SHIGIYA

CNC Cylindrical Grinder

GPS-30B
-40B

Pursuing “higher accuracy grinding with easier operation,” SHIGIYA has infused GPS-30B (GPS-40B) with its own, cutting-edge technologies in order to create cylindrical grinders with uncompromising quality and performance. The greatest feature of this grinder is its low price, which is possible because the customer can select from various standardized options. Our approach to making a more affordable product does not just entail lowering its performance. Rather, we have reduced costs by streamlining the design and manufacturing processes, using

The basic performance maintains a high quality level at a price that an option selection approach. It is perfect as an entry level mod This is SHIGIYA's standard CNC

GPS-30B·50

*The machine in the photo differes from the standard specifications.

common parts, and scaling production through careful mass production planning. The basic performance and specifications are comparable to high performance machinery and are designed for rigidity and quality to allow for both heavy and precision grinding. With SHIGIYA's own interactive automatic programming system, you only have to enter numeric figures for three items, and it will automatically set up the optimum grinding patterns and conditions for you. The GPS-30B (GPS-40B) are standard models of CNC cylindrical grinders.

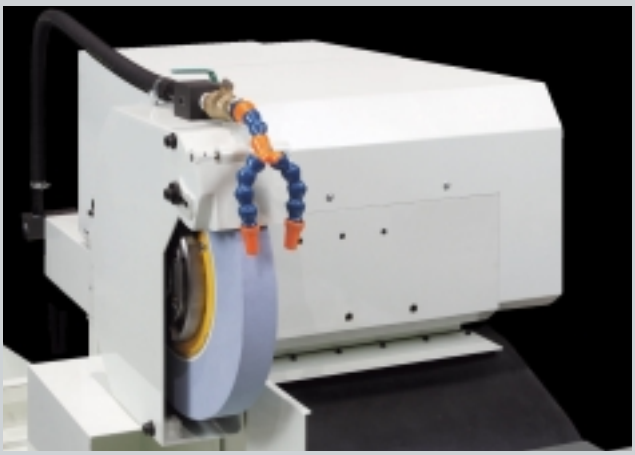
The 8.4 inch color LCD makes it easier to see and comes standard equipped.

The operability has been improved further.
- Tolerance input is possible at the submicron level.
- A variety of alarm functions have been added to prevent human error.

fits your budget by using

el.
cylindrical grinder model.

GPS-30B(GPS-40B)
The mechanism that enables heavy grinding and a precision finish
The mechanism you can trust in

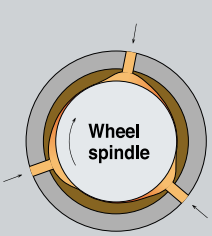


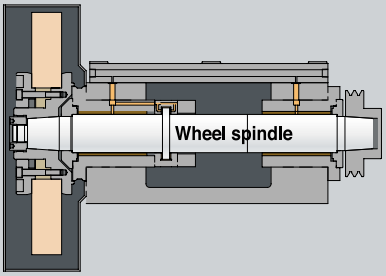
Non-swivel wheelhead

The wheelhead built with a high-rigidity main body and a large-diameter wheel spindle, made from heat treated nitride steel, can be used with a large type wheel to fit a maximum diameter of Ø 510 mm (option).
In addition, there is an upgrade option available to accommodate a wheel peripheral speed of up to 45 m/sec. It provides high precision grinding, high efficiency, and high productivity.

Non-concentric hydrodynamic bearings provide high-precision rotation of the wheel

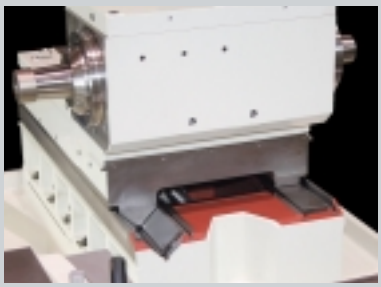
The non-concentric hydrodynamic bearings use hydrodynamics to secure the optimal wedge angle. The bearings are ground with a high degree of precision with a grinder that SHIGIYA has developed exclusively for bearings, thus creating high-rigidity bearings and high-precision rotation.





Wide V-flat sliding surfaces with high rigidity

The wheelhead and the table-feed sliding surfaces have wide, V-flat guiding surfaces that have sufficient rigidity and load capacity. The high dampening performance and equalization of the lubrication oil provided by the oil film's squeezing effect help the grinder maintain good precision and smooth operation for decades. In addition, a low-friction sliding PTFE material is applied to the wheelhead's sliding surface to enable a fine infeed with high precision.

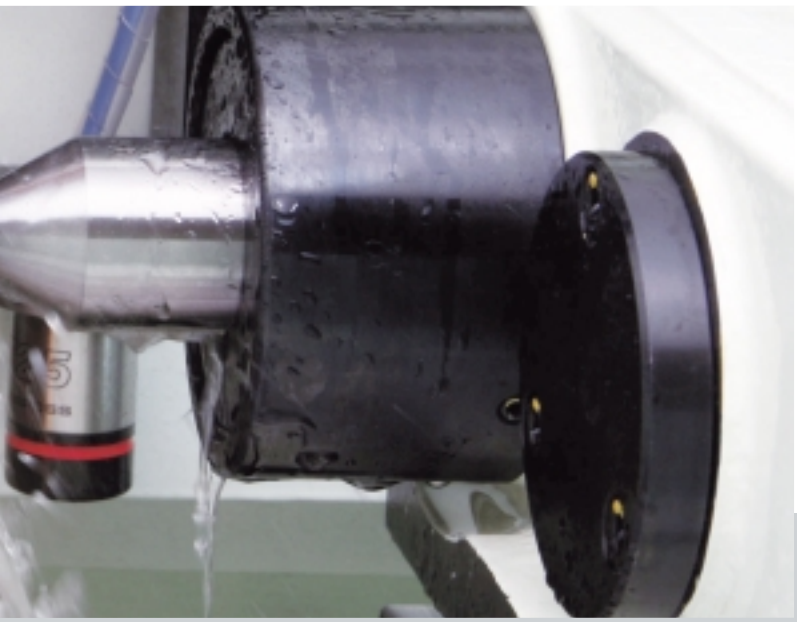


Wheel spindle lubrication oil tank

To avoid thermal displacement in the machine caused by a rise in the lubrication oil's temperature, the wheel spindle lubrication oil is stored in an isolated tank. The wheel spindle begins to rotate only after the pressure switch has confirmed that the lubrication oil is supplied to the spindle unit. This eliminates the chance of seizure on the spindle due to a lack of lubrication oil.

Wheel dressing device mounted on the lower table

A diamond tool holder is mounted onto the lower table. There is no need to change the dressing coordinates (except when you change the wheel or the diamond tool) because the diamond stays in the same position even when the upper table swivels for changing the target workpiece, taper grinding or taper adjustments.



The automatic programming provides for excellent operability, and is very helpful.

Main features

- No programming knowledge is required, just enter three items to perform this simple setting.
- 47 workpiece data (Max. 20 different diameters per piece) can be registered.

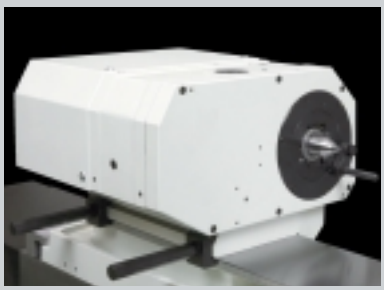
Simple operations with an expert-quality finish

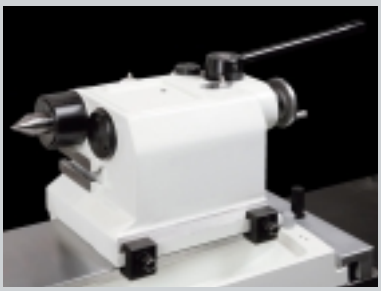
Non-swivel dead spindle workhead, with high rigidity and low vibration

The grinder can change the speed steplessly on the AC servo motor within a range of 15 to 600 min^{-1}. Furthermore, the interactive automatic programming system can automatically determine the optimal rotational speed for each particular workpiece.

Manual tailstock for high-precision heavy grinding

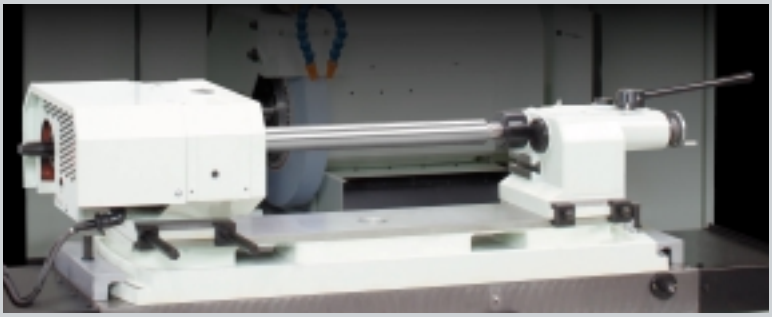
High-precision heavy grinding is made possible by mounting the tailstock with a large-diameter spindle that has been very precisely processed. The workpiece's heat expansion during grinding is offset by the helical compression spring, and the pressing force against the workpiece's center can also be adjusted to any level you want.





Compact specification that reduces the machine width by approximately 20%

Models with up to 750 mm center-distance come standard equipped with a compact workhead and tailstock units. Increasing the distance between both centers reduces the machine width by approximately 20% when compared to previous models.

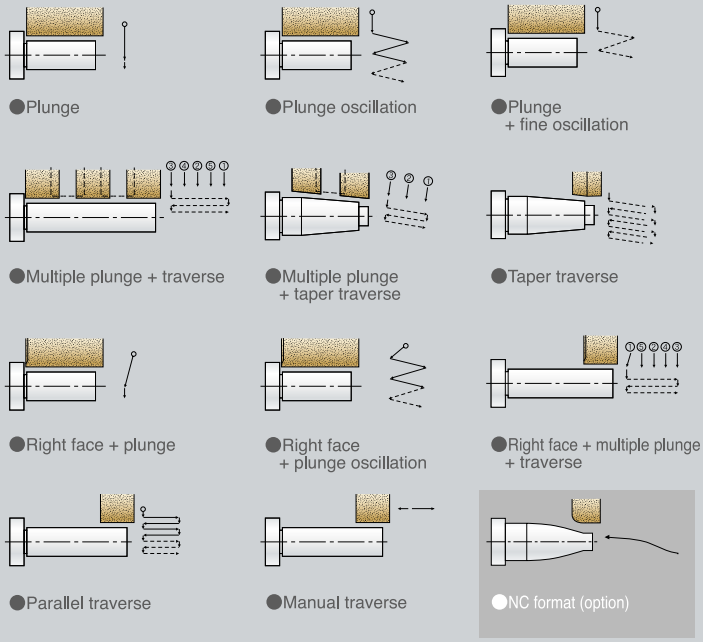


The interactive automatic programming system accommodates a great variety of grinding and dressing patterns to facilitate high-precision cylindrical grinding.

The GPS-30B (GPS-40B) features an "interactive automatic programming system," which has received high praise for its user-friendliness. Programmed with know-how by experts in grinding, the system automatically sets up the optimum grinding conditions. Just enter information on the wheel and the workpiece, and follow the instructions on the screen.

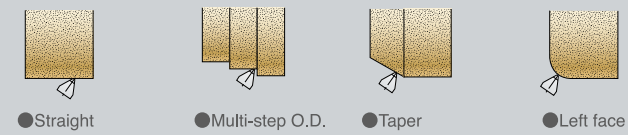
Grinding pattern

*** Left face grinding is available as an option.**



- Plunge
- Plunge oscillation
- Plunge + fine oscillation
- Multiple plunge + traverse
- Multiple plunge + taper traverse
- Taper traverse
- Right face + plunge
- Right face + plunge oscillation
- Right face + multiple plunge + traverse
- Parallel traverse
- Manual traverse
- NC format (option)

Dressing patterns



- Straight
- Multi-step O.D.
- Taper
- Left face & R
- Both faces & R (option)
- NC format (option)

GPS-30B(GPS-40B) SPECIFICATIONS

Machine Specifications

Model			GPS-30B(GPS-40B)				
			50	75	100	150	200
Capacity	Swing over table		ø 300 (ø 410) mm				
	Distance between centers	GPS-30B	500 mm	750 mm	1,000 mm	1,500 mm	2,000 mm
		GPS-40B	470 mm	720 mm	970 mm	1,470 mm	1,970 mm
	Max. grinding diameter		ø 300 (ø 325) mm				
	Workpiece mass when using both centers		150 kg				
Wheelhead	Swivel angle		Non-swivel				
	Wheel size	O.D. x W x I.D.	ø 405 × 50 × ø 152.4 mm				
	Max. wheel peripheral speed		33 m/sec				
	Total feed amount		310 mm			280 mm	
	Rapid feed amount		40 mm				
	Feed speed		ø 0 to 20,000 mm/min			ø 0 to 10,000 mm/min	
	Min. input increment		ø 0.0001 mm				
Workhead	Swivel angle		Non-swivel				
	Work spindle		Dead spindle				
	Rotational speed		15 to 600 min^{-1}				
	Taper hole		MT. No. 4				
Tailstock	Type		Manual lever type				
	Tailstock spindle stroke		30 mm				
	Taper hole		MT. No. 4				
Table	Swivel angle	C.C.W.	11°	9°	8.5°	5°	4°
		C.W.	0°	0°	0°	0°	0°
	Feed speed		0 to 15,000 mm/min			0 to 10,000 mm/min	
	Min. input increment		0.0001 mm				
Motor	Wheel spindle		3.7 kW 4 P				
	Work spindle	AC servo	1.4 kW				
	Wheelhead feed	AC servo	1.2 kW				
	Table traverse	AC servo	1.2 kW		2.5 kW		
	Wheel spindle lubrication oil pump		0.1 kW 4 P				
	Hydraulic pump		0.75 kW 4 P			0.4 kW 4 P	
	Coolant pump		0.18 kW 2 P				
Tank capacity [Viscosity grade]	Wheel spindle lubrication oil tank		12 L [ISO VG5]				
	Hydraulic oil tank		20 L [ISO VG68]			30 L [ISO VG68]	
	Coolant tank		120 L				
Center height from floor			1,050 (1,105) mm				
Mass of machine	approx.	GPS-30B	3,900 kg	4,400 kg	4,900 kg	5,700 kg	6,500 kg
		GPS-40B	4,000 kg	4,500 kg	5,000 kg	5,800 kg	6,600 kg

( ) denotes the dimension for the GPS-40B series.

CNC Specifications (FANUC)

Item	Specifications	Remarks	Item	Specifications	Remarks
No. of registerable workpiece in interactive display	47 pcs.	Max.20 different diameters per pc.	Tool function	Tool nose radius compensation	
Program capacity	512 KB			Tool offset pairs	64 pairs
Display	8.4-inch color LCD		Editing operation	Program protect	
Operation	Single block		Setting and display	Self-diagnosis function	
	Manual handle interruption			Alarm display	
Program input	Optional block skip	1 pc.		Alarm history display	
	Custom macro B			Operation history display	
	Circular interpolation by R programming			Help function	
Controlled axis	Backlash compensation		Data input/output	Memory card	

●The specifications are subject to change without prior notice.

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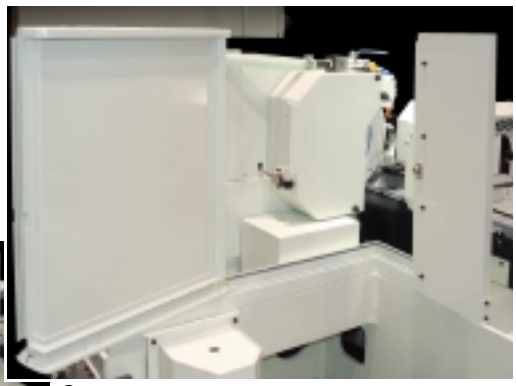
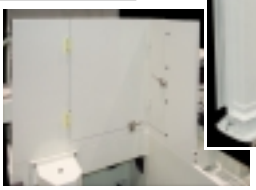
Standard Accessories

Item		Quantity
Wheel flange	ø 405 × 25 to 50 × ø 152.4 mm	1 set
Wheel flange extracting nut		1 pc.
Carbide tipped center ＊		2 pcs.
Diamond tool holder ＊	Mounting position: Lower table	1 set
Jack bolt & Foundation plate		Necessary pcs.
Tool set		1 set
Splash cover	Front splash cover: Insertion type	1 set

＊ These do not come with the Grinder, depending on its specifications.
● No oil or lubricant comes with the Grinder. Please prepare for yourself in advance.
● The NC device instruction manual is provided on a CD.



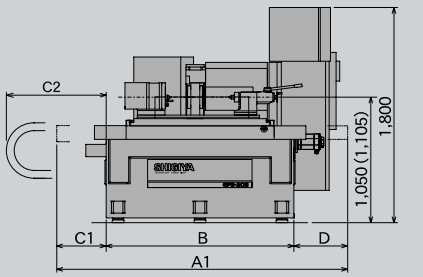


● Left rear splash cover: Hinged door type
＊ Models with up to 1,000 mm for the center-distance are adopted.

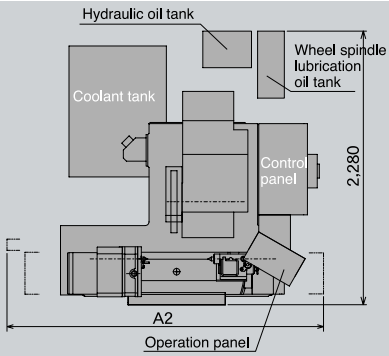
■Floor plan

Model	A1	A2	B	C1	C2	D
GPS-30B･50	2,410	——	1,570	420	——	420
GPS-30B･75	3,170	——	2,070	550	——	550
GPS-30B･100	4,150	4,450	2,810	670	970	670
GPS-30B･150	5,260	5,460	3,800	730	930	730
GPS-30B･200	6,510	6,870	4,800	855	1,215	855

Unit: mm



( ) denotes the dimension for the GPS-40B series.



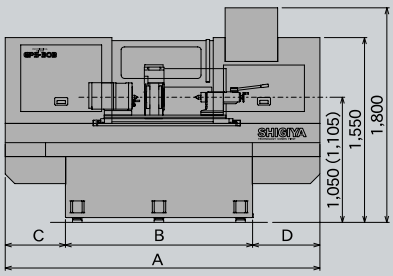
Optional Specifications

Item	Remarks
Machine full cover	Front door: Manual / Automatic

＊See below for counterclockwise angles on the table swivel.
＊Tank capacity for wheel spindle lubrication oil: 29 L.
＊A pendant type operation panel is used for models with a center-distance more than 720 mm.
＊Machine lighting and oil-mist collector are not included.

Model	A	B	C	D	Angle
GPS-30B･50	2,640	1,570	505	565	7 °
GPS-30B･75	3,400	2,070	655	675	5 °
GPS-30B･100	4,140	2,810	655	675	4 °

Unit: mm



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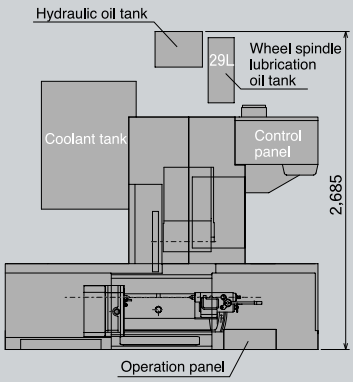
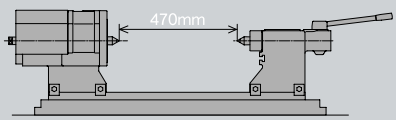


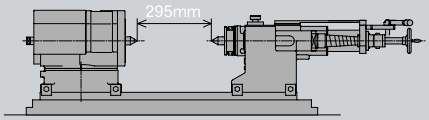
Dead･live spindle workhead with swivel base	
Dead･live spindle workhead with non-swivel	
Work spindle center taper change (MT. No. 5)	Applicable GPS-40B only
Air purge device of workhead	
Workhead swivel stopper	
Manual tailstock with manual fine taper adjustment	Taper adjustment: ±0.05 mm, Stroke: 30 mm
Manual center-distance adjustable manual tailstock	Stroke: 125 + 30 mm
Hydraulic retract tailstock	Stroke: 30 mm
Hydraulic operated tailstock	Stroke: 50 mm
Hydraulic operated tailstock with manual fine taper adjustment	Taper adjustment: ±0.05 mm, Stroke: 50 mm
Tailstock spindle taper change (MT. No. 5)	Applicable GPS-40B only

●Please contact us for other GPS-30B (GPS-40B) series options that are available.

For example, the GPS-40B･50 comes standard with a compact workhead and tailstock and 470 mm distance between centers:



The distance between centers is 295 mm when the standard specifications are replaced with a dead･live spindle workhead with a swivel base and a manual operated center-distance adjustable tailstock.



●The values above were taken when using a standard center for the MT.No.4.

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