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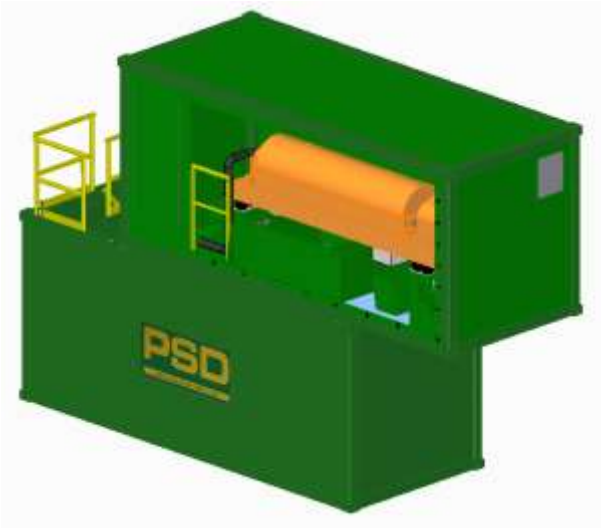
S3-01-H CENTRIFUGE WITH INTEGRATED FLOC SYSTEM

The S3-01-H centrifuge is a high speed, long bowl, decanting centrifuge with a 530mm diameter, 2270mm long bowl, driven by a 30kW variable speed electric motor controlled by a variable speed drive. The machine has a single start scroll conveyor turned by a Rotodiff hydraulic motor, driven by a variable speed hydraulic power pack with an 18.5kW electric motor. A full colour touch screen PLC is used to control the centrifuge and pump functions. The machine can develop up to 1425 'G' Force and can process fluids at rates of up to 16m^3/hr, depending upon fluid properties and solids content and will separate solids down to approximately 9 microns in size. The unit comes complete with an automated flocculation system to partially dewater flocculated solids and with the appropriate treatment, remove virtually all of the solids from active or waste water-based muds. The centrifuge may be used for desilting or with flocculation for waste fluid clean-up.



The S3-01-H consists of two modules, each 6058x2438x2591mm high being the size of a standard 20 foot, type 1CC freight container, complete with ISO corner castings. In operation the centrifuge module mounts on top of the power-house module, so that the complete machine requires a working footprint of 7.9m x 2.5m and stands 5.2m high. The centrifuge is fed by a variable speed pump system. The rate of fluid feed to the centrifuge is controlled by altering the speed of the feed pump.

The centrifuge module has a heavy duty hollow section frame into which are mounted the S3-01 decanting centrifuge, 30kW electric motor for the bowl drive, 18.5kW hydraulic power pack for the scroll drive and electrical controls. A solids discharge chute and centrate discharge tank to allow disposal or recirculation of the centrate into the system. Normally the separated solids would discharge on to the ground beneath the centrifuge module at one end of the tank module for removal by back-hoe or front-end loader or would discharge into a skip, positioned beneath the centrifuge module. Alternatively the solids could discharge onto a separate conveyor system.

The powerhouse module contains a positive displacement progressive cavity pump with a variable speed drive, powered by a 7.5kW electric motor, for feeding process fluid to the centrifuge. An automated flocculant and electrolyte dosing system comprising of a flocculant mixing tank with two vertical shaft agitators, powered by electric motors and a variable speed powder feeder and an electrolyte mixing tank with one vertical shaft agitator, powered by an electric motor. For dosing the dilute flocculant and electrolyte into the feed line to the centrifuge through integrated pipework, there are two variable speed, positive displacement progressive cavity pumps, each powered by 3kW electric motors with variable speed drives.

The special features of variable speed control for the bowl and independent speed control of the scroll enable the performance of the centrifuge to be accurately matched to the task in hand. For the removal of relatively coarse solids, a low bowl speed would be used and an increase in discharge rate can be achieved by running the scroll at a high differential speed. For the separation of very fine solids, a high bowl speed would be needed and the retention time for solids within the centrifuge can be increased by running the scroll at a low differential speed. The pond depth within the centrifuge can be altered by the factory fitting of different height weir dams. The pond depth controls the length of the beach and influences the dryness of the discharge. The rate of feed of fluid to the unit is controlled by altering the speed of the peristaltic feed pump.

TECHNICAL DATA:

Centrifuge:	Dimensions:	6058x2438x2591mm high.	Weight:	9 tonnes.
	Bowl diameter:	530mm.	Bowl length:	2270mm.
	Bowl drive power:	30kW electric motor with variable speed drive.		
	Scroll drive power:	18.5kW electro hydraulic variable speed power pack with star-delta starting.		
Powerhouse:	Dimensions:	6058x2438x2591mm high.	Weight:	11 tonnes.
	Power:	18kW		
Running current:	Not expected to exceed 85A at 380 to 415V, 50Hz.			
Overall size:	For transit:	2 No. 6058x2438x2591mm high.	For work:	7900x2500x5200mm high
Weight:	For transit:	20 tonnes.	For work:	30 tonnes.
Total Power:	Running current, including feed pump, of 85A. Supply cable is 3 phase & earth. The unit uses frequency inverters, which may require adjustment of earth leakage protection settings on the supply.			
Process capacity:	Up to 16m^3/hr in desilting mode and up to 10m^3/hr in flocculation mode.			
G Force:	Variable up to 1425 'G' at 2200rpm.			
Solids discharge:	Beneath cantilever onto ground or into skip of client's supply.			
Fluids discharge:	To the centrate tank by gravity.			
Noise emissions:	65dB at 5m.			
Access:	By internal staircase to upper level.			