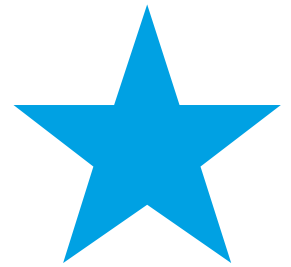


# Blue Star Pneumatics – Top Tips: Air Preparation

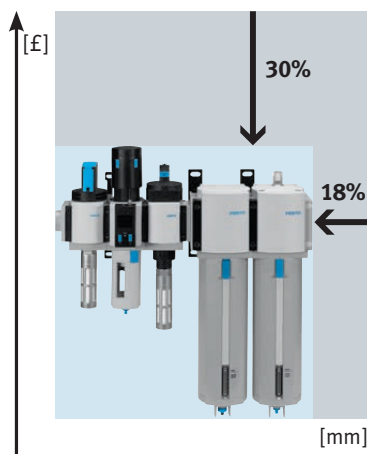
# FESTO

Do you have the correct modules in your air prep set to provide the best air purity? Is the air pressure at the correct level to ensure the best operation at the lowest cost? A correctly specified and sized air preparation set is essential to the operation of your machine. Particles, water and oils contained in the compressed air can lead to mechanical friction, corrosion and clogging so ensuring that the air preparation is optimised will significantly improve not only the service life of components and your system availability but ensure your machine works to its full capacity. Have a look through our list of tips below and for more detailed information download our White Paper: **'Compressed air preparation in pneumatics'**.



**Festo's Core Range** of products features next day delivery, great Festo quality and attractive prices. Look for the blue star in our catalogue.

[www.festo.co.uk/stars-airprep](http://www.festo.co.uk/stars-airprep)



A clever mix: MS6 and MS9. MS6 = standard devices EM, LFR, EE; MS9 = Fine and micro filter LFM-B and LFM-A.  
Original design: MS9 as standard

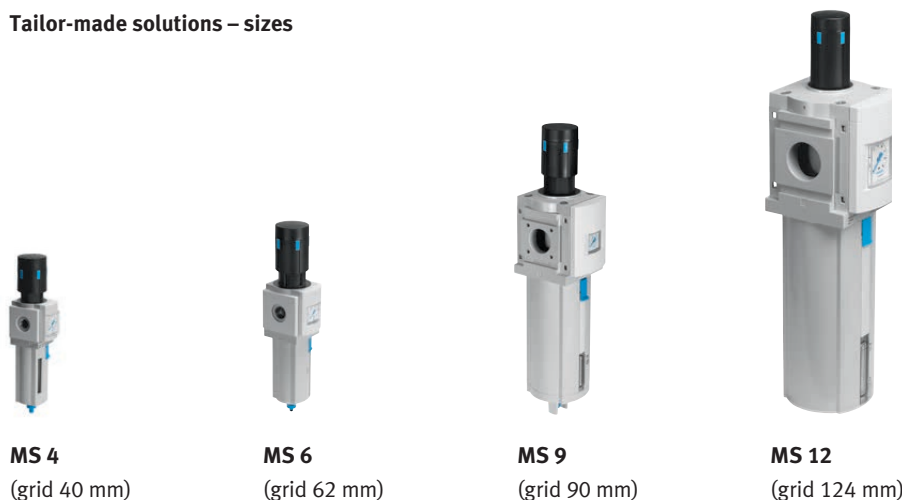
## Filtration

Whilst the overall flow rate of the major elements of an air preparation set can meet the application requirements, pay particular attention to fine and micro filter units. To match the grid size of other units the flow rate is frequently compromised meaning the flow slows considerably through these units unless you run the whole system at a higher pressure to get the flow rate desired, which of course increases energy use. Standard connecting plates allow the fine and micro filters to be a larger size than the rest of the air prep set allowing the optimum flow rate to be used throughout.

## Sizing

Pay attention to the flow rates quoted for air preparation units, oversized filter bowls will not function optimally and won't remove contaminants from the downstream system. They rely upon inducing a swirl action on the air flow and the optimal function is only achieved when the velocity of the air flow meets the design criteria. Don't undersize – but don't oversize, it wastes money and impairs performance.

### Tailor-made solutions – sizes



**MS 4**  
(grid 40 mm)

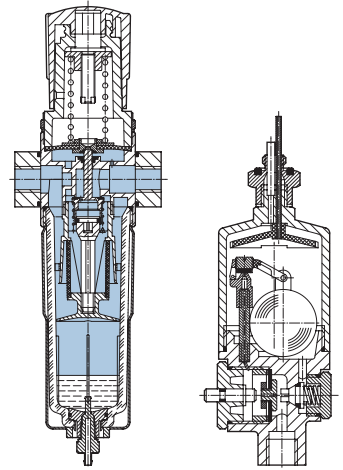
**MS 6**  
(grid 62 mm)

**MS 9**  
(grid 90 mm)

**MS 12**  
(grid 124 mm)

## Contaminants

Liquids such as water in the system causes corrosion of parts, which generates rust particles that can cause mechanical damage or block small flow cross sections. Condensate drains mounted within or below filter units prevent the carry-over of extracted liquid into the downstream air flow. They range in cost and complexity from fully automatic drains with a float mechanism that automatically vents when the condensate builds up, to semi-automatic drains that vent when the air supply is turned off and manual drains that rely upon regular maintenance inspections. Float systems vent the extract automatically when the level reaches the pre-set limit.



Manual drain

Auto drain



Pressure booster feeding a local stainless steel reservoir

## Pressure

Minimise air consumption and energy usage as far as possible, as an example: taking an air pressure setting from 6.5 bar to 4.5 bar reduces energy usage by 30%. Often the machine pressure is set by the requirements of only one or two components. By introducing pressure zones; each with their own regulator on those components or installing a pressure booster feeding a local reservoir the overall air pressure of the machine can be reduced. The additional hardware costs are quickly recovered as the lower air pressure setting can still be maintained for the machine as a whole. Stainless steel pressure vessels are safe and maintenance free yet smooth the output to cope with fluctuating demand.

## Gauges

Gauges with pre-set operating zones enable fast setting and checking of operating pressures without relying upon skilled technicians. With only a quick glance operators can check all is well and see that over pressure is as undesirable as under pressure. The optimum operating pressure can be easily displayed within a green zone. Pressure regulators are adjusted to set the needle within this range.



Red/green pressure gauge

## Filters

Monitor filter elements and change them before they lose efficiency and effectiveness. Clogged filter elements reduce the flow rate through the air preparation unit and fail to remove particulates. Up to 50% of flow can be lost. Contamination gauges or flow meters should be fitted, particularly for fine and micro filter elements. Stocking and replacing filter elements – a low cost, simple maintenance task that can pay large dividends in filter performance and pressure drop.



Replaceable filter element



Aruj Abbas  
Product Marketing Manager –  
Air Supply

E-mail: [info.gb@festo.com](mailto:info.gb@festo.com)

[www.festo.co.uk/stars-airprep](http://www.festo.co.uk/stars-airprep)