

Concept with Carbon Dioxide

CO2 Fire Suppression System



Description

The original "clean agent," **Carbon Dioxide** suppresses fire without leaving behind water, foam or dry chemical to damage sensitive equipment. And because there is no agent to clean up, you're back in business faster. **Carbon Dioxide** systems are still the best fire protection solution for many applications. They provide automatic or manual protection for Class A, B or C fires. Although **Carbon Dioxide** fire protection is not a new concept, its versatility and unique benefits have kept it in high demand. **Carbon Dioxide** can be applied by totally flooding an enclosed area or locally discharging the agent directly on the surface of the burning material. Today's systems are equipped with sophisticated detectors, intelligent control panels and computer designed distribution networks.

High Pressure Systems

High Pressure **Carbon Dioxide** Systems are recommended for hazards like semiconductor wet benches, control rooms and paint lines. Whatever the application, from cylinder to nozzle, each system is custom-designed for your specific fire hazard. High pressure systems use individual storage cylinders – up to 45 kg (100 lb) capacity each - that can be manifolded together for rapid simultaneous discharge. Cylinder valves can be opened automatically or manually, locally or remotely using electric, pneumatic or mechanical valve actuators.

Low Pressure Bulk

Concept Fire Suppression Ltd Bulk Low Pressure **Carbon Dioxide** Systems are for fire hazards requiring large amounts of extinguishing agent in a limited amount of space. A single bulk tank can store from 680 to 54,430 kg (3/4 to 60 tons) of carbon dioxide, which is maintained in a stand-by fire ready state allowing the system to

provide effective distribution of agent on demand. The liquid **Carbon Dioxide** is stored in an pressure vessel equipped with its own refrigeration system. The pressure within the vessel is maintained near 300 psi (20.7 bar) by maintaining the internal temperature at approximately 0°F (-17°C). Valve control is electro-pneumatic or manual. Each master and selector valve assembly consists of either a ball or butterfly valve, a spring return pneumatic valve operator and a three-way electrically operated solenoid valve.

Properties

The following are the properties of the agent:

- Chemical formula - **CO2**
 - Molecular weight - 44.011
 - Normal sublimation temperature at atmospheric pressure - (°F) -109.21 F 0.015
 - Relative dielectric strength of vapour at ambient temperature and one atmosphere pressure (Nitrogen = 1) - 0.88
 - Colour - Clear and water white
 - Flammability - Non-flammable
 - Toxicity - Underwriters Laboratories classification Group 5a
- Quality criteria for initial and recharge are as follows:
- The vapour phase shall not be less than 99.5% **Carbon Dioxide** with no detectable odour.
 - The water content of the liquid phase shall not be more than 0.01% by weight (-30 °F dew point).
 - Oil content shall not be more than ten parts per million by weight.

Applications

Typical **CO2** Applications:

- Commercial Fryers
- Dip Tanks
- Drying Towers
- Electrical Generators

- Electric Generating Equipment
- Electrical Panels
- Marine Applications (cargo holds, paint lockers, etc.)
- Spray Booths
- Waste Disposal Equipment
- Gas Turbines
- Coal Silos
- Hazardous Material Storage
- Quench Tanks
- Semiconductor Wet Benches
- Spark Erosion Machines
- Milling Machines
- Coating Operations
- Paint lines
- Battery Storage Rooms
- Wave Solder Machines
- Machine Operations
- Hose Reel Stations
- Transformer Vaults
- Dust Collectors
- Printing Presses
- Inerting

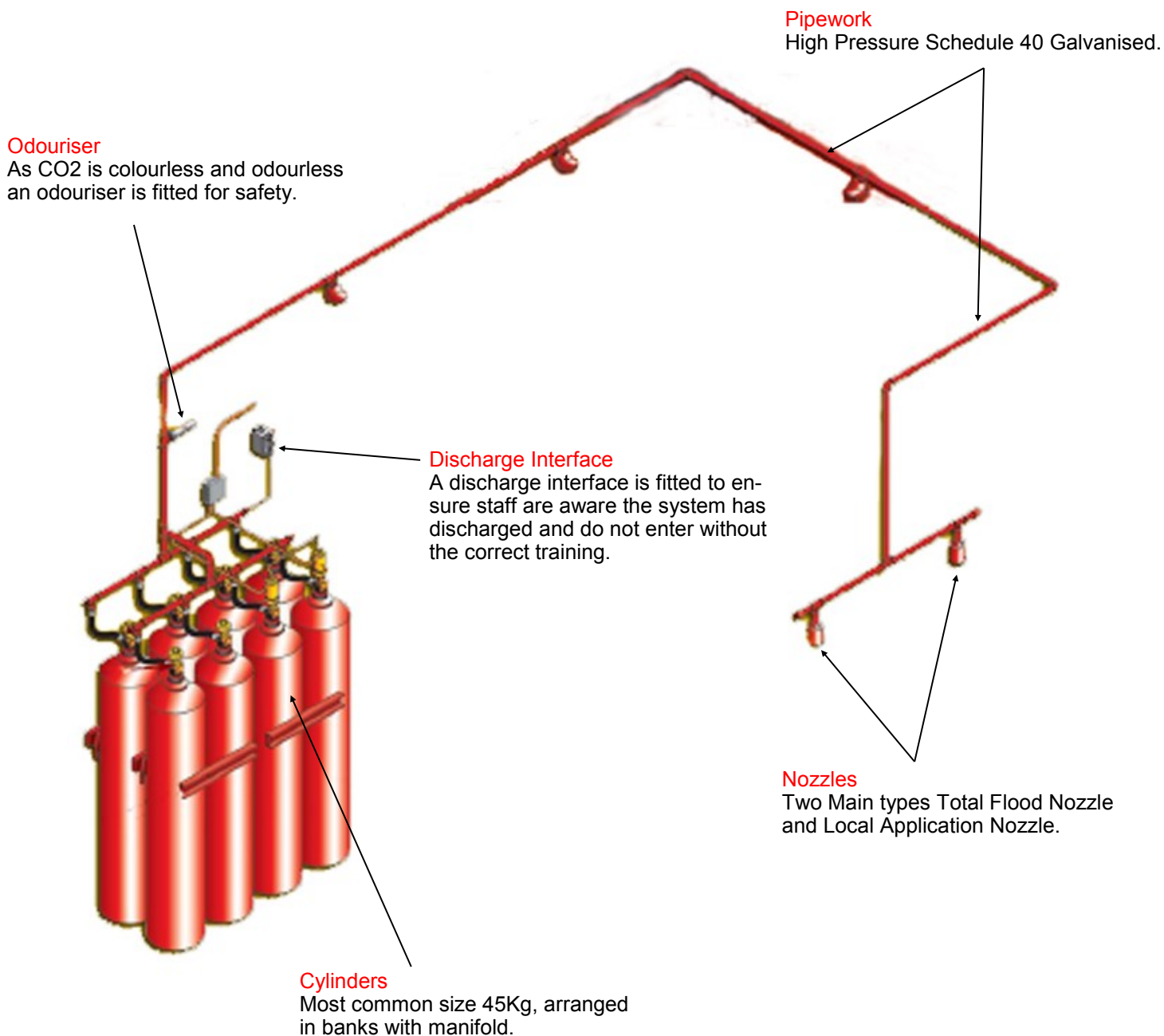
Make **Concept** Fire Suppression Ltd and **Carbon Dioxide** part of your fire protection plan.

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CO2 Fire Suppression System



Typical High Pressure CO2 System



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