

Description

The TUNPROTEC Model 5MS is a small dimensioned, stainless steel nozzle pipe supplied with low pressure water mist nozzles to be fitted directly into the prefabricated nozzle pipe.

The simple and prefabricated design of the Model 5MS reduces installation time and cost, reduces the risk of impurities in the pipes and nozzles and ensures that the nozzles can be quickly installed with the correct orientation and spacing. The modular approach to the Model 5MS means that the pipes can be installed in parallel and in series and connected by press fit connections which further lowers installation times and ease of installation.

The Model 5MS nozzle pipes are supplied in 6-meter-long segments and feature 18 threaded holes in three different orientations, which allows for quick installation of the Model BM-1-20 and Model BM-1-40 low pressure water mist nozzles immediately prior to installation. The threaded hole pattern repeats for every meter of the nozzle pipe to ensure the correct spacing. When installed the Model 5MS nozzle pipe will have a Model BM-1-20 nozzle in the downward position and Model BM-1-40 nozzles in the side position, angled 70 degrees from the downward facing Model BM-1-20 nozzle.

Application

The Model 5MS has been designed specifically for the protection of infrastructure tunnels, and similar applications, with forced ventilation speeds of up to 5.5 m/s.

A single nozzle pipe and water mist nozzle combination allows for protection of up to 6 m wide areas. For tunnels with 6-12 m widths, two parallel nozzle pipes shall be used. For tunnels with 12-18 m widths, three parallel nozzle pipes shall be used. The VID Fire-Kill sales team shall be involved in the means of protecting tunnels wider than 18 m.

Approvals



| General Description | |
|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Min. water pressure | 10 Bar |
| Max. working pressure | 16 Bar |
| Coverage | 36 m ² (6 m x 6 m) |
| Installation height | 2.5 m – 8 m |
| Nozzle pipe dimensions | Ø35x1.5 mm Ø42x1.5 mm Ø54x1.5 mm Other sizes by request |
| Specific Description | |
| K-factor (metric) | 60 (l/min/√(bar)) |
| Nominal flow (10 bar) | 190 l/min |
| Nominal discharge density (max. spacing) | 5.2 mm/min |
| Drop size | DV90 < 300 µm |
| Material | AISI 316L, EN.1.4404 |
| Related components | |
| Model C-NHV | Simple monitored fire zone control valve assembly with test/service trim. Includes control valve, test/service trim, high-capacity filters and monitored manual test/service valves. |
| Model C-NHV-A | Self-testing fire zone control valve assembly. Includes control valve, high capacity filters, motorized self-test/service valves and simple control unit. |
| Model C-NHV-D | Self-testing fire zone control hub and valve assembly including fire detection. Includes control valve, self-test/servicing trim, high capacity filter and control hub handling fire zone hydraulic activation and fire detection. |

The Model 5MS nozzle pipe and water mist nozzles have been successfully tested in full scale tunnel test fires in accordance with prEN 14972 guidelines for fires with a potential heat release rate of 250 MW and the water mist nozzles have been approved in accordance with the IMO MSC.1/Circ. 1165 component test program.

Installation

Once received the Model 5MS nozzle pipe, Model BM-1-20 and Model BM-1-40 low pressure water mist nozzles shall be stored under safe conditions, protected from harmful materials and physical damages.

Once the site has been prepared for installation of the Model 5MS components, the two plastic caps shall be removed from the nozzle pipe after which the nozzle pipe shall be flushed and rinsed.

The Model 5MS nozzle pipe shall be installed using pipe hangers, as specified by the authority having jurisdiction and local norms, and oriented with the centermost hole oriented directly downwards and connected by appropriately sized AISI 316L press fittings. VID Fire-Kill recommends 2-3 m spacing between pipe hangers.

Once the nozzle pipe has been installed, the plastic caps protecting the threaded holes can be removed and the Model BM-1-20 and Model BM-1-40 water mist nozzle can be installed in the threaded holes. The supplied 6x Model BM-1-20 nozzles shall be installed in the downward orientated threaded hole and the 12x Model BM-1-40 nozzles shall be installed in the sideward facing threaded holes.

To ensure that the nozzles are securely fastened during installation, the below torque values shall be achieved when tightening the micronozzles into the threaded inserts of the N-pipe.

Once the Model 5MS nozzle pipes and nozzles have been installed, the area in the vicinity of the water mist nozzles shall be held clean as not to obstruct the nozzle orifices.

Contact

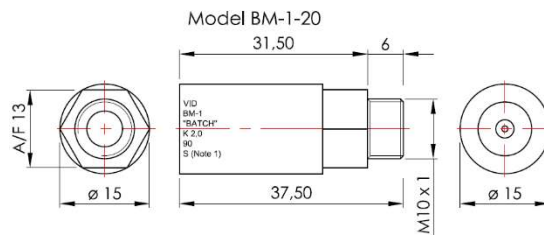
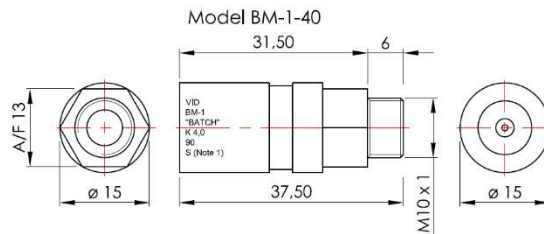
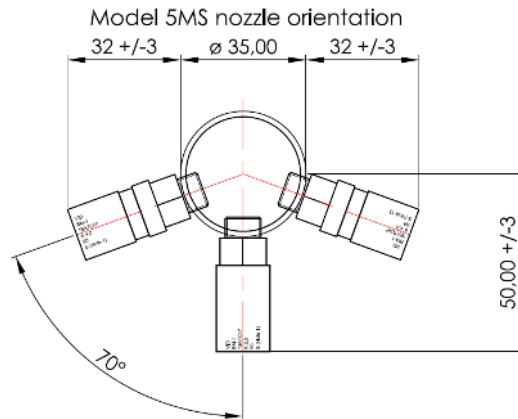
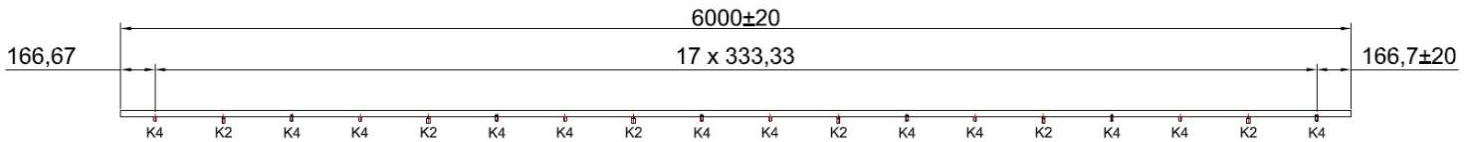
For more information on the Model 5MS nozzle pipes and water mist nozzles, and the TUNPROTEC system and its components, kindly contact the TUNPROTEC sales team at tunprotec@vidaps.dk.

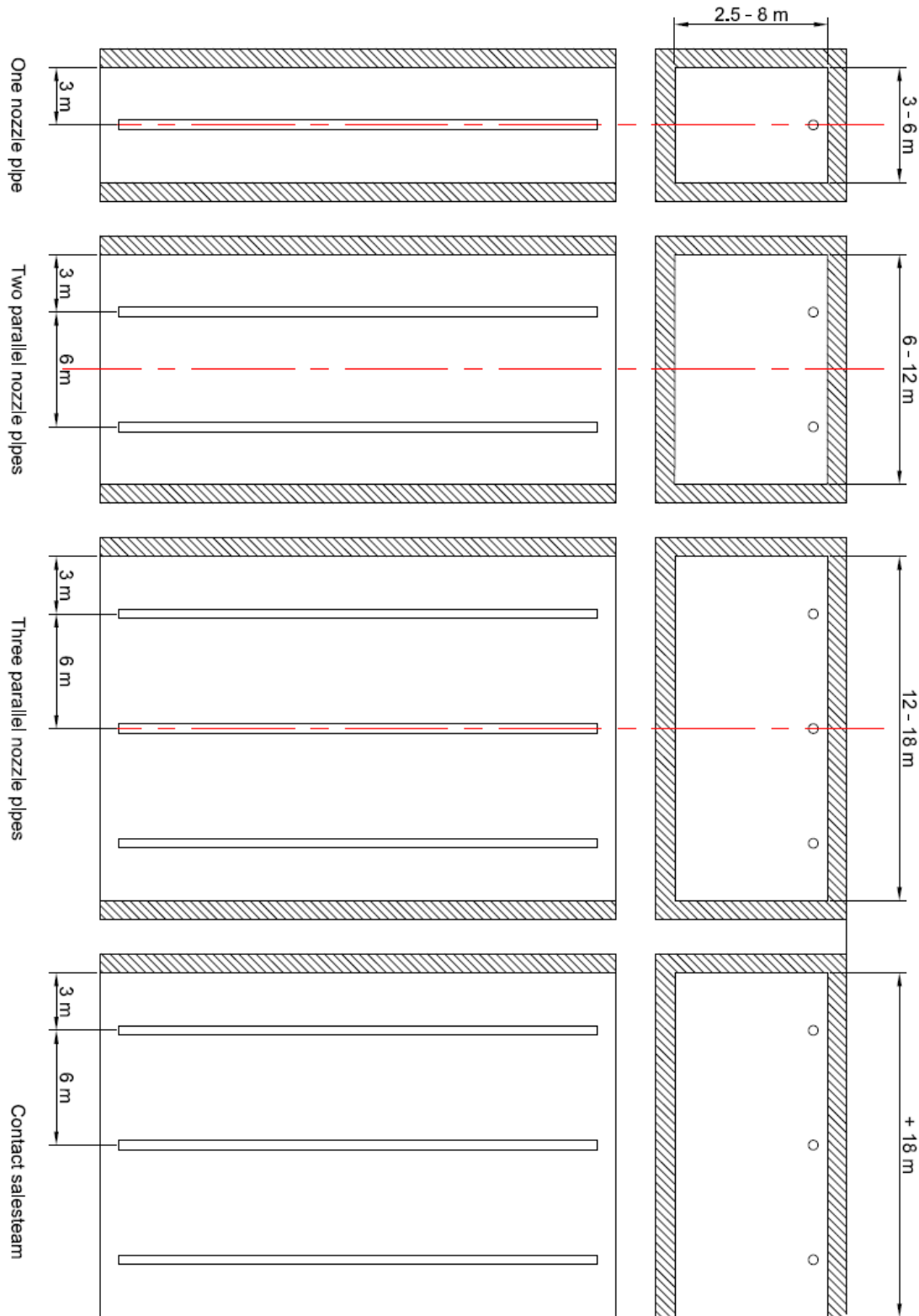
Fastening of Model BM-1 type nozzles

| Nozzle models | | | BM-1-20, BM-1-40 |
|-----------------------------|---------------------|------------------------|------------------|
| Packing material: | No packing material | Thread sealant or glue | Thread seal tape |
| Req. torque for tightening: | 10-20 Nm | 10-20 Nm | 10-20 Nm |
| Axial angle: | Any angle | | |

| Nozzle models | | | 40-15A |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|------------------|
| Packing material: | No packing material | Thread sealant or glue | Thread seal tape |
| Req. torque for tightening: | 10-30 Nm | 10-30 Nm | 10-30 Nm |
| Axial angle: | Vertically symmetrical with diffuser directed upwards. When fastening Model 40-15A maximum values may be slightly exceeded to attain correct diffuser direction. | | |

Dimensions





Model 5MS nozzle pipe spacings

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