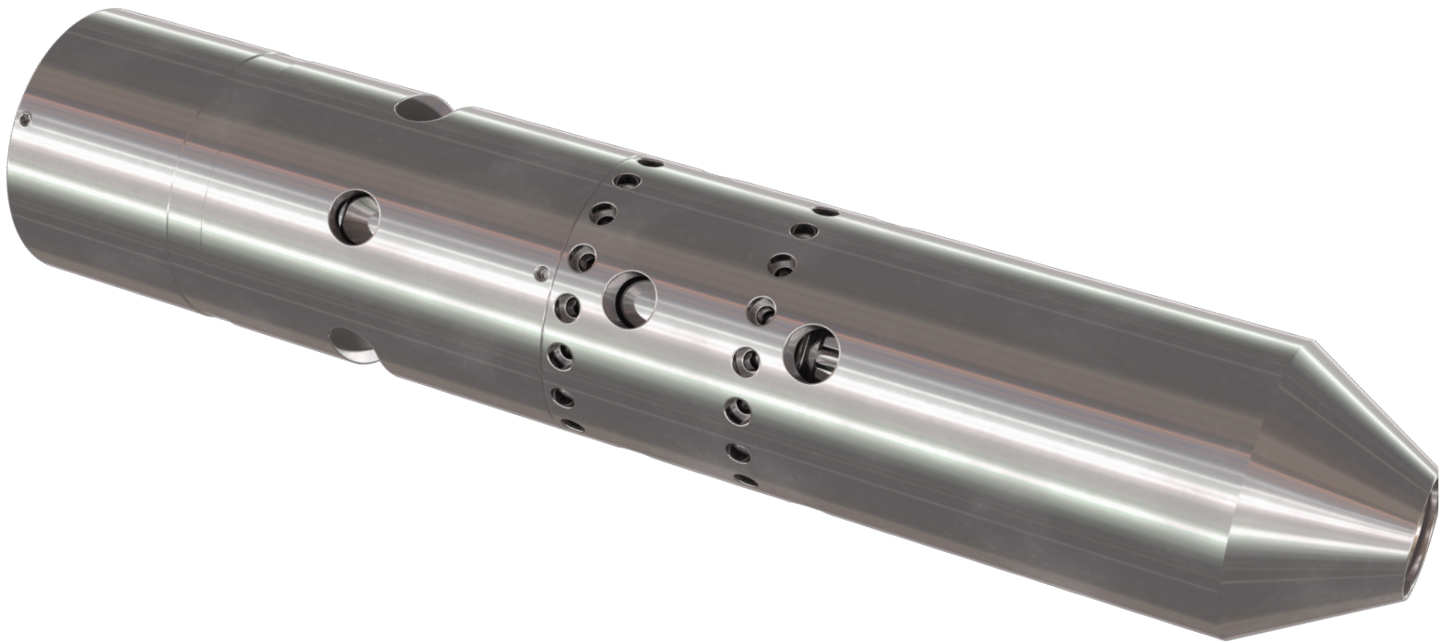


Pump Open Sub for ME Plug (POS)



Description

The POS can serve as a temporary barrier when assembled with an appropriate ME plug. Several POS tools have been tested and qualified in accordance with the ISO 14310 international standard to validation grade Vo.

Application

The POS will hold pressure from above, up to a pre-determined pressure level, at which point the POS will open permanently, enabling injection / production.

At setting depth the opening pressure over the POS is determined by the number of shear screws in the POS and the type of configuration used. When pressure is increased above the plug, the POS will stay closed until the downward force on the piston, due to pressure, overcomes the total shear value of the shear screws.

In differential pressure configuration the pressure level needed above the plug to open the POS is dependent on the pressure below the plug at setting depth. Whereas in absolute pressure/atmospheric chamber configuration, it's independent of the pressure below the plug as long as it is within rated values.

Pump Open Sub for ME Plug (POS)

Benefits

- Enables temporary barrier
- Opens at predetermined differential pressure
- Optional remote equalization enables production/injection (when open)
- Several POS tools have been tested and qualified in accordance with the ISO 14310 international standard to validation grade Vo

Technical Specifications

POS	Weight (kg)	OD (in)	Min Flow Area	Length	MW ΔP^1 Above	MW ΔP Below	Temp ($^{\circ}C$)	ISO 14310 Qualified
5.50 ¹	42.8	5.50"	9.61 in ²	23.80"	70% Nom Shear Pressure	5000 psi	150	Vo 5000psi 4-100 $^{\circ}C$
4.43	46.3	4.43"	6.6 in ²	20.18"	70% Nom Shear Pressure	5000 psi	150	Vo 5000psi 4-100 $^{\circ}C$
4.21 ²	44.6	4.213"	6.6 in ²	42.71"	70% Nom Shear Pressure	5000 psi	150	Vo 5000 psi 4-115 $^{\circ}C$
4.20 ¹	46.4	4.213"	3.68 in ²	53.40"	70% Nom Shear Pressure	5000 psi	150	Vo 5000 psi 4-100 $^{\circ}C$
3.25	16	3.25"	4.095 in ²	33.858"	70% Nom Shear Pressure	5000 psi	150	Vo 3000 psi 40-100 $^{\circ}C$
2.52	8.8	2.52"	1.23 in ²	20.1"	70% Nom Dif-ferential Open- ing Pressure	5000 psi	150	Vo 5000 psi 95-130 $^{\circ}C$
1.75		1.75"			70% Nom Shear Pressure ³	5000 psi	150	Vo 5000 psi 5-150 $^{\circ}C$

1) Atmospheric chamber versions available

2) Debris friendly version with unidirectional lock system

3) Pressure cycles above 70% of nominal differential opening pressure weakens the shear screw and they can shear prematurely on the following cycle.