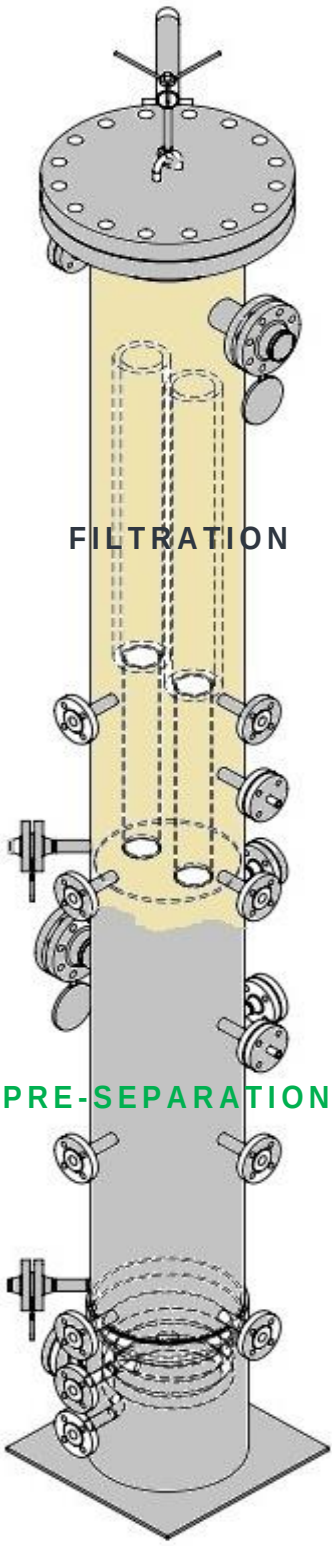
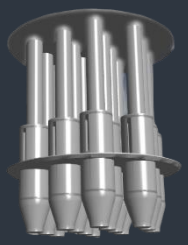
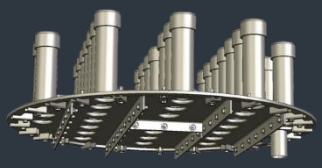
Filter Separator Solutions



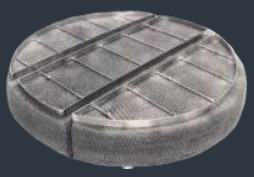




PRE / POST FILRATION PRODUCTS TO ENHANCE GAS FILTER PERFORMANCE & LIFE

Gas Filters or Filter-Coalescers are widely used in all process industries to remove liquid mist and/or solid particles to protect downstream equipment from blockage, erosion or corrosion. One of the major disadvantages of such filter systems is that they can exhibit a short life-span, particularly in liquid slugging or dirty service. However, with the use of carefully designed pre-separation or pre-filtration equipment, the operator can extend the longevity of the filters as well as reducing the required maintenance time.

We have a wide range of effective separation technologies to draw upon for each specific application, depending on the flow characteristics. Hundreds of installations are in service world-wide with KIRK's Inlet Diffusers, Wire Mesh Demisters, Vane Packs, Multi-Cyclones and Swirltubes cleaning gas containing liquid mist and frequently contaminated with solids. These products are also widely used for post-filtration removal of liquids in coalescing vessels. A variety of configuration options is possible as illustrated overleaf, to match filter styles.



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Filter Separator Solutions

Gas Filters & Filter-Coalescers use a variety of industry standard filter cartridges for the removal of solid and liquid contaminants that could otherwise cause downstream maintenance and operational issues.

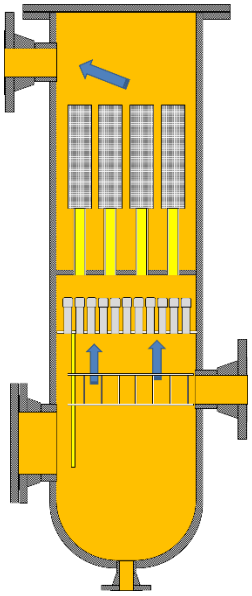
A well designed filter solution will need to be capable of removing dry solids, wet solids, liquid slugs or liquid mist of unpredictable composition and flow rate.

Liquid slugs or high loads can cause pressure drop spikes and cartridge collapse and/or high carryover. High solids levels cause excessive pressure loss and unacceptable filter life.

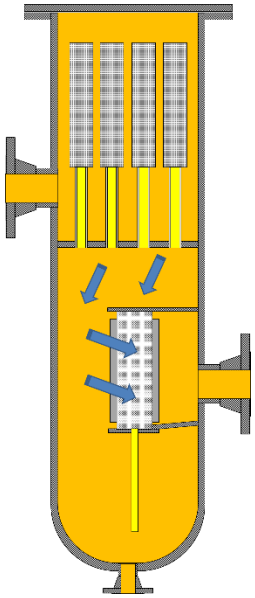
Often a combination of pre- or post-separation devices is required to meet these challenges and improve plant reliability.

KIRK PROCESS SOLUTIONS

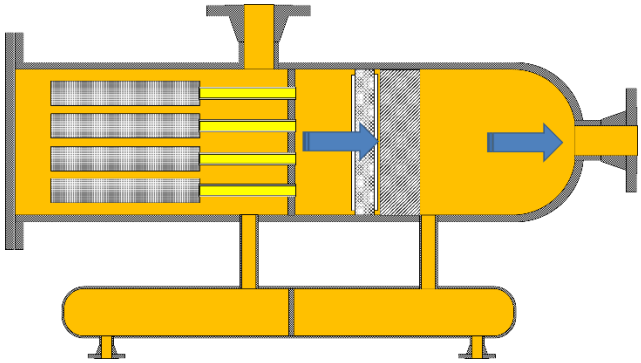
Drawing upon our specialist range of internals, KIRK Process Solutions products are well proven in service, removing down to low ppm levels and providing maximum pre-separation of solids and liquids, or post-separation of liquids. Common layouts are illustrated below. The arrangements can also be used in combination with separate KO drums or Filters for full flexibility.



A modern style of vertical Filter-Coalescer Vessel uses a selected combination of pre-separation devices to cater for incoming liquid slugs and dust. In this example a KVID Multi-Vane Inlet diffuser is used in combination with a KSME Axial Cyclone Deck for high capacity.



Some older, vertical Filter Coalescer designs put the filters first. In this example a mesh or vane post-coalescer is used to capture the liquid droplets. This arrangement is only suited to relatively clean service.



Traditional designs of Filter-Coalescer use a horizontal, double-barrel style arrangement with the raw gas first passing through coalescing filter cartridges to remove solids and liquid slugs, then coalescing small mists into larger droplets to be extracted in the 2nd stage of the vessel.

These designs need to be a good match between 1st and 2nd stage to ensure the liquid mists are properly coalesced into removable droplets. A common mistake is to undersize the filtration stage, leading to droplet break-up inside the filter cores causing high carryover.

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