

# Consolidated\* **11000** Series

Safety Relief Valve



<b>Contents</b>	<b>Page</b>
Conversion Table .....	1
Scope of Design .....	2
Parts .....	3
Materials of Construction .....	4
Dimensions and Weights.....	5
Pressure/Temperature .....	6
X-Ring Selection Guide.....	7
General X-Ring Recommendations.....	7
Capacity Chart.....	8
Spring Chart.....	9
Valve Coding.....	10

# Conversion Table

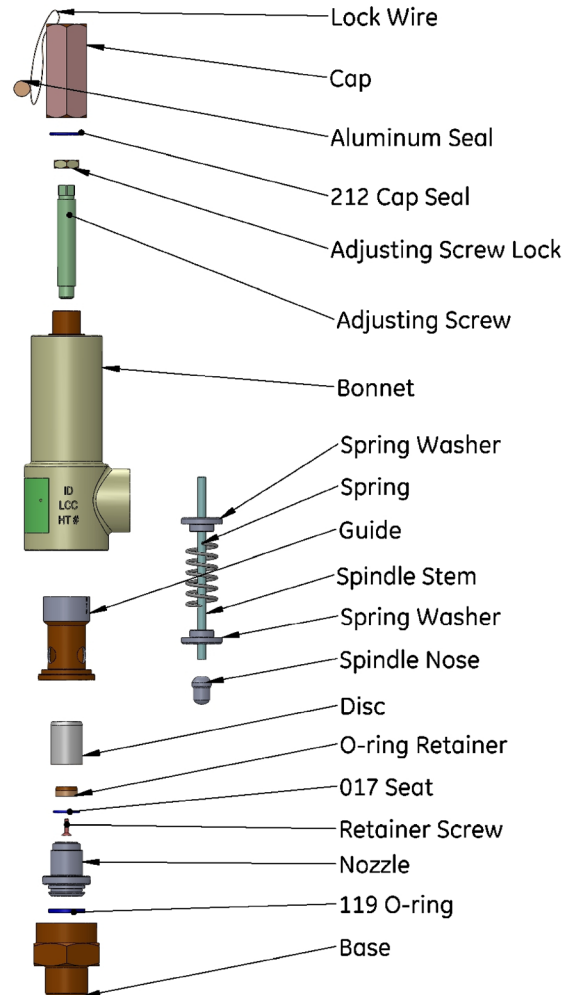
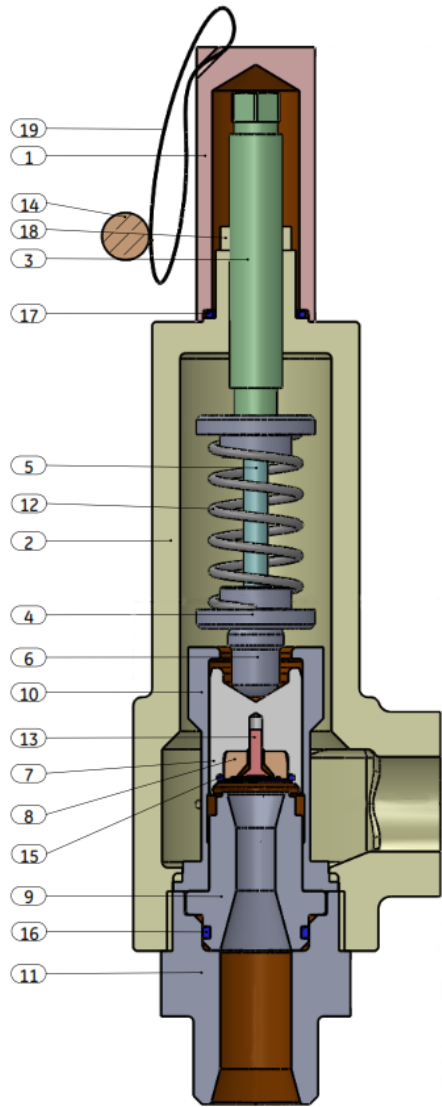
All the USCS values are converted to metric values using the following conversion factors:		
USCS Unit	Conversion Factor	Metric Unit
in.	25.4	mm
lb.	0.4535924	kg
in <sup>2</sup>	6.4516	cm <sup>2</sup>
ft <sup>3</sup> /min	0.02831685	m <sup>3</sup> /min
gal/min	3.785412	L/min
lb/hr	0.4535924	kg/hr
psig	0.06894757	barg
ft lb	1.3558181	Nm
°F	5/9 (°F-32)	°C

# Scope of Design

GE's Consolidated 11000 Series Safety Relief Valve is a certified ASME Section VIII, Division 1 valve designed for upstream and midstream oil and gas applications.

11000 SRV Product Scope D orifice Gas (.132 in.)			
Inlet MNPT (in.)	Outlet FNPT (in.)	Min Set Pressure (psig)	Max Set Pressure (psig)
0.75	1	75	2000
1	1	75	2000
E orifice Gas (.246 in.)			
Inlet MNPT (in.)	Outlet FNPT (in.)	Min Set Pressure (psig)	Max Set Pressure (psig)
0.75	1	75	2000
1	1	75	2000
E orifice liquid (.246 in.)			
Inlet MNPT (in.)	Outlet FNPT (in.)	Min Set Pressure (psig)	Max Set Pressure (psig)
0.75	1	75	1505
1	1	75	1505

# Parts



# Materials of Construction

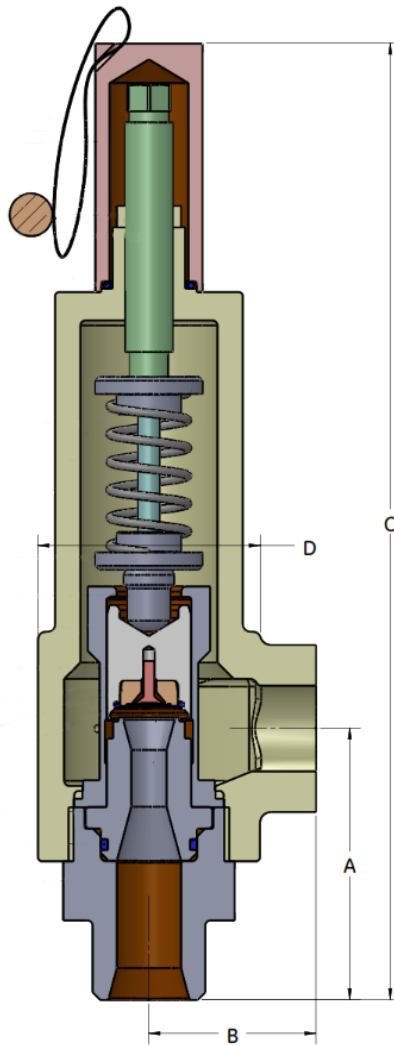
Item No.	Part Description	CC Carbon Steel	S4 Stainless Steel	N1 Carbon Steel NACE	N2 Stainless Steel NACE
1	Cap 11132/246	ASME SA105	SA479 TYPE 316/316L	ASME SA105	SA479 TYPE 316/316L
2	Bonnet 11132/246	ASME SA216 GR. WCC	ASME SA351 GR. CF8M	ASME SA216 GR. WCC	ASME SA351 GR. CF8M
3	Adjusting screw 11132/246	ASTM A108 GR. 1018, 1019 OR 1020 CARBON STEEL	ASME SA479 TYPE 316/316L	ASTM A108 GR. 1018, 1019 OR 1020 CARBON STEEL	ASME SA479 TYPE 316/316L
4	Spring washer 11132/246	ASTM A108 GR. 1018, 1019 OR 1020 CARBON STEEL	ASME SA479 TYPE 316/316L	ASTM A108 GR. 1018, 1019 OR 1020 CARBON STEEL	ASME SA479 TYPE 316/316L
5	Spindle stem 11132/246	ASME SA479 TYPE 316/316L	ASME SA479 TYPE 316/316L	ASME SA479 TYPE 316/316L	ASME SA479 TYPE 316/316L
6	Spindle nose 11132/246	ASME SA479 TYPE 316/316L	ASME SA479 TYPE 316/316L	ASME SA479 TYPE 316/316L	ASME SA479 TYPE 316/316L
7	Disc 11132/246	ASME SA479 TYPE 316/316L	ASME SA479 TYPE 316/316L	ASME SA479 TYPE 316/316L	ASME SA479 TYPE 316/316L
8	X-ring retainer 11132/246	ASME SA479 TYPE 316/316L	ASME SA479 TYPE 316/316L	ASME SA479 TYPE 316/316L	ASME SA479 TYPE 316/316L
9	Nozzle 1" 11132/246	ASME SA479 TYPE 316/316L	ASME SA479 TYPE 316/316L	ASME SA479 TYPE 316/316L	ASME SA479 TYPE 316/316L
10	Guide 11132/246	ASME SA351 GR. CF8M	ASME SA351 GR. CF8M	ASME SA351 GR. CF8M	ASME SA351 GR. CF8M
11	Base 11132/246	ASME SA105	ASME SA479 TYPE 316/316L	ASME SA105	ASME SA479 TYPE 316/316L
12	Spring	316 or 17-7SSST	316 or 17-7SSST	Inconel	Inconel
13	Retainer Screw 11132/246	ASME SA479 TYPE 316/316L	ASME SA479 TYPE 316/316L	ASME SA479 TYPE 316/316L	ASME SA479 TYPE 316/316L
19	Sealing wire	18-8 STAINLESS STEEL (AISI 301, 302, 303 OR 304)	18-8 STAINLESS STEEL (AISI 301, 302, 303 OR 304)	18-8 STAINLESS STEEL (AISI 301, 302, 303 OR 304)	18-8 STAINLESS STEEL (AISI 301, 302, 303 OR 304)
14	Aluminum Seal	ALLOY 1350	ALLOY 1350	ALLOY 1350	ALLOY 1350
	Nameplate	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL
	Metal Tack	STEEL-COPPER NICKEL PLATED	STEEL-COPPER NICKEL PLATED	STEEL-COPPER NICKEL PLATED	STEEL-COPPER NICKEL PLATED
16	Inlet Seal, Size 119	ELASTOMER <sup>1</sup>	ELASTOMER <sup>1</sup>	ELASTOMER <sup>1</sup>	ELASTOMER <sup>1</sup>
17	Cap Seal, Size 212	ELASTOMER <sup>1</sup>	ELASTOMER <sup>1</sup>	ELASTOMER <sup>1</sup>	ELASTOMER <sup>1</sup>
15	Seat, Size 017	ELASTOMER <sup>1</sup>	ELASTOMER <sup>1</sup>	ELASTOMER <sup>1</sup>	ELASTOMER <sup>1</sup>
	Adjusting Screw Lock Nut 11132/246	ASTM A108 GR. 1018, 1019 OR 1020 CARBON STEEL	ASME SA479 TYPE 316/316L	ASTM A108 GR. 1018, 1019 OR 1020 CARBON STEEL	ASME SA479 TYPE 316/316L

<sup>1</sup>Buna-N (Nitrile) is standard; additional options available on request

Note: The seat seal uses an X-ring.

The Inlet Seal and Cap Seal use an O-ring.

# Dimensions & Weights



11000 Series SRV (USCS)										
Size In.	Type	Orifice Area Sq. In.	Pressure Range psig	Inlet In.	Outlet In.	A In.	B In.	C In.	D In.	Approx Weight lb.
3/4	11132 11246	0.132 0.246	75-1040	0.5 MNPT	1 FNPT	3-5/16	2	11-5/6	2-9/16	7.7
			>1040					12-3/16		7.7
1	11132 11246	0.132 0.246	75-1040	1 MNPT				11-5/16		7.9
			>1040					12-13/16		7.9

11000 Series SRV (METRIC)										
Size mm	Type	Orifice Area Sq. sq. mm	Pressure Range barg	Inlet mm	Outlet mm	A mm	B mm	C mm	D mm	Approx Weight kg.
19	11132 11246	85 159	5-72	19	25	84	50	287	65	3.5
			>72					310		3.5
25	11132 11246	85 159	5-72	25				287		3.6
			>72					310		3.6

# Pressure/Temperature

11000 Series - Pressure/Temperature Psig							
Temperature (°F)		-20 to 100	200	300	400	500	600
Material Class	Base Material	psig					
CC	SA105	2000	1834	1770	1711	1630	1536
S4	316/316L	2000	1676	1514	1387	1292	1220

11000 Series - Pressure/Temperature Barg							
Temperature (°C)		-29 to 38	93	149	204	260	316
Material Class	Base Material	barg					
CC	SA105	138	127	122	118	112	106
S4	316/316L	138	116	104	96	89	84



# X-Ring Selection Guide

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 <sup>1</sup>	N1173-70	-25	-31	300	148
Ethylene/ Propylene	50	E981-50	-65	-53	212	100
	70	E603-70	-65	-53	212	100
	75 & 80 <sup>2</sup>	E740-75 & E515-80	-70	-56	250	121
	90	E962-90 <sup>3</sup>	-70	-56	500	260
	75 <sup>4</sup>	E962-75	-60	-51	250 / 400	121 / 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 <sup>5</sup>	82	1050LF	-4	-20	550	287
Kalrez <sup>5</sup>	75	4079	-4	-20	600	315
Kalrez <sup>5</sup>	91	3018	-4	-20	550	287
Kalrez <sup>5</sup>	65	1058	-4	-20	500	260

## General Elastomer Recommendations

Material	Recommended for	Not Recommended for	Mechanical Properties
Buna-N (Nitrile)	Silicone oils/greases, water, petroleum oils/fuels, ethylene glycol fluids	Ketones (MEK), halogenated hydrocarbons, auto, aircraft brake fluids, strong acids, sunlight, ozone, weathering	Good wear resistance, good compression set resistance, good short-term resilience, good permeation resistance
Viton® (Fluorocarbon Type A)	Vacuum, most acids/chemicals, halogenated hydrocarbons, Di-Ester lubricants, petroleum oils/fuels, silicone oils/greases	Ketones (MEK), auto/aircraft brake fluids, amines (ammonia). Acetone, skydrol, ethyl acetate, hot water/steam, low molecular esters and ethers	Good wear resistance, excellent compression set resistance, moderate short-term resilience, excellent permeation resistance
EPDM (Ethylene Propylene)	Sunlight, ozone, weathering, hot water/steam, auto/aircraft brake fluids, some acids and bases, ketones, and alcohols, plumbing	Petroleum oils/fuels	Good wear resistance, good compression set resistance, moderate short-term resilience, good permeation resistance
Aflas	Bases, sour oil/gas, steam, phosphate esters, amines, petroleum oils, acids, ozone, alcohols	Aromatic fuels, ketones, carbon tetrachloride, ethers, non-polar solvents, acetic acid, organic acetates	Good wear resistance, good compression set resistance, moderate short-term resilience, good permeation resistance
Perfluoroelastomer (Chemraz®/Kalrez®)	Low out gassing, chlorine wet/dry, petroleum oil, chlorinated hydrocarbons	Molten metals, gaseous alkali metals, halogenated Feons/fluids, uranium hexafluoride	Good wear resistance, good compression set resistance, moderate short-term resilience, good permeation resistance

# Orifice Capacity Chart

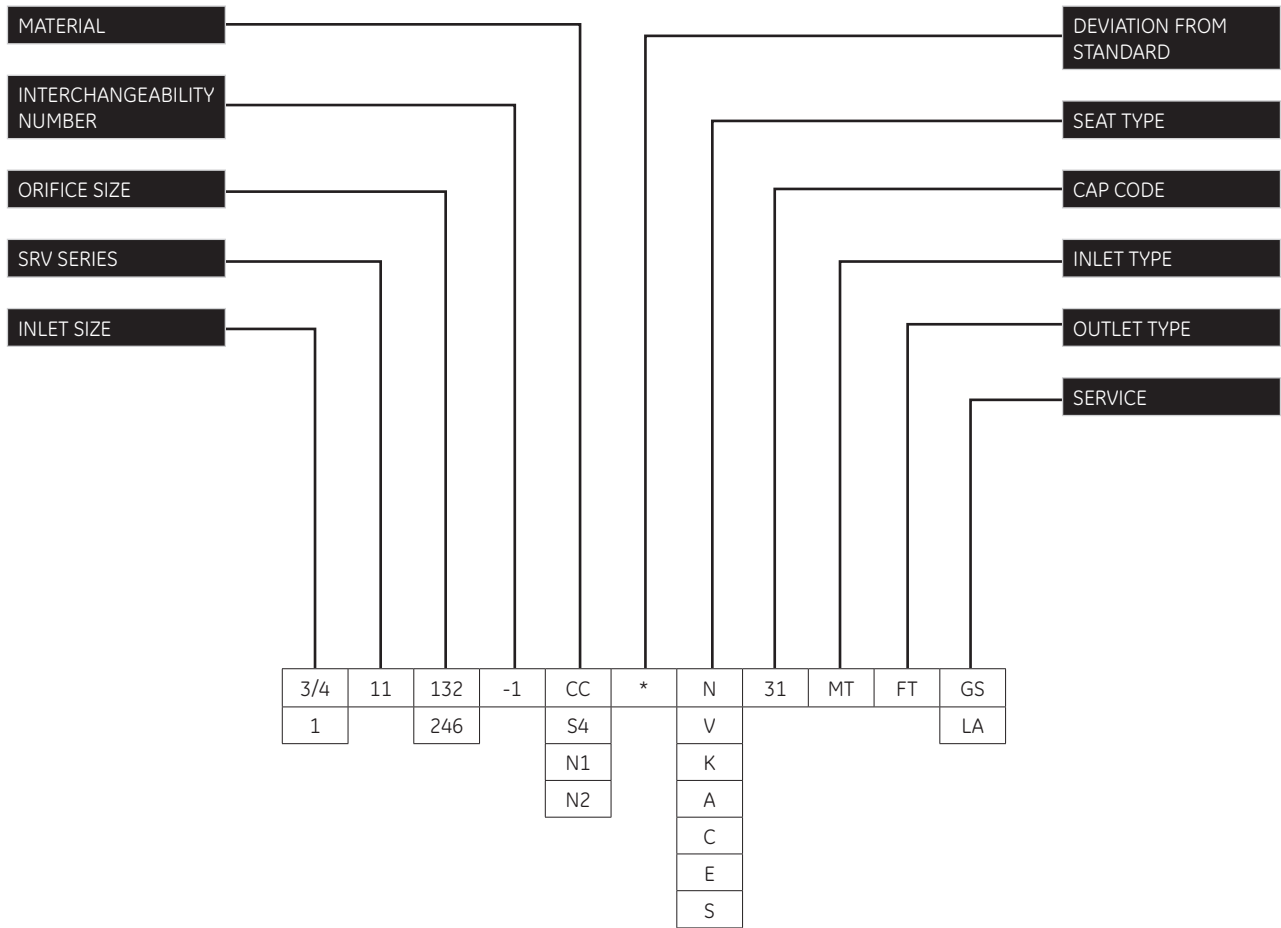
Capacities based on 10% overpressure or 3 psig (0.21 barg), whichever is greater, showing 90% actual capacity.

Medium Orifice Designation		Gas/Vapor		Liquid
Orifice Designation		D	E	E
Orifice Area		in <sup>2</sup>	in <sup>2</sup>	in <sup>2</sup>
Set Pressure		0.132	0.246	0.246
psig		SCFM		GPM
barg		SCFM		GPM
75	5	204.1	347.0	45.1
100	7	261.9	445.2	52.1
200	14	492.9	837.9	73.7
300	21	723.9	1230.6	90.3
400	28	954.9	1623.3	104.3
500	35	1185.9	2016.0	116.6
600	41	1416.9	2408.7	127.7
700	48	1647.9	2801.4	137.9
800	55	1878.9	3194.1	147.4
900	62	2109.9	3586.8	156.4
1000	69	2340.9	3979.5	164.8
1100	76	2571.9	4372.2	172.9
1200	83	2802.9	4764.9	180.6
1300	90	3033.9	5157.6	187.9
1400	97	3264.9	5550.3	195.0
1500	103	3495.9	5943.0	201.9
1505	104	3507.4	5962.6	202.2
1600	110	3726.9	6335.7	
1700	117	3957.9	6728.4	
1800	124	4188.9	7121.1	
1900	131	4419.9	7513.8	
2000	138	4650.9	7906.5	

# Spring Chart

Spring No.	Rate (lb/in)	Pressure Range (psig)		Standard Material	Seal Durometer (recommended)	Part No.
		Low	High			
1	50	75	82	316	70	W11001SY
2	56	83	96	316	70	W11002SY
3	65	97	107	316	70	W11003SY
4	71	108	118	316	70	W11004SY
5	80	113	133	316	70	W11005SY
6	89	134	148	316	70	W11006SY
7	100	149	166	316	70	W11007SY
8	112	167	186	316	70	W11008SY
9	125	187	208	316	70	W11009SY
10	140	209	232	316	70	W11010SY
11	155	233	250	316	70	W11011SY
12	163	251	273	316	70	W11012SY
13	184	274	306	316	70	W11013SY
14	205	307	342	17-7PH	70	W11014NC
15	230	343	386	17-7PH	70	W11015NC
16	260	387	438	17-7PH	70	W11016NC
17	295	439	494	17-7PH	70	W11017NC
18	333	495	557	17-7PH	70	W11018NC
19	375	558	626	17-7PH	90	W11019NC
20	420	627	713	17-7PH	90	W11020NC
21	480	714	817	17-7PH	90	W11021NC
22	550	818	910	17-7PH	90	W11022NC
23	605	911	1040	17-7PH	90	W11023NC
24	700	1041	1169	17-7PH	90	W11024NC
25	785	1170	1374	17-7PH	90	W11025NC
26	925	1375	1537	17-7PH	90	W11026NC
27	1025	1538	1620	17-7PH	90	W11027NC
28	1025	1621	1713	17-7PH	90	W11028NC
29	1150	1714	1892	17-7PH	90	W11029NC
30	1250	1893	2000	17-7PH	90	W11030NC

# Valve Configuration Code



# Valve Configuration Code (Contd.)

Material	
Designation	Material
CC	Carbon steel (standard)
S4	Stainless Steel
N1	Carbon steel Nace
N2	Stainless steel Nace

Orifice Size	
Designation	In.
132	0.132
246	0.246

Inlet Size	
Designation	In.
3/4	0.75
1	1

Seat Material	
Designation	Elastomer
N	Buna-Nitrile (standard)
V	Viton
K	Kalrez
A	Aflas
C	Chemraz
E	EPDM
S	Special

Cap Design	
Designation	Material
31	Screwed cap

Inlet	
Designation	Type
MT	Male NPT

Outlet	
Designation	Type
FT	Female NPT

Service	
Designation	Material
GS	Gas
LA	Liquid





# DIRECT SALES OFFICE LOCATIONS

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