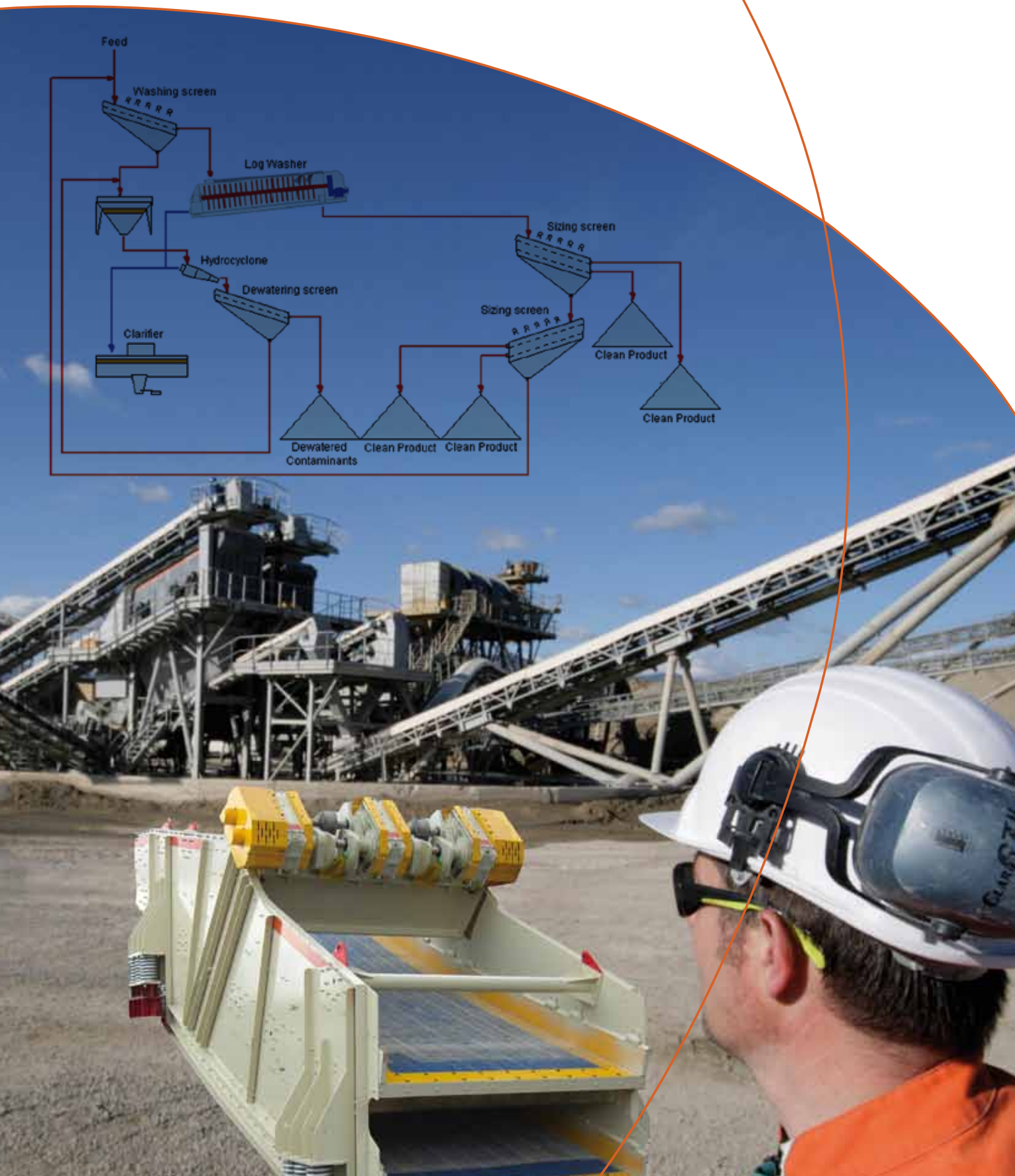
Selection Guideline

Metso Opti-Flo® Range

metso
Expect results



Over 125 years of proven designs from industry trusted brands

Engineering Customer Success

Metso Mining & Construction Technology is the world's largest producer of vibrating equipment. It is also the Industry Benchmark.

Offering the most technologically advanced Products and supported by dedicated people with unique expertise, Metso can work with our customers to solve their screening needs.

This application guide is to be used to help you select the correct vibrating product for the required application.

Created from the designs of:

- **Allis-Chalmers**
- **GFA**
- **Hewitt Robins**
- **Nordberg**
- **Svedala**
- **Tyler**

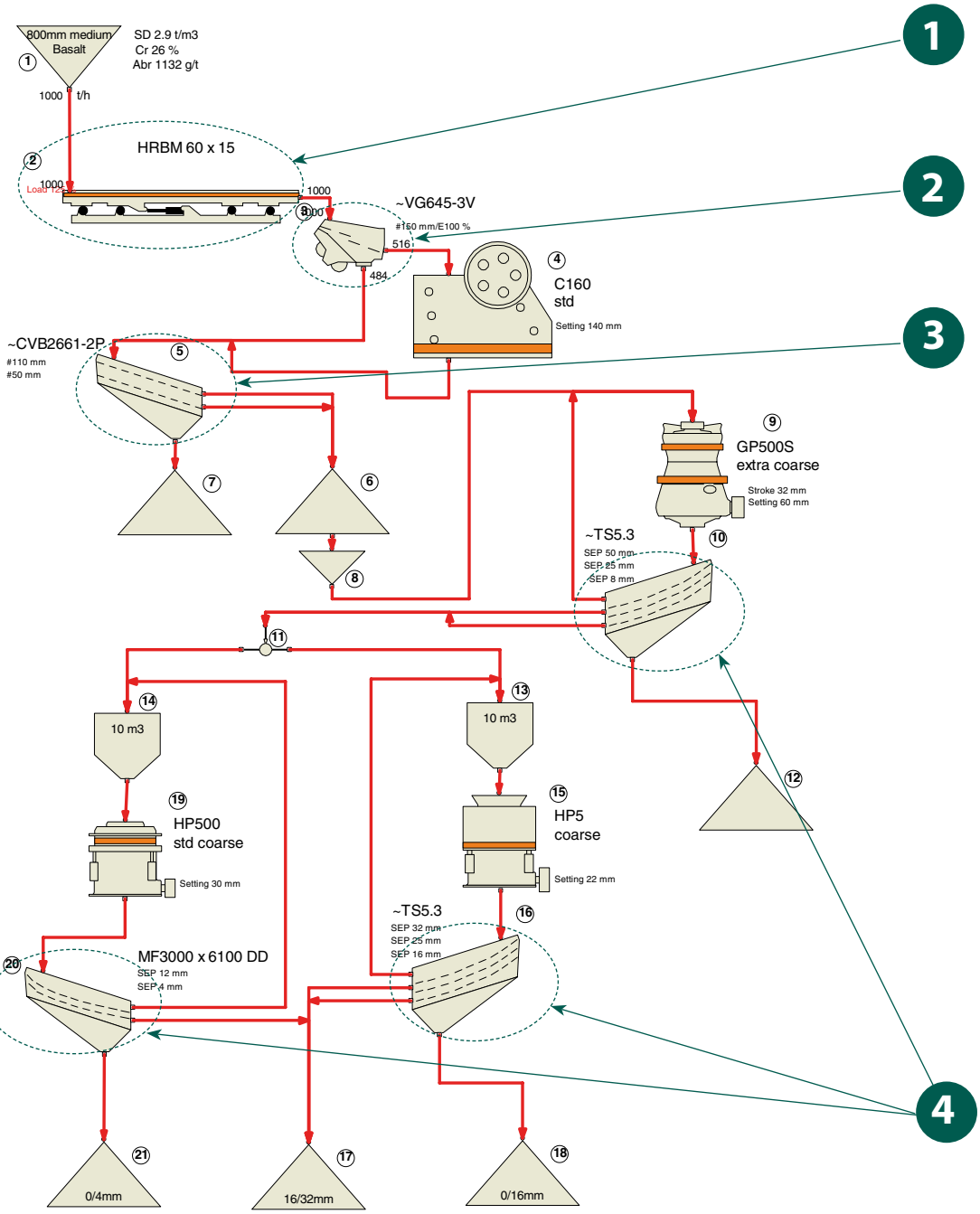
Our Vision:
to be the industry benchmark

Our Solution:
we have combined the global knowledge, history and expertise to create the Metso Opti-Flo ™ range

STEP 1- IDENTIFY THE PROCESS TYPE (FROM PAGE 4 TO 6)

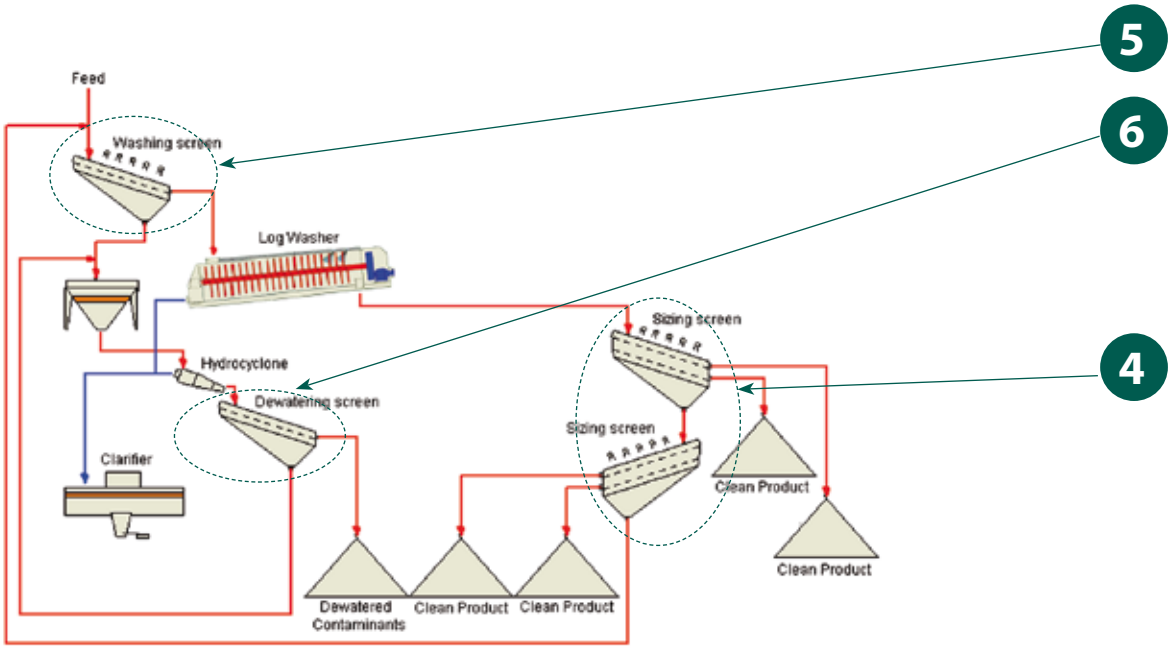
Here are typical flow sheets which show the main categories.
Select the required category and then choose the machines from the product family.

Crushing Circuit



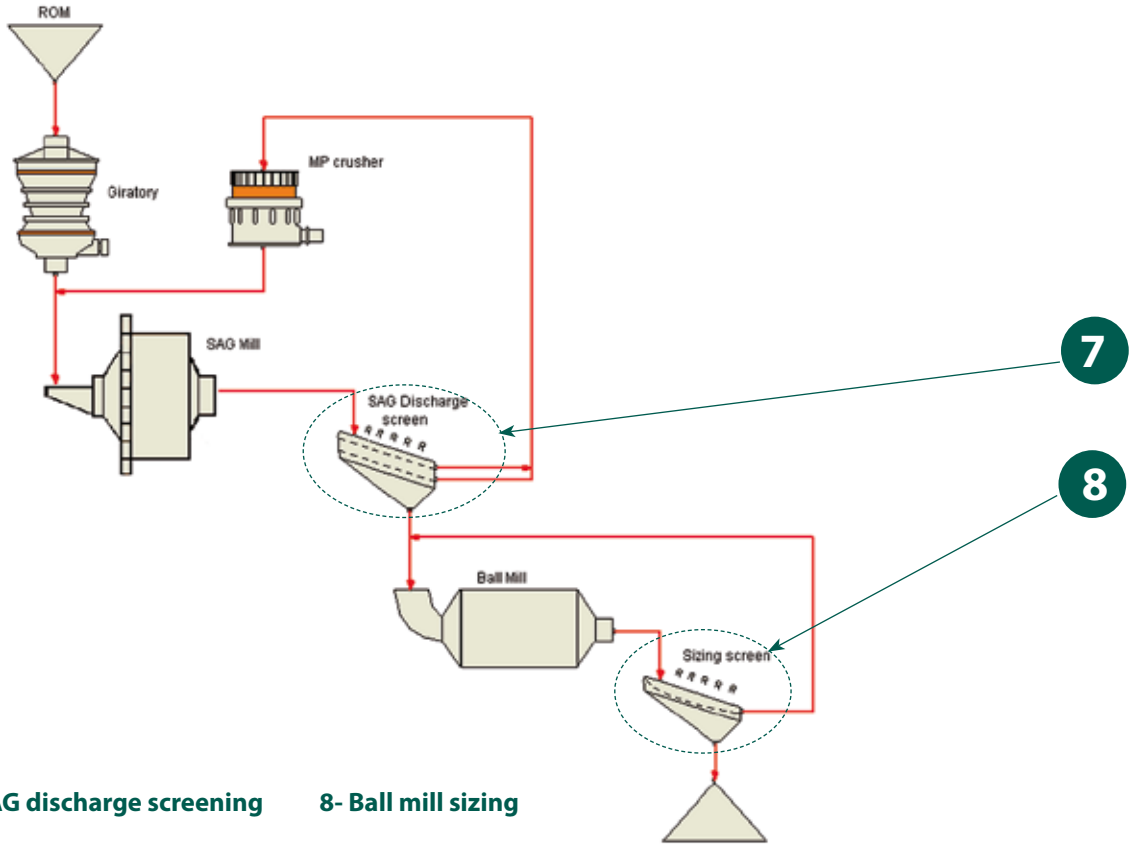
1- Primary feeding **2- Grizzly scalping** **3- Primary screening** **4- Technical : final sizing**

Washing Circuit



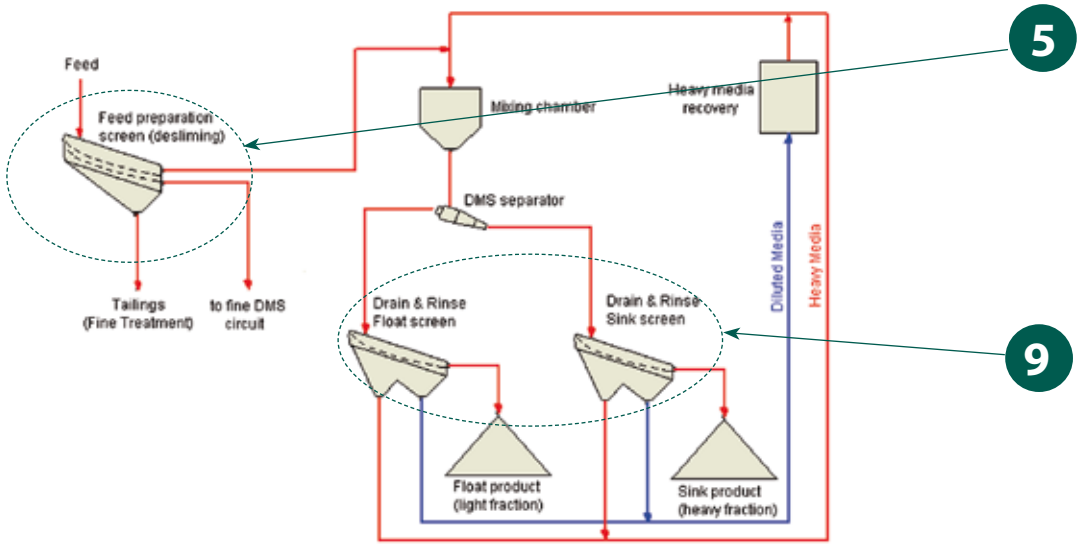
5- Washing screen **6- Dewatering screen**

Mill Circuit



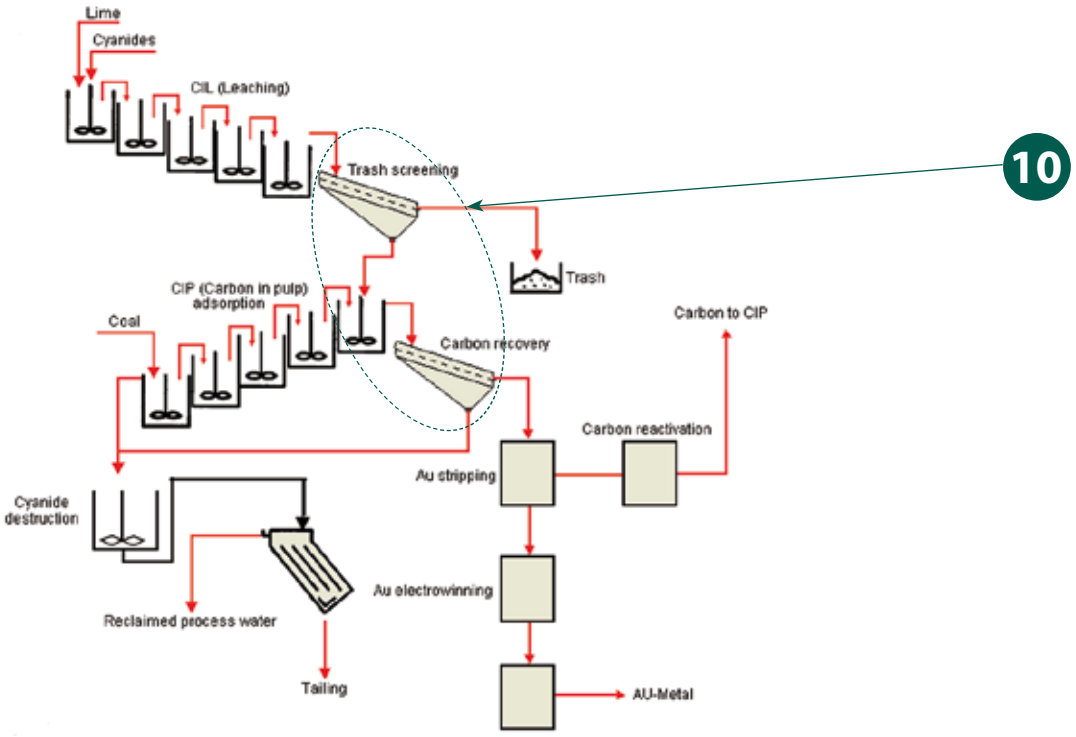
7- SAG discharge screening **8- Ball mill sizing**

Dense media separation



9- Drain & rinse screening

Carbon in leaching - Carbon in pulp circuit (CIL/CIP



10- Trash & carbon recovery screening

OPTI-FLO ™ product family
definition & classification:

Banana screens

DF, DF-P, DS, TS & MF

Curved «banana» deck linear or elliptical motion screens

Inclined screens

CVB-P, RF-P, CVB & RF

Inclined deck circular motion screens

Horizontal screens

FS & LH

Horizontal linear or elliptical motion screens

Feeders and Grizzly's

TK & VG

Linear motion grizzly scalpers

TK, PF, VF & LH.G

Linear motion feeders

HRBM

Push feeders

OPTI-FLO™										
 Products	Primary feeding 1	Grizzly scalping 2	Primary screening 3	Technical final sizing 4	Washing screen 5	Dewatering screen 6	SAG discharge screening 7	Ball mill sizing 8	Drain & rinse screening 9	Trash & carbon recovery screening 10
Banana screens										
DF				X						
DF-P			X							
DS				X						
TS				X	X					
MF			X	X	X			X	X	
Inclined screens										
CVB				X	X					
CVB-P			X	X	X					
RF				X	X					
RF-P			X	X	X					
Horizontal screens										
FS				X	X					
LH				X	X	X	X	X	X	X
Feeders and Grizzly's										
LH.G	X	X								
TK	X	X								
PF	X									
VF	X									
VG		X								
HRBM	X									

Identify the duty

Fine tune the selection with expected working conditions.

Standard Duty

Ideal for low abrasion index material (0 to 800 gr/ton) and classical working conditions. From 1 to 2 shifts per day

Construction

Heavy Duty

Hard working conditions with high abrasion index material (800 to 2000 gr/ton); from 1 to 3 shifts per day.

Mining & Construction

Extra Heavy Duty

Extreme working conditions (24/7) with high abrasion index material. (more than 2000 gr/ton)

Mining

Identify the process type (from page 10 to 14)

After having chosen the category and duty, the third step is to select the range and suitable machine from the following tables. Then you'll find detailed descriptions for each product.

Product comparison

	Machine specification			Installation		Maintenance		Performance		
Products	Duty	Deck design	Motion	Easy installation	Low dynamic loads	Easy screening media & liners replacement	Machinery service	Capacity	Efficiency	Energy saving
Banana screens										
DF	SD	Curved	Linear	+++	++	++	+	+	++	+++
DF-P	SD	Curved	Linear	+++	++	++	+	++	+	++
DS	SD-HD	Curved	Elliptical	+	++	++	+++	++	++	+++
TS	SD-HD	Curved	Elliptical	+	++	+++	+++	+++	+++	+++
MF	HD-XHD	Curved	Linear	+	+++	+++	+++	+++	+++	+
Inclined screens										
CVB	SD-HD	Inclined	Circular	++	+++	++	++	++	++	++
CVB-P	SD-HD	Inclined	Circular	++	+++	++	++	++	++	++
RF	HD-XHD	Inclined	Circular	++	++	++	+	+++	++	++
RF-P	HD-XHD	Inclined	Circular	++	++	++	+	+++	++	++
Horizontal screens										
FS	SD-HD	Horizontal	Elliptical	+++	+	++	+	++	+++	+
LH	HD-XHD	Horizontal	Linear	++	+++	+++	+++	+++	++	+
Feeders and Grizzly's										
LH.G	HD-XHD	Flat	Linear	++	+++	+++	+++	+++	++	+
TK	SD-HD	Flat	Linear	++	++	+	+++	+	++	++
PF	SD-HD	Flat	Linear	++	++	+	++	++	+++	++
VF	SD-HD	Flat	Linear	++	++	+	++	++	++	++
VG	SD-HD	Flat	Linear	++	++	+	++	+++	+++	++
HRBM	HD-XHD	Flat	Linear*	++	+++	+	+	+++	+++	+

Range details

Banana screens

Application / Duty	Primary feeding 1	Grizzly scalping 2	Primary screening 3	Technical final sizing 4	Washing screen 5	Dewatering screen 6	SAG discharge screening 7	Ball mill sizing 8	Drain & rinse screening 9	Trash & carbon recovery screening 10
sD			DF-P	DF DS TS	TS					
HD			DF-P MF	DS MF TS	MF TS			MF	MF	
XHD			MF	MF	MF			MF	MF	

Machine	Capacity				Max feed rate* (t/h)
	Width (m)		Surface (m^2)		
	From	To	From	To	
DF	1.0	1.6	1.2	4.2	400
DF-P	1.0	1.6	1.2	3.2	350
DS	1.8		11		650
TS	1.5	3.0	7.5	25	1200
MF	1.8	4.2	11	36	4400

*Note : Max feed rate values are given for material bulk density 1.6t/m^3 in dry conditions and are indicatives only.

Range details

Inclined screens

Application / Duty	Primary feeding 1	Grizzly scalping 2	Primary screening 3	Technical final sizing 4	Washing screen 5	Dewatering screen 6	SAG discharge screening 7	Ball mill sizing 8	Drain & rinse screening 9	Trash & carbon recovery screening 10
sD			CVB-P	CVB	CVB					
HD			CVB-P RF-P	CVB RF	CVB CVB-P RF & RF-P					
XHD			RF-P	RF	RF RF-P					

Capacity

Machine	Width (m)		Surface (m²)		Max feed rate* (t/h)
	From	To	From	To	
CVB	1.5	2.6	6	16	1000
CVB-P	1.5	2.6	6	16	1200
RF	1.8	3.0	8.7	22	1300
RF-P	1.8	3.0	8.7	18	1600

*Note : Max feed rate values are given for material bulk density 1.6t/m³ in dry conditions and are indicatives only.

Horizontal screens

Application / Duty	Primary feeding 1	Grizzly scalping 2	Primary screening 3	Technical final sizing 4	Washing screen 5	Dewatering screen 6	SAG discharge screening 7	Ball mill sizing 8	Drain & rinse screening 9	Trash & carbon recovery screening 10
sD				FS	FS					
HD			LH	FS LH	FS LH	LH	LH	LH	LH	LH
XHD			LH	LH	LH	LH	LH	LH	LH	LH

Capacity

Horizontal screens	Width (m)		Surface (m^2)		Max feed rate* (t/h)
	From	To	From	To	
FS	1.6	2.5	8.0	15.5	750
LH	1.8	3.6	8.5	26	1150 (dry ore)

*Note : Max feed rate values are given for material bulk density 1.6t/m^3 in dry conditions and are indicatives only.

Feeders and Grizzly's

Application / Duty	Primary feeding 1	Grizzly scalping 2	Primary screening 3	Technical final sizing 4	Washing screen 5	Dewatering screen 6	SAG discharge screening 7	Ball mill sizing 8	Drain & rinse screening 9	Trash & carbon recovery screening 10
sD	TK PF & VF	TK VG								
HD	TK-PF VF-HRBM	TK VG								
XHD	HRBM LH.G	LH.G								

Capacity

Feeders with grizzly section	Width (m)		Quantity of grizzly sections	Max feed rate* (t/h)
	From	To		
TK	0.8	1.2	2	500
VF	1.0	2.0	1 or 2	1800
LH.G	1.8	3.0	1, 2 or 3	4000

Grizzly scalpers	Width (m)		Quantity of grizzly sections	Max feed rate* (t/h)
	From	To		
TK	1.0	1.6	2 or 3	500
VG	1.3	2.0	from 2 to 4	1500

Pan feeders & push feeder	Width (m)		Length (m)		Max feed rate* (t/h)
	From	To	From	To	
Pan feeder: TK	0.8	1.6	1.5	3.2	500
Pan feeder: PF	1.3	2.0	2.5	6.1	1500
Push feeder: HRBM	1.2	1.9	6.0	7.0	1300

*Note : Max feed rate values are given for material bulk density 1.6t/m^3 in dry conditions and are indicatives only.

Banana screens
Curved deck screens

DF
DF-P
DS
TS
MF

Banana DF screens

The Metso DF Series Screens have a very robust and compact design, which allow them to operate under tough conditions. They particularly perform very well when used to remove the fines between two crushing stages.

Product comparison

- 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
- Linear motion (self synchronization)

Options

- Dust encapsulation (Trellex)

Machine	L x W (m)	Decks	Power (kW)	Operating speed (rpm)	Weight (kg)	Capacity (tph)	Top deck maximum opening (mm)
DF1210S	1.2 x 1.0	2	2 x 2.3	1000	1000	150	60
DF2012S	2.0 x 1.2	3	2 x 2.7	1000	1600	300	60
DF2016S	2.0 x 1.6	3	2 x 6.6	1000	4500	350	60
DF2616S	2.6 x 1.6	3	2 x 6.6	1000	4600	400	60

*Note : Max feed rate values are given for material bulk density 1.6t/m^3 in dry conditions and are indicatives only.

Banana DF-P screens

All the features of the Duo-Flo dedicated to primary duty.

Machine	L x W (m)	Decks	Power (kW)	Operating speed (rpm)	Weight (kg)	Capacity (tph)	Top deck maximum opening (mm)
DF1210P	1.2 x 1.0	3	2 x 2.7	1000	1300	150	100
DF2012P	2.0 x 1.2	3	2 x 4.5	1000	3000	250	100
DF2016P	2.0 x 1.6	3	2 x 6.6	1000	4800	350	125

*Note : Max feed rate values are given for material bulk density 1.6t/m^3 in dry conditions and are indicatives only.

Options

- Rubber flat panels (Panelcord®) or perforated steel plates on top deck.

Banana DS screens

The Metso DS Series Screens were launched in 1999 and continue to be a unique design in the mobile screening market (Metso ST620) making, them the most popular high capacity screens.

Design

- Banana curved decks; each deck consists of 2 slopes
- Vibrators are located above the centre of gravity which generates the variable elliptical motion
- The material speed is high at the feed end and slows down at discharge end creating very high capacities compared to normal screens
- **MV** Vibrators (Modular cartridge design, grease lubricated)
- Side plates without welding and huck-bolted assembly. Very safe regarding fatigue stress
- Rubber suspensions: smoother shut down, safer, noiseless

Options

- Hydraulic drive
- Tensioned rubber or polyurethane panels (Trellex Trellecord)
- Flat bolted panels P* version (Trellex Panelcord)
- Rubber protected cross members
- Galvanized body components

Machine	L x W (m)	Decks	Power (kW)	MV vibrator	Weight (kg)	Capacity (tph)	Top deck maximum opening (mm)
DS303	1.8 x 6.1	3	22	MV3	8000	550	75
DS303P	1.8 x 6.1	3	22	MV3	9000	650	150

*Note : Max feed rate values are given for material bulk density 1.6t/m^3 in dry conditions and are indicatives only.

Banana TS screens

The Metso TS Series Screens were launched in 1999 and continue to be a unique design in the screening market making, them the most popular high capacity screens.

Design

- Banana curved decks; each deck consists of 3 slopes
- Vibrators are located above the centre of gravity which generates the variable elliptical motion
- The material speed is high at the feed end and slows down at discharge end creating very high capacities compared to normal screens.
- Available with 2 or 3 decks
- **MV** Vibrators (Modular cartridge design, grease lubricated)
- Side plates without welding and huck-bolted assembly. Very safe regarding fatigue stress
- Rubber suspensions: smoother shut down, safer, noiseless

Options

- Tensioned rubber or polyurethane panels (Trellex Trellecord)
- Modular panels, Trellex LS rubber or polyurethane
- Dust encapsulation
- PU protected cross members
- Wet screening (spray pipes)
- Galvanized body components
- Automatic greasing system

Machine	W x L (m)	Decks	Power (kW)	MV vibrator	Weight (kg)	Capacity (tph)	Top deck maximum opening (mm)
TS2.2	1.5 x 5.0	2	15	MV2	5000	600	75
TS2.3	1.5 x 5.0	3	15	MV2	6000	600	75
TS3.2	1.8 x 6.0	2	22	MV3	8000	750	75
TS3.3	1.8 x 6.0	3	22	MV3	10000	750	75
TS4.2	2.4 x 6.0	2	30	MV4	9000	1000	75
TS4.3	2.4 x 6.0	3	30	MV4	12000	1000	75
TS5.2	2.4 x 8.3	2	30	MV4	16000	1300	75
TS5.3	2.4 x 8.3	3	2 x 22	2 x MV3	20000	1300	75
TS6.2	3.0 x 8.3	2	2 x 22	2 x MV3	19000	1500	75
TS6.3	3.0 x 8.3	3	2 x 30	2 x MV4	25000	1500	75

*Note : Max feed rate values are given for material bulk density 1.6t/m^3 in dry conditions and are indicatives only.

Banana MF screens

The Metso MF screens with multi slope deck inclinations, usually called the "banana Screen" strongly surpasses in performance traditional constant slope screens. The powerful linear vibration generated by the innovative **ML (Metso Linear) exciters** combine high throughput without blinding. The ML exciter is infinitely adjustable for process optimization.
MF screens are specially suited for large material volumes with a high percentage of undersize in the feed material. Normally, MF screens are designed to accept screen media like Trellex Panelcord or Trellex LS modular panel system but can also be prepared for any other type specified by customer.

Options

- Screen body prepared for dust encapsulation
- SSP Monitoring system for the mechanismand the screen body
- Isolation Frame
- Travel truck
- Different options of lining, specific drive arrangements, wet screening (spray pipes)
- Various Erosion / Corrosion protection measures

Machine	W x L (m)	Decks	Power (kW)	ML exciter (qty)	Weight (kg)	Capacity (tph)	Deck max. opening (mm)
MF1861-1	1.8 x 6.1	1	30	2	10800	1900	150
MF1861-2	1.8 x 6.1	2	30	2	15500	1900	150
MF2461-1	2.4 x 6.1	1	30	2	13850	2500	150
MF2461-2	2.4 x 6.1	2	55	2	20000	2500	150
MF3061-1	3.0 x 6.1	1	30	2	17800	3200	150
MF3061-2	3.0 x 6.1	2	55	2	24650	3200	150
MF3073-1	3.0 x 7.3	1	55	2	19350	3200	150
MF3073-2	3.0 x 7.3	2	55	2	27850	3200	150
MF3085-1	3.0 x 8.5	1	55	2	21400	3200	150
MF3085-2	3.0 x 8.5	2	90	2	32500	3200	150
MF3661-1	3.6 x 6.1	1	55	2	17800	3700	150
MF3661-2	3.6 x 6.1	2	55	2	28550	3700	150
MF3673-1	3.6 x 7.3	1	55	2	21850	3700	150
MF3673-2	3.6 x 7.3	2	90	2	33900	3700	150
MF3685-1	3.6 x 8.5	1	55	2	24000	3700	150
MF3685-2	3.6 x 8.5	2	90	3	37050	3700	150
MF4261-1	4.2 x 6.1	1	55	2	23300	4400	150
MF4261-2	4.2 x 6.1	2	90	3	35300	4400	150
MF4273-1	4.2 x 7.3	1	55	2	25300	4400	150
MF4273-2	4.2 x 7.3	2	90	3	39550	4400	150
MF4285-1	4.2 x 8.5	1	55	2	27750	4400	150
MF4285-2	4.2 x 8.5	2	90	3	43500	4400	150

*Note : Max feed rate values are given for material bulk density 1.6t/m^3 in dry conditions and are indicatives only.

Inclined screens

CVB
RF
CVB-P
RF-P

Inclined CVB screens

The Metso CVB series Screens are well proven for Technical / Final sizing. Their simple and robust design has made them the most popular Metso screen.

Design

- Inclined screen 18°, vibrators located at centre of gravity: Circular motion
- Available with 1, 2, 3 or 4 decks
- **MV** Vibrators (Modular cartridge design, grease lubricated)
- Side plates without welding and huck-bolted assembly. Very safe regarding 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)
- PU protected cross members
- Wet screening (spray pipes)
- Galvanized body components
- Automatic greasing device

Machine	W x L (m)	Decks	Power (kW)	MV vibrator	Weight (kg)	Capacity (tph)	Top deck maximum opening (mm)
CVB1540-1	1.5 x 4.0	1	11	MV1	2800	300	75
CVB1540-2	1.5 x 4.0	2	15	MV2	3150	300	75
CVB1540-3	1.5 x 4.0	3	15	MV2	4050	300	75
CVB1540-4	1.5 x 4.0	4	15	MV2	5000	300	75
CVB1845-1	1.8 x 4.5	1	15	MV2	3300	400	75
CVB1845-2	1.8 x 4.5	2	15	MV2	4200	400	75
CVB1845-3	1.8 x 4.5	3	15	MV2	5200	400	75
CVB1845-4	1.8 x 4.5	4	22	MV3	6800	400	75
CVB2050-1	2.0 x 5.0	1	15	MV2	3800	600	75
CVB2050-2	2.0 x 5.0	2	15	MV2	4700	600	75
CVB2050-3	2.0 x 5.0	3	22	MV3	6300	600	75
CVB2050-4	2.0 x 5.0	4	22	MV3	7600	600	75
CVB2060-1	2.0 x 6.0	1	15	MV2	5100	800	75
CVB2060-2	2.0 x 6.0	2	22	MV3	6500	800	75
CVB2060-3	2.0 x 6.0	3	22	MV3	8500	800	75
CVB2060-4	2.0 x 6.0	4	30	MV4	10400	800	75
CVB2661-1	2.6 x 6.1	1	15	MV2	6500	1000	75
CVB2661-2	2.6 x 6.1	2	22	MV3	11000	1000	75
CVB2661-3	2.6 x 6.1	3	30	MV4	13000	1000	75
CVB2661-4	2.6 x 6.1	4	30	MV4	15000	1000	75

*Note : Max feed rate values are given for material bulk density 1.6t/m^3 in dry conditions and are indicatives only.

Inclined RF screens

Metso RF series inclined screen range are designed for continuous-use operation in a broad range of sizing applications (Technical / Final sizing). The RF is available in 1 or 2 deck configurations and can be used for either dry or wet screening.

Design

The RF screen design incorporates huck-bolted construction to eliminate stress points and improve structural integrity. Additional design features rugged body construction and abrasion resistant wear protection.

RF screen range utilizes the oil/ grease lubricated mechanism, consisting of a rotating eccentric shaft with additional external counterweight plates. The mechanisms are used to create a circular screening motion.

Options

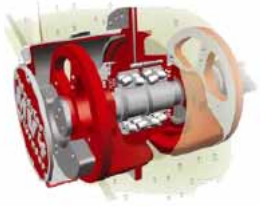
- Dust enclosure (Trellex)
- Rubber lining
- Wet screening (spray pipes)
- Modular panels (LS Trellex and more)

Machine	W x L (m)	Decks	Power (kW)	Speed (rpm)	Weight (kg)	Capacity (tph)	Deck maximum opening (mm)
RF2448-1	2.4 x 4.8	1	22	750-900	6940	1000	150
RF2448-2	2.4 x 4.8	2	30	750-900	13750	1000	150
RF2461-1	2.4 x 6.1	1	22	750-900	7755	1000	150
RF2461-2	2.4 x 6.1	2	2 x 30	750-900	17500	1000	150
RF2473-1	2.4 x 7.3	1	37	750-900	9050	1000	150
RF2473-2	2.4 x 7.3	2	2 x 30	750-900	19300	1000	150
RF3061-1	3.0 x 6.1	1	2 x 22	750-900	12000	1300	150
RF3061-2	3.0 x 6.1	2	2 x 30	750-900	21350	1300	150
RF3073-1	3.0 x 7.3	1	2 x 30	750-900	12400	1300	150
RF3073-2	3.0 x 7.3	2	2 x 30	750-900	23800	1300	150

*Note : Max feed rate values are given for material bulk density 1.6t/m^3 in dry conditions and are indicatives only.

Inclined CVB-P screens

The Metso CVB P series Screens are well proven for primary screening. Their simple and robust design has made them the most popular Metso screen.



Design

- Inclined screen 18°, vibrating machinery located at centre of gravity: Circular motion
- Available with 1, 2 or 3 decks
- **MV** Vibrators (Modular cartridge design, grease lubricated)
- Side plates without welding and huck-bolted assembly. Very safe regarding fatigue stress
- Flat bolted panels on 1st and 2nd deck (steel plates or Trellex Panelcord)

Options

- Tensioned rubber or polyurethane panels (Trellex Trellecord) on 2nd and 3rd deck
- Modular screening Trellex LS panels (rubber or polyurethane) on 2nd and 3rd deck
- Dust encapsulation: stationary (type Trellex)
- PU protected cross members (for side tensioned decks)
- Wet screening (spray pipes)
- Galvanized body components
- Automatic greasing device

Machine	W x L (m)	Decks	Power (kW)	MV vibrator	Weight (kg)	Capacity (tph)	Top deck maximum opening (mm)
CVB1540-1P	1.5 x 4.0	1	11	MV1	3200	400	200
CVB1540-2P	1.5 x 4.0	2	15	MV2	3650	400	200
CVB1540-3P	1.5 x 4.0	3	15	MV2	4500	400	200
CVB1845-1P	1.8 x 4.5	1	15	MV2	3600	600	200
CVB1845-2P	1.8 x 4.5	2	15	MV2	4500	600	200
CVB1845-3P	1.8 x 4.5	3	15	MV2	5800	600	200
CVB2050-1P	2.0 x 5.0	1	15	MV2	4100	800	200
CVB2050-2P	2.0 x 5.0	2	22	MV3	4900	800	200
CVB2050-3P	2.0 x 5.0	3	22	MV3	6650	800	200
CVB2060-1P	2.0 x 6.0	1	15	MV2	5350	1000	200
CVB2060-2P	2.0 x 6.0	2	22	MV3	6700	1000	200
CVB2060-3P	2.0 x 6.0	3	22	MV3	9100	1000	200
CVB2661-1P	2.6 x 6.1	1	22	MV3	6800	1200	200
CVB2661-2P	2.6 x 6.1	2	30	MV4	11900	1200	200
CVB2661-3P	2.6 x 6.1	3	30	MV4	13000	1000	200

*Note : Max feed rate values are given for material bulk density 1.6t/m^3 in dry conditions and are indicatives only.

Inclined RF-P screens

Metso RF-P series consist of inclined screen range, designed for continuous-use operation in a broad range of sizing applications (primary screening). The RF-P is available in 1 or 2 deck configurations and can be used for either dry or wet screening.

Design

The RF-P screen design incorporates huck-bolted construction to eliminate stress points and improve structural integrity. Additional design features rugged body construction and abrasion resistant wear protection.

RF-P screen range utilizes the oil/ grease lubricated mechanism, consisting of a rotating eccentric shaft with additional external counterweight plates. The mechanisms are used to create a circular screening motion.

Options

- Dust enclosure (Trellex)
- Rubber lining
- Wet screening (spray pipes)
- Modular panels (Panelcord, LS Trellex and more)

Machine	W x L (m)	Decks	Power (kW)	Speed (rpm)	Weight (kg)	Capacity (tph)	Deck maximum opening (mm)
RF2448-1P	2.4 x 4.8	1	2 x 22	750-900	11250	1250	200
RF2448-2P	2.4 x 4.8	2	2 x 30	750-900	15600	1250	200
RF2461-1P	2.4 x 6.1	1	2 x 22	750-900	12020	1250	200
RF2461-2P	2.4 x 6.1	2	2 x 30	750-900	18450	1250	200
RF2473-1P	2.4 x 7.3	1	2 x 30	750-900	12550	1250	200
RF2473-2P	2.4 x 7.3	2	2 x 30	750-900	20250	1250	200
RF3061-1P	3.0 x 6.1	1	2 x 30	750-900	13500	1600	200
RF3061-2P	3.0 x 6.1	2	2 x 30	750-900	21900	1600	200

*Note : Max feed rate values are given for material bulk density 1.6t/m^3 in dry conditions and are indicatives only.

Horizontal screens

FS
LH

Horizontal FS screens

The Metso FS series screen are high performance horizontal screens utilizing an elliptical motion vibration. The 1/3 ellipse ratio is very strong which contributes to eliminating 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 on coarse screening.

Design

- Triple shaft line synchronized with gears: Elliptical motion
- Vibration is adjustable in angle and stroke (depending on the application)
- **MV** vibrators
- Side plates without welding and huck-bolted assembly. Very safe regarding fatigue stress
- Rubber suspensions: smoother shut down, safer, noiseless
- Available in 2 or 3 decks

Options

- Tensioned rubber or polyurethane panels (Trellex Trellecord) on 2nd and 3rd deck
- Modular screening Trellex LS panels (rubber or polyurethane) on 2nd and 3rd deck
- Dust encapsulation: stationary (type Trellex)
- PU protected cross members (for side tensioned decks)
- Wet screening (spray pipes)
- Galvanized body components
- Automatic greasing device

Machine	W x L (m)	Decks	Power (kW)	MV vibrator	Weight (kg)	Capacity (tph)	Top deck maximum opening (mm)
FS202	1.6 x 4.9	2	30	2 x MV2	6500	300	75
FS203	1.6 x 4.9	3	37	3 x MV2	8500	400	75
FS282	1.6 x 6.1	2	37	3 x MV2	8300	400	75
FS283	1.6 x 6.1	3	37	3 x MV2	9500	500	75
FS302	1.9 x 6.1	2	37	3 x MV2	9000	500	75
FS303	1.9 x 6.1	3	37	3 x MV2	11500	600	75
FS352	2.2 x 6.1	2	37	3 x MV2	12800	600	75
FS353	2.2 x 6.1	3	55	3 x MV3	14500	700	75
FS402	2.5 x 6.1	2	55	3 x MV3	15000	700	75
FS403	2.5 x 6.1	3	55	3 x MV3	17000	800	75

*Note : Max feed rate values are given for material bulk density 1.6t/m^3 in dry conditions and are indicatives only.

Horizontal LH screens

Metso LH Series screens are heavy duty horizontal screens, used in a wide range of applications such as mill discharge screening, coal preparation, fine wet screening and dewatering.

Note: For smaller size of dewatering screen ask your product department.

Design

The LH screen design incorporates huck-bolted construction to eliminate stress points and improve structural integrity. Others features include modular construction for ease of maintenance, abrasion resistant wear protection and compact overall height.

The LH series screens are built using the latest engineering techniques, such as Finite Element Analysis. As a result, high reliability and long component life on even the most demanding application is guaranteed.

Metso LH series screens utilize the unique **ML exciters** (linear motion) which are infinitely adjustable.

Options

- Dust enclosure (Trellex)
- Polyurethane side plate coating (internal)
- Rubber lining of support frame cross members
- Wet screening (spray pipes)
- Modular panels (LS Trellex and more)

Machine	W x L (m)	Deck(s)	Power (kW)	ML exciter (qty)	Weight (kg)	Capacity (tph)	Deck maximum opening (mm)
LH1848-1	1.8 x 4.8	1	30	1	5295	570	50
LH1848-2	1.8 x 4.8	2	30	1	9810	570	50
LH2448-1	2.4 x 4.8	1	30	2	7305	760	50
LH2448-2	2.4 x 4.8	2	55	2	10340	760	50
LH2461-1	2.4 x 6.1	1	30	2	9345	760	50
LH2461-2	2.4 x 6.1	2	55	2	13835	760	50
LH2473-1	2.4 x 7.3	1	55	2	11140	760	50
LH2473-2	2.4 x 7.3	2	55	2	14950	760	50
LH3061-1	3.0 x 6.1	1	55	2	12000	950	50
LH3061-2	3.0 x 6.1	2	55	2	16540	950	50
LH3073-1	3.0 x 7.3	1	55	2	13500	950	50
LH3073-2	3.0 x 7.3	2	55	2	17800	950	50
LH3661-1	3.6 x 6.1	1	55	2	14500	1150	50
LH3661-2	3.6 x 6.1	2	55	2	19000	1150	50
LH3673-1	3.6 x 7.3	1	55	2	15200	1150	50
LH3673-2	3.6 x 7.3	2	90	3	19800	1150	50

*Note : Max feed rate values are given for material bulk density 1.6t/m^3 in dry conditions and are indicatives only.

Feeders and Grizzly's

Feeders with grizzly sections

TK

VF

LH.G

Grizzly scalpers

TK

VG

Pan feeders

TK

PF

Push feeder

HRBM

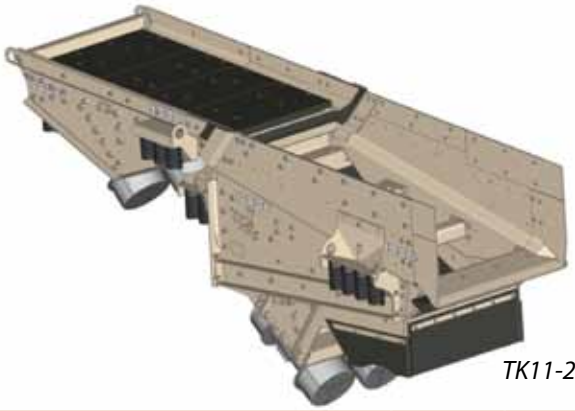
TK feeders and scalpers

The Metso TK Series Feeders and Scalpers compliment Metso VF series feeders for compact primary plants. They are mostly utilized in mobile units (tracks or wheels) but can also be easily installed in stationary plants.

The Metso TK series Feeders are very efficient in removing the waste material by the use of different types of grizzlies (vibrating rods, bars, grizzly cassettes, zig zag plates…)

User Friendly

The linear motion of Metso TK series Feeders is generated by the time proven **V150 & 175 exciters (hydraulic drive)** or by unbalanced motors (electrical drive).



TK11-22 + TK11-20-2V

Machines		W x L (m)	Vibrating machinery	Capacity (tph)	Maximum feed size (mm)	Compatibility	
Grizzly feeders	TK8-27-2V	0.8 x 2.7	El. unbalanced motors or V150 exciter (hyd. drive)	250	450	C80	
	TK8-32-2V	0.8 x 3.2	El. unbalanced motors or V150 exciter (hyd. drive)	300	450	C80	
	TK9-42-2V	0.9 x 4.2	El. unbalanced motors or V150 exciter (hyd. drive)	350	500	C96	
	TK11-42-2V	1.1 x 4.2	El. unbalanced motors or V175 exciter (hyd. drive)	500	700	C100, C106, C116, NP1213M	
	TK11-48-2V	1.1 x 4.8	Electrical unbalanced motors	500	700	C100, C106, C116, NP1213M	
	TK12-32-2V	1.2 x 3.2	El. unbalanced motors or V150 exciter (hyd. drive)	500	350	GP and HP from 300 to 550, NP1213, NP1110M	
Grizzly scalpers	TK10-15-2V	1.0 x 1.5	Electrical unbalanced motors	250	250	VF452-2V , VF461-1V	
	TK11-20-2V	1.1 x 2.0	Electrical unbalanced motors	500	700	TK11-22	
	TK11-27-3V	1.1 x 2.7	Electrical unbalanced motors	500	700	TK11-22	
	TK13-20-3V	1.3 x 2.0	Electrical unbalanced motors	350	250	VF544-2V , VF561-1V	
	TK16-20-3V	1.6 x 2.0	Electrical unbalanced motors	500	250	VF661-2V, VF866-1V	
Pan feeders	TK08-32	0.8 x 3.2	Electrical unbalanced motors	250	450		Primary, secondary or tertiary crushers
	TK10-15	1.0 x 1.5	Electrical unbalanced motors	300	170	TK10-15-2V	
	TK10-20	1.0 x 2.0	Electrical unbalanced motors	350	170	TK10-15-2V	
	TK11-22	1.1 x 2.2	Electrical unbalanced motors	500	700	TK11-20-2V	
	TK12-26	1.2 x 2.6	Electrical unbalanced motors	500	170	TK11-27-3V	
	TK16-27	1.6 x 2.7	Electrical unbalanced motors	500	500		

*Note : Max feed rate values are given for material bulk density 1.6t/m^3 in dry conditions and are indicatives only.

VF Feeders

The Metso VF Primary Feeders have been designed for the toughest applications, high capacity and able to process abrasive material, either in stationary or mobile plants.

Features

- Speed and stroke is adjustable: better feed control of the primary crusher
- Long stroke capability: better scalping efficiency (when feed material contains high ratio of flaky material)

User Friendly

- Rubber suspensions: smoother shut down, safer, noiseless
- **MV** vibrators
- Easy and fast scalping adjustability

Options

- Electrical or Hydraulic drive
- Pan Bottom liners can be either steel or rubber
- Vibrating chute (underneath grizzly sections)
- Automatic greasing system

Machine	W x L (m)	Power (kW)	MV vibrator	Capacity (tph)	Maximum feed size (mm)	Compatibility with crushers (see page 35)
VF452-2V	1.1 x 5.2	15	MV2	450	700	C100, C110, NP1210
VF461-1V	1.1 x 6.1	15	MV2	600	700	C100, C110, NP1210
VF544-2V	1.3 x 4.4	15	MV2	600	900	C110, C125, C3054 NP1315, NP1415
VF561-2V	1.3 x 6.1	15	MV2	750	900	C110, C125, C3054 NP1315, NP1415
VF661-2V	1.6 x 6.1	30	MV3	1000	1200	C140, NP1415 C160, NP1620
VF866-2V	2.0 x 6.6	55	2 x MV3	1800	1500	C160, C200, NP1620, NP2023

*Note : Max feed rate values are given for material bulk density 1.6t/m^3 in dry conditions and are indicatives only.

LH.G Feeders and Grizzly's

Metso LH Series Feeders are extra heavy duty **Vibrating Feeders, Pan Feeders** and **Grizzly Scalpers**, used in a wide range of primary applications.

Design

The LH Feeders design incorporates huck-bolted construction to eliminate stress points and improve structural integrity. Others features include heavy duty construction, abrasion resistant wear protection and compact overall height.

The LH series Feeders are built using the latest engineering techniques, such as Finite Element Analysis. As a result, high reliability and long component life even the most demanding application is guaranteed.

Metso LH series screens utilize the time proven **ML exciters** (linear motion)

Machine	W x L (m)	Power (kW)	Weight (kg)	ML exciter (qty)	Speed (rpm)	Capacity (tph)
LH 1848G	1.8 x 4.8	37	9980	2	450-900	1500
LH 1861G	1.8 x 6.1	37	11565	2	450-900	1800
LH 2142G	2.1 x 4.2	37	10975	2	450-900	2000
LH 2148G	2.1 x 4.8	37	11675	2	450-900	2250
LH 2161G	2.1 x 6.1	55	12700	2	450-900	2500
LH 2461G	2.4 x 6.1	55	16800	2	450-900	3000
LH 2473G	2.4 x 7.3	75	18000	2	450-900	3250
LH 2485G	2.4 x 8.5	75	21500	2	450-900	3500
LH 3061G	3.0 x 6.1	90	24500	3	450-900	3800
LH 3073G	3.0 x 7.3	90	27000	3	450-900	4000

*Note : Max feed rate values are given for material bulk density 1.6t/m^3 in dry conditions and are indicatives only.

VG scalpers

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

Integration in primary scalping section
The Metso VG Primary Scalpers can be fed by different types of feeders: push feeders, apron feeders, vibrating pan feeder.

Features
- Speed and stroke is adjustable
- Long stroke capability: better scalping efficiency (when feed material contains high ratio of flaky material)
- Linear vibration with high G force (5,5G)
- Scalping grizzlies are inclined slightly at 5°: reduced blinding when feed is sticky and contains fines (increased capacity)

User Friendly
- Rubber suspensions: smoother shut down, safer, noiseless
- **MV** vibrators
- Easy and fast scalping adjustability

Options
- Electrical or Hydraulic drive
- Automatic greasing device

Machine	W x L (m)	Power (kW)	MV vibrator	Capacity (tph)	Maximum feed size (mm)	Compatibility with crushers (see page 35)
VG527-2V	1.3 x 2.7	15	MV2	500	900	C100, C110, C125, C3054
VG540-3V	1.3 x 4.0	15	MV2	600	900	NP1315M, NP1415M, NP1313, NP1415
VG635-3V	1.6 x 3.5	22	MV3	750	1000	C140, NP1415
VG645-3V	1.6 x 4.5	30	MV4	1000	1200	C140, NP1415
VG745-3V	1.8 x 4.5	30	MV4	1200	1350	C160, NP1620
VG860-4V	2.0 x 6.0	55	2 x MV3	1500	1500	C160, C200, NP1620, NP2023

*Note : Max feed rate values are given for material bulk density 1.6t/m^3 in dry conditions and are indicatives only.

PF Pan feeders

The Metso PF Primary Pan Feeders have been designed for toughest applications, high capacity and able to process abrasive material, either in stationary or mobile plants.

The Metso primary Pan Feeders are able to maximize the efficiency of the primary plant across wide variations in application.

Integration in primary feeding section
The Metso PF Primary Pan Feeders can feed different types of Grizzly Scalpers (VG) or grizzly screens.

Features
- Speed and stroke is adjustable
- Linear vibration with high G force (5G): reduced building when feed is sticky and contains fines (increased capacity)

User Friendly
- Rubber suspensions: smoother shut down, safer, noiseless
- **MV** vibrators

Options
- Pan rubber liners
- Electrical or Hydraulic drive
- Automatic greasing system

PF525 + VG527-2V

Machine	W x L (m)	Power (kW)	MV vibrator	Capacity (tph)	Maximum feed size (mm)	Compatibility with crushers (see page 35)
PF525	1.3 x 2.5	11	MV1	500	900	VG527-2V
PF561	1.3 x 6.1	15	MV2	600	900	VG540-3V
PF635	1.6 x 3.5	15	MV2	750	1000	VG635-3V
PF661	1.6 x 6.1	22	MV3	1000	1200	VG645-3V

*Note : Max feed rate values are given for material bulk density 1.6t/m^3 in dry conditions and are indicatives only.

HRBM Push Feeders

Metso HRBM Series Push Feeders are extra heavy duty Feeders used in a wide range of primary applications.

Proportional hydraulic system permits the accurate control of feed. Acceleration and deceleration at the beginning and at the end of a cycle are also controlled in order to avoid brutal stops during the feed

Automatic Hydraulic unit can be managed and driven by external PLC.

Options

- Centralized greasing point

Machine	W x L (m)	Power (kW)	Capacity (tph)	Maximum feed size (mm)	Compatibility with grizzly scalpers	Compatibility with crushers
HRBM 6012	1.2 x 6.0	55	600	700	VG540-3V	C100, C110, C125, NP1210, NP1313
HRBM 6015	1.5 x 6.0	75	900	900	VG645-3V	C125, C140, C145, NP1415
HRBM 6517	1.7 x 6.5	90	1100	1050	VG745-3V	C160, NP1620
HRBM 7019	1.9 x 7.0	132	1300	1200	VG860-4V	C160, C200, NP1620, NP2023

*Note : Max feed rate values are given for material bulk density 1.6t/m^3 in dry conditions and are indicatives only.

Jaw Crushers

Jaw Crusher	Feeder	Separate Grizzly Scalper	2nd separation (underneath VF)	Capacity (tph)	Feed size (mm)	Recommended for	
						Sticky material	A lot of fines
C80	TK08-32-2V	No	Integrated 2nd deck on TK08-32	300	450		
C96	TK09-42-2V	No	Integrated 2nd deck on TK09-32	350	500		
C100	TK11-42-2V	No	Integrated 2nd deck on TK11-42	500	700		
C106	TK11-42-2V	No	Integrated 2nd deck on TK11-42	500	700		
C100 C110	VF452-2V	No	TK10-15	350	600		
	VF561-2V	No	TK13-20	400	700		
	PF525	VG527-2V	Integrated 2nd deck on VG527	500	700		X
C116	TK11-48-2V	No	Integrated 2nd deck on TK11-48	500	700		
C125	VF561-2V	No	TK13-20	600	800		
	PF561	VG540-3V	TK13-20	700	800		X
	HRBM 60-12	VG540-3V	TK13-20	700	800	X	
C3054	VF544-2V	No	Integrated 2nd deck on VF544	600	900		
C140 C145	VF661-2V	No	TK16-20	800	900		
	PF661	VG645-3V	TK16-20	1000	900		X
	HRBM 60-15	VG645-3V	TK16-20	1000	900	X	
C160	VF661-2V	No	TK16-20	900	1000		
	PF661	VG645-3V	TK16-20	1000	1000		X
	VF866-2V	No	Separate screen	1200	1000		X
	HRBM 65-17	VG745-3V		1200	1000	X	
	Apron feeder	LH 1848		1500	1200		X
C200	VF866-2V	No	Separate screen	1500	1200		X
	HRBM 70-19	VG860-4V		1500	1200	X	
	Apron feeder	LH 2148		2250	1200		X

*Note : Max feed rate values are given for material bulk density 1.6t/m^3 in dry conditions and are indicatives only.

Impact Crushers

Impact Crusher	Feeder	Scalper	2nd scalper	Capacity (tph)	Feed size (mm)	Recommended for	
						Sticky material	A lot of fines
NP1210	VF452-2V	No	TK10-15	350	700		
	PF525	VG527-2V	Integrated 2nd deck on VG527	450	700		X
NP1313	VF561-2V	No	TK13-20	500	800		
	PF561	VG540-3V	TK13-20	600	800		X
NP1415	VF661-2V	No	TK16-20	700	1000		
	PF661	VG645-3V	TK16-20	900	1000		X
	HRBM 60-15	VG645-3V	TK16-20	900	1000	X	
NP1620	VF661-2V	No	TK16-20	900	1100		
	HRBM 65-17	VG745-3V	Separate screen (CVB or FS)	1200	1300	X	X
NP2023	VF866-2V	No	Separate screen (CVB)	1500	1500		
	HRBM 70-19	VG860-4V		1500	1500	X	X

*Note : Max feed rate values are given for material bulk density 1.6t/m^3 in dry conditions and are indicatives only.

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