Free Floating Lever Air/Gas Vents

Models 11AV, 22AV and 13AV

Installation and Operation Manual

Armstrong®

Overview

Warning: *This bulletin should be used by experienced personnel as a guide to the installation and maintenance of the Armstrong Air/Gas Vents. Selection or installation of equipment should always be accompanied by competent technical assistance. We encourage you to contact Armstrong or your local representative if further information is required.*

Installation Procedures

- Install air vents at all the high points on liquid service systems, hydronic systems, or any liquid storage or distribution system. See Figures 1, 2 & 3 for typical installations.

1. Do not exceed the maximum allowable pressure noted on the label on the side of the air vent body. Also, check to see if the air/gas vent has the proper maximum differential pressure for your particular application.

2. Be certain the vent is installed properly. Note the direction of **flow arrow** on the label and the **red label** indicating **UP** for air and gas venting service.

3. Before installing the vent, flush out the line to remove loose dirt. Use pipe dope or teflon tape sparingly and on male threads only. Leave the end thread exposed to avoid introducing sealant into the system.

4. When tightening a pipe into either the inlet or outlet fittings of an 11AV, 22AV or 13AV use only the hex-shaped fittings as wrenching surfaces. Do not use other parts of the vent for wrenching as unnecessary stress may be placed on the vent body.

5. The inlet and outlet piping should be the same size as the air vent connections. Do not reduce the size of the inlet on light loads; however, smaller pipe or tubing may be used on the outlet. Keep the piping as short as possible, with a minimum of valves and fittings. **If you are installing an air vent without an equalizing connection, do not use elbows in the inlet line from the equipment to the vent.**

6. Install gate valves or full ported ball valves **(Do Not Use Globe Valves)** so the air vent can be isolated from the system to permit servicing. If the air vent is installed in a closed piping arrangement, install a union on each side of the air vent.

7. **Do Not** use a pipeline strainer in the line leading to the vent.

8. Air vents should be installed so that they can be checked periodically. A drain line should be piped to a floor drain or to a visible location where it can be regularly checked for leakage.

Caution: *Do not install air vents with an open discharge where a malfunction could cause damage i.e. above false ceilings.*

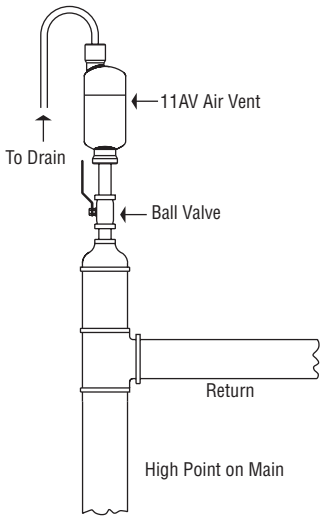

Figure I. Installation of Model 11AV automatic air vent on high point of main.

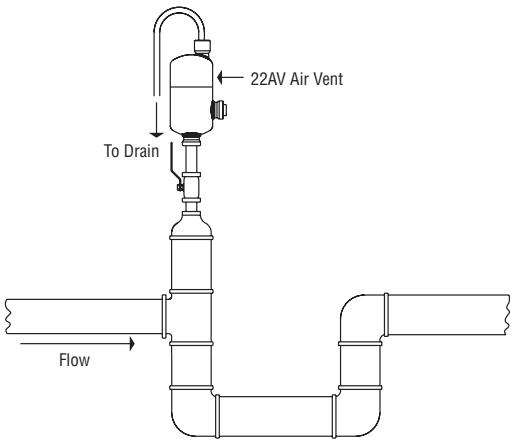

Figure 2. Installation of a Model 22AV automatic air vent on loop in piping.

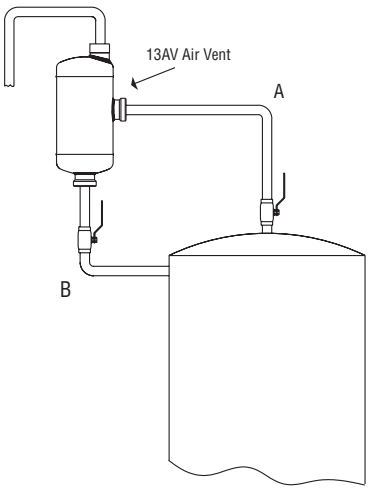

Figure 3. Continuous venting using a Model 13AV with an equalizing line where large amounts of air must be vented. As air enters line A, water leaves through line B.

Troubleshooting

- **Check operation.** It is normal on hydronic systems to have no discharge from the vent, but this is not proof that the vent is functioning properly. To check the air vent, disconnect the outlet piping and observe the discharge from the unit. If the vent is working correctly, a little air should escape, followed by a small amount of liquid.
- When an 11AV, 22AV or 13AV is not operating properly, remove it from service and force water or air through the discharge fitting. Back-flushing to remove scale and dirt often restores the air vent to its normal operating condition.
- When an 11AV, 22AV or 13AV cannot be made to operate properly, replace it with a new one having the same orifice size.
- On new installations, an air vent may fail to open if the maximum operating pressure on the label is less than the actual pressure being encountered. If this is the case, replace the air/gas vent with one sized properly for your higher maximum operating pressure. Consult your Armstrong Representative.
- An unusual increase in system pressure may cause the air vent to lock shut. Either eliminate the cause of the increased pressure or replace the air vent with one that can handle the peak pressures.

For assistance with an unsual installation or service problems, contact your Armstrong Representative or Armstrong International's Application Engineering Department

Free Floating Lever Air/Gas Vents - All Stainless Steel

Models 11AV, 22AV and 13AV

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.

11-AV Maximum Operating Pressures				
Minimum Specific Gravity	0.75		0.50	
Float wt., oz (g)	2.90 (82) Standard		2.08 (59) Special	
Orifice Size (in)	**Maximum Operating Pressure**			
	psi	bar	psi	bar
1/8	178	12	118	8
#38	267	18	177	12
5/64	400	28	311	21

22-AV Maximum Operating Pressure																						
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 wt., oz (g)	10.0 (282)		9.5 (268)		9.0 (254)		8.5 (240)		.0 (226)		7.5 (212)		5.4 (152)		5.0 (141)		4.6 (130)		4.2 (119)		3.8 (109)	
Orifice Size (in)	**Maximum Operating Pressure**																					
	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar
5/16	35	2.4	33	2.3	31	2.2	30	2.0	28	1.9	26	1.8	19	1.3	18	1.2	16	1.1	15	1.0	14	0.9
1/4	57	3.9	54	3.7	51	3.5	49	3.4	46	3.2	43	3.0	31	2.1	29	2.0	27	1.8	24	1.7	22	1.5
3/16	126	8.7	120	8.2	113	7.8	107	7.4	101	7.0	95	6.5	68	4.7	64	4.4	59	4.1	54	3.7	49	3.4
5/32	217	14.9	206	14.2	195	13.5	185	12.7	174	12.0	163	11.2	118	8.1	110	7.6	101	7.0	93	6.4	85	5.8
1/8	371	25.6	352	24.3	334	23.0	316	21.8	297	20.5	279	19.2	202	13.9	187	12.9	173	12.0	159	11.0	145	10.0
7/64	474	32.7	451	31.1	427	29.5	404	27.9	380	26.2	357	24.6	258	17.8	240	16.5	222	15.3	204	14.0	186	12.8
#38	590	40.7	561	38.7	532	36.7	503	34.7	473	32.7	444	30.6	321	22.1	298	20.6	276	19.0	253	17.5	231	15.9
5/64	600	41.4	600	41.4	600	41.4	600	41.4	600	41.4	600	41.4	473	32.6	440	30.3	407	28.1	374	25.8	341	23.5

13-AV Maximum Operating Pressures																		
Specific Gravity*	1.00		0.95		0.90		0.85		0.80		0.75		0.70		0.65		0.60	
Float wt., oz (g)	14.9 (423)		14.2 (402)		13.4 (381)		12.7 (360)		12.0 (339)		11.2 (318)		10.5 (296)		9.7 (275)		9.0 (254)	
Orifice Size (in)	**Maximum Operating Pressure**																	
	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar
1/2	21	1.5	20	1.4	19	1.3	18	1.3	17	1.2	16	1.1	15	1.0	14	1.0	13	0.9
3/8	45	3.1	43	3.0	41	2.8	38	2.7	36	2.5	34	2.3	32	2.2	30	2.0	27	1.9
5/16	72	5.0	69	4.7	65	4.5	61	4.2	58	4.0	54	3.8	51	3.5	47	3.3	44	3.0
9/32	96	6.6	91	6.3	87	6.0	82	5.6	77	5.3	72	5.0	68	4.7	63	4.3	58	4.0
1/4	144	9.9	137	9.4	130	8.9	123	8.5	116	8.0	109	7.5	102	7.0	94	6.5	87	6.0
7/32	206	14	196	13	186	13	176	12	165	11	155	10.7	145	10.0	135	9.3	125	8.6
3/16	309	21	294	20	279	19	264	18	249	17	234	16	218	15	203	14	188	13
5/32	484	33	460	32	437	30	413	28	389	27	365	25	342	24	318	22	294	20
1/8	570	39	570	39	570	39	570	39	570	39	570	39	570	39	570	39	570	39
7/64	570	39	570	39	570	39	570	39	570	39	570	39	570	39	570	39	570	39

*If specific gravity falls between those shown, use next lowest: e.g., if actual gravity is 0.73, use 0.70 specific gravity data.

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