



DRILLER RIG



NEED FOR DRILLER RIG

Large apartments, shopping malls and the bridges across the river requires a deep foundation. Laying deep foundation with the aid of man power is impossible. For serving this purpose, the Driller is used.

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Rotary drilling rig is a kind of pile drilling machinery which is suitable for deep-hole piling in building foundations, and is also widely used in different foundation constructions. This type of rotary drilling rig uses the specially designed hydraulic telescopic crawler chassis which is characterized with compact structure, good stability, and is able to work smoothly and efficiently in a variety of complex and harsh conditions

MAIN COMPONENTS

- ❖ Chassis
- ❖ Slewing platform
- ❖ Lower boom & Upper boom
- ❖ Triangular frame
- ❖ Mast assemblies
- ❖ Drilling pipe
- ❖ Power head
- ❖ Drill
- ❖ Engine
- ❖ Cab
- ❖ Counterweight
- ❖ Hydraulic system
- ❖ Electrical system

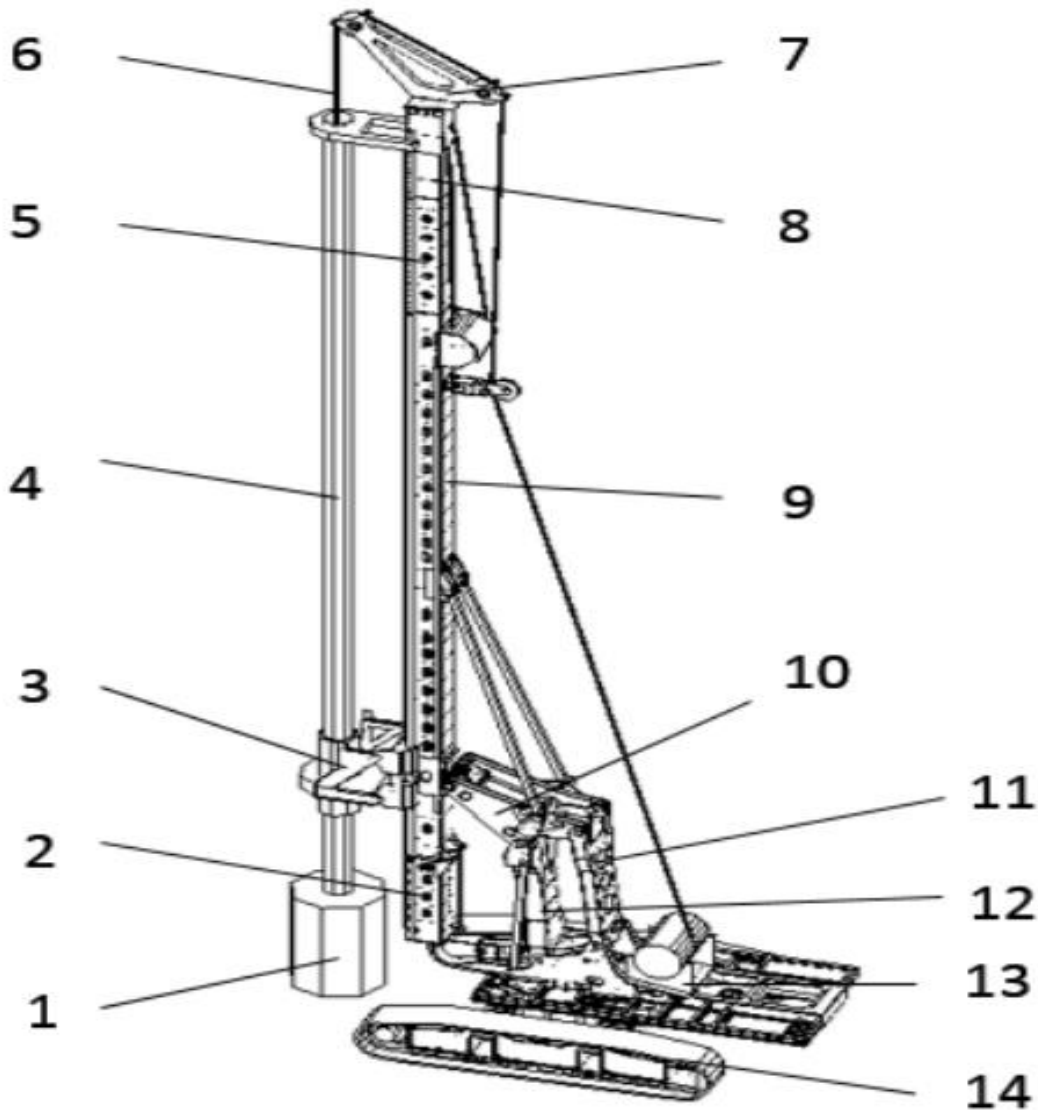
CONSTRUCTIONAL DETAILS

The slewing platform located on the top of the chassis is used to support the working devices, power station and the cab. A hydraulic motor enables the slewing platform to rotate full 360°. The luffing mechanism is an important part of a rotary drilling rig. It consist of lower boom, upper boom, triangular frame, mast leaning hydraulic cylinder and luffing mechanism hydraulic cylinder. The triangular frame, the lower boom and the upper boom constitute a parallelogram mechanism. The triangular frame, the mast leaning hydraulic cylinder and the



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most assemblies form a triangle mechanism. The parallelogram mechanism makes it possible for the mast to move forward and backward by extension or contraction of the mast leaning hydraulic cylinder, while the triangle mechanism controls the mast leaning angle relative to the horizontal by adjusting the extension of luffing mechanism hydraulic cylinder.



1. Drilling head, 2.Mast I, 3.Power head, 4.Drilling pipe, 5. Mast III, 6.Rope, 7.Goose-head frame, 8. Mast IV, 9. Mast II, 10.Triangular frame, 11.Upper boom, 12.Lower boom, 13.Slewing platform, 14.Chassis.

The drilling pipe assembly is suspended by a wire rope from the main hoist, which serves the function to pull out the drilling pipe after every drilling operation. The pulling force could be very high if the drilling head is stuck underground. The mast assembly consists of four different smaller masts connecting one by one to form a long vertical beam-like structure



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to hold the drill pipe in upright position. The goose-head frame on top of the top mast serves as an important supporting part. There is a fixed pulley on the goose-head frame. The drilling pipe assembly is pulled upward using the wire rope over the pulley wheel during the lift-up operation. The power head is the major power source for driving the rotation of the drilling pipe. The torque necessary for the drilling operation is provided by the hydraulic motor inside the power head. A locking mechanism is used to make sure that the power head and the drilling pipe are locked reliably so that they can move together

APPLICATION

- Used in Construction sites for deep foundation.
- Used in oil wells for deep digging.

MANUFACTURING COMPANIES

- Pride Engineering Company
- Komatsu
- Kubota
- JCB