

Progetto per la realizzazione
di un impianto geotermico pilota
nell'area del Permesso di Ricerca "Scarfoglio"

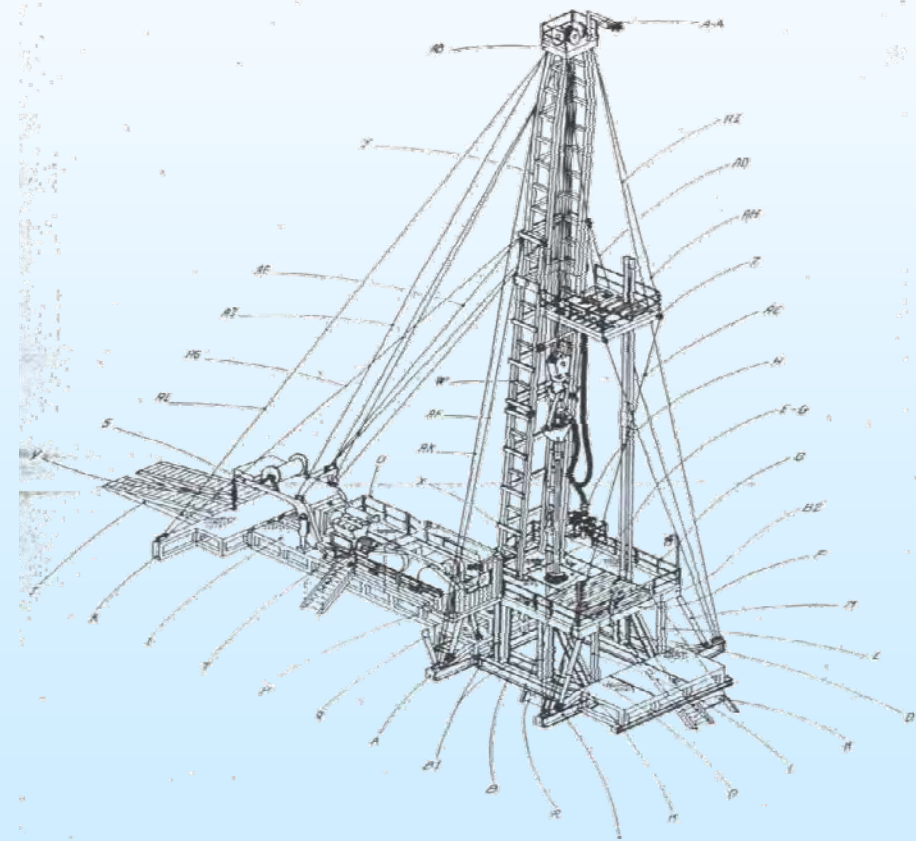
PROGETTO DEFINITIVO

Documento SCA-001-PD-00-A01

Schede tecniche Corsair 300 PDB



gennaio 2015

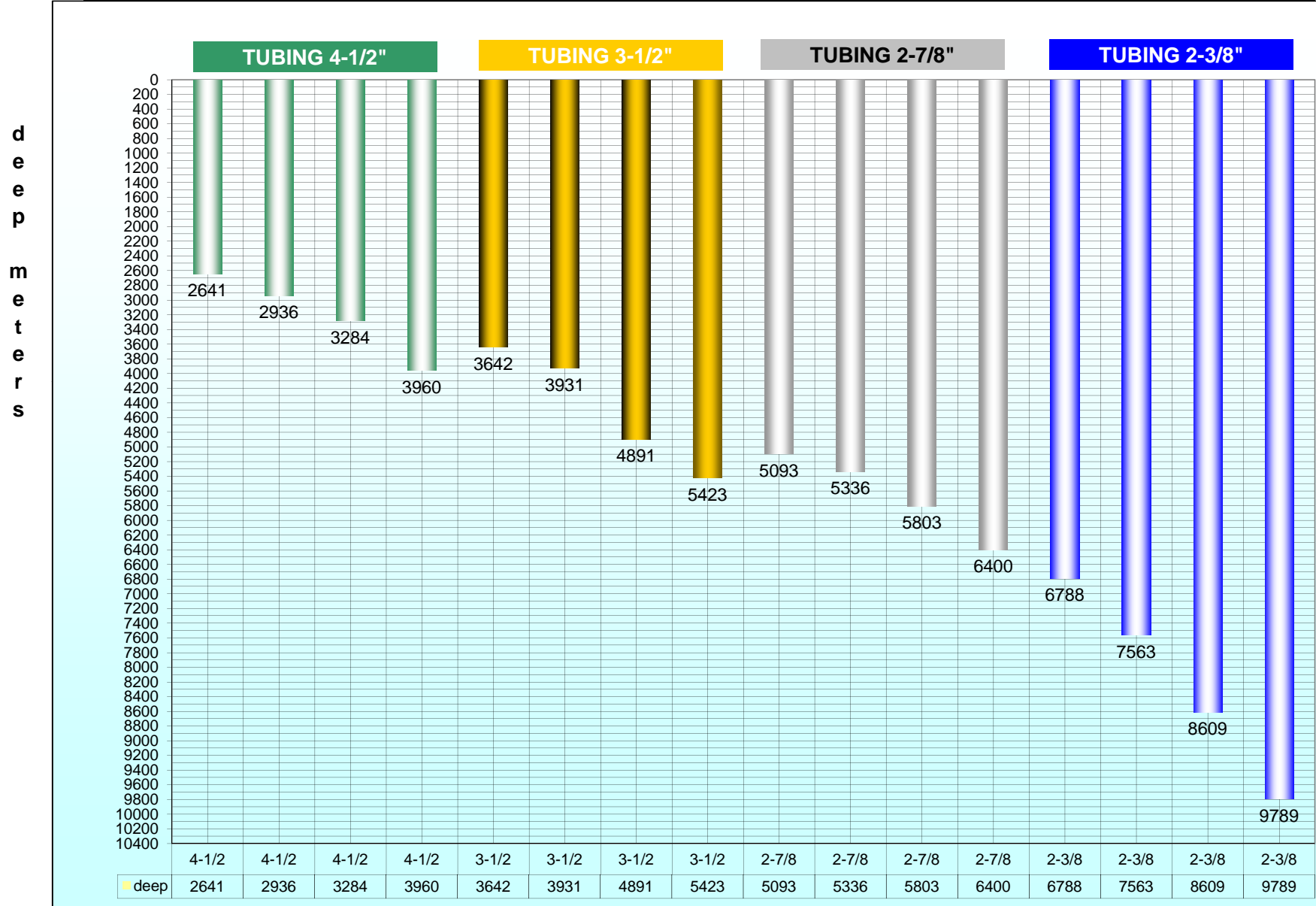


Corsair 300 PDB



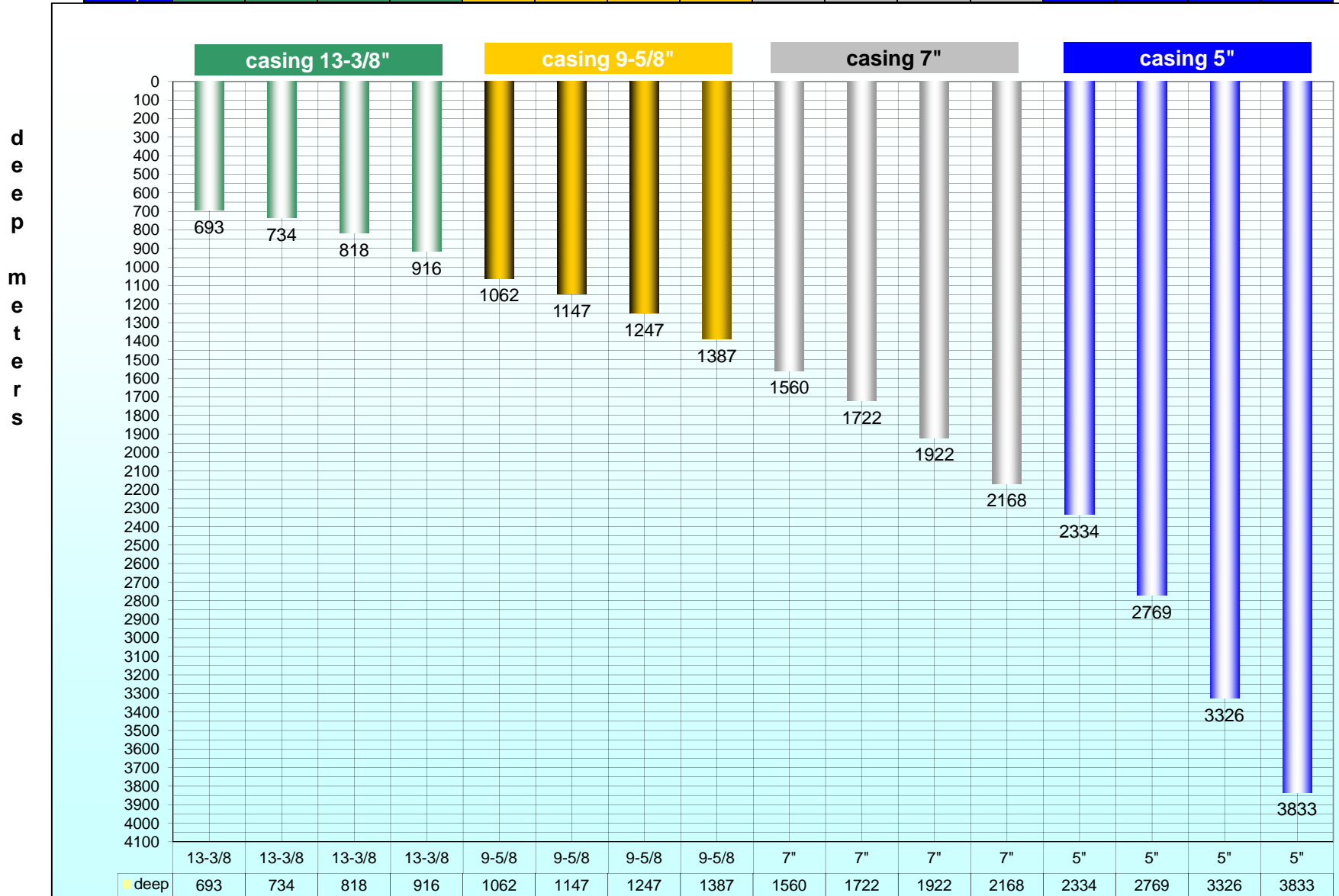
NOMINAL CAPACITY			
IT	COMPONENTS	C.ty	NOTE
1	MAST Gross nominal capacity (mt.)	105	
2	HOOK LOAD CAPACITY (mt.)	98	
3	CROWN BLOCK Rated load cap.(mt.)	105	
4	TRAVELLING BLOCK R.L.C.(mt.)	108	
5	HOOK BLOCK R. L.C. (mt.)	98	
6	SWIVEL HEAD R.L.C (mt.)	125	
7	RAKING PLATFORM capacity (ml)	3000	
8	RIG FLOOR SET BACKR.L.C.(mt.)	160	
9	ROTARY CASING CAP.TY R.L.C.(mt.)	160	
10	DRAWWORK: main drum R.L.C.(mt.)	110	
11	DRILLING LINE R.L.C.(mt.) B.S.		37.9 ton
	MAX. pull up (mt.)	90	90

Diameter	4-1/2	4-1/2	4-1/2	4-1/2	3-1/2	3-1/2	3-1/2	3-1/2	2-7/8	2-7/8	2-7/8	2-7/8	2-3/8	2-3/8	2-3/8	2-3/8
t. mm	10,9	9,7	8,6	6,9	10,5	9,5	7,3	6,5	9,2	8,6	7,8	7	8,5	7,5	6,5	5,5
kg/m	27,58	24,81	22,18	18,39	20	18,53	14,89	13,43	14,3	13,65	12,55	11,38	10,73	9,63	8,46	7,44
lb/ft	18,9#	17#	15,2#	12,6#	13,7#	12,7#	10,2#	9,20#	9,80#	9,35#	8,60#	7,80#	7,35	6,6	5,8	5,1
deep	2641	2936	3284	3960	3642	3931	4891	5423	5093	5336	5803	6400	6788	7563	8609	9789



lifting capacity Rig: 70% 90 metric Tons metriche (API 4F) 63 tons
 mud density 1,06 kg/l buoyancy factor K = 0,865

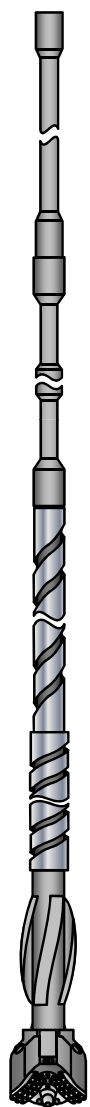
Diameter	13-3/8	13-3/8	13-3/8	13-3/8	9-5/8	9-5/8	9-5/8	9-5/8	7"	7"	7"	7"	5"	5"	5"	5"
t. mm	13,1	12,2	10,9	13,8	12	11,1	10	8,9	11,5	10,4	9,2	8,1	11,1	9,2	7,5	6,4
kg/m	105,1	99,2	89	79,5	68,6	63,5	58,4	52,5	46,7	42,3	37,9	33,6	31,2	26,3	21,9	19
lb/ft	72#	68#	61#	54,5#	47#	43,5#	40#	36#	32#	29#	26#	23#	21,4#	18#	15#	13#
deep	693	734	818	916	1062	1147	1247	1387	1560	1722	1922	2168	2334	2769	3326	3833



Rig Corsair 300

Capacity rig T 90
 coeff. API 4F 70%
 cap. totale T 63,0

T 63
 m 2.313,18



drill pipe
 3-1/2 x 13,30#
 KG/m 20,76
 L m 2.160,18
 Tons 44,84538

Heavy wall DP
 3-1/2 "
 KG/m 37,7
 L m 45
 Tons 1,6965

drill collar
 6-1/2 "x 2-3/4
 KG/m 137,97
 L m 90
 Tons 12,4173

drill collar
 8"x 2-3/4
 KG/m 224,49
 L m 18
 Tons 4,04082

Bit 12 1/4

W.O.B. Tons 16,4581
 weight t x inch 1,34373939

Capacity rig T 90
 coeff. API 4F 70%
 cap. totale T 63,0

T 63
 m 2.401,50



drill pipe
 3-1/2 x 13,30#
 KG/m 20,76
 L m 2.257,50
 Tons 46,86579

Heavy wall DP
 3-1/2 "
 KG/m 37,7
 L m 45
 Tons 1,6965

drill collar
 6-1/2 "x 2-3/4
 KG/m 137,97
 L m 90
 Tons 12,4173

drill collar
 8"x 2-3/4
 KG/m 224,49
 L m 9
 Tons 2,02041

Bit 8-1/2

W.O.B. Tons 14,4377
 weight t x inch 1,69855412

Capacity rig T 90
 coeff. API 4F 70%
 cap. totale T 63,0

T 63
 m 2.591,45



drill pipe
 3-1/2 x 13,30#
 KG/m 20,76
 L m 2.474,45
 Tons 51,36966

Heavy wall DP
 3-1/2 "
 KG/m 37,7
 L m 45
 Tons 1,6965

drill collar
 6-1/2 "x 2-3/4
 KG/m 137,97
 L m 72
 Tons 9,93384

drill collar
 8"x 2-3/4
 KG/m 224,49
 L m 0
 Tons 0

Bit 6-1/2

W.O.B. Tons 9,93384
 weight t x inch 1,52828308

drilling capacity
 drill pipe 3-1/2" x 13,30 lb/t



Rig name:
Crane Carrier Corsair 300

Rig general data:

Trailer mounted.

Year of construction 1988 & overhauled in 2004

Rig up:

Mast Rising through hydraulic pistons (approx.1 hour)

Substructure Rig-up in 3 hours (swing type substructure)

Required Crane: 35 tons capacity

Moving:

Standard truck required: n°3 (n° 1 trailer + n° 2 for substructure).

21 load for equipment

No special trucks required.



MAST dimension & capacity

Built as per API standard 4E

clear height of mast : 29,20 meters (96 ft)

Dimension of top of mast: 34 meters (111,54 ft)

Maximum API hook load: 90 m.ton

Light and painted for signalling to air navigation

Height of racking platform: 16,80 meters (55.11ft)

Lighting: in accordance with API RP500

Crown block: Mc Kissick fig.732 - n°4 sheave

24" + one sheave 39"

N.D.T.: inspected in 29/03/2004



SUBSTRUCTURE AND RIG FLOOR:

Swing Type substructure

setback capacity: 160 ton

rig floor dimension: 5.5 x 5.5 meters

rig floor height from ground level: 4.80
meters

clear height between rotary beams and
ground level: 4.30 mt.

big enough in order to rotate the BOP 360°
under the substructure (very important in
work over operation with double string)



*Substructure and B.O.P. stack
11" x 5000 psi*

DRAWWORKS

Drawworks Crane Carrier Co.

Rated input power: 350 hp,

maximum input power: 450 hp,

diesel engine: IVECO or

GM 8V92TA

brake type: double band with crown-o-matic

Drilling line: 1"

breaking strength 37,9 ton

Sand line: 9/16"

LIFTING EQUIPMENT

Traveling block IDECO UTB 110-3-24, 3v x 24" 243.000

lbs 108 ton

Hook block IDECO UTB 110-3-24, capacity 98 ton

Dead line anchor: National Type F-FS

Crown block: Mc Kissick fig.732 - n°4 sheave 24" + one sheave 39"

Rig floor hoist winch: hydraulic max load 3.800 kg



ROTARY TABLE

Ideco 17-1/2", capacity 160 ton

Maximum opening 17-1/2"

Driven by drawworks

Maximum speed 180 rpm output torque:

Rpm	kgm	hp
180	954	240
133	1288	240
71	2392	240

Master bushing, kelly bushing and hexagon kelly

SWIVEL HEAD

Gardner Denver type SW 125

Dead load capacity 144 ton

Depth range 4-8,000' (2.438 mt)

Rating at 100 rpm: 72 ton

Gooseneck connection 3" LP

Hook clearance 15"



Mud Pump Massarenti Mass 1000

7x9 powered by a CAT D399 c/w torque converter National C300-100 (input power: 1000hp)

MUD PUMP Massarenti				MODEL MASS 1000							
				liner	5"	5-1/2"	6"	6-1/4"	6-1/2"	6-3/4"	7"
max pressure psi				4500	3700	3115	2870	2660	2475	2285	
speed spm	max input power hp	pump discharge l/min									
150	1000	1300	1585	1870	2030	2185	2360	2550			
130	870	1125	1375	1620	1760	1895	2045	2200			
110	735	950	1165	1378	1490	1600	1730	1870			
90	600	780	950	1120	1220	1310	1415	1530			
70	470	605	740	872	950	1020	1110	1200			
VOLUME x STROKE lt											
mechanical efficiency 90%											
flow calculate volumetric efficiency 100%											



Mud Pump Geo-Astra (Drillmec) 7T500

7x7 powered by a GM 8V92 and EATON two speed gear box (input power: 500hp)

MUD PUMP Geo Astra				MODEL 7T500							
				liner	4"	4-1/2"	5"	5-1/2"	6"	6-1/2"	7"
				max pressure	350	285	230	190	160	135	120
	speed spm	max input power hp	hydraulic power	pump discharge l/min							
2 velocity	155	594	546	670	848	1042	1266	1505	1770	2050	
	145	556	512	627	793	974	1185	1408	1655	1920	
	115	440	405	497	629	773	940	1116	1212	1521	
	85	325	299	367	465	571	595	825	970	1124	
1 velocity	70	268	246	302	383	470	572	680	799	926	
	55	210	193	238	301	370	449	534	628	726	
	40	153	140	173	219	269	327	388	457	529	
VOLUME x STROKE lt				4320	5472	6720	8171	9707	11414	13228	
mechanical efficiency 92%											
flow calculate volumetric efficiency 100%											





7T450.3 TRIPLEX MUD PUMP PERFORMANCES DATA SHEET

ENGINE RPM	GEARBOX RATE	SPM	4 1/2" PISTON		5" PISTON		5 1/2" PISTON	
			DELIVERY LT/1'	MAX PRESSURE BAR	DELIVERY LT/1'	MAX PRESSURE BAR	DELIVERY LT/1'	MAX PRESSURE BAR
1200	1	26	141	220	175	180	211	170
1600		34	189	220	233	180	282	170
1950		42	230	220	284	180	344	170
1200	2	36	197	220	243	180	295	170
1600		48	263	220	325	180	393	170
1950		58	320	220	396	180	479	170
1200	3	49	271	220	335	180	405	150
1600		66	362	220	447	180	540	150
1950		80	441	220	545	180	659	150
1200	4	68	374	220	462	170	559	150
1600		91	498	220	616	170	745	150
1950		111	608	220	750	170	908	150
1200	5	92	506	190	625	160	756	130
1600		123	675	190	833	160	1008	130
1950		150	823	190	1016	160	1229	130

VOLUMETRIC EFFICIENCY = 100%

MECHANICAL EFFICIENCY = 90%

0953-3822E

Mud Pump Drillmec 7T450

(optional not included)

7T450.3 7x7 powered by a CAT C15 and EATON two speed gear box.



RIG FLOOR MUD MANIFOLD & CHOKE MANIFOLD

Rig floor manifold



- All connection flanged
- 2 valves 3-1/16 x 5000 psi
- 6 valves 2-1/16 x 5000 psi
- Rotary hoses 2-1/2" x 5000 psi
- Stand pipe 3-1/2" x 5000 psi

Choke manifold

- Choke manifold 2-9/16 x 5000 psi
- Cameron hydraulic choke
- Cameron manual choke
- High pressure section 2-9/16 x 5000 psi
- Low pressure section 3-1/16 x 3000 psi
- Cameron remote control panel in dog house

Outlet to:

- Mud gas separator
- Flare lines
- Waste pit or reverse circulation

Choke & kill valve on BOP stack

CHOKE LINE	Hydraulic Operated	Manual Operated
5000 PSI	1	1
Made	Cameron	Cameron
Connection	Flanged	Flanged
Diameter	4.1/16" – 5M	4.1/16" – M
KILL LINE	Hydraulic Operated	Manual Operated
5000 PSI	1	1
Made	Cameron	Cameron
Connection	Flanged	Flanged
diameter	2.1/16" - M	2.1/16" - M



MUD TANK SYSTEM

Total number of mud tanks installed: 3

Mud tank n°1 capacity 40 mc, divided in 3 compartments:

First compartment: capacity 5 mc (shale shakers);

Second compartment: capacity 15 mc (degasser unit);

Third compartment: capacity 20 mc; n° 1 electric agitator

Samic PF60 Super

Mud tank n° 2 capacity 40 mc. Divided in two

compartment (20 mc) with n° 2 electric agitator Samic PF

60 Super;

Mud tank n° 3 capacity 40 mc (reserve);



CORSAIR 300



Trip Tank & mechanical gas separator

Total capacity 3.9 mc (lt/m 785)

Centrifugal pump 300 – 500 l/m

MUD TREATMENT



One Degasser unit Swaco, horizontal, suction line OD 3", discharge line 2", Venturi line 8"



Two
Gann Mekaniske
GM 2000
shale shaker,
double screen
5x4 ft;

One
Mud cleaner
Swaco 8 cones

B.O.P. STACK SYSTEM 11" X 5000 PSI

ANNULAR blow out preventer Shaffer 11" x 5000 psi, top connection type flanged API 11" x 5000 psi, bottom connection type flanged API 11" x 5000 psi.

RAM double ram preventer Hydrill 11" x 5000 psi top connection type flanged API 11" x 5000 psi, bottom connection type flanged API 11" x 5000 psi.

RAMS: -7" single- -5" single- -4-1/2" single-
-3-1/2" single- -2-7/8" single- -2-3/8"
single- -1.9" single- -2-3/8" single offset-
1.9" single offset - - blind.



B.O.P. STACK SYSTEM 13-5/8" X 5000 PSI

ANNULAR blow out preventer Shaffer 13-5/8" x 5000 psi, top connection type flanged API 13-5/8" x 5000 psi, bottom connection type flanged API 13-5/8" x 5000 psi.

RAM double ram preventer Shaffer 13-5/8" x 5000 psi top connection type flanged API 13-5/8" x 5000 psi, bottom connection type flanged API 13-5/8" x 5000 psi.

RAMS: -7" single- -5" single- -4-1/2" single-

ACCUMULATOR UNIT

Koomey T5080 3S

Oil reservoir capacity: 113 gal (513,70 lt) Total bottle installed: 12

Max working pressure 3000 psi

N° 1 electrical recharging pump flow rate 6.40 gal/min (24,22 lt/min) max W.P. 3000 psi

Air driving recharging pump, flow rate 5 gal/min (18,92 lt/min) max W.P. 3000 psi

Unit Control Manifold Koomey GUIK03S

Lifting equipment

Link elevators,
drill pipe elevators
drill pipe manual slips
drill collar lift plug elevators
drill collar slips
side door casing elevators 5", 7", 9-5/8"
casing slips for rotary table
tubing elevators 3-1/2" - 2-7/8 EU NU -2.3/8 EU NU -1.9
– 4 Vam – 4-1/2 Vam
manuale tubing tongs



TONGS

manual rotary tongs Type C 1.9" to 9-5/8"
Manual rotary tongs type DB 7" to 13-5/8" side
hydraulic tubing tong BJ for OD 1.9" 2-3/8" 2-7/8" 3-1/2" 4-1/2"
hydraulic tubing tong Eckel for OD 2-3/8" 2-7/8" –3-1/2" 5-1/2"
Eckel hydraulic casing tongs 7" 9-5/8 13-5/8

Instrumentations

Weight indicator Totco Type FS

Stand pipe pressure gauges

Torque indicator *Wagner Torquemeter Relative Analog*

Rotary table speed indicator Omron

Tongs pool indicator Poorboy Pullline Piston To handle DB tong

Mud pump stroke counter and totalizer

Mud pit volume

Choke control panel with anulus pressure, drill pipe pressure ,
mud pump stroke counter and totalizer , power choke opening
indicator

