

Installation and Maintenance Manual

Forbes Marshall Vent Head

FMVH

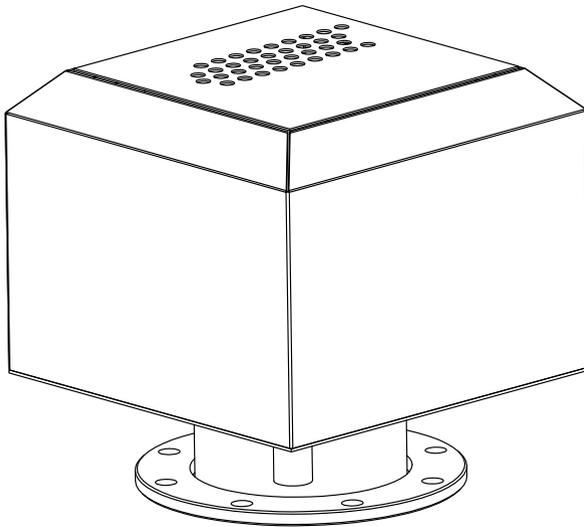


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PLEASE NOTE - Throughout this manual this cautionary symbol is used to describe a potential damage or injury that might occur if the safety considerations are overlooked. This symbol denotes CAUTION, WARNING or DANGER.



1. Preface:

This manual is intended for anyone using, commissioning, servicing, or disposing the below mentioned products safely and efficiently.

Forbes Marshall Vent Head [FMVH]

Size: DN 50(2") / 80 (3") / 100(4") / 150(6") / 200(8") / 250(10") / 300(12") / 350(14") / 400(16") / 450(18") / 500(20")

PLEASE NOTE:

Throughout this manual the following cautionary symbol is used to describe a potential damage or injury that might occur if the safety considerations are overlooked.

2. Important Safety Notes:



Read this section carefully before installing/operating/maintaining the product. The precautions listed in this manual are provided for personnel and equipment safety. Furthermore, Forbes Marshall accepts no responsibility for accidents or damage occurring as a result of failure to observe these precautions. Note that the product is designed to perform for non-contaminated fluids only. A contamination in the form of chemical, foreign particle etc. can lead to problem with product performance and life of the product.

If these products in compliance with the operating instructions are, properly installed, commissioned, maintained and installed by qualified personnel (refer Section 2.7) the safety operations of these products can be guaranteed. General instructions for proper use of tools and safety equipments, pipeline and plant construction must also be complied with.

2.1 Intended use:

Check if the product is suitable for intended use/ application by referring to the installation and maintenance instructions, name plates and technical information sheets.

- i) The product is suitable for use as defined in the technical information sheet. In case the need arises to use the product on any other fluid please contact Forbes Marshall for assistance.
- ii) Check for the suitability in conformance to the limiting conditions specified in technical information sheet of the product.
- iii) The correct installation and direction of fluid flow has to be determined.
- iv) Forbes Marshall products are not intended to resist external stresses, hence necessary precautions to be taken to minimize the same.

2.2 Accessibility and Lighting:

Safe accessibility and working conditions are to be ensured prior to working on the product.

2.3 Hazardous environment and media:

The product has to be protected from hazardous environment and check to ensure that no hazardous liquids or gases pass through the product.

2.4 Depressurizing of systems and normalizing of temperature:

Ensure isolation and safety venting of any pressure to the atmospheric pressure. Even if the pressure gauge indicates zero, do not make an assumption that the system has been depressurized.

To avoid danger of burns allow temperature to normalize after isolation.

2.5 Tools and consumables:

Ensure you have appropriate tools and / or consumables available before starting the work. Use of original Forbes Marshall replacement parts is recommended.

2.6 Protective clothing:

Consider for the requirement of any protective clothing for you/ or others in the vicinity for protection against hazards of temperature (high or low), chemicals, radiation, dangers to eyes and face, noise and falling objects

2.7 Permits to work:

All work to be carried out under supervision of a competent person. Training should be imparted to operating personnel on correct usage of product as per Installation and Maintenance instruction. "Permit to work" to be complied with (wherever applicable), in case of absence of this system a responsible person should have complete information and knowledge on what work is going on and where required, arrange to have an assistant with his primary goal and responsibility being safety. "Warning Notices" should be posted wherever necessary

2.8 Handling:

There is a risk of injury if heavy products are handled manually. Analyze the risk and use appropriate handling method by taking into consideration the task, individual, the working environment and the load.

2.9 Freezing:

Provision should be made to protect systems which are not self-draining, against frost damage (in environment where they may be exposed to temperatures below freezing point) to be made.

2.10 Product Disposal:

It is necessary to dispose this product only in accordance with local regulations at the authorized, qualified collecting point specified for equipment and its parts—Please refer the part details mentioned in the material table of this manual. Please follow all waste disposal guidelines (Management & Handling) as published by local governing authorities in India & abroad

2.11 Returning products:

Customers and Stockist are reminded that, when returning products to Forbes Marshall they must provide information on any hazards and the precautions to be taken due to contamination residues or mechanical damage which may present a health, safety or environmental risk.

This information must be provided in writing including Health and Safety data sheets relating to any substance identified as hazardous or potentially hazardous.

3. Brief Product Information:

3.1 Description:

The Forbes Marshall Vent Head, FMVH, is designed to fit vertical open-ended steam vent pipes. The vent head will discharge dry steam at low velocity safely to atmosphere protecting personnel from injury and buildings from material damage. The vent head incorporates an internal baffle to separate entrained water from the steam and discharges separately through the drain connection.

3.2 Applications:

The FMVH is ideal for use on blowdown vessels, condensate vessels, boiler feedtanks, hot water storage tanks etc.

Warning : FMVH must not be used for safety valve outlets. Vent Heads are selected to be the same nominal size as the vent pipe.

- Efficient separation
- Reduces discharge velocity and noise
- Stainless steel body for long maintenance free life.
- A simple and effective vent head for general applications

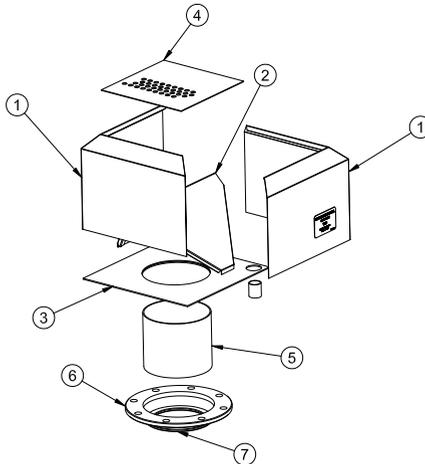


Figure 1 : Forbes Marshall Vent Head.

Materials

Sr. No.	Part	Material	Standard
1	Outer Cover	SS304	ASTM A 240
2	Baffle Plate	SS304	ASTM A 240
3	Base Plate	SS304	ASTM A 240
4	Screen	SS304	ASTM A 240
5	Pipe	SS304	ERW SCH10S
6	Flange	Carbon Steel	SA 516 GR 70
7	Ring	Carbon Steel	SA 516 GR 70

3.3 Available Sizes:

DN 50, 80, 100, 150, 200, 250, 300, 350, 400, 450, 500

3.4 Product Dimension and Drawing:

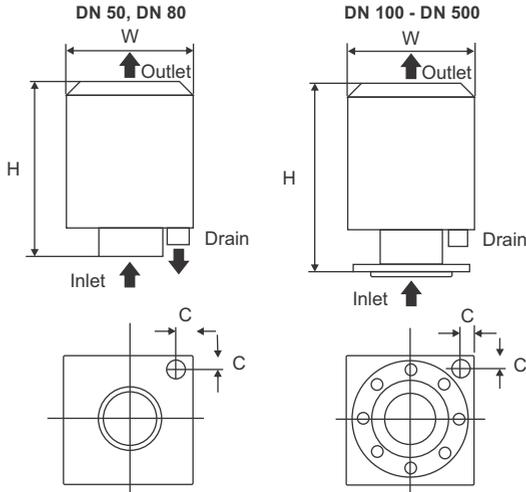


Figure 2 : Dimensional Drawing of FMVH

MODEL NAME	VENT HEAD SIZE	INLET SIZE	DRAIN SIZE	DIM H	DIM W	DIM C	WT
50VH	DN50	DN50 SCR D BSP	DN20 SCR D BSP	210	152	20	2
80VH	DN80	DN80 SCR D BSP	DN20 SCR D BSP	270	202	20	2.5
100VH	DN100	DN100	DN25 SCR D NPT	320	240	24	6
150VH	DN150	DN150	DN25 SCR D NPT	390	340	25	13
200VH	DN200	DN200	DN40 SCR D NPT	430	425	35	20
250VH	DN250	DN250	DN40 SCR D NPT	495	525	35	28
300VH	DN300	DN300	DN50	570	625	45	35
350VH	DN350	DN350	DN50 SCR D BSP	685	725	45	40
400VH	DN400	DN400	DN40 SCR D BSP	652	750	45	50
450VH	DN450	DN450	DN40 SCR D BSP	742	850	45	55
500VH	DN500	DN500	DN40 SCR D NPT	862	1000	45	65

Flanged Connections: Class 150 & PN16

4. Product Working Principle:

Forbes Marshall Vent Head are designed to be fitted on the top of vertical steam vent pipes. The vent separates moisture from the steam and discharges dry steam at low velocity and with low noise to the atmosphere. The water collected is discharged through a different drain connection.

Steam coming inside the vent head is directed over an internal disc which forces the steam flow into a toroidal vortex, which causes the entrained water molecules to fling outside. These molecules are driven to an internal drain by the downward motion of the toroidal vortex.

5. Installation Guidelines: [Refer figure 3]



Note: Before implementing any installations observe the 'Important Safety notes' in section 2. Referring to the Installation and Maintenance Instructions, name-plate and Technical Information, check that the product is suitable for the intended installation.

1. Installation of the screw and flanged Forbes Marshall Vent Head is simple and straightforward.
2. The flanged FMVH have lightweight flange drilled to suit the flange standard specification. The lap joint flange allows easy rotation to position the drain connection.
3. Care should be taken that the drain is piped to a safe location where the discharge of any hot fluid will not create any discomfort or injuries.

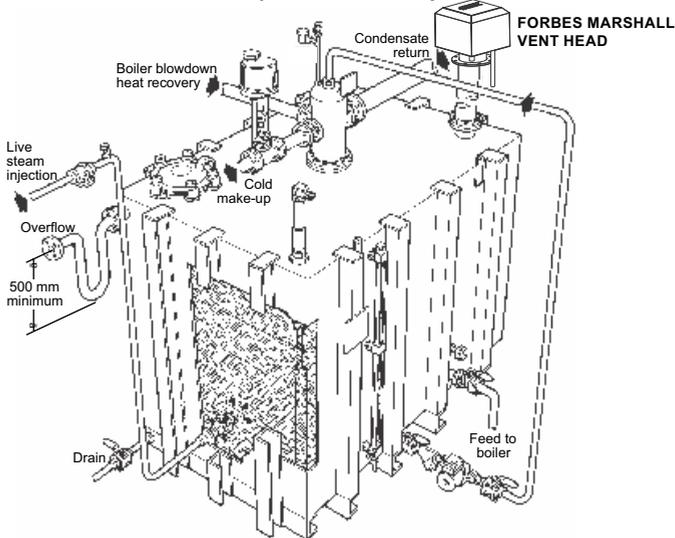


Figure 3: FMHV installation on a feed water tank

6. Commissioning:

After the installation of the FMVH, ensure that the system is fully functional.

7. Maintenance Guidelines:

1. An annual inspection for debris deposition in the outlet or drain connection is recommended to the customers.
2. In case of the vent head having flanges, please replace the gaskets in case any steam leakage is observed.

How to Order:

1 No. Forbes Marshall Vent Head FMVH with inlet flanged to suit Class 150, drain 1" NPT

8. Warranty Period:

As per the ordering information and agreement in the contract.



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