



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

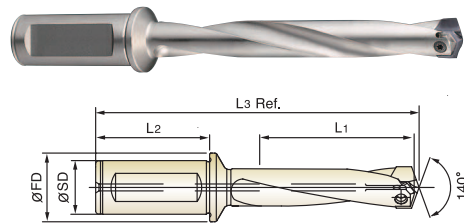
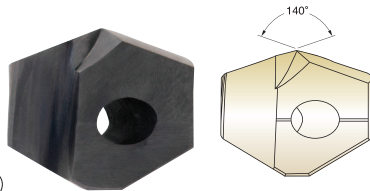
- ▶ For most steels materials / In den meisten Stahlsorten

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. SD	Shank Length L2	Flange Dia. FD	Drilling Depth		Overall Length L3 Ref.	Screw No.
	General (TiAlN)	INOX (TiCN)	h7							L1	L3 Ref.		
			dec.	frac.	mm								
I Ø28.00 to Ø29.99	Y1A2800	YI2C2800	1.1024		28.00	ZH28003032				3D	84	178.2	TX2829T25
	Y1A2818	YI2C2818	1.1094	1*7/64	28.18	ZH28005032	32	60	37	5D	140	234.2	
	Y1A2850	YI2C2850	1.1220		28.50	ZH28007032				7D	196	290.2	
	Y1A2858	YI2C2858	1.1220		28.50	ZH28503032				3D	85.5	179.2	
	Y1A2858	YI2C2858	1.1250	1*1/8	28.58	ZH28505032	32	60	37	5D	142.5	236.2	TX2930T25
	Y1A2858	YI2C2858	1.1250	1*1/8	28.58	ZH28507032				7D	199.5	293.2	
	Y1A2900	YI2C2900	1.1417		29.00	ZH29003032				3D	87	182.2	
	Y1A2900	YI2C2900	1.1417		29.00	ZH29005032	32	60	37	5D	145	240.2	
Y1A2937	YI2C2937	1.1562	1*5/32	29.37	ZH29007032				7D	203	298.2	TX2930T25	
Y1A2950	YI2C2950	1.1614		29.50	ZH29503032				3D	88.5	183.2		
Y1A2950	YI2C2950	1.1614		29.50	ZH29505032	32	60	37	5D	147.5	242.2		
Y1A2950	YI2C2950	1.1614		29.50	ZH29507032				7D	206.5	301.2		
J Ø30.00 to Ø31.99	YJ1A3000	YJ2C3000	1.1811		30.00	ZH30003032				3D	90	186.0	TX3031T25
	YJ1A3016	YJ2C3016	1.1875	1*3/16	30.16	ZH30005032	32	60	37	5D	150	246.0	
	YJ1A3016	YJ2C3016	1.1875	1*3/16	30.16	ZH30007032				7D	210	306.0	
	YJ1A3050	YJ2C3050	1.2008		30.50	ZH30503032				3D	91.5	187.0	TX3031T25
	YJ1A3056	YJ2C3056	1.2031	1*11/64	30.56	ZH30505032	32	60	37	5D	152.5	248.0	
	YJ1A3056	YJ2C3056	1.2031	1*11/64	30.56	ZH30507032				7D	213.5	309.0	
	YJ1A3100	YJ2C3100	1.2205		31.00	ZH31003032				3D	93	188.0	TX3132T25
	YJ1A3100	YJ2C3100	1.2205		31.00	ZH31005032	32	60	37	5D	155	250.0	
	YJ1A3100	YJ2C3100	1.2205		31.00	ZH31007032				7D	217	312.0	
YJ1A3150	YJ2C3150	1.2402		31.50	ZH31503032				3D	94.5	191.0		
YJ1A3150	YJ2C3150	1.2402		31.50	ZH31505032	32	60	37	5D	157.5	254.0		
YJ1A3150	YJ2C3150	1.2402		31.50	ZH31507032				7D	220.5	317.0		

- ▶ 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)		
Y * 1A	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
Y * 2C	○	○	○	○	○	○	○	○	○	○	○	◎	○	○	○	○

- 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



RECOMMENDED CUTTING CONDITIONS
EMPFOHLENE SCHNEIDKONDITIONEN

METRIC

Material Werkstück		Tensile Strength		Hardness		Cutting Speed Vc [M/min]	Feed [mm/rev]				
		[N/mm²]	HB	HRc	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, 10SPb20 etc	~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
		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
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
Structural steels	St33, St37-2, St44-2, St52, St60 etc	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
		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
Tool steels	102Cr6, 105WCr6, C75W etc	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
		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
Grey cast iron	Pearlitic, Ferritic	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
		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
Cast iron nodular	Ferritic Pearlitic	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
		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
Malleable cast iron	Ferritic Pearlitic	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
		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
Aluminum alloys (Wrought)	not heat treatable hardened	450	125			100~125	0.13-0.22	0.17~0.31	0.21~0.32	0.28~0.40	0.32~0.44
		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
Aluminum alloys (Cast)	≤12% Si, not heat treatable ≤12% Si, hardened >12% Si, not heat treatable	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
		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
Copper alloys	Free machining(Pb>1%) Brass Electrolytic copper	450	125			100~125	0.13-0.22	0.17~0.31	0.21~0.32	0.28~0.40	0.32~0.44
		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
Non ferrous material	Duroplastics Fiber plastics Hard rubber	450	125			100~125	0.13-0.22	0.17~0.31	0.21~0.32	0.28~0.40	0.32~0.44
		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
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

Y□1A / Y□2C

Y□2C

*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)

$$M/min = \frac{(RPM) \cdot \pi \cdot (DIA.)}{1000}$$

$$mm/min = (RPM) \cdot (mm/rev)$$

$$RPM = \frac{(M/min) \cdot 1000}{(\pi) \cdot (DIA.)}$$

- ▶ 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.

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
Alloyed steels	45CrMo4, 42CrMo4, 16MnCr5, Ck75, 35CrMo4, 16MnCr5 etc	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
		~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
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
Structural steels	St33, St37-2, St44-2, St52, St60 etc	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
		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

Y1A / Y2C

Y2C

*Formulas :

$$SFM = \frac{(RPM) \cdot \pi \cdot (DIA.)}{12}$$

$$IPM = (RPM) \cdot (IPR)$$

$$RPM = \frac{(SFM) \cdot 12}{(\pi) \cdot (DIA.)}$$

- 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

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- ▶ 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.