

# Catalog

Top drive  
drilling  
device



# Top drive drilling device

## 1. The main technical parameters

### 1.1 Basic parameters

In the name of the drilling depth	2000m ( 4½"Drill pipe )
Maximum load	1350 KN
The main shaft hole size	φ64mm ( φ51mm )
Circulating pressure rating	35MPa ( 5000psi )
System weight	5t(The main body, Excluding single-rail and migration bracket)
Operating height	5.2m(Mention annulus to the HAND CARD on the flat)
The power supply voltage	24 VDC; 380VAC
Diesel Power	294kW(400HP)
Ambient temperature	-30℃～42℃
Elevation	≤3000m

### 1.2 Drilling parameters

Speed range	0～155 r/min
Operating torque	0～15 KN·m
Maximum torque of shackle	55KN•m(discontinuous)

### 1.3 Diesel engine parameters

Diesel Engine Model	TWD1240VE , VOLVO
Engine power	294kW (400HP)
Set the speed	1800r/min (power 282kW)

### 1.4 Hydraulic main system

Pressure of work	35MPa
Maximum pressure	42MPa
System flow	380l/min
Hydraulic auxiliary system operating pressure	380l/min
Work flow	40l/min

## 1.5 Electrical control system

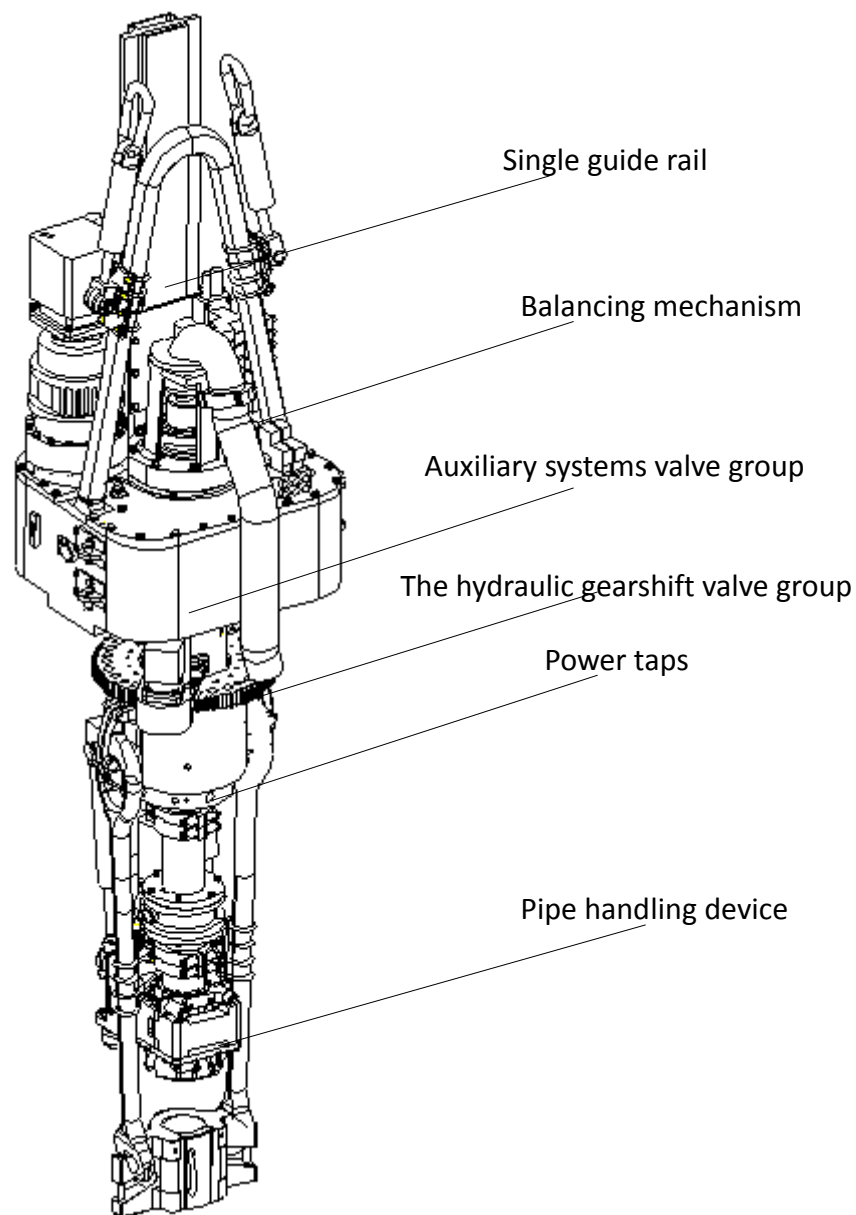
Storage battery	2 group(6-QA-200HD、 4 mass)
Direct voltage	24VDC
Hydraulic oil temperature alarm	75℃
Hydraulic tank low level alarm	

## 1.6 Pipe handling apparatus

Rotating head speed	2～8 r/min (adjustable)
Hydraulic motor Operating pressure	16MPa
On the division of the blowout preventer (Remote control)	4½"API REG box ~ pin, 35MPaThe
The lower the blowout preventer (manual)	4½" API REG box ~ pin, 35MPa
Back clamp diameter	170mm
Pliers clamping range	2⅞" ~ 5" Drill pipe
The biggest shackle torque	55KN·m
Under rings	150t (1800mm、 2400mm、 2700mm)optional
Tilt arm Angle	Lean forward 30°, Backswing 50

## 2. Main body structure

Top drive drilling device mainly made up Power taps、 Pipe handling device、 Hydraulic transmission、 control system、 Electrical control system、 The driller console、 Single guide rail and block、 migration bracket、 auxiliary device and other parts. See below oil drilling below the top drive main body structure.



Picture1: Oil drilling below the top drive main body structure

### 3. Vulnerable components

Vulnerable components: Mechanical parts、Electrical parts、Hydraulic parts

Mechanical parts: Protection joint—27/8" 、 3½"、 4½"; Back clamp righting copper sleeve、 Back-ups righting copper splint set of mechanical arm, and form a complete set screw、 Diesel engine lubricating oil、 antifreezing solution、 air strainer、 Oil filter.

Electrical parts: Each detection sensor nodes - speed sensors, temperature sensors, proximity switch; The explosion-proof solenoid valves; The secondary display instrument and the button.

Hydraulic parts: Various hydraulic pipe joints - fast connection, oil as a sub, card sets of hydraulic hose. Main lines and auxiliary oil filter, hydraulic oil choice need to undertake choosing according to seasons and temperature.



## 4. The main results

### 4.1 Form a complete set of drill: 650 workover rig



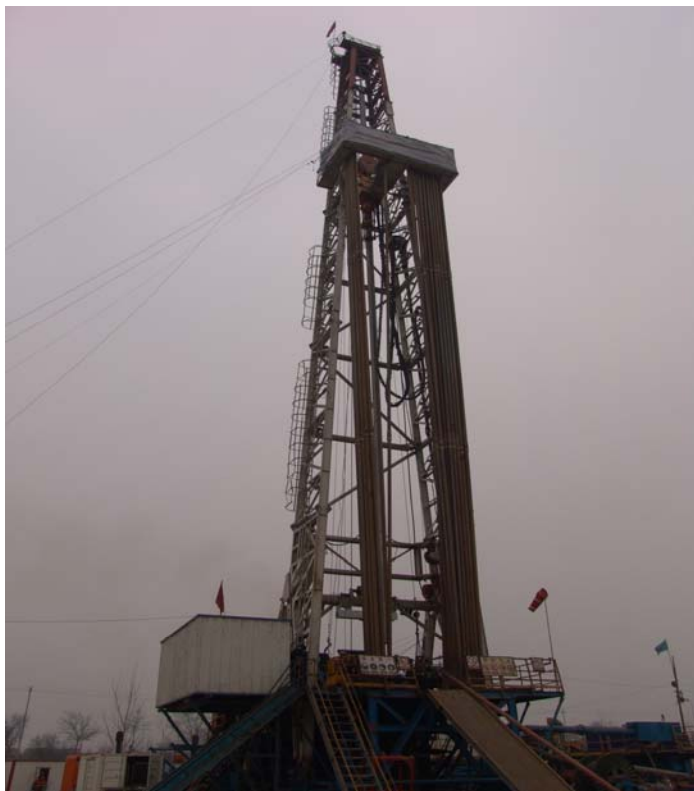
Homework project content: the casing drilling can be used with 650 and 750 workover rig.



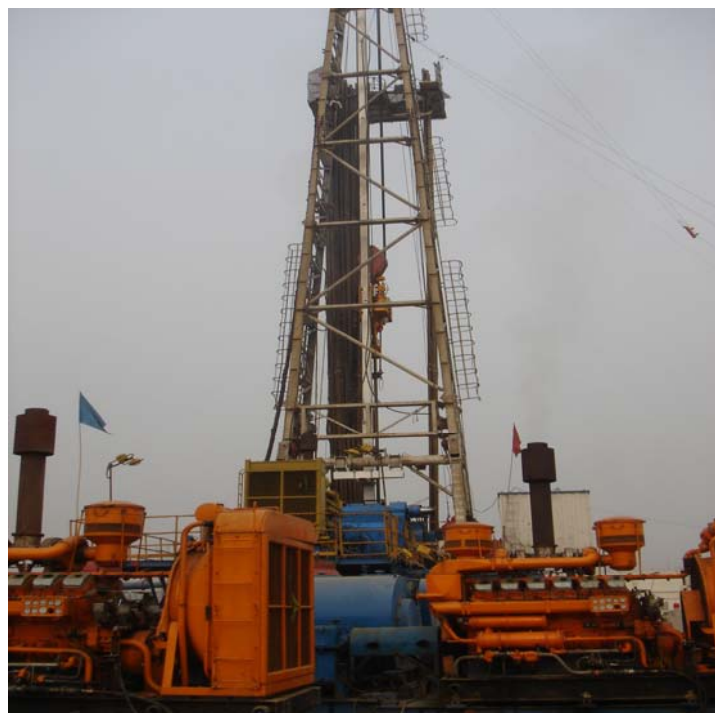


4.2 The top drive is widely used in coal bed methane drilling site, the work in the multi-branch horizontal well drilling engineering, drilling geographic coverage grahame, jincheng, changzhi, shanxi coal bed methane producing.

Supporting drill: 30 drill



Land 36 production well drilling fields



Su 55-11X production well



Coalbed methane drilling



Exploratory well drilling engineering fields



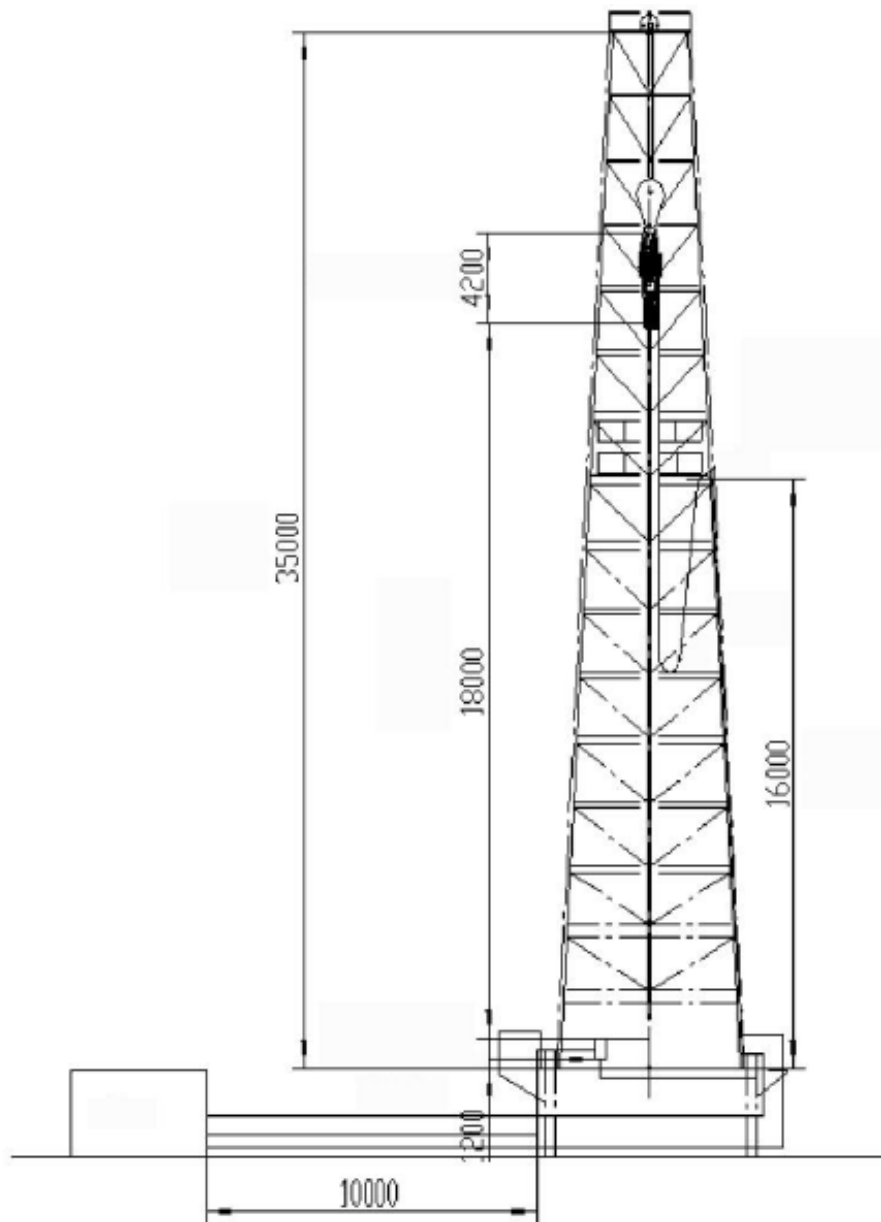


Coalbed Methane multi-branch horizontal wells



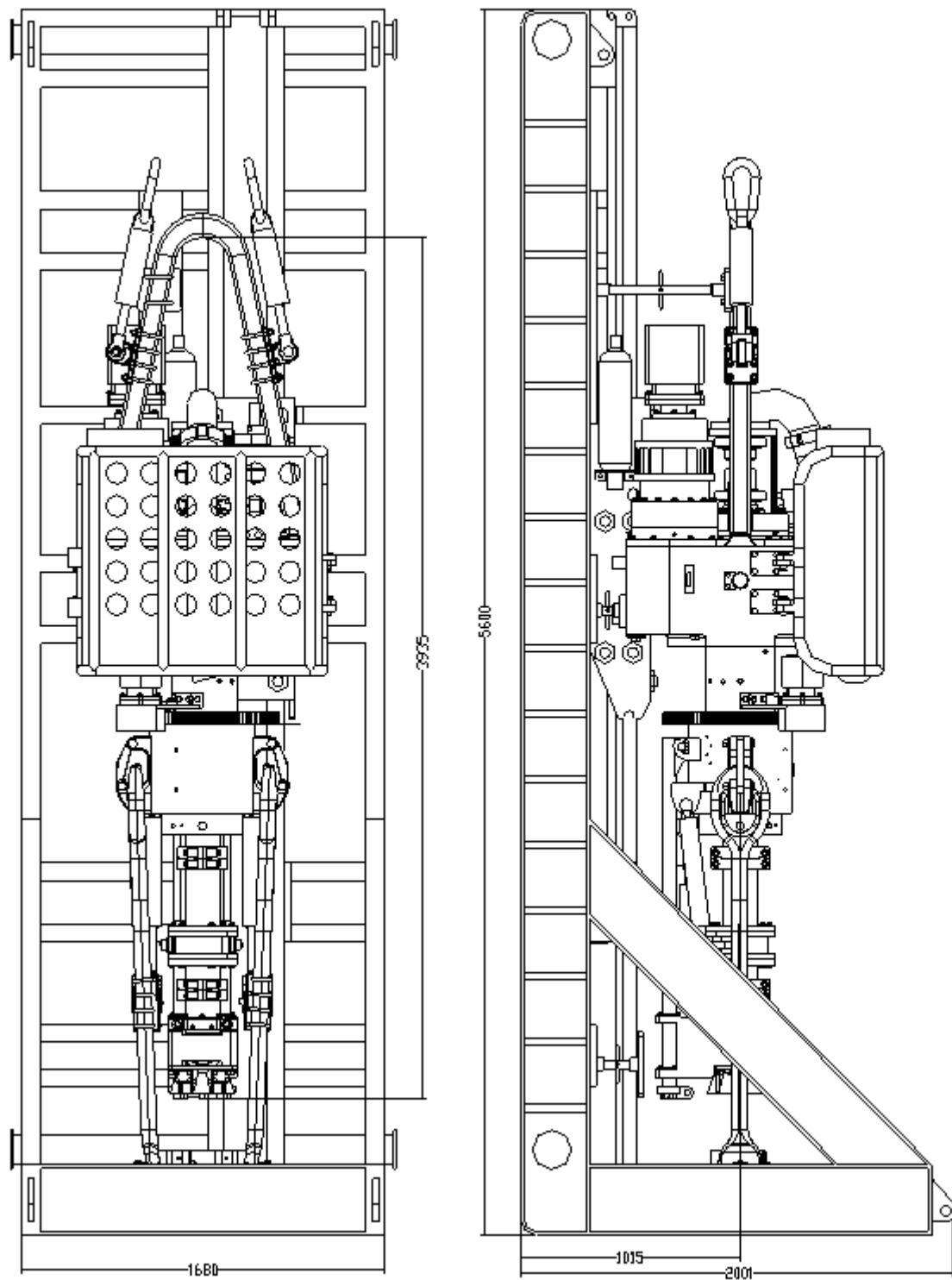
The top drive comprehensive test bench

**Attach 1: Oil the top drive drilling well site layout (Double root)**

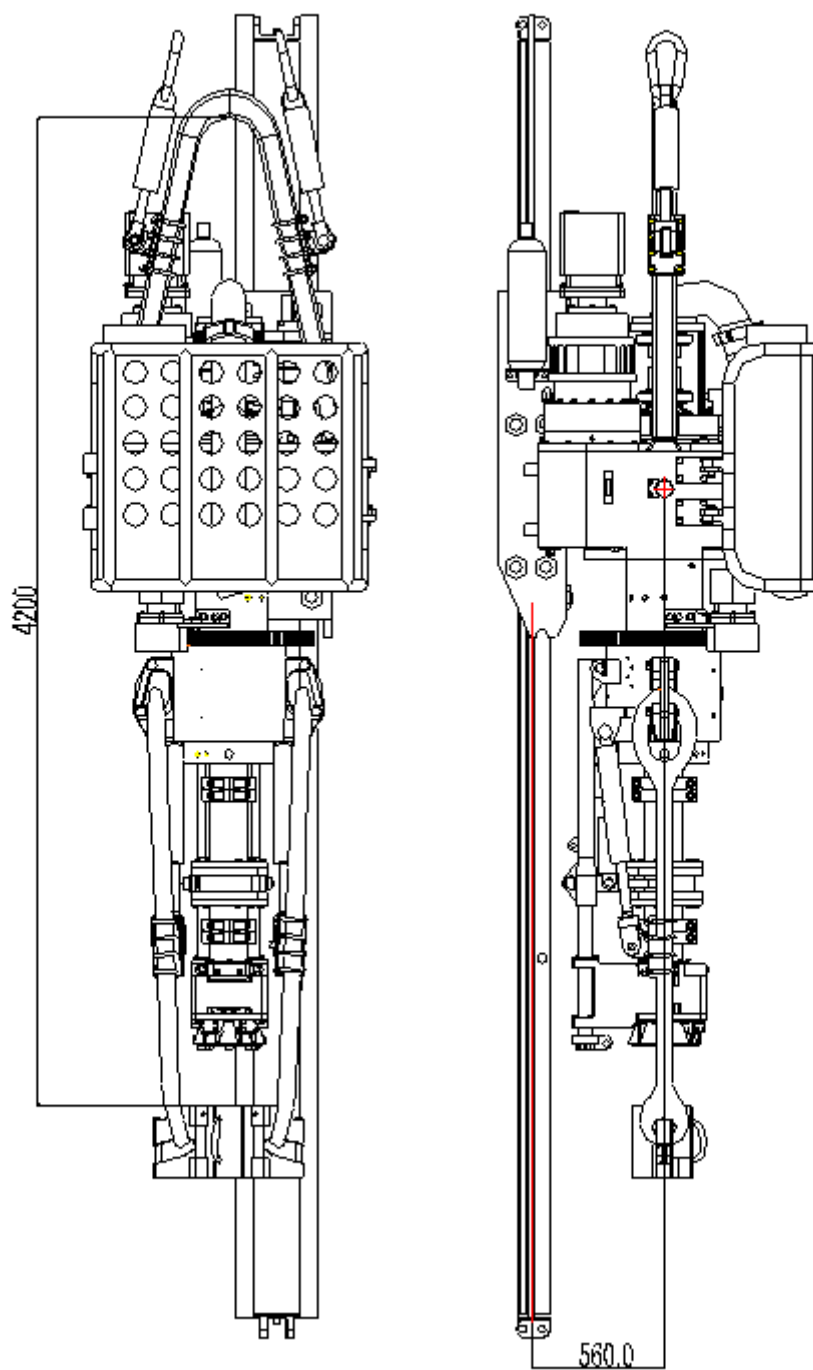


Remark: derrick > 41 meters, can be carried out the homework of three drill pipe columns

## Attach 2: Ontology migration

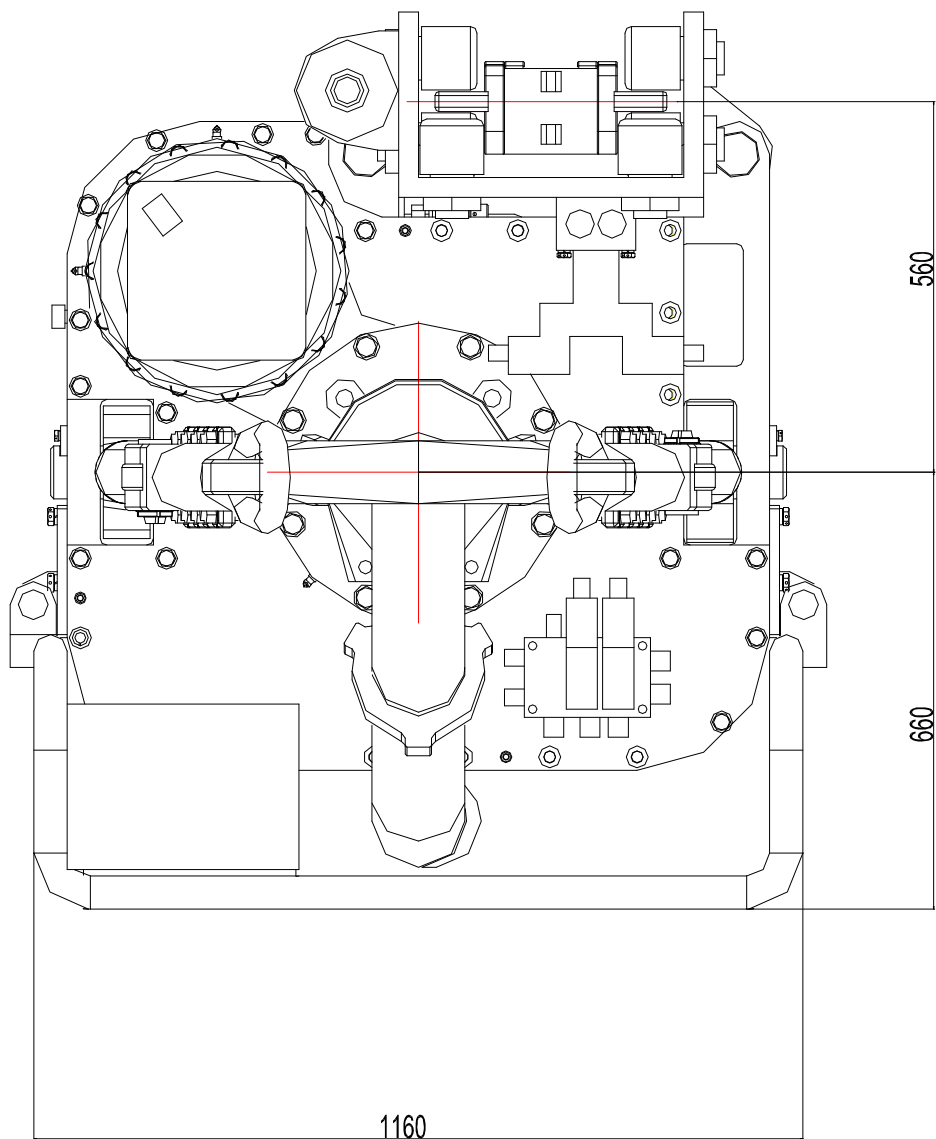


### Attach 3: Ontology structure diagram





#### Attach 4: Vertical view of ontology





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