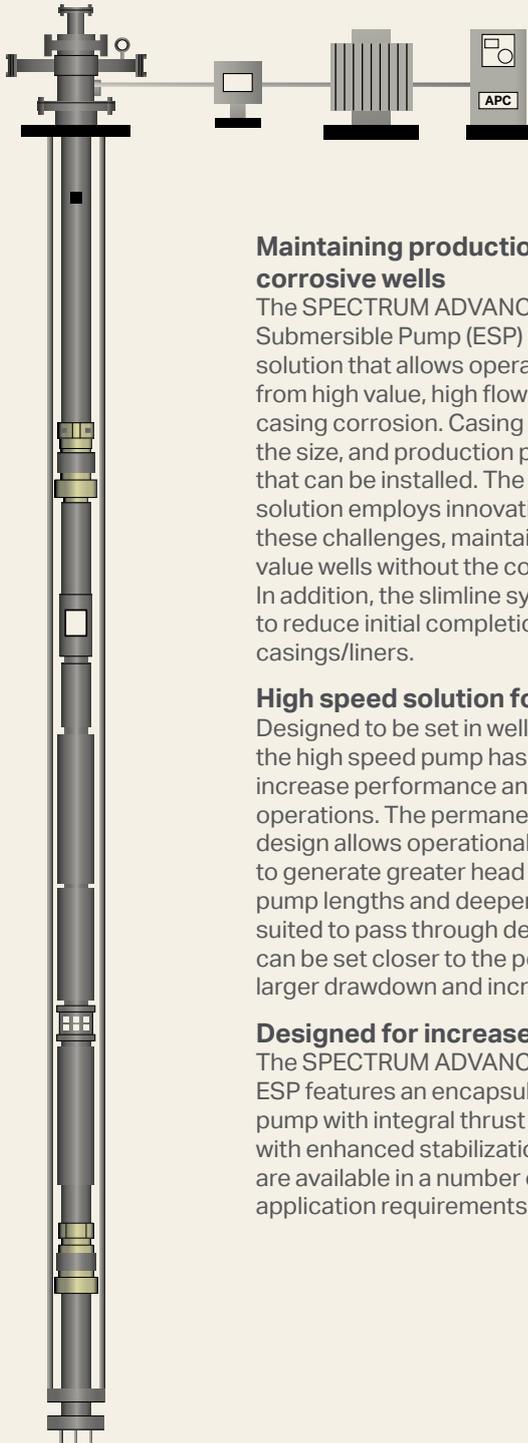


# **SPECTRUM** *Advance*

## High Speed Slim Line ESP Solution



### **Maintaining production from aging, corrosive wells**

The SPECTRUM ADVANCE Slim Line Electrical Submersible Pump (ESP) system is a high speed solution that allows operators to maintain production from high value, high flow wells that suffer from casing corrosion. Casing patches or liners restrict the size, and production potential, of ESP equipment that can be installed. The SPECTRUM ADVANCE solution employs innovative features to overcome these challenges, maintaining production from high value wells without the cost of sidetracking wells. In addition, the slimline system can be implemented to reduce initial completion costs by using smaller casings/liners.

### **High speed solution for slim wells**

Designed to be set in wells with reduced clearances, the high speed pump has been re-designed to increase performance and reliability during high speed operations. The permanent magnet motor (PMM) design allows operational pump speeds of 6,000 RPM, to generate greater head per stage facilitating shorter pump lengths and deeper setting depths. Better suited to pass through deviations, the slim line system can be set closer to the perforations, generating a larger drawdown and increased recovery factor.

### **Designed for increased reliability**

The SPECTRUM ADVANCE High Speed Slim Line ESP features an encapsulated motor lead extension, pump with integral thrust chamber and stages with enhanced stabilization for greater reliability are available in a number of metallurgies to suit all application requirements.

### **APPLICATIONS**

- Designed to be set in 4.5" and 5" casing
- High fluid rates
- Highly deviated, long reach wells
- Harsh environments
- Deep set pumps
- Alternatively deployed ESP

### **BENEFITS**

- High flow rate from slim line pump – unique in industry
- Avoid expensive remedial well work
- Maintain production targets from high value, aging wells
- High lift per stage enables deep setting depths, short strings
- Slim profile passes through high dog legs
- High pump efficiency
- Utilizes standard wellhead
- Prevents damage to casing from corrosive well fluids

### **FEATURES**

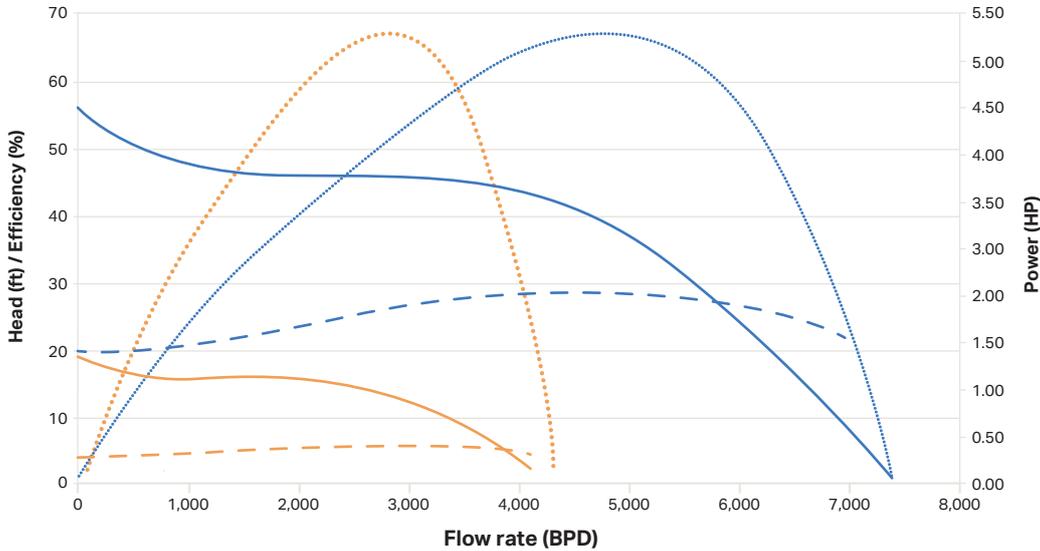
- 3.5" OD
- 6,000 RPM operation
- PM motor with high power density
- 5,000 BPD pump
- Encapsulated power delivery system
- Integral ground fault tolerant gauge (optional)

SERIES  
**350**

**SPECTRUM** Advance  
High Speed Slim Line ESP Solution

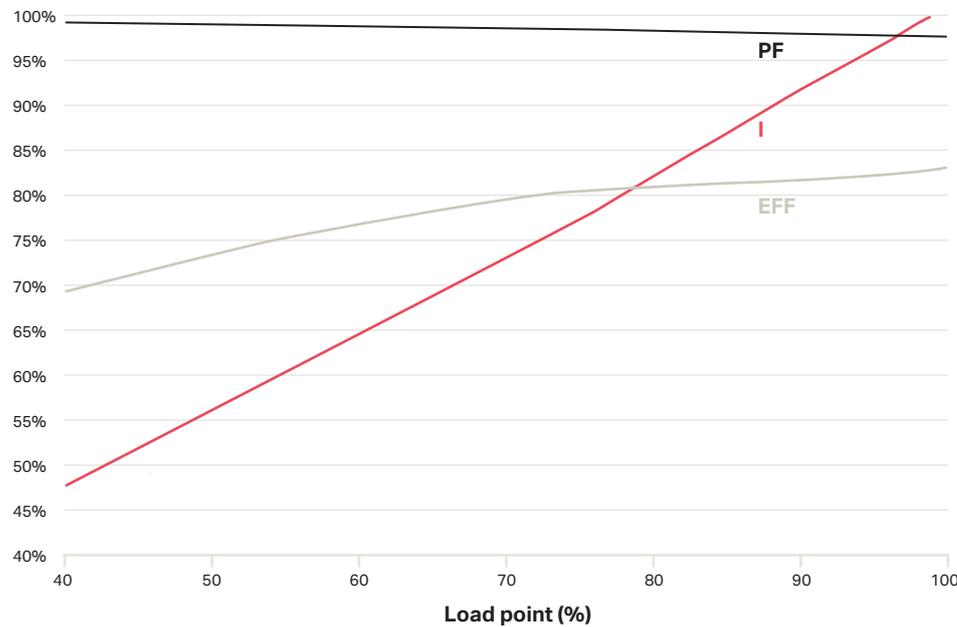
**WA 2700 pump performance 3,500 RPM vs. 6,000 RPM**

High speed operation generates greater lift per stage allowing for deeper pump set depths and shorter pump lengths.



**350 PM motor performance curve @ 6,000 rpm**

Permanent magnet motor design permits greater power factor and efficiency from shorter, slimmer units with higher power density



<b>Pump</b>	338 series 5,000 BPD, AR coated
<b>Motor</b>	350 series permanent magnet motor, 170HP
<b>Gauge</b>	Integral, 9 channel, ground fault tolerant (as option)
<b>Protector</b>	Shaft less protector for isolation, equalization & expansion
<b>Thrust chamber</b>	High temp, high load thrust bearing
<b>Power delivery system</b>	Encapsulated I-Lead system, #4 AWG 5kV