

TV INSPECTION WATER PIPELINE IN SWITZERLAND

By Gullyver



Job Site with Very Nice View



Air Bubbles Below Coating

The Gullyver company has taken another step towards renewing its product range in the area of "inspection systems for particularly long pipes" (LDPI - Long Distance Pipe Inspection). The water snake that has been in use for around 20 years has now undergone a generation change. The first device of this new generation of the water snake has, in the course of inspection for rehabilitation preparation, provided the functional proof in reality. During this first use, a water pipe, ductile iron, DN200, lined inside with a

length of 623m and 18 bends were successfully examined without any problem and with a perfect result.

The Gullyver water snake is particularly suitable for the optical inspection of very long pipes (up to 2500m) with a small diameter (DN80 to 300). The bends frequently encountered in these lines (15° to 90°) - even several - are no obstacle.

A Brief Description of the P&T Water Snake

The camera head is a 50mm pan and tilt camera (PTP50 from iPEK) with lasers for measurement and an integrated location transmitter. Because of the small dimensions - the outer diameter of the water snake is 50mm - no effective drive can be integrated and hardly conceivable for 2500m line inspection.

The water snake is - like a pig - pushed through the line with air pressure, an air valve on the pressure line allows the speed to be controlled sensitively. Instead of a pig, we use a parachute that pulls the camera behind it over thin steel cables.

We use a thin and light fiber optic cable as an umbilical cord. This cable is used to transmit video and other sensor information

from the water snake to the control unit. At the same time, the inspector's control information is sent to the water snake without restriction. The energy supply is realized by a battery pack and allows min. 10h using.

An additional acoustic sensor, a microphone/ hydrophone combination, is also integrated behind the optical sensor (TV camera). With this sensor, the flow noises arising at leak points can be heard and then verified with the camera.

We used our more than 20 years tested standard 5mm fiber optic cable and as cable winches a new designed 2500m automatic winch. The system control and data logging hardware is integrated into this new cable reel, only a remote control and a Windows PC software is necessary to create an online report.

The optical inspection takes the place just as clearly as with a normal camera crawler and because of the flexible construction also around many bends.

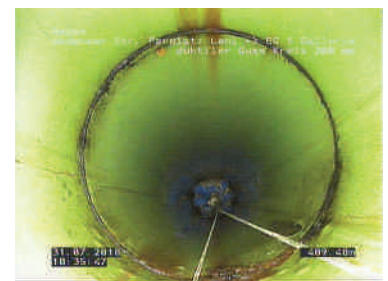
Areas of application for the water snake are, of course, pressure lines first, because of the usually missing shafts and openings. This can e.g. as described above, it may be necessary for a renovation, for leak detection or the



One of 18 Bends



Corrosion



Parachute in Front

search for air bubbles in sewage pressure pipes.

About the Contributor

Gullyver's core competence lies in comprehension of camera-based inspection tasks and associated technologies.



P&T Watersnake