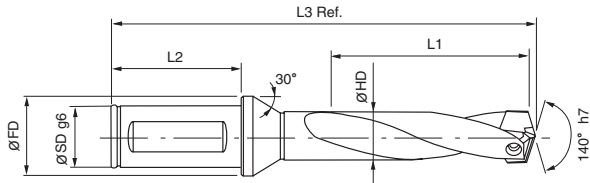


# i-Dream Drill INSERTS & HOLDERS

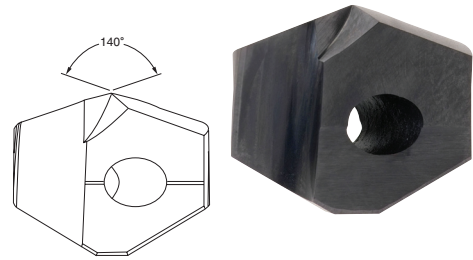


## -Feature of i-Dream Drill Holder-

- ▶ 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.

## -Feature of i-Dream Drill Insert-

- ▶ Secure and accurate seating resulting in accurate repeatability and concentricity.



Series	Insert EDP No. (TiAlN)	Insert O.D.			Drilling Depth	Holder EDP No.	O.D.		Shank Length L2	Flange Dia. FD	Flute Length(L1)			Overall Length (L3) Ref.			Torx No.			
		dec.	frac.	mm			HD	SD g6			3xD	5xD	7xD	3xD	5xD	7xD				
A	YA1A1200	0.4724		12.00	3D	ZH12003020											TX1213T07			
	YA1A1210	0.4764		12.10	5D	ZH12005020	11.7	20	50	25	46	71	95	121	146	170				
	YA1A1220	0.4803		12.20	7D	ZH12007020														
	YA1A1230	0.4843	31/64	12.30																
	YA1A1250	0.4921		12.50	3D	ZH12503020														
	YA1A1260	0.4961		12.60	5D	ZH12505020	12.2	20	50	25	48	74	100	122	148	174				
	YA1A1270	0.5000	1/2	12.70	7D	ZH12507020														
	YA1A1280	0.5039		12.80																
	YA1A1290	0.5079		12.90																
	YA1A1300	0.5118		13.00	3D	ZH13003020														
	YA1A1310	0.5157	33/64	13.10	5D	ZH13005020	12.7	20	50	25	50	77	104	124	151	178				
	YA1A1320	0.5197		13.20	7D	ZH13007020														
	YA1A1349	0.5311	17/32	13.49																
	YA1A1350	0.5315		13.50	3D	ZH13503020														
	YA1A1360	0.5354		13.60	5D	ZH13505020	13.2	20	50	25	51	79	107	125	153	181				
YA1A1380	0.5433		13.80	7D	ZH13507020															
YA1A1389	0.5469	35/64	13.89																	
B	YB1A1400	0.5512		14.00	3D	ZH14003020											TX1415T08			
	YB1A1410	0.5551		14.10	5D	ZH14005020	13.7	20	50	25	53	82	111	126	155	184				
	YB1A1420	0.5591		14.20	7D	ZH14007020														
	YB1A1429	0.5626	9/16	14.29																
	YB1A1430	0.5630		14.30																
	YB1A1440	0.5669		14.40																
	YB1A1450	0.5709		14.50	3D	ZH14503020														
	YB1A1460	0.5748		14.60	5D	ZH14505020	14.2	20	50	25	55	85	115	128	158	188				
	YB1A1468	0.5780	37/64	14.68	7D	ZH14507020														
	YB1A1480	0.5827		14.80																
	YB1A1500	0.5906		15.00	3D	ZH15003020														
	YB1A1508	0.5937	19/32	15.08	5D	ZH15005020	14.7	20	50	25	57	88	119	130	161	192				
	YB1A1510	0.5945		15.10	7D	ZH15007020														
	YB1A1520	0.5984		15.20																
	YB1A1530	0.6024		15.30																
	YB1A1548	0.6094	39/64	15.48																
	YB1A1550	0.6102		15.50	3D	ZH15503020														
YB1A1560	0.6142		15.60	5D	ZH15505020	15.2	20	50	25	59	91	122	131	163	194					
YB1A1570	0.6181		15.70	7D	ZH15507020															
YB1A1580	0.6220		15.80																	
YB1A1587	0.6248	5/8	15.87																	

# 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
<b>Free machining Steel</b> 1213, 12L13, 1215 12L14, 1118 etc	100 - 150	109	124	138	0.24	0.28	0.32	0.35	0.37
	150 - 200	106	119	132	0.22	0.26	0.30	0.33	0.35
	200 - 250	98	106	121	0.21	0.25	0.29	0.32	0.34
<b>Low Carbon Steel</b> 1015, 1020, 1140 1025 etc	85 - 125	113	132	143	0.22	0.26	0.30	0.33	0.35
	125 - 175	98	106	128	0.22	0.26	0.30	0.33	0.35
	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
<b>Medium Carbon Steel</b> 1035, 1050, 1045 1055, 1140 etc	125 - 175	98	106	122	0.22	0.26	0.30	0.33	0.35
	175 - 225	90	101	112	0.19	0.23	0.27	0.30	0.32
	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
<b>Structural Steel</b> A36, A516, A182 etc	100 - 150	90	98	109	0.26	0.30	0.34	0.37	0.39
	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
<b>Cast Iron / S,G Iron</b> A48-76 GR30/GR45 A536-72 60-40-18 A220-76 GR40010 etc	120 - 150	112	144	158	0.25	0.29	0.33	0.36	0.38
	150 - 200	109	116	145	0.23	0.27	0.31	0.34	0.36
	200 - 220	90	109	133	0.21	0.25	0.29	0.32	0.34
	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
<b>Alloy Steel</b> 8620, 4130, 4137 4140, 6150 etc	125 - 175	95	102	118	0.23	0.27	0.31	0.34	0.36
	175 - 225	88	97	106	0.22	0.26	0.30	0.33	0.35
	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
<b>Tool Steel</b> H13, H21, A2, S1 etc	150 - 200	60	67	80	0.14	0.18	0.22	0.25	0.27
	200 - 250	44	55	60	0.14	0.18	0.22	0.25	0.27
<b>High Temp. Alloy</b> Hastelloy B, Inconel etc	140 - 220	31	32	36	0.15	0.19	0.23	0.26	0.28
	220 - 310	24	28	29	0.14	0.18	0.22	0.25	0.27
<b>High Strength Alloy</b> 9840, 4340, 4330V etc	225 - 300	59	66	74	0.21	0.25	0.29	0.32	0.34
	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
<b>Aluminium</b> 2014, 6061, 7075 etc	30	439	475	512	0.36	0.40	0.44	0.47	0.49
	180	293	348	349	0.31	0.35	0.39	0.42	0.44
<b>Stainless Steel</b> 310, 316, 410, 330 etc	135 - 185	60	66	74	0.23	0.27	0.31	0.34	0.36
	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 :

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

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

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

- ▶ 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.

# 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
<b>Free machining Steel</b> 1213, 12L13, 1215 12L14, 1118 etc	100 - 150	358	406	453	0.009	0.011	0.013	0.014	0.015
	150 - 200	346	390	433	0.009	0.010	0.012	0.013	0.014
	200 - 250	323	346	398	0.008	0.010	0.011	0.012	0.013
<b>Low Carbon Steel</b> 1015, 1020, 1140 1025 etc	85 - 125	370	433	469	0.009	0.010	0.012	0.013	0.014
	125 - 175	323	346	421	0.009	0.010	0.012	0.013	0.014
	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
<b>Medium Carbon Steel</b> 1035, 1050, 1045 1055, 1140 etc	125 - 175	323	346	402	0.009	0.010	0.012	0.013	0.014
	175 - 225	295	331	366	0.008	0.009	0.011	0.012	0.013
	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
<b>Structural Steel</b> A36, A516, A182 etc	100 - 150	295	323	358	0.010	0.012	0.013	0.015	0.015
	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
<b>Cast Iron / S,G Iron</b> A48-76 GR30/GR45 A536-72 60-40-18 A220-76 GR40010 etc	120 - 150	366	472	520	0.010	0.011	0.013	0.014	0.015
	150 - 200	358	382	476	0.009	0.011	0.012	0.013	0.014
	200 - 220	295	358	437	0.008	0.010	0.011	0.012	0.013
	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
<b>Alloy Steel</b> 8620, 4130, 4137 4140, 6150 etc	125 - 175	311	335	386	0.009	0.011	0.012	0.013	0.014
	175 - 225	287	319	346	0.009	0.010	0.012	0.013	0.014
	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
<b>Tool Steel</b> H13, H21, A2, S1 etc	150 - 200	197	220	264	0.005	0.007	0.009	0.010	0.011
	200 - 250	146	181	197	0.005	0.007	0.009	0.010	0.011
<b>High Temp. Alloy</b> Hastelloy B, Inconel etc	140 - 220	102	106	118	0.006	0.007	0.009	0.010	0.011
	220 - 310	79	91	94	0.005	0.007	0.009	0.010	0.011
<b>High Strength Alloy</b> 9840, 4340, 4330V etc	225 - 300	193	217	244	0.008	0.010	0.011	0.012	0.013
	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
<b>Aluminium</b> 2014, 6061, 7075 etc	30	1441	1559	1681	0.014	0.016	0.018	0.019	0.019
	180	961	1142	1146	0.012	0.014	0.015	0.016	0.017
<b>Stainless Steel</b> 310, 316, 410, 330 etc	135 - 185	197	217	244	0.009	0.011	0.012	0.013	0.014
	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 :

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

$$\text{IPM} = (\text{RPM}) \cdot (\text{IPR})$$

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

- 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.