## Technical Data

### Adsorption Dryer HRG

<table>
<thead>
<tr>
<th>HRG</th>
<th>(\dot{V}_{\text{nom}}) at 7 bar(g)</th>
<th>connections PN16, DIN 2633</th>
<th>installed power kW</th>
<th>weight kg</th>
<th>dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>m³/h</td>
<td>cfm</td>
<td>DN 50</td>
<td></td>
<td>A=width</td>
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<tr>
<td>0375</td>
<td>375</td>
<td>220</td>
<td>DN 50</td>
<td>10,6</td>
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<td>0550</td>
<td>550</td>
<td>325</td>
<td>DN 50</td>
<td>11,2</td>
<td>960</td>
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<td>650</td>
<td>385</td>
<td>DN 50</td>
<td>11,2</td>
<td>1100</td>
</tr>
<tr>
<td>0850</td>
<td>850</td>
<td>500</td>
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<td>14,2</td>
<td>1200</td>
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<td>1880</td>
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<td>DN 200</td>
<td>198,5</td>
<td>15000</td>
</tr>
</tbody>
</table>

\(\dot{V}_{\text{nom}}\) in m³/h related to compressor inlet at 20°C and 1 bar(a), an operating pressure of 7 bar(g) and a compressed air inlet temperature of +35°C (saturated).

Conversion factor (\(C_1\)) for sizing, depending on dryer inlet temperature and operating pressure at a pressure dew point of -40°C:

<table>
<thead>
<tr>
<th>(T_{\text{inlet}}) °C</th>
<th>operating pressure bar(g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>0,72 0,92 1,09 1,25 1,36 1,45 1,51</td>
</tr>
<tr>
<td>35</td>
<td>0,55 0,7 0,86 1,00 1,12 1,25 1,37</td>
</tr>
<tr>
<td>40</td>
<td>0,33 0,45 0,58 0,71 0,82 0,92 1,03</td>
</tr>
</tbody>
</table>

**Sizing Example:**

real air flow (\(\dot{V}_r\)) = 3990 m³/h
operating pressure: 6 bar(g)
inlet temperature: 40 °C
Faktor \(C_1\): 0,58

\[
\dot{V}_{\text{corr}} = \frac{\dot{V}_r}{C_1} = \frac{3990 \text{ m³/h}}{0,58} = 6879 \text{ m³/h}
\]

Selection: HRG 7000

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Technical changes reserved. Release: R01/31082004
Adsorption Dryer HRG

1. Process Characteristics
- Desorption in co-current flow to the adsorption direction with externally heated blower air
- Cooling with ambient air
- Designed for automatic and continuous operation

2. Standard Conditions
- Pressure dewpoint: -40°C
- Operation pressure: 7 bar(g)
- Inlet temperature: +35°C
- Inlet humidity: saturated
- Selection at different operating conditions by correction factor C1 according to table 2.

3. Operating Limits
- Media: compressed air/nitrogen
- Operating pressure: 4-10 bar(g)
- Inlet temperature: 5-40°C
- Ambient temperature: 35°C/45% to 30°C/60% r.H.
- max. blower inlet: indoor
- Design for operating conditions beyond specified application limits on request.

4. Standard Design
Control
- Design: acc. to VDE/IEC
- Power supply: 3 Ph / 400 V - 50 Hz
- Control voltage: 24 V DC / 230 V - 50 Hz
- PLC: Siemens S7-200 with CPU 224
- Text display: Siemens TD 200
- Protection: IP 55, acc. to IEC 529
- Control panel: C-steel sheet, powder coated, RAL7035 incl.
- Potential free common alarm contact: incl.
- Main switch: incl.

Adsorption Vessel
- Material: carbon steel
- Design data: 11 bar(g), 230°C für 0375 - 2750
  10 bar(g), 200°C für 3500 - 13600
- Design, manufacturing and testing: acc. to AD-2000
- Approval: acc. to PED 27/23/EC incl.
- Desiccant: incl. (stainless steel)

Piping
- Nominal pressure: PN 16
- Material: carbon steel
- Design, manufacturing and testing: acc. to AD-2000
- Approval: acc. to PED 27/23/EC

Heat insulation
- heater to regeneration inlet valves

Electrical flange heater
- with overheat protection

Regeneration blower
- with suction filter

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Adsorption dryer HRG

continuation of standard design

Pneumatically operated butterfly valves  internals made of stainless steel
Non-return valves  with PTFE- gaskets
Pressure release valves  with silencers
Pressure equalization valves  incl.
Resistance thermometer  Pt 100 - measuring and control devices
Pressure transmitter  for pressure and changeover control
Manometer with shut-off valve  per adsorption vessel
Control air unit  incl. valve manifold with multipole connection and control air filter
Pneumatic box  to house the control air unit (sizes 3500 and up)
End position monitoring  of inlet butterfly valves with limit switches (sizes 3500 and up)
Control air piping  up to size 2750 with PVC-pipe; with galvanized steel pipe (sizes 3500 and up)

5. Standard Options (upon request)

• Dewpoint dependent control 'ultraconomy'
• Mounting of prefilter system incl. piping
• Mounting of afterfilter system incl. piping
• System bypass with 3 manual valves
• Bus interface
• Desorption air heating with steam heater instead of electrical heater
• Desorption air heating with steam and electrical heater
• Heat insulation of adsorption vessel
• 16 bar version
• Status information by light indicators
• Control air piping made of stainless steel
• Changeover monitoring and limit switches for additional butterfly valves
• Monitoring of dryer inlet temperature
• Free of silicone / separating agents
• Alternative power supply
• Pressure dew point below -40°C
• Frost protection down to -20°C
• Outdoor installation
• Special noise reduction

6. Filter

Please select the necessary prefilter and afterfilter systems out of our comprehensive filter product range.

7. Condensate

For necessary and economical draining as well as conditioning of accumulated condensate we recommend our condensate technology range of products.