

VACUUM SHOVEL DRYER DRUVATHERM® Type VT (Lab machine)



- Reliable scale-up
- Production development under industrial conditions
- "All-In-One Process" (mixing, granulating, drying, cooling)
- Intensive mixing prevents temperature and moisture gradients in the product
- Short drying times due to intensive product movement and effective introduction of heat
- Gentle thermal treatment of the product at low temperatures due to high vacuum
- Economical solvent recuperation



Vacuum Shovel Dryer DRUVATHERM® type VT 20 L with open housing

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Lödige provides an innovative design of the DRUVATHERM® Laboratory Dryer in terms of ergonomics, machine technology and process options. The system offers reliable scale-up to production machines with respect to product process development and is also suitable for small scale production. The Laboratory Dryer is suitable for drying of suspensions, pastes, bulk products and powders.

Range of Applications:

- Pharmaceutical products and their intermediates
- Cosmetics
- Chemicals / Fine chemicals
- Different types of sludge
- Molding and fibre compounds
- Dyestuffs
- Fibre polymers
- Agrochemicals

Mode of Operation

The DRUVATHERM® Laboratory Shovel Dryer is a horizontal Vacuum Dryer for batch operation with frequency controlled main shaft. The shaft equipped with shovels rotates in a cylindrical drum fitted with heating jacket, generating a three dimensional movement of the product.

Shortest drying times are achieved by steady contact of the product with the heated wall (effective heat transfer) due to the mechanical fluid bed generated by the shovel rotation.

The drum is optionally equipped with a high-speed chopper unit for dispersion of any lumps during phase transition (lumpy / grainy / powdery) releasing additional product surface. This increases considerably the drying capacity and prevents the development of temperature and moisture gradients in the product. Fine particles are retained in the filters dedicated to clean the exhaust vapours. The filter is cleaned pneumatically and the particles drop back into the dryer and take part in the process again.



Standard Equipment

- Outer drum surfaces glass bead blasted
- Product contact surfaces either ground to $RA < 0.8 \mu m$ or $RA < 2.0 \mu m$
- Sliding machine housing for easy access to technical parts
- Integrated PLC control system
- Attached vapour filter

Optional Equipment

- Product contact parts in special materials
- GMP standards / Chemical design
- Mixing drums 5, 10, 20 and 50 l
- Machine designed for inside pressure (DRUVATHERM® type DVT)