Mill E-Z™

Temporary Isolation Tools
Multi-Stage Operations

INNOVATION REVEALED

The **"Mill E-Z™"** Composite Plugs are used for temporary isolation in multi-stage vertical or horizontal completion operations. The Mill E-Z™ line includes the Ball Drop, Bridge Plug, Flo-Back and Flo-Back with Bio-Ball Plugs. Horizontal applications are accomplished with the addition of a Pump Down wiper element. Comprised of proprietary composite material and having a low metallic content, the Mill E-Z™ can be quickly and easily milled and circulated back to surface.


Ball Drop


Bridge


Flo-Back


Flo-Back w/ Bio-Ball

Mill E-Z™ 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 in to the inner funnel top of the tool, the operator can pressure up against the plug to achieve isolation.

Mill E-Z™ Bridge: The Bridge Plug, or "Kill Plug", has a "top venting" ability, which allows for upper and lower equalization during drill out.

Mill E-Z™ 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.

Mill E-Z™ 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 dissolved by pressure, temperature, or fluid, the check valve will allow the two zones to commingle. The operator can then independently treat or test each zone and remove the flo-back plug in an under-balanced environment in one trip.

FEATURES

- Consistent drill times of 30 minutes or less
- Can be set on wireline, coiled tubing, or production tubing using conventional setting tools
- Utilizes conventional setting tools
- Can be milled or drilled with coiled tubing or a rig
- Millable cast iron slips
- High differential pressure rating
- "Top Venting" Bridge configuration allows for upper & lower equalization during drill outs.
- Low temp and high temp materials conducive to a wide range of environments
- Positive lock-up feature to ensure plugs do not spin while milling
- Patented precision shearing device
- Setting is done via a universal setting sleeve and adapter.
- Custom O.D. plugs are available upon request
- Patent #6796376

Pump Down Wipers Available for Horizontal Applications

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Mill E-Z™

Bridge Plug - Multi-Stage Operations

BRIDGE PLUG

CASING SPECS				PLUG SPECS			OPERATING RANGES			
O.D. inch (mm)	WEIGHT RANGE lb/ft (kg/m)	MAX ID inch (mm)	MIN ID inch (mm)	MAX O.D. inch (mm)	LENGTH inch (mm)	SETTING TOOL	LOW TEMP/ LOW PSI	LOW TEMP HIGH PSI	MID TEMP HIGH PSI	HIGH TEMP HIGH PSI
2-3/8 (60.3)	4.7 (7.0)	2.046 (52.0)	1.930 (49.0)	1.750 (44.5)	16.380 (416.1)	Magnum "A-1", Baker #5 or Owen	Not Yet Available	Not Yet Available	300°F 10K PSI (149°C) (68.9MPa) Blue Composite/ HSN Elastomer	400°F 10K PSI (204°C) / (68.9MPa) Blue Composite/ HSN Elastomer
2-7/8 (73.0mm)	6.5-7.9 (9.7-11.8)	2.494 (63.3)	2.243 (57.0)	2.150 (54.6)	17.50 (444.5)			250°F 10K PSI (121°C) (68.9MPa) Yellow Composite/ HSN Elastomer		
3-1/2 (88.9mm)	12.95 (19.3)	2.819 (71.6)	2.654 (67.4)	2.500 (63.5)						
	9.30-10.30 (13.8-15.2)	3.047 (77.4)	2.843 (72.2)	2.725 (69.2)						
	7.7 (11.5)	3.119 (79.2)	3.002 (76.3)	2.825 (71.8)						
4 (101.6)	9.50-11.00 (14.1-16.4)	3.6 (91.4)	3.403 (86.4)	3.188 (81.0)	23.88 (606.6)	Magnum "A-1", Baker #10 or Owen	250°F 8K PSI (121°C) (55.2MPa) Green Composite/ HSN Elastomer			
4-1/2 (114.3)	15.10-17.10 (22.5-25.4)	3.826 (97.2)	3.740 (95.0)	3.440 (87.4)						
	9.50-13.5 (14.1-20.1)	4.090 (103.9)	3.920 (99.6)	3.570 (90.7)						
5 (127.0)	11.50-18.00 (17.1-26.8)	4.560 (115.8)	4.276 (108.6)	3.920 (99.6)						
5-1/2 (139.7)	15.50-23.00 (23.1-34.2)	4.95 (125.7)	4.67 (118.6)	4.300 (109.2)	23.80 (604.5)	Magnum "A-1", Baker #20 or Owen				
	14.00 (20.8)	5.012 (127.3)	5.012 (127.3)	4.600 (116.8)						
7 (177.8)	23.00-32.00 (34.2-47.6)	6.366 (161.7)	6.366 (161.7)	5.750 (146.1)	23.13 (612.9)					
	17.00-20.00 (25.3-29.8)	6.538 (166.1)	6.456 (164.0)	5.950 (151.1)						
7-5/8 (193.7)	24.00-33.70 (35.7-50.1)	7.025 (178.4)	6.765 (171.8)	6.250 (158.8)						
8-5/8 (219.1)	36.00-44.00 (000-000)	7.949 (201.9)	7.506 (190.7)	7.250 (184.2)	32.0 (812.8)			Not Yet Available		
9-5/8 (244.5)	32.30-47.00 (000-000)	9.126 (231.8)	8.681 (220.5)	8.375 (212.7)						