

Troubleshooting

(Angle head)

	Contents of the trouble	Causes	Pulled out of holder. Unable to attach fast to spindle or holder in case of MT shank.
1	Unusual noise is generated.	① Wear and bearing life ② Wear and breakage of gears ③ "A" dimension is not right.	① Ask NT for repair. ② Ask NT for repair. ③ •Check "A" dimension (plunger's height) •Dust or chip on the contact face of positioning block.
2	Unusual heat generation (room temperature +30 degrees and above)	① Cutting resistance is too large. ② "A" dimension (plunger's height) is not correct.	① Lower cutting conditions a. Lower tool projection length b. Higher rotation or lower feed rate (Guidelines: approx. 20%) c. Lower depth of cut ② •Check "A" dimension (plunger's height). •Dust or chip on the contact face of positioning block.
3	Deteriorated accuracy during cutting (Guidelines: 30 micrometers/4D and above)	① "A" dimension (plunger's height) is not correct. ② Poor chucking accuracy of collet ③ Penetrated dust in collet installation part ④ Insufficient chucking length ⑤ Tool shank end touches the bottom of holder I.D.. ⑥ Poor accuracy of tool ⑦ Dust seizing in cap nut thread ⑧ Malfunction of rotor ring in cap nut. (Rotor ring rotation is not smooth.) ⑨ Expansion of BT shank because of overtightening retention stud. ⑩ Deteriorated accuracy of tool interface • Large runout (2 micrometers and above) of spindle ID or end face (in the case of two-face contact) • Dust, scratch or dent on taper area or end face (in the face of two-face contact)	① •Check "A" dimension (plunger's height). •Dust or chip on the contact face of positioning block. ② •Replacement of collets •Use "AA" grade collet. ③ Cleaning of collet insertion area ④ Keep minimum insertion length of tool. ⑤ Tool shank end must be detached from the bottom of the chuck. (Otherwise, chucking accuracy will be deteriorated.) ⑥ Replacement of tools ⑦ Cleaning and greasing of thread area ⑧ •Cleaning of cap nut (for smooth rotation of rotor ring) •Replacement of cap nuts ⑨ Keep recommended torque value for tightening retention stud. ⑩ •Regrinding or correction of machinespindle •Cleaning of taper and end face (in the case of two-face contact), touching up of scratch or dent
4	Cutting tool is pulled out during cutting.	① Insufficient tightening of cap nut ② Insufficient tightening from malfunction of rotor ring in cap nut. ③ Insufficient tightening of cap nut because of increased friction in the thread part.	① •Keep recommended torque value for tightening cap nut. •Use torque wrench. ② Replacement of cap nuts ③ Apply oil (grease) on the thread part after cleaning it.

		<p>④ Cutting resistance is too large. (Pullout by pestle-like movement.)</p>	<p>④ Decrease cutting resistance. a. Lower tool projection length b. Higher rotation or lower feed rate (Approx. 20%) c. Lower cutting depth</p>
5	Chattering	<p>① Chattering by holder's resonance</p> <p>② Cutting resistance is too low for holder's rigidity.</p> <p>③ Cutting resistance is too high for holder's rigidity.</p> <p>④ Bending moment is too large.</p> <p>⑤ Poor contact of tool interface <ul style="list-style-type: none"> • Poor contact because of expanded spindle nose • Dust, scratch or dent on taper or end face (in the case of two-face contact) </p> <p>⑥ Mischoice of retention stud</p> <p>⑦ Expansion of BT shank because of overtightening retention stud.</p>	<p>① Shift rotation speed (more than 10%).</p> <p>② Revision of cutting conditions (Increase cutting resistance.) a. Higher feed rate or lower rotation (Approx. 20%) b. Higher depth of cut</p> <p>③ Revision of cutting conditions (Decrease cutting resistance.) a. Higher rotation and lower feed rate (Approx. 20%) b. Lower depth of cut</p> <p>④ <ul style="list-style-type: none"> • Shorter tool projection • Shorter tool holder projection length </p> <p>⑤ <ul style="list-style-type: none"> • Correction of machine spindle by regrinding • Cleaning of taper and end face (two-face contact), touching up of scratch or dent </p> <p>⑥ Use designated retention stud for the machine.</p> <p>⑦ Keep recommended torque value for tightening retention stud.</p>
6	Misalignment of angle in the rotative direction.	<p>① Loosened bolts for fixing angle</p>	<p>① Re-adjust the angle and tighten the fixing bolts strongly.</p>
7	Misalignment of angle in Z-axis.	<p>① "A" dimension (plunger's height) is not correct.</p> <p>② In the case of flexible Angle Head, bolts for fixing angle are loosened.</p>	<p>① <ul style="list-style-type: none"> • Check "A" dimension (plunger's height). • Dust or chip on the contact face of the positioning block. </p> <p>② Re-adjust the angle and tighten the fixing bolts strongly.</p>