

**Federation of Piling Specialists (the “FPS”)  
Rig Loadings Spreadsheet (the “Spreadsheet”)  
Disclaimer**

The Spreadsheet has been designed without liability with the intention of assisting in the calculation of track bearing pressures for use in the BRE Design Method[1]. The Spreadsheet contains sample data, which are intended only to illustrate how the Spreadsheet may be operated, and do not represent any specific rig .

**The Spreadsheet is intended for use only by a competent person.** It is intended to assist in calculating the track loadings that occur with the rig working on a flat horizontal surface with a vertical mast it makes no allowance for the effects on track loadings caused by raking the mast in any direction, or non-vertical suspended loads.

Whilst we have taken steps to check the accuracy of the Spreadsheet, the FPS and the authors of the Spreadsheet do not give any warranty, guarantee, representation or other assurance as to: the operation, quality or functionality of the Spreadsheet; the accuracy or completeness of the Spreadsheet; or its fitness for any particular purpose.

To the fullest extent permissible by law, the FPS and the authors of the Spreadsheet each disclaim all responsibility for any damages or losses (including, without limitation, financial loss, damages for loss in business projects, loss of profits or other consequential losses) arising in contract, tort or otherwise from the use of or inability to use the Spreadsheet, or from any action or decision taken as a result of using the Spreadsheet.

[1] BRE Report 470, Working Platforms for Tracked Plant, 2004

**Spreadsheet Revision Notes**

Track Pressure Calculation Tool v.3.0 - Released: September 2022  
Corrects an error identified in the calculations effecting the resultant Y offset direction.  
Prevents a calculation being made at 15° on non slewing machines.

Track Pressure Calculation Tool v.3.1 - Released: October 2024  
Spreadsheet Revision Notes Added

The user of this spreadsheet shall input data into the relevant yellow boxes on this worksheet and on all of the other relevant worksheets

Rig Manufacturer:	EXAMPLE	Rig Type / Serial No.	Type	Serial
Operation mode:	Mode	Date:	25/09/2024	
Completed by:	Blank	Checked by:	Blank	

Main Components - Slewing							
Item	Mass (kg)	Weight (kN)	X - Coordinate (m)	Y - Coordinate (m)	Moment Mx (kNm)	Moment My (kNm)	
UPPER WORKS (Slewing)	Base Machine	0	0.00	0.00	0	0	
	Mast Assembly	0	0.00	0.00	0	0	
					0	0	
					0	0	
LOWER WORKS (Slewing)					0	0	
					0	0	
					0	0	
					0	0	
SUSPENDED EQUIPMENT CONNECTED TO CROWD SYSTEM (Slewing)	Rotary Head	0	0.00	0.00	0	0	
	Pile Element	0	0.00	0.00	0	0	
					0	0	
COUNTER-WEIGHT (Slewing)	Counterweight	0	0.00	0.00	0	0	
					0	0	
OTHER/OTHER SUSPENDED EQUIPMENT (Slewing)	Other	0	0.00	0.00	0	0	
					0	0	
	UPPER WORKS	0	0.00	0.00	0	0	
	LOWER WORKS	0	0.00	0.00	0	0	
	SUSPENDED EQUIPMENT CONNECTED TO CROWD SYSTEM	0	0.00	0.00	0	0	
	COUNTERWEIGHT	0	0.00	0.00	0	0	
	OTHER	0	0.00	0.00	0	0	
SLEWING TOTAL/RESULTANT (with $\theta=0$ )		0	0.00	0.00	0	0	

Foot Pads - Slewing							
Description	Bearing Area (m <sup>2</sup> )	Max. Pad Loading (kN)	X - Coordinate (m)	Y - Coordinate (m)	Actual Shape	Actual Dimension	
Front Pad 1					None	None	
Front Pad 2					None	None	
Rear Pad 1					None	None	
Rear Pad 2					None	None	

Forces - Slewing						
	Force (kN)	X - Coordinate (m)	Y - Coordinate (m)			
Crowd System - Maximum Extraction Force (kN)	0	0.00	0.00			Must be inline with suspended equip't.
Crowd System - Maximum Penetration Force (kN)	0	0.00	0.00			-ve Must be inline with suspended equip't.
Maximum Auxillary Force (kN)	0	0.00	0.00			

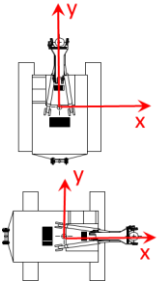
Main Components - Non-Slewing							
Item	Mass (kg)	Weight (kN)	X - Coordinate (m)	Y - Coordinate (m)	Moment Mx (kNm)	Moment My (kNm)	
Lower Works Non-Slewing (undercarriage/tracks etc)	Tracks & Undercarriage	0	0.00	0.00	0	0	
					0	0	
NON-SLEWING TOTAL/RESULTANT (with $\theta=0$ )		0	0.00	0.00	0	0	
TOTAL RIG MASS		0					

Foot Pads - Non-Slewing							
Description	Bearing Area (m <sup>2</sup> )	Max. Pad Loading (kN)	X - Coordinate (m)	Y - Coordinate (m)	Actual Shape	Actual Dimension	
Front Pad 1					None	None	
Front Pad 2					None	None	
Rear Pad 1					None	None	
Rear Pad 2					None	None	

Tracks				Slewing			
Track bearing length (m)	0.00			Can the rig slew?	YES		
Track pad width (m)	0.00						
Distance between centrelines of tracks (m)	0.00						

<p><b>Note:</b> The disclaimer on the first worksheet applies to all tables in this workbook</p>		<p><b>Notes</b> Blank</p>
--	---	-------------------------------

EXAMPLE Type	Weight / Force Applied (kN)	X - Coordinate (m)	Y - Coordinate (m)	Moment Mx (kNm)	Moment My (kNm)					
<b>SLEWING ACTIONS</b>										
Upper Works (slewing)	0	0.00	0.00	0	0					
Suspended Eqpt. on Crowd	0	0.00	0.00	0	0					
Counterweight (slewing)	0	0.00	0.00	0	0					
Other (slewing)	0	0.00	0.00	0	0					
Lower Works (Slewing)	0	0.00	0.00	0	0					
Net Extraction Force	0	0.00	0.00	0	0	Applied Force (kN)	Max. Allowable (kN)			
Net Penetration Force	0	0.00	0.00	0	0	0	0			
Applied Auxiliary Force	0	0.00	0.00	0	0	Applied Force (kN)	Max. Allowable (kN)	Applied Pressure (kPa)	Foot Pad Area (m2)	
Front Pad 1	0	0.00	0.00	0	0	0	0	0	0.00	
Front Pad 2	0	0.00	0.00	0	0	0	0	0	0.00	
Rear Pad 1	0	0.00	0.00	0	0	0	0	0	0.00	
Rear Pad 2	0	0.00	0.00	0	0	0	0	0	0.00	
<b>Summary of Slewing Actions</b>	<b>0</b>	<b>0.00</b>	<b>0.00</b>	<b>0</b>	<b>0</b>	<b>Max. Pad Pressure 0</b>				
<b>NON-SLEWING ACTIONS</b>										
Lower Works Non-Slewing	0	0.00	0.00	0	0	Applied Force (kN)	Max. Allowable (kN)	Applied Pressure (kPa)	Foot Pad Area (m2)	
Front Pad 1	0	0.00	0.00	0	0	0	0	0	0.00	
Front Pad 2	0	0.00	0.00	0	0	0	0	0	0.00	
Rear Pad 1	0	0.00	0.00	0	0	0	0	0	0.00	
Rear Pad 2	0	0.00	0.00	0	0	0	0	0	0.00	
<b>Summary of Non-slewing Actions</b>	<b>0</b>	<b>0.00</b>	<b>0.00</b>	<b>0</b>	<b>0</b>	<b>Max. Pad Pressure 0</b>				
<b>Total Rig Weight</b>	<b>0</b>					Track Bearing Length (m)	<b>0.00</b>			
<b>Resultant of all Actions</b>	<b>0</b>	<b>0.00</b>	<b>0.00</b>	<b>0</b>	<b>0</b>	Track pad width (m)	<b>0.00</b>			
						Track Centerline Dist. (m)	<b>0.00</b>			
<b>Input Data Warning Messages</b>						<b>Notes</b>				
Auxiliary Line Force OK										
Extraction Force OK										
Penetration Force OK										
Slewing Footpad Forces OK										
Non-Slewing Footpad Forces OK										



Mode : Standing							Transformation from triangular or trapezoidal to an equivalent rectangular pressure distribution under track maintaining the load centroid	
Relative Angle - Upper Body and Tracks (degrees)	Max bearing pressure L.H. track (kN/m^2)	Min pressure L.H. track (kN/m^2)	Max bearing pressure R.H. track (kN/m^2)	Min bearing pressure R.H. track (kN/m^2)	Max Track loading dimensions		Equivalent Bearing	
					ecc (m)	Bearing Len. (m)	L (m)	Q (kPa)
0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
15	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
30	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
45	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
60	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
75	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
90	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
105	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
120	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
135	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
150	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
165	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
180	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
195	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
210	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
225	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
240	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
255	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
270	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
285	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
300	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
315	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
330	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
345	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Maximum Track Values							#DIV/0!	#DIV/0!
Pad Area (m <sup>2</sup> )								
Max. Slewing Foot Pads Bearing Pressure (kPa) & Equivalent Bearing Length					0.000	#DIV/0!	0	
Max. Non-Slewing Foot Pads Bearing Pressure (kPa) & Equivalent Bearing L					0.000	#DIV/0!	0	
<b>Maximum Equivalent Design Values</b>							#DIV/0!	#DIV/0!
Eccentricity index - X direction (sideways)							#DIV/0!	
Eccentricity index - Y direction (forwards/backwards)							#DIV/0!	
Track pressure distribution warning							#DIV/0!	
Slewing foot pad message							#DIV/0!	
Non-Slewing foot pad message							#DIV/0!	
<b>BRE LOAD CASE ( 1 or 2 )</b>							<b>1</b>	

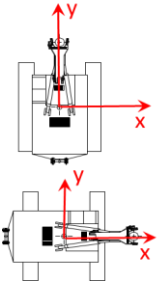
**Notes on Using this Table**  
 Auxiliary Line Pull +ve Z direction. Enter applied force (kN) in appropriate yellow box (G11). Note the maximum design force in the adjacent box (H11).  
 Extraction Line Pull +ve Z direction. Enter applied force (kN) in appropriate yellow box (G9). Note the maximum design force in the adjacent box (FH9).  
 Penetration Force -ve Z direction. Enter applied force (kN) in appropriate yellow box (G10) - must be negative as it imposes an upwards resultant force. Note the maximum design force in the adjacent box (H10).  
 Slewing Foot Pad Forces +ve Z direction. Enter applied total force (kN) in appropriate yellow boxes (G12 to G15). Note the maximum the machine can develop is given in the adjacent boxes.  
 Non-Slewing Foot Pad Forces -ve Z direction. Enter applied total force (kN) in appropriate yellow boxes (G20 to G23). Note the maximum the machine can develop is given in the adjacent boxes.

Fill in values in all yellow boxes appropriate for this mode -  
 Net extraction or penetration force is the applied value minus the weight of any rope / kelly / chain suspended equipment.  
 By trial and error, adjust Foot Pad Forces to eliminate "error" messages and equalise bearing pressures on both tracks and foot pads (highlighted in red boxes).  
 When applying Auxiliary or Extraction Line Pull, ensure that Penetration Force is zero.

**ONLY A COMPETENT PERSON MAY USE THIS TABLE !**      **Note: The disclaimer on the first worksheet applies to all tables in this workbook**



EXAMPLE Type	Weight / Force Applied (kN)	X - Coordinate (m)	Y - Coordinate (m)	Moment Mx (kNm)	Moment My (kNm)					
<b>SLEWING ACTIONS</b>										
Upper Works (slewing)	0	0.00	0.00	0	0					
Suspended Eqpt. on Crowd	0	0.00	0.00	0	0					
Counterweight (slewing)	0	0.00	0.00	0	0					
Other (slewing)	0	0.00	0.00	0	0					
Lower Works (Slewing)	0	0.00	0.00	0	0					
Net Extraction Force	0	0.00	0.00	0	0	Applied Force (kN)	Max. Allowable (kN)			
Net Penetration Force	0	0.00	0.00	0	0	0	0			
Applied Auxiliary Force	0	0.00	0.00	0	0	0	0	Applied Pressure (kPa)	Foot Pad Area (m2)	
Front Pad 1	0	0.00	0.00	0	0	0	0	0	0.00	
Front Pad 2	0	0.00	0.00	0	0	0	0	0	0.00	
Rear Pad 1	0	0.00	0.00	0	0	0	0	0	0.00	
Rear Pad 2	0	0.00	0.00	0	0	0	0	0	0.00	
<b>Summary of Slewing Actions</b>	<b>0</b>	<b>0.00</b>	<b>0.00</b>	<b>0</b>	<b>0</b>	<b>Max. Pad Pressure 0</b>				
<b>NON-SLEWING ACTIONS</b>										
Lower Works Non-Slewing	0	0.00	0.00	0	0	Applied Force (kN)	Max. Allowable (kN)	Applied Pressure (kPa)	Foot Pad Area (m2)	
Front Pad 1	0	0.00	0.00	0	0	0	0	0	0.00	
Front Pad 2	0	0.00	0.00	0	0	0	0	0	0.00	
Rear Pad 1	0	0.00	0.00	0	0	0	0	0	0.00	
Rear Pad 2	0	0.00	0.00	0	0	0	0	0	0.00	
<b>Summary of Non-slewing Actions</b>	<b>0</b>	<b>0.00</b>	<b>0.00</b>	<b>0</b>	<b>0</b>	<b>Max. Pad Pressure 0</b>				
<b>Total Rig Weight</b>	<b>0</b>					Track Bearing Length (m)	<b>0.00</b>			
<b>Resultant of all Actions</b>	<b>0</b>	<b>0.00</b>	<b>0.00</b>	<b>0</b>	<b>0</b>	Track pad width (m)	<b>0.00</b>			
						Track Centerline Dist. (m)	<b>0.00</b>			
<b>Input Data Warning Messages</b>						<b>Notes</b>				
Auxiliary Line Force OK										
Extraction Force OK										
Penetration Force OK										
Slewing Footpad Forces OK										
Non-Slewing Footpad Forces OK										



Mode : Travelling							Transformation from triangular or trapezoidal to an equivalent rectangular pressure distribution under track maintaining the load centroid	
Relative Angle - Upper Body and Tracks (degrees)	Max bearing pressure L.H. track (kN/m^2)	Min pressure L.H. track (kN/m^2)	Max bearing pressure R.H. track (kN/m^2)	Min bearing pressure R.H. track (kN/m^2)	Max Track loading dimensions		Equivalent Bearing	
					ecc (m)	Bearing Len. (m)	L (m)	Q (kPa)
0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
15	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
30	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
45	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
60	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
75	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
90	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
105	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
120	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
135	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
150	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
165	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
180	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
195	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
210	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
225	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
240	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
255	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
270	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
285	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
300	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
315	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
330	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
345	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Maximum Track Values							#DIV/0!	#DIV/0!
Pad Area (m <sup>2</sup> )								
Max. Slewing Foot Pads Bearing Pressure (kPa) & Equivalent Bearing Length					0.000	#DIV/0!	0	
Max. Non-Slewing Foot Pads Bearing Pressure (kPa) & Equivalent Bearing L					0.000	#DIV/0!	0	
<b>Maximum Equivalent Design Values</b>							#DIV/0!	#DIV/0!
Eccentricity index - X direction (sideways)							#DIV/0!	
Eccentricity index - Y direction (forwards/backwards)							#DIV/0!	
Track pressure distribution warning							#DIV/0!	
Slewing foot pad message							#DIV/0!	
Non-Slewing foot pad message							#DIV/0!	
<b>BRE LOAD CASE ( 1 or 2 )</b>							<b>1</b>	

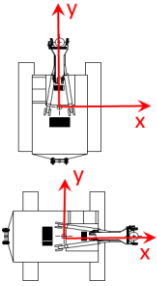
**Notes on Using this Table**  
 Auxiliary Line Pull +ve Z direction. Enter applied force (kN) in appropriate yellow box (G11). Note the maximum design force in the adjacent box (H11).  
 Extraction Line Pull +ve Z direction. Enter applied force (kN) in appropriate yellow box (G9). Note the maximum design force in the adjacent box (FH9).  
 Penetration Force -ve Z direction. Enter applied force (kN) in appropriate yellow box (G10) - must be negative as it imposes an upwards resultant force. Note the maximum design force in the adjacent box (H10).  
 Slewing Foot Pad Forces +ve Z direction. Enter applied total force (kN) in appropriate yellow boxes (G12 to G15). Note the maximum the machine can develop is given in the adjacent boxes.  
 Non-Slewing Foot Pad Forces -ve Z direction. Enter applied total force (kN) in appropriate yellow boxes (G20 to G23). Note the maximum the machine can develop is given in the adjacent boxes.

Fill in values in all yellow boxes appropriate for this mode -  
 Net extraction or penetration force is the applied value minus the weight of any rope / kelly / chain suspended equipment.  
 By trial and error, adjust Foot Pad Forces to eliminate "error" messages and equalise bearing pressures on both tracks and foot pads (highlighted in red boxes).  
 When applying Auxiliary or Extraction Line Pull, ensure that Penetration Force is zero.

**ONLY A COMPETENT PERSON MAY USE THIS TABLE !**      **Note: The disclaimer on the first worksheet applies to all tables in this workbook**



EXAMPLE Type	Weight / Force Applied (kN)	X - Coordinate (m)	Y - Coordinate (m)	Moment Mx (kNm)	Moment My (kNm)					
<b>SLEWING ACTIONS</b>										
Upper Works (slewing)	0	0.00	0.00	0	0					
Suspended Eqpt. on Crowd	0	0.00	0.00	0	0					
Counterweight (slewing)	0	0.00	0.00	0	0					
Other (slewing)	0	0.00	0.00	0	0					
Lower Works (Slewing)	0	0.00	0.00	0	0					
Net Extraction Force	0	0.00	0.00	0	0	Applied Force (kN)	Max. Allowable (kN)			
Net Penetration Force	0	0.00	0.00	0	0	0.00	0			
Applied Auxiliary Force	0	0.00	0.00	0	0	Applied Force (kN)	Max. Allowable (kN)	Applied Pressure (kPa)	Foot Pad Area (m2)	
Front Pad 1	0	0.00	0.00	0	0	0	0	0	0.00	
Front Pad 2	0	0.00	0.00	0	0	0	0	0	0.00	
Rear Pad 1	0	0.00	0.00	0	0	0	0	0	0.00	
Rear Pad 2	0	0.00	0.00	0	0	0	0	0	0.00	
<b>Summary of Slewing Actions</b>	<b>0</b>	<b>0.00</b>	<b>0.00</b>	<b>0</b>	<b>0</b>	<b>Max. Pad Pressure 0</b>				
<b>NON-SLEWING ACTIONS</b>										
Lower Works Non-Slewing	0	0.00	0.00	0	0	Applied Force (kN)	Max. Allowable (kN)	Applied Pressure (kPa)	Foot Pad Area (m2)	
Front Pad 1	0	0.00	0.00	0	0	0	0	0	0.00	
Front Pad 2	0	0.00	0.00	0	0	0	0	0	0.00	
Rear Pad 1	0	0.00	0.00	0	0	0	0	0	0.00	
Rear Pad 2	0	0.00	0.00	0	0	0	0	0	0.00	
<b>Summary of Non-slewing Actions</b>	<b>0</b>	<b>0.00</b>	<b>0.00</b>	<b>0</b>	<b>0</b>	<b>Max. Pad Pressure 0</b>				
<b>Total Rig Weight</b>	<b>0</b>					Track Bearing Length (m)	<b>0.00</b>			
<b>Resultant of all Actions</b>	<b>0</b>	<b>0.00</b>	<b>0.00</b>	<b>0</b>	<b>0</b>	Track pad width (m)	<b>0.00</b>			
						Track Centerline Dist. (m)	<b>0.00</b>			
<b>Input Data Warning Messages</b>						<b>Notes</b>				
Auxiliary Line Force OK										
Extraction Force OK										
Penetration Force OK										
Slewing Footpad Forces OK										
Non-Slewing Footpad Forces OK										



Mode : Handling							Transformation from triangular or trapezoidal to an equivalent rectangular pressure distribution under track maintaining the load centroid		
Relative Angle - Upper Body and Tracks (degrees)	Max bearing pressure L.H. track (kN/m^2)	Min pressure L.H. track (kN/m^2)	Max bearing pressure R.H. track (kN/m^2)	Min bearing pressure R.H. track (kN/m^2)	Max Track loading dimensions		Equivalent Bearing		
					ecc (m)	Bearing Len. (m)	L (m)	Q (kPa)	
0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
15	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
30	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
45	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
60	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
75	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
90	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
105	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
120	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
135	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
150	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
165	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
180	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
195	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
210	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
225	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
240	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
255	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
270	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
285	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
300	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
315	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
330	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
345	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
Maximum Track Values							#DIV/0!	#DIV/0!	#DIV/0!
Pad Area (m <sup>2</sup> )									
Max. Slewing Foot Pads Bearing Pressure (kPa) & Equivalent Bearing Length					0.000	#DIV/0!	0		
Max. Non-Slewing Foot Pads Bearing Pressure (kPa) & Equivalent Bearing L					0.000	#DIV/0!	0		
<b>Maximum Equivalent Design Values</b>							#DIV/0!	#DIV/0!	
Eccentricity index - X direction (sideways)							#DIV/0!		
Eccentricity index - Y direction (forwards/backwards)							#DIV/0!		
Track pressure distribution warning							#DIV/0!		
Slewing foot pad message							#DIV/0!		
Non-Slewing foot pad message							#DIV/0!		
<b>BRE LOAD CASE ( 1 or 2 )</b>								<b>1</b>	

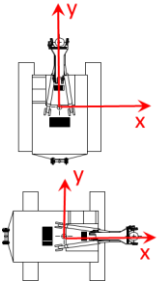
**Notes on Using this Table**  
 Auxiliary Line Pull +ve Z direction. Enter applied force (kN) in appropriate yellow box (G11). Note the maximum design force in the adjacent box (H11).  
 Extraction Line Pull +ve Z direction. Enter applied force (kN) in appropriate yellow box (G9). Note the maximum design force in the adjacent box (FH9).  
 Penetration Force -ve Z direction. Enter applied force (kN) in appropriate yellow box (G10) - must be negative as it imposes an upwards resultant force. Note the maximum design force in the adjacent box (H10).  
 Slewing Foot Pad Forces +ve Z direction. Enter applied total force (kN) in appropriate yellow boxes (G12 to G15). Note the maximum the machine can develop is given in the adjacent boxes.  
 Non-Slewing Foot Pad Forces -ve Z direction. Enter applied total force (kN) in appropriate yellow boxes (G20 to G23). Note the maximum the machine can develop is given in the adjacent boxes.

Fill in values in all yellow boxes appropriate for this mode -  
 Net extraction or penetration force is the applied value minus the weight of any rope / kelly / chain suspended equipment.  
 By trial and error, adjust Foot Pad Forces to eliminate "error" messages and equalise bearing pressures on both tracks and foot pads (highlighted in red boxes).  
 When applying Auxiliary or Extraction Line Pull, ensure that Penetration Force is zero.

**ONLY A COMPETENT PERSON MAY USE THIS TABLE !**      **Note: The disclaimer on the first worksheet applies to all tables in this workbook**



EXAMPLE Type	Weight / Force Applied (kN)	X - Coordinate (m)	Y - Coordinate (m)	Moment Mx (kNm)	Moment My (kNm)					
<b>SLEWING ACTIONS</b>										
Upper Works (slewing)	0	0.00	0.00	0	0					
Suspended Eqpt. on Crowd	0	0.00	0.00	0	0					
Counterweight (slewing)	0	0.00	0.00	0	0					
Other (slewing)	0	0.00	0.00	0	0					
Lower Works (Slewing)	0	0.00	0.00	0	0					
Net Extraction Force	0	0.00	0.00	0	0	Applied Force (kN)	Max. Allowable (kN)			
Net Penetration Force	0	0.00	0.00	0	0	0.00	0			
Applied Auxiliary Force	0	0.00	0.00	0	0	Applied Force (kN)	Max. Allowable (kN)	Applied Pressure (kPa)	Foot Pad Area (m2)	
Front Pad 1	0	0.00	0.00	0	0	0	0	0	0.00	
Front Pad 2	0	0.00	0.00	0	0	0	0	0	0.00	
Rear Pad 1	0	0.00	0.00	0	0	0	0	0	0.00	
Rear Pad 2	0	0.00	0.00	0	0	0	0	0	0.00	
<b>Summary of Slewing Actions</b>	<b>0</b>	<b>0.00</b>	<b>0.00</b>	<b>0</b>	<b>0</b>	<b>Max. Pad Pressure 0</b>				
<b>NON-SLEWING ACTIONS</b>										
Lower Works Non-Slewing	0	0.00	0.00	0	0	Applied Force (kN)	Max. Allowable (kN)	Applied Pressure (kPa)	Foot Pad Area (m2)	
Front Pad 1	0	0.00	0.00	0	0	0	0	0	0.00	
Front Pad 2	0	0.00	0.00	0	0	0	0	0	0.00	
Rear Pad 1	0	0.00	0.00	0	0	0	0	0	0.00	
Rear Pad 2	0	0.00	0.00	0	0	0	0	0	0.00	
<b>Summary of Non-slewing Actions</b>	<b>0</b>	<b>0.00</b>	<b>0.00</b>	<b>0</b>	<b>0</b>	<b>Max. Pad Pressure 0</b>				
<b>Total Rig Weight</b>	<b>0</b>					Track Bearing Length (m)	<b>0.00</b>			
<b>Resultant of all Actions</b>	<b>0</b>	<b>0.00</b>	<b>0.00</b>	<b>0</b>	<b>0</b>	Track pad width (m)	<b>0.00</b>			
						Track Centerline Dist. (m)	<b>0.00</b>			
<b>Input Data Warning Messages</b>						<b>Notes</b>				
Auxiliary Line Force OK										
Extraction Force OK										
Penetration Force OK										
Slewing Footpad Forces OK										
Non-Slewing Footpad Forces OK										



Mode : Penetrating							Transformation from triangular or trapezoidal to an equivalent rectangular pressure distribution under track maintaining the load centroid		
Relative Angle - Upper Body and Tracks (degrees)	Max bearing pressure L.H. track (kN/m^2)	Min pressure L.H. track (kN/m^2)	Max bearing pressure R.H. track (kN/m^2)	Min bearing pressure R.H. track (kN/m^2)	Max Track loading dimensions		Equivalent Bearing		
					ecc (m)	Bearing Len. (m)	L (m)	Q (kPa)	
0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
15	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
30	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
45	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
60	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
75	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
90	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
105	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
120	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
135	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
150	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
165	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
180	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
195	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
210	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
225	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
240	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
255	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
270	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
285	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
300	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
315	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
330	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
345	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
Maximum Track Values							#DIV/0!	#DIV/0!	
Pad Area (m <sup>2</sup> )									
Max. Slewing Foot Pads Bearing Pressure (kPa) & Equivalent Bearing Length					0.000	#DIV/0!	0		
Max. Non-Slewing Foot Pads Bearing Pressure (kPa) & Equivalent Bearing L					0.000	#DIV/0!	0		
<b>Maximum Equivalent Design Values</b>							#DIV/0!	#DIV/0!	
Eccentricity index - X direction (sideways)							#DIV/0!		
Eccentricity index - Y direction (forwards/backwards)							#DIV/0!		
Track pressure distribution warning							#DIV/0!		
Slewing foot pad message							#DIV/0!		
Non-Slewing foot pad message							#DIV/0!		
<b>BRE LOAD CASE ( 1 or 2 )</b>								<b>2</b>	

**Notes on Using this Table**  
 Auxiliary Line Pull +ve Z direction. Enter applied force (kN) in appropriate yellow box (G11). Note the maximum design force in the adjacent box (H11).  
 Extraction Line Pull +ve Z direction. Enter applied force (kN) in appropriate yellow box (G9). Note the maximum design force in the adjacent box (FH9).  
 Penetration Force -ve Z direction. Enter applied force (kN) in appropriate yellow box (G10) - must be negative as it imposes an upwards resultant force. Note the maximum design force in the adjacent box (H10).  
 Slewing Foot Pad Forces +ve Z direction. Enter applied total force (kN) in appropriate yellow boxes (G12 to G15). Note the maximum the machine can develop is given in the adjacent boxes.  
 Non-Slewing Foot Pad Forces -ve Z direction. Enter applied total force (kN) in appropriate yellow boxes (G20 to G23). Note the maximum the machine can develop is given in the adjacent boxes.

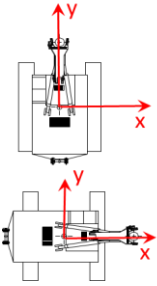
Fill in values in all yellow boxes appropriate for this mode -  
 Net extraction or penetration force is the applied value minus the weight of any rope / kelly / chain suspended equipment.  
 By trial and error, adjust Foot Pad Forces to eliminate "error" messages and equalise bearing pressures on both tracks and foot pads (highlighted in red boxes).  
 When applying Auxiliary or Extraction Line Pull, ensure that Penetration Force is zero.

**ONLY A COMPETENT PERSON MAY USE THIS TABLE !**      **Note: The disclaimer on the first worksheet applies to all tables in this workbook**





EXAMPLE Type	Weight / Force Applied (kN)	X - Coordinate (m)	Y - Coordinate (m)	Moment Mx (kNm)	Moment My (kNm)					
<b>SLEWING ACTIONS</b>										
Upper Works (slewing)	0	0.00	0.00	0	0					
Suspended Eqpt. on Crowd	0	0.00	0.00	0	0					
Counterweight (slewing)	0	0.00	0.00	0	0					
Other (slewing)	0	0.00	0.00	0	0					
Lower Works (Slewing)	0	0.00	0.00	0	0					
Net Extraction Force	0	0.00	0.00	0	0	Applied Force (kN)	Max. Allowable (kN)			
Net Penetration Force	0	0.00	0.00	0	0	0.00	0			
Applied Auxiliary Force	0	0.00	0.00	0	0	Applied Force (kN)	Max. Allowable (kN)	Applied Pressure (kPa)	Foot Pad Area (m2)	
Front Pad 1	0	0.00	0.00	0	0	0	0	0	0.00	
Front Pad 2	0	0.00	0.00	0	0	0	0	0	0.00	
Rear Pad 1	0	0.00	0.00	0	0	0	0	0	0.00	
Rear Pad 2	0	0.00	0.00	0	0	0	0	0	0.00	
<b>Summary of Slewing Actions</b>	<b>0</b>	<b>0.00</b>	<b>0.00</b>	<b>0</b>	<b>0</b>	<b>Max. Pad Pressure 0</b>				
<b>NON-SLEWING ACTIONS</b>										
Lower Works Non-Slewing	0	0.00	0.00	0	0	Applied Force (kN)	Max. Allowable (kN)	Applied Pressure (kPa)	Foot Pad Area (m2)	
Front Pad 1	0	0.00	0.00	0	0	0	0	0	0.00	
Front Pad 2	0	0.00	0.00	0	0	0	0	0	0.00	
Rear Pad 1	0	0.00	0.00	0	0	0	0	0	0.00	
Rear Pad 2	0	0.00	0.00	0	0	0	0	0	0.00	
<b>Summary of Non-slewing Actions</b>	<b>0</b>	<b>0.00</b>	<b>0.00</b>	<b>0</b>	<b>0</b>	<b>Max. Pad Pressure 0</b>				
<b>Total Rig Weight</b>	<b>0</b>					Track Bearing Length (m)	<b>0.00</b>			
<b>Resultant of all Actions</b>	<b>0</b>	<b>0.00</b>	<b>0.00</b>	<b>0</b>	<b>0</b>	Track pad width (m)	<b>0.00</b>			
						Track Centerline Dist. (m)	<b>0.00</b>			
<b>Input Data Warning Messages</b>						<b>Notes</b>				
Auxiliary Line Force OK										
Extraction Force OK										
Penetration Force OK										
Slewing Footpad Forces OK										
Non-Slewing Footpad Forces OK										



Mode : Extracting							Transformation from triangular or trapezoidal to an equivalent rectangular pressure distribution under track maintaining the load centroid		
Relative Angle - Upper Body and Tracks (degrees)	Max bearing pressure L.H. track (kN/m^2)	Min pressure L.H. track (kN/m^2)	Max bearing pressure R.H. track (kN/m^2)	Min bearing pressure R.H. track (kN/m^2)	Max Track loading dimensions		Equivalent Bearing		
					ecc (m)	Bearing Len. (m)	L (m)	Q (kPa)	
0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
15	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
30	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
45	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
60	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
75	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
90	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
105	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
120	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
135	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
150	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
165	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
180	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
195	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
210	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
225	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
240	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
255	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
270	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
285	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
300	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
315	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
330	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
345	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
Maximum Track Values							#DIV/0!	#DIV/0!	#DIV/0!
Pad Area (m <sup>2</sup> )									
Max. Slewing Foot Pads Bearing Pressure (kPa) & Equivalent Bearing Length					0.000	#DIV/0!	0		
Max. Non-Slewing Foot Pads Bearing Pressure (kPa) & Equivalent Bearing L					0.000	#DIV/0!	0		
<b>Maximum Equivalent Design Values</b>							#DIV/0!	#DIV/0!	#DIV/0!
Eccentricity index - X direction (sideways)							#DIV/0!		
Eccentricity index - Y direction (forwards/backwards)							#DIV/0!		
Track pressure distribution warning							#DIV/0!		
Slewing foot pad message							#DIV/0!		
Non-Slewing foot pad message							#DIV/0!		
<b>BRE LOAD CASE ( 1 or 2 )</b>								<b>2</b>	

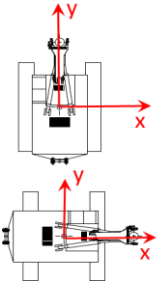
**Notes on Using this Table**  
 Auxiliary Line Pull +ve Z direction. Enter applied force (kN) in appropriate yellow box (G11). Note the maximum design force in the adjacent box (H11).  
 Extraction Line Pull +ve Z direction. Enter applied force (kN) in appropriate yellow box (G9). Note the maximum design force in the adjacent box (FH9).  
 Penetration Force -ve Z direction. Enter applied force (kN) in appropriate yellow box (G10) - must be negative as it imposes an upwards resultant force. Note the maximum design force in the adjacent box (H10).  
 Slewing Foot Pad Forces +ve Z direction. Enter applied total force (kN) in appropriate yellow boxes (G12 to G15). Note the maximum the machine can develop is given in the adjacent boxes.  
 Non-Slewing Foot Pad Forces -ve Z direction. Enter applied total force (kN) in appropriate yellow boxes (G20 to G23). Note the maximum the machine can develop is given in the adjacent boxes.

Fill in values in all yellow boxes appropriate for this mode -  
 Net extraction or penetration force is the applied value minus the weight of any rope / kelly / chain suspended equipment.  
 By trial and error, adjust Foot Pad Forces to eliminate "error" messages and equalise bearing pressures on both tracks and foot pads (highlighted in red boxes).  
 When applying Auxiliary or Extraction Line Pull, ensure that Penetration Force is zero.

**ONLY A COMPETENT PERSON MAY USE THIS TABLE !**      **Note: The disclaimer on the first worksheet applies to all tables in this workbook**



EXAMPLE Type	Weight / Force Applied (kN)	X - Coordinate (m)	Y - Coordinate (m)	Moment Mx (kNm)	Moment My (kNm)					
<b>SLEWING ACTIONS</b>										
Upper Works (slewing)	0	0.00	0.00	0	0					
Suspended Eqpt. on Crowd	0	0.00	0.00	0	0					
Counterweight (slewing)	0	0.00	0.00	0	0					
Other (slewing)	0	0.00	0.00	0	0					
Lower Works (Slewing)	0	0.00	0.00	0	0					
Net Extraction Force	0	0.00	0.00	0	0	Applied Force (kN)	Max. Allowable (kN)			
Net Penetration Force	0	0.00	0.00	0	0	0.00	0			
Applied Auxiliary Force	0	0.00	0.00	0	0	Applied Force (kN)	Max. Allowable (kN)	Applied Pressure (kPa)	Foot Pad Area (m2)	
Front Pad 1	0	0.00	0.00	0	0	0	0	0	0.00	
Front Pad 2	0	0.00	0.00	0	0	0	0	0	0.00	
Rear Pad 1	0	0.00	0.00	0	0	0	0	0	0.00	
Rear Pad 2	0	0.00	0.00	0	0	0	0	0	0.00	
<b>Summary of Slewing Actions</b>	<b>0</b>	<b>0.00</b>	<b>0.00</b>	<b>0</b>	<b>0</b>	<b>Max. Pad Pressure 0</b>				
<b>NON-SLEWING ACTIONS</b>										
Lower Works Non-Slewing	0	0.00	0.00	0	0	Applied Force (kN)	Max. Allowable (kN)	Applied Pressure (kPa)	Foot Pad Area (m2)	
Front Pad 1	0	0.00	0.00	0	0	0	0	0	0.00	
Front Pad 2	0	0.00	0.00	0	0	0	0	0	0.00	
Rear Pad 1	0	0.00	0.00	0	0	0	0	0	0.00	
Rear Pad 2	0	0.00	0.00	0	0	0	0	0	0.00	
<b>Summary of Non-slewing Actions</b>	<b>0</b>	<b>0.00</b>	<b>0.00</b>	<b>0</b>	<b>0</b>	<b>Max. Pad Pressure 0</b>				
<b>Total Rig Weight</b>	<b>0</b>					Track Bearing Length (m)	<b>0.00</b>			
<b>Resultant of all Actions</b>	<b>0</b>	<b>0.00</b>	<b>0.00</b>	<b>0</b>	<b>0</b>	Track pad width (m)	<b>0.00</b>			
						Track Centerline Dist. (m)	<b>0.00</b>			
<b>Input Data Warning Messages</b>						<b>Notes</b>				
Auxiliary Line Force OK										
Extraction Force OK										
Penetration Force OK										
Slewing Footpad Forces OK										
Non-Slewing Footpad Forces OK										



Mode : Other							Transformation from triangular or trapezoidal to an equivalent rectangular pressure distribution under track maintaining the load centroid	
Relative Angle - Upper Body and Tracks (degrees)	Max bearing pressure L.H. track (kN/m^2)	Min pressure L.H. track (kN/m^2)	Max bearing pressure R.H. track (kN/m^2)	Min bearing pressure R.H. track (kN/m^2)	Max Track loading dimensions		Equivalent Bearing	
					ecc (m)	Bearing Len. (m)	L (m)	Q (kPa)
0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
15	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
30	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
45	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
60	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
75	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
90	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
105	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
120	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
135	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
150	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
165	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
180	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
195	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
210	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
225	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
240	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
255	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
270	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
285	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
300	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
315	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
330	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
345	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Maximum Track Values							#DIV/0!	#DIV/0!
Pad Area (m <sup>2</sup> )								
Max. Slewing Foot Pads Bearing Pressure (kPa) & Equivalent Bearing Length					0.000	#DIV/0!	0	
Max. Non-Slewing Foot Pads Bearing Pressure (kPa) & Equivalent Bearing L					0.000	#DIV/0!	0	
<b>Maximum Equivalent Design Values</b>							#DIV/0!	#DIV/0!
Eccentricity index - X direction (sideways)							#DIV/0!	
Eccentricity index - Y direction (forwards/backwards)							#DIV/0!	
Track pressure distribution warning							#DIV/0!	
Slewing foot pad message							#DIV/0!	
Non-Slewing foot pad message							#DIV/0!	
<b>BRE LOAD CASE ( 1 or 2 )</b>							<b>0</b>	

**Notes on Using this Table**  
 Auxiliary Line Pull +ve Z direction. Enter applied force (kN) in appropriate yellow box (G11). Note the maximum design force in the adjacent box (H11).  
 Extraction Line Pull +ve Z direction. Enter applied force (kN) in appropriate yellow box (G9). Note the maximum design force in the adjacent box (FH9).  
 Penetration Force -ve Z direction. Enter applied force (kN) in appropriate yellow box (G10) - must be negative as it imposes an upwards resultant force. Note the maximum design force in the adjacent box (H10).  
 Slewing Foot Pad Forces +ve Z direction. Enter applied total force (kN) in appropriate yellow boxes (G12 to G15). Note the maximum the machine can develop is given in the adjacent boxes.  
 Non-Slewing Foot Pad Forces -ve Z direction. Enter applied total force (kN) in appropriate yellow boxes (G20 to G23). Note the maximum the machine can develop is given in the adjacent boxes.

Fill in values in all yellow boxes appropriate for this mode -  
 Net extraction or penetration force is the applied value minus the weight of any rope / kelly / chain suspended equipment.  
 By trial and error, adjust Foot Pad Forces to eliminate "error" messages and equalise bearing pressures on both tracks and foot pads (highlighted in red boxes).  
 When applying Auxiliary or Extraction Line Pull, ensure that Penetration Force is zero.

**ONLY A COMPETENT PERSON MAY USE THIS TABLE !**      **Note: The disclaimer on the first worksheet applies to all tables in this workbook**





**Schedule of Piling Rig Component Weights, Dimensions, Forces and Pressures**

Rig Manufacturer :	<b>EXAMPLE</b>	Rig Type / Serial No.	<b>Type</b>	<b>Serial</b>
Operation mode:	<b>Mode</b>	Date:	<b>25/09/2024</b>	
Completed by:	<b>Blank</b>	Checked by:	<b>Blank</b>	

Item	Mass (kg)	Weight (kN)	X - Coordinate (m)	Y - Coordinate (m)	Moment Mx (kNm)	Moment My (kNm)
<b>Slewing Components Totals/Resultant (with θ=0)</b>						
UPPER WORKS	0	0	0.00	0.00	0	0
LOWER WORKS	0	0	0.00	0.00	0	0
SUSPENDED EQUIPMENT CONNECTED TO CROWD SYSTEM	0	0	0.00	0.00	0	0
COUNTERWEIGHT	0	0	0.00	0.00	0	0
OTHER	0	0	0.00	0.00	0	0
TOTAL/RESULTANT (with θ=0)	0	0	0.00	0.00	0	0

Description (Forces must be -ve)	Bearing Area (m <sup>2</sup> )	Max. Pad Loading (kN)	X - Coordinate (m)	Y - Coordinate (m)	Actual Shape	Actual Dimension
Front Pad 1					None	None
Front Pad 2					None	None
Rear Pad 1					None	None
Rear Pad 2					None	None

	Force (kN)	X - Coordinate (m)	Y - Coordinate (m)	
Maximum Extraction Force (kN)	0	0.00	0.00	Must be inline with suspended equip't.
Maximum Penetration Force (kN)	0	0.00	0.00	-ve Must be inline with suspended equip't.
Maximum Auxillary Force (kN)	0	0.00	0.00	

Item	Mass (kg)	Weight (kN)	X - Coordinate (m)	Y - Coordinate (m)	Moment Mx (kNm)	Moment My (kNm)
Lower Works Non-Slewing (undercarriage/tracks etc)						
Tracks & Undercarriage	0	0	0.00	0.00	0	0
TOTAL/RESULTANT (with θ=0)	0	0	0.00	0.00	0	0
TOTAL RIG MASS	0					

Description	Bearing Area (m <sup>2</sup> )	Max. Pad Loading (kNm)	X - Coordinate (m)	Y - Coordinate (m)	Actual Shape	Actual Dimension
Front Pad 1					None	None
Front Pad 2					None	None
Rear Pad 1					None	None
Rear Pad 2					None	None

Tracks	Slewing
Track bearing length (m)	0.00
Track pad width (m)	0.00
Distance between centrelines of tracks (m)	0.00
Can the Rig Slew?	<b>YES</b>

MODE	Pressure Summary for Platform Design (unfactored)			BRE LOAD CASE (1 or 2)	Eccentricity Index		Winch Forces
	Equiv. Track Length (m)	Equiv. Track Width (m)	Equiv. Uniform Bearing Pressure, $q_{sa}$ (kPa)		Eccentricity index - X direction (sideways)	Eccentricity index - Y direction (forwards/backwards)	
Standing	#DIV/0!	0.00	#DIV/0!	1	#DIV/0!	#DIV/0!	0
Travelling	#DIV/0!	0.00	#DIV/0!	1	#DIV/0!	#DIV/0!	0
Handling	#DIV/0!	0.00	#DIV/0!	1	#DIV/0!	#DIV/0!	0
Penetrating	#DIV/0!	0.00	#DIV/0!	2	#DIV/0!	#DIV/0!	0
Extracting	#DIV/0!	0.00	#DIV/0!	2	#DIV/0!	#DIV/0!	0
Other	Not Used	-	-	0	-	-	0

MODE	ERROR FOR TRACK	Auxillary Line	ERROR MESSAGES FOR LINE FORCES
Standing	Zero Pressure #DIV/0!	Auxiliary Line Force OK	Extraction Force OK Penetration Force OK
Travelling	#DIV/0!	Auxiliary Line Force OK	Extraction Force OK Penetration Force OK
Handling	#DIV/0!	Auxiliary Line Force OK	Extraction Force OK Penetration Force OK
Penetrating	#DIV/0!	Auxiliary Line Force OK	Extraction Force OK Penetration Force OK
Extracting	#DIV/0!	Auxiliary Line Force OK	Extraction Force OK Penetration Force OK
Other	#DIV/0!	Auxiliary Line Force OK	Extraction Force OK Penetration Force OK

MODE	ERROR MESSAGES FOR FOOT PAD FORCES	ERROR MESSAGES FOR FOOT PAD PRESSURES
	INPUT DATA	OUTPUT DATA
Standing	Slewing Footpad Forces OK Non-Slewing Footpad Forces OK	#DIV/0! #DIV/0!
Travelling	Slewing Footpad Forces OK Non-Slewing Footpad Forces OK	#DIV/0! #DIV/0!
Handling	Slewing Footpad Forces OK Non-Slewing Footpad Forces OK	#DIV/0! #DIV/0!
Penetrating	Slewing Footpad Forces OK Non-Slewing Footpad Forces OK	#DIV/0! #DIV/0!
Extracting	Slewing Footpad Forces OK Non-Slewing Footpad Forces OK	#DIV/0! #DIV/0!
Other	Slewing Footpad Forces OK Non-Slewing Footpad Forces OK	#DIV/0! #DIV/0!

<p><b>Note:</b> The disclaimer on the first worksheet applies to all tables in this workbook</p>		<p><b>Notes</b> Blank</p>
--	---	-------------------------------