

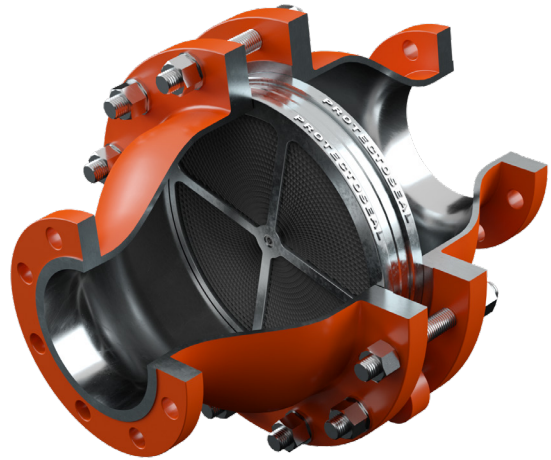
# LCB Series

## In-Line Deflagration Flame Arresters



### With Replaceable Element for NEC Explosion Gas Group C

The Protectoseal LCB Series prevents the spread of fire within piping systems. By installing an LCB Series in close proximity to the probable source of ignition, flames (or an explosion) are restricted to the immediate region.



### Principle of Operation

The LCB Series cools the combustion products at the element surface during a deflagration without a stable flame. This technique prevents the combustion process from continuing through the LCB Series and into the protected line.

In the case that a flame stabilizes on the element surface of the LCB Series, a monitoring system will detect a fast increase in temperature and activate secondary protective measures to stop the flow of the flammable mixture.

### Operating Conditions

The Protectoseal LCB Series is ATEX-approved for a maximum operating temperature of **140°F** or **60°C**. For high-temperature models, the maximum operating temperature is increased to **302°F** or **150°C**.

### Explosion Gas Groups

The Protectoseal LCB Series is certified for gases in **NEC Group C** and **IEC Group IIB3**.

### Standards Compliance

Protectoseal's LCB Series of In-Line Deflagration Flame Arresters has been type-tested to **EN ISO 16852** and approved according to **ATEX Directive 2014/34/EU**.

Each LCB that passes through Protectoseal's facilities undergoes a rigorous inspection and verification of its safety and performance features.

### Protectoseal Expertise

Protectoseal offers industry leading technical leadership with its renowned flame and explosion protection for the most diverse and challenging of industrial applications. By utilizing a range of testing facilities, advanced algorithms and computational fluid dynamics (CFD), our research and development team is constantly looking for new ways to challenge the status quo, thus providing best-in-class innovation.

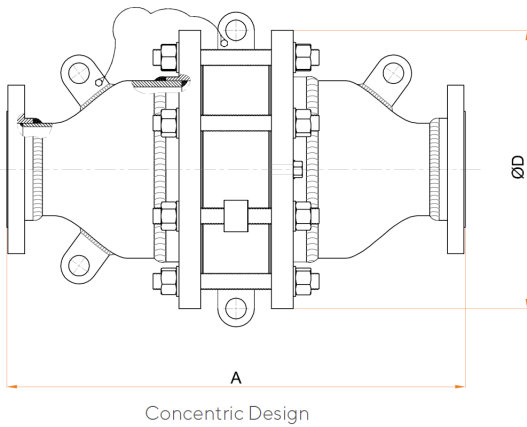
With over 95 years in the business, we have an established sales and service team to support clients with their initial specifications and throughout the product's life cycle.

## Features and Benefits

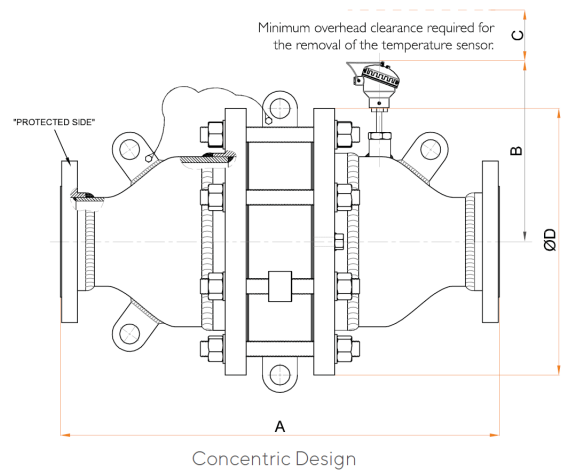
- Outstanding flow capacity with minimal pressure drop
- Short-time burning proof capabilities
- The highest degree of bi-directional safety
- Elements feature replaceable, easy-to-clean crimped-ribbon
- Available with elevated operating temperature and pressure
- Sizes and materials to accommodate a vast array of applications
- Options for end connections include flanged or threaded

## General Arrangements:

LCB Flame Arresters (inc. High Temperature)



LCB Short-Time Burn Flame Arresters



Ref	Description
A	Overall Length
B	Centre to Top of Temperature Probe (short-time burn models)
C	Minimum Clearance (short-time burn models)
D	Ø Diameter

## Selection Key

Positions	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Example	L	C	B	-	0	5	0	A	T	-	1	0	0	T	S	-	N	1	.	1	0	-	T	/	0	0	0	W	0
Table	a	b	c	-	d			e	f	-	g			h	j	-	k	l			-	m	/	n	o	p	q	r	
Model No.	L	C	B	-				A		-	X	X	X		S	-		1	.			-		/	0	0	0		0

Standard Options		
a	Flame Arrester Type	In-Line Deflagration
b	Model Variation	Concentric
c	Gas Group	D,C, IIB3
d	Size	Refer to Table 1
e	Pipe Connection Type	ANSI 150lb. RF
f	Flame Arrester Housing Material	Refer to Table 2
g	Element Size	XXX <i>(Place Holder - your local Protectoseal representative will fill out this section for you)</i>
h	Element Housing Material	Refer to Table 3
j	Element Core Material	316/316L Stainless Steel
k	Temp Rating	Refer to Table 4
l	Operating Pressure Rating	Refer to Table 5
m	Short-Time Burn Capability	Refer to Table 6

Non-Standard Options		
n	Body Modification	Standard - No Alterations
o	Finish/Paint	Refer to Table 7
p	Gasket/Seal	CNAF
q	Fasteners	Refer to Table 8
r	Ports/Taps	Standard - No Ports/Taps

## Table 1: Sizes

### 1.1 Standard LCB

d	Size	Overall Length A	ØD	f	h	Approx Weight
015	1/2", 0.5", 15mm	12.48", 317mm	9.02", 229mm	C or S	D or T	46lbs, 21kg
020	3/4", 0.75", 20mm	12.48", 317mm	9.02", 229mm	C or S	D or T	49lbs, 22kg
025	1", 25mm	13.27", 337mm	9.02", 229mm	C or S	D or T	49lbs, 22kg
040	1.5", 40mm	12.48", 317mm	9.02", 229mm	C or S	D or T	49lbs, 22kg
050	2", 50mm	12.72", 323mm	9.02", 229mm	D or T	D or T	53lbs, 24kg
080	3", 80mm	16.26", 413mm	10.98", 279mm	D or T	D or T	88lbs, 40kg
100	4", 100mm	17.99", 457mm	13.50", 343mm	D or T	D or T	139lbs, 63kg
150	6", 150mm	22.72", 577mm	19.02", 483mm	D or T	D or T	269lbs, 122kg
200	8", 200mm	35.55", 903mm	23.50", 597mm	D or T	D or T	474lbs, 215kg
250	10", 250mm	48.07", 1221mm	27.48", 698mm	D or T	D or T	703lbs, 310kg
300	12", 300mm	48.78", 1239mm	32.01", 813mm	D or T	D or T	917lbs, 416kg

**Note:** End-Cap models are available with larger flame arrester elements for enhanced flow capabilities.

### 1.2 Short-Time Burn LCB

d	Size	Overall Length A	Max B	Min C	ØD	f	h	Approx Weight
015	1/2", 0.5", 15mm	12.48", 317mm	11.22", 285mm	2.95", 75mm	9.02", 229mm	C or S	D or T	49lbs, 22kg
020	3/4", 0.75", 20mm	12.48", 317mm	11.22", 285mm	2.95", 75mm	9.02", 229mm	C or S	D or T	51lbs, 23kg
025	1", 25mm	13.27", 337mm	11.22", 285mm	2.95", 75mm	9.02", 229mm	C or S	D or T	51lbs, 23kg
040	1.5", 40mm	12.48", 317mm	11.22", 285mm	2.95", 75mm	9.02", 229mm	C or S	D or T	51lbs, 23kg
050	2", 50mm	12.72", 323mm	11.22", 285mm	2.95", 75mm	9.02", 229mm	D or T	D or T	55lbs, 25kg
080	3", 80mm	16.26", 413mm	11.22", 285mm	2.95", 75mm	10.98", 279mm	D or T	D or T	90lbs, 41kg
100	4", 100mm	17.99", 457mm	13.39", 340mm	2.95", 75mm	13.50", 343mm	D or T	D or T	141lbs, 64kg
150	6", 150mm	22.72", 577mm	15.75", 400mm	5.31", 135mm	19.02", 483mm	D or T	D or T	271lbs, 123kg
200	8", 200mm	35.55", 903mm	17.13", 435mm	5.31", 135mm	23.50", 597mm	D or T	D or T	476lbs, 216kg
250	10", 250mm	48.07", 1221mm	19.09", 485mm	7.68", 195mm	27.48", 698mm	D or T	D or T	686lbs, 311kg
300	12", 300mm	48.78", 1239mm	21.06", 535mm	7.68", 195mm	32.01", 813mm	D or T	D or T	919lbs, 417kg

**Note:** Dimensions presented above are for 1.10bara operating pressure models. End-Cap models are available with larger flame arrester elements for enhanced flow capabilities.

### 1.3 High-Temperature LCB

d	Size	Overall Length A	ØD	f	h	Approx Weight
015	1/2", 0.5", 15mm	12.87", 327mm	9.02", 229mm	C or S	D or T	46lbs, 21kg
020	3/4", 0.75", 20mm	12.87", 327mm	9.02", 229mm	C or S	D or T	49lbs, 22kg
025	1", 25mm	13.66", 347mm	9.02", 229mm	C or S	D or T	49lbs, 22kg
040	1.5", 40mm	12.87", 327mm	9.02", 229mm	C or S	D or T	49lbs, 22kg
050	2", 50mm	13.11", 333mm	9.02", 229mm	D or T	D or T	53lbs, 24kg
080	3", 80mm	16.65", 423mm	10.98", 279mm	D or T	D or T	93lbs, 42kg
100	4", 100mm	18.39", 467mm	13.50", 343mm	D or T	D or T	146lbs, 66kg
150	6", 150mm	23.11", 587mm	19.02", 483mm	D or T	D or T	276lbs, 125kg
200	8", 200mm	35.94", 913mm	23.50", 597mm	D or T	D or T	487lbs, 221kg
250	10", 250mm	48.46", 1231mm	27.48", 698mm	D or T	D or T	701lbs, 318kg
300	12", 300mm	49.17", 1249mm	32.01", 813mm	D or T	D or T	941lbs, 427kg

**Note:** End-Cap models are available with larger flame arrester elements for enhanced flow capabilities.

Table 2: Flame Arrester Housing Materials

f	Flame Arrester Housing (Body) Material	o	q
C	Fabricated Carbon Steel	O	C
D	Cast Carbon Steel	O	C
S	Fabricated 316/316L Stainless Steel	F	W
T	Cast 316 Stainless Steel	F	W

Table 3: Element Housing Materials

h	Element Housing (Body) Material
D	Cast Carbon Steel
T	Cast 316 Stainless Steel

Table 4: Temperature Rating

k	Temperature Rating
N	Standard (140°F, 60°C)
E	Max Elevated Temperature (302°F, 150°C)

Table 5: Operating Pressure Rating

l	Operating Pressure Rating
1.10	16 psia, 1.10 bara
1.40	20 psia, 1.40 bara
1.50	22 psia, 1.50 bara

Table 6: Short-Time Burn Capability

m	Short-Time Burn Capability
N	No Capability
S	Short Time Burn Single Sensor
T	Short Time Burn Double Sensor (Bi-Directional)

Table 7: Finish/Paint

o	Finish/Paint
O	Primer & Top Coat Orange
F	Natural, Unpainted

Table 8: Fasteners

o	Finish/Paint
C	Zinc Plated Steel
W	316 Stainless Steel

### Customer Support

Tel: 1.630.595.0800  
Email: info@protectoseal.com  
Fax: 1.630.595.8059  
225 Foster Avenue Bensenville, IL 60106 U.S.A

