CNC-TOOL GRINDING M/C
Model: CNC-SK2000

INKOK Industrial Co., Ltd

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1.1 Specifications

CNC-SK2000

Grinding Range
 Grinding: Ø0.025mm ~ 16mm(0.001" ~ 5/8")
 Shank: Ø1.0mm ~ 16mm(0.040" ~ 5/8")
 Clamping Collets: W20
 Grinding Length: Max. 330mm(13")

Control: Fanuc CNC 0iT-D, Panel PC
Programming: Fully Programmable
CNC Axes 4: Y/Z/X/V Grinding Station
 + CNC Axes 2: U/W Robot Station
 Z Axis: Stroke 120mm (4.720")
          Resolution 0.6μm (0.00002")
Z Axis: Stroke 30mm (1.200")
          Resolution 0.1μm (0.000004")
Z Axis: Stroke 350mm (4.720")
          Resolution 0.6μm (0.00002")
Z Axis: Stroke 22mm (4.720")
          Resolution 0.1μm (0.000004")
Workhead
 Motor: 0.7Kw(1Hp)
 Rotation: 300~3000RPM Adjustable,
          Converter

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1.2 Specifications

CNC-SK2000

Robot Load & Unload
Shank: Ø1.0mm ~ 16mm(0.040" ~ 5/8")
Overall Length: 30mm ~ 150mm(1.2" ~ 12")

Manual Loading
Shank: Ø1.0mm ~ 20mm(0.040" ~ 3/4")
Overall Length: 30mm ~ 300mm(1.2"~ 13.8")

Grinding Motor & Spindle
Roughing Motor: 8.5Kw(11Hp)
　　　　　　　Belt Drive, Internal Cooling
Roughing Spindle: Ø100mm(4"),PerfectArbor
Cutting Speed: Adjustable,Frequency
　　　　　　　Converter
Roughing Wheel: Ø250mm(10")
Finishing Motor: 1.4Kw(2Hp)
　　　　　　　Direct Drive, Internal Cooling
Finishing Spindle: Ø100mm(4"),PerfectArbor
Cutting Speed: Adjustable,Frequency
　　　　　　　Converter
Finishing Wheel: Ø150mm(6")

1.3 Specifications
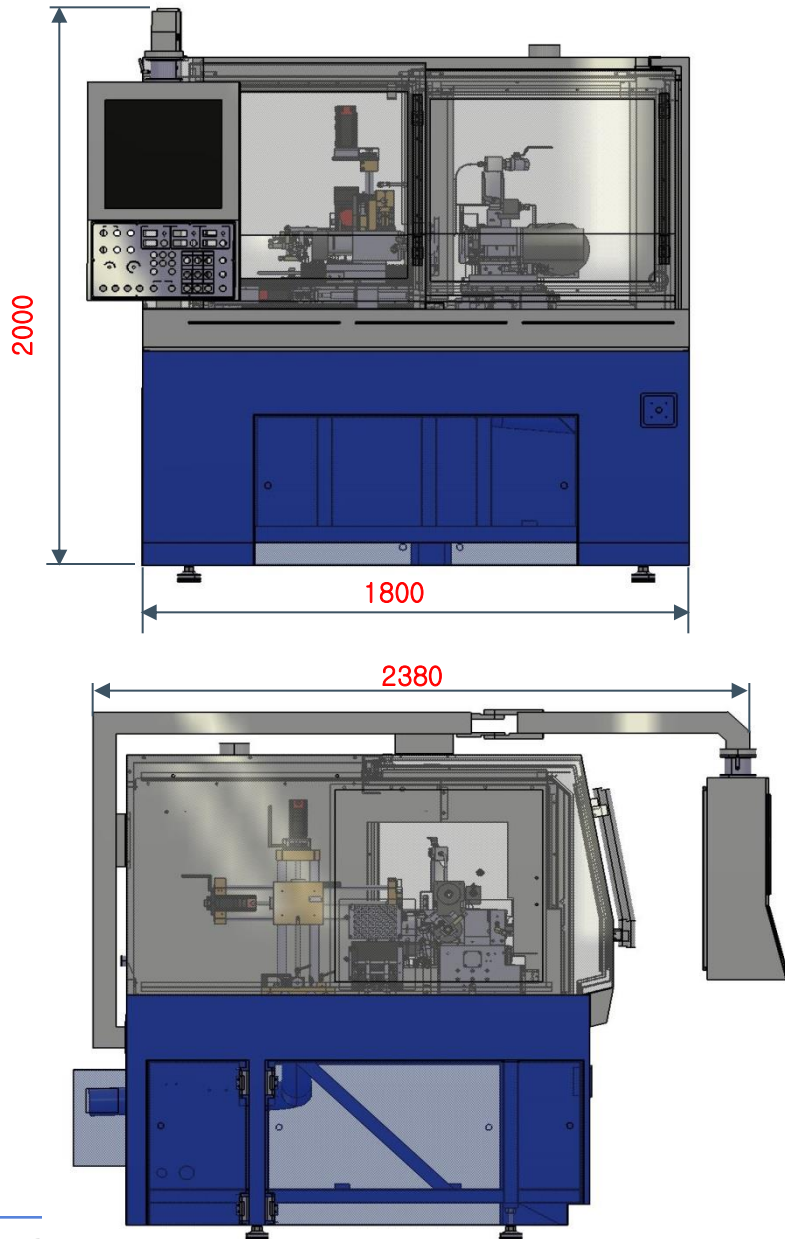
Hydraulic Unit
Oil Tank: **10 Liters (2.6 US Gal.)**
Oil Pressure: **12 Bars(174 Psi.)**

Dimensions
Width: **1,800mm**
Length: **2,380mm**
Height: **2,000mm**

Usage
Usage: **Cylindrical Grinding Machine of Round Rod**

Accuracy(Precision)
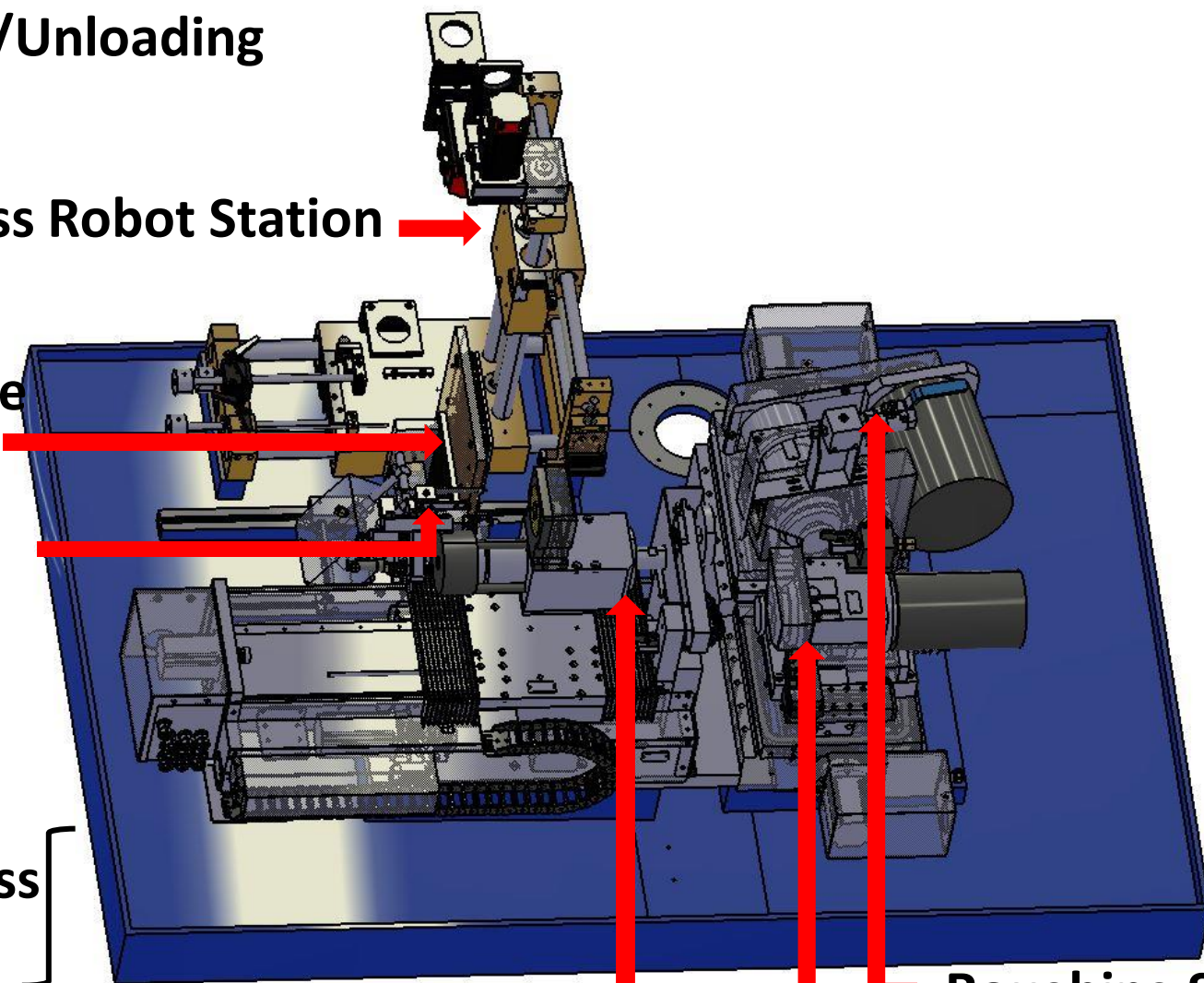Grinding Concentricity Accuracy:
Under 0.002mm

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2. Station Assembly

Auto Loading/Unloading Process

Cross Robot Station →

Blank Cassette

Blank Basket

Grinding Process

Roughing Station

Finishing Station

Workhead Station

3. Auto Loading/Unloading Process
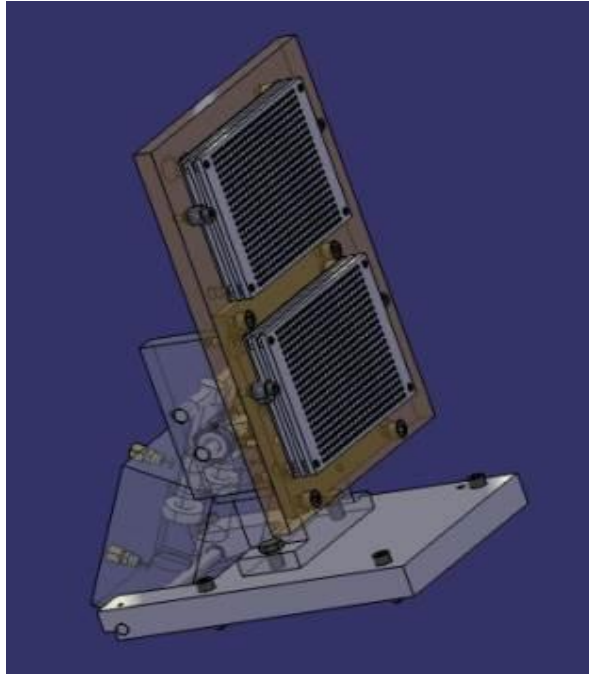
Blank Cassette
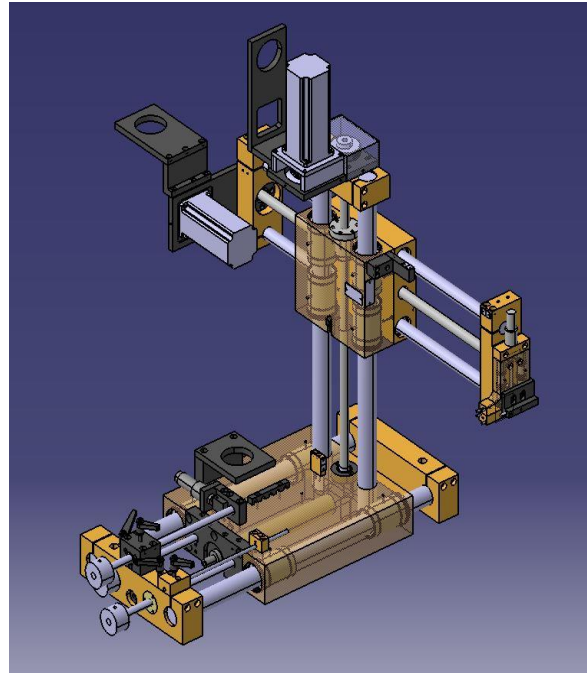
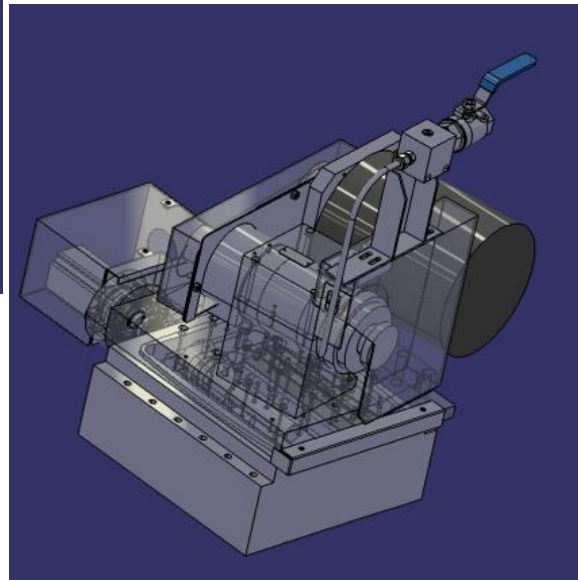**Cross Robot**

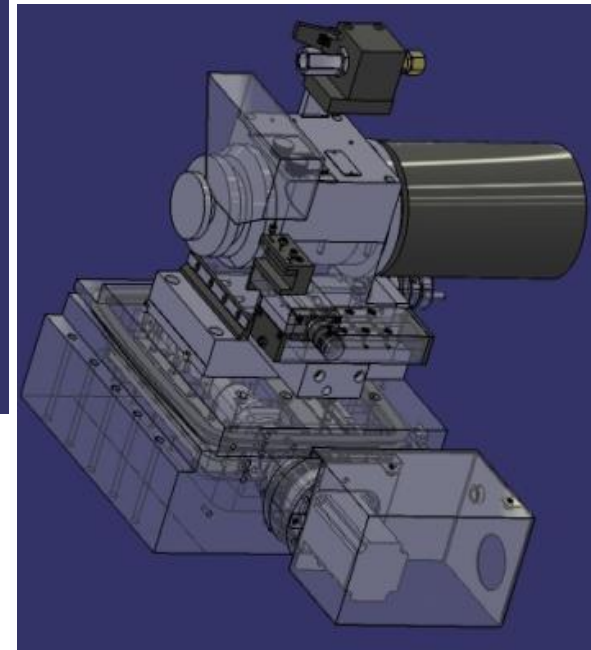**Blank Basket**

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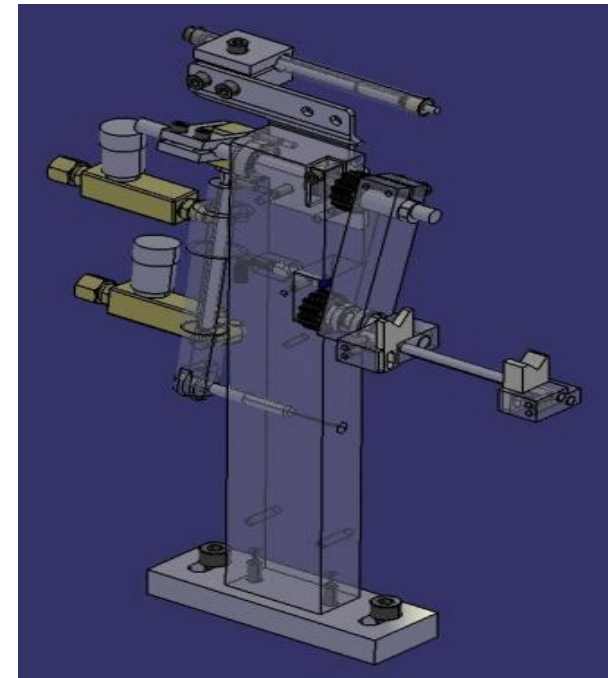
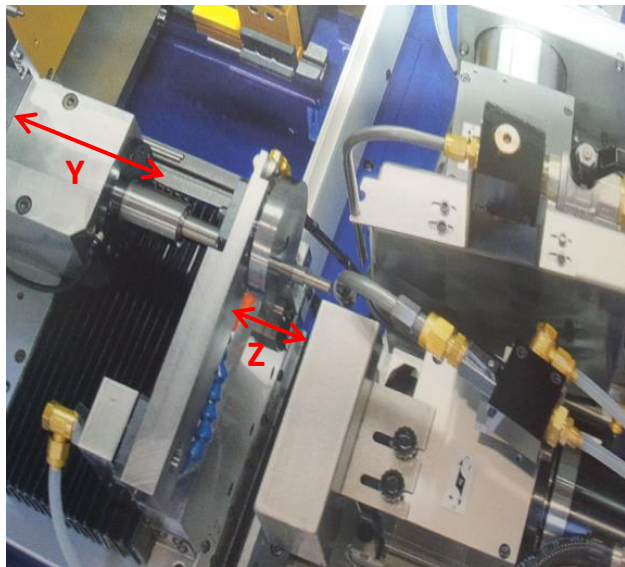# 4. Grinding Process
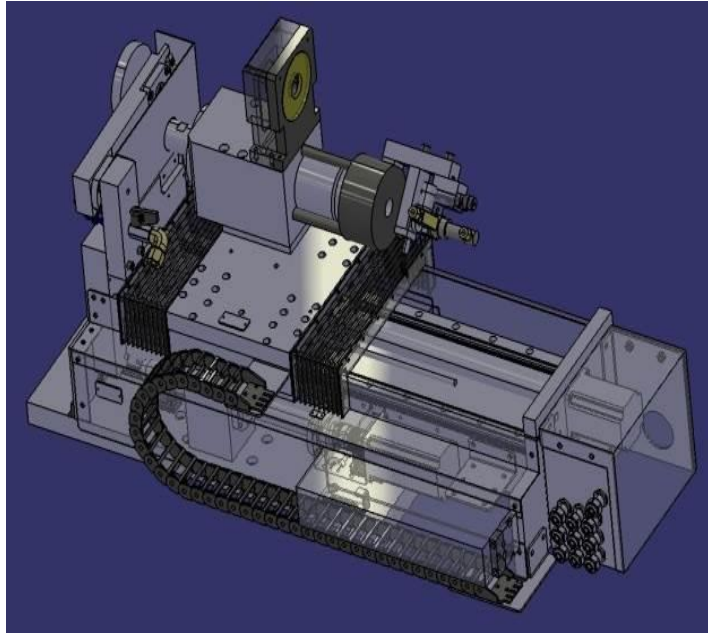
Work Head (Grapping/Rotation/ Moving)

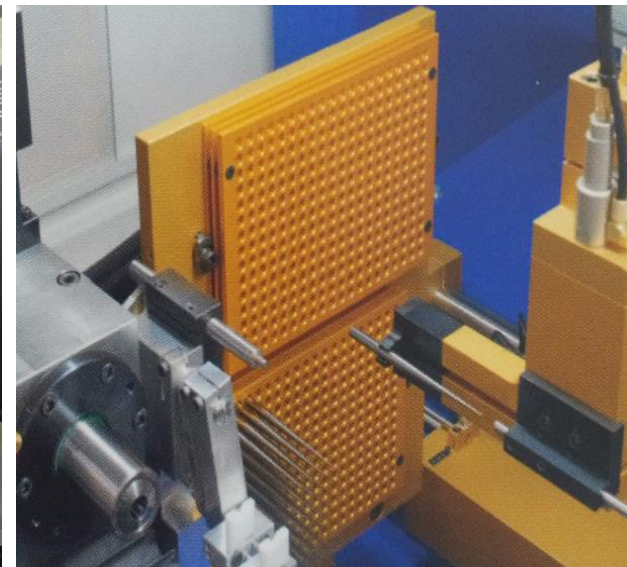**Roughing Grinding**
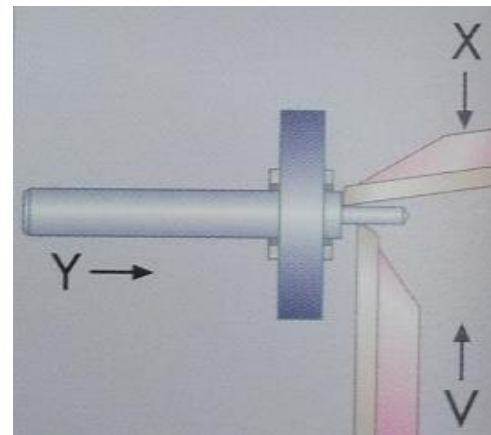

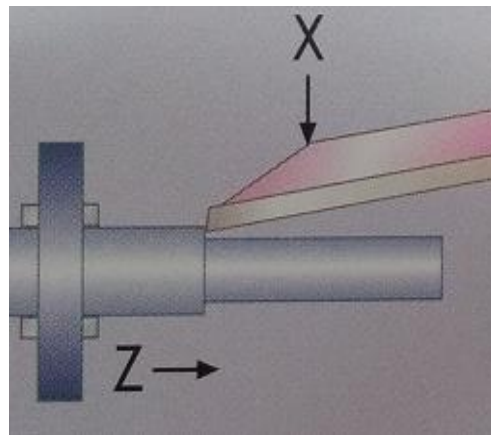**Finishing Grinding**
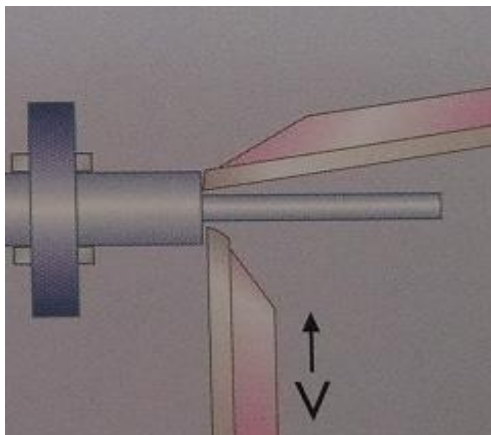
5. Part Images

Y & Z Axis

Roughing/Finishing Wheels
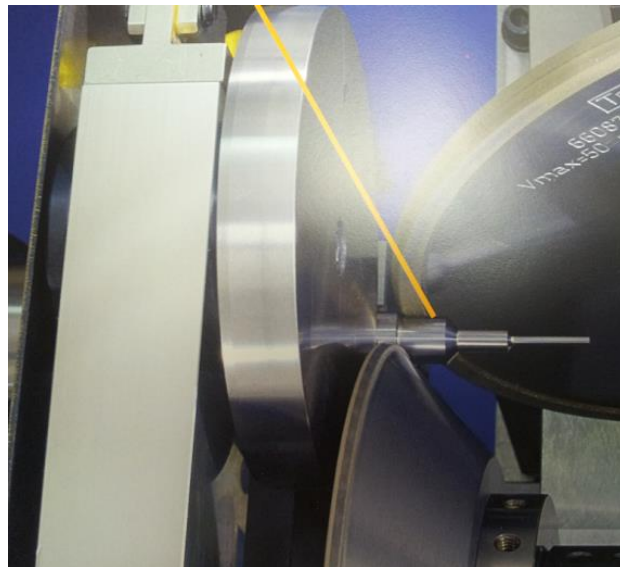
Cassettes
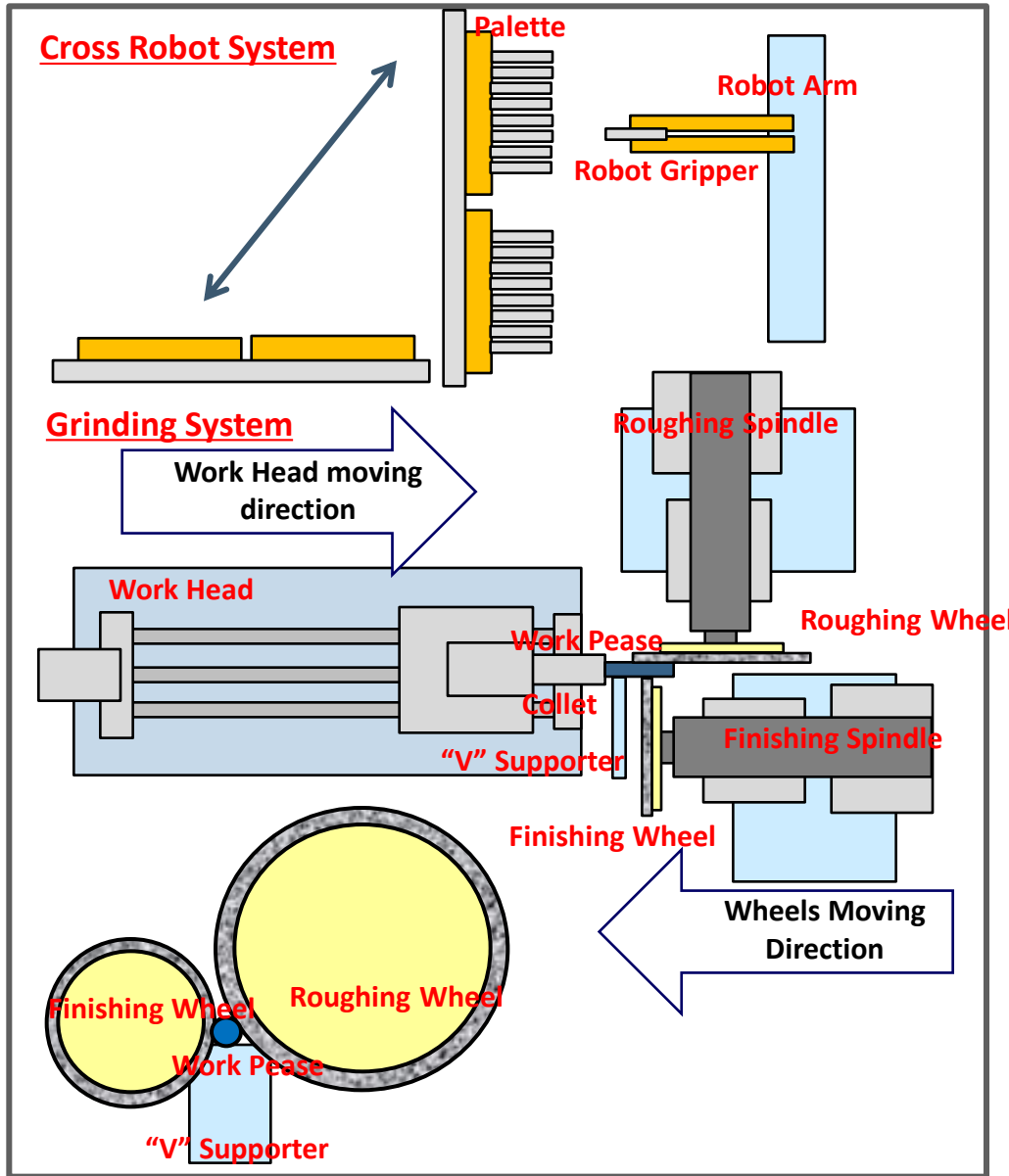
## Grinding 4 Axis (V, X, Y, Z)

Coolant Tank

6. Grinding Mechanism

Cross Robot System

Palette

Robot Arm

Robot Gripper

Grinding System

Work Head moving direction

Roughing Spindle

Work Head

Roughing Wheel

Work Pease

Collet

Finishing Spindle

"V" Supporter

Finishing Wheel

Wheels Moving Direction

Finishing Wheel

Roughing Wheel

Work Pease

"V" Supporter

-. **Cross Robot System:** The robotics system of CNC-SK2000 does not apply expensive robot arms. The advanced features are included in the original package, not as options. This can also improve your productivity to the furthest.

-. **Grinding System:** The machining system comprises the work head, which fixes the material to the collet and rotates it, as it is machined using the roughing wheel and the finishing wheel as they perform rough grinding and finish grinding at the same time. This optimizes the processing time of the material and maximize your productivity.

-. **Parts:** This process is further supported by Swiss's TDM spindle, Schaublin collet, Germany's FAG bearings,Steinmyer ball screw, LM guide, and Japanese Fanuc controller, ensuring precise machining with 0.0001mm level precision numeric control. The precision level of machining can be set below 0.002mm.

7. Application
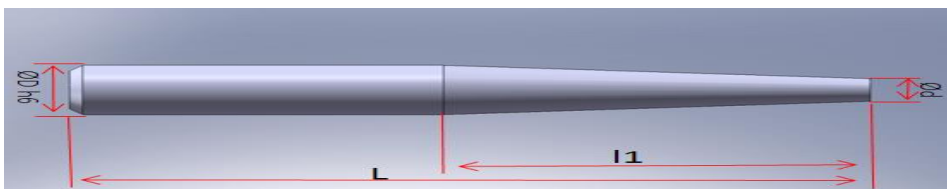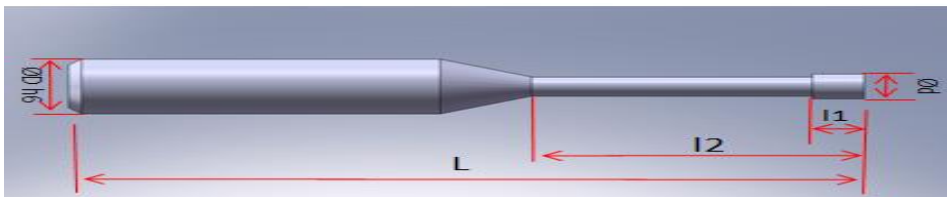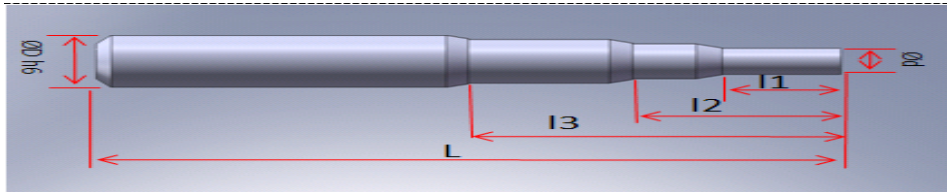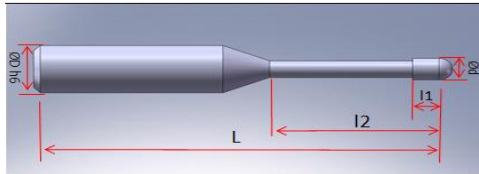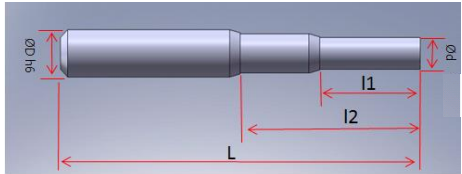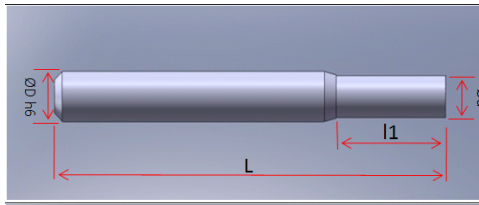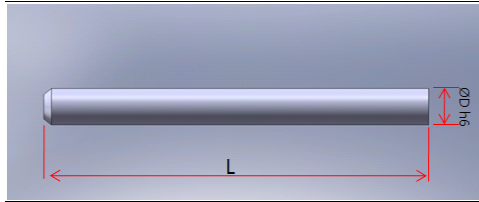
1. **Cutting Tools**

 -. Endmills, Drills etc
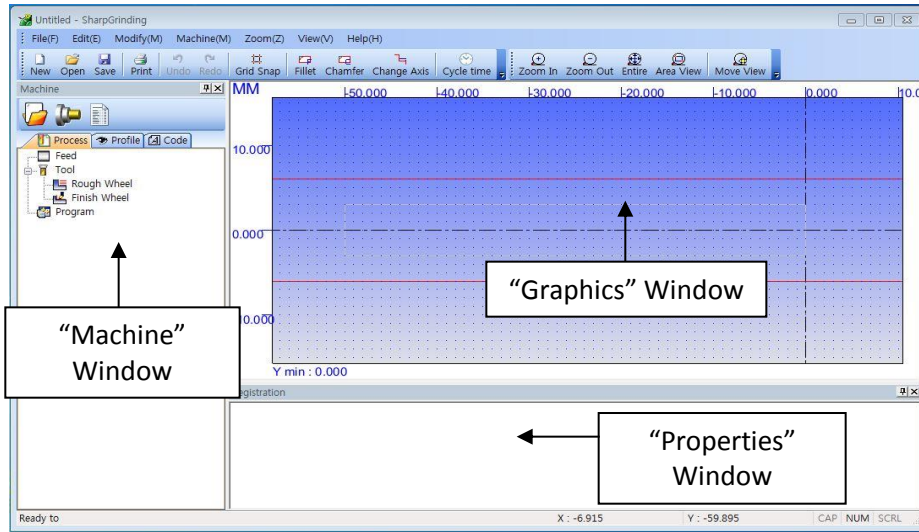
2. **Blanks**

3. **Precision Punches**

4. **Forming Tools**

5. **Mold & Core Pins**

6. **Else Pin Application**

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8. Software (English, Chinese, Japanese, Korean)

◆ **Creating your machine.**

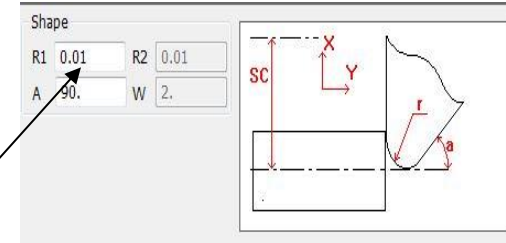"Machine" Window

"Graphics" Window

"Properties" Window

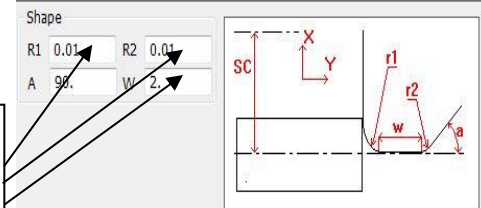◆ **WHEELS: Configuring the roughing and finishing wheels.**
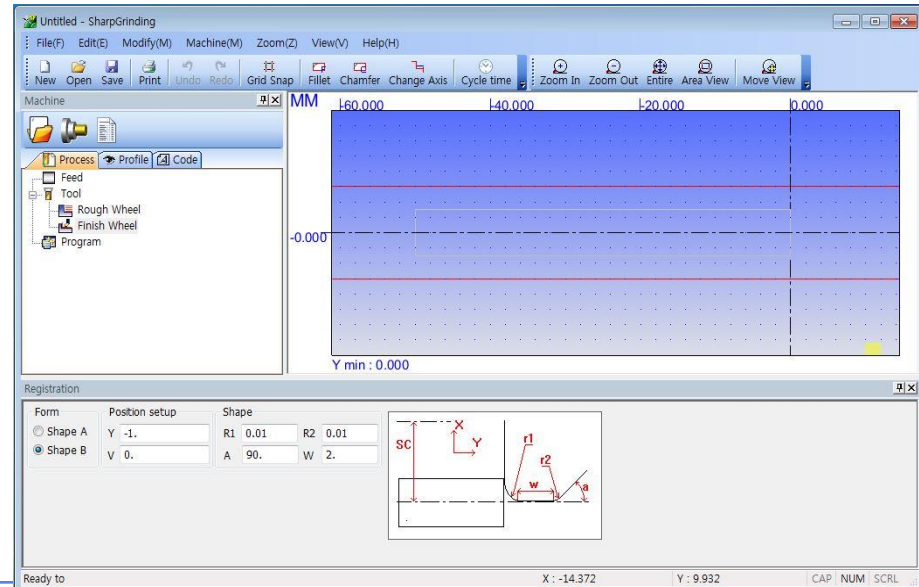
● **Type: There are two different wheel types - A and B**
1) **Shape A: Only one radius(R) is required because only the "R" radius is requested.**

Type the wheel radius "R"

2) Shape B: 2 Radiuses and a plane section are required because the grinding operation must be done with radiuses "R1" and "R2" (negative cone, for example).
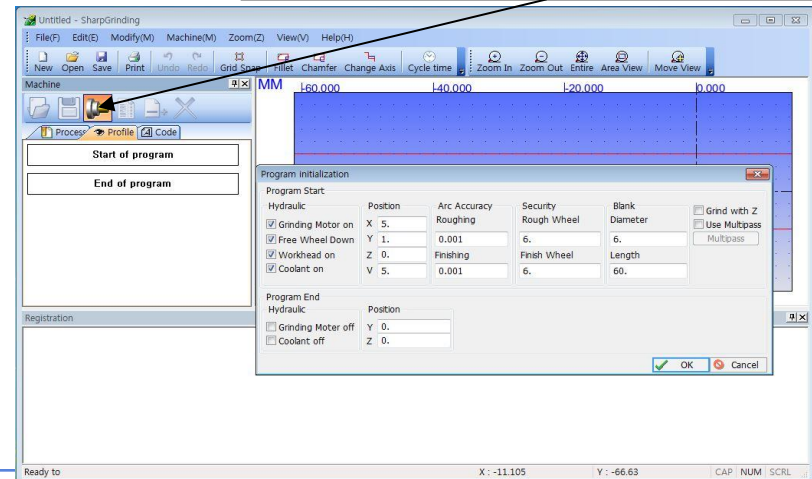

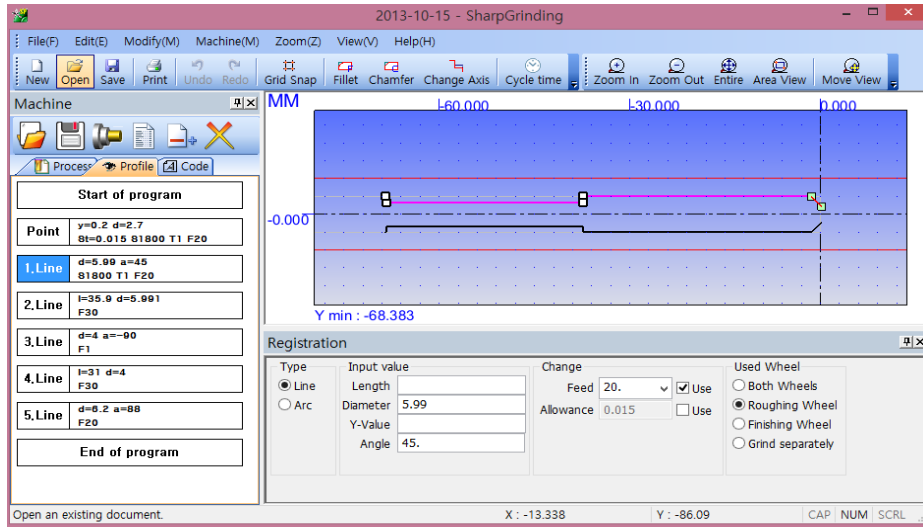Type the different values "R1", "R2", "W" according to the graphics

◆ **PROGRAMS**
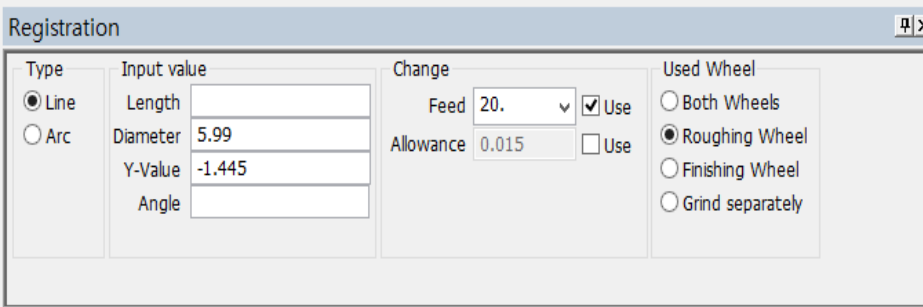➢ **Creating a net sharpen**

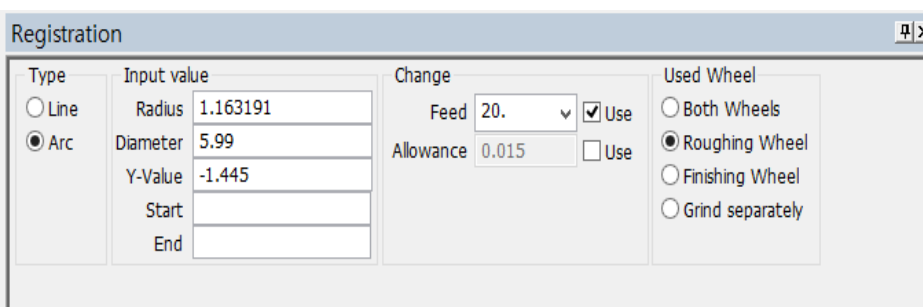Click "New Profile Icon" and new Profile window is opened.

◆ **Click the "Start of program" block and complete the boxes in the "Registration" window.**
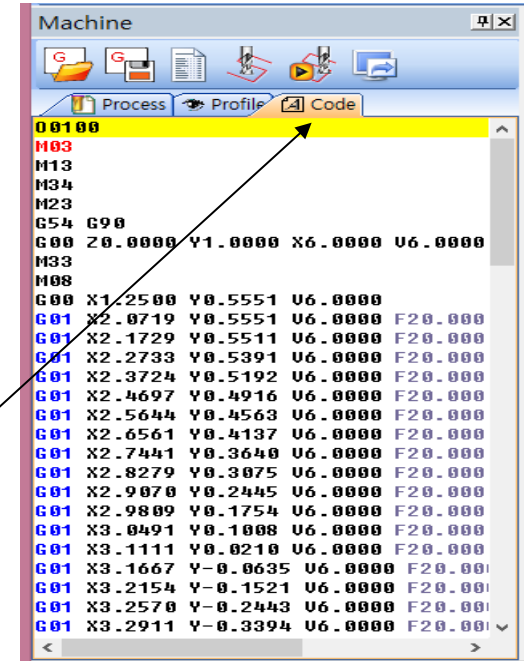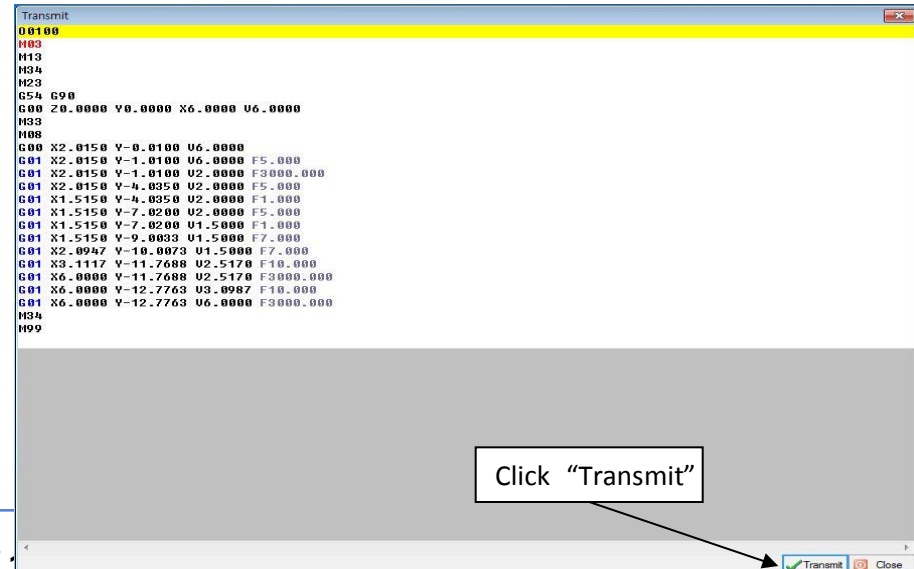
◆ **"Code Output" & " Transfer"**

● **Line**

● **Arc**

Click the "Code Output" icon

Click "Transmit"

◆ **Multipasses, Sharp Grinding.**

1. Select the Multipass function

Select the box. Use Multipass

Click "Multipass"
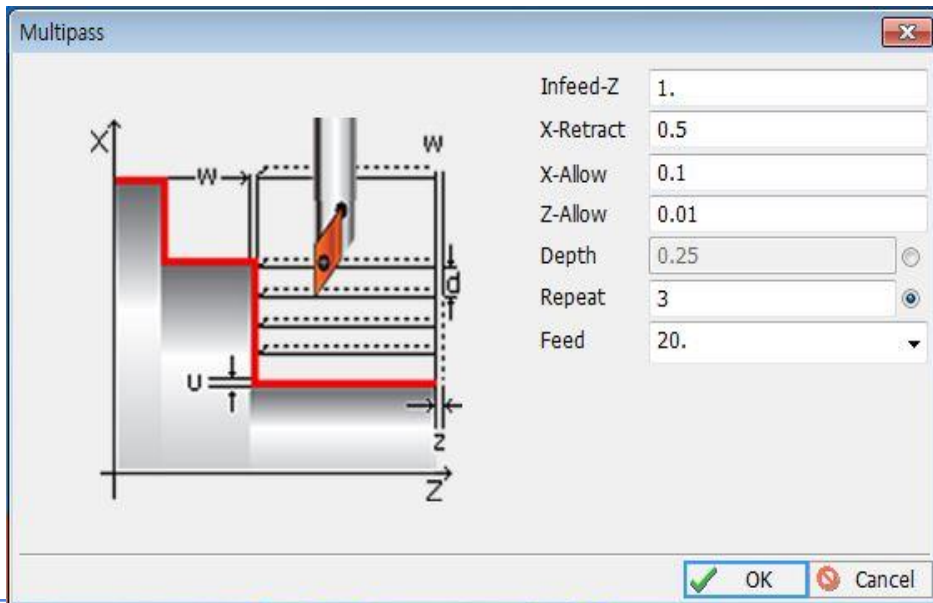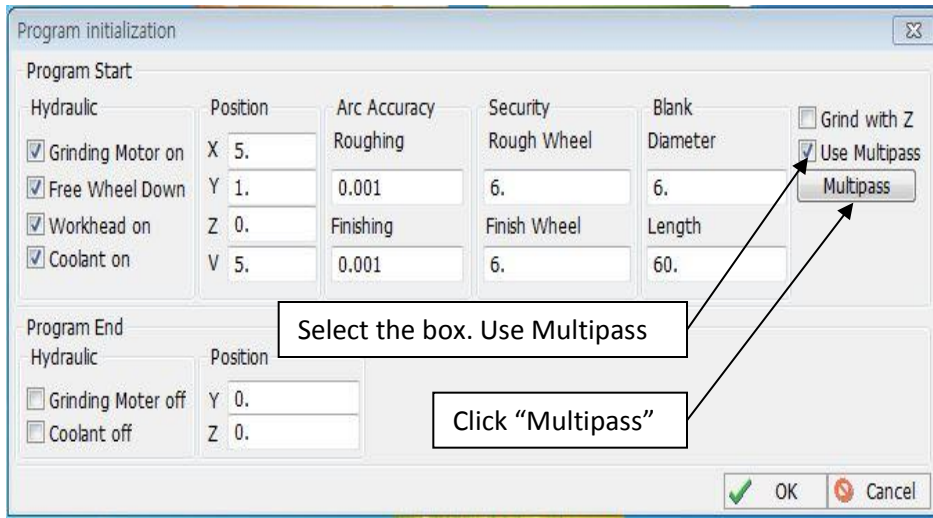
● **Repeat Mode**

In this mode, the "Feed In" between each roughing pass is calculated in order to remove a constant surface. This means the material removal. Dividing the number of times specified by the grinding portion is removed at the same depth.
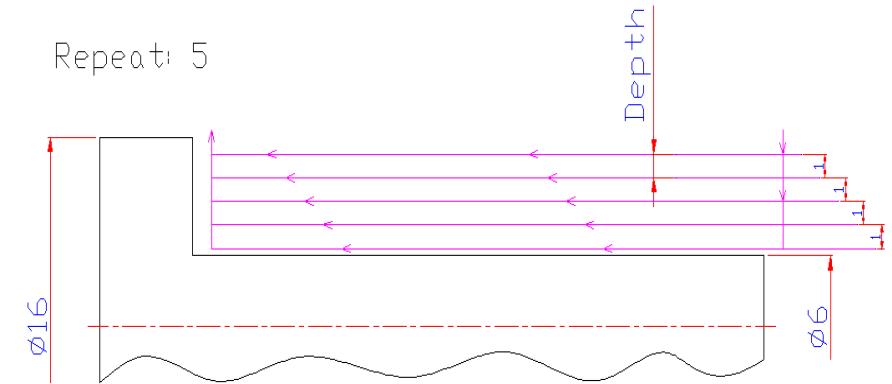
● **Depth Mode**

In this mode, the "Feed In" is constant. It is used when the difference between the blank diameter and the smallest ground diameter is big.

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