

# Where Technology Meets Performance

## DRILLING

INNOVATIVE SOLUTIONS, LLC

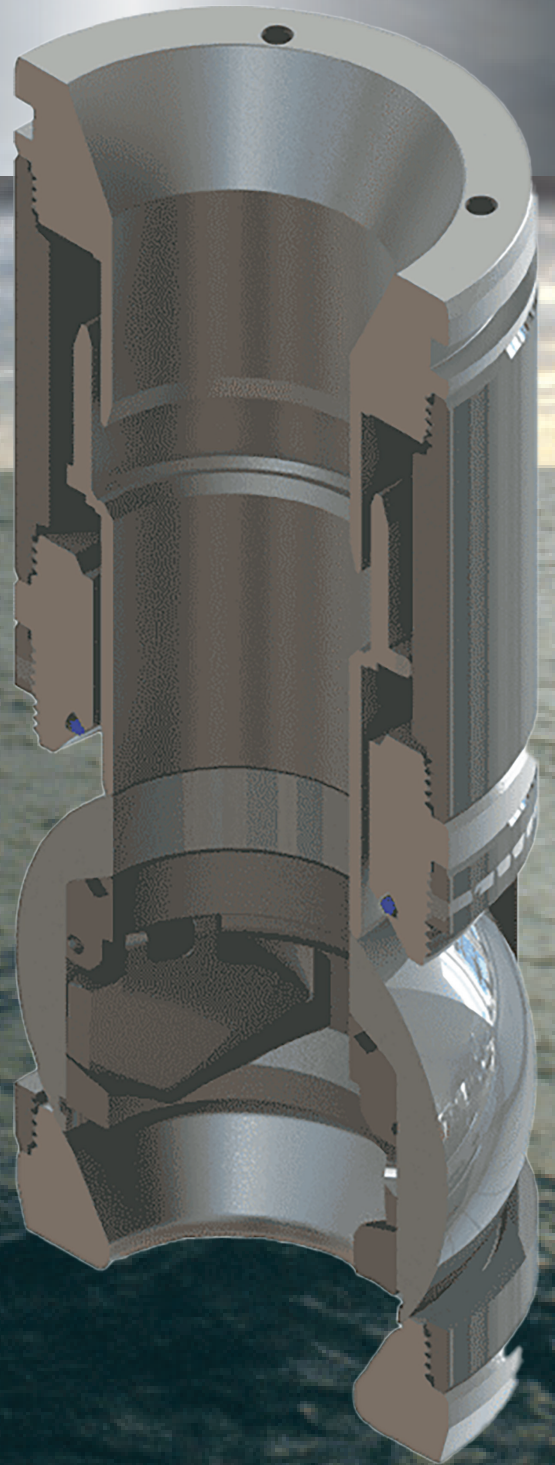
## THE SENTINEL

### Drilling Safety Float Valve

with  
Patented Piloted Ball Technology

The revolutionary new Sentinel DSFV is the first major improvement for drilling float equipment in decades. It was designed to replace outdated equipment that cannot consistently seal after prolonged use.

Utilizing Drilling Innovative Solutions' field-proven flapper actuated ball valve technology, The Sentinel is able to withstand the most extreme downhole drilling conditions and ensure proper sealing time after time. All DSFVs are manufactured to the highest API and ISO 9000 standards ensuring the highest quality tools. The Sentinel is available in a broad range of valve sizes, to accommodate most drilling operations.



# THE SENTINEL

## Drilling Safety Float Valve

### USES

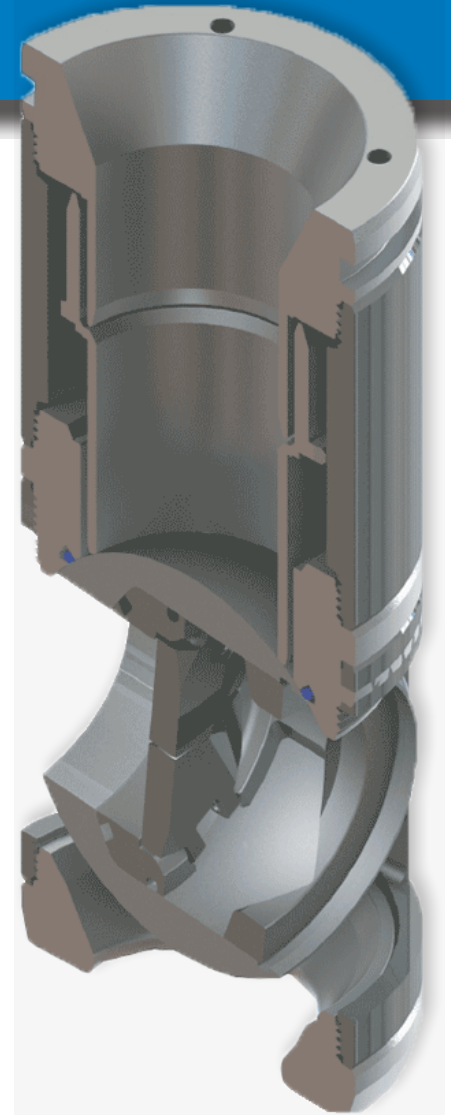
- Can be used for Normal and/or Directional Drilling Operations including HTHP conditions.
- Can be used for Underbalanced Drilling Operations.
- Can be used for Managed Pressure Drilling (MPD) Operations.
- Designed to be used as a barrier against well control events.

### BENEFITS

- Valve is designed to allow reading of Bottom Hole Pressure instantly in a neutral flow environment.
- Valve is full opening, allowing for a large laminar fluid flow as well as access through the valve for any downhole tool actuation devices (ie: balls, darts, etc.)
- 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.
- Valve is non-slamming and has a high resistance to vibrations.
- Valve is recommended to be placed as close to the drill bit as possible to help prevent plugging of the bit due to solids, but can be placed further up the drill string.

### FEATURES

- Valves are designed to 10,000 psi and 450 degrees F, allowing for a broad range of service conditions including HTHP.
- Valves are available in common connection sizes and internal diameters.
- Premium non-standard connections available upon request.
- Sour gas condition valves available upon request.
- Validation Testing to API 7NRP and 7V Ballot.



### STANDARD SIZE SENTINEL SPECIFICATIONS

| Valve            | Sentinel 950         | Sentinel 850         | Sentinel 663 | Sentinel 475 |
|------------------|----------------------|----------------------|--------------|--------------|
| Outside Diameter | 9.50 in              | 8.50 in              | 6.625 in     | 4.75 in      |
| Inside Diameter  | 3.125 in             | 3.125 in             | 2.125 in     | 1.575 in     |
| Pressure Rating  | 10,000 psi           | 10,000 psi           | 10,000 psi   | 10,000 psi   |
| Connection Upper | 7.625 in Reg. RH Box | 6.625 in Reg. RH Box | NC-50 Box    | NC-38 Box    |
| Connection Lower | 7.625 in Reg. RH Box | 6.625 FH Box         | NC-50 Box    | NC-38 Box    |