Detonation Flame Arrester “Stubby” Series C-FH

The Paradox Detonation Flame Arrester represents the best technology for value in flame arrester protection. They prevent flame propagation by absorbing heat and dissipating supersonic pressure waves, using multiple spiral wound crimped ribbon flame cells staged with turbulent creating screen sections.

Detonation Flame Arrester

These screen sections allow for much larger cells than that of competitive crimped ribbon arresters, allowing maximum flow with maximum protection. They provide protection against flame propagation in piping systems that are manifoldeed or have long run-up distances. Paradox’s detonation flame arrester element technology dampens the high velocities and pressures associated with deflagrations and detonations while quenching the flame front and providing larger flame channels which requires less frequent maintenance due to clogging and greater ease in cleaning when service is required. This translates to less down time. Our element offers maximum flow to pressure drop characteristics enhancing the value of our product in any system. They are typically used for extended pipe length or multiple pipe bend configurations to stop high pressures and flame velocities associated with detonations and overdriven deflagrations. In addition, it stops confined and unconfined, low and high pressure deflagrations. All Paradox units are bi-directional and are proven to stop an ignited flammable vapor mixture approaching form either direction that can be traveling at subsonic or supersonic velocities.

Designed with flanged connections, this Arrestor provides the option of the removal of the flame cell (element) for easy cleaning and replacement without disconnection of the pipe connection flanges. Standard housing construction is carbon steel and stainless steel. The element is available in 304 S.S and 316 S.S.

This Coast Guard Approved Stubby” version is approximately 20% shorter than the standard DFA. This unit has consistent design features throughout the size ranges with improved flow characteristics. Special material and protective coatings are available on request.

- U.S. Coast Guard Approved 2" (50mm) - 22" (559mm) IIA (D) and IIB3 (C) Concentric and Eccentric design.
- USCG Tested to 36" (72") Concentric in IIA (D).
- IIC (B) Tested to U.S. Coast Guard, (Concentric only)
- ATEX (EN 12874 Tested) 2" (50mm) - 24" (500mm) IIA and IIB Concentric and Eccentric design.
Features and Benefits

- **USCG Approved**
- **All Paradox Detonation Flame Arrestors** are designed for stable, overdriven & unstable detonations as well as deflagrations.
- **Removable Element** design allows for easy replacement.
- **Large Inspection Ports** are Optional on larger models and allows for easy inspection and cleaning.
- **Stubbys are 20% Shorter** than standard DFA, important when space is limited.
- **Outstanding corrosion** and chemical resistance.
- **Instrument/drain ports** are optional and available in 1.2”, 3/4” or 1” sizes
- Available with Eccentric or Concentric end sections.

Paradox’s Large Crimp Opening Provide:

- Maximum flow
- Less Pressure Drop
- Easy Cleaning
- Less Clogging
- Less Maintenance
- Bi-directional Design
- Available in ANSI, DIN and JIS flanges.

### Material Specifications

<table>
<thead>
<tr>
<th>Housing</th>
<th>Cell</th>
<th>Gas Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon Steel</td>
<td>304 SS</td>
<td>IIA (D)</td>
</tr>
<tr>
<td>304 SS</td>
<td>316 SS</td>
<td>IIB3 (C)</td>
</tr>
<tr>
<td>316L SS</td>
<td>Hastelloy</td>
<td>IIC (B)</td>
</tr>
<tr>
<td>Hastelloy</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Series C-FH Detonation Flame arrester Specifications

- **Model**: C-2C-FH, C-3C-FH, C-4C-FH, C-6C-FH, C-8C-FH, C-10C-FH, C-12C-FH, C-14C-FH, C-16C-FH, C-18C-FH, C-20C-FH, C-20C-FH-L, C-22C-FH, C-22C-FH-L, C-24C-FH
- **A 150# AN-SiConn. Size In. (mm)**: 2 (50), 3 (75), 4 (100), 6 (150), 8 (200), 10 (250), 12 (300), 14 (350), 16 (400), 18 (450), 20 (500), 22 (560), 24 (610)
- **B Housing Size In. (mm)**: 6 (150), 8 (200), 8.5 (210), 10 (250), 12 (300), 16 (400), 19 (480), 20 (500), 24 (600), 27 (686), 30 (762), 36 (914), 48 (1200)
- **C Outside Diameter In. (mm)**: 11 (279), 13.5 (343), 16.0 (406), 19.0 (483), 25.5 (648), 30.5 (775), 36.0 (914), 40.75 (1035), 43.0 (1092), 47.5 (1207), 50 (1270), 48 (1200), 59.9 (1511), 59.9 (1511)
- **D Overall Length In. (mm)**: 27.3 (694), 29 (736), 32.25 (819), 35 (889), 44.2 (1123), 48 (1219), 53.9 (1369), 57.3 (1455), 58.16 (1477), 61.5 (1562), 65 (1651), 59.9 (1511), 77 (1956), 80 (2032), 101.00 (2565)
- **E Height Including Lifting Lug**: 15.5 (394), 17.8 (452), 20 (500), 23 (584), 31 (787), 48 (1219), 53.9 (1369), 41.0 (1035), 43.0 (1092), 51.4 (1306), 54 (1372), 47 (1194), 59.9 (1511), 77 (1956), 62 (2032), 62 (1574)
- **Approx. Weight Lb. (Kg.)**
  - **Grp D +/- 10%**
  - C-2C-FH: 175 (79.4)
  - C-3C-FH: 220 (99.8)
  - C-4C-FH: 400 (181.4)
  - C-6C-FH: 525 (238)
  - C-8C-FH: 1360 (616.9)
  - C-10C-FH: 1945 (882.2)
  - C-12C-FH: 3000 (1360.8)
  - C-14C-FH: 3400 (1542.2)
  - C-16C-FH: 3800 (1723.7)
  - C-18C-FH: 4800 (2177.2)
  - C-20C-FH: 5600 (2540.1)
  - C-20C-FH-L: 8700 (3810)
  - C-22C-FH: 5600 (2540)
  - C-22C-FH-L: 8700 (3810)
  - C-24C-FH: 8400 (3810)
### Model Series “C & C-FH” Detonation Flame Arrester for Group D, C, or B Gas

**Specification Data Sheet**

<table>
<thead>
<tr>
<th>Flame Arrester Type</th>
<th>In-line Bi-Directional Flame Arrester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommended installation /use</td>
<td>Vertically or Horizontally anywhere in a Piping systems.</td>
</tr>
<tr>
<td>Design/Test Standard/Test Gas</td>
<td>USCG 33 cfr/Propane/Ethylene/Hydrogen</td>
</tr>
<tr>
<td>Connection sizes</td>
<td>2” through 22” Pipe sizes (24” &amp; 30” Special order).</td>
</tr>
<tr>
<td>Type of connection</td>
<td>Flanged connection.</td>
</tr>
<tr>
<td>Flange ratings</td>
<td>Available in ASME 150# Raised Faced Flange</td>
</tr>
<tr>
<td>Housing Materials</td>
<td>Standard Model; Carbon Steel, also available in 304, 316L &amp; most other Austenitic metal or hastelloy.</td>
</tr>
<tr>
<td>Element Type/Material</td>
<td>The element is crimped metal ribbon made from 304 Stainless Steel and is also available in 316L or hastelloy.</td>
</tr>
<tr>
<td>Maximum Initial pressure (Psia.)</td>
<td>22.7 (Grp D), 20.7 (Grp C), 19.7 (Grp B)</td>
</tr>
<tr>
<td>Operating temperature range</td>
<td>-17°C to +60°C</td>
</tr>
<tr>
<td>Hydrostatic Test Pressure</td>
<td>350 Psig.</td>
</tr>
<tr>
<td>Gas Group Application Rating</td>
<td>NEC Group D, C, B (IEC Group IIA, IIB, IIC)</td>
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</tbody>
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