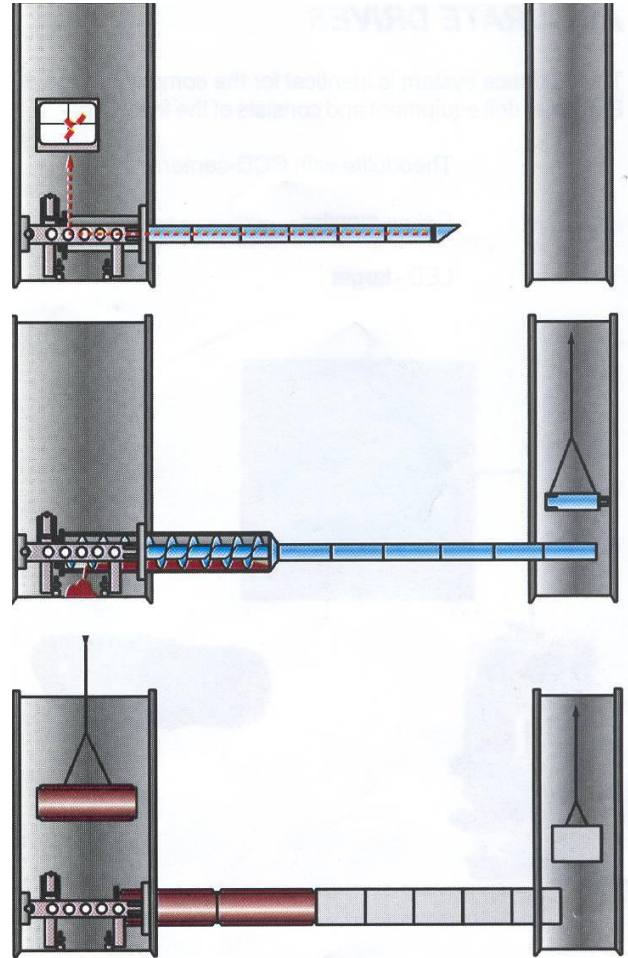


BM 400 – COST-EFFECTIVE SOLUTION FOR SMALL DIAMETER PIPE JACKING

DESCRIPTION

The BM 400 is an auger drilling rig for accurate installation of small diameter sewers using trenchless technology. The installation of clayware ranging from ID 150mm to 500mm is possible from a shaft size of 2100mm in displaceable ground.



FEATURES:

- Accurate drives up to 60m.
- Competitive in price.
- Can be operated from Ø 2100mm launch shaft (1m product pipes)
- Steering principle: PILOT

STANDARD METHOD OF OPERATION

Using pilot rods guided by theodolite, steering head, and CCD camera and monitor, accurate controlled drilling can be carried out in displaceable ground.

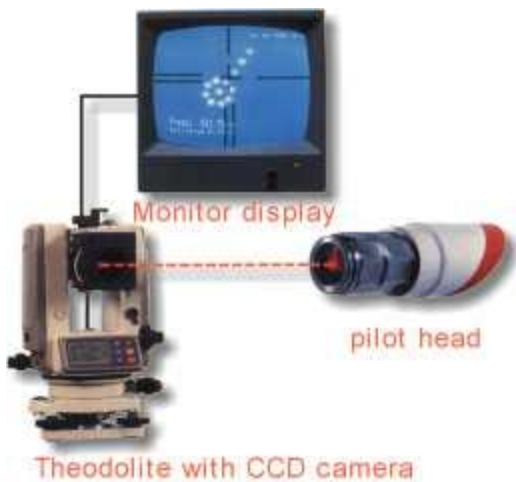
The pilot pipe is thrust through the ground and into the target hole. The direction and tilt are monitored throughout this process by the theodolite. After the pilot is complete, the auger follows the line of the pilots bringing the excavated material back into the launch shaft. After the auguring is completed the product pipe is jacked behind the last casing.

BM 400	TECHNICAL DATA
JACKING FORCE	1,000 kN
PULLING FORCE	500 kN
TORQUE	12.000 Nm
SPEED	30/120 rpm
HYDRAULIC PRESSURE	Up to 320 bar
STROKE	2 x 600mm
WEIGHT	2.000 kg
DIMENSIONS (l/w)	2,0m / 1,20m
LAUNCH SHAFT	Circular Ø 2100mm Rectangular 2100mm
DRIVE LENGTH	Up to 70m
MAX. PIPE Ø (OD)	620mm
STANDARD PIPE Ø (ID)	150mm 225mm 300mm 450mm 500mm

ACCURATE DRIVES

The guidance system for the BM auger drill equipment consists of the following:-

- Theodolite with CCD-camera
- Colour monitor
- LED - target



BM – Guidance System

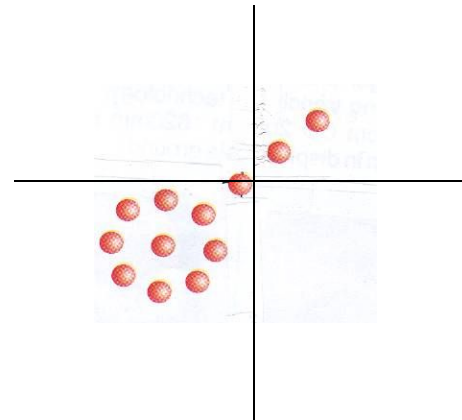
HOW DOES IT WORK?

The theodolite is fixed to the base of the shaft and set up to the correct line and level of the intended drive axis. The CCD-camera focuses on the LED target located in the pilot head. The LED's indicate the pilot head position in relation to the axis of the drive. This allows the operator to immediately see any deviation from the axis using the reference cross-hairs on the screen. The operator can steer the pilot head by turning the rods from the launch shaft.

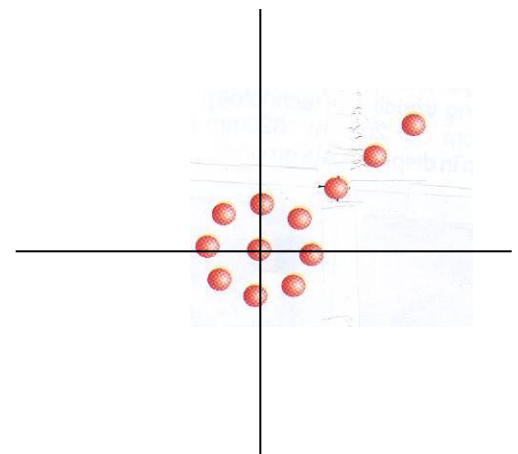
OPTIONS

- The complete pilot bore can be recorded with an optional video recorder,
- A handheld recording device is available for recording the jacking loads during the installation of the production pipes.

Pilot head adjusted for correction



Countersteering Completed !



FEATURES

- Reliable system
- Accuracy
- Works with BM pilot and control-auger systems

BM GUIDANCE SYSTEM	TECHNICAL DATA
PRINCIPLE	pilot / video optical
ACCURACY (60m drive)	+/- 20mm or better
THEODOLITE	Pentax