

Troubleshooting (Hyper spindle)

	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	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	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 chuck ID ⑥ Poor accuracy of tool ⑦ Dust seizing in cap nut thread ⑧ Malfunction of rotor ring of 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 the positioning block. ② •Replacement of collets •AA grade collet should be used. 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 (so that the rotor ring will rotate smoothly) •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
3	Cutting tool is pulled out during cutting	① Insufficient tightening of cap nut ② Insufficient tightening from malfunction of rotor ring in the cap nut ③ Insufficient tightening of cap nut because of increased friction in the thread part ④ Cutting resistance is large. (Pullout by pestle-like movement)	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. ④ Decrease cutting resistance. a. Lower tool projection length b. Higher rotation or lower feed rate (Approx. 20%) c. Lower cutting depth

4	Chattering	<p>① Chattering by holder's resonance</p> <p>② Cutting resistance is too low in comparison with holder's rigidity.</p> <p>③ Bending moment is too large.</p> <p>④ Poor contact of uninterface <ul style="list-style-type: none"> · Lost contact because of spindle expansion · Dust, scratch or dent of taper area or end face (two-face contact) </p> <p>⑤ Mischoice of retention stud</p> <p>⑥ 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 (Decrease cutting resistance.) a. Higher rotation or lower feed rate (Approx. 20%) b. Lower cutting depth</p> <p>③ Lower tool projection</p> <p>④ <ul style="list-style-type: none"> · Correction of machine spindle by regrinding · Cleaning of taper and end face (in the case of two-face contact), touching up of scratch or dent. </p> <p>⑤ Use designated retention stud for the machine.</p> <p>⑥ Keep recommended torque value for tightening retention stud.</p>
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