

Safety Relief Valves

Overview

Parker Bestobell cryogenic safety relief valves are designed to protect piping, cryogenic static storage, and trailer tanks against damage from excessive over-pressure.

Each relief valve is characterized by a set pressure, which is the pressure at which the valve starts to open to discharge the excess pressure in the tank or piping. The Parker Bestobell cryogenic safety relief valve is designed with an accuracy of $\pm 3\%$, which means that the valve starts to open within the limits of $\pm 3\%$ of the set pressure.

When the excess pressure is released, the valve returns to the closed position (reseats), thus preventing the waste of expensive cryogenic gases. The valve's minimum pressure when closed, is around 92% of the set pressure.

Function:

- Prevents over-pressure

Applications:

- Transportation of Liquefied Gases
- Storages of Liquefied Gases
- Gas Processing

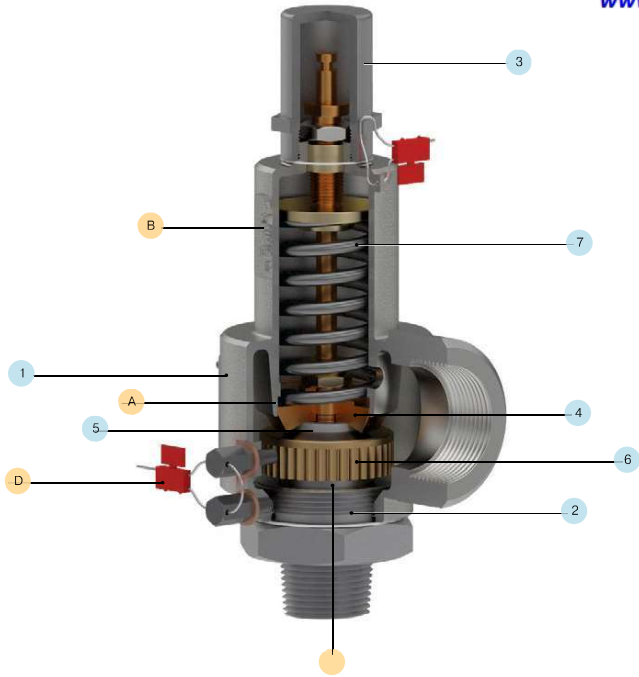
A lift-limiting stop helps prevent valve instability when discharging from or into the lengthy piping runs that can be a part of cryogenic systems.

Each valve is individually set to the required set pressure, which is clearly marked on the body, flow tested, and then stamped with the date of manufacture and its own unique serial number before dispatch. All valves are supplied protected with a tamper-proof seal.

Parker Bestobell cryogenic safety relief valves are available in three sizes, defined by the orifice diameter. Each size is available with a variety of inlet and outlet connections.

The valve can be installed vertically and horizontally.

Valve size	DN10 - DN20
Maximum Working Pressure (MWP)	Bronze: 40 bar (580 PSI) Stainless Steel: 30 bar (435 PSI)
Working temperature	-196°C to +65°C (-319°F to +149°F)
End connections	NPT, BSP
Body materials	Bronze, Stainless Steel
Suitable for media type	Group 1 gases Cleaned for oxygen service
Design and testing standards	ASTM B31.1, BS EN 1626, BS ISO 21011 Optional full material traceability backed by BS EN 10204 3.1/3.2 certification
Approvals	CRN, UKCA and PED approved
Marking	CE and UKCA marked



Features, Benefits and Values

Reference	Feature	Benefit	Value
A	Lift-limiting stop	Smooth operation Constant discharge pressure	Safety Performance Reliability
B	Unique serial number	Helps to identify each item Warranty control Enables location of the relevant certificate	Performance
C	Reseat design	Recloses and prevents loss of fluid when system pressure returns to acceptable	Performance Lower overall cost
D	Anti-tamper	Protection from unauthorized tampering	Safety
N/A	Weather proof cap	Prevents dirt and moisture from entering the valve	Reliability
N/A	Lever	Manual override to open the valve manually and release pressure from the valve in case of emergency	Performance & Safety

Technical Information

Bill of Materials

	Description	Bronze CWF,CWL Series	Stainless Steel CWT Series
1	Body	Gunmetal BS EN 1982 CC491K	Stainless Steel ASTM A351 CF8M
2	Seat	HT Brass BS EN 12164 CW721R	
3	Adjusting cap	Gunmetal BS EN 1982 CC491K	SS ASTM A351 CF8M
4	Disc DN10	Brass BS EN 12163 CW712R	
	Disc DN15, DN20	Phosphor Bronze BS EN 12163 CW451R	
5	Seal	PTFE TF7196	
6	Blow down ring	Gunmetal BS EN 1982 CC491K	
7	Spring	Stainless Steel 302 S26 BS2056	
N/A	Weather proof cap	HT Brass BS EN 12164 CW721R	SS 316 BS EN 10088-3 1.4401
N/A	Lever	Gunmetal BS EN 1982 CC491K	N/A

Safety Relief Valves

Ordering Information

Safety Relief Valves - Orifice Diameter 11.4 mm CWF20/CWL20/CWT20 Series

CWF		20		J	M	55	1					
Series		Orifice Diameter		Inlet Connection		Outlet Connection		Set Pressure (in PSI)	Options (Bronze valves only)			
Cryogenic Safety Relief Valves - Bronze (without lever)	CWF	11.4 mm	20	1/2" BSP-PL Male	J	3/4" BSP-PL Female	H	Insert number from 25 to 580 (See table 1)	No Drain	*		
				1/2" BSP-TR Male	K	3/4" BSP-TR Female	J		Elbow	1		
Cryogenic Safety Relief Valves - Bronze (with lever)	CWL			1/2" NPT Male	L	3/4" NPT Female	K		Inlet Adaptor, Elbow, Downpipe & Coupling	2		
				3/4" BSP-PL Male	M	1" BSP-PL Female	L				Inlet Adaptor	3
Cryogenic Safety Relief Valves - Stainless Steel with Bronze Internals (without lever)	CWT			3/4" BSP-PL Male c/w 60 Deg Cone	N	1" BSP-PL Male c/w 60 Deg Cone	M					
				3/4" BSP-TR Male	P	1" BSP-TR Female	N					
				3/4" NPT Male	R	1" BSP-TR Male	P					
						1" NPT Female	R					
*No designator required.												

Table 1 - Set Pressure (in PSI)																			
25	41	57	73	92	116	140	164	188	212	245	285	325	365	405	445	485	525	565	
27	43	59	75	95	119	143	167	191	215	250	290	330	370	410	450	490	530	570	
29	45	61	77	98	122	146	170	194	218	255	295	335	375	415	455	495	535	575	
31	47	63	79	101	125	149	173	197	220	260	300	340	380	420	460	500	540	580	
33	49	65	80	104	128	152	176	200	225	265	305	345	385	425	465	505	545		
35	51	67	83	107	131	155	179	203	230	270	310	350	390	430	470	510	550		
37	53	69	86	110	134	158	182	206	235	275	315	355	395	435	475	515	555		
39	55	71	89	113	137	161	185	209	240	280	320	360	400	440	480	520	560		

Notes:

- Inlet and outlet connections can be of different types.
- Offered with No Drain as standard. See the table above for available options. Options available on request: Full Stainless Steel valves.



Parker Bestobell Cryogenic Safety Relief Valve in Stainless Steel without Lever (Male NPT Inlet x Female NPT Outlet; No Drain)



Parker Bestobell Cryogenic Safety Relief Valve in Bronze without Lever (BSP-TR Male Inlet x BSP-PL Female Outlet; Elbow)



Parker Bestobell Cryogenic Safety Relief Valve in Bronze without Lever (BSP-TR Male Inlet x BSP-PL Female Outlet; Inlet Adaptor, Elbow, Downpipe & Coupling)

Safety Relief Valves - Orifice Diameter 14.0 mm CWF30/CWT30 Series

CWF		30		M	U	25	
Series		Orifice Diameter		Inlet Connection		Outlet Connection	Set Pressure (in PSI)
Cryogenic Safety Relief Valves - Bronze (without lever)	CWF	14.0 mm	30	3/4" BSP-PL Male	M	1-1/4" BSP-PL Female	T
Cryogenic Safety Relief Valves - Stainless Steel with Bronze Internals (without lever)	CWT			3/4" BSP-TR Male	P	1-1/4" BSP-TR Female	U
				3/4" NPT Male	R	1-1/4" NPT Female	V
				1" BSP-PL Male	S		
				1" BSP-TR Male	T		
		1" NPT Male	U				

Notes:

- Inlet and outlet connections can be of different types.
- Offered with No Drain as standard. Options available on request: Full Stainless Steel valves.

Safety Relief Valves - Orifice Diameter 20.5 mm CWF40/CWT40 Series

CWF		40		M	U	230			
Series		Orifice Diameter		Inlet Connection		Outlet Connection	Set Pressure (in PSI)		
Cryogenic Safety Relief Valves - Bronze (without lever)	CWF	20.5 mm	40	1" BSP-TR Male	T	1-1/4" BSP-PL Female	T		
				1" NPT Male	U	1-1/4" BSP-TR Female	U		
Cryogenic Safety Relief Valves - Stainless Steel with Bronze Internals (without lever)	CWT			1-1/4" BSP-PL Male	V	1-1/4" NPT Female	V		
				1-1/4" BSP-TR Male	W	1-1/2" BSP-PL Female	W		
				1-1/4" NPT Male	Y	1-1/2" NPT Female	Z		
						Insert number from 25 to 435 (See table 1)			

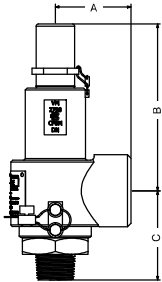
Notes:

- Inlet and outlet connections can be of different types.
- Offered with No Drain as standard. Options available on request: Full Stainless Steel valves.

Specifications

Threaded Ends

Valve Size		DN 10	DN 15	DN 20
Orifice Diameter	mm	11.4	14.0	20.5
A	mm	48	64	64
B	mm	130	133	133
C	mm	60	73	73
Coefficient of discharge		0.37	0.53	0.45
Weight	kg	1.5	3.0	3.0



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