

# TS Series

## ADV® - Automatic Diverter Valve

The RMSpumptools ADV® is the Industry's Best Performing ESP Diverter Valve that enables tubing to annulus communication. Typically used for ESP completions, the ADV® combines ESP protection from solids fall-back on pump shut-down and free flow either from natural flow or from a lower ESP (dual completion). The ADV® dramatically improves ESP run life and has saved significant costs for Operators.

The ADV® has been independently customer tested against all competitor variants and approved as the only diverter valve that can operate under high flow and high pressure ESP applications, especially Dual POD applications.

### The ADV™ versus Similar Competitor Tools

ESP Flow Valve	DFV	PAR	AFV	AFS	TDV	ADV®
Patented Design						●
Metal to Metal Sealing						●
No Valve Chatter	●	●				●
Instant & Precise Open/Close						●
No Recirculation					●	●
High Pressure Equalisation*						●
Maximises Free Flow						●
Non-Reactive to Flow Variations		●		●		●
Extensive Flow Ranges					●	●
Lowest Pressure Drop Design						●
Wireline Retrievable Option		●	●		●	●
ESPCP & RDPCP Options						●
2-3/8, 2-7/8, 3-1/2, 4-1/2						●

\*Metal to Metal sealing enables high pressure unloading on ESP shut-off and combats the high risk of elastomeric seal failures.

### Maximising Flow

The annular port area of the ADV® is greater than the Tubing Area, maximising flow through the tool. All flow areas inside the tool are optimised with paths designed to minimise pressure drop and lessen the effects of erosion.

### Why the ADV® is Unique

The ADV® uses pressure differential, not flow, to function unlike elastomeric competitor tools. As long as the minimum pressure differential is maintained, the well flow rate can fluctuate without disturbing the function of the tool. The benefit is that the ADV® does not prematurely wear from "chattering" as competitor tools are known to do.

### Key Performance Features

- Patented Technology
- Metal to Metal Primary Sealing
- Field Proven in Harsh Environments
- Widest Range of Sizes and Flow Rate Operation



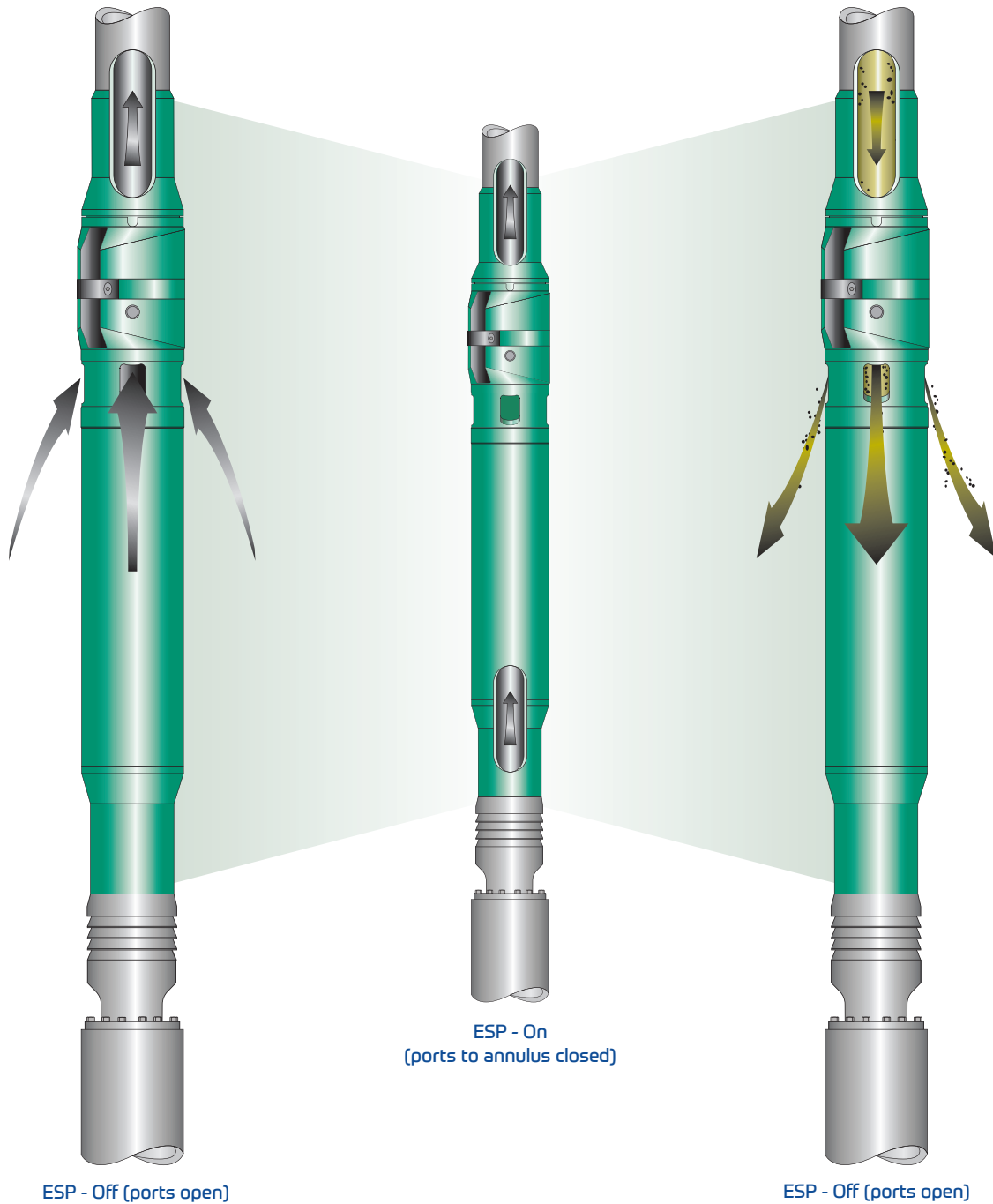
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" The Automatic Diverter Valve Saved North Slope Operator \$4.9M over Three Years. " - BH, Alaska

" Run times of ESPs fitted with the ADV in Occidental's fields have increased by 450% as a direct result of the use of the ADV. " - OXY, Colombia

" The ADV saved 12 hours rig time by removing the need to run a dedicated injection string. " - BH, UK



**Free-Flow**

Free-flow to production tubing avoiding passage of fluid through pump section, eliminating bearing damage and scale build up. On ESP switch-on the ADV® automatically operates to close ports to the annulus and pumped production commences to surface.

**Tubing Drain / Solids Fall-Back to Annulus**

Upon ESP trip / shut down, fluid and solids in the tubing string instantly exhaust into the annulus. Communication to the ESP is blocked preventing solids entering the ESP and eliminating ESP backpin. When the ESP is restarted the ADV® automatically operates to close ports to annulus and normal production resumes.