

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 :	TESCAR	Rig Type & Serial No.	CF3 CFA	#3184
Operation mode:	ESP100 / Supporto BASSO	Date:	23/07/2018	
Completed by:	AM	Checked by:	LF	

Main Components - Slewing:							
Item	Mass (kg)	Weight (kN)	X - Coordinate	Y - Coordinate	Moment Mx (kNm)	Moment My (kNm)	
UPPER WORKS (Slewing)	Mast Assembly	1,450	14	0.00	1.42	-20	0
	Cathead	105	1	0.00	1.42	-1	0
	Support	630	6	0.00	0.69	-4	0
	Hydraulic cylinders	350	3	0.00	1.25	-4	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)	Auger	925	9	0.00	2.12	-19	0
	Rotary Head	400	4	0.00	2.12	-8	0
	Kit injection CFA	640	6	0.00	2.12	-13	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	2,535	25	0.00	1.22	-30	0	
LOWER WORKS	4,500	44	0.00	-0.30	13	0	
SUSPENDED EQUIPMENT CONNECTED TO CROWD SYSTEM	1,965	19	0.00	2.12	-41	0	
COUNTERWEIGHT	700	7	0.00	-1.10	8	0	
OTHER	0	0	0.00	0.00	0	0	
SLEWING TOTAL/RESULTANT (with $\theta=0$)	9,700	95	0.00	0.53	-50	0	

Foot Pads - Slewing :							
Description	Bearing Area	Max. Pad Loading	X - Coordinate	Y - Coordinate	Actual Shape	Actual Dimension	
	m ²	kN	m	m			
Front Pad 1	0.41	-160	0.00	1.42	Rectangular	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)	96	0.00	2.12	Must be inline with suspended equip't.	
Crowd System - Maximum Penetration Force (kN)	-20	0.00	2.12	-ve Must be inline with suspended equip't.	
Maximum Auxillary Force (kN)	10	0.00	2.12		

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 $\theta=0$)	4,500	44	0.00	-0.08	4	0	
TOTAL RIG MASS	14,200						

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

Tracks		Slewing	
Track bearing length (m)	2.30	Can the rig slew?	YES
Track pad width (m)	0.45		
Distance between centrelines of tracks (m)	2.47		

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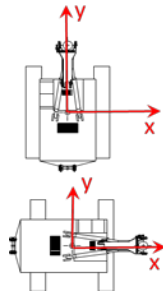
Notes

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

SLEWING ACTIONS					
Upper Works (slewing)	25	0.00	1.22	-30	0
Suspended Eqpt. on Crowd	19	0.00	2.12	-41	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	2.12	0	0
Net Penetration Force	0	0.00	2.12	0	0
Applied Auxiliary Force	0	0.00	2.12	0	0
Front Pad 1	0	0.00	1.42	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 Action	95	0.00	0.53	-50	0

Applied Force (kN)	Max. Allowable (kN)
0	96
0	-20
0	10

Applied Pressure (kPa)	Foot Pad Area (m2)
0	0.41
0	0.00
0	0.00
0	0.00



NON-SLEWING ACTIONS					
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
Summary of Non-slewing Actions	44	0.00	-0.08	4	0
Total Rig Weight (kN)	139				
Resultant of all Actions (kN)	139	0.00	0.34	-47	0

Applied Force (kN)	Max. Allowable (kN)	Applied Pressure (kPa)	Foot Pad Area (m2)
0	0	0	0.00
0	0	0	0.00
0	0	0	0.00
0	0	0	0.00
Max. Pad Pressure			0
Track Bearing Length (m)			2.30
Track pad width (m)			0.45
Track Centerline Dist. (m)			2.47

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 : 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 ecc (m) Bearing Len. (m)		Equivalent Bearing L (m) Q (kPa)		
0	126	8	126	8	0.336	2.300	1.629	95	
15	115	10	133	11	0.323	2.300	1.653	101	
30	101	14	135	19	0.287	2.300	1.725	103	
45	85	21	130	33	0.230	2.300	1.840	101	
60	71	30	118	50	0.155	2.300	1.990	97	
75	57	40	102	71	0.068	2.300	2.164	92	
90	51	44	93	81	-0.025	2.300	2.249	89	
105	63	33	113	60	-0.119	2.300	2.062	96	
120	77	23	130	39	-0.206	2.300	1.888	103	
135	92	14	141	22	-0.281	2.300	1.739	107	
150	108	7	145	9	-0.338	2.300	1.624	109	
165	123	2	143	2	-0.374	2.300	1.552	107	
180	135	0	135	0	-0.386	2.291	1.527	101	
195	143	2	123	2	-0.374	2.300	1.552	107	
210	145	9	108	7	-0.338	2.300	1.624	109	
225	141	22	92	14	-0.281	2.300	1.739	107	
240	130	39	77	23	-0.206	2.300	1.888	103	
255	113	60	63	33	-0.119	2.300	2.062	96	
270	93	81	51	44	-0.025	2.300	2.249	89	
285	102	71	57	40	0.068	2.300	2.164	92	
300	118	50	71	30	0.155	2.300	1.990	97	
315	130	33	85	21	0.230	2.300	1.840	101	
330	135	19	101	14	0.287	2.300	1.725	103	
345	133	11	115	10	0.323	2.300	1.653	101	
Maximum Track Values							1.624	109	
Max. Slewing Foot Pads Bearing Pressure (kPa) & Equivalent Bearing Leng							0.410	0.911	0
Max. Non-Slewing Foot Pads Bearing Pressure (kPa) & Equivalent Bearing							0.000	0.000	0
Maximum Equivalent Design Values							1.624	109	
Eccentricity index - X direction (sideways)					0.29				
Eccentricity index - Y direction (forwards/backwards)					0.34				
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				
BRE LOAD CASE (1 or 2)							1		

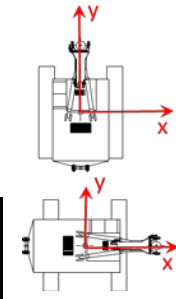


TESCAR	Weight / Force Applied (kN)	X - Coordinate	Y - Coordinate	Moment Mx	Moment My
CF3 CFA					

SLEWING ACTIONS					
Upper Works (slewing)	25	0.00	1.22	-30	0
Suspended Eqpt. on Crowd	19	0.00	2.12	-41	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	2.12	0	0
Net Penetration Force	0	0.00	2.12	0	0
Applied Auxiliary Force	0	0.00	2.12	0	0
Front Pad 1	0	0.00	1.42	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 Action	95	0.00	0.53	-50	0

Applied Force (kN)	Max. Allowable (kN)
0	96
0	-20
0	10

Applied Pressure (kPa)	Foot Pad Area (m ²)
0	0.41
0	0.00
0	0.00
0	0.00



NON-SLEWING ACTIONS					
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
Summary of Non-slewing Actions	44	0.00	-0.08	4	0
Total Rig Weight (kN)	139				
Resultant of all Actions (kN)	139	0.00	0.34	-47	0

Applied Force (kN)	Max. Allowable (kN)	Applied Pressure (kPa)	Foot Pad Area (m ²)
0	0	0	0.00
0	0	0	0.00
0	0	0	0.00
0	0	0	0.00
Max. Pad Pressure			0
Track Bearing Length (m)		2.30	
Track pad width (m)		0.45	
Track Centerline Dist. (m)		2.47	

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 : 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 bearing 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 ecc (m) Bearing Len. (m)		Equivalent Bearing L (m) Q (kPa)		
0	126	8	126	8	0.336	2.300	1.629	95	
15	115	10	133	11	0.323	2.300	1.653	101	
30	101	14	135	19	0.287	2.300	1.725	103	
45	85	21	130	33	0.230	2.300	1.840	101	
60	71	30	118	50	0.155	2.300	1.990	97	
75	57	40	102	71	0.068	2.300	2.164	92	
90	51	44	93	81	-0.025	2.300	2.249	89	
105	63	33	113	60	-0.119	2.300	2.062	96	
120	77	23	130	39	-0.206	2.300	1.888	103	
135	92	14	141	22	-0.281	2.300	1.739	107	
150	108	7	145	9	-0.338	2.300	1.624	109	
165	123	2	143	2	-0.374	2.300	1.552	107	
180	135	0	135	0	-0.386	2.291	1.527	101	
195	143	2	123	2	-0.374	2.300	1.552	107	
210	145	9	108	7	-0.338	2.300	1.624	109	
225	141	22	92	14	-0.281	2.300	1.739	107	
240	130	39	77	23	-0.206	2.300	1.888	103	
255	113	60	63	33	-0.119	2.300	2.062	96	
270	93	81	51	44	-0.025	2.300	2.249	89	
285	102	71	57	40	0.068	2.300	2.164	92	
300	118	50	71	30	0.155	2.300	1.990	97	
315	130	33	85	21	0.230	2.300	1.840	101	
330	135	19	101	14	0.287	2.300	1.725	103	
345	133	11	115	10	0.323	2.300	1.653	101	
Maximum Track Values							1.624	109	
Max. Slewing Foot Pads Bearing Pressure (kPa) & Equivalent Bearing Leng							0.410	0.911	0
Max. Non-Slewing Foot Pads Bearing Pressure (kPa) & Equivalent Bearing							0.000	0.000	0
Maximum Equivalent Design Values							1.624	109	
Eccentricity index - X direction (sideways)					0.29				
Eccentricity index - Y direction (forwards/backwards)					0.34				
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				
BRE LOAD CASE (1 or 2)							1		

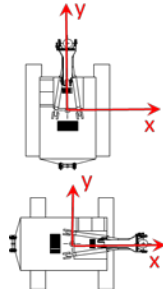


TESCAR	Weight / Force Applied (kN)	X - Coordinate	Y - Coordinate	Moment Mx	Moment My
CF3 CFA					

SLEWING ACTIONS					
Upper Works (slewing)	25	0.00	1.22	-30	0
Suspended Eqpt. on Crowd	19	0.00	2.12	-41	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	2.12	0	0
Net Penetration Force	0	0.00	2.12	0	0
Applied Auxiliary Force	10	0.00	2.12	-21	0
Front Pad 1	0	0.00	1.42	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 Action	105	0.00	0.68	-71	0

Applied Force (kN)	Max. Allowable (kN)
0	96
0	-20
10	10

Applied Pressure (kPa)	Foot Pad Area (m2)
0	0.41
0	0.00
0	0.00
0	0.00
0	0.00
Max. Pad Pressure	0



NON-SLEWING ACTIONS					
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
Summary of Non-slewing Actions	44	0.00	-0.08	4	0
Total Rig Weight (kN)	139				
Resultant of all Actions (kN)	149	0.00	0.46	-68	0

Applied Force (kN)	Max. Allowable (kN)	Applied Pressure (kPa)	Foot Pad Area (m2)
0	0	0	0.00
0	0	0	0.00
0	0	0	0.00
0	0	0	0.00
Max. Pad Pressure	0		
Track Bearing Length (m)			2.30
Track pad width (m)			0.45
Track Centerline Dist. (m)			2.47

Handling

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.

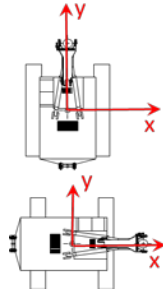
ONLY A COMPETENT PERSON MAY USE THIS TABLE !

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

Mode : 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 ecc (m)	Bearing Len. (m)	Equivalent Bearing L (m)	Q (kPa)	
0	159	0	159	0	0.455	2.085	1.390	119	
15	140	0	171	0	0.439	2.133	1.422	128	
30	117	0	174	0	0.391	2.277	1.518	130	
45	95	9	167	16	0.315	2.300	1.670	127	
60	75	21	151	42	0.216	2.300	1.868	119	
75	57	33	125	73	0.100	2.300	2.099	109	
90	47	41	106	94	-0.024	2.300	2.253	102	
105	62	28	137	61	-0.148	2.300	2.005	114	
120	81	15	162	30	-0.263	2.300	1.774	125	
135	102	3	179	5	-0.362	2.300	1.576	134	
150	125	0	186	0	-0.438	2.135	1.423	139	
165	150	0	183	0	-0.486	1.992	1.328	137	
180	171	0	171	0	-0.502	1.943	1.295	128	
195	183	0	150	0	-0.486	1.992	1.328	137	
210	186	0	125	0	-0.438	2.135	1.423	139	
225	179	5	102	3	-0.362	2.300	1.576	134	
240	162	30	81	15	-0.263	2.300	1.774	125	
255	137	61	62	28	-0.148	2.300	2.005	114	
270	106	94	47	41	-0.024	2.300	2.253	102	
285	125	73	57	33	0.100	2.300	2.099	109	
300	151	42	75	21	0.216	2.300	1.868	119	
315	167	16	95	9	0.315	2.300	1.670	127	
330	174	0	117	0	0.391	2.277	1.518	130	
345	171	0	140	0	0.439	2.133	1.422	128	
Maximum Track Values							1.423	139	
Max. Slewing Foot Pads Bearing Pressure (kPa) & Equivalent Bearing Leng							0.410	0.911	0
Max. Non-Slewing Foot Pads Bearing Pressure (kPa) & Equivalent Bearing							0.000	0.000	0
Maximum Equivalent Design Values							1.423	139	
Eccentricity index - X direction (sideways)					0.39				
Eccentricity index - Y direction (forwards/backwards)					0.44				
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				
BRE LOAD CASE (1 or 2)								1	



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



SLEWING ACTIONS					
Upper Works (slewing)	25	0.00	1.22	-30	0
Suspended Eqpt. on Crowd	19	0.00	2.12	-41	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	2.12	0	0
Net Penetration Force	-39	0.00	2.12	83	0
Applied Auxiliary Force	0	0.00	2.12	0	0
Front Pad 1	0	0.00	1.42	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	56	0.00	-0.59	33	-0

Applied Force (kN)	Max. Allowable (kN)	Applied Pressure (kPa)	Foot Pad Area (m2)
0.00	96	0	0.41
-20.00	-20	0	0.00
0.00	10	0	0.00
0	-160	0	0.41
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					
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
Summary of Non-slewing Actions	44	0.00	-0.08	4	0
Total Rig Weight (kN)	139				
Resultant of all Actions (kN)	100	0.00	-0.37	37	0

Applied Force (kN)	Max. Allowable (kN)	Applied Pressure (kPa)	Foot Pad Area (m2)
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		
Track Bearing Length (m)			2.30
Track pad width (m)			0.45
Track Centerline Dist. (m)			2.47

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 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	85	11	85	11	0.294	2.300	1.711	65	
15	78	12	90	13	0.283	2.300	1.734	69	
30	69	15	91	19	0.250	2.300	1.800	70	
45	59	19	87	28	0.198	2.300	1.904	69	
60	50	25	80	39	0.130	2.300	2.041	67	
75	41	31	69	53	0.050	2.300	2.200	64	
90	39	32	67	56	-0.035	2.300	2.229	63	
105	47	25	80	42	-0.121	2.300	2.059	68	
120	57	18	91	28	-0.200	2.300	1.900	72	
135	67	12	98	17	-0.268	2.300	1.763	75	
150	77	7	101	9	-0.321	2.300	1.658	76	
165	86	3	99	4	-0.354	2.300	1.592	75	
180	94	2	94	2	-0.365	2.300	1.570	71	
195	99	4	86	3	-0.354	2.300	1.592	75	
210	101	9	77	7	-0.321	2.300	1.658	76	
225	98	17	67	12	-0.268	2.300	1.763	75	
240	91	28	57	18	-0.200	2.300	1.900	72	
255	80	42	47	25	-0.121	2.300	2.059	68	
270	67	56	39	32	-0.035	2.300	2.229	63	
285	69	53	41	31	0.050	2.300	2.200	64	
300	80	39	50	25	0.130	2.300	2.041	67	
315	87	28	59	19	0.198	2.300	1.904	69	
330	91	19	69	15	0.250	2.300	1.800	70	
345	90	13	78	12	0.283	2.300	1.734	69	
Maximum Track Values							1.658	76	
Max. Slewing Foot Pads Bearing Pressure (kPa) & Equivalent Bearing Leng							0.410	0.911	0
Max. Non-Slewing Foot Pads Bearing Pressure (kPa) & Equivalent Bearing							0.000	0.000	0
Maximum Equivalent Design Values							1.658	76	
Eccentricity index - X direction (sideways)							0.27		
Eccentricity index - Y direction (forwards/backwards)							0.32		
Track pressure distribution warning							None		
Slewing foot pad message							Slewing Foot Pad Pressure OK		
Non-Slewing foot pad message							Non-Slewing Foot Pad Pressure OK		
BRE LOAD CASE (1 or 2)								2	



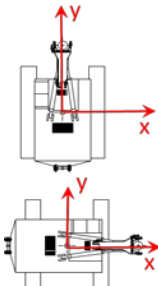
TESCAR	Weight / Force Applied (kN)	X - Coordinate	Y - Coordinate	Moment Mx	Moment My
CF3 CFA					

SLEWING ACTIONS					
Upper Works (slewing)	25	0.00	1.22	-30	0
Suspended Eqpt. on Crowd	19	0.00	2.12	-41	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	77	0.00	2.12	-163	0
Net Penetration Force	0	0.00	2.12	0	0
Applied Auxiliary Force	0	0.00	2.12	0	0
Front Pad 1	-80	0.00	1.42	114	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 Action	92	0.00	1.08	-99	0

Applied Force (kN)	Max. Allowable (kN)
96.00	96
0.00	-20
0.00	10

Applied Pressure (kPa)	Foot Pad Area (m ²)
195	0.41
0	0.00
0	0.00
0	0.00

Max. Pad Pressure 195



NON-SLEWING ACTIONS					
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
Summary of Non-slewing Actions	44	0.00	-0.08	4	0
Total Rig Weight (kN)	139				
Resultant of all Actions (kN)	136	0.00	0.70	-96	0

Applied Force (kN)	Max. Allowable (kN)	Applied Pressure (kPa)	Foot Pad Area (m ²)
0	0	0	0.00
0	0	0	0.00
0	0	0	0.00
0	0	0	0.00
Max. Pad Pressure 0			
Track Bearing Length (m)			2.30
Track pad width (m)			0.45
Track Centerline Dist. (m)			2.47

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 : 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 ecc (m) Bearing Len. (m)		Equivalent Bearing L (m) Q (kPa)		
0	226	0	226	0	0.704	1.337	0.891	170	
15	181	0	247	0	0.679	1.412	0.941	185	
30	131	0	240	0	0.607	1.630	1.087	180	
45	89	0	217	0	0.490	1.979	1.319	162	
60	60	4	187	11	0.339	2.300	1.622	141	
75	40	16	147	59	0.163	2.300	1.974	120	
90	29	25	112	97	-0.026	2.300	2.248	107	
105	44	12	161	45	-0.215	2.300	1.870	127	
120	65	0	201	0	-0.391	2.277	1.518	151	
135	96	0	235	0	-0.542	1.823	1.215	176	
150	144	0	266	0	-0.658	1.475	0.983	199	
165	204	0	278	0	-0.731	1.256	0.837	208	
180	256	0	256	0	-0.756	1.181	0.787	192	
195	278	0	204	0	-0.731	1.256	0.837	208	
210	266	0	144	0	-0.658	1.475	0.983	199	
225	235	0	96	0	-0.542	1.823	1.215	176	
240	201	0	65	0	-0.391	2.277	1.518	151	
255	161	45	44	12	-0.215	2.300	1.870	127	
270	112	97	29	25	-0.026	2.300	2.248	107	
285	147	59	40	16	0.163	2.300	1.974	120	
300	187	11	60	4	0.339	2.300	1.622	141	
315	217	0	89	0	0.490	1.979	1.319	162	
330	240	0	131	0	0.607	1.630	1.087	180	
345	247	0	181	0	0.679	1.412	0.941	185	
Maximum Track Values							0.837	208	
							Pad Area (m ²)		
Max. Slewing Foot Pads Bearing Pressure (kPa) & Equivalent Bearing Leng							0.410	0.911	195
Max. Non-Slewing Foot Pads Bearing Pressure (kPa) & Equivalent Bearing							0.000	0.000	0
Maximum Equivalent Design Values							0.837	208	
Eccentricity index - X direction (sideways)							0.59		
Eccentricity index - Y direction (forwards/backwards)							0.66		
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		
BRE LOAD CASE (1 or 2)							2		

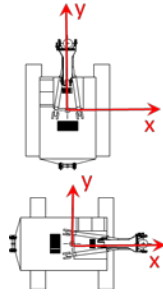


TESCAR	Weight / Force Applied (kN)	X - Coordinate	Y - Coordinate	Moment Mx	Moment My
CF3 CFA					

SLEWING ACTIONS					
Upper Works (slewing)	25	0.00	1.22	-30	0
Suspended Eqpt. on Crowd	19	0.00	2.12	-41	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
Applied Extraction Force	0	0.00	2.12	0	0
Applied Penetration Force	0	0.00	2.12	0	0
Applied Auxiliary Force	0	0.00	2.12	0	0
Front Pad 1	0	0.00	1.42	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 Action	95	0.00	0.53	-50	0

Applied Force (kN)	Max. Allowable (kN)
0	96

Applied Pressure (kPa)	Foot Pad Area (m ²)
0	0.41
0	0.00
0	0.00
0	0.00



NON-SLEWING ACTIONS						Applied Force (kN)	Max. Allowable (kN)	Applied Pressure (kPa)	Foot Pad Area (m ²)	
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)	139					Track Bearing Length (m)	2.30			
Resultant of all Actions (kN)	139	0.00	0.34	-47	0	Track pad width (m)	0.45			
						Track Centreline Dist. (m)	2.47			

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 : 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	126	8	126	8	0.336	2.300	1.629	95	
15	115	10	133	11	0.323	2.300	1.653	101	
30	101	14	135	19	0.287	2.300	1.725	103	
45	85	21	130	33	0.230	2.300	1.840	101	
60	71	30	118	50	0.155	2.300	1.990	97	
75	57	40	102	71	0.068	2.300	2.164	92	
90	51	44	93	81	-0.025	2.300	2.249	89	
105	63	33	113	60	-0.119	2.300	2.062	96	
120	77	23	130	39	-0.206	2.300	1.888	103	
135	92	14	141	22	-0.281	2.300	1.739	107	
150	108	7	145	9	-0.338	2.300	1.624	109	
165	123	2	143	2	-0.374	2.300	1.552	107	
180	135	0	135	0	-0.386	2.291	1.527	101	
195	143	2	123	2	-0.374	2.300	1.552	107	
210	145	9	108	7	-0.338	2.300	1.624	109	
225	141	22	92	14	-0.281	2.300	1.739	107	
240	130	39	77	23	-0.206	2.300	1.888	103	
255	113	60	63	33	-0.119	2.300	2.062	96	
270	93	81	51	44	-0.025	2.300	2.249	89	
285	102	71	57	40	0.068	2.300	2.164	92	
300	118	50	71	30	0.155	2.300	1.990	97	
315	130	33	85	21	0.230	2.300	1.840	101	
330	135	19	101	14	0.287	2.300	1.725	103	
345	133	11	115	10	0.323	2.300	1.653	101	
Maximum Track Values							1.624	109	
							Pad Area (m ²)		
Max. Slewing Foot Pads Bearing Pressure (kPa) & Equivalent Bearing Leng							0.410	0.911	0
Max. Non-Slewing Foot Pads Bearing Pressure (kPa) & Equivalent Bearing							0.000	0.000	0
Maximum Equivalent Design Values							1.624	109	
Eccentricity index - X direction (sideways)					0.29				
Eccentricity index - Y direction (forwards/backwards)					0.34				
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				
BRE LOAD CASE (1 or 2)								0	



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 :	TESCAR	Rig Type & Serial No.	CF3 CFA #3184
Operation mode:	ESP100 / Supporto BASSO	Date:	23/07/2018
Completed by:	AM	Checked by:	LF

Main Components - Slewing:						
Item	Mass (kg)	Weight (kN)	X - Coordinate	Y - Coordinate	Moment Mx (kNm)	Moment My (kNm)
Slewing Components Totals/Resultant (with θ=0)						
UPPER WORKS	2,535	25	0.00	1.22	-30	0
LOWER WORKS	4,500	44	0.00	-0.30	13	0
SUSPENDED EQUIPMENT CONNECTED TO CROWD SYSTEM	1,965	19	0.00	2.12	-41	0
COUNTERWEIGHT	700	7	0.00	-1.10	8	0
OTHER	0	0	0.00	0.00	0	0
TOTAL/RESULTANT (with θ=0)	9,700	95	0.00	0.53	-50	0

Foot Pads - Slewing :						
Description (Forces must be -ve)	Bearing Area	Max. Pad Loading	X - Coordinate	Y - Coordinate	Actual Shape	Actual Dimension
	m ²	kN	m	m		
Front Pad 1	0.41	-160	0.00	1.42	Rectangular	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)	96	0.00	2.12	Must be inline with suspended equip't.	
Maximum Penetration Force (kN)	-20	0.00	2.12	-ve Must be inline with suspended equip't.	
Maximum Auxillary Force (kN)	10	0.00	2.12		

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	
TOTAL/RESULTANT (with θ=0)	4,500	44	0.00	-0.08	4	0
TOTAL RIG MASS	14,200					

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

Tracks		Slewing	
Track bearing length (m)	2.30	Can the Rig Slew?	YES
Track pad width (m)	0.45		
Distance between centrelines of tracks (m)	2.47		

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 _{eq} (kPa)		Eccentricity index - X direction (sideways)	Eccentricity index - Y direction (forwards/backwards)	
Standing	1.62	0.45	109	1	0.29	0.34	0
Travelling	1.62	0.45	109	1	0.29	0.34	0
Handling	1.42	0.45	139	1	0.39	0.44	10
Penetrating	1.66	0.45	76	2	0.27	0.32	-20
Extracting	0.84	0.45	208	2	0.59	0.66	96
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	None	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

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



Notes

