BS-miniDRY®
Lab conical dryer/mixer

Applications & Processes
BOLZ-SUMMIX lab conical dryer/mixer for research, development and for smallest product volumes

Together with one of the leading pharmaceutical companies in Switzerland, the new GMP conform lab dryer and mixer BS-miniDRY® has been developed.

Small – Modular – Flexible – Mobile

During research and development normally only a few grams of a new substance are available. In order to guarantee representative results, for example when developing drying processes, laboratory dryers are necessary with low working volumes, small size, and which are suited to process simulation as flexibly as possible. To fulfill these requirements a new lab dryer has been developed with our partner. His laboratory experience combined with our dryer design and construction know-how has resulted in the development of a highly advanced laboratory dryer.

The dryer is suited to the special requirements of a laboratory in terms of size, instrumentation, equipment and use and thus offers maximum flexibility and diverse application. Prior to the development of the BS-miniDRY®, modular construction, mobility and flexibility were significant handicaps in our partner’s laboratory.

The BS-miniDRY® offers a broad operating window for research and development as a result of our collaboration. Drying processes under vacuum and also other procedures such as mixing, homogenizing, degassing, moistening and so forth can be carried out. Modern Lab-soft- and hardware guarantees, that all process data can be evaluated, reappraised and are available for necessary Scale-Up calculations.

One highlight is the redesigned, optionally available hybrid stirrer, that opens the possibility for the lab dryer either to work as conical screw dryer, or to be used also as central shaft dryer: Innovative technical developments facilitate this unique variability of the new BS-miniDRY®. This allows testing of general suitability and direct comparison of the lab results of one agitator’s performance with another.

During the design phase we considered the possible need to install the BS-miniDRY® in a laboratory fume cupboard. The dryer can be installed in a fume cupboard either as a complete unit or with the (utility) power supply separated. Two separate drives with variable speeds, dust filter, manual sampler, CIP nozzles and adjustable support frame are some of the exceptional features.

Turn-key Package or Semi-Equipped

The entire BS-miniDRY® system can be matched to the end-user’s needs. Depending on requirements the scope of supply can include the following:

- Dryer
- SPS Control and lab software
- Vacuum system
- Solvent recovery system
- Heating/cooling system
- Mobile frame

Alternatively should some of the above items such as the vacuum or the heating/cooling system be already installed in the customer’s lab, then the existing utilities can be connected to the BS-miniDRY®. With the correct interfaces the control systems can also be connected.

The new lab dryer is the ideal and logical development of the already very successful Bolz-Summix pilot dryers in the mL range with working volumes from 10 to 50 liters. These dryers are also well suited for larger volume scale-up or small volume production requirements. They are available in a variety of materials and equipment specifications.

BS-miniDRY® - Lab conical dryer/mixer
**Standard specifications:**
- Material: SS 316L or Alloy C22
- Working volume: Type DKL015; 0.15 bis 1.5 liters
- Working pressure: -1.0 to 0.5 barg
- Working temp.: -20°C to 120°C
- Heating/Cooling: Water/thermal oil at 0 to 6 barg
- Surfaces: inside Ra <0.8 μm

**Basics:**
- Heating/Cooling jacket
- Insulation jacket
- Dust filter
- Two drives with variable speeds
- Manual ball discharge valve
- Pressure and temperature sensors
- Sampler
- Height adjustable support frame

**Options:**
- Hybrid agitator with central shaft mixer
- Vacuum system with solvent recovery
- Heating/Cooling System
- SPS Control with Lab software
- Operation via PC or Laptop
- Free programmable process control
- ATEX Conformity
- Please ask for additional, special equipment and design

www.heinkel.com
For larger volumes BOLZ-SUMMIX offers pilot sized dryer/mixers, the small units for a wide range of applications.

### Summary of dimensions of BOLZ lab conical dryer/mixer

<table>
<thead>
<tr>
<th>Model</th>
<th>Effective capacity in liters</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
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<td>ML 001</td>
<td>15</td>
<td>2230</td>
<td>1985</td>
<td>1785</td>
<td>1455</td>
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<td>625</td>
<td>1075</td>
<td>740</td>
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<td>1883</td>
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<td>2595</td>
<td>2350</td>
<td>2150</td>
<td>1800</td>
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<td>900</td>
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<td>1480</td>
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<td>1050</td>
<td>1493</td>
<td>1630</td>
<td>260</td>
<td>2223</td>
</tr>
</tbody>
</table>

The small pilot units, equipped with all necessary auxiliaries, are available for trials in pilot scale range or as small production unit.

The machines are available in 316L or Alloy C22. Many international standards are available such as PED, ASME, GB 150 or others.

ATEX regulations, controls and mechanical equipment fulfill all safety regulations. Equipped with Heating/Cooling system, solvent recovery and vacuum pump the pilot dryer matches the specification and performance of larger dryers.

For pilot scale trials mobile rental dryers of 10, 30 or 50 liters working volume are available.

Call us and we will be pleased to advise you!

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