

Treatment Plants Compressed Gas



COES

 lubisystem



COES LUBISYSTEM

COES bases its activity on over 40 years tradition in the production of twin towers plants for compressed gas.

The development of new solutions and the acquired experience assure the design and the manufacturing of products, whose technology is always in the vanguard.

The technical competence and the productive flexibility allow the realisation of special units, to optimise performances and reduce costs.

The Coes product range includes:

- Compact low capacity heatless dryers
HMC Series, HM Series
- High capacity heatless dryers
HL Series
- Heat regenerated dryers
DRE Series, SRE series
- Heat of compression dryers
ECM Series
- **PSA nitrogen generators**
- **Purification plants**

Twin towers adsorption plants are used in different applications, but the main characteristics are common.

One tower works at operating pressure and the contained active material purifies the process gas to obtain design values, with a selective adsorption of unwanted pollutants.

Contemporarily, the other tower is regenerated and the exhaust active material is brought back to its original status, stripping away the retained pollutants.

Periodically, a change over between the two towers occurs, to let the plant work without interruption.

The regeneration of exhaust active material can be achieved with different modalities, which characterize every kind of plant:

- flowing the active material with a part of purified gas, expanded at atmospheric pressure
- heating the active material at atmospheric or operating pressure and flowing it with regeneration gas
- using the pressure swing from process to atmosphere

The main parameter in the design of an adsorption plant is the choice of the active material, which must be able to guarantee the process design parameters, but also other components are very important, to let the system work correctly, safely, for a long time, with low maintenance:

- the towers must be designed to assure the correct gas flow in the active material, avoiding clogging, lifting or high pressure drop
- the changeover valves must be reliable, suitable for the heavy working conditions and the high numbers cycles typical of twin towers plants
- the installed instruments and the control logic must assure the complete monitoring of the system, to assure a safe operation and a prompt signal of needed actions for setting, maintenance or malfunction.



AIR AND GAS DRYERS

Twin tower adsorption dryers are used on compressed air or on technical gases to reduce the water dew point to values below 0°C: typically -20°C, -40°C or -70°C.

When the dryer is installed immediately downstream the compressor, it is possible to achieve the regeneration using the heat generated during the compression of the gas, to reduce the operating cost nearly to zero.



NITROGEN GENERATORS



A nitrogen generator plant consists in a train with different components, to obtain nitrogen from compressed air.

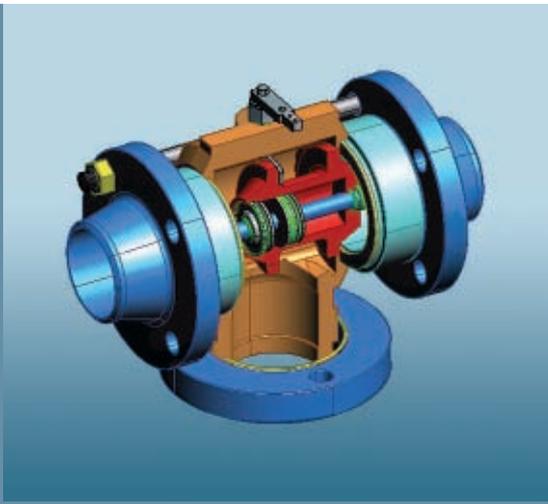
A heatless air dryer, filled with desiccant material, reduces water content to a very low dew point.

A PSA generator, filled with carbon molecular sieve, extracts oxygen from air to get the nitrogen with required purity.



PURIFICATION PLANTS

Completed units for technical gases (oxygen, hydrogen, carbon dioxide, helium) purification



The process valves are the most stressed component in twin towers plants, because of high frequency of the changeovers. Coes designs and manufactures a special series of 3-way valves, with very low pressure drop, internal actuator and frontal sealing on soft seat, which assure a high reliability and a low maintenance cost for the whole operating life of the unit.

VSS SHUTTLE VALVES

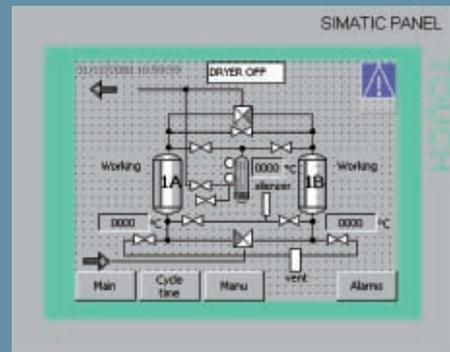
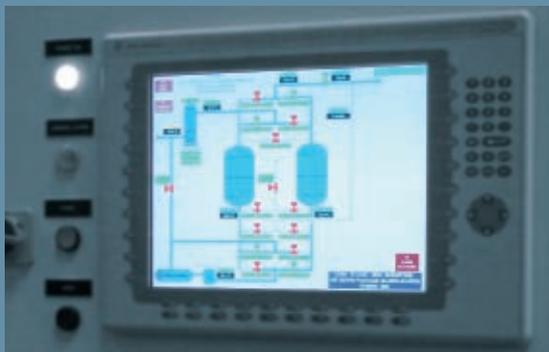


EJECTOR

A typical application on heat regenerated dryers requires the suction of atmospheric air for the regeneration phase. Coes can provide a solution with an ejector, especially designed for this application, which is completely static and doesn't require any maintenance.

FILTERS

Common accessories of twin tower plants are filters, in simple, duplex or multiple execution. Steam separators or coalescing oil removing filters, complete with liquid traps, are installed upstream the unit, while dust removing filters are installed downstream.



CONTROL PANELS

The local control panels can be customized to achieve the required human-machine interface.



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