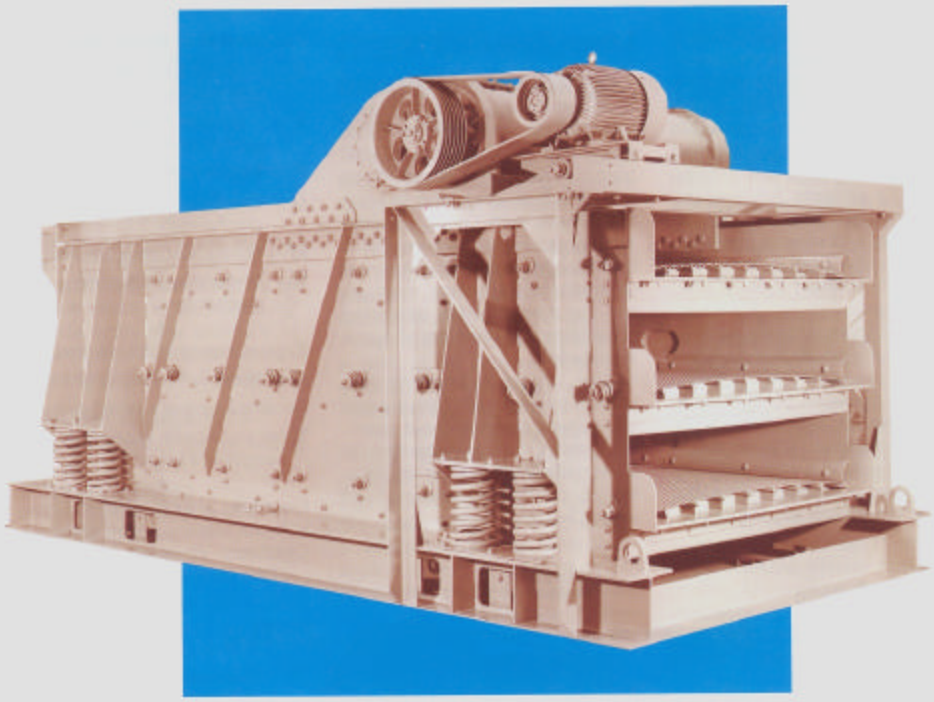
BULLETIN NO. 310

Heavy Duty Horizontal
VIBRATING SCREENS



DEISTER
INC. 1912

Deister Heavy-Duty Horizontal Vibrating Screens

Deister Type Horizontal Vibrating Screens are designed especially to increase production in existing stationary or portable plants where lack of head room prevents the installation of larger inclined screens. They have also proven especially efficient for washing and dewatering sand, gravel, stone, coal and various minerals.

It takes the best in screening equipment to meet today's rigid requirements.

Deister Screens, designed to fit each specific job, *deliver* day after day, year in and year out, with unmatched precision performance. Regardless of specifications or type of material. Deister engineers will welcome an opportunity to study your problem and make recommendations accordingly.

Lower Cost Per Ton

Deister Screens are ruggedly built and do not require constant attention or maintenance. *Extra protection* is provided at all vital points. Quantity-controlled oil lubrication assures long bearing life. Check with Deister owners and operators everywhere. You'll find Deister Screens delivering dependable production, even under the most adverse operating conditions and handling all types of materials.

And, Deister Screens are backed by a follow-through parts and service policy without equal, for Deister top management is personally interested in the continued profitable operation of every Deister Screen.

Explanation of Model Letters

- **B** = H-beam Base with spring and rubber mounts
- **T** = Trunnion Type spring support system
- **F** = Flat or horizontal
- **O** = Overhead vibrating mechanism
- **M** = Middle vibrating mechanism
- **U** = Underslung vibrating mechanism

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Explanation of Model Numbers

First Number = Number of Decks

Second Number = Width in Feet

Third and Fourth Number = Length in Feet

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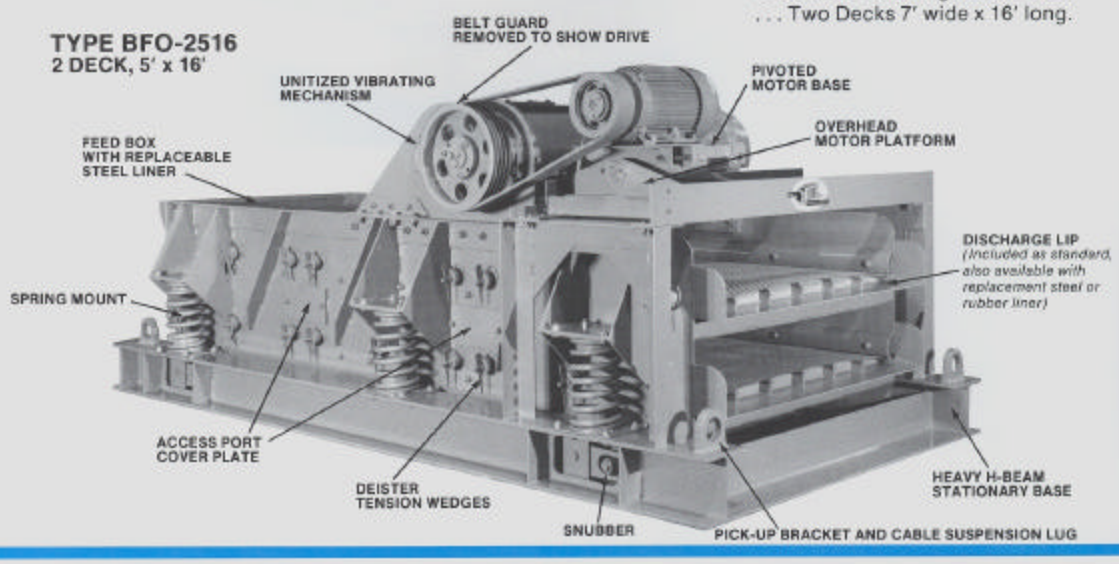
Example . . . BFO-2716
H-beam Base . . . Horizontal . . . Overhead Vibrating Mechanism . . . Two Decks 7' wide x 16' long.

TYPE BFO-2516
2 DECK, 5' x 16'



Standard Features

1. Oil lubricated vibrating mechanism
2. Wide-Flange H-beam base (may be supplied without)
3. Trunnion-type spring support system
4. Snubbers
5. Pick-up brackets and cable suspension lugs
6. "Automatic" spring-tension screen cloth tensioning device
7. Tension plates of exclusive design
8. Interchangeable screen panels
9. Bolted construction for easy replacement of wear parts
10. Access ports
11. Discharge lips
12. Removable back plates completely seal feed end
13. Adjustable throw
14. Sideplates reinforced with ⅜" x 3½" vertical braces (5/16" thick sideplates standard on 3', 4' and 5' wide models, ⅜" thick sideplates standard on 6', 7' and 8' wide models)
15. Feed box w/⅜" A-R wearplate

Optional Equipment

1. Motor Mount, V-belt drive and guard
2. Spray Pipe Holes
3. Spray Pipe Equipment
4. Dust Enclosure
5. Ball Tray Decks
6. Heated Decks
7. Tension Wedges for screen cloth tensioning or quick release center hold-downs
8. Bolted A-R Steel, Rubber or Urethane Wear Liners
9. Rubber or Urethane-covered Tension Plates

All sizes of both Types BF and TF units are available in extra heavy duty models.

Extra clearances between shaft casing tubes and screening surfaces, extra clearance between decks, increased sideplate height above top deck, reinforced transverse support members, additional spring supports, and generally increased bearing size, are some of the features of the "XH" units.

SLINGERMIST LUBRICATION

Deister's exclusive slingermist lubricating system makes it possible for Deister screens to operate at higher speeds and at lower operating temperatures. This system is the ultimate in oil lubrication of antifriction bearings and assures safe operating temperatures under extremely hot climatic conditions where it, in effect, acts as an oil cooling system.

DEISTER unitized long-life vibrating mechanism

An outstanding feature of Deister Horizontal Vibrating Screens is the exclusive "unitized" vibrating mechanism.

The entire vibrating mechanism is a precision constructed, jig assembled unit. It incorporates all the advantages of a two-bearing vibrating mechanism and runs in a bath of oil with internal and external labyrinth seals to prevent loss of oil and entrance of dirt.

The lower portion of the shaft casing tube serves as the oil reservoir across its entire length. The oil is agitated by slingers on the eccentric shaft and constantly envelops the spherical roller bearings and all moving parts. It should never be necessary to add oil to the mechanism, with only monthly oil changes recommended. Renewable sleeves between the inner race of the bearing and the shaft prevent wear on the shaft. Should wear on the sleeve occur, even after years of rugged service, the original close "factory-tolerances" can be easily restored by the simple replacement of the renewable sleeve.

In its 65 years of building vibrating screens, the Deister Machine Company has always designed its vibrating mechanisms with the bearing a slip fit on the shaft or replaceable sleeve, and a press fit in the housing (sleeves not used prior to 1950). The replaceable sleeve is a slip fit on the shaft. Slip fits assure more even wear on bearings and sleeves—providing longer life—easier replacement.

The vibrating mechanism is demountable and readily interchangeable. Where a number of the same size screens are in operation, the "unitized" mechanism can be unbolted and attached to another frame without disturbing any of the internal clearances of the shaft and bearings. The large diameter shaft casing tube, welded or bolted to 1" or 1¼" thick housing plates, maintains proper alignment of the entire assembly.

Stroke adjustment weights are bolted to the eccentric shafts.

Large horizontal units are equipped with the type mechanism shown in photos on page 7. Eccentric shafts are individually driven by stationary motors which synchronize automatically. Elimination of large gears and internal adjustment weights permit higher operating speeds without creation of the excessive heat that shortens bearing life. Stroke adjustment plates are located in the external flywheels.

Deck Surface Tension Systems

Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 5

Fig. 6

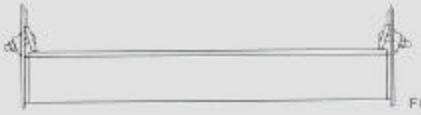


Fig. 7

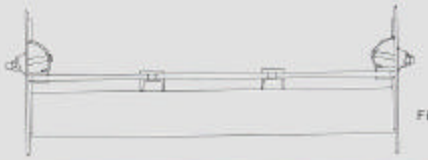


Fig. 8

FIGURE 1. Standard "automatic" spring tension assembly for 3', 4', 5' and 6' wide models. Powerful coil tension springs and tension plates hold the screen cloth over a series of support bars arranged in an arc. Support spacing is governed by size of opening and shape of screening media. As the screen cloth wire wears thin or becomes stretched, the springs automatically keep the cloth in constant tension, thereby preventing whipping or flexing of the cloth, causing wire breakage. The side opposite the spring is held by a half-sphere cast iron nut with indentations fitting the lugs on the steel casting welded to the sideplate, which prevents the nut from backing off.

Ledge angles are formed to 94° to provide the correct interlocking fit between tension plate, screen cloth hook strip, and the supporting ledge angle—prevents pinching or "rocking-up" of the screen cloth in the hook-strip area, which causes premature breakage.

Fewer tension assemblies are required due to the stronger curved tension plates. The method shown in Fig. 1 is recommended for medium and fine screen cloth or lightweight perforated plate.

All assemblies (Figs. 1 thru 8) are interchangeable, as holes and castings in sideplates are identically located.

FIGURE 2. Standard heavy duty tension assembly for heavy wire cloth or perforated plate with hook strips.

FIGURE 3. Optional tension wedge assembly—interchangeable with all assemblies (Figs. 1 thru 8) by substitution of forged slotted bolt, spherical washer and wedge, using the same holes and steel casting in sideplate as above, with same tension plate.

FIGURE 4. Optional tension wedge and "rubber spring" assembly—combines advantages of both types illustrated in Figs. 1 & 3—same specs as Fig. 3 with addition of "rubber-spring"—wedges held firmly in place by spring action—constant attention unnecessary.

FIGURE 5. Standard "automatic" spring tension assembly at both sideplates on 6' wide unit with center hold down.

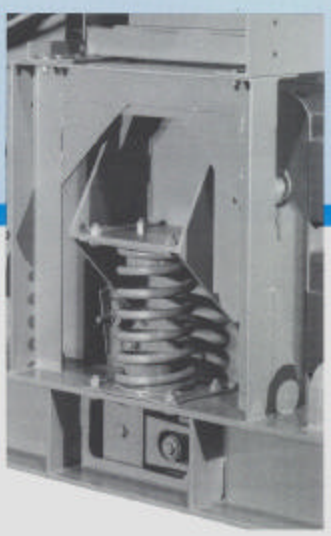
FIGURE 6. Standard "automatic" spring tension assembly for 7' and 8' wide units—double crown with split screen cloths—downward hooks in center with molded rubber (as shown) or steel "bolted-type" cover strip—provides easier replacement, even flow of material over entire width of unit, better tensioning capability giving longer screen life. Standard heavy duty (Fig. 2) or tension wedge (Figs. 3 & 4) can also be used with this type of construction.

FIGURE 7. One of several optional methods for use with heavy gauge perforated plate—⅝" x 3½" flat steel bars, tapered on the bottom, and pulled tight against blocks welded to the sideplates hold plate against support panel and protect sideplates from wear.

FIGURE 8. Standard heavy duty tension assembly (See Fig. 2) for use with profile wire panels. Standard hold-down strips.

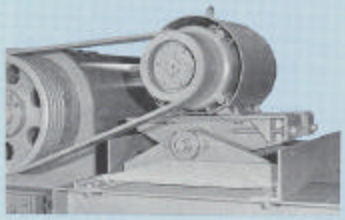
Standard tension plates are available with abrasion-resistant rubber or urethane wear surface, ¼" x 1¼" manganese steel wear surface or with A-R steel formed plates welded to tension plate.

DEISTER Snubbers (friction checks)



Snubbers are an integral part of the suspension system. The spring-loaded horseshoe-shaped arm comes in contact with the spring support arm extension only when the vibrating frame passes through the critical speed area on start-up and shut-down, preventing the live frame from hitting chutes of any stationary structural members during this period, in addition to dampening possible excessive vibration transmission at the same time.

No extra cost is involved if cable suspension is desired. Cables can be attached directly to the lugs on the base. The effectiveness of the mounts eliminates the need for cable suspension springs. However, base mounting is preferred in the installation of the larger units.



Pivoted Motor Base

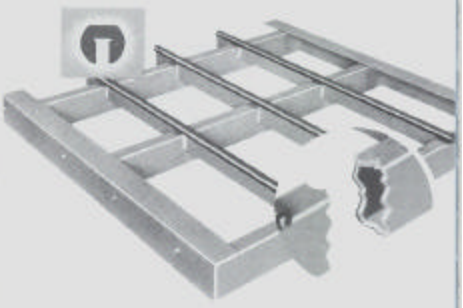
Standard equipment on Deister TF units is a heavy-duty pivoted motor base of our design and manufacture. This base is equipped with a pivoting shaft rotating in a sealed grease-lubricated ball bearing housing. Belt tension is adjusted and maintained by the motor location on the base and a spring-loaded cam.

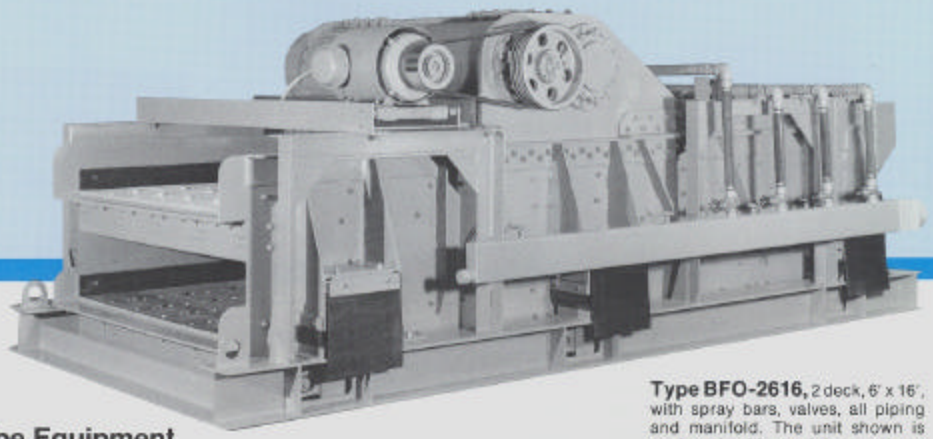
Replaceable Support Trays

The panels, or trays, supporting the screening medium are of rugged construction. The standard trays are made of heavy duty angles, flats and rectangular tube transverse members braced and welded together. The side members of these trays are jig drilled and are attached to the vibrating frame with body-bound bolts and locknuts.

Specially molded rubber buffer strips snap on longitudinal supporting bars. This rubber guard supports the screening medium, spreads contact point, eliminating so-called "line contact," reduces abrasion and reduces friction with possible resultant breakage.

Replaceable trays to support heavy perforated plate, very large opening screen cloth or other special screening media are constructed of tubular, channel or H-beam transverse members welded to side members bolted to the vibrating frame.





Type BFO-2616, 2 deck, 6' x 16', with spray bars, valves, all piping and manifold. The unit shown is equipped with modular urethane screen panels.

Spray Pipe Equipment

Deister Screens can be equipped with specially designed spray equipment—stationary supporting brackets and 2" pipe headers fitted with spray nozzles, as well as complete manifold systems. The supporting framework is welded to the H-beam base, or to a stationary base furnished by the customer, with the individual headers resting on small hardwood blocks to allow for height adjustment. Where the headers pass through the sideplates between decks, the round hole in the sideplate is reinforced by a ⅝" thick steel ring welded to the plate. The opening is sealed by a polyurethane or rubber flange that fits over the spray pipe and is placed against the reinforcing ring.

Threaded brass spray nozzles are provided as standard equipment, but threaded steel nozzles as well as "clamp-on" brass, steel, cast iron or urethane nozzles also are available. The nozzle locations are staggered in order to provide two solid sheets of water per header.

The complete manifold systems include all piping, fittings and individual brass gate valves for each header, mounted on the H-beam base or to be mounted by the customer on his own stationary base.

Spray holes only, with or without covers, can also be furnished.

The support springs on each corner are protected by rubber flaps for wet operations.

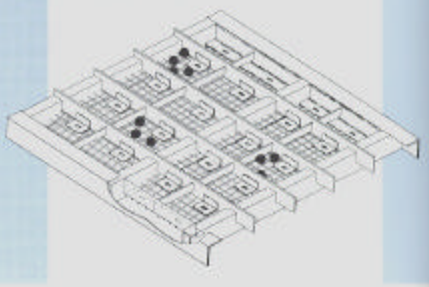
Electric Screen Heater

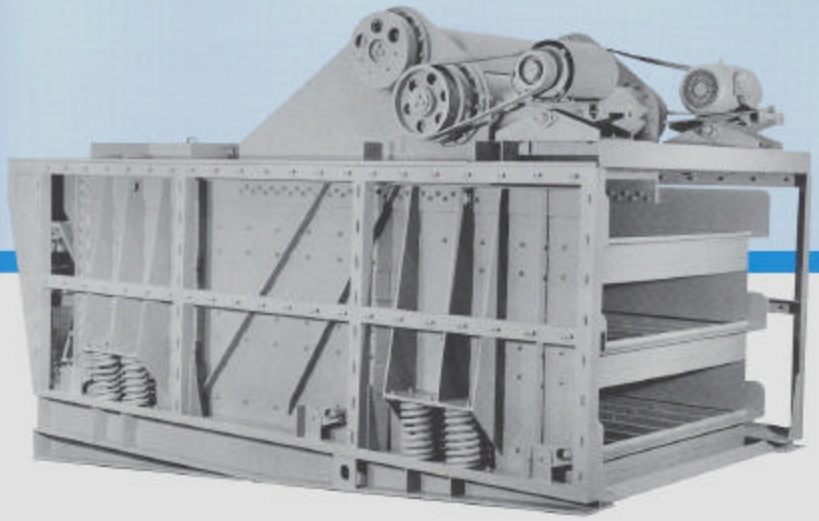
The heated screen deck is a more effective method of preventing blinding in damp material (1½% to 6%) than the ball tray deck and can be used over a wider range of screen cloth openings. The screen heating is accomplished by passing a low-voltage, high-amperage current through the screen cloth.

Fine, damp material blinds the screen meshes because the surface tension of the particles causes them to cling first to the wire and then to each other until the openings in the cloth are completely sealed off. The heat of the wire decreases the surface moisture of these particles, at the point of contact, reducing the surface tension so that no attachment between the particles and the wire can be sustained. There is no appreciable drying of the material itself when screen heating is used.

Ball Tray Decks

The ball tray is used as a means of reducing or eliminating blinding of the meshes in the screen cloth. It consists of a wire cloth panel with relatively large openings placed beneath the screen cloth, and the space between divided into compartments to carry resilient rubber cleaning balls. The impact of the balls against the underside of the screen cloth drives out the near-size irregular shaped particles wedging in apertures and creates a secondary vibration in the screen cloth that prevents fine particles from sticking and building up on the wires. In most cases, a ball tray will be effective with material containing as much as 5% moisture.

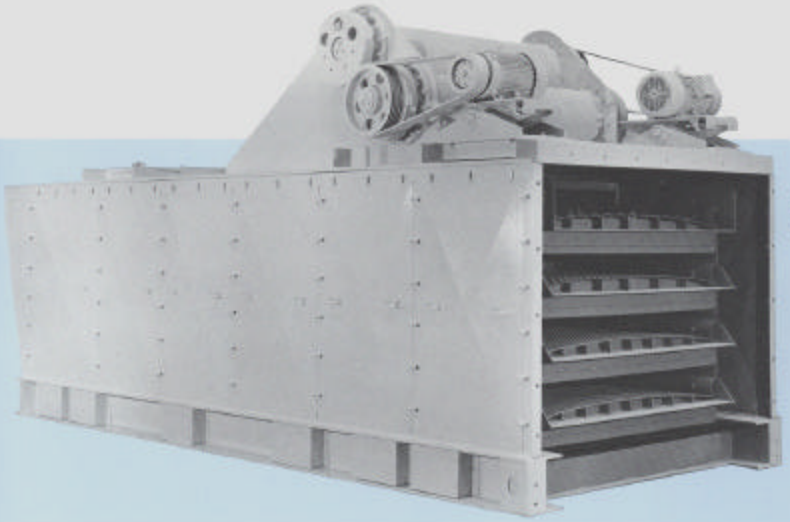




Type BFO-3716E, 3 deck, 7' x 16', fully enclosed screen with covers removed, with 5° sub-base.

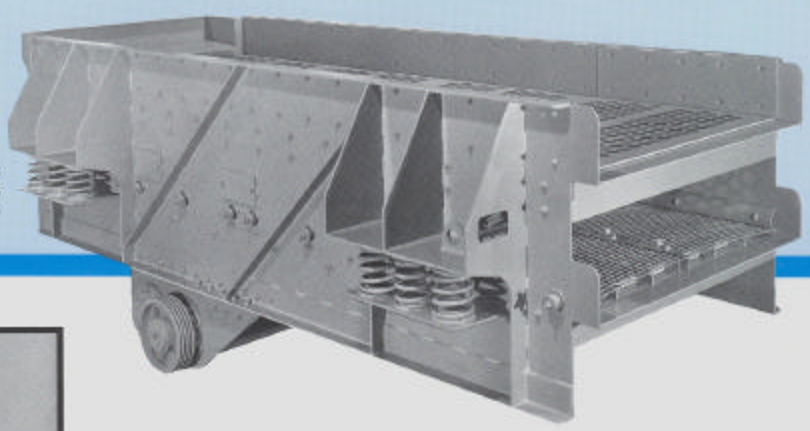
Enclosed Screens

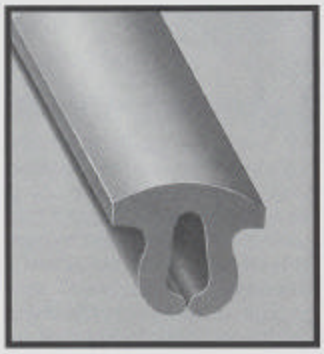
Where dust control is a problem or where local ordinances require air pollution control devices, Deister Type BFO Horizontal Screens are available in partially or fully enclosed models. The removable enclosure panels or covers are held firmly on the ruggedly constructed stationary frame by spring-loaded knock-around fasteners. They are easily removed in a matter of seconds for access to any part of the screen.



Type BFO-3618DE, 3½ deck, 6' x 18', fully enclosed screen.

Type TFU-2616, 2 deck, 6' x 16' trunnion-type spring supports, underslung vibrating mechanism, perforated plate on top deck.





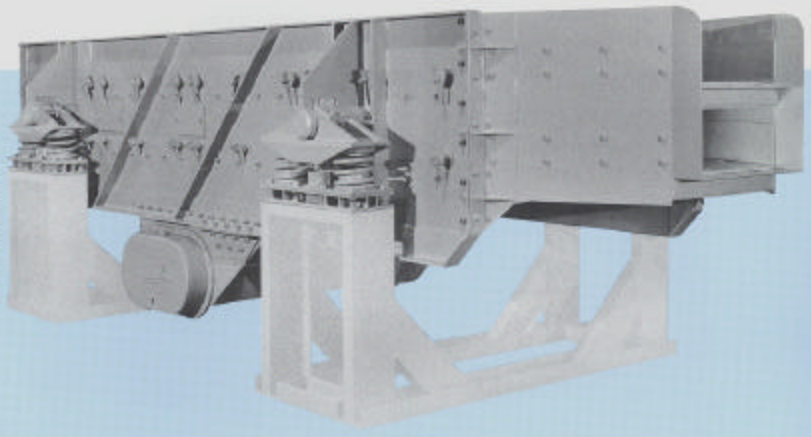
Snap-on Rubber Center

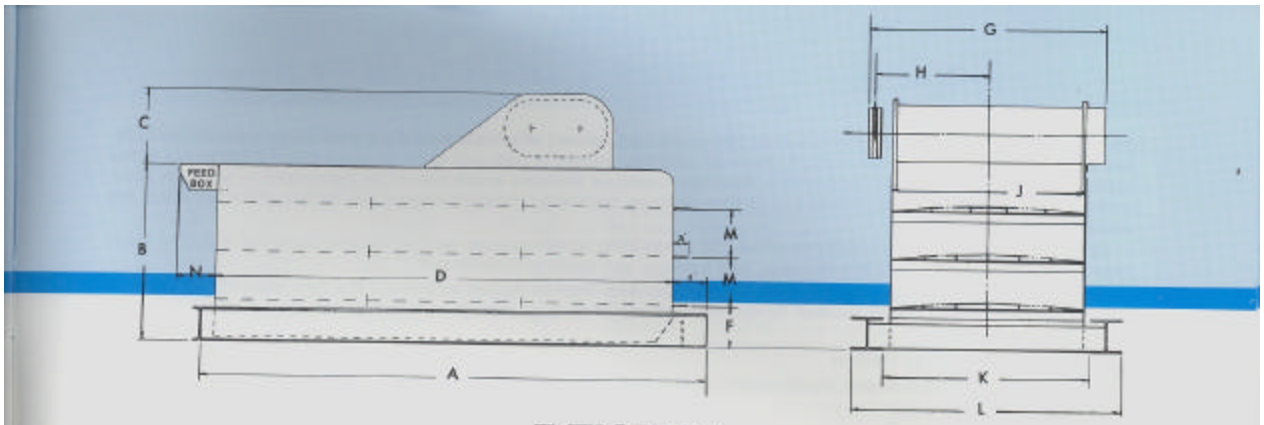
Deister "snap-on" molded rubber center hold-down strip generally used on most 7' x 8' wide screen cloth applications, eliminating the bolted cover strip.

Tension Wedge

Deister Tension Wedge and "Rubber-Spring" screen cloth tensioning device, with the advantage of quick tightening or easy release, while at the same time providing constant tension through the action of the molded rubber spring.

Type TFU-2516, 2 deck, 5' x 16', with trunnion-type spring supports, underslung vibrating mechanism, tension wedge and "rubber-spring" tensioning devices, removable 3 ft. converging discharge chutes with replaceable wear plates (shaded structure for shipping purposes only).





DEISTER

TYPE "BF" HORIZONTAL VIBRATING SCREENS

Dimensions Are Approximate Only—Not For Construction
Specific Installation Drawings Available on Request

	Screen Size*	Mech. No.	"F" Motor H.P.	A	B	C	D	F	G	H	J	K	L	M	N
SINGLE DECK	3 x 12	UF-315	15	13'-3"	25½"	19½"	12'-0"	12¾"	4'-1"	23"	36½"	3'-5"	5'-1"	—	12"
	3 x 16	UF-320	20	17'-3"	25½"	21½"	16'-0"	12¾"	4'-3"	26"	36½"	3'-5"	5'-1"	—	12"
	4 x 8	UF-320	20	9'-3"	25½"	21½"	8'-0"	12¾"	5'-3"	32"	48½"	4'-5"	6'-1"	—	12"
	4 x 10	UF-320	20	11'-3"	25½"	21½"	10'-0"	12¾"	5'-3"	32"	48½"	4'-5"	6'-1"	—	12"
	4 x 12	UF-320	20	13'-3"	25½"	21½"	12'-0"	12¾"	5'-3"	32"	48½"	4'-5"	6'-1"	—	12"
	4 x 14	UF-320	20	15'-3"	25½"	21½"	14'-0"	12¾"	5'-3"	32"	48½"	4'-5"	6'-1"	—	12"
	4 x 16	UF-320	20	17'-3"	31½"	21½"	16'-0"	12¾"	5'-3"	32"	48½"	4'-5"	6'-1"	—	12"
	5 x 10	UF-320	20	11'-3"	31½"	21½"	10'-0"	12¾"	6'-3"	38"	60½"	5'-5"	7'-1"	—	12"
	5 x 12	UF-320	20	13'-3"	31½"	21½"	12'-0"	12¾"	6'-3"	38"	60½"	5'-5"	7'-1"	—	12"
	5 x 14	UF-320	25	15'-3"	31½"	21½"	14'-0"	14¾"	6'-3"	38"	60½"	5'-5"	7'-1"	—	12"
	5 x 16	UF-324	25	17'-3"	33½"	23¾"	16'-0"	14¾"	6'-3"	38¾"	60½"	5'-5"	7'-1"	—	12"
	5 x 18	UF-324	25	19'-3"	33½"	23¾"	18'-0"	14¾"	6'-3"	38¾"	60½"	5'-5"	7'-5"	—	15"
	5 x 20	UF-324	25	21'-3"	33½"	23¾"	20'-0"	14¾"	6'-3"	38¾"	60½"	5'-5"	7'-5"	—	15"
	6 x 12	UF-320	25	13'-3"	33½"	21½"	12'-0"	16¾"	7'-3"	43¾"	72½"	6'-5"	8'-1"	—	18"
	6 x 14	UF-324	25	15'-3"	33½"	23¾"	14'-0"	16¾"	7'-3"	44¾"	72½"	6'-5"	8'-5"	—	18"
	6 x 16	UF-324	25	17'-3"	33½"	23¾"	16'-0"	16¾"	7'-3"	44¾"	72½"	6'-5"	8'-5"	—	18"
	6 x 20	UF-326	25	21'-3"	33½"	23¾"	20'-0"	16¾"	7'-3"	44¾"	72½"	6'-5"	8'-5"	—	18"
	7 x 16	UF-324	30	17'-3"	35½"	23¾"	16'-0"	18¾"	8'-3"	51¾"	84½"	7'-5"	9'-5"	—	18"
	7 x 20	UF-330	40	21'-3"	35½"	28¾"	20'-0"	18¾"	8'-5"	52"	84½"	7'-5"	9'-5"	—	18"
	8 x 16	UF-324	40	17'-3"	35½"	23¾"	16'-0"	18¾"	8'-3"	57¾"	96½"	8'-5"	10'-5"	—	18"
	8 x 20	UF-330	50	21'-3"	35½"	28¾"	20'-0"	18¾"	9'-5"	58"	96½"	8'-5"	10'-5"	—	18"
DOUBLE DECK	3 x 12	UF-315	15	13'-3"	39½"	19½"	12'-0"	12¾"	4'-1"	23"	36½"	3'-5"	5'-1"	15"	12"
	3 x 16	UF-320	20	17'-3"	39½"	21½"	16'-0"	12¾"	4'-3"	26"	36½"	3'-5"	5'-1"	15"	12"
	4 x 8	UF-320	20	9'-3"	39½"	21½"	8'-0"	12¾"	5'-3"	32"	48½"	4'-5"	6'-1"	15"	12"
	4 x 10	UF-320	25	11'-3"	39½"	21½"	10'-0"	12¾"	5'-3"	32"	48½"	4'-5"	6'-1"	15"	12"
	4 x 12	UF-320	25	13'-3"	39½"	21½"	12'-0"	12¾"	5'-3"	32"	48½"	4'-5"	6'-1"	15"	12"
	4 x 14	UF-320	25	15'-3"	39½"	21½"	14'-0"	12¾"	5'-3"	32"	48½"	4'-5"	6'-1"	15"	12"
	4 x 14 XH	UF-324	30	15'-3"	42½"	23¾"	14'-0"	12¾"	5'-3"	32"	48½"	4'-5"	6'-1"	15"	12"
	4 x 16	UF-324	30	17'-3"	39½"	23¾"	16'-0"	12¾"	5'-3"	32¾"	48½"	4'-5"	6'-1"	15"	15"
	5 x 10	UF-320	25	11'-3"	39½"	21½"	10'-0"	12¾"	6'-3"	38"	60½"	5'-5"	6'-1"	15"	12"
	5 x 12	UF-320	25	13'-3"	39½"	21½"	12'-0"	12¾"	6'-3"	38"	60½"	5'-5"	7'-1"	15"	12"
	5 x 14	UF-324	30	15'-3"	39½"	23¾"	14'-0"	12¾"	6'-3"	38¾"	60½"	5'-5"	7'-1"	15"	12"
	5 x 16	UF-324	30	16'-3"	41½"	23¾"	16'-0"	14¾"	6'-3"	38¾"	60½"	5'-5"	7'-5"	15"	12"
	5 x 16 XH	UF-330	40	17'-3"	44½"	28¾"	16'-0"	14¾"	6'-5"	39¾"	60½"	5'-5"	7'-5"	15"	15"
	5 x 18	UF-330	40	19'-3"	46½"	28¾"	18'-0"	14¾"	6'-5"	39¾"	60½"	5'-5"	7'-5"	15"	15"
	5 x 20	UF-330	50	21'-3"	46½"	28¾"	20'-0"	14¾"	6'-5"	39¾"	60½"	5'-5"	7'-5"	15"	15"
	6 x 12	UF-324	30	13'-3"	46½"	23¾"	12'-0"	16¾"	7'-3"	44¾"	72½"	6'-5"	8'-1"	18"	18"
	6 x 14	UF-324	30	15'-3"	46½"	23¾"	14'-0"	16¾"	7'-3"	44¾"	72½"	6'-5"	8'-5"	18"	18"
	6 x 16	UF-330	0	17'-3"	52½"	28¾"	16'-0"	16¾"	7'-5"	45¾"	72½"	6'-5"	8'-5"	18"	18"
	6 x 16 XH	UF-330	40	17'-3"	52½"	28¾"	16'-0"	16¾"	7'-5"	45¾"	72½"	6'-5"	8'-5"	18"	18"
	6 x 20	UF-330	50	21'-3"	52½"	28¾"	20'-0"	16¾"	7'-5"	45¾"	72½"	6'-5"	8'-5"	18"	18"
	7 x 16	UF-330	40	17'-3"	59½"	28¾"	16'-0"	18¾"	8'-5"	52"	84½"	7'-5"	9'-5"	24"	18"
	7 x 20	UT-330	40 (2)	21'-3"	59½"	40"	20'-0"	18¾"	9'-2"	53"	84½"	7'-5"	9'-5"	24"	18"
	8 x 16	UF-330	50	17'-3"	59½"	28½"	16'-3"	18¾"	9'-5"	58"	96½"	8'-5"	10'-5"	24"	18"
	8 x 20	UT-330	40 (2)	21'-3"	59½"	40"	20'-0"	18¾"	10'-2"	59"	96½"	8'-5"	10'-5"	24"	18"
TRIPLE DECK	4 x 8	UF-320	25	9'-3"	54½"	21½"	8'-0"	12¾"	5'-3"	32"	48½"	4'-5"	6'-1"	15"	12"
	4 x 10	UF-320	25	11'-3"	54½"	21½"	10'-0"	12¾"	5'-3"	32"	48½"	4'-5"	6'-1"	15"	12"
	4 x 12	UF-320	25	13'-3"	54½"	21½"	12'-0"	12¾"	5'-3"	32"	48½"	4'-5"	6'-1"	15"	12"
	4 x 12 XH	UF-324	30	13'-3"	57½"	23¾"	12'-0"	12¾"	5'-3"	32"	48½"	4'-5"	6'-1"	15"	12"
	4 x 14	UF-324	30	15'-3"	54½"	23¾"	14'-0"	12¾"	5'-3"	32¾"	48½"	4'-5"	6'-1"	15"	12"
	4 x 16	UF-324	30	17'-3"	54½"	23¾"	16'-0"	14¾"	5'-5"	33¾"	48½"	4'-5"	6'-1"	15"	12"
	4 x 16 XH	UF-330	40	17'-3"	57½"	28¾"	16'-0"	14¾"	6'-3"	33¾"	48½"	4'-5"	5'-1"	15"	15"
	5 x 10	UF-320	25	11'-3"	57½"	21½"	10'-0"	12¾"	6'-3"	38"	60½"	5'-5"	7'-1"	15"	12"
	5 x 12	UF-324	30	13'-3"	57½"	23¾"	12'-0"	12¾"	6'-3"	38½"	60½"	5'-5"	7'-1"	15"	12"
	5 x 14	UF-324	30	15'-3"	57½"	23¾"	14'-0"	12¾"	6'-3"	38¾"	60½"	5'-5"	7'-1"	15"	12"
	5 x 16	UF-324	40	17'-3"	62½"	23¾"	16'-0"	14¾"	6'-3"	39¾"	60½"	5'-5"	7'-1"	15"	12"
	5 x 16 XH	UF-330	40	17'-3"	62½"	28¾"	16'-0"	14¾"	6'-5"	39¾"	60½"	5'-5"	7'-5"	15"	15"
	5 x 18	UF-330	50	19'-3"	62½"	28¾"	18'-0"	14¾"	6'-5"	39¾"	60½"	5'-5"	7'-5"	15"	15"
	5 x 20	UF-330	60	21'-3"	62½"	28¾"	20'-0"	14¾"	6'-5"	39¾"	60½"	5'-5"	7'-5"	15"	15"
	6 x 12	UF-324	30	13'-3"	73½"	23¾"	12'-0"	16¾"	7'-3"	42¾"	72½"	6'-5"	8'-5"	18"	15"
	6 x 14	UF-330	40	15'-3"	73½"	28¾"	14'-0"	16¾"	7'-5"	45¾"	72½"	6'-5"	8'-5"	18"	18"
	6 x 16	UF-330	50	17'-3"	73½"	28¾"	16'-0"	16¾"	7'-5"	45¾"	72½"	6'-5"	8'-5"	18"	18"
	6 x 16 XH	UT-330	30 (2)	17'-3"	73½"	40"	16'-0"	16¾"	8'-2"	47"	72½"	6'-5"	8'-5"	18"	18"
	6 x 20	UT-330	40 (2)	21'-3"	73½"	40"	20'-0"	16¾"	8'-2"	47"	72½"	6'-5"	8'-5"	18"	18"
	7 x 16	UT-332	40 (2)	17'-3"	83½"	43"	16'-0"	18¾"	9'-2"	53"	84½"	7'-5"	9'-5"	24"	18"
	7 x 20	UT-332	40 (2)	21'-3"	83½"	43"	20'-0"	18¾"	9'-2"	53"	84½"	7'-5"	9'-5"	24"	18"
	8 x 16	UT-332	40 (2)	17'-3"	83½"	43"	16'-0"	18¾"	10'-2"	59"	96½"	8'-5"	10'-5"	24"	18"
	8 x 20	UT-332	50 (2)	21'-3"	83½"	43"	20'-0"	18¾"	10'-2"	59"	96½"	8'-5"	10'-5"	24"	18"

*Contact Deister for dimension prints for sizes not listed.

Capacity of Deister Vibrating Screens

The capacity of a vibrating screen is governed by many factors, among which are: type of material, amount of oversize material, undersize material, moisture content, shape of particles, amount of near-size material, percentage of open area of the screening medium, and others. In addition, there are numerous variables which cannot be determined in advance. Non-uniform feed rate, surge loads, changes in crusher settings, fluctuating moisture content, are factors which will affect the capacity of a vibrating screen.

In order to more accurately determine the size of vibrating screen needed, we recommend using the following three capacity calculations: through-flow tonnage, feed tonnage, and depth of material bed.

For multiple deck units, the screen cloth area for each deck must be figured separately. The deck requiring the greatest area determines the size screen needed. Screen selected should be large enough to allow for a margin of safety.

1. Through-flow Tonnage Method

To determine the size of screen, obtain screen cloth area (S) needed by dividing the through-flow tonnage (T) by factors A, B, C, D, E, & F.

$$S = \frac{T}{A \times B \times C \times D \times E \times F \times .8}$$

Factor A—Cap. in TPH passing thru 1 sq. ft. of screen cloth based on 94% efficiency with 25% oversize.																	
Size of Sq. Opening	1/8"	3/16"	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	7/8"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	5"
Gravel	.90	1.12	1.35	1.55	1.75	2.10	2.42	2.70	2.90	3.20	3.62	4.00	4.80	5.60	6.40	7.90	8.30
Stone	.70	.90	1.10	1.30	1.50	1.75	2.00	2.25	2.45	2.65	3.00	3.35	3.87	4.20	5.40	6.70	7.50
Coal	.54	.69	.85	.97	1.10	1.30	1.51	1.70	1.85	2.00	2.29	2.50	2.90	3.60	4.00	5.00	6.00

Amount of Oversize (per deck)	Factor B	Desired Efficiency	Factor C	Am't of feed less than ½ size of opening	Factor D	Wet Screening		Deck	Factor F
						Size of Opening	Factor E		
10%	1.05	60%	2.10	10%	.55	1/32"	1.25	Top	1.00
20%	1.01	70%	1.70	20%	.70	1/16"	1.75	Second	.90
30%	.98	75%	1.55	30%	.80	1/8"	2.00	Third	.80
40%	.95	80%	1.40	40%	1.00	3/16"	2.00		
50%	.90	85%	1.25	50%	1.20	5/16"	1.75		
60%	.86	90%	1.10	60%	1.40	3/8"	1.50		
70%	.80	92%	1.05	70%	1.80	1/2"	1.30		
80%	.65	94%	1.00	80%	2.20	3/4"	1.20		
85%	.50	96%	.95	90%	3.00				
90%	.30	98%	.90	100%					

NOTE: Factor C—Slight inaccuracies are seldom objectionable in screening aggregate and perfect separation (100% efficiency) is not consistent with economy. For finished products, 98% efficiency is the extreme practicable limit and 94% is usually satisfactory. 60% to 75% efficiency is usually acceptable for scalping purposes.

Factor E—If material is dry, use factor 1.00. If there is water in material, or if water is sprayed on screen, use proper factor given above. Wet screening means the use of about 3 to 5 G.P.M. of water per ton of material per hour. Rinsing requires about 1½ to 3 G.P.M. per ton of material per hour.

2. Feed Tonnage Method

S = F x C x 1.25
S = Screen cloth area
F = TPH feed

C = Square Feet of Screen Surface for each TPH of Feed																
Size of Sq. Opening	¼"	⅜"	½"	⅝"	¾"	⅞"	1"	1¼"	1½"	1¾"	2"	2½"	3"	3½"	4"	5"
100 lb./cu. ft. material	.56	.45	.4	.34	.3	.26	.25	.23	.2	.19	.18	.16	.15	.14	.12	.10
Coal	.8	.65	.55	.5	.42	.38	.35	.3	.28	.25	.24	.21	.20	.18	.16	.14

The above areas are approximate for feeds containing up to 60% of oversize and having 50% of the undersize smaller than one-half the screen opening.

3. Depth of Bed Method

In general, depth of bed of material on screen deck should not exceed four times the size of openings in screen for materials weighing 100 lb./cu. ft., and two-and-one-half or three times for material weighing 50 lb./cu.ft.

$$D = \frac{T \times K}{5 \times S \times W}$$

D = depth of material in inches
T = TPH over screen deck
K = number of cubic feet per ton of material
S = 70 fpm
W = net width of screen in feet (nominal width minus 6")

EXAMPLE: What size vibrating screen is required to handle a feed of 150 TPH of stone from a crusher set at ¾"; and make a ½" and ¼" separation?

Crusher Product Sizes

	+⅞	1%	1.5 tons
-⅞	+¾	13%	19.5 tons
-¾	+⅝	13%	19.5 tons
-⅝	+½	14%	21.0 tons
-½	+⅜	13%	19.5 tons
-⅜	+¼	13%	19.5 tons
-¼	+⅛	14%	21.0 tons
	-⅛	19%	28.5 tons
		100%	150.0 tons

	+½"	61.5 tons	41% oversize on ½" deck
	-½"	88.5 tons	59% undersize on ½" deck
	-¼"	49.5 tons	33% of 150 tons feed less than ½ size of ½" opening
	-½"	88.5 tons	feed to ¼" deck
-½"	+⅛"	39.0 tons	44% of 88.5 tons feed to ¼" deck
	-¼"	49.5 tons	through ¼" deck
	-⅛"	28.5 tons	32% of 88.5 tons feed to ¼" deck less than ½ size of ¼" opening

1. Through-flow Tonnage Method

½":
- Factor A (½") = 1.75
- Factor B (41%) = .95
- Factor C (94%) = 1.00
- Factor D (33%) = .86
- Factor E (1.0) = 1.00
- Factor F (top) = 1.00

¼":
- Factor A (¼") = 1.10
- Factor B (44%) = .93
- Factor C (94%) = 1.00
- Factor D (32%) = .85
- Factor E (1.0) = 1.00
- Factor F (2nd) = .90

$$S = \frac{T}{A \times B \times C \times D \times E \times F \times .8}$$

$$S = \frac{88.5}{1.75 \times .95 \times 1.00 \times .86 \times 1.00 \times 1.00 \times .8}$$

$$S = \frac{88.5}{1.14} = 77.7 \text{ sq. ft.}$$

$$S = \frac{49.5}{1.10 \times .93 \times 1.00 \times .85 \times 1.00 \times .8}$$

$$S = \frac{49.5}{.63} = 78.6 \text{ sq. ft.}$$

Use 5' x 16'

2. Feed Tonnage Method

Feed factor to ½" = .4
Feed factor to ¼" = .56

$S = F \times C \times 1.25$
$S = 150 \text{ tons} \times .4 \times 1.25 = 75 \text{ sq. ft.}$
$S = 88.5 \text{ tons} \times .56 \times 1.25 = 62 \text{ sq. ft.}$

Use 5' x 16'

3. Depth of Bed Method

½":
- Factor T = 61.5
- Factor K = 20.0
- Factor S = 70.0
- Factor W = 4.5

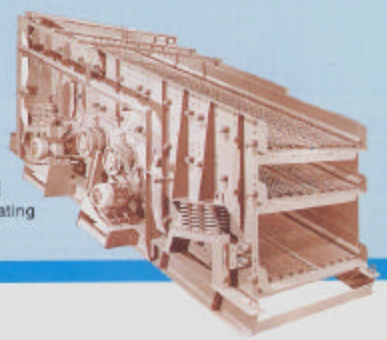
¼":
- Factor T = 39.0
- Factor K = 20.0
- Factor S = 70.0
- Factor W = 4.5

$$D = \frac{T \times K}{5 \times S \times W}$$

$$D = \frac{61.5 \times 20}{5 \times 70 \times 4.5} = .78\text{" (Less than two times size of opening)}$$

$$D = \frac{39 \times 20}{5 \times 70 \times 4.5} = .495\text{" (Less than two times size of opening)}$$

"You can't beat a DEISTER"

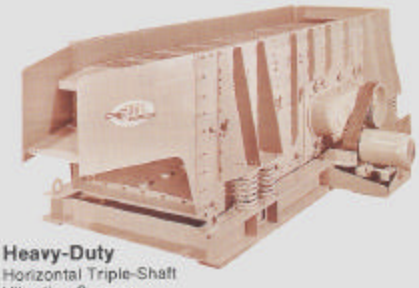


Type BHM
Inclined Vibrating Screen

"You can't beat a Deister Vibrating Screen" . . . that's not an unsupported statement from the manufacturer . . . it's a direct quotation from successful operators with years of experience with many different makes of screening equipment.

Extremely rugged construction is your assurance of long, dependable trouble-free operating life. Lower maintenance costs, uninterrupted production schedules and accurate sizing add up to lower cost per ton.

And, Deister Screens, Feeders and Grizzlies are backed by a follow-through parts and service policy without equal, for Deister top management is personally interested in the continued profitable operation of every Deister screen.



Heavy-Duty
Horizontal Triple-Shaft Vibrating Screens

Type VGF
Vibrating Grizzly Feeder

Type ETVS
High Speed Inclined Vibrating Screen

Type THMP
Portable Plant Inclined Screen

DEISTER
INC. 1912

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