

Dissolvable Pump Out Plug

Republic Oil Tools' Dissolvable Pump Out Plug utilizes a two-part system to form a temporary barrier in the tubing string in order to safely install Permanent Magnet Motor (PMM). Once the PMM is installed and all electrical connections are completed, the inner plug is pumped out allowing a flow path for the ESP to be commissioned. The outer shroud remains in the housing and dissolves in place leaving a near full I.D.

The Dissolvable Pump Out Plug sub is equipped with redundant o-rings and features one set of shear pins to adjust the value at which the inner sleeve will be expended and a set of retaining pins to keep the outer shroud affixed to the housing. During installation, the Dissolvable PoP is made up on joint above the discharge of the ESP and run-in hole. Once at depth, the electrical connections are made up and isolated. At this point, hydraulic pressure is applied to the tubing string to a value above the shear pin settings to release the inner sleeve. At this point, the inner sleeve and the outer shroud will begin to dissolve. Regardless of dissolve rate, the ESP can be commissioned.



The Dissolvable PoP offers a low cost safety barrier to prevent the wellbore from taking a kick during the installation process of a PMM. By having a positive barrier in place, it is easy to verify that no rotation is possible and will allow all field personnel to return home at the end of every day.

Tubing	Housing and Plug Data				
	Sub MAX OD (in. [mm])	MAX OD of Inner Plug (in. [mm])	MIN ID of Tool After Shear (in. [mm])	Total Number of Shear Screws	Shear Pressure (PSI/Screw + /15%)
2.375 [60.3]	3.063 [77.8]	1.900 [48.26]	1.800 [45.72]	6	737
2.875 [73.0]	3.668 [93.2]	2.300 [58.42]	2.200 [55.88]	8	679
3.500 [88.9]	4.313 [109.55]	2.740 [69.6]	2.750 [69.85]	10	637

The magnesium alloy has a dissolution rate of approximately 5 days in fresh water at room temperature. The introduction of temperature and chlorides will speed up this process.

For more information on the Dissolvable Pump Out Plug, please contact your Republic Oil Tools representative at info@republicoiltools.com or visit www.republicoiltools.com