



## Description

The Pump Out Sub is used to circulate fluid from the drill string after the DST has been completed and the drill string is ready to be removed.

The Pump Out Sub consists of a short sub with one or more hollow pins screwed into the sides. These pins project into the sub bore during the course of a test.

## Application

Can be configured with two shear pins, two rupture disks or one shear pin and one rupture disk.

Can be configured as a Radioactive Marker Sub (RA Sub)

## Operation

### Shear Pin Configuration

The shear pin is designed to break upon impact of a steel bar dropped from surface. When the pin is broken, a port opens between the well annulus and the drill string. The opening of this port allows fluid to be circulated or reverse circulated. It is also used to allow the tubing to drain while pulling out of the hole.

### Rupture Disk Configuration

An alternative configuration allows for rupture disks to be screwed into the ports instead of the shear pins. Communication with the annulus is achieved by pressuring up on the tubing to the preset pressure, usually 300 psi above annulus pressure.

### RA Sub Configuration

A shear pin or rupture disk may be replaced with a radioactive marker (PIP tag) to allow depth confirmation (log on depth).

## Specifications

	STANDARD	SLIMHOLE
O.D.	5"	3.5"
I.D.	2.50"	1.75"
Length	.36 m (1.18')	0.25 m (0.82')
Pressure Rating	5,000 psi	5,000 psi
Temperature Rating	-40°F to 250°F	-40°F to 250°F
Tensile Strength	450,000 lbs	220,000 lbs
Connections	3 ½ IF	2 3/8 IF
Service	H2S + CO2	H2S + CO2