

# Where Technology Meets Performance

## DRILLING

INNOVATIVE SOLUTIONS, LLC

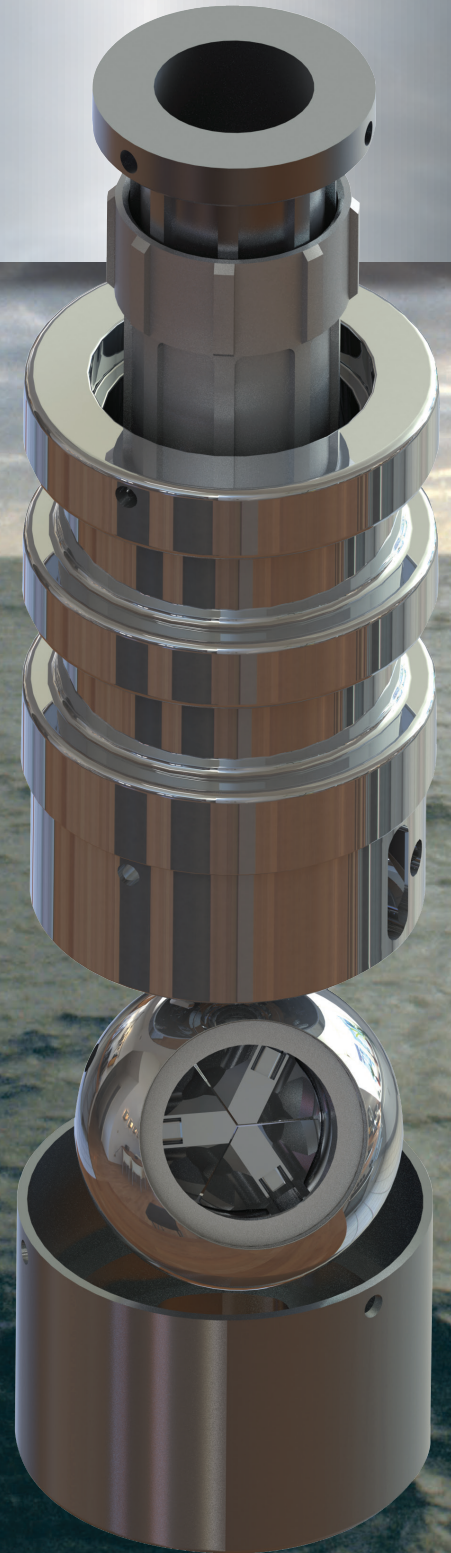
## THE GUARDIAN

### Cement Float Equipment

with  
Patented Piloted Ball Technology

We developed The Guardian to withstand a multitude of well cementing conditions to ensure consistent performance versus the wide-range success rate of traditional cement float equipment. It utilizes Drilling Innovative Solutions, LLC patent pending, field-proven flapper actuated ball valve technology which ensure consistent performance in a range of environments.

All float equipment is designed and tested to API RP10F Category IIIC standards ensuring the highest product quality. The Guardian is available in a broad range of valve sizes, to accommodate standard casing sizes.



# THE GUARDIAN

## Cement Float Equipment

### USES

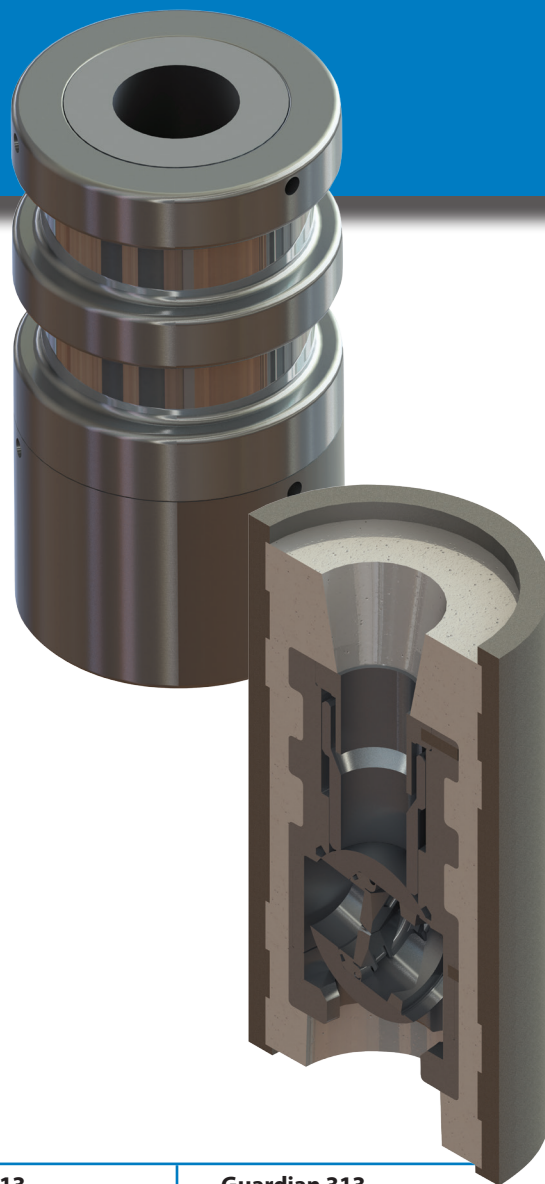
- Can be used in most cementing operations including HTHP conditions.
- The Guardian float shoe comes standard with a round nose used to guide the casing string to the desired depth.
- The Guardian float shoe is normally run with at least one Guardian float collar to provide an additional barrier against the U-tube effect of the cement, as well as allowing contaminated cement to remain in the casing string.
- The ball valve sealing allows the casing to be floated to desired depth assisting in casing run-in.

### BENEFITS

- Valve is full opening, allowing for a large laminar fluid flow.
- Valve is designed utilizing an elastomeric-to-metal seal via a ball valve.
- Sealing surface is always protected from erosion via a flow tube, allowing consistent sealing after prolonged use.
- No springs are required for sealing.
- PDC and Tri-cone bit drillable.

### FEATURES

- Valves available in a broad range of internal diameters.
- The Guardian float shoe can be provided with ports (up, down and/or side) and various noses for different applications.
- Available with auto-fill
- Available in premium grade materials and connections.
- 10,000 psi valves available upon request.



### GUARDIAN VALVE SPECIFICATIONS

Valve	Guardian 158	Guardian 213	Guardian 313
Inlet ID	1.575 in	2.125 in	3.125 in
Minimum Flow Area	1.948 in <sup>2</sup>	3.547 in <sup>2</sup>	7.67 in <sup>2</sup>
API RP10F Rating	Category III C	Category III C	Category III C
Tested Durability	24	24	24
Temperature Rating	400 °F	400 °F	400 °F
Back Pressure Rating	5000 psi	5000 psi	5000 psi
Valve Material	6061 Aluminum	6061 Aluminum	6061 Aluminum
Valve Housing Material	6061 Aluminum	6061 Aluminum	6061 Aluminum
Casing Size Options	5.5 in to 6.625 in	7.0 in to 11.75 in	13.375 in and up