

# Nordberg Vibrating Equipment European Region





## Good vibrations - great results!

Metso Minerals produces the biggest and best selection of vibrating equipment in the construction industry.

Metso's global know-how and cutting edge technology allows us to provide innovative products to customers in the quarrying and mineral processing industries. Our array of feeders, scalpers, screens and screening media give you maximum flexibility and the opportunity to tailor a solution to best suit the unique circumstances of your specific situation.

Our high performance vibrating equipment allows you to operate with maximum efficiency and at high capacity. Robust

design and construction means our equipment will achieve results for you in the toughest of applications. Simple and reliable operation ensures minimum downtime and ease of maintenance.

Metso cares about your installation. Our local support network is based close to your operation. The experience available in our global company ensures our local people have the expertise to help you achieve success from your operation.

Expect results from Metso's range of vibrating equipment.

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# Nordberg VF Series Primary Feeders



*Mechanism.*



The Nordberg VF Primary Feeders have been designed for the toughest applications capable of high capacity and the ability to process abrasive material, either in stationary or mobile plants (tracks or wheels).

## With a Nordberg VF Primary Feeder the primary plant can reach the maximum efficiency

- Speed and stroke is adjustable : better feed control of the primary crusher.
- Long stroke capability : better scalping efficiency (when the feed contains high ratio of flaky material).
- Rubber suspension : smoother shut down of the unit, safety (fingers), reduced noise, and better isolation ratio.

## User friendly

- Identical Nordberg MV Vibrators as on all Nordberg screens : standardization for maintenance.
- Automatic greasing unit (optional) : very low maintenance required (one annual check is necessary).
- Easy and fast scalping adjustability : individual grizzly bars are adjustable (spacing).

## Options

- Electrical drive or hydraulic drive.
- Frame liners can be either steel (abrasion resistant) or rubber (Trellex).
- Automatic greasing of the bearings.
- Vibrating chute to guide the grizzly undersize.

Range	Width x Length (mm)	Power (kW)	Maximum tonnage (t/h)*	Top size in the feed (mm)*	Approximate weight (kg)	Approximate weight (kg)
VF452-2V	1 000 x 5 200	15	400	700	4 600	C100, C110, NP1210
VF544-2V	1 300 x 4 400	15	600	900	4 500	C110, C125, C3055, NP1315M, NP1415M, NP1313, NP1415
VF561-2V	1 300 x 6 100				5 100	
VF661-2V	1 600 x 6 100	22	1 000	1 200	10 500	C140, C145, NP1415, C160, NP1620
VF866-2V	2 000 x 6 600	55	1 800	1 500	17 500	C160, C200, NP1620, NP2023

\*These figures are indicative because they vary depending on application.

# Nordberg VG Series Primary Scalpers



The Nordberg VG Primary Scalpers have been designed for the toughest applications capable of high capacity and the ability to process abrasive material, either in stationary or mobile plants (tracks or wheels). The Nordberg VG Primary Scalpers are able to maximize the efficiency of the primary plant across wide variations in application.

## Integration in primary scalping section

The Nordberg VG Primary scalpers can be fed by different types of feeders: push feeders (plate feeder), apron feeders, vibrating pan feeders,...

## With a Nordberg VF Primary Feeder the primary plant can reach the maximum efficiency

- Linear vibration (long stroke) with high G force (6 G): very high scalping efficiency for better feed to the crusher.
- Scalping grizzlies are inclined slightly at 5°: reduced build up when feed is sticky and contains fines and also increase capacity.
- Rubber suspension: smoother shut down of the unit, safety (fingers), reduced noise and better isolation ration.

## User friendly

- Identical Nordberg MV Vibrators as on all Nordberg screens: standardization for maintenance.
- Automatic greasing unit (optional): very low maintenance required (one annual check is necessary).
- Easy and fast scalping adjustability: individual grizzly bars are adjustable (spacing).

## Options

- Electrical drive or hydraulic drive.
- Automatic greasing of the bearings.

Range	Width x Length (mm)	Amount of grizzly sections (in cascade)	Maximum tonnage (t/h)*	Maximum top feed size (mm)*	Crusher feed
VG527-2V	1 300 x 2 700	2	500	900	C100, C110, C125, C3055,
VG540-3V	1 300 x 4 000	3	600	900	NP1315M, NP1415M, NP1313, NP1415
VG645-3V	1 600 x 4 500	3	1 000	1 200	C140, C145, NP1415
VG745-3V	1 800 x 4 500	3	1 200	1 350	C145, C160, NP1620
VG860-4V	2 000 x 6 000	4	1 500	1 500	C160, C200, NP1620, NP2023

\*These figures are indicative because they vary depending on application.

# Nordberg TK Series Feeders and Scalpers



The Nordberg TK Series Feeders and Scalpers complete the Nordberg VF Series Feeders and the Nordberg VG Series Scalpers for smaller primary plants.

They are more suited to mobile units (tracks or wheels) but also can be installed in stationary plants.

The Nordberg TK Series Scalpers are very efficient to remove the waste material by the use of vibrating grizzly rods or with tensioned mesh.

	Range	Dimensions (mm)	Mechanism	Tonnage (t/h)*	Top size in the feed (mm)*	Crusher feed
Primary feeders with grizzly bars	TK08-27-2V	800 x 2 700	V150 mechanism (hydraulic driven) or electrical unbalanced motors	250	450	C80
	TK08-32-2V	800 x 3 200				C95
	TK09-32-2V	900 x 3 200	V150 mechanism (hydraulic driven)	350	500	C95
	TK12-32-2V	1 200 x 3 200	V150 mechanism (hydraulic driven)	500	350	NP1110M
	TK11-42-2V	1 100 x 4 200	V150 mechanism (hydraulic driven) or electrical unbalanced motors	500	700	C105, NP1213M
	TK11-48-2V	1 100 x 4 800				Electrical unbalanced motors
Pan feeders	TK08-32	800 x 3 200	Electrical unbalanced motors	250	450	Secondary or Tertiary crushers
	TK10-15	1 000 x 1 500		350	170	
	TK10-20	1 000 x 2 000		300	170	
	TK12-26	1 200 x 2 600		500	170	

	Range	Dimensions (mm)	Mechanism	Tonnage (t/h)*	Top size in the feed (mm)*	Installed underneath a primary feeder to make a second separation
Scalpers	TK10-15-2V	1 000 x 1 500	Electrical unbalanced motors	250	250	VF452-2V
	TK13-20-3V	1 300 x 2 000		350	250	VF544-2V, VF561-2V
	TK16-20-2	1 600 x 2 000		500	250	VF661-2V, VF866-2V

\*These figures are indicative because they vary depending on application.

# Nordberg DF Series Screens



The Nordberg DF Series Screens have a very robust design, which allow them to operate under tough conditions (primary or secondary).

They particularly perform very well when used to remove the fines between two crushing stages.

## Performances

- Inclined banana screen having two slopes per deck (DuoFlo): high capacity.
- Very efficient screen when there is a high content of fines in the feed.
- Very compact screen: easy to install.

## User friendly

- Electrical unbalanced motors: simple and reliable.

## Options

- Rubber flat panels (Panelcord) for primary duty.
- Dust encapsulation (Trellex).
- Steel support structure.

Range	Length x Width (mm x mm)	N° of decks	Power (kW)	Weight (kg)	Vitesse (T/min)
DF1210P	1 200 x 1 000	3 (rubber on top deck)	2 x 2.7	1 300	1 000
DF1210S	1 200 x 1 000	2 (wire on top deck)	2 x 2.3	1 000	1 000
DF2012P	2 000 x 1 200	3 (rubber on top deck)	2 x 4.5	3 000	1 000
DF2012S	2 000 x 1 200	3 (wire on top deck)	2 x 2.7	1 600	1 000
DF2016P	2 000 x 1 600	3 (rubber on top deck)	2 x 6.6	4 800	1 000
DF2016S	2 000 x 1 600	3 (wire on top deck)	2 x 6.6	4 600	1 000
DF2616S	2 000 x 1 600	3 (wire on top deck)	2 x 6.6	4 500	1 000



The Nordberg CVB Series Screens are well proven for any type of application. Their simple and robust design have made them the most popular Nordberg screen.

## Design

- Inclined screen (18°), vibratory mechanism is located at center of gravity: circular motion in all points of the screen.
- Available with 2 or 3 or 4 decks.
- Identical Nordberg MV vibrators utilized on all Nordberg screens and feeders: standardization for maintenance.
- Automatic greasing unit (optional): very low maintenance required (one annual check is necessary).
- Side plates without any welding and huckbolt assembly: very safe and reduce possible fatigue stress.

## Options

- Tensioned rubber or polyurethane panels (Trellex Trellecord).
- Modular screening Trellex LS panels (rubber or polyurethane).
- Dust encapsulation: stationary type (Trellex) or vibrating type (stretched canvas).
- Spray pipes.
- Rubber lining.
- Galvanization.

## CVB version for primary duty («P»)

- Flat top deck: steel plate or rubber panels (Panelcord).
- Higher side plates.
- Reinforced mechanism and reinforced suspension.

Range	Width x Length (mm)	Surf. (m <sup>2</sup> )	Decks	Power (kW)	Top size in the feed (mm)*	Maximum separation	Maximum tonnage (t/h)*	Vibration type	Acceleration (G)	Approximate weight (kg)
CVB1540	1 500 x 4 000	6	1,2,3 or 4	15	About 200 mm for regular version and about 400 mm for primary version	About 70 mm for regular version and about 150 mm for primary version	300	Circular motion	3.0 < G < 5.0	3 150 to 5 000
CVB1845	1 800 x 4 500	8		15-22			400			4 200 to 6 800
CVB2050	2 000 x 5 000	10		15-22			600			4 700 to 7 600
CVB2060	2 000 x 6 000	12		22-30			800			6 500 to 10 400
CVB2661	2 630 x 6 100	16		22-30			1 000			11 000 to 15 000

\*These figures are indicative because they vary depending on application.

# Nordberg TS Series Screens



The Nordberg TS Series Screens were launched in 1999 and continue to show unique design in the market making them the most popular screens.

## Design

- Banana screen style ; each deck is consists of 3 slopes (different angles).
- Vibratory mechanism is located above the centre of gravity: variable elliptical motion.  
The material automatically speeds up at feed end and slows down at discharge end.
- Available with 2 or 3 decks.
- Identical Nordberg MV Vibrators utilized on all Nordberg screens and feeders: standardization for maintenance department.
- Automatic greasing unit (optional): very low maintenance required (one annual check is enough).
- Side plates without any welding and huckbolt assembly: very safe and reduce possible fatigue stress.
- Rubber suspension: smoother shut down of the unit, safety (fingers), reduced noise, and better isolation ratio.

## Options

- Tensioned rubber or polyurethane panels (Trellex Trellecord).
- Modular screening Trellex LS panels (rubber or polyurethane).
- Dust encapsulation: stationary type (Trellex) or vibrating type.
- Rubber lining.
- Galvanization.

TS screen	Deck dimension (mm)	Area (m <sup>2</sup> )	Decks	MV	Motor (Kw)	Weight (T)
TS2.2	1 500 x 5 000	7.5	2	MV2	15	5
TS2.3			3			6
TS3.2	1 800 x 6 000	10.8	2	MV3	22	8
TS3.3			3	MV3	22	10
TS4.2	2 400 x 6 000	14.4	2	MV4	30	9
TS4.3			3	MV4	30	12
TS5.2	2 400 x 8 300	20	2	MV4	30	16
TS5.3			3	2 x MV3	2 x 22	20

\*These figures are indicative because they vary depending on application.

# Nordberg FS Series Screens



The Nordberg FS Series Screens are high performance horizontal screens by the help of their elliptical vibration. The 1:3 ellipse ratio is very tough and contributes to struggle against blinding and plugging when material is very sticky or flaky. For information the traditional horizontal screens operate under pure linear motion which is less efficient.

## Design

- Triple shaft line synchronised with gears : elliptical vibration.
- Vibration is adjustable in angle and in shape (ellipse ratio) depending on application.
- Identical Nordberg MV vibrators utilized on all Nordberg screens and feeders: standardization for maintenance.
- Automatic greasing unit optional: very low maintenance required (one annual check is necessary).
- Side plates without any welding and huckbolt assembly: very safe and reduce possible fatigue stress.
- Rubber suspension: smoother shut down of the unit, safety (fingers), reduced noise and better isolation ratio.
- Available in 2 or 3 decks.

## Options

- Tensioned rubber or polyurethane panels (Trellex Trellecord).
- Modular screening Trellex LS panels (rubber or polyurethane).
- Dust encapsulation: stationary type (Trellex).
- Spray pipes.
- Rubber lining.
- Galvanization.

Range	Width x Length (mm)	Surf. (m <sup>2</sup> )	Decks	Power (kW)	Top size at the feed (mm)*	Maximum separation	Maximum tonnage (t/h)*	Acceleration (G)	Approximate weight (kg)
FS202	1 631 x 4 900	8	2	30	About 200 mm	About 60 mm	300	from 5.5 to 6.5	6 500
FS203			3	30			400		8 500
FS282	1 631 x 6 100	10	2	30			400		8 300
FS283			3	37			500		9 500
FS302	1 936 x 6 100	11.8	2	37			500		9 000
FS303			3	37			600		11 500
FS352	2 242 x 6 100	13.7	2	37			600		11 800
FS353			3	55			700		14 500
FS402	2 547 x 6 100	15.5	2	55			700		15 000
FS403			3	55			800		17 000

\*These figures are indicative because they vary depending on application.

## The MV Safer, Faster, Easier

### Real cartridge design

This encapsulated design creates a no-bearing change-out environment. It is a true cartridge that is capable of being removed and a new unit installed within one hour, drastically reducing costs.

### Longer bearing life

Four bearings per shaft line provide a longer bearing life, allowing for larger load capacities while lowering operation costs. The bearings are located centerline of the side plate for equal loading.

### Adjustable Stroke – Easiest Stroke Adjustment in the Industry!

The lightweight aluminum end cap is easily removed by hand for a quick stroke adjustment. The MV allows the Metso screens to be adjusted to fit any application.

### Grease Lubrication System

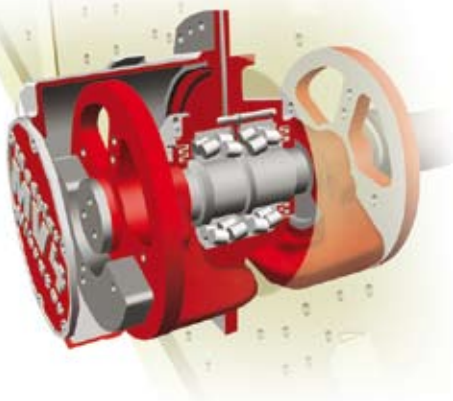
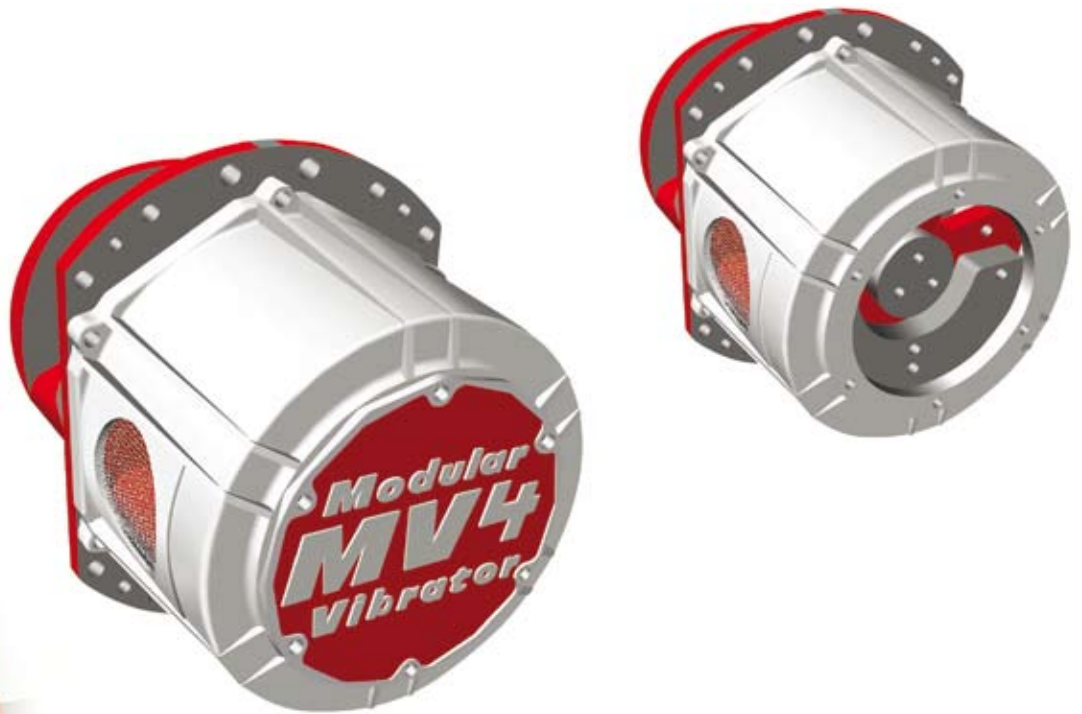
Individual bearing systems eliminate lubrication cross contamination. No refill or draining required. Once a week grease schedule.

### Safety

Risk reduction through safer operating and maintenance! The MV is a one-piece modular construction that reduces risk without the traditional multiple parts replacement and repairs.

### Exchange Program

The MV Exchange Program allows you to trade your used vibrator for a credit towards a new or factory refurbished unit. This program keeps your screen at peak performance levels.



# The MV Exchange Programm

## The service

After several years of operations, it is possible to renew the long bearing life of the screen to startup quality.

Simply by replacing the MV Vibrator through the Metso Minerals Exchange Programm, the screen will be brought back to original specifications.

To guarantee this service the spare parts department of Metso Minerals keep MV vibrators in stock to insure easy and fast replacement to reduce down time.

Metso Minerals will send all your tools, accessories and a six month / 1,000 hour warranty with the new vibrator unit.



## The benefit

	MV vibrators: Real cartridge design	Conventional shaft line
Comments	only the damaged vibrator must be replaced because of the modular grease lubrication design	All the bearings must be replaced because of common oil bath communication.
Total downtime	3 to 6 hours	12 to 24 hours
Expertise required	low	high
Tools required*	lift tool, hand tools	crane, workshop facility, fitting press, etc.
Contamination risk for new bearings	no contamination	possible oil contamination
Warranty	yes, 6 months / 1 000 hours	No

\* All required accessories and tools are included in the package.

# Experience makes the match




## Trellex Screening Media and Metso Screens – naturally better together

**Trellex LS.** Trellex LS modules are the result of more than 50 years of experience and development. Optimized for Metso Screens, Trellex LS helps you achieve higher volume processing with minimal interruptions. And thanks to the industry's only true global sales and support network, Trellex LS modules are always available quickly and conveniently wherever you are. Make sure your Metso Screen is always producing at its cost effective best. Match it with Trellex LS screening modules.

- Open cast polyurethane design for exceptional performance and durability
- Injection moulded rubber ensures consistent material performance properties throughout
- Wide range of aperture pattern and opening choices
- Minimal maintenance design keeps costs down and production up
- Optional stepped deck configuration for more effective throughput of fines

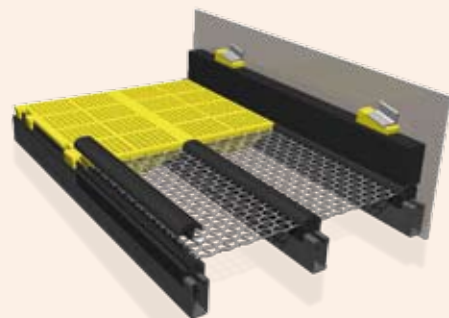


### Trellex LS – Modular solutions

Module size [mm]	Thickness [mm]	Aperture range [mm]	Type of aperture
305 X 610 300 X 500 300 X 610	60 40 30	0.3 - 80	 FR  STS  SLS

### Trellex LS wire inserts

The Trellex LS wire insert system is an effective way to fine tune your deck configuration in the shortest possible time. The Trellex LS modular system also includes several modular accessories such as deflectors, dambar arrangements, wedged sideliners and wedges.



## Trellex Panel Solutions

**Trellex PCO** – the original – has proven its capability in most coarse screen applications around the world.



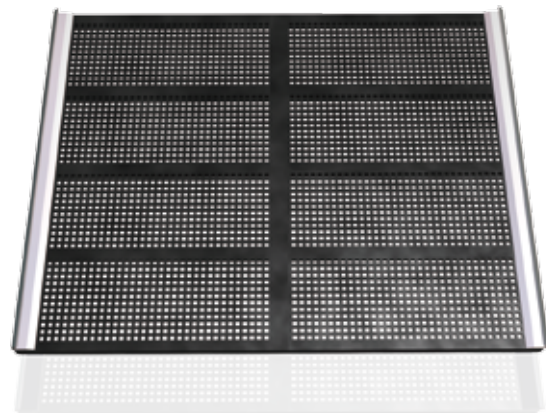
Trellex PCO is available with a wide range of moulded apertures, designed to minimise the risk of pegging and maximise throughput. The thickest panels also have rider bars on the upper surface to increase life in coarse screen applications. All Trellex PCO panels are custom made to match machine size and operating conditions. A complete and well proven attachment system simplifies both installation and maintenance.

Choose Trellex PCO and Metso Screens for minimal downtime and lowest cost per ton.

Module size [mm]	Thickness [mm]	Aperture range [mm]	Type of aperture
Custom	80	20 - 150	
max.	70		
L=1220	55		
max.	45		
W=1800	37		

## Trellex Tensioned Systems

The Trellex tensioned program is the first choice when you want longer lifetime and fewer problems with pegging or blinding.



Product	Thickness [mm]	Aperture range [mm]	Type of aperture
TCO	60	5 - 200	
	50		
	35		
	25		
	20		
	15		
	12		
	10		
SFX	8	3,2 - 25	
	5,5		
	3,5		

**Trellex TCO** is the all-round screen media for use in fine, intermediate and coarse screening applications. It's made of wear resistant rubber and features special cord reinforcement that facilitates tensioning and also maintains the proper tension without the need for continuous adjustments. Trellex TCO is also available in polyurethane.

**Trellex SFX** is for use in fine screening of materials that tend to cause conventional wire cloth to blind over. Both Trellex TCO and SFX are available with different tensioning hooks for both side- and length-tensioned design.

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