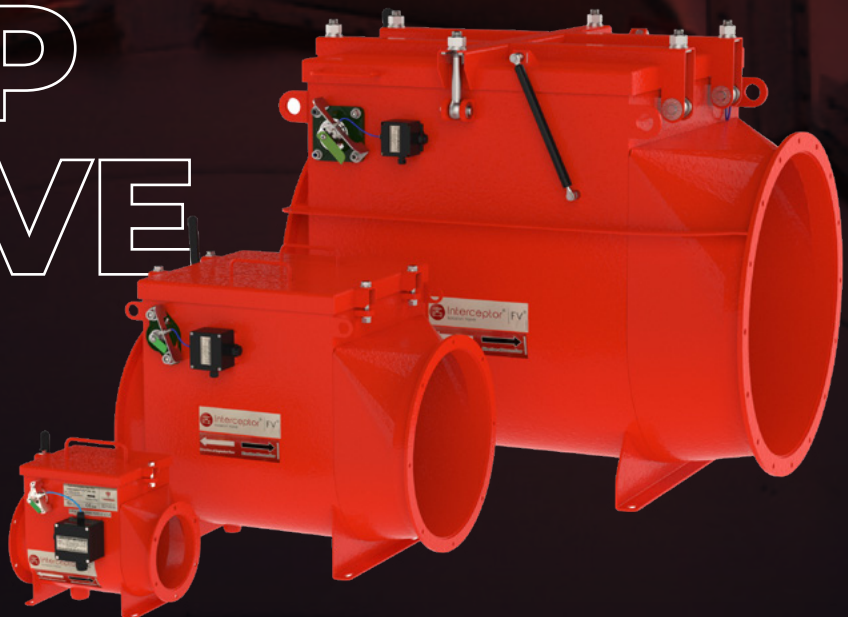




FV

FLAP VALVE



Passive Flap Valve Offers Isolation to Prevent Equipment Damage

Protecting equipment, people, and your plant from damage is part of the compliance puzzle that all companies must solve. The Interceptor®-FV® is one important piece of the compliance puzzle.

This newly updated flap valve offers completely passive isolation in a duct or pipeline, whether horizontal or vertical—a new application orientation in the industry for this valve type! The valve is also approved for use with metal dusts unlike many competitive valves and is compliant with NFPA 69 and certified according to EN 16447 and EN 15089.

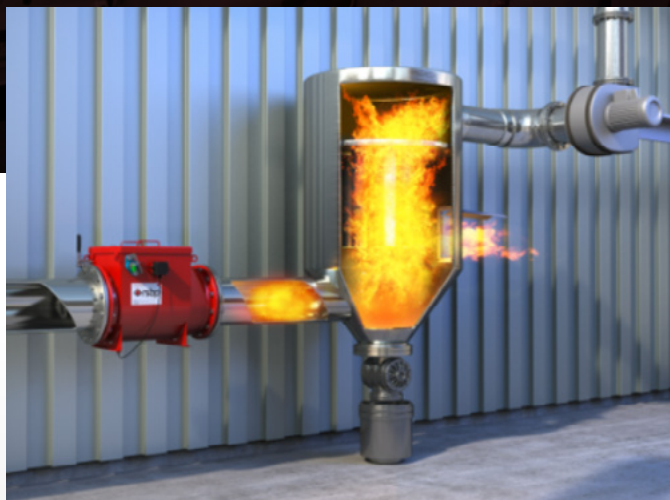
CV Technology's focus is on safety and reliability and this means that the Interceptor®-FV® flap valve has been tested in real-world conditions above and beyond current regulatory standards to ensure safety in many diverse applications. See the next page for more information on the importance of testing and the level of care taken to ensure reliable flap valve operation in actual plant conditions.





New Flap Valve Features

- Horizontal or vertical installation options
- Approved for use with metal dusts and materials with up to a Kst of 350 bar/m/sec
- Suitable for positive or vacuum flow systems



Interceptor®-FV® shown in a horizontal orientation protecting an inlet pipeline to a dust collector.



Interceptor®-FV® shown in the newly available vertical orientation protecting an inlet pipeline and an outlet pipeline connected to a dust collector.

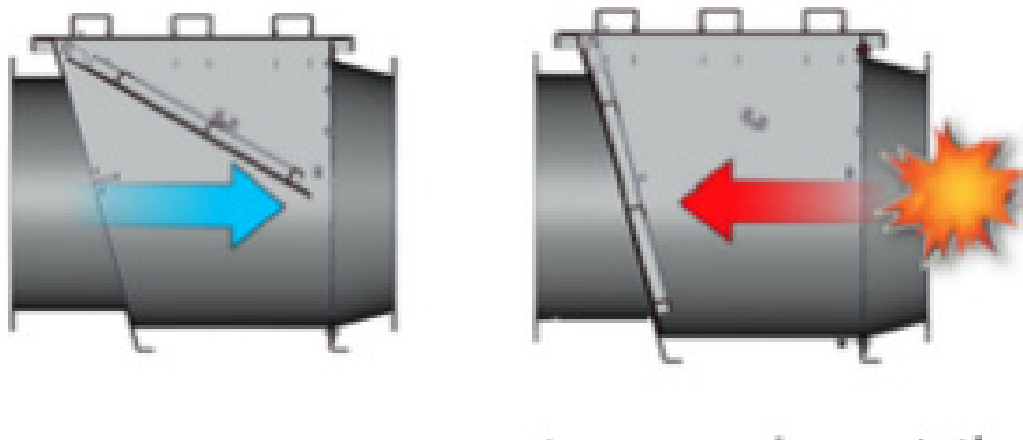
Why Flap Valve Testing Protocols Matter: Going Above and Beyond

The Interceptor®-FV® flap valve has been fully tested to ensure that it can meet and exceed testing standards both domestically and abroad.

This is important for any company that's considering flap valve installation for their new or existing process or that already has one or more legacy flap valves installed now.

CV Technology's engineers are aware that the current EN 16447 testing protocols don't account for real-world conditions, so some certified flap valves may not meet industry standards. The Interceptor®-FV® has been third-party tested and approved to account for process scenarios that some valves may not be properly certified to address, including the known testing issues outlined below. While regulators update and improve these testing protocols, it's important to select equipment from reputable vendors that stringently test to ensure proper isolation in the event of a deflagration or explosion.





Known Flap Valve Testing Issues

Testing Issue 1

EN 16447 has no “protected zone pipeline” requirement to mimic real-world installations and adequately test the valve’s operation.

Explanation: Flap valves aren’t required to be connected to pipelines on both sides of the valve during testing. This means that valves have been tested without both an “unprotected zone pipeline” (between the valve and vessel) and a “protected zone pipeline” (between the valve and other equipment or areas).

Testing Protocol Impacts: Problematic differential pressure test results, meaning that a flap valve: may not hold up to pressure and fail; may open and allow further propagation; and may trap flames in the unprotected pipeline that then spread further and propagate.

Testing Issue 2

EN 16447 has no explicit flap valve open and close validation instructions to adequately test the valve’s operation.

Explanation: Flap valves must be confirmed to have been retained in the fully open position during a portion of the test and then released at a specific time. However, the validation instructions aren’t explicit on valve closure timing or method, which means that inconsistent testing methods have been used. This would have greatly impacted how valve performance was assessed.

Testing Protocol Impacts: Problematic flap valve opening and closing validation, meaning that a flap valve: may not remain open or closed to the required specifications; may close too early during a deflagration and show reduced valve and vessel damage; and may have been tested using an ineffective fishing line to artificially keep the valve open while failing to provide indication of accurate valve function.



Testing **Issue 3**

EN 16447 has no requirement for the testing vessel to have an explosion vent or rupture disc equipped that would mimic real-world installations to adequately test the valve's operation.

Explanation: Normal process vessels include an inlet, outlet, and explosion vent panel and generally do not include an open port to atmosphere. Testing that incorporated an open port in place of an explosion vent or rupture disc would have greatly impacted (reduced) the pressure delivered to the flap valve, resulting in inconsistent flap valve performance assessments.

Testing Protocol Impacts: Problematic testing vessel parameters during flap valve testing, meaning that the testing vessel being protected may have had an open port versus the typical vessel with an explosion vent or rupture disc that also impacts flap valve performance. When the protected vessel has an open port, this may decrease the overall deflagration pressure against the flap valve; cause propagation to direct toward the open port rather than the flap valve; and reduce the flames at the flap valve for an inaccurate flame seal assessment.

Equipment certifications and compliance with industry and regulatory standards are only valuable features in a flap valve if they take real-world conditions into consideration.

If not, companies using outdated or incompletely tested equipment to ensure compliance are putting their reputation at risk and may be liable for unforeseen production downtime, equipment damage, risk to personnel, and other issues. CV Technology meets and exceeds flap valve testing criteria to guarantee process safety and reliably and dependably mitigate the damage caused by a deflagration or explosion event.

Interceptor® FV®

The Interceptor®-FV® flap valve is a completely passive isolation device designed for preventing the propagation of a deflagration in a duct or pipeline in either a pressure or vacuum system.



The updated valve includes an improved locking mechanism that allows installation in either a horizontal or vertical orientation for application flexibility. It also has a mechanically retained open flap, which provides a low pressure drop across the valve and allows for easier material flow through the device during normal operation. In contrast to normal conditions, the flap valve will slam and lock shut during an upset condition where regular material flow is interrupted and a pressure flux comes from the opposite direction. A closed flap valve effectively prevents the dust deflagration from propagating to interconnected equipment or areas.

The flap valve's standard construction is painted carbon steel or it can be made from all stainless steel for use in the food and pharmaceutical industries. Valve cleaning, maintenance, and inspection is simple with a bolt-on lid design for easy access to the valve's interior. The internal sensor and external visual indicator show when the valve's flap is open or closed, allowing for remote monitoring.



FEATURE

- Continuously protects equipment, property, and personnel at all times using passive isolation
- Meets North American and European regulatory standards:
 - » NFPA 69 Standard on Explosion Prevention Systems compliant
 - » FM Global 7-76 Prevention and Mitigation of Combustible Dust Explosion and Fire compliant
 - » EN 16447 and EN 15089 certified (both meets and exceeds EN 16447)
- Designed for materials with up to a Kst of 350 bar/m/sec
- Functions and protects even in low dust loading applications such as dust collector systems, cyclones, mills, and the clean-air side of a dust collector
- Suitable for positive or vacuum flow systems
- Improved locking mechanism to allow either horizontal or vertical installation
- Resettable on field for easy rearming without vendor support
- Includes an access door for valve cleaning, maintenance, and inspection
- Uses an integrated dust accumulation sensor plug for NFPA compliance
- Offers both visual and remote flap position monitoring
- Fits line sizes up to 32 inches in diameter, with approval of metal dust applications using line sizes up to 16 inches in diameter

Selecting a Flap Valve with Confidence

Flap valve selection to meet regulations and protect equipment, property, and personnel can require expertise and a deep knowledge of safety.

Not only does CV Technology have the dependable and reliable engineering solutions you need, but we can advise you on a safety plan that works for your process and your specific regulatory requirements, saving time and money while keeping your people safe. Call CV Technology today and find out how we can help you with selecting the best safety solutions for your plant!



Contact us for more info!

15852 Mercantile Court
Jupiter, Florida 33478

Tel : 561.694.9588

info@cvtechnology.com

www.cvtechnology.com

