

CIRCULAR SILENCERS

Noise control for air handling systems



Introduction

NAP Circular Silencers are used wherever it is necessary to control the passage of noise along an airpath. They control the noise of ventilating and air-conditioning systems in office buildings, lecture and conference rooms, hotels, hospitals, radio and television studios, and wherever air-conditioning and ventilation systems are installed.

In industrial applications, specially designed and constructed circular silencers control noise from fans and blowers, cooling towers, dust extraction systems and similar air or gas handling equipment such as compressors and turbines.

Construction

NAP Circular Silencers are available in a wide range of sizes from 305mm diameter upwards, and are normally supplied with flanged ends for direct attachment to axial flow fans, or direct to ductwork.

NAP Circular Silencers consist of a galvanised sheetmetal case, fabricated from a minimum of 1.0mm galvanised steel. The inner pod and outside lining are manufactured from high density acoustic infill protected by perforated galvanised steel. The silencers are supplied in a natural galvanised finish on the case, with the weld affected areas being protected with cold galvanised paint. The angle frames are also protected by a corrosion resistant paint finish.

Model Range

A standard range comprising Types CS (without pod) and CSP (with pod) is offered from 305mm to 2415mm diameter, and each range is available in two lengths. For CS-1D and CSP-1D the length of silencer is equal to one diameter, and for CS-2D and CSP-2D, the length is equal to two diameters. 1D and 2D are standard lengths, but non-standard lengths are available on request, or to meet special performance requirements. The model prefix is the flange connection diameter of the silencer.

Material of Construction

Flange diameter	Case Material	Perf Material
Up to 915mm	1.0mm galv.	0.6mm
Over 965mm	1.2mm galv.	0.6mm

End Flanges

Flange diameter	Angle size
Up to 380mm	38 x 38 x 3
915mm	51 x 51 x 5
1370mm	64 x 64 x 5
Over 1905mm	75 x 75 x 6

Acoustic Performance

Circular Silencers without Pod Sound Insertion Loss in dB to AS 1277

Model	Octave Band Centre Frequency (Hz)						
	125	250	500	1k	2k	4k	8k
480CS-1D	3	4	9	7	7	7	5
610CS-1D	3	5	9	7	7	6	5
760CS-1D	3	6	9	7	6	5	4
965CS-1D	3	6	9	7	6	5	4
1220CS-1D	4	7	9	7	6	4	4
1525CS-1D	4	8	8	6	5	4	3
2415CS-1D	6	8	8	6	5	4	3
480CS-2D	5	7	15	14	13	10	8
610CS-2D	6	8	15	14	12	10	8
760CS-2D	6	10	16	14	11	9	7
965CS-2D	6	11	16	15	11	8	7
1220CS-2D	8	14	18	14	10	8	7
1525CS-2D	9	15	18	11	9	7	6
2415CS-2D	10	17	14	10	7	6	6

Tested at RMIT Technisearch, Ref. Report 121/618/PD

Circular Silencers with Concentric Pod Sound Insertion Loss in dB to AS 1277

Model	Octave Band Centre Frequency (Hz)						
	125	250	500	1k	2k	4k	8k
480CSP-1D	4	7	13	14	18	18	14
610CSP-1D	4	8	13	16	21	16	12
760CSP-1D	5	10	13	17	23	15	11
965CSP-1D	6	11	14	19	20	13	10
1220CSP-1D	6	11	14	24	18	12	9
1525CSP-1D	8	11	15	22	15	11	9
2415CSP-1D	10	13	23	17	11	9	7
480CSP-2D	8	14	24	30	38	31	21
610CSP-2D	8	18	26	33	37	30	18
760CSP-2D	9	21	27	34	35	26	16
965CSP-2D	10	23	29	37	34	20	14
1220CSP-2D	13	24	30	37	33	19	13
1525CSP-2D	18	25	33	36	26	17	13
2415CSP-2D	22	27	36	30	17	12	11

Tested at RMIT Technisearch, Ref. Report 121/586/PD

Note 1: Materials of Construction may vary according to duty, specification, temperature and acoustic and mechanical conditions.

Note 2: Weights of silencers are given in NAP Technical Bulletin 2.5.

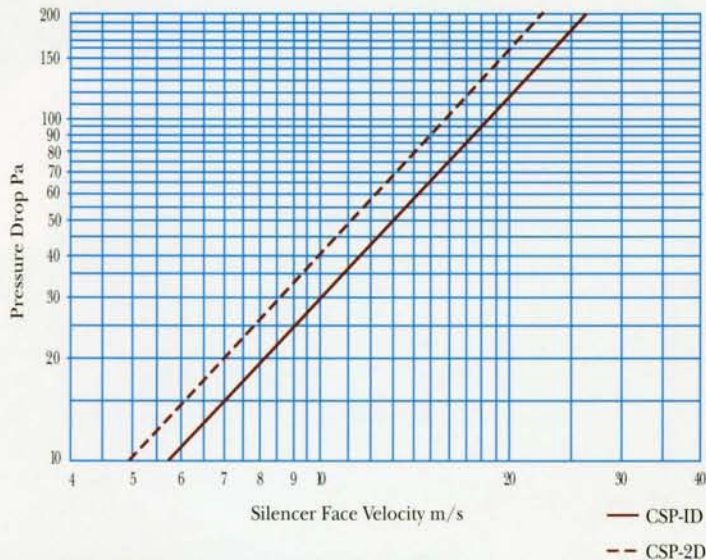
Standard Silencer Dimensions

Flange Dia.	Case O.D.	Shell Thickness	Length 1D*	Length 2D*	Pod Dia
305	455	75	305	610	190
380	530	75	380	760	235
480	630	75	480	960	300
530	680	75	530	1060	330
610	760	75	610	1220	380
760	910	75	760	1520	470
915	1115	100	915	1830	570
965	1175	100	965	1930	600
1065	1275	100	1065	2130	660
1220	1430	100	1220	2440	760
1370	1580	100	1370	2740	850
1525	1740	100	1525	3050	950
1905	2220	150	1905	3810	950
2415	2730	150	2415	4830	950

* length equals length overall including flanges.

Pressure Drop

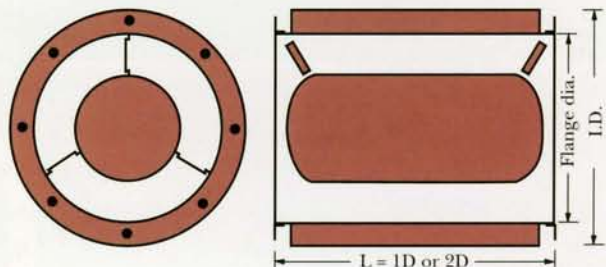
The pressure drop graph below applies to the types CSP-1D, CSP-2D. The type CS (without concentric pod) has a negligible pressure drop. It is equal to the equivalent length of straight duct plus a roughness factor of 60% for duct velocities up to 15m/s.



Flange Drilling for Axial Fans

Flange I.D.*	Flange Width	Flange P.C.D.	No. of Holes	Dia. of Holes
305	38	349	8	10
380	38	425	8	12
480	51	541	8	15
530	51	592	8	15
610	51	668	12	15
760	51	821	12	15
915	57	965	16	15
965	64	1035	16	18
1220	64	1289	20	18
1370	64	1290/1440	20	18
1525	75	1626	12	18
1905	75	2007	16	18

Model type CSP is fitted with a concentric pod. Non-standard flange drillings may be supplied to customer's requirements.



Standard CS Silencer painted finish



Standard CS Silencer galvanized finish

NAP Silentflo is the leading designer and manufacturer of noise control equipment in the southern hemisphere. Whatever the noise problem experienced in architectural, commercial or industrial situations, NAP has a proven engineered product to solve it.

More than 30,000 NAP silencers, louvres, mufflers, doors and enclosures have been supplied to satisfied customers throughout Australia, New Zealand, Hong Kong, China, Singapore and Malaysia.

Since being established in 1978, NAP has, in only 15 years, been involved in the supply of the widest possible range of noise control equipment including audiology suites, safe speech rooms, industrial enclosures, FD and ID fan silencers, gas turbine noise control, resonator silencers, timber and steel acoustic doors, reverberation control, vibration isolation, floating floors, mobile testing laboratories to diesel engine noise control.

The continuous design, testing and development of catalogued acoustic products is the reason for NAP Silentflo's ongoing leadership.

In addition to this leaflet, NAP Silentflo has produced a wide range of technical catalogues. Each gives technical, acoustical, aerodynamic and physical data on individual products. The current range of catalogues (available in presentation binders) is listed on the attached summary of our defined range of standard engineering products. Specialist designs to suit individual requirements or sole manufacturers are always available.

As well as catalogues, the company produces technical bulletins for consultants and engineers, providing further information on our range of products. These are available on request. A regular newsletter is also published to keep customers, friends and interested engineers, designers, architects and consultants aware of new and varied projects carried out by NAP Silentflo.

The range of catalogues produced by the company covers an exhaustive selection of our most popular products. These brochures can be used with confidence by experienced acoustic and mechanical consultants, designers, plant or project engineers and architects.

For those with limited or "once only" experience our sales and project engineers are on hand and are qualified to assist in the evaluation of specific requirements, helping with design, product selection, budgeting and tender submission and schematic planning. Our comprehensive range of technical bulletins provides additional back-up knowledge and information for those requiring more in depth technical support.

Range of Products:

- Rectangular Silencers
- Circular Silencers
- Standard Perforated Sheet Splitters
- Welded Industrial Splitters
- Acoustic Louvres
- Steel Acoustic Doors
- Acoustic Air Handling Units
- Timber Acoustic Doors
- Diesel Engine and Blower Silencers
- Gas Turbine Exhaust Silencers
- Resonator Silencers
- Reactive and Absorptive Industrial Silencers
- Acoustic Enclosures
- Safety Valve and Blowdown Silencers
- Sound-rated Buildings
- Absorption Treatments
- Air Relief Silencers
- Audiometric Booths, Suites and Caravans
- Anechoic Rooms
- Sound-rated Windows
- Heat Recovery Silencers
- Acoustic Screens and Barriers
- Pressure Vessel Silencers
- Vibration Isolators and Acoustic Couplings
- Mobile Diesel Weather and Acoustic Enclosures
- Exhaust Gas Purifiers
- Cooling Tower Silencers
- Vibration Control Systems, inertia bases etc.
- Floating Floors
- Acoustic Lagging



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