

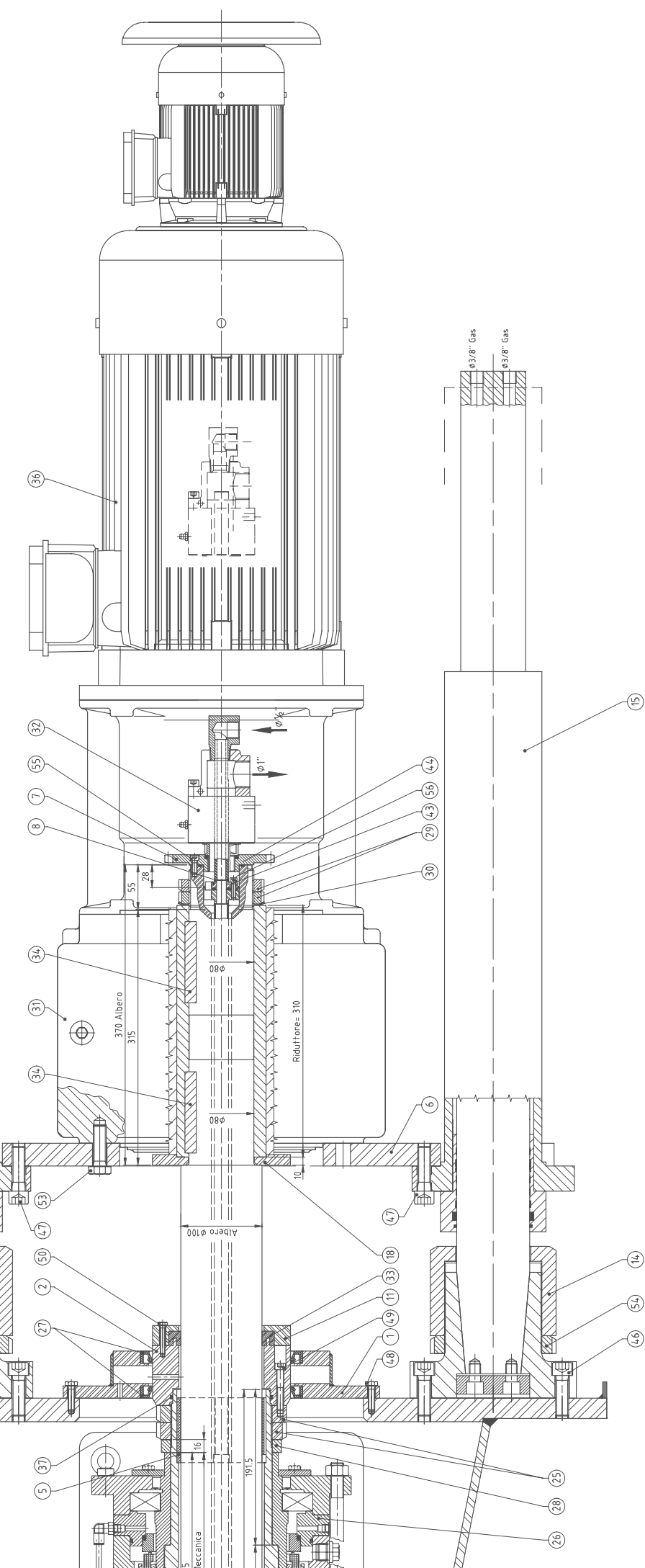
Filtration and drying solutions



Filtration and drying solutions

The complete separation systems
for filtration and drying.

Our machines are designed
to facilitate the discharge of dried or
wet solids, slurries and even liquids.





DNFD: filtration with drying

Drying, filtration, and washing are production steps that are normally handled by multiple machines. The DNFD Delta Nutsche Filter Dryer surpasses this traditional concept by combining operations and offering a more consolidated and flexible approach to the chemical process.

FLEXIBILITY: the nutsche filter dryer

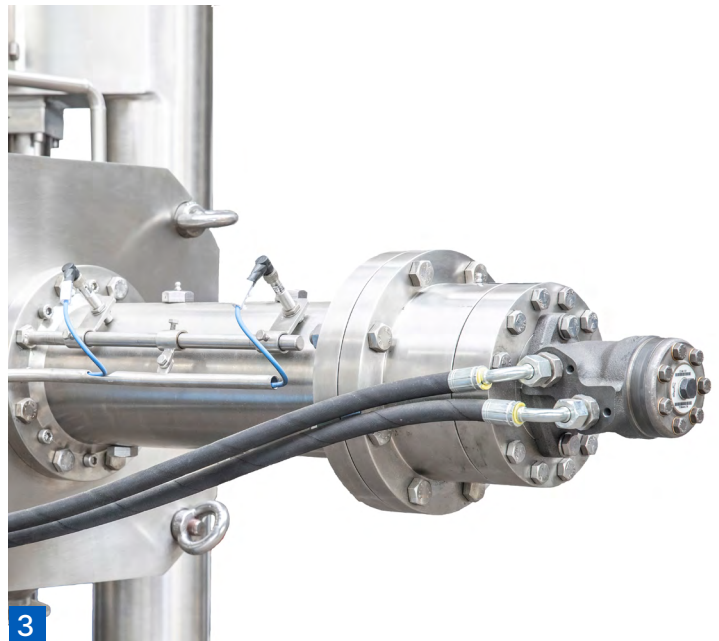
- The DNFD Delta Nutsche Filter Dryer can handle even the most difficult liquid separation. The particular shape of its impeller provides gentle cake squeezing, and the filtering sheet is designed for backpressure.



- The DNFD Delta Nutsche Filter Dryer is equipped with advanced devices able to treat and reslurry the same crystal multiple times.
- Vacuum drying. Process efficiency is strictly correlated with drying time. The DNFD Delta Nutsche Filter Dryer maximizes contact areas

and improves the vacuum level, in order to optimize the drying phase.

- The DNFD Delta Nutsche Filter Dryer offers a wide range of discharging systems, depending on product features and on customer needs.



More flexibility means more applications

- API PRODUCTION
- FINE CHEMICALS
- PLASTICS
- DIETARY SUPPLEMENTS/
FRAGRANCES
- CHEMICAL INTERMEDIATES
- PRECIOUS METALS/METALS
RECYCLING
- CATALYSTS



1 Blades S-shape

2 Delta manual discharge vale

3 Delta Automatic Discharge valve

4 Flat bottom Filtering sheet

5 DNFD with Glove box

DNFD AT A GLANCE: main components

- The agitator is fundamental for each operation. Located on the top head, it can rotate in both directions and can be lifted or lowered, according to process needs.

During filtration, the agitator squeezes the cake.

During product washing, the agitator mixes and reslurries the product.

During discharge, the agitator pushes the crystals to the discharge nozzle.

- The DNFD filtering sheet, installed on the flat bottom head, is designed for the hardest solid / liquid separation conditions. Depending on the process, it can be equipped with a multi-layer metal filtering media or a textile filtering sheet.
- The Delta DNFD plug discharge valve, positioned on the body side at the filtering sheet level. The design features are derived from extensive experience and process knowledge. Manually or automatically driven, it can be adapted to both main packaging and high-containment devices.

5



Customized approach in each bolt

As per the Delta Costruzioni Meccaniche philosophy, each machine can be completely customized to the customer's needs. The following list of DNFD Delta Nutsche Filter Dryer options is only a fraction of the solutions that Delta has developed over the years:

- CIP system – for washing between batches, which uses rotating spray balls and sprayers on critical areas of the discharge valve
- SIP system – steams inside the machine body and checks cold area temperatures for sterilizing grade control
- Sanitary insulation – which is mandatory for applications where cleanliness is important
- Sampling device – for retrieving a product sample and checking the production status
- Dust filter on the top head – for product capture while avoiding vacuum pump contamination
- High containment devices – for high-potency products, such as a glove box at the discharge nozzle or at the sampling port
- Flat bottom lowering and bayonet closure system – for easy maintenance management
- External vacuum system coupled with an integrated heating system – for global production line management.

Delta manufactures technologies for liquid-solid separation and vacuum drying to maximize its customers' production performances in terms of efficiency and effectiveness.

Quality, customization, internal production, and attention to customers' needs are the key factors that characterize Delta's activities and lead our innovation process.