






























**Hi-tech Drills**

◎:Excellent ○:Good ×: Not Used (No mark): Not recommended

| Code No. | Drill Name                                     | Oil Hole | L/D              | Stocked Size |      | Coating | Performance                 | Appearance   | Stock item in Japan  | Work Material |      |      |     |     |                 |           |                 |        |                  |        |                                |            |                 |               |        |        |
|----------|--|----------|------------------|--------------|------|---------|-----------------------------|--|--|---------------|------|------|-----|-----|-----------------|-----------|-----------------|--------|------------------|--------|--------------------------------|------------|-----------------|---------------|--------|--------|
|          |  |          |                  | MIN          | MAX  |         |                             |  |  | SS400         | S45C | S50C | SFC | NAK | Hardened Steels |           | Hardened Steels |        | Stainless Steels |        | Titanium Alloys, Nickel Alloys | Cast Irons | Aluminum Alloys | Copper Alloys |        |        |
|          |  |          |                  |              |      |         |                             |  |  |               |      |      |     |     | 25~40 HRC       | 40~50 HRC | 50~65 HRC       | SUS304 | SUS316           | SUS420 |                                |            |                 |               | FCD FC | AC ADC |
| AQDEXS   | AQUA Drills EX Stub                            | —        | 3                | 2            | 16   | AQ      |                             |    | ●  | ◎             | ◎    | ◎    | ◎   | ◎   |                 |           | ○               | ○      | ×                | ○      |                                |            |                 |               |        |        |
| AQDS     | AQUA Drills Stub                               |          | 3                | 3            | 20   | AQ      |                             |    | ●  | ◎             | ◎    | ◎    | ◎   | ◎   |                 |           | ×               | ○      | ×                | ○      |                                |            |                 |               |        |        |
| AQD3F    | AQUA Drills 3 Flutes                           |          | 3                | 3            | 16   | AQ      | Hi - Precision              |    | ●  | ◎             | ◎    | ◎    | ◎   | ◎   |                 |           | ×               | ○      | ×                | ○      | ×                              | ×          |                 |               |        |        |
| AQDED3F  | AQUA Drill three Flutes with end cutting teeth |          | 3                | 3            | 12   | AQ      | Hi - Precision              |    | ●  | ◎             | ◎    |      |     |     | ×               | ×         | ×               |        | ×                | ◎      |                                |            |                 |               |        |        |
| AQDH     | AQUA Drills Hard                               |          | 3                | 2            | 12   | AQ      | Hi - Hardness               |    | ●  | ×             | ×    | ×    | ×   |     | ◎               | ×         | ×               | ×      |                  |        | ×                              | ×          |                 |               |        |        |
| AQMD     | AQUA Micro Drills                              |          | 7                | 0.2          | 1.99 | AQ      |                             |    | ●  |               |      |      |     |     | ◎               | ◎         | ○               | ○      |                  |        | ×                              |            |                 |               |        |        |
| AQDEXR   | AQUA Drills EX Regular                         |          | 5                | 2            | 16   | AQ      |                             |    | ●  | ○             | ◎    | ◎    | ◎   | ◎   |                 |           | ×               | ○      | ×                | ○      |                                |            |                 |               |        |        |
| AQDR     | AQUA Drills Regular                            |          | 5                | 2            | 20   | AQ      |                             |    | ●  | ◎             | ◎    | ◎    | ◎   | ◎   |                 |           | ×               | ○      | ×                | ○      |                                |            |                 |               |        |        |
| AQDFC    | AQUA Drills FC                                 |          | 5                | 2            | 12   | AQ      | For Cast Iron               |    | ●  | ◎             | ○    |      |     |     |                 |           | ×               | ○      | ×                | ◎      |                                |            |                 |               |        |        |
| DLCMD    | DLC Microdrills                                |          | 5                | 0.5          | 1.9  | DLC     | For Aluminum-Non-iron Alloy |    | ●  |               |      | ×    | ×   | ×   | ×               | ×         | ×               | ×      | ×                | ×      | ◎                              | ○          |                 |               |        |        |
| DLCDR    | DLC Drills Regular                             |          | 5                | 2            | 12   | DLC     | For Aluminum-Non-iron Alloy |    | ●  |               |      | ×    | ×   | ×   | ×               | ×         | ×               | ×      | ×                | ×      | ◎                              | ○          |                 |               |        |        |
| NWDX2D   | AQUA Drill NWDX 2D                             |          | Internal Coolant | 2            | 18.5 | 36      | —                           |  |    | ●             | ◎    | ◎    | ◎   | ○   | ×               | ×         | ○               | ○      |                  |        | ◎                              |            |                 |               |        |        |
| NWDX3D   | AQUA Drill NWDX 3D                             |          |                  | 3            | 18.5 | 36      | —                           |  |    | ●             | ◎    | ◎    | ◎   | ○   | ×               | ×         | ○               | ○      |                  |        | ◎                              |            |                 |               |        |        |
| AQMH3D   | AQUA Drills with Mist-hole(3D)                 |          |                  | 3            | 4.3  | 16      | AQ                          |  |   | ●             | ◎    | ◎    | ◎   | ◎   | ◎               |           |                 | ○      | ○                | ×      | ◎                              |            |                 |               |        |        |
| AQWDS-3  | AQUA Drills WAVY L/D3 (Holder)                 | 3        |                  | 14           | 50   | AQ      |                             |  | ●  | ×             | ◎    | ◎    | ◎   | ×   | ×               | ×         |                 | ×      | ◎                |        |                                |            |                 |               |        |        |
| NWDEX4D  | AQUA Drill NWDX 4D                             | 4        |                  | 18.5         | 36   | —       |                             |  | ●  | ◎             | ◎    | ◎    | ○   | ×   | ×               | ○         | ○               |        |                  | ◎      |                                |            |                 |               |        |        |
| AQMH5D   | AQUA Drills with Mist-hole(5D)                 | 5        |                  | 4.2          | 16   | AQ      |                             |  | ●  | ◎             | ◎    | ◎    | ◎   | ◎   |                 |           | ○               | ○      | ×                | ◎      |                                |            |                 |               |        |        |
| AQWDS-5  | AQUA Drills WAVY L/D5 (Holder)                 | 5        |                  | 14           | 50   | AQ      |                             |  | ●  | ×             | ◎    | ◎    | ◎   | ×   | ×               | ×         |                 | ×      | ◎                |        |                                |            |                 |               |        |        |
| AQMH7D   | AQUA Drills with Mist-hole(7D)                 | 7        |                  | 4.5          | 16   | AQ      |                             |  | ●  | ◎             | ◎    | ◎    | ◎   | ◎   |                 |           | ○               | ○      | ×                | ◎      |                                |            |                 |               |        |        |
| MQLPLD   | MQL Power Long Drills                          | 10~      |                  | 3            | 10   | AQ      |                             |  | △  |               | ◎    | ◎    | ◎   |     |                 | ×         | ×               | ×      | ×                | ◎      |                                |            |                 |               |        |        |
| AGESS    | AG-ESS Drills                                  | —        |                  | 3            | 1    | 20      | AG                          |  |  | ●             | ◎    | ◎    | ◎   | ◎   | ×               | ×         | ○               | ○      | ○                | ○      | ○                              | ○          | ○               | ○             | ○      |        |
| SGESS    | SG-ESS Drills                                  |          |                  | 3            | 1    | 20      | SG                          |  |  | ●             | ◎    | ◎    | ◎   | ◎   |                 |           | ×               | ○      | ○                | ◎      | ○                              | ○          | ○               | ○             | ○      |        |
| AGSUSS   | AG-SUS Drills Short                            |          |                  | 3            | 1    | 20      | AG                          | SUS For Stainless Steels   |  | ●             | ◎    | ○    |     | ×   | ×               | ×         | ◎               | ◎      | ○                |        |                                | ○          | ○               |               |        |        |
| AGES     | AG-ES Drills                                   |          |                  | 5            | 2    | 20      | AG                          |  |  | ●             | ◎    | ◎    | ◎   | ◎   | ×               | ×         | ○               | ○      | ○                | ○      | ○                              | ○          | ○               | ○             | ○      |        |
| SGES     | SG-ES Drills                                   |          |                  | 5            | 2    | 32      | SG                          |  |  | ●             | ◎    | ◎    | ◎   | ◎   |                 |           | ×               | ×      | ◎                | ○      | ○                              | ○          | ○               | ○             | ○      |        |
| AGSUSR   | AG-SUS Drills Regular                          |          | 5                | 1            | 20   | AG      | SUS For Stainless Steels    |  | ●  | ◎             | ○    |      | ×   | ×   | ×               | ◎         | ◎               | ○      |                  |        | ○                              | ○          |                 |               |        |        |
| DLCHD    | DLC-HSS Drills                                 |          | 5                | 1            | 13   | DLC     | For Aluminum-Non-iron Alloy |  | ●  |               | ×    | ×    | ×   | ×   | ×               |           | ×               | ×      |                  |        | ◎                              | ◎          |                 |               |        |        |
| GOH      | G Oil-Hole Drills                              |          | Internal Coolant | 3            | 10   | 40      | G                           |  |  | ●             | ◎    | ◎    | ◎   | ◎   | ×               | ×         | ○               | ○      | ○                | ○      | ○                              | ○          | ○               | ○             | ○      |        |
| SGOH     | SG-FAX Oil-Hole Drills                         |          |                  | 5            | 10   | 30      | SG                          |  |  | ●             | ◎    | ◎    | ◎   | ◎   |                 |           | ×               | ○      | ○                | ◎      | ○                              | ○          | ○               | ○             | ○      |        |

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