

Self-Propelling Trench Shoring Machine

The NOVA Award was presented to the Self-Propelling Trench Shoring Machine for innovation in deep trench excavation and safety.

Deep trenches for pipelines must be shored to protect workers from cave-ins and loss of life to workers. The Self-Propelling Trench Shoring Machine provides a significant advantage over traditional systems by providing a safe and clear work area in trenches up to 30 feet deep, while propelling itself as pipeline work progresses.



The system is composed of steel panels that are stacked to create sidewalls of the necessary depth. In use, a pair of sidewalls, one on each side of the trench and 10 feet long, form the front half of the shoring. Another pair form the rear half. The front and rear halves are connected by a series of hydraulic travel jacks in-line with the axis of the trench. The sidewalls are kept apart by hydraulic struts spanning the width of the trench. The system of modular panels positioned by hydraulic struts makes the system adjustable for a wide range of trench sizes.

Forward movement is enabled by relaxing the spanning struts separating the front sidewalls, while maintaining pressure in the rear section. With the rear sidewalls serving as a thrust pad, the travel jacks are extended, pushing the front sidewalls ahead up to 8 inches. The front spanning struts are then extended to anchor the front section, the rear struts are relaxed, and the travel jacks pull the rear section into place with the front section.

The self-propelling capability of this system allows the pipeline crew to be more productive by eliminating the need to reposition fixed barriers. It also allows trench cuts to be narrower, saving excavation and backfill time and costs.

The Self-Propelling Trench Shoring system greatly reduces the amount of excavation required for deep trenching. This speeds work and contributes to the safety of below-grade workers.

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