



## DIAMOND PRODUCTS CATALOG

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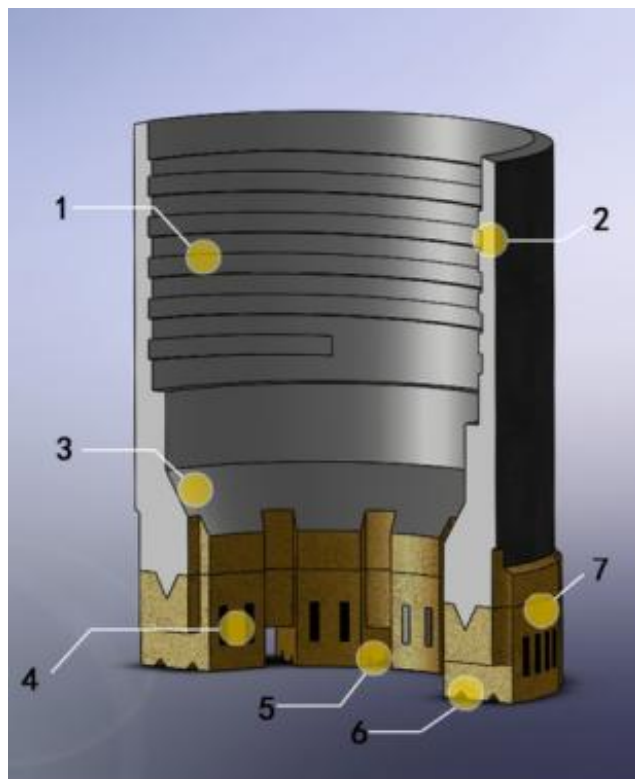
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# Bit structure



No.	Item Description	Function
1	Threads	High-precision CNC lathe processing
2	Bit Body	High quality alloy steel
3	Block-Core Lifter Case	Used to support the Core Lifter Case after the core breaks
4	Diamond Polycrystalline	High wear ratio protect the diameter to increase the stability of the bit
5	Waterway	Control water-flow to cool and remove rock dust
6	Profile	Guaranteed to start working quickly with new drill bits
7	Crown	Pre-alloyed powder is used to strongly wrap and hold diamonds and cut rocks

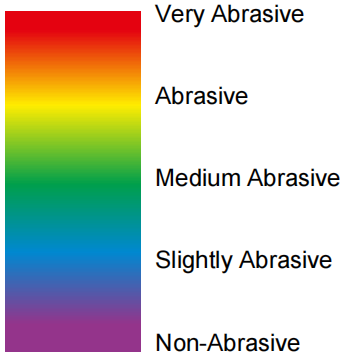
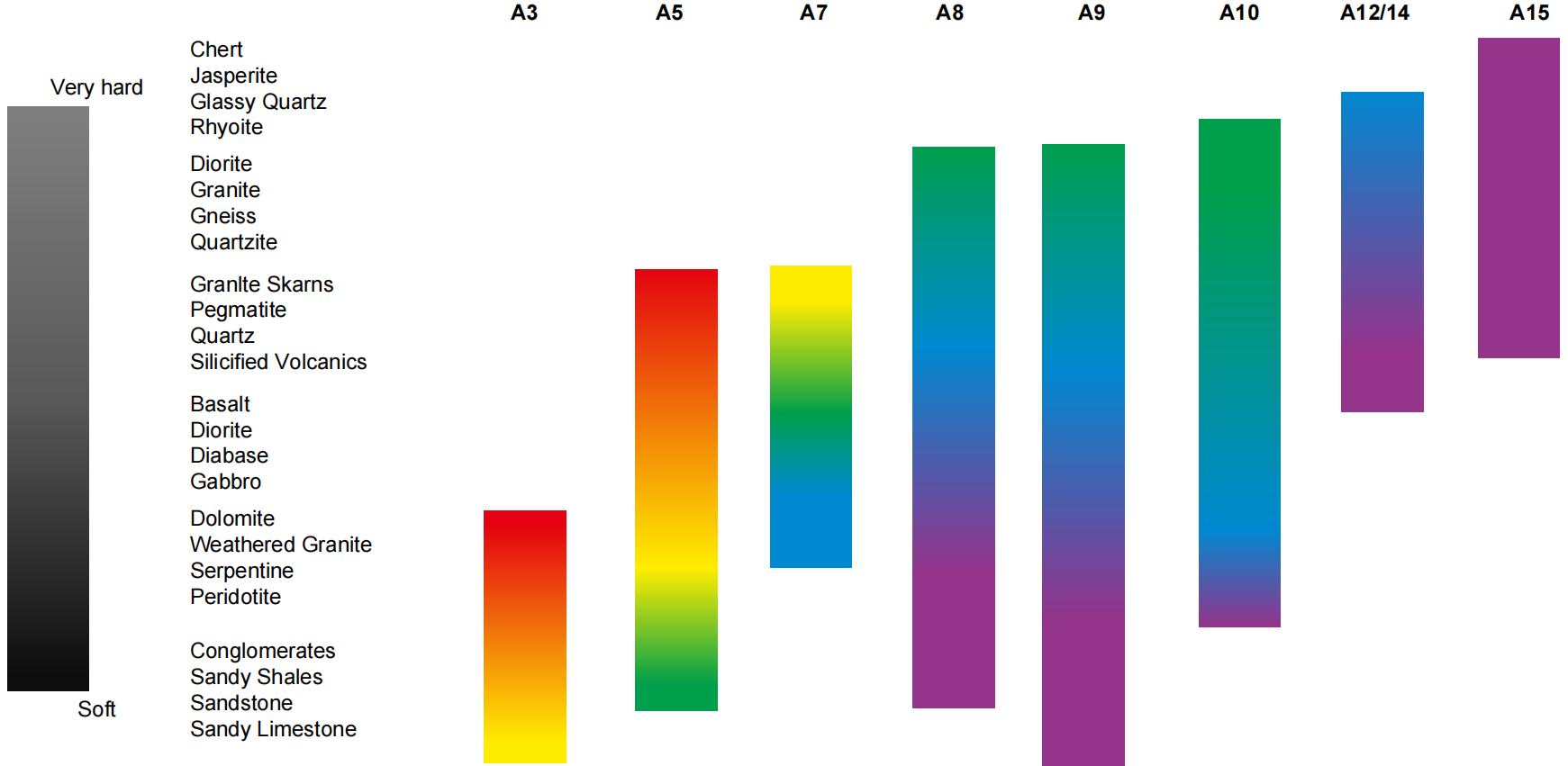
# Bit Matrix Chart



Bit Matrix No.	Rock Features	Rock Type	Hardness
A2	Extremely abrasive, highly fractured	Wear-resistant sandstone, broken wear-resistant sandstone	
A3	Medium soft, abrasive, fractured	Broken wear-resistant sandstone, sandy shale, limestone, threshite	
A4	Medium soft-hard, abrasive, fractured	Sandy shale, limestone, threshite, gabbro	
A5	Medium hard-hard, polishing+mixed	Pyroxene, sorite, gabbro, diabase	
A6	Medium hard-hard, polishing+mixed	Threshold, gabbro, diabase, basalt, mica schist	
A7	Medium hard-very hard, moderately abrasive	Gabbro, diabase, basalt, mica schist, siltstone, granite	
A8	Hard-very hard, polishing	Coarse-grained basalt, mica schist, siltstone, granite, hematite, basalt, hard quartzite	
A9	Hard-very hard, slightly abrasive	Hematite, Basalt, Hard Quartzite, Quartz Conglomerate, Strip Iron Ore	
A10	Very hard-extremely hard, slightly abrasive	Hard Quartzite, Quartz Conglomerate, Bar Iron Ore, Taconite	
A12/14	Extremely hard, non-abrasive, fine grain, very competent	Bar Iron Ore, Taconite, Quartzite	
A15	The hardest	Iron cement, quartzite, black silicate	

The Bits with A series is suggested with 12mm crown height

# Bit Abrasiveness



# Bit Matrix Numbers, Mohs Hardness and Rock Type Chart










HE Series	Mohs Hardness	ROCKFEATURES	ROCK TYPE	Hardness
<b>HE3</b>	3.0-5.5	Soft	Sandstone,Sandy Shale,Limestone,Sandy Limestone,Conglomerates,Peridotite,Serpentine,Weathered Granite,Dolomite	
<b>HE5</b>	4.0-6.0	Soft to Medium Hard	Abrasive Coarse-Grained Granite, Basalt,Pegmatite,Skarns,Rhyolite	
<b>HE7</b>	5.0-6.5	Medium to Hard	Granite,Pegmatite,Skarns,Rhyolite,Jasperite,Glassy Quartz,Basalt	
<b>HE9</b>	6.0-7.5	Hard to Very Hard	Granite,Syenite,Quartz,Diorite,Gneiss,Silicified Volcanics,Diabase,Gabbro,Quartz,Chert,Basalt	
<b>HE11</b>	6.5-7.5	Hard to Extremely Hard	Basalt, Felsic, Volcanic Rock,Diorite,Silicified Volcanics,Quartz,Quartz,Chert	
<b>HE13</b>	7.0-8.0	Hardest	Calcite,Quartzite,Taconite	

The Bits with HE series is suggested with 12mm or 16mm crown height

# Competitive Cross Reference

ROCKFEATURES	ROCK TYPE	Mohs Hardness	HE Series	BOART LONGYEAR	HAYDEN	FORDIA
Soft	Sandstone,Sandy Shale,Limestone,Sandy Limestone,Conglomerates,Peridotite,Serpentine,Weathered Granite,Dolomite	3.0-5.5	<b>HE3</b>	1, 2 Grey, Purple, Blue, Green	1, 2, 3	HERO3
Soft to Medium Hard	Abrasive Coarse-Grained Granite,Basalt,Pegmatite,Skarns,Rhyolite	4.0-6.0	<b>HE5</b>	2, 4, 6 Grey, Blue, Green, Yellow	3, 4, 5	HERO5
Medium to Hard	granite,Pegmatite,Skarns,Rhyolite,Jasperite,Glassy Quartz,Basalt	5.0-6.5	<b>HE7</b>	6, 6ABR, 7 Grey, Blue, Green, Yellow	5, 6, 7	HERO7
Hard to Very Hard	Granite,Syenite,Quartz,Diorite,Gneiss,Silicified Volcanics,Diabase,Gabbro,Quartz,Chert,Basalt	6.0-7.5	<b>HE9</b>	7,7ABR Grey, Yellow, Orange	8, 9	HERO9
Hard to Extremely Hard	Basalt, Felsic,Volcanic Rock,Diorite,Silicified Volcanics,Quartz,Quartz,Chert	6.5-7.5	<b>HE11</b>	8, 8ABR, 8COM, 9 Grey, Yellow, Orange, Red	9, 10, 12/14	HERO11
Hardest	Calcite,Quartzite,Taconite	7.0-8.0	<b>HE13</b>	9,9COM 10,10COM Orange, Red, Black	12/14, 15	HERO13

# Water Shapes

WATERSHAPES	APPLICATION(ROCK CHARACTERISTICS)
 <p>STD(Channel Flushing)</p>	<p>STD Type: standard design,suitable for a wide range of formations</p>
 <p>WD(Wedge)</p>	<p>WD Type: increased water flow; Improving cutting speed; Suitable for rock broken and high abrasive stratum</p>
 <p>TB(Turbo)</p>	<p>TB Type: Suitable for high-speed cutting and drilling to improve the pressure on the working face; Suitable for hard formations</p>
 <p>RFD(Round face discharge)</p>	<p>RFD Type: the modified design reduces the scouring of the core by water and improves the core extraction rate;Suitable for fractured or granular rock formations.</p>
 <p>EFD(Elongated face discharge)</p>	<p>EFD Type: Elongated FD water hole has better effect than round water hole,and it is more effective to prevent water plugging and drilling burning.</p>
 <p>SP(Sand Profile)</p>	<p>SP Type: the design combines the advantages of standardW profile surface and bottom spray lip surface, the process is simple and reliable;Suitable for broken or hard formations</p>
 <p>VP(Vortex Profile)</p>	<p>VP Type: I mproves working efficiency by reducing the interaction time between the hole and the core; Suitable for soft to medium hard formations.</p>

# Crown Profiles

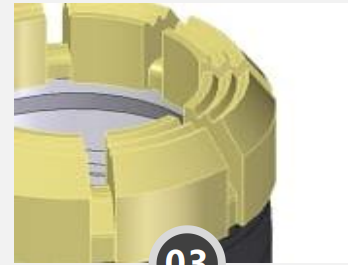
According to different formation and drilling conditions, different crown profiles are offered

**V**

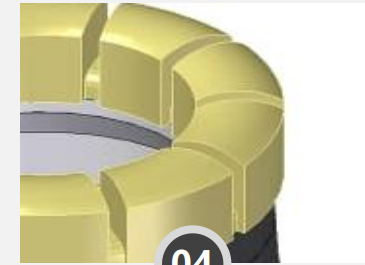
V-Ring Profile

**STD Profile****F**

Flat-Face Profile

**TP**

Tapered Profile

**U**Semi-Round  
Profile

# Product Numbering Rules and Description

Product Description(Impregnated Diamond Bit):  
 Sample:NWL-A10-Y12-W10-STD@215

NWL	A10	Y12	W10	STD	@215
Bit Types B W L , N W L H W L , P W L  W L = Q	Bit Matrix Numbers 2-10 12/14,15	Crown Height 12mm(Y12) 14mm(Y14) 16mm(Y16) 20mm(Y20)	Waterways numbers: BQ(W7),STD NQ/HQ (W10),STD Special quantity is customized	Watershapes STD,WD,TB,RFD,EFD See Page3	Waterway Sizes @125(NWL Standard) @187(HWL Standard) @215 @345 Unspecified, all in accordance with Standard Waterway size

Product Description(Reaming Shell):  
 Sample:SHELL-NWL-IMP-DB

SHELL	NWL	IMP	S
Item: Shell/Reamer	Shell Types: BWL,NWL,HWL,PWL  W L = Q	How the diamond is set? IMP: impregnated SS:Surface Set	System Types: SL:Single ,DB:Double, TR:Triple Unspecified, all with single type

Specialty customized diamond products are acceptable,welcome to send requirements for a quotation.

Crown Profiles: V-Ring Profile (V) is the standard and the other has to be customized

# Product Numbering Rules and Description

## Product Description(Rod Shoe & Casing Shoe):

Sample: CAS-NW-Y6-W10

CAS	NW	Y13	W10
Item: Casing/Rod Shoes	Casing/Rod Types:  AW, NW, HWT, PW, PWT, NWL, HWL	Crown Height:  6mm(Y6) STD	Waterways numbers: W10 W12 W14 Special quantity is customized

## Product Description(Casing Bit):

Sample: CAS-BIT-NW-A10-Y9-W10

CAS	BIT	NW	A10	Y9	W10
Item: Casing/Rod Shoes	Item:  Bit	Casing/Rod Types:  AW, NW, HWT, PW, PWT	Bit Matrix Numbers: A2-10, 12/14, 15, HE	Crown Height 12mm(Y12) 14mm(Y14) 16mm(Y16) 20mm(Y20)	Waterways numbers: W10 W12 W14 Special quantity is customized

Specialty customized diamond products are acceptable, welcome to send requirements for a quotation.

