

CHALWYN

DIESEL PROTECTION SYSTEMS

Diesel Engine Exhaust Spark Arrestors

SELECTION, APPLICATION AND MAINTENANCE

DESCRIPTION

Chalwyn spark arrestors are of the quenching type as defined in BS EN 1834-1:2000 clause 5.10.2. In this design the glowing particles emitted from a diesel engine exhaust are repeatedly impacted against internal spark arrestor surfaces to be cooled and broken down before eventual discharge to atmosphere.

APPROVALS

Spark arrestor types SSL and SSE have been type tested and meet the spark arresting performance specified for diesel engine exhaust spark arrestors for use in zone 1 and zone 2 hazardous areas as defined by the ATEX Directive. Types SSL and SSE are marked:



IMPORTANT NOTE. In order to fully comply with the requirements of the ATEX Directive the installer/user shall satisfy themselves that the installed spark arrestor is suitable for its intended purpose (undertake a spark test if necessary) and shall be included in the temperature assessment of the completed engine prior to commissioning, in accordance with the following standards appropriate to the particular application.

EN 1834 - 1 : 2000 clause 5.3

EN 1834 - 2 : 2000 clause 5.2

EN 1834 - 3 : 2000 clause 5.1

APPLICATION

Suitable for situations where spark emission from a diesel engine exhaust could lead to the ignition of flammable material.

PRODUCT RANGE

TYPE SSL

- Combined spark arrestor/ industrial standard silencers designed for permanent installation.
- ATEX approved for surface or mining hazardous area applications. (See IMPORTANT NOTE under APPROVALS).
- Sizes to suit engine ratings from 7.5KW (10hp) to 373KW (500hp).
- Manufactured in 316 grade stainless steel.
- Can be mounted vertically or horizontally.
- Slotted inlet and outlet pipe for clamping.
- Special custom designed versions to order including flanged or threaded pipe connections.
- Many standard sizes are available from stock.

TYPE SSE

- Compact spark arrestors designed for 'end of line' permanent or temporary installation.
- ATEX approved for Zones 1 and 2 hazardous area applications. (See IMPORTANT NOTE under APPROVALS).
- Sizes to suit engine ratings from 4KW (5hp) to 111KW (150hp).
- Manufactured in 316 grade stainless steel.
- Can be mounted vertically or horizontally.
- Slotted inlet pipe for clamping. Fixed size outlet pipe.
- Flanged or threaded inlet pipe options available.
- A number of standard size units available from stock.

TYPE SAS and SSS

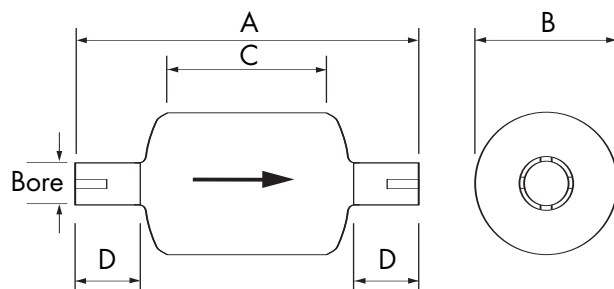
- Simple single stage spark arrestors for engines rated below 4KW (5hp).
- Not ATEX approved.
- Available in carbon steel (SAS types) or stainless steel (SSS types).
- Can be mounted vertically or horizontally.
- Slotted inlet pipe for clamping to exhaust pipe. Fixed size outlet pipe.
- Popular sizes available from stock.

SELECTION

The limiting engine ratings shown in the tabulated data for each spark arrestor type should not be exceeded. Where a diesel engine exhaust system also includes other features with significant flow restriction, e.g. flame traps, restrictive silencers, etc., or the engine manufacturer specifies an unusually low back pressure limit, or where specific noise reduction levels are specified, the installer/user must ensure the spark arrestor meets all requirements of the intended application. If in doubt please check with your local Chalwyn Distributor.

Note that when selecting a "clamp on" pipe arrangement, the tabulated data relates to the internal bore of the spark arrestor pipe stubs.

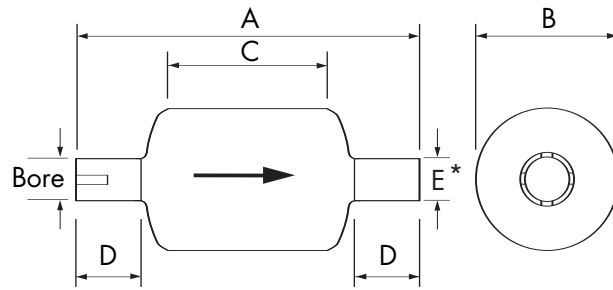
TYPE SSL



Product Code	Pipe Bore		Engine Power Range				A mm	B mm	C mm	D mm	Approx Weight kg
	mm	ins	Naturally Aspirated kW	Naturally Aspirated hp	TurboCharged kW	TurboCharged hp					
SSL-130	31.8	1.1/4	7.5 – 34	10 – 45			490	92	305	65	1.8
SSL-137	34.9	1.3/8									
SSL-150	38.1	1.1/2									
SSL-160	41.2	1.5/8									
SSL-175	44.5	1.3/4									
SSL-208	48.0	1.7/8									
SSL-200	50.8	2									
SSL-202	38.1	1.1/2	7.5 – 41	10 – 55			570	127	380	65	2.9
SSL-207	50.8	2									
SSL-210	44.4	1.3/4	19 – 60	25 – 80			465	153	275	65	3.0
SSL-209	48.0	1.7/8									
SSL-220	50.8	2									
SSL-224	55.0	-									
SSL-225	57.2	2.1/4									
SSL-237	60.3	2.3/8									
SSL-250	63.5	2.1/2									
SSL-262	66.1	2.5/8									
SSL-275	69.9	2.3/4									
SSL-251	50.8	2	19 – 67	25 – 90			650	127	460	65	3.3
SSL-252	63.5	2.1/2									
SSL-259	50.8	2	37 – 75	50 – 100			765	153	585	65	4.5
SSL-260	63.5	2.1/2									
SSL-305	76.2	3									
SSL-281	50.8	2									
SSL-282	57.2	2.1/4									
SSL-238	60.3	2.3/8									
SSL-285	63.5	2.1/2									
SSL-290	69.9	2.3/4									
SSL-300	76.2	3									
SSL-325	82.6	3.1/4									
SSL-350	88.9	3.1/2									
SSL-312	78.0	-	90 – 138	120 – 185	82 – 119	110 – 160	850	153	665	65	5.3
SSL-355	76.2	3									
SSL-356	88.9	3.1/2									
SSL-357	101.6	4									
SSL-360	76.2	3	131 – 187	175 – 250	104 – 149	140 – 200	865	203	665	65	8.0
SSL-362	80.0	-									
SSL-365	82.5	3.1/4									
SSL-370	88.9	3.1/2									
SSL-375	95.3	3.3/4									
SSL-400	101.6	4									
SSL-451	114.3	4.1/2									
SSL-435	88.9	3.1/2	168 – 224	225 – 300	131 – 189	175 – 250	1110	203	910	70	9.5
SSL-440	101.6	4									
SSL-450	114.3	4.1/2									
SSL-448	113.0	-	194 – 261	260 – 350	160 – 224	215 – 300	1320	233	1110	75	16.0
SSL-452	114.3	4.1/2									
SSL-455	120.6	4.3/4									
SSL-500	127.0	5									
SSL-442	101.6	4									
SSL-449	110.0	-									
SSL-453	114.3	4.1/2									
SSL-501	127.0	5									
SSL-550	139.7	5.1/2									
SSL-600	152.4	6									

= Normally stocked items

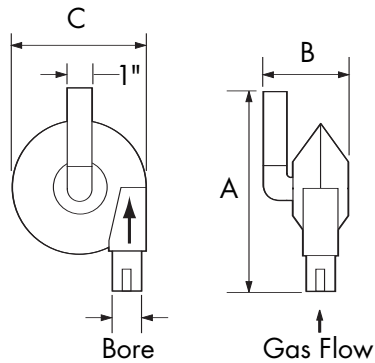
TYPE SSE



Product Code	Inlet Pipe Bore		Engine Power Range		A mm	B mm	C mm	D mm	E mm	Approx Weight kg
	mm	ins	kW	hp						
SSE - 092	31.8	1 1/4	4 – 19	5 – 25	320	92	180	60	38	1.5
SSE - 093	34.9	1 3/8								
SSE - 094	38.1	1 1/2								
SSE - 096	44.5	1 3/4								
SSE - 122	38.1	1 1/2	15 – 34	20 – 45	335	125	190	65	38	2.0
SSE - 124	44.5	1 3/4								
SSE - 126	50.8	2								
SSE - 923	38.1	1 1/2	23 – 45	30 – 60	365	152	182	65	44	2.4
SSE - 945	44.5	1 3/4								
SSE - 222	50.8	2								
SSE - 221	57.2	2 1/4								
SSE - 223	63.5	2 1/2								
SSE - 230	50.8	2	30 – 75	40 – 100	380	205	175	65	63.5	3.5
SSE - 233	63.5	2 1/2								
SSE - 951	69.9	2 3/4								
SSE - 920	76.2	3								
SSE - 302	63.5	2 1/2	55 – 111	75 – 150	430	235	200	65	76	4.5
SSE - 921	76.2	3								
SSE - 926	88.9	3 1/2								

= Normally stocked items.

* = N.B. Diameter 'E' is to outside of pipe stub.

TYPE SAS and SSS

Product Code	Pipe Bore		Engine Power Range		A mm	B mm	C mm	Approx Weight kg
	mm	ins	kW	hp				
SAS - 075	19.0	3/4	1 – 4	1 – 5	238	100	150	0.7
SAS - 100	25.4	1						
SAS - 112	28.6	1.1/8						
SAS - 125	31.8	1.1/4						
SAS - 126	34.9	1.3/8						

= Normally stocked items

The stainless steel SSS versions of the above are available in the same size range.

INSTALLATION

Fit the spark arrester into the diesel engine exhaust pipe at any convenient position. Guard as necessary to avoid any hazard arising from contact with the hot surface.

Ensure correct gas flow direction as indicated by the arrow on the spark arrester.

Provide adequate support for the spark arrester and associated exhaust pipe-work. Use flexible sections where required to avoid excessive stresses. **IMPORTANT: Early mechanical failure will occur if the Spark Arrester is not supported and installed correctly.**

Use a proprietary exhaust gas sealant as necessary to make certain all joints in the exhaust system are gas tight.

Check that under the full range of operating conditions the spark arrester surface temperature does not exceed any maximum specified for the application.

MAINTENANCE

DAILY: Examine the spark arrester for any sign of gas leakage, cracks or significant areas of damage, i.e. dents of more than a few millimetres in depth.

THREE MONTHLY: Remove spark arrester. Tap with a soft mallet to loosen any internal deposits and shake out. Also by shaking check for any loose internal baffles.

SIX MONTHLY: (or 1500 hours operation, whichever is sooner) Examine the exhaust discharge in darkness whilst repeatedly loading and accelerating the engine. If any sparks are observed, the spark arrester is not suitable for further use. Note: ensure adequate ventilation if this check is carried out in an enclosed area.

NOTE: The engine must not be put back into service until any problems identified by the above checks are rectified.

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