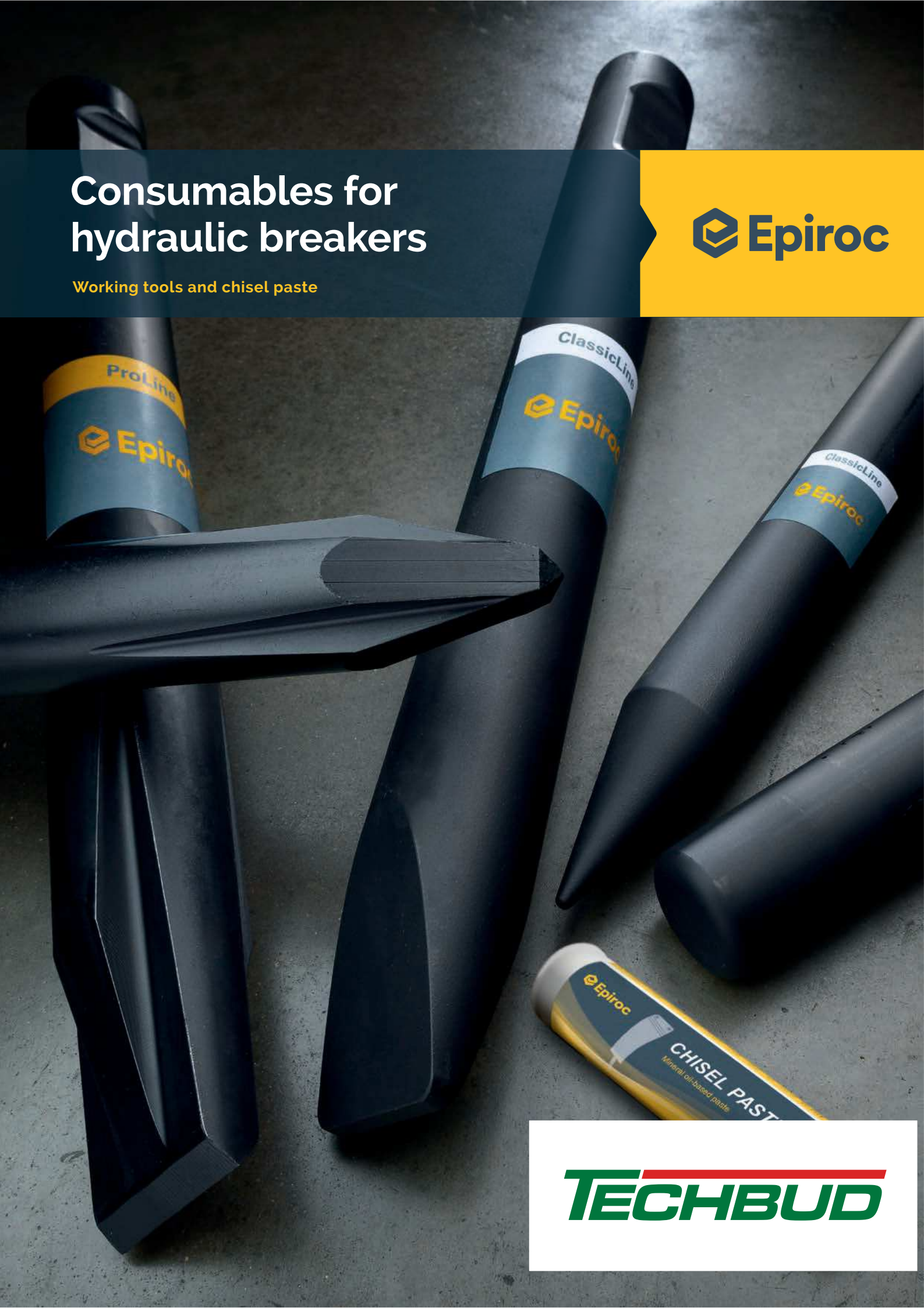
Consumables for hydraulic breakers

Working tools and chisel paste

Epiroc



TECHBUD

Partners in performance

Epiroc working tools for hydraulic breakers are high quality, reliable and provide optimal durability. They are the right choice to protect your investment in Epiroc breakers and to contribute to a low life-cycle cost and increased availability.

Every year, our facilities produce thousands of working tools that are manufactured and processed using state-of-the-art machinery and technology to ensure our finished products comply with the highest standards of quality. Our production process begins with the selection of the best alloy, which passes through our special heat treatment and ends with blasting for finishing. The result is a high-end product with the characteristics of hardness and wear resistance that provides maximum durability for tough applications, such as road construction, demolition, trenching, quarrying, tunnel-ing and mining.

Use our working tools for increased productivity and reduced cost of operation.

It's more than just another piece of steel!

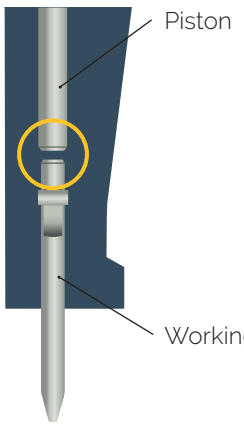
Working tools have three main functions:

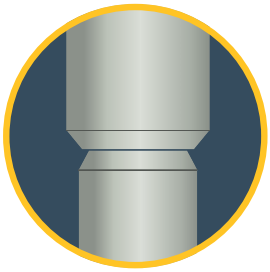
- **Transfer "all" the impact energy from the piston to the rock, for maximum efficiency**
- **High wear resistant behavior to keep the running cost of the breaker under control**
- **Avoid damages on the main components of the hydraulic breaker**

The following features empower Epiroc working tools to play its role to perfection:

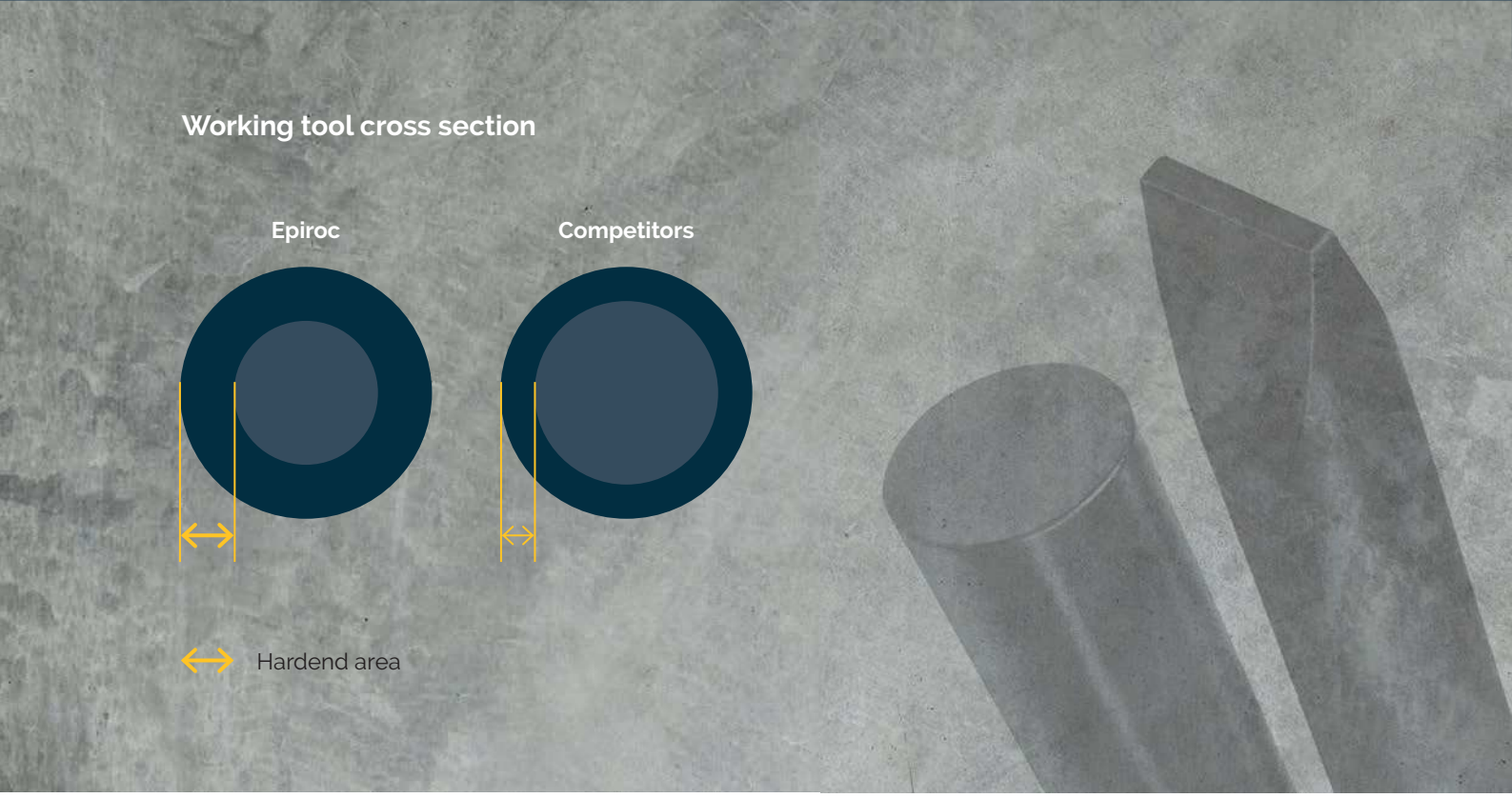
Design

All working tools are manufactured to match Epiroc breakers' design, tolerances and performance. The unique special designed impact surface of the working tool, is impeccably flat (to a degree not visible with naked eye) allowing the piston to hit the working tool on the full surface, transferring the maximum energy trans-mission to the rock. In addition to this, if the impact surface is not perfectly flat, the piston hits the working tools with very high unevenly distributed energy which may cause serious damage on the piston itself as well as on the lower hammer part and cylinder.





Perfect flat impact surface (not visible with naked eye)



Alloy with high purity

Epiroc working tools are manufactured from a special alloy with a very high grade of purity. High purity minimizes the risk of tool breakage by reducing weak spots, which could cause cracks. Especially in the cases where the impurities are on/near the surface, the tool is highly prone to fracture.

High purity helps to achieve a deeper hardening of the shell, without altering the technical specification of the material and at the same time, while maintaining the core of the tool soft. Therefore, our tools efficiently withstand the bending stresses and last much longer, because the hardened surface (which gets removed by wearing) is much deeper than in a non-genuine working tool.

Wide variety

Epiroc offers a wide range of working tools. The right tool for the right application enables you to achieve high productivity and lower operational costs.

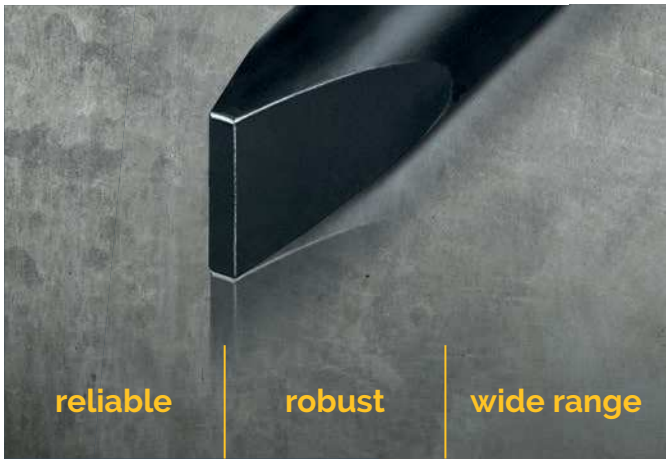
Hardness ratio between piston and working tool impact surface

An optimum hardness ratio between the working tool impact surface and the piston is of key importance. In case this ratio is not perfect, either the piston (in case working tools are harder) or the working tools (in case the piston is harder) is highly prone to serious damage.

Consistency

Epiroc working tool quality starts from the selection of the best raw material available, followed by an advanced machining process and state-of-the-art heat treatment, allowing all working tools to have exactly the same properties. This consistency allows us to predict performance and durability when an Epiroc working tool is replaced with a new one. Furthermore, our customers can be sure that once an Epiroc working tool passes through our strict quality control, there will be consistency within a particular batch.

The right tool for the right job



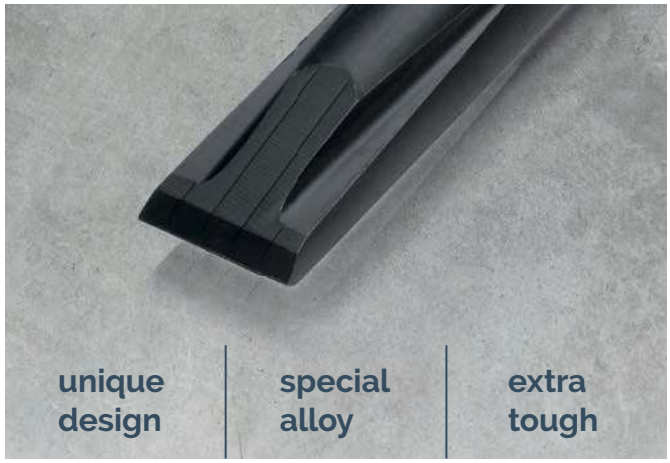
ClassicLine

Tool for every application

Epiroc ClassicLine tools are the standard choice for all kinds of applications, with an excellent ratio of percussive performance to weight.

Dimensions, material properties and tip geometry of ClassicLine working tools have a major impact on reliability, wear behaviour, performance and productivity. In addition, a wide portfolio of tip shapes allows you choose the optimal tool for each application.

ClassicLine is made of a special alloy that has been optimized for hydraulic breaker applications. An advanced heat treatment process and a strict quality control result in maximum durability of all working tools.



ProLine

"Pro" tool for tough jobs

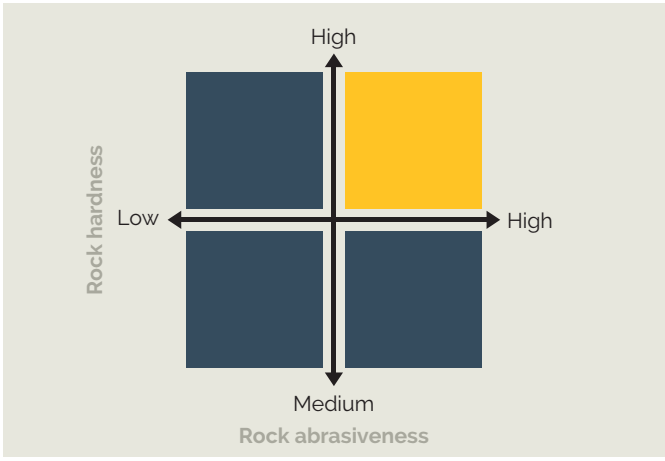
ProLine is the new state-of-the-art portfolio of working tools for Epiroc breakers. All the benefits from ClassicLine are enhanced in ProLine to achieve high productivity under the most demanding conditions.

An exceptional combination of raw material with high nickel content and a special hardening process empower the tools to resist high external forces and wear, particularly under hard and abrasive rock conditions.

Moreover, a specially designed tip helps to flush out dust from the impact area, enabling faster reposition of the tool and reduction of loose rock in the impact area. As a result, ProLine tools achieve excellent penetration and increased lifetime.

The correct application of Epiroc working tools can make you more productive on the job.

This graph provides information to help you to chose the correct line.

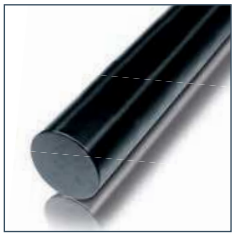


ClassicLine

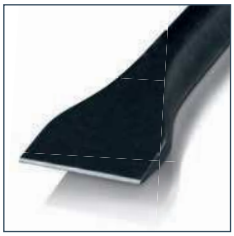
ClassicLine
moil point conical

ClassicLine
moil point pyramidal

ClassicLine
flat chisel



ClassicLine
blunt tool



ClassicLine
wide chisel

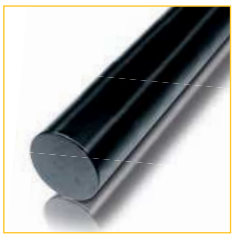
ClassicLine
asphalt cutter

More variants available!

ProLine

ProLine
moil point

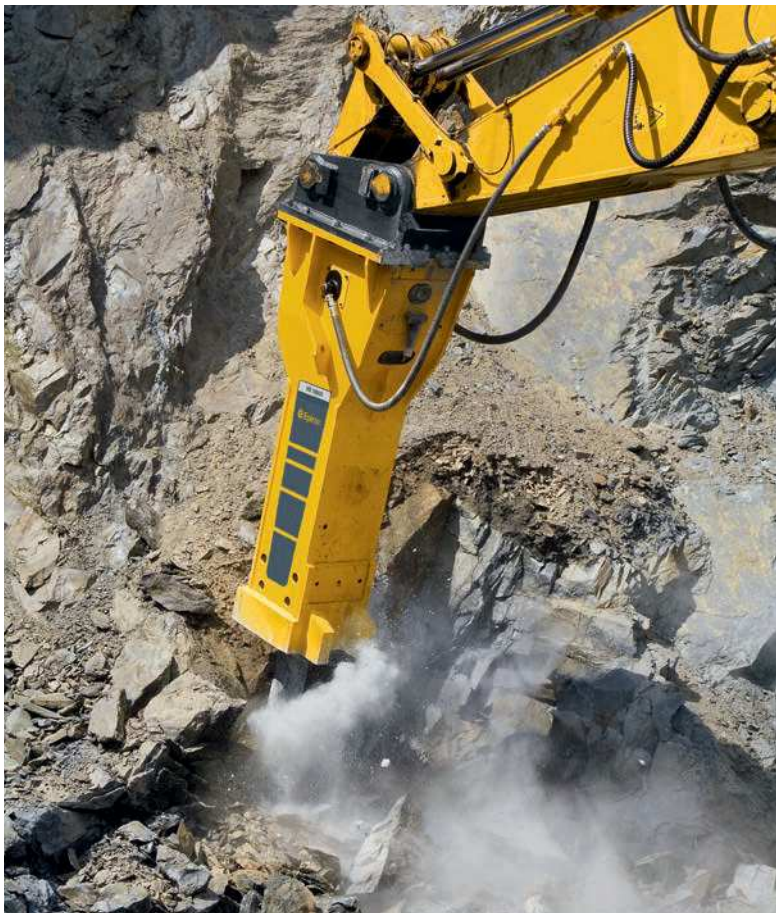
ProLine
flat chisel



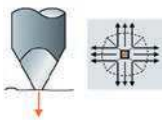
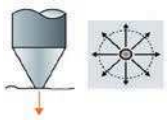
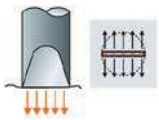
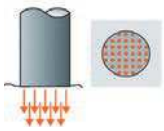
ProLine
blunt tool

Recommendation

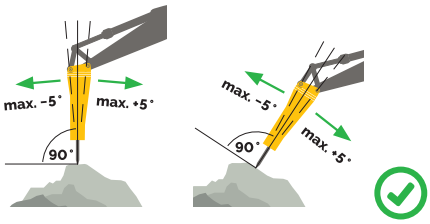
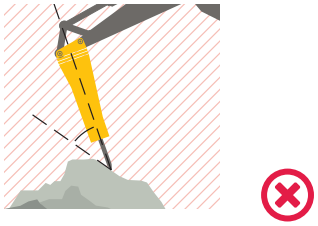
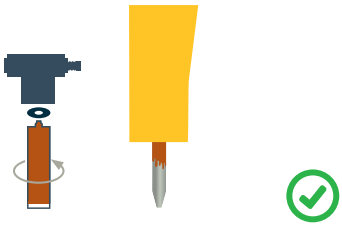
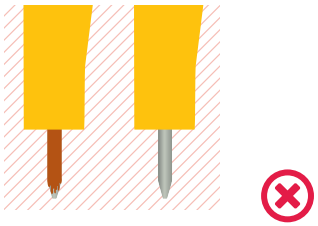
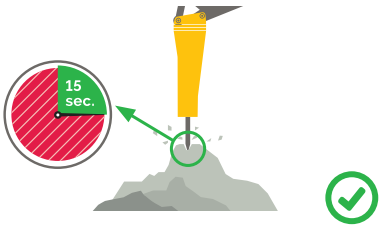
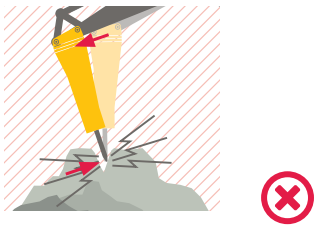
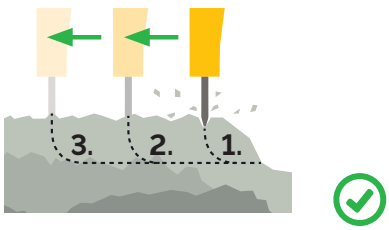
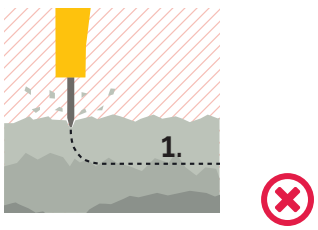
Material	Use	Specifications	Tool type
Concrete	Thin and thick floors, walls	Reinforced	Chisel
		Non-reinforced	Moil point
	Foundations	Reinforced	Chisel
		Non-reinforced	Moil point
	Blocks, columns, support	Reinforced	Chisel
	Recycling	–	Blunt tool
Sedimentary rock (limestone, sand-stone, graywacke, calcareus sediment)	Trenching, foundation work, primary quarry breaking	Heavily fissured	Chisel
		Lightly fissured	Moil point
		Monolithic	Moil point
	Breaking oversizes	–	Blunt tool
Crystalline/magmatic rock (magma, green-stone, gabbro, granite…)	Trenching, foundation work, primary quarry breaking	Heavily fissured	Chisel
		Lightly fissured	Blunt tool
		Monolithic	Blunt tool
	Breaking oversizes	–	Blunt tool
Asphalt	Road surfaces, transport routes	Soft structures	Chisel/wide chisel/asphalt cutter
Soil	Frozen ground	–	Chisel/wide chisel/asphalt cutter



Overview

Tool type	Moil point pyramidal	Moil point conical	Chisel	Blunt tool
Working principle				
Key properties	Minor torsion effect Good penetration Wedge effect in four directions (best in tools with big diameter)	No torsion effect Good penetration Wedge effect in all directions (best in tools with small diameter)	Strong torsion effect Good penetration Optimum wedge effect in two directions	Optimum energy transmission No torsion effect No penetration No wedge effect
Use in concrete	Non reinforced concrete	Non reinforced concrete	Reinforced concrete	Recycling (steel rebar separation)
Use in sedimentary rock	Primary breaking in lightly fissured or monolithic rock	Primary breaking in lightly fissured or monolithic rock	Primary breaking in heavily fissured rock	Secondary breaking (breaking oversizes)
Use in metamorphic/ igneous rock	–	–	Primary breaking in heavily fissured rock	Primary breaking in lightly fissured or monolithic rock as well as secondary breaking (breaking oversizes)

How to efficiently handle working tools

Type	Description	Correct	Not correct
Working Angle	Working tools should always be positioned at right angles to the working surface to avoid long-term secondary damage.		
Lubrication and positioning	Lubricate at regular intervals. Do not over lubricate. Reposition tool at regular intervals to avoid overheating.		
Leveraging	Avoid bending stresses on the tool to avoid over-stressing on the material.		
Working progression pattern	Advancing in large steps will decrease the breaker's performance. Instead, advance in small steps to increase productivity.		

Chisel paste

Epiroc chisel paste is a specially designed grease used for lubricating the wear bushings of hydraulic breakers. It prevents cold welding in the area of the bushings.

Standard greases (i.e. those used on excavator bearings) are not designed for the high temperatures that result from the friction between the working tool, bushings and retainer bars when the hydraulic breaker is in operation. They liquefy and disappear. Without greasing, the parts involved in the friction will suffer from accelerated wear.

Chisel paste is a mineral-oil-based paste containing an aluminium content soap and solid lubricants (such as graphite and copper) with excellent release effect and ambient working temperature range from -20°C to 1100°C (-4°F to 2012°F), suitable for applications both in cold weather and in high temperatures.

High metal content acts ball bearing to minimize high-temperature friction between the surfaces in contact, resulting in less wear between the chisel, retainer bars and bushings.

As a result, Epiroc chisel paste reduces the cost of operation by extending the lifetime of the wear parts and reducing the risk of working tool fractures.

Cartridges	Use
150 g/5.3 oz cartridges for ContiLube™ II Micro	For automatic lubrication in Epiroc breakers fitted with ContiLube™ II Micro. Refillable.
500 g/17.6 oz cartridges for ContiLube™ II	For automatic lubrication in Epiroc breakers fitted with ContiLube™ II and manual greasing with a grease gun. Refillable.
400 g/14 oz cartridges	For manual greasing with a grease gun in all breakers, including handheld hydraulics, from all brands.

- **Excellent performance at high temperature**
- **Tailor made for breakers**
- **Less wear**
- **Long tool life**
- **Reduced cost of operation**

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