



VOKES AIR

Taking small steps together, always ahead, towards a better world

Macrogen GT Duo

Particle filtration - water coalescer - one stage



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APPLICATIONS



Clean Air



Power Generation



Clean Room



Industrial

KEY FACTS

- ▶ **Combines pre-filter with high efficiency coalescer in one stage**
Saves time, space and cost
- ▶ **Patented highly efficient water drainage system**
Drains water away from the downstream airflow
- ▶ **Suitable for ambient dust concentrations up to 100 µg/m³**
Allowing use in all environments
- ▶ **Fully sealed**
Ideally suited for offshore and coastal applications
- ▶ **High burst resistance up to 2000 Pa**
For reliability and safety in operation
- ▶ **Low pressure drop**
Maximises turbine power output
- ▶ **Synthetic media with excellent hydrophobic properties**
Eliminates the requirement for a separate coalescer stage
- ▶ **Fully incinerable and lightweight construction**
For easy storage, handling, installation and disposal
- ▶ **Robust hollow profile plastic frame**
Excellent strength and rigidity
- ▶ **Stabilized pleats**
Ensure air flow rates up to 5000 m³/h without clogging

Macrogen GT Duo has been specifically designed to meet the exact needs of gas turbine operators. With a low initial pressure drop and high dust holding capacity, combined with an inherent water repellency (coalescing and drainage), Macrogen GT Duo meets all the needs of GT power plants.

Made from a durable plastic frame the Macrogen GT Duo product range offers excellent protection to valuable rotating machinery assets like turbines, compressors and pumps. Fitted as a pre-filter. Macrogen GT Duo can improve the overall performance of a turbine, whilst taking up minimal space by eliminating the requirement for an extra coalescer stage.

The filter is ideal for tropical, coastal and offshore gas turbine installations and atmospheric dust concentrations up to 100 µg/m³. Add to this a high burst strength and it is easy to see why this pre-filter/coalescer combination will improve both your turbine's performance and your maintenance schedule.

▼ Macrogen GT Duo product detail



Filter Design

Macrogen GT Duo filters have been designed specifically to offer outstanding performance as pre-filters to high efficiency filters in gas turbines air intake systems. Macrogen GT Duo has been designed from a unique synthetic media, which not only offer excellent dust holding capacity, but also coalesces fine water droplets and removes them from the air stream.

The unique design of the Macrogen GT Duo frame ensures that water always drains away from the turbine. The pleated filter media is stabilized by horizontal support beads and aerodynamically designed filter combs on the reverse side, whilst the filter element is metal-free, non-corroding and fully incinerable.

▼ 1. Aerodynamically designed filter comb



▼ 2. PU-foamed gasket on downstream side



▼ 3. Optional: Tesamol gasket (19 x 10 mm)



▼ 4. Specifically-designed comb ensures pleats remain open even at the highest of flows



Water Coalescing

Where rotating equipment is located in proximity to the sea or where fog or rain is a regular part of the weather pattern, a separate coalescer stage is normal. Macrogen GT Duo has been designed to avoid the need for this through a progressively-structured filter media possessing excellent hydrophobic water repellency characteristics.

In tests, the Macrogen GT Duo repelled 30 litres of water in a 1 hour period with no water breakthrough for a new filter. This level of water resistance means that the option of operating rotating equipment without a classic coalescer stage becomes a reality.

- ▼ 1. Macrogen GT Duo under testing in a water test rig.



- ▼ 2. The reservoir of water that collects at the bottom of the filter is removed thanks to an innovative frame design which features one side shallower than the other, forcing the water to drain towards the front of the filter, away from the final filter and turbine itself.



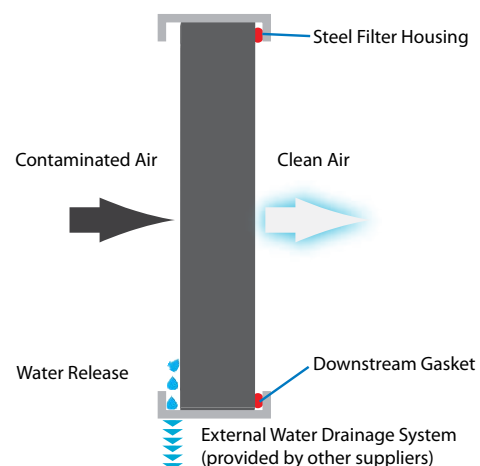
- ▼ 3. The unique hydrophobic media design makes the filter ideal for foggy, coastal and even off-shore applications.



Standard Installation

Macrogen GT Duo can be installed in a standard filter housing as well as into a duct housing or other installations.

Water is coalesced on the upstream side of the filter media, from which water droplets fall with gravity into the base of the Macrogen GT Duo where they are collected and released on the lower part of the filter frame. The water is then to drained away by an external water drainage system.



Technical Data¹⁾

Filter class (according to EN779:2002)	G4
Average Arrestance	> 90%
Effective Filter Area	2 m ²
Continuous Operating Temperature	< 70 °C
Initial Pressure Drop @ 3400 m³/h	58 Pa
Initial Pressure Drop @ 4250 m³/h	83 Pa
Recommended Final Pressure Drop	450 Pa
Burst Pressure (new filter)	Up to 2000 Pa
Admissible Relative Humidity	> 100 %
Dust Holding Capacity (SAE Fine)	1200 g @ 450 Pa
Dimensions (H x W x D)	592 x 592 x 96 mm 610 x 610 x 96 mm 305 x 592 x 96 mm ²⁾ 305 x 610 x 96 mm ²⁾

1) 610 x 610 x 96 mm 2) Optional

Material Specification

Filter media	Synthetic media, progressively structured with hydrophobic characteristics
Frame	ABS plastic
Sealant	Polyurethane
Gasket (standard)	PU-foamed on down-stream side **
Pleat separator	Horizontal hot-melt support beads
Frame stabilizer	ABS plastic comb
Flammability Class (acc. to DIN 53438)	F1

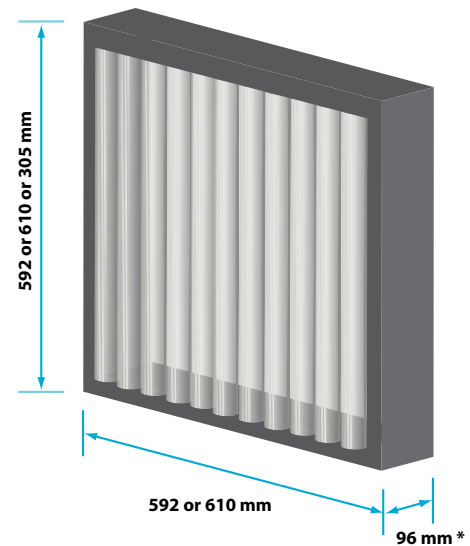
** Gasket Options: none, various materials, on up-stream side

Disposal

Macrogen GT Duo filters can be disposed of in the same way as normal industrial refuse. Macrogen GT Duo is fully incinerable and contains no metal parts.



Dimensions



* Add 5 mm for compressed gasket. Mounting on both sides possible.

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