Product spec >>>

> Series DD - Double deflection grilles
Overview

Enhanced functionality

As per the name, double deflection grilles add another row of blades set at 90° to the forward set, enabling throw to be created in a 360° pattern. Just like their single deflection counterparts though, volume control and a wide range of further options and accessories are available for Series DD grilles.

Specifications:

Materials: Extruded aluminium throughout.
Construction: Two rows of adjustable blades within frame, both extruded aluminium.
Blades held in place with high tensile spring wire & starlock washers.
Frame: Standard - 32mm bevelled.
Optional - See page 40.
Fixings: Standard - None.
Optional - See page 39.
Sizes: Minimum size single unit 100mm x 50mm.
Maximum size single unit 2900mm x 2900mm.
Mullions: Central mullion on any unit above 570mm wide or high.
Finish: Standard - Satin anodised (AA5).
Optional - Polyester powder coat to any RAL / BS colour.

Adjustability

The second bank of individually adjustable blades allows for even greater adjustment of throw, able to create a full 360° of even flow. Perfect for ceiling applications where all round blow is required.

Aesthetics

The range of frame types, and HVC’s full in-house powder coating facility means you need never worry that your double deflection grille will not compliment any building it is fitted into.
**Series DD**

**SIZE**
(Nominal / overall w x h [mm])

<table>
<thead>
<tr>
<th>25mm flat flange (Opt)</th>
<th>32mm bevelled flange (Std)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Nominal + 30mm</td>
<td>A Nominal + 45mm</td>
</tr>
<tr>
<td>B 46mm</td>
<td>B 46mm</td>
</tr>
<tr>
<td>C 90mm</td>
<td>C 90mm</td>
</tr>
<tr>
<td>D 25mm</td>
<td>D 32mm</td>
</tr>
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</table>

**FINISH**
- Satin anodised.........SAA
- Powder coat..............RAL/BS

**FIXINGS - Overleaf**
- Countersunk face.........FH
- Concealed fixings.........CF
- Goalpost brackets.........GB
- Push in clips..............PC

**CORE TYPE - Overleaf**
- Fixed..............................HC
- Hinged............................HC
- Fully removable............RC

**FRAME TYPE - Overleaf**
- 32mm bevelled..............
- 25mm flat.....................25F
- Others page 40............[#]

**SERIES**
- Overleaf.....................

**DAMPER**
- Opposed blade...............D
Grilles
Hinged & removable cores

Overview

Envisage you need access to the ductwork behind a grille to inspect a fire damper, or to adjust a rear mounted opposed blade damper.
Without a removable or hinged core the whole grille will have to be removed. Not only a time consuming process, but also likely damaging the grille itself and the wall or ceiling in the process.

Removable core

Enabling the core to be removed entirely from the frame allows maximum entry space into ductwork behind.
Held within its own frame, the core comes out in one whole unit for maximum ease.
Colour matched bolts are fitted as standard.

Hinged core

Held within its own frame as with the removable option, a silver piano hinge is fitted to one side of the internal frame.
Able to swing out to 180°, access through hinged grilles is comparable to their fully removable cousins.
Cam fasteners are fitted as standard, bolts will be fitted upon specification.

<table>
<thead>
<tr>
<th>Grille series</th>
<th>Core type</th>
<th>SD</th>
<th>DD</th>
<th>FB</th>
<th>ECG</th>
<th>NV</th>
<th>CB</th>
<th>LG</th>
<th>LGFR</th>
<th>CFLG</th>
<th>RGS</th>
<th>PSG</th>
<th>LFP</th>
<th>PPG</th>
<th>LCD</th>
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<tbody>
<tr>
<td></td>
<td>Hinged core</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
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<td>✓</td>
<td>x</td>
<td>N/A</td>
<td>N/A</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Removable core</td>
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<td>✓</td>
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<td>✓</td>
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<td>x</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
Countersunk fixing holes: Code suffix FH

Countersunk fixing holes in the grille frame are the easiest fitting method. Screws in the same finish are supplied with the grille.

Concealed fixings: Code suffix CF

Consisting of L brackets with threaded ports, one L bracket is fixed into the ductwork or plenum, the other is riveted to the rear of the grille frame. Supplied bolts are then used to hold the grille into the supporting structure.

Goalpost method: Code suffix GB

Normally used on linear slot diffusers, HVC has made this effective fixing method available to a wider range of grilles with the addition of a second bracket. It enables the whole grille to be fully supported by, and removable from the plenum.

This method is only suitable for linear grilles with 0° blade, single / double deflection grilles, egg crate grilles, curved blade grilles, and any other grille with the removable or hinged core option specified.

Push-in clip method: Code suffix PC

These sprung clips are compressed when the grille is pushed into place. The outward force provided then holds the grille securely in place.

This method has the advantage of requiring no drilling or bolting, for maximum ease and causing no damage to walls or ceilings.
### Grilles

#### Frame types

<table>
<thead>
<tr>
<th>Frame types</th>
<th>SD</th>
<th>DD</th>
<th>FB</th>
<th>ECG</th>
<th>NV</th>
<th>CB</th>
<th>LG</th>
<th>LGFR</th>
<th>CFLG</th>
<th>SDG</th>
<th>PSG</th>
<th>LFP</th>
<th>PPG</th>
<th>LCD</th>
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</thead>
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<tr>
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<td>✓</td>
<td>✓</td>
<td>X</td>
<td>X</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>STD</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>1 way</td>
<td>X</td>
<td>X</td>
<td>✓</td>
<td>✓</td>
<td>X</td>
<td>X</td>
<td>✓</td>
<td>✓</td>
<td>X</td>
</tr>
<tr>
<td>3 NV angle</td>
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<td>X</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>X</td>
<td>X</td>
<td>✓</td>
<td>✓</td>
<td>X</td>
</tr>
<tr>
<td>4 32mm small bevelled</td>
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<td>✓</td>
<td>X</td>
<td>X</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>STD</td>
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<tr>
<td>5 32mm large bevelled</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>STD</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>X</td>
</tr>
<tr>
<td>6 32mm ECG</td>
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<td>X</td>
<td>X</td>
<td>STD</td>
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<td>X</td>
<td>X</td>
<td>X</td>
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<td>✓</td>
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<td>✓</td>
<td>✓</td>
<td>X</td>
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<td>7 25mm ECG</td>
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<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>X</td>
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<tr>
<td>8 Slimline surface mounted</td>
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<td>X</td>
<td>X</td>
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<td>✓</td>
<td>✓</td>
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<td>✓</td>
<td>✓</td>
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<td>X</td>
</tr>
<tr>
<td>9 Large surface mounted</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>X</td>
</tr>
</tbody>
</table>
Throw values based on grilles mounted in sidewall not more than 1m below an unrestricted ceiling.

For grilles positioned more than 1m below an unrestricted ceiling, reduce throw values by 25%.

Sound power & pressure levels are based upon supply air with dampers fully open. Without dampers subtract 2dB and multiply total pressure by 0.9.

Throw values based on a 10°C cooling application. For isothermal applications, increase throw values by 25%. 

Selection data

Volume (l/s) | Volume (cfm) | Throw  (m) 10°C cooling | Total pressure (N/m sq) | Duct velocity (M/s) | 0 degree deflection | 45 degree deflection | NRLW - Sound pressure level | Inches | mm | mm | Inches
---|---|---|---|---|---|---|---|---|---|---|---|---
3000 | 6000 | | | | | | | 6 | 152 | 102 | 4
2500 | 5000 | | | | | | | 10 | 254 | 152 | 6
2000 | 4000 | | | | | | | 12 | 305 | 203 | 8
1500 | 3000 | | | | | | | 15 | 356 | 254 | 10
1000 | 2000 | | | | | | | 20 | 406 | 305 | 12
900 | 1800 | | | | | | | 25 | 457 | 356 | 14
800 | 1600 | | | | | | | 30 | 508 | 406 | 16
700 | 1400 | | | | | | | 35 | 559 | 457 | 18
600 | 1200 | | | | | | | 40 | 610 | 508 | 20
500 | 1000 | | | | | | | 45 | 660 | 559 | 22
400 | 800 | | | | | | | 50 | 711 | 610 | 24
300 | 600 | | | | | | | 55 | 762 | 660 | 26
250 | 500 | | | | | | | 60 | 813 | 711 | 28
200 | 400 | | | | | | | 65 | 864 | 762 | 30
150 | 300 | | | | | | | 70 | 914 | 813 | 32
100 | 200 | | | | | | | 75 | 965 | 864 | 34
50 | 100 | | | | | | | 80 | 1016 | 914 | 36
0.5 | 0.5 | | | | | | | 85 | 1067 | 965 | 38
1 | 1 | | | | | | | 90 | 1118 | 1016 | 40
2 | 2 | | | | | | | 95 | 1168 | 1067 | 42
3 | 3 | | | | | | | 100 | 1219 | 1118 | 44
20 | 20 | | | | | | | 100 | 203 | 152 | 6
50 | 50 | | | | | | | 50 | 152 | 102 | 4
100 | 100 | | | | | | | 100 | 254 | 152 | 6
150 | 150 | | | | | | | 150 | 305 | 203 | 8
200 | 200 | | | | | | | 200 | 356 | 254 | 10
250 | 250 | | | | | | | 250 | 406 | 305 | 12
300 | 300 | | | | | | | 300 | 457 | 356 | 14
350 | 350 | | | | | | | 350 | 508 | 406 | 16
400 | 400 | | | | | | | 400 | 559 | 457 | 18
450 | 450 | | | | | | | 450 | 610 | 508 | 20
500 | 500 | | | | | | | 500 | 660 | 559 | 22
550 | 550 | | | | | | | 550 | 711 | 610 | 24
600 | 600 | | | | | | | 600 | 762 | 660 | 26
650 | 650 | | | | | | | 650 | 813 | 711 | 28
700 | 700 | | | | | | | 700 | 864 | 762 | 30
750 | 750 | | | | | | | 750 | 914 | 813 | 32
800 | 800 | | | | | | | 800 | 965 | 864 | 34
850 | 850 | | | | | | | 850 | 1016 | 914 | 36
900 | 900 | | | | | | | 900 | 1067 | 965 | 38
950 | 950 | | | | | | | 950 | 1118 | 1016 | 40
1000 | 1000 | | | | | | | 1000 | 1168 | 1067 | 42
1050 | 1050 | | | | | | | 1050 | 1219 | 1118 | 44

www.h-v-c.com
Overview

Designed to facilitate the fitment of ducting to a grille or diffuser. HVC plenum boxes are available in top or side entry models with one or multiple spigots of any diameter. Fire rated models & acoustically lined variants are also available.

Specifications:

Materials: Galvanised steel throughout

Construction: Brake press formed.
Spot welding on spigots.
Sealant used on any joints.

Fixings: Standard - Plenum riveted (or other suitable method) to grille or diffuser on site.
Optional - Fixing lugs to suit drop rod ceiling.

Flange: 12.5mm outturned flange used on everything except type CD and PPD diffusers.

Finish: Standard - Galvanised steel.
Optional - Painted to any RAL / BS colour.

The chart below gives maximum volume in m³/s that shown spigot sizes can handle for a given noise level, with neck velocities in m/s.

<table>
<thead>
<tr>
<th>NC Level</th>
<th>Diameter</th>
<th>25</th>
<th>30</th>
<th>35</th>
<th>40</th>
<th>45</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>2.5m/s</td>
<td>3.0m/s</td>
<td>3.5m/s</td>
<td>4.0m/s</td>
<td>4.5m/s</td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>0.019</td>
<td>0.023</td>
<td>0.027</td>
<td>0.031</td>
<td>0.035</td>
<td></td>
</tr>
<tr>
<td>125</td>
<td>0.03</td>
<td>0.037</td>
<td>0.043</td>
<td>0.049</td>
<td>0.055</td>
<td></td>
</tr>
<tr>
<td>150</td>
<td>0.044</td>
<td>0.053</td>
<td>0.062</td>
<td>0.07</td>
<td>0.079</td>
<td></td>
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<tr>
<td>160</td>
<td>0.05</td>
<td>0.06</td>
<td>0.07</td>
<td>0.08</td>
<td>0.09</td>
<td></td>
</tr>
<tr>
<td>175</td>
<td>0.06</td>
<td>0.072</td>
<td>0.084</td>
<td>0.096</td>
<td>0.108</td>
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<tr>
<td>200</td>
<td>0.078</td>
<td>0.094</td>
<td>0.11</td>
<td>0.125</td>
<td>0.14</td>
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<tr>
<td>225</td>
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<td>0.16</td>
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<tr>
<td>250</td>
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<td>0.17</td>
<td>0.196</td>
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<tr>
<td>300</td>
<td>0.177</td>
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<td>0.28</td>
<td>0.32</td>
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<tr>
<td>315</td>
<td>0.195</td>
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<td>0.27</td>
<td>0.31</td>
<td>0.35</td>
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<tr>
<td>350</td>
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<tr>
<td>400</td>
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<td>0.44</td>
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<tr>
<td>450</td>
<td>0.4</td>
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<td>0.72</td>
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<td>550</td>
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<td>600</td>
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<td>0.85</td>
<td>0.99</td>
<td>1.13</td>
<td>1.27</td>
<td></td>
</tr>
</tbody>
</table>
Fire rated: Series FRTEPB / FRSEPB

Constructed from fully welded 1.22mm thick galvanised steel, and with an integrated S200 fire damper rated for a period of six hours, or an intumescent damper rated at one hour.

The spring loaded damper blades of S200 fire dampers also mean that top entry boxes can be made fire rated, as well as side entry.

HVC always recommend consulting the relevant fire authority when installing fire rated HVAC equipment.

Side entry: Series FRSEPB

Top entry: Series FRTEPB
Grilles & diffusers
Louvres
Fire / Fire smoke dampers
Volume control dampers

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