



SNUB NOSE™ 2-PIECE

INNOVATION REVEALED

The **Snub Nose™** composite frac plug is a multi-configuration plug used to temporarily isolate multi-stage vertical or horizontal completion operations. The base model of the **Snub Nose™** is a ball drop configuration. When combined with three additional on-the-fly inserts (**Bridge Plug**, **Flo-Back**, or **Flo-Back with Bio-Ball**), this tool provides the service company with optimum on-site versatility. Comprised of proprietary composite material and having a low metallic content, the **Snub Nose™** can be quickly and easily milled and circulated back to surface.

Snub Nose™ Ball Drop: After setting, the tool remains open for fluid flow and allows wireline services to continue until the ball drop isolation procedure has started. Once the surface-dropped ball is pumped down and seated into the inner funnel top of the tool, the operator can pressure up against the plug to achieve isolation.

Snub Nose™ Bridge Plug: The Bridge Plug, or “Kill Plug,” has a “top venting” ability, which allows for upper and lower equalization during drillout.

Snub Nose™ Flo-Back: When the pressure below the plug is greater than the pressure above, the one-way check valve will allow the two zones to commingle. The operator can independently treat or test each zone and then remove the flo-back plug(s) in one trip with conventional milling or drilling tools.

Snub Nose™ Flo-Back with Bio-Ball: Also built with a one-way check valve, this plug temporarily prevents sand from invading the upper zone and eliminates cross-flow problems by utilizing an aqueous-soluble Bio-Ball sealer. After the Bio-Ball has been dissolved by pressure, temperature, and fluid, the check valve will allow the two zones to commingle. The operator can then independently treat or test each zone, then remove the flo-back plug(s) in an under-balanced environment, all in one trip.



Pump-Down Wipers
Available for Horizontal
Applications



Composite Frac Plugs

FEATURES

- No tungsten carbide buttons or aluminum
- Composite mandrel aids in fast drill-outs and time saved
- Consistent drill times of 15 minutes or less
- Can be deployed on wireline, coiled tubing, tubing, or drill pipe
- Designed for horizontal or vertical wells
- Dependable patented cast iron slips secure plug in place
- Unique pump-down element design requires less fluid and pump pressure to deploy plug horizontally
- Patented technology
- Setting is done via a universal setting sleeve and adapter
- Positive lock-up feature to ensure lock-up of multiple plugs in a single wellbore
- Efficient wireline deployment speeds of up to 450 feet per minute
- Custom O.D. available upon request

CASING SPECS				PLUG SPECS						OPERATING RANGES
O.D. inch (mm)	Weight Range lb/ft (kg/m)	Min I.D. inch (mm)	Max I.D. inch (mm)	O.D. inch (mm)	Ball Drop Min I.D. inch (mm)	Flo-Back Min I.D. inch (mm)	Length inch (mm)	Ball Size inch (mm)	Setting Tool	
4-1/2 (114.3)	9.50-13.50 (14.1-20.1)	3.92 (99.6)	4.09 (103.9)	3.57 (90.7)	0.500 (12.7)	0.50 (12.7)	26.10 (662.9)	2.13 (54.0)	Magnum "A-1," Baker #10 or Owen	250°F (121°C) 10K PSI (69.0 MPa) Green Composite/ HSN Elastomer
	15.10-17.10 (22.5-25.4)	3.75 (95.4)	3.83 (97.2)	3.44 (87.4)						
5 (127.0)	23.20 (15.6)	4.04 (102.7)	4.04 (102.7)	3.57 (90.7)						

Casing Specs are according to API Tubing/Casing Dimension Chart Information.