

YU-YBD24 AMERICA

BEST VALUE IN THE WORLD OF CUTTING TOOLS

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YG1YUYBD2406002

YG

YGBasiX

***Solid Carbide YGBasix Drills
For General Purpose***



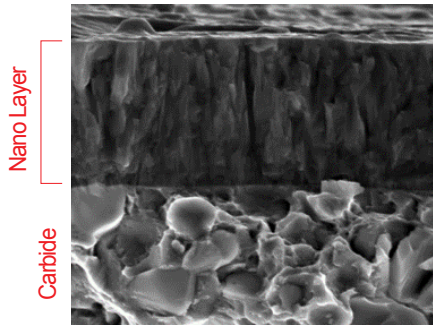
PRODUCT FEATURES

Solid Carbide YGBasix Drills for General Purpose

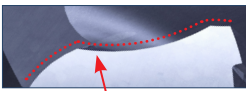
TiAlN Coating

(Upgraded Titanium Aluminum Nitride : nano-Layer coating)

- Higher wear resistance and Lower friction
- Higher Cutting Speed and Feed
- Improved drill Hole Quality

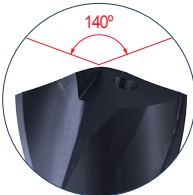


Special surface treatment after coating to reduce friction and better chip flow.

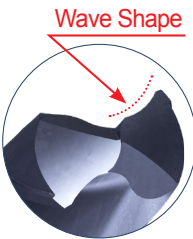


K-Land (negative rake angle) on the cutting edge for Reliable Tool Life

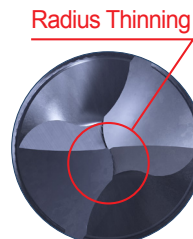
K-Land (negative rake angle)



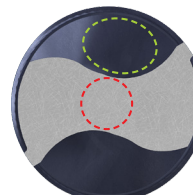
140 Degree Point Angle for good centering and low thrust



Wave shape Cutting Edge will allow low thrust , stable torque and long tool life



Radius Thinning for Self Centering and Chip Breaking



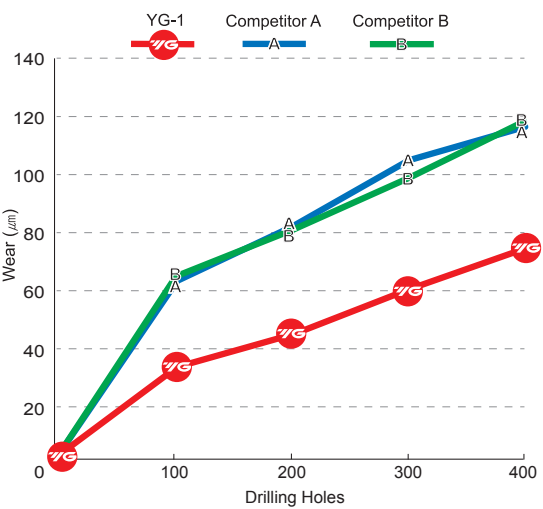
Optimized flute shape for strength of drill and smooth chip evacuation

CASE STUDY

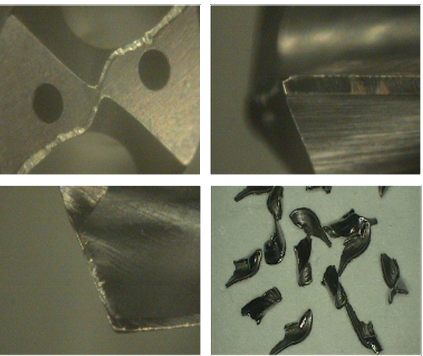
► SOLID CARBIDE YGBasix DRILLS with Coolant Holes

Cutting Condition

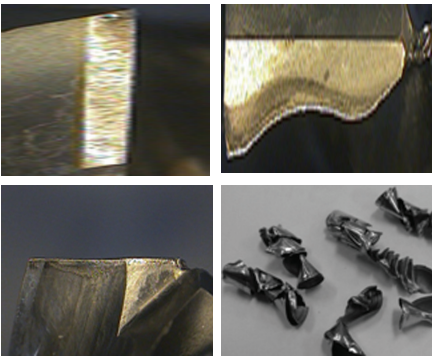
Tool	DB510015
Size	1/16 × 3 × 15 × 55
Work Material	- AISI : H13 - DIN : X40GrMoV51 - JIS : SKD61 - WR : 1.2344 (HRC30)
RPM	14,856 rev./min.
Feed	.0019 inch/rev.
Drilling Depth	.29" (5xD)
Coolant	Wet Cut



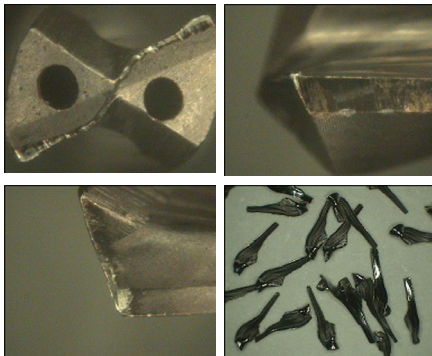
► YG-1 (Total Drilling 400 Holes)



► Competitor A (Total Drilling 400 Holes)



► Competitor B (Total Drilling 400 Holes)



ICON GUIDE

Standard of Tools

DIN 6539 DIN 6537

Tool Material

CARBIDE

Tolerance of Dimension

h6 m7 h7

Point Angle

140°

Coolant Supply Pressure

20 bar

Coating

TiAlN

Cutting Condition Page

SELECTION GUIDE



Solid Carbide YGBasix Drills
For General Purpose



Please visit
globalyg1.com/mat
for material search

SERIES	DB310	DB510	DB301	DB501
DRILLING DEPTH / STANDARD	3XD	5XD	3XD	5XD
LENGTH	SHORT	LONG	SHORT	LONG
SIZE MIN	D3.0	D1.0	D.1181	D.0394
SIZE MAX	D20.0	D20.0	D.7874	D.7874
PAGE	5	9	13	15
SURFACE TREATMENT	TiAIN			



◎ : Excellent ○ : Good

Recommended cutting conditions : P.10~11

ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment		HB	HRC				
P	1	Non-alloy steel	About 0.15% C	Annealed	125					
	2		About 0.45% C	Annealed	190	13	◎	◎	◎	◎
	3		About 0.45% C	Quenched & Tempered	250	25	◎	◎	◎	◎
	4		About 0.75% C	Annealed	270	28	◎	◎	◎	◎
	5		About 0.75% C	Quenched & Tempered	300	32	○	○	○	○
	6	Low alloy steel		Annealed	180	10	◎	◎	◎	◎
	7			Quenched & Tempered	275	29	◎	◎	◎	◎
	8			Quenched & Tempered	300	32	○	○	○	○
	9			Quenched & Tempered	350	38	○	○	○	○
	10	High alloyed steel, and tool steel		Annealed	200	15	◎	◎	◎	◎
	11			Quenched & Tempered	325	35	○	○	○	○
M	12	Stainless steel	Ferritic / Martensitic	Annealed	200	15	○	○	○	○
	13		Martensitic	Quenched & Tempered	240	23	○	○	○	○
	14		Austenitic		180	10				
K	15	Grey cast iron	Pearlitic / ferritic		180	10	◎	◎	◎	◎
	16		Pearlitic (Martensitic)		260	26	○	○	○	○
	17	Nodular cast iron	Ferritic		160	3	◎	◎	◎	◎
	18		Pearlitic		250	25	○	○	○	○
	19	Malleable cast iron	Ferritic		130		◎	◎	◎	◎
N	20		Pearlitic		230	21	○	○	○	○
	21	Aluminum-wrought alloy	Not Curable		60					
	22		Curable	Hardened	100					
	23	Aluminum-cast, alloyed	≤ 12% Si, Not Curable		75					
	24		≤ 12% Si, Curable	Hardened	90					
	25		> 12% Si, Not Curable		130					
	26	Copper and Copper Alloys (Bronze / Brass)	Cutting Alloys, PB>1%		110					
	27		CuZn, CuSnZn (Brass)		90					
	28		CuSn, lead-free copper and electrolytic copper		100					
	29	Non Metallic Materials	Duroplastic, Fiber Reinforced Plastic							
S	30		Rubber, Wood, etc.							
	31	Heat Resistant Super Alloys	Fe Based	Annealed	200	15				
	32			Cured	280	30				
	33			Annealed	250	25				
	34		Ni or Co Based	Cured	350	38				
	35			Cast	320	34				
	36	Titanium Alloys	Pure Titanium		400 Rm					
H	37		Alpha + Beta Alloys	Hardened	1050 Rm					
	38	Hardened steel		Hardened	550	55	○	○	○	○
	39			Hardened	630	60				
	40	Chilled Cast Iron		Cast	400	42				
	41	Hardened Cast Iron		Hardened	550	55				

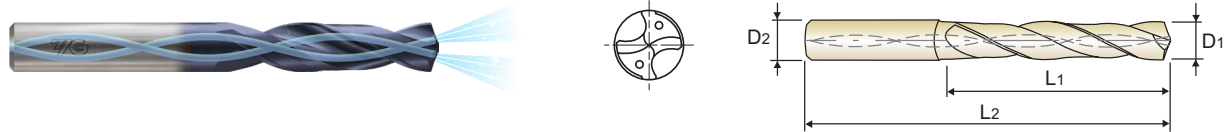
TIAIN-COATED SOLID CARBIDE
YGBASIX DRILLS WITH COOLANT HOLES (3XD)

DB310 SERIES

SHORT

3 × D

- ▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
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- ▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶ Optimized flute shape for strength of drilling and smooth chip evacuation



P.18

Unit : mm											
EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length	EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length
	Fractional	Decimal					Fractional	Decimal			
TiAIN	D1		D2	L1	L2	TiAIN	D1		D2	L1	L2
DB310030		3.0	6	20	62	DB310051		5.1	6	28	66
DB310031		3.1	6	20	62	DB310013F	13/64	5.16	6	28	66
DB310008F	1/8	3.18	6	20	62	DB310052		5.2	6	28	66
DB310032		3.2	6	20	62	DB310053		5.3	6	28	66
DB310033		3.3	6	20	62	DB310054		5.4	6	28	66
DB310034		3.4	6	20	62	DB310055		5.5	6	28	66
DB310035		3.5	6	20	62	DB310014F	7/32	5.56	6	28	66
DB310009F	9/64	3.57	6	20	62	DB310056		5.6	6	28	66
DB310036		3.6	6	20	62	DB310057		5.7	6	28	66
DB310037		3.7	6	20	62	DB310058		5.8	6	28	66
DB310038		3.8	6	24	66	DB310059		5.9	6	28	66
DB310039		3.9	6	24	66	DB310015F	15/64	5.95	6	28	66
DB310010F	5/32	3.97	6	24	66	DB310060		6.0	6	28	66
DB310040		4.0	6	24	66	DB310061		6.1	8	34	79
DB310041		4.1	6	24	66	DB310062		6.2	8	34	79
DB310042		4.2	6	24	66	DB310063		6.3	8	34	79
DB310043		4.3	6	24	66	DB310016F	1/4	6.35	8	34	79
DB310011F	11/64	4.37	6	24	66	DB310064		6.4	8	34	79
DB310044		4.4	6	24	66	DB310065		6.5	8	34	79
DB310045		4.5	6	24	66	DB310006L	0.257	6.53	8	34	79
DB310046		4.6	6	24	66	DB310066		6.6	8	34	79
DB310047		4.7	6	24	66	DB310067		6.7	8	34	79
DB310012F	3/16	4.76	6	28	66	DB310017F	17/64	6.75	8	34	79
DB310048		4.8	6	28	66	DB310068		6.8	8	34	79
DB310049		4.9	6	28	66	DB310069		6.9	8	34	79
DB310050		5.0	6	28	66	DB310009L	0.272	6.91	8	34	79

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P										M				K									
Material Description	Non-alloy steel					Low alloy steel				High alloy steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron					
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				
HRC		13	25	28	32		29	32	38	15	35	15	23	10	10	26	3	25		21				
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180		260	160	250	130	230				
Recommended	◎	◎	◎	◎	○	◎	◎	○	○	◎	○	○	○	○	◎	○	◎	○	◎	○				
ISO	N										S										H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)				Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron		Hardened Cast Iron	
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41			
HRC											15	30	25	38	34			55	60	42	55			
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550			
Recommended																		○						

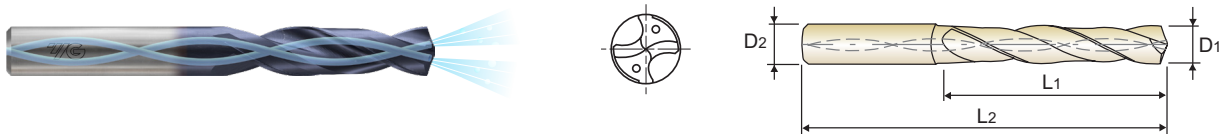
TIAlN-COATED SOLID CARBIDE
YGBASIX DRILLS WITH COOLANT HOLES (3XD)

DB310 SERIES

SHORT

3 × D

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Unit : mm											
EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length	EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length
	Fractional	Decimal					Fractional	Decimal			
TiAlN	D1		D2	L1	L2	TiAlN	D1		D2	L1	L2
DB310070		7.0	8	34	79	DB310090		9.0	10	47	89
DB310071		7.1	8	41	79	DB310091		9.1	10	47	89
DB310018F	9/32	7.14	8	41	79	DB310023F	23/64	9.13	10	47	89
DB310072		7.2	8	41	79	DB310092		9.2	10	47	89
DB310073		7.3	8	41	79	DB310093		9.3	10	47	89
DB310074		7.4	8	41	79	DB310021L	0.368	9.35	10	47	89
DB310075		7.5	8	41	79	DB310094		9.4	10	47	89
DB310019F	19/64	7.54	8	41	79	DB310095		9.5	10	47	89
DB310076		7.6	8	41	79	DB310024F	3/8	9.53	10	47	89
DB310077		7.7	8	41	79	DB310096		9.6	10	47	89
DB310078		7.8	8	41	79	DB310097		9.7	10	47	89
DB310079		7.9	8	41	79	DB310098		9.8	10	47	89
DB310020F	5/16	7.94	8	41	79	DB310099		9.9	10	47	89
DB310080		8.0	8	41	79	DB310025F	25/64	9.92	10	47	89
DB310081		8.1	10	47	89	DB310100		10.0	10	47	89
DB310082		8.2	10	47	89	DB310101		10.1	12	55	102
DB310083		8.3	10	47	89	DB310102		10.2	12	55	102
DB310021F	21/64	8.33	10	47	89	DB310103		10.3	12	55	102
DB310084		8.4	10	47	89	DB310026F	13/32	10.32	12	55	102
DB310017L	0.332	8.43	10	47	89	DB310104		10.4	12	55	102
DB310085		8.5	10	47	89	DB310105		10.5	12	55	102
DB310086		8.6	10	47	89	DB310106		10.6	12	55	102
DB310087		8.7	10	47	89	DB310107		10.7	12	55	102
DB310022F	11/32	8.73	10	47	89	DB310027F	27/64	10.72	12	55	102
DB310088		8.8	10	47	89	DB310108		10.8	12	55	102
DB310089		8.9	10	47	89	DB310109		10.9	12	55	102

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P										M				K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRC		13	25	28	32	10	29	32	38	15	35	15	23	14	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○	○	◎	○	◎	○	◎	○

ISO	N										S						H						
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)				Non Metallic Materials		Heat Resistant Super Alloys				Titanium Alloys		Hardened steel		Chilled Cast Iron		Hardened Cast Iron	
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41		
HRC											15	30	25	38	34			55	60	42	55		
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550		
Recommended																		○					

TIAlN-COATED SOLID CARBIDE
YGBASIX DRILLS WITH COOLANT HOLES (3XD)

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Unit : mm											
EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length	EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length
	Fractional	Decimal					Fractional	Decimal			
TiAlN	D1		D2	L1	L2	TiAlN	D1		D2	L1	L2
DB310110		11.0	12	55	102	DB310132		13.2	14	60	107
DB310111		11.1	12	55	102	DB310133		13.3	14	60	107
DB310028F	7/16	11.11	12	55	102	DB310134		13.4	14	60	107
DB310112		11.2	12	55	102	DB310135		13.5	14	60	107
DB310113		11.3	12	55	102	DB310136		13.6	14	60	107
DB310114		11.4	12	55	102	DB310137		13.7	14	60	107
DB310115		11.5	12	55	102	DB310138		13.8	14	60	107
DB310029F	29/64	11.51	12	55	102	DB310139		13.9	14	60	107
DB310116		11.6	12	55	102	DB310140		14.0	14	60	107
DB310117		11.7	12	55	102	DB310141		14.1	16	65	115
DB310118		11.8	12	55	102	DB310142		14.2	16	65	115
DB310119		11.9	12	55	102	DB310036F	9/16	14.29	16	65	115
DB310030F	15/32	11.91	12	55	102	DB310143		14.3	16	65	115
DB310120		12.0	12	55	102	DB310144		14.4	16	65	115
DB310121		12.1	14	60	107	DB310145		14.5	16	65	115
DB310122		12.2	14	60	107	DB310146		14.6	16	65	115
DB310123		12.3	14	60	107	DB310147		14.7	16	65	115
DB310031F	31/64	12.3	14	60	107	DB310148		14.8	16	65	115
DB310124		12.4	14	60	107	DB310149		14.9	16	65	115
DB310125		12.5	14	60	107	DB310150		15.0	16	65	115
DB310126		12.6	14	60	107	DB310151		15.1	16	65	115
DB310032F	1/2	12.7	14	60	107	DB310152		15.2	16	65	115
DB310128		12.8	14	60	107	DB310153		15.3	16	65	115
DB310129		12.9	14	60	107	DB310154		15.4	16	65	115
DB310130		13.0	14	60	107	DB310155		15.5	16	65	115
DB310131		13.1	14	60	107	DB310156		15.6	16	65	115

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P										M				K								
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21			
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230			
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○	○	◎	○	◎	○	◎	○			
ISO	N										S						H						
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)				Non Metallic Materials		Heat Resistant Super Alloys				Titanium Alloys		Hardened steel		Chilled Cast Iron		Hardened Cast Iron	
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41		
HRc											15	30	25	38	34			55	60	42	55		
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550		
Recommended											○							○					

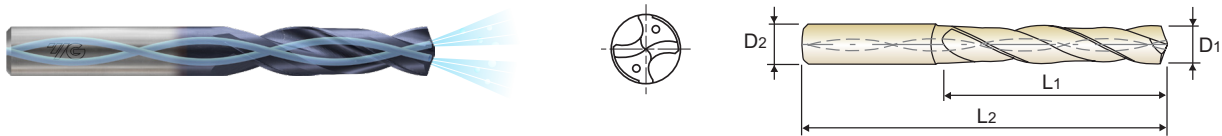
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3 × D

- ▶Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶Self centering and chip breaking by R-thinning
- ▶Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶Optimized flute shape for strength of drilling and smooth chip evacuation



EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length	EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length
	Fractional	Decimal					Fractional	Decimal			
TIAlN	D1		D2	L1	L2	TIAlN	D1		D2	L1	L2
DB310157		15.7	16	65	115	DB310181		18.1	20	79	131
DB310158		15.8	16	65	115	DB310182		18.2	20	79	131
DB310040F	5/8	15.88	16	65	115	DB310183		18.3	20	79	131
DB310159		15.9	16	65	115	DB310184		18.4	20	79	131
DB310160		16.0	16	65	115	DB310185		18.5	20	79	131
DB310161		16.1	18	73	123	DB310186		18.6	20	79	131
DB310162		16.2	18	73	123	DB310187		18.7	20	79	131
DB310163		16.3	18	73	123	DB310188		18.8	20	79	131
DB310164		16.4	18	73	123	DB310189		18.9	20	79	131
DB310165		16.5	18	73	123	DB310190		19.0	20	79	131
DB310166		16.6	18	73	123	DB310048F	3/4	19.05	20	79	131
DB310167		16.7	18	73	123	DB310191		19.1	20	79	131
DB310168		16.8	18	73	123	DB310192		19.2	20	79	131
DB310169		16.9	18	73	123	DB310193		19.3	20	79	131
DB310170		17.0	18	73	123	DB310194		19.4	20	79	131
DB310171		17.1	18	73	123	DB310195		19.5	20	79	131
DB310172		17.2	18	73	123	DB310196		19.6	20	79	131
DB310173		17.3	18	73	123	DB310197		19.7	20	79	131
DB310174		17.4	18	73	123	DB310198		19.8	20	79	131
DB310044F	11/16	17.46	18	73	123	DB310199		19.9	20	79	131
DB310175		17.5	18	73	123	DB310200		20.0	20	79	131
DB310176		17.6	18	73	123						
DB310177		17.7	18	73	123						
DB310178		17.8	18	73	123						
DB310179		17.9	18	73	123						
DB310180		18.0	18	73	123						

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P										M				K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRC		13	25	28	32		29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎	◎	○	◎	◎	○	○	◎	○	○	○	◎	◎	○	◎	◎	◎	○

ISO	N										S						H						
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)		Non Metallic Materials			Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron		Hardened Cast Iron	
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41		
HRC											15	30	25	38	34			55	60	42	55		
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550		
Recommended																		○					

TIAlN-COATED SOLID CARBIDE
YGBASIX DRILLS WITH COOLANT HOLES (5XD)

DB510 SERIES

LONG

5 × D

- ▶Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶Self centering and chip breaking by R-thinning
- ▶Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶Optimized flute shape for strength of drilling and smooth chip evacuation



EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length	EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length
	Fractional	Decimal					Fractional	Decimal			
TIAlN	D1		D2	L1	L2	TIAlN	D1		D2	L1	L2
DB510010		1.0	3	8	55	DB510033		3.3	6	28	66
DB510011		1.1	3	12	55	DB510034		3.4	6	28	66
DB510012		1.2	3	12	55	DB510035		3.5	6	28	66
DB510013		1.3	3	12	55	DB510009F	9/64	3.57	6	28	66
DB510014		1.4	3	12	55	DB510036		3.6	6	28	66
DB510015		1.5	3	16	55	DB510037		3.7	6	28	66
DB510004F	1/16	1.59	3	16	55	DB510038		3.8	6	36	74
DB510016		1.6	3	16	55	DB510039		3.9	6	36	74
DB510017		1.7	3	16	55	DB510010F	5/32	3.97	6	36	74
DB510018		1.8	3	16	55	DB510040		4.0	6	36	74
DB510019		1.9	3	16	55	DB510041		4.1	6	36	74
DB510005F	5/64	1.98	3	16	55	DB510042		4.2	6	36	74
DB510020		2.0	4	21	57	DB510043		4.3	6	36	74
DB510021		2.1	4	21	57	DB510011F	11/64	4.37	6	36	74
DB510022		2.2	4	21	57	DB510044		4.4	6	36	74
DB510023		2.3	4	21	57	DB510045		4.5	6	36	74
DB510006F	3/32	2.38	4	21	57	DB510046		4.6	6	36	74
DB510024		2.4	4	21	57	DB510047		4.7	6	36	74
DB510025		2.5	4	21	57	DB510012F	3/16	4.76	6	44	82
DB510026		2.6	4	21	57	DB510048		4.8	6	44	82
DB510027		2.7	4	21	57	DB510049		4.9	6	44	82
DB510007F	7/64	2.78	4	21	57	DB510050		5.0	6	44	82
DB510028		2.8	4	21	57	DB510051		5.1	6	44	82
DB510029		2.9	4	21	57	DB510013F	13/64	5.16	6	44	82
DB510030		3.0	6	28	66	DB510052		5.2	6	44	82
DB510031		3.1	6	28	66	DB510053		5.3	6	44	82
DB510008F	1/8	3.18	6	28	66	DB510054		5.4	6	44	82
DB510032		3.2	6	28	66	DB510055		5.5	6	44	82

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P										M				K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRC		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎	◎	○	◎	◎	○	○	◎	○	○	○	○	◎	○	◎	○	◎	○

ISO	N										S						H						
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron		Hardened Cast Iron	
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41		
HRC											15	30	25	38	34			55	60	42	55		
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550		
Recommended																		○					

**TIAlN-COATED SOLID CARBIDE
YGBASIX DRILLS WITH COOLANT HOLES (5XD)**

DB510 SERIES

LONG

5 × D

- ▶Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶Self centering and chip breaking by R-thinning
- ▶Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶Optimized flute shape for strength of drilling and smooth chip evacuation



Unit : mm											
EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length	EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length
	Fractional	Decimal					Fractional	Decimal			
TiAlN	D1		D2	L1	L2	TiAlN	D1		D2	L1	L2
DB510014F	7/32	5.56	6	44	82	DB510076		7.6	8	53	91
DB510056		5.6	6	44	82	DB510077		7.7	8	53	91
DB510057		5.7	6	44	82	DB510078		7.8	8	53	91
DB510058		5.8	6	44	82	DB510079		7.9	8	53	91
DB510059		5.9	6	44	82	DB510020F	5/16	7.94	8	53	91
DB510015F	15/64	5.95	6	44	82	DB510080		8.0	8	53	91
DB510060		6.0	6	44	82	DB510081		8.1	10	61	103
DB510061		6.1	8	53	91	DB510082		8.2	10	61	103
DB510062		6.2	8	53	91	DB510083		8.3	10	61	103
DB510063		6.3	8	53	91	DB510021F	21/64	8.33	10	61	103
DB510016F	1/4	6.35	8	53	91	DB510084		8.4	10	61	103
DB510064		6.4	8	53	91	DB510017L	0.332	8.43	10	61	103
DB510065		6.5	8	53	91	DB510085		8.5	10	61	103
DB510006L	0.257	6.53	8	53	91	DB510086		8.6	10	61	103
DB510066		6.6	8	53	91	DB510087		8.7	10	61	103
DB510067		6.7	8	53	91	DB510022F	11/32	8.73	10	61	103
DB510017F	17/64	6.75	8	53	91	DB510088		8.8	10	61	103
DB510068		6.8	8	53	91	DB510089		8.9	10	61	103
DB510069		6.9	8	53	91	DB510090		9.0	10	61	103
DB510009L	0.272	6.91	8	53	91	DB510091		9.1	10	61	103
DB510070		7.0	8	53	91	DB510023F	23/64	9.13	10	61	103
DB510071		7.1	8	53	91	DB510092		9.2	10	61	103
DB510018F	9/32	7.14	8	53	91	DB510093		9.3	10	61	103
DB510072		7.2	8	53	91	DB510021L	0.368	9.35	10	61	103
DB510073		7.3	8	53	91	DB510094		9.4	10	61	103
DB510074		7.4	8	53	91	DB510095		9.5	10	61	103
DB510075		7.5	8	53	91	DB510024F	3/8	9.53	10	61	103
DB510019F	19/64	7.54	8	53	91	DB510096		9.6	10	61	103

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P										M				K									
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron					
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21				
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230				
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○	○	◎	○	◎	○	◎	○				
ISO	N										S										H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)				Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron		Hardened Cast Iron	
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41			
HRc											15	30	25	38	34			55	60	42	55			
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550			
Recommended																		○						

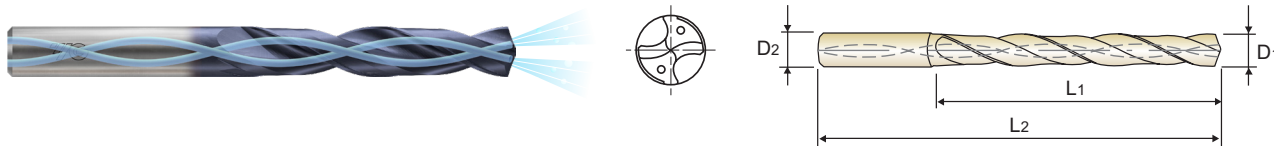
**TIAlN-COATED SOLID CARBIDE
YGBASIX DRILLS WITH COOLANT HOLES (5XD)**

DB510 SERIES

LONG

5 × D

- ▶Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶Self centering and chip breaking by R-thinning
- ▶Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶Optimized flute shape for strength of drilling and smooth chip evacuation



Unit : mm											
EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length	EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length
	Fractional	Decimal					Fractional	Decimal			
TiAlN	D1		D2	L1	L2	TiAlN	D1		D2	L1	L2
DB510097		9.7	10	61	103	DB510030F	15/32	11.91	12	71	118
DB510098		9.8	10	61	103	DB510120		12.0	12	71	118
DB510099		9.9	10	61	103	DB510121		12.1	14	77	124
DB510025F	25/64	9.92	10	61	103	DB510122		12.2	14	77	124
DB510100		10.0	10	61	103	DB510031F	31/64	12.3	14	77	124
DB510101		10.1	12	71	118	DB510123		12.3	14	77	124
DB510102		10.2	12	71	118	DB510124		12.4	14	77	124
DB510103		10.3	12	71	118	DB510125		12.5	14	77	124
DB510026F	13/32	10.32	12	71	118	DB510126		12.6	14	77	124
DB510104		10.4	12	71	118	DB510032F	1/2	12.7	14	77	124
DB510105		10.5	12	71	118	DB510128		12.8	14	77	124
DB510106		10.6	12	71	118	DB510129		12.9	14	77	124
DB510107		10.7	12	71	118	DB510130		13.0	14	77	124
DB510027F	27/64	10.72	12	71	118	DB510131		13.1	14	77	124
DB510108		10.8	12	71	118	DB510132		13.2	14	77	124
DB510109		10.9	12	71	118	DB510133		13.3	14	77	124
DB510110		11.0	12	71	118	DB510134		13.4	14	77	124
DB510111		11.1	12	71	118	DB510135		13.5	14	77	124
DB510028F	7/16	11.11	12	71	118	DB510136		13.6	14	77	124
DB510112		11.2	12	71	118	DB510137		13.7	14	77	124
DB510113		11.3	12	71	118	DB510138		13.8	14	77	124
DB510114		11.4	12	71	118	DB510139		13.9	14	77	124
DB510115		11.5	12	71	118	DB510140		14.0	14	77	124
DB510029F	29/64	11.51	12	71	118	DB510141		14.1	16	83	133
DB510116		11.6	12	71	118	DB510142		14.2	16	83	133
DB510117		11.7	12	71	118	DB510036F	9/16	14.29	16	83	133
DB510118		11.8	12	71	118	DB510143		14.3	16	83	133
DB510119		11.9	12	71	118	DB510144		14.4	16	83	133

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P										M				K									
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel				Grey cast iron		Nodular cast iron		Malleable cast iron				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				
HRC		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21				
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230				
Recommended		◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎				
ISO	N										S										H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)				Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron		Hardened Cast Iron	
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41			
HRC											15	30	25	38	34			55	60	42	55			
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550			
Recommended																		◎						

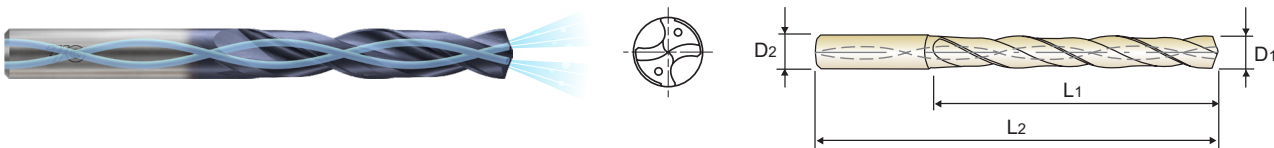
**TIAlN-COATED SOLID CARBIDE
YGBASIX DRILLS WITH COOLANT HOLES (5XD)**

DB510 SERIES

LONG

5 × D

- ▶Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶Self centering and chip breaking by R-thinning
- ▶Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶Optimized flute shape for strength of drilling and smooth chip evacuation



P.18

Unit : mm											
EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length	EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length
	Fractional	Decimal					Fractional	Decimal			
TiAlN	D1		D2	L1	L2	TiAlN	D1		D2	L1	L2
DB510145		14.5	16	83	133	DB510173		17.3	18	93	143
DB510146		14.6	16	83	133	DB510174		17.4	18	93	143
DB510147		14.7	16	83	133	DB510175		17.5	18	93	143
DB510148		14.8	16	83	133	DB510176		17.6	18	93	143
DB510149		14.9	16	83	133	DB510177		17.7	18	93	143
DB510150		15.0	16	83	133	DB510178		17.8	18	93	143
DB510151		15.1	16	83	133	DB510179		17.9	18	93	143
DB510152		15.2	16	83	133	DB510180		18.0	18	93	143
DB510153		15.3	16	83	133	DB510181		18.1	20	101	153
DB510154		15.4	16	83	133	DB510182		18.2	20	101	153
DB510155		15.5	16	83	133	DB510183		18.3	20	101	153
DB510156		15.6	16	83	133	DB510184		18.4	20	101	153
DB510157		15.7	16	83	133	DB510185		18.5	20	101	153
DB510158		15.8	16	83	133	DB510186		18.6	20	101	153
DB510040F	5/8	15.88	16	83	133	DB510187		18.7	20	101	153
DB510159		15.9	16	83	133	DB510188		18.8	20	101	153
DB510160		16.0	16	83	133	DB510189		18.9	20	101	153
DB510161		16.1	18	93	143	DB510190		19.0	20	101	153
DB510162		16.2	18	93	143	DB510048F	3/4	19.05	20	101	153
DB510163		16.3	18	93	143	DB510191		19.1	20	101	153
DB510164		16.4	18	93	143	DB510192		19.2	20	101	153
DB510165		16.5	18	93	143	DB510193		19.3	20	101	153
DB510166		16.6	18	93	143	DB510194		19.4	20	101	153
DB510167		16.7	18	93	143	DB510195		19.5	20	101	153
DB510168		16.8	18	93	143	DB510196		19.6	20	101	153
DB510169		16.9	18	93	143	DB510197		19.7	20	101	153
DB510170		17.0	18	93	143	DB510198		19.8	20	101	153
DB510171		17.1	18	93	143	DB510199		19.9	20	101	153
DB510172		17.2	18	93	143	DB510200		20.0	20	101	153

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO Material Description	P										M					K				
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎	◎	○	◎	◎	○	○	◎	○	○	○	◎	○	◎	◎	○	◎	○
ISO Material Description	N										S					H				
	Aluminum- wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRc											15	30	25	38	34			55	60	42
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400
Recommended																		○		

**TIAlN-COATED SOLID CARBIDE
YGBASIX DRILLS WITHOUT COOLANT HOLES (3XD)**

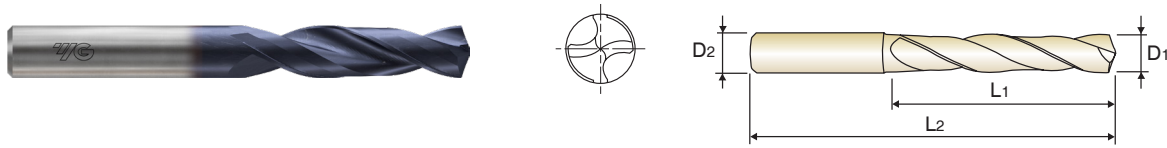
DB301 SERIES

STUB

3 × D

D1=D2

- ▶Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶Self centering and chip breaking by R-thinning
- ▶Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶Optimized flute shape for strength of drilling and smooth chip evacuation



P.20

Unit : mm														
EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length	EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length	
	Metric	Fractional	Decimal					Metric	Fractional	Decimal				
TIAlN	D1			D2	L1	L2	TIAlN	D1			D2	L1	L2	
DB301030	3		.1181	3	16	46	DB301054	5.4		.2126	5.4	28	66	
DB301031	3.1		.1220	3.1	18	49	DB301055	5.5		.2165	5.5	28	66	
DB301008F	3.18	1/8	.1250	6	20	62	DB301014F	5.56	7/32	.2188	6	28	66	
DB301032	3.2		.1260	3.2	18	49	DB301056	5.6		.2205	5.6	28	66	
DB301033	3.3		.1299	3.3	18	49	DB301057	5.7		.2244	5.7	28	66	
DB301034	3.4		.1339	3.4	20	52	DB301058	5.8		.2283	5.8	28	66	
DB301035	3.5		.1378	3.5	20	52	DB301059	5.9		.2323	5.9	28	66	
DB301009F	3.57	9/64	.1406	6	20	62	DB301015F	5.95	15/64	.2344	6	28	66	
DB301036	3.6		.1417	3.6	20	52	DB301060	6		.2362	6	28	66	
DB301037	3.7		.1457	3.7	20	52	DB301061	6.1		.2402	6.1	31	70	
DB301038	3.8		.1496	3.8	22	55	DB301062	6.2		.2441	6.2	31	70	
DB301039	3.9		.1535	3.9	22	55	DB301063	6.3		.2480	6.3	31	70	
DB301010F	3.97	5/32	.1562	6	24	66	DB301016F	6.35	1/4	.2500	8	34	79	
DB301040	4		.1575	4	22	55	DB301064	6.4		.2520	6.4	31	70	
DB301041	4.1		.1614	4.1	22	55	DB301065	6.5		.2559	6.5	31	70	
DB301042	4.2		.1654	4.2	22	55	DB301066	6.6		.2598	6.6	31	70	
DB301043	4.3		.1693	4.3	24	58	DB301067	6.7		.2638	6.7	31	70	
DB301011F	4.37	11/64	.1719	6	24	66	DB301017F	6.75	17/64	.2656	8	34	79	
DB301044	4.4		.1732	4.4	24	58	DB301068	6.8		.2677	6.8	34	74	
DB301045	4.5		.1772	4.5	24	58	DB301069	6.9		.2717	6.9	34	74	
DB301046	4.6		.1811	4.6	24	58	DB301070	7		.2756	7	34	74	
DB301047	4.7		.1850	4.7	24	58	DB301071	7.1		.2795	7.1	34	74	
DB301012F	4.76	3/16	.1875	6	28	66	DB301018F	7.14	9/32	.2812	8	41	79	
DB301048	4.8		.1890	4.8	26	62	DB301072	7.2		.2835	7.2	34	74	
DB301049	4.9		.1929	4.9	26	62	DB301073	7.3		.2874	7.3	34	74	
DB301050	5		.1969	5	26	62	DB301074	7.4		.2913	7.4	34	74	
DB301051	5.1		.2008	5.1	26	62	DB301075	7.5		.2953	7.5	34	74	
DB301013F	5.16	13/64	.2031	6	28	66	DB301019F	7.54	19/64	.2969	8	41	79	
DB301052	5.2		.2047	5.2	26	62	DB301076	7.6		.2992	7.6	37	79	
DB301053	5.3		.2087	5.3	26	62	DB301077	7.7		.3031	7.7	37	79	

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P										M					K							
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
HRc	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25		21			
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230			
Recommended	◎	◎	◎	◎	○	◎	◎	○	○	◎	○	○	○	○	◎	○	◎	○	◎	○			
ISO	N										S					H							
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)				Non Metallic Materials		Heat Resistant Super Alloys				Titanium Alloys		Hardened steel		Chilled Cast Iron		Hardened Cast Iron	
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41		
HRc											15	30	25	38	34			55	60	42	55		
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550		
Recommended																		○					

**TIAlN-COATED SOLID CARBIDE
YGBASIX DRILLS WITHOUT COOLANT HOLES (3XD)**

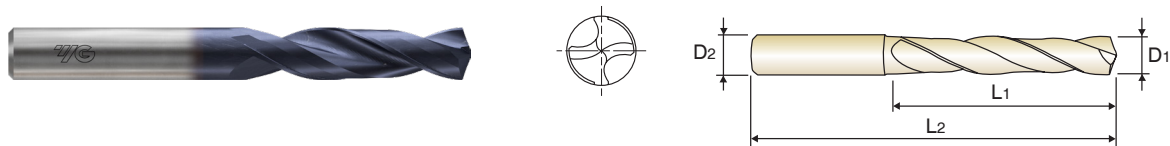
DB301 SERIES

STUB

3 × D

D1=D2

- ▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶ Self centering and chip breaking by R-thinning
- ▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶ Optimized flute shape for strength of drilling and smooth chip evacuation



						Unit : mm							
EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length	EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal					Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2	TiAlN	D1			D2	L1	L2
DB301078	7.8		.3071	7.8	37	79	DB301026F	10.32	13/32	.4062	12	55	102
DB301079	7.9		.3110	7.9	37	79	DB301105	10.5		.4134	10.5	43	89
DB301020F	7.94	5/16	.3125	8	41	79	DB301027F	10.72	27/64	.4219	12	55	102
DB301080	8		.3150	8	37	79	DB301110	11		.4331	11	47	95
DB301081	8.1		.3189	8.1	37	79	DB301028F	11.11	7/16	.4375	12	55	102
DB301082	8.2		.3228	8.2	37	79	DB301115	11.5		.4528	11.5	47	95
DB301083	8.3		.3268	8.3	37	79	DB301029F	11.51	29/64	.4531	12	55	102
DB301021F	8.33	21/64	.3281	10	47	89	DB301030F	11.91	15/32	.4688	12	55	102
DB301084	8.4		.3307	8.4	37	79	DB301120	12		.4724	12	51	102
DB301085	8.5		.3346	8.5	37	79	DB301031F	12.3	31/64	.4844	14	60	107
DB301086	8.6		.3386	8.6	40	84	DB301032F	12.7	1/2	.5000	14	60	107
DB301087	8.7		.3425	8.7	40	84	DB301130	13		.5118	13	51	102
DB301022F	8.73	11/32	.3438	10	47	89	DB301135	13.5		.5314	13.5	54	107
DB301088	8.8		.3465	8.8	40	84	DB301140	14		.5512	14	54	107
DB301089	8.9		.3504	8.9	40	84	DB301036F	14.29	9/16	.5625	16	65	115
DB301090	9		.3543	9	40	84	DB301145	14.5		.5708	14.5	56	111
DB301091	9.1		.3583	9.1	40	84	DB301150	15		.5905	15	56	111
DB301023F	9.13	23/64	.3594	10	47	89	DB301155	15.5		.6102	15.5	58	115
DB301092	9.2		.3622	9.2	40	84	DB301040F	15.88	5/8	.6250	16	65	115
DB301093	9.3		.3661	9.3	40	84	DB301160	16		.6299	16	58	115
DB301094	9.4		.3701	9.4	40	84	DB301165	16.5		.6495	16.5	60	119
DB301095	9.5		.3740	9.5	40	84	DB301170	17		.6692	17	60	119
DB301024F	9.53	3/8	.3750	10	47	89	DB301044F	17.46	11/16	.6875	18	73	123
DB301096	9.6		.3780	9.6	43	89	DB301175	17.5		.6889	17.5	62	123
DB301097	9.7		.3819	9.7	43	89	DB301180	18		.7087	18	62	123
DB301098	9.8		.3858	9.8	43	89	DB301185	18.5		.7283	18.5	64	127
DB301099	9.9		.3898	9.9	43	89	DB301190	19		.1220	19	64	127
DB301025F	9.92	25/64	.3906	10	47	89	DB301048F	19.05	3/4	.7500	20	79	131
DB301100	10		.3937	10	43	89	DB301195	19.5		.7676	19.5	66	131
DB301102	10.2		.4016	10.2	43	89	DB301200	20		.7874	20	66	131

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO Material Description	P										M					K				
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
ISO Material Description	N										S					H				
	Aluminum- wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRc											15	30	25	38	34			55	60	42
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400
Recommended																		◎		

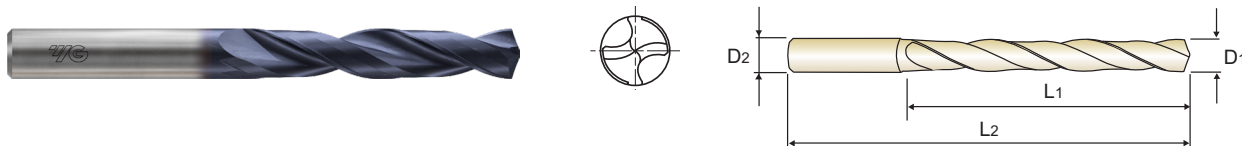
**TIAlN-COATED SOLID CARBIDE
YGBASIX DRILLS WITHOUT COOLANT HOLES (5XD)**

DB501 SERIES

LONG

5 × D

- ▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶ Self centering and chip breaking by R-thinning
- ▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶ Optimized flute shape for strength of drilling and smooth chip evacuation



Unit : mm													
EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length	EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal					Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2	TiAlN	D1			D2	L1	L2
DB501010	1		.0394	3	8	55	DB501032	3.2		.1260	6	28	66
DB501011	1.1		.0433	3	12	55	DB501033	3.3		.1299	6	28	66
DB501012	1.2		.0472	3	12	55	DB501034	3.4		.1339	6	28	66
DB501013	1.3		.0512	3	12	55	DB501035	3.5		.1378	6	28	66
DB501014	1.4		.0551	3	12	55	DB501009F	3.57	9/64	.1406	6	28	66
DB501015	1.5		.0591	3	16	55	DB501036	3.6		.1417	6	28	66
DB501004F	1.59	1/16	.0625	3	16	55	DB501037	3.7		.1457	6	28	66
DB501016	1.6		.0630	3	16	55	DB501038	3.8		.1496	6	36	74
DB501017	1.7		.0669	3	16	55	DB501039	3.9		.1535	6	36	74
DB501018	1.8		.0709	3	16	55	DB501010F	3.97	5/32	.1562	6	36	74
DB501019	1.9		.0748	3	16	55	DB501040	4		.1575	6	36	74
DB501005F	1.98	5/64	.0781	3	16	55	DB501041	4.1		.1614	6	36	74
DB501020	2		.0787	4	21	57	DB501042	4.2		.1654	6	36	74
DB501021	2.1		.0827	4	21	57	DB501043	4.3		.1693	6	36	74
DB501022	2.2		.0866	4	21	57	DB501011F	4.37	11/64	.1719	6	36	74
DB501023	2.3		.0906	4	21	57	DB501044	4.4		.1732	6	36	74
DB501006F	2.38	3/32	.0938	4	21	57	DB501045	4.5		.1772	6	36	74
DB501024	2.4		.0945	4	21	57	DB501046	4.6		.1811	6	36	74
DB501025	2.5		.0984	4	21	57	DB501047	4.7		.1850	6	36	74
DB501026	2.6		.1024	4	21	57	DB501012F	4.76	3/16	.1875	6	44	82
DB501027	2.7		.1063	4	21	57	DB501048	4.8		.1890	6	44	82
DB501007F	2.78	7/64	.1094	4	21	57	DB501049	4.9		.1929	6	44	82
DB501028	2.8		.1102	4	21	57	DB501050	5		.1969	6	44	82
DB501029	2.9		.1142	4	21	57	DB501051	5.1		.2008	6	44	82
DB501030	3		.1181	6	28	66	DB501013F	5.16	13/64	.2031	6	44	82
DB501031	3.1		.1220	6	28	66	DB501052	5.2		.2047	6	44	82
DB501008F	3.18	1/8	.1250	6	28	66	DB501053	5.3		.2087	6	44	82

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

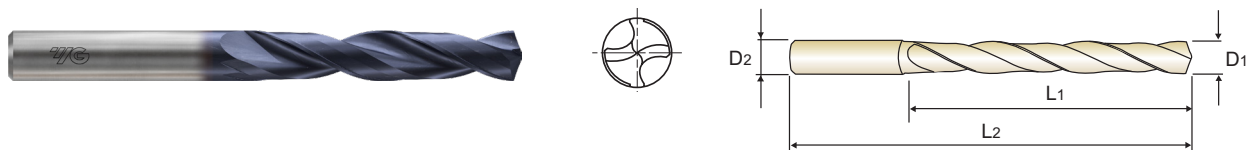
ISO	P										M					K								
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron					
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				
HRC		13	25	28	32	60	29	32	38	15	35	15	23	10	10	26	3	25		21				
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230				
Recommended		◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎				
ISO	N										S										H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)				Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron		Hardened Cast Iron	
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41			
HRC											15	30	25	38	34			55	60	42	55			
HB	60	100	75	90	130	110	90	100			200	280	250	350	320			400 Rm	1050 Rm	550	630	400	550	
Recommended																		◎						

DB501 SERIES

- ▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶ Self centering and chip breaking by R-thinning
- ▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶ Optimized flute shape for strength of drilling and smooth chip evacuation

LONG

5 × D



Unit : mm													
EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length	EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal					Metric	Fractional	Decimal			
TiAIN	D1			D2	L1	L2	TiAIN	D1			D2	L1	L2
DB501054	5.4	7/32	.2126	6	44	82	DB501019F	7.54	19/64	.2969	8	53	91
DB501055	5.5		.2165	6	44	82	DB501076	7.6		.2992	8	53	91
DB501014F	5.56		.2188	6	44	82	DB501077	7.7		.3031	8	53	91
DB501056	5.6		.2205	6	44	82	DB501078	7.8		.3071	8	53	91
DB501057	5.7		.2244	6	44	82	DB501079	7.9		.3110	8	53	91
DB501058	5.8	15/64	.2283	6	44	82	DB501020F	7.94	5/16	.3125	8	53	91
DB501059	5.9		.2323	6	44	82	DB501080	8		.3150	8	53	91
DB501015F	5.95		.2344	6	44	82	DB501081	8.1		.3189	10	61	103
DB501060	6		.2362	6	44	82	DB501082	8.2		.3228	10	61	103
DB501061	6.1		.2402	8	53	91	DB501083	8.3		.3268	10	61	103
DB501062	6.2	1/4	.2441	8	53	91	DB501021F	8.33	21/64	.3281	10	61	103
DB501063	6.3		.2480	8	53	91	DB501084	8.4		.3307	10	61	103
DB501016F	6.35		.2500	8	53	91	DB501085	8.5		.3346	10	61	103
DB501064	6.4		.2520	8	53	91	DB501086	8.6		.3386	10	61	103
DB501065	6.5		.2559	8	53	91	DB501087	8.7		.3425	10	61	103
DB501066	6.6	17/64	.2598	8	53	91	DB501022F	8.73	11/32	.3438	10	61	103
DB501067	6.7		.2638	8	53	91	DB501088	8.8		.3465	10	61	103
DB501017F	6.75		.2656	8	53	91	DB501089	8.9		.3504	10	61	103
DB501068	6.8		.2677	8	53	91	DB501090	9		.3543	10	61	103
DB501069	6.9		.2717	8	53	91	DB501091	9.1		.3583	10	61	103
DB501070	7	9/32	.2756	8	53	91	DB501023F	9.13	23/64	.3594	10	61	103
DB501071	7.1		.2795	8	53	91	DB501092	9.2		.3622	10	61	103
DB501018F	7.14		.2812	8	53	91	DB501093	9.3		.3661	10	61	103
DB501072	7.2		.2835	8	53	91	DB501094	9.4		.3701	10	61	103
DB501073	7.3		.2874	8	53	91	DB501095	9.5		.3740	10	61	103
DB501074	7.4		.2913	8	53	91	DB501024F	9.53	3/8	.3750	10	61	103
DB501075	7.5		.2953	8	53	91	DB501096	9.6		.3780	10	61	103

► Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

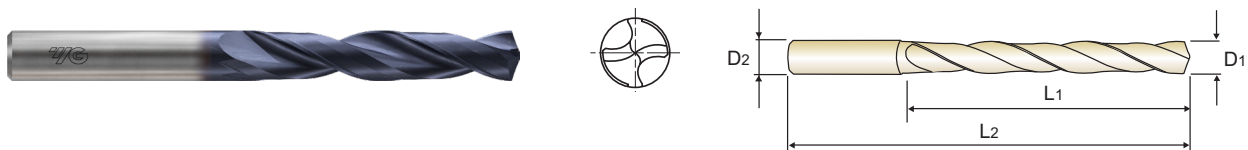
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DB501 SERIES

- ▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶ Self centering and chip breaking by R-thinning
- ▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶ Optimized flute shape for strength of drilling and smooth chip evacuation

LONG

5 × D



Unit : mm													
EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length	EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal					Metric	Fractional	Decimal			
TiAIN	D1			D2	L1	L2	TiAIN	D1			D2	L1	L2
DB501097	9.7		.3819	10	61	103	DB501119	11.9		.4685	12	71	118
DB501098	9.8		.3858	10	61	103	DB501030F	11.91	15/32	.4688	12	71	118
DB501099	9.9		.3898	10	61	103	DB501120	12		.4724	12	71	118
DB501025F	9.92	25/64	.3906	10	61	103	DB501031F	12.3	31/64	.4844	14	77	124
DB501100	10		.3937	10	61	103	DB501125	12.5		.4921	14	77	124
DB501101	10.1		.3976	12	71	118	DB501032F	12.7	1/2	.5000	14	77	124
DB501102	10.2		.4016	12	71	118	DB501130	13		.5118	14	77	124
DB501103	10.3		.4055	12	71	118	DB501135	13.5		.5315	14	77	124
DB501026F	10.32	13/32	.4062	12	71	118	DB501140	14		.5512	14	77	124
DB501104	10.4		.4094	12	71	118	DB501036F	14.29	9/16	.5625	16	83	133
DB501105	10.5		.4134	12	71	118	DB501145	14.5		.5709	16	83	133
DB501106	10.6		.4173	12	71	118	DB501150	15		.5906	16	83	133
DB501107	10.7		.4213	12	71	118	DB501155	15.5		.6102	16	83	133
DB501027F	10.72	27/64	.4219	12	71	118	DB501040F	15.88	5/8	.6250	16	83	133
DB501108	10.8		.4252	12	71	118	DB501160	16		.6299	16	83	133
DB501109	10.9		.4291	12	71	118	DB501165	16.5		.6496	18	93	143
DB501110	11		.4331	12	71	118	DB501170	17		.6693	18	93	143
DB501111	11.1		.4370	12	71	118	DB501175	17.5		.6890	18	93	143
DB501028F	11.11	7/16	.4375	12	71	118	DB501180	18		.7087	18	93	143
DB501112	11.2		.4409	12	71	118	DB501185	18.5		.7283	20	101	153
DB501113	11.3		.4449	12	71	118	DB501190	19		.7480	20	101	153
DB501114	11.4		.4488	12	71	118	DB501048F	19.05	3/4	.7500	20	101	153
DB501115	11.5		.4528	12	71	118	DB501195	19.5		.7677	20	101	153
DB501029F	11.51	29/64	.4531	12	71	118	DB501200	20		.7874	20	101	153
DB501116	11.6		.4567	12	71	118							
DB501117	11.7		.4606	12	71	118							
DB501118	11.8		.4646	12	71	118							

► Other shank types are available on your request.

◎ : Excellent ○ : Good

[illegible]

RECOMMENDED CUTTING CONDITIONS

DB310, DB510 SERIES

with COOLANT HOLES

ISO	VDI 3323	Material Description	SFM	Drill Diameter			SFM	Drill Diameter					
			1.0 ~ 2.9	METRIC	1.0	2.0	3.0 ~ 20.0	METRIC	3.0	-	4.0	-	5.0
			-	FRACTIONAL	-	-	1/8 ~ 3/4	FRACTIONAL	-	1/8	-	3/16	-
			.0394 ~ .0787	DECIMAL	.0394	.0787	.1181 ~ .7874	DECIMAL	.1181	.1250	.1575	.1875	.1969
P	2	Non-alloy steel	263	RPM FEED	25,460 .0012 - .0020	12,730 .0020 - .0028	362	RPM FEED	11,670 .0024 - .0047	8,750 .0031 - .0055	7,000 .0055 - .0079		
	3		263	RPM FEED	25,460 .0012 - .0020	12,730 .0020 - .0028	362	RPM FEED	11,670 .0024 - .0047	8,750 .0031 - .0055	7,000 .0055 - .0079		
	4		263	RPM FEED	25,460 .0012 - .0020	12,730 .0020 - .0028	362	RPM FEED	11,670 .0016 - .0039	8,750 .0028 - .0051	7,000 .0039 - .0063		
	5		230	RPM FEED	22,280 .0012 - .0020	11,140 .0020 - .0028	296	RPM FEED	9,550 .0016 - .0039	7,160 .0028 - .0051	5,730 .0039 - .0063		
	6	Low alloy steel	263	RPM FEED	25,460 .0012 - .0020	12,730 .0020 - .0028	362	RPM FEED	11,670 .0024 - .0047	8,750 .0031 - .0055	7,000 .0055 - .0079		
	7		230	RPM FEED	22,280 .0012 - .0020	11,140 .0020 - .0028	296	RPM FEED	9,550 .0024 - .0047	7,160 .0031 - .0055	5,730 .0039 - .0079		
	8		230	RPM FEED	22,280 .0008 - .0016	11,140 .0012 - .0020	296	RPM FEED	9,550 .0016 - .0039	7,160 .0028 - .0051	5,730 .0039 - .0063		
	9		132	RPM FEED	12,730 .0008 - .0016	6,370 .0012 - .0020	165	RPM FEED	5,310 .0012 - .0031	3,980 .0020 - .0043	3,180 .0031 - .0055		
	10	High alloyed steel, and tool steel	198	RPM FEED	19,100 .0012 - .0020	9,550 .0020 - .0028	263	RPM FEED	8,490 .0016 - .0039	6,370 .0028 - .0051	5,090 .0039 - .0063		
	11		132	RPM FEED	12,730 .0008 - .0016	6,370 .0012 - .0020	148	RPM FEED	4,770 .0012 - .0031	3,580 .0020 - .0043	2,860 .0031 - .0055		
M	12	Stainless steel	198	RPM FEED	19,100 .0012 - .0020	9,550 .0020 - .0028	263	RPM FEED	8,490 .0024 - .0047	6,370 .0031 - .0055	5,090 .0055 - .0079		
	13		148	RPM FEED	14,320 .0008 - .0016	7,160 .0012 - .0020	181	RPM FEED	5,840 .0016 - .0039	4,380 .0028 - .0051	3,500 .0039 - .0063		
K	15	Grey cast iron	263	RPM FEED	25,460 .0016 - .0024	12,730 .0016 - .0024	362	RPM FEED	11,670 .0031 - .0055	8,750 .0047 - .0071	7,000 .0059 - .0087		
	16		247	RPM FEED	23,870 .0016 - .0024	11,940 .0016 - .0024	313	RPM FEED	10,080 .0024 - .0047	7,560 .0031 - .0055	6,050 .0055 - .0079		
	17	Nodular cast iron	296	RPM FEED	28,650 .0016 - .0024	14,320 .0016 - .0024	395	RPM FEED	12,730 .0031 - .0055	9,550 .0047 - .0071	7,640 .0059 - .0087		
	18		198	RPM FEED	19,100 .0016 - .0024	9,550 .0016 - .0024	263	RPM FEED	8,490 .0024 - .0047	6,370 .0031 - .0055	5,090 .0055 - .0079		
	19	Malleable cast iron	230	RPM FEED	22,280 .0016 - .0024	11,140 .0016 - .0024	296	RPM FEED	9,550 .0031 - .0055	7,160 .0047 - .0071	5,730 .0059 - .0087		
	20		198	RPM FEED	19,100 .0012 - .0020	9,550 .0020 - .0028	263	RPM FEED	8,490 .0024 - .0047	6,370 .0031 - .0055	5,090 .0055 - .0079		
H	38 38.1	Hardened steel	82	RPM FEED	7,960 .0004 - .0008	3,980 .0004 - .0012	98	RPM FEED	3,180 .0004 - .0012	2,390 .0004 - .0016	1,910 .0008 - .0020		

RECOMMENDED CUTTING CONDITIONS

SFM = ft/min.
RPM = rev./min.
FEED = inch/rev.

Drill Diameter															
6.0	-	-	8.0	-	10.0	12.0	-	14.0	-	-	16.0	18.0	-	20.0	
-	1/4	5/16	-	3/8	-	-	1/2	-	9/16	5/8	-	-	3/4	-	
.2362	.2500	.3125	.3150	.3750	.3937	.4724	.5000	.5512	.5625	.6250	.6299	.7087	.7500	.7874	
5,840 .0063 - .0087	4,380 .0071 - .0094	3,500 .0075 - .0106	2,920 .0083 - .0114	2,770 .0083 - .0114	2,500 .0091 - .0122	2,190 .0098 - .0130	1,950 .0110 - .0150	1,840 .0110 - .0150	1,750 .0118 - .0157						
5,840 .0063 - .0087	4,380 .0071 - .0094	3,500 .0075 - .0106	2,920 .0083 - .0114	2,770 .0083 - .0114	2,500 .0091 - .0122	2,190 .0098 - .0130	1,950 .0110 - .0150	1,840 .0110 - .0150	1,750 .0118 - .0157						
5,840 .0047 - .0071	4,380 .0055 - .0079	3,500 .0059 - .0091	2,920 .0067 - .0098	2,770 .0067 - .0098	2,500 .0071 - .0102	2,190 .0075 - .0106	1,950 .0079 - .0118	1,840 .0079 - .0118	1,750 .0087 - .0126						
4,770 .0047 - .0071	3,580 .0055 - .0079	2,860 .0059 - .0091	2,390 .0067 - .0098	2,260 .0067 - .0098	2,050 .0071 - .0102	1,790 .0075 - .0106	1,590 .0079 - .0118	1,510 .0079 - .0118	1,430 .0087 - .0126						
5,840 .0063 - .0087	4,380 .0071 - .0094	3,500 .0075 - .0106	2,920 .0083 - .0114	2,770 .0083 - .0114	2,500 .0091 - .0122	2,190 .0098 - .0130	1,950 .0110 - .0150	1,840 .0110 - .0150	1,750 .0118 - .0157						
4,770 .0047 - .0094	3,580 .0063 - .0110	2,860 .0075 - .0106	2,390 .0083 - .0114	2,260 .0083 - .0114	2,050 .0091 - .0122	1,790 .0098 - .0130	1,590 .0110 - .0150	1,510 .0110 - .0150	1,430 .0118 - .0157						
4,770 .0047 - .0071	3,580 .0055 - .0079	2,860 .0059 - .0091	2,390 .0067 - .0098	2,260 .0067 - .0098	2,050 .0071 - .0102	1,790 .0075 - .0106	1,590 .0079 - .0118	1,510 .0079 - .0118	1,430 .0087 - .0126						
2,650 .0039 - .0063	1,990 .0047 - .0071	1,590 .0051 - .0075	1,330 .0055 - .0079	1,260 .0055 - .0079	1,140 .0059 - .0083	990 .0063 - .0087	880 .0067 - .0098	840 .0063 - .0102	800 .0071 - .0110						
4,240 .0047 - .0071	3,180 .0055 - .0079	2,550 .0059 - .0091	2,120 .0067 - .0098	2,010 .0067 - .0098	1,820 .0071 - .0102	1,590 .0075 - .0106	1,410 .0079 - .0118	1,340 .0079 - .0118	1,270 .0087 - .0126						
2,390 .0039 - .0063	1,790 .0047 - .0071	1,430 .0051 - .0075	1,190 .0055 - .0079	1,130 .0055 - .0079	1,020 .0059 - .0083	900 .0063 - .0087	800 .0067 - .0098	750 .0063 - .0102	720 .0071 - .0110						
4,240 .0063 - .0087	3,180 .0071 - .0094	2,550 .0075 - .0106	2,120 .0083 - .0114	2,010 .0083 - .0114	1,820 .0091 - .0122	1,590 .0098 - .0130	1,410 .0110 - .0150	1,340 .0110 - .0150	1,270 .0118 - .0157						
2,920 .0047 - .0071	2,190 .0055 - .0079	1,750 .0059 - .0091	1,460 .0067 - .0098	1,380 .0067 - .0098	1,250 .0071 - .0102	1,090 .0075 - .0106	970 .0079 - .0118	920 .0079 - .0118	880 .0087 - .0126						
5,840 .0079 - .0102	4,380 .0087 - .0110	3,500 .0098 - .0130	2,920 .0106 - .0138	2,770 .0106 - .0138	2,500 .0114 - .0146	2,190 .0122 - .0154	1,950 .0126 - .0165	1,840 .0126 - .0165	1,750 .0134 - .0173						
5,040 .0063 - .0087	3,780 .0071 - .0094	3,020 .0075 - .0106	2,520 .0083 - .0114	2,390 .0083 - .0114	2,160 .0091 - .0122	1,890 .0098 - .0130	1,680 .0110 - .0150	1,590 .0110 - .0150	1,510 .0118 - .0157						
6,370 .0079 - .0102	4,770 .0087 - .0110	3,820 .0098 - .0130	3,180 .0106 - .0138	3,020 .0106 - .0138	2,730 .0114 - .0146	2,390 .0122 - .0154	2,120 .0126 - .0165	2,010 .0126 - .0165	1,910 .0134 - .0173						
4,240 .0063 - .0087	3,180 .0071 - .0094	2,550 .0075 - .0106	2,120 .0083 - .0114	2,010 .0083 - .0114	1,820 .0091 - .0122	1,590 .0098 - .0130	1,410 .0110 - .0150	1,340 .0110 - .0150	1,270 .0118 - .0157						
4,770 .0079 - .0102	3,580 .0087 - .0110	2,860 .0098 - .0130	2,390 .0106 - .0138	2,260 .0106 - .0138	2,050 .0114 - .0146	1,790 .0122 - .0154	1,590 .0126 - .0165	1,510 .0126 - .0165	1,430 .0134 - .0173						
4,240 .0063 - .0087	3,180 .0071 - .0094	2,550 .0075 - .0106	2,120 .0083 - .0114	2,010 .0083 - .0114	1,820 .0091 - .0122	1,590 .0098 - .0130	1,410 .0110 - .0150	1,340 .0110 - .0150	1,270 .0118 - .0157						
1,590 .0012 - .0024	1,190 .0012 - .0024	950 .0016 - .0028	800 .0016 - .0031	750 .0016 - .0031	680 .0020 - .0035	600 .0020 - .0035	530 .0020 - .0039	500 .0020 - .0039	480 .0020 - .0039						

► Recommend to reduce the feed rate as following
Feed 100% : DB310(3XD) Feed 80% : DB510(5XD)

RECOMMENDED CUTTING CONDITIONS

DB301, DB501 SERIES
without COOLANT HOLES

ISO	VDI 3323	Material Description	SFM	Drill Diameter			SFM	Drill Diameter					
			1.0 ~ 2.9	METRIC	1.0	2.0	3.0 ~ 20.0	METRIC	3.0	-	4.0	-	5.0
			-	FRACTIONAL	-	-	1/8 ~ 3/4	FRACTIONAL	-	1/8	-	3/16	-
			.0394 ~ .0787	DECIMAL	.0394	.0787	.1181 ~ .7874	DECIMAL	.1181	.1250	.1575	.1875	.1969
P	2	Non-alloy steel	230	RPM FEED	22,280 .0012- .0020	11,140 .0020- .0028	329	RPM FEED	10,610 .0024- .0047	7,960 .0031- .0055	6,370 .0055- .0079		
	3		230	RPM FEED	22,280 .0012- .0020	11,140 .0020- .0028	329	RPM FEED	10,610 .0024- .0047	7,960 .0031- .0055	6,370 .0055- .0079		
	4		230	RPM FEED	22,280 .0012- .0020	11,140 .0020- .0028	329	RPM FEED	10,610 .0016- .0039	7,960 .0028- .0051	6,370 .0039- .0063		
	5		197	RPM FEED	19,100 .0012- .0020	9,550 .0020- .0028	263	RPM FEED	8,490 .0016- .0039	6,370 .0028- .0051	5,090 .0039- .0063		
	6	Low alloy steel	230	RPM FEED	22,280 .0012- .0020	11,140 .0020- .0028	329	RPM FEED	10,610 .0024- .0047	7,960 .0031- .0055	6,370 .0055- .0079		
	7		197	RPM FEED	19,100 .0012- .0020	9,550 .0020- .0028	263	RPM FEED	8,490 .0024- .0047	6,370 .0031- .0055	5,090 .0039- .0079		
	8		197	RPM FEED	19,100 .0008- .0016	9,550 .0012- .0020	263	RPM FEED	8,490 .0016- .0039	6,370 .0028- .0051	5,090 .0039- .0063		
	9		99	RPM FEED	9,550 .0008- .0016	4,770 .0012- .0020	132	RPM FEED	4,240 .0012- .0031	3,180 .0020- .0043	2,550 .0031- .0055		
	10	High alloyed steel, and tool steel	165	RPM FEED	15,920 .0012- .0020	7,960 .0020- .0028	230	RPM FEED	7,430 .0016- .0039	5,570 .0028- .0051	4,460 .0039- .0063		
	11		99	RPM FEED	9,550 .0008- .0016	4,770 .0012- .0020	132	RPM FEED	4,240 .0012- .0031	3,180 .002- .0043	2,550 .0031- .0055		
M	12	Stainless steel	165	RPM FEED	15,920 .0012- .0020	7,960 .0020- .0028	230	RPM FEED	7,430 .0024- .0047	5,570 .0031- .0055	4,460 .0055- .0079		
	13		115	RPM FEED	11,140 .0008- .0016	5,570 .0012- .0020	148	RPM FEED	4,770 .0016- .0039	3,580 .0028- .0051	2,860 .0039- .0063		
K	15	Grey cast iron	230	RPM FEED	22,280 .0016- .0024	11,140 .0016- .0024	329	RPM FEED	10,610 .0031- .0055	7,960 .0047- .0071	6,370 .0059- .0087		
	16		214	RPM FEED	20,690 .0016- .0024	10,350 .0016- .0024	263	RPM FEED	8,490 .0024- .0047	6,370 .0031- .0055	5,090 .0055- .0079		
	17	Nodular cast iron	230	RPM FEED	22,280 .0016- .0024	11,140 .0016- .0024	329	RPM FEED	10,610 .0031- .0055	7,960 .0047- .0071	6,370 .0059- .0087		
	18		165	RPM FEED	15,920 .0016- .0024	7,960 .0016- .0024	230	RPM FEED	7,430 .0024- .0047	5,570 .0031- .0055	4,460 .0055- .0079		
	19	Malleable cast iron	197	RPM FEED	19,100 .0016- .0024	9,550 .0016- .0024	263	RPM FEED	8,490 .0031- .0055	6,370 .0047- .0071	5,090 .0059- .0087		
	20		165	RPM FEED	15,920 .0012- .0020	7,960 .0020- .0028	230	RPM FEED	7,430 .0024- .0047	5,570 .0031- .0055	4,460 .0055- .0079		
H	38	Hardened steel	65	RPM FEED	6,370 .0004- .0008	3,180 .0004- .0012	82	RPM FEED	2,650 .0004- .0012	1,990 .0004- .0016	1,590 .0008- .0020		

RECOMMENDED CUTTING CONDITIONS

SFM = ft/min.
RPM = rev./min.
FEED = inch/rev.

Drill Diameter															
6.0	-	-	8.0	-	10.0	12.0	-	14.0	-	-	16.0	18.0	-	20.0	
-	1/4	5/16	-	3/8	-	-	1/2	-	9/16	5/8	-	-	3/4	-	
.2362	.2500	.3125	.3150	.3750	.3937	.4724	.5000	.5512	.5625	.6250	.6299	.7087	.7500	.7874	
5,310 .0063- .0087	3,980 .0071- .0094	3,180 .0075- .0106	2,650 .0083- .0114	2,510 .0083- .0114	2,270 .0091- .0122	1,990 .0098- .0130	1,770 .0110- .0150	1,680 .0110- .0150	1,590 .0118- .0157						
5,310 .0063- .0087	3,980 .0071- .0094	3,180 .0075- .0106	2,650 .0083- .0114	2,510 .0083- .0114	2,270 .0091- .0122	1,990 .0098- .0130	1,770 .0110- .0150	1,680 .0110- .0150	1,590 .0118- .0157						
5,310 .0047- .0071	3,980 .0055- .0079	3,180 .0059- .0091	2,650 .0067- .0098	2,510 .0067- .0098	2,270 .0071- .0102	1,990 .0075- .0106	1,770 .0079- .0118	1,680 .0079- .0118	1,590 .0087- .0126						
4,240 .0047- .0071	3,180 .0055- .0079	2,550 .0059- .0091	2,120 .0067- .0098	2,010 .0067- .0098	1,820 .0071- .0102	1,590 .0075- .0106	1,410 .0079- .0118	1,340 .0079- .0118	1,270 .0087- .0126						
5,310 .0063- .0087	3,980 .0071- .0094	3,180 .0075- .0106	2,650 .0083- .0114	2,510 .0083- .0114	2,270 .0091- .0122	1,990 .0098- .0130	1,770 .0110- .0150	1,680 .0110- .0150	1,590 .0118- .0157						
4,240 .0047- .0094	3,180 .0063- .011	2,550 .0075- .0106	2,120 .0083- .0114	2,010 .0083- .0114	1,820 .0091- .0122	1,590 .0098- .0130	1,410 .0110- .0150	1,340 .0110- .0150	1,270 .0118- .0157						
4,240 .0047- .0071	3,180 .0055- .0079	2,550 .0059- .0091	2,120 .0067- .0098	2,010 .0067- .0098	1,820 .0071- .0102	1,590 .0075- .0106	1,410 .0079- .0118	1,340 .0079- .0118	1,270 .0087- .0126						
2,120 .0039- .0063	1,590 .0047- .0071	1,270 .0051- .0075	1,060 .0055- .0079	1,010 .0055- .0079	910 .0059- .0083	800 .0063- .0087	710 .0067- .0098	670 .0067- .0098	640 .0071- .0110						
3,710 .0047- .0071	2,790 .0055- .0079	2,230 .0059- .0091	1,860 .0067- .0098	1,760 .0067- .0098	1,590 .0071- .0102	1,390 .0075- .0106	1,240 .0079- .0118	1,170 .0079- .0118	1,110 .0087- .0126						
2,120 .0039- .0063	1,590 .0047- .0071	1,270 .0051- .0075	1,060 .0055- .0079	1,010 .0055- .0079	910 .0059- .0083	800 .0063- .0087	710 .0067- .0098	670 .0067- .0098	640 .0071- .0110						
3,710 .0063- .0087	2,790 .0071- .0094	2,230 .0075- .0106	1,860 .0083- .0114	1,760 .0083- .0114	1,590 .0091- .0122	1,390 .0098- .0130	1,240 .0110- .0150	1,170 .0110- .0150	1,110 .0118- .0157						
2,390 .0047- .0071	1,790 .0055- .0079	1,430 .0059- .0091	1,190 .0067- .0098	1,130 .0067- .0098	1,020 .0071- .0102	900 .0075- .0106	800 .0079- .0118	750 .0079- .0118	720 .0087- .0126						
5,310 .0079- .0102	3,980 .0087- .0110	3,180 .0098- .0130	2,650 .0106- .0138	2,510 .0106- .0138	2,270 .0114- .0146	1,990 .0122- .0154	1,770 .0126- .0165	1,680 .0126- .0165	1,590 .0134- .0173						
4,240 .0063- .0087	3,180 .0071- .0094	2,550 .0075- .0106	2,120 .0083- .0114	2,010 .0083- .0114	1,820 .0091- .0122	1,590 .0098- .0130	1,410 .0110- .0150	1,340 .0110- .0150	1,270 .0118- .0157						
5,310 .0079- .0102	3,980 .0087- .0110	3,180 .0098- .0130	2,650 .0106- .0138	2,510 .0106- .0138	2,270 .0114- .0146	1,990 .0122- .0154	1,770 .0126- .0165	1,680 .0126- .0165	1,590 .0134- .0173						
3,710 .0063- .0087	2,790 .0071- .0094	2,230 .0075- .0106	1,860 .0083- .0114	1,760 .0083- .0114	1,590 .0091- .0122	1,390 .0098- .0130	1,240 .0110- .0150	1,170 .0110- .0150	1,110 .0118- .0157						
4,240 .0079- .0102	3,180 .0087- .0110	2,550 .0098- .0130	2,120 .0106- .0138	2,010 .0106- .0138	1,820 .0114- .0146	1,590 .0122- .0154	1,410 .0126- .0165	1,340 .0126- .0165	1,270 .0134- .0173						
3,710 .0063- .0087	2,790 .0071- .0094	2,230 .0075- .0106	1,860 .0083- .0114	1,760 .0083- .0114	1,590 .0091- .0122	1,390 .0098- .0130	1,240 .0110- .0150	1,170 .0110- .0150	1,110 .0118- .0157						
1,330 .0012- .0024	990 .0012- .0024	800 .0016- .0028	660 .0016- .0031	620 .0016- .0031	570 .0020- .0035	500 .0020- .0035	440 .0020- .0039	420 .0020- .0039	400 .0020- .0039						

► Recommend to reduce the feed rate as following
Feed 100% : DB301(3XD) **Feed 80% :** DB501(5XD)