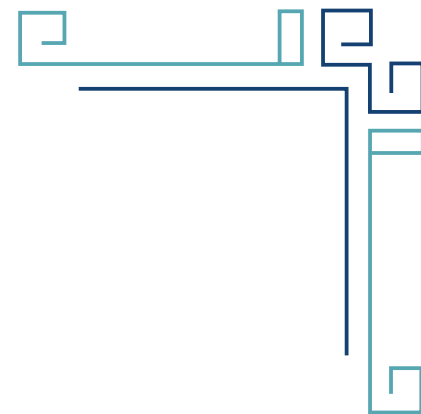


# BREATHER VALVE

## PRESSURE / VACUUM TYPE

[ FDI-BV-713 / FDI-BV-714 ]



Pressure Type  
Breather Valve [ BV - 713 ]

### INDEX

1. Introduction to Breather Valve Pressure Type.
2. Introduction to Breather Valve Vacuum Type.
3. Specification
4. Selection Criteria
5. Product Functionality
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Order Guide & Recommended Spares.

Vacuum Type  
Breather Valve [ BV - 714 ]



## INTRODUCTION : BREATHER VALVE PRESSURE TYPE (BV-713)

Breather Valve also referred to as Pressure and Vacuum Relief Valve, the breather valve is an important part for atmospheric tanks & vessels in which solvents are filled and drawn at a high flow rate. This type of valve is installed in the in-and out-breathing lines of tanks, vessels and process equipment to retain toxic vapors and avoid atmospheric contamination, thus balancing unpredicted fluctuations in pressure & vacuum and providing increased fire protection and safety.

It is available in different types like pressure only, vacuum only, and combined pressure/vacuum type. It protects the storage tank in excessive pressure and vacuum conditions which cause rupture or imploding of the storage tank. They are available in a flanged outlet and atmospheric outlet. It is available in pallet type, spring type, and both combined type design also. Combine type valve is popular because in excessive pressure condition spring design will work and in vacuum condition pallet design will come in the picture.

When continuous pump feeding is taking place tank need to breathe means the circulation of air is needed. At that time if the vent is not big enough or is closed tank may explode or rupture happens. During this time if pressure exceeds the set pressure of the breather valve it will open and relieve the pressure. On the other hand, if the continuous pump emptying process is taking place at that time tank needs to breathe in the air. If the vent is closed or not big enough tank may implode. In this condition, the breather valve will open and relieve the vacuum.

Pressure only type of breather valve is applied for specific out-breathing requirements.



Wing / Hex Nuts

Weatherhood

Material Variations  
as per customer requirements

Bird Screen

Protection from external sources.

Connecting Studs

Seat

Material Variations  
as per customer requirements

Gasket

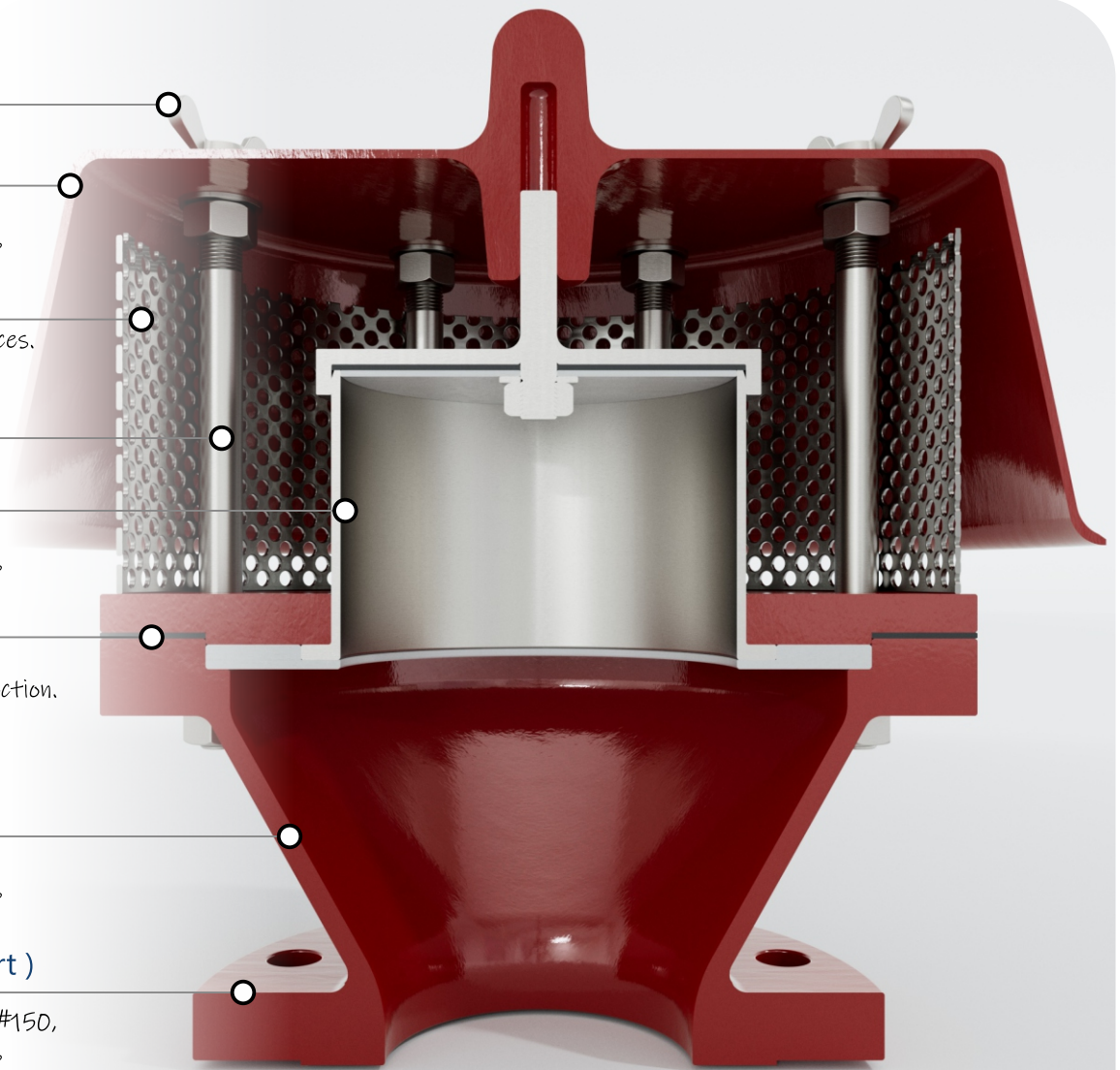
Material Variations  
as per temperature class selection.

Body

Material Variations  
as per customer requirements

Connecting Flange ( Port )

Flanged as per ANSI B 16.5 #150,  
as per customer requirements

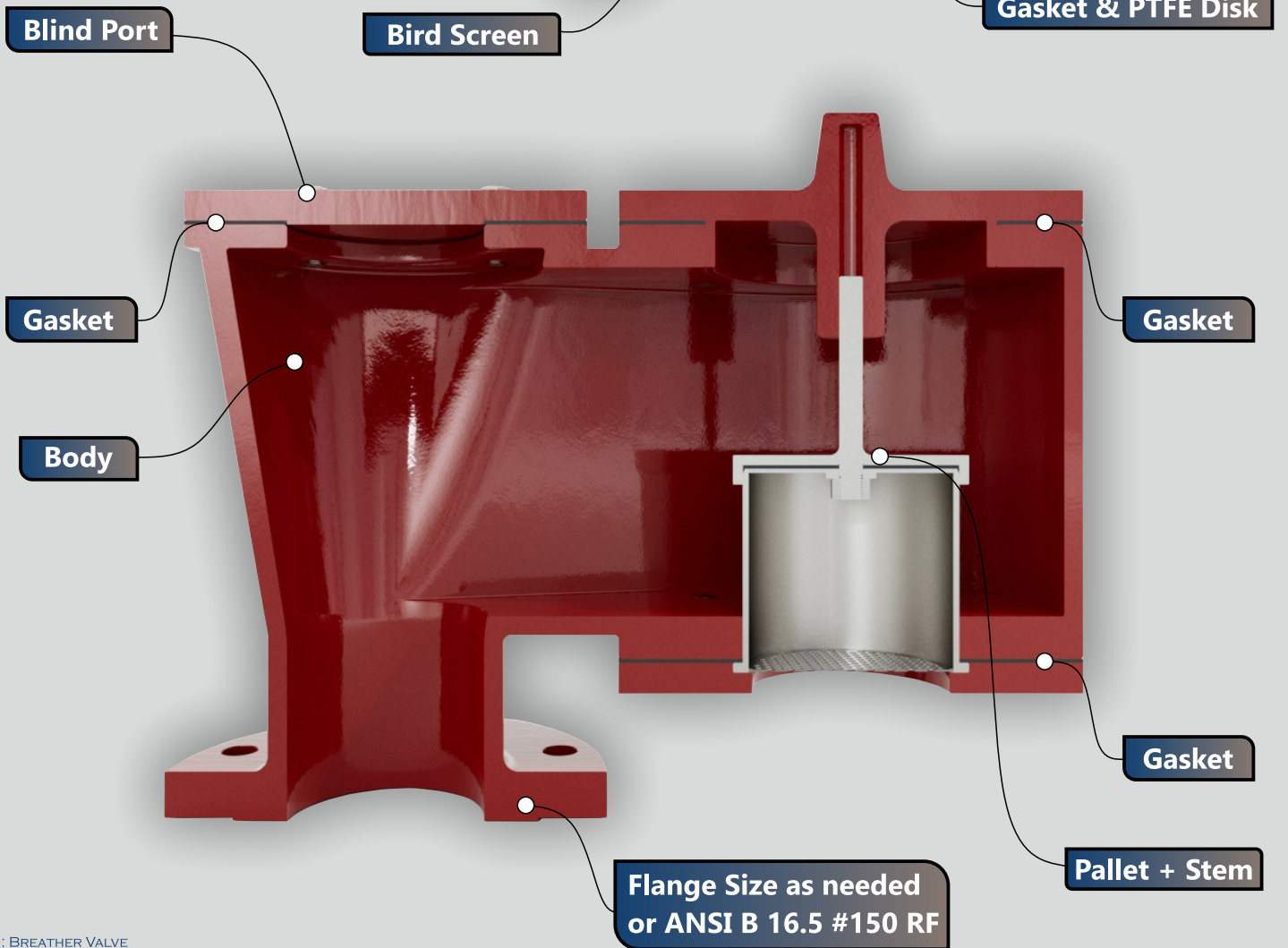
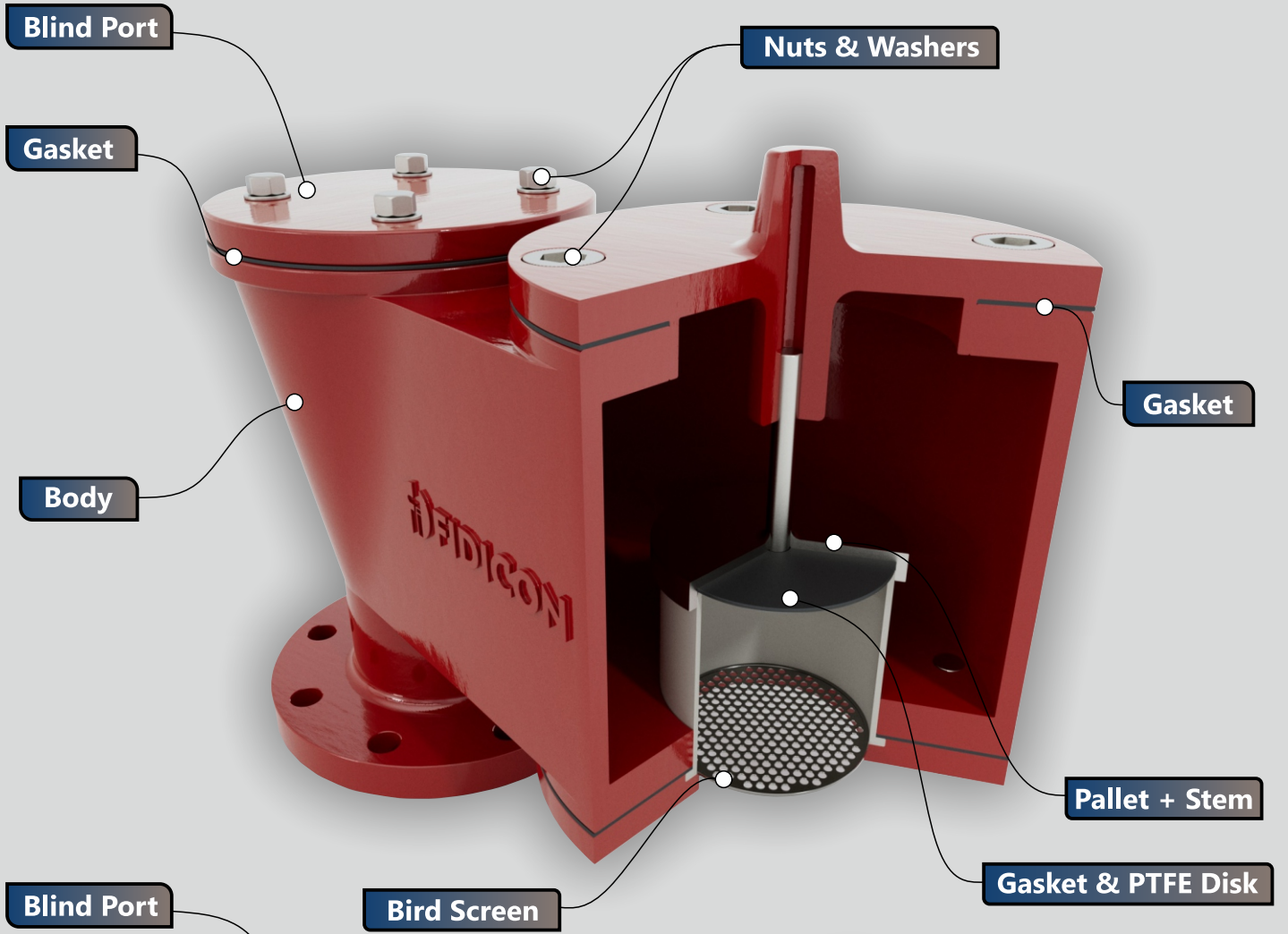


## INTRODUCTION : BREATHER VALVE VACUUM TYPE (BV-714)



Vacuum only type of breather valve is applied for specific in-breathing requirements.

Breather Valve is designed to function on vacuum condition only so we have introduced simple design for the same where breather valve's pressure port is sealed with the blind flange in current Model [ BV-714 ]. when system tank experiences vacuum due to emptying of the contents of it, partial vacuum pressure is induced therefore to stabilize tank pressure, vacuum type breather valve's pallet starts chattering on set pressure and lifts up allowing air inlet and stabilize the tank.



Breather Valve Pressure & Vacuum Type are widely used for automatic venting, breathing, and conservation of losses due to evaporation, Pressure and Vacuum functions are separate, with compact and rugged products.

**Model No.**

**FDI - BV - 713**

(Breather Valve Pressure Type)

**FDI - BV - 714**

(Breather Valve Vacuum Type)

**Available Sizes:**

1" to 24" and different sizes as per customer request.

**Material of Construction:**

Aluminum, Carbon Steel, SS 304, SS 316, Hastelloy C, PTFE, etc. as per Standards and Customer Request.

**Connection Type:**

ANSI B 16.5 #150 and other as per customer requirements.

**Pressure Setting:**

as per customer requirements.

**Breather Valve Sizing :**

Breathing during pumping due to :

- ◆ Pumping Fluid into Tank (Pressure)
- ◆ Pumping Fluid out of Tank (Vacuum)

Thermal breathing due to:

- ◆ Increase in Temperature (Pressure)
- ◆ Decrease in Temperature (Vacuum)

Inbuilt type of model functions successfully for both condition, the additional flame arrester element bank will result in additional little pressure drop in the product comparing to only PVRV Functionality. so we provide and ensure you with the minimum possible pressure drop as per your connection size needs, service media and operating pressure, temperature conditions. For Detailed Enquiry Specifications, refer to checklist provided at last page of the catalogue.



## STANDARDS FOLLOWED BY US.

- **API 2000** ( American Petroleum Institute )
- **API RP 2210** : Benefits & Detriments associated with use of Flame Arrester for Vents of Tanks Storing Petroleum Products.
- **API 2028** : Standard for Flame Arrester in Piping System.
- **USCG 33 CFR154** :  
(Appendix A : Guidelines for Detonation Flame Arrester)  
(Appendix B : Standard Specification for Tank vent Flame Arrester)
- **UL525** : Standard for Safety for Flame Arrester UL Gas & Oil Equipment Directory
- **CEN EN 12874** : Flame Arrester Performance Requirements, Test Methods & Limits for Use.
- **ASTM F 1273** : Standard Provides Minimum Requirements for Design, Construction, Performance, & Testing of Tank vent flame arrester.
- **IS 11006: 2011** : Flame Arrester Specifications
- **EN ISO 16852** : ATEX Compliance Atmospheric Explosible
- **ISO 16852:2016** : Flame Arrester Performance Requirements Test Methods, & Limits for use.
- **NEC/CEC** ( National Electrical Code / Canadian Electrical Code )
- **ASME B 31.3 : 2002**
- **API 2521** : Use of Pressure Vent Valves for Atmospheric Loss.
- **API 520 Part-I** : Sizing, Selection, and Installation of Pressure-Relieving Devices
- **API 521** : Pressure-Relieving and De-pressuring Systems.
- **ISO 28300** : Petroleum, petrochemical and natural gas industries, Venting of atmospheric and low-pressure storage tanks.

## CERTIFICATIONS

- **IS 11006 : 2011 CSIR-CIMFR**
- **EN 12874 : EN ISO 16852 ATEX COMPLIANCE**
- **ISO 16852 : 2016**

## PRODUCT TESTING

Valves are tested for proper setting and for leakage rate of less than 0.03 Nm<sup>3</sup>/hr of air at 90% of the set pressure. Additionally valves are tested for leak tightness at 75% of set point as required by API 2000.

\*custom testing specifications can be followed, as required.

### We offer Following Product Tests,

- Flow Capacity
- Dimensional Checks
- Hydrostatic Pressure Test
- Air Leakage Test
- Performance Test, etc.

\*other tests may be performed as per customer request.

## RECOMMENDED DISPOSAL

- Give it back to us & we will take care of recycling & possible disposal.
- User can dis-assemble the product in multiple stage
- The above may be handed over (state pollution board), authorized re-cycler item-wise.





## ENQUIRY SPECIFICATIONS:

- [1] Service Media Details.
- [2] Tank Volume, Type, MOC of Tank
- [3] Pump Flow ( In-Charge, Discharge Flow Rate )
- [4] Product Design Condition ( Normal Vent / Fire )
- [5] N2 Blanketing System Available ( If Yes, Flowrate / No )
- [6] System Operating and Design Pressure.
- [7] System Operating and Design Temperature.
- [8] Set Pressure and Vacuum Requirements.
- [9] Material Specifications ( Body, Internal )

## RECOMMENDED SPARES

- [1] Moving Parts Such as, Pallet, Diaphragm, Dead Weights, Stem, Spring.
- [2] Flame Element Bank for Breather Valve with Flame Arrester/ Inbuilt Type.

## SIMILAR RANGE OF PRODUCTS

### Category :

Dead Weight Type, Spring Loaded Type.

### Sub Types :

Breather Valve In-Built Flame Arrester  
Breather Valve cum Flame Arrester  
Pipeway Type (Pressure & Vacuum) Breather Valve  
Vacuum Type Breather valve  
Pressure Type Breather Valve, etc.

### Any Query?

Contact us to Discuss,

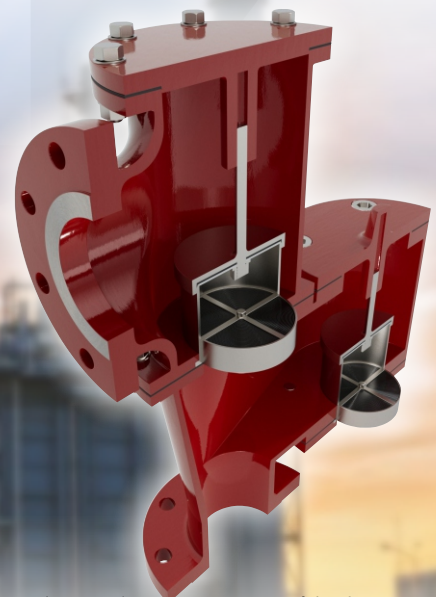
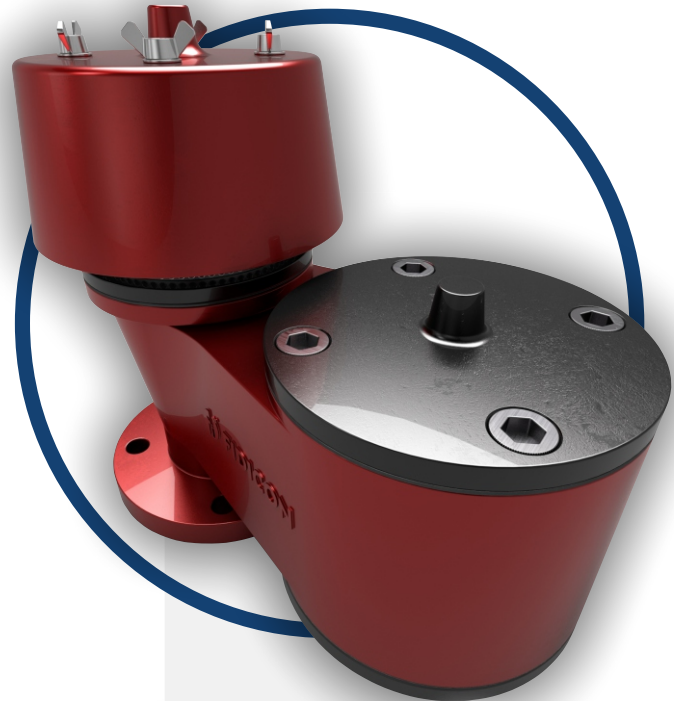
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