

L9-LSP/LBP SAFETY VALVES

GENERAL FEATURES

In order to protect systems designed for different fluids and a certain pressure against all negativities, valves that provide controlled discharge of the fluid (vapor, liquid, gas) when the design pressure exceeds a certain value are called safety valves. Within the safety rules that must be taken regarding pressure vessels, the pressure vessel is usually equipped with 2 safety valves.

Function of Safety Valve

If the system pressure exceeds the pressure value set for the valve, it discharges a certain amount of steam, gas or liquid. Thus, it protects the pressure system that is required to be kept safe against unacceptable pressure increases.

The safety valve should be re-closed with the least possible pressure drop and the valve should remain leak-proof until the next opening.

The safety valve reaches its full discharge capacity with a maximum of 10% pressure increase over the set pressure. The closing pressure of the safety valve: It is a maximum of 10% below the initial opening pressure (set

pressure) for compressible substances and a maximum of 20% below the initial opening pressure (set pressure) for incompressible substances.

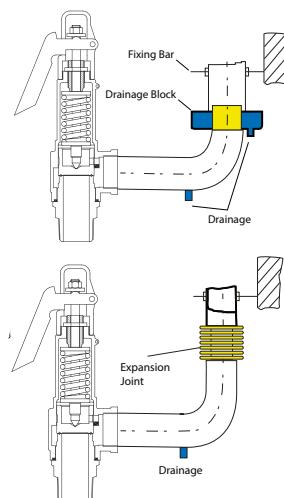
Assembly

- 1- Storage, transportation and assembly should be done carefully.
- 2- The valve should be protected from foreign matter and dust until the assembly time.
- 3- The valve shaft should be assembled with its axis vertical.
- 4- No valve should be placed between the safety valve and the pressure vessel.
- 5- The safety valve should have an easily intervenable area where it is assembled.
- 6- The safety valve outlet pipe should be opened to the atmosphere in the shortest way.
- 7- The safety valve outlet pipe should be inclined in the direction of the outlet.
- 8- If there is a rise after the safety valve, one of the options such as drainage, pot (two intertwined pipes), diameter enlargement should be designed to receive the water that may occur in the

elbow section.

9- A separate outlet line should be made for each safety valve. If it will enter the exhaust pipe; the distance between the safety valve outlet and the exhaust should be at least 4 meters.

Adjustment: Safety valves can be easily adjusted at the application site or they can be supplied with their settings made.



L9-LSP/LBP SAFETY VALVES

SAFETY VALVE TERMS

Operating Pressure: It is the pressure accepted inside the pressure vessel. It is below the set pressure.

Generally, the operating pressure is kept below the safety valve closing pressure.

Maximum Operating Pressure: It is the maximum pressure stated on the pressure vessel manufacturer's label.

Setting Pressure: It is the pressure at the moment when the valve disc starts to open.

Full Opening Pressure: It is the pressure at the moment of full discharge of the safety valve.

Closing Pressure: It is the pressure at the moment when the safety valve disc re-seats.

Back Pressure: It is the pressure on the outlet side of the safety valve.

Pressure Increase: It is the pressure difference between the initial opening pressure and the full opening pressure.

Pressure Drop: It is the pressure difference between the initial opening pressure and the closing pressure.

Working Pressure Difference: It is the sum of the pressure rise and pressure drop values.

Operation and Maintenance

Safety valves should be discharged from time to time by means of the blowdown lever. In this way, it is checked whether the safety valve is working normally and dirt accumulation inside is prevented. Safety valves should always be ready to work in order to protect the system in case all other products in the system do not work. In order to ensure this situation, safety valves should be subject to revision and maintenance in cases of unclean fluid and external environment.

FEATURES OF SAFETY VALVE THAT NEED TO BE KNOWN DURING THE SELECTION STAGE

- 1- System operating pressure
- 2- Initial opening (setting) pressure of the safety valve
- 3- Fluid type
- 4- Requirement discharge capacity
- 5- Fluid temperature
- 6- Back pressure at the valve outlet
- 7- It is recommended that you look at the safety valve tables.

Set Pressure Adjustment

1. Use the adjustment screw to adjust the set pressure. When adjusting the set pressure, turn the pressure adjustment screw to adjust the outlet (set value) pressure to at least 15% above the inlet pressure.

2. When the inlet pressure is increased and the set pressure is adjusted, tighten the pressure adjustment screw clockwise. When the set pressure setting is impaired, loosen the pressure adjustment screw counterclockwise and adjust again

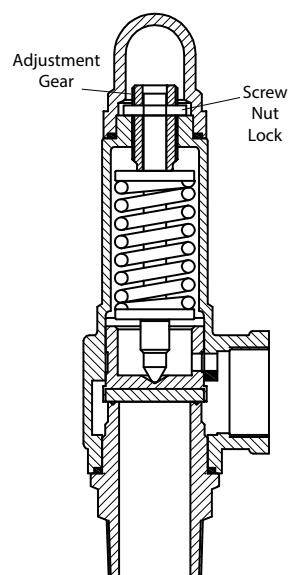
(Note: While the pressure adjustment screw is operating, first loosen the screw fixing nut counterclockwise, then adjust the set pressure to the desired value, then tighten the screw fixing nut clockwise.

3. According to the above steps, if the set pressure still does not change as expected: Check the following points.

a) Check the speed of the opening reaction when the safety valve reaches the set set pressure. If the reaction is slow; check the reasons in detail.

b) Check if the safety valve is damaged due to foreign matter or leakage.

4. The set pressure must be adjusted by authorized persons.



L9-LSP/LBP SAFETY VALVES

APPLICATION AREAS

Available Fluids

- Water
- Non-corrosive gas
- Corrosive gas
- Air and steam

Unused Fluids

- Cannot be used in liquid fuels

DISCHARGE CAPACITY TABLES

DISCHARGE CAPACITIES KG/H (MODEL L9-LBP, BRONZE, 2-10.5 BAR, HANDLE (w/PTFE) (MALE-FEMALE) PROPORTIONAL STEP GAS-WATER-AIR-STEAM-45/+185 °C)																				
	PRESSURE BAR for GAS (AIR AND STEAM)										PRESSURE BAR for WATER									
DIA	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10
1/2"	18	28	37	46	56	65	74	84	93	102	492	696	852	984	1100	1206	1300	1392	1480	1560
3/4"	39	59	79	99	119	139	159	179	198	218	1056	1488	1824	2100	2358	2580	2790	2982	3160	3330
1"	68	102	137	171	206	240	275	309	344	378	1824	2580	3120	3648	4080	4470	7860	5160	5460	5760
1 1/4"	111	168	224	281	337	394	450	507	563	619	2988	4224	5160	5940	6660	7320	7860	8400	8900	9450
1 1/2"	157	237	316	396	475	555	635	714	794	874	4212	5958	7260	8400	9420	10320	11100	11880	12600	13320
2"	272	410	547	685	823	961	1099	1237	1374	1512	7296	10300	12600	14580	16320	17820	19260	20580	21800	23000

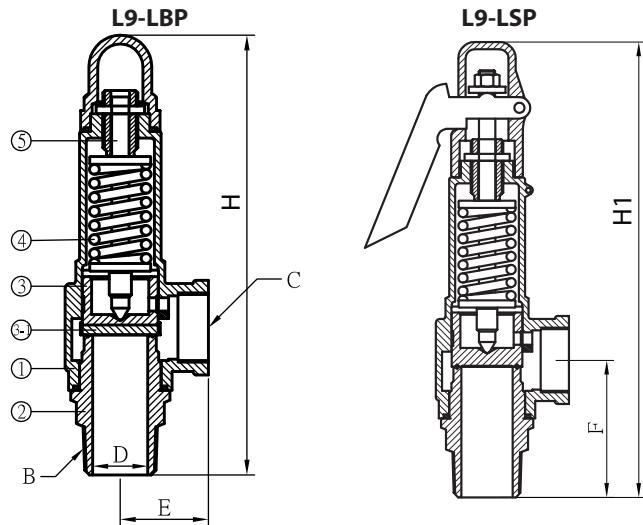
DISCHARGE CAPACITIES (MODEL L9-LBP 10.5-20 BAR, WITH HANDLE (w/PTFE) (MALE-FEMALE) PROPORTIONAL STEP WATER, NON-CORROSIVE GAS, AIR, STEAM -45/+185 °C)																				
	PRESSURE BAR for GAS (AIR AND STEAM)										PRESSURE BAR for WATER									
DIA	11	12	13	14	15	16	17	18	19	20	11	12	13	14	15	16	17	18	19	20
1/2"	112	121	130	140	149	158	167	177	186	195	1638	1710	1776	1848	1908	1974	2034	2094	2148	2208
3/4"	238	258	278	298	318	338	358	378	398	417	3492	3648	3798	3942	4080	4212	4344	4470	4590	4710
1"	413	447	481	516	550	585	619	654	688	723	6048	6318	6576	6822	7062	7296	7518	7740	7590	8154
1 1/4"	676	732	789	845	902	958	1015	1071	1128	1184	9912	10350	10776	11178	11574	11952	12318	12678	13038	13662
1 1/2"	953	1033	1112	1192	1272	1351	1431	1510	1590	1670	13974	14597	15192	15768	16320	16854	17356	17874	18366	18846
2"	1650	1788	1926	2064	2202	2339	2477	2615	2753	2891	24240	25320	26340	27300	28260	29220	30120	30960	31800	32640

DISCHARGE CAPACITIES KG/H (MODEL L9-LSP, SS304 (CF8), 2-10.5 BAR, HANDLE (w/PTFE) (MALE-FEMALE) PROPORTIONAL STEP NON-CORROSIVE GAS, CORROSIVE GAS, AIR, STEAM -5/+290 °C)																				
	PRESSURE BAR for GAS (AIR AND STEAM)										PRESSURE BAR for WATER									
DIA	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10
1/2"	18	28	37	46	56	65	74	84	93	102	492	696	852	984	1100	1206	1300	1392	1480	1560
3/4"	39	59	79	99	119	139	159	179	198	218	1056	1488	1824	2100	2358	2580	2790	2982	3160	3330
1"	68	102	137	171	206	240	275	309	344	378	1824	2580	3120	3648	4080	4470	7860	5160	5460	5760
1 1/4"	111	168	224	281	337	394	450	507	563	619	2988	4224	5160	5940	6660	7320	7860	8400	8900	9450
1 1/2"	157	237	316	396	475	555	635	714	794	874	4212	5958	7260	8400	9420	10320	11100	11880	12600	13320
2"	272	410	547	685	823	961	1099	1237	1374	1512	7296	10300	12600	14580	16320	17820	19260	20580	21800	23000

DISCHARGE CAPACITIES KG/H (MODEL L9-LSP, SS304 (CF8), 10.5-20 BAR, HANDLE (w/PTFE) (MALE-FEMALE) PROPORTIONAL STEP NON-CORROSIVE GAS, CORROSIVE GAS, WATER, AIR, STEAM -5/+290 °C)																				
	PRESSURE BAR for GAS (AIR AND STEAM)										PRESSURE BAR for WATER									
DIA	11	12	13	14	15	16	17	18	19	20	11	12	13	14	15	16	17	18	19	20
1/2"	112	121	130	140	149	158	167	177	186	195	1638	1710	1776	1848	1908	1974	2034	2094	2148	2208
3/4"	238	258	278	298	318	338	358	378	398	417	3492	3648	3798	3942	4080	4212	4344	4470	4590	4710
1"	413	447	481	516	550	585	619	654	688	723	6048	6318	6576	6822	7062	7296	7518	7740	7590	8154
1 1/4"	676	732	789	845	902	958	1015	1071	1128	1184	9912	10350	10776	11178	11574	11952	12318	12678	13038	13662
1 1/2"	953	1033	1112	1192	1272	1351	1431	1510	1590	1670	13974	14597	15192	15768	16320	16854	17356	17874	18366	18846
2"	1650	1788	1926	2064	2202	2339	2477	2615	2753	2891	24240	25320	26340	27300	28260	29220	30120	30960	31800	32640

L9-LSP/LBP SAFETY VALVES

TECHNICAL SPECIFICATIONS



DIMENSIONS (L9-LBP BRONZE SAFETY VALVES)											
DIA	H	Inlet Diameter B	Outlet Diameter C	Valve Seat Orifice D	E	F	Lifting Device	Weight Kg.	DIA	H1	Weight Kg.
1/2"	145	1/2"	1/2"	13	29	49	0,52	0,5	1/2"	168	0,6
3/4"	167	3/4"	3/4"	19	36	55	0,76	0,8	3/4"	190	0,9
1"	202	1"	1"	25	40	67	1	1,3	1"	223	1,4
1 1/4"	233	1 1/4"	1 1/4"	32	50	79	1,28	2,2	1 1/4"	248	2,2
1 1/2"	256	1 1/2"	1 1/2"	38	54	86	1,52	2,9	1 1/2"	272	2,9
2"	283	2"	2"	50	66	96	2	4,7	2"	299	5

DIMENSIONS (L9-LSP STAINLESS SAFETY VALVES)											
DIA	H	Inlet Diameter B	Outlet Diameter C	Valve Seat Orifice D	E	F	Lifting Device	Weight Kg.	DIA	H1	Weight Kg.
1/2"	142	1/2"	1/2"	13	29	49	0,52	0,5	1/2"	168	0,6
3/4"	164	3/4"	3/4"	19	36	55	0,76	0,7	3/4"	190	0,8
1"	200	1"	1"	25	40	67	1,00	1,2	1"	222	1,3
1 1/4"	232	1 1/4"	1 1/4"	32	50	79	1,28	2,0	1 1/4"	248	2,0
1 1/2"	256	1 1/2"	1 1/2"	38	54	86	1,52	2,6	1 1/2"	272	2,7
2"	283	2"	2"	50	66	96	2,00	4,3	2"	306	4,6

(Dimensions are given in mm.)

L9-LBP BRONZE SAFETY VALVES		
NO.	Part Name	L9 - LBP Arm
1	Valve Body	Cast Bronze
2	Seat	Forged Brass
3	Disc	Forged Brass
4	Soft Seal	Teflon (PTFE)
5	Shaft	Brass
Working Pressure		2-10.5 bar/10.5-20bar
Max. Working Pressure		PN25
Working Temperature		- 20 °C - 185 °C
Fluid		Non-Corrosive Gas/Fluid, Air, Steam, Water, Oil

L9-LSP STAINLESS SAFETY VALVES		
NO.	Part Name	L9 - LSP Arm
1	Valve Body	CF8 Stainless Steel
2	Seat	304 Stainless Steel or CF8
3	Disc	304 Stainless Steel or CF8
4	Soft Seal	304 Stainless Steel
5	Shaft	304 Stainless Steel
Working Pressure		2-10.5 bar/10.5-20bar
Max. Working Pressure		PN25
Working Temperature		- 20 °C - 185 °C
Fluid		Non-Corrosive Gas, Corrosive Gas, Air, Steam

L9-LSP/LBP SAFETY VALVES

3D APPLICATION EXAMPLE 1

