Rammer®

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# LARGE RANGE HAMMERS

# EVERY HIT COUNTS

The world's best-known and most-respected brand of hydraulic hammers, Rammer offers a comprehensive range of powerful, productive and durable attachments that are suitable for carriers in the 0.6 to 120 tons (1 300 - 264 600 lbs) operating weight class.

The Rammer Large range is unsurpassed in its innovation and reliability and offers class-leading power-to-weight characteristics that mark them as the best in their class.

Rammer's product selection is supported by a dedicated global dealer network with ready access to Genuine Rammer parts and a wealth of operational knowledge and experience to ensure that your Rammer hammer continues to contribute to your company's profitability for its entire working life.

**SANDVIK IS THE WORLD'S LEADING MANUFACTURER OF HYDRAULIC HAMMERS AND ATTACHMENTS. OVER THE PAST 40 YEARS, SANDVIK-OWNED RAMMER HAMMERS HAVE BEEN DEVELOPED IN CONJUNCTION WITH OUR CUSTOMERS ACROSS THE WORLD. AS A RESULT, THEY ARE TOUGH, DURABLE, RELIABLE AND OFFER THE MOST ECONOMICAL OWNING AND OPERATING COSTS WHILE DELIVERING MAXIMUM PRODUCTION.**


Ram
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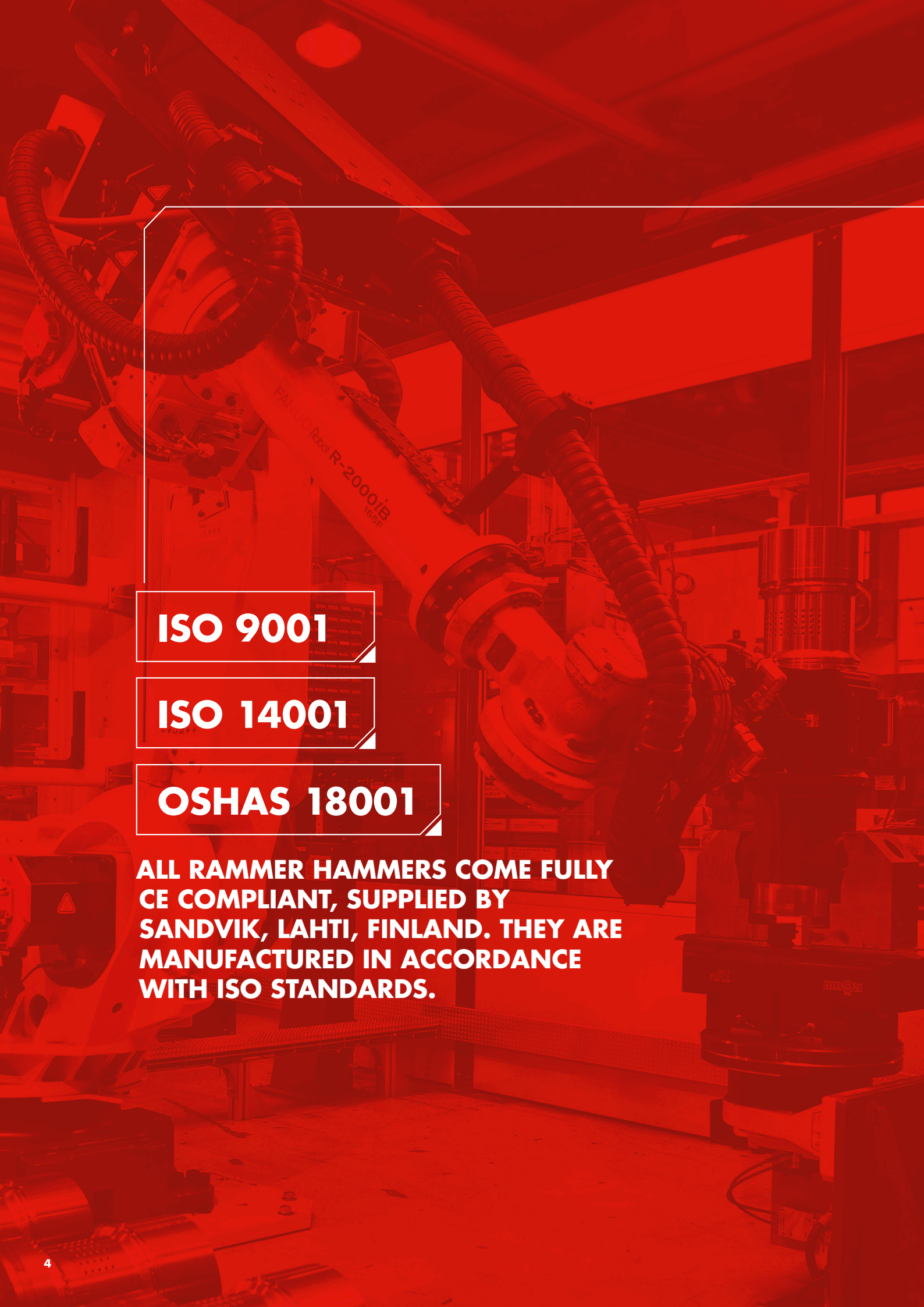

**ISO 9001**

**ISO 14001**

**OSHAS 18001**

**ALL RAMMER HAMMERS COME FULLY CE COMPLIANT, SUPPLIED BY SANDVIK, LAHTI, FINLAND. THEY ARE MANUFACTURED IN ACCORDANCE WITH ISO STANDARDS.**

# SAFETY IS A TOP PRIORITY IN EVERYTHING WE DO

## In the factory
Safety is the primary consideration. Visitors are to consider and improve safety to help us achieve our aim of zero accidents.

## Products
Safety is the driving force behind the development of all our products. Our aim is to set the safety standard by making products that are safe to operate and maintain. Rammer operator and service training packages reinforce that message to ensure the safety of your entire workforce.

## Process
Rammer products also improve the safety of the working site and its processes. For example when breaking oversize material, it reduces loading and hauling and prevents blockages and bridging during the crushing process.

## Safety – Your Advantage
Injuries can impact upon an entire workforce and resulting in lost working days and a loss of production. A safe site is a productive site.

## Environment
Rammer products are manufactured utilizing state-of-the-art, ISO standards technology that consumes the minimum electricity, and recycles cutting fluids and metal chips. Furthermore, when Rammer breakers reach the end of their useful working life, more than 90 percent of the metallic components can be recycled.


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# OUR FEATURES – YOUR BENEFITS

## INCREASE YOUR PRODUCTIVITY

### 1 FBE (Fixed Blow Energy)
A built-in pressure control valve maintains hydraulic pressure levels to ensure that every blow delivers the maximum power possible for optimum productivity.

### 2 Membrane type accumulator
Membrane type accumulator eliminates nitrogen leakages, ensuring maximum piston acceleration and removing the need for time consuming recharging.

### 3 Stroke selector
Fitted as standard on all Large range hammers Stroke selector is designed to optimize hammer operating. It allows operator to match hammer to material and application, delivering more frequent, softer blows in softer materials and fewer high impact blows in hard rock.

### 4 IBP (Idle Blow Protection)
Fitted as standard on all Large range hammers, IBP ensures the hammer cannot be operated until pressure is placed on tool. This eliminates tie rod stress, reduces oil overheating and protects against premature failures.

### 5 Wide tool selection

## PROTECT YOUR WORKING ENVIRONMENT

### 6 Heavy duty housing
Fitted as standard, heavy duty housings feature a robust structure, minimum number of holes and plastic wear plates for optimum hammer protection and noise reduction.

### 7 Top buffer and side pads
The unique Rammer vibration absorption system consists of three buffers - one upper buffer and two side pads – that prevent the transmission of vibration to protect both the breaker and the carrier's boom, stick and swing gears and to isolate the operator.

## MINIMIZE YOUR MAINTENANCE COSTS

### 8 Ramdata II
The Ramdata II service indicator is designed to help hammer operators and service personnel get information about the service interval status, service history and accumulated working history of the hammer.

### 9 Ramlube (Different options)
Rammer offers two types of automatic greasing systems for its Large Hammer Range:
**Ramlube I** - Machine-mounted
**Ramlube II** - Hammer-mounted
Both Ramlube devices maintain correct greasing levels, protect the tool and reduce owning and operating costs.

### 2 Membrane type accumulator
Membrane type accumulator eliminates nitrogen leakages, ensuring maximum piston acceleration and removing the need for time consuming recharging.

### 12 TS (Tool Saver) bushing
Rammer Large range hammers can be equipped as a retrofit with a field replaceable insert that increases service life of the tool and tool bushing.

## MAXIMIZE YOUR UTILIZATION

### 6 Heavy duty housing
Fitted as standard, heavy duty housings feature a robust structure, minimum number of holes and plastic wear plates for optimum hammer protection and noise reduction.

### 10 VIDAT
Vibration Dampened Tie Rods, spherical tie rod nuts and damper bushings ensure piston moves freely for longer, more productive working life.

### 11 Ramvalve
Ramvalve detects overflow, prevents damage from system overload and protects against premature failure. Ramvalve is standard on all Medium and Large range hammers.

### 12 TS (Tool Saver) bushing
Rammer Large range hammers can be equipped as a retrofit with a field replaceable insert that increases service life of the tool and tool bushing.



## GENERAL CONSTRUCTION

## DEMOLITION

## QUARRYING

## MINING

## METALLURGICAL

## UNDER WATER[1)]

[1)] Working under water needs special precautions, contact your local dealer for details.

# FOR EVERY APPLICATION

| | 3288 | 4099 | 5011 | 9033 |
|---|---|---|---|---|
| Breaking of road surface (concrete, asphalt) | C, P, LSC | C, P, LSC | C, P, LSC | C, P, LSC |
| Primary breaking to lay a road | C, LSC | C, LSC | C, LSC | C, LSC |
| Trenching | C, LSC | C, LSC | C, LSC | C, LSC |
| Rock excavation for base of housing | C, LSC | C, LSC | C, LSC | C, LSC |
| Breaking of frozen ground | C, M, P | C, M, P | C, M, P | C, M, P |
| Demolition of concrete walls, roofs, floors | C, M, P | C, M, P | C, M, P | C, M, P |
| Breaking thick brick walls | C, M, P | C, M, P | - | - |
| Breaking heavily reinforced bridge pillars | B, C, P | B, C, P | B, C, P | B, C, P |
| Breaking massive reinforced concrete foundations | C, M, P | C, M, P | C, M, P | C, M, P |
| Rock trenches for mains or water supply | C, LSC | C, LSC | C, LSC | C, LSC |
| Separating rebar from concrete (for recycling) | B | B | B | B |
| Secondary breaking of blasted rock | B | B | B | B |
| Primary breaking of rock | C, LSC, HRC | C, LSC, HRC | C, LSC, HRC | C, LSC, HRC |
| Breaking oversizes on a crusher or feeder | B | B | - | - |
| Primary tunneling | C, M, HRC | C, M, HRC | C, M, HRC | C, M, HRC |
| Trenching in tunnels | C, HRC | C, HRC | C, HRC | C, HRC |
| Blasting prohibited mining | C, M, LSC, HRC | C, M, LSC, HRC | C, M, LSC, HRC | C, M, LSC, HRC |
| Breaking of oversizes on grizzly or feed chute | B | B | - | - |
| Breaking of oversizes after blasting in the drift | B | B | B | B |
| Breaking of massive steel slag | - | B, C | B, C | B, C |
| Breaking of aluminium electrolyse slag | - | B, C | B, C | B, C |
| Breaking of ferrochrome blocks | B, C | B, C | B, C | B, C |
| Demolition under water | C, M, P | C, M, P | C, M, P | C, M, P |
| Rock breaking under water | C | C | C | C |

**RECOMMENDED HAMMER MODEL**

Optimal Suitable

**SYMBOL OF RECOMMENDED TOOLS**

| | | | |
|---|---|---|---|
| Chisel | C | Pyramid | P |
| Hard Rock Chisel | HRC | Blunt | B |
| Limestone Chisel | LSC | Super Blunt | SB |
| Moil point | M | Compacting plate | CP |

# LARGE HAMMERS



| | 3288 | 4099 |
|---|---|---|
| Minimum working weight, kg (lb) | 2400-2500 (5290-5510) | 3380-3540 (7450-7800) |
| Impact rate, Long Stroke, bpm | 370-630 | 400-560 |
| Impact rate, Short Stroke, bpm | 460-740 | 520-700 |
| Operating pressure | 150-160 (2175-2320) | 150-160 (2175 - 2320) |
| Pressure relief, min bar (psi) | 220 (3190) | 210 (3045) |
| Pressure relief, max bar (psi) | 240 (3480) | 230 (3335) |
| Oil flow range, l/min (gal/min) | 160-250 (42.3-66.0) | 250-350 (66.0-92.5) |
| Back pressure, max bar (psi) | 10 (145) | 12 (175) |
| Input power, kW (hp) | 67 (90) | 93 (125) |
| Tool diameter, mm (in) | 142 (5.59) | 166 (6.54) |
| Carrier weight, allowed range, t (lb) | 26-42 (57300-88200) | 36-55 (75000-121300) |
| Noise level, measured sound power level, LWA, dB | 124 | 126 |
| Noise level, guaranteed sound power level, LWA, dB | 128 | 130 |



| | 5011 | 9033 |
|---|---|---|
| Minimum working weight, kg (lb) | 4750 (10470) | 7400 (16300) |
| Impact rate, Long Stroke, bpm | 370-530 | 300–520 |
| Impact rate, Short Stroke, bpm | 450-620 | 355–645 |
| Operating pressure | 160-170 (2320-2465) | 170–180 (2465–2610) |
| Pressure relief, min bar (psi) | 220 (3190) | 230 (3335) |
| Pressure relief, max bar (psi) | 230 (3335) | 240 (3480) |
| Oil flow range, l/min (gal/min) | 280-380 (74.0-100.4) | 360–460 (95.1–121.5) |
| Back pressure, max bar (psi) | 10 (145) | 10 (145) |
| Input power, kW (hp) | 108 (145) | 138 (185) |
| Tool diameter, mm (in) | 190 (7.48) | 215 (8.46) |
| Carrier weight, allowed range, t (lb) | 43-80 (94800-176400) | 65-120 (143300-264600) |
| Noise level, measured sound power level, LWA, dB | 122 | 127 |
| Noise level, guaranteed sound power level, LWA, dB | 126 | 131 |

Please see Rammer PRO hammers on www.rammer.com


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# ACCESSORIES

**Rammer accessories for hydraulic hammers range from simple, practical auxiliary kits to advanced automatic Ramlube lubrication systems and effective AGW Unit. All the accessories will secure higher productivity, greater reliability and reduced owning and operating costs, with minimal environmental impact.**

## Ramlube I

Ramlube I can be used for lubricating the hammer tool and tool bushings. It can be fitted to all Rammer hammers with the pump unit housed within the carrier's engine compartment and is powered electrically. We recommend you to use only genuine Rammer tool grease for tool lubrication. Tool lubricant must have properties to withstand high temperature and extreme pressure, Rammer tool lubricants and automatic tool lubrication systems are especially designed to work with Rammer products.

## Ramlube II

The Ramlube II greasing device can be installed to all Large Range hammers. Mounted on the hammer housing, the lubrication system features no external electric cables or hydraulic hoses for optimum wear and impact protection, Ramlube II contains a replaceable 500-gram (1,1 lbs) grease cartridge. The greasing device is operated by the hydraulic pressure from the hammer's pressure fitting. Ramlube II is ideally suited to applications in which the hammer is required to work with more than one carrier.


## Ramdata II

The Ramdata II service indicator is designed to help hammer operators and service personnel to get information about the service interval status, service history and accumulated working history of the hammer. Ramdata II is a standard feature to all Rammer Large range hammers.

## AGW Unit

The AGW (Air, Grease and Water) Unit comprises the proven Ramair air flush system that prevents potentially harmful dust ingress, the Ramlube I automatic lubrication system to ensure consistent and throughout greasing, and Water jet dust suppression package which minimizes the creation of dust during breaking. Hydraulically actuated AGW Unit is especially designed to protect the hammer from the demands of extreme applications such as tunneling and heavy demolition and it keeps your Rammer hammer protected and productive throughout its working life.

Please see more accessories on rammer.com

# FIRST CLASS SERVICE AND SUPPORT

## Hammer installation

Installation inspection is an essential part of commissioning a new hammer, checking the compatibility of the hammer and carrier and ensuring that flows and pressures are adjusted correctly. Installation inspection together with correct operating methods guarantees reliable hammer operation.

## Trained service personnel

Rammer products are renowned for quality, performance and reliability but when your hammer shows signs of natural wear, or the unexpected happens, our professional dealer service personnel are highly-trained, qualified and experienced which ensures that customers are never more than a phone call away from a Rammer hammer expert.

## Genuine parts and tools

The Rammer global dealer network is the only place to access dedicated and experienced aftersales support. Genuine Rammer parts and tools availability is the best in class which keeps your hammer running at peak performance, ensuring downtime is reduced and enabling you to lower your operating and running costs.

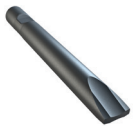
We offer a wide range of tools designed for various applications and materials.

**CHECKOUT MORE FROM OUR PARTS AND TOOLS BROCHURE.**

## Primary breaking

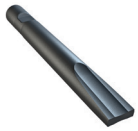
**Standard chisel tool**

- Non-abrasive but tough rock or concrete
- For material which has low or medium penetration rate



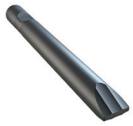
**Hard rock chisel**

- Hard and abrasive rock with fractures
- For applications where drilling and blasting cannot be used
- Materials with low penetration rate



**Limestone and concrete chisel**

- Very soft and easily breaking, non-abrasive rock or concrete
- For rock which has high penetration rate



**Pyramid point tool**

- Soft, non-abrasive and tough rock and especially concrete
- Materials requiring high penetration rate
- Where chisels have excessive retaining pin groove wear

**Moil point tool**

- Where chisels have excessive retaining pin groove wear
- Soft and nonabrasive rock
- General demolition of concrete

## Secondary breaking and boom application

**Blunt tool**

- Hard rock with low or medium abrasive content
- Boulder breaking or concrete demolition
- Application where tool wear rate is low

**Super blunt tool**

- Hard and abrasive rock
- Only for boulder breaking
- 1.5...3 Times more wear life than standard blunt in very abrasive applications
- In non-abrasive applications life maybe shorter than standard blunt

## GLOBAL DEALER NETWORK

Sandvik sells and supports its Rammer-branded products through a global dealer network that operates in 130 countries around the world.

## YOUR LOCAL RAMMER DEALER

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www.rammer.com