



*Incorporating*



## Volume control dampers

### **NCA Series 800C** Heavy duty shut-off dampers

- Low leakage shut-off dampers designed for the most demanding installations
- Heavy duty design for high velocity applications
- Aerodynamic extruded aluminium aerofoil blades for minimal pressure loss when open
- Single units available up to 2m x 2m
- Square, circular and flat oval connections for all types of ductwork
- Variety of control options including comprehensive range of actuators



## NCA Series 800C

Designed to satisfy the most demanding applications, the new S800C heavy duty shut-off damper is a robust, low leakage unit intended for projects requiring any of the below characteristics:

**Low leakage rates** are assured by the fully sealed design, making use of silicone rubber blade edge seals, stainless steel side seals and EPDM rubber stop gap seals.

**Suitability for high airflow velocities** is provided by the robust construction utilising a 180mm deep galvanised steel frame, extruded aluminium aerofoil blade and steel drive system.

**Minimal resistance to airflow** is another benefit of the extruded aluminium aerofoil blade design which combined with a large 150mm blade pitch, gives a maximum free area of around 80%.

**Large single section sizes** are possible thanks to the low torque characteristics of the drive system, meaning single sections of up to 2m x 2m can be manufactured and driven from a single actuator.

S800C dampers are also available with actuators fitted inboard to the overall size rather than in the usual location on the side of the damper. This is particularly useful where multiple dampers need to be installed alongside each other.



## Design features

<b>Material</b>	Galvanised steel frame Zinc plated steel drive system components Extruded aluminium blades Seals from silicone rubber, stainless steel and EPDM rubber
<b>Sizes</b>	Minimum: 200mm x 155mm nominal Maximum single unit: 2000mm width, 2000mm height or 2000mm diameter (circular units done with spigot plate) Above any of these dimensions, units would be made in sections
<b>Frame</b>	40mm flanges, 180mm overall depth
<b>Operation</b>	Opposed blade, linkage driven
<b>Controls</b>	Standard: Extended spindle for motorisation by others Optional: Locking quadrant Inboard actuator mounting plate Factory fitted electronic, pneumatic or ATEX rated actuators Please see pages 6 - 7 for more information on controls
<b>Max recommended velocity</b>	15 m/s
<b>Temperature range</b>	-40°C to 130°C (limited by EPDM stop gap seal) Specification of an actuator may alter this range

## Quality assurance

HVC Supplies (Stourbridge) Ltd is an ISO 9001 certified company.



Assessed to ISO 9001  
Cert/Ref No. 1186

## Certification

S800C heavy duty shut-off dampers have been tested for blade leakage, case leakage and resistance to airflow in accordance with:

**EN 1751:2014**

The testing was carried out in July 2019 by BSRIA in Preston and Bracknell, England.

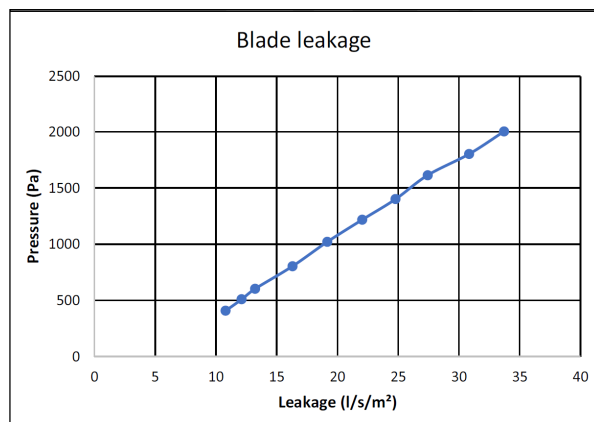
Copies of the test reports are available on request.



## Test results

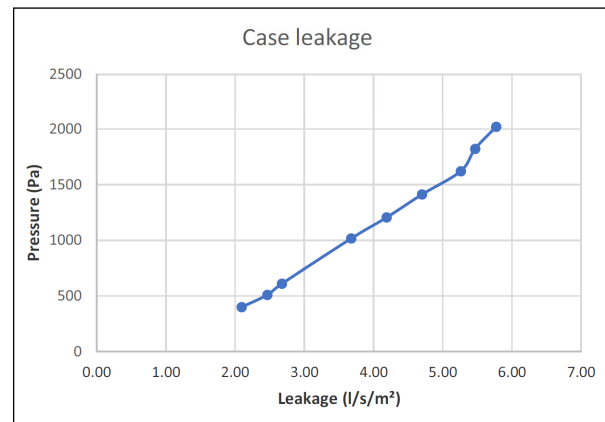
**Blade leakage:** Class 2 achieved

Tested unit size: 1000mm x 905mm nominal



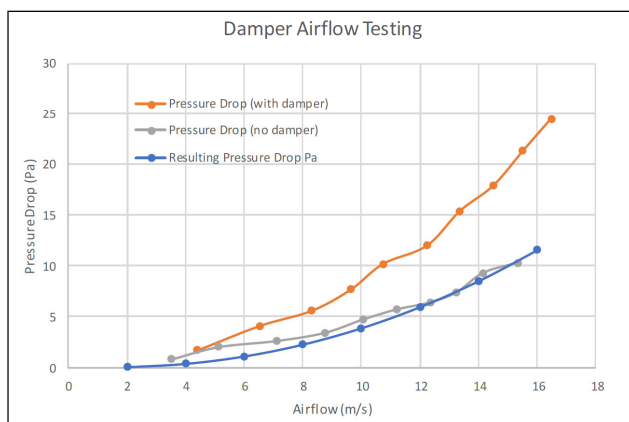
**Case leakage:** Unclassified

Tested unit size: 1000mm x 905mm nominal



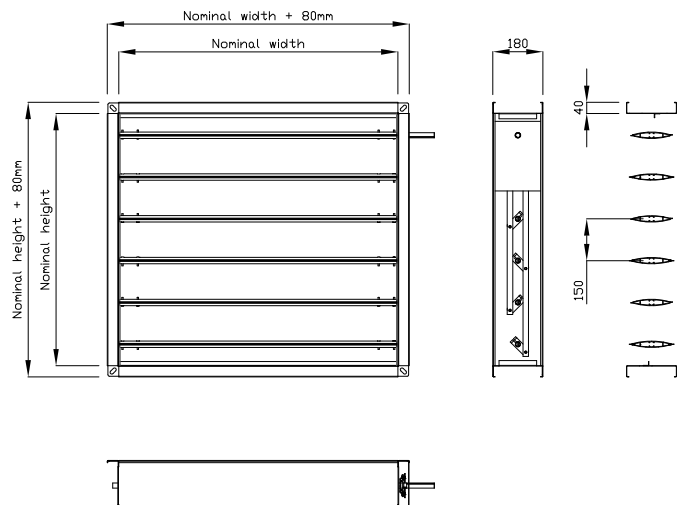
**Resistance to airflow**

Tested unit size: 500mm x 455mm nominal

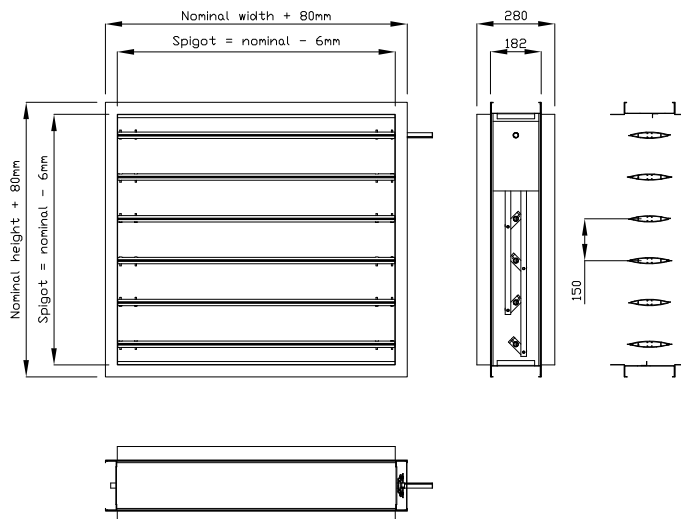


## Technical drawings

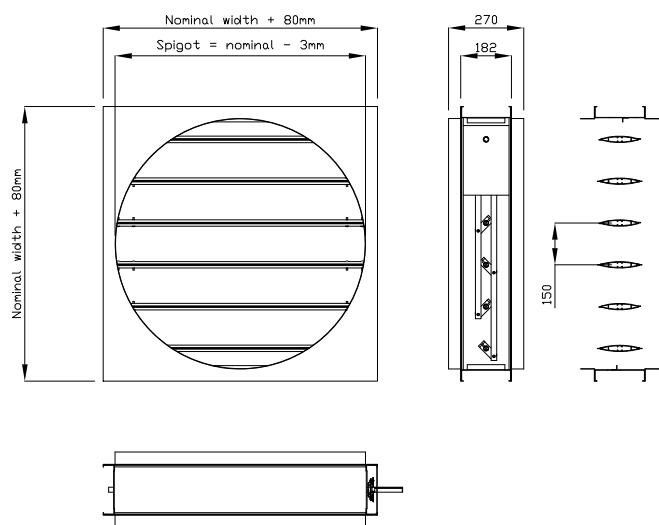
**Model A: Square flanged**



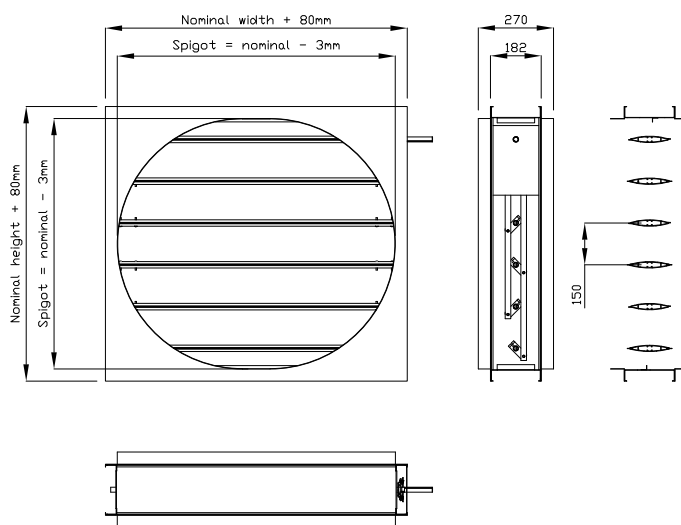
**Model B: Square spigotted**



**Model C: Circular spigotted**



**Model D: Flat oval spigotted**



## Stop gaps

S800 dampers are built with the top blade in a set position.

Stop gaps are fitted at the top and bottom of any size of damper for blades to seal against, however due to the large 150mm blade pitch, some sizes will require a larger stop gap between the bottom blade and the bottom frame which will adversely impact active area and thus performance.

To minimise the required bottom stop gap size and thus maximise free area, take the minimum nominal height of 155mm, and add any multiple of 150mm, e.g. 305mm, 455mm, 605mm etc.

## Controls

### Extended spindle (standard control method unless stated)

Allows fitting of an actuator on the side of the damper.

- 18mm diameter zinc plated mild steel bar
- Extends 90mm from actuator mounting plate
- Fitted to first blade unless requested, can only be fitted to odd number blades.

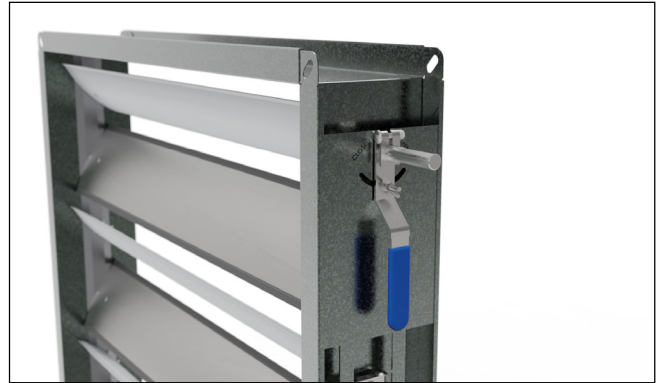
**Important note:** Spindle is too large for Belimo LF series actuators



### Locking quadrant

Permits manual operation with position locking function.

- Heavy duty 3mm thick zinc plated steel lever complete with blue plastic sleeve.
- Laser cut 'OPEN' and 'CLOSED' position indicators in mounting plate.
- Large format wing nut for easy position locking.

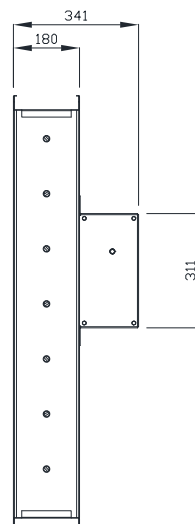
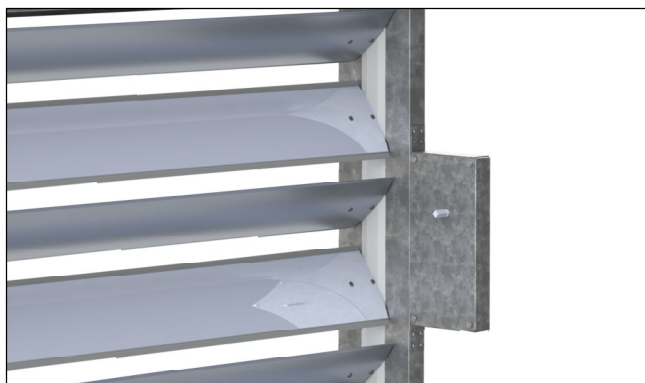


### Inboard actuator mounting plate

Allows fitting of an actuator within the damper's overall size.

Useful in applications where multiple dampers are installed next to each other to create large banks, as the requirement for inactive zones for side mounted actuators is removed.

- 12mm square zinc plated mild steel spindle
- Extends 90mm from actuator mounting plate
- Fitted to third blade unless requested, cannot be fitted to first blade, can only be fitted to odd number blades.
- Only available with square flanged dampers.



## Belimo actuators

We recommend the use of Belimo actuators for applications in non-specialist environments.

All actuators are factory fitted and tested to confirm good operation. Other than connection to wiring, no alteration to the actuator is required on site.

Please see the below table to find the series of Belimo actuator you require for your application.



Series	Mounting location		Suitable for S800 dampers up to			Voltage		Power open power close	Action	
	Outboard	Inboard	0.4m <sup>2</sup>	1.0m <sup>2</sup>	4.0m <sup>2</sup>	24V	230V*		Spring return	Modulating
LM24A	✓		✓			✓		✓		
LM24A-SR	✓		✓			✓		✓		✓
LM230A	✓		✓				✓	✓		
LM230ASR	✓		✓				✓	✓		✓
NM24A	✓			✓		✓		✓		
NM24A-SR	✓			✓		✓		✓		✓
NM230A	✓			✓			✓	✓		
NM230ASR	✓			✓			✓	✓		✓
SM24A	✓				✓	✓		✓		
SM24A-SR	✓				✓	✓		✓		✓
SM230A	✓				✓		✓	✓		
SM230ASR	✓				✓		✓	✓		✓
LF series	Not suitable - Spindle diameter too large									
NF24A	✓			✓		✓			✓	
NF24A-SR	✓			✓		✓			✓	✓
NFA	✓			✓		✓	✓		✓	
SF24A	✓				✓	✓			✓	
SF24A-SR	✓				✓	✓			✓	✓
SFA	✓				✓	✓	✓		✓	

\*Suitable for 240V supply.

## Schischek explosion-proof actuators

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Schischek produce a range of specialist explosion-proof actuators for use in areas with potentially explosive atmospheres; E.G. petro-chemical plants, whisky distilleries and grain silos.

ATEX approved.

All actuators are factory fitted and tested to confirm good operation. Other than connection to wiring, no alteration to the actuator is required on site.

Please contact us for more information on explosion-proof actuators with S800 dampers.



## Kinetrol pneumatic actuators

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We can factory fit dampers with Kinetrol's compressed air driven pneumatic actuators. A range of additional options including spring return modules can be fitted to enhance functionality.

ATEX approved.

All actuators are factory fitted and tested to confirm good operation. Other than connection to pneumatic lines, no alteration to the actuator is required on site.

Please contact us for more information on pneumatic actuators with S800 dampers.



## Finish

Bare metal only



## Ordering codes

### Example

1 - 500 x 500 - S800CA - Inboard - Belimo SM24A-SR

### Codes

1)	Quantity		
2)	Size (mm)	(Width x height)	
3)	Series	S800C	Heavy duty shut-off damper
	Connection	A B C D	Square flanged Square spigotted Circular spigotted Flat oval spigotted
4)	Inboard actuator	Inboard	Inboard actuator mounting plate (only with square flanged connection)
5)	Control	EX LQ (Actuator)	Extended spindle (standard, not with inboard actuator) Locking quadrant (not with inboard actuator) State actuator code
When ordering a spring return actuator, please specify whether you require spring open or spring close operation. If not stated, spring closed will be supplied as standard.			

**Important:** Size will be taken to be nominal unless stated otherwise.

Leave code section blank if no option is required.

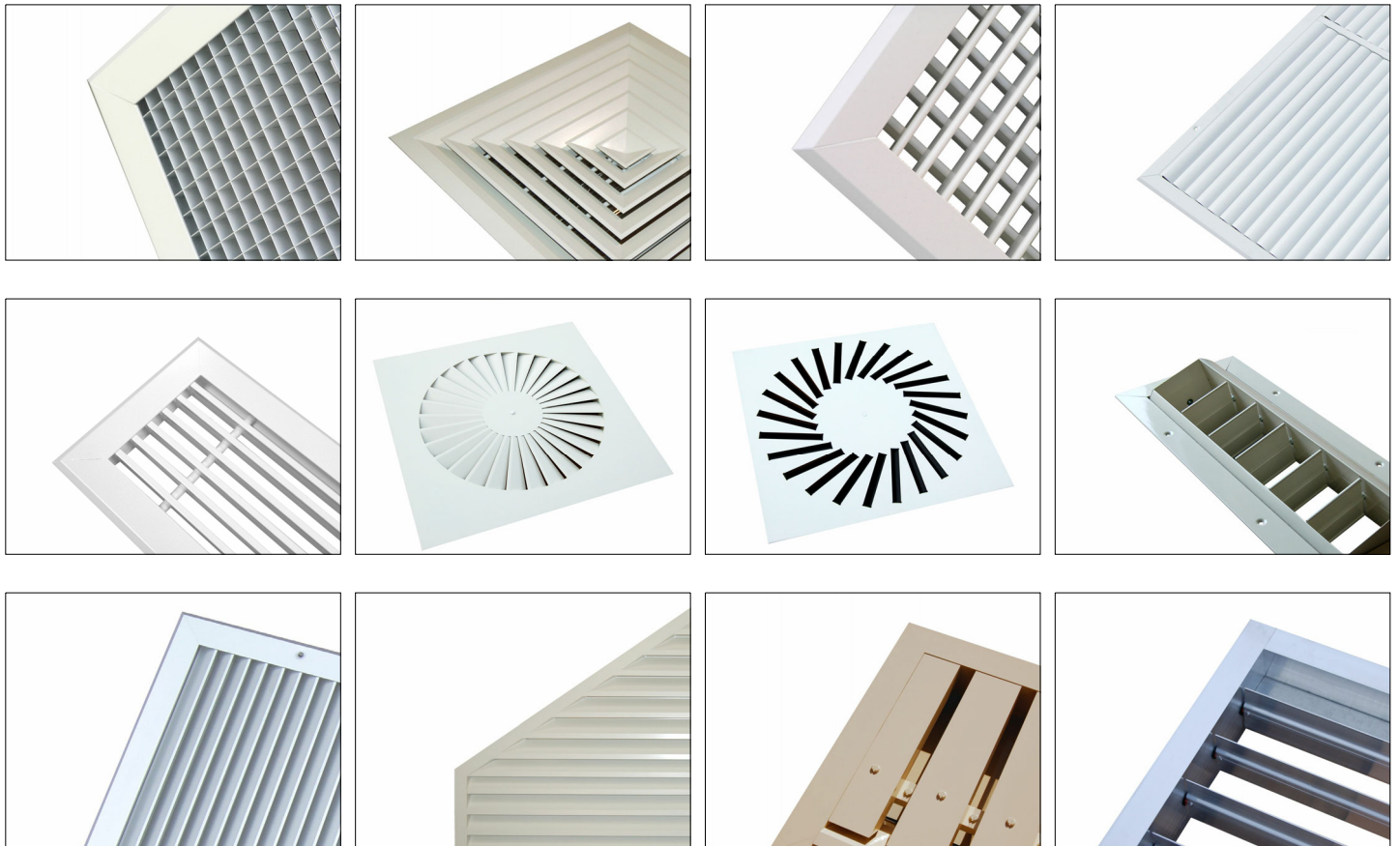


## HVC & NCA products

HVC offer the significant advantage of manufacturing both in duct and duct terminal equipment, making us a one stop shop for all your HVAC needs.

The products shown below are a selection, not an exhaustive list. Go to [www.h-v-c.com](http://www.h-v-c.com) for details on all HVC and NCA products.

### HVC: Grilles, Diffusers, Louvres and Volume Control Dampers



### NCA: Fire and volume control dampers





Assessed to ISO 9001  
Cert/Ref No. 1186

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