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TYPES OF DRILLING MACHINES

USED IN TUNNELING
OUTLINE

- INTRODUCTION
- DRILLING
- TYPES OF DRILL MACHINES
- RIG PRODUCTIVITY AND AUTOMATION
- CONCLUSION
What’s Drilling?

Drilling is the operation of producing circular hole in the work-piece by using a rotating cutter called DRILL.
Drilling Machines

- The machine used for drilling is called drilling machine
INTRODUCTION

- Underground Drilling
- Change operation System
‘Swedish Method’

1970’s

And nowadays

The evolution of drilling productivity by ATLAS COPCO
Types of Drilling Machines

NOT ALL THE TUNNELS ARE

SAME
JACK LEGGED

- Pneumatic operation
- Known as ‘jack hammer’
- Works compressive air
Single Boom jumbo

- Cross sections up to 20m²
- Used small project
Twin Boom Jumbo
Twin Boom Jumbo

- Cross section between 45 to 180 m²
- Accurate and fast drilling and moderate scale
- High productivity
UTB SERIES
UTB Series

- 360° boom rollover
- Semi-automated
- Positioning
SPEED

IS EVERYTHING
Three Boom Jumbo

- Cross sections up to 180m²
- Longevity
- High frequency
- Lock-to-target
PRODUCTIVITY

- Ground condition
- Rockdrill output
- Drilling consumable
- Operator skill
- Maintenance practice
AUTOMATION

- Computer control system
- Used laser effectively
- Measure While Drill (MWD)
- Mine Map Navigation (MMN)
How to Make Boom Selection?

- Use for what, where?
- Cross section area of boom
- Boom length and skill
IN CONCLUSION

We must pay attention for machine selection as, we **MONEY** and **TIME** is valuable from others.

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REFERENCES

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