Information for Use of Gun Drills

Machines and precision
To demonstrate the performance of a gun drill effectively and sufficiently, "precision of the machine and equipments" plays an important role.

1) A highly rigid special machine with low vibration should be used.

2) High precision should be secured with the machine and the bush, as shown in the table on the right.

3) Irregular feed causes breakage, and automatic mechanical feed is the best for gun drilling.

4) Sufficient power is required to allow high speed rotation.

5) To prevent breakage, a safety device for torque over check must be provided.

<table>
<thead>
<tr>
<th>Check item</th>
<th>Illustration for measurement</th>
<th>Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>a Deviation of spindle</td>
<td></td>
<td>≤0.005</td>
</tr>
<tr>
<td>b Clearance between spindle hole and driver</td>
<td>φd φd'</td>
<td>≤0.013</td>
</tr>
<tr>
<td>c Clearance between drill bush and drill outer diameter</td>
<td>φd φd'</td>
<td>≤0.015</td>
</tr>
<tr>
<td>d Concentricity between spindle and bush</td>
<td></td>
<td>≤0.013</td>
</tr>
<tr>
<td>e Parallelism between spindle and bush hole in table travel</td>
<td></td>
<td>≤0.035</td>
</tr>
</tbody>
</table>

Control of bush

High pressure cutting oil

Chip box

Workpiece

Gun drill oil seal

Slide rest

Chip chute

Chip receiving net

Cutting oil

High pressure pump

Cutting oil cooler

Filter

Machine configuration