

SERIES 35000 / 36000RP

Bi-Directional Overdriven / Unstable Detonation Flame Arresters

- Improved flow and reduced pressure drop
- Designed to meet U.S. Coast Guard (USCG) requirements
- Sizes 2" (DN 50) through 24" (DN 600)
- Series 35000 for NEC Group D, IEC Group IIA Vapors
- Series 36000 for NEC Group D & C, IEC Groups IIA & IIB3 Vapors
- 150# ANSI standard, DIN PN16 optional
- Suitable for higher initial operating pressures making them applicable to a broader range of applications
- Reflective pressure protection feature available
- Patent Pending design
- Tested by completely independent laboratories
- Available in Carbon Steel, Stainless Steel & Alloy C276



SERIES 35000 36000RP

OBJECTIVE

Protectoseal's Series 35000 and 36000RP Detonation Flame Arresters are designed to withstand deflagrations (subsonic), stable detonations (sonic) and overdriven/unstable detonations (transitional). These arresters are bi-directional, capable of stopping a flame or detonation approaching from either direction in a piping system.

STABLE VS. UNSTABLE DETONATION ARRESTERS

"Unstable" detonation arresters are required for safety in piping containing flammable vapors, such as encountered in vapor recovery or manifolded tank systems.

A confined flame front will accelerate from the point of ignition, eventually reaching and exceeding the speed of sound in a pipe run. During the unavoidable transition period, from subsonic to sonic speeds, flame front pressures and velocities are far greater than before or after the transition.

"Stable" detonation arresters have not been tested and approved to withstand the pressures of the unstable transition period. They rely upon the premise that it is *unlikely* that the *unavoidable* transition will occur just as the flame front reaches the detonation arrester. By definition, a stable detonation arrester would not meet safety standards set by the U.S. Coast Guard (USCG), Underwriters Laboratories (UL), or the National Fire Protection Association (NFPA).

LABORATORY TESTING

Approvals: Protectoseal's Detonation Flame Arresters have been thoroughly tested by independent laboratories. Details available upon request.

SPECIAL FEATURES

The Series 35000 / 36000RP Detonation Flame Arrester designs utilize improved-flow, crimped metal flame arrester elements. High strength, welded steel housing, hydrostatically tested at 475 PSIG. All welding is performed in accordance with ASME Boiler and Pressure Vessel Code Section IX. Patent pending reflective pressure protection feature on Series 36000RP for NEC Group C (IEC Group IIB3) vapors. Consult factory for availability of reflective pressure protection feature on Series 35000 for NEC Group D (IEC Group IIA) vapors.

Configuration: Concentric housing. Consult factory for availability of eccentric housing.

Sizes Available. 2" (DN 50) through 24" (DN 600) sizes. Consult factory for larger sizes. Flanged to mate with standard flanged 150# ANSI or DIN PN16 bolting specifications. Other drilling patterns are also available upon special request.

Easy Inspection and Maintenance. The crimped metal arrester element is easily removable and interchangeable for inspection, cleaning or replacement.

Optional Fittings: Flanged or tapped fittings may be provided on the arrester housing for drains, pressure taps or temperature probes if required.

Precision Manufacturing: The crimped metal arrester element design allows for flexibility in application. The ability to control the size of the element openings is the key to arresting high velocity and high pressure flame fronts. Manufactured under Protectoseal's ISO 9001 Quality System.

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.

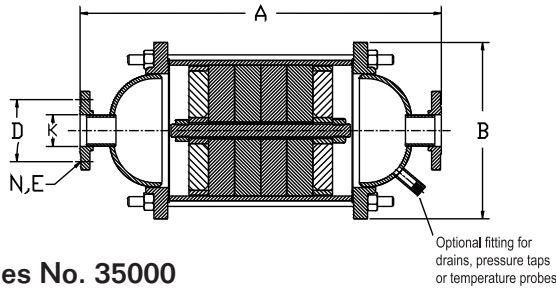
CONSTRUCTION

A comprehensive range of materials is offered as shown in the chart below. Other metals, or options such as steam jacketing, can be furnished upon request. Please consult factory for availability.

Series	Housing & Element Housing	Element Winding
C35000 / C36000RP	Steel	304 S.S.
CS35000 / CS36000RP	Steel	316 S.S.
F35000 / F36000RP	316 S.S.	316 S.S.
L35000 / L36000RP	304 S.S.	304 S.S.
M35000 / M36000RP	Alloy C276	Alloy C276

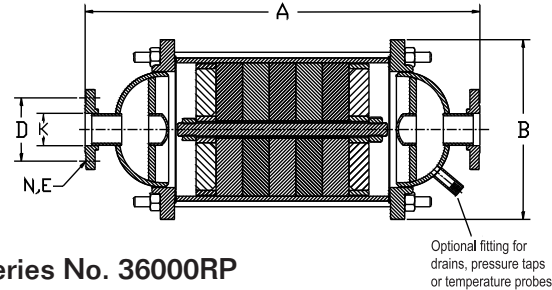
All units flanged to mate with 150# R.F. ANSI. DIN flanging optional.

Suitable for use with Group D chemical vapors, generally equivalent to International Electrotechnical Commissions (IEC) Group IIA



Series No. 35000

Suitable for use with Group C & D chemical vapors, generally equivalent to International Electrotechnical Commissions (IEC) Group IIB3 and IIA



Series No. 36000RP

DIMENSIONS AND ORDERING INFORMATION (Dimensions shown are for reference only, contact factory for certified drawings.)

Cat. No.	Flange Size K	Face to Face A	Dia. B	B.C. D	Dia. E	Holes N
35002	2"	27 3/4"	13 1/2"	4 3/4"	3/4"	4
35003	3"	27 3/4"	13 1/2"	6"	3/4"	4
35004	4"	28 7/8"	16"	7 1/2"	3/4"	8
35006	6"	31 1/2"	20 3/4"	9 1/2"	7/8"	8
35008	8"	47 3/4"	24 7/8"	11 3/4"	7/8"	8
35010	10"	59 1/2"	27 1/2"	14 1/4"	1"	12
35012	12"	60 1/4"	32"	17"	1"	12
35014	14"	80 3/8"	38 3/4"	18 3/4"	1 1/8"	12
35016	16"	88 7/8"	38 3/4"	21 1/4"	1 1/8"	16
35018	18"	90 3/8"	46"	22 3/4"	1 1/4"	16
35020	20"	90 3/4"	50 3/4"	25"	1 1/4"	20
35024	24"	91 1/2"	53"	29 1/2"	1 3/8"	20

Cat. No.	Flange Size K	Face to Face A	Dia. B	B.C. D	Dia. E	Holes N
36002RP	2"	29 3/4"	13 1/2"	4 3/4"	3/4"	4
36003RP	3"	29 3/4"	13 1/2"	6"	3/4"	4
36004RP	4"	30 7/8"	16"	7 1/2"	3/4"	8
36006RP	6"	33 1/2"	20 3/4"	9 1/2"	7/8"	8
36008RP	8"	49 3/4"	24 7/8"	11 3/4"	7/8"	8
36010RP	10"	61 1/2"	27 1/2"	14 1/4"	1"	12
36012RP	12"	62 1/4"	32"	17"	1"	12
36014RP	14"	82 1/4"	38 3/4"	18 3/4"	1 1/8"	12
36016RP	16"	90 7/8"	38 3/4"	21 1/4"	1 1/8"	16
36018RP	18"	92 3/8"	46"	22 3/4"	1 1/4"	16
36020RP	20"	92 3/4"	50 3/4"	25"	1 1/4"	20
36024RP	24"	93 1/2"	53"	29 1/2"	1 3/8"	20

Series No.	Arrester Housing	Element Housing	Element Winding
C35000	Steel	Steel	304 S.S.
CS35000	Steel	Steel	316 S.S.
F35000	316 S.S.	316 S.S.	316 S.S.
L35000	304 S.S.	304 S.S.	304 S.S.
M35000	Alloy C276	Alloy C276	Alloy C276

Series No.	Arrester Housing	Element Housing	Element Winding
C36000RP	Steel	Steel	304 S.S.
CS36000RP	Steel	Steel	316 S.S.
F36000RP	316 S.S.	316 S.S.	316 S.S.
L36000RP	304 S.S.	304 S.S.	304 S.S.
M36000RP	Alloy C276	Alloy C276	Alloy C276

All units are flanged to mate with 150# R.F. ANSI, DIN PN16 optional

ADDITIONAL PRODUCTS FROM PROTECTOSEAL

Series 18540



Pipe-Away Pressure Vacuum Relief Vent for applications that require hazardous vapors be processed into manifolded piping and not released into the atmosphere.

Series 7800



Emergency Vent protects tanks against rupture or explosion resulting from excessive internal pressure caused by exposure to fires.

Series 4950



Vent Line / In-Line Parallel Plate Flame Arrester is designed for installation in open vent pipe or bleed lines from storage or processing tanks. Suitable for NEC Group D (IEC Group IIA) vapors.

Series 830



Combination Pressure / Vacuum Relief Vent & Flame Arrester provides pressure and vacuum relief as well as protection from propagation of externally introduced flames. Suitable for NEC Group D (IEC Group IIA) vapors.