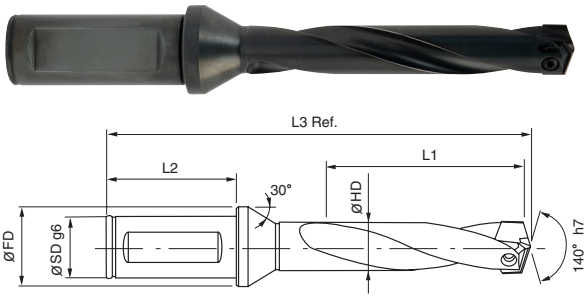
i-Dream Drill INSERTS & HOLDERS



-Feature of *i*-Dream Drill Holder-

- Special Alloy Steel that maintains its hardness and toughness under high temperatures.
- Innovative surface treatment that improves wear resistance and reduces corrosion
- High Performance flute design allowing maximum chip evacuation and minimum interference.

Series	Insert EDP No. (TiAlN)	Insert O.D.			Drilling Depth	Holder	O.D.	Shank Dia.	Shank Length	Flange Dia.	Flute Length(L1)			Overall Length (L3) Ref.			Torx No.
		dec.	frac.	mm		EDP No.	HD	SD g6	L2	FD	3xD	5xD	7xD	3xD	5xD	7xD	
C	YC1A1600	0.6299		16.00	3D 5D 7D	ZH16003020 ZH16005020 ZH16007020	15.7	20	50	25	59	92	125	131	164	197	TX1617T08
	YC1A1609	0.6335		16.09													
	YC1A1620	0.6378		16.20													
	YC1A1627	0.6406	41/64	16.27													
	YC1A1630	0.6417		16.30													
	YC1A1650	0.6496		16.50	3D 5D 7D	ZH16503020 ZH16505020 ZH16507020	16.2	20	50	25	61	95	128	133	167	200	
	YC1A1667	0.6563	21/32	16.67													
	YC1A1680	0.6614		16.80													
	YC1A1700	0.6693		17.00	3D 5D 7D	ZH17003020 ZH17005020 ZH17007020	16.7	20	50	25	63	98	133	134	169	204	
	YC1A1707	0.6720	43/64	17.07													
	YC1A1746	0.6874	11/16	17.46													
	YC1A1750	0.6890		17.50	3D 5D 7D	ZH17503020 ZH17505020 ZH17507020	17.2	20	50	25	64	100	136	135	171	207	
	YC1A1780	0.7008		17.80													
	YC1A1786	0.7031	45/64	17.86													
D	YD1A1800	0.7087		18.00	3D 5D 7D	ZH18003025 ZH18005025 ZH18007025	17.7	25	56	32	66	103	140	149	186	223	TX1819T15
	YD1A1826	0.7189	23/32	18.26													
	YD1A1850	0.7283		18.50	3D 5D 7D	ZH18503025 ZH18505025 ZH18507025	18.2	25	56	32	68	106	144	150	188	226	
	YD1A1865	0.7343	47/64	18.65													
	YD1A1880	0.7402		18.80													
	YD1A1900	0.7480		19.00	3D 5D 7D	ZH19003025 ZH19005025 ZH19007025	18.7	25	56	32	70	109	148	152	191	230	
	YD1A1905	0.7500	3/4	19.05													
	YD1A1927	0.7587		19.27													
	YD1A1945	0.7657	49/64	19.45													
	YD1A1950	0.7677		19.50	3D 5D 7D	ZH19503025 ZH19505025 ZH19507025	19.2	25	56	32	71	111	151	153	193	233	
	YD1A1980	0.7795		19.80													
	YD1A1984	0.7811	25/32	19.84													
E	YE1A2000	0.7874		20.00	3D 5D 7D	ZH20003025 ZH20005025 ZH20007025	19.7	25	56	32	71	112	153	152	193	234	TX2021T20
	YE1A2024	0.7969	51/64	20.24													
	YE1A2050	0.8071		20.50	3D 5D 7D	ZH20503025 ZH20505025 ZH20507025	20.2	25	56	32	73	115	157	154	196	238	
	YE1A2064	0.8126	13/16	20.64													
	YE1A2070	0.8150		20.70													
	YE1A2100	0.8268		21.00	3D 5D 7D	ZH21003025 ZH21005025 ZH21007025	20.7	25	56	32	75	118	161	156	199	242	
	YE1A2103	0.8280	53/64	21.03													
	YE1A2143	0.8437	27/32	21.43													
	YE1A2150	0.8465		21.50	3D 5D 7D	ZH21503025 ZH21505025 ZH21507025	21.2	25	56	32	77	120	164	157	200	244	
	YE1A2170	0.8543		21.70													
	YE1A2183	0.8594	55/64	21.83													
F	YF1A2200	0.8661		22.00	3D 5D 7D	ZH22003025 ZH22005025 ZH22007025	21.7	25	56	32	79	123	168	159	203	248	TX2223T20
	YF1A2223	0.8750	7/8	22.23													
	YF1A2250	0.8858		22.50	3D 5D 7D	ZH22503025 ZH22505025 ZH22507025	22.3	25	56	32	80	126	172	159	205	251	
	YF1A2262	0.8906	57/64	22.62													
	YF1A2270	0.8937		22.70													
	YF1A2300	0.9055		23.00	3D 5D 7D	ZH23003025 ZH23005025 ZH23007025	22.7	25	56	32	82	129	176	161	208	255	
	YF1A2302	0.9063	29/32	23.02													
	YF1A2342	0.9220	59/64	23.42													
	YF1A2350	0.9252		23.50	3D 5D 7D	ZH23503025 ZH23505025 ZH23507025	23.2	25	56	32	84	131	179	163	210	258	
	YF1A2370	0.9331		23.70													
	YF1A2381	0.9374	15/16	23.81													

FAX : +82(32)526-4373 YG-1 CO., LTD.

RECOMMENDED CUTTING CONDITIONS

i-Dream Drill METRIC

Material	Material Hardness (Bhn)	Speed (M/min)			Feed (mm/rev)				
		TiN	TiCN	TiAlN	ø12 ~ 15.9	ø16 ~ 19.9	ø20 ~ 23.9	ø24 ~ 27.9	ø28 ~ 31.9
Free machining Steel	100 - 150	109	124	138	0.24	0.28	0.32	0.35	0.37
1213, 12L13, 1215	150 - 200	106	119	132	0.22	0.26	0.30	0.33	0.35
12L14, 1118 etc	200 - 250	98	106	121	0.21	0.25	0.29	0.32	0.34
Low Carbon Steel	85 - 125	113	132	143	0.22	0.26	0.30	0.33	0.35
1015, 1020, 1140	125 - 175	98	106	128	0.22	0.26	0.30	0.33	0.35
1025 etc	175 - 225	91	98	115	0.19	0.23	0.27	0.30	0.32
	225 - 275	74	88	101	0.19	0.23	0.27	0.30	0.32
Medium Carbon Steel	125 - 175	98	106	122	0.22	0.26	0.30	0.33	0.35
1035, 1050, 1045	175 - 225	90	101	112	0.19	0.23	0.27	0.30	0.32
1055, 1140 etc	225 - 275	79	84	101	0.19	0.23	0.27	0.30	0.32
	275 - 325	67	77	80	0.16	0.20	0.24	0.27	0.29
Structural Steel	100 - 150	90	98	109	0.26	0.30	0.34	0.37	0.39
A36, A516, A182 etc	150 - 250	74	84	90	0.22	0.26	0.30	0.33	0.35
	250 - 350	66	77	88	0.19	0.23	0.27	0.30	0.32
Cast Iron / S,G Iron	120 - 150	112	144	158	0.25	0.29	0.33	0.36	0.38
A48-76 GR30/GR45	150 - 200	109	116	145	0.23	0.27	0.31	0.34	0.36
A536-72 60-40-18	200 - 220	90	109	133	0.21	0.25	0.29	0.32	0.34
A220-76 GR40010 etc	220 - 260	79	97	112	0.17	0.21	0.25	0.28	0.30
	260 - 320	67	84	95	0.16	0.20	0.24	0.27	0.29
Alloy Steel	125 - 175	95	102	118	0.23	0.27	0.31	0.34	0.36
8620, 4130, 4137	175 - 225	88	97	106	0.22	0.26	0.30	0.33	0.35
4140, 6150 etc	225 - 275	79	88	97	0.21	0.25	0.29	0.32	0.34
	275 - 325	74	84	94	0.17	0.21	0.25	0.28	0.30
	325 - 375	64	70	77	0.15	0.19	0.23	0.26	0.28
Tool Steel	150 - 200	60	67	80	0.14	0.18	0.22	0.25	0.27
H13, H21, A2, S1 etc	200 - 250	44	55	60	0.14	0.18	0.22	0.25	0.27
High Temp. Alloy	140 - 220	31	32	36	0.15	0.19	0.23	0.26	0.28
Hastelloy B,Inconel etc	220 - 310	24	28	29	0.14	0.18	0.22	0.25	0.27
High Strength Alloy	225 - 300	59	66	74	0.21	0.25	0.29	0.32	0.34
9840, 4340, 4330V etc	300 - 350	52	59	66	0.17	0.21	0.25	0.28	0.30
	350 - 400	46	52	56	0.15	0.19	0.23	0.26	0.28
Aluminium	30	439	475	512	0.36	0.40	0.44	0.47	0.49
2014, 6061, 7075 etc	180	293	348	349	0.31	0.35	0.39	0.42	0.44
Stainless Steel	135 - 185	60	66	74	0.23	0.27	0.31	0.34	0.36
310, 316, 410, 330 etc	185 - 275	46	53	55	0.21	0.25	0.29	0.32	0.34

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)

* Formulas :

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

$$\text{mm/min} = (\text{RPM}) \cdot (\text{mm/rev})$$

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

▶ 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.

RECOMMENDED CUTTING CONDITIONS

i-Dream Drill INCH

Material	Material Hardness (Bhn)	Speed (SFM)			Feed (IPR)				
		TiN	TiCN	TiAlN	Ø31/64 ~ 5/8	Ø41/64 ~ 25/32	Ø51/64 ~ 15/16	Ø61/64 ~ 1*3/32	Ø1*7/64 ~ 1*1/4
Free machining Steel	100 - 150	358	406	453	0.009	0.011	0.013	0.014	0.015
1213, 12L13, 1215	150 - 200	346	390	433	0.009	0.010	0.012	0.013	0.014
12L14, 1118 etc	200 - 250	323	346	398	0.008	0.010	0.011	0.012	0.013
Low Carbon Steel	85 - 125	370	433	469	0.009	0.010	0.012	0.013	0.014
1015, 1020, 1140	125 - 175	323	346	421	0.009	0.010	0.012	0.013	0.014
1025 etc	175 - 225	299	323	378	0.008	0.009	0.011	0.012	0.013
	225 - 275	244	287	331	0.008	0.009	0.011	0.012	0.013
Medium Carbon Steel	125 - 175	323	346	402	0.009	0.010	0.012	0.013	0.014
1035, 1050, 1045	175 - 225	295	331	366	0.008	0.009	0.011	0.012	0.013
1055, 1140 etc	225 - 275	260	276	331	0.008	0.009	0.011	0.012	0.013
	275 - 325	220	252	264	0.006	0.008	0.009	0.011	0.011
Structural Steel	100 - 150	295	323	358	0.010	0.012	0.013	0.015	0.015
A36, A516, A182 etc	150 - 250	244	276	295	0.009	0.010	0.012	0.013	0.014
	250 - 350	217	252	287	0.008	0.009	0.011	0.012	0.013
Cast Iron / S,G Iron	120 - 150	366	472	520	0.010	0.011	0.013	0.014	0.015
A48-76 GR30/GR45	150 - 200	358	382	476	0.009	0.011	0.012	0.013	0.014
A536-72 60-40-18	200 - 220	295	358	437	0.008	0.010	0.011	0.012	0.013
A220-76 GR40010 etc	220 - 260	260	319	366	0.007	0.008	0.010	0.011	0.012
	260 - 320	220	276	311	0.006	0.008	0.009	0.011	0.011
Alloy Steel	125 - 175	311	335	386	0.009	0.011	0.012	0.013	0.014
8620, 4130, 4137	175 - 225	287	319	346	0.009	0.010	0.012	0.013	0.014
4140, 6150 etc	225 - 275	260	287	319	0.008	0.010	0.011	0.012	0.013
	275 - 325	244	276	307	0.007	0.008	0.010	0.011	0.012
	325 - 375	209	228	252	0.006	0.007	0.009	0.010	0.011
Tool Steel	150 - 200	197	220	264	0.005	0.007	0.009	0.010	0.011
H13, H21, A2, S1 etc	200 - 250	146	181	197	0.005	0.007	0.009	0.010	0.011
High Temp. Alloy	140 - 220	102	106	118	0.006	0.007	0.009	0.010	0.011
Hastelloy B,Inconel etc	220 - 310	79	91	94	0.005	0.007	0.009	0.010	0.011
High Strength Alloy	225 - 300	193	217	244	0.008	0.010	0.011	0.012	0.013
9840, 4340, 4330V etc	300 - 350	169	193	217	0.007	0.008	0.010	0.011	0.012
	350 - 400	150	169	185	0.006	0.007	0.009	0.010	0.011
Aluminium	30	1441	1559	1681	0.014	0.016	0.018	0.019	0.019
2014, 6061, 7075 etc	180	961	1142	1146	0.012	0.014	0.015	0.016	0.017
Stainless Steel	135 - 185	197	217	244	0.009	0.011	0.012	0.013	0.014
310, 316, 410, 330 etc	185 - 275	150	173	181	0.008	0.010	0.011	0.012	0.013

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

* Formulas :

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

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

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

▶ 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.