

# GE3Pi-HYPER CNC Cylindrical Grinder

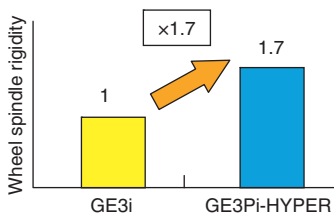


GE3Pi-HYPER is a CNC cylindrical grinder developed for aiming to raise the productivity in high-load grinding in the field for rough grinding of small workpieces such as carbide tools.

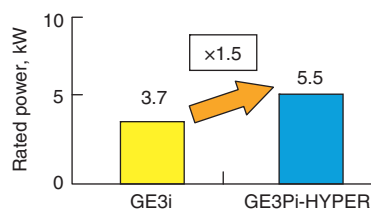
Better productivity is achieved through the rigidity and power equivalent to GE4i (the machine one rank above), within the installation floor space that is equivalent to its base machine, GE3i.

## Features

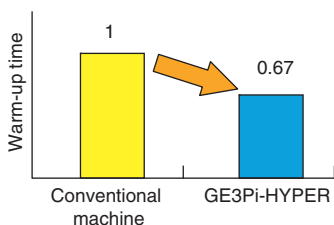
- ① Wheel spindle with higher rigidity  
The application of high-rigidity wheel spindle achieved 1.7 times higher wheel spindle rigidity than its base machine, GE3i.
- ② Higher power  
The application of a small size high-output motor achieved 1.5 times higher wheel spindle power than its base machine, GE3i (3.7 kW changed to 5.5 kW).
- ③ Longer life  
The ball screws and bearings for each feed spindle are lubricated by forced-lubrication, which will reduce the risk of ball screw and bearing failure caused by contamination of fine chips such as cemented carbide and ceramic.
- ④ Shortening warm-up time  
An isolation cover is installed to prevent the coolant heat from being transmitted to the bed, and the wheel spindle bearing lubricant is cooled as well to shorten the warm-up time for the stabilization of dimension changes. Shorter warm-up time will also contribute to energy saving.
- ⑤ Better working environment  
We have added a machine with full-cover specification to our product line-up to suppress the splattering of grinding mist during grinding to improve the work environment.



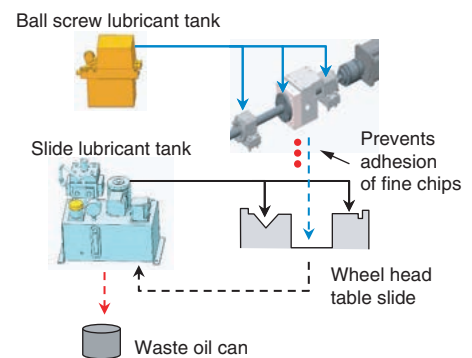
① Wheel spindle rigidity



② Wheel spindle power



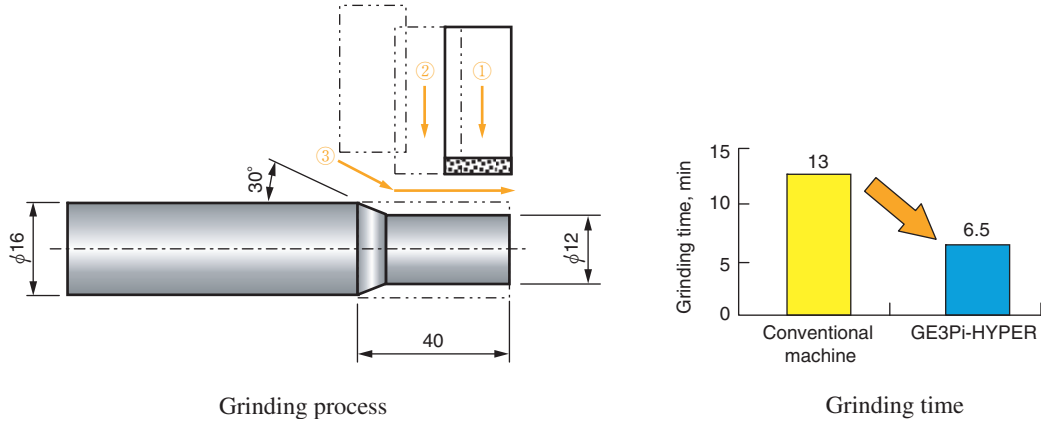
④ Warm-up time



③ Lubrication of ball screws and bearings

**Results**

An example of grinding test, using diamond wheel on carbide tool (K10) with an outer diameter of  $\phi 16\text{mm}$  grinded up to  $\phi 12\text{mm}$  throughout the width of 40mm, shows a significant improvement in productivity due to the grinding time reduction of 1/2 compared to the conventional machine.



(Machine Tools Development Dept., Machine Tools & Mechatronics Operations Headquarters)