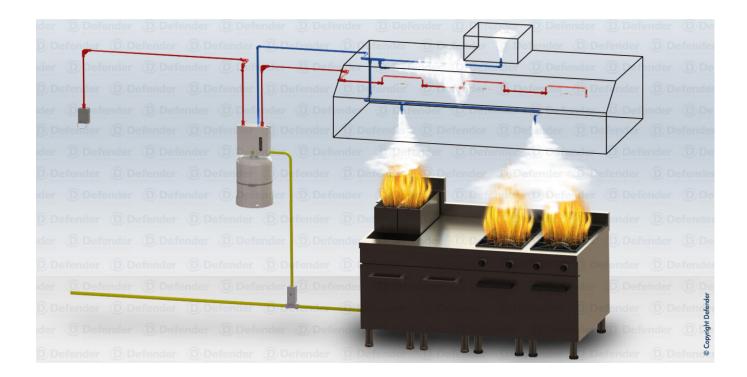


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# Defender Mechanical Kitchen Fire Suppression System

# **DM System**

Defender is easy to install, use and maintain.

Defender M is apt for high temperature, intensive use and tough applications.

The performance-enhanced nozzles in Defender's technology have a wider range and extinguishing performance than its opponents.

Defender's nozzles are different from its opponents with its non-clogging feature. The total cost of the system is low with a small capacity system cylinder, minimum number of nozzles



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and less pipe line.

Defender's system cylinder is continuously pressurized. Maintenance and refilling costs are economical.

Defender's activation mechanism can be operated both automatically and manually

Defender has an alternative option for applications of all sizes:

DM8: 8 Flow system / DM12: 12 Flow system / DM18: 18 Flow system

### Wide and fast detection range:

- 130°C
- 141°C
- 182°C
- 260°C



 The performance of the system has been tested and certified by LPCB according to LPS 1223.



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 The system and production quality is constantly checked by BRE Global Certification.

#### **DM System**

#### Features:

### Defender Mechanical Kitchen Fire Suppression System

- Wider suppression area.
- Non-clogged nozzles.
- Precision in detection.
- Requires less detector installation compared to other suppression system brands.
- Manual activation from 2 points is possible (optional).
- Gas shut-off valves can be easily attached to the system (optional).
- Micro switch can be easily attached to the system (optional).
- Easy to use and install.
- Easy to maintain and service.
- Original spare parts from stock with affordable prices.
- Simplified hydraulic calculation.
- One type suppression piping installation.
- Suitable for all kinds of kitchen hoods.

#### TECHNICAL SPECIFICATIONS

9,5 Lt, 15 Lt ve 22,7 Lt capacity cylinders.

9 bar low pressure cylinders.

30° - 60° - 90° angle full cone non clogged nozzles

Automatic and manual activation is standard.



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UL Listed detectors with 141°C - 182°C - 260°C.

heat detection options.

### **System Spare Parts**

#### **Defender Manual Activation Mechanism**



#### **Defender Manual Activation Button - P1200**

- Defender Manual Activation Mechanism is made of AlSI304 Stainless Steel.
- Defender Manual Activation Mechanism Ring is made of Stainless Spring Steel.
- Defender Manual Activation Mechanism has a special ergonomic design.
- It is not affected by corrosion and impacts.
- Defender Manual Activation Mechanism can be sealed against unauthorized use.



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#### Defender Nozlle



#### Defender Nozzles (P1500 A Nozzle - P1600 F Nozzle - P1700 R Nozzle )

- High quality brass raw material is used in defender nozzles.
- Defender nozzles are produced on high precision CNC machines with a precision of 0.001%.
- Defender nozzles have a specially designed atomizer (Sprayer).
- Defender nozzles are non- clogging. There is no filter or strainer.
- Defender Nozzles spray liquid in full cone (Full Cone).
- Defender Nozzles have oil cap and oil foil.
- It prevents clogging of the outlet ends of the nozzles due to oil and salt steam.
- When the system is operated, the oil foils are torn and the extinguishing liquid is released.

#### **Technical Performance of Defender Nozzles**

Nozzle Type	Pain	Flow	Flow (L / Min )	Place of use
P1500 A Type Nozzle	40°-60°	1	3 Litre	Chimney, Filter and flat surface cooking devices
P1600 F Type Nozzle	25°-35°	2	6 Litre	Fryer, Grilled or Lava stone grill, Tilting pan
P1700 R Type Nozzle	60°-85°	1	3 Litre	Electric / Gas Cookers



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### **Nozzles**

Cooker hood can be considered the most important component of the extinguishing system. Nozzles are produced according to the types of cooking devices under the hood.

Criteria determining the types of nozzles;

Spray Angle; It is the angle of the liquid sprayed from the nozzles.

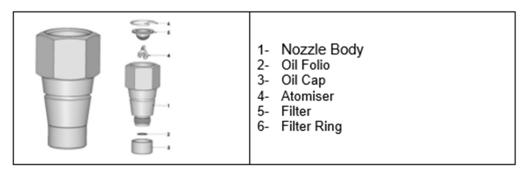
Spraying Flow; It is the amount of liquid taken from a nozzle every 1 minute. (Number of streams)

Droplet size; They are droplets formed by the liquid coming out of the nozzle by breaking up at the micron level.

Spray distance; It is the longest distance reached by the extinguishing liquid sprayed from the nozzle.

As the nozzles are positioned on the cooking appliances, they are constantly exposed to oil and water vapor. This may cause the nozzles to clog. For this reason, there is an oil protection cover or foil at the ends of the nozzles. With the operation of the system, the oil cover is dislodged (if the foil is used, it tears) and allows the extinguishing liquid to be sprayed.

There are strainers / filters so that particles coming from the pipes do not clog the nozzles or block the flow. These strainers / filters may rust over time and become unable to function. Or a large number of particles in the pipe can clog the strainer / filter. For this reason, nonclog nozzles have been developed in today's technology. Therefore, there is no strainer / filter in the nozzle. Non-clogging nozzles have been used in Defender Hood Extinguishing systems for many years.





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#### **Defender Corner Pulley**



#### **Defender Corner Pulley P9000**

- Defender Corner Pulley are made of Zamak-5 Raw Material. It is not affected by oil and salt steam.
- Unlike its counterparts, it has a body thickness of 2 mm. It has a very long mechanical life.
- Stainless steel fully enclosed bearings are used in defender roller elbows.
- It is resistant to corrosion. Rotational motion is guaranteed.
- There are mounting holes on the defender roller bracket bodies.
- It can be easily mounted on the wall. In addition, there is no need to use clamps.
- The pipe entry of the defender Corner Pulley is 18 mm.
- Defender Corner Pulley pipes are fixed with M6 screws.



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### Defender Dedektor Set (Thermo Bulb)



- Defender Thermobulb detectors have 3 different heat values.
- Defender Thermobulb detector (P2751 182 ° C) is used in cooking appliances with high fire risk such as deep fryers.
  - Defender Thermobulb detector (P2851 141 ° C) Used in filter, chimney or cooking appliances with low fire risk.
  - Defender Thermobulb detector (P2951 260 ° C) is used in high heat generating cooking devices such as Charcoal Grill, Lava Stone Grill.
  - Standard and Fast Response models are available.
  - Defender detectors are mounted on steel rope with aluminum connection ferrules.
  - The mounting apparatus of the defender detectors is made of 2 mm sheet metal and has high tensile, tensile, stretch and deformation resistance.
  - Electrolysis coating is applied to the defender detector mounting apparatus against corrosion.



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### Defender System Cylinder and Activation Mechanism



### Defender System Cylinder

- Defender System Cylinder is produced from high quality sheet metal.
- The Defender System Cylinder has passed the tests in accordance with the standards and is CE certified.
- Defender System Cylinder is pressurized with 9 bar.
- Defender System Cylinder has> 100 Bar burst test pressure.
- The Defender System Cylinder is extremely safe against heat and explosion.
- Defender System Cylinder is protected against corrosion with electrostatic paint.

#### **Defender Activation Mechanism**

- Defender Activation Mechanism Box is made of 2 mm sheet metal.
- Defender Activation mechanism is protected against corrosion with electrostatic oven paint.
- Defender Activation Mechanism components are made of stainless steel and Aluminum Bronze. It has high corrosion resistance.



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- Defender Activation components are produced by precision casting with high technology.
- Cylinder pressure can be monitored from the manometer on the Defender Activation Mechanism.
- Kitchen cooking devices and ventilation fans can be de-energized and turned off with micro switch within the Defender Activation Mechanism.

### Defender Shutt-Off Gas Valve



- Defender Sutt-off Gas valve box is made of high quality Stainless steel.
- Defender Sutt-off Gas valve is available in sizes 1 ", 1-1 / 4", 1-1 / 2 ", 2".
- The Defender gas shut-off valve closes the gas passage by its mechanical release.
- Defender Sutt-off Gas valve works with a very short movement.
- It must be used in industrial kitchens to cut off gas in case of fire.



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### Fire Eraser Re-Filling



### Fire Eraser Chemical Extinguishing Liquid

- Fire Eraser is produced from potassium carbonate solution.
- Fire Eraser Solution> 1,40 Fire Eraser Chemical extinguishing liquid has a low PH degree.
- After using Fire Eraser Chemical extinguishing liquid, the kitchen can be washed with plenty of hot water and put into use quickly.
- Fire Eraser Chemical extinguishing liquid is Toxic and Non-Toxic.
- Fire Eraser Lifetime is 10 Years.



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#### **EMT**



### **Emt Connection Unions**

- Defender EMT Connection Couplings are 2 types, one-way and two-way.
- Defender EMT Connection Fittings securely fix aluminum pipes with inner rings.
- Defender EMT Connection Couplings are coated with electrolysis galvanized and have high corrosion resistance. It is not affected by intense oil vapor and salt vapor in kitchens.
- Defender EMT Connection Fittings are "- 18 mm in size.



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### Stainless Steel Wire Rope



- Stainless steel rope is made of AISI304 Stainless Steel.
- 7x7 + 1 Steel core has physical properties.
- It does not curl in stretching, pulling and releasing, it preserves its structure.
- Not affected by heavy oil and salt steam in kitchens
- Corrosion resistance is high.