

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

Rig Manufacturer :	Tes Car	Rig Type :	CF 2,5 A
Completed by:	Tes Car	Operation mode:	
		14/11/2017	Checked by:

Main Components :

	Item	Mass (kg)	Moment arm (m)	Moment (kNm)
UPPER WORKS	Mast Assembly	991	0.53	5.15
	Cathead	120	1.20	1.41
	Support	250	0.70	1.72
	Winches	300	0.70	2.06
	Hydraulic cylinder	75	0.05	0.04
				0.00
				0.00
LOWER WORKS	Base Machine	4600	-1.12	-50.54
				0.00
				0.00
				0.00
				0.00
ROPE / KELLY / CHAIN SUSPENDED EQUIPMENT	Kelly	1050	1.70	17.51
	Rotary head	614	1.70	10.24
				0.00
				0.00
COUNT.	Counterweight	590	-1.90	-11.00
				0.00
				0.00
OTHER	None	0	0.00	0.00
				0.00
				0.00

Main Components Totals

UPPER WORKS	1736	0.61	10.38
LOWER WORKS	4600	-1.12	-50.54
ROPE / KELLY / CHAIN SUSPENDED EQUIPMENT	1664	1.70	27.75
COUNTERWEIGHT	590	-1.90	-11.00
OTHER	0	0.00	0.00
TOTAL	8590	-0.28	-23.41

Tracks

Track bearing length (m)	1.92
Track pad width (m)	0.4
Distance between centrelines of tracks (m)	1.53

Front Foot Pads

Pad Bearing Area (m ²)	0.00	Actual Dimensions	0
Pad Maximum Loading (kN)	0.00	Actual Shape	0
Pad Moment Arm (m)	0.00		

Rear Foot Pads

Pad Bearing Area (m ²)	0.00	Actual Dimensions	0
Pad Maximum Loading (kN)	0.00	Actual Shape	0
Pad Moment Arm (m)	0.00		

Forces

Maximum Extraction Force (kN)	64.00		
Maximum Penetration Force (kN)	95.00		
Maximum Auxillary Force (kN)	0.90	Auxillary Force Moment Arm (m)	1.80

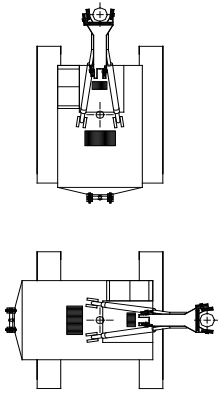
Notes

Max working radius 2,15 m

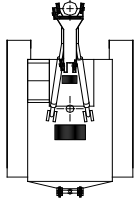
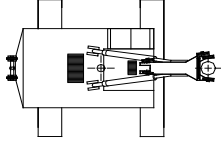
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Tes Car		Weight (kg) / Load (kgf)	Distance to CL rotation (m)	Horizontal moment (kNm)			Mode : 0.000 Standing							Transformation from triangular or trapezoidal to an equivalent rectangular pressure distribution under track maintaining the load centroid
CF 2,5 A							Max Track loading dimensions		Equivalent Bearing					
		ecc (m)		Bearing Len. (m)		L (m)		Q (KPa)						
Relative Angle - Upper Body and Tracks (degrees)	Bearing pressure at front of L.H. track (kN/m ²)	Bearing pressure at rear of L.H. track (kN/m ²)	Bearing pressure at front of R.H. track (kN/m ²)	Bearing pressure at rear of R.H. track (kN/m ²)										
Lower Works	4600	-1.120	-51											
Counterweight	590	-1.900	-11											
Upper Works	1736	0.609	10											
Other	0	0.000	0											
Rope / Kelly / Chain Suspended	1664	1.700	28											
Machine Weight (kg)	8590	-0.278	-23											
				Force (kN)	Max. (kN)									
Auxiliary Line (kgf)	0	1.800	0	0.00	0.90	Foot Pad Area (m ²)								
Net Extraction Force (kgf)	0	1.700	0	0.00	64.00									
Net Penetration Force (kgf)	0	1.700	0	0.00	95.00									
Front Foot Pads Loading (kgf)	0	0.000	0	0.00	0.00	0.000		Front Foot Pads Equivalent Length (m)and Bearing Pressure (kN/m ²)		0.000		0		
Rear Foot Pads Loading (kgf)	0	0.000	0	0.00	0.00	0.000		Rear Foot Pads Equivalent Length (m)and Bearing Pressure (kN/m ²)		0.000		0		
Others	0	0.000	0	Track Bearing Length (m)		1.920								
Track Total Loading (kgf)	8590	-0.278	-23	Track Width Centres (m)		1.530								
				Track pad width (m)		0.400								
										Maximum Equivalent Design Values		1.527 87		
										BRE LOAD CASE (1 or 2)		1		

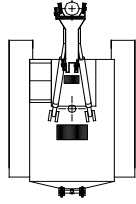
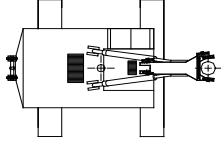


Auxiliary Line Force OK
 Extraction Force OK
 Penetration Force OK
 Front Foot Pad Force OK
 Rear Foot Pad Force OK

Tes Car		Weight (kg) / Load (kgf)	Distance to CL rotation (m)	Horizontal moment (kNm)	 		Mode : 0.000 Travelling						Transformation from triangular or trapezoidal to an equivalent rectangular pressure distribution under track maintaining the load centroid	
CF 2,5 A							Max Track loading dimensions		Equivalent Bearing					
		ecc (m)		Bearing Len. (m)		L (m)		Q (KPa)						
Relative Angle - Upper Body and Tracks (degrees)	Bearing pressure at front of L.H. track (kN/m ²)	Bearing pressure at rear of L.H. track (kN/m ²)	Bearing pressure at front of R.H. track (kN/m ²)	Bearing pressure at rear of R.H. track (kN/m ²)										
Lower Works	4600	-1.120	-51											
Counterweight	590	-1.900	-11											
Upper Works	1736	0.609	10											
Other	0	0.000	0											
Rope / Kelly / Chain Suspended	1664	1.700	28											
Machine Weight (kg)	8590	-0.278	-23											
				Force (kN)	Max. (kN)									
Auxiliary Line (kgf)	0	1.800	0	0.00	0.90	Foot Pad Area (m ²)								
Net Extraction Force (kgf)	0	1.700	0	0.00	64.00									
Net Penetration Force (kgf)	0	1.700	0	0.00	95.00									
Front Foot Pads Loading (kgf)	0	0.000	0	0.00	0.00	0.000		Front Foot Pads Equivalent Length (m) and Bearing Pressure (kN/m ²)		0.000		0		
Rear Foot Pads Loading (kgf)	0	0.000	0	0.00	0.00	0.000		Rear Foot Pads Equivalent Length (m) and Bearing Pressure (kN/m ²)		0.000		0		
Others	0	0.000	0	Track Bearing Length (m)		1.920		Maximum Equivalent Design Values		1.527		87		
Track Total Loading (kgf)	8590	-0.278	-23	Track Width Centres (m)		1.530								
				Track pad width (m)		0.400								
										BRE LOAD CASE (1 or 2)		1		

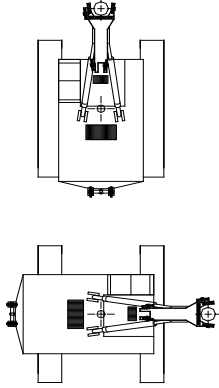


Auxiliary Line Force OK
 Extraction Force OK
 Penetration Force OK
 Front Foot Pad Force OK
 Rear Foot Pad Force OK

Tes Car		Weight (kg) / Load (kgf)	Distance to CL rotation (m)	Horizontal moment (kNm)	 		Mode : 0.000 Handling							Transformation from triangular or trapezoidal to an equivalent rectangular pressure distribution under track maintaining the load centroid	
CF 2,5 A							Max Track loading dimensions		Equivalent Bearing						
		ecc (m)		Bearing Len. (m)		L (m)		Q (KPa)							
Relative Angle - Upper Body and Tracks (degrees)	Bearing pressure at front of L.H. track (kN/m^2)	Bearing pressure at rear of L.H. track (kN/m^2)	Bearing pressure at front of R.H. track (kN/m^2)	Bearing pressure at rear of R.H. track (kN/m^2)											
Lower Works	4600	-1.120	-51												
Counterweight	590	-1.900	-11												
Upper Works	1736	0.609	10												
Other	0	0.000	0												
Rope / Kelly / Chain Suspended	1664	1.700	28												
Machine Weight (kg)	8590	-0.278	-23												
				Force (kN)	Max. (kN)										
Auxiliary Line (kgf)	1019	1.800	18	10.00	0.90	Foot Pad Area (m2)									
Net Extraction Force (kgf)	0	1.700	0	0.00	64.00										
Net Penetration Force (kgf)	0	1.700	0	0.00	95.00										
Front Foot Pads Loading (kgf)	0	0.000	0	0.00	0.00	0.000		Front Foot Pads Equivalent Length (m)and Bearing Pressure (kN/m^2)							
Rear Foot Pads Loading (kgf)	0	0.000	0	0.00	0.00	0.000		Rear Foot Pads Equivalent Length (m)and Bearing Pressure (kN/m^2)							
Others	0	0.000	0	Track Bearing Length (m)		1.920									
Track Total Loading (kgf)	9609	-0.057	-5	Track Width Centres (m)		1.530									
				Track pad width (m)		0.400									
							Maximum Equivalent Design Values		1.839	67					
							BRE LOAD CASE (1 or 2)		1						



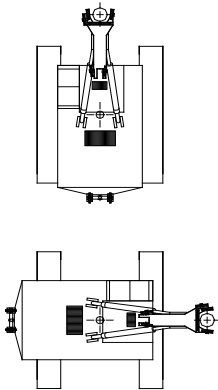
ERROR - AUXILIARY LINE FORCE EXCEEDS MAXIMUM
 Extraction Force OK
 Penetration Force OK
 Front Foot Pad Force OK
 Rear Foot Pad Force OK

Tes Car		Weight (kg) / Load (kgf)	Distance to CL rotation (m)	Horizontal moment (kNm)			Mode : 0.000 Penetrating							Transformation from triangular or trapezoidal to an equivalent rectangular pressure distribution under track maintaining the load centroid	
CF 2,5 A							Max Track loading dimensions		Equivalent Bearing						
		ecc (m)		Bearing Len. (m)		L (m)		Q (KPa)							
Relative Angle - Upper Body and Tracks (degrees)	Bearing pressure at front of L.H. track (kN/m ²)	Bearing pressure at rear of L.H. track (kN/m ²)	Bearing pressure at front of R.H. track (kN/m ²)	Bearing pressure at rear of R.H. track (kN/m ²)											
Lower Works	4600	-1.120	-51												
Counterweight	590	-1.900	-11												
Upper Works	1736	0.609	10												
Other	0	0.000	0												
Rope / Kelly / Chain Suspended	1664	1.700	28												
Machine Weight (kg)	8590	-0.278	-23												
				Force (kN)	Max. (kN)										
Auxiliary Line (kgf)	0	1.800	0	0.00	0.90	Foot Pad Area (m ²)									
Net Extraction Force (kgf)	0	1.700	0	0.00	64.00										
Net Penetration Force (kgf)	-4661	1.700	-78	29.40	95.00										
Front Foot Pads Loading (kgf)	0	0.000	0	0.00	0.00	0.000	Front Foot Pads Equivalent Length (m)and Bearing Pressure (kN/m ²)		0.000	0					
Rear Foot Pads Loading (kgf)	0	0.000	0	0.00	0.00	0.000	Rear Foot Pads Equivalent Length (m)and Bearing Pressure (kN/m ²)		0.000	0					
Others	0	0.000	0	Track Bearing Length (m)		1.920	Maximum Equivalent Design Values		#####	#####					
Track Total Loading (kgf)	3929	-2.624	-101	Track Width Centres (m)		1.530	#VALUE!								
				Track pad width (m)		0.400	BRE LOAD CASE (1 or 2)			2					



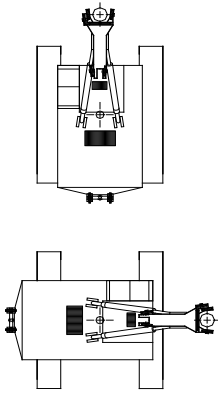
Auxiliary Line Force OK
 Extraction Force OK
 Penetration Force OK
 Front Foot Pad Force OK
 Rear Foot Pad Force OK

Tes Car		Weight (kg) / Load (kgf)	Distance to CL rotation (m)	Horizontal moment (kNm)			Mode : 0.000 Extracting							Transformation from triangular or trapezoidal to an equivalent rectangular pressure distribution under track maintaining the load centroid
CF 2,5 A							Max Track loading dimensions		Equivalent Bearing					
		ecc (m)		Bearing Len. (m)		L (m)		Q (KPa)						
Lower Works	4600	-1.120	-51											
Counterweight	590	-1.900	-11											
Upper Works	1736	0.609	10											
Other	0	0.000	0											
Rope / Kelly / Chain Suspended	1664	1.700	28											
Machine Weight (kg)	8590	-0.278	-23											
				Force (kN)	Max. (kN)									
Auxiliary Line (kgf)	0	1.800	0	0.00	0.90	Foot Pad Area (m2)								
Net Extraction Force (kgf)	38295	1.700	639	392.00	64.00									
Net Penetration Force (kgf)	0	1.700	0	0.00	95.00									
Front Foot Pads Loading (kgf)	-30887	0.000	0	303.00	0.00	0.000	Front Foot Pads Equivalent Length (m)and Bearing Pressure (kN/m^2)		0.000	0				
Rear Foot Pads Loading (kgf)	0	0.000	0	0.00	0.00	0.000	Rear Foot Pads Equivalent Length (m)and Bearing Pressure (kN/m^2)		0.000	0				
Others	0	0.000	0	Track Bearing Length (m)		1.920	Maximum Equivalent Design Values		#####	#####				
Track Total Loading (kgf)	15998	3.920	615	Track Width Centres (m)		1.530	#VALUE!							
				Track pad width (m)		0.400			BRE LOAD CASE (1 or 2)		2			



Auxiliary Line Force OK
ERROR - EXTRACTION FORCE EXCEEDS MAXIMUM
Penetration Force OK
ERROR - FRONT FOOT PAD FORCE EXCEEDS MAXIMUM
Rear Foot Pad Force OK

Tes Car		Weight (kg) / Load (kgf)	Distance to CL rotation (m)	Horizontal moment (kNm)			Mode : 0.000 Other					Transformation from triangular or trapezoidal to an equivalent rectangular pressure distribution under track maintaining the load centroid	
CF 2,5 A							Relative Angle - Upper Body and Tracks (degrees)	Bearing pressure at front of L.H. track (kN/m ²)	Bearing pressure at rear of L.H. track (kN/m ²)	Bearing pressure at front of R.H. track (kN/m ²)	Bearing pressure at rear of R.H. track (kN/m ²)		
										ecc (m)	Bearing Len. (m)	L (m)	Q (KPa)
Lower Works		4600	-1.120	-51									
Counterweight		590	-1.900	-11									
Upper Works		1736	0.609	10									
Other		0	0.000	0									
Rope / Kelly / Chain Suspended		1664	1.700	28									
Machine Weight (kg)		8590	-0.278	-23									
					Force (kN)	Max. (kN)							
Auxiliary Line (kgf)	0	1.800	0		0.00	0.90							
Net Extraction Force (kgf)	0	1.700	0		0.00	64.00							
Net Penetration Force (kgf)	0	1.700	0		0.00	95.00							
Front Foot Pads Loading (kgf)	0	0.000	0		0.00	0.00	0.000	Front Foot Pads Equivalent Length (m) and Bearing Pressure (kN/m ²)			0.000	0	
Rear Foot Pads Loading (kgf)	0	0.000	0		0.00	0.00	0.000	Rear Foot Pads Equivalent Length (m) and Bearing Pressure (kN/m ²)			0.000	0	
Others	0	0.000	0		Track Bearing Length (m)		1.920			Maximum Equivalent Design Values		1.527	87
Track Total Loading (kgf)		8590	-0.278	-23	Track Width Centres (m)		1.530						
					Track pad width (m)		0.400						
										BRE LOAD CASE (1 or 2)		1	



Auxiliary Line Force OK
 Extraction Force OK
 Penetration Force OK
 Front Foot Pad Force OK
 Rear Foot Pad Force OK

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

Rig Manufacturer :		Tes Car		Rig Type :		CF 2,5 A	
Completed by:		Tes Car		Operation mode:		0	
		14/11/2017		Checked by:		0	
Item		Mass (kg)		Moment arm (m)		Moment (kNm)	
UPPER WORKS		1736		0.61		10.38	
LOWER WORKS		4600		-1.12		-50.54	
ROPE / KELLY / CHAIN SUSPENDED EQUIPMENT		1664		1.70		27.75	
COUNTERWEIGHT		590		-1.90		-11.00	
OTHER		0		0.00		0.00	
TOTAL		8590		-0.28		-23.41	
Tracks							
Track bearing length (m)		1.92					
Track pad width (m)		0.4					
Distance between centrelines of tracks (m)		1.53					
Front Foot Pads							
Pad Bearing Area (m ²)		0.00		Actual Dimensions		0	
Pad Maximum Loading (kN)		0.00		Actual Shape		0	
Pad Moment Arm (m)		0.00					
Rear Foot Pads							
Pad Bearing Area (m ²)		0.00		Actual Dimensions		0	
Pad Maximum Loading (kN)		0.00		Actual Shape		0	
Pad Moment Arm (m)		0.00					
Forces							
Maximum Extraction Force (kN)		64.00					
Maximum Penetration Force (kN)		95.00					
Maximum Auxillary Force (kN)		0.90		Auxillary Force Moment Arm (m)		1.80	
Pressure Summary for Platform Design (unfactored)							
MODE	BRE LOAD CASE (1 or 2)	Length (m)	Width (m)	UDL Pressure (kPa)			
Standing	1	1.53	0.4	87			
Travelling	1	1.53	0.4	87			
Handling	1	1.84	0.4	67			
Penetrating	2	#VALUE!	0.4	#VALUE!			
Extracting	2	#VALUE!	0.4	#VALUE!			
Other	NOT USED	N/A	0.4	N/A			
MODE	WARNING MESSAGES	ERROR MESSAGES FOR FORCES					
Standing	None	Auxiliary Line Force OK	Extraction Force OK	Penetration Force OK			
Travelling	None	Auxiliary Line Force OK	Extraction Force OK	Penetration Force OK			
Handling	None	ERROR - AUXILIARY LINE FORCE EXCEEDS MAXIMUM	Extraction Force OK	Penetration Force OK			
Penetrating	#VALUE!	Auxiliary Line Force OK	Extraction Force OK	Penetration Force OK			
Extracting	#VALUE!	Auxiliary Line Force OK	ERROR - EXTRACTION FORCE EXCEEDS MAXIMUM	Penetration Force OK			
Other	None	Auxiliary Line Force OK	Extraction Force OK	Penetration Force OK			
MODE	ERROR MESSAGES FOR FOOT PADS		Notes				
Standing	Front Foot Pad Force OK	Rear Foot Pad Force OK	Only for rig operation on level ground with a vertical mast, unless noted below !				
Travelling	Front Foot Pad Force OK	Rear Foot Pad Force OK	Only for use where the rig is working on a ground supported platform !				
Handling	Front Foot Pad Force OK	Rear Foot Pad Force OK	Foot pad pressures are adjusted to equalise with the track pressures !				
Penetrating	Front Foot Pad Force OK	Rear Foot Pad Force OK	Rigs to be operated in accordance with manufacturer's & employer's instructions				
Extracting	ERROR - FRONT FOOT PAD FORCE EXCEEDS MAXIMUM	Rear Foot Pad Force OK	Max working radius 2,15 m				
Other	Front Foot Pad Force OK	Rear Foot Pad Force OK					
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