

CNC UNIVERSAL CYLINDRICAL GRINDING MACHINE

UGM360NC
UGM3100NC



Okamoto

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UGM360NC/UGM3100NC

The easy to use control, combined with a precise and robust mechanical design, ensure high efficiency.

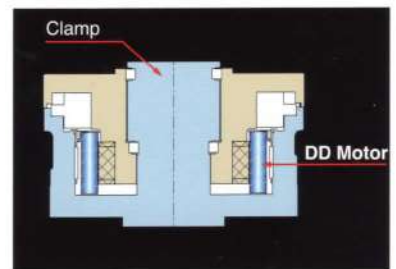
The wheel head is equipped with two large external wheels for cylindrical and face grinding work and one spindle for internal grinding; all mounted on a high accurate automatic indexing base. These combined, allow work-pieces to be ground quickly and efficiently in one setup.

FEATURES

- High rigid single-piece T-shaped machine bed.
- A twin V table slide-way distributes the working force even between the two slide-ways, much better than a V and flat design. Therefore linear straightness is dramatically improved.
- The robust single piece, T shaped bed, fully supports the slide-ways with no overhang, thereby ensuring the highest stability and accuracy.



- Directly coupled AC servomotors and ball screws offer optimal torsional stiffness. This, together with a low friction coating on the slide-ways, ensures precise and smooth motion for many years of service.
- An integrated direct drive B-axis motor offers precise positioning with low maintenance.



- The integrated high precision spindles are temperature controlled to minimize spindle thrust expansion.

OPTIONAL ACCESSORIES

1	Internal grinding spindle 10,000 rpm
2	Internal grinding spindle 20,000 rpm
3	Internal grinding spindle 30,000 rpm
4	Internal grinding spindle 40,000 rpm
5	Internal grinding spindle 50,000 rpm
6	Internal grinding spindle (Wide range type: 10,000 - 42,000 rpm)
7	4" (100 mm) 3 jaw scroll chuck with adaptor
8	5" (125 mm) 3 jaw scroll chuck with adaptor
9	6" (150 mm) 3 jaw scroll chuck with adaptor
10	7" (178 mm) 3 jaw scroll chuck with adaptor
11	8" (200 mm) 3 jaw scroll chuck with adaptor
12	Motor retract type tailstock
13	Extend quill type tailstock (150 mm)
14	2 point steady rest
15	3 point steady rest
16	Work rest
17	Automatic driving dog set (Ø 6 - Ø 80 mm 6 pcs)
18	Work driver
19	Table swivel measuring device
20	Grinding wheel balancer, BW-500 (with arbor)
21	Micro balancer unit (MB-4)
22	Dynamic balancer unit (Auto balance type)
23	Spare wheel adaptor
24	Spare wheel adaptor for Micro balancer system
25	Coolant tank with magnet separator (120 l)
26	Coolant tank with magnet separator, auto paper filter & temperature regulator
27	Jib crane
28	Work light (LED type)
29	Work light (Fluorescent type, 15 W x 2)
30	Lubrication oil

31	O.D. direct sizing device
32	Locator
33	Rotary dress device
34	Gap eliminator
35	Hydrostatic bearing spindle unit for T1 spindle head (with tank and temperature regulator)
36	Scale feedback system (closed loop) for wheel infeed
37	Scale feedback system (closed loop) for table longitudinal feed
38	Programming software, EDELAC Win / iCam

14. 2 point steady rest



16. Work rest



17. Automatic dog set



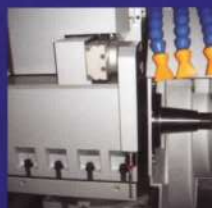
18. Work driver



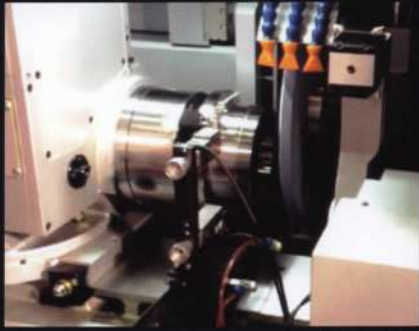
19. Table swivel measuring device



32. Locator

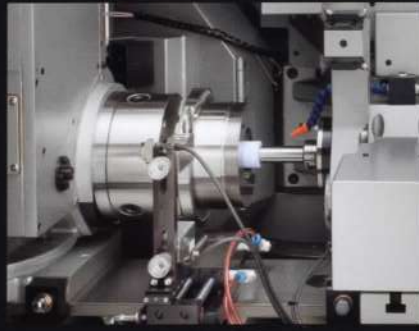


The 3 different spindle types allow a continuous process for high efficient productivity



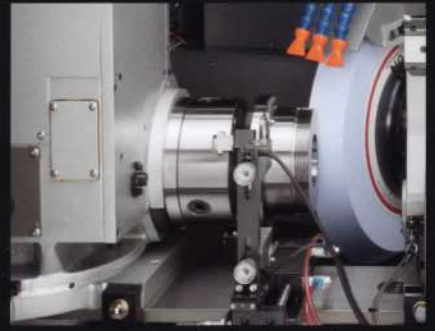
External spindle for cylindrical grinding

T1



Internal spindle for bores

T2



External spindle for face grinding

T3

UGM360NC/UGM3100NC



T1 + T3

Work Sample





T3 + T2

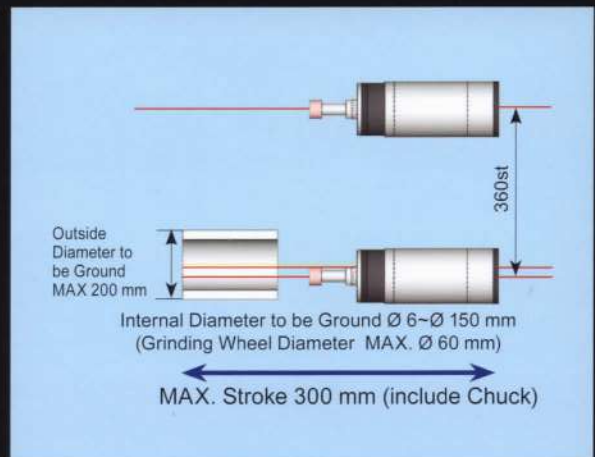
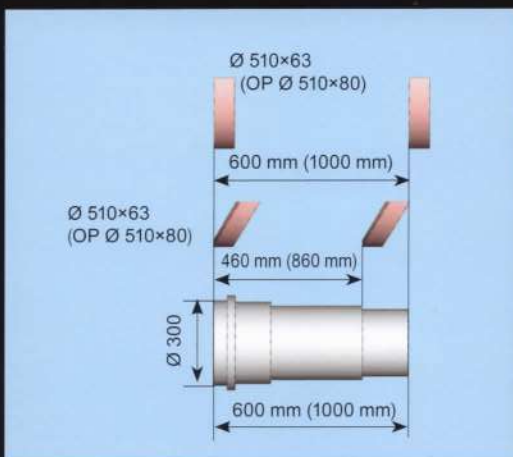


T1 + T2 + T3

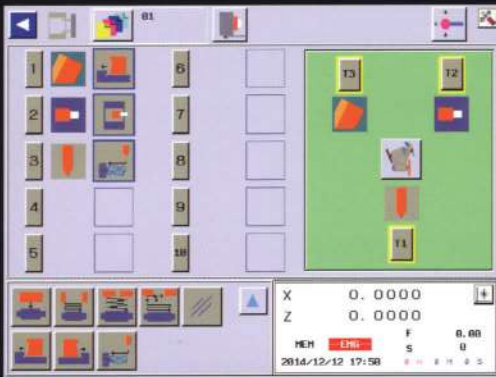


T1 + T3

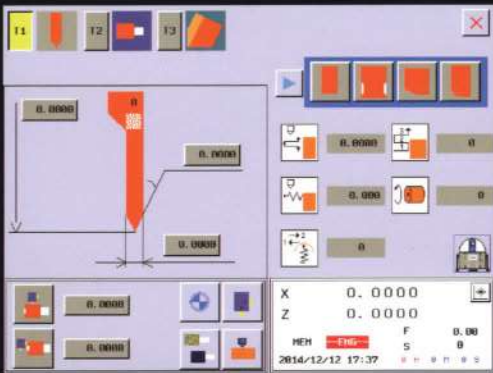
WORKING RANGE UGM360NC



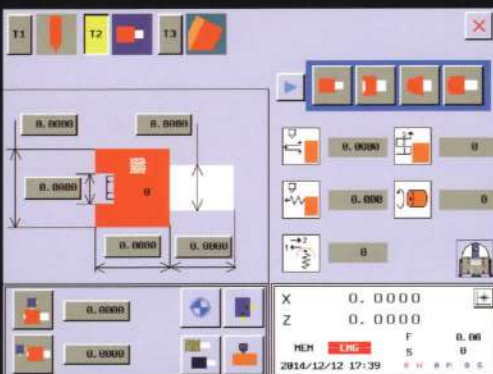
The setting time of complex setups is drastically reduced by using Okamoto's diagrammatic software



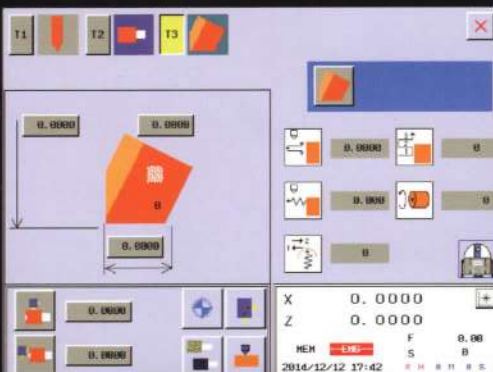
Simultaneous grinding of 10 different steps can be carried out by selecting the appropriate grinding wheel (T1 – T3)



Wheel dressing setup screen for external wheel (T1)



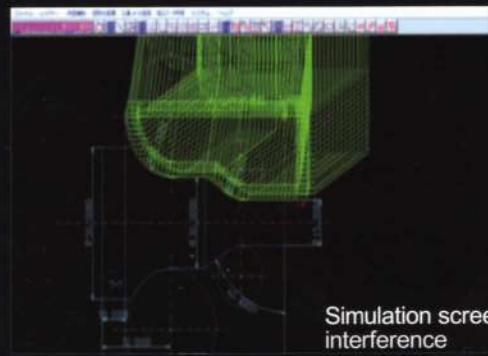
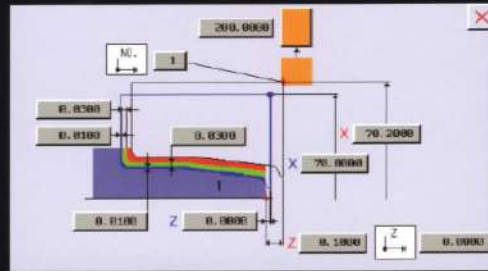
Wheel dress screen for internal wheel (T2)



Wheel dress screen for angle wheel (T3)

Our exclusive software GUI leads the operator through complex setups by presenting information in a simplified visual manner. Even form dressing is made easy. Macro programming and programming by G-code also available.

Contour grinding setup screen for use with EDELAC WIN-CAD / iCam Software contour grinding programme.



Simulation screen for wheel interference

STANDARD ACCESSORIES

Item
Sample grinding wheel (GRIND-X) Ø 510 x 63 (OP80) x Ø 203.2 mm
Plain grinding spindle Unit T1
Angular grinding spindle Unit T3
Internal grinding spindle Unit T2
Inverter for grinding spindles
Wheel adaptor
Carbide tipped centre - 2 pieces
Diamond dressing tool for forming 60°
Fully enclosed table cover with interblocked sliding
Levering bolt and plate
Necessary tools in box
Grease gun
Short circuit breaker
Manual taper-adjust type Tailstock
Wheel spindle revolution meter
Work spindle revolution meter
CNC Unit FANUC 0i-MF

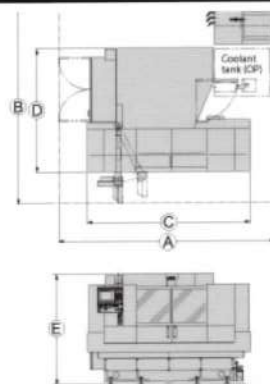
UGM360NC/UGM3100NC

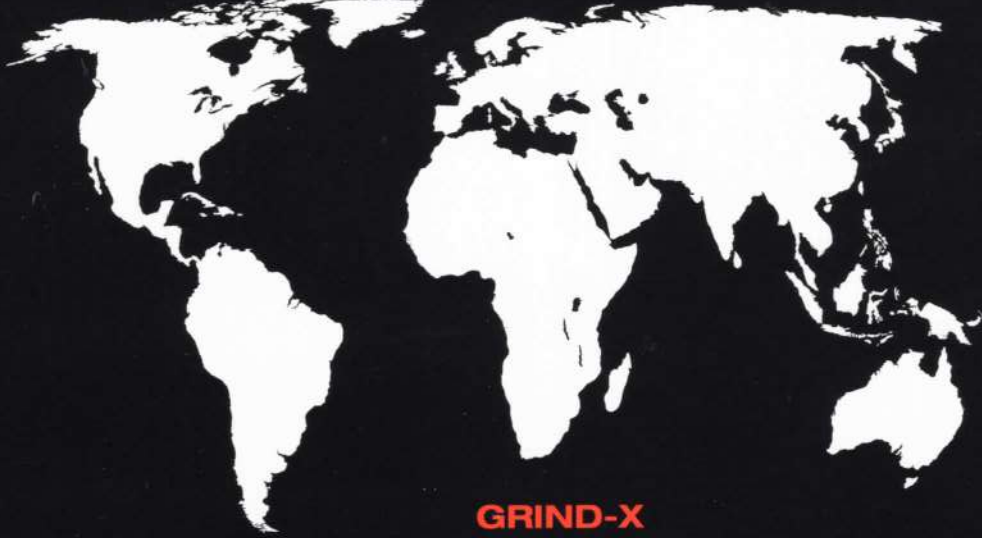
SPECIFICATION

Technical specifications series UGM 360 NC / 3100 NC		Unit	UGM 360 NC	UGM 3100 NC
Workhead	Spindle type		High rigidi type spindle (dead / live centre)	
	Taper for center	MT	No. 5	
	Spindle passage bore	mm	Ø 21	
	Rotation speed	min ⁻¹	10 ~ 500	
	Swivel Angle		Fixed - No Swivel	
Tailstock	Adjustment		Manual adjustment type	
	Tailstock quill movement	mm	30	
	Taper for center	MT	No. 4	
Motor	External wheel-spindle (AC spindle motor)	kW/P	11,0/4 (built-in Motor)	
	Internal wheel-spindle (AC spindle motor)	kW	3.7	
	Work-spindle (C-axis/AC servo motor)	kW	1.8	
	Table feed (Z-axis/AC servo motor)	kW	4.5	
	Wheel infeed (X-axis/AC servo motor)	kW	3.0	
	Wheel swivel (B-axis/servo motor)	kW	5.6 (DD motor)	
	Lubrication pump	W/P	3/4	
	Oil temperature regulator	W	2,800	
	Pump for oil temperature regulator	W	400 1,500 (O.P)	
Grinding Wheel	Diameter x width x bore	mm	Ø 510 x 63 (OP80) x Ø 203.2	
	Rotation speed	min ⁻¹	900 ~ 3,800	
	Max. peripheral speed	m/sec	60	
Grinding Wheel-head (x-axis)	Traveling distance	mm	360	
	Minimum increment (Ø)	mm	0.0001	
	Rapid feed speed (Ø)	mm/min	10,000	
Grinding Wheel-head Swivel (B-axis)	Swivel angle	Deg	+0 ~ -240°	
	Minimum increment	Deg	0.0001	
	Rapid feed speed	min ⁻¹	15	
Table longitudinal movement (Z-axis)	Z-axis travel	mm	850	1,250
	Swivel angle	Deg	0 ~ 8.5	0 ~ 6.0
	Minimum increment	mm	0.0001	
	Rapid feed speed	mm/min	20,000	
Power Supply	kVA	33	36	
Tank Capacity	Lubrication oil	l	3	
	Cooling liquid	l	80	
CNC Unit	Type		FANUC 0i-MF	
	No. of controlled axes		4 (2 simultaneously)	
	Movement		Positioning, Linear, Arc	
Center height	Height from floor to workpiece center	mm	1,135	
Floor space	Width × depth × height	mm	2,780 x 2,750 x 1,900	3,180 x 2,750 x 1,900
Machine weight		kg	7,000	7,900

Machine Out side view

Unit (mm)	A	B	C	D	E
UGM360NC	3,800	3,350	2,780	2,100	1,900
UGM3100NC	4,200	3,350	3,180	2,100	1,900





GRIND-X

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.

When a product manufactured at our factory comes under the Foreign Exchange And Foreign Trade Control Law and is exported or carried overseas, it is necessary to receive permission or approval of the Japanese Government.