

# Conical Dryer Blender (CDB) Systems

## Data Sheet DS18-100-1



### Introduction

With over 500 glass-lined and alloy conical dryer blenders (CDBs) in operation throughout the world, you know Pfaudler is a name you can trust for your corrosive or ultra-pure drying application. However, did you also know that Pfaudler's Engineered Systems Group has been building skid-mounted process systems for the chemical and pharmaceutical industries for over 45 years? Combining Pfaudler's knowledge in manufacturing glass-lined and alloy equipment with its expertise in heat transfer, fluid flow, process control and materials engineering, the Engineered Systems Group is uniquely qualified to provide you with a complete conical dryer blender system customized to meet your process requirements.

Whether your drying needs are well defined or you require assistance in the preliminary design phase, the Engineered Systems Group is ready to develop a custom materials drying process to fit your needs. If critical data is needed, one of our 2.6 cu.ft. glass-lined CDBs is available for test work either at our Test Facility, or it can be shipped to your plant for longer trials.

### Dryer System Design

To complement a Pfaudler CDB, a typical drying system would include a skid-mounted vacuum system and a jacket heating/

cooling medium circulation system. The vacuum system would consist of a vacuum pump, condenser and possibly a distillate pump to automatically transfer evaporated solvents. A tempered water/steam circulation system can usually be designed as the jacket heating medium for the temperature range of the CDB. Typically all field instruments are wired to a local junction box for easy pick-up to the main control room.

See reverse side for a typical CDB system flow sheet.

### Process Control

Engineered Systems has the resources to provide a PLC-based control system with operator interface touch-view screen (program software and supply hardware) to control and monitor batch drying operations as well as document batch operating conditions. Depending on the solvent being removed in the dryer, safety interlocks can also be integrated into the control system to ensure operation is well within safety constraints for non-polar or low auto-ignition temperature solvents.

### System Options

- Single fluid heating/cooling system for  $\pm 1^\circ\text{C}$  temperature control
- Vacuum system/condenser
- Nitrogen blanketing system
- PLC control system
- Distillate recovery pump

### CDB System Design Capabilities

- CDB working capacities (cu. ft.): 2.6, 21, 70, 165
- Heating to  $232^\circ\text{C}$  with thermal fluids
- Cooling to  $-20^\circ\text{C}$
- Vacuum levels to 1mmHg ABS

### Typical CDB System Applications

- Corrosive drying operations
- Ultra-pure materials drying
- Wet cakes from centrifuges and filter presses
- Used for drying flakes, beads, crystalline, granular and powder products

### Benefits of Skid-Mounting CDB Auxiliary Equipment

- Compact design
- Single-source responsibility
- Ease of installation
- Lower installation costs
- Shorter project schedule
- Batch-to-batch repeatability
- Historical trending via control system
- Future portability

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*Engineered  
Systems*  
**PFAUDLER, Inc.**

**A Unit of Robbins & Myers, Inc.**

1000 West Avenue  
PO Box 23600  
Rochester, NY 14692-3600  
Phone: 716 235 1000  
Eng Sys Fax: 716 235 3048  
[www.pfaudler.com](http://www.pfaudler.com)

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# Typical CDB System:

