



20-MSSP

Modular Slurry Separation Plant



*Efficient Recycling of Mud or Bentonite Slurry
Capacities of up to 350 m³/hour*

20-MSSP (MODULAR SLURRY SEPARATION PLANT)

Derrick has developed a versatile Modular Slurry Separation Plant utilizing *Platform Strategy* which can be used for various underground construction applications such as horizontal drilling, micro-tunneling, and slurry wall milling. The innovative design provides optimal flexibility for a wide range of ground conditions. Integrated with a 20' base tank with three chambered construction, electrical control panel, and one or two centrifugal pumps to feed the hydrocyclones; this base tank can accommodate up to three Derrick equipment platforms for multiple slurry separation equipment combinations to meet the end-user requirements.



20-MSSP
[complete tank package]



1

20' BASE TANK

- 238.1" (L) x 95.8" (W) x 102.1" (H)
- Approximately 6200 gallon capacity
- Accommodates up to three equipment platforms (3rd platform requires platform extensions)
- (3) Chambered construction
- Integrated hydrocyclone feed pump(s) 8 x 6 x 14 with 75HP Motor
- Common Electrical Panel (460v, 60Hz, 3 Phase)
- Stairwell with handrails



2

FLC 2000 4-PANEL

- Mounted on 8' (W) x 15' (L) platform
- Super G[®] vibrating motors (continuous 7.3 G's)
- Top feeder
- "Rapid Change" quick screen tensioning system
- Deck angle adjustment (-1° to + 7°)
- Integral underflow sump, walkway and handrails
- Accommodates Derrick urethane, flat and Pyramid™ screen panels (typically uses 20 to 80 mesh urethane screens)
- Platform twist locks in place on top of base tank
- Unit provides initial screening of up to 800 GPM



3

FLC 2000 4-PANEL WITH 6" CONES

- Mounted on 8' (W) x 15' (L) platform
- (8) 6" Hydrocyclones (1600 GPM), d50 cut point 30-35 micron
- Super G vibrating motors (continuous 7.3 G's)
- Top feeder with 6" Victaulic incoming feed connection
- "Rapid Change" quick screen tensioning system
- Deck angle adjustment (-1° to + 7°)
- Integral underflow sump, walkway and handrails
- Accommodates Derrick urethane, flat and Pyramid™ screen panels (typically uses 100 to 200 mesh Pyramid screens)
- Platform twist locks in place on top of base tank
- Unit is fed via hose by centrifugal pump located on base tank



4

DE-1000™ FHD™ CENTRIFUGE

- Mounted on 8' (W) x 15' (L) platform
- Complete with 50 HP motor (460v, 3 Phase, 60Hz)
- Integral centrifugal acceleration exceeding 2300 G's
- Maximum bowl speed of 3400 RPM
- Conveyor differential speeds 3 to 90 RPM
- Maximum capacity of 150 GPM
- Nominal cut point of 5 to 8 micron
- Suitable for Class 1, Division 1, Group C and D areas
- Positive displacement feed pump recommended
- Platform twist locks in place on top of base tank



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CASCADE 2000

- Mounted on an 8'x15' Equipment Platform
- Consists of a Flo-Line Primer (Belt Scalper) machine mounted directly over an FLC 2000 3-panel screening machine
- Top Primer Deck (Flo-Line Primer):
 - Provides initial separation of large oversized material and sticky, consolidated clays
 - Typically utilizes inclined synthetic conveyor belt with 5, 10 or 20 mesh openings
 - Powered by a 1.5HP drive motor
- Bottom Screening Deck (FLC-2000 3-Panel):
 - Super G vibrating motors (continuous 7.0 G's)
 - Typically utilizes 20 to 80 mesh polyurethane screen surfaces
 - Rapid Change quick screen tensioning system
 - Deck angle adjustment (-1° to +5°)
- Integral underflow sump, walkway and handrails
- Platform twist locks in place on top of base tank
- Provides initial screening of up to 1000 GPM

INDIVIDUAL COMPONENT FEATURES

20' BASE TANK

The three chambers in the base tank are separated by weirs for safe, gravity flow operation. When the excavation system is operating at 100 percent capacity, fluid passes through the processing equipment and then to the base tank chambers in sequential order. When the level in Chamber 3 rises to the weir outlet, clean fluid flows by gravity or via a transfer pump back to the excavation process. If the system feed pump is delivering less than 100 percent of the designed flow, part of the slurry in Chamber 2 flows over the weir into Chamber 1. In addition, part of the slurry in Chamber 3 returns to Chamber 2. This feature maintains sufficient fluid supply to the hydrocyclone feed pumps at all times.

FLC 2000 SCREENING MACHINES

SUPER G VIBRATING MOTORS

Super G motors on the FLC 2000 screening machines operate at 1750 RPM, continuously producing high G-force linear motion at 7.0 to 7.3 G's for optimum performance. The "greased-for-life" bearing system eliminates the need for any external lubrication, which reduces maintenance and repair costs. Two Super G motors are standard equipment on the FLC 2000 machines and carry a two year warranty. Sound output of the machine is approximately 81 dBA.

ADJUSTABLE WHILE DRILLING (AWD)

Derrick's AWD is a manually operated jacking mechanism that enables one person to quickly and easily raise or lower the screen basket from -1° to +8° on the 4-panel. As drilling rates, formation, and mud properties change, the angle of the screen deck can be adjusted to achieve the proper solids conveyance and fluid end point. Increased capacity, longer screen life, and optimal solids removal efficiency are the results.

SCREEN SURFACES

Derrick manufactures high quality screen surfaces for the FLC 2000. The patented corrugated Pyramid™ Screen offers 57% more screening area than conventional flat screens. Derrick urethane screen surfaces are abrasion resistant and combine high open area with long life, lasting up to 30 times longer than wire woven screens. As the finest screens in the industry ranging from 8mm to 75 micron (200 mesh), Derrick screens enhance machine performance.

DESILTERS

Derrick offers a radial desilter manifold with the ability to hold up to eight 6" hydrocyclones mounted over the vibrating deck. This allows the FLC 2000 to reclaim the liquid discharge in the cone underflow. Each 6" hydrocyclone processes nearly 200 GPM at 75 feet of head at a maximum capacity of 1600 GPM. The nominal d50 cut point of the 6" cone is 30 to 35 micron. The cone underflow caught in the pan mounted over the vibrating basket can be directed to the vibrating screening machine for further dewatering to a stackable, conveyable consistency for easy handling, at reduced disposable costs and fluid losses.

DE-1000™ FHD™ CENTRIFUGE

The DE-1000 FHD (Full Hydraulic Drive) Centrifuge is designed for unknown or variable feed conditions. The DE-1000 FHD, with a maximum feed rate up to 150 GPM, can process 20 PPG weighted mud as well as flocculated ultra-fine solids slurries. The DE-1000 FHD produces a variable bowl speed of up to 4000 RPM and internal centrifugal acceleration in excess of 3000 G's. The centrifuge comes installed on a rugged, portable skid with two point effluent discharge.

CASCADE 2000

The top Flo-Line Primer deck of the Cascade 2000 provides initial separation of large, oversized material. Scalping of large, oversized particles reduces loading on the primary shaker below, improving separation efficiency and increasing primary shaker screen life. The bottom primary screening deck is a FLC 2000 3-Panel powered by two Super G motors at an unprecedented linear vibratory force of over 7.0 G's. This increase in G-force at the screen surface dramatically improves the conveyance rate and the removal of more tons per hour of cuttings. The bottom deck is equipped with a manually operated jacking mechanism that enables one person to quickly and easily raise or lower the screen basket from -1° to +5°.

20-MSSP DIMENSIONS & WEIGHTS

DIMENSIONS (approx.)

20' Base Tank:

Length: 238.1" (6048 mm)
Width: 95.8" (2433 mm)
Height: 102.1" (2593 mm)

15' Equipment Platform:

Length: 177.3" (4503 mm)
Width: 96.1" (2441 mm)
Height: 70.9" (1801 mm)
Height with hydrocyclones: 110.3" (2802 mm)

20' Complete System with Equipment:

Length: 286.7" (7282 mm)
Width*: 197.4" (5014 mm) max.
Height**: 220.3" (5596 mm) max.

*Depending on screening machine

**Depending on desilter unit

WEIGHTS (approx.)

20' Base Tank:

20,000 lbs (9072 kg)

15' FLC 2000 Platform:

8,300 lbs (3765 kg)

15' FLC 2000 with 8x6" Cones Platform:

10,000 lbs (4536 kg)

15' DE-1000 Platform:

9,600 lbs (4354 kg)

15' Cascade 2000 Platform:

9,700 lbs (4400 kg)



FLC 2000 4-Panel Mud Cleaner discharge



Recovered sand and silts



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