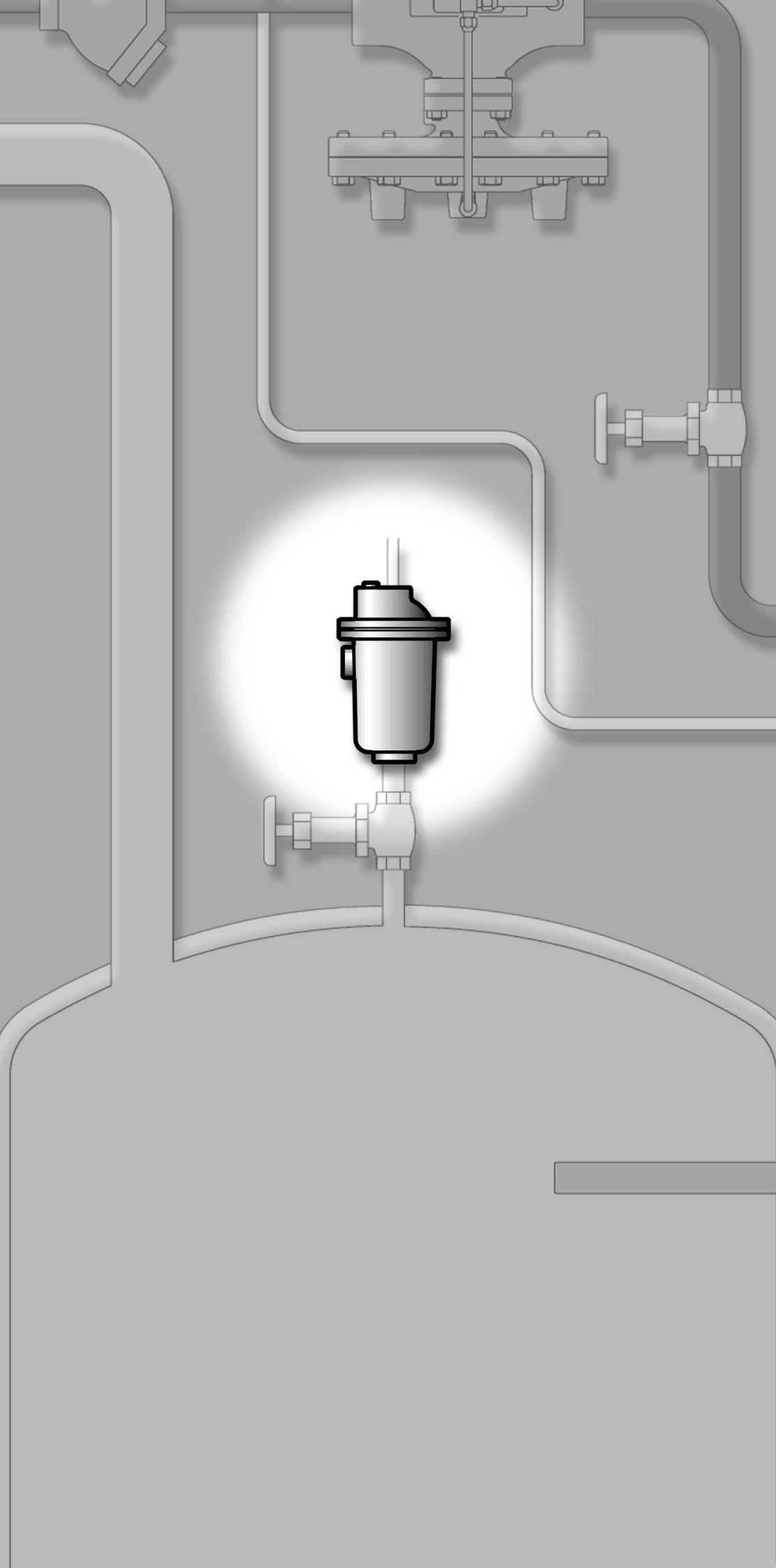


Air Vents

Armstrong





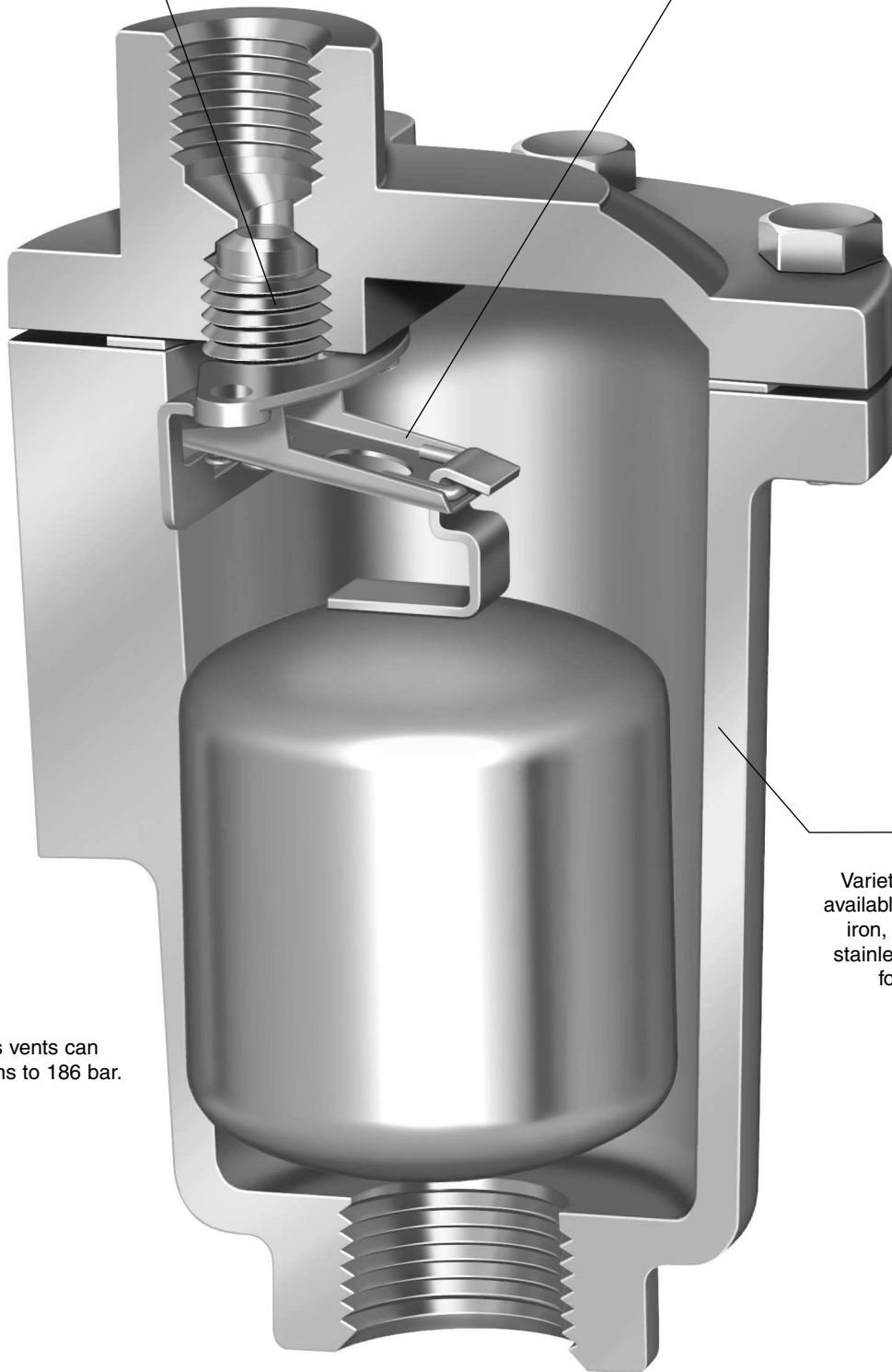
# Air Vents

### Proven

Same proven, free-floating all stainless steel mechanism as used in Armstrong steam traps.

### Leak-tight

Positive closing, free-floating stainless steel lever ensures leak-tight closing under all conditions.



### Body options

Variety of body materials available: polysulfone, cast iron, forged steel and all stainless steel. A material for every application.

### High pressure

Armstrong air/gas vents can handle applications to 186 bar.

Air Vents

# Selecting The Armstrong Air/Gas Vent

With the desired capacity in m<sup>3</sup>/h known, find the orifice size required from the table on this page. Then find the vent or vents with the correct orifice size on pages AV-396 to AV-405 that will operate at the required pressure with a liquid of the specific gravity being handled.

**Example** – Find a model number that will vent 88,3 m<sup>3</sup>/h of air (including safety factor of 1,5 - 2,0) from a liquid with a specific gravity of 0,93 at 17 bar. Using the table below, follow the 17 bar line across to the number 103. Orifice size is 5/32". Now go to pages AV-396 to AV-405 checking the 5/32" orifice lines to locate a vent for 17 bar or higher with 0,90 gravity liquid.

**Note:** Since specific gravity falls between 0,95 and 0,90, use 0,90 gravity data. The model 3-AV on page AV-398 is the one to use.

## For Venting During Filling Only

If a vent is required only for getting rid of air when a system is started up, such as when starting up a deep well pump or filling an empty pipe, tank or other vessel, ability of the vent to open at operating pressure can be ignored. In these cases, a model number with a large orifice for fast venting may be selected, **but the vent will not open after air is expelled and the system reaches operating pressure.**

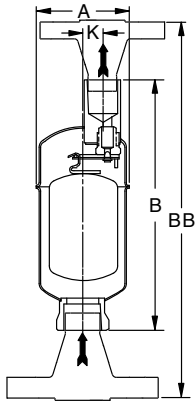
<b>Table AV-393-1. Discharge of Air Through an Orifice in m<sup>3</sup>/h at a Standard Atmospheric Pressure of 1 bar(a) and 21°C</b>																						
Pressure barg	Orifice Diameter, inch																					
	1/16"	5/64"	3/32"	#38	7/64"	1/8"	9/64"	5/32"	3/16"	7/32"	1/4"	9/32"	5/16"	11/32"	3/8"	7/16"	1/2"	9/16"	5/8"	3/4"	7/8"	1 1/16"
0,3	1,10	1,72	2,46	2,63	3,36	4,38	5,56	6,85	9,87	13,4	17,5	22,3	27,4	33,1	39,4	53,7	70,2	88,9	110	158	214	316
0,4	1,21	1,87	2,70	2,89	3,67	4,79	6,07	7,49	10,8	14,7	19,2	24,3	29,9	36,2	43,2	58,6	76,6	97,0	120	173	234	347
0,5	1,29	2,02	2,91	3,11	3,96	5,16	6,54	8,07	11,6	15,8	20,7	26,2	32,3	39,1	46,4	63,2	82,6	104	129	185	253	374
0,6	1,46	2,28	3,28	3,52	4,47	5,83	7,37	9,11	13,1	17,8	23,3	29,6	36,4	44,0	52,5	71,4	93,3	118	146	209	285	421
0,8	1,67	2,62	3,75	4,03	5,11	6,68	8,46	10,4	15,0	20,4	26,7	33,8	41,8	50,5	60,1	81,9	107	135	167	241	328	483
1,0	1,85	2,91	4,18	4,47	5,67	7,42	9,40	11,6	16,7	22,8	29,7	37,5	46,4	56,1	66,8	90,9	119	150	185	267	364	537
1,4	2,12	3,31	4,77	5,11	6,49	8,48	10,7	13,3	19,0	26,0	34,0	43,0	53,0	64,1	76,3	104	136	172	212	306	416	613
1,7	2,34	3,67	5,28	5,66	7,19	9,40	11,9	14,7	21,1	28,7	37,5	47,6	58,6	71,0	84,4	115	150	190	234	338	460	678
2,0	2,62	4,08	5,88	6,29	8,00	10,4	13,2	16,3	23,4	31,9	41,8	52,8	65,2	79,0	94,0	128	167	212	262	375	511	754
2,4	2,94	4,60	6,63	7,08	9,02	11,8	14,9	18,3	26,5	36,0	47,1	59,6	73,6	89,0	106	144	189	238	294	425	578	851
2,8	3,28	5,11	7,37	7,88	10,0	13,1	16,6	20,4	29,4	40,1	52,3	66,3	81,9	99,1	118	160	209	265	328	471	642	946
3,1	3,60	5,62	8,10	8,66	11,0	14,4	18,2	22,4	32,5	44,2	57,6	72,9	90,0	109	130	177	231	292	360	518	705	1 040
3,5	3,92	6,13	8,83	9,45	12,0	15,7	19,9	24,5	35,3	48,1	62,9	79,5	98,0	119	141	192	251	318	392	566	770	1 133
4,1	4,57	7,14	10,3	11,0	14,0	18,3	23,1	28,5	41,1	55,9	73,1	92,4	114	138	164	224	292	370	457	658	895	1 320
4,8	5,20	8,14	11,7	12,5	16,0	20,9	26,3	32,6	46,9	63,7	83,3	106	130	157	187	255	333	421	520	749	1 021	1 505
5,5	5,84	9,12	13,2	14,1	17,8	23,4	29,6	36,5	52,7	71,5	93,4	118	146	177	211	287	374	474	584	841	1 145	1 689
6,2	6,47	10,1	14,6	15,6	19,9	26,0	32,8	40,4	58,3	79,3	104	131	162	195	233	318	415	525	647	933	1 269	1 872
7,0	7,12	11,1	16,0	17,2	21,7	28,4	36,0	44,5	64,1	87,2	114	144	178	216	257	348	455	576	712	1 025	1 393	2 056
7,6	7,75	12,1	17,5	18,7	23,8	30,9	39,2	48,4	69,7	94,8	124	157	194	234	279	379	496	627	775	1 115	1 517	2 238
8,5	8,68	13,6	19,5	20,9	26,7	34,8	44,0	54,4	78,2	107	139	177	217	263	313	426	556	703	868	1 252	1 704	2 511
10	10,3	16,0	23,1	24,8	31,4	41,1	52,0	64,2	92,4	126	164	207	257	311	369	503	658	831	1 026	1 478	2 012	2 966
14	13,4	20,9	30,2	32,3	41,1	53,7	68,0	83,8	121	164	214	272	335	406	483	658	858	1 086	1 341	1 930	2 628	3 875
17	16,5	25,8	37,2	39,9	50,6	66,3	83,8	103	149	202	265	335	413	501	596	810	1 058	1 341	1 655	2 382	3 243	4 781
20	19,7	30,8	44,3	47,4	60,3	78,7	99,6	123	177	241	314	399	493	595	708	965	1 259	1 594	1 967	2 834	3 858	5 688
28	26,0	40,6	58,4	62,5	79,5	104	131	162	233	318	415	525	649	785	934	1 271	1 662	2 255	2 594	3 736	5 087	7 499
35	32,3	50,3	72,5	77,6	98,7	129	163	202	291	394	515	652	805	975	1 160	1 578	2 063	2 610	3 221	4 640	6 315	9 311
41	38,4	60,1	86,6	92,8	118	154	195	241	347	471	615	780	962	1 164	1 385	1 886	2 464	3 118	3 848	5 540	7 542	11 122
52	47,9	74,8	108	115	147	192	243	299	432	586	766	970	1 196	1 448	1 723	2 346	3 063	3 879	4 788	6 895	9 384	13 837
69	63,5	99,2	143	153	195	255	321	398	573	778	1 016	1 286	1 589	1 992	2 287	3 113	4 066	5 146	6 354	9 149	12 452	18 361

Air Vents

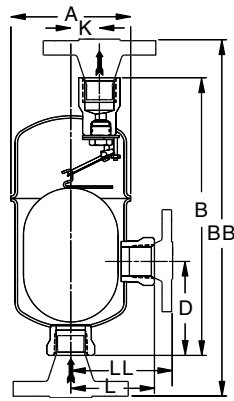


# Free Floating Lever Air/Gas Vents – All Stainless Steel

For Pressures to 41 bar or Specific Gravity Down to 0,50



Model 11-AV



Model 22-AV and 13-AV



The Armstrong all-stainless steel guided lever air vents have been developed to provide positive venting of air/gases under pressure.

The body and cap and all working parts of the models 11-AV, 22-AV and 13-AV are made of high strength, corrosion resistant stainless steel. Body and caps are welded together to form a permanently sealed, tamperproof unit with no gaskets. Elliptical floats and high leverage provide up to 195 m<sup>3</sup>/h capacity for these compact air/gas vents. Lever action is guided to assure proper seating of the valve under all operating conditions.

11-AV, 22-AV and 13-AV – All stainless steel construction where exposure to either internal or external corrosion is a problem. These air/gas vents have the same proven free floating mechanisms used in other Armstrong steam traps. Pressures to 41 bar @ 38°C.

Table AV-404-1. 10-AV Series Physical Data

Model No.	11-AV	22-AV	13-AV
Pipe Connections	15 – 20**	20	25
"A"	70	99	114
"B"	183	221	289
"BB" (PN40*)	225 – 230	271	375
"D"	–	86	156
"K"	14	22	30
"L"	–	67	83
"LL" (PN40*)	–	117	126
Weight in kg (screwed & SW)	0,80	2,3	3,4
Weight in kg (flanged PN40*)	2,9 – 4,0	5,2	7,3
Maximum Allowable Pressure (Vessel Design)	34 bar @ 38°C 30 bar @ 260°C	41 bar @ 38°C 33 bar @ 260°C	39 bar @ 38°C 34 bar @ 360°C

\* Standard flanges are in carbon steel, stainless steel flanges are optional. Other flange sizes, ratings and face-to-face dimensions are available on request.

\*\* 1/2" outlet.

Shade indicates products that are CE Marked according to the PED (97/23/EC). All the other models comply with the Article 3.3 of the same directive.

Table AV-404-2. 10-AV Series List of Materials

Model No.	Valve & Seat	Leverage System	Float	Body & Cap
11-AV	*440	303/304	304	Sealed
22-AV	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
13-AV	Steel	Steel	Steel	304-L

\* Type 316 SS valve and seat available. Consult factory.

**All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.**

# Free Floating Lever Air/Gas Vents – All Stainless Steel

For Pressures to 41 bar or Specific Gravity Down to 0,50



Maximum Operating Pressures of free floating lever vents with weighted floats for different orifice sizes, and the specific gravities on which they can be used.

Minimum Specific Gravity	0,75	0,50
Float weight in grams	82 – Standard	59 – Special
Orifice Size (in)	Maximum Operating Pressure in bar	
1/8"	12	8
#38	18	12
5/64"	28	21

Specific Gravity*	1,00	0,95	0,90	0,85	0,80	0,75	0,70	0,65	0,60	0,55	0,50
Float weight in grams	282	268	254	240	226	212	152	141	130	119	109
Orifice Size (in)	Maximum Operating Pressure in bar										
5/16"	2,4	2,3	2,2	2,0	1,9	1,8	1,3	1,2	1,1	1,0	0,9
1/4"	3,9	3,7	3,5	3,4	3,2	3,0	2,1	2,0	1,8	1,7	1,5
3/16"	8,7	8,2	7,8	7,4	7,0	6,5	4,7	4,4	4,1	3,7	3,4
5/32"	14,9	14,2	13,5	12,7	12,0	11,2	8,1	7,6	7,0	6,4	5,8
1/8"	25,6	24,3	23,0	21,8	20,5	19,2	13,9	12,9	12,0	11,0	10,0
7/64"	32,7	31,1	29,5	27,9	26,2	24,6	17,8	16,5	15,3	14,0	12,8
#38	40,7	38,7	36,7	34,7	32,7	30,6	22,1	20,6	19,0	17,5	15,9
5/64"	41,4	41,4	41,4	41,4	41,4	41,4	32,6	30,3	28,1	25,8	23,5

Specific Gravity*	1,00	0,95	0,90	0,85	0,80	0,75	0,70	0,65	0,60
Float weight in grams	423	402	381	360	339	318	296	275	254
Orifice Size (in)	Maximum Operating Pressure in bar								
1/2"	1,5	1,4	1,3	1,3	1,2	1,1	1,0	1,0	0,9
3/8"	3,1	3,0	2,8	2,7	2,5	2,3	2,2	2,0	1,9
5/16"	5,0	4,7	4,5	4,2	4,0	3,8	3,5	3,3	3,0
9/32"	6,6	6,3	6,0	5,6	5,3	5,0	4,7	4,3	4,0
1/4"	9,9	9,4	8,9	8,5	8,0	7,5	7,0	6,5	6,0
7/32"	14,0	13,0	13,0	12,0	11,0	10,7	10,0	9,3	8,6
3/16"	21,0	20,0	19,0	18,0	17,0	16,0	15,0	14,0	13,0
5/32"	33,0	32,0	30,0	28,0	27,0	25,0	24,0	22,0	20,0
1/8"	39,0	39,0	39,0	39,0	39,0	39,0	39,0	39,0	39,0
7/64"	39,0	39,0	39,0	39,0	39,0	39,0	39,0	39,0	39,0

\* If specific gravity falls between those shown, use next lowest: e.g., if actual gravity is 0,73, use 0,70 specific gravity data.

Air Vents