Donaldson Torit®

CARBON DIOXIDE FIRE SUPPRESSION

In modern industrial plants where welding, grinding, machining or other processes produce potentially combustible dust, mist, or fume, maintaining a clean and safe work environment becomes a top priority. Assessing and addressing the fire risks in your facility should be part of your process hazard analysis and prevention plan.

The classic fire triangle consists of an ignition source, a fuel, and an oxidizer – all of which are needed to produce a fire. Unfortunately it is often easy to find all three in many manufacturing facilities around various dust collection points and in collectors. Sparks, heat, or embers from many processes can become ignition sources. The dust, fume, or mist being produced and collected may provide fuel. Air used to transport dust, fume, or mist to a collector then provides the last component, an oxidizer.

PREVENTION AND PROTECTION

Removing even one component from the fire triangle – ignition, fuel, or oxidizer – will prevent a fire from occurring. Process requirements often make elimination of combustible dust, mist, or fume impractical. Displacing the air (oxygen) is generally not feasible, so the prevention focus is often on ignition source mitigation in order to prevent fires. If a process cannot be adjusted or controlled to totally eliminate the risk of an ignition source and fire, then a protection strategy is the next key step.

Using smaller point-of-use collectors may reduce the amount of fuel present in the collector, but a fire may still occur and cause serious hazards in the area and risk to the plant. Quick detection and clean suppression of fires not only minimize damage to collectors but also reduce the risk of fire spreading to surrounding areas.

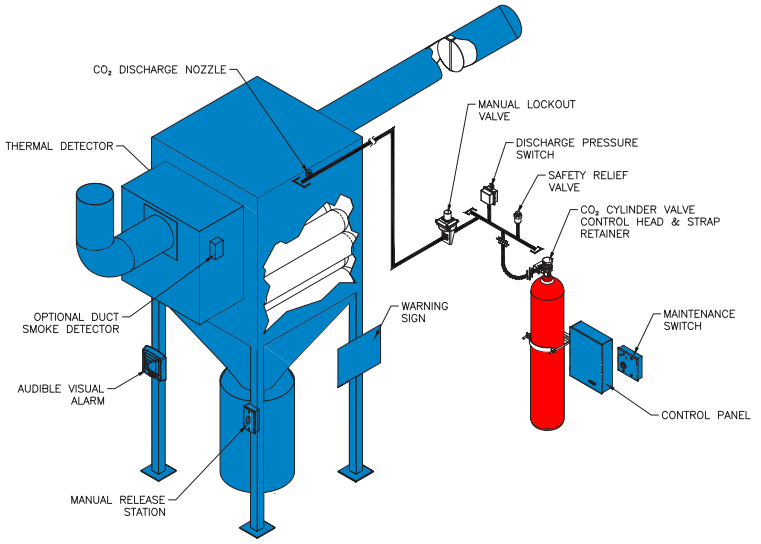
Carbon Dioxide fire suppression systems deliver clean, dependable suppression in seconds and can be incorporated into collection processes to provide effective fire protection.

FIRE SUPPRESSION SYSTEMS

High pressure Carbon Dioxide (HP CO_2) fire suppression systems are ideal for industrial processes where flammable materials and vapors present potential fire hazards. When fires occur in collectors they are considered “deep seated,” and HP CO_2 fire suppression systems are an effective and proven method for extinguishing such events.

Carbon dioxide is a low-cost material and harmless to equipment, as it leaves no residue and no clean-up is required. HP CO_2 fire suppression systems offer the flexibility to protect the smallest to the largest collector designs and are recognized by listing/approval fire protection agencies.

Kidde Fire Systems, a global leader in fire protection, has assembled convenient standardized fire suppression packages for many Donaldson Torit Dust Collectors. These packages include Kidde High Pressure CO_2 systems and optional smoke detectors. Customized Kidde fire suppression packages for unique applications or collectors are also available. In addition to the packages offered from Kidde Fire Systems, Donaldson can offer mitigation equipment options such as Power Interrupt panels or inlet/outlet fire dampers.



SYSTEM DESIGN AND OPERATION

HP CO_2 fire suppression systems are designed to minimize the impact from a fire to the collector and to the surrounding area. The HP CO_2 fire suppression system follows the design practices in NFPA 12, which calls for the flooding of a collector with CO_2 to a 75% concentration. The HP CO_2 fire suppression system typically uses one, two or three CO_2 cylinders piped to a discharge nozzle mounted in the collector or the inlet duct.

Thermal probes installed in the collector detect a rise in thermal heat which then activates the HP CO_2 fire suppression system. An optional clean air duct mounted smoke detector can be included as an early warning signal to alert personnel of potential issues prior to system activation.

Contacts on the Kidde Aegis Control Panel are available to tie into plant fire alarm systems to indicate system actuation or trouble conditions.

SYSTEM RESTRICTIONS:

- Not for use on Class D fires.
- Heat detector – selection based on maximum dust collector operating temperature
- CO_2 tanks – storage at ambient temperatures 0°F to 130°F
- Smoke detector – indoor installation only

Significantly improve the performance of your collector with genuine Donaldson Torit replacement filters and parts. **Call Donaldson Torit at 800-365-1331.**

Important Notice
Many factors beyond the control of Donaldson can affect the use and performance of Donaldson products in a particular application, including the conditions under which the product is used. Since these factors are uniquely within the user's knowledge and control, it is essential the user evaluate the products to determine whether the product is fit for the particular purpose and suitable for the user's application. All products, product specifications, availability and data are subject to change without notice, and may vary by region or country.

Donaldson Company, Inc.
Minneapolis, MN
donaldsontorit.com • shop.donaldson.com

North America
Email: donaldsontorit@donaldson.com
Phone: (USA): +1-800-365-1331
(MX): +1-800-343-36-39

Australasia
Email: marketing.australia@donaldson.com
Phone: +61-2-4350-2000
Toll Free: (AU) +1800-345-837
(NZ) +0800-743-387

China
Email: info.cn@donaldson.com
Phone: +86-400-820-1038

Donaldson Europe B.V.B.A.
Email: IAF-europe@donaldson.com
Phone: +32-16-38-3811

India
Email: info.difs@donaldson.com
Phone: +91-124-4807-400 • +18001035018

Japan
Email: jp-ndl.ifsweb@donaldson.com
Phone: +81-42-540-4112

Korea
Email: iaf-kr@donaldson.com
Phone: +82-2-517-3333

Latinoamerica
Email: IndustrialAir@donaldson.com
Phone: +52-449-300-2442

South Africa
Email: SAMarketing@donaldson.com
Phone: +27-11-997-6000

Southeast Asia
Email: IAF.SEA@donaldson.com
Phone: +65-6311-7373

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