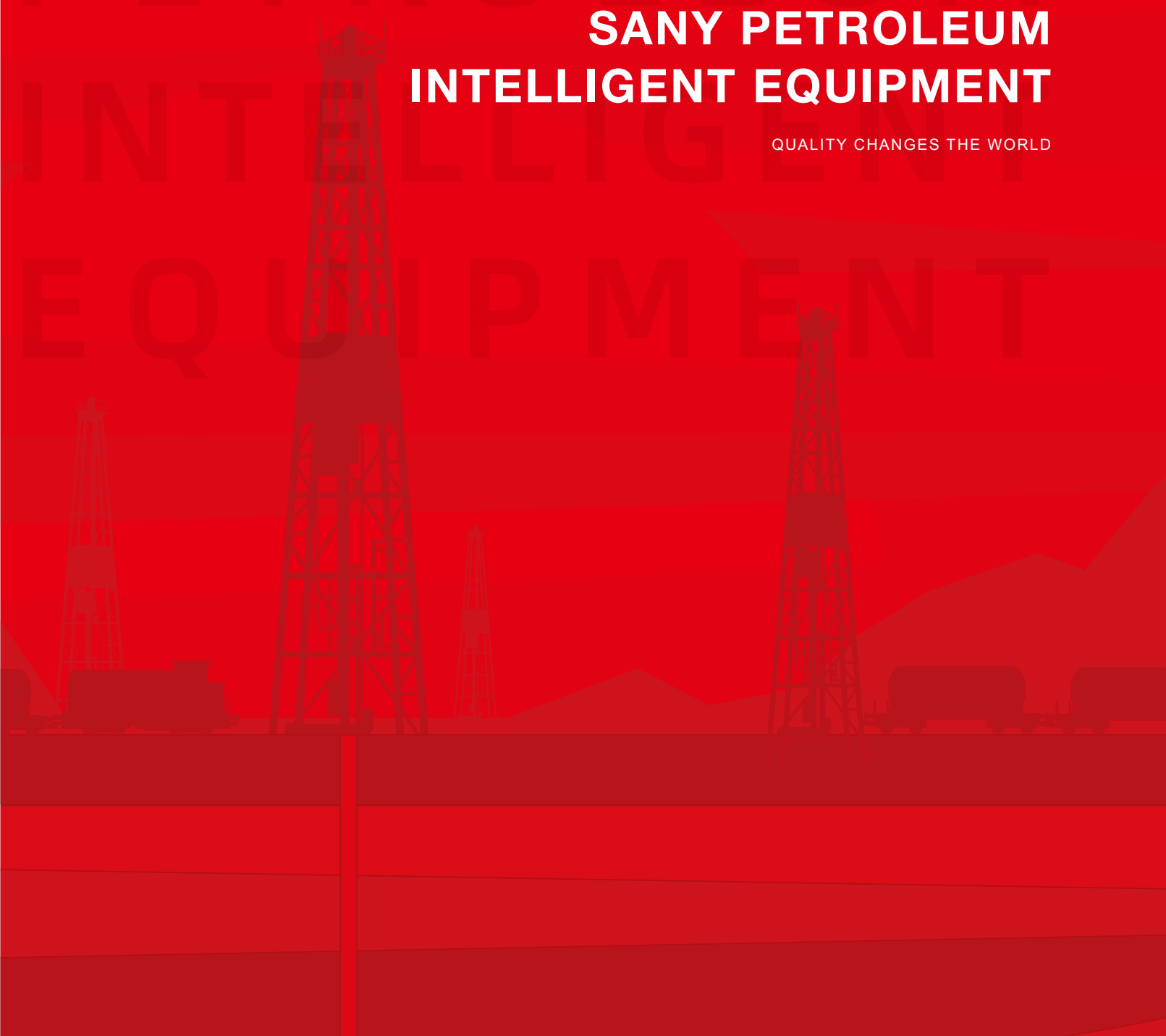




# PETROLEUM INTELLIGENT EQUIPMENT

**SANY PETROLEUM  
INTELLIGENT EQUIPMENT**

QUALITY CHANGES THE WORLD



# SANY PETROLEUM INTELLIGENT EQUIPMENT



QUALITY CHANGES THE WORLD

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SANY Oil, one professional company engaging in the R&D and manufacturing of complete sets of oil and gas field equipment, EPC general contractor, and oilfield technical service, founded in 2013, is committed to providing customers with safe, efficient, intelligent, environmental protection complete sets of oil equipment, comprehensive solutions, and integrated service.

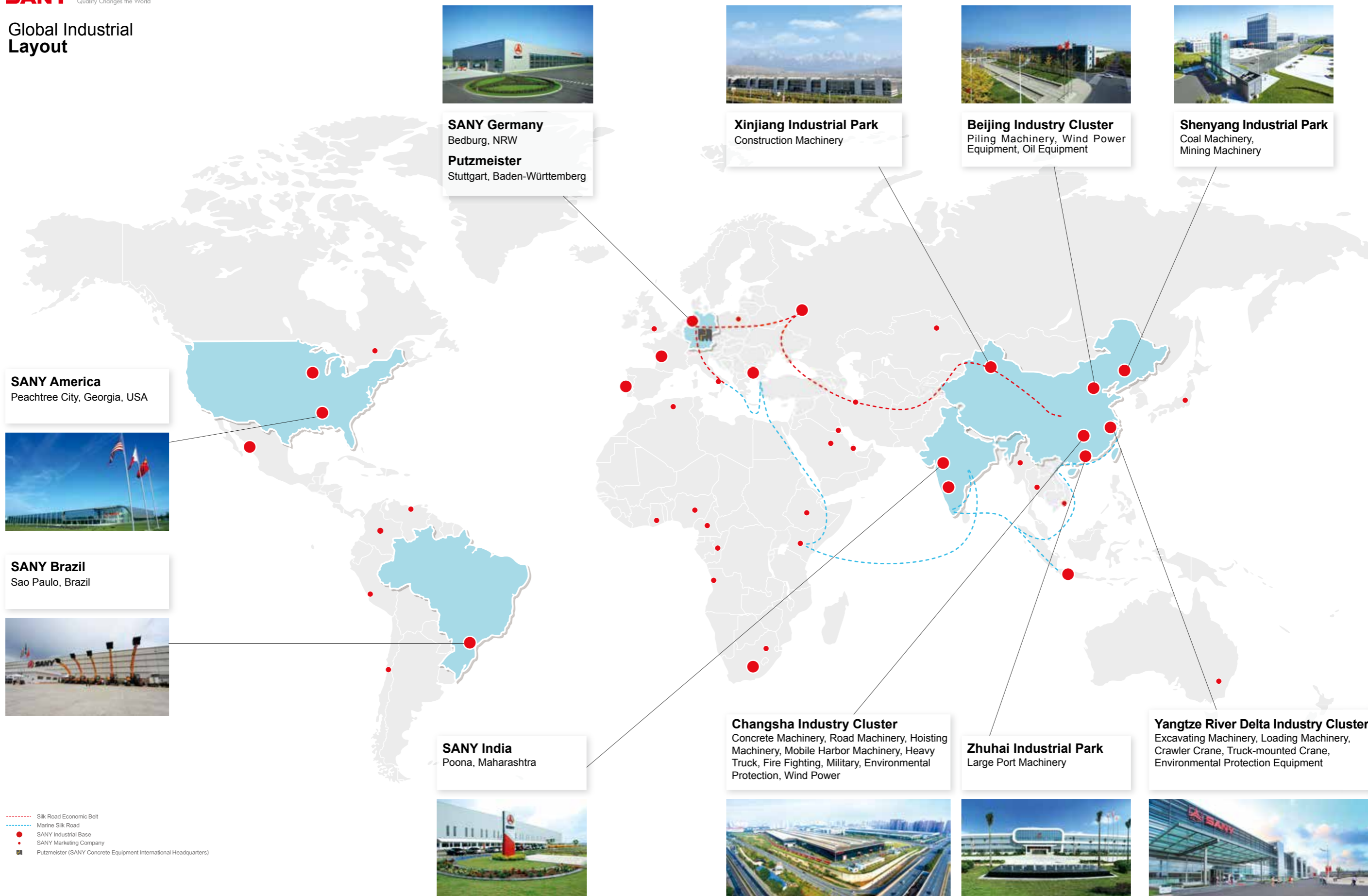
SANY Oil is positioned as the core energy business section of the SANY Group and has R&D, manufacturing, and oilfield service bases in Beijing, Changsha, Zhuzhou, Chengdu, and Karamay, and is the industry leader in equipment manufacturing, manufacturing environment, and automation level. SANY Oil Zhuzhou Industrial Park has been officially put into use since 2022, with a total project investment of 5 billion yuan. The park will become the demonstration park of the energy equipment industry for manufacturing upgrading, industry convergence, and ecological integration.

# SANY PETROLEUM INTELLIGENT EQUIPMENT





# Global Industrial Layout



**SANY America**  
Peachtree City, Georgia, USA



**SANY Brazil**  
Sao Paulo, Brazil



**SANY Germany**  
Bedburg, NRW  
**Putzmeister**  
Stuttgart, Baden-Württemberg



**Xinjiang Industrial Park**  
Construction Machinery



**Beijing Industry Cluster**  
Piling Machinery, Wind Power Equipment, Oil Equipment



**Shenyang Industrial Park**  
Coal Machinery, Mining Machinery

**SANY India**  
Poona, Maharashtra



**Changsha Industry Cluster**  
Concrete Machinery, Road Machinery, Hoisting Machinery, Mobile Harbor Machinery, Heavy Truck, Fire Fighting, Military, Environmental Protection, Wind Power



**Zhuhai Industrial Park**  
Large Port Machinery



**Yangtze River Delta Industry Cluster**  
Excavating Machinery, Loading Machinery, Crawler Crane, Truck-mounted Crane, Environmental Protection Equipment



- Silk Road Economic Belt
- Marine Silk Road
- SANY Industrial Base
- SANY Marketing Company
- Putzmeister (SANY Concrete Equipment International Headquarters)

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# Frac Spread

Quality Changes the World





## Mechanical Fracturing Pump Unit

### High Reliability During Construction :

- Automatic fire extinguishing system improves operation safety
- High strength stainless steel valve box improves the construction reliability under different working conditions
- The independently developed integrated pump housing structure ensures smooth oil return and good lubrication

### Upgraded Intelligence and Convenient Operation :

- Advanced wireless construction transmission technology
- Intelligent maintenance system and fault code visual analysis system
- Mobile APP of fracturing equipment intelligent management system, real-time online diagnosis of equipment information

### First-class Configuration, Safe and Reliable :

- MTU, CAT, Cummins, Allison, Twin Disc, ZF and other international first-class brands are adopted, with reasonable power matching and superior performance
- High quality packing and valve rubber can increase the service life by more than 2 times and shorten the pump inspection time
- Large volume fuel tank provides guarantee for long-term continuous operating of fracturing equipment

### Product Parameters :

Type	YLC600 / YLT600 / YLQ600						YLC1000 / YLT1000 / YLQ1000						
Typical Working Conditions	Acidizing fracturing, cementing, gravel packing, snubbing, coiled tubing milling												
Carrier Type	Truck / Trailer / Skid												
Chassis	SANY / BEIBEN / SINOTRUK / MAN / BENZ												
Engine	Cummins / CAT / MTU						Cummins / CAT / MTU						
Transmission	Allison						Allison						
Plunger Pump	TP600						QP1000						
Plunger Diameter	inch	2-1/2	2-3/4	3	3-1/2	4	4-1/2	2-1/2	2-3/4	3	3-1/2	4	4-1/2
Max. Pump Operating Pressure	psi	20,370	16,835	14,150	10,395	7,960	6,290	20,370	16,835	14,150	10,395	7,960	6,290
	MPa	143.6	118.6	99.7	73.2	56.1	44.3	143.6	118.6	99.7	73.2	56.1	44.3
Max. Discharge Flowrate	gpm	172	208	248	337	441	558	287	347	413	562	734	929
	m <sup>3</sup> /min	0.65	0.78	0.94	1.27	1.66	2.11	1.08	1.31	1.56	2.12	2.78	3.51
Rated Input Power	hp	600						1,000					
Overall Dimension (Truck-mounted) (L x W x H)	m	11.5x2.5x4.0						11.5x2.5x4.0					
Total Weight (Truck-mounted)	kg	13,000						18,000					

Type	YLC2000 / YLT2000 / YLQ2000				YLC2300 / YLT2300 / YLQ2300				YLC2500 / YLT2500 / YLQ2500				
Typical Working Conditions	High pressure and large discharge fracturing operations such as shale gas and tight oil												
Carrier Type	Truck / Trailer / Skid												
Chassis	SANY / BEIBEN / SINOTRUK / MAN / BENZ												
Engine	Cummins / CAT / MTU				Cummins / CAT / MTU				Cummins / CAT / MTU				
Transmission	Allison / Twin Disc / CAT / ZF				Allison / Twin Disc / CAT / ZF				Allison / Twin Disc / CAT / ZF				
Plunger Pump	QP2500				QP2500				QP2800				
Plunger Diameter	inch	3-3/4	4	4-1/2	5	3-3/4	4	4-1/2	5	3-3/4	4	4-1/2	5
Max. Pump Operating Pressure	psi	17,435	15,315	12,095	9,805	17,435	15,315	12,095	9,805	20,015	18,245	14,415	11,675
	MPa	120.2	105.6	83.4	67.6	120.2	105.6	83.4	67.6	138	125.8	99.4	80.5
Max. Discharge Flowrate	gpm	573	650	824	1,017	573	650	824	1,017	573	650	824	1,017
	m <sup>3</sup> /min	2.17	2.46	3.12	3.85	2.17	2.46	3.12	3.85	2.17	2.46	3.13	3.86
Rated Output Power	hp	2,000				2,250				2,500			
Overall Dimension (Truck-mounted) (L x W x H)	m	12.0x2.5x4.0				11.5x2.5x4.0				11.5x2.5x4.0			
Total Weight (Truck-mounted)	kg	40,000				42,000				46,000			





## Hydraulic Fracturing Pump Unit

### Precise Pumping :

- Especially suitable for working conditions of medium and low pressure with large discharge under 70MPa
- Hydraulic transmission stepless speed change can precisely control the discharge flowrate
- Easily realize loaded startup and parallel operation under pressure
- According to different working conditions, operate appropriate number of engines to achieve multiple use of single equipment

### Convenient Maintenance and Larger Space :

- Electronically controlled plunger slow-moving, one-button operation, maximum convenience
- Adopt generalized engine and hydraulic components, cancel transmission, significantly reduce maintenance difficulty, save maintenance cost and shorten maintenance period
- The intelligent maintenance reminder system helps customers manage the equipment maintenance period

### Stable and Reliable, with Stronger Power and Longer Service Life :

- Super heavy hydraulic joint, super flexible hose and hydrocylinder type steel pipe are perfectly combined, making the hydraulic system more reliable
- Multiple input power can meet the working conditions of high load continuous operation
- Upgrade to high-strength stainless steel valve box, high-quality imported packing and rubber, and increase the service life of vulnerable parts of the pump by more than 2 times

### Product Parameters :

Type	YLC600H / YLT600H / YLQ600H			YLC1000H / YLT1000H / YLQ1000H				
Typical Working Conditions	Water injection, oil filling, well cementation, coiled tubing milling							
Carrier Type	Truck / Trailer / Skid							
Chassis	SANY / BEIBEN							
Engine	Volvo / Deutz / Cummins							
Hydraulic Transmission	Linde Pump / Danfoss Pump			Danfoss Motor / Rexroth Motor				
Plunger Pump	TH600			QH1000				
Plunger Diameter	inch	2-1/2	3	3-1/2	3	3-1/2	4	
Max. Pump Operating Pressure	psi	14,600	10,140	7,450	13,800	10,140	7,760	
Max. Discharge Flowrate	MPa	100	70	51	95	70	53	
Rated Output Power	gpm	236	340	460	310	422	550	
Overall Dimension (Truck-mounted) (L x W x H)	m <sup>3</sup> /min	0.89	1.29	1.76	1.17	1.60	2.09	
Total Weight (Truck-mounted)	hp	600			1,000			
Overall Dimension (Truck-mounted) (L x W x H)	m	8.9x2.5x3.8			10.5x2.5x 4.0			
Total Weight (Truck-mounted)	kg	20,000			31,000			

Type	YLC1800H / YLT1800H / YLQ1800H			YLC2300H / YLT2300H / YLQ2300H				
Typical Working Conditions	Oil filling and water injection, coiled tubing milling, coalbed methane fracturing, conventional oil well fracturing							
Carrier Type	Truck / Trailer / Skid							
Chassis	SANY / BEIBEN							
Engine	Volvo / Deutz / Cummins							
Hydraulic Transmission	Linde Pump / Danfoss Pump			Danfoss Motor / Rexroth Motor				
Plunge Pump	QH1800			QH2500				
Plunger Diameter	inch	3-1/2	3-3/4	4	3-3/4	4	4-1/2	
Max. Pump Operating Pressure	psi	15,850	10,140	8,915	14,600	12,835	10,140	
Max. Discharge Flowrate	MPa	109	70	61	100	88	70	
Rated Output Power	gpm	270	422	480	600	687	870	
Overall Dimension (Truck-mounted) (L x W x H)	m <sup>3</sup> /min	1.02	1.6	1.82	2.29	2.6	3.3	
Total Weight (Truck-mounted)	hp	1,800			2,300			
Overall Dimension (Truck-mounted) (L x W x H)	m	12.5x2.5x4.0			12.5x2.5x4.0			
Total Weight (Truck-mounted)	kg	34,000			41,000			



## Blender Unit

### Stable Discharge and Accurate Measurement :

- High performance sand pump with large flowrate, wear resistance and stable discharge pressure
- Anti-interference flowmeter is adopted with an error of  $\pm 0.5\%$
- High precision densitometer, for online density detection with accuracy of  $\pm 1.0\text{kg/m}^3$

### Safe and Reliable, Comfortable Operation :

- The Auger is equipped with a separate lifting anti-misoperation control system, and the platform is equipped with a protective plate to ensure safer construction
- The interface of oil and water, lubrication and drainage is designed at side, making the operation more convenient

### Intelligent Control, Dual Screen Display :

- Each executive structure is automatically controlled and equipped with advanced wireless construction transmission technology
- Online monitoring of pressure, temperature and speed, intelligent alarm, and predictive maintenance system of sand pump life
- Dual screen display and automatic drawing of construction curve; Touch screen controlled butterfly valve and one-button switching make operation simple and reliable

### Product Parameters :

Type	HSC75 / HST75 / HSQ75	HSC100 / HST100 / HSQ100	HSC130 / HST130 / HSQ130
Typical Working Conditions	Acidizing fracturing, cementing, fracturing and sand control, gravel packing, shale gas, tight oil and other fracturing operations		
Carrier Type	Truck / Trailer / Skid		
Chassis	SANY / BEIBEN / BENZ		
Engine	Deutz / Volvo		
Transfer Gearbox	Reastar / Stiebel		
Discharge Centrifugal Pump	10x8x14	12x10x23	14x12x22
Suction Centrifugal Pump	10x8x14	12x12x14-7/8	12x12x14-7/8
Max.Sand Conveying Rate	m <sup>3</sup> /h	280	360
	gpm	1,230	1,585
Liquid Additive Flowrate	L/min	30/60/170/300	30/60/170/300
	gpm	8/16/45/79	8/16/45/79
Max.Discharge Flowrate	m <sup>3</sup> /min	12	16
	gpm	3,170	4,225
Max.Discharge Pressure	Mpa	0.7	0.7
	psi	101.5	101.5
Overall Dimension (Truck-mounted) (L x W x H)	m	12.0x2.5x 4.0	12.8x2.5x 4.0
Total Weight (Truck-mounted)	kg	25,000	31,000



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## Hydration Unit

### Continuous Mixing :

- Large discharge hydration with high efficiency, the maximum daily hydration discharge exceeds 5000 m<sup>3</sup>
- Instant mixing for use, uniform and excellent mixing effect, no uneven mixing

### Accurate Matching, Real-time Online :

- High precision electromagnetic flowmeter and electronic scale ensure accurate solution matching
- High precision liquid additive pump and mass flowmeter ensure accurate liquid additive ratio
- The concentration of the mixed liquid and the liquid additive ratio are adjusted online and in real time

### Excellent Performance, Stable and Reliable :

- Real time video monitoring and alarm system for feeding process
- The tank limiter ensures safe and reliable driving, protects the weighing sensor and extends the service life
- Low temperature auxiliary startup system ensures normal operation of equipment

### Intelligent Control, Comfortable Operation :

- Dual touch screen control system, client mobile APP reading device operation data, user-friendly operation interface
- Highly reliable control system for preventing the water return of the mixer eliminates such risks
- Real-time monitoring system of water pump speed, realizing accurate monitoring of operation data and efficient troubleshooting

### Product Parameters :

Type	HPT12 / HPC12 / HPQ12	HPT16 / HPC16 / HPQ16	
Typical Working Conditions	Hydration of fracturing guar gum and polymer with large discharge for shale gas, tight oil, coalbed gas, conventional oil well stimulation and other working conditions		
Carrier Type	Trailer / Truck / Skid		
Chassis	SANY / BEIBEN / BENZ		
Engine	Volvo / Deutz		
Transfer Gearbox	Stiebel / Reastar		
Suction Centrifugal Pump	10x8x14	12x12x14-7/8	
Discharge Centrifugal Pump	10x8x14	12x12x14-7/8	
Max. Discharge Flowrate	m <sup>3</sup> /min	12	16
	gpm	3,170	4,225
Discharge Flowrate of Dry Additive Conveyor	kg/min	72	96
	lb/min	158	210
Concentration	/	0.1 %~0.6%	
Max. Discharge Pressure	psi	43.5	
	MPa	0.3	
Overall Dimension (Truck-mounted) (L x W x H)	m	12.5x2.5x4.0	12.7x2.5x 4.0
Total Weight (Truck-mounted)	kg	32,000	33,000





## Data Van Unit

### Large space and comfortable environment in the cabin :

- Panoramic lighting, soft and hard decoration, warm color, comfortable working environment
- High power air conditioner and heater, fast temperature regulation in the cabin
- Reasonable layout of the operation station. Key equipment is controlled by the centralized panel

### Upgraded Software, Refined Management :

- Visual management of equipment, one-click configuration of IP address
- Statistical analysis of key information of fracturing unit and sand blender unit, providing predictive assessment and maintenance reminder
- Real time monitoring and pushing core equipment operation parameters, and evaluating equipment health index

### Intelligent upgrade, convenient operation :

- Mobile, PC, tablet, multi-platform monitoring, construction data visualization, and easy access to equipment information
- Wireless transmission of construction data, rapid construction deployment, abnormal alarm function, safe and reliable
- Video monitoring intelligently identifies fire, hydraulic end abnormality and other faults. Timely alarm to reduce economic losses

### Product Parameters :

Type	YBC24	YBT24	YBQ24	
Typical Working Conditions	High pressure and large discharge fracturing operations such as shale gas and tight oil			
Carrier Type	Truck / Trailer / Skid			
Chassis	SANY / BEIBEN / BENZ			
Number of fracturing units controlled	24	24	24	
Number of sand blender units monitored	2	2	2	
Alternator	220V AC 50Hz 12kw		/	
UPS	KVA	2		
Number of data acquisition IPC	2 IPC, 2 monitors			
Fracturing control terminal	2 IPC with touch screen			
Sand blender control terminal	2 IPC with touch screen			
Intercom System	sets	8	12	
Number of air conditioners	pcs	4	3	
Well site monitoring system	1 set of lifting camera, optional in the cabin		/	
Lightning protection system	sets	/	1	
Overall Dimension (Truck-mounted) (L x W x H)	m	9.7×2.5×4.0	8.5×2.5×4.0	8.3×2.5×2.8
Total Weight (Truck-mounted)	kg	14,000	10,000	7,800



## Electric Frac



### Safety and Environment-Friendly :

- Multiple protection measures ensure safety for operators and equipment
- Frequency conversion skid adopts IP54 design for better protection
- Ultra-quiet design provides overall noise up to 85db below for night operating
- Low-speed and long-stroke extend the service life of the fracturing pump

### Larger Displacement and Higher Pressure :

- Maximum displacement 2.4m<sup>3</sup>/min (4.5"), and Maximum pressure 140MPa (4.5")
- Large displacement and high pressure meet the requirements of long working hours for unconventional oil&gas development

### Intelligent upgrade, convenient operation :

- Dual network modes (wired mode +wireless mode) facilitate intelligent operation
- Intelligent maintenance system and fault code visual analysis system
- Mobile APP of fracturing equipment intelligent management system enables real-time online diagnosis of equipment information.
- Automatic remote adjustment of grid voltage according to load fluctuations

### High-end Configuration Improves Quality :

- Consist of high-strength stainless steel valve box to extend the service life
- High-quality valve packing and rubber extend the service life by more than 2 times
- Frequency converter adopts IGCT technical route to increase system capacity

## Electric Fracturing Skid



### Product Parameters :

Type	YLQ60EC1		YLQ50EC1			
Typical Working Conditions	Fracturing operations for shale gas, shale oil, coalbed methane, tight oil and tight gas					
Loading Type	Skid mounted					
Main Electric Motor	Jiamusi / Nanyang Explosion Protection / CRRC					
Transmission Shaft	Qingdao Qingshan Transmission Shaft Co., Ltd					
Plunger Pump	QP6000		FMC5000			
Plunger Diameter	inch	4	4-1/2	5	4	4-1/2
Max. Pump Operating Pressure	psi	20,000	20,000	16,385	20,000	20,000
	MPa	140	140	113	140	140
Max. Discharge Flowrate	gpm	510	645	793	545	687
	m <sup>3</sup> /min	1.93	2.44	3	2.06	2.60
Fracturing Pump Brake Power	kW	4,500		3,730		
Input Voltage on Line Side	kV	10±10%		10±10%		
Input Frequency on Line Side	Hz	50±10%		50±10%		
Overall Noise	db	< 85		< 85		
Overall Dimension (L x W x H)	m	7.1×2.5×2.7		7.1×2.5×2.7		
Total Weight	kg	33,800		27,500		



## Distributed Electric Fracturing Skid



### Product Parameters :

Type	YLQ10E				
Typical Working Conditions	High-Pressure water injection, coiled tubing fluid supply				
Loading Type	Skid / Truck / Semitrailer				
Electric Motor	Permanent magnet synchronous motor				
Number of Electric Motor	4 / 6 / 8				
Input Voltage	kV	10 / 6 / 0.38 available			
Plunger Pump	QP1000				
Plunger Diameter	inch	3	3-1/2	3-3/4	4
Max.Pump Operating Pressure	psi	14,000	10,285	8,855	7,855
	MPa	98	72	62	55
Max. Discharge Flowrate	gpm	312	423	486	555
	m <sup>3</sup> /min	1.18	1.6	1.84	2.1
Rated Output Power	hp	1,000			
Overall Dimension (L x W x H)	m	6.5×2.5×2.8			
Total Weight	kg	16,800			

## Electric Blender Skid



### Product Parameters :

Type	HSQ130E C1	
Typical Working Conditions	Fracturing operations for acidizing, cementing, sand control, gravel packing, shale gas, and tight oil, etc	
Rated Power	600kW	
Voltage Pattern	380V / 50HZ	
Discharge of Centrifugal Pump	14×12×22	
Suction of Centrifugal Pump	12×12×14-7/8	
Max. Sand Conveying Rate	m <sup>3</sup> /h	450
	gpm	1,981
Max. Liquid Additive Flowrate	L/min	30 / 60 / 170 / 300
	gpm	8 / 16 / 45 / 79
Max. Flowrate	m <sup>3</sup> /min	20
	gpm	5,280
Max. Discharge Pressure	MPa	0.7
	psi	101.5
Overall Dimension (L x W x H)	m	10×2.5×3.0
Total Weight	kg	26,000



## Electric Instrument Skid



### Product Parameters :

Type	YBQ24E C1	YBQ24E C2
Typical Working Conditions	High-pressure, large-displacement fracturing operations for shale gas, tight oil, etc.	
Number of the Frac Unit Controlled	24	24
Number of the Sand Blender Controlled	2	2
UPS	kVA	2
Number of Data Acquisition IPC	2IPC, 2 monitors	
Fracturing Control Terminal	2IPC with touch screen	
Sand Blender Control Terminal	2IPC with touch screen	
Intercom System	sets	12
Number of Air Conditioner	pcs	3
Video Surveillance System	One set of lifting cameras outside the cabin, and two cameras in the cabin	
Lightning Protection System	Lightening protection canopy	
Overall Dimension (L x W x H)	m	8.3×2.5×2.8
Total Weight	kg	7,800
		9,000

## Substation Skid



### Product Parameters :

Type	BDQ125E C1
Typical Working Conditions	Conventional and unconventional oil and gas electric drive fracturing equipment can be used in all work scenes.
Loading Type	Skid mounted
Transformer	Oil-immersed transformer
Switch Cabinet	Steel-clad movable-type
Total Capacity	MVA
Incoming Line Rated Voltage	kV
Output Rated Voltage	kV
Input Rated Current	A
Output Rated Current	A
Overall Dimension (L x W x H)	m
Total Weight	kg



## Power Distribution Skid



### Product Parameters :

Type		PDQ125E C1
Typical Working Conditions		Conventional and unconventional oil and gas electric drive fracturing equipment can be used in all work scenes.
Loading Type		Skid mounted
Transformer		Dry type transformer
Switch Cabinet		Solid insulation switchgear
Incoming Line Voltage	kV	10.5
Output Voltage	kV	10.5 / 0.4 / 0.22
10kV Incoming Line Current	A	1250
10kV Feeder Current	A	630
10kV Feeder Number	PC	4
Station Transformer Capacity	kVA	1000
Overall Dimension (L x W x H)	m	7.0×2.5×2.8
Total Weight	kg	15,000

## Frequency Conversion Skid



### Product Parameters :

Type		BPQ601WEC1	BPQ602WEC1	BPQ602ZEC1
Typical Working Conditions		High-pressure, large-displacement fracturing operations for shale gas, tight oil, etc.		
Loading Type		Skid mounted		
Control Mode		Vector control		
Cooling Mode		Liquid cooling		
Power Device		IGCT		
Rated Capacity	kVA	6000	2x6000	2x6000
Input Voltage	kV	10	10	10
Output Voltage	kV	3.3	3.3	3.3
Output Current	A	900	2x900	2x900
Output Frequency	Hz	0~100	0~100	0~100
Overall Efficiency	/	≥97%	≥97%	≥97%
Network Side Harmonics	/	≤4%	≤4%	≤4%
Overall Dimension (L x W x H)	m	6.0×2.5×2.8	8.0×2.5×2.8	8.5×2.5×2.9
Total Weight	kg	24,000	31,000	31,000



# Cementing Fleet

■ Quality Changes the World





## Hydraulic Cementing Unit

### 25% more output capacity than mechanical truck :

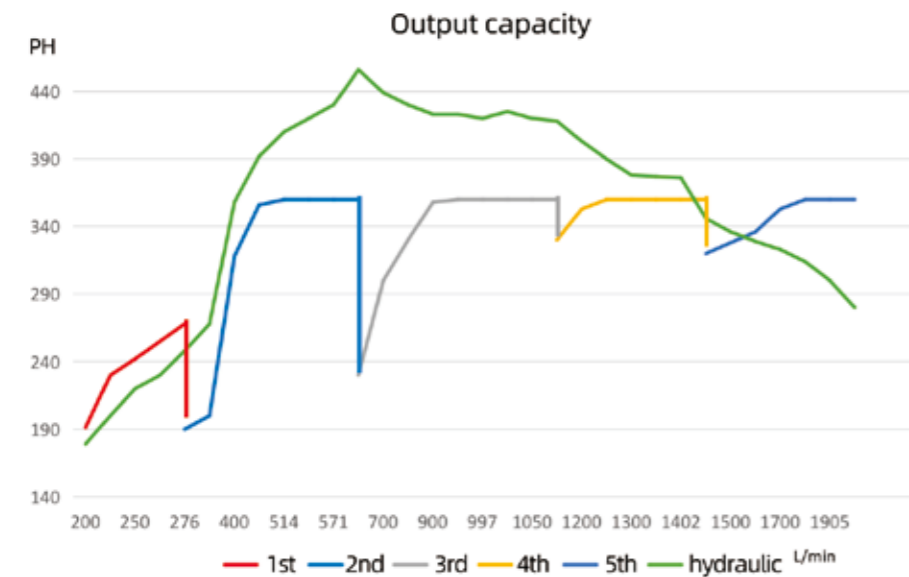
- The common discharge range of single pump cementing truck is 400~1400L/min
- Pumping capacity of hydraulic cementing truck covers mechanical truck

### System Intelligence, Safety Assurance :

- Instrument is equipped with electronic screen display, and the threshold value can be set. Alarm will be given when the range is exceeded to ensure safer operation
- The control system instruments have the functions of data acquisition and operation record saving, so as to facilitate the review of operation data

### Stepless Speed Regulation, Accurate Discharge :

- Unique advantages of hydraulic transmission, no impact caused by shifting, and more smooth power transmission
- Variable pump and variable motor are combined to realize stepless discharge adjustment and precise construction



### Product Parameters :

Type	GJC600H / GJQ600H				GJC600HD / GJQ600HD / GJT600HD				
Typical Working Conditions	Cement slurry mixing and high-pressure pumping, well washing, rock cuttings reinjection and replacement operations								
Carrier Type	Truck / Trailer / Skid								
Chassis	SANY / BEIBEN / SINOTRUK / MAN / BENZ								
Engine	Volvo/CAT / Deutz				Volvo / CAT / Deutz				
Transfer Gearbox	Stiebel / Reastar				Stiebel / Reastar				
Plunger Pump	TH600				TH600				
Plunger Diameter	inch	3	3-1/2	4	4-1/2	3	3-1/2	4	4-1/2
Max.Pump Operating Pressure	psi	14,150	10,395	7,960	6,290	14,150	10,395	7,960	6,290
	MPa	99.7	73.2	56.1	44.3	99.7	73.2	56.1	44.3
Max.Discharge Flowrate	gpm	248	337	441	558	248	337	441	558
	m³/min	0.94	1.27	1.66	2.11	0.94	1.27	1.66	2.11
Mixing Density Range	ppg	8.3~22							
Max.Mixing Capacity	bpm	14.5							
Overall Dimension (Truck-mounted) (L x W x H)	m	11.0x2.5x4.0				12.5x2.5x4.0			
Total Weight (Truck-mounted)	kg	27,000				37,000			



SANY PETROLEUM INTELLIGENT EQUIPMENT



## Machanical Cementing Unit

### Upgraded Intelligence and Convenient Operation :

- Equipped with intelligent maintenance system and fault code visual analysis system
- Mobile APP device intelligent management system, real-time online diagnosis of equipment status information

### Modular Design and Flexible Configuration :

- Skid mounted equipment is divided into pumping system and slurry mixing system according to functional modules. Flexibly combined into single-pump skid or double-pumps skid according to customer requirements

### First-class Configuration, Safe and Reliable :

- CAT, Deutz, Allison and other international first-class brands are adopted, with reasonable power matching and superior performance
- High quality packing and valve rubber can increase the service life by more than 2 times and shorten the pump inspection time

### Product Parameters :

Type	GJC600 / GJQ600				GJC600D / GJQ600D / GJT600D				
Typical Working Conditions	Cement slurry mixing and high-pressure pumping, well washing, rock cuttings reinjection and replacement operations								
Carrier Type	Truck / Skid				Truck / Skid / Trailer				
Chassis	SANY / BEIBEN / SINOTRUK / MAN / BENZ								
Engine	Volvo / CAT / Deutz				Volvo / CAT / Deutz				
Transmission	Allison				Allison				
Plunger Pump	TP600				TP600				
Plunger Diameter	inch	3	3-1/2	4	4-1/2	3	3-1/2	4	4-1/2
Max.Pump Operating Pressure	psi	14,150	10,395	7,960	6,290	14,150	10,395	7,960	6,290
	MPa	99.7	73.2	56.1	44.3	99.7	73.2	56.1	44.3
Max.Discharge Flowrate	gpm	248	337	441	558	248	337	441	558
	m³/min	0.94	1.27	1.66	2.11	0.94	1.27	1.66	2.11
Mixing Density Range	ppg	8.3~22							
Max.Mixing Capacity	bpm	14.5							
Overall Dimension (Truck-mounted) (L x W x H)	m	11.5×2.5× 4.0				12.5×2.5× 4.0			
Total Weight (Truck-mounted)	kg	26,000				36,000			



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INTELLIGENT EQUIPMENT





## Batch Mixing Unit

### Multiple mixed modes to meet operation requirements :

- Continuous mixing and batch mixing
- Manually mixing and automatically mixing

### Meet various certification requirements :

- DNV2.7-1/-3, DNV, ABS and other certification requirements for offshore platform installation can be provided

### First-class Configuration, Safe and Reliable :

- CAT, Deutz and other international first-class brands are adopted, with reasonable power matching and superior performance

### Product Parameters :

Type	PHC100 / PHQ100 / PHT100	
Typical Working Conditions	Mixing and pumping of cement slurry	
Carrier Type	Truck / Skid / Trailer	
Chassis	SANY / BEIBEN / SINOTRUK / MAN / BENZ	
Engine	CAT / Deutz	
Transfer Gearbox	Stiebel / Reastar	
Centrifugal Pump	Injection / Water Pump 4x3x13, Boosting / Recirculating pump 6x5x11	
Batch Mixing Tank	bbl	2×50
Slurry Mixing Tank (Optional)	bbl	12.5
Mixing Density Range	ppg	8.3~22
Max.Mixing Capacity	bpm	14.5
Overall Dimension (Truck-mounted) (L x W x H)	m	11.0×2.5×4.0
Total Weight (Truck-mounted)	kg	24,000



# Coiled Tubing Unit

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## Coiled Tubing Unit

### Adjustable configuration and abundant power :

- The carrier type can be configured according to the customer's on-site operation needs to facilitate transportation
- High power engine, providing abundant power and more reliable operation

### Module Design, High Compatibility :

- Modular design of main components, with superior compatibility, can be matched according to customer requirements
- Customized design of reel capacity, applicable to a variety of tubing specifications, and can adapt to different reels
- The design of parts and components is highly common with SANY construction machinery and is reliable

### System Intelligence, Safety Assurance :

- Instrument is equipped with electronic screen display, and the limitation can be set. Alarm will be given when the range is exceeded to ensure safer operation
- Redundant design of hydraulic system to ensure operation safety of BOP system
- Professional data acquisition system, record operation process, facilitating the review of operation data

### Design optimization of core components :

- The traction system of the injector adopts four pairs of cylinders. The force on the tubing traction area is more uniform
- High strength skate, with high yield strength and surface hardness, ensures the reliability of the traction system
- The coiled tubing reel is equipped with Rexroth reducer and motor, with excellent performance at low speed and small discharge and stable performance

### Product Parameters :

Type	LGC270 / LGT270 / LGQ270	LGC360 / LGT360 / LGQ360
Typical Working Conditions	Acidizing fracturing, sand washing, gas lifting, fishing, milling, logging	
Carrier Type	Truck / Trailer / Skid	
Chassis	SANY / SINOTRUK / Trailer	
Injector Type	ZRT-60K	ZRT-80K
Continuous Pulling Capacity	lbs 60,000	80,000
Continuous Snubbing Capacity	lbs 30,000	40,000
Reel Capacity	/ 1.75"-3800 m 1.5"-5000 m	1.75"-5500m 1.5"-6700m
Well Control Equipment	inch 3-1/16	4-1/16
Applicable Tubing Size	inch 1.25-1.75	1.5-2.375
Operating Pressure	psi 10,000 / 15,000	
Overall Dimension (Trailer-mounted) (L x W x H)	m 15.0×2.5×4.4	15.8×2.5×4.4
Total Weight (Trailer-mounted)	kg 42,000	45,000

Type	LGC450 / LGT450 / LGQ450	LGC630 / LGT630 / LGQ630
Typical Working Conditions	Acidizing fracturing, sand washing, gas lifting, fishing, milling, logging	
Carrier Type	Truck / Trailer / Skid	
Chassis	SANY / SINOTRUK / Trailer	
Injector Type	ZRT-100K	ZRT-140K
Continuous Pulling Capacity	lbs 100,000	140,000
Continuous Snubbing Capacity	lbs 50,000	70,000
Reel Capacity	/ 2"-6600m 1.75"-8400m	2.375"-6500m 2"-9000m
Well Control Equipment	inch 4-1/16	5-1/8
Applicable Tubing Size	inch 1.75-2.875	2-3.5
Operating Pressure	psi 10,000 / 15,000	
Overall Dimension (Trailer-mounted) (L x W x H)	m 16.5×2.5×4.5	18.5×3.2×4.5
Total Weight (Trailer-mounted)	kg 46,000	56,000

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## Coiled Tubing Injector



### Function Optimization and Excellent Performance :

- The driving system adopts stepless speed regulation, with wide adjustment range and excellent low-speed performance
- The traction system of the injector adopts four pairs of cylinders. The traction area of the tubing is extended, and the force is uniform and reasonable
- The skate is made of high-strength steel, with a yield strength of 2390MPa indicating its high reliability
- Gripper surface hardening treatment, extending service life

### Professional Design, Convenient Maintenance :

- The injector gripper adopts a special structure that is convenient for disassembly and installation
- Bearing does not require regular oil injection and is convenient for maintenance;
- The integral disconnecter makes connecting operation fast and convenient

### Safe and Reliable Configuration :

- The safety factor of main load-bearing components is high, meeting the use under extreme working conditions
- Monitoring system is configured to ensure the stripper and coiled tubing in safe condition

### Product Parameters :

Type		ZRT-60K	ZRT-80K	ZRT-100K	ZRT-140K
Max. Pulling Force	lbs	70,000	90,000	110,000	150,000
Continuous Pulling Capacity	lbs	60,000	80,000	100,000	140,000
Continuous Snubbing Capacity	lbs	30,000	40,000	50,000	70,000
Max.Speed @Max.Displacement	m/min	23.7	23.7	23.7	19.5
Max.Speed @Min.Displacement	m/min	62	58	52	43
Min.Steady Speed	m/min	0.2	0.2	0.2	0.2
Applicable Coiled Tubing Size	inch	1-2.375	1.5-2.875	1.5-2.875	2-3.5

## Coiled Tubing Reel



### Excellent Stability at Low Speed, Sufficient Power :

- Driving torque exceeds 50,000 Nm, easy to spool large diameter coiled tubing
- Equipped with Rexroth reducer and motor, with better matching, excellent performance at low speed

### Proprietary Structure to Realize Function Expansion :

- Equipped with cable crossing structure as standard, suitable for logging
- Concentric tube and umbilical tube reel can be provided to meet special operation requirements

### Product Parameters :

Type		GT116-80-86	GT148-80-86	GT166-90-95	GT166-100-95
Applicable Max.Tubing Capacity	/	2"-3000m 1.75"-3800m	2"-6600m 1.75"-8400m	2.375"-6500m 2"-9000m	2.875"-3800m 2.375"-5400m
Applicable Tubing Diameter	inch	1.25~2	1.5~2	1.75~2.375	2~2.875
Diameter of HP Manifold	inch	2			3
Max.Operating Pressure	psi	15,000			
Max.Operating Speed	rpm	8~10			
Special purpose	/	Logging (cable/optical fiber), concentric tube, umbilical tube			





# Drilling & Workover Automation Unit

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## Pipe-Racking Manipulator



### Advantages :

- Replace derrickman and discharge the drilling automatically

### Features :

- Realize unmanned operation on the pipe-racking board to avoid safety risks and reduce the labor intensity
- Full electric drive means no risk of aerial oil leakage
- Conform to API 4F standard, directly interchange with the original pipe-racking board without modification of the derrick
- An automatic folding boom facilitates transportation, without dismantling
- Multiple safety interlocks prevent the risk of aerial oil leakage, with safety and reliability
- Adopt servo electronic control to pre-plan and store the trajectory of the manipulator with the program to realize one-button operation
- The control system has the functions of self-diagnosis and alarm prompt

Technical Parameter Table of Pipe-racking Manipulator:

Type	SRP30-126	SRP40-150	SRP50-170	SRP70-208	SRP70-226	SRP70-250	SRP80-291	SRP90-292	SRP90-321	
Applicable Rig	Type 30	Type 40	Type 50	Type 70			Type 80	Type 90		
Applicable Pipe Diameter	3-1/2"~7"	3-1/2"~8"	3-1/2"~9"	3-1/2"~10"	3-1/2"~10"	3-1/2"~10"	3-1/2"~11"	3-1/2"~11"	3-1/2"~11"	
Pipe Capacity	pipes	126	1,150	170	208	226	250	291	292	321
Operating Radius	mm	1,900	2,350	2,600	2,750	3,100	3,700	3,700	3,700	3,700
Maximum Operating Force	N	2,000	5,000	5,000	6,500	6,500	6,500	8,000	8,000	8,000
Position Accuracy	mm	±5	±5	±5	±5	±5	±5	±5	±5	±5
Swing Angle		±90°	±90°	±90°	±90°	±90°	±90°	±90°	±90°	±90°
Total Motor Power	kW	8.5	8.5	8.5	8.5	8.5	8.5	10	10	10
Transportation Dimension (L x W x H)	m	5.8×3.2×3.0	6.8×2.9×3.0	7.5×2.9×3.0	7.6×3.5×3.0	8.5×3.4×3.0	8.5×3.6×3.0	9.9×3.4×3.2	9.9×3.6×3.2	9.9×3.6×3.2
Weight	kg	5,200	5,400	7,500	8,600	8,900	9,300	11,000	11,500	11,500

Technical Parameter Table of Workover Pipe-racking Manipulator:

Type	X0900RP073	X1100RP073	X1350RP073	X1600RP073	X1800RP073	X2250RP073	
Applicable Workover	XJ350	XJ450	XJ550	XJ650	XJ750	XJ850	
Applicable Pipe Diameter	2-3/8"~3-1/2"	2-3/8"~3-1/2"	2-3/8"~3-1/2"	2-3/8"~3-1/2"	2-3/8"~3-1/2"	2-3/8"~5"	
Pipe Capacity (2-7/8")	pipes	168	168	196	224	252	336
Drill Pipe Stand Pattern	Two joints	Two joints	Two joints	Two joints	Two joints	Two joints	
Operating Radius	mm	1,600	1,600	1,600	1,600	1,600	2,400
Operating Force	N	≥450	≥450	≥450	≥750	≥750	≥1,800
Position Accuracy	mm	±3	±3	±3	±3	±3	±3
Swing Angle		-90° ~ +90°	-90° ~ +90°	-90° ~ +90°	-90° ~ +90°	-90° ~ +90°	-90° ~ +90°
Width of Pipe-racking Platform	mm	3,200	3,200	3,200	3,200	3,200	4,300
Weight	kg	2,000	2,100	2,200	2,600	2,750	5,900

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## Multi-function Hydraulic Unit



### Features :

- Oil Supply on Demand: Realize real-time accurate oil supply according to the demand of the machine, reduce the pressure loss of the hydraulic system, control the oil temperature of the hydraulic system, and improve the efficiency of the hydraulic station
- Smart Alarm: Oil temperature alarm, abnormal liquid level alarm, abnormal temperature rise alarm, oil pump operation detection alarm, smart power consumption monitoring and real-time adjustment, and maintenance reminder
- Multi-equipment Linkage: Multi-equipment oil supply linkage between drill floor manipulator arm, iron roughneck and catwalk, etc
- Independent Oil Supply for Slip: SMH560 enables small-flow, high-backpressure, and long-time oil supply for the slip to reduce power consumption; SMH400 enables interrupted oil supply and holds the accumulator pressure to reduce power consumption
- Operation Data Storage: Operation data localization and remote storage facilitate reading and calling

### Product Parameters :

Type		SMH560B (Split)	SMH400B (Integral)	SMH400C (Split)
Main Motor Power	kW	2×55	2×55	2×55
Rated Flow	L/min	2×280	2×200	2×200
Rated Pressure	MPa	21	21	21
Oil Tank Capacity	L	1,800	1,200	1,200
High-Pressure Cleaning System	Rated Pressure	Mpa	10	10
	Rated Flow	Umin	20	20
Explosion-proof Motor	kW	55×2, 7.5×1, 5.5×1	55×2, 5.5×1	55×2, 5.5×1
Oil Pumps, Motor		Two Rexroth 190 variable piston pumps, one constant pressure plunger pump, one gear pump, one gear motor	Two Rexroth 190 variable piston pumps, one gear pump, one gear motor	Two Rexroth 190 variable piston pumps, one gear pump, one gear motor
Multi-way Valve		Triple HAWE electronic control multi-way valve	Triple HAWE electronic control multi-way valve	Triple HAWE electronic control multi-way valve
Controller		Two SANY motion controller	One SANY motion controller	Two SANY motion controller
Weight	kg	Body 6500, Valve manifold box 600	4700	Body 4700, Valve manifold box 600
Body Dimension	m	3.4×2.0×2.4	2.3×1.8×2	2.3×1.8×2
Valve Manifold Box Dimension	m	1.3×0.7×1.4	/	1.1×0.7×1.6

## Power CAT



### Safer and More Reliable :

- Safety design of key components avoid security risks
- External interlocking averts cross-operation; internal interlocking avoids misoperation
- Sensors for monitoring the key positions, and cameras for monitoring the workspace to realize multifaceted monitoring

### More Intelligent with One-button Operation :

- One-button operation realizes the automatic round-trip of the pipes between rack and floor
- Use program to predefine the device trajectory to reduce operating complexity and avoid misoperation
- The joint control of the local, remote, and driller room and the built-in display screen of the local operation box provide tips for fast troubleshooting

### Product Parameters :

Type		SCW4512	SCWP95
Lifting Type		Hydraulic lifting	Under-pass Electric Power CAT
Applicable Drilling Floor Height	mm	9,000~12,000	9,500
Applicable Drilling Pipe Rack Height	mm	1,070	1,070
Transporting Tubing Maximum Length	mm	12,500	12,000
Transporting Tubing Maximum Weight	kg	4,500	3,200
Transporting Tubing Maximum Diameter	in	24	13 -3/8
Feed Period	s	≤70	≤100
Rated Pressure	MPa	21	/
System Maximum Flow	L/min	240	/
Total Equipment Power	kW	99	40
Power	V/Hz	380/50	380/50
Working Temperature	°C	-20~+55, Relative humidity≤90% (at 20°C)	-20~+55, Relative humidity≤90% (at 20°C)
Overall Dimension(L x W x H)	(m)	12.0×2.9×2.8	12.0×2.8×2.6
Total Equipment Weight	kg	≈34,000	≈27,000

### Hydraulic Power CAT :

- Lifted by full hydraulic cylinder to avoid safety risks and maintenance costs caused by the shortcomings of steel wire rope
- The performance parameters reach the international level of the same model, with fast speed, stable and reliable action
- The folded CAT can be overall transported to meet the transportation requirements of different regions

### Under-pass Electric Power CAT :

- The string can directly go through the base to the mousehole, streamlining the processes and improving the operating efficiency
- Pure electric drive ensures high control accuracy and stable and reliable operation
- Transported in sections, with a single section shorter than 12 meters, to meet the requirements of different regions



# Oilfield Engineering Unit

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## Pumping Unit Inspection Vehicle

### High Adaptability Ensures Carefree Operations :

- The bucket is equipped with an air source interface and a hydraulic oil interface, and can be connected to an air hammer or hydraulic wrench for crank stroke adjustment
- Equipped with pneumatic gear oiling machine to check the reducer and change the gear oil
- Equipped with pneumatic grease injector to tighten the middle and tail bearing and to grease them
- Equipped with pneumatic wax remover adding machine and solvent tank to accurately add the wax remover
- Equipped with a hydraulic torque wrench to mount, remove and re-tighten the large nuts
- Aerial work function can meet the requirements of rust-proof, painting and outdoor lighting, etc

### Performance Upgrade and Convenient Operation :

- The multi-purpose cab is two-row and six-seater, improving 100% in person-carrying capacity
- Compared with similar productions, the power and torque of the industry-leading Yunnei 125 kW engine increase 15% and 43% respectively
- With fewer hinge points than the folding boom and composite boom, the telescopic boom significantly improves the vibration problem
- Adopt 7.00R16 large-size and adhesive tires for oilfield winding roads and muddy roads
- Grease gun, hydraulic wrench, wax remover add machine and other equipment are module-designed, plug-and-play and can work separately, with convenience and high efficiency

### First-class Configuration, Safe and Reliable :

- More than 12 security measures such as vehicle instability protection, entry and exit operation interlock, length and angle sensors ensure the safety of operators
- The bucket is anti-pinch on three sides, protective on bottom, and equipped with various tool interfaces for diversified functions

### Product Parameters :

Type		SPM180	SPM220
Chassis Model		SAIC Two-Row SH1083ZFDDMS	SAIC Two-Row SH1083ZFDDMS
Chassis Specification		4×2	4×2
Engine Parameters	Power	kw/hp	125/170
	Torque	N.m	500
Cab Specification		Two-row, Six-seater	Two-row, Six-seater
Bucket Rated Capacity	kg	200	200
Boom Working Height	m	18	22
Boom Working Range/ Corresponding Height	m	11/5.3	12.5/5.3
Tire Specification		7.00R16 14PR (adhesive)	7.00R16 14PR (adhesive)
Maximum Gradeability	%	45 (24.5°)	45 (24.5°)
Maximum Speed	km/h	105	105
Minimum Ground Clearance	mm	196	196
Approach Angle/ Departure Angle	°	20/13	20/13
Minimum Turning Diameter	m	14.5	14.5
Overall Dimension (L x W x H)	m	7.2×2.2×3.1	7.4×2.2×3.1
Total Equipment Weight	kg	7,210	7,800





## Crawler Pay Welder

### High Reliability Ensures Carefree Operations :

- Adopt enhanced SANY excavator chassis and ensure safe and reliable travel
- Adopt international famous brands such as Cummins, Stamford, Rexroth, Mottrol for reasonable power matching and superior performance
- Adopt Cummins non-road national IV standard electronic control engine with strong power and comply with the latest emission regulation

### Upgrade Modules for Good Comfortability :

- Adopt SANY FOPS excavator cab, safe and comfortable
- Newly upgraded AC makes the interior of the cab thermostatically controlled

### The Smart System Saves Energy and Cost :

- Multiple operating modes: Walking, generating, and smart mode
- Fuel consumption reduces by 5~8% in smart deceleration-and-eco mode
- Equipped with equipment remote smart management system to online diagnosis the operating condition in real-time

### Product Parameters :

Type			SWE160D	SWE180D
Typical Working Conditions			Walking, generating, lifting, equipment mounted	
Chassis			SANY	
Truck with Crane			SANY	
Engine			Cummins	
Alternator			Stamford	
Engine	Power	kW	125/188.5	125/188.5
Generating Capacity	Power Supply Capacity	kVA	160	180
	Rated Voltage	V	AC 380/220	AC 380/220
	Rated Frequency	Hz	50 / 60	50 / 60
Truck with Crane	Maximum Lifting Weight	kg	6,300	6,300
	Maximum Range	m	8	8
Welder Position			Positions of four Lincoln DC400 welders	
Optional Equipment			Air Compressor, gas rack, medium frequency heater, welding rod drying box	
Overall Unit	Travel Speed ( km/h )	Low Gear	0-2.9	0-2.9
		High Gear	0-5	0-5
	No-load Ground Pressure	KPa	31.2	31.2
	Minimum Road Clearance	m	0.58	0.58
	Max Climbing Angle	°	25	25
	Outline Dimension (L x W x H)	m	6.6×2.8×3.3	6.6×2.8×3.3
	Total Weight	kg	13,500	13,500

## Pipelayer

### The Chassis is of Strong Stability and High Reliability :

- Adopt large gauge crawler chassis, with high stability, strong carrying capacity and long service life
- Adopt hydraulic torque converter and planetary power shift transmission gearbox, with easy operation and good micro-mobility
- Normally closed parking brake ensures the safety of ramp parking

### Good Maneuverability and Comfortability :

- The lifting system adopts hydraulic transmission, providing smooth power output, step-less speed change, good micro-mobility and adaptability
- Crane and lifting systems adopt single-handle operation to make overall operation easier

### Complete Safety Devices :

- Equipped with boom range limiter to efficiently prevent the stretch bending accident of the boom
- Hook overwind protection device can prevent the hook accident and steel wire rope pull ring accident
- Emergency load rejection device facilitates operators to handle emergencies promptly
- Torque limiter restricts the equipment is always operating within the rated load

### Product Parameters :

Type			SPL90	SPL70
Engine			Cummins	
Maximum Lifting Mass	kg		90,000	70,000
Rated Lifting Mass	kg		76,500	59,500
Main Machine Mass in Transportation Condition	kg		38,9000	37,5000
Average Ground Pressure	kPa		86.6	87.3
Minimum Road Clearance	m		0.55	0.55
Maximum Slope Climbing Ability	°		20	20
Engine Power			kW	269
Walking Speed	Forward	km/h	3.6 / 6.6 / (11.3 optional)	3.6 / 6.6 / (11.3 optional)
	Reverse	km/h	4.4 / 7.8 / (13.5 optional)	4.4 / 7.8 / (13.5 optional)
Lifting System	Luffing Type		Steel wire rope luffing	Steel wire rope luffing
	Boom Length	m	8.6 / 9.6 / 10.5	7.6 / 8.6
	Hook Speed	m/min	0 ~ 7	0 ~ 7
	Luffing Time	s	40	32
Transportation Outline Dimension(L x W x H)			m	5.6×3.4×3.5
Overall Mass			kg	55,000
				49,000



# Accessories

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## > Treating Iron

- Standardized union connection meets the requirements of interchangeability and quick connection
- Pipe body adopts high-strength forging alloy steel and emulation design to decrease weight and save space in the condition of safety and long use
- Union joint adopts integral forging instead of welding, with better pressure bearing performance
- Length range 0.5m~5m, available for high-pressure fracturing pipeline, auxiliary pipeline, kill and choke lines



Main Technical Parameters

Operating Pressure	psi	10,000~20,000
Nominal Diameter		2"~4"
Temperature Level		P+U (-29°C~121°C) P+U (-20 F ~250 F)
Manufacturing Standard		API 16C
Applicable Conditions		Neutral or sour environment
Specifications	m	0.5~5

## > Swivel Joints

- Metal pipeline joint equipped with ball bearings, widely used in cementing, fracturing, and other operations in oil fields
- Bend adopts die-bending technology with a compact structure and uniform wall thickness to ensure the smoothness of the flow channel
- Special non-equal wall thickness design, in line with the actual working conditions, effectively improves the service life
- Carburized surface and ground rotary raceway improving fitting accuracy ensure use performance



Main Technical Parameters

Operating Pressure	psi	10,000~20,000
Nominal Diameter		2"~4"
Temperature Level		P+U (-29°C~121°C) P+U (-20 F ~250 F)
Manufacturing Standard		API 16C
Applicable Conditions		Neutral or sour environment
Specifications		Type 10, 30, 50, 80, 100

## > Hose Loop

- Standardized union connection meets the requirements of interchangeability and quick connection
- Available for various high-pressure wellhead operations, size and structure can be customized on demand. The equipped swivel joint is flexible, impact-resistant, and shockproof
- Hose loop consists of swivel joints, pup joints, and wing nuts, with the advantages of quick make-up or break-out, reliable sealing, and easy fold-up, shipment, and storage



Main Technical Parameters

Operating Pressure	psi	10,000~20,000
Nominal Diameter		2"~4"
Temperature Level		P+U (-29°C~121°C) P+U (-20 F ~250 F)
Manufacturing Standard		API 16C
Applicable Conditions		Neutral or sour environment
Developed Length	m	3.6 /4.6 / 5.6

## > "Y" or "T" Integral Fitting

- Mainly consist of lateral joint, tee, etc., to form high-pressure fluid channels for cementing and fracturing operations
- Components adopt high-quality forging alloy steel and strict control of chemical compositions and special process parameters, to ensure mechanical properties of materials and improve service life



Main Technical Parameters

Operating Pressure	psi	10,000~20,000
Nominal Diameter		2"~4"
Temperature Level		P+U (-29°C~121°C) P+U (-20 F ~250 F)
Manufacturing Standard		API 16C
Applicable Conditions		Neutral or sour environment



## > Plug Valve

- Various switching operation modes are available such as manual operation, valve deceleration mechanism operation, hydraulic operation, etc. on demand
- Special process strengthens the surface of the plug and sealing arc piece to improve the erosion resistance; the metal sealing surface adopts the fine grinding process to ensure the sealing performance and lower the opening torque
- Adopt a floating plug to ensure the two-way sealing performance of the valve and reduce the wear of the plug
- The grease injection valve is installed on the side of the valve body to facilitate regular grease injection and maintenance



Main Technical Parameters		
Operating Pressure	psi	10,000~20,000
Nominal Diameter		1"~4"
Temperature Level		P+U ( -29°C~121°C ) P+U ( -20 F ~250 F )
Specification Level		PSL3
Performance Level		PR1
Executive Standard		API 6A
Operation Mode		Manual / Gearbox reduction mechanism / Hydraulic

## > Frac Manifold Systems-General Frac Manifold Skid

- Integrated by HP manifold and LP manifold according to the requirements of the field fracturing operation, it can be customized according to the user's demands, to meet the actual use requirements on site, save the layout space of the well pad and facilitate transportation



Main Technical Parameters		
Rated Operating Pressure	psi	10,000~20,000
Main Diameter		4"
Bypass Diameter		3"
Temperature Level		P+U ( -29°C~121°C ) P+U ( -20 F ~250 F )
Material Grade		AA,BB,DD,EE
Specification Level		PSL3
Performance Level		PR1
Manufacturing Standard		API 6A

## > Frac Manifold Systems-HP and LP Manifold

- Consist of the high-pressure manifold and low-pressure manifold and adopt a skid-mounted design, available for connecting multiple fracturing equipment for construction simultaneously
- The main channel adopts a large-diameter design, suitable for large displacement fracturing operations
- Large-diameter HP and LP manifold is widely used in "wells factory" fracturing operations



Main Technical Parameters		
Rated Operating Pressure	psi	10,000~20,000
Main Diameter		5-1/8"~7-1/16"
Bypass Diameter		3-1/16"
Temperature Level		P+U ( -29°C~121°C ) P+U ( -20 F ~250 F )
Material Grade		AA,BB,DD,EE
Specification Level		PSL3
Performance Level		PR1
Manufacturing Standard		API 6A

## > Frac Manifold Systems-Mono Frac Line

- Used for connecting the diverting manifold and the fracturing wellhead to transport the fracturing fluid to the wellhead
- Adopt single channel and large-diameter design to replace multi-channel and small-diameter union pipeline
- Adopt a special eccentric rotation mechanism to adjust in three-dimensional space, make up for the dimension error and installation error of different fracturing wellhead and diverting manifold skid, and ensure the concentric connection of all flanges

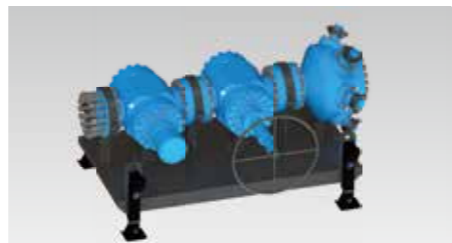


Main Technical Parameters		
Rated Operating Pressure	psi	10,000i~20,000
Main Diameter		5-1/8"~7-1/16"
Temperature Level		L+U ( -46°C~121°C ) L+U ( -50 F ~250 F )
Material Grade		AA~FF
Specification Level		PSL3,PSL3G
Performance Level		PR1,PR2
Manufacturing Standard		API 6A



## > Frac Manifold Systems-Diverting Manifold

- Often used in the zipper-like fracturing operation mode of "wells factory". Open and close the fracturing valve to realize the connection and disconnection of the flow channel and inject the fracturing fluid into different wells on the same platform
- The design of sand control planning in large diameter manual and hydraulic flat gate valves provides safety and reliability during the fracturing operation environment of shale gas wells



Main Technical Parameters		
Rated Operating Pressure	psi	10,000~20,000
Main Diameter		5-1/8"~7-1/16"
Temperature Level		L+U (-46°C~121°C) L+U (-50 F ~250 F)
Material Grade		AA~FF
Specification Level		PSL3,PSL3G
Performance Level		PR1,PR2
Manufacturing Standard		API 6A

## > Stainless Steel Fluid-End Assembly

> 2500HP

> 2800HP



Main Technical Parameters		
Max.Output Power	kW/HP	1,865/2500
Plug-Max. Operating Pressure	in-MPa	3.75-120 4-105
Length of Stroke	in/mm	8/203.2
Max. Strokes	SPM	300
Overall Dimension (L x W x H)	mm	1,772 x 630 x 581
Total Weight	kg	≈2,364
Applicable Ambient Temperature		-40°C~45°C (-104 F ~113 F)
Pump Head Material		15-5PH
Chamber Structure		Centralizer sleeve structure

Main Technical Parameters		
Max.Output Power	kW/HP	2,088/2,800
Plug-Max. Operating Pressure	in-MPa	3.75-120 4-105
Length of Stroke	in/mm	8/203.2
Max. Strokes	SPM	300
Overall Dimension (L x W x H)	mm	2,049 x 687 x 608
Total Weight	kg	≈2,916
Applicable Ambient Temperature		-40°C~45°C (-104 F ~113 F)
Pump Head Material		15-5PH
Chamber Structure		Centralizer sleeve structure

## > 2800HP New Stainless Steel Pump-Head Body

- The new generation of Type-2800 stainless steel pump-head body is integrally forged from ASTM 15-5PH material, with excellent corrosion resistance
- Product quality is ensured by strict chemical composition testing, non-destructive testing, and processing size control in the production process
- The universal design provides wide adaptability



Main Technical Parameters			
Material			ASTM 15-5PH
Plug - Max. Operating Pressure	in-MPa		3.75-140 4-124
Total Weight	kg		≈2,440
Overall Dimension (L x W x H)	mm		1,600x514x608

## > Plunger

- The surface adopts a special process to spray the nickel-based alloy, and the alloy layer is thicker than 0.6mm, with nice adhesion, high hardness, and excellent wear resistance
- High-pressure resistant, impact resistant, fatigue resistant, and with long service life
- The universal design provides wide adaptability, including 3.5", 3.75", 4", 4.5", 5", etc



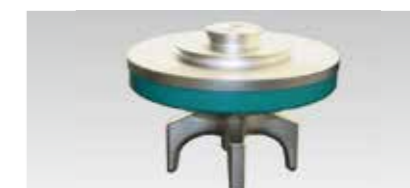
## > Valve Seat Assembly

- Material&Process: 8620H + carburizing and quenching
- Service Life: 25~30 layers (50~80 hours)



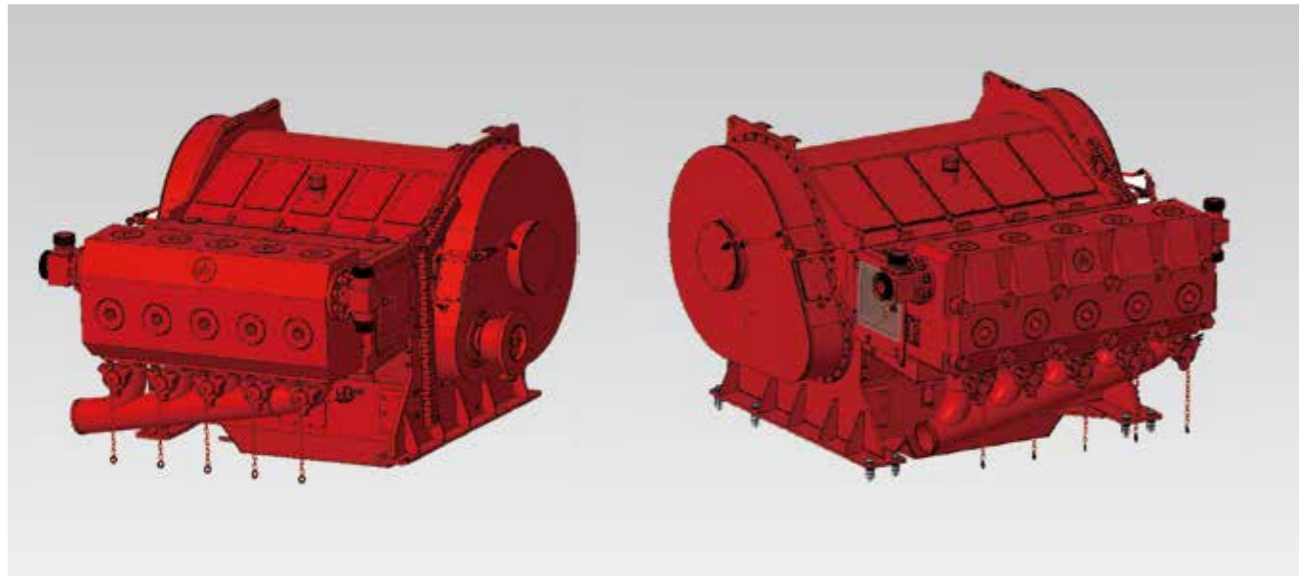
## > G20 Valve Assembly

- Material&Process: G20 + carburizing and quenching
- Service Life: 10~20 layers (25~50 hours)
- Applicable Conditions: Applicable to continuous fracturing of shale gas wells, ceramic sand, and high sand ratio





## > Mechanical Fracturing Pump



### Advanced design, Reliable Performance :

- Meet both conventional fracturing operations and high-power electric drive fracturing operations
- High reliability design of the whole pump makes the structural stress more reasonable, and the bearing capacity increases by 20%
- High-load million stroke test in the factory proves its stable and reliable operation performance

### Upgrade Intelligence, Safety and Efficiency :

- Digital online construction, remote viewing of operating conditions, operating time and pump head life
- Real time monitoring and alarm of operating pressure, vibration, temperature and abnormal data
- Equipped with intelligent fault diagnosis system to accurately locate the faults of vulnerable parts and improve the efficiency of pump inspection

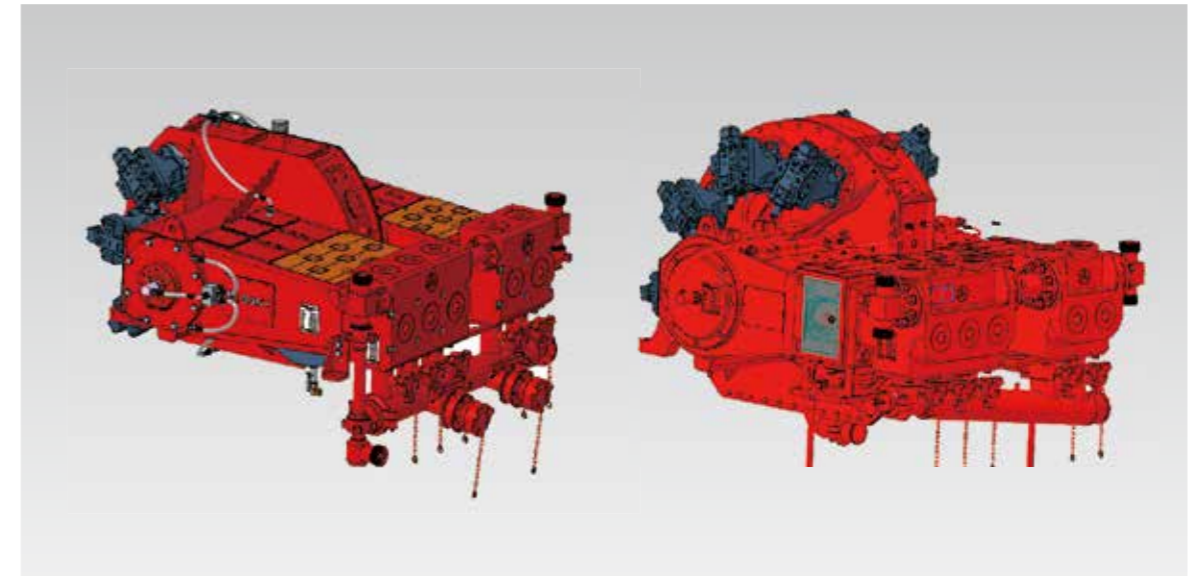
### Long Service Life, Less Maintenance :

- The pump head adopts a new cavity structure, made of high-quality stainless steel, increases the service life by 2 times
- High performance material packing, valve rubber, service life increased by 50%
- Amorphous alloy coating plunger, service life increased by 1 time

### Product Parameters :

Type		TP600	QP1000	QP2500	QP2800	QP3000	QP6000
Max. Braking Power	hp	600	1,000	2,500	2,800	3,000	6,000
Stroke	inch	6	6	8	8	10	11
Max. Strokes	rpm	450	450	300	300	250	170
Plunger Diameter	inch	2-1/2, 2-3/4, 3, 3-1/2, 4, 4-1/2	2-1/2, 2-3/4, 3, 3-1/2, 4, 4-1/2	3-3/4, 4, 4-1/2, 5	3-3/4, 4, 4-1/2, 5	4, 4-1/2, 5	4, 4-1/2, 5
Gear Ratio	/	4.61	4.61	6.353	6.353	6.95	12.5
Overall Dimension	m	1.27×1.38×0.68	1.27×1.91×0.78	2.22×2.02×1.53	2.3×2.3×1.62	2.83×2.52×1.63	2.54×3.28×1.28
Weight	kg	2,240	3,395	7,915	9,811	9,000	14,725

## > Distributed Fracturing Pump



### Advanced design, Reliable Performance :

- Distributed power, multiple input, 3+2 transmission mechanism, reasonable layout and stable transmission
- Multiple hydraulic motors or electric drive, with flexible input and stepless speed regulation
- High-load million stroke test in the factory proves its stable and reliable operation performance

### Long Service Life, Less Maintenance :

- The pump head adopts a new cavity structure, made of high-quality stainless steel, increases the service life by 2 times
- High performance material packing, valve rubber, service life increased by 50%
- Amorphous alloy coating plunger, service life increased by 1 time

### Upgrade Intelligence, Safety and Efficiency :

- Digital online construction, remote viewing of operating conditions, operating duration and pump head life
- Real time monitoring and alarm of operating pressure, vibration, temperature and abnormal data
- Equipped with intelligent fault diagnosis system to accurately locate the faults of vulnerable parts and improve the efficiency of pump inspection

### Product Parameters :

Fracturing Pump Type		TH600	QH1000	QH1800	QH2500
Max. Braking Power	hp	600	1,000	1,800	2,500
Stroke	inch	6	6	8	8
Max. Strokes	rpm	450	450	330	330
Plunger Diameter	inch	2-1/2, 2-3/4, 3, 3-1/2, 4, 4-1/2	2-1/2, 2-3/4, 3, 3-1/2, 4, 4-1/2	3-1/2, 3-3/4, 4, 4-1/2	3-3/4, 4, 4-1/2, 5
Gear Ratio	/	10.33	10	14.46	13
Overall Dimension	m	1.75×2.19×1.62	2.16×1.87×1.37	2.34×1.89×1.63	2.48×2.19×1.65
Weight	kg	2,900	4,878	5,600	8,181



## Global Cases



### 1 The Largest Shale Gas Horizontal Well Platform in Asia Built in Changqing Oilfield

In September 2021, SANY automation units such as the pipe-racking manipulator and the floor pipe racking manipulator facilitated the construction of Platform H100 in Changqing Oilfield, with a construction period of 182 days, 31 horizontal wells were constructed. Platform H100 is currently the largest onshore horizontal well platform in Asia and the shale gas development demonstration project of the major national scientific and technological development projects

### 2 Chuanqing High-pressure Construction of Tight Gas

In November 2021, the SANY 2500HP mechanical fracturing pump unit operated in Well Jinqian 506-8-H1 of Chuanqing and broke the tight gas construction efficiency record in the Sichuan and Chongqing region by 3.8 sections per day, during the period, the equipment ran smoothly and the construction was successfully completed

### 3 The High-altitude, High-pressure, Low-temperature Construction in Qinghai

In June 2020, the SANY 2500HP mechanical fracturing pump unit operated under high pressure of 90-110MPa in Qinghai, at an altitude of 3,300 meters, during the period, the equipment ran smoothly and the construction was successfully completed

### 4 Large Water Discharge Construction on Sichuan Shale Gas under the Single Unit Maximum Water

In June 2019, 130 bbl sand blender truck supplied liquid for Sichuan Mianyang shale gas construction, with a displacement of 18m<sup>3</sup>/min, and a sand concentration rate of 34%. The minimum stable speed of the auger was 380r/min, and the discharge and sand concentrations were stable



# Global Cases

## 1 Tight Oil Fracturing in Loess Plateau

In April 2021, twelve 2500HP mechanical fracturing pump units did a fracturing operation in the tight oil wellsite in Qingcheng, Qingyang, Gansu Province, with 13,300 cubic meters of slickwater, 3,800 cubic meters of water, 17,100 cubic meters of dense fluid, the total liquid volume was 34,200 cubic meters, and the total sand volume was 4,180 cubic meters; the average pressure of 30~55MPa and the equipment operated smoothly

## 2 The World's First Distributed Power Hydraulic Technique and Special Fracturing Unit for Coalbed Gas Development

From September to November 2021, five fracturing units finished 29 sections of coalbed fracturing by tubing-casing annulus injection and supplying liquid to tubing, with an average working pressure of 35MPa, a single unit displacement of 1.6m<sup>3</sup>/min, with smooth operation, and good working condition

## 3 Maximum Operation Depth of 6,802 Meters Breaks the Maximum Operation Depth Record

In June 2021, SANY LG450 coiled tubing unit finished the drilling and grinding construction of ultra-deep high-pressure Well Zu 203H2-1 in the Chongqing Fuling region, the maximum operating depth of 6,802 meters, creating the operation depth of shale gas well coiled tubing operation

## 4 Accurate Discharge Construction on Sandblasting and Perforation of Shanxi Coalbed Methane

In September 2020, 130 bbl sand blender truck supplied liquid to coalbed fracturing by sandblasting and perforating, with a displacement of 0.7m<sup>3</sup>/min, and a sand concentration of 9%. The minimum stable speed of the auger was 6.5r/min, and the displacement and sand concentrations were stable

## 5 The Longest Horizontal Section Shale Gas Well Fracturing in China

In April 2022, twenty-five 2500HP mechanical fracturing pump units finished the shale gas fracturing in Platform Ning 209H26 in Shibe, Gongxian, Yibin, Sichuan Province, with well depth of 5,300 meters, the average pressure of 85~95MPa, the total liquid volume of 2,000 cubic meters, even if the construction pressure at the well site was high and the construction was difficult, the equipment ran smoothly









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