



450FT/MIN

**CAN BE DEPLOYED ON WIRELINE,
COILED TUBING, TUBING, DRILL PIPE**

When combined with three additional on-the-fly inserts, this tool provides the operator with optimum onsite versatility.

**PUMP-DOWN WIPERS AVAILABLE
FOR HORIZONTAL APPLICATIONS**

SNUB NOSE™

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 operator with optimum onsite versatility. Comprised of proprietary composite material, the Snub Nose™ can be quickly and easily milled and circulated back to surface.

Snub Nose™ Single Element: Contains a one-piece sealing system giving the plug a much shorter overall length and making it easier to mill out and circulate back to surface.

Snub Nose™ Three-Piece Element: A more robust version of the standard Snub Nose™ tool, the Snub Nose™ (Three-Piece Element) is a great solution for higher temperature/pressure wellbores.

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 surfacedropped 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 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 underbalanced environment, all in one trip.

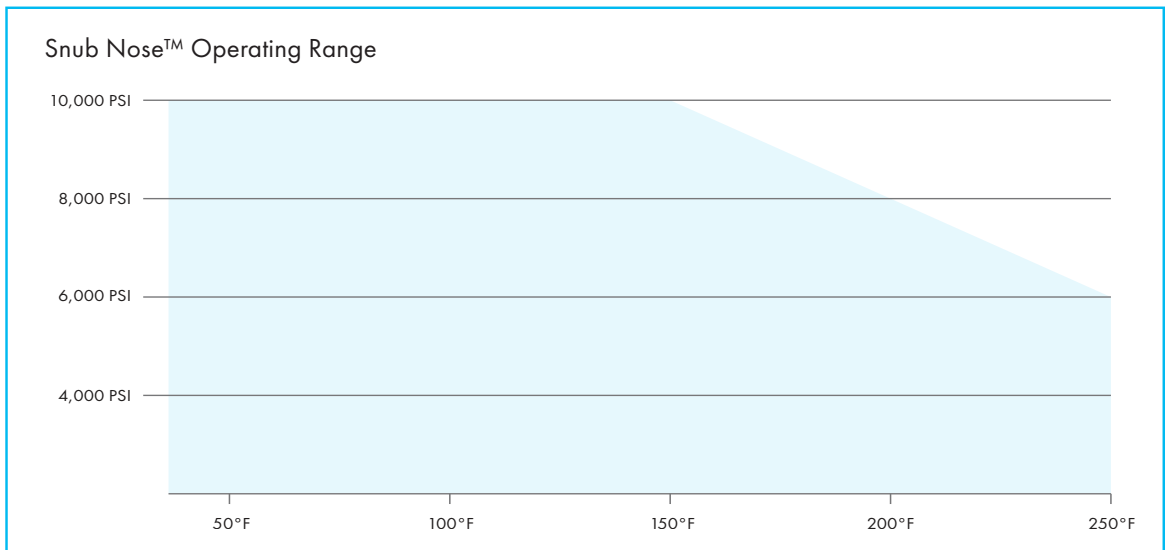
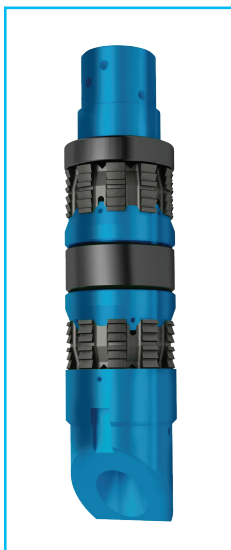
Features

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

SINGLE ELEMENT CONFIGURATION SPEC GUIDE

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)	Ball in Place Min. I.D. inch (mm)	Flo-Back Min. I.D. inch (mm)	Length inch (mm)	Ball Size inch (mm)	Setting Tool	
4.0 (101.6)	11.00-14.66 (16.4-21.8)	3.24 (82.3)	3.48 (88.4)	2.88 (73.0)	0.75 (19.05)	N/A	0.50 (12.7)	21.4 (543.6)	2.13 (54.0)	Magnum "A-1", Baker #10 or Owen	250°F (121°C) 6K psi (41.4 Mpa)
	9.50-11.00 (14.1-16.4)	3.48 (88.4)	3.55 (90.1)	3.19 (81.0)							0.75 (19.1)
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)		N/A		250°F (121°C) 6K psi (41.4 Mpa)			
	15.10-17.10 (22.5-25.4)	3.75 (95.4)	3.83 (97.2)	3.44 (87.4)		0.75 (19.1)		150°F (66°C) 10K psi (68.9 Mpa) 250°F (121°C) 6K psi (41.4 Mpa)			
5.0 (127.0)	23.20 (15.6)	4.04 (102.7)	4.04 (102.7)	3.57 (90.7)		0.75 (19.1)		150°F (66°C) 10K psi (68.9 Mpa) 250°F (121°C) 6K psi (41.4 Mpa)			
	11.50-18.00 (17.1-26.8)	4.28 (108.6)	4.56 (115.8)	3.92 (99.6)		N/A		250°F (121°C) 6K psi (41.4 Mpa)			
5-1/2 (139.7)	14.00 (20.8)	5.01 (127.3)	5.01 (127.3)	4.60 (116.8)		1.25 (31.8)		150°F (66°C) 10K psi (68.9 Mpa) 200°F (93°C) 10K psi (68.9 Mpa) 250°F (121°C) 6K psi (41.4 Mpa)			
	15.50-23.00 (23.1-34.2)	4.67 (118.6)	4.95 (125.7)	4.30 (109.2)		N/A		250°F (121°C) 6K psi (41.4 Mpa)			
	23.00-26.80 (34.2-39.9)	4.50 (114.3)	4.67 (118.6)	4.13 (104.8)		1.25 (31.8)		150°F (66°C) 10K psi (68.9 Mpa) 200°F (93°C) 10K psi (68.9 Mpa) 250°F (121°C) 6K psi (41.4 Mpa)			
7.0 (177.8)	17.00-23.00 (25.3-34.2)	6.37 (161.7)	6.54 (166.1)	5.95 (151.1)		N/A		250°F (121°C) 6K psi (41.4 Mpa)			
	23.00-32.00 (34.2-47.6)	6.09 (154.8)	6.37 (161.7)	5.75 (146.1)	N/A	250°F (121°C) 6K psi (41.4 Mpa) 7 (41.4 Mpa)					

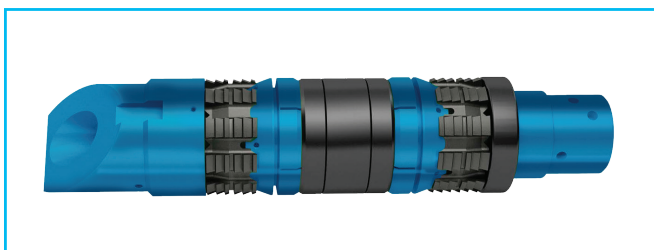
Casing Specs are according to API Tubing/Casing Dimension Chart Information.



THREE PIECE ELEMENT CONFIGURATION SPEC GUIDE

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									
4.0 (101.6)	9.50-11.00 (14.1-16.4)	3.48 (88.4)	3.55 (90.1)	3.19 (81.0)	0.50 (12.7) 1.00 (25.4) AVAILABLE UPON REQUEST	0.50 (12.7)	8K/10K 250F 24.0 (609.6)	2.13 (54.0)	Magnum "A-1", Baker #10 or Owen	250°F (121°C) 8K psi (55.2 Mpa) 10K psi (68.9 Mpa) Green Composite/ HSN Elastomer								
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)						250°F (121°C) 8K psi (55.2 Mpa) 10K psi (68.9 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)						300°F (149°C) 10K psi (68.9 Mpa) (BALL DROP/FLO-BACK ONLY) Black Composite/Nitrile Elastomer								
5.0 (127.0)	23.20 (15.6)	4.04 (102.7)	4.04 (102.7)	3.57 (90.7)			250°F (121°C) 8K psi (55.2 Mpa)											
	11.50-18.00 (17.1-26.8)	4.28 (108.6)	4.56 (115.8)	3.92 (99.6)			10K psi (68.9 Mpa) Green Composite/HSN Elastomer											
5-1/2 (139.7)	14.00 (20.8)	5.01 (127.3)	5.01 (127.3)	4.60 (116.8)			8K/10K 250F 21.0 (533.4)			Magnum "A-1", Baker #10, #20 or Owen	250°F (121°C) 8K psi (55.2 Mpa) 10K psi (68.9 Mpa) Green Composite/HSN Elastomer							
	15.50-23.00 (23.1-34.2)	4.67 (118.6)	4.95 (125.7)	4.30 (109.2)			10K 300F 22.7 (576.6)				300°F (149°C) 10K psi (68.9 Mpa) (BALL DROP/FLO-BACK ONLY) Black Composite/Nitrile Elastomer							
	23.00-26.80 (34.2-39.9)	4.50 (114.3)	4.67 (118.6)	4.13 (104.8)			28.0 (711.2)				2.75 (69.9)	Magnum "A-1", Baker #20 or Owen	250°F (121°C) 8K psi (55.2 Mpa) Green Composite/HSN Elastomer					
	17.00-23.00 (25.3-34.2)	6.37 (161.7)	6.54 (166.1)	5.95 (151.1)			23.00-32.00 (34.2-47.6)				6.09 (154.8)	6.37 (161.7)	5.75 (146.1)	12.00 (304.8)	N/A	N/A	41.1 (1043.9)	N/A

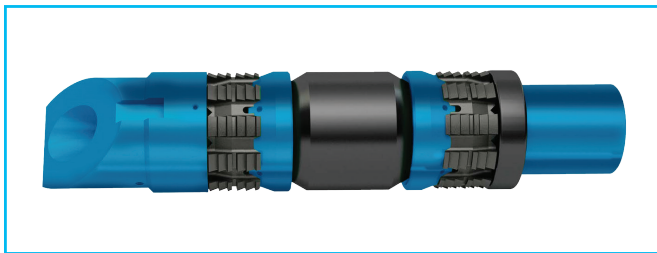
Casing Specs are according to API Tubing/Casing Dimension Chart Information.



10K 200°F PLUG CONFIGURATION SPEC GUIDE

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	
5-1/2 (139.7)	15.50-20.00 (23.1-29.8)	4.78 (121.4)	4.95 (125.7)	4.30 (109.2)	0.50 (12.7)	0.50 (12.7)	10K (20.8) (528.32)	2.125 (53.98)	Baker 20 GO 3-5/8" Compact MOT 3.125" 3.375" 3.625" AI Hydraulic	200°F (93°C) 10K psi (68.9 MPa)

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



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