SERIES GSF

Fixed Swirl Diffusers

(Patented)

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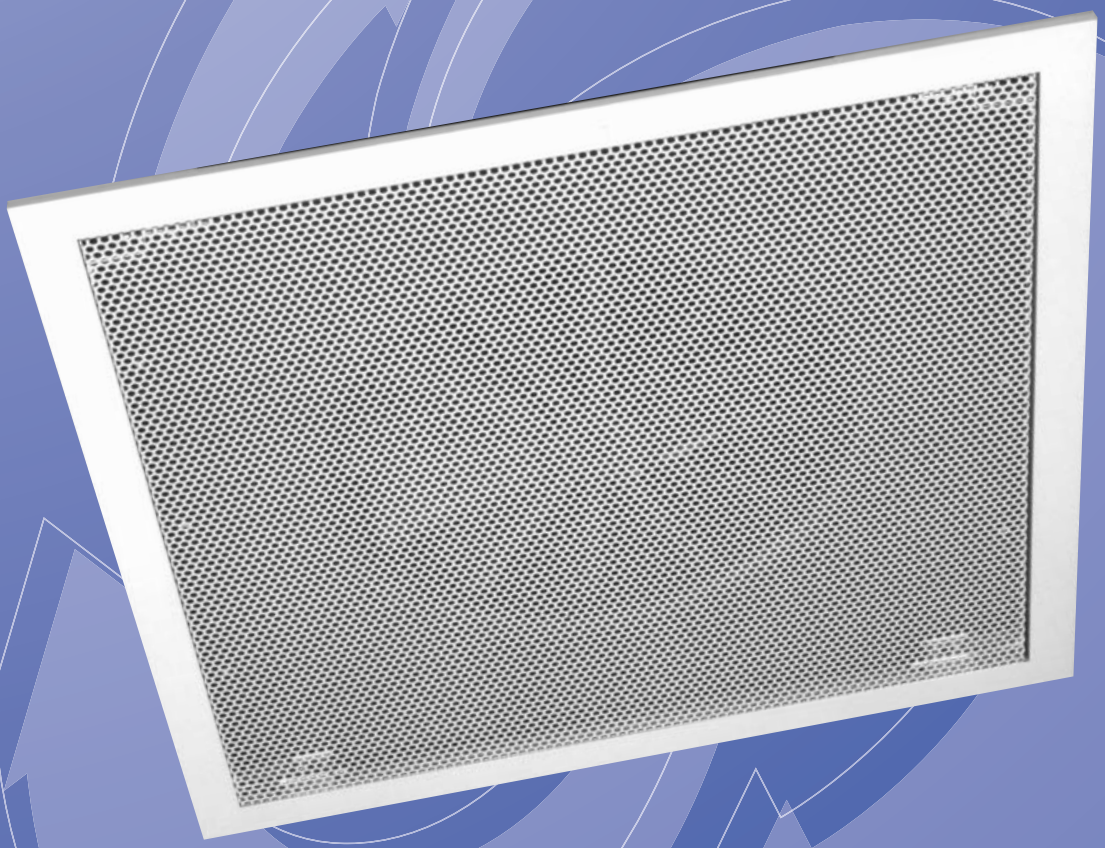


Features

- Omni directional, swirl effect discharge.
- Horizontal projection.
- High induction effect.
- Perforated square, perforated circular or open face circular design.
- Standard or clip-in ceiling border options.
- Suitable for high room air change rates.

GILBERTS

SERIES GSF

Fixed Swirl Diffusers

Introduction

With the GSF Series Gilberts introduce a contemporary and attractively designed range of Fixed Swirl Type Diffusers for ceiling supply and extract applications.The circular pattern of radial vanes featured on this unit provide the swirl, air distribution effect typically associated with this type of diffuser allowing the unit to introduce high volumes of air into the conditioned space, taking advantage of rapid entrainment and intermixing. On a Fixed Swirl Unit the distribution pattern is horizontal across the ceiling. As a result the unit can deliver high air change rates as compared to conventional diffusers. Not withstanding the performance potential, aesthetic aspects have also been considered. The circular profile of the GSFA type unit lends itself well to exposed ductwork and other contemporary applications but is arguably less appropriate in square ceiling grids. The GSFB and GSFC type however, which offer a perforated face diffuser type appearance lend themselves particularly well in these instances always enabling a good balance between performance and aesthetics to be maintained for all applications. Newer models, such as the GSFD, adapted for the clip-in ceiling type applications, and the GSFE with a circular perforated face offer further advancements in swirl options. For the ultimate in discretion the latest GSFH model is designed to fit fully concealed behind the standard perforated ceiling tiles of all the popular manufacturers.

THE FIXED SWIRL range comprises of 7 type options:

TYPE GSFA: Standard Swirl Diffuser comprising of fixed blades mounted in a Circular Housing Frame.

TYPE GSFB: Circular Swirl Diffuser with fixed blades fitted into a square Perforated Face Housing Frame. The perforated face is hinged for easy access from the diffuser face. For a fixed face unit select type GSFK.

TYPE GSFC: Circular Swirl Diffuser with fixed blades fitted into a square borderless Perforated Face Housing Frame.

TYPE GSFD: Circular Swirl Diffuser with fixed blades fitted into a square Perforated Fascia adapted for Clip-in Ceiling applications.

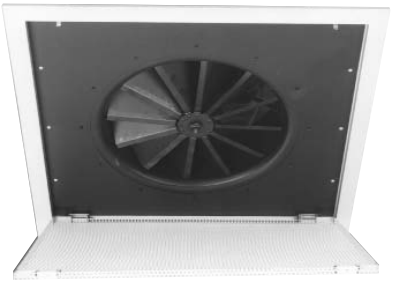
TYPE GSFE: Circular Swirl Diffuser with fixed blades fitted into a Circular Perforated Fascia with removable core.

TYPE GSFH: Circular Swirl Diffuser with fixed blades adapted for fitting behind standard perforated face ceiling tiles from the popular manufacturers.

For extract applications complementary exhaust swirl units (Type GSXB to K) are available to match supply diffuser type options.

Features

- Omni directional, swirl effect discharge.
- Horizontal projection.
- High induction effect.
- Perforated square, perforated circular or open face circular design.
- Standard or clip-in ceiling border options.
- Suitable for high room air change rates.



All units are fabricated from a combination of aluminium and steel components and are available with a matching range of top and side entry plenum boxes. Volume control can be achieved using Quadrant flap type or iris dampers on the plenum inlet spigots. Swirl diffuser sizes range from 160 to 630mm dia as indicated in the dimensional data.

Standard finish is white for type GSFA and white perforated fascia, with unexposed internals finished matt black on all other GSF types.
Stoved finishes to any BS or RAL colour are available on request.

Performance Data

The performance tables illustrated in this brochure give tabulated performance data for each listed size of diffuser, together with their design. The figures given relate to Cooling, Ventilation and Heating applications and always for horizontal distribution of conditioned air.

The performance data for all Gilberts products is derived using a Gilberts plenum design and specification. Performance cannot be guaranteed where alternative plenum designs are used.

References Used
Pressure: All pressures are in Pa (N/m2)
Throw: The horizontal distances for air streams are given for both 0.5 and 0.25 m/s terminal velocities and are based upon a ceiling effect.
Sound: The NC values are peak levels on the NC curves.

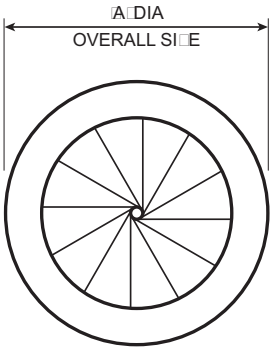
Selection Procedure

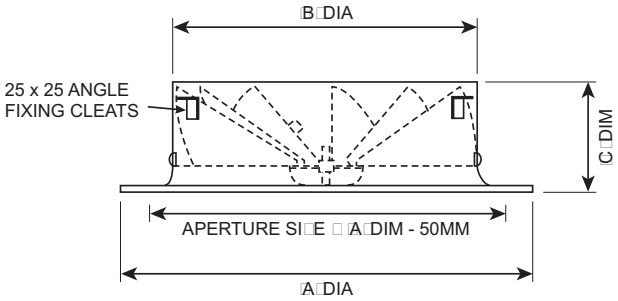
1. Try if possible to construct in plan an imaginary square ceiling grid. This will enable the designer to position each diffuser at each square centre so that distribution is even in all the directions.
2. The total volume of air is then divided by the number of outlets and a volume per diffuser is established.
3. The performance charts should then be used to select the size and type of diffuser based upon volume and throw requirements. For high ceiling applications an overblow situation can be acceptable.
4. Check pressure loss and NC levels from design chart to confirm acceptability.

Gilberts Supply Diffusers have been tested within the range of +/- 10ºC (as recommended in the HEVAC Guide to Air Distribution Technology). For any other temperature differential requirements please contact our Technical Department.

Type GSFA

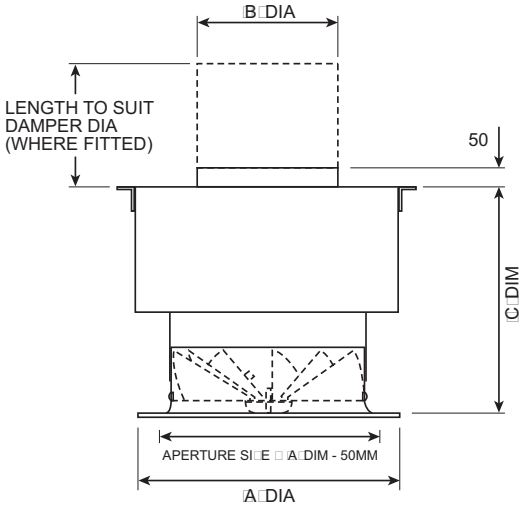
DIFFUSER





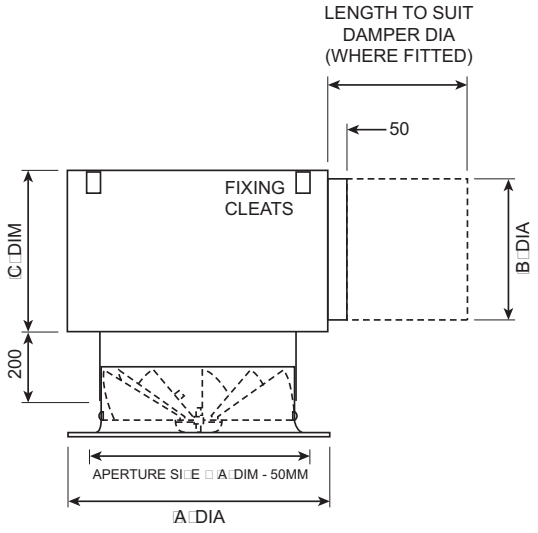
GSFA			
SIZE	A	B	C
160	240	158	90
250	330	248	100
315	425	313	110
450	560	448	155
630	740	628	220

DIFFUSER C/W TOP ENTRY BOX



GSFA-TCB			
SIZE	A	B	C
160	240	125	437
250	330	200	522
315	425	250	582
450	560	350	727
630	740	400	842

DIFFUSER C/W SIDE ENTRY BOX



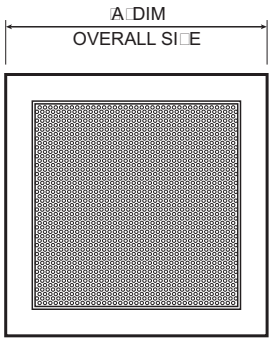
GSFA-SEB				
SIZE	A	B	C	D
160	240	125	187	437
250	330	200	262	522
315	425	250	312	582
450	560	350	412	727
630	740	400	462	842

SERIES GSF

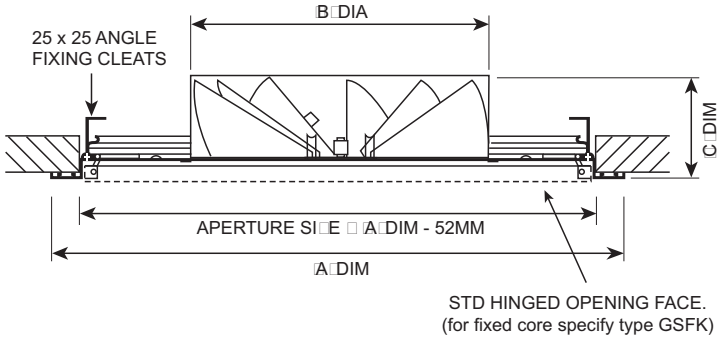
Fixed Swirl Diffusers

Type GSFB & GSFK

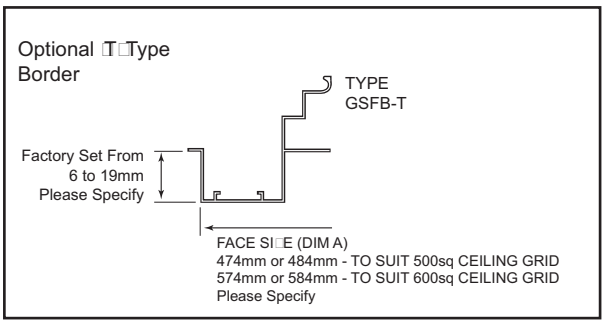
DIFFUSER



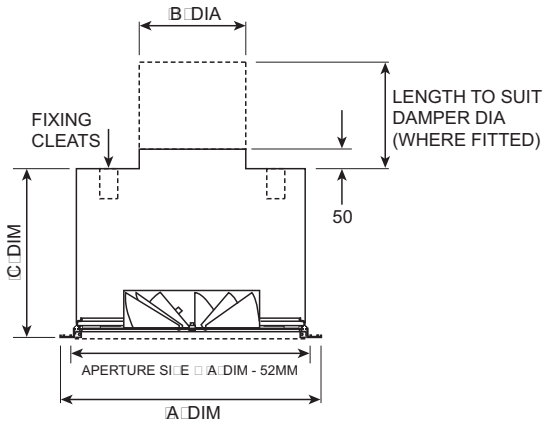
TYPE GSFB - HINGED OPENING FACE
TYPE GSFK - FIXED FACE



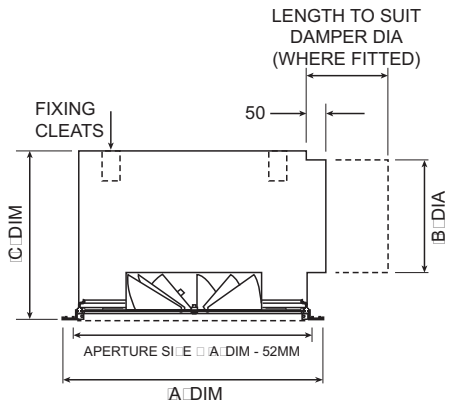
GSFB & GSFK			
SIZE	A	B	C
160	300 594 600	158	119
250	594 600	248	129
315	594 600	313	139
450	594 600	448	184



DIFFUSER C/W TOP ENTRY BOX



DIFFUSER C/W SIDE ENTRY BOX

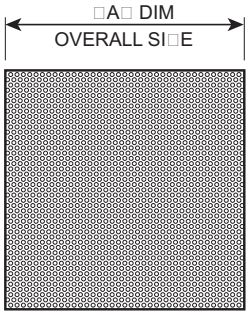


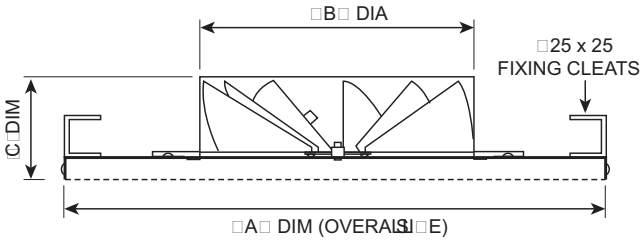
GSFB-TCB GSFK-TCB			
SIZE	A	B	C
160	300 594 600	125	275
250	594 600	200	350
315	594 600	250	400
450	594 600	350	500

GSFB-SEB GSFK-SEB			
SIZE	A	B	C
160	300 594 600	125	275
250	594 600	200	350
315	594 600	250	400
450	594 600	350	500

TYPE GSXB & GSXK: Extract units available without swirl assembly. Dimensions as above.

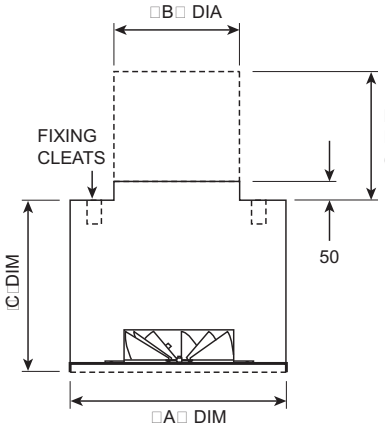
Type GSFC





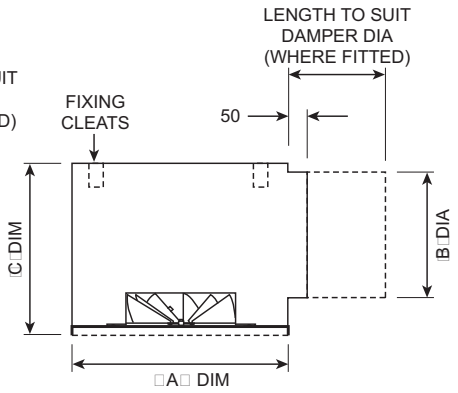
GSFC			
SIZE	A	B	C
160	294 594	158	110
250	594	248	120
315	594	313	130
450	594	448	175

DIFFUSER C/W TOP ENTRY BOX



GSFC-TCB			
SIZE	A	B	C
160	294 594	125	275
250	594	200	350
315	594	250	400
450	594	350	500

DIFFUSER C/W SIDE ENTRY BOX



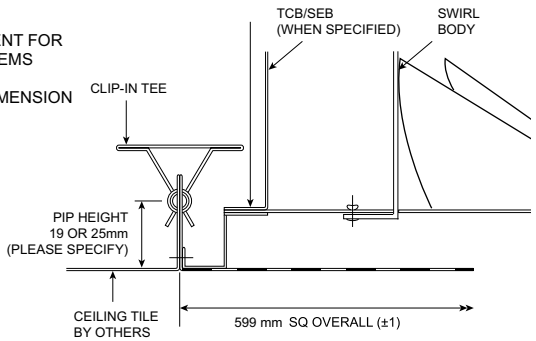
GSFC-SEB			
SIZE	A	B	C
160	294 594	125	275
250	594	200	350
315	594	250	400
450	594	350	500

Installation - On Type GSFC diffusers the Plenum is factory fitted. Combined diffuser/plenum assembly will require installation BEFORE the ceiling is erected

TYPE GSXC: Extract unit available without swirl assembly. Dimensions as above.

Type GSFD

ALTERNATIVE ARRANGEMENT FOR
CLIP-IN CEILING TILE SYSTEMS
DIMENSIONS GENERALLY
AS ABOVE EXCEPT □A□ DIMENSION
IS 600mm

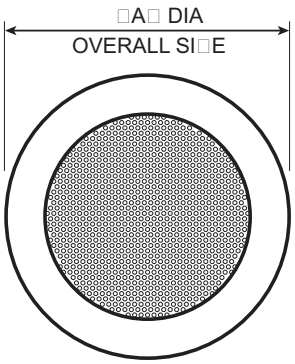


SERIES GSF

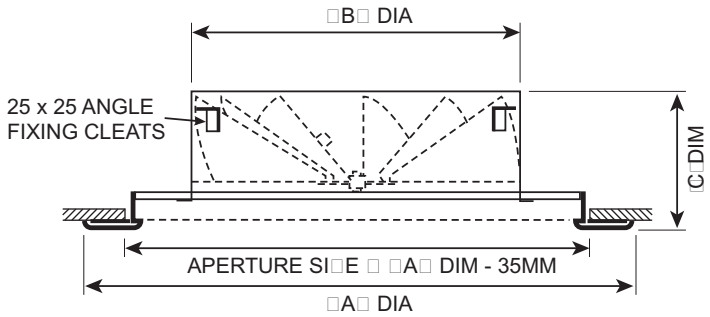
Fixed Swirl Diffusers

Type GSFE

DIFFUSER

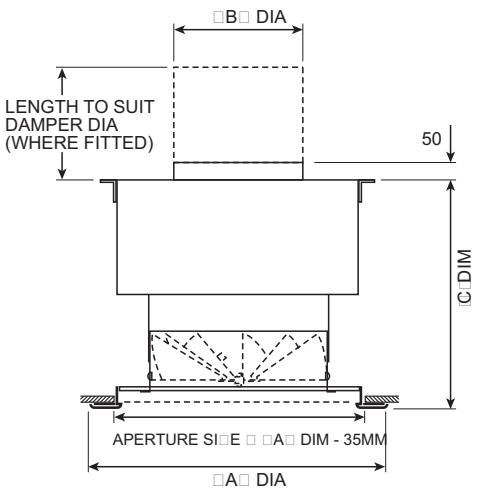


REMOVABLE FACE PLATE
USES BAYONET TYPE FIXING



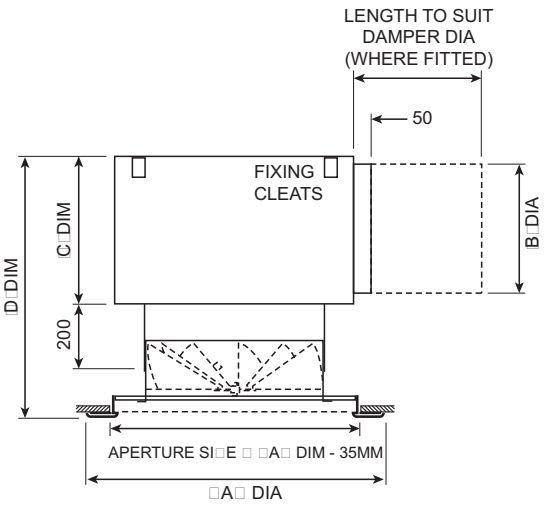
GSFE			
SIZE	A	B	C
160	378	158	108
250	468	248	118
315	533	313	128
450	667	448	173

DIFFUSER C/W TOP ENTRY BOX



GSFE-TCB			
SIZE	A	B	C
160	378	125	459
250	468	200	544
315	533	250	604
450	667	350	749

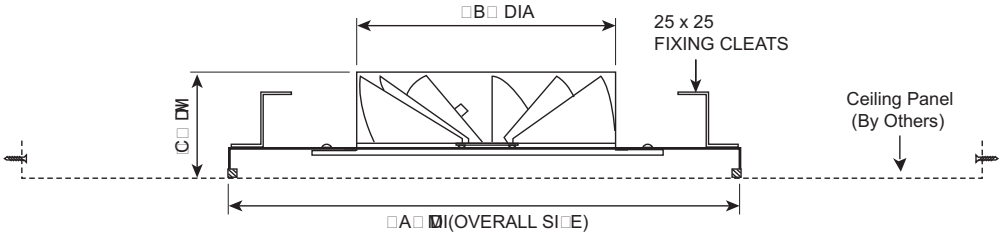
DIFFUSER C/W SIDE ENTRY BOX



GSFE-SEB				
SIZE	A	B	C	D
160	378	125	187	459
250	468	200	262	544
315	533	250	312	604
450	667	350	412	749

TYPE GSXE: Extract unit available without swirl assembly. Dimensions as above.

Type GSFH

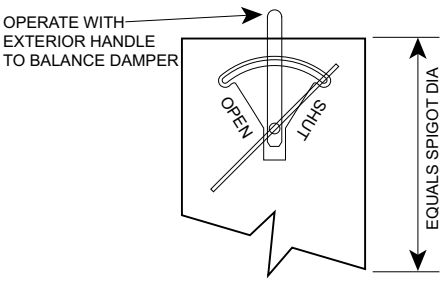


For full dimensional data see Type GSFC (Page 5).

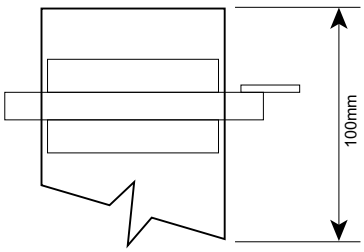
The GSFH option offers a new dimension in ceiling diffuser design. For the ultimate in discretion the swirl diffuser (painted Matt Black) is mounted in a sub frame which is adapted for fitting concealed behind standard ceiling panels from popular ceiling manufacturers. The chassis for the diffuser is designed to provide both an air seal with the back of the ceiling tile face and the correct separation so that the diffuser can still provide an efficient high induction swirl air distribution effect. A minimum perforated tile free area of 40% applies. Please check with Gilberts Technical Department to ensure that the tile is suitable to acheive the correct air distribution.

Volume Control

Series GSF offers 2 alternative methods of volume control.
The principle means involves fitting of a manually operated flap type damper into the inlet spigot of the top or side entry plenum box.
For a more sophisticated form of control however an iris damper can also be supplied. Full technical details on iris dampers are available in a separate data sheet.



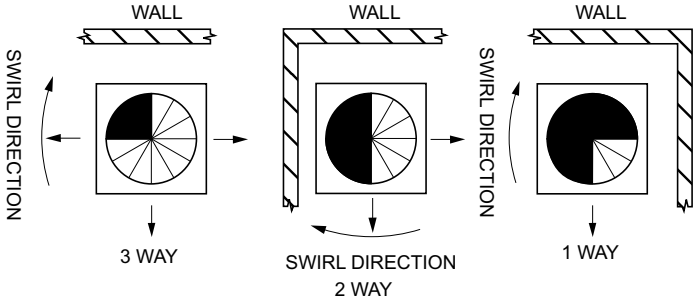
Quadrant Type Ref: DQ



Iris Type Ref: DI

Air Distribution pattern

Although the discharge pattern for all swirl diffusers is omni directional, 2 way and 3 way distribution patterns can be achieved where necessary by factory fitted blanking plates in the positions illustrated.



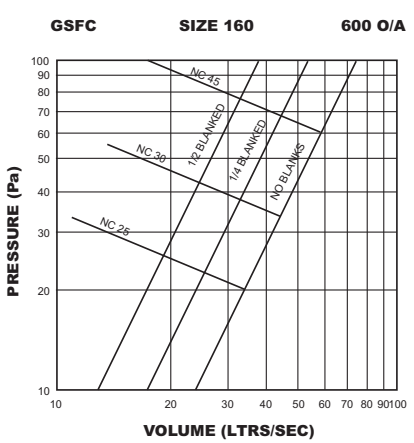
Shaded area indicates closed blade positions to give best air flow pattern.

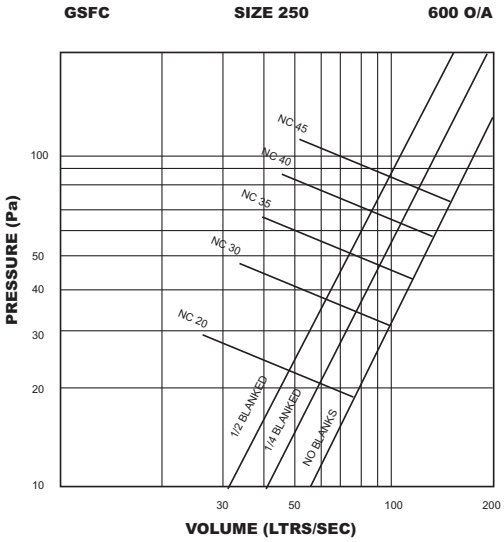
SERIES GSF

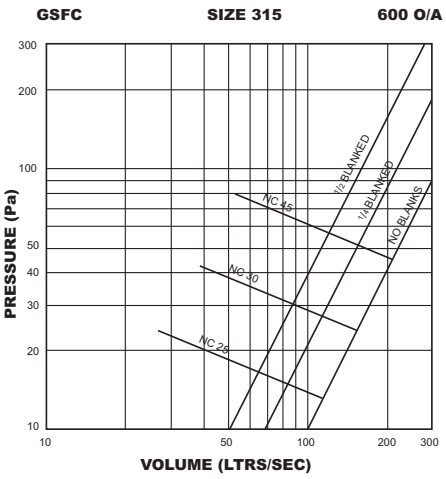
Fixed Swirl Diffusers

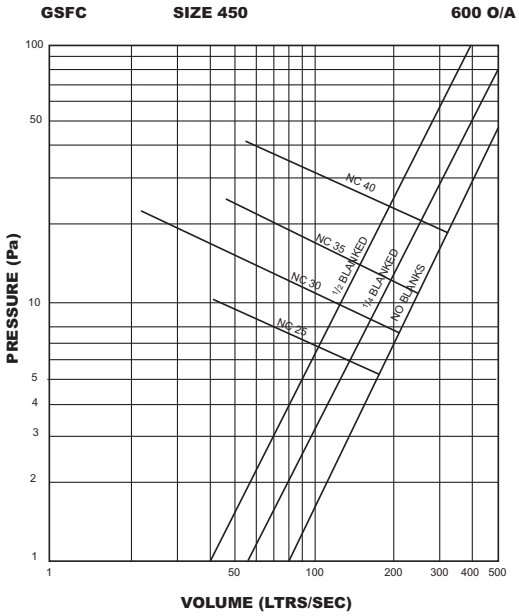
Pressure Graphs

The following graphs indicate the revised pressure/volume relationship and associated noise levels attributable, when blanking swirls diffusers









DATA BASED ON GSFC & GSFB TYPES WITH S.E.B.

Technical Performance Data Series GSFA

Type GSFA **Size 160**

NECK VELOCITY (M/S)		1.25	1.5	1.75	2.0	2.25	2.5	2.75	3.0
VOLUME FLOW RATE (M/³S)		0.025	0.030	0.035	0.040	0.045	0.050	0.055	0.066
PRESSURE DROP (Pa) Static	TOP ENTRY	9.5	14	17	23	29	35	42	48
	SIDE ENTRY	11	15	19	24	31	38	46	55
	STRAIGHT CONNECTIONS	6.4	9.0	12	16	20	25	30	36
THROW TO 0.25 M/S (M)	AT + 10□C	1.0	1.6	2.0	2.4	2.5	2.6	2.8	3.0
	AT + 5□C	1.2	1.4	1.6	1.8	2.0	2.4	2.6	2.8
	ISOTHERMAL	1.0	1.2	1.4	1.5	1.6	1.7	1.8	2.0
	AT - 5□C	0.4	0.6	0.8	1.0	1.2	1.4	1.6	2.0
	AT - 10□C	0.4	0.6	0.8	1.0	1.3	1.5	1.6	2.0
THROW TO 0.5 M/S (M)	AT + 10□C	0.4	0.6	0.8	1.0	1.2	1.5	1.8	2.0
	AT + 5□C	0.3	0.5	0.6	0.8	1.0	1.3	1.6	1.8
	ISOTHERMAL	0.3	0.5	0.6	0.8	1.0	1.2	1.5	1.8
	AT - 5□C	0.3	0.5	0.6	0.8	1.0	1.2	1.5	1.6
	AT - 10□C	0.3	0.5	0.6	0.8	1.0	1.2	1.5	1.8
NOISE LEVEL (NC)	STRAIGHT CONNECTIONS	20	20	20	20	20	25	30	30
	SEB	20	20	20	20	25	25	30	35

TYPE GSFA **Size 250**

NECK VELOCITY (M/S)		1.25	1.50	1.75	2.0	2.25	2.50	2.75	3.00
VOLUME FLOW RATE (M/³S)		0.061	0.073	0.085	0.098	0.11	0.122	0.134	0.147
PRESSURE DROP (Pa)	TOP ENTRY	10	15	18	23	28	34	39	48
	SIDE ENTRY	12	16	19	24	30	38	45	50
	STRAIGHT CONNECTIONS	7	10	14	18	23	27	33	40
THROW TO 0.25 M/S (M)	AT + 10□C	1.3	2.0	2.5	3.0	3.3	3.6	3.8	4.2
	AT + 5□C	1.6	1.9	2.3	2.7	3.0	3.3	3.6	3.8
	ISOTHERMAL	1.4	1.6	1.8	2.0	2.2	2.5	2.7	3.0
	AT - 5□C	1.3	1.5	1.6	2.0	2.0	2.3	2.7	2.9
	AT - 10□C	1.4	1.8	2.1	2.4	2.6	2.7	3.0	3.1
THROW TO 0.5 M/S (M)	AT + 10□C	0.7	1.0	1.3	1.6	1.8	2.1	2.4	2.6
	AT + 5□C	0.7	0.9	1.2	1.4	1.7	2.0	2.2	2.4
	ISOTHERMAL	0.7	0.8	0.9	1.1	1.3	1.5	1.8	2.0
	AT - 5□C	0.7	0.9	1.1	1.4	1.6	1.8	2.1	2.2
	AT - 10□C	0.8	1.1	1.2	1.4	1.7	1.9	2.1	2.3
NOISE LEVEL (NC)	STRAIGHT CONNECTIONS	20	20	20	25	30	30	30	35
	SEB	20	20	25	30	30	35	35	40

Type GSFA **Size 315**

NECK VELOCITY (M/S)		1.25	1.5	1.75	2.0	2.25	2.5	2.75	3.0
VOLUME FLOW RATE (M/³S)		0.097	0.116	0.136	0.155	0.175	0.194	0.214	0.233
PRESSURE DROP (Pa) Static	TOP ENTRY	8	12	15	19	24	29	34	40
	SIDE ENTRY	9	13	16	21	26	31	36	42
	STRAIGHT CONNECTIONS	6	9	12	15	22	25	32	39
THROW TO 0.25 M/S (M)	AT + 10□C	1.8	2.4	3.0	3.6	4.0	4.4	4.8	5.3
	AT + 5□C	2.0	2.4	3.0	3.6	4.0	4.2	4.5	4.8
	ISOTHERMAL	1.8	2.0	2.4	2.6	3.0	3.3	3.6	3.8
	AT - 5□C	2.1	2.5	2.8	3.0	3.2	3.4	3.6	3.8
	AT - 10□C	2.4	3.0	3.5	3.8	3.9	4.1	4.2	4.5
THROW TO 0.5 M/S (M)	AT + 10□C	1.0	1.5	1.8	2.2	2.4	2.8	3.0	3.2
	AT + 5□C	1.0	1.2	1.8	2.0	2.4	2.6	2.8	3.0
	ISOTHERMAL	0.8	1.0	1.2	1.4	1.8	2.0	2.4	2.6
	AT - 5□C	1.0	1.2	1.5	2.0	2.2	2.4	2.6	2.8
	AT - 10□C	1.2	1.6	1.8	2.0	2.4	2.5	2.6	2.8
NOISE LEVEL (NC)	STRAIGHT CONNECTIONS	20	20	20	20	25	30	35	35
	SEB	20	20	20	25	30	35	35	40

TYPE GSFA **Size 450**

NECK VELOCITY (M/S)		1.25	1.5	1.75	2.0	2.25	2.5	2.75	3.0
VOLUME FLOW RATE (M/³S)		0.198	0.238	0.278	0.318	0.357	0.397	0.437	0.477
PRESSURE DROP (Pa) Static	TOP ENTRY	4	6.5	7.8	9	12	17	20	24
	SIDE ENTRY	5	7	8	11	14	18	21	25
	STRAIGHT CONNECTIONS	4	6	7.4	10	13	16	18	20
THROW TO 0.25 M/S (M)	AT + 10□C	2.8	3.0	4.0	4.8	5.5	6.2	7.0	7.8
	AT + 5□C	2.4	2.8	3.6	4.0	4.6	5.2	5.8	6.2
	ISOTHERMAL	2.0	2.2	2.5	3.0	3.5	3.8	4.3	4.8
	AT - 5□C	2.4	2.6	2.8	3.2	4.0	4.4	4.8	5.3
	AT - 10□C	2.6	2.8	3.0	3.9	4.3	4.8	5.3	5.7
THROW TO 0.5 M/S (M)	AT + 10□C	1.5	2.4	2.6	3.2	3.6	4.2	4.8	5.4
	AT + 5□C	1.5	1.8	2.2	2.4	2.8	3.2	3.6	4.0
	ISOTHERMAL	0.8	1.0	1.2	1.5	1.8	2.4	3.0	4.0
	AT - 5□C	1.2	1.5	1.8	2.0	2.4	2.6	3.0	3.5
	AT - 10□C	1.7	2.0	2.4	2.8	3.0	3.5	3.8	4.2
NOISE LEVEL (NC)	STRAIGHT CONNECTIONS	20	20	20	20	20	20	25	25
	SEB	20	20	20	20	25	25	30	30

Type GSFA **Size 630**

NECK VELOCITY (M/S)		1.25	1.5	1.75	2.0	2.25	2.5	2.75	3.0
VOLUME FLOW RATE (M/³S)		0.390	0.467	0.546	0.623	0.701	0.779	0.857	0.935
PRESSURE DROP (Pa) Static	TOP ENTRY	6.5	10	13	17	22	28	33	40
	SIDE ENTRY	7	11	15	19	23	29	36	45
	STRAIGHT CONNECTIONS	6	8	12	15	20	24	29	36
THROW TO 0.25 M/S (M)	AT + 10□C	5.0	5.7	6.4	7.2	7.9	8.7	9.4	10.2
	AT + 5□C	4.6	5.2	6.0	6.8	7.5	8.3	9.0	9.9
	ISOTHERMAL	4.1	4.8	5.6	6.4	7.1	7.9	8.6	9.5
	AT - 5□C	4.2	5.0	5.8	6.6	7.3	8.1	8.8	9.7
	AT - 10□C	4.4	5.2	6.0	6.8	7.5	8.3	9.0	9.9
THROW TO 0.5 M/S (M)	AT + 10□C	3.0	3.7	4.5	5.2	5.6	6.2	7.1	7.8
	AT + 5□C	2.2	3.6	4.3	4.9	5.5	6.1	7.0	7.7
	ISOTHERMAL	2.4	3.6	4.0	4.7	5.4	6.1	7.0	7.7
	AT - 5□C	2.4	3.4	3.9	4.4	5.0	5.7	6.4	6.9
	AT - 10□C	2.5	3.0	3.4	3.9	4.5	5.1	5.8	6.4
NOISE LEVEL (NC)	STRAIGHT CONNECTIONS	20	20	25	30	35	40	40	45
	SEB	20	20	25	30	40	40	45	50

Note: All noise data based on standard catalogue spigot sizes

SERIES GSF

Fixed Swirl Diffusers

Technical Performance Data Series GSFB/GSFE & GSFK

Type GSFB/GSFE/GSFK **Size 160**

NECK VELOCITY (M/S)		1.25	1.5	1.75	2.0	2.25	2.5	2.75	3.0
VOLUME FLOW RATE (M/3S)		0.025	0.030	0.035	0.040	0.045	0.050	0.055	0.060
PRESSURE DROP (Pa) Static	TOP ENTRY	11	16	19	25	31	37	44	50
	SIDE ENTRY	13	17	21	26	33	40	48	57
	STRAIGHT CONNECTIONS	7	10	14	18	22	27	32	38
THROW TO 0.25 M/S (M)	AT + 10 °C	0.7	0.8	0.9	1.0	1.2	1.5	1.8	2.0
	AT + 5 °C	0.7	0.8	0.9	1.0	1.2	1.5	1.8	2.0
	ISOTHERMAL	0.5	0.6	0.7	0.8	1.0	1.1	1.1	1.2
	AT - 5 °C	0.7	0.8	0.9	1.0	1.1	1.4	1.5	1.6
	AT - 10 °C	0.7	0.8	0.9	1.0	1.1	1.4	1.5	1.6
THROW TO 0.5 M/S (M)	AT + 10 °C	-	-	-	0.3	0.5	0.6	0.8	1.0
	AT + 5 °C	-	-	-	0.3	0.5	0.6	0.8	1.0
	ISOTHERMAL	-	-	-	0.3	0.5	0.6	0.8	1.0
	AT - 5 °C	-	-	-	0.4	0.6	0.7	0.9	1.1
	AT - 10 °C	-	-	-	0.4	0.6	0.7	0.9	1.1
NOISE LEVEL (NC)	STRAIGHT CONNECTIONS	20	20	20	25	25	30	30	35
	SEB	20	25	25	30	30	35	40	45

TYPE GSFB/GSFE/GSFK **Size 250**

NECK VELOCITY (M/S)		1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00
VOLUME FLOW RATE (M/3S)		0.061	0.073	0.085	0.098	0.11	0.122	0.134	0.147
PRESSURE DROP (Pa)	TOP ENTRY	9	13	19	25	32	39	48	52
	SIDE ENTRY	11	16	22	30	38	47	54	68
	STRAIGHT CONNECTIONS	8	11	16	20	26	32	41	48
THROW TO 0.25 M/S (M)	AT + 10 °C	1.1	1.3	1.4	1.7	2.0	2.3	2.7	3.0
	AT + 5 °C	1.0	1.2	1.4	1.5	1.7	2.0	2.3	2.6
	ISOTHERMAL	0.7	0.9	1.0	1.2	1.4	1.6	1.7	1.8
	AT - 5 °C	1.0	1.2	1.4	1.5	1.7	1.9	2.0	2.1
	AT - 10 °C	1.1	1.3	1.5	1.7	1.8	2.0	2.2	2.3
THROW TO 0.5 M/S (M)	AT + 10 °C	0.3	0.5	0.7	0.9	1.1	1.2	1.5	1.7
	AT + 5 °C	0.3	0.5	0.6	0.7	0.8	1.0	1.2	1.4
	ISOTHERMAL	-	-	0.3	0.5	0.7	0.8	1.0	1.2
	AT - 5 °C	-	-	0.3	0.6	0.9	1.0	1.2	1.4
	AT - 10 °C	-	-	0.5	0.7	1.0	1.1	1.3	1.5
NOISE LEVEL (NC)	STRAIGHT CONNECTIONS	20	20	25	25	30	30	35	35
	SEB	20	20	30	30	35	35	40	45

Type GSFB/GSFE/GSFK **Size 315**

NECK VELOCITY (M/S)		1.25	1.5	1.75	2.0	2.25	2.5	2.75	3.0
VOLUME FLOW RATE (M/3S)		0.097	0.116	0.136	0.155	0.175	0.194	0.214	0.233
PRESSURE DROP (Pa) Static	TOP ENTRY	10	14	17	21	26	31	36	42
	SIDE ENTRY	11	15	18	23	28	33	38	44
	STRAIGHT CONNECTIONS	8	11	14	17	24	27	34	41
THROW TO 0.25 M/S (M)	AT + 10 °C	1.5	1.8	2.0	2.4	2.8	3.2	3.6	4.0
	AT + 5 °C	1.4	1.7	1.9	2.0	2.2	2.6	2.9	3.3
	ISOTHERMAL	1.0	1.2	1.4	1.6	1.9	2.1	2.3	2.5
	AT - 5 °C	1.4	1.7	1.9	2.1	2.3	2.4	2.5	2.6
	AT - 10 °C	1.6	1.9	2.1	2.5	2.6	2.7	2.9	3.0
THROW TO 0.5 M/S (M)	AT + 10 °C	0.6	1.0	1.2	1.5	1.7	1.9	2.2	2.4
	AT + 5 °C	0.6	0.7	0.9	1.1	1.2	1.4	1.6	1.7
	ISOTHERMAL	0.4	0.6	0.7	0.8	1.0	1.1	1.3	1.5
	AT - 5 °C	0.4	0.6	0.7	0.9	1.1	1.2	1.4	1.6
	AT - 10 °C	0.5	0.7	0.9	1.0	1.3	1.5	1.7	2.0
NOISE LEVEL (NC)	STRAIGHT CONNECTIONS	15	20	25	25	30	35	35	40
	SEB	20	25	30	30	40	45	45	50

TYPE GSFB/GSFE/GSFK **Size 450**

NECK VELOCITY (M/S)		1.25	1.5	1.75	2.0	2.25	2.5	2.75	3.0
VOLUME FLOW RATE (M/3S)		0.198	0.238	0.278	0.318	0.357	0.397	0.437	0.477
PRESSURE DROP (Pa) Static	TOP ENTRY	5	7	9	12	16	20	24	28
	SIDE ENTRY	6	8	11	14	19	24	29	34
	STRAIGHT CONNECTIONS	6	9	12	15	20	25	29	35
THROW TO 0.25 M/S (M)	AT + 10 °C	2.4	2.7	3.1	3.6	3.8	4.2	4.5	4.8
	AT + 5 °C	2.1	2.4	2.7	3.0	3.2	3.5	3.8	4.0
	ISOTHERMAL	1.8	1.9	2.1	2.4	2.5	2.7	2.9	3.0
	AT - 5 °C	1.7	1.8	2.0	2.3	2.4	2.6	2.7	3.0
	AT - 10 °C	1.7	1.8	2.0	2.3	2.4	2.6	2.7	3.0
THROW TO 0.5 M/S (M)	AT + 10 °C	0.9	1.2	1.4	1.7	2.0	2.2	2.4	2.5
	AT + 5 °C	0.8	1.1	1.3	1.5	1.7	2.0	2.2	2.5
	ISOTHERMAL	0.8	1.0	1.3	1.5	1.6	1.8	2.0	2.1
	AT - 5 °C	0.7	1.0	1.2	1.3	1.5	1.6	1.8	2.0
	AT - 10 °C	0.7	1.0	1.2	1.3	1.5	1.6	1.8	2.0
NOISE LEVEL (NC)	STRAIGHT CONNECTIONS	20	25	35	40	40	45	50	50
	SEB	20	25	35	40	40	45	50	55

Note: All noise data based on standard catalogue spigot sizes

Technical Performance Data Series GSFC/GSFD

Type GSFC/GSFD **Size 160**

NECK VELOCITY (M/S)		1.25	1.5	1.75	2.0	2.25	2.5	2.75	3.0
VOLUME FLOW RATE (M/3S)		0.025	0.030	0.035	0.040	0.045	0.050	0.055	0.060
PRESSURE DROP (Pa) Static	TOP ENTRY	11	16	19	25	31	37	44	50
	SIDE ENTRY	13	17	21	26	33	40	48	57
	STRAIGHT CONNECTIONS	7	10	14	18	22	27	32	38
THROW TO 0.25 M/S (M)	AT + 10 □C	0.7	0.8	0.9	1.0	1.2	1.5	1.8	2.0
	AT + 5 □C	0.7	0.8	0.9	1.0	1.2	1.5	1.8	2.0
	ISOTHERMAL	0.5	0.6	0.7	0.8	1.0	1.1	1.1	1.2
	AT - 5 □C	0.7	0.8	0.9	1.0	1.1	1.4	1.5	1.6
	AT - 10 □C	0.7	0.8	0.9	1.0	1.1	1.4	1.5	1.6
THROW TO 0.5 M/S (M)	AT + 10 □C	-	-	-	0.3	0.5	0.6	0.8	1.0
	AT + 5 □C	-	-	-	0.3	0.5	0.6	0.8	1.0
	ISOTHERMAL	-	-	-	0.3	0.5	0.6	0.8	1.0
	AT - 5 □C	-	-	-	0.4	0.6	0.7	0.9	1.1
	AT - 10 □C	-	-	-	0.4	0.6	0.7	0.9	1.1
NOISE LEVEL (NC)	STRAIGHT CONNECTIONS	20	20	20	25	25	30	30	35
	SEB	20	25	25	30	30	35	40	45

TYPE GSFC/GSFD **Size 250**

NECK VELOCITY (M/S)		1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00
VOLUME FLOW RATE (M/3S)		0.061	0.073	0.085	0.098	0.11	0.122	0.134	0.147
PRESSURE DROP (Pa)	TOP ENTRY	9	13	19	25	32	39	48	52
	SIDE ENTRY	11	16	22	30	38	47	54	68
	STRAIGHT CONNECTIONS	8	11	16	20	26	32	41	48
THROW TO 0.25 M/S (M)	AT + 10 □C	1.1	1.3	1.4	1.7	2.0	2.3	2.7	3.0
	AT + 5 □C	1.0	1.2	1.4	1.5	1.7	2.0	2.3	2.6
	ISOTHERMAL	0.7	0.9	1.0	1.2	1.4	1.6	1.7	1.8
	AT - 5 □C	1.0	1.2	1.4	1.5	1.7	1.9	2.0	2.1
	AT - 10 □C	1.1	1.3	1.5	1.7	1.8	2.0	2.2	2.3
THROW TO 0.5 M/S (M)	AT + 10 □C	0.3	0.5	0.7	0.9	1.1	1.2	1.5	1.7
	AT + 5 □C	0.3	0.5	0.6	0.7	0.8	1.0	1.2	1.4
	ISOTHERMAL	-	-	0.3	0.5	0.7	0.8	1.0	1.2
	AT - 5 □C	-	-	0.3	0.6	0.9	1.0	1.2	1.4
	AT - 10 □C	-	-	0.5	0.7	1.0	1.1	1.3	1.5
NOISE LEVEL (NC)	STRAIGHT CONNECTIONS	20	20	25	25	30	30	35	35
	SEB	20	20	30	30	35	35	40	45

Type GSFC/GSFD **Size 315**

NECK VELOCITY (M/S)		1.25	1.5	1.75	2.0	2.25	2.5	2.75	3.0
VOLUME FLOW RATE (M/3S)		0.097	0.116	0.136	0.155	0.175	0.194	0.214	0.233
PRESSURE DROP (Pa) Static	TOP ENTRY	10	14	17	21	26	31	36	42
	SIDE ENTRY	11	15	18	23	28	33	38	44
	STRAIGHT CONNECTIONS	8	11	14	17	24	27	34	41
THROW TO 0.25 M/S (M)	AT + 10 □C	1.5	1.8	2.0	2.4	2.8	3.2	3.6	4.0
	AT + 5 □C	1.4	1.7	1.9	2.0	2.2	2.6	2.9	3.3
	ISOTHERMAL	1.0	1.2	1.4	1.6	1.9	2.1	2.3	2.5
	AT - 5 □C	1.4	1.7	1.9	2.1	2.3	2.4	2.5	2.6
	AT - 10 □C	1.6	1.9	2.1	2.5	2.6	2.7	2.9	3.0
THROW TO 0.5 M/S (M)	AT + 10 □C	0.6	1.0	1.2	1.5	1.7	1.9	2.2	2.4
	AT + 5 □C	0.6	0.7	0.9	1.1	1.2	1.4	1.6	1.7
	ISOTHERMAL	0.4	0.6	0.7	0.8	1.0	1.1	1.3	1.5
	AT - 5 □C	0.4	0.6	0.7	0.9	1.1	1.2	1.4	1.6
	AT - 10 □C	0.5	0.7	0.9	1.0	1.3	1.5	1.7	2.0
NOISE LEVEL (NC)	STRAIGHT CONNECTIONS	15	20	25	25	30	35	35	40
	SEB	20	25	30	30	40	45	45	50

TYPE GSFC/GSFD **Size 450**

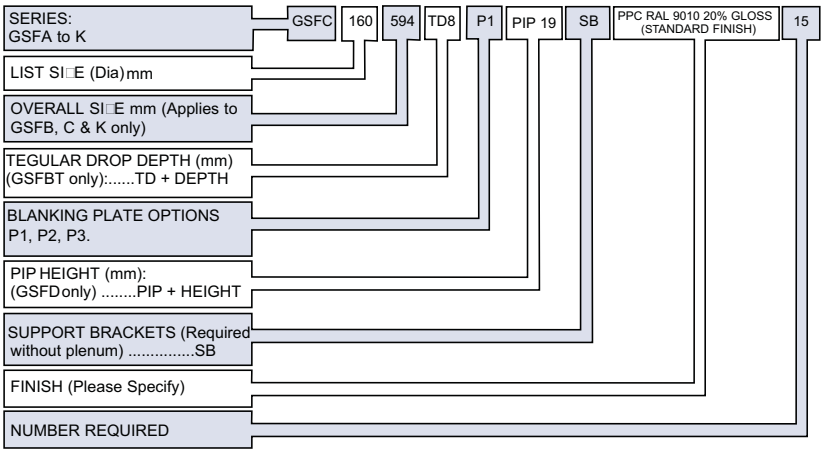
NECK VELOCITY (M/S)		1.25	1.5	1.75	2.0	2.25	2.5	2.75	3.0
VOLUME FLOW RATE (M/3S)		0.198	0.238	0.278	0.318	0.357	0.397	0.437	0.477
PRESSURE DROP (Pa) Static	TOP ENTRY	5	7	9	12	16	20	24	28
	SIDE ENTRY	6	8	11	14	19	24	29	34
	STRAIGHT CONNECTIONS	6	9	12	15	20	25	29	35
THROW TO 0.25 M/S (M)	AT + 10 □C	2.4	2.7	3.1	3.6	3.8	4.2	4.5	4.8
	AT + 5 □C	2.1	2.4	2.7	3.0	3.2	3.5	3.8	4.0
	ISOTHERMAL	1.8	1.9	2.1	2.4	2.5	2.7	2.9	3.0
	AT - 5 □C	1.7	1.8	2.0	2.3	2.4	2.6	2.7	3.0
	AT - 10 □C	1.7	1.8	2.0	2.3	2.4	2.6	2.7	3.0
THROW TO 0.5 M/S (M)	AT + 10 □C	0.9	1.2	1.4	1.7	2.0	2.2	2.4	2.5
	AT + 5 □C	0.8	1.1	1.3	1.5	1.7	2.0	2.2	2.5
	ISOTHERMAL	0.8	1.0	1.3	1.5	1.6	1.8	2.0	2.1
	AT - 5 □C	0.7	1.0	1.2	1.3	1.5	1.6	1.8	2.0
	AT - 10 □C	0.7	1.0	1.2	1.3	1.5	1.6	1.8	2.0
NOISE LEVEL (NC)	STRAIGHT CONNECTIONS	20	25	35	40	40	45	50	50
	SEB	20	25	35	40	40	45	50	55

Note: All noise data based on standard catalogue spigot sizes

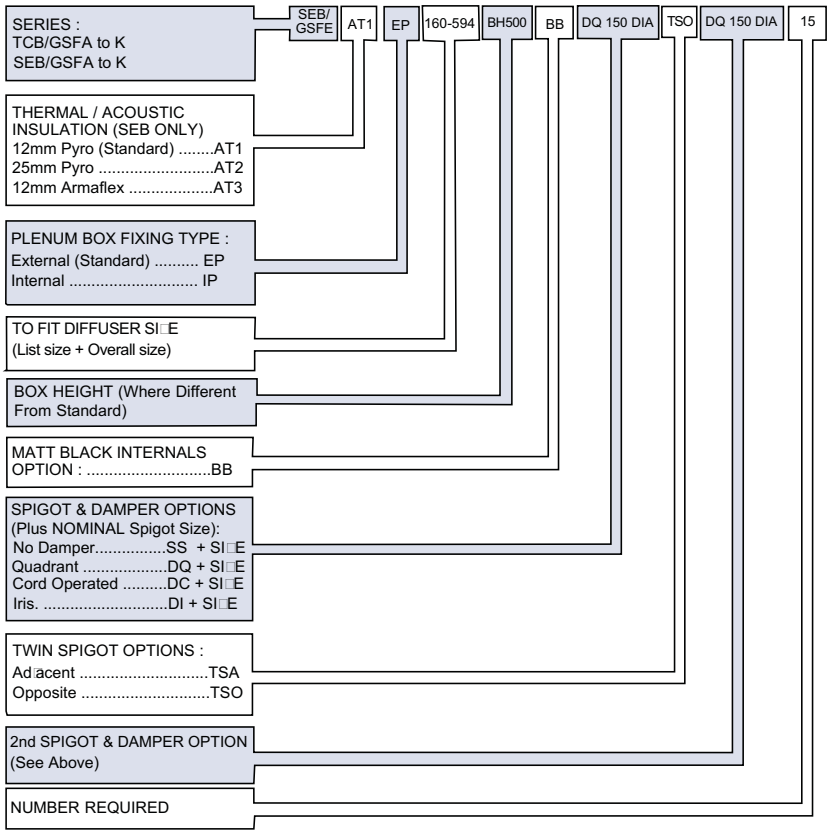
SERIES GSF

Fixed Swirl Diffusers

Ordering Specification
DIFFUSER



Ordering Specification
PLENUM



Fixing

Standard fixing for all units is via drop rods (by others) to 20 x 9mm elongated slots in 25 x 25mm angle cleats at the rear. alternatively an internal fixing where the drop rods locate inside the plenum can be specified where required.

Finish

Standard finish: PPC White RAL 9010 20% gloss (Type GSFH - Matt Black)

Special Finishes: PPC to Stock BS or RAL colour

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