E-Cementing Unit - Twin 1000 QS Pump

In recent years, with the advancement of directional drilling technologies, horizontal wells in North America have become increasingly longer (with the maximum length reaching 5 miles) and more diverse in configuration. This has led to increased resistance and higher pressure during the cementing process, making conventional twin pump cementing units (600hp) inadequate for such operating conditions. Additionally, conventional cementing units often rely on diesel engines as the power source, which inherently suffers from high energy consumption, substantial carbon emissions, severe noise pollution, and low control precision. These shortcomings make it increasingly difficult to comply with the global energy transition to green solutions and tightening environmental regulations. Oil and gas exploration equipment is rapidly evolving towards greener and smarter solutions.

To meet the complex and diverse cementing conditions in North America, as well as the requirements of the global energy transition and corporate ESG responsibilities, Jereh has launched its twin pumping E-cementing unit (1000hp). The E-cementing unit, with its advantages of high efficiency and energy savings, eco-friendly and low emissions, and precise control, will gradually replace traditional diesel-driven equipment, becoming the mainstream trend in industry development.

Advantages

- **High Installed Power - dual-pump configuration with redundancy**
  The two-plunger pump drive motors have a combined installed power exceeding 2100 hp, which is higher than any dual-pump cementing trailer currently on the market. A single unit can meet the requirements of the vast majority of cementing operations. Equipped with two five-cylinder plunger pumps, the unit can operate with one pump online and one on standby for conventional cementing jobs.
- **Fully Electric Drive - energy-efficient and environmentally friendly**
  Both the plunger pumps and centrifugal pumps are driven by electric motors, each controlled by an independent VFD. The centrifugal pumps use permanent-magnet motors, delivering higher efficiency. Compared with diesel-driven units, there are no engines, transmissions, or related maintenance costs, no fuel consumption during operation, and zero exhaust emissions, reducing operating costs while improving environmental performance.
- **Stepless speed control with continuously adjustable flow rate**
  The unit uses direct electric drive, eliminating the need for transmissions and mechanical shift components. This avoids pressure surges associated with gear shifting and allows seamless transition between low-rate pressure testing and high-rate pumping operations.

Advantages - Continued

- **Simplified electrical design - no additional transformers or rectifiers required**
  All pump motors (plunger pumps and centrifugal pumps) operate on a standard 600V supply, the same as the drilling rig's power system. No additional step-up/step-down transformers are required, reducing failure points and simplifying onsite power distribution.
- **VFD cooling system optimized for sandstorm and dusty environments**
  Considering local sand, dust, and harsh environments, the VFDs utilize a wind-to-water cooling system and are housed inside a sealed electrical compartment. Compared with air-cooled systems, this provides significantly improved dust protection. Compared with integrated liquid-cooling designs, separating the cooling loop from the VFDs prevents coolant leakage from damaging internal electric components.

Technical Specifications

Item	Configuration	Quantity
Trailer	3-Axle Single Drop	1
Plunger Pump Drive Motor	Voltage: 600VAC Rated Power: 800 kW (1,072 hp)	2
Plunger Pump	JEREH 1,000 QS 2.0 (3.5" + 3.5")	2
Water, Centrifugal Pump Motor	Voltage: 600VAC Rated Power: 55 kW (74 hp)	2
Slurry Centrifugal Pump Motor	Voltage: 600VAC Rated Power: 75 kW (100 hp)	2
Slurry Mixing Tank	25 bbl total (≈ 8 bbl + 17.0 bbl)	1
Displacement Tank	25 bbl total (2 x 12.5 bbl)	1
Max Pressure	10,400 psi	---
Max Flowrate	1,060 gpm	---
Slurry Density Range	8.3 - 21.7 ppg	---
Weight	≈ 102,500 lb	---
Dimensions (L x H x W)	52.5 ft x 9.8 ft x 13.5 ft	---

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