

CHEVALIER®

Grinding / Turning / Milling



CGP Series

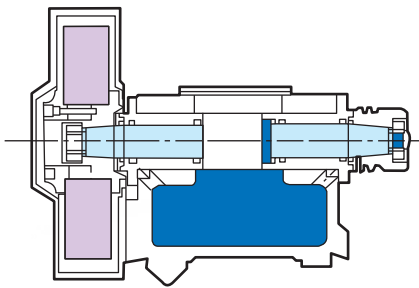
High Precision Cylindrical Grinder

CGP-816 • 1224 • 1240 • 1260 • 1280
CGP-1624 • 1640 • 1660 • 1680

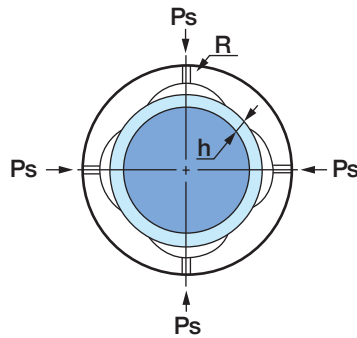
CGP Series

Features

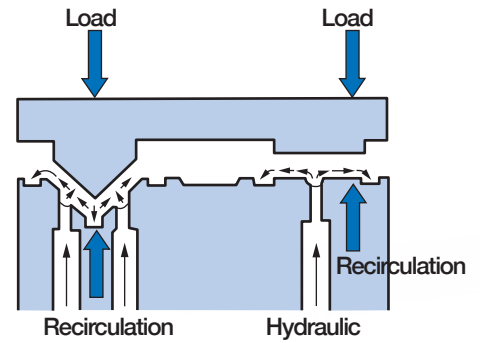
- Friction-free hydrostatic spindle bearing for precision grinding
- Precision ballscrew driven by AC digital servo motor
- Mitsubishi PLC control with touch screen operation
- High-grade Nichrome steel SNCM-220 wheelhead
- Wheelhead repeatability of $\pm 0.000050''$
- Variable speed workhead 10-300 rpm
- Table travels on one V, one flat guideway
- Machine castings are fully ribbed and are made of dense, high-grade Meehanite cast iron
- Tailstock center is capable of absorbing thermal expansion of work piece
- Rough grinding, fine grinding and spark-out in one automated cycle.
- Wheelhead retracts to park unload point after grinding cycle is completed



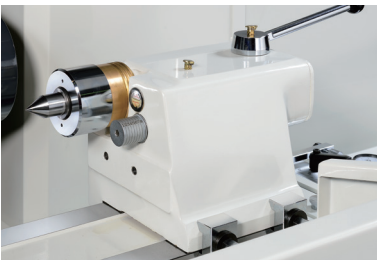
Wheelhead Hydrostatic Spindle Boring



Principle of static pressure bearing



Lubrication principle of slide surface



Tailstock



Work Head



Note: Machine shown with optional accessories.

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Grinding Instructions

Plunge Grinding

Infeed at rough infeed speed, then at a preset point switch to a fine infeed rate, then dwell for a preset time, then at the final depth, wheel will retract to the load unload position.



Shoulder Grinding (Manual Operation)

External and shoulder grinding can be finished at one time. The workpiece is supported by two centers and is available to install the wheel on the right side of the wheelhead. Turn the wheel head to a certain degree to grind.



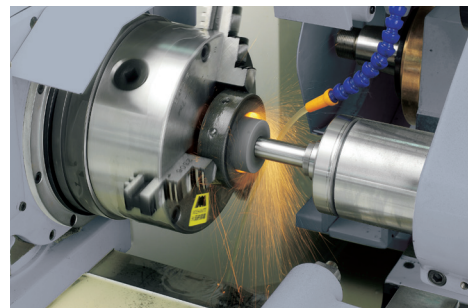
Traverse Grinding

Rough infeed to a preset point, then switch to a fine infeed increment and spark out the desired amount of free passes. Once cycle is finished, wheelhead will retract to a load unload position. Hydraulic driven table provides the workpiece with the most effective longitudinal grinding.



Internal Grinding

To proceed the internal grinding with a hinge type attachment (optional accessory), you may pull down the internal spindle and then fix it as well.



Taper Grinding

The table and wheelhead swivels to facilitate taper grinding.



Face Grinding

Rotate the workhead 90-degrees to face the spindle.

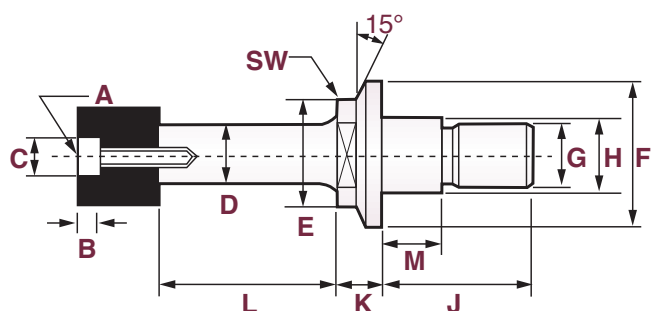


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Internal Grinding Attachment

Internal Grinding Attachment (Optional Accessory)

To switch from O.D. grinding to I.D. grinding, simply swing down the I.D. spindle into position and lock it in place. This enables both O.D. and I.D. precise grinding with a single chucking. The internal grinding spindle is driven by its own 1 HP (0.75 kW) motor.



Unit: mm (")

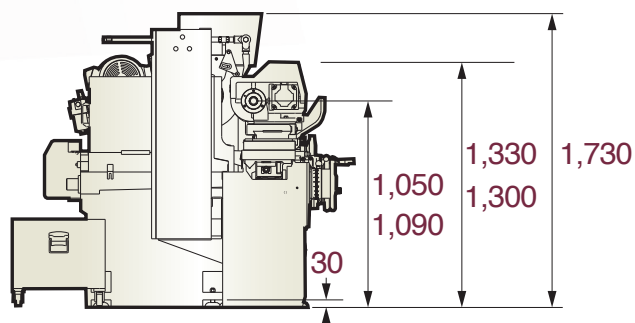
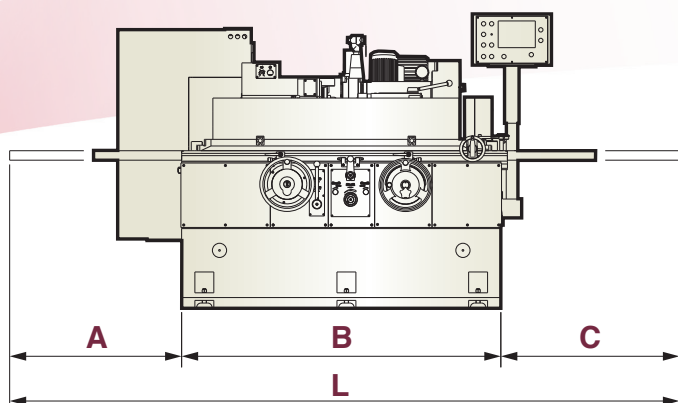
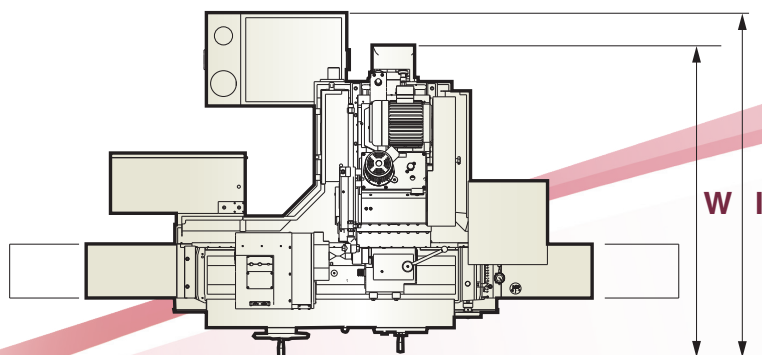
Quills	A	B	C	D	L	E	F	G	H	J	K	SW	M
10,000 rpm	M10	10 (0.39)	10 (0.39)	18	50	32 (1.26)	38 (1.50)	M16 x 1.5	17 (0.67)	29 (1.14)	15 (0.59)	24 (0.94)	12 (0.47)
				22	70								
				25	80								
20,000 rpm	M6	8 (0.31)	8 (0.31)	15	30	24 (0.94)	32 (1.26)	M14 x 1.5	15 (0.59)	27 (1.06)	10.5 (0.41)	19 (0.75)	11 (0.43)
				18	50								
				20	80								
30,000 rpm	M4	8 (0.31)	6 (0.24)	10	25	21 (0.83)	26 (1.02)	M10 x 1.5	10.5 (0.41)	21 (0.83)	9.5 (0.37)	17 (0.67)	9 (0.35)
				12	30								
				16	40								
40,000 rpm	M4	X	X	8	25	17 (0.67)	23 (0.91)	M8 x 1.5	8.5 (0.33)	19 (0.75)	8.5 (0.33)	14 (0.55)	7 (0.28)
				10	30								
				12	40								
50,000 rpm	M4	X	X	6	20	15 (0.59)	20 (0.79)	M7 x 1.5	7.5 (0.30)	18 (0.71)	7 (0.28)	11 (0.43)	7 (0.28)
				7	25								
				8	30								

Application



CGP Series

Dimensional Drawings



Unit: mm (")

Item	A	B	C	L	W	I
CGP-816	590 (23)	1,320 (52)	460 (18)	2,370 (93)	1,450 (57)	1,650 (65)
CGP-1224	800 (31)	1,685 (66)	830 (33)	3,315 (131)	1,650 (65)	1,800 (71)
CGP-1240	1,150 (45)	2,485 (98)	1,090 (43)	4,725 (186)	1,650 (65)	1,800 (71)
CGP-1260	1,265 (50)	3,815 (150)	1,285 (51)	6,365 (251)	1,650 (65)	1,800 (71)
CGP-1280	1,425 (56)	5,210 (205)	1,560 (61)	8,195 (323)	1,750 (69)	2,034 (80)
CGP-1624	800 (31)	1,685 (66)	830 (33)	3,315 (131)	1,650 (65)	1,800 (71)
CGP-1640	1,150 (45)	2,485 (98)	1,090 (43)	4,725 (186)	1,650 (65)	1,800 (71)
CGP-1660	1,265 (50)	3,815 (150)	1,285 (51)	6,365 (251)	1,650 (65)	1,800 (71)
CGP-1680	1,425 (56)	5,210 (205)	1,560 (61)	8,195 (323)	1,750 (69)	2,034 (80)

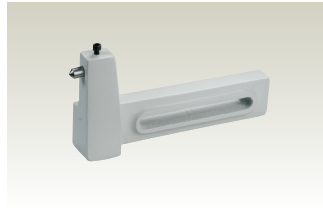
Notice: The manufacturer reserves the right to modify the machine without notice. All the specifications shown above are just for reference.

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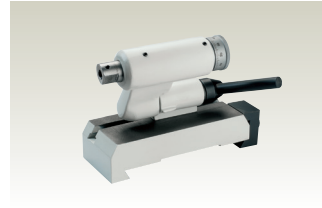
Optional Accessories



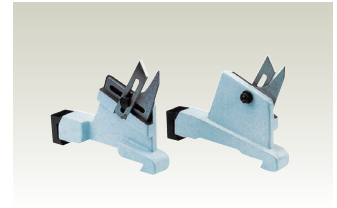
Diamond Tool Holder for Internal and External Grinding (Table Mounted Type)



Diamond Tool Holder (Tailstock Mounted Type)



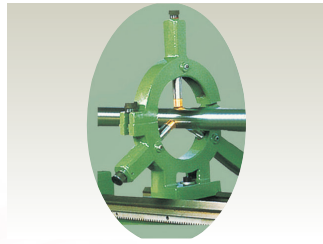
Diamond Tool Holder for Internal and External Grinding (Sideward Open Type)



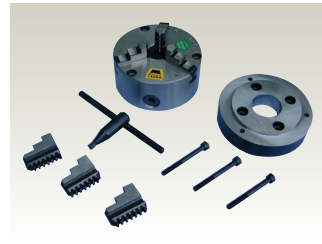
2-Point Steady Rest (Table Mounted Type)



2-Point Steady Rest (For Long Bar Grinding)



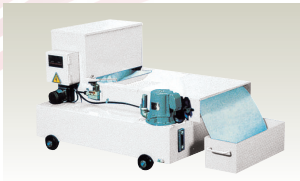
3-Point Steady Rest



Adjustable 3-Jaw Scroll Chuck 5" / 7"



Adjustable 4-Jaw Scroll Chuck 5" / 8"



Coolant System with Paper Filter 20 L / 40 L



Wheel Balancing Stand and Arbor

- Angular Dressing Device
- Radius Dressing Device

Standard Accessories

- Grinding Wheel with Flange
- Diamond Tool Holder (Table Mounted Type)
- Dial Indicator
- Carbide-Tipped Work Centers MT3 8/16 and MT5 12/16 Series
- Coolant Equipment with Paper Filter and Magnetic Separator
- Automatic Lube System
- Spindle Device
- Hydraulic System
- Work Lamp
- Wheel Extractor
- Tool Box with Tools
- Balancing Arbor
- Leveling Screws with Blocks
- Sliding Front Door Located on Table Stand
- Cam-Locked Drive Dogs (6 Pcs/Set)

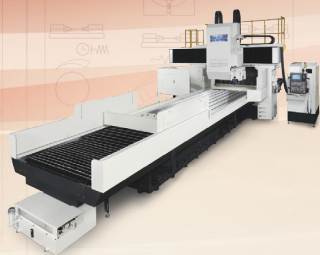


CGP Series

Specifications

Description		CGP-816	CGP-1224	CGP-1240	CGP-1260	CGP-1280	CGP-1624	CGP-1640	CGP-1660	CGP-1680
Capacity	Distance Between Centers	400 mm (15.7")	600 mm (23.6")	1,000 mm (39.3")	1,500 mm (59")	2,000 mm (78.7")	600 mm (23.6")	1,000 mm (39.3")	1,500 mm (59")	2,000 mm (78.7")
	Swivel Over Table	200 mm (7.9")	320 mm (12.6")			420 mm (16.5")				
	Maxi. Load of Centers	60 kg (132 lb)	150 kg (330 lb)			150 kg (330 lb)				
	Maxi. External Grinding	180 mm (7.09")	300 mm (11.8")			400 mm (15.7")				
Wheel Head	Swivel Angel	±30°	±30°			±30°				
	Manual Distance	135 mm (5.2")	160 mm (6.3")			160 mm (6.3")				
	Auto Rapid Traverse	25 mm (1.98")	40 mm (1.57")			40 mm (1.57")				
	Sliding Seat Supplementary	95 mm (3.7"), total 255 mm (10")	95 mm (3.7"), total 255 mm (10")			95 mm (3.7"), total 255 mm (10")				
	Displacement	0.005 mm (0.0002") / 0.001 mm (0.00004")	0.005 mm (0.0002") / 0.001 mm (0.00004")			0.005 mm (0.0002") / 0.001 mm (0.00004")				
	Min. Feeding Count	0.001 mm	0.001 mm			0.001 mm				
	One Turn of Hand Wheel (Graduation.)	2 mm (0.005")	2 mm (0.005")			2 mm (0.005")				
Wheel	O.D. x Width x I.D.	305 x 38 x 127 mm (12" x 1.5" x 5")	355 x 50 x 127 mm (14" x 2" x 5")			355 x 50 x 127 mm (14" x 2" x 5")				
	Speeds (rpm)	50Hz: 2,085 rpm 60Hz: 2,495 rpm	50Hz: 1,783 rpm 60Hz: 1,940 rpm			50Hz: 1,783 rpm 60Hz: 1,940 rpm				
Workhead Spindle	Swivel Angel	120° (+90° , -30°)	120° (+90° , -30°)			120° (+90° , -30°)				
	Center	MT3	MT5			MT5				
	Spindle Speeds	10~300 rpm (Inverter Type)	16~300 rpm (Servo Motor)			16~300 rpm (Servo Motor)				
Tailstock	Swivel Angel	MT3	MT4			MT4				
	Traverse Speed	50/4,000 mm/min	50/4,000 mm/min			50/4,000 mm/min				
Table	Swivel Angel	-3°, +12°	-2°, +13°	-3°, +8°	-3°, +7°	-1°, +7°	-2°, +13°	-3°, +8°	-3°, +7°	-1°, +7°
	Traverse Speed	50 / 4000 mm/min	50 / 4000 mm/min			50 / 4000 mm/min				
	Auto Reciprocate Min. Stroke	8 mm (0.3")	8 mm (0.3")			8 mm (0.3")				
	Feed of One Turn of Handwheel (2-Step)	20 mm (2 mm)	20 mm (2 mm)			20 mm (2 mm)				
Motor	Wheel Spindle	3 HP (4 P)	5 HP (4 P)			5 HP (4 P)				
	Workhead Spindle	1 HP (Inverter)	0.8 kW (AC Servo Motor)			0.8 kW (AC Servo Motor)				
	P40T-1	1 HP (6 P)	1 HP (6 P)			1 HP (6 P)				
	Spindle Lubrication Pump	1 HP (4 P)	1 HP (4 P)			1.7 HP (4 P)				
	Coolant Pump	1/4 HP (2 P)	1/4 HP (2 P)			1/4 HP (2 P)				
	Internal Spindle (Optional)	1/4 HP (2 P)	1 HP (2 P)			1 HP (2 P)				
	Hydraulic Pump	1/2 HP (4 P)	1/2 HP (4 P)			1/2 HP (4 P)				
Tank Capacity	Spindle Lubrication Tank	12 L	12 L			12 L				
	Hydraulic Tank	65 L	65 L			65 L				
	Coolant Tank	100 L	100 L			100 L				
Machine Weight		2,000 kg (4,400 lb)	2,700 kg (5,940 lb)	3,160 kg (6,960 lb)	4,000 kg (8,800 lb)	6,014 kg (13,230 lb)	3,200 kg (7,040 lb)	3,800 kg (8,360 lb)	4,200 kg (9,240 lb)	6,200 kg (13,640 lb)

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Grinding Machines



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Turning Machines



Milling Machines

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