

Victaulic® Vortex™ Hybrid Fire Extinguishing System

Series 953 and Series 954 Hybrid Nozzles



Standard Nozzle



Escutcheon Nozzle



PVDF Nozzle

1.0 PRODUCT DESCRIPTION

- The Victaulic® Vortex™ Hybrid Fire Extinguishing System provides a homogeneous suspension of inert gas mixed with ultra-fine droplets of water to protect various hazards with two extinguishment mechanisms that are occurring simultaneously: flame temperature cooling and diluting of the ambient oxygen level.
- The *Victaulic Vortex* Series 953 and 954 Hybrid Nozzles are devices designed to deliver the hybrid media.
- The Series 953 Hybrid Nozzles feature a dome foil and are typically used in Class B applications.
- The Series 954 Hybrid Nozzles typically feature a cavity foil and are typically used in Class A applications.
- The water and nitrogen are mixed at the hybrid nozzle and distributed as hybrid media.
- The hybrid nozzle atomizes the water to $<10\mu\text{m}$.

Water Flow: Set by flow cartridge

Orientation: Pendent or Sidewall

ALWAYS REFER TO ANY NOTIFICATIONS AT THE END OF THIS DOCUMENT REGARDING PRODUCT INSTALLATION, MAINTENANCE OR SUPPORT.

2.0 CERTIFICATION/LISTINGS

Product manufactured by Victaulic and/or certified suppliers in accordance with ISO-9001.

The following nozzles are used within FM Approved Victaulic® Vortex™ systems, designed in accordance with the applicable *Victaulic Vortex* design manual and installed in accordance with the *Victaulic Vortex* Installation, Operation, and Maintenance Manual and the applicable FM Global Property Loss Prevention Data Sheets:

- Series 953 Standard Nozzle, ½" MPT size
- Series 954 Escutcheon Nozzle, 1", ⅝", and ¾" sizes
- Series 953 PVDF, ¼" Size

3.0 SPECIFICATIONS – MATERIAL

Body (Foil, Water Jacket): (specify choice)

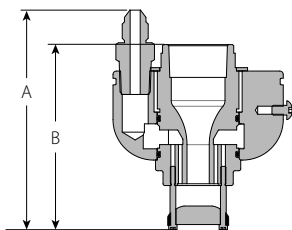
- ☐ Stainless Steel (Standard and Escutcheon Nozzles)
- ☐ Polyvinylidene Fluoride Plastic (PVDF Nozzle)
- ☐ Plain Brass (Only for FM Approved Series 953 ½" Nozzle)

O-Ring: Buna, Viton, EPDM

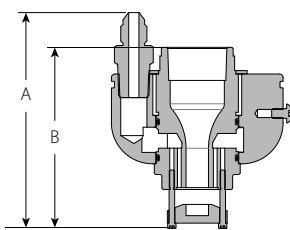
Pins: Stainless Steel

4.0 DIMENSIONS

Series 953 & Series 954 Standard Nozzles



Series 953



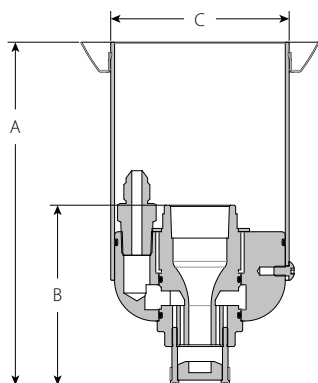
Series 954

Nozzles							Dimensions			
Size inches	Series	Foil Type	Nitrogen Orifice inches mm	Water Orifice (x16) inches mm	Nitrogen Inlet	Water Inlet	A inches mm	B inches mm	Minimum Distance Foil to Ceiling inches mm	Maximum Ceiling Height feet m
1	953/954	Dome	0.96 24.4	0.06 1.5	1" NPT Female	1/8" NPT Female	4.3 108.0	3.9 99.0	6.0 152.0	24.5 7.5
5/8	954	Cavity	0.63 16.0	0.06 1.5	3/4" NPT Female	1/4" NPT Female	3.4 87.6	2.9 74.0	4.5 114.0	24.5 7.5
1/2 ¹	953	Dome	0.50 12.7	0.06 1.5	3/4" NPT Male	1/4" NPT Female	3.2 81.0	2.9 74.0	4.5 114.0	24.5 7.5
1/2	953	Dome	0.50 12.7	0.06 1.5	3/4" NPT Female	1/4" NPT Female	3.7 93.9	3.1 79.0	4.5 114.0	24.5 7.5
3/8	953	Dome	0.38 9.7	0.06 1.5	3/4" NPT Female	1/4" NPT Female	3.7 93.9	3.1 79.0	4.5 114.0	16.0 4.9
	954	Cavity	0.38 9.7	0.06 1.5	3/4" NPT Female	1/4" NPT Female	3.6 91.5	3.0 76.0	4.5 114.0	16.0 4.9
1/4	953	Dome	0.25 6.4	0.06 1.5	3/4" NPT Male	1/4" NPT Female	3.5 88.9	2.9 74.0	4.5 114.0	12.0 3.7
1/8	953	Dome	0.13 3.3	0.03 0.8	3/8" NPT Female	1/8" NPT Female	2.0 51.0	1.9 48.0	4.5 114.0	12.0 3.7

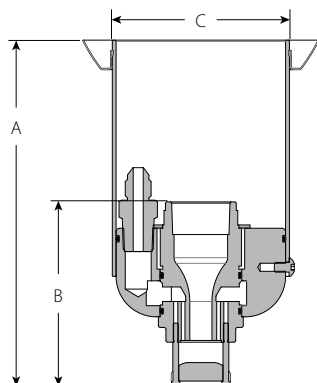
¹ All standard nozzles are stainless steel with the exception of the 1/2" Series 953 male threaded nozzle, which is also available in brass.

4.1 DIMENSIONS

Series 953 & Series 954 Escutcheon Nozzles



Series 953



Series 954

Nozzles							Dimensions				
Size inches	Series	Foil Type	Nitrogen Orifice inches mm	Water Orifice (x16) inches mm	Nitrogen Inlet NPT	Water Inlet NPT	A inches mm	B inches mm	C inches mm	Minimum Distance Foil to Ceiling inches mm	Maximum Ceiling Height feet meters
1	953/954	Dome ³	0.96 24.4	0.06 1.5	1" NPT Female	½" NPT Female	6.4 163.0	3.9 99.0	3.0 76.0	6.0 152.0	24.5 7.5
¾	954	Cavity	0.63 16.0	0.06 1.5	¾" NPT Female	¼" NPT Female	5.6 142.0	2.9 74.0	3.0 76.0	4.5 114.0	24.5 7.5
½	953	Dome	0.50 12.7	0.06 1.5	¾" NPT Female	¼" NPT Female	5.9 150.0	3.1 79.0	3.0 76.0	4.5 114.0	24.5 7.5
¾	953	Dome	0.38 9.7	0.06 1.5	¾" NPT Female	¼" NPT Female	5.8 147.0	3.1 79.0	3.0 76.0	4.5 114.0	16.0 4.9
	954	Cavity	0.38 9.7	0.06 1.5	¾" NPT Female	¼" NPT Female	5.8 147.0	3.0 76.0	3.0 76.0	4.5 114.0	16.0 4.9
¼	953	Dome	0.25 6.4	0.06 1.5	¾" NPT Female	¼" NPT Female	5.6 142.2	2.9 73.66	3.0 76.0	4.5 114.0	12.0 3.7

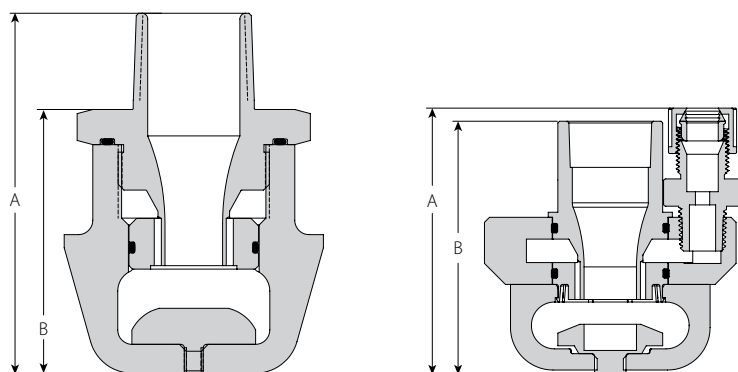
³ 1" size nozzle is only available with a dome foil.

NOTE

- All escutcheon style nozzles are only available in stainless steel.

4.2 DIMENSIONS

Series 953 & Series 954 PVDF Nozzles



Series 953

Series 954

Nozzles							Dimensions			
Size inches	Series	Foil Type	Nitrogen Orifice inches mm	Water Orifice (x16) inches mm	Nitrogen Inlet NPT	Water Inlet NPT	A inches mm	B inches mm	Minimum Distance Foil to Ceiling inches mm	Maximum Ceiling Height feet meters
5/8	Series 954	Cavity	0.63 16.0	0.06 1.5	3/4" NPT Female	1/4" NPT Female	3.2 80.7	3.0 76.0	4.5 114.0	24.5 7.5
1/2	Series 953	Dome	0.50 12.7	0.06 1.5	3/4" NPT Male	1/4" NPT Female	3.1 79.0	2.3 58.0	4.5 114.0	24.5 7.5
1/4	Series 954	Cavity	0.25 6.4	0.06 1.5	3/8" NPT Female	1/8" NPT Female	2.4 62.2	2.1 53.0	4.5 114.0	12.0 3.7
1/8	Series 954	Cavity	0.13 3.3	0.03 0.8	3/8" NPT Female	1/8" NPT Female	2.4 62.2	2.1 53.0	4.5 114.0	12.0 3.7

5.0 PERFORMANCE

Nozzle Size	Nozzle - Flow Characteristic	
Nominal Outlet Size inches	Operating Pressure	Nitrogen Flow Rate
	PSIG bar	SCFM Sm³/min
1	25	534
	1.72	15.12
	50	851
	3.45	24.10
5/8	15	165
	1.03	4.67
	25	230
	1.72	6.51
	50	369
	3.45	10.45
1/2	15	108
	1.03	3.06
	25	145
	1.72	4.11
	50	235
	3.45	6.65
3/8	25	82
	1.72	2.32
	40	110
	2.76	3.11
	50	130
	3.45	3.68
1/4	25	32
	1.72	0.91
	40	40
	2.76	1.13
	50	50
	3.45	1.42
1/8	40	14
	2.76	0.40

6.0 NOTIFICATIONS

⚠️ WARNING









- Always refer to the applicable Victaulic Vortex™ Hybrid Fire Extinguishing System General Design, Installation, and Maintenance Manual before specifying or installing any Victaulic Vortex™ products.
- Wear safety glasses, hardhat, and foot protection during installation and maintenance of a Victaulic Vortex™ Hybrid Fire Extinguishing.
- It is the customer's responsibility to verify hybrid nozzle material compatibility and that the proper size hybrid nozzle and water flow control cartridge are specified in the system design.

Failure to follow instructions and warnings can cause system failure, resulting in death or serious personal injury and property damage.

7.0 REFERENCE MATERIALS

- [70.03: Victaulic® Vortex™ Hybrid Fire Extinguishing System - Series 951 Panels](#)
- [70.05: Victaulic Vortex Hybrid Fire Extinguishing System - Series 950 Water Tanks](#)
- [70.07: Victaulic Vortex Hybrid Fire Extinguishing System - Series 950 Releasing Manifold System](#)
- [70.16: Victaulic Vortex Hybrid Fire Extinguishing System - Flow Cartridge and Strainer Kit](#)

User Responsibility for Product Selection and Suitability

Each user bears final responsibility for determining the suitability of Victaulic products for their end-use application, in accordance with industry standards, project specifications, and Victaulic's published performance, maintenance, and safety data, as well as all warnings and installation instructions. Nothing in this or any other document, nor any verbal recommendation, advice, or opinion from any Victaulic employee, shall be deemed to alter, vary, supersede, or waive any provision of Victaulic Company's standard conditions of sale, warranty, installation instructions, or this disclaimer.

Installation

Always refer to and follow the [Victaulic Installation Handbook](#) or installation instructions for the product you are installing. Handbooks are included with each shipment of Victaulic products, providing complete installation and assembly data, and are available in PDF format on our website at [victaulic.com](#).

Warranty

Refer to the Warranty section of the current Price List or contact Victaulic for details.

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Note

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