


ABM - 40

Minaturised Gyrometric System for 3D Pipeline Mapping by REDUCT

- Quickly map all types of pipe in 3 D
 - No excavation
 - No measurements from the surface
 - No traffic disruption
 - All pipe sizes from **36 to 77 mm. I. D**
 - Up to **200 meters** length - any depth
 - Good accuracy in three dimensions
 - Measures under Buildings, Rivers, etc.
 - Maps available in CAD or GIS format
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- UPDATED**
USB port for faster data transfer
Improved Software for faster processing
Three elements for better alignment

The **ABM 40** by **REDUCT** is a practical and cost effective solution to the problem of three dimensional mapping of all types of small-diameter pipes such as the HDPE pipes for optical fibres and telecommunication cables **up to 200 meters in length**. It uses a patented technique employing an application-specific Inertial Measurement Module with accelerometers and **MEMS** rate-gyros, together with two odometers and an inclinometer. The device is inserted in the pipe at a manhole or any access point, and pulled or pushed along the pipe to be mapped at about 1/1.5 meters per second. Pulling is by hand or with a winch. The result obtained is not only the horizontal track of the pipe, but also the depth and alignment. The **ABM 40** is unaffected by magnetic and electric fields, and it is completely waterproof so that it can be immersed and is not affected by variations of flow. Very simple to use, the device has no need for communication during measurement, and thus there is no electric cable. The positions of the access points are established independantly with precision, normally by GPS, and the resulting map is based on these points.

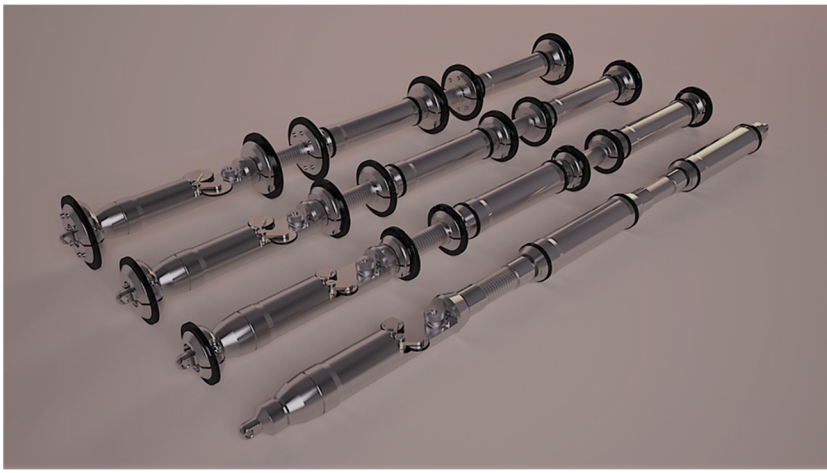
The **ABM-40** has three cylindrical sections which are flexibly coupled together. The measurement module is guided along the pipe by rubber washers which are changed to adapt the tool to different pipe IDs **from 36 mm. to 75mm.** It has two spring loaded odometer wheels.

The data acquired are stored on-board and transferred to a computer once the device is removed from the pipe. The two software packages provided are used for managing the recording, transfer, correction, analysis and display of the data. They help the operator optimise the result obtained, and present it in an easily interpreted form. Two output formats are possible: either Comma Separated Value .csv, which can be loaded directly into Excel, ArcView etc., or Script Format .scr, the default format for AutoCAD. The software can be loaded into any computer(s) running Windows. We offer an optional ruggedised Panasonic **Toughbook** portable computer for dedicated use.

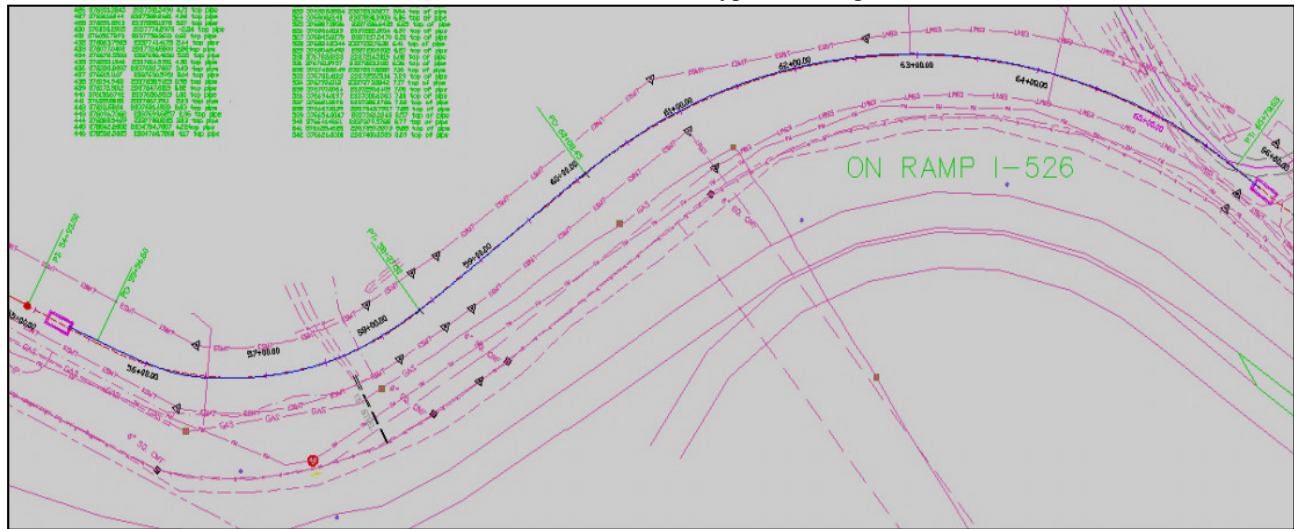
The incertitude of the position obtained is somewhat dependant on the operating conditions, particularly the presence of sharp bends or roughness in the pipe, but in normal conditions it is of the order of <0.25%, for the horizontal, and <0.1% for the vertical, of the distance between the access points. The precision of the pipe position measurement can be improved by making several passes through the pipe, and typically four or six are made to obtain an accuracy of the order of 0,06% of the length, both in horizontal and vertical.

Technical Specification

Length	510 mm.
Max tension	80 kg
Weight	1 kg
Max speed	2 m/sec
Inclination	+45 to -45deg.
Battery life	4 hr
Internal pipe Diameter	Minimum Bend Radius
36 mm.	- 240 cm.
38 mm.	- 130 cm.
41 mm.	- 80 cm.
51 mm.	- 30 cm.
74 mm.	- 20 cm.



Typical Configurations



Example of a plan prepared with the results supplied

A. T. M. S. is at your service for the mapping of any duct with **REDUCT** tools
 For further information, please contact us on 07717763510 or
sales@advantechms.com