



MTS TOOS

Modiriat, Tadarokat va Sakhte Toos



Rig Solution

This is MTS Solutions' drilling rig

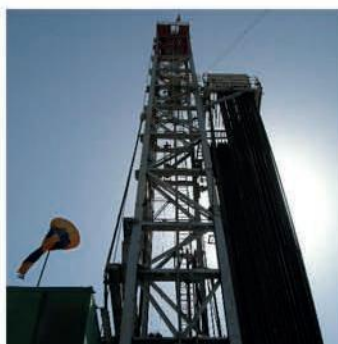
Rig Solutions MTS Toos

MTS Toos , through its subsidiaries and affiliates, is a leading provider of engineering and construction services, technology products and integrated solutions. The business within MTS Toos comprises several industries, including oil & gas, telecommunication hardware and Machine building.

MTS Toos is the preferred partner for delivery of complete drilling rig solutions and has an established organization for providing lifecycle operations, services and maintenance.

Over the last years we have delivered drilling rigs and Ancillary Equipment as per the latest market requirements and have expanded the product portfolio in that respect. MTS Toos is proud to offer support through the entire process including design, manufacturing, installation, commissioning in addition to training and drilling lifecycle services globally. This is done without compromising either quality or focus on HSE.

We work closely with our customers to understand their needs and provide them with drilling solutions of the future.



Drilling rig packages

Complete derrick equipment sets (DES) and can be provided on an EPC basis. MTS Toos draws upon well-qualified and experienced in-house resources to participate in and/or provide the following services as part of the complete drilling facilities delivery:

- Project management
- Conceptual design/front-end engineering design
- Detailed engineering and procurement
- Supply of complete drilling equipment/mud mixing packages, including third party supplies
- Fabrication, supervision and follow-up
- Commissioning, supervision and assistance
- Lifecycle/operational support



Land Rig Packages

The rig packages are designed to minimise rig-up time and moves by providing unitised equipment and complete systems design. All ancillary systems including hydraulics, pneumatics, water, fuel and oil are fully engineered to ensure nothing is missed and no field modifications are required.



MTS Tools provides land packages based on the Pyramid design targeted for the Middle East and other desert environments and can be provided either as complete rigs both AC and DC technology. Our product offering covers rig capacities between 1500hp to 3000hp employing customized style Rigs. The desert rigs are designed for extremely fast rig moves under

tion time.

True "turn-key" packages are provided and therefore leave no details to chance. From the crown to the ground and all around, the rigs are truly complete.

Customized is our standard. We customize our rigs to meet our client's specific needs.

Technical Specifications		MTS 50 D	MTS 70 D	MTS 90 D
Nominal Depth Range	m	2800-5000	4000-7000	5000-9000
Max hook load rating	kips(kN)	695(3150)	992(4500)	1518(6750)
Max No of lines for travelling block		12	12	14
Dia. of wire line	mm(in)	35;(1 3/8)	35;(1 3/8) 38;(1 1/2)	42;(1 5/8)
Sheave O.D of travelling block	mm(in)	1270(50)	1524(60)	1524(60)
I.D. of swivel stem	mm(in)	75(3)	100(4)	100(4)
Rated power of drawworks	kw(hp)	1100(1500)	1470(2000)	2321(3000)
Transmission of drawworks		4/Stepless	4/Stepless	4
Dia. of table opening	mm(in)	698.5(27 1/2)	952.5(37 1/2)	952.5(37 1/2)
Rotary Speed		2	2	2
Power of each mud pump	kw(hp)	960(1300) 1180(1600)	1180(1600)	1640(2200)
No of mud pumps		2	3	3
Working height of mast	m(ft)	43(142)	43(142) 45(147) 47(152)	47(152)
Height of drill floor	m(ft)	7.9(26)	9(30)	9(30)
Clear height of drill floor	m(ft)	6.2(20.6)	7.2(23.6)	7.4(24 1/4)
Power of main engines	kw(hp)	1050(1425)	1200(1676)	1383(1855)
No of main engines		4	4	5
Transmission Type		AC-SCR-DC	AC-SCR-DC	AC-SCR-DC
Volume of mud tanks	m3(bbls)	320(2100)	380(2500)	400(2535)

TRAVELING BLOCKS

MTS TOOS traveling block is available in a broad range of models and sizes, to meet any rating or specific application. New designs for direct couple to top drives and for motion compensating drawworks have been developed to enhanced performance and operability.

- They are rated in accordance with the API yield strength method.
- Proper, precise weighting ensures fast free-fall.
- Streamlined, compact design means there is no interference with mast or derrick components.
- Metallurgy of sheaves and other components are care-fully matched to provide long, trouble-free service.
- Certification from most third party available upon request.



Main Technical Parameters of Traveling Blocks

Model	650TB500	760TB650
No. of sheave	6	7
Sheave O.D., in.	50	60
Load rating tons	500	650
Line Size in	1-3/8,1-1/2	1-1/2,1-5/8
weight lbs	13500	21800
Length in	103	125
Width in	52	63
Height in	31-3/4	38-1/2

SHEAVES

- Fabricated from top quality materials.
- Full penetration welds at hubs.
- Rims compression fit to webs before welding.
- All welds fully inspected.
- Stress relieved after welding.
- Grooves hardened to Rockwell C35.
- Painting according to Sweden Standard SA 2-1/2 (SSPC-SP-10).
- Common sizes stocked.



This is MTS Solution's Sheave

Sheave Solutions MTS Toos

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MTS Toos is a preferred partner for delivery of sheave solutions and has an established organization for providing lifecycle operation, services and maintenance.

We work closely with our customers to understand their needs and provide them with drilling solutions of the future.



SHEAVES

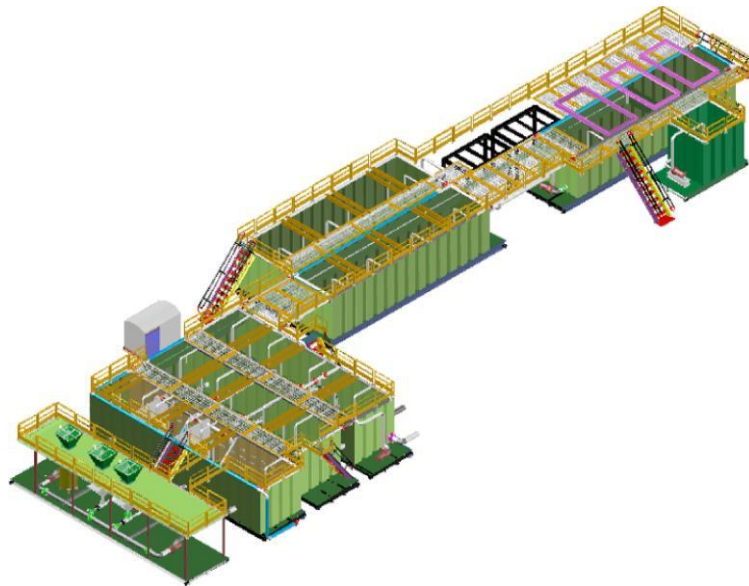
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Mud System

SEVEN (7) TANK MUD SYSTEM HAVING A TOTAL CAPACITY OF 2570 BBLS WITH MUD LEVEL ONE FOOT BELOW TOP OF TANK AND FOUR(4) TANK WATER HAVING A TOTAL CAPACITY OF 2000 BBLS.

TANK GENERAL ARRANGEMENT AS FOLLOWING:



ALL SEVEN TANKS SHOULD BE RUNNER OIL FIELD TYPE SKIDS 9 FEET, WIDE WITH OIL FIELD TYPE SKID ENDS FOR TAILBORDING. TOP OF SKID PLATED WITH 3/8" PLATE, SLOPED 6" TOWARDS CLEAN OUT GATES.(10mm) SKID EXTENSIONS DECKED WITH ST-52 ,3/8" CHECKERED PLATE.

TANK WALLS RIMMED WITH 6" MUD AND WATER LINES FOR CEMENT UNIT SUPPLY, MUD GUNNING AND BACK UP SUPERCHARGING.



TANK SIDE END WALLS AND PARTITIONS SHOULD BE MADE BY ST-52, 5/16" PLATE.

TANK SIDE AND END WALLS SHOULD ROBERDS « V » CRIMP DESIGN FOR RIGIDITY AND EASIER CLEANING.

TANK WALLS SHOULD BE DESIGEND FOR STORAGE MUD WITH 21 PPG DENSITIES.

TANK CONNECTIONS HAMMER SEAL PIT UNION TYPE.

COMPLETED WITH ALL NECESSARY VALVES, FITTING, UNIONS AND DRESSER SLEEVE



ALL TRANSITION AND LINKING PIPES SCHEDULE ARE A106-SCH 80

ALL BUTTERFLY VALVES ARE FROM SANAM'S PRODUCTS

DRESSER SLEEVES PRESSURE RATINGS ARE 1000 PSI

HAMMER UNIONS PRESSURE RATINGS ARE 2000 PSI

TANK SIDES AND SKIDS PLATES ARE ST-52

FLANGES AND PLUG VALVES ARE FROM CLASS 150

GALVANIZED CHECKERD GRATINGS WITH 4CM STRAPS AND 6X5 THICKNESS



High Pressure Pipe Manifold

- Double 6" SCH XXS stand pipe manifold to connect to dual stand pipe.
- One (1) dual stand pipe, 6" XXS lines mounted in the mast complete with 6" XXS 160° gooseneck with capped top outlet and but welded hammer union connections.

High pressure lines

- Double 6" XXS substructure lines from stand pipe manifold to ground manifold. Complete with hammer unions at break points, elbows as required and heavy duty clamps for mounting.

Ground Manifold

- One 6" SCH XXS ground manifold to connect three mud pump discharge lines to two high pressure substructure lines connecting to the stand pipe manifold.



Steel Works



Row	Equipment
1	Fuel Tank
2	Drawworks Cooling Water Tank
3	Wire Line Spool
4	Compressor Room
5	Store
6	Water Tank And Store
7	Oil Dram Basket
8	Work Shop
9	Hopper Skid
10	Sub Basket
11	Bakery And Water Tank
12	Camp Fuel Tank
13	Camp Gen- Set Skid
14	Drill Pipes Basket
15	Pipe Rack
16	Drilling Panel
17	Chook Manifold Skid
18	Traveling Block Skid
19	Kitchen Store
20	Paint &Tool Store
21	CMC Room
22	Swivel Skid
23	Bop Skid



Honors Certificates

The relevant certificates of authorization obtained by the company



Factory: 5 km - Kalat road - Mashhad

E-mail: mts_toosco@yahoo.com

Tel: +98 511 2605551 - 2605550

Fax: +98 511 2605550

Site: www.mts-toos.com



MODIRIAT, TADAROKAT VA SAKHTE TOOS