PGS

The PGS Limited, range of products covers a multitude of exhaust silencer designs using every conceivable proven method of reducing exhaust gas, air intake and allied component noise levels to meet rigorous requirements of today's marketplace.

Why choose us?

We have many years of experience in the manufacture of exhaust silencers, and installations of systems.

We can offer you

Very competitive price, high quality product and unbeatable service.

BESPOKE SILENCER DESIGN

Ranging from 18db-45db
Attenuation,
Radial/Axial Inlet,
Radial/Axial Outlet,
fabricated with Stainless Steels,
Corten Steels,
with a wide range of finishes,
heat resistant paint to shot blast.

SILENCER RANGE

EXHAUST GAS
HP2, HP3, HP4, HP5, HSLS, HPRA 1, HSSD, HPRA2, HXSLS, HESLS

SPARK ARRESTORS
HPA1, HPA2, HPA3,
HPPAA1, HPAA2, HPAA3

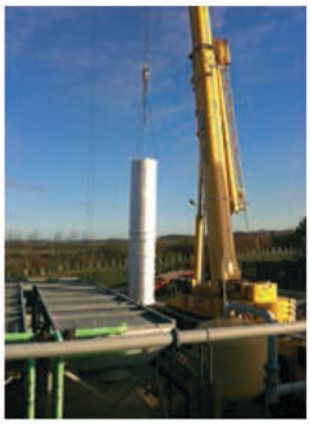
AIR TAKE
HPSC1, HPSS1

BESPOKE PIPEWORK

ACCESSORIES

RAIN CAPS, FLANGES, GASKETS
BOLTING SETS, PIPE WORK,
EXPANSION BELLOWS, FLEXIBLE PIPE.
ELBOW, SOCKETS, BRACKETS HANGERS,
ROLLER BRAKCETS & GUIDES

PGS Limited has years of expertise in developing projects, and takes a hands on approach to working with clients.



Working Nationally, we can take the project through from design stage to manufacture and installation on budget and on time.

SELECTION OF SILENCER TYPE AND SIZE

The proper selection and sizing of the silencer is of utmost importance to ensure that pressure drop, acoustical performance and other specfic design criteria are met.

The selection of the correct type of engine intake and exhaust silencer is determined by the type of engine, the end use of the engine and the degree of silencing required.
Also, the silencer size selected mist accomodate the specified volume of exhaust gas flow keeping the back pressure within the limits specified by the engine manufacturer.

Generally, engine silencers are broadly classified into following categories depending on the end use.

- Commercial
- Industrial
- Semi Residential
- Residential
- Critical
- Super Critical

The attenuation curves shown for each model indicates the insertion loss in dB at different frequencies. These curves represents the expected dynamic insertion loss at each frequency using the respective silencer.

The resultant silenced noise levels may vary to some extent as many factors influence the silenced noise which includes the engine size, type, speed, unsilenced noise levels and frequency distribution.

These curves represents the insertion loss for airborne noise only and has no bearing on structure bome mechanical noise or pipe radiated noise.

Therefore these curves can be used as a guide line only for evaluating the total system

Data Required

- Engine exhaust flow (CFM)
- Exhaust temperature (°F)
- Maximum allowable backpressure (inches of water)

$$V = 4005\sqrt{\frac{\Delta P}{C\left(\frac{530}{T+460}\right)}}$$

V = Gas velocity in FPM
ΔP = Backpressure, inches of water
C = Silencer pressure drop co-efficient
T = Exhaust gas temperature, °F

Note: Do not exceed 13000 FPM velocity for sizing the silencer irrespective of the allowable backpressure.

After calculating the velocity, decide flow area required as follows:

$$\text{Flow area required } (FT^2) = \frac{\text{Exhaust CFM}}{V}$$

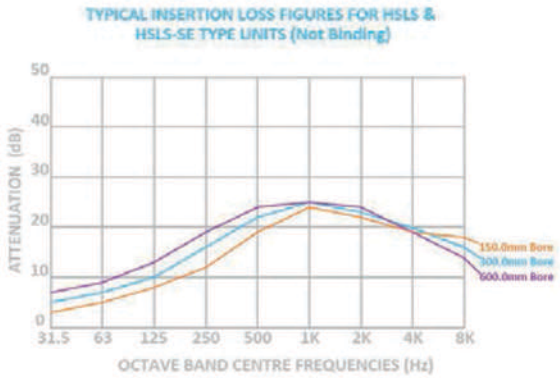
backpressure can be calculated as follows:

$$\Delta P = C\left(\frac{V\ \text{actual}}{4005}\right)^2\left(\frac{530}{T+460}\right)$$

$$V\ \text{actual} = \frac{\text{Exhaust CFM}}{\text{Silencer Flow Area}}$$

EXHAUST GAS SILENCER

The silencers use relative and absorptive principles, or a combination of both. We provide a wide range of silencers from basic industrial absorptive silencers such as the HSLS range to the super critical HPRA 2&3 range, capable of handling even the greater environmental demands.



HSLS - 18dB(A) Insertion loss.

The HSLS type exhaust gas silencer is a simple energy converter utilizing the exhaust gas noise energy to excite individual fibres if different lengths in the acoustic infill to create friction resulting in heat energy to be formed which is then dissipated by the outer silencer casing or into the exhaust gas flow

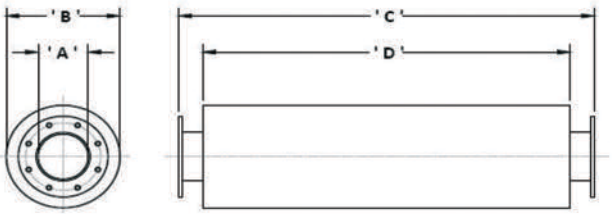
The design also inadvertently uses the Helmholtz principle to increase the insertion loss to approximately 18 dB(A) performance to give an exhaust gas silencer with an exceptionally low pressure drop and good attenuation capabilities at 250 hertz and greater in the overall spectrum.

It can be used singularly as stand alone product in applications such as irrigation pumps, small power packs and similar installations where the minimum amount of noise reduction is required and the final noise level is not considered to be a problem to local surroundings.

Due to the effect on the higher frequencies the design is mainly used as a secondary or terminal silencer for the low frequency biased expansion/reflective primary silencers types

HP, HPA, HPRA & HPAA. The HSLS silencer can be close coupled or remotely mounted in the exhaust gas line to reduce exhaust gas noise to much lower acoustic levels.

AXIAL INLET & AXIAL OUTLET VERSIONS



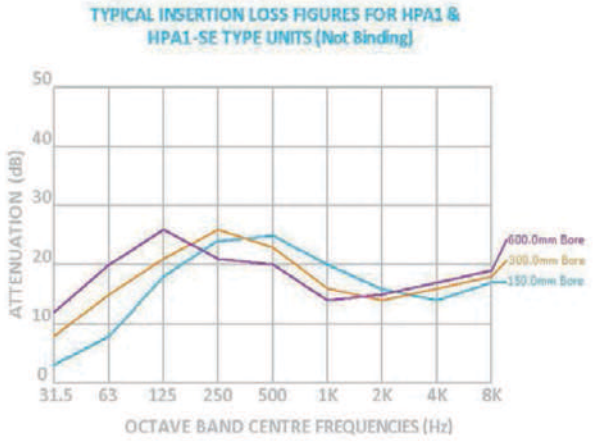
Silencer Part Number	'A'	'B'	'C'	'D'	Wt. (kg)
HSLS 025 (F & S)	25.4	76.0	460.0	390.0	2.0
HSLS-038 (F & S)	38.1	115.0	650.0	580.0	4.2
HSLS 050 (F & S)	50.8	115.0	800.0	720.0	6.0
HSLS 063 (F & S)	63.5	140.0	800.0	720.0	7.0
HSLS 075 (F & S)	76.2	152.0	820.0	720.0	10.5
HSLS 090 (F & S)	88.9	178.0	1000.0	850.0	16.5
HSLS 1 00 (F & S)	101.6	230.0	1000.0	850.0	22.0
HSLS 125 (F)	127.0	310.0	1000.0	850.0	34.0
HSLS 150 (F)	152.4	360.0	1295.0	1145.0	51.0
HSLS 175 (F)	177.8	360.0	1295.0	1145.0	52.0
HSLS 200 (F)	203.2	410.0	1575.0	1425.0	70.0
HSLS 225 (F)	228.6	410.0	1575.0	1425.0	75.0
HSLS 250 (F)	254.0	460.0	1880.0	1730.0	150.0
HSLS 300 (F)	304.8	560.0	2490.0	2290.0	222.0
HSLS 350 (F)	355.6	560.0	2490.0	2290.0	245.0
HSLS 400 (F)	406.4	660.0	2745.0	2545.0	348.0
HSLS 450 (F)	457.2	660.0	2945.0	2745.0	369.0
HSLS 500 (F)	508.0	760.0	2945.0	2745.0	390.0
HSLS 550 (F)	558.8	760.0	3455.0	3255.0	405.0
HSLS 600 (F)	609.6	810.0	3855.0	3655.0	415.0

'S' denotes B.S.P. Screwed versions are available as standard.
'F' denotes Flanged Versions are available in BS 10 Table 'D' drillings as standard.
All the dimensions and weights given are approximate and may vary under manufacturing conditions.
All dimensions and weights given are not binding and may change without prior warning.
Larger sizes are available upon request as well as bespoke design and manufacture.
All units can be installed vertically or horizontally without detriment acoustically.

SPARK ARRESTOR TYPE SILENCER

A substantial number of operating conditions on both land & at sea, require additional capabilities such as spark arresting and flame control aswell as noise suppression.

The PGS Limited rand of spark arrestor silencers offers full compliance to requirements of EEC 98/37/EC & BS-EN 1834-1 machinery directives and all there amendments.



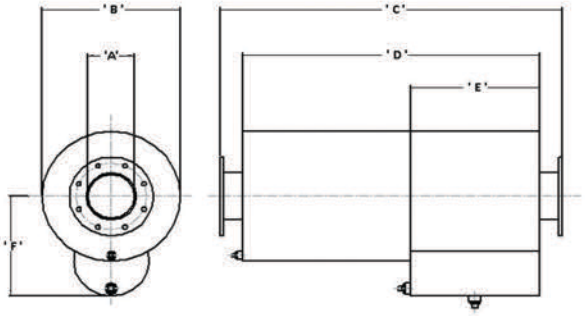
The design also cleverly incorporates a highly efficient centrifugal spark arrestor capability and can be used as a stand alone silencer for hazardous marine and onshore applications by meeting the requirements for the EEC 98/37/EC and BS-EN 1834-1 Machinery Directives and all their amendments

The units can also be close coupled or remotely mounted to an HSLS, HESLS or HXSLS series, dissipative silencer to reduce the exhaust gas noise to a lower more acceptable emission level dependant upon the actual specifications.

The HPA 1 & HPA1-SE (Side Entry) type, spark arrestor exhaust gas silencers are a simple energy converter design utilizing the exhaust gas velocity and differing volumes to create rapid changes exhaust gas speed resulting in noise energy being converted into heat energy, which is then dissipated to the silencer casing or carried away in the exhaust gas flow.

The designs also use the reflective principles well known in acoustic work to bounce dominant frequencies back on themselves cancelling each other out. This increases the overall insertion loss to approximately 18dB(A) centred at the lower frequencies including the fundamental firing frequency to give a silencer with medium pressure drop characteristics and good capabilities at the low to middle ranges of the octave band spectrum.

AXIAL INLET & AXIAL OUTLET VERSIONS

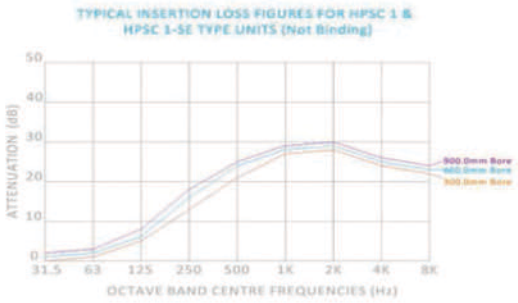


Silencer Part Number	'A'	'B'	'C'	'D'	'E'	'F'	Wt. (kg)
HPA1 038 (F & S)	38.1	210.0	510.0	360.0	180.0	155.0	6.0
HPA1 050 (F & S)	50.8	210.0	535.0	385.0	180.0	155.0	7.5
HPA1 063 (F & S)	63.5	260.0	560.0	410.0	180.0	205.0	9.9
HPA1 075 (F & S)	76.2	310.0	660.0	510.0	180.0	225.0	15.5
HPA1 090 (F & S)	88.9	360.0	760.0	610.0	230.0	275.0	22.0
HPA1 100 (F & S)	101.6	360.0	860.0	710.0	280.0	275.0	30.0
HPA1 125 (F)	127.0	410.0	990.0	840.0	280.0	300.0	44.0
HPA1 150 (F)	152.4	460.0	1140.0	990.0	430.0	355.0	60.0
HPA1 175 (F)	177.8	510.0	1280.0	1130.0	430.0	380.0	92.0
HPA1 200 (F)	203.2	560.0	1420.0	1270.0	430.0	405.0	115.0
HPA1 225 (F)	228.6	610.0	1450.0	1300.0	430.0	430.0	135.0
HPA1 250 (F)	254.0	660.0	1500.0	1320.0	430.0	455.0	170.0
HPA1 300 (F)	304.8	760.0	1750.0	1570.0	430.0	505.0	250.0
HPA1 350 (F)	355.6	920.0	2010.0	1830.0	585.0	605.0	338.0
HPA1 400 (F)	406.4	1020.0	2210.0	2030.0	585.0	655.0	480.0
HPA1 450 (F)	457.2	1170.0	2540.0	2340.0	585.0	730.0	625.0
HPA1 500 (F)	508.0	1270.0	2740.0	2540.0	736.0	810.0	790.0
HPA1 550 (F)	558.8	1370.0	2950.0	2750.0	736.0	855.0	1005.0
HPA1 600 (F)	609.6	1470.0	3250.0	2950.0	736.0	905.0	1200.0

AIR INTAKE SILENCER

When a large diesel or gas powered two/four stroke engine or turbine is used, large quatities of air are drawn into the equipment for combustion purposes. These Air induction systems may be naturally aspirated or use turbo chargers or compressors to increase the air pressure fed into the fuel mixing chambers or cylinders to increase efficiency or performance.

The speed of the air entering the system can create a substantial amount of noise. In addition, the high rotating speed of the turbo charger or compressor, which is directly connected upstream in relation to the intake position, may cause noise to be radiated down the induction pipe and through the intake filter and so out into the atmosphere. This is particulary noticeable on very large rotating induction systems where the noise levels may exceed 120 dB in the higher 2000 to 4000 Hertz frequencies.

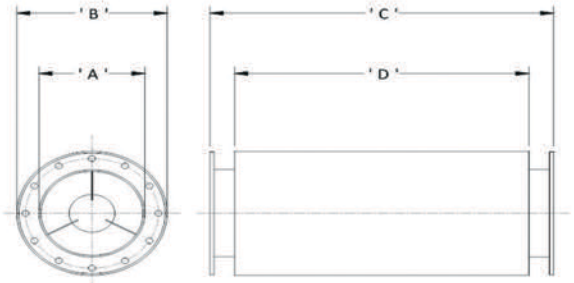


The HPSC 1& HPSC 1-SE (Side Entry) type, Air intake attenuation silencer is a simple energy converter utilizing both the flow energy in the intake duct and the upstream noise from axial or centrifugal fans, turbochargers, superchargers, roots blowers or similar air moving equipment to excite individual fibre of various lengths in the acoustic infill to vibrate and create fiction resulting in heat which is then dissipated to the passing airflow.

The designs also inadvertently use the Helmholtz principle to increase the insertion loss to approximately 25 dB(A) to give a clean type silencer with a low pressure drop and good capabilities at 500hertz and greater in the octave band spectrum.

The design has a central pod partially obscuring the line of sight which combats the flow velocity noise associated with the vast quantities of cool air required to feed all forms of internal combustion engines, small gas turbines, boilers and blowers of all sizes and configurations.
With additional modifications the silencer range can be adapted for use inline on low pressure steam, air or gas pipelines, where noise radiation may be evident.
Under slightly different circumstances the design can be used for medium to high velocity exhaust and air discharge applications in chimneys, exhaust stacks and flues. The designs can be extended to longer lengths increasing the insertion loss with little or no increase in pressure drop across the unit. This makes the concept useful for many arduous tasks and installations which other designs cannot match.

AXIAL INLET & AXIAL OUTLET VERSIONS



Silencer Part Number	'A'	'B'	'C'	'D'	Wt. (kg)
HPSC1 250 (F)	254.0	410.0	1100.0	900.0	50.0
HPSC1 300 (F)	304.8	460.0	1100.0	900.0	65.0
HPSC1 350 (F)	355.6	510.0	1100.0	900.0	75.0
HPSC1 400 (F)	406.4	560.0	1200.0	1000.0	90.0
HPSC1 450 (F)	457.2	610.0	1200.0	1000.0	108.0
HPSC1 500 (F)	508.0	660.0	1300.0	1100.0	130.0
HPSC1 550 (F)	558.8	710.0	1300.0	1100.0	140.0
HPSC1 600 (F)	609.6	760.0	1400.0	1200.0	155.0
HPSC1 650 (F)	660.4	810.0	1500.0	1300.0	170.0
HPSC1 700 (F)	711.2	860.0	1600.0	1300.0	210.0
HPSC1 750 (F)	762.0	920.0	1700.0	1400.0	225.0
HPSC1 800 (F)	812.8	960.0	1800.0	1500.0	275.0
HPSC1 850 (F)	863.6	1020.0	1900.0	1600.0	290.0
HPSC1 900 (F)	914.4	1080.0	2100.0	1700.0	320.0

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COMPANY PROFILE

The companies incorporation began in 1955, as PECO Industrial Silencers Ltd., as a manufacturing company to supply heavy duty exhaust gas silencers for both the industrial and marine markets in Europe. The primary markets were identified as marine propulsion engines and generators, land based power plants of all sizes as well as off-shore/on-shore oil exploration and production facilites.

The designs and goodwill were purchased by the current owners in 2003. The ongoing management have maintained the production of slightly modified generic designs based on their earlier counterparts until this very day.

The history of the two companies in conjunction must make the current owners of PGS Ltd., one of the oldest and longest surviving continuoous manufacturers of quality heavy duty diesel, gas and heavy fuel oil powered primer mover exhaust gas silencers and combustion air intake attenuators in the U.K. this is indeed an accolade in itself as well as for the Merseyside area as a whole.

The current management pride themselves on producing the best quality heavy duty exhaust gas equipment at a competitive price for distribution all around the world. With the added assistance of external expert advice, the company can operate at any level in the European market to meet the most arduous noise requirements specified by any customer on any form of prime mover.
With an expanding customer base extending form the Arctic Circles to the deserts of the Arabian Emirates and the tropical rain forests of South America and the Far East or plying the vast oceans of the world.

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