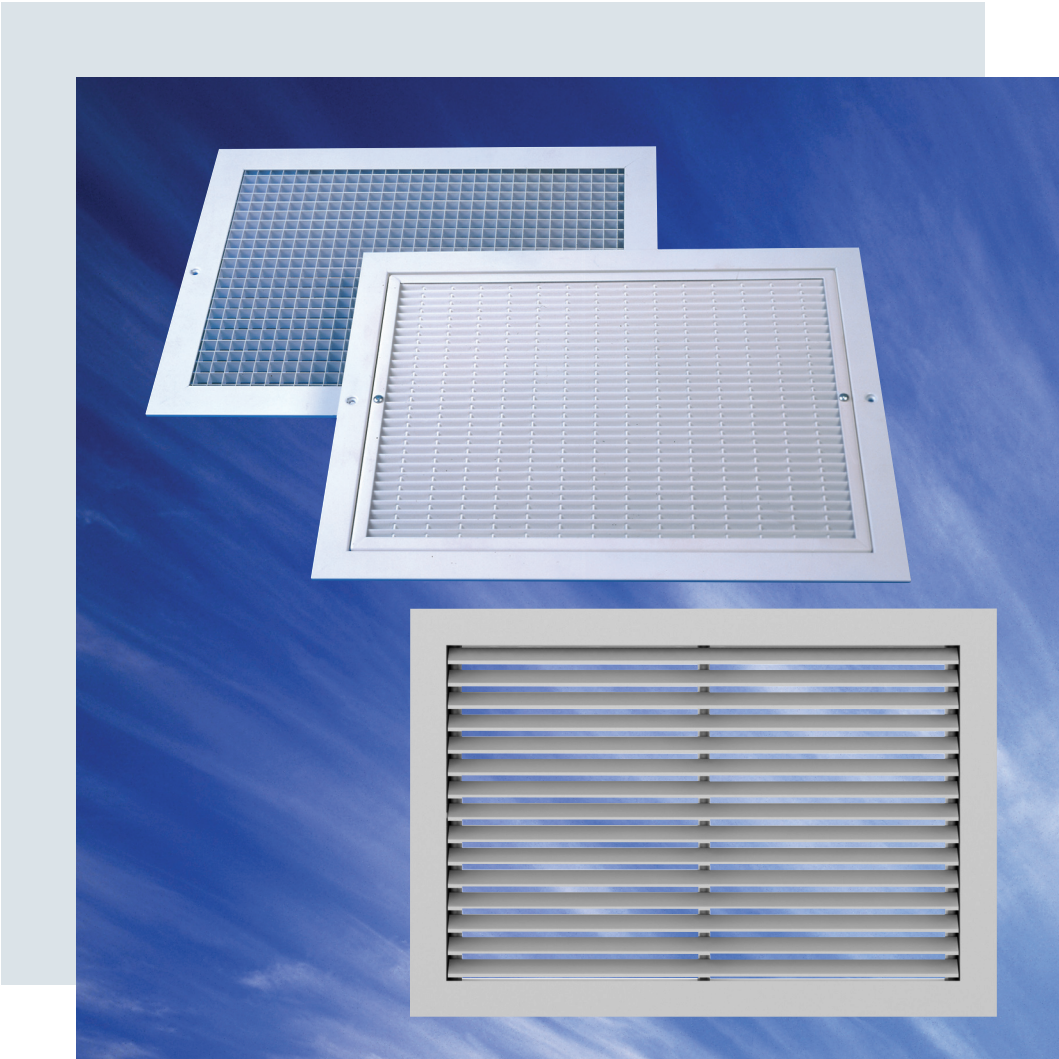




E N G I N E E R E D A I R P R O D U C T S

RETURN AIR GRILLES

G SERIES



G

SERIES

RETURN AIR GRILLES

G SERIES

QUALITY AND EFFICIENCY
WITHOUT COMPROMISE

Application:

Colman's range of Return Air Grilles have been designed to complement our Supply Diffusers for both side wall and ceiling applications. The range is available in a wide variety of styles and sizes to suit individual application requirements.

Description:

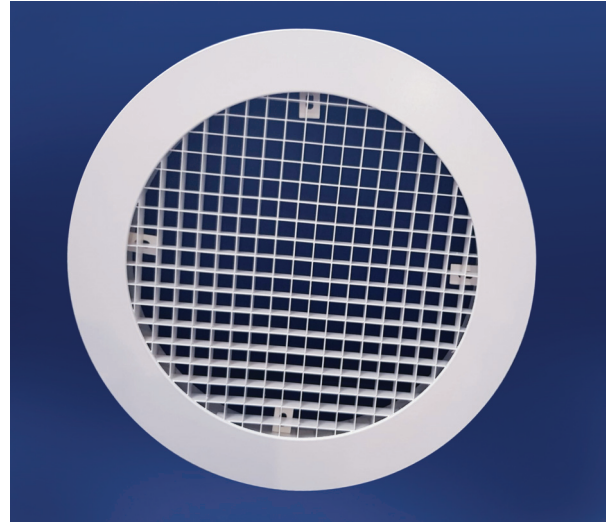
With three standard frames and four styles of core, the range provides a flexible group of grilles to meet most functional and installation requirements.

Grilles utilising our 'B' style frame have integral cores++ which are retained by spring clips on the rear of the extrusion, whilst the 'H' style houses the core in a U channel panel frame, removable from the face and allowing access to the duct without having to remove the whole grille.

Fixings:



The most common method for fixing our range of Return Air Grilles is screw fixing through the flange face (method G) or through the flange neck (method A). However, to suit the wide selection of products within this range a number of alternative standard fixing arrangements are available, see the product coding section of this brochure for additional information.



Colman can manufacture circular eggcrates to suit standard duct sizes.



All models are available with opposed blade volume control dampers operable from the face of the grille and sealing gasket is available as an option.

Finish:

Return Air Grilles are available as standard in powder coated RAL 9010 Matt White.

Grilles which are manufactured totally from aluminium are also available in a natural anodised finish, please contact sales office for availability.

Please refer to the product coding section of this brochure for a list of other standard finishes. Special finishes are available upon request.

All grilles are pre-treated utilising a six stage phosphate conversion process conforming to ISO 9171 prior to being powder coated in accordance with BS6496.

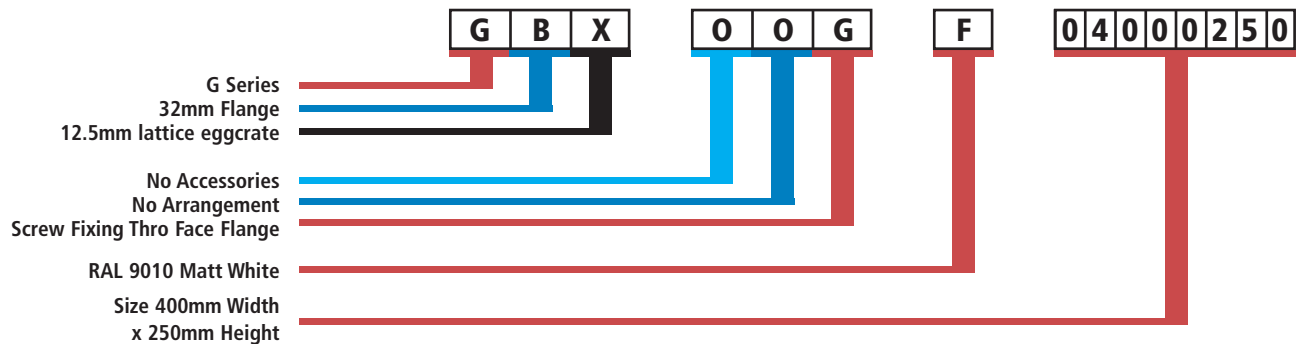
Options and Order Codes

Return Air Grilles

| 1 | 2 FRAME | 3 CORE | 4 ACCESSORIES | 5 ARRANGEMENT | 6 FIXING | 7 FINISH |
|----------|--|---|--|---|---|---|
| G | 0 Core only B 32mm frame for fixed core H 25mm frame for removable core U Channel | F Aluminium bar set at 45° V Steel non-vision X 12.5mm aluminium lattice | 0 None V Face operated volume control damper X Face operated volume control damper (painted matt black) | 0 None A 100mm dia top conversion B 125mm dia top conversion C 150mm dia top conversion D 200mm dia top conversion E 250mm dia top conversion F 300mm dia top conversion G 350mm dia top conversion H 400mm dia top conversion J 450mm dia top conversion K 500mm dia top conversion L 100mm sq top conversion M 125mm sq top conversion N 150mm sq top conversion P 200mm sq top conversion Q 250mm sq top conversion R 350mm sq top conversion T 400mm sq top conversion V 450mm sq top conversion W 500mm sq top conversion 1 Special CC Circular | 0 None A Screw fixing thro neck D Universal extended bracket G Screw fixing thro flange H Hanger bkt Ceur 1140 S Steel hanger bkt fitted to conversion U Universal bracket X Extended hanger bracket | 0 Mill finish F Ral 9010 Matt white A Anodised 9 Satin anodised 8 Matt black C BS00E55 Gloss H BS00E55 Satin D BS00E55 Matt E Ral 9010 Gloss G Ral 9010 Satin 3 Ral 9006 Aluminium 1 Special colours |
| | Note see product data sheet for frame sizes. | Note see product data sheet for frame sizes. | Note damper not available with circular grille. | | Note 1/ Code D for diffuser with VCD's only. 2/ Code D, E, H, U, X to be used only with B frame. 3/ Code S or G to be used with B, H, frame when conversion required. | Note A and 9 can only be used with aluminium cores. |

Note: The items shown in red print above and below in the code example are the standard option for this product. Unless shown otherwise on any quotation or order the units will be supplied in this configuration.

Example of Order Codes



Plenum Boxes

| 1 | 2 LINING | 3 INSTALLATION | 4 ACCESSORIES | 5 ARRANGEMENT | 6 SPIGOT TYPE | 7 SPIGOT SIZE |
|----------|--|--|--|------------------|---|--|
| G | L Lined (6mm Bestobell) N Unlined | 0 None U Universal brackets | 0 None M Mono blade cord operated damper N Mono blade cord operated damper painted matt black (internally only) P No accessories painted matt black (internally only) | E Extract | R Round - Side entry S Square - Side entry T Round - Top entry W Round - Flush with top of unit X Square - Flush with top of unit Y Square - Top entry 1 Special | A 100 B 125 C 150 D 200 E 250 F 300 G 350 H 400 J 450 K 500 L 160 M 180 N 224 P 280 R 315 S 355 1 Special |
| | | | Note: Max size mono blade 400 dia 350sq | | | |

Performance Data

| X Core Return | | | | | | | | |
|---------------------------------|---------------------|----|----------------|----|----------------|----|----------------|----|
| Air Volume m ³ /s | Face Velocity (m/s) | | | | | | | |
| | 2 | | 2.5 | | 3 | | 4 | |
| | m ² | NR | m ² | NR | m ² | NR | m ² | NR |
| .05 | .025 | - | .02 | - | .017 | 16 | .013 | 25 |
| .075 | .038 | - | .03 | - | .025 | 18 | .019 | 26 |
| .10 | .05 | - | .04 | - | .033 | 18 | .025 | 28 |
| .125 | .063 | - | .05 | - | .042 | 19 | .031 | 29 |
| .15 | .075 | - | .06 | - | .05 | 21 | .038 | 29 |
| .175 | .088 | - | .07 | 16 | .058 | 21 | .044 | 30 |
| .20 | .10 | - | .08 | 17 | .067 | 22 | .05 | 30 |
| .25 | .125 | - | .10 | 17 | .083 | 23 | .063 | 31 |
| .30 | .15 | - | .12 | 18 | .10 | 24 | .075 | 32 |
| .35 | .175 | - | .14 | 19 | .117 | 24 | .088 | 33 |
| .40 | .20 | - | .16 | 20 | .133 | 25 | .10 | 34 |
| .45 | .225 | - | .18 | 20 | .15 | 25 | .113 | 34 |
| .50 | .25 | - | .20 | 21 | .167 | 26 | .125 | 35 |
| .60 | .30 | - | .24 | 21 | .20 | 27 | .15 | 35 |
| .70 | .35 | - | .28 | 22 | .233 | 27 | .175 | 36 |
| .80 | .40 | - | .32 | 23 | .267 | 28 | .20 | 37 |
| .90 | .45 | - | .36 | 23 | .30 | 28 | .225 | 37 |
| 1.00 | .50 | 16 | .40 | 24 | .333 | 29 | .25 | 38 |
| 1.25 | .625 | 17 | .50 | 25 | .417 | 30 | .313 | 39 |
| 1.50 | .75 | 17 | .60 | 25 | .50 | 31 | .375 | 39 |
| 1.75 | .875 | 18 | .70 | 26 | .583 | 31 | .438 | 40 |
| 2.00 | 1.00 | 19 | .80 | 27 | .667 | 32 | .50 | 40 |

| Pressure Drop Data | | | |
|------------------------|------------|--------|--------|
| Face Velocity (m/s) | Core Style | | |
| | F Core | X Core | V Core |
| 0.5 | 1 | 1 | 2 |
| 1 | 3 | 2 | 9 |
| 1.5 | 7 | 4 | 20 |
| 2 | 13 | 7 | 35 |
| 2.5 | 22 | 12 | |
| 3 | 30 | 17 | |
| 3.5 | 42 | 23 | |
| 4 | 53 | 29 | |
| 4.5 | 71 | 37 | |
| 5 | 88 | 46 | |

The face velocity through return grilles with 'V' core should not exceed 2m/s.

These data tables should be used in conjunction with the relevant core area chart.

NR Ratings and Core Areas

| F Core Return | | | | | | | | |
|---------------------------------|---------------------|----|----------------|----|----------------|----|----------------|----|
| Air Volume m ³ /s | Face Velocity (m/s) | | | | | | | |
| | 1.5 | | 2 | | 2.5 | | 3 | |
| | m ² | NR | m ² | NR | m ² | NR | m ² | NR |
| .075 | .050 | - | .038 | 23 | .030 | 28 | .025 | 31 |
| .100 | .067 | - | .050 | 23 | .040 | 28 | .033 | 32 |
| .125 | .083 | - | .063 | 24 | .050 | 29 | .042 | 33 |
| .150 | .100 | - | .075 | 24 | .060 | 29 | .050 | 33 |
| .175 | .117 | - | .088 | 25 | .070 | 30 | .058 | 34 |
| .200 | .133 | - | .100 | 25 | .080 | 30 | .067 | 34 |
| .250 | .167 | - | .125 | 26 | .100 | 31 | .083 | 35 |
| .300 | .200 | 19 | .150 | 26 | .120 | 31 | .100 | 35 |
| .350 | .233 | 19 | .175 | 27 | .140 | 32 | .117 | 36 |
| .400 | .267 | 20 | .200 | 27 | .160 | 32 | .133 | 36 |
| .450 | .300 | 21 | .225 | 27 | .180 | 33 | .150 | 37 |
| .500 | .333 | 21 | .250 | 28 | .200 | 33 | .167 | 38 |
| .550 | .367 | 22 | .275 | 28 | .220 | 33 | .183 | 38 |
| .600 | .400 | 22 | .300 | 29 | .240 | 34 | .200 | 39 |
| .650 | .433 | 23 | .325 | 29 | .260 | 34 | .217 | 39 |

Return Air Grille - Core Area Chart

| Height | B & H Frame Core Areas | | | | | | | | | | | | | | | | | |
|--------|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | 150 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1100 | 1200 | 1400 | 1600 | 1800 | 2000 | 2200 | 2400 |
| 75 | 0.01 | 0.01 | 0.01 | 0.02 | 0.02 | 0.03 | 0.03 | 0.04 | 0.04 | 0.05 | 0.05 | 0.06 | 0.07 | 0.08 | 0.09 | 0.10 | 0.11 | 0.12 |
| 100 | 0.01 | 0.01 | 0.02 | 0.03 | 0.04 | 0.04 | 0.05 | 0.06 | 0.07 | 0.07 | 0.08 | 0.09 | 0.10 | 0.12 | 0.13 | 0.15 | 0.17 | 0.18 |
| 150 | 0.02 | 0.02 | 0.03 | 0.05 | 0.06 | 0.07 | 0.09 | 0.10 | 0.11 | 0.12 | 0.14 | 0.15 | 0.17 | 0.20 | 0.22 | 0.25 | 0.27 | 0.30 |
| 200 | | 0.03 | 0.05 | 0.07 | 0.08 | 0.10 | 0.12 | 0.14 | 0.15 | 0.17 | 0.19 | 0.21 | 0.24 | 0.28 | 0.31 | 0.35 | 0.38 | 0.42 |
| 250 | | | 0.06 | 0.08 | 0.11 | 0.13 | 0.15 | 0.18 | 0.20 | 0.22 | 0.24 | 0.27 | 0.31 | 0.36 | 0.40 | 0.45 | 0.49 | 0.54 |
| 300 | | | 0.08 | 0.10 | 0.13 | 0.16 | 0.19 | 0.21 | 0.24 | 0.27 | 0.30 | 0.32 | 0.38 | 0.43 | 0.49 | 0.55 | 0.60 | 0.66 |
| 350 | | | | 0.12 | 0.16 | 0.19 | 0.22 | 0.25 | 0.29 | 0.32 | 0.35 | 0.38 | 0.45 | 0.51 | 0.58 | 0.64 | 0.71 | 0.77 |
| 400 | | | | 0.14 | 0.18 | 0.22 | 0.25 | 0.29 | 0.33 | 0.37 | 0.40 | 0.44 | 0.52 | 0.59 | 0.67 | 0.74 | 0.82 | 0.89 |
| 450 | | | | | 0.20 | 0.25 | 0.29 | 0.33 | 0.37 | 0.42 | 0.46 | 0.50 | 0.59 | 0.67 | 0.76 | 0.84 | 0.93 | 1.01 |
| 500 | | | | | 0.23 | 0.27 | 0.32 | 0.37 | 0.42 | 0.46 | 0.51 | 0.56 | 0.65 | 0.75 | 0.85 | 0.94 | 1.04 | 1.13 |
| 550 | | | | | | 0.30 | 0.36 | 0.41 | 0.46 | 0.51 | 0.57 | 0.62 | 0.72 | 0.83 | 0.93 | 1.04 | 1.14 | 1.25 |
| 600 | | | | | | 0.33 | 0.39 | 0.45 | 0.50 | 0.56 | 0.62 | 0.68 | 0.79 | 0.91 | 1.02 | 1.14 | 1.25 | 1.37 |
| 700 | | | | | | | 0.46 | 0.52 | 0.59 | 0.66 | 0.73 | 0.79 | 0.93 | 1.07 | 1.20 | 1.34 | 1.47 | 1.61 |
| 800 | | | | | | | | 0.60 | 0.68 | 0.76 | 0.83 | 0.91 | 1.07 | 1.22 | 1.38 | 1.53 | 1.69 | 1.84 |
| 900 | | | | | | | | | 0.77 | 0.85 | 0.94 | 1.03 | 1.21 | 1.38 | 1.56 | 1.73 | 1.91 | 2.08 |
| 1000 | | | | | | | | | | 0.95 | 1.05 | 1.15 | 1.34 | 1.54 | 1.73 | 1.93 | 2.12 | 2.32 |
| 1100 | | | | | | | | | | | 1.16 | 1.27 | 1.48 | 1.70 | 1.91 | 2.13 | 2.34 | 2.56 |
| 1200 | | | | | | | | | | | | 1.38 | 1.62 | 1.85 | 2.09 | 2.32 | 2.56 | 2.79 |

| Height | U Frame Core Areas | | | | | | | | | | | | | | | |
|--------|--------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 700 | 800 | 900 | 1000 | 1100 | 1200 |
| 75 | 0.01 | 0.01 | 0.01 | 0.01 | 0.02 | 0.02 | 0.02 | 0.03 | 0.03 | 0.03 | 0.04 | 0.04 | 0.05 | 0.05 | 0.06 | 0.06 |
| 100 | 0.01 | 0.01 | 0.02 | 0.02 | 0.03 | 0.03 | 0.03 | 0.04 | 0.04 | 0.05 | 0.05 | 0.06 | 0.07 | 0.08 | 0.08 | 0.09 |
| 150 | 0.02 | 0.02 | 0.03 | 0.04 | 0.04 | 0.05 | 0.05 | 0.06 | 0.07 | 0.07 | 0.09 | 0.10 | 0.11 | 0.13 | 0.14 | 0.15 |
| 200 | | 0.03 | 0.04 | 0.05 | 0.06 | 0.07 | 0.08 | 0.09 | 0.09 | 0.10 | 0.12 | 0.14 | 0.16 | 0.17 | 0.19 | 0.21 |
| 250 | | | 0.05 | 0.06 | 0.07 | 0.09 | 0.10 | 0.11 | 0.12 | 0.13 | 0.15 | 0.18 | 0.20 | 0.22 | 0.25 | 0.27 |
| 300 | | | | 0.08 | 0.09 | 0.11 | 0.12 | 0.13 | 0.15 | 0.16 | 0.19 | 0.22 | 0.24 | 0.27 | 0.30 | 0.33 |
| 350 | | | | | 0.11 | 0.12 | 0.14 | 0.16 | 0.17 | 0.19 | 0.22 | 0.26 | 0.29 | 0.32 | 0.35 | 0.39 |
| 400 | | | | | | 0.14 | 0.16 | 0.18 | 0.20 | 0.22 | 0.26 | 0.29 | 0.33 | 0.37 | 0.41 | 0.45 |
| 450 | | | | | | | 0.18 | 0.20 | 0.23 | 0.25 | 0.29 | 0.33 | 0.38 | 0.42 | 0.46 | 0.50 |
| 500 | | | | | | | | 0.23 | 0.25 | 0.28 | 0.32 | 0.37 | 0.42 | 0.47 | 0.52 | 0.56 |
| 550 | | | | | | | | | 0.28 | 0.31 | 0.36 | 0.41 | 0.46 | 0.52 | 0.57 | 0.62 |
| 600 | | | | | | | | | | 0.33 | 0.39 | 0.45 | 0.51 | 0.57 | 0.62 | 0.68 |
| 700 | | | | | | | | | | | 0.46 | 0.53 | 0.60 | 0.66 | 0.73 | 0.80 |
| 800 | | | | | | | | | | | | 0.61 | 0.68 | 0.76 | 0.84 | 0.92 |
| 900 | | | | | | | | | | | | | 0.77 | 0.86 | 0.95 | 1.03 |
| 1000 | | | | | | | | | | | | | | 0.96 | 1.05 | 1.15 |
| 1100 | | | | | | | | | | | | | | | 1.16 | 1.27 |
| 1200 | | | | | | | | | | | | | | | | 1.39 |

Core only

Core area (m²) = nominal grille height (m) x nominal grille width (m)

Dimensional Data

Return Air Grilles GOX, GUX, GBX, GHX, GBF

GOX



A high free area aluminium lattice core assembly with 12.5 mm square openings.

MINIMUM SIZE 150 X 75
MAXIMUM SIZE 1200 X 1200

FREE AREA 90%.

GUX

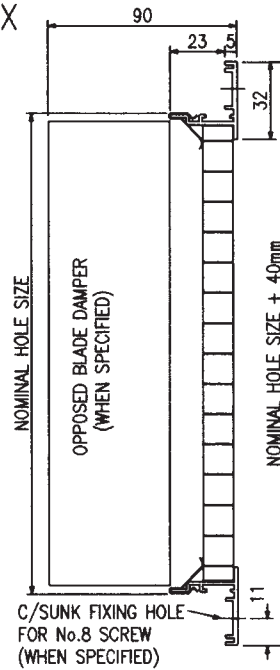


The GOX core assembly fixed into a steel U channel frame.

MINIMUM SIZE 150 X 75
MAXIMUM SIZE 1200 X 1200

FREE AREA 90%.

GBX

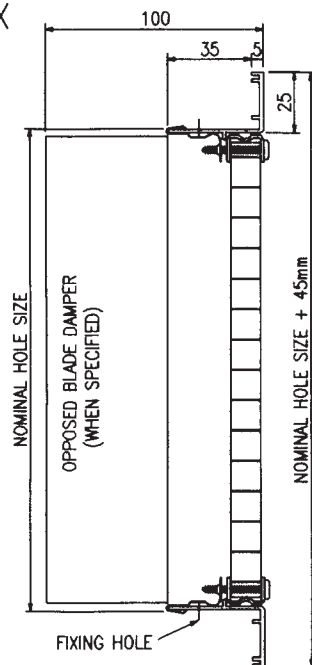


The GOX core assembly held captive within an extruded aluminium outer frame.

MINIMUM SIZE 150 X 75
MAXIMUM SIZE 2400 X 1200
MAXIMUM INDIVIDUAL CORE SIZE 1200 X 1200

FREE AREA 90%.

GHX

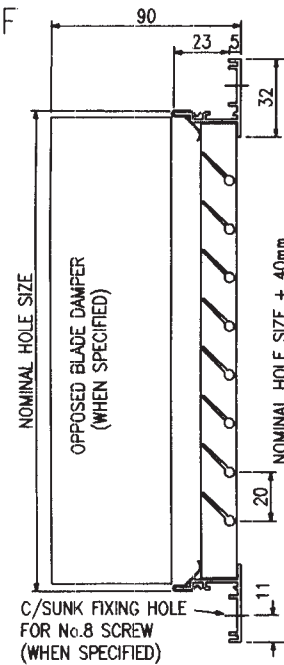


The GUX core assembly fitted into an extruded aluminium outer frame such that it can easily be removed.

MINIMUM SIZE 150 X 75
MAXIMUM SIZE 2400 X 1200
MAXIMUM INDIVIDUAL CORE SIZE 1200 X 1200

FREE AREA 90%.

GBF

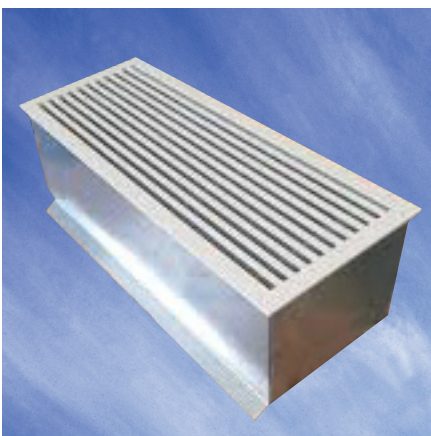
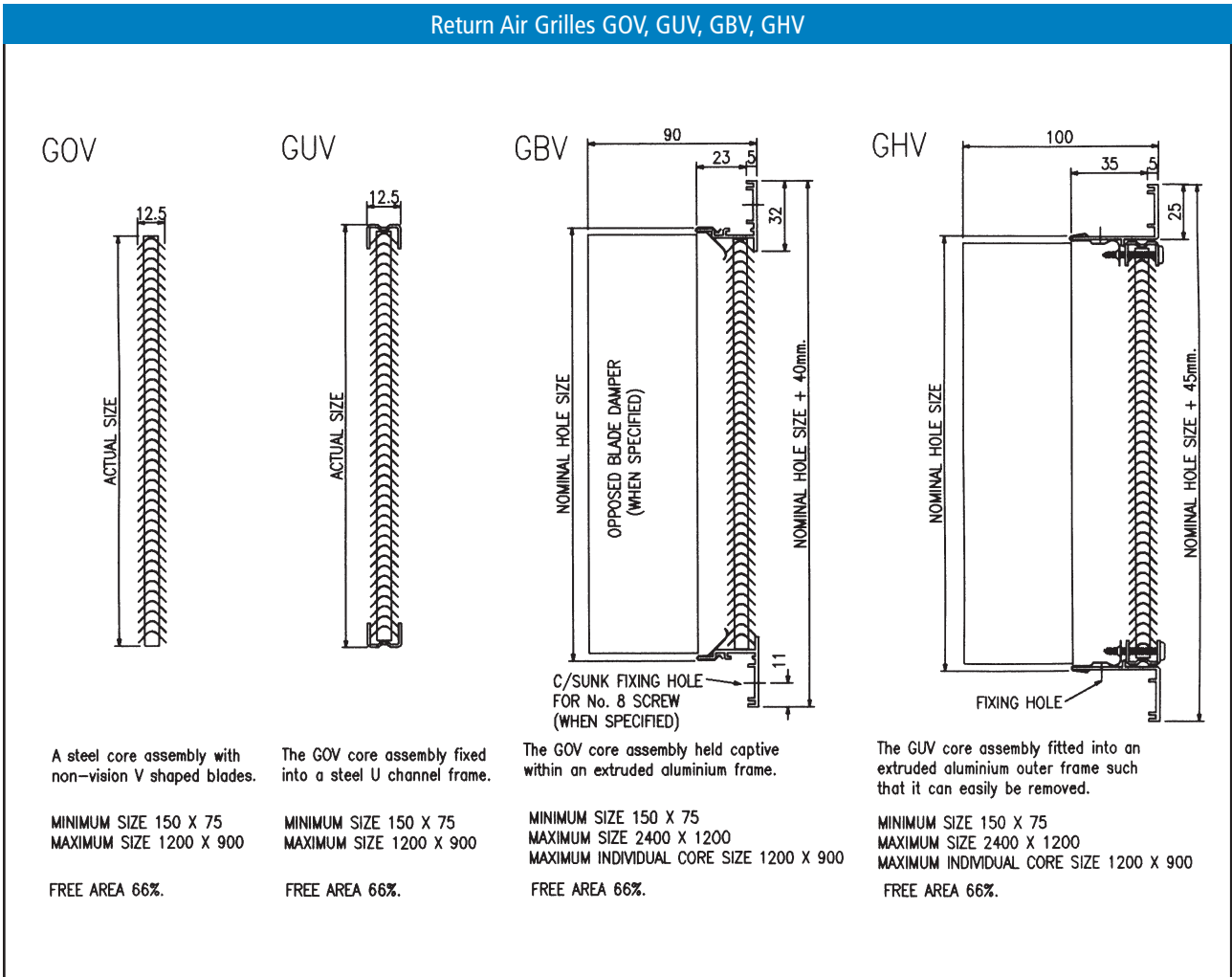


An aluminium core assembly with horizontal blades set 45° and held captive within an extruded aluminium outer frame.

MINIMUM SIZE 150 X 75
MAXIMUM SIZE 1800 X 1200
MAXIMUM INDIVIDUAL CORE SIZE 400 X 600

FREE AREA 60%.

Dimensional Data



New options available

Colman can now offer our G series deflection and extract grilles as well as our T series linear bar grilles to be suitable for mounting on exposed circular ducts.

Complete with a solid shoe boot manufactured to suit the duct diameter required, this offers an attractive and practical solution for circular duct applications.

PRODUCT RANGES

| GRILLES | DIFFUSERS | LOUVRES |
|----------------------------|--------------------------------|--------------|
| Linear Bar | Linear Slot | External |
| Ceiling | Louvre Face | Circular |
| Sidewall | Sidewall | Door |
| Floor | Perforated Face | Screens |
| Computer Floor | Circular | Penthouse |
| Cill | Swirl | Sand Louvres |
| Single & Double Deflection | Ceiling | Roof Louvres |
| Egg Crate | Sidewall Fixed & Adjustable | |
| Hinged Core | Jet Flow / Nozzle | |
| Door Transfer | Repus Displacement Ventilation | |
| Security and Prison | | |
| Supply and Extract Valves | | |

BESPOKE SERVICE

We offer a bespoke design service where standard products do not fit the requirements of the build, we also supply products in special colours and finishes including bronze, brass, gold and chrome to meet Architectural design specifications.



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Decade Close, Newcastle-Under-Lyme
Stoke-on-Trent, Staffordshire ST5 7UH

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