NN100

Clean Agent Fire Suppression System



NOHMI

NN100 SYSTEM ——

A STANDARD FIRE SUPPRESSION SYSTEM IN THE NEW AGE, THE AGENT OF WHICH IS THE SAME WITH ONE OF NATURAL RESOURCES.

Today, the global environmental protection becomes one of the most serious issues for human beings to survive. Fire suppression systems are also in the new stage where it must meet requirements given from the point of view of the global environmental protection and safety for human beings.

We, as a manufacturer of fire suppression systems, have paid thorough effort to give a shape to an ideal fire extinguishing system which must give no adverse affect to the natural environment and have the affirmative capability of fire extinguishing. As a result, we have successfully developed the NN100 system by employing nitrogen gas as an agent which has place 78% in the air. The NN100 system has the capability for both environmental protection and fire extinguishing which is required for fire protection systems in the new stage.

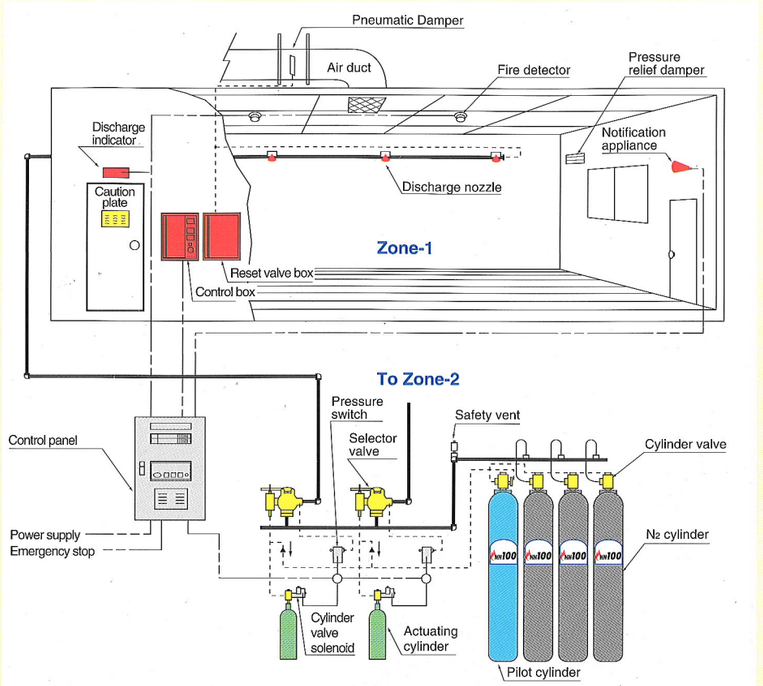
Furthermore, the NN100 system has been provided with a high level of safety to human beings, a high cost-performance and no influence to valuable equipment and property, in accordance with our development concept. The NN100 system will be a 'standard' fire suppression system in future since the NN100 system is friendly to both human beings and our planet.



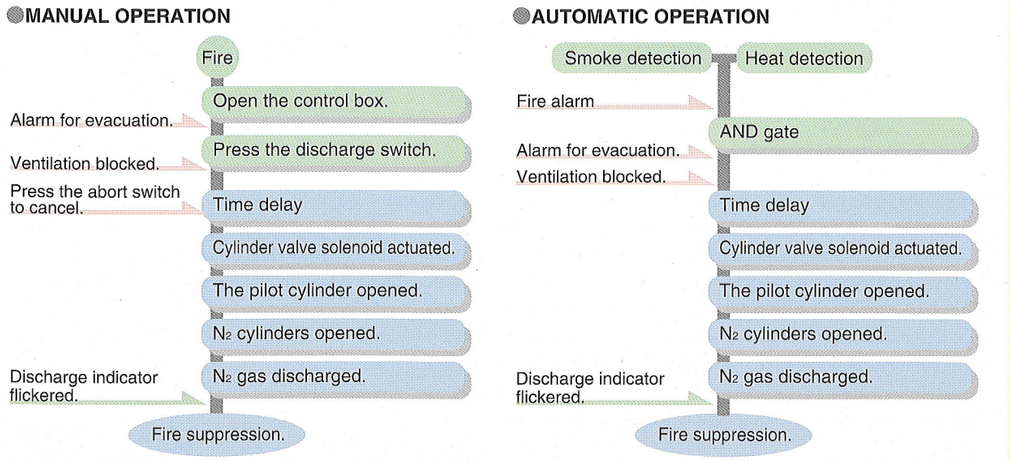
FRIENDLY TO NOT ONLY HUMAN BEINGS AND THE EARTH, BUT ALSO PROPERTIES. A NEW FIRE SUPPRESSION SYSTEM MOST SUITABLE FOR THE NEW AGE.

System Configuration





Operation Flow Chart



Note : System configuration and Operation flow chart might differ according to the standard you apply.Japanese standard is applied to above two diagrams.

Larger cylinder station required

Since nitrogen gas is filled in the form of vapor like other inert gases, the cylinder station for NN100 system should be larger than that for Halocarbon systems.

Pressure relief device needed

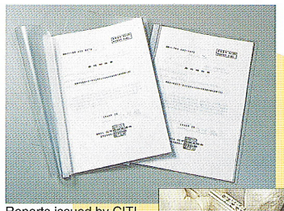
The excessive pressure in the room protected caused by the discharge of the agent must be released to prevent the room from incurring damage.

Is there any physiological effect to humans?

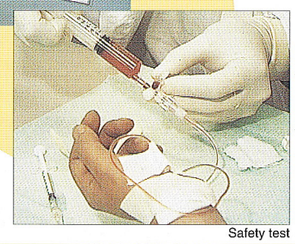
When nitrogen gas of the NN100 system is discharged to put out a fire, the concentration of nitrogen gas and oxygen gas in the room will change to about 87% (normally 78%) and 12.5% (normally 21%) by volume respectively. The Chemicals Evaluation and Research Institute,Japan(CERI) has tested on safety of human beings under such ambient conditions and reported that there will happen no physiological influence to humans while evacuating.
The Environmental Protection Agency (EPA, USA) proposes that an IG-100 system could be designed to an oxygen level of 10% if occupants can egress the area within one minute, but may be designed only to the 12% level if it takes longer than one minute to egress the area, while the design concentration of oxygen for the NN100 system is 12.5%.

Why is a fire extinguished with nitrogen?

Continuous combustion requires more than 15% of oxygen concentration by volume. The NN100 system will suppress a fire by reducing the oxygen concentration down to 12.5% with nitrogen gas discharged.

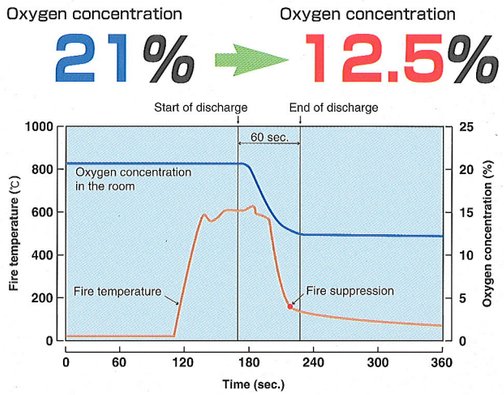


Reports issued by CITI



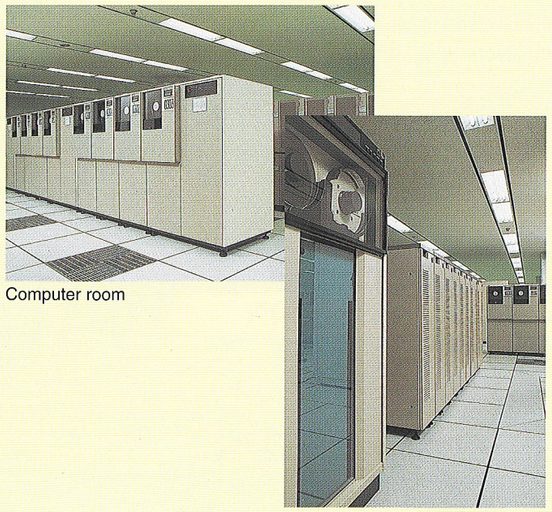
Safety test

The result of fire tests

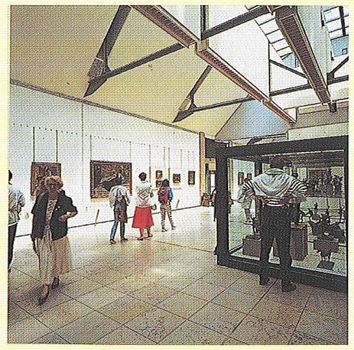


Applications

The NN100 fire suppression system is suitable for applications for computer rooms, occupied signal transmission machine rooms such as fire protection centers, and art museums and national museums which occupied by many strangers.



Computer room



Museum



Control room



FEATURES

Zero ODP and zero GWP
The NN100 system has zero ozone depletion potential and zero global warming potential, since it employs nitrogen gas, 78% of the air, as the fire extinguishing agent.

No toxicity to human beings
The NN100 system employs no carbon dioxide and no Halocarbon. There is no possibility to produce hydrofluorine, a toxic gas, even in contact with heat or flame.

Low cost to refill
The NN100 system needs neither synthetic nor blended gas as a fire extinguishing agent. It needs only nitrogen gas commonly available for industrial use and it has no technical difficulties to refill.

Pressure adjustable for existing piping classes
The capability of pressure control on the discharge side of NN100 system storage vessels may allow the NN100 system to replace existing Halon systems in many applications without replacing existing piping and related equipment. This system has been patented in the US.

Clear view to exits
The discharge of nitrogen gas does not cause any trouble in visibility necessary for occupants to access to exits, since no condensation of humid in the air takes place on the discharge of agent.

No damage to properties
The NN100 system can be used to protect rooms containing precision instruments or fine arts, since there happens no vaporization of agent by discharging, which may cause condensation of humid in the air.

Centralized cylinder station allowed
The NN100 high pressure system can be designed to cover multiple zones with a single cylinder-station having a volume of agent required for the largest zone.

Packaged type available

INTERNATIONAL RECOGNITION

Underwriters Laboratories Inc (UL)
National Fire Protection Association (NFPA)
Environment Protection Agency (EPA)
Fire Protection Equipment and Safety Center of Japan (FESC)

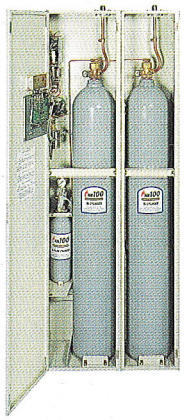
Specifications

System name	NN100	
Agent	100% nitrogen	
Agent supply	Industrial use	
Design concentration (Vol %)	40.3(classB)	37.2(classA)
Agent quantity required	0.52 m^3/ m^3	0.47 m^3/ m^3
Cylinder pressure (MPa, at 35℃)	30	
Form of agent in storage	Vapor	
Secondary pressure (MPa, at 40℃)	10.8	
Piping class	Sch.80	
Discharge time (sec.)	60	
Ozone depletion potential	0	
Global warming potential	0	
Toxicity	No	
Visual difficulties caused by the discharge of agent	No	

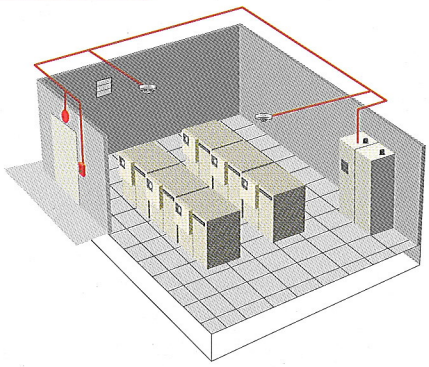
NN100 Package EX

Cylinders,control panel,and nozzle are in cabinet.





Nozzle mounting type package



- This system is intended to suppress a fire in its early stage. However, please note that it may not suppress the fire if the type, quantity and or arrangement of combustibles in the protected area is changed after installation.
- This system comprises cylinders filled with the highly pressurized gas. Properly handle the cylinders according to the cautions indicated on them.
- These instructions do not purport to cover all the details or variations in the equipment described, nor provide for every possible contingency to be met in connection with installation, operation and maintenance.
- Specifications are subject to change without notice. Contact Nohmi before relying on above specifications.
- Actual performance is based on proper application of the product by a qualified professional.
- Should further information be desired or should particular problems arise, which are not covered sufficiently for the purchaser's purposes, the matter should be referred to Nohmi or a distributor in your region.

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