Crane Ground Pressure simulation manual
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1. Introduction
1.1. Usage environment
(1) PC
Please note that this service is not guaranteed for PC environments other than the following.

<table>
<thead>
<tr>
<th>OS</th>
<th>Microsoft Windows XP, 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web browser</td>
<td>Microsoft Internet Explorer 6.0 / 7.0 / 8.0, Firefox since version 3.5.</td>
</tr>
</tbody>
</table>

(2) Communication environment
This service is available via the Internet.

1.2. Inquiries
If you have any questions or trouble in operating the service, please contact the following:

Sumitomo Heavy Industries Construction Cranes Co., Ltd.
9-3, Higashi-Ueno 6-chome, Taitou-ku, Tokyo, 110-0015 Japan

Click here to make an inquiry
2. Using the service

2.1. Start-up
Open Internet Explorer and access the website of Sumitomo Heavy Industries Construction Cranes Co., Ltd. (the following URL).  http://www.hsc-cranes.com/e/
Click [Sales & Service] and select [Ground Pressure Simulator].

2.2. Agreeing to the terms of use
Please read the terms of use and click [Accept & Start simulation].

Note:
Contact us with any questions about the service by clicking [Contact us] in the bottom left corner of the page.
2.3. Select model
Select a model for calculating ground pressure.

2.4. Select specifications
Select the specifications of the base machine, including counter weight, lower weight, shoes, external weight, and conditions.
*When you specify a model, available options appear automatically.

Note:
Please contact us for unlisted models.
Cranes based on Excavators with capacities below 30t are listed under the Hitachi and Sumitomo Excavator categories.

Note:
You can look up crane specifications and load charts by clicking on the specification catalog link provided next to the model name.
To view the catalog for tower (Luffing) cranes, please look under Lineup on our website.
2.5. Calculating ground pressure of the crane specification.

1) Select [Crane] as the front attachment specification and click [Confirm model and specification].

2) Specify the working conditions by selecting boom mast, boom type, and boom length.

*Working condition options for the specified model and specifications are automatically displayed.

Caution:

If you need to return to the model selection screen, click [Back to model selection]. Do not use the [Back] button on your browser, as this may clear all selections you have made up to this point.
3) Select jib type, jib length, and jib offset angle.  
*Specifications will be automatically selected if no options exist for the selected jib type.

4) Enter the lifting point, working radius or boom angle, and lifting load (including hook), and click [Calculation].

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Caution:
If you wish to calculate ground pressure based on a short jib or crane jib, refer to the specification catalog and select a corresponding boom length.

Caution:
Enter either the working radius or boom angle. If you enter both, the program will use the item that is selected by the radio button.

Note:
The working radius or boom angle may be entered up to the first decimal place. Lifting load (including hook) may be entered up to the second decimal place.

Caution:
Enter a boom angle that is within the crane’s proper working conditions.
5) The calculation result appears. If you wish to print it out, click [Print].

6) After the print screen appears, use your browser’s print function to print the result.

Note:
If you wish to recalculate the result using different calculation conditions, click [Back to model selection] or [Change working condition].
2.6. Calculating ground pressure of a tower (Luffing) crane specification.

1) Select [Tower (Luffing)] as the front attachment specification and click [Confirm model and specification].

2) Specify the working conditions by selecting tower boom mast, tower boom type, and tower boom length.

*Specifications will be automatically selected if no options exist for the selected model.

Caution:
Enter a tower boom angle that is within the crane's proper working conditions.
3) Select tower jib length and short jib.
*Specifications will be automatically selected if no options exist for the selected jib type.

4) Enter the lifting point, working radius or tower jib angle, and lifting load (including hook), and click [Calculation].

Caution:
Enter either the working radius or boom angle. If you enter both, the program will use the item that is selected by the radio button.

Caution:
Enter a tower jib angle that is within the crane’s proper working conditions.
5) The calculation result appears. If you wish to print it out, click [Print].

6) After the print screen appears, use your browser’s print function to print the result.

Note:
If you wish to recalculate the result using different calculation conditions, click [Back to model selection] or [Change working condition].
2.7. Calculating ground pressure without a front attachment

1) Select [without a front attachment] as the condition and click [Calculation].

![Diagram showing ground pressure simulation with options to select](image)

Note:

"Without front attachment" refers to specifications excluding the boom and other front attachments, but includes the counterweight and crawler.

2) The calculation result appears.
   If you wish to print it out, click [Print].

![Diagram showing calculated ground pressure](image)

Note:

If you wish to recalculate the result using different calculation conditions, click [Back to model selection] or [Change working condition].
3. Calculation result screen –Explanation of the chart–

The items of the calculation result chart mean the following.

<table>
<thead>
<tr>
<th>Item name</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boom direction</td>
<td>Expresses the direction the boom is facing in reference to the crawler.</td>
</tr>
<tr>
<td>Swing angle</td>
<td>Shows the swing angle at maximum ground pressure.</td>
</tr>
<tr>
<td>A crawler reaction force (RA)</td>
<td>Shows the reaction force of A Crawler (right crawler).</td>
</tr>
<tr>
<td>B crawler reaction force (RB)</td>
<td>Shows the reaction force of B Crawler (left crawler).</td>
</tr>
<tr>
<td>A Crawler ground pressure front (QAF)</td>
<td>Shows the front ground pressure of A Crawler (right crawler).</td>
</tr>
<tr>
<td>A Crawler ground pressure rear (QAR)</td>
<td>Shows the rear ground pressure of A Crawler (right crawler).</td>
</tr>
<tr>
<td>B Crawler ground pressure front (QBF)</td>
<td>Shows the front ground pressure of B Crawler (left crawler).</td>
</tr>
<tr>
<td>B Crawler ground pressure rear (QBR)</td>
<td>Shows the rear ground pressure of B Crawler (left crawler).</td>
</tr>
<tr>
<td>Length of ground pressure (L)</td>
<td>Shows the length of ground pressure on the crawler.</td>
</tr>
<tr>
<td>Distribution of pressure</td>
<td>Shows the distribution of the ground pressure (triangular or trapezoidal).</td>
</tr>
</tbody>
</table>
Change history

<table>
<thead>
<tr>
<th>No</th>
<th>Ver.</th>
<th>Date</th>
<th>Name</th>
<th>Description of the major changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ver. 1.0</td>
<td>11/15/ 2011</td>
<td>Akiko Matsui</td>
<td>First publication</td>
</tr>
<tr>
<td>2</td>
<td>Ver. 2.0</td>
<td>4/6/ 2018</td>
<td>Akiko Matsui</td>
<td>Change of our Company Name</td>
</tr>
</tbody>
</table>