

Tooling by **DIJET**®

Milling & Drilling

Vol.3
(English Ver.)

Carbide Grades

Modular Head Series

Indexable Tools

Solid Carbide End Mills

Drills

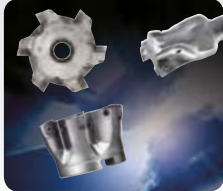
Technical Information

Break Through

YOUR SEARCH FOR WORLD CLASS TOOLS ENDS HERE.



Modular Head Series
B007



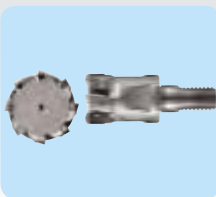
SKS GII
B022, C012



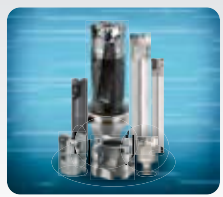
QM MAX
B027, C055



QM MAX GII
B078, C050



QM Mill
B088, C092



High Feed Diemaster
B012, C033



SKS Extreme
C025



Hepta Mill
C106



Mirror Series
B153, C172



Super Diemaster
B111, C140



Aero Chipper
B145, C220



SMSR
B186



Solide Carbide E/M for
Heat Resistant Alloy
D006



Solide Carbide E/M for
Aluminium
D011



TA-EZ Drill
E004



Sigma Drill Hard
E010

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
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About Safety When Using Cutting Tool Products

1. When Using cutting tool products

In accordance with the Product Liability Law (PL law) enforced on July 1st 1995, our company has attached warning labels and caution labels to the packaging of our applicable products. However, there are no specific caution notes displayed on the tools themselves. Before handling or using any cutting tool or cutting tool material, please read the sections "About safety when using cutting tool products" in this catalogue. In addition, please teach the information stated in these sections to all workers as part of the safety education at your company.

 Warning	You can be killed or seriously injured if you don't follow instructions.
 Caution	You can be exposed to potential hazardous situation which, if not avoided, may result in minor or moderate injury.

	PROHIBITION - "Do Not"
	COMPULSION - "Do By All Means"

2. Basic Characteristics of Cutting Material.

2-1. Meanings of words used in this catalogue

2-1-1. Cutting tool materials:

General terms such as carbide alloy, cermet, ceramics, sintered CBN, sintered diamond, cermetal etc

2-2. Physical Characteristics

2-2-1. Appearance:

Varies depending on material properties and material type. Example: Gray, black, gold, etc.

2-2-2. Odor:

Odorless

2-2-3. Hardness, Specific Gravity

Material	Hardness (HV)	Gravity
Carbide alloy	500~3000	9~16
Cermet	500~3000	5~9
Ceramic	1000~4000	2~7
Sintered CBN	2000~5000	3~5
Sintered Diamond	8000~12000	3~5
New composite material not including W & Co (Cermetal)	500~3000	5~9
HSS	200~1200	7~9
Alloy steel	200~1200	7~9








2-2-4. Composition:

Including carbides, nitrides and sulfides of W, Ti, Al, Si, Ta, Nb, B, V, etc. as well as metal components of Fe, Co, Ni, Cr, Mo, etc.



About Safety When Using Cutting Tool Products










3. Cautions regarding the handling of tool materials

 Warning	
	① Cutting tool materials have the characteristics of being extremely hard yet brittle. Therefore may be broken by impact or by overtightening.
	② Since carbide tool materials have high specific gravities, be carefull to handle large products or large quantities as heavy materials.
	③ If a laser or electric pen, etc. is used to mark carbide material or products, crack may form. Do not mark sections which may be subject to stress.
	④ The thermal expansion of carbide tool materials is different from that of metal materials. Because of this, for shrink-fit or cooling-fit products, if the usage temperature is slightly higher (lower) than the specified temperature, cracking may occure.
	⑤ When brazing hard tool materials, if the temperature is too high or too low from the melting point of the brazing material, loosening and breakage may occur.
	⑥ Please note that products in this catalogue are continously under study and are improved. The products therefore may be changed in the future and thus become different from the catalogue. Stock status is mentioned for the products in this catalogue. However, please note that the products here may be replaced by the new grades and products in the future.
	⑦ When cutting tool materials are grounded or heated, dust or mist (smoke) occurs. If a lot of it is inhaled, swallowed or comes in contact with eyes or skin, it could result injury to the body. When machining, be careful to avoid exposing your body to the dust or mist; it is recommended that localized ventilation equipment to be used and that a protective mask, protective goggles, and protective gloves be worn. In addition, if the dust, etc. comes in contact with hands, wash them thoroughly with soap and water. Do not drink or eat in the work area, and wash your hands before drinking or eating. Dust on clothes should not be shaken out, use a vaccum, etc. to remove the dust or wash the clothes in a washing machine. If the cobalt contain in the cutting tool material is touched repeatedly or over a long period of time, it has been reported that it may affect skin, respiratory organs, or heart, etc. For detailed information refer to the MSDS = Material Safety Data Sheet for each material.
 Caution	
	⑧ If cutting tool materials become corroded due to cutting fluid, lubricating agents, or other moisture, their strength will be reduced. Care should be taken regarding storage conditions
	⑨ For carbide tool materials, the strength may be slightly reduced due to the surface conditions. For finishing, always use diamond grinder.
	⑩ Machining hard tool materials on EDM may cause cracks on the surface due to electrons remaining after the EDM operation, resulting in lowering of the toughness. Eliminate these cracks by grinding,etc.

















About Safety When Using Cutting Tool Products

4. Precaution for using cutting tools

General Cutting Tools	 Caution	 Counter plan
	① Misuse or mismatch of working conditions may cause tool breakage or dispersion of broken pieces.	1. Please equip safety items, such as safety glasses and protective gloves. 2. Please use them in the area of our recommended cutting condition (See our catalogue or instruction)
	② Excess impact or heavy wear will increase cutting resistance and may cause tool breakage and dispersion of broken pieces.	1. Please equip safety items, such as safety glasses and protective gloves. 2. Please change tools a bit early for its tool life.
	③ Lack of dynamic balance in high-speed revolution cause vibration and tool-broken.	1. Please equip safety items, such as safety glasses and protective gloves. 2. Please operate test-run before cutting, and confirm that there is no vibration or unusual sound.
	④ Sparks, generation of heat or chips in high temperature during operation may cause fire.	 Counter plan 1. Please don't operate around "Danger Zone", in which area there is some fear of fire or explosion. 2. When oil-coolant is used, please be sure to be enough system for fire-prevention around there.
	 Caution	 Counter plan
	⑤ Direct touch to the sharp cutting edge may cause injury.	When you set up them to the machine or take them out of the case, please wear protective gloves.
	⑥ Dispersion of hearted or prolonged chips may cause injury or burn.	1. Please equip safety items, such as safety glasses and protective gloves. 2. When you get rid of chips, please stop machining at first, and equip protective items before doing it.
⑦ During cutting operation, cutting tools get very hot. Direct touch to tools immediately after operation may cause burn.	Please equip safety items, such as safety glasses and protective gloves.	
⑧ Direct contact to the rough surface on the work may cause injury.	Please don't touch work materials with bare hands.	
Indexable Cutting Tools	 Warning	 Counter plan
	⑨ When inserts or parts are not clamped well, falling off or dispersion may occur and cause injury.	1. Please clean up the insert pocket or fastening parts before setting insert. 2. Please set up the inserts with supplied wrench only, and confirm that the inserts or parts are clamped completely.
	⑩ When indexable tools are used in high-speed revolution or parts may burst out of the body due to centrifugal force.	 Counter plan Please use them in the area of our recommended cutting condition. (see our catalogue or instruction)
⑪ When clamped too tight by supplementary tools like pipe etc, inserts or body may be broken.	 Counter plan Please set up them with supplied wrench only.	



About Safety When Using Cutting Tool Products

Milling Cutters and Other Milling tools	 Warning	 Counter plan
	If cutter lacks dynamic balance, tool breakage or dispersion of broken pieces may occur by vibration.	1. Please use them in the area of recommended cutting condition. (See our catalogue or instruction) 2. Rotating portion and dynamic balancing should be periodically checked to prevent from eccentric rotation or run out due to wear of bearing portion.
	 Caution	 Counter plan
	Since milling cutter have sharp edges, direct contact with bare hands may cause injury.	Please equip safety items such as safety glasses and protective gloves.
Drills	 Warning	 Counter plan
	When drilling through hole with turning work, a kind of disk (reminder parts) sometimes flies out from the end of frilling very fast. It's very dangerous since the disc has sharp edge.	Please equip safety items such as safety glasses, protective gloves, and covers at the chucking.
	 Caution	 Counter plan
	Some micro drills have sharp edge with the top. Direct touch to tools may cause injury.	Please equip safety items such as safety glasses and protective gloves.
Brazed Tools	 Warning	 Counter plan
	When brazing is carried out again and again, the strength of carbide insert is deteriorated and becomes easy to be broken during cutting.	Carbide tools which is brazed several times should not be used because its strength has deteriorated.
	 Caution	 Counter plan
	Dispersion of broken inserts by tools breakage or falling off body may cause injury.	1. Please confirm they are firmly brazed. 2. Please don't use brazed tools in the condition that requires high cutting temperature.
Others	 Warning	 Counter plan
	It is dangerous to use tools except for the fixed application. It may cause damage of tool and machine.	Please use them in the area of our recommended cutting condition. (see our catalogue or instruction)

How To Use This Catalogue

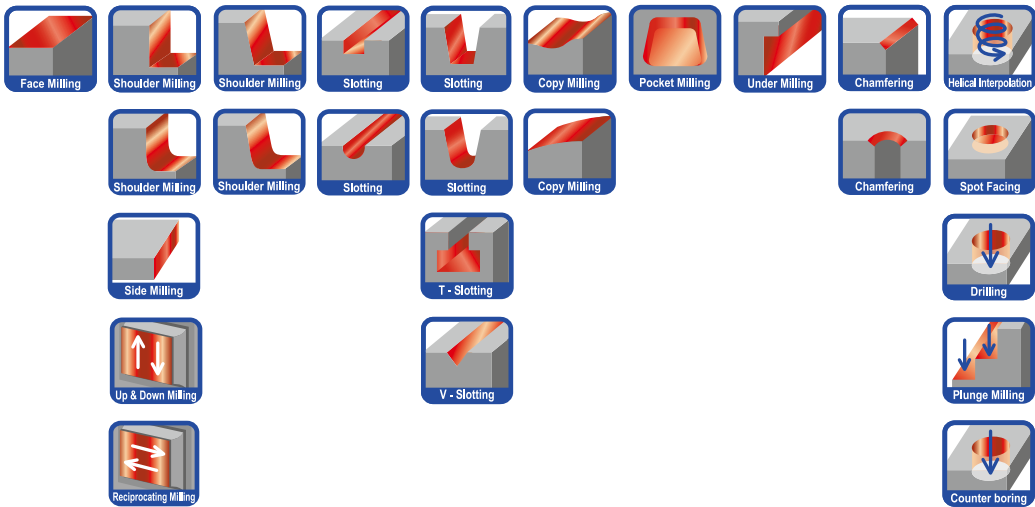
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REGARDING STOCK STATUS

- : Standard stock items
- : Stock in Japan
- ◎ : Soon to be stocked

○ : Soon to be deleted

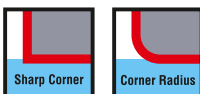
APPLICATION ICONS



GRADE ICONS



CORNER R ICONS



OTHERS



Ultra-rigid "G-body" improved body durability and tool life by 30% or more



Internal coolant hole



Environment-Conscious Products



“Environment-Conscious Products” is authorized Japan Cemented Carbide Tool manufacturer’s Association (JCTMA). JCTMA established the standard for Environment-Conscious Products for the purpose of the global environmental preservation. Dijet has been promoting many “Environment-Conscious Products” since we had joined this program. And also, Dijet has continuously developed this kind of products.

Evaluation Item

New product development concept (60 points)	Tool life (Improve 20%)	15
	Environment road reduction of customer	15
	Energy-saving at the manufacturing	5
	Waste at the manufacturing	5
	Harmful materials at the manufacturing	5
	Weight reduction	5
	Harmful material of the product	5
	Rare metal of the product	5
	Purchasing (Green product, environmental education, etc)	10
	Manufacturing (Energy-Saving, Waste, etc)	15
Environmental activity (40 points)	Packaging material (Improvement of the recycling rate)	5
	Distribution (Low-emission vehicles, ISO 14001)	5
	Waste & Recycling (Collection of used tools & package, etc)	5
Total		100

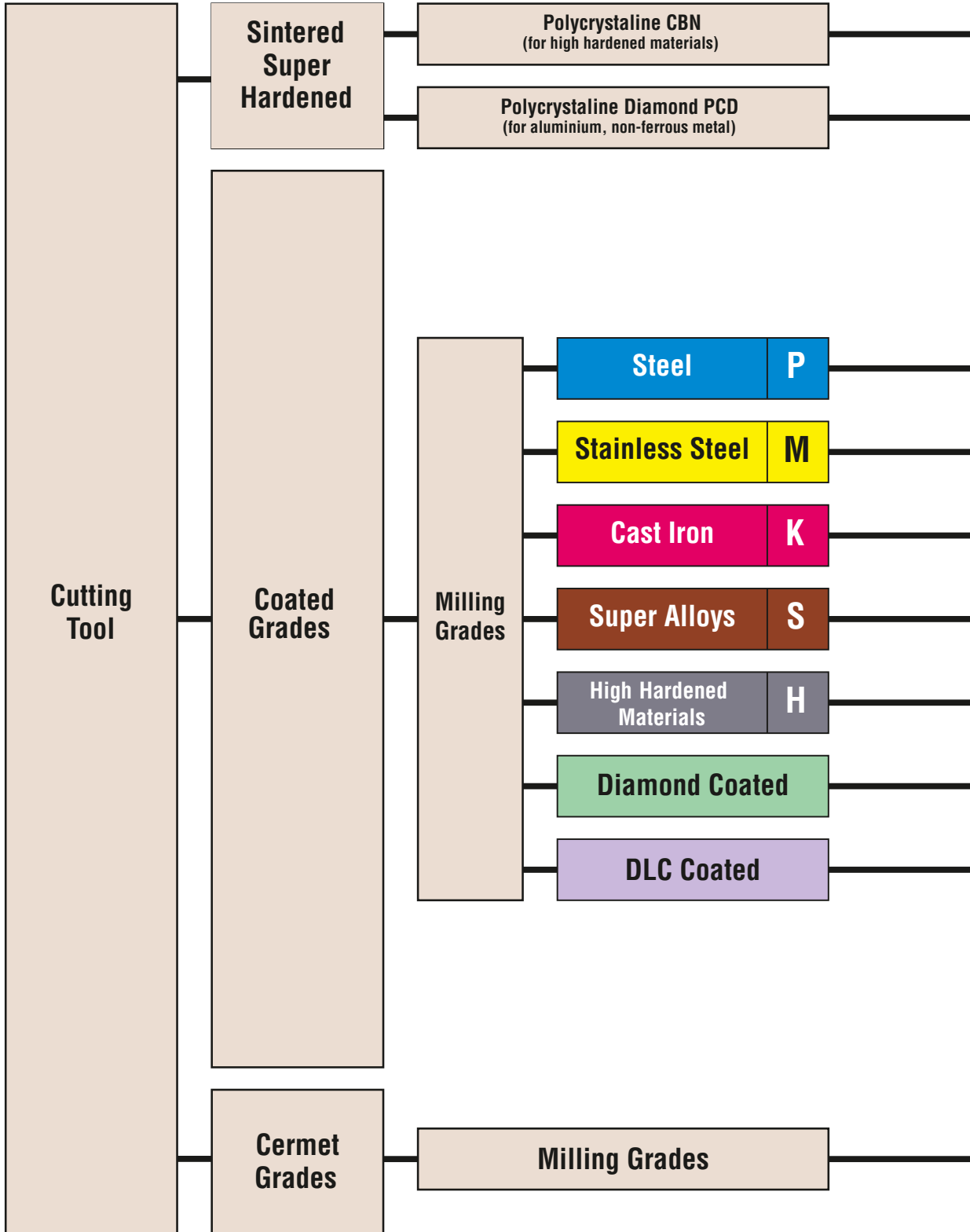
Evaluation Criteria

Environment-conscious products	Over 80	★★★★
	79~60	★★★
	59~40	★

Tooling by **DIJET**®

Carbide Grades

DIJET Grades for Cutting Tools





JBN795 JBN500 JBN300 JBN245

JDA30 JDA735 JDA10 JDA715

DH103 JC8015 JC8118 JC5015 JC5118 JC5040 JC8050 JC7550 JC7560

JC8015 JC8118 JC5015 JC5118 JC8050 JC7550 JC7560

DH103 JC605W JC608X JC8015 JC8118 JC5015

DH103 JC8015 JC8118 JC5015 JC5118 JC8050 JC7550 JC7560

DH102 DH103 DH108 JC8015 JC8118 JC5118

JC10000

JC20003 JC20015

CX75 CX90

DIJET Grades for Turning Tools

ISO classification	P					M				K			
	P01	P10	P20	P30	P40	M10	M20	M30	M40	K01	K10	K20	K30
Coated	DH103							JC8015		DH103			
		JC8015						JC5015		JC605W			
		JC8118						JC5118		JC608X			
		JC5015						JC8050		JC8118			
		JC5118						JC7550		JC8015			
		JC5040						JC7560		JC5015			
		JC8050											
		JC7550											
		JC7560											
	Cermet		CX75										
			CX90					CX75				CX75	

ISO classification	S				H		
	S01	S10	S20	S30	H01	H10	H20
Coated	DH103				DH102		
	JC8015				DH103		
	JC8118				DH108		
	JC5015				JC8015		
	JC5118				JC5118		
	JC8050				JC5118		
	JC7550				JC8118		
	JC7560						

For Finishing of Steel & Cast Iron	
CBN	JBN795
	JBN500
	JBN245
Coated	DH102
	DH103
	JC8015 JC5015

Aluminium · Copper Alloy · Non-ferrous Metal	
PCD	JDA30
	JDA735
	JDA10

Grade Comparison Chart

COATED GRADES FOR MILLING

ISO Codes	DIJET	Mitsubishi	Tungaloy	Sumitomo	Kyocera	Hitachi	Sandvik	Kennametal	NTK	
P	P01	DH103			PR915 PR1005	TH308 TH303 JP4105				
	P10	DH103 JC8015 JC8115	VP15TF MS8015 MP6120	AH710 SH725	AC520U	PR930 PR1225 PR1215	JP4115 PN215 JP4120	GC1010	KC505M KC510M KC515M KC715M	DT4 VM1
	P20	JC8015 JC8118 JC5118	VP15TF VP20RT MP6120	AH120 AH725	ACP200 AC1030U AC530U	PR1230 PR1425 PR1525	IP2000 CY150 P4120	GC15 GC1125	KC522M KC525M KC527M KC610M KC620M KC635M KC715M KC720M KC927M KCPM20	DM4 TM4 QM3
	P30	JC5015 JC5118 JC8118 JC5040	VP20RT VP15TF MP6130	AH9030 AH730 SH730	ACP200 ACP300	PR1230 PR1525 PR1425	JS4045 CY250 PTH30E	GC1130 GC2030 GC34	KC530M KC537M KC725M KC730M KC735M KCMP30 KCPK30	TM4 QM3 DM4
	P40	JC5040 JC8050 JC7560	VP30RT	AH3135 AH740	ACP300		JS4060 PTH40H JM4160	GC2040 GC1145	KC735M	
M	M10	DH103	VP15TF VP10RT		AC520U ACM100	PR1525 PR1225 PR1215	IP50S IP100S	GC1010 GC1105	KC515M KCPM20	DT4 VM1
	M20	JC8015 JC8118	VP20RT VP15TF MP7130	AH120 AH725 SH725	AC1030U AC6040M ACM300	PR1525 PR1225 PR1215	JP4120 CY150	GC15 GC34 GC1115	KC522M KC525M KC610M KC635M KC720M KC927M	DM4 TM4 QM3
	M30	JC8015 JC5118 JC8118	MP7035 MP7130 MP7140	AH630 AH130 AH6030	ACP6040M ACM300 ACP200	PR1125 PR1535	JS4045 CY250 PTH30E	GC1040 GC2030 GC2035	KC530M KC537M KC725M KC730M KC735M KCMP30	DM4 QM3 TM4
	M40	JC8050 JC7560 JC7550	VP30RT MP7035 MP7140	AH645 AH140 AH3135	ACP300 AC6040M ACU300		JM4160 PTH40H	GC1040 GC1145		
K	K01	DH103			AC510U ACK260		TH303 ATH80D ATH10E		KC907M	
	K10	JC8015	VP10RT	AH110 GH110	AC520U ACK260	PR1210 PR1510 PR905	JP4120 PTH13S	GC1020 GC1010	KC514M KC515M KC914M KC917M KCK15	
	K20	JC8015 JC5015 JC8118	VP15TF VP20RT VP10RT	AH120 SH725	AC520U AC1030U ACK280	PR1210 PR1510 PR905	JP4120 CY150	GC1020 GC34	KC520M KC522M KC524M KC527M KC610M KC620M KC635M KC924M KC927M KCPM20	DM4 QM3
	K30	JC5015	VP15TF VP20RT		ACK300		JS4045 CY250		KC537M KCPK30	
S	S01	DH103	MP9005 VP05RT	AH905		PR005S PR1305	PN215 JP9105			DT4
	S10	JC5015 JC8015 JC8118	MP9005 MP9015 MP9020	AH110 AH8005	AC510U	PR1310 PR015S	IP100S JP9115	GC1010 GC1105	KC510M	DT4
	S20	JC5015 JC5118 JC8118	MP9130 MP9015 MP9020	AH120 AH725 AH8015	AC520U	PR015S PR1325	JP4120 PTH30E	GC15 S30T GC1115	KC522M KC525M KC610M	DT4 TM4 DM4
	S30	JC8050 JC7560 JC7550	MP9130	SH730 AH4035		PR1535	JM4160 PTH40H	GC1040 GC2040 GC34	KC725M KCMP30	
H	H01	DH102 DH103	MP8010		AC503U		TH303 TH308 JP4105	GC1010		
	H10	DH108 JC8015	MP8010 VP15TF		AC503U		PN208 PN215 JP4115		KC505M KC510M	
	H20	JC8118 JC5118	VP15TF	AH120			JP4120	GC34		

Carbide Grades

■ CERMET GRADES

ISO Codes	DIJET	Mitsubishi	Tungaloy	Sumitomo	Kyocera	Hitachi	Sandvik	Kennametal	NTK
P	LN10	AP25N VP25N	NS520	T1000A	TN610 PV710			KT1120	T15
	P10 LN10 CX75	AP25N NX2525 NX3035	GT9530	T1500A T1500Z	TN610 PV710	CZ25	CT5015	KT315 KT910	T15
	P20 CX75 CX90	NX2525 MP3025 NX3035	GT9530 NS9530	T1500A T1500Z T3000Z	TN620 PV720 TN90	CH550 CH7030 MZ1000	GC1525	KT5020 KTPK20	C7X
	P30 CX90	NX4545 VP45N MX3030	NS740	T3000Z T4500A T250A		CH7035			C7X N40
M	M10 LN10 CX75	AP25N NX2525 VP25N	NS520	T1000A T1500Z	TN60 PV720 TN620		GC1525	KT315 KT910	C7X T15
	M20 CX75	AP25N NX2525 VP25N	GT9530 NS9530	A1500A A1500Z	TN90 PV720 TN620	CH550 CH7030 MZ1000		KT5020 KTPK20	C7X
	M30	NX4545 MX3030	NS740	T4500A T3000Z		CH7035			C7X N40
K	K01 LN10	AP25N VP25N	NS520	T1000A	PV7005			KT1120	T15
	K10 LN10 CX75	AP25N NX2525 VP25N	GT9530 NS9530	T1500A T1500Z	PV7005 PV710 TN610	CH550 MZ1000	CT5015	KT315 KT910	C7X T15
	K20 CX75	AP25N NX2525 VP25N		T3000Z		CH7030		KT5020 KTPK20	
	K30					CH7035			