

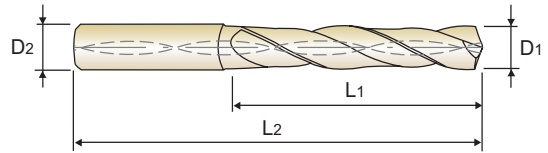
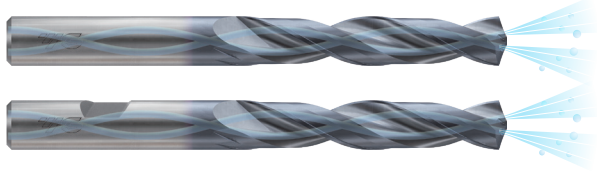
## RCH-COATED SOLID CARBIDE

## DREAM DRILL X with COOLANT HOLES (5XD)

DTX408

DTX448

- Upgraded coating for higher tool life in various materials
- Soft cutting action and reduced axial forces; easy to recondition
- Good self-centering even at low feed rates and unstable situations
- Excellent chip breaking and chip evacuation



p.45

LONG

5 x D

\* NEW SIZE

Unit : mm

| EDP No.      |              | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|--------------|--------------|----------------|----------------|--------------|----------------|
| RCH-Coating  | Flat         | D1             | D2             | L1           | L2             |
| DTX408010    | -            | 1.0            | 3              | 8            | 55             |
| DTX408011    | -            | 1.1            | 3              | 12           | 55             |
| DTX408012    | -            | 1.2            | 3              | 12           | 55             |
| DTX408013    | -            | 1.3            | 3              | 12           | 55             |
| DTX408014    | -            | 1.4            | 3              | 12           | 55             |
| DTX408015    | -            | 1.5            | 3              | 16           | 55             |
| DTX408016    | -            | 1.6            | 3              | 16           | 55             |
| DTX408017    | -            | 1.7            | 3              | 16           | 55             |
| DTX408018    | -            | 1.8            | 3              | 16           | 55             |
| * DTX4080183 | -            | 1.83           | 3              | 16           | 55             |
| DTX408019    | -            | 1.9            | 3              | 16           | 55             |
| DTX408020    | -            | 2.0            | 4              | 21           | 57             |
| DTX408021    | -            | 2.1            | 4              | 21           | 57             |
| DTX408022    | -            | 2.2            | 4              | 21           | 57             |
| DTX408023    | -            | 2.3            | 4              | 21           | 57             |
| DTX408024    | -            | 2.4            | 4              | 21           | 57             |
| DTX408025    | -            | 2.5            | 4              | 21           | 57             |
| DTX408026    | -            | 2.6            | 4              | 21           | 57             |
| DTX408027    | -            | 2.7            | 4              | 21           | 57             |
| DTX408028    | -            | 2.8            | 4              | 21           | 57             |
| DTX408029    | -            | 2.9            | 4              | 21           | 57             |
| DTX408030    | * DTX448030  | 3.0            | 6              | 28           | 66             |
| DTX408031    | * DTX448031  | 3.1            | 6              | 28           | 66             |
| DTX408032    | * DTX448032  | 3.2            | 6              | 28           | 66             |
| * DTX4080325 | * DTX4480325 | 3.25           | 6              | 28           | 66             |
| DTX408033    | * DTX448033  | 3.3            | 6              | 28           | 66             |
| DTX408034    | * DTX448034  | 3.4            | 6              | 28           | 66             |
| DTX408035    | * DTX448035  | 3.5            | 6              | 28           | 66             |

| EDP No.      |              | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|--------------|--------------|----------------|----------------|--------------|----------------|
| RCH-Coating  | Flat         | D1             | D2             | L1           | L2             |
| DTX408036    | * DTX448036  | 3.6            | 6              | 28           | 66             |
| DTX408037    | * DTX448037  | 3.7            | 6              | 28           | 66             |
| DTX408038    | * DTX448038  | 3.8            | 6              | 36           | 74             |
| DTX408039    | * DTX448039  | 3.9            | 6              | 36           | 74             |
| DTX408040    | * DTX448040  | 4.0            | 6              | 36           | 74             |
| DTX408041    | * DTX448041  | 4.1            | 6              | 36           | 74             |
| DTX408042    | * DTX448042  | 4.2            | 6              | 36           | 74             |
| DTX408043    | * DTX448043  | 4.3            | 6              | 36           | 74             |
| DTX408044    | * DTX448044  | 4.4            | 6              | 36           | 74             |
| DTX408045    | * DTX448045  | 4.5            | 6              | 36           | 74             |
| DTX408046    | * DTX448046  | 4.6            | 6              | 36           | 74             |
| * DTX4080465 | * DTX4480465 | 4.65           | 6              | 36           | 74             |
| DTX408047    | * DTX448047  | 4.7            | 6              | 36           | 74             |
| DTX408048    | * DTX448048  | 4.8            | 6              | 44           | 82             |
| DTX408049    | * DTX448049  | 4.9            | 6              | 44           | 82             |
| DTX408050    | * DTX448050  | 5.0            | 6              | 44           | 82             |
| DTX408051    | * DTX448051  | 5.1            | 6              | 44           | 82             |
| DTX408052    | * DTX448052  | 5.2            | 6              | 44           | 82             |
| DTX408053    | * DTX448053  | 5.3            | 6              | 44           | 82             |
| DTX408054    | * DTX448054  | 5.4            | 6              | 44           | 82             |
| DTX408055    | * DTX448055  | 5.5            | 6              | 44           | 82             |
| * DTX4080555 | * DTX4480555 | 5.55           | 6              | 44           | 82             |
| DTX408056    | * DTX448056  | 5.6            | 6              | 44           | 82             |
| DTX408057    | * DTX448057  | 5.7            | 6              | 44           | 82             |
| DTX408058    | * DTX448058  | 5.8            | 6              | 44           | 82             |
| DTX408059    | * DTX448059  | 5.9            | 6              | 44           | 82             |
| DTX408060    | * DTX448060  | 6.0            | 6              | 44           | 82             |
| DTX408061    | * DTX448061  | 6.1            | 8              | 53           | 91             |

► Other shank types are available on your request.

► NEXT PAGE

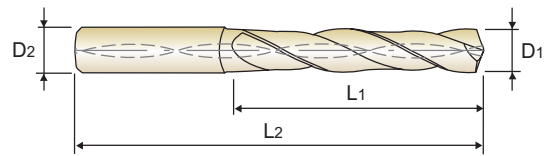
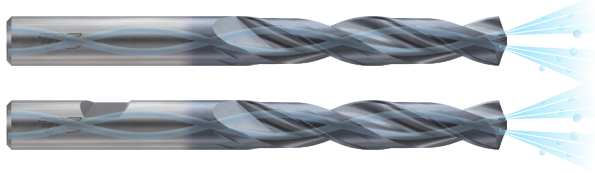
◎ : Excellent ○ : Good

| ISO                  | P                      |     |                        |     |     |                                           |     |     |                        |                                    |                             | M               |     |     | K              |                 |                   |                |                     |                   |     |                    |  |  |
|----------------------|------------------------|-----|------------------------|-----|-----|-------------------------------------------|-----|-----|------------------------|------------------------------------|-----------------------------|-----------------|-----|-----|----------------|-----------------|-------------------|----------------|---------------------|-------------------|-----|--------------------|--|--|
| Material Description | Non-alloy steel        |     |                        |     |     | Low alloy steel                           |     |     |                        | High alloyed steel, and tool steel |                             | Stainless steel |     |     | Grey cast iron |                 | Nodular cast iron |                | Malleable cast iron |                   |     |                    |  |  |
| VDI 3323             | 1                      | 2   | 3                      | 4   | 5   | 6                                         | 7   | 8   | 9                      | 10                                 | 11                          | 12              | 13  | 14  | 15             | 16              | 17                | 18             | 19                  | 20                |     |                    |  |  |
| HRC                  |                        | 13  | 25                     | 28  | 32  | 10                                        | 29  | 32  | 38                     | 15                                 | 35                          | 15              | 23  | 10  | 10             | 26              | 3                 | 25             |                     | 21                |     |                    |  |  |
| HB                   | 125                    | 190 | 250                    | 270 | 300 | 180                                       | 275 | 300 | 350                    | 200                                | 325                         | 200             | 240 | 180 | 180            | 260             | 160               | 250            | 130                 | 230               |     |                    |  |  |
| Recommended          |                        | ◎   | ◎                      | ◎   | ○   | ◎                                         | ◎   | ○   | ○                      | ◎                                  | ○                           | ○               | ○   |     | ◎              | ○               | ◎                 | ○              | ◎                   | ○                 |     |                    |  |  |
| 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                  | 40                | 41  |                    |  |  |
| HRC                  |                        |     |                        |     |     |                                           |     |     |                        |                                    | 15                          | 30              | 25  | 38  | 34             |                 |                   | 55             | 60                  | 42                | 55  |                    |  |  |
| HB                   | 60                     | 100 | 75                     | 90  | 130 | 110                                       | 90  | 100 |                        |                                    | 200                         | 280             | 250 | 350 | 320            | 400 Rm          | 1050 Rm           | 550            | 630                 | 400               | 550 |                    |  |  |
| Recommended          |                        |     |                        |     |     |                                           |     |     |                        |                                    |                             |                 |     |     |                |                 |                   | ○              |                     |                   |     |                    |  |  |

## RCH-COATED SOLID CARBIDE

**DREAM DRILL X with COOLANT HOLES (5XD)**
**DTX408**
**DTX448**

- ▶ Upgraded coating for higher tool life in various materials
- ▶ Soft cutting action and reduced axial forces; easy to recondition
- ▶ Good self-centering even at low feed rates and unstable situations
- ▶ Excellent chip breaking and chip evacuation


**LONG**

5 × D

\* (NEW SIZE) Unit : mm

| EDP No.      |              | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|--------------|--------------|----------------|----------------|--------------|----------------|
| RCH-Coating  | Flat         | D1             | D2             | L1           | L2             |
| DTX408062    | * DTX448062  | 6.2            | 8              | 53           | 91             |
| DTX408063    | * DTX448063  | 6.3            | 8              | 53           | 91             |
| DTX408064    | * DTX448064  | 6.4            | 8              | 53           | 91             |
| DTX408065    | * DTX448065  | 6.5            | 8              | 53           | 91             |
| * DTX4080655 | * DTX4480655 | 6.55           | 8              | 53           | 91             |
| DTX408066    | * DTX448066  | 6.6            | 8              | 53           | 91             |
| DTX408067    | * DTX448067  | 6.7            | 8              | 53           | 91             |
| DTX408068    | * DTX448068  | 6.8            | 8              | 53           | 91             |
| DTX408069    | * DTX448069  | 6.9            | 8              | 53           | 91             |
| DTX408070    | * DTX448070  | 7.0            | 8              | 53           | 91             |
| DTX408071    | * DTX448071  | 7.1            | 8              | 53           | 91             |
| DTX408072    | * DTX448072  | 7.2            | 8              | 53           | 91             |
| DTX408073    | * DTX448073  | 7.3            | 8              | 53           | 91             |
| DTX408074    | * DTX448074  | 7.4            | 8              | 53           | 91             |
| DTX408075    | * DTX448075  | 7.5            | 8              | 53           | 91             |
| DTX408076    | * DTX448076  | 7.6            | 8              | 53           | 91             |
| DTX408077    | * DTX448077  | 7.7            | 8              | 53           | 91             |
| DTX408078    | * DTX448078  | 7.8            | 8              | 53           | 91             |
| DTX408079    | * DTX448079  | 7.9            | 8              | 53           | 91             |
| DTX408080    | * DTX448080  | 8.0            | 8              | 53           | 91             |
| DTX408081    | * DTX448081  | 8.1            | 10             | 61           | 103            |
| DTX408082    | * DTX448082  | 8.2            | 10             | 61           | 103            |
| DTX408083    | * DTX448083  | 8.3            | 10             | 61           | 103            |
| DTX408084    | * DTX448084  | 8.4            | 10             | 61           | 103            |
| DTX408085    | * DTX448085  | 8.5            | 10             | 61           | 103            |
| DTX408086    | * DTX448086  | 8.6            | 10             | 61           | 103            |
| DTX408087    | * DTX448087  | 8.7            | 10             | 61           | 103            |
| DTX408088    | * DTX448088  | 8.8            | 10             | 61           | 103            |

| EDP No.     |             | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|-------------|-------------|----------------|----------------|--------------|----------------|
| RCH-Coating | Flat        | D1             | D2             | L1           | L2             |
| DTX408089   | * DTX448089 | 8.9            | 10             | 61           | 103            |
| DTX408090   | * DTX448090 | 9.0            | 10             | 61           | 103            |
| DTX408091   | * DTX448091 | 9.1            | 10             | 61           | 103            |
| DTX408092   | * DTX448092 | 9.2            | 10             | 61           | 103            |
| DTX408093   | * DTX448093 | 9.3            | 10             | 61           | 103            |
| DTX408094   | * DTX448094 | 9.4            | 10             | 61           | 103            |
| DTX408095   | * DTX448095 | 9.5            | 10             | 61           | 103            |
| DTX408096   | * DTX448096 | 9.6            | 10             | 61           | 103            |
| DTX408097   | * DTX448097 | 9.7            | 10             | 61           | 103            |
| DTX408098   | * DTX448098 | 9.8            | 10             | 61           | 103            |
| DTX408099   | * DTX448099 | 9.9            | 10             | 61           | 103            |
| DTX408100   | * DTX448100 | 10.0           | 10             | 61           | 103            |
| DTX408101   | * DTX448101 | 10.1           | 12             | 71           | 118            |
| DTX408102   | * DTX448102 | 10.2           | 12             | 71           | 118            |
| DTX408103   | * DTX448103 | 10.3           | 12             | 71           | 118            |
| DTX408104   | * DTX448104 | 10.4           | 12             | 71           | 118            |
| DTX408105   | * DTX448105 | 10.5           | 12             | 71           | 118            |
| DTX408106   | * DTX448106 | 10.6           | 12             | 71           | 118            |
| DTX408107   | * DTX448107 | 10.7           | 12             | 71           | 118            |
| DTX408108   | * DTX448108 | 10.8           | 12             | 71           | 118            |
| DTX408109   | * DTX448109 | 10.9           | 12             | 71           | 118            |
| DTX408110   | * DTX448110 | 11.0           | 12             | 71           | 118            |
| DTX408111   | * DTX448111 | 11.1           | 12             | 71           | 118            |
| DTX408112   | * DTX448112 | 11.2           | 12             | 71           | 118            |
| DTX408113   | * DTX448113 | 11.3           | 12             | 71           | 118            |
| DTX408114   | * DTX448114 | 11.4           | 12             | 71           | 118            |
| DTX408115   | * DTX448115 | 11.5           | 12             | 71           | 118            |
| DTX408116   | * DTX448116 | 11.6           | 12             | 71           | 118            |

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

| ISO                  | P                      |     |                        |     |     |                                           |     |     |                        |                                    |                             | M               |     |     | K               |        |                   |     |                     |     |                    |  |
|----------------------|------------------------|-----|------------------------|-----|-----|-------------------------------------------|-----|-----|------------------------|------------------------------------|-----------------------------|-----------------|-----|-----|-----------------|--------|-------------------|-----|---------------------|-----|--------------------|--|
| Material Description | Non-alloy steel        |     |                        |     |     | Low alloy steel                           |     |     |                        | High alloyed steel, and tool steel |                             | Stainless steel |     |     | Grey cast iron  |        | Nodular cast iron |     | Malleable cast iron |     |                    |  |
| VDI 3323             | 1                      | 2   | 3                      | 4   | 5   | 6                                         | 7   | 8   | 9                      | 10                                 | 11                          | 12              | 13  | 14  | 15              | 16     | 17                | 18  | 19                  | 20  |                    |  |
| HRc                  |                        | 13  | 25                     | 28  | 32  | 10                                        | 29  | 32  | 38                     | 15                                 | 35                          | 15              | 23  | 10  | 10              | 26     | 3                 | 25  |                     | 21  |                    |  |
| HB                   | 125                    | 190 | 250                    | 270 | 300 | 180                                       | 275 | 300 | 350                    | 200                                | 325                         | 200             | 240 | 180 | 180             | 260    | 160               | 250 | 130                 | 230 |                    |  |
| Recommended          |                        | ◎   | ◎                      | ◎   | ○   | ◎                                         | ◎   | ○   | ○                      | ◎                                  | ○                           | ○               | ○   |     | ◎               | ○      | ◎                 | ○   | ◎                   | ○   |                    |  |
| 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                  | 40  | 41                 |  |
| HRc                  |                        |     |                        |     |     |                                           |     |     |                        |                                    | 15                          | 30              | 25  | 38  | 34              |        |                   | 55  | 60                  | 42  | 55                 |  |
| HB                   | 60                     | 100 | 75                     | 90  | 130 | 110                                       | 90  | 100 |                        |                                    | 200                         | 280             | 250 | 350 | 320             | 400 Rm | 1050 Rm           | 550 | 630                 | 400 | 550                |  |
| Recommended          |                        |     |                        |     |     |                                           |     |     |                        |                                    |                             |                 |     |     |                 |        |                   | ◎   |                     |     |                    |  |

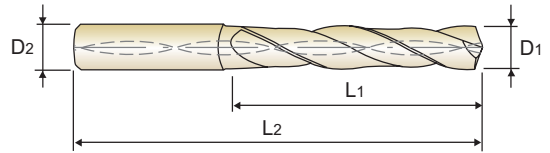
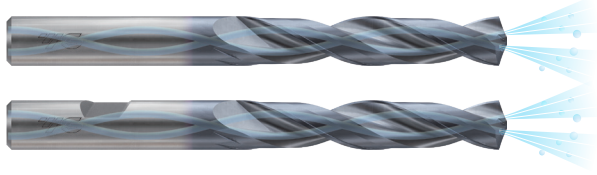
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p.45

LONG

5 x D

\* NEW SIZE

Unit : mm

| EDP No.     |             | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|-------------|-------------|----------------|----------------|--------------|----------------|
| RCH-Coating | Flat        | D1             | D2             | L1           | L2             |
| DTX408117   | * DTX448117 | 11.7           | 12             | 71           | 118            |
| DTX408118   | * DTX448118 | 11.8           | 12             | 71           | 118            |
| DTX408119   | * DTX448119 | 11.9           | 12             | 71           | 118            |
| DTX408120   | * DTX448120 | 12.0           | 12             | 71           | 118            |
| DTX408125   | * DTX448125 | 12.5           | 14             | 77           | 124            |
| DTX408130   | * DTX448130 | 13.0           | 14             | 77           | 124            |
| DTX408135   | * DTX448135 | 13.5           | 14             | 77           | 124            |
| DTX408140   | * DTX448140 | 14.0           | 14             | 77           | 124            |
| DTX408145   | * DTX448145 | 14.5           | 16             | 83           | 133            |
| DTX408150   | * DTX448150 | 15.0           | 16             | 83           | 133            |

| EDP No.     |             | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|-------------|-------------|----------------|----------------|--------------|----------------|
| RCH-Coating | Flat        | D1             | D2             | L1           | L2             |
| DTX408155   | * DTX448155 | 15.5           | 16             | 83           | 133            |
| DTX408160   | * DTX448160 | 16.0           | 16             | 83           | 133            |
| DTX408165   | * DTX448165 | 16.5           | 18             | 93           | 143            |
| DTX408170   | * DTX448170 | 17.0           | 18             | 93           | 143            |
| DTX408175   | * DTX448175 | 17.5           | 18             | 93           | 143            |
| DTX408180   | * DTX448180 | 18.0           | 18             | 93           | 143            |
| DTX408185   | * DTX448185 | 18.5           | 20             | 101          | 153            |
| DTX408190   | * DTX448190 | 19.0           | 20             | 101          | 153            |
| DTX408195   | * DTX448195 | 19.5           | 20             | 101          | 153            |
| DTX408200   | * DTX448200 | 20.0           | 20             | 101          | 153            |

- Other shank types are available on your request.

◎ : Excellent ○ : Good

| ISO                  | P                      |     |     |     |     |                        |     |     |     |     | M                                         |     |     |     |     | K                      |         |     |     |     |
|----------------------|------------------------|-----|-----|-----|-----|------------------------|-----|-----|-----|-----|-------------------------------------------|-----|-----|-----|-----|------------------------|---------|-----|-----|-----|
|                      | Non-alloy steel        |     |     |     |     | Low alloy steel        |     |     |     |     | High alloyed steel, and tool steel        |     |     |     |     | Stainless steel        |         |     |     |     |
| Material Description |                        |     |     |     |     |                        |     |     |     |     |                                           |     |     |     |     |                        |         |     |     |     |
| VDI 3323             | 1                      | 2   | 3   | 4   | 5   | 6                      | 7   | 8   | 9   | 10  | 11                                        | 12  | 13  | 14  | 15  | 16                     | 17      | 18  | 19  | 20  |
| HRC                  | 13                     | 25  | 28  | 32  | 38  | 10                     | 29  | 32  | 38  | 15  | 35                                        | 15  | 23  | 10  | 10  | 26                     | 3       | 25  |     | 21  |
| HB                   | 125                    | 190 | 250 | 270 | 300 | 180                    | 275 | 300 | 350 | 200 | 325                                       | 200 | 240 | 180 | 180 | 260                    | 160     | 250 | 130 | 230 |
| Recommended          | ◎                      | ◎   | ◎   | ◎   | ◎   | ◎                      | ◎   | ◎   | ◎   | ◎   | ◎                                         | ◎   | ◎   | ◎   | ◎   | ◎                      | ◎       | ◎   | ◎   | ◎   |
| ISO                  | N                      |     |     |     |     |                        |     |     |     |     | S                                         |     |     |     |     | H                      |         |     |     |     |
|                      | Aluminum-wrought alloy |     |     |     |     | Aluminum-cast, alloyed |     |     |     |     | Copper and Copper Alloys (Bronze / Brass) |     |     |     |     | Non Metallic Materials |         |     |     |     |
| Material Description |                        |     |     |     |     |                        |     |     |     |     |                                           |     |     |     |     |                        |         |     |     |     |
| VDI 3323             | 21                     | 22  | 23  | 24  | 25  | 26                     | 27  | 28  | 29  | 30  | 31                                        | 32  | 33  | 34  | 35  | 36                     | 37      | 38  | 39  | 40  |
| HRC                  | 21                     | 22  | 23  | 24  | 25  | 26                     | 27  | 28  | 29  | 30  | 31                                        | 32  | 33  | 34  | 35  | 36                     | 37      | 38  | 39  | 40  |
| HB                   | 60                     | 100 | 75  | 90  | 130 | 110                    | 90  | 100 |     |     | 15                                        | 30  | 25  | 38  | 34  | 400 Rm                 | 1050 Rm | 55  | 60  | 42  |
| Recommended          | ◎                      | ◎   | ◎   | ◎   | ◎   | ◎                      | ◎   | ◎   | ◎   | ◎   | ◎                                         | ◎   | ◎   | ◎   | ◎   | ◎                      | ◎       | ◎   | ◎   | ◎   |

## DTX406, DTX408, DTX448, DTX421 SERIES

with COOLANT HOLES

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

| ISO | VDI 3323 | Material Description               | Vc  | Parameter | Drill Diameter (mm) |           | Vc        | Parameter | Drill Diameter (mm) |           |           |           |
|-----|----------|------------------------------------|-----|-----------|---------------------|-----------|-----------|-----------|---------------------|-----------|-----------|-----------|
|     |          |                                    |     |           | 1.0                 | 2.0       |           |           | 3.0                 | 4.0       | 5.0       | 6.0       |
| P   | 2        | Non-alloy steel                    | 80  | RPM       | 25460               | 12730     | 110       | RPM       | 11670               | 8750      | 7000      | 5840      |
|     | 3        |                                    |     | FEED      | 0.03-0.05           | 0.05-0.07 |           | FEED      | 0.06-0.12           | 0.08-0.14 | 0.14-0.20 | 0.16-0.22 |
|     | 4        |                                    | 80  | RPM       | 25460               | 12730     | 110       | RPM       | 11670               | 8750      | 7000      | 5840      |
|     | 5        |                                    |     | FEED      | 0.03-0.05           | 0.05-0.07 |           | FEED      | 0.06-0.12           | 0.08-0.14 | 0.14-0.20 | 0.16-0.22 |
|     | 6        | Low alloy steel                    | 80  | RPM       | 25460               | 12730     | 110       | RPM       | 11670               | 8750      | 7000      | 5840      |
|     | 7        |                                    |     | FEED      | 0.03-0.05           | 0.05-0.07 |           | FEED      | 0.06-0.12           | 0.08-0.14 | 0.14-0.20 | 0.16-0.22 |
|     | 8        |                                    | 70  | RPM       | 22280               | 11140     | 90        | RPM       | 9550                | 7160      | 5730      | 4770      |
|     | 9        |                                    |     | FEED      | 0.03-0.05           | 0.05-0.07 |           | FEED      | 0.04-0.10           | 0.07-0.13 | 0.10-0.16 | 0.12-0.18 |
|     | 10       | High alloyed steel, and tool steel | 40  | RPM       | 12730               | 6370      | 50        | RPM       | 5310                | 3980      | 3180      | 2650      |
|     | 11       |                                    |     | FEED      | 0.02-0.04           | 0.03-0.05 |           | FEED      | 0.03-0.08           | 0.05-0.11 | 0.08-0.14 | 0.10-0.16 |
| M   | 12       | Stainless steel                    | 60  | RPM       | 19100               | 9550      | 80        | RPM       | 8490                | 6370      | 5090      | 4240      |
|     | 13       |                                    |     | FEED      | 0.03-0.05           | 0.05-0.07 |           | FEED      | 0.06-0.12           | 0.08-0.14 | 0.14-0.20 | 0.16-0.22 |
| K   | 15       | Grey cast iron                     | 80  | RPM       | 25460               | 12730     | 110       | RPM       | 11670               | 8750      | 7000      | 5840      |
|     | 16       |                                    |     | FEED      | 0.04-0.06           | 0.04-0.06 |           | FEED      | 0.08-0.14           | 0.12-0.18 | 0.15-0.22 | 0.20-0.26 |
|     | 17       | Nodular cast iron                  | 90  | RPM       | 28650               | 14320     | 120       | RPM       | 12730               | 9550      | 7640      | 6370      |
|     | 18       |                                    |     | FEED      | 0.04-0.06           | 0.04-0.06 |           | FEED      | 0.08-0.14           | 0.12-0.18 | 0.15-0.22 | 0.20-0.26 |
|     | 19       | Malleable cast iron                | 70  | RPM       | 22280               | 11140     | 90        | RPM       | 8490                | 6370      | 5090      | 4240      |
|     | 20       |                                    |     | FEED      | 0.04-0.06           | 0.04-0.06 |           | FEED      | 0.08-0.14           | 0.12-0.18 | 0.15-0.22 | 0.20-0.26 |
| H   | 38       | Hardened steel                     | 25  | RPM       | 7960                | 3980      | 30        | RPM       | 3180                | 2390      | 1910      | 1590      |
|     |          |                                    |     | FEED      | 0.01-0.02           | 0.01-0.03 |           | FEED      | 0.01-0.03           | 0.01-0.04 | 0.02-0.05 | 0.03-0.06 |
| ISO | VDI 3323 | Material Description               | Vc  | Parameter | Drill Diameter (mm) |           |           |           |                     |           |           |           |
|     |          |                                    |     |           | 8.0                 | 10.0      | 12.0      | 14.0      | 16.0                |           |           |           |
| P   | 2        | Non-alloy steel                    | 110 | RPM       | 4380                | 3500      | 2920      | 2500      | 2190                | 1950      | 1750      |           |
|     | 3        |                                    |     | FEED      | 0.18-0.24           | 0.19-0.27 | 0.21-0.29 | 0.23-0.31 | 0.25-0.33           | 0.28-0.38 | 0.30-0.40 |           |
|     | 4        |                                    | 110 | RPM       | 4380                | 3500      | 2920      | 2500      | 2190                | 1950      | 1750      |           |
|     | 5        |                                    |     | FEED      | 0.18-0.24           | 0.19-0.27 | 0.21-0.29 | 0.23-0.31 | 0.25-0.33           | 0.28-0.38 | 0.30-0.40 |           |
|     | 6        | Low alloy steel                    | 90  | RPM       | 4380                | 3500      | 2920      | 2500      | 2190                | 1950      | 1750      |           |
|     | 7        |                                    |     | FEED      | 0.14-0.20           | 0.15-0.23 | 0.17-0.25 | 0.18-0.26 | 0.19-0.27           | 0.20-0.30 | 0.22-0.32 |           |
|     | 8        |                                    | 90  | RPM       | 3580                | 2860      | 2390      | 2050      | 1790                | 1590      | 1430      |           |
|     | 9        |                                    |     | FEED      | 0.14-0.20           | 0.15-0.23 | 0.17-0.25 | 0.18-0.26 | 0.19-0.27           | 0.20-0.30 | 0.22-0.32 |           |
|     | 10       | High alloyed steel, and tool steel | 80  | RPM       | 4380                | 3500      | 2920      | 2500      | 2190                | 1950      | 1750      |           |
|     | 11       |                                    |     | FEED      | 0.18-0.24           | 0.19-0.27 | 0.21-0.29 | 0.23-0.31 | 0.25-0.33           | 0.28-0.38 | 0.30-0.40 |           |
| M   | 12       | Stainless steel                    | 80  | RPM       | 3180                | 2550      | 2120      | 1820      | 1590                | 1410      | 1270      |           |
|     | 13       |                                    |     | FEED      | 0.18-0.24           | 0.19-0.27 | 0.21-0.29 | 0.23-0.31 | 0.25-0.33           | 0.28-0.38 | 0.30-0.40 |           |
| K   | 15       | Grey cast iron                     | 110 | RPM       | 4380                | 3500      | 2920      | 2500      | 2190                | 1950      | 1750      |           |
|     | 16       |                                    |     | FEED      | 0.22-0.28           | 0.25-0.33 | 0.27-0.35 | 0.29-0.37 | 0.31-0.39           | 0.32-0.42 | 0.34-0.44 |           |
|     | 17       | Nodular cast iron                  | 120 | RPM       | 3780                | 3020      | 2520      | 2160      | 1890                | 1680      | 1510      |           |
|     | 18       |                                    |     | FEED      | 0.18-0.24           | 0.19-0.27 | 0.21-0.29 | 0.23-0.31 | 0.25-0.33           | 0.28-0.38 | 0.30-0.40 |           |
|     | 19       | Malleable cast iron                | 90  | RPM       | 4770                | 3820      | 3180      | 2730      | 2390                | 2120      | 1910      |           |
|     | 20       |                                    |     | FEED      | 0.22-0.28           | 0.25-0.33 | 0.27-0.35 | 0.29-0.37 | 0.31-0.39           | 0.32-0.42 | 0.34-0.44 |           |
| H   | 38       | Hardened steel                     | 30  | RPM       | 3180                | 2550      | 2120      | 1820      | 1590                | 1410      | 1270      |           |
|     |          |                                    |     | FEED      | 0.18-0.24           | 0.19-0.27 | 0.21-0.29 | 0.23-0.31 | 0.25-0.33           | 0.28-0.38 | 0.30-0.40 |           |
|     |          |                                    |     | RPM       | 1190                | 950       | 800       | 680       | 600                 | 530       | 480       |           |
|     |          |                                    |     | FEED      | 0.03-0.06           | 0.04-0.07 | 0.04-0.08 | 0.05-0.09 | 0.05-0.09           | 0.05-0.10 | 0.05-0.10 |           |

► Recommend to reduce the feed rate as following **Feed 100%:** DTX406(3×D), DTX408(5×D), DTX448(5×D) **Feed 75%:** DTX421(8×D)

SERIES

DRILLING DEPTH

LENGTH

SIZE MIN

SIZE MAX

PAGE

SOFT MICRO

PRO

DGXPA01

DPPA00

DGN523

DGN526

4XD

3XD

3XD

5XD

-

SHORT

LONG

D0.3

D1.0

D3.0

D1.0

D0.9

D6.0

D20.0

D20.0

9

14

16

GX-Coating

X-Coating

Z-Coating

# SOLID CARBIDE DREAM DRILLS



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for material search

◎ : Excellent ○ : Good

| 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  |   |   | ○ | ○ |
|     | 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       | Copper and Copper Alloys (Bronze / Brass) | 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  |   |   |   |   |
|     | 32       |                                           |                                                | Cured               | 280     | 30  |   |   |   |   |
|     | 33       |                                           | Ni or Co Based                                 | Annealed            | 250     | 25  |   |   |   |   |
|     | 34       |                                           |                                                | Cured               | 350     | 38  |   |   |   |   |
|     | 35       |                                           |                                                | Cast                | 320     | 34  |   |   |   |   |
|     | 36       | Titanium Alloys                           | Pure Titanium                                  |                     | 400 Rm  |     |   |   |   |   |
|     | 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  |   |   |   |   |



| PRO    |        | X      |        |        |        |                  |               | HIGH FEED |        |
|--------|--------|--------|--------|--------|--------|------------------|---------------|-----------|--------|
| DGN506 | DGN508 | DTX404 | DTX423 | DTX424 | DTX406 | DTX408<br>DTX448 | DTX421        | DGR493    | DGR495 |
| 3XD    | 5XD    | 3XD    | 3XD    | 5XD    | 3XD    | 5XD              | 8XD           | 3XD       | 5XD    |
| SHORT  | LONG   | STUB   | SHORT  | LONG   | SHORT  | LONG             | EXTRA<br>LONG | SHORT     | LONG   |
| D3.0   | D1.0   | D3.0   | D3.0   | D1.0   | D3.0   | D1.0             | D3.0          | D5.0      | D5.0   |
| D20.0  | D20.0  | D20.0  | D20.0  | D20.0  | D20.0  | D20.0            | D14.0         | D20.0     | D20.0  |
| 19     | 21     | 30     | 32     | 34     | 37     | 39               | 42            | 50        | 52     |

| Z-Coating | RCH-Coating |  |  |  |  |  | H-Coating |
|-----------|-------------|--|--|--|--|--|-----------|
|-----------|-------------|--|--|--|--|--|-----------|

|                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |    |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----|
|  |  |  |  |  |  |  |  |  |  |    |
| ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                  | ⊙                                                                                   | ⊙                                                                                   | ⊙                                                                                   | 1  |
| ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                  | ⊙                                                                                   | ⊙                                                                                   | ⊙                                                                                   | 2  |
| ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                  | ⊙                                                                                   | ⊙                                                                                   | ⊙                                                                                   | 3  |
| ○                                                                                 | ○                                                                                 | ○                                                                                 | ○                                                                                 | ○                                                                                 | ○                                                                                 | ○                                                                                  | ○                                                                                   | ○                                                                                   | ○                                                                                   | 4  |
| ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                  | ⊙                                                                                   | ⊙                                                                                   | ⊙                                                                                   | 5  |
| ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                  | ⊙                                                                                   | ⊙                                                                                   | ⊙                                                                                   | 6  |
| ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                  | ⊙                                                                                   | ⊙                                                                                   | ⊙                                                                                   | 7  |
| ○                                                                                 | ○                                                                                 | ○                                                                                 | ○                                                                                 | ○                                                                                 | ○                                                                                 | ○                                                                                  | ○                                                                                   | ○                                                                                   | ○                                                                                   | 8  |
| ○                                                                                 | ○                                                                                 | ○                                                                                 | ○                                                                                 | ○                                                                                 | ○                                                                                 | ○                                                                                  | ○                                                                                   | ○                                                                                   | ○                                                                                   | 9  |
| ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                  | ⊙                                                                                   | ⊙                                                                                   | ⊙                                                                                   | 10 |
| ○                                                                                 | ○                                                                                 | ○                                                                                 | ○                                                                                 | ○                                                                                 | ○                                                                                 | ○                                                                                  | ○                                                                                   | ○                                                                                   | ○                                                                                   | 11 |
| ○                                                                                 | ○                                                                                 | ○                                                                                 | ○                                                                                 | ○                                                                                 | ○                                                                                 | ○                                                                                  | ○                                                                                   |                                                                                     |                                                                                     | 12 |
| ○                                                                                 | ○                                                                                 | ○                                                                                 | ○                                                                                 | ○                                                                                 | ○                                                                                 | ○                                                                                  | ○                                                                                   |                                                                                     |                                                                                     | 13 |
|                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 14 |
| ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                  | ⊙                                                                                   | ⊙                                                                                   | ⊙                                                                                   | 15 |
| ○                                                                                 | ○                                                                                 | ○                                                                                 | ○                                                                                 | ○                                                                                 | ○                                                                                 | ○                                                                                  | ○                                                                                   | ○                                                                                   | ○                                                                                   | 16 |
| ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                  | ⊙                                                                                   | ⊙                                                                                   | ⊙                                                                                   | 17 |
| ○                                                                                 | ○                                                                                 | ○                                                                                 | ○                                                                                 | ○                                                                                 | ○                                                                                 | ○                                                                                  | ○                                                                                   | ○                                                                                   | ○                                                                                   | 18 |
| ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                 | ⊙                                                                                  | ⊙                                                                                   | ⊙                                                                                   | ⊙                                                                                   | 19 |
| ○                                                                                 | ○                                                                                 | ○                                                                                 | ○                                                                                 | ○                                                                                 | ○                                                                                 | ○                                                                                  | ○                                                                                   | ○                                                                                   | ○                                                                                   | 20 |
|                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 21 |
|                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 22 |
|                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 23 |
|                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 24 |
|                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 25 |
|                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 26 |
|                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 27 |
|                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 28 |
|                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 29 |
|                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 30 |
|                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 31 |
|                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 32 |
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