

Crane Ground Pressure simulation manual

Ver.4.0

English

July 6, 2022

Sumitomo Heavy Industries Construction Cranes Co., Ltd.

1. Introduction.....	3
1.1. Usage environment	3
1.2. Inquiries	3
2. Using the service.....	4
2.1. Start-up	4
2.2. Agreeing to the terms of use.....	4
2.3. Select model	5
2.4. Select specifications.....	5
2.5. Calculating ground pressure according to the working posture of the crane	6
2.6. Calculating ground pressure according to the working posture of a tower (Luffing) crane	9
2.7. Calculating ground pressure without a front attachment	12
3. Calculation result screen –Explanation of the chart–	13

1. Introduction

1.1. Usage environment

(1) PC

We have confirmed the operation of this system in the following environment at the time of creating this manual.

OS :

Microsoft Windows 10

Web browser :

Microsoft Edge(Chromium)、Internet Explorer 11、Google Chrome、Firefox

(2) Communication environment

This service is available via the Internet.

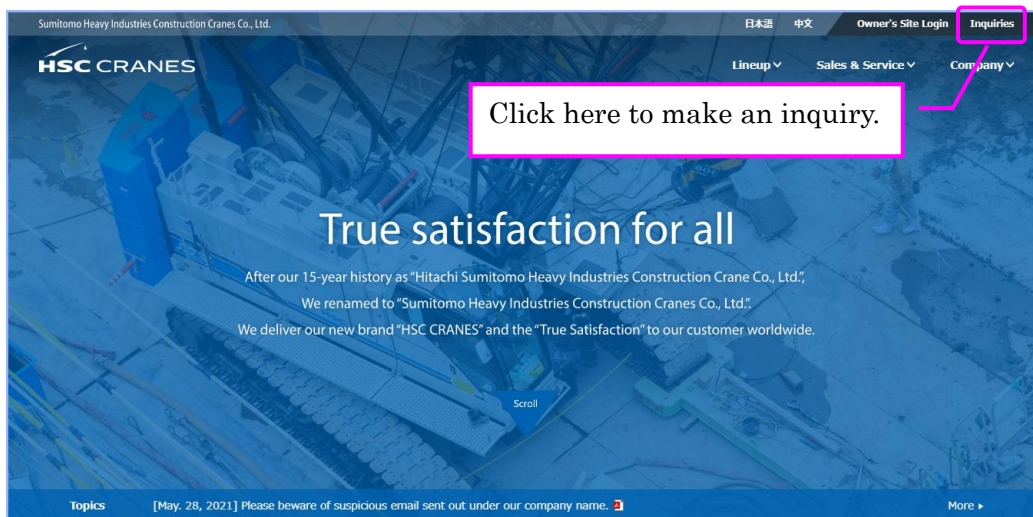
1.2. Inquiries

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

URL: <http://www.hsc-cranes.com/e/>



Select a model for calculating ground pressure.



Ground Pressure Simulator

Select model

Model

Select category ▼

Select category

HSC models

SCX400

SCX400T

SCX500

SCX550

SCX550-3

SCX700

SCX700-2

SCX700-3

SCX800-2

SCX800A-3

SCX800HD

SCX800HD-2

SCX900-1

SCX900-2

SCX900-3

SCX900HD-1

SCX900HD-2

SCX1000A-3

1


2

3

Select specifications of base machine

(Note) Specifications and working conditions are determined by the selected model and specifications in the rated lifting load chart.

Specification of base machine	
Counter weight	
Lower weight	
Shoes	
External weight	<div style="display: flex; align-items: center;"> <div style="border: 1px solid #ccc; padding: 2px 5px;">▼</div> <div style="margin: 0 5px;">Radius 10m</div> <div style="border: 1px solid #ccc; padding: 2px 5px;">▼</div> </div>
Condition	Without front attachment
Swing angle	<div style="display: flex; align-items: center;"> <div style="border: 1px solid #ccc; flex-grow: 1; margin-right: 5px;"></div> <div>(°)</div> </div>
Front attachment	<input type="radio"/> Crane <input type="radio"/> Tower (Luffing)

[Contact us](#) [Manual](#)



Copyright Sumitomo Heavy Industries Construction Cranes Co., Ltd. All Rights Reserved.

2.4. Select specifications

When you select a model, the available specifications of that model will be displayed.

Select the items according to the model such as main body specifications, various weights, shoes, posture, etc. (Mandatory)

For computable models, enter a swing angle you want to calculate. (Optional)




Ground Pressure Simulator

Select model

1

2

3

Model	<div style="border: 1px solid #ccc; padding: 2px;">SCX900-3</div>	 Catalog
-------	---	---

Select specifications of base machine

(Note) Specifications and working conditions should be within parameters in the rated lifting load chart.

Specification of base machine	Standard
Counter weight	<div style="border: 1px solid #ccc; padding: 2px;">Standard(31.7t)</div>
Lower weight	<div style="border: 1px solid #ccc; padding: 2px;">Standard(7.5t)</div>
Shoes	Standard
External weight	Without
Condition	<input checked="" type="radio"/> Working <input type="radio"/> Erection <input type="radio"/> Without front attachment
Swing angle	<div style="border: 1px solid #ccc; padding: 2px; display: inline-block;">25</div> (°)
Front attachment	<input type="radio"/> Crane <input type="radio"/> tower (Lifting)

[Contact us](#)
 [Manual](#)

Copyright Sumitomo Heavy Industries Construction Cranes Co., Ltd. All Rights Reserved.

Note:

Please contact us for unlisted models.

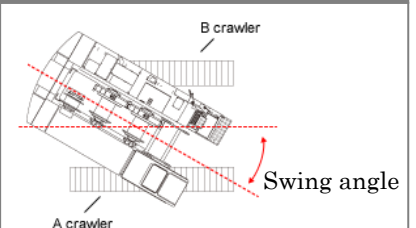
Cranes based on Excavators with capacities below 30t are listed under the Hitachi and Sumitomo Excavator categories.

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.

Note:



2.5. Calculating ground pressure of the crane specification.

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

The screenshot shows the 'Ground Pressure Simulator' interface for HSC CRANES. It is divided into two main sections: 'Select model' and 'Select specifications of base machine'. In the 'Select model' section, the 'Model' dropdown is set to 'SCX900-3'. In the 'Select specifications of base machine' section, a table lists various specifications: 'Specification of base machine' (Standard), 'Counter weight' (Standard(31.7t)), 'Lower weight' (Standard(7.5t)), 'Shoes' (Standard), 'External weight' (Without), 'Condition' (Working, Erection, Without front attachment), 'Swing angle' (25°), and 'Front attachment' (Crane, Tower (Luffing)). The 'Front attachment' row is highlighted with a pink box, and a 'Confirm model and specification' button is located below it. At the bottom, there are links for 'Contact us' and 'Manual', and a copyright notice for Sumitomo Heavy Industries Construction Cranes Co., Ltd.

Select specifications of base machine	
Specification of base machine	Standard
Counter weight	Standard(31.7t)
Lower weight	Standard(7.5t)
Shoes	Standard
External weight	Without
Condition	<input checked="" type="radio"/> Working <input type="radio"/> Erection <input type="radio"/> Without front attachment
Swing angle	25 (°)
Front attachment	<input checked="" type="radio"/> Crane <input type="radio"/> Tower (Luffing)

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.

The screenshot shows the 'Ground Pressure Simulator' interface for HSC CRANES, specifically the 'Input working condition' section. It displays a table with the specifications from the previous step, including 'Model' (SCX900-3), 'Specification of base machine' (Standard), 'Counter weight' (Standard(31.7t)), 'Lower weight' (Standard(7.5t)), 'Shoes' (Standard), 'External weight' (Without), 'Condition' (Working), 'Swing angle' (25°), and 'Front attachment' (Crane). Below this table is a 'Back to model selection' link. The 'Input working condition' section includes a note: '(Note) Specifications and working conditions should be within parameters in the rated lifting load chart.' It then lists 'Boom' specifications: 'Boom mast' (Without), 'Boom type' (Limited for crane), and 'Boom length' (12.00m), which are highlighted with a pink box. Below the 'Boom' section are 'Jib' specifications: 'Jib type' (Without, Aux. Sheave (Short jib), Crane jib) and 'Jib length' (Select category). At the bottom, there is a 'Lifting load' section.

Model and specification	
Model	SCX900-3
Specification of base machine	Standard
Counter weight	Standard(31.7t)
Lower weight	Standard(7.5t)
Shoes	Standard
External weight	Without
Condition	Working
Swing angle	25°
Front attachment	Crane

Back to model selection

Input working condition	
(Note) Specifications and working conditions should be within parameters in the rated lifting load chart.	
Boom	
Boom mast	Without
Boom type	Limited for crane
Boom length	12.00m
Jib	
Jib type	<input type="radio"/> Without <input type="radio"/> Aux. Sheave (Short jib) <input type="radio"/> Crane jib
Jib length	Select category
Lifting load	

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, with or without aux sheave, jib length, and jib offset angle.

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

Swing angle	Standard
External weight	Without
Condition	Working
Swing angle	25°
Front attachment	Crane

[Back to model selection](#)

Input working condition
(Note) Specifications and working conditions should be within parameters in the rated lifting load chart.

Boom


Boom mast	Without
Boom type	Limited for crane
Boom length	12.00m

Jib

Jib type	<input type="radio"/> Without <input type="radio"/> Aux. Sheave (Short jib) <input checked="" type="radio"/> Crane jib
Jib length	16.00m
Jib offset angle	30°

Lifting load

Lifting point	<input type="radio"/> Boom lift <input type="radio"/> Jib lift
Working radius or boom angle	<input checked="" type="radio"/> Working radius (m) <input type="text"/> (m) <input type="radio"/> Boom angle(°) <input type="text"/> (°)
Number of falls	Boom <input type="text"/> (falls) Jib <input type="text"/> (falls)
Lifting load (including hook)	Boom(t) <input type="text"/> (t) Jib(t) <input type="text"/> (t)

[Contact us](#) [Manual](#)  Copyright Sumitomo Heavy Industries Construction Cranes Co., Ltd. All Rights Reserved.

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

Swing angle	25°
Front attachment	Crane

[Back to model selection](#)

Input working condition
(Note) Specifications and working conditions should be within parameters in the rated lifting load chart.

Boom


Boom mast	Without
Boom type	Limited for crane
Boom length	12.00m

Jib

Jib type	<input type="radio"/> Without <input type="radio"/> Aux. Sheave (Short jib) <input checked="" type="radio"/> Crane jib
Jib length	16.00m
Jib offset angle	30°

Lifting load

Lifting point	<input checked="" type="radio"/> Boom lift <input type="radio"/> Jib lift
Working radius or boom angle	<input checked="" type="radio"/> Working radius (m) <input type="text"/> 5 (m) <input type="radio"/> Boom angle(°) <input type="text"/> (°)
Number of falls	Boom <input type="text"/> 8 (falls) Jib <input type="text"/> 1 (falls)
Lifting load (including hook)	Boom(t) <input type="text"/> 70 (t) Jib(t) <input type="text"/> 0.9 (t)

[Contact us](#) [Manual](#)  Copyright Sumitomo Heavy Industries Construction Cranes Co., Ltd. All Rights Reserved.

[Calculation](#) >

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.

Note:

In the calculation where the hook may not be hung, enter 0 for both the number of falls and Lifting load.

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].

HSC CRANES

Ground Pressure Simulator

1 2 3

Result

Model and specification

Model	SCX900-3 Catalog
Specification of base machine	Standard
Counter weight	Standard(31.7t)
Lower weight	Standard(7.5t)
Shoes	Standard
External weight	Without
Condition	Working
Swing angle	25°
Front attachment	Crane

[Back to model selection](#)

Working condition

Boom mast	Without
Boom type	Limited for crane
Boom length	12.00m
Jib type	Crane jib
Jib length	16.00m
Jib offset angle	30°
Lifting point	Boom lift
Working radius	Working radius: 5.0m
Boom or tower jib angle	Angle: 73.9°
Number of falls	Boom(falls): 8falls Jib(falls): 1falls
Lifting load (including hook)	Boom(t): 70t Jib(t): 0.9t

[Change working condition](#)

Ground pressure

The simulation is based on Japan Construction Machinery and Construction Association

Boom direction	Front	Diagonally to the front	Side	Diagonally to the rear	Rear	Max. pressure	Specified swing direction
Swing angle °	0	45	90	135	180	156	25
A Crawler reaction force (RA) t	80.5	122.8	140.2	122.8	80.5	104.8	105.8
B Crawler reaction force (RB) t	80.5	38.3	20.8	38.3	80.5	56.2	55.3
A Crawler ground pressure front (QAF) t/m ²	56.0	61.7	30.5	0.0	0.0	0.0	65.5

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

Print
Total: 2 sheets of paper

Printer
Microsoft Print to PDF

Copies
1

Layout
☒ Portrait
☐ Landscape

Pages
☒ All
☐ e.g. 1-5, 8, 11-13

Color
Color

[More settings](#)

[Print using system dialog \(Ctrl+Shift+P\)](#)

[Troubleshoot printer issues](#)

Print **Cancel**

Model and specification

Model	SCX900-3
Specification of base machine	Standard
Counter weight	Standard(31.7t)
Lower weight	Standard(7.5t)
Shoes	Standard
External weight	Without
Condition	Working
Swing angle	25°
Front attachment	Crane

Working condition

Boom mast	Without
Boom type	Limited for crane
Boom length	12.00m
Jib type	Crane jib
Jib length	16.00m
Jib offset angle	30°
Lifting point	Boom lift
Working radius	Working radius: 5.0m
Boom or tower jib angle	Angle: 73.9°
Number of falls	Boom(falls): 8falls Jib(falls): 1falls
Lifting load (including hook)	Boom(t): 70t Jib(t): 0.9t

Ground pressure

The simulation is based on Japan Construction Machinery and Construction Association

Boom direction	Front	Diagonally to the front	Side	Diagonally to the rear	Rear	Max. pressure	Specified swing direction
Swing angle °	0	45	90	135	180	156	25
A Crawler reaction force (RA) t	80.5	122.8	140.2	122.8	80.5	104.8	105.8
B Crawler reaction force (RB) t	80.5	38.3	20.8	38.3	80.5	56.2	55.3
A Crawler ground pressure front (QAF) t/m ²	56.0	61.7	30.5	0.0	0.0	0.0	65.5
A Crawler ground pressure rear (QAR) t/m ²	0.0	0.0	33.9	65.4	60.7	70.4	0.0
B Crawler ground pressure front (QBF) t/m ²	56.0	19.2	4.5	0.0	0.0	0.0	34.3
B Crawler ground pressure rear (QBR) t/m ²	0.0	0.0	5.0	20.4	60.7	37.8	0.0
Length of ground pressure (L) m	3.55	4.91	5.38	4.64	3.27	3.68	3.99
Distribution of pressure	Triangle	Triangle	Trapezoidal	Triangle	Triangle	Triangle	Triangle

(Note) 1(kPa)=0.102(t/m²), 1(t/m²)=9.8(kPa)
 (Note) Theoretical ground area = Distance between tumbler LT
 (Note) This simulation doesn't judge overload. Please confirm load charts first and input data according to charts.

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)] or [Tower (suspended load position)] as the front attachment specification and click [Confirm model and specification].

HSC CRANES

Ground Pressure Simulator

Select model

Model: SCX900-3 [Catalog](#)

Select specifications of base machine

(Note) Specifications and working conditions should be within parameters in the rated lifting load chart.

Specification of base machine	Standard
Counter weight	Standard(31.7t)
Lower weight	Standard(7.5t)
Shoes	Standard
External weight	Without
Condition	<input checked="" type="radio"/> Working <input type="radio"/> Erection <input type="radio"/> Without front attachment
Swing angle	25 (°)
Front attachment	<input type="radio"/> Crane <input checked="" type="radio"/> Tower (Luffing)

Confirm model and specification >

[Contact us](#) [Manual](#) [Catalog](#) Copyright Sumitomo Heavy Industries Construction Cranes Co., Ltd. All Rights Reserved.

- 2) For working condition, select and enter the tower boom information corresponding to the selected model.

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

HSC CRANES

Ground Pressure Simulator

Model and specification

Model	SCX900-3 Catalog
Specification of base machine	Standard
Counter weight	Standard(31.7t)
Lower weight	Standard(7.5t)
Shoes	Standard
External weight	Without
Condition	Working
Swing angle	25°
Front attachment	Tower (Luffing)

[Back to model selection](#)

Input working condition

(Note) Specifications and working conditions should be within parameters in the rated lifting load chart.

Tower boom

Tower boom mast	Without
Tower boom type	Standard
Tower boom length	41.50m
Tower boom Angle (°)	70 (°)

Tower jib

Tower jib length	Select category
Short jib	Without

Lifting load

Note:

For models with super lift specifications, specify the hook suspension position in the Tower.

Caution:

Enter a tower boom angle that is within the crane's proper working conditions.

3) Enter the jib information for the selected model.

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

External weight	Without
Condition	Working
Swing angle	25°
Front attachment	Tower (Luffing)

[Back to model selection](#)

Input working condition
(Note) Specifications and working conditions should be within parameters in the rated lifting load chart.

Tower boom

Tower boom mast	Without
Tower boom type	Standard
Tower boom length	41.50m
Tower boom Angle (°)	70 (°)

Tower jib

Tower jib length	37.00m
Short jib	Without

Lifting load

Lifting point	TowerJib lift
Working radius or Tower jib angle	<input checked="" type="radio"/> Working radius (m) <input type="text"/> (m) <input type="radio"/> Tower jib angle (°) <input type="text"/> (°)
Number of falls	Tower jib <input type="text"/> (falls)
Lifting load (including hook)	Tower jib(t) <input type="text"/> (t)

[Calculation >](#)

[Contact us](#) [Manual](#) Copyright Sumitomo Heavy Industries Construction Cranes Co., Ltd. All Rights Reserved.

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

External weight	Without
Condition	Working
Swing angle	25°
Front attachment	Tower (Luffing)

[Back to model selection](#)

Input working condition
(Note) Specifications and working conditions should be within parameters in the rated lifting load chart.

Tower boom

Tower boom mast	Without
Tower boom type	Standard
Tower boom length	41.50m
Tower boom Angle (°)	70 (°)

Tower jib

Tower jib length	37.00m
Short jib	Without

Lifting load

Lifting point	TowerJib lift
Working radius or Tower jib angle	<input checked="" type="radio"/> Working radius (m) <input type="text"/> 25 (m) <input type="radio"/> Tower jib angle (°) <input type="text"/> (°)
Number of falls	Tower jib <input type="text"/> 1 (falls)
Lifting load (including hook)	Tower jib(t) <input type="text"/> 5 (t)

[Calculation >](#)

[Contact us](#) [Manual](#) Copyright Sumitomo Heavy Industries Construction Cranes Co., Ltd. All Rights Reserved.

Note:

In the calculation where the hook may not be hung, enter 0 for both number of falls and lifting load.

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].

B Crawler ground pressure rear (QBR)	t/m ²	0.0	0.0	4.4	13.8	33.3	20.6	0.0
Length of ground pressure (L)	m	4.15	5.34	5.38	5.03	3.84	4.32	4.53
Distribution of pressure		Triangle	Triangle	Trapezoidal	Triangle	Triangle	Triangle	Triangle

(Note) 1 (kPa) = 0.102 (t/m²), 1 (t/m²) = 9.8 (kPa)
 (Note) Theoretical ground area = Distance between tumbler LT
 (Note) This simulation doesn't judge overload. Please confirm load charts first and input data according to charts.

Description

(Note) QAF = on A crawler & Front, QAR = on A crawler & Rear, QBF = on B crawler & Front, QBR = on B crawler & Rear

Note

1. Calculation conditions
To use the Service, Users shall input values of the capacity of the crane and the values listed in the rated lifting load chart that the Company provides separately.
2. Warranty and liability
(1) The Company shall provide the Service that it is capable of providing at the times that Users use the Service.
(2) Users should understand that the results obtained by using the Service (hereinafter referred to as the "Calculated Values") are values that are calculated and not values that are actually measured.
(3) Users shall use the Calculated Values at their own liability and the Company shall not be liable for any damage caused to any of the Users or third parties that is incurred through the use of the Calculated Values by the Users.

[Restart from the beginning](#) [Print](#)

[Contact us](#) [Manual](#) Copyright Sumitomo Heavy Industries Construction Cranes Co., Ltd. All Rights Reserved.

Note:

If you wish to recalculate the result using different calculation conditions, click [Back to model selection] or [Change working condition].

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

Print

Total: 2 sheets of paper

Printer: Microsoft Print to PDF

Copies: 1

Layout: Portrait

Pages: All

Color: Color

[More settings](#)

[Print using system dialog \(Ctrl+Shift+P\)](#)

[Troubleshoot printer issues](#)

[Print](#) [Cancel](#)

6/7/2021 Ground Pressure Simulator | Sumitomo Heavy Industries Construction Cranes Co., Ltd.

Model and specification		Working condition	
Model	SCX900-3	Boom mast	Without
Specification of base machine	Standard	Boom type	Limited for crane
Counter weight	Standard (31.7t)	Boom length	12.00m
Lower weight	Standard (7.5t)	Jib type	Crane jib
Shoes	Standard	Jib length	16.00m
External weight	Without	Jib offset angle	30°
Condition	Working	Lifting point	Boom lift
Swing angle	25°	Working radius	Working radius: 5.0m
Front attachment	Crane	Boom or tower jib angle	Angle: 73.9°
		Number of falls	Boom(falls): 8falls Jib(falls): 1falls
		Lifting load (including hook)	Boom(t): 70t Jib(t): 0.9t

Ground pressure							
The simulation is based on Japan Construction Machinery and Construction Association							
Boom direction	Front	Diagonally to the front	Side	Diagonally to the rear	Rear	Max. pressure	Specified swing direction
Swing angle	0	45	90	135	180	156	25
A Crawler reaction force (RA)	80.5	122.8	140.2	122.8	80.5	104.8	105.8
B Crawler reaction force (RB)	80.5	38.3	20.8	38.3	80.5	56.2	55.3
A Crawler ground pressure front (QAF)	56.0	61.7	30.5	0.0	0.0	0.0	65.5
A Crawler ground pressure rear (QAR)	0.0	0.0	33.9	65.4	60.7	70.4	0.0
B Crawler ground pressure front (QBF)	56.0	19.2	4.5	0.0	0.0	0.0	34.2
B Crawler ground pressure rear (QBR)	0.0	0.0	5.0	20.4	60.7	37.8	0.0
Length of ground pressure (L)	3.55	4.91	5.38	4.64	3.27	3.68	3.99
Distribution of pressure	Triangle	Triangle	Trapezoidal	Triangle	Triangle	Triangle	Triangle

(Note) 1 (kPa) = 0.102 (t/m²), 1 (t/m²) = 9.8 (kPa)
 (Note) Theoretical ground area = Distance between tumbler LT
 (Note) This simulation doesn't judge overload. Please confirm load charts first and input data according to charts.

(QBR)	t/m ²	3.55	4.91	5.38	4.64	3.27	3.68	3.99
Length of ground pressure (L)	m							

2.7. Calculating ground pressure without a front attachment

- 1) For the corresponding models, you can select the calculation with the main unit only. Select [Without a front attachment] as the condition and click [Calculation].

HSC CRANES

Ground Pressure Simulator

Select model 1 2 3

Model: SCX900-3 [Catalog](#)

Select specifications of base machine
(Note) Specifications and working conditions should be within parameters in the rated lifting load chart.

Specification of base machine	Standard
Counter weight	Standard(31.7t)
Lower weight	Standard(7.5t)
Shoes	Standard
External weight	Without
Condition	<input type="radio"/> Working <input type="radio"/> Erection <input checked="" type="radio"/> Without front attachment
Swing angle	25 (°)
Front attachment	<input type="radio"/> Crane <input type="radio"/> Tower (Luffing)

Calculation >

[Contact us](#) [Manual](#) [Catalog](#) Copyright Sumitomo Heavy Industries Construction Cranes Co., Ltd. All Rights Reserved.

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].

HSC CRANES

Ground Pressure Simulator

Result 1 2 3

Model and specification

Model	SCX900-3 Catalog
Specification of base machine	Standard
Counter weight	Standard(31.7t)
Lower weight	Standard(7.5t)
Shoes	Standard
External weight	Without
Condition	Without front attachment
Swing angle	25°

[Back to model selection](#)

Ground pressure

The simulation is based on Japan Construction Machinery and Construction Association

Boom direction	Front	Diagonally to the front	Side	Diagonally to the rear	Rear	Max. pressure	Specified swing direction
Swing angle °	0	45	90	135	180	22	25
A Crawler reaction force (RA) t	42.4	18.5	8.6	18.5	42.4	29.8	28.1
B Crawler reaction force (RB) t	42.4	66.4	76.3	66.4	42.4	55.1	56.7
A Crawler ground pressure front (QAF) t/m ²	0.0	0.0	1.9	9.7	32.5	0.0	0.0
A Crawler ground pressure rear (QAR) t/m ²	36.1	10.5	2.1	0.0	0.0	22.5	20.6
B Crawler ground pressure front (QBF) t/m ²	0.0	0.0	16.5	34.9	32.5	0.0	0.0

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.

Ground pressure							
The simulation is based on Japan Construction Machinery and Construction Association							
Boom direction	Front	Diagonally to the front	Side	Diagonally to the rear	Rear	Max. pressure	Specified swing direction
Swing angle °	0	45	90	135	180	22	25
A Crawler reaction force (RA) t	42.4	18.5	8.6	18.5	42.4	29.8	28.1
B Crawler reaction force (RB) t	42.4	66.4	76.3	66.4	42.4	55.1	56.7
A Crawler ground pressure front (QAF) t/m ²	0.0	0.0	1.9	9.7	32.5	0.0	0.0
A Crawler ground pressure rear (QAR) t/m ²	36.1	10.5	2.1	0.0	0.0	22.5	20.6
B Crawler ground pressure front (QBF) t/m ²	0.0	0.0	16.5	34.9	32.5	0.0	0.0
B Crawler ground pressure rear (QBR) t/m ²	36.1	37.5	18.6	0.0	0.0	41.7	41.6
Length of ground pressure (L) m	2.90	4.36	5.38	4.69	3.23	3.26	3.37
Distribution of pressure	Triangle	Triangle	Trapezoidal	Triangle	Triangle	Triangle	Triangle

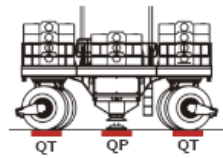
(Note) 1(KPa)=0.102(t/m²), 1(t/m²)=9.8(KPa)
(Note) Theoretical ground area = Distance between tumblers LT
(Note) This simulation doesn't judge overload. Please confirm load charts first and input data according to charts.

Description

(Note) QAF = on A crawler & Front, QAR = on A crawler & Rear, QBF = on B crawler & Front, QBR = on B crawler & Rear

Item name	Explanation
Boom direction	Expresses the direction the boom is facing in reference to the crawler.
Swing angle	Shows the swing angle at maximum ground pressure.
A crawler reaction force (RA)	Shows the reaction force of A Crawler (right crawler).
B crawler reaction force (RB)	Shows the reaction force of B Crawler (left crawler).
A Crawler ground pressure front (QAF)	Shows the front ground pressure of A Crawler (right crawler).
A Crawler ground pressure rear (QAR)	Shows the rear ground pressure of A Crawler (right crawler).
B Crawler ground pressure front	Shows the front ground pressure of B Crawler (left crawler).

(QBF)	
B Crawler ground pressure rear (QBR)	Shows the rear ground pressure of B Crawler (left crawler).
Length of ground pressure (L)	Shows the length of ground pressure on the crawler.
Distribution of pressure	Shows the distribution of the ground pressure (triangular or trapezoidal).

External weight ground pressure on firm supporting surface (Approximate value)			
External counterweight ground pressure			
Tire ground pressure(QT)	t/m ²	98.0	
Pontoon ground pressure(QP)	t/m ²	15.0	

Item name	Explanation
Tire ground pressure (QT)	Shows the tire ground pressure of the external weight.
Pontoon ground pressure (QP)	Shows the pontoon ground pressure of the external weight.

Depending on the specifications, the calculation results will be displayed as follows.

Specifications of base machine	Calculation results
Standard	Crawler Crane body (Method from Japan Construction Machinery and Construction Association)
Super Lift	<p>When the Crawler Crane body is in the following states (Method from Japan Construction Machinery and Construction Association)</p> <p>External weight support pendant tension: large / Longmast support pendant tension: small</p> <p>External weight support pendant tension: small / Longmast support pendant tension: large</p> <p>External weight ground pressure on firm supporting surface (Approximate value)</p> <p>External weight ground pressure on firm supporting surface.</p>

Change history

No	Ver.	Date	Name	Description of the major changes
1	Ver. 1.0	11/15/ 2011	Akiko Matsui	First publication
2	Ver.2.0	4/6/ 2018	Akiko Matsui	Change of our Company Name
3	Ver.3.0	7/21/2021	Katsuyuki Satou	Input categories for arbitrary swing angle and number of falls has been added.
4	Ver.4.0	7/6/2022	Katsuyuki Satou	Additional entry of input/output items along with the addition of corresponding Super Lift models.