Drilling Rigs

- Truck-mounted drilling rigs

- This kind of drilling rigs are designed and manufactured in accordance with API Spec Q1, 4F, 7k, 8C and RP500, GB3826.1, GB3836.2, GB7258, SY6584 Standards as well as "3C" compulsory standard.

- The whole rig has a compact structure, which requires a small installation space due to kits high integration.

- The heavy-duty and self-propelled chassis: 8x6, l0x8, 12x8, l4x8, 14x12, 16x12 and hydraulic steering system are utilized respectively, which ensures the drilling rig a good passage and cross-country capability.

- The reasonable assembly of CATERPILLAR engine and ALLISON transmission box can ensure high driving efficiency and working reliability.

- The main brake adopts hydraulic disc brake or band brake and Air brake or hydromatic brake or FDWS brake can be applied as auxiliary brake.

- The rotary table transmission box can realize forward-reverse shift, which can be suitable for all kinds of DP rotary operations, and the anti-torque releasing device can be used to make the DP deformation force released safely.

- The mast, which is front - open and double-section type with an inclination angle or erective double-section type, can be erected or lowered and telescoped hydraulically.

- The drill floor is twin-body telescopic type or with parallelogram structure, which is convenient for easy hoist and transportation. The height of the drill floor can be designed according to the client's requirements.

- The perfect configurations of solid control system, well control system, high-pressure manifold system, generator house, engine & mud pump house, doghouse and other auxiliary facilities can meet user's different requirements.

- Safety and inspection measures are strengthened under the guidance of the design concept of "Humanism Above All" to meet the requirements of HSE.

AOSCO

Truck-mounted drilling rig 1000m

Tru ted drilling rig 3000m

Truck-mounted drilling rig 1500m

3000m Truck-mounted drilling rig (VFD-drive)

Truck-mounted drilling rig 2000

Truck-mounted drilling rig 4000m

- **1000m Truck-mounted drilling rigs**

Product model	ZJ10
Structure model	Self-pr[illegible]ed
Nominal drilling depth (4 1/2"DP)	3[illegible]0ft
Nominal workover depth (3 1/2" DP)	10[illegible]
Max. hook load	[illegible]0000lbs
Hook speed(ft/s)	0.6[illegible]4.59
Mast height	[illegible]5ft
Engine's model	CAT3406B
Engine power(hp)	360or350
Model for hydraulic transmission box	CLBT5961
Transmission mode	Hy[illegible]ulic +mechanical
Traveling system	3×4
Main wireline diameter	1 in
Hook block model	YG90
Swivel model	SL110
Model for rotary table	ZP175
Model for chassis/drive way	XD40/8×6
Approaching angle/departure an	25°/16°
Min. ground clearance	121/4 in
Max. climbing gradien	30%
Min. turning radius	92ft
Overall dimension (ft)	55×9×14
Weight of main [illegible]	93000 lbs
Weight of acces[illegible]	33000lbs

- **1500m Truck-mounted drilling rigs**

Product type	ZJ15
Structure type	Self-propelled
Drilling depth(41/2" DP)	5000ft
Workover depth (3 1/2" DP)	15000ft
Max. hook load	250000lbs
Hook speed (ft/s)	0.66~4.59
Mast height	105ft
Engine model	CAT3408B DIT
Engine power	475hp
Model for hydraulic transmission box	CLBT5961
Ttransmission model	Hydraulic +mech
Traveling system	4×5
Main wireline diameter	1
Model for hook block	YG
Swivel model	
Rrotary table model	ZP175
Chassis/drive way model	50/10
Approaching angle/leave-taking angle	28°
Min. ground clearance	12 1/4in
Max. gradient	26%
Min. turning radius	98ft
Overall dimension(ft)	62×9×14
Weight of the main unit	110000lbs
Weight of accessories	44000lbs

- **2000m Truck-mounted drilling rigs**

Product type	ZJ20
Structure type	Self-propelled
Drilling depth(4 1/2" DP)	6600ft
Workover depth (3 1/2" DP)	18000ft
Max. hook load	350000lbs
Hook speed (ft/s)	0.66-4.59
The mast height	115ft
Engine's model	CAT3412B DITA
Engine power	650hpor660hp
Model for hydraulic transmission box	CLBT6061
The transmission mode	Hydraulic +mecha
Traveling system	4×5
The main wireline diameter	11/8in
Model for hook block	YG135/ YG160
Model for swivel	SL135/ 160
Model for rotary table	ZP1
Model for chassis/drive way	X
Approaching angle/leave-taking angle	
Min. ground clearance	12 1/4in
Max. gradient	%
Min. turning radius	ft
Overall dimension (ft)	67×9×15
Weight of the main unit	30000lbs
Weight of accessories	53000lbs

- **3000m Truck-mounted drilling rigs**

Function

1- Drilling by DP.
2- Meet the requirements on well adjustment and lateral drilling operation.
3- Put and install wellhead equipment and casings.
4- Trip string, examine and repair on the downhole equipment.
5- Grind bridge plug or drill cement plug.
6- Fishing operation.
7- Wash the sand on bottom-hole or perforated well section.

Design principle

1. Meet the technical requirement on bidding;

2. The advanced domestic and overseas technology and structure are adopted, key parts are bought in to improve the rig reliability and enhance the standard factor.

3. Insist the design principle of safety first and put double safety device on the key parts to protect person and equipment safety.

4. Strengthen protection against abrasion to prolong using life;

5. Insist the design principle of reliability to prolong the using life of the drilling rig:

6. Strengthen human engineering to improve the working efficiency;

7. Conform to HSE Specs.

Technical specification

Structure type	double drum, truck -mounted and self-propelled
Nominal drilling depth	10000 ft (41/2"DP)
Max. hook load	400000lbs
Engine power	2x475hp (two sets)
Engine model	CAT3408 (two sets)
Drive way	Hydraulic +mechanical
Transmission model	Allison 5961 (two sets)
Drawworks gear NO.	5F+1R
Mast height	lI8/125(ft)
Traveling system	4x5/5x6
Wireline dia.	F 11/4 in
Hook block speed	0.66-4.59(ft/s)
Substructure height	19.685ft
Opening dia. of rotary table	27 .5in
Chassis drive way	l4x8
Main unit weight when moving	l70000lbs
Overall dimension when moving	73 x l0 x l5 (ft)

AOSCO

- **4000m Truck-mounted drilling rigs**

Product type	ZJ40/225[illegible]Z
Structure type	Self-prop[illegible]
Drilling depth (41/2" DP)	13[illegible]ft
Workover depth (3 1/2" DP)	2[illegible]
Max. hook load	5000([illegible]hs [illegible]×6)
Rated power for the drawuorks HP/kW(hp)	73[illegible]00)
Wireline number	10
Pump power (Unit) no less hP/kW(hp)	7[illegible](1000)
Opening dia of rotary table	7[illegible]mm(271/2in)
Substructure height	18ft
Mast height (ft)	18/125

- **The trailer-mounted drilling rigs**

The trailer-mounted drilling rigs

- This kind of drilling rigs are designed and manufactured in accordance with API Spec Q1, 4F, 7k, 8C and RP500, GB3826.1, GB3836.2 GB7258, SY 6584 standards as well as "3C" compulsory standard.

- These drilling rigs have following advantages: reasonable design structures and high integration, a small working space and a reliable transmission.

- The heavy-duty trailer is equipped with some desert tires and large-span axles to improve the moveability and the cross-country performance.

- A high transmission efficiency and performance reliability can be maintained by a smart assembly and a utilization of two CAT 3408 diesels and ALLISON hydraulic transmission box.

- The drawworks is double-drum type, with which the hydraulic disc brake is equippmed as main brake and air water-cooling disc brake (Model EATON WCB324) is equipped as auxiliary brake.

- The derrick which is front-open type and has two-section structure with an inclination angle or erective sections can be lifted up or fallen down and telescoped.

- The substructure has a parallelogram integral structure for easy transportation and installation, which can be risen by 6 setbacks spirally.

- This kind of drilling rigs with desert adaptability design also have good anti-dust and high/low- temperature proof performances.

- Safety and inspection measures are strengthened under the guidance of the design concept of "Humanism Above All" to meet the requirements of HSE.

- Water-well drilling rigs

- This kind of drilling rigs are designed and manufactured in accordance with API Spec Q1, 4F, 7k, 8C and RP500, GB3826.1, GB3836.2 GB7258, SY6584 standards as well as "3C" compulsory standard.

- This kind of drilling rigs can be used to drill water wells with the Max. depth of 300 meters and Max wellhead diameter of 500mm and to drill the gas wells with the foregoing same specification and to complete workover operations.

- The water-well drilling rig is mobile rig. And a heavy-duty and cruise chassis is utilized for loading the hoisting/spinning and circulation system integrally, which has a good motion performance. The operations of these kind of drilling rigs, such as, hoisting operation, spinning operation and the slurry circulations are driven hydraulically,. The parameters for drilling water well can be adjusted automatically.

- The water-well drilling rigs also have a function of auto bit feed and high working efficiency, equipped with pressure device for pressurization and depressurization to DP.

- A hydraulic brake and a Crown-O-Matic as well as a hydraulic source under the substructure are installed respectively with the purposes of meeting drilling-process requirements and of insuring safety and reliability of the rigs.

- Safety and inspection measures are strengthened under the guidance of the design concept of "Humanism Above All" to meet the requirements of HSE.

The main technical specification for the water-well drilling rigs

Nominal drilling depth (ft)	1000
Rated load for hoisting system (lbs)	67000
Hook speed (ft/s)	0~2.3
Mast height (ft)	46
Rated power for engine (hp)	375
The pressurization capacity for hoisting system (lbs)	22500
Max pressure for slurry system (psi)	715
Max discharge capacity for slurry system (usgal/min)	528.3

- The skid-mounted drilling rigs

- This kind of drilling rigs are designed and manufactured in accordance with API Spec Q1, 4F, 7k, 8C, 9A and RP500, GB3826.1, GB3836.2, SY5609 standards.

- These drilling rigs adopt an advanced AC- VFD-AC or AC-SCR-DC drive system and a non-step speed adjustments can be realized on the drawworks, rotary table and mud pump, which can obtain a good well-drilling performance with the following advantages: calm startup, high transmission efficiency and auto load distribution.

- One -to -one control is designed for the VFD system and one-to -two control is designed for the SCR system., The intellectual control of the drillerover the drilling rigs can be realized by PLC system and the integrated design of touch screen parameters of gas, electricity, fluid and drilling instrumentation.

- K type mast and the swing-up/sling-shot substructure have a good stability and provide a large working space. The mast and the equipment on the drill floor can be assembled on the ground and raised integrally.

- The skid module structure can make the whole unit very compact and quick for movement, which can meet the requirements of the whole-unit-trucked transportation and of cluster-type-well drillings.

- The drawworks will be driven by a single-shaft gear with a non-step speed adjustment. The transmission is simple and reliable.

- The drawworks is equipped with a hydraulic disc brake and a motor-energy-consumption braking, and the braking torques can be controlled via the computer.

- An auto bit feeder is equipped individually to realize real-time monitoring to the dropping process and drilling process of the DP.

- The skid-mounted drilling rigs

The main technical performance & specification for the skid-mounted drilling rigs

Model		ZJ10DB	ZJ20K	ZJ30K	ZJ30DB	ZJ40K
Drilling depth(ft)	41/2"DP	1600-3200	3900-6600	5200-9800	5200-9[illegible]	8200-13000
	5"DP	1600-2600	3600-5900	4900-8200	4900-[illegible]	6600-10000
Max hook load（lbs）		150000	350000	380000	380[illegible]	500000
Hook speed (ft/s)		0~3.6	0.67~4.9	0.67~4.9	0~[illegible]	0.49~4.5
Mast height (ft)		95	102	108	[illegible]35	141
Mast type		Erective section	Erective section	Erective section	[illegible] ty[illegible]	Erective section
Height of the drill floor (ft)		8.86	14.76	18.37	1[illegible]	19.68
Substructure type		Folding	Folding	Folding frame	Folding frame	Folding frame /telescopic
Engine type		AC- VF Motor	CAT3412 DITA Or C-16 ATAAC	CAT3408 DI[illegible] Or 2×C-15 ATAA[illegible]	[illegible]C-VF motor	2×CAT3412 DITA or 2×C-16 ATAAC
Engine power(No×hp)		308	650 or 660	2×5[illegible] [illegible]×526	671	2×650 or 2×660
Transmission type		Electrical+ Mechanical	Hydraulic+ mechanical	[illegible]+ mec[illegible]	Electrical+ Mechanical	Hydraulic+ mechanical
Model of the transmission box		ZJ10	S6610HR	[illegible]10HR	JZK-190 4-shiftgear box	S6610HR
Traveling system		4×5	4×5	5×[illegible]×5	5×6	5×6/6×7
Drawworks Model		JC10DB	JC20K	[illegible]0K	JC30DB	JC40K
Drawworks power(hp)		268	469	536	671	986
Main brake		Band	Band	Band	Band /disc	Band/disc
Auxiliary brake		224WCB	224WC[illegible]	324WCB	324WCB	236WCB
Main wireline diameter (in)		7/8	1 1/[illegible]	11/8 / 11/4	11/8	11/4
Model of the hook block		YG70	YG160	YG225	YG225	YG225
Model of the swivel		SL110	X[illegible]170	SL225	SL225	XSL225
Model of rotary table		ZP175	[illegible]	ZP205、P275	ZP275	ZP275
Mud pump power (hp/set)		496	[illegible]/2	986/2	986/2	1287/2
Working pressure of the hydraulic system (psi)		2030				
Working pressure of air system (psi)		143				
Weight (lbs)		176000	[illegible]90000	220000	370000	620000

ZJ10DB

ZJ30

- The skid-mounted drilling rigs

The main technical performance & specification for the skid-mounted drilling rigs

Model		ZJ40LDB	ZJ40DB	ZJ50DB	ZJ70LDB	ZJ70DB
Drilling depth (m)	4 1/2"DP	8200-13000	8200-13000	11000-16000	15000-23000	00-23000
	5"DP	6600-10000	6600-10000	9200-15000	13000-20000	000-20000
Max hook load (lbs)		500000	500000	700000	1000000	1000000
Hook speed (ft/s)		0.67-4.6	0-3.9	0-3.9	0-3.9	0-3.9
Mast height (ft)		141	141	141、148	148	148
Mast type		K type	K type	K type	K typ	K type
Height of the drill floor (ft)		24.61	24.61	24.61、29.53	29.53、34	29.53、34.45
Substructure type		swing-up	Swing-up	Swin-up/sling-shot	ing-	Swing-up
Engine type		G12V190PZL-3	CAT3512B generator set	CAT3512B generato set	A12 PZL-3	CAT3512 Bgenerator set
Engine power (No×hp)		3×1086	2×1676+536	3×1676		4×1676
Transmission type		hydraulic+ mechanical	VFD	VFD	hydra c+ mec ical	VFD
Model of the transmission box		YZOJ750	ZJ40	ZJ50	YZOJ750	ZJ70
Traveling system		5×6	5×6	6×	6×7	6×7
Drawworks Model		JC40LDB	JC40DB	JC5 B	JC70LDB	JC70DB
Drawworks power (hp)		986	1073	16	1971	2146
Main brake		disc brake	Disc brake	Disc brake	Disc brake	Disc brake
Auxiliary brake		FDWS40	energy-consumption braking	ne y- onsu tion br g	FDWS70	energy-consumption braking
Main wireline diameter (in)		11/4	11/4	3/8	11/2	11/2
Model of the hook block		YC225、DG225	YC225、D	YC315、DG315	YC450、DG450	YC450、DG450
Model of the swivel		SL225	SL22	SL450	SL450	SL450
Model of rotary table		ZP275	ZP	ZP375	ZP375	ZP375
Mud pump power (hp/set)		960/2		960/2	1180/3	1180/3
Working pressure of the hydraulic system (psi)		2030/2320				
Working pressure of air system (psi)		143				
Weight (lbs)		710000	000	770000	990000	880000

ZJ40K

ZJ70

- The skid-mounted drilling rigs

- This kind of drilling rigs are designed and manufactured in accordance with API Spec Q1, 4F, 7k, 8C and RP500, GB3826.1, GB3836.2, SY5609 standards.

- The drilling rigs can fully meet the well-drilling- process requirements by adoption of flexible driving designs-mechanical drives (high-speed diesels, hydraulic transmission box, angle gear box or middle-speed diesel hydraulic transmission, chain combination box), compound transmission and electrical drives (VFD or SCR) etc.

- The whole unit is very compact and a quick whole transportation and installation of the whole drilling rig can be realized due to a utilization of a skid-mounted structure. In addition, the drilling rig requires a small working site due to its high integration and compact configuration.

- Masts and substructures have various structures, such as: perpendicular-hoist sectional mast, whole-hoist K-type mast, telescopic substructure, spirally hoisted substructure and folding - frame substructure.

- A standard and module design and various ways of combination have been adopted in order to boost up the universal and exchangeable performances of the drilling rigs and to meet the user's different requirements.

- Disc brake or band brake can be applied as main brake and air brake or FDWS brake can be used as auxiliary brake and the energy-consumption braking can be available for electrical-drive-rig auxiliary brake. The drawworks can be equipped with bit-feed motor and control system.

- The Internet and communication techniques have been used on the drilling rigs, which can realize an integral display for power, air control, hydraulic control, and monitoring and the intellectual and safe control of the driller.

- The perfect configurations of the solid control system, well control system, high-pressure pipe manifold system, the generator house, the engine pump house, doghouse and other auxiliary facilities can meet the user's different requirements. Safety and inspection measures are strengthened under the guidance of the design concept of "Humanism Above All" to meet the requirements of HSE.