



their safety is essential.

Protecting people, property, and the planet.

Safety Cabinet Venting

Justrite recognizes the health and safety needs of those who work with or around flammable liquids and hazardous materials every day. In addition to fire protection, end users in laboratories, education, and other sectors may need to ventilate safety cabinets. Cabinet ventilation can eliminate exposure to odors, toxins and ignitable vapors and ignitable dust or gas when opening a safety cabinet's doors. When designing and installing a ventilation system, it's essential to maintain the FM compliance and the performance of the cabinet in the event of a fire. Per NFPA® 30 Section 9.5.4, venting of storage cabinets is not recommended unless the authority having jurisdiction requires it or if building owners require it for increased health and safety. In such cases, NFPA 30 recommends a thermally actuated damper as the best way to ensure the performance of a ventilated safety cabinet during a fire.

An innovator in workplace safety solutions, Justrite developed the Safe-T-Vent™ Thermally-Actuated Safety Cabinet Vent Damper (patent pending). FM-approved for use in conjunction with a Justrite safety cabinet, Safe-T-Vent is a safe, reliable, and compliant way to ventilate a safety cabinet and still maintain the cabinet's performance in a fire.



Safe-T-Vent
Thermally-Actuated Damper

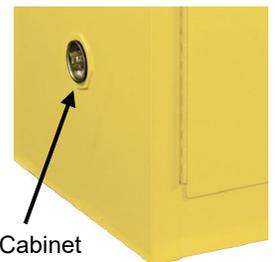
The damper connects a properly designed ventilation system to any Justrite flammable liquids or hazardous material safety cabinet with 2-inch NPT vent openings. It features a fusible link that melts at 165°F (73.9°C) and releases a spring-loaded valve plate, closing the damper and protecting the safety cabinet's performance in a fire by stopping the flow of air through the cabinet.

Justrite recommends a safety cabinet ventilation system be designed by the owner's professional engineer, experienced with the hazards of stored materials, local building codes, and good engineering practices.

- It is important to consult the local building code, fire code, and the authority having jurisdiction (AHJ) to understand the laws and provide recommendations or interpretations.
- Please reference these codes and standards for proper ventilation design:
 - NFPA 91 Standard for Exhaust Systems for Air Conveying of Vapors, Gases, Mists, and Particulate Solids
 - NFPA 70 National Electrical Code (see chapter 5 Special Occupancies)
 - NFPA 45 Chapter 7 Laboratory Ventilating Systems and Hood Requirements
 - ANSI/AIHA Z9.5 – 2012 Laboratory Ventilation
- Justrite steel safety cabinets include vent bungs with built-in flame arrestors to accommodate a 2-inch NPT-threaded schedule 40 rigid steel pipe for ducting intake and exhaust to and from the cabinet.



Vent bung

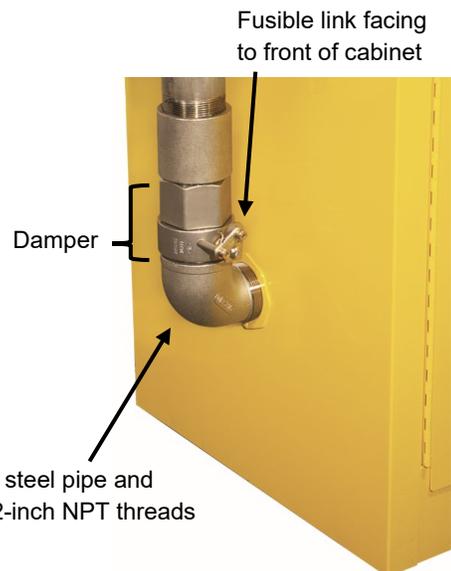
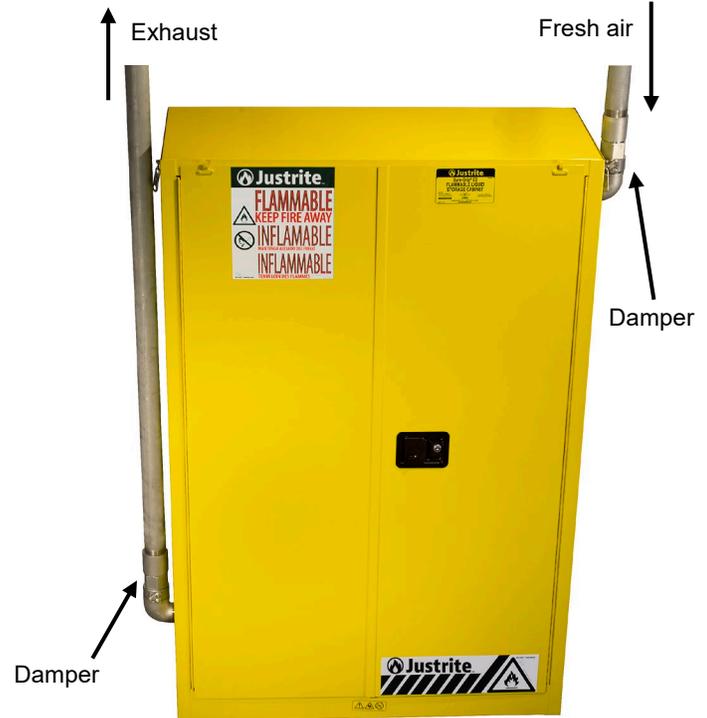


Cabinet
vent opening



- The recommended ducting is 2-inch schedule 40 pipe in black steel, galvanized steel, or stainless-steel materials based on the corrosion resistance needed. These electrically conductive choices are important when the stored materials require grounding for proper management of static.
- Chemical-resistant plastic pipes are not recommended because of limited pressure ratings, temperature and UV resistance, and combustibility.
- Planning/design should consider the possibility of ignition of vapors, gases, or dust within the vent pipes.
- Mechanical exhaust ventilation is preferred and should comply with NFPA 91.
- Manifolding the venting of multiple safety cabinets should be avoided.
- Blowers in the ventilation system should be specified as safe to handle vapors of the materials stored. Explosion-proof and corrosion-resistant blowers would be required for flammable/combustible liquids and many hazardous materials (see NFPA 70 Chapter 5).
- Venting ducts and blowers should be installed to evacuate vapors from the cabinet using negative pressure (suction) to avoid dispersing vapors into the room. Blowers should shut down in a fire, to avoid drawing hot air and flames into the cabinet (see NFPA 91 2015 Section 4.2.14.1 and 4.2.14.2).
- Since most flammable vapors are heavier than air, draw exhaust from the bottom bung and provide fresh air through the top bung.
- Install the Safe-T-Vent as close to the safety cabinet's vent openings as possible with the fusible link facing towards the front of the cabinet. Male/female elbows can be used to save space.

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Periodic inspection should be scheduled on the Safe-T-Vent damper and ventilation system:

1. To verify valve plate rotates freely: Locate 3mm hex screw on the opposite side of the damper housing from the fusible link. Using a 3mm hex wrench, rotate the screw clockwise approximately 5°. This will relieve tension from the spring on the fusible link. Relieving the tension and letting the spring reapply tension demonstrates free movement.
2. All ducting, blower, dampers and cabinet vent flame arresters should be inspected, cleared of corrosion and other debris that could block the damper's ability to seal or the impede the flow of air. These components should be cleaned or replaced as required.
3. For replacement of the Safe-T-Vent damper's fusible link order part number 11009 (sold 1 ea.).
4. For replacement of Justrite safety cabinet's flame arresters order part number 25014 (sold 1 ea.).



See NFPA 91 for further inspection guidance.

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NFPA 30-2018 9.5.4

9.5.4 Storage cabinets shall not be required by this code to be ventilated for fire protection purposes.

- 9.5.4.1 If a storage cabinet is not ventilated, the **vent openings** shall be sealed with the **bungs** supplied with the cabinet or with bungs specified by the cabinet manufacturer.
- 9.5.4.2 If a storage cabinet is ventilated for any reason, the vent openings shall be **ducted directly to a safe location outdoors** or to a treatment device designed to control volatile organic compounds (VOCs) and ignitable vapors in such a manner that will not compromise the specified performance of the cabinet and in a manner that is acceptable to the authority having jurisdiction.
- A.9.5.4 **Venting of storage cabinets has not been demonstrated to be necessary for fire protection purposes.** Additionally, venting a cabinet could compromise the ability of the cabinet to adequately protect its contents from involvement in a fire, because cabinets are not generally tested with any venting. Therefore, venting of storage cabinets is not recommended.
- However, it is recognized that some jurisdictions might require storage cabinets to be vented and that venting can also be desirable for other reasons, such as health and safety. In such cases, **the venting system should be installed so as to not affect substantially the desired performance of the cabinet during a fire. Means of accomplishing this can include thermally actuated dampers on the vent openings** or sufficiently insulating the vent piping system to prevent the internal temperature of the cabinet from rising above that specified. Any make-up air to the cabinet should also be arranged in a similar manner.
- If vented, the cabinet should be vented from the bottom with make-up air supplied to the top. Also, **mechanical exhaust ventilation is preferred and should comply with NFPA 91.** Manifolding the vents of multiple storage cabinets should be avoided.

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