



Leading Through Innovation

CARBIDE INSERTS & HOLDERS

i - DREAM DRILLS

i-Dream Drills

- For General Steels and Stainless Steels
- Für allgemeine Stähle und Edelstähle

SELECTION GUIDE



CARBIDE INSERTS & HOLDERS

i-DREAM
DRILLS

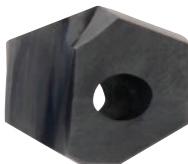
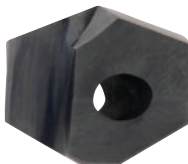
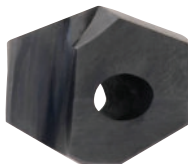
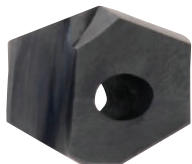
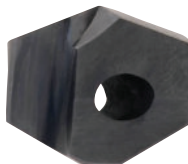
For General Steels and Stainless Steels

Please visit globalyg1.com/mat for material search

© : Excellent ○ : Good

Recommended cutting conditions : p.A54

ISO		VDI 3323	Material Description	Composition / Structure / Heat Treatment		HB	HRc	SURFACE TREATMENT			
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		◎		◎	
	20			Pearlitic		230	21	◎		◎	
N	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			Cutting Alloys, PB>1%		110			○		○
	27	Copper and Copper Alloys (Bronze / Brass)		CuZn, CuSnZn (Brass)		90			○		○
	28			CuSn, lead-free copper and electrolytic copper		100			○		○
	29	Non Metallic Materials		Duroplastic, Fiber Reinforced Plastic							
	30			Rubber, Wood, etc.							
S	31	Heat Resistant Super Alloys		Fe Based	Annealed	200	15				
	32				Cured	280	30				
	33			Ni or Co Based	Annealed	250	25				
	34				Cured	350	38				
	35	Titanium Alloys		Cast		320	34				
	36			Pure Titanium		400 Rm					
	37			Alpha + Beta Alloys	Hardened	1050 Rm					
H	38	Hardened steel				550	55				
	39					630	60				
	40			Chilled Cast Iron		400	42				
	41			Hardened Cast Iron		550	55				

YC1A	YC2C	YD1A	YD2C	YE1A	YE2C	YF1A	YF2C	YG1A	YG2C
C		D		E		F		G	
16.00		18.00		20.00		22.00		24.00	
17.86		19.84		21.83		23.81		25.80	
A46		A47		A48		A49		A50	
TiAlN	TiCN	TiAlN	TiCN	TiAlN	TiCN	TiAlN	TiCN	TiAlN	TiCN
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									

SELECTION GUIDE



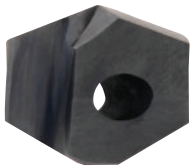
SERIES
TYPE
SIZE MIN
SIZE MAX
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SURFACE TREATMENT

YH1A	YH2C
H	
26.00	
27.78	
A51	
TiAIN	TiCN

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DRILLS

For General Steels and Stainless Steels



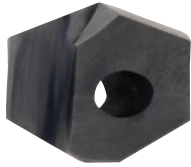
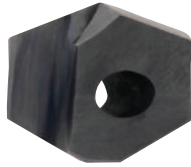
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◎ : Excellent ○ : Good

Recommended cutting conditions : p.A54

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	◎	
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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		◎	
	20		Pearlitic		230	21	◎	
N	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	Cutting Alloys, PB>1%		110			○
	27		CuZn, CuSnZn (Brass)		90			○
	28	Non Metallic Materials	CuSn, lead-free copper and electrolytic copper		100			○
	29		Duroplastic, Fiber Reinforced Plastic					
	30		Rubber, Wood, etc.					
S	31	Heat Resistant Super Alloys	Fe Based	Annealed	200	15		
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	34			Cured	350	38		
	35			Cast	320	34		
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	37		Alpha + Beta Alloys	Hardened	1050 Rm			
H	38	Hardened steel		Hardened	550	55		
	39			Hardened	630	60		
	40	Chilled Cast Iron		Cast	400	42		
	41	Hardened Cast Iron		Hardened	550	55		

YI1A	YI2C	YJ1A	YJ2C	ZH*3	ZH*5	ZH*7
I		J				
28.00		30.00				
29.77		31.75				
A52		A53				
TiAIN	TiCN	TiAIN	TiCN	3XD	5XD	7XD



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i-DREAM DRILL INSERTS & HOLDERS

- i-DREAM DRILL EINSÄTZE UND HALTER
- 🇫🇷 PLAQUETTES ET PORTE-PLAQUETTE i-DREAM DRILL - USAGE GÉNÉRAL / INOX
- 🇮🇹 INSERTI & PORTAINSERTI i-DREAM DRILL

- 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-Dresm 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.



CARBIDE

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i-ONE
DRILLS

i-DREAM
DRILLS

DREAM
DRILLS
-PRO

DREAM
DRILLS
-GENERAL

DREAM
DRILLS
-HIGH FEED

DREAM
DRILLS
-FLAT BOTTOM

DREAM
DRILLS
-INOX

DREAM
DRILLS
-ALU

DREAM
DRILLS
-MQL

DREAM DRILLS
for HIGH
HARDENED STEELS

GENERAL
CARBIDE
DRILLS

MULTI-1
DRILLS

HPD
DRILLS

GOLD-P
DRILLS

SUPER-GP
DRILLS

STRAIGHT
SHANK
DRILLS

TAPER SHANK
DRILLS

NC-
SPOTTING
DRILLS

CENTER
DRILLS

SPADE
DRILLS

REAMERS

COUNTER
SINKS

COUNTER
BORES

TECHNICAL
DATA



i-DREAM DRILL INSERTS & HOLDERS

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Unit : mm													
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)	h7				SD	L2	FD	L1	L3 Ref.		
			dec.	frac.	mm								
G Ø24.00 to Ø25.99	YG1A2400	YG2C2400	.9449	-	24.00	ZH24003032	32	60	37	3D	72	164.8	TX2425T20
	YG1A2421	YG2C2421	.9531	61/64	24.21	ZH24005032				5D	120	212.8	
						ZH24007032				7D	168	260.8	
	YG1A2450	YG2C2450	.9646	-	24.50	ZH24503032	32	60	37	3D	73.5	165.8	
	YG1A2461	YG2C2461	.9688	31/32	24.61	ZH24505032				5D	122.5	214.8	
	YG1A2470	YG2C2470	.9724	-	24.70	ZH24507032				7D	171.5	263.8	
	YG1A2500	YG2C2500	.9843	63/64	25.00	ZH25003032	32	60	37	3D	75	167.8	TX2526T20
	YG1A2540	YG2C2540	1.0000	1	25.40	ZH25005032				5D	125	217.8	
						ZH25007032				7D	175	267.8	
	YG1A2550	YG2C2550	1.0039	-	25.50	ZH25503032	32	60	37	3D	76.5	170.8	
	YG1A2567	YG2C2567	1.0106	-	25.67	ZH25505032				5D	127.5	221.8	
	YG1A2570	YG2C2570	1.0118	-	25.70	ZH25507032				7D	178.5	272.8	
YG1A2580	YG2C2580	1.0156	1-1/64	25.80									

► Other diameters of insert and shank types of holder are available upon request.



i-DREAM DRILL INSERTS & HOLDERS

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- 🇫🇷 PLAQUETTES ET PORTE-PLAQUETTE I-DREAM DRILL - USAGE GÉNÉRAL / INOX
- 🇮🇹 INSERTI & PORTAINSERTI i-DREAM DRILL

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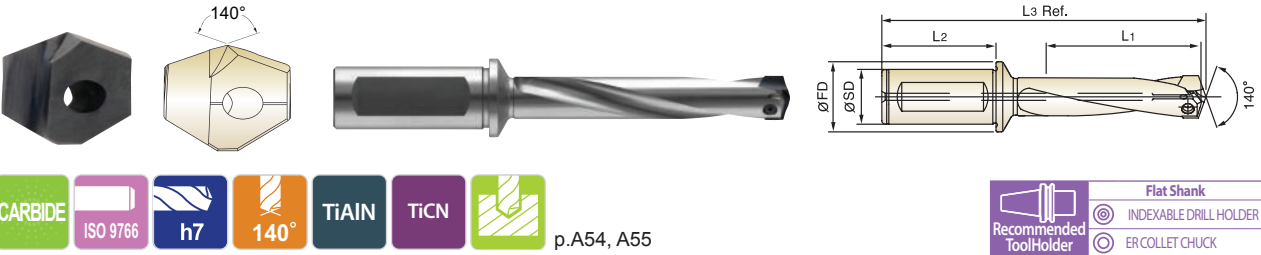
i-Dream Drill General / i-Dream Drill allgemeinen

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i-Dream Drill INOX / i-Dream Drill INOX

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(mm)	General (TiAlN)	INOX (TiCN)	h7				SD	L2	FD	L1	L3 Ref.			
			dec.	frac.	mm									
H Ø26.00 to Ø27.99	YH1A2600	YH2C2600	1.0236	-	26.00	ZH26003032	32	60	37	3D	78	171.2	TX2627T25	
	YH1A2619	YH2C2619	1.0312	1-1/32	26.19	ZH26005032				5D	130	223.2		
						ZH26007032				7D	182	275.2		
	YH1A2650	YH2C2650	1.0433		26.50	ZH26503032	32	60	37	3D	79.5	172.2		TX2728T25
	YH1A2659	YH2C2659	1.0469	1-3/64	26.59	ZH26505032				5D	132.5	225.2		
	YH1A2699	YH2C2699	1.0625	1-1/16	26.99	ZH26507032				7D	185.5	278.2		
	YH1A2700	YH2C2700	1.0630	-	27.00	ZH27003032	32	60	37	3D	81	174.2	TX2728T25	
						ZH27005032				5D	135	228.2		
						ZH27007032				7D	189	282.2		
	YH1A2750	YH2C2750	1.0827	-	27.50	ZH27503032	32	60	37	3D	82.5	175.2		TX2728T25
						ZH27505032				5D	137.5	230.2		
	YH1A2778	YH2C2778	1.0938	1-3/32	27.78	ZH27507032				7D	192.5	285.2		

► Other diameters of insert and shank types of holder are available upon request.

◎ : Excellent ○ : Good																			
ISO	P										M					K			
Material Description	Non-alloy steel					Low alloy steel					Stainless steel					Grey cast iron		Nodular cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
HRc	13	25	28	32	30	10	29	32	38	15	35	15	23	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	230
YG1A	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
YG2C	○	○	○	○	○	○	○	○	○	○	◎	◎	◎	◎	◎	◎	◎	◎	◎
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
HRc											15	30	25	38	34			55	60
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630
YG1A																			
YG2C	○	○	○	○	○	○	○	○											

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◎ : Excellent ○ : Good																			
ISO	P										M					K			
Material Description	Non-alloy steel					Low alloy steel					Stainless steel					Grey cast iron		Nodular cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
HRc	13	25	28	32	30	10	29	32	38	15	35	15	23	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	230
YH1A	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
YH2C	○	○	○	○	○	○	○	○	○	○	◎	◎	◎	◎	◎	◎	◎	◎	◎
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
HRc											15	30	25	38	34			55	60
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630
YH1A																			
YH2C	○	○	○	○	○	○	○	○	○	○									

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DREAM
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-PRO

DREAM
DRILLS
-GENERAL

DREAM
DRILLS
-HIGH FEED

DREAM
DRILLS
-FLAT BOTTOM

DREAM
DRILLS
-INOX

DREAM
DRILLS
-ALU

DREAM
DRILLS
-MQL

DREAM DRILLS
for HIGH
HARDENED STEELS

GENERAL
CARBIDE
DRILLS

MULTI-1
DRILLS

HPD
DRILLS

GOLD-P
DRILLS

SUPER-GP
DRILLS

STRAIGHT
SHANK
DRILLS

TAPER SHANK
DRILLS

NC-
SPOTTING
DRILLS

CENTER
DRILLS

SPADE
DRILLS

REAMERS

COUNTER
SINKS

COUNTER
BORES

TECHNICAL
DATA



RECOMMENDED CUTTING CONDITIONS
EMPFOHLENE SCHNEIDPARAMETER

YA1A, YB1A, YC1A, YD1A, YE1A,
YF1A, YG1A, YH1A, YI1A, YJ1A SERIES

i-DREAM DRILLS - GENERAL

Vc = m/min.
RPM = rev./min.
FEED = mm/rev.

ISO	VDI 3323	Material Description	Vc	Feed				
				Ø12.00-14.99	Ø15.00-17.99	Ø18.00-21.99	Ø22.00-26.99	Ø27.00-31.99
P	1	Non-alloy steel	95-120	0.16-0.28	0.21-0.35	0.27-0.40	0.34-0.52	0.37-0.55
	2		80-105	0.14-0.24	0.21-0.35	0.27-0.40	0.34-0.52	0.37-0.55
	3		60-80	0.12-0.20	0.17-0.28	0.22-0.32	0.30-0.46	0.33-0.49
	4		55-70	0.10-0.16	0.15-0.25	0.21-0.30	0.25-0.38	0.29-0.43
	5		55-70	0.10-0.16	0.15-0.25	0.21-0.30	0.25-0.38	0.29-0.43
	6	Low alloy steel	70-90	0.12-0.20	0.17-0.28	0.22-0.32	0.30-0.46	0.34-0.50
	7		60-80	0.12-0.20	0.15-0.25	0.22-0.32	0.30-0.46	0.34-0.50
	8		55-70	0.10-0.16	0.13-0.21	0.21-0.30	0.25-0.38	0.29-0.43
	9		45-60	0.08-0.12	0.13-0.21	0.21-0.30	0.25-0.38	0.29-0.43
	10	High alloyed steel, and tool steel	50-65	0.10-0.16	0.13-0.21	0.18-0.26	0.20-0.31	0.24-0.35
	11		40-55	0.10-0.16	0.11-0.18	0.21-0.30	0.20-0.31	0.24-0.35
K	15	Grey cast iron	100-125	0.15-0.26	0.20-0.37	0.27-0.42	0.36-0.51	0.40-0.55
	16		75-95	0.11-0.20	0.16-0.29	0.20-0.30	0.25-0.35	0.29-0.40
	17	Nodular cast iron	95-120	0.13-0.22	0.17-0.31	0.21-0.32	0.28-0.40	0.32-0.44
	18		75-95	0.11-0.20	0.14-0.26	0.19-0.29	0.25-0.35	0.29-0.40
	19	Malleable cast iron	100-125	0.13-0.22	0.17-0.31	0.21-0.32	0.28-0.40	0.32-0.44
	20		75-95	0.11-0.18	0.14-0.26	0.19-0.29	0.25-0.35	0.29-0.40

- 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 use a pilot drill with equal to or larger than 140° point angle (0.5xD - 1.5xD).
The use of the centering pre-hole improves hole location, roundness and surface finish.



RECOMMENDED CUTTING CONDITIONS
EMPFOHLENE SCHNEIDPARAMETER

YA2C, YB2C, YC2C, YD2C, YE2C,
YF2C, YG2C, YH2C, YI2C, YJ2C SERIES

i-DREAM DRILLS - INOX

Vc = m/min.
RPM = rev./min.
FEED = mm/rev.

ISO	VDI 3323	Material Description	Vc	Feed				
				Ø12.00-14.99	Ø15.00-17.99	Ø18.00-21.90	Ø22.00-26.99	Ø27.00-31.99
P	1	Non-alloy steel	95-120	0.16-0.28	0.21-0.35	0.27-0.40	0.34-0.52	0.37-0.55
	2		80-105	0.14-0.24	0.21-0.35	0.27-0.40	0.34-0.52	0.37-0.55
	3		60-80	0.12-0.20	0.17-0.28	0.22-0.32	0.30-0.46	0.33-0.49
	4		55-70	0.10-0.16	0.15-0.25	0.21-0.30	0.25-0.38	0.29-0.43
	6		70-90	0.12-0.20	0.17-0.28	0.22-0.32	0.30-0.46	0.34-0.50
	7	Low alloy steel	60-80	0.12-0.20	0.15-0.25	0.22-0.32	0.30-0.46	0.34-0.50
	10		50-65	0.10-0.16	0.13-0.21	0.18-0.26	0.20-0.31	0.24-0.35
M	12	Stainless steel	30-45	0.08-0.14	0.09-0.15	0.10-0.16	0.12-0.20	0.14-0.22
	13		30-45	0.08-0.14	0.09-0.15	0.10-0.16	0.12-0.20	0.14-0.22
	14		45-60	0.10-0.16	0.12-0.18	0.14-0.20	0.15-0.26	0.18-0.28
N	21	Aluminum-wrought alloy	250-330	0.30-0.40	0.35-0.45	0.40-0.50	0.45-0.55	0.50-0.60
	22		200-250	0.30-0.40	0.35-0.45	0.40-0.50	0.45-0.55	0.50-0.60
	23	Aluminum-cast, alloyed	200-250	0.25-0.35	0.30-0.40	0.35-0.45	0.40-0.50	0.45-0.55
	24		150-220	0.25-0.35	0.30-0.40	0.35-0.45	0.40-0.50	0.45-0.55
	25		100-200	0.20-0.30	0.25-0.35	0.30-0.40	0.35-0.45	0.40-0.50
	26	Copper and Copper Alloys (Bronze / Brass)	115-145	0.16-0.28	0.23-0.36	0.29-0.36	0.37-0.45	0.41-0.48
	27		145-185	0.17-0.29	0.24-0.37	0.30-0.38	0.38-0.46	0.42-0.49
	28		95-120	0.06-0.09	0.09-0.13	0.11-0.13	0.15-0.18	0.19-0.22

- 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 use a pilot drill with equal to or larger than 140° point angle (0.5xD - 1.5xD).
The use of the centering pre-hole improves hole location, roundness and surface finish.

CARBIDE

HSS

i-ONE
DRILLS

i-DREAM
DRILLS

DREAM
DRILLS
-PRO

DREAM
DRILLS
-GENERAL

DREAM
DRILLS
-HIGH FEED

DREAM
DRILLS
-FLAT BOTTOM

DREAM
DRILLS
-INOX

DREAM
DRILLS
-ALU

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DRILLS
-MQL

DREAM DRILLS
for HIGH
HARDENED STEELS

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ASSEMBLY OF i-DREAM DRILLS MONTAGE DES i-DREAM DRILLS



Make sure to clean the insert and insert seat.
Schneideinsatz und Haltersitz sorgfältig reinigen.



Slide the drill insert into the slot of the holder and press down the insert to touch the bottom of the slot.
Schneideinsatz in den Haltersitz einführen und den Schneideinsatz fest auf den Grund des Haltersitzes pressen.



After confirming the insert is pressed down to the bottom of the slot, tighten the screw using anti-seize compound.
Wenn der Schneideinsatz fest auf den Grund des Haltersitzes gepresst ist, die Schraube fest anziehen und dabei Spezialfett verwenden.

WRENCH TYPE	PRODUCT No.	T-HANDLE No.	SERIES (SIZE)	CLAMPING TORQUE (N·m)
 WING TYPE	TWWT08	—	A (Ø12.00-Ø13.99)	2.4
			B (Ø14.00-Ø15.99)	
			C (Ø16.00-Ø17.99)	
 TORX BIT TYPE	TWBT15		D (Ø18.00-Ø19.99)	6
	TWBT20		E, F, G (Ø20.00-Ø25.99)	10
	TWBT25		H, I, J (Ø26.00-Ø31.99)	13

Use the wing type or T-type wrench.
Benutzen Sie den Winkeldreher oder T - Schlüsse

► Need to use appropriate wrenches and screws as indicated.
Unbedingt die angegebenen Schrauben und Dreher verwenden.

► It's important to tighten up the screw properly.
Es ist wichtig, die Schraube korrekt und fest anzuziehen.

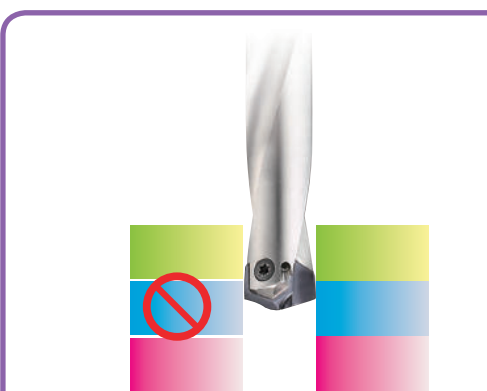
CAUTION-NOT RECOMMENDABLE APPLICATION ACHTUNG - NICHT EMPFOHLENE ANWENDUNG



Intersecting cross hole is bigger than the drill insert's Margin Length.
Der Haltersitz ist größer als die Breite des Schneideinsatzes.

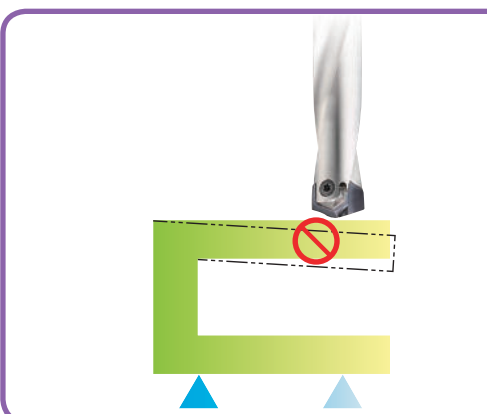


Material with slanting entrance and exit over 7 degrees. (If drilling 7 degrees or under slanting surface, reduce the feed about 30-50%)
Werkstücke mit schrägem Anschnitt oder Austritt von über 7°. (Zum Bohren von bis zu 7° Schräge den Vorschub um ca. 30-50% reduzieren).



For drilling stacked plates, minimize the space between the plates.
Beim Bohren von Blechpaketen den Abstand der Bleche minimieren.

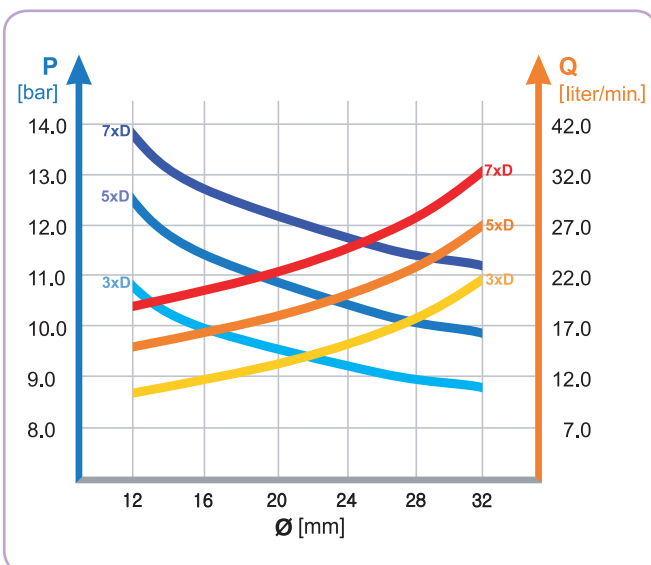
The space between stacked plates can cause insert breakage or poor chip control.
Freiraum in Blechpaketen kann den Bruch des Schneideinsatzes oder schlechte Entspannung verursachen.



The material needs to be fixtured securely before drilling.
Das Werkstück muss fest und sicher aufgespannt sein



RECOMMENDED COOLANT PRESSURE AND FLOW RATE ON VERTICAL DRILLING EMPFOHLENE KÜHLMITTELDRUCK UND - MENGE BEIM VERTIKALEN BOHREN



- Recommended emulsion mix is 6 - 8%.
Empfohlene Emulsionsmischung 6 - 8%.
- For Drilling into Stainless and High Strength steels, a mix of 10% is recommended.
Beim Bohren in rostfreie und hochfeste Stähle werden 10% empfohlen.
- For horizontal drilling, 30% reduction on the coolant pressure and flow rate is possible.
Beim horizontalen Bohren können Kühlmitteldruck und -menge um 30% gemindert werden.
- Dry drilling is possible for 1-2xD drilling.
(But not recommended.)
Trocken Bohren ist möglich bei 1-2xD.
(Aber nicht empfohlen.)

TROUBLE SHOOTING PROBLEMLÖSUNGEN



- 1) Heavy flank wear / Fast flank wear**
- Reduce cutting speed
 - Increase feed



- 2) Chipping on cutting edge**
- Reduce feed
 - Check the rigidity of spindle and chuck
 - Rigid clamping of workpiece



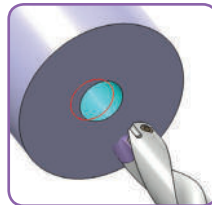
- 3) Build-up on cutting edge**
- Increase cutting speed
 - Use a coated insert



- 4) Chipping or break down on outer corner**
- Reduce feed
 - Rigid clamping of workpiece



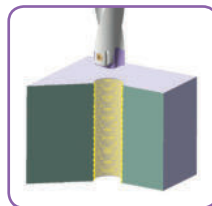
- 5) Wear of land margin**
- Rigid clamping of workpiece
 - Reduce cutting speed
 - Increase coolant flow



- 6) Unsatisfactory positioning of the hole**
- Rigid clamping of workpiece
 - Reduce feed during entrance or exit



- 7) Scratching on holder**
- Rigid clamping of workpiece
 - Reduce feed
 - Increase coolant flow



- 8) Unsatisfactory surface finish**
- Rigid clamping of workpiece
 - Increase coolant flow and pressure