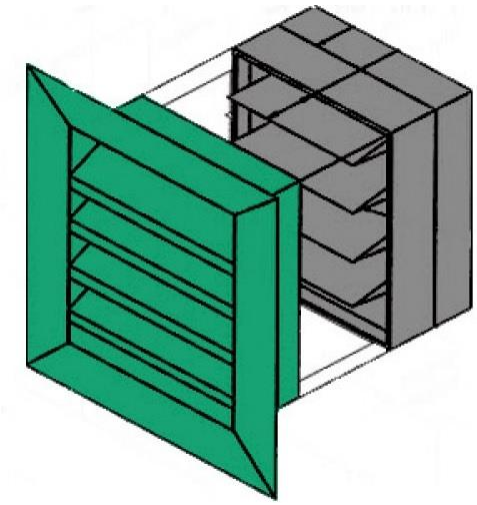
K-VENTIL

BACK DRAFT DAMPER

Back Draft Damper
BDD

K-VENTIL ventilation equipment
export@kventil.com | +356 79667970 | www.kventil.com

BACK DRAFT DAMPER



DESCRIPTION:

Back Draft dampers open and close automatically.

Backdraft dampers (also called gravity dampers) allow airflow in one direction and prevent reverse airflow for use in exhaust or intake HVAC systems. Backdraft dampers can either be operated by gravity (where pressure or velocity opens and closes the damper) or motorized to open and close when required.

BDD-1: Rectangular Back Draft Damper

BDD-2: Circular Back Draft Damper

MATERIAL:

Sheet metal Frame, Aluminum Blade

FUNCTION:

Back Draft dampers for gas fire extinguishing systems and transformer substations

- Air leakage with back pressure to EN 1751, class 4
- Maximum differential pressure: 5000 Pa
- Differential pressure can be adjusted from 50 – 1000 Pa (B > 600 mm: 600 Pa max.)
- Blades made of aluminum, casing made of galvanized steel
- Blades open when the maximum differential pressure is exceeded and close automatically when the pressure drops
- Robust, maintenance-free construction
- Available in standard sizes and many intermediate sizes
- Operating temperature 0 to 80 °C

INSTALLATION:

BACK DRAFT DAMPER

- Screw

STANDARD SIZES (mm):

TYPE BBD-1

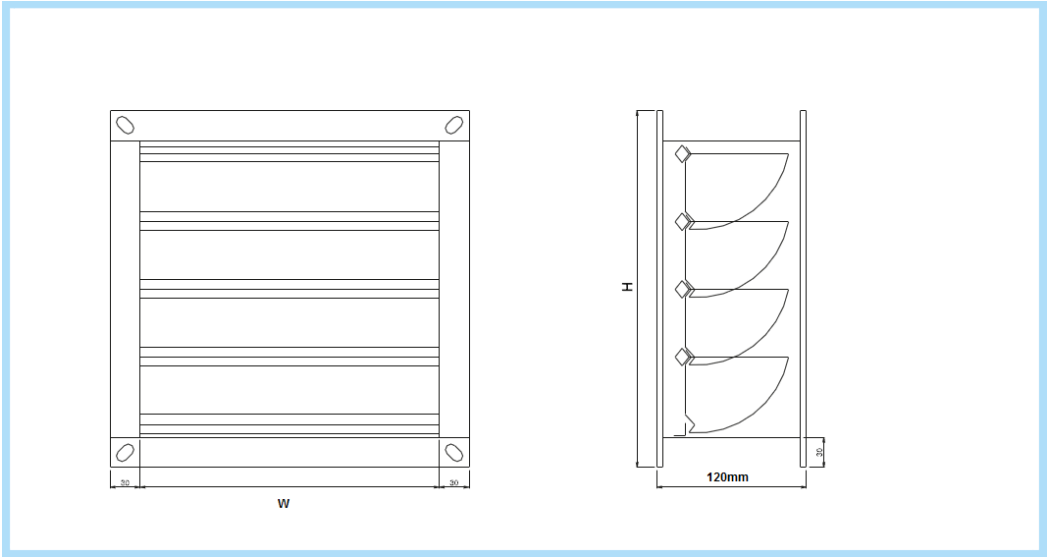
AVAILABLE SIZES (mm) - Always width x height												
	WIDHT											
HEIGHT	200	300	400	500	600	800	1000	1200	1400	1600	1800	2000
105	X	X	X	X	X	X	X	X	X	X	X	X
205	X	X	X	X	X	X	X	X	X	X	X	X
305	X	X	X	X	X	X	X	X	X	X	X	X
405	X	X	X	X	X	X	X	X	X	X	X	X
505	X	X	X	X	X	X	X	X	X	X	X	X
605	X	X	X	X	X	X	X	X	X	X	X	X
705	X	X	X	X	X	X	X	X	X	X	X	X
805	X	X	X	X	X	X	X	X	X	X	X	X
905	X	X	X	X	X	X	X	X	X	X	X	X
1005	X	X	X	X	X	X	X	X	X	X	X	X
1105	X	X	X	X	X	X	X	X	X	X	X	X
1205	X	X	X	X	X	X	X	X	X	X	X	X
1305	X	X	X	X	X	X	X	X	X	X	X	X
1405	X	X	X	X	X	X	X	X	X	X	X	X
1505	X	X	X	X	X	X	X	X	X	X	X	X
1605	X	X	X	X	X	X	X	X	X	X	X	X
1705	X	X	X	X	X	X	X	X	X	X	X	X

TYPE BDD-2 - AVAILABLE SIZES (mm)											
NECK DIAMETER											
100	125	150	200	250	315	355	400	450	500	560	630
X	X	X	X	X	X	X	X	X	X	X	X

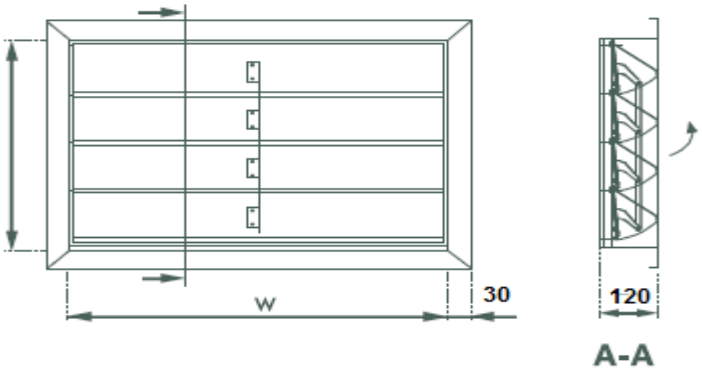
BACK DRAFT DAMPER

DRAWING

Type BDD-1

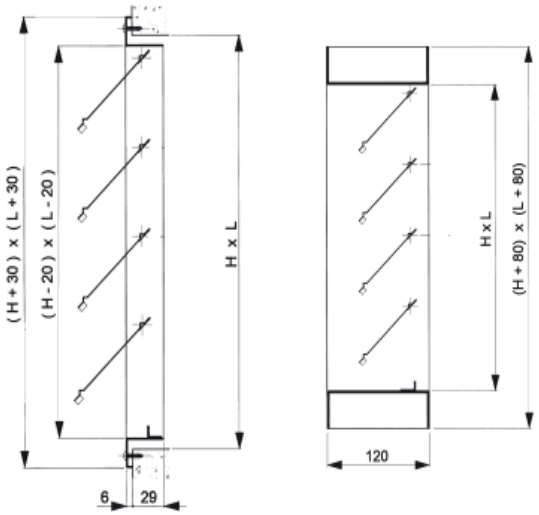


Long Dimensions



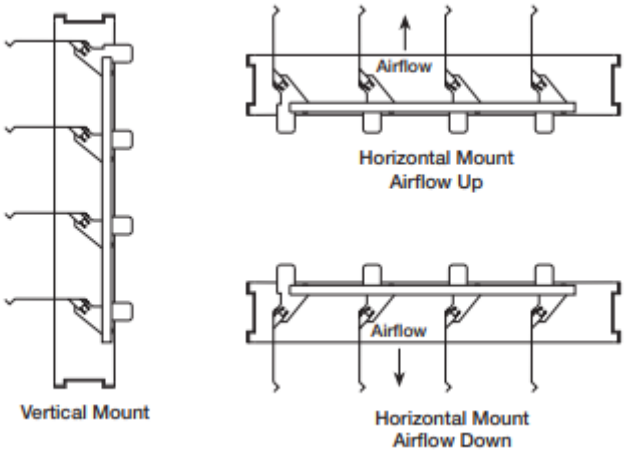
General Dimension

BACK DRAFT DAMPER



Mounting Orientation

Backdraft dampers are available in vertical or horizontal mount.

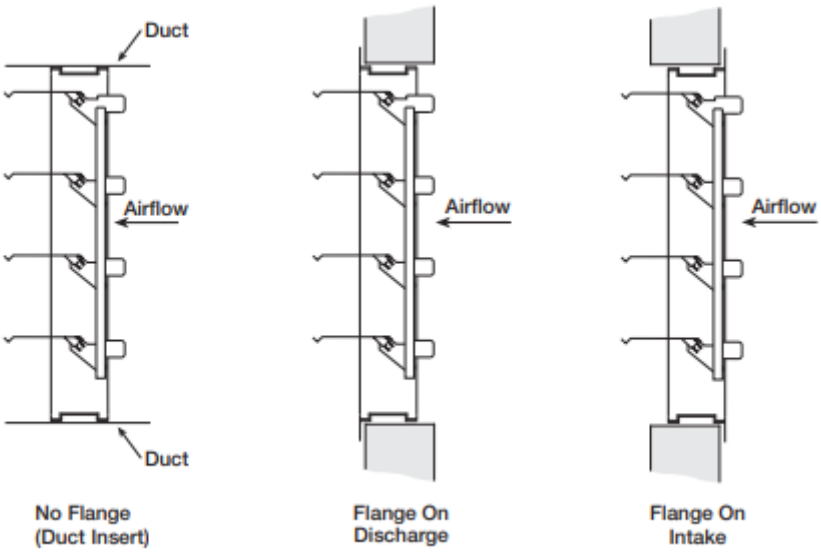


Frame Construction

Three types of frame construction are available on all commercial backdraft damper models:

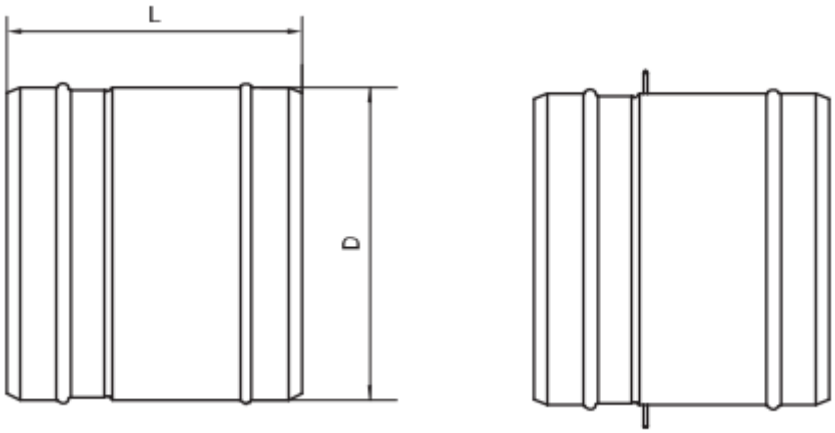
- No flange
- Flange on discharge
- Flange on intake

BACK DRAFT DAMPER



No Flange (Duct Insert) | Flange On Discharge | Flange On Intake

Type BDD-2



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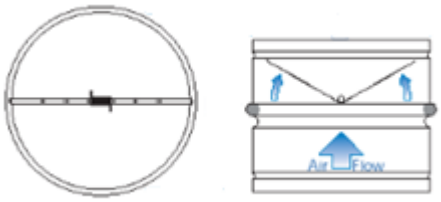
Ölçü (mm)	D	L
Ø102	97,5	100
Ø127	122,5	125
Ø152	147,5	150
Ø160	155,5	160
Ø203	198,5	180
Ø254	249,5	220
Ø315	310,5	260
Ø356	351,5	270
Ø406	401,5	300



BDD-2 SELECTION TABLE

STANDARD SIZE Ak(m2) VOLUES

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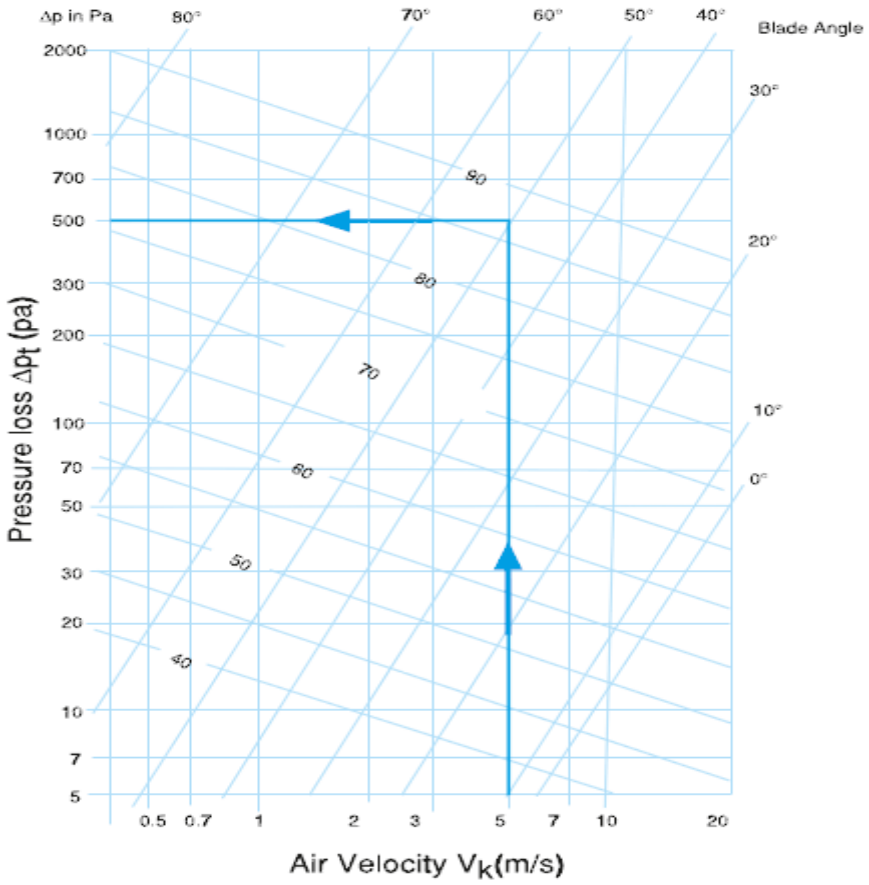
BACK DRAFT DAMPER

H	200	300	400	500	600	800	1000	1200	1400	1600	1800	2000
105	0.021	0.031	0.041	0.052	0.062	0.083	0.103	0.124	0.144	0.165	0.186	0.206
205	0.040	0.060	0.081	0.101	0.121	0.161	0.201	0.242	0.282	0.322	0.363	0.403
305	0.060	0.090	0.120	0.150	0.180	0.240	0.300	0.360	0.419	0.479	0.539	0.599
405	0.080	0.119	0.159	0.199	0.239	0.318	0.398	0.477	0.557	0.636	0.716	0.796
505	0.099	0.149	0.198	0.248	0.298	0.397	0.496	0.595	0.694	0.794	0.893	0.992
605	0.119	0.178	0.238	0.297	0.357	0.475	0.594	0.713	0.832	0.951	1.070	1.188
705	0.138	0.208	0.277	0.346	0.415	0.554	0.692	0.831	0.969	1.108	1.246	1.385
805	0.158	0.237	0.316	0.395	0.474	0.632	0.791	0.949	1.107	1.265	1.423	1.581
905	0.178	0.267	0.356	0.444	0.533	0.711	0.889	1.067	1.244	1.422	1.600	1.778
1005	0.197	0.296	0.395	0.494	0.592	0.790	0.987	1.184	1.382	1.579	1.777	1.974
1105	0.217	0.326	0.434	0.543	0.651	0.868	1.085	1.302	1.519	1.736	1.953	2.170
1205	0.237	0.355	0.473	0.592	0.710	0.947	1.813	1.420	1.657	1.893	2.130	2.367
1305	0.256	0.384	0.513	0.641	0.769	1.025	1.282	1.538	1.794	2.051	2.307	2.563
1405	0.276	0.414	0.552	0.690	0.828	1.104	1.830	1.656	1.932	2.208	2.484	2.760
1505	0.296	0.443	0.591	0.739	0.887	1.181	1.478	1.774	2.069	2.365	2.660	2.956
1605	0.315	0.473	0.630	0.788	0.946	1.261	1.576	1.891	2.207	2.522	2.837	3.152
1705	0.335	0.502	0.670	0.837	1.005	1.340	1.340	2.009	2.344	2.679	3.014	3.349

1 m2 DAMPER FOR Ak(m2) VALUE FOR PRESSURE DROP DIAGRAM



EXAMPLE

GIVEN:

Air flow v= 18.000m^3/h
when Damper %50 is closed
Air velocity V_k= 5m /s

RESULTS:

in Diagram 1
Ak= 1m^2
Δpt= 500 pa

in Table 2 BxH 1200 x 1005

Commercial Backdraft Damper

BACK DRAFT DAMPER

A commercial backdraft damper is a gravity damper (when non-motorized) allowing airflow in one direction only. When placed on a propeller fan, for example, it will prevent the wind from causing the fan to run backwards when the power is off. When a backdraft damper is motorized, it functions like a control damper.

To assist with opening the damper blades, backdraft dampers may utilize springs, adjustable counterbalance weights, or a motor pack.

- Spring assist is a spring attached to the damper that helps in opening or closing the damper blades. The spring is adjustable by using a series of holes in the frame or blade assembly to increase or decrease the tension.
- Adjustable counterbalance weights are a more precise means of reducing the pressure that is required to open the damper.
- A motor pack is used when it is necessary that the damper opens and closes without having to rely on air velocity or pressure. Backdraft damper selection begins by determining the damper construction required based on system velocity and static pressure. The BDD damper series are used in applications up to 1500 ft/min (7 m/s) and 2 in. wg (0.5 kPa) of static pressure.

BDD-1 and BDD-2 series dampers can be used in applications for:

• Exhaust

• Roof ventilation

• In-duct ventilation

• Air intake

• Sidewall ventilation

End Switch Kits

An end switch kit can be used in conjunction with a motor pack. The end switch is wired to a fan and/or to a light serving as an open/closed indicator. When wired to a fan, this will ensure the damper is fully open before the fan starts.

Heavy Duty/Industrial Backdraft - HB & HBR Series

BACK DRAFT DAMPER

Heavy duty/Industrial backdraft dampers are designed to prevent backflow at static pressures up to 20 in. wg (5 kPa) and velocities up to 6400 ft./min (32.5 m/s). Counterbalance weights are mounted externally for easy adjustment and balancing in the field. The HB series dampers are flange frame mounted. Width and height dimensions are to the inside of the frame.

HB and HBR series dampers can be used in applications for:

- Blower outlets
- Branch duct isolation
- Industrial process isolation
- Emergency generator radiator outlets

HBR-050 & HBR-150

- Round frame and blade
- Corrosion resistant
- Optional 304 or 316 stainless steel construction


HBR-050

HB-120

Optional 304 or 316 stainless steel construction


HB-120

BACK DRAFT DAMPER

Fan Accessory Industrial Backdraft Dampers:

Industrial backdraft dampers are used on blower outlets for automatic isolation which allows air to pass in one direction and restrict flow in the opposite direction. Each damper is factory-adjusted for its intended flow direction. Multiple nested counterbalance arms and weights are positioned to reduce load on bearings and linkage. Industrial backdraft dampers are recommended for low temperatures and clean air applications.

Barometric Relief - BR


BR-30 Series

A barometric relief damper is a backdraft damper with an adjustable start-open pressure. It is used for gravity ventilation and low velocity systems. Counterbalance weights provide the ability to fine tune start-to-open and full-open operation. BR series dampers are constructed with a galvanized steel frame and aluminum blades. The EBR series is constructed of 316 stainless steel for severe or corrosive environments. Vinyl blade seals are used on both series of dampers. This damper series is rated for velocities up to 2000 ft/min (10.2 m/s) and back pressure up to 2 in. wg (0.5 kPa). The start-open pressure is selectable from .05 to .13 in. wg (0.01 kPa to .03 kPa).

BR and SEBR series dampers can be used in applications for:

- Gravity hood intake and exhaust
- Stairwell pressurization
- Room pressurization
- Ductwork outlets

In-House Testing

State-of-the-art laboratory and testing facilities have always been important to GMCAIR's ongoing business success. GMCAIR has a laboratory facility devoted exclusively to development of damper and louver related products as well as testing to the latest version of AMCA, ANSI, ASHRAE, UL, Miami-Dade County, and Other industry standards of performance.

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ORDER CODES