

CNC CENTERLESS GRINDERS

CLG 5020/6015

CLG 6020/6025

CLG 6030 (TG)

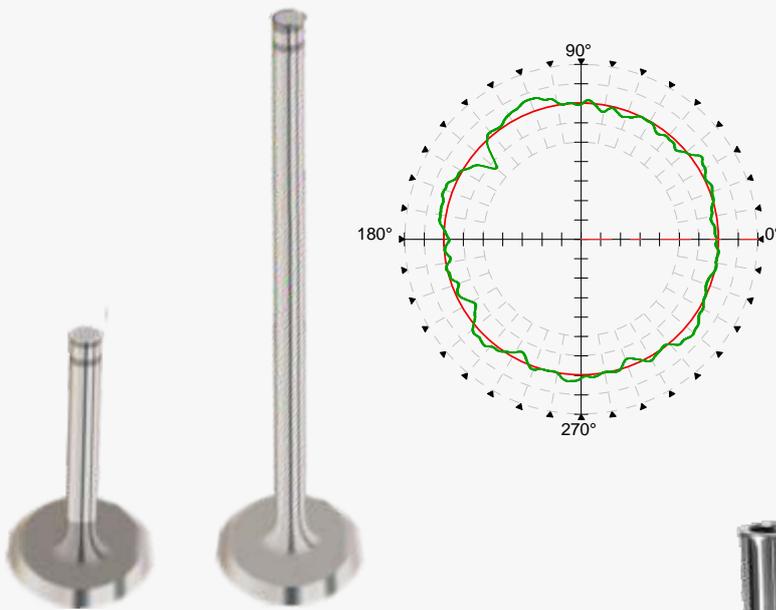


WHO WE ARE

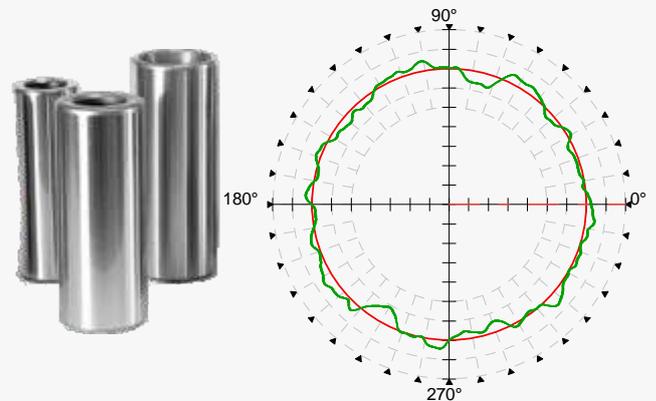
Established in 1973, Micromatic Grinding Technologies Ltd (MGT) have been manufacturing a wide range of External, Internal, Universal and special purpose cylindrical grinders in CNC, PLC and Hydraulic versions. These machines are built to the exacting requirements of our customers from its 4 plants in Ghaziabad near New Delhi and Bangalore in South India. Production CNC Centerless Grinders, Internal Grinders & Crankshaft Journal Grinders have also been added to expand the range of new machines being offered from the 4th new plant at Bangalore started in 2008. Since 2005, MGT has emerged as the market leader with nearly 50% market share in India.

Four decades of building an organisation Culture of ethical & transparent working, combined with the pursuit of excellence, drives Team MGT towards its vision of "Becoming the Best." We at MGT are constantly seeking new avenues to partner, acquire latest technology, skills and quality-centric processes to co-create value & your success. 4000 machines delivered worldwide with many repeat references from a Global customer list, stand today as a testimony to customer's preference for Micromatic Grinding machines.

ULTIMATE PRECISION & FLEXIBILITY IN GRINDING



Work Sample	Engine Valve
Roundness	2 μm (Stock removal 0.15)
Cylindricity	2 μm
Surface Roughness	0.2 $\mu\text{m Ra}$



Work sample	Pins (Thrufeed)
Roundness	0.5 μm
Cylindricity	1 μm
Surface Roughness	0.2 $\mu\text{m Ra}$
Thru Feed rate	1.2M/min

CNC CENTERLESS GRINDERS

These machines are suitable for higher productivity and accuracy.

The process is ideal for large batch production.

The machine is configured for both through-feed & In-feed grinding.

Various types of automation can be integrated with the machine for parts such as Engine Valve, U-J Cross, Piston Pin, Shocker Tube, Hydraulic Valve Spool etc.



CLG-5020/6015



CLG-6020/6025
CLG-6030(TG)

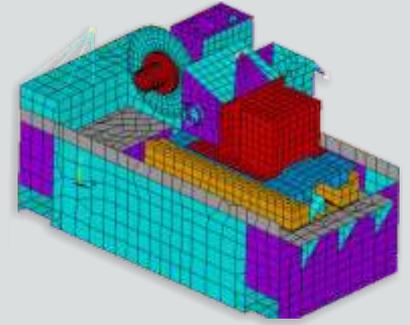
FEATURES

- The ribbed structure of bed ensures better static, dynamic rigidity & vibration damping.
- Rigid out board support bearing for regulating wheel spindle.
- Heavy duty, pre-loaded high precision roller guide ways for In-feed movement
- Grinding Wheel & Regulating Wheel spindles are provided with Antifriction bearing and has undergone FEA analysis for maximum load in dynamic condition.
- Two axes CNC Grinding wheel dresser for any profile.

FEATURES

Finite element analysis

- FEA was done for all critical parts and sub assembly
- Dynamic and static analysis was conducted
- Prototype testing - stringent regulation test related to quality & reliability done as per Global Standards



Machine base

- High quality cast iron machine base is heat treated and stress relieved before machining
- Ribbed structure (Honeycomb pattern) is designed for better static, dynamic rigidity and vibration damping



Regulating wheel head

- Wheel spindle runs on grease packed precision roller bearings
- Rigid outboard support is provided for maximum rigidity and life
- Speed can be varied with inverter drive
- Power transmission is through worm & worm wheel
- RW tilting with respect to horizontal axis: $+5^{\circ}$ to -3° for through feed grinding
- RW horizontal adjustment $\pm 5\text{mm}$ for finer job setting



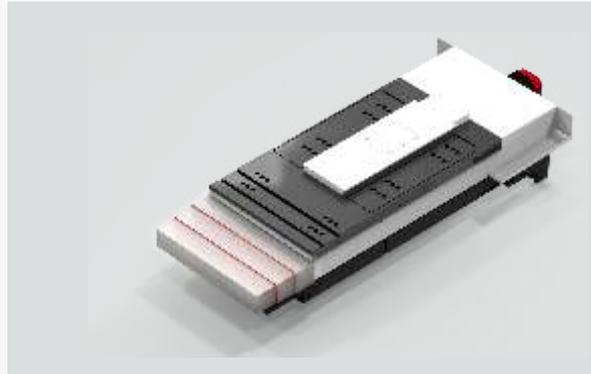
Grinding wheel head

- Fixed type wheel head on machine bed ensures maximum rigidity
- Wheel spindle runs on grease packed high precision antifriction / hydro-dynamic bearings
- Special labyrinth and seal arrangement avoids coolant & dust entry inside the wheel head
- Pulleys are dynamically balanced to reduce vibration
- Spindle type auto dynamic balancer is provided as optional
- CLG-6030 (TG) is provided with twin grip spindle for high rigidity and better part quality



Main in-feed axis Slide

- Robust construction with pre-loaded LM guide ways for rigidity, accurate and precision positioning
- The pre-loaded $\varnothing 63$ ball screw for higher rigidity, accurate and precision drive system



Regulating wheel in-feed axis

- Micro feed adjustment unit is 0.001 mm to meet high accuracy requirement & accurate job setting
- Dovetail slide way on the upper slide ensures smooth and accurate movement. It is lubricated by a centralized lubricator
- The slide ways on the slide unit are coated with Turcite lining to ensure stick-slip free movement



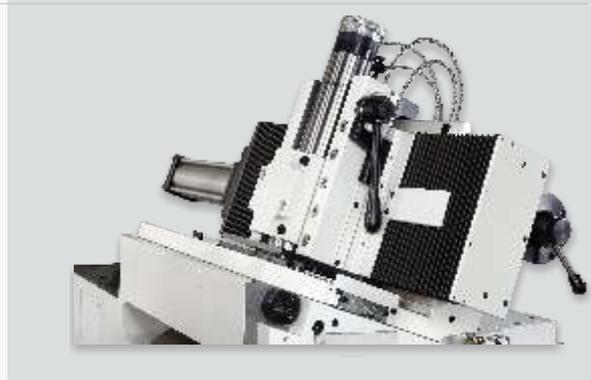
2 axes grinding wheel dresser

- Two axis CNC Dresser for Grinding Wheel
- Anti-friction M/V guide ways for traverse axis and LM guide ways for In-feed axis for better rigidity & accuracy
- Maximum profile accuracy through CNC Dresser
- Diamond roll for profile dressing (Optional)
- Rotary disc dresser (Optional)



Regulating wheel dresser

- Hydraulic template type profile dresser for regulating wheel dressing
- 2 axes CNC dresser (optional)

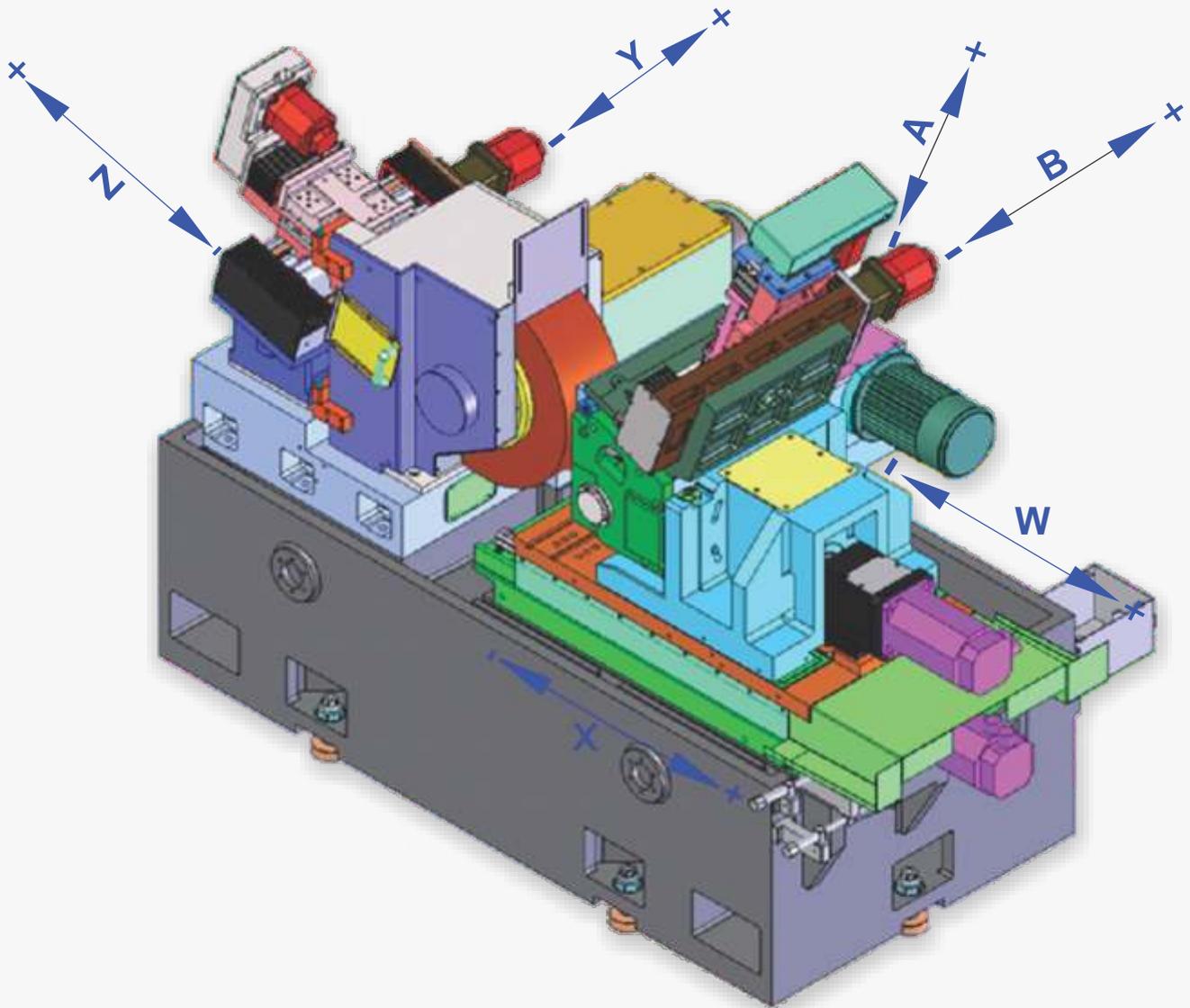


Work rest

- Easy to set, adjust and replace work rest blade
- Blade is provided with carbide tips



AXIS CONFIGURATION



3 axis (standard)

- Main in-feed (X), grinding wheel dresser traverse (Y) and dresser feed (Z)

1 axis (optional)

- Main in-feed (X) (only for through feed applications)

6 axis (optional)

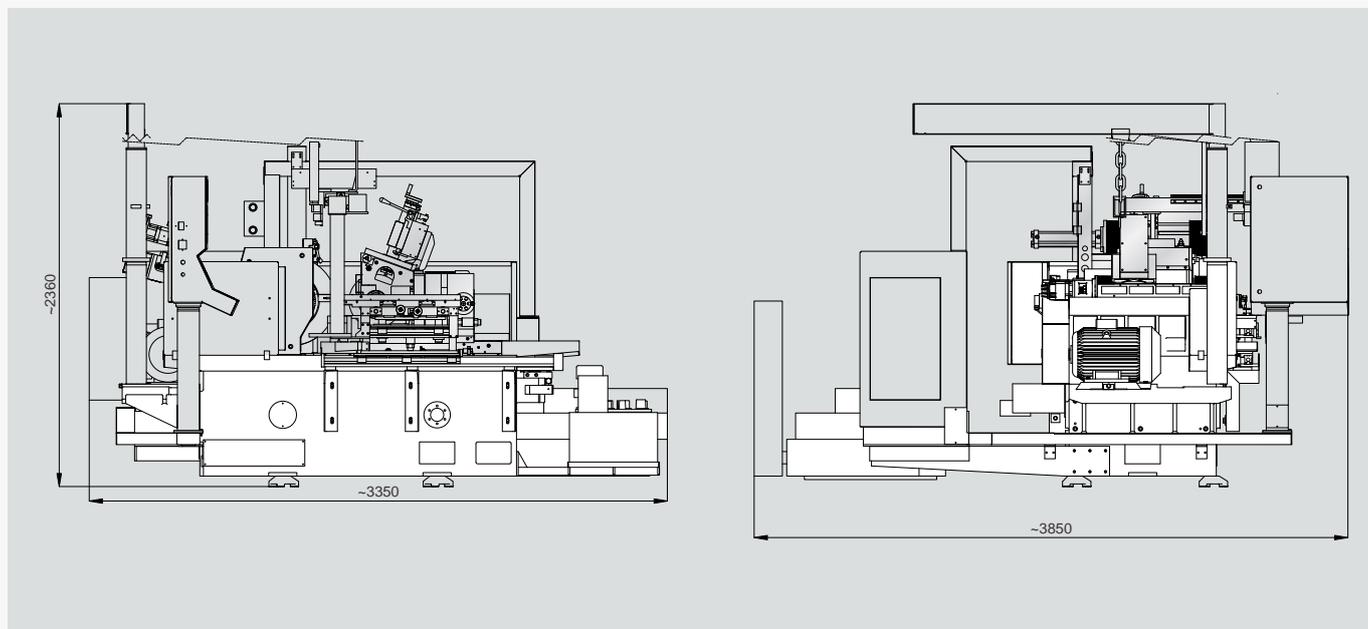
- Main in-feed (X), grinding wheel dresser traverse (Y) and dresser feed (Z)
- In-feed housing slide (W), regulating wheel dresser traverse (B) and in-feed (A).

OPTIONAL ACCESSORIES

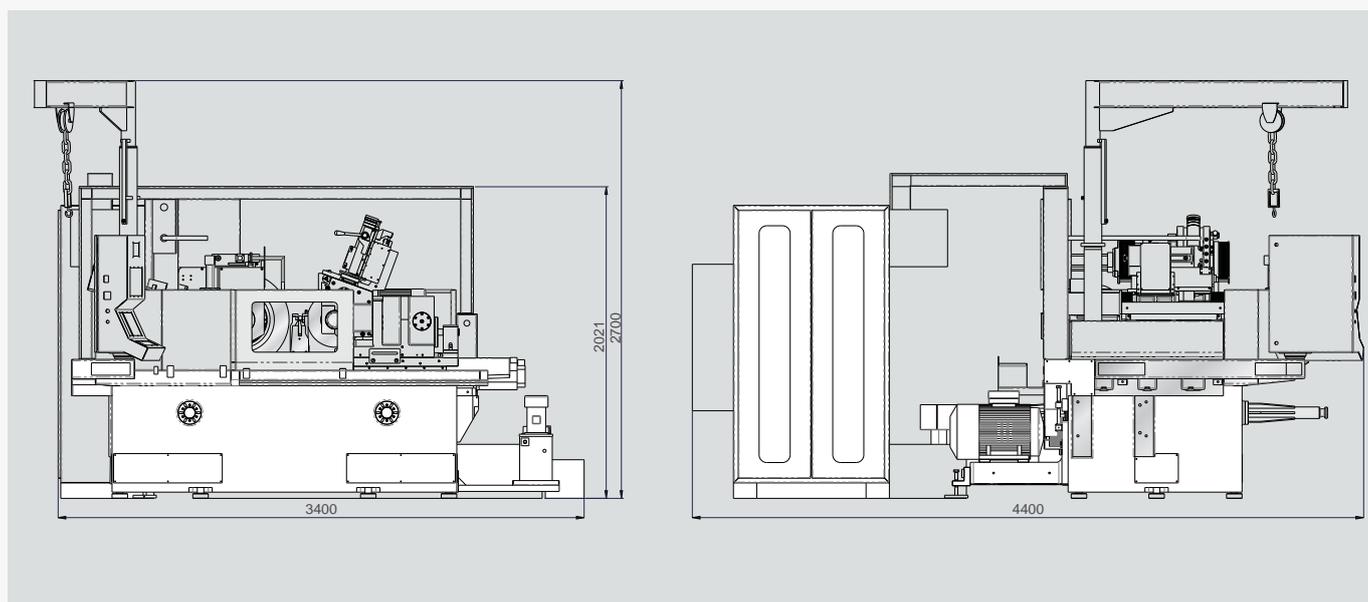
- Dynamic wheel balancer for grinding wheel
- Regulating dresser with CNC control
- Diamond roll dresser
- Linear scale for X, Y, Z axes
- Rotary disc dresser
- Post process gauging
- Rotary dressing system for diamond wheel

MACHINE LAYOUT

CLG-5020/6015



CLG-6020/6025/6030 (TG*)



* Twin Grip

APPLICATIONS



Plunge Feed Grinding



Through Feed Grinding

AUTOMATION

- Auto loading/unloading equipment for in-feed grinding (Optional)
 - Engine valve Automation
 - Gantry type loading/unloading system
- Auto loading/unloading equipment for Thru feed grinding (Optional)
 - Vibratory bowl feeder for small work pieces
 - Roller/Belt conveyor for round tubes and bar



SPECIFICATIONS

		CLG-5020/6015	CLG-6020/6025	CLG-6030 (TG)*
Capacity				
Minimum - maximum	mm	02-60	3-120	3-120
Max. length in plunge grinding	mm	195/145	195/245	295
Center height of wheel from floor	mm	~1050	~1150	~1150
Grinding Wheel				
Dia. x Width x Bore	mm	Ø510 x 200 x 254 Ø610 x 150 x 304.8	Ø610 x 200 x 304.8 Ø610 x 250 x 304.8	Ø610 x 305 x 304.8
Minimum dia.	mm	Ø370** (410**)	Ø410**	Ø410**
Max. wheel surface speed	m/s	45	45	45
Grinding wheel power	kW	11 (15)	22 (30)	30
Regulating Wheel				
Dia. x Width x Bore	mm	Ø305 x 200/150 x Ø127	Ø350 x 200/250 x Ø152	Ø350 x 305 x Ø152
Minimum dia.	mm	Ø240**	Ø270**	Ø270**
Speed Range	rpm	10- 210	10- 210	10- 210
Regulating wheel tilting	degree	-3° ~ +5°	-3° ~ +5°	-3° ~ +5°
Motor power	kW/rpm	1.5/1500	2.2/1500	2.2/1500
Infeed Slide				
Input resolution	mm	0.0001	0.0001	0.0001
Minimum increment/pulse	mm	0.0005	0.0005	0.0005
Swivel of in-feed slide	degree	±1°	±1°	±1°
Servo motor	Nm	11/12	18/22	18/22
Feedback system	std: Motor encoder, Opt: Linear encoder			
Grinding wheel Dresser	2 Axes CNC			
Least count	mm	0.001	0.001	0.001
Servo motor - both axes	Nm	3/4	3/4	3/4
Regulating wheel dresser	Copying template design			
Sleeve dia.	mm	50	60	60
Feed movement increment on dia. - manual knob	mm	0.005	0.005	0.005
Traverse movement speed	mm/min	50- 500	50- 500	50- 500
General				
CNC control system	SIEMENS/FANUC			
Operation voltage	volts	415 ± 10 % AC 3 phase		
Machine weight	kg	5000 (Approx)	8000 (Approx)	8000 (Approx)

* Twin grip spindle

** Minimum wheel diameter may vary depending on Automation and Toolings

Since continuous development is taking place, design and specifications are subjected to change without prior notice and information

Colour shown in picture may not match with actual colour due to printing limitations

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