

# YCG-1215

## CENTER HOLE GRINDER

### Wouldn't it be wonderful if "Further precise grinding" can be actualized with your currently available cylindrical grinding machines?

Quality parts with high level of functions and longer life spans at reasonable price ...

Such customers' demands made us to take up the challenges to clear tighter tolerance requirements of functional part grinding such as mirror surface grinding, therefore, it is a common practice now to try to achieve machining accuracy with a precision level in nanometers (1/1,000,000).

Your products may not be competitive enough if their circularity is not quite satisfied or cylindricity varies.

### Are such issues only because of your cylindrical grinding machine?

Causes of geometry faults such as improper circularity and cylindricity as well as surface roughness could be the insufficient machine precision or the balance of grinding stones. However, in many cases, all those issues may be caused by the accuracy of the "Center hole".

If you feel something should be improved, please first check the accuracy of the center hole. Not only can the causes of accuracy failure be because of center hole, but the "Centering machine" and "Center hole grinding machine" can be the causes, too.

### "YCG-1215" created by a highly precise machining center manufacturing technique

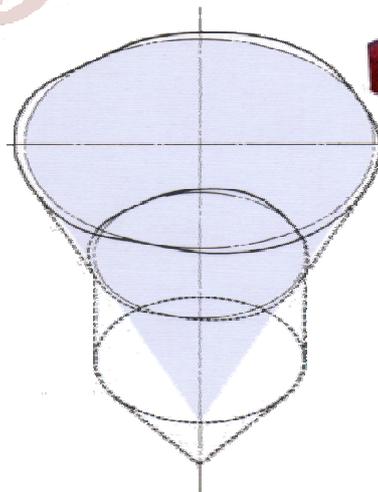
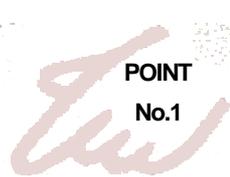
YASDA's machining center, well known for its excellent precision and long lifetime, is highly appreciated by world-class machine manufacturers. And "YCG-1215", YASDA's center hole grinding machine, is developed by utilizing YASDA's designing philosophy and essences of the manufacturing technique.

YCG-1215 is a precise center hole grinding machine capable of grinding both center holes accurately without turning the work pieces. Delivery of YCG-1215 into the market made a step forward to the future potential of extra precision cylindrical grinding machines.

### Grinding center hole into a super-precise polygonal configuration

The accuracy of the center hole influences that of cylindrical grinding greatly. The grinding motion of the unique grinding stone of YCG-1215 is capable of grinding the center hole into the super-accurate polygonal shape with a deviation of  $2\mu\text{m}$  or less, and this can only be realized by the cutting edge technology of YASDA. The center hole, which is polygonal-shaped based on the three-point support principle, is in contact with the spindle stock of the cylindrical grinding machine and the center of tailstock at three points precisely and securely. This makes possible the further higher grinding accuracy using your currently available cylindrical grinding machines.

If YCG-1215 is used to grind the center hole and there are still some issues with the grinding precision of the work pieces, the cause of such issues is obviously the "Cylindrical grinding machine".



- The polygonal configuration of the center hole is machined by the planetary motion of the grinding stone spindle and unique cyclic motion.





S-YCG 93002A

### Simple and high rigid body and ...

High precision and rigidity are realized by the time-proven technologies and are the bywords of YASDA ...

Obviously, such technologies are utilized for YCG-1215 surely. It is extremely workable as it approaches to the work piece from any directions. This outstanding workability is made possible with its construction that one rigid upright column is equipped with a grinding head, dresser, chuck, tailstock, and operation panel in a geometrically efficient way.

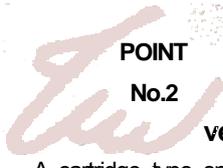
At the same time, the grinding position is maintained at the ergonomically optimum height for operators, therefore, monitoring of the precision grinding process does not cause fatigue.

Machine which is easy to operate and causes almost no fatigue ...

User-friendliness is another aspect of "YCG-1215", a high precision center hole grinding machine, that the operators appreciate day by day as they use it more.



S-YCG 93003A



#### POINT

##### No.2

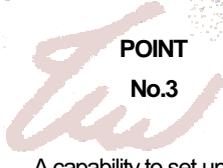
### A step advanced function - 3 revolution velocities can be selected with a one-touch switch.

A cartridge type spindle, whose major diameter is 32mm, and three types of grinding tones can be switched flexibly in accordance with the shape and the size of work pieces. At the same time, the revolution can be selected from three velocities,  $15,000\text{min}^{-1}$ ,  $25,000\text{min}^{-1}$ , and  $45,000\text{min}^{-1}$ . The revolution velocity can be changed with one touch by using the unique selector switch which is far easier than the traditional method of changing the belt.

The spindle bearing is lubricated by the oil mist lubrication system which prevents the invasion and deposition of foreign materials and dust into the spindle.



S-YCG 93004A



#### POINT

##### No.3

### Speedy and exact work piece setting

A capability to set up the center hole to be ground quickly and properly - This is one of critical points which determine the productivity and performance of the center hole grinding machine. YCG-1215 is capable of clamping the work piece after an extremely easy positioning to the machine center that is directly below the grinding spindle using a three-point support vice.

This outstanding handling performance assures the high precision grinding and consistent productivity of YCG-1215.



S-YCG 93005A

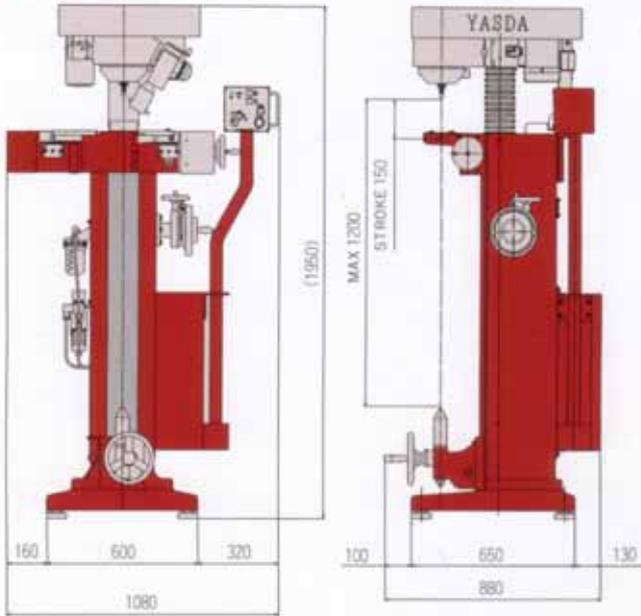
### Simple grind stone dressing

The manual dresser installed on the right side of the spindle head has a mechanism which moves the diamond vertically along the taper grinding stone while oscillating the diamond horizontally, therefore, precise dressing of the grinding stone can be done with the simple operation of a manual lever.



S-YCG 93006A

## OUTLINE



## Profile of YASDA Engineering Service (YES)

In 1969, Yasuda Kogyo Co., Ltd. invested in the establishment of YASDA Engineering Service Co., Ltd. for the purpose of supporting the manufacturing processes of the YASDA machining center, a world-class machining center known for its high precision performance. Since then, YES has been improving our technical capabilities to meet various severe and high technical requirements which our customers demand for YASDA's products. As a result of such efforts, YES has accumulated unique high level techniques and has been highly appreciated in the world as a company of unique techniques as we manufacturer not only the designing and fabrication of precision fixtures, tools, and vices, but also the precision spindle which determines the performance of machining centers. As YES's motto is to provide our customers with products which are unique, highly capable, and safe, we continuously strive to improve our technologies and research and development.

### • Business line

Designing and fabrication of fixtures and jigs for precision machining, tools, precision vices, high-speed high-accurate spindles for machine tools, precise spindles for industrial machinery, test bars, and bar gauges. Precise parts machining. Manufacturing, sales, and repair of extra-precise granite leveling blocks.

## Specifications

Size of workpiece	Workpiece clamping range Workpiece length Max. weight of workpiece	Φ5~ Φ150mm 50~ 1200mm 100 kg
Center hole grinder Capacity	Center hole angle Dia. of center hole stone Reciprocation motion	60° Φ2~ Φ50mm 1.3mm
Spindle of grinding stone	Dia. of spindle Speed of grinding stone (15mm dia.) Speed of grinding stone (27mm dia.) Speed of grinding stone (51mm dia.)	Φ32mm 45,000min <sup>-1</sup> 25,000min <sup>-1</sup> 15,000min
Motors	For spindle For reciprocating motion For dust collector (Option)	0.4KW 0.1KW 0.4KW
Grinding head	Max. rapid approach One revolution of handwheel for fine adjustment	150mm 1.5mm (0.01mm/div.)
Grinding stone dressing device	Travel of dressing diamond Max. travel for one revolution of wheel Max. in-feed for one revolution of wheel	40mm 1.5mm 1mm(0.01mm/div.)
Electric power supply	Voltage & spindle Capacity	3Ph 200V 50/60Hz 1.5KVA
Pneumatic source	For lubrication of spindle	0.35~0.4MPa (3.5~4kgf/cm <sup>2</sup> )
Weight	Net weight of the standard machine	900kg

## Standard Accessories

Name	Q'ty
15 dia. of grinding stone	1
27 dia. of grinding stone	1
51 dia. of grinding stone	1
Diamond tool for dressing	1
Short center	1
Long center	1
Set of servicing spanners	1
Grease gun	1
Oil gun	1

## Special Accessories

Name
Dust collector system complete
Three-jaw chuck
Spot light
Centering device for eccentric rod

