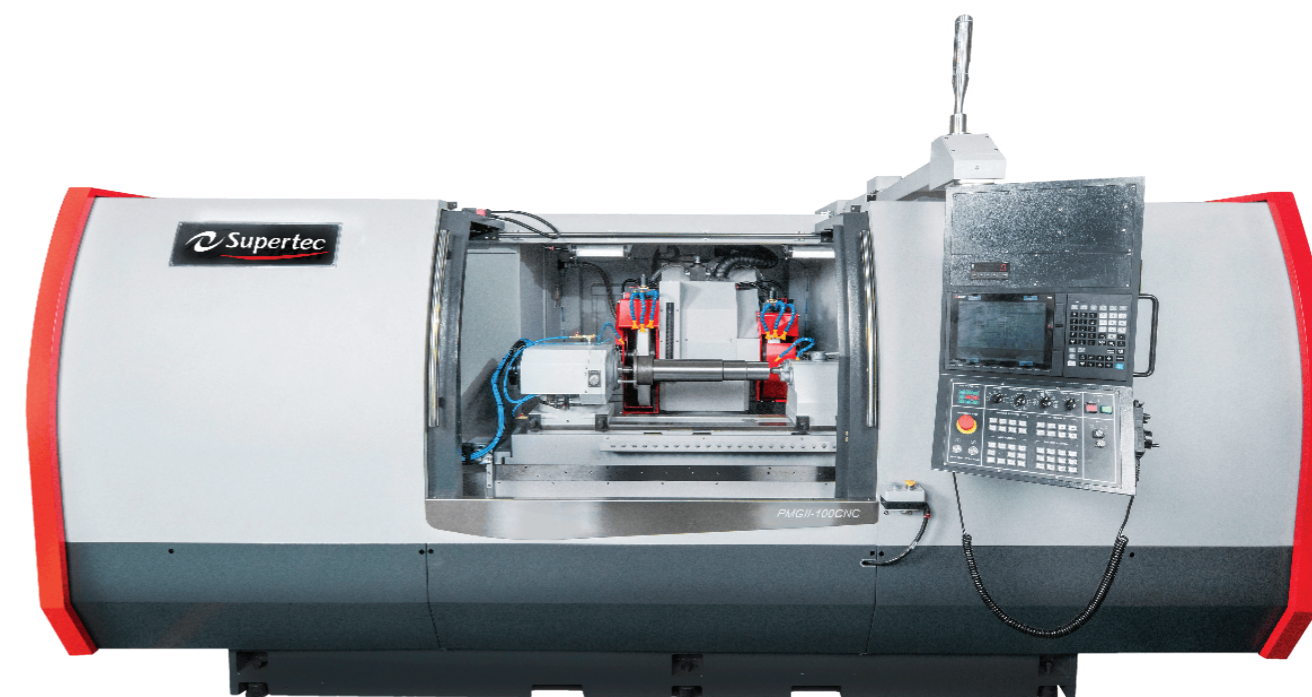


Your Source for Grinding Solutions

CNC UNIVERSAL CYLINDRICAL GRINDER PMGII Series



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Website & Social

CNC UNIVERSAL CYLINDRICAL GRINDER

PMGII Series

The PMGII CNC universal cylindrical grinders are designed for grinding round complex parts in a single set-up. Versatile enough for large and small batch production the PMG models come in 24", 40" and 60" between centers with a swing over table of 14".

All PMGII models come with a programmable B-axis with 3 grinding wheels, a plunge, an anglehead and a ID type.

Features

- Rigid ribbed box structure with a fully supported table ensures maximum base stability and durability.
- Intuitive i-Grind system with a graphical conversational interface, designed for easy learning and quick operation—even for new users.
- High-rigidity B-axis rotary table offers precise positioning and flexible multitasking capabilities for complex grinding applications.



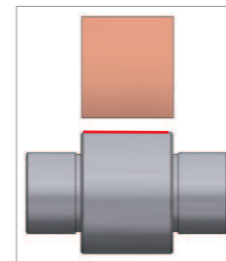
CNC Controller

- i-Grind graphic conversational interface, including the function of auto. dressing and compensation.
- Equipped with internal/external straightness offset function.
- X & Z-axis with 0.0001 mm minimum resolution.
- Data upload and storage function for long-term usage.
- Immediate dressing function to minimize machine setup time.
- Current indicator combines with crash control function and monitors the changes during the operation, reducing machine setup time.
- Simulate program with MPG before cycle start.
- Large operation panel with 10.4" screen complete grinding cycle with rough, medium, and fine grinding values to increase efficiency and flexibility at the same time.

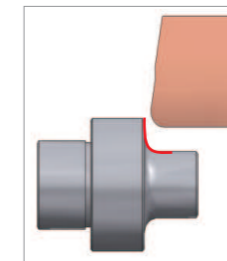


Standard Grinding Cycles & Multi-Steps Graphic Conversational Functions

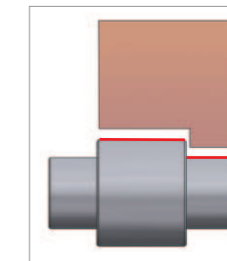
Wheel T1



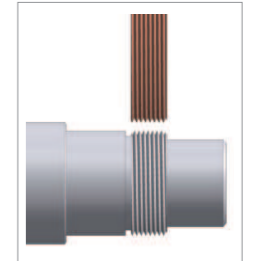
Plunge Grinding



OD + Radius + Face

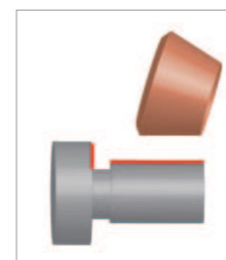


Form Grinding

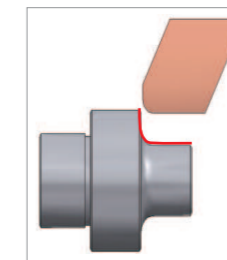


Thread Grinding

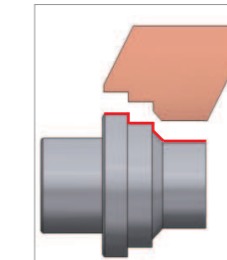
Wheel T2



OD + End Face

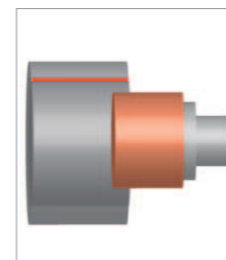


OD + Radius + Face

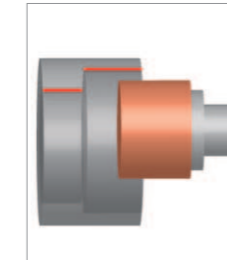


Form Profile Grinding

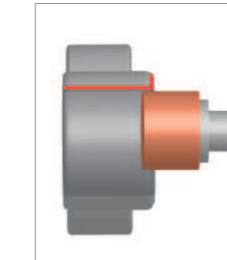
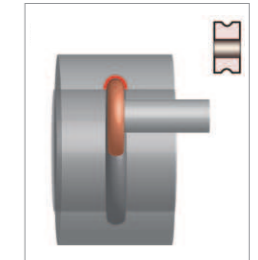
Wheel T3



Inner Through Hole



2-Step Straight Hole

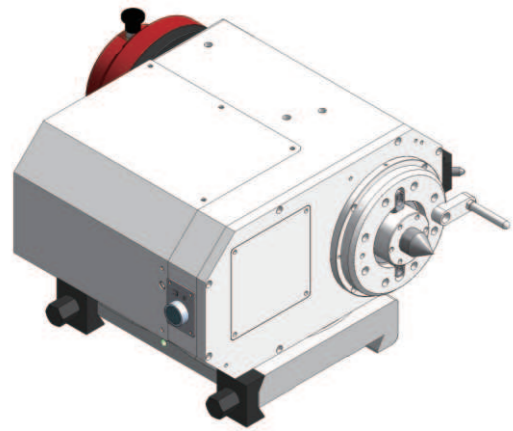
Inner through hole
+ outer end face (gear trip)

Inner Radius Grooving

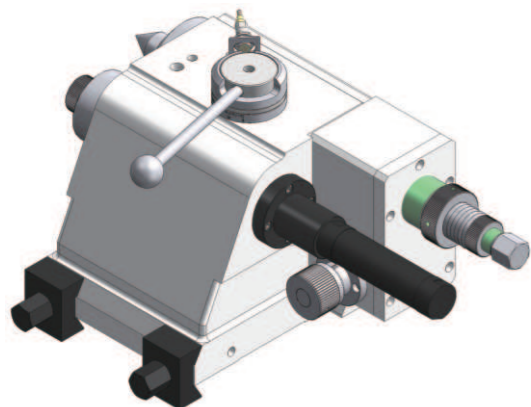


CNC UNIVERSAL CYLINDRICAL GRINDER

Structure Design

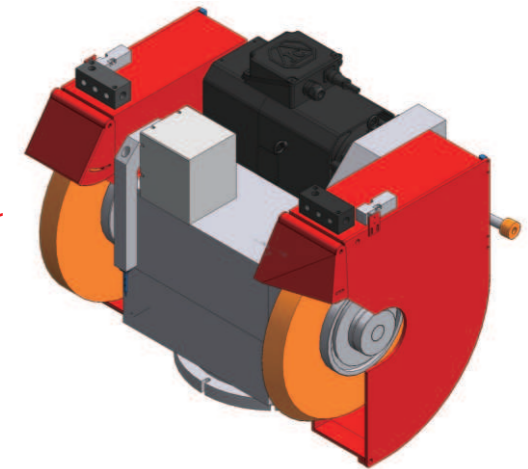
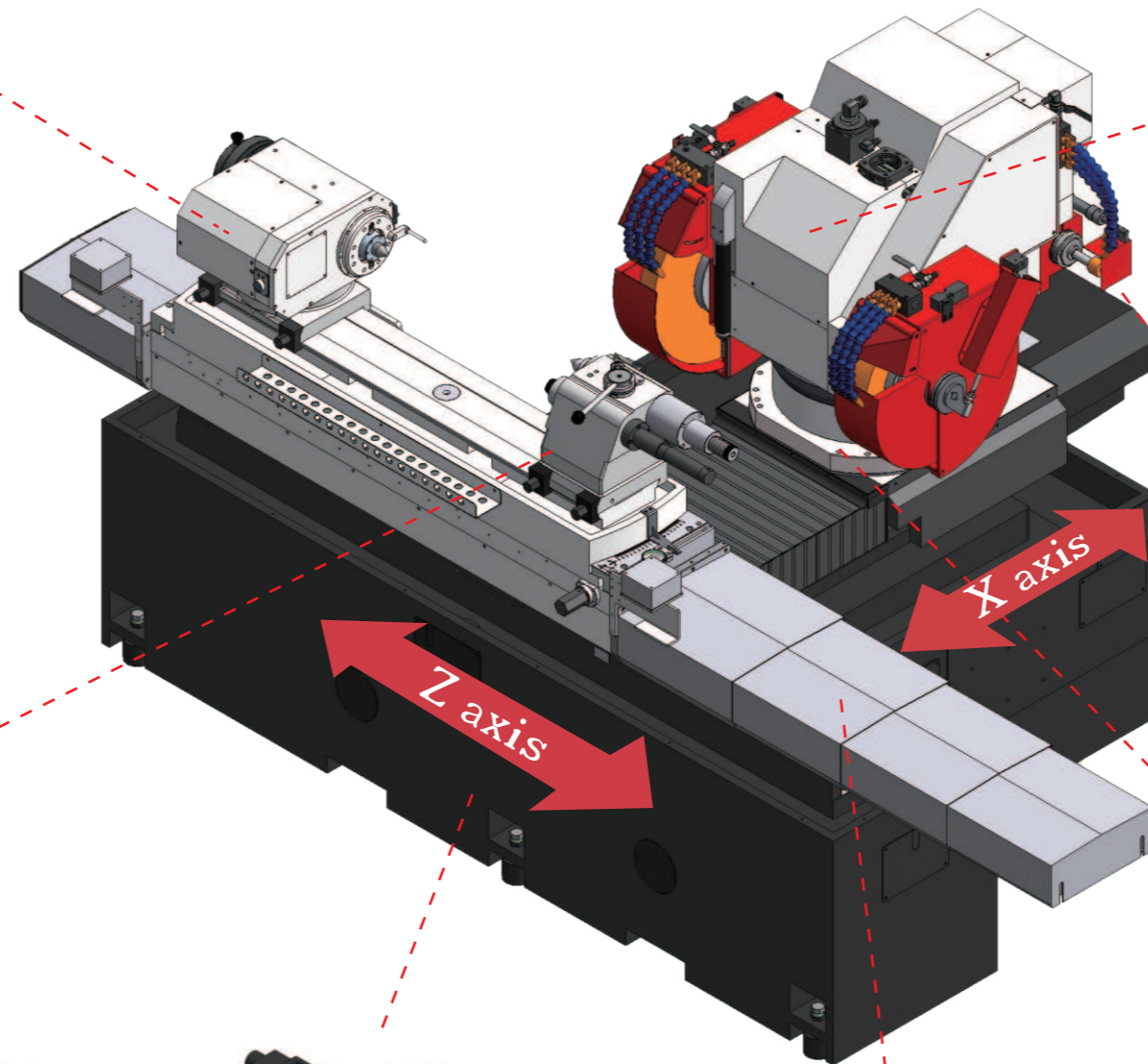
**Workhead**

NN bearing designed work spindle offers heavy duty load capacity, optimal rotation accuracy, and high rigidity. The servo motor drive offers stable speed and torque during the grinding operation. It is also provided with a positive air plunge system, keeping the grinding debris and coolant out of workhead to prolong the longevity.

**Tailstock**

A coolant nozzle is installed on the top of the tailstock for cooling the center tip. An air floating device allows smoother movement and protection of the table. It is capable of slightly adjustment and no need to reset dressing zero.

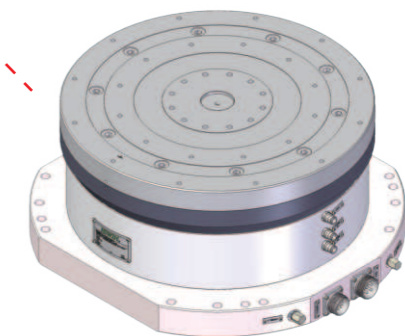
- An optional tailstock quill travel of 2" and 3" helps to load/unload the workpiece with ease. the quill is oil-bathed to ensure smooth movement.
- An optional tailstock taper adjustment feature allows the operator to easily correct the taper.

**Wheelhead**

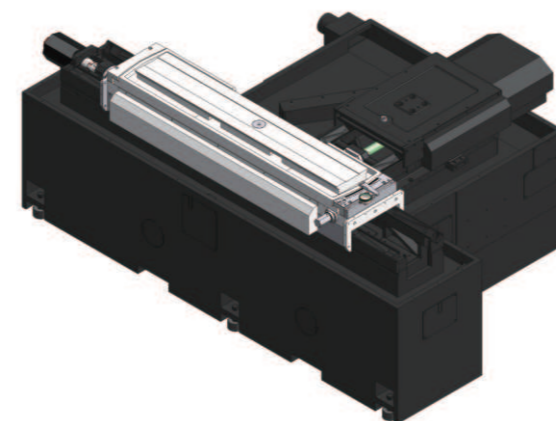
T1 and T2 share the same spindle with NN bearing design, ensuring the best rigidity and accuracy during grinding operation. Additionally, it provides a bigger power output to increase the grinding efficiency. (Standard linear velocity: 1.7")

ID Grinding Spindle

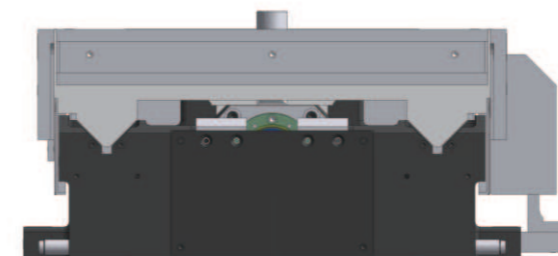
The T3 axis uses a belt-driven internal grinding spindle, which facilitates easier replacement. Driven by a servo motor, it provides constant speed and torque output, enhancing grinding efficiency and quality. The built-in internal spindle can be equipped as an option.

**Rotary Index Table**

The rotary table is equipped with a direct drive motor and chiller. The high rigidity comes from its bearing that possessed high accuracy on both radial and axial direction. Plus, a high accuracy absolute encoder and powerful braking system, it features outstanding preciseness, high RPM and torque.

**Rigid Machine Base**

The machine base is designed with ribbed-box structure with thickness of 1", and internalized coolant guide with three outlet. This design provides excellent rigidity and stability of the machine, and also ensure accuracy and quality of grinding.

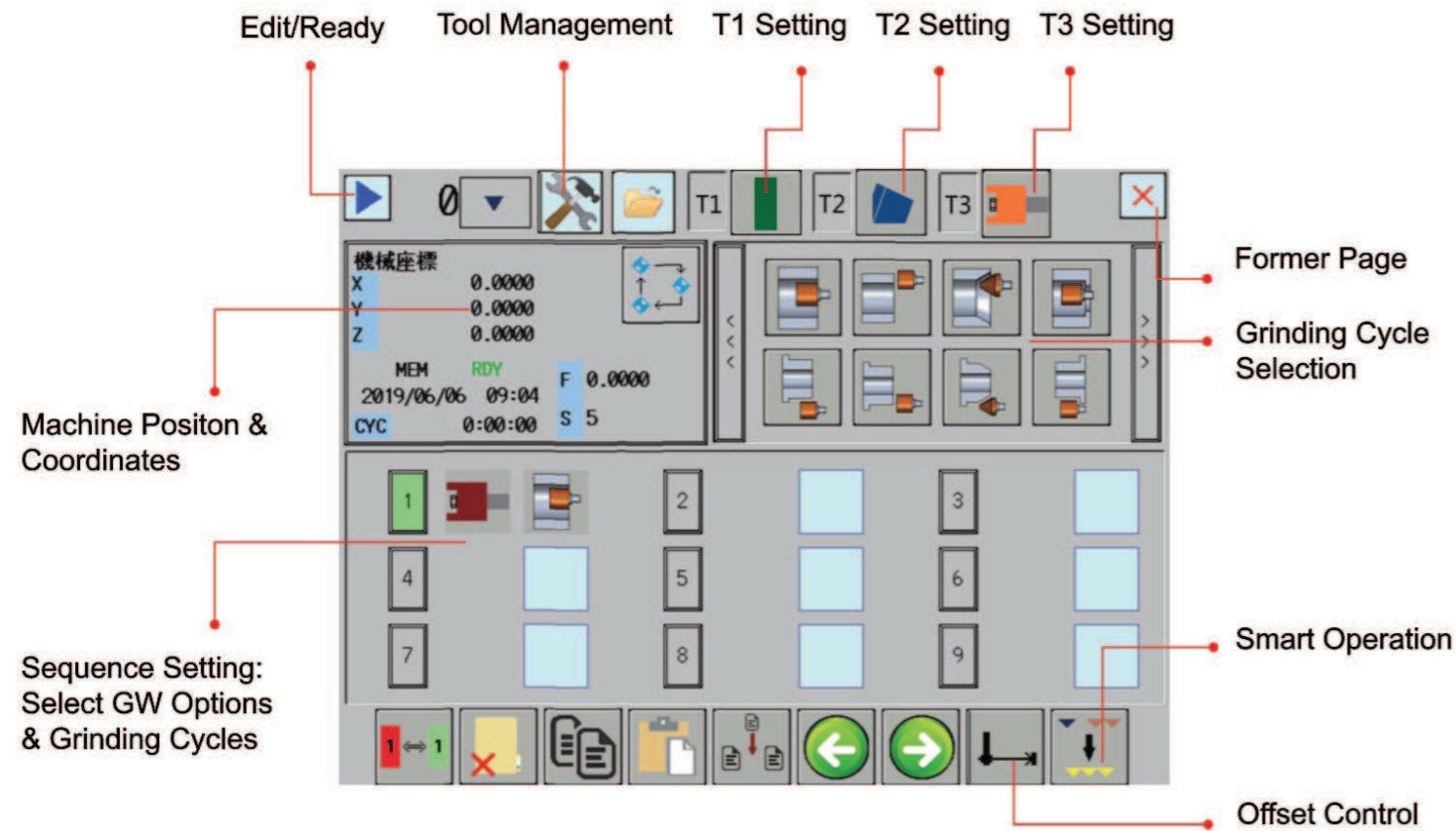
**Z-Axis Guideway**

The hand scraped guideway on the X-axis is designed specially with a double-V to provide a perfect balance and stability on the machine. It provides an outstanding perpendicularity with the Z-axis in both horizontal and vertical direction.

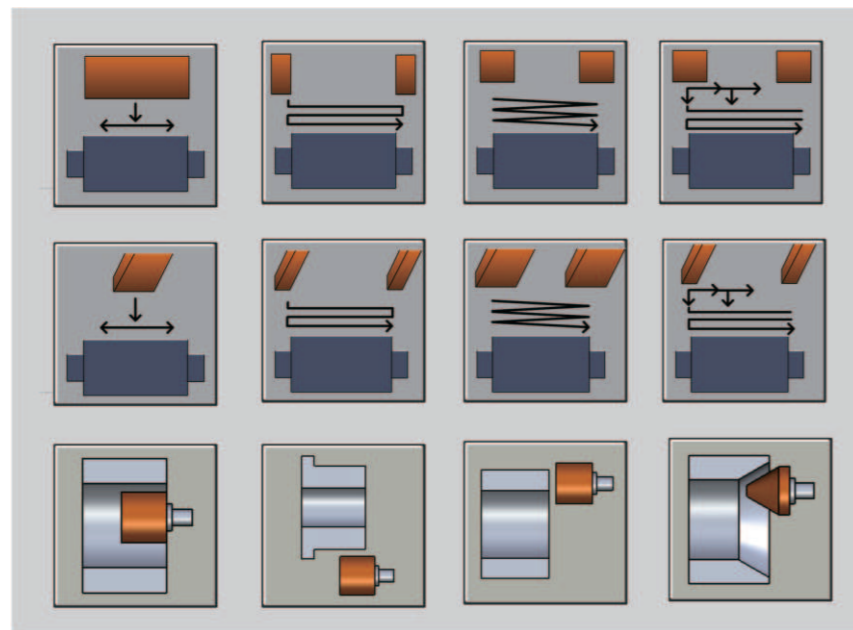
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iGrind Graphic Conversational Screen

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

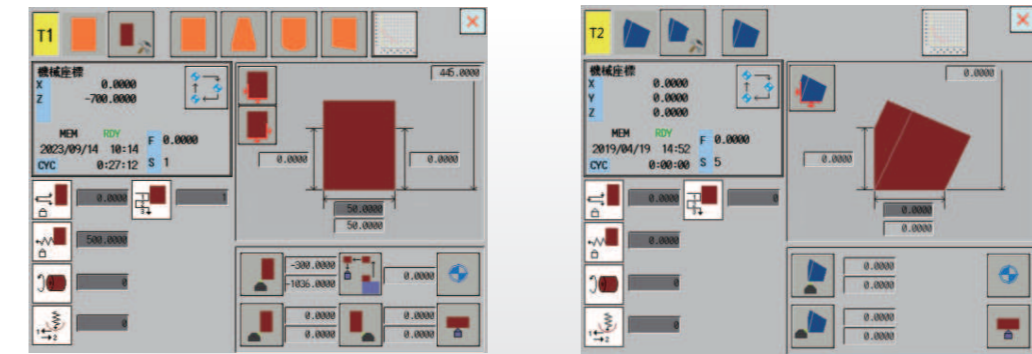


Grinding Cycle Selection



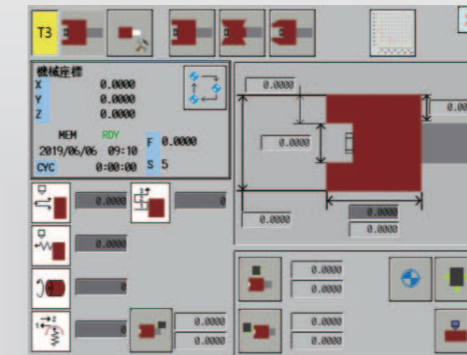
Grinding Wheel Dressing

The best advantage in iGrind is that e-tech had not only made a wide range of standard forming cycles, but also a free forming software which allows the operators to form the wheel into their own desired shape. It also includes a new wheel forming cycle to provide the best efficiency by reducing its setting and dressing cycle time, and increases the grinding efficiency. The operators are only required to input the wheel specification and geometric data to build up a complete forming cycle.

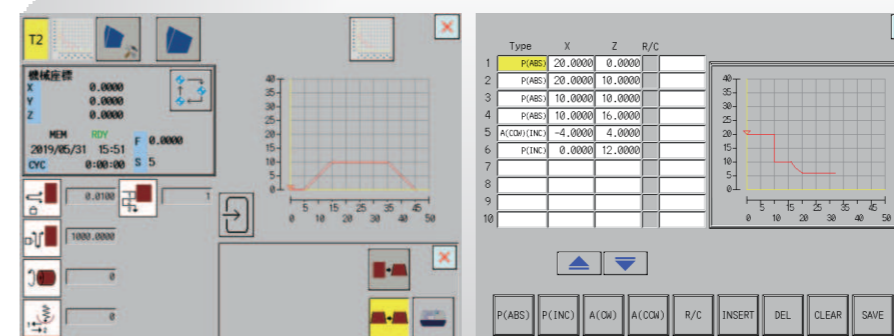
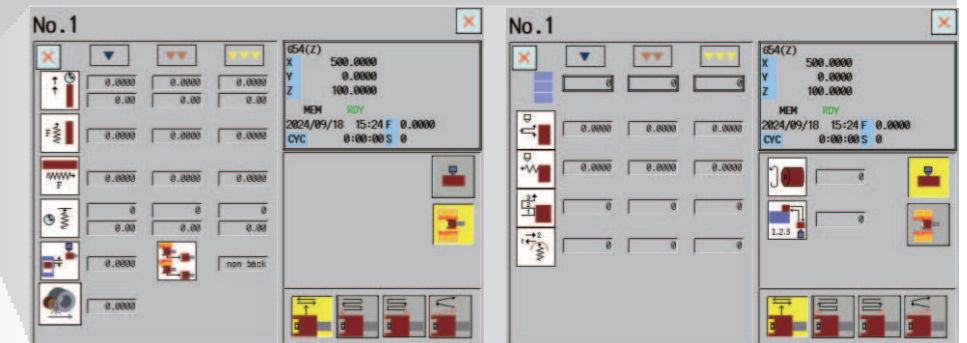


T1 OD wheel parameter setting

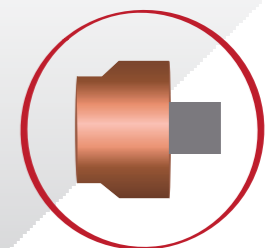
T2 Angular wheel parameter setting



T3 ID wheel parameter setting

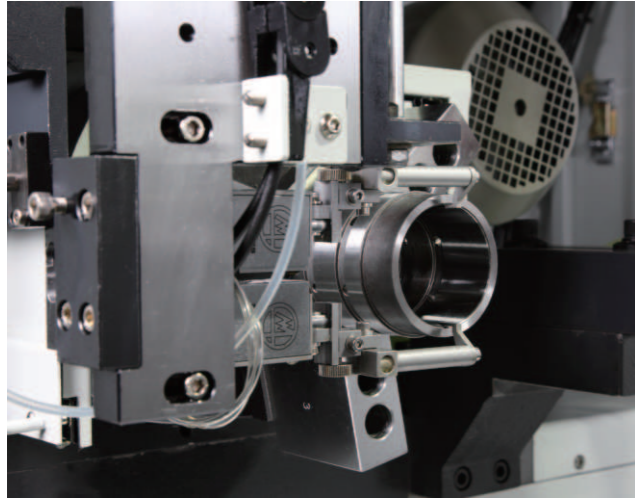


Profile grinding customization



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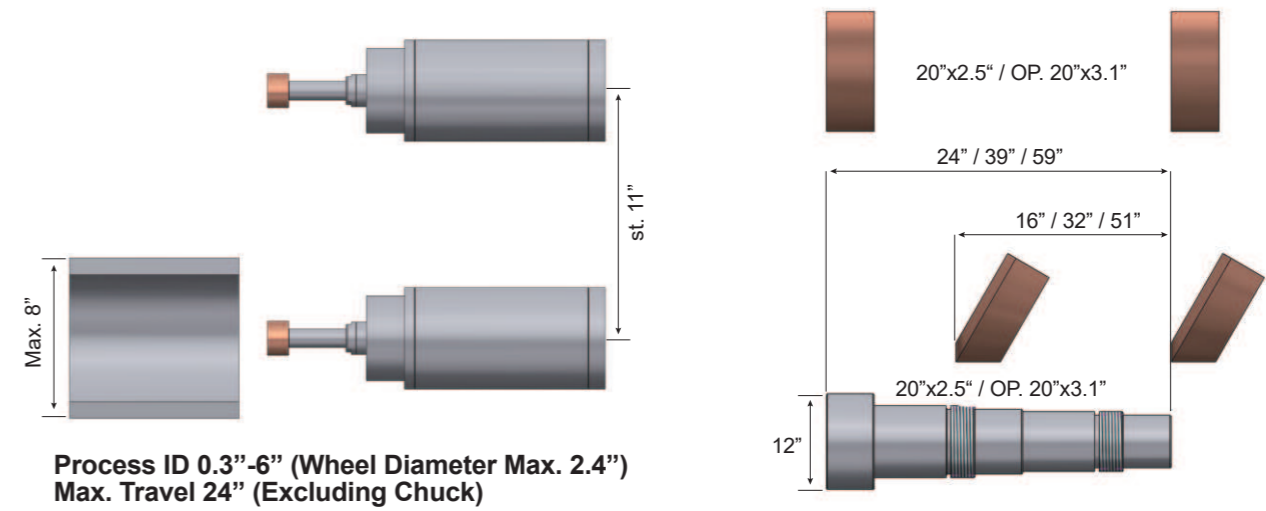
Grinding Example



ID Auto Gauging Device

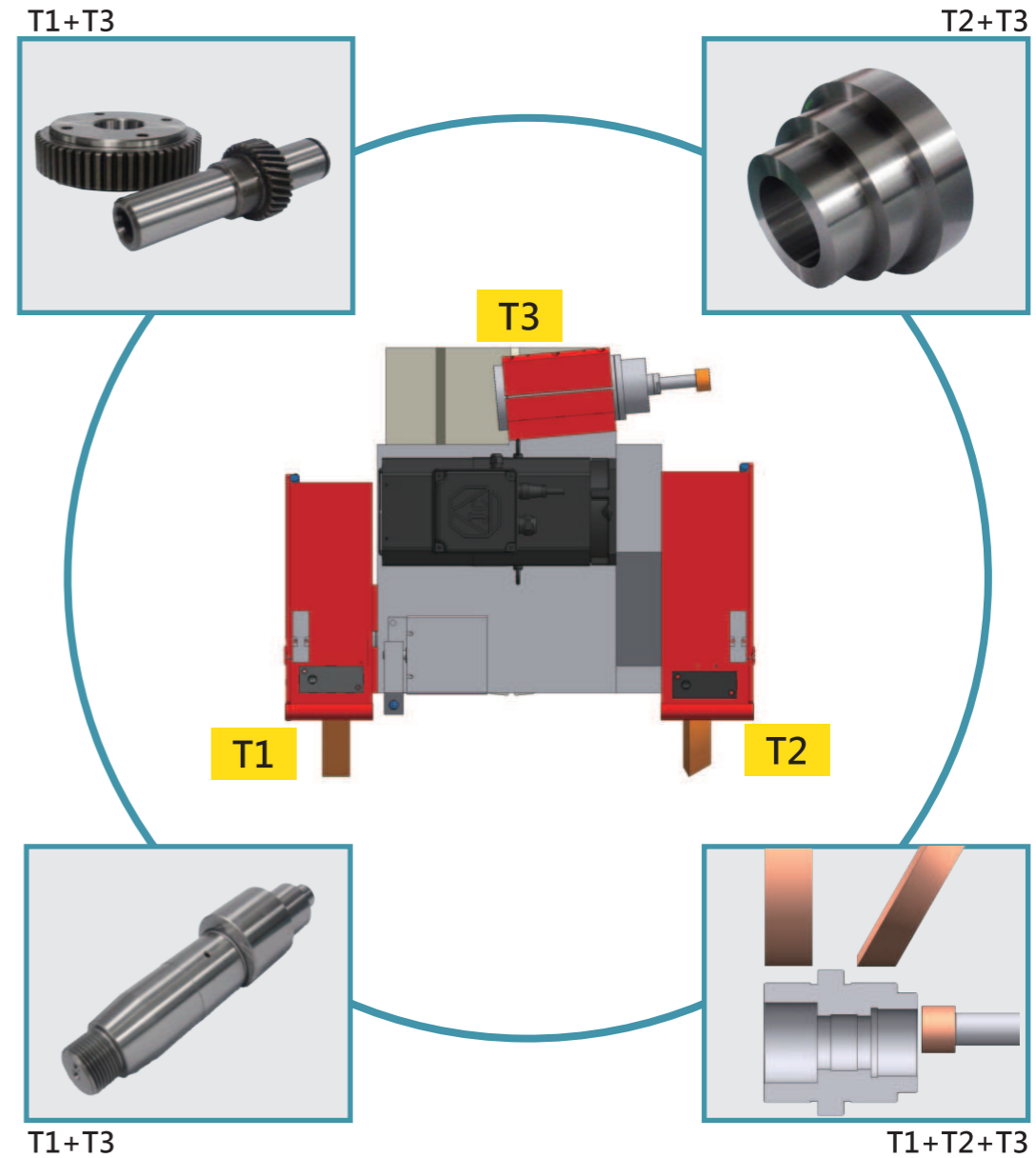
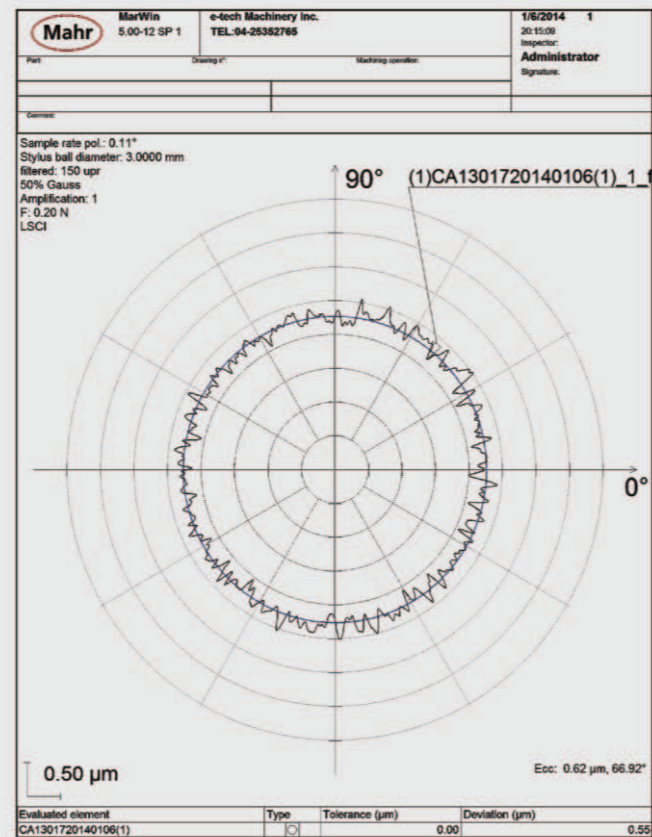
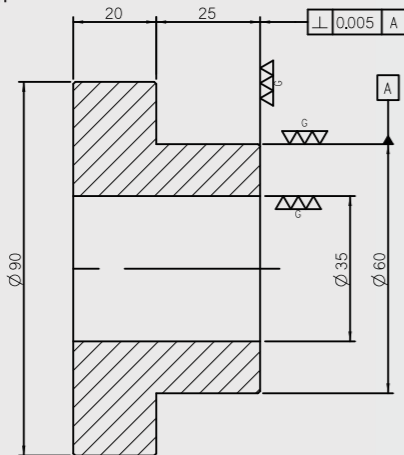


Grinding Range



Parts Name:

- Material : SCM415(JIS)
- Workpiece dimension : 3.5"x1.8"x1.4"
- Grinding application : 0.01" / min
- Hardness : HRC55°±2°
- Dimension tolerance : 5um
- Grinding wheel speed : 20,000 rpm
- Roundness : 2um
- Cylindricity : 3um



CNC UNIVERSAL CYLINDRICAL GRINDER

Specification

	PMGII-60CNC	PMGII-100CNC	PMGII-150CNC
Grinding Capacity			
Swing Over Table	15"	15"	15"
Distance Between Centers	23.6"	39.4"	59"
Max. Grinding Diameter	14"	14"	14"
Max. Load Held Between Center	330 lbs.	330 lbs.	330 lbs.
Center Distance Between Spindle & Slide Table	7.5"	7.5"	7.5"
OD Grinding Wheel Spindle (T1, T2)			
Diameter x Width x Bore	T1: 20" x 2" x 6" T2: 16" x 2" x 6"		
Motor Rapid Power / Max. Torque	10 Hp / 36 Lb-Ft		
Wheel Speed	1650 Rpm		
ID Grinding Wheel Spindle (T3)			
ID Spindle Diameter	3.5" (Opt. 4")		
Motor Rated Power / Max. Torque	4 Hp / 7.2 Lb-Ft		
ID Spindle Speed	8,000 - 50,000 Rpm		
Workhead			
Swiveling Angle	90°		
Spindle Speed (Infinite Variable)	10 - 600 Rpm		
Motor Rated Power	2 Hp		
Center Taper	MT4 (Opt. MT5)		
Diameter of Bore	1.02"		
Tailstock			
Quil Travel	1" (Opt. 2" / 3")		
Center Taper	MT4 (Opt. MT5)		
X-Axis			
Travel	13.7"		
Max. Rapid Feedrate	20' / Min		
Linear Scale Resolution	0.000002"		
Min. Increment	0.00004"		
Servo Motor Rated Power	2.4 Hp (F) / 3 Hp (M)		
Z-Axis			
Travel	40"	57"	77"
Swiveling Angle	±9°	±7°	±5°
Max. Rapid Feedrate	26' / Min		
Min. Increment	0.00004"		
Servo Motor Rated Power	2.4 Hp (F) / 3 Hp (M)	2.4 Hp (F) / 3 Hp (M)	2.4 Hp (F) / 4.7 Hp (M)
B-Axis			
Swiveling Angle	-30° - +210°		
Max. Rotation Speed	30 Rpm		
Min. Increment	0.00004"		
Motor Type	Direct Drive		
Clamping Torque	442.5 Lb-Ft		
Motor			
Hydraulic Pump	3 Hp		
Hydrodynamic Wheel Spindle Lubrication Motor	0.26 Hp		
Guide Way Lubrication Pump	0.26 Hp		
Coolant Pump	0.26 Hp		
Machine Size & Weight			
Net Weight (Semi-Enclosed Splash Guard)	14,330 Lbs	16,534 Lbs	19,180 Lbs
Gross Weight	15,432 Lbs	17,857 Lbs	20,723 Lbs
Size	146" x 116" x 82.6"	177" x 116" x 82.6"	228" x 116" x 82.6"

Accessories

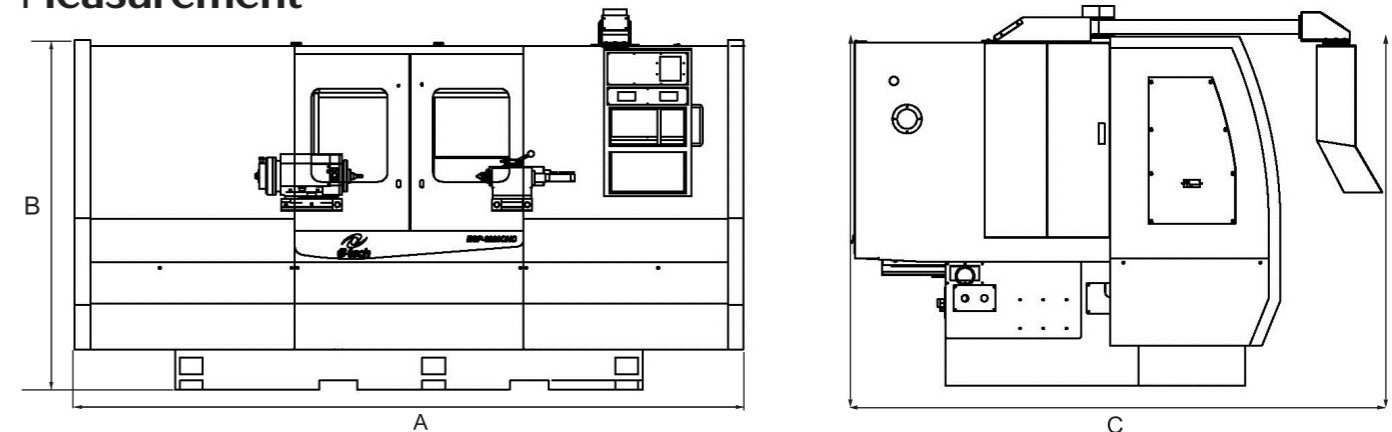
Standard Accessories

- Mitsubishi controller (M80) iGrind program
- T1 Plunge type wheel + 6" wheel flange
- T2 Angular type wheel + 6" wheel flange
- T3 Internal std. wheel w/o spindle + quill
- Automatic multiple step wheel speed change
- Infinite variable workhead w/servo motor MT4
- X Axis Renishaw linear scale (resolution 0.05 um)
- B axis rotary index table -30~+210 degree
- Diamond dresser and stand
- Grinding wheel extractor
- Standard coolant tank 140L
- Carbide center tip MT4/C14
- LED working light
- Operating manual and part list
- Standard hydraulic tank (cooling fan)
- Tools and Tool Box
- Electricity cabinet w/ heat exchanger
- Balancing arbor & stand
- 4-color indication signal light

Optional Accessories

- Mitsubishi controller (M80) iGrind conversational program
- Including radius / taper / multiple step / form shape dressing
- Mitsubishi controller (M80) iGrind thread grinding program
- Workhead upgrade to MT5
- Tailstock upgrade to MT5
- ID built-in type sipindle 20,000 ~ 40,000 rpm (w/ dressing seat)
- ID built-in type sipindle 40,000 ~ 60,000 rpm (w/ dressing seat)
- Automatic 3-jaw hydraulic chuck
- Manual 3-jaw scroll chuck
- Workpiece carrier
- Workpiece supporting seat, 2pc / set
- 2-point steady rest (0.8" - 2.8")
- 2-point steady rest (2.8" - 4.7")
- 3-point steady rest (2.8" - 4.7")
- 3-point steady rest (4.7" - 8")
- Diamond roller dressing device (Brand: Taiwanese maker)
- Diamond roller dressing device (Brand: Dr. Kaiser, Germany)
- Coolant system with magnetic separator 80L/min
- Coolant system with paper filter 210L
- Coolant system with magnetic separator 120L/min
- Coolant system with paper filter 260L
- Grinding wheel dynamic balance system
- Gap & crash control device
- BS VM15 Integration system
- (OD gauging+ crash & gap control)
- BS VM25 Integration system
- (OD gauging+ crash & gap control + dynamic balance system)
- Full-enclosure splash guard
- Spare grinding wheel flange 152.4
- Z Axis Renishaw linear scale - 60 CNC
- Z Axis Renishaw linear scale - 100 CNC
- Hydraulic tailstock (w/ foot pedal)
- Auto gauging device
- Tailstock micro-taper adjustment
- Oil & mist collecting system
- Touch probe
- Electrical cabinet air conditioner
- Full-Carbide center tip

Measurement



	A	B	C	D	E	F	G	H	I
PMGII-60CNC	146"	71"	109"	50"	39.8"	23"	12.8"	19"	39"
PMGII-100CNC	177"	71"	109"	65.7"	55.5"	39"	28.5"	19"	39"
PMGII-150CNC	229"	71"	109"	89.3"	40"	62.4"	52"	19"	39"