

CARBON DIOXIDE FIRE SUPPRESSION SYSTEM UL LISTED

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Under normal atmospheric temperature and pressures, Carbon Dioxide exists as a Colorless, Odorless Gas which is about 1.5 times heavier than Air. Carbon Dioxide will not burn or support combustion and will not sustain life. High pressure Carbon Dioxide Fire Suppression System is a specialized Extinguishing System designed to maintain the Carbon Dioxide supply at 21° C and 850psig in Alloy Steel cylinders. The cylinders contain the Carbon Dioxide required to protect the largest single hazard. On large hazards where several Cylinders are required, a Manifold is used to connect each cylinder by means of Flexible hoses and Check Valves. Cylinder valves control the Carbon Dioxide Flow to the hazard through properly sized pipe, terminating in nozzles that apply the Carbon Dioxide. Flow rate is controlled by nozzle orifices as well as pipe sizes. The cylinder master valves are electronically operated and the slave valves are pressure actuated. The master valves can be automatically and/or manually operated.

MOBIAK UL Listed Carbon Dioxide Fire Suppression System which is categorized as:

Total Flooding System

Discharges the Agent into an enclosed space. The enclosed space must be adequate to contain the discharge of agent to achieve the required Carbon Dioxide concentration. Fires which can be extinguished by total flooding methods may be divided into two categories a) Surface fires involving flammable liquids, gases and solids and b) Deep seated fires involving solids subject to smoldering.

Local Application System

Consists of a fixed supply of carbon dioxide permanently connected to a system of fixed piping with nozzles arranged so as to discharge the agent directly onto the hazard. Local application systems are used for the suppression of surface fires in flammable liquids, gases and shallow solids where the hazard is not enclosed or where the enclosure does not conform to the requirements for total flooding.

System Operation

A variety of Carbon Dioxide High-Pressure Cylinders are available. All cylinders are seamless and filled to their specified weight with liquid Carbon Dioxide. Two types of Valves are available, the Master & the Slave. Both are manufactured of Brass with an optional Nickel-plated finish. In order to activate the valve, the solenoid part is firstly actuated – after actuation it pressurizes the pneumatic port enabling the valve to discharge. Master Valve can be also operated manually, by lever. The slave valve can be operated by pneumatic pressure or manually. Single cylinder systems require a single master valve with a manual actuator and the solenoid part. This is generally referred to as a master cylinder. For systems with two or more cylinders, one cylinder must act as master and have solenoid and manual actuator and the rest cylinders must act as slave cylinders having slave valves which are pneumatically actuated through the master cylinder valve. All cylinders must therefore be installed in a normal upright position. On the flowing you can see a Typical System arrangement with all associated components

Automatic actuation is achieved through the solenoid part of the Master Cylinder Valve. The solenoid part is normally closed, when de-energized and it is open only when it is energized - When the Master Valve of the System is actuated it opens pneumatically the Slave Cylinder Valves and the Gas is been discharged either in Total Flooding or Local Discharge through sophisticated Nozzles.





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Most Ideal for Protection

- Paint and varnish manufacturing and processing area.
- Powder coating and Painting boots
- Transformers and substations
- Rolling mills and Turbines
- False Floors and cable shafts
- Engine test benches and SHIP Engine Room / Compartments
- Printing Machines

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List of Components

- Various Sizes of Battery Frames can be provided according to the Number of Cylinders used of each Systems.
- Directional Valves are also available in various sizes. These are installed for using one common system for discharge to different areas
- An Important Lock-out valve is provided with our Carbon Dioxide System which must be located in the discharge piping between the nozzles and supply in the fire suppression system. The valve is used to prevent accidental or deliberate discharge when persons not familiar with the system are present in the protected space.
- A Pange of Check valves are Available. These are used to isolate the main cylinder manifold from the interconnected reserve cylinder manifold. In the manifolds of joint systems, they are also used to prevent the discharge from activated cylinders causing activation of the other cylinders in the bank
- Bleed Valves are also Used with our system. Bleed valve vents accidental check valve leakage
- Air Connection Assembly is also available – it is installed on the manifold and it is used for flushing the lines by air after installation and during yearly maintenance to ensure the discharge lines are clean.
- Safety Pressure Release Valve is installed in sections of closed piping such as between selector valves and the cylinder manifold. It is a frangible disc assembly designed to rupture if trapped Carbon Dioxide expands and the line pressure exceeds 180 to 200bar.
- Weight loss indication device is made to monitor the loss of weight in cylinders by more than 5%.
- Pressure operated siren is installed in the discharge line within the protected area. The siren continuously operates on pressure above 1Bar & produces audible siren signaling evacuation of protected area by any personnel if present.
- Time Delay Unit shall be provided for all total flooding systems protecting normally occupied and occupiable enclosures and local application systems where the Carbon Dioxide discharge will expose personnel to hazardous concentrations. The Time Delay Unit delays the discharge of Carbon Dioxide for predetermined amount of time. This extra time allows additional time for ventilation and equipment shutdown. The Time Delay Unit is installed between the master Carbon Dioxide cylinders and the discharge nozzles. The actual time delay period is per-set at the factory.
- Pressure Switch is Connected to the discharge piping and operates when the system discharges. Switches can be used to confirm system discharge, to operate alarms, to shutdown motors, pumps, fans and conveyors, to release magnetic door holders, etc., automatically when the system discharges

