



FINE-SEPARATION FOR AGGREGATES

LETTER FROM THE FAMILY

Founded by H. William Derrick Jr. in 1951, Derrick® Corporation was created to solve some of the most challenging mechanical separation needs of the Mining Industry. At the heart of our present-day offering resides the Integrated Vibratory Motor which was invented by our founder and gave life to an entire line of innovative separation technology. To this day, our pioneering spirit pulses through the organization and inspires development of our leading-edge solutions.

Over the years, we have experienced exponential growth, expanding from our Mining roots to Oil & Gas Drilling, Civil Construction, Industrial, and other challenging industries worldwide. Our robust installed base and expansive network of thousands of cohesive individuals are located across the globe.

Our success is fully dependent on people. Priority one is to serve our global families; our tenured employees, multi-national partners, and surrounding communities. Our unique, close-knit culture and shared, long-term outlook is not only paramount to our success, but to the success of all integral stakeholders.

We thank you for expressing interest in our organization and look forward to being of service to you in the future.



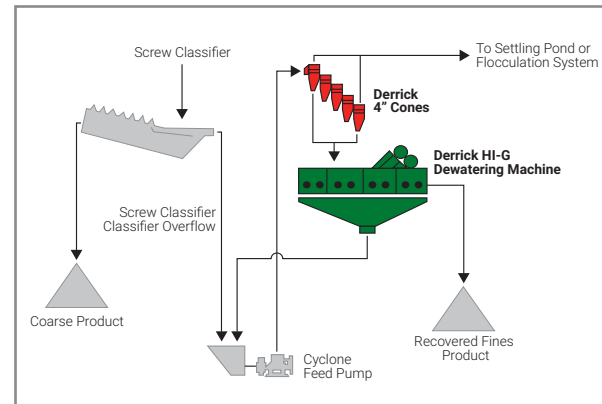
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HI-G® DEWATERING MACHINE

Serving the Aggregates Industry

The Derrick HI-G Dewatering Machine provides the most cost-effective solution to handling fine solids separation. Derrick's HI-G Dewatering Machine consists of a cluster of 4" hydrocyclones mounted over a high G performance linear motion screening unit.



FEATURES & BENEFITS

Hydrocyclones

- Up to twenty 4" hydrocyclones
- Designed to remove silt-sized solids (20-74 microns)
- Optional individual shutoff valve for each 4" hydrocyclone

Super G Integrated Vibratory Motors

- Zero maintenance
- Powerful, quiet, dual vibratory motors apply high G performance
- Standard Super G has greased-for-life bearings (Two-year warranty)

Polyweb Urethane Screens Panels

- High open area for maximum flow capacity
- Unique non-blinding design for optimum efficiency and performance
- Long lasting – 10 to 15 times longer than woven wire panels



HI-G Dewatering Machine

HI-G FINES RECOVERY SYSTEM

System Operation

Wash plant discharge is directed to the custom-designed two-chambered sump. A heavy duty sand slurry pump feeds the Derrick 4" hydrocyclones that are mounted on a radial-designed manifold. The centrifugal separation extracts the ultra fine sands and silts, discharging them out the underflow. The fines leave the hydrocyclone and are fed to the high G performance dewatering screen.

The Derrick HI-G Dewatering Machine is outfitted with two 2.5 HP electromechanical vibratory motors that operate at 1,750 RPM. The combination of stroke length and rotation speed create high G performance on the screen surface, resulting in efficient separation of water from the fine solids. The dewatered fine solids are then discharged from the screening machine.

The Derrick HI-G Fines Recovery System provides the Aggregate industry with unparalleled performance and unmatched cost-effectiveness in handling by-product fines.

- Recover up to 80% of the silts and ultra fine sands reporting to your settling pond
- Reduce pond cleaning maintenance costs and extend the life of your settling pond
- Turn a once wasted material into a marketable product
- Requires no expensive polymers or chemicals



HI-G Fines Recovery System



HI-CAP™

The Derrick HI-Cap shaker offers over 57 sq. ft. of screen surface on a single unit which allows unmatched shaker performance with minimal footprint. This is accomplished by utilizing our true, high G linear motion shaker design, coupled with Derrick's Polyweb® urethane screen surfaces. Its characteristic high open area allows for maximum fluid and solids handling capacity. Polyweb screens are virtually non-blinding and outlast comparable wire cloth surfaces many times over.



HI-Cap

FEATURES & BENEFITS

W Series Vibratory Motors

- Zero maintenance
- Powerful, quiet, dual vibratory motors apply high G performance
- Internal oil lubrication (One-year warranty)

Polyweb Urethane Screens

- High open area for maximum flow capacity
- Unique non-blinding design for optimum efficiency and performance
- Long lasting – 10 to 15 times longer than woven wire panels

Optional Screen Angle Adjustment

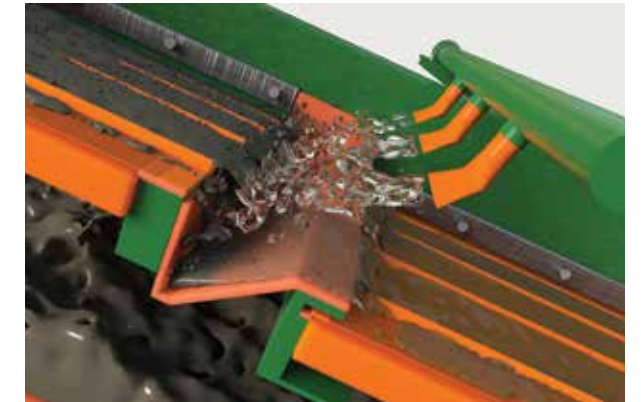
- Adjustable screen angle from -3° to +3° for optimum capacity, screen life, and efficiency
- Manual single point ratcheting system allows one man operation and optimization

REPULP

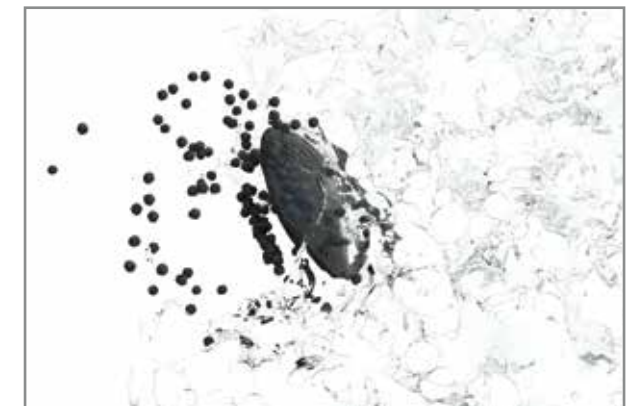
WET SIZING SCREEN

The Repulp wet sizing screen is the ideal machine for the production of a clean oversize material free of fines or undersize particles. The Repulp screen is equipped with spray nozzles directed at one or more rubber-lined repulping or wash troughs. Highly efficient wet sizing and maximum removal of fines is accomplished by repulping and screening the material multiple times as it moves down the length of the screen surface. Spray water directed at the screen surface would result in accelerated wear and could also force oversize particles through the openings.

In fine wet sizing, undersize particles are transported through the screen openings by the fluid, normally water. Once all the water has passed through the screen surface, no more sizing takes place. Any remaining fines simply adhere to the oversize particles. The multiple repulping and rescreening steps possible with the Repulp screen maximize the removal of fine particles. Multiple separation sizes or cut points are also possible by using a Repulp screen equipped with a split undersize hopper. A finer separation is made first, followed by a coarser separation.



Repulp System



Separation of Undersize Material from Repulp System



Repulp Wet Sizing Screen

DRY SCREENING MACHINES

SINGLE AND DOUBLE-DECK

A wide assortment of Single-Deck and Double-Deck dry screening machines are offered by Derrick.

Each machine is custom engineered for the required duty and installation and comes complete with the appropriate feed box, product collection hoppers, and dust enclosure. The covers and doors on the dust enclosures, together with side openings on the vibrating screen frame, permit easy access for inspection or screen surface replacement. The lower deck screen surfaces on Double-Deck machines can be replaced without having to remove the upper deck screen surfaces.

Compared with other types of vibrating screens, structural requirements are considerably less with Derrick screens since they transmit virtually no dynamic load to the surrounding support structure.

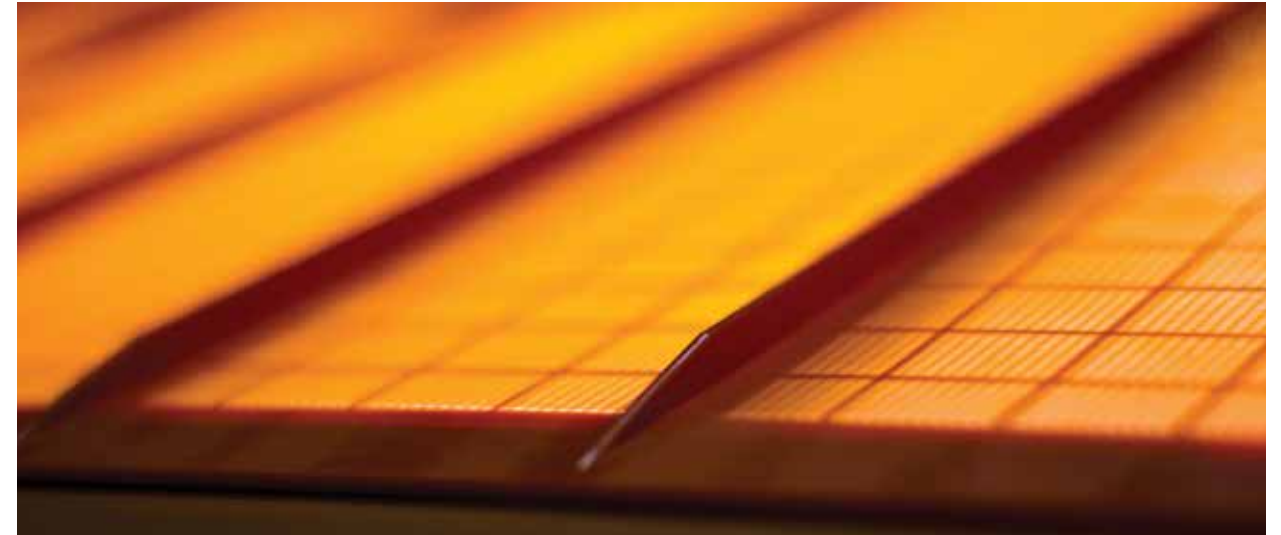


Dry Screening Machine
Single-Deck



Dry Screening Machine
Double-Deck

SCREEN TECHNOLOGY



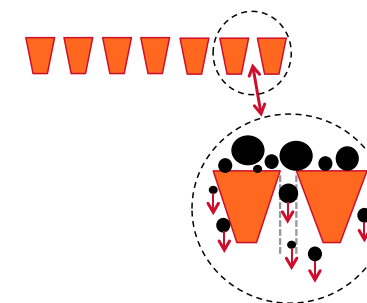
Polyweb Screens

Suited to a variety of wet and dry applications, fine mesh Polyweb urethane screen surfaces provide up to three times more open area than conventional urethane screen surfaces. While all urethane screen panels are well known for their abrasion resistance, only Derrick's Polyweb urethane screens combine long life with high open area, capacity, and performance rivaling that of conventional woven wire screens. The anti-blinding properties of the screen now make it feasible to screen materials previously considered difficult or even impossible to screen. Currently, panel openings as fine as 325 mesh (45 microns)* and open areas ranging from 35 to 45% are available.

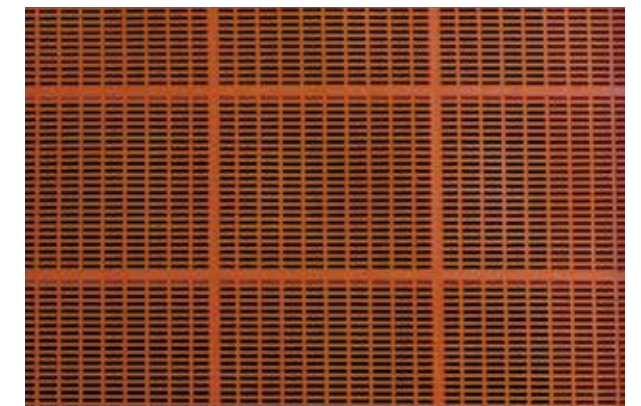


Polyweb

Slotted Openings Prevent Blinding



* Wet panels as fine as 325 mesh (45 μm)
Dry panels as fine as 140 mesh (104 μm)



VIBRATORY MOTORS

Proven to dramatically increase liquid/solids separation, the Super G series vibratory motors produce superior conveyance due to their high G characteristics. Increased fluid-handling capacities using fewer shakers is only part of the reason for their success. Screening finer significantly reduces mud and disposal costs. The Super G series vibratory motors are built with Derrick's superior electrical components, which are renowned in the industry for durability. High performance and exceptional durability make the Super G series vibratory motors an asset to any program.



Super G Integrated Vibratory Motors

Featuring permanently lubricated bearings that eliminate the need for a remote lubrication system, Derrick Super G vibratory motors reduce both repair costs and maintenance requirements. These grease-filled bearings also result in significantly lower sound output with a measured level of 74 +/- 4 dBA. Super G vibratory motors carry a two-year warranty.



Super G Vibratory Motors

W2 Motors

The W2 motor's continuous, internal oil-bath lubrication system ensures long life and robust maintenance-free operation. In addition to greatly extending the life of the motor, the hydrodynamic cushioning effect on bearing surfaces created by this unique lubrication system reduces friction, wear, heat, and sound. Sealed, continuous recirculation of lubricating oil maintains a fresh film of oil on all bearing surfaces at all times and prevents entry of contaminants. W2 motors carry a one-year warranty.



W2 Motor

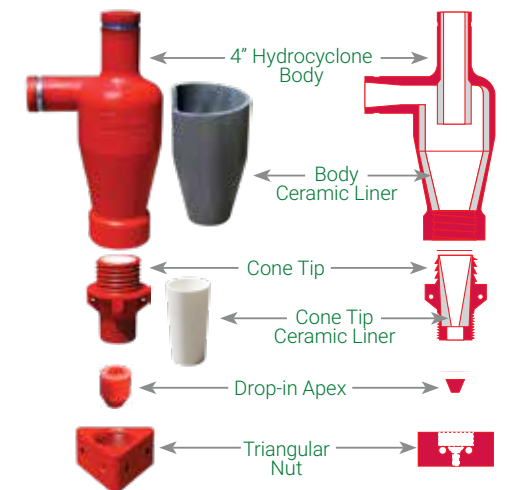
HYDROCYCLONES



4 Inch Round Desilters

The Derrick round desilter is designed to remove silt-sized solids (20 to 74 microns) from plant discharge slurries. Derrick's round desilters are simple to operate and easy to maintain. Optional shutoff valves on each round desilter cone inlet permit individual cone removal and inspection without interrupting operation of the desilter. The round desilter is available in a variety of sizes up to 20 cone models. Available cone quantity dependent on machine type.

Derrick's polyurethane hydrocyclone offers a high volume 4" cone, while providing contractors an economical replacement for less efficient older equipment. Derrick's unique uni-body construction eliminates excess parts and seams where excessive wear can occur. Derrick's 4" desilter cones are available with ceramic inserts for extreme service.



Rubber Lined Manifold

DE-7200™ VFD™ CENTRIFUGE

Bowl

- High volumetric flow rates provide processing capacity for the most demanding applications
- Driven by a 150 HP motor, the bowl attains 2750 G's at 3000 RPM to separate fine solids at high feed rates
- High speed and high capacity enable maximum solids removal efficiency and finest cut points

Conveyor and Gearbox

- Axial and radial combination conveyor increases throughput and reduces fluid turbulence at liquid end of bowl for increased solids settling
- With 70,806 in-lbs maximum torque and 60 HP motor, the conveyor handles high solids volume without overloading or packing off
- Overload clutch protects gearbox from damage due to excessive torque

Control System

- Control cabinet can be separated from the centrifuge for flexibility during installation
- Non-hazardous location (switchgear room) control panel available
- Variable frequency drive control for ultimate operational flexibility and performance optimization
- Load sensing and feed pump control automatically adjusts feed rate for optimal processing efficiency



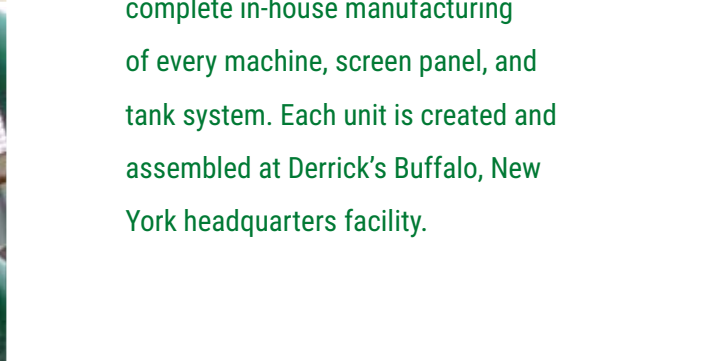
DE-7200 with Control Cabinet

DE-7200 SPECIFICATIONS

DE-7200	
CENTRIFUGE	
Type:	Decanter (continuous flow)
Bowl Inside Diameter:	21.4" (544 mm)
Bowl Effective Length:	72" (1829 mm)
High G Maximum:	2750 G's
Bowl Speed Range:	up to 3000 RPM
Conveyor Differential Speed Range:	1-90 RPM
CONVEYOR	
Type:	Axial/Radial Hybrid
Lead Direction:	Left Hand
Movement Related to Bowl:	Leading
GEARBOX	
Type:	Three Stage - planetary
Ratio:	48:1
Torque Maximum:	70,806 in-lb (8000 N·m)
ELECTRICAL	
Bowl Drive:	150 HP (112 KW) Motor and VFD
Conveyor Drive:	60 HP (45 KW) Motor and VFD
Pump Drive:	30 HP (22 KW) VFD
Control System:	Intuitive color operator interface with PLC control and dedicated Operator Interface (OI) terminal
OPTIONS	
Electrical Configurations:	400/480/600 VAC Input
Electrical Cabinet:	NEMA 4 (non-explosion proof) rating NEC Class I, Division I, Groups C&D (explosion proof) rating



DERRICK IS COMMITTED TO PROVIDING THE LATEST TECHNOLOGICAL ENHANCEMENTS THAT EVOLVE ALONGSIDE INDUSTRY BEST PRACTICES AND MARKET DEVELOPMENTS.



Since 1951, Derrick has manufactured premium fines recovery technology for the Aggregates industry. From ruggedly dependable dewatering equipment to long-lasting urethane panels, Derrick's innovative technologies are applicable to a global customer base and many worldwide markets.

Derrick has remained dedicated to complete in-house manufacturing of every machine, screen panel, and tank system. Each unit is created and assembled at Derrick's Buffalo, New York headquarters facility.

WEIGHTS & DIMENSIONS

EQUIPMENT		DIMENSIONS				
Model	Options	Width in (mm)	Length in (mm)	Height in (mm)	Weight lbs (kg)	
HI-G Dewatering Machine	3-Panel 20 - 4" Cones	70-9/16 (1792)	115-9/16 (2935)	94-1/16 (2389)	5000 (2268)	
	4-Panel (2) 20 - 4" Cones	140-1/2 (3569)	137-15/16 (3503)	103-3/16 (2622)	8200 (3719)	
HI-G Fines Recovery System	3-Panel 20 - 4" Cones	205-7/8 (5229)	152-3/4 (3880)	204-1/2 (5194)	18000 (8165)	
	4-Panel (2) 20 - 4" Cones	205-7/8 (5229)	220 (5588)	222-5/8 (5654)	35000 (15876)	
HI-Cap	Box Feeder	88-15/16 (2259)	213-1/2 (5423)	107-3/4 (2737)	10000 (4536)	
	Weir Feeder		239-1/4 (6077)			
Repulp	Contact Derrick for more information on Repulp weights & dimensions					
Dry Screening Machines	Contact Derrick for more information on Dry Screening Machine weights & dimensions					
Desilters	Round	10 Cones	65 (1651)	69 (1753)	63-1/8 (1603)	2300 (1043)
		12 Cones				2400 (1089)
		16 Cones	78-9/16 (1995)	80 (2032)	67-1/2 (1715)	2500 (1134)
		20 Cones				2700 (1225)
DE-7200 VFD (Variable Frequency Drive)	Centrifuge	81-5/16 (2065)	155-13/16 (3958)	64-5/8 (1641) [†]	14000 (6351)	
	Electrical Control Cabinet	31-9/16 (802)	69-7/16 (1763)	79-5/16 (2015)	2010 (912)	

† Centrifuge Bowl Cover Open

All photographs and specifications in this publication are for general information only and are based on the latest product information available at the time of initial publication. Derrick Corporation reserves the right to change its product offering at any time without prior notice. Any reliance on any information in this publication shall be at user's own risk. For additional information, please contact the Derrick Buffalo Engineering Department.



**GLOBAL FAMILY.
PIONEERING TECHNOLOGY.®**

590 Duke Road
Buffalo, New York 14225 U.S.A.
Office: (716) 683-9010
Fax: (716) 683-4991
Email: info@derrick.com
www.Derrick.com