

**Dynamic bursting with X 400 for 500 mm (20") pipe**

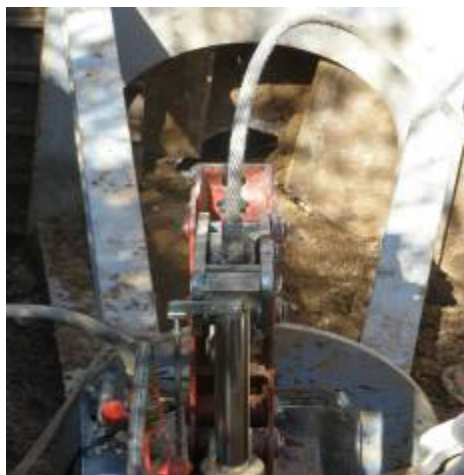


The cable burster X 400 with special front box for 500 mm (20") pipes.

Near by the Spanish capitol Madrid old sewer pipes Ø 400 mm (16") from concrete had to be replaced by new HDPE pipes OD 500 mm (20"). These new pipes in the quality PE-100 (DN 10) had a wall thickness of 29.7 mm (1.2"). Several sections up to 90 m (300 ft) long had to be replaced. This bursting job was done with the cable burster TERRA-EXTRACTOR X 400. It's pulling force of 400 kN (40 tons), 88'000 lbs is obviously too small for such large pipe diameters. Therefore the dynamic bursting sleeve OD 610 mm (24") was used, which was driven by a TERRA Steel Pipe Ram TR 220. This bursting sleeve is equipped with a patented spring box which keeps the full pulling force at the bursting sleeve even during the return stroke of the X 400. This spring box is tensioned during the power stroke of the X 400 and keeps this pulling force during the return stroke.

The TERRA Steel Pipe Ram TR 220 is driven by an air compressor with 7 bar (100 psi) and minimum 7 m<sup>3</sup>/min (245 cfm). The remote regulation valve directly behind the TR 220 and sures the starting and stopping of the TR 220 even at long distances.

The bore canal had to be expanded from Ø 400 mm (16") to Ø 610 mm (24"). Simultaneously the new up to 90 m (300 ft) long HDPE pipe Ø 500 mm (20") had to be pulled in. The working speed was between 12- 18 m/h (40- 60 ft/h).



The special front box for 500 mm (20") pipes is large enough for the bursting sleeve OD 610 mm (24").



The TERRA ram TR 220 is assembled in the bursting sleeve OD 610 mm (24")



**Cable Burster  
TERRA-EXTRACTOR X 400**



The HDPE pipe  $\varnothing$  500 mm (20") is connected with the bursting sleeve OD 610 mm (24") via a patented volt connection. The bolts are smooth outside, so they cannot be cut.



90 m (300 ft) long new pipe  $\varnothing$  500 mm (20") is laid out. The rear pressure plate and the chain carry some of the pulling forces.

## Cable Burster TERRA-EXTRACTOR X 400

The spring box is pressed together and tensioned during the return stroke of the cable burster X 400. It includes the pulling force even during the return stroke.



Starting procedure: the cable burster X 400 pulls the bursting sleeve OD 610 mm (24") with the 500 mm (20") pipe into the 400 mm (16") old pipe.



## Cable Burster TERRA-EXTRACTOR X 400

The dynamic bursting sleeve with the inner TERRA ram 220 and the new HDPE pipe  $\varnothing$  500 mm (20") are entering the ground.



At the end of the bursting operation the bursting sleeve OD 610 mm (24") is pulled into the special front box of the X 400.

The bursting sleeve OD 610 mm (24") and the new HDPE pipe  $\varnothing$  500 mm (20") have reached the target pit. The 90 m (300 ft) long bursting job is successfully finished.

