Model 837BC Sub-Surface Release™ Top Plug System

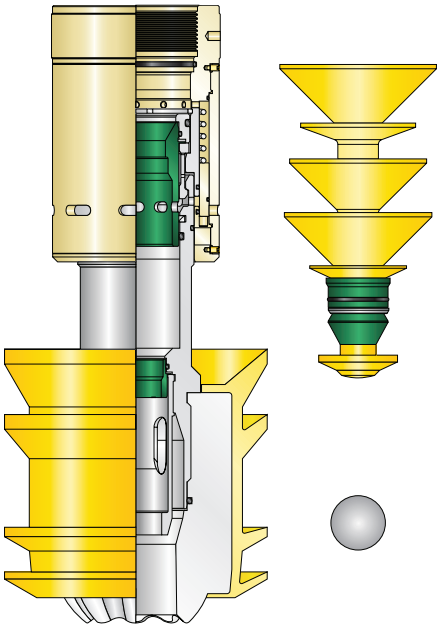
For Liner Sizes 9 5/8 in. to 16 in.

Weatherford's industry-standard Model 837BC *Sub-Surface Release* top plug system is a premium cementing plug that incorporates a ball seat for mid-diameter liners. The plug is designed for use with 9 5/8-in. and larger subsea casing hanger or hydraulic liner systems, where the minimum drift of the drillstring is 2.54 in. (64.5 mm).

This plug performs multiple functions during liner-setting and cementing operations. When the setting ball lands in the seat, applied surface pressure facilitates setting the hydraulic hanger and releasing the hydraulically released running tool. During the cementing job, the plug separates the top of the cement column from the displacement fluid, preventing cement contamination and confirming cement displacement when the plug lands on the float or landing collar at the liner bottom.

The Model 837BC *Sub-Surface Release* top plug system features a patented integral-pressure equalizer to prevent premature release. It also has a more reliable shear-ring ball seat and plug-launch design, resulting in more accurate shear-pressure activation.

When run on the outer joints connected to the retrievable seal mandrel (RSM) packoff, the plug does not move when picking up the setting tool, thus confirming release from the hanger system. This feature prevents damage to, or accidental release of, the plug and is a proprietary design advantage of the Weatherford liner-hanger system.



Applications

- Liners run in pressure-sensitive formations
- Compatible and recommended for use with Weatherford's SurgeMaster™ II and large-bore autofill float equipment
- Liners run with close-tolerance annuli
- Wells in which it is advantageous to have the ball seat in the plug rather than at the shoe

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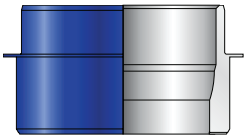
Features, Advantages and Benefits

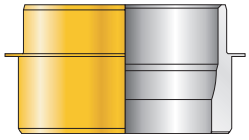
- The integral ball seat provides the capability to actuate hydraulically functioned equipment above the plug rather than pressuring up the complete casing string, providing greater operational efficiency.
- The ball seat retains the setting ball after shearing, eliminating the need for a separate ball-catching device, thereby reducing costs.
- This Model 837BC *Sub-Surface Release* plug relieves surge pressures while running a liner with autofill-float equipment in close-tolerance annuli, ultimately saving time and rig costs by protecting sensitive formations from surge pressures, which can cause mud loss.
- The patented, integral pressure-equalizer system prevents pressure buildup above the plug, thereby preventing premature release.
- The mid-bore dart releases the plug to maintain fluid separation of cement and displacement fluid through the drillpipe, preventing cement contamination.
- The 2.343-in. (59.512-mm) bore enables 2.125-in. (53.98-mm) trip balls to pass through, activating equipment below the plug, such as the float equipment.
- When the integral ball seat is sheared, the pressure dissipates in the liner, greatly reducing the possibility of formation damage related to hydraulic shock.
- Polyurethane plug fins offer superior abrasion resistance and case-wiping action, resulting in a cleaner casing ID than conventional plugs.
- The plug is polycrystalline-diamond-composite drillable, which eliminates the need to trip in and out of the hole to remove the plug, saving operating costs and rig time.
- The exclusive WiperLok® nonrotating system's selective use of the compatible Weatherford float collar or landing collar prevents the plug from rotating during drillout, thereby reducing rig time.
- If the plug does not release as planned, a bypass feature located in the crossover above the plug enables the plug to be released and cement to be displaced from the liner.

Ball Seat

Ball seats can catch 2 1/8-in. balls and come in four different shear pressures that are color-coded for easy identification: 1,600 psi (11.03 MPa) blue, 2,500 psi (17.24 MPa) yellow, 3,000 psi (20.68 MPa) green, and 3,500 psi (24.13 MPa) red.

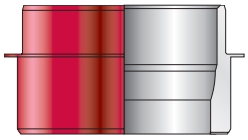


1,600 psi (11.03 MPa)



2,500 psi (17.24 MPa)

3,000 psi (20.68 MPa)



3,500 psi (24.13 MPa)

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Specifications

Plug size (in./*mm*)	9-5/8 *244.5*	10-3/4 to 11-3/4 *273.1 to 298.5*	13-3/8 to 14 *339.7 to 355.6*	16 *406.4*
Maximum bump pressure (psi/*MPa*)	6,500 *44.81*	6,000 *40.37*	5,500 *37.92*	3,000 *20.68*
Plug-launch pressure (psi/*MPa*)	2,000 to 2,500 *13.79 to 17.24*			
Blue ball seat shear pressure (psi/*MPa*)	1,600 *11.03*			
Yellow ball seat shear pressure (psi/*MPa*)	2,500 *17.24*			
Green ball seat shear pressure (psi/*MPa*)	3,000 *20.68*			
Red ball seat shear pressure (psi/*MPa*)	3,500 *24.13*			
Pressure required to open equalizer (psi/*MPa*)	30 to 60 *0.21 to 0.41*			
Minimum plug ID (in./*mm*)	2.343 *59.51*			
Minimum flow area ($in.^2/mm^2$)	3.19 *2,058*			
Maximum rigid-dart diameter (in./*mm*)	2.492 *63.30*			
Minimum pump-through drift diameter (in./*mm*)	2.540 *64.52*			
Maximum circulating temperature rating (°F/°*C*)	257 *125*			
Maximum temperature for bump pressure rating (°F/°*C*)	257 *125*			
Flow endurance before ball seat shear (bbl/min)	16 for 24 hr			
Flow endurance after ball seat shear (bbl/min)	16 for 4 hr			

Options

- Plug sets are available in standard or combination plug-fin designs.
- Top plug available for high- or low-pressure applications.