HEATING MANTLES

Two position heating
Heating mantles with digital electronic regulation
Heating mantels made with a double woven mineral wool
Banks of heating mantles for Kjeldahl and soxhlet
Flexible heating

page 227
page 228
page 229
page 230
page 231

HOT PLATES

Ceramic top hotplates
Round hotplates
Rectangular hotplates
Bank of circular hotplates and for kjeldahl and soxhlet

page 232
pages 233 to 234
pages 234 to 235
page 236

“The first requisite for success is the ability to apply your physical and mental energies to one problem incessantly without growing weary.”
Thomas Edison
HEATING MANTLES FOR FLASKS

SAFETY:
FOLLOWING CE STANDARDS, IN THE CASE OF LIQUID SPILLS AN EARTH WIRE IS WOVEN INTO THE MANTLE TO PREVENT ELECTRIC SHOCKS.

COMMON FEATURES
1. Hand woven mineral wool with flexible braiding, which adapts snugly around the flask, with drain hole, replaceable.
2. The heating element is distributed homogeneously throughout the mantle. Connectors and cables are protected by mineral fibre tubes. Efficient low power consumption of 1 w/cm². Maximum mantle temperature of 450 °C.
3. Double walled fibre wool thermally insulated casing.
4. Pure Nickel connection terminals protected by mineral fibre tubing that prevent the deterioration of the contact due to high temperature.
Support for retort bar.

APPLICATIONS
For digestion distillation, extraction, evaporation and boiling processes.

MODELS SELECTION SUMMARY TABLE

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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<th></th>
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<td>–</td>
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<td>–</td>
<td>3491100</td>
<td>–</td>
<td>–</td>
<td></td>
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<td>3491200</td>
<td>–</td>
<td>–</td>
<td></td>
<td>–</td>
<td>–</td>
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</tr>
</tbody>
</table>
Heating mantle for flasks “Fibroman-C”

DUAL HEATING POWER.

FEATURES
Two position isolated rocker switch heating control with power on indicator lamp.

TECHNICAL DESCRIPTION
- DUR ALLOY aluminium exterior case with epoxy coating.
- Suspended mineral wool woven heating mantle.
- Heating element homogeneously distributed throughout the woven mantle.
- Thermally insulated case, mineral wool fibre insulation.
- Nickel connectors.
- Retort stand clamp at the back of the unit.
- To prevent breakage or spills a drain hole is provided at the bottom of the mantle.
- Safety earth connection.

MODELS

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Flask capacity (ml)</th>
<th>Flask Ø approx. (mm)</th>
<th>Ø / Height (exterior) / cm</th>
<th>Power (W)</th>
<th>Weight (Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3003141</td>
<td>100</td>
<td>65</td>
<td>16 / 11</td>
<td>130</td>
<td>1</td>
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<td>3003142</td>
<td>250</td>
<td>83</td>
<td>18 / 11</td>
<td>130</td>
<td>1,1</td>
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<td>3003145</td>
<td>500</td>
<td>102</td>
<td>20 / 12</td>
<td>270</td>
<td>1,2</td>
</tr>
<tr>
<td>3031410</td>
<td>1000</td>
<td>132</td>
<td>22 / 13,5</td>
<td>410</td>
<td>1,4</td>
</tr>
<tr>
<td>3031420</td>
<td>2000</td>
<td>170</td>
<td>26 / 14</td>
<td>530</td>
<td>2</td>
</tr>
<tr>
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<td>3000</td>
<td>190</td>
<td>29 / 18</td>
<td>620</td>
<td>2,2</td>
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<tr>
<td>3031450</td>
<td>5000</td>
<td>222</td>
<td>33 / 19</td>
<td>840</td>
<td>3,2</td>
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<td>10000</td>
<td>290</td>
<td>38 / 22</td>
<td>1400</td>
<td>4,7</td>
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<td>3314200*</td>
<td>20000</td>
<td>365</td>
<td>48 / 26</td>
<td>2300</td>
<td>11</td>
</tr>
</tbody>
</table>

* The mantle part no. 3314200 supplied without the 2 position controller and switch. See Accessories on (page 230) and Regulators and controllers (pages 293 and 294).

ACCESSORY

Support bar Dur-Aluminium of 12 Ø x 700 mm long.
Part No. 6000270

CROSS SECTION OF HEATED FLASKS

Position I
50% power output.

Position II
100% power output.
Heating mantles for flasks “Fibroman HT-W”

For adjustable temperatures from ambient +5 °C to 400 °C.
Stability ±0.5 to 1 °C according to temperature.
Electronic regulation of temperature with double screen to show the present temperature and the programmed one.

Maximum precision in temperature control and energy saving
Includes “TC” temperature sensor, connectable to case directly

Features
External case made of AISI 304 stainless steel.
Heating elements homogeneously distributed inside of the mineral wool woven and thermically insulated.
Pure nickel connection terminals.
Temperature control system by inner thermocouple.
TC probe connector included in the equipment for the liquid temperature control inside the flask.
Device to hold support bar.

Models

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Flask Capacity ml</th>
<th>Ø Flask mm</th>
<th>Height / Width / Depth (exterior) cm</th>
<th>Ø Length mm</th>
<th>Stability °C</th>
<th>Power W</th>
<th>Weight Kg</th>
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<tbody>
<tr>
<td>3031470</td>
<td>100</td>
<td>65 to 67</td>
<td>13 22 26</td>
<td>4 170</td>
<td>±0.5 to 1</td>
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<td>1,5</td>
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<td>3031471</td>
<td>250</td>
<td>83 to 87</td>
<td>13 26 29</td>
<td>4 170</td>
<td>±0.5 to 1</td>
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<td>3</td>
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<td>3031472</td>
<td>500</td>
<td>102 to 105</td>
<td>13 26 29</td>
<td>4 170</td>
<td>±0.5 to 1</td>
<td>220</td>
<td>3,5</td>
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<tr>
<td>3031473</td>
<td>1000</td>
<td>132 to 139</td>
<td>14 30 33</td>
<td>4 170</td>
<td>±0.5 to 1</td>
<td>530</td>
<td>4</td>
</tr>
<tr>
<td>3031474</td>
<td>2000</td>
<td>164 to 170</td>
<td>16 31 34</td>
<td>4 200</td>
<td>±0.5 to 1</td>
<td>650</td>
<td>5</td>
</tr>
</tbody>
</table>

Note: the heating mantles are supplied with TC probe connected to the case.

Accessories

Support bar Dur-Aluminium, 12 mm Ø x 700 mm long.
Part No. 6000270

Double bosshead.
Part No. 1000069

Spring clamp to hold thermometers.
Part No. 7000025

Clamp to support and hold condensers or other glassware.
Part No. 70001161
**Heating mantle for flasks “Fibroman-D”**

**FEATURES**  
Soft mantle made with a double woven mineral wool. A mains switch and safety earth are also fitted. The mantle can be supported by a retort ring or tripod stand.

**MODELS**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Flask capacity ml</th>
<th>Ø / Height (exterior) cm</th>
<th>Power W</th>
<th>Weight Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>3004192</td>
<td>250</td>
<td>15 6.5</td>
<td>130</td>
<td>0.8</td>
</tr>
<tr>
<td>3004195</td>
<td>500</td>
<td>17 7</td>
<td>270</td>
<td>0.9</td>
</tr>
<tr>
<td>3041910</td>
<td>1000</td>
<td>20 8.5</td>
<td>410</td>
<td>1</td>
</tr>
<tr>
<td>3041920</td>
<td>2000</td>
<td>24 11</td>
<td>530</td>
<td>1.5</td>
</tr>
</tbody>
</table>

See accessories (page 230) and controller (pages 293 and 294).

---

**Heating mantle for flasks and funnels “Fibroman-0”**  
WITH TRIPOD SUPPORT STAND.

**APPLICATIONS**  
Suitable for round bottom flasks, decanting funnels and reaction flasks with a bottom drain.

**FEATURES**  
- Woven mineral fibre mantle.  
- Epoxy coated exterior.  
- On/Off switch.  
- Safety earth.

**MODELS**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Flask capacity ml</th>
<th>Ø / Height (exterior) cm</th>
<th>Ø cm Bottom hole</th>
<th>Tripod Height cm</th>
<th>Power W</th>
<th>Weight Kg</th>
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</thead>
<tbody>
<tr>
<td>3041910</td>
<td>1000</td>
<td>24 10.5</td>
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<td>34</td>
<td>410</td>
<td>1.5</td>
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<tr>
<td>3041920</td>
<td>2000</td>
<td>28.5 12</td>
<td>8</td>
<td>36</td>
<td>530</td>
<td>2.5</td>
</tr>
<tr>
<td>3049121</td>
<td>500</td>
<td>37.5 17.5</td>
<td>9</td>
<td>38</td>
<td>840</td>
<td>3.5</td>
</tr>
<tr>
<td>3049122</td>
<td>1000</td>
<td>43.5 20</td>
<td>9</td>
<td>43</td>
<td>1400</td>
<td>5</td>
</tr>
<tr>
<td>3049121</td>
<td>2000</td>
<td>48 25</td>
<td>12</td>
<td>36</td>
<td>2300</td>
<td>13</td>
</tr>
</tbody>
</table>

Due to its capacity the part no. 3491200, 20000 ml capacity is manufactured in a cylindrical case.  
See accessories (page 230) and controller (pages 293 and 294).

---

**Heating mantle for flasks**  
ADAPTABLE FOR THE “AGIMAN” STIRRER UNIT.

**MODELS**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Flask capacity ml</th>
<th>Ø / Height (exterior) cm</th>
<th>Power W</th>
<th>Weight Kg</th>
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<tbody>
<tr>
<td>3000447</td>
<td>250</td>
<td>15 6.5</td>
<td>130</td>
<td>0.8</td>
</tr>
<tr>
<td>3000448</td>
<td>500</td>
<td>17 7</td>
<td>270</td>
<td>0.9</td>
</tr>
<tr>
<td>3000449</td>
<td>1000</td>
<td>20 8.5</td>
<td>410</td>
<td>1</td>
</tr>
<tr>
<td>3000450</td>
<td>2000</td>
<td>24 11</td>
<td>530</td>
<td>1.5</td>
</tr>
</tbody>
</table>

**ACCESSORIES**  
Mantle magnetic stirrer “Agiman”. With interchangeable mantle adapters. Electronic control of stir speed (up to 1600 r.p.m.). Connection at the back for an electronic contact thermometer “Sensoterm” or digital electronic regulator “Electemp-TFT”.  
See controller (pages 293 and 294).  
Part No. 7000446

---

Stirring mantle with adapter device.  
Stirring mantle, complete.
Banks of heating mantles for digestion, Kjeldahl, Soxhlet extraction and round bottle flasks

CONTROLLABLE MANTLE TEMPERATURE UP TO 550 °C.

FEATURES
Independent heating control for each position.
2 height and angle adjustable bars to support condensers or other glassware for digestion or extraction.
External case made of AISI 304 stainless steel.
Safety earth strip fitted.

CONTROL PANEL
Temperature control with a pulsed energy regulator. An indicator lamp shows when the mantle is on.

MODELS

<table>
<thead>
<tr>
<th>Part No.</th>
<th>For Flasks</th>
<th>Flask Volume (ml)</th>
<th>No. of Places</th>
<th>Height (cm)</th>
<th>Width (cm)</th>
<th>Depth (cm)</th>
<th>Power</th>
<th>Weight (Kg)</th>
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<tbody>
<tr>
<td>6003294</td>
<td>Kjeldahl / Soxhlet</td>
<td>300-500</td>
<td>4</td>
<td>18</td>
<td>76</td>
<td>25</td>
<td>1500</td>
<td>12</td>
</tr>
<tr>
<td>6003296</td>
<td>Kjeldahl / Soxhlet</td>
<td>300-500</td>
<td>6</td>
<td>18</td>
<td>105</td>
<td>25</td>
<td>2200</td>
<td>16</td>
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<tr>
<td>6014204</td>
<td>Micro-Kjeldahl</td>
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<td>4</td>
<td>16</td>
<td>59</td>
<td>21</td>
<td>510</td>
<td>9</td>
</tr>
<tr>
<td>6014206</td>
<td>Micro-Kjeldahl</td>
<td>100</td>
<td>6</td>
<td>16</td>
<td>81</td>
<td>21</td>
<td>900</td>
<td>12</td>
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</tbody>
</table>

Supplied with:
- 2 bars and 4 clamps for Kjeldahl/Soxhlet models.
- 1 bar and 2 clamps for Micro-Kjeldahl models.

ACCESSORIES (DIGESTION)

Fume extractor tube clips made of AISI 304 stainless steel.
Part No. 6000008 For bank of Macro-Kjeldahl.
Part No. 6000009 For bank of Micro-Kjeldahl.

Borosilicate glass fume extractor tubes.
Part No. 1000104 For: Bank Macro-Kjeldahl, 4 positions.
Part No. 1000106 For: Bank Macro-Kjeldahl, 6 positions.
Part No. 1042044 For: Bank Micro-Kjeldahl, 4 positions.
Part No. 1042066 For: Bank Micro-Kjeldahl, 6 positions.

Kjeldahl flask support made of AISI 304 stainless steel. Flasks 300-500 ml.
Part No. 1000002

ACCESSORIES EXTRACTION

Double nut boss head.
Part No. 1000069

Clamp for holding condensers.
Part No. 7000403

EXTRACTION AND NEUTRALIZATION OF GASSES.

Reduces water wastage.

“Scrubber” unit designed to neutralize and absorb fumes generated in the Kjeldahl digestion process.
Composed of a “Scrubber unit” that blocks the passage and neutralizes the condensed acids, and a re-circulating water pump that produces sufficient vacuum to aspirate the vapours.
No mains water connection required. Prevents waste contamination.
Low noise level (<65dBA).
Re-circulating pump made from chemically resistant materials.

It is essential to put the “Scrubber” unit together with the neutralizer solution between the digestion block and the re-circulating pump.

“Scrubber” unit

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Height / Width / Depth (exterior) cm</th>
<th>Weight (Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4001611</td>
<td>32 31 16</td>
<td>2</td>
</tr>
</tbody>
</table>

It is supplied with 3 Kg. acid vapours neutralizer solution.

Re-circulating water vacuum pump.

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Height / Width / Depth (exterior) cm</th>
<th>Vacuum level bar</th>
<th>Pump rate litre/minute</th>
<th>Weight (Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4001612</td>
<td>44 39 28</td>
<td>0.98</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>

Spare part

3 Kg. acid vapours neutralizer solution. Part No. 4001610
**Heating tapes**

HEATING TAPE SURFACE TEMPERATURE UP TO 210 °C. CONFORMS TO VDE EN 60335-A.

**FEATURES**
Heating elements distributed homogeneously between flexible moulded sheets of silicon.

**APPLICATIONS**
Used for heating small areas such as heating ducts for distillation, valves and pipes etc.

**MODELS**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Length</th>
<th>Width</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>3003178</td>
<td>0.80</td>
<td>25</td>
<td>180</td>
</tr>
<tr>
<td>3031710</td>
<td>1</td>
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<td>210</td>
</tr>
<tr>
<td>3031715</td>
<td>1.5</td>
<td>25</td>
<td>265</td>
</tr>
</tbody>
</table>

**Flexible heating cord**

FEATURES
For tape surface temperatures up to 180 °C. Thermally insulated using flexible silicon tube.

APPLICATIONS
For heating small areas such as heating ducts, distillation, valves and pipes etc.

**MODELS**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Length</th>
<th>Ø Cord</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000781</td>
<td>1.5</td>
<td>3</td>
<td>45</td>
</tr>
<tr>
<td>1000782</td>
<td>3</td>
<td>3</td>
<td>90</td>
</tr>
<tr>
<td>1000783</td>
<td>6</td>
<td>3</td>
<td>180</td>
</tr>
<tr>
<td>1000784</td>
<td>12</td>
<td>3</td>
<td>360</td>
</tr>
</tbody>
</table>

**Large surface area heating mats**

MAT SURFACE TEMPERATURES UP TO 210 °C. CONFORMS TO VDE STANDARD EN 60335-A.

**FEATURES**
The heating element is insulated and distributed homogeneously between two sheets of flexible moulded silicon.
Heating Power: 0.39 W cm².
Mat surface temperature up to 210 °C.
Held in place by hooked spring fittings.

**APPLICATIONS**
Suitable for heating drums up to 200 litres Ø 60 cm.
Total: 3 bands of 171 cm in length x 15 cm wide.
Power consumption 3000 W.
Part No. 4000200

**ACCESSORIES**
Controller (pages 293 and 294).