex	Duplex	Duplex	Duplex
19000H	Inconel X-750	Inconel X-750	Inconel X-750	Inconel X-750
Disc Holder (BP-Soft Seat only)				
Metal Seat; 19000L, 19000M, 19000H	316 Stainless Steel	Duplex	Duplex	Duplex
Soft Seat; 19000L	Duplex	Duplex	Duplex	Duplex
Soft Seat; 19000M, 19000H	Inconel X-750	Inconel X-750	Inconel X-750	Inconel X-750
Guide	316 Stainless Steel	Duplex	Duplex	Duplex
Bonnet (DA and MS)	ASME SA216 WCC Carbon St.	ASME SA216 WCC Carbon St.	Duplex	Duplex
Bonnet Top and Bonnet Bottom (BP only)	ASME SA105 Carbon St.	ASME SA105 Carbon St.	Duplex	Duplex
Body Studs (Integral Cast Flange Design)	ASME SA193 B7 AS	ASME SA193 B7 AS	Duplex	Duplex
Stud Nuts (Integral Cast Flange Design)	ASME SA194 2H CS	ASME SA194 2H CS	Duplex	Duplex
Bonnet Gasket (Integral Cast Flange Design)	Monel	Monel	Monel	Monel
Spindle (BP-Soft Seat only)				
Metal Seat: 19000L, 19000M; Soft Seat: 19000L	316 Stainless Steel	Duplex	Duplex	Duplex
Metal Seat: 19000H; Soft Seat: 19000M, 19000H	Inconel X-750	Inconel X-750	Inconel X-750	Inconel X-750
Spring Washer	Carbon Steel	Carbon Steel	Carbon Steel	Duplex
Spring (BP-19000M only)				
19000Lc	17-7 PH Stainless Steel	17-7 PH Stainless Steel	17-7 PH Stainless Steel	Duplex
19000Lt, 19000Mt, 19000Ht	Inconel X-750	Inconel X-750	Inconel X-750	Inconel X-750
19000Mc, 19000Hc	17-7 PH Stainless Steel	17-7 PH Stainless Steel	17-7 PH Stainless Steel	Inconel X-750
Adjusting Screw, Adjusting Screw Locknut	316 Stainless Steel	316 Stainless Steel	Duplex	Duplex
Gag Bolt	Carbon Steel	Carbon Steel	316 Stainless Steel	316 Stainless Steel
Sealing Plug, Screwed Cap	Carbon Steel	Carbon Steel	Duplex	Duplex
Sealing Plug Gasket, Cap Gasket	Soft Iron	Soft Iron	Monel	Monel
Packed Cap, Cap Screw, Lever Pin	Carbon Steel	Carbon Steel	N/A	N/A
Cam Shaft	410 Stainless Steel	410 Stainless Steel	N/A	N/A
Bushing	416 Stainless Steel	416 Stainless Steel	N/A	N/A
Bushing Gasket	Soft Iron	Soft Iron	N/A	N/A
Packed Lifting Lever, Plain Lifting Lever	Malleable Iron	Malleable Iron	N/A	N/A
Drive Pin	Steel (Ni-Plated)	Steel (Ni-Plated)	N/A	N/A
O-Ring	Viton 70	Viton 70	N/A	N/A
Release Nut, Release Locknut	Carbon Steel	Carbon Steel	N/A	N/A
Plain Lever Cap	Malleable Iron	Malleable Iron	N/A	N/A
Inlet Extension, Inlet Nipple Ext. (optional)	Duplex	Duplex	Duplex	Duplex
Inlet Flange, Outlet Flange	ASME SA105 Carbon Steel	ASME SA105 Carbon St.	Duplex	Duplex
Outlet Ext., Outlet Nipple Ext. (optional)	316 Stainless Steel	316 Stainless Steel	Duplex	Duplex
Outlet Neck Flange (Socket Weld Flange with Locknut Design)	ASME SA216 WCC CS	ASME SA216 WCC CS	Duplex	Duplex
O-Ring Retainer Lockscrew (DA and BP)	Duplex	Duplex	Duplex	Duplex
O-Ring Seat Seal (DA and BP)	Select	Select	Select	Select
Backup Plate O-Ring (BP only)	Select	Select	Select	Select
Spindle O-Ring	Select ⁽⁴⁾	Select ⁽⁴⁾	Select ⁽⁴⁾	Select ⁽⁴⁾
Backup Plate (BP only)	Duplex	Duplex	Duplex	Duplex

1. Parts made from castings shall be constructed from ASME SA995 CE8MN Duplex. Parts made from barstock shall be constructed from ASME SA479 UNS S31803 Duplex.

2. Stellite or equivalent seats.
3. Supplied for steam service at and above 251°F (122°C).
4. Not to be Teflon.

Cryogenic Service Materials

Low Temperature Material Variation ⁽¹⁾	
Part	Material Variation (-CI)
Base	
19000L, 19000M	ASME SA479 316 Stainless Steel
19000H	ASME SA479 316L Stainless Steel ⁽²⁾
Body - Integral Cast Flange Design	ASME SA352 LCC Carbon Steel
Nozzle - Integral Cast Flange Design	ASME SA479 316 Stainless Steel
Base Locknut - Socket Weld Flange with Locknut Design	316 Stainless Steel
Disc (MS)	
19000L and M	316 Stainless Steel
19000L and M (steam) ⁽³⁾	616 Stainless Steel
19000H	Inconel X-750
O-Ring Retainer (DA and BP)	
19000L, 19000M, 19000H	316 Stainless Steel
Disc Holder (BP-Soft Seat only)	
Metal Seat: 19000L, 19000M	316 Stainless Steel
Metal Seat: 19000H, Soft Seat: 19000L	316 Stainless Steel
Soft Seat: 19000M, 19000H	Inconel X-750
Guide, Adjusting Screw, Adjusting Screw Locknut	316 Stainless Steel
One Piece Bonnet (DA and MS)	ASME SA352 LCC Carbon Steel
Bonnet Top and Bonnet Bottom (BP only)	ASME SA479 316 Stainless Steel
Body Studs (Integral Cast Flange Design)	ASME SA193 B8M SS
Stud Nuts (Integral Cast Flange Design)	ASME SA194 8M SS
Bonnet Gasket (Integral Cast Flange Design)	Monel
Spindle (BP-Soft Seat only)	
Metal Seat: 19000L, 19000M; Soft Seat: 19000L	316 Stainless Steel
Metal Seat: 19000H; Soft Seat: 19000M, 19000H	Inconel X-750
Spring Washer, Screwed Cap, Packed Cap	316 Stainless Steel
Spring (BP-19000M only)	
19000Lc, 19000Mc, 19000Hc	17-7 PH Stainless Steel
19000Lt, 19000Mt, 19000Ht	Inconel X-750
Gag Bolt, Sealing Plug, Cap Screw	Carbon Steel
Sealing Plug Gasket, Cap Gasket	Soft Iron
Cam Shaft	410 Stainless Steel
Bushing	416 Stainless Steel
Bushing Gasket	Soft Iron
Packed Lifting Lever, Plain Lifting Lever	Malleable Iron
Drive Pin	Steel (Ni-Plated)
O-Ring	EPR-70
Release Nut, Release Locknut, Lever Pin	Carbon Steel
Plain Lever Cap	Malleable Iron
Inlet Extension, Inlet Nipple Extension (optional)	316 Stainless Steel
Inlet Flange	ASME SA182-F316 or SA479-316 SS
Outlet Nipple Extension (optional)	Carbon Steel
Outlet Extension, O-Ring Retainer Lockscrew (DA and BP)	316 Stainless Steel
Backup Plate (BP only)	316 Stainless Steel
Outlet Flange	ASME SA182-F316 or SA479-316 SS
Outlet Neck Flange (Socket Weld Flange with Locknut Design)	ASME SA352 LCC Carbon Steel
O-Ring Seat Seal (DA and BP), Backup Plate O-Ring (BP only)	Select
Spindle O-Ring (BP only)	Select ⁽⁴⁾

1. Applicable to Ambient Temperatures of -50°F (-45.6°C).

2. Stellite or equivalent seats

3. Supplied for steam service at and above 251°F (122°C).

4. Not to be Teflon.

Cryogenic Service Materials

Low Temperature Material Variation (Standard Design only)

Part	Material Variation (L1) -27 to -100°F (127 to -73°C)	Material Variation (L3) -101 to -450°F (-74 to -268°C)
Base		
19000L, 19000M	ASME SA479 316 Stainless Steel	ASME SA479 316 Stainless Steel
19000H	ASME SA479 316 Stainless Steel, Stellite or Equivalent Seats	ASME SA479 316 Stainless Steel, Stellite or Equivalent Seats
Body (Integral Cast Flange Design)	ASME SA351 CF8M Stainless Steel	ASME SA351 CF8M Stainless Steel
Nozzle (Integral Cast Flange Design)	ASME SA479 316 Stainless Steel	ASME SA479 316 Stainless Steel
Base Locknut (Socket Weld Flange with Locknut Design)	316 Stainless Steel	316 Stainless Steel
Disc (MS)		
19000L and M	316 Stainless Steel	316 Stainless Steel
19000H	Inconel X-750	Inconel X-750
Disc Holder		
Metal Seat: 19000 L/M/H	316 Stainless Steel	316 Stainless Steel
Body Studs (Integral Cast Flange Design)	ASME SA193 B8M SS	ASME SA193 B8M SS
Stud Nuts (Integral Cast Flange Design)	ASME SA194 8M SS	ASME SA194 8M SS
Bonnet Gasket (Integral Cast Flange Design)	Monel	Monel
Guide, Adjusting Screw Locknut	316 Stainless Steel	316 Stainless Steel
Bonnet	ASME SA351 CF8M Stainless Steel	ASME SA351 CF8M Stainless Steel
Spindle		
Metal Seat: 19000 L/M/H	316 Stainless Steel	316 Stainless Steel
Spring Washer	316 Stainless Steel	316 Stainless Steel
Spring		
19000Lc	316 Stainless Steel	316 Stainless Steel
19000Lt, 19000Mc, 19000Mt	Inconel X-750	Inconel X-750
Adjusting Screw	316 Stainless Steel	316 Stainless Steel
Gag Bolt, Sealing Plug	316 Stainless Steel	316 Stainless Steel
Sealing Plug Gasket, Cap Gasket, Bushing Gasket	Monel	Monel
Screwed Cap, Packed Cap, Cam Shaft	316 Stainless Steel	316 Stainless Steel
Bushing, Packed Lifting Lever	316 Stainless Steel	316 Stainless Steel
Drive Pin	303 Stainless Steel	303 Stainless Steel
O-Ring	Viton 70	Viton 70
Release Nut, Release Locknut, Plain Lever Cap	316 Stainless Steel	316 Stainless Steel
Plain Lifting Lever, Cap Screw, Lever Pin	316 Stainless Steel	316 Stainless Steel
Inlet Extension, Inlet Nipple Extension (optional)	316 Stainless Steel	316 Stainless Steel
Inlet Flange, Outlet Flange	316 Stainless Steel	316 Stainless Steel
Outlet Neck Flange (Socket Weld Flange with Locknut Design)	ASME SA351 CF8M SS	ASME SA351 CF8M SS
Outlet Extension, Outlet Nipple Extension (optional)	316 Stainless Steel	316 Stainless Steel

Materials

O-Ring Selection Procedure

In addition to the rating of the valve based on materials and temperatures, it is possible that if the valve is equipped with O-Rings (soft seats), the O-Ring may limit the range of valve application.

The following selection process is simple and straight forward and should yield a satisfactory valve selection.

Use the following steps in the O-Ring selection process:

1. Refer to "Table A" (O-Ring Selection - Durometer). Using the valve set pressure, determine the durometer hardness which will be needed.
2. Refer to "Table B". Utilizing the material selected and the durometer hardness selected, check the temperature limits of the material.
3. If the selected material is not adequate, select another material and repeat the procedure.

Note: For fire applications use the operating temperature when selecting a material.

Table A: O-Ring Selection - Durometer

Valve Type	O-Ring Durometer										Teflon									
	Set Pressure										Set Pressure									
	50 ⁽¹⁾				70 ⁽¹⁾				90 ⁽²⁾				-300 to 200 °F (-184.4 to 93.3 °C)				201 to 500 °F (93.9 to 260 °C)			
	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.
	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg
19096	5	0.34	50	3.45	51	3.52	500	34.47	501	34.54	2500	172.37	1400	96.53	5000	344.74	15	1.03	5000	344.74
19110	5	0.34	50	3.45	51	3.52	500	34.47	501	34.54	2500	172.37	1400	96.53	5000	344.74	15	1.03	5000	344.74
19126	5	0.34	50	3.45	51	3.52	500	34.47	501	34.54	2250	155.13	1000	68.95	6000	413.69	15	1.03	6000	413.69
19226	5	0.34	50	3.45	51	3.52	450	31.03	451	31.10	2000	137.90	1000	68.95	6000	413.69	15	1.03	6000	413.69
19357	5	0.34	50	3.45	51	3.52	400	27.58	401	27.65	1500	103.42	-	-	-	-	15	1.03	1500	103.42
19567	5	0.34	50	3.45	51	3.52	400	27.58	401	27.65	1000	68.95	-	-	-	-	15	1.03	1000	68.95

1. Maximum set pressure for silicone compounds is half of the maximum value.

2. The E9 62-90D O-Ring can be used in steam service to a lower pressure limit of 15 psig (1.03 barg).

Materials

O-Ring Selection Procedure

Table B: O-Ring Temperature Limits

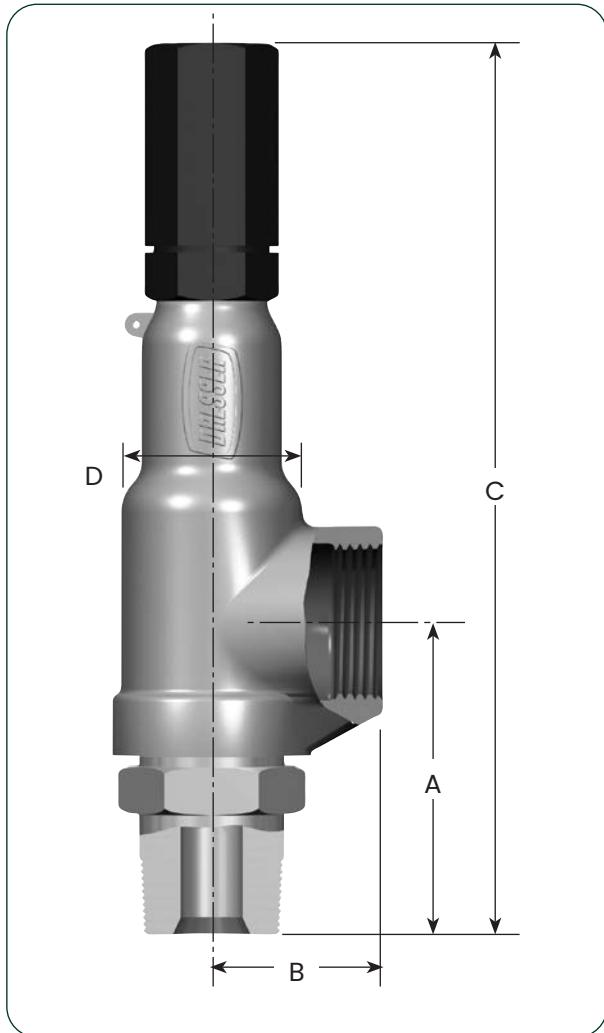
Material	Durometer	Description	Temperature Limits			
			min.		max.	
			°F	°C	°F	°C
Nitrile	50	N299-50 or N1009-50	-45	-42	225	107
	70	N674-70	-40	-40	250	121
	90	N552-90	-40	-40	250	121
	70 ⁽¹⁾	N1173-70	-25	-31	300	148
Ethylene and Propylene	50	E981-50	-65	-53	212	100
	70	E603-70	-65	-53	212	100
	75 and 80 ⁽²⁾	E740-75 and E515-80	-70	-56	250	121
	90	E962-90 ⁽³⁾	-70	-56	500	260
	75 ⁽⁴⁾	E962-75	-60	-51	250 to 400	121 to 204
Fluorocarbon	50	V986-50	-15	-26	400	204
	75	V747-75 or V884-75	-15	-26	400	204
	90	V894-90 or V709-90	-15	-26	400	204
Neoprene	50	C267-50	-45	-42	300	148
	70	C944-70 or C873-70	-45	-42	300	148
Silicone	50	S595-50	-65	-53	437	225
	70	S604-70	-65	-53	437	225
Teflon	N/A	Teflon	-300	-184	505	263
Kalrez ⁽⁵⁾	90	7390	-15	-26	572	300
	75	4079	-4	-20	600	316
	90	7390	-15	-26	572	300
	70	0040	-40	-40	450	232

1. Consult Factory before using. For use with Freon 134A and Ester Oil Service.
2. Set Pressure Ranges per "Table B" For durometer shall apply to these compounds (For Nuclear Service, Radiation Environment.)
3. EPR962-90D can be used in steam service to a lower pressure limit of 15 psig (1.03 barg). A maximum temperature of 500°F (260°C) is possible for steam only.
4. Up to 400°F (204.4°C) for steam applications only.
5. Consult Factory before selecting. (4079 - Not for use in hot water or steam applications.)

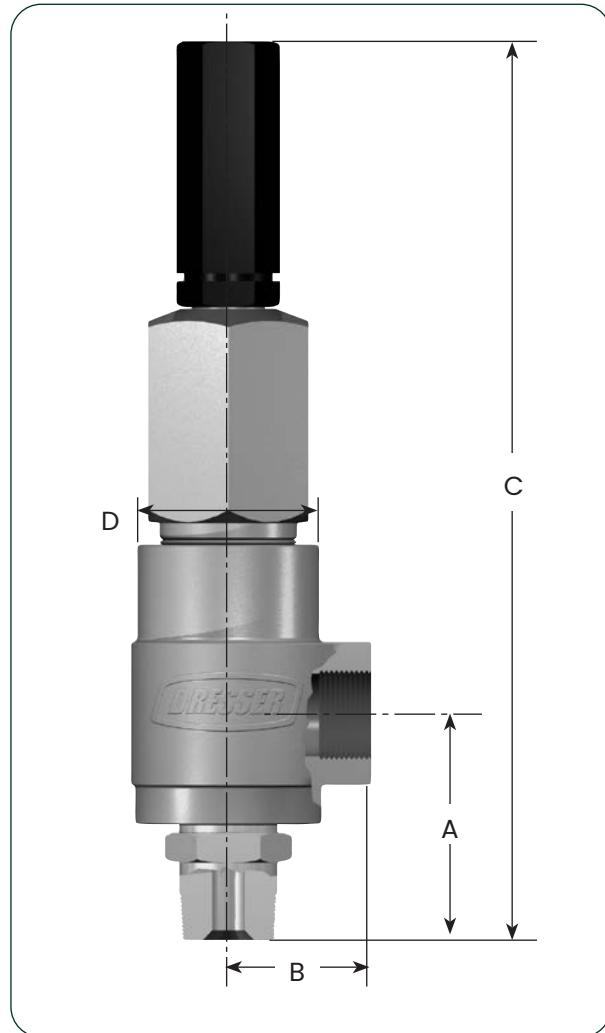
Dimensions and Weights

Threaded Connections

19000 Threaded Connections



19000M-BP Threaded Connections



The key to selecting the appropriate dimensions is to use the numbers in the column named "Valve Type". The "Inlet" column defines the valve by inlet size and connection type, then by outlet size and connection type.

Example: 0.5 - MNPT x 1.0 - FNPT

Inlet size is 0.5" (12.7 mm) with a male NPT pipe thread and the outlet is 1" (25.4 mm) size with a female NPT pipe thread. "SW" indicates socket weld. "Flanged Connections" show size of flange and pressure rating.



CAUTION

Do not seal weld inlet and outlet connections.

Dimensions and Weights

Threaded Connections

Threaded Connections (Standard and Backpressure Designs)															
Valve Type	Inlet			Outlet			A		B		C				
	Size		Type ⁽¹⁾	Size		Type ⁽¹⁾					STD		M-BP		
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm		
19096L	0.5	12.7	MNPT	1	25.4	FNPT	3.25	82.6	1.88	47.75	10.38	263.7	N/A	N/A	
	0.75	19.1	MNPT				3.25	82.6			10.38	263.7			
			FNPT				3.13	79.5			10.25	260.4			
	1	25.4	MNPT				3.25	82.6			10.38	263.7			
19096M	0.5	12.7	MNPT	1	25.4	FNPT	3.25	82.6	2	50.80	12.19	309.6	12.88	327.2	
	0.75	19.1	MNPT				3.25	82.6			12.19	309.6	12.88	327.2	
			FNPT				3.13	79.5			12.06	306.3	12.75	323.9	
	1	25.4	MNPT				3.25	82.6			12.19	309.6	12.88	327.2	
19096H	0.75	19.1	FNPT	1	25.4	FNPT	3.13	79.5	2.38	60.45	12.50	317.5	N/A	N/A	
19110L	0.5	12.7	MNPT	1	25.4	FNPT	3.25	82.6	1.88	47.75	10.38	263.7	N/A	N/A	
	0.75	19.1	MNPT				3.25	82.6			10.38	263.7			
			FNPT				3.13	79.5			10.25	260.4			
	1	25.4	MNPT				3.25	82.6			10.38	263.7			
19110M	0.5	12.7	MNPT	1	25.4	FNPT	3.25	82.6	2	50.80	12.19	309.6	12.88	327.2	
	0.75	19.1	MNPT				3.25	82.6			12.19	309.6			
			FNPT				3.13	79.5			12.06	306.3	N/A	N/A	
	1	25.4	MNPT				3.25	82.6			12.19	309.6	12.88	327.2	
19110H	0.75	19.1	FNPT	1	25.4	FNPT	3.13	79.5	2.38	60.45	12.50	317.5	N/A	N/A	
19126L	0.75	19.1	MNPT	1	25.4	FNPT	3.25	82.6	1.88	47.75	10.38	263.7	N/A	N/A	
			FNPT				3.13	79.5			10.25	260.4			
	1	25.4	MNPT				3.25	82.6			10.38	263.7			
19126M	0.75	19.1	MNPT	1	25.4	FNPT	3.25	82.6	2	50.80	12.19	309.6	12.88	327.2	
			FNPT				3.13	79.5			12.06	306.3	N/A	N/A	
	1	25.4	MNPT				3.25	82.6			12.19	309.6	12.88	327.2	
19126H	0.75	19.1	FNPT	1	25.4	FNPT	3.13	79.5	3.13	79.50	15.94	404.9	N/A	N/A	
19226L	1	25.4	MNPT	1.5	38.1	FNPT	3.63	92.2	2.25	57.15	11.63	295.4	N/A	N/A	
			FNPT				3.38	85.9			11.38	289.1			
19226M	1	25.4	MNPT	1.5	38.1	FNPT	3.63	92.2	2.38	60.45	13	330.2	13.88	352.6	
			FNPT				3.38	85.9			12.75	323.9	N/A	N/A	
19226H	1	25.4	FNPT	1.5	38.1	FNPT	3.13	79.5	3.13	79.50	15.94	404.9	N/A	N/A	
19357L	1.5	38.1	FNPT	2	50.8	FNPT	4.06	103.1	3.13	79.50	15.06	382.5	N/A	N/A	
19357M	1.5	38.1	FNPT	2	50.8	FNPT	4.06	103.1	3.13	79.50	16.88	428.8	N/A	N/A	
19567L	2	50.8	FNPT	2.5	63.5	FNPT	4.06	103.1	3.13	79.50	15.06	382.5	N/A	N/A	
19567M	2	50.8	FNPT	2.5	63.5	FNPT	4.06	103.1	3.13	79.50	16.88	428.8	N/A	N/A	

1. Valves are provided with a male pipe threaded (MNPT) or a female pipe threaded (FNPT) inlet connection.

Dimensions and Weights

Threaded Connections

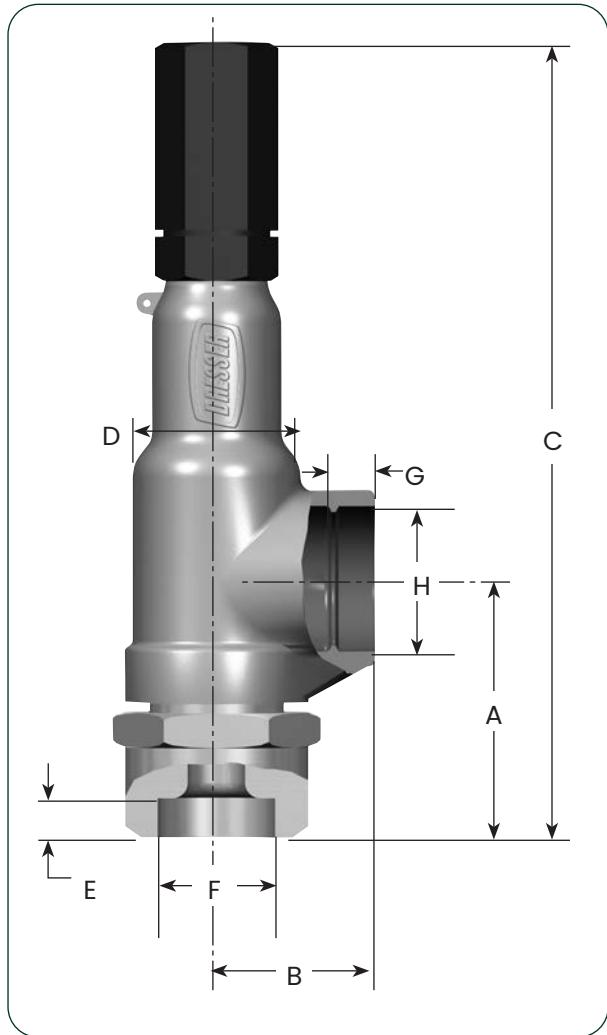
Threaded Connections (Standard and Backpressure Designs)																
Valve Type	Inlet		Type ⁽¹⁾	Outlet		Type ⁽¹⁾	D				Approx. Weight					
	Size			Size			STD		M-BP		STD		M-BP			
	in	mm		in	mm		in	mm	in	mm	lb	kg	lb	kg		
19096L	0.5	12.7	MNPT	1	25.4	FNPT	2	50.8	N/A	N/A	4.75	2.15	N/A	N/A		
	0.75	19.1	MNPT								4.75	2.15				
			FNPT								4.5	2.04				
	1	25.4	MNPT								4.75	2.15				
19096M	0.5	12.7	MNPT	1	25.4	FNPT	2.56	65.0	3.75	95.3	6.5	2.95	11.5	5.22		
	0.75	19.1	MNPT													
			FNPT													
19096H	0.75	19.1	FNPT	1	25.4	FNPT	3.13	79.5	N/A	N/A	11.5	5.22	N/A	N/A		
19110L	0.5	12.7	MNPT	1	25.4	FNPT	2	50.8	N/A	N/A	4.75	2.15	N/A	N/A		
	0.75	19.1	MNPT								4.75	2.15				
			FNPT								4.5	2.04				
	1	25.4	MNPT								4.75	2.15				
19110M	0.5	12.7	MNPT	1	25.4	FNPT	2.56	65	N/A	N/A	3.75	95.3	6.5	2.95		
	0.75	19.1	MNPT								3.75	95.3				
			FNPT								N/A	N/A				
	1	25.4	MNPT								3.75	95.3				
19110H	0.75	19.1	FNPT	1	25.4	FNPT	3.13	79.5	N/A	N/A	11.50	5.22	N/A	N/A		
19126L	0.75	19.1	MNPT	1	25.4	FNPT	2	50.8	N/A	N/A	5.25	2.38	N/A	N/A		
			FNPT								5	2.27				
	1	25.4	MNPT								5.25	2.38				
19126M	0.75	19.1	MNPT	1	25.4	FNPT	2.56	65.	N/A	N/A	3.75	95.3	6.5	2.95		
			FNPT								N/A	N/A				
	1	25.4	MNPT								3.75	95.3				
19126H	.75	19.1	FNPT	1	25.4	FNPT	4.63	117.6	N/A	N/A	30	13.61	N/A	N/A		
19226L	1	25.4	MNPT	1.5	38.1	FNPT	2.38	60.5	N/A	N/A	6.75	3.06	N/A	N/A		
			FNPT								6.5	2.95				
19226M	1	25.4	MNPT	1.5	38.1	FNPT	3.13	79.5	N/A	N/A	3.875	98.4	11.5	5.22		
			FNPT								N/A	N/A				
19226H	1	25.4	FNPT	1.5	38.1	FNPT	4.63	117.6	N/A	N/A	30	13.61	N/A	N/A		
19357L	1.5	38.1	FNPT	2	50.8	FNPT	3.63	92.2	N/A	N/A	18	8.16	N/A	N/A		
19357M	1.5	38.1	FNPT	2	50.8	FNPT	4.63	117.6	N/A	N/A	30	13.61	N/A	N/A		
19567L	2	50.8	FNPT	2.5	63.5	FNPT	3.63	92.2	N/A	N/A	19	8.62	N/A	N/A		
19567M	2	5.08	FNPT	2.5	63.5	FNPT	4.63	117.6	N/A	N/A	30	13.61	N/A	N/A		

1. Valves are provided with a male pipe threaded (MNPT) or a female pipe threaded (FNPT) inlet connection.

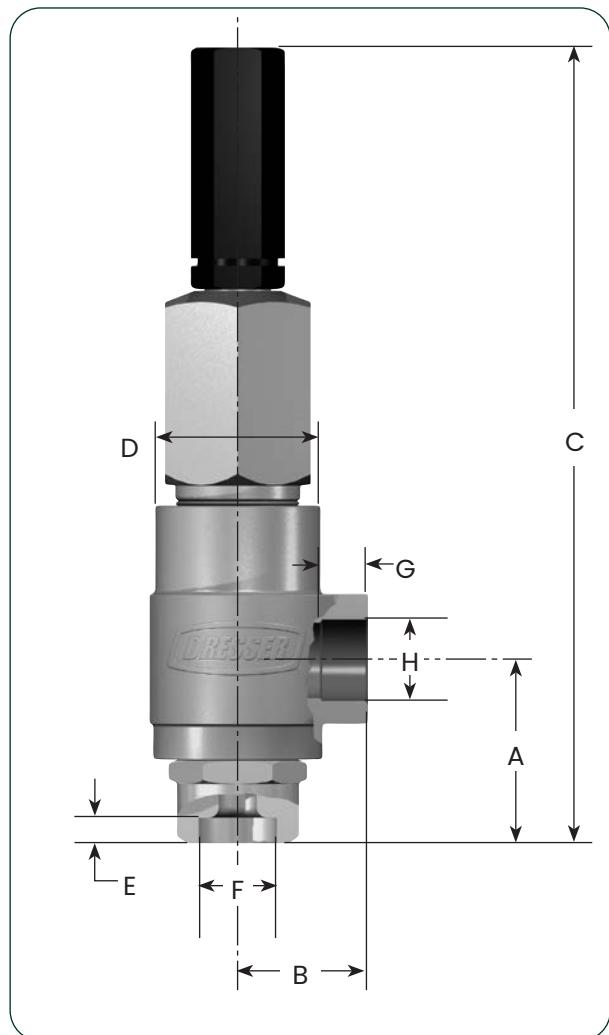
Dimensions

Socket Weld Connections

19000 Socket Weld Connections



19000M-BP Socket Weld Connections



 **CAUTION**

Avoid excessive weld deposits.

Dimensions and Weights

Socket Weld Connections

Socket Weld Connections (Standard and Backpressure Designs)

Valve Type	Inlet			Outlet			A		B		C				D			
	Size		Type	Size		Type					STD		M-BP		STD		M-BP	
	in	mm		in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
19096L	0.5	12.7	SW	1	25.4	SW	3.5	88.9	1.88	47.8	10.63	270	N/A	N/A	2	50.8	N/A	N/A
	0.75	19.1																
	1	25.4																
19096M	0.5	12.7	SW	1	25.4	SW	3.5	88.9	2	50.8	12.44	316	13.13	333.4	2.56	65	3.75	95.3
	0.75	19.1																
	1	25.4																
19096H	0.75	19.1	SW	1	25.4	SW	4	101.6	2.38	60.5	13.38	339.9	N/A	N/A	3.13	79.5	N/A	N/A
19110L	0.5	12.7	SW	1	25.4	SW	3.5	88.9	1.88	47.8	10.63	270	N/A	N/A	2	50.8	N/A	N/A
	0.75	19.1																
	1	25.4																
19110M	0.5	12.7	SW	1	25.4	SW	3.5	88.9	2	50.8	12.44	316	13.13	333.4	2.56	65	3.75	95.3
	0.75	19.1																
	1	25.4																
19110H	0.75	19.1	SW	1	25.4	SW	4	101.6	2.38	60.5	13.38	339.9	N/A	N/A	3.13	79.5	N/A	N/A
19126L	0.75	19.1	SW	1	25.4	SW	3.5	88.9	1.88	47.8	10.63	270	N/A	N/A	2	50.8	N/A	N/A
	1	25.4																
	0.75	19.1																
19126M	0.75	19.1	SW	1	25.4	SW	3.5	88.9	2	50.8	12.44	316	13.13	333.4	2.56	65	3.75	95.3
	1	25.4																
19126H	0.75	19.1	SW	1	25.4	SW	4.5	114.3	3.13	79.5	17.31	439.7	N/A	N/A	4.63	117.6	N/A	N/A
19226L	1	25.4	SW	1.5	38.1	SW	3.94	100.1	2.25	57.2	11.94	303.3	N/A	N/A	2.38	60.5	N/A	N/A
19226M	1	25.4	SW	1.5	38.1	SW	3.94	100.1	2.38	60.5	13.31	338.1	13.88	352.6	3.13	79.5	3.875	98.4
19226H	1	25.4	SW	1.5	38.1	SW	4.5	114.3	3.13	79.5	17.31	439.7	N/A	N/A	4.63	117.6	N/A	N/A
19357L	1.5	38.1	SW	2	50.8	SW	4.75	120.7	3.13	79.5	15.75	400.1	N/A	N/A	3.63	92.2	N/A	N/A
19357M	1.5	38.1	SW	2	50.8	SW	4.75	120.7	3.13	79.5	17.56	446	N/A	N/A	4.63	117.6	N/A	N/A
19567L	2	50.8	SW	2.5	63.5	SW	5.38	136.7	3.13	79.5	16.38	416.1	N/A	N/A	3.63	92.2	N/A	N/A
19567M	2	50.8	SW	2.5	63.5	SW	5.38	136.7	3.13	79.5	18.19	462	N/A	N/A	4.63	117.6	N/A	N/A

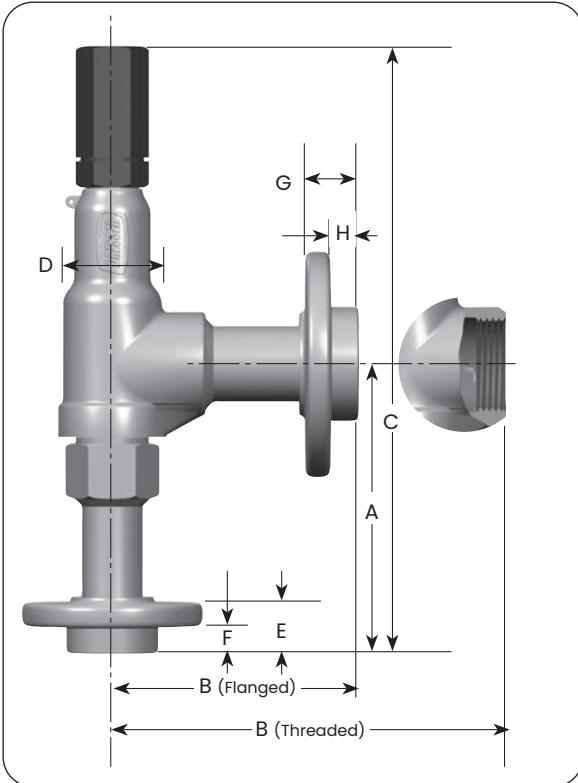
Dimensions and Weights

Socket Weld Connections

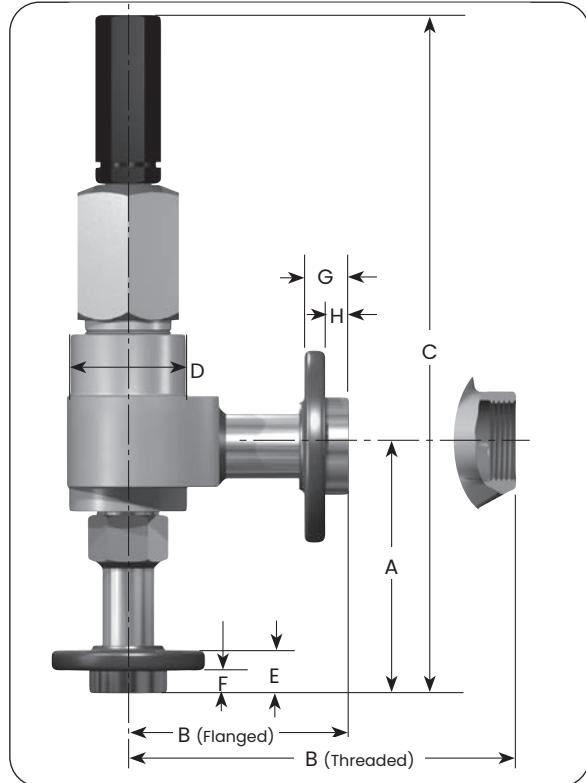
Socket Weld Connections (Standard and Backpressure Designs)																		
Valve Type	Inlet			Outlet			E		F		G		H		Approx. Weight			
	Size		Type	Size		Type									lb	kg	lb	kg
	in	mm	Type	in	mm	Type	in	mm	in	mm	in	mm	in	mm	lb	kg	lb	kg
19096L	0.5	12.7	SW	1	25.4	SW	0.5	12.7	0.86	21.7	0.63	16	1.33	33.8	5.5	2.49	N/A	N/A
	0.75	19.1							1.07	27.1					5.5	2.49		
	1	25.4							1.33	33.8					6.25	2.83		
19096M	0.5	12.7	SW	1	25.4	SW	0.5	12.7	0.86	21.7	0.63	16	1.33	33.8	7	3.18	12	5.44
	0.75	19.1							1.07	27.1					7.5	3.4	12.5	5.67
	1	25.4							1.33	33.8					8	3.63	13	5.9
19096H	0.75	19.1	SW	1	25.4	SW	0.5	12.7	1.07	27.1	0.63	16	1.33	33.8	12	5.44	N/A	N/A
19110L	0.5	12.7	SW	1	25.4	SW	0.5	12.7	0.86	21.7	0.63	16	1.33	33.8	5.5	2.49	N/A	N/A
	0.75	19.1							1.07	27.1					5.5	2.49		
	1	25.4							1.33	33.8					6.25	2.83		
19110M	0.5	12.7	SW	1	25.4	SW	0.5	12.7	0.86	21.7	0.63	16	1.33	33.8	7	3.18	12	5.44
	0.75	19.1							1.07	27.1					7.5	3.4	12	5.44
	1	25.4							1.33	33.8					8	3.63	12.5	5.67
19110H	0.75	19.1	SW	1	25.4	SW	0.5	12.7	1.07	27.1	0.63	16	1.33	33.8	12	5.44	N/A	N/A
19126L	0.75	19.1	SW	1	25.4	SW	0.5	12.7	1.07	27.1	0.63	16	1.33	33.8	6	2.72	N/A	N/A
	1	25.4							1.33	33.8					6.75	3.06		
	0.75	19.1							1.07	27.1					7	3.18	12	5.44
19126M	0.75	19.1	SW	1	25.4	SW	0.5	12.7	1.07	27.1	0.63	16	1.33	33.8	8	3.63	12.5	5.67
	1	25.4							1.33	33.8					8	3.63	12.5	5.67
19126H	0.75	19.1	SW	1	25.4	SW	0.63	16.0	1.07	27.1	0.63	16	1.33	33.8	32	14.51	N/A	N/A
19226L	1	25.4	SW	1.5	38.1	SW	0.5	12.7	1.33	33.8	0.63	16	1.92	48.6	8	3.63	N/A	N/A
19226M	1	25.4	SW	1.5	38.1	SW	0.5	12.7	1.33	33.8	0.63	16	1.92	48.6	12.5	5.67	19.2	8.71
19226H	1	25.4	SW	1.5	38.1	SW	0.63	16	1.33	33.8	0.63	16	1.92	48.6	32	14.51	N/A	N/A
19357L	1.5	38.1	SW	2	50.8	SW	0.63	16	1.92	48.6	0.63	16	2.41	61.1	18.25	8.28	N/A	N/A
19357M	1.5	38.1	SW	2	50.8	SW	0.63	16	1.92	48.6	0.63	16	2.41	61.1	31	14.06	N/A	N/A
19567L	2	50.8	SW	2.5	63.5	SW	0.63	16	2.41	61.1	0.63	16	2.91	73.8	24	10.89	N/A	N/A
19567M	2	50.8	SW	2.5	63.5	SW	0.63	16	2.41	61.1	0.63	16	2.91	73.8	34	15.42	N/A	N/A

Dimensions Flanged Connections

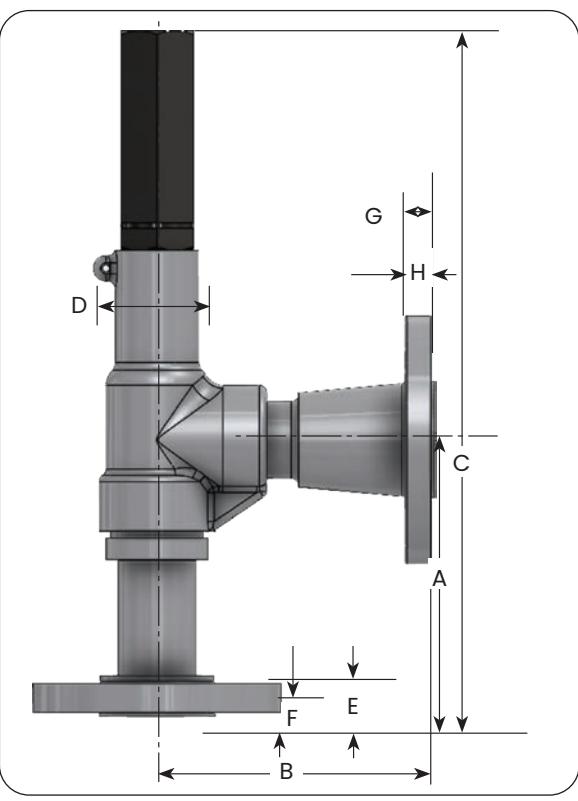
19000 Slip-On Flange Connections
(standard design)



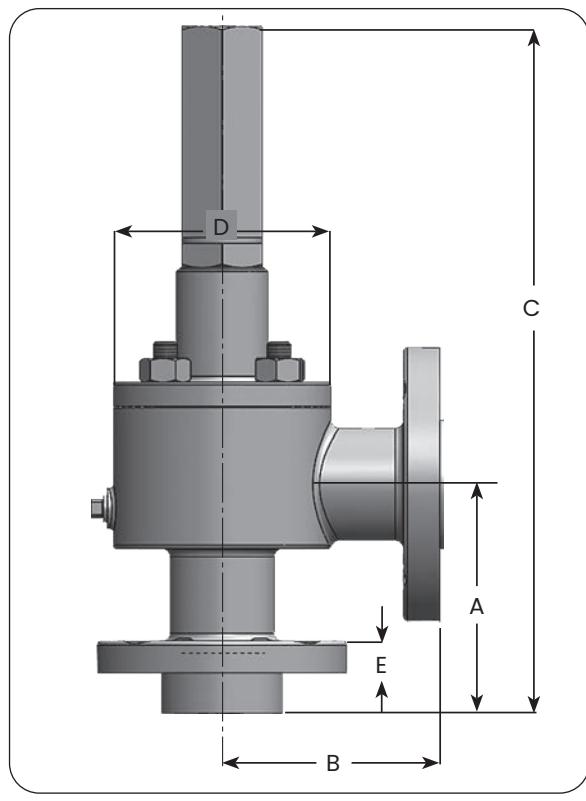
19000M-BP Slip-On Flange Connections
(standard design)



19000 Socket Weld Flange with Locknut
(optional design)



19000 Integral Cast Flange
(optional design)



Dimensions and Weights

Flanged Connections

Flanged Connections (Slip-On and Socket Weld Designs)																				
Valve Type	Inlet			Outlet			A		B		C		D		E					
	Size		Type	Size		Type														
	in	mm		in	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm					
19096L 19110L	0.5	12.7	150# Slip-On	1	25.4	FNPT	6	152.4	1.88	47.8	13.13	333.5	2	50.8	N/A	N/A				
						150# Slip-On			4.88	124					0.88	22.4				
						FNPT			1.88	47.8					N/A	N/A				
						150# Slip-On			4.88	124					1	25.4				
	0.75	19.05	150# Slip-On	1	25.4	FNPT	6.25	158.8	1.88	47.8	13.38	339.9	2	50.8	N/A	N/A				
						150# Slip-On			4.88	124					1	25.4				
			150# SW			150# SW	4.72	119.9	4.75	120.7	11.85	301			0.56	14.2				
			300# Slip-On			FNPT	6.25	158.8	1.88	47.8	13.38	339.9			N/A	N/A				
						150# Slip-On			4.88	124					1.13	28.7				
			300# SW			150# SW	4.72	119.9	4.75	120.7	11.85	301			0.56	14.2				
19126L	1	25.4	150# Slip-On	1	25.4	FNPT	6.5	165.1	1.88	47.8	13.63	346.2	2	50.8	N/A	N/A				
						150# Slip-On			4.88	124					1.06	26.9				
			150# SW			150# SW	4.72	119.9	4.75	120.7	11.85	301			0.56	14.2				
			300# Slip-On			FNPT	6.5	165.1	1.88	47.8	13.63	346.2			N/A	N/A				
						150# Slip-On			4.88	124					1.19	30.2				
			300# SW			150# SW	4.72	119.9	4.75	120.7	11.85	301			0.56	14.2				
	1	19.05	150# Slip-On	1	25.4	FNPT	6.25	158.8	1.88	47.8	13.38	339.9	2	50.8	N/A	N/A				
						150# Slip-On			4.88	124					1	25.4				
			150# SW			150# SW	4.72	119.9	4.75	120.7	11.85	301			0.56	14.2				
			300# Slip-On			FNPT	6.25	158.8	1.88	47.8	13.38	339.9			N/A	N/A				
						150# Slip-On			4.88	124					1.13	28.7				
			300# SW			150# SW	4.72	119.9	4.75	120.7	11.85	301			0.56	14.2				
19226L	1	25.4	150# Slip-On	1	38.1	FNPT	6.5	165.1	1.88	47.8	13.63	346.2	2	60.5	N/A	N/A				
						150# Slip-On			4.88	124					1.06	26.9				
			150# SW			150# SW	4.72	119.9	4.75	120.7	11.85	301			0.56	14.2				
			300# Slip-On			FNPT	6.5	165.1	1.88	47.8	13.63	346.2			N/A	N/A				
						150# Slip-On			4.88	124					1.19	30.2				
			300# SW			150# SW	4.72	119.9	4.75	120.7	11.85	301			0.56	14.2				
			150# Slip-On	2	50.8	FNPT	7.13	181.1	2.25	57.2	14.25	362	2.38	60.5	N/A	N/A				
						150# Slip-On			6.13	155.7					1.06	26.9				
						150# SW			4.72	119.9	4.75	120.7	12.72	323.1			0.69	17.5		
						150# SW			6.13	155.7	N/A	N/A								
19357L	1.5	38.1	150# Slip-On	2	50.8	FNPT	7.13	181.1	3.13	79.5	18.13	460.5	3.63	92.2	N/A	N/A				
						150# Slip-On			6.13	155.7					1.19	30.2				
			300# Slip-On			FNPT			3.13	79.5					N/A	N/A				
						150# Slip-On			6.13	155.7					1.31	33.3				
			150# Slip-On	2.5	63.5	FNPT	7.13	181.1	3.13	79.5	18.13	460.5	3.63	92.2	N/A	N/A				
						150# Slip-On			6.13	155.7					1.38	35.1				
						FNPT			3.13	79.5					N/A	N/A				
						150# Slip-On			6.13	155.7					1.5	38.1				

Dimensions and Weights

Flanged Connections

Flanged Connections (Slip-On and Socket Weld Designs)														
Valve Type	Inlet			Outlet			F		G		H		Approx. Weight	
	Size		Type	Size		Type	in.	mm	in.	mm	in.	mm	lb	kg
	in	mm		in	mm									
19096L 19110L	0.5	12.7	150# Slip-On	1	25.4	FNPT	N/A	N/A	N/A	N/A	N/A	N/A	6.3	2.86
			150# Slip-On			150# Slip-On	0.44	11.1	1.06	26.9	0.5	12.7	9.3	4.22
			300# Slip-On			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	7.3	3.31
			150# Slip-On			150# Slip-On	0.44	11.1	1.06	26.9	0.5	12.7	10.3	4.67
	0.75	19.05	150# Slip-On	1	25.4	FNPT	N/A	N/A	N/A	N/A	N/A	N/A	7	3.18
			150# SW			150# Slip-On	0.5	12.7	1.06	26.9	0.5	12.7	10	4.54
			300# Slip-On			150# SW	0.06	1.5	0.56	14.2	0.06	1.5		
			150# SW			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	8.5	3.86
			300# SW			150# Slip-On	0.5	12.7	1.06	26.9	0.5	12.7	11.5	5.22
			150# SW			150# SW	0.06	1.5	0.56	14.2	0.06	1.5		
	1	25.4	150# Slip-On	1	25.4	FNPT	N/A	N/A	N/A	N/A	N/A	N/A	7.8	3.54
			150# SW			150# Slip-On	0.5	12.7	1.06	26.9	0.5	12.7	10.8	4.9
			300# Slip-On			150# SW	0.06	1.5	0.56	14.2	0.06	1.5		
			150# SW			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	9.3	4.22
			300# SW			150# Slip-On	0.5	12.7	1.06	26.9	0.5	12.7	12.3	5.58
			150# SW			150# SW	0.06	1.5	0.56	14.2	0.06	1.5		
19126L	0.75	19.05	150# Slip-On	1	25.4	FNPT	N/A	N/A	N/A	N/A	N/A	N/A	7.5	3.4
			150# SW			150# Slip-On	0.5	12.7	1.06	26.9	0.5	12.7	10.3	4.67
			300# Slip-On			150# SW	0.06	1.5	0.56	14.2	0.06	1.5		
			300# SW			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	9	4.08
			150# SW			150# Slip-On	0.5	12.7	1.06	26.9	0.5	12.7	12	5.44
			150# SW			150# SW	0.06	1.5	0.56	14.2	0.06	1.5		
	1	25.4	150# Slip-On	1	25.4	FNPT	N/A	N/A	N/A	N/A	N/A	N/A	8.3	3.76
			150# SW			150# Slip-On	0.5	12.7	1.06	26.9	0.5	12.7	11.3	5.13
			300# Slip-On			150# SW	0.06	1.5	0.56	14.2	0.06	1.5		
			150# SW			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	9.8	4.45
			300# SW			150# Slip-On	0.5	12.7	1.06	26.9	0.5	12.7	12.8	5.81
			150# SW			150# SW	0.06	1.5	0.56	14.2	0.06	1.5		
19226L	1	25.4	150# Slip-On	1.5	38.1	FNPT	N/A	N/A	N/A	N/A	N/A	N/A	9.8	4.45
			150# SW			150# Slip-On	0.5	12.7	1.19	30.2	0.5	12.7	14.8	6.71
			300# Slip-On			150# SW	0.06	1.5	0.69	17.5	0.06	1.5		
			150# SW			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	11.3	5.13
			300# SW			150# Slip-On	0.5	12.7	1.19	30.2	0.5	12.7	16.3	7.39
			150# SW			150# SW	0.06	1.5	0.69	17.5	0.06	1.5		
19357L	1.5	38.1	150# Slip-On	2	50.8	FNPT	N/A	N/A	N/A	N/A	N/A	N/A	22.8	10.34
			150# SW			150# Slip-On	0.5	12.7	1.38	35.1	0.63	16	30.3	13.74
			300# Slip-On			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	26.3	11.93
			150# SW			150# Slip-On	0.5	12.7	1.38	35.1	0.63	16	33.8	15.33
19567L	2	50.8	150# Slip-On	2.5	63.5	FNPT	N/A	N/A	N/A	N/A	N/A	N/A	26.8	12.16
			150# SW			150# Slip-On	0.63	15.9	1.5	38.1	0.63	16	38.3	17.37
			300# Slip-On			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	28.8	13.06
			150# SW			150# Slip-On	0.63	15.9	1.5	38.1	0.63	16	40.3	18.28

Dimensions and Weights

Flanged Connections

Flanged Connections (Slip-On and Socket Weld Designs)																
Valve Type	Inlet			Outlet			A		B		C		D		E	
	Size		Type	Size		Type										
	in	mm		in	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	
19096M 19110M	0.5	12.7	300# Slip-On	1	25.4	FNPT	6	152.4	2	50.8	2.56	65	N/A	N/A	N/A	N/A
			150# Slip-On			4.88			4.88	124					1	25.4
			600# Slip-On			FNPT			2	50.8					N/A	N/A
			150# Slip-On			4.88			4.88	124					1	25.4
			900# Slip-On			FNPT	6.5	165.1	2	50.8	15.44	392.2	N/A	N/A	N/A	N/A
			300# Slip-On			4.88			4.88	124					1.5	38.1
			1500# Slip-On			FNPT			2	50.8					N/A	N/A
	0.75	19.1	300# Slip-On	1	25.4	300# SW	6.25	158.75	2	50.8	2.56	65	N/A	N/A	N/A	N/A
			150# Slip-On			4.88			4.88	124					1.13	28.7
			600# Slip-On			150# SW			4.72	119.9					0.62	15.7
			600# SW			FNPT	6.25	158.75	2	50.8	15.44	392.2	N/A	N/A	N/A	N/A
			150# Slip-On			4.88			4.88	124					1.13	28.7
			900# Slip-On			150# SW			4.72	119.9					0.87	22.1
			900# SW			FNPT	6.75	171.45	2	50.8	15.44	398.5	N/A	N/A	N/A	N/A
			1500# Slip-On			300# Slip-On			6.75	171.45					1.63	41.4
			1500# SW			300# SW			4.72	119.9					1.25	31.8
19126M	1	25.4	300# Slip-On	1	25.4	FNPT	6.5	165.1	2	50.8	2.56	65	N/A	N/A	N/A	N/A
			150# Slip-On			4.88			4.88	124					1.19	30.2
			300# SW			150# SW			4.72	119.9					0.69	17.5
			600# Slip-On			FNPT	6.5	165.1	2	50.8	15.44	392.2	N/A	N/A	N/A	N/A
			600# SW			150# Slip-On			4.88	124					1.19	30.2
			900# Slip-On			150# SW			4.72	119.9					0.94	23.9
			900# SW			FNPT	7.5	190.5	2	50.8	16.44	417.6	N/A	N/A	N/A	N/A
			1500# Slip-On			300# Slip-On			6.75	190.5					1.75	44.5
			1500# SW			300# SW			5.72	145.3					1.37	34.8
	0.75	19.1	300# Slip-On	1	25.4	FNPT	6.25	158.75	2	50.8	2.56	65	N/A	N/A	N/A	N/A
			150# Slip-On			4.88			4.88	124					1.13	28.7
			300# SW			150# SW			4.72	119.9					0.62	15.7
			600# Slip-On			FNPT	6.25	158.75	2	50.8	15.44	385.8	N/A	N/A	N/A	N/A
			600# SW			150# Slip-On			4.88	124					1.13	28.7
			900# Slip-On			150# SW			4.72	119.9					0.87	22.1
			900# SW			FNPT	6.75	171.45	2	50.8	15.44	398.5	N/A	N/A	N/A	N/A
			1500# Slip-On			300# Slip-On			6.75	171.45					1.63	41.4
			1500# SW			300# SW			4.72	119.9					1.25	31.8
	1	25.4	300# Slip-On	1	25.4	FNPT	6.5	165.1	2	50.8	2.56	65	N/A	N/A	N/A	N/A
			150# Slip-On			4.88			4.88	124					1.19	30.2
			300# SW			150# SW			4.72	119.9					0.69	17.5
			600# Slip-On			FNPT	6.5	165.1	2	50.8	15.44	392.2	N/A	N/A	N/A	N/A
			600# SW			150# Slip-On			4.88	124					1.19	30.2
			900# Slip-On			150# SW			4.72	119.9					0.94	23.9
			900# SW			FNPT	7.5	190.5	2	50.8	16.44	417.6	N/A	N/A	N/A	N/A
			1500# Slip-On			300# Slip-On			6.75	190.5					1.75	44.5
			1500# SW			300# SW			5.72	145.3					1.37	34.8

Dimensions and Weights

Flanged Connections

Flanged Connections (Slip-On and Socket Weld Designs)														
Valve Type	Inlet			Outlet			F		G		H		Approx. Weight	
	Size		Type	Size		Type	in.	mm	in.	mm	in.	mm	lb	kg
	in	mm		in	mm									
19096M 19110M	0.5	12.7	300# Slip-On	1	25.4	FNPT	N/A	N/A	N/A	N/A	N/A	N/A	9	4.08
			150# Slip-On			150# Slip-On	0.44	11.1	1.06	26.9	0.5	12.7	12	5.44
			600# Slip-On			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	9	4.08
			150# Slip-On			150# Slip-On	0.44	11.1	1.06	26.9	0.5	12.7	12	5.44
			FNPT			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	13.3	6.03
			300# Slip-On			300# Slip-On	0.63	15.9	1.19	30.2	0.5	12.7	17.8	8.07
			FNPT			300# Slip-On	N/A	N/A	N/A	N/A	N/A	N/A	13.3	6.03
	0.75	19.1	300# Slip-On	1	25.4	FNPT	N/A	N/A	N/A	N/A	N/A	N/A	10.3	4.67
			300# SW			150# Slip-On	0.5	12.7	1.06	26.9	0.5	12.7	13.3	6.03
			600# Slip-On			150# SW	0.06	1.5	0.56	14.2	0.06	1.5		
			600# SW			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	10.3	4.67
			900# Slip-On			150# Slip-On	0.5	12.7	1.06	26.9	0.5	12.7	13.3	6.03
			900# SW			150# SW	0.25	6.4	0.56	14.2	0.06	1.5		
			1500# Slip-On			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	13.5	6.12
19126M	1	25.4	300# Slip-On	1	25.4	300# SW	0.63	15.9	1.19	30.2	0.5	12.7	18	8.16
			300# SW			150# Slip-On	0.5	12.7	1.06	26.9	0.5	12.7		
			600# Slip-On			150# SW	0.06	1.5	0.56	14.2	0.06	1.5	14	6.35
			600# SW			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	11	4.99
			900# Slip-On			150# Slip-On	0.5	12.7	1.06	26.9	0.5	12.7	14	6.35
			900# SW			150# SW	0.25	6.4	0.56	14.2	0.06	1.5		
			1500# Slip-On			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	15.5	7.03
	0.75	19.1	300# Slip-On	1	25.4	300# SW	0.63	15.9	1.19	30.2	0.5	12.7	20	9.07
			300# SW			150# Slip-On	0.5	12.7	1.06	26.9	0.5	12.7		
			600# Slip-On			150# SW	0.06	1.5	0.56	14.2	0.06	1.5	14	6.35
			600# SW			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	13.5	6.12
			900# Slip-On			300# Slip-On	0.63	15.9	1.19	30.2	0.5	12.7	20	9.07
			900# SW			300# SW	0.25	6.4	0.69	17.5	0.06	1.5		
			1500# Slip-On			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	15.5	7.03
			1500# SW			300# Slip-On	0.63	15.9	1.19	30.2	0.5	12.7	20	9.07
			1500# SW			300# SW	0.25	6.4	0.69	17.5	0.06	1.5		
19126M	1	25.4	300# Slip-On	1	25.4	FNPT	N/A	N/A	N/A	N/A	N/A	N/A	10.3	4.67
			300# SW			150# Slip-On	0.5	12.7	1.06	26.9	0.5	12.7	13.3	6.03
			600# Slip-On			150# SW	0.06	1.5	0.56	14.2	0.06	1.5		
			600# SW			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	10.3	4.67
			900# Slip-On			150# Slip-On	0.5	12.7	1.06	26.9	0.5	12.7	13.3	6.03
			900# SW			150# SW	0.25	6.4	0.56	14.2	0.06	1.5		
			1500# Slip-On			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	13.5	6.12
	0.75	19.1	300# Slip-On	1	25.4	300# SW	0.63	15.9	1.19	30.2	0.5	12.7	18	8.16
			300# SW			150# Slip-On	0.5	12.7	1.06	26.9	0.5	12.7		
			600# Slip-On			150# SW	0.06	1.5	0.56	14.2	0.06	1.5	14	6.35
			600# SW			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	11	4.99
			900# Slip-On			300# Slip-On	0.63	15.9	1.19	30.2	0.5	12.7	13.3	6.03
			900# SW			300# SW	0.25	6.4	0.69	17.5	0.06	1.5		
			1500# Slip-On			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	13.5	6.12
			1500# SW			300# Slip-On	0.63	15.9	1.19	30.2	0.5	12.7	18	8.16
			1500# SW			300# SW	0.25	6.4	0.69	17.5	0.06	1.5		

Dimensions and Weights

Flanged Connections

Flanged Connections (Slip-On and Socket Weld Designs)																					
Valve Type	Inlet			Outlet			A		B		C		D		E						
	Size		Type	Size		Type															
	in	mm		in	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm						
19226M	1	25.4	1.5	38.1	1.5	38.1	FNPT	6.25	158.8	2.38	60.5	15.63	397	3.13	79.5	N/A	N/A				
							150# Slip-On		6.13	155.7						1.19	30.2				
							300# SW	4.72	119.9	4.75	120.7	14.1	358.1			0.69	17.5				
							150# SW	6.25	158.8	2.38	60.5	15.63	397					N/A	N/A		
							FNPT		6.13	155.7			1.19			30.2					
							150# SW	4.72	119.9	4.75	120.7	14.1	358.1			0.94	23.9				
							FNPT	7.25	184.2	2.38	60.5	16.63	422.4					N/A	N/A		
							300# Slip-On		6.13	155.7			1.75			44.5					
							300# SW	5.72	145.3	6.75	171.5	15.1	383.5			1.37	34.8				
							FNPT	7.25	184.2	2.38	60.5	16.63	422.4					N/A	N/A		
							300# Slip-On		6.13	155.7			1.75			44.5					
							300# SW	5.72	145.3	6.75	171.5	15.1	383.5			1.37	34.8				
19357M	1.5	38.1	2	50.8	2	50.8	FNPT			3.13	79.5	19.94	506.5	4.63	117.6	N/A	N/A				
							150# Slip-On	7.13	181.1	6.13	155.7					1.31	33.3				
							FNPT			3.13	79.5					N/A	N/A				
							150# Slip-On			6.13	155.7					1.38	35.1				
							FNPT			3.13	79.5	21.06	534.9				N/A	N/A			
							300# Slip-On	8.25	209.6	6.13	155.7						1.88	47.8			
							FNPT			3.13	79.5						N/A	N/A			
							300# Slip-On			6.13	155.7						1.88	47.8			
19567M	2	50.8	2.5	63.5	2.5	63.5	FNPT			3.13	79.5	19.94	506.5	4.63	117.6	N/A	N/A				
							150# Slip-On	7.13	181.1	6.13	155.7					1.5	38.1				
							FNPT			3.13	79.5					N/A	N/A				
							150# Slip-On			6.13	155.7					1.63	41.4				
							FNPT			3.13	79.5	21.06	534.9				N/A	N/A			
							300# Slip-On	8.25	209.6	6.13	155.7						2.13	54.1			
							FNPT			3.13	79.5						N/A	N/A			
							300# Slip-On			6.13	155.7						2.13	54.1			

Dimensions and Weights

Flanged Connections

Flanged Connections (Slip-On and Socket Weld Designs)														
Valve Type	Inlet			Outlet			F		G		H		Approx. Weight	
	Size		Type	Size		Type	in.	mm	in.	mm	in.	mm	lb	kg
	in	mm		in	mm									
19226M	1	25.4	300# Slip-On	1.5	38.1	FNPT	N/A	N/A	N/A	N/A	N/A	N/A	16	7.26
						150# Slip-On	0.5	12.7	1.19	30.2	0.5	12.7	19	8.62
						150# SW	0.06	1.5	0.69	17.5	0.06	1.5	17.6	8.0
						FNPT	N/A	N/A	N/A	N/A	N/A	N/A	16	7.26
						150# Slip-On	0.5	12.7	1.19	30.2	0.5	12.7	21	9.53
						150# SW	0.25	6.4	0.69	17.5	0.06	1.5		
						FNPT	N/A	N/A	N/A	N/A	N/A	N/A	20.5	9.3
						300# Slip-On	0.63	15.9	1.31	33.3	0.5	12.7	29	13.15
						300# SW	0.25	6.4	0.81	20.6	0.06	1.5		
						FNPT	N/A	N/A	N/A	N/A	N/A	N/A	20.5	9.3
						300# Slip-On	0.63	15.9	1.31	33.3	0.5	12.7	29	13.15
						300# SW	0.25	6.4	0.81	20.6	0.06	1.5		
19357M	1.5	38.1	300# Slip-On	2	50.8	FNPT	N/A	N/A	N/A	N/A	N/A	N/A	38.3	17.37
						150# Slip-On	0.5	12.7	1.38	35.1	0.63	15.9	45.8	20.77
						FNPT	N/A	N/A	N/A	N/A	N/A	N/A	38.3	17.37
						150# Slip-On	0.5	12.7	1.38	35.1	0.63	15.9	45.8	20.77
						FNPT	N/A	N/A	N/A	N/A	N/A	N/A	46.8	21.23
						300# Slip-On	0.63	15.9	1.5	38.1	0.63	15.9	56.3	25.54
						FNPT	N/A	N/A	N/A	N/A	N/A	N/A	46.8	21.23
						300# Slip-On	0.63	15.9	1.5	38.1	0.63	15.9	56.3	25.54
19567M	2	50.8	300# Slip-On	2.5	63.5	FNPT	N/A	N/A	N/A	N/A	N/A	N/A	39.8	18.05
						150# Slip-On	0.63	15.9	1.5	38.1	0.63	15.9	51.3	23.27
						FNPT	N/A	N/A	N/A	N/A	N/A	N/A	40.8	18.51
						150# Slip-On	0.63	15.9	1.5	38.1	0.63	15.9	52.3	23.72
						FNPT	N/A	N/A	N/A	N/A	N/A	N/A	55.3	25.08
						300# Slip-On	0.63	15.9	1.63	41.4	0.63	15.9	68.8	31.21
						FNPT	N/A	N/A	N/A	N/A	N/A	N/A	55.3	25.08
						300# Slip-On	0.63	15.9	1.63	41.4	0.63	15.9	68.8	31.21

Dimensions and Weights

Flanged Connections

Flanged Connections (Slip-On and Socket Weld Designs)																
Valve Type	Inlet			Outlet			A		B		C		D		E	
	Size		Type	Size		Type										
	in	mm		in	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	
19096H 19110H	0.75	19.1	1500# Slip-On	1	25.4	FNPT	6.5	165.1	2.38	60.5	15.63	397	3.13	79.5	N/A	N/A
			300# Slip-On			300# SW	5.72	145.3	6.75	171.5	14.85	377.2			1.63	41.4
			1500# SW			300# SW	6.5	165.1	2.38	60.5	15.63	397			1.37	34.8
			2500# Slip-On			FNPT	6.5	165.1	3.13	79.5	19.06	484.1			N/A	N/A
			300# Slip-On			300# SW	6.25	158.8	5.72	145.3	18.28	464.3			1.88	47.8
			1500# Slip-On			FNPT	6.5	165.1	6.25	158.8	4.63	117.6			N/A	N/A
19126H	0.75	19.1	1500# SW	1	25.4	300# Slip-On	6.5	165.1	3.13	79.5	19.06	484.1	4.63	117.6	1.63	41.4
			2500# Slip-On			300# SW	6.25	158.8	5.72	145.3	18.28	464.3			1.37	34.8
			1500# Slip-On			FNPT	6.5	165.1	6.25	158.8	4.63	117.6			N/A	N/A
			300# Slip-On			300# SW	7.25	184.15	3.13	79.5	19.06	484.1			1.88	47.8
			1500# SW			300# Slip-On	7.25	184.15	6.13	155.7	4.63	117.6			N/A	N/A
			2500# Slip-On			300# SW	5.72	145.3	6.75	171.5	14.85	377.2			1.75	44.5
19226H	1	25.4	1500# Slip-On	1.5	38.1	FNPT	7.25	184.15	6.13	155.7	16.38	416.1	4.63	117.6	1.37	34.8
			300# Slip-On			300# SW	5.72	145.3	6.75	171.5	14.85	377.2			N/A	N/A
			1500# SW			FNPT	7.25	184.15	6.13	155.7	16.38	416.1			2	50.8
			2500# Slip-On			300# Slip-On	5.72	145.3	3.13	79.5	4.63	117.6			N/A	N/A
			1500# SW			300# Slip-On	6.25	158.8	6.75	171.5	14.85	377.2			1.75	44.5
			2500# Slip-On			300# SW	7.25	184.15	6.13	155.7	16.38	416.1			1.37	34.8

Dimensions and Weights

Flanged Connections

Flanged Connections (Slip-On and Socket Weld Designs)															
Valve Type	Inlet			Outlet			F		G		H		Approx. Weight		
	Size		Type	Size		Type	in.	mm	in.	mm	in.	mm	lb	kg	
	in	mm		in	mm										
19096H	0.75	19.1	1500# Slip-On	1	25.4	FNPT	N/A	N/A	N/A	N/A	N/A	N/A	18.5	8.39	
			300# Slip-On			0.63	15.9	1.19	30.2	0.5	12.7		23	10.43	
	19110H		1500# SW			300# SW	0.25	6.4	0.69	17.5	0.06	1.5			
			2500# Slip-On			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	20.8	9.43	
19126H	0.75	19.1	300# Slip-On	1	25.4	300# Slip-On	0.63	15.9	1.19	30.2	0.5	12.7	25.3	11.48	
			1500# SW			300# SW	0.25	6.4	0.69	17.5	0.06	1.5			
			2500# Slip-On			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	39	17.69	
			300# Slip-On			300# Slip-On	0.63	15.9	1.19	30.2	0.5	12.7	41.5	18.82	
			1500# Slip-On			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	39	17.69	
19226H	1	25.4	1500# Slip-On	1.5	38.1	300# Slip-On	0.63	15.9	1.31	33.3	0.5	12.7	47	21.32	
			1500# SW			300# SW	0.25	6.4	0.69	17.5	0.06	1.5			
			2500# Slip-On			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	43.5	19.73	
			300# Slip-On			300# Slip-On	0.63	15.9	1.31	33.3	0.5	12.7	51.5	23.36	
			1500# SW			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	39	17.69	

Dimensions and Weights

Flanged Connections

Flanged Connections (Back Pressure Design)																		
Valve Type	Inlet			Outlet			A		B		C		D		E			
	Size		Type	Size		Type												
	in	mm		in	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm			
19096M-BP 19110M-BP	0.5	12.7	150# Slip-On	1	25.4	FNPT	6	152.4	2	50.8	15.63	397	3.75	95.3	N/A	N/A		
						150# Slip-On			4.88	124					0.88	22.4		
						FNPT			2	50.8					N/A	N/A		
						150# Slip-On			4.88	124					1	25.4		
						FNPT			2	50.8					N/A	N/A		
						150# Slip-On			4.88	124					1	25.4		
						FNPT	6.5	165.1	2	50.8	16.13	409.7			N/A	N/A		
						300# Slip-On			4.88	124					1.5	38.1		
						FNPT			2	50.8					N/A	N/A		
						300# Slip-On			4.88	124					1.5	38.1		
						300# Slip-On			4.88	124					N/A	N/A		
19126M-BP	0.75	19.1	150# Slip-On	1	25.4	FNPT	6.25	158.75	2	50.8	15.88	403.4	3.75	95.3	N/A	N/A		
						150# Slip-On			4.88	124					1	25.4		
						FNPT			2	50.8					N/A	N/A		
						150# Slip-On			4.88	124					1.13	28.7		
						FNPT			2	50.8					N/A	N/A		
						150# Slip-On			4.88	124					1.13	28.7		
						FNPT	6.75	171.45	2	50.8	16.38	416.1			N/A	N/A		
						300# Slip-On			4.88	124					1.63	41.4		
						FNPT			2	50.8					N/A	N/A		
						300# Slip-On			4.88	124					1.63	41.4		
						300# Slip-On			4.88	124					N/A	N/A		
19226M-BP	1	25.4	150# Slip-On	1	25.4	FNPT	6.5	165.1	2	50.8	16.13	409.7	3.75	95.3	N/A	N/A		
						150# Slip-On			4.88	124					1.06	26.9		
						FNPT			2	50.8					N/A	N/A		
						150# Slip-On			4.88	124					1.19	30.2		
						FNPT			2	50.8					N/A	N/A		
						150# Slip-On			4.88	124					1.19	30.2		
						FNPT	7.5	190.5	2	50.8	17.13	435.1			N/A	N/A		
						300# Slip-On			4.88	124					1.75	44.5		
						FNPT			2	50.8					N/A	N/A		
						300# Slip-On			4.88	124					1.75	44.5		
						300# Slip-On			4.88	124					N/A	N/A		
						300# Slip-On			4.88	124					1.75	44.5		
19226M-BP	1	25.4	150# Slip-On	1.5	38.1	FNPT	6.25	158.8	2.38	60.5	15.19	385.826	2.56	65.024	N/A	N/A		
						150# Slip-On			6.13	155.7					1	25.4		
						FNPT			2.38	60.5					N/A	N/A		
						150# Slip-On			6.13	155.7					1.13	28.7		
						FNPT			2.38	60.5					N/A	N/A		
						150# Slip-On			6.13	155.7					1.13	28.7		
						FNPT	7.25	184.2	2.38	60.5	16.44	417.576	2.56	65.024	N/A	N/A		
						300# Slip-On			6.13	155.7					1.19	30.2		
						FNPT			2.38	60.5					N/A	N/A		
						300# Slip-On			6.13	155.7					1.19	30.2		
						FNPT			2.38	60.5					N/A	N/A		
						300# Slip-On			6.13	155.7					1.19	30.2		

Dimensions and Weights

Flanged Connections

Flanged Connections (Back Pressure Design)														
Valve Type	Inlet			Outlet			F		G		H		Approx. Weight	
	Size		Type	Size		Type							lb	kg
	in	mm		in	mm	in.	mm	in.	mm	in.	mm	lb	kg	
19096M-BP 19110M-BP	0.5	12.7	150# Slip-On	1	25.4	FNPT	N/A	N/A	N/A	N/A	N/A	N/A	13	5.9
			150# Slip-On			150# Slip-On	0.438	11.1	1.06	26.9	0.5	12.7	16	7.3
			300# Slip-On			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	14	6.4
			150# Slip-On			150# Slip-On	0.438	11.1	1.06	26.9	0.5	12.7	17	7.7
			600# Slip-On			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	14	6.4
			900# Slip-On			150# Slip-On	0.438	11.1	1.06	26.9	0.5	12.7	17	7.7
			1500# Slip-On			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	18.25	8.3
	0.75	19.1	300# Slip-On	1	25.4	300# Slip-On	0.625	15.9	1.19	30.2	0.5	12.7	22.75	10.3
			150# Slip-On			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	18.25	8.3
			600# Slip-On			150# Slip-On	0.625	15.9	1.19	30.2	0.5	12.7	22.75	10.3
19126M-BP	1	25.4	150# Slip-On	1	25.4	FNPT	N/A	N/A	N/A	N/A	N/A	N/A	13.75	6.2
			150# Slip-On			150# Slip-On	0.5	12.7	1.06	26.9	0.5	12.7	16.75	7.6
			300# Slip-On			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	15.25	6.9
			150# Slip-On			150# Slip-On	0.5	12.7	1.06	26.9	0.5	12.7	18.25	8.3
			600# Slip-On			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	15.25	6.9
			900# Slip-On			150# Slip-On	0.5	12.7	1.06	26.9	0.5	12.7	18.25	8.3
			1500# Slip-On			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	20	9.1
	1	25.4	300# Slip-On	1	25.4	300# Slip-On	0.625	15.9	1.19	30.2	0.5	12.7	23	10.4
			150# Slip-On			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	20	9.1
			600# Slip-On			150# Slip-On	0.625	15.9	1.19	30.2	0.5	12.7	23	10.4
19226M-BP	0.75	19.1	150# Slip-On	1	25.4	FNPT	N/A	N/A	N/A	N/A	N/A	N/A	14.5	6.6
			150# Slip-On			150# Slip-On	0.5	12.7	1.06	26.9	0.5	12.7	17.5	7.9
			300# Slip-On			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	16	7.3
			150# Slip-On			150# Slip-On	0.5	12.7	1.06	26.9	0.5	12.7	19	8.6
			600# Slip-On			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	16	7.3
			900# Slip-On			150# Slip-On	0.5	12.7	1.06	26.9	0.5	12.7	19	8.6
			1500# Slip-On			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	22	10
	1	25.4	300# Slip-On	1	25.4	300# Slip-On	0.625	15.9	1.19	30.2	0.5	12.7	25	11.3
			150# Slip-On			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	22	10
			600# Slip-On			150# Slip-On	0.625	15.9	1.19	30.2	0.5	12.7	25	11.3
19226M-BP	1	25.4	150# Slip-On	1	38.1	FNPT	N/A	N/A	N/A	N/A	N/A	N/A	16	7.3
			150# Slip-On			150# Slip-On	0.5	12.7	1.06	26.9	0.5	12.7	19	8.6
			300# Slip-On			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	16	7.3
			150# Slip-On			150# Slip-On	0.5	12.7	1.06	26.9	0.5	12.7	19	8.6
			600# Slip-On			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	22	10
			900# Slip-On			300# Slip-On	0.63	15.9	1.19	30.2	0.5	12.7	25	11.3
			1500# Slip-On			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	22	10
	1	25.4	300# Slip-On	1	38.1	300# Slip-On	0.63	15.9	1.19	30.2	0.5	12.7	25	11.3
			150# Slip-On			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	17	7.7
			600# Slip-On			150# Slip-On	0.5	12.7	1.19	30.2	0.5	12.7	20	9.1
			900# Slip-On			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	23	10.4
			1500# Slip-On			300# Slip-On	0.63	15.9	1.19	30.2	0.5	12.7	26	11.8
			150# Slip-On			FNPT	N/A	N/A	N/A	N/A	N/A	N/A	23	10.4
			600# Slip-On			300# Slip-On	0.63	15.9	1.19	30.2	0.5	12.7	26	11.8

Dimensions and Weights

Flanged Connections

Flanged Connections (Integral Cast Flange Design)

Valve Type	Inlet			Outlet			A		B		C		D		E		Approx. Weight	
	Size		Type	Size		Type	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lb	kg
	in	mm		in	mm		in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lb	kg
19096L 19110L	0.75	19.05	150#	1	25.4	150#	3.56	90.42	3.44	87.38	10.75	273.05	3.56	90.42	1.03	26.16	12.75	5.78
			300#				4.13	104.90			11.25	285.75			1.28	32.51	15	6.80
	1	25.4	150#	1	25.4	150#	3.56	90.42	3.44	87.38	10.75	273.05	3.56	90.42	1.06	26.92	13.25	6.01
			300#				4.13	104.90			11.25	285.75			1.35	34.29	15.75	7.14
19096M 19110M	0.75	19.05	300#	1	25.4	150#	4.13	104.90	3.44	87.38	13	330.20	3.56	90.42	1.28	32.51	15	6.80
			600#															
	1	25.4	300#	1	25.4	150#	4.13	104.90	3.44	87.38	13	330.20	3.56	90.42	1.35	34.29	15.75	7.14
			600#															

Pressure and Temperature

General Information

19000 and 19000M-BP Series

These ratings apply to threaded or socket weld end connections.

When the valves are supplied with flanged connections the flange ratings may govern the range of valve pressure and temperature rating.

Allowable total backpressure is the sum of the constant and variable back pressure, superimposed and built-up.

19000

- Constant back pressure - 400 psig (27.58 barg).
- Variable back pressure (superimposed or built-up) - 400 psig (27.58 barg) or 10 percent of set pressure whichever is smaller.

19000M-BP

- Liquid: 70 percent of set pressure (Thermal relief applications may be supplied with back pressure up to 90% of set pressure)
- Gas: 50 percent of set pressure
- Total back pressure for liquid or gas shall not exceed 400 psig (27.58 barg)

Valves with set pressures less than 15 psig (1.03 barg) cannot be stamped with the ASME Code stamp.

Note: When soft seats are used, Elastometer material may govern the valve pressure and temperature rating.



19000 and 19000M-BP Series

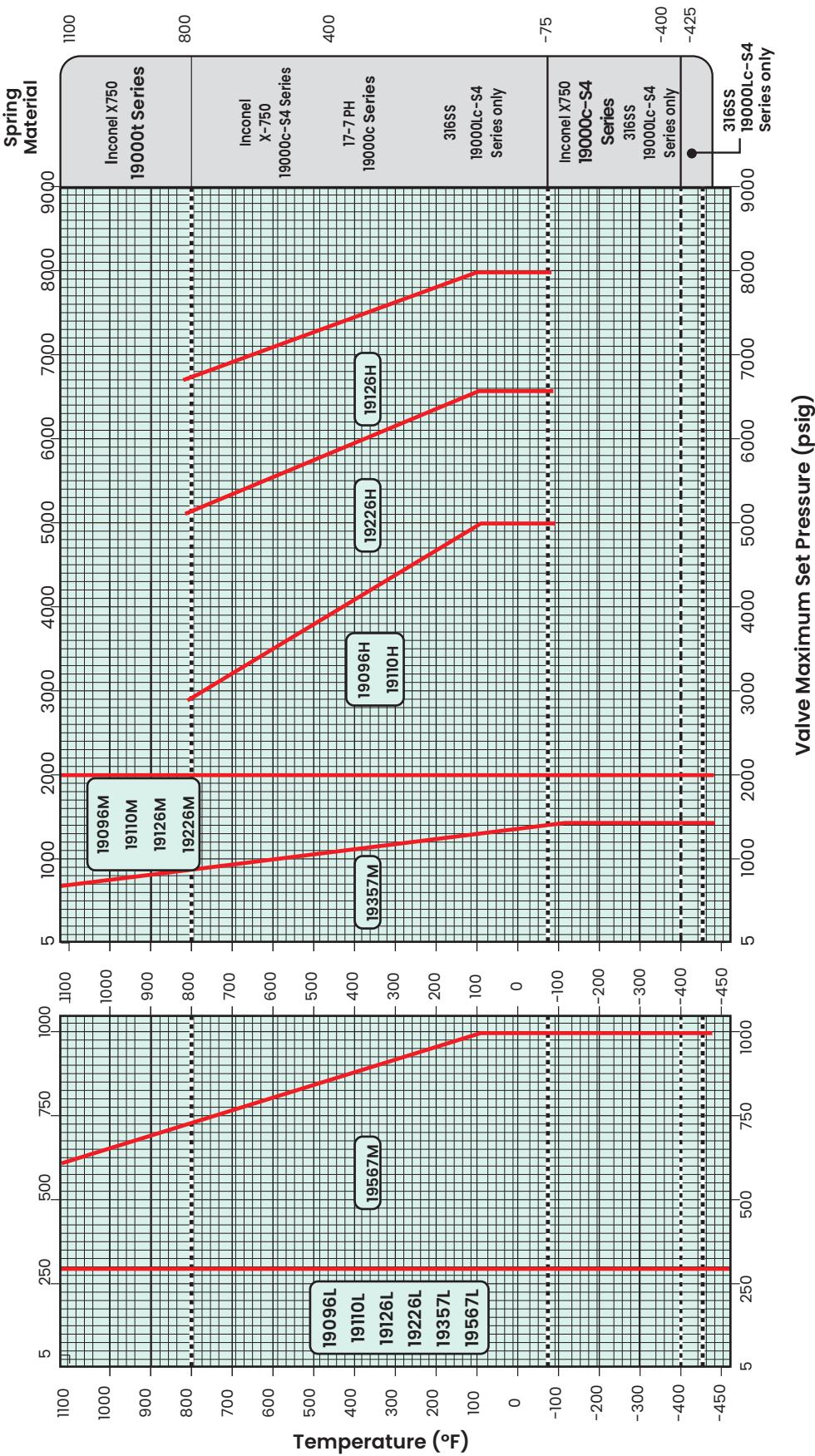
Pressure and Temperature

Pressure Temperature Ratings of 19000 Series Valves												
Valve Type	-425 °F (-253.9 °C)		-75 °F (-59.4°C)		100 °F (37.8°C)		200 °F (93.3°C)		300 °F (148.9°C)		400 °F (204.4°C)	
	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg
19096L	290	19.99	290	19.99	290	19.99	290	19.99	290	19.99	290	19.99
19110L												
19126L												
19226L												
19357L												
19567L												
19096M	2000	137.89	2000	137.89	2000	137.89	2000	137.89	2000	137.89	2000	137.89
19110M												
19126M												
19226M												
19357M	1500	103.42	1500	103.42	1500	103.42	1420	97.90	1340	92.38	1260	86.87
19567M	1000	68.94	1000	68.94	1000	68.94	960	66.18	920	63.43	880	60.67
19096H	5000	344.73	5000	344.73	5000	344.73	4811	331.70	4621	318.60	4432	305.57
19110H												
19126H	8000	551.58	8000	551.58	8000	551.58	7785	536.75	7571	522	7357	507.24
19226H	6400	441.26	6400	441.26	6400	441.26	6107	421.06	5814	400.86	5521	380.65

Pressure Temperature Ratings of 19000 Series Valves														
Valve Type	500 °F (260.°C)		600 °F (315.6°C)		700 °F (371.1°C)		800 °F (426.7°C)		900 °F (482.2°C)		1000 °F (537.8°C)		1100 °F (593.3°C)	
	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg
19096L	290	19.99	290	19.99	290	19.99	290	19.99	290	19.99	290	19.99		
19110L														
19126L														
19226L														
19357L														
19567L														
19096M	2000	137.89	2000	137.89	2000	137.89	2000	137.89	2000	137.89	2000	137.89		
19110M														
19126M														
19226M														
19357M	1180	81.35	1100	75.84	1020	70.32	940	64.81	860	59.29	780	53.77	700	48.26
19567M	840	57.91	800	55.15	760	52.40	720	49.64	680	46.88	640	44.12	600	41.36
19096H	4243	292.54	4054	279.51	3864	266.41	3675	253.38	-	-	-	-	-	
19110H														
19126H	7142	492.42	6928	477.66	6714	462.91	6500	448.15	-	-	-	-	-	
19226H	5228	360.45	4935	340.25	4642	320.05	4350	299.92						

Pressure and Temperature

Pressure and Temperature Rating of 19000 Series Valves



Capacities

Valve Capacity for ASME BPVC Section XIII (UV) – for Air

Based at 10 percent overpressure or 3 psig (0.21 barg), whichever is greater, showing 90 percent of actual capacity in accordance with latest ASME Code requirements. Units of ft³/min (m³/min) of air are at a temperature of 60°F (15.6°C).

Orifice		19096 ⁽¹⁾		19110		19126		19226		19357		19567	
Orifice Area		in ²	cm ²	in ²	cm ²	in ²	cm ²	in ²	cm ²	in ²	cm ²	in ²	cm ²
Set Pressure		Orifice Capacity											
psig	barg	ft ³ /min	m ³ /min	ft ³ /min	m ³ /min	ft ³ /min	m ³ /min	ft ³ /min	m ³ /min	ft ³ /min	m ³ /min	ft ³ /min	m ³ /min
15	1.03	50	1.41	57	1.61	66	1.86	119	3.36	188	5.32	298	8.43
20	1.37	58	1.64	66	1.86	76	2.15	137	3.87	216	6.11	344	9.74
30	2.06	73	2.06	84	2.37	96	2.71	173	4.89	274	7.75	435	12.31
40	2.75	90	2.54	104	2.94	119	3.36	213	6.03	337	9.54	536	15.17
50	3.44	107	3.02	123	3.48	141	3.99	253	7.16	400	11.32	636	18
60	4.13	124	3.51	143	4.04	163	4.61	293	8.29	464	13.13	737	20.86
70	4.82	141	3.99	162	4.58	186	5.26	333	9.42	527	14.92	837	23.70
80	5.51	158	4.47	182	5.15	208	5.88	374	10.59	590	16.70	938	26.56
90	6.20	175	4.95	201	5.69	230	6.51	414	11.72	654	18.51	1038	29.39
100	6.89	192	5.43	221	6.25	253	7.16	454	12.85	717	20.30	1139	32.25
120	8.27	226	6.39	260	7.36	297	8.41	534	15.12	843	23.87	1340	37.94
140	9.65	260	7.36	299	8.46	342	9.68	614	17.38	970	27.46	1541	43.63
160	11.03	295	8.35	338	9.57	387	10.95	694	19.65	1097	31.06	1742	49.32
180	12.41	329	9.31	377	10.67	431	12.20	774	21.91	1223	34.63	1943	55.01
200	13.78	363	10.27	416	11.77	476	13.47	854	24.18	1350	38.22	2144	60.71
220	15.16	397	11.24	455	12.88	521	14.75	934	26.44	1476	41.79	2345	66.40
240	16.54	431	12.20	494	13.98	565	15.99	1015	28.74	1603	45.39	2546	72.09
260	17.92	465	13.16	533	15.09	610	17.27	1095	31	1729	48.95	2747	77.78
280	19.30	499	14.13	572	16.19	655	18.54	1175	33.27	1856	52.55	2948	83.47
300	20.68	533	15.09	611	17.30	699	19.79	1255	35.53	1983	56.15	3149	89.16
320	22.06	567	16.05	650	18.40	744	21.06	1335	37.80	2109	59.72	3350	94.86
340	23.44	601	17.01	689	19.51	789	22.34	1415	40.06	2236	63.31	3551	100.55
360	24.82	635	17.98	728	20.61	833	23.58	1495	42.33	2362	66.88	3752	106.24
380	26.20	669	18.94	767	21.71	878	24.86	1575	44.59	2489	70.48	3953	111.93
400	27.57	703	19.90	806	22.82	923	26.13	1656	46.89	2615	74.04	4154	117.62
420	28.95	737	20.86	845	23.92	967	27.38	1736	49.15	2742	77.64	4355	123.31
440	30.33	771	21.83	884	25.03	1012	28.65	1816	51.42	2869	81.24	4556	129.01
460	31.71	805	22.79	923	26.13	1057	29.93	1896	53.68	2995	84.80	4757	134.70
480	33.09	839	23.75	962	27.24	1101	31.17	1976	55.95	3122	88.40	4958	140.39
500	34.47	873	24.72	1001	28.34	1146	32.45	2056	58.21	3248	91.97	5159	146.08

1. 19000M-BP set pressure range is 50 to 2000 psig (3.45 to 137.90 barg).

Capacities

Valve Capacity for ASME BPVC Section XIII (UV) – for Air

Based at 10 percent overpressure or 3 psig (0.21 barg), whichever is greater, showing 90 percent of actual capacity in accordance with latest ASME Code requirements. Units of ft³/min (m³/min) of air are at a temperature of 60°F (15.6°C).

Orifice		19096 ⁽¹⁾		19110		19126		19226		19357		19567	
Orifice Area		in ²	cm ²										
Set Pressure		Orifice Capacity											
psig	barg	ft ³ /min	m ³ /min										
600	41.36	1043	29.53	1196	33.86	1370	38.79	2457	69.57	3881	109.89	6165	174.57
700	48.26	1213	34.34	1391	39.38	1593	45.10	2857	80.90	4514	127.82	7170	203.03
750	51.71	1299	36.78	1488	42.13	1705	48.28	3058	86.59	4830	136.77	7672	217.24
800	55.15	1384	39.19	1586	44.91	1816	51.42	3258	92.25	5147	145.74	8175	231.49
900	62.05	1554	44	1781	50.43	2040	57.76	3659	103.61	5780	163.67	9180	259.94
1000	68.94	1724	48.81	1976	55.95	2263	64.08	4059	114.93	6413	181.59	10185	288.40
1100	75.84	1894	53.63	2171	61.47	2486	70.39	4460	126.29	7045	199.49	-	-
1200	82.73	2064	58.44	2366	66.99	2710	76.73	4861	137.64	7678	217.41	-	-
1300	89.63	2235	63.28	2561	72.51	2933	83.05	5261	148.97	8311	235.34	-	-
1400	96.52	2405	68.10	2756	78.04	3156	89.36	5662	160.33	8944	253.26	-	-
1500	103.42	2575	72.91	2951	83.56	3380	95.71	6062	171.65	9577	271.19	-	-
1600	110.31	2745	77.72	3146	89.08	3603	102.02	6463	183.01	-	-	-	-
1700	117.21	2915	82.54	3341	94.60	3826	108.34	6864	194.36	-	-	-	-
1800	124.10	3085	87.35	3535	100.10	4050	114.68	7264	205.69	-	-	-	-
1900	131	3256	92.19	3730	105.62	4273	120.99	7665	217.04	-	-	-	-
2000	137.89	3426	97.01	3925	111.14	4497	127.34	8066	228.40	-	-	-	-
2500	172.36	4277	121.11	4900	138.75	5613	158.94	10069	285.12	-	-	-	-
3000	206.84	5128	145.20	5875	166.36	6730	190.57	12072	341.84	-	-	-	-
3500	241.31	5979	169.30	6850	193.97	7847	222.20	14075	398.55	-	-	-	-
4000	275.79	6829	193.37	7825	221.57	8964	253.83	16078	455.27	-	-	-	-
4500	310.26	7680	217.47	8800	249.18	10081	285.46	18081	511.99	-	-	-	-
5000	344.73	8531	241.57	9775	276.79	11197	317.06	20085	568.74	-	-	-	-
5500	379.21	-	-	-	-	12314	348.69	22088	625.46	-	-	-	-
6000	413.68	-	-	-	-	13431	380.32	24091	682.18	-	-	-	-
6400	441.26	-	-	-	-	14324	405.61	25693	727.54	-	-	-	-
6500	448.15	-	-	-	-	14548	411.95	-	-	-	-	-	-
7000	482.63	-	-	-	-	15665	443.58	-	-	-	-	-	-
7500	517.10	-	-	-	-	16781	475.18	-	-	-	-	-	-
8000	551.58	-	-	-	-	17898	506.81	-	-	-	-	-	-

1. 19000M-BP set pressure range is 50 to 2000 psig (3.45 to 137.90 barg).

Capacities

Valve Capacity for ASME BPVC Section XIII (UV) - for Saturated Steam

Based at 10 percent overpressure or 3 psig (0.21 barg), whichever is greater, showing 90 percent of actual capacity in accordance with latest ASME Code requirements.

Orifice		19096 ⁽¹⁾		19110		19126		19226		19357		19567	
Orifice Area		in ²	cm ²	in ²	cm ²	in ²	cm ²	in ²	cm ²	in ²	cm ²	in ²	cm ²
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
15	1.03	141	63	162	73	186	84	334	151	527	239	838	380
20	1.37	163	73	187	84	214	97	385	174	608	275	966	438
30	2.06	207	93	237	107	271	122	487	220	769	348	1222	554
40	2.75	254	115	291	131	334	151	599	271	947	429	1504	682
50	3.44	302	136	346	156	397	180	712	322	1125	510	1786	810
60	4.13	350	158	401	181	459	208	824	373	1302	590	2068	938
70	4.82	398	180	456	206	522	236	937	425	1480	671	2351	1066
80	5.51	445	201	510	231	585	265	1049	475	1657	751	2633	1194
90	6.20	493	223	565	256	647	293	1161	526	1835	832	2915	1322
100	6.89	541	245	620	281	710	322	1274	577	2012	912	3197	1450
120	8.27	636	288	729	330	835	378	1499	679	2368	1074	3761	1705
140	9.65	732	332	839	380	961	435	1723	781	2723	1235	4325	1961
160	11.03	827	375	948	430	1086	492	1948	883	3078	1396	4889	2217
180	12.41	923	418	1057	479	1211	549	2173	985	3433	1557	5453	2473
200	13.78	1018	461	1167	529	1337	606	2398	1087	3788	1718	6017	2729
220	15.16	1114	505	1276	578	1462	663	2623	1189	4143	1879	6581	2985
240	16.54	1209	548	1386	628	1587	719	2848	1291	4498	2040	7145	3240
260	17.92	1305	591	1495	678	1713	777	3072	1393	4854	2201	7709	3496
280	19.30	1400	635	1605	728	1838	833	3297	1495	5209	2362	8273	3752
300	20.68	1496	678	1714	777	1963	890	3522	1597	5564	2523	8837	4008
320	22.06	1591	721	1823	826	2089	947	3747	1699	5919	2684	9401	4264
340	23.44	1687	765	1933	876	2214	1004	3972	1801	6274	2845	9965	4520
360	24.82	1782	808	2042	926	2339	1060	4196	1903	6629	3006	10529	4775
380	26.20	1878	851	2152	976	2465	1118	4421	2005	6984	3167	11093	5031
400	27.57	1973	894	2261	1025	2590	1174	4646	2107	7339	3328	11657	5287
420	28.95	2069	938	2371	1075	2715	1231	4871	2209	7695	3490	12221	5543
440	30.33	2164	981	2480	1124	2841	1288	5096	2311	8050	3651	12785	5799
460	31.71	2260	1025	2589	1174	2966	1345	5321	2413	8405	3812	13349	6055
480	33.09	2355	1068	2699	1224	3091	1402	5545	2515	8760	3973	13913	6310
500	34.47	2451	1111	2808	1273	3217	1459	5770	2617	9115	4134	14477	6566
600	41.36	2928	1328	3355	1521	3843	1743	6894	3127	10891	4940	17297	7845
700	48.26	3406	1544	3902	1769	4470	2027	8018	3636	12666	5745	20118	9125
750	51.71	3644	1652	4176	1894	4784	2169	8580	3891	13554	6147	21528	9764
800	55.15	3883	1761	4450	2018	5097	2311	9142	4146	14442	6550	22938	10404
900	62.05	4361	1978	4997	2266	5724	2596	10267	4657	16218	7356	25758	11683
1000	68.94	4838	2194	5544	2514	6350	2880	11391	5166	17994	8161	28578	12962
1100	75.84	5316	2411	6091	2762	6977	3164	12515	5676	19769	8967	-	-
1200	82.73	5793	2627	6638	3010	7604	3449	13639	6186	21545	9772	-	-
1300	89.63	6271	2844	7185	3259	8230	3733	14763	6696	23321	10578	-	-
1400	96.52	6748	3060	7732	3507	8857	4017	15887	7206	25096	11383	-	-
1423 ²	98.11	6858	3110	7858	3564	9001	4082	16146	7323	25505	11568	-	-
1500	103.42	7260	3293	8319	3773	9529	4322	17093	7753	27001	12247	-	-
1600	110.31	7792	3534	8928	4049	10227	4638	18343	8320	-	-	-	-
1700	117.21	8333	3779	9549	4331	10938	4961	19619	8899	-	-	-	-
1800	124.10	8888	4031	10184	4619	11665	5291	20923	9490	-	-	-	-
1900	131	9455	4288	10834	4914	12410	5629	22260	10096	-	-	-	-
2000	137.89	10039	4553	11503	5217	13176	5976	23633	10719	-	-	-	-
2500	172.36	13285	6025	15222	6904	17436	7908	31275	14186	-	-	-	-
2903 ³	200.15	16611	7534	19033	8633	21802	9889	39106	17738	-	-	-	-

1. 19000M-BP set pressure range is 50 to 2000 psig (3.45 to 137.9 barg).

2. The following Napier Factor is applied to the capacity of pressures greater than 1423 psig (98.11 barg):

$$\left[\frac{0.1906 \times P_{psia} - 1000}{0.2292 \times P_{psia} - 1061} \right]$$

3. Maximum permissible set pressure on steam is 2903 psig (200.15). Value has been interpolated.

Capacities

Valve Capacity for ASME BPVC Section XIII (UV) - for Water

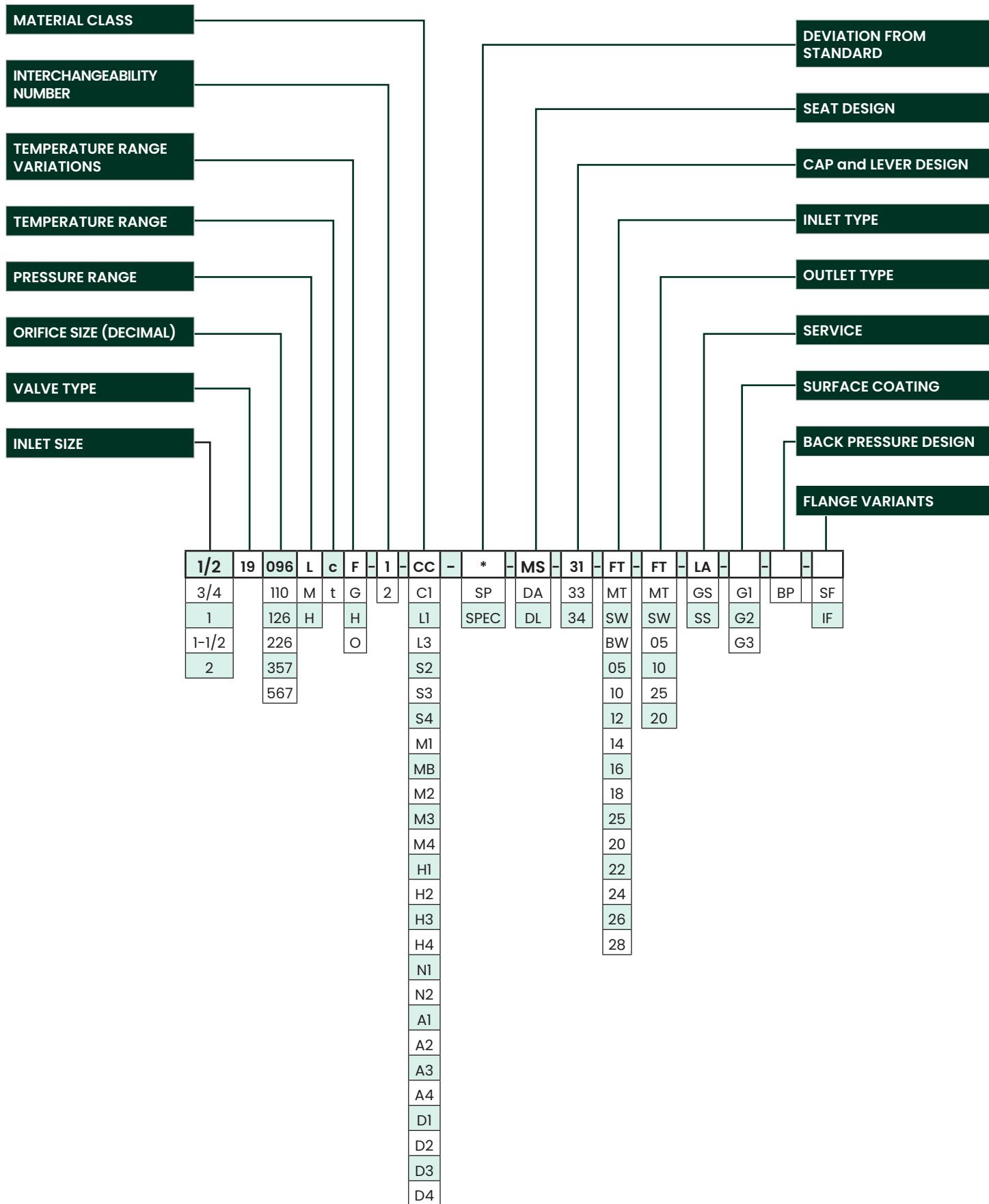
Based at 10 percent overpressure or 3 psig (0.21 barg), whichever is greater, with zero backpressure. Units of gal/min (L/min) at 70°F (21.1°C), showing 90 percent average capacity in accordance with latest ASME Code requirements.

Orifice		19096 ⁽¹⁾		19110		19126		19226		19357		19567	
Orifice Area		in ²	cm ²	in ²	cm ²	in ²	cm ²	in ²	cm ²	in ²	cm ²	in ²	cm ²
Set Pressure		Orifice Capacity											
Pressure Range	psig	L/M/H	L/M/H	L	M/H	L	M/H	L/M/H	L/M/H	L/M/H	L/M/H	L/M/H	L/M/H
psig	barg	gal/min	L/min	gal/min	gal/min	L/min	L/min	gal/min	L/min	gal/min	L/min	gal/min	L/min
15	1.03	10	38	11	9	42	34	13	49	24	91	38	144
20	1.37	11	42	13	10	49	37	15	57	27	102	43	163
30	2.06	14	53	16	12	61	45	18	68	33	125	52	197
40	2.75	16	61	18	15	68	56	21	79	38	144	60	227
50	3.44	18	68	20	16	76	60	23	87	42	159	67	254
60	4.13	19	72	22	18	83	68	26	98	46	174	74	280
70	4.82	21	79	24	19	91	71	28	106	50	189	80	303
80	5.51	23	87	26	21	98	79	30	114	54	204	85	322
90	6.20	24	91	27	22	102	83	32	121	57	216	90	341
100	6.89	25	95	29	23	110	87	33	125	60	227	95	360
120	8.27	28	106	32	25	121	94	37	140	66	250	104	394
140	9.65	30	114	34	28	129	105	39	148	71	269	113	428
160	11.03	32	121	37	30	140	113	42	159	76	288	121	458
180	12.41	34	129	39	31	148	117	45	170	81	307	128	485
200	13.78	36	136	41	33	155	124	47	178	85	322	135	511
220	15.16	38	144	43	35	163	132	50	189	89	337	142	538
240	16.54	39	148	45	36	170	136	52	197	93	352	148	560
260	17.92	41	155	47	38	178	143	54	204	97	367	154	583
280	19.30	43	163	49	39	185	147	56	212	101	382	160	606
300	20.68	44	167	-	41	-	155	58	220	104	394	165	625
320	22.06	46	174	-	42	-	158	60	227	108	409	171	647
340	23.44	47	178	-	43	-	162	62	235	111	420	176	666
360	24.82	48	182	-	45	-	170	64	242	115	435	181	685
380	26.20	50	189	-	46	-	174	65	246	118	447	186	704
400	27.57	51	193	-	47	-	177	67	254	121	458	191	723
420	28.95	52	197	-	48	-	181	69	261	124	469	196	742
440	30.33	54	204	-	49	-	185	70	265	127	481	200	757
460	31.71	55	208	-	50	-	189	72	273	130	492	205	776
480	33.09	56	212	-	51	-	193	74	280	132	500	209	791
500	34.47	57	216	-	53	-	200	75	284	135	511	214	810
600	41.36	63	238	-	58	-	219	82	310	148	560	234	886
700	48.26	68	257	-	62	-	234	89	337	160	606	253	958
750	51.71	70	265	-	65	-	246	92	348	166	628	262	992
800	55.15	72	273	-	67	-	253	95	360	171	647	270	1022
900	62.05	77	291	-	71	-	268	101	382	181	685	287	1086
1000	68.94	81	307	-	75	-	283	106	401	191	723	302	1143
1100	75.84	85	322	-	78	-	295	112	424	201	761	317	1200
1200	82.73	89	337	-	82	-	310	117	443	209	791	331	1253
1300	89.63	92	348	-	85	-	321	121	458	218	825	345	1306
1400	96.52	96	363	-	88	-	333	126	477	226	856	358	1355
1500	103.42	99	375	-	91	-	344	130	492	234	886	370	1401
1600	110.31	102	386	-	94	-	355	135	511	242	916	-	-
1700	117.21	106	401	-	97	-	367	139	526	249	943	-	-
1800	124.10	109	413	-	100	-	378	143	541	257	973	-	-
1900	131	112	424	-	103	-	389	147	556	264	999	-	-
2000	137.89	115	435	-	106	-	401	151	572	271	1026	-	-
2500	172.36	128	485	-	118	-	446	168	636	303	1147	-	-
3000	206.84	141	534	-	129	-	488	185	700	332	1257	-	-
3500	241.31	152	575	-	140	-	529	199	753	358	1355	-	-
4000	275.79	162	613	-	150	-	567	213	806	383	1450	-	-
4500	310.26	172	651	-	159	-	601	226	856	406	1537	-	-
5000	344.73	182	689	-	167	-	632	238	901	428	1620	-	-
5500	379.21	-	-	-	-	-	250	946	449	1700	-	-	-
6000	413.68	-	-	-	-	-	261	988	469	1775	-	-	-
6400	441.26	-	-	-	-	-	270	1022	484	1832	-	-	-
6500	448.15	-	-	-	-	-	272	1030	-	-	-	-	-
7000	482.63	-	-	-	-	-	282	1067	-	-	-	-	-
7500	517.10	-	-	-	-	-	292	1105	-	-	-	-	-
8000	551.58	-	-	-	-	-	302	1143	-	-	-	-	-

1. 19000M-BP set pressure range is 50 to 2000 psig (3.45 to 137.90 barg).

2. The following Napier Factor is applied to the capacity of pressures greater than 1423 psig (98.11 barg):
$$\left[\frac{0.1906 \times P_{\text{psia}} - 1000}{0.2292 \times P_{\text{psia}} - 1061} \right]$$

Safety Valve Configuration Code



Safety Valve Configuration Code

Orifice Area		
Designation	Area	
	in ²	cm ²
096	0.096	0.619
110	0.110	0.710
126	0.126	0.813
226	0.226	1.458
357	0.357	2.303
567	0.567	3.658

Pressure Range				
Designation	Range			
	min.		max.	
psig	barg	psig	barg	
L	5	0.34	290	19.99
M	291	20.06	2000	137.90
H	2001	137.96	8000	551.58

Temperature Range Variations	
Designation	Range
F	All Temps. (MS)
G	> 250°F (121°C) (SS/MS)
H	> 250°F (121°C) (SG/MS)
O	DA (SOFT SEAT)

Surface Coating	
Designation	Description
G1	Glide Aloy Disc Holder
G2	Glide Aloy Guide
G3	Guide Aloy Disc Holder and Guide

Surface Coating	
Designation	Description
MS	Metal Seat
DA	Soft Seat
DL	Soft Seat Liquid Service Pressures ≤ 100 psig (6.89 barg) (Except 110 Orifice)

Backpressure Design	
Designation	Description
BP	Medium Pressure [50 - 2000 psig (3.45-137.90 barg)] Maximum B/P 400 psig (27.58 barg)

Temperature Class	
Designation	Class
c	≤ 800°F (427°C)
t	> 800°F (427°C)

Service	
Designation	Description
GS	Gas, Air
LA	Liquid
SS	Steam

Cap and Lever Design	
Designation	Description
31	Screwed
33	Packed
34	Plain

Pressure Range	
Designation	Variation
CC	Standard Material
C1	Ambient Temp. to -50°F (-45.6°C) [LCC Construction]
L1	Low Temperature Service [-21 to -100°F (-29 to -73°C)]
L3	Low Temperature Service [-101 to -450°F (-74 to -268°C)]
S2	Stainless Steel [Internals, Except Spring Assembly]
S3	Stainless Steel [All Except Spring Assembly]
S4	Stainless Steel [Complete Valve]
M1	Monel [Base and Disc]
MB	Monel [M1+Disc Holder]
M2	Monel [Internals, Except Spring Assembly]
M3	Monel [All Except Spring Assembly]
M4	Monel [Complete Valve]
H1	Hastelloy [Base and Disc]
H2	Hastelloy [Internals, Except Spring Assembly]
H3	Hastelloy [All Except Spring Assembly]
H4	Hastelloy [Complete Valve]
N1	Sour Gas
N2	Sour Gas (Stainless Steel)
A1	Alloy 20 [Base and Disc]
A2	Alloy 20 [Internals, Except Spring Assembly]
A3	Alloy 20 [All Except Spring Assembly]
A4	Alloy 20 [Complete Valve]
D1	Duplex [Base and Disc]
D2	Duplex [Internals, Except Spring Assembly]
D3	Duplex [All Except Spring Assembly]
D4	Duplex [Complete Valve]

Safety Valve Configuration Code

Inlet Connection Type	
Designation	Variation
FT	Female NPT
MT	Male NPT
SW	Socket Weld
BW	Buttweld
05	150# Flanged Raised Face
10	300# Flanged Raised Face
12	600# Flanged Raised Face
14	900# Flanged Raised Face
16	1500# Flanged Raised Face
18	2500# Flanged Raised Face
25	150# Flanged Ring Joint
20	300# Flanged Ring Joint
22	600# Flanged Ring Joint
24	900# Flanged Ring Joint
26	1500# Flanged Ring Joint
28	2500# Flanged Ring Joint

Outlet Connection Type	
Designation	Variation
FT	Female NPT
MT	Male NPT
SW	Socket Weld
05	150# Flanged Raised Face
10	300# Flanged Raised Face
25	150# Flanged Ring Joint
20	300# Flanged Ring Joint

Interchangeability	
Designation	Valve Type
1	Existing Soft Seat (DA and DL) Previous Metal Seat (MS)
2	Existing Metal Seat (MS)

Flange Variants	
Designation	Variation
SF	Socket Weld Flange with Locknut
IF	Integral Cast Flange

Note: The standard flanged default variation is a slip-on flange.

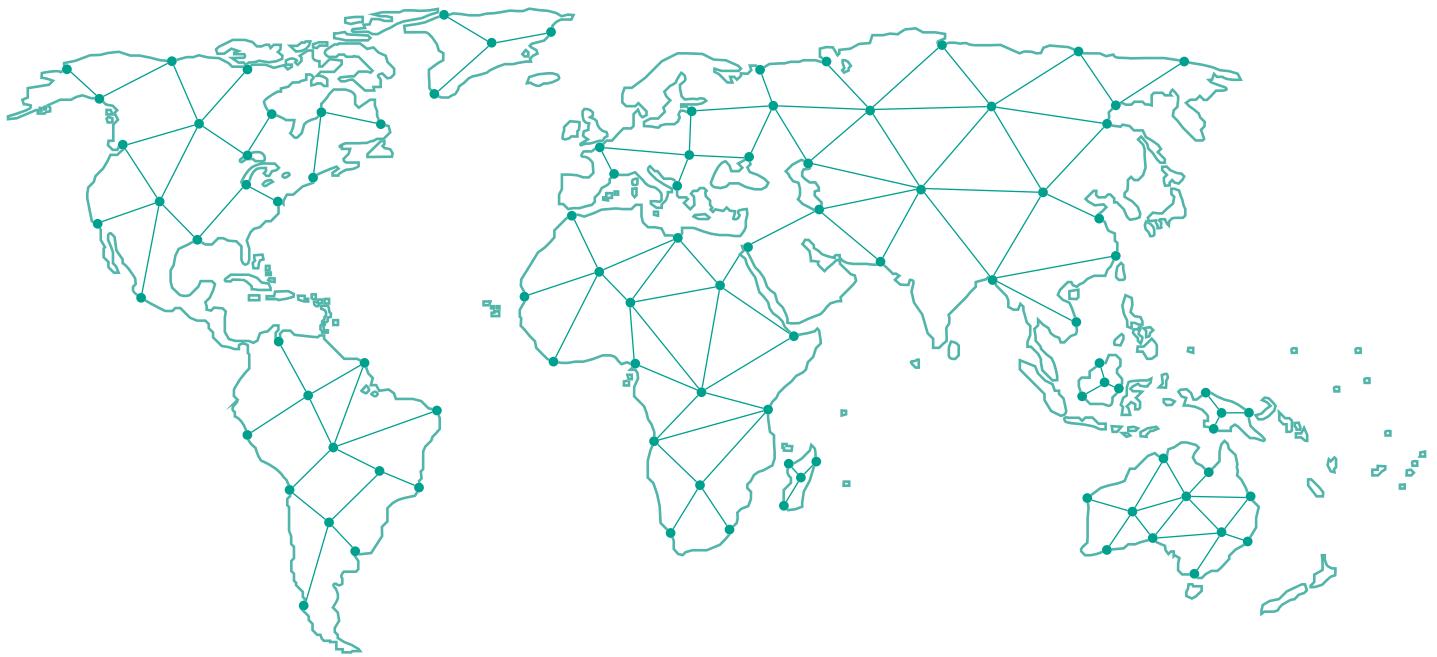
Ordering a 19000 Safety Relief Valve

Specification Sheet

	Page _____ of _____		Materials	
Requisition No.			13.	Base:
Job No.			14.	Bonnet:
Date			15.	Guide and Rings:
Revised By			16.	Seat Material:
General			Metal:	
1.	Item Number:			
2.	Tag Number:			
3.	Service, Line or Equipment No:			
4.	Number Required:			
Basis of Selection			Resilient:	
5.	Code:			
<input type="checkbox"/> ASME Sec. III <input type="checkbox"/> ASME Sec. XIII (UV) <input type="checkbox"/> OTHER Specify:				
6.	<input type="checkbox"/> Fire	<input type="checkbox"/> OTHER Specify:		
7.	Rupture Disk: <input type="checkbox"/> YES <input type="checkbox"/> NO			
Valve Design			Service Conditions	
8.	Type: Safety Relief			
9.	Design:			
<input type="checkbox"/> Metal Seat <input type="checkbox"/> Resilient Seat <input type="checkbox"/> API 527 Seat Tightness <input type="checkbox"/> OTHER Specify:				
Connections			22. Fluid and State: 23. Required Capacity per Valve and Units: 24. Molecular Weight or Specific Gravity: 25. Viscosity at Flowing Temperature and Units: 26. Operating Pressure and Units: 27. Blowdown: <input type="checkbox"/> Standard <input type="checkbox"/> Other 28. Latent Heat of Vaporization and Units: 29. Operating Temperature and Units: 30. Relieving Temperature and Units: 31. Built-up Back Pressure and Units: 32. Superimposed Back Pressure and Units: 33. Cold differential Test Pressure and Units: 34. Allowable Overpressure in Percent or Units: 35. Compressibility Factor, Z: 36. Ratio of Specific Heats:	
10.	Flanged			
Inlet Size:		Rating:	Facing:	
Outlet Size:		Rating:	Facing:	
11.	Threaded			
Inlet:		<input type="checkbox"/> MNPT	<input type="checkbox"/> FNPT	
Outlet:		<input type="checkbox"/> MNPT	<input type="checkbox"/> FNPT	
12.	<input type="checkbox"/> OTHER Specify:			
Sizing and Selection				
37.	Calculated Orifice Area: _____ in ² _____ cm ²			
38.	Selected Orifice Area: _____ in ² _____ cm ²			
39.	Orifice Designation (letter):			
40.	Manufacturer:			
41.	Model Number:			
42.	<input type="checkbox"/> YES <input type="checkbox"/> NO			

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