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Development of Underwater Cutting Method of Interlocked Steel Pipe Piles Using

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Synopsis :

Interlocked steel pipe piles are driven into the ground for construction of piers located in rivers or the sea. In such cases underwater cutting is often required at the end of construction. Cutting of junction pipes is so hard that the pipes will usually be cut before driving. This construction method sometimes causes troubles of water leakage and so on during construction. An effective underwater cutting machine system has been developed to solve these problems. It can cut not only pipe piles but also junction pipes. The system is mainly composed of a plasma arc cutting device and a grindstone device. The mechanism is simple and remote -controlled using some sensors attached. Work time needed for cutting a 800 - P P x V W H H O S L S H S L O H D Q G D F R X S O H R I M about 20 minutes, and thus an efficient automatic underwater cutting method has been established.

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プラズマアークを用いた鋼管矢板水中切断工法・ 装置（プラズマカッター）の開発*

川崎製鉄技報
20 (1988) 4, 279-284

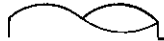
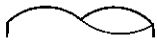
Development of Underwater Cutting Method of Interlocked Steel Pipe Piles Using Plasma Arc

要旨

仮締切兼用鋼管矢板井筒工法においては、従来は継手をあらかじめ



(mm)



本管→継手とすれば、継手の切断末期に本管の拘束が弱くなることから本管の変形や変位が生じるためこの条件を満たすことができた

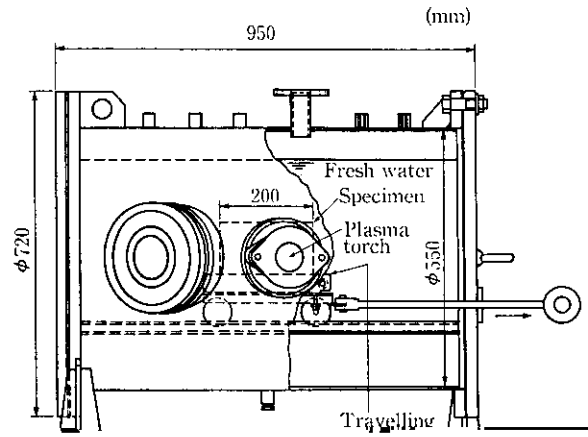
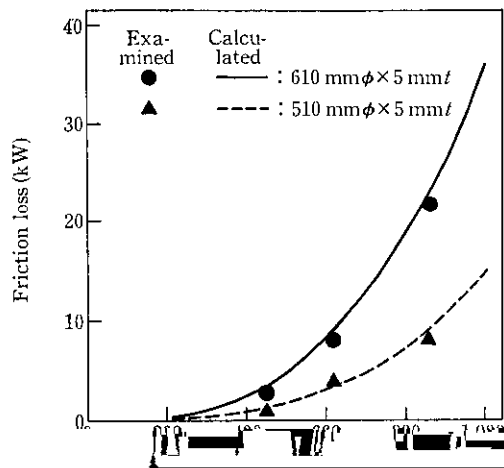


Fig. 2 Relation between rotational number of cutter and friction loss

Fig. 4 Pressure tank



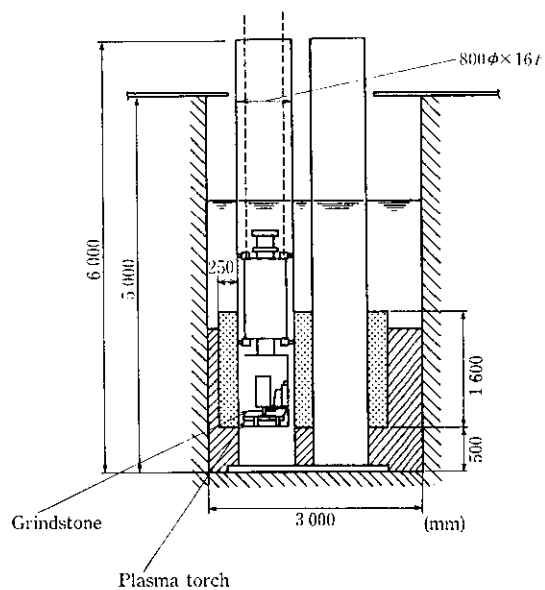


Fig. 9 Configuration of underwater cutting experiment using the cutting machine

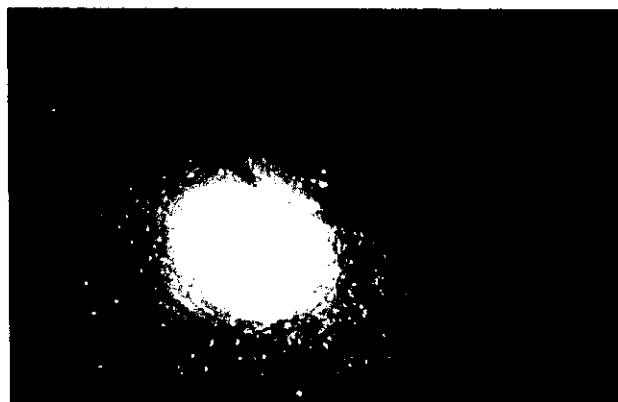


Photo 3 Underwater cutting of main pile pipe by plasma arc

