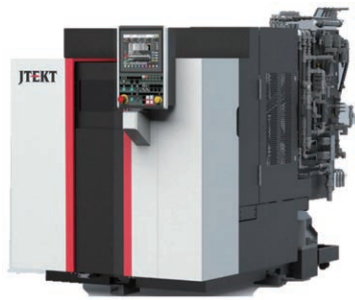


G1 Series Small Cylindrical Grinding Machines

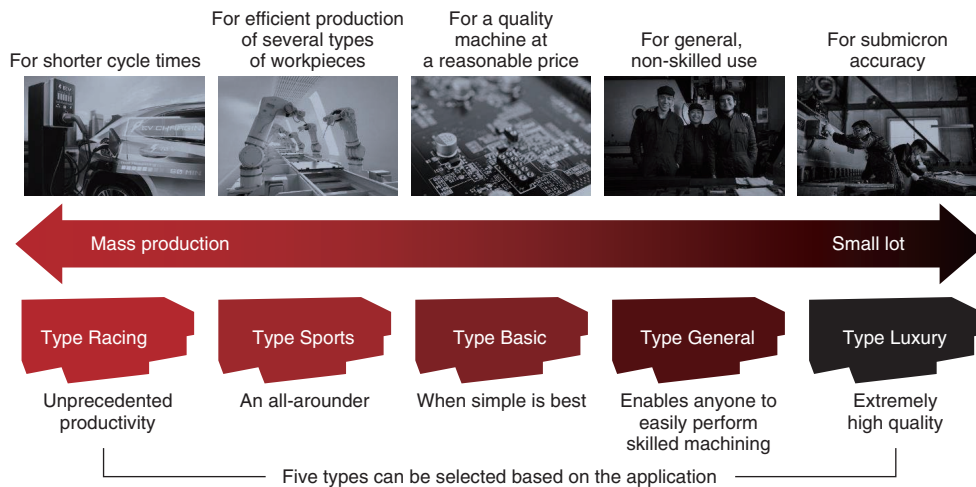


The rapid electrification of automobiles in recent years has brought significant changes to customer needs in regard to machine tools. There are also extremely high demands for carbon neutrality. These circumstances made it necessary for JTEKT to restructure its external cylindrical grinder to enable the optimal machines to be provided to all markets and all customers.

Our newly developed “G1 Series” of small external cylindrical grinding machines features five types that can be selected based on the application.

Aim of Development

Our aim is to provide quality products to as many customers as possible at an affordable price. Over its 80 year history, JTEKT has manufactured and sold various grinding machines, from general-purpose to mass-produced and special-purpose machines, and is proud its contributions, mainly to the development of automotive industries around the world. This time, JTEKT has set its sights on realizing a high-quality, low-cost external cylindrical grinding machine that is both easier to use and obtain and which inherits the superior reliability of our previous grinding machines while featuring enhanced functions to meet the needs of a diverse array of customers. With five types to choose from depending on the application, our “G1 Series” features various models, from those designed to provide extreme levels of productivity during mass production to those designed for craftsmanship at the submicron level.



JTEKT’s restructured line of external cylindrical grinding machines

Features

1. Outstanding Quality

To achieve the desired level of precision at all times, we focused on the functions necessary for grinding, which are “grabbing,” “rotating,” and “grinding.” We also minimized the three undesirable elements of “deformation,” “vibration,” and “thermal displacement.”

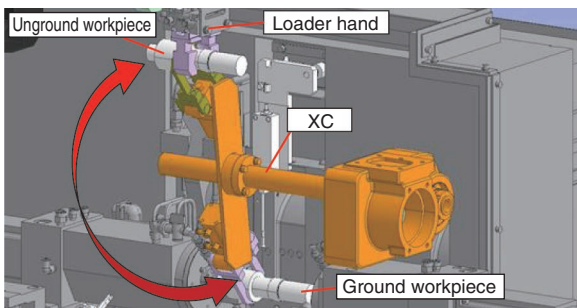
This time, by using the latest combined analysis methods, we have succeeded in developing a platform

that minimizes deformation and thermal displacement, and which reduces workpiece dimensional changes to 1/3 that of conventional grinding machines. We have also added a low-vibration rolling-bearing grinding wheel spindle to our range of available grinding wheel spindles which features both our long popular and highly reliable fluid bearings, as well as JTEKT’s high-precision, high-rigidity bearings.

2. Unprecedented Productivity

In order to provide the fastest grinding machine possible, we focused on enhancing grinding speed while reducing wasted time, which are the keys to achieving high productivity in the automotive industry. To our range of available CBN grinding wheels, we have added a grinding wheel with a circumferential speed of 120 m/s that is capable of superior grinding speed.

We have also developed the fastest work changer ever, the “XC,” which enables extreme reductions in machine downtime. Because machined workpieces are instantaneously switched out for an unmachined workpiece once machining has been completed, and because the machining cycle and loading/unloading cycle are performed in parallel, workpiece loading and unloading times are almost reduced to zero.



XC

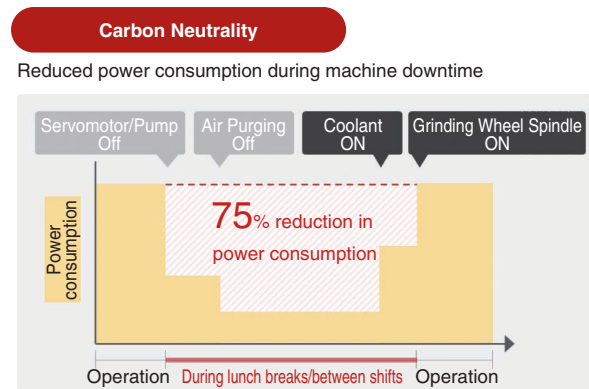
3. Excellent Operability

Designed for beginner and experienced operators alike, our grinding machines feature the superior operability and abundant functions that operators expect from such machines. They also feature an operator-friendly mechanical structure that provides excellent operability and workability during all work stages, from setup to maintenance.

Operators can choose from up to 16 patterns of grinding cycles, which have been designed using the expertise accumulated in unison with our customers over JTEKT’s 80 year history. Furthermore, the distance the operator needs to move when changing the grinding wheel has been shortened from the conventional 300mm to 50mm. This has resulted in improved grinding wheel accessibility. We made this improvement as part of our aim to develop a machine that anyone can use safely and comfortably without having to perform work in an uncomfortable posture.

4. Carbon Neutrality

We are working to help realize a decarbonized society by reducing power consumption during machine downtime and operation, which leads to decreased CO₂ emissions from customer production plants. In order to reduce standby energy during machine downtime, we have provided our grinding machine with “Sleep In” and “Wake Up” functions.



Together with our group company, JTEKT Grinding Tools Corporation, we have developed a new CBN grinding wheel named “SAKURA” that is designed to minimize power consumption during machine operation by reducing grinding resistance. Combining these has enabled us to reduce CO₂ emissions by approximately 8 tons per year.

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