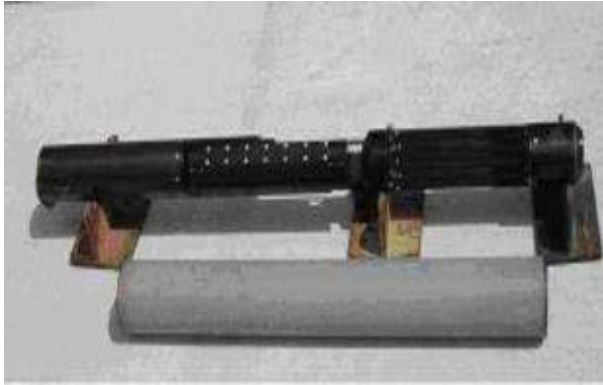


S.P.O.T. SYSTEM COMPONENTS

The following notes give a brief description of the System Components and Safety Aspects.

Sonar Head

The sonar head contains the acoustic transducer. This transmits and receives acoustic signals. The transducer head is inserted vertically into the crude and when required is moved to the horizontal position under remote control. A removable plastic tube for transportation protects the transducer. Length 1.4 metre, Weight 12.5 Kg



Motor Tube

The motor tube contains the rotation motor, slip rings, tilt sensors and electronics to: Control the motors, Process the sonar signals, and communicate with the computer. The tube has a removable flange plate which supports the probe in the entry position.

Length 1 metre, Weight 12 Kgs.



Extension Tube and End connector

One metre extension tube with wiring loom (used to extend the tool when a tank has long leg sleeves). When the long mode of operation is required the flange plate is removed from the motor tube and fitted to the top of this tube. The end connector is used to replace the flanged plate. Weight 1.5Kg



Hose reel

The hose is of an antistatic type, and is 200m long. It is used for carrying the purge gas, and the wiring between the computer in the vehicle and the SPOT probe on the tank roof. The hose is purged and filled with Nitrogen (oxygen free) at 15psi.

The metal reel stays in the survey vehicle and the hose is hauled to the tank roof. The hose reel is fitted with a pressure relief valve to prevent over pressurising the system. Total weight 86 Kgs.



Gas Monitor Box

The gas monitor box contains a pressure gauge and two pressure switches; it also has power supply leads and gas supply pipes in and out of the box. The pressure switches ensure that if the system loses pressure at 8 / 9 Psi the electrical power to the system is isolated before the pressure falls to zero.

The purge procedure also ensures correct operation of the box before power is supplied to the equipment on the tank roof.



Nitrogen Gas Bottle and Regulator

Gas bottle contains Nitrogen (Oxygen free); these are size 'X' 17Kg gross weight. Fitted to the bottle is an output pressure regulator, with a bottle pressure gauge 0-3500psi and outlet pressure 0-100 psi gauge. A bottle this size will normally do approx. 7 gas purges of the system. The other bottle is a full spare; bottles should be secured within a vehicle. The Gas Purge Unit, Gas bottles and the computer remain within the survey vehicle throughout the survey. Once the system is purged the Nitrogen bottles are isolated. The SPOT system remains under a positive pressure of approx. 1Bar (15 psi).



Laptop computer

The laptop is loaded with Windows and WinSPOT (SPOT software). The computer controls the SPOT remotely and displays the **The Power**



Power Supply

The power supply comes from a 12v D.C battery charged from the vehicle alternator. The vehicle engine does not need to be running to power the SPOT. The 12v is applied to an inverter to produce 110v A.C. this powers the Gas box which supplies the Computer and the Hose-reel. Electronics within the hose reel provide a 24v DC power supply for the SPOT probe on top of the tank. received data as it is collected.

