Incorporating

Fire protection

NCA Series 700

Motorised leakage rated fire dampers

(Fire/smoke dampers)

- **CE marked against the requirements of EN 15650**
- **Classified in accordance with EN 13501-3**
- **Fire tested to EN 1366-2**
- **120 minute installations for drywall partitions, masonry walls and concrete floor slabs**
- **Unique surface mounted design with factory punched fixing holes**
- **No backfilling or sealing of apertures required**
- **Single and multiple section assemblies available (CE marked)**
- **Available to suit square, rectangular, circular and flat oval ducting**

CE

S700: May 2020

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Quality assurance

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

Assessed to ISO 9001
Cert/Ref No. 1186

CE marking

In accordance with the Construction Products Regulation or CPR (305/2011/EU) introduced into the UK on the 1st of July 2013, any fire dampers sold into the UK and EU markets must be CE marked.

To obtain CE marking, companies and fire dampers themselves must fully comply with the requirements of BS EN 15650.

Companies must be:

- ISO 9001 accredited
- Monitoring production through a program of Factory Production Control (FPC)
- Issued with a certificate of constancy of performance by a notified body

Fire dampers must be:

- Fire tested to BS EN 1366-2
- Classified to BS EN 13501-3
- Thermal release mechanism tested to ISO 10294-4
- Stainless steel and multiple damper assemblies assessed against EN 15882-2

HVC currently have three CE marked installation methods for Series 700 fire dampers.

- Plate frame in drywall partitions
- Plate frame in masonry walls
- Plate frame in concrete floor slabs

It is a legal requirement that fire dampers are installed in the way instructed by the manufacturer. Any other installation is untested and therefore illegal.

Responsibility for ensuring correct installation lies with all parties in the supply chain.

This brochure gives a short overview of the installation methods.

For full installation instructions, declaration of performance, maintenance routine and CE certificates go to:

www.h-v-c.com/installations

NCA Series 700 fire dampers

Designed to maintain compartmentation in buildings at locations where ductwork penetrates a fire barrier, a fire damper's basic function is to prevent fires spreading through ductwork.

NCA Series 700 motorised leakage rated fire dampers go beyond this basic requirement with their reduced leakage design, making them suitable for areas requiring dampers with 'ES' classification.

Uniquely easy to install, S700 fire dampers are surface mounted, making use of fixing lugs and a simple plate frame with factory punched fixing holes, installations require no backfilling, sealing or pattress frames. This makes them especially useful for refurbishment projects where disruption needs to be minimised.

S700 fire dampers are currently available with 120 minute rated installations to suit drywall partitions, masonry walls and concrete floor slabs (single sections only). All installations are classified 'i↔o' meaning air is permitted to flow in either direction through the damper.

Actuators are Belimo BF series, are available in 24 or 230 volt variants and are supplied with a 72°C rated thermal probe.

Design features

Materials	Plate frame - 1.5mm galvanised steel Case, internal frame and actuator mounting bracket - 1.2mm galvanised steel Blades - 0.7mm galvanised steel (double layered) Frame side, top and bottom seals - 0.4mm stainless steel (grade 301) Drive system - Steel throughout (BZP coated)	
Sizes	Minimum: 200mm x 200mm / 200mm diameter nominal Maximum: Single section - 1000mm x 1000mm / 1000mm diameter nominal Multiple section - 2074mm x 2074mm / 2074mm diameter nominal Units requiring a nominal width/height/diameter of less than 200mm can be supplied using reducing spigots	
Operation	Opposed blade, linkage driven (out of airstream)	
Controls	Single section assemblies:	Belimo BF24-TN or BF230-TN actuator (power open, spring return, non-modulating) complete with 72°C thermal probe
	Multiple section assemblies:	Belimo BF24 actuators (power open, spring return, non-modulating) complete with relay box assembly (24V or 230V supply) with 72°C thermal probe

Damper design

1. **Plate frame**
   Serves as the mounting point for fixing the damper to the partition. Pre-punched 5mm diameter fixing holes assist installation on site.

2. **Fixing lugs**
   Mounted at the top of the case on either side, these serve as mounting points for hanging the damper from either 8mm or 10mm diameter threaded drop rods. Fixing lugs are not required to be used in horizontal applications.

3. **Case**
   Comprises the spigots and encapsulates the inner frame.

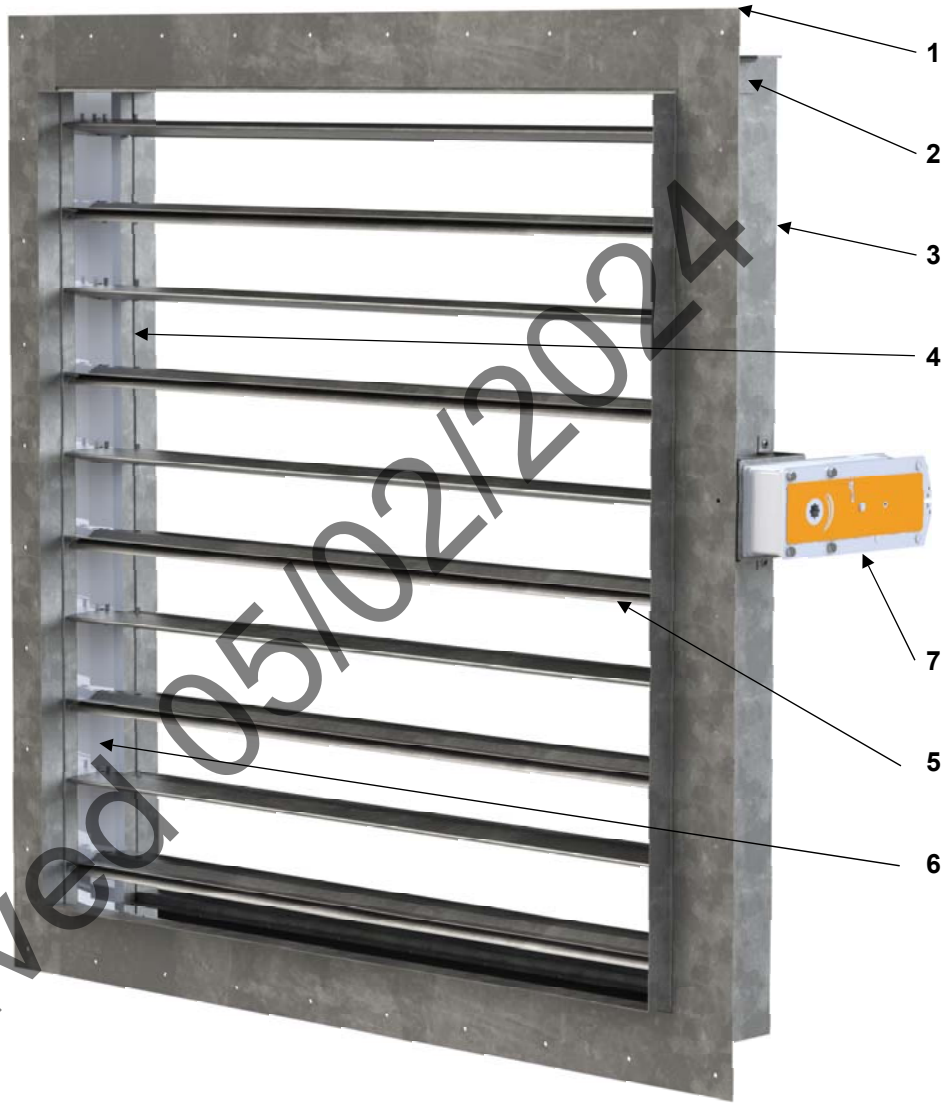
4. **Inner frame**
   The main component around which other components are fitted. Formed bushes in the side members hold steel tube axles to which the blades are mounted.

5. **Blades**
   Aerodynamic formed steel blades designed to present low resistance to airflow when open, but also to provide the required strength and level of shut-off when closed.

6. **Stainless steel seals**
   Formed stainless steel seals sit between the inside frame and blade edges and ends.

7. **Belimo BF series actuator**
   A specialist fire damper actuator with integrated thermal probe, powered open during normal use, springs closed when required.

   Positioned on damper's left side (as shown) unless specified.



Product testing - Non-CE mandated

Aerodynamic testing

S700 motorised leakage rated fire dampers have been tested for blade leakage, case leakage and resistance to airflow in accordance with:

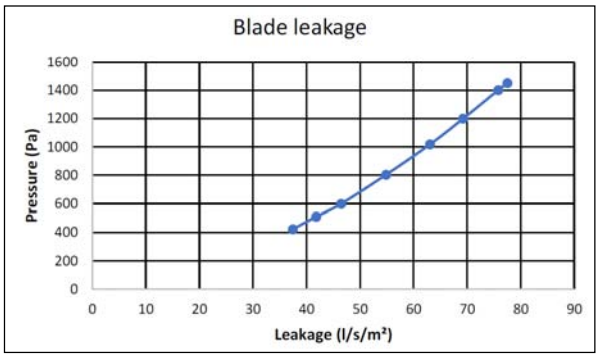
BS EN 1751:2014

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

Copies of the test reports are available on request.

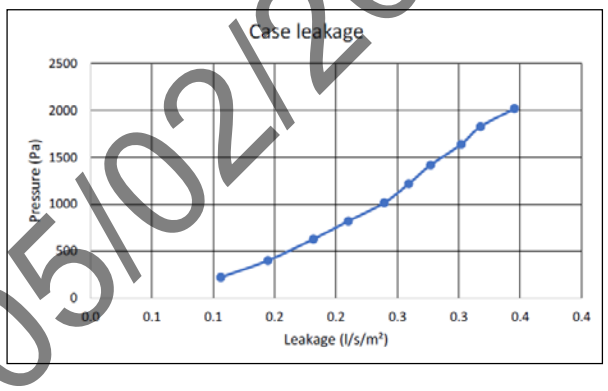
Blade leakage: Class 2 achieved

Tested unit size: 1000mm x 1000mm nominal



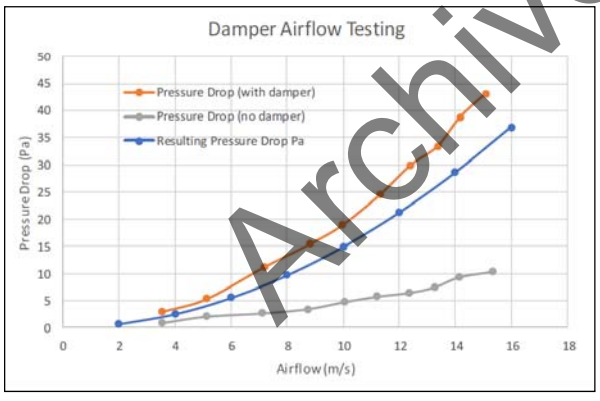
Case leakage: Class C achieved

Tested unit size: 1000mm x 1000mm nominal



Resistance to airflow

Tested unit size: 500mm x 500mm nominal
The blue line gives the resistance to airflow caused by the damper



Product testing - CE mandated

- **BS EN 1366-2**
  Fire resistance test
  Vertical installation in drywall partition: Tested for up to 120 minutes
  Horizontal installation in aerated concrete floor slab: Tested for up to 240 minutes

- **BS EN 13501-3**
  Classification of fire resistance performance
  Classified to: E 120 (ve ho i ↔ o) S (single sections only, see below for confirmation)

Installation guide

HVC currently have three CE marked installations available for Series 700 fire dampers.

Installation code	Frame type	Substrate			Orientation		Nominal size range (single sections, w x h / dia, mm)	Nominal size range (multiple sections, w x h / dia, mm)	Classification (EN 13501-3)	Page/s
		Drywall partition	Masonry wall	Concrete slab	Vertical	Horizontal				
S700-2VP/M	Plate	✓ (P)	✓ (M)		✓		200 x 200* / 200* to 1000 x 1000 / 1000	1001 x 1001 / 1001 to 2074 x 2074 / 2074	E 120 (ve i↔o) S	8 and 9
S700-2HC				✓		✓		Not available	E 120 (ho i↔o) S	10

* Units requiring a nominal width/height/diameter of less than 200mm can be supplied using reducing spigots

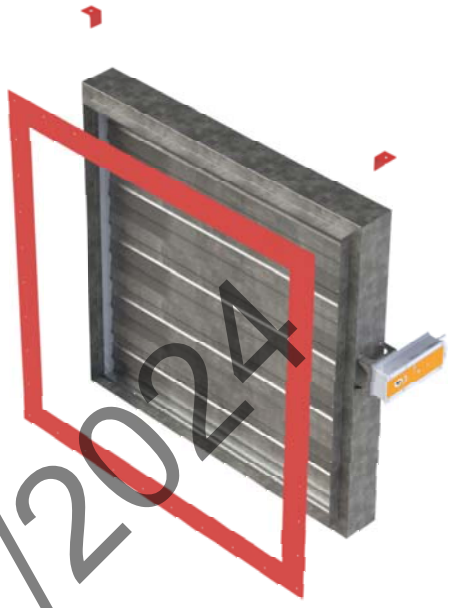
Installation S700-2VP

NCA Series 700 fire damper c/w plate frame in drywall partition

Installation classified to (in accordance with BS EN 13501-3):

E 120 (ve i↔o) S

120 minute rated reduced leakage vertical installation
Air permitted to flow in either direction through damper
Permitted for single and multiple section assemblies



Installation procedure:

Hang the damper using the two factory fitted fixing lugs from drop rods (M8/M10) securely attached to a structural element of the building distinct from the partition itself.

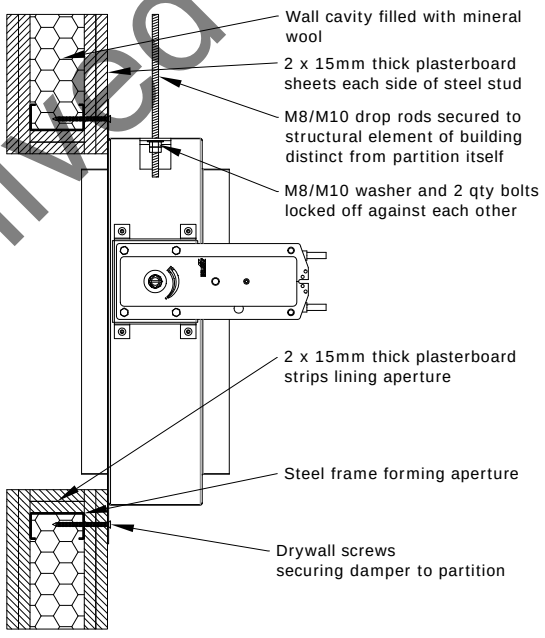
Position the damper spigot (plate frame side) centrally within a correctly sized aperture, constructed in accordance with our S700 installation instructions.

Screw the damper to the wall through the factory punched fixing holes in the plate frame, ensuring all screws gain a positive fix on the steel framework inside the partition.

Fit the actuator's thermal probe to the top half of ductwork.

No backfilling or sealing of the aperture, nor a pattress frame are required.

The damper must be installed so blades run horizontally.



The above is a shortened version of our full installation method and does not contain all details necessary to perform a compliant installation.

To download full installation instructions, declaration of performance and maintenance routine, go to:

www.h-v-c.com/installations

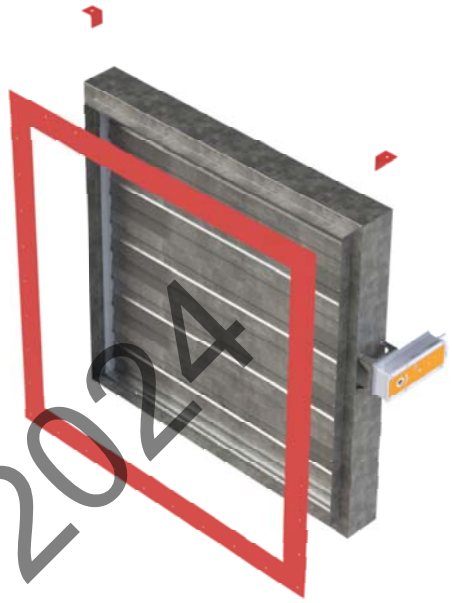
Installation S700-2VM

NCA Series 700 fire damper c/w plate frame in masonry wall

Installation classified to (in accordance with BS EN 13501-3):

E 120 (ve i↔o) S

120 minute rated reduced leakage vertical installation
Air permitted to flow in either direction through damper
Permitted for single and multiple section assemblies



Installation procedure:

Open the factory punched 5mm diameter fixing holes in the plate frame out to 8mm diameter.

Hang the damper using the two factory fitted fixing lugs from drop rods (M8/M10) securely attached to a structural element of the building distinct from the partition itself.

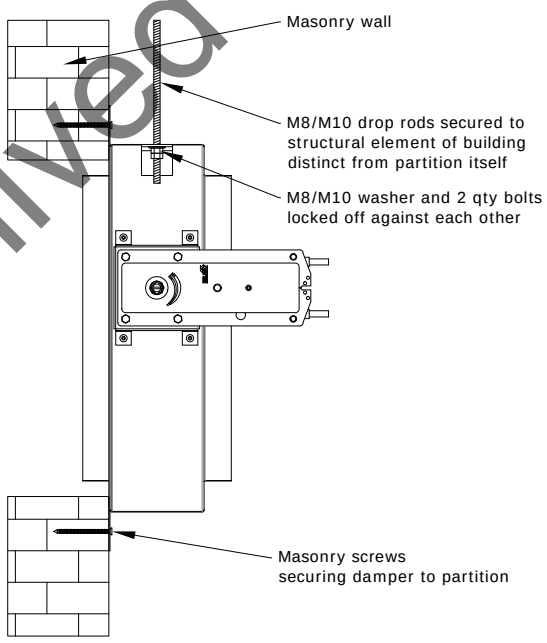
Position the damper spigot (plate frame side) centrally within a correctly sized aperture, constructed in accordance with our S700 installation instructions.

Screw the damper to the wall through the enlarged fixing holes in the plate frame, ensuring all screws gain a positive fix on the masonry.

Fit the actuator's thermal probe to the top half of ductwork.

No backfilling or sealing of the aperture, nor a pattress frame are required.

The damper must be installed so blades run horizontally.



The above is a shortened version of our full installation method and does not contain all details necessary to perform a compliant installation.

To download full installation instructions, declaration of performance and maintenance routine, go to:

www.h-v-c.com/installations

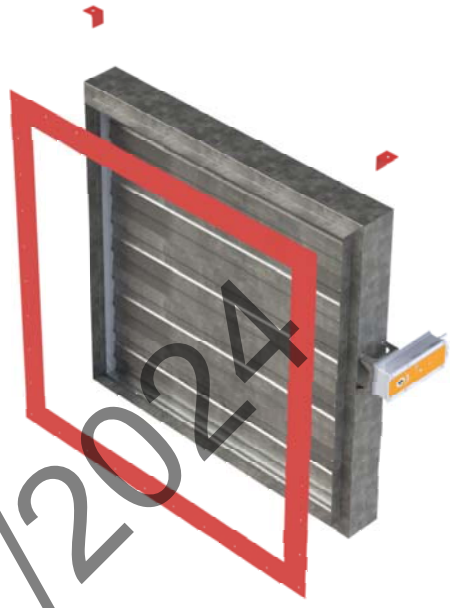
Installation S700-2HC

NCA Series 700 fire damper c/w plate frame in aerated concrete floor slab

Installation classified to (in accordance with BS EN 13501-3):

E 120 (ho i↔o) S

120 minute rated reduced leakage horizontal installation
Air permitted to flow in either direction through damper
Permitted for single section assemblies only



Installation procedure:

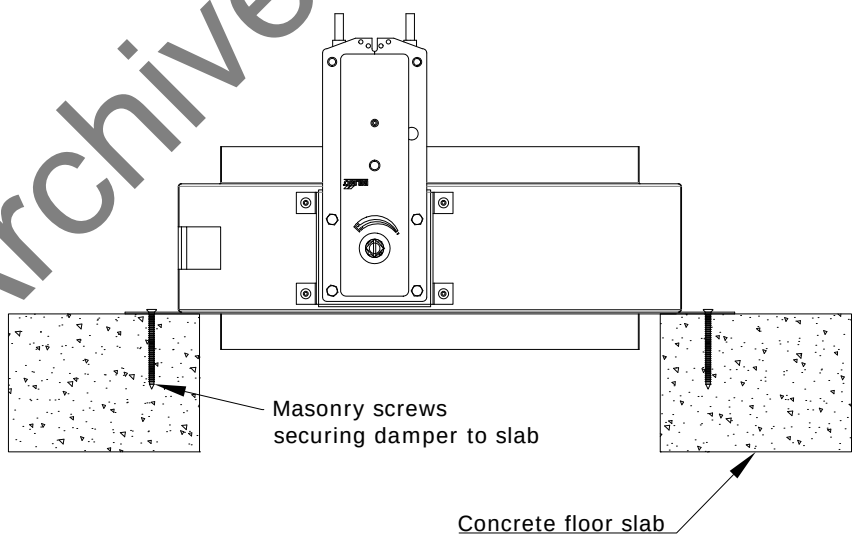
Position the damper spigot (plate frame side) centrally within a correctly sized aperture, constructed in accordance with our S700 installation instructions.

Open the factory punched 5mm diameter fixing holes in the plate frame out to 8mm diameter, then screw the damper to the floor slab ensuring all screws gain a positive fix.

Fit ductwork to damper spigots and then fit the actuator's thermal probe to ductwork.

Fixing lugs are redundant in this installation.

No backfilling or sealing of the aperture, nor a pattress frame are required.



The above is a shortened version of our full installation method and does not contain all details necessary to perform a compliant installation.

To download full installation instructions, declaration of performance and maintenance routine, go to:

www.h-v-c.com/installations

Further information: Direct field of application

Separation between fire dampers and between fire dampers and construction elements

- There should be a minimum of 200mm of supporting construction between fire dampers installed in separate ducts.
- There should be a minimum of 75mm of supporting construction between the fire damper and any adjacent construction element, e.g. a wall or ceiling.

Supporting construction

A test result obtained for a fire damper mounted in or on the face of a standard supporting construction is applicable to a supporting construction of the same type with a fire resistance equal to or greater than that of the standard supporting construction used in the test (thicker, denser, more layers of board etc.)

Control panels

HVC are able to supply, install and commission a full range of fire damper control panels to suit S700 fire dampers throughout the UK and Republic of Ireland, including:

- Single/multiple zone electro-mechanical systems
- Basic addressable systems
- Fully addressable systems

For further information on control panels please contact HVC.

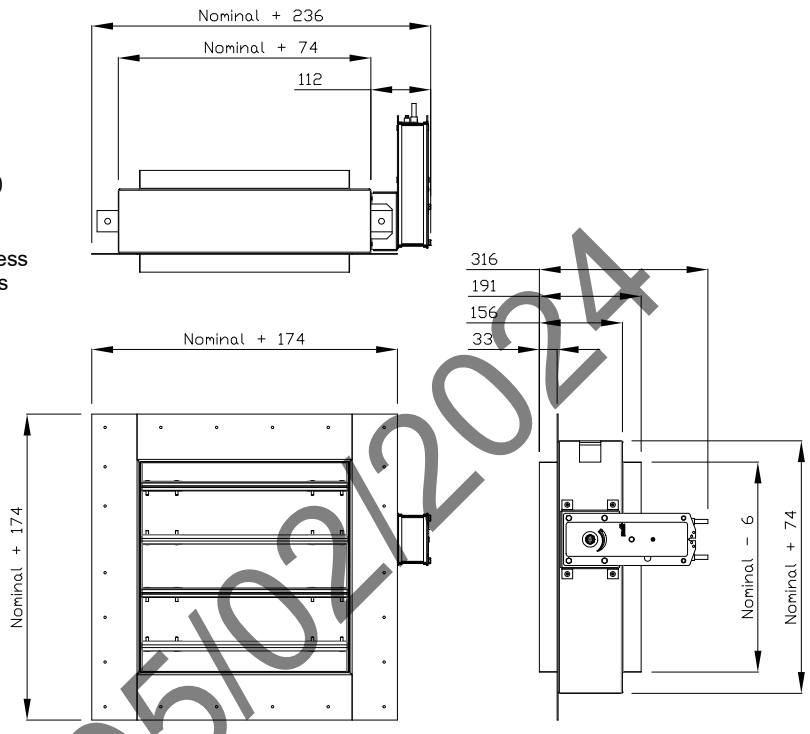
Technical drawings

S700BGP

- Square spigot (35mm deep)
- Spigot 6mm under nominal (duct) width and height
- Min nominal size: 200mm W x 200mm H
- Max nominal size: 1000mm W x 1000mm H (single section)
  2074mm W x 2074mm H (multiple section)

Please note: Units requiring a nominal width/height/diameter of less than 200mm can be supplied using reducing spigots

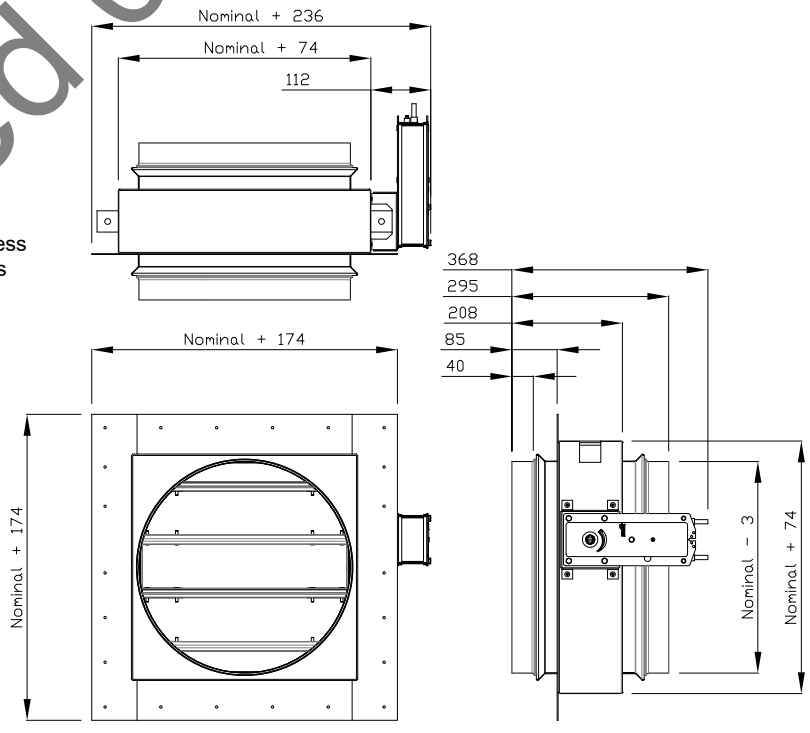
This will increase damper depth by 70mm.



S700CGP

- Circular spigot (40mm deep)
- Spigot 3mm under nominal (duct) diameter
- Min nominal size: 200mm dia.
- Max nominal size: 1000mm dia. (single section)
  2074mm dia. (multiple section)

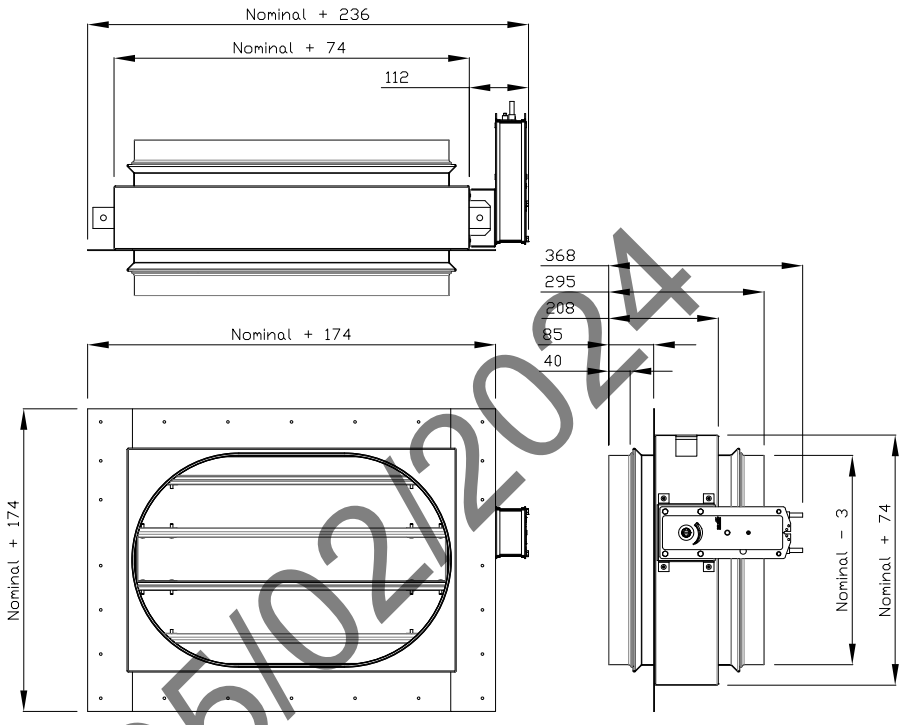
Please note: Units requiring a nominal width/height/diameter of less than 200mm can be supplied using reducing spigots



S700DGP

- Flat oval spigot (40mm deep)
- Spigot 3mm under nominal (duct) width and height
- Min nominal size: 200mm W x 200mm H
- Max nominal size: 1000mm W x 1000mm H (single section)
  2074mm W x 2074mm H (multiple section)

Please note: Units requiring a nominal width/height/diameter of less than 200mm can be supplied using reducing spigots



Weight charts

		Nominal width (mm)																
		200	**250**	**300**	**350**	**400**	**450**	**500**	**550**	**600**	**650**	**700**	**750**	**800**	**850**	**900**	**950**	**1000**
Nominal height (mm)	**200**	10	11	11	12	13	13	14	15	15	16	17	17	18	19	19	20	21
	271	12	12	13	14	14	15	16	17	17	18	19	20	20	21	22	22	23
	371	13	14	15	16	16	17	18	19	20	20	21	22	23	23	24	25	26
	471	15	16	17	17	18	19	20	21	22	23	23	24	25	26	27	28	28
	571	16	17	18	19	20	21	22	23	24	25	26	27	27	28	29	30	31
	671	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
	771	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	37
	871	21	22	24	25	26	27	28	29	30	31	32	34	35	36	37	38	39
	971	23	24	25	26	28	29	30	31	32	34	35	36	37	38	39	41	42
	1000	23	24	25	27	28	29	30	31	33	34	35	36	37	38	40	41	42

Nominal diameter (mm)																
200	**250**	**300**	**350**	**400**	**450**	**500**	**550**	**600**	**650**	**700**	**750**	**800**	**850**	**900**	**950**	**1000**
12	14	17	18	21	23	26	27	31	33	36	38	42	44	48	50	52

- Weights are in kg and include a Belimo BF actuator
- For multiple sections obtain total weight of component single sections and add 10% to cover section joint cover plates.

Single/multiple section assemblies

Single sections

Single section damper assemblies comprise a single damper section complete with single actuator with integrated 72°C rated thermal probe (Belimo BF24-TN or BF230-TN).

Multiple sections

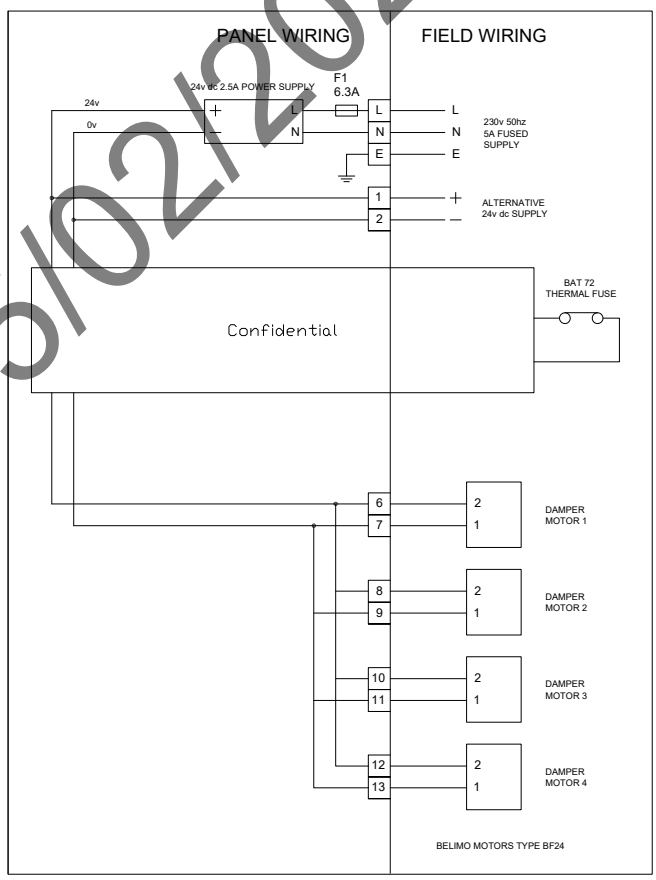
Supplied factory assembled and comprising either two or four dampers depending on the size required.

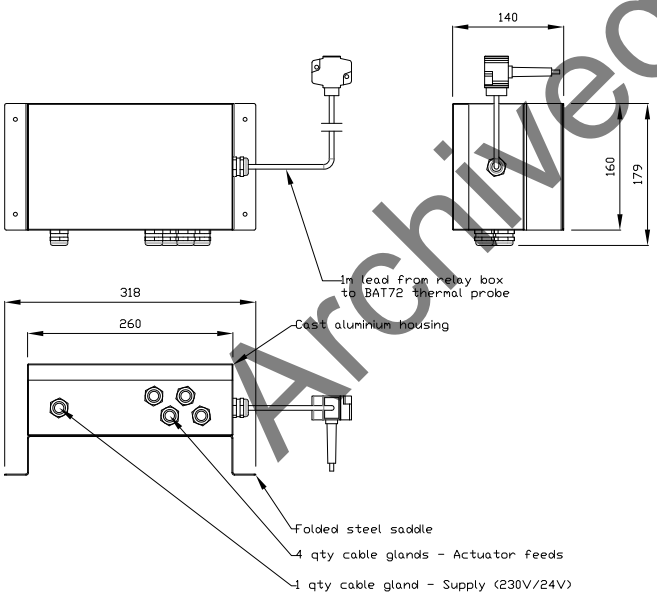
Each component section uses a single Belimo BF24 actuator which is connected on site to a fire damper relay box.

Unique to HVC, fire damper relay boxes ensure that the component single section dampers in a multiple section assembly operate in unison while opening and closing.

Fire damper relay boxes power up to four actuators and are equipped with a single thermal probe which should be fitted to ductwork as normal. Relay boxes should be fitted to the partition or floor, not ductwork.

FIRE DAMPER RELAY BOX CIRCUIT DIAGRAM

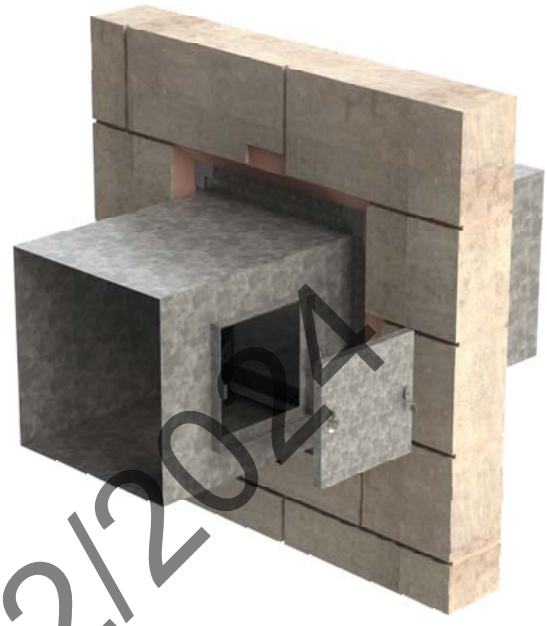




Installation

Installation should take into account the requirements of future maintenance, with a view to providing adequate access to fire dampers for testing and cleaning purposes.

We are able to supply a full range of access doors to facilitate access into ductwork.



Installation into chlorinated environments

We are unable to supply S700 fire dampers suitable for installation into chlorinated environments, swimming baths for example.

Any dampers installed into environments where chlorine is present shall be considered to be installed in an unsuitable location and will therefore not be covered by our standard 12 month warranty.

Maintenance

Maintenance of fire dampers is essential to ensure they remain in good working condition for the life of the building.

An operation and maintenance manual for NCA Series 700 fire dampers is available via:

www.h-v-c.com/oandm

Finish

Bare metal only

Ordering codes

Example

1 - 500 x 500 - S700BGP - BF24-TN

Codes

1)	**Quantity**		
2)	**Size (mm)**	(Width x height / diameter)	Nominal size (see pages 12 and 13 for available sizes)
3)	**Series**	S700	Series 700 motorised leakage rated fire damper
4)	**Duct connection:**	B	Square spigotted
		C	Circular spigotted
		D	Flat oval spigotted
	Material:	G	Galvanised steel
	Frame type:	P	Plate frame
6)	**Actuator/s:**	**Single section damper assemblies only**	
		BF24-TN	Belimo BF series actuator c/w 72°C rated thermal probe, 24 volt
		BF230-TN	Belimo BF series actuator c/w 72°C rated thermal probe, 230 volt
		Multiple section damper assemblies only	
		BF24	Belimo BF series actuator, 24 volt

Important: S700 fire dampers must be supplied with a factory fitted Belimo BF series actuator.
Actuators must always be used in a power open, spring return (fail closed) configuration with S700 fire dampers.
Single section dampers will be supplied with motors on their left side unless specified (as detailed in this brochure).
Multiple section dampers will be supplied with a relay box.

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** 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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