

# Series VN-S

Acoustic Silencers

PUBLICATION

NATURAL VENT 3

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## Features

- Excellent acoustic attenuation properties
- 5 noise reduction performance specification
- Fully non-combustible design
- Galvanised steel frame with mineral wool insert
- Tested to BS EN 10140-2 2010
- BB93 compliant design



## Introduction

Gilbert VN-S introduces a range of silencers designed to provide high noise reduction factors for air intake or air transfer applications through walls and building facades. For an external application for example, the silencer can be fitted behind an external louvre to provide attenuation from external noise sources. For an internal application the unit can be fitted into walls or partitions (concealed behind fascia grilles where necessary) to provide attenuation from internal noise break out i.e. from a corridor into a room. The silencer can also be fitted into fire rated transfer applications if used in combination with an approved fire damper, intumescent damper or a smoke fire damper.

Manufactured from a galvanised steel frame with rockwool inserts the silencers are fully non-combustible and available in 5 noise reduction specification levels ranging from 100 to 600mm deep. The units were independently tested to BS EN 10140-2 2010 and are also compliant with BB93 for acoustics in school buildings.

Sizes range from 250x250 up to 1013x1040 with standard unit depths of 100 and 200mm. Units are fully modular allowing a build depth as great as 600mm.

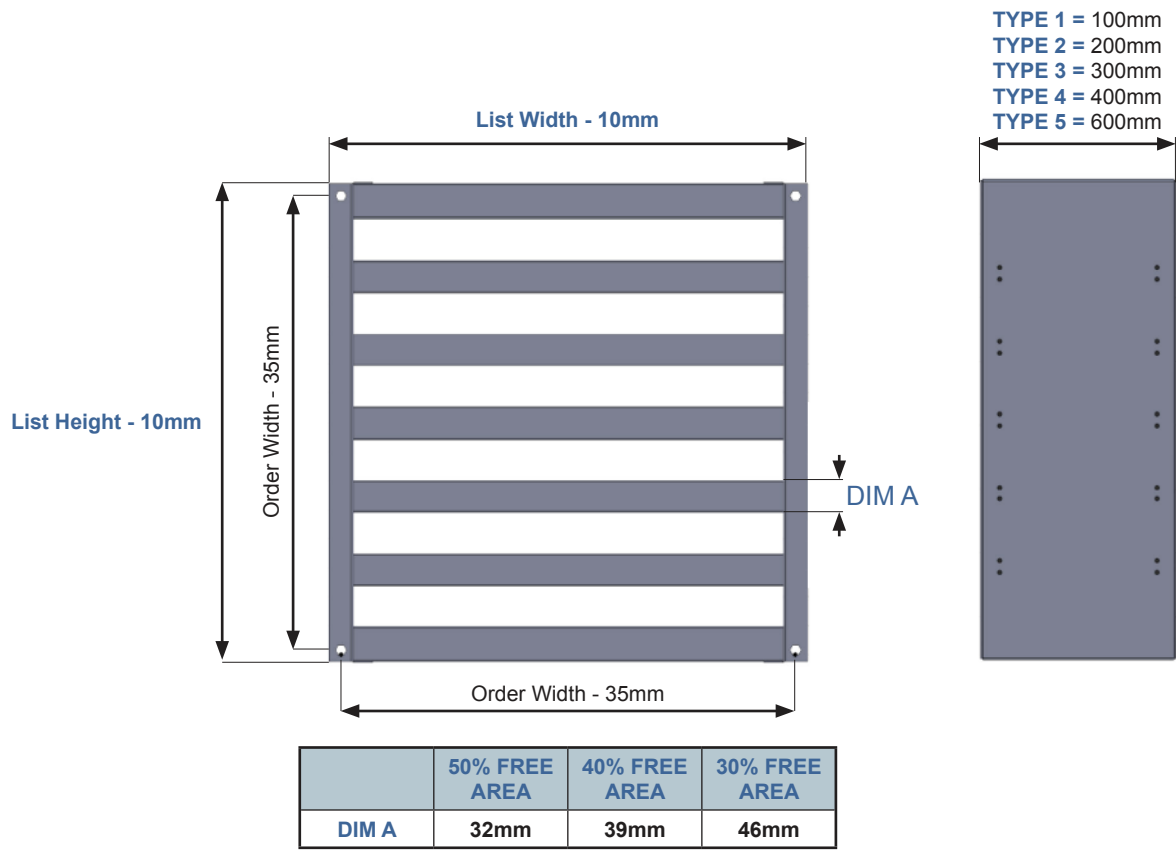
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# Dimensional Data



**Size Range**  
250 - 2013mm wide  
250 - 1040mm high  
in 1mm increments

## Weights/M²

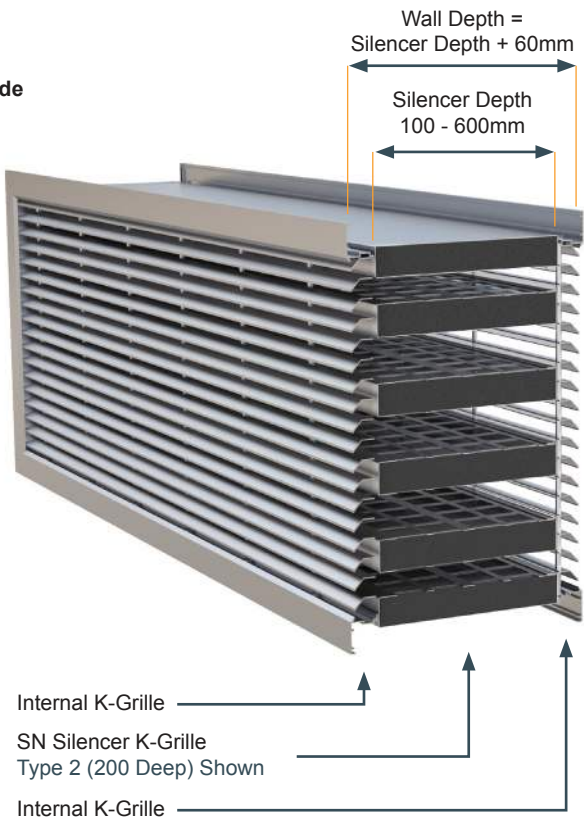
|        | 50% FREE AREA | 40% FREE AREA | 30% FREE AREA |
|--------|---------------|---------------|---------------|
| TYPE 1 | 18kg          | 19kg          | 20kg          |
| TYPE 2 | 28kg          | 30kg          | 32kg          |
| TYPE 3 | 46kg          | 49kg          | 52kg          |
| TYPE 4 | 56kg          | 60kg          | 64kg          |
| TYPE 5 | 84kg          | 90kg          | 96kg          |



# Application Examples

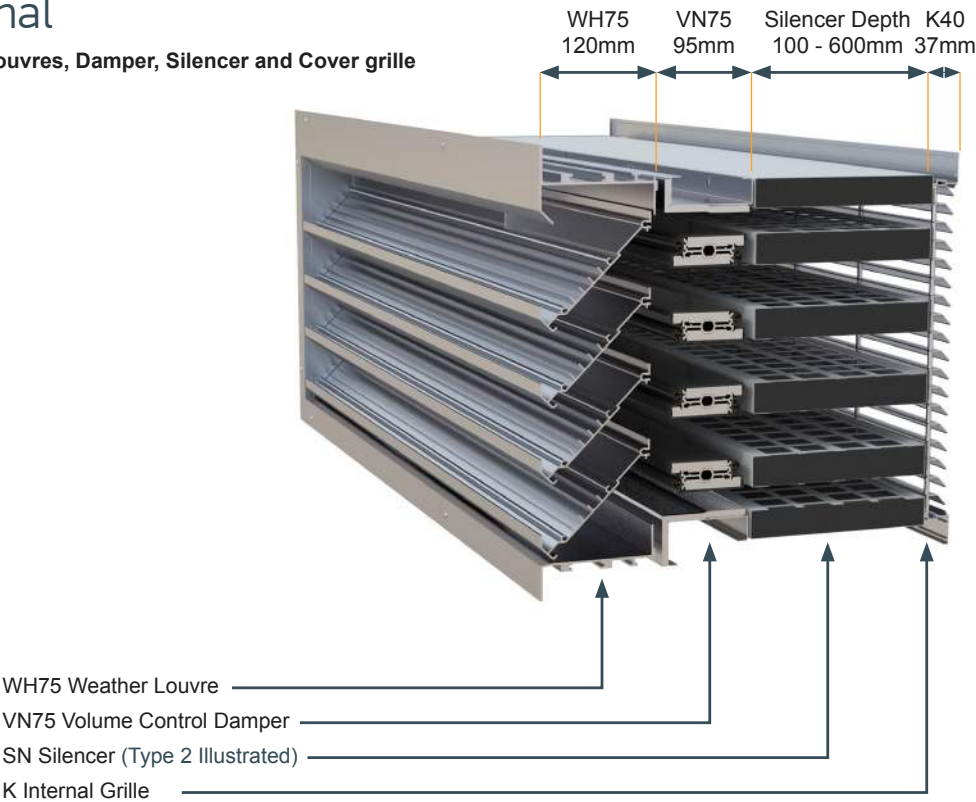
## Air Transfer

Silencer fitted into wall with cover grilles each side



## External

External Louvres, Damper, Silencer and Cover grille



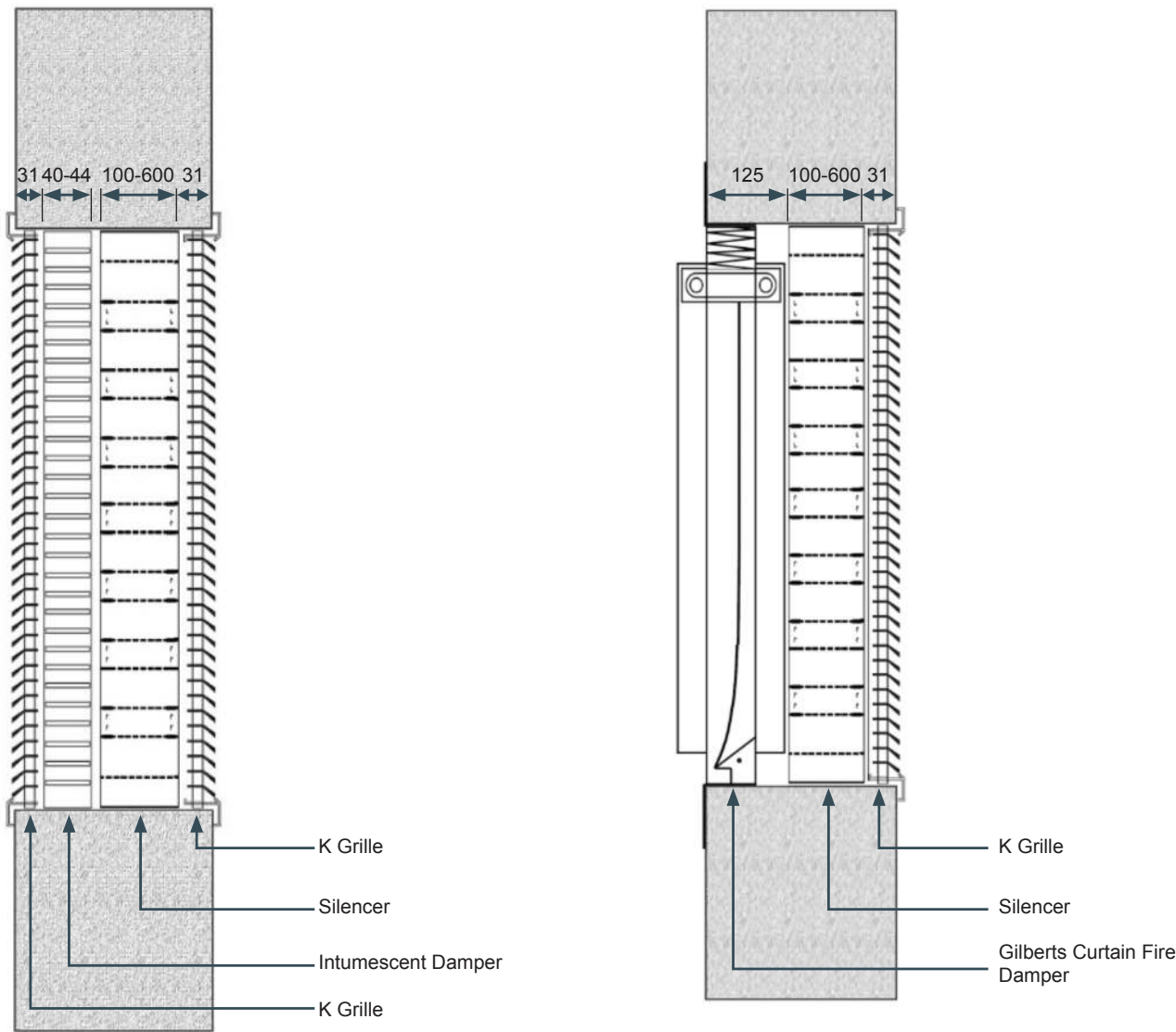
NOTE - Heating Coil Module can also be included\*



# Application Examples

## Smoke/Fire Rated

Silencer fitted into wall with cover grilles each side





## Acoustic Performance Data **Silencer with fascia grilles**

| Section View Illustration                                                           | Silencer Depth*   | Acoustic Performance<br>DN, E, W Reduction (db) |               |                 |
|-------------------------------------------------------------------------------------|-------------------|-------------------------------------------------|---------------|-----------------|
|                                                                                     |                   | 50% Free Area                                   | 40% Free Area | 30% Free Area** |
|    | 100MM<br>[TYPE 1] | 19                                              | 20            | 21              |
|   | 200MM<br>[TYPE 2] | 23                                              | 24            | 25              |
|  | 300MM<br>[TYPE 3] | 25                                              | 27            | 29              |
|  | 400MM<br>[TYPE 4] | 27                                              | 29            | 31              |
|  | 600MM<br>[TYPE 5] | 30                                              | 32            | 34              |

### Notes

1. \*Allow Additional 60mm For Wall Depth Based On 2 K-Grilles Fitted (as Per Illustrations)
2. \*\*30% Free Area Figures Have Been Projected Based On Linearity.
3. Performance Data Based On 1380w X 365h (0.5m<sup>2</sup> Area) Silencer With K Grilles
4. RW Reduction Data Available *[Dn,E,W -12 Can Be Used As Guide.]*
5. Full Test Report Available On Application.



## Acoustic Performance Data Silencer with Louvre, Damper & Fascia Grille

| Section View                                                                        | Silencer Depth*   | DN,E,W REDUCTION [DB]<br>DAMPER OPEN |               |               | DN,E,W REDUCTION [DB]<br>DAMPER CLOSED |               |               |
|-------------------------------------------------------------------------------------|-------------------|--------------------------------------|---------------|---------------|----------------------------------------|---------------|---------------|
|                                                                                     |                   | 50% Free Area                        | 40% Free Area | 30% Free Area | 50% Free Area                          | 40% Free Area | 30% Free Area |
|    | 100MM<br>[TYPE 1] | 23                                   | 23            | 24            | 42                                     | 42            | 42            |
|   | 200MM<br>[TYPE 2] | 26                                   | 27            | 28            | 43                                     | 44            | 44            |
|  | 300MM<br>[TYPE 3] | 27                                   | 29            | 30            | 45                                     | 47            | 47            |
|  | 400MM<br>[TYPE 4] | 30                                   | 31            | 32            | 45*                                    | 46            | 48            |
|  | 600MM<br>[TYPE 5] | 32                                   | 34            | 36            | 45                                     | 47            | 49            |

### Notes

1. Performance Data Based On 1500w X 400h (0.6m<sup>2</sup> Area) WH75 Louvre + VN75 Damper + Silencer + K Grille.
2. Vn75 Damper With Wh75 Louvre In Open Position [No Silencer] Provides Dn,E,W 17db Reduction.
3. Vn75 Damper With Wh75 Louvre In Closed Position [No Silencer] Provides Dn,E,W 35db Reduction.
4. Add 1db Noise Reduction If Heating Coil Is Included.
5. Rw Reduction Data Available. [Dn,E,W -12 Can Be Used As Guide]
6. \*Adjusted To Match Linearity



# Pressure Drop [Pa] and CD Values

## Silencer Only

| SILENCER TYPE / FREE AREA | PRESSURE DROP [Pa] @ VELOCITY |        | CD VALUE |
|---------------------------|-------------------------------|--------|----------|
|                           | 0.5M/S                        | 1.0M/S |          |
| 50%                       | 0.7                           | 3      | 0.46     |
| 40%                       | 1.2                           | 5      | 0.36     |
| 30%                       | 2.7                           | 11     | 0.24     |

## Silencer + Single K0/K15 Grille

| SILENCER TYPE / FREE AREA | PRESSURE DROP [Pa] @ VELOCITY |        | CD VALUE |
|---------------------------|-------------------------------|--------|----------|
|                           | 0.5M/S                        | 1.0M/S |          |
| 50%                       | 0.9                           | 3.5    | 0.41     |
| 40%                       | 1.4                           | 6      | 0.33     |
| 30%                       | 2.7                           | 11     | 0.23     |

### With Two K0/15 -Grilles Use The Following Correction Factors:

50% Silencer = 10% Decrease In Cd Value / Increase In Pressure Drop

40% Silencer = 7.5% Decrease In Cd Value / Increase In Pressure Drop

30% Silencer = 5% Decrease In Cd Value / Increase In Pressure Drop

## Silencer + K40 Grille

| SILENCER TYPE / FREE AREA | PRESSURE DROP [Pa] @ VELOCITY |        | CD VALUE |
|---------------------------|-------------------------------|--------|----------|
|                           | 0.5M/S                        | 1.0M/S |          |
| 50%                       | 1.7                           | 7      | 0.30     |
| 40%                       | 2.4                           | 9      | 0.26     |
| 30%                       | 3.7                           | 15     | 0.20     |

### With Two K0/15-Grilles Use The Following Correction Factors:

50% Silencer = 20% Decrease In Cd Value / Increase In Pressure Drop

40% Silencer = 15% Decrease In Cd Value / Increase In Pressure Drop

30% Silencer = 10% Decrease In Cd Value / Increase In Pressure Drop

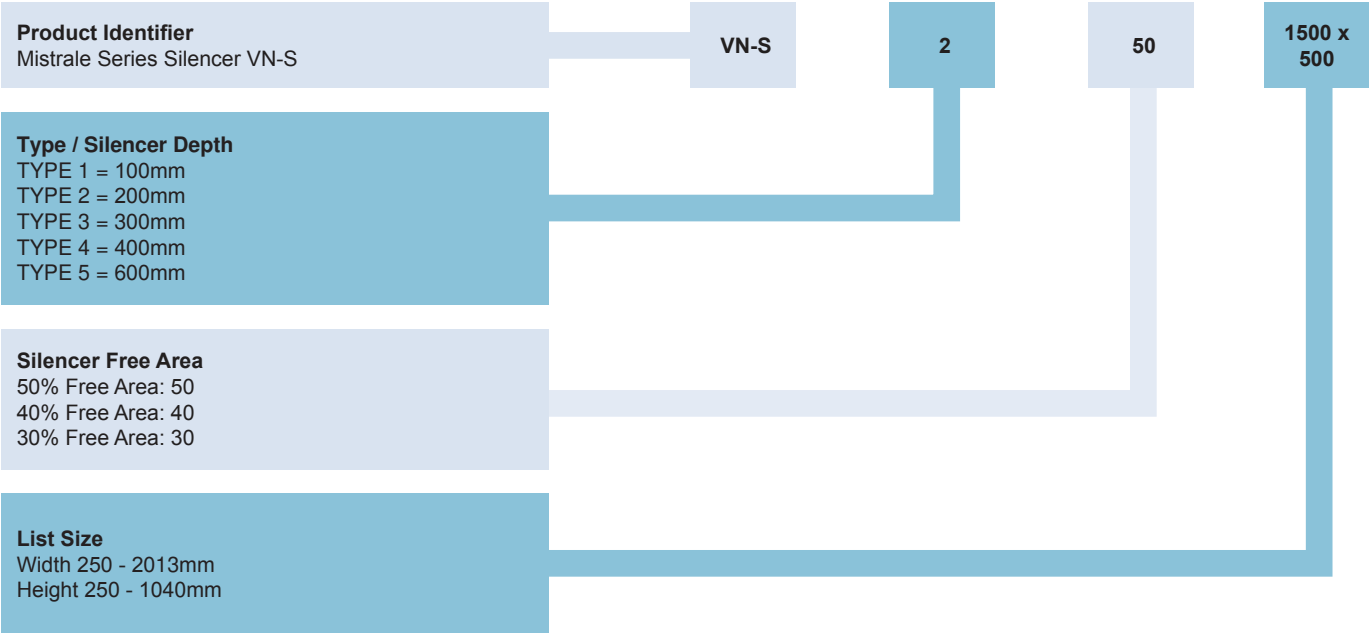
## Silencer + VN75 Damper + WH75 Louvre + K0/K15 Grille

| SILENCER TYPE / FREE AREA | PRESSURE DROP [Pa] @ VELOCITY |      | CD VALUE | CD VALUE WITH K40 GRILLE |
|---------------------------|-------------------------------|------|----------|--------------------------|
|                           | 0.5M/S                        | 1M/S |          |                          |
| 50%                       | 4.2                           | 17   | 0.21     | 0.19                     |
| 40%                       | 4.8                           | 19   | 0.20     | 0.18                     |
| 30%                       | 6.4                           | 25   | 0.18     | 0.16                     |

**Note:** Data above applies to all depth types 1 to 5



# Ordering Specification



When ordering for use with natural ventilation dampers (Type VN-75) please check with office for correct dimensions.

**GILBERTS**  
Head Office and Works  
**GILBERTS (BLACKPOOL) LTD**  
Gilair Works, Clifton Road,  
Blackpool, Lancashire FY4 4QT.

Telephone: **(01253) 766911**  
e-mail: **sales@gilbertsblackpool.co.uk**  
Web: **www.gilbertsblackpool.com**

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