

Central compressed air treatment

Production of the compressed air purity required by the majority of the compressed air applications or the largest compressed air consumers.

Water separator

Approx. 70% of the actual amount of condensate in a compressed air system is produced in the aftercooler on the compressor. Therefore, the condensate needs to be immediately removed from the compressed air system at this point. Without the use of a water separator, large amounts of condensate would enter the compressed air system (approx. 0.1 l/h per kW compressor performance).

Appropriate filtration grade



Upstream filter of refrigeration dryer

Condensate entering the refrigeration dryer reduces the drying efficiency. Larger amounts of oil coat the heat exchanger surface and thus reduce the heat transfer and consequently, the performance. Refrigeration dryers must therefore always be provided with an upstream filter.

Appropriate filtration grade



Downstream filter of refrigeration dryer

The remaining contamination will consist of significant quantities of fine oil and dust particles and vapour. After condensate removal, the downstream filters will efficiently remove these fine contaminants to the required quality levels.

Appropriate filtration grades



Upstream filter of adsorption dryer

Liquid condensate reduces the drying efficiency of the desiccant used in an adsorption dryer whilst liquid oil contaminates the desiccant bed and reduces the adsorption dryer performance permanently. Therefore both contaminants must be effectively removed upstream of an adsorption dryer.

Appropriate filtration grade



Downstream filter of adsorption dryer

Desiccants in adsorption dryers are, by nature, porous granulates. When the compressed air flows through the desiccant bed, abrasion material is produced in the form of particles of coarse to fine dust. Downstream filters are used to reliably eliminate these contaminants from the downstream flow.

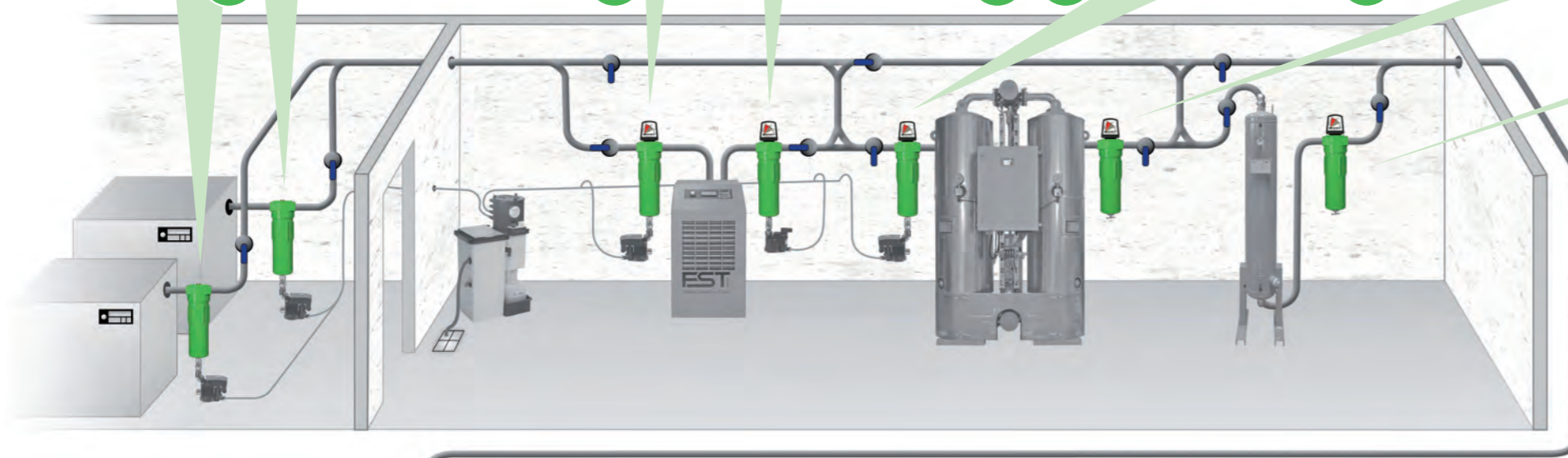
Appropriate filtration grade



Downstream filter of activated carbon towers

Activated carbons are porous granulates. When the compressed air flows through the activated carbon bed, abrasion material is produced in the form of particles of coarse to fine dust. Downstream filters are used to reliably eliminate these contaminants from the downstream flow.

Appropriate filtration grade



The following rule applies to central compressed air treatment:

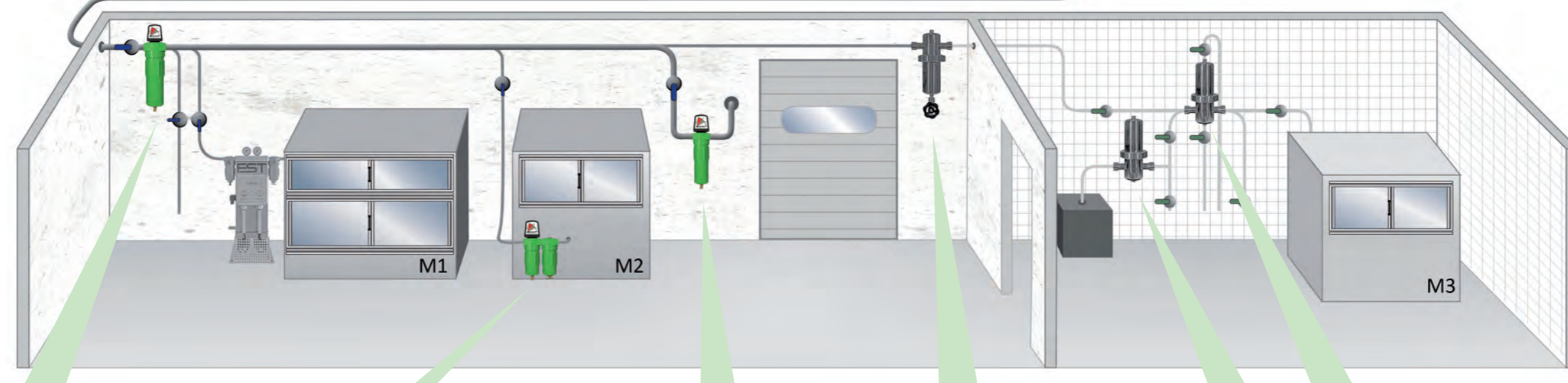
As much as necessary, as little as possible

Compressed air treatment requires energy in the form of differential pressure and intrinsic energy. The higher the compressed air purity produced, the more energy is required. Therefore, central compressed air treatment should achieve only the compressed air purity required by the majority of the compressed air applications or the largest compressed air consumers.

If individual compressed air applications require greater compressed air quality, a smaller, separate air treatment package can be installed with a separate distribution system thereby reducing the energy cost, the capital cost and cost of ownership.

Decentralised compressed air treatment

Protection of compressed air applications against contamination from the compressed air system and final production of the compressed air purity required by the relevant compressed air application.



Section interface filters

Section interface filters are security filters and prevent entire compressed air system areas from time-consuming cleaning in the event of an emergency. They protect entire areas of the compressed air system against contaminants which might be produced in the event of unpredictable malfunctions in the central treatment area (e.g. oil breakthrough of a compressor) or due to adverse weather conditions (e.g. frost or low temperatures).

Appropriate filtration grades



Point of use filters

Point of use filters are installed directly upstream of the compressed air application. They produce the final compressed air purity and quantity required by the relevant compressed air application.

Appropriate filtration grades



Application interface filters

If, in a compressed air system, there is a transition point to a special application area (e.g. paint-compatible area for paint processes), the application interface filter removes incompatible contaminants from the upstream compressed air system.

Appropriate filtration grades



Material interface filters

If, in a compressed air system, there is a transition point to a higher grade material (e.g. stainless steel), the material interface filter removes contaminants from the upstream piping (e.g. rust from steel piping). Material interface filters are also made of high-grade material.

Appropriate filtration grades



Steam and sterile filters

Sterile filters are used to remove microbiological contaminants and thus produce sterile compressed air. All other types of contaminants must be thoroughly removed upstream of the sterile filter. Because microbiological contaminants are fertile and living organisms, they need to be devitalised at a specified time by means of sterilisation. If hot-steam sterilisation is performed in-line (i.e. when being installed), the steam filters produce the required steam purity.

Appropriate filtration grades

