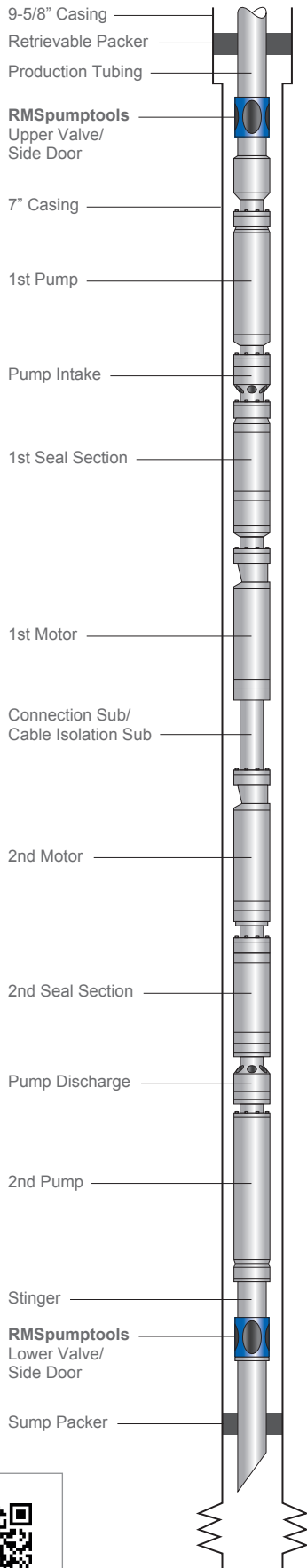


ESP Dual Systems - Restricted Annular UVP (Unrestricted Volume Pumping)



As the originators of dual ESP technology, RMSpumptools' in-depth background and expertise in dual ESPs, translates into an unparalleled range of systems that cater for the wide variety of completion needs demanded by today's sophisticated ESP user.

Description

A unique redundancy Dual ESP solution that overcomes casing size restrictions. This innovative RMSpumptools patented system will allow a dual ESP system of 562 Series Pumps inside 7" casing or 675 Series Pumps inside 9-5/8" casing.

Operation

A second (inverted) ESP is suspended from the bottom of a standard ESP system. Each system has its own power cable. The lower (inverted) ESP is fitted with a stinger intake that engages into a sump packer PBR. A RMSpumptools ADV (automatic flow diverter valve) is situated both above the upper ESP and below the lower ESP, to provide automatic flow bypass to enable each ESP to operate individually.

Application

For use in wells where the ideal ESP series (OD size) does not allow room for a dual system using Y-Tool bypass or encapsulated (Can) system.

Advantage

The simplest ESP system possible. Allows the operator to maximise drawdown, whilst retaining the benefits of a down-hole backup dual ESP system.

Upper Pump Operation

When operating the upper ESP, the RMSpumptools flow diverter valves are automatically operated to enable the upper ESP to operate and thus re-commence production.

Flow enters the annulus via the lower valve, with communication to the lower pump shut off.

Lower Pump Operation

RMSpumptools Lower Flow Diverter Valve is set shut to the annulus and open to the lower ESP. Upper Sliding Valve set to annulus and shut to upper ESP.

Flow from the reservoir is directed to the lower pump intake and is discharged into the annulus by the pump. Flow enters the production tubing via the upper RMSpumptools Flow Diverter.

NB. Upper ESP is protected against premature wear from turbinating effect and protected against debris build-up because communication between ESP and tubing is shut off.

