

RIG

Inclined Workover Rig



- Max. load(kN) 350
- Mast height(m) 25.4
- Mast angle of inclination 45~80
- Vertical adjustable(mm) 600
- Horizontal adjustable(mm) 250
- Rotary adjustable 5
- Installed power(hp) 360
- Velocity stage 4 forwards and 1 reverse speed
- Max. climbing degree 26

Desert Workover Rig



Model SXJ120

- Structure type self-propelled
- Nominal small repair depth(m) 8500
- Nominal big repair depth(m) 5500
- Depth-drilled(m) 2000
- Max. load(kN) 1580
- Engine power (KW) 530
- Transmission model Hydraulic + mechanical
- Mast height(m) 35
- Min. ground clearance(mm) 370
- Max. climbing degree 30

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Digital Control VF Rig



- Adopting digital-control technique, computer technique and integrating mechanics, electricity, hydraulics and pneumatics into design, the intelligent control for drilling rig is realized through PLC technology and touch screen.
- Adopting AC VF motor drive, the drawworks, rotary table and mud pump achieves stepless speed regulating.
- The drawworks is a structure with single shaft, gear transmission, stepless speed regulating, the brake adopts hydraulic disk brake and dynamic brake together, with structure simple and performance reliable.
- Adopting constant WOB auto-bit-feed device, patent of Honghua, the WOB control precision is very perfect.
- The rig realizes the function for collecting, displaying, storing, printing and transmission of drilling parameters, and has the function of multi-points monitoring and communication.
- The rig achieves the full digital-control or digital closed-loop control for travelling block position, trip speed, safety preset and interlock protection, has the function of preventing “collide up and impact down” and preventing “pumping and obstructing”.
- Having online monitoring system for working state of mechanical, electric, hydraulic and pneumatic implements; failure alarm and failure self-diagnosis system, can keep the working condition of equipments and do troubleshooting easily.

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- The driller control cabin is independent and lifted hydraulically (ZJ70DBS), not to contact drill floor, with little vibration and convenient for installation and teardown. The driller control cabin is a pressurization unit for explosion – proof (certificated). The drillers can complete all drilling operation sitting on the operating chair, it radically remodels their operation manner and working condition, lightens their labor intensity.
- It can be equipped with rig moving device, satisfying the requirement for cluster well drilling.
- Satisfying the requirement for TDS installation.
- Basic Parameter Of Varied Rigs

Rig Model	ZJ20DBS	ZJ30DBS	ZJ40DBS	ZJ50DBS	ZJ70DBS
Nominal drilling depth, 127mm(5")DP, m	2000	3000	4000	5000	7000
Max. hook load, kN(t)	1350(135)	1700(170)	2250(225)	3150(315)	4500(450)
drill line number	8	10	10	12	12
Dia. of wireline, mm	29	29	32	35	38
Max. pull of fastline, kN	200	200	275	350	487
Drawworks Model	JC-20DB	JC-30DB	JC-40DB	JC-50DB	JC-70DB
Rated power, kW(hP)	400(500)	450(600)	900(1200)	1200(1600)	1940(2600)
Gears one gear, stepless speed regulating brake hydraulic disk brake + dynamic brake EATON brake + dynamic brake					
Crown block	TC135	TC170	TC225	TC315	TC450
Travelling block	YG135	YC170	YC225	YC315	YC450
OD of sheaves of hoisting system, mm	1005	1120	1270	1524	
Hook	YG135	YG170	DG225 or	DG250 DG315	DG450
Swivel Model	SL-135	SL-170	SL-225	SL-450	SL-450
Dia. of stem bore	75	75	75	75	75
Rotary table Opening dia. mm(in)	444.5(17 1/2)	520(20 1/2)	698.5(27 1/2)	952.5(37 1/2)	952.5(37 1/2)
Gears one gear, stepless speed regulating					
Drive mode independent motor drive					
Derrick (mast)	Type K or telescoping K or A		K	K	K
Height, m	31 or 39	41	43	45	45
Max. load, kN(lbs)	900	1700	2250	3150	4500
Substructure Type box on box, or telescoping dual-lifting dual-lifting or swing up					
Drillfloor height	3.8 or 4.5	5 or 5.5	7.5	9	10.5
Clear height under rotary beam, m	2.6 or 3.3	3.8 or 4.3	6	7.6	9
Mud pump Modelxnumber	F800x1	F1000x2	F1300x2	F-1600x2	F-1600x3
Drive mode electric drive electric drive					
Electric control mode AC-DC-AC、 one to one					

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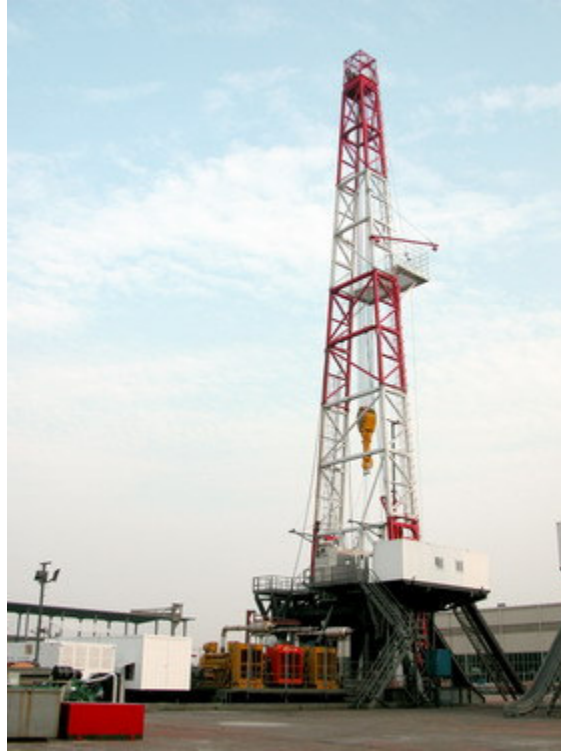
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Mechanical Rotary Table Rig



- The mechanical / AC VF electric compound drive rig with independent rotary table drive, has better economic property of mechanical rig, and partial merit of DBS rig at the same time, is a kind of high performance and economical utility rig for deep well drilling.
- It resolves thoroughly the inconsistency (that they can not be adjusted separately) between rotary speed and SPM of pump. And the rotary speed can completely satisfy the requirement of drilling technology.
- It adopts full digital-control, constant WOB and auto-bit-feeding, the bit is fed evenly and smoothly. This prolongs its service life, advances the wellbore quality, increases the mechanical penetration rate greatly, and prevents downhole accident.
- The driller cabin, integrated with electric (digital), pneumatic, hydraulic control and video communication function, can realize the function for adjustment, display, storage, print, monitoring and remote management of electric parameters and drilling parameters. And it provides driller with a safe, centralized, convenient, reliable and comfortable working condition.

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- After the parallel operation for 3 sets of diesel engine via the chain drive compound and hydraulic coupling gear box, the drawworks, 2 mud pumps and 800kVA generator are driven respectively, the drive efficiency is higher than traditional mechanical rig.
- The chain drive compound drives a 800kVA generator (wide frequency) to provide power to rotary table and wellsite distribution system with high quality of power generation and obvious effect in energy saving.

Basic Parameter Of Varied Rigs

• Model	ZJ50LDB	ZJ70LDB
• Nominal dring depth, m	5,000	7,000
• Max. hook load, kN	3150	4500
• Max. drill string weight, kN	1800	2500
• Dia. Of drilling line, mm	35	38
• Mast effective height / type	45m/K	45m/K
• Drill floor height, m	9	9
• Drawworks rated power, hp.	1500	2000
• Gears	4, forward	4, forward
• Dia of rotary table opening, in.	37 1/2"	37 1/2"
• Rated power of mud pump×number	1300hp×2	1600hp×2
• Drive mode Rotary table is independent electric drive, drawworks and mud pump are mechanical drive		
• Total powerhp.	5000	5000

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Electromechanical Rig



- The rig mainframe is equipped with rig moving device, which can move the rig with setback load within wellsite; the power and drive system once installed well, they can not be moved again, it is suitable for cluster well drilling.
- The drilling pump and generator (wide frequency) are driven by the mode of “ diesel + coupling gear box + chain drive compound ” or “ diesel + parallel operation with V-belt ”, the drawworks and rotary table are driven by AC variable frequency motors. This kind of rig not only has the main functions and features of AC VF electric rig, but also has low price compared to AC VF electric rig, and has outstanding energy saving effect.
- Single shaft drawworks, one gear stepless speed regulating, full digital close – loop control of AC VF electric drive, completely preset for safety protection, convenient for operation.
- The hydraulic disk brake and dynamic brake are adopted in drawworks, the hydraulic disk brake is used only in manual bit feeding, orientation, parking and emergency brake.
- The auxiliary drive device can be used for hoisting the max. weight of drill string while the main drive fails, it can realize the constant WOB auto-bit-feeding, the WOB control precision is perfect.
- Modular design, reasonable layout and power distribution aid each other well, the efficiency of power using is high.

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- The driller cabin integrates the functions of electric (digital), hydraulic, pneumatic control and video communication, can achieve the functions for collecting, displaying, storing, printing of drilling parameters, and perfect functions of monitoring, protection and failure self-diagnosis, the driller can realize all drilling operation sitting in room, the working condition be improved and the labor intensity be lightened greatly.
- Satisfy the requirement for TDS installation.

Basic Parameter Of Varied Rigs

• Model, drilling rig	ZJ40DBS-L(J)	ZJ50DBS-L(J)
• Nominal drilling depth, 127mm(5")DP, m	4000	5000
• Max. hook load, kN(t)	2250	3150
• drill line number	10	12
• Dia. of wireline, mm	32	35
• Max. pull of fastline, kN	280	350
• Drawworks Model	JC-40DB	JC-50DB
• Rated power, kW(hP)	900 (1200)	1200 (1600)
• Gears one gear,stepless speed regulating		
• Main brake hydraulic disk brake + regeneration brake(dynamic brake)		
• Assistant brake		
• Crown block	TC-225	TC-315
• Travelling block	YC-225	YC-315
• OD of sheaves of hoisting system, mm(in)	1120	1270
• Hook	DG225/DG250	DG-315
• Swivel Model	SL-225	SL-450
• Dia. of stem bore 75 75		
• Rotary table Opening dia. mm(in)	698.5(27 1/2)	952 . 5(37 1/2)
• Gears one gear,stepless speed regulating		
• Drive mode FV motor		
• Derrick (mast) Type K K		
• Height, m	43	45
• Max. load, kN(lbs)	2250	3150
• Substructure Type Box on box, or hydraulic lift vertically swing-up		
• Drillfloor height	7.5	9
• Clear height under rotary beam, m	6.3	7.68
• Mud pump Model×number	F-1300×2	F-1300×2
• Drive mode Diesels and compound		
• Drive mode for rotary table Independent drive with VF motor		
• Total power, kW	3×810	3×810

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DC Rig



- It adopts AC-SCR-DC drive mode, using DC motors to drive drawworks, rotary table and mud pump, it can realize stepless speed regulating to satisfy preferably the drilling technology requirements.
- K-type derrick (mast) and swing-up substructure, the drill floor height 9m or 10.5m, the derrick, substructure and drill floor equipment are installed at low place and lifted integrally with drawworks.
- Hydraulic disk brake or band brake is used as the main brake of the drawworks, the assistant brake is electromagnetic eddy current brake with air cooling or water cooling, may equip with EATON pneumatic disk brake with water cooling as requested by customer too.
- The rotary table can be driven by drawworks, can be driven independently by DC motor too.
- The driller cabin integrates the function of electric, hydraulic, pneumatic control with video communication, the driller can realize all drilling operation sitting in room with air conditioner, the working condition be improved and the labor intensity be lightened greatly.
- Satisfy the requirement for TDS installation.

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Basic Parameter Of Varied Rigs

• Rig Model	ZJ50D	ZJ70D
• Nominal drilling depth, 127mm(5 ") DP, m	5000	7000
• Max. hook load, kN(t)	3150 (315)	4500 (450)
• dill line system of travelling system	6×7	6×7
• Dia. Of drill line , mm	35	38
• Max. pull of fastline, kN	350 (35)	485 (48.5)
• Drawworks Model	JC-50D	JC-70D
• Rated power, kW(hP)	1100 (1500)	1470 (2000)
• Gears	2 (4)	4
• Main brake hydraulic disk brake hydraulic disk brake		
• Assistant brake Eddy current brake(EATON) Eddy current brake(EATON)		
• Crown block	TC-315	TC-450
• Travelling block	YC-315	YC-450
• OD of sheaves of hoisting system, mm	1270	1540
• Hook	DG-315	DG-450
• Swivel Model	SL-450	SL-450
• Dia. of stem bore	75	75
• Rotary table Opening dia. mm(in)	952.5(37 1/2)	952.5(37 1/2)
• Gears I OR II, stepless speed regulating		
• Drive mode independent or compound drive		
• Derrick (mast) Type	JJ315/45-K	JJ450/45-K
• Height, m 45m 45m		
• Max. load, kN(lbs)	3150(700000)	4500(1000000)
• Racking board height, m	24.5, 25.5, 26.5	24.5, 25.5, 26.5
• Substructure Type	DZ315/9-S	DZ450/9(10.5)-S
• Drillfloor height	9 9	10.5
• Clear height under rotary beam, m	7.6	7.4 (9)
• Capacity of mud circulating system		
• Mud pump Model×number	F-1300×2	F-1600×2
• Drive mode DC motor		
• HP mud manifold Φ 103mm (bore dia.) × 35MPa		
• Electric drive mode AC-SCR-DC , one to one, or one to two		
• Number of main generator × capacity	3×1500KVA	4 ×1900KVA

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Mechanical Rig



- There are several drive modes, such as “ diesel + hydraulic torque converter (or hydraulic coupling gear box) + chain drive compound ”, “ diesel + parallel operation with narrow V-belt ” etc, the power distributing and utilizing reasonable and high efficiency.
- Hydraulic disk brake or band brake is used as the main brake of drawworks, the assistant brake is electromagnetic eddy current brake. The drawworks is equipped with auxiliary drive device which can be used for mast lifting and laying down, also for hoisting the max. weight of drill string while the main drive fails; there is an interface of auto-bit-feed remained for rig upgrade.
- Optionally, it can be equipped with frictional cathead or hydraulic cathead.
- The arrangement mode of “ high front-low back ” is adopted, the drawworks, power and drive system are placed at low position, the rotary table and cathead on drill floor are driven through bevel gear box and cardan shaft.
- The rig with hydraulic disk brake may be equipped with driller cabin optionally, can realize all drilling operation controlled hydraulically and pneumatically in room, also, can achieve the

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functions for collecting, displaying, storing, printing and remote transmission of drilling parameters, multi-points monitoring and communication.

- The rigs with nominal drilling depth 3000m above, can satisfy the requirement for TDS installation.

Basic Parameter Of Varied Rigs

• Model, drilling rig	ZJ30L	ZJ40L	ZJ50L	ZJ70L
• Nominal drilling depth, 127mm(5 ")DP, m	3000	4000	5000	7000
• Max. hook load (kN)	1700	2250	3150	4500
• drill line number	10	10	12	12
• Dia. Of wireline (mm)	29	32	35	38
• Max. pull of fastline, kN	200	280	350	487
• Drawworks Model	JC30	JC-40	JC-50	JC-70
• Rated power, kW	560	735	1100	1470
• Gears	4+2R	4+2R	4+2R	4+2R
• Main brake hydraulic disk brake, or band brake				
• Assistant brake electromagnetic eddy current brake				
• Crown block	TC-170	TC-225	TC-315	TC-450
• Travelling block	YG-170	YC-225	YC-225	YC-450
• OD of sheaves for hoisting system,mm(in)	1005	1120	1524	
• Hook	YD-170	DG-250	DG-250	DG450
• Swivel Model	SL-170	SL-250	SL-250	SL-450
• dia.of stem bore (mm) 75				
• Rotary table opening dia. mm(in)	444.5(17 1/2)	520(20 1/2)	698.5(27 1/2)	952.5(37 1/2)
• Gears	4+2R	4+2R	4+2R	4+2R
• Derrick (mast) Type	A	K	K	K
• Height (m)	41	43	45	45
• Max. load, kN(lbs)	1700	2250	3150	4500
• Substructure Type Module-mounted, or box on box				
• drillfloor height, m	5/5.5	6/7.5	7.5	7.5
• clear height, m	4/4.5	5,1/6.3	6.3	6.24
• Mud pump Model×number	F-1000×2	F-1300×2	F-1300×2 or F1600×2	F1600×2
• drive mode Diesels and compound Diesels and compound				
• Diesel power× number	810KW×2	810KW×3	810KW×3	810KW×4

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Truck-Mounted Drilling Rig

- Power system adopts caterpillar engine and Allison hydraulic gear box, matches well and has a steady performance, strong power and high efficiency. Each part of the transmission set is compactly structured and reasonably distributed.
- Torque reducer adopts multi-axial great center distance, which could transfer the power on platform separately to draw works, front axle and rear axle then locked.
- The draw works adopts double bars brake structure, reducing handling dynamics of driller; brake drum is forced circulation cooling, which facilitates the draw works, guaranteeing the swift and reliable main brake. Double air chamber pneumatic water cooling auxiliary brake is adopted, which broadens the auxiliary brake function, and strengthen the auxiliary brake function.
- Rotary table could keep normal and reverse turning, and is applicable to various kinds of drill pipe thread circle operation, equipped with reactive torque release device, to ensure the safe release of deformed drill pipe.
- The derrick is front open designed, dual suit installed four points supported mast, with double hydraulic cylinder collapsing entirely lifting up and down, which guarantees the simple and swift operation, safe and reliable application.
- The drill floor is helicospiral structure, equipped well, convenient for hoisting and transportation, and different sizes and heights floors could be made according to the customer's requirements.
- Perfect cementing unit, well control system, high pressure manifolds and auxiliary equipment could meet the needs of different customers.



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- Moving is convenient and swift. Truck could both guarantee flexible turning, and enough bearing capacity, with a good cross-country performance. To meet different needs of customers, the following 5 models of truck-mounted drill rigs are for

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Workover Rig

- The structure of workover rig is reasonable, equipped with diesel engine, hydraulic gear box, angle drive box, drawworks, rotary gear box, auxiliary brake, mast, hydraulic control system, hydraulic drawworks with high degree composition and small floor area.
- Chassis: normal driven self-propelled chassis, heavy load 8 x 6, 10 x 8, 12 x 8, 14 x 8, power steering system and good cross-country performance.
- Brake drum adopts forced internal recycle cooling to insure brake sensitivity strong and favor of protection environment.
- Rotary table transmission case makes it easy for forward and reverse shift, reactive torque release device to ensure safe release of the deformed drill pipe during well drilling process.
- Open front, double sections interlinked installed, trim mast, hydraulic telescoping entire lifting up and down.
- Drilling platform: double unit can be telescoped, easy to be transported and hoisted; floor size and height can be designed according to the user's requirements.
- Desert workover rig is equipped with large-scale desert-tyre to be fit for special requirements of desert moving and desert operation.



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