

ARES
CNC FIRE EXTINGUISHING SYSTEMS



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OUR FACTORIES

ARES Fire Extinguishing Systems have been designed and manufactured by Nero Industry's team of leading expert engineers at 4 different locations, on 3 different continents for more than 10 years. Nero Industry who has developed nearly 200 products with the staff of 250 people, including 140 engineers, has been importing ARES Fire Extinguishing Systems to 29 countries within this scope.



NERO INDUSTRIES

Advanced Reliability



NERO Endüstri Savunma Sanayi A.Ş. which operates in United States of America, Bulgaria and Turkey at Ankara headquarters, is one of the largest subsystem manufacturers in Defence Industry in Turkey. Our company which is located on a plot of 12.000 m2 in Ankara Organized Industrial Zone; has been performing hundred percent domestic design, manufacture and provide system solutions with its team who are experts in their field and substructure since its foundation in 2009. More than 100 engineers are assigned within its staff of 210 people. Besides, it imports 29 different countries in the world. While our group companies operates in Space Aviation field, Defence Industry, it also comprises one of the largest test centres of Turkey regarding Defence Industry.

Within the scope of designed and qualified systems,

ARES - Fire Suppression Systems,

MARS - CBRN Detection and Filtration Systems,

ARMA - Power Systems,

UMAY - Laser Detection/Warning and Smoke Grenade Launcher Systems are included.

By combining design, production, monitoring, control and improvement methods conforming to ISO9001 and AS9100 standards with quality engineering and test infrastructure, it successfully competes with its global competitors and accomplishes outstanding projects together with world leaders of the sector.



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ARES FIRE SUPPRESSION SYSTEMS EXPORT TO COUNTRIES

- Germany
- France
- Israel
- Spain
- Ukraine
- England
- Brasil
- Peru
- USA
- Suadi Arabia
- Azerbaijan
- Türkmenistan
- Bahrain
- United Arab Emirates
- China
- Canada
- Indonesia
- India
- Koweit
- Thailand
- Malaysia
- Kazakistan
- Oman
- Latvia
- Pakistan
- Esthonia
- Katar
- Lithuania
- Singapore

AEROSOL EXTINGUISHING SYSTEMS

CNC processing machines are the equipment with high initial investment cost which gives investment's worth in time and these are also the equipment with the utmost competitive environment at today's industry sector. Leaving this equipment idle even for 1 minute means loss for the investor. The main reason of CNC machine fires is in fact the cooling liquid used for operation of these machines. Most CNC machines use an oil-based cooling liquid or metal working fluid. These oil-based liquids are quite inflammable, and they also have weak heat dissipation features which creates a high fire risk. A CNC machine, can easily let sparkles even while they are operating at low temperatures and low speed and create fire even by a single sparkle.

The automatic fire detection and extinguishing systems produced by Nero Industry domestically, detect fire within 3 milliseconds and automatically extinguishes in 1 second. This developed system is the most effective and most technological existing fire extinguishing system used in the world.

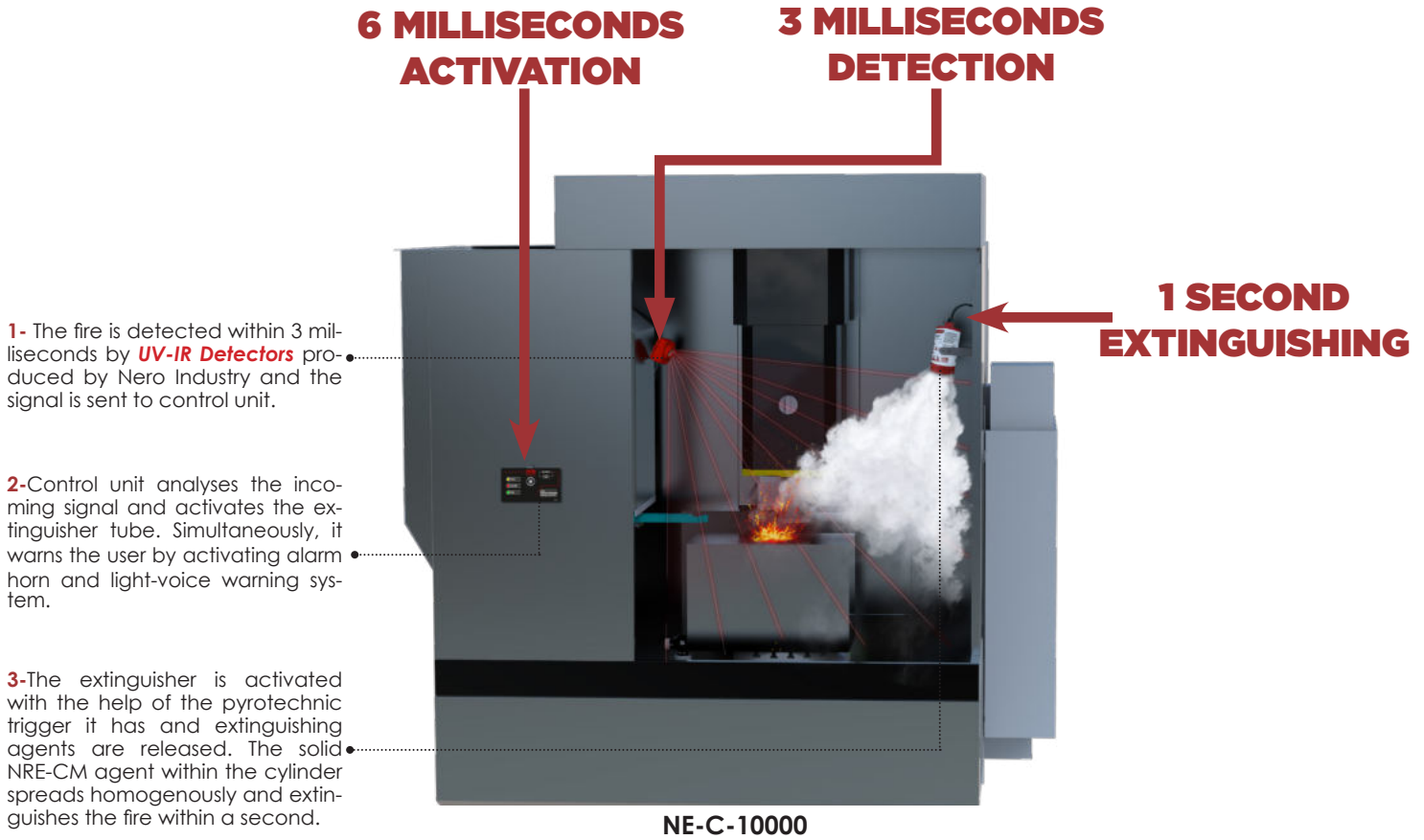
NAFEG AEROSOL FIRE EXTINGUISHING SYSTEM

NAFEG Aerosol Extinguisher is designed to extinguish and defuse type A (solid fuel), B (liquid fuel), C (gas fuel) fires and type E (electrical) fires in enclosed volumes. After the extinguishing agent concentration required for each type of fire and volume to be protected is calculated, the solid NRE- CM agent content in the NAFEG cylinder and total number of NAFEG cylinders at the area to be protected are determined. NAFEG-125, is designed to produce powdered aerosol to extinguish a fire in a 1,25 m3 enclosed volume.



NAFEG AEROSOL FIRE EXTINGUISHING TUBE	
Extinguishing Volume	1,25 m ³ (125 gr/m ³)
Activation Mode	Electrical
Discharge Time	4-6 seconds
Discharge Length	2 m
Operation Temperature Range	-40°C (-104°F) - 120°C (248°F)
Toxicity	Yok
Solid Fire Extinguisher Weight	125 gr
Effective Fire Classes	Class A, Class B, Class C, Class E
ELECTRICAL REQUIREMENTS	
Power Consumption	1,2 Ampere
MECHANICAL SPECIFICATIONS	
Dimensions	Diameter 89 mm (3.50'') Height 132 mm (5.19'')
Weight	1.8 kg (3.96 pound)
ENVIRONMENTAL IMPACT	
Impact on Ozone Layer	None

NAFEG AEROSOL FIRE EXTINGUISHING SYSTEM OPERATION SCHEMATIC



PRESSURE AND DISPERSION

- No need for maintenance for long years.
- No need for nozzles or hydraulic line.

SERVICE

- Nero Industry provides the quickest after-sales service thanks to its approximately 70 stations throughout the world.

ADVANTAGES OF NAFEG AEROSOL FIRE EXTINGUISHING SYSTEM

- No need for Pressured Container Use.
- No leakage or permeability problem.
- It discharges the whole agent within 5 seconds.
- As it is unpressurised its maintenance cost is low.
- Detection feature can be added.
- It can optionally be activated by manual triggering.
- It is the lightest extinguishing technology.
- It has durable and compact body structure. It takes little space.



NAFEG-TD AEROSOL FIRE EXTINGUISHING SYSTEM

NAFEG-TD provides independent system solution where fire detection and extinguishing are mechanically combined and there is no need for electricity. It can be activated mechanically without being controlled by any control unit and without being connected to any electrical power supply. Thanks to the thermal sensor/activator on it, it can detect fire and become activated automatically at various optional temperatures (57oC, 68oC, 79oC, 93oC, 141oC, 180oC) according to different requirements.

ADVANTAGES OF NAFEG-TD AEROSOL FIRE EXTINGUISHING SYSTEM

- Auto mechanical detection.
- Investment cost is lower.
- Capacity of 7/24 fire protection.
- It discharges the whole agent within 5 seconds.
- As it is unpressurised its maintenance cost is low.
- Detection feature can be added.
- It can optionally be activated by manual triggering.
- It is the lightest extinguishing technology.
- Detection and being activated according to optional temperatures.



PRESSURE AND DISPERSION

- It does not need maintenance for long years.
- There is no need for nozzles and hydraulic line.



NE-C-10001

NAFEG-TD AEROSOL FIRE EXTINGUISHING TUBE

Extinguishing Volume	1,25 m ³ (125 gr/m)
Activation Mode	Mechanical
Discharge Time	4-6 seconds
Temperature Range	-40°C (-40°F) to 180°C (356°F)
Toxicity	None
Solid Fire Extinguisher Weight	125 gr
Effective Fire Classes	Class A, Class B, Class C, Class E
ELECTRICAL REQUIREMENTS	
Power Consumption	No Need
MECHANICAL SPECIFICATIONS	
Dimensions	Diameter 89 mm (3.50") Height 172 mm (6.77")
Weight	1.8 kg (3.96 pound)
DETECTION OPTIONS	
Mechanical Thermal Detection Threshold Temperature Options	■ 57°C (135°F) ■ 68°C (155°F) ■ 79°C (175°F) ■ 93°C (200°F) ■ 141°C (286°F) ■ 180°C (356°F)
Activation Time	5 seconds from activation of mechanical thermal sensor
Impact on Ozone Layer	None

FM 200 EXTINGUISHING SYSTEMS

HFC 227-EA (FM 200) FIRE EXTINGUISHING SYSTEM

Nero Industry ARES-CNC Fire Extinguishing System has been certified as per UNECE Regulation ECE/R107 requirements by TSI (Turkish Standards Institution) with international validity.

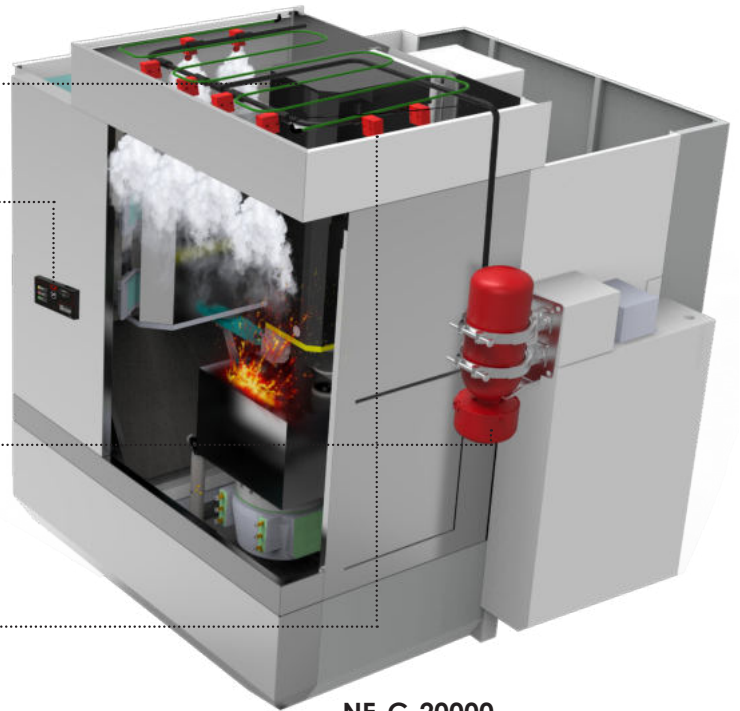
FM 200 FIRE EXTINGUISHING SYSTEM OPERATION SCHEMATIC

1-The fire is detected by Linear sensor wire and the signal is sent to control unit.

2- Control unit analyses the incoming signal and activates the extinguisher tube. Simultaneously, it activates the alarm horn within the vehicle and warns the user with light-voice warning system on the panel

3- The extinguisher tube is activated with the help of the pyrotechnic trigger it has and extinguishing agents are released. The tube having 60 bar pressure, delivers HFC 227-EA gas to the nozzles within 2 seconds by the help of hydraulic lines.

4- HFC 227-EA gas released from the nozzles covers the area of fire homogenously and extinguishes the fire within 5 seconds.



SERVICE

• Nero Industry provides the quickest after-sales service thanks to its approximately 70 stations throughout the world.











PYROTECHNIC TRIGGERING

• Thanks to the pyrotechnic trigger, quick and accurate activation is ensured at lowest battery level or the hardest environmental conditions.

ADVANTAGES

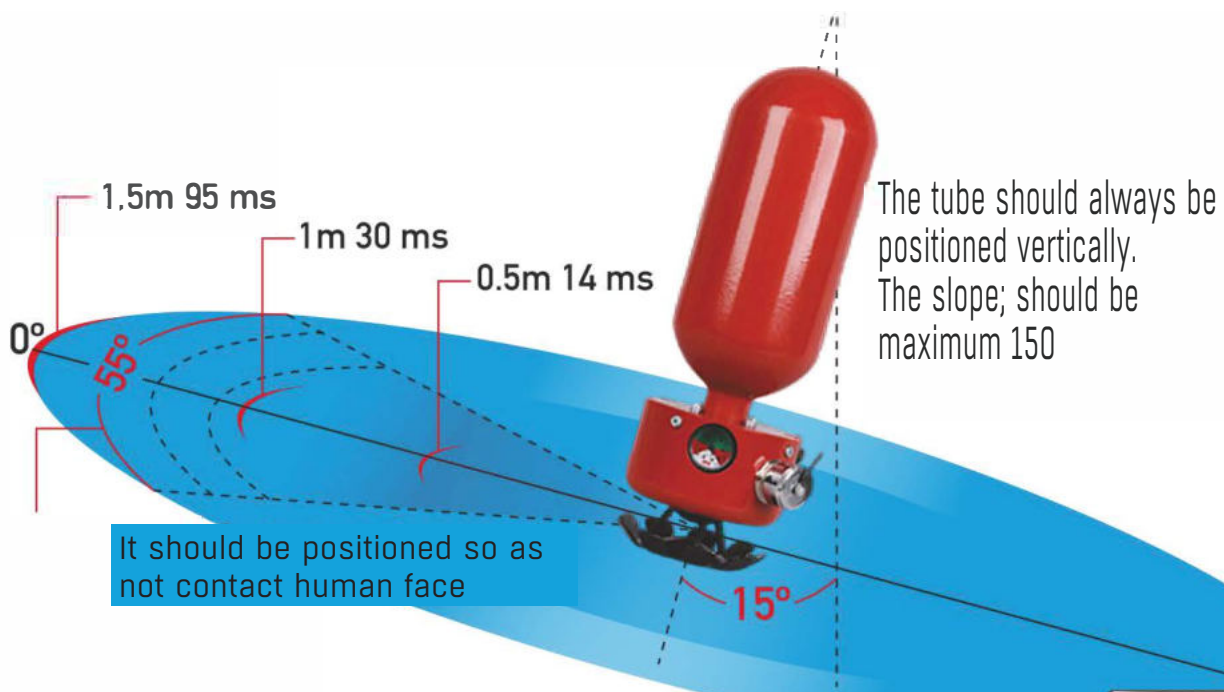
- Thanks to its cooling feature, it prevents fire outbreak again for at least 2 minutes after the activation.
- There is no need for cleaning after activation.
- It does not react chemically with engine and engine equipment.
- It is environment friendly.
- Diffusing each point within the compartment, it extinguishes any fire that can outbreak within the compartment it diffuses.



PYREX FIRE EXTINGUISHING TUBE	
 Extinguishing Volume: 1,2 m ³ with 1 kg	 Burning Class: Class A, Class B, Class C and Class E
 Activation mode: Pyrotechnic	 Tube nominal pressure: 42 Bar
 High speed activation in a time less than 6 milliseconds	 Refillable by refill kit
 Temperature Range: -55 °C / +71 °C	 It has MIL-STD-810G, MIL-STD-461G, MIL-STD-1275E certifications.
 Weight: 5 – 18 kg +0,5 kg	 Conforming to UL, CE GOST-R standards.

DETECTION

- Thanks to near 10 sensor options included in ARES Fire Extinguishing Systems, sensor with the detection speed between 3 milliseconds to 30 seconds are provided optionally according to preferred use.



SYSTEM COMPONENTS



CONTROL UNIT	
High speed reaction	Operating temperature: -32 °C / +71 °C
Reading input signals received from detector	Storage temperature: -50 °C / +71 °C
Automatic / Manual activation	Fault indication for each detector and tube
Weight: 480g +50 g	Dimensions: 85x49x100 mm (±5 mm)



UV-IR OPTICAL DETECTOR	
Detection in a time less than 3 milliseconds	Ultraviolet (UV) and Infrared (IR) Sensor
Power Supply: 24 VDC nominal	Operating temperature: -51 °C / +120 °C
Operating temperature: -55 oC / +150 oC	Power Consumption: 70 mA @ 24VDC
Weight: 480g ±50 g	Dimensions: 85x49x100 mm (±5 mm)

FALSE ALARM PROTECTION CHART

UV-IR Detector has protection and assurance against all effects that can result in false alarm during operation in daily life. This system only reacts to fire, it protects itself and the system against fire and false alarms by filtering the signals received from other heat and light sources apart from fire.



Test Performed	Spec Requirement
Headlight (55-65 W)	15 cm
Incandescent Lamp (100 W)	2,5 cm
Halogen Lamp (500 W)	5 cm
Fluorescent Light (40 W)	At any distance
Sunlight	At any distance
UV Lamp (75 W)	At any distance
In-Vehicle Lighting (5 W)	At any distance
Radiator Heater (1000 W)	At any distance
Match	20 cm
Sodium Lamp (70-250 W)	At any distance
Xenon Lamp (30 W)	5 cm
Flashlight (1 W)	At any distance
Vehicle Infrared Headlights (60 W)	30,5 cm
Arc Weld, 4mm, 300A	150 cm

EXTINGUISHER PERFORMANCE COMPARISON CHART

	FM-200 (HFC 227-EA)	AERESOL
Pressure	60 bar	Unpressurised
Activation	Pyrotechnic	Pyrotechnic
Size	Medium size	Small size
Agent Discharge	Hydraulic Fitting and Nozzle Assistance	No Additional Fitting is Needed
Cleaning	No need for cleaning. It dissolves into the atmosphere.	No need for cleaning. It dissolves into the atmosphere.
Corrosion	Noncorrosive	Noncorrosive
Chemical reaction	No chemical reaction.	No chemical reaction.
Maintenance	Agent should be changed every 5 years.	No need for maintenance for 10 years.
Extinguishing Performance	Extinguishes all the areas by spreading homogenously.	Extinguishes all the areas by spreading homogenously.
Number of Uses	Refillable.	Single use.
Fire recurrence	Cooling the setting it prevents recurrence of the fire.	Cooling the setting it prevents recurrence of the fire.
Environment Friendly	It is environment friendly. It has no impact on ozone layer.	It is environment friendly. It has no impact on ozone layer.
Human Health and Safety	It has no harm to human.	There is no final diagnosis.
Weight	Between 5-10 KG	Between 1-3,5 KG
Detection	It doesn't have any detection capacity.	Detection at optional temperatures can be added.
Installation	Hard	Easy
Extinguishing Agent Performance	1,2 m ³ with 1 kg	1 m ³ with 100 grams

ARES CNC FIRE EXTINGUISHING SYSTEM READY SYSTEM PERFORMANCE COMPARISON CHART

	Fire Detection Time	Fire Extinguishing Time	Additional Cooling Feature	Cleaning Need	CAN-BUS Line	Hose and Nozzle Necessity	Electricity Necessity
NE-C-10000	3 ms	1 sec	Available	None	Available	None	Existent
NE-C-10001	10-20 sec	15-25 sec	Available	None	Available	None	None
NE-C-20000	3 ms	1 sec	Available	None	Available	Existent	Existent



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