

i-DREAM DRILL INSERTS & HOLDERS

i-DREAM DRILL EINSÄTZE UND HALTER

- Features of i-Dream Drill Inserts- Merkmale des i-Dream Drill Einsätze

- Secure and accurate seating resulting in accurate repeatability and concentricity.
Der sichere und genaue Sitz der Platte garantiert genaue Wiederholbarkeit beim Einsatz und beim Rundlauf.

i-Dream Drill **General** / i-Dream Drill **allgemeinen**

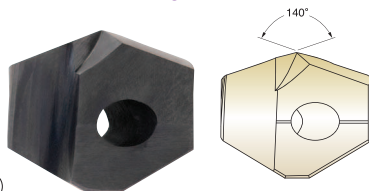
- For most steels materials / In den meisten Stahlsorten

i-Dream Drill **INOX** / i-Dream Drill **INOX**

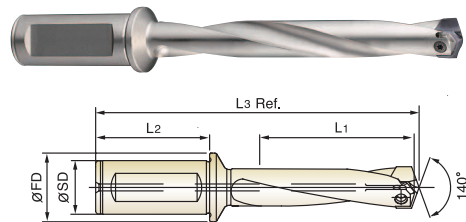
- For tough, ductile materials and stainless steels
Für zähe, verformbare Werkstoffe und rostfreie Stähle.
- Light, sharp cutting edge / Scharfe Schneidkante
- Soft cutting action / Weicher Schnitt
- Minimize cutting forces / Minimaler Schneidendruck
- Reduce built-up edge / Reduzierte Gratbildung

- Features of i-Dream Drill Holders- - Merkmale des i-Dream Drill Halters-

- Special Alloy Steels maintain its hardness and toughness under high temperatures.
Speziell legierter Stahl, der seine Härte und Zähigkeit auch bei hohen Temperaturen behält.
- Innovative surface treatment improves wear resistance and reduces corrosion.
Innovative Oberflächenbehandlung, die die Verschleißfestigkeit erhöht und die Korrosion vermindert.
- High Performance flute design allows maximum chip evacuation and minimum interference.
Optimierte Nutenform für maximale Spanabfuhr.



cutting conditions : p.50~51



Series Range (mm)	Insert EDP No.		Insert O.D.			Holder EDP No.	Shank Dia.	Shank Length	Flange Dia.	Drilling Depth	Overall Length	Screw No.
	General (TiAlN)	INOX (TiCN)	dec.	frac.	mm		SD	L2	FD	L1	L3 Ref.	
B Ø14.00 to Ø15.99	YB1A1450	YB2C1450	0.5709		14.50	ZH14503020				3D	43.5	120.9
	YB1A1460	YB2C1460	0.5748		14.60	ZH14505020	20	50	25	5D	72.5	149.9
	YB1A1468	YB2C1468	0.5781	37/64	14.68	ZH14507020				7D	101.5	178.9
	YB1A1480	YB2C1480	0.5827		14.80							
	YB1A1500	YB2C1500	0.5906		15.00							
	YB1A1508	YB2C1508	0.5938	19/32	15.08	ZH15003020				3D	45	122.9
	YB1A1510	YB2C1510	0.5945		15.10	ZH15005020	20	50	25	5D	75	152.9
	YB1A1520	YB2C1520	0.5984		15.20	ZH15007020				7D	105	182.9
	YB1A1530	YB2C1530	0.6024		15.30							
	YB1A1548	YB2C1548	0.6094	39/64	15.48							TX1516T08
	YB1A1550	YB2C1550	0.6102		15.50							
	YB1A1560	YB2C1560	0.6142		15.60	ZH15503020				3D	46.5	123.9
	YB1A1570	YB2C1570	0.6181		15.70	ZH15505020	20	50	25	5D	77.5	154.9
	YB1A1580	YB2C1580	0.6220		15.80	ZH15507020				7D	108.5	185.9
C Ø16.00 to Ø17.99	YB1A1587	YB2C1587	0.6250	5/8	15.87							
	YC1A1600	YC2C1600	0.6299		16.00							
	YC1A1609	YC2C1609	0.6335		16.09	ZH16003020				3D	48	125.0
	YC1A1620	YC2C1620	0.6378		16.20	ZH16005020	20	50	25	5D	80	157.0
	YC1A1627	YC2C1627	0.6406	41/64	16.27	ZH16007020				7D	112	189.0
	YC1A1630	YC2C1630	0.6417		16.30							TX1617T08
	YC1A1650	YC2C1650	0.6496		16.50	ZH16503020				3D	49.5	127.0
	YC1A1667	YC2C1667	0.6562	21/32	16.67	ZH16505020	20	50	25	5D	82.5	160.0
	YC1A1680	YC2C1680	0.6614		16.80	ZH16507020				7D	115.5	193.0

- ▶ TiN, TiCN, TiAlN & Hardslick are available on your request.
- ▶ 10×D Holder is available on your request.

◎ : Excellent ○ : Good

	Non-alloyed Steels, Free Machining Steels	Carbon Steels		Alloy Steels		High Alloyed steels		Structural Steels		Tool Steels		Stainless Steels	Cast Iron		Aluminum	Copper Alloys
	~HRc24 (~HB250)	~HRc28 (~HB275)	HRc28~ (~HB275~)	~HRc28 (~HB275)	HRc28~ (~HB275~)	~HRc37 (~HB350)	HRc37~ (~HB350~)	~HRc24 (~HB250)	HRc24~ (~HB250~)	~HRc13 (~HB200)	HRc13~ (~HB200~)	~HRc28 (~HB275)	~HRc19 (~HB220)	HRc19~ (~HB220~)	~HRc8 (~HB180)	~HB110
Y * 1A	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎		◎	◎		
Y * 2C	○	○		○				○		○		◎			○	○

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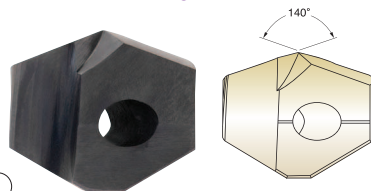
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i-Dream Drill INOX / i-Dream Drill INOX

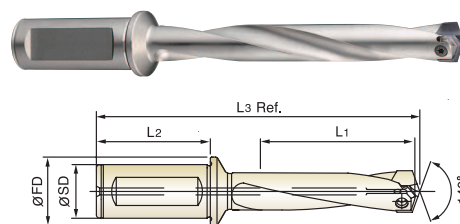
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cutting conditions : p.50~51



Series Range	Insert EDP No.		Insert O.D.			Holder EDP No.	Shank Dia.	Shank Length	Flange Dia.	Drilling Depth		Overall Length	Screw No.
	General (TiAlN)	INOX (TiCN)	h7							L3 Ref.			
			dec.	frac.	mm								
(mm)							SD	L2	FD	L1			
C Ø16.00 to Ø17.99	YC1A1700	YC2C1700	0.6693		17.00	ZH17003020				3D	51	128.0	TX1718T08
	YC1A1707	YC2C1707	0.6719	43/64	17.07	ZH17005020	20	50	25	5D	85	162.0	
	YC1A1746	YC2C1746	0.6875	11/16	17.46	ZH17007020				7D	119	196.0	
	YC1A1750	YC2C1750	0.6890		17.50	ZH17503020				3D	52.5	130.0	
	YC1A1780	YC2C1780	0.7008		17.80	ZH17505020	20	50	25	5D	87.5	165.0	
	YC1A1786	YC2C1786	0.7031	45/64	17.86	ZH17507020				7D	122.5	200.0	
D Ø18.00 to Ø19.99	YD1A1800	YD2C1800	0.7087		18.00	ZH18003025				3D	54	140.3	TX1819T15
						ZH18005025	25	56	32	5D	90	176.3	
	YD1A1826	YD2C1826	0.7188	23/32	18.26	ZH18007025				7D	126	212.3	
	YD1A1850	YD2C1850	0.7283		18.50	ZH18503025				3D	55.5	141.3	
	YD1A1865	YD2C1865	0.7344	47/64	18.65	ZH18505025	25	56	32	5D	92.5	178.3	
	YD1A1880	YD2C1880	0.7402		18.80	ZH18507025				7D	129.5	215.3	
	YD1A1900	YD2C1900	0.7480		19.00	ZH19003025				3D	57	144.3	TX1920T15
	YD1A1905	YD2C1905	0.7500	3/4	19.05	ZH19005025	25	56	32	5D	95	182.3	
	YD1A1927	YD2C1927	0.7587		19.27	ZH19007025				7D	133	220.3	
	YD1A1945	YD2C1945	0.7656	49/64	19.45								
	YD1A1950	YD2C1950	0.7677		19.50	ZH19503025				3D	58.5	145.3	
	YD1A1980	YD2C1980	0.7795		19.80	ZH19505025	25	56	32	5D	97.5	184.3	
	YD1A1984	YD2C1984	0.7812	25/32	19.84	ZH19507025				7D	136.5	223.3	

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	Non-alloy Steels, Free Machining Steels	Carbon Steels		Alloy Steels		High Alloyed steels		Structural Steels		Tool Steels		Stainless Steels	Cast Iron		Aluminum	Copper Alloys
	~HRc24 (~HB250)	~HRc28 (~HB275)	HRc28~ (HB275~)	~HRc28 (~HB275)	HRc28~ (HB275~)	~HRc37 (~HB350)	HRc37~ (HB350~)	~HRc24 (~HB250)	HRc24~ (HB250~)	~HRc13 (~HB200)	HRc13~ (HB200~)	~HRc28 (~HB275)	~HRc19 (~HB220)	HRc19~ (HB220~)	~HRc8 (~HB180)	~HB110
Y * 1A	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎		◎	◎		
Y * 2C	○	○		○				○		○		◎			○	○



METRIC

Material Werkstück		Tensile Strength	Hardness		Cutting Speed	Feed [mm/rev]				
		[N/mm²]	HB	HRC	Vc [M/min]	Ø12.0 ~Ø14.9	Ø15.0 ~Ø17.9	Ø18.0 ~Ø21.9	Ø22.0 ~Ø26.9	Ø27.0 ~Ø31.9
Non-alloyed steels, Cast steels Free-machining steels	9SMn28, 9SMnPb28,	~500	100~150		95~120	0.16~0.28	0.21~0.35	0.27~0.40	0.34~0.52	0.37~0.55
	10SPb20 etc	500~850	150~250	~24	80~105	0.14~0.24	0.21~0.35	0.27~0.40	0.34~0.52	0.37~0.55
Low-alloyed steels, Cast steels(<5%) Carbon steels	C15, C22, 20Mn5, Ck45, C45 etc	~450	85~125		90~115	0.14~0.25	0.20~0.33	0.25~0.39	0.31~0.47	0.34~0.50
		450~755	125~225	~19	70~90	0.12~0.20	0.17~0.28	0.22~0.32	0.30~0.46	0.33~0.49
		755~900	225~265	19~27	60~80	0.12~0.20	0.17~0.28	0.22~0.32	0.30~0.46	0.33~0.49
		900~1200	265~350	27~37	55~70	0.10~0.16	0.15~0.25	0.21~0.30	0.25~0.38	0.29~0.43
Alloyed steels	45CrMo4, 42CrMo4, 16MnCr5, Ck75, 35CrMo4, 16MnCr5 etc	~600	125~175	~7	80~100	0.14~0.24	0.17~0.28	0.22~0.32	0.30~0.46	0.34~0.50
		600~800	175~235	7~22	70~90	0.12~0.20	0.17~0.28	0.22~0.32	0.30~0.46	0.34~0.50
		800~950	235~280	22~29	60~80	0.12~0.20	0.15~0.25	0.22~0.32	0.30~0.46	0.34~0.50
		950~1110	280~330	29~35	55~70	0.10~0.16	0.13~0.21	0.21~0.30	0.25~0.38	0.29~0.43
		1110~1230	330~360	35~39	45~60	0.08~0.12	0.13~0.21	0.21~0.30	0.25~0.38	0.29~0.43
High-alloyed steels	36CrNiMo4, 41CrAlMo7 etc	600~1020	225~300	19~32	45~60	0.12~0.20	0.15~0.25	0.21~0.30	0.20~0.31	0.24~0.35
		1020~1200	300~355	32~38	40~55	0.10~0.16	0.11~0.18	0.21~0.30	0.20~0.31	0.24~0.35
		1200~1330	355~390	38~42	40~50	0.08~0.12	0.09~0.14	0.18~0.26	0.19~0.29	0.23~0.34
Structural steels	St33, St37-2, St44-2, St52, St60 etc	350~500	100~150		75~95	0.14~0.24	0.21~0.35	0.27~0.39	0.29~0.44	0.32~0.47
		500~850	150~250	~24	60~75	0.12~0.20	0.20~0.33	0.22~0.32	0.25~0.38	0.29~0.43
Tool steels	102Cr6, 105WCr6, C75W etc	850~1200	250~355	24~38	50~65	0.10~0.16	0.17~0.28	0.21~0.30	0.21~0.32	0.26~0.38
		500~705	150~210	~16	50~65	0.10~0.16	0.13~0.21	0.18~0.26	0.20~0.31	0.24~0.35
Grey cast iron	Pearlitic, Ferritic Pearlitic	705~950	210~280	16~29	40~50	0.10~0.16	0.13~0.21	0.18~0.26	0.20~0.31	0.24~0.35
		500~700	150~210	~16	100~125	0.15~0.26	0.20~0.37	0.27~0.42	0.36~0.51	0.40~0.55
Cast iron nodular	Ferritic Pearlitic	700~850	210~250	16~24	75~95	0.11~0.20	0.16~0.29	0.20~0.30	0.25~0.35	0.29~0.40
		540	165	4	95~120	0.13~0.22	0.17~0.31	0.21~0.32	0.28~0.40	0.32~0.44
Malleable cast iron	Ferritic Pearlitic	850	250	24	75~95	0.11~0.20	0.14~0.26	0.19~0.29	0.25~0.35	0.29~0.40
		450	125		100~125	0.13~0.22	0.17~0.31	0.21~0.32	0.28~0.40	0.32~0.44
Aluminum alloys (Wrought)	not heat treatable hardened	780	230	21	75~95	0.11~0.18	0.14~0.26	0.19~0.29	0.25~0.35	0.29~0.40
			65		250~330	0.30~0.40	0.35~0.45	0.40~0.50	0.45~0.55	0.50~0.60
Aluminum alloys (Cast)	≤12% Si, not heat treatable ≤12% Si, hardened >12% Si, not heat treatable Free machining(Pb>1%)		150		200~250	0.30~0.40	0.35~0.45	0.40~0.50	0.45~0.55	0.50~0.60
			75		200~50	0.25~0.35	0.30~0.40	0.35~0.45	0.40~0.50	0.45~0.55
			90		150~220	0.25~0.35	0.30~0.40	0.35~0.45	0.40~0.50	0.45~0.55
			130		100~200	0.20~0.30	0.25~0.35	0.30~0.40	0.35~0.45	0.40~0.50
Copper alloys	Brass Electrolitic copper		110		115~145	0.16~0.28	0.23~0.36	0.29~0.36	0.37~0.45	0.41~0.48
			90		145~185	0.17~0.29	0.24~0.37	0.30~0.38	0.38~0.46	0.42~0.49
Non ferrous material	Duroplastics Fiber plastics Hard rubber		100		95~120	0.06~0.09	0.09~0.13	0.11~0.13	0.15~0.18	0.19~0.22
Stainless steels	Austenitic and Austenitic/ferritic	450~610	135~185	~9	45~60	0.10~0.16	0.12~0.18	0.14~0.20	0.15~0.26	0.18~0.28
		610~930	185~275	9~28	30~45	0.08~0.14	0.09~0.15	0.10~0.16	0.12~0.20	0.14~0.22

*Formulas :

RPM = revolution per minute (rev/min)
M/min = surface meter per minute(M/min)
DIA. = diameter of drill (mm)
mm/rev = feed rate(mm/rev)

$$\begin{aligned} \text{M/min} &= \frac{(\text{RPM}) \cdot \pi \cdot (\text{DIA.})}{1000} \\ \text{mm/min} &= (\text{RPM}) \cdot (\text{mm/rev}) \\ \text{RPM} &= \frac{(\text{M/min}) \cdot 1000}{(\pi) \cdot (\text{DIA.})} \end{aligned}$$

- The recommendations for speeds, feeds and other parameters presented in this chart are nominal recommendations and should be considered only as good starting points.
Speed and feed reductions (20% reduction in speed and 10% reduction in feed) are recommended.
- Recommend you to reduce the feed rate to 85%,70% when you use 5xD,7xD holders.
- For use of 7xD holder, we recommend to drill a centering pre-hole with equal to or larger than 140 ° point angle to min. 2/3 cutting diameter.
The use of the centering pre-hole improves hole location , roundness and surface finish.



i-Dream Drills

RECOMMENDED CUTTING CONDITIONS EMPFOHLENE SCHNEIDKONDITIONEN

CARBIDE

HSS

i-DREAM
DRILLS

DREAM
DRILLS
-GENERAL

DREAM
DRILLS
-INOX

DREAM
DRILLS
-ALU

DREAM
DRILLS
-CFRP

DREAM
DRILLS
-MQL TYPE

DREAM
DRILLS
for HARDENED
STEELS

GENERAL
CARBIDE
DRILLS

NC-SPOTTING
DRILLS

CENTER
DRILLS

MULTI-1
DRILLS

HPD DRILLS

GOLD-P
DRILLS

STRAIGHT
SHANK
DRILLS

TAPER
SHANK
DRILLS

NC-SPOTTING
DRILLS

CENTER
DRILLS

SPADE
DRILLS

TECHNICAL
DATA

INCH

Material Werkstück		Tensile Strength	Hardness		Cutting Speed	Feed [IPR]				
		MPa	HB	HRC	Vc [SFM]	Ø31/64 ~Ø37/64	Ø19/32 ~Ø45/64	Ø23/32 ~Ø55/64	Ø7/8 ~Ø1-1/16	Ø1-3/32 ~Ø1-1/4
Non-alloyed steels, Cast steels Free-machining steels	9SMn28, 9SMnPb28, 10SPb20 etc	~500	100~150		312~394	0.006~0.011	0.008~0.014	0.011~0.016	0.013~0.020	0.015~0.022
		500~850	150~250	~24	262~344	0.006~0.009	0.008~0.014	0.011~0.016	0.013~0.020	0.015~0.022
Low-alloyed steels, Cast steels(<5%) Carbon steels	C15, C22, 20Mn5, Ck45, C45 etc	~450	85~125		295~377	0.006~0.010	0.008~0.013	0.010~0.015	0.012~0.019	0.013~0.020
		450~755	125~225	~19	230~295	0.005~0.008	0.007~0.011	0.009~0.013	0.012~0.018	0.013~0.019
		755~900	225~265	19~27	197~262	0.005~0.008	0.007~0.011	0.009~0.013	0.012~0.018	0.013~0.019
		900~1200	265~350	27~37	180~230	0.004~0.006	0.006~0.010	0.008~0.012	0.010~0.015	0.011~0.017
Alloyed steels	45CrMo4, 42CrMo4, 16MnCr5, Ck75, 35CrMo4, 16MnCr5 etc	~600	125~175	~7	262~328	0.006~0.009	0.007~0.011	0.009~0.013	0.012~0.018	0.013~0.020
		600~800	175~235	7~22	230~295	0.005~0.008	0.007~0.011	0.009~0.013	0.012~0.018	0.013~0.020
		800~950	235~280	22~29	197~262	0.005~0.008	0.006~0.010	0.009~0.013	0.012~0.018	0.013~0.020
		950~1110	280~330	29~35	180~230	0.004~0.006	0.005~0.008	0.008~0.012	0.010~0.015	0.011~0.017
		1110~1230	330~360	35~39	148~197	0.003~0.005	0.005~0.008	0.008~0.012	0.010~0.015	0.011~0.017
High-alloyed steels	36CrNiMo4, 41CrAlMo7 etc	600~1020	225~300	19~32	148~197	0.005~0.008	0.006~0.010	0.008~0.012	0.008~0.012	0.009~0.014
		1020~1200	300~355	32~38	131~180	0.004~0.006	0.004~0.007	0.008~0.012	0.008~0.012	0.009~0.014
		1200~1330	355~390	38~42	131~164	0.003~0.005	0.004~0.006	0.007~0.010	0.007~0.011	0.009~0.013
		350~500	100~150		246~312	0.006~0.009	0.008~0.014	0.011~0.015	0.011~0.017	0.013~0.019
Structural steels	St33, St37-2, St44-2, St52, St60 etc	500~850	150~250	~24	197~246	0.005~0.008	0.008~0.013	0.009~0.013	0.010~0.015	0.011~0.017
		850~1200	250~355	24~38	164~213	0.004~0.006	0.007~0.011	0.008~0.012	0.008~0.013	0.010~0.015
Tool steels	102Cr6, 105WCr6, C75W etc	500~705	150~210	~16	164~213	0.004~0.006	0.005~0.008	0.007~0.010	0.008~0.012	0.009~0.014
		705~950	210~280	16~29	131~164	0.004~0.006	0.005~0.008	0.007~0.010	0.008~0.012	0.009~0.014
Grey cast iron	Pearlitic, Ferritic Pearlitic	500~700	150~210	~16	328~410	0.006~0.010	0.008~0.015	0.011~0.017	0.014~0.020	0.016~0.022
		700~850	210~250	16~24	246~312	0.004~0.008	0.006~0.011	0.008~0.012	0.010~0.014	0.011~0.016
Cast iron nodular	Ferritic Pearlitic	540	165	4	312~394	0.005~0.009	0.007~0.012	0.008~0.013	0.011~0.016	0.013~0.017
		850	250	24	246~312	0.004~0.008	0.006~0.010	0.007~0.011	0.010~0.014	0.011~0.016
Malleable cast iron	Ferritic Pearlitic	450	125		328~410	0.005~0.009	0.007~0.012	0.008~0.013	0.011~0.016	0.013~0.017
		780	230	21	246~312	0.004~0.007	0.006~0.010	0.007~0.011	0.010~0.014	0.011~0.016
Aluminum alloys (Wrought)	not heat treatable hardened		65		820~1083	0.0118~0.0157	0.0138~0.0177	0.0157~0.0197	0.0177~0.0217	0.0197~0.0236
			150		656~820	0.0118~0.0157	0.0138~0.0177	0.0157~0.0197	0.0177~0.0217	0.0197~0.0236
Aluminum alloys (Cast)	≤12% Si, not heat treatable ≤12% Si, hardened >12% Si, not heat treatable		75		656~820	0.0098~0.0138	0.0118~0.0157	0.0138~0.0177	0.0157~0.0197	0.0177~0.0217
			90		492~722	0.0098~0.0138	0.0118~0.0157	0.0138~0.0177	0.0157~0.0197	0.0177~0.0217
			130		328~656	0.0079~0.0118	0.0098~0.0138	0.0118~0.0157	0.0138~0.0177	0.0157~0.0197
Copper alloys	Free machining(Pb>1%) Brass Electrolitic copper		110		377~476	0.006~0.011	0.009~0.014	0.011~0.014	0.015~0.018	0.016~0.019
			90		476~607	0.007~0.011	0.009~0.015	0.012~0.015	0.015~0.018	0.017~0.019
			100		312~394	0.002~0.004	0.004~0.005	0.004~0.005	0.006~0.007	0.007~0.009
Non ferrous material	Duroplastics Fiber plastics Hard rubber									
Stainless steels	Austenitic and Austenitic/ferritic	450~610	135~185	~9	145~197	0.004~0.006	0.005~0.007	0.006~0.008	0.006~0.011	0.007~0.011
		610~930	185~275	9~28	89~145	0.003~0.005	0.004~0.006	0.004~0.006	0.005~0.008	0.006~0.009

*Formulas :

RPM = revolution per minute (rev/min)
SFM = surface feet per minute (ft/min)
DIA. = diameter of drill (inch)
IPR = feed rate (inch/rev)
IPM = inch per minute penetration rate

$$\begin{aligned} \text{SFM} &= \frac{(\text{RPM}) \cdot \pi \cdot (\text{DIA.})}{12} \\ \text{IPM} &= (\text{RPM}) \cdot (\text{IPR}) \\ \text{RPM} &= \frac{(\text{SFM}) \cdot 12}{(\pi) \cdot (\text{DIA.})} \end{aligned}$$

► The recommendations for speeds, feeds and other parameters presented in this chart are nominal recommendations and should be considered only as good starting points.

Speed and feed reductions (20% reduction in speed and 10% reduction in feed) are recommended.

► Recommend you to reduce the feed rate to 85%,70% when you use 5xD,7xD holders.

► For use of 7xD holder, we recommend to drill a centering pre-hole with equal to or larger than 140 ° point angle to min. 2/3 cutting diameter.

The use of the centering pre-hole improves hole location , roundness and surface finish.