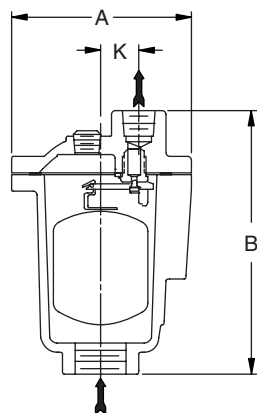
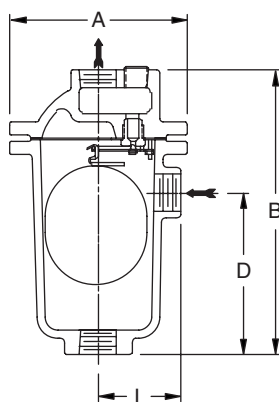


Free Floating Lever Air/Gas Vents—Cast Iron

For Pressures to 300 psig (21 bar) or Specific Gravity Down to 0.40



Model 1-AV



Model 2-AV, 3-AV and 6-AV



Armstrong free floating lever Air/Gas Vents use the same bodies, caps, lever mechanisms, valves and seats of Armstrong inverted bucket steam traps that have been proven in years of service.

Elliptical floats and high leverage make it possible to open large orifices to provide adequate capacity for vent size and weight. The hemispherical valve, seat and leverage are identical in design, materials and workmanship to those for saturated steam service up to 1,000 psig, with the exception of the addition of a guidepost to assure a positive, leaktight valve closing under all conditions.

1-AV—A cast iron air vent that uses a positive-closing free floating lever to ensure leaktight closing under all conditions. This vent is good for low capacity air/gas venting up to 300 psi.

For a fully detailed certified drawing, refer to CD #1070.

2-AV, 3-AV and 6-AV—Cast iron vents using the same proven free floating lever mechanisms used in Armstrong steam traps. For applications where high air/gas venting capacity is required up to 250 psi.

For a fully detailed certified drawing, refer to CD #1034.

Physical Data

Model No.	Cast Iron							
	1-AV**		2-AV		3-AV		6-AV	
Pipe Connections	in	mm	in	mm	in	mm	in	mm
	1/2*, 3/4*	15, 20	1/2, 3/4	15, 20	3/4, 1	20, 25	1-1/2, 2	40, 50
"A"	3-3/4	89	5-1/4	133	6-3/8	162	10-3/16	259
"B"	5-1/2	140	8-3/4	222	11-1/2	292	18	457
"D"	-	-	5-1/8	130	7	188	9-3/8	238
"K"	13/16	21	-	-	-	-	-	-
"L"	-	-	2-7/16	62	2-7/8	73	4-5/8	-
Weight, lb (kg)	4 (1.8)		12 (5.5)		21 (9.5)		78 (35.5)	
Max. Allowable Pressure (Vessel Design)	300 psig @ 200°F (21 bar @ 93°C) 250 psig @ 450°F (17 bar @ 232°C)		250 psig @ 450°F (17 bar @ 232°C)					

*Outlet connection 1/4" (7 mm). **1-AV available with side connection if specified on order. On models 2-AV, 3-AV and 6-AV, pipe size of side connections is same as that of inlet and outlet connections. Some floats are oil filled. Consult factory for details.

List of Materials

Model No.	Valve & Seat	Leverage System	Float	Body & Cap	Gasket	Bolts	Nuts
1-AV	Stainless Steel			ASTM A48 Class 30 Cast Iron	Non-asbestos	ASTM A193 Gr. B7	ASTM A563 Gr. A
2-AV						SAE Gr. 2	
3-AV							
6-AV							

Free Floating Lever Air/Gas Vents—Cast Iron

For Pressures to 300 psig (21 bar) or Specific Gravity Down to 0.40

1-AV Maximum Operating Pressures		
Minimum Specific Gravity	0.80	
Orifice Size (in)	Maximum Operating Pressure	
	psi	bar
1/8	146	10
7/64	173	12
#38	219	15
5/64	300	21

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.

2-AV Maximum Operating Pressures																						
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)	7.7 (217)		7.3 (206)		6.9 (195)		6.5 (184)		6.1 (174)		5.7 (163)		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	27	1.8	25	1.8	24	1.7	23	1.6	22	1.5	20	1.4	19	1.3	18	1.2	16	1.1	15	1.0	14	0.9
1/4	44	3.0	42	2.9	40	2.7	38	2.6	35	2.4	33	2.3	31	2.1	29	2.0	27	1.8	24	1.7	22	1.5
3/16	97	6.7	92	6.4	88	6.0	83	5.7	78	5.4	73	5.0	68	4.7	64	4.4	59	4.1	54	3.7	49	3.4
5/32	167	12	159	11	151	10.4	142	9.8	134	9.3	126	8.7	118	8.1	110	7.6	101	7.0	93	6.4	85	5.8
1/8	250	17	250	17	250	17	244	17	230	16	216	15	202	14	187	13	173	12	159	11	145	10.0
7/64	250	17	250	17	250	17	250	17	250	17	250	17	250	17	240	17	222	15	204	14	186	13
#38	250	17	250	17	250	17	250	17	250	17	250	17	250	17	250	17	250	17	250	17	231	16
5/64	250	17	250	17	250	17	250	17	250	17	250	17	250	17	250	17	250	17	250	17	250	17

3-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	250	17	250	17	250	17	250	17	249	17	234	16	218	15	203	14	188	13
5/32	250	17	250	17	250	17	250	17	250	17	250	17	250	17	250	17	250	17

6-AV Maximum Operating Pressures																												
Specific Gravity*	1.00		0.95		0.90		0.85		0.80		0.75		0.70		0.65		0.60		0.55		0.50		0.45		0.40			
Float wt., oz (g)	73.5 (2,084)		69.8 (1,979)		66.2 (1,875)		62.5 (1,771)		58.8 (1,667)		55.1 (1,563)		51.5 (1,459)		47.8 (1,354)		44.1 (1,250)		40.4 (1,146)		36.8 (1,042)		33.1 (938)		29.4 (833)			
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	psi	bar	psi	bar	psi	bar
1-1/16	22	1.5	21	1.5	20	1.4	19	1.3	18	1.2	17	1.2	16	1.1	14	1.0	13	0.9	12	0.8	11	0.8	10	0.70	9	0.62		
7/8	35	2.4	33	2.3	31	2.2	30	2.0	28	1.9	26	1.8	24	1.7	23	1.6	21	1.5	19	1.3	18	1.2	16	1.1	14	1		
3/4	50	3.5	48	3.3	45	3.1	43	3.0	40	2.8	38	2.6	35	2.4	33	2.3	30	2.1	28	1.9	25	1.8	23	1.6	20	1.4		
5/8	77	5.3	73	5.0	69	4.8	66	4.5	62	4.3	58	4.0	54	3.7	50	3.5	46	3.2	43	2.9	39	2.7	35	2.4	31	2.2		
9/16	102	7.0	97	6.7	92	6.3	87	6.0	82	5.6	77	5.3	72	4.9	67	4.6	62	4.2	57	3.9	51	3.6	46	3.2	41	3.9		
1/2	148	10.2	140	9.7	133	9.2	126	8.7	119	8.2	111	7.7	104	7.2	97	6.7	89	6.2	82	5.6	75	5.1	67	4.6	60	4.1		
7/16	210	14	200	14	189	13	179	12	168	12	158	11	148	10.2	137	9.5	127	8.7	116	8.0	106	7.3	96	6.6	85	5.9		
3/8	250	17	250	17	250	17	250	17	250	17	249	17	233	16	216	15	200	14	184	13	167	12	151	10.4	134	9.3		
11/32	250	17	250	17	250	17	250	17	250	17	250	17	250	17	250	17	250	17	245	17	223	15	201	14	179	12		
5/16	250	17	250	17	250	17	250	17	250	17	250	17	250	17	250	17	250	17	250	17	250	17	250	17	230	16		
9/32	250	17	250	17	250	17	250	17	250	17	250	17	250	17	250	17	250	17	250	17	250	17	250	17	250	17		
1/4	250	17	250	17	250	17	250	17	250	17	250	17	250	17	250	17	250	17	250	17	250	17	250	17	250	17		

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

Designs, materials, weights and performance ratings are approximate and subject to change without notice. Visit armstronginternational.com for up-to-date information.

I. Internals Maintenance:

- Remove the complete vent from the line;
- Unscrew bolts (9) and nuts (8) and disassemble the cap (1) and the body (2);
- Remove and replace the float (7) and the mechanism (valve and seat) (3, 4 & 5);
- Mechanism should be adjusted as shown above. When correctly aligned, lever (B) can be moved sideways the same distance to the right as to the left. If guide pin (A) is not in the middle of the orifices, adjust by slightly hitting with a hammer;
- **1-AV:** Make sure the lever stop (11) is correctly assembled. In that case the clearance of 0,8 mm between the valve seat (3) and the fulcrums of the lever (5) is automatically set up;
- **2-AV, 3-AV:** Unscrew the stop lock nut in order to leave 0,4 mm clearance between the nut (12) and the extension of the valve lever under it (13);
- **6-AV:** Unscrew the stop lock nut in order to leave 0,8 mm clearance between the nut (12) and the extension of the valve lever under it (13);
- Replace gasket (6);
- Put the cap (1) back on the body (2) and screw bolts (9) and nuts (8).

GB

I. Wartung und Reparatur:

- Komplette Armatur aus der Rohrleitung ausbauen;
- Schrauben (9) und Muttern (8) lösen, Deckel (1) und Gehäuse (2) abnehmen;
- Schwimmer (7) und Mechanismus (Ventil und Ventilsitz) (3, 4, 5) austauschen;
- Die Skizzen oben zeigt die Einstellung des Mechanismus. Bei korrekter Ausrichtung kann der Hebel (B) seitlich gleich weit nach rechts und links bewegt werden. Wenn die Führungslifte (A) nicht in der Mitte der Bohrungen stehen, sind sie durch leichte Hammerschläge einzurichten;
- **1-AV:** Richtigen Sitz des Hebelstopperanschlagbolzens (11) prüfen. In diesem Fall wird der Abstand von 0,8 mm zwischen Ventilsitz (3) und Hebelgelenk (5) automatisch eingestellt;
- **2-AV, 3-AV:** Stopper-Stellmutter so einstellen, daß sich zwischen der Mutter (12) und der darunter liegenden Ventilhebelverlängerung (13) ein Abstand von 0,4 mm besteht;
- **6-AV:** Stopper-Stellmutter so einstellen, daß sich zwischen der Mutter (12) und der darunter liegenden Ventilhebelverlängerung (13) ein Abstand von 0,8 mm besteht;
- Gehäuseabdichtung (6) erneuern;
- Deckel (1) auf das Gehäuse (2) setzen, Schrauben (9) und Muttern (8) wieder anziehen.

D

I. Entretien des pièces internes :

- Enlever le purgeur d'air de la conduite;
- Dévisser les boulons (9) et les écrous (8) et enlever le couvercle (1) du corps (2);
- Enlever et remplacer le flotteur (7) et le mécanisme (siège et soupape) (3, 4 & 5);
- Le mécanisme doit être ajusté comme montré ci-dessus. Lorsqu'il est correctement aligné, le bras de levier (B) peut glisser avec la même amplitude vers la gauche que vers la droite. Si les tiges de guidage (A) ne sont pas au centre des orifices, il faut les ajuster en donnant de légers coups de marteau;
- **1-AV :** S'assurer que la butée du levier (11) est assemblée correctement. Dans ce cas, on trouve automatiquement un espace de 0,8mm entre le siège de la soupape (3) et les supports du levier (5);
- **2-AV, 3-AV :** Dévisser l'écrou de blocage pour laisser un espace de 0,4 mm entre l'écrou (12) et l'extension du levier de soupape située en dessous de celui-ci (13);
- **6-AV :** Dévisser l'écrou de blocage pour laisser un espace de 0,8 mm entre le boulon (12) et l'extension du levier de soupape située en dessous de celui-ci (13);
- Remplacer le joint de corps (6);
- Replacer le couvercle (1) sur le corps (2) et revisser les boulons (9) et les écrous (8).

F



I. Mantenimiento de las piezas internas:

- Retire el purgador completo de la línea;
- Afloje los pernos (9) y las tuercas (8) y desmonte la tapa (1) y el cuerpo (2);
- Retire y cambie la boya (7) y el mecanismo (válvula y asiento) (3, 4 y 5);
- El mecanismo debe quedar ajustado como se muestra más arriba. Si está alineado correctamente, la palanca (B) podrá moverse la misma distancia tanto a la derecha como a la izquierda. Si el perno guía (A) no está centrado en los orificios, ajústelo golpeando ligeramente con un martillo;
- **1-AV:** Asegúrese de que el tope de la palanca (11) esté montado correctamente. De ser así, el espacio libre de 0,8 mm entre el asiento de válvula (3) y los puntos de apoyo de la palanca (5) quedará establecido automáticamente;
- **2-AV, 3-AV:** Afloje la contratuercas de traba de manera que queden 0,4 mm libres entre la tuerca (12) y la extensión de la palanca de la válvula que se encuentra debajo (13);
- **6-AV:** Afloje la contratuercas de traba de manera que queden 0,8 mm libres entre la tuerca (12) y la extensión de la palanca de la válvula que se encuentra debajo (13);
- Cambie la junta (6);
- Vuelva a colocar la tapa (1) en el cuerpo (2) y ajuste los pernos (9) y las tuercas (8).

E

I. Binnenwerk vervangen:

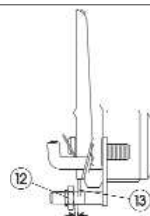
- Verwijder de gehele ontluchter uit de leiding;
- Verwijder bouten (9) en moeren (8) en neem het deksel (1) van het huis (2) af;
- Verwijder en vervang de vlottor (7) en het mechanisme (klep en zitting) (3, 4 & 5);
- Het mechanisme moet worden afgesteld zoals boven getoond. Als het mechanisme goed is uitgelijnd, moet de hefboom (B) net zover naar rechts als naar links kunnen bewegen. Als de geleidepennen (A) niet exact in het midden van de gaatjes zitten, moeten deze met een hamer teruggesteld worden;
- **1-AV:** Controleer de hefboomaanslag (11). In dat geval wordt de vrije ruimte van 0,8 mm tussen klepzitting (3) en het steunpunt van de hefboom (5) automatisch bepaald;
- **2-AV, 3-AV:** draai de vastzet/stop moer los waardoor 0,4 mm vrije ruimte gelaten wordt tussen de moer (13) en de verlenging van de klep hefboom hieronder (12);
- **6-AV:** draai de vastzet/stop moer los waardoor 0,8 mm vrije ruimte gelaten wordt tussen de moer (13) en de verlenging van de klep hefboom hieronder (12);
- Vervang pakking (6);
- Plaats het deksel (1) terug op het huis (2) middels bouten (9) en moeren (8).

NL

I. Manutenzione degli organi interni:

- Smontare dalla linea l'intero eliminatore d'aria;
- Svitare i bulloni (9), i dadi (8) e sollevare la testa (1) ed il corpo (2);
- Asportare e sostituire il galleggiante (7) ed il meccanismo (valvola e sede) (3, 4 & 5);
- Regolare il meccanismo come mostrato in figura. Se correttamente allineata la leva (B) si muoverà lateralmente in modo simmetrico sia a destra sia a sinistra. Se gli spinotti di guida (A) non fossero centrati nei fori, centrarli opportunamente con leggerissimi colpi di martello;
- **1-AV:** Assicurarsi che il fermo-leve (11) sia montato correttamente; In tal caso la luce di 0,8 mm tra la sede valvola (3) ed il fulcro della leva (5) risulta automaticamente registrato e corretto;
- **2-AV, 3-AV:** Svitare il dado di blocco in modo da lasciare una luce di 0,4 mm tra il dado (13) ed il prolungamento della leva porta valvola (12);
- **6-AV:** Svitare il dado di blocco in modo da lasciare una luce di 0,8 mm tra il dado (13) ed il prolungamento della leva porta valvola (12);
- Sostituire la guarnizione (6);
- Rimontare la testa (1) sul corpo (2) ed avvitare bulloni (9) e dadi (8).

I



MODELS WITH CE MARKING - MODELLE MIT CE KENNZEICHNUNG - MODELES MARQUES CE MODELOS CON LA MARCA CE - MODELLEN MET CE KEUR - MODELLI CON MARCATURA CE

Model	PMA	TMA	Volume	Orifice	PMO
Modell	PMA	TMA	Volumen	Ventilgröße	PMO
Modèle	PMA	TMA	Volume	Orifice	PMO
Modelo	PMA	TMA	Volumen	Orificio	PMO
Model	PMA	TMA	Volume	Klepdoorlaat	PMO
Modello	PMA	TMA	Volume	Orifizio	PMO
6-AV	17 bar	232°C	4,76 l	Check on the order Entsprechend Ihrer Bestellung Voir la commande Chequear con el pedido Kijk op de order en documentatie Verificare su ordine	Depends on orifice Von der Ventilgröße abhängig Dépend de l'orifice Depende del orificio Afhankelijk van klepdoorlaat Dipende dall'orifizio

Armstrong International S.A., Parc Industriel des Hauts-Sarts, 4040 Herstal - Belgium Ph: +32.4.240.90.90 Fax: +32.4.248.13.61



Models 1-AV, 2-AV 3-AV & 6-AV

Free Floating Lever Air/Gas Vents Luft/Gas-Entlüfter mit Freischwingendem Hebelmechanismus Purgeurs d'Air/de Gaz à Levier Libre Non-Guidé Purgadores de Aire y Gas con Palanca de Flotación Libre Ontluchters - met Bolvlotter Eliminatori d'Aria e Gas da Liquidi in Pressione

*These instructions should be used by experienced personnel !
Diese Gebrauchsanweisung ist durch Fachpersonal zu benutzen !
Ces instructions devraient être utilisées par du personnel expérimenté !
¡Estas instrucciones deben ser utilizadas por personal experimentado !
Onderhoud uitsluitend uit te voeren door ervaren personeel !
Queste istruzioni devono essere utilizzate da personale esperto !*

PRODUCT DESCRIPTION - PRODUKTBESCHREIBUNG - DESCRIPTION DU PRODUIT DESCRIPCION DEL PRODUCTO - PRODUKT OMSCHRIJVING - DESCRIZIONE DEL PRODOTTO

Model shown on the picture: 1-AV - Die Abbildung zeigt das Modell 1-AV - Photo: modèle 1-AV
Modelo mostrado en la fotografía: 1-AV - Model op foto: 1-AV - Modello in figura: 1-AV

GB

Armstrong Cast Iron Free Floating Lever Air/Gas Vent
2 Connections (Bottom Inlet - Top Outlet) or 3 Connections (Side Inlet - Top Gas Outlet - Bottom Liquid Outlet)

D

Armstrong Luft/Gas-Entlüfter aus Grauguß mit Freischwingendem Hebelmechanismus
2 Anschlußarten (Einlaß Unten - Auslaß Oben) oder 3 Anschlußarten (Seitlicher Einlaß - Entlüftung Oben - Abfluß Unten)

F

Purgeur d'Air/de Gaz en Fonte, à Levier Libre et Non-Guidé
2 Raccordements (Entrée par le Bas - Sortie vers le Haut) ou 3 Raccordements (Entrée sur le côté - Évent Dessus - Sortie Liquide vers le Bas)

E

Purgador de Aire y Gas con Palanca de Flotación Libre
Armstrong en Fundición
2 Conexiones (Entrada Inferior - Salida Superior) o 3 Conexiones (Entrada Lateral - Salida de Gas Superior - Salida de Líquido Inferior)

NL

Armstrong Gietijzeren Ontluchter met Zwevend draaipunt
2 Aansluitingen (Bodem Inlaat - Top Uitlaat) of 3 Aansluitingen (Zijde Inlaat - Top Ontluchting - Bodem Vloeistof Uitlaat)

I

Eliminatore d'Aria e Gas da Liquidi in Pressione - In ghisa
2 Connessioni (Entrata al Fondo - Uscita in Alto) o 3 Connessioni (Entrata Laterale - Uscita Aria in Alto - Scarico Liquido/Bilanciamento sul Fondo)



For detailed material specifications, options, approximate dimensions and weights, see Armstrong literature or consult your local Representative.

Für detaillierte Werkstoffangaben, Zubehör, Abmessungen und Gewichte, sehen Sie die Armstrong Datenblätter oder fragen Sie Ihre Armstrong-Vertretung.
Pour toute spécification détaillée des matières, options, dimensions et poids, veuillez vous référer à la littérature Armstrong ou prendre contact avec votre Représentant local.

Para especificaciones de materiales detalladas, opciones, dimensiones aproximadas y pesos, ver catálogos Armstrong o consultar con su Representante local.

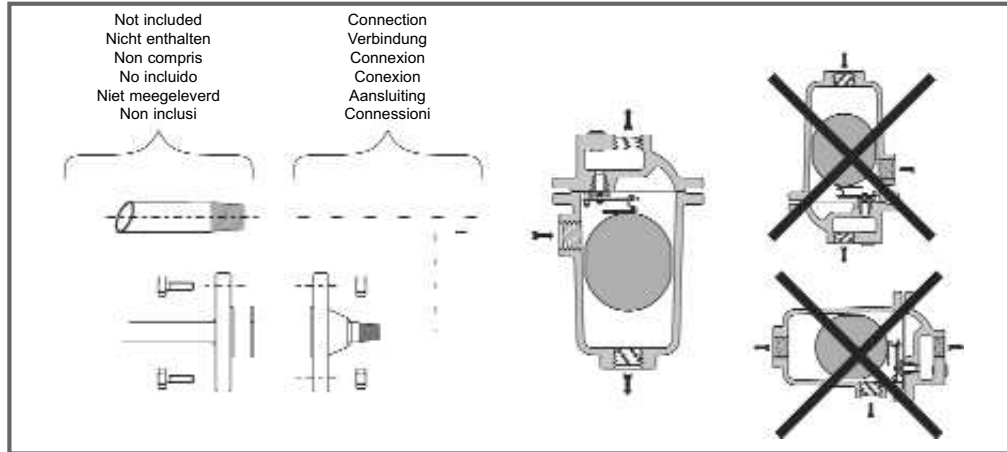
Voor gedetailleerde materiaal specificaties, afmetingen en gewichten, zie de Armstrong documentatie of neem contact op met uw plaatselijke Vertegenwoordiger.

Per la specifica dettagliata dei materiali, accessori opzionali, dimensioni e pesi approssimativi, vedere la documentazione appropriata o contattare il Distributore locale.

INSTALLATION - INSTALLATIONSANWEISUNG - INSTALLATION INSTALACION - INSTALLATIE - INSTALLAZIONE

Model shown on the drawing: 3-AV - Die Zeichnung zeigt das Modell 3-AV - Schéma: modèle 3-AV
Modelo mostrado en el dibujo: 3-AV - Model op tekening: 3-AV - Modello in figura: 3-AV

Possible connections: screwed or flanged - Mögliche Anschlußarten: Muffengewinde oder Flansche
Raccordements possibles: taraudé ou à brides - Conexiones posibles: roscada o brida
Mogelijke aansluiting: draad of flens - Connessioni disponibili: filettate o flangiate



START-UP PROCEDURE (Side inlet - Top gas outlet - Bottom liquid outlet) - **INBETRIEBNAHME** (seitlicher Einlaß - Entlüftung oben - Abfluß unten)
PROCEDURE DE DEMARRAGE (Entrée sur le côté - Évent dessus - Sortie liquide vers le bas) - **PROCEDIMIENTO DE PUESTA EN MARCHA**
(Entrada lateral - Salida de gas superior - Salida de líquido inferior) - **OPSTARTPROCEDURE** (Zijde inlaat - Top ontluuchting - Bodem vloeistof uitlaat)
PROCEDURA D'AVVIAMENTO (Entrata laterale - Uscita aria in alto - Scarico liquido/Bilanciamento sul fondo)

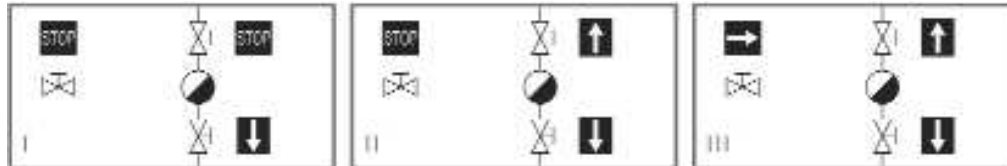
For detailed hookups and adapted start-up and shut-down procedures, see Armstrong literature or consult your local Representative.
Für detaillierte Informationen über Installation, Inbetriebnahme und Außerbetriebnahme sehen Sie die Armstrong Datenblätter oder fragen Sie Ihre Armstrong-Vertretung.

Pour plus de détails à propos des procédures de démarrage et d'arrêt, ainsi que pour l'installation, veuillez vous référer à la littérature Armstrong ou prendre contact avec votre Représentant local.

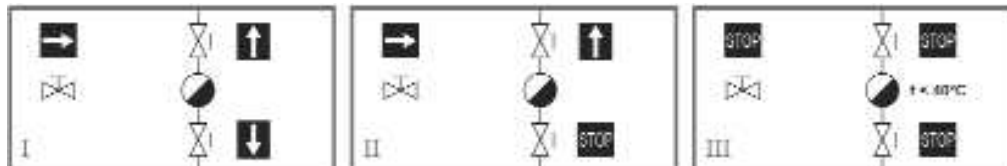
Para posibilidades de conexionado y procedimientos de parada y puesta en marcha, ver catálogos Armstrong o consultar con su Representante local.

Voor gedetailleerde montage en installatie instructies zie het betreffende Armstrong documentatieblad of neem contact op met uw plaatselijke Vertegenwoordiger.

Per procedure dettagliate di collegamento, d'avviamento e di fermata, vedere la documentazione Armstrong o consultare il Distributore locale.



SHUT-DOWN PROCEDURE (Side inlet - Top gas outlet - Bottom liquid outlet) - **AUßERBETRIEBNAHME** (seitlicher Einlaß - Entlüftung oben - Abfluß unten) - **PROCEDURE D'ARRÊT** (Entrée sur le côté - Évent dessus - Sortie liquide vers le bas) - **PROCEDIMIENTO DE PARADA** (Entrada lateral - Salida de gas superior - Salida de líquido inferior) - **UIT BEDRIJFNAME** (Zijde inlaat - Top ontluuchting - Bodem vloeistof uitlaat)
PROCEDURA DI FERMATA (Entrata laterale - Uscita aria in alto - Scarico liquido/Bilanciamento sul fondo)



MAINTENANCE - WARTUNGSMITTEILUNGEN - MAINTENANCE MANTENIMIENTO - ONDERHOUD - MANUTENZIONE

For troubleshooting, testing methods, frequency of maintenance and detailed spare parts list, see Armstrong literature or consult your local Representative.

Für detaillierte Informationen über Fehlersuche, Testmethoden, Wartungsintervallen und Ersatzteillisten fragen Sie Ihre Armstrong-Vertretung.

Pour le dépannage, les méthodes de test, la fréquence d'entretien et la liste détaillée des pièces de rechange, veuillez vous référer à la littérature Armstrong ou prendre contact avec votre Représentant local.

Para detección de posibles averías, métodos de test, frecuencia de mantenimiento y lista detallada de repuestos, ver catálogos Armstrong o consultar con su Representante local.

Voor het oplossen van problemen, test methodes, onderhoud en gedetailleerde onderdelenlijsten, zie de Armstrong documentatie of neem contact op met uw plaatselijke Vertegenwoordiger.

Per la soluzione di eventuali problemi, metodi di prova funzionalità, frequenza di manutenzione e dettaglio della lista ricambi, vedere la documentazione Armstrong o consultare il Distributore locale.



Equipment under pressure - Operating temperature might be > 90°C
Make sure vent is cold before handling !



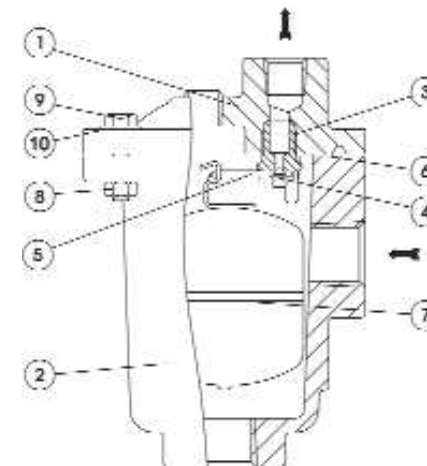
Armatur steht unter Druck - Arbeitstemperatur kann > 90°C sein
Stellen sie sicher, dass die Armatur kalt und drucklos ist, bevor an dieser gearbeitet wird !

Equipement sous pression - Température en fonctionnement > 90°C
Laisser le purgeur refroidir avant toute manipulation !

Equipo bajo presión - Temperatura posible de trabajo > 90°C
¡Asegúrese de que el purgador esté frío antes de manipularlo !

Toestel onder druk, werktemperatuur > 90°C
Ontluchter moet afgekoeld zijn alvorens eraan te werken !

Apparecchiatura in pressione - Temperatura operativa potrebbe essere > 90°C
Assicurarsi che l'eliminatore sia freddo prima d'intervenire !

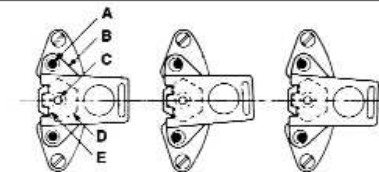


Model shown on the drawing: 2-AV
Die Zeichnung zeigt das Modell 2-AV
Schéma: modèle 2-AV

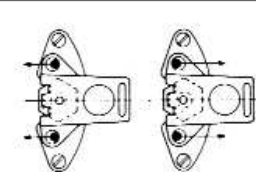
Modelo mostrado en el dibujo: 2-AV
Model op tekening: 2-AV
Modello in figura: 2-AV

MECHANISM ADJUSTMENT - AUSRICHTEN DES MECHANISMUS - AJUSTEMENT DU MECANISME AJUSTE DEL MECANISMO - KLEPMECHANISME - REGOLAZIONE DEL MECCANISMO

OK



NO





Installation and Maintenance

ARMSTRONG NO. 1-AV AIR VENT

This bulletin should be used by experienced personnel as a guide to the installation of Armstrong No. 1-AV Air Vents and their repair parts. Selection or installation of equipment should always be accompanied by competent technical assistance. We encourage you to contact Armstrong or its local representative if further information is required.

The Armstrong 1-AV Air Vent is intended for venting gas during filling or occasional venting of accumulated gas. Where large quantities of gas must be vented, Armstrong recommends a larger air vent with an equalizing connection.

The maximum operating pressure of the **1-AV** Air Vent is 150 psi with an **1/8"** orifice and 300 psi with a **5/64"** orifice. DO NOT EXCEED THE MAXIMUM OPERATING PRESSURE.

The **vessel design limitations** of the 1-AV Air Vent are 300 psig @ **200°F.**

INSTALLATION PROCEDURES

1. 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 fittings and valves. DO NOT USE ELBOWS IN THE INLET LINE FROM THE EQUIPMENT TO THE VENT.
 2. Install gate valves or full ported ball valves so the air vent can be isolated from the system to permit cleaning and repair. DO NOT USE GLOBE VALVES.
 3. Before installing the vent, flush out the line to remove loose dirt. Use pipe dope or teflon sparingly and on male threads only. Leave the end thread exposed to avoid introducing sealant into the system.
 4. DO NOT use a pipe strainer in the line leading to the vent.
 5. Be certain the vent is installed properly, with the CAP AT THE TOP for air and gas relief service.
 6. Install the 1-AV air vent at all the high points of water service systems, hydronic systems, or any water storage or distribution system. See Figures 1-6 for typical installations.
-



ARMSTRONG NO. 1-AV AIR VENT

7. Air vents should be installed so that they can be checked periodically. A drain line should be piped to a floor drain, slop sink, or other visible location where maintenance personnel can regularly check for leakage. If the vent is installed in an inaccessible location, a $1/4"$ copper tube drain line to a slop sink, floor drain, or other visible location makes periodic inspection practicable.
8. The pipe plug in the cap of the 1-AV air vent can be replaced with a test cock or test valve for vent testing or even manual venting. A test cock makes it possible to check that the vent is not air bound due to the orifice being clogged. In addition, the manual test cock will enable the operator to vent the unit manually should the automatic vent fail.

CAUTION: DO NOT INSTALL THE AIR VENT WITH AN OPEN DISCHARGE IF A MALFUNCTION CAN CAUSE DAMAGE, FOR EXAMPLE, ABOVE FALSE CEILINGS.

MAINTENANCE

1. No discharge from the vent is normal on hydronic systems, but is not proof that the vent functions properly. To check the air vent, crack the test cock. If the vent is working correctly, a little air should escape, followed by water.
2. Vent Does Not Open
If a lot of air escapes out of the test cock before water begins to discharge, it is a sign that the vent body was full of air and that the float did not sink to open the valve, or that the valve was plugged. Isolate the vent by closing the gate valve before opening for inspection.
 - A. Remove the vent cover and inspect the mechanism. If the mechanism cannot be made to operate freely after cleaning and inspection, order a new assembly.
 - B. Check the orifice for dirt. Clean the orifice. If it cannot be cleared, order a new mechanism.
 - C. On new installations, an air vent may fail to open if the orifice is too large for the operating pressure. Replace the mechanism with one sized for your operating pressure.
 - D. An unusual increase in system pressure may cause the air vent to lock shut. Either eliminate the cause of the added pressure or replace the mechanism with one that can handle the peak pressures.
3. Vent Fails to Close Tightly (Leaks Water)
 - A. Dirt may be lodged in the orifice. Clean the orifice, the mechanism, the body, and the cap.
 - B. The valve and seat may be worn. Replace the whole mechanism.
 - C. There may be a leak in the float. Disconnect the float and shake it close to your ear. If liquid has leaked inside you will be able to hear it sloshing. Replace the float.



- D. An unlikely possibility is that the float has collapsed. Replace the float.

For help with unusual installations or service problems, contact your Armstrong Representative or the Armstrong Machine Works Application Engineering Department.

REPLACEMENT OF 1-AV AIR VENT VALVE AND SEAT

REFER TO FIGS. 7, 8, AND 9

1. Remove the cap from the 1-AV and place it in a vise with the mechanism up.
2. Remove the float, lever, lever stop, and guide pin assembly by removing the two guide plate screws.
3. Unscrew the valve seat.
4. Clean all dirt, pipe scale, etc. from the vent cap, especially the threaded holes.
5. Screw the new valve seat into position. DO NOT use pipe dope or lubricant on the valve seat threads. The seal is made, not by the threads, but by **metal to metal** contact at the ground end of the valve seat. Make sure the seating area of the vent is clean before screwing the valve seat into position.
6. To mount the guide pin assembly, the following parts must be installed in the following order: guideplate, lever, and lever stop. Place the guideplate on the cap so that the two screw holes are aligned over the tapped holes in the cap. The guideplate is installed on the side of the seat away from the gasket surface. Place the lever over the two pins on the guideplate. Then place the lever stop on the guideplate and aligned over the two screw holes. Tighten the whole assembly to the cap.

NOTE : THE LEVER STOP SHOULD BE IN A LINE OVER THE PINS ON THE GUIDEPLATE. IF THE LEVER STOP IS INSTALLED BACKWARDS, THE VENT WILL NOT FUNCTION PROPERLY. See Figure 7.

7. There must be some clearance at all points between the lever and the lever stop. If the lever stop touches the lever on either side, tap the lever stop lightly in the appropriate direction so that the condition is corrected. See Fig. 8.
8. With the valve seated and the lever in the fully closed position, there should be approximately 1/32" clearance between the valve seat and the fulcrums on the lever. See Fig. 8 and 9. If the fulcrums touch the seat, they can be raised by lightly tapping the base of the lever stop from the side closest to the gasket surface. If there is too much space between the fulcrums and the seat, lower the fulcrums by lightly tapping the base of the bridge on the side closest to the center of the cap.



ARMSTRONG NO. 1-AV AIR VENT

9. Check the alignment of the guide pins. With the valve lever held all the way down and the valve seated, the guide pins should be central in the guide pin holes. When correctly aligned, the lever will move sideways the same distance to the right as to the left. Should the guide pins be out of line, they should be straightened so that they will be central in the guide pin holes. For example, the guide pins in Figs. 13 & 14 have been bent and should be tapped lightly with a hammer or similar tool to force them in the direction of the arrows. If the pins are too far apart or too close together, a similar procedure should be followed to position them centrally.
10. Hook the float on the valve lever and remove the cap from the vise. The air vent is now ready for assembly.

FIGURE 1

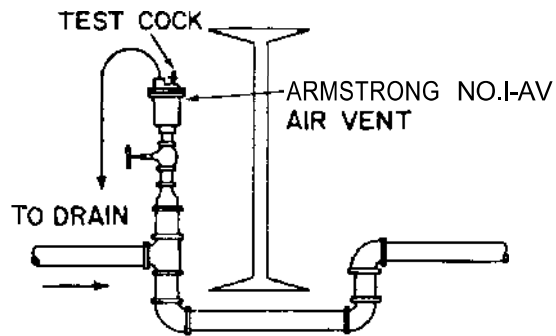


FIGURE 2

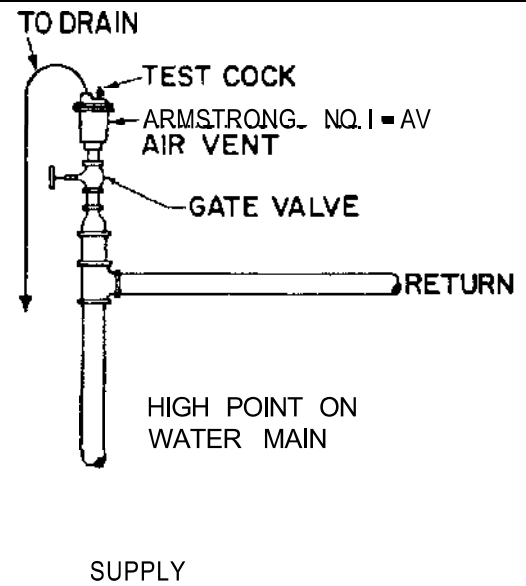


FIGURE 3

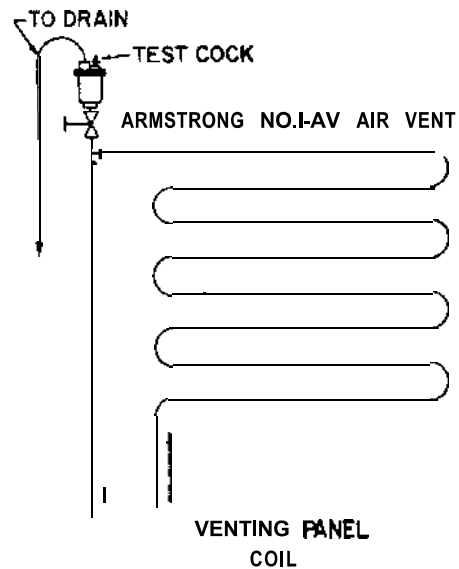
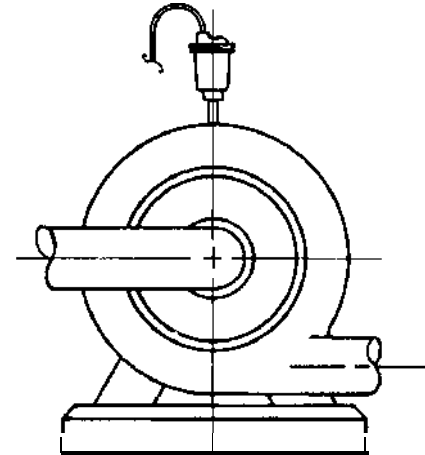


FIGURE 4



Be certain there is a positive pressure where the vent is installed.

FIGURE 5

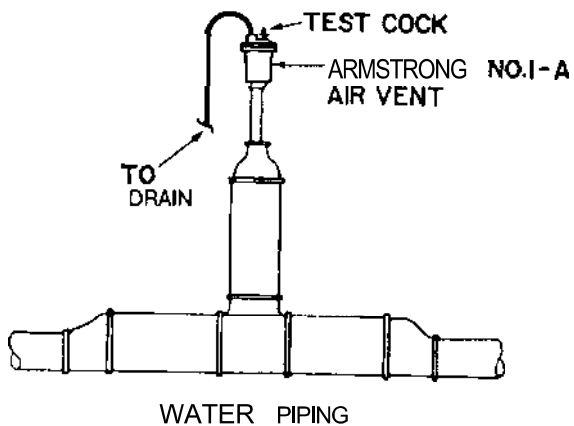


FIGURE 6

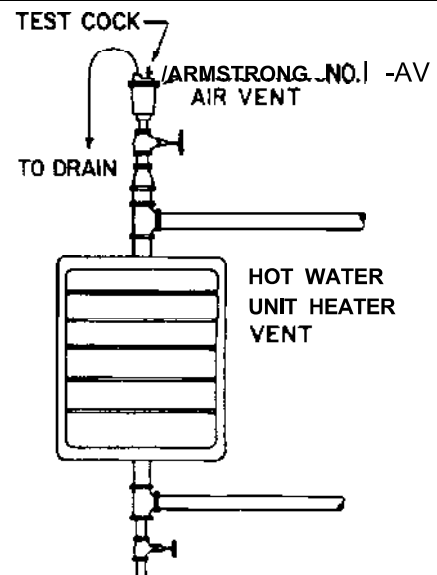


FIGURE 7

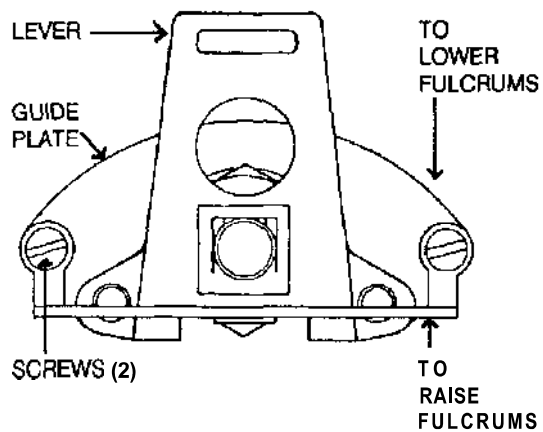


FIGURE 9

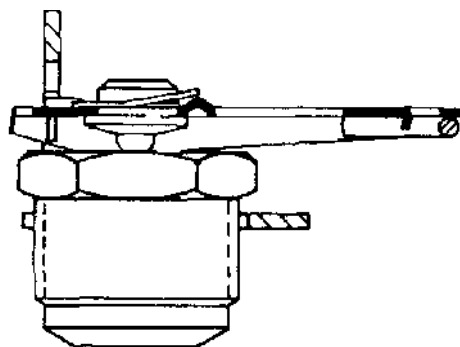
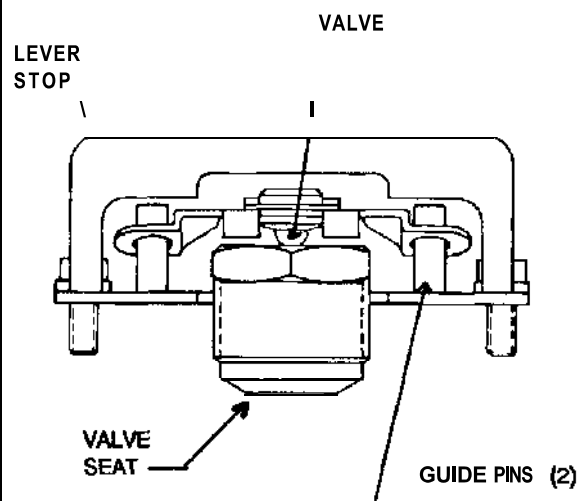


FIGURE 8



FIGURES 10 THRU 14

