



The TDS is special designed for shallow water trenching. The TDS can be applied on any floating object such as a pontoon or a vessel.

The Trench Dredging System is developed, built and commissioned by Seascope. It's completely bridge operated and consists of dredging equipment and a controlling system.

Dredge equipment

The dredging equipment consist of a dredge frame, an A-frame floating pipelines and possible with a hose guiding system. The dredge frame has a small electronics epod for the roll & pitch and depth sensor. The frame is build up with suction and jetting nozzles with pumps and the necessary tubing and hydraulics.

Design 1 is as frame with 5x350 m³/hr pumps with 2x350m³/hr jets. Design 2 is as frame with 5x700 m³/hr pumps with 4x350m³/hr jets. The first designs was considered to be able to dredge in one movement approximately 0,5 m deep and 6 m wide. During actual dredging commissioning the system was able to dredge a trench of 2 m deep and 8 m wide in one pass. The soil was medium compact fine sand with some clay layers. The system is cable of dredging 230-250 m³/hr. of sand and dumping it 100-150 m through a floating line from the vessel.

Control system

Seascope developed a PLC software positioning system to position a vessel or pontoon with a 4 point mooring system in combination with a multibeam echosounder system to monitor the pre-, actual and post dredging slope. The multibeam echosounder is based on a 120 degrees swath beam with and update rate of 12Hz and a 0,02% slant range accuracy. The multibeam echosounder includes a data acquisition and navigation software for real time dredging monitoring and post processing dredging results.

The PLC software receives GPS information through DGPS survey software. The 4 point mooring system consist of four anchors which are connected to special designed constant tension control winches. The coordinates are shown in the DGPS software. Two deck winches are synchronized to have a lateral movement control and two deck winches are synchronized for lateral movement control of the vessel or pontoon.

The mooring winches are electrical frequency controlled winches with a built in load sensing. The winches can be set to constant tension for automatic spooling and unspooling. The winches can be controlled local and remote.

Pontoon



Vessel

