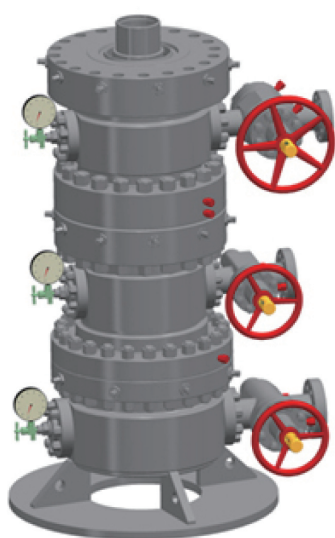


## Well Head and Control Equipment

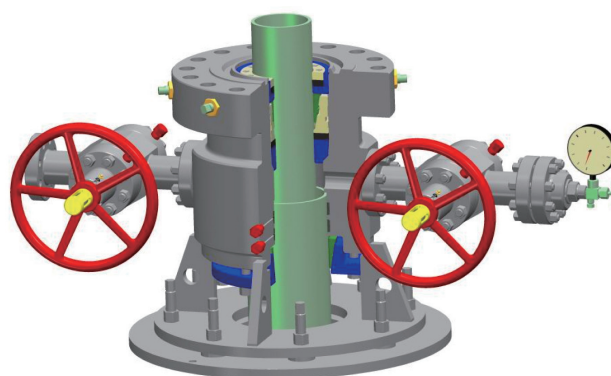
### Wellhead Equipment

Well head Equipment is an important equipment for drilling & production .CNPC offers series well head equipment. Products conform to API Spec. 6A, and are granted the right to use API monogram.

Wellhead equipment main include casing head, casing spool, gate valve and pressure guage, etc. Casing hangers are all installed in the casing head, casing spool.



Wellhead



Slip casing head

### 1. Casing Head

The casing head on the top of casing string is a key unit to connect the casing pipe, BOP and oil(gas) Production wellhead, and also to hang casing pipes except for surface casing. Casing heads are of two types according to its hanged casing types: screw casing head and slip casing head. They also can be distinguished by its hanged casing layers: single casing head, dual casing head and triplex casing head and so on.

#### 1.1 Slip Casing Head

##### Technical features

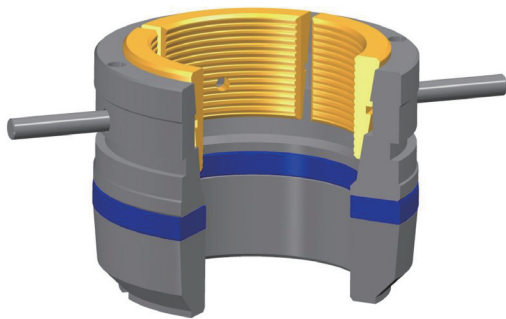
- There are outlets on the two sides of the cross. One is connected with the threaded, flange, the joint, the intercepting valve and the pressure gauge. The other is connected with the gate valve. Through the pressure gauge, you can observe the pressure gathering between the casing and the casing. As necessary, open the gate valve to release the pressure.
- The lower slip suspends the surface casing. The bottom bracket and the adjusting screw transmit the wellhead load to the ground and adjust the casing head to the level by using the adjusting screw. There are two BT seals and applicable grease-injecting ports under the cavity. When using it, you must inject high-pressure sealant from the grease-injecting valve so as to make the BT seal function. If there' s leakage in the seal, you shall inject sealant from the grease-injecting valve respectively so as to make the sealing continue acting. The grease-injecting pressure is not higher than

the rated working pressure of the cross. There's a sealing plane matching the slip hanger above the cavity. There's a jack screw on the flange, which is used to lock the wear cover (protecting the sealing plane). After being seated into the sealing box, it can lock it down (if using the threaded hanger, you can use it to fix the hanger). If there's leakage at the jack screw, you can tighten the gland so as to make the seal act.

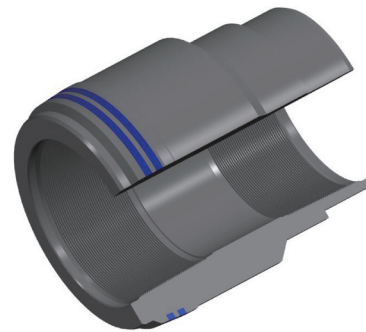
- Equipped with special removal tool with wear cover for removing the wearing cover.
- The wellhead pressure-testing plug (option) is designed so as to test pressure on the wellhead equipment.

### Technical features of major parts

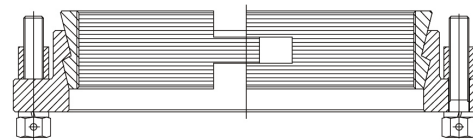
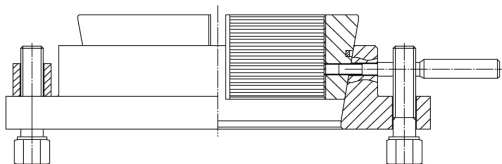
Slip hanger: The slip insert and the slip bowl adopt the structural type of single cone. It can be tightened and reliable. The loading capacity is strong. It's convenient to fix it.



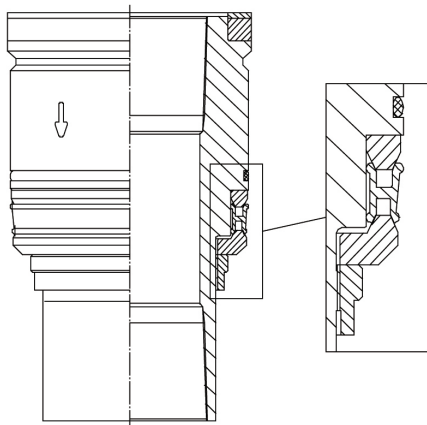
Slip hanger



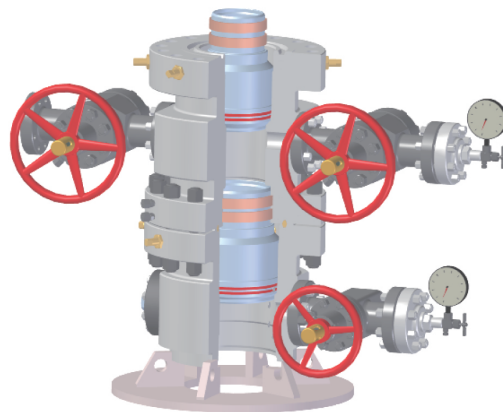
Threaded hanger



Reverse slip hanger



Threaded hanger with metal seal



Threaded casing head

## 1.2 Threaded Casing Head

### Technical features

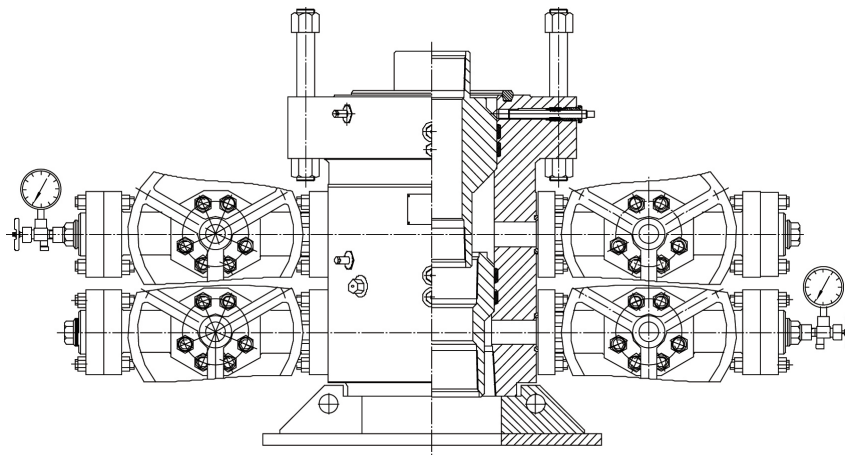
The lower casing thread connects the surface casing. The bottom bracket transmits the wellhead load to the ground. There are two BT seals and applicable grease-injecting ports under the cavity. There's a sealing plane matching the slip hanger in the cavity. There's a jack screw on the flange, which is used to lock the wear cover (protecting the sealing plan). After being seated into the casing hanger, it can lock it down. If there's leakage at the jack screw, you can tighten the gland so as to make the seal act.

There are outlets on the two sides of the cross. One is connected with the gate valve, the treaded flange, the intercepting valve and the pressure gauge. The other is connected with the gate valve. Through the pressure gauge, you can observe the pressure gathering between the casing and the casing. As necessary, open the gate valve to release the pressure.

## 1.3 Integral Thread Casing Head

### Technical features

- It reduces one casing head spool and lowers the overall height of the casing head;
- It reduces the connected place and the leaking position. The sealing performance is more reliable.



## 2 casing spool

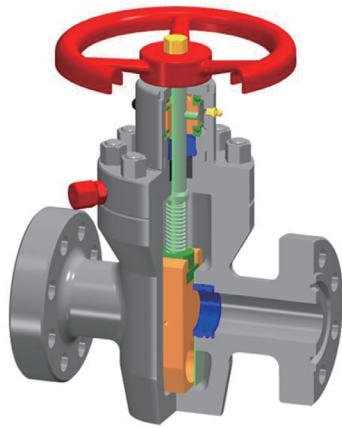
The casing spools are main used for hanging technical casing pipe with one or few . Valve and pressure guage can be connected on two side of the casing spool. The bottom of casing spool can be connected with casing head and the upper connected with oil/gas production wellhead

## 3. Valves

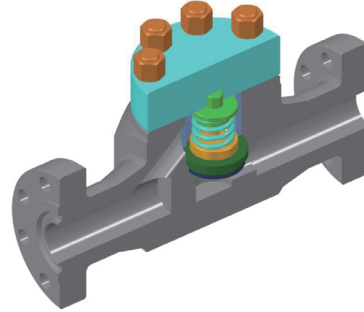
CPNC offer series flage type gate valve(manual/hydraulic),chocke valve(manual/hydraulic, Positive /adjustable), one way valve and surface safety salve,etc.They are all in accordance with API Spec 6A.

### Main technical parameter

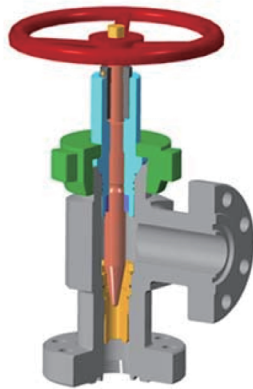
Bore Dia., in	21/16 ~ 41/16
Working pressure, MPa	14 ~ 70
Temperature, °C	-29 ~ 129



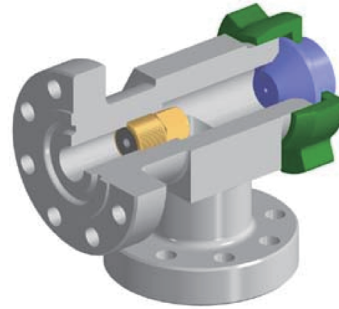
Rising stem ( PFF ) Gate Valve



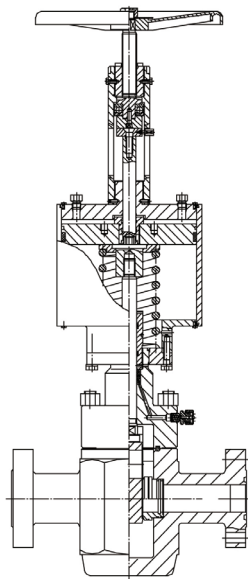
One- way valve



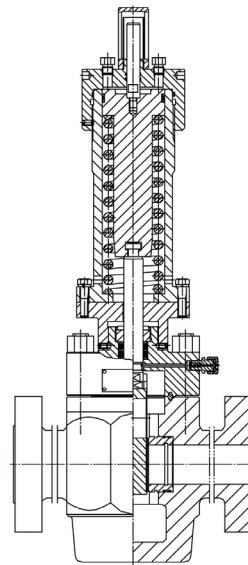
Adjustable Choke



Positive Choke



Pneumatic Surface Safety Valve



Hydraulic Surface Safety Valve