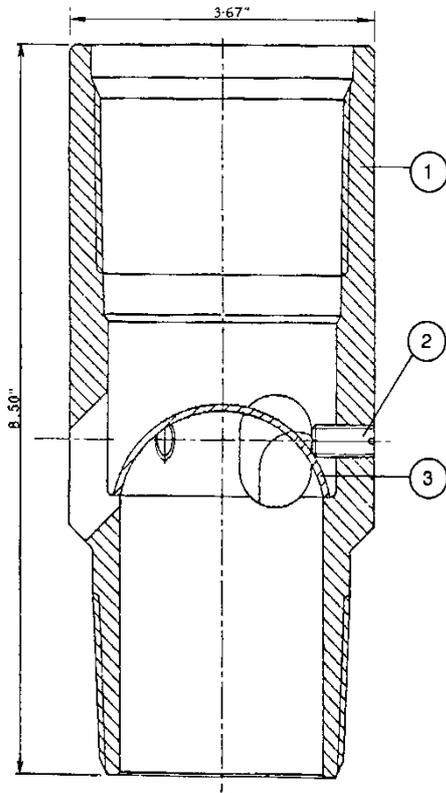


**DEBRIS SUB**



**APPLICATION**

The debris sub is used as a barrier to prevent scale and debris falling down the tubing and fouling the firing head. It may also be used as a method of achieving an underbalance by circulating a lighter fluid prior to setting the packer. Ports in the sub allow formation fluid to pass through into the tubing string after perforation.

**OPERATION**

The sub is normally positioned 30ft above the firing head, allowing this space to be filled with a clean fluid. Once the gun string is at the correct depth, circulation prior to setting the packer will enable the string to be cleaned. Having set the packer, the ceramic cone in the sub will be shattered by a falling drop bar on its way to the firing head. Ports extending below the ceramic cone allow for pressure equalisation.

**ASSEMBLY**

The ceramic cone is held in place by retaining screws or pins, which should not apply too much force to the cone as any stress subsequently applied to the sub would result in a broken cone. Subs are available with various threaded connections to suit requirements.

SPECIFICATIONS	2-3/8"	2-7/8"	3-1/2"
Thread	8rd EUE or as specified		
Min ID (in)	1.99	2.25	2.99
Max OD (in)	3.06	3.67	4.50
Max Torque (ft-lb)	1,700	2,860	3,040
Max Tensile Load (lb)	90,000	140,000	205,000