



# ENGINEERING YOUR PROJECTS TO SUCCESS



Welcome to Fainger Engineering, technical leaders for providing strong, customer-focused approach with the continuous quest for world-class quality in field of Safety & environmental control systems, Level monitoring & control systems and Flow instruments.

With a strong commitment to quality, customer satisfaction and integrity, Fainger Engineering came into business in 1975. At Fainger Engineering with implementation of ISO 9001 – 2008, CCOE, and CIMFR approved shop, operations are strategically structured along vertical business in Manufacturing, Exporting, Testing and Calibration facilities.

Our Products are developed with close collaboration with end-users in accordance to relevant & prevailing standards. Client's Specification and requirements are our key principle and on the basis of that all our products are manufactured. Trust and bond with our products makes our clients valuable.



# OUR MISSION

Striving for perfection in order to establish a prominent position, by exemplary performance, state of art quality, thereby providing utmost satisfaction to all customers.

# OUR VISION

We believe our products are an integral part of our customers' core production units. Our products can ensure efficient and reliable processes and thus help with our customers' profitability for many more decades to come. Our Vision with Values are -



**Ethics** - Setting high standards of ethics and values.



**People** - Leading with passion to excel.



**Innovation** - For the creativity and entrepreneurship development.



**Environment** - Taking care of environment and our community.



**Technology** - Providing frontier techniques.



**Customers** - Creating a everlasting relationship with our customers.

Our corporate quality leadership team defines quality strategy, quality goals, improvement approaches and initiatives, which are then reviewed by the corporate leadership team for validation and resource commitment.

➤ For more details about our Quality policy and Certification visit : [www.faingerengineering.com](http://www.faingerengineering.com)

# OUR PRODUCTS

## Fainger Safety and Environment vapour control equipments

### FLAME ARRESTERS

For explosion gas group Class II A , IIB , IIC

Flame arresters are safety devices fitted to openings of enclosures or to the connecting pipe work of a system of enclosures, and whose intended function is to allow flow but prevent the transmission of flame. These devices protect systems from damage that may cause due to explosions.



a. Deflagration / Detonation

b. End of Line / Inline

c. End of line with Pressure and vacuum relief valve

- > Certified by CMRI / FCRI as per IS 11006
- > Crimped Ribbon Design
- > Gap sizes from 0.1 mm to 0.9 mm
- > Low Pressure Drop
- > Multilayer easy removable filter discs for easy maintenance
- > Stainless steel Element by default
- > Wide range of Material combinations available
- > Teflon lined for highly corrosive media.
- > In-Line & End of Line designs available
- > Size - 15mm to 400mm Higher sizes on request



End of Line



End of Line with PVRV



In Line - Eccentric



Inline

### EMERGENCY VENTS

Tanks are also required to be protected from external fire or failure of inert gas system. In such case overpressure of tank cannot be taken care by standard breather valves, hence emergency valves to be used on tanks.

a. Dead weight type

b. Spring Loaded type

- > Light weight design
- > Self relief
- > Dead Weight / Spring loaded type
- > Diaphragm sealing for better sealing
- > Inbuilt design for vacuum / pressure relief as option
- > Multistage Pressure relieving
- > Steam Jacketing available
- > Size -6" to 30" Larger sizes on request
- > Set pressures 50 mmwc to 6000 mmwc



## BREATHER VALVES & PRESSURE/VACUUM - RELIEF VALVES

Aboveground liquid petroleum or petroleum products storage tanks and aboveground and underground refrigerated storage tanks designed as atmospheric storage tanks or low-pressure storage tanks, are to be safeguarded from exploding due to overpressure or imploding due to vacuum in the tank for normal and emergency vapour venting requirements.

To control loss of product in atmosphere and thus reduce environment pollution, breather valves OR pressure / vacuum valves to be used.



Vacuum Relief Valve

- > Reduced vapour loss
- > Tank protection against Explosions and Implosions.
- > Dead weight design
- > Self drain type body design
- > Soft seating for tight shutoff
- > Easy for maintenance
- > PTFE lined for highly corrosive vapours
- > Steam Jacketing available
- > Designed as per API 2000 / ISO 28300
- > Spring loaded design for higher pressures
- > Open vent
- > Pipe away
- > FCRI approved flows
- > Special design with inbuilt Flame arrester
- > Size – 1" to 14"
- > Set pressure – 20 mmwc to 10000 mmwc



End of Line



Inline

- > Set Vacuum – 10 mmwc to 5000 mmwc
- > End connections – Flanged ANSI 150 class / ANSI 300 class (Other on Request)
- > Wide range of Material combinations available.
- > Nitrogen Inbreathing – Flanged / Screwed available

## NITROGEN BLANKETING SYSTEM (NBS)

To maintain non-flammable atmospheres in the tanks and reduce the extent of the flammable envelope of the vapours vented from the tanks, the likelihood of a potentially explosive atmosphere is reduced and there can be benefits related to a less severe hazardous area classification.



- > Direct reduction of pressure from 2bar to 100 mmwc
- > Pressure reduction station available as option from 150 bar to 10 mbar
- > Tight sealing upto set pressures
- > Reducing loss of Nitrogen
- > Reducing loss of product vapours by 90%
- > Compact design
- > Available with Flame arrester
- > Optional Back pressure Relief valve for maintaining constant pressure
- > Available in stainless steel hence no contamination
- > Size – 1", 1 ½" & 2"

## PRESSURE REGULATORS (PRV)

Self-actuated diaphragm operated direct acting upstream pressure control valves. Used for pressure reduction from high pressure to low pressures in Gas lines. These are designed to control the pressure inside the process vessels or piping at a very low value.



- > Economical solution for precise pressure controls at low pressures.
- > Tamper proof adjustments
- > Self Actuated
- > Tight shutoff
- > Highly sensitive to Minor Pressure variations
- > Maintenance friendly
- > Wide set pressure ranges - 150 bar to 2 bar.
- > Available in wide range of materials as per application.

## SAFETY RELIEF VALVE

A pressure relief valve is a safety device designed to protect a pressurized vessel or system during an overpressure event. An overpressure event refers to any condition which would cause pressure in a vessel or system to increase beyond the specified design pressure or maximum allowable working pressure (MAWP). Basically actuated by inlet static pressure & designed to open during emergency or abnormal conditions to prevent a rise on internal fluid pressure in excess of a design value.



- > Designed in accordance to API 520
- > Tested as per API 527
- > Full Nozzle type
- > Spring Loaded
- > Inlet size 1/2" to 8"
- > Set Pressure from 0.15 bar to 30 bar
- > Operating Temperatures -50 deg C to 350 deg C
- > Available in Flanged and screwed design
- > Wide range of materials of construction to choose as per application

## OPEN BONNET SAFETY VALVES

Open Bonnet valves to relieve excess pressure built-up in systems & pipe lines automatically in atmosphere normalizing the line / system pressure..



- > Minimum Built-up pressure.
- > Extremely accurate settings.
- > Compact design
- > Light weight
- > Soft sealing for tight shutoff
- > Wide range of springs to suite required set pressure.
- > Combination of wide range of materials to choose from.
- > Blow down rings for fine settings at site.
- > Optimum re-seating pressure.
- > Available from 1/2" to 2" size.
- > Connections Screwed / Flanged.

## CHANGE OVER VALVES

Change over valves is used to mount two safety valves on one outlet flange (are used as dual manifold for safety valves), so one safety valve while in operation other stays standby. Standby valve can be removed from system for maintenance, cleaning, replacement with no compromise on pressurised protection of system.



- > Optimized design with low pressure loss.
- > Soft sealing for tight shut off.
- > Full flow area available while change over.
- > No production loss.
- > No shutdowns for service.
- > Ease of handling.
- > Size range – 15 mm to 100 mm (1/2" to 4")
- > Flange ratings – 150#, 300#, 600# & 900#
- > IBR Certification on request.

## EXCESS FLOW CHECK VALVES

Excess Flow Check Valves are used for installation in lines flowing into and out of Pressure Tanks. Their main function is to stop excessive flow of the tanks contents liquids / gases automatically in case of a flow line rupture or system disoperation. If the flow in the given direction exceeds the predetermined flow rate, the valve will automatically close.



a. Flanged

b. Screwed

- > Range: 15 mm to 200 mm (1/2" to 8")
- > Connection: Screwed / sandwiched type. Modified to flanged design optional
- > Differential pressure: 0.1 bar for gases & 1 kg/cm<sup>2</sup> for fluids
- > Pressure ratings up to 1500#
- > Manufactured as per UL 125 design
- > Certifications: CCOE

## LEVEL MEASUREMENTS AND INDICATORS

Level measurement is an integral part of process control, and is used in wide variety of industry. The purpose of level measurement is to provide a measured variable, representing the height or material presence within the vessel. And can be used for local level indication, detection of material presence, or an input signal to a level control scheme.

We at Fainger provide a range of devices to fulfil requirements of level measurements / indications / controls

Fainger Engineering is committed to a policy that will ensure that our customers are provided with products of a consistently high level of quality, reliability and safety.

## LEVEL GAUGES

Direct reading level gauges are used wherever positive, accurate measurement of fluid levels / observation of fluids in vessels are necessary.

- a. Transparent Tube
- b. Reflex
- c. Magnetic
- d. Tubular



Reflex Type



Transparent Type

## LEVEL INDICATORS

a. Rotoball	c. Roller
b. Flapper	d. Follower Magnet
<ul style="list-style-type: none"> <li>&gt; C to C Distance: Upto 6000 mm</li> <li>&gt; Operating temperature: (-)80 to (+) 400deg C</li> <li>&gt; Pressures: Upto 150 Kg/cm2</li> <li>&gt; Glass: Borosilicate / Sodium silicate</li> <li>&gt; Auto Shutoff ball check valves for isolation</li> <li>&gt; Switches &amp; Transmitters available in option</li> <li>&gt; Over lapped sections for continuous measurements</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Float density 0.6 kg/m3</li> <li>&gt; MOC – To suite application, also available for corrosive and toxic media</li> <li>&gt; Flanged / Screwed Connections</li> <li>&gt; IBR Certification in Form III C (Optional)</li> <li>&gt; Auto shut off valves / Mica Shield / Steam tracing in options</li> <li>&gt; Over lapped sections for continuous measurements</li> </ul>

## SIGHT FLOW INDICATORS

The most cost efficient and effective way to view the process flow stream of fluids in pipe lines and to determine, if any problems exist at certain points in process lines.

- a. Drip Tube
- b. Flapper
- c. Rotary Wheel
- d. Full view



Drip Type



Flapper Type



Rotary Wheel type



Full View



### Features

- > Wide range of materials to select in compatibility to process fluids
- > Glass Toughened Borosilicate / Sodium silicate
- > Temperatures up to 350
- > Pressure up to 30 bar
- > Steam Jacketing
- > Teflon lining location
- > Size: ½" to 20"
- > Connection: Flanged / Screwed

## LEVEL SWITCHES

a. Float

b. Displacer

- > Safe and rugged design
- > Accuracy  $\pm 2\%$
- > Suitable for Corrosive & Hazardous applications
- > Housings available for IP 65 as standard and explosion proofs on request.
- > Transmitters available as option
- > Reed Switch / Micro switch
- > Switching available upto 4 levels
- > Designed to minimize shock and vibrations
- > Available in extended lengths for longer nozzles
- > Max. Temperatures up to 400 deg C
- > External cage optional
- > Available from 100 mm to 5000 mm
- > Pressures upto 20 Kg/cm<sup>2</sup>
- > PTFE Coating available
- > Screwed & Flanged design
- > Side mounted / Top mounted



Level Switch Displacer type



Level Switch Float type

## FLOW SWITCHES

Fainger flow switches are designed for direct controlling of fluid flow in pipe lines / ducts, mechanically or magnetically actuated.

a. Magnetic / Mechanical

b. In line / Top Mounted

- > For vertical or horizontal pipelines.
- > Accuracy level 3%
- > Top mounted / Inline mounted
- > No moving parts, hence maintenance free.
- > Housings available for IP 65 as standard and explosion proofs on request.
- > Magnetic Bellow type
- > Flanged / screwed design.
- > Size 1/2" to 12"
- > Temperature (-)20 deg C to (+) 250 deg C
- > Operating pressures upto 15 kg/cm<sup>2</sup>



Flow Switch  
Mech & Magnetic



Flow Switch  
Mechanical