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DRILLING RIG G25 Series – TRUCK MOUNTED

1.1 RIG TYPE AND MODEL

HYDRAULIC DRILLING RIG, DRILLMEC G25 mounted on 4-axle truck (provided by the customer) and suitable to drill with foam, mud and air and to allow both direct and reverse circulation system (optional).
Designed for water wells up to 300 m of max depth and 12" ¼ hole diameter with direct circulation.
The rig is on a sub frame and properly mounted on heavy duty truck.

1.1.1 Drilling rig capacity*

The rig is capable and suitable to drill with the following features:

Drilling system	Conventional Air / Mud / DTH	
Drilling depth	300 m	984 ft
Drill pipes	6 m	20 "

*The max. drilling dephts depend by the adopted drilling techniques and soil characteristics.

1.2 HYDRAULIC POWER PACK

The transfer case has four output shafts that drive the hydraulic pumps.
The system includes:
No. 3 hydraulic piston pumps for hoisting system, power swivel and mud pump.
No. 1 vane double pump
No. 1 vane triple pump
Oil-air heat exchanger
500 l oil capacity tank
Various valves, cylinders, pipes, hoses, filters and gauges.

1.2.1 Diesel Engine

One Diesel engine Cummins complete with soundproof enclosure.

Following the main features:

Engine Model:	6CTAA 8.3 "Elite"
Number of cylinders	6
Power	224 kW
Engine Speed	2200 RPM

1.3 MAIN FRAME

With electrically welded steel members, main longitudinal support and steel plates for attachment to truck frame, completed with four independent 500 mm stroke hydraulic outriggers (two in front and two rear).

1.4 MAST

Manufactured of high tensile steel, electrically welded, box section.
Raised and lowered by two chrome-plated double acting, telescopic hydraulic cylinders.
Main characteristic:

- Structure type: monotubolar
- Gross capacity: 35.000 Kg (77.161 lbs)

1.5 CROWN BLOCK

Complete with:

N°3 sheaves for main winch	Rope 16 mm	Rope 5/8"
N°2 sheaves for service winch	Rope 10 mm	Rope 24/6 4"

1.6 POWER SWIVEL (DRILL HEAD)

Hydraulically powered by two (2) top-head hydraulic motor and is equipped with a shock absorber system cushion to facilitate DTH hammer drilling.
Suitable to drill both direct and reverse circulation system (optional).
Main performance:

- Max pull up: 21600 Kg* (47620 lbs)
- Max pull down: 10000 Kg* (22046 lbs)
- Max pull up & down speed: 0,57 m/s
- Max torque: 1700 Kg/m (12296 ft*lbs)
- Max rotation speed at max torque: 60 rpm
- Max rotation speed: 200 rpm
- Max torque at max rotation speed: 680 Kg/m (4918 ft*lbs)
- I.D. full opening: 148 mm (5 53/64 in)
- Lateral shift: 520 mm (20 15/32 in)

*Nominal Values

1.7 DIRECT CIRCULATION SWIVEL

To allow mud, water and air drilling.

1.8 PULL UP & DOWN SYSTEM

Hydraulic cylinder for pull up/down inside mast structure connected to special block divider especially made according to DRILLMEC specifications by first class supplier.
Following the technical data*:

Stroke	6.800 mm	22,30 ft
Pull down capacity	10000 Kg*	22,004 lbs
Pull up (Pull back)	21600 Kg*	47,620 lbs
Pull up speed/down (max)	34 m/min.	111 ft/min
Intermittent duty	375 bar	5438 PSI

*Nominal Values

1.9 FEED SYSTEM

Drilling conditions can change from foot to foot and it's necessary for the best balance between max. drilling speed and min. wear on bits and tools. The rig solves this problem with a pressure balanced feed system that senses the amount of down-feed at any instant and adjust feed automatically and instantly.

1.10 HOIST WINCH

Top head hydraulic driven hoists, provided of arrangement for using pipe and casing elevators with top drive unit for lifting and lowering rotary drill pipes and casings whenever required.

1.10.1 Main Winch

Mounted on rig frame, especially studied for fast string and casing pull-out and running-in operations. Following the main features:

Max single line pull	6550 kg	15.860 lbs
Supplied wire rope	120 m	390 ft
Wire Rope OD	16 mm	5/8 "
Travelling block pull up	19.500 Kg	42990 lbs

1.10.2 Service Winch

Hydraulically operated service winch completed with crown block jib boom (rotation of 90° from outside the mast to the well center). Following the main features:

Max single line pull	2,000 kg	4409 lbs
Supplied wire rope	66 m	216 ft
Wire Rope OD	10 mm	25/64"

1.11 BREAKOUT SYSTEM

The rig is equipped with hydraulic pipe break out cylinder and a pipe holding system mounted on the rig for easy un-tightening/tightening tool joint for DC, DP and casing.
The un-tightening is arranged by means of the hydraulic cylinder, the tightening is directly given by means of the power swivel.

1.11.1 Hydraulic Clamps presented on the following table

Max holding diameter	560 mm	22"
Torque	6,500 kg·m	47,010 ft·lbs

1.11.2 Hydraulic Breakers have the following main characteristics

Max. holding diameter capacity	560 mm	22"
Max break-out torque	6,500 kg·m	47,010 ft·lbs
Max rotation pitch	15°	

The breaker torque is variable and controlled from Main Control Panel.

1.12 MUD PUMP - DRILLMEC 8D1S

DRILLMEC 8D1S model 8" x 8" duplex mud pump equipped with 8" pistons, deck mounted with double acting pistons, powered by mean of hydraulic motor, input shaft on the transmission box DRILLMEC type. These are the main performance:

The mud pump is equipped with replaceable cylinder line & piston cups complete with discharge pipe, surge chamber, relief valve and pressure gauge with auxiliary connections for mud mixing. Other sizes of piston and liners, from 5" to 8" can be supplied as per Customer's request.

POMPA FANGO DUPLEX D1S 8 x 8
D1S DUPLEX MUD PUMP 8 x 8

DIAM. CAMICIA / LINER SIZE		PORTATA MAX / MAX DISPLACEMENT N° COLPI MIN / SPM								PRESS. MAX MAX PRESSURE (INTERM.)	
		85		70		55		40			
INCHES	MM	GPM	L/MIN	GPM	L/MIN	GPM	L/MIN	GPM	L/MIN	PSI	BAR
8	203.2	581	2200	479	1812	376	1424	274	1035	186	13
7 1/2	190.5	510	1930	420	1590	330	1249	240	909	214	14
7	177.8	443	1675	365	1380	287	1084	209	789	242	17
6 1/2	165.1	380	1438	313	1185	246	931	179	677	284	20
6	152.4	321	1214	265	1000	208	786	151	571	326	23
5 1/2	139.7	270	1022	223	842	175	662	127	481	383	27
5	127	221	835	182	688	143	541	104	393	469	33
POTENZA CV INPUT HP		75		60		48		35			

PORTATE RELATIVE A RENDIMENTO VOLUMETRICO = 1
IL RENDIMENTO MECCANICO E' CONSIDERATO = 0.85

DELIVERY PERTINENT TO VOLUMETRIC EFFICIENCY = 1
THE MECHANICAL EFFICIENCY = 0.85

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1.13 MUD / AIR MANIFOLD

Main characteristic:

Offset diameter	76.2 mm	3 "
Max Mud working pressure	85 bar	1,232 PSI
Max Air working pressure	30 bar	435 PSI
Mud pump connection nominal diameter		2"

1.14 CONTROL BOARD

Main control panel left-side mounted with all controls for drilling operations including:
Hydraulic gauges
Engine tachometer
Mud pressure gauge
Engine accelerator
Air pressure gauge
Water/engine/temperature gauge
Engine oil pressure gauge
Compressor oil pressure gauge
Safety devices and indicators.
Make-up and break-out controls
Leveling jacks and raising mast

1.15 TOOL BOX

Steel box with complete set of hand tools.

1.16 LIGHTING SYSTEM

Lighting system:
n°6 light point 70 W each (24 V-CC)

1.17 TRUCK

Truck provided by the Customer.

1.18 DTH LUBRICATOR

For DTH lubrication, during air drilling. Venturi type, with oil reserve tank of 20 Liters. (5,30 Gallons)