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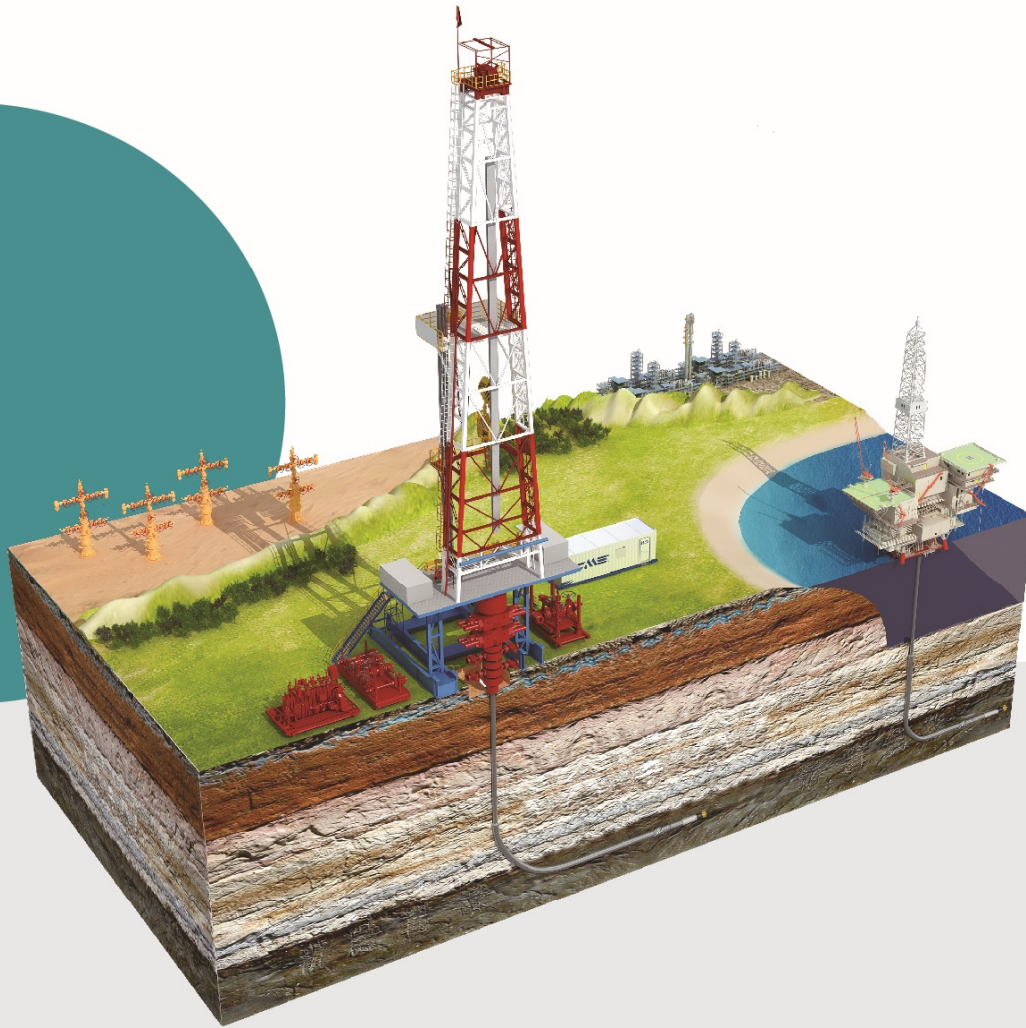
WELLHEAD EQUIPMENT

WELLHEAD DEVICE

CHRISTMAS TREE

WELLHEAD CONTROL DEVICE



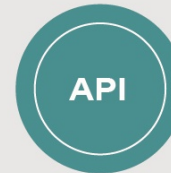


ABOUT SHENKAI

Shanghai Shenkai Petroleum Equipment Co.,Ltd is a wholly-owned subsidiary of China A-share listed enterprise "Shenkai shares" (stock code 002278). Shenkai located in Shanghai Pudong district, Shenkai is an enterprise mainly unceasing devote to researching, manufacturing, sale wellhead Christmas tree, wellhead control system, choke and kill manifold, manifold control system, blowout preventer, BOP control system. Shenkai is China's most comprehensive wellhead equipment manufacturing enterprises, can provide users with a complete wellhead supporting solutions.

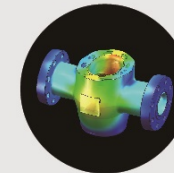
Shenkai has more than 50 years of professional and technical accumulation and historical heritage, relying on Shanghai's talent and technical advantages, Shenkai aim at high-end manufacturing and becoming a world-class oil equipment manufacturing enterprise, to provide customers with quality products and services for the responsibility, Shenkai continuously developed and manufactured a series of wellhead and well control equipment products with large diameter, high pressure, high resistance to H₂S (CO₂), ultra-high pressure equipment, it provides safety guarantee for the exploration and development of high-sulfur, ultra-high temperature, ultra-low temperature, ultra-deep well and other difficult oil and gas fields.

With complete quality assurance system, certified by QHSE, ISO9001, APIQ1 quality system, and has the certificate of API6A, 16A, 16C, 16D, 17D and Russian custom union. Our products are widely used in Sinopec, CNPC and CNOOC (offshore) oil fields, and are sold to dozens of countries and regions in the Middle East, Russia, the United States, Africa, Canada, Australia, central Asia, Southeast Asia and other countries and regions. With enterprise spirits of "Responsibility, Reality, Innovation, Win-Win", quality and technology as the foundation and customer demand as the core, the company will continue to build its core competitiveness and make unremitting efforts for the development of petroleum equipment technology.



QUALITY MANAGEMENT SYSTEM

With complete quality management system, has passed the API Q1, HSE system certification, from all aspects of product quality control, to ensure reliable product quality. API 6A (the highest grade PSL4, PR2), API 16C and API 17D Certificates have been obtained.



R & D CAPABILITY

With strong research and development ability, with finite element stress calculation and other computer-aided design, completed verification test means, developed a number of international advanced level, with independent intellectual property rights of new products, and has a number of inventions and utility model patent technology.



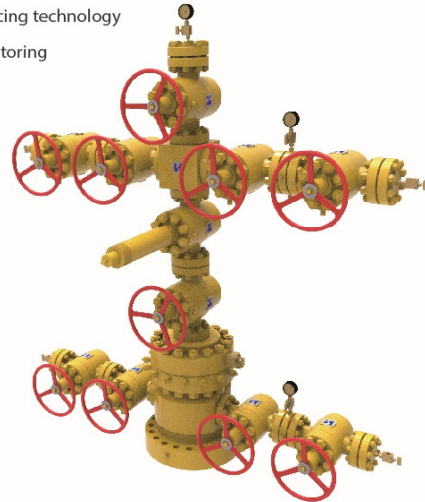
MACHINING CAPABILITY

With strong capability of machining and equipped with CNC gantry machining center, large CNC floor-type boring and milling machine, large CNC vertical lathe, horizontal machining center, vertical machining center, gantry grinding machines and other equipment hundreds of units, dozens of fine, large, rare and other high-end equipment, world's top welding equipment, can process all kinds of large, super large parts.

WELLHEAD EQUIPMENT AND CHRISTMAS TREE

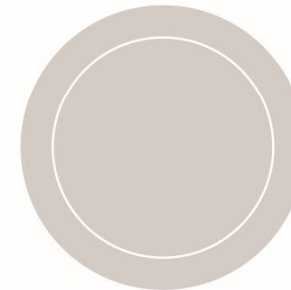
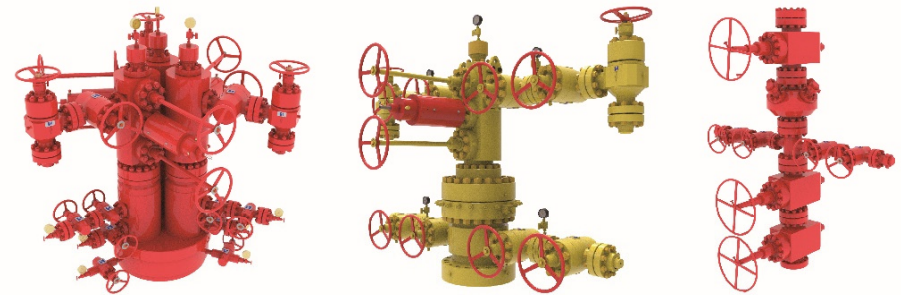
Every wellhead equipment and Christmas tree manufactured by Shenkai aims to control volatile and toxic liquids and gases released into the ground and water. Hence, every set of wellhead equipment and Christmas tree that Shenkai manufactured is designed and manufactured with standard higher than API 6A.

- Strictly designed and manufactured according to API 6A standard
- Compact structure, running reliable
- Provide 2000~20000 psi product
- Provide metal sealing for all wellhead equipment and Christmas tree
- Maintain long-term stability, reliability, and long service life
- Compact structure, Small size, full function, easy to install and maintenance
- Equipped with safety valve can maximize insures the safe running of the wellhead
- Super nickel-based alloy port surfacing technology
- Implement automatic remote monitoring



PRODUCT MODEL

HH level wellhead and Christmas tree, triple or dual tubing in one well, ESP wellhead device and production tree, dual tubing production tree, integrated wellhead device, large bore fracturing tree, thermal wellhead, gas injection tree and other products.



WELLHEAD CONTROL PANEL

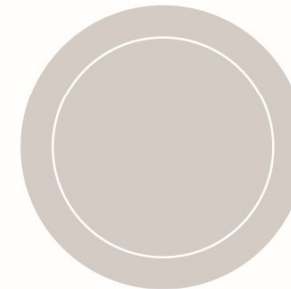
Main function is to emergent close the ground safety valve (SSV), subsurface safety valve (SCSSV) in place. Well shut protection in high and low production line pressure. (High: 2500 psi / 17.2Mpa, Low: 300 psi / 2.1Mpa), emergent shut-down if on fire.

- Control 1~4 safety valves
- Pressure rated 10000 psi
- High and low pressure protection, Fusible plug fire protection
- RTU remote control, automatically well site
- Fault warning and automatic isolation and APP applied
- Simple operation
- Shut down in three seconds
- Explosion-proof zone: Zone 1/2
- Environmental temperature: -35~120°C



WELLHEAD CONTROL PANEL

Normal model	Quantity of controlled safety valves	Pressure level (psi)			Power source			
		3000	5000	10000	Manual pump	Electric pump	Pneumatic pump	Solar energy
WCP-0111	1	√	√		√			
WCP-0112	1	√	√	√		√		
WCP-0114	1	√	√	√			√	
WCP-0115	1	√	√					√
WCP-0121	2	√	√	√	√	√		
WCP-0122	2	√	√	√		√		
WCP-0132	3	√	√	√				
WCP-1524	2	√	√	√			√	



SALES & APPLICATIONS

Our products are widely used in Sinopec, CNPC and CNOOC (offshore platform) oilfields, and have been exported to various countries and regions in the Middle East, Russia, America, Africa, Canada, Australia, central Asia and Southeast Asia, etc.



HH LEVEL HIGH H₂S RESISTANT CHRISTMAS TREE

- Applied to Uzbekistan
- Working pressure: 5000 psi
- HH-NL, PU, PSL3G, PR2



HH LEVEL HIGH H₂S RESISTANT CHRISTMAS TREE

- Applied to Sichuan Puguang area
- Working pressure: 10000~15000 psi
- HH-NL, PU, PSL3G, PR2

LARGE BORE FRACTURING CHRISTMAS TREE

- Applied to shale gas exploration in the United States
- Working pressure: 15000 psi
- EE-NL, PU, PSL3G, PR1



DUAL TUBING CHRISTMAS TREE

- Applied to Nigeria project
- Working pressure: 5000~15000 psi
- FF-NL, PU, PSL3G, PR2



GAS INJECTION CHRISTMAS TREE

- Applied to Henan Puyangwen
- 23 gas storage project
- Working pressure: 10000 psi
- CC, PU, PSL3G, PR2



ELECTRIC PUMP WELLHEAD CHRISTMAS TREE

- Applied to Indonesia project
- Working pressure: 5000 psi
- FF-1.5, PU, PSL3, PR2

INTEGRAL WELLHEAD

- Applied to Indonesia project
- Working pressure: 5000 psi
- FF-1.5, PU, PSL3, PR2



TRIPLE IN ONE WELL CHRISTMAS TREE

- Applied to Thailand project
- Working pressure: 5000 psi
- CC, PU, PSL3G, PR2



WCP-0112 WELLHEAD PANEL

- Applied to overseas project
- Working pressure: 5000 psi
- Temperature: 0~60 °C
- Real-time indication and remote transmission valve position
- Simple operation with double button



HIGH H₂S RESISTANT WELLHEAD PANEL

- Applied to Sichuan Yuanba area
- Working pressure: 0~15000 psi
- Temperature: -29~80 °C
- Using Inco 825 material for special component for H₂S resistant
- Equipped with RTU control system

WCP-0122 WELLHEAD PANEL

- Applied to Sichuan Yuanba area
- Working pressure: 0~20000 psi
- Temperature: -29~80 °C
- Shut down: <3 seconds
- Provide single well, multi well control system



Wellhead Oil Recovery

Medium and high-end wellhead equipment and manifolds

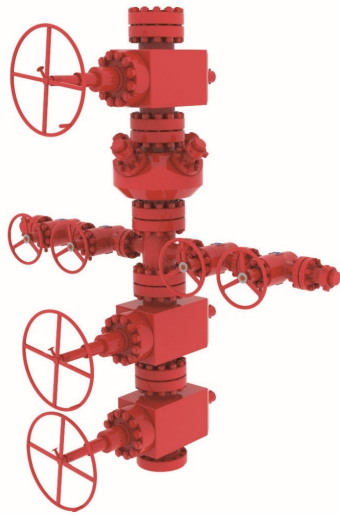
Large-diameter fracturing tree

Reference standards: API 6A, ISO10423, GB/T22513 and NACE 0175

This product is mainly used in productivity testing, acidizing, fracturing, well completion, gas production and other working conditions.

Product Features

- Consisting of multiple large-diameter fracturing gate valves, fracturing heads, and unions
- Maximum diameter of 7-1/16" and maximum pressure of 15,000 psi
- Fracturing head designed with compact structure, small size and light weight for easy installation
- Used for high-pressure and large-diameter manual valves, and designed with a ball screw structure to reduce switching torque
- Compact design to greatly reduce ground area and height
- Stable and reliable in long-term use, with a long service life



7-1/16"

Maximum diameter of 7-1/16

15000psi

Maximum pressure of 15,000 psi

Compact structure

Fracturing head designed with compact structure, small size and light weight for easy installation

Wellhead Oil Recovery

Medium and high-end wellhead equipment and manifolds

Intelligent gate valve (safety valve, block valve)

Reference standards: API 6A, ISO10423, GB/T22513 and NACE 0175

Through coordinating with the ground safety control system, the intelligent gate valve can automatically shut down the well and the cut off gas source in case of abnormalities. Hydraulic, pneumatic, electric and other driving modes are available.

Product Features

- Spring return is designed to ensure reliable and stable action, as well as rapid and sensitive response.
- The piston, piston rod and other parts of the actuator are resistant to wear to ensure its sensitive response and longer service life.
- As an independent component, the standard actuator is easily and reliably connected to the safety valve, and re-commissioning of the safety valve is not required when the actuator is replaced.
- Under special circumstances, the actuator can forcibly open the safety valve mechanically to maintain normal production, even without a hydraulic source.
- The driver piston is treated to have a harder surface and stronger wear resistance, thereby with a longer service life.



Anti-wear design

For the actuator piston, piston rod and other parts

Convenient and reliable

The standard actuator is connected to the safety valve as an independent component

Longer service life

The driver piston is treated to have a harder surface and stronger wear resistance

Wellhead Oil Recovery

Medium and high-end wellhead equipment and manifolds

Intelligent throttle valve

Reference standards: API 6A, ISO10423, GB/T22513 and NACE 0175

The intelligent throttling valve can automatically regulate its opening degree to ensure the subsequent production and the required flow rate in the gas gathering pipeline.

Product Features

- Highly resistant to fire: It has passed the API 6FA test
- Reliable rod sealing, which has passed the ISO 15848-2 test.
- Highly resistant to sulfur HH, surfacing with 625 or integrally with 718 for parts in contact with fluid
- Accurate flow control. Fluent software is first used to simulate flow curve according to field flow characteristics, with the electric head adjusting accuracy controlled within 1%.
- Easy to operate. Manual, hydraulic, fixed and electric driving modes are available



Highly resistant to fire

Passed the API 6FA test

Highly resistant to sulfur HH

Surfacing with 625 or integrally with 718 for parts in contact with fluid

Easy to operate

Manual, hydraulic, fixed and electric driving modes available

Wellhead Oil Recovery

Medium and high-end wellhead equipment and manifolds

HP regulating valve

Reference standards: API 6A, ISO10423, GB/T22513 and NACE 0175

Through receiving the control signal output from the regulating control unit, it uses the driving force to change the medium flow, pressure, temperature, liquid level and other process parameters of HP valves.

Product Features

- Maximum pressure of HP regulating valve can reach up to 105MPa
- Self-diagnosis improves reliability and further reduces failure rate
- Characteristic curve of the valve is improved to achieve higher regulating quality
- Automatic control of opening degree is designed to regulate the medium flow, pressure and liquid level
- Small leakage, easy to guarantee closure, or even completely cutoff



105Mpa

The maximum pressure that the HP regulating valve can be achieved

Self-diagnosis

improves reliability and further reduces failure rate

Small leakage

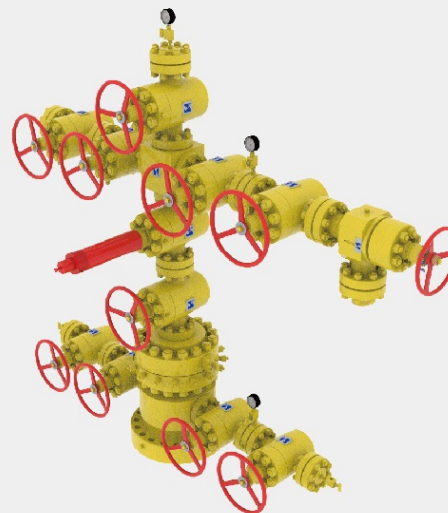
Easy to guarantee closure, or even completely cutoff



WELLHEAD EQUIPMENT & CHRISTMAS TREE (HH LEVEL)

- Standard: API 6A, ISO 10423, GB/T 22513, NACE 0175
- This product is suitable for the use of high hydrogen H₂S and other corrosive media in the working condition, the device use special material of corrosion resistant

- Applied in Sichuan Puguang, Yuan Ba, Uzbekistan, Kazakhstan and other regions
- Maximum working pressure rated 105Mpa (15000psi), HH-NL, PU, PSL3G, PR2
- H₂S concentration reach 65%, CO₂ concentration reach 35%
- All metal sealing device, suitable for high pressure and corrosion resistant and harsh working environment



WELLHEAD EQUIPMENT & CHRISTMAS TREE (GAS INJECTION)

- API 6A, ISO 10423, GB/T 22513, NACE 0175
- This product is mainly used for gas injection condition of gas storage tank to meet the needs of gas injection and other production and operation functions

- Applied in Henan Puyang Wen 23 project
- Working pressure 35Mpa (5000psi), CC, PU, PSL3G, PR2
- Equipped with safety valve can maximize insures the safe running of the wellhead
- All metal sealing device, suitable for high pressure and corrosion resistant and harsh working environment

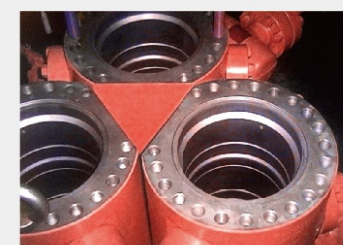
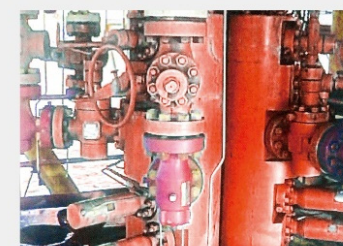


WELLHEAD EQUIPMENT & CHRISTMAS TREE (LARGE BORE FRACTURING TREES)

- API 6A, ISO 10423, GB/T 22513, NACE 0175

- This product is mainly used for shale gas production capacity test, acidification, fracturing and completion gas production and other working conditions

- Applied in Chongqing Peiling, American shale gas project
- Working pressure is 105Mpa (15000psi), EE-NL, PU, PSL3G, PR1
- Flow rated 80~110BBL/min, fracturing amount reach to 100
- Applied for high pressure, large bore manual valve, ball screw structure to reduce switching torque



WELLHEAD EQUIPMENT & CHRISTMAS TREE (TRIPLE IN ONE WELLHEAD DEVICE)

- API 6A, ISO 10423, GB/T 22513, NACE 0175

- This product is suitable for the production of three different strata or three different sections of oil layers in one well

- Applied in Thailand offshore project
- Working pressure 35Mpa (5000psi), CC, PU, PSL3G, PR2
- Reduced mounting height and size, increased sealing reliability
- Each wellhead can be installed separately



WELLHEAD CONTROL SYSTEM ELECTRIC PUMP SERIES (WCP-0132 WCP-0125)

- API 6A, API 14C, API 14D, ISO 10423, NACE MR 0175

- This product is suitable for wellsite controlled by electronic control system

- Automatically refill pressure function
- Compact cable layout
- Equipped with short cable and fast response
- Applied imported components which is reliable
- Adopts solar power, energy conservation and environmental protection
- Parameters at all levels can be transmitted remotely
- Safety valve can be open and close in order
- A touch screen can be configured to observe wellhead data
- Modular design of each well for easy maintenance



WELLHEAD CONTROL SYSTEM PNEUMATIC PUMP SERIES (WCP-0114)

- API 6A, API 14C, API 14D, ISO 10423, NACE MR 0175

- This product is suitable for gas driven well site using safety valve

- Automatically refill pressure function
- Adopts solar power, energy conservation and environmental protection
- Compact cable layout
- Equipped with short cable and fast response
- Applied imported components which is reliable
- Adopts gas drive and control which has no pollution



WELLHEAD CONTROL SYSTEM SINGLE WELL SINGLE VALVE ELECTRIC PUMP (WCP-0112)

- API 6A, API 14C, API 14D, ISO 10423, NACE MR 0175

- This product is suitable for single safety valve wellsite which are watched by supervisor

- Automatically refill pressure function
- Compact cable layout
- Equipped with short cable and fast response
- Applied imported components which is reliable
- Parameters at all levels can be transmitted remotely



WELLHEAD CONTROL SYSTEM SINGLE WELL SINGLE VALVE PNEUMATIC PUMP (WCP-0114)

- API 6A, API 14C, API 14D, ISO 10423, NACE MR 0175

- This product is suitable for single safety valve well site which has air driven source

- Automatically refill pressure function
- Compact cable layout
- Equipped with short cable and fast response
- Applied imported components which is reliable
- Adopts gas drive and control which has no pollution



WELLHEAD CONTROL SYSTEM SINGLE WELL TRIPLE VALVES ELECTRIC PUMP (WCP-0132)

- API 6A, API 14C, API 14D, ISO 10423, NACE MR 0175
- This product is suitable for triple safety valves wellsite

- Automatically refill pressure function
- Compact cable layout
- Equipped with short cable and fast response
- Applied imported components which is reliable
- Parameters at all levels can be transmitted remotely
- Safety valve can be open and close in order
- A touch screen can be configured to observe wellhead data



WELLHEAD CONTROL SYSTEM 15 WELL DOUBLE VALVES ELECTRIC PUMP (WCP-1524)

- API 6A, API 14C, API 14D, ISO 10423, NACE MR 0175
- This product is suitable for multi-well control, most are used in offshore project

- Automatically refill pressure function
- Compact cable layout
- Equipped with short cable and fast response
- Applied imported components which is reliable
- Parameters at all levels can be transmitted remotely
- Safety valve can be open and close in order
- A touch screen can be configured to observe wellhead data
- Modular design of each well for easy maintenance



WELLHEAD CONTROL SYSTEM SINGLE WELL SINGLE VALVE MANUAL TYPE (WCP-0111)

- API 6A, API 14C, API 14D, ISO 10423, NACE MR 0175

- This product is suitable for single safety valve which are watched by supervisor

- Simple operation and maintenance
- Compact cable layout
- Equipped with short cable and fast response
- Applied imported components which is reliable



WELLHEAD CONTROL SYSTEM SINGLE WELL DOUBLE VALVE MANUAL TYPE (WCP-0121)

- API 6A, API 14C, API 14D, ISO 10423, NACE MR 0175

- This product is suitable for single safety valve which are watched by supervisor

- Simple operation and maintenance
- Compact cable layout
- Equipped with short cable and fast response
- Applied imported components which is reliable
- Safety valve can be open and close in order