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

Rig Manufacturer :	Tes Car	Rig Type :	CF3P
	Operation mode:		
Completed by: Tes Car	22/04/2014	Checked by:	

Main Components :

	Item	Mass (kg)	Moment arm (m)	Moment (kNm)
UPPER WORKS	Mast Assembly	1040	0.60	6.12
	Cathead	120	1.25	1.47
	Support	470	0.80	3.69
	Winches	300	0.80	2.35
	Hydraulic cylinder1	140	1.00	1.37
	Hydraulic cylinder2	240	1.30	3.06
				0.00
				0.00
				0.00
LOWER WORKS	Base Machine	2323	-1.12	-25.52
	Extracted Crawler	3190	-0.20	-6.26
				0.00
				0.00
				0.00
				0.00
ROPE / KELLY / CHAIN SUSPENDED EQUIPMENT	Kelly	1043	2.16	22.10
	Rotary head	614	1.94	11.69
				0.00
				0.00
				0.00
COUNT.	Counterweight	703	-1.80	-12.41
				0.00
				0.00
OTHER	Others	1310	1.00	12.85
				0.00
				0.00

Main Components Totals

UPPER WORKS	2310	0.80	18.07
LOWER WORKS	5513	-0.59	-31.78
ROPE / KELLY / CHAIN SUSPENDED EQUIPMENT	1657	2.08	33.79
COUNTERWEIGHT	703	-1.80	-12.41
OTHER	1310	1.00	12.85
TOTAL	11493	0.18	20.51

Tracks

Track bearing length (m)	2.92		
Track pad width (m)	0.45		
Distance between centrelines of tracks (m)	1.87		

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

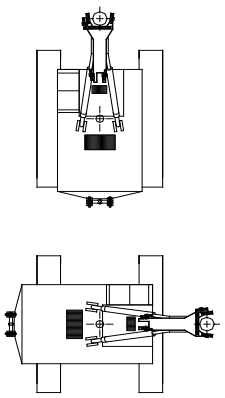
Maximum Extraction Force (kN)	64.00		
Maximum Penetration Force (kN)	95.00		
Maximum Auxillary Force (kN)	0.90	Auxillary Force Moment Arm (m)	1.80

Notes

Max working radius 2,15 m

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

Tes Car CF3P	Weight (kg) / Load (kgf)	Distance to CL rotation (m)	Horizontal moment (kNm)
Lower Works	5513	-0.588	-32
Counterweight	703	-1.800	-12
Upper Works	2310	0.797	18
Other	1310	1.000	13
Rope / Kelly / Chain Suspended	1657	2.078	34
Machine Weight (kg)	11493	0.182	21
Auxiliary Line (kgf)	0	1.800	0
Net Extraction Force (kgf)	0	2.078	0
Net Penetration Force (kgf)	0	2.078	0
Front Foot Pads Loading (kgf)	0	0.000	0
Rear Foot Pads Loading (kgf)	0	0.000	0
Others	0	0.000	0
Track Total Loading (kgf)	11493	0.182	21



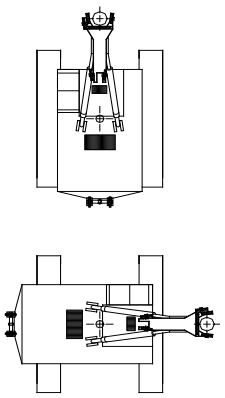
	Force (kN)	Max. (kN)	
Auxiliary Line (kgf)	0.00	0.90	Foot Pad Area (m2)
Net Extraction Force (kgf)	0.00	64.00	
Net Penetration Force (kgf)	0.00	95.00	
Front Foot Pads Loading (kgf)	0.00	0.00	0.000
Rear Foot Pads Loading (kgf)	0.00	0.00	0.000
Track Bearing Length (m)			2.920
Track Width Centres (m)			1.870
Track pad width (m)			0.450

Mode : 0.000 **Standing**

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)	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	59	27	59	27	0.182	2.920	2.556	49
15	55	26	61	29	0.176	2.920	2.569	51
30	51	26	62	32	0.158	2.920	2.605	53
45	47	27	62	36	0.129	2.920	2.663	54
60	42	29	60	41	0.091	2.920	2.738	53
75	38	31	56	46	0.047	2.920	2.826	53
90	35	35	51	51	0.000	2.920	2.920	51
Front Foot Pads Equivalent Length (m)and Bearing Pressure (kN/m^2)							0.000	0
Rear Foot Pads Equivalent Length (m)and Bearing Pressure (kN/m^2)							0.000	0
Maximum Equivalent Design Values							2.663	54
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 CF3P	Weight (kg) / Load (kgf)	Distance to CL rotation (m)	Horizontal moment (kNm)
Lower Works	5513	-0.588	-32
Counterweight	703	-1.800	-12
Upper Works	2310	0.797	18
Other	1310	1.000	13
Rope / Kelly / Chain Suspended	1657	2.078	34
Machine Weight (kg)	11493	0.182	21
Auxiliary Line (kgf)	0	1.800	0
Net Extraction Force (kgf)	0	2.078	0
Net Penetration Force (kgf)	0	2.078	0
Front Foot Pads Loading (kgf)	0	0.000	0
Rear Foot Pads Loading (kgf)	0	0.000	0
Others	0	0.000	0
Track Total Loading (kgf)	11493	0.182	21



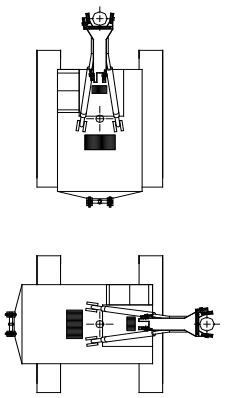
	Force (kN)	Max. (kN)	
Auxiliary Line (kgf)	0.00	0.90	Foot Pad Area (m2)
Net Extraction Force (kgf)	0.00	64.00	
Net Penetration Force (kgf)	0.00	95.00	
Front Foot Pads Loading (kgf)	0.00	0.00	0.000
Rear Foot Pads Loading (kgf)	0.00	0.00	0.000
Track Bearing Length (m)			2.920
Track Width Centres (m)			1.870
Track pad width (m)			0.450

Mode : 0.000 **Travelling**

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)	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	59	27	59	27	0.182	2.920	2.556	49
15	55	26	61	29	0.176	2.920	2.569	51
30	51	26	62	32	0.158	2.920	2.605	53
45	47	27	62	36	0.129	2.920	2.663	54
60	42	29	60	41	0.091	2.920	2.738	53
75	38	31	56	46	0.047	2.920	2.826	53
90	35	35	51	51	0.000	2.920	2.920	51
Front Foot Pads Equivalent Length (m)and Bearing Pressure (kN/m^2)							0.000	0
Rear Foot Pads Equivalent Length (m)and Bearing Pressure (kN/m^2)							0.000	0
					Maximum Equivalent Design Values		2.663	54
					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 CF3P	Weight (kg) / Load (kgf)	Distance to CL rotation (m)	Horizontal moment (kNm)
Lower Works	5513	-0.588	-32
Counterweight	703	-1.800	-12
Upper Works	2310	0.797	18
Other	1310	1.000	13
Rope / Kelly / Chain Suspended	1657	2.078	34
Machine Weight (kg)	11493	0.182	21
Auxiliary Line (kgf)	1019	1.800	18
Net Extraction Force (kgf)	0	2.078	0
Net Penetration Force (kgf)	0	2.078	0
Front Foot Pads Loading (kgf)	0	0.000	0
Rear Foot Pads Loading (kgf)	0	0.000	0
Others	0	0.000	0
Track Total Loading (kgf)	12512	0.314	39



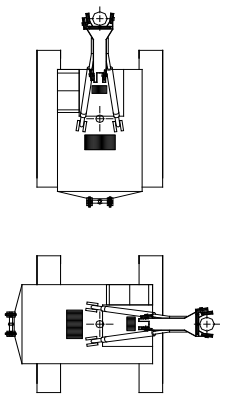
	Force (kN)	Max. (kN)	
	10.00	0.90	Foot Pad Area (m2)
	0.00	64.00	
	0.00	95.00	
	0.00	0.00	0.000
	0.00	0.00	0.000
Track Bearing Length (m)			2.920
Track Width Centres (m)			1.870
Track pad width (m)			0.450

Mode : 0.000 **Handling**

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)	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	77	17	77	17	0.314	2.920	2.293	59
15	69	16	82	19	0.303	2.920	2.314	64
30	61	17	85	24	0.272	2.920	2.377	67
45	52	19	84	31	0.222	2.920	2.476	68
60	44	22	80	41	0.157	2.920	2.606	68
75	37	26	72	52	0.081	2.920	2.758	65
90	31	31	62	62	0.000	2.920	2.920	62
Front Foot Pads Equivalent Length (m)and Bearing Pressure (kN/m^2)							0.000	0
Rear Foot Pads Equivalent Length (m)and Bearing Pressure (kN/m^2)							0.000	0
Maximum Equivalent Design Values							2.476	68
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 CF3P	Weight (kg) / Load (kgf)	Distance to CL rotation (m)	Horizontal moment (kNm)
Lower Works	5513	-0.588	-32
Counterweight	703	-1.800	-12
Upper Works	2310	0.797	18
Other	1310	1.000	13
Rope / Kelly / Chain Suspended	1657	2.078	34
Machine Weight (kg)	11493	0.182	21
Auxiliary Line (kgf)	0	1.800	0
Net Extraction Force (kgf)	0	2.078	0
Net Penetration Force (kgf)	-4654	2.078	-95
Front Foot Pads Loading (kgf)	0	0.000	0
Rear Foot Pads Loading (kgf)	0	0.000	0
Others	0	0.000	0
Track Total Loading (kgf)	6839	-1.109	-74



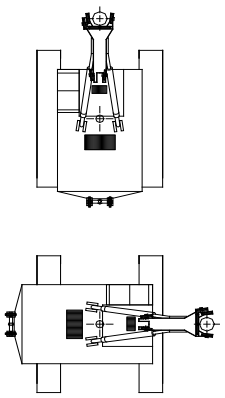
	Force (kN)	Max. (kN)	
Auxiliary Line (kgf)	0.00	0.90	Foot Pad Area (m2)
Net Extraction Force (kgf)	0.00	64.00	
Net Penetration Force (kgf)	29.40	95.00	
Front Foot Pads Loading (kgf)	0.00	0.00	0.000
Rear Foot Pads Loading (kgf)	0.00	0.00	0.000
Track Bearing Length (m)			2.920
Track Width Centres (m)			1.870
Track pad width (m)			0.450

Mode : 0.000 **Penetrating**

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)	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	0	141	0	141	-1.109	1.054	0.703	106
15	0	167	0	89	-1.071	1.167	0.778	125
30	0	158	0	40	-0.960	1.500	1.000	119
45	0	135	0	12	-0.784	2.028	1.352	101
60	0	111	0	-1	-0.554	2.717	1.811	83
75	22	87	-2	-6	-0.287	2.920	2.346	68
90	56	56	-5	-5	0.000	2.920	2.920	56
Front Foot Pads Equivalent Length (m)and Bearing Pressure (kN/m^2)							0.000	0
Rear Foot Pads Equivalent Length (m)and Bearing Pressure (kN/m^2)							0.000	0
Maximum Equivalent Design Values							0.778	125
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 CF3P	Weight (kg) / Load (kgf)	Distance to CL rotation (m)	Horizontal moment (kNm)
Lower Works	5513	-0.588	-32
Counterweight	703	-1.800	-12
Upper Works	2310	0.797	18
Other	1310	1.000	13
Rope / Kelly / Chain Suspended	1657	2.078	34
Machine Weight (kg)	11493	0.182	21
Auxiliary Line (kgf)	0	1.800	0
Net Extraction Force (kgf)	38302	2.078	781
Net Penetration Force (kgf)	0	2.078	0
Front Foot Pads Loading (kgf)	-30887	0.000	0
Rear Foot Pads Loading (kgf)	0	0.000	0
Others	0	0.000	0
Track Total Loading (kgf)	18908	4.321	801



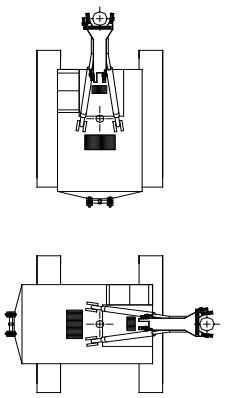
	Force (kN)	Max. (kN)	
Auxiliary Line (kgf)	0.00	0.90	Foot Pad Area (m2)
Net Extraction Force (kgf)	392.00	64.00	
Net Penetration Force (kgf)	0.00	95.00	
Front Foot Pads Loading (kgf)	303.00	0.00	0.000
Rear Foot Pads Loading (kgf)	0.00	0.00	0.000
Track Bearing Length (m)			2.920
Track Width Centres (m)			1.870
Track pad width (m)			0.450

Mode : 0.000 **Extracting**

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)	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	#VALUE!	#VALUE!	#VALUE!	#VALUE!	4.321	#VALUE!	-5.722	#VALUE!
15	#VALUE!	#VALUE!	#VALUE!	#VALUE!	4.174	#VALUE!	-5.427	#VALUE!
30	#VALUE!	#VALUE!	#VALUE!	#VALUE!	3.742	#VALUE!	-4.564	#VALUE!
45	#VALUE!	#VALUE!	#VALUE!	#VALUE!	3.055	#VALUE!	-3.191	#VALUE!
60	#VALUE!	#VALUE!	#VALUE!	#VALUE!	2.160	#VALUE!	-1.401	#VALUE!
75	#VALUE!	0	#VALUE!	0	1.118	1.025	0.683	#VALUE!
90	#VALUE!	-256	#VALUE!	397	0.000	2.920	2.920	#VALUE!
Front Foot Pads Equivalent Length (m)and Bearing Pressure (kN/m^2)							0.000	0
Rear Foot Pads Equivalent Length (m)and Bearing Pressure (kN/m^2)							0.000	0
Maximum Equivalent Design Values							#######	#######
#VALUE!								
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 CF3P	Weight (kg) / Load (kgf)	Distance to CL rotation (m)	Horizontal moment (kNm)
Lower Works	5513	-0.588	-32
Counterweight	703	-1.800	-12
Upper Works	2310	0.797	18
Other	1310	1.000	13
Rope / Kelly / Chain Suspended	1657	2.078	34
Machine Weight (kg)	11493	0.182	21
Auxiliary Line (kgf)	0	1.800	0
Net Extraction Force (kgf)	0	2.078	0
Net Penetration Force (kgf)	0	2.078	0
Front Foot Pads Loading (kgf)	0	0.000	0
Rear Foot Pads Loading (kgf)	0	0.000	0
Others	0	0.000	0
Track Total Loading (kgf)	11493	0.182	21



	Force (kN)	Max. (kN)	
Auxiliary Line (kgf)	0.00	0.90	Foot Pad Area (m2)
Net Extraction Force (kgf)	0.00	64.00	
Net Penetration Force (kgf)	0.00	95.00	
Front Foot Pads Loading (kgf)	0.00	0.00	0.000
Rear Foot Pads Loading (kgf)	0.00	0.00	0.000
Track Bearing Length (m)			2.920
Track Width Centres (m)			1.870
Track pad width (m)			0.450

Mode : 0.000 **Other**

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)	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	59	27	59	27	0.182	2.920	2.556	49
15	55	26	61	29	0.176	2.920	2.569	51
30	51	26	62	32	0.158	2.920	2.605	53
45	47	27	62	36	0.129	2.920	2.663	54
60	42	29	60	41	0.091	2.920	2.738	53
75	38	31	56	46	0.047	2.920	2.826	53
90	35	35	51	51	0.000	2.920	2.920	51
Front Foot Pads Equivalent Length (m)and Bearing Pressure (kN/m^2)							0.000	0
Rear Foot Pads Equivalent Length (m)and Bearing Pressure (kN/m^2)							0.000	0
Maximum Equivalent Design Values							2.663	54
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 :**	**CF3P**
	Operation mode:	**0**	
Completed by: **Tes Car**	**22/04/2014**	**Checked by:**	**0**

Item	Mass (kg)	Moment arm (m)	Moment (kNm)
UPPER WORKS	**2310**	**0.80**	**18.07**
LOWER WORKS	**5513**	**-0.59**	**-31.78**
ROPE / KELLY / CHAIN SUSPENDED EQUIPMENT	**1657**	**2.08**	**33.79**
COUNTERWEIGHT	**703**	**-1.80**	**-12.41**
OTHER	**1310**	**1.00**	**12.85**
TOTAL	**11493**	**0.18**	**20.51**
Tracks			
Track bearing length (m)	2.92		
Track pad width (m)	0.45		
Distance between centrelines of tracks (m)	1.87		
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	2.66	0.45	54
Travelling	1	2.66	0.45	54
Handling	1	2.48	0.45	68
Penetrating	2	0.78	0.45	125
Extracting	2	#VALUE!	0.45	#VALUE!
Other	NOT USED	N/A	0.45	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	None	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	
Standing	Front Foot Pad Force OK	Rear Foot Pad Force OK
Travelling	Front Foot Pad Force OK	Rear Foot Pad Force OK
Handling	Front Foot Pad Force OK	Rear Foot Pad Force OK
Penetrating	Front Foot Pad Force OK	Rear Foot Pad Force OK
Extracting	ERROR - FRONT FOOT PAD FORCE EXCEEDS MAXIMUM	Rear Foot Pad Force OK
Other	Front Foot Pad Force OK	Rear Foot Pad Force OK

Notes

Only for rig operation on level ground with a vertical mast, unless noted below !

Only for use where the rig is working on a ground supported platform !

Foot pad pressures are adjusted to equalise with the track pressures !

Rigs to be operated in accordance with manufacturer's & employer's instructions

Max working radius 2,15 m

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