

DOUBLE ORIFICE ARV

FAF 7320

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Features

- Ductile Iron Body, flanged connection according to EN 1092-2. Float part made of polyethylene which can be replaced easily.
- while emptying the line, if the air intake amount less than the water discharge amount, pipe will face the danger of vacuuming. Regardless of the pipe type, vacuum force will pull the pipe perimeter to the center, hence contractions and bendings occur on the pipe.
- Gasket fixings become loose and causes leakage after filling. Welding and connection areas will be under same danger.
- If the air is not discharged in water transmission and water network when on duty, air is collected in certain areas and may cause the danger of stopping the waterflow. This danger is increased with the congestion, and causing the pipeline to explode and major damages.
- Double Orifice ARV is installed on the pipe with a flange, releases the air received from its flange connection through the orifices located above the float parts. When the air release is completed, the floats travel upside with the water force and closes the orifice outlet, thus preventing the leakage of water.
- The biggest problem of Double Orifice ARV' is the ARV blockage. For this reason, ARV's on the line must be checked at certain intervals.
- Body and cover of ductile iron with blue epoxy coating.
- Release valves can be manufactured with flanged or screwed ends.
- Depending on the capacity of the pipeline, single orifice or double orifice air release valve needs to be chosen.
- Working pressure range: 0.2 – 16 bar.

Temperature

- +130 °C

PRODUCTION STANDARTS

DN50 → DN200

PN 10-16

| | |
|----------------------|------------------------|
| Design | EN 1074-4 |
| End Connection | EN 1092-2 / ISO 7005-2 |
| Marking | EN 19 |
| Tests | EN 12266 |
| Corrosion Protection | Industrial Epoxy |

Product Description

FAF7320 Double Orifice ARV; to be used for the purpose of releasing the existing air in the potable water transmission lines and water networks after installation or during emptying and refilling the pipeline due to maintenance works. And, to be used for the purpose of vacuuming air into the pipe during emptying the pipeline due to maintenance or failure circumstances.

Accessories

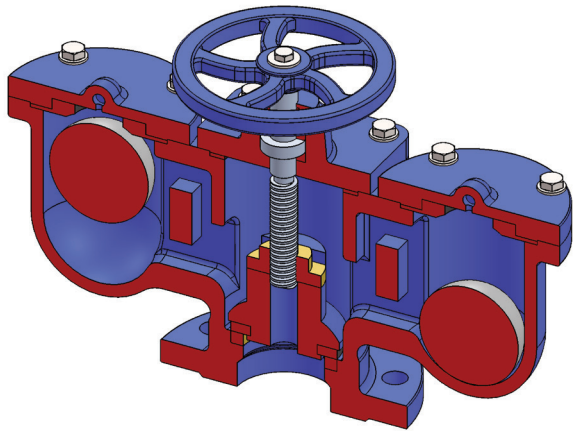
- Gate valve, FAF6000
- Butterfly valve, FAF3500-3600
- Flange adaptor, FAF3960

Scope of Application

- Pump suction lines
- Water lines
- Water supply network
- Line valves
- Venturimeters
- Plunger & turbine pumps

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PRODUCTS MODEL CODES

| | |
|----------------|---------------------------------------|
| FAF7310 | SINGLE ORIFICE ARV |
| FAF7320 | DOUBLE ORIFICE ARV |
| FAF7330 | NON-SLAM DYNAMIC ARV |
| FAF7340 | DOUBLE ORIFICE NON-SLAM (Kinetic) ARV |
| FAF7350 | COMBINATION (Underground -Street) ARV |

VALVE TEST PRESSURE (Bar)

| MAX. OPERATING PRESSURE | BODY / SHELL TEST | SEAT TEST |
|-------------------------|-------------------|-----------|
| 10 | 15 | 11 |
| 16 | 24 | 17,6 |

100% of the valves are subjected to hydrostatic tests at FAF facilities.

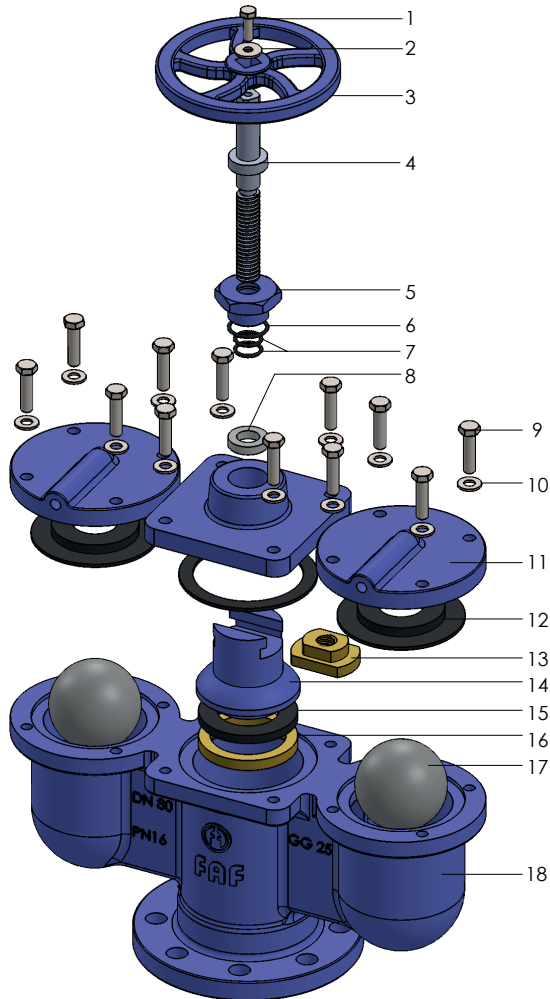
Note

- For proper use and safety precautions please follow the installation and operating instructions.

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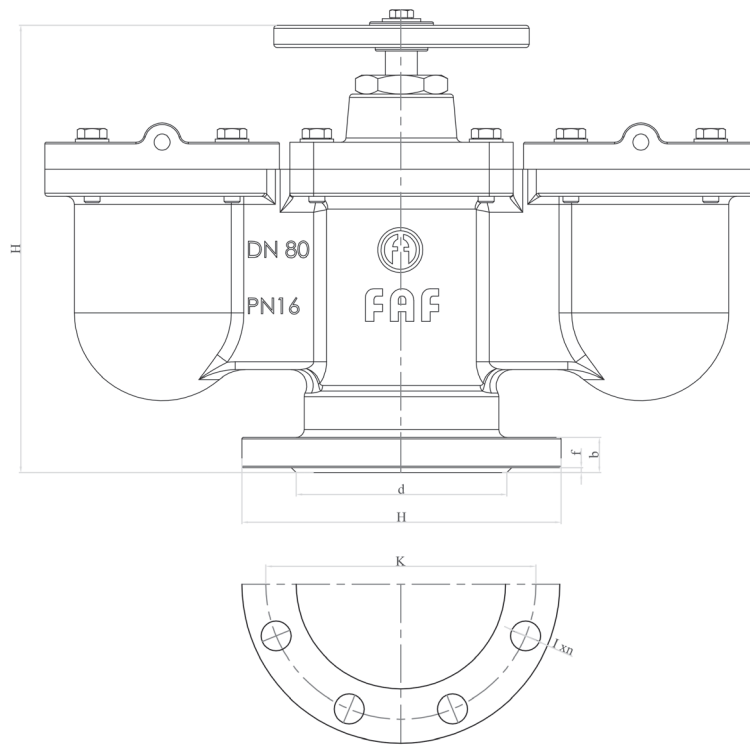
Material List



| NO | ITEM | MATERIALS |
|----|----------------|--|
| 1 | BOLT | DIN 933 |
| 2 | WASHER | STEEL |
| 3 | HAND WHEEL | EN GJL 250 CAST IRON |
| 4 | STEM | 1.4021 STAINLESS STEEL |
| 5 | BONNET NUT | EN GJL 250 CAST IRON |
| 6 | O-RING | NBR - EPDM |
| 7 | O-RING | NBR - EPDM |
| 8 | WASHER | PTFE |
| 9 | BOLT | DIN 933 |
| 10 | WASHER | DIN 125 |
| 11 | BONNET | EN GJS 400 DUCTILE IRON / EN GJL 250 CAST IRON |
| 12 | BONNET SEALING | EPDM |
| 13 | SLIDE NUT | CuZn40Pb2 MS58 BRASS |
| 14 | DISC | EN GJS 400 DUCTILE IRON / EN GJL 250 CAST IRON |
| 15 | DISC SEALING | EPDM |
| 16 | SEAT | CuZn40Pb2 MS58 BRASS |
| 17 | FLOAT | POLYETHYLENE |
| 18 | BODY | EN GJS 400 DUCTILE IRON / EN GJL 250 CAST IRON |

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Technical Details & Drawing, Dimensions



| DIMENSIONS | | | | | | | | |
|------------|------|-----|-----|-----|--------|---|----|-----|
| DN (mm) | PN | D | K | d | l x n | f | b | H |
| 50 | PN10 | 165 | 125 | 99 | 19x4 | 3 | 20 | 275 |
| 65 | | 185 | 145 | 118 | 19x4 | 3 | 20 | 275 |
| 80 | | 200 | 160 | 132 | 19x8 | 3 | 20 | 280 |
| 100 | PN16 | 220 | 180 | 156 | 19x8 | 3 | 24 | 280 |
| 125 | | 250 | 210 | 184 | 19x8 | 3 | 26 | 280 |
| 150 | | 285 | 240 | 211 | 23x8 | 3 | 26 | 400 |
| 200 | PN10 | 340 | 295 | 266 | Ø23x8 | 4 | 26 | 400 |
| 200 | PN16 | 340 | 295 | 266 | Ø23x12 | 4 | 30 | 400 |

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General Information About Arv's

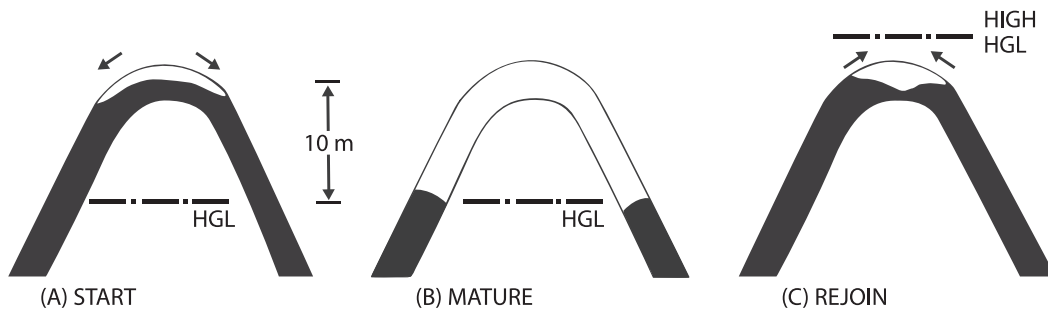
Air vacuum and release is vital for the pipeline operation and safety. Many problems faced with the pipelines are actually related with the air left inside the pipe that cannot be released.

Where does the air in the pipeline come from?

- Pipeline is already filled with air before filling with water.
- There exists 2% dissolved air in the water, which can vaporise by temperature change or pressure drop.
- Each pump absorbs a certain amount of air.
- Incorrect installations.

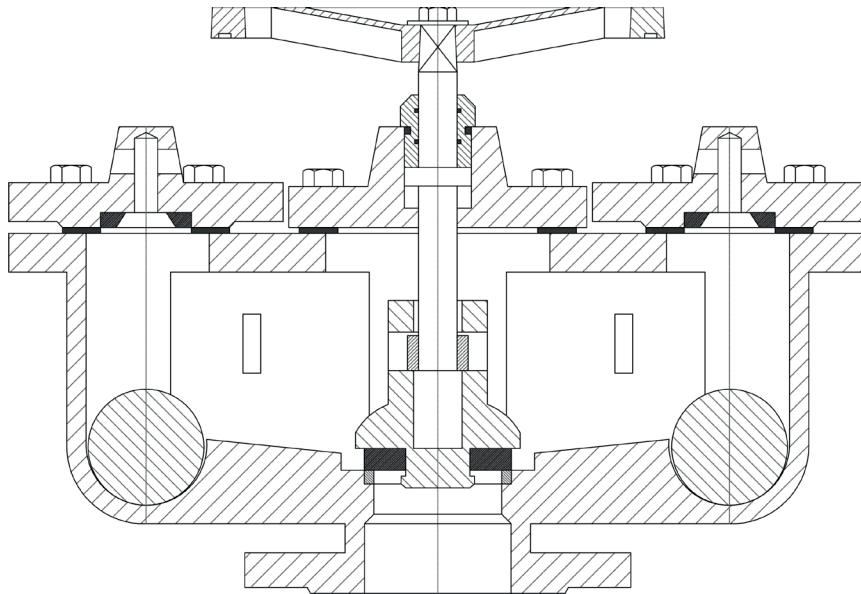
Effects of Air

- Air in the pipeline, narrows the filled water section and increases operating costs.
- Sometimes trapped air can stop the entire flow, depending on the nature of the pump
- At the peaks, the air that is trapped moves suddenly. This creates turbulence and vibration on the pipeline.
- Corrosion rate accelerates.
- Causes faulty flow meter readings.
- Affects the operation of control valves.
- At some cases, the jammed air arrives at such a moment that it causes the pipe to explode.





General Information about ARV's



Problems, Usage

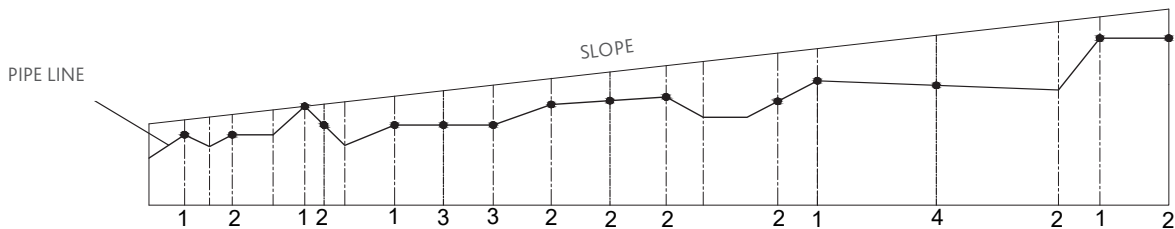
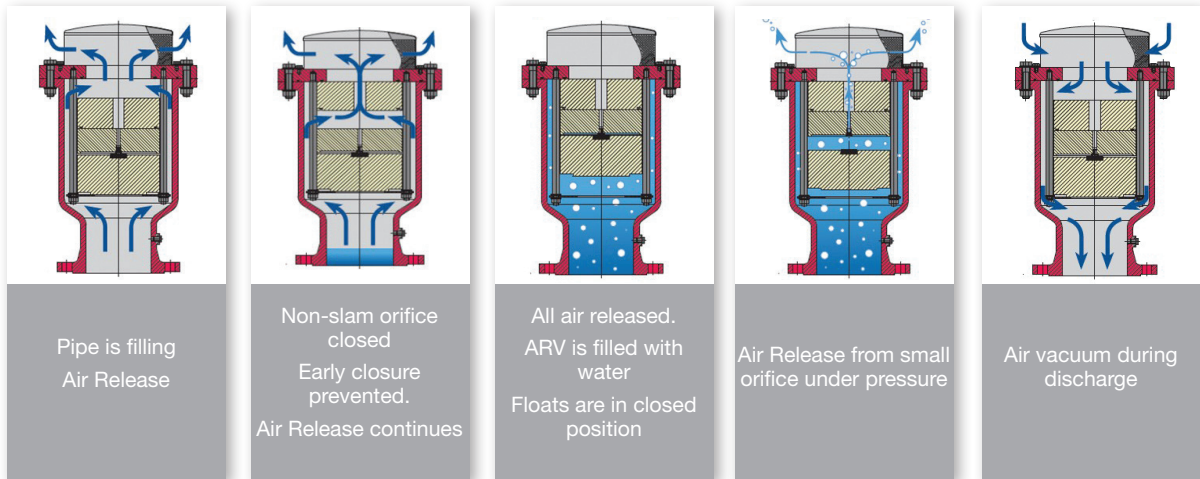
- Leakage due to float deformation and rubber damage are the most common complaints in rubber coated sphere float designs.
- In some designs, the air release valve is deactivated due to float part is jammed to the large orifice during the closure.
- The biggest problems are the closure problems in the literature, called dynamic (premature) closure, before the entire pipeline air mass is released.
- During air release, it is not possible to hold the float at its place after a certain air flow, subject to aerodynamic laws, and is absorbed, closing the large orifice.

Non-slam Dynamic ARV

Non-slam dynamic ARV's are kind of ARV's that do not block and do not require maintenance and observation by continuing to release the air through the orifice of the float even when the anti-shock float is closed, solving all the problems of double orifice ARV with its structure and functions. The middle float keeps the system fully safe by releasing the air bubbles occurring under pressure. They are installed inside the ARV chambers on the pipelines by placing isolation valves such as gate and wafer butterfly valves under the Dynamic ARV's and Double Orifice ARV's.

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ARV Placement Position Suggestions ARV Application



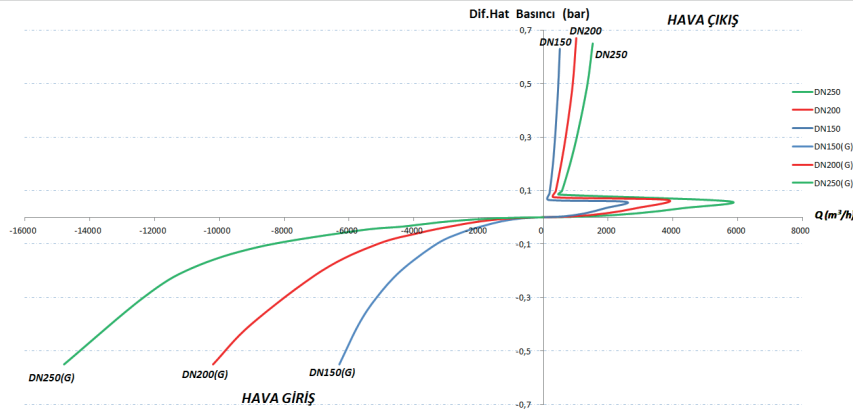
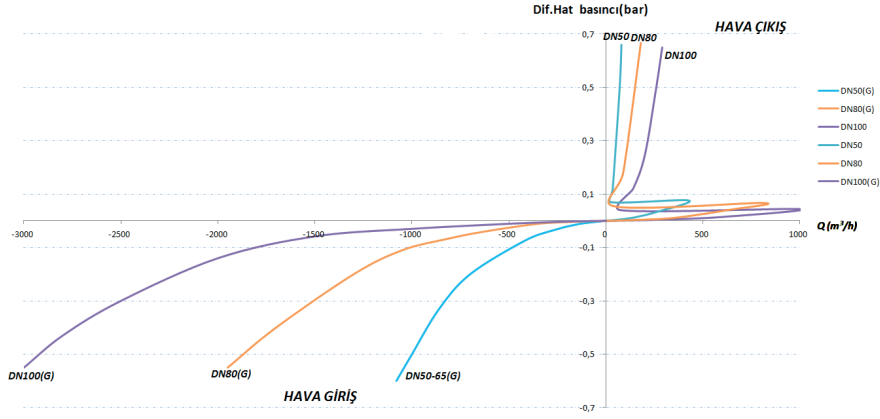
1. Full peak points
2. Incase of increase in downward slope or decrease in upward slope.
3. At every 600 to 1000 mt. at long linear pipelines
4. At long sloping lines, maximum at every 600 mt.
5. At every 400-500 mt in water networks.

ARV placement interval alternative to Item 3 and 4; can be taken as
PIPELINE DIAMETER DN (mm) X 1 (mt).

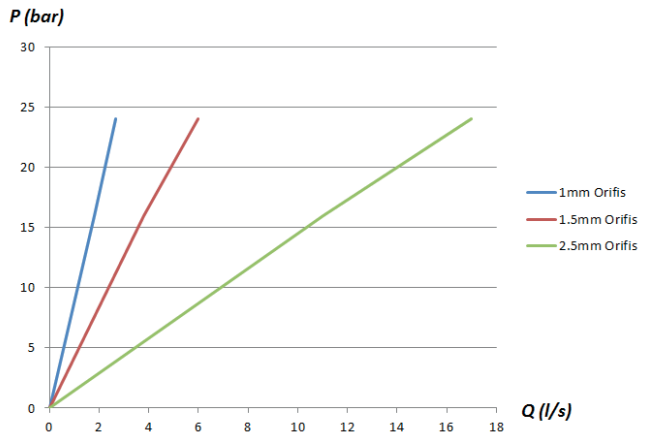
(DN1000 mm X 1mt. = 1000 mt)

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General Information about ARV's ARV Selection Criteria



| ORIFICE SELECTION | |
|-------------------|--------------|
| ARV Size | Orifice Size |
| DN50 | 1mm |
| DN65 | 1mm |
| DN80 | 1.5mm |
| DN100 | 1.5mm |
| DN150 | 1.5mm |
| DN200 | 2.5mm |
| DN250 | 2.5mm |



ARV Factory Acceptance Test Requirements

1. Reistance Test
2. Hydrostatic Test
3. Low Pressure Sealing Test
4. Air Release
5. Air Release under pressure
6. Vaccum tests

