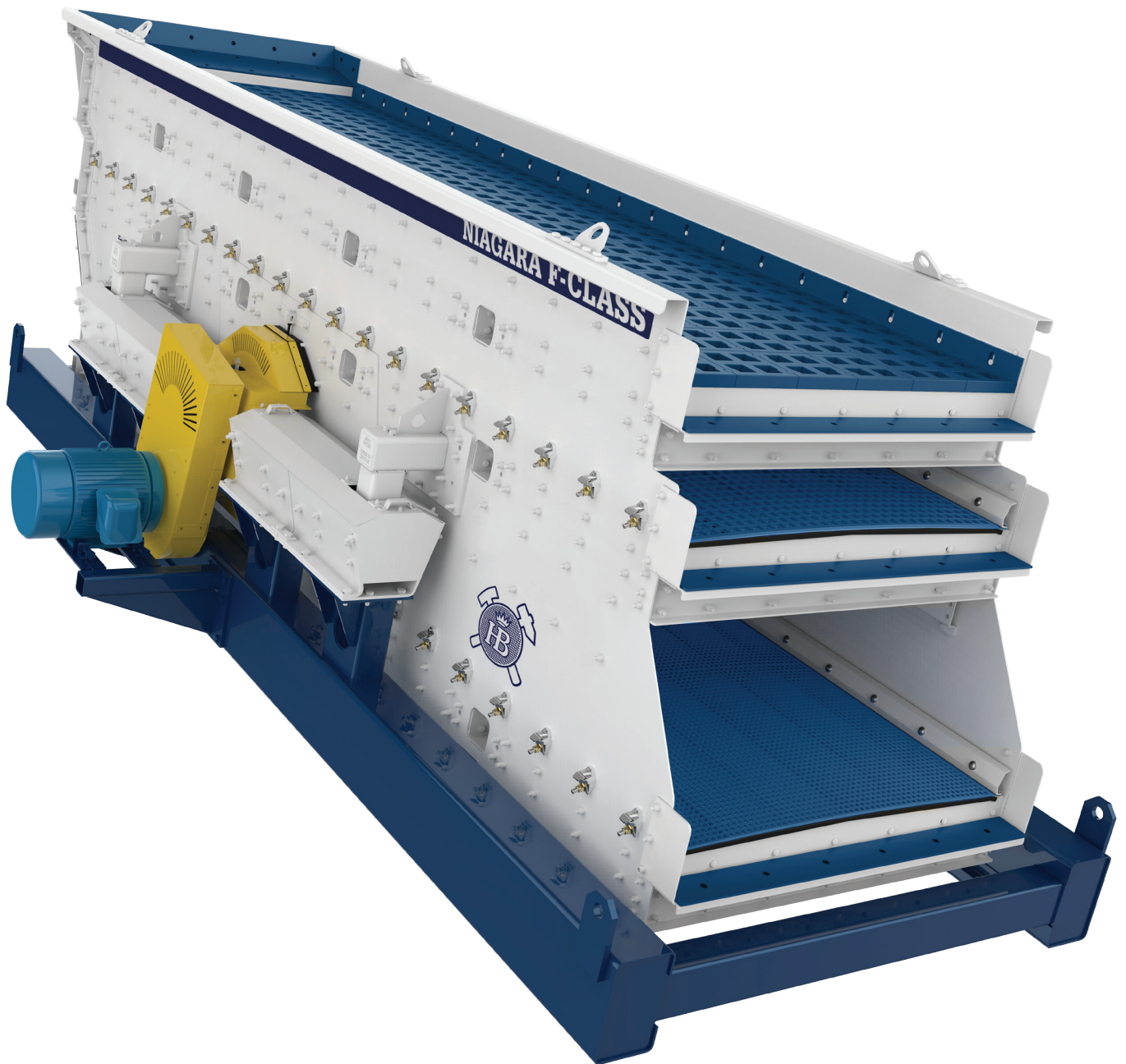


HAVER & BOECKER



NIAGARA

F-CLASS VIBRATING SCREEN

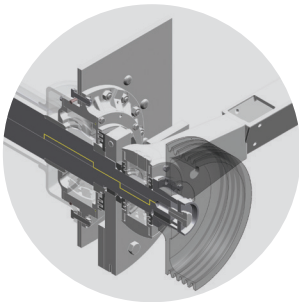
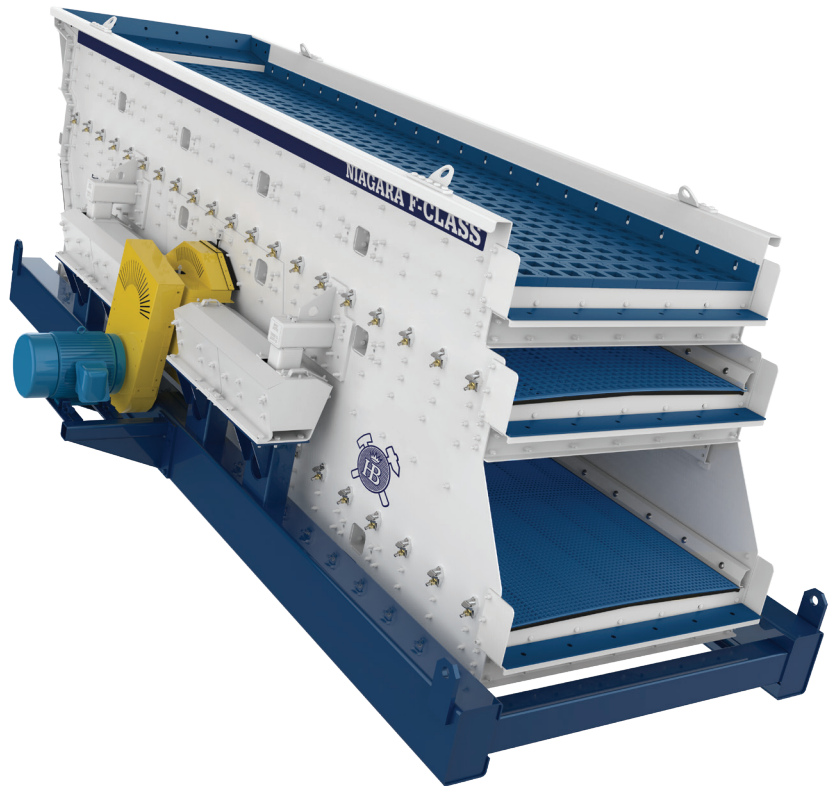


F-CLASS WHY ECCENTRIC VS. CONCENTRIC?

Most inclined vibrating screens are designed with a concentric shaft assembly and are mounted on springs.

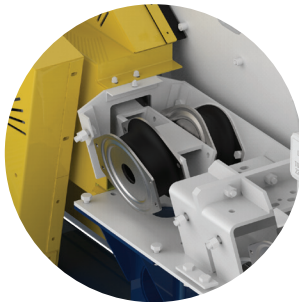
The F-Class, however, is designed with a double eccentric shaft assembly, is mounted on shear rubber mounts, and includes both a base frame and a motor support.

F-Class technology combines constant g-force for optimal material stratification with a maintenance-friendly design.



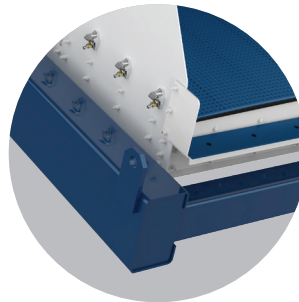
DOUBLE ECCENTRIC SHAFT ASSEMBLY

- Maintains constant g-force, even during surging
- Allows for multiple machine installation in your structure



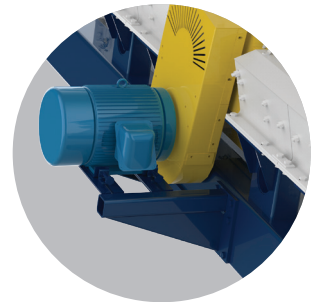
SHEAR RUBBER MOUNTS

- Minimize lateral movement for smoother operation than springs
- Reduces noise
- Extends the life of your vibrating screen



BASE FRAME

- Easier installation to existing structure
- Provides support for catwalks and other components



MOTOR SUPPORT

- Eliminates requirement for separate support
- Complete with sliding motor base

F-CLASS KEY FEATURES

MAINTENANCE-FRIENDLY DECK FRAME

The F-Class' deck frame is lock-bolted rather than welded. Lockbolts are proven to be more effective than welding in the demanding, load-bearing, high-vibration operation of a vibrating screen to ensure the machine's structural integrity.

Bar rails are fastened to the cross beams with lockbolts, making them easy to exchange if they become worn.

Cross beams are positioned every four feet rather than every two feet for optimal material movement through the vibrating screen with less wear.

Fastening with vibration-resistant lockbolts instead of welding offers five key benefits to maintain your vibrating screen:

- **Safety** — Eliminates potential welding accidents from cutting or grinding, and the chance of fire.
- **Saving** — Does not require a costly, skilled welder for installation.
- **Simplicity** — Easy to install.
- **Structural Integrity** — Provides a high level of vibration resistance, ensuring strong joints with no welding fatigue.
- **Speed** — Up to 50% faster installation and maintenance.



FLAT AND CAMBERED DECKS AVAILABLE

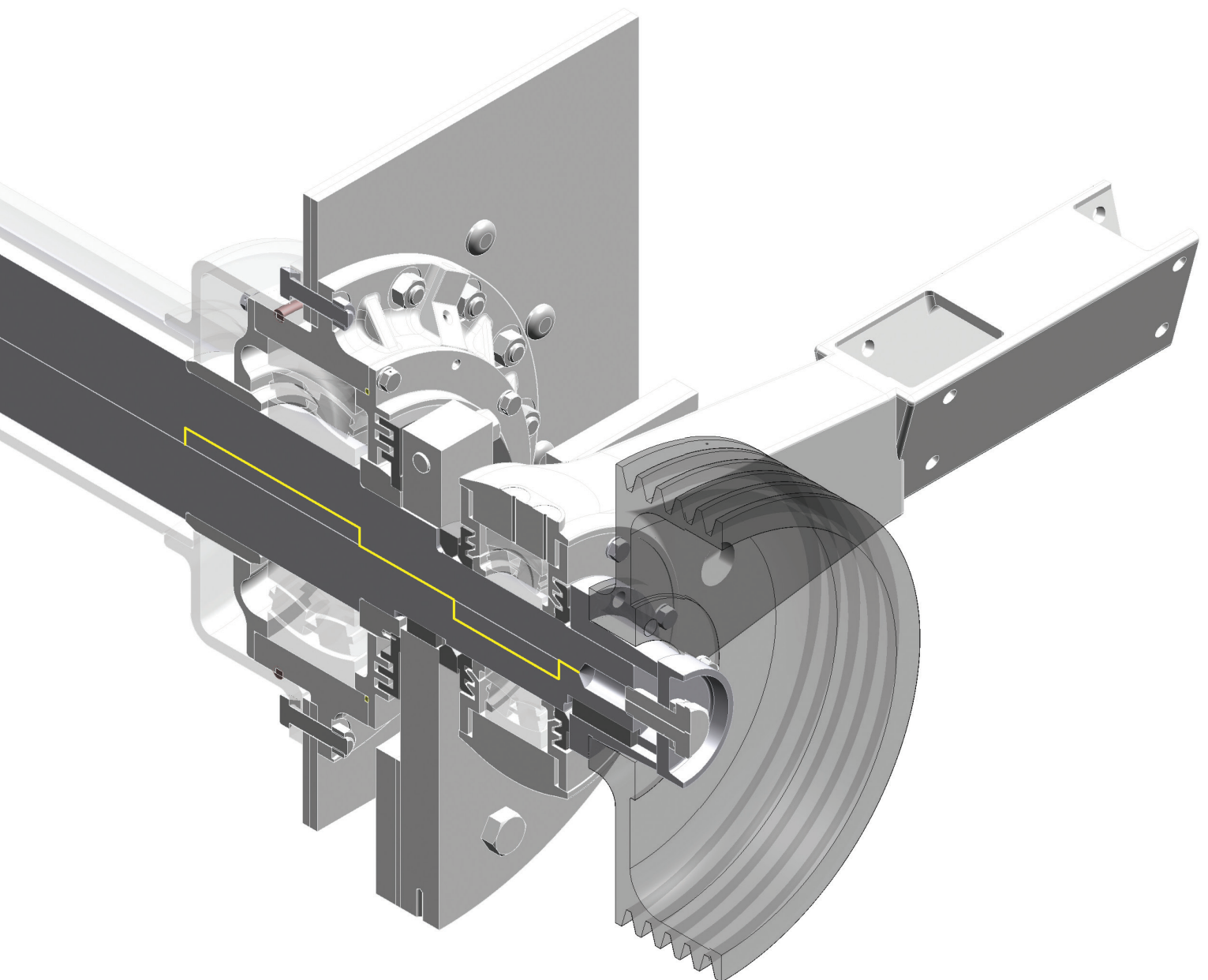
Flat deck for modular screen media panels illustrated.
Cambered decks for tensioned screen media also available.

DOUBLE ECCENTRIC SHAFT ASSEMBLY

Supported by spherical roller bearings, the double eccentric shaft creates a constant stroke, maintaining g-force during material surging. This generates constant material stratification, which ensures accurate product specification.

While the shaft rotates, the vibrating body and counterbalance weights pull in opposite directions, generating equal forces that cancel each other out. This creates a dynamically balanced system that transmits virtually no vibration into the structure or chassis.

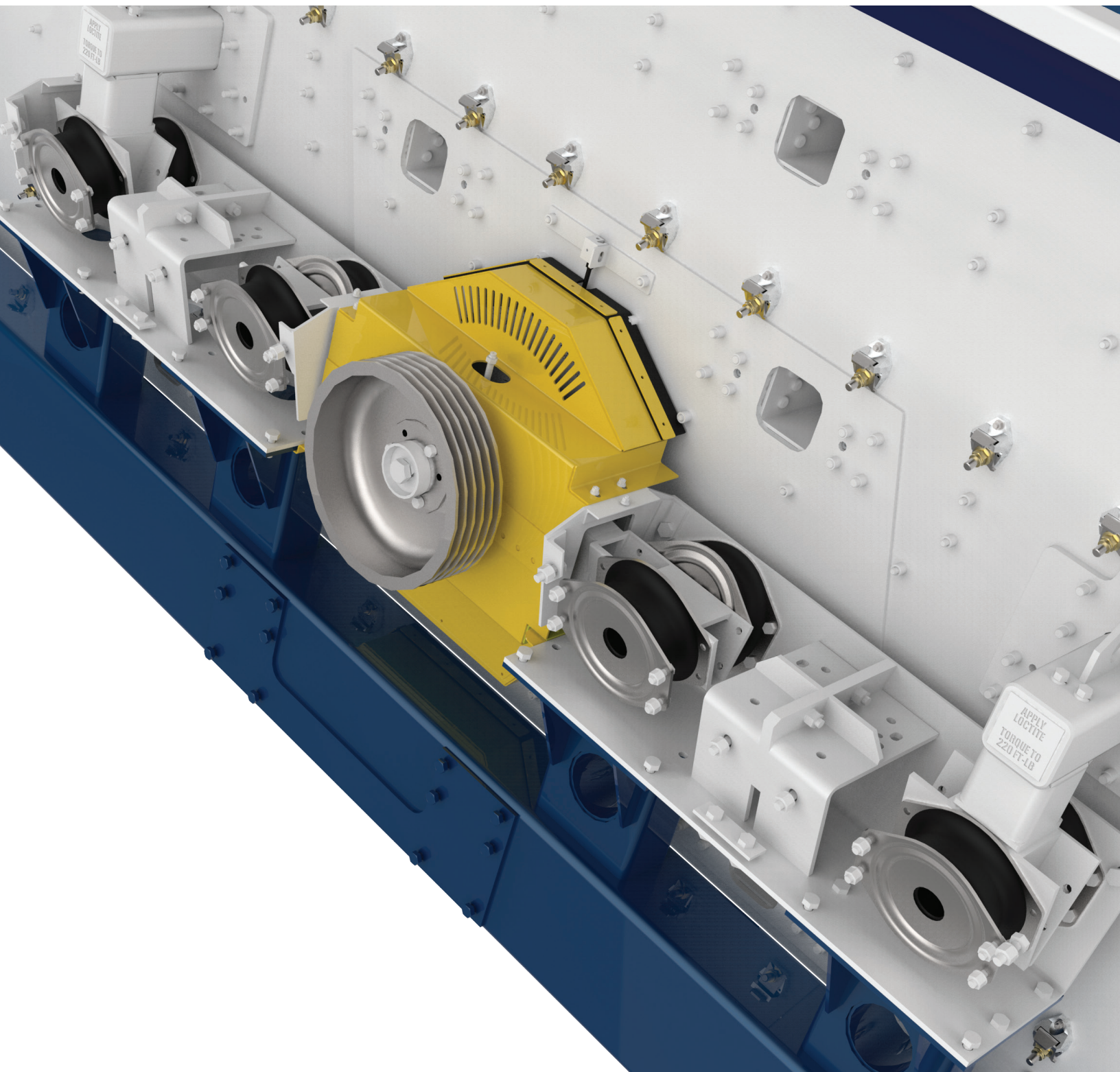
Eliminating vibration preserves the integrity of the structure — or portable chassis — and permits multiple machine installation.



F-CLASS KEY FEATURES

SHEAR RUBBER MOUNTING SYSTEM

Shear rubber mounts minimize the lateral movement caused by traditional springs to reduce noise, maintain smoother operation and extend the life of your F-Class vibrating screen.



F-CLASS VIBRATING SCREEN ANATOMY

LOCKBOLT SECURED

Proven more effective in the demanding, load-bearing, high-vibration operation of vibrating screens to ensure structural integrity.

REINFORCING PLATES

Reinforcing plates are sandwiched together with the side plate, shaft housing and cross beams behind the bearing housing to add strength to the side plate without welding.

SPLIT-BUCKET DESIGN

Split-bucket mounting system reduces bearing replacement time with easy access to critical components.

MOTOR SUPPORT

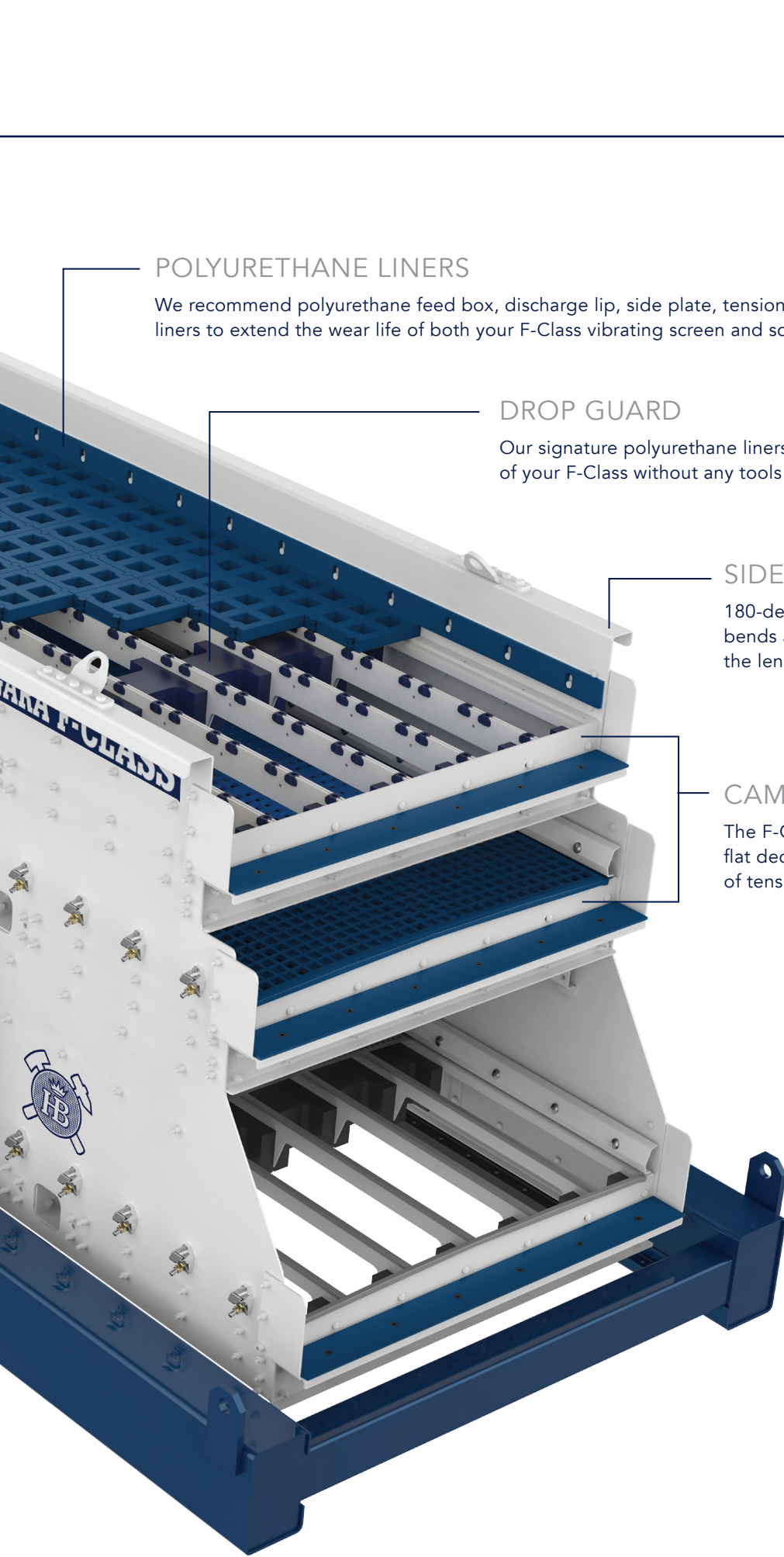
Motor support attached to the base frame eliminates need for additional structure.

SHEAR RUBBER MOUNTING SYSTEM

Shear rubber mounting system minimizes lateral movement to reduce noise, maintain smoother operation and extend the life of your vibrating screen.

STATIONARY TUBULAR BASE FRAME

Niagara-engineered tubular base frame offers greater strength than a traditional I-beam to provide solid support and simplify installation.



POLYURETHANE LINERS

We recommend polyurethane feed box, discharge lip, side plate, tension rail and bar rail liners to extend the wear life of both your F-Class vibrating screen and screen media.

DROP GUARD

Our signature polyurethane liners protect the cross beams of your F-Class without any tools or installation hardware.

SIDE PLATES

180-degree bends at the top edge and 45-degree bends at the bottom edge add rigidity throughout the length of the side plates without welding.

CAMBERED OR FLAT DECKS

The F-Class can be customized with cambered or flat decks to accommodate virtually any combination of tensioned or modular screen media.

F-CLASS SPECIFICATIONS AND INDUSTRIES

WIDTH	LENGTH	DECKS	CUT RANGE	TOP SIZE	CAPACITY (TPH)	INCLINATION	BEARINGS	LUBRICATION	ACCELERATION
6'	12'	1 - 3	1/8" - 6"	16" minus	Up to 800	20°	4	Grease	3.8 - 4.2g
	16'								
	20'								
7'	16'				Up to 1,000				
	20'								
8'	16'								
	20'								
	24'								
10' Tandem	24'	1 - 2							
	28'								
	32'								



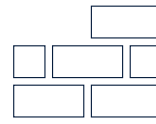
MINING



**FERTILIZER
& SALT**



**AGGREGATES
& MINERALS**

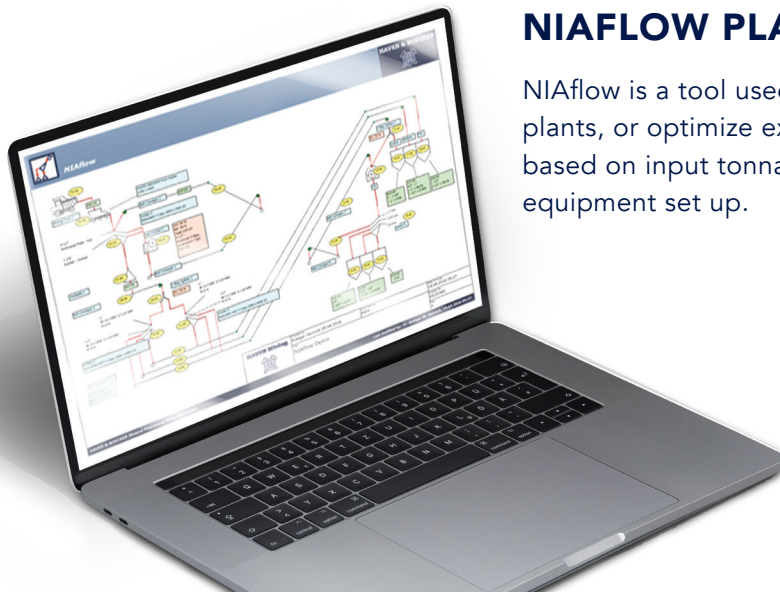


**CEMENT & BUILDING
PRODUCTS**



RECYCLING

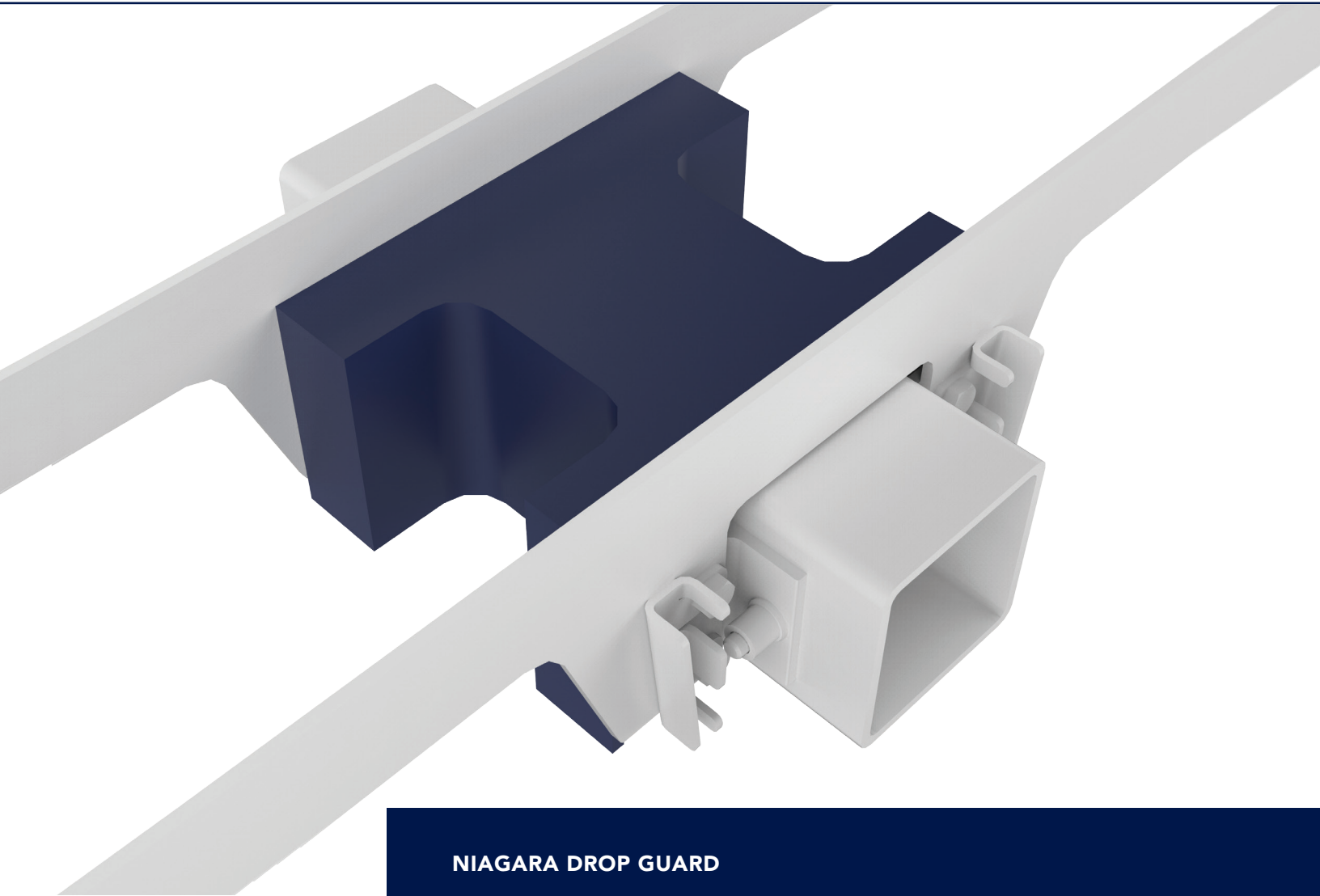
The F-Class has successfully optimized screening in numerous industries and applications. Our engineering team works with our signature NIAflow plant simulation software to size the F-Class according to your specifications.



NIAFLOW PLANT SIMULATION SOFTWARE

NIAflow is a tool used to design new mineral processing plants, or optimize existing plants, to predict production based on input tonnage, material characteristics and equipment set up.

F-CLASS UPGRADES



NIAGARA DROP GUARD

The revolutionary Niagara Drop Guard polyurethane liner will protect the cross beams of your F-Class to reduce wear and extend the life of your machine. Best of all, the liners require no tools or hardware for installation or removal.

■ POLYURETHANE LINERS

Polyurethane feed box, side-plate, discharge lip, tension rail and bar rail liners extend the wear life of your F-Class and screen media.

■ SPRAY SYSTEM

The F-Class can effectively be used for wet screening applications with the addition of a spray system.

■ STATIONARY DUST ENCLOSURE

Reduces dust emissions.

■ AUTO LUBRICATION SYSTEM

Automated system supplies lubricant at required intervals to eliminate manual greasing.

■ FINES HOPPER

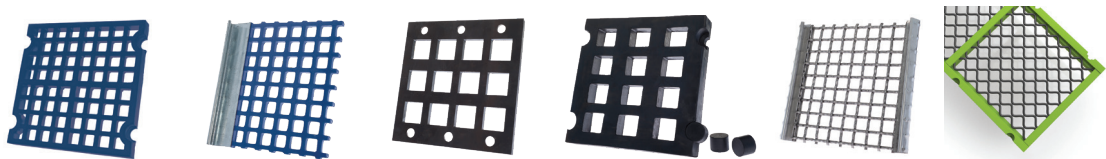
Fits beneath the vibrating screen to collect under-size material.

■ BALL TRAYS

Reduce blinding and pegging and ensure sharp cuts; best for classification of fine material; available for wire cloth screen media applications only.

SCREEN MEDIA OPTIONS

All F-Class vibrating screens can be engineered with flat decks for modular screen media panels, including pin & sleeve, snap-in, groove or bolt-down fastening systems; cambered decks for side-tensioned screen media, with a single or double crown; end-tensioned screen media; or a combination of all three.



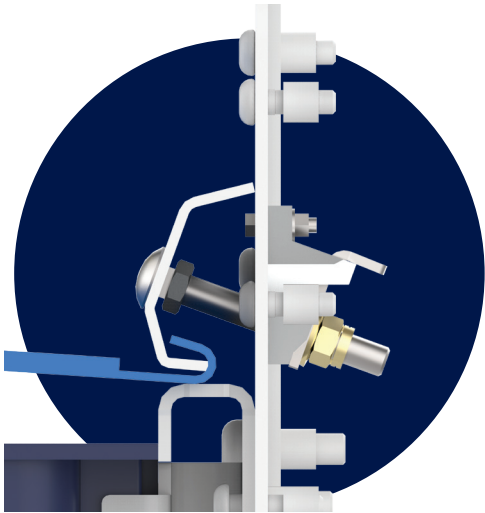
	POLYURETHANE	HYBRID	PERFORATED PLATE	RUBBER	WOVEN WIRE	SELF-CLEANING
MODULAR/FLAT-DECK	●	●	●	●	●	●
SIDE-TENSIONED/ CAMBERED DECK	●	●	●	●	●	●
END-TENSIONED BOTTOM DECK					●	●

TY-RAIL™ FOR SIDE-TENSIONED MEDIA ON CAMBERED DECKS

Every side-tensioned deck on an F-Class is engineered with Ty-Rail. Each rail, and all of the hardware, work together as a single, removable assembly. The patented, quick-tensioning system cuts screen change-out time in half, drastically reducing costly downtime, and improving productivity and profit.

HOW IT WORKS

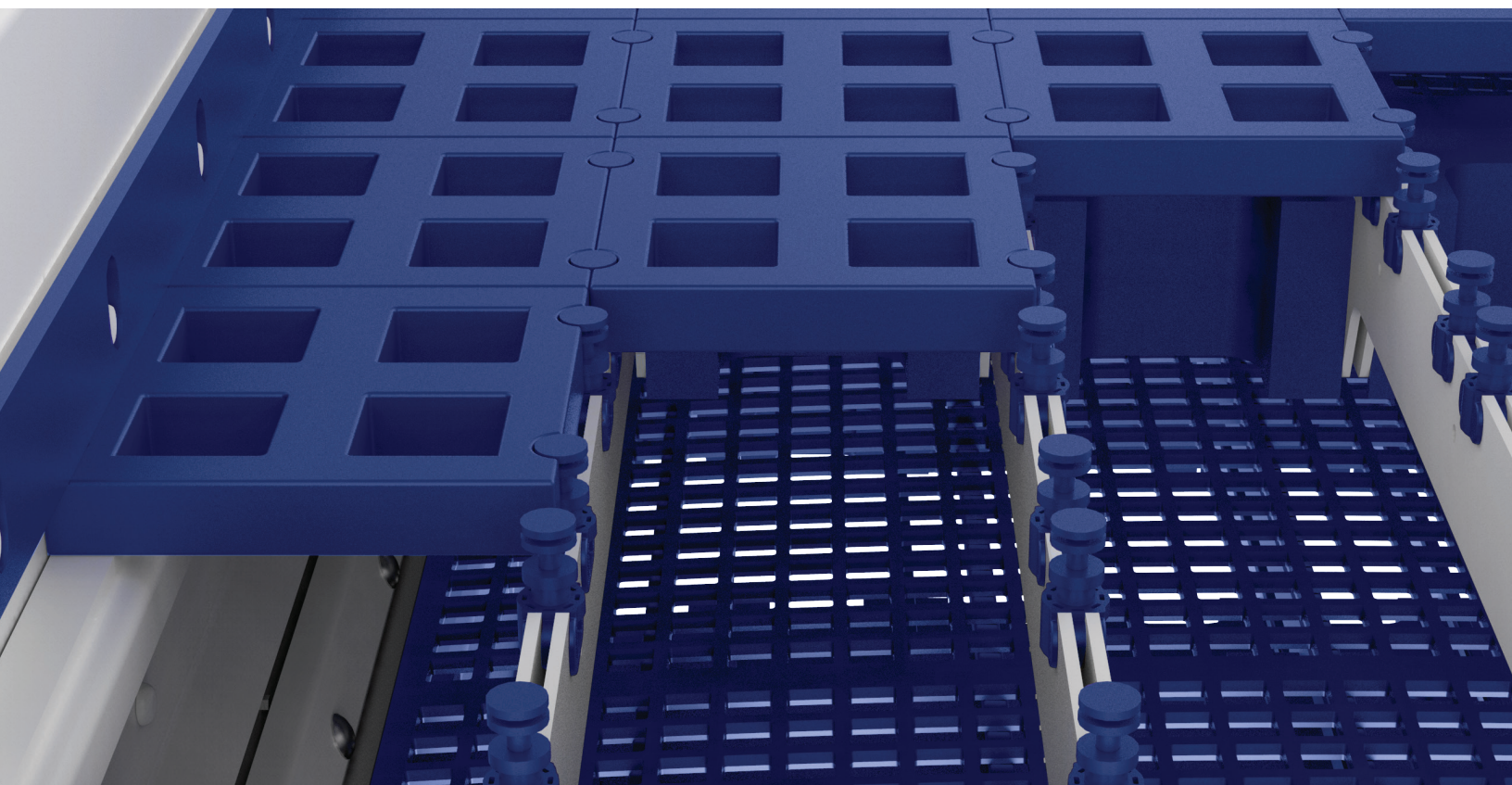
1. Loosen tension bolts and shift locking plates up.
2. Lift the tension rail out.
3. Change the screen media section.
4. Move tension rail back into place.
5. Shift the locking plates down and tighten tension bolts.



F-CLASS DECK FRAME TECHNOLOGY

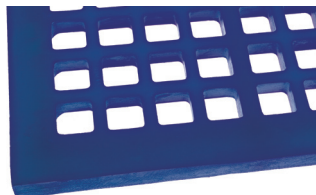
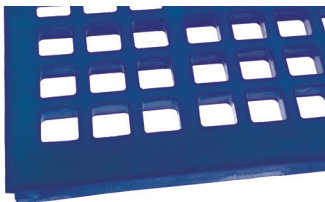
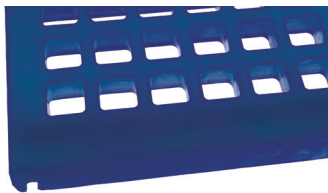
PIN & ANCHOR DECK FRAME FOR MODULAR PIN STYLE PANELS

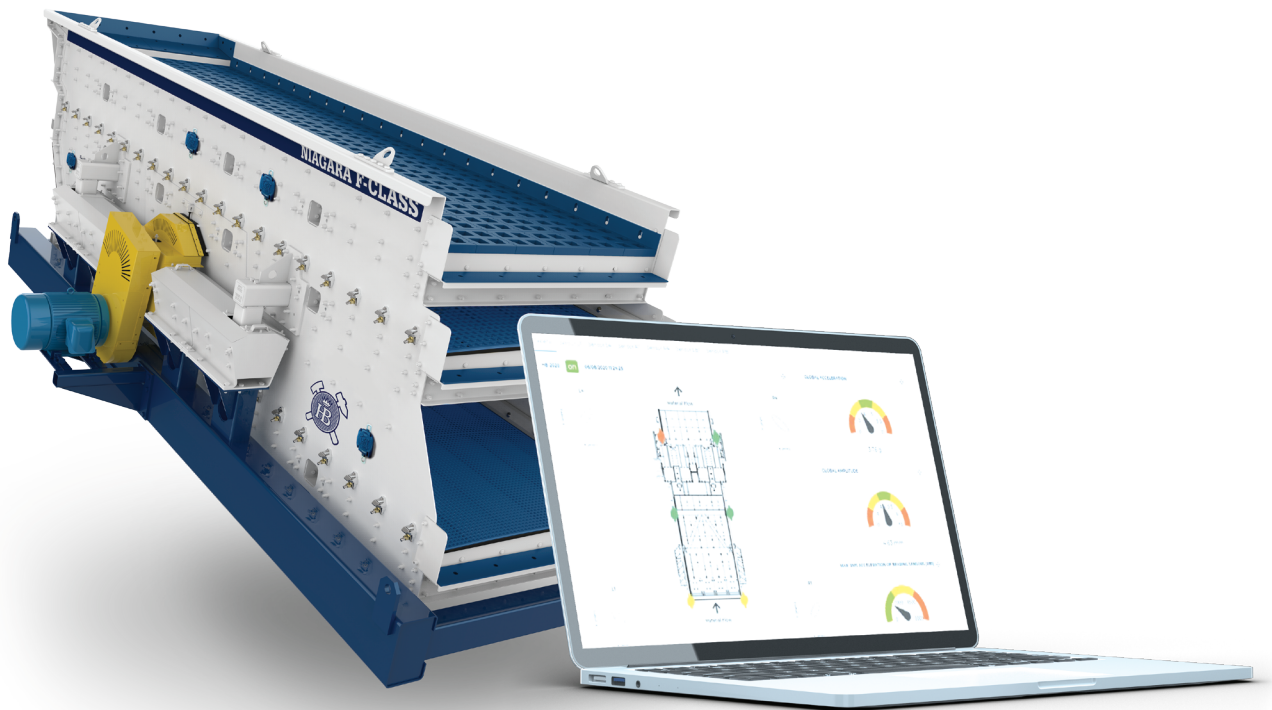
Every pin style flat deck on an F-Class is engineered with our high open area deck frame. The modular system offers more open area than other flat decks and is adaptable to virtually any pin style modular screen media. The high open area design prevents material build-up in the bar rails. The polyurethane anchors are easy to replace and prevent premature wear on the deck frame.



ADDITIONAL MODULAR PANEL HOLD DOWN SYSTEMS AVAILABLE

SNAP SYSTEM	GROOVE SYSTEM	BOLT-DOWN SYSTEM
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PULSE IMPACT TEST

The Pulse Impact Test ensures each machine is properly calibrated to avoid operating in resonance for efficient operation. Operating in resonance can diminish productivity, incur damage to vibrating screens and pose safety risks.

PULSE VIBRATION ANALYSIS SERVICE

Pulse Vibration Analysis (Pulse VA) is designed to examine the health of any vibrating screen by detecting irregularities that could translate into diminished performance, decreased efficiency, increased operating costs and imminent breakdowns.

PULSE CONDITION MONITORING

Pulse Condition Monitoring (Pulse CM) is the next level in the Pulse portfolio. Similar to Pulse VA, the condition monitoring software analyzes data to help users get the most out of their equipment. Unlike vibration analysis, Pulse CM is installed permanently on each vibrating screen for 24/7 equipment monitoring.

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