DEERFIELD TISSUE LLC
PM 1 AUGUSTA
Tsunami Slot Diffuser® Headbox

DOCUMENTATION

HOGENKAMP RESEARCH, INC

308 PLANTATION HILL ROAD, GULF BREEZE, FLORIDA 32561
TEL (850) 677-1072
WWW.HOGENKAMPRESEARCH.COM
## CONTENTS

### PAGE

1. Design Specifications
2. System Overview Drawing
3. Radial Header Details
4. Hose Layout
5. Hose Specification
6. Headbox Details
7. Headbox Parts
8. Top Lip Control
9. Top Lip Assembly
10. Top Lip Spoiler Bar
11. Total Head Manometer
12. Jet Speed Control
13. Jet vs. Total Head, Lip Opening
14. Apron
15. Sub Assembly Component Manuals - as separate attachments
# DESIGN SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headbox Pond Width</td>
<td>104.33&quot; [2650mm]</td>
</tr>
<tr>
<td>Basis Weight Range</td>
<td>15 - 200 gsm</td>
</tr>
<tr>
<td>Speed Range</td>
<td>400-2000 fpm maximum</td>
</tr>
<tr>
<td>Consistency Range</td>
<td>0.20 - 1.2%</td>
</tr>
<tr>
<td>First Pass Retention</td>
<td>TBA</td>
</tr>
<tr>
<td>Flow Rate</td>
<td>1,000 - 4,000 gpm</td>
</tr>
<tr>
<td>Tonnage</td>
<td>60 stpd</td>
</tr>
<tr>
<td>Slice Lip Opening</td>
<td>1/2&quot; operating, 2&quot; max for cleaning</td>
</tr>
<tr>
<td>Grade</td>
<td>Towel, Bag, Linerboard</td>
</tr>
<tr>
<td>Furnish</td>
<td>Recycled or Pulp</td>
</tr>
<tr>
<td>Operation</td>
<td>Hydraulic Pressure</td>
</tr>
<tr>
<td>Material of Construction</td>
<td>316titanium stainless steel/DIN 1.4571</td>
</tr>
</tbody>
</table>
SYSTEM OVERVIEW

RADIAL HEADER

HEADBOX
**Radial Header**

**Function**
- Distribute equal amounts of pulp into 32 hoses.
- CD basis weight control.
- Dampen pulsations in flexible hoses.

**Operation**
- Operator adjusts 32 dilution valves to change CD basis weight in 32 zones
NOTES

1. Hose Ø = 1.50" [38mm]
2. Hose Length = 20 ft max [6m]
<table>
<thead>
<tr>
<th>part number</th>
<th>inside Ø</th>
<th>weight</th>
<th>wall thickness</th>
<th>bending radius</th>
<th>pressure working-bursting</th>
<th>vacuum</th>
<th>roll length</th>
<th>volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA 01 006</td>
<td>6</td>
<td>110</td>
<td>2,7</td>
<td>13</td>
<td>7</td>
<td>35</td>
<td>9,5</td>
<td>60</td>
</tr>
<tr>
<td>PA 01 008</td>
<td>8</td>
<td>130</td>
<td>2,7</td>
<td>16</td>
<td>7</td>
<td>35</td>
<td>9,5</td>
<td>60</td>
</tr>
<tr>
<td>PA 01 010</td>
<td>10</td>
<td>150</td>
<td>2,7</td>
<td>18</td>
<td>7</td>
<td>35</td>
<td>8,5</td>
<td>60</td>
</tr>
<tr>
<td>PA 01 012</td>
<td>12</td>
<td>180</td>
<td>2,7</td>
<td>23</td>
<td>6</td>
<td>30</td>
<td>8,5</td>
<td>60</td>
</tr>
<tr>
<td>PA 01 014</td>
<td>14</td>
<td>205</td>
<td>2,7</td>
<td>26</td>
<td>6</td>
<td>30</td>
<td>8,5</td>
<td>60</td>
</tr>
<tr>
<td>PA 01 016</td>
<td>16 5/8&quot;</td>
<td>250</td>
<td>3</td>
<td>30</td>
<td>6</td>
<td>30</td>
<td>8,5</td>
<td>60</td>
</tr>
<tr>
<td>PA 01 018</td>
<td>18</td>
<td>200</td>
<td>3,2</td>
<td>32</td>
<td>5</td>
<td>25</td>
<td>9,5</td>
<td>60</td>
</tr>
<tr>
<td>PA 01 020</td>
<td>20 3/4&quot;</td>
<td>350</td>
<td>3,5</td>
<td>34</td>
<td>5</td>
<td>25</td>
<td>8,5</td>
<td>60</td>
</tr>
<tr>
<td>PA 01 022</td>
<td>22</td>
<td>380</td>
<td>3,5</td>
<td>38</td>
<td>5</td>
<td>25</td>
<td>8,5</td>
<td>60</td>
</tr>
<tr>
<td>PA 01 025</td>
<td>25 1&quot;</td>
<td>500</td>
<td>4</td>
<td>42</td>
<td>5</td>
<td>25</td>
<td>8,5</td>
<td>60</td>
</tr>
<tr>
<td>PA 01 030</td>
<td>30</td>
<td>585</td>
<td>4</td>
<td>40</td>
<td>4</td>
<td>20</td>
<td>8,5</td>
<td>60</td>
</tr>
<tr>
<td>PA 01 032</td>
<td>32 1 1/4&quot;</td>
<td>650</td>
<td>4,2</td>
<td>53</td>
<td>4</td>
<td>20</td>
<td>8,5</td>
<td>60</td>
</tr>
<tr>
<td>PA 01 035</td>
<td>35</td>
<td>700</td>
<td>4,2</td>
<td>58</td>
<td>4</td>
<td>20</td>
<td>8,5</td>
<td>60</td>
</tr>
</tbody>
</table>

Deerfield PM1 Augusta
**HEAD BOX**

**Function**
- Flow pulp evenly onto fourdrinier

**Operation**
- Operator adjusts slice lip to control jet speed
- Pressure adjusted by automatic controls
- CD Basis Weight adjusted by Dilution Profiling
TOP LIP
CONTROL

Function

• Adjust the jet speed to match the wire speed.

Operation

13mm [1/2"] is a normal lip opening for the towel paper grade. The operator must determine the required total head in the plexiglas manometer to create the target jet speed and then open/close the top lip until the correct total head is reached.

For continuous Jet Speed control, an electronic pressure transmitter is mounted to the bottom of the plexiglas manometer and sends total head signals to the electronic controller which then makes fine adjustments to the flow valve or fan pump motor.
Tending Side Gearbox w/ Extension shaft to Handwheel

Drive Side Gearbox w/ Stub shaft. Can be motorized in the future.

Top Lip Assembly w/ access ports to internal hinge bolts.
Spoiler is reversible. Can be used straight side or serrated side into the flow.

The Top Lip Spoiler Bar adds a final jolt of turbulence to the stock as it leaves the headbox. The Hogenkamp spoiler has two edges - a flat and a serrated - which can be used as you choose according to the results of trials. The serrated edge creates peaks and troughs in the jet. When the jet passes over a foil blade, the trough jumps up and the peak drops down. This phase change action mixes the fibers and improves the formation.

Channels change phase over each foil.
TOTAL HEAD MANOMETER

2 acrylic tubes
50 x 5 x 2000mm

Shower Nozzle
Lechler 214.184.17
Fine continuous control of the Jet may be achieved by adjusting either the fan pump motor or the flow valve position.

An electronic pressure transmitter is supplied with the headbox. Other control instruments supplied by the mill.

Model: pmc-min-pt/el-200"wc-HC-TH/SS-D
miniature electronic pressure transmitter
 c/w stainless termination cap
 c/w local digital display
 s/n 13028m
J E T VS. TOTAL HEAD, LIP OPENING
The APRON is the flat moveable stainless steel floor. It slides back and forth so as to change the jet angle and jet deposition point vis-a-vis the forming board.

With the apron forward, the jet becomes flatter, the formation usually improves and the md:cd tensile ratio usually squares up.

With the apron back, the jet pressure forms into the wire creating a faster drainage, more md tensile and less cd tensile.

Initial factory setup is +25mm, for a flat jet angle.
ATTACHMENTS

SUB - COMPONENT MANUALS

- PMC
  1x Transmitter
  2x Seal Pressure Gage

- ZIMM
  2x Top Lip Gearbox
  2x Apron Gearbox
  2x Inlet Gearbox

- SIKO
  1x Top Lip Handwheel
  1x Apron Handwheel