

94406



Shand & Jurs Co.

A COGNESENSE BRAND

Vertical Inline Deflagration Flame Arrester

The Shand & Jurs® Model 94406 Vertical Inline Deflagration Flame Arrester prevents flame propagation in low-pressure vapor piping and tank vent systems where ignition can occur downstream of the protected equipment. Installed inline, the arrester prevents flame travel before it reaches the vapor space.

A spiral-wound crimped ribbon tube bank absorbs heat from the flame front. It reduces the gas temperature below ignition, extinguishing combustion while maintaining high flow capacity and minimal pressure drop. The vertical configuration supports installation above pressure-vacuum vents or within upright piping where condensate drainage is required. The removable tube bank allows inspection and replacement without removing the unit from the piping.

Designed to ISO 16852 and ATEX EN 12874, the arrester is suitable for IIA gas groups in systems operating near atmospheric pressure with up to 50 psig static pressure. Arrester sizing and pressure-drop verification can be evaluated using the Shand & Jurs WinSize software to confirm compatibility with expected venting flow rates and API 2000 venting requirements. Available in 2–12 in. sizes with ANSI or EN1092-1 flanges.



Key Features

Crimped ribbon tube bank

High flow capacity with minimal pressure drop

Vertical inline body

Supports upright piping and condensate drainage

Factory Approvals

FM/ATEX certified to EN 12874 and ISO 16852 for deflagration service

Removable tube bank assembly

Inspection and replacement without pipe removal

Multi-material body construction

Aluminum, carbon steel, or 316 SS body options; tube bank in CS or 316 SS only

Close-coupled installation

Applied within specified run-up distances to the ignition source



Benefits



STOPS FLAME PROPAGATION IN PIPING

Prevents flashback into tanks or digesters



MAINTAINS SYSTEM FLOW CAPACITY

Avoids vent restriction and pressure buildup



CERTIFIED PROTECTION ENVELOPE

Supports hazardous area compliance



FIELD-SERVICEABLE ELEMENT

Reduces maintenance downtime



CONDENSATE-TOLERANT INSTALLATION

Improves reliability in wet gas service



DEFINED IGNITION BOUNDARY

Allows proper arrester selection by location

Available Options



Differential pressure tap connections

Enables pressure drop measurement across tube bank to indicate when maintenance is required



316 stainless tube bank

Corrosion resistance in wet or sour gas



Carbon steel body

Increased structural durability



Aluminum body

Reduced installation weight (ISO 16852 approved only; not ATEX certified)



Flange type and drilling options

ANSI 125/150 or EN1092-1 PN10/16, FF or RF



Temperature monitor connection

Allows monitoring on the unprotected side



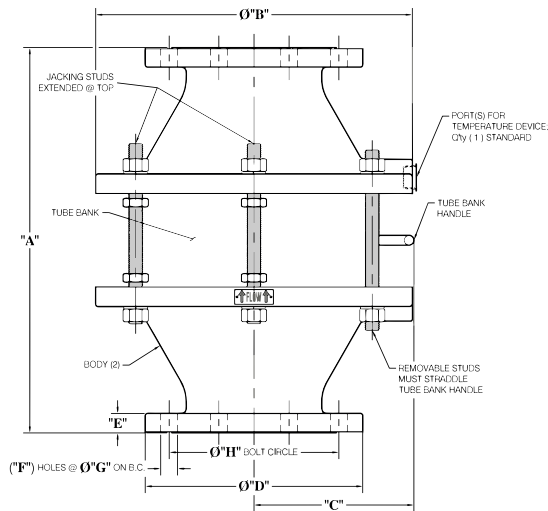
Key Performance Data

Parameter	Value
Available Sizes	2", 3", 4", 6", 8", 10", 12"
Max Static Pressure	3.45 barg (50 psig)
Operating Pressure	2"–6": 1.1 bara (16.20 psia) 8"–12": 1.09 bara (15.95 psia)
Max Operating Temperature	140°F (60°C)
Min Operating Temperature	-4°F (-20°C)
Gas Group	IIA / NEC Group D
Factory Approvals	Designed to ISO 16852 (Short Term Burn) and ATEX EN 12874
Installation	Vertical inline
Body Materials	Aluminum (only approved for ISO 16852, FF only), Carbon Steel, or 316 Stainless Steel
Flame Element	Carbon Steel or 316 Stainless Steel Tube Bank
Hardware	316 Stainless Steel
Gaskets	High-temperature synthetic composition
Hardware	Size Max run-up to ignition source 2"–4" 50 pipe diameters 6" 20 pipe diameters 8"–12" 10 pipe diameters

Dimensions

Dimensions in Inches								
Vent Size	"A"	Diameter "B"	"C"	Diameter "D"	"E"	Holes "F"	Diameter "G"	Diameter "H"
2"	13 3⁄8	8 ½	7 9⁄32	6	5⁄8	4	3⁄4	4 ¾
3"	15 3⁄8	10 ½	8 5⁄16	7 ½	¾	4	¾	6
4"	17 7⁄8	12 3⁄8	6 21⁄32	9	15⁄16	8	¾	7 ½
6"	19 7⁄8	16 3⁄8	8 9⁄32	11	1	8	7⁄8	9 ½
8"	24 ½	20 ½	10 13⁄32	13 ½	1 1⁄8	8	7⁄8	11 ¾
10"	28 7⁄8	24 ½	12 11⁄32	16	1 3⁄16	12	1	14 ¼
12"	32 7⁄8	28 ¾	14 9⁄32	19	1 ¼	12	1	17

ANSI Connection Dimensions shown. Other Flange Types available.



Installation Note: Locate flame arrester within “x” pipe diameters of potential ignition source.

Run up length “x” =
2”-4” size- 50 pipe diameters.
6” size- 20 pipe diameters.
8”-12” size- 10 pipe diameters.

Model Number Selection

The model number will consist of a base number 94406 followed by 6 digit numbers. These digits will represent 3 option tables.

94406 - AB - CD - EF

Ordering Information

Specify:

1. Model 94406 Vertical Inline Deflagration Flame Arrester
2. Size and Body Material
3. Tube Bank and Hardware Material
4. Type of Flange and Auxiliary Connection
5. Special Materials or Coatings, If Required

Table AB - Configuration

Option AB	Size (Inches)	Body Material	Option CD	Tube Bank Material Shell/Element	Hardware Material	Shipping Wt. (lbs)
23	2	Cast Aluminum	22	316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel	15
33	3	Cast Aluminum	22	316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel	25
43	4	Cast Aluminum	22	316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel	45
63	6	Cast Aluminum	22	316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel	69
83	8	Cast Aluminum	22	316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel	93
03	10	Cast Aluminum	22	316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel	165
13	12	Cast Aluminum	22	316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel	200

NOTE: Aluminum and Cast Iron bodies are only ISO 16852 approved.
* Other material combinations available. Raised Face not available in Aluminum body.

Table AB - Size & Body* Table CD - Tube Bank and Hardware*

Option AB	Size (Inches)	Body Material	Option CD	Tube Bank Material Shell/Element	Hardware Material	Shipping Wt. (lbs)
20	2	Cast Steel	22	316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel	43
22	2	Cast 316 SS	22	316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel	
30	3	Cast Steel	22	316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel	65
32	3	Cast 316 SS	22	316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel	
40	4	Cast Steel	22	316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel	120
42	4	Cast 316 SS	22	316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel	
60	6	Cast Steel	22	316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel	207
62	6	Cast 316 SS	22	316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel	
80	8	Cast Steel	22	316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel	280
82	8	Cast 316 SS	22	316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel	

Table AB - Size & Body* Table CD - Tube Bank and Hardware*

Option AB	Size (Inches)	Body Material	Option CD	Tube Bank Material Shell/Element	Hardware Material	Shipping Wt. (lbs)
00	10	Cast Steel	22	316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel	480
02	10	Cast 316 SS	22	316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel	
10	12	Cast Steel	22	316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel	610
12	12	Cast 316 SS	22	316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel	

* Other Material Combinations Available

Table E - Flange Type*

Option E	Description
0	ANSI 125/150 lb. FF
1	ANSI 125/150 lb. RF*
2	EN1092-1 PN10 FF
3	EN1092-1 PN10 RF*
4	EN1092-1 PN16 FF
5	EN1092-1 PN16 RF*

*Raised Face Flanges Not Available with Aluminum.

Note: Raised faced flanges with smooth finish are standard.
For optional serrated raised faced flanges, consult factory

Tube Banks Only*

Part Number	Size (In.)	Tube Bank Material Shell/Element	Shipping Wt. (lbs.)
9440-10010	2	316 SS./ 316 SS	25
9440-10011	3	316 SS / 316 SS	35
9440-10012	4	316 SS / 316 SS	60
9440-10013	6	316 SS / 316 SS	100
9440-10014	8	316 SS / 316 SS	160
9440-10015	10	316 SS / 316 SS	240
9440-10016	12	316 SS / 316 SS	325

*NOTE: Other Material Combinations Available.

Table F - Auxillary Connections

Option F	Description0 ANSI	Quantity
0 ⁽¹⁾	3/4" NPT (Uni-Directional)	1
1	3/4" NPT (Bi-Directional)	2

⁽¹⁾ Flow Direction Label Affixed to Cast Body.

Summary

The Model 94406 protects low-pressure vapor systems in which ignition may travel through connected piping rather than entering through an open vent. Stopping deflagration while maintaining full venting capacity, it allows safe integration with pressure-vacuum vents and process headers without adding significant restriction. Certified performance, removable tube bank construction, and vertical drainage capability provide predictable operation in real operating conditions. Optional temperature monitor and differential pressure tap connections support condition-based maintenance and regulatory compliance monitoring.

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