

### COOLER

#### Regeneration Cooler

Regeneration cooler based on shell and tube heat exchanger. It is built of round tubes mounted in large cylindrical shells with the tube axis parallel to that of the shell. Also it is widely used as gas cooler, condenser and chemical process.

#### Regeneration Cooler Specifications

- 250 bar (3,626 psi)
- Max. 1,000 kW ( 3,414,425 BTU/hr)



### HEATER

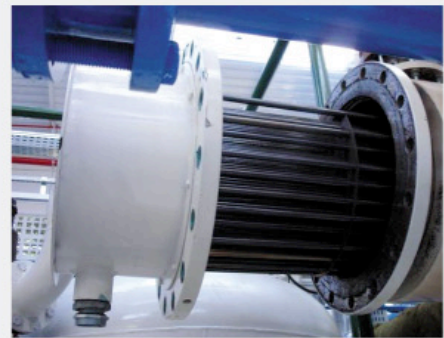
#### Heater

Air Heater converts electrical energy into heat. The heating element consist of electrical resister and work on the principle of Joule heating.

It's shape and basic operation is similar to that of most shell and tube heat exchanger.

#### Heater Specifications

- 250 bar (3,626 psi)
- Max. 1,000 kW ( 3,414,425 BTU/hr)



### FILTER / SEPARATOR

#### Filter

##### - Pre Filter

It filters out moisture, particles and substances from after cooler and/ or separator to prevent contamination of desiccant.

##### - After Filter

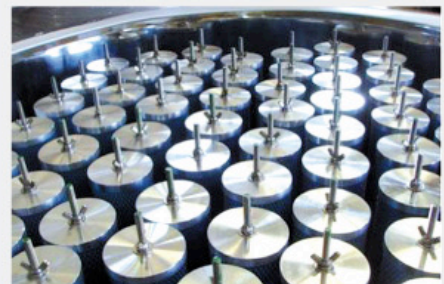
It filters out particles from desiccant and substances in the product line

#### Separator

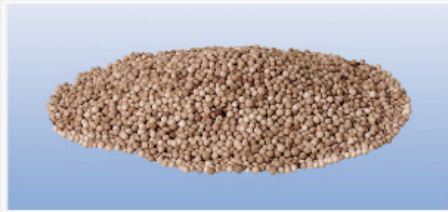
It separates condensed water in 100% by generating the centrifugal force in the use of aerodynamic vane in Min. 5 steps and enlarging the inner volume.

#### Pre - Filter & After - Filter Specifications

- 100 to 45,000 SCMh (59 to 26,486 SCFM)
- Maximum number of Particles per  $m^3$   
[100 to 1,000,000 (0.1 ~ 0.5 micron)]
- Total oil : 0.01 to 0.1  $mg/m^3$
- ISO Compressed air purity class : 1 ~ 2



**Silica-Gel**



- In case of low inlet temperature and high degree of relative humidity increase adsorption capacity.
- Lower energy usage for regeneration
- Regeneration temperature range : 100 ~ 200°C
- Dew point : -70°C

ITEM	PROPERTIES
Component	SiO <sub>2</sub> (97%) : Al <sub>2</sub> O <sub>3</sub> (3%)
Color/Shape	Yellow / Bead
Pore Diameter	25 Å
Total Pore Volume	400~500 m <sup>3</sup> /kg
Size	Ø 3.5 ~ 4.5
Crush Strength	13 kgs
Bulk Density	700 kg/m <sup>3</sup>
Surface Area	650 m <sup>2</sup> /g
Critical Temp.	250 °C

**Activated Alumina**



- The material have good pore distribution and high surface area
- That have a good compressive strength, when water contact
- Regeneration temperature range : 150 ~ 250°C
- Dew point : -70°C

ITEM	PROPERTIES
Component	Al <sub>2</sub> O <sub>3</sub> (93.1%) SiO <sub>2</sub> (0.02%)
Color/Shape	White / Bead
Pore Diameter	20 Å
Total Pore Volume	400~500 m <sup>3</sup> /kg
Size	Ø 4.8
Crush Strength	25 kgs
Bulk Density	770 kg/m <sup>3</sup>
Surface Area	355 m <sup>2</sup> /g
Critical Temp.	650 °C

**Molecular Sieve**



- The material of MS have high adsorption capacity without reference to relative humidity
- The adsorption capacity lightly decrease when the inlet temperature is high
- Regeneration temperature range : 200 ~ 300°C
- Dew point : -80°C

ITEM	PROPERTIES
Component	Na <sub>12</sub> [(AlO <sub>2</sub> ) <sub>12</sub> (SiO <sub>2</sub> ) <sub>12</sub> ](27~30)H <sub>2</sub> O
Color/Shape	Yellow / Bead
Pore Diameter	4 ~ 10 Å
Total Pore Volume	m <sup>3</sup> /kg
Size	Ø 3.6
Crush Strength	9 kgs
Bulk Density	670 ~ 720 kg/m <sup>3</sup>
Surface Area	480 m <sup>2</sup> /g
Critical Temp.	600 °C

**Adsorption Model No. List**

APPLICATION	AIR DRYER		GAS & LIQUID DRYER		N <sub>2</sub> PSA GENERATOR
	AIR DRYER	HMD			
Model No.	HNA-200 HNA-200	HNS-205	HNM-03Z HNM-03C HNM-03U	HNM-04Z HNM-04C HNM-04U	HNG-15H HNG-220