

# SCM SINGLE CEMENTER

## SANJEL CYCLONIC MIXER

### DESCRIPTION

Sanjel's Cyclonic Mixer (SCM) is the industry's premier high energy mixing system. The SCM Single is capable of mixing at slurry rates up to 1.8 m<sup>3</sup>/min with densities up to 2400 kg/m<sup>3</sup>. Non-nuclear density measurements for both the process control loop and the downhole fluid line ensures accurate readings for slurry density, rate, temperature and volume. The SCM mixing system utilizes Sanjel Energy Services' Mark IV Automated Control Technology. The target slurry properties drive mix water and bulk control to within blend specifications. Complex job parameters are pre-programmed and capable of on-the-fly transition of up to 10 cement systems using touch-button simplicity. Key job parameters can also be managed in real-time. These include pressure limits, system sensors and supplementary information ranging from trend graphs to diagnostics.

### APPLICATIONS

- Shallow to deep well applications
- Critical and sour gas wells
- Surface, intermediate and production casings
- Liner cementing operations
- Plug-back and Whipstock cementing operations
- Injectivity tests
- Conductor barrels
- High pressure pumping
- Remedial cementing operations

### EQUIPMENT

- 1 – 418 kW engine
- 1 – 70 MPa triplex pump with 3 ½" plungers
- 1 – 3" x 4" centrifugal water pump with 9" impeller
- 1 – 6" x 5" centrifugal recirculating pump with 12" impeller
- 1 – 6" x 5" centrifugal boost pump with 12" impeller
- 2 – 2.0 m<sup>3</sup> displacement tanks
- 1 – 0.8 m<sup>3</sup> mixing tank
- 1 – 0.8 m<sup>3</sup> averaging tank
- 2 – Non-nuclear Coriolis flowmeters used for density control
- 2" treating iron package
- Cementing hose reel with 15 m of hose
- All-weather enclosure and operator cab
- Blower for standalone bin operations

### PERFORMANCE

- Maximum Mixing Rate: 1.8 m<sup>3</sup>/min
- Maximum Pumping Rate: 1.27 m<sup>3</sup>/min
- Maximum Pressure: 70 MPa
- Maximum Slurry Density: 2400 kg/m<sup>3</sup>

### MARK IV AUTOMATED CONTROL TECHNOLOGY

- Automation of both mix water and bulk cement rates
- Target slurry properties used to control automation
- Set mix rate or actual downhole rate can be used to control automation
- Capable of holding density to within ±12 kg/m<sup>3</sup> under steady state conditions while pumping downhole
- Up to 10 different cement blends can be entered at one time
- All job parameters displayed simultaneously on the operator's touch screen
- Single button stage advance
- Visual identifiers indicate if slurry and operation parameters are outside of target range
- Supplementary information also displayed on operator screen (e.g., trend graphs, P&ID process displays, sensor diagnostics)
- Electronic over pressure management

