CPSS – Perforated Secure Diffuser

Model: **CPSS**

The Holyoake Series CPSS range of Perforated Supply Secure Diffusers has been designed to provide a medium to high level of security. The CPSS is constructed of heavy gauge perforated plate, framed by a heavy section aluminium surround. The perforated diffusion plate is locked in place by solid heavy aluminium spacers.

The CPSS can be used as a ceiling, or wall mounted diffuser, or as a return if required.

The small perforation size and heavy gauge material, make it ideal for use In locations where security and safety is a requirement.

Construction

The Series CPSS comprises of a 2, or 3 mm thick perforated steel face plate mounted in a 4 mm thick aluminium surround, with mitred and welded corners.
A 40 x 6 mm centre support bar is added to diffusers with a 300 mm nominal neck size and above.

Installation

The CPSS should be fixed from the rear for maximum security. This can be achieved using angle section mounting brackets fixed to the surround of the diffuser and sandwiching the ceiling, or wall.
Alternatively, the diffuser can be face fixed using security screws.

Features

- Highly Secure Heavy Duty construction.
- Secure diffuser fixing by 3 mm thick aluminium spacers.
- 2 or 3 mm thick perforated steel diffusion plate.
- Mitred and welded corners.
- 2 or 3 mm diameter holes for 30, or 40 % free area.
- 4 mm thick aluminium surround.

Options

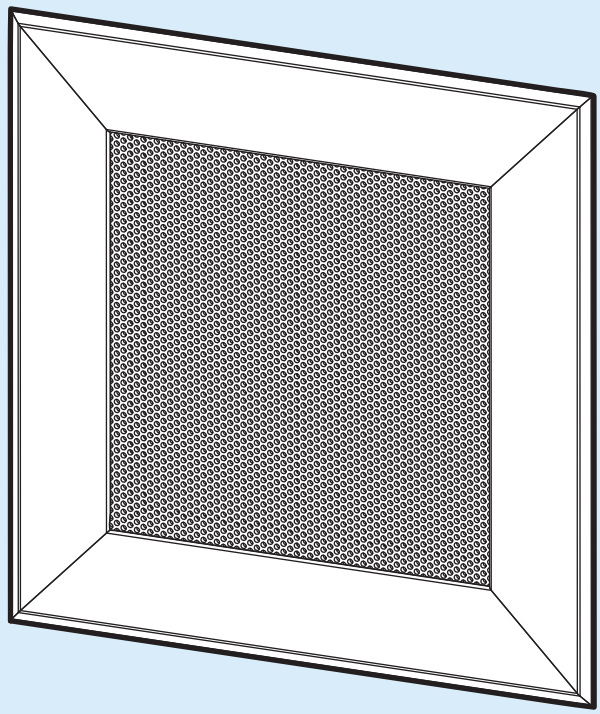
SSA, SRA and RRA Neck Adaptors are available to suit a wide range of duct sizes.

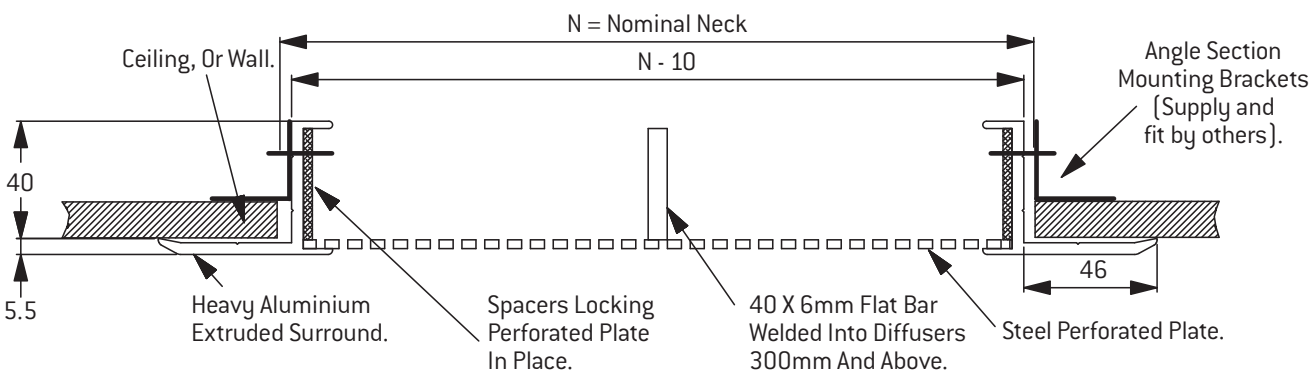
Premi-Aire™, or Galvanised Cushion Head boxes are available to suit standard spiral ducting.
(Refer to Sections J Spiro Ducting and K Accessories).

Finish

Standard Finish is Holyoake White, or can be powder coated to specific requirements.

CPSS- Ceiling Perforated Supply Secure





Contact your local Holyoake branch for specific requirements and local material variations.

Performance Data – CPSS

Nominal Neck (mm)	Flowrate (l/s)	25	50	75	100	150	200	250	300	400	500	600	700	800	900	1000
200x200	Vel (m/s)	0.7	1.4	2.1	2.8	4.2	5.5	6.9								
	ΔP_{S1} (Pa)	4	15	35	62	139										
A_N = 0.036	ΔP_{S2} (Pa)	1	6	13	23	53	94	146								
225x225	Vel (m/s)	0.5	1.1	1.6	2.2	3.2	4.3	5.4	6.5							
	ΔP_{S1} (Pa)	2	9	20	36	81	143									
A_N = 0.046	ΔP_{S2} (Pa)	1	3	8	14	31	54	85	122							
250x250	Vel (m/s)	0.4	0.9	1.3	1.7	2.6	3.5	4.3	5.2	6.9						
	ΔP_{S1} (Pa)	1	6	13	22	50	89	139								
A_N = 0.058	ΔP_{S2} (Pa)	1	2	5	8	19	34	53	76	135						
300x300	Vel (m/s)	0.3	0.6	0.9	1.2	1.8	2.4	3.0	3.6	4.8	5.9	7.1				
	ΔP_{S1} (Pa)	1	2	6	10	22	39	62	89	158						
A_N = 0.084	ΔP_{S2} (Pa)	0	1	2	4	8	15	23	34	60	94	135				
350x350	Vel (m/s)	0.2	0.4	0.6	0.9	1.3	1.7	2.2	2.6	3.5	4.3	5.2	6.1	6.9		
	ΔP_{S1} (Pa)	0	1	3	5	11	20	31	45	80	126					
A_N = 0.116	ΔP_{S2} (Pa)	0	0	1	2	4	8	12	17	31	48	69	93	122		
400x400	Vel (m/s)	0.2	0.3	0.5	0.7	1.0	1.3	1.6	2.0	2.6	3.3	3.9	4.6	5.3	5.9	6.6
	ΔP_{S1} (Pa)	0	1	2	3	6	11	18	25	45	70	102				
A_N = 0.152	ΔP_{S2} (Pa)	0	0	1	1	2	4	7	10	17	27	39	52	69	87	107
450x450	Vel (m/s)	0.1	0.3	0.4	0.5	0.8	1.0	1.3	1.5	2.1	2.6	3.1	3.6	4.1	4.6	5.2
	ΔP_{S1} (Pa)	0	0	1	2	4	7	11	15	27	43	61	83	109		
A_N = 0.194	ΔP_{S2} (Pa)	0	0	0	1	1	3	4	6	10	16	23	32	41	52	65
500x500	Vel (m/s)	0.1	0.2	0.3	0.4	0.6	0.8	1.0	1.2	1.7	2.1	2.5	2.9	3.3	3.7	4.2
	ΔP_{S1} (Pa)	0	0	1	1	2	4	7	10	17	27	39	53	70	88	109
A_N = 0.240	ΔP_{S2} (Pa)	0	0	0	0	1	2	3	4	7	10	15	20	26	33	41
550x550	Vel (m/s)	0.1	0.2	0.3	0.3	0.5	0.7	0.9	1.0	1.4	1.7	2.1	2.4	2.7	3.1	3.4
	ΔP_{S1} (Pa)	0	0	0	1	2	3	5	7	12	18	26	36	47	59	73
A_N = 0.292	ΔP_{S2} (Pa)	0	0	0	0	1	1	2	2	4	7	10	14	18	22	28
600x600	Vel (m/s)	0.1	0.1	0.2	0.3	0.4	0.6	0.7	0.9	1.1	1.4	1.7	2.0	2.3	2.6	2.9
	ΔP_{S1} (Pa)	0	0	0	1	1	2	3	5	8	13	18	25	32	41	50
A_N = 0.348	ΔP_{S2} (Pa)	0	0	0	0	0	1	1	2	3	5	7	9	12	16	19

Guide Product Weights		
Description	Size	Approximate Weight in Kg.
CPSS	200 x 200	0.99
CPSS INC SECURE BOX	250 x 250	8.56

Performance Notes

1. Vel (m/s) is the duct velocity.
2. A_N is the neck area in m^2.
3. ΔP_{S1} (Pa) is based on a 2mm thick diffusion plate with 2mm diameter holes. Free Area 30%.
4. ΔP_{S2} (Pa) is based on a 3mm thick diffusion plate with 3mm diameter holes. Free Area 40%.
5. Minimum size 190 x 190 exact neck.
6. For ceiling applications, seismic restraints would be required, but not supplied.

CPR, CPS, CPMS, CPSHS, CPSS, CPT & CPTR

Product Ordering Key and Suggested Specifications

CPS / CPR	–	600 x 600	–	300 x 300/300 DIA	–	OPTIONS	–	ACCESSORIES	–	FINISH
Ceiling Perforated Supply. Ceiling Perforated Return.		Plenum Adaptor Size (Ceiling Opening).		Nominal Neck Size/ Nominal Neck Diameter.		OBD-2 Opposed Blade Damper / Heavy Gauge Galvanised Perforated Plate.		SRA 300 x 300/ 250 DIA. Square to Round Adaptor.		Holyoake White. Powder Coat.

Ceiling Perforated diffusers shall be Holyoake Series CPS, or CPR and shall consist of an extruded aluminium frame with close mitred corners and 0.75 mm aluminium perforated face in an extruded aluminium sub-frame. The face shall be removable, by means of a separate mounting frame, which if used for supply air shall be furnished with field adjustable pattern control louvers and a galvanised steel plenum with duct connection. All shall be as manufactured by Holyoake.

CPMS	–	200 x 200	–	FINISH
Ceiling Perforated Maximum Security.		Neck Size.		304 Stainless Steel Mill

Ceiling Perforated Maximum Security Grilles (CPMS) shall be constructed of Stainless Steel type 304 for easy wash down. The faceplate shall be constructed from a single piece with 2mm holes, with no ledges or face fixings. They shall be tested to ASTM F254 and meet a minimum grade 2 rating. All shall be as manufactured by Holyoake.

CPSHS	–	200 x 200	–	FINISH
Ceiling Perforated Supply High Secure.		Neck Size.		304 Grade Stainless Steel Mill Finish.

Ceiling Perforated Supply High Secure diffusers shall be Holyoake Series CPSHS. These shall be constructed from a single piece of Stainless Steel 304 Grade face plate, with small 2mm diameter holes, with no ledges, or face fixings. Complete with a long welded neck sleeve for full floor penetration and neck clamping flanges, ensuring no face fixings are required. All shall be as manufactured by Holyoake.

CPSS	–	600 x 600	–	2 / 3	–	ACCESSORIES	–	FINISH
Ceiling Perforated Supply Secure.		Nominal Neck Size.		Perforated Hole Size and Plate Thickness.		SSA, SRA & RRA Neck Adaptors, Premi-Aire™, or Galvanised Cushion Head Boxes.		Holyoake White. Powder Coat.

Ceiling Perforated Supply Secure diffusers shall be Holyoake Series CPSS and shall be constructed from heavy section aluminium surround to provide maximum security. 2 or 3 mm thick steel plate shall provide 30, or 40 % free area. Finished in a durable Powder Coat. All shall be as manufactured by Holyoake.

Note Seismic restraints are required, but not supplied.