

How the tunnel boring machine works

1 Boring through the ground

The machine's six cutters drill through 1.5m worth of soil each day. The soil mixture is transported out of the tunnel via a muck wagon.

2 Building the tunnel

Once the soil is removed, pre-cast concrete "rings" that form the walls of the underpass are lowered and slotted into place. Each "ring" weighs 47 tonnes.

3 Moving forward

Hydraulic jacks thrust the concrete rings and tunnel boring machine forward. They exert about 7,200 tonnes of force, equivalent to the weight of about 1,300 African elephants.

4 Completing the tunnel

Once completed, the steel shield of the machine is left in place while the rest of the machine, including the cutters, is dismantled and removed.

