

PLASTIC VOLUME CONTROL DAMPERS

OVERVIEW TYPE: GGB

- **All composite construction**
- **Rigid extruded uPVC aerofoil blade section**
- **Integral blade seals for low leakage operation**
- **Individual blades driven via reinforced styrene gear wheels in maintenance free moulded styrene bearings**
- **Rigid extruded uPVC casework with 25, 30, 35 or 40mm flange options**
- **Stainless steel fixings and drive shaft**
- **Bare shaft, manual quadrant or factory fitted actuator options**
- **Circular and flat oval spigot options**
- **Face and bypass arrangements available**
- **Option for full DW154 compliance**
- **High pressure option available**
- **5-year 'no nonsense' anticorrosion warranty**
- **Manufactured in UK**

Fully compliant with DW144 with an option for compliance with DW154 the GGB range of uPVC volume control dampers offer all the benefits of traditional aluminium aerofoil dampers but without the corrosion risk, making them suitable for virtually all applications.

Available in sizes from 100mm x 100mm up to 900mm x 1200mm in a single section, plus much larger sizes in multiple section units.

Options for standard flange fit or circular / flat oval spigot fit connections with bare shaft, manual quadrant or factory fitted actuator.

Face and bypass arrangements for horizontal or vertical installation, bypass can be either side or centrally located.

Factory painted option in any RAL colour.

Full design, selection and costing software is available on request or download the latest version from our website.



GGB.FFS damper finished in RAL 3003



GGB.CPS dampers c/w electric actuator



Standard GGB.FFS damper bare shaft



GGB.FFB side face and bypass damper

Typical applications :-

- Volume control in HVAC systems
- Distribution ductwork balancing
- Air mixing in air handling units
- Swimming pool systems
- Fume cupboards/extract systems
- Coastal environment

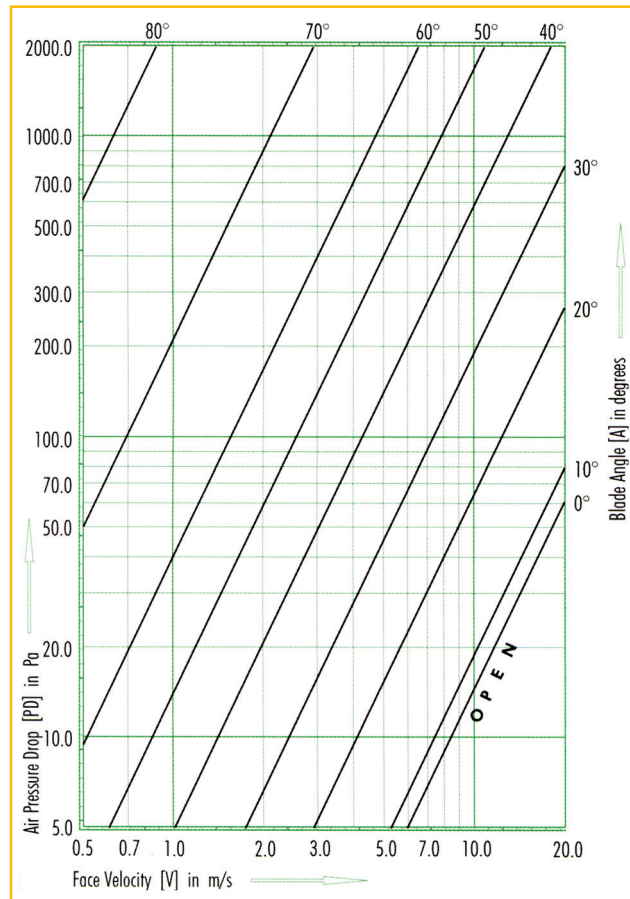
Not suitable for :-

- 100% tight shut-off
- Smoke extract systems
- Fire isolation
- Applications where +60° temp regularly expected

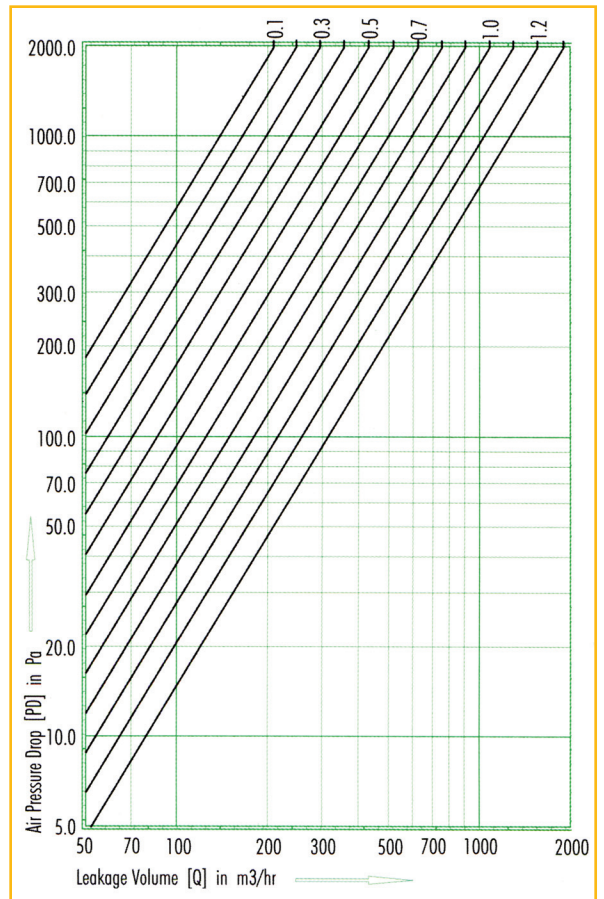
PLASTIC VOLUME CONTROL DAMPERS

PERFORMANCE DATA TYPE: GGB

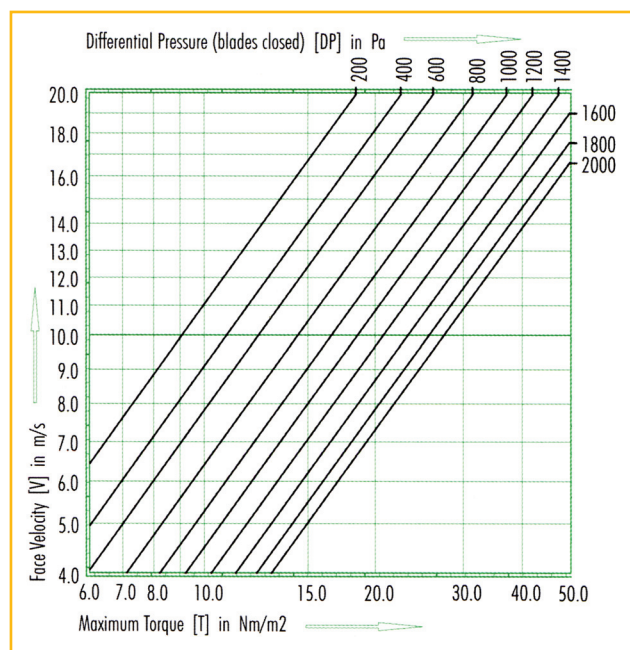
Air Pressure Drop



Air Leakage Rate



Maximum Torque



Example maximum torque calculation...

Where :-

Damper face size = 0.8 mW x 0.8 mH
 Pressure Differential [DP] = 1000 Pa (damper closed)
 Air Volume = 3.2 m³/s

Area [A] = 0.8 x 0.8 = 0.64 m²
 Face Velocity [V] = 3.2 ÷ 0.64 = 5.0 m/s

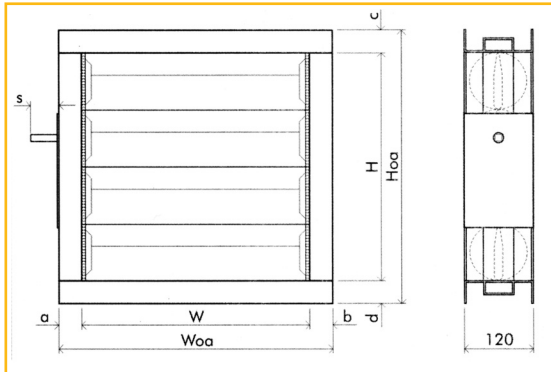
Maximum torque [T] value from chart = 9.6 Nm/m²
 Apply torque rating to face area = 9.6 x 0.64
 Actuator torque required = 6.14 Nm

PLASTIC VOLUME CONTROL DAMPERS

DIMENSIONAL DATA TYPE: GGB

Flange Fit Regular Volume Control Dampers (Ffs Type)

Single section Width $\leq 900\text{mm}$ & Height $\leq 1200\text{mm}$



Notes

Dimensions :-

Woa	Overall width inc flanges
W	Duct width
w	Blade length
Hoa	Overall height inc flanges
H	Duct height
B	Bypass width/height
D	Nominal spigot diameter
FW	Flat oval spigot width
FH	Flat oval spigot height
a	Driveside flange size
b	Opposite driveside flange size
c	Top flange size
d	Bottom flange size
s	Drive shaft length

Tolerances :-

1 mm < 1000	+/- 1
1 mm > 1000	+/- 2
1 mm > 2000	+/- 3
1.0 mm	+/- 0.3
Angles	+/- 1°

Driveshaft :-

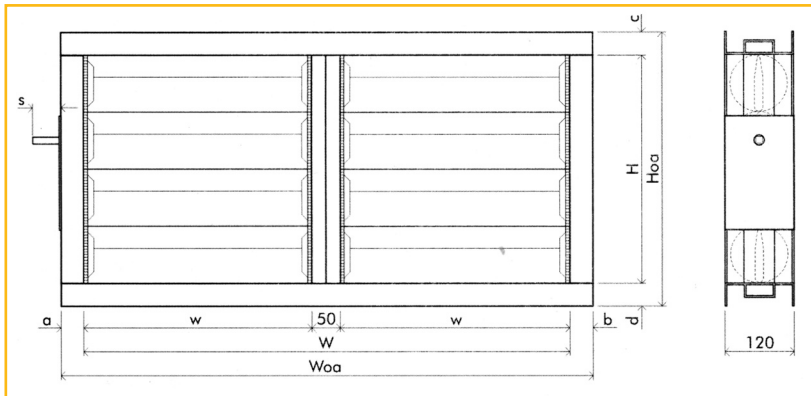
12.0 x 12.0 stainless square section
Standard length = 50mm

Flanges :-

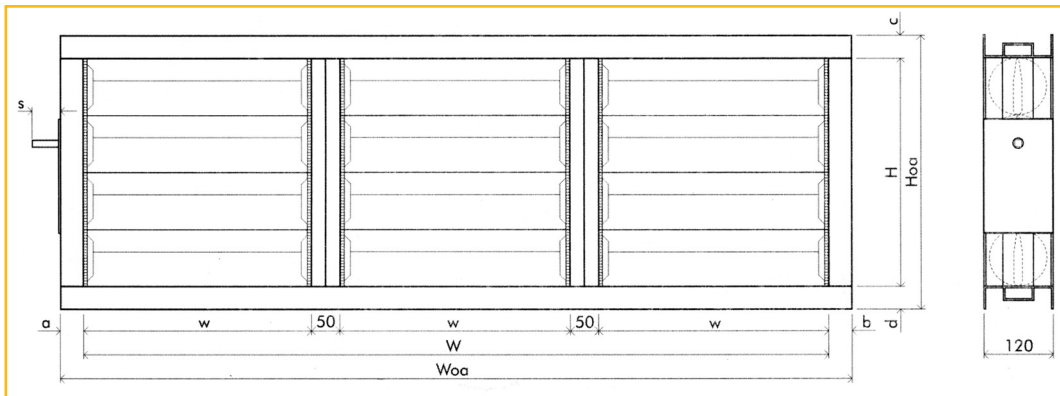
Each flange size can be specified separately at 40, 35, 30 or 25mm
Flange codes :-
25 = 1, 30 = 2, 35 = 3, 40 = 4

Two section

Width > 900 and $\leq 1850\text{mm}$ & Height $\leq 1200\text{mm}$



Three section Width > 1850 and $\leq 2800\text{mm}$ & Height $\leq 1200\text{mm}$



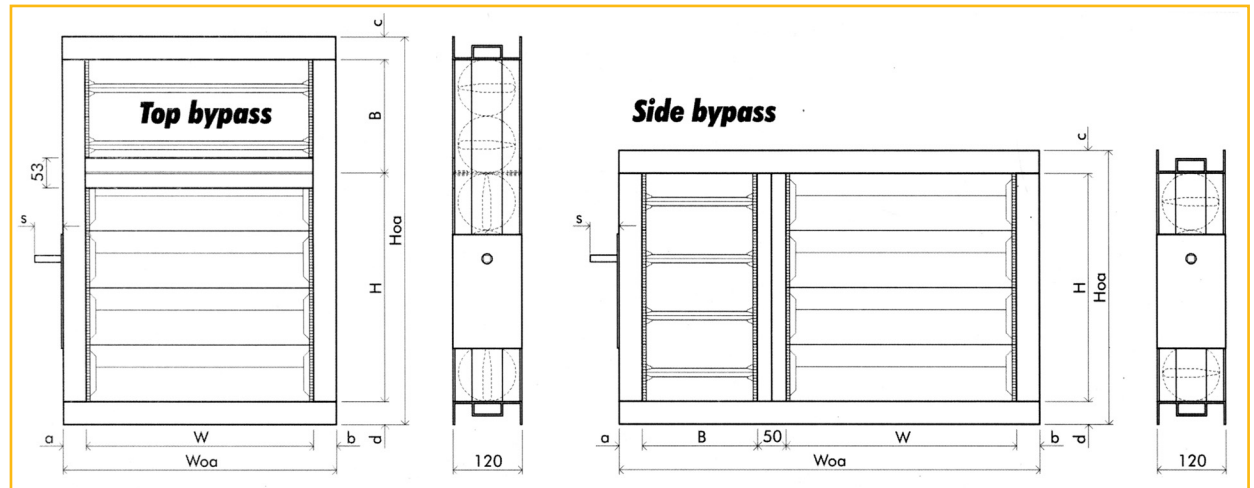
Typical weight chart (kg)

		Damper width in mm								
Damper height in mm		200	300	400	500	600	700	800	900	1000
	100	2.0	2.4	2.8	3.3	3.7	4.1	4.5	5.0	6.0
	200	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	7.5
	300	3.1	3.6	4.2	4.8	5.4	5.9	6.5	7.1	9.0
	400	3.6	4.3	4.9	5.5	6.2	6.8	7.5	8.1	10.5
	500	4.2	4.9	5.6	6.3	7.0	7.8	8.5	9.2	12.0
	600	4.7	5.5	6.3	7.1	7.9	8.7	9.5	10.2	13.5
	700	5.3	6.1	7.0	7.8	8.7	9.6	10.4	11.3	15.0
	800	5.8	6.7	7.7	8.6	9.5	10.5	11.4	12.4	16.5
	900	6.4	7.4	8.4	9.4	10.4	11.4	12.4	13.4	18.0
	1000	6.9	8.0	9.1	10.1	11.2	12.3	13.4	14.5	19.4

PLASTIC VOLUME CONTROL DAMPERS

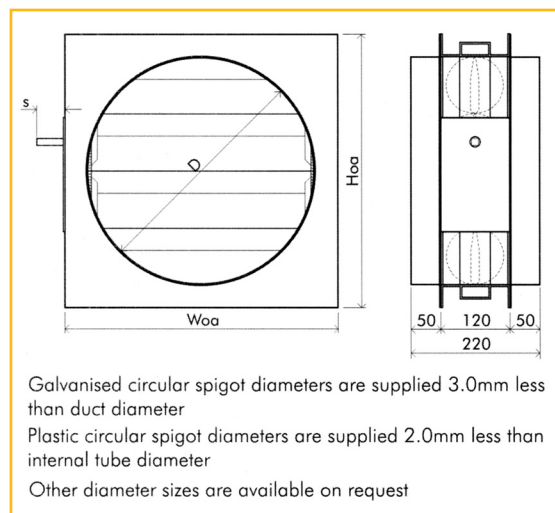
DIMENSIONAL DATA TYPE: GGB

Flange Fit Face & Bypass Volume Control Dampers (Ffb Type)



Circular Spigot Fit Volume Control Dampers (Cgs/Cps Type)

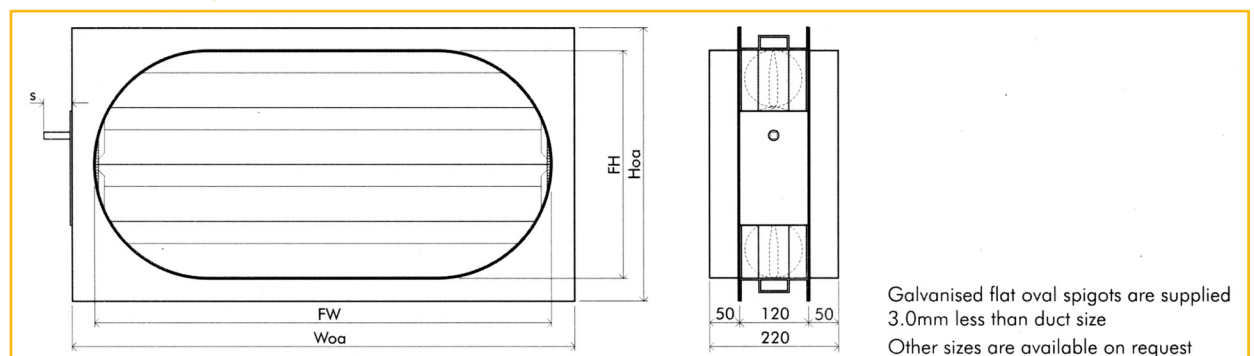
Available with both plastic & galvanised spigots



D (dia)	W/Hoa	kg
100	150	1.8
125	175	1.9
160	245	3.1
200	250	3.2
250	340	3.8
300	350	3.9
315	365	4.1
355	440	6.4
400	450	6.6
450	530	8.4
500	550	8.8
560	630	11.2
630	720	13.6
710	820	16.7
800	910	19.1
900	950	26.3
1000	1100	29.5

D (dia)	W/Hoa	kg
110	160	1.8
160	245	2.9
200	250	3.0
225	275	3.3
250	340	4.3
315	365	4.7
355	440	6.0
400	450	6.5
450	530	8.1
500	550	8.5
600	650	11.0
700	820	13.9
800	910	17.0
900	950	19.0
1000	1100	27.0

Flat Oval Spigot Fit Volume Control Dampers (Fos Type)



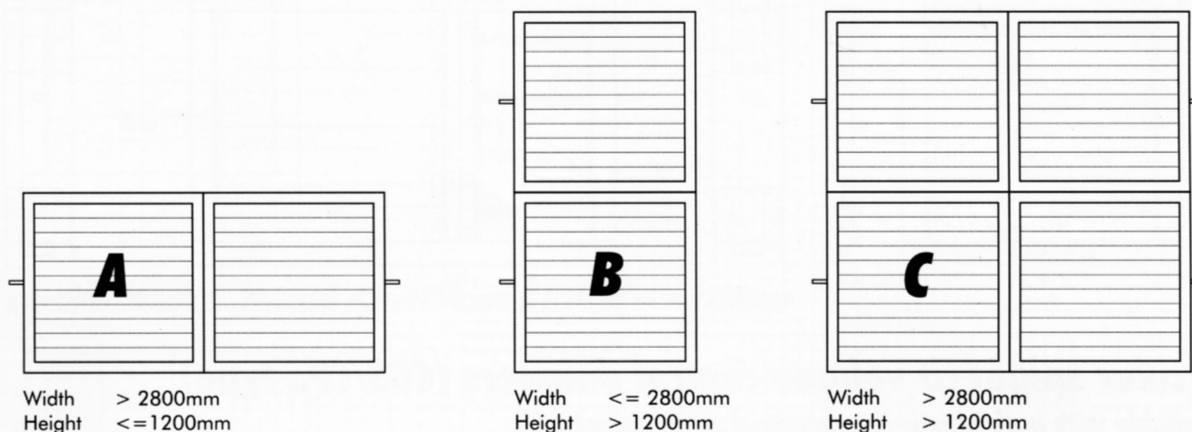
	FW	FH	Woa	Hoa	FW	FH	Woa	Hoa	FW	FH	Woa	Hoa
Galvanised steel	200	100	250	150	600	200	650	250	1000	400	1080	450
	300	100	350	150	600	300	650	350	1200	400	1280	450
	400	100	450	150	700	300	750	350	1000	500	1080	540
	400	200	450	250	800	300	850	350	1200	500	1280	540
	500	200	550	250	800	400	850	450	1500	500	1580	540

PLASTIC VOLUME CONTROL DAMPERS

APPLICATION NOTES TYPE: GGB

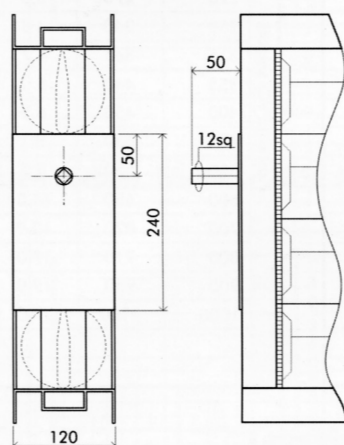
Multiple Assemblies

Where the damper height (H) exceeds 1200mm or the damper width (W) exceeds 2800mm the damper will be supplied in several sections for on-site assembly by others. Jointing plates will be supplied on request. It is important that the damper is externally supported where jointed to maintain rigidity, contact the factory for recommended support arrangements for high pressure (>500Pa) applications. Smaller dampers can be supplied in several sections for applications where access may be restricted.

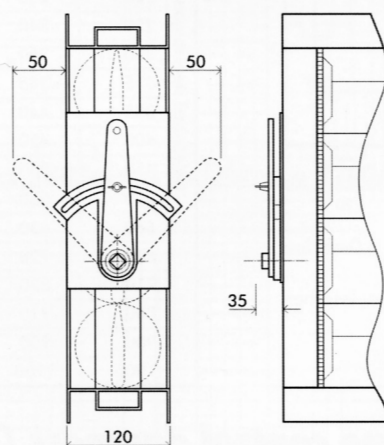


Control Options

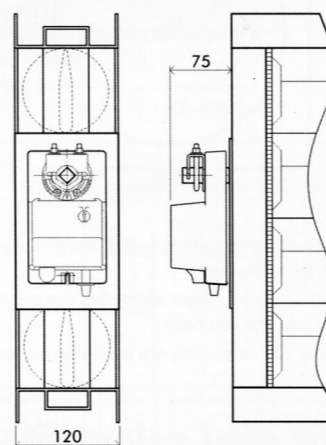
A. Bare driveshaft



B. Manual quadrant



C. Electric actuator



As standard all dampers are supplied with a bare driveshaft, manual quadrants or electric actuators must be specified at time of ordering. Spring return and pneumatic actuators are also available on request. Fitting kits for other types of actuators can be supplied on request.

Installation Notes

When unpacking, the damper should be visually checked for any signs of damage which may have occurred during transport or storage. The damper blades should rotate freely, on larger dampers there may be some resistance due to the large torque load.

On bare shaft dampers, due to packaging restrictions the damper drive shaft(s) is (are) supplied loose. The drive shaft should be inserted into the drive socket. Although this is a tight fit, we recommend that a small quantity of cyanoacrylate adhesive (superglue) is applied to the bottom of the shaft, prior to insertion, to ensure the shaft does not work loose. Do not hammer the driveshaft into the socket as this will damage the drivewheel and the damper will malfunction.

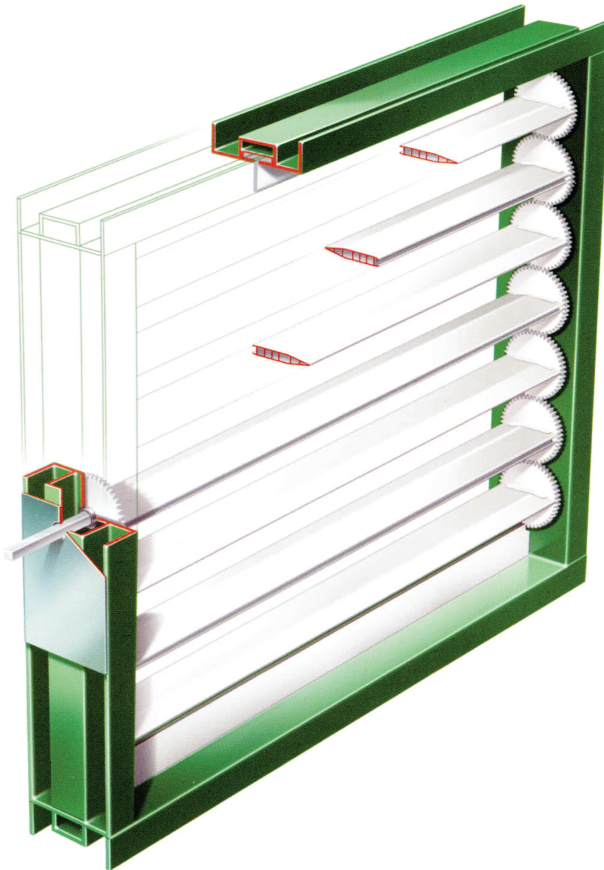
It is important that any adjacent ductwork to each side of the damper is supported independently. Supporting directly from the damper is not recommended and may cause the damper to distort and fail.

Flange mounted dampers have their flanges left undrilled. There are a variety of fixings that can be used and we recommend fixing centres of approximately 200mm. Spigot mounted dampers should be fixed through the spigots only. All fixings are supplied by others.

When fixing the damper it is imperative that the unit is kept square. An out of square damper will have a much higher operating torque or may not even rotate at all. Check the diagonals are equal to ensure squareness when fitting.

PLASTIC VOLUME CONTROL DAMPERS

CONSTRUCTION SPECIFICATION TYPE: GGB



Description

Composite construction, opposed blade volume control damper, incorporating extruded rigid uPVC aerofoil blades mounted in an heavy gauge extruded uPVC framework. Semi-rigid extruded uPVC top and bottom framework blade seals are fitted to reduce leakage when the damper is in the closed position.

All joints are sealed after manufacture with a high grade low modulus sealant.

Bypass Section

Where fitted, the blades in a bypass section operate at 90° to the main section ensuring that when the main section is closed the bypass section is open and vice versa.

Operating limits

Maximum face velocity	10.0 m/s
Temperature envelope	-20°C to +60°C
Max pressure differential	1000 Pa
<i>(for higher pressure consult factory)</i>	

Standard appearance

uPVC blades & gear wheels	White
uPVC framework	White

Standard configuration

Flange size	40mm
Drive type	Bareshaft 50mm

Optional accessories

The following options are available :

- Circular/flat oval spigot
- Extended drive shaft
- Manual locking quadrant
- Electric actuator
- Spring return actuator
- Pneumatic actuator
- Individual flange sizes
- High pressure construction up to 2000Pa
- Painted colour finish to RAI



Bare driveshaft (std)



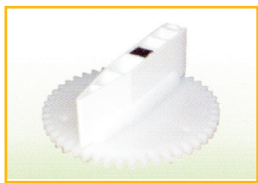
Manual quadrant



Electric actuator

PLASTIC VOLUME CONTROL DAMPERS

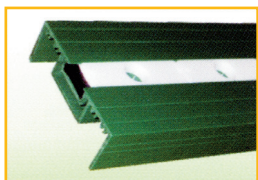
CONSTRUCTION SPECIFICATION **TYPE: GGB**



Construction

Each damper assembly consists of several rigid extruded double skin uPVC aerofoil section blades (1.5mm wall), each fitted with integral flexible uPVC blade seal for low leakage operation.

Each blade is driven via its own reinforced styrene gear wheels, which operate in maintenance free styrene bearings.



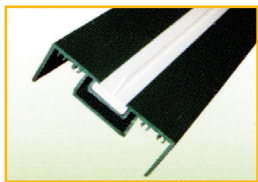
Each blade is stiffened and reinforced internally with a 10mm square steel tube running the entire length of the blade.

Opposed blade operation provides accurate volume control.



The damper framework is constructed from a double skin, heavy gauge (3.0mm wall) rigid extruded uPVC section, the corners being jointed and secured with A2 stainless steel fixings.

The framework is available with either 25, 30, 35 or 40mm flanges. The damper blades are driven via a stainless steel 12mm square drive shaft extended through the assembly framework.



Optional high pressure additional construction

Each blade is stiffened and reinforced internally with two 10mm square steel tubes running the entire length of the blade. The maximum length of each blade is restricted to 500mm.



Each gear wheel is attached to the blade using stainless steel 12mm square drive stub shafts.

Each corner joint is reinforced with heavy duty uPVC angle extrusion. The damper framework is reinforced using 13mm heavy duty uPVC tube.

To comply with DW154 damper flanges are reinforced with 6mm uPVC strip to increase thickness from 3 to 9mm.

Warranty

All dampers are guaranteed against defects in workmanship and materials for a period of 12 months from the date of original shipment.

Further, at no additional cost, all dampers are guaranteed for a period of 5-years against any corrosion to the blades, drive wheels, seals and framework.