SINOPEC EQUIPMENT

SJPETRO石油四机®

2024

PRODUCT CATALOG

中石化四机石油机械有限公司
SJ PETROLEUM MACHINERY CO.

SINOPEC EQUIPMENT

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SJ PETROLEUM MACHINERY CO.

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SINOPEC EQUIPMENT

SJ Petroleum Machinery Co. (SJ for short), one of the backbone enterprises of petroleum drilling and production equipment in China, was established in 1941, with 82 years of experience up to now. Located in Jingzhou, a historical and cultural ancient city in Hubei, SJ is mainly engaged in research, development, manufacturing and service of land and offshore oil/gas exploration and development equipment, covering drilling equipment, cementing equipment, workover equipment, fracturing equipment, coiled tubing units, snubbing rigs, offshore equipment and high pressure fluid control products. Meanwhile, SJ has been actively expanding into on-site equipment inspection, testing, overhaul and modification service, to provide integrated solution of oil/gas exploration and development equipment for customers.SJ has passed ISO9001 certification, HSE certification, API Q1 and Series Product Certification, and has been awarded "National Hi-tech Enterprise", "National Enterprise Technology Center", "National May-1st Labor Award", "National Quality Management Excellent Enterprise", "China Top 500 Machinery Manufacturers", and "National Civilized Enterprise" ,etc. Our SJPETRO brand cementing trucks, workover rigs, drilling rigs, offshore workover rigs and fracturing packages have earned lots of honors such as " National Silver Medal", "National Classified New Product" "China Top Brand" "National Scientific and Technical Innovation Excellent Project Award" "National Scientific and Technical Progress Award" and "National Single Champion Demonstration Enterprise for Manufacturing Industry". Our products and technical services have spread all over China and major overseas oil-producing regions. SJ is the enterprise in China who has exported the most drilling/workover rigs, cementing and fracturing equipment.

CONTENTS

01 DRILLING EQUIPMENT

SJ is focused on the research and development of characteristic drilling rigs for oil/gas exploration field, from truck-mounted drilling rig to automated modular drilling rig, Big Easy drilling rig, cold-weather drilling rig, wheel type drilling rig, helicopter drilling rig, trailerized desert drilling rig, full-hydraulic drilling rig, etc, SJ is featuring fast moving, fast installation, automatic control and adaptability for complicated environments. These drilling rigs are widely used for oil/gas exploration and development in plain, arctic, desert, mountain, etc. SJ has created series of leading achievements and has been awarded China Top Brand. Now, SJ has become the backbone enterprise of petroleum drilling rig in China.

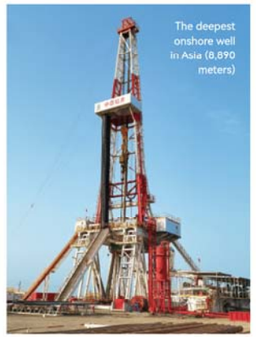
Model	Nominal drilling depth m(ft)(4-1/2"DP)	Max. Hook load kN(lb)	Drawwroks rated HP kW(hp)	Mast type and height (m)	Substructure type and height (m)
SZJ180D/DB/L (ZJ30)	3000(9840)	1800(404600)	600(800)	K Type, 33/41	Box-on-Box、telescope 5.6
SZJ225D/DB/LDB/L (ZJ40)	4000(13120)	2250(500000)	800(1100)	K Type, 43	Box stacking type、Swing-up, 7.5
SZJ315D/DB/L (ZJ50)	5000(16400)	3150(700000)	1100(1470)	K Type, 45.5	Swing-up, 9
SZJ450D/DB/ (ZJ70)	7000(22970)	4500(1000000)	1470(2000)	K Type, 45.5	Swing-up, 10
SZJ585D/DB (ZJ80)	8000(26247)	5850(1300000)	2000(2720)	K Type, 48	Swing-up、Sling shot, 12
SZJ675D/DB (ZJ90)	9000(29530)	6750(1500000)	2210(3000)	K Type, 48	Sling shot, 13.7

- Three types of power systems are avaliable for option: Electric drive(DC/AC VFD), Compound drive, mechanical drive.
- Substructure option : box-on-box type, swing-up type,or sling shot type technology, and drawworks can be installed in low position, or high position.
- K-type mast is adopted, the top drive system can be optional Complete with rig unitized capacity integrated mature.
- drilling tools, drilling manifold system, drilling fluid circulating system, well site electirc system, well control system, etc . , and stable and perfect supply chain system.

ZJ70D Drilling Rig in Kuwait

ZJ70D Drilling Rig in Algeria

ZJ80D Automated Drilling Rig in Sichuan and Chongqing Areas



ZJ90D Drilling Rig in Tashen 5 Well, Xinjiang China

Drillng Rig Automation System

- Improve automation level of drilling rig, and realize the whole process automation of Drilling, tripping, making up and breaking out, pipe conveying and arrangement.
- High integration for tools, high degree of mechanization and automation, reduce the labor intensity of operators
- Reduce the amount of personnel working in dangerous areas such as racking board, and improve the safety of equipment operation.
- Integrated control, remote monitoring, and expert systems are combined to reduce drilling risks.

Automate d pipe handlin g system on drill floor

Automated pipe handling system on racking board

Automated pipe feeding system

Hydraulic elevator

Si-driller integrated driller control system

Iron roughneck

Automated pipe handling system

- "Pushing & holding"type structure, suitable for modification of existing conventional drilling rig and newly produced drilling rig.
- Both of the manipulators on drill floor and racking board are driven by servo motor, which is easy to be assembled and disassembled. Arrange drill strings slantingly, featuring high reliability.
- Manipulator and racking board are designed integratedly. Assembled and raised on low position. Positioning precisely by complex coordinates real time location and state detection.
- Full automatic control model and one-button operation, it can be switched to manual mode in case of emergency.
- Good adaption, L-type rail, avoiding the pipe conveyance access effectively.

Si-driller integrated driller control system

- An intelligent driller control system is established for the integrated operate&control, information security sharing and internet unified management of the drilling equipment.
- Security intelligence, establish regional anti-collison, interference alarm mechanism and process safety interlock mechanism, grading emergency shutdown mechanism to avoid misoperation and improve operating safety.
- The integrated MRO IOT system can realize the comprehensive. perception of key equipment at the well site, real-time monitoring, maintenance reminder, early warning, and running protection.

Wellhead automated tool

Include iron roughneck, hydraulic elevator, air slips, power rat hole, to realize the automatic operations of make-up/break-out, latching elevator, slips placement.

Automated pipe conveyance system

Include power catwalk and centralizing mechanical arm, to realize the two-way conveyance of pipes between the pipe rack and wellhead or mouse hole.

Model	Rig floor height(m)	Max. pipe length(m)	Max. pipe OD(mm
SPC 30/9	7.5-9	13.7	508
SPC 40/10.5	9-10.5	13.7	508
SPC 45/14	11-14	13.7	508

Upgrading and modification of conventional drilling rigs

Series Modularized Drilling Rig

Swing-up type drilling rig

- Developed 5000 ~ 9000m ipsilateral swing-up mast and substructure. Drawworks is located on median position, formed main rig floor of automated drilling rig.
- Rig floor with wide open space to install automated equipments.
- Low lifting force for derrick and substructure, high safety.
- Drawworks with dual gear box drive, high reliability.
- Suitable for cluster well transportation, enough space for 3.7m wellhead equipment.


Rig floor


Drawworks


8000m Swing-up drilling rig

Synchronous-lifting drilling rig

- Aiming at the simultaneous operation of multiple rigs on large shale oil platforms, 5000 ~ 8000 meter synchronous-lifting rig was developed to optimize well site layout and complete with a full set of automation equipment and information syste;
- The layout for well site is compact, reduced the well site size.
- Install mast and substructure on the low position. Stringinging drill line once and the lifting efficiency increases by 50%. Avoid installation on high position during raising up mast.
- The VFD system of drawworks, rotoary table, and TDS is integrated into a room, located near from the drawworks, which can decrease cable quantity during moving for cluster well.
- Driller's room and left doghouse are integrated as one room located outside of mast. Operation area around the wellhead is large and the driller has a good vision.


8000m Synchronous-lifting drilling rig

Series continuous lifting rig

- Developing 5000 ~ 8000m continuous lifting rig, with drawworks located on high position, which is suitable for automated equipments installtion.
- The derrick and substructure is stringing drill line once for continuous lifting.
- The driller's room is located at the end of the drawworks, and the driller has no dead angle of vision.
- Drawworks is located on high position and it allows the driller to observe the drawworks and cluster well moving.
- The drawworks is driven by high power and high torque VFD motor to improve the lifting efficiency of the rig with heavy load.


8000m continuous-lifting drilling rig


Driller's cabin location

Double-lifting drilling rig

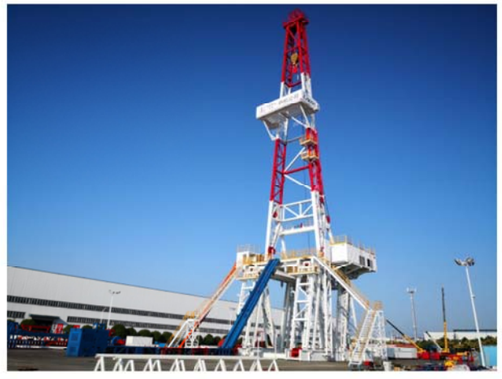
- In view of the problems such as insufficient clear height and poor lifting safety of ultra-deep oil and gas drilling rig substructure in China, we have developed the 7000~9000m double-lifting drilling rig to lead the development of ultra-deep drilling rig in China.
- High clear height: Double-lifting type, rig floor height is 13.7m,the clear height is 12m.
- Lightweight mast raising up: Lifting load is 1800KN.
- Raising up Substructure remotely, hydraulic drawworks remote raising up with high safety.
- Strong adaptability: The drawworks is installed on the rig floor, which is conducive to cluster well operation and transfer of large modules between well sites.
- High stability: The offset of drilling rig wellhead center is just 50% of similar type normal drilling rig under the heavy load.
- Innovative pipe operation process, tripping speed is up to 25 strings/h, improving pipe string handling efficiency by more than 20%.
- One-key operation system realizes the pipe string processed operation.
- Automatic coordinate alignment removes the effect of interferences.
- Laser real-time detection for connecting between manipulator and drill string to avoid collision accidents.


Power catwalk


Racking board manipulator


Lift-hold rig floor manipulator


Substructure for 9000m Double-lifting drilling rig


9000m Double-lifting drilling rig

Cluster well drilling rig transport device betweel wells

According to the characteristics of shale gas exploration and development in China, SJ uses guide-rail, wheel-rail and stepping-type transportation mechanisms to realize the whole-set transportation of drilling rig between wells with full setback, to realize the successful application of process drilling under the development mode of "well plant", provide high-end technical equipment support for shale gas exploration and development drilling and completion operations.

Product model	Max. Moving weightkN(lb)	Moving direction
SDG700 Guide-rail type	8000(1700000)	Single row(Vertical double column)
S-TS700 Train-rail type	7000(1500000)	Single row
S-TS2000 Train-rail type	20000(4500000)	Single row
SWS 1500/445-500 Step-by-step	15000(3300000)	360°

Stepping type drilling rig

- Aiming at the development of well-plant for domestic and oversea market, 7000m stepping type drilling rig has been developed to effectively solve the problems of low efficiency, poor safety and large well site area.
- It is the first time in China to achieve full drilling rig and fast movement between any wells, helping the development of National Fuling shale Gas Demonstration Zone.
- Full movement: Adaptable to any layout of platform well location, movement time between 10m well spacing is less than 2 hours.
- Synchronous control: The deviation of multiple groups of translation cylinders shall not exceed 2%.
- Remote control operation: convenient for operators to observe.
- Quick alignment of wellhead, with the function of leveling after foundation subsidence.

Modification technology of conventional drilling rig moving between wells

It can provide the customer with the modification plan of the substructure for the conventional drilling rig in service, and upgrade to the guide-rail, wheel-rail and stepping type transport mechanism, which can meet the requirements of the cluster well drilling rig transport and operation between wells.

Train-rail transportation device between weels

10m distance between wells, only two hours for rig movement, suitable for all-directional movement, with maximum moving weight is up to 1000T (drilling rig with full setback).

Desert fast moving drilling rig

Model	SZJ450D Full-trailerized Desert Drilling Rig
Max. Weight for substructure / Whole moving capacity	450 t
Max. weight for whole mast / Moving capacity	140 t

- In order to meet the requirement of fast moving drilling rig in high temperature desert areas in the Middle East, 7000m fast moving drilling rig was successfully developed.
- Less job for disassembly and assembly: The main rig is divided into two large modules: derrick and substructure transportation.
- Suitable for long-distance moving: The driving speed is 8-10km /h.
- Low safety risk: Low center of gravity, small moving load.
- Low requirements on roads: Few restrictions on road conditions, such as road slope, camber and electric power grid etc.

Cold-weather drilling rig

- Low-temperature material, process and structure design, meeting the requirements for operation at -45℃and storage at -60℃with humidity of less than 90%.
- Applicable to modularized, train-rail type, truck-mounted, or trailerized drilling rigs, with GOST certification and EAC Customs Union certification.


ZJ40DB cold-weather drilling rig is working for ROSENEFT in RUSSIA


ZJ50DT cold-weather train-rail type drilling rig is working for EuroAsia in RUSSIA


ZJ30CZ cold-weather truck-mounted drilling rig is working for Schlumberger.

Cold whether wheel rail drilling rig

- To meet the drilling development requirements in the Arctic Circle and the extremely cold areas in the Far East, the 5000m cold whether wheel-rail drilling rig was developed. The whole rig and its associated equipment were located on one platform, and the rig with full setback and mud to be moved as integration.
- Meeting the requirements for operation at -45℃ and storage at -60℃.
- Rig with setback in upright status and overall transport weight is more than 2000 tons
- Fast moving between wells, less than 3 hours for rig movement about10m gap between wells.
- Raising up mast and substructure remotely(Outside 70m).
- The rig is suitable for operating in swamps and frozen soils with very low surface carrying capacity (≥0.12MPa).
- Less disassembly, less lifting, high safety.

ZJ50DB-ST Cold weather wheel rail Electric drive drilling rig has won "The third prize of scientific and technological progress" of Sinopec group.

Series Fast Moving & Fast Installation Rig

BE550 drilling rig is working for NABORS in USA

Series Big Easy drilling rigs

Model	Max. hook load kN(lb)	Rated HP, DrawworkskW(hp)
BE400	1800(400000)	600(750)
BE550	2500(550000)	735(1000)
BE770	3500(770000)	1100(1500)
BE1100	5000(1100000)	1470(2000)

Series Big Easy drilling rigs are featured by fast rigging-down, movement and rigging-up. The main equipments of rig are of VF electric drive. All trailerized modules, low-position installation, integral hydraulic lifting. The modules are connected with each other through pin shafts, featuring good interchangeability and quick dismantling & installation.

The main rig only needs 5 transport trucks (including drawworks and driller's room), realizing no crane, no bolt disassembly and installation, associated equipments are trailer mounted, it will only take 18 hours for whole drilling rig moving 50 km.

The whole rig was awarded national invention patent. This kind of drilling rigs have been exported in batches to USA, Middle East, etc.


BE770 Drilling Rig

Series Truck-mounted Drilling Rig

Series truck-mounted drilling rig

The truck-mounted drilling rig is featured by the power driving system, drawworks system, mast and traveling system all mounted on a self-propelled, trailerized chassis, to realize efficient rig movement and fast rigging-up.

Model	Max. Hook load KN(lb)	Rated HP, Drawworks kW(hp)
SZJ112CZ/TZ(ZJ10/1125CZ)	1120(250000)	336(450)
SZJ135CZ/TZ(ZJ15/1350CZ)	1350(300000)	410(550)
SZJ147CZ/TZ/DBT(ZJ20/1470CZ)	1470(330000)	485(650)
SZJ170CZ/TZ/DBT(ZJ30/1700CZ)	1700(380000)	560(750)
SZJ225CZ/TZ/DBT(ZJ40/2250CZ)	2250(500000)	735(1000)

Truck-mounted drilling rig (diesel engine drive)


SZJ225CZ(ZJ40)Truck-mounted drilling rig

Trailer-mounted drilling rig (diesel engine drive)


SZJ180TZ(ZJ30T)Trailer-mounted Drilling Rig

Truck-mounted fast moving drilling rig (diesel drive)


SZJ180CZ(ZJ30) Truck-mounted drilling rig(8 axles)

Truck-mounted composite module electric drive drilling rig


SZJ225CZ(ZJ40) Truck-mounted composite module drilling rig working in Algeria

Full-trailerized drilling rig (electric drive)

AC VFD drilling rig, the main rig and mast are moved in one traller, hydraulic raised-up and installation, substructure and unitized equipments are all placed on trailer for convenient movement.


SZJ180TZ(ZJ30DBT)Trailer-mounted drilling rig working in Oman

Super single drilling rig

- Based on the increasingly mature technology of "one-trip drilling", the research on single joint drilling operation mode was carried out, and the 3,000-meter super single drilling rig was developed to improve the efficiency of rig moving and operation safety.
- There will be 3 transport trucks for main rig, and the top drive is integrated in the derrick for transport, improving the moving efficiency. Well site covers Small area, it solved the problem of small well site area effectively.
- Complete set of automated string handling equipment is integrated to improve operational safety.


3000m Super single automated rig raising-up mast


Beijing Tongzhou geothermal demonstration project site

Top Pressure Drilling Rig

National major science and technology special project
"development of large oil and gas fields and coalbed methane"

- In order to solve the difficulty of running string for medium-shallow horizontal well and high-inclination well, 4,000m top pressure drilling rig was developed. The drilling rig was hydraulically controlled and driven by electro-hydraulic, and the lifting system was an eight-motor gear lifting box.
- With 600kN active snubbing capability, and realize accurate bit weight control.
- Integrated automatic string handling system, with high automation.
- No drawworks, wire line and traveling block, less maintenance work.
- 25% transport trucks and 16% floor space are reduced and is reduced.

Technical index	
Nominal drilling depth (4-1/2"DP)	4000m
Max. Hook load	2500kN
Max. snubbing force load	600kN
Mast type and height	K Type, 34 m
Substructure height/Clear height	7.5 m / 6.3 m
Qty. motor for lifting box	8
Hydraulic drive rotary table and model and max. output torque	ZP375, 28000 N.m

Series Helicopter Drilling Rig

Series helicopter drilling rig

Model	Max. Hook loadkN(lb)	Rated HP, DrawworkskW(hp)
SLH147	1470(330000)	410(550)
SLH170DB	1580(355000)	560(750)
SLH225DB	2250(500000)	735(1000)
SLH315DB	3150(700000)	1100(1470)

- Optional diesel or electric drive, maximum drilling depth 2000-5000 meters.
- The application of structural lightweight technology, the maximum weight of a single module is 2.7/4/10 tons, suitable for the mountain, jungle, island, desert hinterland oil area helicopter lifting and transport.
- Fast disassemble and assemble technology, the moving time from one well to another well is only 6 days.

Electrification and Energy Saving for Conventional Mechanical Rig

- Modify the compound box, and drive the peak regulating motor and transfer box with pump.
- Modify electromagnetic eddy current auxiliary brake, and the end is connected with the gear box and the potential energy recovery motor.
- Integrated hydraulic top drive and HPU, which can improve drilling efficiency by 10 ~ 15%.
- Energy storage and potential energy recovery modification for conventional mechanical rig can reduce consumption by more than 15%.

Drilling Rig Traveling System

Traveling system

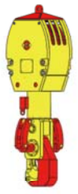
Series traveling hook

YG70
YG80
YG90
YG110
YG150
YG180
YG250

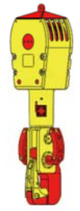
Series traveling block

YC180
YC225
YC315
YC450
YC585
YC675

With mature series of traveling hook, the maximum load from 700kN ~ 2500kN, covering 800 ~ 4000 meters of drilling&workover rig, effectively improve the supporting capacity of drilling&workover system.

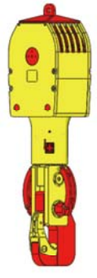


YG70
YG80
YG90



YG110
YG150

YG180



YG250

Series hook

DG225
DG450

Series swivel

SL120
SI160
SI225
SI450

Drilling Mud Pump

Series of high pressure drilling pump

- To meet the requirements of high formation pressure in ultra-deep Wells and efficiency drilling speed, STP1600M and STP2200M high pressure drilling pumps have been developed to effectively improve the processing capacity of solid control system.
- Capture the long stroke, low SPM and L-shape fluid end, manifold forging technology, improve the service life of high pressure drilling pump and pressure resistance.
- Combined with the operating conditions of in-service drilling pump, optimize the structure, upgrade the material, improve the performance of supporting accessories and consumable parts.

Model	STP1600ML	SQP2200M	SQP2800M
Rated input power hp(kW)	1600(1193)	2200(1641)	2800 *n.c.*
Rated stroke-1/min	120	135	107
Stroke in. (mm)	12"(304.8)	12"(304.8)	304.8
Max.rated displacement L/s	39.9 (7" Liner)	97.7 (7.5" Liner)	69.2(7" Liner)
Max. WP MPa	51.7(5" Liner)	51.8 (4" Liner)	51.7(5" Liner)
L×W×H mm	6000×2675×2882	8025×3673×2929	6000×3487×2935
Pump weight t	28	66	42 (w/o charging system)

STP1600ML

SQP2200M

SQP2800M Quintuplet drilling pump

- SQP2800M Quintuplet cylinder drilling pump is based on high pressure high power reciprocating pump research and development experience.
- Higher power, higher displacement and lower flow pulsation.
- Both of high pump pressure and large displacement are taken into account at the same time, and the coverage of working conditions is wider.
- High connecting rod load, low rated stroke, high power density.
- The smallest volume and lightest weight of the Quintuplet cylinder pumps for the same power class.

SQP2800M

02 CEMENTING EQUIPMENT

SGJ600-30 Desert cementing truck

SJ is the largest research&development and manufacturing base of cementing equipment in China, it is the "Single champion" of Chinese cementing equipment manufacturing industry. It has accumulated more than 30 years of research&development and manufacturing experience of complete cementing equipment, and owns core technologies with independent intellectual property rights, such as series of plunger pumps, ACM automatic mixing system, automatic control system of the whole process and associated equipment. It is the setter of China's cementing equipment industry standard. The products include: truck mounted/trailer mounted/skid mounted cementing equipment, which meet the requirement of drilling, completion and cementing operations in various environments such as land, desert and ocean etc. The newly developed series of high-power cementing truck, electric drive cementing truck, foam cementing equipment coud meet the requirements of cementing process for deep-ultra-deep oil and gas Wells.

STP350
Plunger pump

STP400
Plunger pump

STP600
Plunger pump

SQP1000 Quintuple
plunger pump

SQP1600 Quintuple
plunger pump

SQP2000 Quintuple
plunger pump

SQP2500 Quintuple
plunger pump

Series Cementing Plunger Pump

Series cementing plunger pump

SJ is the largest high pressure plunger pump manufacturing enterprise in China. It has independent intellectual property rights for 200 ~ 2500HP series of cementing plunger pump, with pump design, manufacturing to basic material technology research and millions SPMs test, high pressure test capabilities. There are more than 5000 sets pump products used for cementing equipment, high pressure pumping equipment. The liability of the pumps has been proven in the cementing and pumping operation.

Model	STP350	STP400	STP600/STP600S	SQP1000	SQP2500L	SQP2500
Max. input power kW(hp)	265(350)	447(600)	447(600)	745(1000)	1491(2000)	1866(2500)
Stroke mm(in.)	127(5")	203.2(8")	152.4(6")	152.4(6")	152.4(6")	203.2mm(8")
Max. stroke-1 rpm	350	350	450	450	330	330
Plunger size in	5"、4-1/2"、4"、3-3/4"	4-1/2"、4"	3"、3-1/2"、4"、4-1/2"	3"、3-1/2"、4"、4-1/2"	3-3/4"、4"、4-1/2"、5"	3-3/4"、4"、4-1/2"、5"
Gear ratio	4.32:1	8.6:1	4.61:1	4.61:1	6.353:1	6.353:1
Overall dimension (LxWxH)mm	1760×1178×805	1760×1178×805	1626/1292×1366×607	1290×1910×860	2267×1905×908	2545×2140×873
Weight kg(lbs)	2050(4520)	2910(6450)	2492(5489)/2155(4751)	3180(7000)	6200(13668)	7500(16534)

Series Auto Mixing System

Series auto-mixing and high energy jet mixing system

- ACM auto-mixing system is mainly composed of high energy mixing system of cement slurry and density auto-control system. After twenty years of development, it has been developed into the 5th generation, which can realize multiple cycle mixing of cement slurry, density full automatic control by computer, simple operation, stable mixing quality.
- The newly developed new generation auto-mixing system adopts the new A&A mixer, double densitometer and new discharge manifold design, and the mixing density is more accurate and stable.
- The SUPER HEMI Super High Energy Jet Mixing system is a new super high energy mixing system developed for high displacement cementing job with a maximum mixing capacity of 3.0m3/min@1.9g/cm3, which is nearly twice of a conventional single mixer.

ACM-III
Density auto-control mixing system
(Cement control)

ACM-IV
Density and liquid levelauto-control
mixing system (Cement and water control)

ACM-IV.2
Better initial mixing effect, more intelligent
man-machine operation interface

ACM-V
Realize the "one-button " process control of
complete sets of cementing equipment

SGJ400 Series Cementing Truck/Trailer/Skid

Model	Max. WP MPa(psi)	Max. Displacement L/min(GPM)
SGJ400-15(GJC75-15)	77.2(11200)	1527(403)
SGJ400-27(GJC95-27)	95(14000)	2733(722)
SGJ400-30(GJC75-30)	77.2(11200)	3054(806)

SGJ400-15 Single pump cementing truck

SGJ400-27 Twin pump cementing trailer

SGJ350 Series Cementing Truck/Trailer/Skid

Model	Max. WP MPa(psi)	Max. Displacement L/min(GPM)
SGJ350-13(GJC50-13)	50(7252)	1376(362)
SGJ350-17(GJC40-17)	40(5800)	1641(434)
SGJ350-25(GJC70-25)	70(10153)	2473(653)
SGJ350-30(GJC50-30)	50(7252)	2866(757)

SGJ350-25 Twin pump cementing truck

SGJ600 Series Cementing Equipment

Model	Max. WP MPa(psi)	Max. Displacement L/min(GPM)
SGJ600-13(GJC70-13)	70(10100)	1274(336)
SGJ600-17(GJC55-17)	55(7976)	1662(440)
SGJ600-21(GJC45-21)	45(6526)	2105(558)
SGJ600-30(GJC100-30)	99.7(14456)	3041(803)
SGJ600-33(GJC70-33)	70(10100)	3379(893)
SGJ600-37(GJC55-37)	55(7976)	3767(996)
SGJ600-42(GJC45-42)	45(6526)	4210(1112)

SGJ600-21 Single pump intelligent cementing truck

SGJ600 Series Cementing Equipment

SGJ600-30 Cementing truck/trailer

SGJ600-30 Full-auto cementing truck

SGJ600-30T Trailer-mounted cementing unit

SGJ600 Series desert cementing truck

Desert cementing truck is a kind of cementing equipment suitable for desert driving and operation, which is designed to work in high temperature and sand environment.Operating temperature: -10℃ ~ +55℃.

- Double crossarm double torsion bar independent suspension.
- Split drive axle.
- Differential lock.
- Wide section ultra-low pressure tires.
- Automatic charging&discharging system.
- Circuit system interface partition and dust-proof connector design.
- Adopt high intensity heat dissipation and high precision filtration device.

SGJ600-30D Electric drive cementing skid

- SGJQ600-30D electric drive cementing skid is driven by 400kW/600V variable frequency speed regulating device, with stable power supply and high drive efficiency, the wellsite grid electricity or rig electricity could be used, the operation is green and low carbon and good for environmental protection.
- Two STP600 plunger pump are combined, operation is stable and reliable, maximum pressure can reach 82.3MPa and Max. displacemet is 3000L/min.

SGJ600-30 Single motor double pump electric drive cementing truck

SGJ1000 Series Cementing Equipment

- The equipment is designed with installation power 1000hp, for high displacement under high pressure.
- Based on the principle of density priority, the stability of slurry density is improved by controlling the fluctuation of bulk supply and increasing the density detection.
- Wellhead metering device can improve the accuracy of slurry flow detection.

SGJ1000-21 Single pump cementing truck

SGJ1000-21 Single pump cementing truck

SGJ1600 Series Cementing Equipment

Model	Max. WP MPa(psi)	Max. Displacement L/min(GPM)
SGJ1600-28	96.7(11400)	2460(740)
SGJ1600-28D	79(11400)	2800(740)

SGJ1600 Cementing truck (diesel drive)

- The imported engines have been replaced with homemade large horsepower engines to improve the lead time.
- The lightweight design of the equipment is more suitable for mountainous areas and bad harsh road conditions.

SGJ1600 Cementing truck (electric drive)

- Variable frequency integrated machine(motor) replaces the configuration of radiator + engine + transmission, saving layout space, shortening wheelbase and improving passability.
- The characteristics of the motor continuously variable speed enable the equipment to cover a wide range of pressure and displacement, it could adapt to the requirements of various operating conditions.
- The operating stability of quintuplet plunger pump is better than triplex plunger pump.
- Low emission and low maintenance cost.

SGJ1600-28D Electric cementing truck

SGJSGJ1600-28D Electric drive cementing truck working in Weiyuan, Sichuan

SGJ2500 Series Cementing Equipment

SGJ2500 Series cementing truck

Model	Max. WP MPa(ps)	Max. Displacement L/min(GPM)
SGJ2500-31/38	67.5(9800)	3100(818)/3800(1004)
SGJ2500D-31/38	126.3(9800)	4650(818)/3800(1004)

SGJ2500 Remote control cementing equipment

- One pc 2500 cementing truck is used to meet the operation requirements of 2m3/min displacement under 40MPa working pressure, it is suitable for deep shale gas with large displacement and high pressure clean water displacement operation condition.
- 2500hp quintuplet cementing pump can meet the requirement of large displacement and long time operation.
- Mixing capacity could be increased to 3m/min@1.9g/cm3.
- It can realize remote pumping and bleed off, with high safety.

SGJ2500-38 High power cementing truck

SGJ2500-38 High power cementing truck working in Weiyuan, Sichuan.

SGJ2500 Series Cementing Equipment

SGJ2500 Full-auto electric drive cementing skid

- The high-displacement&lightweight SQP2500 cementing pump is 15% lighter than similar product.
- Equipped with the largest capacity mixing system in the world, mixing capacity is 76% higher than conventional mixing system.
- The equipment is equipped with full electric drive system, the localization rate reaches 95%.
- A "one button" cementing control system could realize local unmanned operation.

Cementing Engineering Centralized Control Command Center

Wireless transmission and cloud platform technology, combined with the remote monitoring system equipped with video surveillance, data acquisition and transmission, remote adjustment of execution components, to build the remotecontrol system of cementing equipment, to achieve local control -remote centralized control - base command center monitoring.

Cementing instrument van

Foam Cementing Equipment

The foam cementing equipment is mainly used for cementing job of long horizontal well and low pressure leaking stratum, the following problems will be solved effectively.

- For conventional slurry cementing job, casing in long horizontal section and long inclined section is easy to be eccentric.
- The problems such as well loss and insufficient slurry return caused by low pressure and leakage prone formation.

Model	SPH14-7
Slurry flow range(m^3/min)	0.2-1.4
Slurry density control range(g/cm^3)	0.7-1.9
Foam slurry outlet pressure range (MPa)	0-2.5
Overall dimension/Weight (m/t)	7.0×2.5×2.8 / 10

SPH14-7 Foam slurry mixing skid work in Wushenqi

Associated Equipment For Cementing Equipment

Cement tank and bulk system

Complete equipment includes automatic cement supply system, continuous liquid additive system, network control system, etc. It can provide cementing instrument truck, bulk cement truck, vertical silos, surge tank, air compressor skid, water supply truck, back tank truck, liquid additive device, bulk cement mixing skid, tools truck, wellhead tools, cementing manifold, mud testing equipment etc. integrated equipment.

Cement tank and bulk system

Continuous liquid additive system

Cement mixing skid

Series Batch Mixing Truck/Trailer/Skid

Model	SHJC16
Tank volume (m^3)	16 (2x8)
Max. slurry mixing capacit (m^3/min)	2.3
Slurry density (g/cm^3)	1-3.0
Slurry density precision (g/cm^3)	±0.012

Batch mixing equipment is developed to adapt to the cementing process and it could carry out batch and continuous mixing job, which can be truck/trailer/skid mounted.

SHJC16 Batch mixer truck

SHJC16 Batch mixer trailer

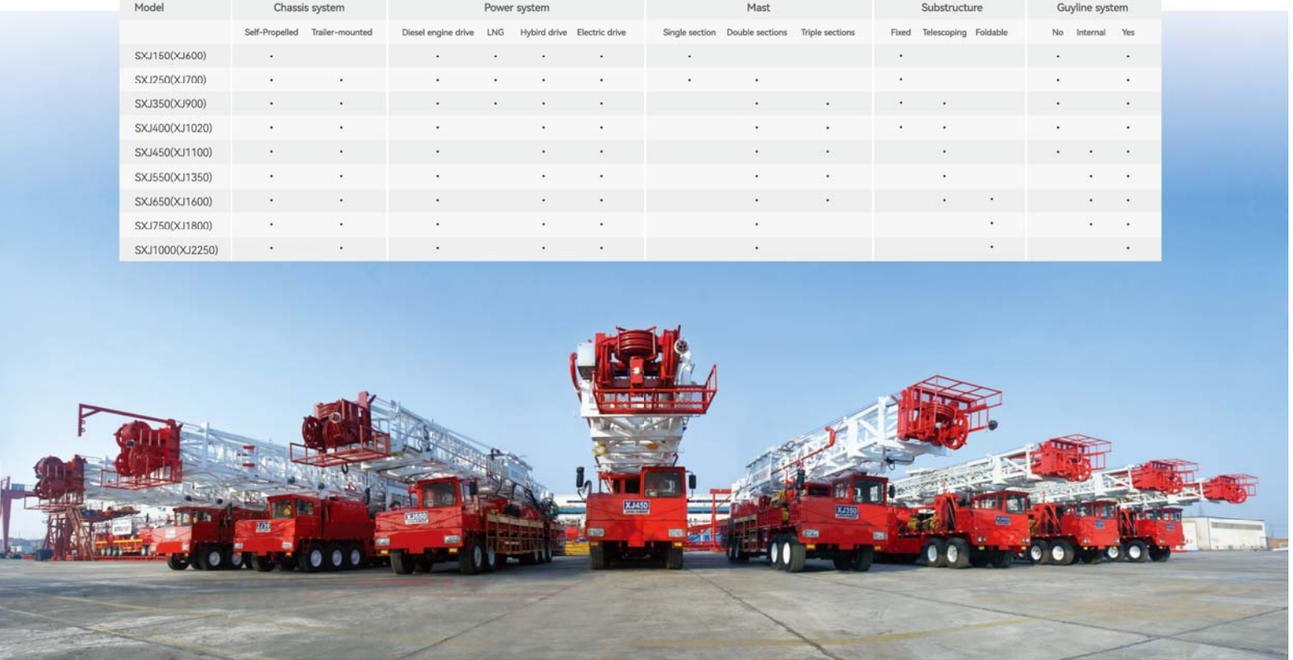
SHJQ16 Batch mixer skid

03 WORKOVER RIGS

SJ is the largest workover equipment manufacturing base in China, with a full range of self-propelled workover rigs with a maximum hook load of 600kN~2250kN. We have developed various fast moving, efficient, and energy-saving new products that meet different environmental and operational requirements. We have produced and sold more than 2000 truck-mounted workover rigs, including 834 units exported to over 30 countries and oil producing regions around the world. We are the largest manufacturer in terms of production, sales, and export volume in China.

Model	Nominal hook load kN(lb)	Max. Load kN(lb)	Engine Power kW(hp)
SXJ150(XJ600)	300(67440)	600(131508)	175(235)
SXJ250(XJ700)	400(89920)	700(151740)	242(325)
SXJ350(XJ900)	600(134880)	900(1202320)	287(385)
SXJ400(XJ1020)	800(220304)	1020(229296)	335(450)
SXJ450(XJ1100)	800(220304)	1100(252900)	354(475)
SXJ550(XJ1350)	1000(264365)	1350(303480)	403(540)
SXJ650(XJ1600)	1200(303480)	1600(330456)	522(700)
SXJ750(XJ1800)	1500(337200)	1800(382160)	403×2(540×2)
SXJ1000(XJ2250)	1800(404640)	2250(505800)	470×2(630×2)

Model	Chassis system		Power system				Mast			Substructure			Guyline system		
	Self-Propelled	Trailer-mounted	Diesel engine drive	LNG	Hybird drive	Electric drive	Single section	Double sections	Triple sections	Fixed	Telescoping	Foldable	No	Internal	Yes
SXJ150(XJ600)	·		·	·	·	·	·			·			·		·
SXJ250(XJ700)	·	·	·	·	·	·	·	·		·			·		·
SXJ350(XJ900)	·	·	·	·	·	·		·	·	·	·		·		·
SXJ400(XJ1020)	·	·	·		·	·		·	·	·	·		·		·
SXJ450(XJ1100)	·	·	·		·	·		·	·		·		·	·	·
SXJ550(XJ1350)	·	·	·		·	·		·	·		·			·	·
SXJ650(XJ1600)	·	·	·		·	·		·	·		·	·		·	·
SXJ750(XJ1800)	·	·	·		·	·		·				·		·	·
SXJ1000(XJ2250)	·	·	·		·	·		·				·			·



Series Self-propelled Workover Rigs

SJ has more than 40-year experiences in the design and manufacturing of special chassis for workover rigs. Over 2000 workover rigs have been equipped with our self-propelled chassis, with huge advantages in load bearing reliability, road steering ability, and adaptability to oil field conditions.

SXJ350D(XJ900) workover rig (Electric drive)

SXJ450(XJ1100) workover rig (Diesel engine drive)

SXJ1000(XJ2250) workover rig (Diesel engine drive)

Series Trailer-mounted Workover Rigs

- Suitable for wide road and spacious well site. The rigs can be towed and transported to the site by tractors.
- Available with two forms of drives: diesel engine drive and variable frequency electric drive.

XJ450T Trailer-mounted workover rig (Diesel Engine Drive)

Series Compact Workover Rig Package

In response to the requirements for rapid transition in the Middle East and North Africa, a compact workover rig package for small well site was developed.

- High integration: only 2 modules: workover rig and drill floor.
- Hydraulically-lifted trailerized drill floor: integrated transportation of driller's cabin, doghouse, blowout preventer, etc. with the drill floor.
- Full trailerized drill floor and peripheral equipment: Efficient rig movement, no need for crane assistance.

SXJ750(XJ1800) Workover rig working in Oman

SXJ750(XJ1800) Workover rig working in Oman

Double-line four-axle trailerized drilling floor

Half-axle suspension trailerized drilling floor

Series Electric-drive Automated Workover Rigs

Full-electric-drive automated XJ350 workver rigs

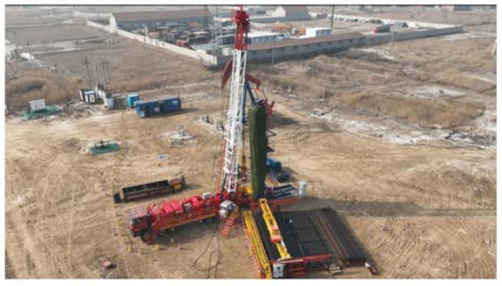
In response to the requirements for environmental protection and automated operation, we have developed a series of full electric drive automatic workover rigs based on our core technologies such as a new type of power battery heavy-duty chassis, an on-board integrated automatic operation device, and energy management.

- Full electric drive for chassis movement and equipment operation
- Two technical routes: distributed drive and centralized drive
- 68% of equipment energy consumption can be saved when using a combination of grid power (30KVA) and energy storage devices for power supply.

XJ350 Battery energy storage workover rig

In response to the limited operation caused by limited capacity of well site transformers, we have developed XJ350 electric workover rig, with power coming from 30KVA well site transformer plus battery storage energy in the case of rig operation, and from the chassis engine in the case of rig movement.

Max. Hook load	900 кН
Drive type	8x8
Mast height	21m
Motor power	160 kW
Battery capacity	150 kwh
Automation efficiency	35~40 columns/hour



Series super capacitor workover rigs

In view of the small capacity of transformers in the well site, a series of super capacitor energy storage workover rigs have been developed, which can absorb and store electrical energy in operation interval, and release electrical energy during operation, saving 50% of the operating cost compared to diesel engine drive equipment.

- Well site network power+super capacitor energy storage
- Free-standing Mast, without guy lines
- "Small power grid, big operation"
- "Multi energy, combination and distribution"

Model	SXJ250E	SXJ250TE	SXJ350E
Well site grid power	50 kVA	50 kVA	80 kVA
Generator	50 kW	68 kW	/
Diesel engine	360 hp	/	375 hp
Motor	90 kW (asynchronous)	80 kW (PM synchronous)	110 kW (asynchronous)
Potential energy recovery	×	√	√
braking resistor	×	√	×
Capacitor capacity	4.7 MJ	3.6 MJ	3.67 MJ

Series diesel-electric dual drive workover rigs

- Drawworks and rotary table are driven by diesel engine and motor, a power switch unit is provided, and the chassis is driven by diesel engine.
- 40% less operating cost, 50% less emission, environment-friendly, low noise.

LNG Workover Rig

- Natural gas is a clean energy, low emission from gas engine.
- LNG costs less, compared with diesel with an equivalent combustion heat value.
- Rapid power response, with performance comparable to diesel powered workover rig.

SXJ350 LNG workover rig

To meet the needs of clean operations in oil fields, the XJ350 LNG workover rig was developed on the basis of natural gas engine technology and LNG safety application technology.

- Gas engine: 30% less cost compared to diesel engines.
- Green and environmental protection: significant reduction in harmful gas and carbon emissions.
- Heavy wheeled off-road chassis: powerful off-road performance.

Series Cold-weather Workover Rigs

Aiming at the Cold-weather market, through the optimization of low-temperature materials and research on thermal insulation measures, We have developed a truck/trailer-mounted cold-weather drilling and workover rig suitable for operation at - 45 ℃ and storage at - 60 ℃ .

- Low temperature materials: welding process qualification, standardized welding template, processing test specimens, and tensile, bending, low-temperature impact, and other tests.
- Thermal insulation measures: standardized rapid-disassembling insulation system.
- Heating measures: equipped with heating and ventilation systems to create a comfortable and safe working environment.

Series Desert Workover Rigs

- Off-road desert chassis, internal wind load guyline, good adaptability to high temperatures (55℃) in deserts.
- Sand control measures: heavy-duty air filter and special painting process for deserts.
- High temperature prevention measures: 70 ℃ high temperature air conditioner, high temperature water tank, inter-layer environmental protection insulation materials for house , copper/cotton braided gas pipeline, sunshade for water tanks, electrical appliances and cables for high temperature, etc.

SXJ550 (XJ1350)
Desert workover rig working in Oman

SXJ650 (XJ1800)
Tunisian desert workover rig

Series Mountain Workover Rigs

- Truck-mounted + module, with the overall dimensions and weight of each module meeting the requirements of mountain road transportation.
- Multi-stage mast, featuring convenient and fast installation and disassembly.

Three-section-mast mountain workover rig

- Three-section mast, small turning radius, suitable for mountain road transportation.
- Wire rope lifting or hydraulic cylinder telescoping method.
- Internal wind load guyline, featuring convenient installation and less occupied area.

XJ900 Three-section-mast Workover Rig

XJ1100 Three-section-mast Workover Rig

Truck+module series mountain workover rigs

- Fast moving and installation: low position installation, overall lifting, safe and efficient, with a set of lifting cylinder for separate lifting of mast and substructure.
- Transportation module: fewer transportation modules, fewer moving vehicles, and a small number of pin shafts for connection between modules.
- Mast telescoping: the extending and retraction of the mast are realized by the drawworks.
- Chassis: small turning radius, high power, meeting the needs of mountain transportation.

Multi-stage Mast Mountain Workover Rig

Big-Easy Mast Mountain Workover Rig

Series Dual Fastline Workover Rigs

In response to the requirements for efficiency, highly integration, and rapid transportation in the USA market, We firstly developed the dual fast line workover rig.

- Double fast line operation at low load, doubling hook speed.
- Integrated transportation of wellhead low platform and workover rig.
- Air cooled air controlled caliper brake replaces water cooled air controlled disc brake, providing large maintenance space.
- Available with mechanized tools.

More than 200 sets of XJ400 dual fastline workover rigs exported to the USA in batch

Series Wheel Type Workover Rigs

SXJ150, SXJ250, SXJ350 Series

Heavy-duty wide-flange tires for wheel type workover rigs, adapted to small workover service in poor road area such as swamp, mud flat, etc., featuring good passing ability, small turning radius, and good agility.

Series Free-standing Workover Rigs

Series free-standing workover rigs have been developed for China VI emission standard update, and upgrading requirements for automation.

- H-mast, without guyline. No need of ground anchor, faster rigging-up and rigging-down, mechanized tools.
- Multi-stage rotary operation cabin, comfortable operation and good visibility for the driller
- Integrated automatic operation device: unmanned tubing tripping at the wellhead, reducing the number of operators per shift from 5-6 to 2.
- Integrated management system for rig power: meeting the requirements for hydraulic, air and electric power supply for rig adjustment, operation and mechanized tools, without the need for additional power.
- Job data acquisition, storage, and wireless transmission.

Series Internal-guyline Workover Rigs

- Wind load guylines are all secured in the substructure.
- Saving the guyline installation process and shortening the preparation time.
- Solving the problem of no space for wind load guylines, and reducing operation costs.

Series Flushing & Workover Rig

- Integrated with a small pumping system on the chassis. One rig for multiple purposes (functions such as workover, well flushing, drill string rotation, etc.)
- High degree of integration and efficient transportation. Trailerized quick moving module.
- Optional hydraulic rotary table to achieve rotation function.

XJ250P flushing & workover rigs exported to Columbia in large quantities

XJ250P flushing & workover rig working in Syria

XJ250P flushing & workover rigs exported to Columbia in large quantities

Automated Workover Rigs for Minor Repair

Truck-mounted integrated automated rig

Aiming at the requirements for automated tools, integrated transportation and comprehensive utilization of power systems for workover rigs, we have developed a truck-mounted integrated automated rig, which can meet the requirements of placing power catwalks in three directions at the well site and unmanned handling of tubing at the wellhead.

The entire device is composed of a folding arm type automatic makeup and breakout device, a hydraulic foldable lifting platform, an integrated power management system, and an integrated control system.

- Folding arm type automatic makeup and breakout device: integrated stabbing device, installed at the rear of the main rig, transported with the rig as a whole.
- Hydraulic foldable lifting operation platform: integrated with pipe receiving manipulator, pneumatic spider, etc., with adjustable height.
- Integrated control system: driller integrated control, system real-time monitoring, equipment movement safety interlock.

Pipe diameter	ϕ73 ~ ϕ89 mm
Platform height	1300 ~ 2000 m
Centralizer pushing trip	1900 mm
Max. handling fore	1.5 kN
Max. torque of hydrualic tong	6 kN·m

Self-contained skid-mounted automated rig

Our self-contained skid-mounted automated rig is integrated with automated parts, inclusive of wellhead platform, gantry type hydraulic tongs, hydraulic elevator, hydraulic spider, pipe centralizers, pipe stabbing device.

- Adjustable operation platform
- Pipe feeding and arrangement can be done in three directions.
- Centralizing mechanical arm in non-working condition can be folded into the platform, without affecting driller operation.
- Equipped with sewage collector.

Automated Workover Rig Package For Overhauling Operation

- Diesel engine/ VFD AC drive.
- Series automated operation tools and integrated controlling system.
- Improving the working environment, reducing the labor intensity.
- Automated pipe operation, can be integrated or connected separately to driller controlling system.
- Safety interlock: automated monitoring and programs interlock.

Automated pipe handling system

SPR 600TD racking plantform mechanical arm

- Default path, automated operation, unmanned racking platform
- Servo motor drive, closed-loop control, high precision motion
- One-key operation, easy to use
- Logic interlock with rig travelling system, safe and reliable.
- Light structure, transported together with the rig.

Name	SPR600-T-D	SPR1000-T-D
Pipe size	2-3/8"~3-1/2"	2-3/8"~5"
Pipe capacity	192~224 Pipes (2/7/8" DP)	192~224 Pipes (2/7/8" DP)
Max. handling fore	600N	1000N
Operation speed	≥0.2m/s	≥0.2m/s
Rotation angle	±90°	±90°
Horizontal travel	1760mm	2080mm
Max.operating radius	1500mm	1700mm
Position accuracy	±5mm	±5mm
Applicable rig model	SXJ1100-SXJ1600	SXJ1800-SXJ2250

SFP 2300TD drilling floor mechanical arm

- Servo motor drive, closed-loop control, high precision motion.
- Default parameter, automatic memory, one-key operation.
- Remote control, real-time monitor.
- "L" type guide rail, automatic avoidance, without occupying the central channel in setback area.

Pipe size	2 3/8" ~ 5"
Max. operating force	2200
Telescope stroke range	650mm~2300mm
Average working period	≤80 s

SZQ 140/25 YZ multifunctional iron roughneck

- Defualt parameter, automatic running, one-key makeup and breakout.
- Integrated with torque monitoring, to prevent tubing from damage.
- Automatic shift between high and low gear, high working efficiency.
- Integrated with splash proof, centralizing and sewage collecting functions, clean production.
- Triple control (Local, remote and driller cabin), smart operation.
- Fewer external interfaces, convenient assembling and disassembling.

Pipe size	2 3/8"-3 1/2" drilling pipe
	2 3/8"-4 1/2" tubing
	4 1/2"-5 1/2" casing
Rated torque of hydraulic tong	25 kN·m
Hydraulic tong RPM	low gear 8 rpm, high gear 43 rpm
Rated pressure	14 MPa

Ground Manifold System

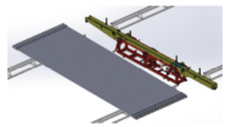
SPC5/5T Power Catwalks SPB300 Hydraulic pipe box

- Structure features: automatic control, high integration level, simple control interface.
- Safety interlock: automatic monitoring of each position state, program interlock, safe and reliable.
- Human-machine interface: good interaction, and meeting the demand for one-driller operation.
- High level integration: Parameter instrument, failure, alarm, indicator light, etc. are of integrated display.
- Suitable for equipment upgrading.

SPC 3.5/3.5 foldable power catwalks (Pipe feeding device)

- Cylinder lifting, complete with servo pulleys, protecting tubing thread.
- Foldable, compact structure, easy feeding.
- Applicable to SXJ700-SXJ900 workover rigs.

Pipe length	8-10 m
Pipe size	2 3/8" -3 1/2"
Max. weight of pipes	3.5 KN
Suitable wellhead height	1-3.5 m

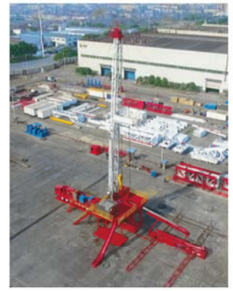


Working state

Transportation state

SPC 5/5 power catwalks

- Hydraulic lifting type, unmanned pipe feeding operation.
- Integrated control system+ remote control + local control, good reliability.
- PLC logic control, step-by-step one-key operation, high degree of automation.
- Tubing length measurement function (Optional), with 0.5% accuracy.
- Compact structure, integrated transportation.
- Suitable for SXJ110-SXJ1600 workover rigs.



Pipe length	8 - 10m
Pipe size	2 3/8" – 5"
Max. weight of pipe	5 KN
Wellhead height	4.5 - 5.5m

SPC 10/7 power catwalks

- PLC process control, one-key feeding of pipes.
- Multiple operation choices such as remote control, control box, local emergency operation, driller's cabin (optional), etc.
- Multiple safety protection, wellhead anti-collision.

Pipe length	8 - 10 m
Pipe size	2 3/8" – 7"
Max. weight of pipe	10 KN
Wellhead height	5.5 - 7.5 m

- Tube thread protection.
- Suitable for SXJ1800-SXJ2250 workover rig.

SPB 80 hydraulic pipe box

- Automatic two-way conveyance of pipes on the hydraulic pipe rack and pipe box , saving manual work.
- Grabbing and laying of pipes in whole row, with high efficiency, reducing the area of pipe storage yard, saving the well site space.
- Pipe box bottom sealed, sewage collecting.

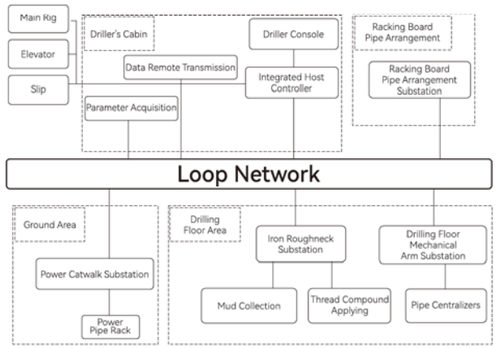
Max. Length of Pipe	10 m
Capacity	750 m (2 7/8") 、
	700 m (3 1/2")
Loading weight	12 T
Transport size	11 m×2.5 m×1.9 m

Onsite application of hydraulic pipe box (Pipe out)

Onsite application of hydraulic pipe box (Pipe in)

Driller integrated control system

- Integrated control system for automated service and workover rigs.
- One-driller control: Multi-device synchronous collaboration, saving 2-3 persons, one-key automatic operation mode, step-by-step automatic and manual operation mode.
- PLC logic control: location real-time monitoring system, anti-collision interlock.
- Data information processing: data acquisition, storage and wireless transmission.



Integrated control and data remote transmission system

In response to the demand of high-efficiency integrated control of main rig and automatic device for medium workover rigs, we developed this integrated controlling system for workover rigs.

- One-driller control: One-driller control: Multi-device synchronous collaboration, saving 2-3 persons, one-key automatic operation mode, step-by-step automatic and manual operation mode.
- PLC logic control: location real-time monitoring system, anti-collision interlock.
- Data information processing: data acquisition, storage and wireless transmission.

Workover Rig Components

Series workover swivel

For support of workover service, hydraulically operated, Max. Load of 1200-1600kN.

Model	SI120	SI135	SI160	SI225
Max. payload kN	1200	1350	1600	2250
Max. RPM	300	300	300	300
Max. pressure	35(5076)	35(5076)	35(5076)	35(5076)
ID of wash pipe	54(2-1/8")	57(2-1/4")	57(2-1/4")	75mm(3")

SL160D Power Swivel Skid

SL135 Spinner Swivel

SL225 Swivel

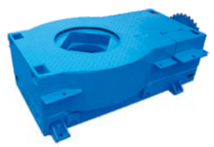
Series traveling block hook

Model	Max. static load kN(lb)	OD of pulley mm(in)	Qty. Of pulley	Wireline diameter mm(in)
YG50	500(112500)	575(22.6")	3	22(7/8")
YG70	700(157500)	605(24")	4	22(7/8")
YG110	1100(247500)	605(24")	3	26(1")
YG150	1500(337500)	760(30")	4	26(1")/29(1-1/8")
YG180	1800(405000)	1060(42")	5	29(1-1/8")
YG200	2000(450000)	1100(43.3")	5	32(1-1/4")
YG350	3500(787500)	1118(44")	5	32(1-1/4")

Series rotary table

Model	Max. static load kN(lb)	Opening size mm(in)	Max. rotary speed (r/min)	Speed ratio
ZP75	Φ190.5(7.5")	585(131508)	300	1:3.6
ZP105	Φ266.7(10.5")	1000(224800)	300	1:3.375
ZP175	Φ444.5(17.5")	1500(337200)	300	1:3.58
ZP205	Φ520.7(20.5")	3150(708120)	300	1:3.22
ZP275	Φ698.5(27.5")	4500(1011600)	300	1:3.68
ZP375	Φ952.5(37.5")	5850(1315080)	300	1:3.56

ZP275



ZP105

Series Skid-mounted Pumps

Model	Max. working pressure MPa(psi)	Max. working displacement L/min(gpm)	Pump type
SNQ500 15	25(3571)	1500(396)	STP500M
SNQ800-20	35(5000)	1970(520)	STP800M
SNQ800Q-24	35(5000)	2330(618)	SQP800M
SZQ350-13/16/17	50/35/40	1216/1590/1641	STP350
SZQ600-13/18	70/40	1295/1834	STP600
SZQ900-22/18/14	50/40/30	2139/1730/1368	STP900

- Series skid-mounted pumps include portable mud pumps which are primarily for workover mud circulation service, and plunger pumps for well flushing, water injection, water plugging, acidizing, shallow well fracturing. Two drive types of diesel engine and electric drive are available.
- Meeting the operation engineering requirements, good consistency of device interface.
- Integrated with advanced control technology, reducing the cost.

Series portable skid-mounted mud pumps

SNQ500-15D electrical skid-mounted mud pump

SNQ500-15 skid-mounted mud pump

SNQ800 20 skid-mounted mud pump

SNQ800Q-24 skid-mounted mud pump

Series skid-mounted plunger pumps

ZZQ350-16D electrical skid-mounted pump

SZQ350-17 skid-mounted pump

SZQ600-18 skid-mounted pump

SZQ900-22 skid-mounted pump

Workover Rig Integration Technology

SJ has a mature supply chain system and a complete testing capability for unitized equipment, and is able to provide integrated service and solution for workover rig package.

04 FRACTURING EQUIPMENT

SJ's second generation fully electric fracturing equipment Focusing on electrification, automation, standardization, and digital technologies Assist in green, low-carbon, and efficient development of oil and gas resources.

Fracturing Equipment Overview

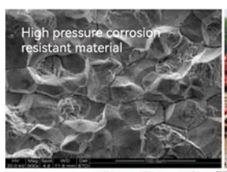
SJ is a top-notch development and manufacture base of fracturing package in the world. We possess the self-owned core technologies for series 350~8000HP plunger pumps, fracturing pump trucks, sand blending trucks, instrument vans, manifold trucks, high pressure manifolds, electric fracturing skids, integration of large-scale fracturing package, high-displacement continuous mixing equipment, and network control. With 30 years of experience in developing, manufacturing and service of fracturing equipment, we can provide integrated equipment solution for conventional and unconventional oil and gas fields. SJ had undertaken the tasks of "National 863 plan" project. Its model 3000 fracturing package, a "12th-Five-Year major scientific and technological project", won the second prize of National Science and Technology Progress Award, and had been widely used in the fracturing construction of large-scale shale gas reservoir reconstruction in Chongqing and Sichuan, creating a number of construction records. Relying on the development and application of all-electric drive fracturing equipment of the "National 13th Five-Year Major Project", the second generation of long-life electric fracturing units has been formed for mass production and application, providing electrified, automated, standardized, digital green, low-carbon and efficient solutions for fracturing reservoir transformation projects.

Jiaoye 11# East Platform standardized all-electric fracturing well site

Series Fracturing Plunger Pump Design & Manufacturing Technology

SJ's series plunger pump integrates design and manufacturing and new material technology to provide reliable guarantee and long service life for high-pressure, large-displacement continuous operation.

- Research on material control technology, refine the microstructure of materials, develop high pressure and corrosion resistant materials with strength increased by 5%, toughness increased by 150%, hardenability increased by 200%, the service life of pump body is significantly improved than that of similar advanced products.
- The new plunger pumps have passed the "million SPMs" test to ensure reliable product performance.
- Test methods and test specifications for plunger pumps have been established.



High pressure corrosion resistant material

System testing

Lightweight module structure

500 hours of on-site experiments

- Carry out the research on the service life stability of SJ pump fluid cylinder, apply high-metallurgical quality steel ingot and special forging process to control the blank, adopt special heat treatment process to improve the hardenability of the inner hole, optimize the cavity structure, reduce the internal stress, improve the machining technology, and comprehensively improve the service life of the pump cylinder.
- Carry out data analysis of pump cylinder and product dissection analysis, refine and improve the process used in excellent cases, and form a unique specification and internal control key process.

SJ series stainless steel pump fluid cylinder

- Based on advanced design and manufacturing technologies, SJ second-generation stainless steel material is adopted;
- The peak stress in the dispersion cavity has strong stress corrosion resistance, and the average service life is more than twice that of the ordinary alloy steel pump fluid cylinder.

SCF5000 Continuous full load fracturing pump

SCF5000 continuous full load fracturing pump has the characteristics of super high power, long stroke, low stroke per minute, small discharge pulsation, good balance, for shale gas and well plant operation mode long-term continuous fracturing working conditions development, high-strength pump casing, oversized bearings, stainless steel pump fluid cylinder, strong overall rigidity, high power density, built-in temperature monitoring system, easy to detect and maintain, can achieve 7/24 hours continuous operation 100% power output, high-strength stainless steel pump fluid cylinder, service life of more than 2000h.

SQP5500/7500 quintuplet fracturing pump

SCF5000/SQP8000 continuous full load fracturing pump

SQP3300 quintuplet fracturing pump (Stainless steel pump head)

STP3300 triplex fracturing pump

SQP2800 quintuplet fracturing pump

SQP2500 quintuplet fracturing pump

STP2000 triplex fracturing pump

STP1500 triplex fracturing pump

China's Largest Fracturing Plunger Pump R & D And Manufacturing Enterprise

Plunger pump model	STP900/1000	STP1500	STP1800	STP2000	SQP2500/2500H
Max. Input power kW(hp)	670/750(900/1000)	1120(1500)	1342(1800)	1491(2000)	1866(2500)
Stroke mm(in.)	203.2(8")	203.2(8")	203.2(8")	203.2(8")	203.2(8")
Max. SPM rpm	300	330	330	330	330
Plunger size in.	5"、4-1/2"、4"、3-3/4"	5"、4-1/2"、4"	5"、4-1/2"、4"	5-1/2"、5"、4-1/2"、4"	5"、4-1/2"、4"、3-3/4"
Gear ratio	5.619:1 / 5.043:1	6.353:1	6.353:1	6.353:1	6.353:1
Overall dimensions(LXWXH)mm	2012×1410×1016	2199×11472×1110	2280×1518×1126	2280×1518×1126	2199×1980X1113
Weight kg	4082/3856	4552	5398	5610	6760
Plunger pump model	SQP2800	STP3300	SQP3300	SQP5500	SCF5000
Max. Input power kW(hp)	2088(2800)	2460(3300)	2460(3300)	4045(5500)	3729(5000)
Stroke mm(in.)	203.2(8")	279.4(11")	279.4(11")	279.4(11")	279.4(11")
Max. SPM rpm	350	250	250	250	250
Plunger size in.	5"、4-1/2"、4"、3-3/4"	5-1/2"、5"、4-3/4"、4-1/2"	5"、4-3/4"、4-1/2"、4"、3-3/4"	6"、5-1/2"、5"、4-3/4"、4-1/2"、4"	6"、5-1/2"、5"、4-3/4"、4-1/2"、4"
Gear ratio	6.333:1	7.514:1	7.514:1	7.529:1	10:1
Overall dimensions(LXWXH)mm	2296×2310X1198	1290×1910×860	2465×2696×1141	2736×3096×1620	2580×3308×1267
Weight kg	9166	8800	9200	14493	17000

Integrated Solution For Full Electric Fracturing Reservoir Renovation Equipment

- Relying on mature complete sets of equipment technology, optimizing the allocation of grid power resources through the entire process, to achieve comprehensive electrification, standardization, automation, and digital operation of oil and gas development, fracturing, and reservoir transformation engineering;
- The application of all electric drive technology replaces imported diesel engines and transmission, reduces the configuration of imported chassis with a skid mounted structure, increases the localization rate to 95%, significantly reduces equipment procurement costs, and reduces operation and maintenance costs by more than 30%;
- The whole grid electric drive significantly reduces CO_2 and carbon emissions, reduces construction noise by 17%, and reduces the area of high-voltage areas by more than 50%;
- The second generation SCF series plunger pump is specially designed for ultra high power continuous working conditions, which can meet the requirements of shale gas and other large-scale fracturing reservoir reconstruction operations, and its service life has been increased by more than 2 times;
- The SOFE-Link intelligent fracturing system is an equipment life cycle maintenance platform based on industrial intelligent control technology, IoT cloud technology, and expert big data analysis technology, to achieve safe, efficient, green, and low-cost intelligent fracturing operations.

Series full electric fracturing skid

Model	SYL2500Q-140DQ	SYL5000Q-140DQ	SCF5000Q-140DQ	SYL6000Q-140DQ	SYL8000Q-140DQ
Plunger pump model	SQP2800	SQP2800×2	SCF5000	SCF6000	SQP8000
Structural type	Single pump	Dual pump	Single pump	Single pump	Single pump
Max. motor power kW	2100	4100	3750	4500	6000
Rated voltage V	3300	3300	3300	3300	6000
Max. Output power hp	2500	5000	5000	6000	7600
Max. working pressure MPa	140	140	140	140	140
Max. displacement m³/min	1.6(3.75")	3.316(4")	2.477(5")	3.316(4")	2.646(5")
Weight t	20	41	32	34	35
Overall dimensions mm	6450×2500×2600	9200×2500×2800	7800×2600×2800	8100×2650×2650	8100×2600×2850

SYLQ8000Q Electric fracturing skid

- Innovatively developed a domestically produced 6000V motor and a "one driven two" structure variable frequency control system, filling the technical gap of the 6000V fracturing electric transmission system in China.
- Optimize the overall layout and lubrication technology, and develop a domestic maximum power 8000 electric fracturing skid, with one capable of replacing three conventional 2500 oil drive fracturing trucks.
- In January 2023, the 8000 electric fracturing skid was installed on the Huaye 4 platform of Jiangsu Oilfield, with a construction pressure of 75-85MPa and a displacement of 2.1-2.5m³/min, with a maximum continuous operation time of 5 hours, and reliable equipment performance.

SYL8000DQ Electric Fracturing Skid

SCF5000 Electric fracturing skid

- Develop a second-generation electric complete fracturing device with continuous full load capacity, using silent, multi-stage lubrication, and compact design, equipped with a three-phase asynchronous motor and SCF5000 long-life fracturing pump.
- The rated output power of single engine is 5000hp, the power utilization coefficient is ≥ 0.8, the weight is 32t, and the overall noise is ≤ 90dB, suitable for large-scale fracturing operations under "continuous" working conditions.

SCF5000 Electric Fracturing Skid

SYLQ5000Q Electric fracturing

- Develop a series of 5000 electric fracturing pump devices with integrated technology of six-phase variable frequency motor drive and multiple combinations of one engine dual (single) pump, and effectively improve equipment load efficiency.
- Compared with conventional diesel fracturing equipment, the single stage construction cost has decreased by 24%, including a 46% decrease in equipment depreciation cost, a 27% decrease in maintenance and usage cost, a 36% decrease in fuel cost, and a 40% decrease in construction personnel.

SYL5000DQ Electric Fracturing Skid (dual pump)

SCF6000 Electric fracturing skid

- Develop a second-generation electric complete fracturing device with continuous full load capacity, using silent and multi-level lubrication, and compact design, equipped with three-phase asynchronous motor and SCF6000 long-life fracturing pump.
- The rated output hydraulic power of a single engine is 6000hp, the maximum output hydraulic power is 8000hp, the weight is 34t, and the noise of the entire machine is ≤ 90dB, suitable for large-scale fracturing operations under continuous working conditions.

SCF6000 Electric Fracturing Skid

Electric sand blending skid

Product model	SHS40DQ	SHS32
Max. water displacement	2×20m³/min(clear water)	32m³/min (20+12m³/min)
Rated voltage	380V	380V
Overall dimensions	10.5×2.5×2.9m	≤9×2.8×3m
Weight	25t	≤22t
Max. sand transport capacity	8m³/min	7.5m³/min
Working conditions	24h/d, 7d/week	24h/d, 7d/week

SHS32D Electric sand blending skid

- Integrated equipment for liquid supply and sand blending, achieving the integration of liquid supply pump and sand blending system, with a maximum flow rate of 32m³/min;
- Driven by a 380V motor, the distribution cabinet and equipment are integrated into a skid, with a compact structure and small volume
- Meet the needs of both sand and water pumping operations, with a max. sand transporting capacity of 7.5m³/min, the sand content can reach 30% at 20m³/min.

SHS32 Fully Electric Sand Blending Skid

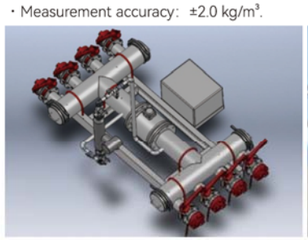
SHS40D Electric sand blending skid

- The 260 barrels ultra large displacement electric sand blending skid adopts a "double mixing and double row" mode, which is equivalent to two sand blending trucks, effectively improving the safety factor of operation and meeting the needs of deep oil and gas development.
- The on-site automatic sand transporting tank can achieve full process automation and efficient sand transporting.

SHS40DQ Electric Sand Blending Skid

Non-radioactive density meter

- Non-radioactive source, no need for approval and filing, easy to manage.
- External installation without affecting the use of the original equipment.
- Measurement accuracy: ±2.0 kg/m³.



Fracturing construction monitoring device of Jianghan Oil Production Institute

COSL SHS16 Sand Blending Skid

Automated continuous sand conveying units

- For the sand bag supply mode, 180m³ double silos bucket elevator is equipped, using sand excavator or sand truck to supply sand;
- Low level lifting sand, isolated according to dual silos and multiple media, meeting the requirements of adding 4 types of sand molds, and controlled by electric gate valves at the outlet;
- Radar monitoring of sand surface height, intelligent warning, and automatic sand unloading in conjunction with sand blending, requiring only 3 people to complete the unloading and supply of sand.

Model	Sand transporting rate	Number of operators	Advantages and disadvantages
Spiral type (first generation)	50m³/h	5 persons	Wet sand, easily blocked
Caterpillar type (second generation)	90m³/h	5 persons	Low sand transporting rate
Bucket lift type (third generation)	150m³/h	3 persons	Automatic sand unloading in conjunction with sand blending

SPY20 Fracturing fluid mixing skid

Liquid mixing, achieving online mixing and precise measurement of six liquid materials and one dry material, with an online mixing capacity of 20m³/min.

- Adopting a mixed main skid and powder tank skid split structure, with remote control function, achieving local unmanned operation;
- Mixing capacity 4-20m³/Min, with a maximum foam water ratio of 6%, can solve the problem of insufficient capacity of a single mixing equipment in large-scale fracturing construction.

Full electric drive fracturing continuous mixing skid

Digital fractrucing control command center realizing "one-key" fractrucing operation.

Instrument control skid

- Realize hybrid control of oil and electricity (20+20 electric drive equipment).
- Remote centralized operation of fracturing, sand blending, liquid preparation, and sand supply devices.
- Implement monitoring and display of equipment operating parameters and status throughout the entire process.
- Configure SOFE-Link remote monitoring system and build an intelligent data platform.
- Personalized design of internal structural form.
- Ring network control system.
- Remote image monitoring system.
- Independently developed data collection system.
- Single and double expansion silos structure.

Dual extension instrument skid

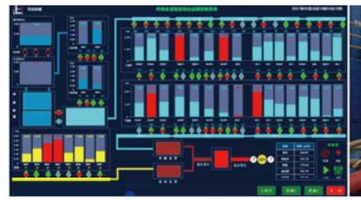
Single extension instrument skid

Fracturing control system

- The multi unit cluster control system has been tested and massively produced in the United States, making China the second country after the United States to have the ability to accept and export this technology in bulk.
- With a wireless network control system, the construction process data can be quickly entered, adapting to the needs of multi-stage automatic control.
- Establish fracturing equipment commissioning and testing devices to support the reliability verification of the control system.

One-key liquid supply automation

Realize the automation transformation of low-pressure processes such as liquid supply, liquid tank level, and liquid collection manifold. One key liquid supply, tackle automatic liquid level control algorithms, and develop automatic liquid level control software and systems. The fracturing liquid level can be automatically controlled during operation, achieving automation of all low-pressure processes. One person monitors in the control center, replacing the previous four person in valve reversing and inspection operations.

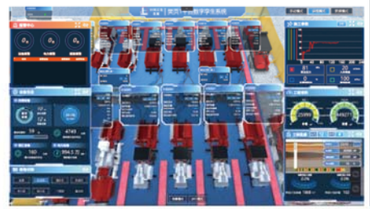


Control interface for automatic liquid supply

Modified liquid tank

Fracturing engineering digital technology

- Fracturing Engineering Digital Twin: Realistic presentation of the entire process of fracturing engineering, showcasing equipment health, load rate, operational efficiency, electricity, fluid supply, and sand usage; Based on the design of fracturing technology, analyze the real-time fluid supply, sand usage, power and energy consumption of each section, and form a comprehensive analysis report on fracturing engineering and equipment, providing reference for engineering decision-making.
- SOFELink Application Data: The digital intelligence IoT platform is based on a microservice framework to create a fracturing equipment database and cloud platform, which realizes microservice applications such as equipment status monitoring, remote support, remote operation and maintenance, and predictive diagnosis, providing a data platform for the entire life cycle of equipment.



Fracturing Engineering Digital Twin

SOFELink Application Data

Large-scale Fracturing Package

The fracturing unit consists of fracturing, sand blending, instruments, manifolds, and auxiliary equipment. The sand blending unit mixes the fracturing fluid and proppant and then delivers them to multiple fracturing equipment through a manifold; The fracturing equipment pressurizes the mixed liquid and injects it into the bottom of well through manifold; Instrumentation equipment monitors, analyzes, and records the operation process. In Fuling shale gas productivity demonstration area, hundreds of 2500/3000 fracturing trucks played a key role in shale gas fracturing construction, creating the shortest time record of the same scale in China.

Series Fracturing Pump Truck

Adopting a truck, skid or trailer structure, the entire unit has high integration, the max. output power of 3000hp per unit, and the max. pressure is 140MPa. It can be equipped with modules such as plunger video monitoring and chassis remote start/stop control to achieve remote monitoring of the equipment.

Model	Max. working pressure MPa(psi)	Power of engine kW(hp)
SYL3000Q-140(3000)	140(20000)	2350(3150)
SYL3000-140(3000)	140(20000)	2350(3150)
SYL2500Q-140(2500)	140(20000)	2235(3000)
SYL2300Q-140(2500A)	140(20000)	1860(2500)
SYL2000Q-105(2000)	105(15000)	1680(2250)
SYL2000-105(2000)	105(15000)	1680(2250)
SYL1600-105(1600)	105(15000)	1320(1800)
SYL1300-105(1300)	105(15000)	1120(1500)
SYL1000-105(1000)	99.5(14426)	1040(1400)
SYL900-70(900)	70(10000)	845(1135)

SYL2500Q-140 fracturing pump truck

SYL2000Q-105 fracturing pump truck

SYL1800-105 Fracturing pump truck

SYL3000-140Q fracturing pump

SYL2300Q-105 fracturing pump truck

SYL2000-105 fracturing pump

SYL1000-105 Fracturing pump truck

Series Sand Blending Truck

Sand blending equipment is the main supporting equipment for oil and gas field fracturing reservoir transformation, sand control, and acidification operations, mainly mixing, stirring, and transporting fracturing operation sand fluid and other media. The max. flow rate of the series products is 6-20m³/min, and it is driven by fully hydraulic electric control fluid. Multiple advanced technologies such as sand mixing automatic control, non-radioactive density meter, pulse sand adding can be selected, and matching sand blending equipment can be designed to user's needs.

Model	Max. displacement of sand pump m3 /min(bbl)	Max. sand conveying capacity of the output device kg/min(ppm)	Max. working Pressure MPa(psi)
SHS06(acidizing)	6(40)	3500(7700)	0.7(100)
SHS10	10(60)	5000(11000)	0.7(100)
SHS12	12(75)	7000(15400)	0.7(100)
SHS16	16(100)	10000(22000)	0.7(100)
SHS20	20(130)	11500(25300)	0.7(100)

SHS20(130bbl) sand blending truck

SHS16(100bbl) sand blending truck

SHS12(75bbl) sand blending truck

SHS20 Pulse sand blending truck

- Combining pulse and conventional processes to achieve pulse sand and fiber addition; SYL1000-105 Fracturing pump truck.
- Recycle pulse for 12-14S, with a maximum sand adding capacity of 0.266m³.
- Coordinated control of pulse sand adding capacity in the mixed conveying system.
- Two high-energy mixers in parallel to achieve high displacement requirements, with a backup.

SHS20(130bbl) pulse sand blending truck

Series Instrument Vans

Used for monitoring the entire process of fracturing operations, real-time collection, display, recording, and processing of fracturing operation data, and centralized control of multiple pump trucks and sand blending trucks in the fracturing units set.

Series Fracturing Manifolds Truck

- Pressure grade 105/140MPa.
- The high-pressure manifold adopts a 4"main path, which can connect 8-10 fracturing pump equipment.
- The low-pressure manifold adopts a large diameter direct connection structure to avoid sand settling and reduce friction.
- Optional straight arm and folding arm cranes can be used, hydraulic auxiliary support can effectively prevent rollover.

40 Манифольды на грузовой машине

Series Fracturing Fluid Continuous Mixing Equipment

- Meet the requirements of on-site preparation and pressure construction operations, achieve accurate and continuous uniform feeding and high-quality continuous liquid preparation, and effectively remove water bag powder.
- Computer fully automatic control, with real-time adjustment of mixing ratio and mixing speed.
- Truck mounted fracturing fluid continuous mixing equipment, one truck mounted, self powered, capable of independently completing operations, with a maximum mixing capacity of 4-12m³/min.

Fracturing fluid continuous mixing truck

Series Fracturing Trailer

The hydraulic fracturing trailer adopts a trailer chassis structure, and is used in oil field operation areas with open well pads and good road conditions such as plains, deserts, and Gobi in North America, the Middle East and Russia. The main pump adopts a series of long-life and high-power quintuplet cylinder hydraulic fracturing plunger pumps manufactured by SJ, which have outstanding advantages in single engine power, displacement, service life, and adaptability.

SYL2500Q-105T fracturing trailer

Series Sand Blending Trailer

- Adopting a trailer chassis, the power of the on-board power system is increased by 25%, with strong power.
- Integrated water supply centrifugal pump, with a max. displacement of 32m³/min under clean water conditions, which is 60% higher than conventional sand blending displacement, better meeting the needs of large displacement construction.

SHS20T(130bbl) sand blending trailer

Series Fracturing Skid (Diesel Engine Driven)

The diesel driven fracturing pump skid with a skid-mounted structure is suitable for oil field operation areas with harsh road conditions such as mountainous and hilly areas, and can be transported separately or as a whole. The main pump adopts a series of long life and high-power quintuplet fracturing plunger pumps manufactured by SJ, which have outstanding advantages in operational performance, service life, operation and maintenance costs, and adaptability.

SYL2300Q-105Q
fracturing pump skid

SYL2500Q-105Q
fracturing pump skid

Dry Fracturing Equipment

CO_2 Boosting device

Adopting a skid-mounted structure and equipped with dual booster pumps, one in use and one standby, with an output flow rate of 8m³/min. It has been used in over 300 well layers in Shengli Oilfield.

CO_2 Closed sand blending device

Equipped with a vertical sand tank with a volume of 23m³, suitable for CO_2 sealed continuous sand adding with a flow rate of 6-8m³/min.

Main technical parameter	
Temperature	-29℃ ~ 45℃
Max. displacement of booster device	8 m³/min
Max. working pressure	0.5 MPa
Capacity of closed sand blending device	23 m³

Fiber mixing truck

- It is used to provide fracturing fluid and fiber mixture when fracturing.
- Max. mixing liquid displacement: 4m³/min
- Max. fiber mixing capacity: 20kg/min

Light Duty Fracturing Pump Truck (Acidizing)

Model	Max. working pressure MPa(psi)	Power of Engine W(hp)
SYL600-70(YLC70-670)	70(10000)	700(520)
SYL400-70(YLC70-300)	70(10000)	540(403)
SYL300-70(YLC70-265)	70(10000)	450(336)

SYL600-70 fracturing pump truck

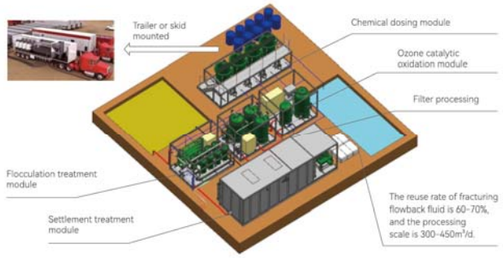
SYL400-70 fracturing pump truck

SYL300-70 fracturing pump truck

Auxiliary Fracturing Device

Fracturing fluid flowback device

The treatment device meets the requirements through a comprehensive process, selecting different treatment methods based on different water samples to reduce dependence on water resources and reduce treatment costs.



Electric Continuous Water-injection Skids

The electric continuous water-injection skid is a high-power electric pumping equipment designed for high-pressure water filling operations in oil fields based on the continuous working condition electric fracturing skid technology. It adopts mature grid electric drive and control technology, and the main pump adopts a series of long-life and high-power quintuplet fracturing plunger pumps manufactured by SJ. It has the characteristics of high water filling pressure, large displacement, and long service life under continuous working conditions. Currently, it is widely used in oil field water filling engineering.

- Based on the 5000 electric fracturing skid, power matching has been re carried out on the original foundation, with a motor power of 1600KW, suitable for pressure drive water filling conditions.
- According to the on-site power grid situation of the oil field, the VFD room can be equipped with two sets of distribution systems, 10kV/680V and 6kV/680V, so that the equipment can be suitable for different power supply voltage conditions.

Model	SYQ2000DQ	SYL2000QI	SYL4500Q
Plunger pump model	SQP3300	SQP3300	SQP2500×2
Type	Single pump	Single pump+ VFD	Dual pump
Max. motor power kW	1600	1600	3300
Rated voltage V	690	3300	690
Max. Output power hp	2000	2000	4500
Max. working pressure MPa	53(4.5")	62.5(4.5")	105
Max. displacement m³/min	2.6(4.5")	1.9(4.5")	2.6

SZQ2000D Water injection skid

05 COILED TUBING UNITS

Series Coiled Tubing Units (Truck-mounted/Trailer-mounted/Skid-mounted)

Based on the technologies introduced from international collaboration and developed by our ownself, we have owned the engineering and manufacturing technologies of core components (i.e. injector and reels) and system integration. Now we can provide truck-, trailer- and skid-mounted coiled tubing units with six levels of maximum pull force ranging from 50 to 620KN. Our CTUs have been widely used in domestic markets, and exported to international markets such as South America, Africa, the Middle East, Russia, and Indonesia.

Model	SLG50	SLG180	SLG270	SLG360	SLG450	SLG620
Max. pull capacity (lb/t)	11000/5	40000/18	60000/27	80000/36	100000/45	100000/63
Max. snubbing capacity (lb/t)	5500/2.5	20000/9	30000/13.5	40000/18	50000/22.5	50000/31
Max. speed (m/min)	60	60	60	60	48	48
Tubing dia. (in)	1/4"-1"	1"-2"	1"-2 3/8"	1 1/4"-3 1/2"	1 1/4"-3 1/2"	2"-4 1/2"
Tubing capacity (or customized)(m)	3/8"-6000	1.5"-4000	1.5"-4000	2"-5000	2"-6600	2"-8000
Working pressure (psi/MPa)	5000/35			10000-15000 / 69-103.5		

Injector Head Of Coiled Tubing Unit

- Lifting capacity ranging from 11K to 140K
- Tubing size ranging from 3/8" to 4 ½"
- 36"~120" goosenecks
- CCTV or counter option

SZR270 injector

SZR380 injector

SZR450 injector

SZR620 injector

Truck-mounted Series Coiled Tubing Units

SLG180 Coiled tubing unit

- Highly integrated design. No need to remove coil tubing and control pipeline, transportation as one unit.
- Integrated crane. The built-in cable slip ring is used for well logging.
- The equipment can be quickly dismantled by 4 people and installed within one hour, with efficiency increase by over 50%. One-well-service job can be done within a single day.

SLG270 Coiled tubing unit (one-truck)

- One load, quick transportation, adaptable to the oil field rough road conditions.
- Injector transported with coils to reduce on-site installation time.
- No need to plug on/ off hoses during on-site installation of injector and BOP.
- Integrated operation of the crane and hose reel, only 2-3 people needed to accomplish the operation.
- Two trucks or one additional pumping unit with controls integrated into the control cabin of a coiled tubing unit.

SLG270 Coiled tubing unit (two-truck)

SLG270 coiled tubing unit (main unit)

SLG270 coiled tubing unit (auxiliary unit)

SLG380 Coiled tubing unit (two-truck)

SLG380 coiled tubing unit (main unit)

SLG380 coiled tubing unit (auxiliary unit)

- Compact layout, visible pipe arrangement, easy operation.
- Low speed and stable control of injector satisfying the unconventional plug-drill operation.
- CCTV-enhanced visibility of the operation.
- Injector cradle and hydraulic gooseneck facilitating installation.

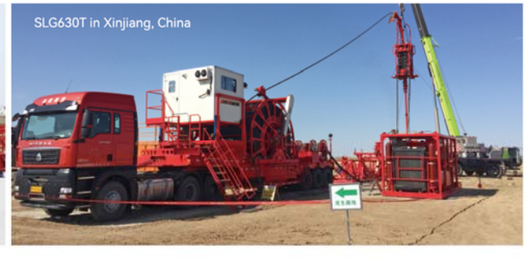
SLG450 Coiled tubing unit (two-truck)

SLG450 coiled tubing unit (main unit)

SLG450 coiled tubing unit (auxiliary unit)

- Separate layout to maximize the tubing capacity.
- One truck with multi-reels reducing the auxiliary operation time.
- Low speed and stable control of injector satisfying plug-drill operation.
- CCTV used for easy pipe arrangement.
- Edge tool for deep well unconventional oil and gas exploration.
- Main truck with separate skid-mounted tubing reel, in order to upgrading in the future.

Series Trailer-mounted Coiled Tubing Units



Series Skid-mounted Coiled Tubing Units

· Applicable to deep well unconventional oil & gas, and offshore oil & gas exploration.
· Flexible skid-mounted module to solve the problem of transportation limit.
· One of three skids integrating the power pack and control cabin.
· Dual-purpose tubing reel designed for truck and skid for easy transportation.

SLG380Q Skid-mounted coiled tubing unit (4-skids)

Power pack skid + control skid

Reel skid

Injector skid

SLG450Q Skid-mounted coiled tubing unit (3 skids)

Power control skid

Reel skid

Injector skid

SLG630DQ Electrical driven & automatic skid-mounted coiled tubing unit

Power control skid

Reel skid

Electrical driven & automatic configuration, 400V input voltage, capacity > 1000kVA, with high efficiency, low carbon and high level of automation.

Coiled Tubing Unit Automatic System

The ability and performance of conventional equipment meet the requirements of routine regular operations. Under continuous heavy load conditions, there are complicated operations and a high failure rate, low life and high safety risk. SJ has developed the automated coiled tubing unit, which realizes the safe automatic control and improves the construction efficiency and ensures the safety of operation, and can provide package equipment to promote the development of the coiled tubing operation in a digital and intelligent direction.

Coiled tubing unit automatic system

- Preset parameters of intelligent control, and can be switched between manual and automatic mode. In automatic mode with the safety setting, computerized control without person intervention. In case of exceeding the safety preset value, warn in yellow and optimize the operation via feedback control.
- Built-in protection program, the threshold value set to avoid mis-operation and accident.
- Enhanced by cloud technology, IOT and mobile Internet, the centralized management of equipment, operation status and operation parameters are monitored remotely.

Concentric Coiled Tubing Unit

- The concentric coiled tubing unit is designed for the operation requirements of under balance sand flushing, production formation testing, dual fluid pumping service.
- Inner tubing is added to the existing single channel coiled tubing to form double channels of the inner tubing and annulus.
- Under balance flushing is achieved by installing a vacuum jet pump
- Suitable for low pressure and well loss.
- Small ID, and low required displacement.
- 2" x1" (35 35MPa outer tube, 70MPa inner tube), the tubing capacity can be customized to customer requirements.

Wellhead Support Device

- The wellhead supporting technology and device solution are provided in order to solve the problems such as high cost and safety risk of CTU crane.
- Installation of supporting platform or mast to eliminate crane.
- All-direction adjustment facilitate wellhead alignment and the service with different height.
- Reduce the installation workload and enhance the installation efficiency.
- Reduce the load on the wellhead and increase the operation stability.

Multi-function Heavy Duty Spooling Device

- The circulating manifold system to realize the dual functions of quick changing working reel and spooling.
- The reel of quick changing and adjustable structure realizes the rapid replacement of coiled tubing and shipping reel with different sizes.
- Automatic level-wind system to eliminate manual spooling.
- Especially suitable for speedy tubing operation, reduce the spooling process, improve the efficiency and tubing fatigue life.
- Suitable for the lifting limit of the offshore platform.
- Max. torque 60kN.m, Rated load 60t, Dead weight 8t.

Plug-drill Pumping Unit

The equipment is integrated with both mixing and pumping functions, to realize the function of pumping-while-mixing. The skid-mounted electric plug-drill pumping unit is of double engine double pump, using the grid power as the power source, low noise, low energy consumption, low carbon, low emission, environmental protection and energy saving. It has solved the wasted power caused by the joint operation of two fracturing pump trucks with mixing equipment in the domestic plug-drill service.

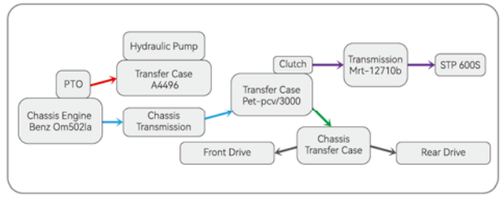
Model	SZB1000 electric plug-drill pumping skid	SZB1000 plug-drill pumping truck
Model, plunger pump	STP1000 × 2	STP1000 × 2
Max. W.P.	64MPa	64MPa
Max. displacement, single pump	1500L/min	1500L/min
Liquid mixing type	Liquid+Liquid, Solid+Liquid	Liquid+Liquid, Solid+Liquid
Additives	≥2	≥2
Continuous working hours	> 8 h	> 8 h

Plug-drill pumping skid

Plug-drill pumping truck

SKB70 Air Compressor Pumping Truck

The equipment serves with a coiled tubing unit, heating and pumping of different media and flushing the inner wall of the coiled tubing after completing the operation.



Min. displacement,pump (L/min)	20
Max. pressure,pump (MPa)	70
Max. Pressure, air compressor (psi)	1000
Max. displacement,air compressor (m³/min)	2×1.86
Boiler outlet water temperature(℃)	95
Rated displacement, boiler(L/min)	400

Equipment Integration Solution For Coiled Tubing Units

Develop the integrated supporting technology of ground equipments for coiled tubing units and downhole tools.

06 SNUBBING UNITS

SDYJ160 remote control snubbing units

The operation of the snubbing equipment does not require any kill well or bleed off, which can directly carry out downhole jobs. It is an ideal opeation unit featured with environment protection and energy saving. Combined the cooperation with the international technology transfer and independent innovation, SJ successfully developed and mass produced new types of SDYJ series snubbing units featured with safety, environmentally friendly and energy-saving. Fully hydraulic drive, maximum lifting load ranging from 400 to 2700 kN, including independent type and auxiliary type, with skid-mounted, trailer-mounted and truck mounted types, suitable for various operation conditons, such as land, lakes, oceans, etc.

Series Snubbing Equipments

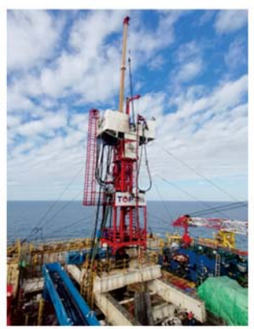
Model	Max. lifting load kN(lb)	Max. Snubbing load kN(lb)	Engine power kW(hp)
SDYJ40	400(90000)	280(63000)	175(235)
SDYJ70	675(135000)	350(135000)	242(325)
SDYJ90	900(202500)	550(1242000)	287(385)
SDYJ110	1125(253000)	850(191000)	335(450)
SDYJ160	1575(354000)	1000(225000)	354(475)
SDYJ225	2250(506000)	1160(261000)	403(540)
SDYJ270	2700(608000)	1700(382160)	403(540)

SDYJ225D (skid-mounted stand-alone type)

SDYJ225D working in Venezuela

SDYJ270 (for ship)

SDYF70 (auxiliary type)

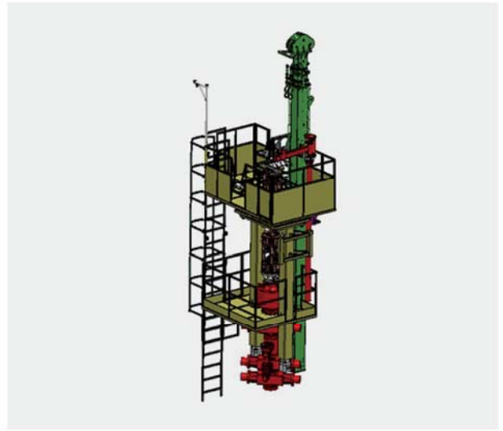


SDYJ225 on offshore platform

Snubbing Unit For Medium And Low Pressure Oil Well

- Suitable for trip in and out of tubulars, flush by and well flush in the 21MPa working pressure.
- Structure type: auxiliary and integrated, well control, raising and control system integrated, can be operated with workover rig and drilling rig by only one person.
- Transportation and installation as one unit, improving the mobilization efficiency by 50% and reducing the cost by 30%.

Model	DYJ40-120
Max. lifting load kN	400-1200
Max. snubbing load kN	200-600
Pipe size	1"~3-1/2"
Lifting speed m/s	0,8
Snubbing speed m/s	0,7
Stroke m	3.05/3.5



Series Snubbing Unit For High Pressure Oil And Gas Wells

- Suitable operating pressure 35 ~ 70 MPa, lifting load 700 ~ 1600 kN.
- Standalone HPU and PLC, 3-stage well control of work, safety and emergency well pressure, configured with double-protection of top anti-collision and tubular bending, CCTV and data acquisition system.
- Modular design, adapted to the complex well site transportation and installation.

Model	DYJ70-160
Max. lifting load kN	700 ~ 1600
kN Max. snubbing load	350 ~ 800
Pipe size in	1~7-5/8
Working pressure MPa	35 ~ 70
Rotating torque kN.m	20
Raising up speed m/s	0.8
Snubbing speed m/s	0.6
Stroke m	3.05/3.5

SDYJ225D operating in Venezuela

SDYJ225D operating at Fuling shale gas (skid-mounted stand-alone type)

SDYJ160D operating in Thailand (skid-mounted stand-alone type)

SDYJ160D operating at Fuling shale gas (skid-mounted stand-alone type)

Snubbing Unit For Deep Oil And Gas Extraction

- Suitable for snubbing operation for deep shale oil and gas, long lateral well (more than 2500m).
- Working pressure 105MPa, torque 30kN.m, Max.tublar 9-5/8".
- Multiple control for power and well pressure, trip in and trip out speed is 26~30 joints per hour.
- Multiple operations for trip-in / out and rotating of tublars.

Model	DYJ160-270
Max. Lifting load kN	1600 ~ 2700
Max. snubbing load kN	800 ~ 1350
Pipe size	2-3/8" ~ 9-5/8"
Working pressure MPa	105
Rotating torque kN.m	30
Cylinder (eas)	4

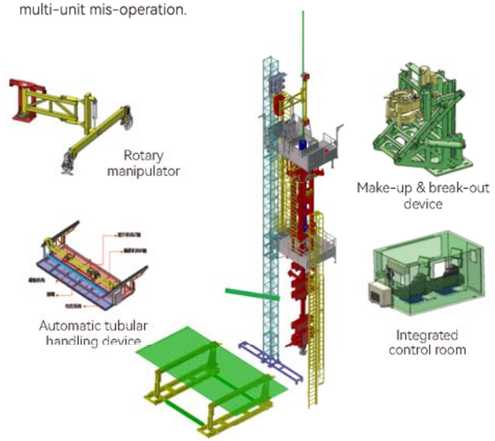
Remote Control Snubbing Unit

- We have successfully developed the remote control system of snubbing unit for real-time monitoring and logical analysis of the operation status.
- The main and assistant operators can control the slip, cylinder, working BOP and other components in the remote control room.
- It solves the problems of mis-operation and clamping, and reduces the risk of snubbing operation.

Automated Snubbing Unit

The automated pipe handling system is integrated on the basis of the remote control snubbing unit. By using sensing detection and process logic interlocking control technology to accurately grab, deliver and auto make-up & break-out, the high position operation platform can be unmanned.

- Multifunctional rotary manipulator realizes automatic handling and grabbing of operation tubular.
- The conveying device realizes the vertical conveying of tubular and the accurate positioning of the make-up & break-out.
- The ground integrated control system realizes the automatic coordination control and management of the whole operation process.
- 1~2 people are required for ground remote control to solve the risk of multi-unit mis-operation.



Automated pipe handling system for snubbing unit

Hydraulic Workover Equipment

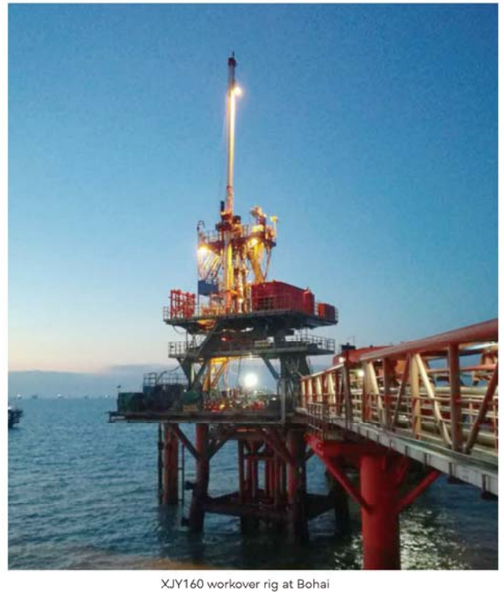
It is an innovative stand-alone full-hydraulic workover equipment based on our research experience of offshore workover rigs and stand-alone snubbing units in combination with offshore platform workover operation need.

Compared with the conventional workover rigs with the mechanical drive, high mast and complicated structure, it is fully hydraulically powered. Hydraulic cylinders and hydraulic motors will accomplish the lifting, snubbing and rotating of tubing. with the advantages such as heavy load, large torque, optimized centralized control of operation console and convenient operation.

This equipment is featured by simple structure, compact layout and light weight. It is fitted with hydraulic skidding base and integrated wellhead device, meeting the requirements for offshore cluster-well operation and integral movement. Its successful development has filled the void of high-end offshore hydraulic workover rig in China, with 8 national patents awarded.

- Suitable for high-dense cluster wells, small well site and offshore platform.
- Modular lightweight design, the single module is less than 8T.
- Rapid movement between wells, and the cost of installation and transportation is 30% less.

Model	XJY160-270
Max. lifting load kN	1600 ~ 2700
Max. snubbing load kN	800 ~ 1350
Pipe size in	2-3/8" ~ 9-5/8"
Rotating torque kN.m	~30
Stroke m	3.05/3.5
Cylinder (pc)	4



XJY160 workover rig at Bohai

07 HIGH PRESSURE FLUID CONTROL PRODUCTS

We can offer various high pressure fluid control elements with sizes ranging from 1"~5" and pressure from 7-175Mpa (1000-25000psi), including swivel joints, plug valves, gate valves, check valves, emergency unloading valves, unions, line pipes, flanges and integral connections, and design and produce series products such as drilling fluid manifolds, cementing and fracturing manifolds, offshore manifolds, high pressure ground testing device, and provide some custom-made high pressure manifold system and complete solutions for desert or offshore environments.
These product all meet API 6A, API 16C Specs, Special Equipment Manufacturing License (Grade A), Petro China Well Control Equipment Qualification, and ABS certification standards, and have been awarded Hubei Top Brand and China Petroleum and Petrochemical Top Brand.

High Pressure Fluid Control Elements

Item	Type	Description	Environment	Size	Working pressure
1	Valves	Plug valve	Normal, H_2S	1" ~ 4"	35 - 175MPa
2		Check valve	Normal, H_2S	2" ~ 4"	35 - 175MPa
3		Safety valve (emergency shutoff valve)	Normal	2"	105 - 140MPa
4		Mud valve	Normal, H_2S	2" ~ 5"	35 - 175MPa
5		Needle choke valve	Normal, H_2S	2" ~ 3"	105 - 140MPa
6		Drilling choke valve	H_2S	2-1/16" ~ 3-1/16"	35 - 105MPa
7		Gate valve	H_2S	2-1/16" ~ 7-1/16"	35 - 140MPa
9	Swivel joints	Swivel joint	Normal, H_2S	1.5" ~ 4"	35 - 175MPa
10	Line pipes	High pressure straight pipe	Normal, H_2S	2" ~ 4"	35 - 175MPa
11	Integral connections Unions	Integral connections (Ells, Tees, Wyes, Crosses, Laterals)	Normal, H_2S	2" ~ 4"	35 - 175MPa
12		Union assy	Normal, H_2S	1" ~ 4"	35 - 175MPa

Fracturing Manifolds

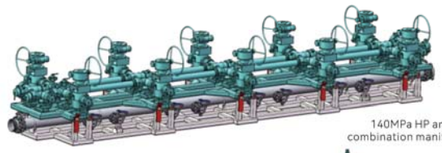
Type	Main bore	Qty of passages	Pressure rating	Size of bypass	Displacement
Union type	3" (69.8mm)	2/3	105/140MPa/175MPa	2" / 3"	Combined 18m³/min
	4" (89.7mm)	2	105MPa	2" / 3"	
Flange type	4 1/16" (103mm)	2	105/140MPa	3"	Max. 27m³/min
	5 1/8" (130mm)	1	105MPa	3"	
	7 1/16" (180mm)	1	105/140MPa/175MPa	3"	

High-pressure manifolds for conventional and unconventional oil and gas fracturing operation, widely used in global oil and gas fields.
3"~7-1/16" series fracturing manifolds for high-pressure and large displacement fracturing operations for shale gas and oil development.

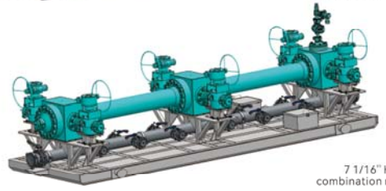
Series flanged large-diameter fracturing manifolds

We have developed 5-1/8" to 7-1/16" series flanged large-size fracturing manifolds for the requirements for large-scale shale gas fracturing operations of high displacement, high pressure and long operation hours, realizing full flanged connection of ground manifolds.

- Flanged large-diameter fracturing manifolds.
- Resistant to erosion, sand settling and corrosion.
- Low vibration, low fatigue failure rate.
- Good stability, high safety and long life.



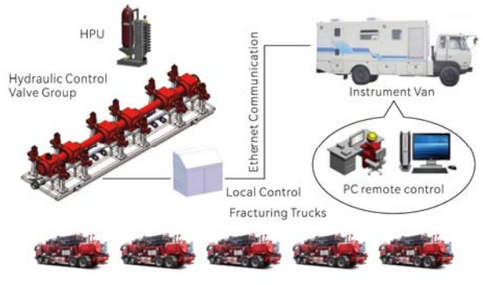
140MPa HP and LP combination manifolds



7 1/16" HP and LP combination manifolds

- Union type fracturing manifolds.
- Easy installation and maintenance.
- Lightweight, easy for handling and transportation.
- Good compatibility for any fracturing job.
- Metal sealing for higher safety.
- One flanged piping can replace multiple union piping.
- Reduce potential leakage by 75%.
- Nearly 50 sets of large-diameter manifolds are in service, with the longest life being more than 2500 hours.

Remote centralized controlled LP and HP manifolds system



175Mpa Large-size Remote-Controlled Fracturing Manifold Device

We have developed 3" to 7-1/16" series high pressure fracturing manifolds for conventional and non-conventional fracturing operations for shale gas and shale oil, providing integrated solution for large-scale fracturing manifolds.

- Remote and local control of HP valves.
- Automatic control of interlock between plug valves and fracturing truck.
- Reduce risk and labor intensity.

140MPa Large-size Remote-Controlled Fracturing Manifold Device

Large-size Fracturing Wellhead Quick Plug-in Device

The large diameter fracturing wellhead quick plug-in device independently developed by SJ can achieve single channel quick connection of multiple shale oil (gas) fracturing wellheads, and is the first quick-inserting device in China to adopt the form of large diameter swivel joints. The development and application of this device can further reduce the number of fracturing manifolds and operation costs, leading to full electrified and automated fracturing engineering services.

- We have developed large-size quick connection fracturing manifold system, with single channel connection from manifold skid to wellhead, reducing quantity of wellhead manifold and labor intensity, and realizing quick switch connection of wellhead pumping lines.
- No need of diversion manifolds and multiple piping, reducing operation cost and promoting efficiency.
- Quick connection fracturing manifold system: 5-1/8"-15K (bore:130mm), meeting the connection for three wells with 5m well space.

Nomimal bore	5 1/8"
Rated pressure	15000psi
Material grades	AA
Temperature class	PU

5-1/8"-15K Fracturing Quick Plug-in Device

5-1/8"-15K Flange Telescoping Compensator

5-1/8"-15K Large-size Swivel Joint

Full flanged fracturing manifold system

The single channel fracturing manifold connection technology at the wellhead has changed the traditional connection method of multiple union piping to the wellhead, providing a safer, more efficient, and simpler manifold connection method for single or multiple wellhead fracturing operation.

Size	Main Bore (mm)	MAX. displacement
5 1/8"-15K	130	14.6 square/min
7 1/16"-15K/20K	180	27 square/min

Fracturing Wellhead Protector

A fracturing wellhead protector is installed on the wellhead ready for fracturing operation, and the fracturing fluid will directly enter the well through the protector, and the Christmas tree will no longer bear the fracturing pressure.

Rated working pressure	105 MPa
Diameter	40 mm
Product specification level / performance rating	PSL3 / PR1
Material grade /temperature class	EE / P + U (-29 ° C ~ 121 ° C)

Fracturing Diversion Manifold Skid

The fracturing diversion manifold is a device for centralized distribution of high-pressure fracturing fluid from the fracturing manifolds, with three available structural forms: straight, U-shaped, and H-shaped.

Max. Working pressure	105 / 140MPa
Main bore	5-1/8"
inlet / outlet	3"FIG1502
Size of fracturing head	5-1/8" 140MPa -3"FIG1502 F

105MPa Fracturing Diversion Manifold Skid

140MPa Fracturing Diversion Manifold Skid

175MPa Ultra High Pressure Fluid Control Products

The 3 "-175MPa high-pressure fluid control product is one of the important achievements of the National" 13th Five Year Plan "Key Special Project, and is currently the first creative technology. It can increase the safety margin of high-pressure manifold products by more than 30%, further reduce operational risks , and provide manifold technology solutions for ultra deep oil and gas development

Rated working pressure	1175MPa 25000psi
Nominal bore	3" (76.2mm)
Material grade	AA
Temperature class	PU (-29°C—+121°C)
Working medium	slurry, frac fluid, etc.

Lubricators

A lubricator is a straight pipe with special interface form at both ends, installed between a stripper and the BOPs for CTU operations, used to seal the downhole pressure when lifting and lowering the downhole tool string.

Rated working pressure	105/70 MPa
Nominal bore	3-1/16", 4-1/16", 5-1/8"
Common interfaces	CB34, CB44, CB46, CB54, CB56
Material grades	DD, EE

Testing Manifolds

- Nozzle manifolds: Electric control, simple structure, easy maintenance, high reliability .
- Desander: Applicable to the ground testing process for oil fields containing sulfur and sand, removing solid particles such as fracturing sand in the return fluids, and protecting downstream equipment.
- Filtering type desander and cyclone type desander.

High Pressure Wellhead Desander

The equipment is suitable for the ground testing process of wellheads with sulfidation and bulk sand production in oil fields. There are two types of cyclone type and filtering type, which can effectively purify solid particles such as formation sand, fracturing sand, and cuttings in wellhead flowback fluid to protect the downstream test equipment, avoiding the pipeline body and nozzle from being eroded and blocked.

	Filtering type	Cyclone type
Max. degassing capacity	140x105m³/day	140x105m³/day
Max. desanding capacity	580m³/day	580m³/day
Working pressure	15000psi	15000psi
Allowable pressure differential	700psi	700psi
Material grade	EE-1.5	EE-1.5
Sand barrel volume	≈ 50L	≈ 140L

Other Manifolds

HP manifolds for special purpose


Lubricator adapter


Coiled tubing rotating joint 130-105 flange telescoping compensator

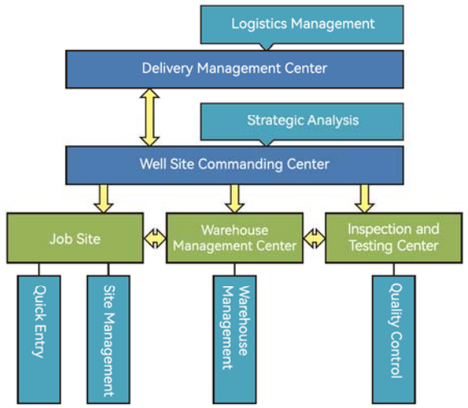

Deep water connector

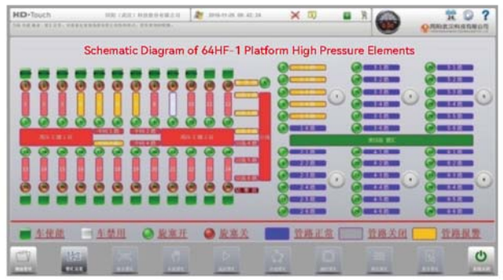

Wellhead protector

180-140 Large diameter check valve

Full life cycle management system for HP manifolds

- Realize specialized entire process information management for high-pressure manifolds, including product shipping, warehousing, on-site construction, testing, and procurement decision-making.
- Safe, timely, and efficient entire life cycle information traceability, , achieving digitalization of high-pressure manifold information management and automation of usage time calculation.
- High pressure manifold electronic ID card , automatic calculation of usage time, detection and service life alarm, automatic generation of demand reports and well site structure diagrams, and other functions.





Drilling Fluid Manifolds

- 3"-5" 70Mpa drilling fluid manifolds are available, meeting the complete rig manifold requirements.
- Our self-developed 5" 70Mpa drilling fluid manifolds can meet the service requirements for high pressure and high displacement of deep well drilling rigs.
- Our low temperature drilling fluid manifolds can meet the operation requirements at as low as -46℃ in extreme cold areas like Russia.
- The remote control of ground manifold valves can reduce the labor intensity and safety risk.


Drilling fluid manifold for NDC Project, Abu Dhabi


Manifolds for 9000m drilling rig


Arctic manifolds for Haihua Project

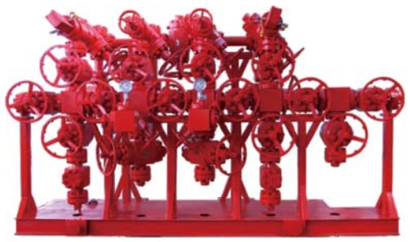
- Our choke and kill manifolds for land and offshore drilling rigs cover the conventional service and H2S service environments.
- Automated remote control, data monitoring, etc.
- We have rich experience in the design and manufacturing of high pressure manifolds for offshore platforms.

Mud Pump Combination Manifolds

Onshore Kill Manifolds

Onshore Choke Manifolds


Cementing Manifolds


Offshore Choke and Kill Manifolds

Pipeline Quick Release Device

Nominal bore	3"
Connection type	FIG1502
Pressure rating	105MPa
Working pressure for cylinder	16MPa
Material grade	AA
Temperature class	P-U (-29℃~+121℃)
Product specification level	PSL3
Performance rating	PR1

08 OFFSHORE EQUIPMENT

SJF450DB Automated offshore drilling rigs

SJ is a backbone enterprise of manufacturing offshore oil drilling and production equipment in China. Based on strong R&D and manufacturing capability of onshore oil drilling and production equipment, SJ has entered the field of offshore engineering equipment since the early 1990s, and has maintained leading advantages in technology and performance in offshore fixed platform drilling rig, offshore cementing & fracturing equipment, offshore manifold products. The products of the National Technology Innovation Excellent Project Award are distributed in the Bohai Sea, the East China Sea and the South China Sea, and exported to the international market. Four fixed platform drilling rigs have been operating in China's Bohai Sea, and exported to the United States, Malaysia and other countries. SJ has accumulated technological knowledge to build 9000m jack-up offshore platform drilling package and 25000hp offshore fracturing vessel.

3000HP Drawworks of offshore drilling rig

Jack-up Drilling Rig

Model	MAX. hook loab kN(lb)	Drawworks rated power kW(hp)
SJK450DB	4500(100,0000)	1470(2000)
SJK675DB	6750(150,0000)	2200(3000)
SJK900DB	9000(200,0000)	4413(6000)

- Derrick 56 m.
- Drawworks Horsepower 3000 HP.

SJK675DB Jack-up drilling rig

SJK450DB Jack-up drilling rig

Jack-up drilling/ workover rig

Fixed Platform Drilling Rig, Lightweight Offshore Drilling Rig

Model	MAX. hook loab kN(lb)	Drawworks rated power kW(hp)
SJF180DB	1800(400000)	550(750)
SJF225DB	2250(500000)	735(1000)
SJF315DB	3150(700000)	1100(1500)
SJF450DB	4500(1000000)	1470(2000)

- Optimized module design, 30% lighter than the same type of offshore drilling rig.
- It adopts bootstrapped mast, and can choose main drawworks or hydraulic winch for installation, which is suitable for offshore installation and maintenance.
- Symmetrical arrangement for easy maintenance and high safety redundancy drawworks for offshore rigs.
- The whole area of toxic and combustible gas monitoring and alarm system, the rig has explosion-proof design to ensure safety.
- The substructure has fully enclosed sewage collection structure. It is green and environmentally friendly.

Fixed platform drilling rig

Fixed platform drilling rig

Fixed platform drilling rig

HZJ315DD Lightweight fixed offshore drilling rig

Fixed Platform Workover Rig

Model	MAX. hook loab kN(lb)	Drawworks power kW(hp)
SHXJ90	900(200000)	257 ~ 330
SHXJ112	1125(250000)	280 ~ 400
SHXJ135	1350(300000)	330 ~ 450
SHXJ158	1575(350000)	400 ~ 500
SHXJ180	1800(400000)	450 ~ 600
SHXJ225	2250(550000)	550 ~ 735

- The upper and lower sliding double-layer substructure which can slide up and down can be longitudinally and horizontally sliding to each wellhead of the cluster well, and the top drive can be installed.
- Power drives include diesel engine, DC/AC frequency conversion, hydraulic, hybrid drive, etc.
- Guylineless double section mast with telescopic cylinder for easy installation, maintenance and avoidance of drilling vessels in the sea.
- Module design is easy to lift.Lightweight and excellent capability.
- The structural parts are treated with marine anticorrosive technology such as spraying aluminum and hot dip galvanizing.

SHXJ180 offshore workover rig

SHXJ158 offshore workover rig

HXJ135 offshore workover rig

Removable Offshore Workover Rig

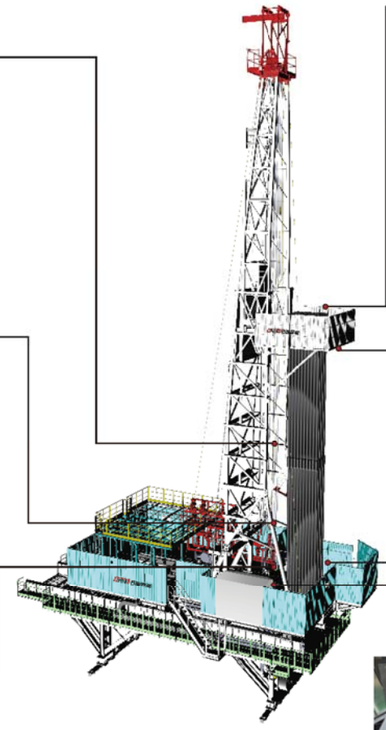
- Platform crane can be used for mobilization, no need to use floating crane, which can reduce costs and improve equipment utilization.
- Based on the platform crane capacity, the maximum lifting module can be designed up to 8T-30T.
- Easy-to-relocate modular structure, the relocation cycle can be controlled within 20 days.

Automated Offshore Drilling / Workover Rig

Hydraulic elevator
- The anti-freezing design of hydraulic elevator can prevent its failure caused by the frozen liquid from the pipe string.

Hydraulic elevator
- Fast and convenient dismantling and installation.
- Handling of string in 3 directions.

Pneumatic slip



Power racking board
- Automatically adjustable fingers.
- Satisfying the arrangement of different pipe strings.

Mechanical arm on RB
- Hydraulically driven folding arm
- Small size, light weight
- 2 7/8 ~ 9" Wide range of pipe holding

Iron roughneck
- Large stroke, wide torque
- Application: 2 7/8 ~ 9"
- Torque is automatically adjusted for different strings.

Integrated control system
- Independent integrated control system.
- Communication and interaction with the drilling rig electronic control system is simple, efficient, safe and easy to maintain.

Offshore Workover Rig With Substructure Integrated With Solid Control System

- The mud tank and substructure are integrated to save platform space.
- The wide, dual-module substructure is arranged vertically under the base, and can slide to avoid the space above the solid control equipment, facilitating the maintenance of the solid control equipment.

Offshore Rig Bulk System

- The gas-solid two-phase flow technology is adopted to support long-distance and closed efficient conveying operations between storage tanks between ships and offshore platforms.
- Realize the control, monitoring and tracking of the automatic conveying of slurry barite and dry cement to reduce labor intensity.

Offshore Rig Bulk System

Offshore Cementing Equipment

Model	Max. WP MPa(psi)	Max. Displacement L/min(GPM)
SGJ600-30Q(GJQ100-30)	97.5(14137)	3050(794)
SGJ600-33Q(GJQ70-30)	70 (10150)	3379(893)
SGJ600-37Q(GJQ55-35)	55(7976)	3767(996)
SGJ600-42Q(GJQ45-42)	45(6526)	4210(1112)
SGJ400-30Q(GJQ75-35)	75 (10875)	3504 (806)
SGJ400-27Q(GJQ95-27)	95 (13775)	2733 (722)
SGJ350-30Q(GJQ50-30)	50 (7251)	3000(792)
SGJ350-25Q(GJQ70-25)	70(10150)	2500(660)

The product has a compact structure, small footprint, convenient lifting and transportation, meets the special requirements of anti-corrosion and explosion-proof operations of offshore platforms, and adapts to cementing operations in oilfields such as ocean, desert, tidal flats and narrow well site operation space.

SGJ600-30Q Offshore cementing skid

Offshore Fracturing Sand Prevention Unit

Offshore fracturing sand prevention unit is used for high-density and low-density gravel sand prevention construction, pressure sand filling operations, acidification and fracturing operations in offshore oil operations. The equipment can meet the requirements of high pressure and large displacement during oil well sand prevention operations.

SYLQ2000-1050
Fracturing skid

Skid Mounted Offshore Pump

SZQ600-13
Skid mounted offshore pump

25000HP Offshore Stimulation Vessel

Vessel data	
Total length	99.9м
Width	22м
Depth	9.9м
Main power	6700 Квт x 4
Cruise speed	13 knot
Endurance mileage	10000 sea mile
Endurance time	60 days
Personnel	54
GPS	DP2
Applicable sea conditions	Significant wave height 3.0, magnitude-7 wind, 1.5-knot flow

Performance data	
High pressure pumping system	5000hp frac pump, 5 sets
Total installed HHP	25000hp
Max. displacement of a single unit	2.45m^3/min(79MPa)
Max. pressure	15000psi(105MPa)
Continuous mixing	16m^3/min×2
Sand blender	20m^3/min×2
Acid mixing equipment	3.5m^3/min
Fluid preparation and storage	150 m^3
Fluid storage	1000 m^3
Proppant	700 m^3
High pressure hose reels	2×4" 15000psi(105MPa)-300ft

Electric fracturing pump skid

Sand blender skid

Fluid mixing skid

25000HP Offshore Stimulation Vessel

09 MARKET & AFTER-SALES SERVICE

Service Principle:
“Repair First, Claim Secons”

Treat Market with Respect,
Serve Customers with Gratitude.