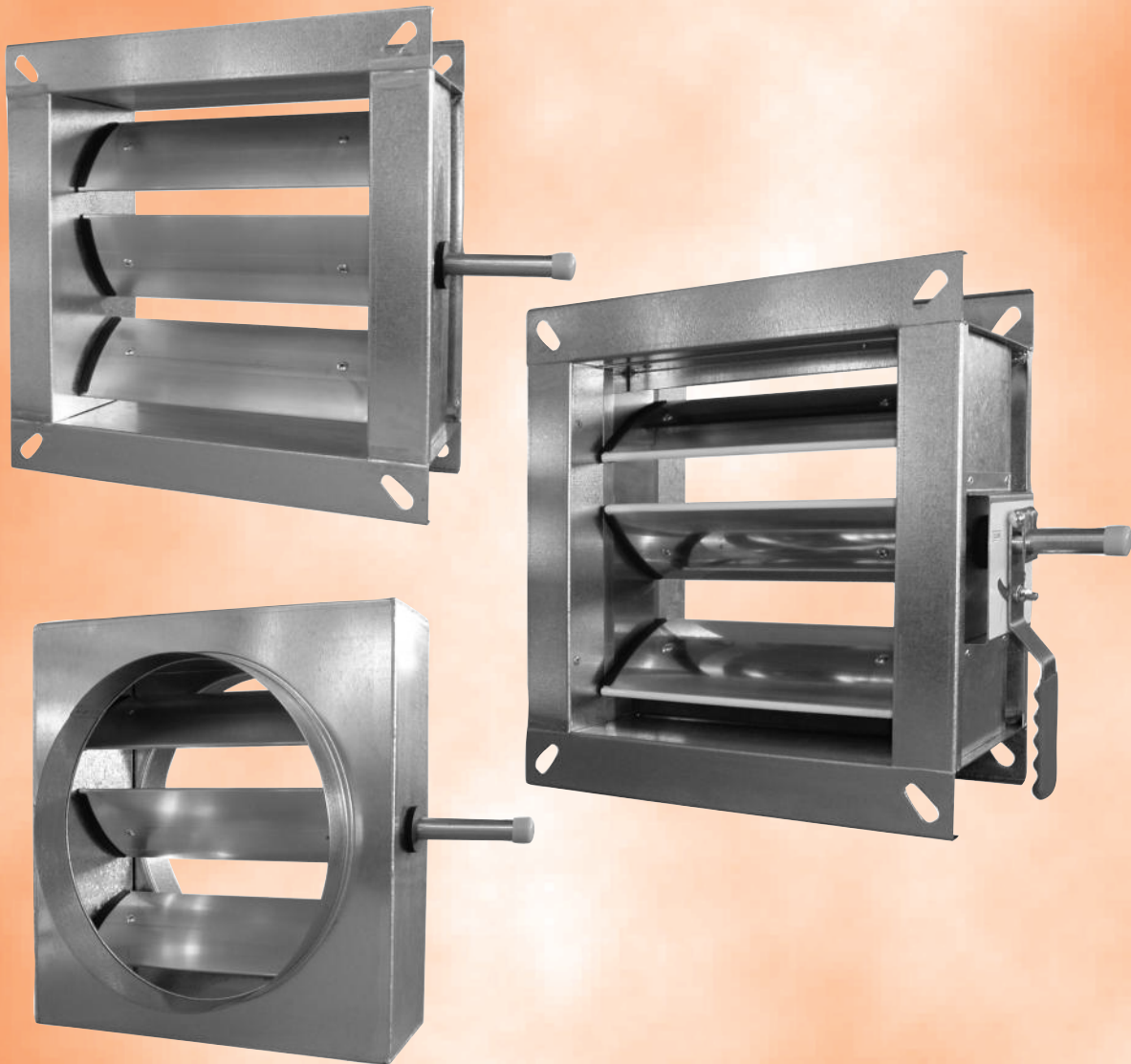
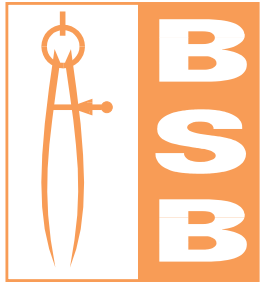


HEAVY DUTY BALANCE AND CONTROL DAMPER



HD
SERIES

MANUFACTURERS OF AIR/FIRE/SMOKE CONTROL PRODUCTS

BALANCE CONTROL

Product Description and Features

Introduction

The HD Series Multi-Leaf Volume Control Damper has been specifically designed for installation in systems where high air pressures and velocities are experienced.

Combined with its robust construction, the damper is particularly suitable for use on air handling units.

Dampers for air control can be manufactured with a single drive to a maximum size of 2500mm wide x 2000mm high. Where low closed blade leakage is required, the maximum size with a single drive will be 1000mm x 1000mm.

Manual Quadrant Control, Motor Option or 19mm dia. Extended Spindle for actuation by others are available as standard.

Features

- * Standard case construction is galvanised mild steel
- * Three airfoil blade designs
- * Four casing options
- * Low and high pressure models
- * Out of airflow linkage
- * Easy conversion from manual to motorised and vice versa
- * Can be supplied with blades and case in Grade 316 and 430 stainless steel
- * Balance and control dampers
- * Infinite sizing capability from 100mm to 2500mm widths and 100mm to 2000mm height
- * Variable flange dimensions and casing widths
- * Comprehensive control options
- * Stainless steel side seals to order

Specifications and Testing

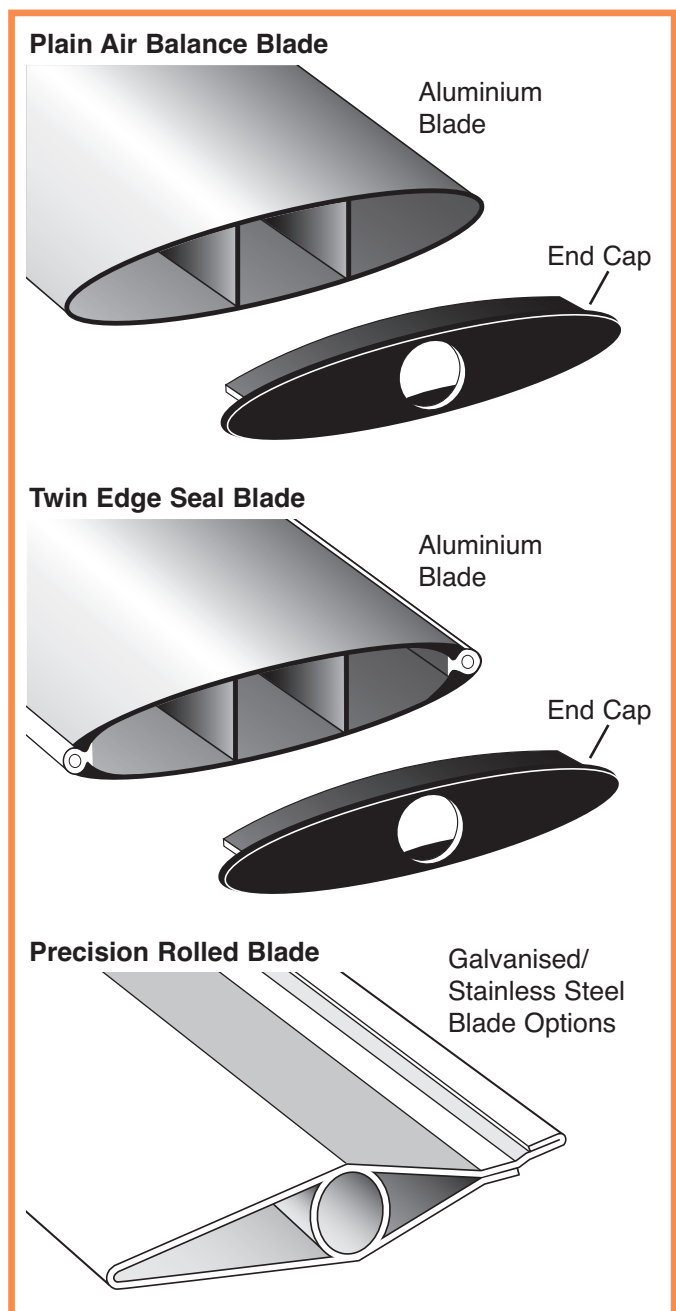
- * Unless stated otherwise, flange models are suitable for classes A & B of DW144, with spigot models suitable for classes A, B & C of DW144
- * Conforms to HVCA specification DW144
- * Conforms to Eurovent 2/2 classes A-C
- * Independent performance tests for pressure loss and leakage. Test reports 158 and 160 refer respectively

Blades

The 100mm wide galvanised blade is offered as standard with the option of extruded aluminium airfoil section or precision rolled grade 430 or 316 stainless steel available to order. All blades are fitted to 19mm diameter spindles.

All models are available with either opposed or parallel blades (unless specified, opposed blades will be supplied as standard).

Fitted to the ends of the aluminium blades are End Caps to alleviate noise generation.



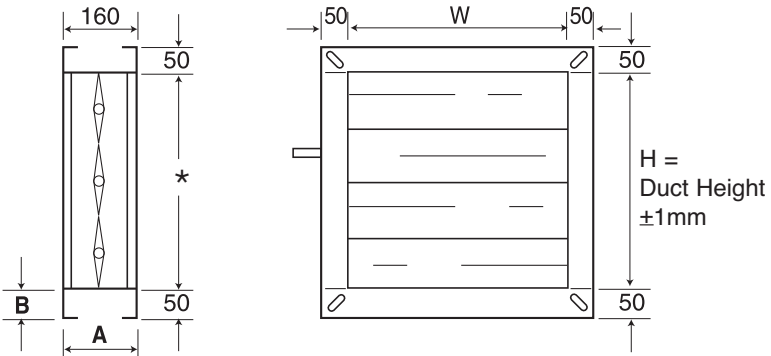
Dimensions

Heavy Duty Flangefit

Width: 100mm - 2500mm
Height: 100mm - 2000mm

A = 140, 150 and 200mm
 to order (160mm standard)
B = 35 and 40mm to order
 (50mm standard)

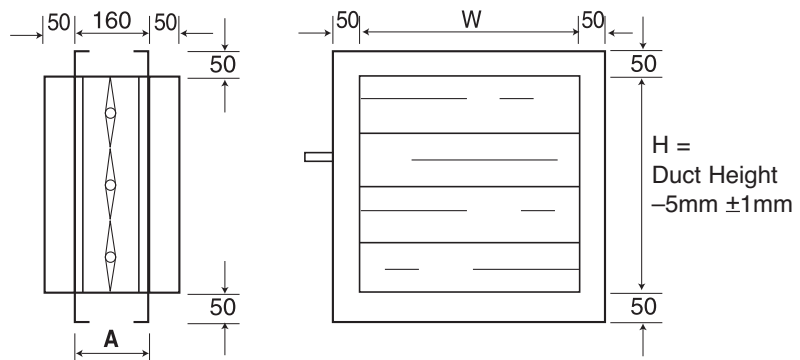
* Where damper heights are requested in 100mm increments, the damper air way size will be 12mm greater for stainless steel and galvanised blades and 5mm greater for aluminium blades. Top and bottom flanges are amended to accommodate the blade profile, with the overall flange size being unaffected.



Heavy Duty Spigotfit

Width: 100mm - 2500mm
Height: 100mm - 2000mm

A = 140, 150 and 200mm
 to order (160mm standard)



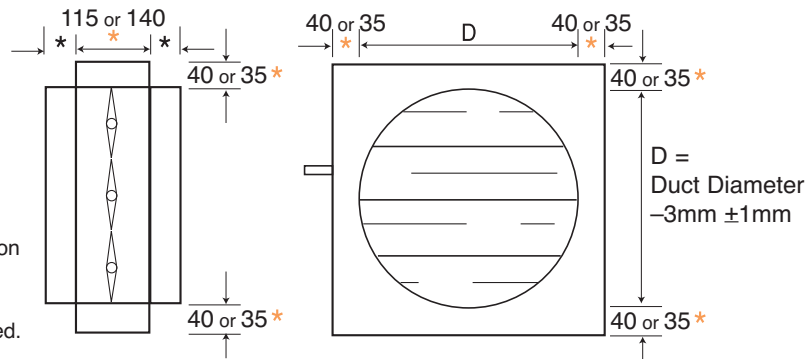
Heavy Duty Circular Spigotfit

Diameter: 100mm - 2000mm

* = 40mm (100 - 354mm dia.)
 60mm (355 - 2000mm dia.)

* Damper case depth is 115mm where aluminium blades are fitted. 40mm dimension from spigot to case edge

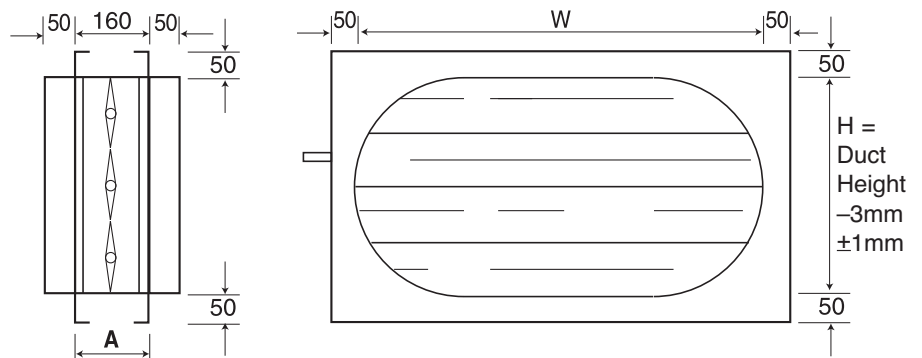
Damper case depth is 140mm where galvanised or stainless steel blades are fitted. 35mm dimension from spigot to case edge



Heavy Duty Flat Oval Spigotfit

Width: 100mm - 2000mm
Height: 100mm - 2000mm

A = 110, 120, 150 and 200mm
 to order (160mm standard)



- Notes: 1. All dimensions are in mm
 2. Spigotfit Models are supplied with actual spigot dimensions nominal less – please see comments above.
 3. For sizes greater than detailed maximum size, multiple section units would be supplied.
 4. To order always specify Duct Width x Duct Height

Multiple Assemblies

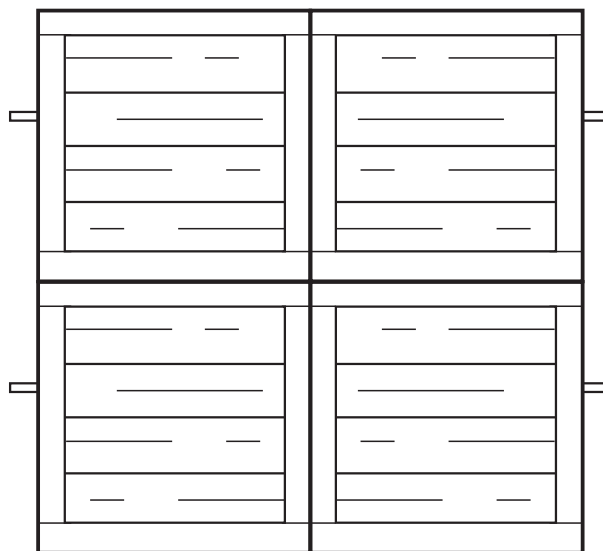
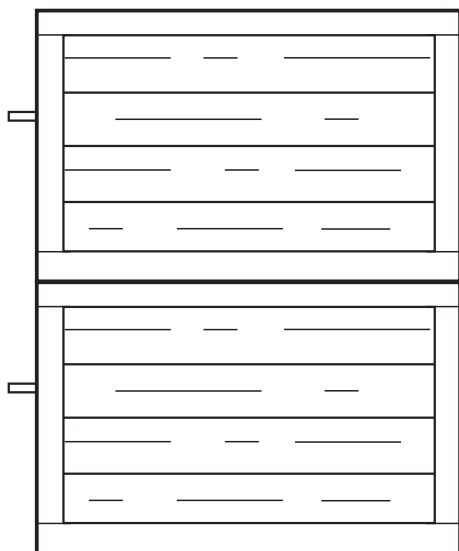
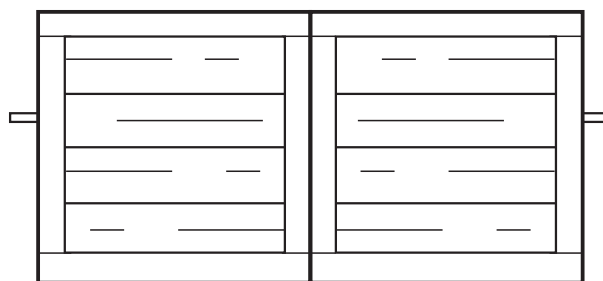
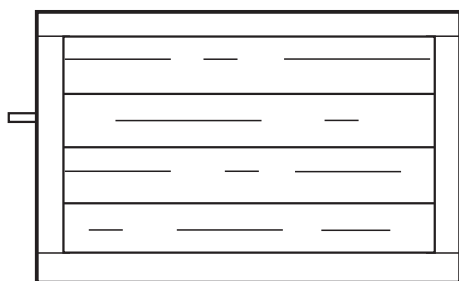
Illustrated below are several variants to multiple section units. Blade lengths are up to 1250mm with 15mm centre mullions used where case widths extend to sizes greater than maximum blade length.

Low Leakage Model

It is important to note that the low leakage model is only supplied up to 1000mm in width and height, with multiple sections supplied for units greater than 1000mm.

When there are transportation restrictions, large multiple units will be shipped in individual sections for site assembly by others. Joining strips are supplied un-drilled unless requested otherwise.

Large multiple units required to be shipped fully assembled will incur additional packing/shipping costs. Please contact our sales office for further information.



Sizes up to 2500mm x 4000mm

Sizes up to 5000mm x 4000mm

Special Note:

BSB can manufacture to individual specifications and applications. Illustrated above are standard variants with other variants available to order.

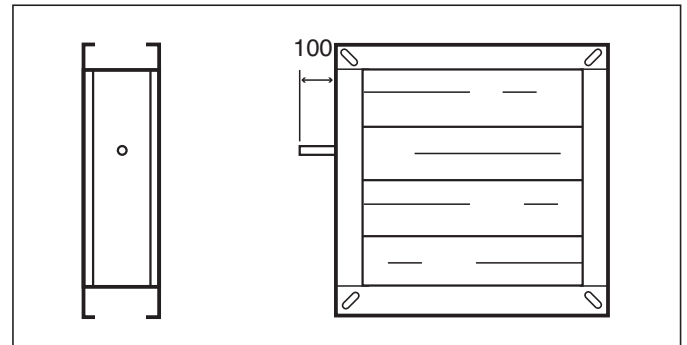
For applications which necessitate the blades to be installed vertically, BSB's sales office must be informed so that thrust bearings are fitted to eliminate blade friction.

Single and Multiple Damper arrangements are designed to be installed with blades in the horizontal plane. Drive spindle is always fitted to the second blade down. Alternative positions are possible to special order.

Control Options

Option E Extended Spindle

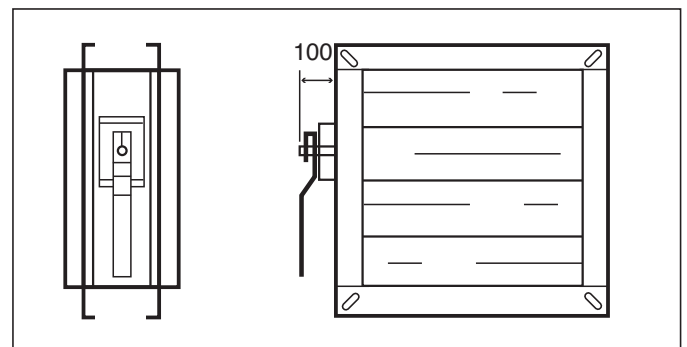
When the specification requires the HD Series Damper to be supplied for motorisation by others. BSB supplies the damper with a 19mm diameter spindle, 100mm in length.



Option H Hand Control

BSB's unique hand-lockable quadrant is supplied complete from the factory.

When the specification is amended from Option "E" to Option "H" conversion is easily completed.

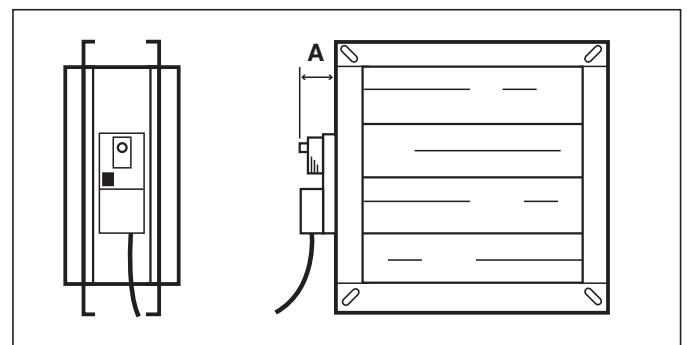


Option M Electric Motor

A dimension: Square/Rectangular = 100mm
Circular = 110mm

The HD Series Damper can be supplied factory fitted with electric actuators offering a choice of methods of operation.

For additional technical details, please contact BSB's sales office for data sheets.



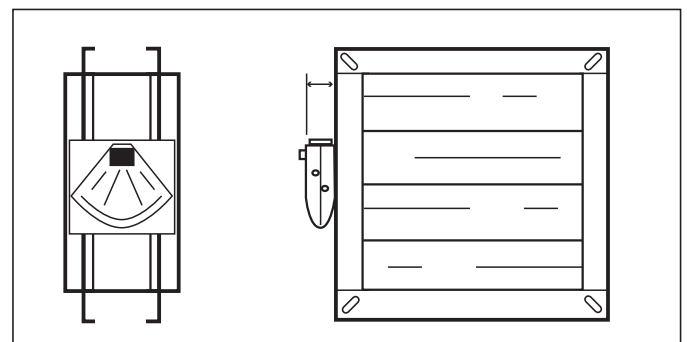
Option P Pneumatic Actuator

The model actuator used operates between 30psi/2bar and 120psi/8bar.

It is supplied fitted to the damper complete with integral threaded 1/4bsp air-ports to pressurize and vent the actuator.

Various accessories are available to this actuator.

For additional technical details and dimensions, please contact BSB's sales office for data sheets.



Performance, Weight and Torque Data



Torque Chart (Balance Blade with End Caps)

These values have been rounded up and down to whole numbers and are illustrated for estimation purposes only

Differential Pressure (Pa)	Damper Size (mm)					
	400 x 400		1000 x 1000		1500 x 1500	
	Nm	lb/ins	Nm	lb/ins	Nm	lb/ins
500	5.0	44.0	9.0	79.0	13.0	115.0
1000	6.0	53.0	11.0	97.0	15.0	132.0

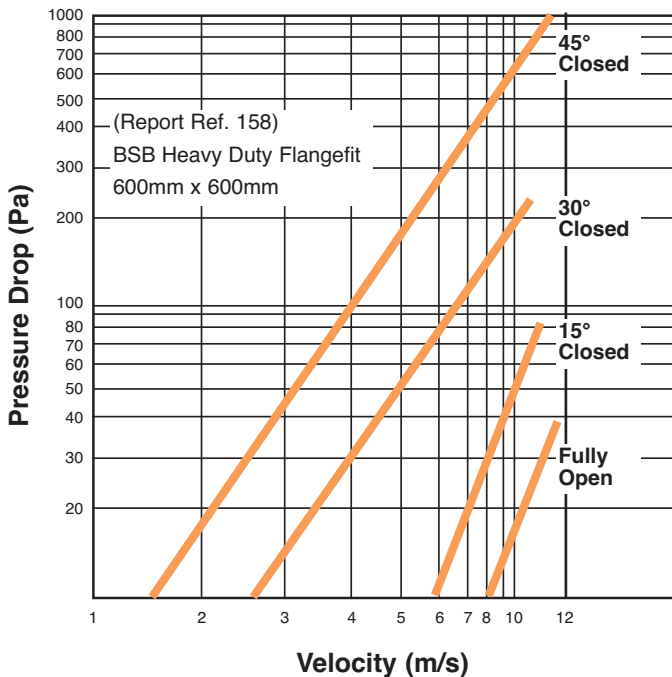
Weight Chart (Kg) (Flangefit Model - Aluminium Blades)

These values have been rounded up and down to whole numbers and are illustrated for estimation purposes only

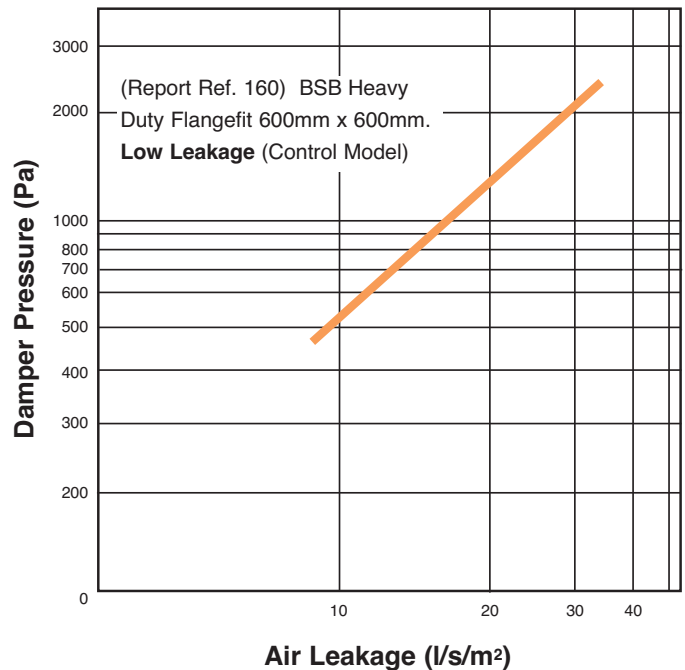
Damper Height (mm)	Damper Width (mm)								
	200	300	400	500	600	700	800	900	1000
100	2.5	3.0	4.0	4.5	5.5	6.0	7.0	7.5	8.5
200	4.0	4.5	5.5	6.0	7.0	7.5	8.5	9.0	10.5
300	4.5	6.0	7.0	8.5	9.0	10.0	10.5	12.0	13.5
400	6.0	7.5	9.0	10.0	12.0	13.0	13.5	15.0	16.0
500	7.0	8.5	10.0	12.0	13.0	14.0	16.0	16.5	18.0
600	8.5	10.0	12.0	13.5	15.0	16.5	18.0	19.5	21.0
700	9.0	12.0	13.5	16.0	18.0	19.5	21.0	22.5	23.5
800	10.5	13.0	14.0	16.5	19.0	20.5	22.5	25.0	26.5
900	12.0	13.5	16.5	19.0	20.5	22.5	23.5	25.5	27.5
1000	12.0	15.0	18.0	20.5	23.5	25.5	26.5	27.5	31.5

Performance Characteristics

Pressure Drop



Low Leakage



Material Specification

Casing

1.2mm (18swg) galvanised mild steel to BS EN 10142 1991. Coating Class Fe P02b Z275 Na.

Blades

Extruded airfoil aluminium to BS 1747 1987, wall thickness 1.25mm (18swg) minimum.
Precision rolled galvanised mild steel.
430 grade stainless steel.
316 grade stainless steel.

Blade End Caps

Injection moulded black polypropylene to BSB's recorded design.

Blade Spindles

19mm (3/4") diameter galvanised mild steel tube with corrosion resistant "Flo-Coat".

Drive Spindles

19mm (3/4") diameter galvanised mild steel tube with corrosion resistant "Flo-Coat".

Quadrant

1.2mm (18swg) galvanised mild steel chassis with integral rotation slot and blade position indication.
30mm x 2.75mm (1 3/16" x 1/8") zinc plated mild steel handle with integral clamp and locking nut to BS EN 10142 1991. Coating Class Fe P02b Z275 Na.

Linkage

Crank Arm: 30mm x 2.75mm zinc plated mild steel spindle clamp with integral 8mm diameter drive pins 3mm thick.
Drive Bar: 20mm x 3mm flat bar punched to fit onto zinc plated drive pins.

Bushes

Punch-formed bushes are formed within the casing to provide a low friction bearing for the blade spindles to rotate.

Rivets

High quality self-sealed rivets are used to European standards as relevant.

Sealant

All joints and seams are sealed with 3M sealant conforming to dictates of DW144.

Paint

Aluminium primer is applied to all welds and ground surfaces.

Operating Temperature

-10°C to +110°C as standard.

To order: -10°C to + 350°C (galvanised blades)
-10°C to + 200°C (aluminium blade & silicon seal).

Low Leakage Models

Blade Edge Seals

Extruded hollow section silicone seal with temperature before distortion -10°C to + 200°C.

Side Seal Gasket

Grade 302 stainless steel hard rolled to BS 5770 Part4 1981, 0.345mm (0.010") thick.

Options

Casing

Grades 316 or 430 stainless steel.

Blades

Grades 316 or 430 stainless steel or galvanised coated mild steel, 0.7mm thick.

Blade and Drive Spindles

Grade 316 stainless steel.

Locking Quadrants

Grades 316 or 430 stainless steel, 1.2mm thick.

Linkage

Crank arm and drive bar in grade 316 stainless steel.

Bearings

Injection moulded Nylon 66 "Top Hat" design.

Oilite Bronze Bushes

Impregnated with mineral oil to ISO VG 100 (SAE 30) would be supplied.

Side Seal Gasket

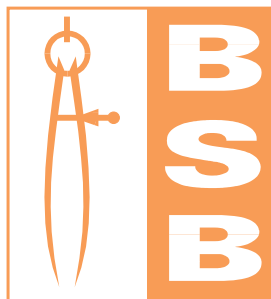
Grades 302 or 316 stainless steel hard rolled to BS 5770 Part 4 1981, 0.345mm (0.010") thick.

Paint

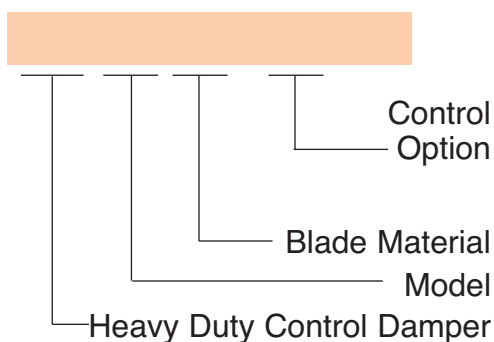
Galvafruid zinc rich paint.

Special Note:

When rectangular spigots are supplied 1.6mm (16swg) material will be used. When circular or flat oval spigots are supplied, 1.6mm (16swg) material will be used for the mating plates with 0.8mm (22swg) material used for spigots.



Example:



HD Heavy Duty Control Damper

Model:

- F Flangefit
- S Rectangular/Square Spigotfit
- C Circular Spigotfit
- O Flat Oval Spigotfit

Blade Material:

- G Galvanised Mild Steel Airfoil Blades
- A Aluminium Airfoil Blades (state balance or low leakage)
- S Stainless Steel Airfoil Blades (state Grade)

Options:

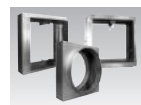
- E Extended Spindle
- H Hand Control
- M Electric Motor (state voltage and model)
- P Pneumatic Actuator Fitted



BD Series
Backdraught Damper



DD Series
Duct Damper



FD Series
Fire Damper



FSD-TD Series
Fire/Smoke Damper



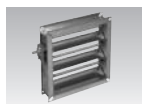
HD Series
Heavy Duty Control Damper



SB Series
Single Blade Regulating Damper



SC Series
Smoke Control Damper



SF Series
Slimfit Regulating Damper



Control Panel
Fully Addressable or Electro-Mechanical



BSB Engineering Limited

Unit E, Tribune Drive, Trinity Trading Estate,
Sittingbourne, Kent ME10 2PD

Tel: +44 (0)1795 422609. Fax: +44 (0)1795 429543

E-mail: sales@bsb-dampers.co.uk

www.bsb-dampers.co.uk

BSB Engineering Services Ltd. reserves the right to modify or withdraw any specification without prior notice that may result from continuous product development. The information contained within this brochure is correct at the time of going to press.

BSBHD. Jun. 2008

MANUFACTURERS OF AIR/FIRE/SMOKE CONTROL PRODUCTS



HD Series Heavy Duty Control Dampers

Installation, Maintenance and Operating Instructions



Models: Flangefit and Spigotfit



Installation:

1. Before installation, the damper should be inspected to ensure that it has not been damaged and is in good condition following transportation.
2. Ensure that all packing materials are removed, as failure to complete could result in permanent damage to the product.
3. Ensure that the ductwork and damper flange or spigots are carefully matched, with the specified sealing material used during installation.
4. Ensure that the ductwork is adequately supported, this is particularly important where large dampers are concerned.
5. Ensure that the damper is free of any foreign matter, the assembly is not distorted and is square with no surface damage that could restrict blade movement.
6. If stored before installation, ensure the product is stacked and stored in clean, dry conditions to prevent the ingress of dust, as well as avoiding excessive temperature or humidity.
7. Care should always be taken when handling dampers on site to avoid subjecting them to excessive stress for which they are not designed.
8. It is important to ensure that all dampers are installed with airflows and pressures conforming to the test data as detailed in the manufacturers technical product manual. Excessive airflows and/or pressures could result in permanent damage and/or malfunction of the damper.

Maintenance:

1. Keep the damper clean and free from any contamination.
2. Where possible, operate the blades against airflow to ensure easy, free movement without distortion or stress of the linkage.
3. Periodic inspection should be made of any seals that have been fitted to the damper, to ensure efficient control and operation.
4. It is recommended within normal preventative maintenance procedures for the blades and inner casings to be cleaned annually, with specific attention being made to ensure all spindles, bushes and linkage mechanisms are clean and rotate freely.
5. The time period can be ascertained by experience or local regulations, but should not exceed a twelve month interval. Inspection should be carried out more frequently where excessive dust or dirty conditions prevail.
6. Normal lubrication should only be made to exposed spindles/bushes and operating linkages outside of the airflow. Excessive lubrication will attract dust and could fail or impede the operation of the damper.



HD Series Volume Control Dampers

Installation, Maintenance and Operating Instructions



Operation:

1. These dampers are primarily designed for use in ductwork systems to balance/regulate the airflow. Once the system has been commissioned to its designed performance, the manual dampers are usually locked in their position with a record noted of blade positions. It is normal for the motorised dampers to have their blades in either the open or closed position during the operation of the system
2. If the damper is supplied with a spindle for the fitting of an actuator by sub-contractors, then attention to torque requirements of the damper and actuator is essential.
3. It is assumed that the airflow through the damper is filtered and environmentally controlled, with regard to humidification and corrosive atmospheres to national and international specifications.

National and International Specifications:

1. The HD Series Heavy Duty Control Damper is designed and manufactured for use as described in the HVCA Ductwork Specification DW144, and as Eurovent 2/2.
2. This product does conform to other national and international specifications not mentioned above, BSB's sales office can confirm details as required.

Recommended Spares:

1. None for this product.

It is always recommended that if either the specifying authority, the installer or the user has any doubts with regard to the product selection and/or suitability to the application, then contact to the following office is advised.

BSB Engineering Services Limited

(Technical Sales Department)

Unit E, Tribune Drive

Trinity Trading Estate

Sittingbourne

Kent ME10 2PD

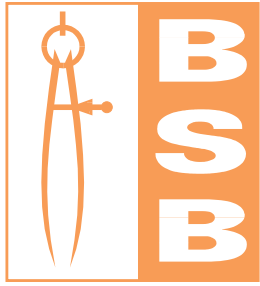
Tel: +44 (0) 1795 422609

Fax: +44 (0) 1795 429543

Email: sales@bsb-dampers.co.uk

www.bsb-dampers.co.uk

HEAVY DUTY BALANCE AND CONTROL DAMPER



HD
SERIES

MANUFACTURERS OF AIR/FIRE/SMOKE CONTROL PRODUCTS

BALANCE CONTROL

Product Description and Features

Introduction

The HD Series Multi-Leaf Volume Control Damper has been specifically designed for installation in systems where high air pressures and velocities are experienced.

Combined with its robust construction, the damper is particularly suitable for use on air handling units.

Dampers for air control can be manufactured with a single drive to a maximum size of 2500mm wide x 2000mm high. Where low closed blade leakage is required, the maximum size with a single drive will be 1000mm x 1000mm.

Manual Quadrant Control, Motor Option or 19mm dia. Extended Spindle for actuation by others are available as standard.

Features

- * Standard case construction is galvanised mild steel
- * Three airfoil blade designs
- * Four casing options
- * Low and high pressure models
- * Out of airflow linkage
- * Easy conversion from manual to motorised and vice versa
- * Can be supplied with blades and case in Grade 316 and 430 stainless steel
- * Balance and control dampers
- * Infinite sizing capability from 100mm to 2500mm widths and 100mm to 2000mm height
- * Variable flange dimensions and casing widths
- * Comprehensive control options
- * Stainless steel side seals to order

Specifications and Testing

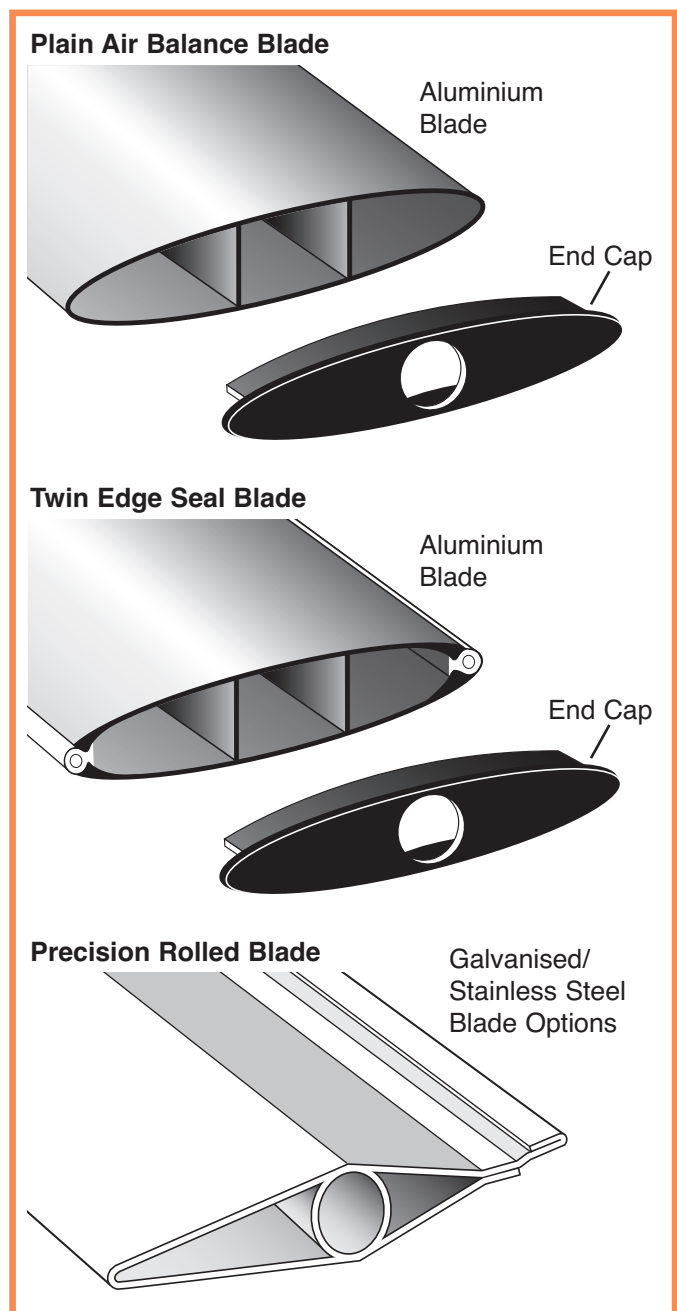
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- * Conforms to HVCA specification DW144
- * Conforms to Eurovent 2/2 classes A-C
- * Independent performance tests for pressure loss and leakage. Test reports 158 and 160 refer respectively

Blades

The 100mm wide galvanised blade is offered as standard with the option of extruded aluminium airfoil section or precision rolled grade 430 or 316 stainless steel available to order. All blades are fitted to 19mm diameter spindles.

All models are available with either opposed or parallel blades (unless specified, opposed blades will be supplied as standard).

Fitted to the ends of the aluminium blades are End Caps to alleviate noise generation.



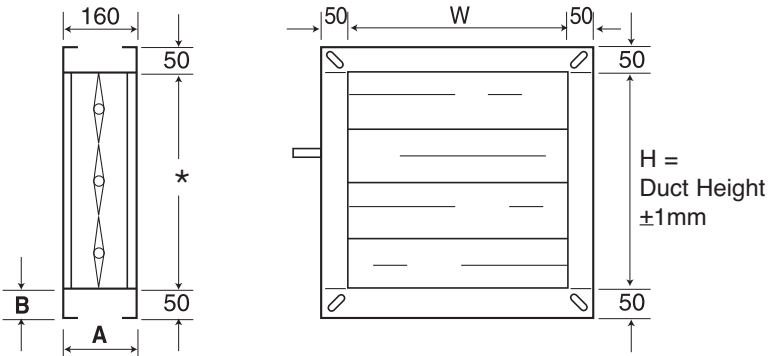
Dimensions

Heavy Duty Flangefit

Width: 100mm - 2500mm
Height: 100mm - 2000mm

A = 140, 150 and 200mm
 to order (160mm standard)
B = 35 and 40mm to order
 (50mm standard)

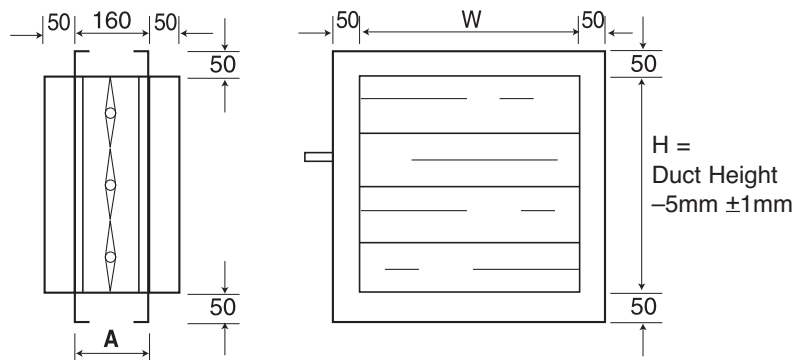
* Where damper heights are requested in 100mm increments, the damper air way size will be 12mm greater for stainless steel and galvanised blades and 5mm greater for aluminium blades. Top and bottom flanges are amended to accommodate the blade profile, with the overall flange size being unaffected.



Heavy Duty Spigotfit

Width: 100mm - 2500mm
Height: 100mm - 2000mm

A = 140, 150 and 200mm
 to order (160mm standard)



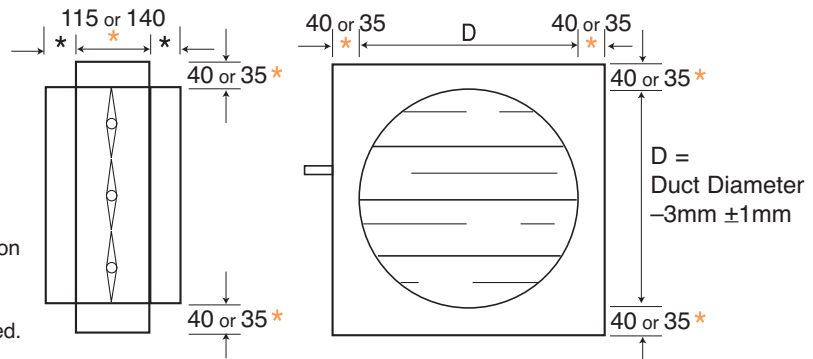
Heavy Duty Circular Spigotfit

Diameter: 100mm - 2000mm

* = 40mm (100 - 354mm dia.)
 60mm (355 - 2000mm dia.)

* Damper case depth is 115mm where aluminium blades are fitted. 40mm dimension from spigot to case edge

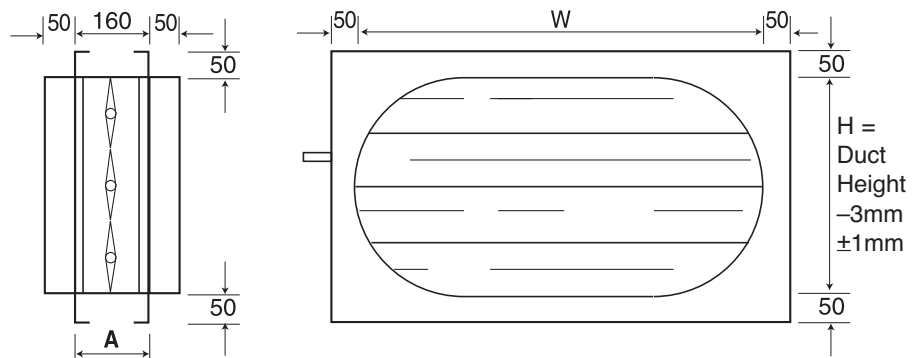
Damper case depth is 140mm where galvanised or stainless steel blades are fitted. 35mm dimension from spigot to case edge



Heavy Duty Flat Oval Spigotfit

Width: 100mm - 2000mm
Height: 100mm - 2000mm

A = 110, 120, 150 and 200mm
 to order (160mm standard)



- Notes: 1. All dimensions are in mm
 2. Spigotfit Models are supplied with actual spigot dimensions nominal less - please see comments above.
 3. For sizes greater than detailed maximum size, multiple section units would be supplied.
 4. To order always specify Duct Width x Duct Height

Multiple Assemblies

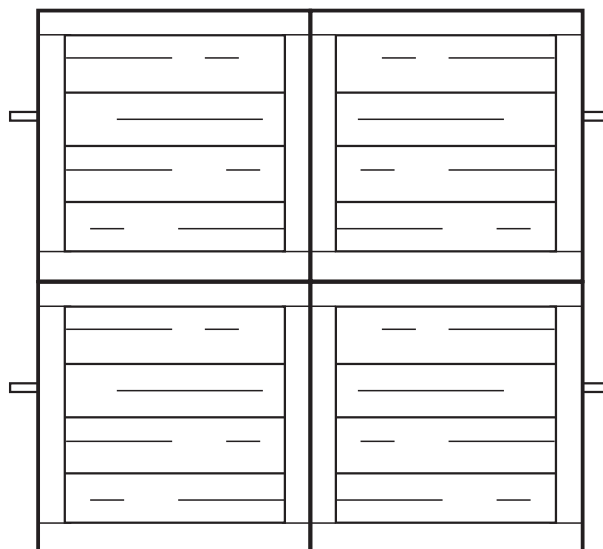
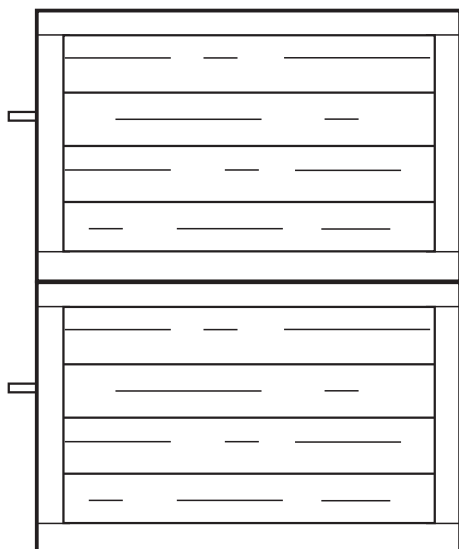
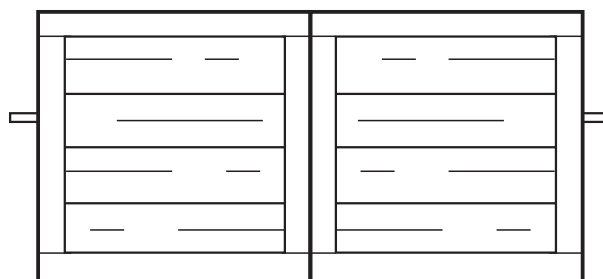
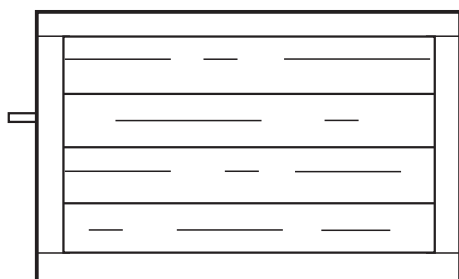
Illustrated below are several variants to multiple section units. Blade lengths are up to 1250mm with 15mm centre mullions used where case widths extend to sizes greater than maximum blade length.

Low Leakage Model

It is important to note that the low leakage model is only supplied up to 1000mm in width and height, with multiple sections supplied for units greater than 1000mm.

When there are transportation restrictions, large multiple units will be shipped in individual sections for site assembly by others. Joining strips are supplied un-drilled unless requested otherwise.

Large multiple units required to be shipped fully assembled will incur additional packing/shipping costs. Please contact our sales office for further information.



Sizes up to 2500mm x 4000mm

Sizes up to 5000mm x 4000mm

Special Note:

BSB can manufacture to individual specifications and applications. Illustrated above are standard variants with other variants available to order.

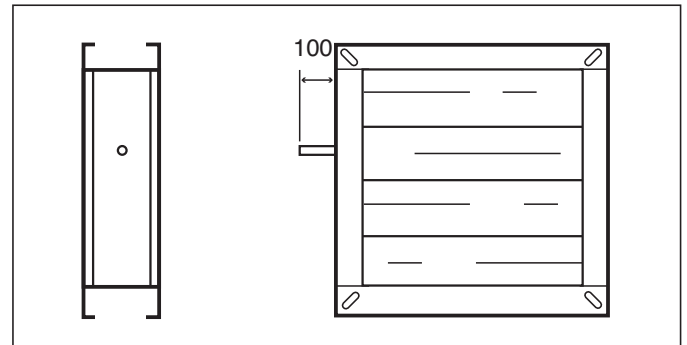
For applications which necessitate the blades to be installed vertically, BSB's sales office must be informed so that thrust bearings are fitted to eliminate blade friction.

Single and Multiple Damper arrangements are designed to be installed with blades in the horizontal plane. Drive spindle is always fitted to the second blade down. Alternative positions are possible to special order.

Control Options

Option E Extended Spindle

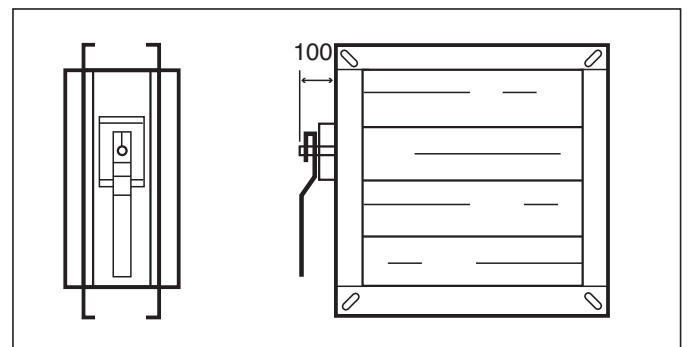
When the specification requires the HD Series Damper to be supplied for motorisation by others. BSB supplies the damper with a 19mm diameter spindle, 100mm in length.



Option H Hand Control

BSB's unique hand-lockable quadrant is supplied complete from the factory.

When the specification is amended from Option "E" to Option "H" conversion is easily completed.

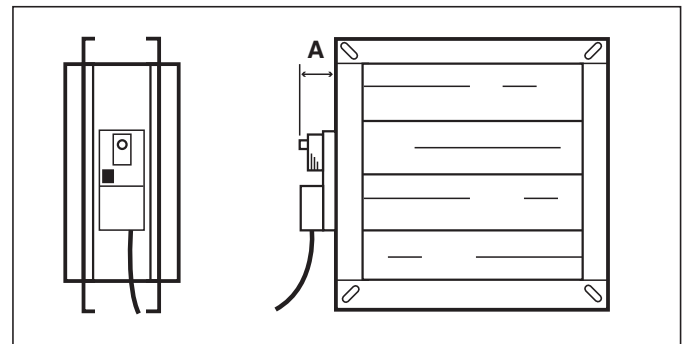


Option M Electric Motor

A dimension: Square/Rectangular = 100mm
Circular = 110mm

The HD Series Damper can be supplied factory fitted with electric actuators offering a choice of methods of operation.

For additional technical details, please contact BSB's sales office for data sheets.



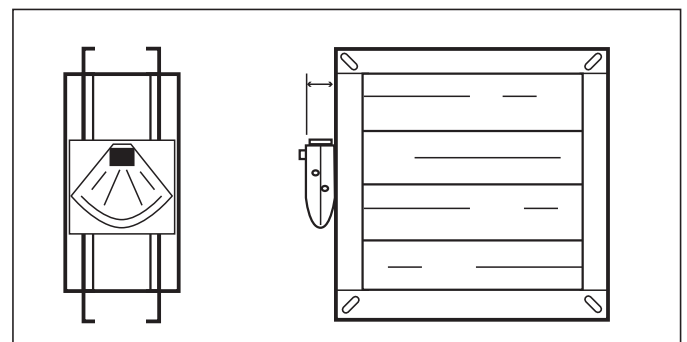
Option P Pneumatic Actuator

The model actuator used operates between 30psi/2bar and 120psi/8bar.

It is supplied fitted to the damper complete with integral threaded 1/4bsp air-ports to pressurize and vent the actuator.

Various accessories are available to this actuator.

For additional technical details and dimensions, please contact BSB's sales office for data sheets.



Performance, Weight and Torque Data

Torque Chart (Balance Blade with End Caps)

These values have been rounded up and down to whole numbers and are illustrated for estimation purposes only

Differential Pressure (Pa)	Damper Size (mm)					
	400 x 400		1000 x 1000		1500 x 1500	
	Nm	lb/ins	Nm	lb/ins	Nm	lb/ins
500	5.0	44.0	9.0	79.0	13.0	115.0
1000	6.0	53.0	11.0	97.0	15.0	132.0

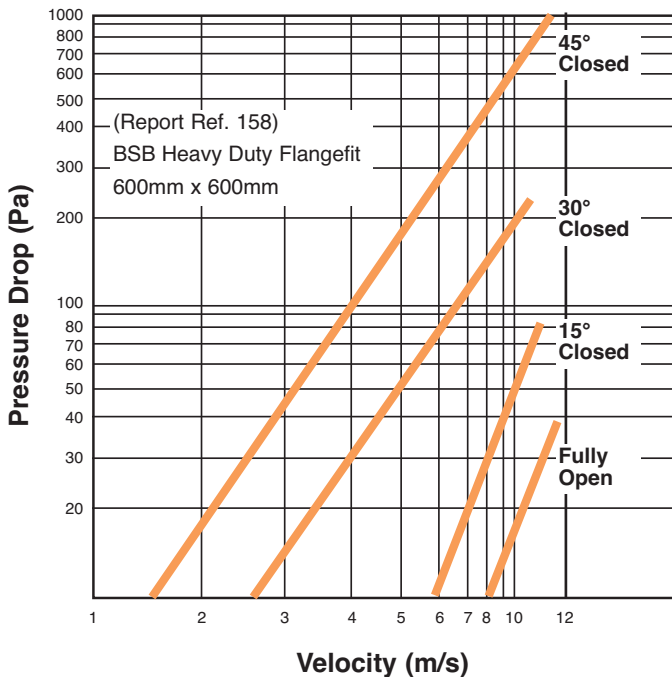
Weight Chart (Kg) (Flangefit Model - Aluminium Blades)

These values have been rounded up and down to whole numbers and are illustrated for estimation purposes only

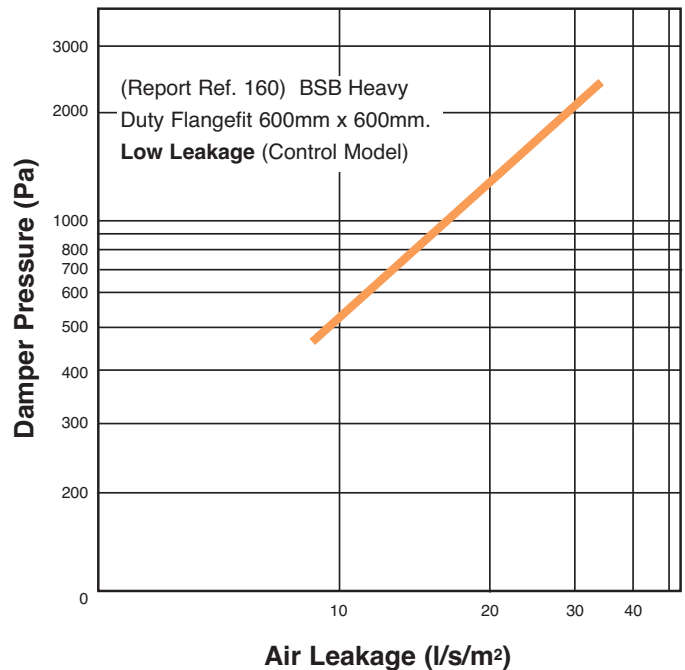
Damper Height (mm)	Damper Width (mm)								
	200	300	400	500	600	700	800	900	1000
100	2.5	3.0	4.0	4.5	5.5	6.0	7.0	7.5	8.5
200	4.0	4.5	5.5	6.0	7.0	7.5	8.5	9.0	10.5
300	4.5	6.0	7.0	8.5	9.0	10.0	10.5	12.0	13.5
400	6.0	7.5	9.0	10.0	12.0	13.0	13.5	15.0	16.0
500	7.0	8.5	10.0	12.0	13.0	14.0	16.0	16.5	18.0
600	8.5	10.0	12.0	13.5	15.0	16.5	18.0	19.5	21.0
700	9.0	12.0	13.5	16.0	18.0	19.5	21.0	22.5	23.5
800	10.5	13.0	14.0	16.5	19.0	20.5	22.5	25.0	26.5
900	12.0	13.5	16.5	19.0	20.5	22.5	23.5	25.5	27.5
1000	12.0	15.0	18.0	20.5	23.5	25.5	26.5	27.5	31.5

Performance Characteristics

Pressure Drop



Low Leakage



Material Specification

Casing

1.2mm (18swg) galvanised mild steel to BS EN 10142 1991. Coating Class Fe P02b Z275 Na.

Blades

Extruded airfoil aluminium to BS 1747 1987, wall thickness 1.25mm (18swg) minimum.

Precision rolled galvanised mild steel.

430 grade stainless steel.

316 grade stainless steel.

Blade End Caps

Injection moulded black polypropylene to BSB's recorded design.

Blade Spindles

19mm (3/4") diameter galvanised mild steel tube with corrosion resistant "Flo-Coat".

Drive Spindles

19mm (3/4") diameter galvanised mild steel tube with corrosion resistant "Flo-Coat".

Quadrant

1.2mm (18swg) galvanised mild steel chassis with integral rotation slot and blade position indication. 30mm x 2.75mm (1 3/16" x 1/8") zinc plated mild steel handle with integral clamp and locking nut to BS EN 10142 1991. Coating Class Fe P02b Z275 Na.

Linkage

Crank Arm: 30mm x 2.75mm zinc plated mild steel spindle clamp with integral 8mm diameter drive pins 3mm thick.

Drive Bar: 20mm x 3mm flat bar punched to fit onto zinc plated drive pins.

Bushes

Punch-formed bushes are formed within the casing to provide a low friction bearing for the blade spindles to rotate.

Rivets

High quality self-sealed rivets are used to European standards as relevant.

Sealant

All joints and seams are sealed with 3M sealant conforming to dictates of DW144.

Paint

Aluminium primer is applied to all welds and ground surfaces.

Operating Temperature

-10°C to +110°C as standard.

To order: -10°C to + 350°C (galvanised blades)

-10°C to + 200°C (aluminium blade & silicon seal).

Low Leakage Models

Blade Edge Seals

Extruded hollow section silicone seal with temperature before distortion -10°C to + 200°C.

Side Seal Gasket

Grade 302 stainless steel hard rolled to BS 5770 Part4 1981, 0.345mm (0.010") thick.

Options

Casing

Grades 316 or 430 stainless steel.

Blades

Grades 316 or 430 stainless steel or galvanised coated mild steel, 0.7mm thick.

Blade and Drive Spindles

Grade 316 stainless steel.

Locking Quadrants

Grades 316 or 430 stainless steel, 1.2mm thick.

Linkage

Crank arm and drive bar in grade 316 stainless steel.

Bearings

Injection moulded Nylon 66 "Top Hat" design.

Oilite Bronze Bushes

Impregnated with mineral oil to ISO VG 100 (SAE 30) would be supplied.

Side Seal Gasket

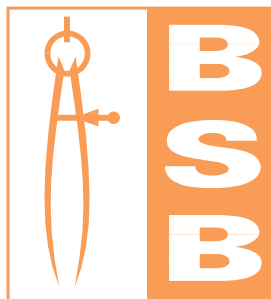
Grades 302 or 316 stainless steel hard rolled to BS 5770 Part 4 1981, 0.345mm (0.010") thick.

Paint

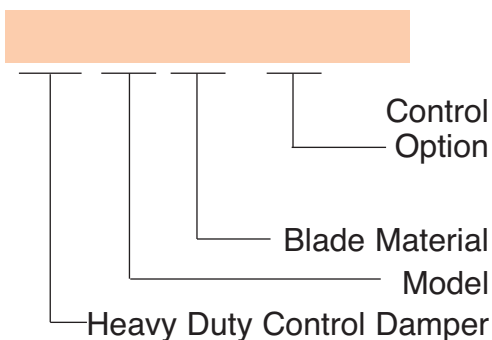
Galvafruid zinc rich paint.

Special Note:

When rectangular spigots are supplied 1.6mm (16swg) material will be used. When circular or flat oval spigots are supplied, 1.6mm (16swg) material will be used for the mating plates with 0.8mm (22swg) material used for spigots.



Example:



HD Heavy Duty Control Damper

Model:

- F Flangefit
- S Rectangular/Square Spigotfit
- C Circular Spigotfit
- O Flat Oval Spigotfit

Blade Material:

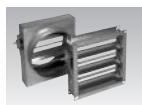
- G Galvanised Mild Steel Airfoil Blades
- A Aluminium Airfoil Blades (state balance or low leakage)
- S Stainless Steel Airfoil Blades (state Grade)

Options:

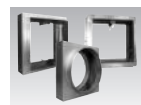
- E Extended Spindle
- H Hand Control
- M Electric Motor (state voltage and model)
- P Pneumatic Actuator Fitted



BD Series
Backdraught Damper



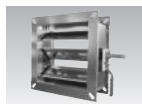
DD Series
Duct Damper



FD Series
Fire Damper



FSD-TD Series
Fire/Smoke Damper



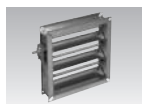
HD Series
Heavy Duty Control Damper



SB Series
Single Blade Regulating Damper



SC Series
Smoke Control Damper



SF Series
Slimfit Regulating Damper



Control Panel
Fully Addressable or Electro-Mechanical



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BSB Engineering Services Ltd. reserves the right to modify or withdraw any specification without prior notice that may result from continuous product development. The information contained within this brochure is correct at the time of going to press.

BSBHD. Jun. 2008

MANUFACTURERS OF AIR/FIRE/SMOKE CONTROL PRODUCTS

HD Series Heavy Duty Control Dampers

Installation, Maintenance and Operating Instructions

Models: Flangefit and Spigotfit



Installation:

1. Before installation, the damper should be inspected to ensure that it has not been damaged and is in good condition following transportation.
2. Ensure that all packing materials are removed, as failure to complete could result in permanent damage to the product.
3. Ensure that the ductwork and damper flange or spigots are carefully matched, with the specified sealing material used during installation.
4. Ensure that the ductwork is adequately supported, this is particularly important where large dampers are concerned.
5. Ensure that the damper is free of any foreign matter, the assembly is not distorted and is square with no surface damage that could restrict blade movement.
6. If stored before installation, ensure the product is stacked and stored in clean, dry conditions to prevent the ingress of dust, as well as avoiding excessive temperature or humidity.
7. Care should always be taken when handling dampers on site to avoid subjecting them to excessive stress for which they are not designed.
8. It is important to ensure that all dampers are installed with airflows and pressures conforming to the test data as detailed in the manufacturers technical product manual. Excessive airflows and/or pressures could result in permanent damage and/or malfunction of the damper.

Maintenance:

1. Keep the damper clean and free from any contamination.
2. Where possible, operate the blades against airflow to ensure easy, free movement without distortion or stress of the linkage.
3. Periodic inspection should be made of any seals that have been fitted to the damper, to ensure efficient control and operation.
4. It is recommended within normal preventative maintenance procedures for the blades and inner casings to be cleaned annually, with specific attention being made to ensure all spindles, bushes and linkage mechanisms are clean and rotate freely.
5. The time period can be ascertained by experience or local regulations, but should not exceed a twelve month interval. Inspection should be carried out more frequently where excessive dust or dirty conditions prevail.
6. Normal lubrication should only be made to exposed spindles/bushes and operating linkages outside of the airflow. Excessive lubrication will attract dust and could fail or impede the operation of the damper.

HD Series Volume Control Dampers

Installation, Maintenance and Operating Instructions



Operation:

1. These dampers are primarily designed for use in ductwork systems to balance/regulate the airflow. Once the system has been commissioned to its designed performance, the manual dampers are usually locked in their position with a record noted of blade positions. It is normal for the motorised dampers to have their blades in either the open or closed position during the operation of the system
2. If the damper is supplied with a spindle for the fitting of an actuator by sub-contractors, then attention to torque requirements of the damper and actuator is essential.
3. It is assumed that the airflow through the damper is filtered and environmentally controlled, with regard to humidification and corrosive atmospheres to national and international specifications.

National and International Specifications:

1. The HD Series Heavy Duty Control Damper is designed and manufactured for use as described in the HVCA Ductwork Specification DW144, and as Eurovent 2/2.
2. This product does conform to other national and international specifications not mentioned above, BSB's sales office can confirm details as required.

Recommended Spares:

1. None for this product.

It is always recommended that if either the specifying authority, the installer or the user has any doubts with regard to the product selection and/or suitability to the application, then contact to the following office is advised.

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