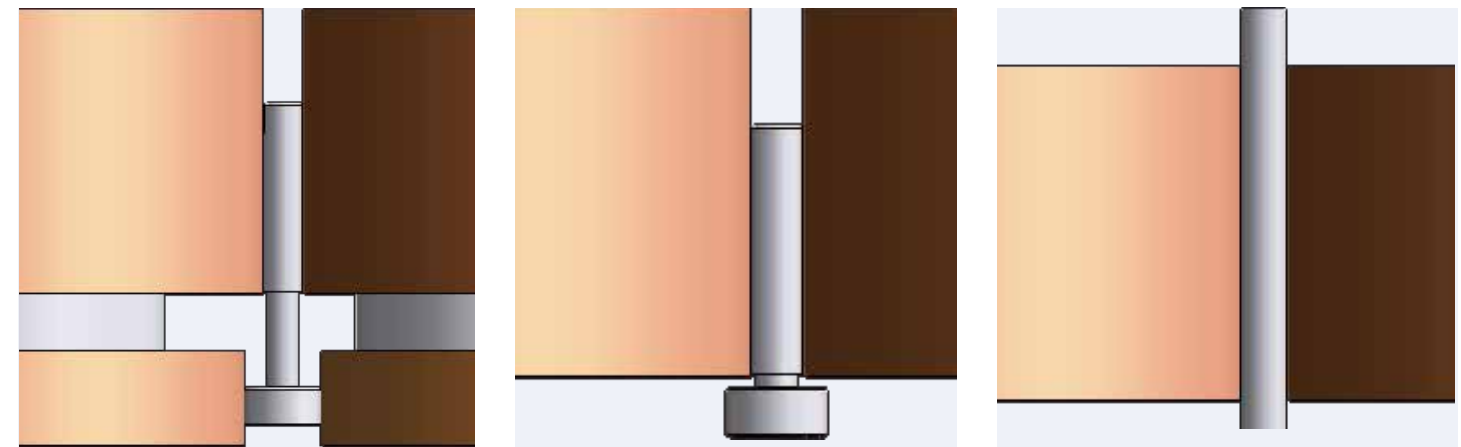




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Centerless Grinder

ECG Series



Grinder Professionals

Headquarters

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

U.S. Company

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

Shanghai Company

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

WEB

www.etechtw.com



watch more

1 ECG Centerless Grinding Machine

Features

ECG series high precision centerless grinder is different from other competitors, we use spectrum analyzer to precisely analyze the machine base inner ribs and casting thickness for greater rigidity.

We offer hydrodynamic alloy bearing spindle with best rotation accuracy, suitable for heavy duty jobs, and drastically increase the spindle longevity.

CNC Series

For CNC series, it not only covers all the advantages for S & NC series but also enables customers to choose axial numerical control combination.

E-tech CNC series can perform complicated grinding wheel or regulating wheel dressing operation, and automation solutions can be offered as optional accessories which greatly meet customer's demands.



NC Series

With all the advantage of S series, NC series further offers lower slide (Z axis) with servo motor driven design which enables the infeed position located precisely, and the infeed distance can be controlled by numerical value.

Auto. grinding wheel dressing and compensation system can be equipped as optional accessories and led to easy computer numerical control grinders for operators.



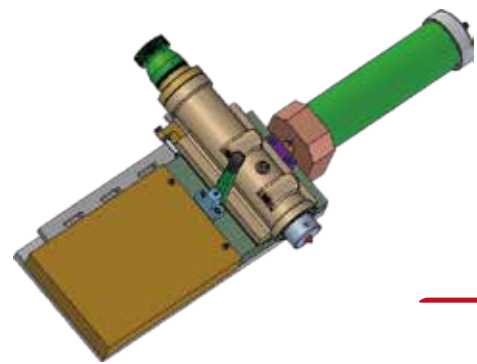
S Series

The S series is suitable for various kinds of shafts with thrufeed grinding operation. The servo motor on regulating wheel provides infinitely variable speeds for grinding and dressing speed adjustment, with timing belt transmission system which provides steady speed and torque performance.



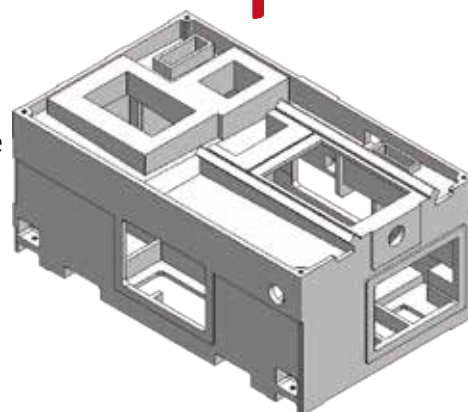
3 Features

4

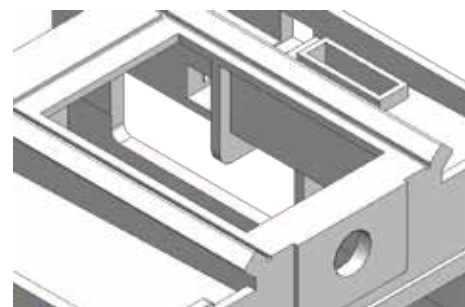


A hydraulic dressing unit on both the grinding and regulating wheels with precisely hand-scraped guide ways provides stable hydraulic movement and the best dressing effects. Various types of form dressing can be achieved with optional templates.

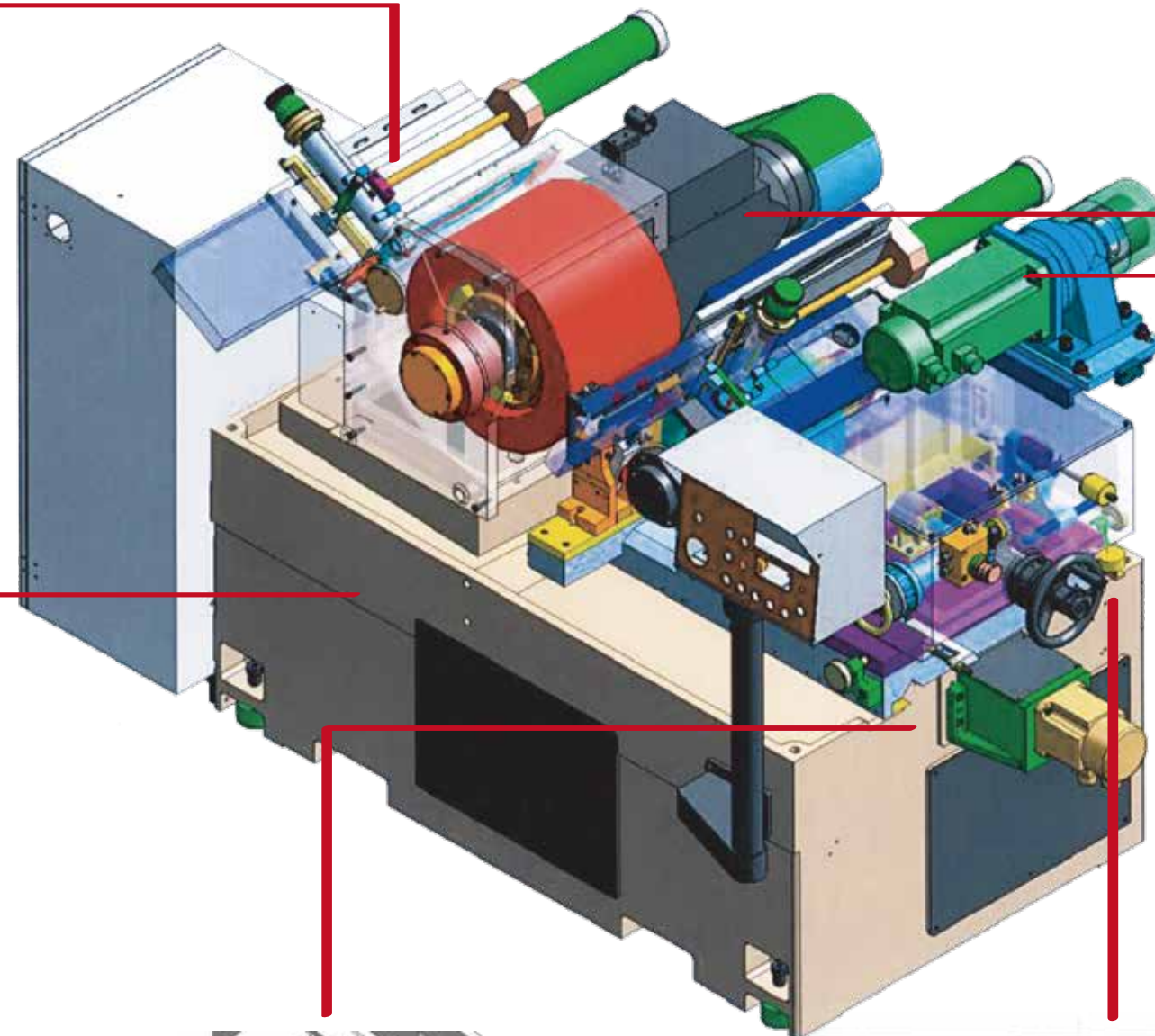
- NC model: optional auto. grinding wheel dressing device enables count dressing, time dressing, or auto dressing and compensation.
- CNC model: with two axes servo control and the automatic compensation system can precisely dress forms with complicated shapes.
- Various workrest design: E-tech developed various kinds of workrest based on different diameter of workpieces, which are easy for operating adjustment.



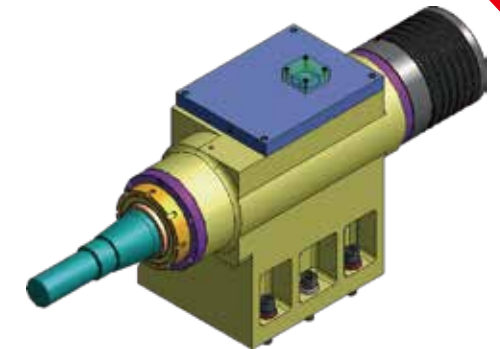
The machine base is made of Meehanite castings designed to reduce vibration. The machine base provides stable support to the grinding wheel and regulating wheel assemblies to ensure a rigid machine foundation and better accuracy.



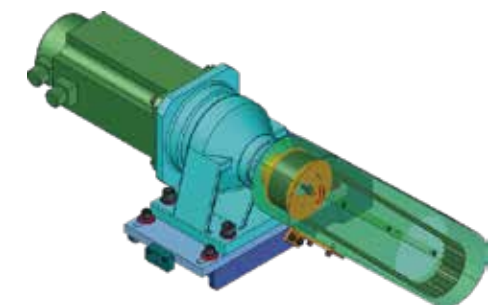
A double inverted "V" slideway with optimum spacing for the regulating wheel assembly provides smooth movement and stable grinding operation.



Automatic infeed models (NC) are equipped with a PLC touch screen control with easy learning conversational software. An infeed grinding cycle can be completed by simply choosing the grinding cycle mode (single or automatic), inputting grinding data and then pressing cycle start.

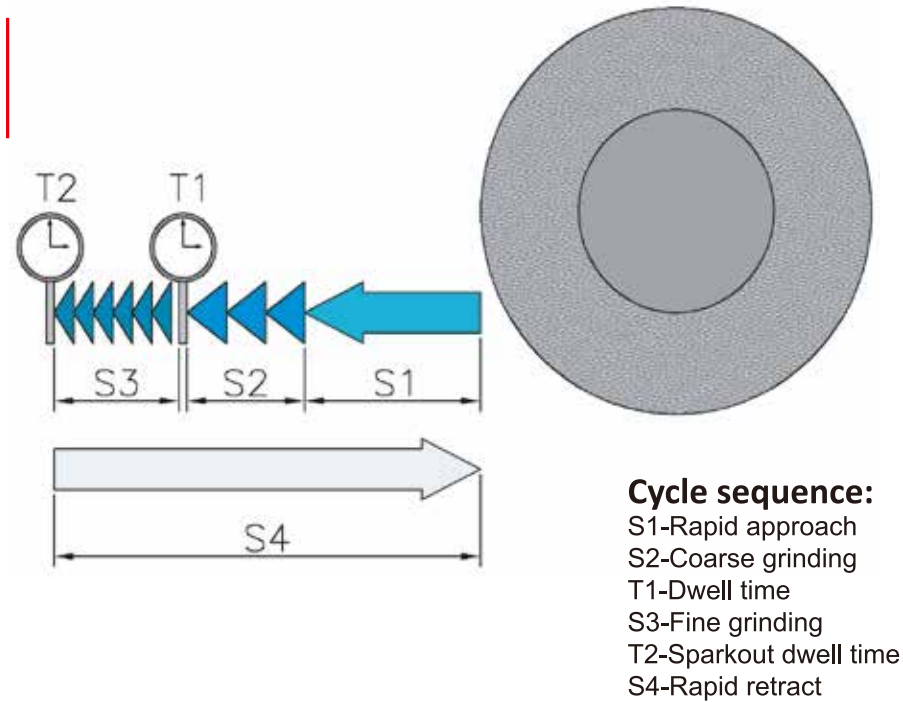


Both grinding & regulating wheel spindles are made of Ni-Cr-Mo alloy steel, which is normalized, carbonized, hardened and ground.



The regulating wheel utilizes a servo motor which provides infinitely variable speeds. The speed can be set digitally to reach constant surface speeds even when the diameter of the regulating wheel changes. Consequently, better surface finishes and roundness of the workpiece can be achieved. A belt-driven transmission system is also adopted for the regulating wheel for less vibration and noise compare to traditional chain-driven system.

Auto-infeed Grinding Cycle



Setting screen :
Fill in the blanks to set up required data.

POSITION: 0123.567

TOTAL COARSE REMOVAL: mm
 COARSE FEEDRATE: mm/min
 DWELLING: sec.
 TOTAL FINE REMOVAL: mm
 FINE FEEDRATE: mm/min
 SPARKOUT CLEARANCE: mm
 DWELL TIME: sec.
 CYCLE TIMER: sec.
 COUNTER: sec.

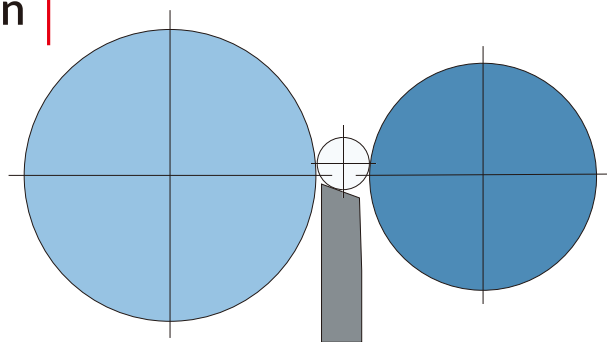
SINGLE CYCLE JOG

Alarm display screen :
Fault diagnosis function assists

MOTOR OVERLOAD ALARM
 SERVO ALARM
 OIL PRESSURE SWITCH ALARM
 OVER TRAVEL ERROR RESET
 LUBRICATION PUMP ALARM

BACK

Blade Selection

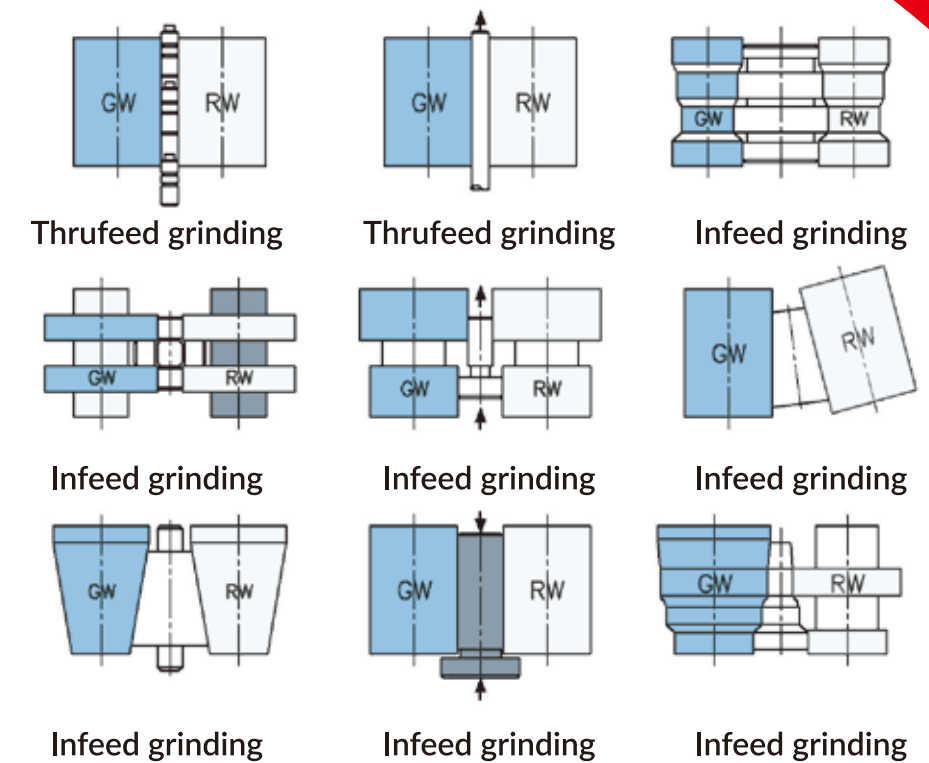


Due to different working diameters, the guide plate and regulating wheel must be parallel as this influences the grinding accuracy significantly.

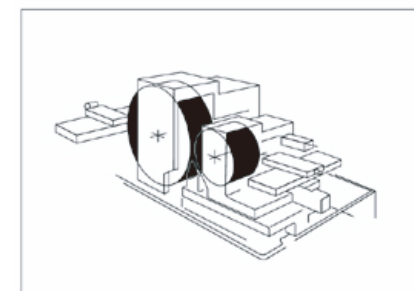
Blade Selection Table

Dia. Of Workpiece(A)	Thickness(T)
Ø1.5~Ø2.5	1
Ø2.6~Ø4	2
Ø4~Ø5	3
Ø5~Ø7	4
Ø7~Ø8	5
Ø8~Ø10	6
Ø10~Ø16	8
Ø12~Ø20	10
Ø15~Ø30	12
Ø25UP	20

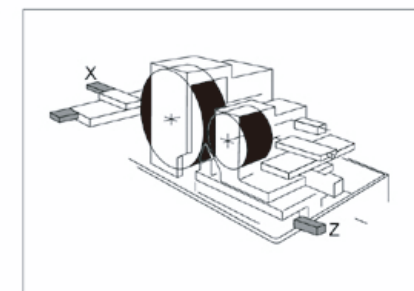
Grinding Applications



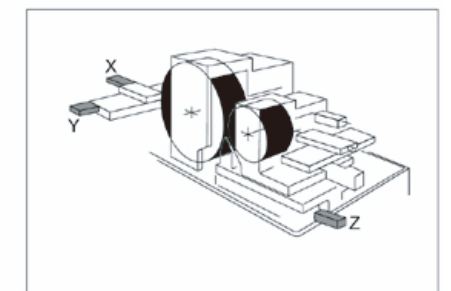
Control Axis Diagram



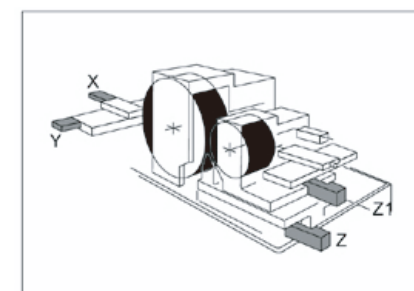
1 Axis
Z Axis: Upper or lower slide movement



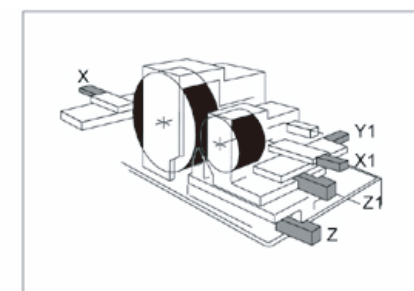
2 Axes
X Axis: Grinding wheel dressing
Z Axis: Lower slide movement



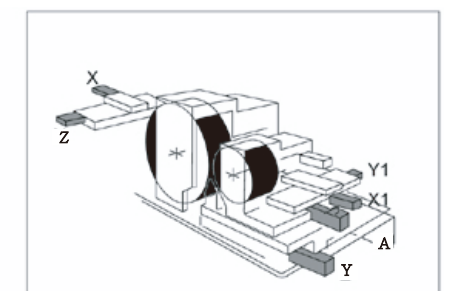
3 Axes
X, Y Axis: Grinding wheel dressing (Profile dressing)
Z: Upper or Lower slide movement



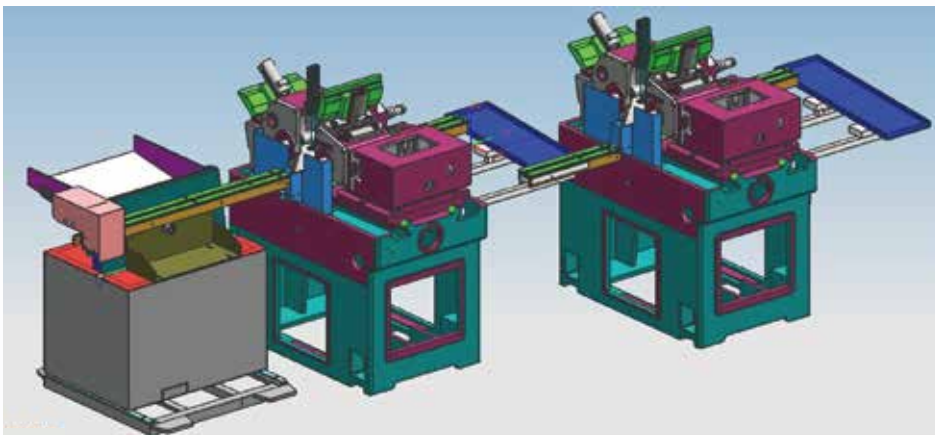
4 Axes
X, Y Axis: Grinding wheel dressing (Profile dressing)
Z Axis: Lower slide movement
Z1 Axis: Upper slide movement



5 Axes
X1, Axis: Grinding wheel dressing
X1, Y1 Axis: Regulating wheel dressing (Profile dressing)
Z Axis: Lower slide movement
Z1 Axis: Upper slide movement

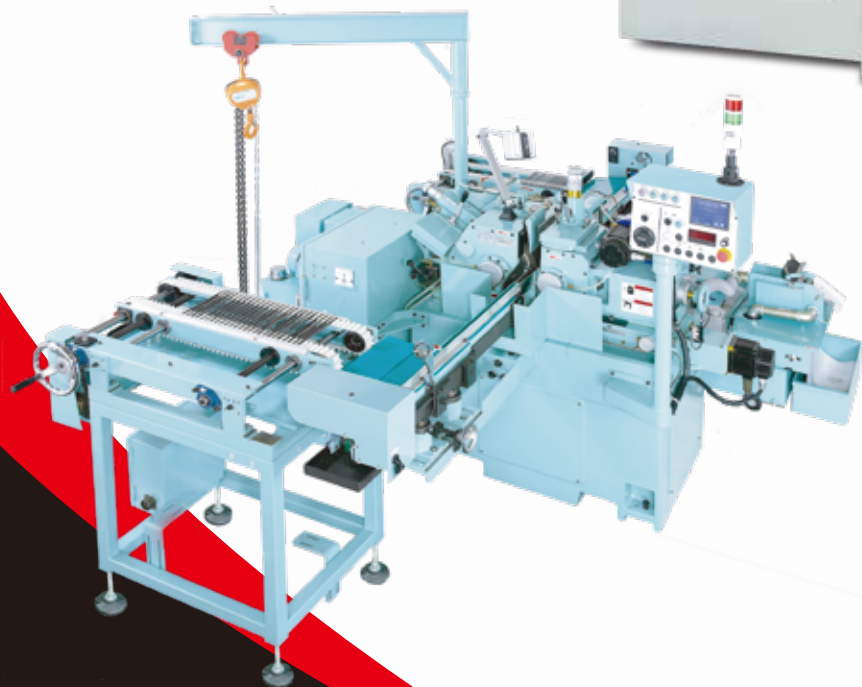


6 Axes
X, Y Axis: Grinding wheel dressing (Profile dressing)
X1, Y1 Axis: Regulating wheel dressing (Profile dressing)
Z Axis: Lower slide movement
Z1 Axis: Upper slide movement



- Multiple machines can be linked to do rough, medium and fine grinding in one production line to save time for repetitive loading and unloading procedure.

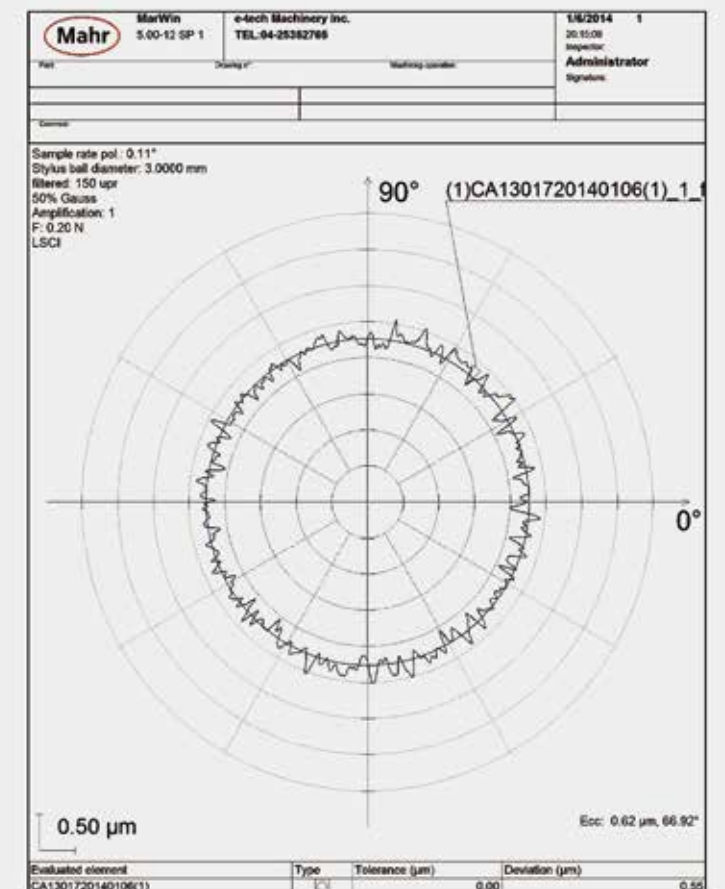
- Infeed Grinding: Applicable for parts with head, shoulder or multi-diameters.



- Thrufeed Grinding: Applicable for parts with single diameter, e.g. round tube, shaft and bars.



- Part name: Step shaft
Infeed grinding + auto-loading/unloading
Material: SCM415
Removed stock: Max. $\varnothing 0.2$ mm
Cycle time: 25 sec
(loading/unloading included)
Roundness: $1.5 \mu\text{m}$
- Part name: Piston pin
Thrufeed grinding
Material: SCr21H
Removed stock: Max. $\varnothing 0.13$ mm
Feedrate: 3m/min
Roundness: $1.2 \mu\text{m}$
- Part name: Ball piston
Infeed grinding + auto-loading/unloading
Material: SCM415
Removed stock: Max. $\varnothing 0.3$ mm
Cycle time: 26 sec
(loading/unloading included)

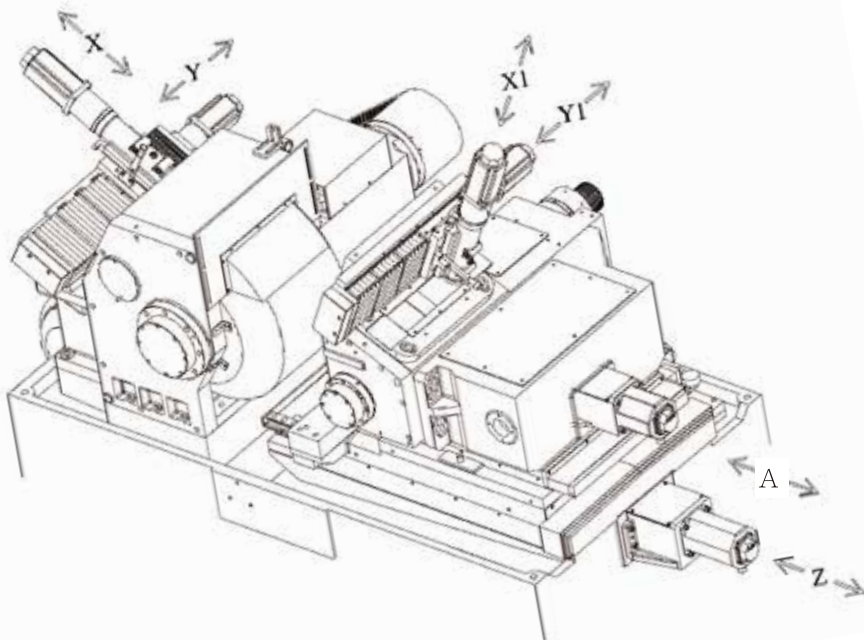


Model			ECG-CNC 1206	ECG-CNC 1808/1810/1812	Model	ECG-CNC 2008/2010/2012		
Grinding	Work diameter (w/standard workrest)	mm	Ø1-30	Ø1-60	Grinding	Work diameter (w/standard workrest)	mm	Ø1-80
Capacity	Work diameter (w/special workrest)	mm	Ø30-50	Ø60-100	Capacity	Work diameter (w/special workrest)	mm	Ø60-120
	Auto infeed min. increment	mm	0.001	0.001		Auto infeed min. increment	mm	0.001
Grinding	Wheel size (OD x Width x ID) 08type	mm	Ø305x150xØ120	Ø455x205xØ228.6	Grinding	Wheel size (OD x Width x ID) 08type	mm	Ø510x205xØ304.8
Wheel	Wheel size (OD x Width x ID) 10type	mm	N/A	Ø455x255xØ228.6	Wheel	Wheel size (OD x Width x ID) 10type	mm	Ø510x255xØ304.8
	Wheel size (OD x Width x ID) 12type	mm	N/A	Ø455x305xØ228.6		Wheel size (OD x Width x ID) 12type	mm	Ø510x305xØ304.8
	Motor rated power	kW	5.5 (Opt. 7.5)	11 (Opt. 15)		Motor rated power	kW	15 (Opt. 18.75)
	Spindle circumferential speed	m/min	2000	2000		Spindle circumferential speed	m/min	2000
	Dressing infeed servo motor (X, opt)	kW	0.75	0.75		Dressing infeed servo motor (X, opt)	kW	0.75
	Dressing traverse servo motor (Y, opt)	kW	0.75	0.75		Dressing traverse servo motor (Y, opt)	kW	0.75
Regulating	Wheel size (OD x Width x ID) 08 type	mm	Ø205x150xØ90	Ø255x205xØ111.2	Regulating	Wheel size (OD x Width x ID) 08 type	mm	Ø305x205xØ127
Wheel	Wheel size (OD x Width x ID) 10 type	mm	N/A	Ø255x255xØ111.2	Wheel	Wheel size (OD x Width x ID) 10 type	mm	Ø305x255xØ127
	Wheel size (OD x Width x ID) 12 type	mm	N/A	Ø255x305xØ111.2		Wheel size (OD x Width x ID) 12 type	mm	Ø305x305xØ127
	Regulating wheel motor	kW	18/1810-3	3/1812-4.4		Regulating wheel motor	kW	4.4
	Spindle speed (infinite variable)	rpm	10-300	10-300		Spindle speed (infinite variable)	rpm	10-300
	Dressing infeed servo motor (X1, opt)	kW	0.75	0.75		Dressing infeed servo motor (X1, opt)	kW	0.75
	Dressing traverse servo motor (Y1, opt)	kW	0.75	0.75		Dressing traverse servo motor (Y1, opt)	kW	0.75
	Lower slide infeed servo motor (Z)	kW	2	3		Lower slide infeed servo motor (Z)	kW	3
	Regulating wheel infeed servo motor (Z1, opt)	kW	1	2		Regulating wheel infeed servo motor (Z1, opt)	kW	2
	Swiveling angle (L/R)	deg	±5°	±5°		Swiveling angle (L/R)	deg	±5°
	Min. infeed unit	mm	0.001	0.001		Min. infeed unit	mm	0.001
	Inclining angle (F/R)	deg	+5° ~ -3°	+5° ~ -3°		Inclining angle (F/R)	deg	+5° ~ -3°
Motors	Hydraulic motor	kW	0.75	0.75	Motors	Hydraulic motor	kW	0.75
Machine	Net Weight	kg	1750	3350	Machine	Net Weight	kg	3550
	Gross Weight	kg	1900	3550		Gross Weight	kg	3750
	Packing size (Length x Width x Height)	mm	2730x2270x1800	3000x2270x1800		Packing size (Length x Width x Height)	mm	3000x2270x1800



(Six Axes Diagram)

6 Axes Diagram
X Axis : Grinding wheel dressing
Y Axis : Grinding wheel Traverse Infeed
X1 Axis : Regulating wheel dressing
Y1 Axis : Regulating wheel Traverse Infeed
Z Axis : Regulating Wheel Lower Slide Infeed
A Axis : Regulating Wheel Infeed
(OPT. Add Axes)



Model			ECG-NC 1206	ECG-NC 1808/1810/1812	Model	ECG-NC 2008/2010/2012		
Grinding	Work diameter (w/standard workrest)	mm	Ø1-30	Ø1-60	Grinding	Work diameter (w/standard workrest)	mm	Ø1-80
Capacity	Work diameter (w/special workrest)	mm	Ø30-50	Ø60-100	Capacity	Work diameter (w/special workrest)	mm	Ø60-120
	Auto infeed min. increment	mm	0.001	0.001		Auto infeed min. increment	mm	0.001
Grinding	Wheel size (OD x Width x ID) 08type	mm	Ø305x150xØ120	Ø455x205xØ228.6	Grinding	Wheel size (OD x Width x ID) 08type	mm	Ø510x205xØ304.8
Wheel	Wheel size (OD x Width x ID) 10type	mm	N/A	Ø455x255xØ228.6	Wheel	Wheel size (OD x Width x ID) 10type	mm	Ø510x205xØ304.8
	Wheel size (OD x Width x ID) 12type	mm	N/A	Ø455x305xØ228.6		Wheel size (OD x Width x ID) 12type	mm	Ø510x205xØ304.8
	Motor rated power	kW	5.5 (Opt. 7.5)	11 (Opt. 15)		Motor rated power	kW	15 (Opt. 18.75)
	Spindle circumferential speed	mm/min	2000	2000		Spindle circumferential speed	mm/min	2000
	Dressing increment per gra./rev.	mm	0.01/1.25	0.01/2		Dressing increment per gra./rev.	mm	0.01/2
Regulating	Wheel size (OD x Width x ID) 08 type	mm	Ø205x150xØ90	Ø255x205xØ111.2	Regulating	Wheel size (OD x Width x ID) 08 type	mm	Ø305x205xØ127
Wheel	Wheel size (OD x Width x ID) 10 type	mm	N/A	Ø255x255xØ111.2	Wheel	Wheel size (OD x Width x ID) 10 type	mm	Ø305x255xØ127
	Wheel size (OD x Width x ID) 12 type	mm	N/A	Ø255x305xØ111.2		Wheel size (OD x Width x ID) 12 type	mm	Ø305x305xØ127
	Spindle speed (infinite variable)	rpm	10-300	10-300		Spindle speed (infinite variable)	rpm	10-300
	Upper slide infeed handwheel per gra.rev.	mm	0.05 / 3.5	0.05 / 3.5		Upper slide infeed handwheel per gra.rev.	mm	0.05 / 3.5
	Upper slide micro infeed handwheel per gra.rev.	mm	0.001 / 0.1	0.001 / 0.1		Upper slide micro infeed handwheel per gra.rev.	mm	0.001 / 0.1
	Swiveling angle (L/R)	deg	±5°	±5°		Swiveling angle (L/R)	deg	±5°
	Inclining angle (F/R)	deg	+5° ~ -3°	+5° ~ -3°		Inclining angle (F/R)	deg	+5° ~ -3°
	Dressing increment(X1, Y1) per gra./rev.	mm	0.01 / 1.25	0.01 / 2		Dressing increment(X1, Y1) per gra./rev.	mm	0.01 / 2
	Regulating wheel motor	kW	2	3		Regulating wheel motor	kW	4.4
	Infeed servo motor (NC)	kW	1	2		Infeed servo motor (NC)	kW	2
Motors	Hydraulic motor	kW	0.75	0.75	Motors	Hydraulic motor	kW	0.75
Machine	Net Weight	kg	1650	3200	Machine	Net Weight	kg	3400
	Gross Weight	kg	1800	3400		Gross Weight	kg	3600
	Packing size (Length x Width x Height)	mm	2270x1750x1800	2730x2270x1800		Packing size (Length x Width x Height)	mm	2730x2270x1800

*e-tech reserves the right to change or improve specifications without prior notice.



Model			ECG-S 1206	ECG-S 1808/1810/1812	Model	ECG-S 2008/2010/2012		
Grinding	Work diameter (w/standard workrest)	mm	Ø1-30	Ø1-60	Grinding	Work diameter (w/standard workrest)	mm	Ø1-80
Capacity	Work diameter (w/special workrest)	mm	Ø30-50	Ø60-100	Capacity	Work diameter (w/special workrest)	mm	Ø60-120
Grinding	Wheel size (OD x Width x ID) 08type	mm	Ø305x150xØ120	Ø455x205xØ228.6	Grinding	Wheel size (OD x Width x ID) 08type	mm	Ø510x205xØ304.8
Wheel	Wheel size (OD x Width x ID) 10type	mm	N/A	Ø455x255xØ228.6	Wheel	Wheel size (OD x Width x ID) 10type	mm	Ø510x255xØ304.8
	Wheel size (OD x Width x ID) 12type	mm	N/A	Ø455x305xØ228.6		Wheel size (OD x Width x ID) 12type	mm	Ø510x305xØ304.8
	Motor rated power	kW	5.5 (Opt. 7.5)	11 (Opt. 15)		Motor rated power	kW	15 (Opt. 18.75)
	Spindle circular velocity	mm/min	2000	2000		Spindle circular velocity	mm/min	2000
	Dressing increment (per gra./rev.)	mm	0.01 / 1.5	0.01 / 2		Dressing increment (per gra./rev.)	mm	0.01 / 2
Regulating	Wheel size (OD x Width x ID) 08 type	mm	Ø205 x 150 x Ø90	Ø255x205xØ111.2	Regulating	Wheel size (OD x Width x ID) 08 type	mm	Ø305x205xØ127
Wheel	Wheel size (OD x Width x ID) 10 type	mm	N/A	Ø255x255xØ111.2	Wheel	Wheel size (OD x Width x ID) 10 type	mm	Ø305x255xØ127
	Wheel size (OD x Width x ID) 12 type	mm	N/A	Ø255x305xØ111.2		Wheel size (OD x Width x ID) 12 type	mm	Ø305x305xØ127
	Spindle speed (infinite variable)	rpm	10-300	10-300		Spindle speed (infinite variable)	rpm	10-300
	Upper slide infeed handwheel (per gra./rev.)	mm	0.05 / 3.5	0.05 / 3.5		Upper slide infeed handwheel (per gra./rev.)	mm	0.05 / 3.5
	Upper slide micro infeed handwheel (per gra./rev.)	mm	0.001/0.1	0.001/0.02		Upper slide micro infeed handwheel (per gra./rev.)	mm	0.001/0.01
	Swiveling angle (L/R)	deg	±5°	±5°		Swiveling angle (L/R)	deg	±5°
	Inclining angle (F/R)	deg	+5° ~ -3°	+5° ~ -3°		Inclining angle (F/R)	deg	+5° ~ -3°
	Dressing increment (per gra./rev.)	mm	0.01 / 1.5	0.01 / 2		Dressing increment (per gra./rev.)	mm	0.01 / 2
	Lower slide infeed handwheel (per gra./rev.)	mm	0.05 / 10	0.05 / 10		Lower slide infeed handwheel (per gra./rev.)	mm	0.05 / 10
	Lower slide micro infeed handwheel (per gra./rev.)	mm	0.001 / 0.2	0.001 / 0.2		Lower slide micro infeed handwheel (per gra./rev.)	mm	0.001 / 0.2
	Regulating wheel motor	kW	2	3		Regulating wheel motor	kW	3
Motors	Hydraulic motor	kW	0.75	0.75	Motors	Hydraulic motor	kW	0.75
Machine	Net Weight	kg	1650	3200	Machine	Net Weight	kg	3400
	Gross Weight	kg	1800	3400		Gross Weight	kg	3600
	Packing size (Length x Width x Height)	mm	2270x1750x1800	2730x2270x1800		Packing size (Length x Width x Height)	mm	2730x2270x1800

Standard Accessories

- Tools and tool box

Standard coolant tank

Wheel extractor

Diamond dresser

Levelling bolts and blocks

Grinding wheel with flange

Regulating wheel with flange
- Spindle lubrication system w/ cooling fan

Regulating wheel with flange

Manual lubricator for guide ways (S model)

Operation manual and part lists

Thrufeed workrest

Infeed workrest

Control panel (S model)

PLC controller + touch screen + control panel (NC model)

FANUC 0i-TF CNC controller (CNC model)

Optional Accessories

- Vibration feeder auto. loading system

Auto. unloading system for thrufeed grinding

Forming attachment (forming plates)

Coolant system with magnetic separator

Thrufeed blade (various sizes)

Infeed blade (various sizes)

Hydraulic forming attachment

Coolant system with paper filter

Coolant system with magnetic separator & paper filter

Infeed grinding workpiece eject attachment (hydraulic / pneumatic)

Auto. loading system for thrufeed grinding (Φ5~25mm, L 50~600mm)

Hopper type auto. loading system for thrufeed grinding (Φ2~8mm, L 50~180mm)
- Input rail & output rail

Balancing stand/ arbor

Spare regulating wheel flange

Spare grinding wheel flange

CE standard electrical cabinet

Special workrest (for large dia. Workpiece)

Minor diameter workrest (dia. 0.5~2mm)

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