BRANDT HD4800 MUD CLEANING/ Drilling Fluid System

- Average operating capacity: 1,000 – 1,2000 gpm
- Handles 100% of circulating volume
- Removes solids larger than 74 µm
- Separation by straining through screen
- Meets Australian Standards

Standard package includes:

8 shaker skids (4x2 shakers per skid) with (desilter/ desander
x 4 Agitator mixing tanks with x2 Mission Magnum centrifugal pumps and valves per tank.

x 4 recycle tanks with Mission Magnum centrifugal pumps and valves per tank.
x 2 Pump Skids with x4 Mission Magnum centrifugal pumps and valves per unit.

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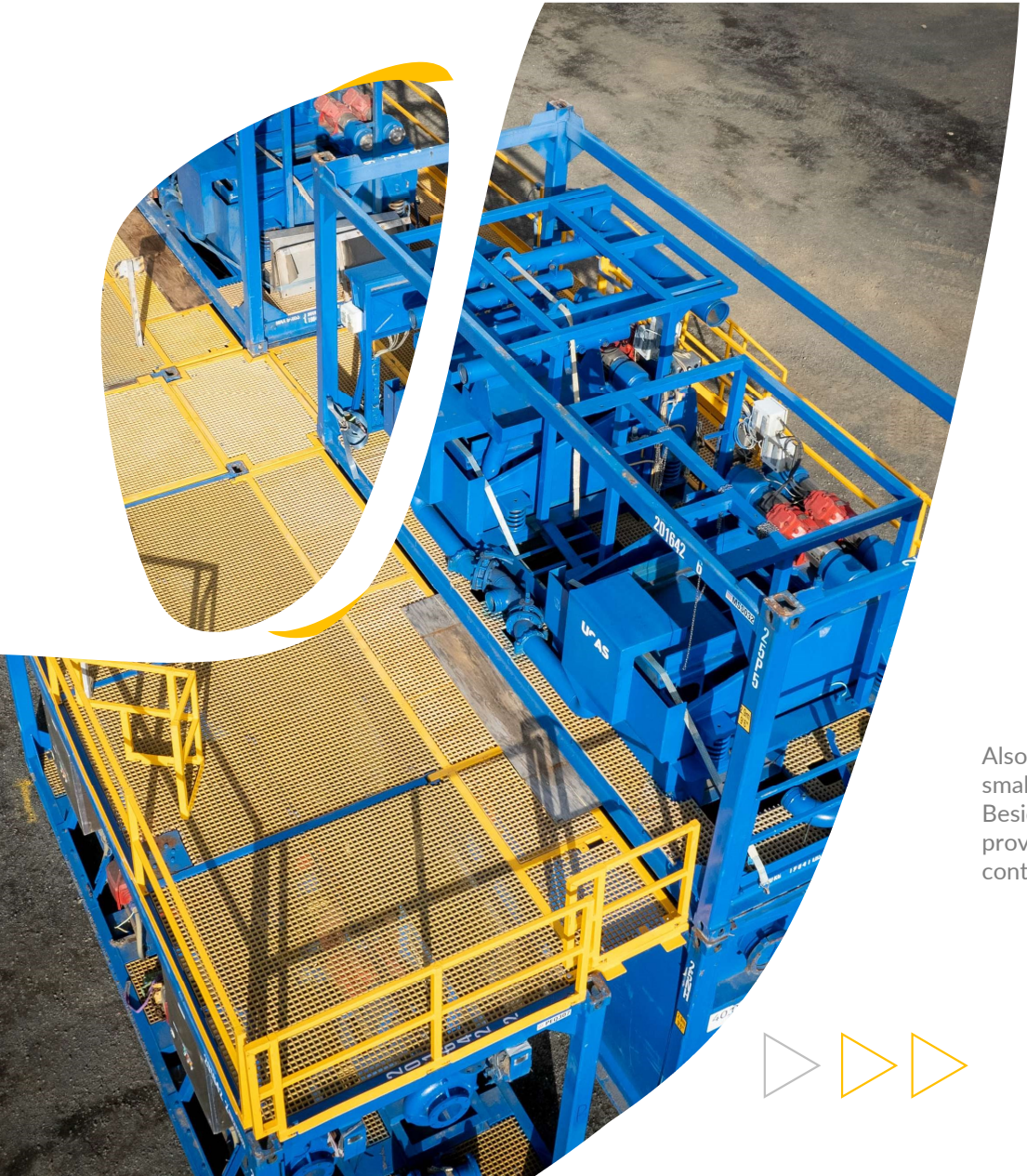

HD4800 System overview

The Modular Drilling Fluid Tank System is a processing system designed to each mix, store, and clean
viscous drilling fluids at flow rates of up to 1500 GPM and consistently return clean drilling fluids.
The system is set up such that fluid from the drill flows across the scalping deck of all the VSM 300
shakers, to remove solids that are large enough to damage the pumps and associated equipment
and fittings. Then the fluid enters one side of the Recycle tank below the shaker module. New and active mud is stored in tank modules fitted with high velocity agitators.

Also known as “mud cleaner” this system is compact, occupies small space, comes as a ready solution with walkways & handrails. Besides the standard drilling mud recycling system, HD4800 also provide customized mud recycling system according to drilling contractors applications.

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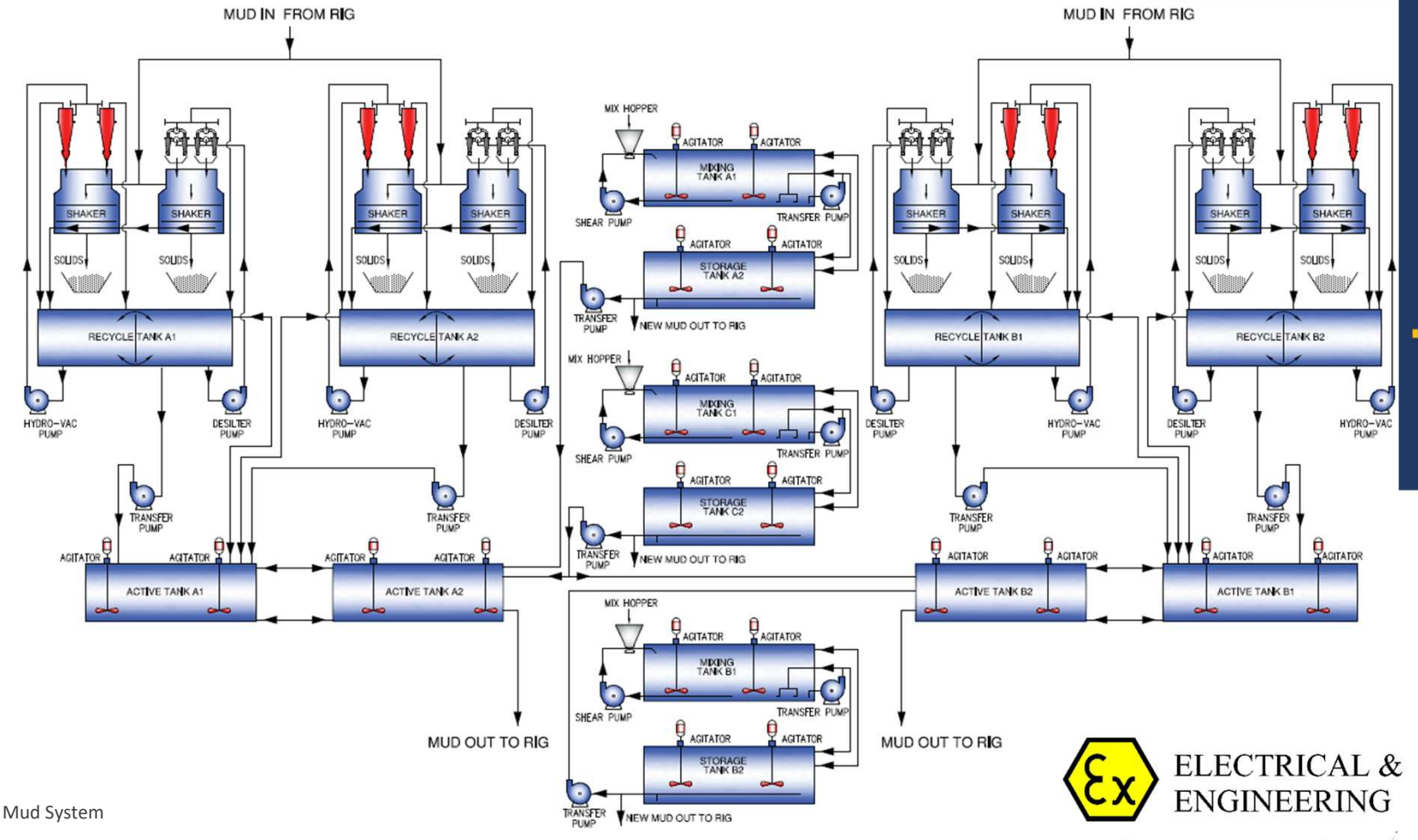
PFD HD4800



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Mixing Tanks

MIX TANK	3 units x 20 ft
External Tank Dimensions	20’ x 8 x 9’6” (6060 x 2440 x 2890)
Max Tank Working Volume	23.25 m3
Min Tank Working Volume	1.50 m3
Number of Compartments	1
Equipment	MA-5RGC x 2pcs
6” Mission Venturi Hopper	1pcs
Mission 2500 Supreme Turbo Shear Pump with 55kW/4P/IP56 or better/TEFC Motor (Belt Driven)	1pcs
Mud Gun	2pcs
4x3x13 Mission Magnum 1 with 37.5kW/4P/IP56/TEFC Motor	1pcs
Hiab 033T Hydraulic Arm with 3kW Powerpack	1pcs

Brandt Mud System HD4800

Brandt Mud System

SHAKERS (VSM 300)

VSM 300 Shale Shakers

The VSM 300 Shale Shaker is designed to meet the demands of the oilfield drilling industry and is purpose built to provide a more efficient primary solids removal system.

The VSM 300's unique drive motion delivers significant improvements in the transportation of large, sticky, hydrated clays, which are often encountered when drilling tophole sections with water-based muds.

Supplied in modular form, the VSM 300 can be assembled onsite to produce a multiple-unit setup. This, along with the unit's high capacity, dramatically reduces weight, capital expenditures, installation expenses and operating costs.

This truly unique design, coupled with balanced elliptical motion, enables the shaker to maximize solids conveyance and liquid/solid separation. The Pneumoseal screen clamping system is an element of the shaker that offers an air-operated, quick release system that allows screens to be quickly changed by a single operator.

The skid base is manufactured to form a fluid sump and is located under the basket/drive assembly. It is used to collect the processed mud before it is returned to the mud tanks.

Each skid base is manufactured with two (2) exit gates, one at each side, which enables the mud to flow into either an adjacent link section or a site built ditch.

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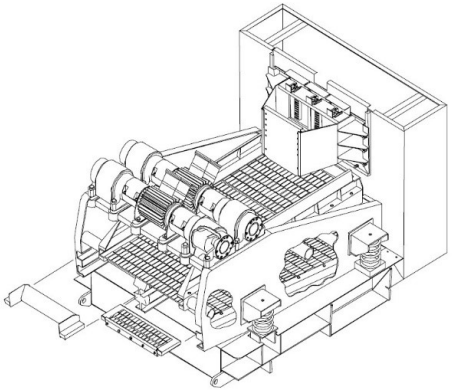
Technical Specifications	VSM 300
Dimensions	2754 x 1870 x 1505
Weight	2436 kg
Weir Height	991mm
G Force	4.6 or 8G's (Adjustable)
Vibration Motion	Balanced Elliptical
Motor quantity	2
Motor Power (Each)	3kW
Electrical Voltage/Phase/Frequency	380-160 VAC/3Phase/50Hz
Air Connection/Pressure/Capacity	Single-point/85-90psi/0.014m3/min

VSM 300 SHAKER SCREENS



The screens used on the VSM 300 Shale Shaker can be easily changed out to suit operational conditions.

The following screen types are used:

Top Deck Screens (Scalping Screen)
The top deck of the VSM 300 utilizes multi panel pretensioned screens which are used to scalp off volumes of large solids thus protecting the finer mesh of the lower deck screens.
The top deck screens are retained in position by pneumoseal clamping systems which enable rapid screen changeout.

Lower Deck Screens (Primary)
The lower deck screen configuration of the VSM 300 comprise four
(4) multi panel pretensioned screens. All the screens are mounted ona constant 7° ramp. This screen configuration ensures consistent conveyance of solids thus minimizing solids build-up. This results in a higher throughput capacity. (The lower screens are retained in position by pneumoseal clamping systems which enable rapid screen changeout.)

Screens Deck	
Scalping Screens Qty	3
Deck Angle	0
Screen Type	Pretension, Repairable
Deck Area	1.9m2
Primary Screens Qty	4
Deck Angle	7
Screen Type	Pretension, Repairable
Deck Area	2.4m2

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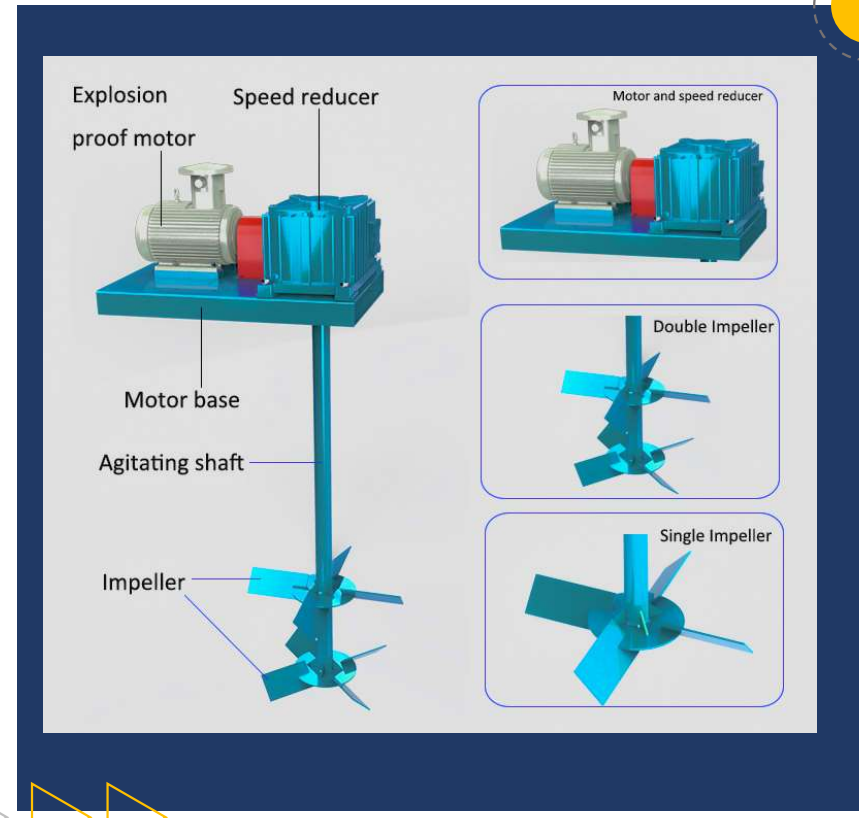
AGITATORS (MA-5RGC)

MUD System HD4800 includes 20pcs of MA-5RGC agitators.
Brandt agitators are very compact, their low profile reduces headroom requirements and provides more layout space on top of the tanks for other equipment.

The MA-RG (mud agitator right-angle gear) series is a double-reduction helical gear. The 1:1 ratio of height-to-width of the horizontally-mounted drive design results in a low venter of gravity and requires less overhead space.

The MA-RGC (mud agitator right-angle gear c-face motor) is the same design as the MA-RG, but uses a c-face motor for a smaller footprint.



Dimensions: 1022mm x 548mm x 425mm
Weight: 263kg

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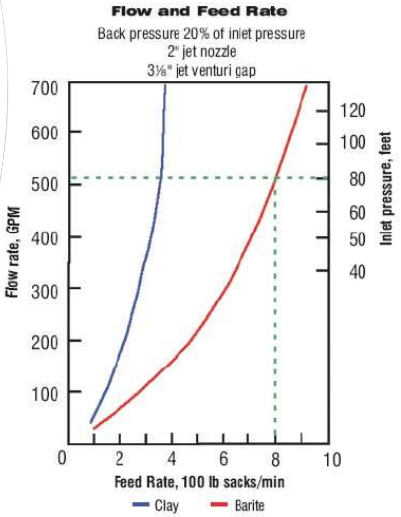
6” MISSION VENTURI HOPPER

HD4800 includes 3pcs of Mixing Hoppers.

Brandt Mud Hoppers are equipped with a jet-venturi, maximizing the missing efficiency of the hopper, allowing increased mixing rates.

The mud hoppers are equipped with a butterfly valve between the hopper and tee assembly to allow precise mixing of solids with the Medium.

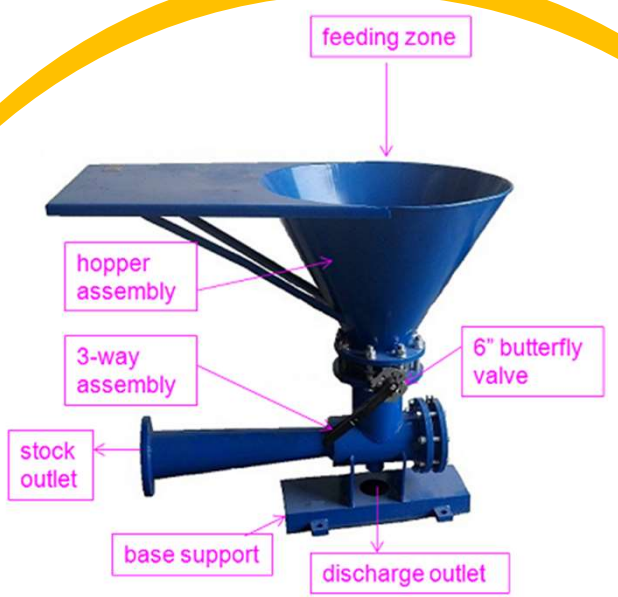


HD4800

Mixing Hopper

Mission 6” Venturi Hopper is equipped with a standard 2” nozzle.

As shown, with 80 feet of head for the inlet 531gpm.



Active Tanks

ACTIVE TANK	4 units x 20 ft
External Tank Dimensions:	20’ x 8’ x 9’6” (6060 x 2440 x 2890)
Max Tank Working Volume	31.70 m3
Min Tank Working Volume	1.5 m3
Number of Compartments	1 (5500 x 2350 x 2090)
Equipment installed:	
MA-5RGC	2pcs

SEAWATER STORAGE TANK	6 units x 20ft
External Tank Dimensions:	20’ x 8’ x 9’6” (6060 x 2440 x 2890)
Max Tank Working Volume	38.75 m3
Min Tank Working Volume	0 m3
Number of Compartments	1 (5500 X 2350 X 2090)
Capacity of Each Compartment	28.9 m3

Brandt Mud System HD4800

MISSION 2500 Supreme Turbo Shear Pump (Belt Driven)

Featuring a concentric casing design, coupled with wide-vane impellers, these 2500 Supreme Shear Pumps exhibit reduced wear and increased pump life.
The shaft, which is larger in diameter than conventional pump shafts, provides heavy-duty performance, minimum deflection and increased operating life of the seal or packing.
HD4800 includes 3pcs of Turbo Shear Pumps per system.

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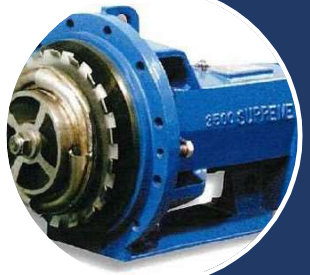

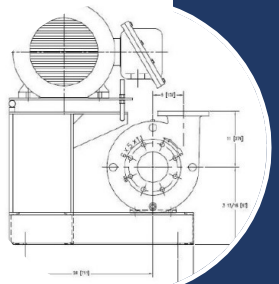

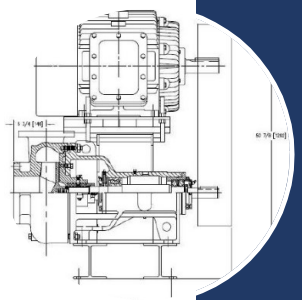

1. Fluid Enters pump through inlet ports and impacts the shear plate.
2. Fluid passes through the teeth of the shear plate, which is turning at 2200rpm.
3. 50% of the fluids is re-circulated through the four nozzle scoops and is jetted through the 44 nozzles against the shear plate and incoming fluid.
4. Liquid shear occurs at more than 5000ft/min. The tip speed of the turbine is more than 7000ft/min, causing a liquid shear to occur in addition to the mechanical shear.

Mission Centrifugal Pumps

HD4800 MUD System includes the following services:

Mission Centrifugal Pumps:

- Transfer Pumps x 10pcs (Flowrate 600GPM)

Size	RPM	Impeller Diameter	Efficiency	kW Water	kW Mud
4 x 3 x 13	1450	12	0.66	18	26

Total Friction Head 1.7
Total Elevation Head 25
Total Head required 101.7

- Desilter Pumps x 4pcs (Flowrate 1000GPM)
- 15" HydroVac Pumps x 4pcs (Flowrate 1000gpm) 1000gpm)

Size	RPM	Impeller Diameter	Efficiency	kW Water	kW Mud
8 x 6 x 14	1450	12	0.65	36	55

Total Friction Head 1.36
Total Elevation Head 25
Total Head Required 101.3

Main Parameters for all services:

Liquid Pumped	Mud PPG	Fluid Temp (F)	Atmospheric Pressure (ft)	Head Required at Discharge Point	Total Friction Loss (Suction side)	Total Friction Loss (Discharge side)
Mud	12	80	20	75	20	40

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Tanks

Brandt Mud System HD4800

PUMP SKID TANK	2units x 20 ft
External Tank Dimensions:	20’ x 8’ x 9’6” (6060 x 2440 x 2890)
Equipment:	
8x6x14 Mission 2500 Supreme Hard with 758kW/4P/IP56/TEFC Motor	4pcs

STORAGE TANK	5units x 20ft
External Tank Dimensions:	20’ x 8’ x 9’6” (6060 x 2440 x 2890)
Max Tank Working Volume	31.00 m3
Min Tank Working Volume	1.50 m3
Number of Compartments	1
Equipment:	
MA-5RG Agitator with Canted Paddle	2pcs
4x3x13 Mission Magnum Centrifugal Pump Type 1 Mechanical Seal with 37.5kW/4P/IP56/TEFC Motor	1pcs

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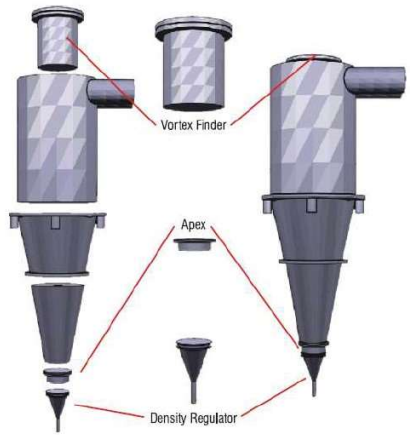
15” Hydro-VAC Cyclone

Hydro-VAC Cyclone

HD4800 Mud system includes 4 sets by 2 (total 8 pcs) of hydro-cyclones.
The Brand Hydro-VAC cyclone consists of a cylindrical feed section, and a tapered conical section terminating with a discharge section fitted with an underflow boot.
A vortex finder is mounted un the top of the feed section and extends down into the cyclone.



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Technical Specifications	15” Hydro-VAC Cyclone
Size	15” (381mm)
Flow Rate	450-650gpm/1703-2461 L/min
Inlet Slurry Feed Pressure	12-15 psi

Hydro-VAC Cyclone is a liquid/solids separator that can be used to wash, classify and dewater mineral slurries and other process streams.
Compared to conventional hydrocyclones, the Hydro-VAC provides more consistent (drier) underflow, reduced plugging from oversized particles and is virtually unaffected by changes in feed density.

Slurry is supplied to the feed inlet of the Hydro-VAC by a centrifugal pump. The slurry enters the feed chamber, spirals through the conical section and separates into two phases: the dense solids underflow and the light liquid overflow.

The solids exit the Hydro-VAC through the apex and density regulator.
The clean fluid overflow exits the Hydro-VAC through the vortex finder and siphons to an atmospheric collection point below the separator.

The amount of vacuum is controlled by the overflow vacuum assembly.

Recycling Tanks

RECYCLING TANK	4 units x 20ft
Dimensions	20’ x 8’ x 9’6” (6060 x 2440 x 2890)
Max Tank Working Volume	27.30 m3
Min Tank Working Volume	24.16 m3
Number of Compartments	2
Max Capacity of Each Compartment	13.65 m3
4x3x13 Mission Magnum 1 with 37.5kW/4P/IP56 or better/TEFC Motor	1
Equipment Module	Top stacked ISO skid & frame
External Dimensions	20’ x 8’ x 8’6” (6060 x 2440 x 2890)
Shaker	VSM300 (2pcs)
Hydro VAC Cyclone	15” (2pcs)
Cone Desilter	4” x 20 (1 set)

Brandt Mud System HD4800

Desilters

Brandt Mud System

MUD System HD4800 includes 16pcs of 4” desilters (4pcs per skid, 2 by 2).

4” Desilter	
Nominal Inner Diameter:	4” (101.3mm)
Material:	Cast Urethane
Capacity:	60gpm/227.1 L/min
Weight (each)	5.9kg

Brandt Twin 10 Cone 4” Desilters are rated with total capacity of 1300gpm. Each Cone capacity is 60-65gpm at 75 feet of head pressure.

Brandt Hydrocyclones are simple mechanical devices designed to speed up the settling process of solids.
These specially designed hydrocyclones are made from a durable polymeric material.
The involute feed entry design (rather than the conventional tangential entry commonly used in the industry) increases the hydrocylones’ handling capacity up to 25%.
Other advantages are more efficient drilled solids separation, less drilling fluid is discarded and reduced wear at the feed inlet.

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MUD SYSTEM BENEFITS

Mud Systems are a critical component of any drilling operation for maximizing solids control efficiency and effectiveness.

The system is delivered with all the essential solids control equipment necessary for successful operations.

Additionally, optional solids control configurations are available to suit the needs of specific applications.

MULTI-FUNCTIONED

- Electrical Cable Trays;
- Skid mounted;
- Provides easy access for controlling processes;
- Mud level sensors.
- Provides well-control, reduces contamination on the drill site.

MOBILE

- Collapsible handrails;
- Minimal Footprint;
- Fold-down crossover walks between tanks;
- Minimal Piping Inside Tanks.

EASY TO OPERATE

- Allows to proper agitation, thus improving homogenization of the mud;
- Facilitates quick, easy and thorough cleaning;
- Provides quick rig-up, rig-down and reduces transportation cost.

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