

Overview

Chalwyn Spark Arrestors help mitigate the risk of fire from the ignition of flammable materials caused by spark emission from diesel engine exhaust.

They are a basic but key safety feature for both hazardous area and lower risk diesel engine applications where a stray spark may cause ignition of combustible material.

Virtually all legislation about operating a diesel engine in a hazardous area includes a mandatory requirement to fit a properly tested and approved exhaust spark arrestor.



Typical Applications

- Where spark emission from a diesel engine exhaust could lead to the ignition of flammable material
- Offshore platforms and drilling rigs
- Refinery vehicles and industrial equipment
- Forklift trucks in defined hazardous areas



Features and Benefits

- Standard Spark Arrestor versions are safe to use where a stray spark from a diesel engine exhaust may ignite surroundings or cause an explosion
- ATEX Spark Arrestor versions are safe to use in potentially explosive atmospheres (the 316L range meets EN 1834 requirements)
- For use as a mandatory requirement globally in the oil and gas industry
- Constructed from corrosion resistant 304L stainless steel or 316L stainless steel for ATEX approved versions, the material is robust providing longevity
- Wide range of sizes available
- Meets engine manufacturers published back pressure specification providing emission conformance, and exceptional spark-arresting abilities



Operating Principle

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

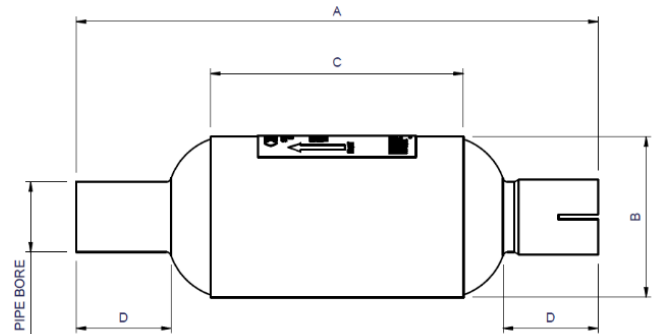
Product Range and Selection

Standard Spark Arrestor versions (SAA)

Designed for 'in-line' or 'end of line' installation.

A range of pipe diameter sizes available

Manufactured from 304L grade stainless steel



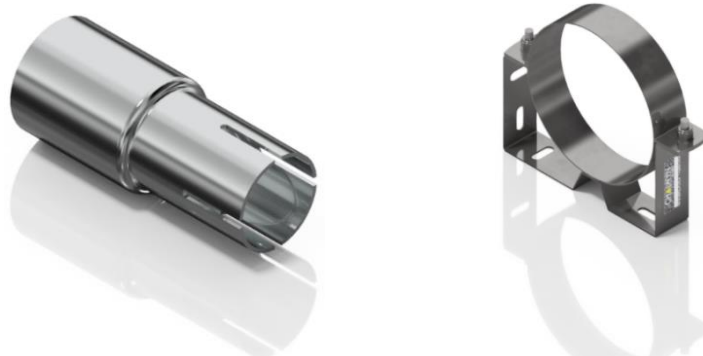
PRODUCT CODE	PIPE BORE mm	PIPE BORE INCHES	A mm	B mm	C mm	D mm	Weight kg
SAA100-035	35mm	1 3/8	330	100	160	60	1.1
SAA100-038	38mm	1 1/2					
SAA100-045	45mm	1 3/4					
SAA125-045	45mm	1 3/4	600	125	350	75	2.8
SAA125-050	50mm	2					
SAA125-057	57mm	2 1/4					
SAA125-064	64mm	2 1/2					
SAA150-050	50mm	2	672	150	450	75	4.5
SAA150-057	57mm	2 1/4					
SAA150-064	64mm	2 1/2					
SAA150-070	70mm	2 3/4					
SAA150-076	76mm	3					
SAA175-064	64mm	2 1/2	710	175	500	75	5.1
SAA175-070	70mm	2 3/4					
SAA175-076	76mm	3					
SAA175-089	89mm	3 1/2					
SAA200-076	76mm	3	970	200	700	100	7.9
SAA200-089	89mm	3 1/2					
SAA200-102	102mm	4					
SAA200-114	114mm	4 1/2					
SAA250-102	102mm	4	1200	250	850	125	11.8
SAA250-114	114mm	4 1/2					
SAA250-127	127mm	5					
SAA300-127	127mm	5	1420	300	1000	150	17.5
SAA300-140	140mm	5 1/2					
SAA300-153	153mm	6					
SAA350-153	153mm	6	1650	350	1200	150	23.3
SAA350-178	178mm	7					
SAA350-203	203mm	8					

Notes: When selecting a "clamp on" pipe arrangement, the tabulated data relates to the internal bore of the spark arrestor pipe stubs.

It is essential to select the correct spark for installation on a modern emission complaint engine with exhaust after treatment devices, please contact Chalwyn for support if unsure which model suits your engine and application.

Accessories

UBC body support brackets are available as well as pipe reducing adaptors. Please contact Chalwyn for model numbers.



ATEX

ATEX Spark Arrestor versions are available upon request as the Standard Spark Arrestor versions with the following exceptions:

- Manufactured from 316L grade stainless steel
- ATEX approved for Zones 1 and 2 hazardous area applications (see IMPORTANT NOTE under Approvals above).
- Spark arrestor types 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.

The ATEX types are marked:



II 2 G D

I M2

Tamb -40°C to +55°C

Important Note: To fully comply with the requirements of the ATEX Directive, the installer/user shall ensure that the 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 for II 2 G

EN 1834 -2: 2000 clause 5.2 for I M2

EN 1834 -3: 2000 clause 5.1 for II 2 D

Installation

Fit the spark arrestor 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 arrestor.

Provide adequate support for the spark arrestor and associated exhaust pipe-work. Support brackets up to 360mm (14") diameter are available from Chalwyn.

Use flexible sections where required to avoid excessive stresses.

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 arrestor surface temperature does not exceed any maximum specified for the application.

SA125 to SA350 ranges must always be supported at both ends.

Spark Arrestors can be mounted vertically as long as they have adequate support. UBC Body support are available upon request as per accessories above.

IMPORTANT: Early mechanical failure will occur if the spark arrestor is not supported and installed correctly.

Maintenance

1. Chalwyn spark arrestors contain no serviceable parts and require minimal maintenance.
2. Spark arrestors should be examined daily while in use for any signs of damage and to ensure that the outer case is intact with no cracks, dents, holes or evidence of corrosion.
3. In normal conditions, the spark arrestor is self-cleaning. However, after prolonged use or long periods of idling, the unit may be cleaned by bringing the engine to full operating temperature. While running at high revs, the spark arrestor case should be lightly tapped with a soft hammer to loosen any accumulated carbon; this will be blown out by the exhaust.
4. Normally, the first sign of deterioration will be visible externally. We recommend removing the spark arrestor every 1,000 hours and examining it for damage. Tap with a soft hammer as described above and shake out any deposits. Check for loose baffles. Reinstall and run a spark check.

Note: Ensure adequate ventilation if this check is carried out in an enclosed area. The engine must not be put back into service until any problems identified by the above checks are rectified.

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