A BRAND AT-2 R-SPEC
High-Efficiency Thread Mill with End-Cutting Edge

Super High Efficiency Threading

PRIMARY TARGETS

- Customers threading Aluminum material.
- Customers threading into Cast hole.
- Customers looking for thread processing efficiency.

SOLUTIONS

- Threading time can be dramatically reduced.
- Useful for preventing shifting of cutting position in cast hole.
- Possible to thread with air blow.

WHAT OUR CUSTOMERS SEE

- Achieves drilling and threading by continuous helical with single tool.
- Fastest threading process in the world!

HOW DOES IT WORK?

End cutting geometry with roughing teeth
  • Helical drilling while rough cutting the thread form suppress bending of the tool with load.

Left hand cutting
  • Tool specification enables climb cutting which prolong tool life.

DLC-IGUSS coating
  • Prevent welding achieves long tool life also semi dry cutting.

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**A Brand AT-2 R-SPEC**

The OSG A Brand AT-2 R-SPEC high-efficiency thread mill is engineered to dramatically reduce machining time in non-ferrous metal applications such as aluminum alloy by its continuous helical cutting ability, which combines drilling and threading into a single process. The AT-2 R-SPEC is also effective as a countermeasure against cutting position misalignment in cast holes.

### Features & Benefits

- **Left-Hand Cut Configuration** for climb milling.
- **End Cutting Edge** for simultaneous helical drilling and threading.
- **Special Cutting Edge Shape** so bending of the tool can be controlled.
- **2-Flute** provides wide chip room.
- **Roughing Teeth (2 Ridges)** provides higher efficiency by load distribution.

### Threading Time Dramatically Reduced

**Time Comparison with Conventional Method**

<table>
<thead>
<tr>
<th>Method</th>
<th>Time (sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conventional method (2 processes)</td>
<td>4.3</td>
</tr>
<tr>
<td>AT-2 R-SPEC</td>
<td>3.2</td>
</tr>
</tbody>
</table>

M6×1 Threading length 10mm ADC12 material

Conventional drill: Vc=126m/min, f=0.6mm/rev

Tap: Vc=94m/min (ATC: 1 time)

AT-2 R-SPEC: Vc=220m/min, f=1.2mm/rev

Threading time is reduced by more than 25%!

### Prevent Shifting of Cutting Position in Cast Hole

**Comparison of Hole Position Accuracy with Drill Tap (DRT)**

<table>
<thead>
<tr>
<th>Method</th>
<th>Deviation (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRT 1st hole</td>
<td>0.05</td>
</tr>
<tr>
<td>DRT 72nd hole</td>
<td>0.1</td>
</tr>
<tr>
<td>AT-2 R-SPEC 1st hole</td>
<td>0.05</td>
</tr>
<tr>
<td>AT-2 R-SPEC 100th hole</td>
<td>0.15</td>
</tr>
</tbody>
</table>

M8×1.25 Depth 18mm AC material

Cutting test by shifting the axial center of Ø4.3 pilot hole by 0.7 mm

Drill tap: Vc=100m/min, f=1.25mm/rev

AT-2 R-SPEC: Vc=220m/min, f=1.2mm/rev

Amount of deviation is significantly controlled!