EGM – Series ID OD Compound Grinders

Outline


01
INTRODUCTION
機台簡介
02
Specification
機台規格
03
Operation &
Software
軟體及操作
04
Application
機台應用

High Accuracy, High Effeicency
EGM – 350 CNC

- According to more than 10 years of expert Operator and user’ s experience to make the machine more user friendly.

- iGrind Total Graphical Interface:
  - ✓ Let beginners quickly enter the field of CNC grinding machines
  - ✓ Conventional machine users to accept CNC Controls
  - ✓ High precision products do not require high operating technical skills anymore
  - ✓ Solve Inter-transition language issue

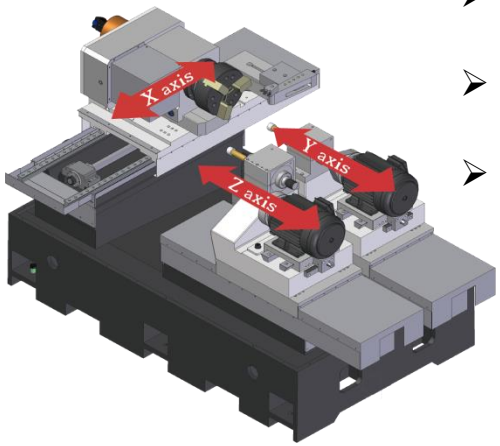
- Flexible Operation

- Multiple grinding applications:
  - ✓ inner diameter/ inner end/ inner taper / inner hook
  - ✓ outer diameter/ outer end/outer taper / ooter hook

- Groove, R angle, inner and outer steps, by forming grinding wheel and complete multi-task in one cycle, and shortens the working hours efficiently.

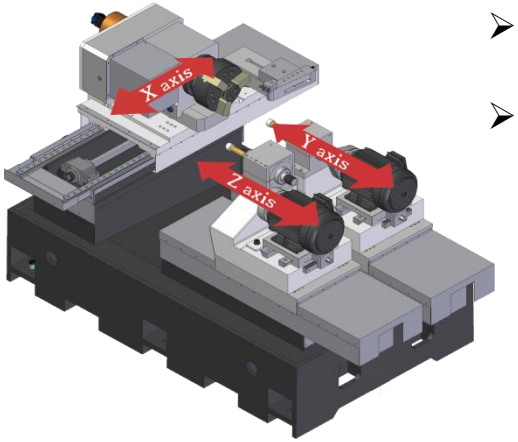
Machine Selection

EGI-150



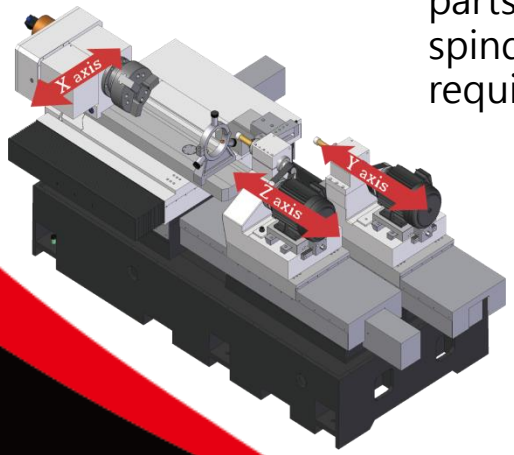
- Suitable for Short part
- Delicately finish easy operation
- Using lowest budget to complete best quality

EGM-350



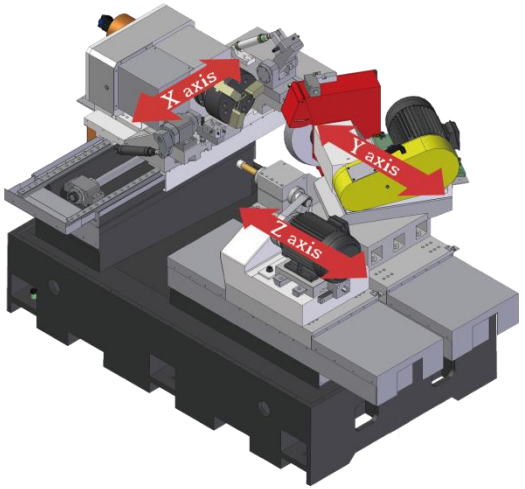
- Suitable for short part
- Suitable for grinding OD below Ø270mm
- Hybrid and flexible function to achieve all kinds of application

EGM-350L



- Able to grind long parts (750mm) i.e. spindle ID requirement

EGM-450



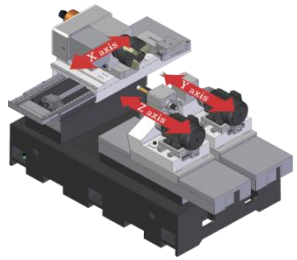
- Y axis with Cylindrical Angular Wheel
- Suitable for grinding OD between Ø250~400mm
- Suitable for more face grinding requirement

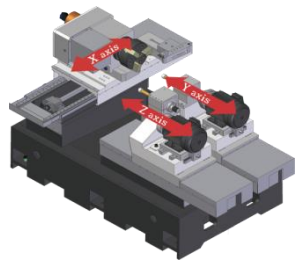
Outline

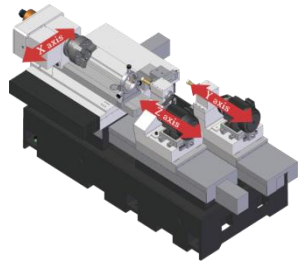

01
INTRODUCTION
機台簡介
02
Specification
機台規格
03
Operation &
Software
軟體及操作
04
Application
機台應用

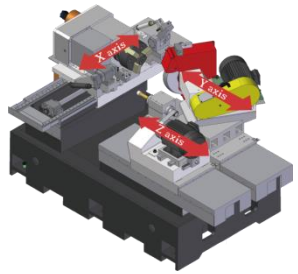
Machine Model Comparison

General Capacity	Unit	EGI-150	EGM-350	EGM-350L	EGM-450
Max. ID Grinding	mm	Ø300	Ø400	Ø300	Ø400
Max. OD Grinding	mm	Ø300	Ø400	Ø330	Ø400
Swing Over Workhead	mm	Ø500	Ø500	Ø340	Ø410
Max. grinding depth	mm	260	260	260	260
Max. weight of workpiece	kg	50	50	300 (w/ three point steady rest)	50
Max. length of workpiece	mm	300	300	750 (w/ three point steady rest)	300
Type of wheel head		Single feeding Axis(Z)	Dual independent wheel head (Y/Z)	Dual independent wheel head (Y/Z)	Dual independent wheel head (Y/Z) Y: Cylindrical Angular Wheel



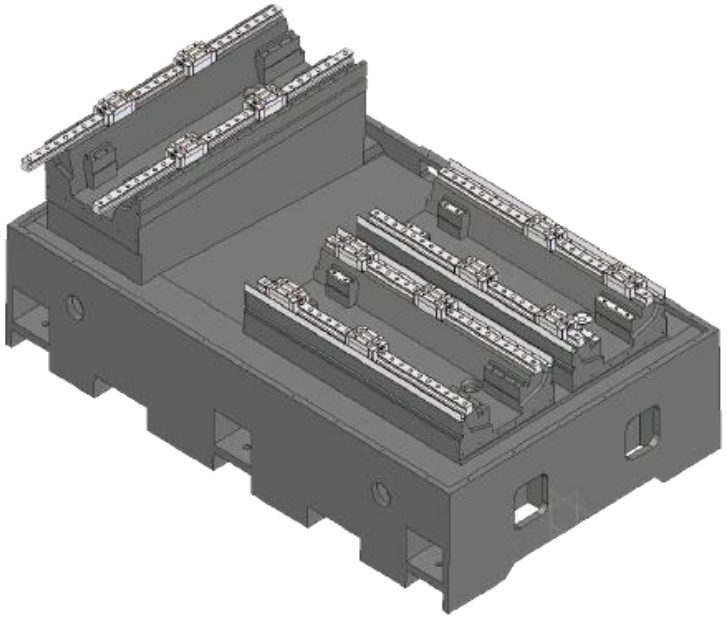






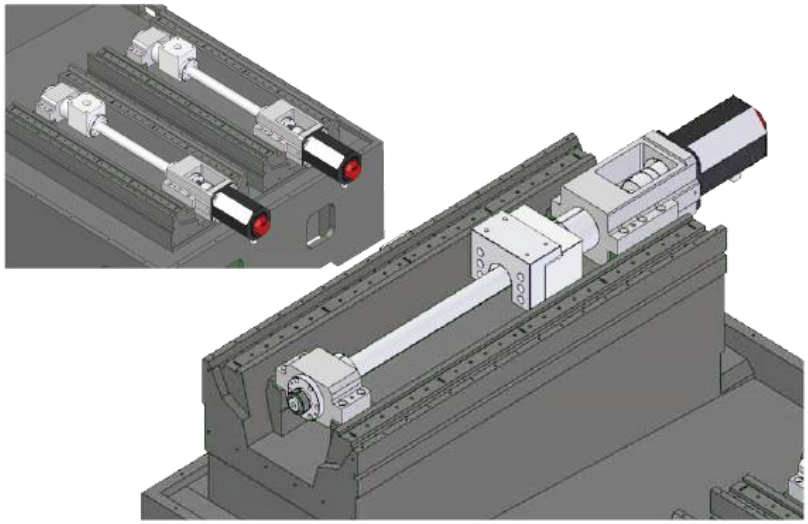
Machine Base and Roller Linear Way

- The low-profile mechanical structure, combined with the large-angle tilting base design, facilitates to remove cutting debris when, which can be used to keep the machine clean.



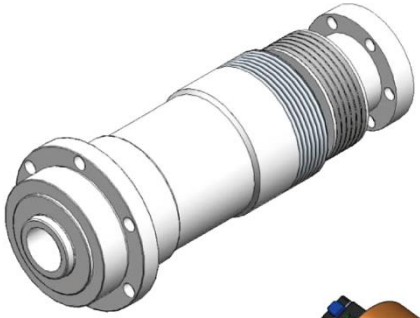
- All three axes mounted Roller linear way, combining both flexibility and high rigidity, and also with heavy load capacity can greatly improve machining accuracy and achieve high precision performance.

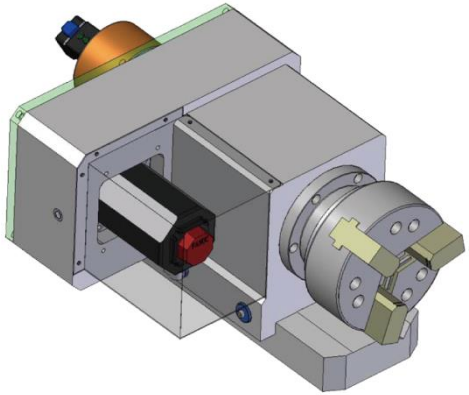
- All three axes Selected C1 grade high precision ball screw for high efficiency, high rigidity, high lead and predictable long lasting accuracy.

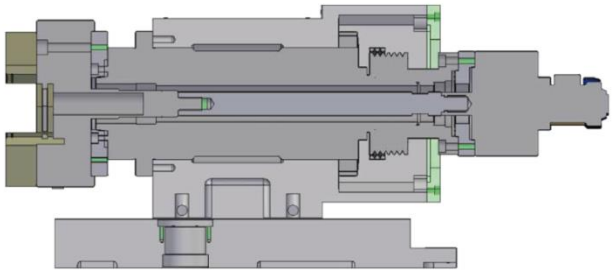


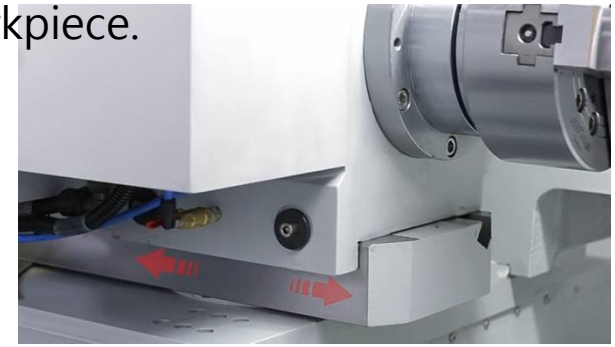
Workhead(X Axis)

- The workhead spindle is consist of 3 NSK precision Angular Roller Bearing plus one NSK precision Double Sided Roller Bearing.
- After assembling, the spindle goes through accuracy adjustment and temperature rise tests.
- Standard Spindle Nose with A2-5 design to easily exchange to all kinds of clamping tools.
- Heidenhain X linear Scale in X axis is standard (Resolution: 0.05μm)
- Opt. A2-6 Spindle 。
- Servo motor driven, presenting stable speed and torque and showing best accuracy after long operation.
- Forward workhead center to increase rigidity and weight load capacity.
- X axis down slide design able to manually move forward and backward. Easier for exchanging same type but different length workpiece.



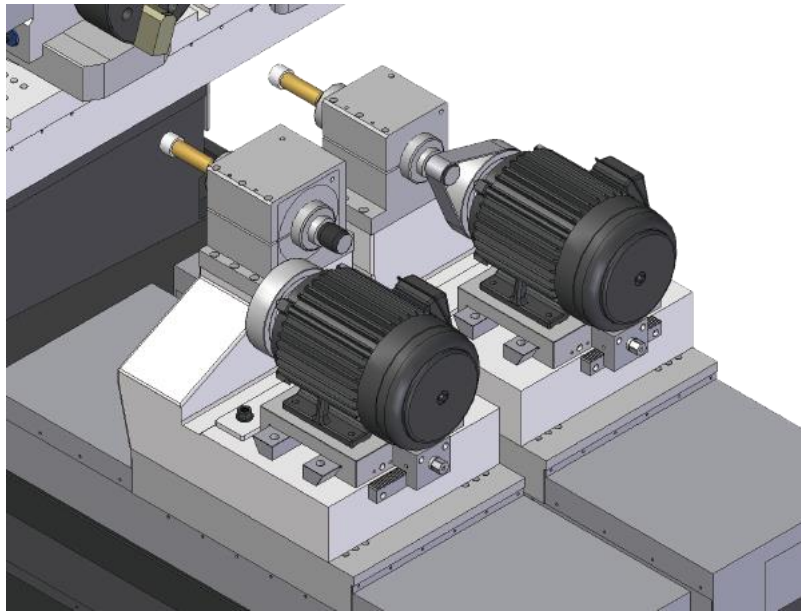






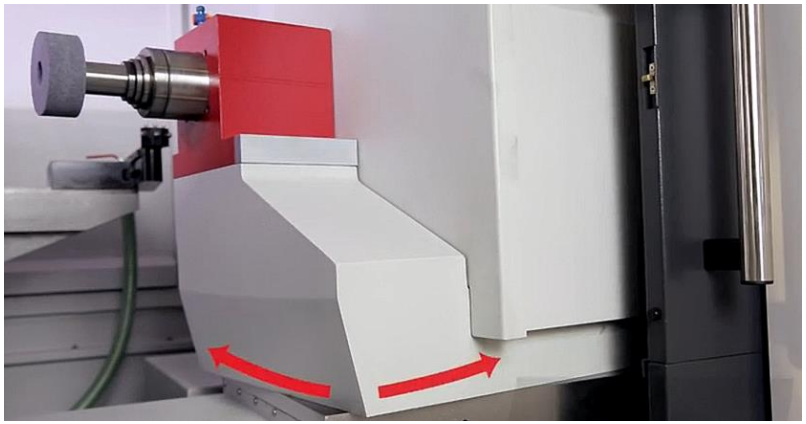
Grinding Wheel Axis(Y,Z axis)

- The grinding wheel shaft uses a OD Ø90mm belt drive high-speed precision spindle, and has various RPM spindles for selection.
- Standard Oil-grease type spindle 80,000 ~ 50,000RPM. Also could comply with high RPM requirement to choose 40,000 ~ 60,000 RPM Oil-mist type spindle (Opt.).
- The grinding wheel shaft is driven by a 5HP (3.75Kw) motor, which is usually higher than other supplier.
- Max. OD for inner grinding wheel can be installed up to Ø100mm
- With the inverter which is able to set the grinding speed to meet the required frequency.

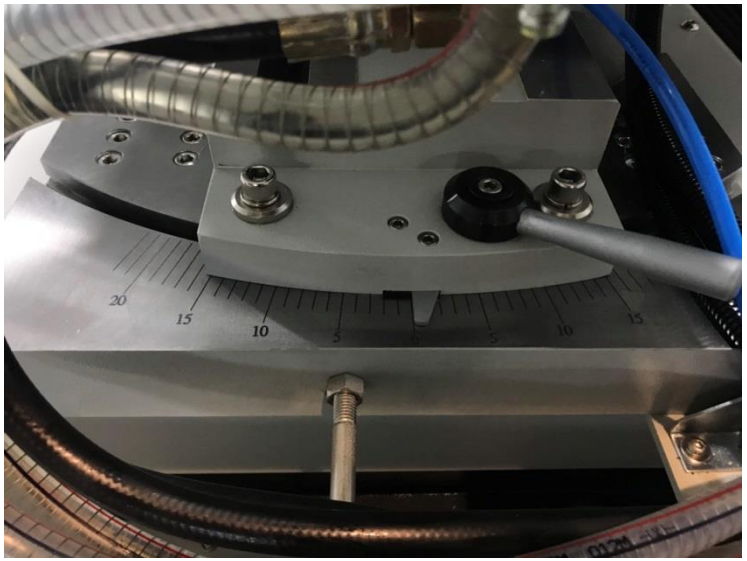


Three Axes Taper Device

- Workhead Taper: +15˚ ~ -5˚
- Grinding spindle taper:
  Z : +12° ~ 0°
  Y : 0° ~ -12°



Wheel head Taper Mechanism



Workhead Taper Mechanism

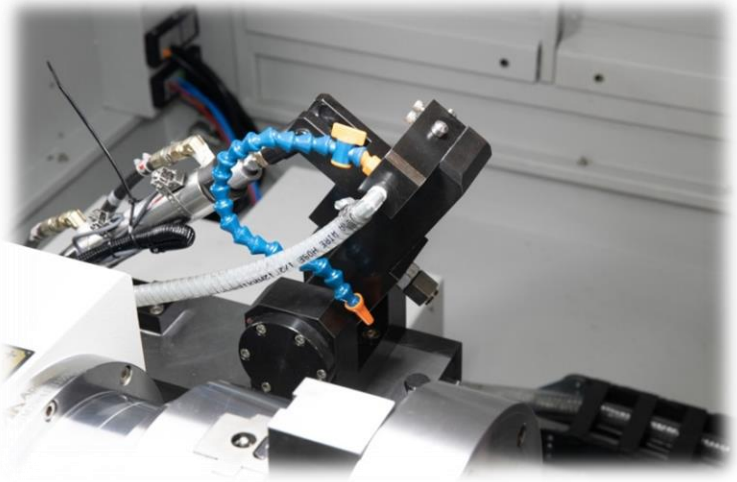
Standard Dressing Device

EGI、EGM-350、EGM-350L Dressing Device

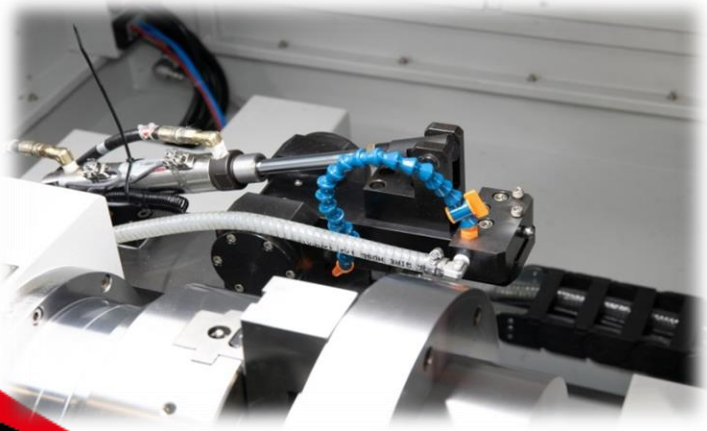
- Combining cast-iron, steel and copper spacer, with different materials to enhance rigidity, and also to reduce vibration.

EGM-450 Dressing Device

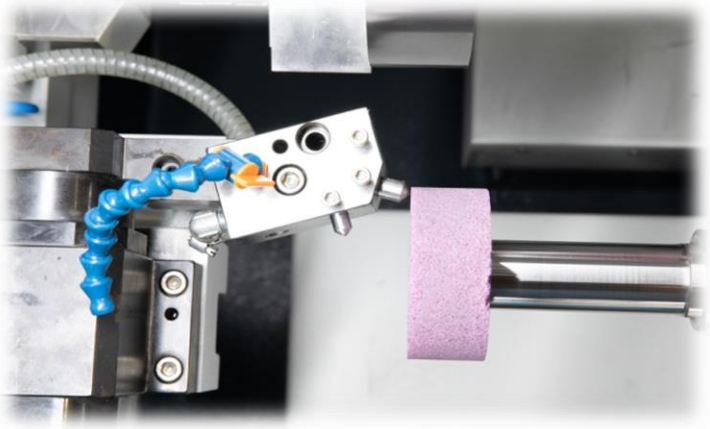
✓ Swing-type Dressing Seat



✓ To dress Y Axis Angular wheel



✓ To dress Z Axis Internal grinding wheel



EGM Accuracy Parameter

- Laser Calibration Accuracy for Each Axis:

(According to GB/T 17421.2-2000 standard / ISO 230-2 standard in the seller's factory conducting laser calibration by a third party (certified as the largest credible company in Taiwan), the seller provides reports to the buyer as a basis for accuracy):

- ✓ Positioning accuracy: X axis: ≦ 0.001mm、Y axis: ≦ 0.001mm、Z axis: ≦ 0.001mm
- ✓ Repeatability: X axis:≦ 0.001mm、Y axis: ≦ 0.001mm、Z axis: ≦ 0.001mm

Standard Accessories

✓Controller:
FANUC 0i-TF with 10.4" Screen
Mitsubishi M80 controller
(choose one)

✓MPG handwheel:
- EGI-150 2 Axes
- EGM 3 Axes Control

✓Standard Coolant Tank 140L

✓Wheel spindle surface detecting & crash
control system(Current Indicator)

✓X Axis Heidenhain Linear Scale
(Resolution 0.05um)

✓Three direction dresser stand x1 set
Diamond dresser x3

✓Hydraulic 8" 3-jaw chuck
(with solid rotary cylinder)

✓Grease type grinding wheel spindle
- EGI-150 & EGM-450 select 1 pc from 8,000~50,000
- EGM-350 & EGM-350L select 2 pc from 8,000~50,000

✓Workhead spindle A2-5

✓Full-enclosed splash guard

✓Automatic lubrication system

✓LED working light

✓4-color indication signal light

✓Levelling bolts and blocks

✓Adjusting tools & tool box

✓Electrical diagram

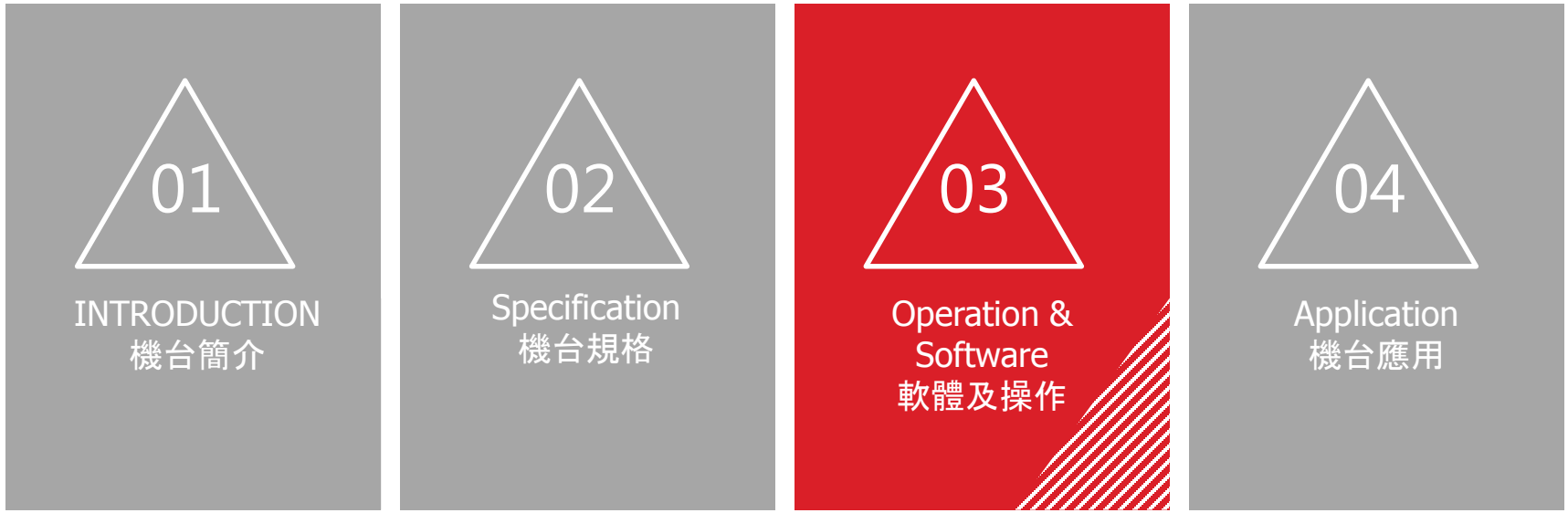
✓Operation manual & part lists

✓Electricity cabinet w/ heat exchanger

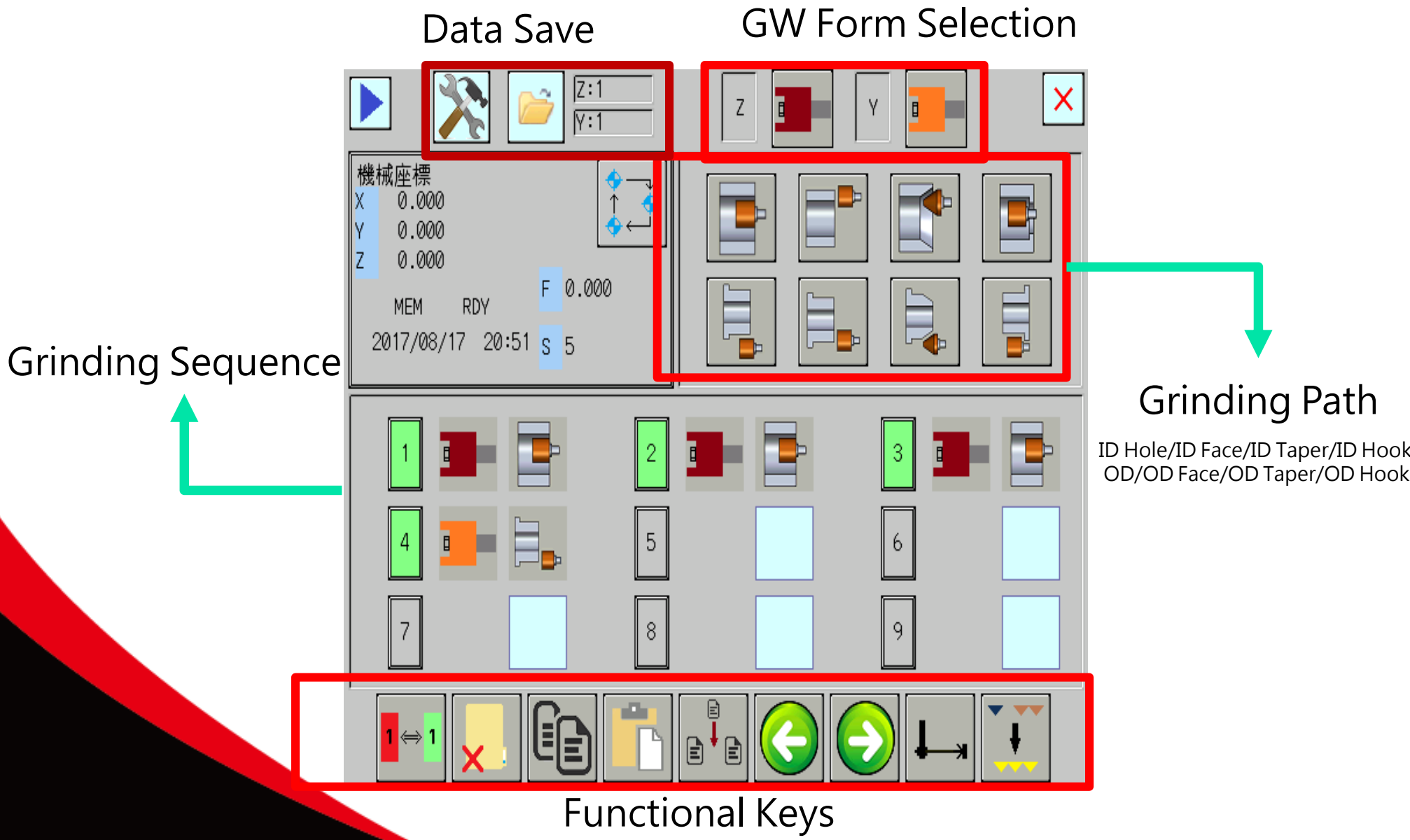
Optional Accessories

- Mitsubishi controller (M80) iGrind program Radius / Taper / Multiple step / form shape
- Manual strong type 7” 3-jaw chuck
- Spindle oil mist lubrication system (Oil-mist spindle)
- Grease type grinding wheel spindle 8,000~50,000RPM
- Oil mist type grinding wheel spindle
- Coolant system with magnetic separator 60L/min, 160L
- Coolant system with paper filter 60L/min, 160L
- Workhead spindle A2-6
- B Axis linear scale w/ digital readout
- Oil & mist collecting system
- ID auto. gauging device
- Diamond roller dressing device
- Dressing sensor system
- Soft-jaw turning assembly
- CE standard electrical cabinet
- Electrical cabinet air conditioner

Outline

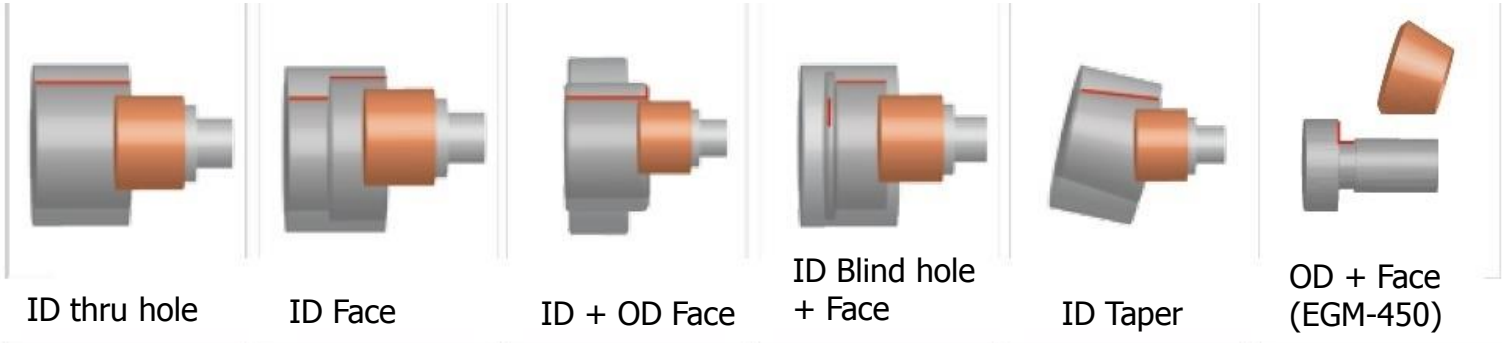

01
INTRODUCTION
機台簡介
02
Specification
機台規格
03
Operation &
Software
軟體及操作
04
Application
機台應用

iGrind Introduction (Mitsubishi M80)

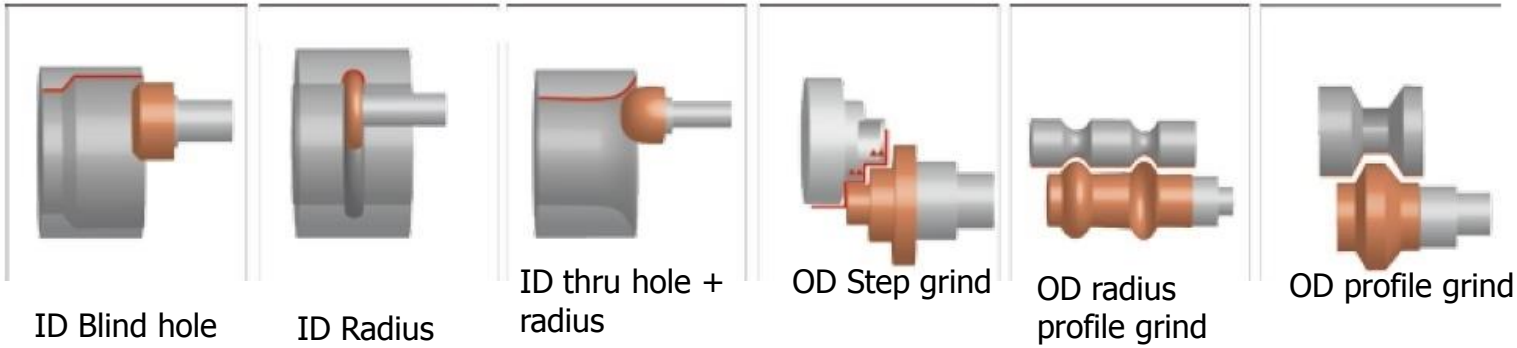


ID/OD Grinding Applications

Grinding Path



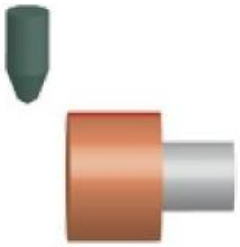
ID thru hole | ID Face | ID + OD Face | ID Blind hole + Face | ID Taper | OD + Face (EGM-450)



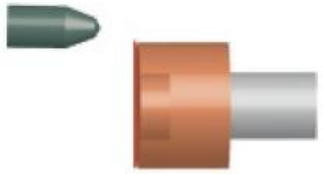
ID Blind hole | ID Radius | ID thru hole + radius | OD Step grind | OD radius profile grind | OD profile grind

Dressing Illustration

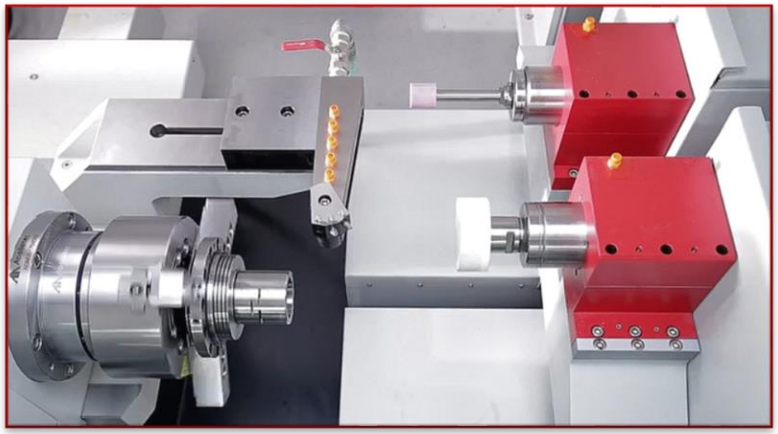
OD Dressing

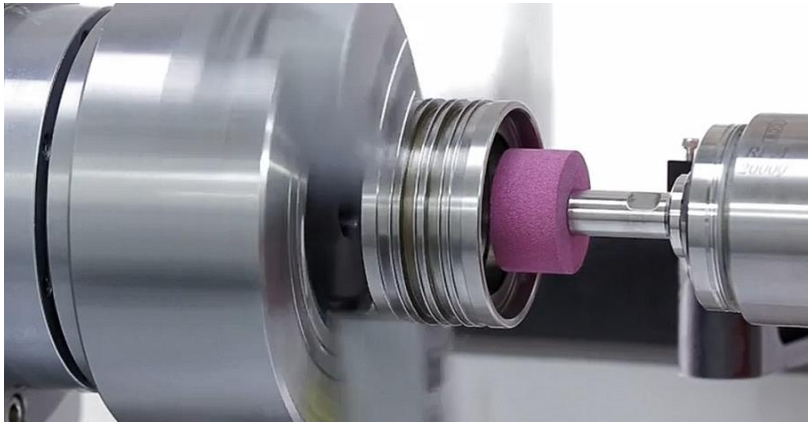


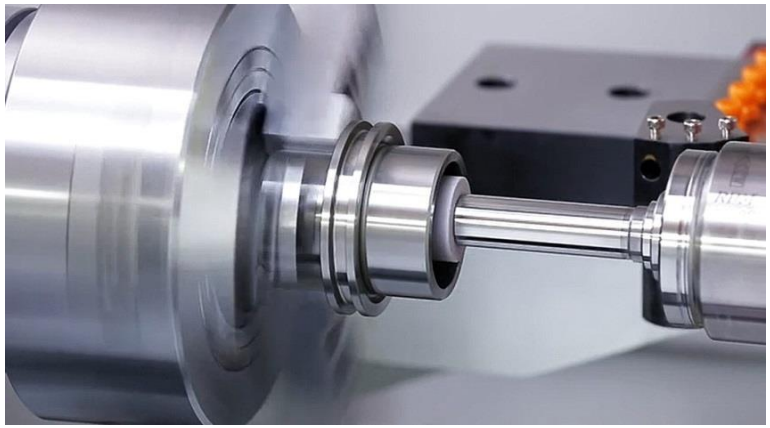
Face Dressing

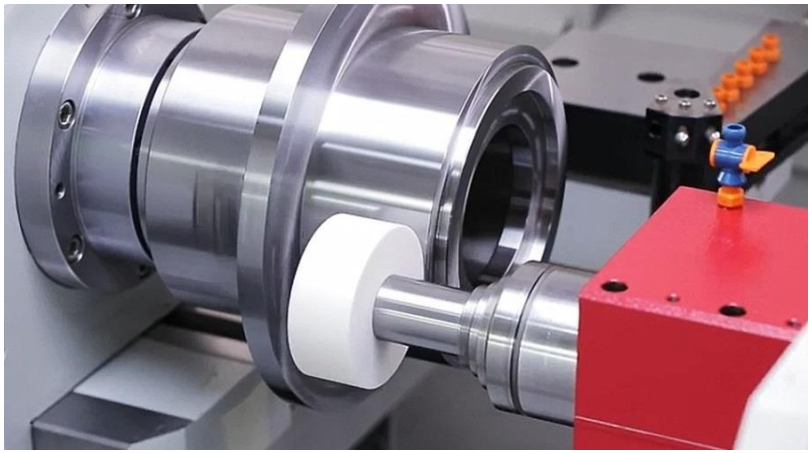


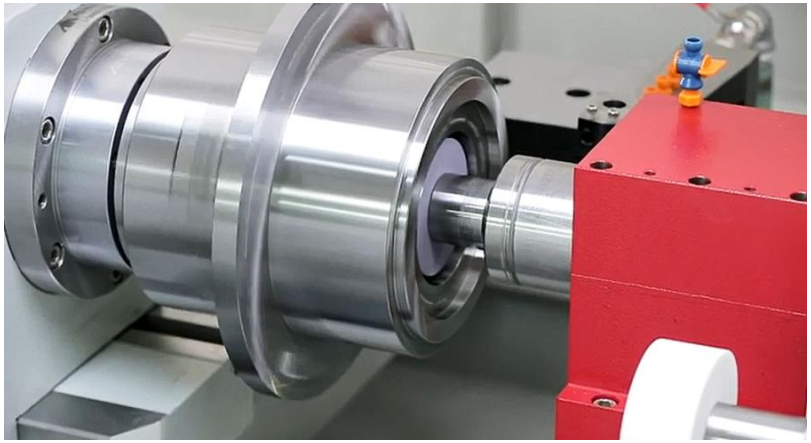
-











Outline

01
INTRODUCTION
機台簡介

02
Specification
機台規格

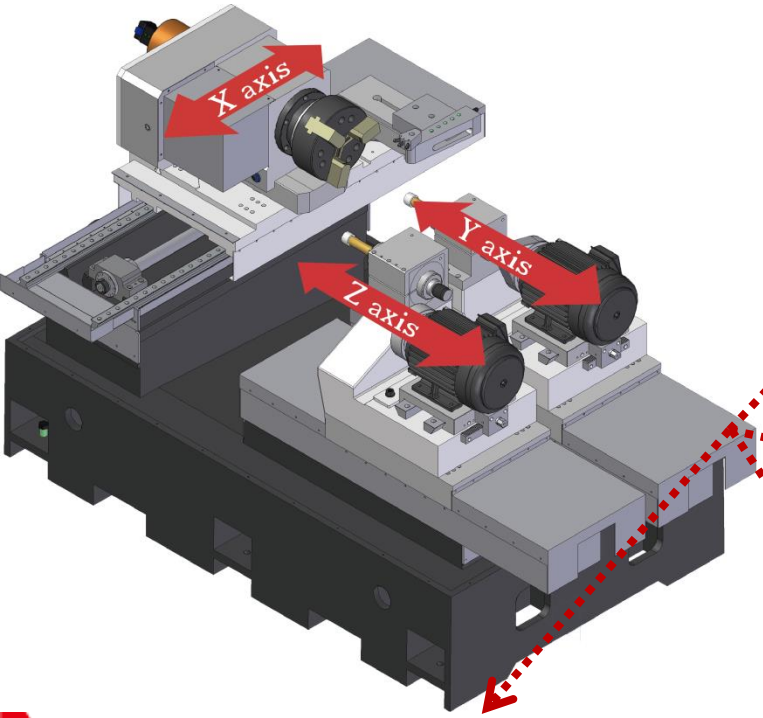
03
Operation &
Software
軟體及操作

04
Application
機台應用

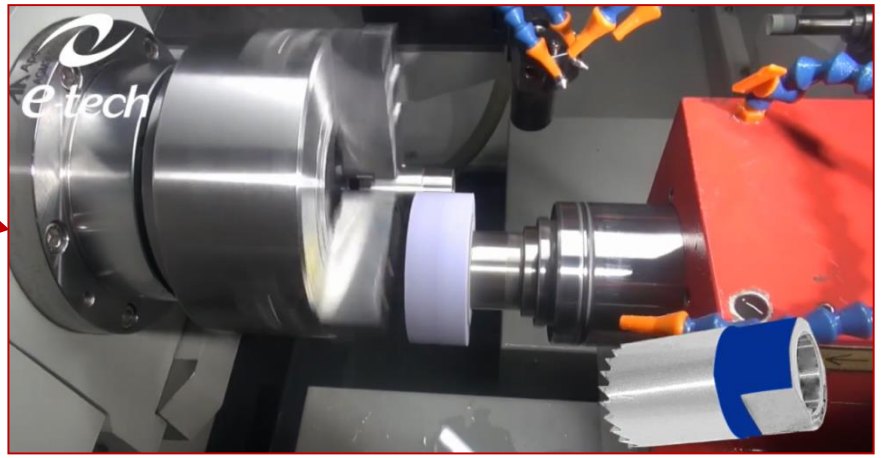
EGI & EGM ID/OD Hybrid Grinder

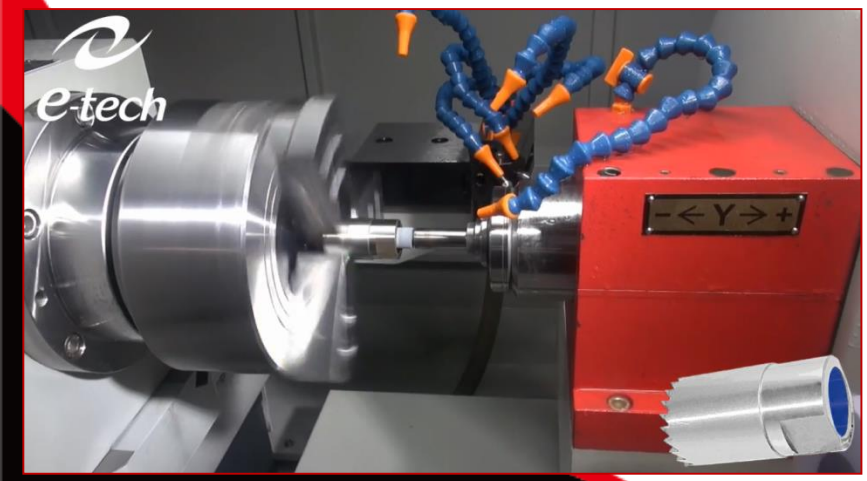
- Grinding Illustration
- Tooling Component Industry
  (i.e. bearing housing、 Roller bearing、 Adaptor)
- Gear Industry
- Spindle Industry

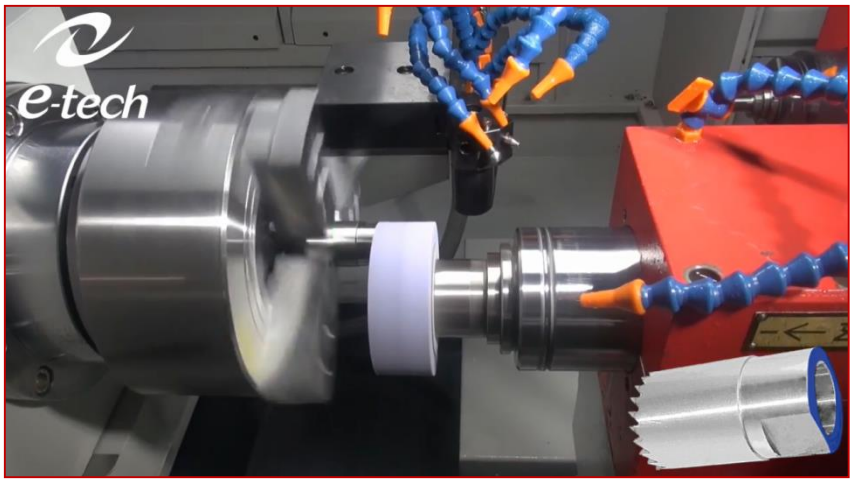
Grinding Illustration



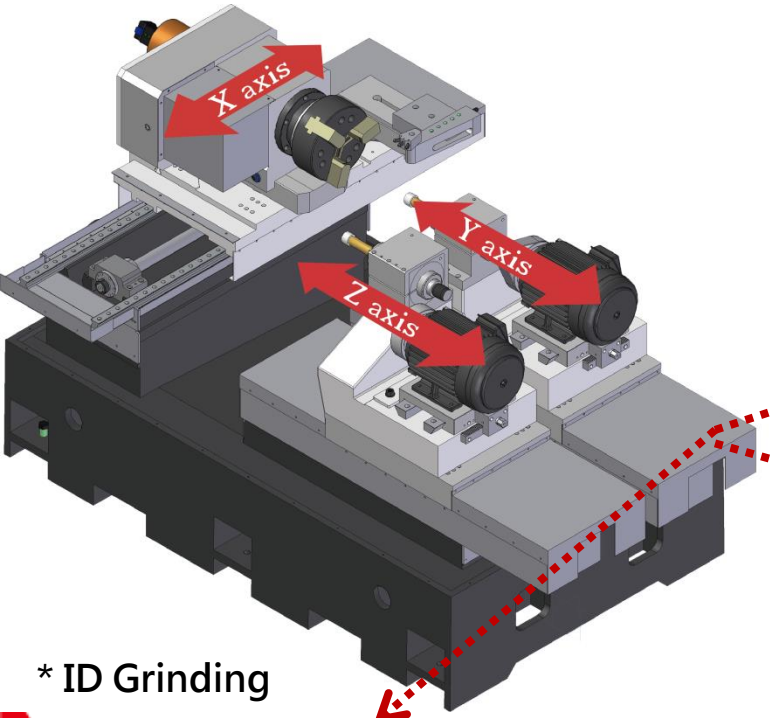
- Part Name:
SKD Circular Saw
- Application:
  - OD
  - Outer Face
  - ID

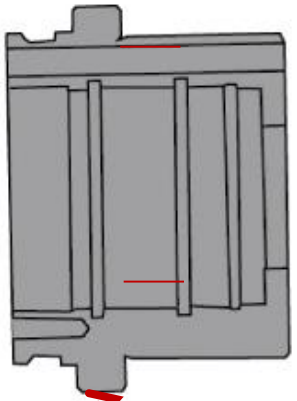






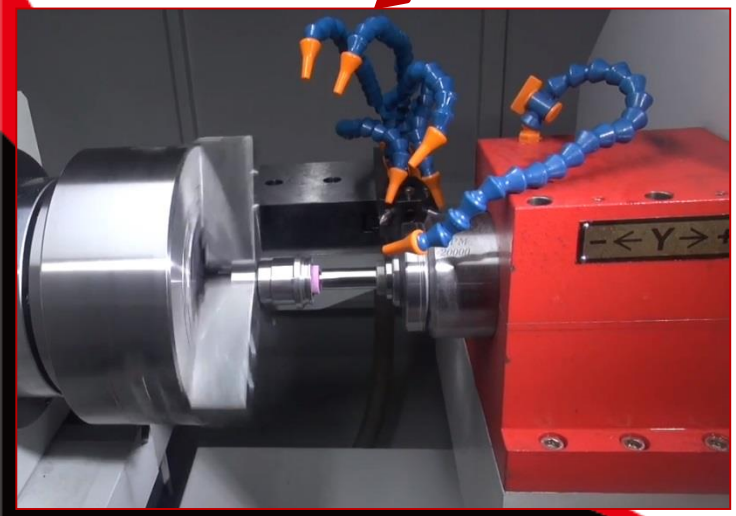
Bearing Housing



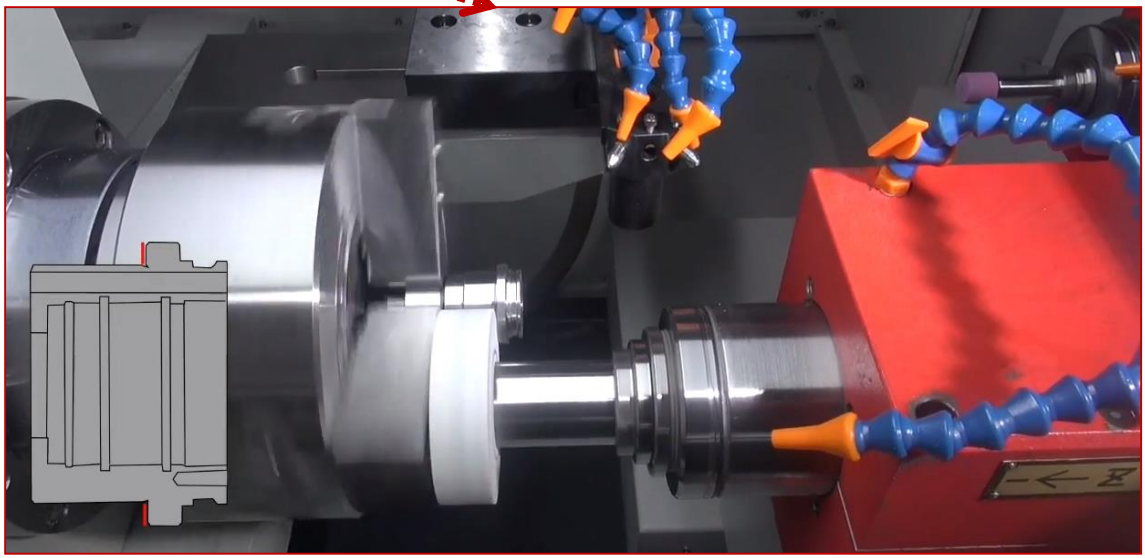


- Machine Model: EGM-350CNC
- Part Name: Bearing Housing
- Application:
  - OD Reversing (hook)
  - OD Grinding
  - ID Grinding

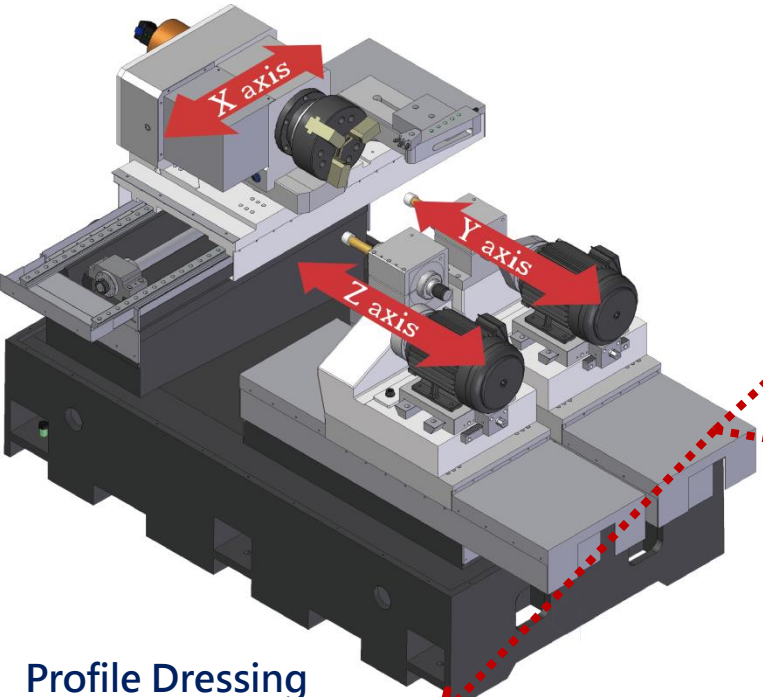
* ID Grinding



* OD Reversing (Hook)



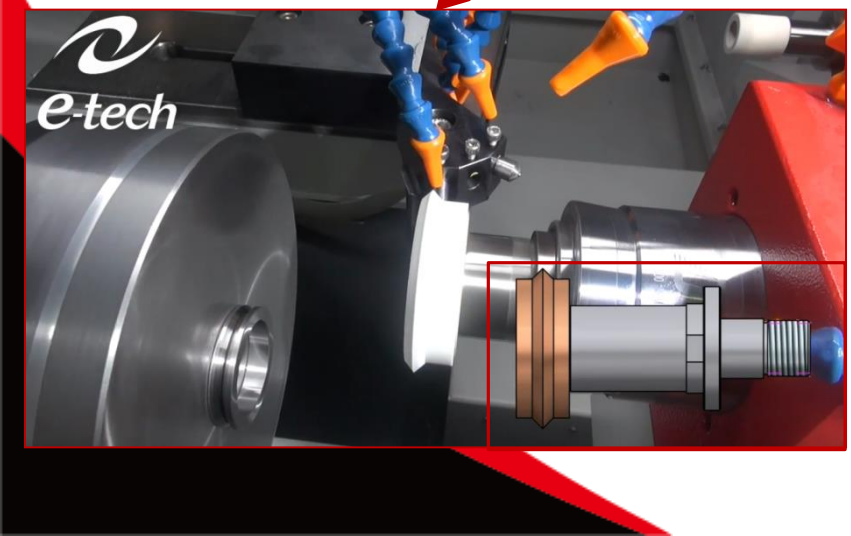
Cross Roller Bearing

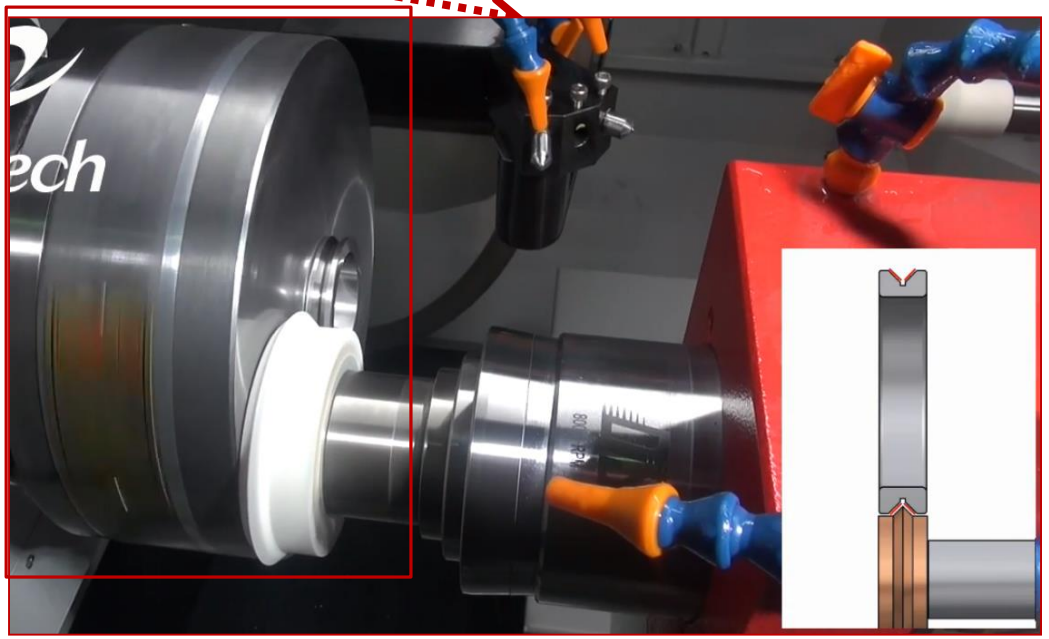


- Part Name: Cross Roller Bearing
- Application:
  - Profile Dressing
  - OD Taper (V Shape)
  - Outer End Face

Machine Model: EGM-350CNC + Magnetic Chuck (fixture)

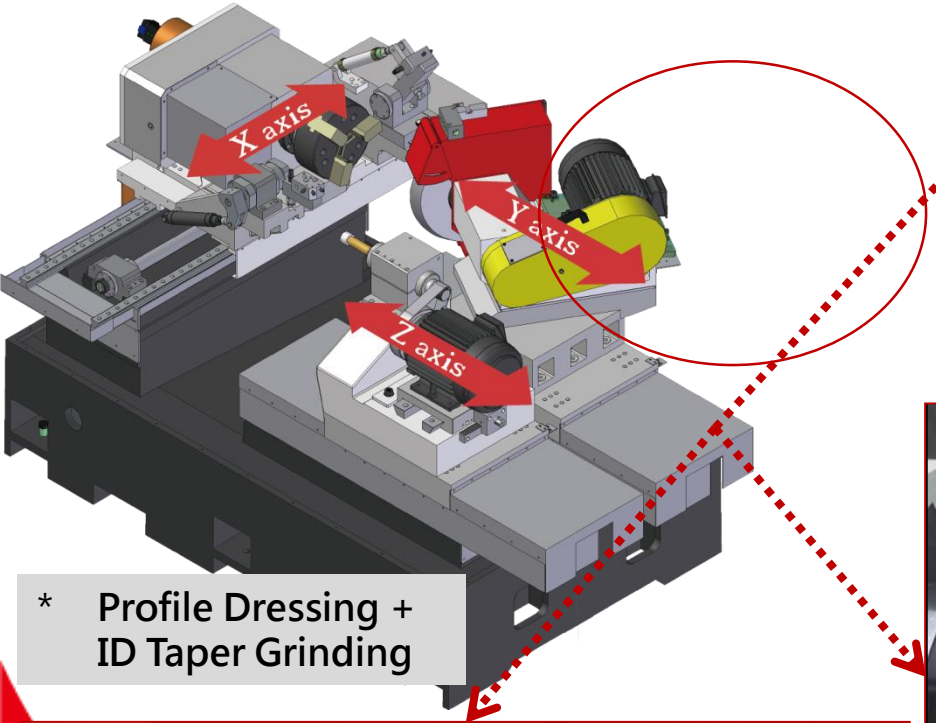
Profile Dressing



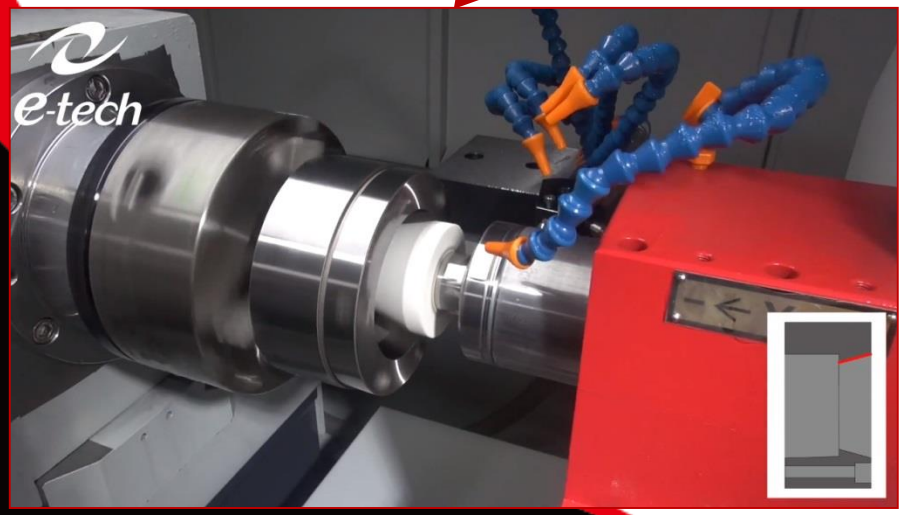


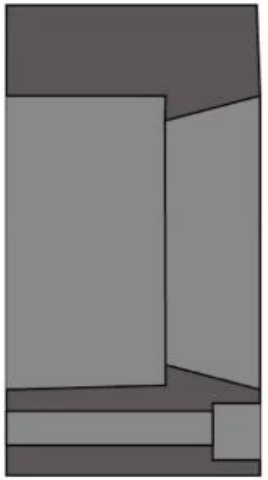
Profile Grinding

Adaptor

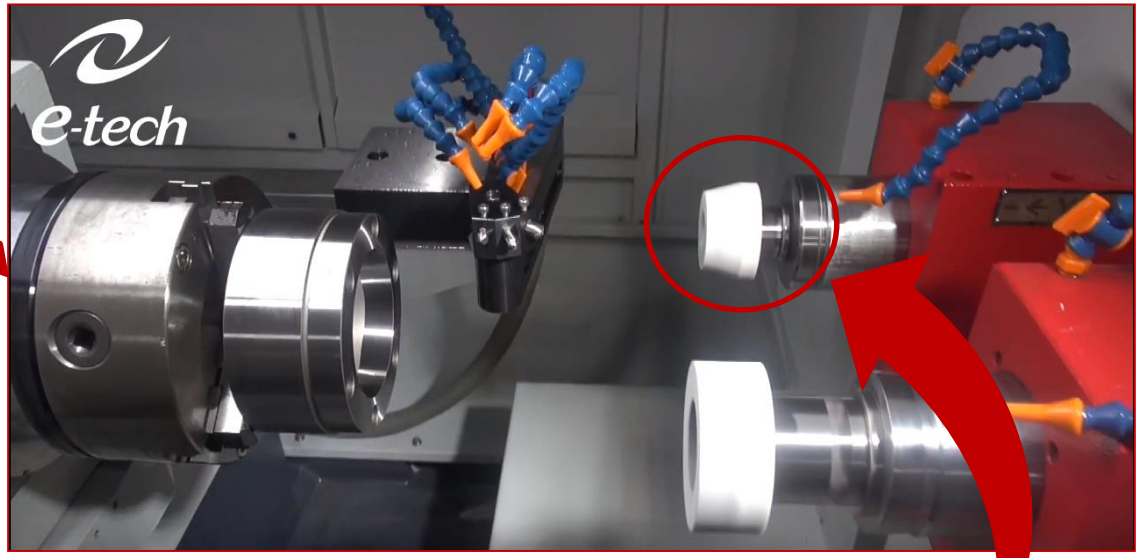


* Profile Dressing + ID Taper Grinding





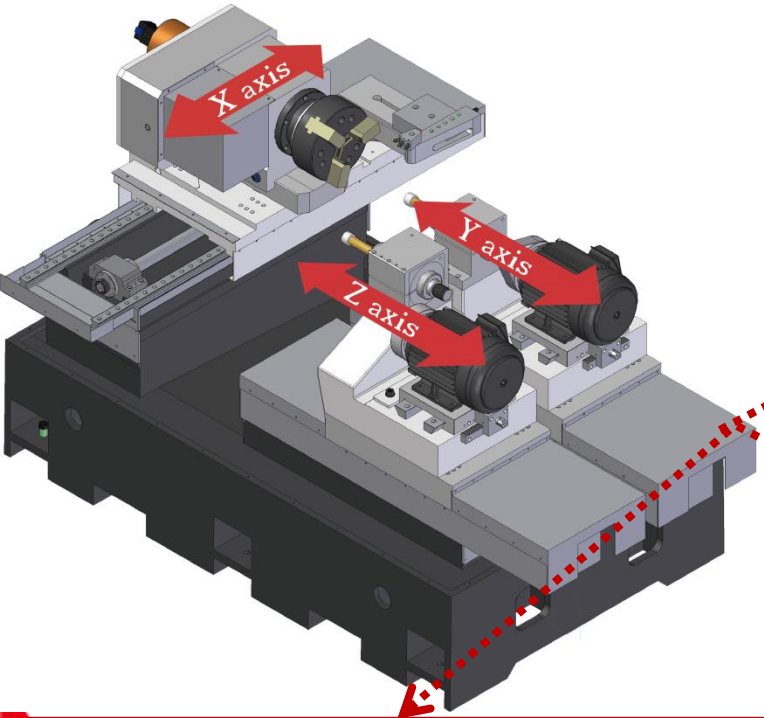
- Part Name: Adaptor
- Application:
  - Outer Face Grinding
  - OD
  - ID
- Flip part
  - OD
  - ID Taper Grinding

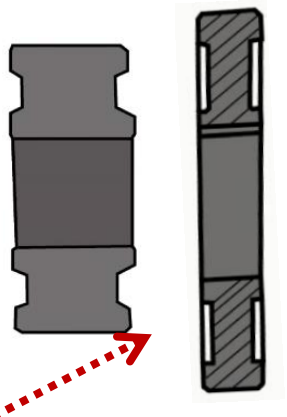


Machine Model: EGM-350CNC or EGM-450CNC

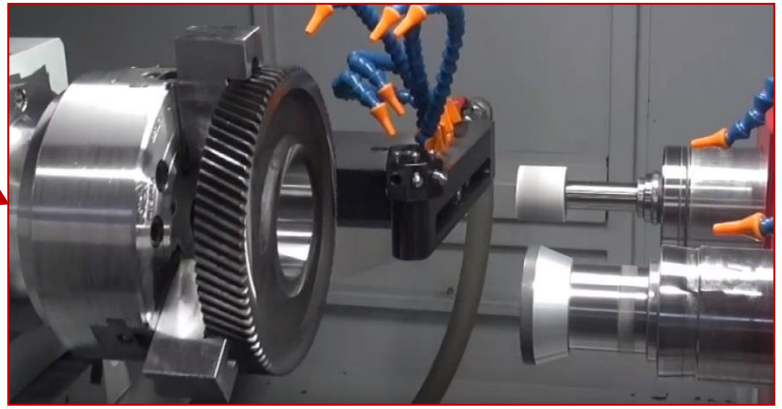
Description: Adaptor for Tooling Application
* Profile Dressing and Grind

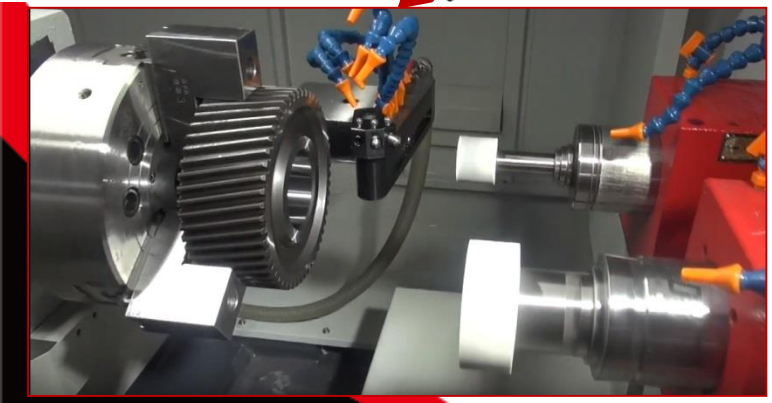
Gear Grinding



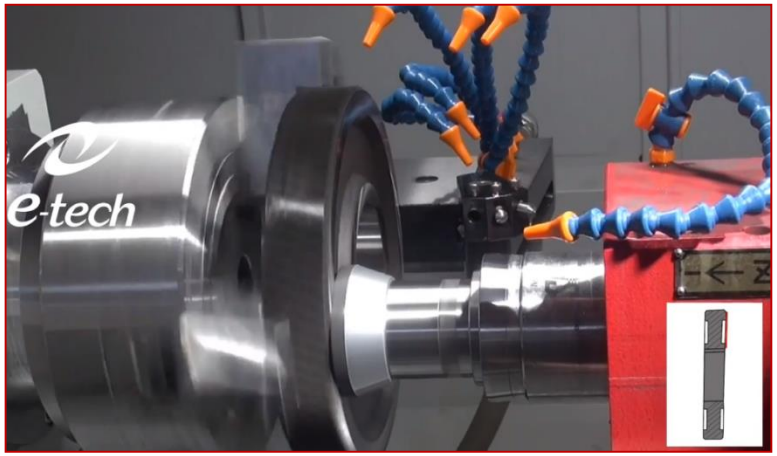


- Part Name: Cross Roller Bearing
- Application:
  - Outer End Face
  - ID
- Machine Model:
  EGM-350CNC + CBN Cup Wheel

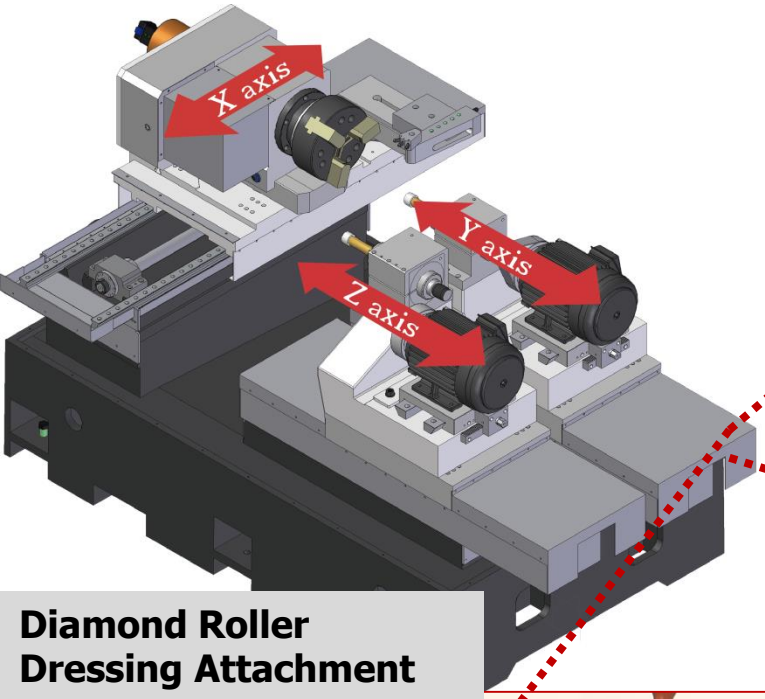


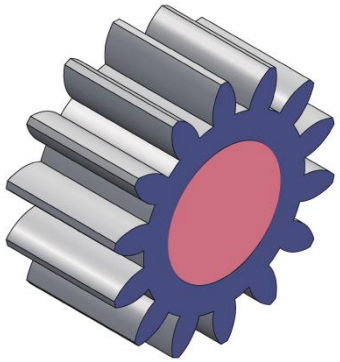


* Profile Dressing



Gear Grinding + Automation





- Part Name: Gear
- Application:
  - End Face
  - ID

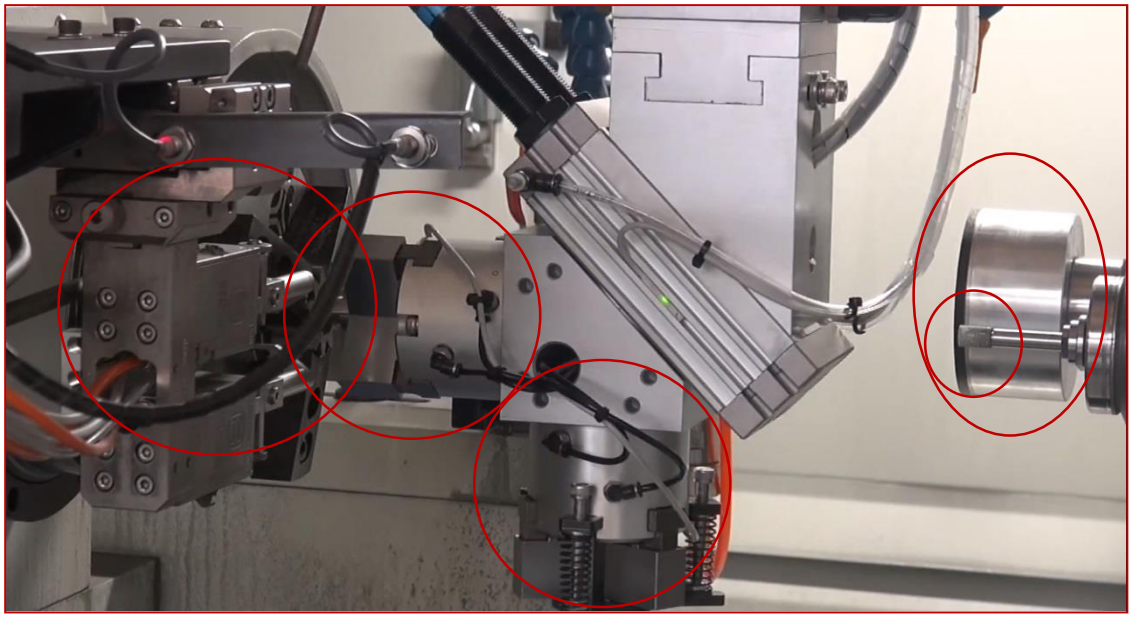
*Turnkey
*ID Gauging
*CBN Wheel
*Diamond Roller Dressing Attachment
*Automation (Gantry Robot Arm)

Gantry type Robot Arm (Automation)
Auto-loading and unloading Jaw

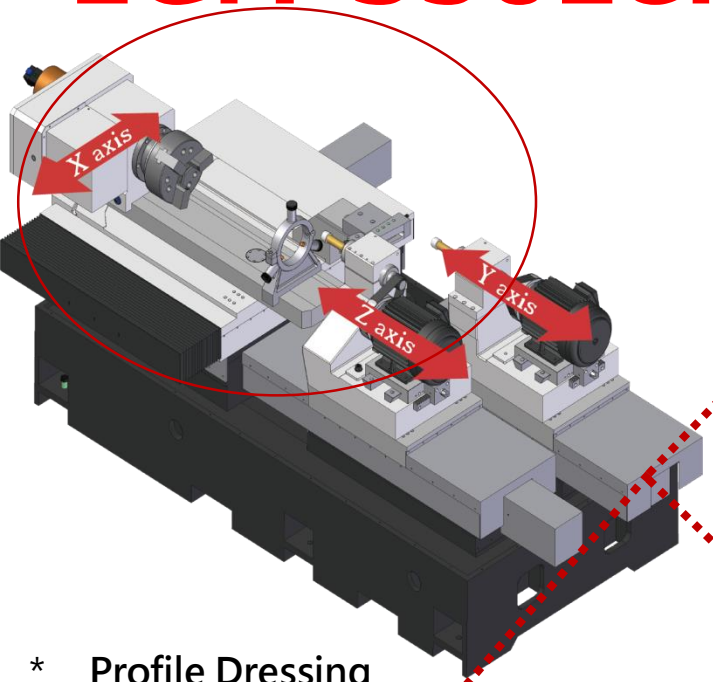
Diamond Roller Dressing Attachment

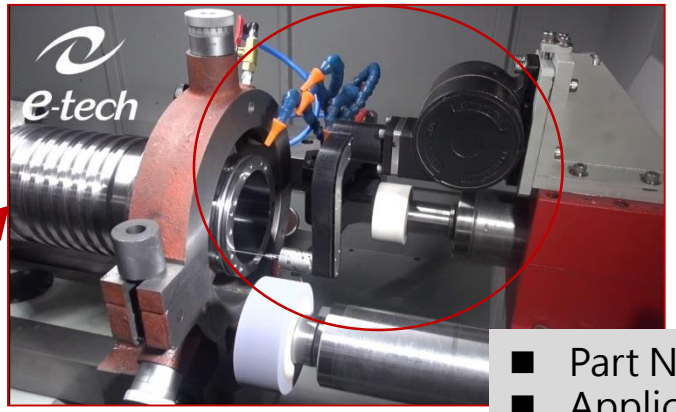
ID Gauging

CBN Wheel (Face + ID)



EGM-350LCNC Spindle Grinding

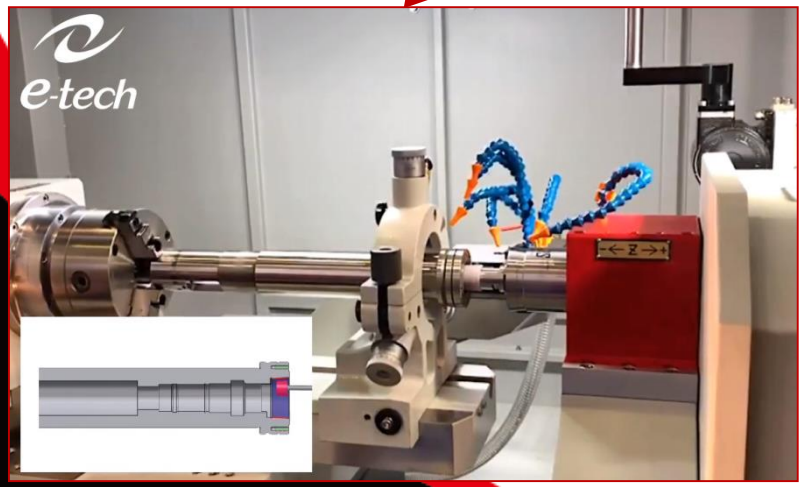


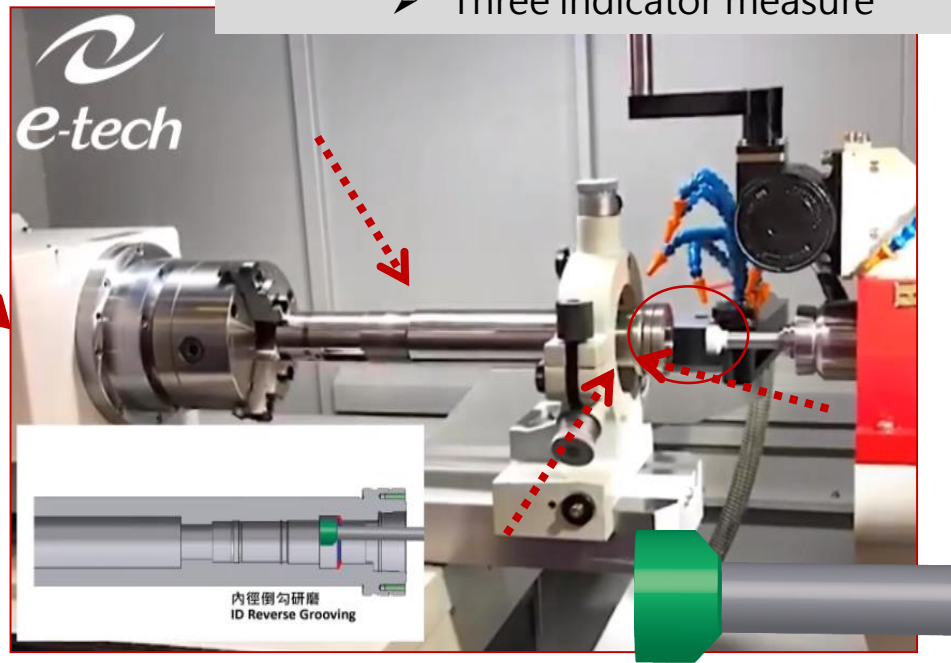


- Machine Model:
  - * EGM-350LCNC
  - * Touch Probe
  - * Three point steady rest

- Part Name: Spindle
- Application:
  - ➢ OD has to be ground first
  - ➢ Three point steady rest holding
  - ➢ Three indicator measure

* **Profile Dressing**



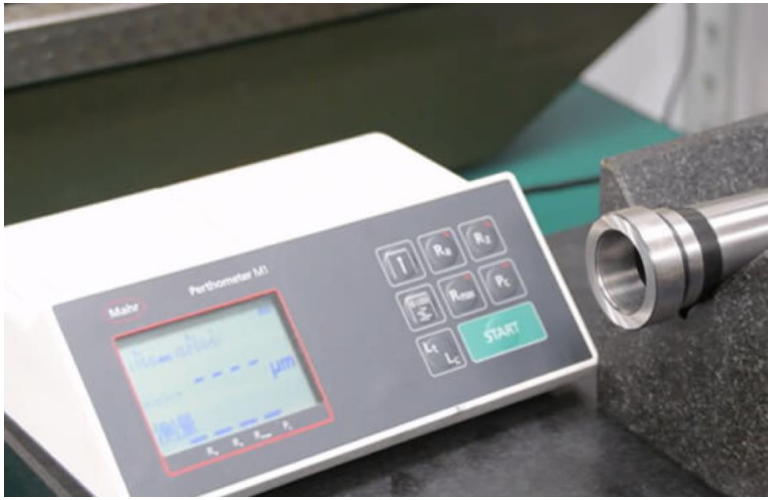


ID/OD Grinding Applications

MITUTOYO

Wenzel CMM

Mahr



Mahr