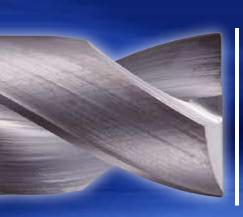
### PRODUCT NEWS PN-E-014



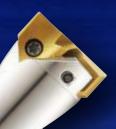
## FLAT DRILL Series

TLDM type <Solid carbide drill>
TLD3D/TLD5D type <Solid carbide drill>
TLZD type <Indexable insert drill>





## 180° Flat face



180° Flat face

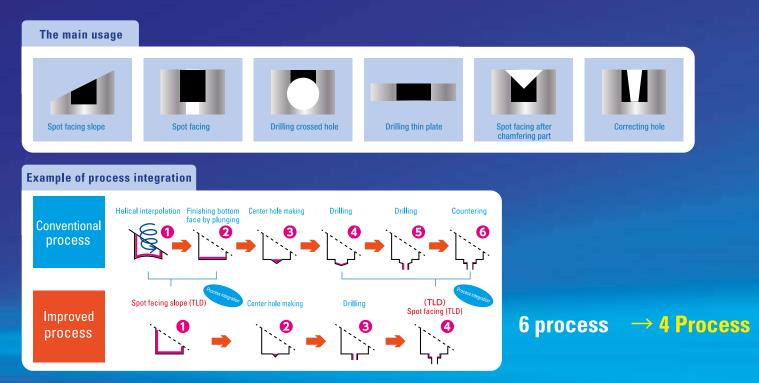


## **DIJET GmbH**

## www.dijet.de

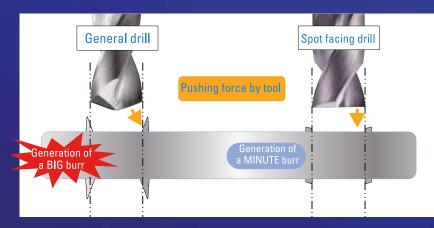
#### Feature of product

#### Because of multi application, achieved process integration



## Widely applied from carbon & mold steel to stainless steel, cast iron & aluminum alloy

#### Restraing entrance burr and exit burr



Useful in situations where burr processing is difficult, such as crossed hole processing





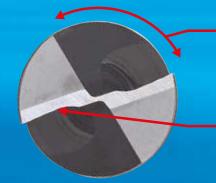




#### 

#### TLDM type (Drilling depth 2×Dc)

Because of shortness overhung length, improved accuracy Specializing in thin plate and bottom face processing



Wide flute design Good chip discharge performance

Low cutting force Excellent biting property

#### TLD3D/TLD5D

#### TLD3D/5D type (Drilling depth 3×Dc/5×Dc)

Wide flute design and Smooth surface treatment Good chip discharge performance

Through coolant hole type Specializing in deep hole drilling



Low cutting force Excellent biting property

#### Line up

#### TLDM type

- Spot facing drill with point angle of 180 °(flat face)
- Drilling depth 2×Dc
- Helix angle: 30°



Dimensions (mm)



|            |       |     | Dimens       | ions (mm | ı)  |
|------------|-------|-----|--------------|----------|-----|
| Cat. No.   | Stock | φDc | l            | L        | ¢Ds |
| TLDM010    | 0     | 1   | 3            | 60       | 3   |
| TLDM011    | 0     | 1.1 | 3.3          | 60       | 3   |
| TLDM012    | 0     | 1.2 | 3.6          | 60       | 3   |
| TLDM013    | 0     | 1.3 | 3.9          | 60       | 3   |
| TLDM014    | 0     | 1.4 | 4 <u>.</u> 2 | 60       | 3   |
| TLDM015    | 0     | 1.5 | 4.5          | 60       | 3   |
| TLDM016    | 0     | 1.6 | 4.8          | 60       | 3   |
| TLDM017    | 0     | 1.7 | 5.1          | 60       | 3   |
| TLDM018    | 0     | 1.8 | 5.4          | 60       | 3   |
| TLDM019    | 0     | 1.9 | 5.7          | 60       | 3   |
| TLDM020    | 0     | 2   | 7            | 60       | 4   |
| TLDM021    | 0     | 2.1 | 7.5          | 60       | 4   |
| TLDM022    | 0     | 2.2 | 8            | 60       | 4   |
| TLDM023    | 0     | 2.3 | 8.5          | 60       | 4   |
| TLDM024    | 0     | 2.4 | 9            | 60       | 4   |
| TLDM025    | 0     | 2.5 | 9.5          | 60       | 4   |
| TLDM026    | 0     | 2.6 | 10           | 60       | 4   |
| TLDM027    | 0     | 2.7 | 10.5         | 60       | 4   |
| TLDM028    | 0     | 2.8 | 11           | 60       | 4   |
| TLDM029    | 0     | 2.9 | 11.5         | 60       | 4   |
| TLDM030    | 0     | 3   | 12           | 60       | 4   |
| TLDM030-S6 | 0     | 3   | 12           | 60       | 6   |
| TLDM031    | 0     | 3.1 | 12           | 60       | 4   |
| TLDM031-S6 | 0     | 3.1 | 12           | 60       | 6   |
| TLDM032    | 0     | 3.2 | 12           | 60       | 4   |
| TLDM032-S6 | 0     | 3.2 | 12           | 60       | 6   |
| TLDM033    | 0     | 3.3 | 13           | 60       | 4   |
| TLDM033-S6 | 0     | 3.3 | 13           | 60       | 6   |
| TLDM034    | 0     | 3.4 | 13           | 60       | 4   |
| TLDM034-S6 | 0     | 3.4 | 13           | 60       | 6   |
| TLDM035    | 0     | 3.5 | 13           | 60       | 4   |
| TLDM035-S6 | 0     | 3.5 | 13           | 60       | 6   |

 ${ lackbdash :}$  Standard stock item  ${ \ \, { \textbf{O} :} }$  Stock in Japan





In case of Dc≦12 and Dc<Ds

20

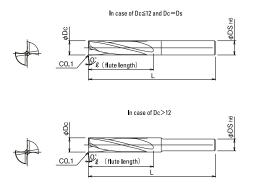
l (flute length)

φDc

<u>\*C0.1</u>

¢DS h6

| Drill dia.   | Tolerance   |
|--------------|-------------|
| Dc ≤ 3       | 0<br>0.010  |
| 3 < Dc ≤ 6   | 0<br>-0.012 |
| 6 < Dc ≤ 10  | 0<br>0.015  |
| 10 < Dc ≤ 18 | 0<br>0.018  |



|          |       | Dimensions (mm) |        |           |        |
|----------|-------|-----------------|--------|-----------|--------|
| 0.1.11   | 0     |                 | Dimens | sions (mn | ו)<br> |
| Cat. No. | Stock | øDс             | l      | L         | φDs    |
| TLDM063  | 0     | 6.3             | 24     | 70        | 8      |
| TLDM064  | 0     | 6.4             | 25     | 70        | 8      |
| TLDM065  | 0     | 6.5             | 25     | 70        | 8      |
| TLDM066  | 0     | 6.6             | 25     | 75        | 8      |
| TLDM067  | 0     | 6.7             | 26     | 75        | 8      |
| TLDM068  | 0     | 6.8             | 26     | 75        | 8      |
| TLDM069  | 0     | 6.9             | 27     | 75        | 8      |
| TLDM070  | 0     | 7               | 27     | 75        | 8      |
| TLDM071  | 0     | 7.1             | 27     | 75        | 8      |
| TLDM072  | 0     | 7.2             | 28     | 75        | 8      |
| TLDM073  | 0     | 7.3             | 28     | 75        | 8      |
| TLDM074  | 0     | 7.4             | 28     | 75        | 8      |
| TLDM075  | 0     | 7.5             | 29     | 75        | 8      |
| TLDM076  | 0     | 7.6             | 29     | 75        | 8      |
| TLDM077  | 0     | 7.7             | 30     | 75        | 8      |
| TLDM078  | 0     | 7.8             | 30     | 75        | 8      |
| TLDM079  | 0     | 7.9             | 30     | 75        | 8      |
| TLDM080  | 0     | 8               | 31     | 75        | 8      |
| TLDM081  | 0     | 8.1             | 31     | 75        | 10     |
| TLDM082  | 0     | 8.2             | 32     | 75        | 10     |
| TLDM083  | 0     | 8.3             | 32     | 75        | 10     |
| TLDM084  | 0     | 8.4             | 32     | 75        | 10     |
| TLDM085  | 0     | 8.5             | 32     | 75        | 10     |
| TLDM086  | 0     | 8.6             | 33     | 80        | 10     |
| TLDM087  | 0     | 8.7             | 33     | 80        | 10     |
| TLDM088  | 0     | 8.8             | 34     | 80        | 10     |
| TLDM089  | 0     | 8.9             | 34     | 80        | 10     |
| TLDM090  | 0     | 9               | 35     | 80        | 10     |
| TLDM091  | 0     | 9.1             | 35     | 80        | 10     |
| TLDM092  | 0     | 9.2             | 35     | 80        | 10     |
| TLDM093  | 0     | 9.3             | 36     | 80        | 10     |
| TLDM094  | 0     | 9.4             | 36     | 80        | 10     |

|          |       |              | Dimen | sions (mn | n)  |
|----------|-------|--------------|-------|-----------|-----|
| Cat. No. | Stock | фDc          | l     | L         | ¢Ds |
| TLDM095  | 0     | 9.5          | 37    | 80        | 10  |
| TLDM096  | 0     | 9.6          | 37    | 80        | 10  |
| TLDM097  | 0     | 9.7          | 37    | 80        | 10  |
| TLDM098  | 0     | 9.8          | 38    | 80        | 10  |
| TLDM099  | 0     | 9 <u>.</u> 9 | 38    | 80        | 10  |
| TLDM100  | 0     | 10           | 39    | 80        | 10  |
| TLDM101  | 0     | 10,1         | 39    | 85        | 12  |
| TLDM102  | 0     | 10.2         | 39    | 85        | 12  |
| TLDM103  | 0     | 10.3         | 40    | 85        | 12  |
| TLDM104  | 0     | 10.4         | 40    | 85        | 12  |
| TLDM105  | 0     | 10.5         | 40    | 85        | 12  |
| TLDM106  | 0     | 10.6         | 41    | 85        | 12  |
| TLDM107  | 0     | 10.7         | 41    | 85        | 12  |
| TLDM108  | 0     | 10.8         | 42    | 85        | 12  |
| TLDM109  | 0     | 10.9         | 42    | 85        | 12  |
| TLDM110  | 0     | 11           | 42    | 85        | 12  |
| TLDM111  | 0     | 11.1         | 43    | 85        | 12  |
| TLDM112  | 0     | 11.2         | 43    | 85        | 12  |
| TLDM113  | 0     | 11.3         | 44    | 85        | 12  |
| TLDM114  | 0     | 11.4         | 44    | 85        | 12  |
| TLDM115  | 0     | 11.5         | 44    | 85        | 12  |
| TLDM116  | 0     | 11.6         | 45    | 90        | 12  |
| TLDM117  | 0     | 11.7         | 45    | 90        | 12  |
| TLDM118  | 0     | 11.8         | 45    | 90        | 12  |
| TLDM119  | 0     | 11.9         | 46    | 90        | 12  |
| TLDM120  | 0     | 12           | 46    | 90        | 12  |
| TLDM125  | 0     | 12.5         | 48    | 95        | 12  |
| TLDM130  | 0     | 13           | 50    | 100       | 12  |
| TLDM135  | 0     | 13.5         | 52    | 100       | 12  |
| TLDM140  | 0     | 14           | 54    | 100       | 12  |

Recommended cutting conditions  $\downarrow$ 



• Standard stock item O Stock in Japan

#### Line up

#### TLD3D type

- Spot facing drill with point angle of 180 °(flat face)
- Through coolant hole
- Drilling depth 3×Dc
- Helix angle: 30°
- Double margin



|                |       | Dimensions (mm) |    |    |     |
|----------------|-------|-----------------|----|----|-----|
| Cat. No.       | Stock | øDc             | l  | L  | φDs |
| TLD3DCH0300S03 | ٠     | 3               | 14 | 60 | 3   |
| TLD3DCH0310S04 | ٠     | 3.1             | 14 | 60 | 4   |
| TLD3DCH0320S04 | •     | 3.2             | 15 | 60 | 4   |
| TLD3DCH0330S04 | •     | 3.3             | 15 | 60 | 4   |
| TLD3DCH0340S04 | •     | 3.4             | 16 | 60 | 4   |
| TLD3DCH0350S04 | ٠     | 3.5             | 16 | 60 | 4   |
| TLD3DCH0360S04 | ٠     | 3.6             | 17 | 60 | 4   |
| TLD3DCH0370S04 | •     | 3.7             | 17 | 60 | 4   |
| TLD3DCH0380S04 | ٠     | 3.8             | 18 | 60 | 4   |
| TLD3DCH0390S04 |       | 3.9             | 18 | 60 | 4   |
| TLD3DCH0400S04 | ٠     | 4               | 18 | 60 | 4   |
| TLD3DCH0410S05 |       | 4.1             | 19 | 65 | 5   |
| TLD3DCH0420S05 | •     | 4.2             | 19 | 65 | 5   |
| TLD3DCH0430S05 | •     | 4.3             | 20 | 65 | 5   |
| TLD3DCH0440S05 | •     | 4.4             | 20 | 65 | 5   |
| TLD3DCH0450S05 | •     | 4.5             | 21 | 65 | 5   |
| TLD3DCH0460S05 | ٠     | 4.6             | 21 | 65 | 5   |
| TLD3DCH0470S05 |       | 4.7             | 22 | 65 | 5   |
| TLD3DCH0480S05 | ٠     | 4.8             | 22 | 65 | 5   |
| TLD3DCH0490S05 | •     | 4.9             | 23 | 65 | 5   |
| TLD3DCH0500S05 | •     | 5               | 23 | 65 | 5   |
| TLD3DCH0510S06 | •     | 5.1             | 23 | 70 | 6   |
| TLD3DCH0520S06 | ٠     | 5.2             | 24 | 70 | 6   |
| TLD3DCH0530S06 | •     | 5.3             | 24 | 70 | 6   |

Cat. No. Stock φDc l L ¢Ds TLD3DCH0540S06 • 5.4 25 70 6 TLD3DCH0550S06 • 5.5 25 70 6 TLD3DCH0560S06 • 5.6 26 70 6 TLD3DCH0570S06 • 5.7 26 70 6 TLD3DCH0580S06 • 27 70 6 5.8 TLD3DCH0590S06 • 27 5.9 70 6 TLD3DCH0600S06 • 6 27 70 6 TLD3DCH0610S07 • 6.1 28 75 7 TLD3DCH0620S07 • 6.2 28 75 7 TLD3DCH0630S07 • 6.3 29 75 7 TLD3DCH0640S07 ۲ 6.4 29 75 7 TLD3DCH0650S07 • 6.5 30 75 7 TLD3DCH0660S07 • 6.6 30 75 7 7 TLD3DCH0670S07 • 6.7 31 75 TLD3DCH0680S07 • 6.8 31 75 7 • 6.9 32 75 7 TLD3DCH0690S07 TLD3DCH0700S07 • 7 32 75 7 TLD3DCH0710S08  $\bullet$ 7.1 32 80 8 TLD3DCH0720S08 • 7.2 33 80 8 TLD3DCH0730S08 • 7.3 33 80 8 TLD3DCH0740S08 • 7.4 34 80 8 TLD3DCH0750S08 • 7.5 34 80 8 TLD3DCH0760S08 • 7.6 35 80 8 TLD3DCH0770S08 7.7 35 80 8 lacksquare

Through

coolant hole Coating

Dimensions (mm)

• Standard stock item O Stock in Japan



•Tolerance of drill diameter (mm)

| Drill dia.   | Tolerance   |
|--------------|-------------|
| Dc ≤ 3       | 0<br>-0.010 |
| 3 < Dc ≤ 6   | 0<br>-0.012 |
| 6 < Dc ≤ 10  | 0<br>0.015  |
| 10 < Dc ≤ 18 | 0<br>0.018  |

|                |       | Dimensions (mm) |    |     |     |
|----------------|-------|-----------------|----|-----|-----|
| Cat. No.       | Stock | фDc             | l  | L   | ¢Ds |
| TLD3DCH1020S11 | •     | 10.2            | 46 | 105 | 11  |
| TLD3DCH1030S11 |       | 10,3            | 47 | 105 | 11  |
| TLD3DCH1040S11 | •     | 10.4            | 47 | 105 | 11  |
| TLD3DCH1050S11 | •     | 10.5            | 48 | 105 | 11  |
| TLD3DCH1060S11 | •     | 10.6            | 48 | 105 | 11  |
| TLD3DCH1070S11 | •     | 10.7            | 49 | 105 | 11  |
| TLD3DCH1080S11 | •     | 10 <u>.</u> 8   | 49 | 105 | 11  |
| TLD3DCH1090S11 | •     | 10.9            | 50 | 105 | 11  |
| TLD3DCH1100S11 | •     | 11              | 50 | 105 | 11  |
| TLD3DCH1110S12 |       | 11.1            | 50 | 115 | 12  |
| TLD3DCH1120S12 | •     | 11.2            | 51 | 115 | 12  |
| TLD3DCH1130S12 |       | 11.3            | 51 | 115 | 12  |
| TLD3DCH1140S12 | •     | 11.4            | 52 | 115 | 12  |
| TLD3DCH1150S12 | •     | 11.5            | 52 | 115 | 12  |
| TLD3DCH1160S12 | •     | 11.6            | 53 | 115 | 12  |
| TLD3DCH1170S12 | •     | 11.7            | 53 | 115 | 12  |
| TLD3DCH1180S12 | •     | 11.8            | 54 | 115 | 12  |
| TLD3DCH1190S12 | •     | 11.9            | 54 | 115 | 12  |
| TLD3DCH1200S12 | •     | 12              | 54 | 115 | 12  |
| TLD3DCH1250S13 | •     | 12.5            | 57 | 125 | 13  |
| TLD3DCH1300S13 | •     | 13              | 59 | 125 | 13  |
| TLD3DCH1350S14 | •     | 13.5            | 61 | 130 | 14  |
| TLD3DCH1400S14 | •     | 14              | 63 | 130 | 14  |

CO.05

¢Dc

In case of  $\phi Dc = \phi Ds$ 

|                |       | Dimensions (mm) |    |     |     |
|----------------|-------|-----------------|----|-----|-----|
| Cat. No.       | Stock | ФDc             | l  | L   | φDs |
| TLD3DCH0780S08 | •     | 7.8             | 36 | 80  | 8   |
| TLD3DCH0790S08 |       | 7 <u>.</u> 9    | 36 | 80  | 8   |
| TLD3DCH0800S08 | •     | 8               | 36 | 80  | 8   |
| TLD3DCH0810S09 | •     | 8.1             | 37 | 90  | 9   |
| TLD3DCH0820S09 | •     | 8 <u>.</u> 2    | 37 | 90  | 9   |
| TLD3DCH0830S09 | •     | 8.3             | 38 | 90  | 9   |
| TLD3DCH0840S09 | •     | 8.4             | 38 | 90  | 9   |
| TLD3DCH0850S09 |       | 8.5             | 39 | 90  | 9   |
| TLD3DCH0860S09 | •     | 8.6             | 39 | 90  | 9   |
| TLD3DCH0870S09 |       | 8.7             | 40 | 90  | 9   |
| TLD3DCH0880S09 | •     | 8.8             | 40 | 90  | 9   |
| TLD3DCH0890S09 | •     | 8.9             | 41 | 90  | 9   |
| TLD3DCH0900S09 | •     | 9               | 41 | 90  | 9   |
| TLD3DCH0910S10 | •     | 9.1             | 41 | 95  | 10  |
| TLD3DCH0920S10 | •     | 9.2             | 42 | 95  | 10  |
| TLD3DCH0930S10 | •     | 9.3             | 42 | 95  | 10  |
| TLD3DCH0940S10 | •     | 9.4             | 43 | 95  | 10  |
| TLD3DCH0950S10 | •     | 9.5             | 43 | 95  | 10  |
| TLD3DCH0960S10 | •     | 9.6             | 44 | 95  | 10  |
| TLD3DCH0970S10 | •     | 9.7             | 44 | 95  | 10  |
| TLD3DCH0980S10 | •     | 9.8             | 45 | 95  | 10  |
| TLD3DCH0990S10 | •     | 9.9             | 45 | 95  | 10  |
| TLD3DCH1000S10 | •     | 10              | 45 | 95  | 10  |
| TLD3DCH1010S11 | •     | 10.1            | 46 | 105 | 11  |

• Standard stock item **O** Stock in Japan



#### Line up

#### TLD5D type

- Spot facing drill with point angle of 180 °(flat face)
- Through coolant hole
- Drilling depth 5×Dc
- Helix angle: 30°
- Double margin





|                |       | Dimensions (mm) |    |    |     |
|----------------|-------|-----------------|----|----|-----|
| Cat. No.       | Stock | ФDc             | l  | L  | φDs |
| TLD5DCH0300S03 | 0     | 3               | 20 | 70 | 3   |
| TLD5DCH0310S04 | 0     | 3.1             | 21 | 70 | 4   |
| TLD5DCH0320S04 | 0     | 3.2             | 22 | 70 | 4   |
| TLD5DCH0330S04 | 0     | 3.3             | 22 | 70 | 4   |
| TLD5DCH0340S04 | 0     | 3.4             | 23 | 70 | 4   |
| TLD5DCH0350S04 | 0     | 3.5             | 24 | 70 | 4   |
| TLD5DCH0360S04 | 0     | 3.6             | 24 | 70 | 4   |
| TLD5DCH0370S04 | 0     | 3.7             | 25 | 70 | 4   |
| TLD5DCH0380S04 | 0     | 3.8             | 26 | 70 | 4   |
| TLD5DCH0390S04 | 0     | 3.9             | 26 | 70 | 4   |
| TLD5DCH0400S04 | 0     | 4               | 27 | 70 | 4   |
| TLD5DCH0410S05 | 0     | 4.1             | 28 | 80 | 5   |
| TLD5DCH0420S05 | 0     | 4.2             | 28 | 80 | 5   |
| TLD5DCH0430S05 | 0     | 4.3             | 29 | 80 | 5   |
| TLD5DCH0440S05 | 0     | 4.4             | 30 | 80 | 5   |
| TLD5DCH0450S05 | 0     | 4.5             | 30 | 80 | 5   |
| TLD5DCH0460S05 | 0     | 4.6             | 31 | 80 | 5   |
| TLD5DCH0470S05 | 0     | 4.7             | 32 | 80 | 5   |
| TLD5DCH0480S05 | 0     | 4.8             | 32 | 80 | 5   |
| TLD5DCH0490S05 | 0     | 4.9             | 33 | 80 | 5   |
| TLD5DCH0500S05 | 0     | 5               | 34 | 80 | 5   |
| TLD5DCH0510S06 | 0     | 5.1             | 34 | 85 | 6   |
| TLD5DCH0520S06 | 0     | 5.2             | 35 | 85 | 6   |
| TLD5DCH0530S06 | 0     | 5.3             | 36 | 85 | 6   |

|                |       | Dimensions (mm) |    |     |     |
|----------------|-------|-----------------|----|-----|-----|
| Cat. No.       | Stock | ¢Dc             | l  | L   | ¢Ds |
| TLD5DCH0540S06 | 0     | 5.4             | 36 | 85  | 6   |
| TLD5DCH0550S06 | 0     | 5.5             | 37 | 85  | 6   |
| TLD5DCH0560S06 | 0     | 5.6             | 38 | 85  | 6   |
| TLD5DCH0570S06 | 0     | 5.7             | 38 | 85  | 6   |
| TLD5DCH0580S06 | 0     | 5.8             | 39 | 85  | 6   |
| TLD5DCH0590S06 | 0     | 5.9             | 40 | 85  | 6   |
| TLD5DCH0600S06 | 0     | 6               | 40 | 85  | 6   |
| TLD5DCH0610S07 | 0     | 6.1             | 41 | 95  | 7   |
| TLD5DCH0620S07 | 0     | 6.2             | 42 | 95  | 7   |
| TLD5DCH0630S07 | 0     | 6.3             | 42 | 95  | 7   |
| TLD5DCH0640S07 | 0     | 6.4             | 43 | 95  | 7   |
| TLD5DCH0650S07 | 0     | 6.5             | 44 | 95  | 7   |
| TLD5DCH0660S07 | 0     | 6.6             | 44 | 95  | 7   |
| TLD5DCH0670S07 | 0     | 6.7             | 45 | 95  | 7   |
| TLD5DCH0680S07 | 0     | 6.8             | 46 | 95  | 7   |
| TLD5DCH0690S07 | 0     | 6.9             | 46 | 95  | 7   |
| TLD5DCH0700S07 | 0     | 7               | 47 | 95  | 7   |
| TLD5DCH0710S08 | 0     | 7.1             | 48 | 100 | 8   |
| TLD5DCH0720S08 | 0     | 7.2             | 48 | 100 | 8   |
| TLD5DCH0730S08 | 0     | 7.3             | 49 | 100 | 8   |
| TLD5DCH0740S08 | 0     | 7.4             | 50 | 100 | 8   |
| TLD5DCH0750S08 | 0     | 7.5             | 50 | 100 | 8   |
| TLD5DCH0760S08 | 0     | 7.6             | 51 | 100 | 8   |
| TLD5DCH0770S08 | 0     | 7.7             | 52 | 100 | 8   |

• Standard stock item O: Stock in Japan



•Tolerance of drill diameter (mm)

| Drill dia.   | Tolerance   |
|--------------|-------------|
| Dc ≤ 3       | 0<br>-0.010 |
| 3 < Dc ≤ 6   | 0<br>-0.012 |
| 6 < Dc ≤ 10  | 0<br>0.015  |
| 10 < Dc ≤ 18 | 0<br>0.018  |

|                |       | Dimensions (mm) |    |     |     |
|----------------|-------|-----------------|----|-----|-----|
| Cat. No.       | Stock | ФDc             | l  | L   | ¢Ds |
| TLD5DCH1020S11 | 0     | 10.2            | 68 | 130 | 11  |
| TLD5DCH1030S11 | 0     | 10.3            | 69 | 130 | 11  |
| TLD5DCH1040S11 | 0     | 10.4            | 70 | 130 | 11  |
| TLD5DCH1050S11 | 0     | 10.5            | 70 | 130 | 11  |
| TLD5DCH1060S11 | 0     | 10.6            | 71 | 130 | 11  |
| TLD5DCH1070S11 | 0     | 10.7            | 72 | 130 | 11  |
| TLD5DCH1080S11 | 0     | 10.8            | 72 | 130 | 11  |
| TLD5DCH1090S11 | 0     | 10.9            | 73 | 130 | 11  |
| TLD5DCH1100S11 | 0     | 11              | 74 | 130 | 11  |
| TLD5DCH1110S12 | 0     | 11.1            | 74 | 145 | 12  |
| TLD5DCH1120S12 | 0     | 11.2            | 75 | 145 | 12  |
| TLD5DCH1130S12 | 0     | 11.3            | 76 | 145 | 12  |
| TLD5DCH1140S12 | 0     | 11.4            | 76 | 145 | 12  |
| TLD5DCH1150S12 | 0     | 11.5            | 77 | 145 | 12  |
| TLD5DCH1160S12 | 0     | 11.6            | 78 | 145 | 12  |
| TLD5DCH1170S12 | 0     | 11.7            | 78 | 145 | 12  |
| TLD5DCH1180S12 | 0     | 11.8            | 79 | 145 | 12  |
| TLD5DCH1190S12 | 0     | 11.9            | 80 | 145 | 12  |
| TLD5DCH1200S12 | 0     | 12              | 80 | 145 | 12  |
| TLD5DCH1250S13 | 0     | 12.5            | 84 | 155 | 13  |
| TLD5DCH1300S13 | 0     | 13              | 87 | 155 | 13  |
| TLD5DCH1350S14 | 0     | 13.5            | 90 | 160 | 14  |
| TLD5DCH1400S14 | 0     | 14              | 94 | 160 | 14  |

 $C_{0.05} = \begin{pmatrix} c_{0.05} \\ c_{0.05$ 

In case of  $\phi Dc = \phi Ds$ 

1

|                |       | Dimensions (mm) |    |     |     |  |  |  |  |  |  |
|----------------|-------|-----------------|----|-----|-----|--|--|--|--|--|--|
| Cat. No.       | Stock | ФDc             | l  | L   | øDs |  |  |  |  |  |  |
| TLD5DCH0780S08 | 0     | 7.8             | 52 | 100 | 8   |  |  |  |  |  |  |
| TLD5DCH0790S08 | 0     | 7 <u>.</u> 9    | 53 | 100 | 8   |  |  |  |  |  |  |
| TLD5DCH0800S08 | 0     | 8               | 54 | 100 | 8   |  |  |  |  |  |  |
| TLD5DCH0810S09 | 0     | 8.1             | 54 | 110 | 9   |  |  |  |  |  |  |
| TLD5DCH0820S09 | 0     | 8 <u>.</u> 2    | 55 | 110 | 9   |  |  |  |  |  |  |
| TLD5DCH0830S09 | 0     | 8.3             | 56 | 110 | 9   |  |  |  |  |  |  |
| TLD5DCH0840S09 | 0     | 8.4             | 56 | 110 | 9   |  |  |  |  |  |  |
| TLD5DCH0850S09 | 0     | 8.5             | 57 | 110 | 9   |  |  |  |  |  |  |
| TLD5DCH0860S09 | 0     | 8.6             | 58 | 110 | 9   |  |  |  |  |  |  |
| TLD5DCH0870S09 | 0     | 8.7             | 58 | 110 | 9   |  |  |  |  |  |  |
| TLD5DCH0880S09 | 0     | 8.8             | 59 | 110 | 9   |  |  |  |  |  |  |
| TLD5DCH0890S09 | 0     | 8.9             | 60 | 110 | 9   |  |  |  |  |  |  |
| TLD5DCH0900S09 | 0     | 9               | 60 | 110 | 9   |  |  |  |  |  |  |
| TLD5DCH0910S10 | 0     | 9.1             | 61 | 120 | 10  |  |  |  |  |  |  |
| TLD5DCH0920S10 | 0     | 9.2             | 62 | 120 | 10  |  |  |  |  |  |  |
| TLD5DCH0930S10 | 0     | 9.3             | 62 | 120 | 10  |  |  |  |  |  |  |
| TLD5DCH0940S10 | 0     | 9.4             | 63 | 120 | 10  |  |  |  |  |  |  |
| TLD5DCH0950S10 | 0     | 9.5             | 64 | 120 | 10  |  |  |  |  |  |  |
| TLD5DCH0960S10 | 0     | 9.6             | 64 | 120 | 10  |  |  |  |  |  |  |
| TLD5DCH0970S10 | 0     | 9.7             | 65 | 120 | 10  |  |  |  |  |  |  |
| TLD5DCH0980S10 | 0     | 9.8             | 66 | 120 | 10  |  |  |  |  |  |  |
| TLD5DCH0990S10 | 0     | 9.9             | 66 | 120 | 10  |  |  |  |  |  |  |
| TLD5DCH1000S10 | 0     | 10              | 67 | 120 | 10  |  |  |  |  |  |  |
| TLD5DCH1010S11 | 0     | 10.1            | 68 | 130 | 11  |  |  |  |  |  |  |

• Standard stock item O Stock in Japan



#### "Indexable Spot facing drill" TLZD type







# TLZD



## Series expansion, new modular head TLZD type (flat face).

Suitable for spot facing in case of long overhung length such as stamping die or large-sized mold part.

**Feature of product** 

#### Features 1

Size range:  $\phi$ 14- $\phi$ 32mm dia. And even in case of long overhung length, stable machining can be possible by combination with MSN carbide shank arbor.





Achieved non-step drilling without pilot hole even if drilling slope surface and crossed hole.

#### Features **3**

By adopting new PVD coated grade "JC7550" and unique coolant system, achieved longer tool life even if drilling mold steel or stainless steel.

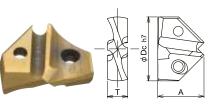
**Features 4** 

Drilling depth: 0.7-1D.

#### "Indexable Spot facing drill" TLZD type

#### Line up

TLZD-SS type



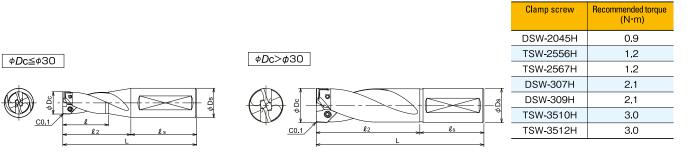
Through coolant hole
Drilling depth: 1.5×Dc

- SS type (1.5D)



| Insert             | Body       |            |      |                |              |           |                   |             |                             |             |               |              | Parts | 1/2       |                   |
|--------------------|------------|------------|------|----------------|--------------|-----------|-------------------|-------------|-----------------------------|-------------|---------------|--------------|-------|-----------|-------------------|
|                    |            | In         | sert |                |              |           |                   |             | Parts                       |             |               |              |       |           |                   |
| Drill dia.<br>(mm) |            | PVD coated |      | ensions<br>nm) | Applica      | able dia. |                   | Clamp screw | Wrench<br>(Not be included) |             |               |              |       |           |                   |
| ¢Dс                | Insert No. | JC7550     | А    | т              | Over Or unde |           | Tool No.          | Stock       | l                           | Dimen<br>L2 | sions(r<br>¢s | mm)<br>L φDs |       |           | (Not be included) |
| 14                 | TLZ1400    | •          |      |                |              |           |                   |             |                             |             |               |              |       |           |                   |
| 14.1               | TLZ1410    |            |      |                |              |           |                   |             |                             |             |               |              |       |           |                   |
| 14 <u>.</u> 2      | TLZ1420    |            | 10.6 | 4.5            | 125          | 145       | TI 7D1 40001 C 00 |             | 29                          | 10          | 48            | 01           | 16    |           | A 07              |
| 14.3               | TLZ1430    | •          | 10.6 | 4.5            | 13.5         | 14.5      | TLZD1400S16-SS    |             | 29                          | 43          | 40            | 91           | 16    | DSW-2045H | A-07              |
| 14.4               | TLZ1440    |            |      |                |              |           |                   |             |                             |             |               |              |       |           |                   |
| 14.5               | TLZ1450    |            |      |                |              |           |                   |             |                             |             |               |              |       |           |                   |
| 14.6               | TLZ1460    | •          |      |                |              |           |                   |             |                             |             |               |              |       |           |                   |
| 14.7               | TLZ1470    | •          |      |                |              |           | TLZD1500S20-SS    |             |                             |             |               |              |       |           |                   |
| 14.8               | TLZ1480    | •          |      |                |              |           |                   |             | 31                          |             |               |              |       |           |                   |
| 14.9               | TLZ1490    | •          |      |                |              | 15.5      |                   |             |                             | 46          | 50            | 96           | 20    | DSW-2045H | A-07              |
| 15                 | TLZ1500    | •          | 11.3 | 4.8            | 14.5         |           |                   |             |                             |             |               |              |       |           |                   |
| 15.1               | TLZ1510    | •          | 11.0 | 4.0            |              |           |                   |             |                             |             |               |              |       |           |                   |
| 15.2               | TLZ1520    |            |      |                |              |           |                   |             |                             |             |               |              |       |           |                   |
| 15.3               | TLZ1530    |            |      |                |              |           |                   |             |                             |             |               |              |       |           |                   |
| 15.4               | TLZ1540    | •          |      |                |              |           |                   |             |                             |             |               |              |       |           |                   |
| 15.5               | TLZ1550    |            |      |                |              |           |                   |             |                             |             |               |              |       |           |                   |
| 15.6               | TLZ1560    | •          |      |                |              |           |                   |             |                             |             |               |              |       |           |                   |
| 15.7               | TLZ1570    | •          |      |                |              |           |                   |             |                             |             |               |              |       |           |                   |
| 15.8               | TLZ1580    | •          |      |                |              |           |                   |             |                             |             |               |              |       |           |                   |
| 15.9               | TLZ1590    | •          |      |                | 15.5         |           |                   |             |                             |             |               |              |       |           |                   |
| 16                 | TLZ1600    | •          | 12.1 | 5.0            |              | 16.5      | TLZD1600S20-SS    |             | 33                          | 49          | 50            | 99           | 20    | TSW-2556H | A-08              |
| 16.1               | TLZ1610    |            |      | 0.0            |              |           |                   |             |                             |             |               |              | 20    |           |                   |
| 16.2               | TLZ1620    |            |      |                |              |           |                   |             |                             |             |               |              |       |           |                   |
| 16.3               | TLZ1630    |            |      |                |              |           |                   |             |                             |             |               |              |       |           |                   |
| 16.4               | TLZ1640    |            |      |                |              |           |                   |             |                             |             |               |              |       |           |                   |
| 16.5               | TLZ1650    |            |      |                |              |           |                   |             |                             |             |               |              |       |           |                   |
| 16.6               | TLZ1660    |            |      |                |              |           |                   |             |                             |             |               |              |       |           |                   |
| 16.7               | TLZ1670    | •          |      |                |              |           |                   |             |                             |             |               |              |       |           |                   |
| 16.8               | TLZ1680    | •          |      |                |              |           |                   |             |                             |             |               |              |       |           |                   |
| 16.9               | TLZ1690    | •          |      |                |              |           |                   |             |                             |             |               |              |       |           |                   |
| 17                 | TLZ1700    | •          | 12.6 | 5.5            | 16.5         | 17.5      | TLZD1700S20-SS    | •           | 35                          | 52          | 50            | 102          | 20    | TSW-2556H | A-08              |
| 17.1               | TLZ1710    | •          |      |                |              |           |                   |             |                             |             |               |              |       |           |                   |
| 17.2               | TLZ1720    | •          |      |                |              |           |                   |             |                             |             |               |              |       |           |                   |
| 17.3               | TLZ1730    | •          | -    |                |              |           |                   |             |                             |             |               |              |       |           |                   |
| 17.4               | TLZ1740    | •          |      |                |              |           |                   |             |                             |             |               |              |       |           |                   |
| 17.5               | TLZ1750    | •          |      |                |              |           |                   |             |                             |             |               |              |       |           |                   |
| 17.6               | TLZ1760    | •          |      |                |              |           |                   |             |                             |             |               |              |       |           |                   |
| 17.7               | TLZ1770    | •          |      |                |              |           |                   |             |                             |             |               |              |       |           |                   |
| 17.8               | TLZ1780    | •          | 13.2 |                |              |           |                   |             |                             |             |               |              |       |           |                   |
| 17.9               | TLZ1790    | •          |      |                |              |           |                   |             |                             |             |               |              |       |           |                   |
| 18                 | TLZ1800    | •          |      | 5.8            | 17.5         | 18.5      | TLZD1800S20-SS    |             | 37                          | 55          | 50            | 105          | 20    | TSW-2556H | A-08              |
| 18.1               | TLZ1810    | •          |      |                |              |           |                   |             |                             |             | 50            |              |       |           |                   |
| 18.2               | TLZ1820    | •          |      |                |              |           |                   |             |                             |             |               |              |       |           |                   |
| 18.3               | TLZ1830    | •          |      |                |              |           |                   |             |                             |             |               |              |       |           |                   |
| 18.4               | TLZ1840    | •          |      |                |              |           |                   |             |                             |             |               |              |       |           |                   |
| 18.5               | TLZ1850    |            |      |                |              |           |                   |             |                             |             |               |              |       |           |                   |





| Insert             |            |            |      |                | Boo       | dy        |                | Parts 2/2 |    |          |          |     |     |                   |      |
|--------------------|------------|------------|------|----------------|-----------|-----------|----------------|-----------|----|----------|----------|-----|-----|-------------------|------|
|                    |            | Insert     |      |                |           |           |                | Parts     |    |          |          |     |     |                   |      |
| Drill dia.<br>(mm) |            | PVD coated |      | ensions<br>nm) | Applica   | able dia. | Clamp screw    | Wrench    |    |          |          |     |     |                   |      |
|                    | Insert No. | 107550     |      | Ŧ              |           |           |                |           |    | Dimen    | sions (r | nm) | R   | (Not be included) |      |
| ФDс                | incorrino. | JC7550     | A    | Т              | Over      | Or under  | Tool No.       | Stock     | l  | l2       | ls       | L   | φDs |                   |      |
| 18.6               | TLZ1860    | •          |      |                |           |           |                |           |    |          |          |     |     |                   |      |
| 18.7               | TLZ1870    |            |      |                |           |           |                |           |    |          |          |     |     |                   |      |
| 18.8               | TLZ1880    |            |      |                |           |           |                |           |    |          |          |     |     |                   |      |
| 18.9               | TLZ1890    |            |      |                |           |           | TLZD1900S25-SS |           |    |          |          |     |     |                   |      |
| 19                 | TLZ1900    |            | 13.6 | 6.0            | 18,5      | 19.5      |                | •         | 39 | 58       | 56       | 114 | 25  | TSW-2567H         | A-08 |
| 19.1               | TLZ1910    |            |      |                |           |           |                |           |    |          |          |     | 20  | 1011 200711       |      |
| 19.2               | TLZ1920    |            |      |                |           |           |                |           |    |          |          |     |     |                   |      |
| 19.3               | TLZ1930    |            |      |                |           |           |                |           |    |          |          |     |     |                   |      |
| 19.4               | TLZ1940    |            |      |                |           |           |                |           |    |          |          |     |     |                   |      |
| 19.5               | TLZ1950    |            |      |                |           |           |                |           |    |          |          |     |     |                   |      |
| 19.6               | TLZ1960    | •          |      |                |           |           |                |           |    |          | 56       | 117 |     |                   |      |
| 19.7               | TLZ1970    |            |      |                |           |           |                |           |    |          |          |     | 25  |                   |      |
| 19.8               | TLZ1980    | •          | 14.6 | 6.5            | 19.5      | 20.5      | TLZD2000S25-SS | •         | 41 | 61       |          |     |     | TSW-2567H         | A-08 |
| 19.9               | TLZ1990    | •          |      |                |           |           |                | -         |    |          |          |     |     |                   |      |
| 20                 | TLZ2000    |            |      |                |           |           |                |           |    |          |          |     |     |                   |      |
| 20.5               | TLZ2050    |            |      |                |           |           |                |           |    |          |          |     |     |                   |      |
| 21                 | TLZ2100    |            | 15.2 | 6.7            | 20.5      | 21.5      | TLZD2100S25-SS | •         | 43 | 64       | 56       | 120 | 25  | TSW-2567H         | A-08 |
| 21.5               | TLZ2150    |            |      |                |           |           |                |           |    | <u> </u> |          |     |     |                   |      |
| 22                 | TLZ2200    |            | 15.9 | 7.5            | 21.5      | 22.5      | TLZD2200S25-SS |           | 45 | 67       | 56       | 123 | 25  | DSW-307H          | A-10 |
| 22.5               | TLZ2250    |            |      |                |           |           |                |           |    |          |          |     |     |                   |      |
| 23                 | TLZ2300    |            | 16.7 | 7.5            | 22.5      | 23.5      | TLZD2300S25-SS | •         | 47 | 7 70     | 0 56     | 126 | 25  | DSW-307H          | A-10 |
| 23.5               | TLZ2350    |            |      |                |           |           |                |           |    |          |          |     |     | D3W-30711         |      |
| 24                 | TLZ2400    |            | 17.4 | 8.0            | 23.5      | 24.5      | TLZD2400S32-SS | •         | 49 | 73       | 60       | 133 | 32  | DSW-307H          | A-10 |
| 24.5               | TLZ2450    |            |      |                |           |           |                |           |    |          |          |     | 02  |                   |      |
| 25                 | TLZ2500    |            | 18.3 | 8.0            | 24.5      | 25.5      | TLZD2500S32-SS | •         | 51 | 76       | 60       | 136 | 32  | DSW-309H          | A-10 |
| 25.5               | TLZ2550    |            |      |                |           |           |                |           |    |          |          |     |     |                   |      |
| 26                 | TLZ2600    | •          | 18.8 | 8.5            | 25.5      | 26.5      | TLZD2600S32-SS | •         | 53 | 79       | 60       | 139 | 32  | DSW-309H          | A-10 |
| 26.5               | TLZ2650    |            |      |                |           |           |                | -         |    |          |          |     |     |                   |      |
| 27                 | TLZ2700    | •          | 19.5 | 8.5            | 26.5      | 27.5      | TLZD2700S32-SS | •         | 55 | 82       | 60       | 142 | 32  | DSW-309H          | A-10 |
| 27.5               | TLZ2750    |            |      |                |           |           |                |           |    |          |          |     |     |                   |      |
| 28                 | TLZ2800    | •          | 20.3 | 9.0            | 27.5      | 28.5      | TLZD2800S32-SS | •         | 57 | 85       | 60       | 145 | 32  | TSW-3510H         | A-15 |
| 28.5               | TLZ2850    |            |      |                |           |           |                |           |    |          |          |     |     |                   |      |
| 29                 | TLZ2900    |            | 21.1 | 9.0            | 28.5      | 29.5      | TLZD2900S32-SS | •         | 59 | 88       | 60       | 148 | 32  | TSW-3510H         | A-15 |
| 29.5               | TLZ2950    |            |      |                |           |           |                | -         |    |          |          |     |     |                   |      |
| 30                 | TLZ3000    |            | 21.5 | 9.5            | 29.5      | 30.5      | TLZD3000S32-SS | •         | 61 | 91       | 60       | 151 | 32  | TSW-3510H         | A-15 |
| 30.5               | TLZ3050    |            |      |                | 29.5 30.5 |           |                |           |    |          |          | 131 |     |                   |      |
| 31                 | TLZ3100    |            | 22.3 | 10.0           | 30.5      | 31.5      | TLZD3100S32-SS |           | _  | 94       | 60       | 154 | 32  | TSW-3512H         | A-15 |
| 31.5               | TLZ3150    | •          |      |                |           |           |                |           |    |          |          |     |     |                   |      |
| 32                 | TLZ3200    |            | 23.1 | 10.0           | 31.5      | 32.5      | TLZD3200S32-SS |           | -  | 97       | 60       | 157 | 32  | TSW-3512H         | A-15 |

1 insert per case 🔹 🕒 : Standard stock items

Note) All cutters are supplied without inserts, wrench and MOLY.



#### "Indexable Spot facing drill" TLZD type

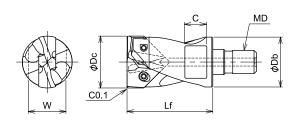
Line up





| Inse                | ert                |        |              |              | Bo   | ody           |              |        |         |      | Parts  |      | Recommended<br>■ arbor 1/2 |             |                   |                    |
|---------------------|--------------------|--------|--------------|--------------|------|---------------|--------------|--------|---------|------|--------|------|----------------------------|-------------|-------------------|--------------------|
|                     | Insert             |        |              |              |      |               |              | Bo     | ody     |      | Part   | ts   | Arbor                      |             |                   |                    |
| Drill               |                    | PVD    | <b>D</b> :   |              |      |               |              |        |         |      |        |      |                            |             |                   |                    |
| dia.<br>(mm)        |                    | coated | Dimer<br>(mi | nsions<br>m) |      | cable<br>lia. | TL           | ZD typ | e (0.7- | 1D)  |        |      |                            | Clamp screw | Wrench            |                    |
| (,                  |                    |        |              | ,            |      |               |              |        |         |      | nsions | (mm) |                            |             | (Not be included) |                    |
| φDc                 | Insert No.         | JC7550 | A            | т            | Over | Or            | Tool No.     | Stock  |         |      |        |      |                            |             | $\sim$            |                    |
| φDC                 |                    |        |              |              | Over | under         | 1001110.     | SLUCK  | Lf      | φDb  | MD     | С    | W                          |             |                   |                    |
| 14                  | TLZ1400            |        |              |              |      |               |              |        |         |      |        |      |                            |             |                   |                    |
| 14.1                | TLZ1410            | •      |              |              |      |               |              |        |         |      | M6     | 7    |                            |             |                   |                    |
| 14.2                | TLZ1420            | •      | 10.6         | 4.5          | 13.5 | 14.5          | TLZD1400-M6  | •      | 27.5    | 13.1 |        |      | 10                         | DSW-2045H   | A-07              | MSN-M6-**-S16C     |
| 14.3                | TLZ1430            | •      |              |              |      |               |              |        |         |      |        |      |                            |             |                   |                    |
| 14.4                | TLZ1440            | •      | -            |              |      |               |              |        |         |      |        |      |                            |             |                   |                    |
| 14.5                | TLZ1450            | •      |              |              |      |               |              |        |         |      |        |      |                            |             |                   |                    |
| 14.6                | TLZ1460            | •      |              |              |      |               |              |        |         |      |        |      |                            |             |                   |                    |
| 14.7                | TLZ1470            | •      |              |              |      |               |              |        |         |      |        |      |                            |             |                   |                    |
| 14.8<br>14.9        | TLZ1480<br>TLZ1490 | •      |              |              |      |               |              |        |         |      |        |      | 12                         | DSW-2045H   | A-07              |                    |
| 14.9                | TLZ1490<br>TLZ1500 | •      | -            |              |      |               |              | •      |         |      |        |      |                            |             |                   |                    |
| 15.1                | TLZ1500            | •      | 11.3         | 4.8          | 14.5 | 15.5          | TLZD1500-M8  |        | 29.5    | 14   | M8     | 8    |                            |             |                   | MSN-M8-**S-S14C    |
| 15.2                | TLZ1510            | •      |              |              |      |               |              |        |         |      |        |      |                            |             |                   |                    |
| 15.3                | TLZ1530            | •      |              |              |      |               |              |        |         |      |        |      |                            |             |                   |                    |
| 15.4                | TLZ1540            | •      |              |              |      |               |              |        |         |      |        |      |                            |             |                   |                    |
| 15.5                | TLZ1550            | •      |              |              |      |               |              |        |         |      |        |      |                            |             |                   |                    |
| 15.6                | TLZ1560            | •      |              |              |      |               |              |        |         |      |        |      |                            |             |                   |                    |
| 15.7                | TLZ1570            | •      | 1            |              |      | 5 16.5        |              |        |         |      |        |      |                            |             |                   |                    |
| 15.8                | TLZ1580            | •      | 1            |              |      |               |              |        |         |      |        |      |                            |             |                   |                    |
| 15.9                | TLZ1590            |        | 1            |              | 15.5 |               |              |        |         |      |        |      |                            |             |                   |                    |
| 16                  | TLZ1600            |        | 12.1         | 5.0          |      |               | TLZD1600-M8  | •      | 29.5    | 15   | M8     | 8    | 12                         | TSW-2556H   | A-08              | MSN-M8-**S-S15C    |
| 16.1                | TLZ1610            |        | 12.1         |              |      |               |              |        | 29.5    |      | MO     | 0    | 12                         |             | A-00              | 10010-000-000-0100 |
| 16.2                | TLZ1620            |        |              |              |      |               |              |        |         |      |        |      |                            |             |                   |                    |
| 16.3                | TLZ1630            |        |              |              |      |               |              |        |         |      |        |      |                            |             |                   |                    |
| 16.4                | TLZ1640            | •      |              |              |      |               |              |        |         |      |        |      |                            |             |                   |                    |
| 16.5                | TLZ1650            | •      |              |              |      |               |              |        |         |      |        |      |                            |             |                   |                    |
| 16.6                | TLZ1660            | •      |              |              |      |               |              |        |         |      |        |      |                            |             |                   |                    |
| 16.7                | TLZ1670            | •      | -            |              |      |               |              |        |         |      |        |      |                            |             |                   |                    |
| 16.8                | TLZ1680            | •      | -            |              |      |               |              |        |         |      |        |      |                            |             |                   |                    |
| 16.9                | TLZ1690            | •      | -            |              |      |               |              |        |         |      |        |      |                            |             |                   |                    |
| 17                  | TLZ1700            |        | 12.6         | 5.5          | 16.5 | 17.5          | TLZD1700-M8  |        | 30.5    | 16   | M8     | 8    | 12                         | TSW-2556H   | A-08              | MSN-M8-**S-S16C    |
| 17 <u>1</u><br>17.2 | TLZ1710<br>TLZ1720 | •      | -            |              |      |               |              |        |         |      |        |      |                            |             |                   |                    |
| 17.2                | TLZ1720<br>TLZ1730 | •      |              |              |      |               |              |        |         |      |        |      |                            |             |                   |                    |
| 17.4                | TLZ1730            |        |              |              |      |               |              |        |         |      |        |      |                            |             |                   |                    |
| 17.5                | TLZ1740            | •      |              |              |      |               |              |        |         |      |        |      |                            |             |                   |                    |
| 17.6                | TLZ1750            | •      |              |              |      |               |              |        |         |      |        |      |                            |             |                   |                    |
| 17.7                | TLZ1700            | •      |              |              |      |               |              |        |         |      |        |      |                            |             |                   |                    |
| 17.8                | TLZ1780            | •      | 13.2         |              |      |               |              |        |         |      |        |      |                            |             |                   |                    |
| 17.9                | TLZ1790            | •      |              |              |      |               |              |        |         |      |        |      |                            |             |                   |                    |
| 18                  | TLZ1800            | •      |              |              | 475  | 10-           | TI 7D1000 M2 |        | 00 5    | 17   |        | 0    | 10                         | TOWNOFFOL   | 1.00              |                    |
| 18.1                | TLZ1810            | •      |              | 5.8          | 17.5 | 18.5          | TLZD1800-M8  |        | 30.5    | 17   | M8     | 8    | 12                         | TSW-2556H   | A-08              | MSN-M8-**S-S16C    |
| 18.2                | TLZ1820            | •      |              |              |      |               |              |        |         |      |        |      |                            |             |                   |                    |
| 18.3                | TLZ1830            |        |              |              |      |               |              |        |         |      |        |      |                            |             |                   |                    |
| 18.4                | TLZ1840            |        |              |              |      |               |              |        |         |      |        |      |                            |             |                   |                    |
| 18.5                | TLZ1850            |        |              |              |      |               |              |        |         |      |        |      |                            |             |                   |                    |





| Clamp screw | Recommended torque<br>(N•m) |  |  |  |  |  |  |  |  |
|-------------|-----------------------------|--|--|--|--|--|--|--|--|
| DSW-2045H   | 0.9                         |  |  |  |  |  |  |  |  |
| TSW-2556H   | 1.2                         |  |  |  |  |  |  |  |  |
| TSW-2567H   | 1.2                         |  |  |  |  |  |  |  |  |
| DSW-307H    | 2.1                         |  |  |  |  |  |  |  |  |
| DSW-309H    | 2,1                         |  |  |  |  |  |  |  |  |
| TSW-3510H   | 3.0                         |  |  |  |  |  |  |  |  |
| TSW-3512H   | 3.0                         |  |  |  |  |  |  |  |  |

| Inse                  | ert                |               |              |          | Bo   | ody           |                 |              |                 |       | Parts |             | Recommended arbor 2/2 |             |           |                  |                 |
|-----------------------|--------------------|---------------|--------------|----------|------|---------------|-----------------|--------------|-----------------|-------|-------|-------------|-----------------------|-------------|-----------|------------------|-----------------|
| D.::II                | Insert             |               |              |          |      |               |                 | Bo           | ody             |       | Pari  | s           | Arbor                 |             |           |                  |                 |
| Drill<br>dia.<br>(mm) |                    | PVD<br>coated | Dimer<br>(mi |          |      | cable<br>lia. | TL              | ZD typ       | e (0.7-         | ID)   |       | Clamp screw | Wrench                |             |           |                  |                 |
| φDc                   | Insert No.         | JC7550        | A            | т        | Over | Or<br>under   | Tool No.        | Stock        | Dimensions (mm) |       |       |             |                       |             | 2Z        |                  |                 |
| 18.6                  | TLZ1860            |               |              |          |      |               |                 |              |                 | · · · |       |             |                       |             |           |                  |                 |
| 18.7                  | TLZ1870            | •             | 1            |          |      |               |                 |              |                 |       |       |             | 9 14                  |             | A-08      |                  |                 |
| 18.8                  | TLZ1880            |               |              |          |      |               |                 |              |                 |       | M10   | 9           |                       | TSW-2567H   |           |                  |                 |
| 18.9                  | TLZ1890            | •             |              |          |      |               |                 |              |                 | 18    |       |             |                       |             |           |                  |                 |
| 19                    | TLZ1900            | •             | 13.6         | 6.0      | 18.5 | 19.5          | TLZD1900-M10    | •            | 38.5            |       |       |             |                       |             |           | MSN-M10-**S-S18C |                 |
| 19.1                  | TLZ1910            | •             | -            |          |      |               |                 |              | 00.0            |       |       |             |                       |             |           | W3N-W10-446-5100 |                 |
| 19 <u>.</u> 2         | TLZ1920            | •             | -            |          |      |               |                 |              |                 |       |       |             |                       |             |           |                  |                 |
| 19.3<br>19.4          | TLZ1930<br>TLZ1940 | •             | -            |          |      |               |                 |              |                 |       |       |             |                       |             |           |                  |                 |
| 19.5                  | TLZ1940            |               | -            |          |      |               |                 |              |                 |       |       |             |                       |             |           |                  |                 |
| 19.6                  | TLZ1950            | •             |              |          |      |               |                 |              |                 |       |       |             |                       |             |           |                  |                 |
| 19.7                  | TLZ1970            | •             | 1            |          | 19.5 |               |                 |              |                 |       |       |             |                       |             |           |                  |                 |
| 19.8                  | TLZ1980            | •             | 1.4.0        | 6.5      |      |               |                 |              | 00 F            | 10    |       |             | 1.                    | TSW-2567H   | 1.00      |                  |                 |
| 19.9                  | TLZ1990            | •             | 14.6         |          |      | 20.5          | TLZD2000-M10    |              | 38.5            | 19    | M10   | 9           | 14                    |             | A-08      | MSN-M10-**-S20C  |                 |
| 20                    | TLZ2000            | •             | 1            |          |      |               |                 |              |                 |       |       |             |                       |             |           |                  |                 |
| 20.5                  | TLZ2050            |               |              |          |      |               |                 |              |                 |       |       |             |                       |             |           |                  |                 |
| 21                    | TLZ2100            |               | 15.2         | 6.7      | 20.5 | 21.5          | TLZD2100-M10    |              | 38.5            | 20    | м10   | 9           | 14                    | TSW-2567H   | A-08      | MSN-M10-**S-S20C |                 |
| 21.5                  | TLZ2150            |               | 10.2         | 0.7      | 20.0 | 21.0          |                 |              | 00.0            | 20    |       |             |                       | 1011 200711 |           |                  |                 |
| 22                    | TLZ2200            | •             | 15.9         | 7.5      | 21.5 | 22.5          | TLZD2200-M10    |              | 38.5            | 21    | м10   | 9           | 14                    | DSW-307H    | A-10      | MSN-M10-**S-S20C |                 |
| 22.5                  | TLZ2250            | •             |              |          |      |               |                 |              |                 |       |       |             |                       |             |           |                  |                 |
| 23<br>23.5            | TLZ2300            | •             | 16.7         | .7 7.5   | 22.5 | 23.5          | TLZD2300-M10    |              | 38.5            | 22    | M10   | 9           | 14                    | DSW-307H    | A-10      | MSN-M10-**S-S20C |                 |
| 23.5                  | TLZ2350<br>TLZ2400 | •             |              |          |      |               |                 |              |                 |       |       |             |                       |             |           |                  |                 |
| 24.5                  | TLZ2400<br>TLZ2450 | •             | 17.4         | 8.0      | 23.5 | 24.5          | TLZD2400-M12    |              | 43              | 23    | M12   | 11          | 19                    | DSW-307H    | A-10      | MSN-M12-**S-S23C |                 |
| 25                    | TLZ2400            | •             |              |          |      |               |                 |              |                 |       |       |             |                       |             |           |                  |                 |
| 25.5                  | TLZ2550            | •             | 18.3         | 8.0      | 24.5 | 25.5          | TLZD2500-M12    |              | 43              | 24    | M12   | 11          | 19                    | DSW-309H    | A-10      | MSN-M12-**-S25C  |                 |
| 26                    | TLZ2600            | •             | 18.8         | 8.5      | 255  | 26.5          |                 |              | 43              | 25    | M12   | 11          | 19                    | DSW-309H    | A-10      |                  |                 |
| 26.5                  | TLZ2650            |               | 10.8         | 0.0      | 20.0 | 20.5          | TLZD2600-M12    |              | 43              | 25    | 1012  |             | 19                    | D2M-308H    | A-10      | MSN-M12-**S-S25C |                 |
| 27                    | TLZ2700            |               | 19.5         | 8.5      | 26.5 | 27.5          | TLZD2700-M12    |              | 43              | 26    | M12   | 11          | 19                    | DSW-309H    | A-10      | MSN-M12-**S-S25C |                 |
| 27.5                  | TLZ2750            |               | 13.5         | 0.0      | 20.0 | 21.5          |                 |              | -0              | 20    |       |             | 13                    | 500000      | A 10      |                  |                 |
| 28                    | TLZ2800            | •             | 20.3         | 9.0      | 27.5 | 28.5          | TLZD2800-M12    | •            | 43              | 27    | M12   | 11          | 19                    | TSW-3510H   | A-15      | MSN-M12-**S-S25C |                 |
| 28.5                  | TLZ2850            | •             |              |          |      |               |                 |              |                 |       |       |             |                       |             |           |                  |                 |
| 29                    | TLZ2900            | •             | 21.1         | 9.0      | 28.5 | 29.5          | TLZD2900-M16    | •            | 51              | 28    | M16   | 12          | 22                    | TSW-3510H   | A-15      | MSN-M16-**S-S28C |                 |
| 29.5                  | TLZ2950            | •             |              |          |      |               |                 |              |                 |       |       |             |                       |             |           |                  |                 |
| 30<br>30.5            | TLZ3000            | •             | 21.5         | 9.5      | 29.5 | 30.5          | TLZD3000-M16    |              | 51              | 29    | M16   | 12          | 22                    | TSW-3510H   | A-15      | MSN-M16-**-S32C  |                 |
| 30.5                  | TLZ3050<br>TLZ3100 | •             |              |          |      |               |                 |              |                 |       |       |             |                       |             |           |                  |                 |
| 31.5                  | TLZ3100            | •             | 22.3         | 10.0     | 10.0 | 30.5          | 31.5            | TLZD3100-M16 |                 | 51    | 30    | M16         | 12                    | 22          | TSW-3512H | A-15             | MSN-M16-**-S32C |
| 32                    | TLZ3130            | •             | 23.1         | 10.0     | 31.5 | 32.5          | TLZD3200-M16    | •            | 51              | 31    | M16   | 14          | 26                    | TSW-3512H   | A-15      | MSN-M16-**-S32C  |                 |
|                       | 120200             | -             |              | ataak ii |      | 52.0          | . 1200200 10110 |              |                 |       |       |             | 20                    |             |           |                  |                 |

1 insert per case • : Standard stock items

Note) All cutters are supplied without inserts, wrench and MOLY.





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