



# COMPRESSOR PROTECTION

Compressor stations are an integral part of the natural gas pipeline network that moves natural gas from individual producing well sites to end users. As natural gas moves through a pipeline, distance, friction, and elevation differences slow the movement of the gas, and reduce pressure.

## Benefits of an Optimized Filtration Solution:

- Protect high value equipment such as compressor valves & cylinders
- Reduce maintenance downtime
- Higher quality gas for further processing
- Meet customer pipeline specifications

Compressor stations are placed strategically within the gathering and transportation pipeline network to help maintain the pressure and flow of gas to market. They also allow the gas to be rerouted into storage areas during periods of low demand.

Depending on the particular compressor station, its size, sophistication, and other factors, it may or may not be staffed with on-site personnel. Many modern compressor stations can be completely monitored and operated remotely hence the reliability of the filtration equipment is critically important for the smooth functioning of the station.

## Inlet/Suction Protection

The natural gas coming into the compressor station has contaminants like water, hydrocarbons, pipe scale, black powder (iron sulfide from corrosion) which need to be removed before entering the compressor to protect critical parts such as valves, bearings, seals.

A bulk separator or scrubber is recommended, up stream of primary filtration, if there is a potential for slugs or extremely high solids loading. The gas stream is then typically run through a horizontal coalescer to remove the remaining liquid and solid contaminants.

In a natural gas powered system, fuel gas is typically taken from main inlet as a side stream. Due to pressure reduction requirements a vertical coalescer is recommended to remove any condensed liquids that may have formed. This provides a clean and dry fuel for optimal combustion, and emissions control, of today's lean burning engines.

## Outlet/Discharge Protection

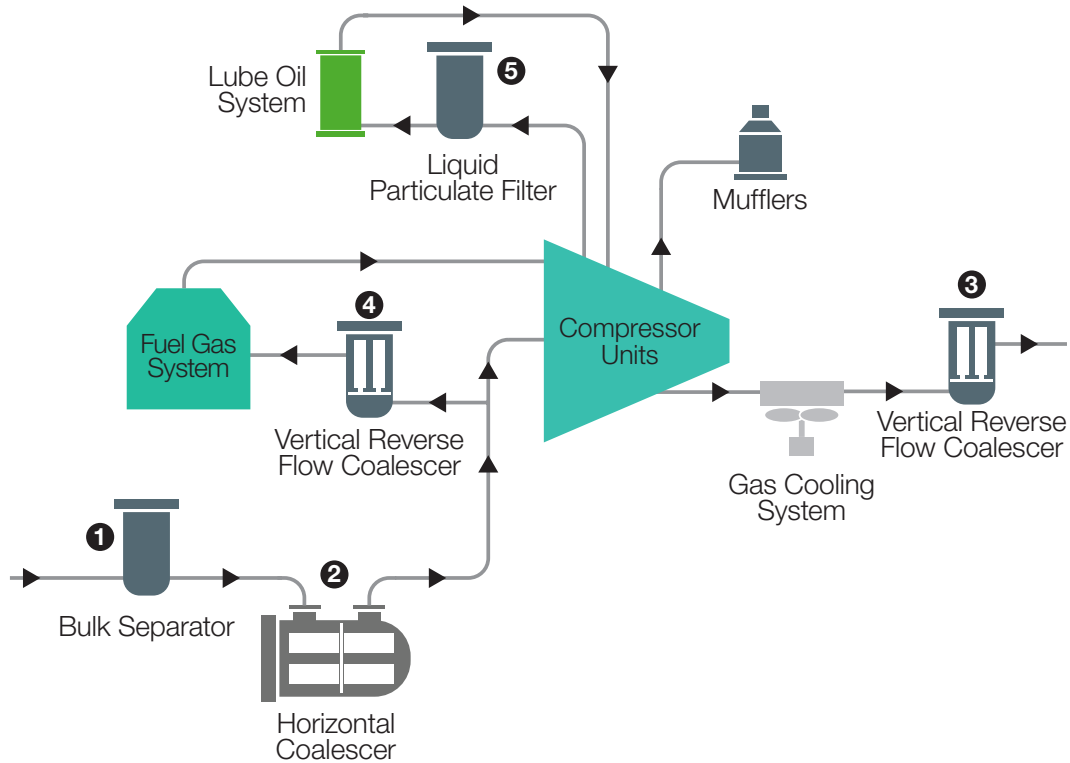
With reciprocating compressors lube oil is used to reduce friction and wear on moving metal components. As gas passes through each cylinder it carries very fine aerosols into discharge piping. In addition to lubricating aerosols condensation of gas may occur during the expansion and cooling of the gas on discharge from compressor.

As typical contaminants are low surface tension aerosols a vertical gas coalescer is recommended to remove those contaminants before discharge into main piping.

## Lube oil Filtration

Lube oil filtration can be found as integral part of the compressor package or, in larger set ups, as stand alone systems.

## Compressor Station Protection



	Filter Solution	Filter Purpose	Filter Benefit
01	Bulk Mechanical Scrubber or Separator	Mechanical separation device designed to handle large slugs of liquids or alleviate high solids and entrained liquid loading from feed gas to primary filtration	Manages damaging volumes of liquids and provides a predictable maintenance schedule, for primary coalescer, to operations
02	Compressor Inlet Horizontal Coalescer	Removing solid and liquid contaminants from gas prior to compression	Efficiently removes difficult, and damaging, low surface tension liquids and shear sensitive Iron Sulfides with low operational costs
03	Compressor discharge gas coalescer with TRI-SHIELD™ filters	Removing aerosolized low surface tension lubricating oil carryover from exiting compressor gas	Provide high quality gas for custody transfer, pipeline transmission, or further processing
04	Fuel Gas Filter (vertical coalescer) with TRI-SHIELD™	Remove solids and aerosols from primary fuel source	Provide high BTU fuel gas for optimal combustion, reducing NOx emissions and overall fuel consumption
05	Lubricating oil particulate filter using LiquiPleat® technology	Removing contaminants like wear materials and ash from lube oils	Maintain ISO cleanliness standard for lube oil

