



Distributed by:  **MIFAB**®

# AV-MH

Air Release & Air and  
Vacuum Valves Breaking Valves



**AV-MH-KA**  
(Metal Air Valves)



## PRODUCT CATALOGUE

Edition 06/2013

# AV-MH

## Air Release and Vacuum Break Valves



### FIRST OPERATION:

#### Venting air from a filling pipeline

The standard valve allows discharge of trapped air while the system is being filled with liquid. The valve will remain open, even at very high air flow velocity (A), until the liquid has reached the float and lifted it to its closed position (B).

Available for valve models with suffix "K" and "KA".

### SECOND OPERATION:

#### Vacuum Breaking (Air Intake) of a draining pipeline

Decrease or the pressure in the system to negative value and the simultaneous drainage of the valve chamber, forces the floats down, allowing the admittance of air into the pipe, thus preventing negative pressure and possible collapse of the pipe (C).

Available for valve models with suffix "K" and "KA".

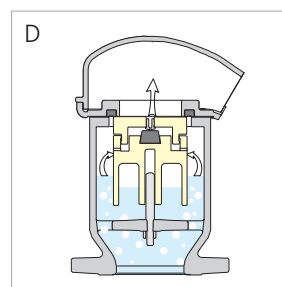
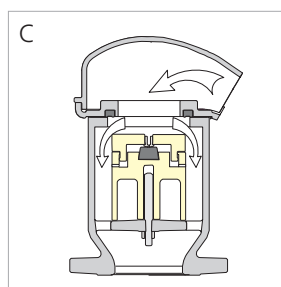
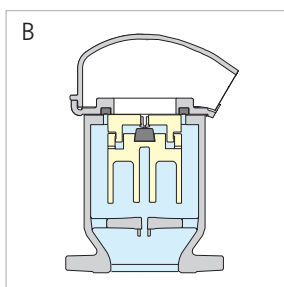
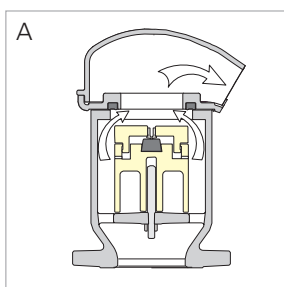
### THIRD OPERATION:

#### Release of dissolved air from a pressurized pipeline

Air that is being released from the liquid in the pressurized system or being introduced into the system from open sources and pumping vortexes, accumulates in the air release valves located at high places.

The accumulated air forces the liquid out of the valve chamber, so the floating force of the bottom float decreases. The bottom float then drops, allowing for the trapped air to be vented through the small nozzle at the center of the top float. Then the liquid level rises, the bottom float is lifted and the nozzle closes (D).

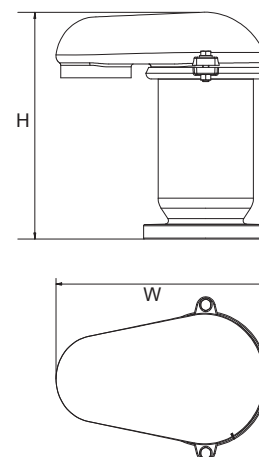
Available for valve models with suffix "KA" only.



## DIMENSIONS & WEIGHTS

| Nom. diameter | Height H | Width W | Orifice Area D    | Approx. shipping Weight |
|---------------|----------|---------|-------------------|-------------------------|
| inch          | inch     | inch    | inch <sup>2</sup> | lbs                     |
| 2             | 9.8      | 6.5     | 3.0               | 16.5                    |
| 3             | 11       | 8.9     | 7.7               | 27                      |
| 4             | 15.7     | 11.2    | 12.2              | 57                      |
| 6             | 18.5     | 14.8    | 27.4              | 115                     |
| 8             | 22.8     | 18.9    | 48.7              | 192                     |
| 10            | 27.4     | 22.6    | 48.7              | 478                     |

Connections: 2" - NPT, 2" - 6" ANSI 150 or ANSI 300 Flanged

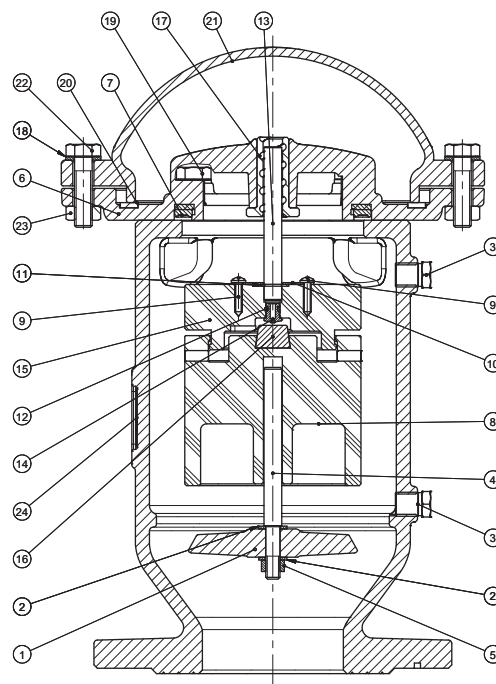


## SPECIFICATIONS

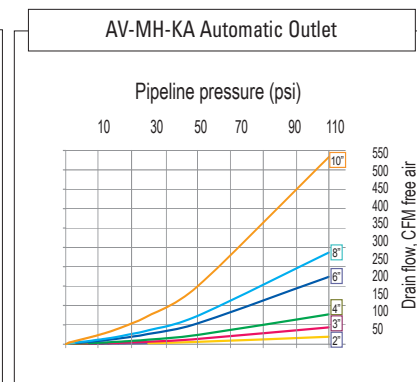
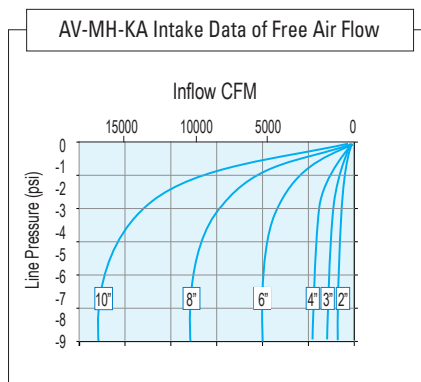
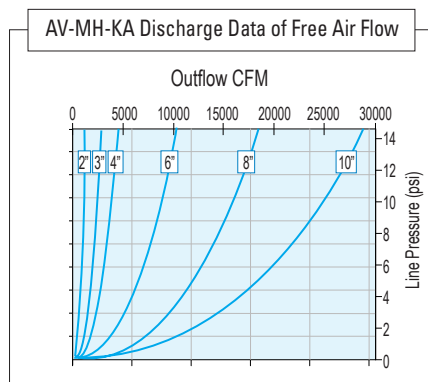
|   |  |
|---|--|
| Nominal sizes                           | 2" to 10"  |
| Pressure rating                         | 150 Flg. (250 psi), 300 Flg. (400 psi), Thd. (400 psi) |
| Minimal pressure for drip-tight sealing | 3 psi  |
| Max. Temperature                        | 150°F  |

## COMPONENTS

| NO. | DESCRIPTION          | MATERIAL |
|-----|----------------------|----------|
| 1   | BODY                 | D.I.     |
| 2   | WASHER               | SST      |
| 3   | PLUG                 | BRS      |
| 4   | BOTTOM GUIDING SHAFT | SST      |
| 5   | NUT                  | SST      |
| 6   | PLATE                | D.I.     |
| 7   | SEAL                 | NR       |
| 8   | FLOAT BODY           | PE-H.D.  |
| 9   | BOLT                 | SST      |
| 10  | DISC                 | SST      |
| 11  | RETAINING RING       | SST      |
| 12  | O-RING 2-009         | NBR      |
| 13  | TOP GUIDING SHAFT    | SST      |
| 14  | NOZZLE               | SST      |
| 15  | FLOAT COVER          | PE-H.D.  |
| 16  | NOZZLE SEAL          | EPDM     |
| 17  | GUIDING INSERT       | POM      |
| 18  | WASHER               | SST      |
| 19  | BOLT                 | SST      |
| 20  | COVER SEAL           | EPDM     |
| 21  | COVER                | D.I.     |
| 22  | BOLT                 | SST      |
| 23  | NUT                  | SST      |
| 24  | I.D. PLATE           | AL       |



## PERFORMANCE



# AV-MH-SA

## Surge Arresting Device (SA) for AV-MH Valve



### FEATURES

- Surge Arresting – Automatically prevents water hammer pressure surges associated with air release valves operation.
- Optimum performance – Air outlet can be adjusted according to surge analysis results, on site to a required aerodynamic performance. The SA addition is assembled on user selected valves only (at local high elevated points). The flow through other valves remains unrestricted.
- Simplicity – Can be easily assembled on any of AV-MH series air valves.
- Reliability – Simple, durable mechanism, fabricated from high grade materials. Can be serviced without having to put the air valve out of service.

### FUNCTION

When air is admitted into the pipe, an in "Air Pocket" is created in the local high points where the Air / Vacuum valve is located. The returning flow re-fills the "pocket". Too-high velocity of the approaching water column may generate a pressure surge when it reaches the valve.

### OPERATION OF THE SA ADDITION

#### Air venting

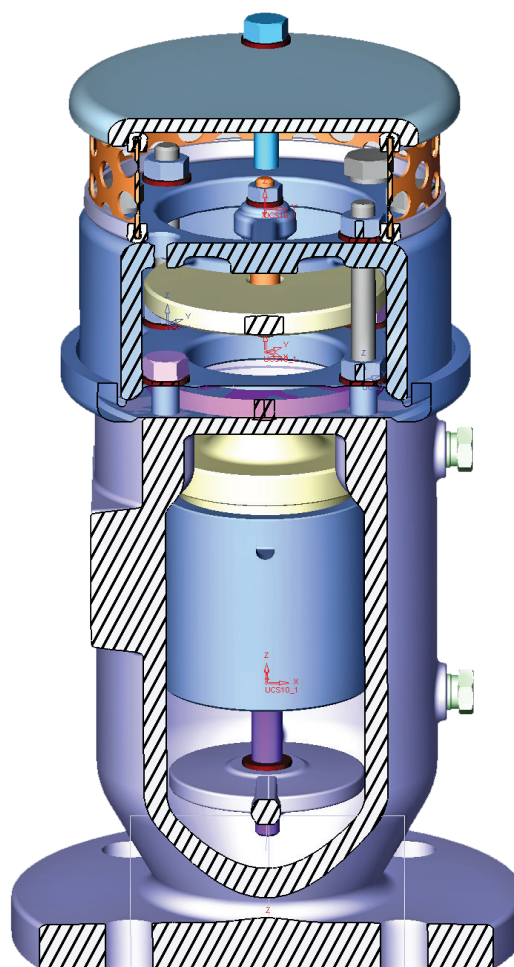
The Surge Arrestor addition to AV-MH Series valves limits the air outflow, when the escaping air velocity exceeds a threshold value.

This optional addition creates a temporary, slow closing "Air Cushion" that decelerates the water velocity, preventing water hammer effect.

Adjustment of the air outflow can be done by plugging or un-plugging a set of bores in the SA adjustment plate (see pictures right side).

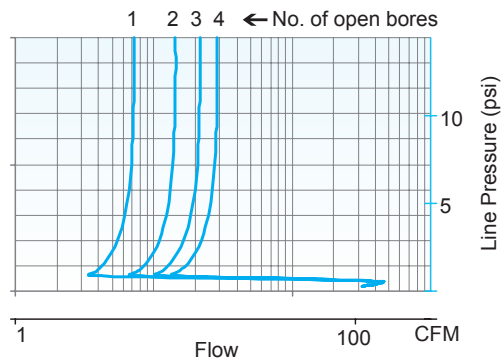
#### Vacuum Breaking (Air Intake)

Decrease or the pressure in the system to negative value and the simultaneous drainage of the valve chamber, forces the floats down, allowing the admittance of air into the pipe. The SA disc is in its low position, allowing unrestricted air flow into the system.

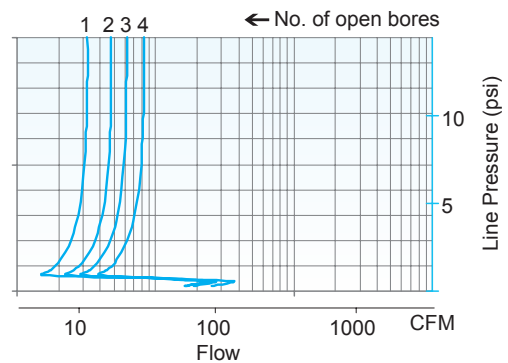


## PERFORMANCE > FREE AIR OUTFLOW

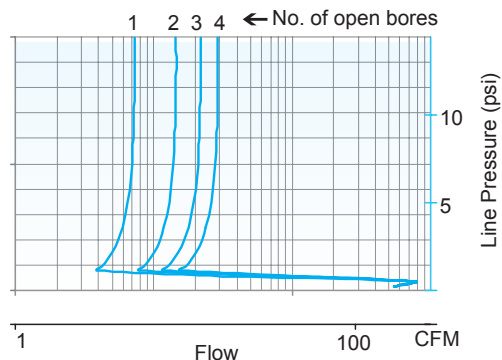
**2" AV-MH-KA-SA Discharge**



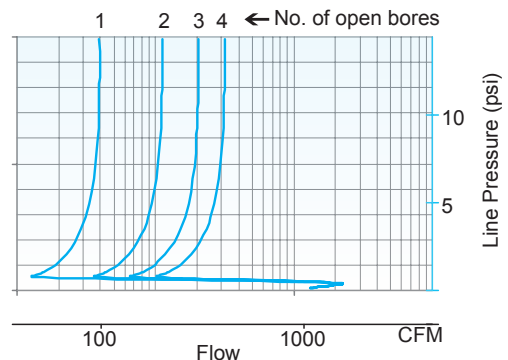
**6" AV-MH-KA-SA Discharge**



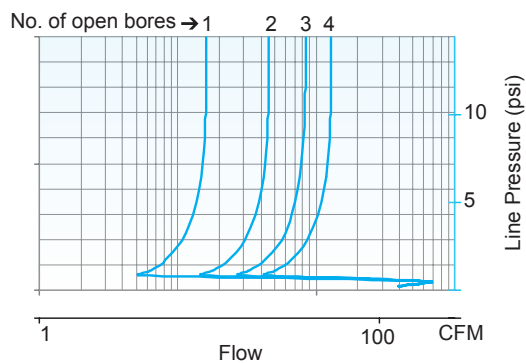
**3" AV-MH-KA-SA Discharge**



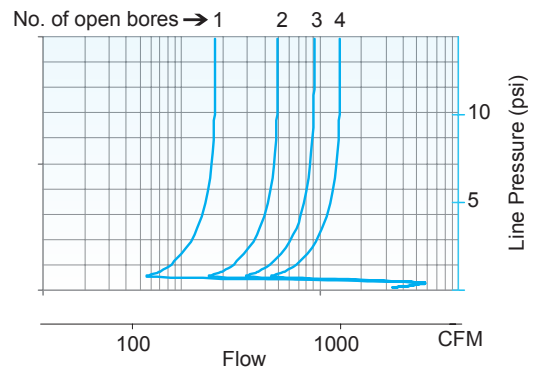
**8" AV-MH-KA-SA Discharge**



**4" AV-MH-KA-SA Discharge**



**10" AV-MH-KA-SA Discharge**

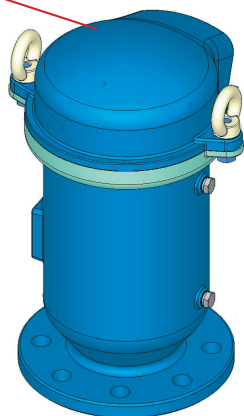




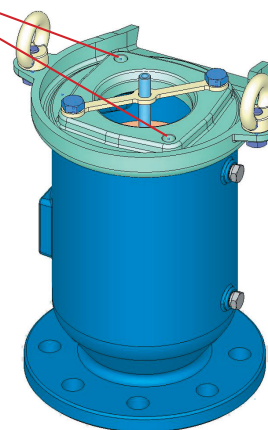
# AV-MH-SA

## Assembly of Surge-Arresting Device (SA)

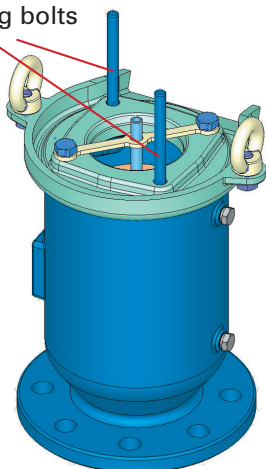
1. Remove cover



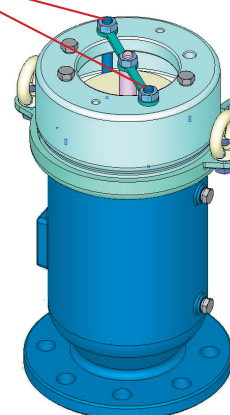
2. Remove 2 bolts



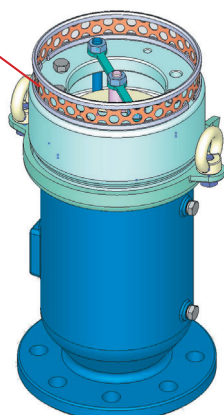
3. Add 2 long bolts



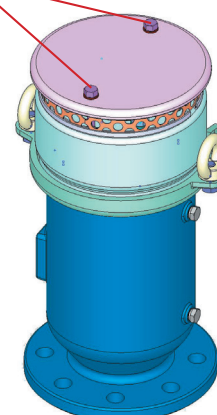
4. Add housing and fasten nuts



5. Add net



6. Add the cover and fasten the M6 bolts



## OPTIONS:

| DAV | Model       | Diameter                       | Connections   | Type                                  | Optional Addition | Pressure rating                                 |
|-----|-------------|--------------------------------|---|---------------------------------------|-------------------|---|
|     | MH Standard | 2" / 50mm<br>to<br>10" / 250mm | ISO PN16<br>ANSI 150<br>BSP<br>NPT<br>BSTD<br>BSTE<br>ISO PN25<br>ISO PN40<br>ANSI 300<br>JIS Standards | KA Combination valve<br><br>K Kinetic | SA Surge Arrestor | PN16 / 230psi<br>PN25 / 360psi<br>PN40 / 580psi |

## EXAMPLE:

4" (100mm) Valve, ANSI 300 Combination Valve with Surge Arrestor, Pressure Rated 40 bar (580psi)

|     |    |   |          |    |    |      |
|-----|----|---|----------|----|----|------|
| DAV | MH | 4 | ANSI 300 | KA | SA | PN40 |
|-----|----|---|----------|----|----|------|



# Setting New Global Standards of Innovation, Expertise and Reliability

Hundreds of companies in the industrial, civil engineering and agricultural sectors around the world have selected the innovative and field-proven technologies developed by Dorot. Public and private water utility companies, construction and engineering companies, fire-suppression integrators, farming enterprises, energy companies and other entities from various industries, all benefit from Dorot's expertise and professional services. Dorot is considered a true partner by its customers for overcoming challenges in R&D, design, implementation, and maintenance of water-control valve products.

Since its establishment in 1946, Dorot drives the market with continued innovation, uncompromising excellence and firm commitment to its customers. Through its unique water-management solutions, the company also contributes to the global efforts for environment protection. Dorot invests in research and development of quality products and solutions.



Distributed by:  **MIFAB**®