

## **The present status of development on the reverse circulation drilling technique in China**

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The reverse circulation(RC)drilling techniques have been used for 40 years in China. Since RC drilling has higher drilling efficiency, better geologic result in the mineral exploration, and is easy to drill large diameter hole in foundation drilling, so, it has been widely used in the mineral and foundation drilling.

There are many types of RC drilling techniques in China, they are: pressure RC drilling(with high pressure air or liquid and dual-wall pipes in whole hole); air-lift RC drilling(with compressed air and partial dual-wall pipes and single pipes); suction-pump RC drilling(with suction pump and single pipes): jet RC drilling(with jet pump and single pipes).

The drilling pipes for RC have single and dual wall pipes, and the diameters of pipes are from 55.5 to 219mm. The 59 to 152mm diameters are mainly for mineral drilling, and 152 to 9000 mm diameters are for water well and foundation drilling. Hole depth for mineral drilling is more than 300m and that for water well is more than 1000m.

The capacity of RC drilling mainly depends on the capacities of air compressors and pumps. The rock fragmentation tools for RC drilling are roller cutter bits, Down- the hole hammer bits and drag bits and so on. RC drilling has made China greatly increase drilling efficiency.

At present, China has various kinds of drilling equipment and tools, and also contracted many international drilling projects with RC drilling. In Africa, China has drilled many water wells with air-lift RC drilling, which was praised by African people.