

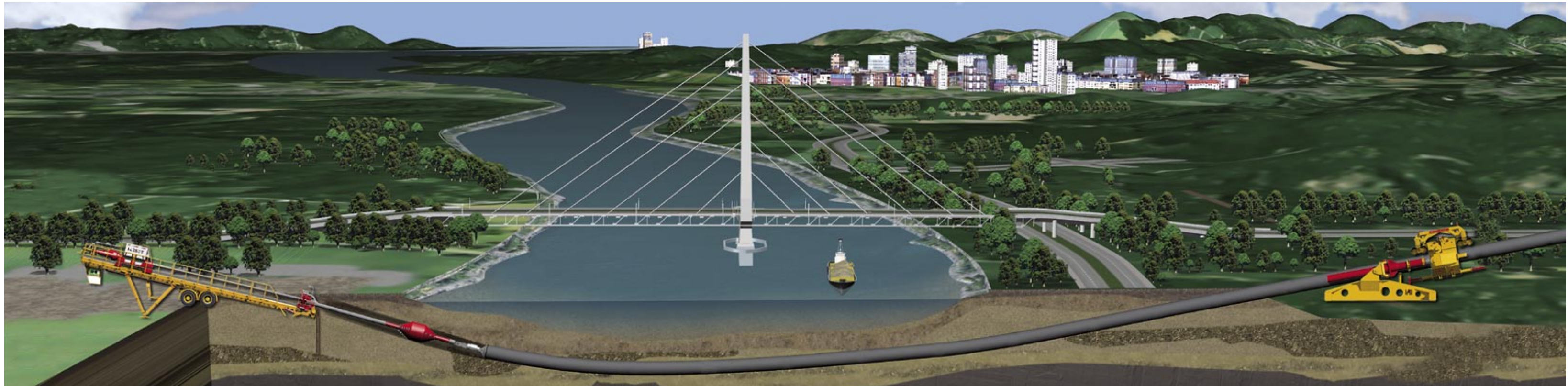


Process innovations give trenchless pipeline construction ever greater advantages over conventional procedures. The latest example is the Pipe Thruster (PT). This add-on equipment for Horizontal Directional Drilling Rigs reduces the loads exerted on the pipeline during very long crossings and in difficult geological conditions. This increases the application range of HDD technology.



Additional thrust and pulling force for pipe installation with the Pipe Thruster.

MORE POWER RESERVES FOR PIPELINE CONSTRUCTION!



Tunnelling with united forces. The Pipe Thruster – installed at the target hole – gives extra thrust for pipe installation. First of all, the HDD Rig carries out a test pilot which is then successively reamed until it reaches the nominal diameter of the pipeline. At the end, the rig pulls the complete pipeline from the target pit back to the launch pit. When longer pipelines must be laid, and in difficult geological conditions, the PT at the target pit helps by giving the pipeline additional thrust towards the launch opening. In this way the forces exerted on the pipeline are better distributed.



In addition, the PT offers considerable power reserves. The Thruster transfers its clamping force to the product pipe using a clamp ring with radially arranged hydraulic cylinders and thrusts the pipeline towards the HDD Rig with a force of up to 500t and a speed of 5m/min. The specially developed clamp rings can be adapted for use with all common types of pipe with diameters between 20 and 48 inches, and all pipe coatings.

If tunnelling is to go ahead without a hitch, the Rig and Thruster's work must be synchronized precisely. The data necessary for that – the operating pressure for example – are permanently monitored at the control stands of the HDD Rig and the Thruster and adjusted via radio remote control.

The development engineers paid special attention to the quality of the controls. During operation a high degree of "sensitivity" is necessary, as the jacking stations must not be allowed to put too much mechanical pressure on the sensitive pipeline.

New applications for tried-and-tested technology. The Pipe Thruster enables an existing – originally inefficient – pipe laying system to be upgraded for use even on longer and more complex drills. The efficiency of smaller HDD Rigs can be directly increased. This allows an extension of drilling lengths and the more frequent use of large, 48 inch product pipes. When the PT is no longer needed it can be packed away quickly and is then ready to be transported to the next job.

The Pipe Thruster can also be used as a rescue tool. For example, to recover stuck pipes, since its maximum force of 500t can be applied in both pull and thrust mode. The Pipe Thruster can also apply its power reserves to sea outfall projects. With the Thruster, wastewater pipes can be pushed out to sea from the landside. This makes cost and time consuming offshore drilling facilities unnecessary.



PIPE THRUSTER IN FIGURES

TYPE	FIGURES
Maximum thrust and pulling force:	500t (5,000kN)
Min. – max. clamp diameter:	20 – 48 inches
Max. speed:	5 meter/minute
Max. cylinder stroke:	5,000mm
Dimensions:	9 x 4.1 x 4.4 meters
Weight:	45t