



KBM Series can provide required slope and direction with high precision. This Camera Controlled Guided Boring System is used in the pilot drilling stage. A special system is inserted in the directional head, and the camera system follows the path from inside the drill stems.

Cutter Head, Auger and Casing While Boring



Slurry or Dry System



**Pile Driving Equipment**

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**K B M S E R I E S**

# KBM SERIES

**Camera Controlled Guided Auger Boring System**



To watch the animation scan the QR code.

The gas pipes, waste water pipes, electricity cabling, etc. under the highways, railways or canals lined by Camera Controlled Guided Auger Boring Machine KBM. Özkanlar KBM Series offers unique solution to operating in heavy clays and stiff soils in busy urban situations.

KBM Series covers the diameters from DN 200 - DN 1200 in steel pipes. This system has a compact footprint on the job site, requiring minimum Ø 6,5 m shaft by making this system the ideal answer for trenchless technology in build up cities and towns.



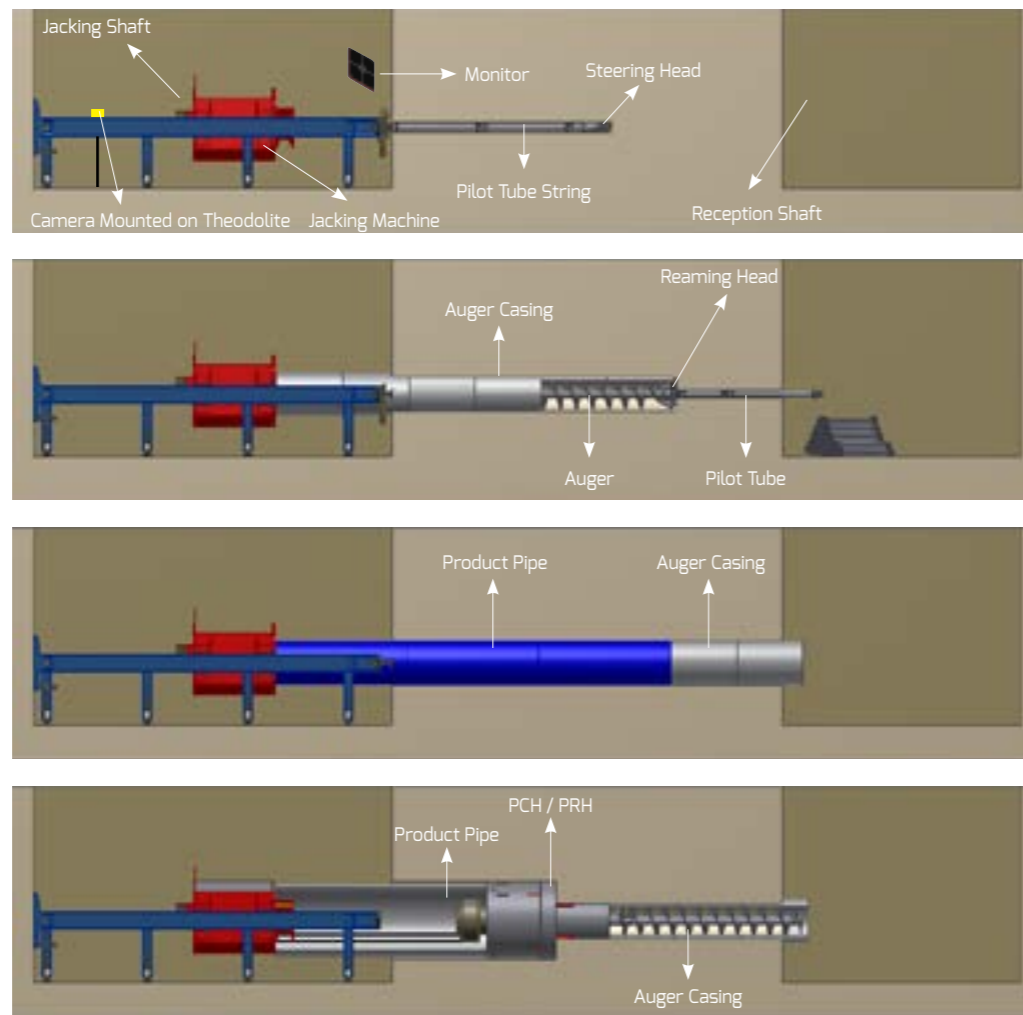
# OPERATING PRINCIPLE

# TECHNICAL SPECIFICATION

## The Method of Guidance

The method of guidance shall be by laser or electronic theodolite with camera and electronic (LED) target that can continuously monitor line and grade to insure accuracy is maintained within the tolerances specified by Özkanlar Factory. The pilot head designed to avoid the need for dewatering except as is required to control groundwater inflows at jacking and receiving pits.

Pipe insertion methods using pilot tube system can be employed to directly install the new pipe, in a two phase operation (1- pilot tube, 2- pipe) or three phase operation (1- pilot tube, 2- casing with augers, 3- pipe) at each of the locations indicated on the drawing.



## First Phase (Pilot Boring):

The pilot tubes provide a guided path for the augers to follow. The pilot head section contains the LED target for guidance. The hollow stem pilot tubes provide an optical path for the CCTV theodolite which displays the head position and orientation in relation to the pilot head steering.

The CCTV provides an image on the monitor so that the operator knows the position of the head in relation to the axis of the drive and the position of the pilot head for steering. When the pilot head reaches the shaft, the reaming auger and casing is fitted behind the last pilot tube.

## Second Phase (Auger and Casing):

If the product pipe is near the diameter of the casing then the augers and casings are inserted one by one into the line. The auger head provides a small overcut to allow the casings and there after the product pipes to be inserted with minimal friction from the ground.

The augers and casings are extended to the target shaft pushing out the pilot tubes as each auger and casing is added in the start shaft. The augers follow the path created by the pilot tubes.

Pipes with greater diameter than augers and casing:

Under the circumstance that the pipe ID is greater than the casing OD it is possible to complete the above in 2 stages! For this Özkanlar provide supports which are bolted to the auger casings, the feet are designed to maintain the auger in the axis of the product pipe. If larger pipes are used then the contractor only needs the corresponding reaming head and casing supports.

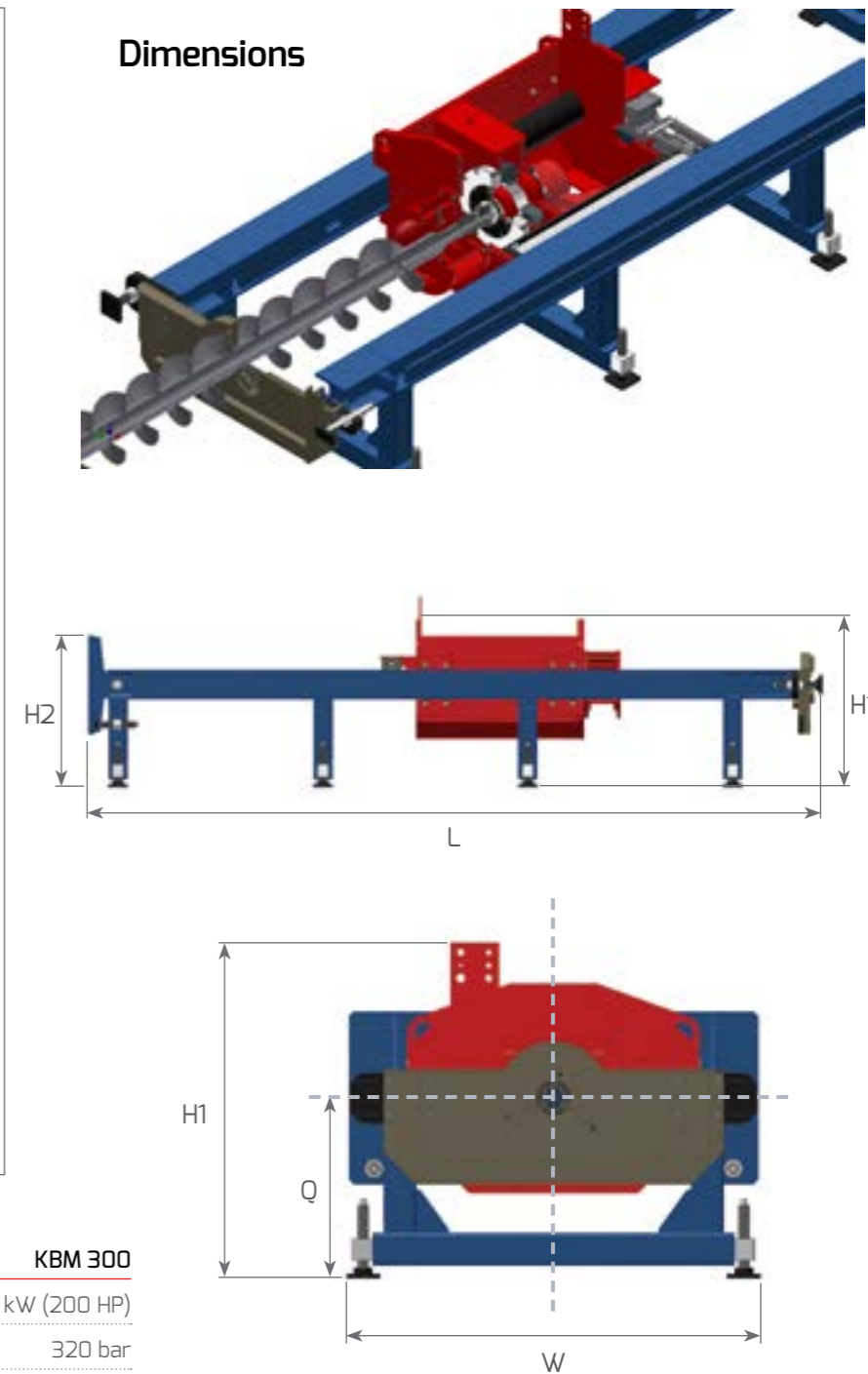
## Third Phase (Product Pipes):

When the reaming head reaches the target shaft the product pipes can be inserted which push out the augers and casings into the target shaft.

## equipment



## Dimensions



	KBM 125	KBM 300
Diesel Engine Power	88 kW (120 HP)	147 kW (200 HP)
Operating Pressure	320 bar	320 bar
Oil Flow Capacity	210 l/min	260 l/min
	42 l/min	104 l/min
Max. Spindle Speed	0 - 25 rpm	0 - 25 rpm
	0 - 50 rpm	
Max. Torque	30.560 Nm @ 25 rpm	46.000 Nm @ 25 rpm
	15.280 Nm @ 50 rpm	
Thrust Force	2 x 603 kN	2 x 1472 kN
Stroke	1.130 mm	1.100 mm
Max. Drill Diameter	Ø 200 - Ø 800	Ø 300 - Ø 1.200
Weight	8.850 kg	13.950 kg

	KBM 125	KBM 300
L (mm)	5995	5995
H1 (mm)	1558	1850
H2 (mm)	1238	1680
W (mm)	1925	2445
Q (mm)	838	1180