

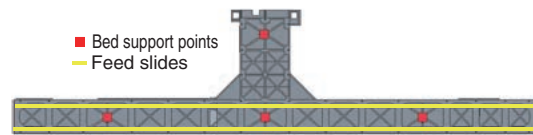
GR7i-400 High Accuracy Roll Grinder



With the rapid growth of the electric vehicle market, there is an increased demand for the large, high-accuracy rolls required to manufacture the necessary batteries. In addition, high-accuracy rolls are also required in the production of thin films used in the semiconductor and display fields. GR7i-400 is a high accuracy roll grinder that meets these requirements and allows anyone to easily perform machining that even skilled technicians cannot match.

Stable High-accuracy Machining

① The ribs and support points of the bed were optimized by structural analysis and the support method during processing was devised during machining, allowing for high-precision manufacturing to be carried out.

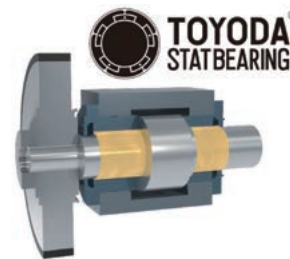


Bed support points

② The static pressure technology TOYODA STAT BEARING, one of our core technologies, is used for the grinding wheel spindle.

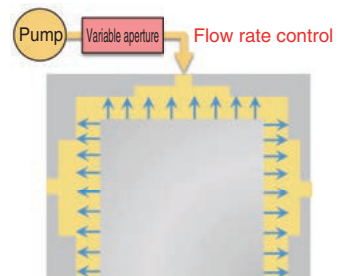
It offers features such as long life due to using non-metal-contact, and high accuracy due to the averaging effect of an oil layer.

This machine also applies static pressure technology for work spindle bearings, tailstock shaft bearings, wheelhead feed slides, and table feed slides, achieving a friction-free machine configuration.



TOYODA STAT BEARING

③ STAT CONTROL, a technology that optimally controls the flow rate of oil in the static pressure section, is used for each slide of the wheelhead feed and table feed.



Static pressure slide

Static pressure control technology STAT CONTROL

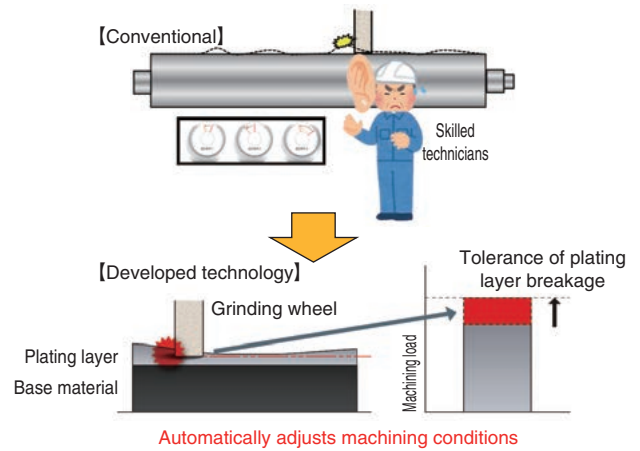
These are assembled with high precision by our craftsmen, to help achieve unparalleled high precision machining of cylindricity 0.5 μm.

Machining that Even Skilled Technicians Cannot Match

①Machining load detection LOAD CHECKER

In roll grinding, plating cracks may occur due to an increase in the machining load caused by variations in the shape of the material such as plating, and skilled technicians typically manually finetuned the machining conditions by listening to the machining sound.

We have developed a technology, LOAD CHECKER, which detects the machining load of the feed mechanism. By automatically adjusting the machining conditions, plating cracks are prevented during machining at a level that cannot be matched even by skilled technicians.

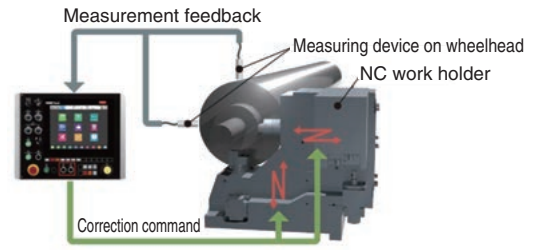


Machining load detection LOAD CHECKER

②Automatic taper adjustment that is easy for anyone

In roll grinding, the machining accuracy was ensured by skilled technician adjusting the manual work holder to correct the taper caused by the machining conditions and the wear of the grinding wheel.

We have developed an NC work holder that can be automatically controlled by a motor mounted on the work holder. This allows for automatic taper adjustment. Automatic taper adjustment can be performed easily by anyone, and it drastically reduces the adjustment time as well.



Automatic taper adjustment for roll

(Grinding System Engineering Dept., Machine Tools & Manufacturing Systems Business Unit)