

BD-1300 Balancing Dampers

Since 1905, Johnson Controls has provided high quality dampers that fit customer application and size requirements. Continuing the legacy of application based products, a balancing damper is now offered.

BD-1300 Balancing Dampers include:

- *self-lubricating bearings*
- *rigid, 13-gauge frame*
- *16-gauge blades*
- *single side linkage*

BD-1300 balancing dampers are designed and built for balancing or variable volume control only and must not be used for tight shutoff. These dampers are intended for manual operation but can be motorized when required. No seals are provided.



Figure 1: BD-1300 Balancing Damper

Features and Benefits	
<input type="checkbox"/> Three-Working-Days Standard Shipping after Order Entry	Results in fast response for short lead time projects
<input type="checkbox"/> One-Working-Day Fast-Track Shipping Available	Allows short lead time at a cost premium
<input type="checkbox"/> Three-Year Warranty on Materials and Workmanship	Provides the confidence of a company standing behind the product
<input type="checkbox"/> Tested to Over 100,000 Cycles	Ensures long damper life
<input type="checkbox"/> Factory-Installed Electric Actuator	Provides easy installation

Applications

BD-1300 dampers come in sizes that meet different balancing application and environmental requirements. These applications include, but are not limited to:

- volume (air) control applications, which regulate airflow
- pressure control applications, which maintain a constant pressure
- manual or motorized applications
- frames can be fastened together for larger sizes

IMPORTANT: BD-1300 Balancing Dampers are not suitable for installation with the blades in a vertical position for motorized applications.

Specifications

Damper frames are to be constructed of formed 13-gauge galvanized sheet steel, mechanically joined. Linkage is concealed in the right side channel when facing airflow to eliminate noise and friction. Self-lubricating bearings shall be provided.

Damper blade width shall not exceed 8 inches nominal. Blade rotation is to be parallel or opposed as shown on the schedules.

The damper must be rated to operate over a temperature range of -40 to 200°F (-40 to 93°C) standard or -40 to 350°F (-40 to 177°C) extended temperature.

Damper sizing shall be by the designer in accordance with accepted industry practices to ensure proper system performance. Blank off plates and duct-to-damper transitions may be required.

Construction

Table 1: Materials

Frame	3-1/2-inches x 1-inch x 13-gauge, galvanized steel, hat channel shaped, mechanically joined
Blades	16-gauge galvanized steel 6-inch nominal width and 8-inch maximum
Linkage	1/8-inch rolled steel, zinc plated, concealed in right end channel when facing airflow
Blade Pin	3/8 inch square steel, zinc plated
Blade Pin Extension	1/2 inch diameter, 7-inch long pin, included with all dampers
Bearings	Self-lubricating acetal or bronze
Blade Seals	None
Side Seals	None

Components

Each frame is made of galvanized sheet steel, formed into channels, and mechanically joined for maximum rigidity. The modular design of the frames means that they can be quickly and easily coupled in the field.

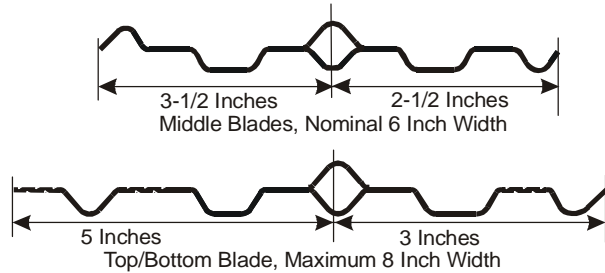


Figure 2: BD-1300 Blade Profile

BD-1300 16-gauge galvanized steel blades are made from 16-gauge rolled sheet steel. The nominal width of blades is 6 inches. The top and bottom blades may be up to 8 inches in width as shown in Figure 2.

Dimensional Data

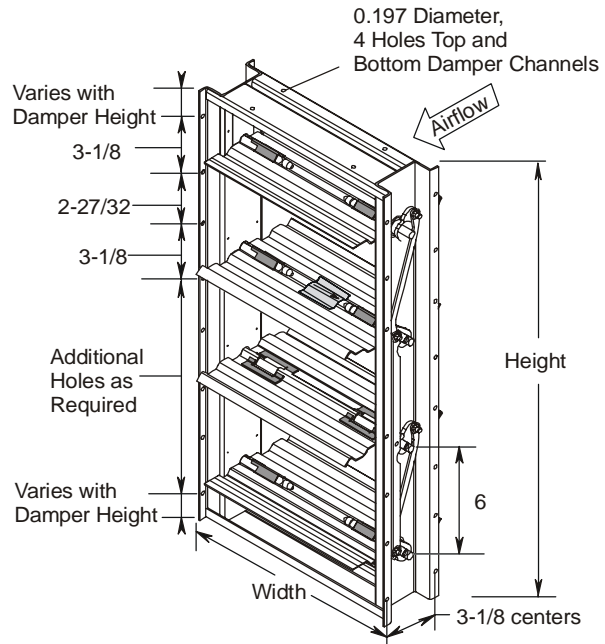


Figure 3: Dimensions, inches

All Johnson Controls® damper height and width dimensions are from the outside edges of the damper frame. Depth is 3-1/2 inches between outside edges.

Actual size is 1/4-inch less than nominal.

Selection Information

- Determine required size and type of damper.
- Select the features from Table 2 that match the operation and temperature required.
- Enter width then height of damper.
Actual damper size is 1/4-inch less than nominal.

Table 2: Balancing Damper Selector

	Ordering Code	B	V	-	0	w	w	x	0	h	h		
Application	B = Balancing												
Blade Operation	O = Opposed P = Parallel												
Blade/Frame Type	V = 16-gauge Single-Piece/13-gauge Galvanized Steel												
Bearings/Seals	S = Acetal Bearing, no seals H = Bronze Bearing, no seals												
Actuator	A = M92xx-AGC-2 B = M92xx-HGC-2 C = M92xx-BAC-2 D = M92xx-BGC-2 F = M91xx-AGC-2 G = M91xx-HGC-2 N = None												
Width Dimensions	008 to 096 inches, 1-inch increments												
Height Dimensions	006 to 076 inches, 1-inch increments												
Options	C Cover over actuator (maximum 030 x 030) E Exact whole inch size, no undercut F 1.5-inch L flange air entering side (Cannot be used with option G or H.) G 1.5-inch L flange air leaving side (Cannot be used with option F or H.) H Double flange (Cannot be used with option F or G) Q Internal Mount Actuator (minimum 14 x 21)												

Notes: The number of actuators mounted at the factory will be based on published torque rating of 3.5 lb-in/sq ft at 1-inch static pressure. Refer to actuator literature for specifications.

Accessories

Table 3: Accessory Kits

Description	Code Number
Blade Pin Extension Support Bracket	DMPR-KC001
3-1/4-inch Pin Extension w/o Bracket	DMPR-KC002
15-inch Pin Extension	DMPR-KC004
Manual Locking Quadrant	DMPR-KC250

Note: A 7-inch blade pin extension is supplied with each damper.

Refer to *Damper Accessory Kits and Replacement Parts Product Bulletin (LIT-2681100)* for a complete listing.

Performance Data

Leakage - Fully Closed		Not rated for positive shutoff			
Operating Torque	0.5-inch static pressure and 100 fpm fully open approach velocity	3.1 lb-in/sq ft			
	1-inch static pressure and 1000 fpm fully open approach velocity	3.5 lb-in/sq ft			
Pressure Drop (inches WG) - Fully Open		1000 fpm	2000 fpm	3000 fpm	4000 fpm
	24 inches x 24 inches	0.05	0.20	0.42	0.57
	48 inches x 48 inches	0.03	0.10	0.25	0.45
Velocity and Pressure	Limits recommended to meet other performance specifications (not structural limits):	Damper Width:	12 inches	6000 fpm @ 6-inch static	
			24 inches	4500 fpm @ 6-inch static	
			36 inches	3000 fpm @ 4.5-inch static	
Mounting		Wall or Ceiling with blades horizontal to floor			
Temperature Rating	Standard Operating Conditions	-40 to 200°F (-40 to 93°C)			
	High Operating Conditions	-40 to 350°F (-40 to 177°C)			
	Actuator	-4 to 122°F (-20 to 50°C)			
Approximate Weight		Damper: 5 pounds/square foot (2.27 kg/square foot) Actuator: 2.9 pounds (1.31 kg) per actuator			

Dampers are tested at an AMCA Certified Laboratory using instrumentation and procedures in accordance with AMCA Standard No. 500, Test Methods for Louvers, Dampers, and Shutters.

All dampers are built to order and cannot be returned due to improper ordering. If a damper fails within the 3-year warranty period, the factory will determine if the damper is to be returned. For application at conditions beyond these specifications, consult the local Johnson Controls' representative. Johnson Controls, Inc. shall not be liable for damages resulting from misapplication or misuse of its products.



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