

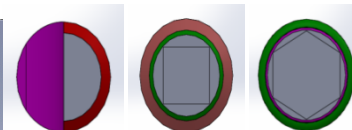
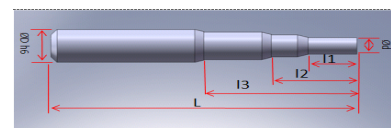
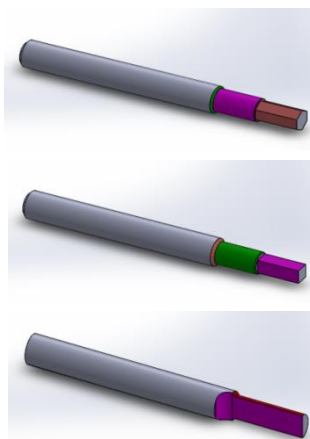
CNC-SK3000 Step Grinding Machine

INKOK Industrial Co., Ltd.

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Tel : +82-2-2108-2500~9 Fax : +82-2-2108-2510
- Factory: 808-3, Sachangri, Yamgammyun, Hwangsung City, Kyunggido
Tel: +82-31-354-2731~39 Fax: +82-31-354-2758
- Japanese Factory: Inkaloy Inc. ,
(株)インカロイ
377-0425, 群馬県吾妻郡中之条町大字西中之条 8 1 番地 1
전화번호 : +81-279-75-6201 팩스 : +81-279-75-6001
- Homepage: <http://www.inkok.co.kr>



SK3000



1. Introduction.

Div.	Contents		
Company name	INKOK INDUSTRIAL CO.,LTD.		
Chairman	金 聖 圭, Kim, Sung Kyu		
Foundation day	May 4 th , 1977		
Address	<p>-. Head office: 1st floor, 104, Woorom E-Biz Center, 170-5, Gurodong, Gurogu, Seoul Tel : +82-2-2108-2500~9 Fax : +82-2-2108-2510</p> <p>-. Factory: 808-3, Sachangri, Yamgammyun, Hwangsung City, Kyunggido Tel: +82-31-354-2731~39 Fax: +82-31-354-2758</p> <p>-. Japanese Factory: Inkaloy Inc. , (株)インカロイ 377-0425, 群馬県吾妻郡中之条町大字西中之条 8 1 番地 1 Tel : +81-279-75-6201 Fax: +81-279-75-6001</p>		
Capital	US\$ 7,000,000		
Employee	140		
Homepage	www.inkok.co.kr / sskim@inkok.co.kr		
Relative company	Boomin, Engis Korea, Inkarloy		
Divisions	Micro Drill	40%	Micro Drill and Endmill for holing on the PCB board.
	Machinery Div.	30%	Cutting tool grinding machine and lapping/polish machine for semiconductor wafer
	Power Train Div.	25%	Coupling and Clutch brake for power transmission
	Tool Div.	4%	Cutting tool (Endmill, Drill, Gundrill, CBN insert)
	Hard Metal Div.	1%	Tungsten carbide rod for cutting tool

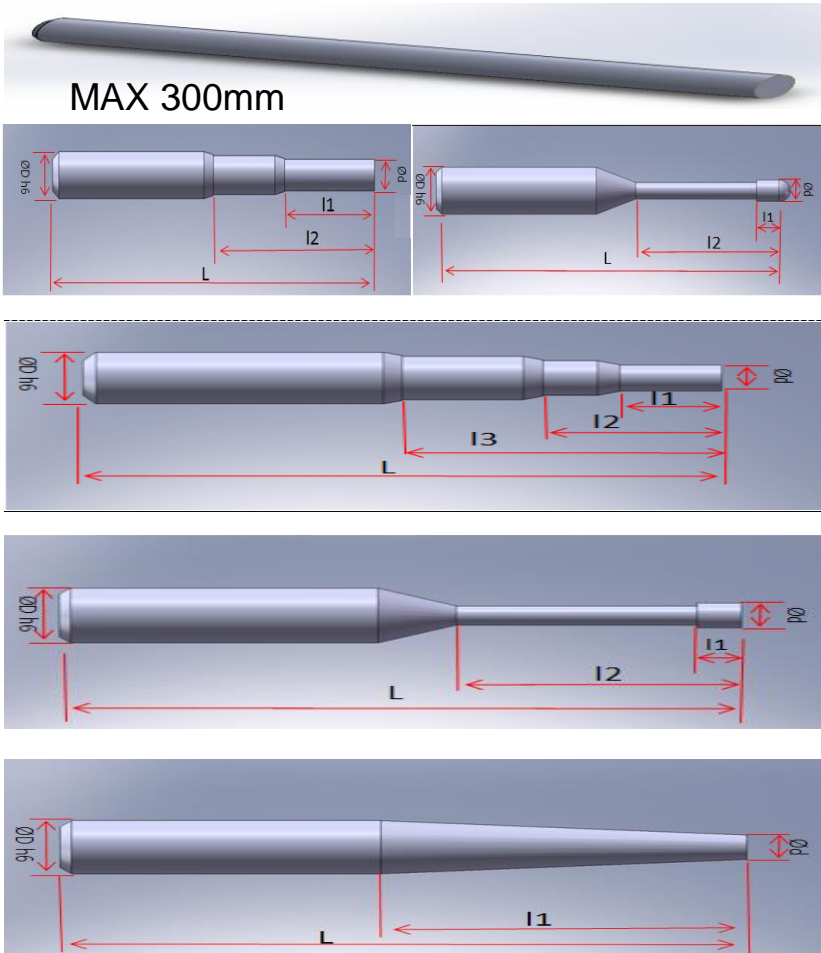
2. Step grind machine CNC-SK3000

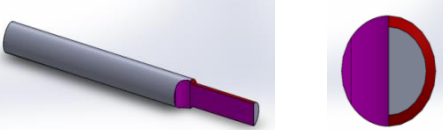
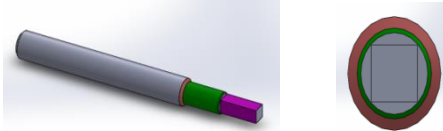
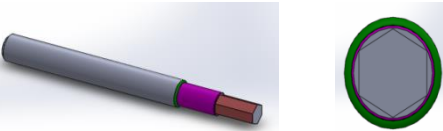

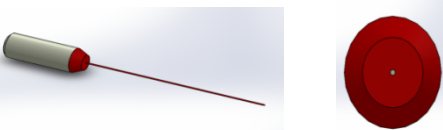


2-1. Application

CNC SK-3000 has high precision for step grinding and like below table, it could grind standard and special various shapes.

Stand shape



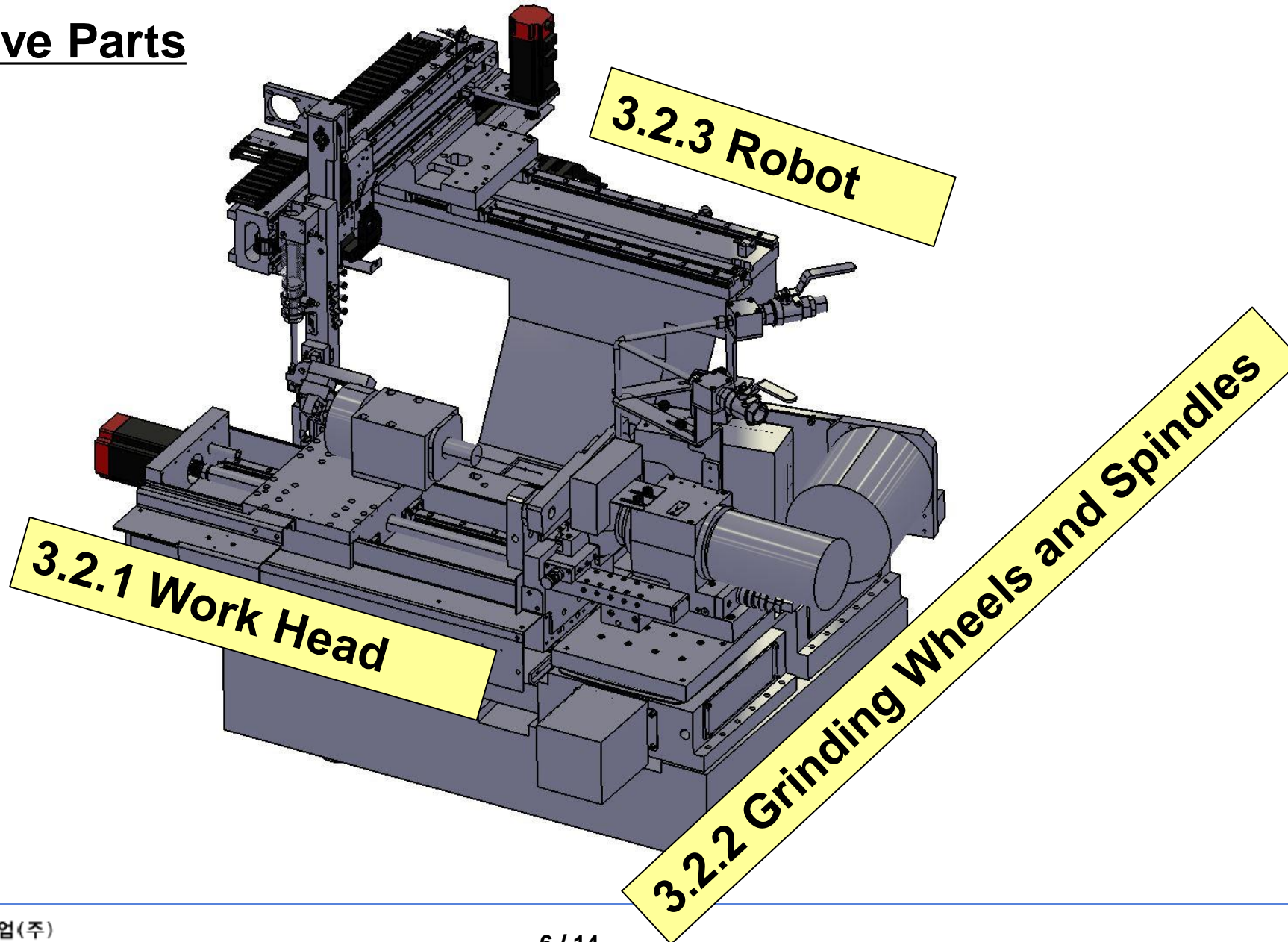
Special Shape	Application
	<ul style="list-style-type: none"> - Cutting tools' Step grinding for Endmill, Drill, ID type drill, Multi steps drill, T-Cutter etc
	<ul style="list-style-type: none"> - Mold pin and punch with precision and various shapes
	<ul style="list-style-type: none"> - Dental Drills
	<ul style="list-style-type: none"> - Cylindrical Grinding
	<ul style="list-style-type: none"> - From cylindrical rod, it could be grinded as half square, square, hex,

3. Specification

Model name	CNC-SK3000		Control	Fanuc CNC 0iT-F, Panel PC		
Maker	INKOK Industrial Co., Ltd			Programming	Smart Sharp Grinding	
Country	Korea			CNC 5 Axis	Y/Z/X/V/C Axis Grinding Part	
Grinding Range	Diameter	Ø0.025mm~Ø20mm		CNC 3 Axis	U/V/W Robot Part	
	Shank	Ø1.0mm ~ 20mm		C Axis	Stroke	360 degrees Rotation
	Collet	SCHAUBLIN W20			Resolution	0.0001mm
	Length	Max 330mm		Z Axis	Stroke	100mm
Auto Loading	Shank	Ø1.0mm ~ 16mm			Resolution	0.0001mm
	Overall Length	30mm ~ 330mm		X Axis	Stroke	29mm
Manual Loading	Shank	Ø1.0mm ~ 20mm			Resolution	0.0001mm
	Overall Length	30mm ~ 330mm		Y Axis	Stroke	350mm
Precision	Run-out	Under 0.002mm			Resolution	0.0001mm
	Diameter Tolerance	Under 0.002mm		V Axis	Stroke	29mm
Size	Width	1,800mm			Resolution	0.0001mm
	Length	2,000mm	Roughing Motor	8.5Kw(11Hp), Belt driven, internal coolant		
	Height	2,100mm		Roughing Spindle	Ø100mm(4"), Wheel supporter	
			Roughing Wheel	Diamond Wheel, Ø250mm(10")		
			Finishing Motor	1.4Kw(2Hp), Belt driven, internal coolant		
			Finishing Spindle	Ø100mm(4"), Wheel supporter		
			Finishing Wheel	Diamond Wheel, Ø150mm(6")		
			Work Head	FANUC SERVO MOTOR + SPINDLE		
			Action			

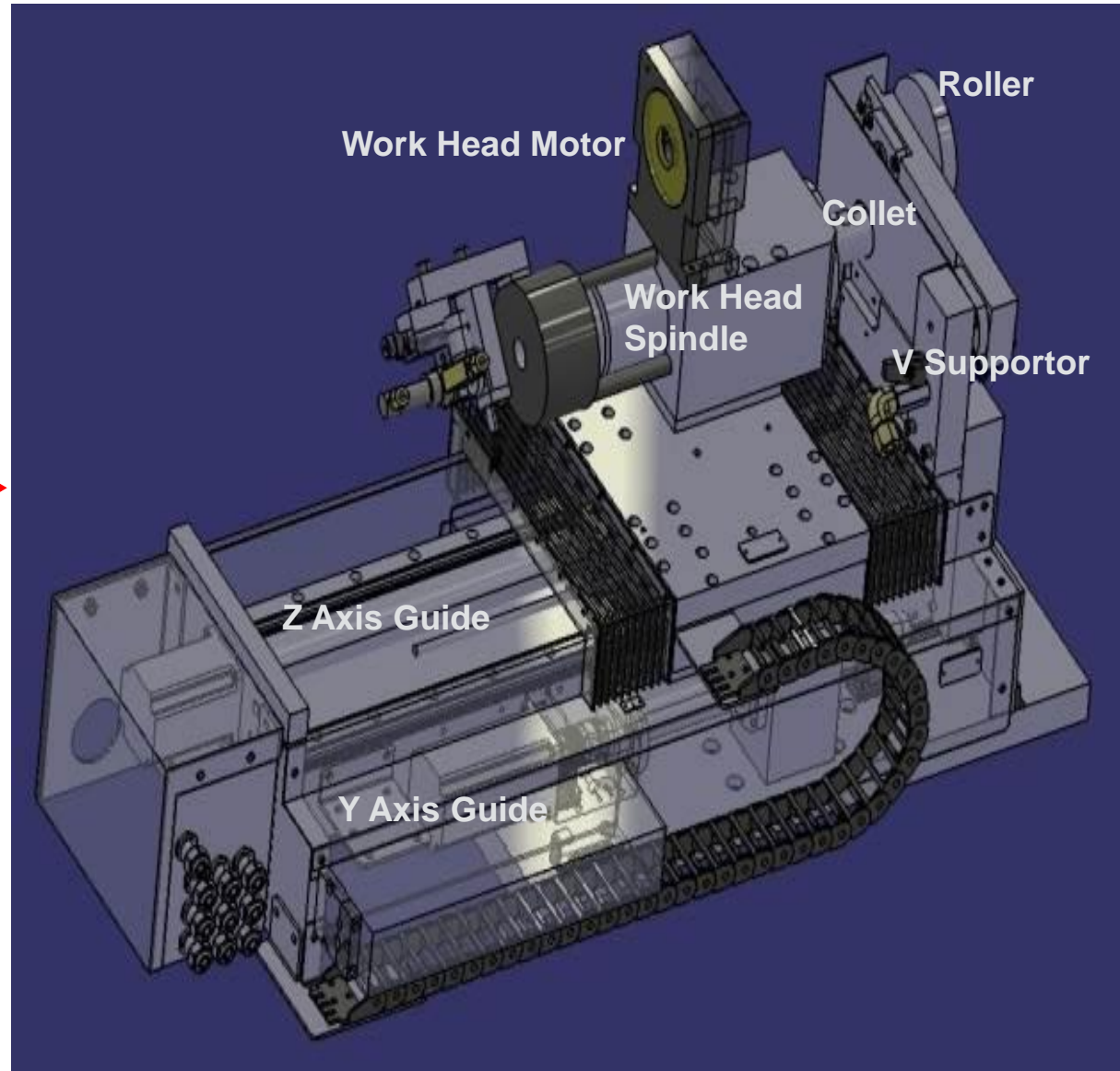
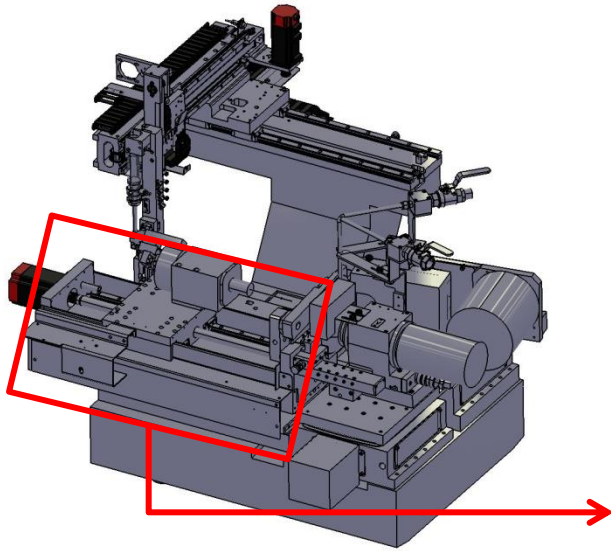
3.1 Machinery Parts

Drive Parts

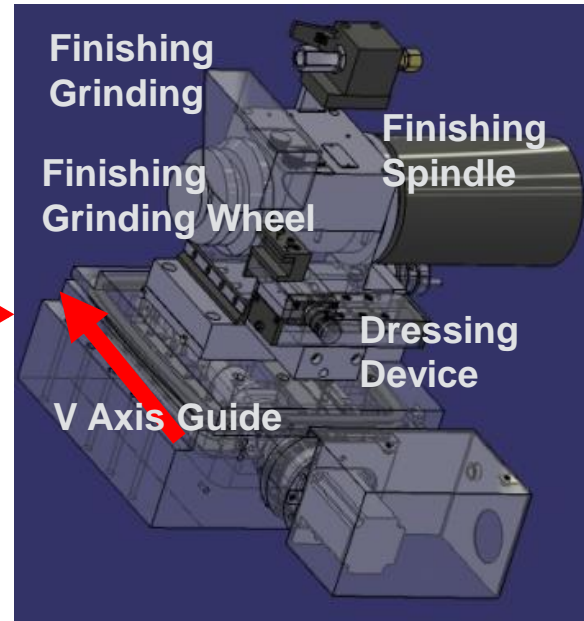
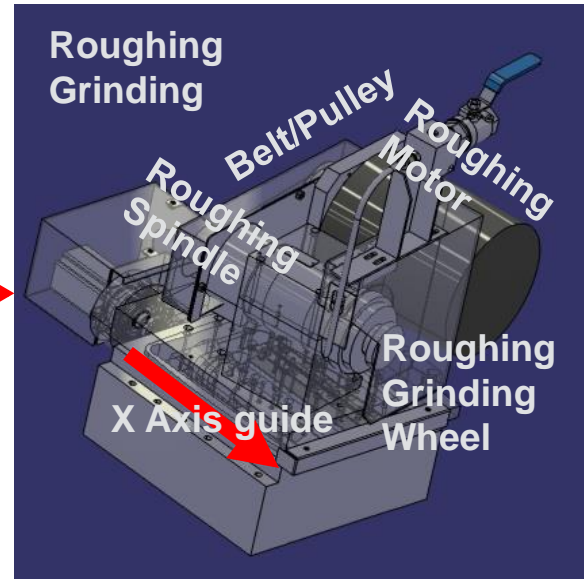
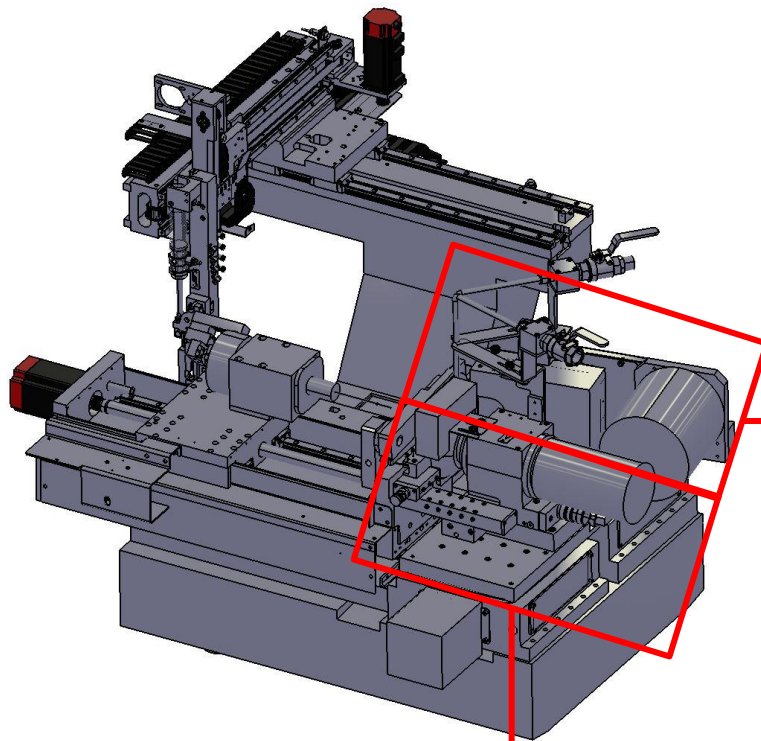


3.2 Work Head

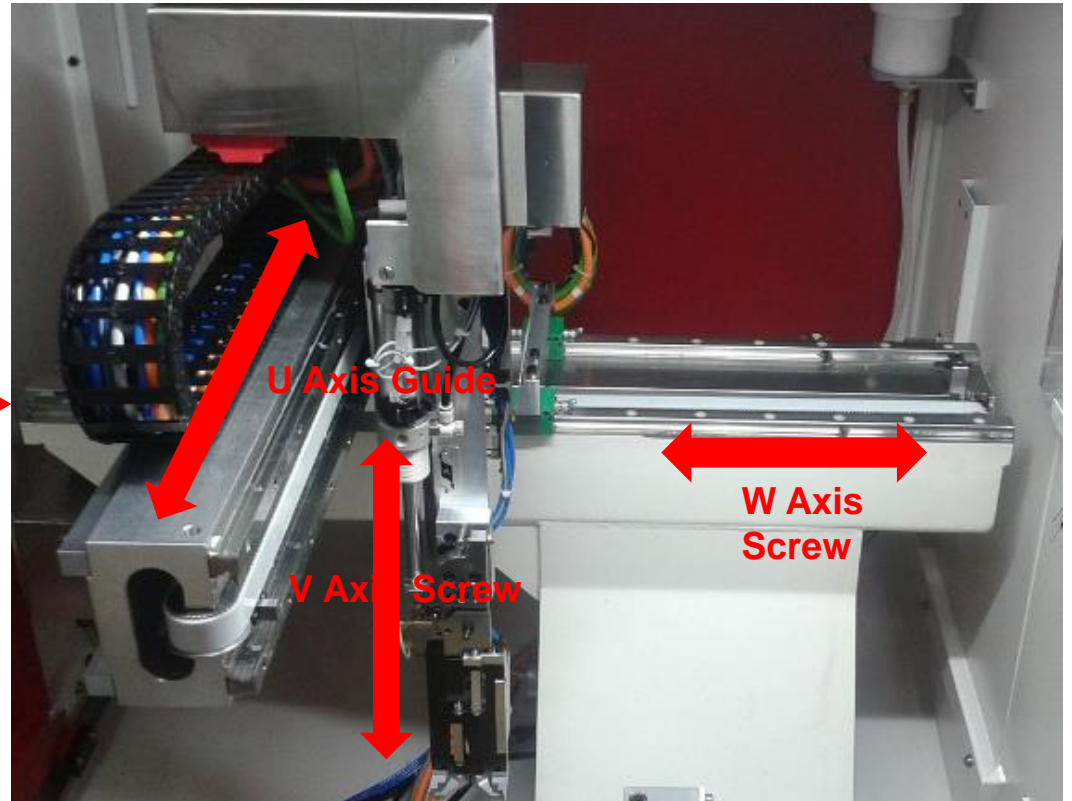
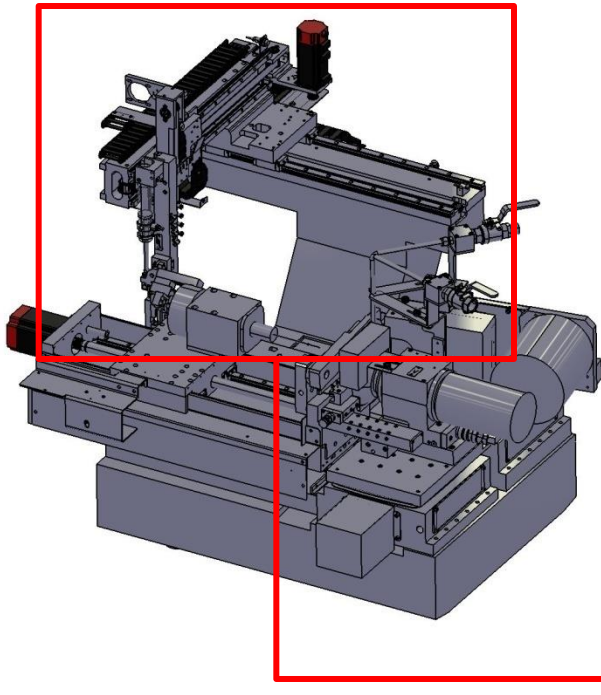
- Each Position name



3.3 Diamond Grinding Wheels and Spindles

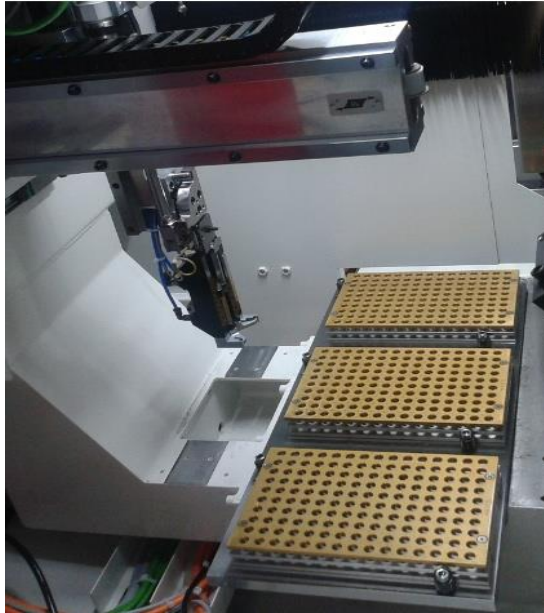


3.4 Robot

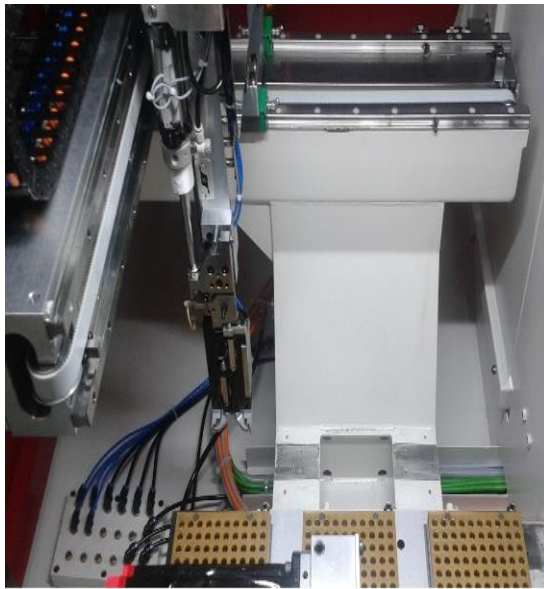


3.5 Cassette

Supply,
Discharge



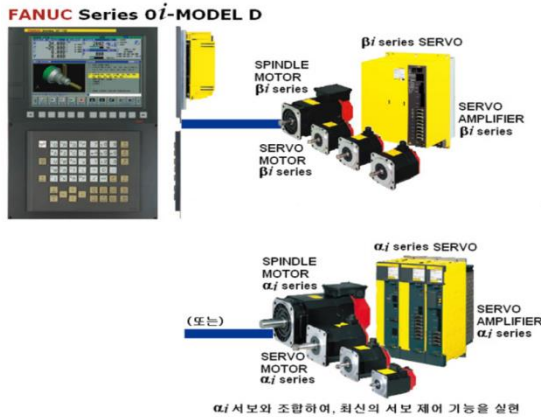
Cross Robot



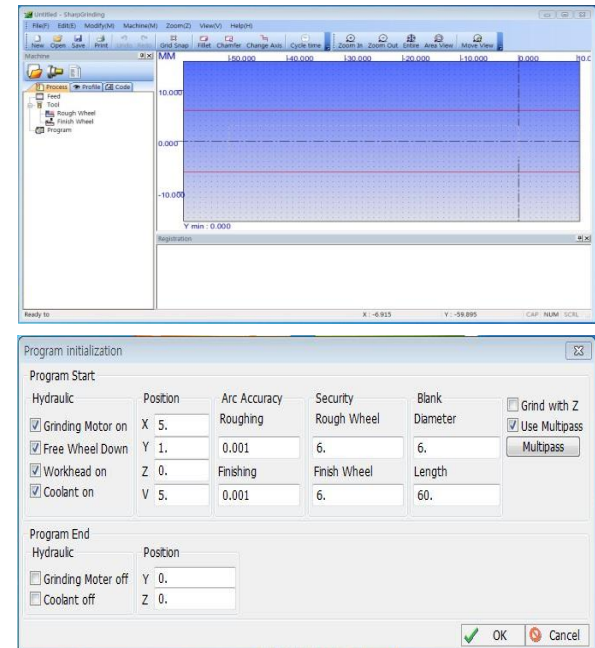
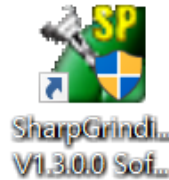
- . It has automatic loading/unloading system and cassette for auto feeding in a collet so it can makes manufacturing to be fast without operator.
- . Cross ROBOT has high precision linear guide and Fanuc Servo Motor, so that durability and precision are excellent.
- . With Cassette, mass work pieces could be manufactured by Robot, so the productivity could be maximum.
- . Cassettes are basic option.
(Ø1 ~ Ø20)

3.6 Controller

3.6.1 Fanuc Controller and Operation computer



3.6.2 Software: Sharp Grind



3.6.1 Fanuc Controller and Operation computer

Model name: Fanuc CNC 0iT-F, Panel PC

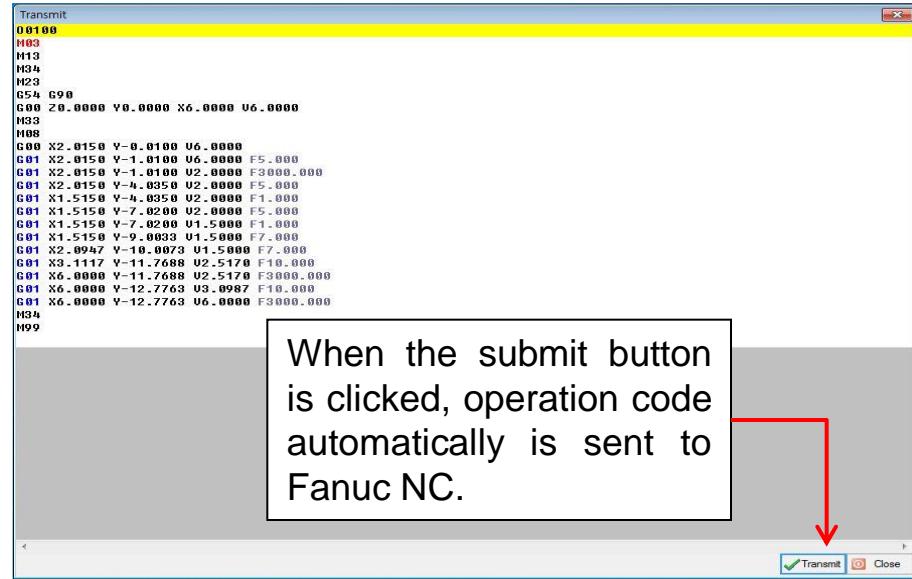
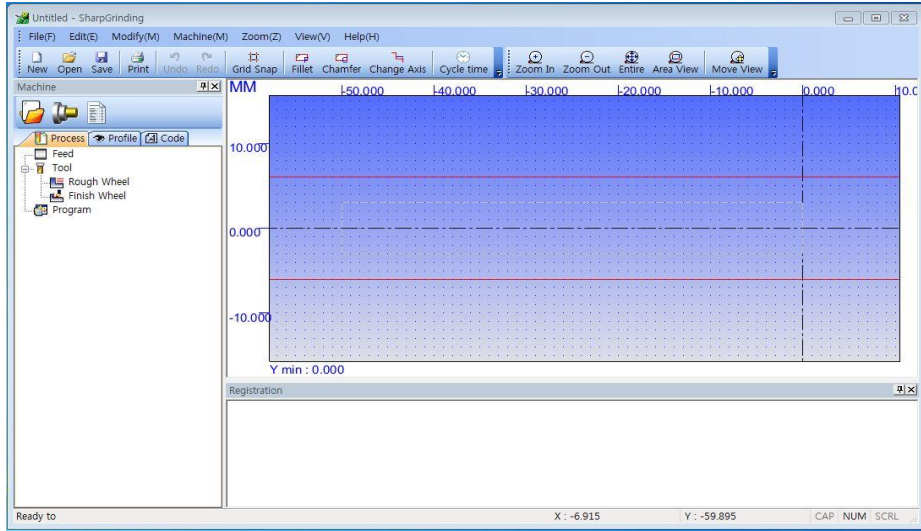
- CNC-SK3000 is using Fanuc CNC Controller, and this has the best precision and durability.
- CNC-SK3000's motion is controlled by Fanuc CNC 0iT-F and touch panel PC –Servo.
- Touch panel Monitor, and assembled PC with comfortable user Inter face.



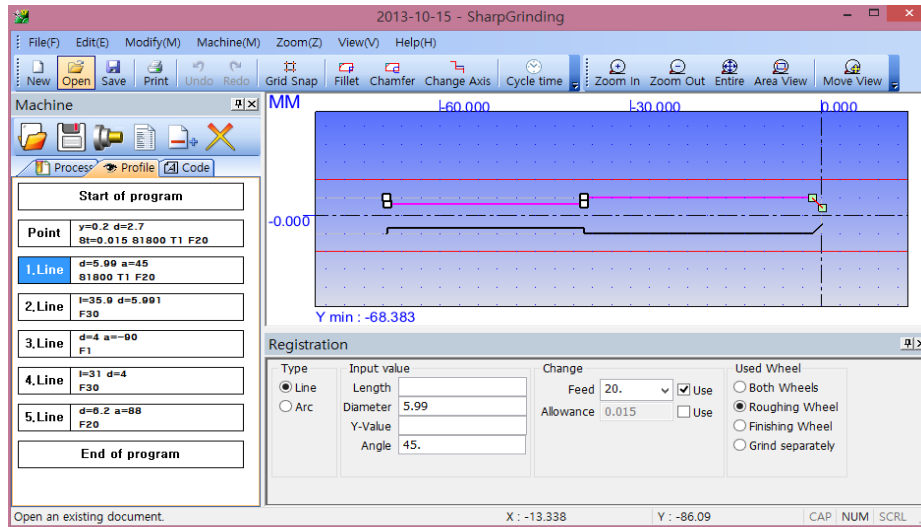
Div	Detail
CPU	Intel Pentium Dual-core P6200 (3M Cache, 2.13 GHz Mobile)
RAM	DDR3 2GB SO-DIMM
HDD	500GB (2.5HDD/SATA2/5400rpm/16M)
OS	Win 7 PRO(32bit/Embedded)
PSD	220ATX(AC input)
ODD	Slim DVD-Multi / SATA
Monitor	17"LCD/Resol.1280*1024/250cd, Touch panel
Cover	Aluminium Case

3.6.2 Software: Sharp Grind

- Operation Software "Sharp Grind" is developed by INKOK autonomously, this has English, Chinese, Japanese, Korean 4 versions.



When the submit button is clicked, operation code automatically is sent to Fanuc NC.

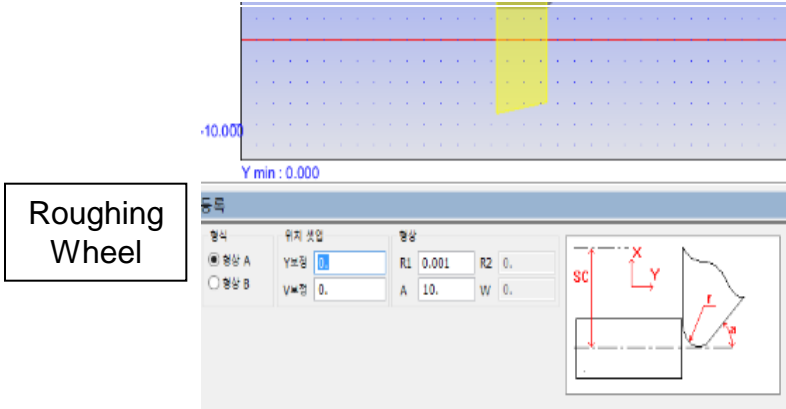


Directly, on the screen, we can draw a step shape, and this drawing can be converted operation code.

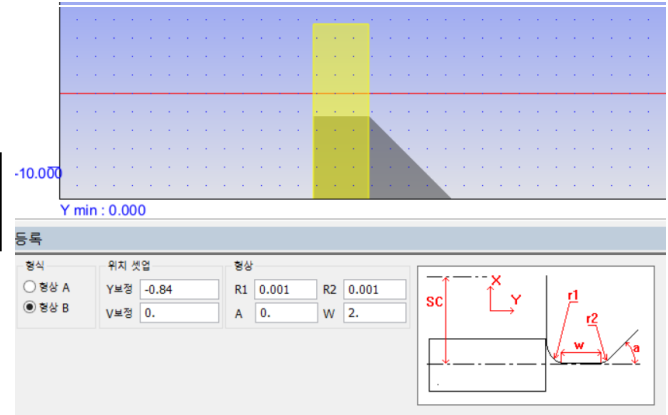
Sharp Grind is developed as user friendly and comfortable and easy program.

3.6.2 Software: Sharp Grind

- Operator can input a grinding wheel shape directly to Sharp Grind and Sharp Grind could automatically calculate the point of grinding wheel and work piece.

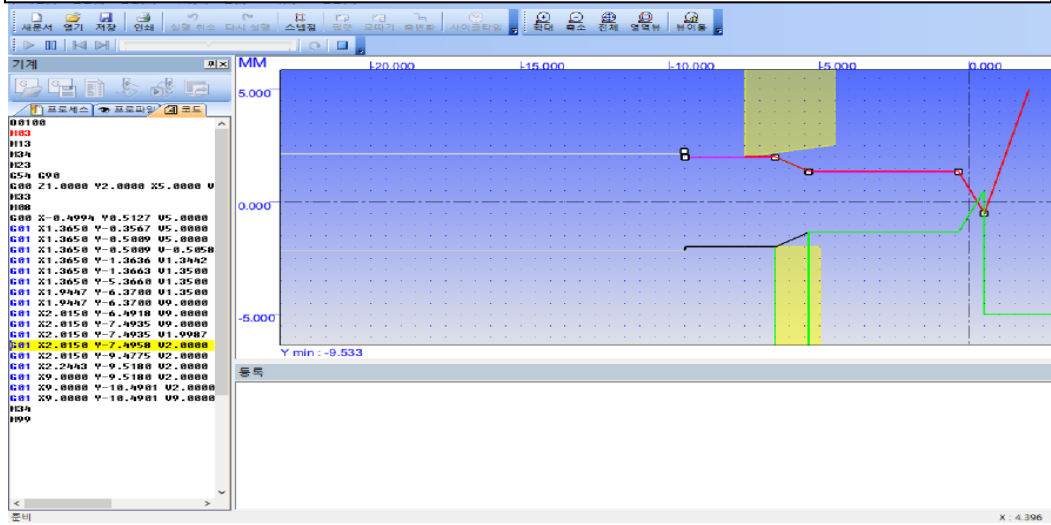


Roughing Wheel



Finishing Wheel

With NC Code which created automatically, virtual simulation is possible.



With simulation, grinding cycle time calculation is possible.

