

Impact crushers
NP Series impact crushers



Primary range

NP1313

NP1415

NP1620

NP2023

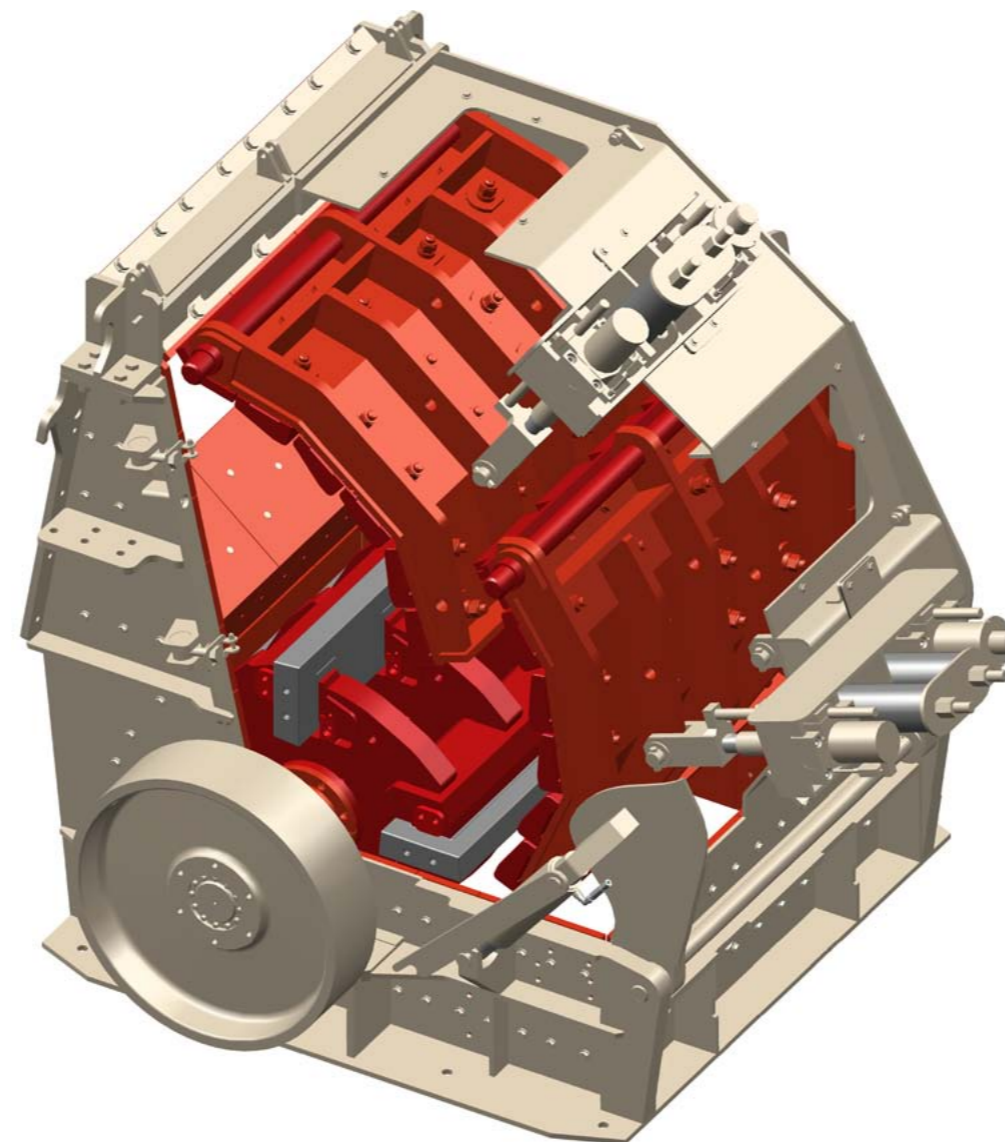
Secondary range

NP1110

NP1213

NP1315

NP1520



High Performance for Higher Profitability

NP Series impact crushers feature a unique combination of heavy rotor design, wear material and crushing chamber design. This combination has proved revolutionary in improving capacity, product quality and in reducing operating and wear costs.

NP Series impact crushers are characterised by a unique blow bar fixing system providing a higher degree of reliability.

NP Series impact crushers have been designed to minimise maintenance and improve adjustment operations. NP Series impact crushers deliver unbeatable performances in primary, secondary, tertiary and recycling applications.

A history of quality

NP Series impact crushers are built on the success of our 50 years of BP and HS impact crushers experience. The field proven NP series combines the best of these crushers' technologies and benefits from the latest developments in wear material quality.

All helps to increase profitability.

Why NP Series impact crushers?

- Process benefits.
- Crusher working benefits.
- Maintenance benefits.



Reach new heights with Metso

High capacity

NP Series impact crushers are the solution for operating conditions where output and productivity demands are increasingly stringent.

Our engineers have optimised machine layout to maximise loading, with a bigger crushing chamber, optimised liners and specific rotors to boost productivity in every type of application.

Particular effort has gone into redesigning the rotor to increase swing-weight, improve crushing reduction and obtain extra capacity.

NP series impact crushers achieve a higher reduction with fewer crushing stages, lowering your capital costs and saving energy.

High quality

All this with no quality trade-off on legendary NP impact crushers!

Continuous collaboration with research laboratories has made it possible to bring you state of the art technical innovations in terms of durability for wear parts (blow bars, breaker plate liners, side liners ...) and the reliability of the mechanical components (shaft lines, bearings).



A range for every type of application

The strength of NP impact crushers makes them ideal for diverse applications and configurations.

NP impact crushers have proven their effectiveness in a host of missions from crushing low abrasive materials to industrial applications and recycling.



Process benefits

- High reduction ratio.
- Good cubical shape to meet asphalt and concrete product specifications for flakiness and elongation.
- Less sensitive to sticky material than other machines.
- Extremely versatile machine - suitable for quarrying and gravel pit industries, cement industry, concrete and asphalt recycling, and slag recycling.





Crusher working benefits

Unique blow bar attachment system

Over and above the different grades of wear-resistant steel available throughout the range, NP impact crusher is characterised by a unique attachment unit.

Blow bars are fixed to rotors by a single wedge assembly delivering higher tightening torque than any other manufacturer. Combined with perfect blow bar alignment on crossbeam contact faces, this guarantees the enormous advantage of eliminating clearance between the rotor and the blow bars. This reduces risks of breakage and makes it possible to push the use of cast iron for blow bars beyond conventional limits.

Easy to maintain with high security level

The same hydraulic power unit opens the frame and adjusts the breaker plates. Inspection doors located all around the frame make it possible to reach the interior of the crusher.

Blow bars can be changed vertically or horizontally which enables the machine to adapt to many implementation possibilities.

Particular attention has been paid to the modularity of wear parts, significantly reducing the number of parts references.

Parts on any given machine do not all wear at the same rate. With the NP Series impact crusher, they can be moved around, reducing the need to stock wear and spare parts.

Additionally, sensors on the frame make maintenance interventions safer by preventing machine start up.

Application flexibility, easy to operate

You can easily build your own crusher configuration by adding the suitable options for your application:

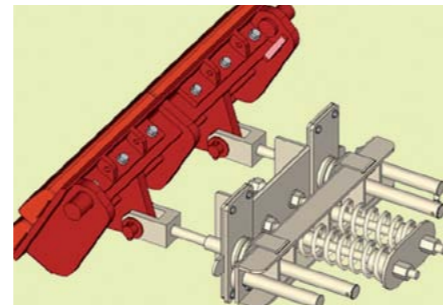
- Fully hydraulic breaker plate adjustment setting to reduce downtime.
- Third breaker plate to control the top product size in open circuit.
- Different grades of steel and cast iron for the blow bars, breaker plates and side liners to decrease the wear cost.
- S.R.R., Autolub unit and bearing temperature sensors to facilitate the maintenance.

Self Rotor Rotation system (S.R.R.)

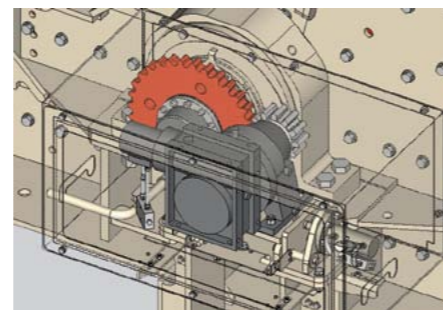
The new S.R.R. system is available over the NP single drive configuration range and is part of Metso's constant efforts to innovate and find ways to enhance the quality, ease of use, and safety of its products.

The principle consists in positioning the rotor during the maintenance period when changing the blow bars or adjusting the breaker plates.

With the new S.R.R. system no human intervention is necessary inside the crusher.



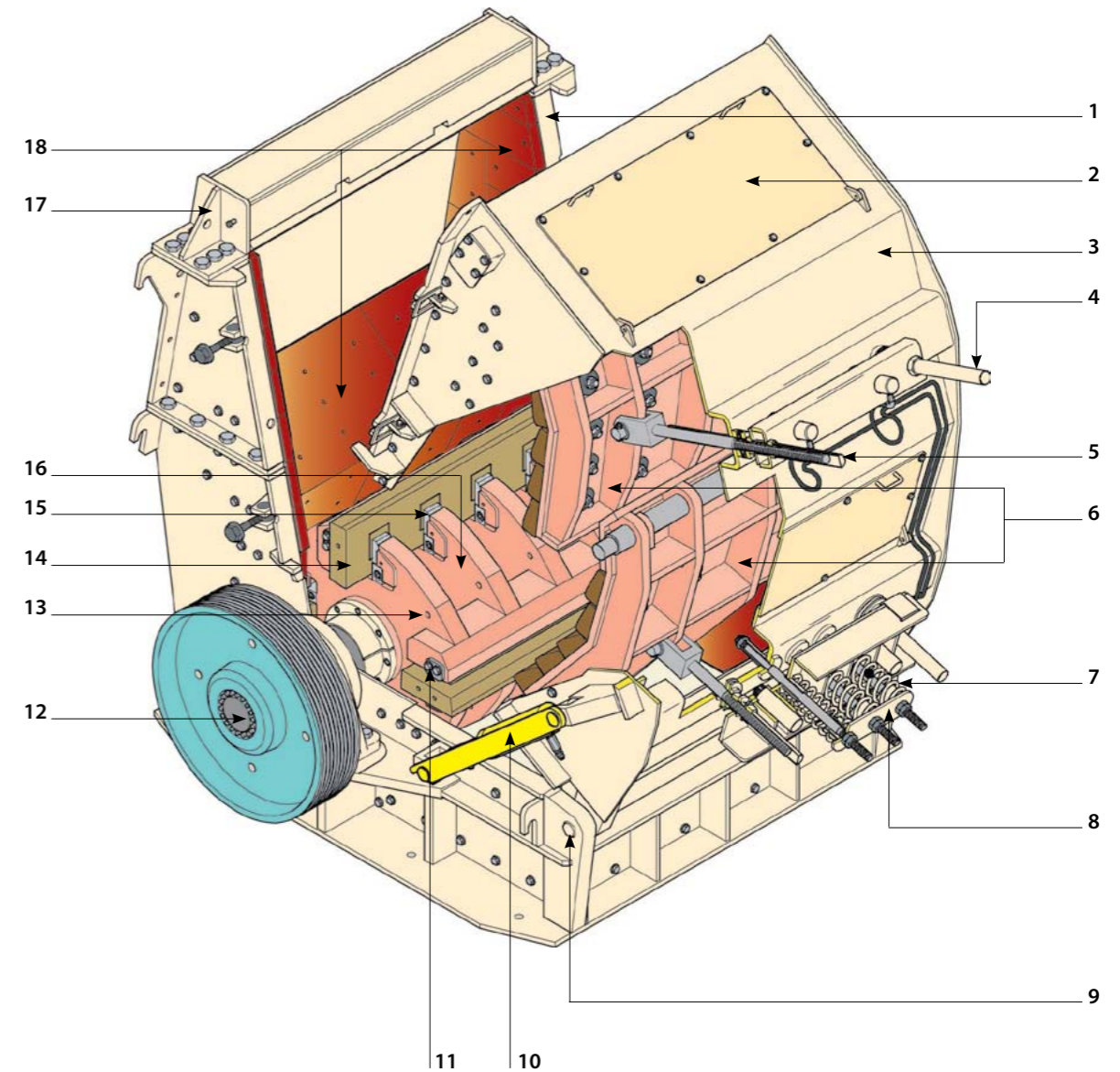
Optional third breaker plate



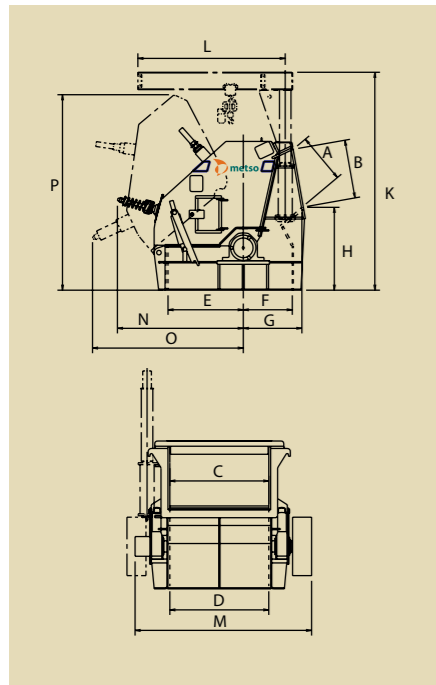
Self Rotor Rotation system (S.R.R.)

Crusher working benefits

- Quick and easy installation.
- Very simple design with high mechanical reliability.
- Easy to operate.
- Fixed or mobile applications.



- | | | |
|-----------------------------------|--------------------------------------|------------------------------|
| 1 - Front frame | 7 - Tramp iron spring safety device | 13 - Rotor locking holes |
| 2 - Access door | 8 - 2nd breaker plate setting device | 14 - Blow bar |
| 3 - Rear frame | 9 - Frame hinge | 15 - Blow bar locking device |
| 4 - Protection tube | 10 - Hydraulic cylinder & safety arm | 16 - Rotor |
| 5 - 1st breaker plate setting rod | 11 - Lateral stop | 17 - Frame cross beam |
| 6 - 1st and 2nd breaker plate | 12 - Rotor shaft | 18 - Frame side liners |



Technical data					
NP Model	Crusher complete	Rotor complete	Rotor diameter	Rotor width	
Primary range	NP1313	17 800 kg 39 249 Lbs	6 340 kg 13 980 Lbs	1 300 mm 51.2 in	1 300 mm 51.2 in
	NP1415	21 815 kg 48 102 Lbs	8 165 kg 18 004 Lbs	1 400 mm 55.1 in	1 500 mm 59.1 in
	NP1620	40 500 kg 89 303 Lbs	15 980 kg 35 236 Lbs	1 600 mm 63 in	2 000 mm 78.7 in
	NP2023	74 230 kg 163 677 Lbs	28 280 kg 62 357 Lbs	2 000 mm 78.7 in	2 300 mm 90.6 in
Secondary range	NP1110	9 250 kg 20 396 Lbs	3 065 kg 6 758 Lbs	1 100 mm 43.3 in	1 000 mm 39.4 in
	NP1213	12 780 kg 28 180 Lbs	4 850 kg 10 694 Lbs	1 200 mm 47.2 in	1 300 mm 51.2 in
	NP1315	16 130 kg 35 567 Lbs	6 370 kg 14 046 Lbs	1 300 mm 51.2 in	1 500 mm 59.1 in
	NP1520	27 100 kg 59 756 Lbs	10 400 kg 22 932 Lbs	1 500 mm 59.1 in	2 000 mm 78.7 in

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	1 225 48.2	1 320 52.0	1 305 51.4	760 30.0	632 24.9	1 386 54.5	3 765 148.2	2 100 82.7	2 560 100.8	2 340 92.1	2 764 108.8	3 405 134.0
	NP1415	1 140 44.9	1 320 52.0	1 540 60.6	1 305 51.4	800 31.5	605 23.8	1 430 56.3	4 000 157.5	2 295 90.3	2 790 109.8	2 380 93.7	2 790 109.8	3 600 141.7
	NP1620	1 400 55.1	1 634 64.3	2 040 80.3	1 600 63.0	920 36.2	850 33.5	1 772 69.8	4 950 194.9	3 000 118.1	3 600 141.7	2 630 103.5	3 085 121.5	4 400 173.2
	NP2023	1 720 67.7	1 986 78.2	2 310 91.0	2 210 87.0	1 140 44.9	1 631 64.2	2 273 89.5	6 000 236.2	3 930 154.7	4 424 174.2	3 520 138.6	4 100 161.4	5 514 217.0
Secondary range	NP1110	710 28.0	820 32.3	1 020 40.1	1 105 43.5	652 25.6	796 31.3	1 125 44.3	3 055 120.3	1 800 70.9	2 106 82.9	1 830 72.0	2 030 80.0	2 716 107.0
	NP1213	750 29.5	879 34.6	1 320 52.0	1 120 44.1	705 27.8	864 34.0	1 212 47.7	3 145 123.8	2 100 82.7	2 529 100.0	1 945 76.6	2 306 90.8	2 882 113.5
	NP1315	800 31.5	930 36.6	1 540 60.6	1 172 46.1	765 30.1	915 36.0	1 291 50.8	3 395 133.7	2 295 90.3	2 750 108.3	1 960 77.2	2 350 92.5	3 055 120.2
	NP1520	850 33.5	995 39.2	2 040 80.3	1 368 53.9	885 34.8	1 055 41.5	1 518 59.8	3 950 155.5	3 000 118.1	3 400 133.9	2 336 92.0	2 763 108.8	3 540 139.4

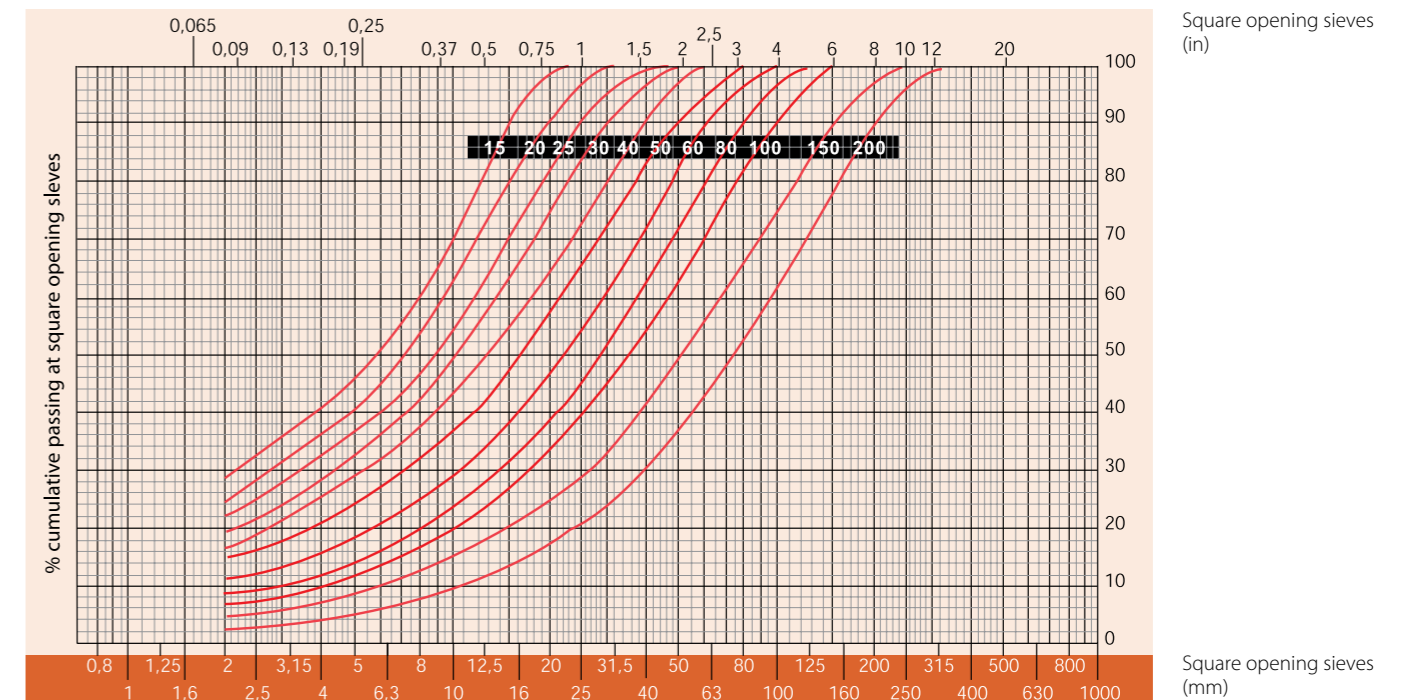
Crusher capacities (1)					
NP Model	Top Feed Size 800 mm - 32 inch		Top Feed Size 600 mm - 24 inch		
	End Product 200 mm - 8 inch	End Product 100 mm - 4 inch	End Product 200 mm - 8 inch	End Product 100 mm - 4 inch	
Primary range	NP1313	450 mtph / 500 stph	300 mtph / 340 stph	480 mtph / 540 stph	320 mtph / 360 stph
	NP1415	560 mtph / 630 stph	365 mtph / 410 stph	600 mtph / 670 stph	400 mtph / 450 stph
	NP1620	870 mtph / 970 stph	570 mtph / 640 stph	930 mtph / 1040 stph	620 mtph / 690 stph
	NP2023	1780 mtph / 1990 stph	1160 mtph / 1300 stph	1970 mtph / 2200 stph	1270 mtph / 1400 stph

NP Model	Top Feed Size 400 mm - 16 inch		Top Feed Size 200 mm - 8 inch		
	End Product 60 mm - 2 1/2 inch	End Product 40 mm - 1 1/2 inch	End Product 40 mm - 1 1/2 inch	End Product 20 mm - 3/4 inch	
Secondary range	NP1110	190 mtph / 210 stph	150 mtph / 170 stph	210 mtph / 230 stph	130 mtph / 140 stph
	NP1213	250 mtph / 280 stph	200 mtph / 220 stph	280 mtph / 310 stph	180 mtph / 200 stph
	NP1315	315 mtph / 350 stph	250 mtph / 280 stph	350 mtph / 390 stph	225 mtph / 250 stph
	NP1520	500 mtph / 560 stph	400 mtph / 450 stph	560 mtph / 630 stph	360 mtph / 400 stph

⁽¹⁾ Represents capacity through crusher based on instantaneous product sample.

Impact crusher capacity charts are developed for use as an application tool to properly utilize the NP impact crusher's capabilities. The capacity figures shown above apply to material weighing 100 pounds per cubic foot or 1600 kg per cubic meter. The crusher is one component of the total circuit. As such, its performance is also dependent on the proper selection and operation of feeders, conveyors, screens supporting structure, electric motors, drive components and surge bins.

Production Curves*



* The gradation and capacities shown are dependent on feed gradation, material density and crushability.



Technical data					
NP Model	Feed opening	Maximum feed size	Nominal installed power (kW / HP)	Maximum installed power ⁽¹⁾ (kW / HP)	
Primary range	NP1313	1320 x 1225 mm / 52" x 48.2"	900 mm / 35.4"	200 / 250	
	NP1415	1540 x 1320 mm / 60.6" x 52"	1000 mm / 39.4"	250 / 350	
	NP1620	2040 x 1634 mm / 80.3" x 64.3"	1300 mm / 51.2"	400 (2x200) / 500 (2x250)	
	NP2023	2310 x 1986 mm / 91" x 78.2"	1500 mm / 59.1"	1000 (2x500) / 1300 (2x650)	
Secondary range	NP1110	1020 x 820 mm / 40.2" x 32.3"	600 mm / 23.6"	160 / 200	
	NP1213	1320 x 879 mm / 52" x 34.6"	600 mm / 23.6"	200 / 250	
	NP1315	1540 x 930 mm / 60.6" x 36.6"	600 mm / 23.6"	250 / 350	
	NP1520	2040 x 995 mm / 80.3" x 39.2"	700 mm / 27.6"	400 (2x200) / 500 (2x250)	

⁽¹⁾ For higher installed power, please contact the factory.

Evaluation of the wear cost

Due to the fact that the first step of crushing in the NP impact crushers is done by the blow bars in rotation, around 70% of the wear is concentrated on them. The rest of the wear results from the breaker plate liners, side liners and other parts.

It's therefore easy to estimate the total wear cost if you are able to predict the wear life of the blow bars and their costs during the working hours of operation.

Benefits of the Metal Matrix Composite

Metal Matrix Composite or MMC, consists

of metallic and ceramic alloy. The metallic matrix may be steel or cast iron. The ceramic part consists of particles spread across the blow bar. This composite has the effect of combining the very hard surface of ceramic with the useful mechanical properties of cast iron or steel.

This solution considerably increases the blow bar's life span. MMC has shown to be 2-4 times more wear resistance than our normal mono-metal blow bars. Another advantage is the edge of the blow bars stays sharper longer assuring a better contact with the material.



Maintenance benefits

- Easy blow bars locking device.
- Wide choice of blow bars and liners.
- Designed for easy maintenance.
- Many options to improve crusher efficiency.
- Safe environment working conditions.



A world of difference

Before, during and after the sale, you can count on the experts at Metso to provide the best service and support all over the world. Whether you're installing an entire customized system, a complete circuit, or simply replacing or updating a single piece of equipment, you can count on us to help you make sure it's the right equipment for your specific needs.

In the design stage, we look at variables such as ore characteristics and properties, physical space limitations, size of ore body – even your investment plan – just to name a few. Once you make your purchase, you'll be linked to Metso' on-line computerized parts availability system, giving you immediate access to the right parts, in stock, and delivered promptly. If

you have questions, a trained service analyst is always standing by – over the phone or in person – ready to analyze your needs and recommend a complete, long-term, cost-effective solution.

We offer training schools to help you get the most out of your system. Over the years, thousands of crushing professionals like you have benefited from the wide variety of seminars we offer. Do you have special training needs? Tell us – and we'll create a unique training session specially adapted to your company.

NP Series impact crushers. A world of difference in technology, quality, performance, reliability, and support.

To find out more, contact your nearest Metso office.



Metso's Mining and Construction crushing and screening equipment

Product families:

Unit crushers

- C series jaw crushers
- Primary gyratory crushers
- GP series cone crushers
- HP series cone crushers
- MP series cone crushers
- NP series horizontal impact crushers
- Barmac series vertical impact crushers

Unit screens

- DF series screens
- CVB series screens
- FS series screens
- TS series screens
- MF series screens
- RF series screens

Unit feeders

- TK series feeders
- VF series feeders
- LH.G series feeders
- VG series feeders
- PF series feeders
- HRBM series feeders

Mobile crushing and screening plants

- Lokotrack LT series track-mounted crushing plants
- Lokotrack ST series track-mounted screening plants
- Lokotrack CT and CW series track- and wheel-mounted conveyors
- NW series wheel-mounted crushing plants

Stationary crushing plants

- Complete plants for aggregate production
- Complete plants for recycling applications

Mining and Construction Technology main contacts

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