

Metso:Outotec

Mining crushers

Superior™ MKIII Primary Gyratory

Maximizing plant
efficiency and
throughput





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Comminution solutions from Metso Outotec

Minerals processing is changing. With diminishing ore grades and rising energy costs, ensuring that a plant has the lowest total cost of ownership is vital. More sustainable technologies & practices are required to make these hard, variable and low-grade ore bodies viable.

Global leader in comminution technology

Metso Outotec has an extensive history of technological development and is recognized as the world leader in engineering and innovating comminution circuits that are not only energy efficient but are also lower in operating costs helping our customers achieve maximum production and consistent recovery.

High speed primary gyratory

Superior™ MKIII is the first high speed PG and exceeds other gyratory by up to 30%. And, with higher PG speed, inevitably comes higher throughput. A heavy and robust piece of equipment, no compromises have been made to handle the highest duty with the Superior™ MKIII. This goes to show that it is possible to use a smaller machine to achieve the same - if not, better - performance.

Superior™ Primary Gyrotory MKIII Range

The right choice

Perfect mix of experience and innovation

100+ years of proven experience, latest advancements in metallurgy and thousands of crusher installations around the world combine to create a Primary Gyrotory crusher with the best performance, highest capacity and highest reliability.

Metso Outotec's line of Superior™ Primary Gyrotory crushers are designed to meet the demand for high efficiency and high capacity mining installations.

Superior™ MKIII is the first high speed Gyrotory. The new features allow significant CAPEX reduction of a primary crushing stage from the retaining wall to the primary stock pile.

The industry's most CAPEX efficient Primary Gyrotory.



Excellent performance

- Up to 30% increased capacity from Superior™ MKII to MKIII
- Possible to use a smaller machine to achieve the design capacity
- Higher throughput is reached thanks to increased speed, installed power and mechanical improvements

Rotable shells

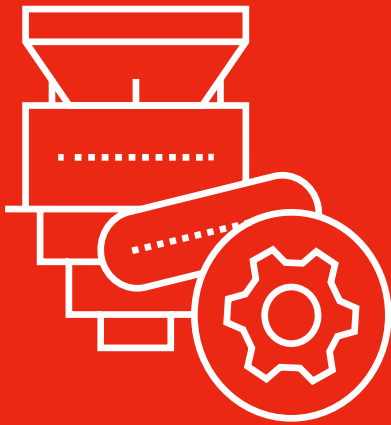
- Hydraulic separation and individual lifting of shells for easy & safe maintenance
- 70% reduction in downtime with new set of shells and concaves
- Significant reduction of primary stock pile based on crusher maintenance downtime

Proven technology

- The new features of Superior™ MKIII have been proven and tested on the field
- Majority of structural and rotating components same as Superior™ MK-II

Advanced automation

- Intelligent measurement of crushing operations by control systems such as VisioRock® and VisioTruck®
- Detailed reporting and online analysis of plant operations
- Increased operational safety



Superior™ MKIII primary gyratory range

Primary gyratory crushers are the initial driving force for the entire mineral processing circuit. Metso Outotec's Superior™ MKIII primary gyratory crushers provide high throughput and less downtime to bring maximum efficiency to your operation.

Introducing the industry leading SmartStation

Metso Outotec is an expert in automating crushing stations. The patent-pending SmartStation combines innovative monitoring tools such as VisioRock® and VisioTruck® along with expanded sensors on the equipment and bin/hopper, enabling intelligent measurement and automated-control of crushing operation for optimal ore processing and distribution.

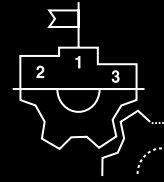
The system includes online analysis and detailed reporting of plant operations, as well as increased operational safety.

VisioRock® technology

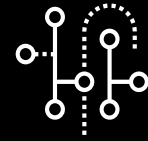
An advanced innovative image analysis technology for estimating rock size distribution and other rock properties, usually online, most often on a conveyor belt. VisioRock® system may be used either as a standalone instrument, or as a component of an integrated advanced control system.

VisioTruck® technology

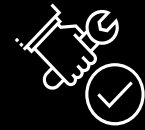
An advanced innovative vision technology for estimating rock size distribution and other properties of mine truck loads. VisioTruck® intelligently archives truck images and makes it easy to navigate among archived images or replay the discharge of any truck in the past.



Optimized production



Easy online analysis



Reduction in vault size



Innovative technology

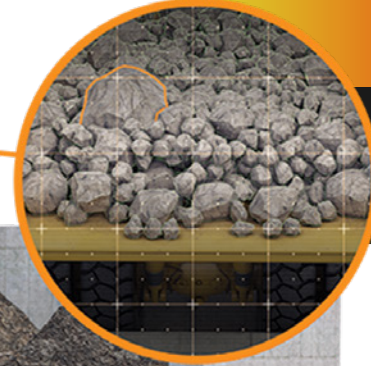
Connected Analytics

Cloud based analytics for predictive maintenance



VisioTruck®

Automatic incoming material size analysis



Vault level sensor

Crusher adjustment for more consistent level in vault



VisioRock®

Crusher adjustment for wear compensation



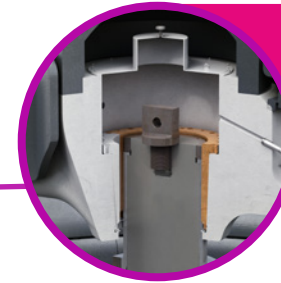
Mining crushers

Proven and Robust core Superior™ MKIII design delivers +30% capacity

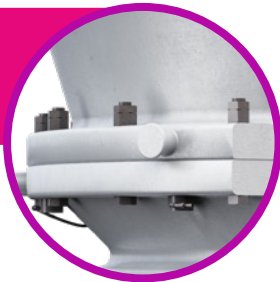
One piece
U shape arched spider
minimize bridging



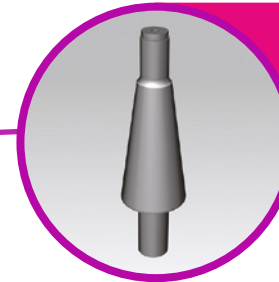
Mn Bronze
spider bushing
3x longer lifetime



Shell separators



One piece robust
main shaft



Inspection ports



Large upper
counter weight
-60% Dynamic loads



Most of the new MKIII features are retrofittable on existing Superior™ MKI and MKII

Mining crushers

Why choose Metso Outotec Superior™ MKIII Primary Gyratory

1 +30% additional throughput

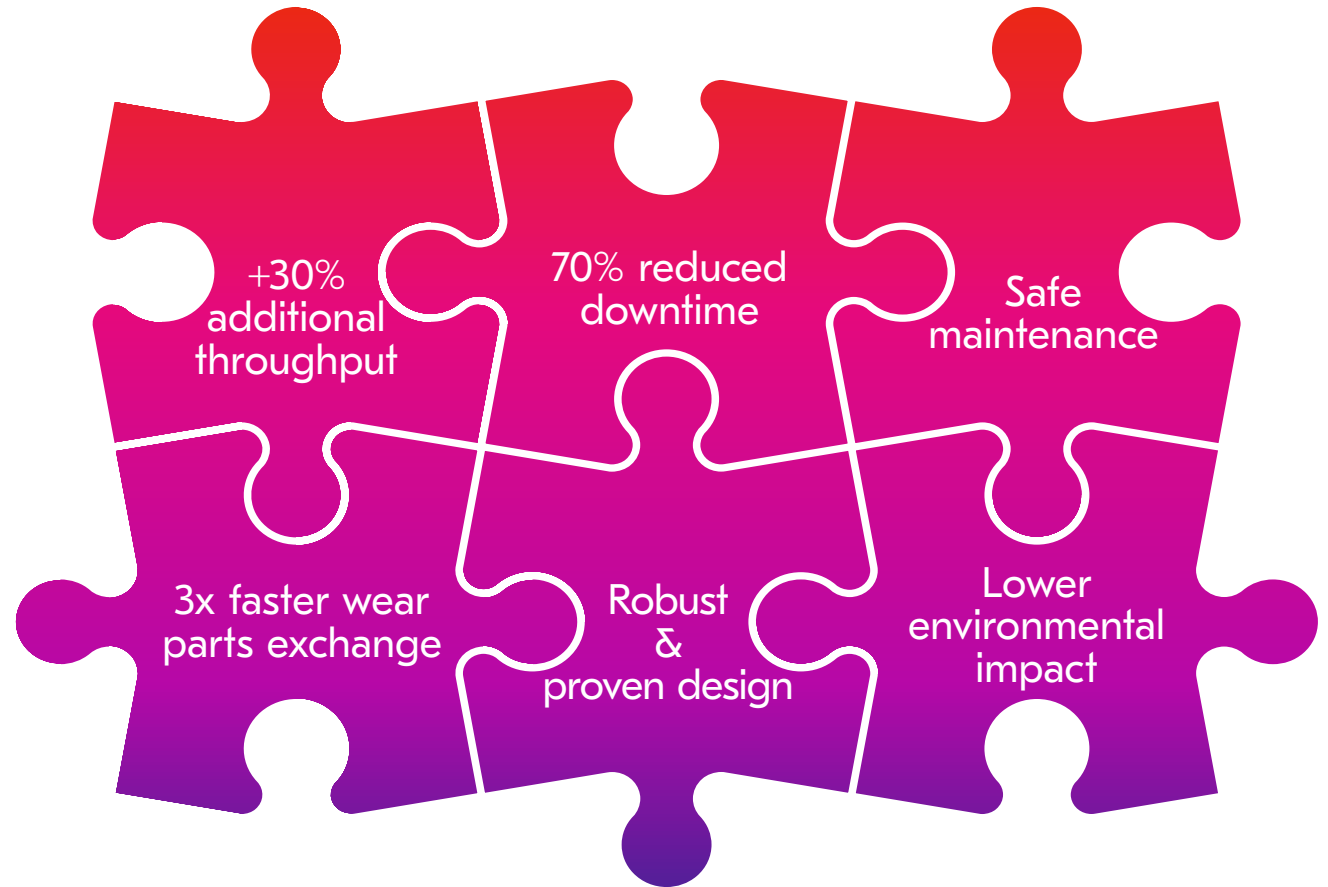
2 70% reduced downtime

3 Safe maintenance

4 3x faster wear parts exchange

5 Robust & proven design

6 Lower environmental impact





Get more for less

Superior™ MKIII Gyratory Crushers combine Metso Outotec's trusted technology with the latest advancements in metallurgy to achieve peak efficiency and maximized throughput.



Technical details

Main characteristics

| Model | Weight (mtons) | Feed opening (mm) | Power (kW) | Maximum capacity (mtph) |
|--------|----------------|-------------------|------------|-------------------------|
| 42-65 | 120 | 1066 | 450 | 5250 |
| 50-65 | 153 | 1270 | 450 | 6375 |
| 54-75 | 242 | 1370 | 600 | 7500 |
| 62-75 | 298 | 1575 | 600 | 8750 |
| 60-89 | 365 | 1525 | 750 | 12500 |
| 70-89 | 430 | 1780 | 900 | 15000 |
| 60-110 | 553 | 1525 | 1500 | 17000 |



Capacity (mtph): Typical feed curve, $SG=2.75t/m^3$, maximum eccentricity

| OSS (mm) | 152 (6 in) | | 177 (7in) | | 203 (8 in) | | 203 (9 in) | | 254 (10 in) | | 305 (12 in) | |
|----------|------------|------|-----------|------|------------|-------|------------|-------|-------------|-------|-------------|-------|
| | min | max | min | max | min | max | min | max | min | max | min | max |
| 42-65 | 2354 | 3362 | 2893 | 4133 | | | | | | | | |
| 50-65 | 2414 | 3449 | 2958 | 4226 | | | | | | | | |
| 54-75 | 2908 | 4154 | 3170 | 4529 | 3513 | 5018 | | | | | | |
| 62-75 | 2913 | 4162 | 3846 | 5494 | 4365 | 6235 | | | | | | |
| 60-89 | | | 4576 | 6538 | 5337 | 7625 | 5851 | 8359 | | | | |
| 70-89 | | | 5051 | 7215 | 6076 | 8681 | 7033 | 10047 | | | | |
| 60-110 | | | 5579 | 7970 | 7394 | 10562 | 8346 | 11923 | 8961 | 12802 | 9857 | 14082 |

