

Column type Precision Surface Grinding Machine Series

PSG-DX Series

PSG-iQ Series

PSG-DXNC Series

UPG-NC Series

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Printed in Japan in Sep. 2023 2023091000AD-01



Extensive line-up of column-type grinding CNC, and ultra-precision

machines for surface, interactive software,

Column type Precision Surface Grinding Machine Lineup

PSG-DX Series





Semi automatic cycle of large surface grinding machine performs powerfully

- LSI control system that incorporated with original software realized the automatic cycle of semi automatic surface grinding machine.
- Infeed of 1µm unit is achieved in the automatic cycle of "Rough grinding⇒Fine grinding⇒Sparkout.
 M.P.G controller interruption is possible during the cycle, and enhanced the versatility.





Grinding Example

Size: $600 \times 600 \times 150$ mm

Material : S45C Required flatness : 5 μ m Actual flatness : 4 μ m

PSG-iQ Series



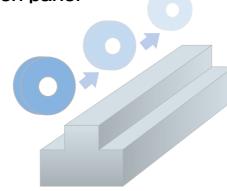


No need for G-Code programming on the touch panel

■ Innovative iQ software thoroughly simplifies data input.

Input the total grinding removal and fine grinding removal, and then, just input the wheel grain size, the optimum grinding conditions and dressing conditions are automatically created.





Grinding Example

Size: $600 \times 400 \times 100$ mm

Material: SK-3

Required dimensional tolerance : \pm 3 μ m Actual dimensional tolerance : \pm 2.5 μ m

PSG-DXNC Series

CNC

Go to P.9

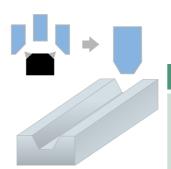
Custom-made shape grinding realized by CNC control

- Easy operation with original graphical interactive software!

 "Wheel head vertical feed" and "Column cross feed" are controlled with the minimum increment of 0.1 μm.
- Complex wheel shape can be formed by the combination of various dressers.
- CNC precision surface grinding machine realizes large-scale form grinding. Groove grinding is also available with the optional vertical spindle wheel.

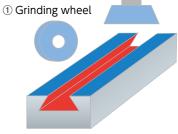


2 Vertical axis wheel (option)



Grinding Example

Size: $650 \times 300 \times 50$ mm Material: SCM440H Tip R: $0.6 \pm 2.5 \mu$ m Actual R: $0.6 \pm 2 \mu$ m



Grind red surface with wheel ② Grinding Example

Grind blue surface with wheel 1

Size: $510 \times 100 \times 200$ mm Material: FC30 Parallelism (top and bottom): 3 μ m Flatness (top): 2 μ m

UPG-NC Series

Ultra Precisio

Go to P.11

Supreme hydrostatic grinding machine for grinding ultra precision large workpieces

- Original variable hydrostatic slide system maintains the slideway with good vibration damping, and the oil film thickness is flexibly controlled even under unbalanced load conditions.
- Ultra precision surface grinding machines that achieved the accuracy of 1.5 μ m/4000mm for longitudinal straightness. (not always guaranteed).





Grinding Example

Size: $600 \times 150 \times 200$ mm Material: SUS304 Weight: approx.280kg Required flatness: $1 \mu m$ Actual flatness: $0.5 \mu m$

Column type Series 01

Column type Series 01

Detailed services for Diversifying needs

Structures and Features for DX, iQ and DXNC

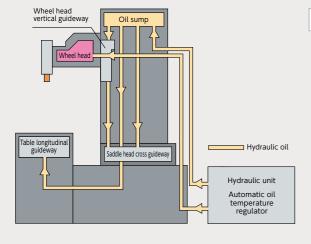
Construction & Feature

Operator-oriented design that takes advantage of the column type

- It has the column type structure in which the column that holds the wheel head is fed front/back. Therefore, the workpiece on the table does not move front/back and the distance from the operator to workpiece is kept constant. Mounting/dismounting of the workpiece is easy regardless to its size, and the workability and operability are excellent.
- Non-overhanging structure allows the chuck to be supported within the frame even at the left end/right end of the table.

Lubrication to guideways are by the free-fall automatic lubrication system.

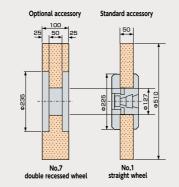
■ Lubricant is automatically replenished to the guideways of the wheel head vertical, column cross, and table longitudinal by utilizing the height difference from the oil sump. Hydraulic pressure is naturally kept constant, and the oil film thickness is uniform. The guideways are with scraped surface texture.



Heat controlled model as a standard

- Hydraulic unit is a dual use for hydraulic and lubrication, and separately placed to prevent from the impact on the main unit, such as vibration and thermal displacement.
- Hydraulic tank unit equipped with automatic oil temperature regulator suitable for the series is provided as a standard accessory. It supplies temperature controlled lubrication oil to all slideways.

Wheel dimension drawing for 100 width (OP)



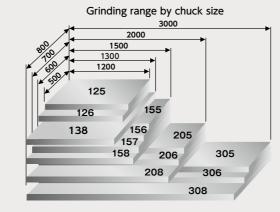
Size lineup by series

■ We have a wide lineup of column type grinding machines ranging from 1200 x 500 to 3000 x 800 mm.

You can also select DX "manual operation surface grinding", iQ "interactive software", DXNC "automation with CNC control", or UPG "ultra precision" according to the usages.







Series lineup by chuck size

Cross	500	600	700	800
1200	DX/DXNC	DX/DXNC/iQ	-	-
1300	-	-	-	DX/DXNC
1500	DX/DXNC	DX/DXNC/iQ	DX/DXNC/iQ	DX/DXNC
2000	DX/DXNC	DX/DXNC/iQ	-	DX/DXNC
3000	DX/DXNC	DX/DXNC/iQ/UPG	-	DX/DXNC/UPG

Series lineup by Grinding Example

Rough removal
Fine removal

	Grinding example	Grinding shape	PSG-DX	PSG-iQ	PSG- DXNC	UPG-NC
Flat	OKE		Manual (automatic cycle available)	0	0	0
Concave Convex		5	Manual	Side grinding is manual	0	0
Step			Manual	Side grinding is manual	0	0
Side			Manual	Side grinding is manual	0	0
Pitch			Manual	OP Side grinding is manual	0	0
Complex			Manual	OP Side grinding is manual	0	0
Automatic dressing cycle		See P.6 Standard Automatic Grinding Cycle	×	0	0	0
G code	Ganoy	[Dedicated program] Complicated shapes and special grinding cycles	×	OP Upon request	OP Upon request	OP Upon request

Column type Series 03

Best selling large grinding machines which prioritize 1μ m unit precision infeed and manual operation

Precision Surface Grinding Machine PSG-DX Series



Optimum to manual grinding of large castings and die/mold plates

Manual operation type large grinding machines integrated with original software. Vertical feed mechanism is AC servo motor feed which enables the minimum increment of $1\mu m$. Best selling series for flexibly grinding small to large sizes.

Operator-oriented design that takes advantage of column type

■ Taking advantage of that the operator can access to the table regardless of the workpiece size, the handwheels and operation panel are located at the operator's

When operating the wheel spindle up and down, the infeed start position can be easily set with the portable M.P.G. controller.

Rhythmical and accurate operability is realized.

Safety is also fully considered such as the handwheels are interlocked during automatic operation, and the covers for reversing dogs are installed.

Vertical axis portable M.P.G. controller

1μ m scale high precision feed with AC servo motor pulse control

- Vertical AC servo motor feed is adopted. Feed range of 1 to 5μ m is achieved with simple handles and switches.
- Dressing operation is easily performed with the overhead dresser that comes as a standard accessory.

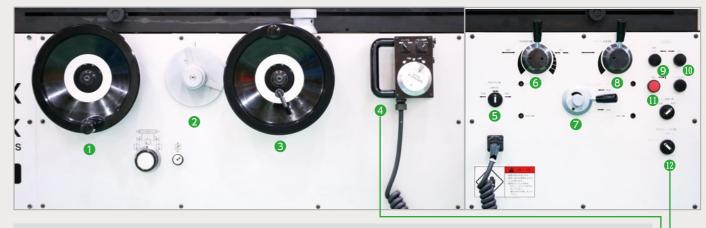
Digital switch system makes the condition setup accurate and easy

■ The automatic grinding cycle of Rough grinding ⇒ Fine grinding ⇒ Sparkout ⇒ Table right end stop" can be easily set. It is also possible to set the total removal and the number of sparkouts (O to 5 times).



Overhead dresser

Operation panel



- 1 Table longitudinal feed handle
- Column cross selector switch
- Column crossfeed handle
- 4 Vertical axis portable M.P.G. controller Crossfeed direction switch
- 6 Column speed adjusting dial
- Dressing speed adjusting knob and dressing cross direction selector lever
 - Table speed adjusting dial
- Table left travel switch
- 10 Table right travel switch
- Table right end stop switch
- Grinding mode selector switch

@ Grinding mode selector switch

Traverse...Infeed at the end of each column crossfeed reversal

Plunge 1···One infeed per table stroke (right end infeed)

Plunge 2··· Two infeeds per table stroke (both ends infeed)

Vertical axis portable M.P.G. controller

Manual interruption during cycle operation is enabled, control system is putting priority in the operability of manual grinding machine. When manually interrupted with the M.P.G. controller, the current infeeding position is always feedbacked and displayed in digital, and immediately after release of manual interruption, the automatic operation resumes to finish remaining grinding. The operation box is a handy type that enables feed 1 graduation 0.001 mm and 1 revolution 0.1 mm, and when the tall workpiece is ground which cannot be reached with the handle, the fine feeding is possible by visually checking the current position display. When not using, it can be hanged on the operation panel

- (B) Wheel head rapid feed switch (D) Total grinding amount reset switch
- (b) Vertical position display

- (B) Vertical reset switch Cross reset switch

0

- Rapid feed/jog feed selector switch Mode selector switch
 - Rough infeed amount switch
- (i) Cross position display (optional)

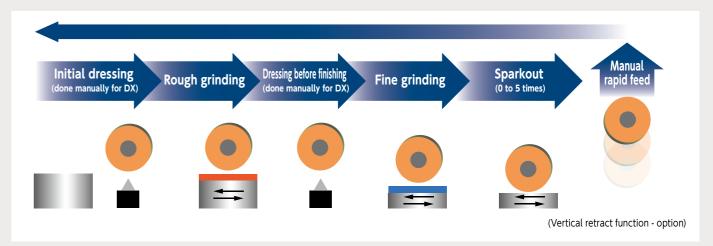
 Fine grinding allowance switch
- - Sparkout switch (0 to 5 times)

Grinding amount setting

The total grinding amount can be set in 1 μ m scale using LED digital display, and switching fine/rough grinding is done simply by setting the fine grinding amount with the fine grinding amount switch.

Fine grinding amount setting is 8 steps of 2, 5, 10, 15, 20, 30, 40, 50 μ m.

Standard automatic grinding cycle



Column type Series 05 Column type Series 06 Latest grinding machines with the automatic dressing and automatic calculation function for grinding conditions

NC Precision Surface Grinding Machine PSG-iQ Series

Touch panel iQ software makes the surface grinding of large workpieces easy

iQ software thoroughly simplifies the data input with the novel idea.

Cycle time is greatly shorten.

The functions to enable high precision grinding are equipped as standard.



* The photo includes optional accessories.

iQ automatic data creation function by inputting grinding wheel grain size

■ Input the total grinding removal and fine grinding removal, and then, just input the wheel grain size, the optimum grinding conditions and dressing conditions are automatically created.

Data input is completed with only 2-screen touches

■ No text are shown on the screen. You just touch the screen while watching the panel buttons.

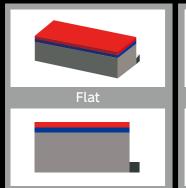


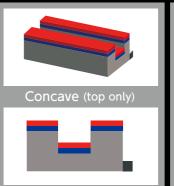
0.0000 🚢 👛 🚢 iQ dressing screen

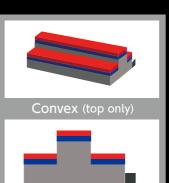


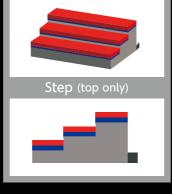
iQ grinding screen

Grinding shape selection If you need side grinding, please contact us.

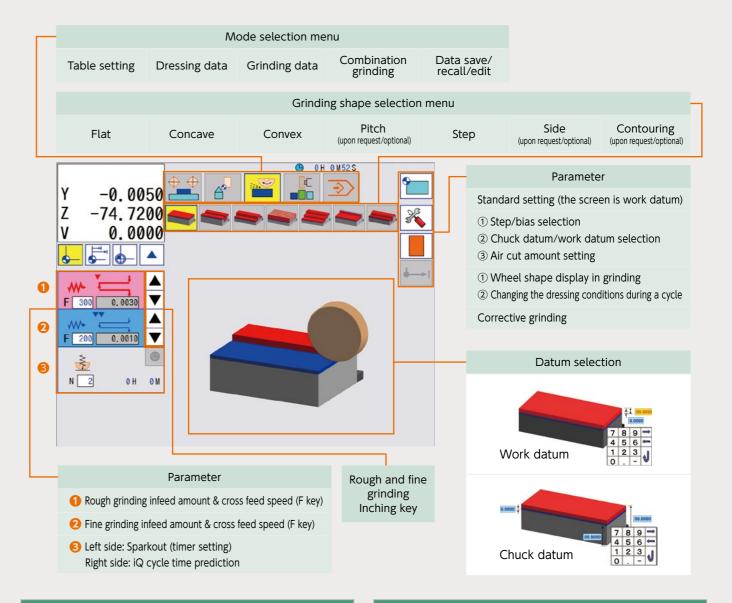








Grinding data screen



Versatile iQ functions

- Tips to greatly shorten the cycle time The cycle time can be greatly reduced by combining the overhead dresser correction function, shift plunge function, tabletop dresser function.
- Cycle time prediction function The finish time display ease your time arrangement.
- Graphical current grinding position display The positions to be ground is displayed. Red=rough g. Blue=fine g.

Function and Accuracy are UP!

- It is equipped with a wheel spindle continuous variable speed controller, an automatic oil temperature regulator, and an oil-cooled wheel head as standard accessories,
- which contribute to the improved accuracy.
- The front cover can be changed to the slide type in option. (standard: insertion cover)



Slide type cover (option)

Dressing form selection



Straight

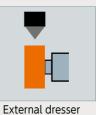


side grinding is performed manually.

Single-direction dresser

(standard)

Dresser selection



(standard)





Three-direction dresser (special option, upon request)

(special option, upon request)

CNC grinding machine with minimum increment of $0.1\mu m$ that meets a variety of grinding needs

Column Type CNC Precision Surface Grinding Machine PSG-DXNC Series

High spec CNC grinding machines that realize on-machine measuring, swiveling wheel spindle, and complex wheel forming.

Original graphic interactive software and high follow-up capability realize the high-performance grinding machines. Various options are available such as on-machine measuring, swiveling wheel spindle,



Systems that support high precision

- ☐ High follow-up capability is guaranteed by the simultaneous 2-axis control (cross and vertical) as standard
- \blacksquare Vertical feed minimum increment is controlled by 0.1 μ m
- Oil-cooled wheel head is equipped as a standard, the detailed temperature control system is adopted everywhere.
- The rough-middle-finishing automatic grinding cycle and automatic dressing cycles by the interactive software are equipped as standard. Wheel forming by the interactive software is also supported.

On-machine measuring unit (option)

■ The high positioning accuracy is achieved by adding the longitudinal axis control. The on-machine measurement is realized by installing the optional measuring unit.



Interruption dressing during cycle

■ If you press the "Manual Dress Interrupt" button during the automatic cycle, dressing is interrupted at the position while remaining the finish point setting.

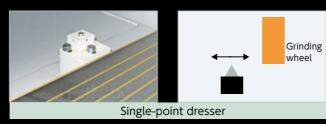
Wheel swiveling model (special option)

■ A model in which the wheel spindle swivels to grind the inner grooves on workpieces. This is provided as a special option since it requires the information of the swiveling angle, etc.



Various dressers (option)

To support your various grinding, we prepared the dressers that add the trend on the wheel as an option.

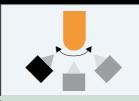




Three-point dresser



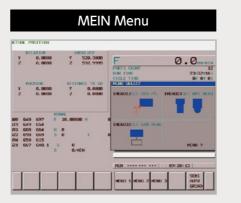




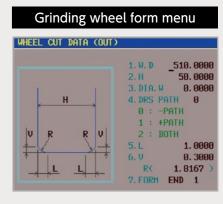
Swivel dresser

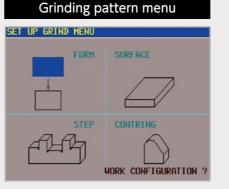
Graphical interactive software is equipped (typical screens)

■ PSG-DXNC series is equipped with the graphical interactive program software for the operators new to the NC program.

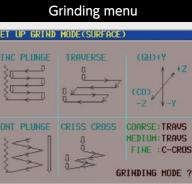


Dresser Menu MENU 1 2. TABLE: 2 (OPTION) 3. TUMBLE (OPTION) 4. TUMBLE: 2 (OPTION) (OPTION) 5. UPPER (OPTION) DRESSER ?



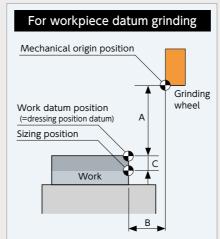


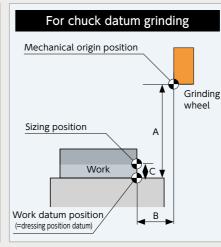




Work datum and chuck datum

■ The workpiece dimensions and remaining allowance, etc. can be perceived easier by using the positioning method of dressing datum and work datum than using the absolute coordinate.





For workpiece datum grinding	Υ	Z
Dressing position datum	-A	-В
Work datum position	0.0000	0.0000
Sizing position	-C	0.0000
*In this setting the absolute coord	inate V is the o	rinding start

position Y=0.000, and the grinding finish position Y=C.

For chuck datum grinding	Y	Z
Dressing position datum	-A	-В
Work datum position	0.0000	0.0000
Sizing position	С	0.0000

*In this setting, the absolute coordinate Y is the grinding start position Y=C+Grinding margin, and the grinding finish position Y=C.

Ample experience and optional supports







Workpiece indexing unit (option)

Swiveling rotary dresser + single-point dresser (option)

Column type Series 09 Column type Series 10 High-class machine with non-contact guideway that realizes the ultimate surface grinding

CNC Ultra Precision Surface Grinding Machine UPG-NC Series

Variable hydrostatic slide system realizes stable high accuracy

Variable hydrostatic system with the original 6-face holding slide is equipped on the longitudinal slideway

compared to the fixed type hydrostatic guideways,

by flexibly controlling the flowrate to the guideway,

the fluctuation can be reduced to 1/7, and the stable flatness against the bias load is realized.

The wear on the slideways are less, and the machine life became longer.



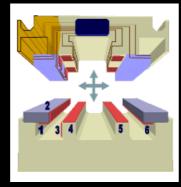
What is Variable Hydrostatic Slide System?

Ultra Precise surface grinding is achieved this way; the pair of ① & ② controls the flowrate of the oil hydrostatic pocket constant in real time, and the gap amount between slides ③ & ④ is also maintained



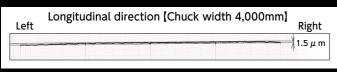
The same accuracy is achieved at any position on the chuck

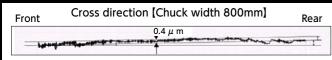
W1 P1 P3 W2 V P1 P3 P4 4



Straightness and accuracy

■ The impact of the shock is minimized to within 1µm at the longitudinal and crossfeed strokes, and the accuracy on the chuck top becomes ultra precise. It achieved the straightness within 1.5µm/4000mm for longitudinal direction, and 0.4µm/800mm for cross direction (not always guaranteed).



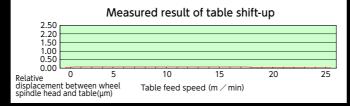




Mirror surface grinding of long workpiece

Stable table height when moving right and left

■ By controlling the oil film thickness, the amount of table shift-up is always stable, so the surface quality is ultra precise with the small amount of oil.



Compact machine design

■ The hydrostatic tank and water tank are designed to save floor space despite the oil hydrostatic model.



Space-saving design for hydrostatic tank

Optional accessories

Item & M	lodel		Specification	DX	iQ	DXNC
1). Coolant Unit						-
1.Coolant unit with m		rator	Tank capacity:300L	0	0	0
2.Coolant unit with m				0	0	0
with automatic pap	0 1	. 2001	Tank capacity:600L	0	0	0
3.Coolant unit with m		rator		0	0	0
with automatic pap		atUI	Tank capacity:600L	0	0	
with automatic oil t		ator		0	0	0
4.With high pred	cision filter/filt	ration	ı unit	0	0	0
5.Coolant nozzle				0	0	
6.Coolant nozzle				0	0	
7.3-way coolant				0	0	0
2). Chuck	Applicable model		Standard o			
,. <u></u>	125	120	0×500×100mm 2-ream	0	_	
	155		0×500×100mm 3-ream	0	_	
	205		0×500×100mm 4-ream	0	_	
	305		0×500×100mm 4-ream	0	_	
	126		0×600×100mm 2-ream	0	0	0
1.Electromagnetic	156		0×600×100mm 2-ream	0	0	
chuck, oil-cooled chuck.	206		0×600×100mm 2-ream	0	0	
electro-permanent	306		0×600×100mm 4-ream	0	0	
magnetic chuck	157		0×700×100mm 2-ream	0	0	
-	138			0	_	-
				0		
	158		0×800×100mm 2-ream		_	0
	208		0×800×100mm 2-ream	0	_	0
2 Church what /	308	300	0×800×100mm 3-ream	0	_	0
2.Chuck plate (r				0	0	0
3.Chuck plate (le		AP		0	0	0
A.Automatic demagnetizi	-		able model:125,155,205,126,156,157	0	0	0
5. Automatic demagnetizi			cable model:305,206,138,158	0	0	0
6. Automatic demagnetizi	ng controller (20A)	Appli	cable model:306,208,308	0	0	
3). Digital Scale			th. altern les 20 004			
1.Cross digital so		Min	. unit display:0.001mm	0	0	
4). Wheel flange						
1.Spare wheel fl				0	0	0
2.Wheel flange f				0	0	0
3.Wheel flange f				0	0	0
4.Wheel flange f			pindle unit	0	0	0
5.Hoist hook for				0	0	0
6.GRIND-X grind	ing wheel			0	0	0
7. Grinding whee			e type:φ150×25×φ31.75mm	0	0	0
wheel spindle		Cup	type:φ150×55×φ31.75mm	0	0	0
5). Wheel balan						
1.Wheel balancer	with arbor (O.I	Ο.φ50	0:BW-5,φ600:BW-6)	0	0	0
2.Wheel flange f	for GRIND-X m	nicro	balancer	0	0	0
3.Automatic wheel ba	alancer Change	ed to de	dicated wheel guard model	0	0	0
6). Work light						
1.LED light				0	0	0
7). GRIND-X hyd	draulic oil/grin	nding	fluid			
1.GRIND-X hydra	aulic oil	20	ℓ ×10cans	0	0	0
2.GRIND-X grind	ling fluid			0	0	0

Item & Model	5	Specification	DX	iQ	DXNC
8). Specified color			0	0	0
9). Wheel spindle				1	
1.Wheel spindle inverter	Whee	el spindle:7.5kW	0	T -	0
2.Wheel spindle inverter	Whee	el spindle:11kW	0	Standard	0
3.Wheel spindle inverter	Whee	el spindle:15kW	0	0	0
4.wheel spindle motor output increase	11kW	/ 6P	0	Standard	0
5.wheel spindle motor output increase	15kW	/ 6P	0	0	0
	Hydrosta	tic tank with automatic oil		_	_
6.Hydrostatic wheel spindle	l '	ure regulator, with spindle oil	0	0	0
7.Vertical wheel spindle unit	Wheel Rotation 2850/3 With a and an surface	:220mm .spindle motor:2.2kw on speed: 3460min ¹ (50/60Hz) ingle dresser (DRA-5) gle dresser for bottom e (DRA-3). When 50 dth is mounted, 11).2 ired.	0	0	0
8.Vertical wheel spindle inverter	12	00~4500min ⁻¹	0	0	0
10). Table					
1.Cross microfeeder unit			0	_	-
2.Slideways high-precision model (longitudinal/	cross feed)	Minimum increment:	0	0	0
3.Table longitudinal feed NC c	ontrol	0.0001mm	-	_	0
11). Cover		,			,
1.Sliding door table cover	125,15	55,205,126,156,206	0	0	0
2.Wheel guard for vertical whe	el spind	le mounting	0	0	0
12). Oil cooling unit					,
1.Oil cooling pump installed			0	Standard	Standard
2.Oil-cooled wheel head			0	Standard	Standard
13). Instrument					'
1.Elapsed time indicator			0	0	0
2.Calendar timer					0
catchaar tillel			0	0	
3.Grinding time end prediction	on		0	Standard	_
			0 -	_	-
3.Grinding time end prediction 14). Safety measures related	l	v: Cycle completed	<u> </u>	_	_
3.Grinding time end prediction 14). Safety measures related 1.3-color signal tower continuous	l		0 -	_	-
3.Grinding time end prediction 14). Safety measures related	Yellov Red: /		-	Standard	_
3.Grinding time end prediction 14). Safety measures related 1.3-color signal tower continuous ON type	Yellov Red: /	Alarm	-	Standard	_
3.Grinding time end prediction 14). Safety measures related 1.3-color signal tower continuous ON type 2.3-color signal tower	Yellov Red: /	Alarm 1: In cycle 2: Cycle completed	-	Standard	_
3.Grinding time end prediction 14). Safety measures related 1.3-color signal tower continuous ON type	Yellov Red: // Greer Yellov Red: //	Alarm 1: In cycle 2: Cycle completed	0	Standard	-
3.Grinding time end prediction 14). Safety measures related 1.3-color signal tower continuous ON type 2.3-color signal tower	Yellov Red: // Greer Yellov Red: // Greer	Alarm n: In cycle v: Cycle completed Alarm	0	Standard	-
3.Grinding time end prediction 14). Safety measures related 1.3-color signal tower continuous ON type 2.3-color signal tower blinking type	Yellov Red: // Greer Yellov Red: // Greer	Alarm n: In cycle v: Cycle completed Alarm n: In cycle	0	Standard	-
3.Grinding time end prediction 14). Safety measures related 1.3-color signal tower continuous ON type 2.3-color signal tower blinking type 3.Revolving light	Yellov Red: // Greer Yellov Red: // Greer	Alarm n: In cycle v: Cycle completed Alarm n: In cycle	0 0	Standard	0
3.Grinding time end prediction 14). Safety measures related 1.3-color signal tower continuous ON type 2.3-color signal tower blinking type 3.Revolving light 4.Auto shut down function	Yellov Red: // Greer Yellov Red: // Greer	Alarm n: In cycle v: Cycle completed Alarm n: In cycle	0	Standard	0 0
3.Grinding time end prediction 14). Safety measures related 1.3-color signal tower continuous ON type 2.3-color signal tower blinking type 3.Revolving light 4.Auto shut down function 5.Chuck interlock	Yellov Red: / Greer Yellov Red: / Greer Lights up an	Alarm n: In cycle v: Cycle completed Alarm n: In cycle	0	Standard	0 0
3.Grinding time end prediction 14). Safety measures related 1.3-color signal tower continuous ON type 2.3-color signal tower blinking type 3.Revolving light 4.Auto shut down function 5.Chuck interlock 15). Dresser 1.Hydraulic overhead dresser With automatic dressing correction function For 75mm/100mm width	Yellov Red: // Greer Yellov Red: // Greer Lights up an	Alarm n: In cycle v: Cycle completed Alarm n: In cycle nd rotates when the cycle is complete	0 0	Standard	0 0
3.Grinding time end prediction 14). Safety measures related 1.3-color signal tower continuous ON type 2.3-color signal tower blinking type 3.Revolving light 4.Auto shut down function 5.Chuck interlock 15). Dresser 1.Hydraulic overhead dresser With automatic dressing correction function For 75mm/100mm width 16). GRIND-X peripherals	Yellov Red: / Greer Yellov Red: / Greer Lights up at	Alarm n: In cycle v: Cycle completed Alarm n: In cycle nd rotates when the cycle is complete mm/100mm width g points always perform up compensation to eel when the tabletop g cycle is used together.	- 0 0	Standard	- 0
3.Grinding time end prediction 14). Safety measures related 1.3-color signal tower continuous ON type 2.3-color signal tower blinking type 3.Revolving light 4.Auto shut down function 5.Chuck interlock 15). Dresser 1.Hydraulic overhead dresser With automatic dressing correction function For 75mm/100mm width 16). GRIND-X peripherals 1.Warpage correction jig (Gil	Yellov Red: / Greer Yellov Red: / Greer Lights up an	Alarm n: In cycle v: Cycle completed Alarm n: In cycle nd rotates when the cycle is complete mm/100mm width g points always perform evel when the tabletop g cycle is used together. SG master)	- 0 0	Standard	- 0 0
3.Grinding time end prediction 14). Safety measures related 1.3-color signal tower continuous ON type 2.3-color signal tower blinking type 3.Revolving light 4.Auto shut down function 5.Chuck interlock 15). Dresser 1.Hydraulic overhead dresser With automatic dressing correction function For 75mm/100mm width 16). GRIND-X peripherals	Yellov Red: / Greer Yellov Red: / Greer Lights up an For 755 Dressing follow- the wh dressing RIND-X 3	Alarm n: In cycle v: Cycle completed Alarm n: In cycle nd rotates when the cycle is complete mm/100mm width g points always perform up compensation to eel when the tabletop g cycle is used together.	- 0 0	Standard	- 0

Item & Model Specification DX iO DXNC

♦ UPG series is ultra precision model. Please contact us.



Mist collector and coolant system with magnetic separator and with automatic oil temperature regulator



UPG406NC constant temperature chamber model



TWIN-BIX



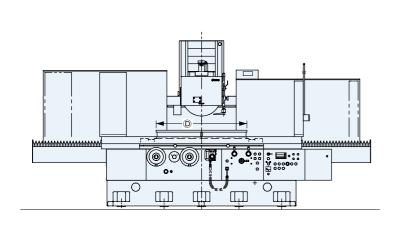
reestanding operation panel (standard of DXNC&UPG)

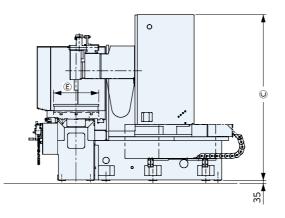
PSG-DX series Specifications

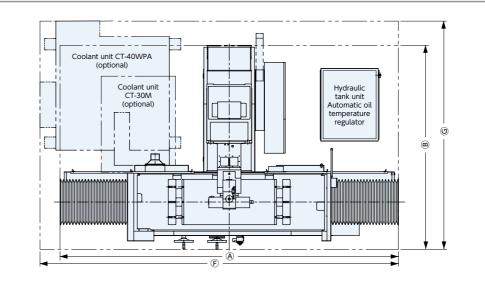
	· • • • • • • • • • • • • • • • • • • •														
	Item	Unit	125DX	155DX	205DX	305DX	126DX	156DX	206DX	306DX	157DX	138DX	158DX	208DX	308DX
	Workpiece grinding range (length x width x height)	mm	1200×500×595	1500×500×595	2000×500×595	3000×500×595	1200×600×595	1500×600×595	2000×600×595	3000×600×595	1500×700×695	1300×800×695	1500×800×695	2000×800×695	3000×800×695
	$\label{thm:maximum travel (table longitudinal } x \ \ column \ cross \ x \ wheel \ head \ vertical)$	mm	1450×560×620	1700×560×620	2250×560×620	3250×560×620	1450×660×620	1750×660×620	2250×660×620	3250×660×620	1750×760×720	1550×860×720	1750×860×720	2250×860×720	3250×860×720
Capacity	Table working capacity (length x width)	mm	1250×500	1550×500	2050×500	3050×500	1250×600	1550×600	2050×600	3050×600	1550×700	1350×800	1550×800	2050×800	3050×800
Capacity	Distance from the top of the table to the bottom of the wheel	mm			595				595				695		
	Standard chuck dimensions (length x width x height)	mm	1200×500×100	1500×500×100	2000×500×100	3000×500×100	1200×600×100	1500×600×100	2000×600×100	3000×600×100	1500×700×100	1300×800×100	1500×800×100	2000×800×100	3000×800×100
	Table load capacity (including chuck ())	kg	1200 (440)	2500 (555)	2400 (740)	2100 (1110)	2500 (530)	2400 (600)	2300 (800)	2300 (1200)	2700 (774)	2700 (700)	2700 (900)	2600 (1180)	2300 (1770)
Table	T-groove width (width x number)	mm×No.		20×3											
(longitudinal feed)	Hydraulic feed rate (average)	m/min			2~25						2~25				
(iorigituulilai leeu)	Longitudinal handwheel feed per revolution	mm			25						25				
	Cross manual feed Feed per handwheel revolution	mm			5						5				
	Feed per handwheel graduation	mm			0.02						0.02				
Column (cross feed)	Traverse feed amount (a.k.a intermittent feed amount)	mm			5~35						5~35				
	Cross automatic feed Bias feed rate (a.k.a continuous feed rate)	mm/min		300~5000							300~5000				
	Feed per handwheel revolution	mm		-	0.1 (×1) /1 (×	10)					0.1 (×1) /1 (×	10)	-		
	Manual infeed Feed per handwheel graduation	mm			0.001 (×1) /0.01	(×10)					0.001 (×1) /0.01	(×10)			
	Automatic infeed (traverse & bias feed) Rough grinding Fine grinding			0.001~0.05 (Rd	ough grinding 15 steps	s, Fine grinding 10 ste	os)			0.001~0.05 (Ro	ough grinding 15 step	s, Fine grinding 10 ste	eps)		
	Number of sparkout	No.			0~5						0~5				
	Rapid feed rate	mm/min			360						360				
Grinding	O.D. x W x I.D.	mm		φ510×50×φ1	127 (75mm width and	100mm width optiona	ıl)			φ510×50×φ1	27 (75 mm width and	100 mm width option	nal)		
wheel	Rotation speed (50/60Hz)	min-1			1000/1200						1000/1200				
	Grinding wheel spindle	kW/P	W/P 7.5/6 (Standard) 、11/6 (Option) 、15/6 (Option) 7.5/6 (Standard) 、11/6 (Option) 、15/6 (Option)												
Motor	Vertical feed (AC servo motor)	kW			0.75						0.75				
	Hydraulic pumps	kW/P	3.7/6		5.5/6		3.7/6	76 5.5/6							
Power	Operation power	-			AC200/220V, 50/60H	Iz 3-phase		AC200/220V, 50/60Hz 3-phase							
1 OWCI	Power consumption (main unit only)	kVA	23.0	25	5.6	26.1	23.0	25.6 26.1 27.0 25.6 26.1				27			
	Width x Depth x Height	mm	4915×3014×2195	5480×3014×2195	6680×3014×2195	9080×3014×2195	4735×3014×2195	5480×3014×2195	6680×3014×2195	9080×3014×2195	5480×3214×2395	4835×3340×2395	5480×3340×2395	6680×3340×2395	8760×3340×2395
Weight	Net weight	kg	7500	8000	9000	12000	7800	8400	9400	12400	10600	10850	10900	12200	16000

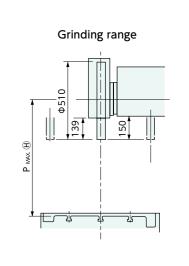
^{*}Machine standard painting color is two tone color. A separate quotation is provided for specified colors.

PSG-DX series External view, Grinding range, Machine size









- *1. C dimension is machine height from machine bottom.
- *2. 35mm is the standard dimension from the floor to the machine bottom when the machine level is adjusted using the standard leveling plate. It may vary depending on the leveling condition.

													·	
Item	Unit	125DX	155DX	205DX	305DX	126DX	156DX	206DX	306DX	157DX	138DX	158DX	208DX	308DX
(A)	mm	4830	5480	6680	9080	4470	5480	6680	9080	5480	4670	5480	6680	8760
(B)	mm		25			2696		2696		3031		31	81	
©	mm			2195			2195			2395				
(D)	mm	1200	1500	2000	3000	1200	1500	2000	3000	1500	1300	1500	2000	3000
(E)	mm		50	00		600		600		700		80	00	
(F)	mm	4915	5480	6680	9080	4735	5480	6680	9080	5480	4835	5480	6680	8760
©	mm	3014					3014			3214	3214 3340			
Θ	mm	850					850			950				

Column type series 13

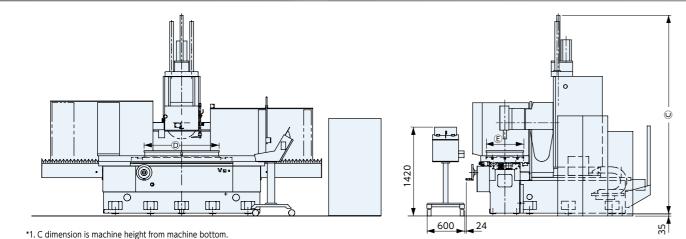
^{*}Power consumption and floor space will change by specifications.

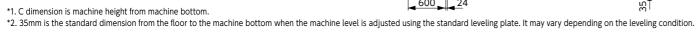
PSG-DXNC series Specifications

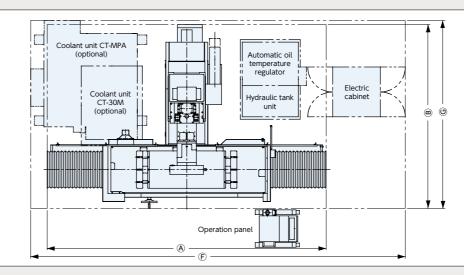
	Item		Unit	125DXNC	155DXNC	205DXNC	305DXNC	126DXNC	156DXNC	206DXNC	306DXNC	157DXNC	138DXNC	158DXNC	208DXNC	308DXNC	
		nge (length x width x height)	mm	1200×500×575	1500×500×575	2000×500×575	3000×500×575	1200×600×575	1500×600×575	2000×600×575	3000×600×575	1500×700×675	1300×800×675	1500×800×675	2000×800×675	3000×800×675	
		al x column cross x wheel head vertical)	mm	1450×552×620	1750×552×620	2250×552×620	3250×552×620	1450×652×620	1750×652×620	2250×652×620	3250×652×620	1750×752×720	1550×852×720	1750×852×720	2250×852×720	3250×852×720	
Capacity		pacity (length x width)	mm	1250×500	1550×500	2050×500	3050×500	1250×600	1550×600	2050×600	3050×600	1550×700	1350×800	1550×800	2050×800	3050×800	
		e table to the bottom of the wheel	mm			575 (Origin position)				75 (Origin position)				675 (Origin position)			
		ions (length x width x height)	mm	1200×500×100	1500×500×100	2000×500×100	3000×500×100	1200×600×100	1500×600×100	2000×600×100	3000×600×100	1500×700×100	1300×800×100	1500×800×100	2000×800×100	3000×800×100	
		(including chuck ())	kg	1200 (440)	2500 (555)	2400 (740)	2100 (1110)	2500 (530)	2400 (600)	2300 (800)	2300 (1200)	2700 (774)	2700 (700)	2700 (900)	2600 (1180)	2300 (1770)	
Table		(width x number)	mm×No.			20×3			20×3								
(longitudinal feed)	Hydraulic feed ra	, , ,	m/min			3~25			3~25								
(10111111111111111111111111111111111111	-	heel feed per revolution	mm			25						25					
	Cross manual feed	Feed per handwheel revolution	mm		0.0	1(×1)/0.1(×10)/1(×	100)					0.01(×1)/0.1(×	10)/1(×100)				
Column		Feed per handwheel graduation	mm		0.0001	(×1) /0.001 (×10) /0.0	1 (×100)					0.0001 (×1) /0.001 (,		
(cross feed)	Feed rate (F code	command)	mm/min			0~5000						0~50					
	Rapid feed rate		mm/min		1250(×25	5%)/2500(×50%)/500	00(×100%)				1:	250(×25%)/2500(×	50%)/5000(×100%)				
	Jog feed rate		mm/min			0~1000						0~10	000				
	Manual infeed	Feed per handwheel revolution	mm		0.0	1(×1)/0.1(×10)/1(×	100)		0.01(×1)/0.1(×10)/1(×100)								
	Maridai iiricca	Feed per handwheel graduation	mm	0.0001(×1)/0.001(×10)/0.01(×100)								0.0001(×1)/0.001(×10)/0.01(×100)				
	Automatic infeed	Rough grinding	mm														
	(traverse & bias f	eed) Fine grinding	mm														
Wheel head	Rough grinding ai	ir cut amount	mm		Setup on	the graphical interactive	ve software				:	Setup on the graphical	interactive software				
(vertical feed)	Fine grinding air of	cut amount	mm														
	Number of sparke	out	No.														
	Feed rate (F code	command)	mm/min			0~2000						0~20	000				
	Rapid feed rate		mm/min		500(×25	%)/1000(×50%)/200	0(×100%)				5	500(×25%)/1000(×5	0%)/2000(×100%)				
	Jog feed rate		mm/min			0~1000						0~10	000				
Grinding	O.D. x W x I.D.		mm		φ510×50×φ127	7 (75mm width and 100	Omm width optional)				φ510×5	0×φ127 (75mm widt	h and 100mm width op	itional)			
wheel	Rotation speed (5	50/60Hz)	min-1			1000/1200						1000/	1200				
	Wheel spindle		kW/P 7.5/6 (Standard) 、11/6 (Option) 、15/6 (Option) 7.5/6 (Standard) 、11/6 (Option) 、15/6 (Option)														
Motor	Vertical feed (AC	servo motor)	kW			1.8						1.8	3				
MOTOL	Cross feed (AC se	ervo motor)	kW			1.8			1.8								
	Hydraulic pumps		kW/P			5.5/6			5.5/6								
Power	Operation power		-			200/220V,50/60Hz 3- ₁	phase					AC200/220V,50					
	· ·	on (main unit only)	kVA		28.7		29.1	28.7	28.7	29.1	30.0	28.7		2.8	23		
		leight	mm	6004×3011×3170	6244×3011×3170	6844×3011×3170	9080×3011×3170	6004×3011×3170	6244×3011×3170	6844×3011×3170	9080×3011×3170	6244×3211×3380	6004×3346×3380	6244×3346×3380	6844×3346×3380	8760×3346×3380	
Weight	Net weight		kg	7500	8000	9000	12000	7800	8400	9400	12400	10600	10700	10800	13000	16000	

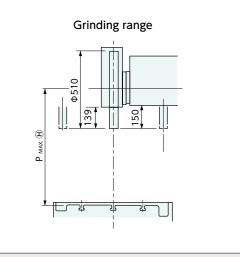
^{*}Machine standard painting color is two tone color. A separate quotation is provided for specific colors. *Power consumption and floor space will change by specifications.

PSG-DXNC series External view, Grinding range, Machine size









Item	Unit	125DXNC	155DXNC	205DXNC	305DXNC	126DXNC	156DXNC	206DXNC	306DXNC	157DXNC	138DXNC	158DXNC	208DXNC	308DXNC
(A)	mm	4830	5480	6680	9080	4470	5480	6680	9080	5480	4670	5480	6680	8760
(B)	mm		27	76		2946		2946		3196	3346			
©	mm			3170				3170			3380			
D	mm	1200	1500	2000	3000	1200	1500	2000	3000	1500	1300	1500	2000	3000
(E)	mm		50	00		600		600		700		80	0	
(F)	mm	6004	6244	6844	9080	6004	6244	6844	9080	6244	6004	6244	6844	8760
© ©	mm	3011					3011			3211	3211 3346			
Θ	mm	830					830			930				

Column type series 15

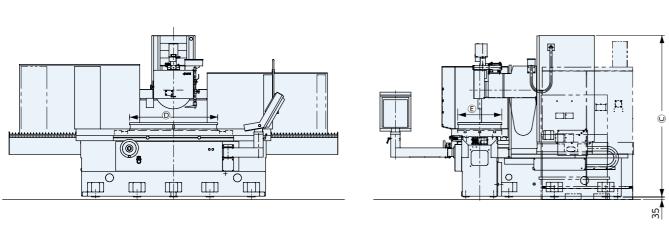
PSG-iQ series Specifications

	Item			Unit	126-iQ	156-iQ	206-iQ	306-iQ	157-iQ			
	Workpiece grinding	range (length x w	ridth x height)	mm	1200×600×575	1500×600×575	2000×600×575	3000×600×575	1500×700×675			
		Table longitu	ıdinal	mm	1450	1750	2250	3250	1750			
	Maximum travel	Column cros	S	mm		65	52		752			
Capacity	Table working	capacity (leng	gth x width)	mm	1250×600	1550×600	2050×600	3050×600	1550×700			
	Distance from top o	of the table to botto	m of the wheel	mm		57	75		675			
	Standard chuck dim	nensions (length x	width x height)	mm	1200×600×100	1500×600×100	2000×600×100	3000×600×100	1500×700×100			
	Table load capa	acity (including	g chuck ())	kg	2500 (530) 2400 (600) 2300 (800) 2300 (1200) 2700 (774)							
Table	T-groove width	h (width x num	nber)	mm×No.	20×3							
(longitudinal feed)	Hydraulic feed	d rate (averag	e)	m/min	2~25							
		Feed per handw	heel revolution	mm	0.01(×0.1)/0.1(×1)/1(×10)/5(×50)							
	Cross manual feed	Feed per handwh	neel graduation	mm		0.0001(×0.1)	/0.001(×1)/0.01(×10	0)/0.05(×50)				
Column (cross feed)	Rapid feed rat	e		mm/min			4000					
(Cross reed)	Feed rate (F c	ode comman	d)	mm/min			0~4000					
	Jog feed rate			mm/min	0~1000							
		Feed per handwheel revolution		mm	0.01(×0.1)/0.1(×1)/1(×10,×50)							
	Manual infeed	Feed per handwh	neel graduation	mm		0.0001(×0	.1)/0.001(×1)/0.01	(×10,×50)				
A	Automatic infeed		Rough grinding	mm			0.0001~0.9999					
	(traverse & bia	(traverse & bias feed)		mm	0.0001~0.9999							
Wheel head	Rough grinding	g air cut amou	ınt	mm	0~0.9999							
(vertical feed)	Fine grinding a	air cut amount	t	mm			0~0.9999					
	Number of spa	arkout		No.			0~99					
	Rapid feed spe	eed		mm/min			600					
	Feed rate (F co	ode command	1)	mm/min			0~600					
Grinding	O.D. x W x I.D.			mm		φ510×50×φ127 (75mm width and 100	mm width optional)				
wheel	Rotation speed	d (inverter)		min-1			400~1500					
	Wheel spindle			kW/P		11/6 (Standard) 、15/6 (O	ption)				
	Hydraulic pum	ips		kW/P			5.5/6					
Motor	Vertical feed (AC servo mot	or)	kW			1.6					
	Cross feed (AC	C servo motor)	kW			1.2					
	Overhead dres	sser (AC serve	o motor)	kW			0.35					
Power	Operation pow			-			0/220V,50/60Hz 3-p					
	Power consumption (main unit only)			kVA	35 37 39				37			
Floor space	Width x Depth	x Height		mm	5952×3937×2195	6192×3937×2195	6792×3937×2195	9080×3937×2195	6192×4137×2395			
Weight	Net weight			kg	7800	8400	9400	12400	10600			

^{*}Machine standard painting color is two tone color. A separate quotation is provided for specific colors. *Power consumption and floor space will change by specifications

PSG-iQ series External view, Grinding range, Machine size

Item	Unit	126-iQ	156-iQ	206-iQ	306-iQ	157-iQ							
A	mm	4470	5480	6680	9080	5480							
B	mm		36	37		3982							
©	mm		2395										
0	mm	1200	1500	2000	3000	1500							
(E)	mm		700										
(F)	mm	5952	6192	6792	9080	6192							
©	mm		4137										
$oxed{\Theta}$	mm		830										



^{*1.} C dimension is machine height from machine bottom.

Standard Accessories

No.		Item	DX	iQ	DXNC
1	GRIND-X wheel (28 x 36	0	0	0	
2	Wheel flange (adaptor)	0	0	0	
3	Necessary tools	0	0	0	
4	Leveling bolt	0	0	0	
5	Leveling plate or anchor	0	0	0	
6	Longitudinal handwheel	0	0	0	
7	Table raise unit	DX • DXNC (157,138,158,208,308)	0	-	0
′	Table faise unit	iQ (all models)	-	0	-
8	Wheel guard with magr	net base	0	0	0
9	Hydraulic unit with auto	matic oil temperature regulator	0	0	0

No.	It	DX	iQ	DXNC	
10	Oil-cooled wheel head	Δ	0	0	
11	Wheel spindle continuous va	Δ	0		
12	Tabletop dresser (with auto	-	0	0	
13	Hydraulic overhead dresser	0	_	-	
14	Hydraulic overhead dresser (with for 50 mm width wheel	1	0	-	
15	Signal towar 2 calor	Yellow: cycle complete	Δ	Δ	
15	Signal tower 2-color	Red: Alarm			

O: Standard model △: Optional model –: Not covered by specification

UPG-NC series Specifications

■ Since the UPG-NC series ultra precision surface grinding machines are specially modified, please contact your sales representative separately.

Longitudinal (variable hydrostatic)	Cross (variable hydrostatic)	Wheel spindle	Wheel dimensions						
mm	mm		mm						
3000	600		φ510×50 (OP100)×φ203.2						
4000	800	Hydrostatic	ψ310^30 (OP100)^ ψ203.2						
3000	800		φ610×100 (OP150) ×φ304.8						
4000	800		ψ610×100 (OP130) ×ψ304.6						

Warpage correction jig SG Master Grinding Data

Front Sic	de Grinding	Measuring point	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Max. difference
Before grinding		μm	0	-42	-84	-56	0	-1	-43	-52	-9	0	-43	-82	-48	-3	84	
Grinding	0.010mm infe	eed x 8times	μm	0	-4	-4	-3	9	0	-11	-4	2	5	-4	-3	-3	12	23
condition	0.003mm infeed x 8times + sparkout x 2times		μm	0	0	1	0	-1	1	1	2	1	1	1	2	2	1	3

Back Side Grinding Measuring point		Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Max. difference	
Before gr	Before grinding			0	58	114	59	-3	12	72	73	1	4	55	96	50	-8	122
Grinding	0.010mm infe	eed x 8times	μm	0	-2	-3	-2	-1	-1	-3	-1	-1	2	-1	-2	0	1	5
condition	•		μm	0	-1	0	0	1	-1	-1	-1	-1	2	-1	-2	0	1	2





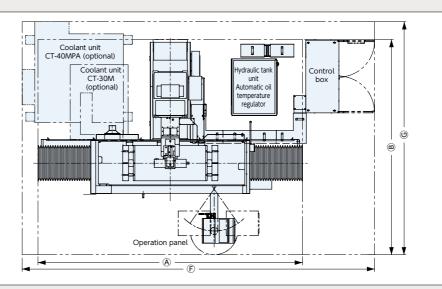


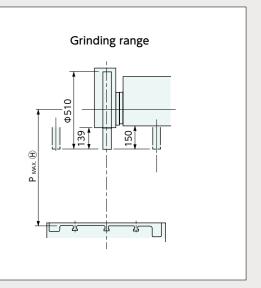




alancer GRIND

GRIND-X hydraulic oil GRIND-X grinding fl





Column type series 17

Column type series 18

^{*2. 35}mm is the standard dimension from the floor to the machine bottom when the machine level is adjusted using the standard leveling plate. It may vary depending on the leveling condition.