

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

Note: The disclaimer on the first worksheet applies to all tables in this workbook

Rig Manufacturer :	<b>TESCAR</b>	Rig Type & Serial No.	<b>CF3</b>	<b>#3164</b>
Operation mode:	<b>ESP100 / Supporto BASSO</b>	Date:	<b>23/07/2018</b>	
Completed by:	<b>LG</b>	Checked by:	<b>LF</b>	

Main Components - Slewing:							
Item	Mass (kg)	Weight (kN)	X - Coordinate	Y - Coordinate	Moment Mx (kNm)	Moment My (kNm)	
UPPER WORKS (Slewing)	Mast Assembly	1,150	11	0.00	1.50	-17	0
	Cathead	150	1	0.00	1.50	-2	0
	Support	450	4	0.00	0.96	-4	0
	Winches	300	3	0.00	0.96	-3	0
	Hydraulic cylinder	350	3	0.00	1.25	-4	0
	Pull down	100	1	0.00	1.60	-2	0
LOWER WORKS (Slewing)	Base Machine	4,500	44	0.00	-0.30	13	0
						0	0
						0	0
						0	0
SUSPENDED EQUIPMENT CONNECTED TO CROWD SYSTEM (Slewing)	Kelly	1,900	19	0.00	2.25	-42	0
	Rotary Head	400	4	0.00	2.25	-9	0
						0	0
COUNTER-WEIGHT (Slewing)	Counterweight	700	7	0.00	-1.10	8	0
						0	0
OTHER/OTHER SUSPENDED EQUIPMENT (Slewing)						0	0
						0	0
UPPER WORKS	2,500	25	0.00	1.31	-32	0	
LOWER WORKS	4,500	44	0.00	-0.30	13	0	
SUSPENDED EQUIPMENT CONNECTED TO CROWD SYSTEM	2,300	23	0.00	2.25	-51	0	
COUNTERWEIGHT	700	7	0.00	-1.10	8	0	
OTHER	0	0	0.00	0.00	0	0	
SLEWING TOTAL/RESULTANT (with θ=0)	10,000	98	0.00	0.63	-62	0	

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

Forces - Slewing					
	Force	X - Coordinate	Y - Coordinate		
	kN	m	m		
Crowd System - Maximum Extraction Force (kN)	48	0.00	2.25	Must be inline with suspended equip't.	
Crowd System - Maximum Penetration Force (kN)	-130	0.00	2.25	-ve Must be inline with suspended equip't.	
Maximum Auxilliary Force (kN)	1	0.00	1.80		

Main Components - Non-Slewing:							
Item	Mass (kg)	Weight (kN)	X - Coordinate	Y - Coordinate	Moment Mx (kNm)	Moment My (kNm)	
Lower Works Non-Slewing (undercarriage/tracks etc)	Tracks & Undercarriage	4,500	44	0.00	-0.08	4	0
				0.00	0.00	0	0
				0.00	0.00	0	0
NON-SLEWING TOTAL/RESULTANT (with θ=0)	4,500	44	0.00	-0.08	4	0	
TOTAL RIG MASS	14,500						

Foot Pads - Non-Slewing							
Description	Bearing Area	Max. Pad Loading	X - Coordinate	Y - Coordinate	Actual Shape	Actual Dimension	
	m <sup>2</sup>	kN	m	m			
Front Pad 1							
Front Pad 2							
Rear Pad 1							
Rear Pad 2							

Tracks	Slewing
Track bearing length (m)	2.58
Track pad width (m)	0.45
Distance between centrelines of tracks (m)	1.87
Can the rig slew?	
YES	

Note: The disclaimer on the first worksheet applies to all tables in this workbook



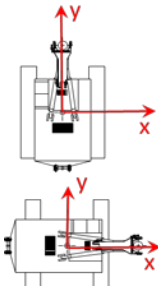
Notes  
MAX WORKING RADIUS 2,15m.

<b>TESCAR</b>	Weight / Force Applied (kN)	X - Coordinate	Y - Coordinate	Moment Mx	Moment My
<b>CF3</b>					

<b>SLEWING ACTIONS</b>					
Upper Works (slewing)	25	0.00	1.31	-32	0
Suspended Eqpt. on Crowd	23	0.00	2.25	-51	0
Counterweight (slewing)	7	0.00	-1.10	8	0
Other (slewing)	0	0.00	0.00	0	0
Lower Works (Slewing)	44	0.00	-0.30	13	0
Net Extraction Force	0	0.00	2.25	0	0
Net Penetration Force	0	0.00	2.25	0	0
Applied Auxiliary Force	0	0.00	1.80	0	0
Front Pad 1	0	0.00	0.00	0	0
Front Pad 2	0	0.00	0.00	0	0
Rear Pad 1	0	0.00	0.00	0	0
Rear Pad 2	0	0.00	0.00	0	0
<b>Summary of Slewing Action</b>	98	0.00	0.63	-62	0

Applied Force (kN)	Max. Allowable (kN)
0	48
0	-130
0	1

Applied Pressure (kPa)	Foot Pad Area (m <sup>2</sup> )
0	0.00
0	0.00
0	0.00
0	0.00
<b>Max. Pad Pressure</b>	<b>0</b>



<b>NON-SLEWING ACTIONS</b>						Applied Force (kN)	Max. Allowable (kN)	Applied Pressure (kPa)	Foot Pad Area (m <sup>2</sup> )	
Lower Works Non-Slewing	44	0.00	-0.08	4	0	0	0	0	0.00	
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>	44	0.00	-0.08	4	0	<b>Max. Pad Pressure 0</b>				
<b>Total Rig Weight (kN)</b>	142					Track Bearing Length (m)	2.58			
<b>Resultant of all Actions (kN)</b>	142	0.00	0.41	-58	0	Track pad width (m)	0.45			
						Track Centerline Dist. (m)	1.87			

<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	

**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**

<b>Mode : Standing</b>								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 <sup>2</sup> )	Min pressure L.H. track (kN/m <sup>2</sup> )	Max bearing pressure R.H. track (kN/m <sup>2</sup> )	Min bearing pressure R.H. track (kN/m <sup>2</sup> )	Max Track loading dimensions		Equivalent Bearing		
					ecc (m)	Bearing Len. (m)	L (m)	Q (kPa)	
0	120	3	120	3	0.411	2.580	1.758	90	
15	104	4	132	5	0.396	2.580	1.787	99	
30	86	8	138	14	0.353	2.580	1.874	104	
45	68	14	135	28	0.283	2.580	2.013	104	
60	53	20	125	47	0.193	2.580	2.194	101	
75	41	27	107	71	0.088	2.580	2.404	95	
90	35	31	95	85	-0.025	2.580	2.530	92	
105	44	23	117	60	-0.138	2.580	2.305	99	
120	57	16	135	37	-0.243	2.580	2.094	106	
135	73	9	145	18	-0.333	2.580	1.914	110	
150	91	3	146	5	-0.402	2.580	1.775	110	
165	110	0	140	0	-0.446	2.532	1.688	105	
180	127	0	127	0	-0.461	2.487	1.658	95	
195	140	0	110	0	-0.446	2.532	1.688	105	
210	146	5	91	3	-0.402	2.580	1.775	110	
225	145	18	73	9	-0.333	2.580	1.914	110	
240	135	37	57	16	-0.243	2.580	2.094	106	
255	117	60	44	23	-0.138	2.580	2.305	99	
270	95	85	35	31	-0.025	2.580	2.530	92	
285	107	71	41	27	0.088	2.580	2.404	95	
300	125	47	53	20	0.193	2.580	2.194	101	
315	135	28	68	14	0.283	2.580	2.013	104	
330	138	14	86	8	0.353	2.580	1.874	104	
345	132	5	104	4	0.396	2.580	1.787	99	
<b>Maximum Track Values</b>							1.914	110	
							Pad Area (m <sup>2</sup> )		
Max. Slewing Foot Pads Bearing Pressure (kPa) & Equivalent Bearing Leng							0.000	0.000	0
Max. Non-Slewing Foot Pads Bearing Pressure (kPa) & Equivalent Bearing							0.000	0.000	0
<b>Maximum Equivalent Design Values</b>							1.914	110	
Eccentricity index - X direction (sideways)					0.47				
Eccentricity index - Y direction (forwards/backwards)					0.36				
Track pressure distribution warning					Track(s) lifting				
Slewing foot pad message					Slewing Foot Pad Pressure OK				
Non-Slewing foot pad message					Non-Slewing Foot Pad Pressure OK				
<b>BRE LOAD CASE ( 1 or 2 )</b>								1	

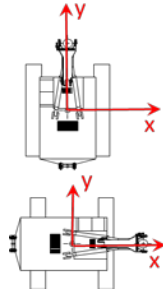


<b>TESCAR</b>	Weight / Force Applied (kN)	X - Coordinate	Y - Coordinate	Moment Mx	Moment My
<b>CF3</b>					

<b>SLEWING ACTIONS</b>					
Upper Works (slewing)	25	0.00	1.31	-32	0
Suspended Eqpt. on Crowd	23	0.00	2.25	-51	0
Counterweight (slewing)	7	0.00	-1.10	8	0
Other (slewing)	0	0.00	0.00	0	0
Lower Works (Slewing)	44	0.00	-0.30	13	0
Net Extraction Force	0	0.00	2.25	0	0
Net Penetration Force	0	0.00	2.25	0	0
Applied Auxiliary Force	0	0.00	1.80	0	0
Front Pad 1	0	0.00	0.00	0	0
Front Pad 2	0	0.00	0.00	0	0
Rear Pad 1	0	0.00	0.00	0	0
Rear Pad 2	0	0.00	0.00	0	0
<b>Summary of Slewing Action</b>	98	0.00	0.63	-62	0

Applied Force (kN)	Max. Allowable (kN)
0	48
0	-130
0	1

Applied Pressure (kPa)	Foot Pad Area (m <sup>2</sup> )
0	0.00
0	0.00
0	0.00
0	0.00
0	0.00
<b>Max. Pad Pressure</b>	0



<b>NON-SLEWING ACTIONS</b>						Applied Force (kN)	Max. Allowable (kN)	Applied Pressure (kPa)	Foot Pad Area (m <sup>2</sup> )	
Lower Works Non-Slewing	44	0.00	-0.08	4	0	0	0	0	0.00	
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>	44	0.00	-0.08	4	0	<b>Max. Pad Pressure 0</b>				
<b>Total Rig Weight (kN)</b>	142					Track Bearing Length (m)	2.58			
<b>Resultant of all Actions (kN)</b>	142	0.00	0.41	-58	0	Track pad width (m)	0.45			
						Track Centerline Dist. (m)	1.87			

<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	

**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.

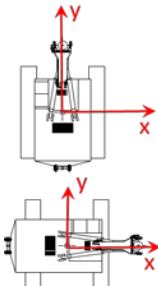
**ONLY A COMPETENT PERSON MAY USE THIS TABLE !**

**Note: The disclaimer on the first worksheet applies to all tables in this workbook**

<b>Mode : Travelling</b>								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 <sup>2</sup> )	Min pressure L.H. track (kN/m <sup>2</sup> )	Max bearing pressure R.H. track (kN/m <sup>2</sup> )	Min bearing pressure R.H. track (kN/m <sup>2</sup> )	Max Track loading dimensions		Equivalent Bearing		
					ecc (m)	Bearing Len. (m)	L (m)	Q (kPa)	
0	120	3	120	3	0.411	2.580	1.758	90	
15	104	4	132	5	0.396	2.580	1.787	99	
30	86	8	138	14	0.353	2.580	1.874	104	
45	68	14	135	28	0.283	2.580	2.013	104	
60	53	20	125	47	0.193	2.580	2.194	101	
75	41	27	107	71	0.088	2.580	2.404	95	
90	35	31	95	85	-0.025	2.580	2.530	92	
105	44	23	117	60	-0.138	2.580	2.305	99	
120	57	16	135	37	-0.243	2.580	2.094	106	
135	73	9	145	18	-0.333	2.580	1.914	110	
150	91	3	146	5	-0.402	2.580	1.775	110	
165	110	0	140	0	-0.446	2.532	1.688	105	
180	127	0	127	0	-0.461	2.487	1.658	95	
195	140	0	110	0	-0.446	2.532	1.688	105	
210	146	5	91	3	-0.402	2.580	1.775	110	
225	145	18	73	9	-0.333	2.580	1.914	110	
240	135	37	57	16	-0.243	2.580	2.094	106	
255	117	60	44	23	-0.138	2.580	2.305	99	
270	95	85	35	31	-0.025	2.580	2.530	92	
285	107	71	41	27	0.088	2.580	2.404	95	
300	125	47	53	20	0.193	2.580	2.194	101	
315	135	28	68	14	0.283	2.580	2.013	104	
330	138	14	86	8	0.353	2.580	1.874	104	
345	132	5	104	4	0.396	2.580	1.787	99	
<b>Maximum Track Values</b>							1.914	110	
							Pad Area (m <sup>2</sup> )		
Max. Slewing Foot Pads Bearing Pressure (kPa) & Equivalent Bearing Leng							0.000	0.000	0
Max. Non-Slewing Foot Pads Bearing Pressure (kPa) & Equivalent Bearing							0.000	0.000	0
<b>Maximum Equivalent Design Values</b>							1.914	110	
Eccentricity index - X direction (sideways)					0.47				
Eccentricity index - Y direction (forwards/backwards)					0.36				
Track pressure distribution warning					Track(s) lifting				
Slewing foot pad message					Slewing Foot Pad Pressure OK				
Non-Slewing foot pad message					Non-Slewing Foot Pad Pressure OK				
<b>BRE LOAD CASE ( 1 or 2 )</b>								1	



<b>TESCAR</b>	Weight / Force Applied (kN)	X - Coordinate	Y - Coordinate	Moment Mx	Moment My
<b>CF3</b>					



<b>SLEWING ACTIONS</b>					
Upper Works (slewing)	25	0.00	1.31	-32	0
Suspended Eqpt. on Crowd	23	0.00	2.25	-51	0
Counterweight (slewing)	7	0.00	-1.10	8	0
Other (slewing)	0	0.00	0.00	0	0
Lower Works (Slewing)	44	0.00	-0.30	13	0
Net Extraction Force	0	0.00	2.25	0	0
Net Penetration Force	0	0.00	2.25	0	0
Applied Auxiliary Force	1	0.00	1.80	-2	0
Front Pad 1	0	0.00	0.00	0	0
Front Pad 2	0	0.00	0.00	0	0
Rear Pad 1	0	0.00	0.00	0	0
Rear Pad 2	0	0.00	0.00	0	0
<b>Summary of Slewing Action</b>	99	0.00	0.64	-64	0

Applied Force (kN)	Max. Allowable (kN)	Applied Pressure (kPa)	Foot Pad Area (m <sup>2</sup> )
0	48	0	0.00
0	-130	0	0.00
1	1	0	0.00

<b>NON-SLEWING ACTIONS</b>						Applied Force (kN)	Max. Allowable (kN)	Applied Pressure (kPa)	Foot Pad Area (m <sup>2</sup> )	
Lower Works Non-Slewing	44	0.00	-0.08	4	0	0	0	0	0.00	
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>	44	0.00	-0.08	4	0	<b>Max. Pad Pressure 0</b>				
<b>Total Rig Weight (kN)</b>	142					Track Bearing Length (m)	2.58			
<b>Resultant of all Actions (kN)</b>	143	0.00	0.42	-60	0	Track pad width (m)	0.45			
						Track Centerline Dist. (m)	1.87			

Handling

<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	

**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.

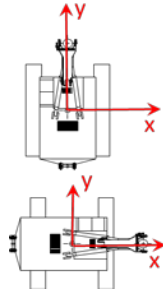
**ONLY A COMPETENT PERSON MAY USE THIS TABLE !** **Note: The disclaimer on the first worksheet applies to all tables in this workbook**

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 <sup>2</sup> )	Min pressure L.H. track (kN/m <sup>2</sup> )	Max bearing pressure R.H. track (kN/m <sup>2</sup> )	Min bearing pressure R.H. track (kN/m <sup>2</sup> )	Max Track loading dimensions		Equivalent Bearing		
					ecc (m)	Bearing Len. (m)	L (m)	Q (kPa)	
0	122	1	122	1	0.421	2.580	1.738	92	
15	105	3	135	4	0.406	2.580	1.769	101	
30	86	8	141	12	0.361	2.580	1.858	106	
45	69	13	138	27	0.290	2.580	1.999	106	
60	53	20	127	47	0.198	2.580	2.184	103	
75	40	26	109	71	0.091	2.580	2.399	97	
90	34	30	96	86	-0.025	2.580	2.531	93	
105	44	22	119	61	-0.140	2.580	2.300	101	
120	57	15	137	37	-0.247	2.580	2.085	108	
135	73	9	148	17	-0.340	2.580	1.901	112	
150	92	2	149	3	-0.411	2.580	1.759	112	
165	111	0	143	0	-0.455	2.505	1.670	107	
180	129	0	129	0	-0.470	2.459	1.640	97	
195	143	0	111	0	-0.455	2.505	1.670	107	
210	149	3	92	2	-0.411	2.580	1.759	112	
225	148	17	73	9	-0.340	2.580	1.901	112	
240	137	37	57	15	-0.247	2.580	2.085	108	
255	119	61	44	22	-0.140	2.580	2.300	101	
270	96	86	34	30	-0.025	2.580	2.531	93	
285	109	71	40	26	0.091	2.580	2.399	97	
300	127	47	53	20	0.198	2.580	2.184	103	
315	138	27	69	13	0.290	2.580	1.999	106	
330	141	12	86	8	0.361	2.580	1.858	106	
345	135	4	105	3	0.406	2.580	1.769	101	
<b>Maximum Track Values</b>							1.759	112	
							Pad Area (m <sup>2</sup> )		
Max. Slewing Foot Pads Bearing Pressure (kPa) & Equivalent Bearing Length							0.000	0.000	0
Max. Non-Slewing Foot Pads Bearing Pressure (kPa) & Equivalent Bearing Length							0.000	0.000	0
<b>Maximum Equivalent Design Values</b>							1.759	112	
Eccentricity index - X direction (sideways)							0.48		
Eccentricity index - Y direction (forwards/backwards)							0.36		
Track pressure distribution warning							<b>Track(s) lifting</b>		
Slewing foot pad message							<b>Slewing Foot Pad Pressure OK</b>		
Non-Slewing foot pad message							<b>Non-Slewing Foot Pad Pressure OK</b>		
<b>BRE LOAD CASE ( 1 or 2 )</b>							1		



TESCAR	Weight / Force Applied (kN)	X - Coordinate	Y - Coordinate	Moment Mx	Moment My
<b>CF3</b>					

SLEWING ACTIONS					
Upper Works (slewing)	25	0.00	1.31	-32	0
Suspended Eqpt. on Crowd	23	0.00	2.25	-51	0
Counterweight (slewing)	7	0.00	-1.10	8	0
Other (slewing)	0	0.00	0.00	0	0
Lower Works (Slewing)	44	0.00	-0.30	13	0
Net Extraction Force	0	0.00	2.25	0	0
Net Penetration Force	-61	0.00	2.25	136	0
Applied Auxiliary Force	0	0.00	1.80	0	0
Front Pad 1	0	0.00	0.00	0	0
Front Pad 2	0	0.00	0.00	0	0
Rear Pad 1	0	0.00	0.00	0	0
Rear Pad 2	0	0.00	0.00	0	0
Summary of Slewing Actions	38	0.00	-1.98	74	-0



Applied Force (kN)	Max. Allowable (kN)	Applied Pressure (kPa)	Foot Pad Area (m <sup>2</sup> )
0.00	48	0	0.00
-38.00	-130	0	0.00
0.00	1	0	0.00
0	0	0	0.00
0	0	0	0.00
0	0	0	0.00
0	0	0	0.00
0	0	0	0.00
Max. Pad Pressure	0		

NON-SLEWING ACTIONS						Applied Force (kN)	Max. Allowable (kN)	Applied Pressure (kPa)	Foot Pad Area (m <sup>2</sup> )
Lower Works Non-Slewing	44	0.00	-0.08	4	0	0	0	0	0.00
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
Summary of Non-slewing Actions	44	0.00	-0.08	4	0	Max. Pad Pressure	0		
Total Rig Weight (kN)	142					Track Bearing Length (m)			2.58
Resultant of all Actions (kN)	82	0.00	-0.95	78	0	Track pad width (m)			0.45
						Track Centerline Dist. (m)			1.87

Input Data Warning Messages	Notes
Auxiliary Line Force OK	
Extraction Force OK	
Penetration Force OK	
Slewing Footpad Forces OK	
Non-Slewing Footpad Forces OK	

**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**

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 <sup>2</sup> )	Min pressure L.H. track (kN/m <sup>2</sup> )	Max bearing pressure R.H. track (kN/m <sup>2</sup> )	Min bearing pressure R.H. track (kN/m <sup>2</sup> )	Max Track loading dimensions		Equivalent Bearing		
					ecc (m)	Bearing Len. (m)	L (m)	Q (kPa)	
0	143	0	143	0	0.866	1.273	0.849	107	
15	99	0	166	0	0.835	1.366	0.911	125	
30	57	0	165	0	0.744	1.638	1.092	123	
45	27	0	148	0	0.599	2.072	1.381	111	
60	11	0	127	3	0.411	2.580	1.758	95	
75	3	1	99	38	0.192	2.580	2.196	80	
90	1	1	76	62	-0.043	2.580	2.494	72	
105	4	1	112	24	-0.278	2.580	2.023	87	
120	12	0	141	0	-0.498	2.377	1.585	105	
135	31	0	169	0	-0.686	1.812	1.208	127	
150	68	0	196	0	-0.830	1.379	0.919	147	
165	123	0	205	0	-0.921	1.106	0.738	154	
180	179	0	179	0	-0.952	1.014	0.676	134	
195	205	0	123	0	-0.921	1.106	0.738	154	
210	196	0	68	0	-0.830	1.379	0.919	147	
225	169	0	31	0	-0.686	1.812	1.208	127	
240	141	0	12	0	-0.498	2.377	1.585	105	
255	112	24	4	1	-0.278	2.580	2.023	87	
270	76	62	1	1	-0.043	2.580	2.494	72	
285	99	38	3	1	0.192	2.580	2.196	80	
300	127	3	11	0	0.411	2.580	1.758	95	
315	148	0	27	0	0.599	2.072	1.381	111	
330	165	0	57	0	0.744	1.638	1.092	123	
345	166	0	99	0	0.835	1.366	0.911	125	
Maximum Track Values							0.738	154	
							Pad Area (m <sup>2</sup> )		
Max. Slewing Foot Pads Bearing Pressure (kPa) & Equivalent Bearing Leng							0.000	0.000	0
Max. Non-Slewing Foot Pads Bearing Pressure (kPa) & Equivalent Bearing							0.000	0.000	0
<b>Maximum Equivalent Design Values</b>									
Eccentricity index - X direction (sideways)							<b>0.97</b>		
Eccentricity index - Y direction (forwards/backwards)							<b>0.74</b>		
Track pressure distribution warning							<b>Track(s) lifting</b>		
Slewing foot pad message							<b>Slewing Foot Pad Pressure OK</b>		
Non-Slewing foot pad message							<b>Non-Slewing Foot Pad Pressure OK</b>		
<b>BRE LOAD CASE ( 1 or 2 )</b>									<b>2</b>

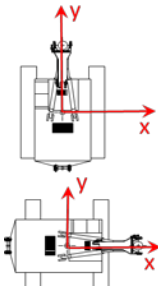


<b>TESCAR</b>	Weight / Force Applied (kN)	X - Coordinate	Y - Coordinate	Moment Mx	Moment My
<b>CF3</b>					

<b>SLEWING ACTIONS</b>					
Upper Works (slewing)	25	0.00	1.31	-32	0
Suspended Eqpt. on Crowd	23	0.00	2.25	-51	0
Counterweight (slewing)	7	0.00	-1.10	8	0
Other (slewing)	0	0.00	0.00	0	0
Lower Works (Slewing)	44	0.00	-0.30	13	0
Net Extraction Force	25	0.00	2.25	-57	0
Net Penetration Force	0	0.00	2.25	0	0
Applied Auxiliary Force	0	0.00	1.80	0	0
Front Pad 1	0	0.00	0.00	0	0
Front Pad 2	0	0.00	0.00	0	0
Rear Pad 1	0	0.00	0.00	0	0
Rear Pad 2	0	0.00	0.00	0	0
<b>Summary of Slewing Action</b>	123	0.00	0.96	-119	0

Applied Force (kN)	Max. Allowable (kN)
47.80	48
0.00	-130
0.00	1

Applied Pressure (kPa)	Foot Pad Area (m <sup>2</sup> )
0	0.00
0	0.00
0	0.00
0	0.00
<b>Max. Pad Pressure</b>	<b>0</b>



<b>NON-SLEWING ACTIONS</b>					
Lower Works Non-Slewing	44	0.00	-0.08	4	0
Front Pad 1	0	0.00	0.00	0	0
Front Pad 2	0	0.00	0.00	0	0
Rear Pad 1	0	0.00	0.00	0	0
Rear Pad 2	0	0.00	0.00	0	0
<b>Summary of Non-slewing Actions</b>	44	0.00	-0.08	4	0
<b>Total Rig Weight (kN)</b>	142				
<b>Resultant of all Actions (kN)</b>	167	0.00	0.69	-115	0

Applied Force (kN)	Max. Allowable (kN)	Applied Pressure (kPa)	Foot Pad Area (m <sup>2</sup> )
0	0	0	0.00
0	0	0	0.00
0	0	0	0.00
0	0	0	0.00
<b>Max. Pad Pressure</b>	<b>0</b>		
Track Bearing Length (m)		2.58	
Track pad width (m)		0.45	
Track Centerline Dist. (m)		1.87	

<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	

**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**

<b>Mode : Extracting</b>							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 <sup>2</sup> )	Min bearing pressure L.H. track (kN/m <sup>2</sup> )	Max bearing pressure R.H. track (kN/m <sup>2</sup> )	Min bearing pressure R.H. track (kN/m <sup>2</sup> )	Max Track loading dimensions ecc (m) Bearing Len. (m)		Equivalent Bearing L (m) Q (kPa)		
0	206	0	206	0	0.688	1.805	1.203	155	
15	159	0	237	0	0.664	1.878	1.252	178	
30	111	0	246	0	0.593	2.090	1.394	184	
45	71	0	235	0	0.481	2.428	1.619	177	
60	44	6	212	27	0.334	2.580	1.913	161	
75	27	12	172	78	0.163	2.580	2.255	143	
90	18	17	133	121	-0.021	2.580	2.538	129	
105	28	10	184	65	-0.205	2.580	2.171	149	
120	46	3	224	15	-0.376	2.580	1.828	169	
135	75	0	248	0	-0.523	2.302	1.535	186	
150	118	0	261	0	-0.635	1.964	1.309	196	
165	171	0	254	0	-0.706	1.751	1.167	191	
180	222	0	222	0	-0.730	1.679	1.119	166	
195	254	0	171	0	-0.706	1.751	1.167	191	
210	261	0	118	0	-0.635	1.964	1.309	196	
225	248	0	75	0	-0.523	2.302	1.535	186	
240	224	15	46	3	-0.376	2.580	1.828	169	
255	184	65	28	10	-0.205	2.580	2.171	149	
270	133	121	18	17	-0.021	2.580	2.538	129	
285	172	78	27	12	0.163	2.580	2.255	143	
300	212	27	44	6	0.334	2.580	1.913	161	
315	235	0	71	0	0.481	2.428	1.619	177	
330	246	0	111	0	0.593	2.090	1.394	184	
345	237	0	159	0	0.664	1.878	1.252	178	
<b>Maximum Track Values</b>							1.309	196	
<b>Max. Slewing Foot Pads Bearing Pressure (kPa) &amp; Equivalent Bearing Length</b>							0.000	0.000	0
<b>Max. Non-Slewing Foot Pads Bearing Pressure (kPa) &amp; Equivalent Bearing Length</b>							0.000	0.000	0
<b>Maximum Equivalent Design Values</b>							1.309	196	
Eccentricity index - X direction (sideways)							<b>0.76</b>		
Eccentricity index - Y direction (forwards/backwards)							<b>0.57</b>		
Track pressure distribution warning							<b>Track(s) lifting</b>		
Slewing foot pad message							<b>Slewing Foot Pad Pressure OK</b>		
Non-Slewing foot pad message							<b>Non-Slewing Foot Pad Pressure OK</b>		
<b>BRE LOAD CASE ( 1 or 2 )</b>							<b>2</b>		





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

Note: The disclaimer on the first worksheet applies to all tables in this workbook

Rig Manufacturer :	<b>TESCAR</b>	Rig Type & Serial No.	<b>CF3 #3164</b>
Operation mode:	<b>ESP100 / Supporto BASSO</b>	Date:	<b>23/07/2018</b>
Completed by:	<b>LG</b>	Checked by:	<b>LF</b>

Main Components - Slewing:						
Item	Mass (kg)	Weight (kN)	X - Coordinate	Y - Coordinate	Moment Mx (kNm)	Moment My (kNm)
<b>Slewing Components Totals/Resultant (with θ=0)</b>						
UPPER WORKS	2,500	25	0.00	1.31	-32	0
LOWER WORKS	4,500	44	0.00	-0.30	13	0
SUSPENDED EQUIPMENT CONNECTED TO CROWD SYSTEM	2,300	23	0.00	2.25	-51	0
COUNTERWEIGHT	700	7	0.00	-1.10	8	0
OTHER	0	0	0.00	0.00	0	0
<b>TOTAL/RESULTANT (with θ=0)</b>	<b>10,000</b>	<b>98</b>	<b>0.00</b>	<b>0.63</b>	<b>-62</b>	<b>0</b>

Foot Pads - Slewing :						
Description (Forces must be -ve)	Bearing Area	Max. Pad Loading	X - Coordinate	Y - Coordinate	Actual Shape	Actual Dimension
	m <sup>2</sup>	kN	m	m		
Front Pad 1	0.00	0	0.00	0.00	None	None
Front Pad 2	0.00	0.00	0.00	0.00	None	None
Rear Pad 1	0.00	0.00	0.00	0.00	None	None
Rear Pad 2	0.00	0.00	0.00	0.00	None	None

Forces - Slewing					
	Force	X - Coordinate	Y - Coordinate		
	kN	m	m		
Maximum Extraction Force (kN)	48	0.00	2.25	Must be inline with suspended equip't.	
Maximum Penetration Force (kN)	-130	0.00	2.25	-ve Must be inline with suspended equip't.	
Maximum Auxillary Force (kN)	1	0.00	1.80		

Main Components - Non-Slewing:						
Item	Mass (kg)	Weight (kN)	X - Coordinate	Y - Coordinate	Moment Mx (kNm)	Moment My (kNm)
Lower Works Non-Slewing (undercarriage/tracks etc)	Tracks & Undercarriage	4500	44	0.00	-0.08	4
				0.00	0.00	
				0.00	0.00	
<b>TOTAL/RESULTANT (with θ=0)</b>	<b>4,500</b>	<b>44</b>	<b>0.00</b>	<b>-0.08</b>	<b>4</b>	<b>0</b>
<b>TOTAL RIG MASS</b>	<b>14,500</b>					


Front Foot Pads - Non-Slewing						
Description	Bearing Area	Max. Pad Loading	X - Coordinate	Y - Coordinate	Actual Shape	Actual Dimension
	m <sup>2</sup>	kN	m	m		
Front Pad 1						
Front Pad 2						
Rear Pad 1						
Rear Pad 2						

Tracks		Slewing	
Track bearing length (m)	2.58	Can the Rig Slew?	YES
Track pad width (m)	0.45		
Distance between centrelines of tracks (m)	1.87		

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 <sub>eq</sub> (kPa)		Eccentricity index - X direction (sideways)	Eccentricity index - Y direction (forwards/backwards)	
Standing	1.91	0.45	110	1	0.47	0.36	0
Travelling	1.91	0.45	110	1	0.47	0.36	0
Handling	1.76	0.45	112	1	0.48	0.36	1
Penetrating	0.74	0.45	154	2	0.97	0.74	-38
Extracting	1.31	0.45	196	2	0.76	0.57	48
Other	Not Used	-	-	0	-	-	0

MODE	ERROR FOR TRACK	Auxiliary Line	ERROR MESSAGES FOR LINE FORCES	
	Zero Pressure		Extraction Force	Penetration Force
Standing	Track(s) lifting	Auxiliary Line Force OK	Extraction Force OK	Penetration Force OK
Travelling	Track(s) lifting	Auxiliary Line Force OK	Extraction Force OK	Penetration Force OK
Handling	Track(s) lifting	Auxiliary Line Force OK	Extraction Force OK	Penetration Force OK
Penetrating	Track(s) lifting	Auxiliary Line Force OK	Extraction Force OK	Penetration Force OK
Extracting	Track(s) lifting	Auxiliary Line Force OK	Extraction Force OK	Penetration Force OK
Other	Track(s) lifting	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	Slewing Foot Pad Pressure OK	Non-Slewing Foot Pad Pressure OK
Travelling	Slewing Footpad Forces OK	Non-Slewing Footpad Forces OK	Slewing Foot Pad Pressure OK	Non-Slewing Foot Pad Pressure OK
Handling	Slewing Footpad Forces OK	Non-Slewing Footpad Forces OK	Slewing Foot Pad Pressure OK	Non-Slewing Foot Pad Pressure OK
Penetrating	Slewing Footpad Forces OK	Non-Slewing Footpad Forces OK	Slewing Foot Pad Pressure OK	Non-Slewing Foot Pad Pressure OK
Extracting	Slewing Footpad Forces OK	Non-Slewing Footpad Forces OK	Slewing Foot Pad Pressure OK	Non-Slewing Foot Pad Pressure OK
Other	Slewing Footpad Forces OK	Non-Slewing Footpad Forces OK	Slewing Foot Pad Pressure OK	Non-Slewing Foot Pad Pressure OK

<p>Note: The disclaimer on the first worksheet applies to all tables in this workbook</p> 	<p><b>Notes</b></p> <p>MAX WORKING RADIUS 2,15m.</p>
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