

Overview

The ABV is an automatic balancing valve that maintains a constant airflow volume in HVAC applications. The engineered damper blade and stainless steel spring are laboratory calibrated to automatically adjust to varying pressures using physics – not electricity – giving the ABV true pressure independence.

The ABV is a reversible product – it can be used for exhaust or supply applications. However, the ABV is air flow dependent and the direction of airflow through the product is critical for proper operation. **Assure that the Airflow Direction shown on the product is properly aligned for your application.** (see Figure 1)

Installation

ABV Valves can be installed in rigid duct, duct collars, plenum/register boxes or anywhere a constant volume of air is required.

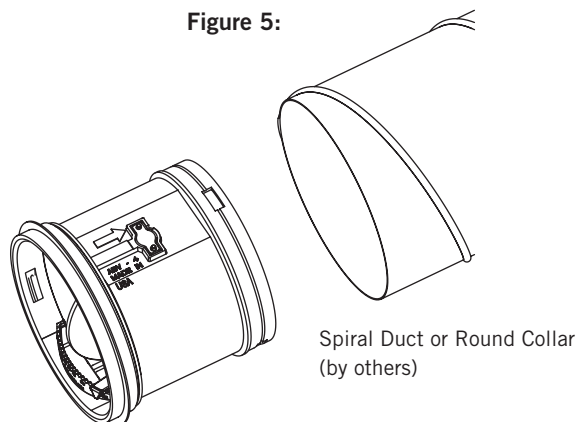
The ABV is designed for installation without the need for any screws or fasteners. The adjustment of the airflow is accomplished through the set-points and set-point ridges on the face of the damper (See Figure 2).

ABV valves can be installed in any orientation vertically or horizontally (see Figure 3). If installed with the set-point arrow point sideways, the valve will still function, but the CFM volume may be outside of the +/- 10% range of the selected volume (see Figure 4).

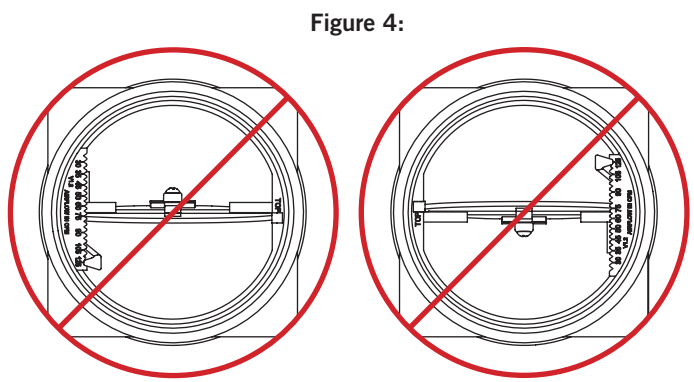
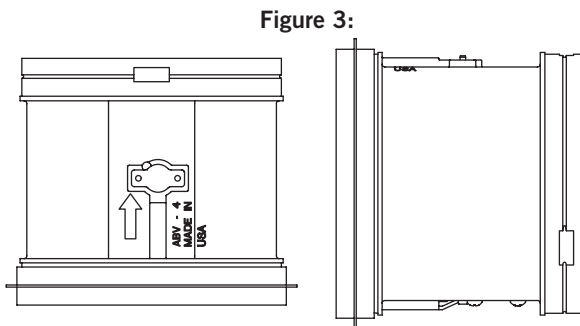
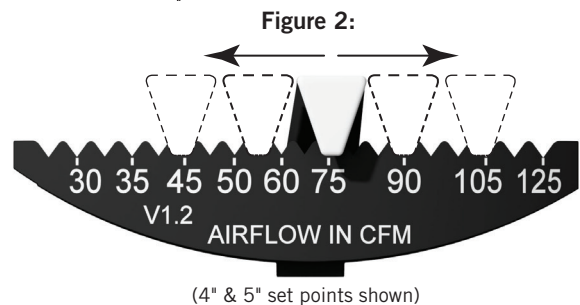
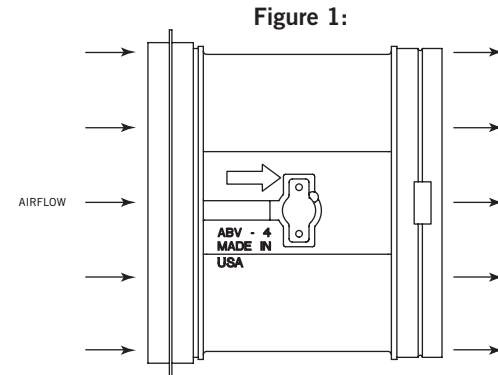
Round Duct/Opening Installation:

- The ABV can be pressed into round duct without any need for fasteners. The provided perimeter gasket provides sufficient grip to hold the valve in place without the need for any fasteners or adhesives.
- Simply remove the quick adapter plate from the end of the ABV and slide into the rigid round duct (see Figure 5), or any rigid round opening such as the neck of a diffuser (see Figure 6).

Note: The perimeter gasket material can be removed from one end and moved to the opposite end if needed for installation.



This product is covered by US Patent No. 10,203,703 and other pending applications.



MODEL ABV - Pressure Independent Automatic Balancing Valve Installation, Operation & Maintenance Instructions



Square/Rectangular Duct/Box Installation:

- Installation into square/rectangular duct requires a square/rectangular to round transition. A square (or rectangle) to round plate should be fabricated or purchased with the ABV model (see Figure 6 and 7).
- With the valve aligned in the direction of airflow, press the gasketed end into the round opening of the square/rectangular to round transition.
Note: The perimeter gasket can be moved from one end of the valve to the other as needed for proper airflow and space constraints.
- From the other side of the round opening, simply 'snap' the Quick Connect Adapter Ring in place for a tight, fastener-free, tool-free installation (see Figures 6 and 7).
- Finally, the square/rectangular to round transition can be inserted into a square/rectangular duct (or plenum box) (see Figure 8). Sheet metal screws can then be used to fix the ABV and transition into place.

Note: If the valve is installed in a continuous duct run, an access panel or door should be provided for periodic cleaning, inspection or adjustment.

Figure 8:



Figure 6:



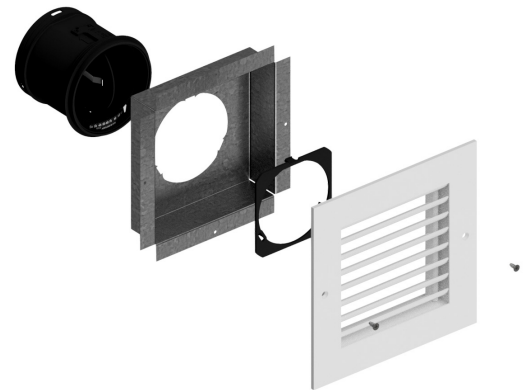
4" Model with 6" x 6" transition shown.

Figure 7:



4" Model with 6" x 6" transition shown.

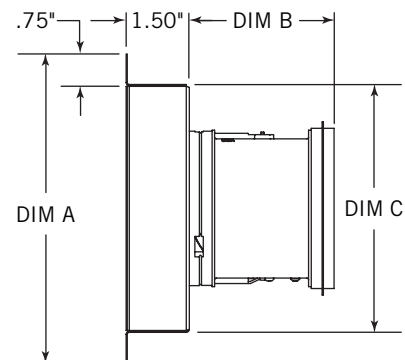
Figure 9:



Grille Box Installation:

- The ABV can be installed into a grille mount box fabricated in the field or supplied by AAB (see Figure 9).
- If fabricated in the field, follow similar dimensional guidelines as in Figure 10. Dimensions A-C will be variable depending on the ABV diameter and grille size.
- Special considerations should be given to flange length (flange is optional) as well as the box depth in order to fit grille by others.

Figure 10:

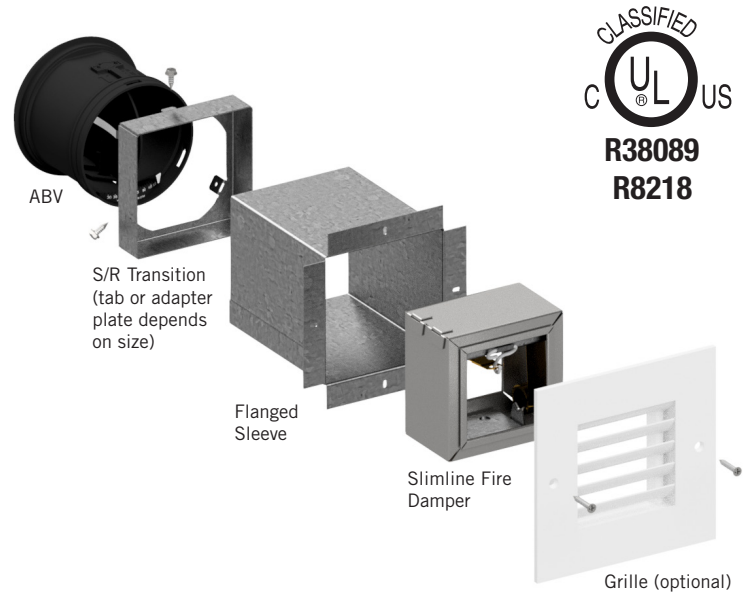


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UL Rated Fire Damper Assembly Installation:

- If the ABV is supplied as a part of a UL rated assembly with a UL 555 rated fire damper, it must be installed per the manufacturer's UL fire damper installation instructions.
- AAB uses NCA Manufacturing Fire Dampers in their UL rated assemblies. Please see NCA's Fire Damper IOM document which is either supplied with the assembly, or can be viewed online at www.NCAMfg.com.



Operation

Air Flow Adjustment:

Each ABV valve has a broad range of laboratory calibrated airflow set points – that are easily viewable, accessible and adjustable with the product installed. The most commonly specified CFM volumes are labeled on each unit's adjustment ridge:

CFM SET POINTS										
ABV-4, ABV-5	30	35	45	50	60	75	90	105	125	---
ABV-6	60	75	90	105	120	135	150	180	205	240

CFM ratings for every adjustment set point (not just the ones that are labeled) can be found in our Performance Guide.

While the ABV is pressure independent, the accuracy of the valve is impacted by duct pressure. The operating pressure range and accuracy of the ABV is 0.2 to 2.0" WG. (It is recommended to keep static pressure below 1.0" WG. in most applications to reduce the potential for leakage, noise, and wasted energy.)

The ABV valve should only be adjusted by means of the adjustment arm. **DO NOT OPERATE THE DAMPER VIA THE BLADE.** Adjusting or operating the damper by the blade can change the tension of the stainless steel spring and can possibly change the operating range of the valve.

Maintenance

Generally, no maintenance is required for the product to operate as designed. In addition, all ABV models incorporate Steri-Balance™, a non-caustic antimicrobial agent, into all plastic components in the valve to inhibit microbial growth.

Blowing pressurized air into the valve is normally sufficient to keep the valve clean and dust free. If necessary, the valve can be removed and washed with water. No solvents should be used in cleaning as they could damage the valve or gasket.