

# Pharmadry<sup>®</sup> Vacuum Paddle Dryer



*Pharmadry<sup>®</sup> paddle dryer, left as vacuum dryer, right in pressure proof version.*



- In compliance with **cGMP** and **FDA** guidelines, also in **aseptic/steam sterilizable** versions:
  - Entirely welded agitator design, without any bolts, without pockets and with all edges rounded for good cleanability.
  - Agitator supported at the rear only, thus no couplings etc. in the product area.
  - Minimal build depth, thus very good accessibility for inspection and cleaning purposes.
  - Excellent cleanability using CIP systems, simple validation.
  - Available with separating wall between process and mechanical areas.
  - Double mechanical seal, externally interchangeable, dry running contacting or non contacting lift-off type seals as well as liquid lubricated seals).
- Calculation, design and manufacture to **Pressure Equipment Directive 97/23/EC and/or ASME** with **U-Stamp**.
- Good emptying characteristics due to narrow agitator to wall clearances, minimal vessel depth and a special agitator blade design.
- Large heating area resulting in an outstanding heat transfer rate by heating all product wetted areas such as the vessel walls, the front door as well as the agitator shaft, arms and blades.
- Slowly rotating agitator, to minimize shear forces for gentle treatment of the product, and to prevent balling or lump formation.
- Hinged front door, permitting an unobstructed view of and access to the entire vessel interior with the door opened.

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## Applications for the Pharmadry<sup>®</sup> vacuum paddle dryers

The **Pharmadry**<sup>®</sup> vacuum paddle dryer with short drying times is well suited for the drying of freely flowing, sensitive pharmaceutical ingredients and fine chemicals. Designed to meet stringent **cGMP** and **FDA** guidelines.

Agitator supported at the rear, with externally exchangeable mechanical seal. Designed for frequent product changes. Excellent cleanability using CIP Systems, simple validation.

Good product discharge characteristics with negligible product residues, due to narrow agitator to wall clearances, minimal vessel depth and a special agitator blade design.

## Typical design parameters for Pharmadry<sup>®</sup> vacuum paddle dryers

Product volume:	50 – 40.000 liters
Operating temperature:	–10 to 151°C (15 to 300°F) or per requirements
Operating pressure:	–1 to +0.45 bar (g) (FV to 6.5 psig), –1 to +6 bar (g) (FV to 90 psig) in pressure proof version or per requirements
Product wetted materials:	Stainless steels, Nickel based alloys such as Hastelloy C 22 or Alloy 59, Titanium, etc., Sealing materials: PTFE gaskets, O-Rings in FFKM or FEP encapsulated
Area classification:	EC type examination certificate 03ATEX0245X per the 94/9/EC directive, or with electrical components UL approved for operation in a Class I, Division 1 or 2, Groups C&D environment
Heated areas:	All product wetted components, including agitator shaft, arms and blades
Accessories:	Dust filter with automatic back cleaning, sampling valve, CIP system, sight glass with vessel light, vacuum system with condenser, heating and cooling unit etc.
Controls:	Control cabinet with PLC, HMI with touch screen, MCC, interface for DCS

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