



PETROLEUM RETAIL OUTLET VENT SAFETY

Combined Pressure / Vacuum Relief Valve with Flame Arrestor

Model 2053-CV-FD

ATEX Certified

One compact device that breathes your storage tank safely and stops a flame from travelling back inside. Available in flanged and NPT (F) versions.



Product Overview

The **2053-CV-FD** is a combined pressure / vacuum relief valve with an integral flame arrestor, designed for the vent lines of underground and aboveground fuel storage tanks at petroleum retail outlets. It protects the tank from over-pressure during filling and from vacuum during dispensing, while the flame arrestor prevents flashback from an external ignition source into the tank vapour space.

A weather hood shields the pallets and arrestor element from rain, dust and debris, keeping the unit reliable through the seasons.

Key Features

Two-in-one protection

Pressure/vacuum relief and flame arrestor in a single body — one fitting, fewer joints, less to install.

Weight-loaded & spring-loaded pallets

Pressure relief is by a weight-loaded pallet; vacuum relief is by a spring-loaded pallet — each guided for a repeatable opening and a firm reset.

Weather hood

Domed cover held on stand-off studs protects the seat from rain and debris while keeping the vent path open.

Flame arrestor element

Arrestor bank sits in the flow path to quench flame fronts before they reach the tank.

Flanged or NPT (F)

Choose a flanged inlet or a female NPT thread to suit your existing vent pipe.

Built for the forecourt

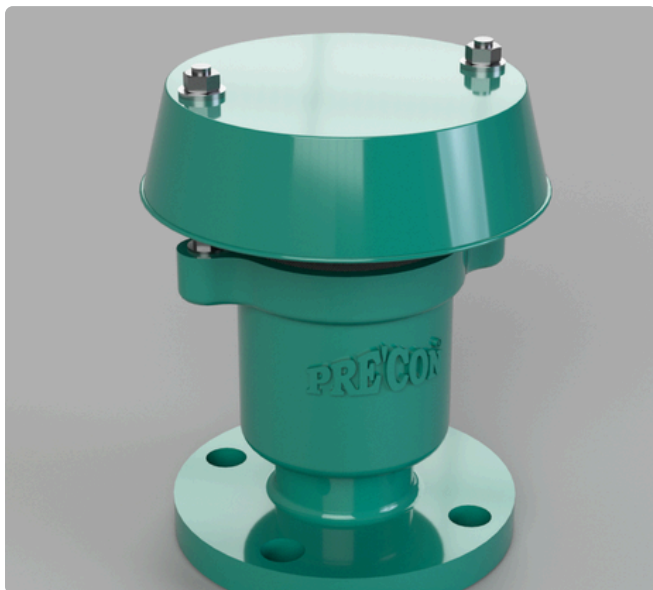
Compact body in 2" and 3" sizes to suit retail outlet vent stacks; coated for outdoor service.

ATEX certified. The 2053-CV-FD is ATEX certified for use in potentially explosive atmospheres. EU-type examination certificate **IBExU18ATEX2146 X** (Directive 2014/34/EU).

Typical Applications

- Petrol, diesel and ethanol-blend underground storage tank vent lines
- Aboveground fuel tanks at retail outlets and fleet depots
- Vent stacks that require flame protection and breathing control

Available Variants



2053-CV-FD · Flanged

Flanged inlet 2" & 3"

Bolted flange connection with 4-bolt pattern for rigid, leak-tight mounting on a flanged vent riser.



2053-CV-FD · NPT (F)

Female NPT 2" & 3"

Female NPT threaded inlet that screws directly onto a threaded vent pipe — quick to fit on standard forecourt piping.

How It Works

- **Normal:** both pallets sit closed on their seats — the pressure pallet held down by its own weight, the vacuum pallet held by its spring — keeping vapours in the tank.
- **Over-pressure (tank filling / temperature rise):** the weight-loaded pressure pallet lifts once tank pressure exceeds the pallet weight and vapour exits through the flame arrestor and under the hood.
- **Vacuum (dispensing / cooling):** the spring-loaded vacuum pallet is drawn off its seat against its spring and fresh air is drawn in through the same path, preventing tank collapse.
- **Flame protection:** the arrestor element absorbs heat from any flame at the vent outlet, quenching it before it enters the tank.

Sectional views of both variants are shown on the next page. Photographs and sections show the 2" size.

Technical Specifications

General	
Model	2053-CV-FD
Type	Combined pressure / vacuum relief valve with flame arrestor
Available sizes	2" (50 mm) and 3" (80 mm)
End connection	Flanged · or Female NPT
Flange standard / rating	ASME B16.5 Class 150 RF (flanged version)
Body material	Cast aluminium alloy LM25
Hood material	Aluminium
Pallet material	Brass
Flame arrestor element	SS 316 / SS 316L corrugated matrix
Performance	
Pressure set point (weight-loaded pallet)	200 mmWc
Vacuum set point (spring-loaded pallet)	30 mmWc
Flow capacity	As per capacity curves (out-breathing and in-breathing), page 6
Flame arrestor approval / group	Group IIA / IIB3
Certification	ATEX certified — EU-type examination certificate IBExU18ATEX2146 X (see page 7)
Operating temperature	100 °C (max)

Ordering Information

2053-CV-FD – [FL | NPT] – [2" | 3"]

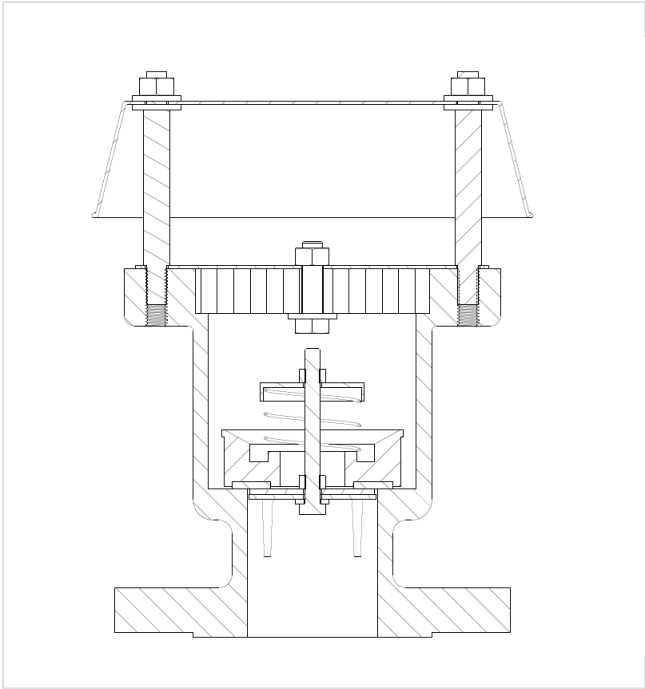
- **FL** – Flanged inlet **NPT** – Female NPT inlet
- **2" / 3"** – Nominal size
- Please state required pressure / vacuum settings and any approval requirements when ordering.

Specifications are subject to change without notice.

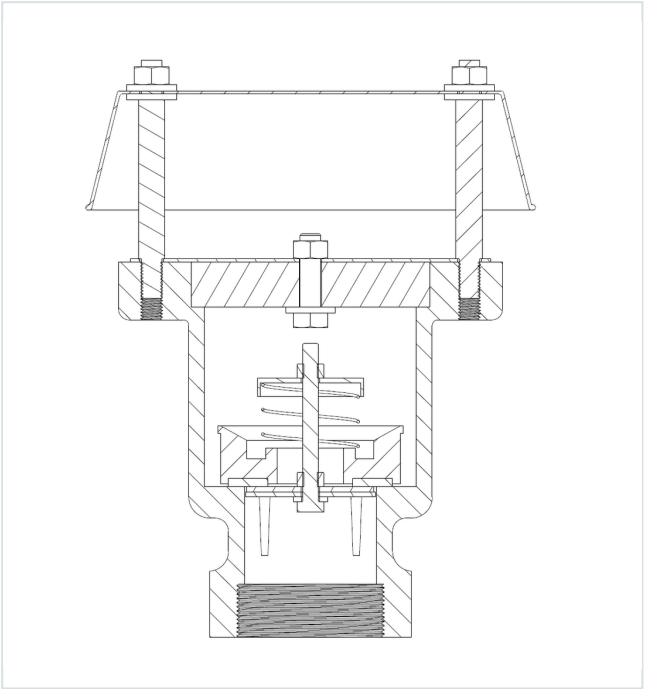
Sectional Views

Sectional view, 2" size. Shows the weight-loaded pressure pallet, spring-loaded vacuum pallet and flame arrestor in the flow path.

2053-CV-FD · Flanged



2053-CV-FD · NPT (F)



At a Glance

200

mmWc pressure set point
(weight-loaded)

30

mmWc vacuum set point
(spring-loaded)

IIA / IIB3

flame arrestor group

100 °C

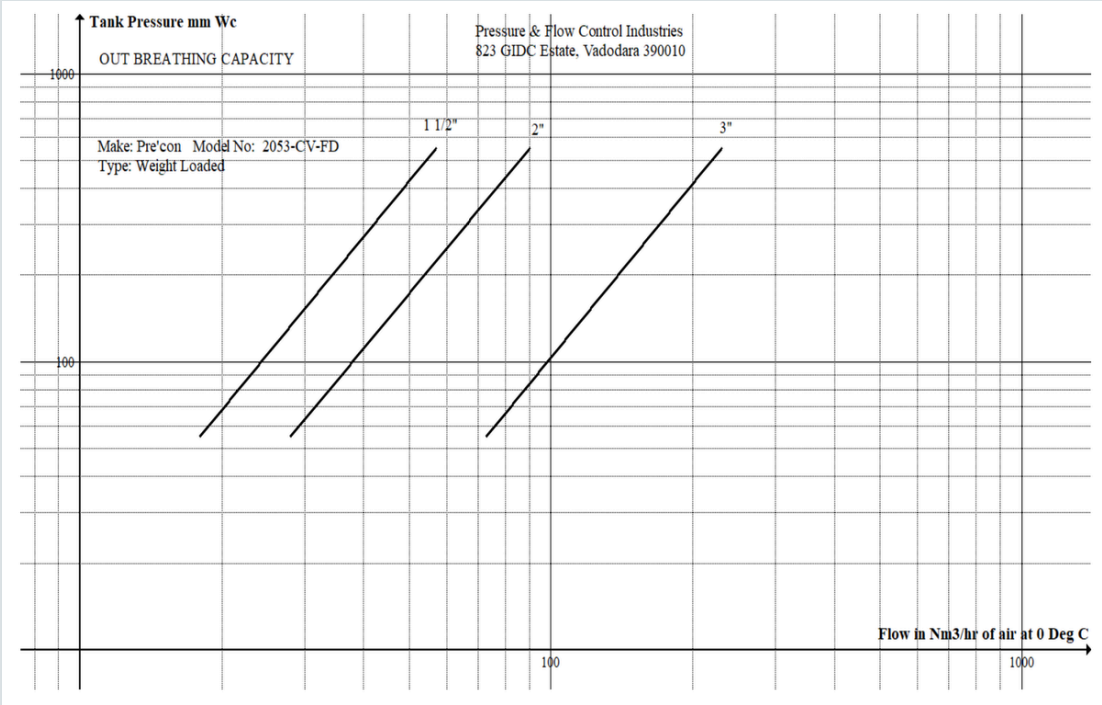
max operating
temperature

Materials of Construction

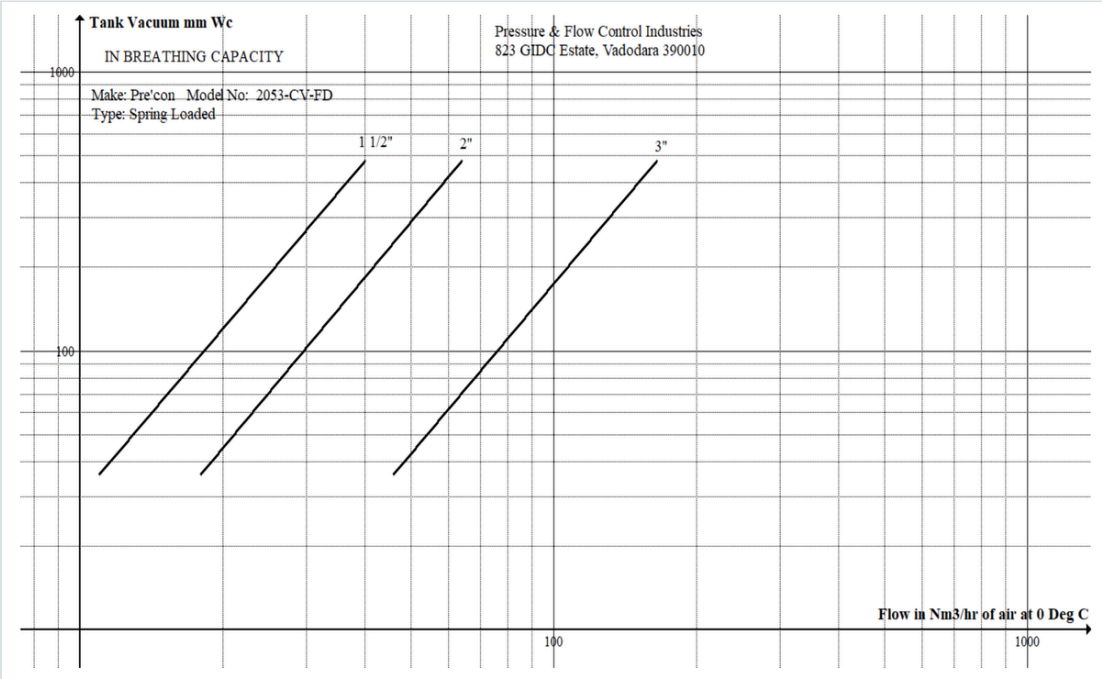
Body	Cast aluminium alloy LM25
Hood	Aluminium
Pallet	Brass
Flame arrestor element	SS 316 / SS 316L corrugated matrix
Spring	SS 304
Sealing	Nitrile

Flow Capacity Curves

Out-breathing capacity — pressure (weight-loaded)



In-breathing capacity — vacuum (spring-loaded)



ATEX Certification

The 2053-CV-FD is certified under the ATEX Directive for use in potentially explosive atmospheres.



Certificate	EU-type examination certificate
Certificate no.	IBExU18ATEX2146 X · Issue 0
Directive	2014/34/EU
Certified product	End-of-line deflagration flame arrester with pressure / vacuum relief valve, Model 2053-CV/FD
Manufacturer	Pressure & Flow Control Industries, 823 GIDC Estate, Makarpura, Vadodara 390010, Gujarat, India

Copy of certificate shown for reference. The “X” suffix indicates special conditions for safe use; refer to the original certificate.



ABOUT US

Pressure & Flow Control Industries

PRE'CON® is a registered trademark of Pressure & Flow Control Industries, an ISO-certified manufacturer of breather valves, flame arresters and tank safety equipment, based in Vadodara, Gujarat. Founded in 1975, we serve oil & gas storage and petrochemical customers in nearly 20 countries.

Since 1975

ISO-certified manufacturer

Breather valves

Flame arresters

Combined PVRV & flame arresters

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TO ORDER OR ENQUIRE

Please quote model **2053-CV-FD**, end connection (Flanged / NPT F), size (2" / 3"), and your required pressure and vacuum settings.