

# Softrock Tools

E6 Hard Materials







# 3 Contents

<b>Construction</b>		<b>Tunneling</b>	20
- Weld-on Bars	6	<b>Surface Mining</b>	22
- Weld-on Cutting Teeth	7	<b>Mining</b>	
- Flat Picks	8	- Round Shank Picks	24
- Round Shank Picks	10	- Rotary Drill Bits	28
- Pilot Bits	14	- PCD Drill Bits	34
<b>Trenching</b>	15	- Dolomit Drilling System	37
<b>Soil Stabilisation</b>	18	<b>Recycling Tools</b>	38
<b>Snow Plow and Graders</b>	19		

The tools indicated in this brochure represent our standard product range. Customised products can be manufactured upon request. Our experienced team of sales and application engineers look forward to assist in developing products for your specific requirements.



## A rich tradition and decades of experience

With six decades of history behind it, Element Six Hard Materials has expertise in application knowledge and manufacture of tungsten carbide. This knowledge is used in the development, production and sales of hardmetals and special tools for industries ranging from construction, mining and tunnelling to mineral processing, textiles, automotive and agriculture.

The focus of our business is to deliver the commercial benefits of tungsten carbide to customers through cost-effective solutions that enhance productivity. The combined hardness and toughness of tungsten carbide tools and wear parts outperform their steel equivalents significantly.

Element Six Hard Materials currently produces 1500 tons of tungsten carbide in its production plants in Germany, South Africa and China. Its head office is in Germany and this is supported by sales offices in the UK and the USA.



Element Six Code	WC sintered grain size	Co in % ± 0,2	Density g/cm3 ± 0,1	Hardness HV ± 50	Hardness HRA ± 0,3	Coercivity Oe	TRS ISO B N/mm2
T 6	medium	6,0	14,95	1.450	90,6	130 – 160	2.800
B 20	coarse	8,0	14,70	1.250	88,7	90 – 110	2.800
B 25	coarse	10,0	14,50	1.230	88,5	75 – 100	2.900
B 30	coarse	11,0	14,40	1.150	87,7	75 – 100	2.900
B 40	coarse	15,0	14,00	1.050	86,5	65 – 90	2.800
B 15 N	extracoarse	6,5	14,90	1.100	87,2	55 – 75	2.200
B 20 N	extracoarse	8,6	14,65	1.050	86,5	45 – 60	2.300
B 25 N	extracoarse	9,5	14,55	1.030	86,2	46 – 58	2.300
B 25 SN	extracoarse	9,5	14,55	1.050	86,5	50 – 64	2.300
B 30 SN	extracoarse	11,0	14,40	1.000	85,8	50 – 70	2.300
Master Grades B 15 MN B 25 MN	extracoarse extracoarse	6,5 9,5	14,90 14,55	The innovation of the “Master Grades” is an enhancement of the hardmetal binder.			

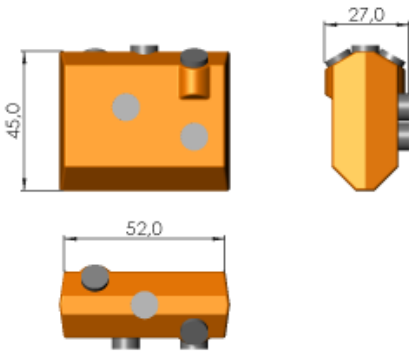


Element Six Hard Materials products fall into two categories: Hardmetal Products and Softrock Tools.

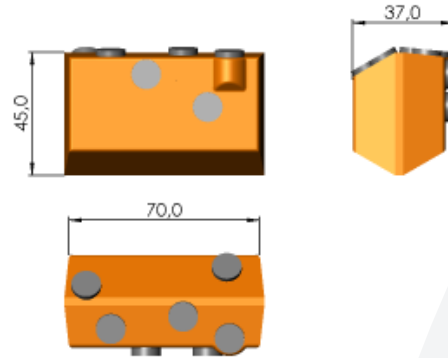
Hardmetal Products encompass a range of tungsten carbide components and materials that have wide industrial use and include inserts for drill bits and wear parts for diverse industries. Softrock Tools cover tools and tooling solutions for road planing, mining and tunnelling, construction, recycling, trenching and soil stabilisation applications.

Element Six Hard Materials also manufactures industry-specific products such as mill rolls for hot rolling mills, solid carbide rods, burr blanks and powder products for specialist tooling solutions.

# 6 Construction / Weld-on Bars

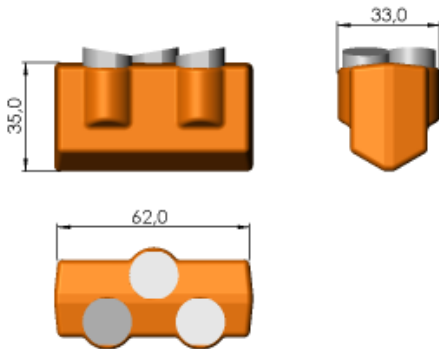


**BAS 52 x 27 / 5-9**

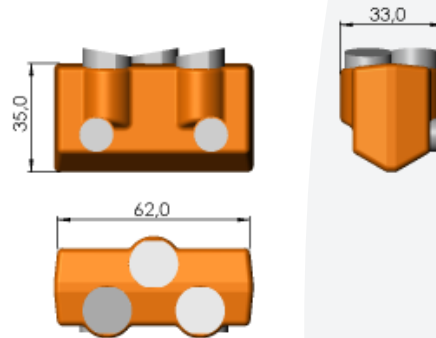


**BAS 70 x 37 / 7-11**

<b>part-no.</b>	<b>part-no.</b>
12510001	12510002

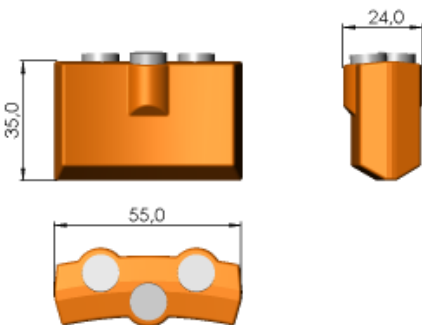


**BAS 62 x 33 / 3-SW 15**



**BAS 62 x 33 / 3-SW 15 / 2-SW 10**

<b>part-no.</b>	<b>part-no.</b>
12510003	12510004

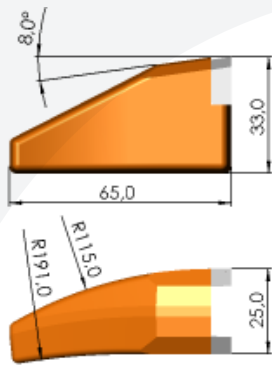


**BAS 55 x 24 / 3-11**

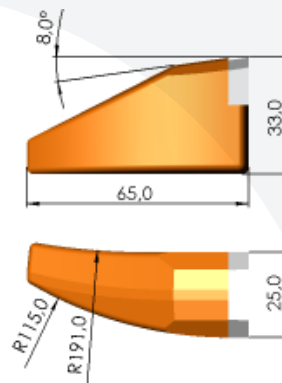
<b>part-no.</b>
12510005



# 7 Construction / Weld-on Cutting Teeth



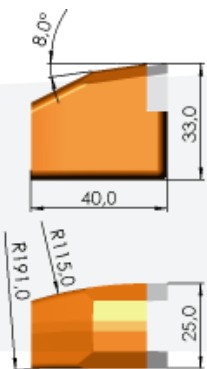
**BAZ 65 x 33 x 25 / L**



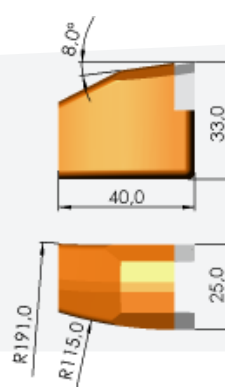
**BAZ 65 x 33 x 25 / R**

part-no.
12510008

part-no.
12510007



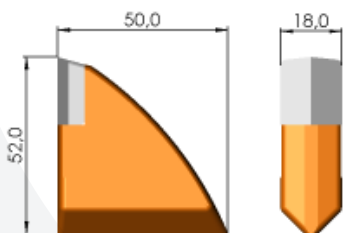
**BAZ 40 x 33 x 25 / L**



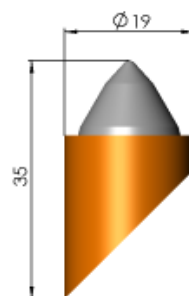
**BAZ 40 x 33 x 25 / R**

part-no.
12510021

part-no.
12510020



**BAS**



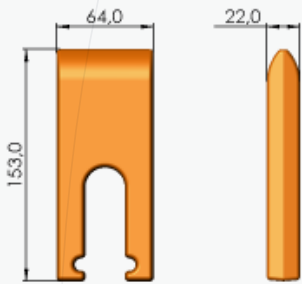
**BAS 45°**

part-no.
12410023

part-no.
12510025

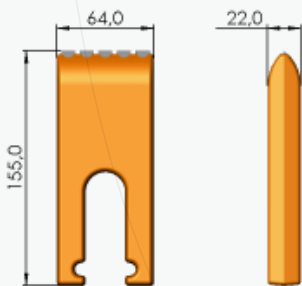


# Construction / Flat Picks



**FZ 64-1**

part-no.
12310031



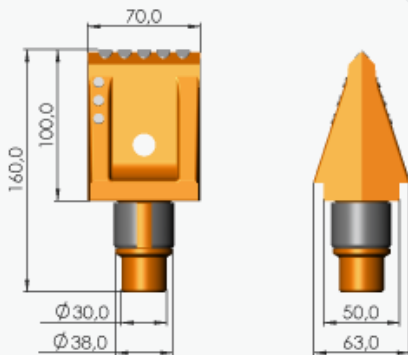
**FZ 64-2**

part-no.
12310032



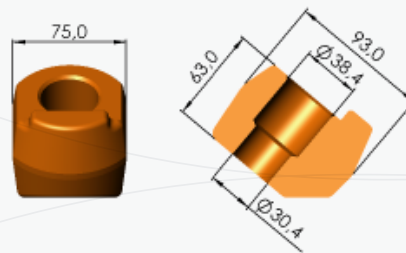
**FZ 64**

part-no.
13010209



**FZ 70**

part-no.
12310024

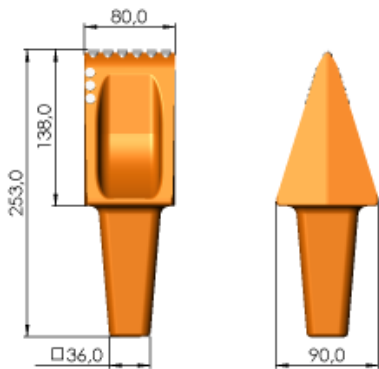


**FH 70**

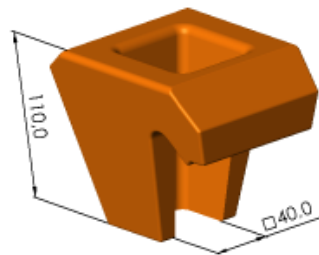
part-no.
13010172



# Construction / Flat Picks



**FZ 80**



**FH 80**

part-no.
12310003

part-no.
13010213

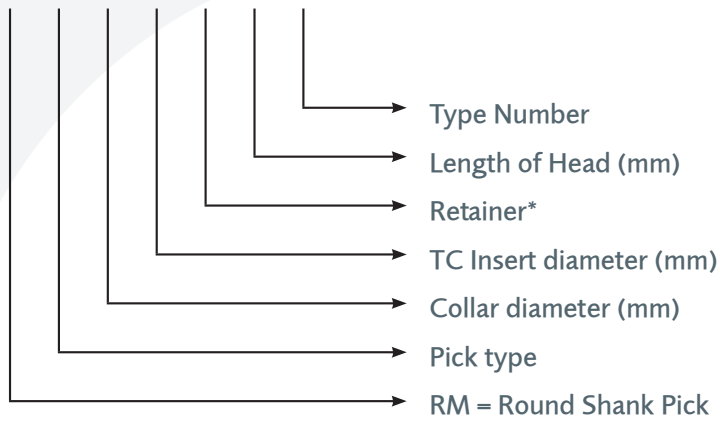


Retaining Clip for **FZ 80**

part-no.
55010610

### Type description for E6 Hard Materials Round Shank Picks

RM 38-58 25 C 70 01

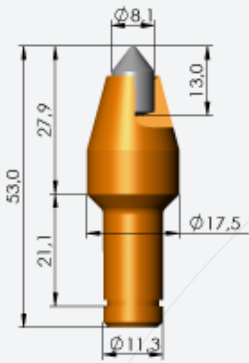


#### \*Retainer:

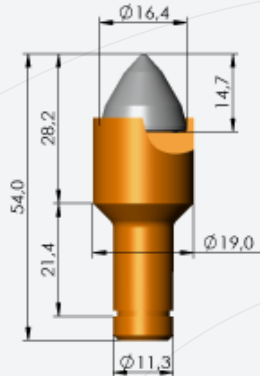
- H = sleeve
- S = snap ring
- C = clip ring
- HS = sleeve + snap ring
- T = Trenching ring
- CH = friction sleeve



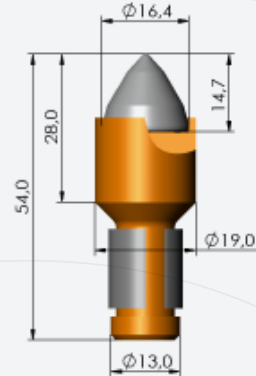
# Construction / Round Shank Picks



**RM2 -1808 S28 01**



**RM2 -1916 S28 01**

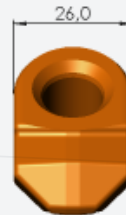
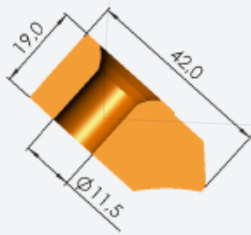


**RM2 -1916 H28 01**

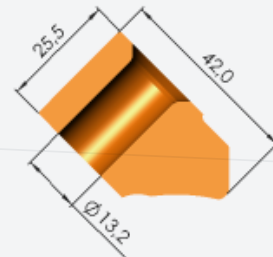
part-no.	part-no.	part-no.
11020014	11020002	11020005



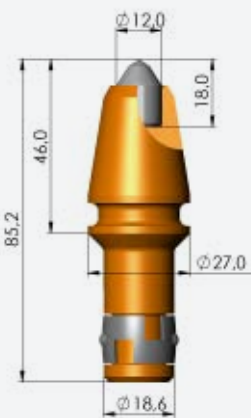
**RH2 -11-S**



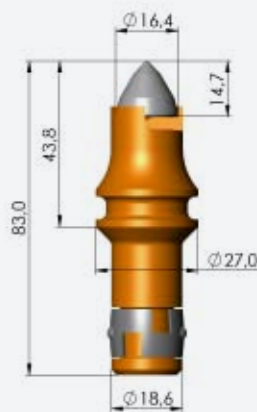
**RH2 -13-H**



part-no.	part-no.
13010235	13010119



**RM3 -2712 C46 01**

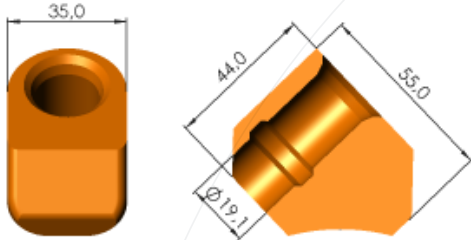


**RM3 -2716 C44 01**

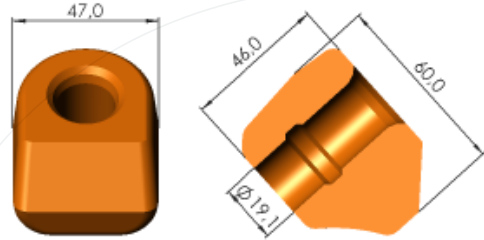
part-no.	part-no.
11030020	11030021



## Construction / Round Shank Picks

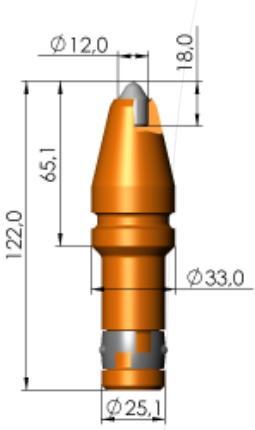


**RH3 -19-W**

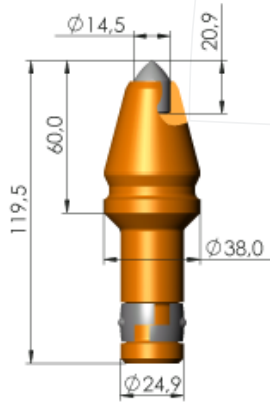


**RH3 -19-T**

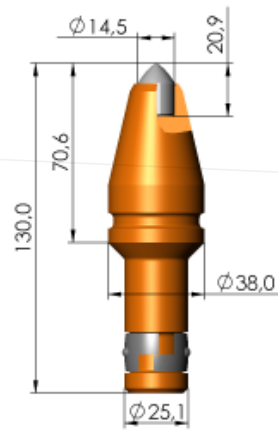
<b>part-no.</b>	<b>part-no.</b>
13010117	13010141



**RM5 -3312 C65 01**

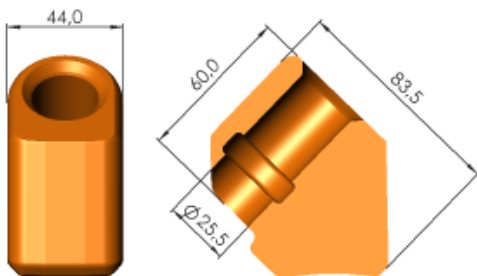


**RM5 -3815 C60 01**

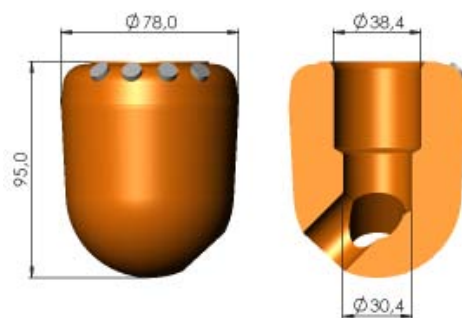


**RM5 -3815 C71 01**

<b>part-no.</b>	<b>part-no.</b>	<b>part-no.</b>
11050003	11050032	11050002



**RH5 -25-W**

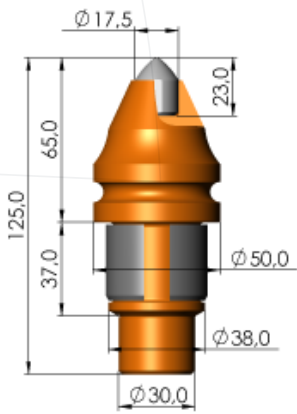


**RH7 -SPT-H85**

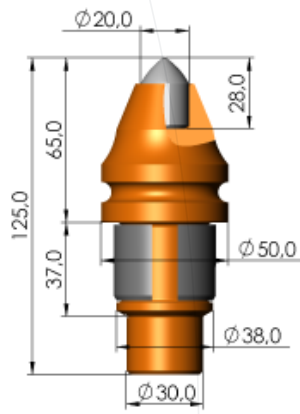
<b>part-no.</b>	<b>part-no.</b>
13010028	13010247

# 13

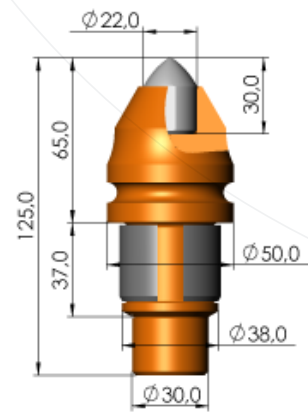
## Construction / Round Shank Picks



**RM7 -5017 H65 01**

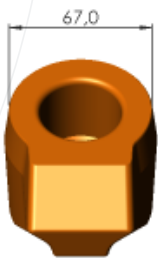


**RM7 -5020 H65 01**

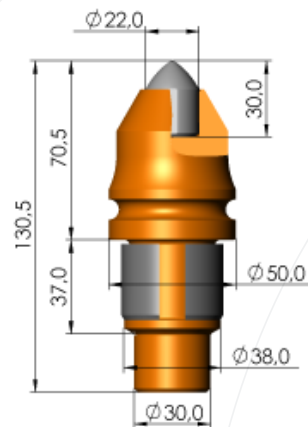
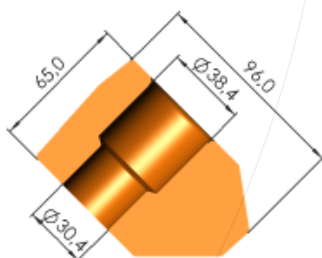


**RM7 -5022 H65 01**

<b>part-no.</b>	<b>part-no.</b>	<b>part-no.</b>
11070001	11070012	11070004

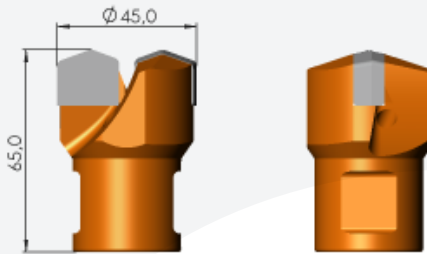


**RH7 -light**



**RM7 -5022 H70 01**

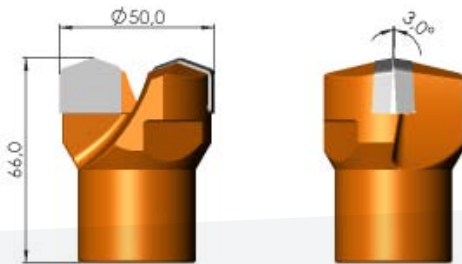
<b>part-no.</b>	<b>part-no.</b>
13010036	11070045



DB 2/45 Rd 24 f O 01

part-no.

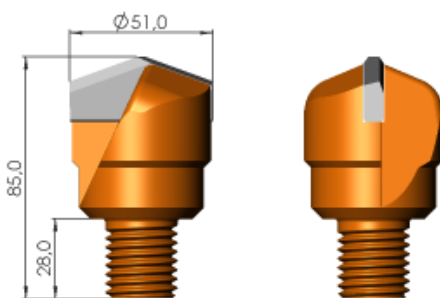
22310014



DB 2/50 M 24 f P 01

part-no.

22310095



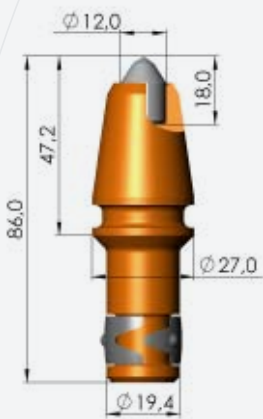
DB 2/51 W1" m O 01

part-no.

22310034

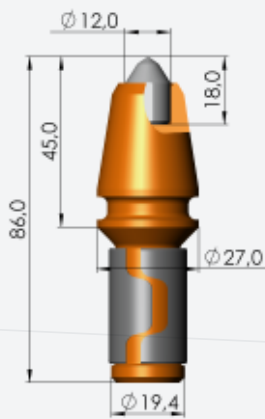


# 15 Trenching / Round Shank Picks



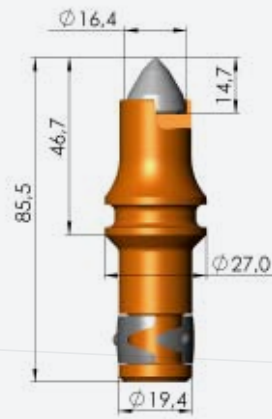
**RM3 -2712 C47 01**

part-no.
11030016



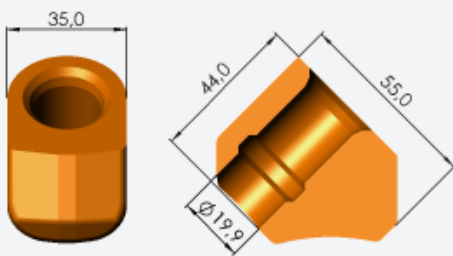
**RM3 -2712 H45 01**

part-no.
11030017



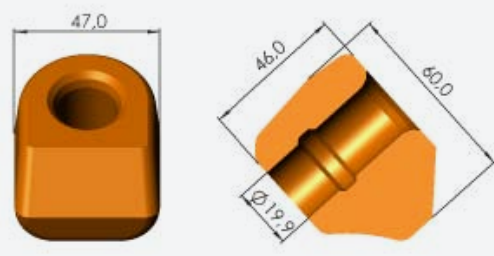
**RM3 -2716 C47 01**

part-no.
11030055



**RH3 -20-W**

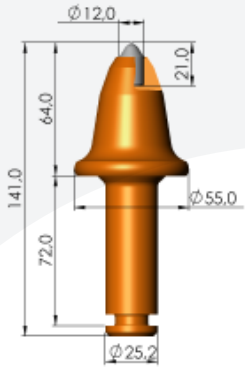
part-no.
13010021



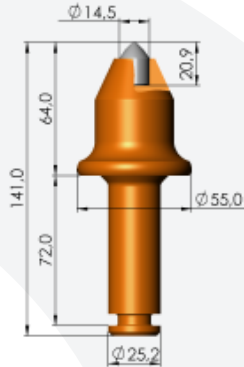
**RH3 -20-T**

part-no.
13010130

# 16 Trenching / Round Shank Picks

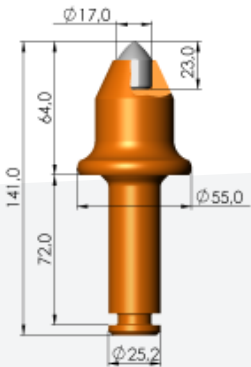


**RMS -5512 T64 01**

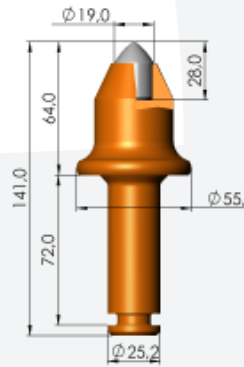


**RMS -5515 T64 01**

<b>part-no.</b>	<b>part-no.</b>
11050089	11050090



**RMS -5517 T64 01**



**RMS -5519 T64 01**

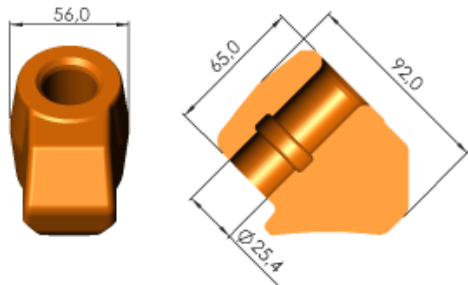
<b>part-no.</b>	<b>part-no.</b>
11050091	11050092



**RMS -T Safety ring**

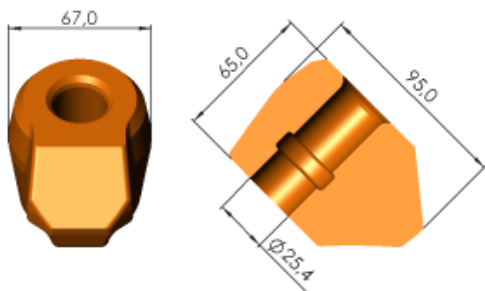
<b>part-no.</b>
61990351

# 17 Trenching / Round Shank Picks



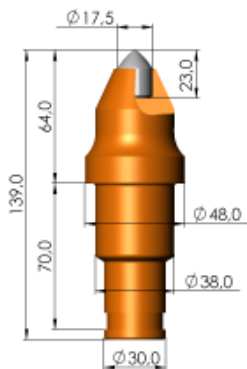
**RH5 -25-T**

<b>part-no.</b>
13010125



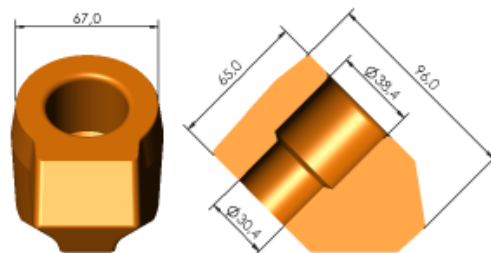
**RH5 -25-TV**

<b>part-no.</b>
13010124



**RM7 -4817 S64 01**

<b>part-no.</b>
11070008

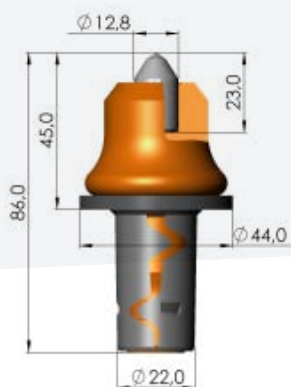


**RH7 -light**

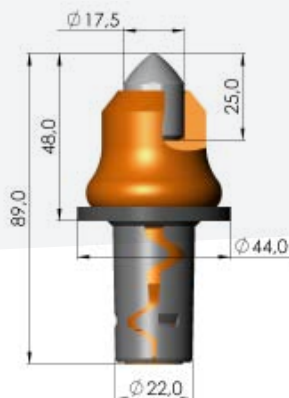
<b>part-no.</b>
13010036



# Soil Stabilisation / Round Shank Picks

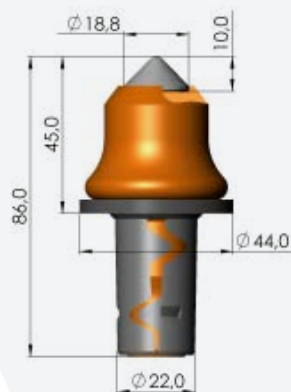


**RM3 -22 / BS 13**

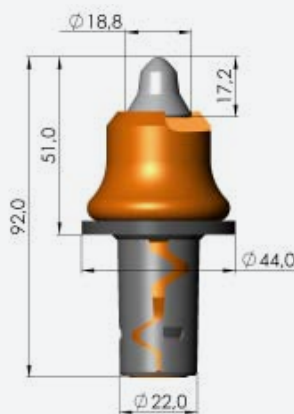


**RM3 -22 / BS 18**

<b>part-no.</b>	<b>part-no.</b>
11030252	11030288

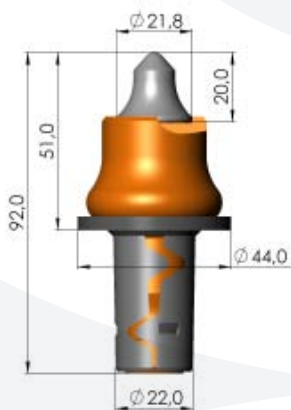


**RM3 -22 / B 3**

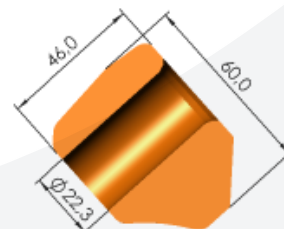
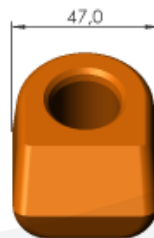


**RM3 -22 / B 7**

<b>part-no.</b>	<b>part-no.</b>
11030253	11030247

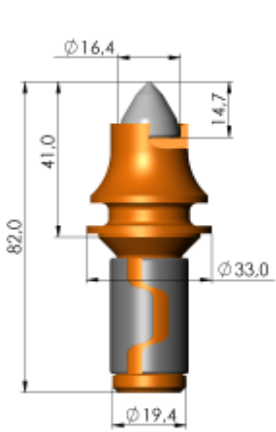


**RM3 -22 / B 10.1**

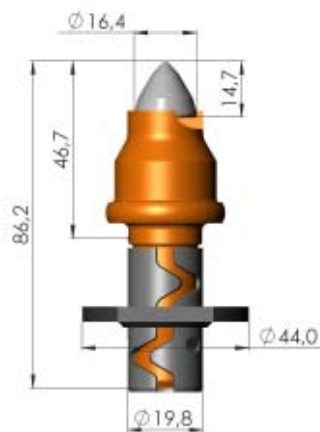


**RH3 -22-T**

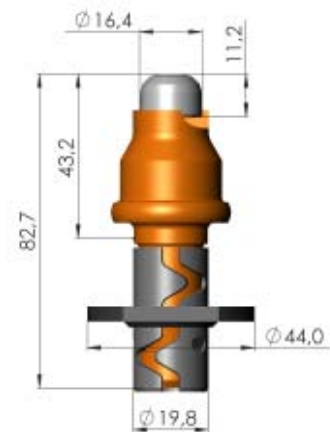
<b>part-no.</b>	<b>part-no.</b>
11030287	13010127



**RM3 -3316 H41 01**

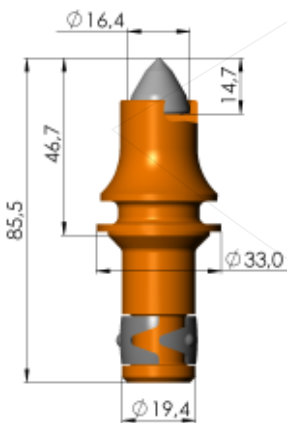


**RM3 -3016 H47 01**

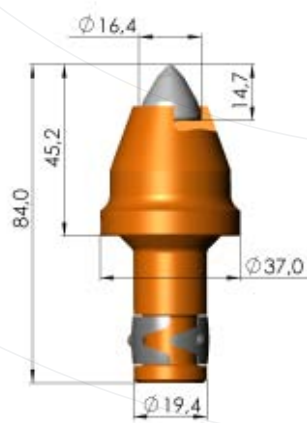


**RM3 -3016 H43 01**

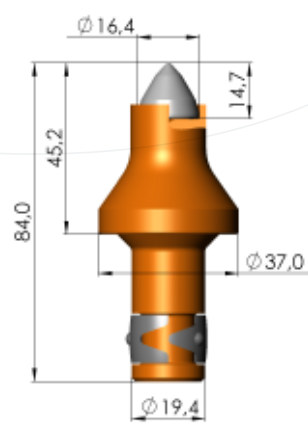
<b>part-no.</b>	<b>part-no.</b>	<b>part-no.</b>
11030010	11031324	11031416



**RM3 -3316 C47 01**

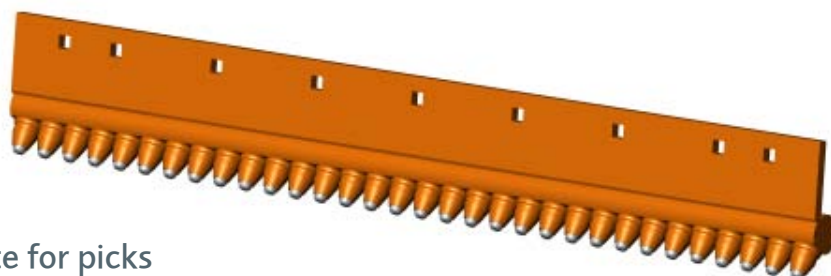


**RM3 -3716 C45 01**



**RM3 -3716 C45 02**

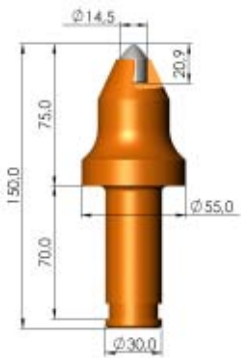
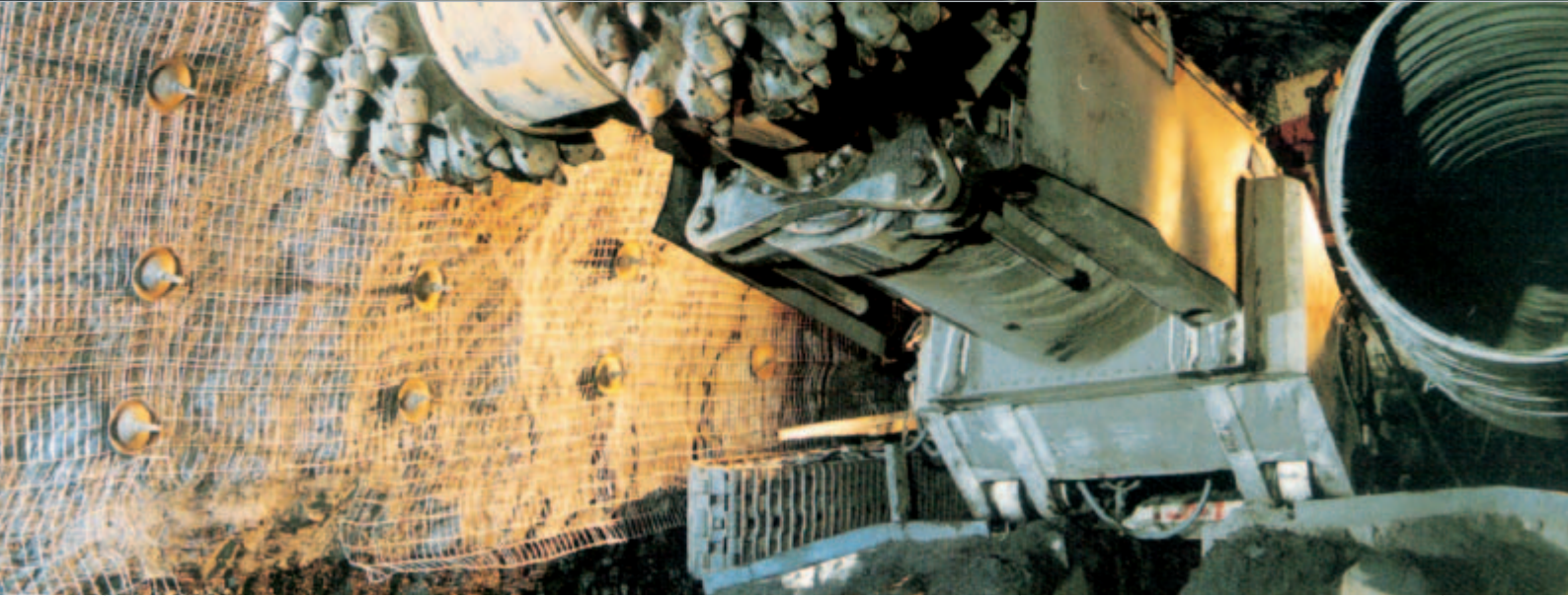
<b>part-no.</b>	<b>part-no.</b>	<b>part-no.</b>
11030148	11030071	11030243



Holder plate for picks

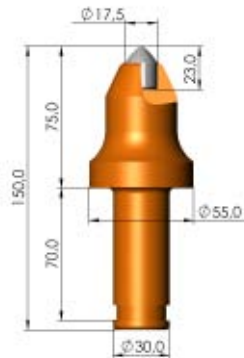
<b>part-no.</b>
14010027

# 20 Tunneling / Round Shank Picks



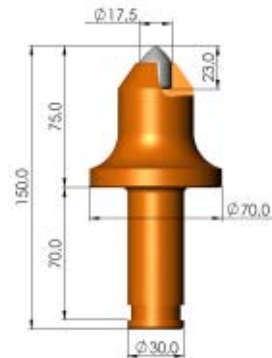
**RM8 -5515 S75 01**

part-no.
11080034



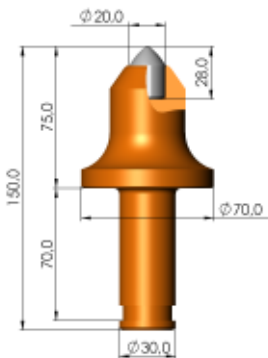
**RM8 -5517 S75 01**

part-no.
11080035



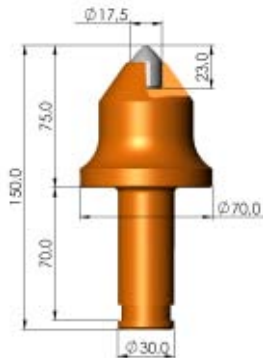
**RM8 -7017 S75 01**

part-no.
11080108



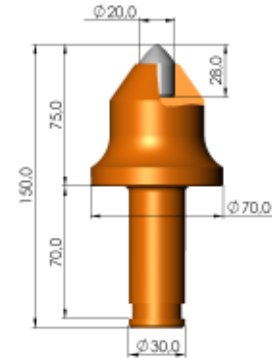
**RM8 -7020 S75 01**

part-no.
11080109



**RM8 -7017 S75 02**

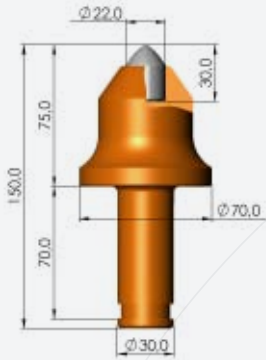
part-no.
11080116



**RM8 -7020 S75 02**

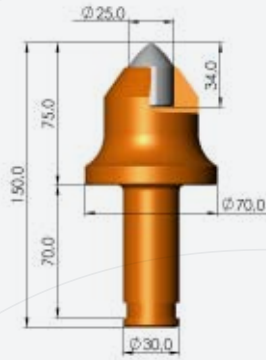
part-no.
11080117





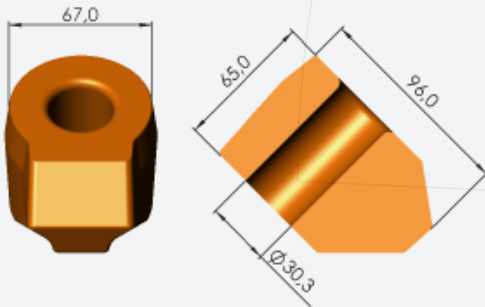
**RM8 -7022 S75 02**

part-no.
11080118



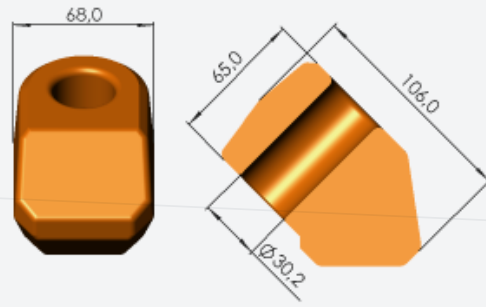
**RM8 -7025 S75 02**

part-no.
11080119



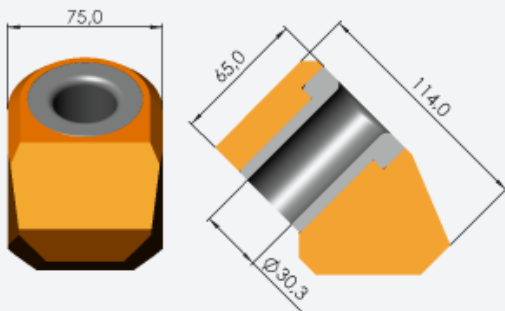
**RH8 -30-light**

part-no.
13010115



**RH8 -30-M-L**

part-no.
13010089



**RH8 -30 with sleeve**

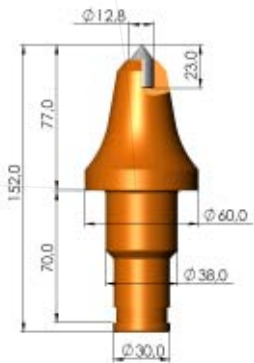
part-no.
13010038



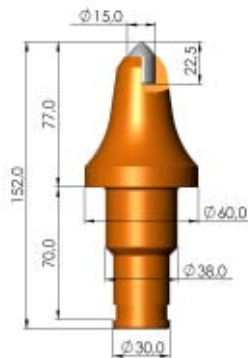
**RM8 -Safety ring**

part-no.
61990147

# Surface Mining / Round Shank Picks



**RM7 -6013 S77 01**



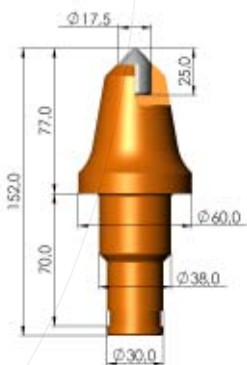
**RM7 -6015 S77 01**

**part-no.**

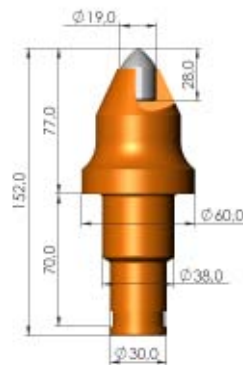
11070135

**part-no.**

11070136



**RM7 -6018 S77 01**



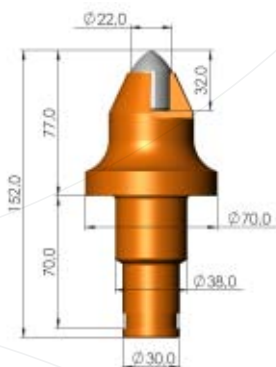
**RM7 -6019 S77 01**

**part-no.**

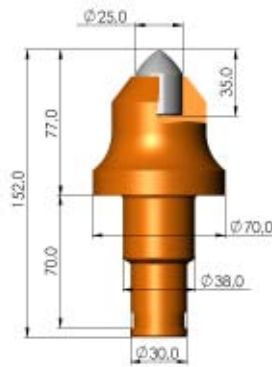
11070137

**part-no.**

11070125



**RM7 -7022 S77 01**



**RM7 -7025 S77 05**

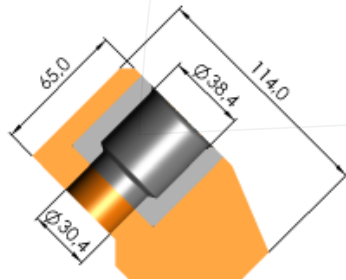
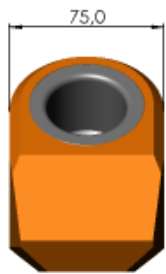
**part-no.**

11070120

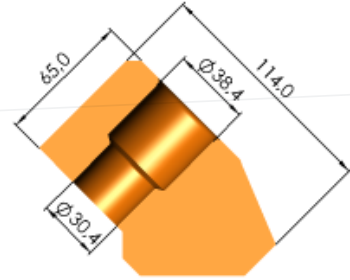
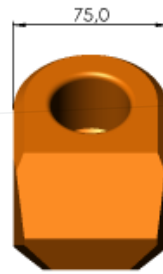
**part-no.**

11070088

## Surface Mining / Round Shank Picks



**RH7** with sleeve



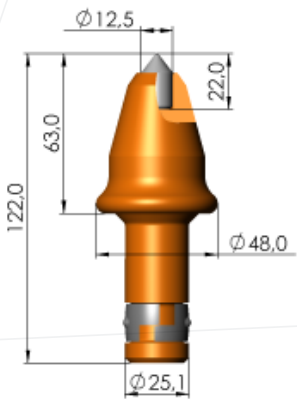
**RH7 -HD**

part-no.	part-no.
13010031	13010033

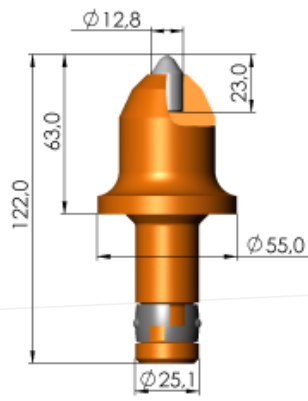




Photo: RAG Deutsche Steinkohle

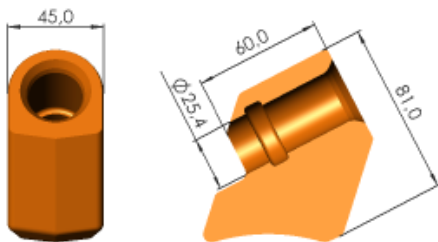


**RM5 -4813 C63 01**

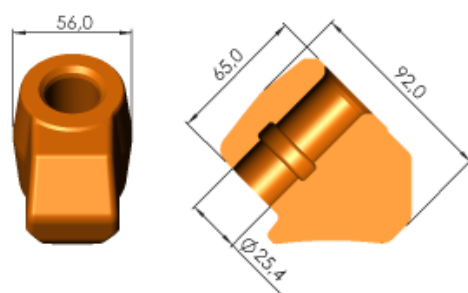


**RM5 -5513 C63 01**

<b>part-no.</b>	<b>part-no.</b>
11050018	11050037



**RH5 -M**

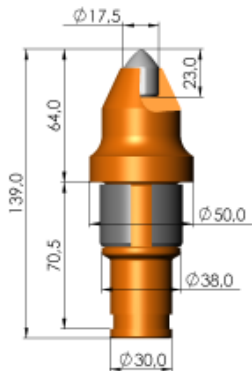


**RH5 -25-T**

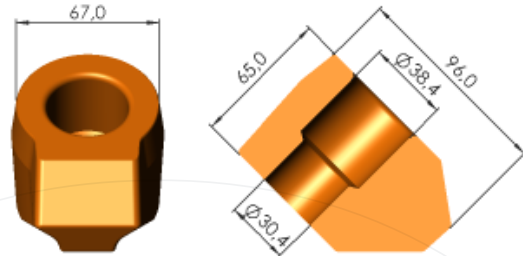
<b>part-no.</b>	<b>part-no.</b>
13010030	13010125



## Mining / Round Shank Picks

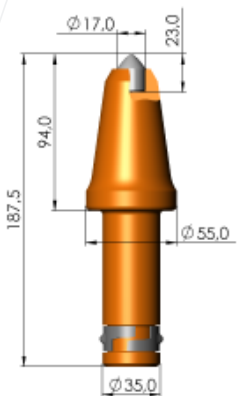


**RM7 -5017 HS64 01**

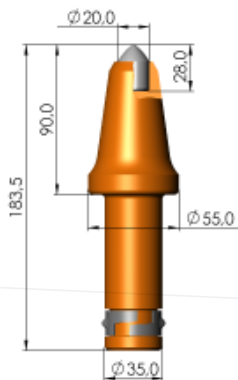


**RH7 -light**

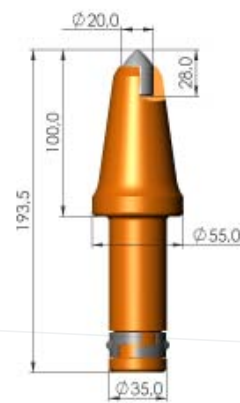
<b>part-no.</b>	<b>part-no.</b>
11070037	13010036



**RM35 -5517 C94 01**

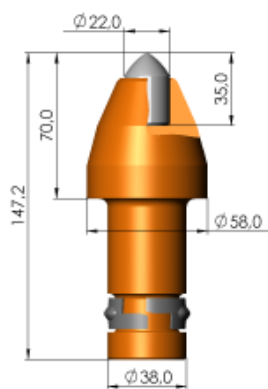


**RM35 -5520 C90 01**

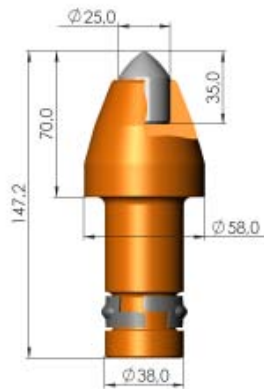


**RM35 -5520 C100 01**

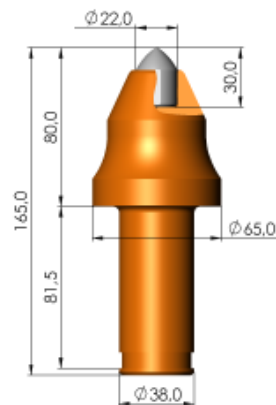
<b>part-no.</b>	<b>part-no.</b>	<b>part-no.</b>
11350029	11350004	11350005



**RM38 -5822 C70 01**



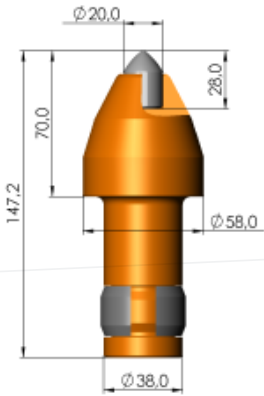
**RM38 -5825 C70 01**



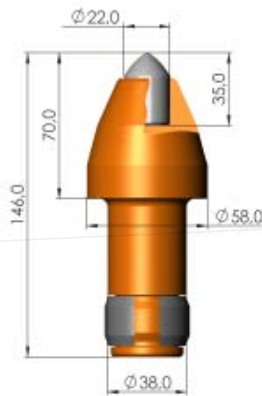
**RM38 -6522 S80 01**

<b>part-no.</b>	<b>part-no.</b>	<b>part-no.</b>
11090041	11090050	11090029

## Mining / Round Shank Picks

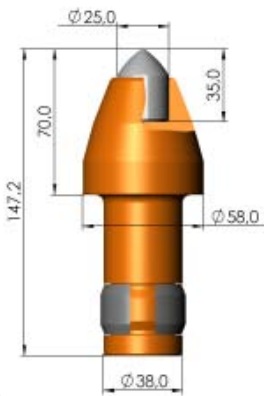


**RM38 -5820 CH70 01**

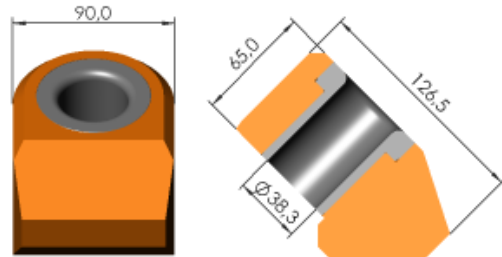


**RM38 -5822 CH70 03**

<b>part-no.</b>	<b>part-no.</b>
11090082	11090062



**RM38 -5825 CH70 01**

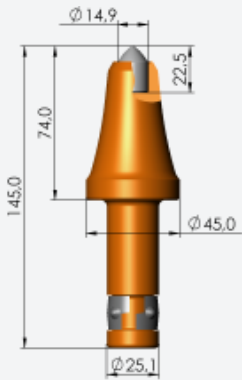


**RH38 -with sleeve**

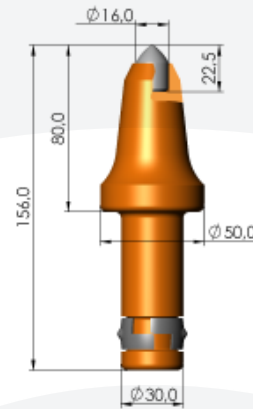
<b>part-no.</b>	<b>part-no.</b>
11090101	13010043

Photo: RAG Deutsche Steinkohle



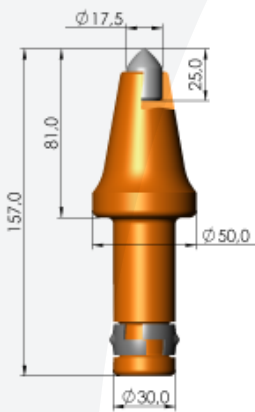


**RM5 -4515 C74 01**

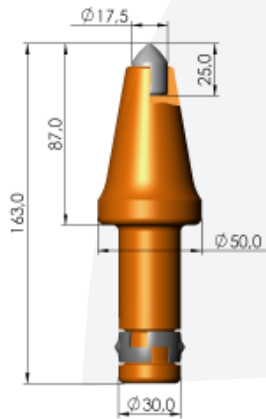


**RM8 -5016 C80 01**

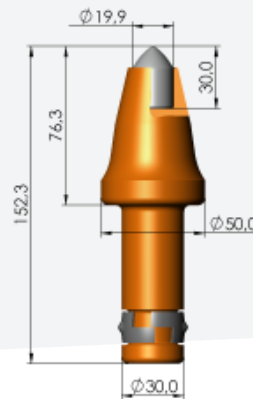
<b>part-no.</b>		<b>part-no.</b>
61150001		61150005



**RM8 -5018 C81 01**

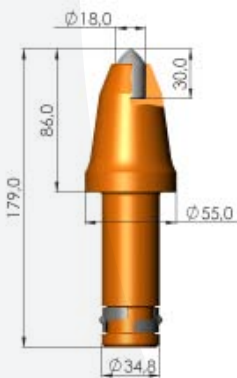


**RM8 -5018 C87 01**

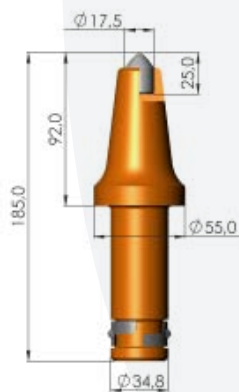


**RM8 -5020 C76 01**

<b>part-no.</b>	<b>part-no.</b>	<b>part-no.</b>
61150003	61150002	61150004



**RM35 -5518 C86 01**



**RM35 -5518 C92 01**



**RM35 -5518 C102 01**

<b>part-no.</b>	<b>part-no.</b>	<b>part-no.</b>
61150006	61150007	61150008



# Mining / Rotary Drill Bits

## Type description for E6 Hard Materials Drill Bits and PCD-Drill Bits

DB 2 / 32 M16 m N 01

→ Type Number

→ Cutting angle (P = positiv; O = neutral; N = negativ)

→ f = female thread; m = male thread

→ Coupling type (thread; VK = square; R = Round Shank;

A = Wedge Shank; K = conus)

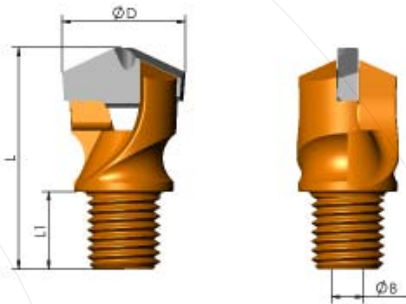
→ Cutting diameter (mm)

→ Number of cutting wings

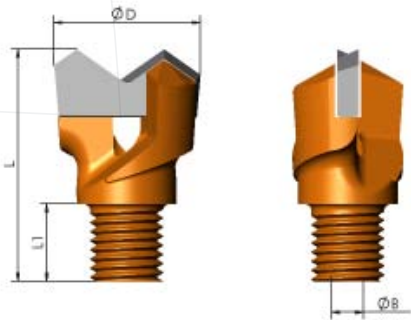
→ DB = Drill Bit; PCD = Poly Crystalline Diamonds



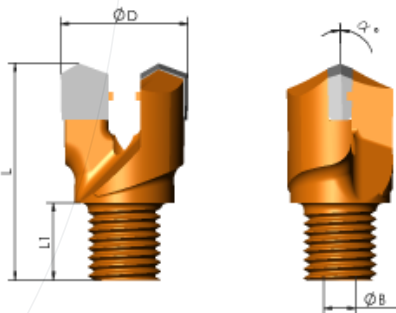




part-no.	description	Ø D (mm)	L (mm)	L1 (mm)	thread	Ø B (mm)
22310026	DB 2/27 M16 m O 01	27,0	48,7	17,0	M16	7,0
22310028	DB 2/32 M16 m O 02	32,0	52,0	17,0	M16	7,0

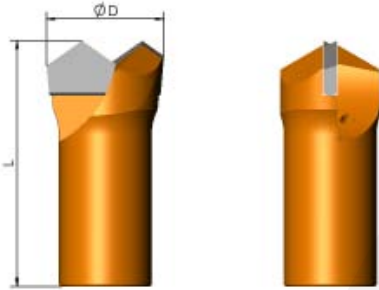


part-no.	description	Ø D (mm)	L (mm)	L1 (mm)	thread	Ø B (mm)
22310027	DB 2/32 M16 m O 01	32,5	51,0	17,0	M16	7,0

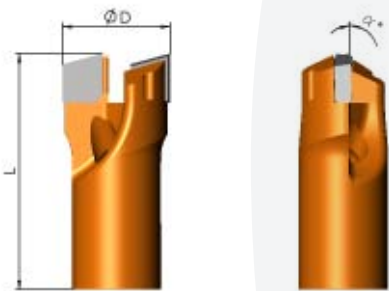


part-no.	description	Ø D (mm)	L (mm)	L1 (mm)	thread	Ø B (mm)	α°
22310190	DB 2/27 M16 m N 01	27,0	47,5	17,0	M16	7,0	neg.
22310100	DB 2/28 M16 m N 01	28,0	47,5	17,0	M16	7,0	neg.
22310098	DB 2/32 M16 m N 01	32,0	49,0	17,0	M16	7,0	neg.

# 30 Mining / Rotary Drill Bits



part-no.	description	Ø D (mm)	L (mm)	thread
22310228	DB 2/32 B17 f O 05	32,5	72,0	B17
22310187	DB 2/38 A25 f O 01	38,0	90,0	R1" right
22310002	DB 2/43 A25 f O 01	43,0	90,0	R1" right



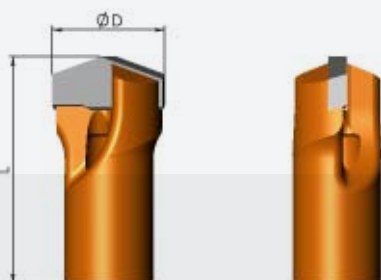
part-no.	description	Ø D (mm)	L (mm)	thread	α°
61020311	DB 2/25 Rd16 f N 01	24,6	53,0	Rd 16	neg.
61020312	DB 2/26 Rd16 f N 01	25,8	53,3	Rd 16	neg.
61020313	DB 2/37 Rd20 f O 01	36,5	71,0	Rd 20	0



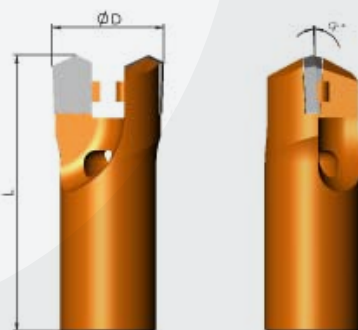
# 31 Mining / Rotary Drill Bits



Photo: RAG Deutsche Steinkohle



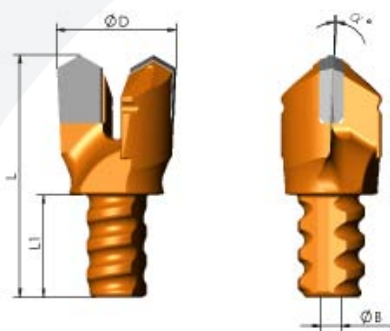
part-no.	description	$\varnothing D$ (mm)	L (mm)	thread
61020314	DB 2/26 Rd16 f O 01	25,6	50,9	Rd 16



part-no.	description	$\varnothing D$ (mm)	L (mm)	thread	$\alpha^\circ$
61020310	DB 2/28 Rd20 f N 01	28,0	69,0	Rd 20	neg.



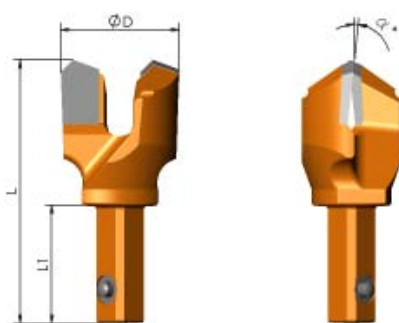
# 32 Mining / Rotary Drill Bits



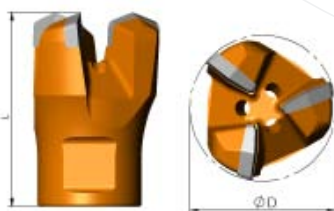
part-no.	description	$\varnothing D$ (mm)	L (mm)	L <sub>1</sub> (mm)	thread	$\varnothing B$ (mm)	$\alpha^\circ$
22350043	DB 2/34 KW20 m P 01	34,0	71,0	30,0	Rd 20 x 3 Gg./1"	6,0	pos.
22350049	DB 2/35 KW20 m P 04	35,0	71,0	30,0		6,0	pos.
22350083	DB 2/36 KW20 m P 01	36,0	71,0	30,0		6,0	pos.
22350084	DB 2/38 KW20 m P 02	38,0	71,0	30,0		6,0	pos.
22350082	DB 2/40 KW20 m P 03	40,0	70,5	30,0		6,0	pos.
22350070	DB 2/42 KW20 m P 02	42,0	71,0	30,0		6,0	pos.
22350065	DB 2/44 KW20 m P 01	44,0	73,4	30,0		—	pos.
22350067	DB 2/46 KW20 m O 03	46,0	75,0	30,0		—	0
22350078	DB 2/46 KW20 m O 04	46,0	75,0	30,0		6,5	0



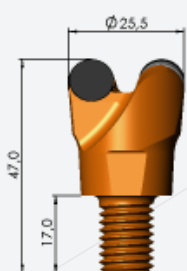
# 3 Mining / Rotary Drill Bits



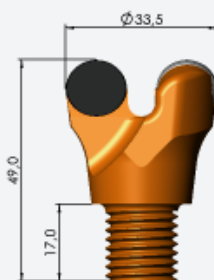
part-no.	description	Ø D (mm)	L (mm)	L1 (mm)	VK (mm)	α°
22350026	DB 2/38 VK m P 01	38,2	85,0	38,0	VK 13	pos.
22350028	DB 2/40 VK m P 01	40,6	85,0	38,0	VK 13	pos.
22350046	DB 2/60 VK m P 01	60,0	98,0	45,0	VK 24	pos.



part-no.	description	Ø D (mm)	L (mm)	thread
22310036	DB 3/65 M39 f N 01	65,0	95,0	M39
22310038	DB 3/65 Tr39 f N 01	65,0	95,0	Tr39 x 12P6
22310040	DB 3/80 M39 f N 01	80,0	110,0	M39
22310044	DB 3/80 M45 f N 01	80,0	135,0	M45
22310046	DB 3/95 M45 f N 01	95,0	140,0	M45
22310042	DB 3/105 M45 f N 01	105,0	140,0	M45

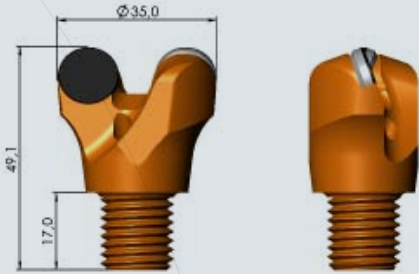


**PCD 2/25 M12 m N 01**



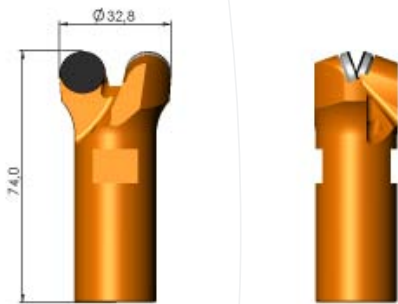
**PCD 2/33 M16 m N 01**

<b>part-no.</b>	<b>part-no.</b>
22340109	22340044



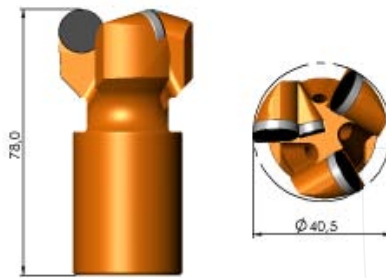
**PCD 2/35 M16 m N 02**

<b>part-no.</b>
22340108



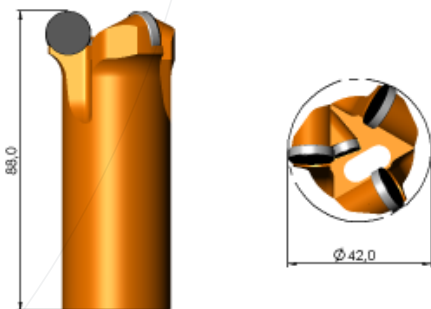
**PCD 2/32 B17 f N 01**

<b>part-no.</b>
22340012



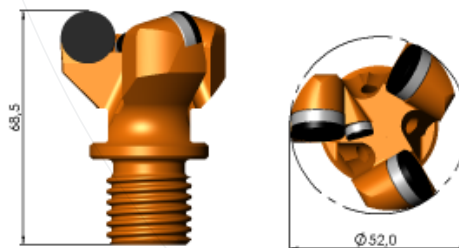
**PCD 3/40 A25 f N 01**

<b>part-no.</b>
22340088



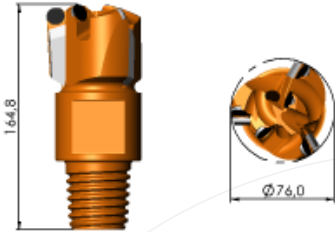
**PCD 3/42 K f N 01**

<b>part-no.</b>
22340063



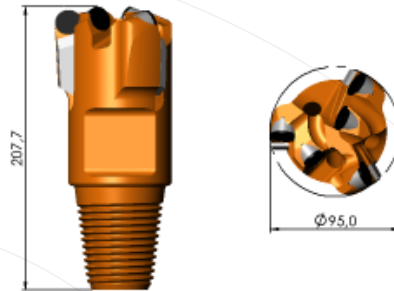
**PCD 3/52 Rd25 m N 01**

<b>part-no.</b>
22340081



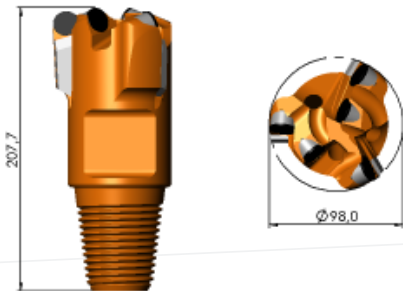
**PCD 3/76 Gg46 m N 02**

part-no.
22340107



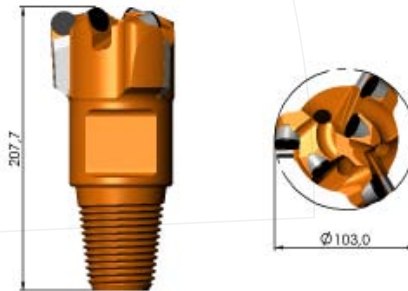
**PCD 3/95 API m N 02**

part-no.
22340102



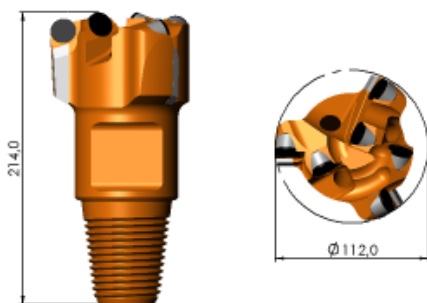
**PCD 3/98 API m N 02**

part-no.
22340104



**PCD 3/103 API m N 02**

part-no.
22340106



**PCD 3/112 API m N 01**

part-no.
22340105



# 37 Mining / Dolomit Drilling System



Each **Dolomite Drilling System** consists of **Pilot Bit, Reamers, Pin** and **Rod Connector**. Components can be varied to meet the required bore hole diameter.

## Drilling Diameter 80 - 115 mm

### System M39 / Pilot Bits and Reamers

### System M39 / Pins

part-no.	type	description	Ø D (mm)	part-no.	description	required for number of reamers
22310036	Pilot Bit	DB 3/65 M39 f N 01	65,0	24020061	AZ M39 -1	1
22380016	Reamer *	NS 3 / 80 F / 39	80,0	24020063	AZ M39 -2	2
22380004	Reamer *	NS 3 / 95 / 39	95,0	24020065	AZ M39 -3	3
22380001	Reamer *	NS 3 / 105 / 39	105,0	24020066	AZ M39 -4	4
22380002	Reamer *	NS 3 / 115 / 39	115,0			

\* special **Reamers** for other drilling diameters available upon request

## Drilling Diameter 125 - 200 mm

### System M45 / Pilot Bits and Reamers

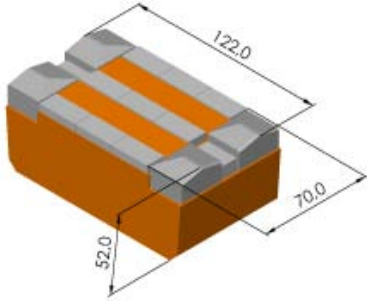
### System M45 / Pins

part-no.	type	description	Ø D (mm)	part-no.	description	required for number of reamers
22310046	Pilot Bit	DB 3/95 M45 f N 01	95,0	24020069	AZ M45 -1	1
22380023	Reamer *	NS 3 / 125 FV / 45	125,0	24020070	AZ M45 -2	2
22380013	Reamer *	NS 3 / 150 / 45	150,0	24020071	AZ M45 -3	3
22380015	Reamer *	NS 3 / 175 / 45	175,0	24020072	AZ M45 -4	4
22380005	Reamer *	NS 3 / 200 / 45	200,0			

\* special **Reamers** for other drilling diameters available upon request

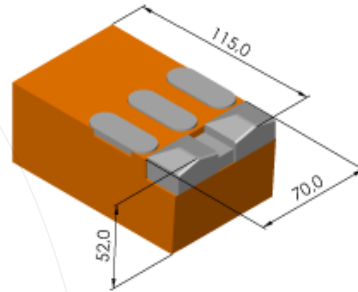
For appropriate **Rod Connectors** please specify connection thread, male/female thread type as well as rod diameter. All commonly used thread types are available.

# 38 Recycling Tools



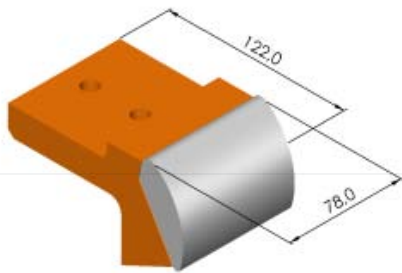
**Morbark 122 x 70 x 52**

part-no.
14410067



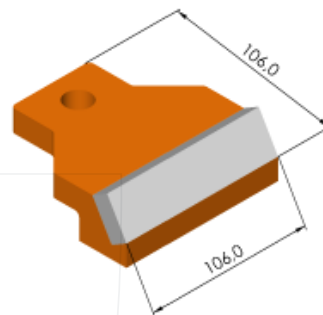
**Morbark 115 x 70 x 52**

part-no.
14410058



**Stone Crusher 122 x 78 x 73**

part-no.
14020020



**Stone Crusher 106 x 106 x 38**

part-no.
14020011





**E6 Hard Materials**

Element Six GmbH  
Städeweg 12 - 24  
36151 Burghaun  
Germany

Tel: +49 6652 82-300

Fax: +49 6652 82-390

Email: [hm@e6.com](mailto:hm@e6.com)

Sales Office

Production Plant

Sales Office

[www.e6.com](http://www.e6.com)

Production Plant

Production Plant