



GEA filter program for turbo-machines

Gas turbines, compressors, motors and intake systems

Application brochures



Air Eco2nomy is more than a technology. It is an attitude that creates values with a future: quality of life for people.

Peak performances thanks to clean air

Gas turbines, compressors, and motors require clean air to yield maximum output. This is ensured by intake systems from GEA Delbag Air Technology. Air Eco2nomy ensures highest process efficiency with lowest energy consumption.

GEA Delbag air technology stands for the competence and experience from about 100 years of market leadership in air-filtration technology. Under the motto Air Eco2nomy, we offer you comprehensively oriented solutions that set economic and ecological standards. The intake system is an example that we have continually refined for more than 50 years in close cooperation with manufacturers and operators of gas turbines, compressors and motors.

Turbo machines and motors are also successfully employed world-wide under the most difficult conditions. The intake air must be optimally cleaned for these machines to continuously achieve their maximum performance capability. Our intake system accomplishes this task. For instance it prevents the efficiency of the gas turbine being reduced by an impaired aerodynamics of the blades. Effective supply air equipment filtration furthermore prevents cost-intensive damage by particle abrasion, deposits and corrosion. The operating costs over the entire lifetime are minimized by supplementary air treatment measures.

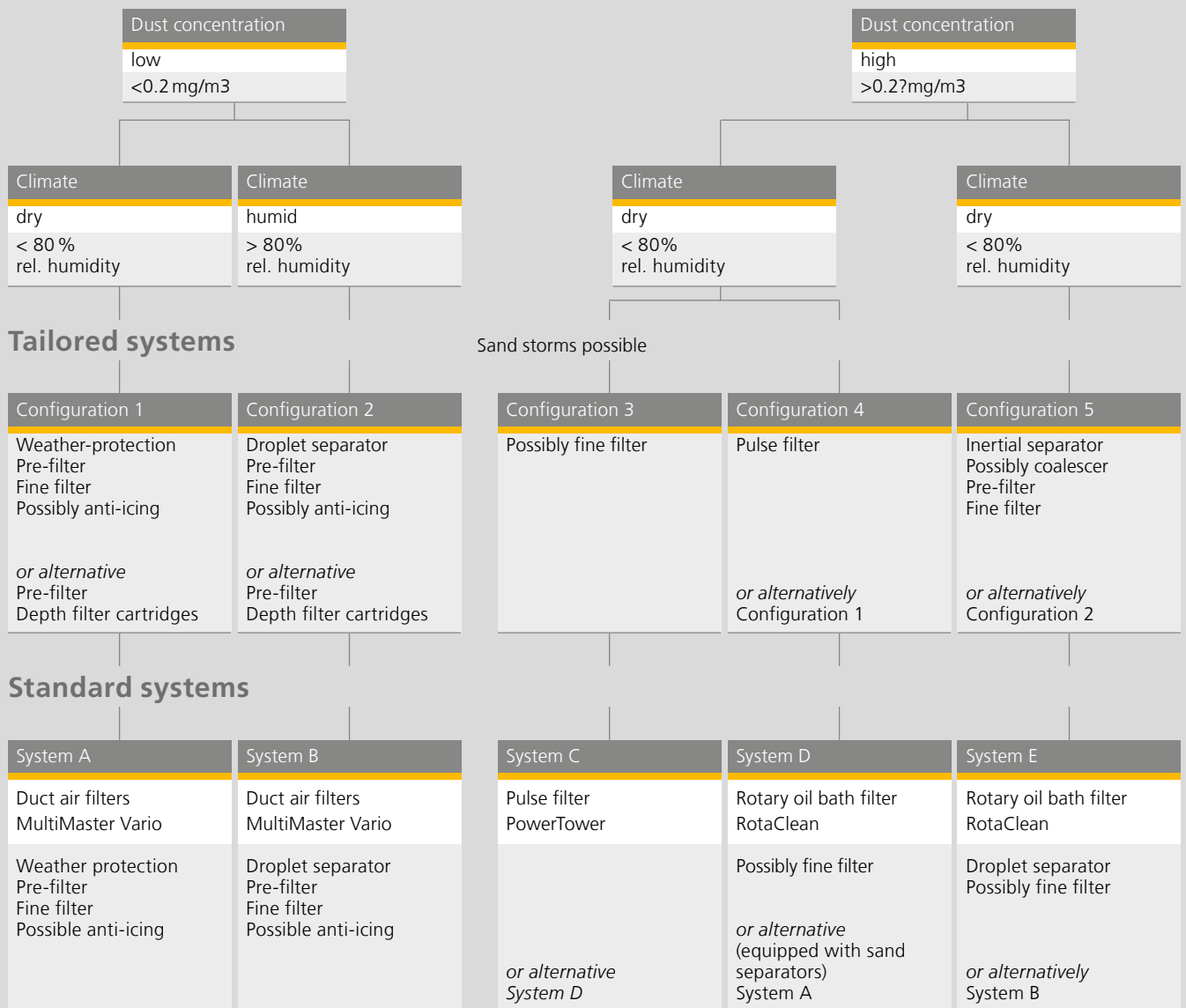
- Extensive filter program for intake systems (gas turbines, compressors, motors and process air)
- Standard systems and tailor-made engineering
- Filter design takes local environmental conditions into consideration
- Constructive design of the entire intake system
- Acoustic configuration according to local noise requirements
- Electrical execution according to all international standards
- On-schedule delivery including filter, sound absorber and accessories
- Worldwide assembly and commissioning
- Continual Quality Control according to DIN EN ISO 9001:2008

Selection criteria and modules

Whether desert or tropical climate, always the suitable solution

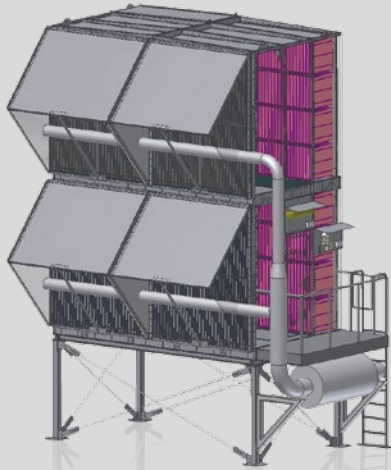
Sand storms cause different problems than monsoon rains. Operators of compressors, turbines and motors therefore need filter systems that are individually adapted to the climatic conditions, dust concentrations and additional local parameters. Our selection diagram facilitates the selection of the correct system. Apart from our flexibly combinable standard system, we also offer you harmonized customized systems for your application. In addition we offer comprehensive services such as the professional assembly, commissioning and maintenance.

Selection criteria for intake systems

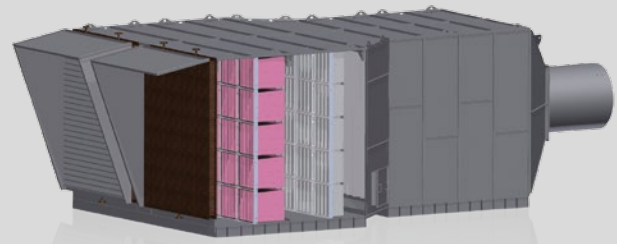


Intake systems

Tailored systems



Static filter system with hot air anti-icing



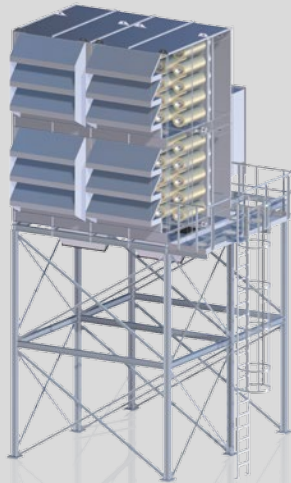
Static filter system with anti-icing heat exchangers

Static filter systems (Arrangement 1, 2)

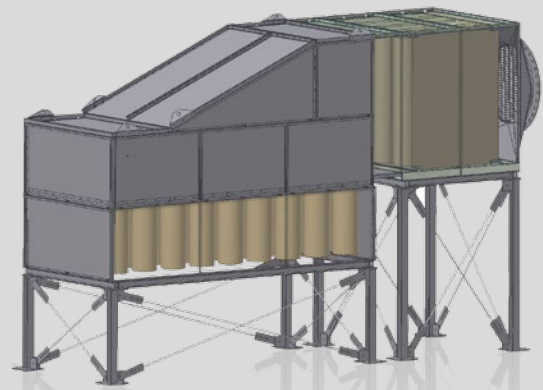
In regions with relatively low dust concentration, a static filter system is the most practical solution. Usually a two-stage arrangement with pre- and fine filter is selected in order to achieve the required filter class and endurance. Customarily, bag filters are employed in the first and compact filter elements in the fine-filter stage. For long-sustained periods of high air humidity and mist, a droplet eliminator is additionally integrated. In zones with extremely high open wetness, such as in coastal regions, an additional upstream coalescer filter system is recommended.

Anti-icing systems for static filters (Arrangement 1, 2)

Anti-icing systems are required everywhere, where low temperatures can occur in combination with high air humidity. In such weather periods, the systems avoid ice formation, which can lead to a rapid increase of the pressure loss up to the blocking of the air filter. The bandwidth of the anti-icing systems from GEA Delbag comprises heat exchanger, warm and hot air distributor, infrared light systems and electric heaters.



Pulse filter system Cross Flow



Depth filter cartridge systems table filter

Pulse filter systems (Arrangement 3, 4)

Self-cleaning pulse filter plants are employed wherever there is high dust concentrations, like in desert areas and especially burdened industrial regions. The dust particles are separated on the surface of the filter medium. The dust cake that forms is effectively removed on-line by counter-current pulse-jet cleaning with compressed air. There are the horizontally arranged pulse filter cartridges (Cross Flow System) or vertically-arranged (Table Filter System) systems depending on the local conditions. GEA Delbag pulse filter systems are operated without an additional anti-icing system.

Centrifugal force separation (Arrangement 5)

In regions where high volumes of dust are combined with a large share of coarse particles with high air humidity, the intake air can be effectively cleaned with a centrifugal force separator of type TFA. The separated dust is discharged to the outside with a secondary air fan.

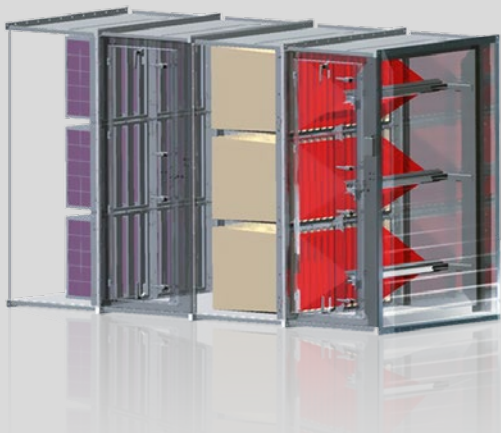
Depth filter cartridge systems (Configuration 1, 2, 4, 5)

A broad field of applications can be covered with depth filter cartridge systems. The pre-filter, which is an economical, easy-to-exchange filter sock, is pulled directly over the depth filter cartridges. The compact execution unites maximum filtration efficiency with high service life. Experience has proven that anti-icing systems such as required for static plants are not needed. Depth filter cartridges can also be employed as retrofits for existing pulse filter systems, if the filtration efficiency and the endurance of pulse filter cartridges is inadequate due to too low dust concentrations or high moisture.

Intake systems

Standard systems

The standard solutions from GEA Delbag are characterized by a dimensionally harmonized modular design. All modules can be combined without difficulty and, depending on requirements, be supplemented by additional standard components such as weather-protection hoods, droplet eliminators, sound absorbers and connecting ducts.



Air-duct filter MultiMaster Vario with infrared anti-icing



Rotary oil bath filter RotaClean and pulse filter PowerTower

Module air-duct filter MultiMaster Vario (System A, B)

The GEA Delbag Universal air-duct filter type MultiMaster Vario permits individual solutions for the most diverse application areas. The system is equipped with static filters, such as filter materials, bag filter, filter elements and roll filters. Filter classes of G2 to H13 can be presented. Thanks to their innovative design, the casings have a very high stability and long service life.

Pulse filter module PowerTower (System C)

With the standard pulse filter system of type PowerTower, the technical advantages of the pulse filter cartridges can also be inexpensively implemented for smaller air volumes. Accordingly, the PowerTower is especially employed for motors and smaller compressors. This development can alternatively be equipped with cartridges hanging horizontally or vertically. While skirt sheets ensure sufficient covering for the hanging cartridges, in the horizontal version, droplet eliminators are standardly integrated in the intake opening.



Replacement filter media

Module rotary oil bath filter RotaClean (System D, E)

Rotary oil bath filters of type RotaClean are predominantly employed for the coarse-dust filtration of the combustion air in diesel engines, also under the most difficult environmental conditions. Oil-wetted filter panels ensure an effective and secure separation. They are especially economical because of their low maintenance and operating costs.

Replacement filter media

GEA Delbag offers almost the entire bandwidth of the usual commercial spare filter media. All systems and applications are covered. The program comprises coalescer filters (e.g. filter materials, metal filters and bag filters), pre-filters of the filter classes G2 to F7 (e.g. filter materials and bag filter), fine filters of the filter classes F6 to F9 (e.g. bag filter or filter elements), HEPA filter elements of the filter classes H10 to H13, and pulse filters and depth filter cartridges in all types and dimensions.



We live our values.

Excellence • Passion • Integrity • Responsibility • GEA-versity

GEA Group is a global engineering company with multi-billion euro sales and operations in more than 50 countries. Founded in 1881, the company is one of the largest providers of innovative equipment and process technology. GEA Group is listed on the STOXX® Europe 600.

GEA Heat Exchangers

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