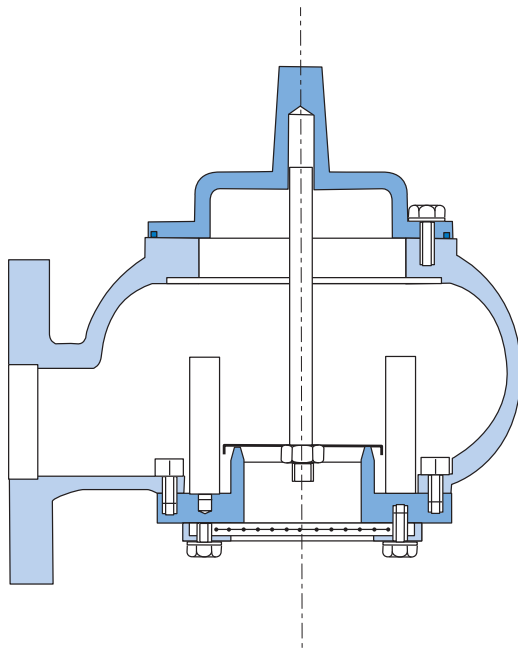




EMERSON™

ANDERSON GREENWOOD MARVAC SERIES 400 VACUUM RELIEF VALVES

Weight or spring loaded valves with a side inlet capable of effective vacuum relief.



FEATURES

- Weight or spring loaded models available.
- Choice of body materials.
- Modular design enables all components to be removed and replaced in-situ for quicker, simpler maintenance.
- Optional 'all-weather' coating prevents frozen condensate build-up and sticking of vital components in cold weather applications.
- ANSI and DIN flanges.

GENERAL APPLICATION

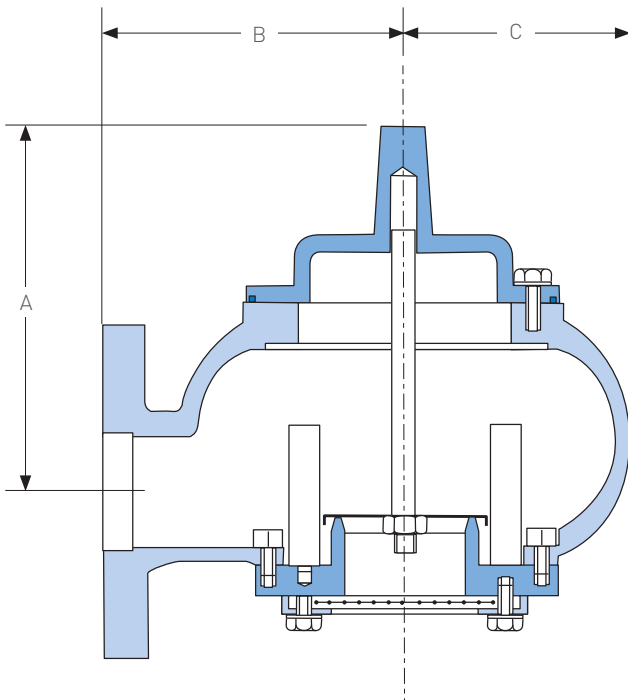
The Types 401 and 451 valves provide vacuum relief to protect tanks from damage or deformation in storage tank farms, oil and gas production, the petroleum, pharmaceutical and chemical sectors.

TECHNICAL DATA

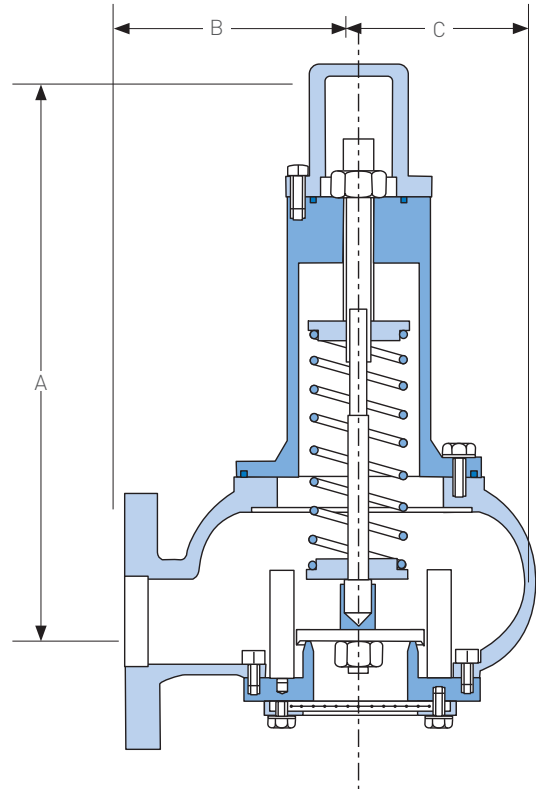
Materials:	Aluminum, carbon steel, stainless steel
Sizes:	2" to 16" (DN 50 to 400)
Vacuum settings	
Weight loaded:	2.5 to 60 mbarg
Spring loaded:	60 to 800 mbarg
Certification:	ATEX Directive 2014/34/EU

ANDERSON GREENWOOD MARVAC SERIES 400 VACUUM RELIEF VALVES

TYPE 401



TYPE 451



TYPE 401 DIMENSIONS

Nominal size DN	50	80	100	150	200	250	300	400
Nominal size NPS	2	3	4	6	8	10	12	16
A	166 mm (6.53")	179 mm (7.04")	202 mm (7.95")	200 mm (7.87")	217 mm (8.54")	230 mm (9.05")	300 mm (11.8")	417 mm (16.4")
B	140 mm (5.51")	180 mm (7.08")	200 mm (7.87")	242 mm (9.52")	310 mm (12.2")	358 mm (14.0")	393 mm (15.5")	510 mm (20.0")
C	105 mm (4.13")	140 mm (5.51")	162 mm (6.37")	202 mm (7.95")	237 mm (9.33")	280 mm (11.0")	326 mm (12.8")	417 mm (16.4")

TYPE 401 WEIGHTS

Nominal size DN	50	80	100	150	200	250	300	400
Nominal size NPS	2	3	4	6	8	10	12	16
Aluminum	4 kg (8.8 lbs)	6 kg (13 lbs)	10 kg (22 lbs)	17 kg (37 lbs)	26 kg (57 lbs)	39 kg (86 lbs)	51 kg (112 lbs)	110 kg (243 lbs)
CS/SS	11 kg (24 lbs)	22 kg (49 lbs)	35 kg (77 lbs)	48 kg (106 lbs)	72 kg (159 lbs)	101 kg (223 lbs)	135 kg (298 lbs)	420 kg (926 lbs)

TYPE 451 DIMENSIONS

Nominal size DN	50	80	100	150	200	250	300	400
Nominal size NPS	2	3	4	6	8	10	12	16
A	330 mm (12.9")	334 mm (13.1")	351 mm (13.8")	361 mm (14.2")	361 mm (14.2")	418 mm (16.4")	435 mm (17.1")	435 mm (17.1")
B	140 mm (5.51")	180 mm (7.08")	200 mm (7.87")	242 mm (9.52")	310 mm (12.2")	358 mm (14.0")	393 mm (15.4")	510 mm (20.0")
C	105 mm (4.13")	140 mm (5.51")	162 mm (6.37")	202 mm (7.95")	237 mm (9.33")	280 mm (11.0")	326 mm (12.8")	417 mm (16.4")

TYPE 451 WEIGHTS

Nominal size DN	50	80	100	150	200	250	300	400
Nominal size NPS	2	3	4	6	8	10	12	16
Aluminum	9 kg (19 lbs)	11 kg (24 lbs)	16 kg (35 lbs)	32 kg (70 lbs)	41 kg (90 lbs)	59 kg (13 lbs)	71 kg (15 lbs)	140 kg (30 lbs)
CS/SS	17 kg (37 lbs)	42 kg (92 lbs)	55 kg (12 lbs)	83 kg (18 lbs)	107 kg (23 lbs)	137 kg (30 lbs)	200 kg (44 lbs)	480 kg (10 lbs)

ANDERSON GREENWOOD MARVAC SERIES 400 VACUUM RELIEF VALVES

TYPE 401 WEIGHT LOADED VACUUM FLOW FIGURES

Set pressure mbarg	DN 50 (2")		DN 80 (3")		DN 100 (4")		DN 150 (6")		DN 200 (8")		DN 250 (10")		DN 300 (12")		DN 400 (16")	
	Over pressure		Over pressure		Over pressure		Over pressure		Over pressure		Over pressure		Over pressure		Over pressure	
	20%	40%	20%	40%	20%	40%	20%	40%	20%	40%	20%	40%	20%	40%	20%	40%
2.5	45	64	101	145	180	257	404	578	719	1029	1124	1608	1618	2316	2877	4117
5	64	91	143	205	254	364	571	817	1017	1455	1589	2274	2288	3275	4068	5822
10	90	129	202	289	359	514	807	1155	1438	2058	2247	3215	3235	4630	5751	8231
20	127	182	286	409	508	727	1141	1633	2032	2909	3176	4545	4573	6545	8130	11635
30	156	223	350	501	622	890	1397	1999	2488	3561	3888	5564	5599	8012	9953	14243
40	179	257	404	578	718	1027	1612	2307	2872	4110	4487	6421	6462	9247	11488	16439
50	201	287	451	646	802	1148	1802	2578	3210	4592	5015	7176	7222	10333	12838	18370
60	220	314	494	707	879	1257	1973	2823	3514	5028	5491	7857	7907	11314	14058	20113

Flow in m³/hr

Set pressure, inch w.c.	DN 50 (2")		DN 80 (3")		DN 100 (4")		DN 150 (6")		DN 200 (8")		DN 250 (10")		DN 300 (12")		DN 400 (16")	
	Over pressure		Over pressure		Over pressure		Over pressure		Over pressure		Over pressure		Over pressure		Over pressure	
	20%	40%	20%	40%	20%	40%	20%	40%	20%	40%	20%	40%	20%	40%	20%	40%
1	1589	2260	3567	5121	6357	9076	14267	20412	25391	36339	39694	56786	57139	81789	101600	145390
2	2260	3214	5050	7240	8970	12855	20165	28852	35915	51383	56115	80306	80800	115656	143660	205602
4	3178	4556	7134	10206	12678	18152	28499	40788	50782	72678	79352	113537	114243	163507	203095	290675
8	4485	6427	10100	14444	17940	25674	40294	57669	71759	102730	112159	160505	161494	231134	287108	410886
12	5509	7875	12360	17693	21966	31430	49335	70594	87863	125756	137303	196491	197727	282941	351487	502987
16	6321	9076	14267	20412	25356	36268	56927	81471	101424	145143	158457	226755	228203	326555	405695	580538
20	7098	10135	15927	22813	28322	40541	63637	91041	113360	162165	177103	253418	255042	364906	453370	648730
24	7769	11089	17445	24967	31042	44391	69676	99693	124096	177562	193913	277467	279233	399550	496453	710284

Flow in SCFH

TYPE 451 SPRING LOADED VACUUM FLOW FIGURES

Set pressure mbarg	DN 50 (2")		DN 80 (3")		DN 100 (4")		DN 150 (6")		DN 200 (8")		DN 250 (10")		DN 300 (12")		DN 400 (16")	
	Over pressure		Over pressure		Over pressure		Over pressure		Over pressure		Over pressure		Over pressure		Over pressure	
	20%	40%	20%	40%	20%	40%	20%	40%	20%	40%	20%	40%	20%	40%	20%	40%
60	118	167	264	375	470	667	1058	1500	1880	2667	2938	4167	4230	6000	7520	N/A
70	127	180	285	405	507	720	1140	1616	2030	2879	3172	4498	4567	6478	8120	11516
80	136	192	305	433	542	769	1218	1727	2169	3076	3389	4807	4881	6921	8676	12305
90	144	204	323	459	575	815	1291	1831	2300	3261	3593	5096	5174	7338	9199	13045
100	151	215	341	483	606	859	1360	1929	2423	3436	3786	5369	5452	7731	9692	13744
200	213	302	480	680	853	1209	1916	2715	3412	4835	5332	7555	7678	10879	13649	19341
400	299	423	673	952	1196	1693	2687	3802	4786	6773	7478	10583	10769	15240	19144	27093
600	363	514	818	1156	1454	2055	3265	4615	5815	8220	9086	12844	13084	18496	23261	32881
800	416	588	937	1323	1666	2353	3741	5283	6664	9410	10413	14704	14994	21173	26657	37642

Flow in m³/hr

N/A = Not available

Set pressure, Inch w.c.	DN 50 (2")		DN 80 (3")		DN 100 (4")		DN 150 (6")		DN 200 (8")		DN 250 (10")		DN 300 (12")		DN 400 (16")	
	Over pressure		Over pressure		Over pressure		Over pressure		Over pressure		Over pressure		Over pressure		Over pressure	
	20%	40%	20%	40%	20%	40%	20%	40%	20%	40%	20%	40%	20%	40%	20%	40%
24	4167	5898	9323	13243	16598	23555	37363	52972	66392	94184	103754	147156	149381	211888	265566	N/A
28	4485	6357	10065	14302	17905	25427	40259	57068	71689	101671	112018	158845	161282	228768	286755	406684
32	4803	6780	10771	15291	19141	27157	43013	60988	76597	108628	119681	169758	172371	244413	306390	434547
36	5085	7204	11407	16209	20306	28781	45591	64661	81224	115161	126886	179964	182718	259139	324860	460680
40	5333	7593	12042	17057	21401	30335	48028	68122	85567	121341	133701	189604	192536	273018	342270	485365
80	7522	10665	16951	24014	30123	42695	67663	95879	120494	170746	188298	266802	271146	384188	482010	683021
161	10559	14938	23767	33620	42236	59788	94890	134266	169016	239186	264083	373735	380304	538195	676064	956780
241	12819	18152	28887	40824	51348	72572	115302	162977	205355	290287	320869	453581	462057	653180	821454	1161181
321	14691	20765	33090	46721	58834	83095	132112	186567	235337	332311	367732	519267	529508	747717	941383	1329314

Flow in SCFH

N/A = Not available

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