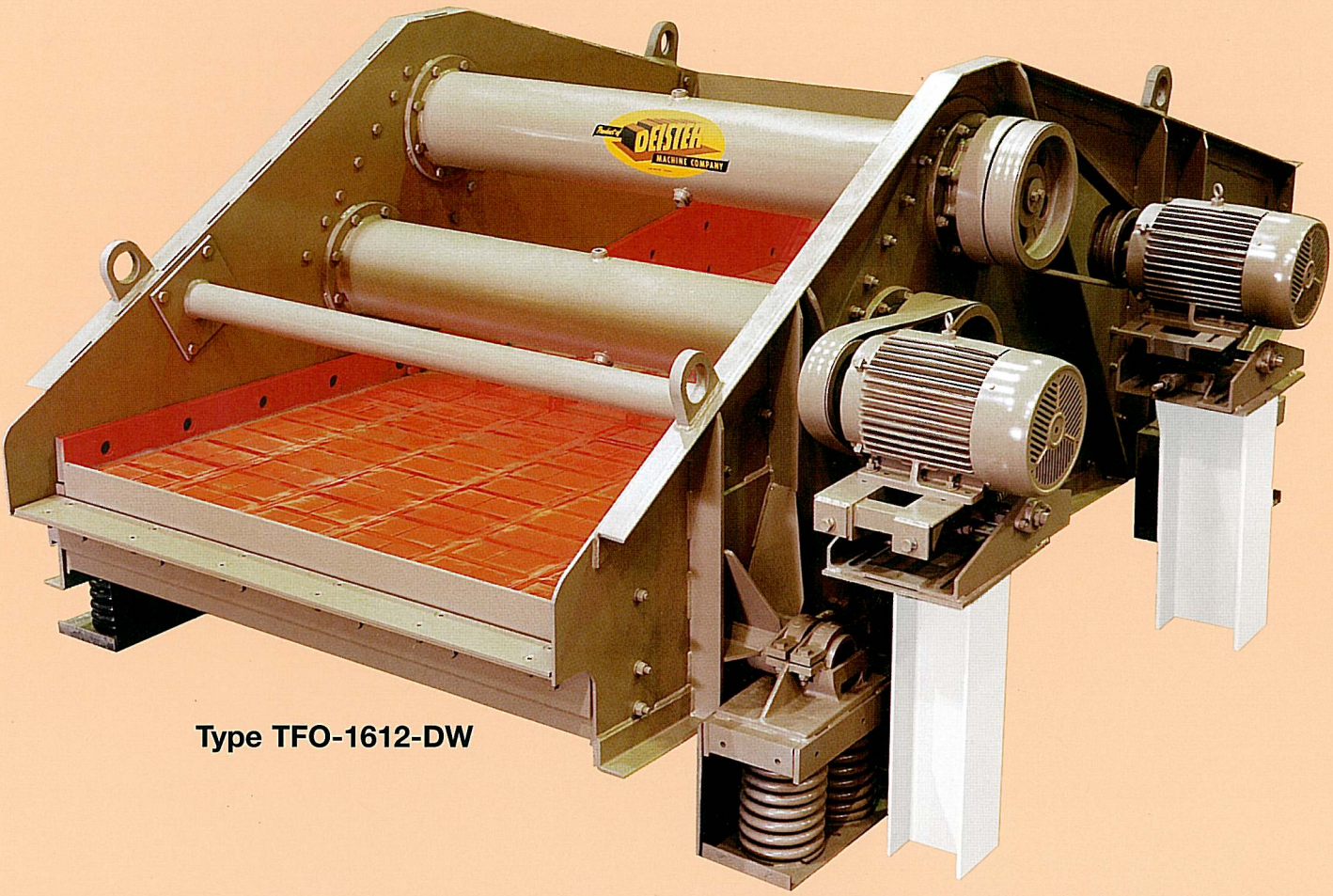
Bulletin No. 320



Type TFO-1612-DW

DEISTER®

INC. 1912

Heavy-duty

DEWATERING SCREENS

Deister Heavy-duty Dewatering Screens

WITH OVER 85 YEARS EXPERIENCE IN SEPARATING AND SIZING IN THE MINERAL, AGGREGATE, AND COAL INDUSTRIES, DEISTER heavy-duty construction, a time tested vibrating mechanism, and innovative design features combine for the most efficient dewatering screen on the market.

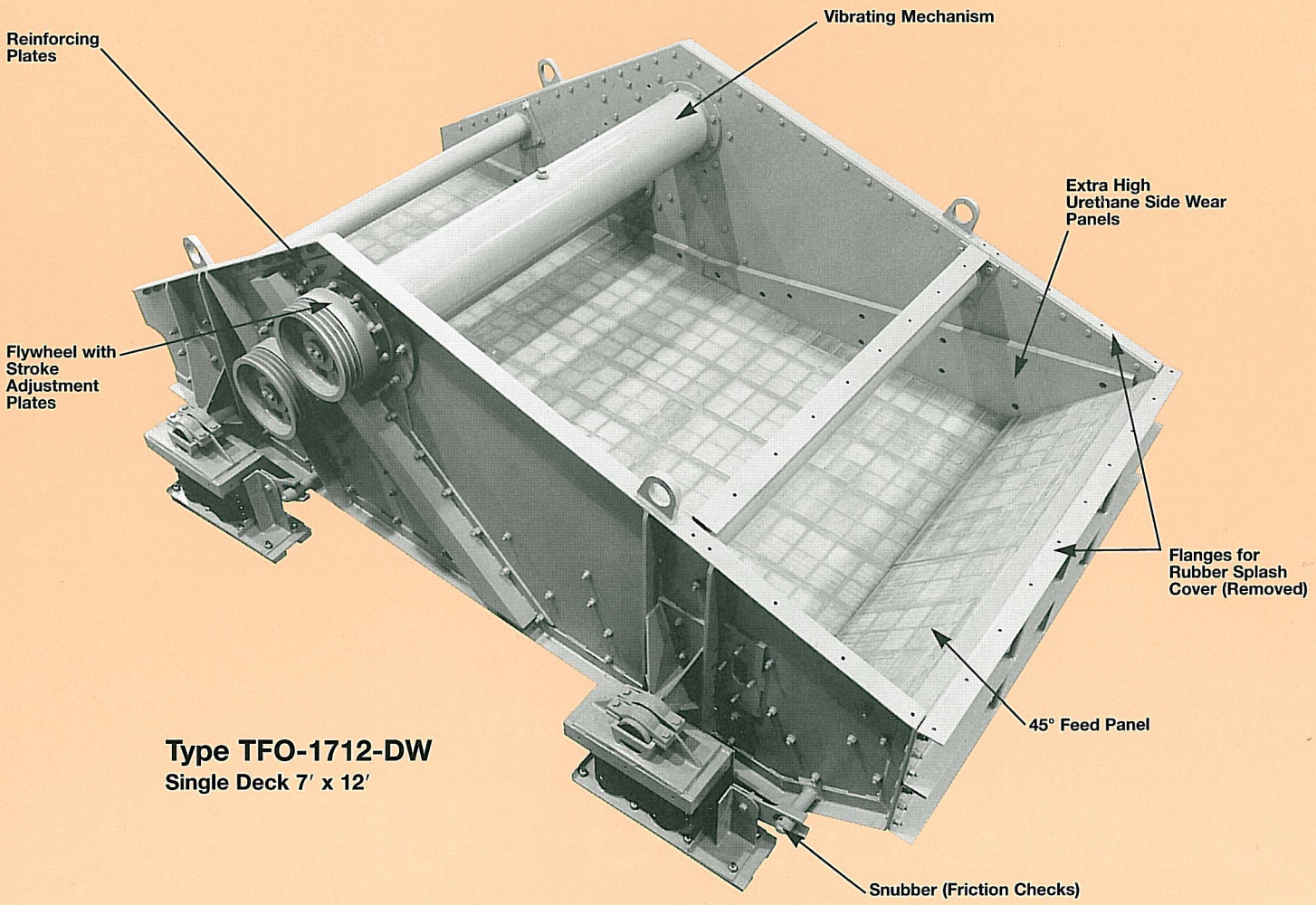
Sizes range from 3′ x 8′ to 8′ x 20′, and handle many types of feeds including hydro-cyclone discharge, dredged sand, sand screw overflow, sand screw discharge, coal fines, settling pond fines, wash screen underflow, and shredded recyclables. Screens are typically declined at 3° to 5° so that material must travel uphill.

Other Design Features:

- Trunnion spring supports allow for easy incline adjustment of the screen frame.
- Adjustable discharge weir allows for variations of the material bed depth to maximize dewatering.
- 45° feed panel provides high capacity dewatering at the point where the slurry is introduced.
- Specially designed extra high urethane side wear panels at the feed end provide protection for the side sheets from the slurry pool.
- An optional flexible rubber splash cover over the feed end third of the unit contains splash and mist.
- Reinforced side plates around the vibrating mechanism distribute the vibration forces created by the eccentric shafts over a larger area of the side frame.

It is common knowledge that most fine materials will dewater more effectively as the depth of bed of material increases. A problem occurs, however, when the weight of the material overcomes the vibrating action of the screen.

Deister Dewatering Screens can run with deeper beds of material, therefore at higher tonnages with drier products than other dewatering screens because of the heavy-duty construction. The additional centrifugal force present in Deister Screens will handle more tons per hour per square foot of screen area. The deeper bed depth will also entrap more of the ultra-fine particles that might otherwise pass the openings.



Type TFO-1712-DW
Single Deck 7′ x 12′

Explanation of Model Letters

B = H-beam Base with spring mounts

T = Trunnion type spring support system

F = Flat or horizontal

O = Overhead vibrating mechanism

DW = Dewatering

Explanation of Model Numbers

First Number = Number of Decks

Second Number = Width in Feet

Third and Fourth Numbers = Length in Feet

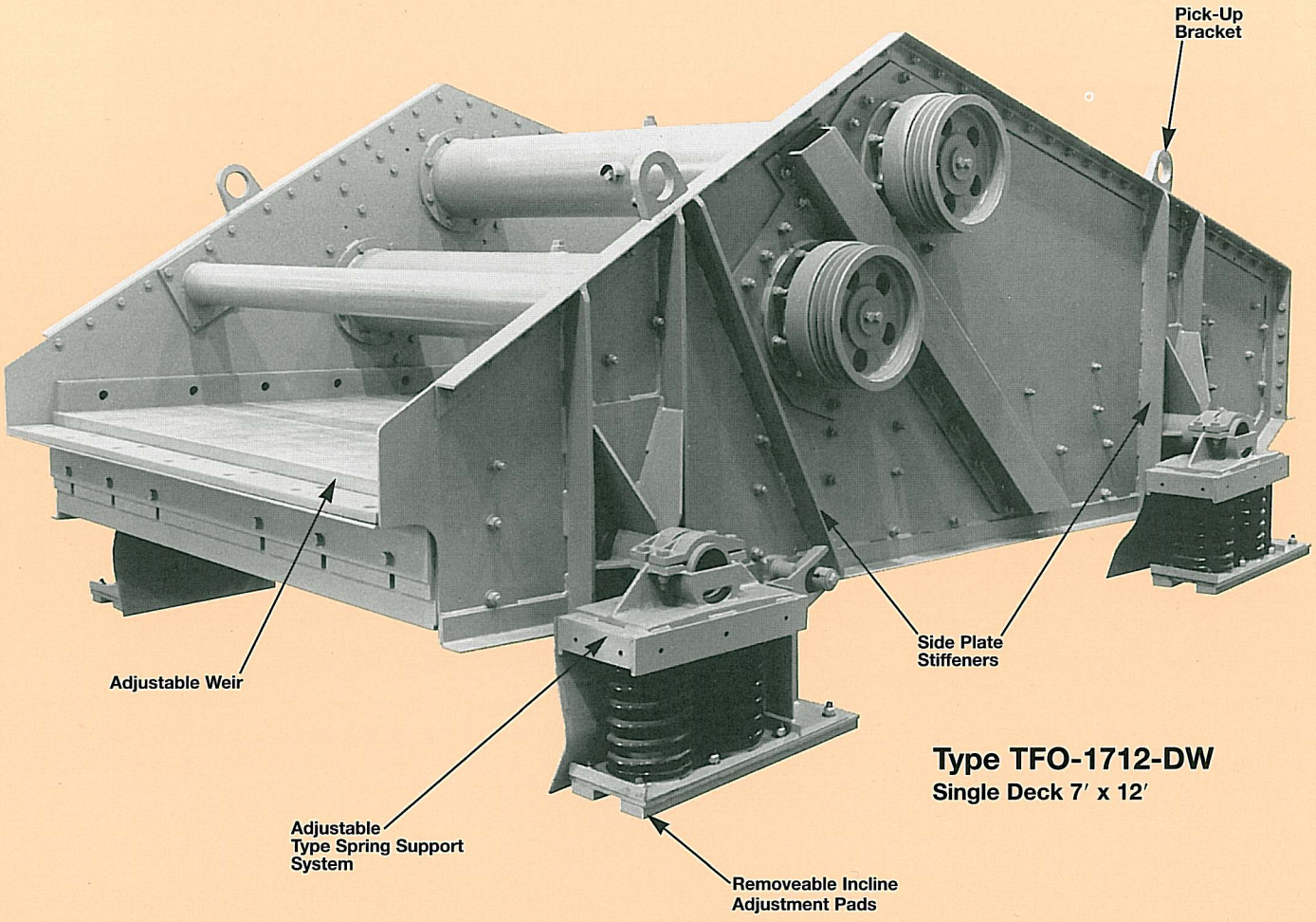
Example: BTFO-1716-DW
H-beam Base . . . Trunnion . . . Horizontal . . . Overhead Vibrating Mechanism . . . One Deck 7′ wide x 16′ long . . . Dewatering

Standard Equipment

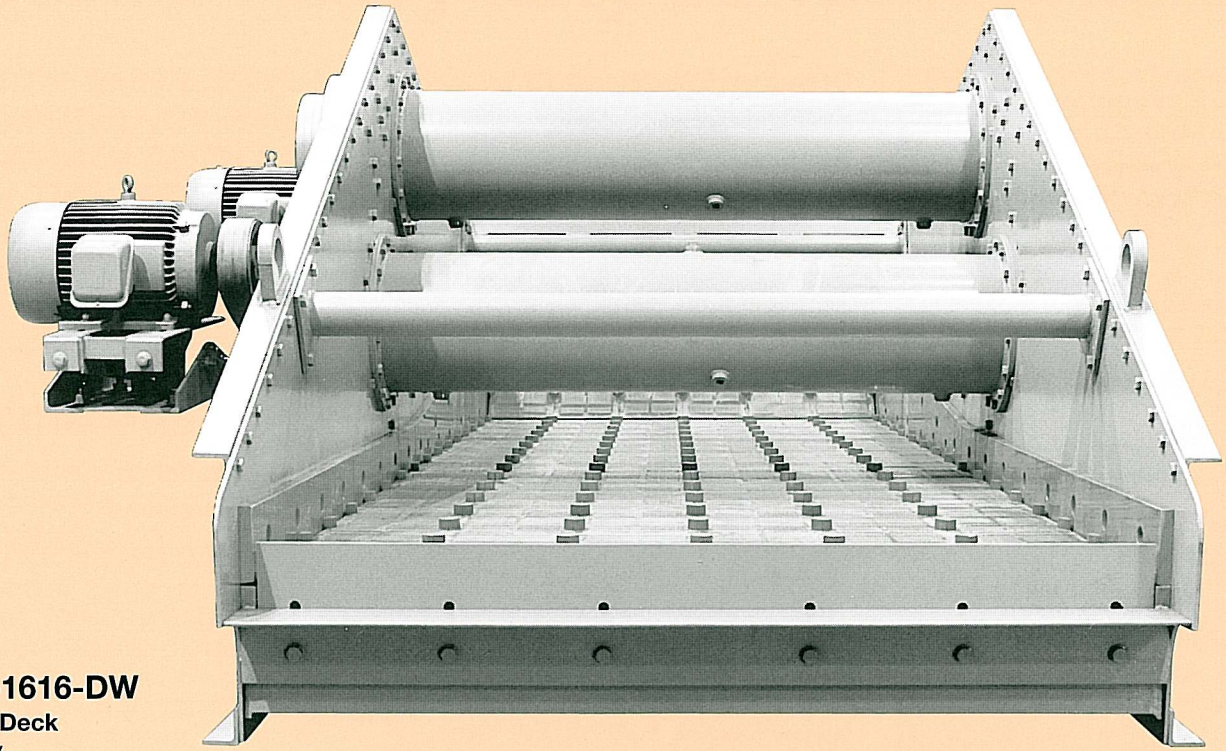
1. Oil lubricated vibrating mechanism
2. PVC coated steel coil spring suspension system on pivoting supports
3. Snubbers (spring-loaded friction checks)
4. Pick-up brackets
5. Interchangeable screen panels
6. Bolted construction for easy replacement of wear parts
7. Discharge lips
8. Adjustable throw
9. Sideplates reinforced with vertical braces
10. Rubber belting around support springs to protect from material buildup

Optional Equipment

1. Wide-flange H-beam base
2. Motor mount, V-belt drive, and guard
3. Spray pipe equipment
4. Turbo washer troughs
5. Replaceable side and discharge lip liners
6. Polyurethane coating on exposed surfaces
7. A-R steel, rubber or urethane wear liners
8. Rubber splash cover
9. Hydro-Chamber
10. Removeable incline adjustment pads



Type TFO-1712-DW
Single Deck 7′ x 12′



BFO-1616-DW
Single Deck
6′ x 16′

DEISTER long-life vibrating mechanism

An outstanding feature of the Deister Vibrating Screen is the exclusive vibrating mechanisms mounted above the vibrating frame.

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.

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 anti-friction bearings and assures safe operating temperatures under extremely hot climatic conditions where it, in effect, acts as an oil cooling system.

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 envelopes the spherical roller bearings and all moving parts. It should never be necessary to add oil to the mechanism, with only periodic 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 70 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 V-belt drive can be custom designed to the proper speed for the particular application. The operating speed is not locked into 1200 RPM like conventional dewatering screens.

Stroke (throw) adjustments can be made in the field by simply adding or removing counterweight plates to/from the unbalanced flywheels.

HYDRO-CHAMBER

Another innovative option is the patented* HYDRO-CHAMBER. This design allows a shorter length screen unit to be used for a given feed rate of slurry. The smaller machine means less cost and a smaller footprint in the plant design. Conversely, production can be increased without going to a larger machine by retro-fitting a Deister Dewatering Screen with the Hydro-Chamber feature.

The Hydro-Chamber is most effective with relatively coarse feeds that have a high percentage of water. For example, it is less sensitive to variations in hydrocyclone efficiency. In fact, cyclones can be set to allow more water in the underflow, and therefore lose fewer solids out the overflow. In most applications to date, the unders from the dewatering screen have been close-looped back to the hydro-cyclones.

How does the Hydro-Chamber work? Increased dewatering efficiency is accomplished by effectively removing the depth of bed of material traveling over a portion of the openings and increasing the available percent of open area. The short upper section is located near the feed end of the screen unit and dewaters much like the conventional configuration. The water and extreme fines that pass through will fall on the lower section of screen media. Since there is little or no bed depth of material, the water and extreme fines pass through to the undersize hopper very quickly.

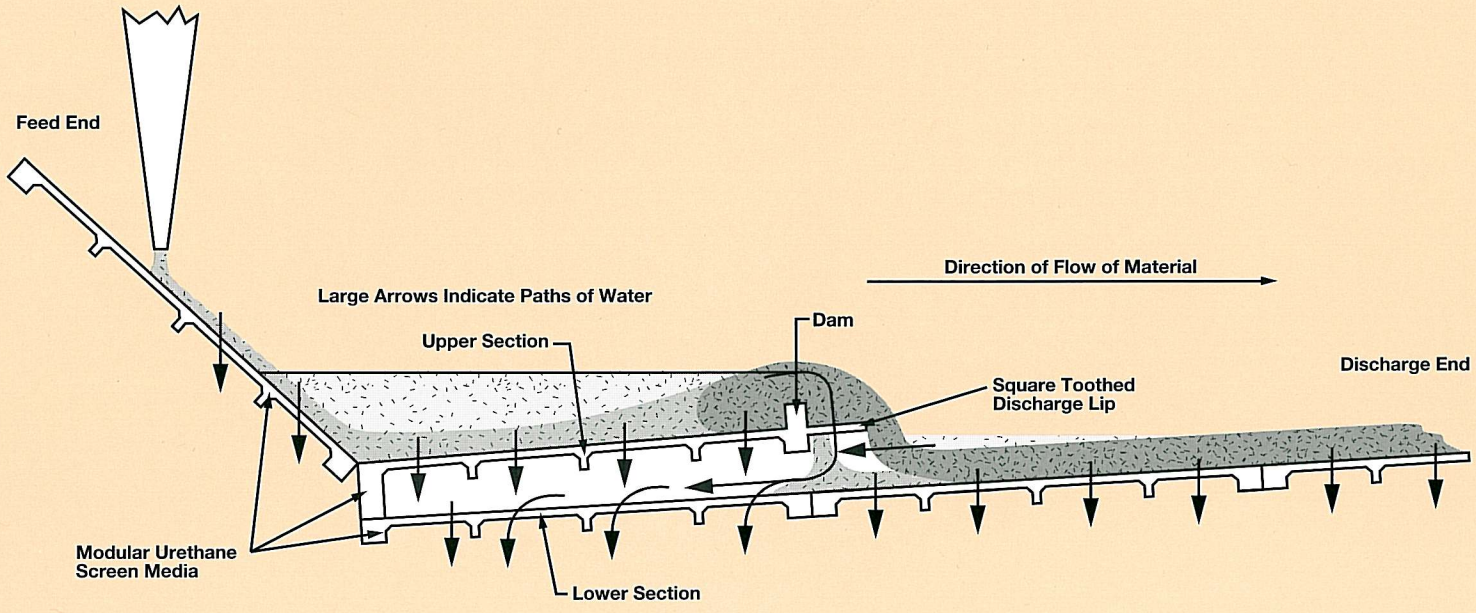
The additional dewatering capacity is realized from the ability of excess water to enter between the two layers of screen media from the large opening at the discharge end of the short top section. The excess water will carry some fines with it toward the feed end, but the fines will settle down to the media surface and be conveyed toward the discharge end.

The discharge end of the short upper section is provided with a square-toothed discharge lip. The square tooth pattern provides interruptions or gaps in the "curtain" of fines discharging from the end of the short upper section onto the lower deck. These gaps provide a pathway for water to back flow under the short upper section without having to back flow through a continuous "curtain" of fines across the width of the screen.

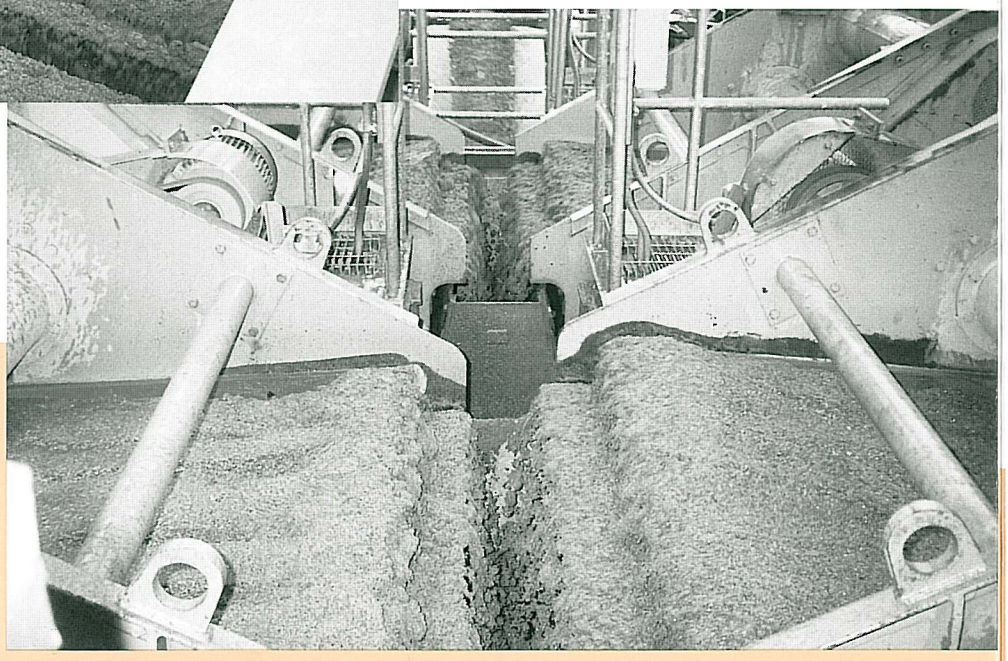
A dam is located at the discharge end of the short upper section. This dam will hold back fines and water from flowing onto the lower deck until the fines and water form a deeper pool and overflow the dam. The purpose is to increase the pressure or "head" of the water at the screen media surface, therefore forcing more water through the openings.

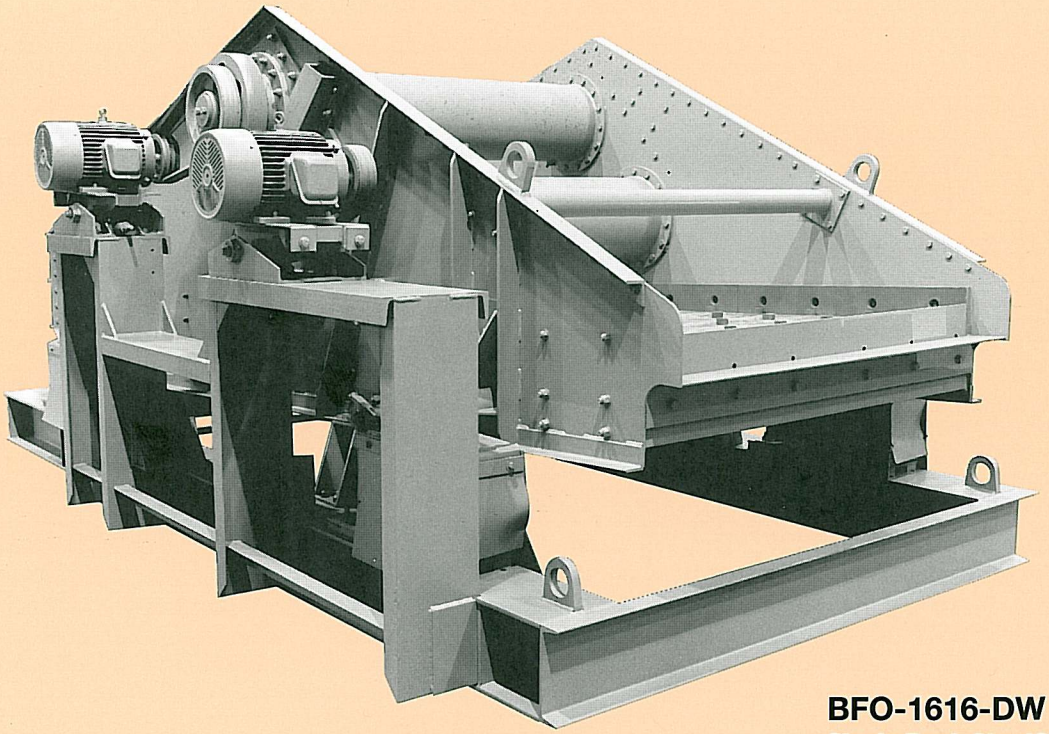
The tendency for solid particles to settle before they flow to the lowest (toward the feed end) area of the lower panel allows for the inclusion of slightly larger openings that would have a larger percent open area. This will further increase the dewatering capacity.

*Patent(s) pending

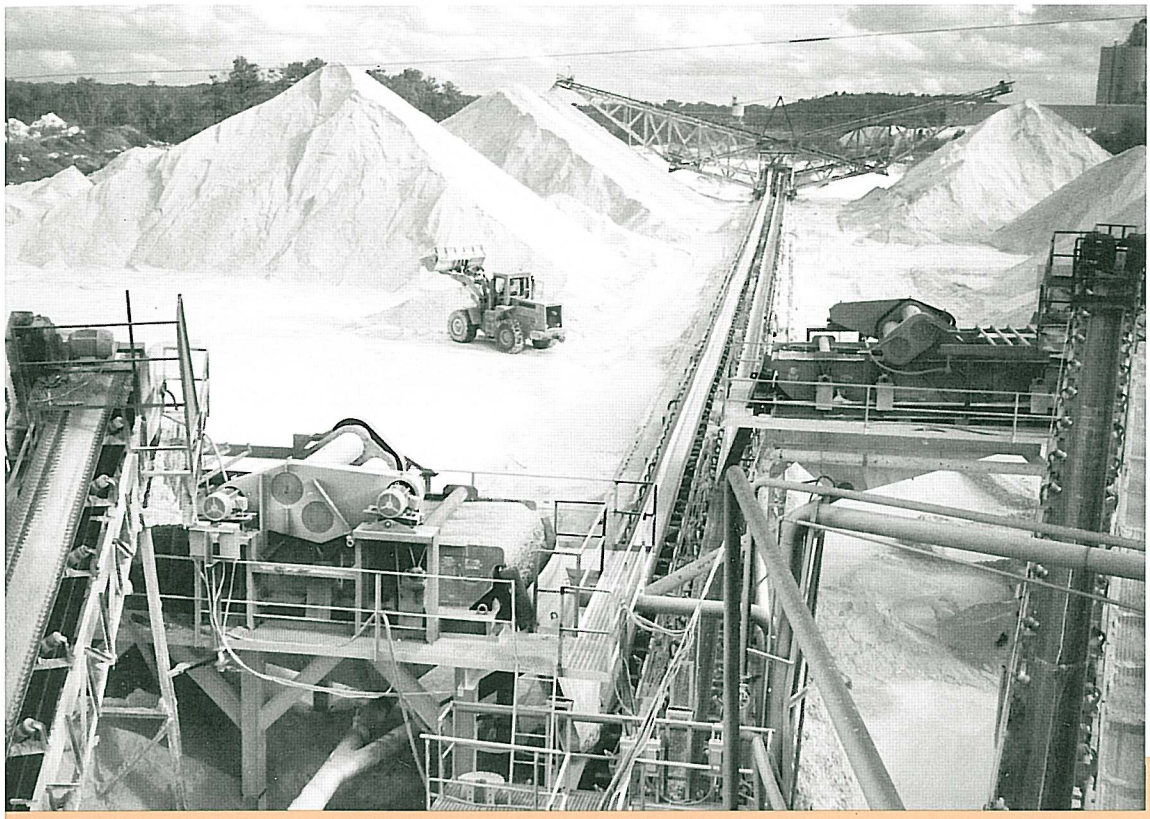


Four single deck 6′ x 12′ units on the deck of a bucket ladder dredge, each fed by two 20″ hydro-cyclones, dewatering up to 800 TPH of natural sand.

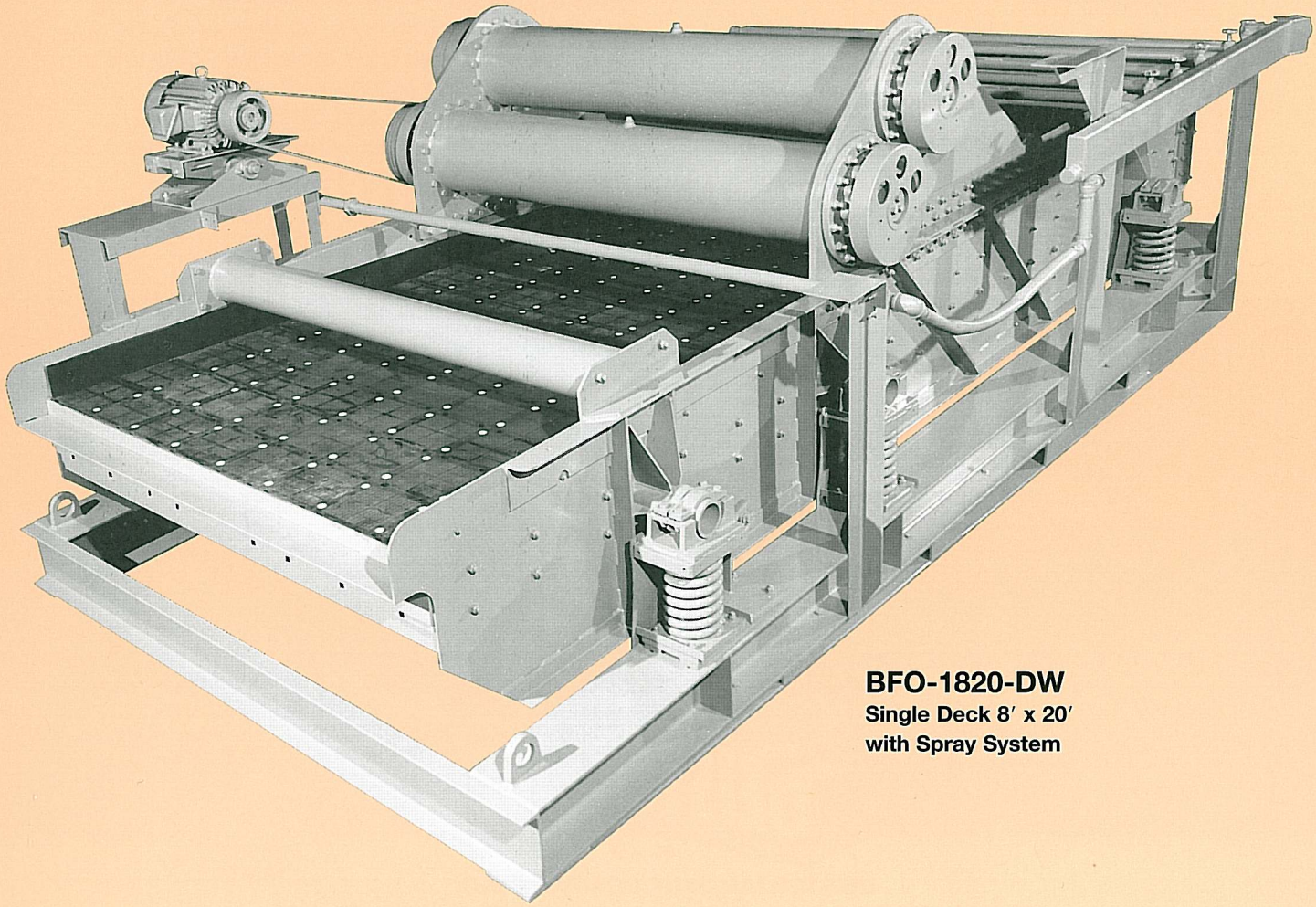




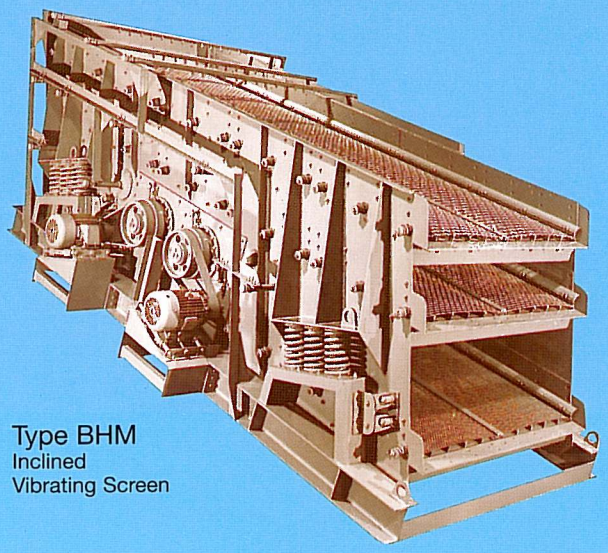
BFO-1616-DW
Single Deck 6′ x 16′



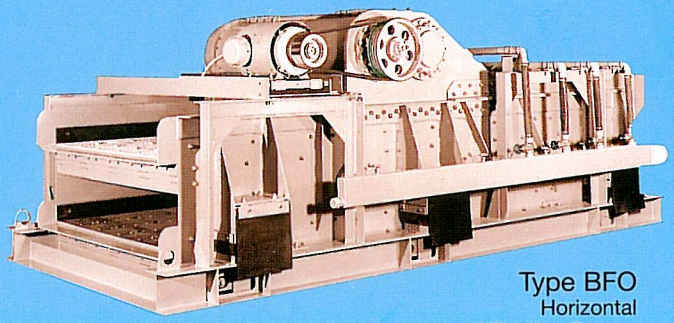
Two single deck
8′ x 20′ units are taking 200 TPH each of asphalt sand from a sand screw discharge and removing the minus 200 mesh (having adjusted the water volume from the spray headers), then dewatering to improve stackability.



BFO-1820-DW
Single Deck 8′ x 20′ with Spray System



Type BHM
Inclined
Vibrating Screen



Type BFO
Horizontal
Vibrating Screen

DEISTER IS NUMBER ONE!

Deister is preferred over the competition according to the best source—the people who buy and operate

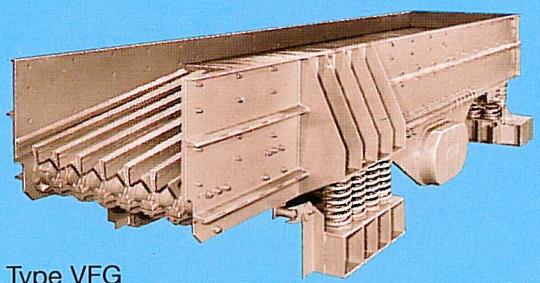
DEISTER SCREENS and FEEDERS

Deister Screens and Feeders are preferred for:

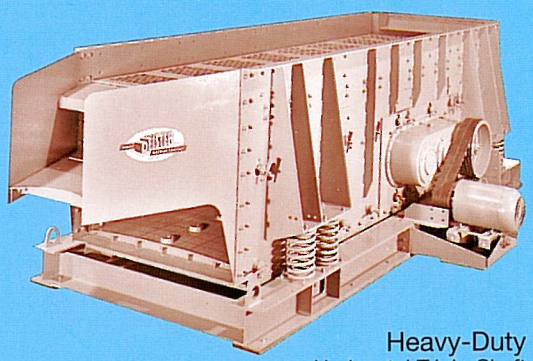
1. Rugged design and construction for long trouble-free production.
2. Accurate sizing plus lower maintenance costs = lower costs p/ton.
3. Backed by a follow-through parts and service program without equal.

The complete Deister line includes all types and sizes for heavy screening, scalping and feeding requirements. All Deister vibrating equipment features their exclusive Long-Life Unitized Vibrating Mechanism.

Pick up the phone and discuss your operations with Deister—the family-owned and operated company with over 83 years' experience.



Type VFG
Vibrating
Grizzly Feeder



Heavy-Duty
Horizontal Triple-Shaft
Vibrating Screen

DEISTER
INC. 1912

Aggregates Foundation For Technology, Research And Education
SAND STONE GRAVEL
FOUNDER

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