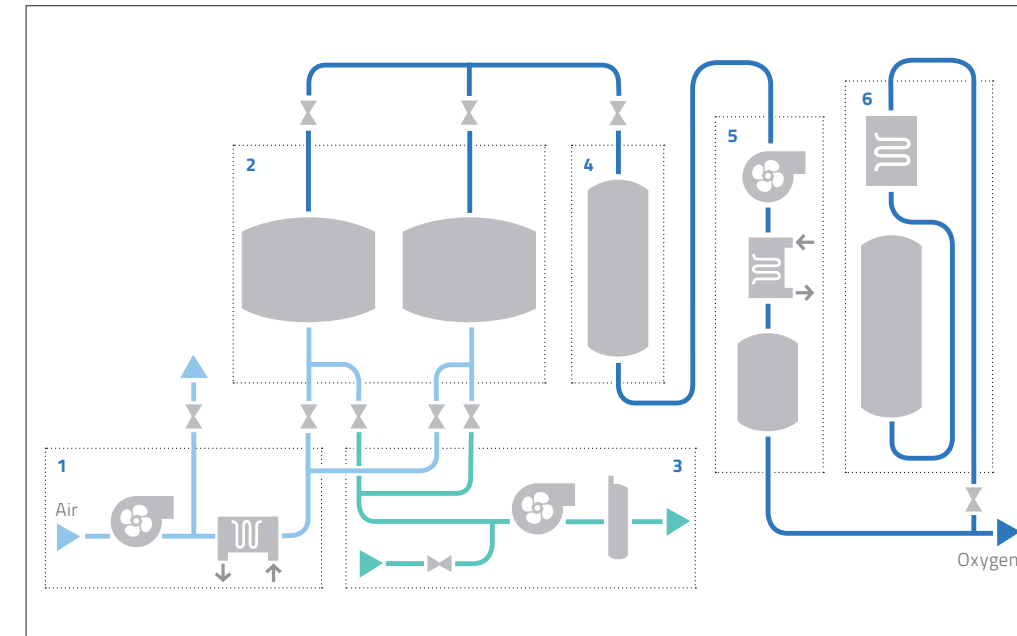


# OXYSWING

## The oxygen generator



1 Air compression unit 2 Air separation unit 3 Evacuation unit 4 Oxygen buffer vessel 5 Oxygen compression unit 6 Back-up system

### PLANT FEATURES

- Capacities from 300 to 5,000 Nm<sup>3</sup>/h
- Purities up to 94 vol.-%
- Product flexibility regarding flow and purity
- Design for long lifetime
- Completely pre-manufactured skids
- Automatic turn down
- High availability and reliability:** Many years of experience in plant design and manufacturing guarantee high reliability of all OXYSWING systems.

**Fast start-up:** All OXYSWING systems are "on-spec" within minutes.

**Full automation and remote control:** All OXYSWING systems are designed for unattended operation and automatic load adjustment.

**Independent and low-cost on-site production:**

- Production is not affected by road transportation or weather conditions
- Low power consumption
- No injection water
- Minimized maintenance and operating costs

**Sound abatement:** Professional sound abatement to meet highest requirements.

## The basic process

Mahler AGS' OXYSWING systems employ the basic principle of air separation at ambient temperatures using high performance zeolite, a material that adsorbs preferably nitrogen to leave a rich stream of oxygen. The adsorptive separation of air is effected in three main process steps.

### Purification

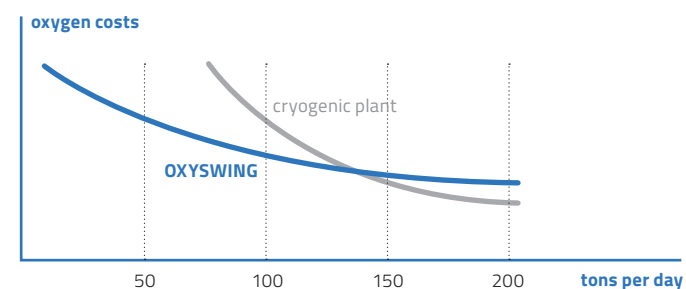
The ambient (inlet) air is filtered before being compressed moderately by a blower system.

### Adsorption

The pre-treated air passes into a vessel containing zeolites to remove any moisture and/or CO<sub>2</sub> and adsorbs the nitrogen while oxygen passes through the vessel outlet. Before the adsorption capability of the zeolite is exhausted the adsorption process is interrupted.

### Desorption

The saturated zeolite is regenerated (i. e. the adsorbed gases released) by means of pressure reduction below adsorption pressure. This is achieved by a dry running vacuum pump. The resulting off gas is vented to atmosphere. To maintain a continuous flow of oxygen supply a surge tank is installed.



## Applications

Users in wide range of industrial applications can cut the production costs by using the Mahler AGS OXYSWING systems:

### Glass and enamel industry

- Melting of glass in melting ends
- Melting of enamel in rotary drum type kilns and tank furnaces
- Heating of effluent grooves

### Steel industry

- Arc furnaces
- Cupola melting furnaces
- Holding furnaces
- Forge furnaces

### Pulp and paper industry

- Oxygen delignification
- Black liquor oxidation
- Feed gas for the ozone production at the ozone bleaching stage

### Chemical industry

- Oxidation processes such as production of H<sub>2</sub>O<sub>2</sub>

### Potable water supply

- Feedgas for ozone production for potable water treatment

### Public and private waste water treatment and waste disposal industries

- Aerobic waste water treatment
- Thermal refuse incineration

### Biotechnology

- Fermentation processes

## Highlights

Mahler AGS supplies plants with the top overall performance and cost ratio:

- Low electrical energy consumption
  - Highest availability
  - No injection water
- Plants are in operation for more than 15 years with original equipment.