



HYDRAULIC  
**GRINDERS**

**Ace Micromatic**  
Group

# WHO WE ARE

## 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.

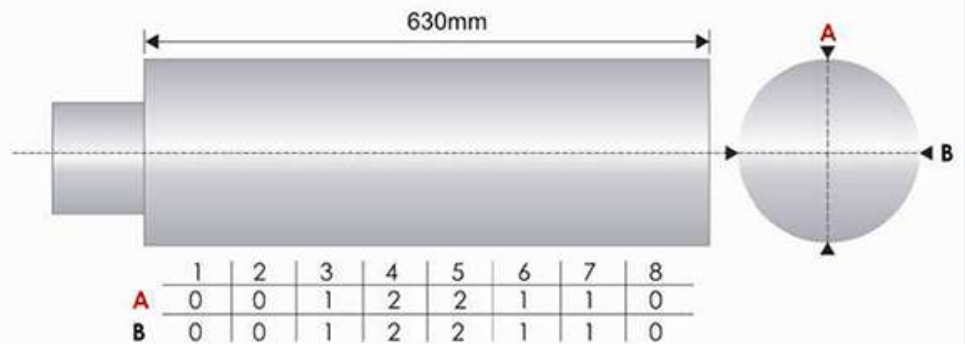
Four decades of building an organisation Culture of ethical & transparent working, combined with the pursuit of excellence, drives Team MGT towards its vision of "Becoming the Best." We at MGT are constantly seeking new avenues to partner, acquire latest technology, skills and quality-centric processes 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



Surface Finish : Ra 0.16 $\mu$

Cylindricity  $\lambda$  3 $\mu$  / 630mm

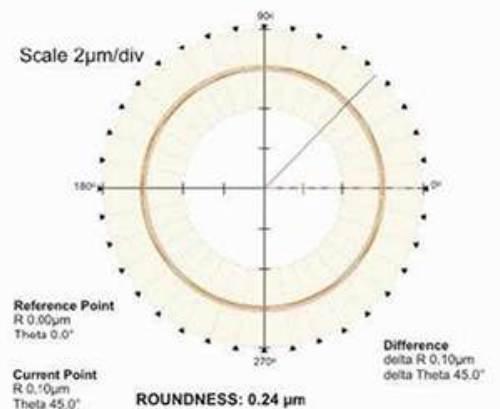


Test Piece

All readings are in  $\mu$ m



Test Piece





# ECO200

High performance, compact, economical model **ECO 200** is ideally suitable for grinding of small size high precision components for tool room & small batch production.



# GC350

**GC 350** series hydraulic grinders are used for precision tool room & production application for medium size components.



# GCH440

Heavy duty model **GCH 440** series cylindrical Grinders are used in diverse heavy-duty production and tool room grinding applications. These grinders are available in both external and universal version.



## FEATURES

- Robust cast iron box structured design of machine bed ensures high static and dynamic stability
  - A guaranteed roundness accuracy < 2 microns is standard on live spindle
    - Precision SWISS TYPE hand scrapped V & Flat table guideways with continuous lubrication for stick-slip free movement and longer life
    - Repeatability of wheel head slide  $\pm 0.001$  mm

## Wheel Head

- The wheel head spindle runs in high precision multipoint hydrodynamic bearings which gives very high rigidity & excellent damping (as an option, spindle with high precision angular contact bearings is also available).
- The spindle is made of Nitriding steel, especially heat treated to achieve very high dimensional stability, accuracy and long life.

## Internal Grinding Spindle

- In ECO 200 this unit is on independent slide which can be quickly brought into the grinding position.
- In GC 350 & GCH 440 series this unit is swing down type with its independent drive motor. It can be quickly brought down into grinding position.
- Safety Interlock is provided to ensure that internal spindle doesn't get ON if External operation is in process.

## Work Head

for Eco 200 and GC 350

- Cartridge type multipoint Hydrodynamic bearing spindle is standard on universal model suitable for live and dead centre grinding.
- As an option workhead spindle running on precision antifriction bearings for both between centre and live spindle grinding.

for GCH Series

- Workhead spindle running on precision antifriction bearings for both between centre and live spindle grinding.

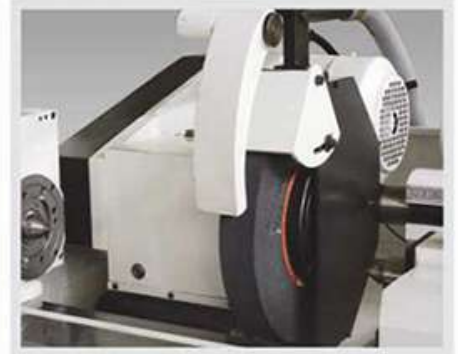
Guaranteed roundness accuracy

- 0.002 mm on standard Hydrodynamic workhead.
- 0.001/ 0.0005 mm on special hydrodynamic workhead is available as an option.

GC 350



ECO 200



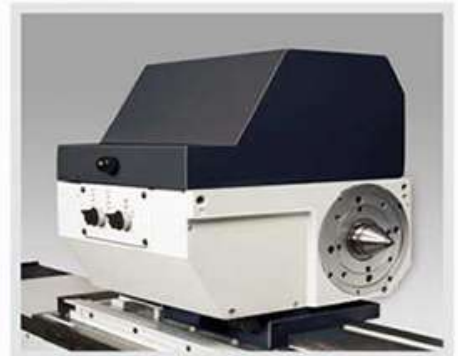
ECO 200



GC & GCH SERIES



Work Head





## Table

- V & Flat guideways with turcite are provided as standard feature of the machine.
- Up to 30 degree table swivel arrangement for grinding of steep tapers (Eco 200 model only).



TABLE SWIVEL (ECO 200)

## Tailstock

- Rigid tailstock.
- Quill moves in special speith bushings. This design facilitates quick adjustment of running clearance for maintenance.
- Optional Features.
  - Microtaper adjustment for fine taper correction.
  - Hydraulic actuation for ease of job loading and unloading.



TAILSTOCK



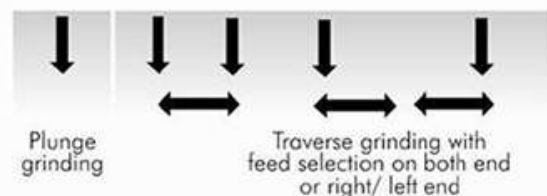
MICRO TAPER ADJUSTMENT

## Automatic Grinding Cycle

- Single lever operation of grinding cycle
- Automatic Grinding Cycle
  - Rapid Infeed
  - Grinding Infeed - rough & fine selection
  - Sparkout time - 0~ 60 sec
  - Rapid retraction of wheel head slide and feed handwheel to grinding set position
- Pre-select Grinding Cycle



CONTROL PANEL



## ACCESSORIES



2 POINT STEADY REST



3 POINT STEADY REST



SIDE &amp; ANGLE DRESSER



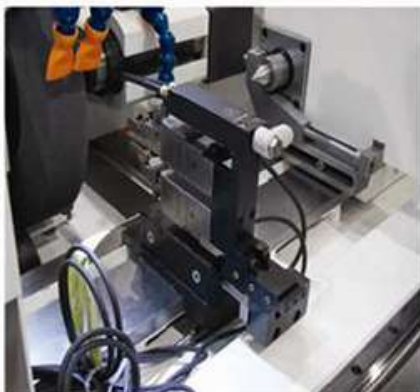
COOLANT SYSTEM



BALANCING STAND



WHEEL HEAD MOUNTED DRESSER



INPROCESS GAUGE



RADIUS DRESSER



MIRO DRESSER



DIGITAL READ OUT



SINE BAR



# SPECIFICATIONS

DESCRIPTION	UNIT	ECO - 200 E/U	GC U / E 350			GCH U / E 440		
<b>CAPACITY</b>								
Swing over table	mm	200	350			440		
Admit Between Centre (ABC)	mm	400	630	800	1200	800	1600	2000 <sup>5</sup>
Grinding length	mm	400	500	750	1150	750	1550	2000
Grinding Diameter (Max. / Min. OD)	mm	100 / 6**	160 / 6**			250/6**		
Grinding Diameter (Max. / Min.ID)	mm	85 / 6**	140 / 6**			200.6**		
Max. weight of job between centers	kg	50	80			250		
*Max. weight of job on chucking application (Including Chuck weight)*	kg	30	50			80		
<b>WHEEL HEAD</b>								
Grinding wheel size (ODxDxWidth)	mm	350x127x50 <sup>†</sup>	400[500]* x 127[203.2] x 50 [80] <sup>†</sup>			(U- 500x203.2x80 <sup>†</sup> ) [E-600X254X80(100) <sup>†</sup> ]		
Minimum usable size of Grinding Wheel (OD)	mm	300 Only possible in straight grinding.	300 [360 with 500 mm wheel]			400 [440 with 600 mm wheel]		
Spindle Speed	rpm	1800 - 2000 (33 mps)	1430-1870 (with 400mm wheel & 33mps) 1250-1650 (with 500mm wheel & 33mps) 1700-2200 (with 500mm wheel & 45mps)			1260-1405 (with 500mm wheel & 33mps) 1560-1810 (with 500mm wheel & 45mps) 1050-1160(with 600mm wheel & 33mps)		
Spindle motor power	kW	3.7	3.7 [5.5]			7.5[11]		
Peripheral (surface) speed	m/sec	33	33 [45]			33 [45]		
Rapid approach	mm	40	50			50		
Infeed with hand wheel	mm	20	20			225		
Max. Plunge feed on Dia. (auto)	mm	1.7 [3.4]	1.7 [3.4]			1.7[3.4]		
Minimum increment on diameter	mm	0.001	0.001			0.001		
Infeed rate on diameter (coarse/fine)	mm/min	0.015 - 6 / 0.015 - 3	0.015 - 6 / 0.015 - 3			0.015 - 6 / 0.015 - 3		
<b>TABLE</b>								
Table speed	m/min	0.1 - 5	0.1 - 5			0.1-3.5		
Table stroke	mm	450	650	850	1250	850	1650	2100
Minimum automatic travel	mm	2	2			2		
Maximum swivel of table	deg.	-2° to + 30°	-3° to 12°	-3° to 9°	-1° to 7°	-3° to 9°	-1° to 6°	-1° to 4°
<b>WORKHEAD</b>								
Taper bore	mm	MT-4	MT-5			MT 5		
Spindle speed	rpm	90-1000	56-630 ( 8- steps)			28 ~ 312 (8 Steps)		
Spindle motor power (In 2 Steps)	kW	0.28/0.37	0.25/0.5			1.5 / 2.2		
<b>TAIL STOCK</b>								
Centre taper	no.	MT-3	MT-4			MT-5		
Quill travel	mm	25	40			40		
Taper Correction Range (Optional)	mm	[±0.03]	[±0.04]			[±0.040]		
<b>HYDRAULIC UNIT</b>								
Tank capacity	Litre	40	40			70		
<b>INTERNAL GRINDING (only for GCU)</b>								
Std. Spindle Size (Dia x Length (Max. rpm)	mm (rpm)	60 X 250 (18000)	60 X 250 (18000)			80X250(12C00)		
Optional spindle (Dia x Length (Max. rpm)	mm (rpm)	[45 X 250 (30000)]	[45 X 250 (30000)]			[100X250(8C00)]		
Optional spindle (Dia x Length (Max. rpm)	mm (rpm)	[80 X 250 (12000)]	[80 X 250 (12000)]			[45X250(30C00)]		
Optional spindle (Dia x Length (Max. rpm)	mm (rpm)					[60 x 250(18000)]		
Spindle housing bore	mm	80	80			100		
Motor power	kW	1.5	1.5			1.5		
<b>GENERAL</b>								
Operation voltage	volts	415+/-10% AC 3 Phase	415+/-10% AC 3 Phase			415+/-10% AC 3 Phase		
Total power requirement	kW	6.5 [8.5]	6.5 [8.5]			12.5		
Floor space including Std. coolant tank (LxW)	mm	2600 x 1800	2500 x 2000	3500 x 2000	4500x2000	4200 x 2250	5350 x 2250	7200x2250
Machine weight	kg	2000	2800	3200	4000	3800	4500	5200

NOTE: [ ] Optional **ce** marked machines are available as an option

- Maximum & Minimum grinding diameter as specified above may vary based on specific job requirement. Please discuss before placing the order on us.
- External model ("E") workhead will be with Dead Center (Non Rotating) type. In case Live center (Rotating) Work Head is required with E Model, the same needs to be ordered in lieu of STD.
- \* Option of 500mm wheel Outer Diameter is for GCE Model only, for GCU Model wheel maximum Outer diameter will be 400mm.
- \*\* Less than 6mm Outer diameter / Bore Diameter is also possible after special modification. Contact us before ordering.
- # Wheel width as mentioned is with recess.
- Higher capacity machine upto 3000 ABC are available. Specification on request
- Admit between centre, Grinding Length, Wheel Utilisation will change depending on swivel angle required, please discuss suitability to your requirement before ordering on us.

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



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