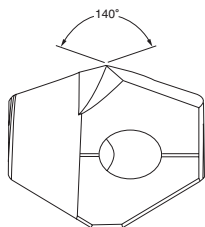
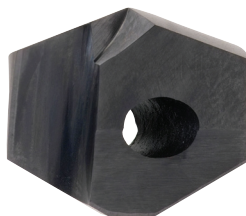


# *i*-Dream Drill INSERTS & HOLDERS



## -Feature of *i*-Dream Drill Insert-

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

| Series   | Insert<br>EDP No.<br>(TiAlN) | Insert O.D. |        |       | Drilling<br>Depth | Holder<br>EDP No.                      | O.D.<br>HD | Shank<br>Dia.<br>SD g6 | Shank<br>Length<br>L2 | Flange<br>Dia.<br>FD | Flute Length(L1) |     |     | Overall Length<br>(L3) Ref. |     |     | Torx<br>No. |
|----------|------------------------------|-------------|--------|-------|-------------------|----------------------------------------|------------|------------------------|-----------------------|----------------------|------------------|-----|-----|-----------------------------|-----|-----|-------------|
|          |                              | dec.        | frac.  | mm    |                   |                                        |            |                        |                       |                      | 3xD              | 5xD | 7xD | 3xD                         | 5xD | 7xD |             |
| <b>G</b> | YG1A2400                     | 0.9449      |        | 24.00 | 3D<br>5D<br>7D    | ZH24003032<br>ZH24005032<br>ZH24007032 | 23.7       | 32                     | 60                    | 37                   | 85               | 134 | 183 | 172                         | 221 | 270 | TX2425T20   |
|          | YG1A2421                     | 0.9531      | 61/64  | 24.21 |                   |                                        |            |                        |                       |                      |                  |     |     |                             |     |     |             |
|          | YG1A2450                     | 0.9646      |        | 24.50 | 3D                | ZH24503032                             |            |                        |                       |                      |                  |     |     |                             |     |     |             |
|          | YG1A2461                     | 0.9689      | 31/32  | 24.61 | 5D                | ZH24505032                             | 24.2       | 32                     | 60                    | 37                   | 87               | 137 | 187 | 173                         | 223 | 273 |             |
|          | YG1A2470                     | 0.9724      |        | 24.70 | 7D                | ZH24507032                             |            |                        |                       |                      |                  |     |     |                             |     |     |             |
|          | YG1A2500                     | 0.9843      | 63/64  | 25.00 | 3D                | ZH25003032                             | 24.7       | 32                     | 60                    | 37                   | 89               | 140 | 191 | 175                         | 226 | 277 |             |
|          | YG1A2540                     | 1.0000      | 1      | 25.40 | 5D                | ZH25005032                             |            |                        |                       |                      |                  |     |     |                             |     |     |             |
|          | YG1A2550                     | 1.0039      |        | 25.50 | 7D                | ZH25007032                             |            |                        |                       |                      |                  |     |     |                             |     |     |             |
|          | YG1A2567                     | 1.0106      |        | 25.67 | 3D                | ZH25503032                             | 25.2       | 32                     | 60                    | 37                   | 91               | 142 | 194 | 177                         | 228 | 280 |             |
|          | YG1A2570                     | 1.0118      |        | 25.70 | 5D                | ZH25505032                             |            |                        |                       |                      |                  |     |     |                             |     |     |             |
|          | YG1A2580                     | 1.0157      | 1*1/64 | 25.80 | 7D                | ZH25507032                             |            |                        |                       |                      |                  |     |     |                             |     |     |             |
| <b>H</b> | YH1A2600                     | 1.0236      |        | 26.00 | 3D<br>5D<br>7D    | ZH26003032<br>ZH26005032<br>ZH26007032 | 25.7       | 32                     | 60                    | 37                   | 92               | 144 | 196 | 177                         | 229 | 281 | TX2627T25   |
|          | YH1A2619                     | 1.0311      | 1*1/32 | 26.19 |                   |                                        |            |                        |                       |                      |                  |     |     |                             |     |     |             |
|          | YH1A2650                     | 1.0433      | 1*3/64 | 26.50 | 3D                | ZH26503032                             | 26.2       | 32                     | 60                    | 37                   | 93               | 146 | 199 | 178                         | 231 | 284 |             |
|          | YH1A2659                     | 1.0469      |        | 26.59 | 5D                | ZH26505032                             |            |                        |                       |                      |                  |     |     |                             |     |     |             |
|          | YH1A2699                     | 1.0626      | 1*1/16 | 26.99 | 7D                | ZH26507032                             |            |                        |                       |                      |                  |     |     |                             |     |     |             |
|          | YH1A2700                     | 1.0630      |        | 27.00 | 3D                | ZH27003032                             | 26.7       | 32                     | 60                    | 37                   | 95               | 149 | 203 | 180                         | 234 | 288 |             |
|          | YH1A2750                     | 1.0827      |        | 27.50 | 5D                | ZH27005032                             | 27.2       | 32                     | 60                    | 37                   | 97               | 153 | 208 | 181                         | 237 | 292 |             |
|          | YH1A2778                     | 1.0937      | 1*3/32 | 27.78 | 7D                | ZH27007032                             |            |                        |                       |                      |                  |     |     |                             |     |     |             |
| <b>I</b> | YI1A2800                     | 1.1024      |        | 28.00 | 3D<br>5D<br>7D    | ZH28003032<br>ZH28005032<br>ZH28007032 | 27.7       | 32                     | 60                    | 37                   | 99               | 155 | 211 | 183                         | 239 | 295 | TX2831T25   |
|          | YI1A2818                     | 1.1094      | 1*7/64 | 28.18 |                   |                                        |            |                        |                       |                      |                  |     |     |                             |     |     |             |
|          | YI1A2850                     | 1.1220      |        | 28.50 | 3D                | ZH28503032                             | 28.2       | 32                     | 60                    | 37                   | 100              | 157 | 214 | 184                         | 241 | 298 |             |
|          | YI1A2858                     | 1.1252      | 1*1/8  | 28.58 | 5D                | ZH28505032                             |            |                        |                       |                      |                  |     |     |                             |     |     |             |
|          | YI1A2900                     | 1.1417      |        | 29.00 | 7D                | ZH28507032                             |            |                        |                       |                      |                  |     |     |                             |     |     |             |
|          | YI1A2937                     | 1.1563      | 1*5/32 | 29.37 | 3D                | ZH29003032                             | 28.7       | 32                     | 60                    | 37                   | 103              | 162 | 220 | 186                         | 245 | 303 |             |
|          | YI1A2950                     | 1.1614      |        | 29.50 | 5D                | ZH29005032                             | 29.2       | 32                     | 60                    | 37                   | 104              | 164 | 223 | 187                         | 247 | 306 |             |
|          | YI1A2977                     | 1.1720      |        | 29.77 | 7D                | ZH29007032                             |            |                        |                       |                      |                  |     |     |                             |     |     |             |
| <b>J</b> | YJ1A3000                     | 1.1811      |        | 30.00 | 3D<br>5D<br>7D    | ZH30003032<br>ZH30005032<br>ZH30007032 | 29.7       | 32                     | 60                    | 37                   | 106              | 166 | 226 | 189                         | 249 | 309 | TX2831T25   |
|          | YJ1A3016                     | 1.1874      | 1*3/16 | 30.16 |                   |                                        |            |                        |                       |                      |                  |     |     |                             |     |     |             |
|          | YJ1A3050                     | 1.2008      |        | 30.50 | 3D                | ZH30503032                             |            |                        |                       |                      |                  |     |     |                             |     |     |             |
|          | YJ1A3056                     | 1.2031      |        | 30.56 | 5D                | ZH30505032                             | 30.2       | 32                     | 60                    | 37                   | 108              | 170 | 232 | 190                         | 252 | 314 |             |
|          | YJ1A3096                     | 1.2189      | 1*7/32 | 30.96 | 7D                | ZH30507032                             |            |                        |                       |                      |                  |     |     |                             |     |     |             |
|          | YJ1A3100                     | 1.2205      |        | 31.00 | 3D                | ZH31003032                             | 30.7       | 32                     | 60                    | 37                   | 109              | 171 | 233 | 191                         | 253 | 315 |             |
|          | YJ1A3150                     | 1.2402      |        | 31.50 | 5D                | ZH31005032                             |            |                        |                       |                      |                  |     |     |                             |     |     |             |
|          | YJ1A3175                     | 1.2500      | 1*1/4  | 31.75 | 7D                | ZH31007032                             | 31.2       | 32                     | 60                    | 37                   | 112              | 176 | 240 | 194                         | 258 | 322 |             |

Coating : TiN, TiCN & Hardslick is available on your request.

# 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><br>1213, 12L13, 1215<br>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><br>1015, 1020, 1140<br>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><br>1035, 1050, 1045<br>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><br>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><br>A48-76 GR30/GR45<br>A536-72 60-40-18<br>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><br>8620, 4130, 4137<br>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><br>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><br>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><br>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><br>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><br>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><br>1213, 12L13, 1215<br>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><br>1015, 1020, 1140<br>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><br>1035, 1050, 1045<br>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><br>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><br>A48-76 GR30/GR45<br>A536-72 60-40-18<br>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><br>8620, 4130, 4137<br>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><br>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><br>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><br>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><br>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><br>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.