

MAGNUM™ COMPOSITE BRIDGE PLUGS

DESCRIPTION

The “Magnum” is a multi-configuration plug used to temporarily isolate multi-stage vertical or horizontal completion operations. The base model of the Magnum Series 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 Magnum Series can be quickly and easily milled and circulated back to surface.

FEATURES

- Consistent drill times of 30 minutes or less
 - Can be converted into a Magnum™ Cement Retainer
 - Set on wireline, coiled tubing or production tubing using conventional setting tools
 - Milled-out using down-hole motor or power swivel
 - Millable cast iron slips
 - Positive lock-up feature to ensure plugs do not spin while milling
 - Utilizes conventional setting tools
 - Patented precision shearing device
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- **Magnum 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.
 - **Magnum Bridge:** The Bridge Plug, or “Kill Plug,” has “top venting” ability, which allows for upper and lower equalizations during drill out.
 - **Magnum 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.
 - **Magnum Flo-Back with Bio-Ball:** Also built with a one-way check valve, this plug temporarily isolates bottom hole pressure by utilizing an Aqueous-Soluble Bio-Ball Sealer. After the bio-ball has dissolved, the check valve will allow bottom hole pressure to flow through the plug.



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PRODUCT SPECIFICATION

| CASING SPECS | | | | PLUG SPECS | | | | | | OPERATING RANGES | | | |
|----------------------|------------------------------------|------------------------|------------------------|----------------------|--|--|------------------------|------------------------------|--|--|---|---|--|
| O.D. inch (mm) | WEIGHT RANGE lb/ft (kg/m) | MIN ID inch (mm) | MAX ID inch (mm) | O.D. inch (mm) | BALL DROP MIN I.D. inch (mm) | FLOW BACK MIN I.D. inch (mm) | LENGTH inch (mm) | BALL SIZE inch (mm) | SETTING TOOL | LOW TEMP/ LOW PSI | LOW TEMP/ HIGH PSI | MID TEMP/ HIGH PSI | HIGH TEMP/ HIGH PSI |
| 2-7/8 (73.0) | 6.4-7.9 (9.5-11.8) | 2.323 (59.0) | 2.441 (62.0) | 2.150 (54.6) | 0.440 (11.2) | 0.440 (11.2) | 21.0 (533.4) | 1.125 (28.6) | Magnum "A-1", Baker #5 or Owen | N/A | 250°F 10K PSI (121°C) (68.9MPa) | 300°F 10K PSI (149°C) (68.9MPa) | 400°F 10K PSI (204°C) (68.9MPa) |
| 3-1/2 (88.9) | 7.7-10.2 (11.5-15.2) | 2.922 (74.2) | 2.992 (77.93) | 2.725 (69.2) | | | | | | | | | |
| 4 (101.6) | 12.95 (19.3) | 2.750 (69.9) | 2.750 (69.9) | 2.500 (63.5) | 1.250 (31.8) | 0.500 (12.7) | 26.0 (660.4) | 1.75 (44.5) | Magnum "A-1", Baker #10 or Owen | 250°F 8K PSI (121°C) (55.2MPa) Green Composite/ HSN Elastomer | Yellow Composite/ HSN Elastomer | Blue Composite/ HSN Elastomer | Blue Composite/ Viton Elastomer |
| 4-1/2 (114.3) | 9.50-11.00 (14.1-16.4) | 3.476 (88.3) | 3.548 (90.1) | 3.188 (81.0) | | | | | | | | | |
| 5 (127.0) | 9.50-13.5 (14.1-20.1) | 3.920 (99.6) | 4.090 (103.9) | 3.570 (90.7) | | | | | | | | | |
| 5-1/2 (139.7) | 15.10-17.10 (22.5-25.4) | 3.754 (95.4) | 3.826 (97.2) | 3.440 (87.4) | | | | | | | | | |
| 6-5/8 (168.3) | 11.50-18.00 (17.1-26.8) | 4.276 (108.6) | 4.560 (115.8) | 3.920 (99.6) | 1.80 (45.7) | 0.630 (16.0) | 28.0 (711.2) | 2.125 (54.0) | Magnum "A-1", Baker #20 or Owen | 250°F 8K PSI (121°C) (55.2MPa) Green Composite/ HSN Elastomer | 250°F 10K PSI (121°C) (68.9MPa) | 300°F 10K PSI (149°C) (68.9MPa) | 400°F 10K PSI (204°C) (68.9MPa) |
| 7 (177.8) | 14.00 (20.8) | 5.012 (127.3) | 5.012 (127.3) | 4.600 (116.8) | | | | | | | | | |
| 7-5/8 (193.7) | 15.50-20.00 (23.1-29.8) | 4.778 (121.4) | 4.950 (125.7) | 4.300 (109.2) | | | | | | | | | |
| 8-5/8 (219.1) | 23.0-28.4 (34.2-42.3) | 4.440 (112.8) | 4.670 (118.6) | 4.125 (104.8) | | | | | | | | | |
| 9-5/8 (244.5) | 24.0-32.0 (35.7-47.6) | 5.675 (144.1) | 5.921 (150.4) | 5.375 (136.5) | 2.5 (63.5) | 1.0 (25.4) | 31.5 (800.1) | 2.75 (70.0) | Magnum "A-1", Baker #20 or Owen | 250°F 8K PSI (121°C) (55.2MPa) Green Composite/ HSN Elastomer | Yellow Composite/ HSN Elastomer | Blue Composite/ HSN Elastomer | Blue Composite/ Viton Elastomer |
| 10-5/8 (273.1) | 17.00-23.00 (25.3-34.2) | 6.366 (161.7) | 6.538 (166.1) | 5.950 (151.1) | | | | | | | | | |
| 11-5/8 (298.3) | 23.00-32.00 (34.2-47.6) | 6.094 (154.8) | 6.366 (161.7) | 5.750 (146.1) | | | | | | | | | |
| 12-5/8 (322.9) | 24.00-33.70 (35.7-50.2) | 6.765 (171.8) | 7.025 (178.4) | 6.250 (158.8) | | | | | | | | | |
| 13-5/8 (349.3) | 28.00-40.00 (41.7-59.5) | 7.725 (196.2) | 8.017 (203.7) | 7.375 (187.3) | 2.125 (54.0) | 2.125 (54.0) | 36.0 (914.4) | 2.5 (63.5) | Magnum "A-1", Baker #20 or Owen | 250°F 8K PSI (121°C) (55.2MPa) Green Composite/ HSN Elastomer | 300°F 8K PSI (149°C) (55.2MPa) Blue Composite/ HSN Elastomer | 400°F 8K PSI (204°C) (55.2MPa) Blue Composite/ Viton Elastomer | |
| 14-5/8 (375.0) | 32.30-40.00 (48.1-59.5) | 8.835 (224.4) | 9.001 (228.6) | 8.375 (212.7) | 2.5 (63.5) | 2.5 (63.5) | 40.0 (1016.0) | 3.0 (76.2) | | | | | |
| 15-5/8 (401.3) | 43.50-53.50 (64.7-79.6) | 8.535 (216.8) | 8.755 (222.4) | 8.125 (206.4) | | | | | | | | | |