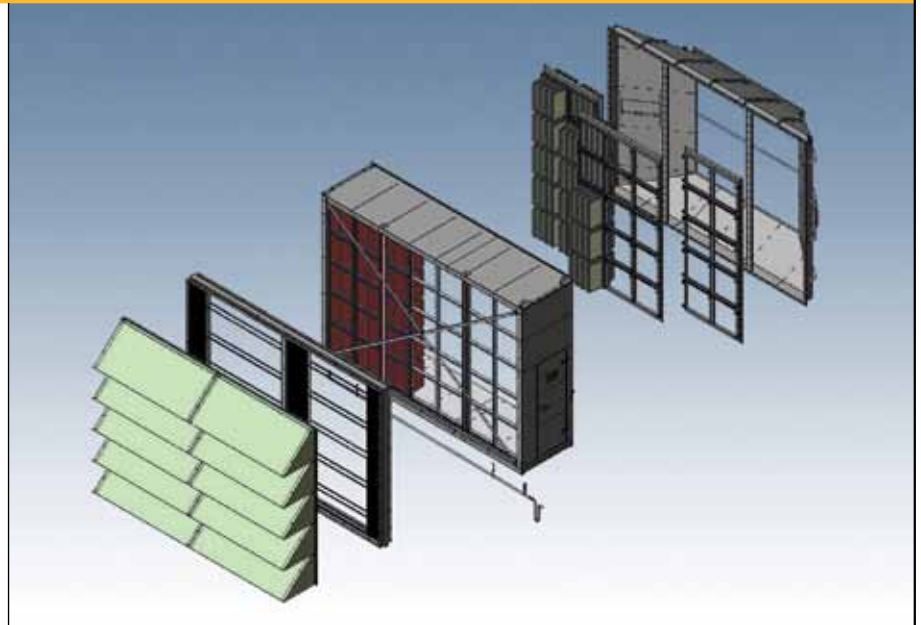


Worldwide Turbomachinery Support

## Extreme Duty/ High Efficiency Offshore Air Inlet Filtration Upgrade

*Solar's extreme duty/high efficiency offshore air inlet filtration system upgrade protects Solar gas turbines operating under severe conditions in offshore installations.*

Primary Goals	
●	Operational Efficiency
●	Machinery Efficiency
●	Life Extension
●	Optimize Productivity



Solar® gas turbines operating in extreme duty environments require a more robust level of protection against high concentrations of airborne contaminants.

Offshore installations more than 100 feet above the ocean surface (oil platforms, etc.) must often contend with driving rain, snow, sea mist, airborne salt particulates, freezing fog, high and low humidity, blowing sand, and high and low ambient temperatures.

Such airborne contaminants can vary daily or seasonally and are subject to climatic conditions such as wind direction and speed, temperature, relative humidity, and precipitation.

Maintaining its industry leadership position, Solar is continually researching and improving its extreme duty offshore air inlet filtration system, developing new products that enable its family of gas turbine engines to operate more efficiently under the most demanding conditions while minimizing downtime and maximizing engine life.

### Benefits

- Reduced turbine blade fouling and erosion through high removal efficiency of particles 0.2 microns and larger.
- Lower overall operating costs by protecting gas turbine performance and maximizing unit life cycle.
- Greater operational uptime through reduced water wash frequency.
- Increased turbine operating efficiency by upgrading from a high velocity filter system.
- Increased turbine operating efficiency by upgrading from the high velocity filter systems.
- Cost-savings through a significant reduction in downtime resulting from reduced final filter changeout frequency.

## Selectable Filter Elements to Best Meet a Specific Operating Environment

Regardless of the operating environment, gas turbines ingest large quantities of air. Contaminants in this air will enter the gas turbine airflow unless they are filtered out. This makes the suitability of a filter for its application a critical factor in maintaining gas turbine performance and reliability while carefully managing operating and maintenance costs.

To meet the needs of the broadest range of operating environments, Solar offers several filter element options.

## Exceptional Protection through 3-Stage or 4-Stage Filtration System

Solar's extreme duty offshore air inlet filtration system consists of either three or four stages mounted in series.

### Stage 1 – Marine Vane Separator

The first-stage Marine Vane Separator protects the system against the ingress of driving rain, and will effectively separate water even under conditions of heavy tropical rain.

### Stage 2 – F7 Pre-Filter Bag

The second-stage F7 Pre-Filter Bags are manufactured from synthetic material designed to retain the large particles of dust and hydrocarbons. The pre-filter uses a separate holding frame. Filters are accessed via a side door.

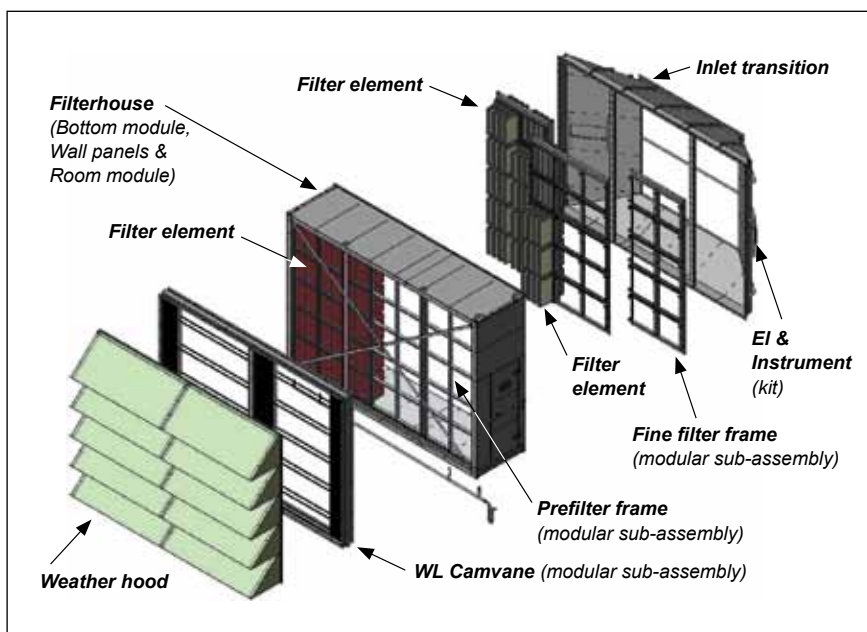
### Stage 3 – F9 or E10 High Efficiency Filter Element

The third-stage of the system consists of F9 (Intermediate/Final) or E10 (Final) High Efficiency Filter Elements that are designed to collect finer particles of dust and other particulates that penetrate the Pre-Filter Bag, thereby reducing to acceptable limits, the salt-in-air concentration entering the gas turbine.

## EN 779 Performance Data

Filter Options/ Class <sup>1</sup>	Pre-Filter F7	Intermediate/Final F9 / E10	Final E10
Test Air Flow Rate (m <sup>3</sup> /s / cfm)	1.18/2500	1.18/2500	1.18/2500
Initial Resistance (Pa/in wg)	124/0.5	170/0.68	235/0.94
Duct Holding Capacity (g/lb) <sup>2</sup>	323/0.71	314/0.69	260/0.57

<sup>1</sup>CEN/EN 779 Class <sup>2</sup> Duct Holding Capacity based on ASHRAE dust @ 450Pa



### Stage 4 – E10 High Efficiency Filter Element (optional)

The fourth-stage (optional) is a E10 High Efficiency Filter Element designed to collect very fine particles of dust that penetrate the third-stage filter element, reducing the salt-in-air concentration entering the turbine to acceptable limits.

### Weatherhood

A weatherhood is used to provide extra protection against water ingress.

### Optional Insect Screen

An extended area insect screen also is available to prevent insects entering the filter system.

## Additional Information

For more information about Solar's extreme duty offshore air inlet filtration system, contact Solar's Field Office nearest you or visit us at [www.solarturbines.com](http://www.solarturbines.com).