

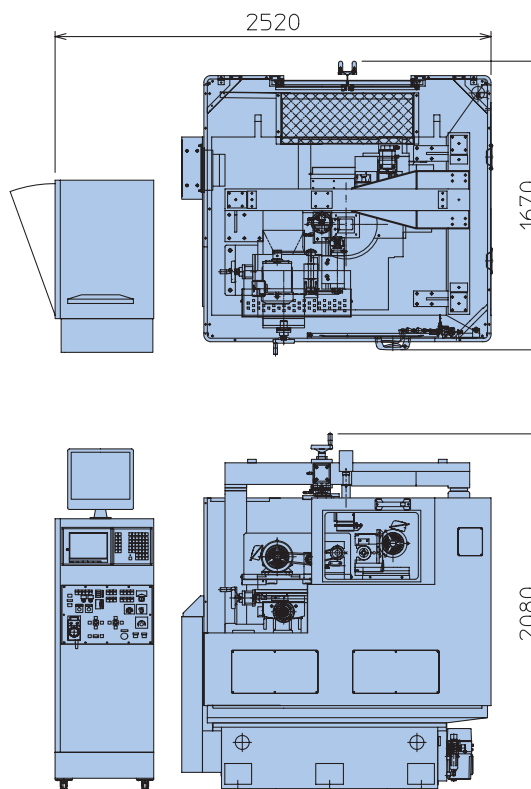
## Standard specifications

		SAF410-CNC5-CCD	SAF410-CNC5-CCD-305
Capacity	Max.diameter of forming wheel	$\phi$ 410mm	
	Min.diameter of forming wheel	$\phi$ 1mm	
	Max.width of forming wheel	40mm	
	Grinding angle	$\pm 95^\circ$	
The move- ment and adjustment range	Work spindle	Cross	Manual: 160mm
	head	Longitudinal	Manual: 85mm
	Wheel spindle head	Cross	(U-axis)NC: 50mm
		Oscillation	(V-axis)NC: 70mm
		Swivel	(C-axis)NC: $\pm 95^\circ$
		Longitudinal of swivel base	(Y-axis)NC: 80mm
		Cross of swivel base	(X-axis)NC: 100mm
	Projector	Vertical	80mm
		Cross/Longitudinal	13mm
	Wheel spindle angular offset angle	0~20°	-
Work spindle	Remodeling for installation customer's specific spindle	○	
	Motor	1.5kw-4p	
Wheel spindle	Spindle speed (Inverter use)	500~1800rpm	
	Motor	0.75Kw-4p (OP 1.5Kw-4p)	
	Wheel size	$\phi$ 205x19x $\phi$ 50.8	$\phi$ 305x19x50.8
Digital CCD camera	CCD camera	2million pixel color CCD	
	Frame rate	30fps	
	High accuracy zoom microscope	1~5x	
	PC	Windows 7, HDD250G, DVD drive Keyboard, Mouse, USB3.0, LAN	
	Monitor	17inch color LCD (OP 21inch color LCD)	
	Magnification of monitor	40~200X (Zoom lens) (Magnification range is changeable by lens exchange)	
	Drawing soft	Cross scale, Concentric circle, Semicircle	
	Measuring function	Scale, Distance between two points, Radius, Angle, Calibration	
	Drawing function	Cross scale, Concentric circle, Parallel lines	
	Transmitted source of light	50W Halogen lamp (With illumination adjustment function)	
	Structure	Vibration-free bridge type: supported at 3 points	
Cover of machine		Upward opening oil pan	
Control unit		FANUC Series 32i/31i-MB	
Others	Automatic refueling unit	1set	
	Supply of air (Dry air)	Consumption of air 90 l / min	
	Wheel frange	1piece	
Machine weight		4000kg	
Standard accessories		1set	
Standard tools		1set	

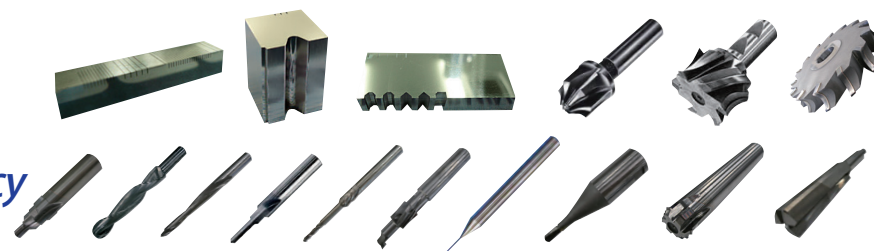
## Option

Signal tower		Red Orange Green
Control panel name plate		Each language
Coolant unit	Capacity・Coolant pump	60L・60w 100L・180W With simplified paper filter
	Spindle speed (Inverter use)	25~250rpm
	Exchangeable holder for spindle quill	$\varphi$ 45mm1set $\varphi$ 60mm1set $\varphi$ 70mm1set

## External dimensions



Sample by high accuracy forming wheel



**KANEHIRA**  
株式会社 カネヒラ

- ・ダイヤモンド砥石自動成形盤
- ・工具研削盤
- ・各種専用機設計製作
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●本機の仕様は改良のため予告なく変更する場合があります。詳しくはお問い合わせください。2014.07



A Super Abrasive Wheel CNC Forming Machine  
**SAF410-CNC5-CCD**

# Continue evolution for the high accuracy

The machine with confidence lead the others

# KANEHIRA

## The High Rigidity Guaranteed

We put our know-how of machine development together, and guaranteed the high rigidity of the bed and whole machine structure. The machine is high rigidity and low oscillation; the machine body is complete-box-type-structure and a bed filled up with concrete. The highly accuracy linear roller way are used on the table slide. It enable to have a rigid body and a accuracy movement. SAF410-CNC5-CCD reduce the machine-trace-line-error to a sub-micron-level by the center of gravity movement during the processing.

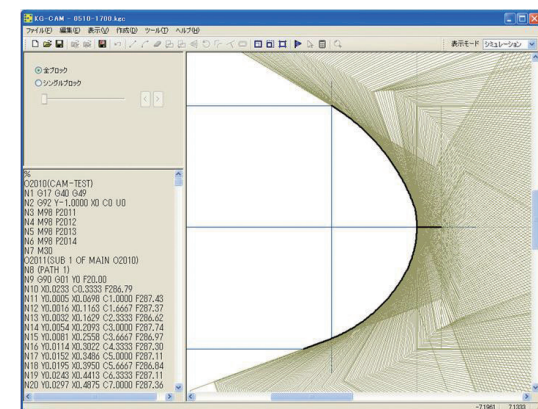
## Normal Direction Control

The program operation keep the wheel control to face the normal direction all the time. It makes possible to process the outline accurately.

## Various software / CAM system

It helps you easy to operate this 5-axis machine.

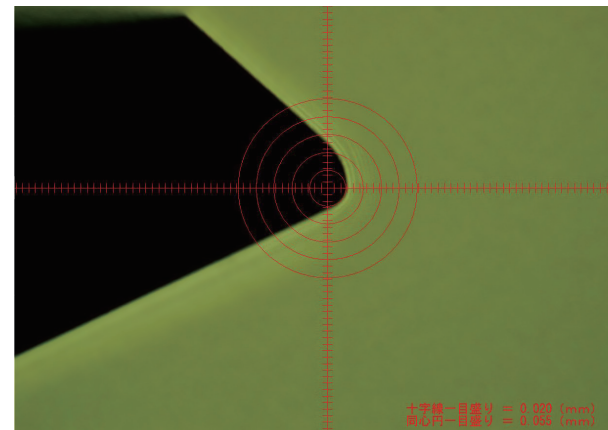
A shape pattern macro program interactive programming system KG-CAM (authoring the NC programs by CAD drawing (DXF data format) and multipoint date)



A screen of KG-CAM simulation.

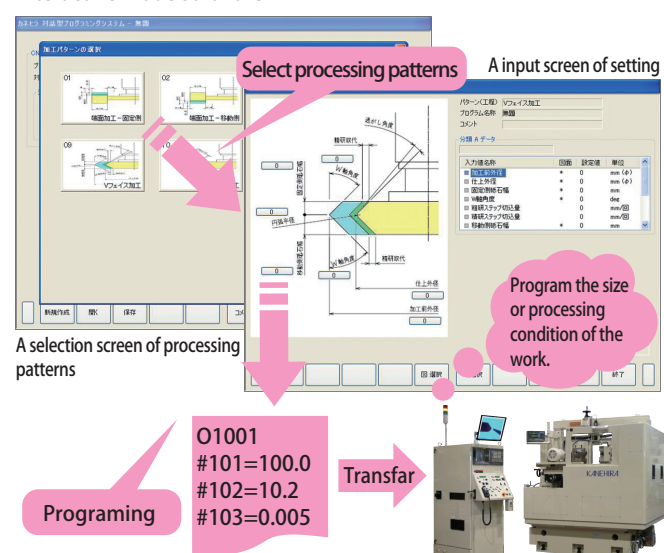
## Digital CCD Camera

Digital CCD camera is installed in the measurment stand on the machine of gate type structure. It reduce a vibration and heat displacement to a minimum. Also, it show its ability for the high magnification measurement by saving various measurements and their images.



Magnificant of 200,  $\phi$ 150mm, work circumference (Wheel for the drill-flute-grinding)  
0.002mm/div The reference screen

## Interactive mode software

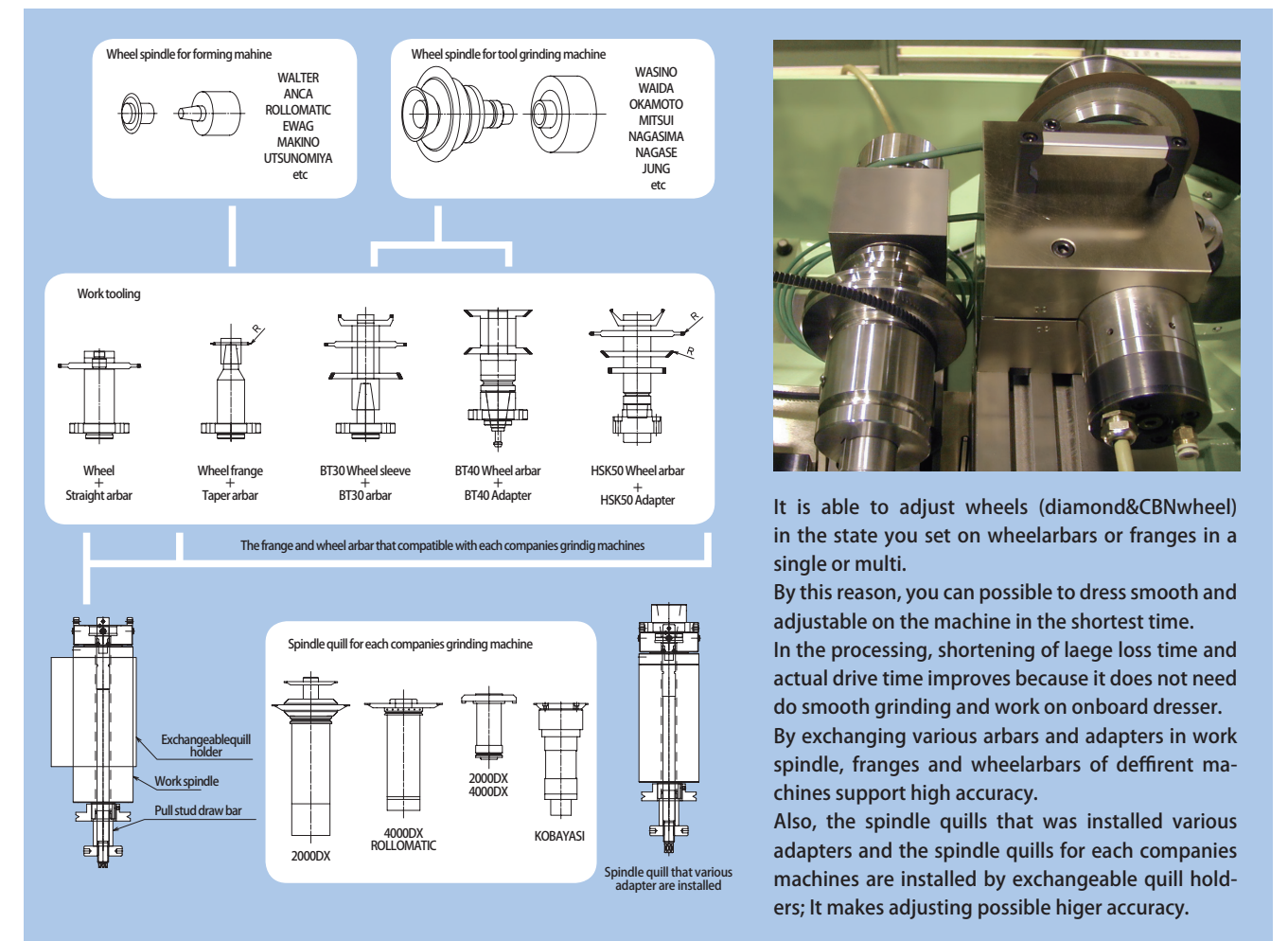


## The Point of The High accuracy

- ① This machine support the rivision frange and multi-set-wheel with arbar of each companies. (cf. chart below a figure of touring)
- ② It can set the spindle quill with diamond wheel removed from the griding machine, during processing, the intial abration of the wheel is reduced by suppressing the vibration to a minimum. (It is important to be in a good condion of your spindle.)

## Processing results

After customers process the diamondwheels for  $\phi$ 0.09 PCD drill-flute-recessing, 1~1000 pieces of all are processed in a good state by customer's grinding machine, and it gives 100% satisfaction for concrete shape. Also, the machine achieve a good reproducibility in 10 times of same shape examination of  $\phi$ 0.1 PCB drill-flute-grinding.



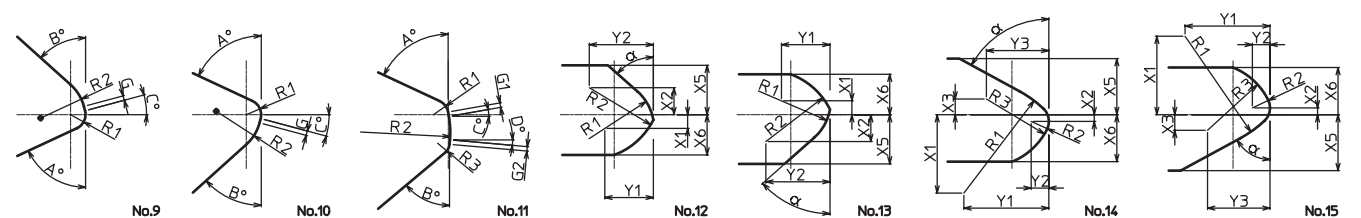
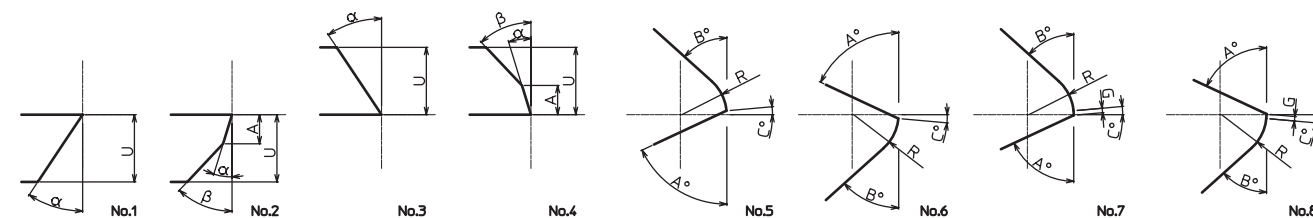
It is able to adjust wheels (diamond&CBNwheel) in the state you set on wheelarbars or franges in a single or multi.

By this reason, you can possible to dress smooth and adjustable on the machine in the shortest time.

In the processing, shortening of laege loss time and actual drive time improves because it does not need do smooth grinding and work on onboard dresser.

By exchanging various arbars and adapters in work spindle, franges and wheelarbars of deffirent machines support high accuracy.

Also, the spindle quills that was installed various adapters and the spindle quills for each companies machines are installed by exchangeable quill holders; It makes adjusting possible higher accuracy.



Sample of a shape pattern macro program (Option)