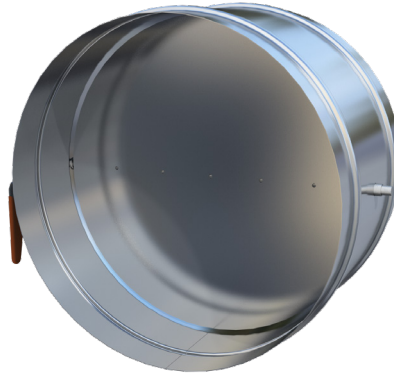


# ENERVEX BBF & BBM BALANCING BAFFLES

3001850 08.18

Installation & Operating Manual



**READ AND SAVE THESE INSTRUCTIONS!**



UL File E467733

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**ENERVEX®**   
VENTING DESIGN SOLUTIONS



This symbol shows that the ENERVEX BBM and BBF Automatic Dampers are listed in the US and certified for Canada under Underwriters Laboratories Inc. file no. E467733.

**IMPORTANT: READ THESE INSTRUCTIONS CAREFULLY PRIOR TO INSTALLATION.**

- **EXAMINE ALL COMPONENTS FOR POSSIBLE SHIPPING DAMAGE PRIOR TO INSTALLATION.**
- **PROPER JOINT ASSEMBLY IS ESSENTIAL FOR A SAFE INSTALLATION. FOLLOW THESE INSTRUCTIONS EXACTLY AS WRITTEN. CHECK SECURENESS OF JOINTS UPON COMPLETION OF ASSEMBLY.**

**WARNING**

**Failure to follow these installation instructions could cause FIRE, CARBON MONOXIDE POISONING, and/or DEATH. If you are unsure of installation requirements, contact ENERVEX.**

**Symbol Legend**

The following terms are used throughout this manual to bring attention to the presence of potential hazards, or to important information concerning the product.



**DANGER:** Indicates an imminent hazardous situation which, if not avoided, will result in death, serious injury or substantial property damage.



**WARNING:** Indicates an imminent hazardous situation which, if not avoided, may result in personal injury or property damage.

**How to use this manual**

This installation manual does not contain any system design documentation. System design documentation is available from any authorized ENERVEX representative. Accessories, fans, and variable frequency drives are not covered by this manual. Please refer to these component's individual manuals.

**TO REDUCE THE RISK OF FIRE, ELECTRICAL SHOCK OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:**

1. Use this unit in the manner intended by the manufacturer. If you have questions, contact the manufacturer at the address or telephone number listed on the front of the manual.
2. Before servicing or cleaning the unit, switch off at service panel and lock service panel to prevent power from being switched on accidentally.
3. Installation work and electrical wiring must be done by a qualified person(s) in accordance with applicable codes and standards.
4. Follow the appliance manufacturer's guidelines and safety standards such as those published by the National Fire Protection Association (NFPA), and the American Society for Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), and the local code authorities.
5. This unit must be grounded.

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## 1. PRODUCT INFORMATION

### 1.1 FUNCTION

The ENERVEX BBF/BBM Balancing Baffle is a single blade, single position stainless steel baffle with hand quadrant. The BBF/BBM is available in standard stack diameters ranging from 4 to 36 inches.

The BBF/BBM Balancing Baffles are used to properly balance an ENERVEX engineered vent system. Once the vent system has been properly balanced, the baffles are permanently fixed into position and will retard the flow of flue gases as needed.

The BBM Balancing Baffle is manufactured to connect to chimneys w/o flange connections. The BBF Balancing Baffle is manufactured to connect to chimneys with a standard 1/2" flanged connection. The BBF/BBM is rated for temperatures up to 1400°F (760°C).

The BBF/BBM should be installed with sufficient clearance above the boiler outlet to allow for damper protrusion into the stack when fully open. BBF/BBM nameplates located as shown on diagram below.

It is for installation with gas-fired or oil-fired equipment only.

### 1.2 SHIPPING

- Standard Packing List
- BBF/BBM is shipped completely assembled

### 1.3 WARRANTY

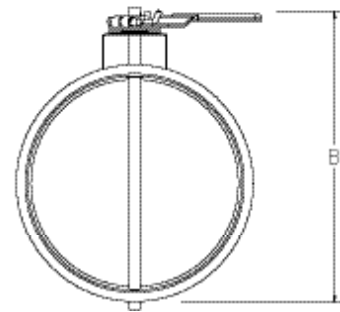
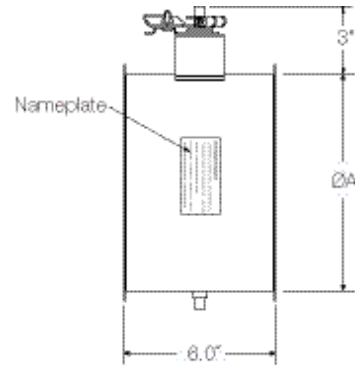
2-Year Factory Warranty. Complete warranty conditions are available from ENERVEX, Inc.

## 2. SPECIFICATIONS AND DIMENSIONS

### 2.1 DIMENSIONS AND CAPACITIES

Model	Stack ID in / mm	Dim. A in / mm	Dim. B in / mm	Dim. C in / mm
BBF 4	4	3.94 / 100	4.88 / 124	6.89 / 175
BBF 6	6	5.91 / 150	6.85 / 174	8.86 / 225
BBF 8	8	7.87 / 200	8.82 / 224	10.83 / 275
BBF 10	10	9.84 / 250	10.79 / 274	12.80 / 325
BBF 12	12	11.81 / 300	12.76 / 324	14.76 / 375
BBF 14	14	13.78 / 350	14.72 / 374	16.73 / 425
BBF 16	16	15.75 / 400	16.69 / 424	18.70 / 475
BBF 18	18	18.00 / 457	19.00 / 483	21.00 / 533
BBF 20	20	20.00 / 508	21.00 / 533	23.00 / 584
BBF 22	22	22.00 / 559	23.00 / 584	25.00 / 635
BBF 24	24	24.00 / 610	25.00 / 635	27.00 / 686
BBF 26	26	26.00 / 660	27.00 / 686	29.00 / 737
BBF 28	28	28.00 / 711	29.00 / 737	31.00 / 787
BBF 30	30	30.00 / 762	31.00 / 787	33.00 / 838
BBF 32	32	32.00 / 813	33.00 / 838	35.00 / 889
BBF 34	34	34.00 / 864	35.00 / 889	37.00 / 940
BBF 36	36	36.00 / 914	37.00 / 940	39.00 / 991

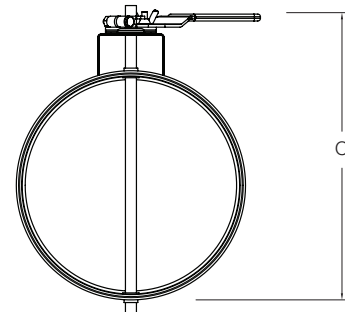
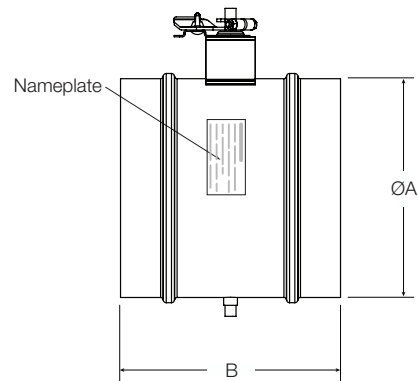
Other sizes available upon request.



BBF

Model	Stack ID (in)	Dia. A in / mm	Dim. B in / mm	Dim. C in / mm
BBM 6	6	5.85 / 146	8.0 / 203	8.85 / 225
BBM 8	8	7.85 / 197	8.0 / 203	10.85 / 276
BBM 10	10	9.85 / 248	10.0 / 254	12.85 / 326
BBM 12	12	11.85 / 298	10.0 / 254	14.85 / 377
BBM 14	14	13.85 / 349	10.0 / 254	16.85 / 428
BBM 16	16	15.85 / 400	10.0 / 254	18.85 / 479
BBM 18	18	17.85 / 451	12.0 / 305	20.85 / 530
BBM 20	20	19.85 / 502	12.0 / 305	22.85 / 580
BBM 22	22	21.85 / 552	14.0 / 356	24.85 / 631
BBM 24	24	23.85 / 603	14.0 / 356	26.85 / 682
BBM 26	26	25.85 / 654	16.0 / 406	28.85 / 733
BBM 28	28	27.85 / 705	16.0 / 406	30.85 / 784
BBM 30	30	29.85 / 756	16.0 / 406	32.85 / 834
BBM 32	32	31.85 / 806	16.0 / 406	34.85 / 885
BBM 34	34	33.85 / 857	18.0 / 457	36.85 / 936
BBM 36	36	35.85 / 908	18.0 / 457	38.85 / 987

Other sizes available upon request.



BBM

### 3. MECHANICAL INSTALLATION

#### 3.1 GENERAL

Install the BBF or BBM in the vent system at least one (1) vent diameter plus one (1) foot above outlet of the boiler and at least one (1) vent diameter below the common vent. Special requirements may be present for installation in a system with a draft hood or barometric damper.

See Fig. 1 for installations of a BBM used with draft hood appliance. See Fig. 2 for installations of a BBM with a barometric damper. Follow the contractor's recommendations to safely secure the BBM in the vent system. Once installed, verify the baffle can fully open and close without hitting any obstructions in the vent.

Install a BBF in systems that require pressure stack. Verify the baffle blade does not protrude into the common vent or a barometric damper. Use the accompanying V-Band and a gasket seal to connect the BBF to flanged stack. See Fig. 3. Follow the same guidelines stated above for systems using a BBF

IT IS FOR INSTALLATION WITH GAS-FIRED OR OIL-FIRED EQUIPMENT ONLY.

MINIMUM CLEARANCE TO COMBUSTIBLE IS 18 INCHES

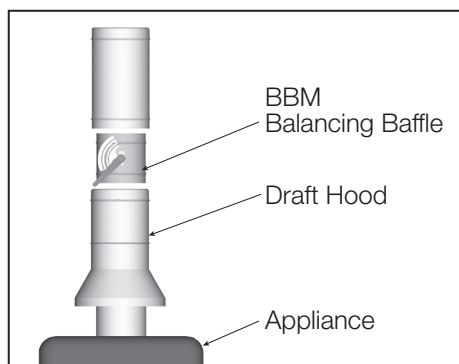


Fig. 1

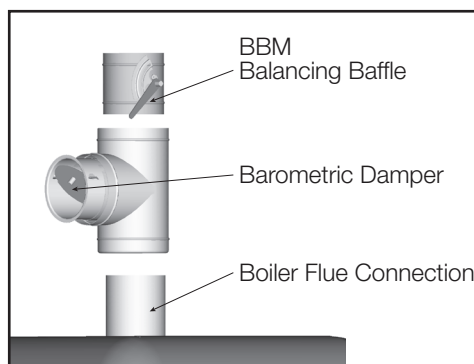


Fig. 2

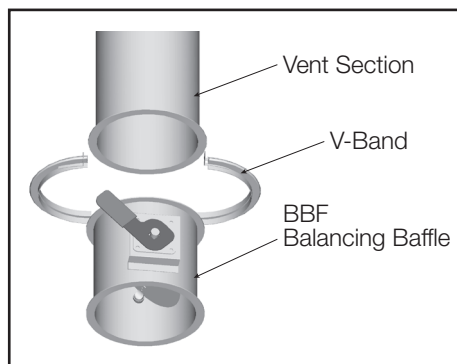


Fig. 3

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## 4. STARTUP AND CONFIGURATION

### 4.1 GENERAL

Set all baffles to the fully open position (the indicator on the end of the rod should be parallel with air flow direction) and confirm the ENERVEX system is functioning properly BEFORE starting to balance the system.

Once confirmed, fully load all appliances and take a pressure reading at the outlet of the appliance furthest from the fan (refer to the appliance manufacturer for the pressure (draft) requirement at the appliance outlet). If the pressure reading is not within the boundaries set by the appliance manufacturer, adjust draft set-point of the EBC 30 / EBC 12 / MEC 18 / EBC 10 until the reading is within the correct range.

After the first baffle has been balanced, move to the next baffle, working from furthest to nearest to the fan. Set each baffle so that the pressure requirement is met for each appliance. Balancing a multiple appliance system is an iterative process and may require several adjustments before the system is completely balanced.

#### CODE ISSUES

The BBF and BBM baffles are NOT manually operated dampers. The purpose of the BBF and BBM is to balance a multiple appliance system by retarding the flow of exhaust gases in the vent system. There are excerpts below from two of the most widely accepted mechanical codes for safe and proper appliance venting.

##### **NFPA 54 (National Fuel Gas Code)**

1. 3.3.23 Baffle.  
An object placed in an appliance to change direction of or retard the flow of air, air-gas, or flue gases.
2. 10.12.7 Manually Operated Dampers.  
A manually operated damper shall not be placed in any equipment vent connector.  
Fixed baffles shall not be classified as manually operated dampers.

##### **UMC**

1. 815.1.11 Manually Operated Dampers.  
Manually operated dampers shall not be placed in connector stoker-fired, liquid- or gas-burning appliances.

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## **5. MAINTENANCE**

### **5.1 GENERAL**

Annual maintenance is recommended. During the maintenance check, verify the balancing baffle is in the correct position. Check that the hand quadrant and mounting bracket is firmly secured and tighten fasteners if necessary.

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