T-SLOT MILL 16T1A

- 4-edged tangential insert
- Positive and negative geometry
- Square borehole for stable positioning
- Internal coolant supply
- No roof shape / 90° geometry
- Optimal tool life
- High process reliability
**Product Overview**

The new T-slot mills of series 16T1A combine stability and process-reliability of a tangential system with the option of smooth cut due to the double-positive (radial and axial) geometry.

The cutter series covers the T-slot sizes T22, T28 and T36 according to DIN 650 in the catalog standard. It is possible to cover further T-slot sizes with the existing selection of inserts.

**Inserts**

The tangential insert provided for this cutter series enables the use of positive and negative geometry in one insert seat. This results in a high degree of flexibility with regard to machining materials as well as process reliability with non-optimal machine stiffness, unfavorable projecting length and clamping situation.

**Application Range**

The option of using different geometries in one cutter body, in conjunction with the Weldon adaption, allows the use of both mono spindle and multi-spindle units.

**Application example of PowerMax T-slot mill:**

Ensure good chip flow by means of high coolant or compressed air supply!

**Technical Features**

- 4-edged (2RH/ 2LH) insert
- Positive and negative geometry can be used in one insert seat.
- No roof shape on the T-slot sides faces of the bottom flange
- Highly economical, flexible and process-reliable

**Advantages**

The possibility of using positive and negative geometries in one single tool results in a high degree of flexibility in connection with process reliability and economy.
Recommended cutting data:

<table>
<thead>
<tr>
<th>Material</th>
<th>1st choice dry machining</th>
<th>1st choice wet machining</th>
<th>Chip Thickness hm [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Vc [m/min]</td>
<td>Vc [m/min]</td>
<td></td>
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<tr>
<td>unalloyed steel</td>
<td>IN4005 140 - 200</td>
<td>IN4030 120 - 180</td>
<td>hm x 1.2</td>
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<tr>
<td>alloyed steel 800 N/mm²</td>
<td>IN4005 120 - 160</td>
<td>IN4030 100 - 140</td>
<td>hm x 1.0</td>
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<tr>
<td>alloyed steel 1100 N/mm²</td>
<td>IN4005 100 - 160</td>
<td>IN4030 100 - 140</td>
<td>hm x 0.9</td>
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<tr>
<td>stainless steel</td>
<td>IN4005 80 - 160</td>
<td>IN4030 80 - 140</td>
<td>hm x 1.0</td>
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<tr>
<td>gray cast iron</td>
<td>IN4005 150 - 200</td>
<td>IN4030 130 - 180</td>
<td>hm x 1.2</td>
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<tr>
<td>nodular cast iron</td>
<td>IN4015 120 - 160</td>
<td>IN4030 100 - 140</td>
<td>hm x 1.0</td>
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<td>aluminum</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>high temperature alloys</td>
<td>IN4005 60 - 100</td>
<td>IN4030 40 - 80</td>
<td>hm x 0.8</td>
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<tr>
<td>titanium alloys</td>
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<td>IN4003 30 - 60</td>
<td>hm x 0.8</td>
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<tr>
<td>hard machining &lt; 54 HRC</td>
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<td>-</td>
<td>-</td>
</tr>
<tr>
<td>hard machining &lt; 63 HRC</td>
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</tbody>
</table>

Tips:
- The worse the material machinability, the smaller the tool engagement should be chosen.
- The smaller the cutting tool diameter, the higher the cutting speed can be.
- If tool engagement is less than 40% of cutting tool diameter, the feed per tooth should be calculated with the following formula:

\[ f_z = \text{hm} \times \sqrt{\frac{D}{3ae}} \]

General information:
- Insert: DPD_-S/DNE_-S
- Average chip thickness: hm = 0.20 mm, hm = 0.25 mm
- Insert screw: SM40-100-R0
- Torque: 4.5 Nm
- Torque wrench: DT40-01 with bit DS-T15B

Successful machining results depend on many factors, so cutting data recommendations can only be a rough guideline. Therefore in any case of doubt do not hesitate to contact your Ingersoll partner.
## T-SLOT MILL 16T1A...W

### ADAPTION ACC. TO DIN 1835 B

![Diagram of T-SLOT MILL 16T1A...W](image)

<table>
<thead>
<tr>
<th>Designation</th>
<th>D</th>
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<th>d8</th>
<th>L</th>
<th>L1</th>
<th>L2</th>
<th>a</th>
<th>Z</th>
<th>Zeff</th>
<th>²</th>
<th>related inserts</th>
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<td>25</td>
<td>20</td>
<td>110</td>
<td>48</td>
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<tr>
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<td>33</td>
<td>140</td>
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<td>104</td>
<td>28</td>
<td>6</td>
<td>3</td>
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<td>1,079</td>
</tr>
</tbody>
</table>

### SPARE PARTS

1. SM40-100-RD (4,5Nm) DS-T15S
   - Insert screw
2. SM40-100-RD (4,5Nm) DS-T15S
   - Screw driver
Designation | fz(min/max) | Design | Grades | IN4005 | IN4015 | IN4030
--- | --- | --- | --- | --- | --- | ---
DPD314-201-S | 0.10/0.20 | positive geometry R0.8 | | | | |
DPD314-202-S | 0.10/0.20 | positive geometry R1.6 | | | | |
DPD314-203-S | 0.10/0.20 | positive geometry R2.4 | | | | |
DNE314-201-S | 0.10/0.25 | negative geometry R0.8 | | | | |
DNE314-202-S | 0.10/0.25 | negative geometry R1.6 | | | | |
DNE314-203-S | 0.10/0.25 | negative geometry R2.4 | | | | |
DPD324-201-S | 0.10/0.20 | positive geometry R0.8 | | | | |
DPD324-202-S | 0.10/0.20 | positive geometry R1.6 | | | | |
DNE324-201-S | 0.10/0.25 | negative geometry R0.8 | | | | |
DNE324-202-S | 0.10/0.25 | negative geometry R1.6 | | | | |
DNE324-203-S | 0.10/0.25 | negative geometry R2.4 | | | | |

1) on request