

# CO2 SUPPRESSION SYSTEM FOR ELECTRICAL PANEL



+91 83479 47404

+91 97123 34565



[www.ashaenterprise.in](http://www.ashaenterprise.in)

# Direct High Pressure CO<sub>2</sub> Fire Suppression System



A Direct High Pressure (DHP) CO<sub>2</sub> Fire Suppression System is designed for rapid fire protection of electrical and industrial enclosures. The system uses high-pressure CO<sub>2</sub> cylinders and a heat-sensitive detection tube to automatically detect and suppress fire directly at the source. It provides fast, clean, and reliable fire suppression without external power or complex piping, making it ideal for server racks, control panels, UPS systems, and compact machinery enclosures.

## FEATURES

- **Direct High-Pressure Discharge** : CO<sub>2</sub> is discharged directly onto the fire area through the detection tubing system.
- **DHP Valve Mechanism** : A mechanically operated valve activates automatically when pressure drops due to tube rupture.
- **Combined Detection & Suppression** : The heat-sensitive tube functions as both the fire detection device and discharge outlet.
- **Residue-Free Agent** : CO<sub>2</sub> is a clean extinguishing agent that does not leave residue and is safe for electrical equipment.
- **No External Power Required** : Mechanical activation allows dependable operation even during power failure.
- **Fast Fire Suppression** : Provides immediate localized fire control at the early stage of fire.
- **Easy Maintenance** : Simple design with fewer components ensures low maintenance and easy inspection.

## APPLICATIONS

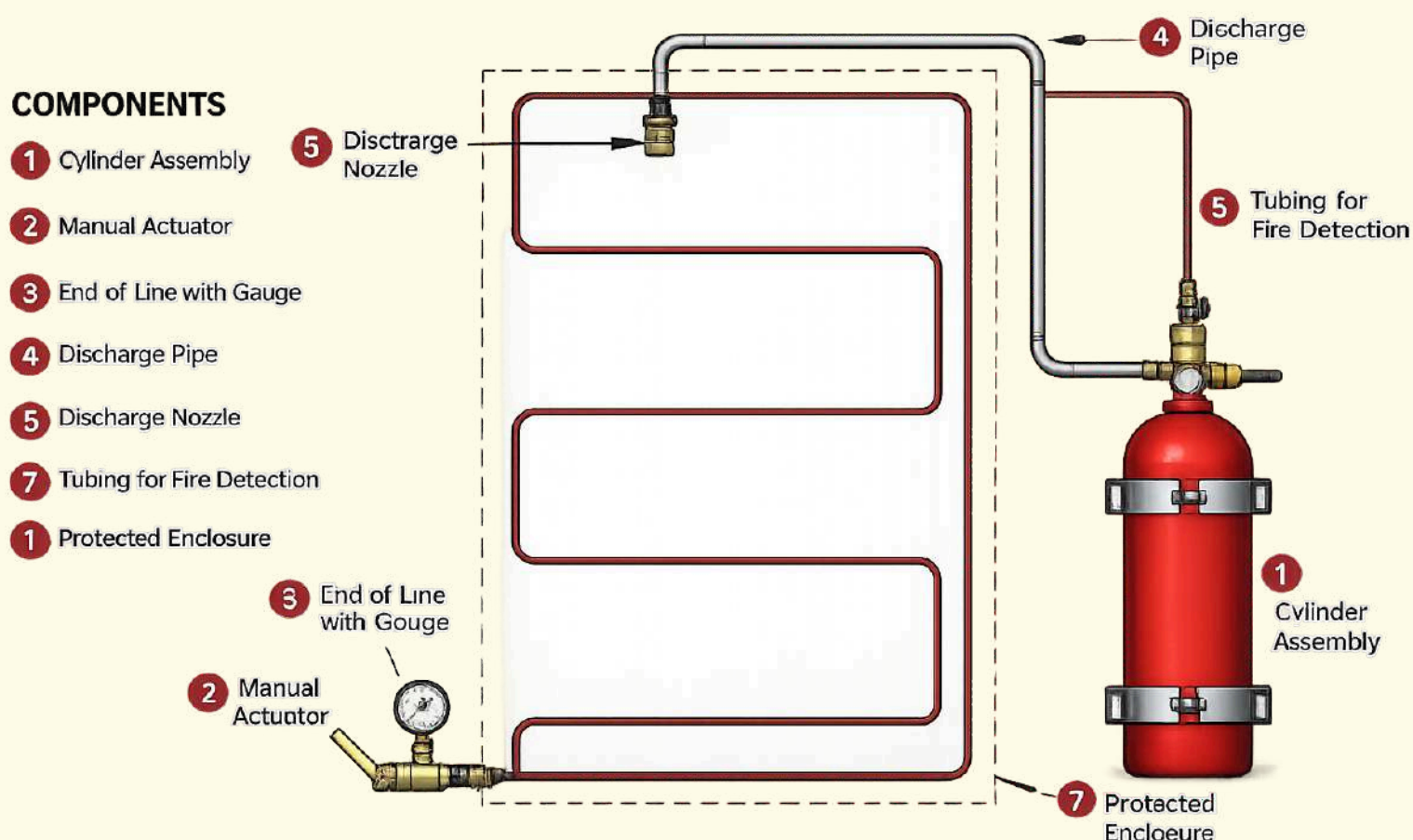
- **Electrical Panels & Switchboards** : Designed to protect control panels, MCC panels, switchgear, and power distribution systems from fire hazards.
- **Server Racks & IT Enclosures** : Provides targeted fire suppression for data centers, server cabinets, and telecom equipment.
- **UPS & Battery Areas** : Protects critical backup power and battery systems against electrical fire risks.
- **Industrial Equipment** : Suitable for CNC machines, automation systems, robotic stations, and high-power industrial machinery.
- **Telecom Cabinets** : Ensures reliable fire protection for sensitive communication and networking equipment.
- **Compact Enclosures** : Ideal for small enclosed spaces requiring fast, clean, and direct fire suppression at the source.

# In Direct High Pressure CO<sub>2</sub> Fire Suppression System

An Indirect High Pressure (IHP) CO<sub>2</sub> Fire Suppression System is an automatic gaseous fire suppression system that uses high-pressure carbon dioxide (CO<sub>2</sub>) cylinders and a heat-sensitive detection tube or electronic detector to activate discharge through engineered nozzles. Unlike DHP systems, the detection tube in IHP acts only as a sensing device, while the extinguishing agent is discharged through a dedicated piping and nozzle network.

## SUPPRESSION MECHANISM

### FIRE SUPPRESSION SYSTEM – MECHANISM DIAGRAM



- **Storage & Pressure** : CO<sub>2</sub> is stored in a high-pressure cylinder at around 57 bar and 21 °C for fast discharge performance.
- **Detection System** : A pneumatic detection tube is directly connected to the DHP valve and installed inside the protected area.
- **Heat Activation** : During fire exposure, the tube bursts at the hottest point (about 100–120 °C), creating a discharge opening near the fire source.
- **Automatic Valve Trigger** : Tube rupture causes pressure loss, which mechanically activates the DHP valve without electricity.
- **Agent Discharge** : High-pressure CO<sub>2</sub> expands rapidly through the rupture point and floods the flame area.
- **Fire Suppression** : CO<sub>2</sub> extinguishes fire by reducing oxygen levels and cooling through rapid gas expansion.
- **Efficient Discharge** : Directional discharge improves suppression efficiency while reducing agent wastage.
- **Reliable Operation** : The fully mechanical design ensures operation even during power failure or electromagnetic interference.

## ADVANTAGES

- Clean Agent
- Non-Conductive
- Rapid Discharge
- No Water Damage
- Compact System
- Automatic Detection
- Low Maintenance

## MAIN COMPONENTS

- CO<sub>2</sub> Cylinder
- IHP Valve
- Detection Tube
- Pressure Gauge
- Pressure Switch
- Flexible Hose
- Steel Pipe Network
- Discharge Nozzle



## CORPORATE ADDRESS :



### ASHA ENTERPRISE

727,729 7<sup>th</sup> Floor, City Gate,  
Above ICICI Bank, B/S Vishala  
Hotel, New Vasna,  
Ahmedabad-380007, Gujarat



+91 83479 47404  
+91 97123 34565



ashaenterprise123@gmail.com  
info1.ashaenterprise@gmail.com



www.ashaenterprise.in  
<https://www.fire-ban.com/>