



DRILLMEC
DRILLING TECHNOLOGIES

TECHNICAL SPECIFICATION

DOCUMENT NUMBER

DT-076-17

DOCUMENT TITLE

Triplex Mud Pump 7T450 Diesel

Rev. No.	Date of issue [dd/mm/yyyy]	Reason for issue	Prepared	Checked	Approved
00	05/04/2017	<i>Technical proposal</i>	<i>Zul</i>	<i>CoG</i>	<i>FeS</i>

COMPANY WITH
MANAGEMENT SYSTEM
CERTIFIED BY API
=API Spec Q1 9th Ed=
=ISO 9001=

COMPANY WITH
MANAGEMENT SYSTEM
CERTIFIED BY DNV GL
= ISO 9001 =
= ISO 14001 =
= OHSAS 18001 =

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1 TRIPLEX MUD PUMPS 7T450.3

Manufacturer: Drillmec

Model: 7T450

Quantity: One (1)

Mud pump triplex single action piston, type 7T450 Diesel, installed on skid, driven by diesel engine model C15 ACERT.

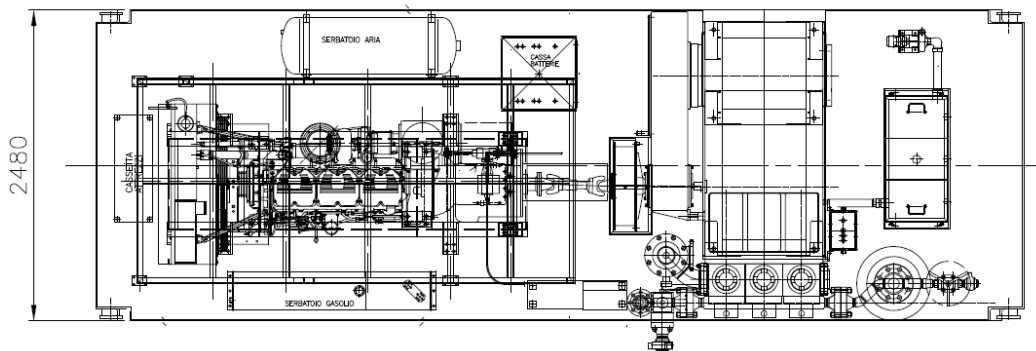
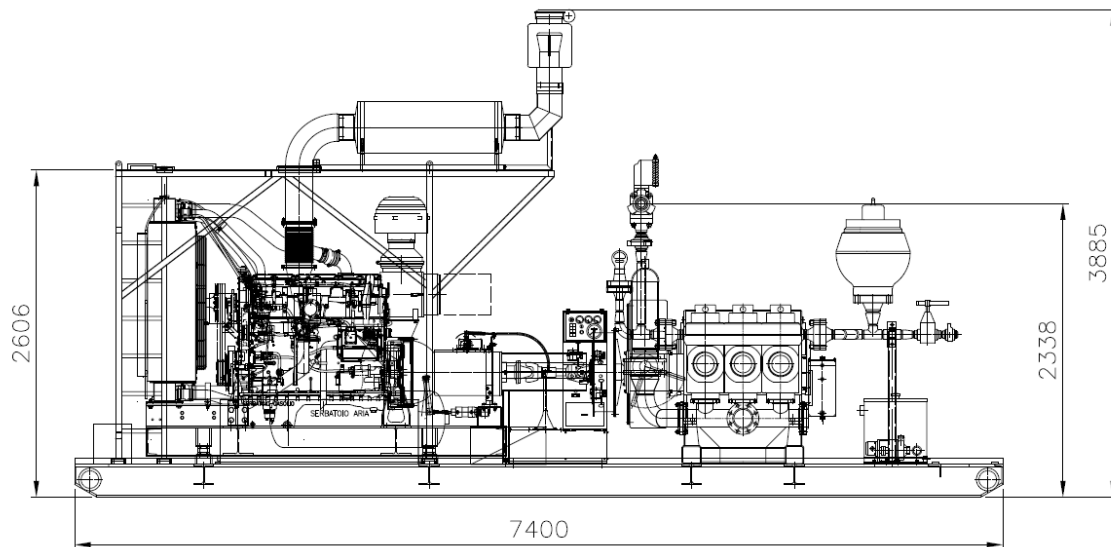
The Triplex Mud Pump consists of the following main items:

- One (1) 7T450 mud pump c/w:
 - Power end
 - Fluid end
- Additional equipment
- Diesel engine/transmission including:
 - One (1) CAT C15
 - Gear box and air clutch transmission
- Piston & Liner
- Control panels
 - Local control panel
 - Remote control panel
- Mud pump electric system
- Lifting provisions

Triplex mud pump will be designed in accordance with API Specifications and all construction will be in accordance with API recommended standards governing fabrication, welding, coating, storage, etc.

Mud pump manufactured in accordance API spec 7K (6th edition).

The Mud pump and its accessories are designed to work in climate temperatures from -20°C to +50°C.




7T450 Triplex Mud Pump General Assembly

1.1 MAIN DATA

Max. strokes per minute:	150 spm
Continuous working speed:	from 0 to 150 spm
Max delivery with 5.1/2" plungers:	1229 lt/min @ 1885 psi
Stroke	7"
Estimated weight	16 metric ton (35,300 lbs)
Overall dimensions L x W x H	7400 mm x 2480 mm x 3885 mm

Pump : indicated data are based on volumetric efficiency = 1 and mechanical efficiency = 0,85.

			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 PSI	DELIVERY LT/1'	MAX PRESSURE PSI	DELIVERY LT/1'	MAX PRESSURE PSI
1200	1	26	141	3000	175	2610	211	2465
1600		34	189	3000	233	2610	282	2465
1950		42	230	3000	284	2610	344	2465
1200	2	36	197	3000	243	2610	295	2465
1600		48	263	3000	325	2610	393	2465
1950		58	320	3000	396	2610	479	2465
1200	3	49	271	3000	335	2610	405	2175
1600		66	362	3000	447	2610	540	2175
1950		80	441	3000	545	2610	659	2175
1200	4	68	374	3000	462	2465	559	2175
1600		91	498	3000	616	2465	745	2175
1950		111	608	3000	750	2465	908	2175
1200	5	92	506	2755	625	2320	756	1885
1600		123	675	2755	833	2320	1008	1885
1950		150	823	2755	1016	2320	1229	1885

VOLUMETRIC EFFICIENCY = 100%
 MECHANICAL EFFICIENCY = 85%

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7T450 Triplex Mud Pump Performance chart

1.2 TECHNICAL DESCRIPTION

1.2.1 7T450.3 MUD PUMP

Manufacturer: Drillmec

Quantity: One (1)

1.2.1.1 POWER END FEATURES

Manufacturer: Drillmec

Quantity: One (1)

- Power end case made of laminated steel , welded and normalized.
- Crankshaft made of thermally treated alloy steel.
- High capacity roller bearing fitted on crankshaft and connecting rods.
- Cross head covered with anti-wear bronze.
- Forced lubrication with oil pump and gravity distribution to working parts.
- Oil pressure gauge.
- Oil lubrication temperature gauge.

1.2.1.2 FLUID END FEATURES

Manufacturer: Drillmec

Quantity: One (1)

- Fluid end modules made of heat treated alloy steel.
- Screwed valve pot covered for quick inspection and replacing of wearing parts (Valves seats).
- Discharge manifold with discharge connections on both ends and suction connection of center of suction manifold.

1.2.2 ADDITIONAL EQUIPMENT

Manufacturer: Drillmec

Quantity: One (1)

- Heavy duty skid oilfield type to mount pump and diesel engine.
- Pressure visual gauge 0-6000 psi flanged.
- Pulsation dampener 10 gal - 5000 psi (Make: Mattco)
- Spring loaded reset relief valve range 1500 – 5000 psi
- One set of valves, valve seats.
- Valve seat hydraulic puller.
- Engine canopy as weather protection.

1.2.3 DIESEL MOTOR/TRANSMISSION

Manufacturer: Drillmec

Quantity: One (1)

1.2.3.1 DIESEL ENGINE

Manufacturer: CAT

Quantity: One (1)

The pump is supplied completed with CAT Power Unit engine model C15 ACERT, power 354 bkW (475 bHp) at 2100 rpm.

1.2.3.2 TRANSMISSION

Manufacturer: Drillmec

Quantity: One (1)

Mud pump transmission will be complete with the following equipment:

- One (1) gear box
- One (1) air clutch
- One (1) heavy duty chain transmission

1.2.4 PISTON & LINER

Manufacturer: Drillmec

Quantity: One (1)

The pump is supplied with API 5 ½" piston and liner

Other size: Available upon request

1.2.5 CONTROL PANELS

Manufacturer: Drillmec

Quantity: One (1) set

1.2.5.1 LOCAL CONTROL PANEL

Control panel mounted on skid to control the following operations and parameters:

- Engine throttle
- Clutch
- Engine water temperature
- Engine speed
- Engine hour – meter
- Discharge pressure
- Remote/Local Switch

1.2.5.2 REMOTE CONTROL PANEL

Remote control panel installed near driller's control panel, to control the following parameters:

- Engine Throttle
- Clutch
- Emergency Button
- Alarm light

1.2.6 MUD PUMP ELECTRIC SYSTEM

Manufacturer: Drillmec

Quantity: One (1)

Junction boxes, all connection cables from junction boxes to motor, brakes, sensors and valves.