

SCHAER HITECH

INSTALLATION AND MAINTENANCE

Deflagration- and Endurance Burning Flame Arrester for Bio- Sewage- Methane Gas - Ex. IIA / I - in Eccentric Design with removable Element

*System **SCHAER HITECH Series SDB***

Installation- and Maintenance Dokument Nr. SH/DB/eng/002

A. GENERAL

The Deflagration- and Endurance burning Flame Arresters, Series SDB, are intended for use in Piping Systems handling flammable Gases / Vapours of Gas Group Ex. IIA / I.

B. GUIDANCE

1. Maximum Temperature limit -20 to +60 °C, covering the general Range of Flame Arresters.
2. SDB Series Deflagration / Endurance burning Flame Arresters are designed to protect Piping Systems and Equipment from explosive Deflagrations that have occurred in associated Piping / Equipment or external to the Vent Piping.
3. For use as Endurance burning protection Installation - a Temperature Gauge is recommended
4. **ONLY** install for Applications it has been designed and specified for and within its tested / certified Limitations – refer to Product Data-Sheet for guidance. It is potentially **DANGEROUS** to use in other than specified Applications.
5. Mounting of all monitoring Devices shall be in accordance with EN50018.
6. Flame Arresters should not be positioned near hot Equipment unless certified for the elevated Temperature, as heat transfer to the Flame Arrester will reduce its Performance and may cause it to fail.
7. Each Flame Arrester is to be secured on either Side with a Shut off Device. Shut off Devices should be fully open during Operation.
8. Continuous monitoring of Pressure drop is advised if the Process is known to contain Particulates or Substances, which can block the Element Matrix and thus Over pressure the System.
9. Metal Parts insulated by Gaskets should be earthed where necessary.
10. Flame velocities and Pressures of flammable Mixtures can be enhanced by upstream turbulence, which can be caused by Bends, Valves or any change in section of the Pipework. The Flame Arrester should only be used for the Process application it is designed for -
11. If the Process conditions or the Pipework configuration change, the Flame Arrester should be checked with the Manufacturer.

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C. INSTALLATION

1. Remove all Packaging from the Flame Arrester prior to Installation, paying particular attention to the inlet and outlet Housing sections.
2. Mount the Flame Arrester in the Pipeline. The SCHAER HITECH Series SDB is certified for Bi- directional use.
3. **FLANGED CONNECTIONS** – bolt to Flanges of the same Specification as those fitted to the Flame Arrester itself, with intermediate Gaskets of a Type appropriate to the service Conditions. Uniformly tighten the Bolting to ensure a good Seal.
4. The distance to the Flame Source does not exceed an L/D Ratio of 1:50.
5. For **Endurance burning** protection the Mounting is only allowed **in a horizontal position**
6. Ensure that any accessory Nozzles are fitted with the necessary Accessories or with Plugs / blanking Flanges or appropriate
7. The certification is for a max. System pressure of 100mbar,- Temperature -20/+60°C
8. When appropriate, it is recommended that a protective Cage be installed to guard the Flame Arrester against accidental Impact from Vehicles or from heavy falling Objects.

D. MAINTENANCE

Should only be carried out by suitably qualified Personnel.

1. During service the Element Matrix may become blocked with Particles and Impurities from the Atmosphere and /or Process. If too severe, the blockage will impair the free flow of Gases / Vapours. In severe Cases this can cause damage to Equipment and the Flame Arrester itself.
2. A periodic maintenance Schedule is recommended for the Flame arrester, the Frequency should be based on operational Experience and actual operating Conditions, but at least annually.
3. No special Tools are required. Standard Spanners and lifting Equipment for larger Sizes of Flame Arresters, if required

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4. The Flame Arrester Series SDB are designed to allow Inspection and Maintenance “in Situ” – i.e without being disconnected from the Pipework. However, this should only be done if it is safe to do so.

NOTE: Potentially toxic Substances may have been passing through the Flame Arrester. Always wear appropriate Safety Equipment – with Eye protection – when working on or near Flame Arresters.

5. Loosen the Bolting around the Central Flanges containing the Element Assembly / Assemblies.
6. Separate the Central Flanges, using any Jacking Bolt that may be fitted to the Flame Arrester or other appropriate means, by an amount sufficient to allow removal of the Gaskets and Element Assembly / Assemblies. Note that there may occur conditions that call for removing the whole Flame Arrester from the Pipeline for Maintenance / Inspection Work.
7. Remove sufficient bolting to allow the Gasket and Element Assembly to be removed, or, where a Swing out Element Assembly is fitted, for it to be swung out for inspection.
8. Remove the Element(s) using lifting Equipment when appropriate, and examine both Surfaces. **DO NOT insert** any Wire, Probes or metallic Parts into the Element Matrix.
9. If the Element Matrix is visually damaged or corroded it must be replaced before the Flame Arrester is returned into Service. If cleaning is required see **Section E** before re-fitting.
10. Check if the Sealing Face of the Housing is clean and free from Particles that may affect the Sealing of the Element.

NOTE: Any Gap between the Housing and the Gaskets / Elements may provide a Flame Path around the Flame Arrester Element and are therefore **DANGEROUS**.

11. Fit new Gaskets of the same Specification and re-fit the Element(s) ensuring that it is centrally located. There may be locating Collars fitted to some of the Bolts to assist in this.
12. Replace the Bolting and tighten to the appropriate Torque (see Product Data Sheet).
13. After any external Fire in the Locality of the Flame Arrester, it is mandatory that the Equipment be examined for eventual damage. Particular attention to be paid to the joint Gaskets, replacing them if necessary. Also check the tightness of the Flange Bolting and retighten if necessary.

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E. CLEANING THE ELEMENT ASSEMBLY

1. **DO NOT** attempt to remove the Element Matrix from its Gage / Casing.
2. **DO NOT** allow the Element Assembly to become severely blocked.
3. **DO NOT** clean by inserting Probes / Wieres into the Cell Structure.
4. **DO NOT** use excessively corrosive Materials (e.g. hydrochloric Acid) to clean the Element.
5. High- pressure Water jets **ARE NOT** recommended.
6. The following **ARE** recommended: Detergents, Solvents, compressed Air, Steam or Ultrasonic. The actual cleaning Method will depend on the Nature of the Substance causing the Blockage.
7. If the Element is **DAMAGED** during cleaning a **NEW** Element Assembly should be fitted. If in doubt refer to SCHAER HITECH - or your nearest Representative - for further Advice.

F. SPARE PARTS

Under normal Conditions only the Element Assembly and Gaskets should need replacing. It is recommended that for every three Flame Arresters of a given Type and Size, at any one time, at least one Element Assembly is available at all times. One Set of Gaskets for each Flame Arrester Assembly should also be available.

When requesting / ordering Spare Elements the full Type Code, Serial Number and Part Number **MUST** be quoted / relied – fitting the incorrect Element is potentially **DANGEROUS**. See the Flame Arrester Part identification Tag (fitted to the Element Gage) and / or associated detailed Spare Part List for Details.

G. AFTER SALES SERVICE

Service is available through SCHAER HITECH,- or the network of regional Agents

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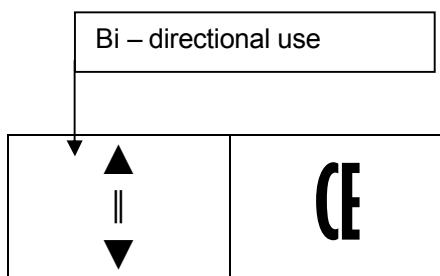
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H. MARKING on the FLAME ARRESTER



Deflagration
Endurance Burning
Detonation

SCHAER HITECH Engineering, Anlagenbau Hermannstrasse 7 CH-8400 Winterthur	Ph. +41 52 212 0115	Type			Date:		
	Fax +41 52 212 1578 info@schaer-hitech.ch	Serial No	EN 12874-	Gas Group	max. Gas P	Temp.	
				Ex	mbar	max.	min.

IIA / I
IIB

SPECIAL CONDITIONS for SAFE USE

- For Series SDB Ex. IIA / I the Manufacturing is certified for Sizes DN40 (1½") to DN200 (8")

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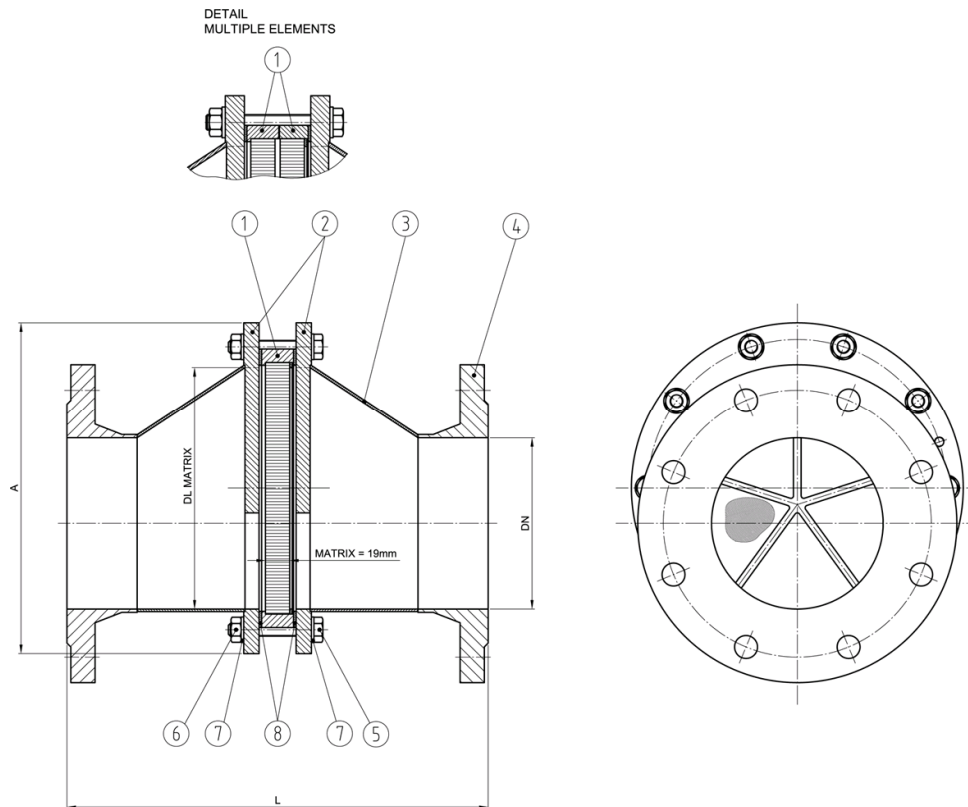
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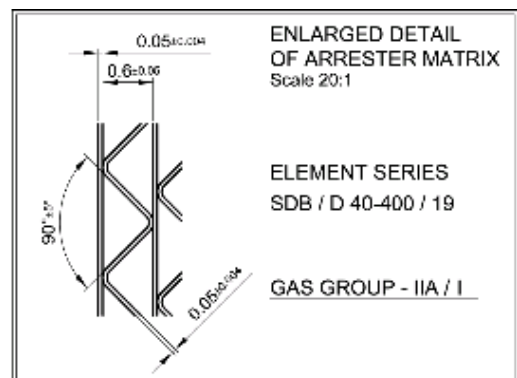
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Type	DN / Inch	DL MATRIX	L	A	X	Y	Z
SDB 419	DN40 / 1 1/2"	72	215	121	1	6	12
SDB 5019	DN50 / 2"	96	215	147	1	6	12
SDB 6519	DN65 / 2 1/2"	96	230	147	1	6	12
SDB 8019	DN80 / 3"	121	240	180	1	6	12
SDB 1019	DN100 / 4"	143	265	207	1	8	16
* SDB 1219	DN125 / 5"	190	330	260	1	10	20
SDB 1519	DN150 / 6"	241	330	320	1	10	20
SDB 2029	DN200 / 8"	293	370	376	2	12	24
SDB 25_9	DN250 / 10"	375	460	453	-	16	32
SDB 30_9	DN300 / 12"	419	480	515	-	18	36
SDB 35_9	DN350 / 14"	468	500	565	-	20	40
SDB 40_9	DN400 / 16"	568	600	667	-	24	48

* drawn size



ELEMENT MATRIX PROVIDED BY SSUK / AMAL Div.

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