

The MicroCoil® enables accurate ranging in situations where it is not feasible to deploy surface ranging or standard underground ranging techniques. For example, when drilling in freeze hole or ground consolidation applications.

The MicroCoil® is installed inside a “blind hole” (i.e., a borehole which does not exit on the surface) which can then be used to range to when drilling parallel boreholes.



Benefits

Can:

- be installed inside a blind borehole and used for accurate parallel tracking
- be used in one of the parallel boreholes
- be used in a sacrificial borehole within a radius
- be used between two vertical bore series to create side walls
- be used vertically and horizontally

Has:

- been deployed inside train tunnels
- positively guided more than 170 bores to date of a 400 bore project
- achieved bore hole rate of three 50 meter bores per working day
- reduced or eliminated cases of inaccurate bores causing redrill, additional or replacements bores
- created opportunity for contractor to increase the length of bores thereby increasing production time and achieving significant cost savings



Since the accuracy of the wire placement on a narrow plastic pipe is extremely important, this pipe has been accurately grooved in an engineering shop to avoid assembly problems.

After assembly it is inserted into the sacrificial bore as shown below.



Specifications

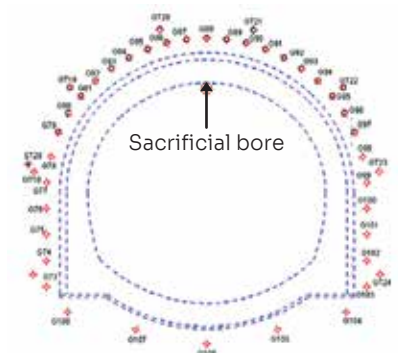
Shock mounted triaxial accelerometers and magnetometers, temperature sensor and digitising circuitry contained in 1.750" diameter x 55.3" long beryllium copper pressure barrel. Telemetry and power via single conductor wire line.

Temperature Rating	85°C (185°F)
Pressure Rating	1200 bar (17404 psi)
Sensor Accuracy	
Inclination	± 0.1°
Azimuth	± 0.4°
Tool face	± 0.5°
Length	1256 mm (49")
Maximum Wire line Length	5000 m (16000')

MicroCoil®

Narrow coil, accurately wound axially on a stiff plastic pipe. Wire size and length determined on the planned application.

Wire	Insulated 0.75– 2.5 mmsq stranded
Plastic pipe	Minimum 55mm diameter
Length	Minimum 20m
Accuracy	±5cm possible in 5 m depending on S/N ratio



The MicroCoil®, made on site from readily available materials, is usually deployed inside a sacrificial bore in the centre of the object or planned bore geometry. The sacrificial bore must be drilled and surveyed accurately in order for it to be used to guide the rest of the bores using the MicroCoil®.