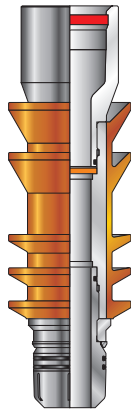
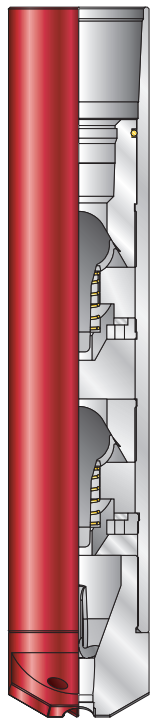


Excellent Value, Proven Performance

Successfully run in horizontal applications in Texas, Oklahoma, northern Louisiana and eastern New Mexico, this innovative plug system is ideal for today's shale-play applications. The following features are offered to help reduce your well preparation costs.



Latch-in, high-pressure rupture plug



Dual-valve float shoe

- **Multiple configurations** provide precise displacement of cement in the openhole annulus and accurate volume of retarded water to the casing shoe, creating a flow path to the formation.
- **Functionality** of the plug system enables the use of pumpdown wireline perforating devices, eliminating the need for tubing-conveyed equipment and reducing operational costs and NPT.
- **Modular design** consists of high-pressure, high-temperature (HPHT) plugs with field-adjustable rupture disks, providing plug flexibility for various well conditions.
- **Polyurethane fins** provide enhanced wiping capabilities and abrasion resistance, resulting in a clean casing ID and thus avoiding the need and cost of a cleanup run.
- **PDC drillable** plug system features antirotational design to prevent plug rotation during drillout, saving rig time.
- **High-strength float shoe**, tested to API RP 10 Category IIIC specifications, provides a readily detectable high-pressure plug bump and a means of testing the casing.
- **Field-adjustable** rupture disk provides accurate rupture pressure and shatters without damaging the float valves, enabling fluid displacement past the shoe.
- **Latch mechanism incorporated into the float shoe** retains the plug when landed, providing redundant backpressure capabilities up to the value of the rupture disk.
- **Double-valve float shoe** is designed to use fluid hydraulics to draw the plunger firmly into the retainer cup, minimizing spring fatigue and reducing plunger contact with the sidewall. As a result, the system experiences less erosion damage from high-velocity flow.

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Reducing Well Preparation Costs for Fracturing Horizontal Wells

Multiple Latch-In High-Pressure Rupture Plug System



Move the rig earlier and pump down perforating guns

Weatherford's innovative multiple latch-in high-pressure rupture plug system can eliminate thousands of dollars of cost to prepare horizontal wells for fracturing operations. Run in over 500 wells, this system provides significant value by reducing cost, eliminating nonproductive time (NPT) and initiating production more quickly than alternative conventional procedures.

System Functionality

Released from Weatherford's rotating cement head in a pre-planned sequence, the plugs use adjustable rupture disks to overdisplace cement, creating a flow path into the formation at the casing shoe. The multiple-plug system is used in conjunction with a high-strength float shoe to place precisely measured volumes of cement and retarded water into the wellbore. When set, the cement provides zonal isolation above the shoe, with the fluid at the shoe providing communication to the formation below. The latch-in, antirotation plug design allows the casing to be tested before overdisplacement.

The drilling rig can be moved off location once the cement job is complete. The plug system's superior wiping capabilities eliminate the need of a costly cleanup run. With communication to the formation established at the shoe, tubing-conveyed perforating is no longer required. Fracturing equipment and perforating units are then mobilized to the wellsite and rigged to initiate injection through the shoe. By rupturing the top disk and bullheading the retarded water into the formation below the shoe, the perforating guns can be pumped to depth and perforations can be shot as required. Fracturing operations can commence immediately after gun retrieval.

Applications

- High-angle, horizontal wells
- Shale plays requiring fracturing
- Wells that require high-pressure casing test before stimulation operations
- Cementing casing strings where pumpdown wireline perforating guns would be advantageous
- Perforating in horizontal wells drilled in formations that take fluid

Options and Specifications

- Nitrile plug fins provide high-temperature resistance
- Large 1.49-in. (37.8-mm) ID rupture disks rated to 1,000, 2,000 and 3,000 psi (6.9, 13.8 and 20.7 MPa)
- Single, dual or triple configurations customized to application and well conditions
- Sizes ranging from 3-1/2 to 5-1/2 in. (88.9 to 139.7 mm) and in any combination

Triple-Plug Configuration Sequence

Typically used in deeper, longer laterals, the three-plug configuration places a precise volume of cement in the annulus to ensure proper zonal isolation and retarded water at the shoe to enable communication with the formation. The first plug is run ahead of the cement to prevent contamination while being displaced through the casing. The second plug separates the cement below from the retarded water above, and the third plug is placed above the retarded water.

