HAVER & BOECKER

NIAGARA

F-CLASS VIBRATING SCREEN

THE LAFARGE CORPORATION

Extraordinary, Exceptional and Eccentric: Presque Isle, the Lafarge Corporation's largest quarry, needed to update its vibrating screen fleet. They sought to increase production while retaining stability of the six-story structure in which the new vibrating screens would operate. Haver & Boecker Niagara worked with the operation to assess its needs before recommending the four-bearing, double-eccentric shaft Niagara F-Class; Presque Isle purchased 14. The new equipment allowed the operation to increase screening area by 60%. The double-eccentric shaft design allowed multiple units to be placed beside and above one another in a tight space, with no vibrations transmitted into the structure.

> *"Probably the most dramatic example of this increase was what we saw in our one-inch minus material," said Dave Nelson, Lafarge Presque Isle quarry manager. "Our loading rate increased by 50%."*

F-CLASS VIBRATING SCREEN

Niagara F-Class vibrating screens offer the ideal solution for challenging screening applications requiring consistent performance, load independence and minimal vibration transmission in the structure.

- Dynamically balanced design eliminates dynamic loads transferred into the structure, virtually eliminating structural vibration to allow for multiple machine installations.
- Shear rubber mounting system, drive and base frame work together to maintain constant g-force during extreme operating conditions, such as overloading, surging and starting and stopping under load.
- Split-bucket mounting system reduces bearing replacement time by giving easy access to critical components.
- Niagara-designed tubular base frame is stronger than a traditional I-beam base frame to provide solid support for the robust machine.
- Motor support attached to the base frame eliminates additional structure.
- Options — such as a spray system, motor or dust enclosure — install easily on existing F-Class base frame.

F-CLASS SPECIFICATIONS

APPLICATIONS

SCALPING

DEDUSTING

CLASSIFYING (WET OR DRY)

INDUSTRIES

AGGREGATES

MINING

MINERALS

CLASS	WIDTH	LENGTH	DECKS	CUT RANGE	TOP SIZE	CAPACITY IN TPH	INCLINATION	BEARINGS	LUBRICATION	ACCELERATION
F	6′	12′	1 - 3	1/8″ - 6″	16″ minus	Up to 800	20°	4	Grease	3.8 - 4.2g
		16′								
		20′								
	8′	16′				Up to 1,200				
		20′								
		24′								
F Tandem	10′	24′						4x4		
		28′								
		32′								

NIAFLOW PLANT SIMULATION SOFTWARE

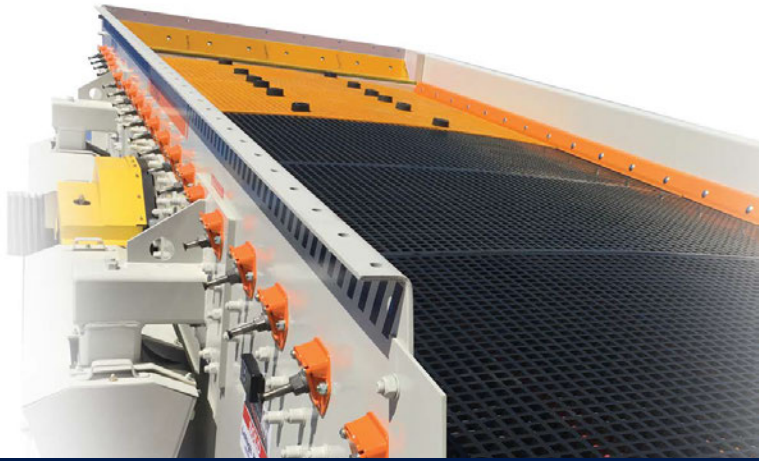
NIAflow is a tool used to design new mineral processing plants, or optimize existing plants, to predict production based on input tonnage, material characteristics and equipment set-up.

SCREEN MEDIA

The F-Class can be engineered with a flat deck for modular screen media panels, including pin & sleeve, snap-in, groove or bolt-down fastening systems; a cambered deck for side-tensioned screen media with a single or double crown; or end-tensioned screen media. Proper screen media selection virtually eliminates blinding and pegging.

	MODULAR FOR FLAT-DECK	SIDE-TENSIONED FOR CAMBERED DECK	END-TENSIONED
POLYURETHANE	•	•	
HYBRID	•	•	
PERFORATED PLATE	•	•	
RUBBER	•	•	
WOVEN WIRE	•	•	•
SELF-CLEANING	•	•	•

Blending screen media on a single deck helps increase production and extend periods between screen change-outs. Here we've blended two panels of Ty-Max polyurethane on the feed end, with Ty-Wire hybrid screen media on the remaining sections to maximize wear life and open area.



F-CLASS VIBRATING SCREEN ANATOMY

REINFORCING PLATES

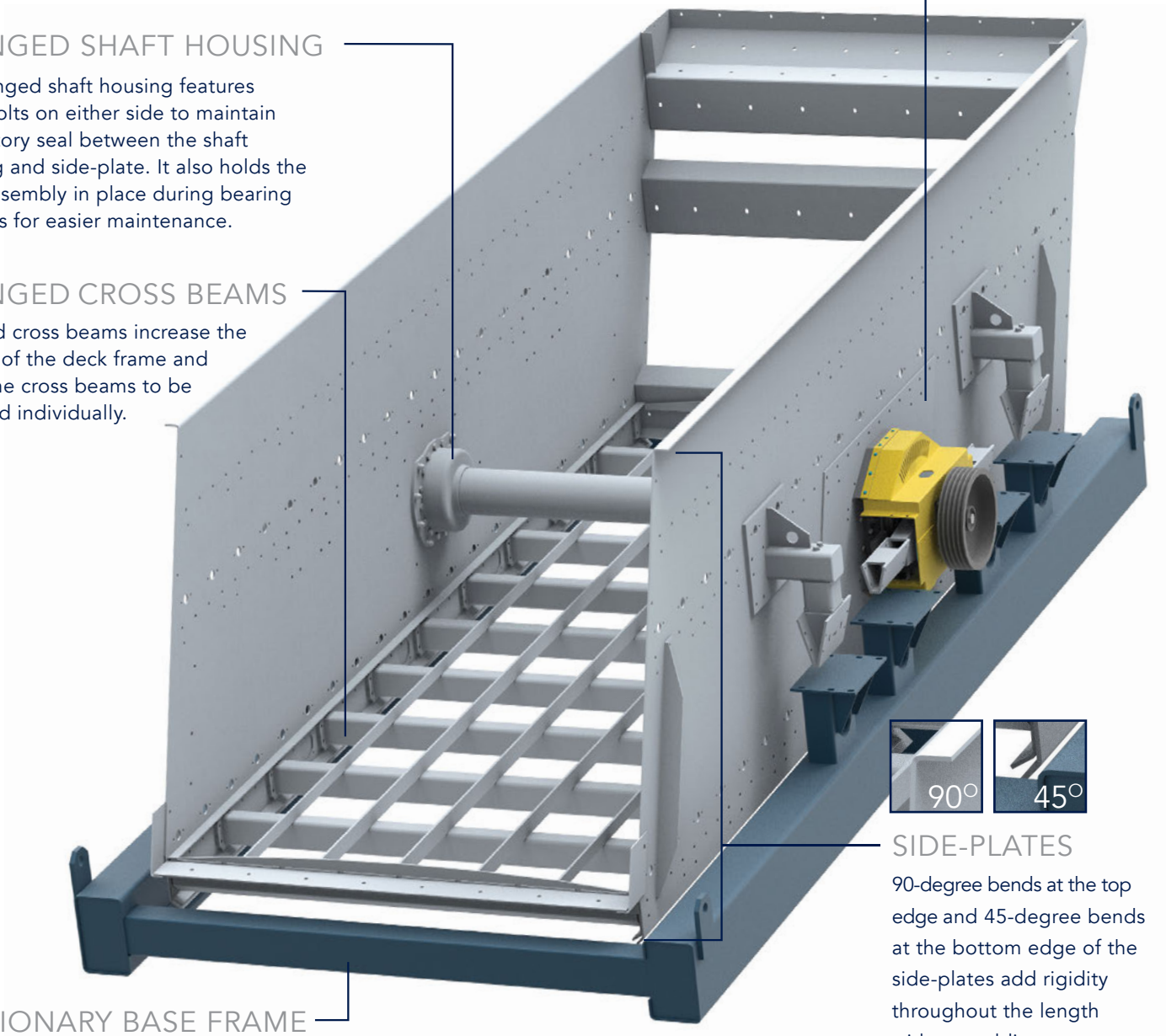
Reinforcing plates are located behind the bearing housing to sandwich the reinforcing plate, side-plate, shaft housing and flanged cross beam together without welding, adding strength.

FLANGED SHAFT HOUSING

The flanged shaft housing features Huck bolts on either side to maintain the factory seal between the shaft housing and side-plate. It also holds the shaft assembly in place during bearing changes for easier maintenance.

FLANGED CROSS BEAMS

Flanged cross beams increase the rigidity of the deck frame and allow the cross beams to be changed individually.

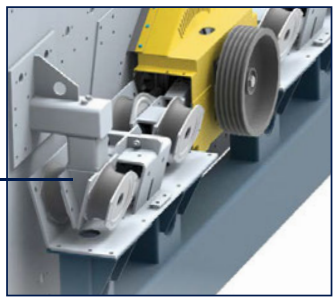


SIDE-PLATES

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

STATIONARY BASE FRAME

Each F-Class comes with a stationary base frame to support the robust machine.

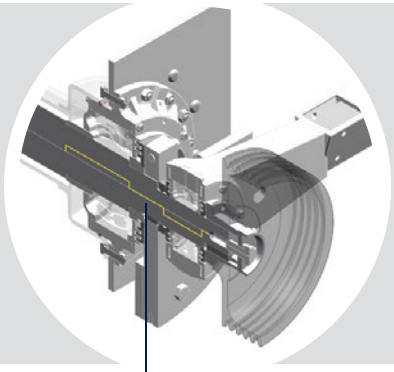


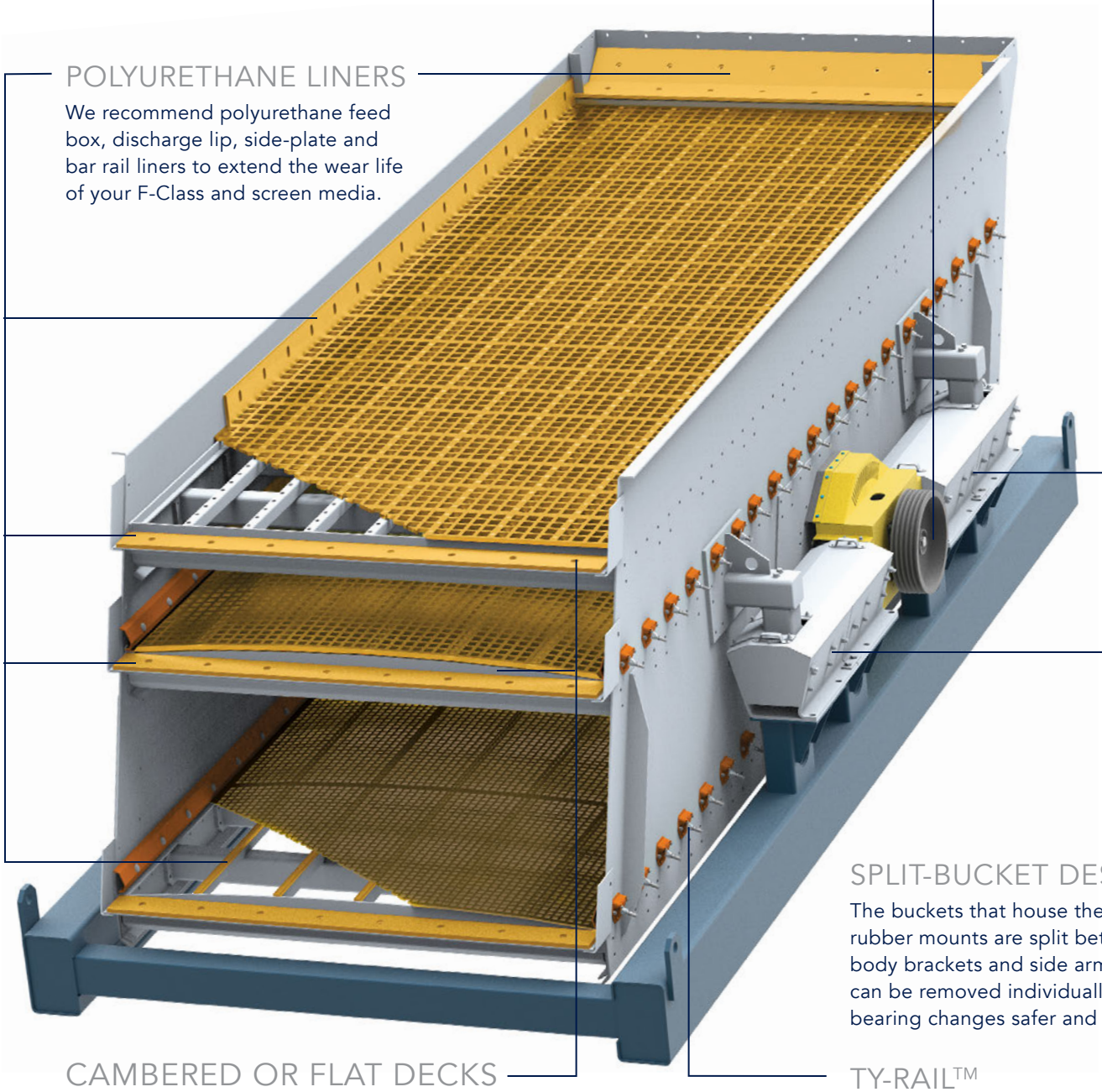
SHEAR RUBBER MOUNTING SYSTEM

Shear rubber mounting system provides smoother operation than traditional springs, reduces noise, and minimizes lateral movement, extending the life of your vibrating screen.

DOUBLE ECCENTRIC SHAFT

Supported by spherical roller bearings the double eccentric shaft creates a constant positive stroke that handles material surging without losing momentum. As the shaft turns, the screen body is forced to follow the shaft movement. While it travels upward, the counterbalance weights move in the opposite direction and create an equal force to that generated by the body. The forces cancel each other, creating a dynamically balanced system that transmits minimal to no vibration into the chassis.





POLYURETHANE LINERS

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

SPLIT-BUCKET DESIGN

The buckets that house the shear rubber mounts are split between the body brackets and side arms. They can be removed individually to make bearing changes safer and faster.

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.

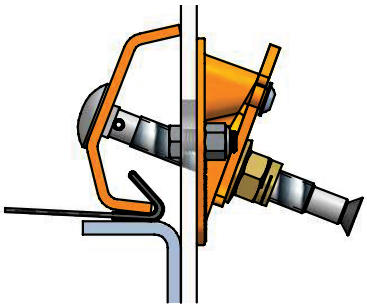
TY-RAIL™

All cambered decks come complete with the patented Ty-Rail quick-tensioning system.

F-CLASS ACCESSORIES

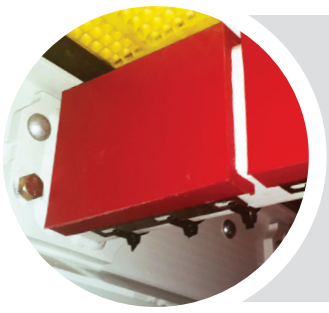
TY-RAIL™

Every side-tensioned deck on an F-Class machine is engineered with Ty-Rail. The patented quick-tensioning system cuts screen change-out time in half, drastically reducing costly downtime, and improving productivity and profit, for a fast return on investment.



UPGRADE OPTIONS

- **POLYURETHANE LINERS**
  Polyurethane feed box, side-plate, discharge lip and bar rail liners extend the wear life of your F-Class and screen media.
- **SPRAY SYSTEM**
  Effectively wash or rinse dirty or contaminated materials during the screening process.
- **STATIONARY DUST SEAL**
  Reduces dust emissions on vibrating screens.
- **BALL TRAYS**
  Reduce blinding and pegging, and ensure sharper cuts; best for classification of fine and agglomerated material; available for wire cloth screen media applications only.
- **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.



ZIP GUARD
Installing Zip Guard liners on the cross beams of your F-Class machine will reduce wear, extending the life of your machine and minimizing maintenance time.

PULSE VIBRATION ANALYSIS SERVICE

Enhance screening operations with Pulse, Haver & Boecker Niagara's innovation in vibration analysis technology. Pulse is designed for analyzing the health of all vibrating screen brands. It detects irregularities that could translate into diminished performance, decreased efficiency, increased operating costs and imminent breakdowns. We use Pulse to understand an operation's screening challenges, then work with our customers to optimize the screening operation.

- Detailed reports contain OEM recommendations for maximizing screening efficiency and minimizing unscheduled downtime.
- Onsite training provides maintenance departments the skill and confidence necessary to maintain a productive operation.

> *Customers are always looking for ways to maximize production and minimize downtime. To instill confidence in our equipment's performance with our customers, we offer ongoing support and programs, like Pulse Vibration Analysis and our Uptime 3-year warranty.*
>
> – Karen Thompson, Haver & Boecker Niagara

UPTIME 3-YEAR WARRANTY

The industry's only 3-year warranty program offers preventative maintenance services on new equipment purchases with approved applications.

- Full-service approach to equipment optimization — from parts inspection and equipment assessment to screen media evaluation.
- Complete with two regularly scheduled annual service visits by Haver & Boecker Niagara certified technicians who use Pulse vibration analysis and implement a comprehensive asset management program tailored to the equipment and environment.

THE OLD FAITHFUL SCREENING MACHINE

Manufactured in 1943, this vibrating screen is still running in an aggregates operation today. The 4-by-10-foot machine was called a Ty-Rock when R.E. Law Crushed Stone purchased it. The design evolved with technology to the F-Class, as it's known today.

F-CLASS PORTABLE PLANT

WHY USE AN INCLINED MACHINE ON A PORTABLE PLANT?

A circular motion inclined vibrating screen uses gravity to help move material down the screen deck, reducing pegging as well as energy and horsepower requirements. There are differences in the rate of material travel between an inclined and horizontal machine. At 45 to 50 feet per minute (and at a specific tonnage) a horizontal screen will experience diminished capacity due to a greater bed depth. Alternatively, on a 20-degree incline and at 70 to 75 feet per minute travel rate, an inclined screen will deliver up to 25% more capacity than a linear-stroke horizontal machine.

FEATURES

- Custom-built chassis combines F-Class vibrating screen along with periphery equipment, such as crushers and conveyors.
- Hydraulic system allows for set-up in 30 minutes, positioning the screen at an optimal angle of 20 degrees.
- Optional end-tension bottom deck available for easier maintenance and increased throughput.
- The vibrating screen can be lowered in less than 5 minutes for easy screen media change-outs.

PIDHERNEY'S

A One-Stop Shop

Pidherney's is one of Alberta's largest trucking and heavy construction companies. Started by Merv Pidherney in 1964, the company now employs 650 people and crushes 250,000 to 500,000 tons of aggregates annually. Pidherney's produces aggregates for roadbuilding projects, oilfield sites, ready mix plants and water and sewer civil works projects.

Pidherney's has an impressive fleet of equipment that includes more than 100 gravel and low-bed trucks, as well as a variety of excavators, scrapers, dozers, loaders, rock trucks, packers, crushers, screens, hydrovac trucks and more. To help keep up and expand its aggregates operations, they invested in a Haver & Boecker Niagara F-Class Portable Plant.

The F-Class Portable Plant is designed to maneuver easily between different locations and boasts a number of features and benefits, many of which were notable to the Pidherney's team. Pidherney's estimates that their new F-Class Portable Plant has helped them to increase production by 25%. The operation especially noticed the durability of the Ty-Max and Ty-Wire screen media, convenience of the Ty-Rail quick tensioning system, and the option for changing screen sections easily by lowering the machine to a horizontal position.

> *"The F-Class Portable Plant exceeded expectations. I looked at other plants and they just didn't meet our needs. I wanted a trouble-free plant and I got it. You can tell the people that built it knew what they were doing."*
>
> – Merv Pidherney, Pidherney's owner

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