

# ONGC WORKSHOP AND MAINTANANCE

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**Abstract:** - in this research paper, I intend to explain different ways of maintenance and brief explanation about crude oil production and different parts, which are useful in the process of crude oil production.

**Key words:** - ONGC maintenance, crude oil production, parts and machineries in ongc, ONGC workshop

- **NH26 Lathe machine**



It is Russian manufactured machine with two side chucks but Final settlement of work piece is manual by workers. It is mainly use for big & heavy work pieces generally for threading and other operations for instance Internal & external thread. It also require some Extra supports for long pipe holding.

- **Diesel generator**



It is a 6-cylinder generator with two inlet and two outlet. Both the valves are generally Connect with centrifugal pump for high suction of crude oil. There are mainly two types of pumps, which are useful in crude oil suction gear pump, and Reciprocating pump both pumps are useful for land oil suction rig. In addition, centrifugal pump is useful for crude oil suction in ocean rig.

- **Reciprocating pump**



This reciprocating pump is Useful for crude oil production. It is Double stroke with suction and delivery valve. It has four suction (at lower side) & 4 delivery (at upper side) valves .At the top side of reciprocating pump, nitrogen balloon is available. When the system of oil flow is improper then nitrogen balloon compress and make flow proper. In addition, by that knocking effect can be prevent Mostly BPCL pump (c558) is use and it have five plunger. They also use centrifugal pump for water mainly as a safety prospect to prevent fire issues at oilrig site.

- **Rotary table**



It generally settled near to dock head. It is main part for drilling rig .it is useful to transfer rotary motion from top head to bottom drill beat. From one side electrical or mechanical energy provide according to rig and by that energy rotary motion take place, complex Gear system is available inside the table.



## Diesel engine

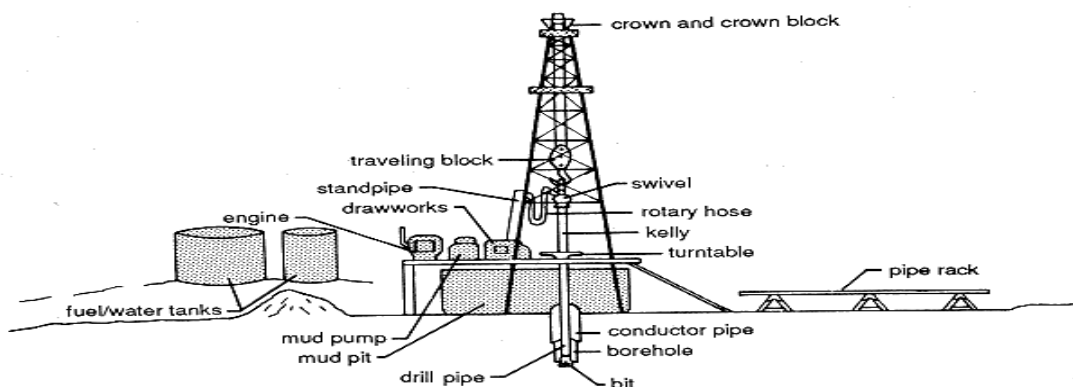
Two diesel engines are used to run the oil rig. one diesel engine is for external purpose .one Small size and high efficiency diesel engine are available at rig for safety purpose. If any of the Main diesel engine stop working with proper efficiency then small engine are put in use so production of oil is continue in rig site. At rig side, two diesel engines are connected with rig for extra power. Elision is connect with diesel engine. It works as a filter and supply power only to the drop box. It maintain and filter the power. PTO (power limiting valve operation) is connected between elision and drop box. It is useful for transmit the power specifically as per requirement. Steel rope is connected and surrounded to the drop box. Drop box transfer energy by steel road.

- **Process of find oil**



The oil is inside the sand stone . Crude Oil found at delta of Asian river which is called basin. After that by sound waves found the probability of availability of oil. Then start drilling at sustain depth. Oil is inside some special shape of rock surface.

- **Drilling rig**





First they drill big size of hole approximately about size of 36" inches in the ground. After that they drill other small size of hole and then down the pipe and counting surround the pipe. Then after seatrain depth they drill smaller size of hole and deep the pipe and counting surround. Then at final they drop tube which made from iron each, which is 10 m long. And oil suction take place from that tube. They use mechanism named charismas tree for oil suction. Its setup on the well the oil produce from it. There is kormaing valve on the top. Then the T is called fluid arm the pipe is connected with it the oil is out from that pipe that there is annealing. Then the last one is called flange coupling.

generally they use two side gear box. Only one of them is use for run the rig. Switching system is available between two side gear box. If we use both sides then the speed of rig become very fast. Steel road from drop box is useful to transmit power in to the crown block. Hanging block is connected between crown block and rotary table. After rotary table mud swivel is available. Mud tank perform a key role in rig site. In suction part of tank there is one inlet and 1 outlet. The mud should continuously rotate in suction section. If its not rotate then mud will jam. In intermediate tank the mud is filtered. Used mud is filtered and transmitted to the intermediate tank. In sacker tank used mud are transmit over there soil particles and mud are filtered. Trif tank use to transmit fresh mad. Once we use mud then the quantity of purified mud decrees to 50% less so in that part the new mud are transfer.



BOP (low and prevent) is Useful to stop oil flow from well. Its connected with accumulator. It create pressure by nitrogen cylinder of accumulator External presser block the oil flow. mainly used when the oil well going to be clean. BOP accumulator unit is for block the oil line from flange. Nitrogen gas is available in cylinders. Different valves available by setup first pipe is block by brake system by second one the system cut the pipe and block the oil. Presser is require to be maintain over the system.



- **Sucker head pump**



This pump is connected with gear drive. it is used when the pressure of oil is low. The rod is connected with one end of the sucker rod and this rod goes into the Christmas tree as shown in the photo. So it works as a piston pump, same as a cycle air pump. At the other end, a half crank system is available, which is powered externally for rotary motion.

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### Reference

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