

Metso

Crushing and screening solutions

A large industrial crushing machine, a Metso Nordberg HP4, is the central focus of the image. It is a massive, cylindrical piece of equipment with a white and grey finish. The machine is mounted on a complex metal structure with various pipes, valves, and electrical components. A conveyor belt is visible at the top, feeding material into the machine. The background shows an industrial setting with metal railings and structural beams. The lighting is bright, highlighting the machine's details.

Making the big
difference to
our customers

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Right where you need us We supply competitiveness

At Metso, we know that the only real measure of our worth is in the results we deliver to our customers. Our expertise is rooted in more than a century of experience that today provides our customers with an unparalleled knowledge base, rock-solid financial resources, plus the engineering know-how, innovative technologies and worldwide locations to ensure that your crushing and screening operations will profit.

Metso's products are built to last. Our crushers and screens are highly engineered and precisely tested to ensure that they run and deliver 24 hours a day, 365 days a year. Metso's experience and competence in crushing and screening technology ensures that we provide equipment that is the best in the world. The use of premium-quality components ensures that your Metso equipment runs at high performance, cost efficiently and safely.

With Metso equipment, you can be sure that your operations – and profit – stay up and running. Uninterrupted.

Nordberg®
C Series™



Nordberg® C Series™

Why choose Metso's jaw crusher?

Reliability

- Pinned and bolted, non-welded frame construction
- Outstanding fatigue strength
- Excellence in casting engineering
- Premium-quality components

Easy installation

- Compact crusher module
- Easy to install in place of an existing crusher
- Possible to ship to the site in pieces (for example, in case of underground installation)

Productivity

- Excellent material intake capability
- Steep cavity cross section for excellent bite
- Aggressive pitman motion for efficient compression
- Reliability, high availability

Safety

- Lifting tools for jaw dies, cheek plates and toggle plate as standard
- Optional flywheel and drive guards
- Optional maintenance platform
- Safe, quick and easy setting adjustment system
- Metso IC™ crusher automation

Jaw crushers Nordberg® C Series™

Nordberg® C Series™ jaw crushers are engineered for the toughest feed materials. They are proven to be reliable and productive in thousands of real mining, quarrying, recycling and industrial applications. You can rely on the Nordberg C Series jaw crusher as the backbone of your process.

Uncompromised reliability and productivity

The reliability of Nordberg C Series jaw crushers is based on a revolutionary pinned and bolted, non-welded frame construction. This design provides excellent fatigue strength even in toughest quarrying or mining applications.

Metso's foundry expertise enables continuous steel casting development to ensure the best casting designs and quality in terms of strength and fatigue life. High level of engineering combined with top-of-the-line commercial components, such as spherical roller bearings, ensure the reliability that Nordberg C Series jaw crushers are known for.

Nordberg C Series jaw crushers are the most productive and cost-efficient jaw crushers for any primary crushing application. C Series jaw crushers were originally developed to crush the hardest ores and rocks so they perform extremely well also in less demanding applications, such as soft rock, recycling and slag.

Benefits

- Reliability
- Productivity
- Easy installation
- Safety



Nordberg® C Series™ Jaw crushers

Nordberg C Series jaw crushers are engineered to deliver maximum productivity at the lowest operating costs. Reliability combined with great performance, low operating costs and easy maintenance ensure the best result in a real primary crushing application.

Excellent material intake capacity

Feed opening depth, which typically defines the top feed size, is well balanced with the width and height of the crusher. A good feed opening depth enables excellent material intake capacity and ensures that the rocks enter the cavity without restrictions.

Excellent bite in the cavity

The steep nip angle, the angle between the movable and fixed jaw dies, ensures good bite and good material flow down in the cavity. On top of great performance, a good nip angle also reduces wear on the jaw dies -- and that has a direct impact on operating costs.

High production and reduction

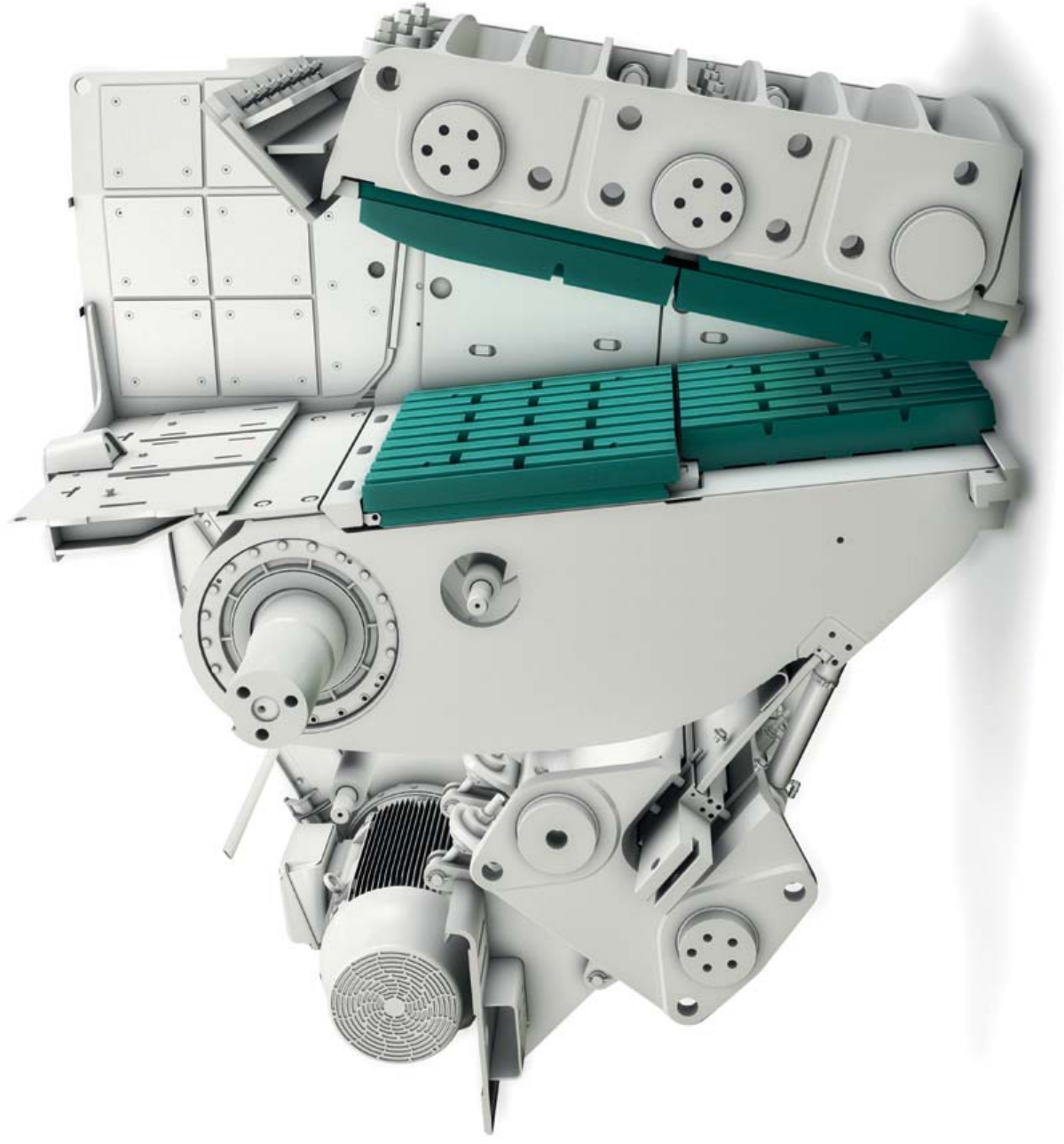
Nordberg C Series jaw crushers are well known for the aggressive motion of the pitman and long stroke in the bottom of the cavity. The stroke is amplified from the top to the bottom, which means that the stroke is always longest in the bottom of the cavity. This boosts the capacity as well as the reduction ratio, resulting in high production and better end-product gradation.

Easy to maintain

Areas where any wear is anticipated are engineered to be easy to replace or protected by sacrificial wear items. This ensures that maintenance of C Series jaw crushers is easy and cost efficient over the long lifetime of the crusher. These designs protect the most expensive main components from wear and shorten maintenance time. And a shorter maintenance time means higher uptime.

Benefits of Nordberg C Series

- High production
- High reduction ratio
- Easy maintenance
- High uptime



Nordberg® C Series™

Significant space, time and cost savings in installation

Nordberg C Series jaw crushers offer multiple benefits that save space, time and money. This makes the Nordberg C Series the most economical choice in both greenfield and brownfield applications. The modular structure is ideally suited to open-pit installations and adds even more value when installed underground.

Installation made easy

Nordberg C Series jaw crushers are easily installed into either new plants or to replace older jaw crushers to extend plant lifetime and boost production. The modular concept makes the C Series jaw crushers easy to install. The crusher can be installed as one compact module that includes all the necessary auxiliaries around the crusher itself. The crusher can be installed within a few days, minimizing on-site engineering and fabrication. Ultimately, this leads to a significant savings in time and installation costs.

Wide range of options

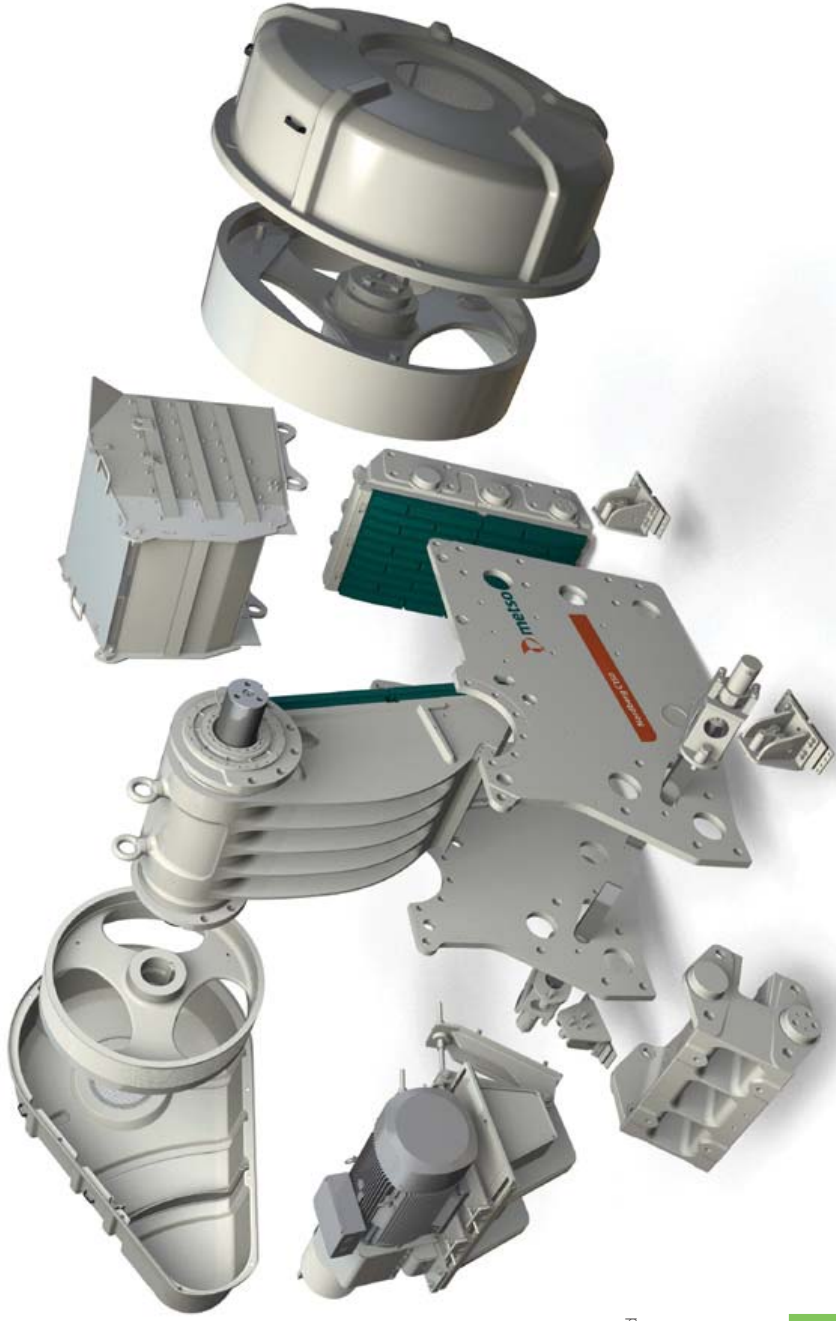
C Series jaw crushers can be customized with options for any application. Safe flywheel and drive guards protect operators from moving objects. An optional integrated motor base allows installation of the crusher drive motor directly to the back of the crusher. The motor moves in sync with the crusher so the V-belt life is enhanced and alignment and tensioning are always perfect. An optional feed chute is engineered for uninterrupted material flow from the feeder into the crusher.

Favored in underground mining

Nordberg C Series jaw crushers are very popular in underground mining applications. The possibility to dismantle the jaw crushers for transport makes them especially easy to use in underground installations. Moving the dismantled components into the tunnel requires less space in the tunnel and shaft, and less heavy lifting. The crusher can be installed and commissioned in its final destination within a few days. These factors make the C Series the most favored jaw crushers for underground operations.

Easy installation

- Modular structure
- Wide selection of options
- Savings in transport, installation and on-site engineering costs



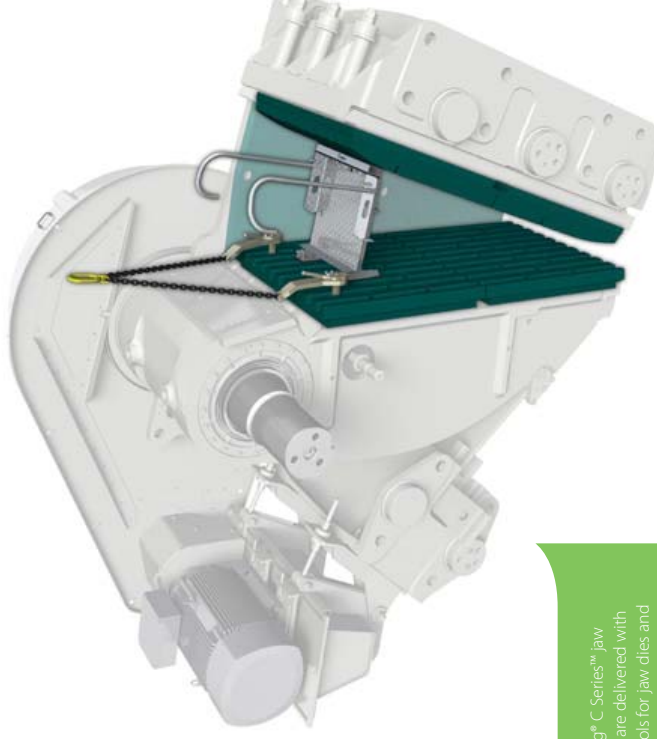
All Nordberg® C Series™ jaw crushers are based on a revolutionary modular, non-welded frame construction.



Nordberg® C Series™

Technical specifications	C80™	C96™	C106™	C116™	C120™	C130™	C150™	C160™	C200™
Power	75 kW (100hp)	90 kW (125 hp)	110 kW (150 hp)	132 kW (175 hp)	160 kW (200 hp)	160 kW (200 hp)	200 kW (260 hp)	250 kW (330 hp)	400 kW (500 hp)
Speed	350 rpm	330 rpm	280 rpm	260 rpm	230 rpm	220 rpm	220 rpm	220 rpm	200 rpm
Basic crusher weight ^(*)	7 029 kg 16 000 lbs	9 759 kg 21 520 lbs	14 359 kg 31 650 lbs	18 609 kg 40 920 lbs	26 009 kg 57 200 lbs	40 199 kg 88 500 lbs	51 290 kg 113 000 lbs	76 609 kg 168 300 lbs	171 519 kg 379 930 lbs
Operational crusher weight ^(**)	9 500 kg 21 000 lbs	11 870 kg 26 170 lbs	17 050 kg 37 390 lbs	21 500 kg 47 300 lbs	29 300 kg 64 700 lbs	44 000 kg 97 000 lbs	61 400 kg 135 200 lbs	88 500 kg 194 700 lbs	137 160 kg 302 440 lbs
Nominal feed opening	800 mm (32")	930 mm (37")	1 060 mm (42")	1 150 mm (45")	1 200 mm (47")	1 300 mm (51")	1 400 mm (55")	1 600 mm (63")	2 000 mm (79")
Width	510 mm (20")	580 mm (23")	700 mm (28")	760 mm (30")	870 mm (34")	1 000 mm (39")	1 200 mm (47")	1 200 mm (47")	1 500 mm (59")
Depth ^(***)									

^(*) Crusher without options
^(**) Crusher with options
^(***) Actual feed opening depths are cavity specific



Nordberg® C Series™ jaw crushers are delivered with lifting tools for jaw dies and cheek plates.

In addition, an optional Maintenance platform makes wear part change safe and easy.

Metso Rock breakers





Metso Rock breaker solutions

Metso rock breaker solutions are complete functional packages for rock breaking in the primary crushing stage. The breaker booms and hammers are engineered to meet the requirements set by rough primary crushing applications. These packages are optimized to work together and support Metso primary crushers, ensuring the best productivity of the whole primary crushing station.

Significant improvement to plant capacity

Long-term plant production is significantly improved when the primary station is equipped with a rock breaker solution. Downtime due to build-ups and blockages can be easily cut to a minimum. This ensures a steady material flow through the primary station to the next process stages. The huge economic impact as a result of improved productivity means that the investment pay-back time is typically very short.

The safest way to manage build-ups

A rock breaker solution is clearly the safest way to manage blockages and build-ups and to clear the crusher cavity. The remote-controlled boom and hammer with the radio remote control, which is part of standard scope of delivery, means that the boom and hammer can be operated from a location that gives the operator unlimited visibility into the area where the rocks are moved or broken. Metso rock breaker solutions are also engineered safe and easy to maintain, with single-point lubrication of the boom joints as a standard feature.

A complete, optimized solution

Metso rock breaker solutions are complete functional packages optimized for primary crushing applications. Each component, breaker boom, rock breaker, hydraulic power unit and radio remote control, is optimized to work most efficiently with the other components. And each complete solution is optimized to work most efficiently with certain Metso crushers. Each component is engineered to meet the requirements set for the equipment used in rough primary crushing applications.

Benefits of Metso's rock breaker solutions

- Safety
- Complete, optimized solution
- Engineered to Metso's standards

Technical specifications		MB253**	MB302**	MB32**	MB52**	MB65**	MB76**	MB109**
Breaker boom		2.9 m (9' 6")	3.0 m (9' 10")	3.5 m (11' 6")	4.3 m (14' 2")	6.5 m (21' 5")	6.7 m (22' 1")	10.5 m (34' 7")
Hammer		MH400** / MH550**	MH300** / MH400**	MH400** / MH550**	MH1100**	MH1100**	MH1750**	MH2200**
Hammer weight		400 kg (880 lb) / 550 kg (1 210 lb)	300 kg (660 lb) / 400 kg (880 lb)	400 kg (880 lb) / 550 kg (1 210 lb)	1 100 kg (2 420 lb)	1 100 kg (2 420 lb)	1 750 kg (3 850 lb)	2 200 kg (4 840 lb)
Power unit		MPU18**	MPU18**	MPU18**	MPU30**	MPU30**	MPU37**	MPU48**
Power rating		18 kW (25 hp)	18 kW (25 hp)	18 kW (25 hp)	30 kW (40 hp)	30 kW (40 hp)	37 kW (50 hp)	55 kW (74 hp)
Optimized for			Nordberg® C80 / C90 / C106 / C116 / C130**	Nordberg® C120** / C130**	Nordberg® C150**	Nordberg® C160**	Nordberg® C200**	SUPERIOR® Primary Gyratory

** Please contact Metso for more information

Nordberg® NP Series™



Nordberg® NP Series™

Why choose Metso's impact crusher?

High performance

- High capacity
- High reduction ratio
- Less sensitive to sticky material than other machines
- High-quality end product; cubical shape

Maintenance friendly

- Easy blow bar attachment
- Self Rotor Rotation (SRR)
- Safety devices

Adaptable to all applications

- Wide choice of blow bars and liners
- Third breaker plate
- Full hydraulic setting
- Metso IC™ crusher automation

High efficiency

- Quick and easy installation
- Easy to operate
- High mechanical reliability
- High machine availability

Impact crushers Nordberg® NP Series™

Metsos focus on customer success is clearly demonstrated in the development of the Nordberg® NP Series™ impact crusher. We have been building impact crushers for 60 years, so we know that our customers are looking for high performance to boost profitability. By combining the best technical solutions, our crushers provide a reliability that lets you focus on your operations.

Crusher efficiency

Nordberg NP Series impact crushers have a unique blow-bar attachment system that provides a higher degree of reliability. NP Series impact crushers are designed to minimize maintenance, to improve adjustment operations and to deliver unbeatable performance in primary, secondary, tertiary and recycling applications.

Plant profitability

NP Series impact crushers feature a unique combination of heavy rotor and crushing chamber design in addition to materials selected for their outstanding wear resistance. This combination has proved revolutionary in improving capacity and product quality while further reducing operating and wear costs.

Benefits

- Process performance
- Maintenance friendly
- Easy operation



Nordberg® NP Series™ Impact crushers

Nordberg NP Series impact crushers feature a unique combination of heavy rotor design, materials selected for good wear resistance and crusher chamber design. This combination has proven revolutionary in improving capacity and product quality and in reducing operating and wear costs. NP Series impact crushers deliver unbeatable performances in primary, secondary, tertiary and recycling applications.

Configured for your needs

NP Series impact crushers are the solution when output and productivity demands are increasingly stringent, from quarry to industrial applications and from mining to recycling. It's easy to build your own crusher configuration – by adding options for your application – like a full hydraulic breaker plate adjustment setting, a third breaker plate or different grades of steel and cast iron for the blow bars with the possibility for ceramic inserts. The Self Rotor Rotation system (SRR) is available across the NP range and is part of Metso's ongoing effort to innovate and find ways to enhance the quality, ease of use, and safety of its products. Metso I™ crusher automation controls the crusher operation and gives a perfect and complete overview of performance.

High performance from NP Series

NP Series impact crushers feature a unique blow-bar attachment system. Combined with perfect blow-bar alignment on the crossbeam contact faces, this reduces risks of breakage and makes it possible to push the use of cast iron for blow bars beyond conventional limits. The rotor with high inertia

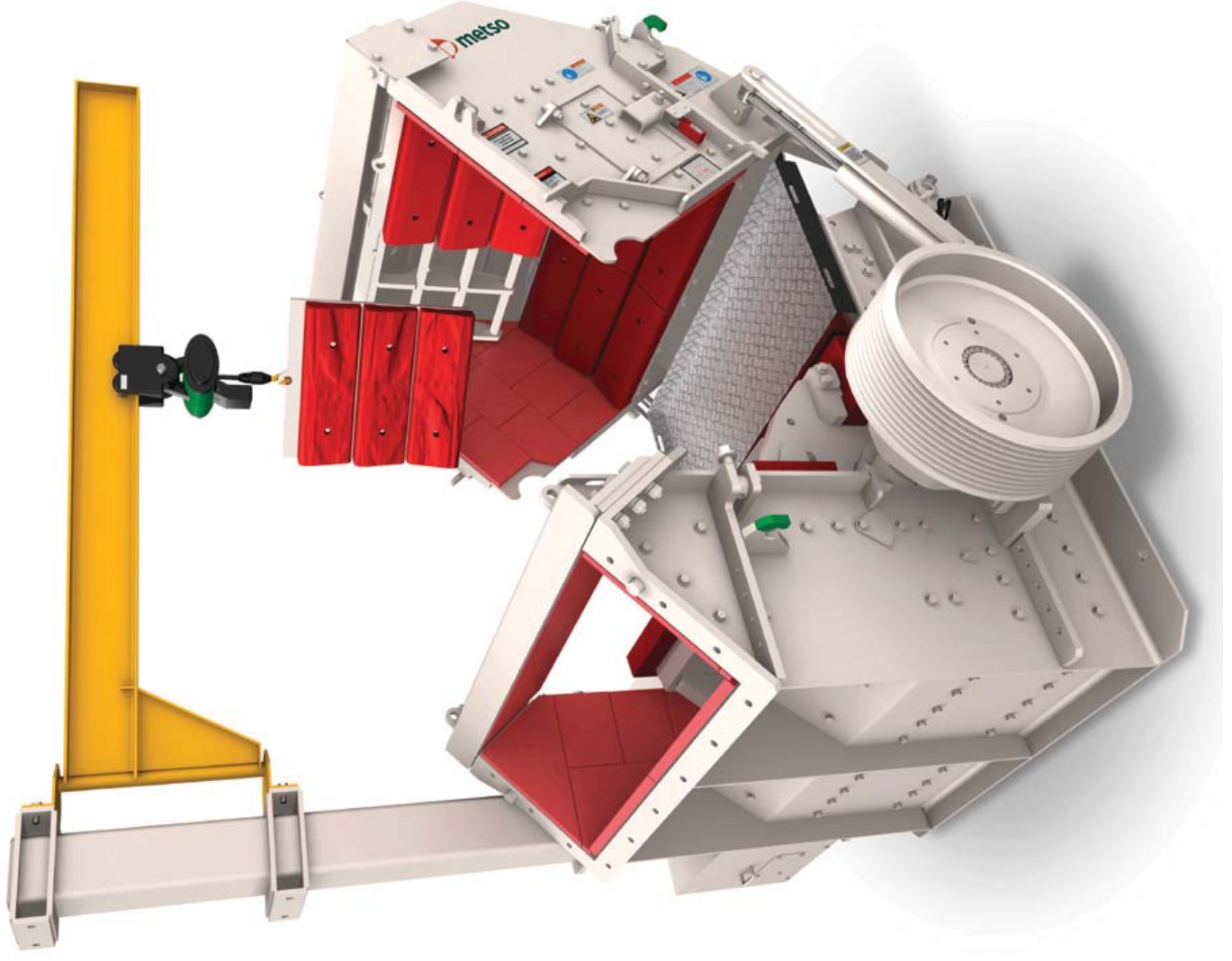
improves crushing reduction and provides stability in the process, reducing energy consumption and increasing long-term performance.

Reduced plant operating costs

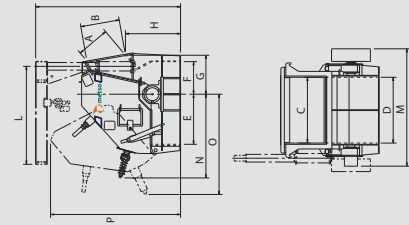
Continuous collaboration with research laboratories results in state-of-the-art technical innovations in terms of durability of wear parts and reliability of mechanical components. Higher reduction with fewer crushing stages lowers your capital costs and saves energy. Mechanical reliability, and simplified process, easy machine operation, and easy and safe maintenance increase the global availability of the plant and profitability.

Benefits of Nordberg NP Series

- High end-product value
- High plant availability
- Adaptable for all applications
- High quality for low CAPEX



Nordberg® NP Series™



Main dimensions and weights

NP Model	Crusher complete	Rotor complete	Rotor diameter	Rotor width
Primary range	NP1313™	17,800 kg 39,249 lbs	1,300 mm 51 1/4"	1,300 mm 51 1/4"
	NP1415™	22,330 kg 49,230 lbs	1,400 mm 55 1/8"	1,500 mm 59 1/8"
	NP1620™	41,240 kg 90,920 lbs	1,500 mm 59 1/8"	2,000 mm 78 3/4"
Secondary range	NP2023™	80,600 kg 177,700 lbs	2,000 mm 78 3/4"	2,000 mm 78 3/4"
	NP1110™	9,250 kg 20,396 lbs	1,100 mm 43 3/4"	1,000 mm 39 3/8"
Secondary & tertiary	NP13™	11,700 kg 25,700 lbs	1,300 mm 51 1/4"	1,300 mm 51 1/4"
	NP15™	16,130 kg 35,567 lbs	1,300 mm 51 1/4"	1,500 mm 59 1/8"
	NP20™	26,250 kg 58,075 lbs	1,500 mm 59 1/8"	2,000 mm 78 3/4"
	NP20™	26,250 kg 58,075 lbs	1,500 mm 59 1/8"	2,000 mm 78 3/4"

Clearance dimensions (mm/inch)

NP Model	A	B	C	D	E	F	G	H	K	L	M	N	O	P		
Primary range	NP1313™	1,050 41 3/8"	1,225 48 1/4"	1,320 51 7/8"	1,305 51 1/4"	760 30"	964 38"	1,386 54 1/2"	2,100 82 3/4"	2,560 100 3/4"	2,340 92 1/4"	2,764 108 7/8"	3,405 134"	2,764 108 7/8"	3,405 134"	
	NP1415™	1,140 44 7/8"	1,320 52"	1,540 60 5/8"	1,305 51 1/4"	800 31 1/2"	998 39 1/4"	1,430 56 1/4"	4,000 157 1/2"	2,295 90 3/4"	2,811 111"	2,425 95 1/2"	2,830 111"	2,830 111"	3,600 141 3/4"	
	NP1620™	1,400 55 1/4"	1,634 64 1/4"	2,040 80 3/4"	1,600 63"	920 36 1/4"	1,270 50"	1,772 69 3/4"	4,950 194 1/4"	3,820 149 3/4"	3,100 122"	3,820 150 1/2"	4,400 173 1/2"	3,105 122"	4,400 173 1/2"	5,514 217"
	NP2023™	1,720 67 3/4"	1,986 78 1/4"	2,310 91"	2,210 87"	1,140 44 7/8"	1,631 64 1/4"	2,273 89 1/2"	6,000 236 1/4"	3,930 154 1/4"	4,424 174 1/4"	3,520 138 1/4"	4,100 161 1/4"	4,100 161 1/4"	5,514 217"	6,807 268"
Secondary range	NP1110™	28" 710	32 1/4" 820	40 1/4" 1,020	43 1/2" 1,105	25 1/4" 652	797 796	1,558 1,125	3,481 3,055	3,050 1,800	2,531 2,106	1,980 1,830	3,050 2,030	3,050 2,030	3,050 2,030	
	NP13™	22" 600	22" 600	31 1/2" 1,540	43 1/2" 1,177	27 1/4" 700	61 1/4" 845	107 1/2" 1,670	120 1/2" 3,085	120 1/2" 3,055	120 1/2" 3,085	120 1/2" 3,085	120 1/2" 3,085	120 1/2" 3,085	120 1/2" 3,085	
Secondary & tertiary	NP15™	23 1/4" 700	23 1/4" 700	60 1/4" 1,540	66 1/4" 1,677	30 1/4" 770	65 1/4" 1,665	151" 3,815	120" 3,050	120" 3,050	120" 3,050	120" 3,050	120" 3,050	120" 3,050	120" 3,050	
	NP20™	27 1/4" 700	27 1/4" 700	80 1/4" 2,040	83 1/4" 2,115	34 1/4" 870	76 1/4" 1,940	163 1/4" 4,150	157 1/2" 3,990	157 1/2" 3,990	157 1/2" 3,990	157 1/2" 3,990	157 1/2" 3,990	157 1/2" 3,990	157 1/2" 3,990	

Technical data

NP Model	Feed opening	Maximum feed size	Nominal installed power	Maximum installed power
Primary range	NP1313™	1,320 x 1,225 mm (52" x 48 1/4")	200 kW (270 hp)	250 kW (330 hp)
	NP1415™	1,540 x 1,320 mm (60 5/8" x 52")	250 kW (330 hp)	315 kW (400 hp)
	NP1620™	2,040 x 1,634 mm (80 3/4" x 64 1/4")	400 kW (520 kW) / 500 HP (D-250 hp)	500 kW (650 kW) / 700 HP (D-350 hp)
	NP2023™	2,310 x 1,986 mm (91" x 78 1/4")	1,000 kW (1,300 kW) / 1,300 HP (D-650 hp)	1,200 kW (1,550 kW) / 1,600 HP (D-800 hp)
Secondary range	NP1110™	1,020 x 820 mm (40 1/4" x 32 1/4")	160 kW (200 hp)	200 kW (250 hp)
	NP13™	1,320 mm x 560 mm (52" x 22")	250 kW (330 hp)	315 kW (400 hp)
Secondary & tertiary	NP15™	1,540 x 600 mm (60 5/8" x 24")	315 kW (400 hp)	355 kW (450 hp)
	NP20™	2,040 x 700 mm (80 3/4" x 27 1/4")	500 kW (650 kW) / 700 HP (D-350 hp)	650 kW (835 kW) / 800 HP (D-400 hp)



Nordberg® HP Series™



Nordberg® HP Series™

Why choose Metso's cone crusher?

Reliability

- Field-proven design
- Hydraulic safety system
- Bronze bushings

Performance

- Capacity
- Reduction ratio
- Final production yield
- Shape
- Power efficient

Energy efficient

- High-yield production
- Large stroke
- High-efficiency motors

Maintenance friendly

- Versatility
- One-piece main frame
- Dismantling from top
- No backing liners
- Metso LC™ crusher automation

Cone crushers Nordberg® HP Series™

Metso is committed to driving customer success. Nordberg® HP Series™ cone crushers help Metso demonstrate this value by offering unprecedented performance: high capacity, superior end-product quality and energy efficiency.

Highest performance

Nordberg HP Series cone crushers feature a unique combination of crusher speed, throw, crushing forces and cavity design. This combination is renowned for providing higher capacity and superior product quality in all secondary, tertiary and quaternary applications. Field proven for years, HP Series cone crushers are built to perform.

Cost effective

In a size-class comparison, the HP Series crushers have a higher output capacity, higher density in the crushing chamber and better reduction ratio, producing higher on-spec yield end products with the same energy consumption. HP Series cone crushers are equipped with the latest high-efficiency motors, making them efficient and ecological crushing machines.

Maintenance friendly

Designed for your needs, HP Series cone crushers are safe and easy to maintain. Fast and easy access to all the main components from the top, dual-acting hydraulic cylinders, and no backing material significantly reduce downtime and are more environmentally friendly.

Benefits

- Performance
- Reliability
- Energy efficient
- Less downtime
- Easy to maintain



Nordberg® HP Series™

Cone crushers

Metso is once again on the cutting edge of innovative technology and leading the way with a new generation of cone crushers. Its new-generation HP Series cone crushers are high performers.

Making success happen

In today's dynamic crushing and screening environment, Metso is focused on customer success. We listen to our customers to find out what they need to succeed and then develop solutions to make it happen.

HP for high performance

HP Series cone crushers produce finer products by limiting crushing stages, which lowers your investment cost and saves energy. This is achieved through a combination of optimized speed, large throw, crushing chamber design and increased crushing force. The efficient crushing action of the HP Series gives it the best power utilization per cone diameter.

More power with less energy

Increasing the stroke, the power and the retaining force while improving crusher body design and weight to withstand the force are principles of kinematics. A higher density in the crushing chamber improves the inter-particle crushing action, resulting in superior product shape, high reduction ratio and high capacity.

More uptime, more confidence

Another way the HP Series cone crushers deliver is through less downtime and increased operator confidence.

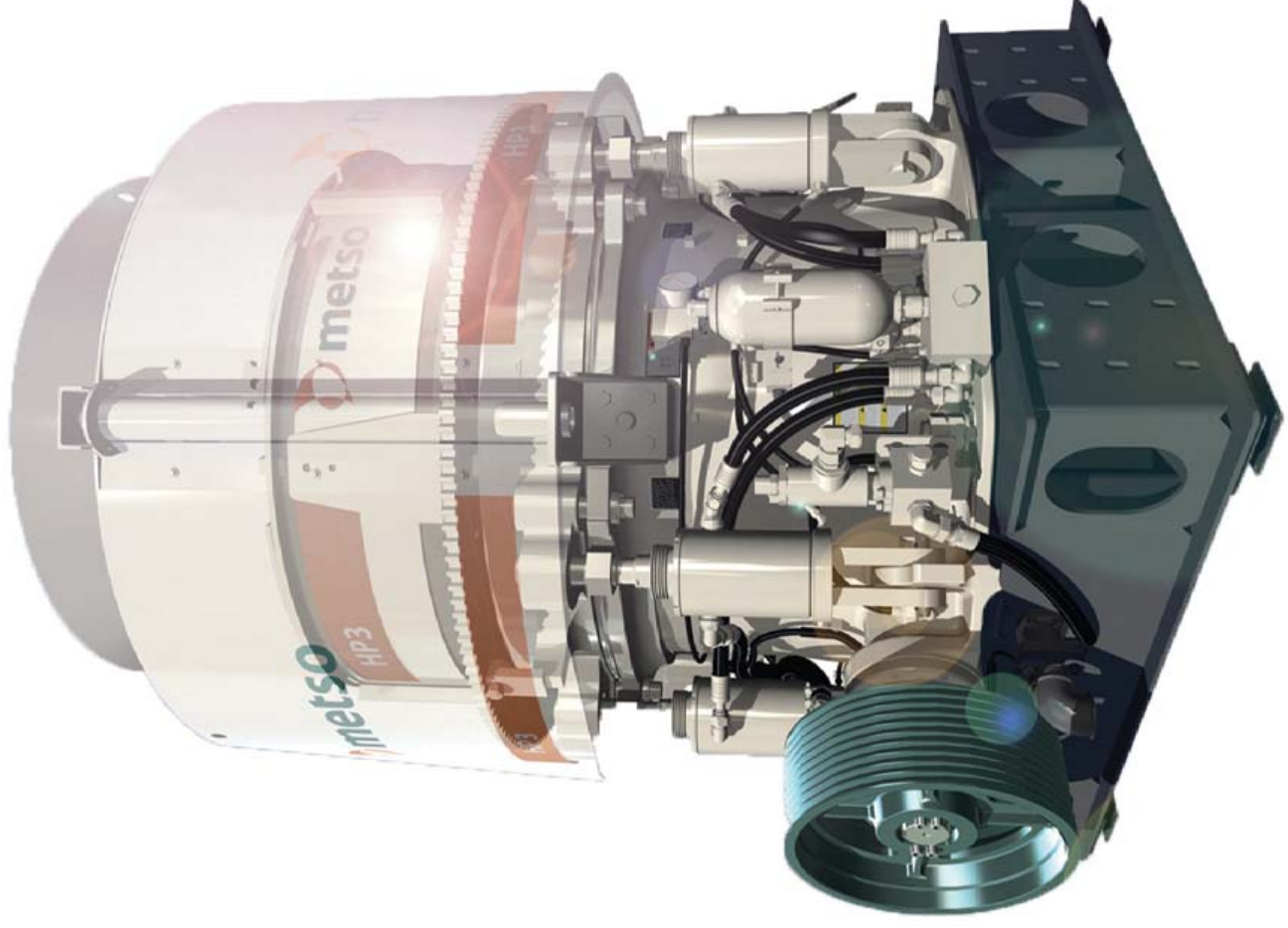
Dual-acting hydraulic tramp-release cylinders are used to let the crusher pass tramp iron and to provide a large clearing stroke if needed. The double accumulator combination provides better reactivity of the hydraulic system.

User friendly maintenance

Because we are working in potentially hazardous environments, HP Series cone crushers are designed to ensure maximum operator safety and easy maintenance. Accessibility from the top of the crusher to the principal components, easy access for liner maintenance, mechanical rotation of the bowl for removal with a simple press of a button, no backing compound on liners, and full protection with Metso C™ crusher automation make the Nordberg HP Series the most reliable cone crushers.

Benefits of Nordberg HP Series

- Large stroke
- Strong crushing force
- Attrition
- Reduction ratio
- Antisign
- Dual-acting cylinders



Nordberg® GP Series™



Nordberg® GP Series™

Why choose Metso's cone crusher?

Versatility

- Use the same crusher as a secondary, tertiary or quaternary machine, simply by changing the cavity
- A wide selection of strokes, depending on application
- Can be operated on/off feed

High and stable performance

- Robustly constructed design guarantees durability in high-power applications
- Stable performance throughout the liner life

Easy and safe to use and maintain

- Metso iC™ crusher automation
- Dynamic setting adjustment
- Dismantling from top
- Quick, easy, and cost-effective liner change, no backing material

Environmentally friendly

- Energy optimized due to stroke adjustment
- Effective utilization of natural raw materials both in design and performance
- No backing material

Cost effective installation

- Low installation height due to patented piston design
- Reduced need of steel structures and conveyor lengths
- Easy to install in place of an existing crusher

Cone crushers Nordberg® GP Series™

Nordberg® GP Series™ cone crushers have been developed to crush feed materials into desired end products efficiently, reliably, and economically.

Optimized for your needs

Metso, the global leader in rock crushing technology, has developed the Nordberg GP Series cone crushers for all rock types. Incorporating the latest crusher know-how, the GP Series crushers combine the highest crushing efficiency and end-product quality with the lowest production costs per ton.

Nordberg GP Series cone crushers embody Metso's 100+ years of commitment to first-class crusher design and product development. As a result, the GP Series offers several outstanding features that enable you to work efficiently in any secondary, tertiary or quaternary crushing application. Nordberg GP Series crushers are optimized for your crushing needs, whether your aggregate or mining process requires high reduction, first-class cubicity or great capacity.

Nordberg GP Series crushers provide you with unlimited possibilities in smooth process adaptation and full crushing process automation. All of this is backed by our worldwide, comprehensive pre- and aftersales support services. Take a closer look at the Nordberg GP Series crushers. We know you'll find a GP cone crusher that is ideal for your needs.

Benefits

- High and stable performance
- Versatility
- Cost-effective installation
- Easy and safe to use and maintain
- Environmentally friendly



Nordberg® GP Series™ Secondary cone crushers

The robust design of Nordberg GP Series cone crushers makes it possible to maintain high power levels that result in high productivity. The proven heavy-duty design and the use of high-quality Metso components with optimized wear parts keep production up and operating costs down.

Best long-term performance

Optimized cavity designs by the industry leader provide maximum yields for required high-quality end products. The stroke and cavity change feature allows crusher throughput to be easily adjusted to work in harmony with the rest of the crushing plant.

The steep head angle in secondary GP cone crushers guarantees trouble-free operation in varying feed conditions with a high reduction ratio. Continuing process and crusher control ensures high availability with optimum production levels of desired end products.

The Nordberg GP Series cone crusher is the right machine to maximize your profitability.

Increased production of desired end-product fractions

The robust design of GP Series cone crushers makes it possible to maintain high crushing power and pressure that leads to higher end-product capacity. Nordberg GP series secondary crushers are designed especially for efficient secondary crushing or primary gravel crushing applications.

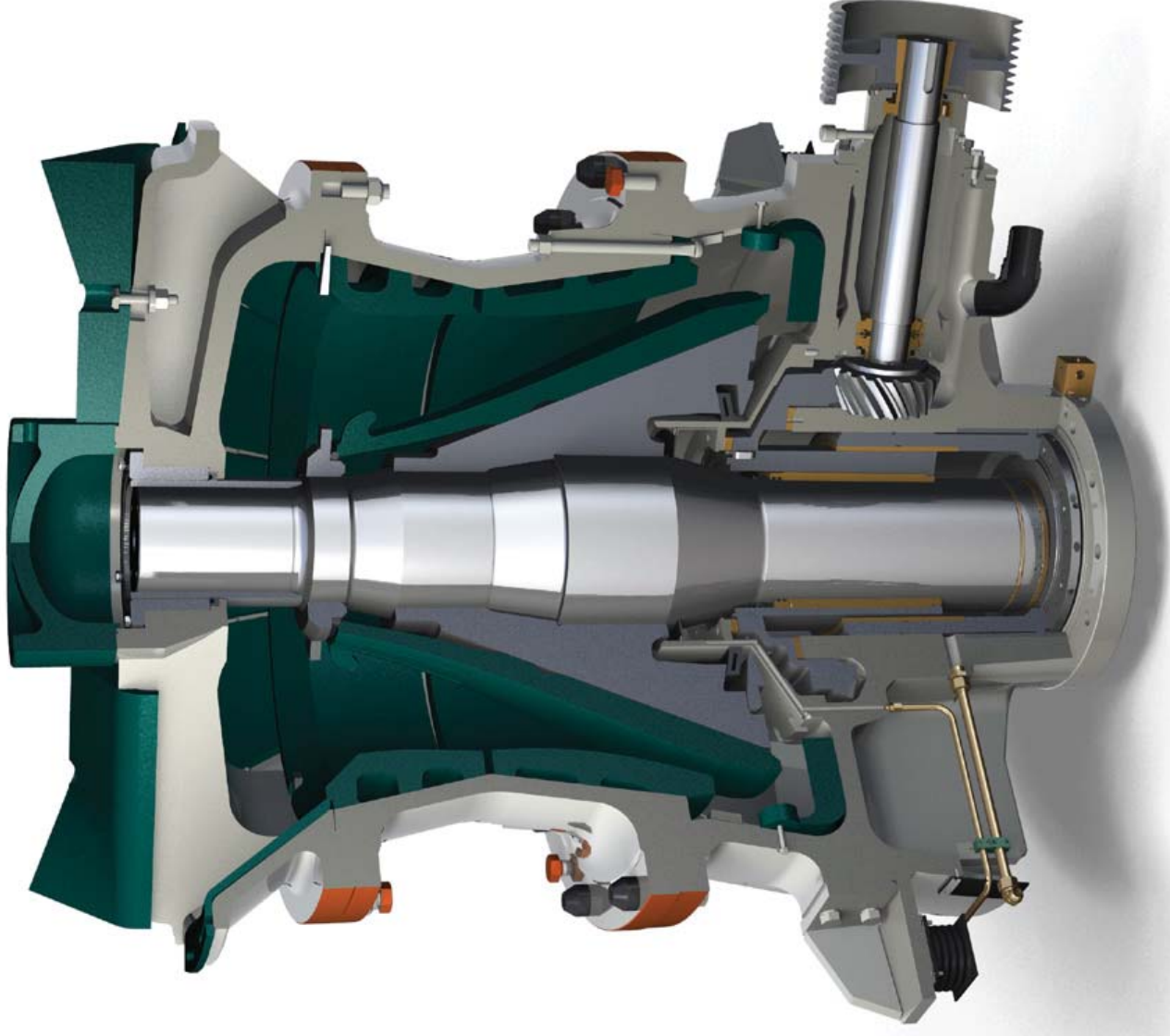
The crushers provide maximum feed opening for undisturbed operation with big feed, calibrating material to a consistent, easy-to-process size for the following crushing and screening stages.

Superior reliability

The reliability and safe operation of Nordberg GP Series cone crushers are the result of their unique design and high-quality steel. Their reliability in demanding crushing applications is guaranteed by Metso's acclaimed metallurgical know-how, and ongoing development of manganese materials, metallurgical compounds and geometrical design.

Benefits of Nordberg GP Series secondary crushers

- Best long-term performance
- Reliability in demanding applications
- First-class end-product shape
- High reduction ratio



Nordberg® GP Series™ Tertiary cone crushers

The robust design of the GP Series cone crushers enables high power levels and high productivity. The proven heavy-duty design and use of high-quality components with optimized wear parts keep operating costs down.

The highest performance and excellent end-product quality

The optimized design of the Nordberg GP Series castings enables the use of a higher power rating than any other cone crusher with an equal head diameter. The castings design together with high-quality Meiso components make it possible to maintain high crushing performance in the toughest conditions. High crushing forces, excellent cavity geometry and proven kinematics in tertiary applications result in first-class end-product shape and increased production of desired end-product fractions.

The dynamic setting control maintains excellent, stable end-product quality. The crusher setting can be continuously adjusted under load in all Nordberg GP Series cone crushers. Meiso IC™ crusher automation maintains a high power draw and compensates for liner wear during crushing without interruptions.

One crusher for the secondary, tertiary and quaternary crushing stage

Nordberg GP Series cone crushers are always adapted to your specific production requirements. A high power rating with a wide selection of cavities and strokes enables the use of the same crusher for

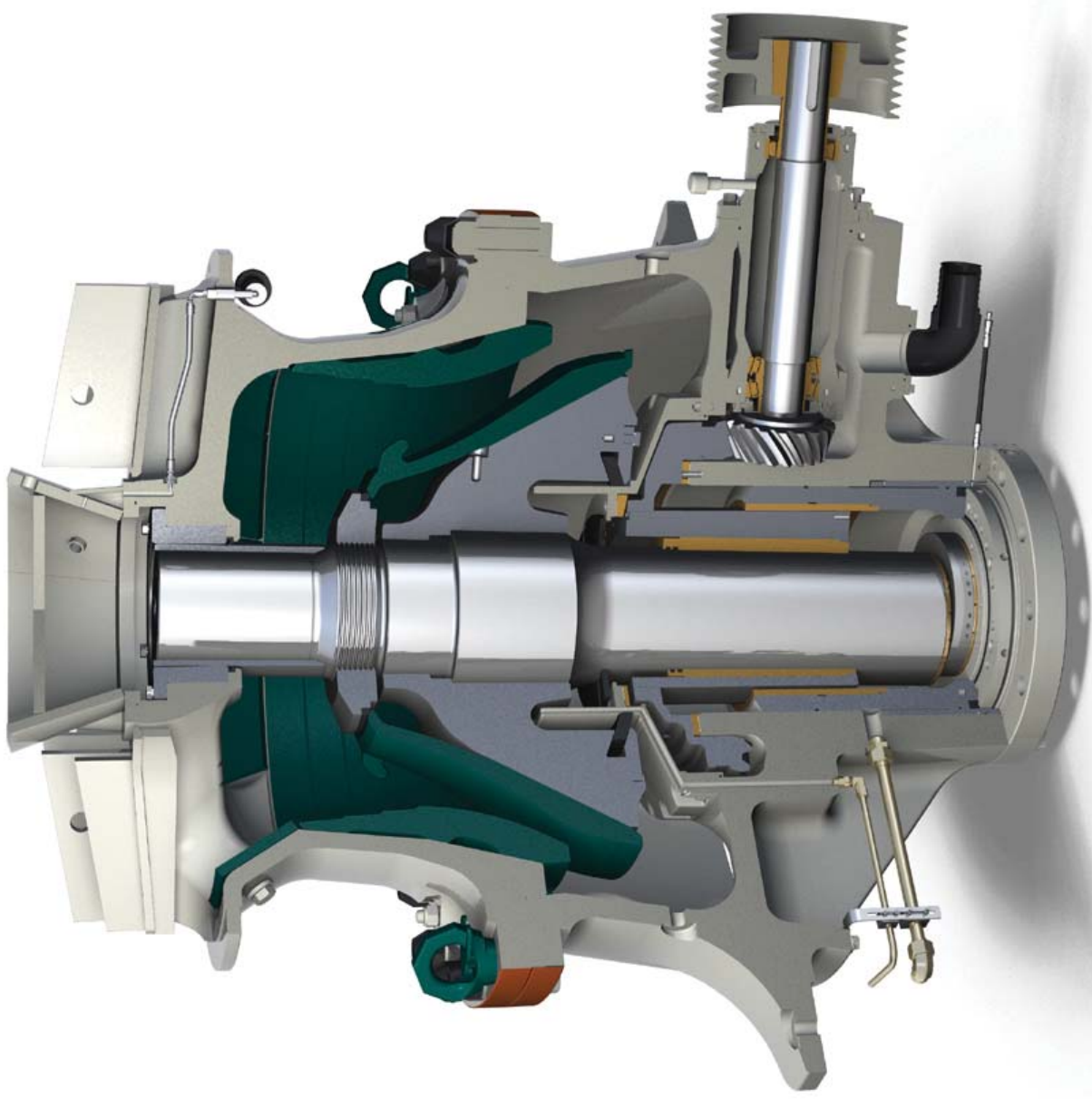
the 2nd, 3rd or 4th crushing stages. The stroke change feature allows crusher throughput to be easily adjusted to work in harmony with the rest of the crushing plant. The adjustable stroke also allows you to attain proper choke feed conditions and optimum crusher settings, ensuring the maximum yield of a required end-product size.

Guaranteed performance

Nordberg GP Series crushers are designed to be easy to maintain and service. When OEM parts are used, a long lifetime is guaranteed. Meiso IC crusher automation ensures that your GP cone crusher runs at its optimal performance level.

Benefits of Nordberg GP Series tertiary crushers

- The highest performance and excellent end-product quality
- One crusher for stages 2, 3 and 4
- Reliability in demanding applications
- First-class end-product shape
- Wider range of cavities



Nordberg® GP Series™

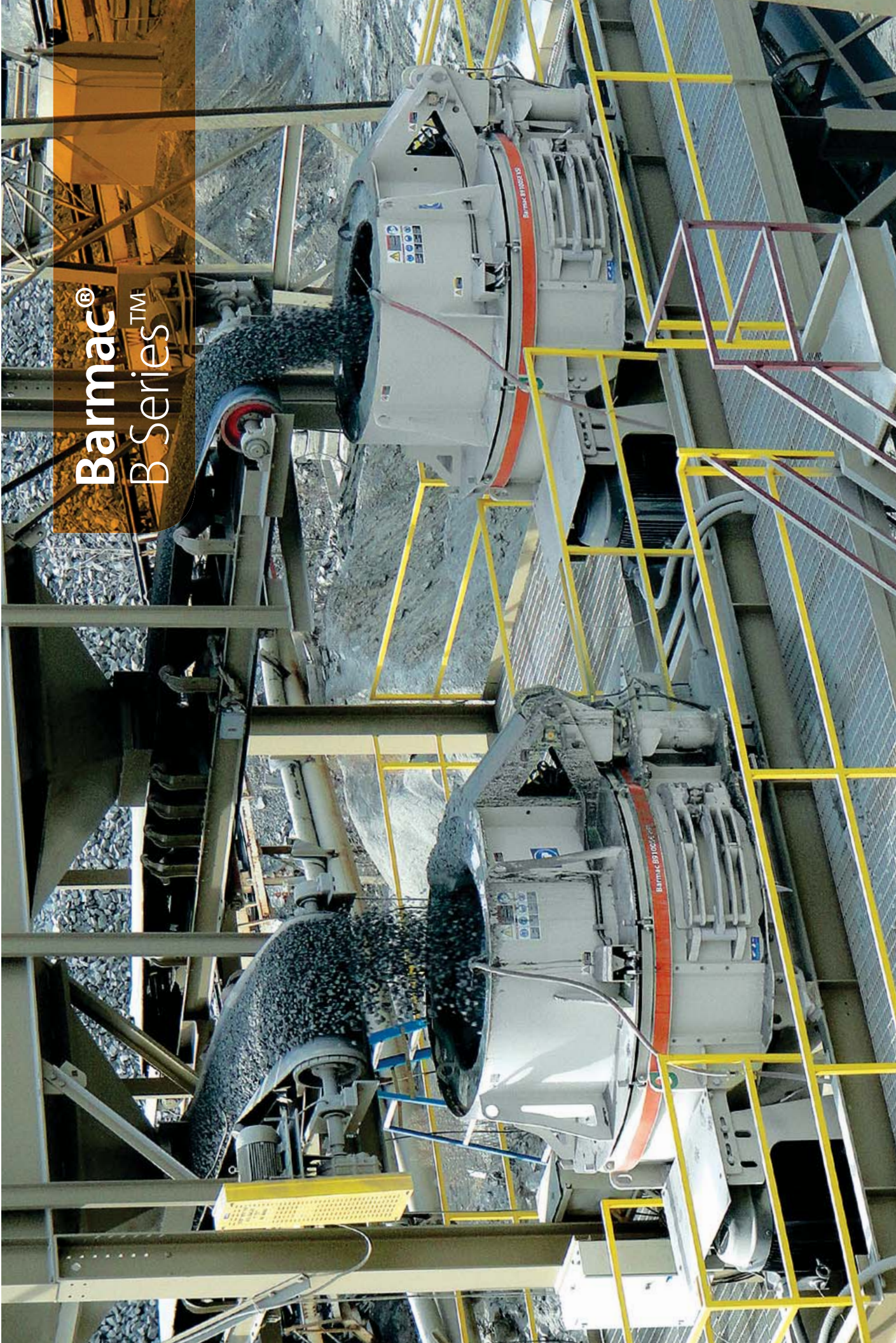
Technical specifications		GP1005*	GP2005*	GP3005**	GP5005**	GP7**	GP100**	GP220**	GP330**	GP550**	
Power	75 - 90 kW (100 - 125 hp)	110 - 160 kW (150 - 225 hp)	132 - 250 kW (175 - 350 hp)	200 - 355 kW (275 - 475 hp)	375 - 560 kW (500 - 750 hp)	75 - 90 kW (100 - 125 hp)	132 - 220 kW (175 - 300 hp)	250 - 315 kW (325 - 425 hp)	250 - 315 kW (325 - 425 hp)	250 - 400 kW (325 - 500 hp)	
Basic crusher weight**	7 350 kg 16 200 lbs	10 900 kg 24 000 lbs	16 200 kg 35 700 lbs	33 300 kg 73 400 lbs	62 000 kg 137 000 lbs	62 000 kg 137 000 lbs	10 200 kg 22 500 lbs	15 700 kg 34 600 lbs	15 700 kg 34 600 lbs	26 500 kg 58 400 lbs	
Feed opening		Feed opening									
Capacity											
EF							46 mm (1 3/4")	58 mm (2 1/4")	**	68 mm (2 3/4")	
F							53 mm (2")	89 mm (3 1/2")	85 mm (3 1/2")	95 mm (3 3/4")	
MF							95 mm (3 3/4")	101 mm (4")	107 mm (4 1/4")	113 mm (4 1/2")	
M	206 mm (8 1/4")	222 mm (8 3/4")	247 mm (9 3/4")	321 mm (12 5/8")	335 mm (13 1/4")	335 mm (13 1/4")	141 mm (5 1/2")	118 mm (4 3/4")	135 mm (5 1/4")	152 mm (6")	
C	239 mm (9 1/2")	295 mm (11 5/8")	332 mm (13 1/4")	401 mm (15 4")	414 mm (16 1/4")	414 mm (16 1/4")	142 mm (5 5/8")	182 mm (7 1/4")	184 mm (7 1/4")	192 mm (7 5/8")	
EC							213 mm (8 1/4")	213 mm (8 1/4")	225 mm (8 7/8")	250 mm (9 5/8")	
ECLS / ECTR							332 mm (13 1/4")	442 mm (17 1/4")	450 mm (17 3/4")	265 mm (10 3/4")	
Strokes		Strokes									
Stroke options	16, 20, 25 mm (5/8, 3/4, 1")	18, 25, 28, 32, 36 mm (3/4, 1 1/8, 1 1/4, 1 1/2, 5/8")	18, 25, 28, 32, 36 mm (3/4, 1 1/8, 1 1/4, 1 1/2, 5/8")	18, 25, 28, 32, 36, 40 mm (3/4, 1 1/8, 1 1/4, 1 1/2, 5/8, 1")	25, 28, 32, 36, 40, 45 mm (1, 1 1/8, 1 1/4, 1 1/2, 5/8, 1 1/8, 3/4")	25, 28, 32, 36, 40, 45 mm (1, 1 1/8, 1 1/4, 1 1/2, 5/8, 1 1/8, 3/4")	16, 20, 25 mm (5/8, 3/4, 1")	18, 25, 28, 32, 36, 40 mm (3/4, 1 1/8, 1 1/4, 1 1/2, 5/8, 1")	18, 22, 25, 28, 32, 36, 40 mm (3/4, 1 1/8, 1 1/4, 1 1/2, 5/8, 1 1/8, 3/4")	25, 28, 32, 36, 40, 45 mm (1, 1 1/8, 1 1/4, 1 1/2, 5/8, 1 1/8, 3/4")	

Capacity		Capacity									
Capacity		Capacity									
Closed side setting		Capacity									
6 mm		35 - 50									
8 mm	1/4"	39 - 55									
10 mm	3/8"	40 - 65	70 - 90								
15 mm	1/2"	44 - 72	77 - 99	110 - 160							
20 mm	1/2"	49 - 80	88 - 143	121 - 210							
25 mm	3/4"	50 - 95	105 - 175	130 - 260							
30 mm	1"	55 - 105	115 - 192	143 - 286							
35 mm	1 1/8"	65 - 105	120 - 230	155 - 300							
40 mm	1 1/4"	72 - 116	132 - 253	170 - 300							
45 mm	1 1/2"	88 - 99	150 - 265	180 - 350							
50 mm	1 3/4"	105 - 155	165 - 292	187 - 319							
55 mm	1 7/8"	116 - 170	176 - 220	198 - 220							
60 mm	2"	120 - 195	150 - 265	170 - 200							
65 mm	2 1/4"	132 - 214	165 - 292	187 - 319							
70 - 80 mm	2 1/2"	135 - 220	190 - 330	200 - 400							
80 - 90 mm	2 3/4"	149 - 242	209 - 363	220 - 440							
	3"	145 - 230	210 - 365	215 - 440							
	3 1/4"	160 - 253	231 - 402	236 - 484							
	3 1/2"	155 - 250	230 - **	235 - **							
	3 3/4"	170 - 275	243 - **	243 - **							
	4"	240 - **	260 - **	260 - **							
	4 1/4"	264 - **	286 - **	286 - **							
	4 1/2"	400 - 750	716 - 1257	716 - 1257							
	4 3/4"	440 - 825	826 - 1388	826 - 1388							
	5"	450 - 800	830 - 1380	830 - 1380							
	5 1/4"	495 - 880	915 - 1521	915 - 1521							
	5 1/2"	517 - 957	992 - 1653	992 - 1653							
	5 3/4"	500 - **	980 - **	980 - **							
	6"	550 - **	1080 - **	1080 - **							
	6 1/4"	1130 - **	1246 - **	1246 - **							

* Crusher without options
** Please contact Metso for more information



Barmac®
B Series™



Barmac® B Series™

Why choose Metso's VSI crusher?

Maximized availability

- Orange Series rotor - Uptime can be significantly increased through shorter maintenance breaks and longer life of wear parts
- Metso IC™ crusher automation

Easy to install and maintain

- Minimal foundation requirements
- Maintenance lifting tools available
- Inspection door for rotor access
- Orange Series rotor for quick & easy maintenance and maximized uptime

High-quality products

- Unique rock-on-rock principle results in superior cubical shape
- Performance is easy to fine-tune by rotor speed or cascade ratio
- Parts wear has no effect on product gradation or quality

Safety

- Interlocking device prevents the access when operating
- Specialized tools for rotor service and crusher top half lifting



VSI crushers Barmac® B Series™

Barmac® B Series™ Vertical Shaft Impactor (VSI) is the original rock-on-rock impactor. It has become synonymous with high-quality products in quarrying and minerals processing industries.

Proven producer of premium quality

The crushing process makes Barmac VSI unique. Whereas most other types of crushers use metallic parts to crush rock, Barmac VSI uses the rock fed into the machine to crush itself. This autogenous crushing action offers the lowest possible cost per ton of any impact crushing method. The high velocity impact crushing achieved in a Barmac VSI improves the soundness and shape of the material and produces the highest quality end products on the market today. It is widely known that the more cubical your product, the better its performance in concrete, asphalt and base mixtures.

Barmac VSI is usually applied in the last phase of the crushing circuit. The quarrying and construction industry has always been Barmac VSI's main application area with thousands of units operating around the world, followed by many demanding manufactured sand, heap leaching, pre-grinding, industrial minerals and recycling applications. This is possible because of the unique free-impact crushing and grinding action combined with the ability to accept fines in the feed and to fine-tune the crusher's performance by simply changing the rotor speed or cascade ratio.

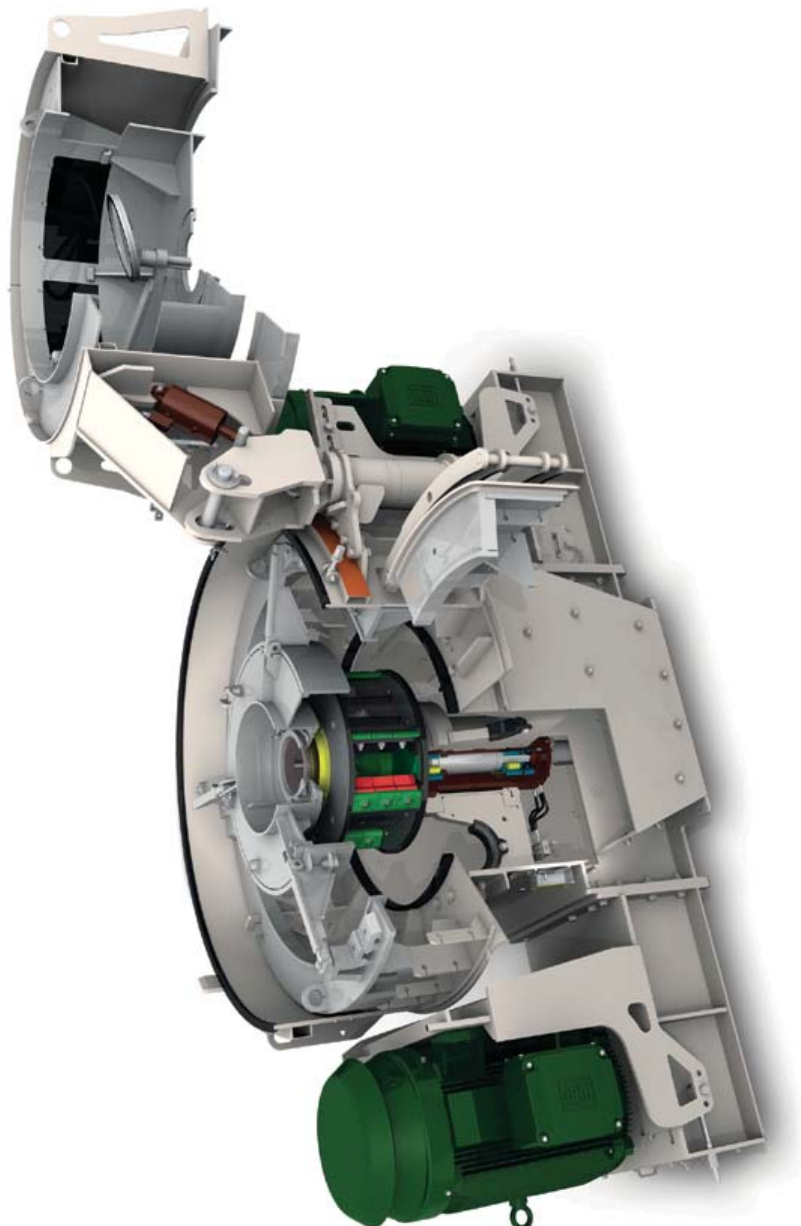
Benefits

- Produces a product of superior cubical shape
- Ability to control product grading
- Low wear costs due to unique rock-on-rock crushing
- Accepts fine material in feed

Barmac® B Series™ VSI

Your competitive advantage

Barmac B Series VSI is unbeatable when you require maximum availability, low operational costs, consistent high-quality products, and a VSI crusher that meets all the latest safety requirements.



The heart of success

The Barmac VSI rotor has been developed to prolong the lifetime of its wear parts and to increase the operational availability by reducing the time needed for parts changes. Deep rotor technology (DTR) makes it possible to reach the highest possible capacities with the lowest possible power consumption.

Genuine premium-quality Metso parts assure trouble-free operation. The right materials and profiles can be supplied for a long lifetime of crushing.

Cascading optimizes quality

The primary path for the feed material is through the rotor where material can be accelerated up to rotor tip speeds of 80 m/s (262 ft/s) before being discharged into the crushing chamber. Additionally, material may be cascaded into the crushing chamber, bypassing the rotor. The cascade feature enables the operator to optimize the capacity and power consumption and to manipulate the product grading and shape to meet all specification requirements.

User-friendly and minimizes downtime

Barmac B Series VSI is designed with ease of installation in mind. Foundation requirements are minimal due to the low static and dynamic forces in operation.

Service time is drastically reduced with quick access to the rotor parts via a safe-to-use inspection door. The roof lifter and rotor service arm eliminate the requirement for an external crane in regular maintenance and give easy access to the internal workings and rapid rotor changes. Simple and reliable automatic lubrication handles the daily greasing of the main shaft. Metso iC™ crusher automation ensures safe operation and condition monitoring.

Benefits of Barmac B Series

- Deep rotor technology maximizes capacity (DTR)
- Fine-tune product with cascading
- Multiple optional features to help installation and maintenance
- Metso parts for trouble-free operation

Barmac® B Series™

Technical specifications	B6150SE™	B7150SE™	B9100SE™
Maximum feed size *)	37 mm (1 1/2")	45 mm (1 3/4")	50 mm (2")
Speed	1 500 - 2 500 rpm	1 100 - 2 100 rpm	1 000 - 1 800 rpm
Power	75-160 kW (100 - 200 hp)	160-320 kW (200 - 400 hp **)	320-600 kW (400 - 800 hp)
Operational crusher weight ***)	6 400 kg 14 100 lbs	12 400 kg 27 300 lbs	14 400 kg 31 700 lbs
Capacity			
Minimum capacity	60 MtpH	125 MtpH	263 MtpH
	66 StpH	137 StpH	289 StpH
Maximum capacity with cascade	217 MtpH	545 MtpH	775 MtpH
	238 StpH	599 StpH	852 StpH

*) Square mesh
 **) Up to 250 kW (300 hp) single-drive configuration
 ***) Including motors



Metso's new Orange Series Rotor is a user-friendly and cost-effective solution for your VSI application. Uptime can be significantly increased through shorter maintenance breaks and longer life of wear parts.



Metso IC™ crusher automation

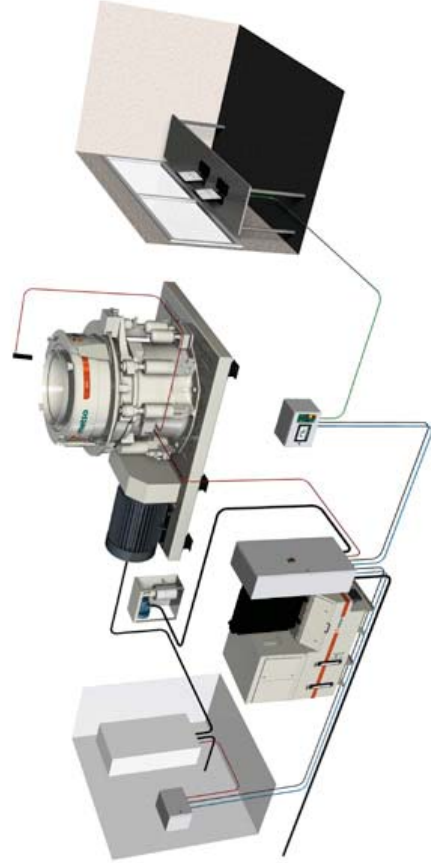
Crusher automation

A comprehensive range of Metso IC™ intelligent crusher automation solutions is available for Metso crushers. Metso IC automation ensures full performance and is precisely designed to meet your expectations and crushing plant requirements for consistent performance, safety and easy control of crusher parameters.

The automation brings precision and consistency to your crusher operations. This leads to predictable and stable production and end-product quality, and thus ensures profitable operation of the crusher and the whole crushing plant. With optimized start-up and shut-down procedures and sequences integrated into the IC automation, you can be sure that the crusher is working correctly in all circumstances and that the downtime of the crusher is minimal.

Metso IC crusher automation allows you to maximize the performance of your high-quality Metso crushers. This is done with carefully defined safety parameters for oil temperature, power, draw and oil pressure, which are indicators of the actual crusher load. Metso IC crusher automation monitors the crusher condition and gives an early indication if there's a problem in the crusher. This can help solve a problem before it becomes serious and costly.

Metso IC crusher automation can be easily connected to any plant automation system used in the crushing and screening industry. This enables centralized control of the crusher and the whole plant, allowing the operator to safely control and alter crusher operating parameters according to production needs from a single location.



Easy integration to any plant automation system is one of the benefits of Metso IC crusher automation.

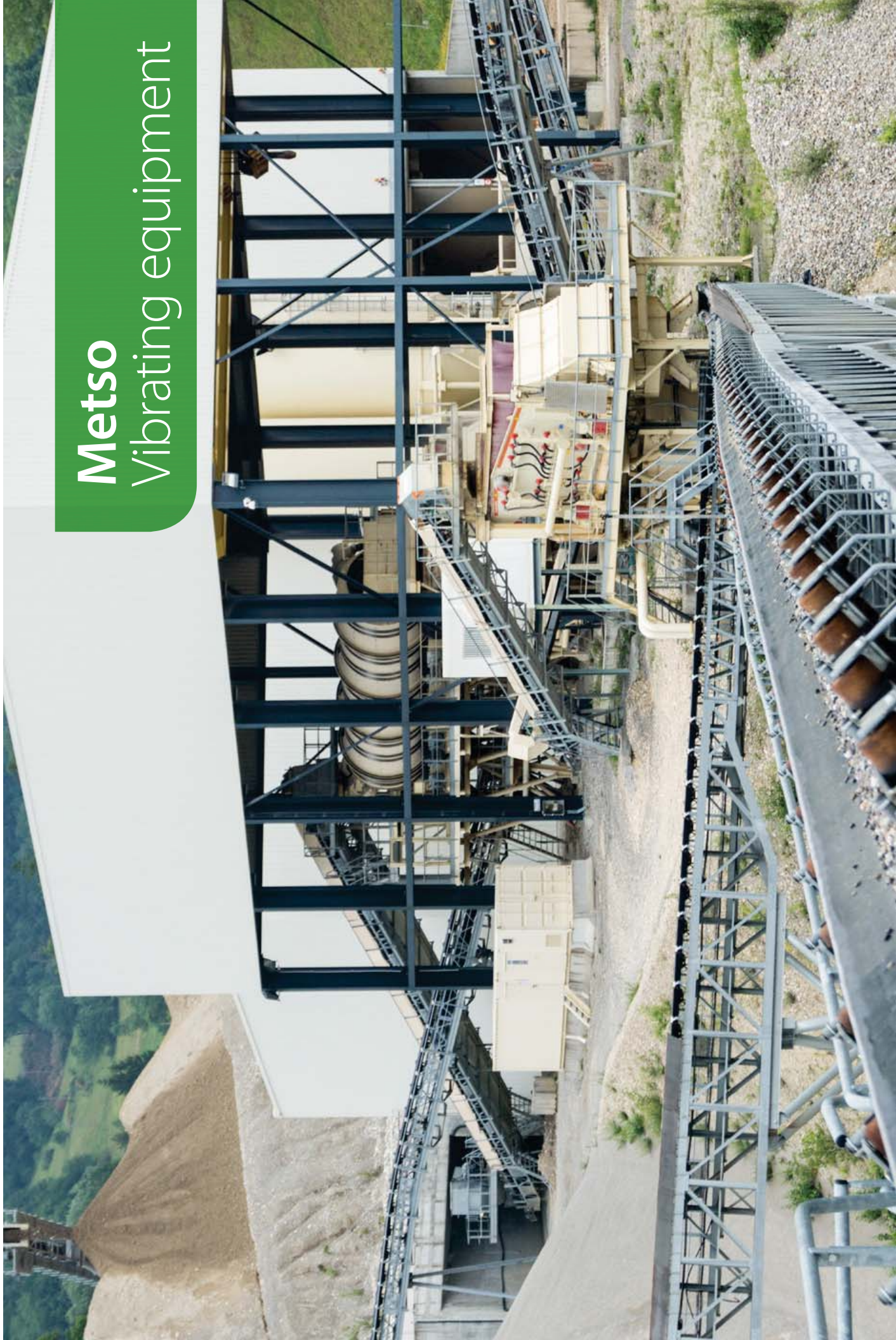


Metso IC crusher automation is easy and safe to use. The process can be started and stopped by pressing one single button.



Metso IC crusher automation adjusts the crushing process automatically. You can also benefit from the special fine-adjustment features that enable easy crushing process optimization.

Metso Vibrating equipment



Metso Vibrating equipment

Metso feeders and screens deliver optimal uptime and the lowest total cost to operate with trouble-free, reliable designs and high availability of wear and spare parts.

Dependable screening performance

In addition to being a provider of crushing and complete rock and mineral processing solutions, Metso has also gained a worldwide reputation as a specialist in vibrating equipment. As an example, more than 30000 units of the highly recognized and robustly designed Metso PREMIER CV8™ screen have been sold and now deliver reliable screening results all around the world.

Maintenance friendly

Our well proven Metso modular MV™ vibrators with the cardan shaft design are uniquely easy to maintain. Unlike conventional designs, our MV vibrators have doubled bearings that ensure extended bearing life. The modular design and highly available wear and spare parts combined with a low-stress designed screen body provide for maximize uptime.

Worker safety

Ease of maintenance and worker safety are a priority, and Metso's vibrating solutions lead the way. Whatever your process requirements, Metso has the right solution - from dependent inclined, high-energy horizontal or high-capacity banana screens. Just name your application, and Metso's professionals will find the most productive and cost-effective vibrating equipment for you.

Benefits

- Reliability
- Availability
- Performance
- Lowest total cost
- Worker safety



Metso PREMIER and COMPACT screens

Why choose Metso's screen?

Performance

- Easy adjustability of stroke & speed
- Extensive selection of screening panels type
- Extensive selection of upgrade options

Durability

- MV™ vibrators: long bearing life (double bearing design)
- Weld free side plates and huck-bolted assembly
- Robust deck frame design
- Uncompromised wear protection standard

Worker safety

- Comfortable room between the decks
- High safety belt guards design
- Safety coil spring covers
- Rubber stabilizers as standard
- Configured to be equipped with dust and noise protection

Maintenance friendly

- Modular MV™ vibrators and cardan shaft design
- Easy access and quick replacements of screening media
- Easily replaceable modular crossbeam protection
- Modular wear and impact resistance rubber linings
- Centralized and conveniently located greasing manifold



Inclined screens Metso PREMIER CVB™

The Metso PREMIER CVB™ is the screen for you when you want a versatile and durable partner in your screening process.

Lowest total cost of your screening operation

Metso PREMIER CVB™ has one of the industry's strongest legacies in the industry of delivering dependable screening performance. Its uniquely robust deck frames are an example of its enhanced durability and reliability. The shaft line is positioned at the center of gravity, a perfect circular motion results on all points on the screen. Combined with an adjustable slope angle from 12-22° this circular motion gives very good screening efficiency for all types of applications, such as primary, technical and final screening. The weld-free crossmember sections reduce the risk of fatigue stress and optimize the product lifetime. In addition, the CVB Series has weld-free side plates, which increases the screen's durability and stress tolerance. Huck-bolting gives you perfect and homogeneous assembling conditions and eliminates the risk of detachment. Size for size, the CVB Series inclined screens are often the most economical in terms of capital expenditure and power consumption compared to other types of screens.

Metso PREMIER CVB has been designed to deliver the lowest total cost to operate with its trouble-free design and high availability of wear and spare parts, which eliminates expensive downtime due to high-cost customized items with low availability.

Benefits

- Circular motion with up to 4G
- Adjustable incline 15°-20°
- High safety design
- High-quality wear protection
- Metso MW™ vibrators

Horizontal screens Metso PREMIER ES™

Ramp up your screening efficiency with the revolutionary, high-energy elliptical motion Metso PREMIER ES™ screen.

High-efficiency screening

Metso PREMIER ES™ screens feature two unbalanced shaft lines rotating in opposite directions to generate a high-energy elliptical motion. This deceptively simple solution is more efficient than conventional horizontal screens that have a linear motion, and the ES Series is more reliable than other elliptical motion screens. What's more, the ES Series separates your materials with consistency and accuracy, even in damp and sticky conditions. The high-energy elliptical motion of the ES Series gives you up to 25% greater capacity than a conventional screen of the same size. In difficult screening conditions – such as wet screening or screening of sticky and dirty materials – the ES Series provides exactly the kind of aggressive screening action you need. Capable of handling all kinds of material, from quarry solid to gravel, you can trust the ES Series to perform reliably in applications that require a high level of screening accuracy. The ES Series is designed to keep downtime and maintenance to a minimum, as there is no mechanical timing device, no gears, no belt and no oil leakage. Quite simply, there's very little that can go wrong.

Compared with other elliptical motion screens, the ES Series is designed with up to 50% more space between the decks.

Benefits

- Elliptical motion with up to 6G
- High-energy screening
- Adjustable incline 0-5°
- Easy maintenance and safe access
- Metso MV™ vibrators





Multi-slope screens Metso PREMIER TS™

The Metso PREMIER TS™ is what you need when you are looking for uniquely designed high-capacity screens.

High-capacity screening

The Metso PREMIER TS™ banana screen is a triple-slope screen ensuring a fast travel speed with an elliptical motion in the first slope, medium travel speed and circular motion in the second slope, and a low travel speed, backwards rotating elliptical motion in the last section. The slower travel speed and strong stratification effect ensures more time and more surface to screen the near-size particles. A single shaft located above the center of gravity generates the elliptical motion with variable angles.

The TS Series banana screen delivers up to 40% more capacity than a standard inclined screen – especially when the feed material contains a high percentage of fines. Creating a safe working environment is one of Metso's top priorities. Safety solutions are not an add-on, but part of our standard offering. This is another factor that puts the TS Series ahead of the competition. The feedback, discharge spout and cardan shaft come with high-quality, impact-resistant rubber linings as standard. Upgrade options, such as replaceable modular crossbeam protection and Trelex™ LS™ modular screening media, make the screen well suited for high-capacity applications with ensured uptime.

Benefits

- Elliptical motion up to 6G
- High-energy screening
- Multi-slope inclines: 25°-20°-16°
- Easy maintenance and safe access
- Metso MV™ vibrators

Optimize your screen Multiple options for your needs

A wide offering of options enables you to customize your screen to meet your needs. Full and appropriate use of these options helps to optimize the efficiency and uptime of your plant.



Modular screening media

- Trellex® LS, RU and PU



Crossmember protection

- Trellex® CMP-polyurethane



Dust sealing system

- Trellex® dust control



Side tension screening media

- Trellex® TCO RU and PU



Spray pipe unit

- Ideal package for wet screening



Galvanization treatment

- Optimal corrosion protection



Automatic greasing kit

- Electrical power greasing unit



Anti-blinding system kit

- Trellex® ABR polyurethane anti-blinding rods



Modular rail-wear protection

- Trellex® polyurethane HD upgrade strip

Metso PREMIER CV® inclined screens					
Range	Deck dimension	Area	Decks	M/V vibrator	Weight *)
CVB101™	1 365 x 3 460 mm 5' x 12'	5,7 m ²	1	2 x MW2	4 000 kg (8 900 lb)
CVB102™	1 365 x 3 460 mm 5' x 12'	60 ft ²	2	2 x MW2	5 200 kg (11 500 lb)
CVB103™	1 365 x 3 460 mm 5' x 12'	60 ft ²	3	2 x MW2	6 400 kg (14 100 lb)
CVB104™	1 365 x 3 460 mm 5' x 12'	60 ft ²	4	2 x MW2	8 000 kg (17 700 lb)
CVB201™	1 670 x 4 880 mm 5' 6" x 16'	91 m ²	1	2 x MW2	5 000 kg (11 000 lb)
CVB203™	1 670 x 4 880 mm 5' 6" x 16'	96 ft ²	2	2 x MW2	7 000 kg (15 400 lb)
CVB204™	1 670 x 4 880 mm 5' 6" x 16'	96 ft ²	3	2 x MW2	10 080 kg (22 300 lb)
CVB204™	1 670 x 4 880 mm 5' 6" x 16'	96 ft ²	4	2 x MW2	12 350 kg (27 300 lb)
CVB301™	1 870 x 6 100 mm 6' x 20'	11,4 m ²	1	2 x MW3	6 200 kg (13 700 lb)
CVB302™	1 870 x 6 100 mm 6' x 20'	120 ft ²	2	2 x MW3	9 600 kg (21 300 lb)
CVB303™	1 870 x 6 100 mm 6' x 20'	120 ft ²	3	2 x MW3	11 900 kg (26 300 lb)
CVB304™	1 870 x 6 100 mm 6' x 20'	120 ft ²	4	2 x MW4	13 000 kg (28 700 lb)
CVB401™	2 480 x 6 100 mm 8' x 20'	15,1 m ²	1	2 x MW2	7 500 kg (16 600 lb)
CVB402™	2 480 x 6 100 mm 8' x 20'	160 ft ²	2	2 x MW3	11 000 kg (24 300 lb)
CVB403™	2 480 x 6 100 mm 8' x 20'	160 ft ²	3	2 x MW4	16 000 kg (35 300 lb)
CVB404™	2 480 x 6 100 mm 8' x 20'	160 ft ²	4	2 x MW4	19 000 kg (41 900 lb)
CVB501™	2 480 x 7 320 mm 8' x 24'	18,2 m ²	1	2 x MW3	9 500 kg (21 000 lb)
CVB502™	2 480 x 7 320 mm 8' x 24'	192 ft ²	2	2 x MW3	14 000 kg (30 900 lb)
CVB503™	2 480 x 7 320 mm 8' x 24'	192 ft ²	3	4 x MW3	19 000 kg (41 900 lb)
CVB602™	3 070 x 7 320 mm 10' x 24'	22,5 m ²	2	4 x MW3	22 100 kg (48 800 lb)
CVB603™	3 070 x 7 320 mm 10' x 24'	240 ft ²	3	4 x MW4	26 100 kg (57 600 lb)
CVB101P™	1 365 x 3 460 mm 5' x 12'	5,6 m ²	1	2 x MW2	4 000 kg (8 900 lb)
CVB102P™	1 365 x 3 460 mm 5' x 12'	60 ft ²	2	2 x MW2	5 100 kg (11 300 lb)
CVB103P™	1 365 x 3 460 mm 5' x 12'	60 ft ²	3	2 x MW3	7 100 kg (15 700 lb)
CVB201P™	1 670 x 4 880 mm 5' 6" x 16'	89 m ²	1	2 x MW2	5 000 kg (11 000 lb)
CVB202P™	1 670 x 4 880 mm 5' 6" x 16'	96 ft ²	2	2 x MW3	7 190 kg (15 900 lb)
CVB203P™	1 670 x 4 880 mm 5' 6" x 16'	96 ft ²	3	2 x MW3	9 500 kg (21 000 lb)
CVB301P™	1 870 x 6 100 mm 6' x 20'	11,1 m ²	1	2 x MW2	6 200 kg (13 700 lb)
CVB302P™	1 870 x 6 100 mm 6' x 20'	120 ft ²	2	2 x MW3	9 300 kg (20 600 lb)
CVB303P™	1 870 x 6 100 mm 6' x 20'	120 ft ²	3	2 x MW3	10 800 kg (23 900 lb)
CVB401P™	2 480 x 6 100 mm 8' x 20'	14,9 m ²	1	2 x MW3	7 500 kg (16 600 lb)
CVB402P™	2 480 x 6 100 mm 8' x 20'	160 ft ²	2	2 x MW3	11 000 kg (24 300 lb)
CVB403P™	2 480 x 6 100 mm 8' x 20'	160 ft ²	3	2 x MW4	16 000 kg (35 300 lb)
CVB501P™	2 480 x 7 320 mm 8' x 24'	17,8 m ²	1	2 x MW3	9 500 kg (21 000 lb)
CVB502P™	2 480 x 7 320 mm 8' x 24'	192 ft ²	2	2 x MW4	14 500 kg (32 000 lb)
CVB503P™	2 480 x 7 320 mm 8' x 24'	192 ft ²	3	4 x MW3	18 000 kg (39 700 lb)
Metso PREMIER TS™ horizontal screens					
Range	Deck dimension	Area	Decks	M/V vibrator	Weight *)
ES203™	1 670 x 4 880 mm 5' 6" x 16'	91 m ²	2	2 x MW2 / 2 x MW3	6 500 kg (14 300 lb)
ES203™	1 670 x 4 880 mm 5' 6" x 16'	96 ft ²	3	2 x MW2 / 2 x MW3	10 500 kg (23 150 lb)
ES302™	1 670 x 6 100 mm 5' 6" x 20'	11,4 m ²	2	2 x MW2 / 2 x MW3	9 500 kg (20 950 lb)
ES303™	1 670 x 6 100 mm 5' 6" x 20'	120 ft ²	3	2 x MW2 / 2 x MW3	11 500 kg (25 500 lb)
ES402™	2 480 x 6 100 mm 8' x 20'	15,1 m ²	2	2 x MW3 / 2 x MW4	12 360 kg (27 250 lb)
ES403™	2 480 x 6 100 mm 8' x 20'	160 ft ²	3	2 x MW3 / 2 x MW4	16 500 kg (36 380 lb)
ES503™	2 480 x 7 320 mm 8' x 24'	17,8 m ²	2	2 x MW3 / 2 x MW4	15 500 kg (34 200 lb)
ES503™	2 480 x 7 320 mm 8' x 24'	192 ft ²	3	2 x MW3 / 4 x MW3	23 500 kg (51 700 lb)
Metso PREMIER TS™ multi-slope screens					
Range	Deck dimension	Area	Decks	M/V vibrator	Weight *)
TS2.2™	1 300 x 4 300 mm 4' 3" x 14'	7,5 m ²	2	2 x MW2	6 000 kg (13 230 lb)
TS2.3™	1 300 x 4 300 mm 4' 3" x 14'	80,4 ft ²	3	2 x MW2	8 000 kg (17 640 lb)
TS3.2™	1 800 x 6 100 mm 5' 9" x 20'	10,8 m ²	2	2 x MW3	8 000 kg (17 640 lb)
TS3.3™	1 800 x 6 100 mm 5' 9" x 20'	116,2 ft ²	3	2 x MW3	10 000 kg (22 050 lb)
TS4.2™	2 400 x 6 100 mm 7' 9" x 20'	14,4 m ²	2	2 x MW4	9 000 kg (19 840 lb)
TS4.3™	2 400 x 6 100 mm 7' 9" x 20'	155,6 ft ²	3	2 x MW4	12 000 kg (26 450 lb)
TS5.2™	2 400 x 8 200 mm 7' 9" x 27'	20 m ²	2	2 x MW4	16 000 kg (35 275 lb)
TS5.3™	2 400 x 8 200 mm 7' 9" x 27'	214,9 ft ²	3	4 x MW3	20 000 kg (44 090 lb)
TS6.3™	3 000 x 8 200 mm 10' x 27'	35 m ²	2	4 x MW3	31 000 kg (68 300 lb)
TS6.3™	3 000 x 8 200 mm 10' x 27'	270 ft ²	3	4 x MW4	28 000 kg (61 800 lb)

*) Values are indicative only. Please contact Metso for more information.

Metso COMPACT™ screens



Metso COMPACT CVB-M™ inclined screens with circular motion offer one of the most versatile screen arrangements to provide high reliability. The compact design is optimized for high portability without sacrificing performance.

An extremely versatile solution

In many applications, the set-up time is crucial, as the application and process needs change from location to location. The design of the Metso COMPACT CVB-M™ inclined screens includes features so that it can be quickly put into operation. These features include fast and efficient change of the screening media, and the ability to adjust stroke and RPM parameters within a wide range to optimize performance quickly.

Metso COMPACT CVB-M™ screens fit into a single container, making moving them fast and easy.



As part of the Metso COMPACT screen series, the FS™ horizontal screens are designed for integration into tight spaces, both with fixed and mobile plants. The FS screens include carefully selected features in a standard configuration, for easy and reliable operation.

A high accuracy screen

Metso COMPACT FS™ flat screens are horizontal elliptical motion screens. This screen is extremely compact for the best portability; its triple shaft line generates a high-energy elliptical vibration. The combination of horizontal decks + high acceleration + aggressive elliptical vibration provides a strong stratification of the bed depth, which leads to high screening accuracy.

Metso COMPACT CVB-M™ inclined screens					
Range	Deck dimension	Area	Decks	MV/vibrator	Weight *)
CVB1540-3M™ CVB1540-4M™	1,500 x 4,000 mm 5' x 13'	6 m ² 65 ft ²	3 4	2 x MW2	4,000 kg (8,900 lbs) 10,000 kg (22,000 lbs)
CVB1845-3M™ CVB1845-4M™	1,800 x 4,500 mm 6 x 15'	8.1 m ² 87.2 ft ²	3 4	2 x MW2	4,500 kg (10,000 lbs) 5,100 kg (11,300 lbs)
CVB2060-3M™ CVB2060-4M™	2,000 x 6,000 mm 6.6 x 20'	12 m ² 129.2 ft ²	3 4	2 x MW3	6,500 kg (14,400 lbs) 10,200 kg (22,500 lbs)
Metso COMPACT FS™ horizontal screens					
Range	Deck dimension	Area	Decks	MV/vibrator	Weight *)
FS2520™ FS2523™	1,800 x 4,800 mm 6 x 16'	8.9 m ² 96 ft ²	2 3	6 x MW2	9,100 kg (20,000 lbs) 12,000 kg (26,500 lbs)
FS303™	1,800 x 6,100 mm 6 x 20'	11.1 m ² 120 ft ²	3	6 x MW2	10,400 kg (23,000 lbs)
FS353™	2,100 x 6,100 mm 7 x 20'	13 m ² 140 ft ²	3	6 x MW3	13,500 kg (29,800 lbs)
FS403™	2,400 x 6,100 mm 8 x 20'	14.9 m ² 160 ft ²	3	6 x MW3	17,500 kg (38,600 lbs)

*) Values are indicative only. Please contact Metso for more information.



Primary scalpers Metso VG™

Metso VG™ primary scalpers have been designed for the toughest applications, high capacity and the ability to process abrasive material, either in stationary or mobile plants.

High scalping efficiency means more tonnage

Metso VG™ primary scalpers are able to maximize the efficiency of the primary plant across a wide variation of application.

VG primary scalpers can be used with different types of feeders, such as push feeders, apron feeders or vibrating pan feeders.

The speed and stroke are easily adjustable, ensuring optimal feed control of the primary crusher. A long stroke capability means better scalping efficiency, delivering a linear motion with high G force (5.5 G). Our scalping grizzlies are slightly inclined at 5° to reduce blinding when feed is sticky and contains fines (increased capacity). It can be fitted with various grizzly bar options that ensure wide separation flexibility. The vibrator beam is weld-free and fully huck-bolted to ensure optimal, robust performance. The MV-vibrator and cardan shaft design ensure a much more reliable operation than a direct belt-drive design.

Benefits

- Metso MV™ vibrators
- High G force
- Adjustable stroke
- Fully huck-bolted design
- Easy maintenance



Grizzly feeders Metso VF™

Metso VF™ grizzly feeders have been designed for the toughest applications, high capacity and the ability to process abrasive material, either in stationary or mobile plants.

Maximized efficiency of the primary section

A long stroke capability means better scalping efficiency, especially when feed material contains a high ratio of flaky material. In addition to delivering good process control and flexibility for your operation, our VF™ feeders are designed to ensure easy maintenance and secured reliability.

The primary feeds are equipped with our acclaimed MV vibrators with a cardan shaft design, similar to our screens. The MV design not only ensures high availability of spare parts but also an unbeatable combination of easy maintenance and excellent durability.

Our vibrating units can be optimized for your specific needs through a wide range of options. You can choose an electrical or hydraulic drive, a steel or rubber lining, a vibrating chute underneath the grizzly section and an automatic greasing unit.

- Benefits**
- Metso MV™ vibrators
 - Various grizzly bar options
 - Adjustable stroke
 - Fully huck-bolted design
 - Easy maintenance



Compatibility with primary plants

Jaw crusher	Grizzly feeder		Separate feeder + grizzly/scalper		Recommended for		Capacity ^{*)}	Top feed size ^{*)}
	Mobile	Stationary	Pan feeder	Push feeder + grizzly/scalper Stationary	Sticky feed	A lot of fines in the feed		
C80[™]	TK9-2-2V	TK9-3-2V					300 mtpsh (840 stph)	650 mm (18")
C96[™]	TK9-3-2V	TK9-3-2V					350 mtpsh (930 stph)	500 mm (15')
C100[™]		B10-3-2V		DET10-38	X	X	500 mtpsh (560 stph)	700 mm (27')
C108[™]	TK11-4-2V						500 mtpsh (560 stph)	700 mm (27')
C116[™]	TK11-4-2V	B10-3-2V			X	X	500 mtpsh (560 stph)	700 mm (27')
	TK12-4-2V			DET10-38	X	X	500 mtpsh (560 stph)	700 mm (27')
C120[™]		VF561-2V	PF561	HRB600-12		X	600 mtpsh (670 stph)	800 mm (32')
		VF561-2V	PF561	HRB600-12	X	X		
C130[™]		VF661-2V	PF661	HRB600-12		X	700 mtpsh (780 stph)	900 mm (36')
	VF661-2V	VF661-2V	PF661	HRB600-12	X	X	600 mtpsh (670 stph)	
C150[™]		VF866-2V	PF661	HRB600-15		X	1,000 mtpsh (1,110 stph)	900 mm (36')
	VF866-2V	VF866-2V	PF661	HRB600-15	X	X	900 mtpsh (1,000 stph)	
C160[™]			PF661	HRB600-17		X	1,300 mtpsh (1,440 stph)	1,200 mm (47')
			PF661	HRB600-17	X	X	1,000 mtpsh (1,110 stph)	
				HRB600-19		X	1,100 mtpsh (1,220 stph)	
				Apron		X	1,300 mtpsh (1,440 stph)	1,000 mm (40')
				Apron		X	1,300 mtpsh (1,440 stph)	1,200 mm (47')
C200[™]		VF866-2V	PF661	HRB600-19		X	1,500 mtpsh (1,660 stph)	1,200 mm (47')
				Apron		X	1,300 mtpsh (1,440 stph)	
				Apron		X	1,800 mtpsh (2,000 stph)	1,200 mm (47')

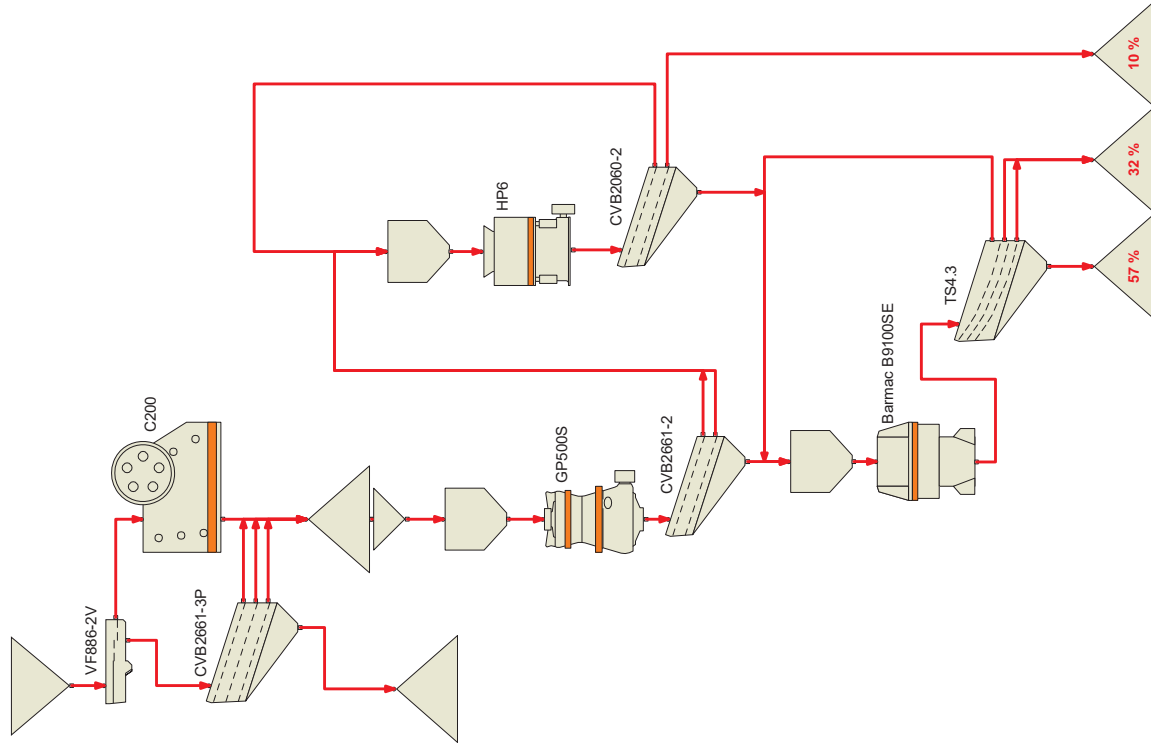
Impact crusher	Grizzly feeder		Separate feeder + grizzly/scalper		Recommended for		Capacity ^{*)}	Top feed size ^{*)}
	Mobile	Stationary	Pan feeder	Push feeder + grizzly/scalper Stationary	Sticky feed	A lot of fines in the feed		
NP1100[™]	TK9-4-2V						400 mtpsh (440 stph)	600 mm (24")
NP1213M[™]	TK11-4-2-2V						540 mtpsh (600 stph)	600 mm (24")
		VF361-2V	PF561	HRB600-12	X	X	900 mtpsh (600 stph)	900 mm (36')
NP1313[™]				VG500-3V		X	620 mtpsh (690 stph)	900 mm (36')
		VF661-2V	PF661	HRB600-15		X	900 mtpsh (960 stph)	900 mm (36')
NP1415[™]				VG645-3V		X	1,000 mtpsh (407)	1,000 mm (40')
		VF666-2V		HRB600-15		X	750 mtpsh (830 stph)	1,000 mm (40')
NP1620[™]				VG745-3V	X	X	1,300 mtpsh (517)	1,300 mm (51')
				HRB600-19	X	X	1,000 mtpsh (1,110 stph)	1,000 mm (43')
				Apron		X	1,300 mtpsh (1,440 stph)	1,300 mm (51')
		VF666-2V		Apron	X	X	1,800 mtpsh (2,000 stph)	1,300 mm (51')
NP2023[™]				HRB600-19		X	1,300 mtpsh (1,440 stph)	1,500 mm (59')
				Apron		X	2,000 mtpsh (2,220 stph)	1,500 mm (59')

^{*)} Note: Maximum feed rate values are given for material bulk density of 1.6 t/m³ in dry conditions and are indicative only.

Metso Application expertise

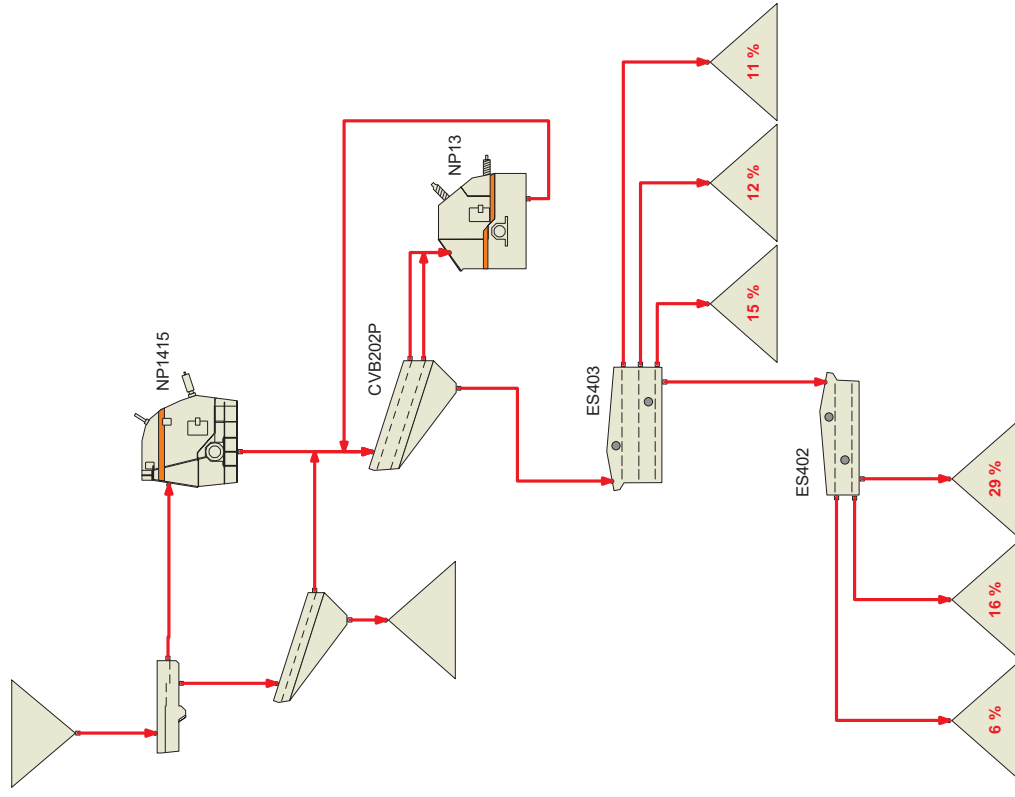


Bruno™ process simulation tool



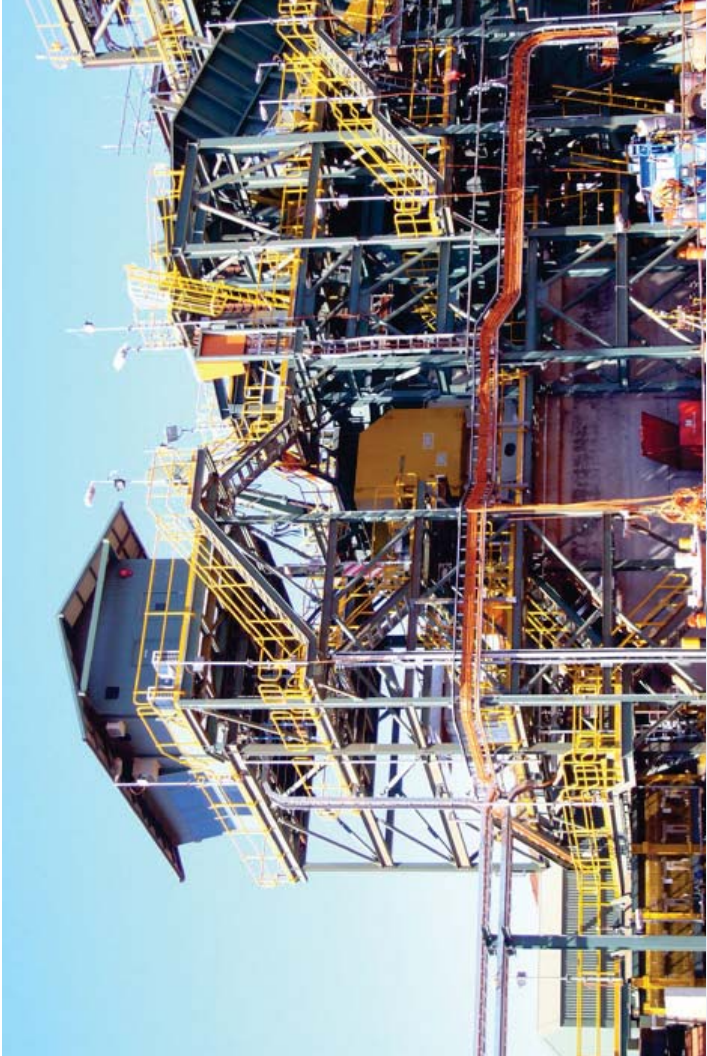
Bruno process simulation tool helps you to maximize crushing plant production

Metso's Bruno process simulation tool helps you to choose the right Metso equipment and helps you to optimize the performance of the crushing plant. The competence and calculation models behind the software are based on thousands of real crushing and screening test results.

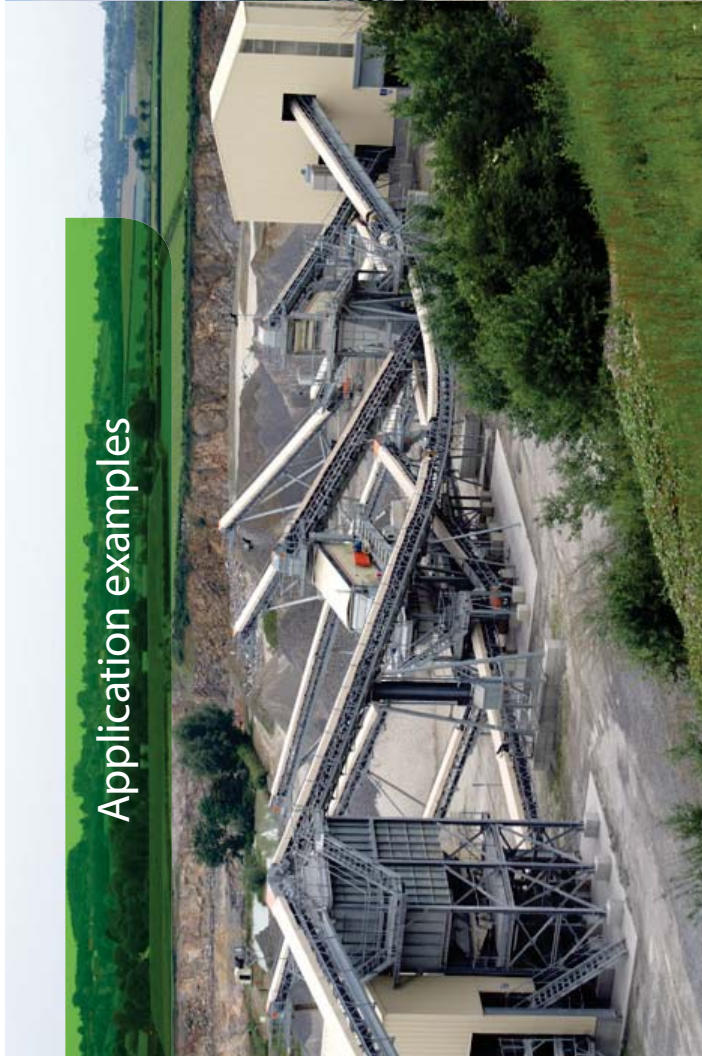




Application examples



Application examples



Services

Maximizing your return on investment

Our comprehensive services offering includes everything from original spare and wear parts to customizable service solutions fine-tuned to your specific needs. You can count on Metso's expertise and support, available through our worldwide network of service centers, distribution facilities and regional warehouses. So if it's wear or spare parts support, engineered service solutions, a tailored Equipment Protection Plan or a long term Life Cycle Services contract that you are looking for, we'll make sure that your investments get the attention they deserve.

Spare and wear part support

Our OEM parts help maintain the performance and availability of your equipment, resulting in a lower production cost per ton. Based on a long-term mutual commitment, you can take advantage of benefits such as preferential access to the most critical spare and wear parts.

Metso parts are manufactured according to specific design parameters using high-quality materials, tools and techniques. The use of OEM parts assures optimal performance and equipment availability, resulting in a lower production cost per ton. Our crusher chamber/liner optimization solution is tailored to your process. This is a continuous improvement program, since the characteristics of the aggregates or the crushing process may vary. Depending on your needs, we can set goals, such as longer wear life, higher capacity throughput, finer material, or shorter downtime on liner changes.

Field Services

We understand our customers' real issues and that success comes from helping you reach your operational and financial goals. Combining our global service network and deep industry knowledge with your operational expertise ensures that we provide the best solutions to deliver quality aggregate and increased productivity, eliminate waste and reduce risk.

We offer a comprehensive set of field services to help meet your maintenance, repair and refurbishment needs, offering a cost-effective alternative to purchasing new or replacement equipment. These services are available at our global service facilities or on site through our experienced field service staff. Backed by years of experience, we can repair broken or damaged equipment to "like-new" condition and restore worn or irreplaceable equipment to perfect operating condition.



Life Cycle Services

Our Life Cycle Services (LCS) take the entire range of services Metso provides to our aggregate customers and conveniently bundle them into customizable, easily manageable packages, ranging from the basics to more complete solutions, depending on the scale of your needs. Metso implements industry best practices at each step of your operation to achieve optimum performance and guaranteed results.

Our Life Cycle Services offering includes equipment support, maintenance services and maintenance and optimization packages.

Equipment Protection Plan

EPP is a reliability assurance program that covers key components of your Metso equipment, representing up to 75% of the complete crushing equipment value. Standard freight and service supervisory work are included in the program coverage.

Scheduled equipment inspection visits from a Metso-certified inspector are part of the program, and ensure that any issues are caught early. Certified inspectors help optimize your equipment's life cycle productivity to enable the lowest sustainable cost of production.

The Metso Way – Making the big difference to our customers

Everything we do is based on deep industry knowledge and expertise that makes the big difference to our customers. Decades of close customer collaboration and adapting to our customers' ever changing needs have transformed us into a knowledge company.



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