

SOLIDSMASTER® 400DP DESANDER

The SOLIDSMASTER® 400DP is a high performance desander that consists of two 20 foot container sized modules; the lower pump tank module and the upper shaker/hydrocyclone module. The machine is designed for cleaning drilling muds used for slurry shield tunnelling, directional drilling, diaphragm walling and bentonite piling. The plant is suitable for treating bentonite based muds having a Marsh Funnel viscosity of up to 100 seconds per U.S. Quart. It will treat muds having sand contents up to 30% by volume. The throughput capacity of the unit is up to 400m³/hr with low viscosity muds, but is reduced as the mud sand content and viscosity increase.

The machine will clean to better than 100µm with low viscosity feed muds having less than 15% solids content. Increases in feed mud viscosity and solids content coarsen the separation point. The SOLIDSMASTER® 400DP is equipped with a very powerful big stroke, heavy duty, long bed linear motion shaker fitted with small aperture slotted screens. The machine is particularly suitable for the treatment of Thanet Sand or other fine or single sized sands. The unit is equipped with 18 No. high performance, long bodied 5" hydrocyclones.

Each module of the SOLIDSMASTER® 400DP is built to the dimensions of a type 1CC 20 foot freight container, 6058x2438x2591mm high, and is complete with twistlock corner castings. The two modules will fit on to a standard 40' artic trailer, or can be shipped as containers for seafreight.

The upper module houses the shaker which has twin 7.5kW motors. The screening and dewatering is carried out by 1.8m wide by 4.8m long beds fitted with stainless steel wedgewire or polyurethane screens. The hydrocyclones are mounted, in two banks, above the rear part of the shaker and the hydrocyclone underflow discharges directly on to the screens for dewatering. The solids are discharged off the 2.4 metre end of the unit.

The pump tank module houses 2 No. Svedala 150x100E centrifugal hydrocyclone feed pumps each powered through V-belts by a 45kW electric motor with star-delta starting and a mechanically variable speed Svedala MM200 clean mud discharge pump, powered by a 45kW electric motor. The main electrical panels and a secure stores unit are built into the pump tank module and there is also space within the tank for the transport of pipes, hoses and pump fittings.

The dirty mud is supplied to the machine by way of a riser pipe, which connects at the rear of the machine. The mud is discharged on to a central primary screening deck dressed with 3mm aperture wedge wire or polyurethane screens. Mud passing through this screen falls into the pump tank below from where it is pumped to the hydrocyclone inlets by the HM150 pumps. The hydrocyclones discharge their underflows to two heavy duty 4.8m by 0.65m wide linear motion shaker decks for dewatering, the fluid passing through the screen falls into the pump tank below for recycling. Separated solids discharge off the front of the shaker. The hydrocyclone overflow passes to the pump tank where some is recycled and some passes to the MM200 discharge pump for onward transfer. The rate of solids removal from the SOLIDSMASTER® 400DP is governed by the characteristics of the dirty mud but can be up to 100 tonnes/hour.



TECHNICAL DATA

Shaker module:	Transport size: 6058x2438x2591mm high, with twistlock castings Weight: 12 tonnes. Hydrocyclones: 18 No. 5" long bodied high performance hydrocyclones. Shaker: 1.8 x 4.8m bed driven by 2 No. 7.5kW motors.
Pump tank module:	Transport size: 6058x2438x2591mm high, with twistlock castings Weight: 12 tonnes. Hydrocyclone feed pumps: 2 No. Svedala 150x100E centrifugal with 45kW motors. Clean mud discharge pump: 1 No. variable speed Svedala MM200 with 45kW motor.
Transport:	The machine can be transported as two standard type 1CC containers.
Operating size:	6058x4000x5200mm high.
Operating weight:	38 tonnes.
Power:	380-415V, 50Hz, 3-phase & earth no neutral is required. Total power requirement is 150kW.
Running current:	280A per phase.
Starting current:	475A per phase.
Lighting & small tools:	1 No. 220V, 3kW, single phase transformer for lighting.
Other:	1 No. additional 32 amp 3 phase socket (not to be used for welding sets).
Fluid throughput:	up to 400m ³ /hr of mud having a Marsh Funnel viscosity of up to 100 seconds per U.S. Quart.
Solids removal rate:	up to 100 tonnes/hr depending on the characteristics of the dirty mud.
Noise emissions:	75dB at 5m