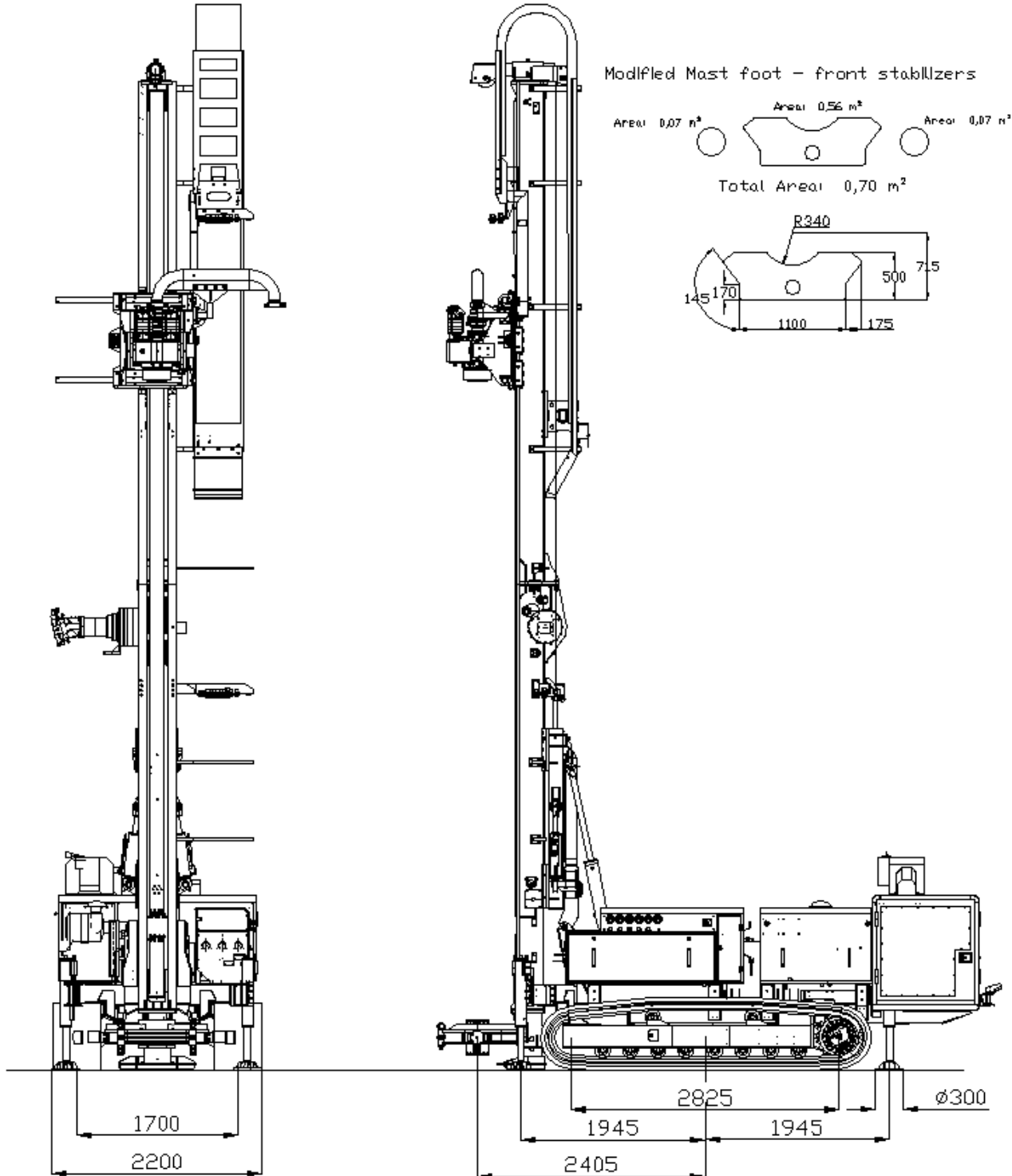



HBR204MP – COLETS Rig Loading Spreadsheet



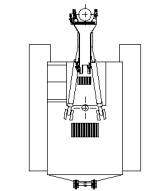
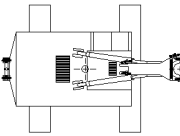
Note: The disclaimer on the first worksheet applies to all tables in this workbook			
Rig Manufacturer :		CASAGRANDE SPA	Rig Type : HBR204_s/n H204UT0107
		Operation mode:	W.R. 2,4 m
Completed by:	Ing. Fabiano Ceron	21/05/2014	Checked by: Ing. Giorgio Michelazzo
Main Components :			
	Item	Mass (kg)	Moment arm (m)
UPPER WORKS	1		0,00
	Mast Assembly+clamps +cathead+winch	4090	1,88
			0,00
	safety guards	500	2,40
			0,00
	Mast assembly in travel complete with clamps safety guards and accessories (20° tilted backward)	0	0,82
			0,00
LOWER WORKS	Upperstructure and undercarriage	8880	-0,37
			0,00
	Upperstructure and undercarriage (20° tilted backward)	0	-0,41
			0,00
ROPE / KELLY / CHAIN SUSPENDED EQUIPMENT	rotary with accessories	1950	2,28
	tools (augers, rods...)	1000	2,40
			0,00
	rotary 20° backward tools (augers, rods etc...) 20° backward	0	-0,60
		0,00	
COUNT.	counterweight	280	-2,54
			0,00
OTHER	None	0	0,00
			0,00
			0,00
Main Components Totals			
UPPER WORKS		4590	1,93
LOWER WORKS		8880	-0,37
ROPE / KELLY / CHAIN SUSPENDED EQUIPMENT		2950	2,32
COUNTERWEIGHT		280	-2,54
OTHER		0	0,00
TOTAL		16700	0,70
Tracks			
	Track bearing length (m)	2,825	
	Track pad width (m)	0,5	
	Distance between centrelines of tracks (m)	1,70	
Front Foot Pads			
	Pad Bearing Area (m ²)	0,70	Actual Dimensions special mast foot 0,70 m ²
	Pad Maximum Loading (kN)	300,00	Actual Shape polygonal + circular
	Pad Moment Arm (m)	1,94	
Rear Foot Pads			
	Pad Bearing Area (m ²)	0,14	Actual Dimensions dia 300mm
	Pad Maximum Loading (kN)	300,00	Actual Shape circular
	Pad Moment Arm (m)	-1,94	
Forces			
	Maximum Extraction Force (kN)	150,00	
	Maximum Penetration Force (kN)	150,00	
	Maximum Auxillary Force (kN)	20,00	Auxillary Force Moment Arm (m) 3,20
Notes			
Note: The disclaimer on the first worksheet applies to all tables in this workbook			No limits on working practice INPUT PAGE FOR STANDING-HANDLING- PENETRATING-EXTRACTING

CASAGRANDE SPA H204UT0107		Weight (kg) / Load (kgf)	Distance to CL rotation (m)	Horizontal moment (kNm)			Mode : W.R. 2,4 m Standing						Transformation from triangular or trapizoidal to an equivalent rectangular pressure distribution under track maintaining the load centroid			
							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		Equivalent Bearing		
												ecc (m)	Bearing Len. (m)	L (m)	Q (KPa)	
Lower Works	8880	-0,365	-32				0	154	0	154	0	0,705	2,123	1,415	116	
Counterweight	280	-2,544	-7				0	154	0	154	0	0,705	2,123	1,415	116	
Upper Works	4590	1,933	87				0	154	0	154	0	0,705	2,123	1,415	116	
Other	0	0,000	0				0	154	0	154	0	0,705	2,123	1,415	116	
Rope / Kelly / Chain Suspended	2950	2,323	67				0	154	0	154	0	0,705	2,123	1,415	116	
Machine Weight (kg)	16700	0,705	115				0	154	0	154	0	0,705	2,123	1,415	116	
				Force (kN)	Max. (kN)	Foot Pad Area (m ²)	0	0,00	20,00							
Auxiliary Line (kgf)	0	3,200	0	0,00	20,00		0	154	0	154	0	0,705	2,123	1,415	116	
Net Extraction Force (kgf)	0	2,323	0	0,00	150,00		0	154	0	154	0	0,705	2,123	1,415	116	
Net Penetration Force (kgf)	0	2,323	0	0,00	150,00		0	154	0	154	0	0,705	2,123	1,415	116	
Front Foot Pads Loading (kgf)	0	1,944	0	0,00	300,00	0,700	Front Foot Pads Equivalent Length (m) and Bearing Pressure (kN/m ²)						1,400	0		
Rear Foot Pads Loading (kgf)	0	-1,943	0	0,00	300,00	0,141	Rear Foot Pads Equivalent Length (m) and Bearing Pressure (kN/m ²)						0,283	0		
Others	0	0,000	0	Track Bearing Length (m)		2,825							Maximum Equivalent Design Values		1,415	116
Track Total Loading (kgf)	16700	0,705	115	Track Width Centres (m)		1,700										
				Track pad width (m)		0,500							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														


CASAGRANDE SPA H204UT0107		Weight (kg) / Load (kgf)	Distance to CL rotation (m)	Horizontal moment (kNm)			Mode : W.R. 2,4 m Handling					Transformation from triangular or trapizoidal to an equivalent rectangular pressure distribution under track maintaining the load centriod		
				Force (kN)	Max. (kN)	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		Equivalent Bearing	
											ecc (m)	Bearing Len. (m)	L (m)	Q (KPa)
Lower Works	8880	-0,365	-32			0	103	0	103	0	0,574	2,516	1,677	77
Counterweight	280	-2,544	-7			0	103	0	103	0	0,574	2,516	1,677	77
Upper Works	4590	1,933	87			0	103	0	103	0	0,574	2,516	1,677	77
Other	0	0,000	0			0	103	0	103	0	0,574	2,516	1,677	77
Rope / Kelly / Chain Suspended	2950	2,323	67			0	103	0	103	0	0,574	2,516	1,677	77
Machine Weight (kg)	16700	0,705	115			0	103	0	103	0	0,574	2,516	1,677	77
Auxiliary Line (kgf)	2039	3,200	64	20,00	20,00	0	103	0	103	0	0,574	2,516	1,677	77
Net Extraction Force (kgf)	0	2,323	0	0,00	150,00	0	103	0	103	0	0,574	2,516	1,677	77
Net Penetration Force (kgf)	0	2,323	0	0,00	150,00	0	103	0	103	0	0,574	2,516	1,677	77
Front Foot Pads Loading (kgf)	-5505	1,944	-105	54,00	300,00	0,700	Front Foot Pads Equivalent Length (m)and Bearing Pressure (kN/m ²)					1,400	77	
Rear Foot Pads Loading (kgf)	0	-1,943	0	0,00	300,00	0,141	Rear Foot Pads Equivalent Length (m)and Bearing Pressure (kN/m ²)					0,283	0	
Others	0	0,000	0	Track Bearing Length (m)		2,825	Maximum Equivalent Design Values					1,677	77	
Track Total Loading (kgf)	13234	0,574	75	Track Width Centres (m)		1,700						BRE LOAD CASE (1 or 2)		1
				Track pad width (m)		0,500								

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

CASAGRANDE SPA		Weight (kg) / Load (kgf)	Distance to CL rotation (m)	Horizontal moment (kNm)	Force (kN)		Foot Pad Area (m2)	Mode : W.R. 2,4 m Penetrating							Transformation from triangular or trapizoidal to an equivalent rectangular pressure distribution under track maintaining the load centroid	
H204UT0107					Force (kN)	Max. (kN)		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			Equivalent Bearing
											ecc (m)	Bearing Len. (m)	L (m)	Q (KPa)		
Lower Works		8880	-0,365	-32				0	0	237	0	237	-1,289	0,372	0,248	177
Counterweight		280	-2,544	-7				0	0	237	0	237	-1,289	0,372	0,248	177
Upper Works		4590	1,933	87				0	0	237	0	237	-1,289	0,372	0,248	177
Other		0	0,000	0				0	0	237	0	237	-1,289	0,372	0,248	177
Rope / Kelly / Chain Suspended		2950	2,323	67				0	0	237	0	237	-1,289	0,372	0,248	177
Machine Weight (kg)		16700	0,705	115												
Auxiliary Line (kgf)		0	3,200	0	0,00	20,00										
Net Extraction Force (kgf)		0	2,323	0	0,00	150,00										
Net Penetration Force (kgf)		-9678	2,323	-221	66,00	150,00										
Front Foot Pads Loading (kgf)		0	1,944	0	0,00	300,00	0,700	Front Foot Pads Equivalent Length (m)and Bearing Pressure (kN/m ²)					1,400	0		
Rear Foot Pads Loading (kgf)		-2538	-1,943	48	24,90	300,00	0,141	Rear Foot Pads Equivalent Length (m)and Bearing Pressure (kN/m ²)					0,283	176		
Others		0	0,000	0	Track Bearing Length (m)		2,825	Maximum Equivalent Design Values					0,248	177		
Track Total Loading (kgf)		4484	-1,289	-57	Track Width Centres (m)		1,700						BRE LOAD CASE (1 or 2)		2	
					Track pad width (m)		0,500									

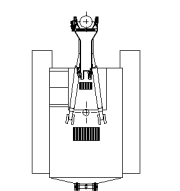
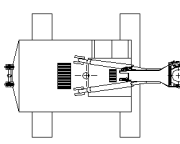



with current circular shape dia 300mm




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

CASAGRANDE SPA H204UT0107						Mode : W.R. 2,4 m Extracting						Transformation from triangular or trapezoidal to an equivalent rectangular pressure distribution under track maintaining the load centroid		
Weight (kg) / Load (kgf)	Distance to CL rotation (m)	Horizontal moment (kNm)				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		Equivalent Bearing	
			Force (kN)	Max. (kN)	ecc (m)						Bearing Len. (m)	L (m)	Q (KPa)	
Lower Works	8880	-0,365	-32			0	241	0	241	0	0,967	1,335	0,890	181
Counterweight	280	-2,544	-7			0	241	0	241	0	0,967	1,335	0,890	181
Upper Works	4590	1,933	87			0	241	0	241	0	0,967	1,335	0,890	181
Other	0	0,000	0			0	241	0	241	0	0,967	1,335	0,890	181
Rope / Kelly / Chain Suspended	2950	2,323	67			0	241	0	241	0	0,967	1,335	0,890	181
Machine Weight (kg)	16700	0,705	115			0	241	0	241	0	0,967	1,335	0,890	181
Auxiliary Line (kgf)	0	3,200	0	0,00	20,00	0	241	0	241	0	0,967	1,335	0,890	181
Net Extraction Force (kgf)	12341	2,323	281	150,00	150,00	0	241	0	241	0	0,967	1,335	0,890	181
Net Penetration Force (kgf)	0	2,323	0	0,00	150,00	0	241	0	241	0	0,967	1,335	0,890	181
Front Foot Pads Loading (kgf)	-12640	1,944	-241	124,00	300,00	0,700	Front Foot Pads Equivalent Length (m)and Bearing Pressure (kN/m ²)					1,400	177	
Rear Foot Pads Loading (kgf)	0	-1,943	0	0,00	300,00	0,141	Rear Foot Pads Equivalent Length (m)and Bearing Pressure (kN/m ²)					0,283	0	
Others	0	0,000	0	Track Bearing Length (m)		2,825	Maximum Equivalent Design Values					0,890	181	
Track Total Loading (kgf)	16400	0,967	156	Track Width Centres (m)		1,700						BRE LOAD CASE (1 or 2)		2
				Track pad width (m)		0,500								

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

Note: The disclaimer on the first worksheet applies to all tables in this workbook				
Rig Manufacturer :		CASAGRANDE SPA	Rig Type : HBR204_s/n H204UT0107	
Completed by: Ing. Fabiano Ceron		Operation mode: 21/05/2014	W.R. 2,4 m Checked by: Ing. Giorgio Michelazzo	
Main Components :				
	Item	Mass (kg)	Moment arm (m)	Moment (kNm)
UPPER WORKS	0			0,00
	Mast Assembly+clamps +cathead+winch	0	1,88	0,00
				0,00
	safety guards	0	2,40	0,00
				0,00
	Mast assembly in travel complete with clamps safety guards and accessories (20° tilted backward)	4590	0,82	37,10
				0,00
LOWER WORKS	Upperstructure and undercarriage	0	-0,37	0,00
				0,00
	Upperstructure and undercarriage (20° tilted backward)	8880	-0,41	-35,54
				0,00
ROPE / KELLY / CHAIN SUSPENDED EQUIPMENT	rotary with accessories	0	2,28	0,00
	tools (augers, rods...)	0	2,40	0,00
				0,00
	rotary 20° backward	1950	-0,60	-11,44
	tools (augers, rods etc..) 20° backward	1000	1,06	10,39
COUNT.	counterweight	280	-2,54	-6,99
				0,00
				0,00
OTHER	None	0	0,00	0,00
				0,00
Main Components Totals				
UPPER WORKS		4590	0,82	37,10
LOWER WORKS		8880	-0,41	-35,54
ROPE / KELLY / CHAIN SUSPENDED EQUIPMENT		2950	-0,04	-1,05
COUNTERWEIGHT		280	-2,54	-6,99
OTHER		0	0,00	0,00
TOTAL		16700	-0,04	-6,48
Tracks				
	Track bearing length (m)	2,825		
	Track pad width (m)	0,5		
	Distance between centrelines of tracks (m)	1,70		
Front Foot Pads				
	Pad Bearing Area (m ²)	0,70	Actual Dimensions	special mast foot 0,70 m ²
	Pad Maximum Loading (kN)	300,00	Actual Shape	polygonal + circular
	Pad Moment Arm (m)	1,94		
Rear Foot Pads				
	Pad Bearing Area (m ²)	0,14	Actual Dimensions	dia 300mm
	Pad Maximum Loading (kN)	300,00	Actual Shape	circular
	Pad Moment Arm (m)	-1,94		
Forces				
	Maximum Extraction Force (kN)	150,00		
	Maximum Penetration Force (kN)	150,00		
	Maximum Auxillary Force (kN)	20,00	Auxillary Force Moment Arm (m)	3,20
Notes				
Note: The disclaimer on the first worksheet applies to all tables in this workbook			No limits on working practice INPUT PAGE FOR STANDING-HANDLING- PENETRATING-EXTRACTING	

CASAGRANDE SPA H204UT0107		Weight (kg) / Load (kgf)	Distance to CL rotation (m)	Horizontal moment (kNm)			Mode : W.R. 2,4 m Travelling					Transformation from triangular or trapizoidal to an equivalent rectangular pressure distribution under track maintaining the load centriod				
					Force (kN)	Max. (kN)	Foot Pad Area (m2)	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		Equivalent Bearing
														ecc (m)	Bearing Len. (m)	L (m)
Lower Works		8880	-0,408	-36				0	53	63	53	63	-0,040	2,825	2,746	60
Counterweight		280	-2,544	-7				0	53	63	53	63	-0,040	2,825	2,746	60
Upper Works		4590	0,824	37				0	53	63	53	63	-0,040	2,825	2,746	60
Other		0	0,000	0				0	53	63	53	63	-0,040	2,825	2,746	60
Rope / Kelly / Chain Suspended		2950	-0,036	-1				0	53	63	53	63	-0,040	2,825	2,746	60
Machine Weight (kg)		16700	-0,040	-6				0	53	63	53	63	-0,040	2,825	2,746	60
Auxiliary Line (kgf)		0	3,200	0	0,00	20,00		0	53	63	53	63	-0,040	2,825	2,746	60
Net Extraction Force (kgf)		0	-0,036	0	0,00	150,00		0	53	63	53	63	-0,040	2,825	2,746	60
Net Penetration Force (kgf)		0	-0,036	0	0,00	150,00		0	53	63	53	63	-0,040	2,825	2,746	60
Front Foot Pads Loading (kgf)		0	1,944	0	0,00	300,00	0,700	Front Foot Pads Equivalent Length (m)and Bearing Pressure (kN/m ²)					1,400	0		
Rear Foot Pads Loading (kgf)		0	-1,943	0	0,00	300,00	0,141	Rear Foot Pads Equivalent Length (m)and Bearing Pressure (kN/m ²)					0,283	0		
Others		0	0,000	0	Track Bearing Length (m)		2,825						Maximum Equivalent Design Values		2,746	60
Track Total Loading (kgf)		16700	-0,040	-6	Track Width Centres (m)		1,700						BRE LOAD CASE (1 or 2)		1	
					Track pad width (m)		0,500									

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