

# AMINE FILTRATION PACKAGES

Technical application report for Amine solution purification.



BEA Technologies designs and manufactures fully automated AMINE filtration packages for the removal of solid contaminants, cook fines, acid condensates from the amine solution circulating in gas sweetening plants. The filtration of amine solution serves to protect internal critical parts of re-boilers and injectors from corrosion damages.

The filter packages are manufactured in carbon steel or S.S.316L according to specifications and provided of actuated valves for an easy operation of package which is controlled by PLC. The system is using gas assisted technology for the regeneration of the filter elements from retained contamination. The gas assisted technology is based on Nitrogen which is accumulated in a specific vessel. When the differential pressure across the package has reached the set point, then one Filter housing, is isolated from amine flow and the regeneration cycles starts. The filter housing is connected , through an actuated valve to the nitrogen vessel and the gas pressurize the liquid remained in the filter housing to have a reverse flow through the filter elements in few seconds. The reverse flow is so rapid that the contamination attached to the surface of filter elements is immediately detached and flows with liquid to the collecting lower tank. The regenerated filter housing is then put on stream to filter again the amine solution. The regeneration cycles continues with a second filter housing

The filter housings and packages are carefully tested and controlled before final release. The filter elements installed are designed for amine and acid solution filtration to achieve high retention capacity and efficiency to separate even micronic particles

The filter elements are made of metal S.S. 316 sintered fibers to be exceptionally robust and resistant to repeated regeneration cycles.

The production is made in our modern facility according to “Good manufacturing” guidelines to assure filter elements of prime quality.

#### **Features:**

- Increased filtration area for outstanding accumulation capacity of solid contaminants.
- High retention efficiency of micronic particles plugging re-boilers and heat exchangers.
- Fully automated operation controlled by PLC for easy management of the unit.
- Selected construction materials according to ASME. and E.E.C. directives.
- Filter elements of Metal sintered fibers with 1.0, 2.0, 3.0, 5.0 absolute retention ratings
- Filter elements reinforced to resist to high pressure in direct and reverse flow.

#### **Benefits:**

- Full purification of AMINE solution for a better protection of equipment from corrosion.
- Economic savings for reduction of fuel consumption due to lower regeneration temperature of amine solution in re-boilers

## **APPLICATIONS OF AMINE SOLUTION FILTRATION PACKAGES**

### **GAS SWEETENING UNITS**

For the regeneration of Amine solutions used to adsorb the sulphur from the NATURAL GAS.

### **REFINERIES – GAS RECOVERY PLANTS**

For the amine used to separate the sulphur and acid sub-products from the refinery gas.

### **TREATMENT OF OFF-GAS**

To recovery the amine solution used for the purification of gas exiting reactors and columns. .



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