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 :	TES CAR	Rig Type & Serial No.	CF2,5	2587
Operation mode:	no slew	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)	Supporto	396	4	0.00	1.30	-5	0
	Controslitta			0.00		0	0
	Mast	900	9	0.00	1.90	-17	0
	Falchetto	150	1	0.00	2.10	-3	0
						0	0
						0	0
LOWER WORKS (Slewing)	Base Machine	1,500	15	0.00	0.00	0	0
						0	0
						0	0
						0	0
						0	0
SUSPENDED EQUIPMENT CONNECTED TO CROWD SYSTEM (Slewing)	Kelly bar	1,000	10	0.00	2.58	-25	0
	Rotary Head	700	7	0.00	2.58	-18	0
						0	0
						0	0
						0	0
COUNTER-WEIGHT (Slewing)	Contrappeso	850	8	0.00	-1.00	8	0
						0	0
						0	0
OTHER/OTHER SUSPENDED EQUIPMENT (Slewing)			0	0.00	3.41	0	0
						0	0
						0	0
	UPPER WORKS	1,446	14	0.00	1.76	-25	0
	LOWER WORKS	1,500	15	0.00	0.00	0	0
	SUSPENDED EQUIPMENT CONNECTED TO CROWD SYSTEM	1,700	17	0.00	2.58	-43	0
	COUNTERWEIGHT	850	8	0.00	-1.00	8	0
	OTHER	0	0	0.00	0.00	0	0
	SLEWING TOTAL/RESULTANT (with θ=0)	5,496	54	0.00	1.11	-60	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					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)		28	0.00	2.58	Must be inline with suspended equip't.
Crowd System - Maximum Penetration Force (kN)		-95	0.00	2.58	-ve Must be inline with suspended equip't.
Maximum Auxillary Force (kN)		10	0.00	2.58	

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	2,500	25	0.00	0.00	0	0
				0.00	0.00	0	0
				0.00	0.00	0	0
	NON-SLEWING TOTAL/RESULTANT (with θ=0)	2,500	25	0.00	0.00	0	0
	TOTAL RIG MASS	7,996					

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						

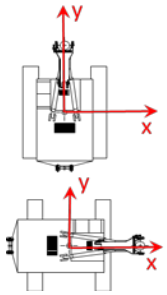
Tracks		Slewing		
Track bearing length (m)	2.25	Can the rig slew?	YES	
Track pad width (m)	0.40			
Distance between centrelines of tracks (m)	1.55			

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

Notes

EXCTRACTION USING THE ROTARY IS NOT TAKE INTO ACCOUNT

TES CAR CF2,5	Weight / Force Applied (kN)	X - Coordinate	Y - Coordinate	Moment Mx	Moment My	Applied Force (kN)	Max. Allowable (kN)	Applied Pressure (kPa)	Foot Pad Area (m2)
SLEWING ACTIONS									
Upper Works (slewing)	14	0.00	1.76	-25	0				
Suspended Eqpt. on Crowd	17	0.00	2.58	-43	0				
Counterweight (slewing)	8	0.00	-1.00	8	0				
Other (slewing)	0	0.00	0.00	0	0				
Lower Works (Slewing)	15	0.00	0.00	0	0				
Net Extraction Force	0	0.00	2.58	0	0	0	28		
Net Penetration Force	0	0.00	2.58	0	0	0	-95		
Applied Auxillary Force	0	0.00	2.58	0	0	0	10		
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 Slewing Action	54	0.00	1.11	-60	0	Max. Pad Pressure		0	



NON-SLEWING ACTIONS						Applied Force (kN)	Max. Allowable (kN)	Applied Pressure (kPa)	Foot Pad Area (m2)
Lower Works Non-Slewing	25	0.00	0.00	0	0				
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	25	0.00	0.00	0	0	Max. Pad Pressure		0	
Total Rig Weight (kN)	78					Track Bearing Length (m)		2.25	
Resultant of all Actions (kN)	78	0.00	0.76	-60	0	Track pad width (m)		0.40	
						Track Centerline Dist. (m)		1.55	

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

Mode : Standing

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)	Max Track loading dimensions Bearing Len. (m)	Transformation from triangular or trapizoidal to an equivalent rectangular pressure distribution under track maintaining the load centriod: Equivalent Bearing L (m)	Equivalent Bearing Q (KPa)
0	179	0	179	0	0.760	1.095	0.730	134
15	125	0	210	0	0.734	1.173	0.782	157
30	71	0	209	0	0.658	1.401	0.934	156
45	34	0	188	0	0.537	1.763	1.175	141
60	13	0	162	0	0.380	2.235	1.490	122
75	4	1	129	40	0.197	2.250	1.857	103
90	1	1	86	86	0.000	2.250	2.250	86
105	4	1	129	40	-0.197	2.250	1.857	103
120	13	0	162	0	-0.380	2.235	1.490	122
135	34	0	188	0	-0.537	1.763	1.175	141
150	71	0	209	0	-0.658	1.401	0.934	156
165	125	0	210	0	-0.734	1.173	0.782	157
180	179	0	179	0	-0.760	1.095	0.730	134
195	210	0	125	0	-0.734	1.173	0.782	157
210	209	0	71	0	-0.658	1.401	0.934	156
225	188	0	34	0	-0.537	1.763	1.175	141
240	162	0	13	0	-0.380	2.235	1.490	122
255	129	40	4	1	-0.197	2.250	1.857	103
270	86	86	1	1	0.000	2.250	2.250	86
285	129	40	4	1	0.197	2.250	1.857	103
300	162	0	13	0	0.380	2.235	1.490	122
315	188	0	34	0	0.537	1.763	1.175	141
330	209	0	71	0	0.658	1.401	0.934	156
345	210	0	125	0	0.734	1.173	0.782	157
					Maximum Track Values		0.782	157
						Pad Area (m^)		
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
					Maximum Equivalent Design Values		0.782	157

Eccentricity index - X direction (sideways)	0.98
Eccentricity index - Y direction (forwards/backwards)	0.68
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

Notes on Using this Table

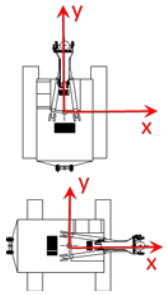
Auxilliary Line Pull +ve Z direction. Enter applied force (kN) in appropriate yellow box (G11). Note the maximum design force in the adjacent box (H11).
Extraction Line Pull +ve Z direction. Enter applied force (kN) in appropriate yellow box (G9). Note the maximum design force in the adjacent box (FH9).
Penetration Force -ve Z direction. Enter applied force (kN) in appropriate yellow box (G10) - must be negavtive 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 Auxilliary 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

TES CAR CF2,5	Weight / Force Applied (kN)	X - Coordinate	Y - Coordinate	Moment Mx	Moment My
SLEWING ACTIONS					
Upper Works (slewing)	14	0.00	1.76	-25	0
Suspended Eqpt. on Crowd	17	0.00	2.58	-43	0
Counterweight (slewing)	8	0.00	-1.00	8	0
Other (slewing)	0	0.00	0.00	0	0
Lower Works (Slewing)	15	0.00	0.00	0	0
Net Extraction Force	0	0.00	2.58	0	0
Net Penetration Force	0	0.00	2.58	0	0
Applied Auxillary Force	0	0.00	2.58	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 Action	54	0.00	1.11	-60	0



	Applied Force (kN)	Max. Allowable (kN)	Applied Pressure (kPa)	Foot Pad Area (m2)
Net Extraction Force	0	28		
Net Penetration Force	0	-95		
Applied Auxillary Force	0	10		
Front Pad 1	0	0	0	0.00
Front Pad 2	0	0	0	0.00
Rear Pad 1	0	0	0	0.00
Rear Pad 2	0	0	0	0.00
Max. Pad Pressure			0	

NON-SLEWING ACTIONS						Applied Force (kN)	Max. Allowable (kN)	Applied Pressure (kPa)	Foot Pad Area (m2)
Lower Works Non-Slewing	25	0.00	0.00	0	0				
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	25	0.00	0.00	0	0	Max. Pad Pressure		0	
Total Rig Weight (kN)	78					Track Bearing Length (m)		2.25	
Resultant of all Actions (kN)	78	0.00	0.76	-60	0	Track pad width (m)		0.40	
						Track Centerline Dist. (m)		1.55	

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

Mode : Travelling

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)	Max Track loading dimensions Bearing Len. (m)	Transformation from triangular or trapizoidal to an equivalent rectangular pressure distribution under track maintaining the load centriod: Equivalent Bearing L (m)	Equivalent Bearing Q (KPa)
0	179	0	179	0	0.760	1.095	0.730	134
15	125	0	210	0	0.734	1.173	0.782	157
30	71	0	209	0	0.658	1.401	0.934	156
45	34	0	188	0	0.537	1.763	1.175	141
60	13	0	162	0	0.380	2.235	1.490	122
75	4	1	129	40	0.197	2.250	1.857	103
90	1	1	86	86	0.000	2.250	2.250	86
105	4	1	129	40	-0.197	2.250	1.857	103
120	13	0	162	0	-0.380	2.235	1.490	122
135	34	0	188	0	-0.537	1.763	1.175	141
150	71	0	209	0	-0.658	1.401	0.934	156
165	125	0	210	0	-0.734	1.173	0.782	157
180	179	0	179	0	-0.760	1.095	0.730	134
195	210	0	125	0	-0.734	1.173	0.782	157
210	209	0	71	0	-0.658	1.401	0.934	156
225	188	0	34	0	-0.537	1.763	1.175	141
240	162	0	13	0	-0.380	2.235	1.490	122
255	129	40	4	1	-0.197	2.250	1.857	103
270	86	86	1	1	0.000	2.250	2.250	86
285	129	40	4	1	0.197	2.250	1.857	103
300	162	0	13	0	0.380	2.235	1.490	122
315	188	0	34	0	0.537	1.763	1.175	141
330	209	0	71	0	0.658	1.401	0.934	156
345	210	0	125	0	0.734	1.173	0.782	157
					Maximum Track Values		0.782	157
						Pad Area (m^)		
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
					Maximum Equivalent Design Values		0.782	157

Eccentricity index - X direction (sideways)	0.98
Eccentricity index - Y direction (forwards/backwards)	0.68
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

Notes on Using this Table

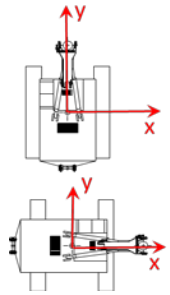
Auxilliary Line Pull +ve Z direction. Enter applied force (kN) in appropriate yellow box (G11). Note the maximum design force in the adjacent box (H11).
Extraction Line Pull +ve Z direction. Enter applied force (kN) in appropriate yellow box (G9). Note the maximum design force in the adjacent box (FH9).
Penetration Force -ve Z direction. Enter applied force (kN) in appropriate yellow box (G10) - must be negavtive 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 Auxilliary 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

TES CAR CF2,5	Weight / Force Applied (kN)	X - Coordinate	Y - Coordinate	Moment Mx	Moment My	Applied Force (kN)	Max. Allowable (kN)	Applied Pressure (kPa)	Foot Pad Area (m2)
SLEWING ACTIONS									
Upper Works (slewing)	14	0.00	1.76	-25	0				
Suspended Eqpt. on Crowd	17	0.00	2.58	-43	0				
Counterweight (slewing)	8	0.00	-1.00	8	0				
Other (slewing)	0	0.00	0.00	0	0				
Lower Works (Slewing)	15	0.00	0.00	0	0				
Net Extraction Force	0	0.00	2.58	0	0	0	28		
Net Penetration Force	0	0.00	2.58	0	0	0	-95		
Applied Auxillary Force	1	0.00	2.58	-2	0	1	10		
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 Slewing Action	55	0.00	1.12	-61	0	Max. Pad Pressure		0	



NON-SLEWING ACTIONS						Applied Force (kN)	Max. Allowable (kN)	Applied Pressure (kPa)	Foot Pad Area (m2)
Lower Works Non-Slewing	25	0.00	0.00	0	0				
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	**25**	**0.00**	**0.00**	**0**	**0**	Max. Pad Pressure		0	
Total Rig Weight (kN)	78					Track Bearing Length (m)		2.25	
Resultant of all Actions (kN)	**79**	**0.00**	**0.77**	**-61**	**0**	Track pad width (m)		0.40	
						Track Centerline Dist. (m)		1.55	

Handeling

Input Data Warning Messages	Notes
Auxiliary Line Force OK	MAX 0,6 kN IN HANDLING MODE
Extraction Force OK	
Penetration Force OK	
Slewing Footpad Forces OK	
Non-Slewing Footpad Forces OK	

Mode : Handling

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)	Max Track loading dimensions Bearing Len. (m)	Transformation from triangular or trapizoidal to an equivalent rectangular pressure distribution under track maintaining the load centriod: Equivalent Bearing L (m)	Equivalent Bearing Q (KPa)
0	187	0	187	0	0.774	1.054	0.703	141
15	129	0	219	0	0.747	1.133	0.755	165
30	73	0	217	0	0.670	1.365	0.910	163
45	34	0	194	0	0.547	1.734	1.156	146
60	12	0	166	0	0.387	2.214	1.476	125
75	2	1	132	40	0.200	2.250	1.850	105
90	0	0	88	88	0.000	2.250	2.250	88
105	2	1	132	40	-0.200	2.250	1.850	105
120	12	0	166	0	-0.387	2.214	1.476	125
135	34	0	194	0	-0.547	1.734	1.156	146
150	73	0	217	0	-0.670	1.365	0.910	163
165	129	0	219	0	-0.747	1.133	0.755	165
180	187	0	187	0	-0.774	1.054	0.703	141
195	219	0	129	0	-0.747	1.133	0.755	165
210	217	0	73	0	-0.670	1.365	0.910	163
225	194	0	34	0	-0.547	1.734	1.156	146
240	166	0	12	0	-0.387	2.214	1.476	125
255	132	40	2	1	-0.200	2.250	1.850	105
270	88	88	0	0	0.000	2.250	2.250	88
285	132	40	2	1	0.200	2.250	1.850	105
300	166	0	12	0	0.387	2.214	1.476	125
315	194	0	34	0	0.547	1.734	1.156	146
330	217	0	73	0	0.670	1.365	0.910	163
345	219	0	129	0	0.747	1.133	0.755	165
					Maximum Track Values		0.755	165
						Pad Area (m^)		
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
					Maximum Equivalent Design Values		0.755	165

Eccentricity index - X direction (sideways)	1.00
Eccentricity index - Y direction (forwards/backwards)	0.69
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

Notes on Using this Table

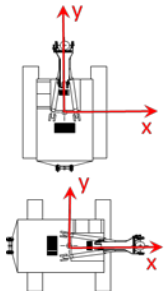
Auxilliary Line Pull +ve Z direction. Enter applied force (kN) in appropriate yellow box (G11). Note the maximum design force in the adjacent box (H11).
Extraction Line Pull +ve Z direction. Enter applied force (kN) in appropriate yellow box (G9). Note the maximum design force in the adjacent box (FH9).
Penetration Force -ve Z direction. Enter applied force (kN) in appropriate yellow box (G10) - must be negavtive 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 Auxilliary 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

TES CAR CF2,5	Weight / Force Applied (kN)	X - Coordinate	Y - Coordinate	Moment Mx	Moment My	Applied Force (kN)	Max. Allowable (kN)	Applied Pressure (kPa)	Foot Pad Area (m2)
SLEWING ACTIONS									
Upper Works (slewing)	14	0.00	1.76	-25	0				
Suspended Eqpt. on Crowd	17	0.00	2.58	-43	0				
Counterweight (slewing)	8	0.00	-1.00	8	0				
Other (slewing)	0	0.00	0.00	0	0				
Lower Works (Slewing)	15	0.00	0.00	0	0				
Net Extraction Force	0	0.00	2.58	0	0	0.00	28		
Net Penetration Force	-35	0.00	2.58	89	0	-18.00	-95		
Applied Auxillary Force	0	0.00	2.58	0	0	0.00	10		
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 Slewing Actions	19	0.00	-1.55	30	-0	**Max. Pad Pressure**		0	



NON-SLEWING ACTIONS						Applied Force (kN)	Max. Allowable (kN)	Applied Pressure (kPa)	Foot Pad Area (m2)
Lower Works Non-Slewing	25	0.00	0.00	0	0				
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	**25**	**0.00**	**0.00**	**0**	**0**	**Max. Pad Pressure**		0	
Total Rig Weight (kN)	78					Track Bearing Length (m)		2.25	
Resultant of all Actions (kN)	**44**	**0.00**	**-0.68**	**30**	**0**	Track pad width (m)		0.40	
						Track Centerline Dist. (m)		1.55	

Input Data Warning Messages	Notes
Auxiliary Line Force OK	
Extraction Force OK	
Penetration Force OK	MAX 18 kN IN PENETRATING MODE
Slewing Footpad Forces OK	
Non-Slewing Footpad Forces OK	

Mode : Penetrating

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)	Transformation from triangular or trapizoidal to an equivalent rectangular pressure distribution under track maintaining the load centriod: Equivalent Bearing L (m)	Q (KPa)
0	82	0	82	0	0.682	1.328	0.885	62
15	60	0	96	0	0.659	1.398	0.932	72
30	38	0	98	0	0.591	1.602	1.068	74
45	21	0	92	0	0.483	1.927	1.285	69
60	11	1	82	4	0.341	2.250	1.568	62
75	5	2	66	24	0.177	2.250	1.897	53
90	3	3	46	46	0.000	2.250	2.250	46
105	5	2	66	24	-0.177	2.250	1.897	53
120	11	1	82	4	-0.341	2.250	1.568	62
135	21	0	92	0	-0.483	1.927	1.285	69
150	38	0	98	0	-0.591	1.602	1.068	74
165	60	0	96	0	-0.659	1.398	0.932	72
180	82	0	82	0	-0.682	1.328	0.885	62
195	96	0	60	0	-0.659	1.398	0.932	72
210	98	0	38	0	-0.591	1.602	1.068	74
225	92	0	21	0	-0.483	1.927	1.285	69
240	82	4	11	1	-0.341	2.250	1.568	62
255	66	24	5	2	-0.177	2.250	1.897	53
270	46	46	3	3	0.000	2.250	2.250	46
285	66	24	5	2	0.177	2.250	1.897	53
300	82	4	11	1	0.341	2.250	1.568	62
315	92	0	21	0	0.483	1.927	1.285	69
330	98	0	38	0	0.591	1.602	1.068	74
345	96	0	60	0	0.659	1.398	0.932	72
					Maximum Track Values		1.068	74
						Pad Area (m^)		
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
					Maximum Equivalent Design Values		1.068	74

Eccentricity index - X direction (sideways)	**0.88**
Eccentricity index - Y direction (forwards/backwards)	**0.61**
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

Notes on Using this Table

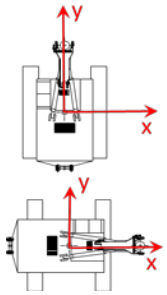
Auxilliary Line Pull +ve Z direction. Enter applied force (kN) in appropriate yellow box (G11). Note the maximum design force in the adjacent box (H11).
Extraction Line Pull +ve Z direction. Enter applied force (kN) in appropriate yellow box (G9). Note the maximum design force in the adjacent box (FH9).
Penetration Force -ve Z direction. Enter applied force (kN) in appropriate yellow box (G10) - must be negavtive 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 Auxilliary 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

TES CAR CF2,5	Weight / Force Applied (kN)	X - Coordinate	Y - Coordinate	Moment Mx	Moment My	Applied Force (kN)	Max. Allowable (kN)	Applied Pressure (kPa)	Foot Pad Area (m2)
SLEWING ACTIONS									
Upper Works (slewing)	14	0.00	1.76	-25	0				
Suspended Eqpt. on Crowd	17	0.00	2.58	-43	0				
Counterweight (slewing)	8	0.00	-1.00	8	0				
Other (slewing)	0	0.00	0.00	0	0				
Lower Works (Slewing)	15	0.00	0.00	0	0				
Net Extraction Force	-2	0.00	2.58	4	0	15.00	28		
Net Penetration Force	0	0.00	2.58	0	0	0.00	-95		
Applied Auxillary Force	0	0.00	2.58	0	0	0.00	10		
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 Slewing Action	52	0.00	1.06	-55	-0	**Max. Pad Pressure**		0	



NON-SLEWING ACTIONS						Applied Force (kN)	Max. Allowable (kN)	Applied Pressure (kPa)	Foot Pad Area (m2)
Lower Works Non-Slewing	25	0.00	0.00	0	0				
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	**25**	**0.00**	**0.00**	**0**	**0**	**Max. Pad Pressure**		0	
Total Rig Weight (kN)	78					Track Bearing Length (m)		2.25	
Resultant of all Actions (kN)	**77**	**0.00**	**0.72**	**-55**	**0**	Track pad width (m)		0.40	
						Track Centerline Dist. (m)		1.55	

Input Data Warning Messages	Notes
Auxiliary Line Force OK	
Extraction Force OK	MAX 15 kN IN PENETRATING MODE
Penetration Force OK	
Slewing Footpad Forces OK	
Non-Slewing Footpad Forces OK	

Mode : Extracting

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)	Max Track loading dimensions Bearing Len. (m)	Transformation from triangular or trapizoidal to an equivalent rectangular pressure distribution under track maintaining the load centriod: Equivalent Bearing L (m)	Equivalent Bearing Q (KPa)
0	158	0	158	0	0.720	1.215	0.810	118
15	113	0	185	0	0.696	1.288	0.859	139
30	68	0	187	0	0.624	1.504	1.003	140
45	36	0	172	0	0.509	1.847	1.232	129
60	16	0	151	3	0.360	2.250	1.530	113
75	7	2	121	41	0.186	2.250	1.877	97
90	3	3	82	82	0.000	2.250	2.250	82
105	7	2	121	41	-0.186	2.250	1.877	97
120	16	0	151	3	-0.360	2.250	1.530	113
135	36	0	172	0	-0.509	1.847	1.232	129
150	68	0	187	0	-0.624	1.504	1.003	140
165	113	0	185	0	-0.696	1.288	0.859	139
180	158	0	158	0	-0.720	1.215	0.810	118
195	185	0	113	0	-0.696	1.288	0.859	139
210	187	0	68	0	-0.624	1.504	1.003	140
225	172	0	36	0	-0.509	1.847	1.232	129
240	151	3	16	0	-0.360	2.250	1.530	113
255	121	41	7	2	-0.186	2.250	1.877	97
270	82	82	3	3	0.000	2.250	2.250	82
285	121	41	7	2	0.186	2.250	1.877	97
300	151	3	16	0	0.360	2.250	1.530	113
315	172	0	36	0	0.509	1.847	1.232	129
330	187	0	68	0	0.624	1.504	1.003	140
345	185	0	113	0	0.696	1.288	0.859	139
					Maximum Track Values		1.003	140
						Pad Area (m^)		
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
					Maximum Equivalent Design Values		1.003	140

Eccentricity index - X direction (sideways)	**0.93**
Eccentricity index - Y direction (forwards/backwards)	**0.64**
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**

Notes on Using this Table

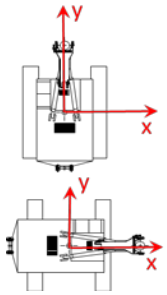
Auxilliary Line Pull +ve Z direction. Enter applied force (kN) in appropriate yellow box (G11). Note the maximum design force in the adjacent box (H11).
Extraction Line Pull +ve Z direction. Enter applied force (kN) in appropriate yellow box (G9). Note the maximum design force in the adjacent box (FH9).
Penetration Force -ve Z direction. Enter applied force (kN) in appropriate yellow box (G10) - must be negavtive 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 Auxilliary 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

TES CAR CF2,5	Weight / Force Applied (kN)	X - Coordinate	Y - Coordinate	Moment Mx	Moment My	Applied Force (kN)	Max. Allowable (kN)	Applied Pressure (kPa)	Foot Pad Area (m2)
SLEWING ACTIONS									
Upper Works (slewing)	14	0.00	1.76	-25	0				
Suspended Eqpt. on Crowd	17	0.00	2.58	-43	0				
Counterweight (slewing)	8	0.00	-1.00	8	0				
Other (slewing)	0	0.00	0.00	0	0				
Lower Works (Slewing)	15	0.00	0.00	0	0				
Applied Extraction Force	0	0.00	2.58	0	0	0	28		
Applied Penetration Force	0	0.00	2.58	0	0	0	-95		
Applied Auxillary Force	0	0.00	2.58	0	0	0	10		
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 Slewing Action	54	0.00	1.11	-60	0	Max. Pad Pressure		0	



NON-SLEWING ACTIONS						Applied Force (kN)	Max. Allowable (kN)	Applied Pressure (kPa)	Foot Pad Area (m2)
Lower Works Non-Slewing	25	0.00	0.00	0	0				
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	**25**	**0.00**	**0.00**	**0**	**0**	Max. Pad Pressure		0	
Total Rig Weight (kN)	78					Track Bearing Length (m)		2.25	
Resultant of all Actions (kN)	**78**	**0.00**	**0.76**	**-60**	**0**	Track pad width (m)		0.40	
						Track Centerline Dist. (m)		1.55	

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

Mode : Other

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)	Max Track loading dimensions Bearing Len. (m)	Transformation from triangular or trapizoidal to an equivalent rectangular pressure distribution under track maintaining the load centriod: Equivalent Bearing L (m)	Equivalent Bearing Q (KPa)
0	179	0	179	0	0.760	1.095	0.730	134
15	125	0	210	0	0.734	1.173	0.782	157
30	71	0	209	0	0.658	1.401	0.934	156
45	34	0	188	0	0.537	1.763	1.175	141
60	13	0	162	0	0.380	2.235	1.490	122
75	4	1	129	40	0.197	2.250	1.857	103
90	1	1	86	86	0.000	2.250	2.250	86
105	4	1	129	40	-0.197	2.250	1.857	103
120	13	0	162	0	-0.380	2.235	1.490	122
135	34	0	188	0	-0.537	1.763	1.175	141
150	71	0	209	0	-0.658	1.401	0.934	156
165	125	0	210	0	-0.734	1.173	0.782	157
180	179	0	179	0	-0.760	1.095	0.730	134
195	210	0	125	0	-0.734	1.173	0.782	157
210	209	0	71	0	-0.658	1.401	0.934	156
225	188	0	34	0	-0.537	1.763	1.175	141
240	162	0	13	0	-0.380	2.235	1.490	122
255	129	40	4	1	-0.197	2.250	1.857	103
270	86	86	1	1	0.000	2.250	2.250	86
285	129	40	4	1	0.197	2.250	1.857	103
300	162	0	13	0	0.380	2.235	1.490	122
315	188	0	34	0	0.537	1.763	1.175	141
330	209	0	71	0	0.658	1.401	0.934	156
345	210	0	125	0	0.734	1.173	0.782	157
					Maximum Track Values		0.782	157
						Pad Area (m^)		
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
					Maximum Equivalent Design Values		0.782	157

Eccentricity index - X direction (sideways)	0.98
Eccentricity index - Y direction (forwards/backwards)	0.68
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

Notes on Using this Table

Auxilliary 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 negavtive 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 Auxilliary 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

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

Rig Manufacturer :	TES CAR	Rig Type & Serial No.	CF2,5 2587
Operation mode:	no slew	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	1,446	14	0.00	1.76	-25	0
LOWER WORKS	1,500	15	0.00	0.00	0	0
SUSPENDED EQUIPMENT CONNECTED TO CROWD SYSTEM	1,700	17	0.00	2.58	-43	0
COUNTERWEIGHT	850	8	0.00	-1.00	8	0
OTHER	0	0	0.00	0.00	0	0
TOTAL/RESULTANT (with θ=0)	5,496	54	0.00	1.11	-60	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	0.00	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)		28	0.00	2.58	Must be inline with suspended equip't.
Maximum Penetration Force (kN)		-95	0.00	2.58	-ve Must be inline with suspended equip't.
Maximum Auxillary Force (kN)		10	0.00	2.58	

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	2500	25	0.00	0.00		
				0.00	0.00		
				0.00	0.00		
TOTAL/RESULTANT (with θ=0)		2,500	25	0.00	0.00	0	0
TOTAL RIG MASS		7,996					

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)	2.25	Can the Rig Slew?	YES	
Track pad width (m)	0.40			
Distance between centrelines of tracks (m)	1.55			

	Pressure Summary for Platform Design (unfactored)			BRE LOAD CASE (1 or 2)	Eccentricity Index		Winch Forces
MODE	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)	Algebraic sum of forces (kN)
Standing	0.78	0.40	157	1	0.98	0.68	0
Travelling	0.78	0.40	157	1	0.98	0.68	0
Handling	0.76	0.40	165	1	1.00	0.69	1
Penetrating	1.07	0.40	74	2	0.88	0.61	-18
Extracting	1.00	0.40	140	2	0.93	0.64	15
Other	Not Used	-	-	0	-	-	0

MODE	ERROR FOR TRACK	ERROR MESSAGES FOR LINE FORCES		
	Zero Pressure	Auxillary Line	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

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

Notes

EXCTRACTION USING THE ROTARY IS NOT TAKE INTO ACCOUNT