PRECISION SURFACE GRINDING MACHINE

PSG/ACC DX
SERIES

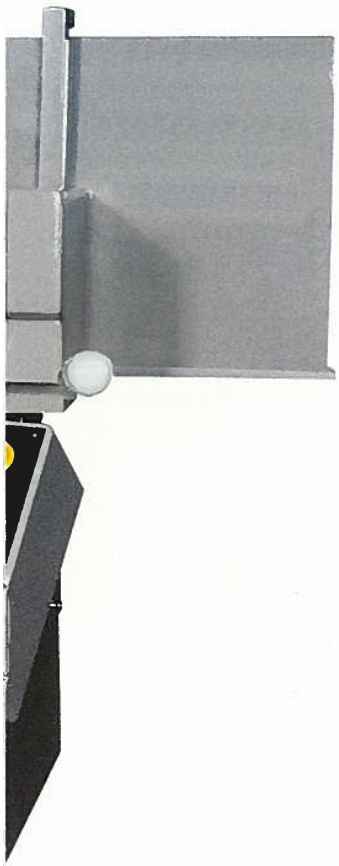
Okamoto

Smartest and Most Popular

Standard & Leading Version of Surface Grinding Machine in the World

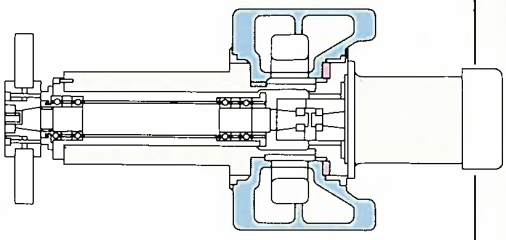
Enjoying all-time high sales as single series and user's greatest credit due to its balanced excellence in workmanship, manipulability and performance, and unrivalled wide supply range. When it comes to Surface Grinding Machine, no one can miss OKAMOTO in his reasonable choice.

*Coolant dust suction system with magnetic dust separator is optional accessory.



Structure profile

Column
Designed to have optimizedly wide construction, and adequate rigidity for heavy duty grinding with strengthen double-wall and 3 taper-gib incorporated on the vertical guide ways as shown below.

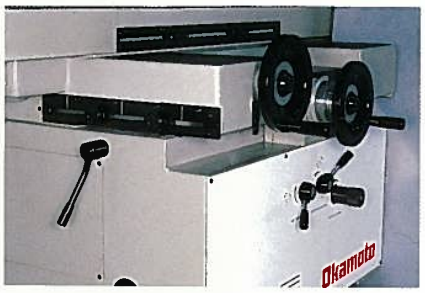


Grinding Wheel Spindle
High power cartridge type of cylindrical shape incorporating super precision angular contact bearing with thick spindle, and maintenance-free thanks to permanent grease seal.

Frame · Saddle · Table
Frame width expanded, saddle taken wide, and table slide face length prolonged.
Table overhang is minimized.
Both cross and longitudinal movement is hydraulically driven.

Longitudinal/Cross Feed Reversal Dog · Non-contact Proximity Switch
Reversal dogs for both longitudinal & cross feed are built inside the machine and non-contact proximity switches are incorporated. So short-stroke table reciprocating become possible and performes precise and quick grinding of small components of die & mold etc.

Cross and Longitudinal Guide Way Surface
V-V shaped slide surface with widespan improves linear accuracy.



Crossfeed Handwheel
Feed amount per handwheel revolution is 5.0 mm, and per graduation 0.02 mm.
Safety interlock disengaging each other manual mode and automatic mode is incorporated. And also able to switch the modes by manually shifting the handwheel back and forth.
Automatic crossfeed takes after the basic mechanism of the former Model PSG-AN series, combination of ball screw and high-precision hydraulic motor which already has reputed evaluation for high reliability.

Hydraulic Operation Panel
All hydraulic operation control can be made at the centered panel in machine front face.

Continuous/Step Crossfeed Switch Lever
Easily able to switch cross feed mode, step or bias, with table feed jointly working.
Continuous feed is steplessly variable in speed, giving conveniences for dressing.

Table Speed Control Lever
Steplessly variable upto max. 25 m/min.

Step Feed Control Knob
Metering step mechanism permits adjustment in the range of 0.5 ~ 20 mm.

Our Own Unique LSI Control System Incorporating AC Servo Motor for Vertical Movement

*Saddle position display is optional accessory

Operation Control Panel Overview

Operation Mode
4 modes are interlockedly provided; STOCK REMOVAL (to set total grinding amount), MANUAL down feed available with 3 kinds graduation of 0.1 μm, 1 μm and 10 μm, RAPID FEED workable with separate 2 push buttons of RAPID FEED UP and RAPID FEED DOWN, and AUTO SIZING (automatic grinding cycle start)

Grinding Mode
3 modes to be selected; one reversal end PLUNGE, both reversal end PLUNGE and TRAVERSE

Vertical Position Display
Under STOCK REMOVAL mode, total grinding amount to be pre-set on the digital display at 0.1 μm increment.
The set amount figure will, as grinding goes on, be decreasing to zero to automatically stop.

Fine Grinding Allowance
Under STOCK REMOVAL mode, FINE GRINDING ALLOWANCE to be pre-set either at 10, 20, or 30 μm.

Down Feed Amount
12-step amount between 1 and 30 μm to be pre-set for rough grinding

Fine Down Feed Amount
11-step amount between 0.1 and 10 μm to be pre-set for fine grinding

Vertical Feed Handle
Under MANUAL mode, pulse generator dial conducts manual down feed at graduation either 0.1 μm, 1 μm, or 10 μm.

Incremental
Manual inching down feed at pre-set increment works any time by pressing the button even during automatic grinding cycle, when pre-set total grinding amount is kept as is.

Spark Out
Pass no. of spark-out to be pre-set upto 5 times.

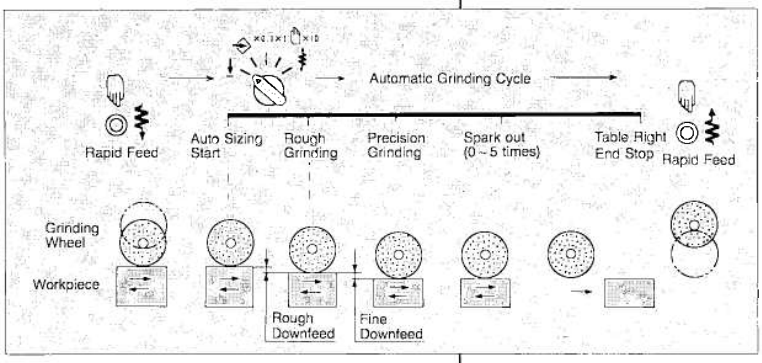
Table Stop
Singly pressing the button makes table to stop at right end of set stroke, eliminating lever operation of TABLE SPEED CONTROL.

Simplifies down feed operation,
Realizes Automatic Grinding Cycle with high precision;
Rough Grinding→Fine Grinding→Spark Out (0～5 times)
→Table Right End Stop, and
Proves Out 0.1 μm Downfeed is Easy Job.

Automatic Lubrication of Gravity Actuated System enabling smooth and compulsion-free lubricating
Lubricating oil is pumped up to oil reservoir at the head of column and then is automatically gravity fed to all guide surfaces, where therefore floating by compelling force will not occur.

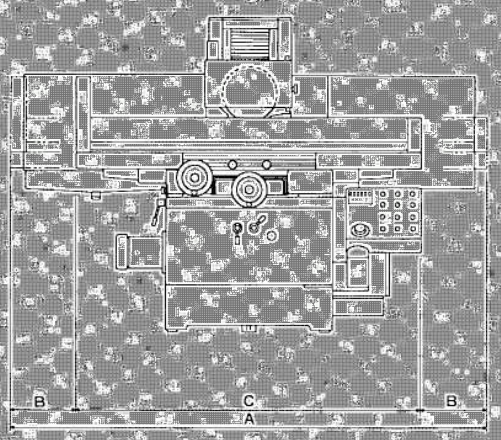
Appropriate Arrangement for Anti-Dust · Splash and Draining Durable against Hard Operating Conditions
The safest measures are taken in order to protect key mechanism; slide cover beneath grinding wheel head to prevent splash and dust cover at cross guide ways to ensure the surface accuracy, etc. and good draining capability is given to table surface and draining pipe, permitting of supplying ample amount of coolant.

Hydraulic Unit permitting effortless maintenance · inspection
Hydraulic unit serving both driving system and lubricating system with the common oil is compactly installed inside the frame to be exposed through the rear cover, thus very much eases maintenance and inspection.

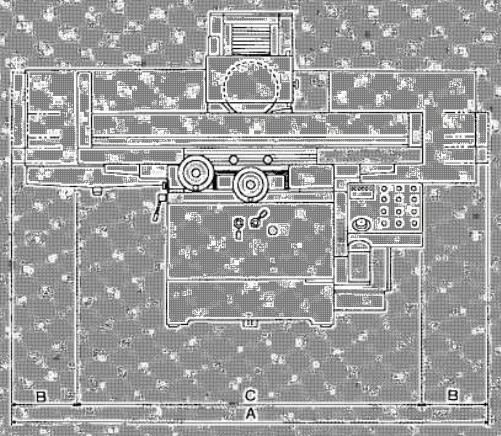


External View

52DX, 63DX, 64DX, 65DX, 84DX



105DX



Model	Dimension	A	B	C	D	E
52DX	mm	2417	325	1755	1579	1808
63DX	mm	2737	375	1975	1929	1808
64DX	mm	2737	375	1975	2203	1808
65DX	mm	2737	375	1975	2448	2069
84DX	mm	3322	475	2360	2211	2115

Model	Dimension	A	B	C	D	E
105DX	mm	4524	575	3380	2546	2059

SPECIFICATIONS

Item			Unit	52DX	63DX	64DX	65DX	84DX	105DX
Table	Table Working Cap. (Length×width)		mm	550×200	605×300	650×400	650×500	850×400	1016×500
	Distance from Table Top to Wheel Underside	ϕ205 mm wheel (50/60 Hz)	mm	47.5~397.5	—	—	—	—	—
		ϕ355 mm wheel (50 Hz)	mm	—	22.5~322.5		22.5~522.5		
		ϕ305 mm wheel (60 Hz)	mm	—	47.5~347.5		47.5~547.5		
	Dim of Standard Chuck (L×W×H)		mm	500×200×80	600×300×80	600×400×85	600×500×95	800×400×85	1000×500×110
	Table Load Capacity Including Chuck		kgf	200	420		700		
	T-Slots (Width×No.)		mm	17×1	17×3				
Longitudinal Feed	Max. Travel		mm	650	750			950	1150
	Longitudinal Feed Rate (Average)		m/min.	0.3~25				3~25	
	Hand Feed per Revolution		mm	47					
Cross Feed	Max. Travel		mm	230	340	440	540	440	540
	Manual Feed	Hand Feed/Revolution	mm	5.0					
		Graduation of Handwheel	mm	0.02					
	Automatic Feed	Intermittent Feed	mm	0.5~12	0.5~20				
		Continuous Feedrate	m/min.	0.1~1.0				0.2~1.0	
Vertical Feed	Auto. Downfeed (Traverse & Plunge Cut)		mm	0.0001~0.03 <15 stages>					
	Manual Down Feed	Hand Feed/Graduation (.1×,1×,10×)	mm	0.0001/0.001/0.01					
		Hand Feed/Rev. (.1×,1×,10×)	mm	0.01/0.1/1.0					
	No. of Spark-Out		time	0~5					
	Vertical Rapid Feedrate		mm/min.	600					
Grinding Wheel	Diameter (50/60 Hz)×Width×Bore		mm	ϕ205×19×ϕ50.8	ϕ355/305×38×ϕ127				
	Speed (50/60 Hz)		rpm	3000/3600	1500/1800				
Motors	Grinding Wheel Spindle		kW/P	1.5/2	3.7/4				
	Hydraulic Oil Pump		kW/P	0.75/4	1.5/4		2.2/4		
	Vertical Rapid Feed & Downfeed		kW	0.4 (AC Servo)					
Power Supply	Required Power Consumption Including Electro-Magnetic Chuck and Coolant System		kVA	5.0	10.0	11.0			
Machine Space	Width×Depth×Height		mm	2417×1579×1808	2737×1929×1808	2737×2203×1808	2737×2449×2069	3322×2211×2115	4524×2546×2059
Weight	Net Weight		kgf	2100	2800	3000	3500	3900	4600

**Standard machine color is brownish light gray (MUNSEL No. 5Y 6/1). Designated color shall be otherwise estimated.*

GRINDING WHEEL PERIPHERAL SPEED

52DX

Frequency	Outside Diameter of Standard Wheel	Spindle Speed	Standard Peripheral Speed
50 Hz	205 mm	3000 rpm	1931 m/min
60 Hz		3600 rpm	2317 m/min

63DX, 64DX, 65DX, 84DX, 105DX

Frequency	Outside Diameter of Standard Wheel	Spindle Speed	Standard Peripheral Speed
50 Hz	355 mm	1500 rpm	1673 m/min
60 Hz	305 mm	1800 rpm	1725 m/min

**Peripheral speed prescribed in the grinding wheel to be used shall exceed the ones written above.*

STANDARD ACCESSORIES

No.	Item	Quantity
1	Grinding Wheel (WA-46-HmV)	1 Pce.
2	Wheel Adapter	1 Set
3	Tabletop Wheel Dresser with Diamond Tool	1 Set
4	Necessary Tools Kit with Box	1 Set
5	Leveling Bolts and Plates	1 Set
6	Splash Cover	1 Set

No.	Item	Quantity
7	Automatic Demagnetizing Controller MA-3	1 Set
8	Spark-Out Device (0～5 times)	1 Set
9	Oil Air-Fan Cooler (for 95DX, 105DX only)	1 Set
10	Both Ends Downfeed Plung Cut Mode	1 Set
11	Automatic Rough-Fine Feed Step Changing Device	1 Set
12	Vertical Position Display (Auto Sizing Device)	1 Set

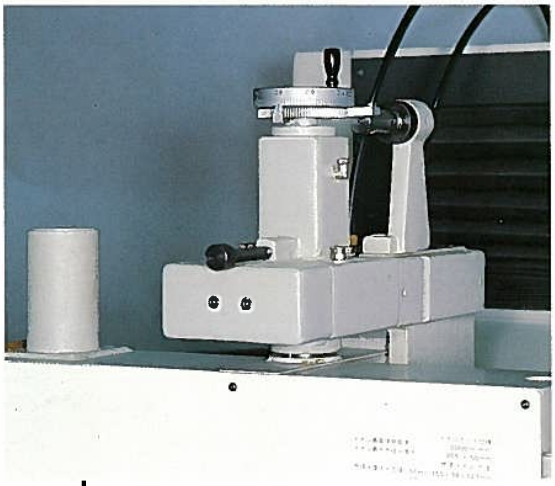
OPTIONAL ACCESSORIES

No.	Item
1	Coolant & Dust Suction System with Magnetic Dust Separator
2	Coolant System with Magnetic Dust Separator & Paper Filter
3	Electro-Magnetic Chuck
4	Electro-Magnetic Chuck, Inclining Type
5	Permanent-Magnetic Chuck, Inclining Type
6	Cylindrical Grinding Attachment
7	Indexing Device, Manual Type
8	Demagnetizer
9	Spare Wheel Adapter
10	Spare Spindle Unit
11	Wheel Balancing Apparatus with Arbor
12	Wheel Balancing Arbor
13	Micro Balancer
14	Wheel Adapter for Micro Balancer
15	Work Light
16	Hydraulic Oil
17	Designated Machine Color
18	Hydraulic Oil Temperature Regulator
19	Diamond Wheel Trueing Device

No.	Item
20	Overhead Wheel Dresser, Manual Type
21	Overhead Wheel Dresser, Hydraulic Type
22	25R Dressing Device
23	30R Dressing Device
24	Angle Dressing Device
25	Side Dressing Device
26	Digital Read-Out Device for Cross Position
27	Micro Feeder for Cross Movement

No. 13 Micro Balancer

No. 21 Overhead Wheel Dresser, Hydraulic Type



GRIND-X
OKAMOTO PRECISION SYSTEMS
Okamoto

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⚠ CAUTION

*When and before using our products, you are requested to well go through the articles on danger, warning and attention for the sake of safety described in operation manual attached to the machine and also in the warning plates mounted on the machine.
*Specifications subject to change without notice.

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