



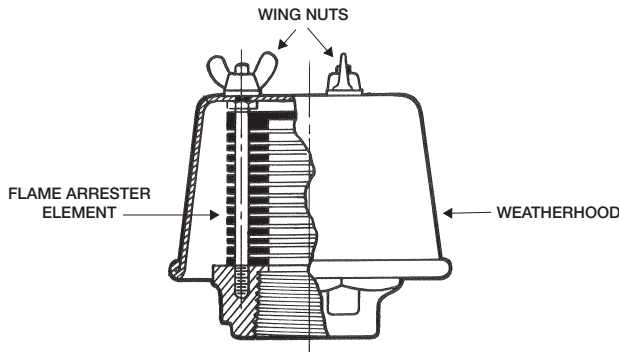
**SERIES  
670E**

- Sizes DN 25 (1") through DN 150 (6")
- Type Approved according to ATEX Directive 94/9/EC, Standards EN 12874 and ISO 16852
- Suitable for use with Explosion Groups IIB3 or IIA (NEC Groups C or D)
- Parallel plate-type flame arrester
- Operating temperatures up to +60°C (140°F)
- Available with threaded (FNPT) or flanged (DIN, ANSI) connections
- Easy inspection and maintenance
- Weatherhood protects against environmental conditions
- Available in Aluminum, Ductile Iron, Steel and Stainless Steel



### OBJECTIVE

The Series 670E Flame Arresters are designed to provide flame stopping protection for a tank's vapor space when mounted to the end of a tank nozzle leading directly to atmosphere. Maximum operating pressure is 1.1 bara (15.9 PSIA). The arresters prevent a flame front generated by an unconfined deflagration occurring outside the tank from propagating into the vapor space. Arresters are not for use in stabilized burning situations.



### VAPOR GROUPS

The arresters as designated by model number, are intended for use with vapors equivalent to International Electrotechnical Commission Explosion (IEC) Groups IIB3 or IIA, National Electric Code (NEC) Group C or D.

### TECHNIQUE

The arrester is mounted on the end of a vent pipe from the tank. Vapors are allowed to escape into the atmosphere and air can be drawn into the tank through the specially designed flame arrester grid assembly. If an ignition source outside the tank is encountered, the flame arrester provides protection for the tank contents.

### SPECIAL FEATURES

**Easy Inspection, Installation and Maintenance.** Design and light weight of unit permit easy, convenient handling for inspection, installation and maintenance. The weatherhood is readily removable by loosening just a few wing nuts.

**Automatic Condensate Drainage.** Vertically mounted, circular plate-type flame arrester is employed for self-drainage of condensate. This prevents accumulation of condensate subject to freezing and consequent clogging of the arrester under low temperature conditions.

**Positive Flame Arresting.** The Series 670E employs a precisely-spaced, circular plate type flame arrester to protect tank contents by preventing the propagation of fire into the tank. Precision embossings or spacers provide correct gaps for flame arresting function. Plates are fabricated from heavy gauge stainless steel to resist distortion and bending.

**Sizes Available.** DN 25 (1"), DN 50 (2"), DN 80 (3") and DN 100 (4") and DN 150 (6"). Please refer to dimension chart on reverse for flange connection options.

**Test Lab Listings.** Type Approved according to ATEX Directive 94/9/EC, Standards EN 12874 and ISO 16852. Refer to Protectoseal Series 670/6670 for Underwriters Laboratories (UL) Listed arresters.

**PRO-FLOW III® Sizing and Selection Software.** Use PRO-FLOW III® to calculate flame arrester flow requirements in accordance with API 2000, ISO 28300, NFPA 30 and OSHA 1910.106.

**Quality Assurance.** Each unit is inspected to meet Protectoseal's high standards prior to shipment.

### CONSTRUCTION

A comprehensive range of materials is offered as shown in the chart below.

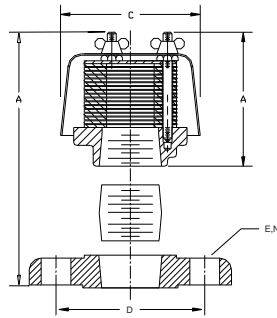
#### Available Options.

- Material certifications for castings

| Series | Body         | Hood                  | Nipple/Flange | Flame Arrester Grid Assembly |
|--------|--------------|-----------------------|---------------|------------------------------|
| A670E  | Aluminum     | 316 S.S.              | Aluminum      | 316 S.S.                     |
| C670E  | Ductile Iron | 316 S.S.              | Steel         | 316 S.S.                     |
| F670E  | 316 S.S.     | 316 S.S.              | 316 S.S.      | 316 S.S.                     |
| S670E  | Steel        | 316 S.S. <sup>1</sup> | Steel         | 316 S.S.                     |

*Please refer to charts on reverse for ordering options. Note 1: Hood on 6" size is constructed of Steel.*

### DN 25 (1"), DN 50 (2"), DN 80 (3") & DN 100 (4") Sizes FNPT or Nipple and Flange Connection

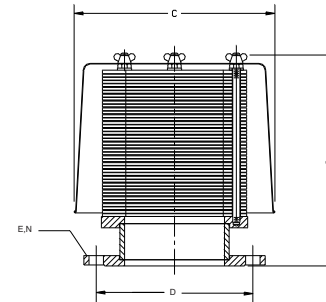


Suitable for use with International Electrotechnical Commission (IEC) Groups IIB3 or IIA (NEC Groups C or D), as designated by model number

Looking for a UL Listed Group D Arrester?

See Series No. 670/6670

### DN 150 (6") Size Flange Connection



## SERIES 670E PART NUMBERING SYSTEM

| DN 25 (1"), DN 50 (2"), DN 80 (3") & DN 100 (4") Sizes |                 |    |   |   |            |   |   |   |   |
|--|-----------------|----|---|---|------------|---|---|---|---|
| DIGIT #  | 1               | 2  | 3   | 4 | 5          | 6 | 7 | 8 | 9 |
| 1  | Material        | A  | Aluminum Body, 316 S.S. Element & Hood                                  |   |            |   |   |   |   |
|  |                 | C  | Ductile Iron Body, 316 S.S. Element & Hood                              |   |            |   |   |   |   |
|  |                 | F  | 316 S.S. Body, Element & Hood   |   |            |   |   |   |   |
|  |                 | S  | Steel Body, 316 S.S. Element & Hood                                     |   |            |   |   |   |   |
| 2 & 3  | Series No.      | 67 | End-of-Line Deflagration Flame Arrester                                 |   |            |   |   |   |   |
|  |                 | 4  | Size  | 1 | DN 25 (1") |   |   |   |   |
| 2  | DN 50 (2")      |    |   |   |            |   |   |   |   |
| 3  | DN 80 (3")      |    |   |   |            |   |   |   |   |
| 4  | DN 100 (4")     |    |   |   |            |   |   |   |   |
| 5  | Type            | E  |   |   |            |   |   |   |   |
| 6  | Connection      | 1  | FNPT  |   |            |   |   |   |   |
|  |                 | 2  | ANSI 125# FF Flange (Aluminum)  |   |            |   |   |   |   |
|  |                 |    | ANSI 150# RF Flange (Other Materials)                                   |   |            |   |   |   |   |
|  |                 | 3  | DIN PN 16 FF Flange (Aluminum)<br>DIN PN 16 RF Flange (Other Materials) |   |            |   |   |   |   |
| 7  | Flange / Nipple | 0  | None (FNPT Connection)  |   |            |   |   |   |   |
|  |                 | 1  | 316 S.S. (Use with Prefix "F")  |   |            |   |   |   |   |
|  |                 | 2  | Steel (Use with Prefix "C" or "S")                                      |   |            |   |   |   |   |
|  |                 | 3  | Aluminum (Use with Prefix "A")  |   |            |   |   |   |   |
| 8  |                 | -  |   |   |            |   |   |   |   |
| 9  | Vapor Group     | C  | Explosion Group IIB3 (NEC Group C)                                      |   |            |   |   |   |   |
|  |                 | D  | Explosion Group IIA (NEC Group D)                                       |   |            |   |   |   |   |

| DN 150 (6") Size |                 |    |   |   |   |   |   |   |   |
|------------------|-----------------|----|---|---|---|---|---|---|---|
| DIGIT #          | 1               | 2  | 3   | 4 | 5 | 6 | 7 | 8 | 9 |
| 1                | Material        | A  | Aluminum Body, 316 S.S. Element & Hood                                  |   |   |   |   |   |   |
|                  |                 | F  | 316 S.S. Body, Element & Hood   |   |   |   |   |   |   |
|                  |                 | S  | Steel Body & Hood, 316 S.S. Element                                     |   |   |   |   |   |   |
| 2 & 3            | Series No.      | 67 | End-of-Line Deflagration Flame Arrester                                 |   |   |   |   |   |   |
| 4                | Size            | 6  | DN 150 (6")   |   |   |   |   |   |   |
| 5                | Type            | E  |   |   |   |   |   |   |   |
| 6                | Connection      | 1  | ANSI 125# FF Flange (Aluminum)<br>ANSI 150# RF Flange (Other Materials) |   |   |   |   |   |   |
|                  |                 | 2  | DIN PN 16 FF Flange (Aluminum)<br>DIN PN 16 RF Flange (Other Materials) |   |   |   |   |   |   |
|                  |                 | 3  | Aluminum (Use with Prefix "A")  |   |   |   |   |   |   |
| 7                | Flange / Nipple | 1  | 316 S.S. (Use with Prefix "F")  |   |   |   |   |   |   |
|                  |                 | 2  | Steel (Use with Prefix "C" or "S")                                      |   |   |   |   |   |   |
|                  |                 | 3  | Aluminum (Use with Prefix "A")  |   |   |   |   |   |   |
| 8                |                 | -  |   |   |   |   |   |   |   |
| 9                | Vapor Group     | C  | Explosion Group IIB3 (NEC Group C)                                      |   |   |   |   |   |   |
|                  |                 | D  | Explosion Group IIA (NEC Group D)                                       |   |   |   |   |   |   |

#### PART NO. EXAMPLE:

|          |   |   |   |   |   |   |   |   |   |
|----------|---|---|---|---|---|---|---|---|---|
| Digit #: | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|          | F | 6 | 7 | 2 | E | 3 | 1 | - | C |

Description: Body, Element & Hood - 316 S.S.  
Size - DN 50 (2")  
Connection - DIN PN 16 RF Flange  
Flange / Nipple - 316 S.S.  
Vapor Group IIB3 (NEC Group C)

## DIMENSIONS (Please refer to numbering system above to complete Part No. NOTE: Dimensions shown are for reference only, contact Factory for certified drawings.)

| Part No.    | Connection |      |           | Ht            | Dia            | B.C           | Dia.        | Holes | Type           |
|-------------|------------|------|-----------|---------------|----------------|---------------|-------------|-------|----------------|
|             | FNPT       | ANSI | DIN 16 PN | A             | C              | D             | E           | N     | Approval       |
| 1 671E10-9  | 1"         | -    | -         | 73mm (2.88")  | 73mm (2.88")   | -             | -           | -     |                |
| 1 671E2 7-9 | -          | 1"   | -         | 112mm (4.4")  | 73mm (2.88")   | 80mm (3.13)   | 16mm (.63") | 4     |                |
| 1 671E3 7-9 | -          | -    | DN 25     | 112mm (4.4")  | 73mm (2.88")   | 85mm (3.35")  | 14mm (.55") | 4     |                |
| 1 672E10-9  | 2"         | -    | -         | 117mm (4.63") | 150mm (5.88")  | -             | -           | -     |                |
| 1 672E2 7-9 | -          | 2"   | -         | 178mm (7")    | 150mm (5.88")  | 120mm (4.75") | 19mm (.75") | 4     | ATEX Directive |
| 1 672E3 7-9 | -          | -    | DN 50     | 178mm (7")    | 150mm (5.88")  | 125mm (4.9")  | 18mm (.72") | 4     | 94/9/EC        |
| 1 673E10-9  | 3"         | -    | -         | 203mm (8")    | 150mm (5.88")  | -             | -           | -     | Standards      |
| 1 673E2 7-9 | -          | 3"   | -         | 251mm (9.88") | 150mm (5.88")  | 152mm (6")    | 19mm (.75") | 4     | EN 12874 &     |
| 1 673E3 7-9 | -          | -    | DN 80     | 251mm (9.88") | 150mm (5.88")  | 160mm (6.3")  | 18mm (.72") | 8     | ISO 16852      |
| 1 674E10-9  | 4"         | -    | -         | 187mm (7.38") | 184mm (7.25")  | -             | -           | -     |                |
| 1 674E2 7-9 | -          | 4"   | -         | 238mm (9.38") | 184mm (7.25")  | 191mm (7.5")  | 19mm (.75") | 8     |                |
| 1 674E3 7-9 | -          | -    | DN 100    | 238mm (9.38") | 184mm (7.25")  | 180mm (7.09") | 18mm (.72") | 8     |                |
| 1 676E1 7-9 | -          | 6"   | -         | 330mm (13")   | 314mm (12.38") | 241mm (9.5")  | 22mm (.87") | 8     |                |
| 1 676E2 7-9 | -          | -    | DN 150    | 330mm (13")   | 314mm (12.38") | 240mm (9.45") | 22mm (.87") | 8     |                |

Superscripted numbers refer to digits as indicated in the "Part Numbering System" chart.



Ekotech Pty Ltd

Ph: 03 9457 3700 Fax: 03 9457 3800

sales@ekotech.com.au www.ekotech.com.au