

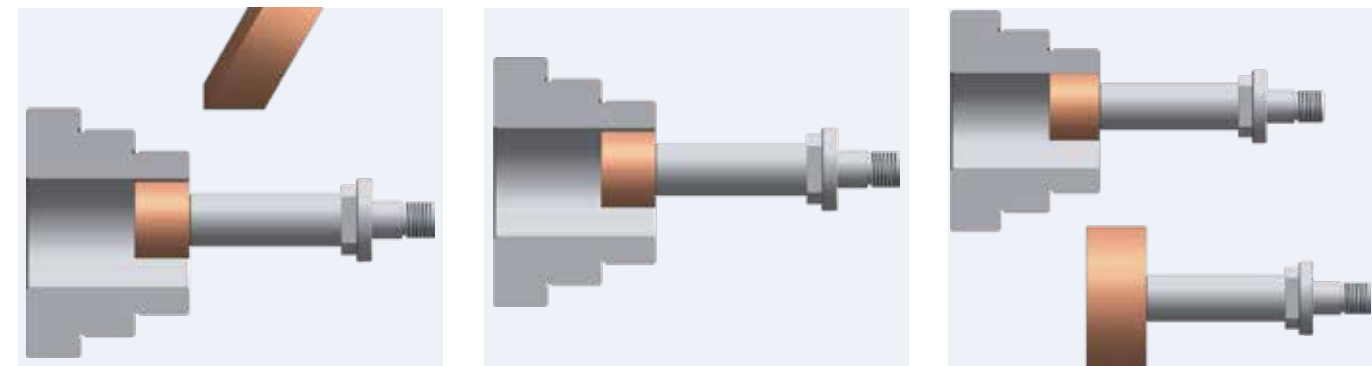


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CNC Universal Internal

ID & OD Grinder

EGM.EGI Series



Grinder Professionals

e-tech Headquarters & Manufacturing Site

No. 12, Longshan 2nd St., Daya Dist.,
Taichung City 42863, Taiwan (R.O.C.)
TEL : +886-4-2568-6418
Mail : info@etechtw.com

Shanghai Branch

201700 Room 502, No. 79, Green Age Mansion,
Baihe Town, Qingpu District, Shanghai 201700, China
Phone : +86-1347-2898433
TEL : +86-21-5825-5706
Mail : hz@etechtw.com

www.etechtw.com

US Branch - Supertec USA

6435 Alondra Blvd, Paramount, CA.90723
TEL : +1(562)220-1675
Mail : info@supertecusa.com

www.supertecusa.com



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1 EGM&EGI series CNC Universal Internal ID & OD Grinder

EGM CNC Universal Internal grinder equips with X, Z, Y three axes slides and two grinding spindles. It is specially designed to keep up with the growing demand for extremely high precision parts.

Features

- EGM&EGI series CNC control systems are available for MITSUBISHI* or FANUC** control. It also can be operated with graphic conversational programming (Option) Therefore, it eliminates the need for G-code programing, and is easy to learn and use for grinding operation even for beginners.
(*MITSUBISHI M80 with touch screen / **FANUC 0i-TF)
- Low-gravity base structure and operation panel are designed to meet ergonomic requirement
- Combinations of grinding operations for internal, external, end-face, groove, radius, internal & external step, and taper grinding can be executed in one chucking. Thus, it highly increases grinding efficiency and also ensures better concentricity and accuracies of the ground parts.



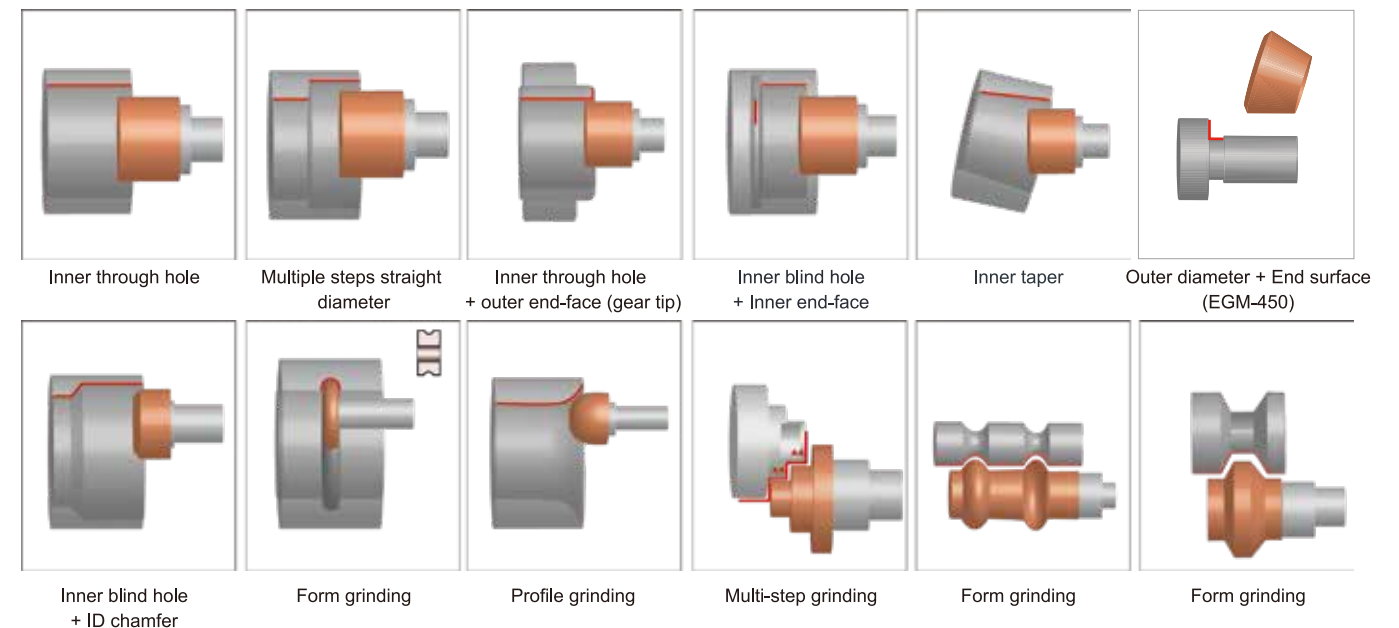
EGM-350LCNC

CNC Controller

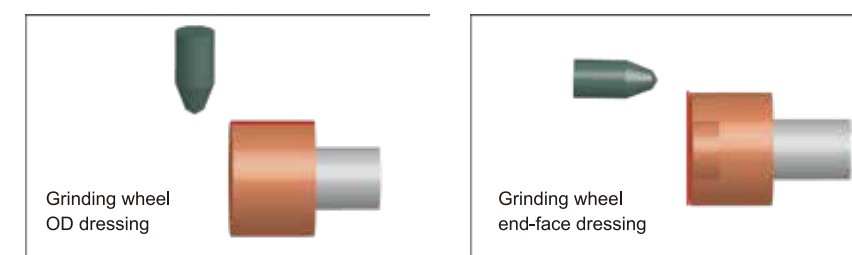
- Outstanding dressing function highly reduces dressing time (Mitsubishi M80)
- Optional graphic conversational programming for grinding and wheel dressing (Mitsubishi/Fanuc)
- Immediate dressing function during the grinding cycle can save time for the initial set-up.
- 10.4" color touch screen for Mitsubishi M80.
- Internal / External cylindricity compensating function.
- Min. increase input for X/Z/Y axes: 0.001mm.
- Programs can be stored for future use.
- Current anti-collision function.
- MPG simulation function to test-run for the program to avoid accidental wheel crash.



Standard grinding cycles and multi-steps graphic conversational functions.

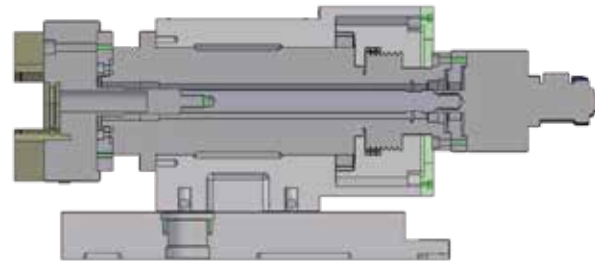


Grinding wheel dressing graphic illustration

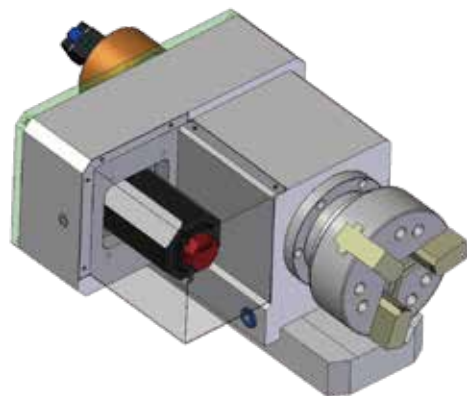




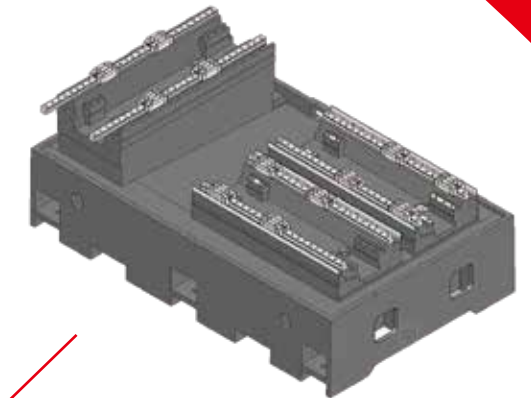
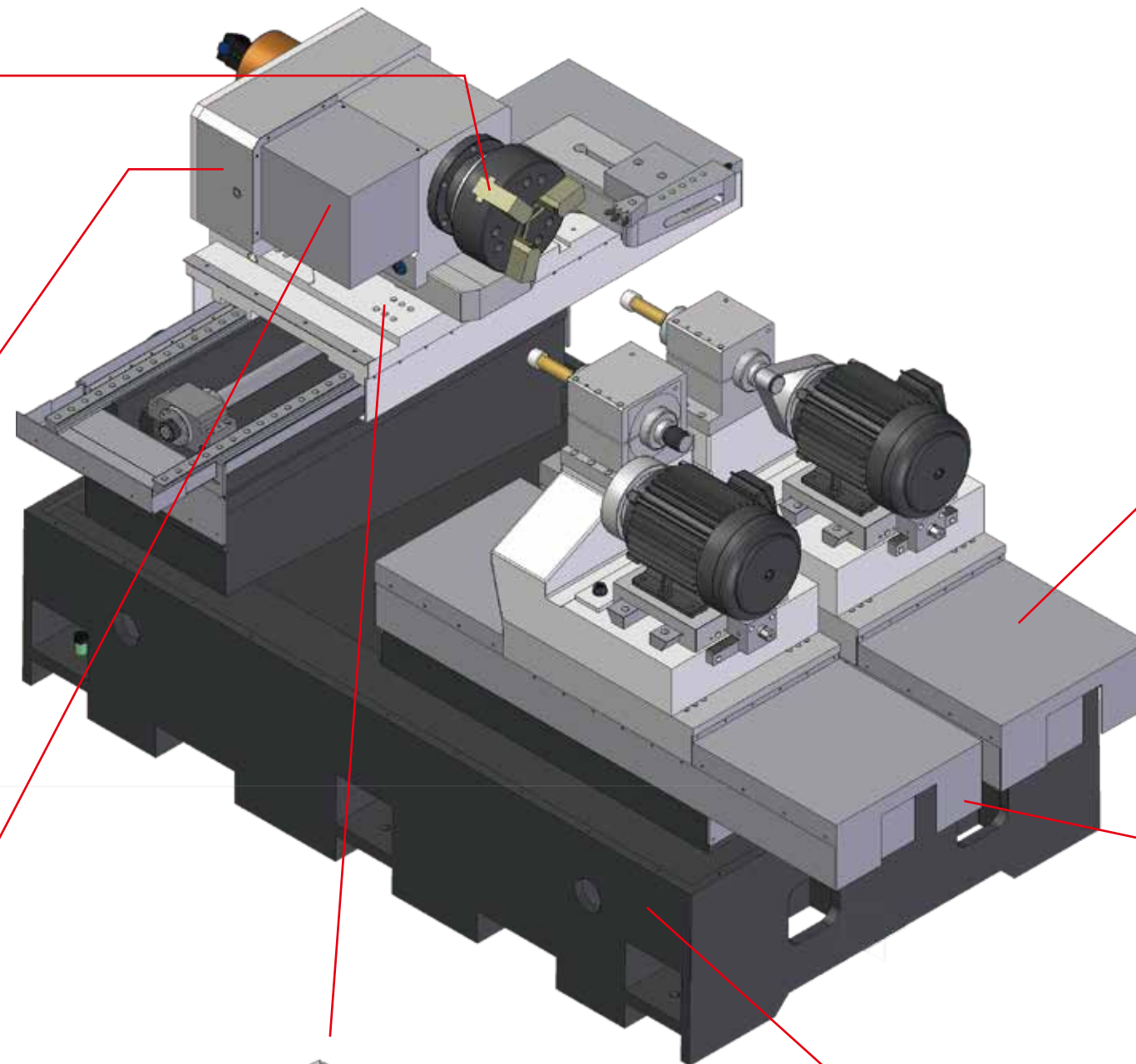
Complete one piece cartridge spindle can avoid the eccentricity of spindle housing and reduces the thermal growth, it increase spindle life-time .



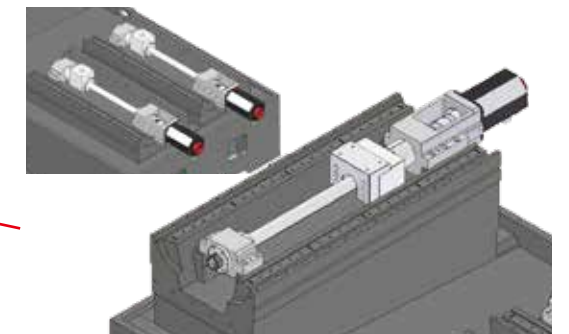
The spindle head design places the center of gravity at the rear portion to help balancing the whole spindle mechanism to increase spindle accuracy and loading capacity.



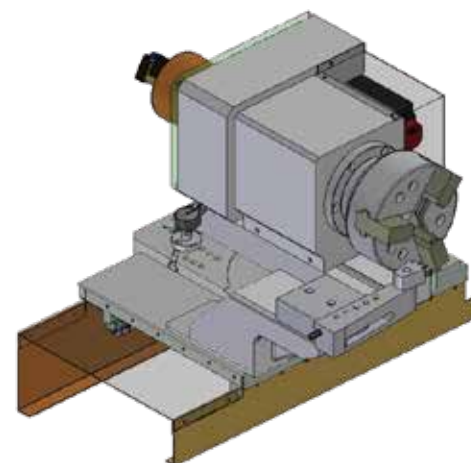
Spindle driven by servo motor offers optimum speed and torque performance.



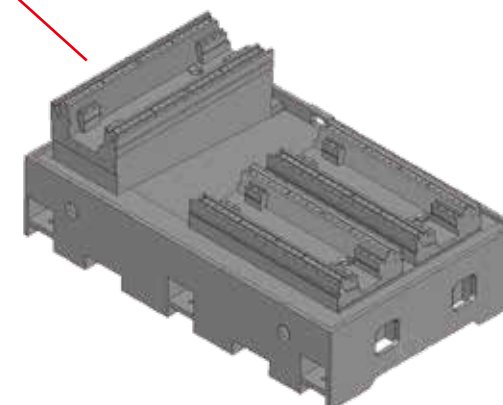
Machine is using roller type linear guide ways for X/Z/Y axes for high dynamic rigidity and better loading capacity. This drastically increases the grinding accuracy.



C1 grade precision ball screw with large leading pitch is used to achieve high accuracy.



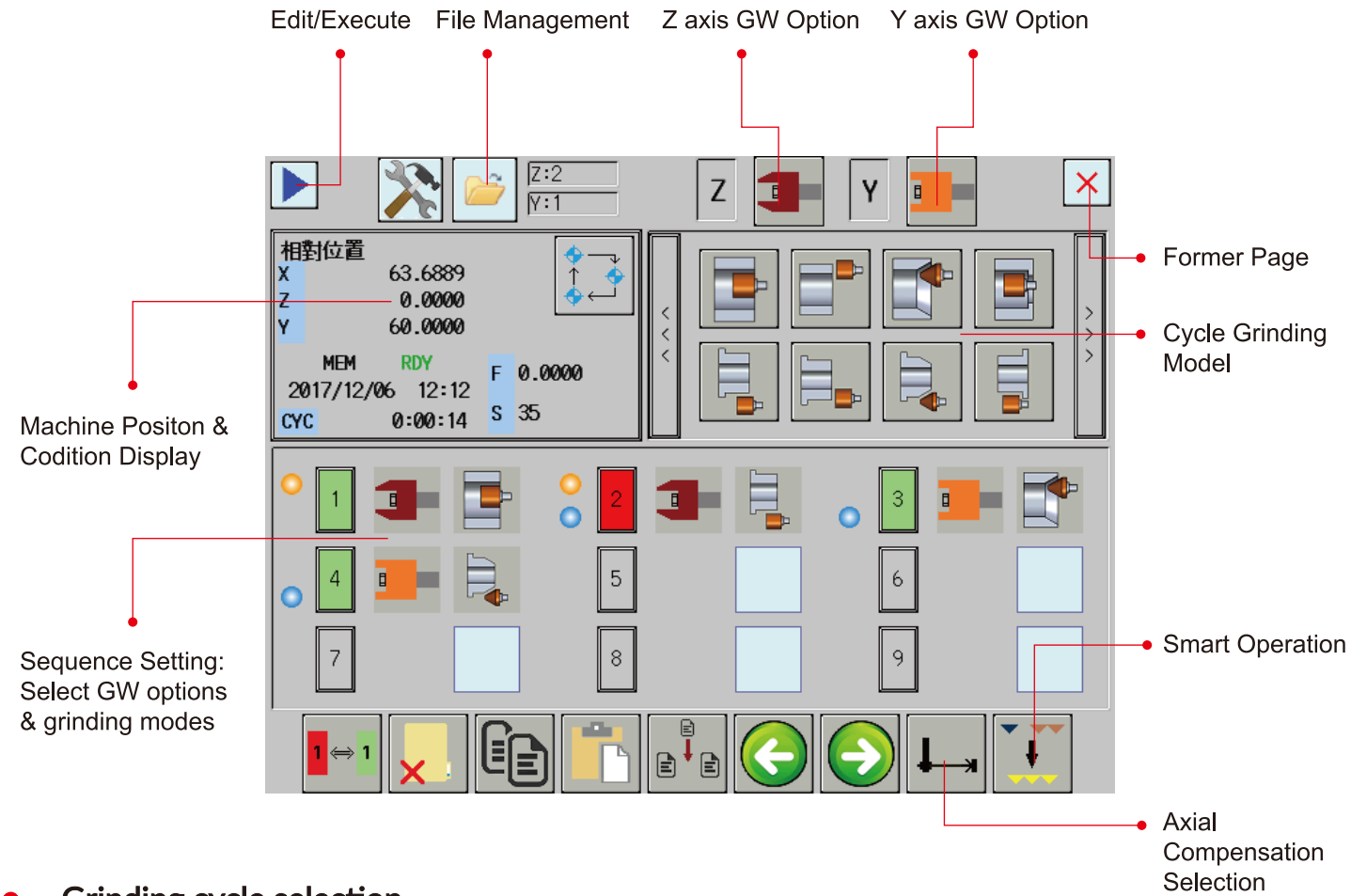
X axis lower slide design offers easy adjustment of the workhead for grinding parts with different lengths.



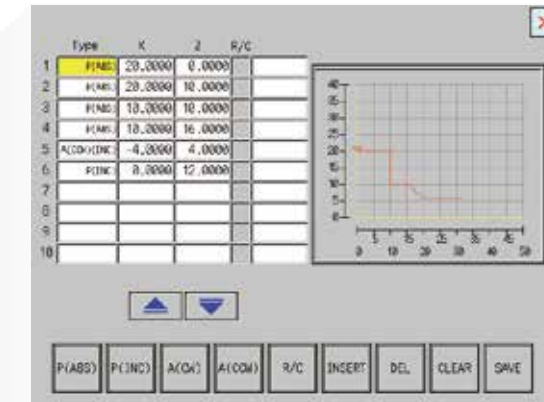
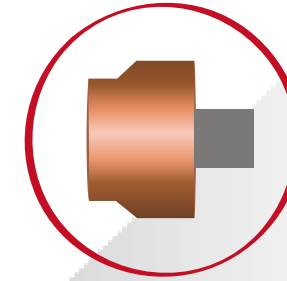
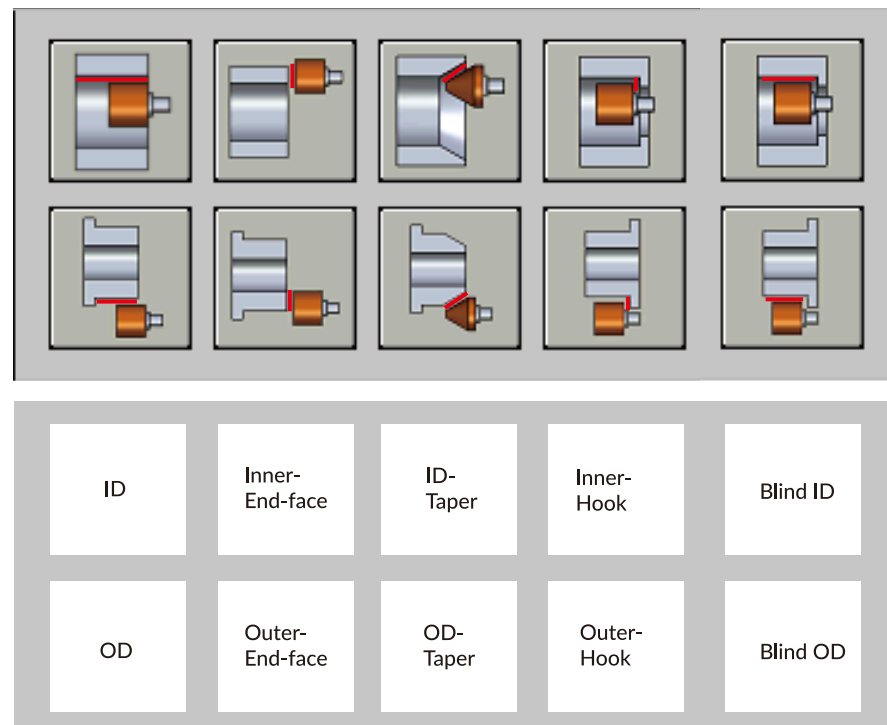
Low-gravity base structure, with slant bed design for better coolant draining and grinding swarf removal.

5 iGrind Graphic Conversational Screen

- Operation set-up through simple graphic display icons for easy learning progress.

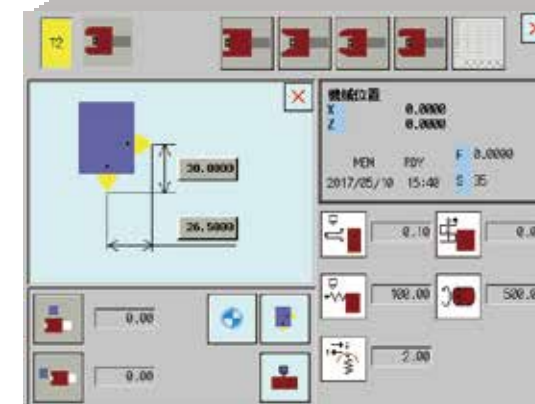
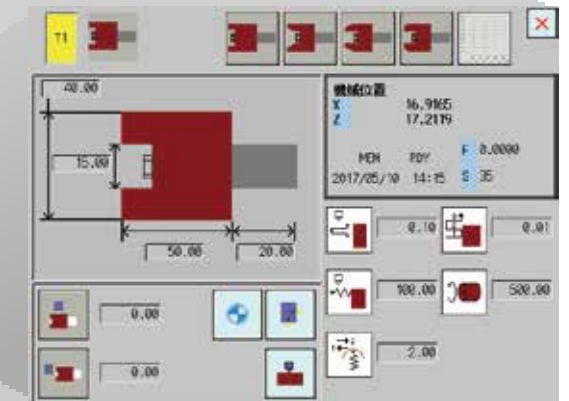


- Grinding cycle selection



Grinding Wheel Dressing

With the iGrind outstanding dressing function, the operator just have to input the necessary parameters for the dresser and the geometric data of the profile to create the optimal dressing path. Thus, it drastically reduces the wheel dressing time.



Convenient and quick wheel dressing point setting

7 Grinding Example



ID auto. gauging device

Parts Name:

Material : SCM415(JIS)

Workpiece dimension : $\varnothing 90 \times 45 \times \varnothing 35 \text{mm}$

Grinding application : 0.25mm/60 sec.

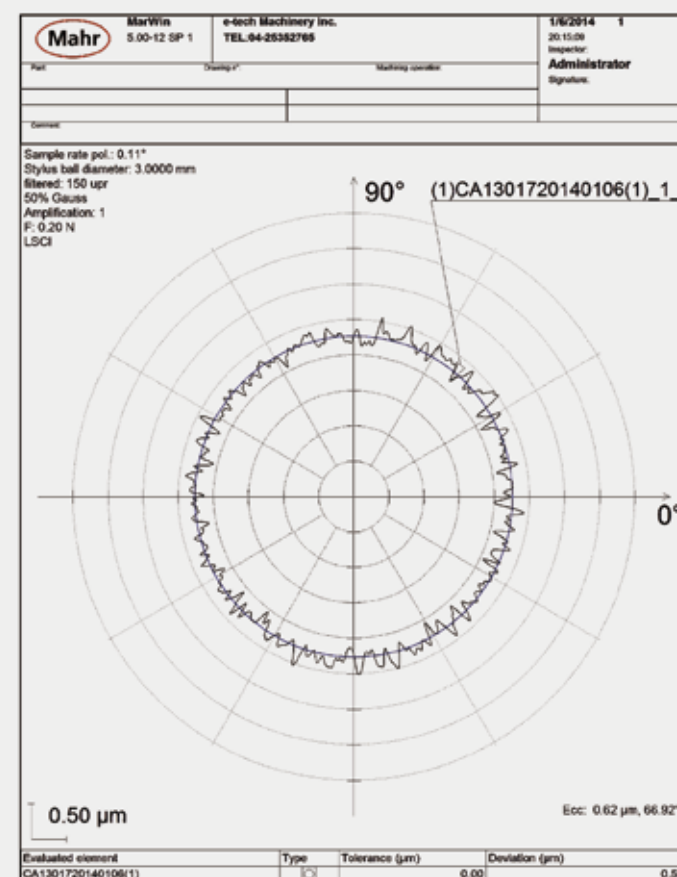
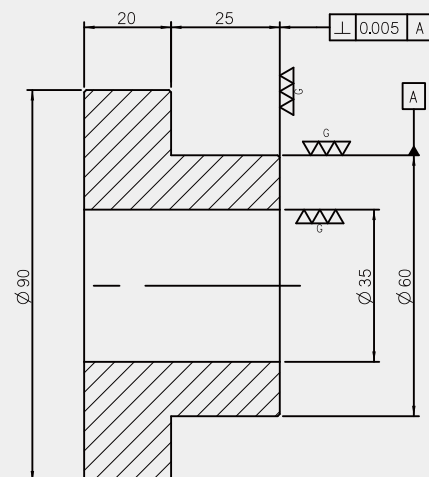
Hardness : HRC55° $\pm$ 2°

Dimension tolerance : 5um

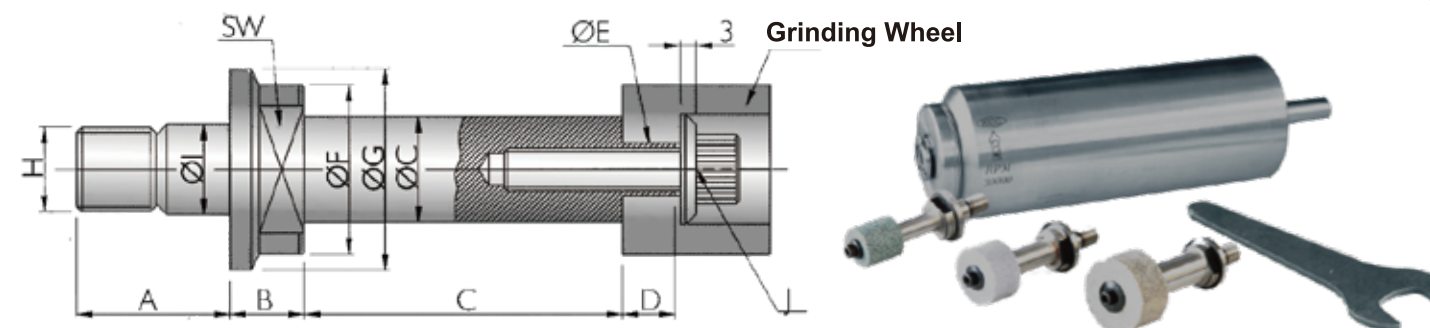
Grinding wheel speed : 20,000 rpm

Roundness : 2um

Cylindricity : 3um



Grinding wheel spindle specification



Suitable Inner Diameter	Grease Type	A	B	C	D	E	F	G	H	I	J	SW	Oil Mist Type	Suitable Inner Diameter
$\varnothing 65 \sim \varnothing 150$	8,000 rpm	42	16	$\varnothing 50 \times 38$ $\varnothing 50 \times 78$ $\varnothing 50 \times 103$	12	$\varnothing 12$	$\varnothing 50$	$\varnothing 58$	M26x2P	$\varnothing 28$	M8x1.25P	41	-	-
$\varnothing 35 \sim \varnothing 70$	15,000 rpm	29	14	$\varnothing 30 \times 90$ $\varnothing 25 \times 70$ $\varnothing 20 \times 50$	10	$\varnothing 10$	$\varnothing 32$	$\varnothing 40$	M16x1.5P	$\varnothing 17$	M8x1.25P	24	-	-
$\varnothing 24 \sim \varnothing 40$	20,000 rpm	28	11	$\varnothing 24 \times 80$ $\varnothing 20 \times 60$ $\varnothing 16 \times 40$	8	$\varnothing 8$	$\varnothing 26$	$\varnothing 32$	M14x1.5P	$\varnothing 15$	M6x1.0P	19	30,000 rpm	$\varnothing 15 \sim \varnothing 25$
$\varnothing 15 \sim \varnothing 25$	30,000 rpm	21	9	$\varnothing 16 \times 40$ $\varnothing 13 \times 30$ $\varnothing 10 \times 25$	x	x	$\varnothing 21$	$\varnothing 26$	M10x1.5P	$\varnothing 10.5$	M4x0.7P	17	40,000 rpm	$\varnothing 12 \sim \varnothing 16$
$\varnothing 12 \sim \varnothing 16$	40,000rpm	20	8	$\varnothing 12 \times 35$ $\varnothing 10 \times 30$ $\varnothing 8 \times 25$	x	x	$\varnothing 18$	$\varnothing 23$	M8x1.25P	$\varnothing 8.5$	M4x0.7P	14	50,000 rpm	$\varnothing 9 \sim \varnothing 13$
$\varnothing 9 \sim \varnothing 13$	50,000rpm	18	7	$\varnothing 8 \times 30$ $\varnothing 7 \times 25$ $\varnothing 6 \times 20$	x	x	$\varnothing 15$	$\varnothing 20$	M7x1P	$\varnothing 7.5$	M4x0.7P	11	60,000 rpm	$\varnothing 6 \sim \varnothing 10$

Standard Accessories

Control system: Mitsubishi M80 or FANUC 0i-TF with 10.4" screen

Three-direction dresser stand x 1 set, diamond dresser x 3 pcs

Wheel spindle surface detecting & crash control system (current indicator)

Grease type grinding wheel spindle: (Select 2 pc from 8,000~50,000RPM)

Hydraulic 8" 3-jaw chuck (w/ solid cylinder)

MPG handwheel: EGI 2 Axes, EGM 3 Axes control

Renishaw/Mitsubishi linear scale (resolution 0.05 um)

Electricity cabinet w/ heat exchanger

Standard coolant tank 140L

Automatic lubrication system

4-color indication signal light

Levelling bolts and blocks

Tools & tool box

Electrical wiring diagram

Operation manual & part lists

Full-enclosed splash guard

Workhead spindle A2-5

Electrical lubricator

LED working light

Optional accessories

Mitsubishi controller (M80) dressing program: Radius / Taper / Multiple step / form shape

Mitsubishi controller (M80) iGrind program

Coolant system with magnetic separator & paper filter

Coolant system with magnetic separator

Coolant system with paper filter

CE standard electrical cabinet

Electrical cabinet air conditioner

Grease type grinding wheel spindle

Oil mist type grinding wheel spindle

Workhead spindle A2-6 (65mm thru-hole)

Manual strong type 7" 3-jaw chuck

Oil & mist collecting system

Spindle oil mist lubrication system

ID auto. gauging device

Diamond roller dressing device

Dressing sensor system

Soft-Jaw turning assembly

Workhead swivel w/ linear scale and DRO

Safety door lock

Diamond roller dressing device



Model			EGI-80CNC	EGM-80CNC	EGI-150CNC	EGM-350CNC	EGM-350LCNC	EGM-450CNC	EGM-550LCNC	EGM-550XLCNC
General Capacity	Max. grinding ID	mm	Ø80	Ø80	Ø300	Ø300	Ø300	Ø300	Ø500	Ø500
	Max. grinding OD	mm	Ø80	Ø80	Ø300	Ø400	Ø330	Ø400	Ø550	Ø550
	Swing over workhead	mm	Ø240	Ø240	Ø500	Ø500	Ø340	Ø410	Ø560	Ø560
	Max. grinding depth	mm	80	80	260	260	260	260	550	550
	Max. weight of workpiece	kg	25	25	50	50	300 (w/ steady rest)	50	500 (w/ steady rest)	500 (w/ steady rest)
	Max. length of workpiece	mm	80	80	300	300	750	300	1200	2000
	Type of wheel head	-	Single feeding	Dual independent	Single feeding	Dual independent	Dual independent	Dual independent	Dual independent	Dual independent
Workhead (X Axis)	3-Jaw chuck	-	Hydraulic 5"/6"(opt.)	Hydraulic 5"/6"(opt.)	Hydraulic -8"/10"(opt.)	Hydraulic -8"/10"(opt.)	Manual -8"/10"(opt.)	Hydraulic -8"/10"(opt.)	Manual -8"/10"/12"(opt.)	Manual -8"/10"/12"(opt.)
	Swiveling angle range	deg	+45°~-10°	+45°~-10°	+15°~-5°	+15°~-5°	+10°~-5°	+15°~-5°	+8.5°~-2°	+8.5°~-2°
	Manual travel distance (toward Z axis)	mm	200	200	250	250	550	250	1000	1550
	Spindle speed	rpm	0~1000 (Variable speed)	0~1000 (Variable speed)	0~1000 (Variable speed)	0~1000 (Variable speed)	0~1000 (Variable speed)	0~1000 (Variable speed)	0~300 (Variable speed)	0~300 (Variable speed)
	Servo motor rated power	kW	1.2(F)/1.5(M)	1.2(F)/1.5(M)	1.8(F)/2.2(M)	1.8(F)/2.2(M)	1.8(F)/2.2(M)	1.8(F)/2.2(M)	2.2(M)	2.2(M)
Grinding wheelhead (Y Axis)	OD grinding wheel size	mm	N/A	N/A	N/A	N/A	N/A	Ø405x50xØ127	N/A	N/A
	ID grinding wheel size	mm	N/A	Ø60	N/A	Ø100	Ø100	N/A	Ø100	Ø100
	Max. spindle RPM	rpm	N/A	20,000(std.)	N/A	20,000 (std.)	20,000 (std.)	1,300 (std.)	8,000(std.)	8,000(std.)
	Spindle motor/ max. torque	kW/Nm	N/A	2.2/7.3	N/A	3.75 / 13	3.75 / 13	3.75 / 26	3.75 / 13	3.75 / 13
Grinding wheelhead (Z Axis)	OD grinding wheel size	mm	Ø100	Ø100	N/A	Ø100	Ø100	N/A	Ø100	Ø100
	ID grinding wheel size	mm	N/A	N/A	Ø100	N/A	N/A	Ø100	N/A	N/A
	End-Surface grinding spindle (Opt.Z2)	mm	N/A	N/A	Ø80 (CBN)	N/A	N/A	N/A	N/A	N/A
	Max. spindle RPM	rpm	8,000(std.)	8,000(std.)	20,000 (std.)	8,000 (std.)	8,000 (std.)	20,000 (std.)	8,000 (std.)	8,000(std.)
	Spindle motor/ max. torque	kW/Nm	2.2 / 7.3	2.2 / 7.3	3.75 / 13	3.75 / 13	3.75 / 13	3.75 / 13	3.75 / 13	3.75 / 13
X Axis	Travel	mm	350	350	300	420	420	450	600	600
	Rapid feed rate	m/min	8	8	8	8	8	8	8	8
	Linear scale resolution	um	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
	Min. increment	mm	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
	Servo motor rated power	kW	1.2(F)/1.5(M)	1.2(F)/1.5(M)	1.8(F)/2.2(M)	1.8(F)/2.2(M)	2.5(F)/3.0 (M)	1.8(F)/2.2(M)	2.2(M)	3.5(M)
Y Axis	Travel	mm	N/A	180	N/A	350	350	350	600	600
	Rapid feed rate	m/min	N/A	8	N/A	8	8	8	8	8
	Min. increment	mm	N/A	0.0001	N/A	0.0001	0.0001	0.0001	0.0001	0.0001
	Servo motor rated power	kW	N/A	1.2(F)/1.5(M)	N/A	1.8(F)/2.2(M)	1.8(F)/2.2 (M)	1.8(F)/2.2(M)	2.2(M)	2.2(M)
Z Axis	Travel	mm	180	180	350	350	350	350	600	600
	Rapid feed rate	m/min	8	8	8	8	8	8	8	8
	Min. increment	mm	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
	Servo motor rated power	kW	1.2(F)/1.5(M)	1.2(F)/1.5(M)	1.8(F)/2.2(M)	1.8(F)/2.2(M)	1.8(F)/2.2(M)	1.8(F)/2.2(M)	2.2(M)	2.2(M)
Motor	Hydraulic motor	kW	0.375	0.375	0.75	0.75	0.75	0.75	N/A	N/A
	Coolant pump	kW	0.18	0.18	0.37+0.18	0.37+0.18	0.37+0.18	0.37+0.18	0.37+0.37	0.37+0.37
Machine	Net weight	kg	3000	3000	5000	5800	6800	6300	10,300	11,750
	Gross weight	kg	3400	3400	5500	6300	7300	6800	11,300	12,750
	Packing size (L x W x H)	mm	2150x1750x1860	2150x1750x1860	3350x2250x1950	3350x2250x1950	4000X2250X1950	3350x2250x1950	4030x2200x2220	4830x2200x2220



EGM-80CNC



EGI-150CNC



EGM-350CNC



EGM-350LCNC



EGM-450CNC



EGM-550LCNC

