SYCONS

SPECIAL ENGINEERING

Guided Auger Boring

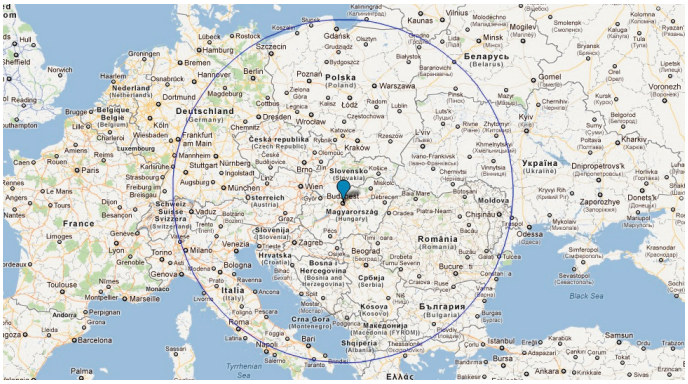
Auger boring is a trenchless technology used for installing underground utility or protective pipes with **minimal disruption to the surface**. It is a rapidly growing sector of the civil engineering industry, since it is a cost effective and time saving alternative to open cut methods when installing pipes amidst **extensive underground infrastructure** or under **surface obstacles** undesirable to be disturbed such as frequented roads, railroads, narrow historical streets or waterways.

Whereas conventional auger boring provides limited steer ability, guided auger boring can be **much more accurate** (+/- 5 cm over span length up to 100 meters).

Advantages:

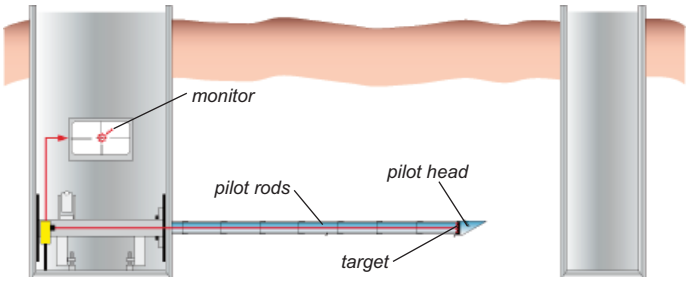
- Small footprint – little or no disruption at all to the surface, buildings, road, rail or other objects over the ground
- The working area is confined to the launch and reception pit
- Ideal for gravity drainage pipes, cable ducts or other installations that need vertical or horizontal accuracy of execution
- Dry method of installation - unlike micro tunneling it does not generate slurry
- The ground is fully supported during installation
- The boring is unaffected by surface obstacles
- Unlike micro tunneling, it can be retracted back to the launch pit
- Can be used to install pipes in variable ground conditions
- The process is relatively quick and efficient, and in many cases has lower overall costs

Sycons Ltd. has considerable expertise in guided auger boring. Our complete range of equipment and several years of experience in the field enable us to competitively carry out full service construction within **800 kilometers of distance from Hungary**, providing a cost-effective alternative even to micro-tunneling method in the range of **50-100 m** single drive length with pipe diameters **up to 1400 mm**.

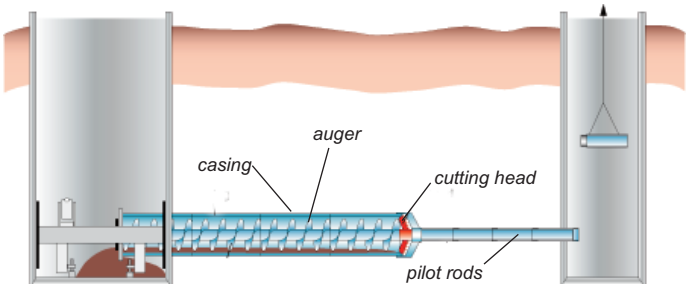


The method requires a **special pilot system** with pilot rods, varying pilot head (depending on soil conditions), a theodolite with CCD camera and a monitor. The pilot rods are jacked through the ground into the target shaft. During the drilling direction and slope are permanently surveyed. The augers and casings then precisely follow the pilot rods, followed by follow-up insertion of the product pipes.

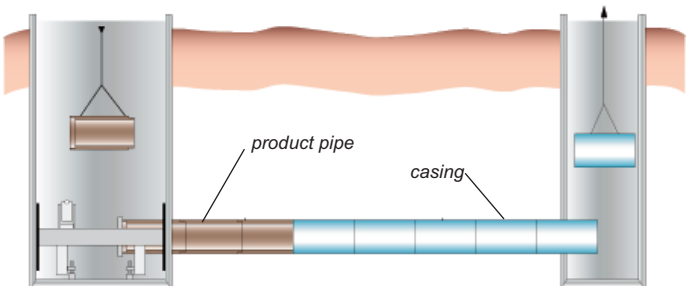
The technology is applicable in a wide range of ground conditions **from sand through clay to solid rock**. It provides ready to be used water-tight pipelines of **steel, reinforced concrete** or unglazed vitrified **clay**.



1. Directionally controlled drilling assisted by pilot pipes



2. Drilling of casings leaded by the pilot pipes



3. Jacking of the product piping

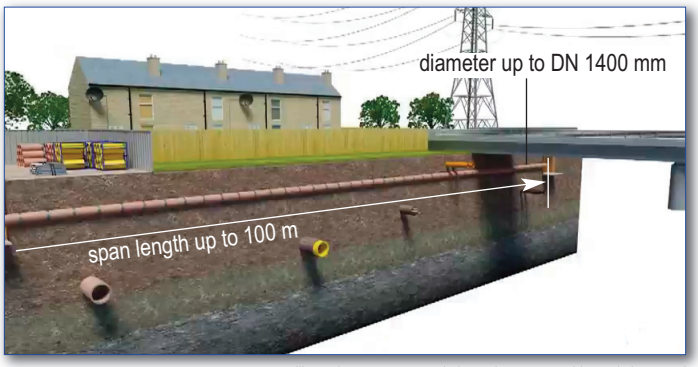


Illustration sources: www.bohrtec.de, www.trenchlesssolutions.co.uk

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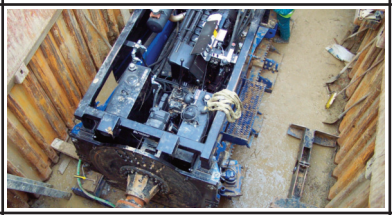
SYCONS
SPECIAL ENGINEERING

GUIDED AUGER BORING
REFERENCES FROM THE PAST YEARS

SYCONS LTD. has top-class references in guided auger boring. The following is a short list of our main projects carried out in the latest years:

Main project	Location	Short description	Pipe size (DN)	Span length	Year
M0 Motorway Ring - Rainwater diversion	Halásztelek, Hungary	Guided auger boring of a reinforced concrete pipe under the motorway.	1200 mm	33 m	2011
					
M0 Motorway Ring - Rainwater diversion	Budapest, Hungary	Guided auger boring of parallel reinforced concrete pipes under the motorway.	1200/1000 mm	27 m / 63 m / 30 m / 27 m	2010
					
Budapest Central Wastewater Treatment Plant - Collector pipes and related facilities	Budapest, Hungary	Guided auger boring of reinforced concrete pipes under Budaörsi street with very difficult soil conditions.	1200/800 mm	25 m / 30 m	2010
					
Construction of the Bence-valley water reservoir's drainage system	Gyöngyösoroszi, Hungary	Steel pipe for draining water from the reservoir.	1000 mm	87 m	2009
					
Metro 4 Project	Budapest, Hungary	Utility steel pipe installation under the railroads of the main train station of Kelenföld.	600 mm	96 m	2009
					

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