FLASH DRYERS

PRINCIPLE

Flash drying works on the principle of pneumatic transport using hot air. Wet product is introduced into a high velocity air stream through a special Venturi feeder.

Highly turbulent airflow generates an intense gas-solid thermal exchange and disaggregates the product. This allows a rapid evaporation in a few seconds residence time.

Rapid drying process avoids overheating of product allowing the use of high temperature drying gases. At dryer outlet, dried product is recovered by means of a gas-solid separator (cyclone, bag filter, etc.). Partial recycling of dried product in wet material can be considered in case of sticky product.

This process is particularly suitable for fine products or filter cakes.

ADVANTAGES OF THIS TECHNOLOGY

- Low maintenance
- Simple process
- High thermal efficiency
- Highly reactive process control
- Short start-up and shut-down sequences
- Reduced foot-print layout

MAIN APPLICATIONS

Fine powders, filter cakes, fibers, sawdust, lightweight products for all industries (chemical, food, mineral, etc.).

MAIN PROCESSES

Pre-drying, dehydration, drying.

PILOT TEST LABORATORY

For determination of flash dryers parameters and possibility to perform semi industrial tests.

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we dry harder

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comessa can propose following alternatives

RAPID DRYER

Dedicated to sticky/pasty products or filter cakes, this dryer is fitted with two counter-rotating rotors at its bottom where hot gases are injected through a Venturi nozzle.

Disaggregation of product increases gas-solid mixing and thus thermal exchange. Until fully disaggregated, product remains at the bottom while fine dried particles are carried over from the dryer and pneumatically transported to the air-product separator.

Product residence time is slightly longer than in a standard flash dryer with a more compact equipment.

CYCLONIC DRYER

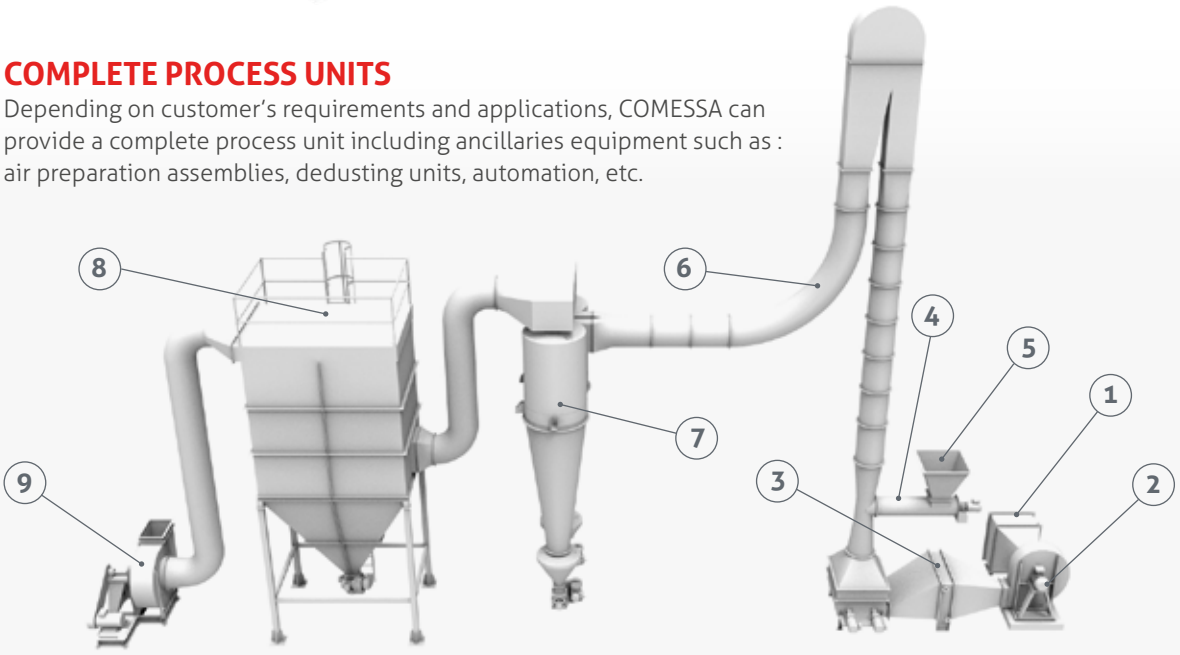
Cyclonic dryer is composed of a cylindrical body with a set of internal conical baffles. Wet product is introduced into the air stream through a Venturi feeder. Gas-solid mixture is tangentially fed at the bottom of the dryer.

Design and numbers of internal baffles are adapted for each application, providing a turbulent swirling flow, thereby highly efficient thermal exchange.

Due to internals, product residence time is longer for bigger particles allowing a homogeneous drying. Dried product is leaving the dryer body at the top and is pneumatically conveyed to the separator. This alternative to standard flash dryer is much more compact with limited foot print.

COMPLETE PROCESS UNITS

Depending on customer's requirements and applications, COMESSA can provide a complete process unit including ancillaries equipment such as : air preparation assemblies, dedusting units, automation, etc.



1 - Air filter
2 - Blower
3 - Air heater
4 - Feeding screw
5 - Hopper
6 - Flash dryer
7 - Cyclone(s)
8 - Bag filter
9 - Exhauster

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