

MAXIMIZE YOUR MINERAL CUTTING PRODUCTIVITY. **THIS WAY!**

SANDVIK MINING
MINERAL GROUND TOOLS PRODUCT CATALOGUE



AT SANDVIK WE PUT SAFETY FIRST

With continued demand from mining companies to ensure safety and increase productivity, Sandvik Rock Tools are committed to providing the support needed – through safe products and product information.

Every site must work with environmental health and safety (EHS) Regulations. EHS procedures should be developed specifically for the operation. All those involved should collect and apply those procedures throughout their work, while constantly examining if they are adequate enough or need modifications. A methodology of risk assessments should be employed.

PERSONAL SAFETY MEASURES

APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT (PPE) SHOULD BE WORN (E.G.):

- ▶ Safety helmet
- ▶ Hearing protection
- ▶ Safety glasses
- ▶ Protective and high visibility clothing
- ▶ Safety boots
- ▶ Any site-specific PPE as required

GENERAL

The products in this catalog are designed for excavating minerals. They are for use on longwall shearers, continuous/bolter miners, or roadheaders and should only be used for this purpose. Typically they are used in an underground coal mining environment. This environment poses a very particular set of hazards and mines safety rules should be followed. In particular; be familiar with air flow and escape routes, obey all instruction given by mine personnel, never work under unsupported roof, never stay or work close to potential “pinch” areas.

TAKE 5 MINUTES

Consider safety when planning your Schedule. Taking five minutes before the start of a task to consider the possible hazards, perform a quick risk assessment and then plan and apply appropriate control measures is a quick and effective way to prevent incidents that can cause injury and environmental damage. Plan, sequence and determine the resources required for each step of the job. Consult available procedures. Identify potential hazards, determine the risk of the hazards and consider appropriate measures to control the hazards. Ensure you have the correct resources to perform the task.



RECOMMENDED SAFETY PROCEDURES

LIFTING

Use safe and correct lifting practices while working with heavy items. Consider body position, awkwardness of the item and its weight. Consider if two people are required for the lift, or if a lifting device is necessary. Beware tools can spill out of their containers during lifting.

INSTALLATION

Cemented tungsten carbide tipped tools have tough wear resistant edges that may fracture or cause hard objects such as steel hammers to chip when struck during the installation or removal process. During installation, spring-tensioned clips can become dislodged and a risk of crushing a finger exists. Use a brass or copper hammer to reduce the risk (safety glasses and gloves too).

USE

Rotating tools can break or be dislodged during use.

Personal protective equipment such as eye protection and suitable clothing should be worn around machinery using carbide tipped tools. Sandvik recommends introducing a barrier between the cutting drum and mines personnel. Either flexible shielding next to the cutting drum to catch flying objects from the cutting area, or appropriate PPE.

Cutting rock will generate dust. Some dust is dangerous if inhaled and the use of water sprays, exhaust ducting and suitable PPE is recommended.

Cutting rock generates noise, and suitable hearing protection is recommended.

Cutting rock, especially pyrites and sandstone, can generate a spark that may ignite methane in the mine, leading to an explosion. Selection of the correct pick design can significantly minimise the risk of frictional ignition during the cutting cycle. The Sandvik range offers a variety of designs that minimize this risk, suitable for continuous/bolter miners, road-headers and longwall shearers. A blunt, worn, bent, cracked or damaged pick or pick block can significantly increase the risk of frictional ignition and must be replaced immediately. Safe work and operational procedures should incorporate an inspection of the machine picks and pick blocks before use, and regular



monitoring and review, based upon mining conditions, mine health and safety management systems requirements and hazard management plans. Workers should be provided with safety information, instruction, and training on transporting, installation, operational care and use, service and maintenance and removal of machine picks and pick blocks.

Inspect tools before use and at regular intervals. If they are loose, dull, bent, cracked, burred, or otherwise unsuitable for use, DO NOT USE! Replace them.

BLOCKS/SLEEVES

Do not use if cracked, bent, or damaged. Use of tools in holders with excessively worn bores can cause loss of the cutting tool in use creating a dangerous situation.

GRINDING

Sandvik Rock Tools use cemented carbide components. Cemented carbide is made up of tungsten carbide and cobalt. Grinding cemented carbide will produce dusts or fumes with dangerous ingredients that can be inhaled, swallowed or come in contact with the skin or eyes. Do not breathe the dust. Wear protective gloves / protective clothing / eye protection. In case of inadequate ventilation wear respiratory protection. In particular, avoid dry grinding.

HANDLING OF WORN PARTS

Worn parts should be removed and disposed of appropriately. Consider recycling the used tools. Please contact your local Sandvik Mining representative for support and further information regarding the Recycling process.

STORING

All products should be stored in a dry place and in original package until they are required for use.

Read more about our Health and Safety Information at page 70.



Göran Fredrik Göransson founded Sandvik in 1862.

AS THE WORLD CHANGES OUR VALUES REMAIN THE SAME

With 150 years of history it's not surprising that we have seen many changes in our industry. What hasn't changed is our commitment to our core values Open Mind, Team Spirit and Fair Play. By living our values we are an innovative and growing company, meeting the world around us with an open mind.

We pride ourselves in developing and offering the very best solutions for our customers. A major breakthrough for us here at Sandvik was the integral steel in the late 1940's. Overnight, this material revolutionised rock drilling a hundredfold and significantly improved production as well as performance. This Integral drill

steel was the first product that was based on the new revolutionary material, cemented carbide and is still the single most important material that makes rock drilling effective and profitable for our customers. Today, we continue to conduct business in close cooperation with our customers, based all over the world. We stand by our promise of being a proactive and innovative partner. We accomplish this by always looking ahead, listening to our customers and their market requirements. We follow developments in society and industry, as well as contributing products and solutions to meet demand.

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“In a world where innovation and technology make the difference between good work and great work, being second best just isn’t an option for us.”

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OUR VALUES ARE REPRESENTED IN THE WAY WE DO BUSINESS

Sandvik Mining is a leading global supplier of Rock tools and equipment, service and technical solutions for the mining industry. Our offering covers rock drilling, rock cutting, rock crushing, loading and hauling and materials handling.



OPEN MIND

At Sandvik, we approach the world around us with an open mind to remain a highly innovative and growing company focused on increasing value for our stakeholders. Open Mind invites us to look for innovations and improvements, to value and learn from different perspectives and to take a positive attitude to change. We encourage those who take the initiative and experiment with new ways of working.

TEAM SPIRIT

Within the Sandvik Group, we act together as one team in close cooperation with our stakeholders worldwide. Progress is secured by Sandvik personnel trusting each other as enthusiastic members of a team, with everyone seeking to do their best and showing respect for one another.

FAIR PLAY

At Sandvik, Fair Play is about taking our responsibilities when conducting business. We comply with the high ethical standards stated in the Sandvik Code of Conduct. This means that our business is based on honesty, integrity and trust. Fair Play also requires us to conduct transparent relations with all of our stakeholders.



Continuous improvement – product quality and service is our only job. We believe “there is no best, only better”.



RESEARCH AND DEVELOPMENT TAKE THE LEAD IN OUR PRODUCTION

Our rock tools are known to all the main mining customers all over the world.

Our tight focus and continuous development work insure the latest technical solutions for the most demanding rock conditions and for the most powerful rock tools, all for the benefit of our customers.

Our products undergo extensive laboratory studies and then, tested fully in the field. Finally evaluated and refined to provide the highest grade of equipment that stands for the Sandvik name.

Our spirit of innovation and high involvement runs through every product. It is preceded by extensive Research & Development. Supported by a worldwide service network offering on-site service, training and round-the-clock support.

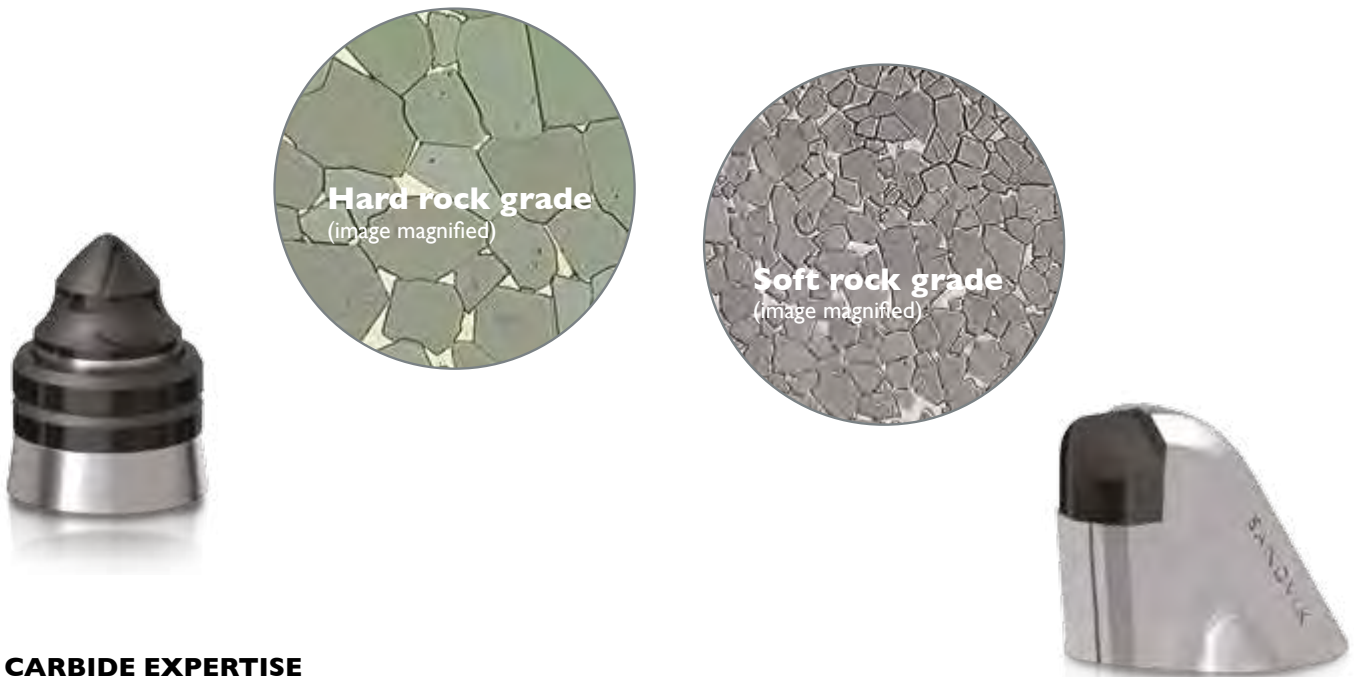
Our service-oriented, global organisation is well developed. Sandvik has technical service specialists strategically located around the world to service our customers.



AT SANDVIK SAFETY IS NOT HANDLED LIGHTLY

Safety is also very important for our customers. We are the safe choice for our customers, not only because we lead in safety innovation and functional safety, but also because we do what we promise. In addition to offering our customers' better productivity, Sandvik products and services also enable them to sleep well at night. The reason? Risk is minimized, enabling operations to run smoothly, giving them peace of mind.

SANDVIK CEMENTED CARBIDE



CARBIDE EXPERTISE

Sandvik Mining is the world's leading supplier of machines and tool systems for all rock, surface and mineral excavation applications. Sandvik delivers millions of tools annually, including everything from small road planing, ice scraping and roof drilling bits used in all types of coal and soft minerals, to the biggest tunneling, trenching and surface mining tools.

Sandvik continues to develop new hard material alloys to meet today's demanding environments. An extensive research project within Sandvik has resulted in a new generation of carbide grades and new larger, stronger, more stable and efficient tools. The demand on tool performance, especially pertaining to the cemented carbide tip material and its resistance to wear and fracturing, becomes more critical as we progress into harder rock and mineral formations. Larger continuous cutting machines are being used to replace the drill and blast process in many mining projects. The continuous process offers a lower cost per ton of excavated material, assures maximum worker safety and has a positive effect on the environment.

TOUGHEST CARBIDE IN THE INDUSTRY

This latest generation of patented carbide grades is manufactured using an innovative process technique with completely new raw materials. This process has made it possible to create new extra-coarse, super-tough alloys with perfectly uniform grain structure. It has also allowed Sandvik to better match tip material grade to hard rock and soft rock applications.

The creation of this carbide, with a significantly stronger carbide matrix and a perfect grain size configuration, has contributed to the superior toughness and high-temperature wear resistance experienced in a great number of operations.

The Sandvik range of standard grades are cost effective in all general surface and underground applications and meet or exceed the performance of competitive brands. Our XT-Grade has proven to be 1.5 to 3 times better than anything else on the market in hard-to-extreme tunneling, trenching and coal mining applications (individual results may vary).

ADVANCED CARBIDE MINING TOOLS

Sandvik has applied its carbide expertise to develop a complete line of mining tools for continuous and longwall mining applications; including coal, salt, gypsum, limestone, kimberlite and potash. These tools are manufactured to be used on any small, medium or large mining equipment.

As a result of our extensive research and development, Spark Resistant tools have been designed with spark-resistant characteristics, thereby reducing the possibility of frictional ignition and increasing the safety in coal mines.

Sandvik has also developed our TriSpec™ tools with a carbide ring strategically placed slightly below the tip to prevent body wear, maximizing carbide tip use.

CONICAL TOOL SYSTEMS

COMPONENT IDENTIFICATION

The key to achieving maximum productivity is having the right tool. Sandvik offers a wide selection of advanced conical mining tools that can properly match your application. Our tool system consists of high-quality components to help you achieve greater efficiency. A more complete description of each component, a Tool Selection Guide and detailed product specifications are located on the following pages to assist you in selecting the best tool for your machine and your job.



CARBIDE TIPS



CAP



INSERT



CAP

Our market leading cap carbide tips are best suited for soft to medium-hard materials and applications. A valve seat braze joint increases strength and shear resistance. These tips offer superior penetration, and the larger carbide shoulder provides excellent protection against steel wash.

INSERT

Insert carbide tips prevail in high impact conditions or when working with hard materials. These industry leading tips are ideal for penetration applications where steel wash is not an issue.



TRISPEC®



SPARK RESISTANT



TOP VIEW

TRISPEC® (TIP-RING COMBINATION)

TriSpec® tools are equipped with a carbide ring placed slightly below the tip to prevent body wear and maximize carbide tip use. Each tool is available with either an insert or cap carbide tip. TriSpec® tools reign supreme in high body-wash conditions.

SPARK RESISTANT

Spark Resistant tools reduce the likelihood of frictional ignition caused by tool impact during the mining process. A carbide ring placed just below a carbide cap covers all exposed steel on the nose of the tool. Spark Resistant tools are ideal for coal mines with high methane levels.

NOTE: Frictional ignitions may still be possible and methane levels should always be monitored closely, regardless of tools used. Ensure proper maintenance of water sprays at all times.

COMPONENTS

TOOL BODIES

Sandvik offers a wide selection of body types to match your application and machine.

- Slender: provides better breakout and penetration while producing less fines
- Standard: provides a powerful combination of penetration and durability
- Heavy-duty: provides greater strength and maximum durability

These body types are available in solid and/or finned body styles to meet your application and personal preference. To match your machine specifications, Sandvik also offers versions with step shanks.



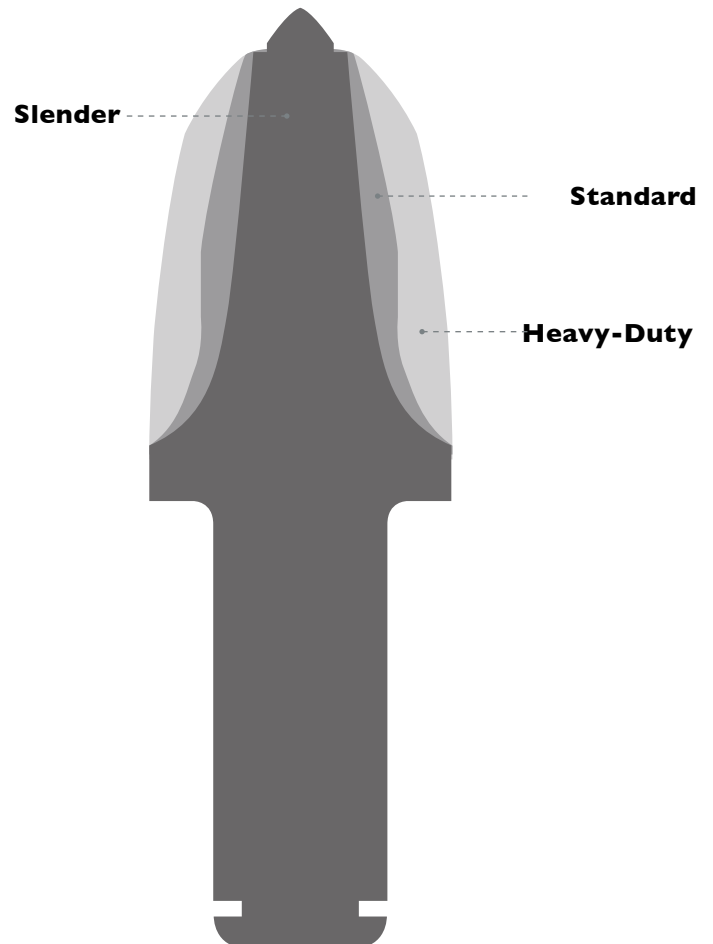
SLENDER



STANDARD



HEAVY-DUTY





CHAMFER / STANDARD



PULLER



WIDE

The tool shoulder is designed to extend the wear life of the sleeve and block by deflecting material and debris away from them and by reducing material buildup at the base of the tool. Sandvik's standard shoulder design provides excellent sleeve and block protection, but for extreme applications and environments, our wide shoulder design delivers increased protection.



SIMPLIFIED TOOL REPLACEMENT

Changing tools is simplified with Sandvik's full line of puller and extractor accessories (see page 67).

RETAINERS



BUMPED / RAISED RETAINER

This internal retainer, made of either metal or plastic, fits on the tool shaft and has a raised section that snaps into a groove within the sleeve, creating a positive lock for better retention.

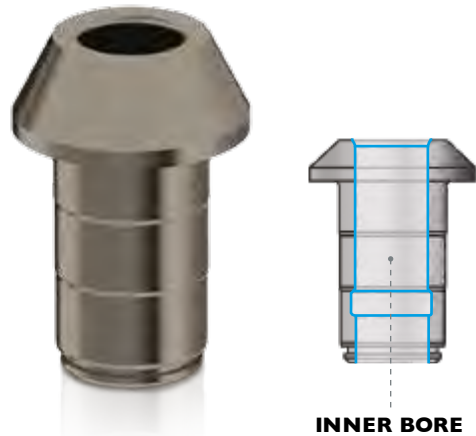


FRICTION RETAINER

Sandvik has many different internal friction retainers to hold the tool in the sleeve and is determined by the sleeve design.

SLEEVES

The sleeve extends block life by minimizing its exposure to wear and protecting it from material and debris. The block shape, style and measurements will determine the type of sleeve that is required for your machine. Your block also determines whether you should use a slip-fit sleeve that uses an external retainer to hold it in place or a press-fit sleeve which does not require a retainer (see page 58).



BLOCKS

The block is welded to the machine and holds the sleeve and tool in proper position. The block is protected by the sleeve and the shoulder of the tool to help extend its life and minimize the need for replacement. The shape, style and size of the block will determine what type of sleeve and tools may be used on a machine (see page 58).

EXTERNAL RETAINER

External retainers provide maximum tool retention and are placed on the groove at the end of the tool after it is placed in the sleeve. There are many different styles of external retainers, including: hair pin, hose clamp, and snap-ring. All these retainers are available in metal and some are available in plastic. Sandvik has accessories to assist with installing and removing these retainers.



WORKING PRINCIPLES OF TOOLS

TOOL PERFORMANCE AND LIFE

To get the most out of tools, ensure the proper items are checked and maintained



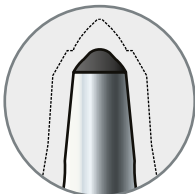
Check **water spray system** (proper flow, proper pressure, plugged nozzles, etc.)



Check **tool rotation**



Change sleeves before excessive wear (wallowed bores will inhibit tool rotation and retention)



Change tools before failure (refer to next page for tool wear guide) (failed tools used during operation can damage the entire system and the tools that follow)



Ensure you're using the **proper tool** for your condition (refer to Tool Selection Guide on page 20 or consult your local sales specialist for the best tool)

TOOL SELECTION PARAMETERS

The guidelines below are a suggested reference to help begin the process of tool selection. There are many other factors that affect tool performance such as drum condition, water flow, rock abrasivity and machine horsepower. The best way to truly determine the best Sandvik tool for your specific application is to contact your local sales specialist.

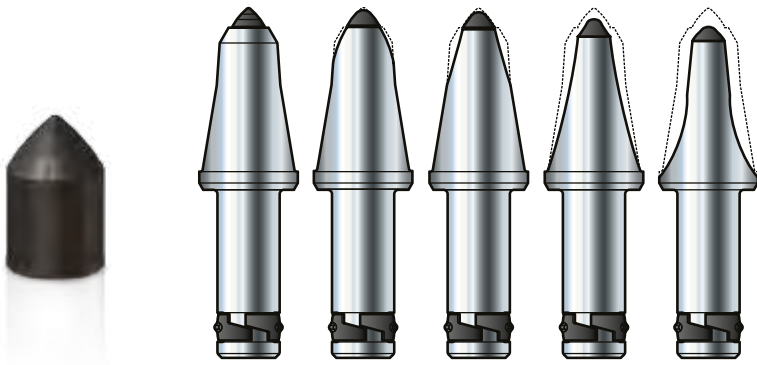
HARDNESS CLASSIFICATION FOR ROCK	
DESCRIPTION	COMPRESSIVE STRENGTH (MPA)
Soft	$\sigma_c < 30$
Medium	$20 < \sigma_c < 50$
Hard	$40 < \sigma_c < 80$
Extreme	$70 < \sigma_c$

ABRASIVITY CLASSIFICATIONS FOR ROCK	
DESCRIPTION	CHERCHAR ABRASIVITY INDEX VALUE (CAI)
Low	$CAI < 1.0$
Moderate	$1.0 < CAI < 2.0$
High	$2.0 < CAI < 3.0$
Extreme	$3.0 < CAI$

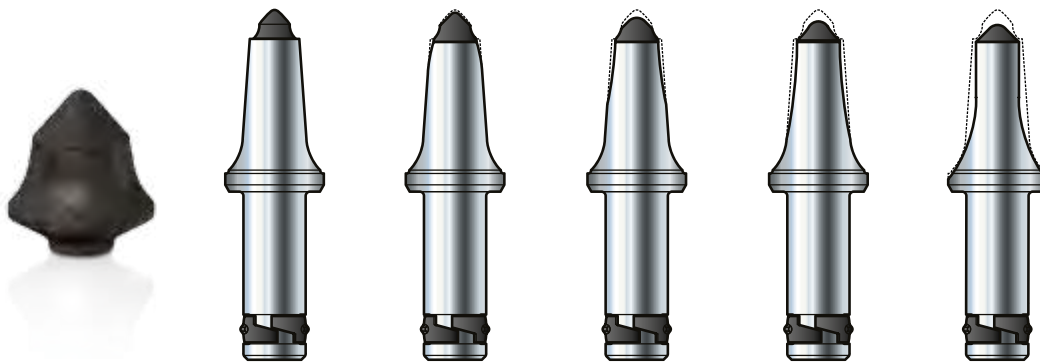
WARNING

Cemented carbide tipped tools have extremely hard and wear resistant edges that may fracture or cause less hard objects such as steel hammers to chip when struck during the installation or removal of the tools.

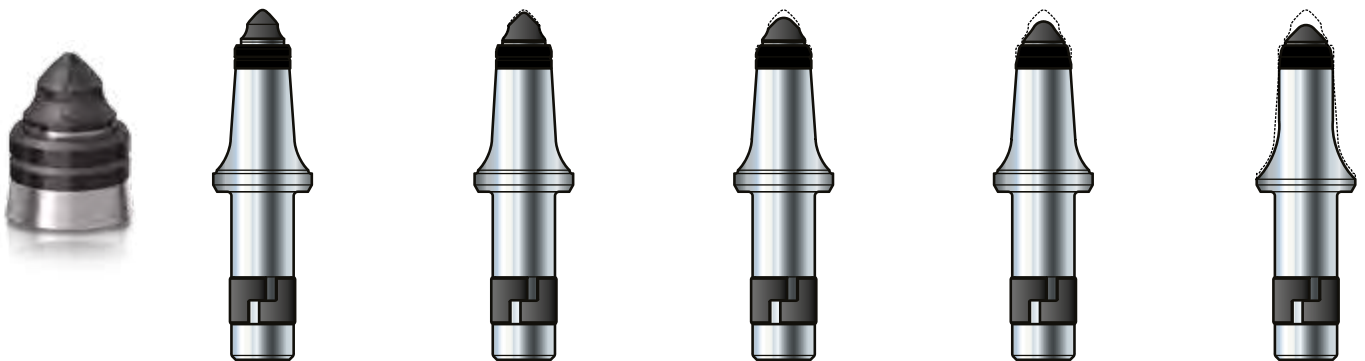
TOOL WEAR



WEAR OVER TIME*



WEAR OVER TIME*



WEAR OVER TIME*



*Results may vary. Based on typical medium abrasiveness

CONICAL TOOL SUCCESS STORIES

MEDIUM ROCK

COAL WITH HARD SHALE & SANDSTONE

Condition: 762 mm (30") coal with 762 mm (30") hard shale & sandstone inclusions

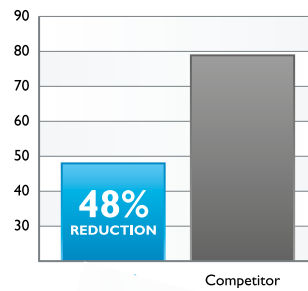
Mining: Coal with continuous miner

Method: Room and pillar

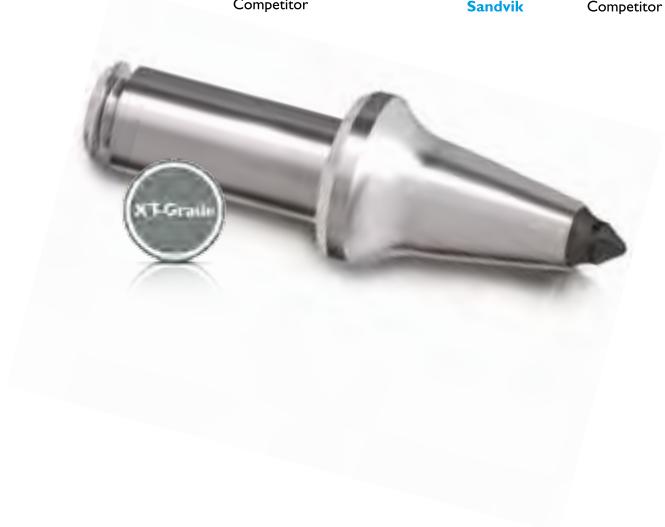
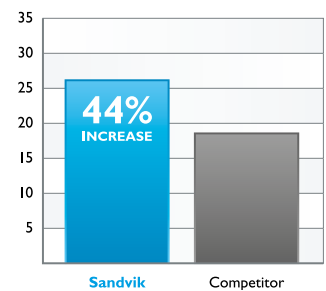
Sandvik Tool: Q8KX-3084-5790 (XT-Grade)

Competitor Tool: Standard grade (best equivalent with similar geometry)

Tools Replaced



Tons Mined Per Tool



MEDIUM ROCK

COAL WITH HARD SHALE & SULFUR BALLS

Condition: 1,651 mm (65") coal with 1,092 mm (43") hard shale & sulfur balls (carbonate nodules)

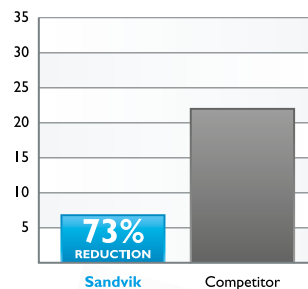
Mining: Coal with continuous miner

Method: Room and pillar

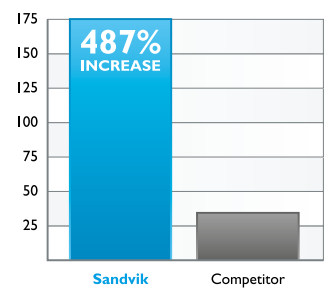
Sandvik Tool: Q8KX-3084-5062 (standard grade)

Competitor Tool: Standard grade (best equivalent with similar geometry)

Tools Replaced



Tons Mined Per Tool



MEDIUM ROCK

COAL WITH HARD SHALE, SANDSTONE & HARD SOAPSTONE

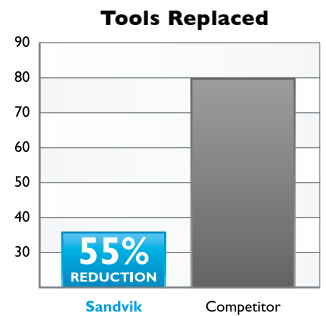
Condition: 127 mm (5") coal with 457 mm (18") medium shale, 305 mm (12") sandstone, 305 mm (12") hard soapstone (steatite)

Mining: Coal with continuous miner

Method: Room and pillar

Sandvik Tool: Q8KF-3084-5762 (standard grade)

Competitor Tool: Standard grade (best equivalent with similar geometry)



EXTREME HARD ROCK

SILVER WITH QUARTZ VEIN & FLINTSTONE EXTREME HARD ROCK

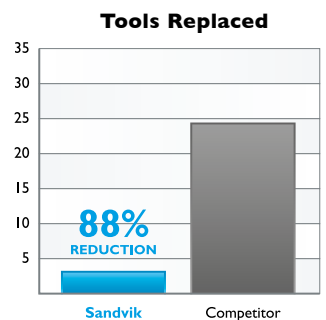
Condition: Silver with quartz veins & flintstone

Mining: Silver with a road header

Method: Room and pillar

Sandvik Tool: Q7AU-3870-1790 (XT-Grade)

Competitor Tool: Standard grade (best equivalent with similar geometry)



TOOL SELECTION GUIDE

Please review the Tool System section on page 9 for a more detailed description of each component.

PRODUCT	CUTTING CONDITION				RETAINER TYPE			PENETRATION			LIFE	BODY TYPE		TIP TYPE		ADDITIONAL FEATURE	PAGE
	Soft	Medium	Hard	Extreme	Friction	Bumped	External	Good Heavy-Duty	Better Standard	Best Slender		Standard	Finned	Insert	Cap		
25 mm																	
P9QA-2561-4262	●					●			●		Good	●		NP42		Puller groove	27
P9MS-2563-4262	●						●		●		Good	●		NP42			29
P7MS-2564-2462	●						●		●		Better	●		NP24			29
P9MS-2569-1265	●						●		●		Better	●		NP12			29
Q7MF-2569-1862	●						●		●		Good		●	NP18			31
P8JA-2563-3262		●			●				●		Best	●		NP32			25
P9XJ-2569-5762		●			●		●	●			Better	●		NP57	Puller groove		24
P9AA-2563-0562		●				●			●		Good	●		NP05	Puller groove		26
P9AA-2569-2462		●				●			●		Best	●		NP24	Puller groove		26
P9QA-2565-1862		●				●			●		Best	●		NP18	Puller groove		27
Q7MS-2569-3562		●					●		●		Good	●		NP32			29
Q7MF-2569-5762		●					●		●		Best		●	NP57			31
Q7MF-2569-3562		●					●		●		Best		●	NP35			31
P9XJ-2563-5062			●		●		●	●			Best	●		NP50	Puller groove		24
P9QA-2560-3562			●			●			●		Better	●		NP35	Puller groove		27
P9AA-2563-1362			●			●			●		Best	●		NP13	Puller groove		26
Q7AF-2569-5762			●			●			●		Best		●	NP57			28
P9MS-2563-5062			●				●	●			Best	●		NP50			30
Q7MS-2563-3562			●				●		●		Better	●		NP35			30
Q7MS-2569-5762			●				●		●		Better	●		NP57			30
30 mm																	
Q8AF-3084-5762	●					●			●		Best		●	NP57			35
Q8AX-3084-1265	●					●			●		Good	●		NP12			32
Q8AX-3084-1862	●					●			●		Good	●		NP18			32
Q8AX-3084-5762	●					●			●		Best	●		NP57			32
Q8AF-3095-5762	●					●			●		Best		●	NP57			35
Q8KX-3084-4262	●						●		●		Good	●		NP42			36
Q8KX-3084-1862	●						●		●		Better	●		NP18			32
P8AA-3084-5762		●				●			●		Better	●		NP57			33
P8AA-3084-4362		●				●			●		Better	●		NP43			32
Q8TA-3089-4362		●				●			●		Good	●		NP43	Extended shank		34
Q8AX-3084-4362		●				●			●		Better	●		NP43			32
Q8KD-3085-3262		●					●		●		Good	●		NP32			37
Q8KD-3080-4562		●					●		●		Better	●		NP45			37
W8KD-3085-4562		●					●		●		Best	●		NP45	Spark resistant		37
P8KD-3084-5762		●					●		●		Best	●		NP57			36
Q8KX-3084-3562		●					●		●		Better	●		NP35			37
P9KD-3084-4362		●					●		●		Better	●		NP43			36
Q8KX-3084-5762		●					●		●		Best	●		NP57			36
Q8KF-3084-5762		●					●		●		Best		●	NP57			40
Q8TA-3089-4562			●			●		●			Better	●		NP45	Extended shank		34
Q8TA-3070-5662			●			●		●			Best	●		NP56	Extended shank		34
Q2AA-3077-4162			●			●			●		Good	●		NP41	Extended shank		34
Q8TA-3070-4162			●			●			●		Good	●		NP41	Extended shank		34
P8AA-3084-2362			●			●			●		Best	●		NP23			33
P8AA-3084-5662			●			●			●		Best	●		NP56			33
Q8TA-3089-4162			●			●			●		Good	●		NP41	Extended shank		34
P8AA-3084-5062			●			●			●		Better	●		NP50			33
Q8AF-3084-3562			●			●			●		Good		●	NP35			35
Q8KD-3085-4162			●				●		●		Good	●		NP41			37
Q8KD-3070-4162			●				●		●		Good	●		NP41			38

TOOL SELECTION GUIDE cont.

PRODUCT	CUTTING CONDITION				RETAINER TYPE			PENETRATION			LIFE	BODY TYPE		TIP TYPE		ADDITIONAL FEATURE	PAGE
	Soft	Medium	Hard	Extreme	Friction	Bumped	External	Good Heavy-Duty	Better Standard	Best Slender		Standard	Finned	Insert	Cap		
30 mm cont.																	
P5KS-3075-3962			●				●	●			Better	●		NP39			38
Q8KD-3085-4562			●				●		●		Better	●			NP45		37
Q6XX-3090-4562			●				●		●		Better	●			NP45	Extended shank	39
P8KD-3084-2362			●				●		●		Best	●			NP23		38
Q6XX-3090-5662			●				●		●		Best	●			NP56	Extended shank	39
Q8KX-3084-5062			●				●			●	Best	●			NP50		35
Q8KF-3084-3562			●				●		●		Good		●	NP35			40
P8AA-3084-5690				●			●		●		Best	●			NP56	XT-grade	33
35 mm																	
T6JA-3525-6062	●				●					●	Good	●		NP60		TriSpec	43
T6JA-3500-6062	●				●					●	Good	●		NP60		TriSpec	43
Q7JK-3585-4362	●				●					●	Best	●			NP43		43
Q7JX-3585-4362	●				●					●	Best	●			NP43		43
Q7JX-3502-4362	●				●					●	Best	●			NP43		44
Q7AK-3502-4362	●				●	●				●	Better	●			NP43		41
Q7AX-3502-4362	●					●				●	Better	●			NP43		42
Q7MR-3502-5762	●						●			●	Best	●			NP57		45
Q7AK-3502-5062		●			●	●				●	Better	●			NP50		42
Q7AX-3502-5062		●				●				●	Better	●			NP50		42
Q7AR-3502-2362		●				●				●	Better	●			NP23		42
W7AX-3502-2362		●				●				●	Best	●			NP23	Spark resistant	41
Q6MR-3500-2362		●					●		●		Better	●			NP23	Puller groove	45
Q7MR-3502-5062		●					●			●	Good	●			NP50		45
Q6JA-3580-2162			●		●				●		Good	●		NP21			44
Q7JA-3589-5662			●		●				●		Best	●			NP56		44
Q7JX-3502-5662			●		●				●		Best	●			NP56		44
W7AR-3502-3962			●			●			●		Better	●		NP39		TriSpec	42
Q7AR-3502-5662			●			●			●		Best	●			NP56		42
Q6MR-3580-3962			●				●		●		Better	●		NP39		Puller groove	45
Q7JA-3589-5690				●	●				●		Best	●			NP56	XT-Grade	44
38 x 30 mm																	
Q6EC-3897-4362	●						●			●	Best	●			NP43	Plastic retainer	48
Q6EC-3877-4362		●					●		●		Better	●			NP43	Plastic retainer	48
Q3DS-3870-2362		●					●		●		Best	●			NP23		47
Q7VG-3875-1962			●			●		●			Best	●		NP19			46
Q2VA-3877-2162			●			●			●		Better	●		NP21			46
Q5EC-3877-2162			●				●		●		Better	●		NP21			48
38 mm																	
Q7AU-3885-2362	●					●			●		Good	●			NP23		50
P7JU-3870-2162		●			●				●		Good	●		NP21			43
P7JU-3890-5662		●			●				●		Better	●			NP56		49
Q7AU-3870-2162		●				●			●		Good	●		NP21			50
P7JU-3870-1962			●		●				●		Better	●		NP19			49
P7AU-3870-1962			●			●			●		Better	●		NP19			50
Q7AU-3870-1962			●			●			●		Better	●		NP19			50
P7AU-3870-1762			●			●			●		Best	●		NP17			50
Q7AU-3870-1762			●			●			●		Best	●		NP17			51
Q7AU-3870-5662			●			●			●		Best	●			NP56		50
P5MR-3880-1962			●				●	●			Best	●		NP19			52
P7JU-3870-1970				●	●				●		Better	●		NP19		XT-Grade	49
Q7AU-3870-1970				●		●			●		Better	●		NP19		XT-Grade	51

TOOL SELECTION GUIDE cont.

PRODUCT	CUTTING CONDITION				RETAINER TYPE			PENETRATION			LIFE	BODY TYPE		TIP TYPE		ADDITIONAL FEATURE	PAGE
	Soft	Medium	Hard	Extreme	Friction	Bumped	External	Good Heavy-Duty	Better Standard	Best Slender		Standard	Finned	Insert	Cap		
38 mm cont.																	
Q7AU-3870-1990				●		●		●			Better	●		NP19		XT-Grade	51
Q7AU-3870-1770				●		●		●			Best	●		NP17		XT-Grade	51
Q7AU-3870-1790				●		●		●			Best	●		NP17		XT-Grade	51
43 x 35 mm																	
Q3JX-4314-2366	●				●					●	Best	●		NP23			53
W3XA-4314-3962		●			●					●	Best	●		NP39			54
W3XA-4314-2362		●			●					●	Best	●		NP23	Spark Resistant		53
Q3JX-4314-2362		●			●					●	Good	●		NP23			53
Q3XA-4337-5662		●			●					●	Better	●		NP56			53
Q3XA-4314-5662			●		●					●	Better	●		NP56			54
Q3XA-4302-5662			●		●					●	Best	●		NP56			54
Q3XZ-4319-5662			●		●			●		●	Better	●		NP56	Washer Dual retention		57
Q3XD-4395-2062			●					●	●		Best	●		NP20			55
W3XD-4302-3962			●					●		●	Best	●		NP39	TriSpec		55
Q3XD-4314-5662			●					●		●	Best	●		NP56			55
Q3HA-4314-5662			●					●		●	Best	●		NP56	Thru-pin		56
Q3XZ-4319-5690				●	●			●		●	Best	●		NP56	Washer. Dual retention. XT-grade		57
Q3XD-4302-1990				●				●		●	Best	●		NP19	XT-grade		55

MAXIMIZED USE AND OPTIMIZED SAFETY



XT GRADE

Our XT-Grade (XT= ExtraTough), with its high wear resistance and optimized toughness, has proven to be 1.5 to 3 times better than anything else on the market in hard-to-extreme tunneling, trenching and coal mining applications.



TRISPEC®

TriSpec® tools are equipped with a carbide ring placed slightly below the tip to prevent body wear and maximize carbide tip use. Each tool is available with either an insert or cap carbide tip. TriSpec® tools reign supreme in high body-wash conditions.



SPARK RESISTANT

Spark Resistant tools reduce the likelihood of frictional ignition caused by tool impact during the mining process. A carbide ring placed just below a carbide cap covers all exposed steel on the nose of the tool. Spark Resistant tools are ideal for coal mines with high methane levels.

CONICAL TOOLS

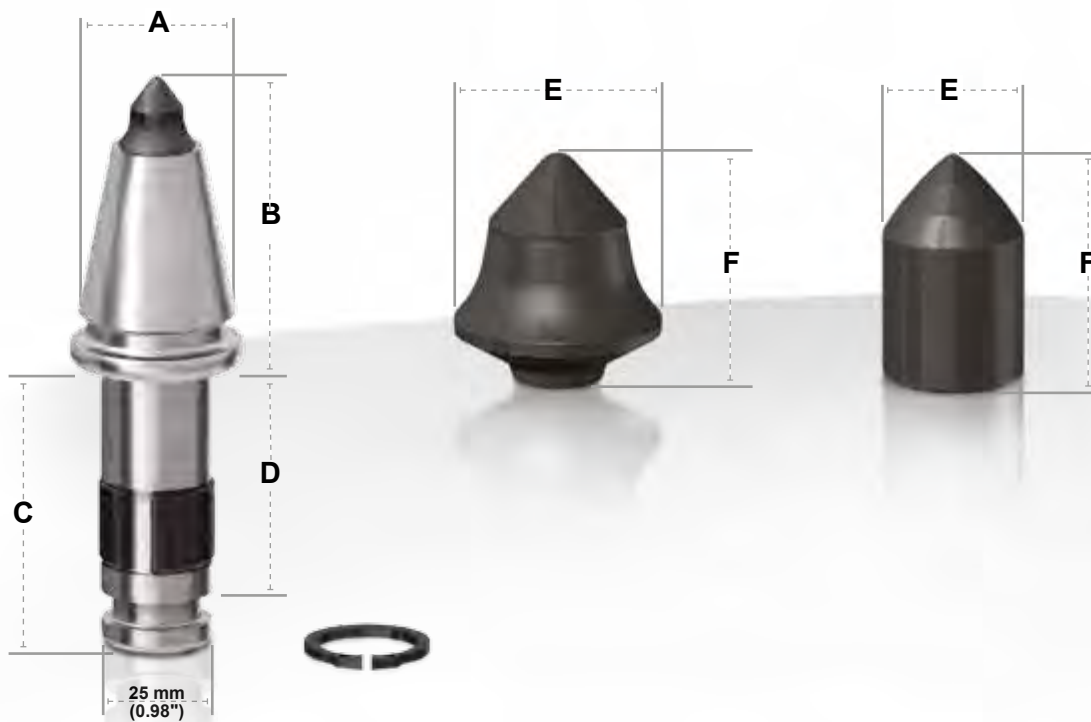
Sandvik conical tools are available in shank diameter sizes from 25 mm to 43 mm for use on roadheaders, longwall and continuous miners and crushers for the mining and tunneling industries.

The tools are manufactured in production facilities in the United States, India, China and Australia according to the highest quality standards.



25 MM TOOL

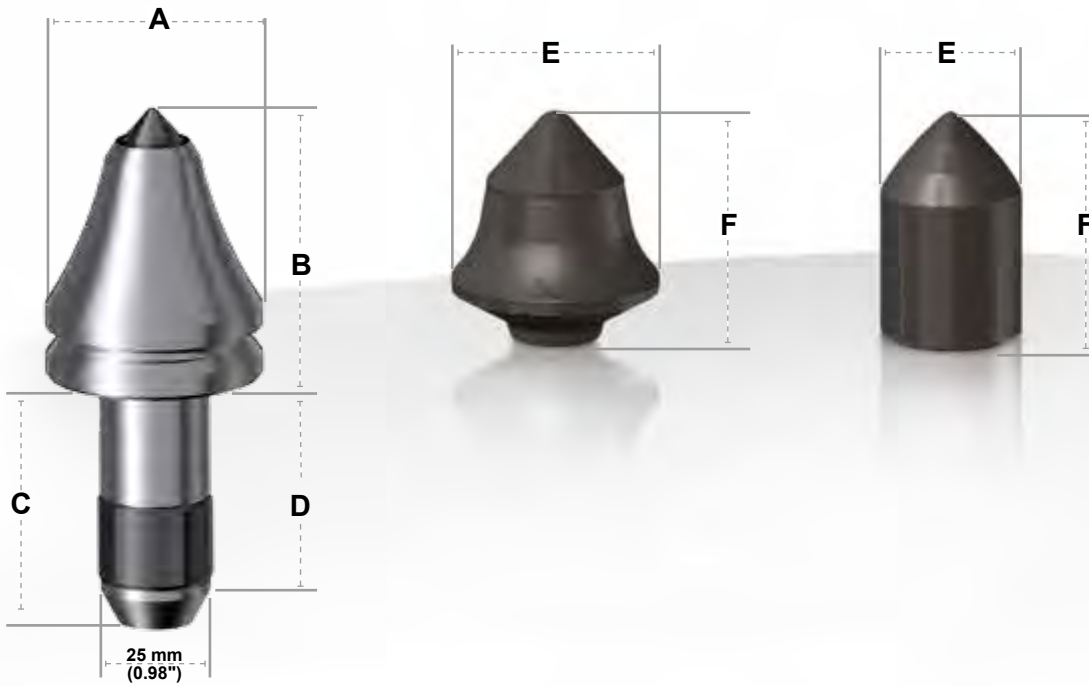
FRICTION/EXTERNAL RETAINER



CUTTING CONDITIONS		A	B	C	D	E	F	PRODUCT CODE	PIECES PER BOX	BOXES PER PALLET	PIECES PER PALLET
ME		40 mm	70 mm	66 mm	54 mm	18 mm	21 mm	P9XJ-2569-5762	EU: 25	24	600
		1.59"	2.75"	2.59"	2.13"	0.70"	0.81"		STD: 25	48	1200
HARD		40 mm	63 mm	66 mm	54 mm	22 mm	29 mm	P9XJ-2563-5062	EU: 25	24	600
		1.59"	2.50"	2.59"	2.13"	0.87"	1.14"		STD: 25	48	1200

EU: European pallet. STD: Standard pallet.

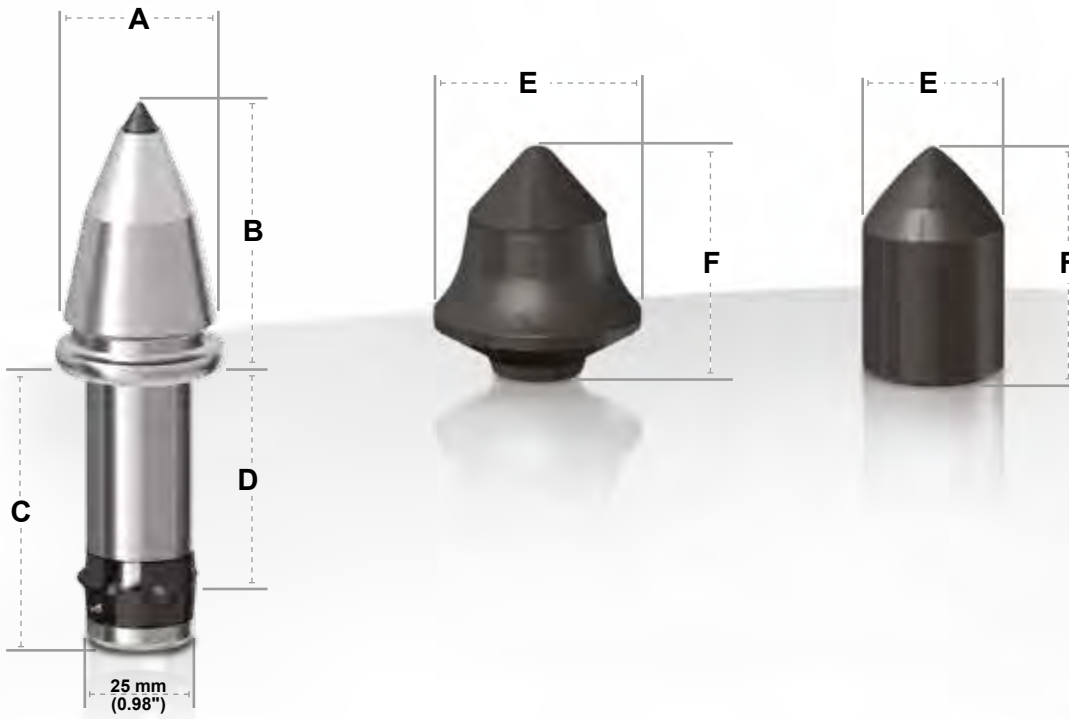
25 MM TOOL FRICTION RETAINER



CUTTING CONDITIONS		A	B	C	D	E	F	PRODUCT CODE	PIECES PER BOX	BOXES PER PALLET	PIECES PER PALLET
MED.		50 mm	64 mm	58 mm	54 mm	12 mm	22 mm	P8JA-2563-3262	EU: 25	24	600
		1.96"	2.5"	2.28"	2.13"	0.48"	0.88"		STD: 25	48	1200

EU: European pallet. STD: Standard pallet.

25 MM TOOL BUMPED RETAINER

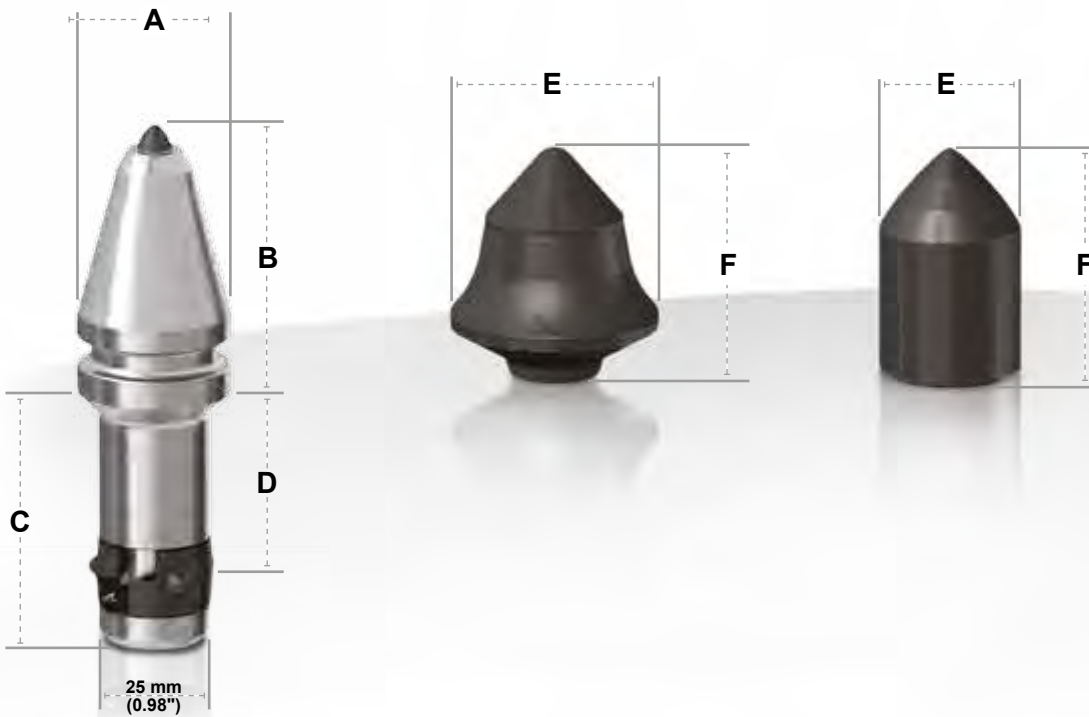


CUTTING CONDITIONS		A	B	C	D	E	F	PRODUCT CODE	PIECES PER BOX	BOXES PER PALLET	PIECES PER PALLET
MED.		40 mm	70 mm	66 mm	52 mm	16 mm	17 mm	P9AA-2569-2462	EU: 25	24	600
		1.59"	2.75"	2.59"	2.06"	0.64"	0.65"		STD: 25	48	1200
HARD		40 mm	63 mm	66 mm	52 mm	8 mm	18 mm	P9AA-2563-0562	EU: 25	24	600
		1.59"	2.50"	2.59"	2.06"	0.33"	0.69"		STD: 25	48	1200
HARD		40 mm	63 mm	66 mm	52 mm	15 mm	23 mm	P9AA-2563-1362	EU: 25	24	600
		1.59"	2.50"	2.59"	2.06"	0.60"	0.91"		STD: 25	48	1200

EU: European pallet. STD: Standard pallet.

25 MM SHORT TAIL TOOL

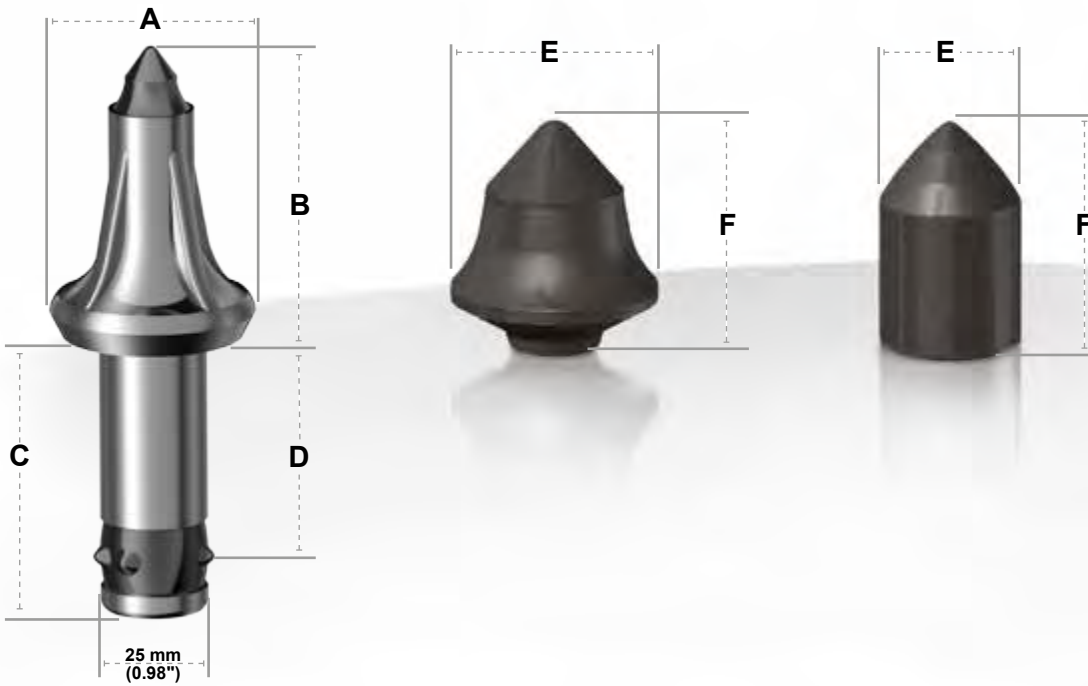
BUMPED RETAINER




CUTTING CONDITIONS		A	B	C	D	E	F	PRODUCT CODE	PIECES PER BOX	BOXES PER PALLET	PIECES PER PALLET
SOFT		35 mm	62 mm	58 mm	42 mm	8 mm	17 mm	P9QA-2561-4262	EU: 20	24	480
		1.38"	2.44"	2.29"	1.65"	0.33"	0.67"		STD: 20	48	960
		35 mm	65 mm	58 mm	42 mm	16 mm	20 mm	P9QA-2565-1862	EU: 20	24	480
		1.38"	2.54"	2.29"	1.65"	0.64"	0.77"		STD: 20	48	960
MED		35 mm	58 mm	58 mm	42 mm	12 mm	19 mm	P9QA-2560-3562	EU: 20	24	480
		1.38"	2.30"	2.29"	1.65"	0.48"	0.76"		STD: 20	48	960

EU: European pallet. STD: Standard pallet.

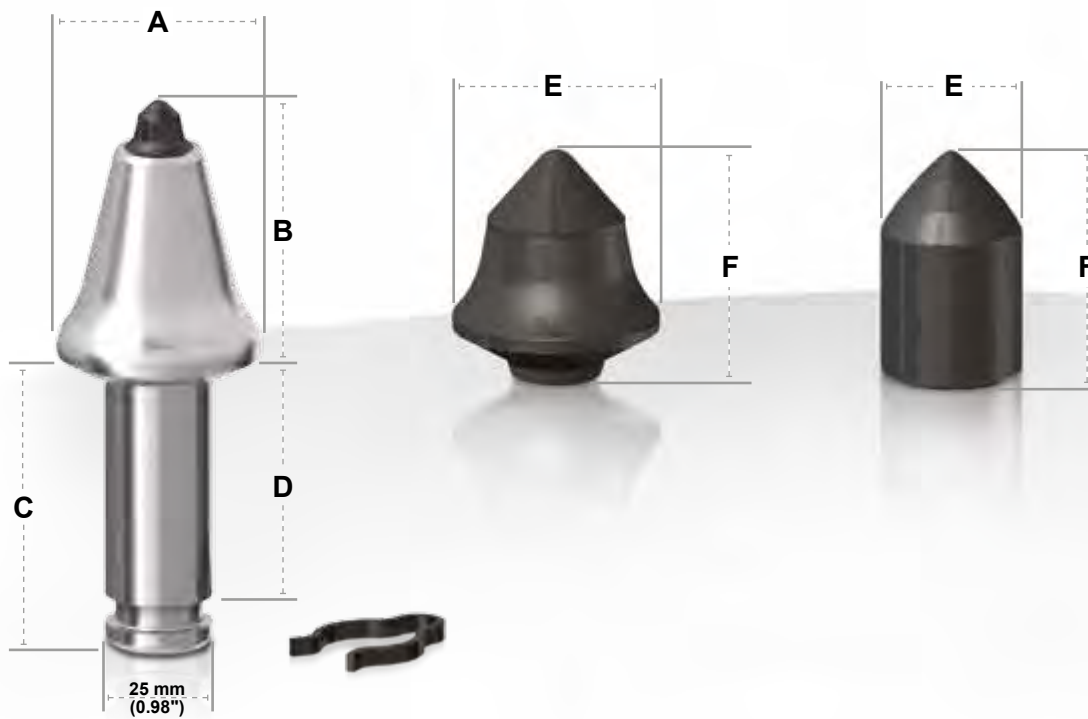
25 MM FINNED TOOL BUMPED RETAINER



CUTTING CONDITIONS		A	B	C	D	E	F	PRODUCT CODE	PIECES PER BOX	BOXES PER PALLET	PIECES PER PALLET
HARD		48 mm	70 mm	66 mm	52 mm	18 mm	20 mm	Q7AF-2569-5762	EU: 25	24	600
		1.9"	2.75"	2.59"	2.03"	0.7"	0.81"		STD: 25	48	1200

EU: European pallet. STD: Standard pallet.

25 MM TOOL EXTERNAL RETAINER

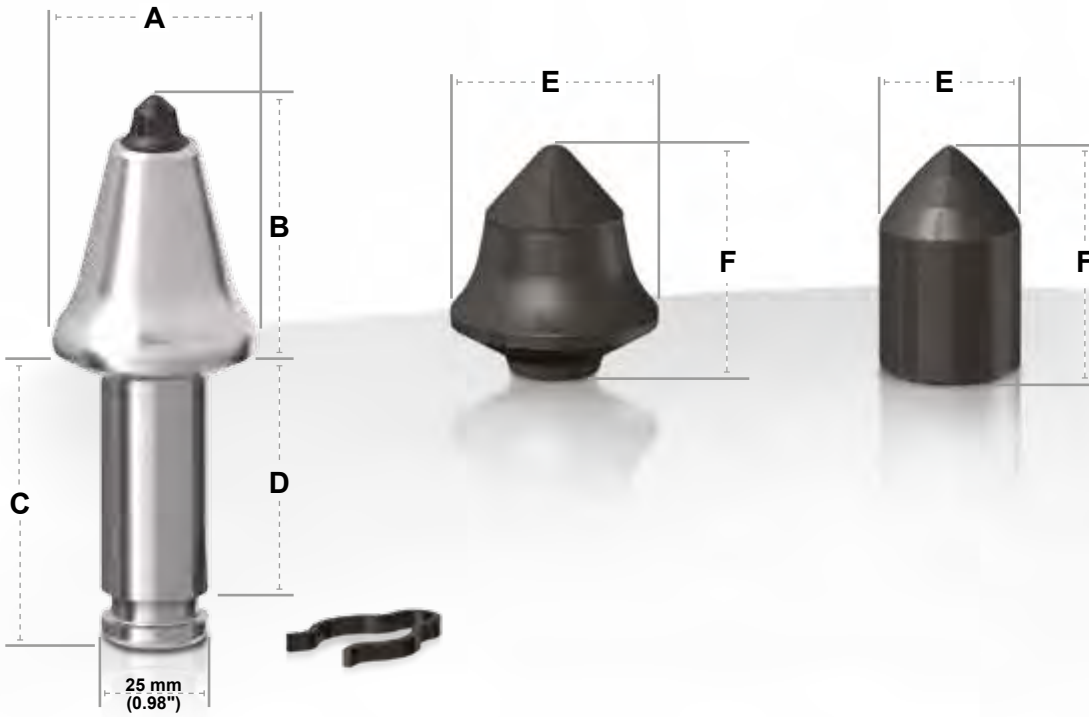




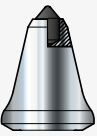
CUTTING CONDITIONS		A	B	C	D	E	F	PRODUCT CODE	PIECES PER BOX	BOXES PER PALLET	PIECES PER PALLET
SOFT		40 mm	70 mm	66 mm	54 mm	16 mm	19 mm	P9MS-2569-1265	EU: 20	24	480
		1.59"	2.75"	2.59"	2.13"	0.64"	0.74"		STD: 20	48	960
		46 mm	63 mm	66 mm	54 mm	16 mm	17 mm	P7MS-2564-2462	EU: 20	24	480
		1.83"	2.50"	2.58"	2.13"	0.64"	0.65"		STD: 20	48	960
MED.		40 mm	63 mm	66 mm	54 mm	8 mm	17 mm	P9MS-2563-4262	EU: 20	24	480
		1.59"	2.50"	2.59"	2.13"	0.33"	0.67"		STD: 20	48	960
		46 mm	70 mm	66 mm	54 mm	12 mm	19 mm	Q7MS-2569-3562	EU: 20	24	480
		1.83"	2.75"	2.58"	2.13"	0.48"	0.76"		STD: 20	48	960

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EU: European pallet. STD: Standard pallet.

25 MM TOOL EXTERNAL RETAINER



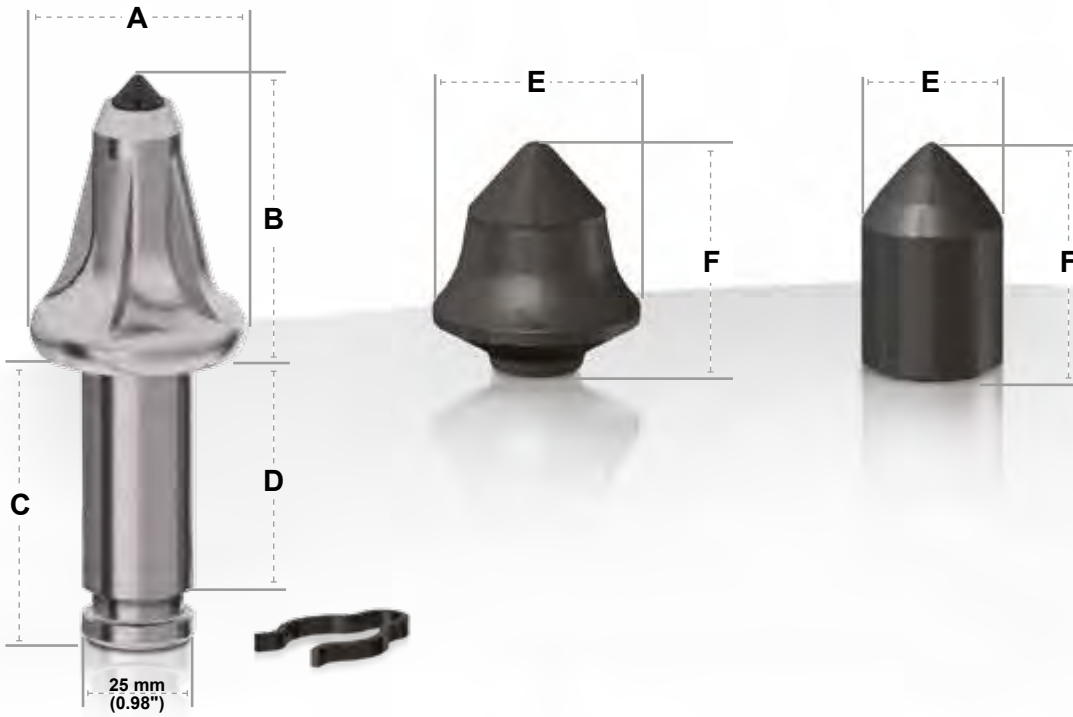
CUTTING CONDITIONS		A	B	C	D	E	F	PRODUCT CODE	PIECES PER BOX	BOXES PER PALLET	PIECES PER PALLET
HARD		46 mm	70 mm	66 mm	54 mm	18 mm	21 mm	Q7MS-2569-5762	EU: 20	24	480
		1.83	2.75"	2.58"	2.13"	0.70"	0.83"		STD: 20	48	960
		40 mm	63 mm	66 mm	54 mm	22 mm	29 mm	P9MS-2563-5062	EU: 20	24	480
		1.59"	2.50"	2.59"	2.13"	0.87"	1.14"		STD: 20	48	960
HARD		46 mm	63 mm	66 mm	54 mm	12 mm	19 mm	Q7MS-2563-3562	EU: 20	24	480
		1.83	2.50"	2.58"	2.13"	0.48"	0.75"		STD: 20	48	960

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EU: European pallet. STD: Standard pallet.

25 MM FINNED TOOL

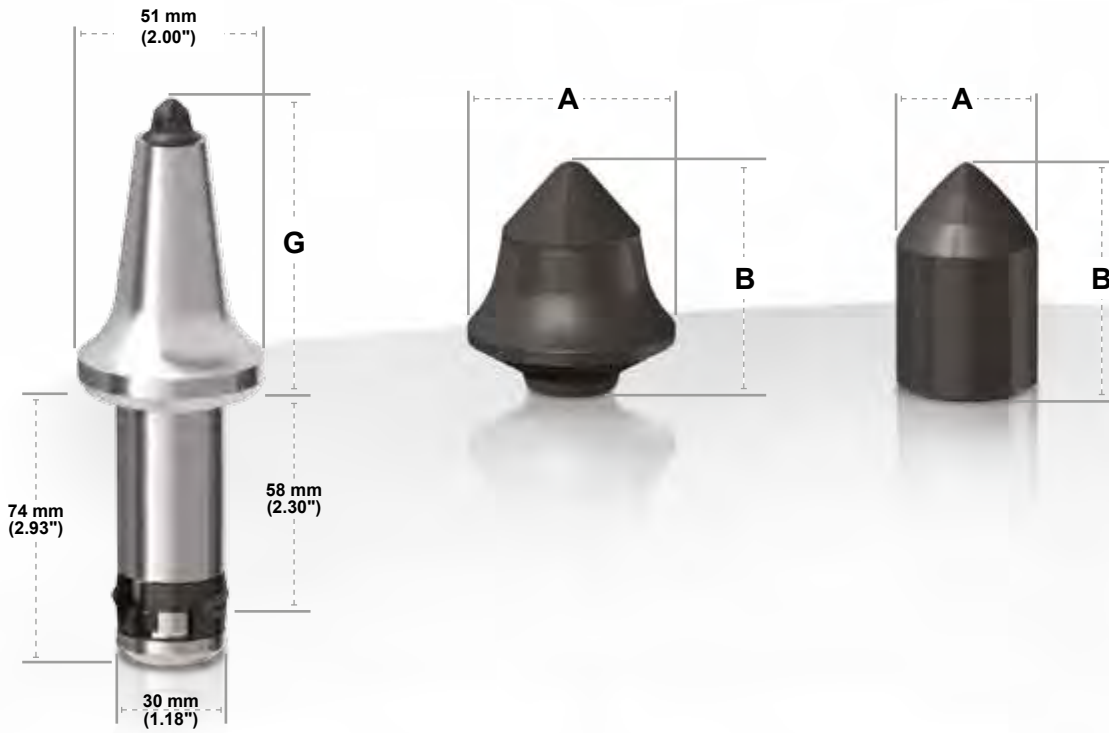
EXTERNAL RETAINER



CUTTING CONDITIONS		A	B	C	D	E	F	PRODUCT CODE	PIECES PER BOX	BOXES PER PALLET	PIECES PER PALLET
SOFT		48 mm	70 mm	66 mm	54 mm	16 mm	20 mm	Q7MF-2569-1862	EU: 20	24	480
		1.90"	2.75"	2.59"	2.13"	0.70"	0.77"		STD: 20	48	960
		48 mm	70 mm	66 mm	54 mm	18 mm	21 mm	Q7MF-2569-5762	EU: 20	24	480
		1.90"	2.75"	2.59"	2.13"	0.70"	0.81"		STD: 20	48	960
MED		48 mm	70 mm	66 mm	54 mm	12 mm	19 mm	Q7MF-2569-3562	EU: 20	24	480
		1.90"	2.75"	2.59"	2.13"	0.48"	0.76"		STD: 20	48	960

EU: European pallet. STD: Standard pallet.

30 MM TOOL BUMPED RETAINER

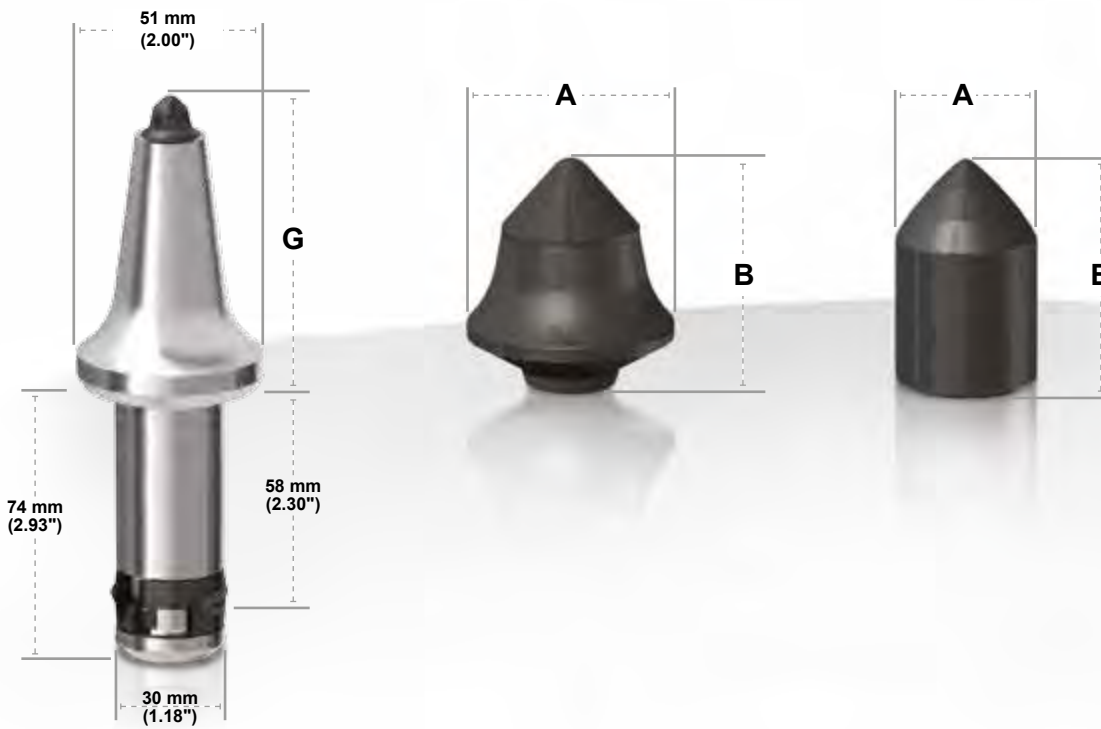


CUTTING CONDITIONS		G	A	B	PRODUCT CODE	PIECES PER BOX		BOXES PER PALLET	PIECES PER PALLET
SOFT		84 mm	16 mm	19 mm	Q8AX-3084-1265	EU:	12	24	288
		3.31"	0.64"	0.74"		STD:	12	48	576
		84 mm	16 mm	20 mm	Q8AX-3084-1862	EU:	12	24	288
		3.31"	0.64"	0.77"		STD:	12	48	576
		84 mm	18 mm	21 mm	Q8AX-3084-5762	EU:	12	24	288
		3.31"	0.70"	0.81"		STD:	12	48	576
	84 mm	20 mm	24 mm	Q8AX-3084-4362	EU:	12	24	288	
	3.31"	0.79"	0.95"		STD:	12	48	576	
MED.		84 mm	20 mm	24 mm	P8AA-3084-4362	EU:	12	24	288
		3.31"	0.79"	0.95"		STD:	12	48	576

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EU: European pallet. STD: Standard pallet.

30 MM TOOL BUMPED RETAINER

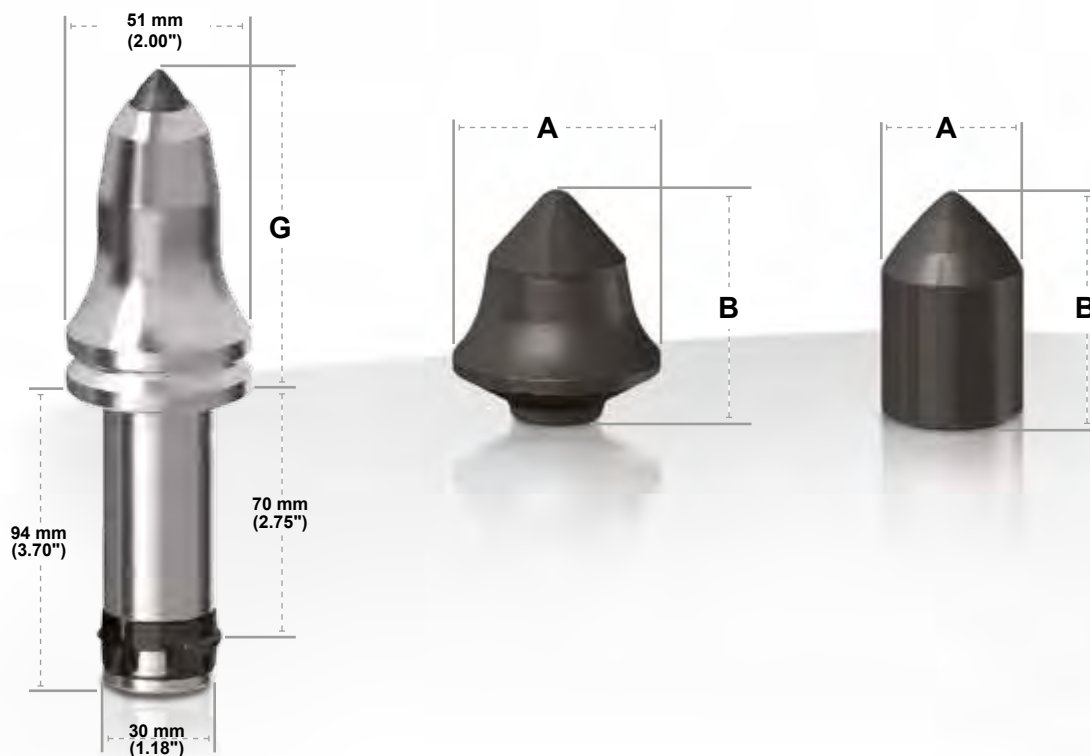


CUTTING CONDITIONS		G	A	B	PRODUCT CODE	PIECES PER BOX		BOXES PER PALLET	PIECES PER PALLET
MED.		84 mm	18 mm	21 mm	P8AA-3084-5762	EU:	12	24	288
		3.31"	0.70"	0.81"		STD:	12	48	576
		84 mm	24 mm	24 mm	P8AA-3084-2362	EU:	12	24	288
		3.31"	0.95"	0.93"		STD:	12	48	576
HARD		84 mm	22 mm	29 mm	P8AA-3084-5062	EU:	12	24	288
		3.31"	0.87"	1.14"		STD:	12	48	576
		84 mm	29 mm	33 mm	P8AA-3084-5662	EU:	12	24	288
		3.31"	1.3"	1.14"		STD:	12	48	576
EX-TREME		84 mm	29 mm	33 mm	P8AA-3084-5690	EU:	12	24	288
		3.31"	1.3"	1.14"		STD:	12	48	576

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EU: European pallet. STD: Standard pallet.

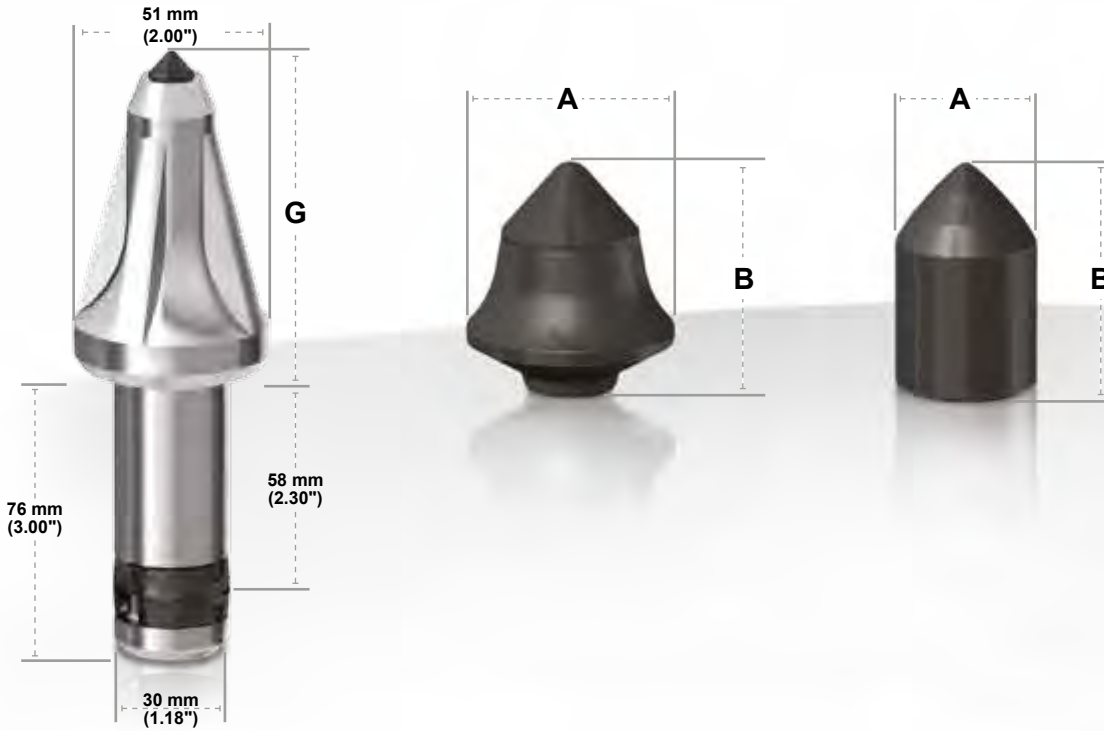
30 MM EXTENDED TAIL TOOL BUMPED RETAINER



CUTTING CONDITIONS		G	A	B	PRODUCT CODE	PIECES PER BOX		BOXES PER PALLET	PIECES PER PALLET
MED		89 mm	20 mm	24 mm	Q8TA-3089-4362	EU:	10	24	240
		03.50"	0.79"	0.93"		STD:	10	36	360
		89 mm	24 mm	24 mm	Q8TA-3089-4562	EU:	10	24	240
		03.50"	0.95"	0.93"		STD:	10	36	360
		89 mm	15 mm	26 mm	Q8TA-3089-4162	EU:	10	24	240
		03.50"	0.6"	1.03"		STD:	10	36	360
		77 mm	15 mm	26 mm	Q2AA-3077-4162	EU:	10	24	240
		3.03"	0.60"	1.03"		STD:	10	63	630
		70 mm	15 mm	15 mm	Q8TA-3070-4162	EU:	10	24	240
		2.75"	0.60"	0.60"		STD:	10	63	630
HARD		70 mm	29 mm	33 mm	Q8TA-3070-5662	EU:	10	24	240
		2.75"	1.14"	1.30"		STD:	10	36	360

EU: European pallet. STD: Standard pallet.

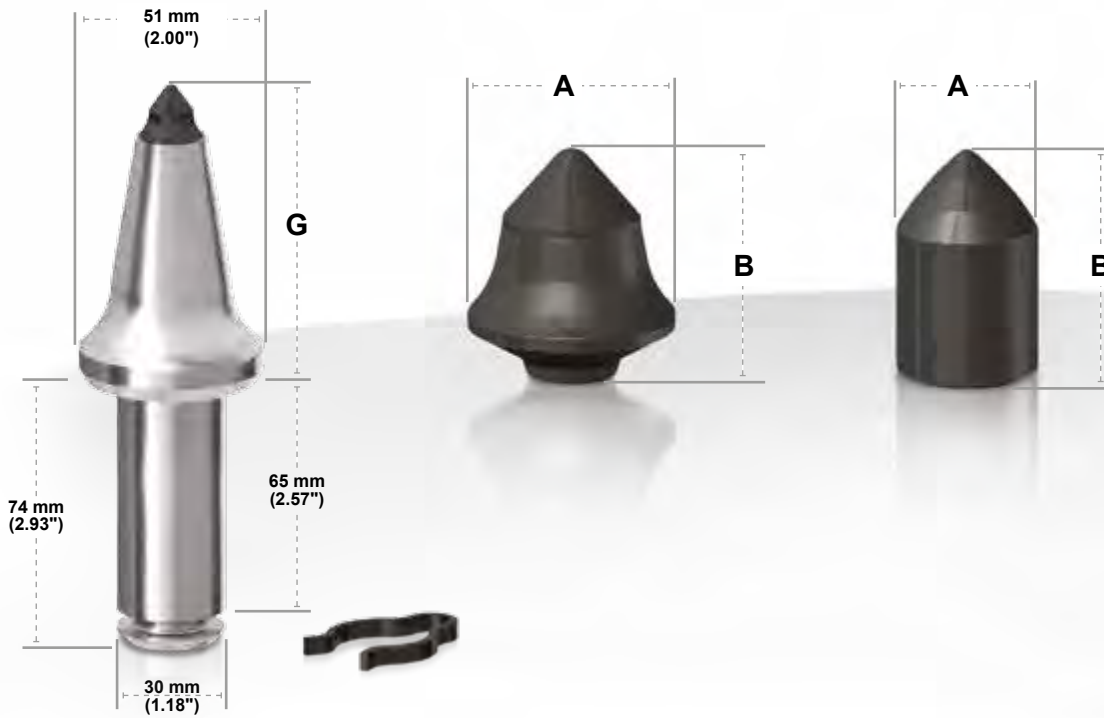
30 MM FINNED TOOL BUMPED RETAINER



CUTTING CONDITIONS		G	A	B	PRODUCT CODE	PIECES PER BOX		BOXES PER PALLET	PIECES PER PALLET
SOFT		84 mm	18 mm	21 mm	Q8AF-3084-5762	EU:	12	24	288
		3.31"	0.70"	0.81"		STD:	12	48	576
		95 mm	18 mm	21 mm	Q8AF-3095-5762	EU:	12	24	288
		3.74"	0.70"	0.81"		STD:	12	48	576
HARD		84 mm	12 mm	19 mm	Q8AF-3084-3562	EU:	12	24	288
		3.31"	0.48"	0.76"		STD:	12	48	576

EU: European pallet. STD: Standard pallet.

30 MM TOOL EXTERNAL RETAINER

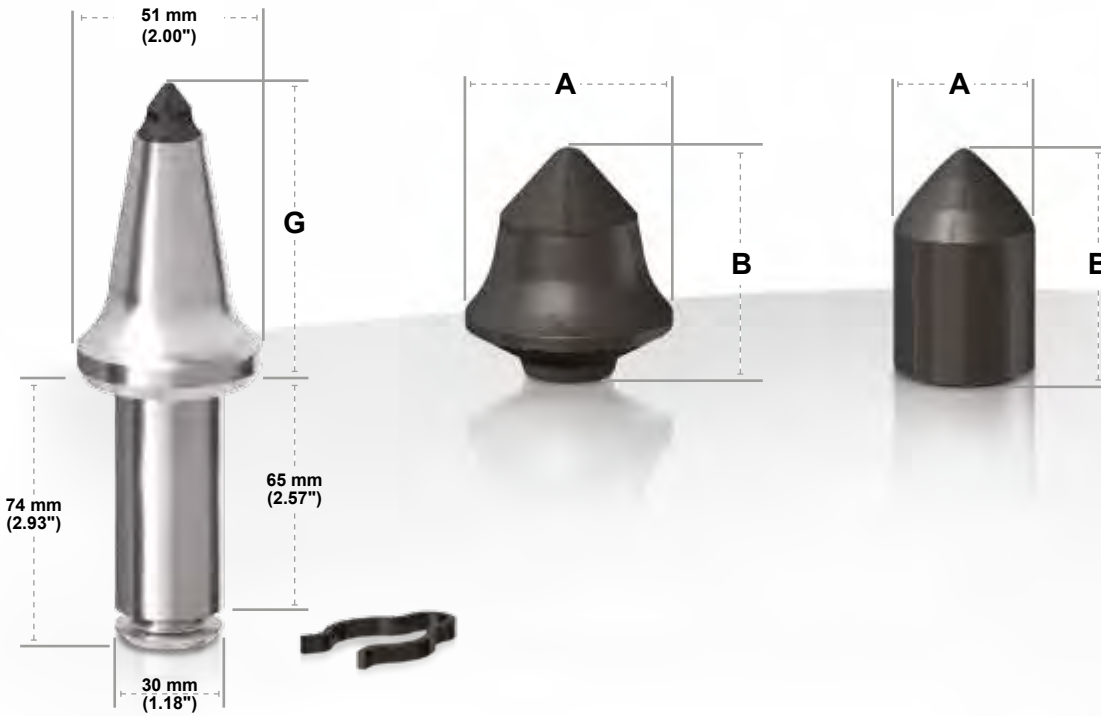





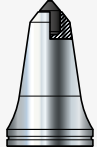
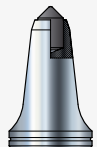
CUTTING CONDITIONS		G	A	B	PRODUCT CODE	PIECES PER BOX		BOXES PER PALLET	PIECES PER PALLET
SOFT		84 mm	16 mm	20 mm	Q8KX-3084-1862	EU:	12	24	288
		3.31"	0.64"	0.77"		STD:	12	48	576
		84 mm	8 mm	17 mm	Q8KX-3084-4262	EU:	12	24	288
		3.31"	0.33"	0.67"		STD:	12	48	576
		84 mm	20 mm	24 mm	P9KD-3084-4362	EU:	12	24	288
		3.31"	0.79"	0.94"		STD:	12	48	576
MED		84	18	21	Q8KX-3084-5762	EU:	12	24	288
		3.31"	0.70"	0.81"		STD:	12	48	576
		84	18	21	P8KD-3084-5762	EU:	12	24	288
		3.31"	0.70"	0.81"		STD:	12	48	576

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EU: European pallet. STD: Standard pallet.

30 MM TOOL EXTERNAL RETAINER

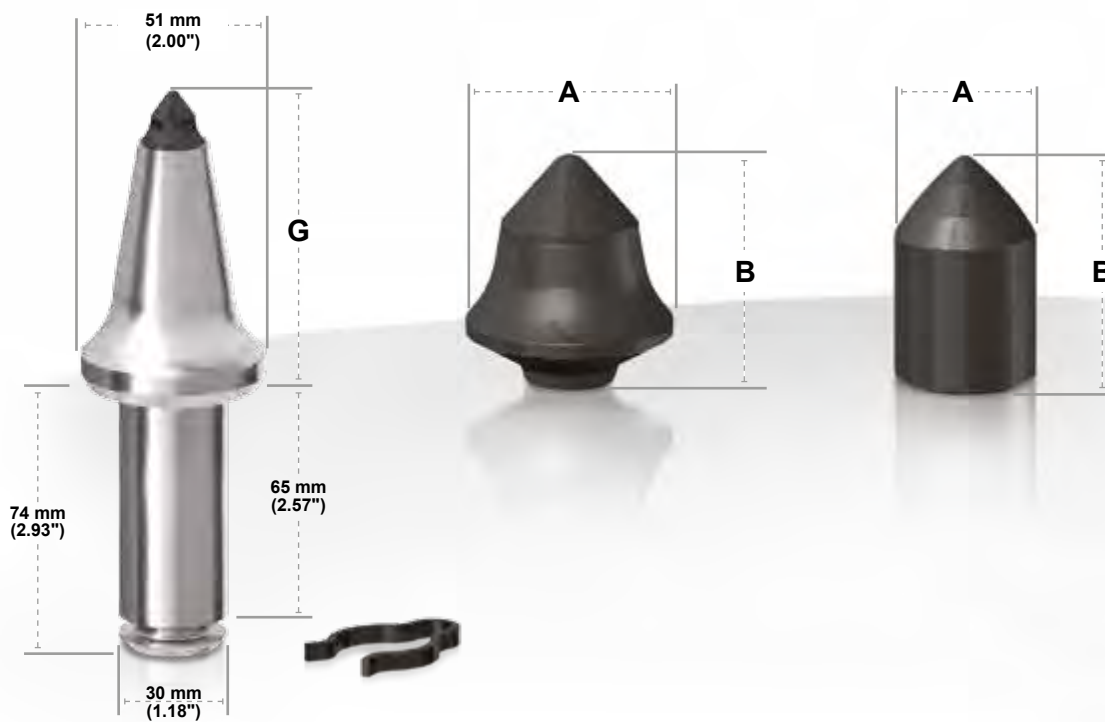


CUTTING CONDITIONS		G	A	B	PRODUCT CODE	PIECES PER BOX	BOXES PER PALLET	PIECES PER PALLET	
MED		85	24	24	W8KD-3085-4562	EU:	12	24	288
		3.35"	0.95"	0.93"		STD:	12	48	576
		84 mm	12 mm	19 mm	Q8KX-3084-3562	EU:	12	24	288
		3.31"	0.48"	0.76"		STD:	12	48	576
		85 mm	24 mm	24 mm	Q8KD-3085-4562	EU:	12	24	288
		3.35"	0.95"	0.93"		STD:	12	48	576
		85 mm	24 mm	24 mm	Q8KD-3080-4562	EU:	12	24	288
		3.35"	0.95"	0.93"		STD:	12	48	576
HARD		85 mm	12 mm	22 mm	Q8KD-3085-3262	EU:	12	24	288
		3.35"	0.48"	0.88"		STD:	12	48	576

<--- CONTINUED --->

EU: European pallet. STD: Standard pallet.

30 MM TOOL EXTERNAL RETAINER



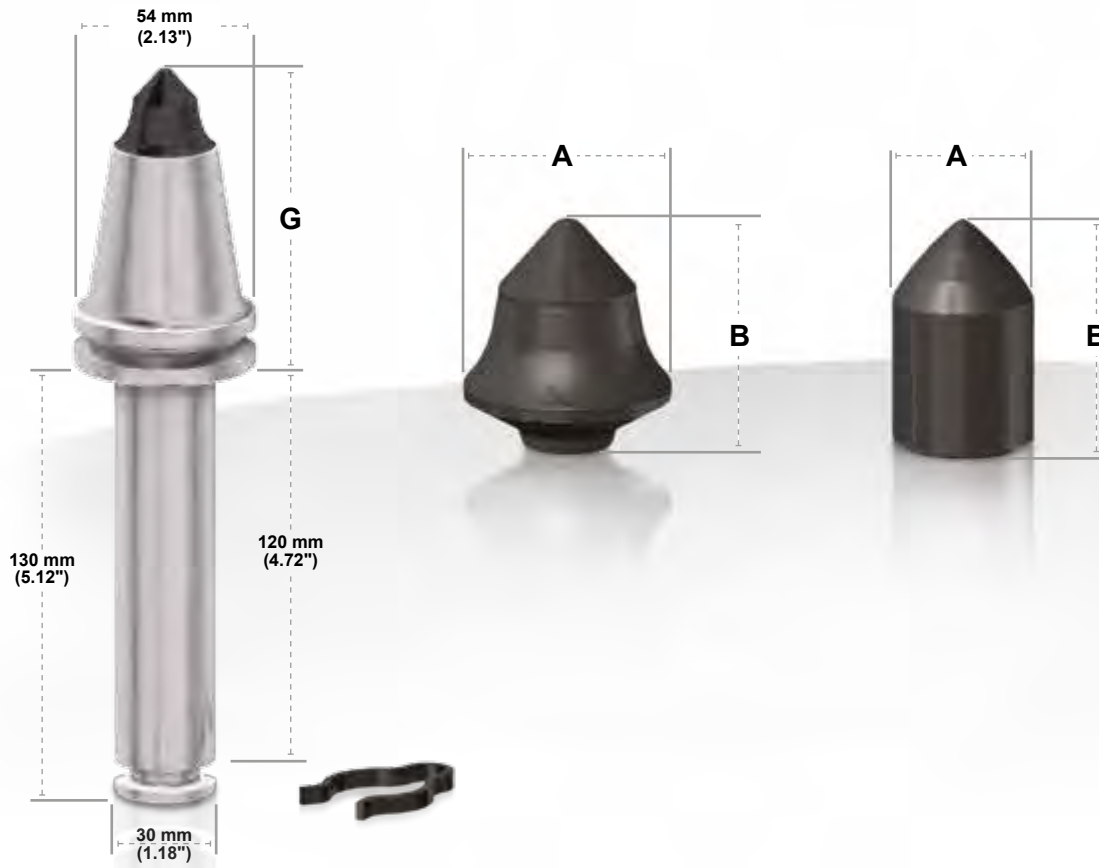
CUTTING CONDITIONS		G	A	B	PRODUCT CODE	PIECES PER BOX		BOXES PER PALLET	PIECES PER PALLET	
HARD		85 mm	15 mm	26 mm	Q8KD-3085-4162	EU:	12	24	288	
		3.35"	0.60"	1.03"		STD:	12	48	576	
		84 mm	22 mm	29 mm	Q8KX-3084-5062	EU:	12	24	288	
		3.31"	0.87"	1.14"		STD:	12	48	576	
		84 mm	24 mm	24 mm	P8KD-3084-2362	EU:	12	24	288	
		3.31"	0.95"	0.93"		STD:	12	48	576	
		70 mm	15 mm	26 mm	Q8KD-3070-4162	EU:	12	24	288	
		2.75"	0.6"	1.03"		STD:	12	48	576	
		65 mm (2.56")	75 mm	20 mm	34 mm	P5KS-3075-3962	EU:	10	24	240
		2.95"	0.78"	1.33"	STD:		10	63	630	



<-- CONTINUED

EU: European pallet. STD: Standard pallet.

30 MM EXTENDED TAIL TOOL

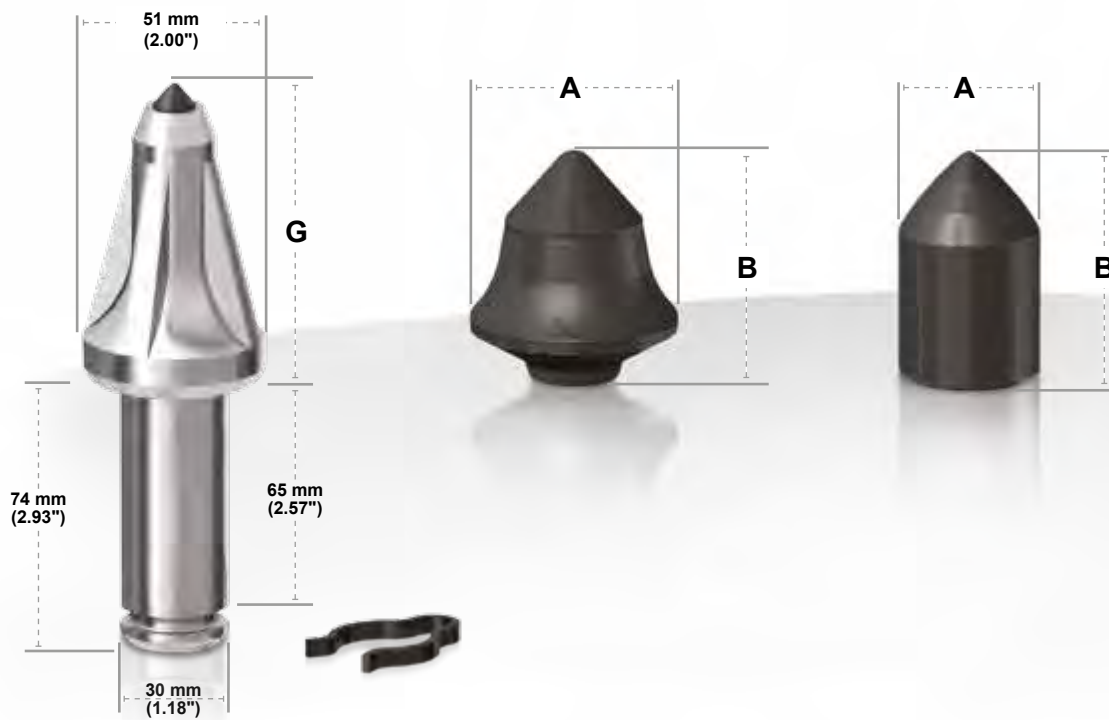
EXTERNAL RETAINER



CUTTING CONDITIONS		G	A	B	PRODUCT CODE	PIECES PER BOX		BOXES PER PALLET	PIECES PER PALLET
HARD		90 mm	24 mm	24 mm	Q6XX-3090-4562	EU:	8	24	192
		3.54"	0.95"	0.93"		STD:	8	36	288
		90 mm	29 mm	33 mm	Q6XX-3090-5662	EU:	8	24	192
		3.54"	1.14"	1.30"		STD:	8	36	288

EU: European pallet. STD: Standard pallet.

30 MM FINNED TOOL EXTERNAL RETAINER

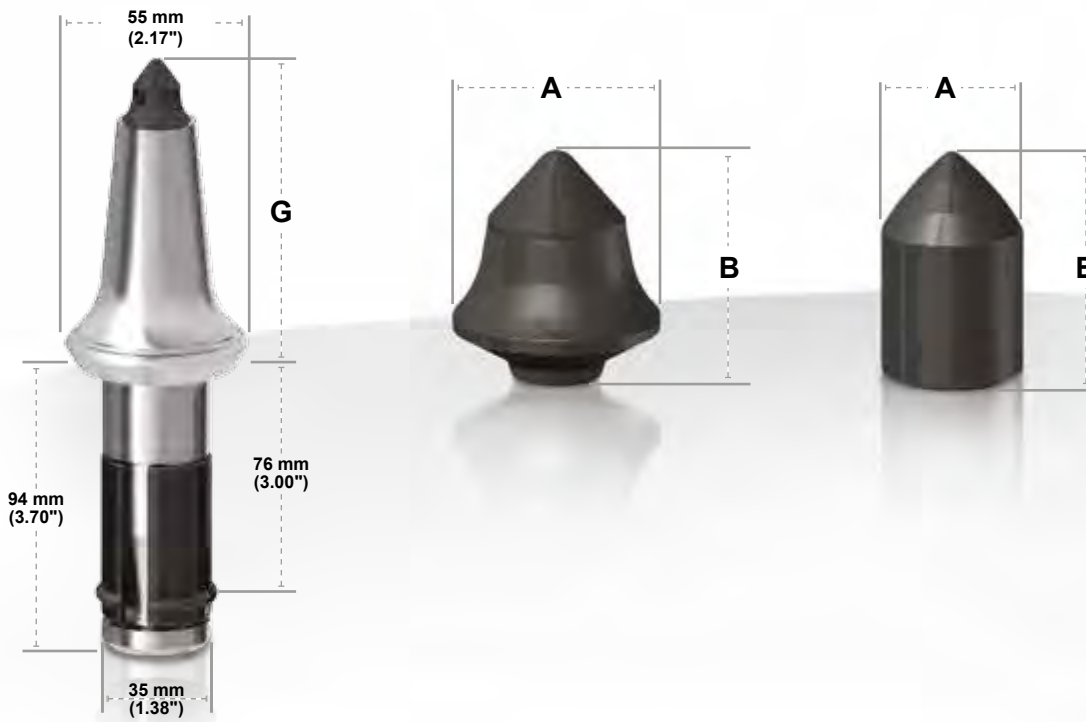


CUTTING CONDITIONS		G	A	B	PRODUCT CODE	PIECES PER BOX		BOXES PER PALLET	PIECES PER PALLET
MED		84 mm	18 mm	21 mm	Q8KF-3084-5762	EU:	12	24	288
		3.31"	0.70"	0.81"		STD:	12	48	576
HARD		84 mm	12 mm	19 mm	Q8KF-3084-3562	EU:	12	24	288
		3.31"	0.48"	0.76"		STD:	12	48	576

EU: European pallet. STD: Standard pallet.

35 MM TOOL

BUMPED/FRICTION RETAINER

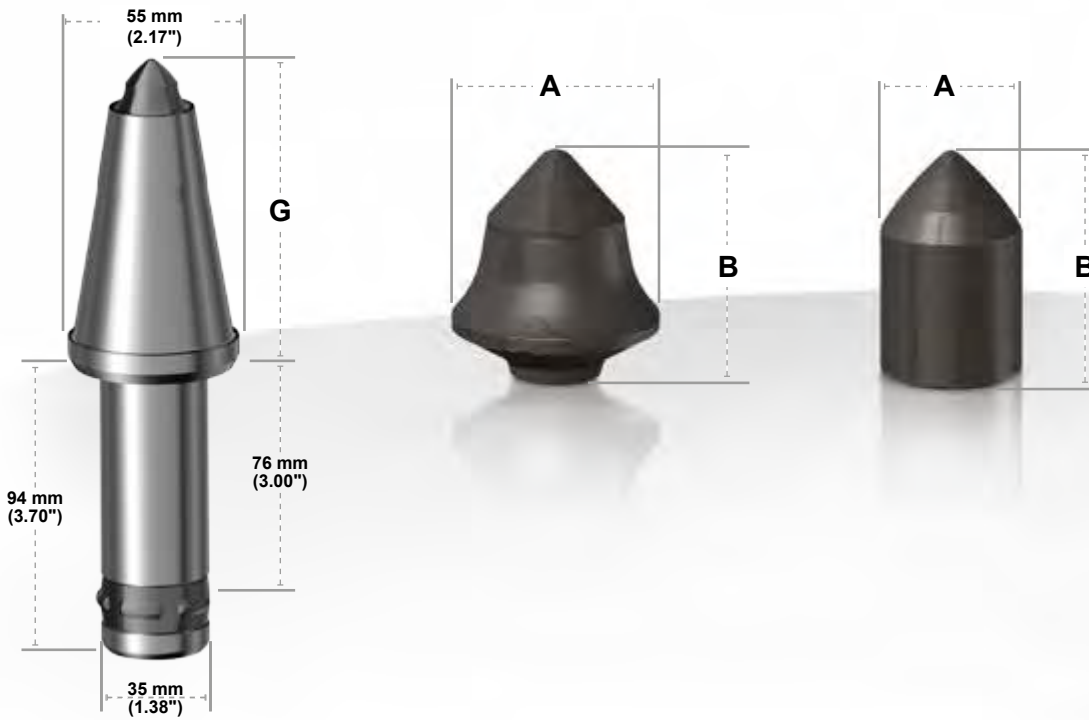



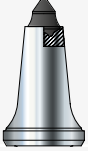

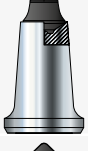

CUTTING CONDITIONS		G	A	B	PRODUCT CODE	PIECES PER BOX		BOXES PER PALLET	PIECES PER PALLET
SOFT		102 mm	20 mm	24 mm	Q7AK-3502-4362	EU:	8	24	192
		4.00"	0.79"	0.95"		STD:	8	50	400
Spark Resistant		102 mm	24 mm	24 mm	W7AK-3502-2362	EU:	8	24	192
		4.00"	0.95"	0.93"		STD:	8	50	400
MED.		102 mm	22 mm	29 mm	Q7AK-3502-5062	EU:	8	24	192
		4.00"	0.87"	1.14"		STD:	8	50	400

EU: European pallet. STD: Standard pallet.

35 MM TOOL

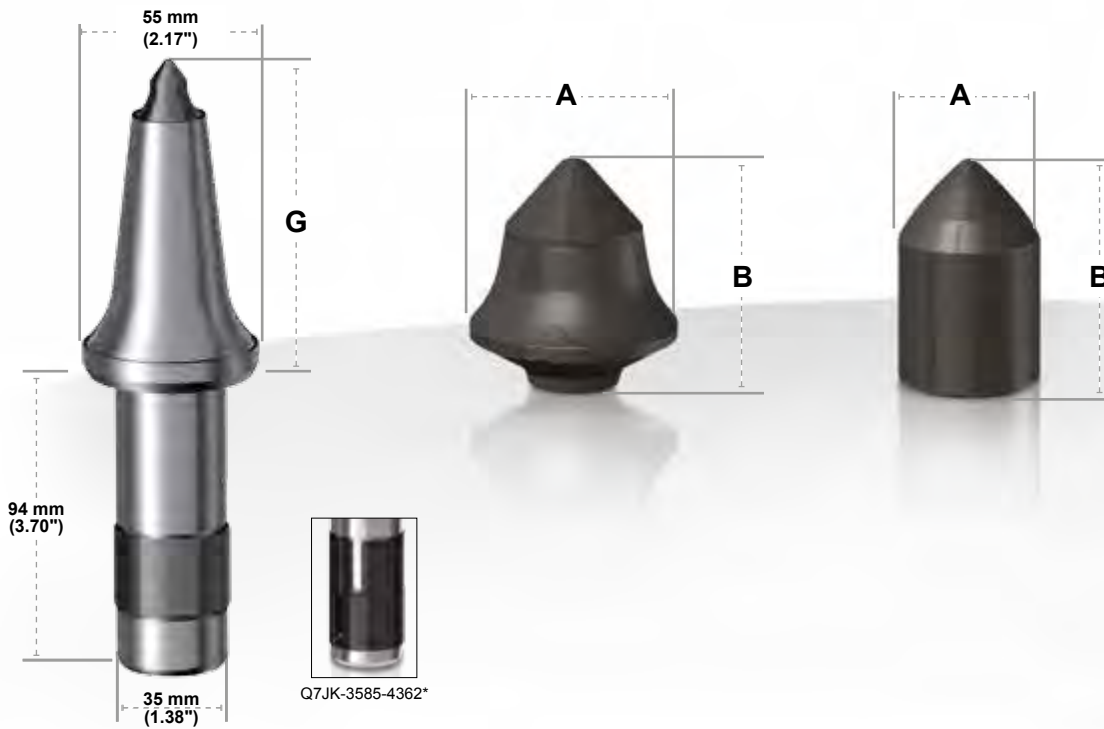
BUMPED/FRICTION RETAINER



CUTTING CONDITIONS		G	A	B	PRODUCT CODE	PIECES PER BOX		BOXES PER PALLET	PIECES PER PALLET
MED.		102 mm	20 mm	24 mm	Q7AX-3502-4362	EU:	8	24	192
		4.00"	0.79"	0.95"		STD:	8	50	400
		102 mm	22 mm	29 mm	Q7AX-3502-5062	EU:	8	24	192
		4.00"	0.87"	1.14"		STD:	8	50	400
		102 mm	24 mm	24 mm	Q7AR-3502-2362	EU:	8	24	192
		4.00"	0.95"	0.93"		STD:	8	50	400
		102 mm	29 mm	33 mm	Q7AR-3502-5662	EU:	8	24	192
		4.00"	1.14"	1.3"		STD:	8	50	400
HARD		102 mm	20 mm	34 mm	W7AR-3502-3962	EU:	8	24	192
		4.00"	0.78"	1.33"		STD:	8	50	400

EU: European pallet. STD: Standard pallet.

35 MM TOOL FRICTION RETAINER

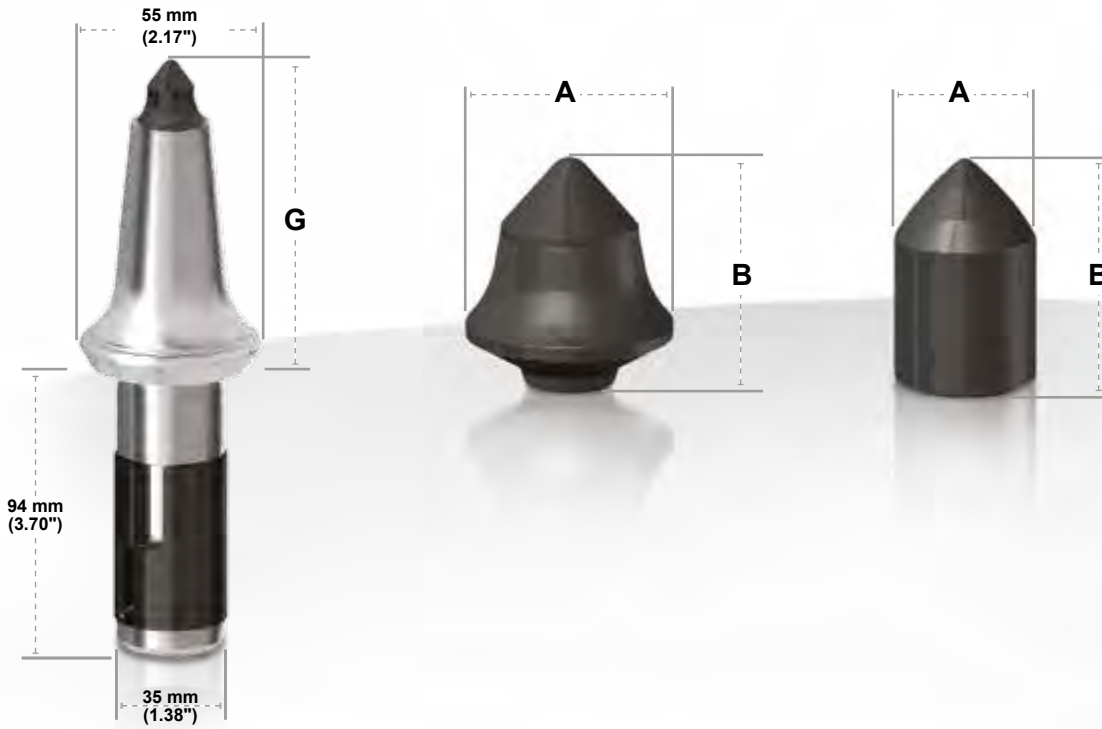


CUTTING CONDITIONS		G	A	B	PRODUCT CODE	PIECES PER BOX		BOXES PER PALLET	PIECES PER PALLET
TriSpec		125 mm	16 mm	29 mm	T6JA-3525-6062	EU:	8	24	192
		4.9"	0.62"	1.16"		STD:	8	50	400
TriSpec		100 mm	16 mm	29 mm	T6JA-3500-6062	EU:	8	24	192
		3.9"	0.62"	1.16"		STD:	8	50	400
SOFT		84 mm	20 mm	24 mm	Q7JK-3585-4362*	EU:	8	24	192
		3.30"	0.79"	0.95"		STD:	8	50	400
		84 mm	20 mm	24 mm	Q7JX-3585-4362	EU:	8	24	192
		3.30"	0.79"	0.95"		STD:	8	50	400

CONTINUED -->

EU: European pallet. STD: Standard pallet.

35 MM TOOL FRICTION RETAINER

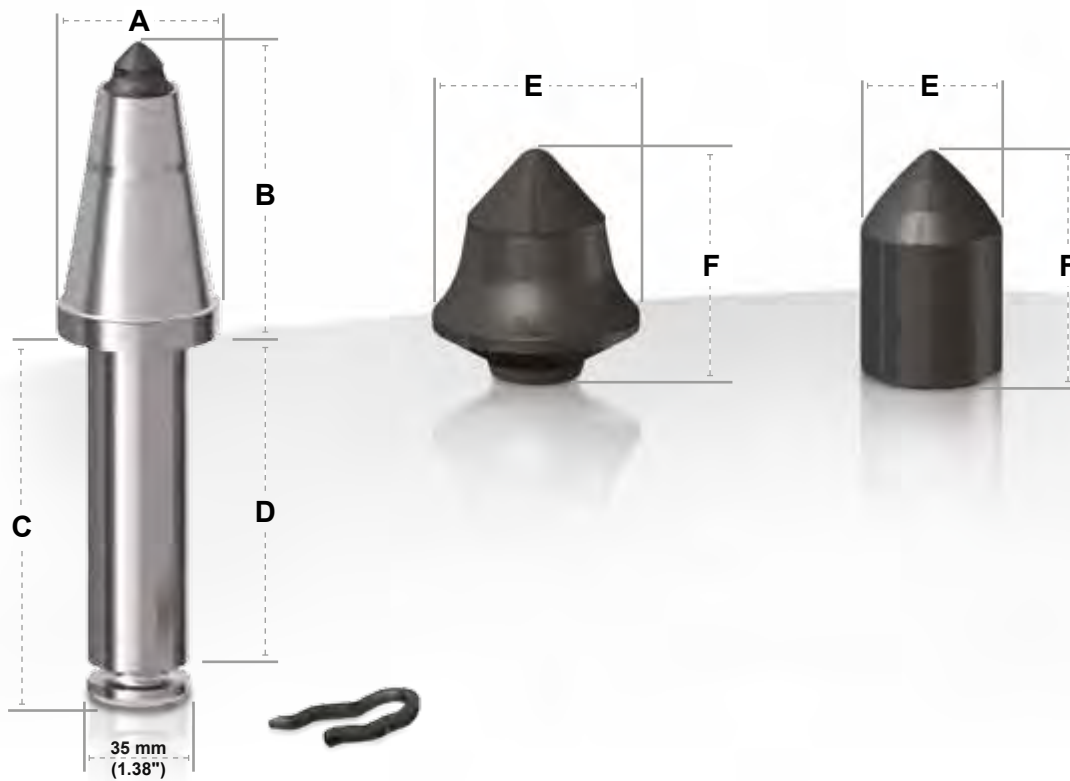


CUTTING CONDITIONS		G	A	B	PRODUCT CODE	PIECES PER BOX		BOXES PER PALLET	PIECES PER PALLET
SOFT		102 mm	20 mm	24 mm	Q7JX-3502-4362	EU:	8	24	192
		4"	0.79"	0.95"		STD:	8	50	400
		80 mm	18 mm	29 mm	Q6JA-3580-2162	EU:	8	24	192
		3.15"	0.71"	1.13"		STD:	8	50	400
HARD		102 mm	29 mm	33 mm	Q7JX-3502-5662	EU:	8	24	192
		4"	1.14"	1.3"		STD:	8	50	400
		89 mm	29 mm	33 mm	Q7JA-3589-5662	EU:	8	24	192
		3.5"	1.14"	1.3"		STD:	8	50	400
EXTREME		89 mm	29 mm	33 mm	Q7JA-3589-5690	EU:	8	24	192
		3.5"	1.14"	1.3"		STD:	8	50	400

<-- CONTINUED

EU: European pallet. STD: Standard pallet.

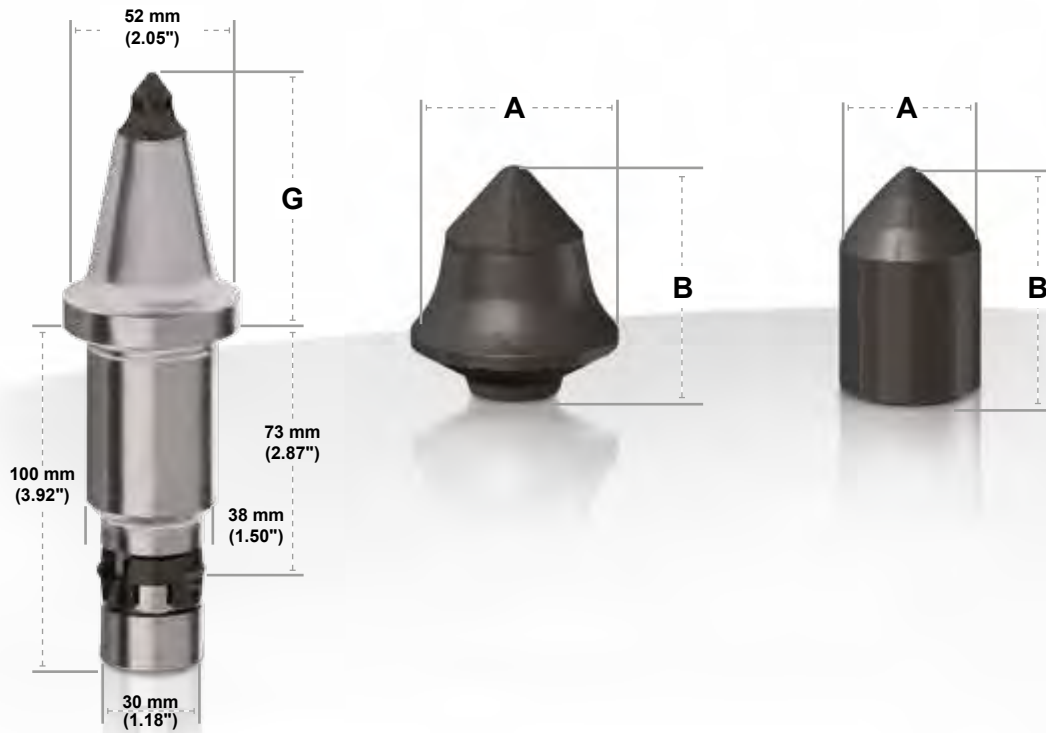
35 MM EXTENDED TAIL TOOL EXTERNAL RETAINER



CUTTING CONDITIONS		A	B	C	D	E	F	PRODUCT CODE	PIECES PER BOX	BOXES PER PALLET	PIECES PER PALLET
MED.		55 mm	102 mm	128 mm	102 mm	18 mm	20 mm	Q7MR-3502-5762	EU: 8	24	192
		2.17"	4"	5.03"	4.03"	0.7"	0.81"		STD: 8	36	288
		55 mm	102mm	128 mm	102mm	22 mm	29 mm	Q7MR-3502-5062	EU: 8	24	192
		2.17"	4"	5.03"	4.03"	0.87"	1.14"		STD: 8	36	288
		54 mm	100 mm	130 mm	115 mm	24 mm	24 mm	Q6MR-3500-2362	EU: 8	24	192
		2.13"	3.94"	5.12"	4.53"	0.95"	0.93"		STD: 8	36	288
HARD		54 mm	80 mm	130 mm	115 mm	20 mm	34 mm	Q6MR-3580-3962	EU: 8	24	192
		2.13"	3.15"	5.12"	4.53"	0.78"	1.33"		STD: 8	36	288

EU: European pallet. STD: Standard pallet.

38 X 30 MM TOOL BUMPED RETAINER

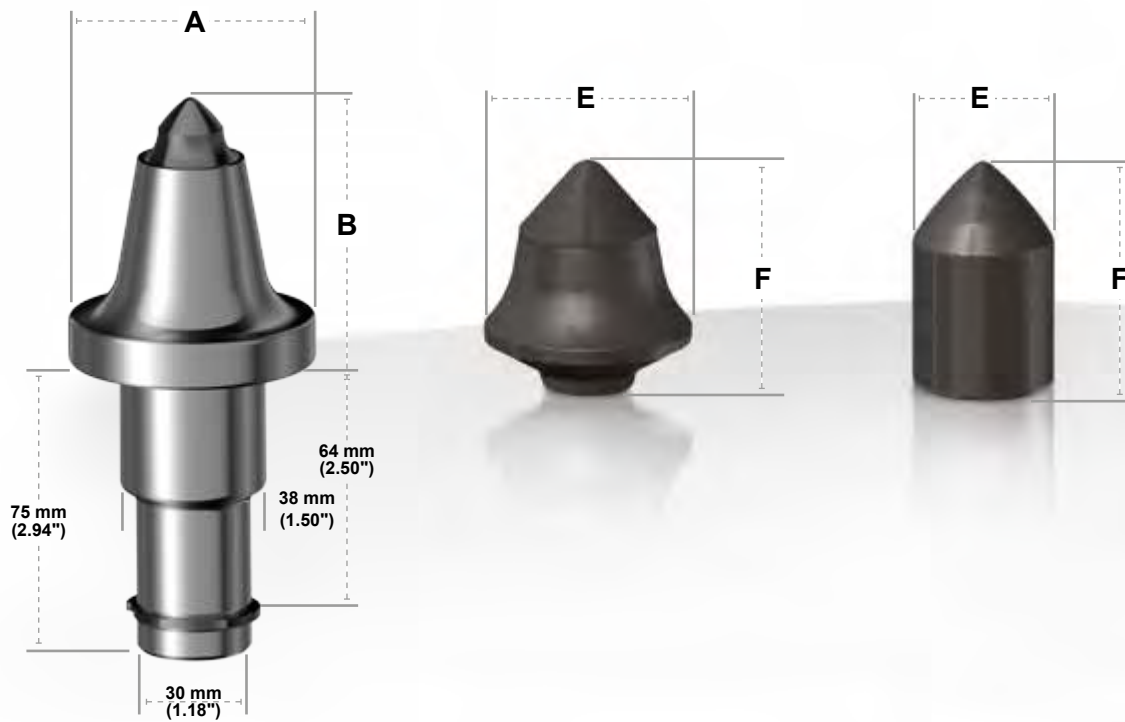



CUTTING CONDITIONS		G	A	B	PRODUCT CODE	PIECES PER BOX		BOXES PER PALLET	PIECES PER PALLET
HARD		77 mm	18 mm	29 mm	Q2VA-3877-2162	EU:	10	24	240
		3.03"	0.71"	1.13"		STD:	10	63	630
		75 mm	22 mm	35 mm	Q7VG-3875-1962	EU:	10	24	240
		2.95"	0.87"	1.37"		STD:	10	63	630

EU: European pallet. STD: Standard pallet.

38 X 30 MM TOOL

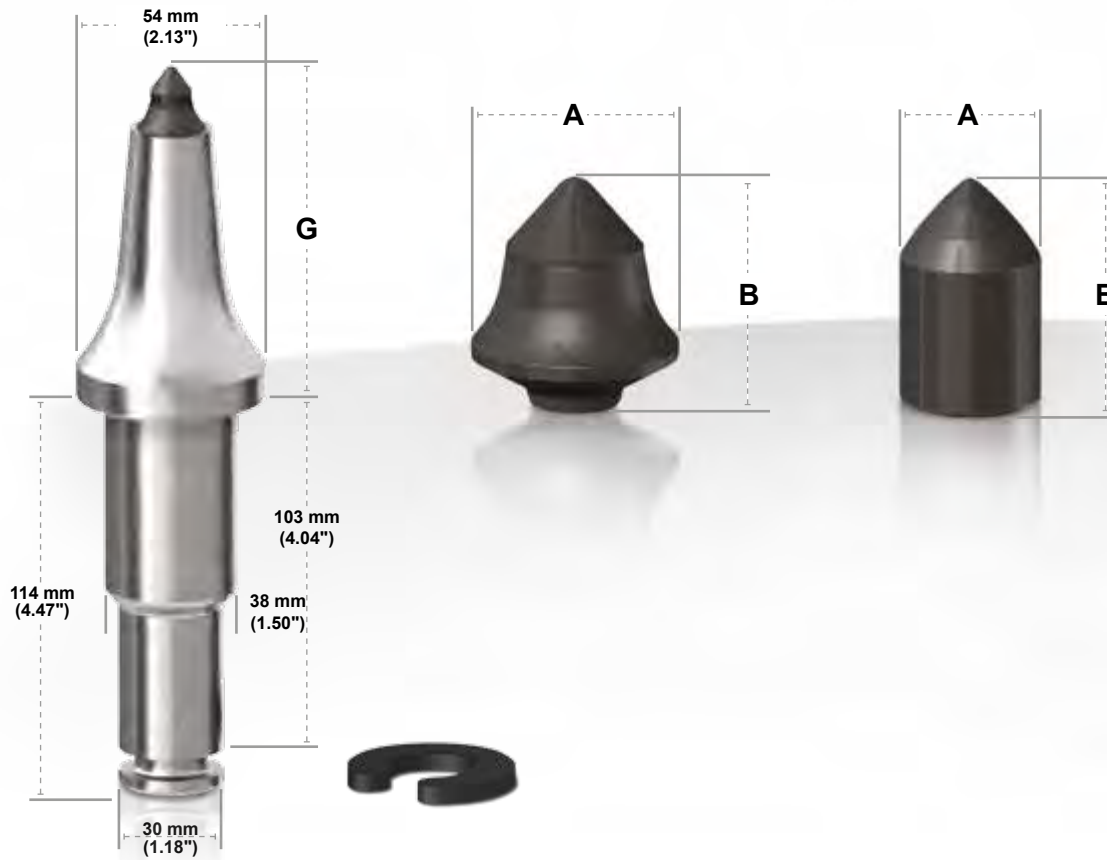
EXTERNAL RETAINER



CUTTING CONDITIONS		A	B	E	F	PRODUCT CODE	PIECES PER BOX	BOXES PER PALLET	PIECES PER PALLET
MED.		64 mm	70 mm	24 mm	24 mm	Q3DS-3870-2362	10	24	240
		2.5"	2.75"	0.95"	0.93"		10	63	630

EU: European pallet. STD: Standard pallet.

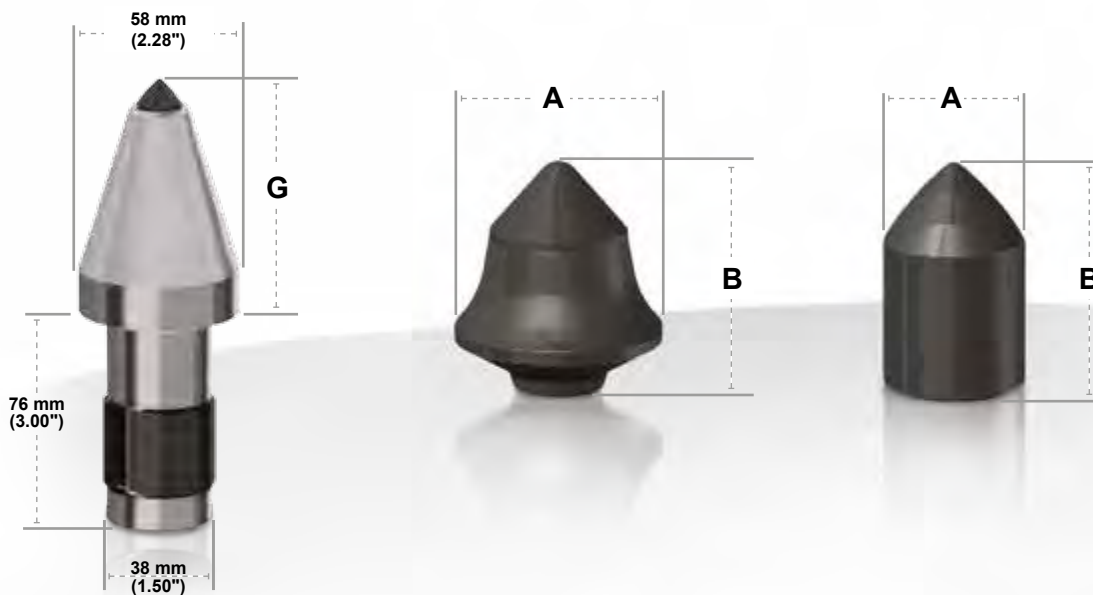
38 X 30 MM EXTENDED TAIL TOOL EXTERNAL RETAINER

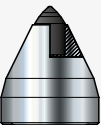

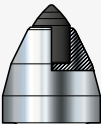
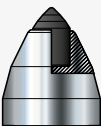


CUTTING CONDITIONS		G	A	B	PRODUCT CODE	PIECES PER BOX		BOXES PER PALLET	PIECES PER PALLET
SOFT		97 mm	20 mm	24 mm	Q6EC-3897-4362	EU:	6	24	144
		3.83"	0.79"	0.95"		STD:	6	48	288
MED.		77 mm	20 mm	24 mm	Q6EC-3877-4362	EU:	6	24	144
		3.03"	0.79"	0.95"		STD:	6	48	288
HARD		77 mm	18 mm	29 mm	Q5EC-3877-2162	EU:	6	24	144
		3.03"	0.71"	1.13"		STD:	6	48	288

EU: European pallet. STD: Standard pallet.

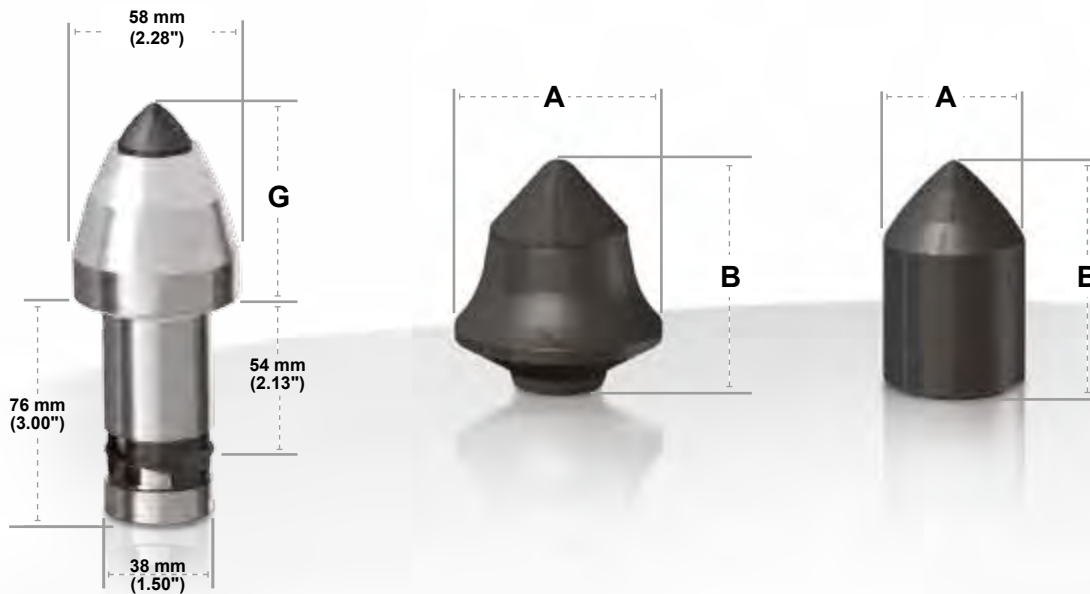
38 MM TOOL FRICTION RETAINER



CUTTING CONDITIONS		G	A	B	PRODUCT CODE	PIECES PER BOX		BOXES PER PALLET	PIECES PER PALLET
SOFT		70 mm	18 mm	29 mm	P7JU-3870-2162	EU:	10	63	630
		2.75"	0.71"	1.13"		STD:	10	50	500
MED		90 mm	29 mm	33 mm	P7JU-3890-5662	EU:	10	63	630
		3.54"	1.14"	1.3"		STD:	10	50	500
HARD		70 mm	22 mm	35 mm	P7JU-3870-1962	EU:	10	63	630
		2.75"	0.87"	1.37"		STD:	10	50	500
EX-TREME		70 mm	22 mm	35 mm	P7JU-3870-1970	EU:	10	63	630
		2.75"	0.87"	1.37"		STD:	10	50	500

EU: European pallet. STD: Standard pallet.

38 MM TOOL BUMPED RETAINER

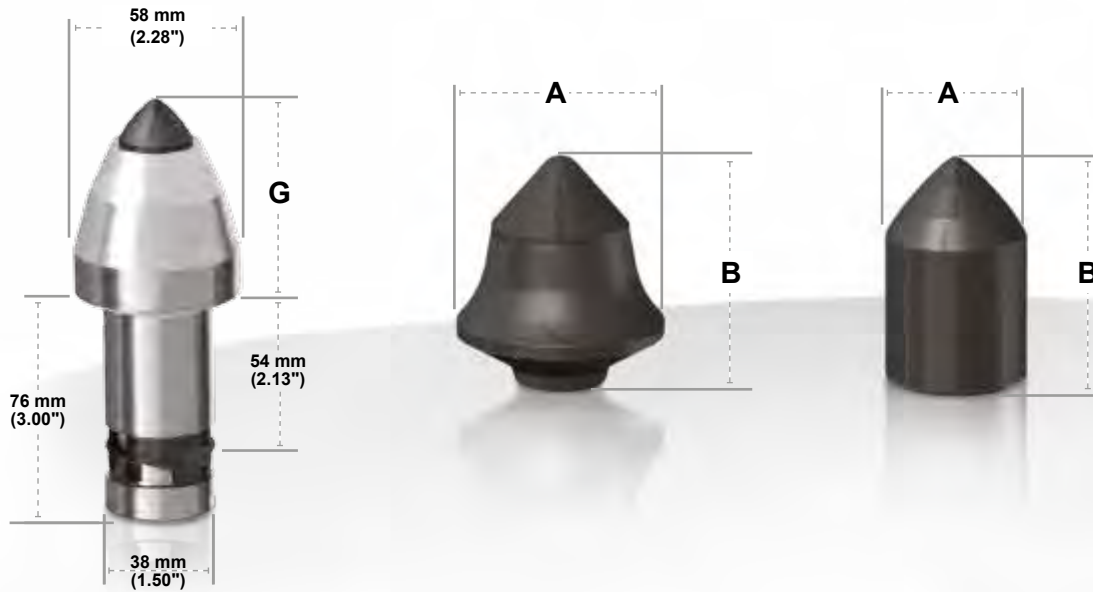


CUTTING CONDITIONS		G	A	B	PRODUCT CODE	PIECES PER BOX		BOXES PER PALLET	PIECES PER PALLET
SOFT		85 mm	24 mm	24 mm	Q7AU-3885-2362	EU:	10	63	630
		3.35"	0.95"	0.93"		STD:	10	63	630
		70 mm	18 mm	29 mm	Q7AU-3870-2162	EU:	10	63	630
		2.75"	0,71"	1.13"		STD:	10	63	630
		70 mm	29 mm	33 mm	Q7AU-3870-5662	EU:	10	63	630
		2.75"	1.14"	1.30"		STD:	10	63	630
	70 mm	22 mm	35 mm	P7AU-3870-1962	EU:	10	63	630	
	2.75"	0,87"	1.38"		STD:	10	63	630	
	70 mm	22 mm	35 mm	Q7AU-3870-1962	EU:	10	63	630	
	2.75"	0.87"	1.37"		STD:	10	63	630	
HARD		70 mm	26 mm	35 mm	P7AU-3870-1762	EU:	10	63	630
		2.75"	1.01"	1.38"		STD:	10	63	630

CONTINUED -->

EU: European pallet. STD: Standard pallet.

38 MM TOOL BUMPED RETAINER

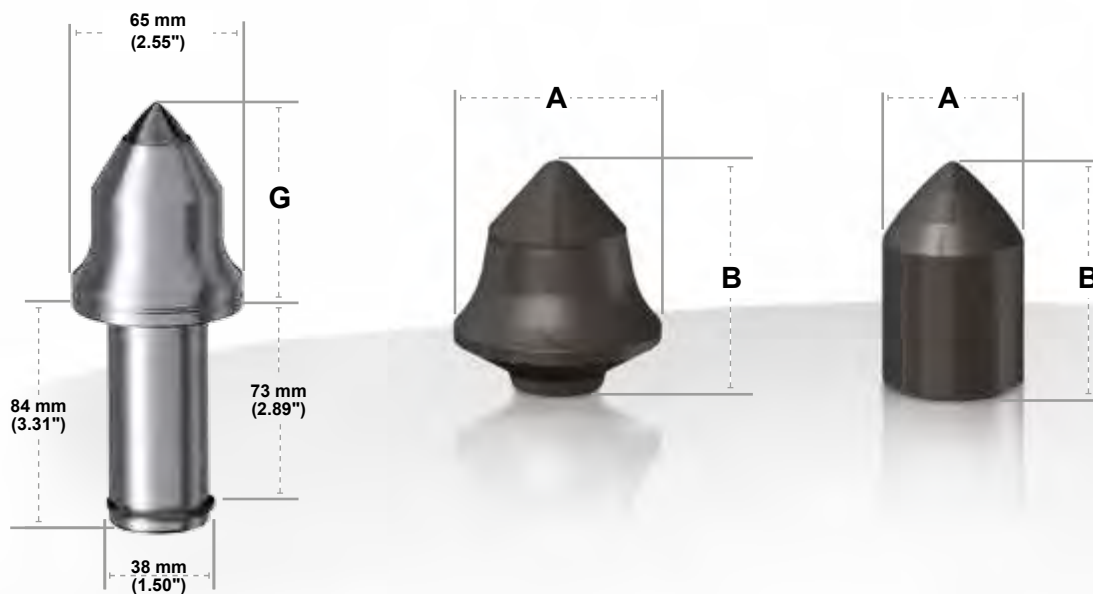


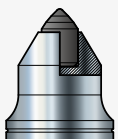
CUTTING CONDITIONS		G	A	B	PRODUCT CODE	PIECES PER BOX		BOXES PER PALLET	PIECES PER PALLET
HARD		70 mm	26 mm	35 mm	Q7AU-3870-1762	EU:	10	63	630
		2.75"	1.01"	1.38"		STD:	10	63	630
XT-Grade		70 mm	22 mm	35 mm	Q7AU-3870-1970	EU:	10	63	630
		2.75"	0.87"	1.37"		STD:	10	63	630
XT-Grade		70 mm	22 mm	35 mm	Q7AU-3870-1990	EU:	10	63	630
		2.75"	0.87"	1.37"		STD:	10	63	630
XT-Grade		70 mm	26mm	35 mm	Q7AU-3870-1770	EU:	10	63	630
		2.75"	1.01"	1.37"		STD:	10	63	630
EXTREME		70 mm	26 mm	35 mm	Q7AU-3870-1790	EU:	10	63	630
		2.75"	1.01"	1.37"		STD:	10	63	630

<-- CONTINUED

EU: European pallet. STD: Standard pallet.

38 MM TOOL EXTERNAL RETAINER

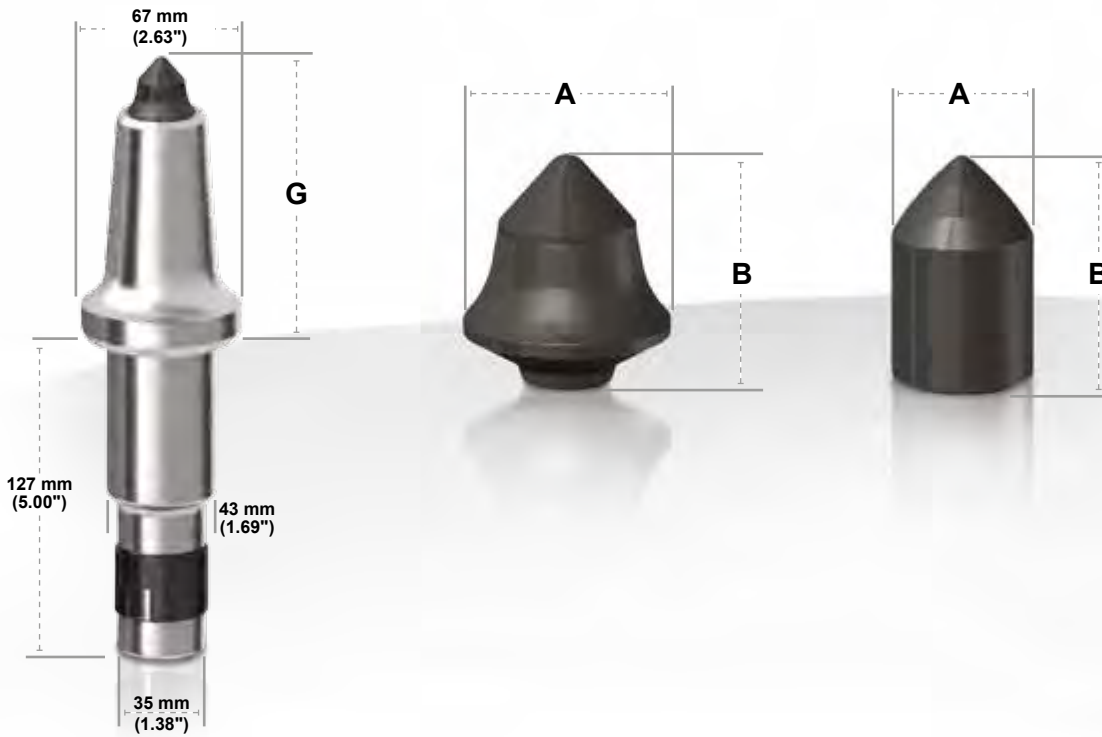


CUTTING CONDITIONS		G	A	B	PRODUCT CODE	PIECES PER BOX		BOXES PER PALLET	PIECES PER PALLET
HARD		80 mm	22 mm	35 mm	P5MR-3880-1962	EU:	10	63	630
		3.15"	0.87"	1.37"		STD:	10		

EU: European pallet. STD: Standard pallet.

43 X 35 MM TOOL

FRICTION RETAINER



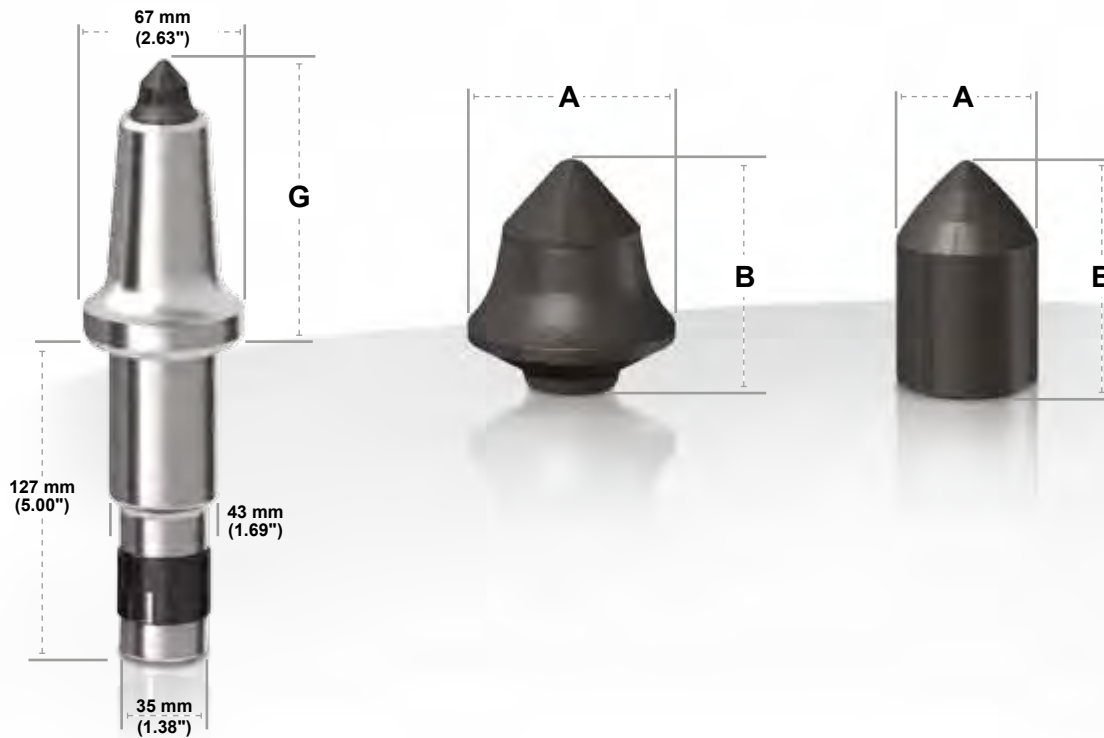
CUTTING CONDITIONS		G	A	B	PRODUCT CODE	PIECES PER BOX		BOXES PER PALLET	PIECES PER PALLET
SOFT		114 mm	24 mm	35 mm	Q3JX-4314-2366	EU:	8	24	192
		4.50"	0.95"	1.37"		STD:	8	32	256
Spark Resistant		114 mm	24 mm	24 mm	W3XA-4314-2362	EU:	8	24	192
		4.50"	0.95"	0.93"		STD:	8	32	256
		137 mm	29 mm	33 mm	Q3XA-4337-5662	EU:	8	24	192
		5.40"	1.14"	1.30"		STD:	8	32	256
ME		114 mm	24 mm	24 mm	Q3JX-4314-2362	EU:	8	24	192
		4.50"	0.95"	0.93"		STD:	8	32	256

CONTINUED -->

EU: European pallet. STD: Standard pallet.

43 X 35 MM TOOL

FRICTION RETAINER

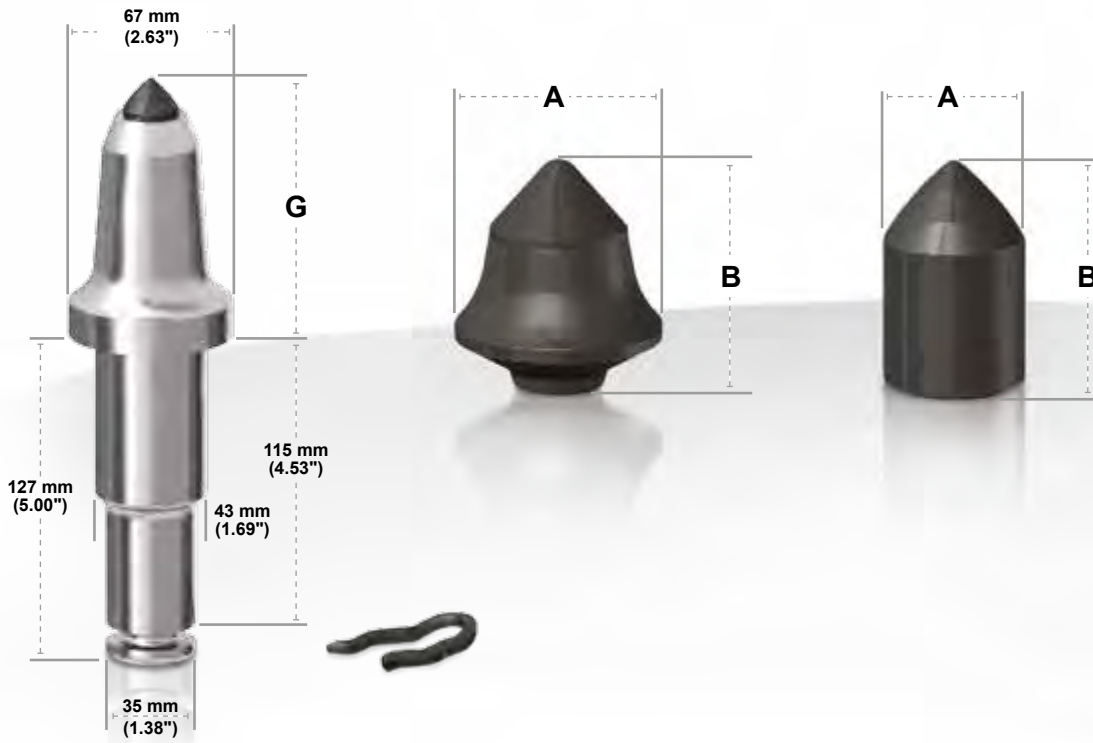



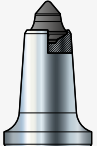


CUTTING CONDITIONS		G	A	B	PRODUCT CODE	PIECES PER BOX		BOXES PER PALLET	PIECES PER PALLET
MED		114 mm	20 mm	34 mm	W3XA-4314-3962	EU:	8	24	192
		4.50"	0.78"	1.33"		STD:	8	32	256
		102 mm	29 mm	33 mm	Q3XA-4302-5662	EU:	8	24	192
		4.00"	1.14"	1.30"		STD:	8	32	256
HARD		114 mm	29 mm	33 mm	Q3XA-4314-5662	EU:	8	24	192
		4.50"	1.14"	1.30"		STD:	8	32	256

<-- CONTINUED

EU: European pallet. STD: Standard pallet.

43 X 35 MM TOOL EXTERNAL RETAINER

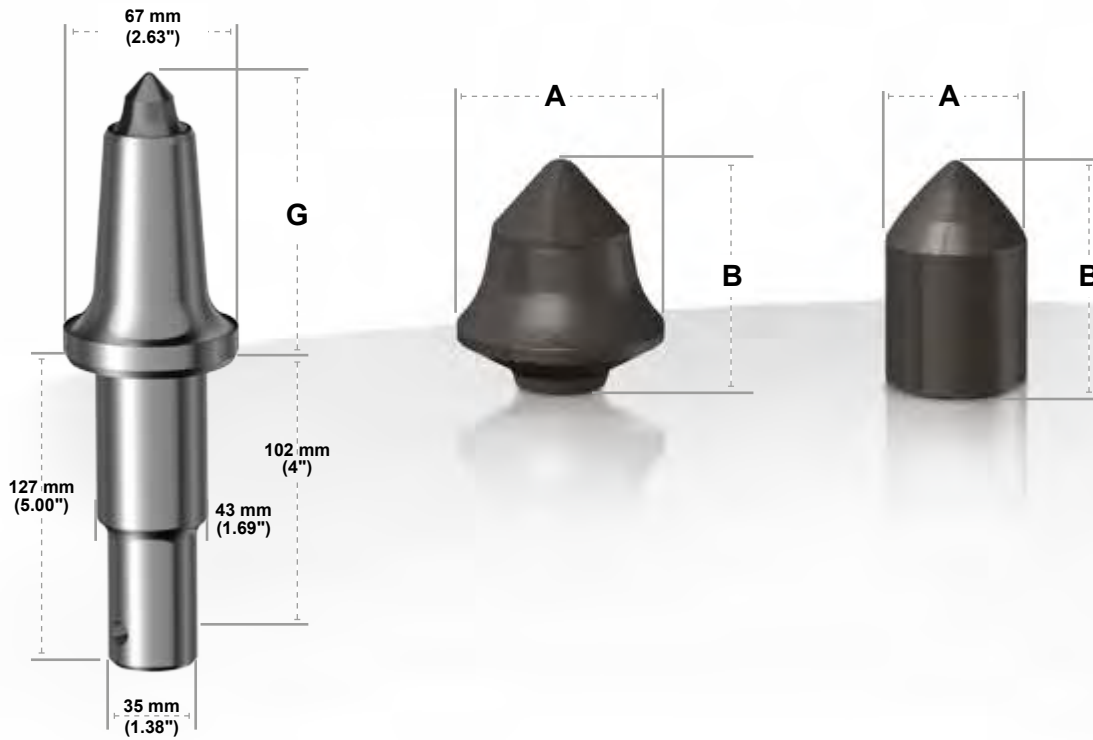



CUTTING CONDITIONS		G	A	B	PRODUCT CODE	PIECES PER BOX		BOXES PER PALLET	PIECES PER PALLET
MED		102 mm	20 mm	34 mm	W3XD-4302-3962	EU:	8	24	192
		4.00"	0.78"	1.33"		STD:	8	32	256
		114 mm	29 mm	33 mm	Q3XD-4314-5662	EU:	8	24	192
		4.5"	1.14"	1.3"		STD:	8	32	256
		95 mm	33 mm	36 mm	Q3XD-4395-2062	EU:	8	24	192
		3.74"	1.30"	1.41"		STD:	8	32	256
EXTREME		102 mm	22 mm	35 mm	Q3XD-4302-1990	EU:	8	24	192
		4.00"	0.87"	1.37"		STD:	8	32	256

EU: European pallet. STD: Standard pallet.

43 X 35 MM TOOL

THRU-PIN RETAINER

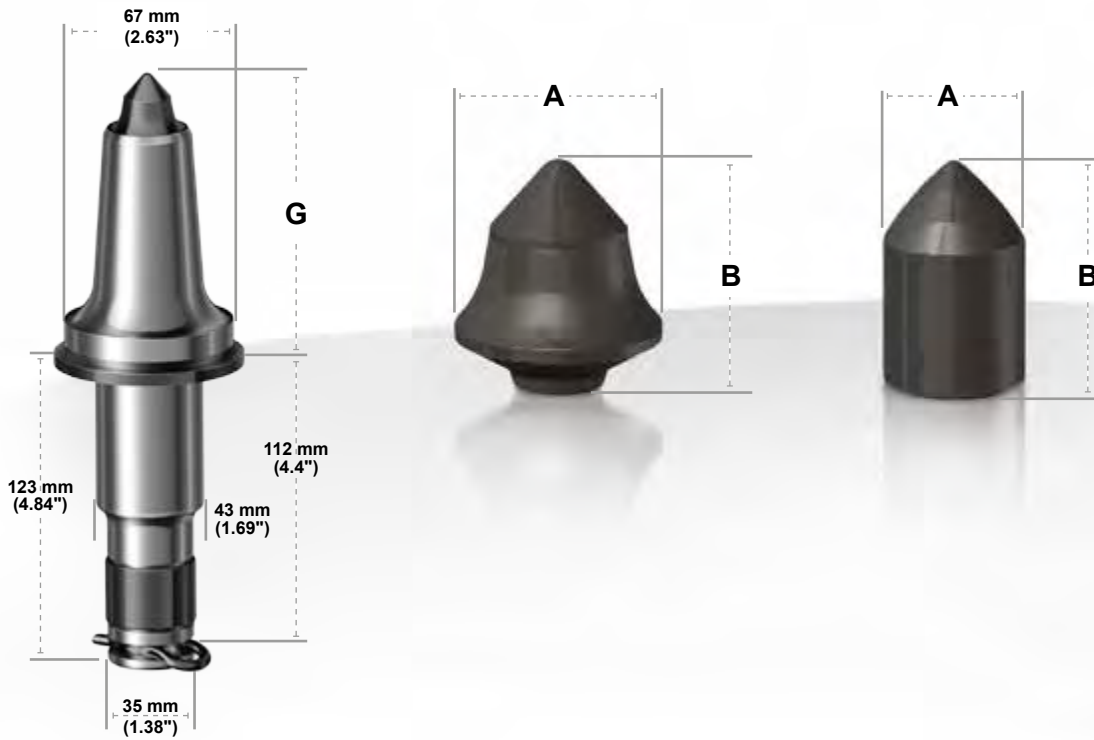


CUTTING CONDITIONS		G	A	B	PRODUCT CODE	PIECES PER BOX		BOXES PER PALLET	PIECES PER PALLET
HARD		114 mm	29 mm	33 mm	Q3HA-4314-5662	EU:	8	24	192
		4.4"	1.14"	1.3"		STD:	8	32	256

EU: European pallet. STD: Standard pallet.

43 X 35 MM TOOL

DUAL RETENTION

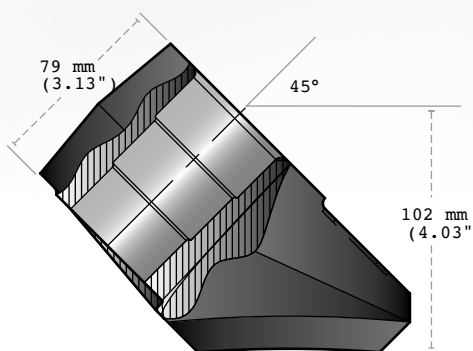
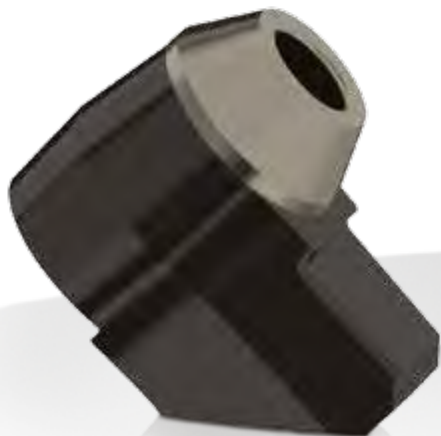


CUTTING CONDITIONS		G	A	B	PRODUCT CODE	PIECES PER BOX		BOXES PER PALLET	PIECES PER PALLET
HARD		119 mm	29 mm	33 mm	Q3XZ-4319-5662	EU:	8	24	192
		4.69"	1.14"	1.3"		STD:	8	32	256
EXTREME		119 mm	29 mm	33 mm	Q3XZ-4319-5690	EU:	8	24	192
		4.69"	1.14"	1.3"		STD:	8	32	256

EU: European pallet. STD: Standard pallet.

BLOCKS & SLEEVES

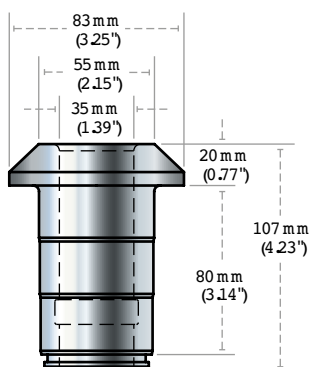
35 MM TOOLS



PRODUCT CODE	PIECES PER BOX	BOXES PER PALLET	PIECES PER PALLET	
B3GC-3525-4500	EU:	2	63	126
	STD:	2	45	90

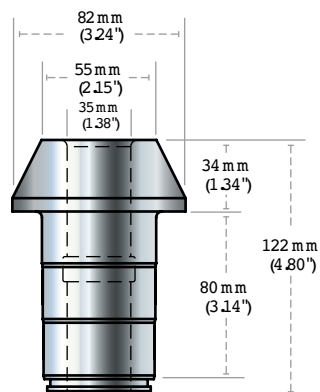
EU: European pallet. STD: Standard pallet.

This standard block is intended for use with the standard sleeves shown below.



C2AG-4920-3500

Loose-fit step sleeve for use with 35 mm tools with internal clip. Sleeve has groove for external retention.

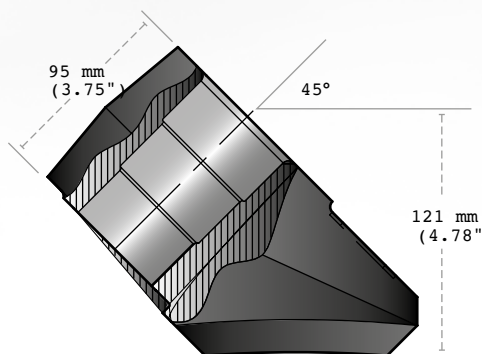
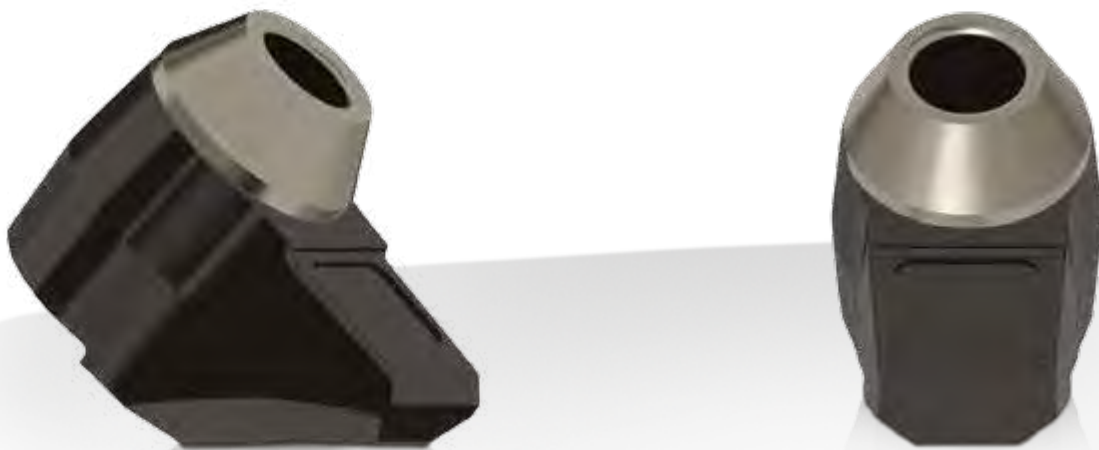


C2AG-4934-3500

Taller version of sleeve C2AG-4920-3500. Loose-fit step sleeve for use with 35 mm tools.

BLOCKS & SLEEVES

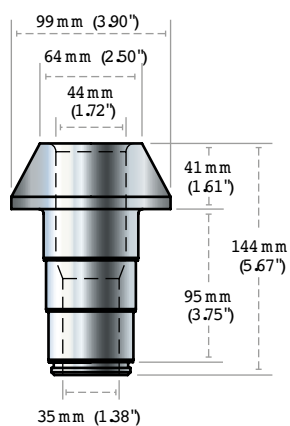
43 X 35 MM TOOLS



PRODUCT CODE	PIECES PER BOX		BOXES PER PALLET	PIECES PER PALLET
B3GC-4350-4500	EU:	2	63	126
	STD:	2	45	90

EU: European pallet. STD: Standard pallet.

This standard block is intended for use with the following large sleeve.



C2LG-4341-5900

Loose-fit step sleeve for use with 43 x 35 mm step-shank tools. Sleeve has groove for external retention.

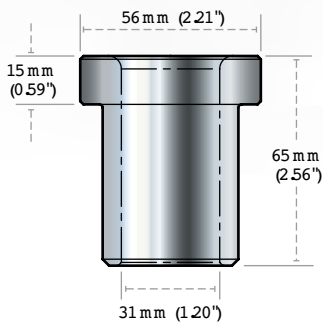
REPLACEMENT SLEEVES



REPLACEMENT SLEEVES FOR CONICAL TOOLS

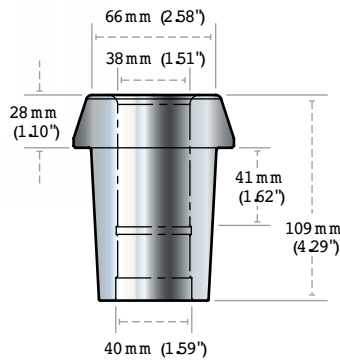
The sleeve extends block life by minimizing its exposure to wear and protecting it from material and debris. The block shape, style and measurements will determine the type of sleeve that is required for your machine. Your block also determines whether you should use a slip-fit sleeve that uses an external retainer to hold it in place or a press-fit sleeve which does not require a retainer.

C3BB-3015-4200



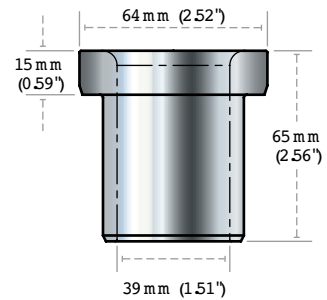
Press-fit sleeve, compatible with Mitsui Miike S200 block.

C4AS-3828-6700



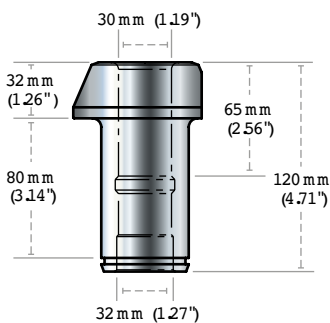
Press-fit sleeve, compatible with AM105 block.

C4BB-3815-4800



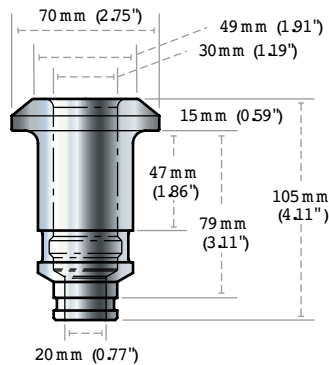
Press-fit sleeve, compatible with Mitsui Miike S300 block.

C4PA-3032-5000-MF



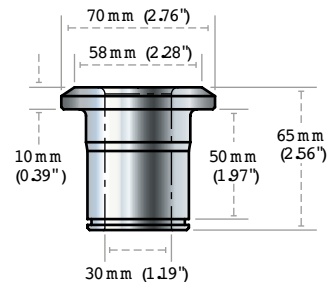
Loose-fit sleeve, compatible with ABM25 block.

C3PH-3015-4500



Compatible with ABM20 block.

C4BU-3010-4700



Replacement sleeve for Joy® J30 block.

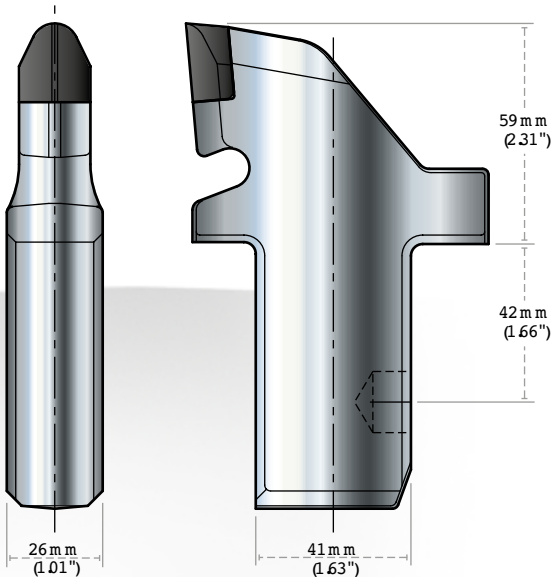
© Registered mark of Joy Manufacturing Company

RADIAL TOOLS

Sandvik offers radial tool products for the mining and tunneling industries. The products are manufactured in production facilities in the United States and Australia in accordance with the highest quality standards.



RADIAL TOOLS

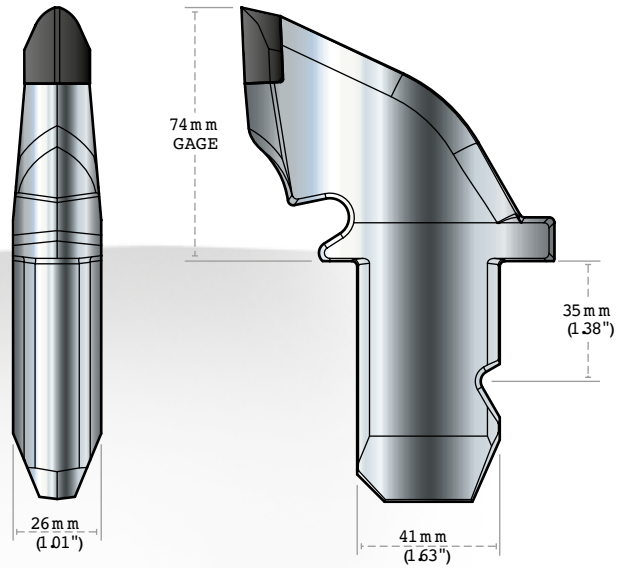


Application: Radial used in trona, potash and coal.

PRODUCT CODE		PIECES PER BOX	BOXES PER PALLET	PIECES PER PALLET
R1BA-2558-4762	EU:	15	63	945
	STD:	15	45	675

EU: European pallet. STD: Standard pallet.

RADIAL TOOLS



Application: Radial used in trona, potash and coal.

PRODUCT CODE		PIECES PER BOX	BOXES PER PALLET	PIECES PER PALLET
R1VA-2574-5762	EU:	15	63	945
	STD:	15	45	675

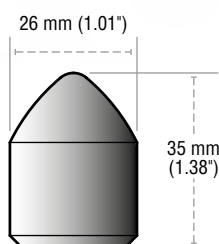
EU: European pallet. STD: Standard pallet.

CARBIDE TIPS INSERTS

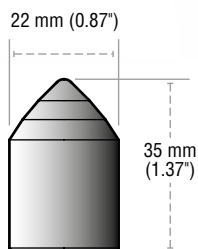


INSERT CARBIDE TIPS FOR CONICAL TOOLS

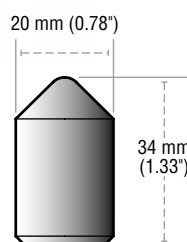
Insert carbide tips are best suited for penetration applications where steel wash is not an issue. These tips are ideal for use in hard, high-impact conditions.



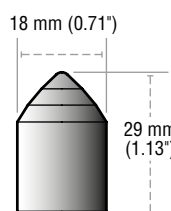
NP17



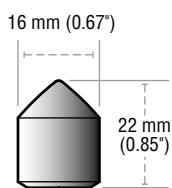
NP19



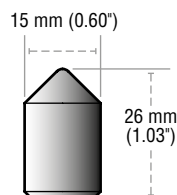
NP39



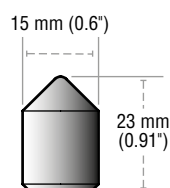
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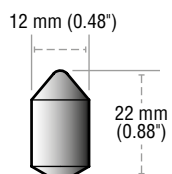
NP51



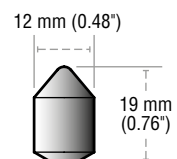
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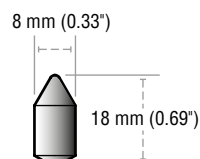
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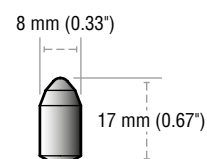
NP32



NP35



NP05



NP42

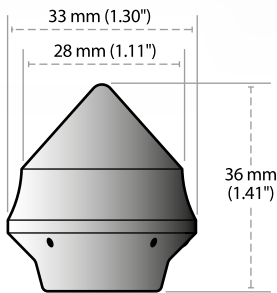
CARBIDE TIPS

CAPS

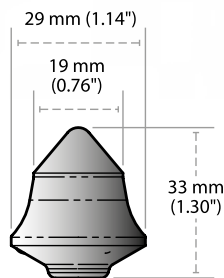


CAP CARBIDE TIPS FOR CONICAL TOOLS

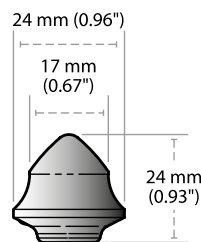
Cap carbide tips have a valve-seat braze joint for increased strength and shear resistance. The tips provide excellent penetration, and the large carbide shoulder gives excellent protection against steel wash. These tips are best suited for use in soft to medium-hard materials or conditions.



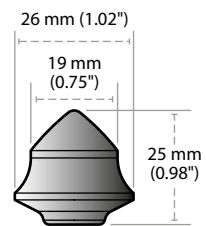
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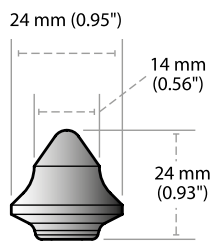
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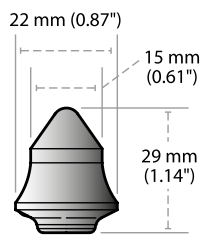
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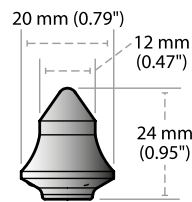
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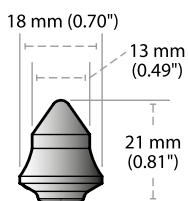
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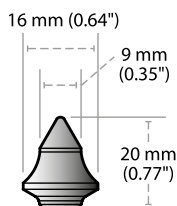
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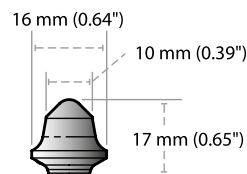
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NP57



NP18



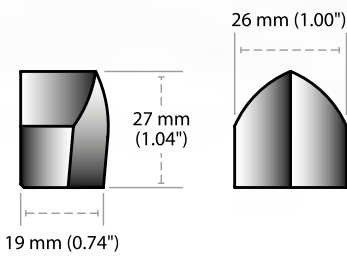
NP24

CARBIDE TIPS FOR RADIAL TOOLS

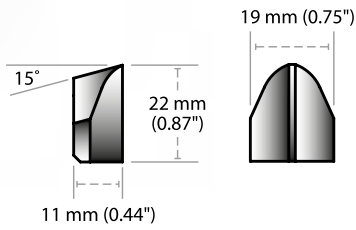


CARBIDE TIPS FOR RADIAL TOOLS

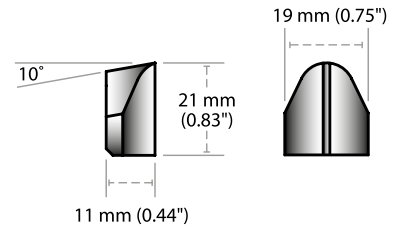
Radial carbide tips are used in tools that do not rotate. They are strategically located at different attack angles for maximum efficiency. The face of each carbide tip is designed with a specific angle for high productivity.



NR20



NR57



NR47

ACCESSORIES FOR CONICAL TOOLS

Sandvik provides pullers and extractors to assist with tool and machine maintenance.

PULLER

For removal of tools with 25 mm shank.



PART NUMBER	TOOL SERIES
M8T-0003-25AA	P9AA 25 mm Tool
M8T-0003-25QA	P9QA 25 mm Tool

LARGE PULLERS

For removal of conical tools from blocks. Hardened tip provides long life.



PART NUMBER	TOOL SERIES
M8T-0014-30	30 mm Tool
M8T-0014-35	35 mm Tool
M8T-0014-110*	38 mm Tool
M8T-0014-4335	43 mm Tool

*NOTE: This puller can also be used with the R1RP Radial Tool.

RATCHET SNAP-RING PLIERS

For easy installation/removal of external snap-ring. Features one-button quick release.



PART NUMBER	TOOL SERIES
M8T-0059	Snap-Ring style retainers
M8T-0060	Replaceable Tips

INSTALLATION / REMOVAL

For removal of external hairpin retainers for 25, 30, 35, and 43 mm tools.



PART NUMBER	TOOL SERIES
M8T-0063	...35mm, 43x35mm external retainers
M8T-006425-30mm external retainers

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INFORMATION

Grinding of Hardmetal – Health and Safety Information

Material Composition

Hardmetal products contain tungsten carbide and cobalt.

Routes of exposure

Grinding or heating hardmetal blanks or hardmetal products will produce dusts or fumes with dangerous ingredients that can be inhaled, swallowed or come in contact with the skin or eyes.

Acute toxicity

The dust is toxic by inhalation. Inhalation may cause irritation and inflammation in the airways. Skin contact can cause irritation and rash. Sensitized persons may experience an allergic reaction.

Chronic toxicity

Repeated inhalation of aerosols containing cobalt may cause obstruction in the airways. Prolonged inhalation of increased concentrations may cause lung fibrosis or lung cancer. Epidemiological studies indicate that workers exposed in the past to high concentrations of tungsten carbide/cobalt carried an increased risk of developing lung cancer.

Cobalt and nickel are potent skin sensitizers. Repeated or prolonged contact can cause sensitization.

Classification

- Following hazard classification according to GHS/CLP applies to the hardmetal powder ($2.5\% \leq \text{Co} < 25\%$):
- Acute Inhalation 3, H331: Toxic if inhaled
- Carc. Cat. 2, H351: Suspected of causing cancer by inhalation
- Repr. 2, H361; Suspected of damaging fertility.
- STOT RE 1, H372: Causes damage to lungs through prolonged or repeated exposure by inhalation
- Resp. Sens. 1B, H334 : May cause allergy or asthma symptoms or breathing difficulties if inhaled
- Skin Sens.1, H317: May cause an allergic skin reaction
- Eye Irrit. 2, H319: Causes serious eye irritation
- Aquatic Acute 1, H400: Very toxic to aquatic life
- Aquatic Chronic 2, H411: Toxic to aquatic life with long lasting effects

Precautionary Statements

- Do not breathe dust
- Wear protective gloves/protective clothing/eye protection.
- Use personal protective equipment as required. In case of inadequate ventilation wear respiratory protection
- Avoid release to the environment
- IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician
- If skin irritation or rash occurs: Get medical advice/attention

EVERYTHING FOR YOUR BUSINESS

Sandvik is a global industrial group with advanced products and world-leading positions in selected areas – tools for metal cutting, equipment and tools for the mining and construction industries, stainless materials, special alloys, metallic and ceramic resistance materials as well as process systems. In 2012 the Group had about 49,000 employees and representation in 130 countries, with annual sales of about 99,000 MSEK (pro forma rounded numbers).



mining.sandvik.com