

**DRILLMEISTER**

Tungaloy Report No. 412S5-G

# Cylindrical shank in range $\varnothing 6 - 9.9$ mm now available

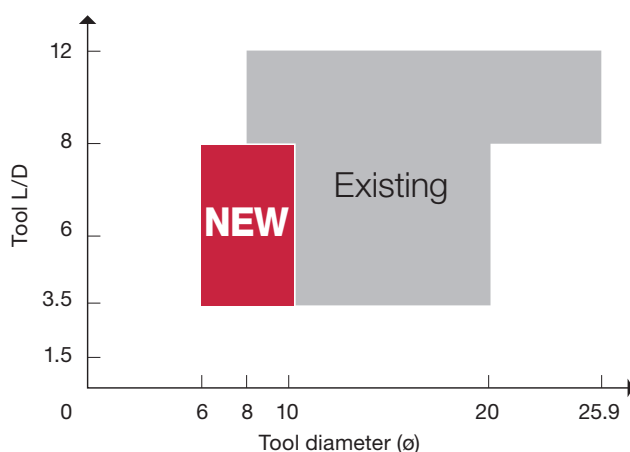




## Expansion of cylindrical shank design for the range of $\varnothing 6$ - 9.9 mm and 3.5, 6, and 8xD

- Long shank design allows overhang adjustments
- Same adapters can be used as with solid carbide drills
- Minimum tool interference when drilling close to the walls

| Shank size                   |                                   |                                    |
|------------------------------|-----------------------------------|------------------------------------|
|                              | TID060... – TID075...             | TID080... – TID095...              |
| <b>New</b> Cylindrical shank | <b><math>\varnothing 8</math></b> | <b><math>\varnothing 10</math></b> |
| Flange                       | $\varnothing 12$                  |                                    |



For optimal performance, use the following adapters

Hydro chuck



Power chuck

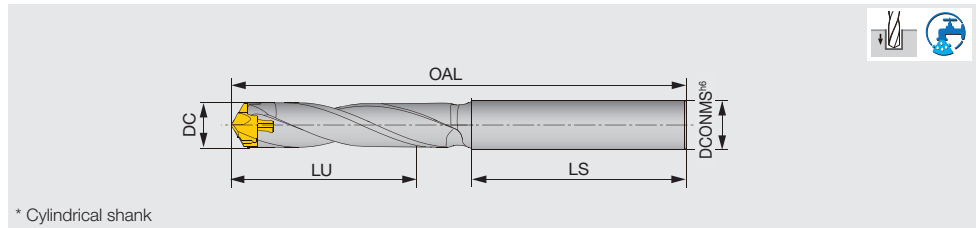


Collet chuck



## TID-R L/D=3.5

Head changeable drill



|            | Designation   | DC        | DCONMS | LU    | LS | OAL     |      |       | Pocket size | Head            |
|------------|---------------|-----------|--------|-------|----|---------|------|-------|-------------|-----------------|
|            |               |           |        |       |    | DMP/H/N | DMC  | DMF   |             |                 |
| <b>New</b> | TID060R8-3.5  | 6 - 6.4   | 8      | 21    | 45 | 75.7    | 75.9 | 74.81 | 6           | DM*060 - DM*064 |
| <b>New</b> | TID065R8-3.5  | 6.5 - 6.9 | 8      | 22.75 | 45 | 77.5    | 77.7 | 76.58 | 6.5         | DM*065 - DM*069 |
| <b>New</b> | TID070R8-3.5  | 7 - 7.4   | 8      | 24.5  | 45 | 79.1    | 79.3 | 78.18 | 7           | DM*070 - DM*074 |
| <b>New</b> | TID075R8-3.5  | 7.5 - 7.9 | 8      | 26.25 | 45 | 80.9    | 81.1 | 79.98 | 7           | DM*075 - DM*079 |
| <b>New</b> | TID080R10-3.5 | 8 - 8.4   | 10     | 28    | 50 | 87.8    | 88   | 86.89 | 8           | DM*080 - DM*084 |
| <b>New</b> | TID085R10-3.5 | 8.5 - 8.9 | 10     | 29.75 | 50 | 89.6    | 89.8 | 88.69 | 8           | DM*085 - DM*089 |
| <b>New</b> | TID090R10-3.5 | 9 - 9.4   | 10     | 31.5  | 50 | 91.5    | 91.7 | 90.41 | 9           | DM*090 - DM*094 |
| <b>New</b> | TID095R10-3.5 | 9.5 - 9.9 | 10     | 33.25 | 50 | 93.2    | 93.4 | 92.11 | 9           | DM*095 - DM*099 |

| Tool diameter | Hole diameter tolerance* |
|---------------|--------------------------|
| ø6 - ø9.9     | +0.05 / 0                |

\* For reference

- An overall length (OAL) differs based on each head geometry. (No difference for the drill shoulder)
- When using the drill at a higher feed rate, make sure to provide an axial support by placing the overhang adjusting screw at the drill shank end in the tool holder. This will prevent high thrust force from pushing the drill back into the holder during drilling.
- When axially adjusting the shank inside the holder to obtain a required drill overhang, make sure the shank length remaining inside the holder does not come short of the minimum clamping length (LSCN) specified by the holder supplier.

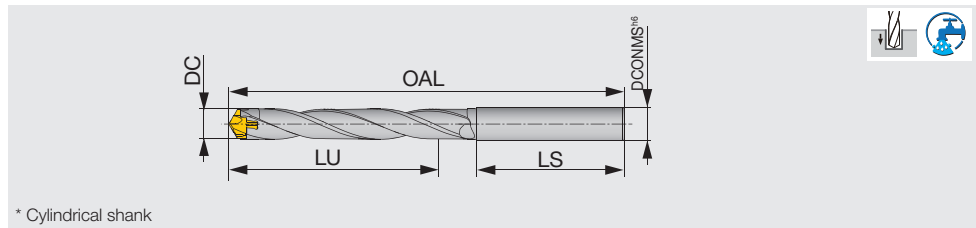
### SPARE PARTS



| Designation | Clamping key |
|-------------|--------------|
| TID060-095  | K-TID6-9.99  |

## TID-R L/D=6

Head changeable drill



|            | Designation | DC        | DCONMS | LU | LS | OAL     |       |        | Pocket size | Head            |
|------------|-------------|-----------|--------|----|----|---------|-------|--------|-------------|-----------------|
|            |             |           |        |    |    | DMP/H/N | DMC   | DMF    |             |                 |
| <b>New</b> | TID060R8-6  | 6 - 6.4   | 8      | 36 | 45 | 91.7    | 91.9  | 90.81  | 6           | DM*060 - DM*064 |
| <b>New</b> | TID065R8-6  | 6.5 - 6.9 | 8      | 39 | 45 | 94.8    | 95    | 93.88  | 6.5         | DM*065 - DM*069 |
| <b>New</b> | TID070R8-6  | 7 - 7.4   | 8      | 42 | 45 | 97.6    | 97.8  | 96.68  | 7           | DM*070 - DM*074 |
| <b>New</b> | TID075R8-6  | 7.5 - 7.9 | 8      | 45 | 45 | 100.6   | 100.8 | 99.68  | 7           | DM*075 - DM*079 |
| <b>New</b> | TID080R10-6 | 8 - 8.4   | 10     | 48 | 50 | 108.8   | 109   | 107.89 | 8           | DM*080 - DM*084 |
| <b>New</b> | TID085R10-6 | 8.5 - 8.9 | 10     | 51 | 50 | 111.8   | 112   | 110.89 | 8           | DM*085 - DM*089 |
| <b>New</b> | TID090R10-6 | 9 - 9.4   | 10     | 54 | 50 | 115     | 115.2 | 113.91 | 9           | DM*090 - DM*094 |
| <b>New</b> | TID095R10-6 | 9.5 - 9.9 | 10     | 57 | 50 | 118     | 118.2 | 116.91 | 9           | DM*095 - DM*099 |

| Tool diameter | Hole diameter tolerance* |
|---------------|--------------------------|
| ø6 - ø9.9     | +0.06 / 0                |

\* For reference

- An overall length (OAL) differs based on each head geometry. (No difference for the drill shoulder)
- When using the drill at a higher feed rate, make sure to provide an axial support by placing the overhang adjusting screw at the drill shank end in the tool holder. This will prevent high thrust force from pushing the drill back into the holder during drilling.
- When axially adjusting the shank inside the holder to obtain a required drill overhang, make sure the shank length remaining inside the holder does not come short of the minimum clamping length (LSCN) specified by the holder supplier.

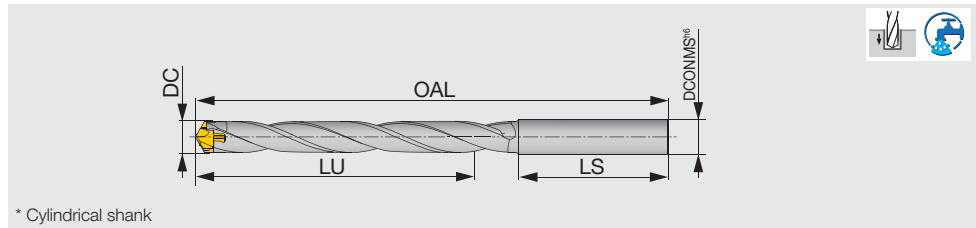
## SPARE PARTS



| Designation | Clamping key |
|-------------|--------------|
| TID060-095  | K-TID6-9.99  |

## TID-R L/D=8

Head changeable drill



|            | Designation | DC        | DCONMS | LU | LS | OAL     |       |        | Pocket size | Head            |
|------------|-------------|-----------|--------|----|----|---------|-------|--------|-------------|-----------------|
|            |             |           |        |    |    | DMP/H/N | DMC   | DMF    |             |                 |
| <b>New</b> | TID060R8-8  | 6 - 6.4   | 8      | 48 | 45 | 104.5   | 104.7 | 103.61 | 6           | DM*060 - DM*064 |
| <b>New</b> | TID065R8-8  | 6.5 - 6.9 | 8      | 52 | 45 | 108.6   | 108.8 | 107.68 | 6.5         | DM*065 - DM*069 |
| <b>New</b> | TID070R8-8  | 7 - 7.4   | 8      | 56 | 45 | 112.4   | 112.6 | 111.48 | 7           | DM*070 - DM*074 |
| <b>New</b> | TID075R8-8  | 7.5 - 7.9 | 8      | 60 | 45 | 116.4   | 116.6 | 115.48 | 7           | DM*075 - DM*079 |
| <b>New</b> | TID080R10-8 | 8 - 8.4   | 10     | 64 | 50 | 125.6   | 125.8 | 124.69 | 8           | DM*080 - DM*084 |
| <b>New</b> | TID085R10-8 | 8.5 - 8.9 | 10     | 68 | 50 | 129.6   | 129.8 | 128.69 | 8           | DM*085 - DM*089 |
| <b>New</b> | TID090R10-8 | 9 - 9.4   | 10     | 72 | 50 | 133.8   | 134   | 132.71 | 9           | DM*090 - DM*094 |
| <b>New</b> | TID095R10-8 | 9.5 - 9.9 | 10     | 76 | 50 | 137.8   | 138   | 136.71 | 9           | DM*095 - DM*099 |

| Tool diameter | Hole diameter tolerance* |
|---------------|--------------------------|
| ø6 - ø9.9     | +0.08 / 0                |

\* For reference

- An overall length (OAL) differs based on each head geometry. (No difference for the drill shoulder)
- When using the drill at a higher feed rate, make sure to provide an axial support by placing the overhang adjusting screw at the drill shank end in the tool holder. This will prevent high thrust force from pushing the drill back into the holder during drilling.
- When axially adjusting the shank inside the holder to obtain a required drill overhang, make sure the shank length remaining inside the holder does not come short of the minimum clamping length (LSCN) specified by the holder supplier.

### SPARE PARTS



| Designation | Clamping key |
|-------------|--------------|
| TID060-095  | K-TID6-9.99  |

## STANDARD CUTTING CONDITIONS

| ISO      | Workpiece materials                                                              | Cutting speed<br>Vc (m/min) | Feed: $f$ (mm/rev) |             |
|----------|----------------------------------------------------------------------------------|-----------------------------|--------------------|-------------|
|          |                                                                                  |                             | DC (mm)            |             |
|          |                                                                                  |                             | ø6 - ø7.9          | ø8 - ø9.9   |
| <b>P</b> | Low carbon steel (C < 0.3)<br>(SS400 / St42-1, SM490 / St52-3, S25C / C25, etc.) | 80 - 140                    | 0.09 - 0.13        | 0.12 - 0.25 |
|          | High carbon steel (C > 0.3)<br>(S45C / C45, S55C / C55, etc.)                    | 70 - 120                    | 0.09 - 0.13        | 0.12 - 0.25 |
|          | Low alloy steel<br>(SCM415, etc.)                                                | 70 - 120                    | 0.08 - 0.13        | 0.11 - 0.25 |
|          | Alloy steel<br>(SCM440 / 42CrMo4, SCR420 / 20Cr4, etc.)                          | 40 - 90                     | 0.08 - 0.13        | 0.11 - 0.25 |
| <b>M</b> | Stainless steel<br>(SUS304 / X5CrNi18-9,<br>SUS316 / X5CrNiMo17-12-2, etc.)      | 30 - 70                     | 0.08 - 0.1         | 0.1 - 0.15  |
| <b>K</b> | Grey cast iron<br>(FC250 / GG25, etc.)                                           | 80 - 180                    | 0.12 - 0.18        | 0.15 - 0.3  |
|          | Ductile cast iron<br>(FCD700 / GGG70, etc.)                                      | 80 - 140                    | 0.12 - 0.18        | 0.15 - 0.3  |
| <b>N</b> | Aluminium alloys<br>(ADC12, etc.)                                                | 80 - 220                    | 0.1 - 0.2          | 0.2 - 0.35  |
| <b>S</b> | Titanium alloys<br>(Ti-6Al-4V, etc.)                                             | 20 - 50                     | 0.05 - 0.07        | 0.06 - 0.12 |
|          | Nickel-based alloys                                                              | 20 - 50                     | 0.05 - 0.07        | 0.06 - 0.11 |
| <b>H</b> | Hardened steel                                                                   | 20 - 50                     | 0.05 - 0.07        | 0.06 - 0.12 |

- Cutting conditions in the above table show standard cutting conditions.  
 - Cutting conditions may change due to the rigidity and power of the machine and the workpiece material.

- Machined hole diameter may change depending upon the rigidity of the machine tool or cutting conditions.  
 - In case of L/D = 8 drill, the recommended range of cutting speeds and feeds is between the minimum and median values listed above.



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