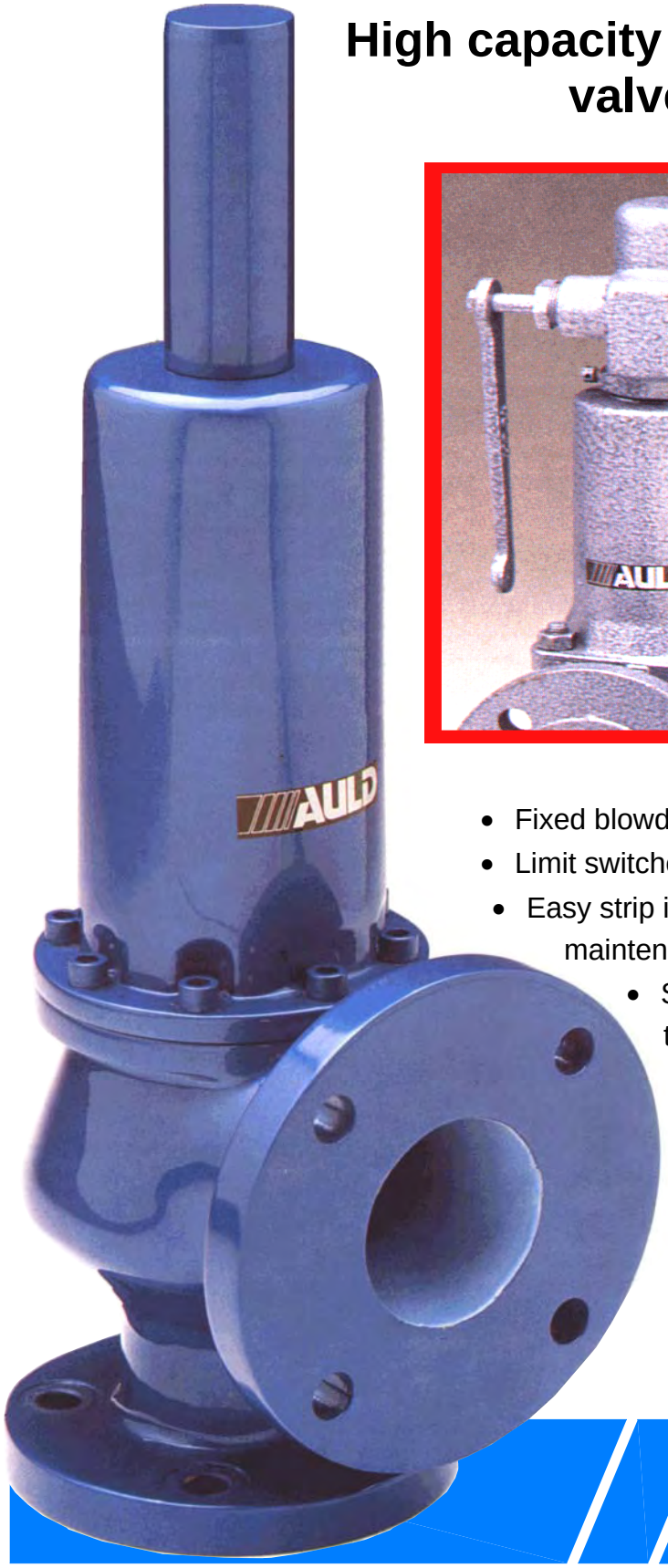
SuperVigilant Safety Valve
...for cool calculated protection.



High capacity to match modern control valves and systems

- Designed to BS6759 and TUV
- QA Assured plant to BS EN ISO 9001:2000
- 6 sizes plus complementary range
- Precision lapped faces, correct seat alignment for tight shut off
- 4 material versions including stainless and copper free

- Fixed blowdown for simplicity and reliability
- Limit switches for remote monitor
- Easy strip including seat and lid for CIP Zones and maintenance
- Springs to BS1726 in a variety of materials – the key to good performance

AULD®

PRESSURE CONTROL AND SAFETY VALVES

SAFETY RELIEF VALVE

The SuperVigilant is a Safety Relief valve - defined as a valve which will automatically discharge gases, vapours or liquids to prevent a predetermined safe pressure being exceeded. It has a rapid full opening action.

SET PRESSURE

The pressure measured at the valve inlet at which a safety relief valve should commence to lift under service conditions.

ACCUMULATION

The pressure increase over a maximum safe working pressure of the vessel or system when the safety relief valve is discharging at its rated capacity is called accumulation. The term refers to the vessel or the system to be protected and not to the valve. Accumulation is the same as overpressure when the valve is set at the design pressure of the vessel.

OVERPRESSURE

The pressure increase above set pressure at the valve inlet at which the discharge capacity is attained.

International overpressure code	Media	Over-pressure	Blowdown
BS6759 Pt 1	Steam	5%	15%
BS6759 Pt 2	Air	10%	10%
BS6759 Pt 3	Gas	10%	15%
BS6759 Pt 3	Liquid	10%	20%
AD Merkblatt A2	Steam/gas	5%	10%
AD Merkblatt A2	Liquid	10%	20%
Below 3 bar set pressures these figures increase			

RE-SEAT PRESSURE

The pressure measured at the valve inlet at which the safety relief valve re-seats.

BLOWDOWN

The pressure drop of a safety relief valve. It is the difference between the set pressure and the re-seating pressure expressed as a percentage of the set pressure or as a pressure difference.

SIMMER

The pressure zone between the valve set pressure and the popping pressure. In this pressure zone the valve is only slightly open and therefore discharging a small percentage of its rated capacity.

WARNING

A safety relief valve must be used on any closed vessel or system in which the design pressure can be exceeded.

OUTLET DISCHARGE PIPE

It is important that the outlet pipe is large enough to allow the discharge to escape. In most cases this will be to atmosphere and the pressure at the safety relief valve outlet will be atmospheric. If not consider the following definitions.

CONSTANT SUPERIMPOSED BACK PRESSURE

Constant pressure higher than atmosphere occurring at the valve outlet, usually because of system design. The SuperVigilant can be applied to constant back pressures up to 40% of the set pressure by setting the valve at the difference between the two pressures. (Differential set pressure)

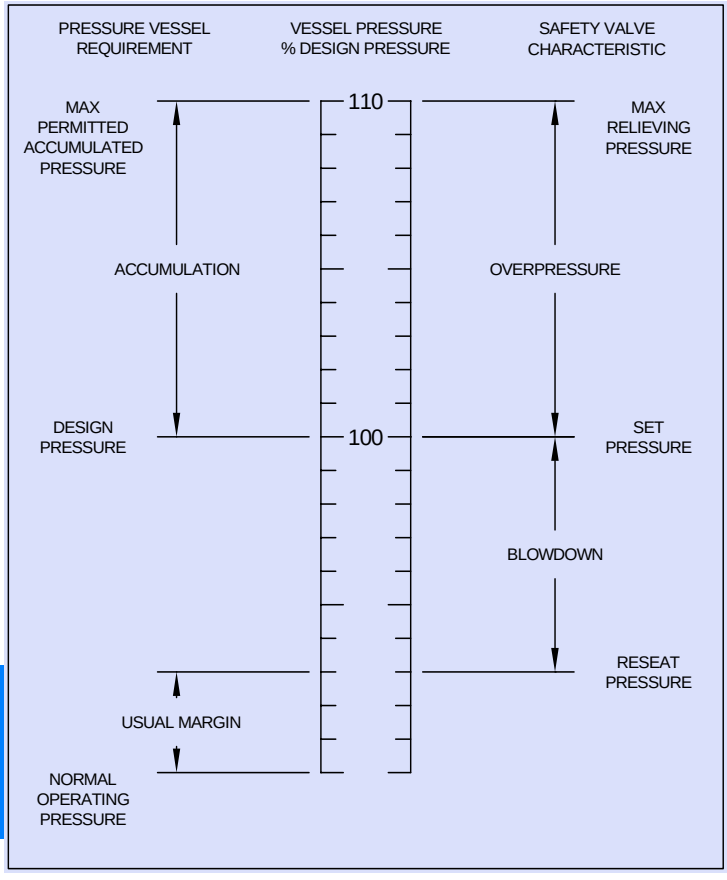
VARIABLE SUPERIMPOSED BACK PRESSURE

Variable pressure higher than atmosphere occurring at the valve outlet. This may for example result from a discharge into a common toxic disposal system for safety valves and other devices. A bellows sealed SuperVigilant must be used for variable pressures between 0 and 40% of the set pressure.

BUILT UP BACK PRESSURE

Pressure existing at the outlet of a safety valve caused by the flow through the valve into the disposal system. When this exceeds 15% of the set pressure a bellows seal must be used.

PRESSURE TERM RELATIONSHIP

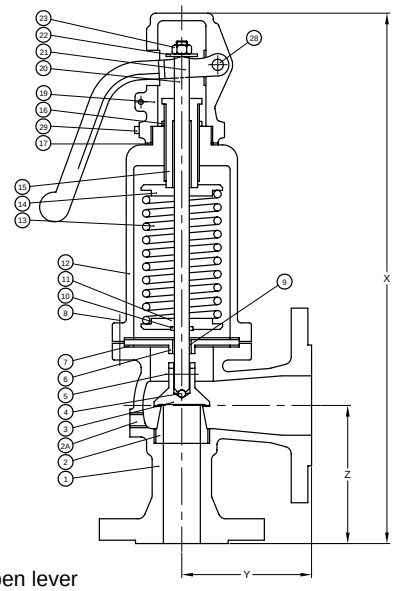


APPLICATION

The SuperVigilant must be correctly sized, applied and installed to achieve statutory protection. The definitions set out on the previous page will help and advice is available from Auld. In short, choose the highest set pressure allowable as this will lower the cost of the installation. Select the valve size which matches the required duty and check it falls within the operating limits. Choose the material option preferred and identify the accessories you may require.

PRINCIPAL FEATURES

The SuperVigilant is a high performance, full lift safety relief valve, designed to international codes to give repeatable safe action - and by adding limit switches it can be remotely monitored giving this performance. After overpressure it reseats quickly and gives tight shut off between blow offs. It is a high capacity valve matching modern control valve systems. This high capacity combined with the simplicity of design and construction gives the lowest cost per mass flow available. SuperVigilant gives protection on overpressure, shut off when not and lowest installed cost. It is available in four material versions including stainless steel and copper free to suit the most demanding processes and environmental conditions. Again simplicity of design means easy maintenance and cleaning in CIP zones.



Type 357 - open lever

Item	Description	Item	Description
1	Chest	12	Bonnet
2	Seat	13	Spring
2A	Body drain	14	Top spring cap
3	Valve lid	15	Adjusting screw
4	Ball	16	Locking ring
5	Valve pin	17	Gasket
6	Guide	19	Lever housing
7	Gasket	20	Spindle
8	Studs / nuts	21	Lever
9	Bush	22	Spindle collar
10	Collar	23	Nut
11	Bottom spring cap	28	Lever pin

FLANGES

The following flanges are in stock or on short delivery	
Cast iron	Carbon / SS
PN16 x PN16	PN40 x PN16

LIMITS

Material versions	Ref	Max temp	Max bar cold	Max bar steam
Cast iron std	M1	220°C	16	13
Cast steel std	M2	400°C	40	30
Cast steel copper free	M5	400°C	40	30
Stainless steel	M7	550°C	40	30
Note : Max bar fall at larger sizes				

DIMENSIONS

Valve size mm	25 x 40	40 x 65	50 x 80	65 x 100	80 x 125	100 x 150
Seat orifice dia	23.5	37.9	46.5	60	74	92
Alternative seat	May be used in special applications					
Height (X)	445	580	600	710	735	860
CL to outlet flange (Y)	100	115	120	140	160	180
CL to inlet flange (Z)	105	140	150	170	195	220
Body drain (2A)	1/4”	1/4”	1/4”	3/8”	3/8”	3/8”
Weight (kg)	12.5	24	26	46	50	72

ALTERNATIVES & ACCESSORIES

Ref	Detail
56	Manual easing lever - closed to atmosphere
57	Manual easing lever - open to atmosphere
PL	Pneumatic lift for remote operation
TG	Test gag - for site test - not for service
BS	Bellows seal - variable back pressure
ES	Soft valve face - for extreme shut off - 140°C max
XS	Springs - non standard for special conditions
PS	Limit switch - to indicate open and close
XT	Special testing
XC	Extra certification

SUPERVIGILANT SAFETY VALVE

SIZING

If your application is not covered by these capacity charts and you would prefer that we carry out the sizing for you - the following information is required:

- The type of fluid and any phase change
- The required capacity
- Set pressure requirement
- Over pressure requirement
- Back pressure - atmospheric or constant or variable

In some cases also the following

- Inlet temperature
- Compressibility factor
- Gas constant or isentropic coefficient K (cP/cV)
- Molecular weight
- Specific gravity

If you wish to size the valves yourself then we have a comprehensive Technical Brochure.

SATURATED STEAM CAPACITIES kg/h @ 5% OVERPRESSURE

Set point (bar g)	25 x 40	40 x 65	50 x 80	65 x 100	80 x 125	100 x 150
1	286	738	1111	1851	2815	4351
1.5	355	916	1379	2296	3493	5399
2	425	1112	1648	2744	4173	6450
2.5	491	1267	1907	3176	4830	7466
3	559	1441	2168	3610	5492	8488
3.5	711	1833	2759	4594	6988	10016
4	786	2026	3050	5078	7724	11070
4.5	860	2217	3338	5557	8453	12115
5	938	2419	3641	6062	9221	13216
5.5	1011	2607	3924	6533	9938	14243
6	1089	2807	4226	7036	10702	15340
6.5	1163	3000	4516	7519	11437	16392
7	1238	3192	4805	8000	12168	17441
7.5	1315	3391	5105	8500	12929	18532
8	1389	3582	5392	8977	13654	19571
9	1539	3970	5975	9949	15133	21689
10	1685	4344	6540	10888	16562	23738
11	1838	4739	7134	11878	18067	25897
12	1986	5121	7709	12835	19523	27983
13	2133	5501	8281	13788	20972	30060
14	2285	5894	8873	14772	22470	32206
16	2584	6663	10030	16700	25402	36409
18	2880	7428	11182	18617	28319	40590
20	3168	8169	12297	20474	31144	44638
22	3305	8591	12932	-	-	-
24	3539	9338	14056	-	-	-
26	3880	10085	15181	-	-	-
28	4168	10832	16305	-	-	-
30	4455	11579	17430	-	-	-

WATER CAPACITIES m^3/h @ 10% OP & 20°C

Set point (bar g)	25 x 40	40 x 65	50 x 80	65 x 100	80 x 125	100 x 150
0.5	9.7	25	37.8	63	95.8	148.2
1	11.2	29	43.7	72.7	110.7	171
2	13.7	35.5	53.5	89.1	135	209
3	15.9	41	61.7	102.9	156	242
4	17.8	45.9	69.1	115	175	270
5	19.5	50.2	75.7	126	191	296
6	21	54.2	81.7	136	207	320
7	22.5	58	87.4	145	221	342
8	23.8	61.5	92.7	154	234	363
9	25.1	64.8	97.7	162	247	382
10	26.3	68	102.5	170	259	401
11	27.6	71	107	178	271	419
12	28.7	74	111	185	282	436
13	29.7	76.8	115	192	293	452
14	30.8	79.5	120	199	303	468
15	31.8	82	123	206	313	484
16	32.7	84.6	127	212	322	499
17	33.7	87.1	131	218	332	513
18	34.6	89.4	134	224	341	527
19	35.6	91.7	138	230	350	540
20	36.4	94	141	236	358	554

COMPRESSED AIR CAPACITIES NCMH @ 0°C & 760 Torr 5%

Set point (bar g)	25 x 40	40 x 65	50 x 80	65 x 100	80 x 125	100 x 150
1	344	887	1335	2223	3381	5226
1.5	430	1109	1669	2779	4227	6533
2	516	1330	2003	3334	5072	7839
2.5	602	1552	2336	3890	5917	9146
3	688	1774	2670	4446	6762	10452
3.5	875	2257	3398	5657	8606	12334
4	973	2508	3776	6268	9562	13705
4.5	1070	2759	4153	6915	10518	15075
5	1167	3010	4531	7543	11474	16446
5.5	1264	3261	4908	8172	12430	17816
6	1362	3511	5286	8800	13386	19186
6.5	1459	3762	5663	9429	14343	20557
7	1556	4013	6041	10058	15299	21928
7.5	1653	4264	6418	10686	16255	23298
8	1751	4515	6796	11315	17211	24668
9	1945	5016	7551	12572	19123	27409
10	2140	5518	8306	13829	21036	30151
11	2334	6020	9061	15086	22948	32892
12	2529	6521	9816	16344	24860	35633
13	2723	7023	10572	17601	26773	38374
14	2918	7524	11327	18858	28685	41115
16	3307	8528	12837	21372	32510	46596
18	3696	9531	14347	23887	36335	52079
20	4084	10534	15857	26401	40159	57561
22	4263	11082	16682	-	-	-
24	4635	12046	18132	-	-	-
26	5005	13010	19583	-	-	-
28	5377	13973	21033	-	-	-
30	5747	14937	22484	-	-	-

FOR MORE INFORMATION

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