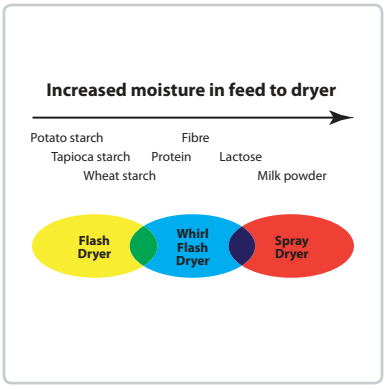
LARSSON SWEDEN™

HID™ Technology
Gentle Drying - High Efficiency

Gain competitive advantages in spray drying with an HID™ Air Distributor (High Intensity Drying technology).

- Up to 20% higher capacity compared to a conventional air distributor.
- The multi-stage HID™ Air Distributor is more efficient - energy consumption can be reduced with up to 10 %.
- The different inlet air temperatures and air flow velocities in the HID™ Air Distributor can be controlled and optimised during operation.
- More gentle drying of the powder particles - suitable for sensitive products.
- Can be retrofitted into existing spray dryers.



In spray drying, LARSSON can supply the whole product range from a single HID™ Air Distributor to complete high efficient turnkey spray drying plants.

The History of LARSSON™ Spray Dryers

In 2012 LARSSON acquired the technology of Sahene Engineering ApS from Denmark.
Sahene was founded in 2005 by Mr. Henning Rasmussen who has been working with spray drying since 1976 and is a leading specialist in drying technologies.

By the acquisition the LARSSON™ product range was complemented with:

- Whirl Flash™ dryers
- Spray dryers
- HID™ Air Distributers for spray dryers
- Indirect Air Heaters

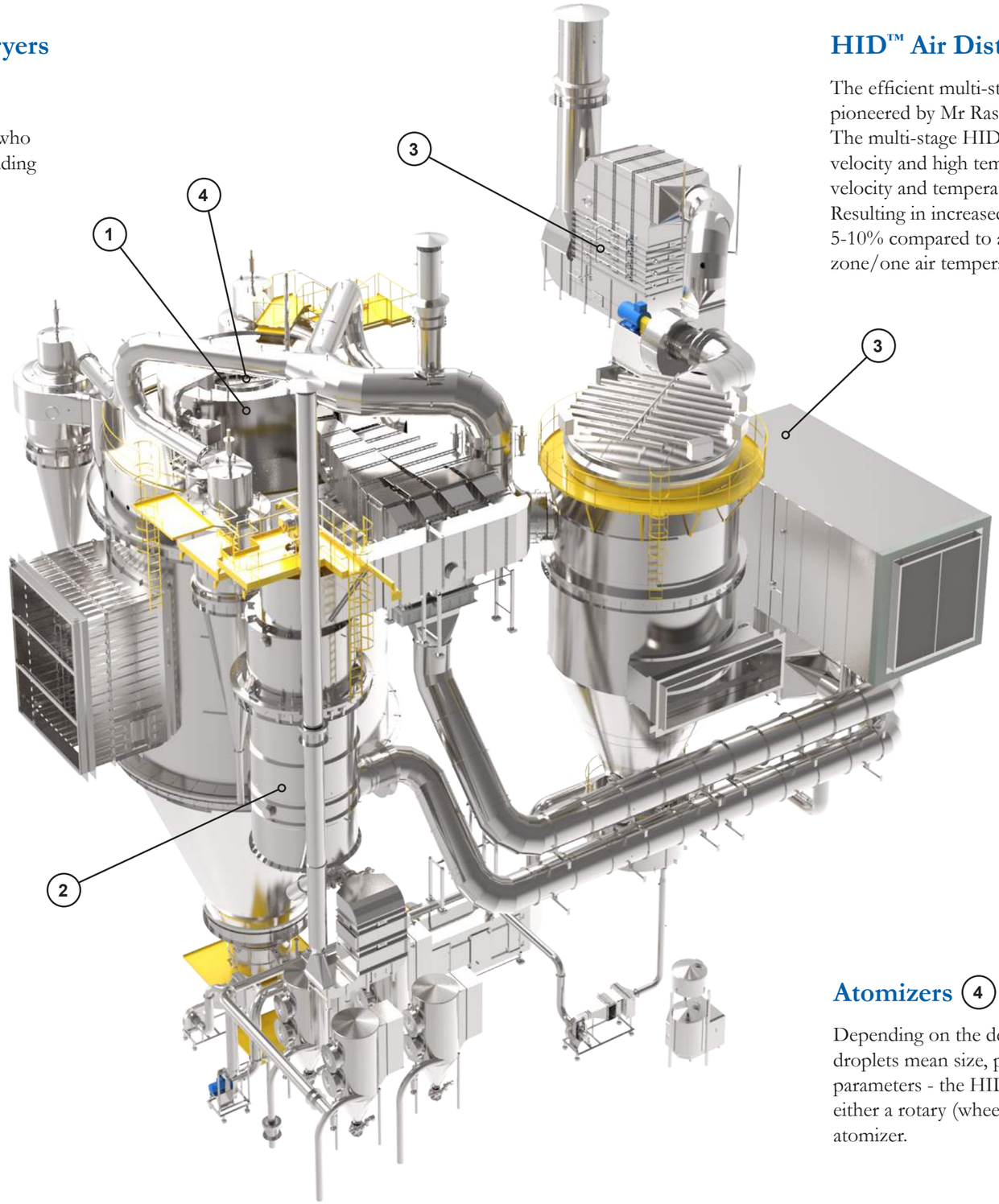
Since 2012 LARSSON has made numerous and continuous design improvements and product development work on the products.
In 2016 LARSSON™ signed a partnership agreement with Sanco Processing BV to further strengthen our position in spray drying. Sanco is a Dutch engineering company specialized in spray drying technology.

Spray Dryers

Together with Sanco, LARSSON offers high efficient turnkey ready spray drying solutions from process design and engineering to delivery, installation and commissioning of the spray drying plant.

Key Components

LARSSON and Sanco – together at the forefront of spray drying technology.
Key components are designed and developed in-house by LARSSON and Sanco.
The LARSSON HID™ Air Distributors, Air Mixers, Air Heaters and energy recovery systems is added to Sancos well proven spray drying systems of internal/external fluid beds, cyclones, CIP-able bag filters, explosion protection knowledge, electrical equipment and process automation.



HID™ Air Distributor 1

The efficient multi-stage HID™ Air Distributor for spray dryers was pioneered by Mr Rasmussen in 2005.
The multi-stage HID™ Air Distributor operates with high air flow velocity and high temperature in the primary drying zone and a lower velocity and temperature in the secondary drying zone.
Resulting in increased capacity and reduced energy consumption by 5-10% compared to a conventional air distributor with one drying zone/one air temperature.

Air Heater 2

The LARSSON™ Air Heater focus on energy saving and is designed for food, chemical and pharmaceutical industries.
The LARSSON™ Air Heater is completely made of stainless steel alloys and without refractory lining, resulting in short response time in thermal cycling. The high efficiency of the Air Heater results in low a pressure drop and energy savings.

Heat Recovery System 3

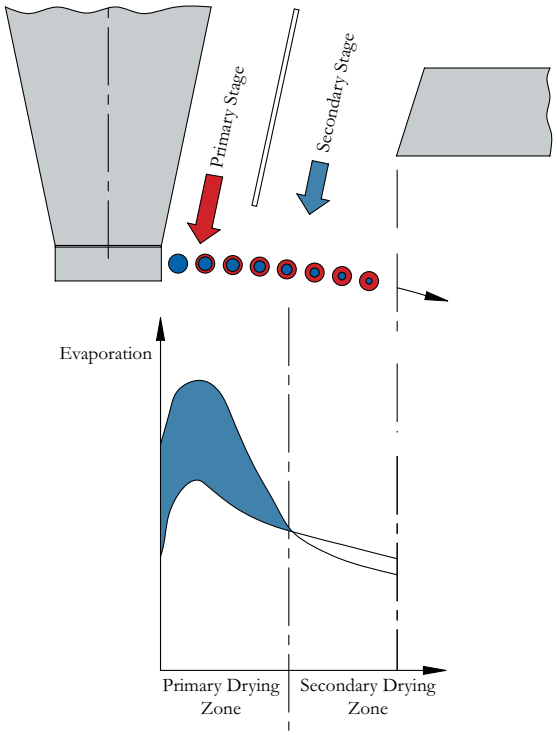
The LARSSON™ Heat Recovery System is designed to recover waste energy from various stages in the process.
Included in the design is the use and recovery of latent energy formed at the transition between gas and liquid state on both flue gas and exhaust air in the spray dryer.
This design results in a highly efficient heat recovery system.

Atomizers 4

Depending on the design of the drying chamber, droplets mean size, product type and many other process parameters - the HID™ Air Distributor is equipped with either a rotary (wheel) atomizer or a nozzle (pressure) atomizer.

The principle of HID™ Spray Drying.

The picture shows the particles moving from the atomizer trough the primary and the secondary drying zone (stage) in the spray dryer.
After primary evaporation the wet droplet forms a particle with a thin shell around the wet core. The primary dried particle is very heat sensitive, crisp and fragile. Gentle drying and greater product quality is achieved by reducing the temperature of the drying air in the secondary drying zone.
The HID™ Air Distributor accelerates the primary drying while the particles are wet and then moves with high speed the fragile particles in to the gentler secondary drying zone. At the same time the capacity of the drying process is increased compared to conventional spray drying systems.



Suitable products for spray drying

- Proteins
- Cereals
- Yeast
- Enzymes
- Flavourings
- Food additives
- Gelatine
- Herb extracts
- Pectin

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