

BRAIN SKID MOUNTED CYCLONIC DEWATERING SYSTEM.

Application.

The Brain Cyclonic Dewatering System is for the processing of coal slurry discharge from a Brain pump or ROM Dewatering Screen.

Description.

The Brain Skid Mounted Classification Tank system is designed to accept a pulp feed rate of up to 15L/sec (54000L/hr) of an average 10% solids content with a maximum lump size of 12mm down to dust.

The tank acts as a surge buffer and allows addition of mix water via a ball cock if necessary so that a consistent feed can be pumped to the separation cyclone. The system stratifies the material and has a "clean" side and a "dirty" side. If no material is provided to the "dirty side", it will recirculate water and is designed for constant operation.

The tank is fabricated from a combination of 3CR12 wear & corrosion resistant plate, and stainless steel in its wetted areas. Length, width and height are 3000 x 1600 x 1500mm respectively and the system is mounted on channel skids with chain holes. It has a sloping floor down to the pump inlet with both vertical and horizontal baffle plates.

The 50 N.B outlet to pump is a replaceable stainless steel Spigot terminating in a hose tail for connection of the pump suction hose. A 25 N.B air fluidising system is provided to the bottom of the tank in the event that the system has been shut down and needs the tank solids content agitated to get away upon start up.

The tank has a drive base fitted which mounts the pump and motor assembly and the electrical control cabinet (free issue by Customer) or can be remote wired. The drive base area is protected by a hinge down crash frame and has a lid to give the pump, motor and electrical cabinet protection from falling rock etc.

The pump is a Warman 2/1.5B-AH heavy duty horizontal slurry pump specifically designed for the continuous pumping of highly abrasive slurries. It has replaceable metal liners and impeller. The pump is directly coupled with a FRAS Fenner coupler to a WEG 11kW, 2 pole, 415V, 50Hz, IP55, 3 phase electric motor. The motor is mine approved and the assembly has a drive guard.

The "dirty" side of the tank has a static oversize protection screen of stainless steel wedge wire with height adjustable struts and can be oriented to shed any plus 12mm lump size material to the right or left of the tank as required.

The "clean" side of the tank has a cover plate which incorporates the 100 N.B shouldered victaulic cyclone overflow return pipe spigot. The 50mm brass valve and float ball of the ball cock mechanism is housed underneath the cover plate.

An overflow skimmer box is mounted to either the left or right of the “clean” side of the tank and has a 100 N.B shouldered victaulic flange adaptor to allow discharge of “clean” excess water either via gravity or by pump (not included).



The 250mm diameter thickening cyclone is solid polyurethane and has a rubber fishtail underflow regulator.

The cyclone has a mounting frame and is fitted with 100 N.B shouldered Victaulic inlet and outlet flange adaptors. If the flow of solids reporting to underflow is reduced, the fishtail contracts so that minimal water discharges as underflow.



The overflow at approx 8L/sec should only have approximately 0.1% solids at minus 30micron size which is returned to the “clean” side of the classifying tank.