

REVERSE ACTION WATER SPRAY NOZZLE

Model No : MV-CB, MV-CBS, MV-C, MV-CS, MV-CE

Model	MV CB - Brass MV CBS - Brass With Copper Strainer MV C - Stainless Steel MV CS - Stainless Steel With Strainer MV CE - Aluminium Bronze	
Maximum Working Pressure	12.3 KG/CM ² (175 PSI)	
Effective Working Pressure	1.4 to 3.5 KG/CM ² (20 - 50 PSI)	
End Connection	½" BSPT (½" NPT Optional)	
Included Water Spray Angle For Each K-Factor	140°, 120°	
K-Factor	MV-CB/MV-C MV-CE K30 (2.10) K51 (3.57) K64 (4.48) K79 (5.53) K102 (7.14)	MV-CBS MV-CS K18 (1.26) K22 (1.54)
Weight (Approx)	0.130 Kg	
Finish	MV-CB/ MV-CBS: Natural Brass finish, Chrome plated brass, Electroless Nickel plated, Epoxy coated MV-C/ MV-CS/ MV-CE: Natural finish	
Ordering Information	Specify Model, K-Factor, spray angle, finish and end connection	

DESCRIPTION

SHIELD Reverse Action Medium Velocity Water Spray Nozzles are open type (non-automatic) nozzles, designed for directional spray application in fixed fire protection system.

Reverse Action MV nozzle has external deflector and discharges water in opposite direction of flow. Water is uniformly distributed over the surface to be protected.

The Nozzles are effectively designed to apply water to exposed vertical, horizontal, curved and irregular shaped surfaces to allow cooling to prevent excessive absorption of heat from an external fire and provide structural damage or spread of fire. In some application, nozzles may be applied to control or extinguish the fire depending on water design density as per applicable codes.



The nozzle is used in deluge water spray system for special hazard fire protection application.

As the design and intent of specific water spray system may vary considerably, the nozzle is made available in several combinations of orifice sizes and spray angles.

The minimum desirable pressure to achieve a reasonable spray pattern is 1.4 Kg/Sq.cm. The water distribution pattern as shown in the graph in following pages is at an average pressure of 2.0 Kg/Sq.cm. The change in pressure between 1.4 to 3.5 Kg/sq.cm. does not affect considerable change in spray angle. The spray pattern shown is considering still air condition. System designer must consider wind velocity while designing the system for outdoor application. Field obstruction if any affecting the spray pattern of the nozzle must also be considered. The nozzle may be oriented to any position as deemed necessary to cover the hazard.

The Blow-off plugs can be used to prevent depositing of foreign materials in the water way of the nozzle, which could interfere with the discharge of the spray nozzle. Blow-off plugs are optional and are not UL listed.

As per NFPA-15 main pipeline strainer is required for system utilizing nozzle orifice diameter less than 9.5mm (3/8 inch), i.e Nozzle having K-factor 30 and less, and also for the system water which is likely to contain obstructive materials.

INSTALLATION & MAINTENANCE

The spray nozzle must be handled with due care. For best results, the storage as well as any further shipment be made in original packing only.

Nozzle which is visibly damaged should not be installed.

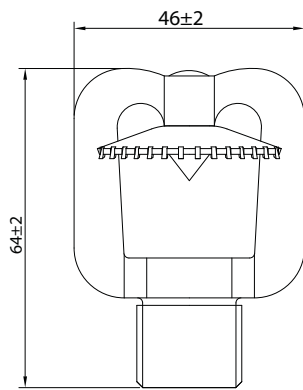
Use Teflon tape or soft thread sealant on male thread of the nozzle. The nozzles must be hand tightened into the fitting. Excessive tightening torque may result into serious damage to nozzle arms and the deflector, which may affect spray pattern of the nozzle and its performance.

It is recommended that water spray system be inspected regularly by authorized technical personnel. The nozzle

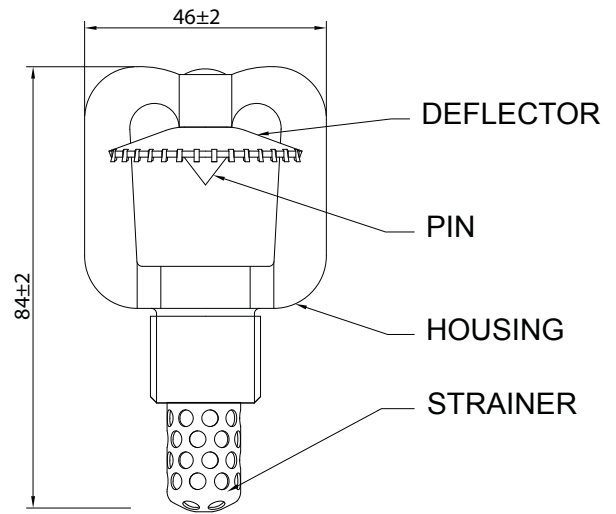
must be checked for atmospheric effects, external and internal obstruction & blockage if any. The system must be operated with optimum water flow at least twice in a year or as per the provisions of NFPA /TAC or local authority having jurisdiction.

The owner is solely responsible for maintaining the water spray system and the components there in, so that it performs properly when required.

MODEL MV-CB, MV-C, MV-CE



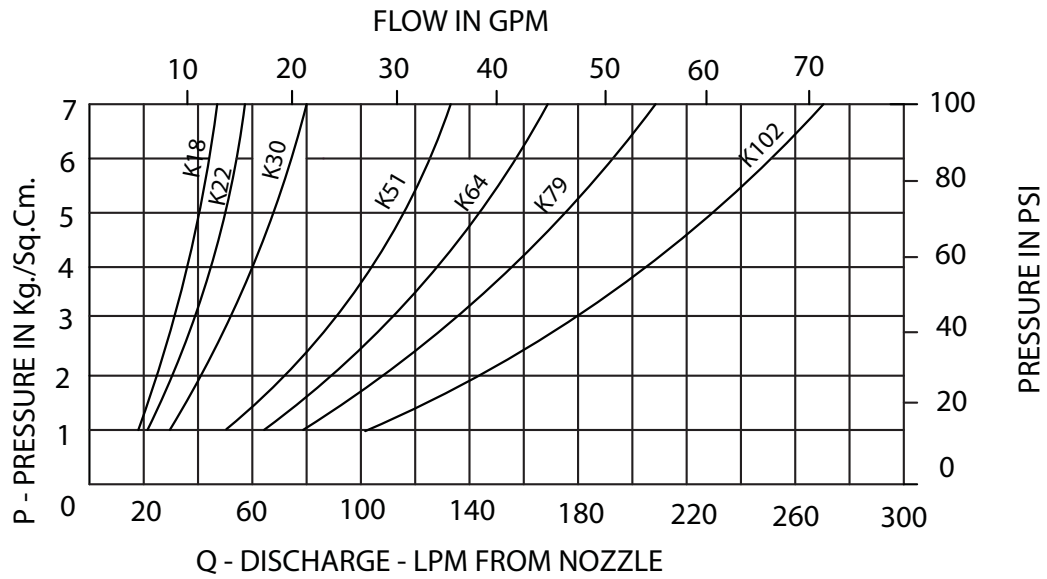
MODEL MV-CBS, MV-CS



MATERIAL OF CONSTRUCTION

Component	Model MV-CB, MV-CBS	Model MV-C, MV-CS	Model MV-CE
Housing	Brass ASTM B21	ASTM A 351, CF8M	Aluminium Bronze ASTM A148
Pin	Brass ASTM B21	ASTM A 479 GR 31803	PH. Bronze ASTM B148/ BS2874-PB102
Deflector	Brass ASTM B21	ASTM A 240 GR 2205	PH. Bronze ASTM B148/ BS2874-PB102
Strainer	Copper (For MV-CBS)	Stainless Steel 316 (For MV-CS)	---
Blow-Off Cap	Elastomer	Elastomer	Elastomer

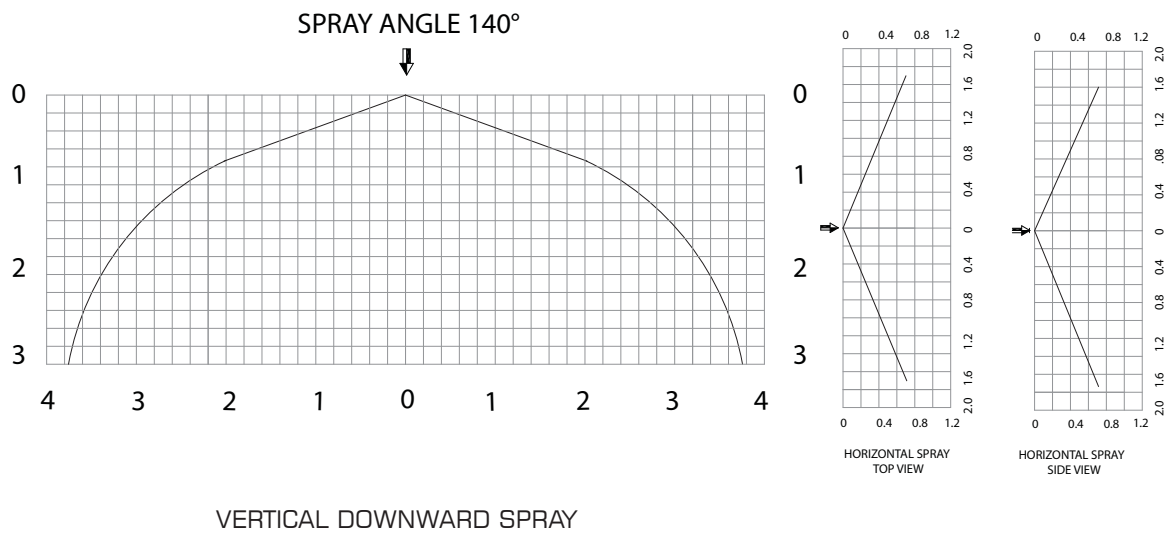
DISCHARGE CHARACTERISTICS



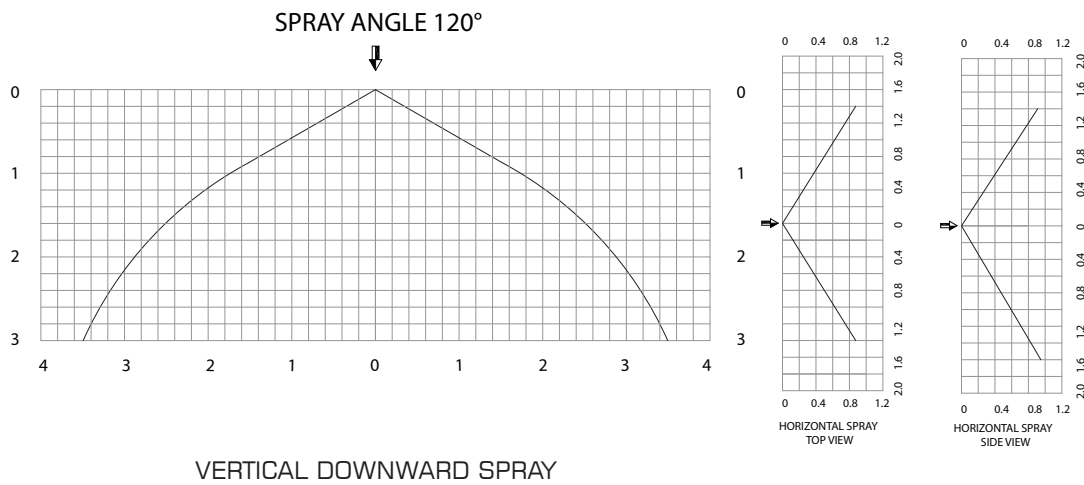
$Q = K \sqrt{P}$ where P is supply pressure in Kg./Sq.cm., K=Nozzle constant (K-factor) in metric

US K factor = Metric K factor \div 14.2745

SPRAY PATTERN



SPRAY PATTERN



ALL DIMENSIONS ARE IN METERS

Note :

- 1) The design spray pattern given in graph are included spray angle of 120 Deg. and 140 Deg. at nozzle inlet pressure of 1.4 to 3.5 Bar. When the nozzle pressure above 3.5 is applied, the coverage area will decrease because the spray pattern tends to draw inward at higher pressure.
- 2) The spray data are obtained from the test in still air.



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*In Line with SHIELD policy for continuous product development,
 SHIELD has the right to change specification without prior notice.*