Through Pipe Jacking and We contribute to the development

Many of the arteries for living which support the foundation for urban environments in modern society, such as water supplies, sewage systems, information communication cables, electricity cables, and gas pipes, are buried underground where they cannot be seen. These underground arteries of the city that are arranged in the manner of a complex net have become essential to our lives.

Now imagine that even if only a single water pipe is severed, such could cause trouble in our everyday lives…

Safety

We will realize development of safe infrastructures with a high degree of quality control based on our quality management system (ISO9001) and advanced technology of the RAMSUS construction method.


Reliability

By promoting technological advancements and providing sincere correspondence in response to the changing needs and quality requirements of customers, we aim to be a reliable company.

Contribution

In addition to the development of infrastructures across Japan, we develop the RAMSUS construction method in various countries throughout Asia aiming for economic development to promote a wide range of social contributions.

For people to be able to continue leading a safe and comfortable everyday life. Through construction work of developing foundations for urban environments, SUN-SHIELD Co., Ltd. will not only efficiently support urban functionality with high-quality and highly reliable advanced technologies but also continue to contribute to society by providing appropriate after service and maintenance after construction.

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Pipe Jacking

The Pipe Jacking method is a construction method with which, like a mole, it is possible to freely dig through the ground underneath our city.

The Pipe Jacking method involves construction work of digging a hole horizontally and installing a pipeline from vertical holes which are referred to as the launch shaft and reception shaft. As this method does not occupy the entire section for the construction work, it is possible to reduce the effects on transportation and the everyday lives of citizens thus being advantageous in terms of urban environmental measures.

Pipe Jacking comprises the use of a variety of equipment and requires a high level of construction techniques, accurate measurement techniques, and extensive knowledge of geology and water quality. With a history of many years of experience, SUN-SHIELD clears these requirements for such technologies at a high level to provide safe and high-quality lifelines.

Pipe Jacking Implementation Overview

Our lineup of Pipe Jacking machines and peripheral equipment includes a wide variety to cover the needs of various applications.

Pipeline Maintenance

By performing the work of maintaining and managing lifelines, we will build designs and construction that take the environment into consideration.

From the rectification of old pipes to the removal of clogged water supply pipes of houses, apartments, and condominiums, we will make use of the most advanced technologies to provide a comfortable living environment.
Shield Construction

The shield construction method is a construction method in which segments are assembled to the rear of the excavator and the boring is performed while using these segments as its reactive force. As the main body of the excavator is constantly pushed forward, this places no limit on the digging distance while also making it possible to tunnel complex curves and large diameters. This method is widely used in the construction work of facilities such as subways, underwater tunnels, and multi-purpose utility conduits.

A large difference between the Pipe Jacking method and the shield construction method is that while the shield construction method involves directly pushing the excavator forward with a hydraulic jack, assembling segments within the shield machine, and moving forward by using these segments as its reactive force, with the Pipe Jacking method, the Pipe Jacking machine and shield pipes are directly pushed forward with a base pushing jack installed in the launch shaft. Which construction method is to be used is comparatively evaluated based on the distance, position, and shape of the pipeline.

Maintenance Process

- Confirmation of on-site usage conditions
- Acceptance at factory
- Operation test
- Inspection
- Painting application
- Cleaning
- Assembly and wiring

In order to respond to the needs of society at our own factory, we will take the environment into consideration and incorporate the most advanced technologies in conducting the “design, production, improvement, and maintenance” of construction machinery and excavators, etc. By making use of the know-how acquired on the construction sites, we also conduct the “design and development” of in-pipe automatic surveying machines, high-output motors, wind-powered generators, and mud creating materials for construction.

Environmental Preservation

In order to reduce the emission of byproducts of construction work, we have developed the reflux-type mud separation system “ECOPHENAIX” and are promoting construction work that takes the environment into consideration. ECOPHENAIX is a system that satisfies the environmental and economic needs of such as “reduction of industrial waste”, “recycling of resources”, “improvement of safety and productivity”, and “reduction of costs” by circulating and separating excavated soil from the slurry used for the construction work.

Applicable in a variety of construction work
- Slurry type Pipe Jacking in general
- Dense slurry type Pipe Jacking in general
- Muddy soil pressurizing type Pipe Jacking in general
- Shield construction in general
- Other various construction works
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