

PCS-421B Auto density control double pump cementing skid

1. Overview

Model PCS-421B is an integral skid mounted mixing and pumping unit which is state-of-the-art in continuous mixing and density automatic control.

It mainly consists of skid frame, two engines, two transmissions, two TPA400 triplex pumps, hydraulic system, high and low pressure system and ACM auto mixing system. The High energy mixing system is powered from two transmissions PTO. The entire skid is very compact and applicable for offshore drilling platform.

This unit is mainly utilized in cementing job, acidizing job, oil well pressure testing, and other fluid pumping job in offshore, on land or desert oil field.

2. General specification

Max. working pressure: 69MPa (w/ 3 3/4" fluid end)

Max. flow: 3.28m³/min(w/two 5" fluid ends)

Density range: 1.3~2.5g/cm³

Auto control precision: ±0.02 g/cm³

Mixing capacity: 0.3~2.3m³/min

Working temperature: -20°C ~ 50°C

Overall dimension (mm): 7400(L) x 2500(W) x 3265(H)

Net weight: 20000kg

3. Features

- High energy recirculating jet mixing system.
- Off-center dry cement valve avoids bulk cement from choking.
- Emergency kill system of air inlet shutoff.
- Plunger pump overpressure protection system.
- SPS non-leakage packing system.
- Emergency mixing system.
- F300 Non-radioactive densitometer, easy to wash, safe and reliable.
- Simplify operation, adapts to working habits in oilfield.
- 10" operation screen, convenient to monitor and input the working data.
- Portable wireless / wired data acquisition system available.
- Engine auxiliary cold start, pneumatic or hydraulic start available.
- Fan radiator or sea water heat exchanger are available.
- C7 auxiliary power unit is available.
- ZONE-II Explosion-proof kit is available for application to hazardous areas.

Technical specification			
Engine	Caterpillar C13 475 HP@2100 RPM (2sets)		
	Caterpillar C15 540HP@2100RPM (optional)		
	Detroit S60 475HP@2100RPM (optional)		
Transmission	Allison 4700DFS (5 forward gears + neutral gear) (2sets)		
Hydraulic system	driven by transmission PTO, closed loop for c-pumps, open loop for agitators		
Triplex pump (2 sets)			
Model/type	SERVA TPA400 Reciprocal, horizontal single action plunger pump		
Stroke	5" (127mm)		
Max. B.H.P.	400 BHP (294Kw)		
Chain case ratio	27:40		
Gear ratio	25:108		
Fluid End	3 3/4"	4 1/2"	5"
Rated pressure	69MPa	48.3MPa	38MPa
Max. discharge rate	0.92 m ³ /min	1.34 m ³ /min	1.64 m ³ /min
ACM-III. Mixing system			
Mixer	High energy recirculating mixer		
Dry cement valve	off-center bulk metering valve		
Water pump	SERVA 4X3 (1.5 m ³ /min@0.78MPa)		
Recirculating/booster pump	SERVA RA56 (3.7 m ³ /min@0.45MPa) (two sets)		
Densitometer	Micro Motion 3" F300 non-radioactive densitometer		
Computer system	AB PLC		
Others			
Mixing tank	8 BBL (1.4 m ³)	Fuel tank	900 L
Measuring tank	2X10 BBL (2X1.5 m ³)	Hydraulic oil tank	170 L
		Air tank	80L

