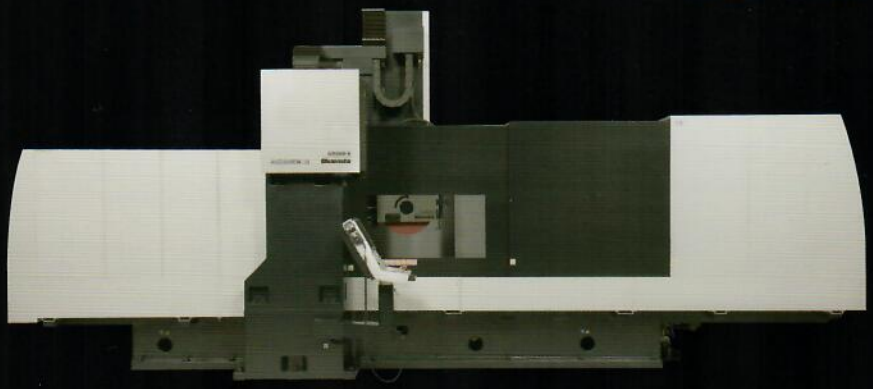
DOUBLE COLUMN GRINDING MACHINE

ACC-CH *i*Q
SERIES



Okamoto

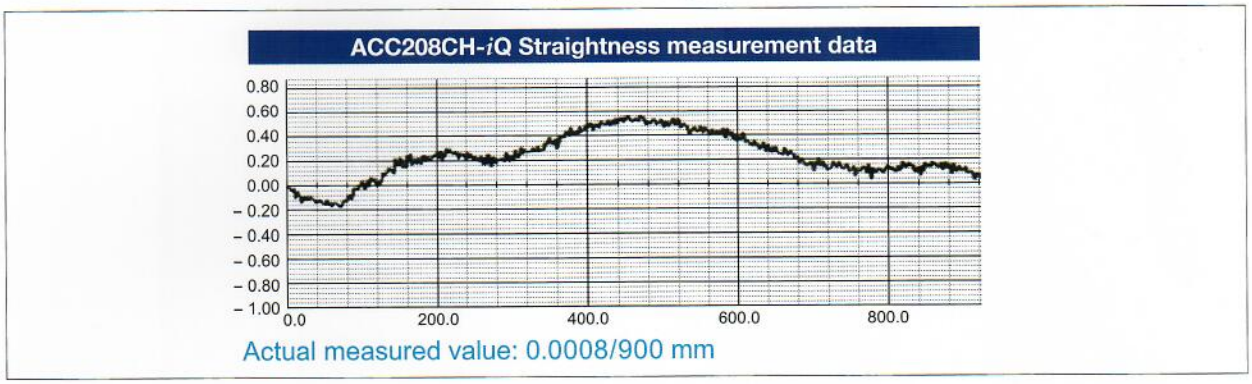
ACC-CH *i*Q Series

This double-column grinding machine satisfies

The ACC-CH *i*Q Series satisfies the demands for high accuracy required for machining the progressive dies used for motor cores or LC processing, while also offering the high efficiency needed by the die base processing industry.

Highly accurate process

The accuracy of a double-column grinding machine depends on the crossrail. We have developed a crossrail mechanism that enables mechanical adjustments without NC correction.
Extremely high degrees of flatness can be obtained along the entire width of the working surface.
Accuracy can be adjusted with the cross rail attached after installation.

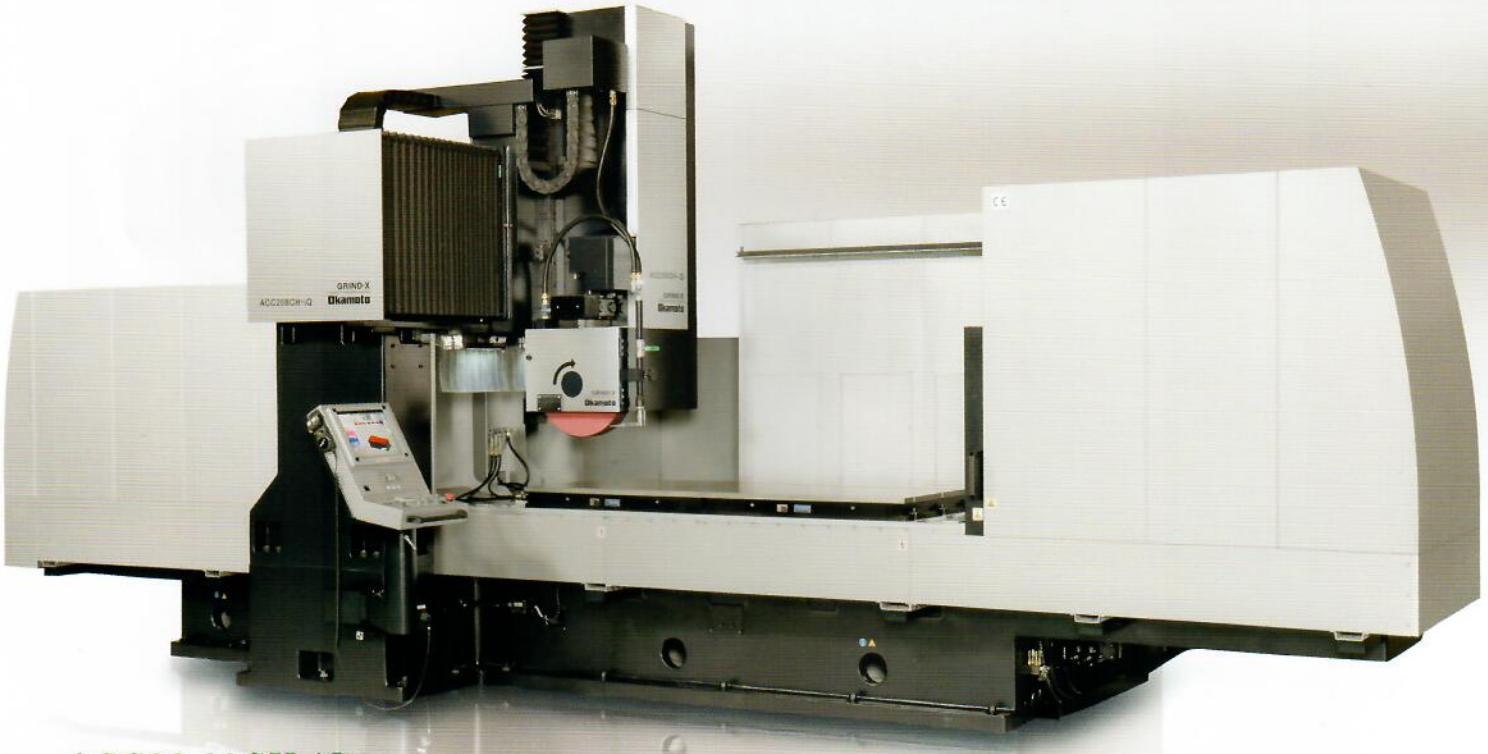


Actual measured value: 0.0008/900 mm

Highly efficient process

❶ Pass width with extra space enables the processing of cross lengths of up to 39.4 in.
❷ The 30 hp spindle motor offers the maximum horsepower in this class, with approximately 3 times the power of our conventional column-type machines.
❸ Dressing time has been shortened by combining upper dressing (option: dress correction function provided as standard) for rough dressing with tabletop dressing for finishing. Also, the shift-plunge grinding cycle contributes to reducing the processing time.

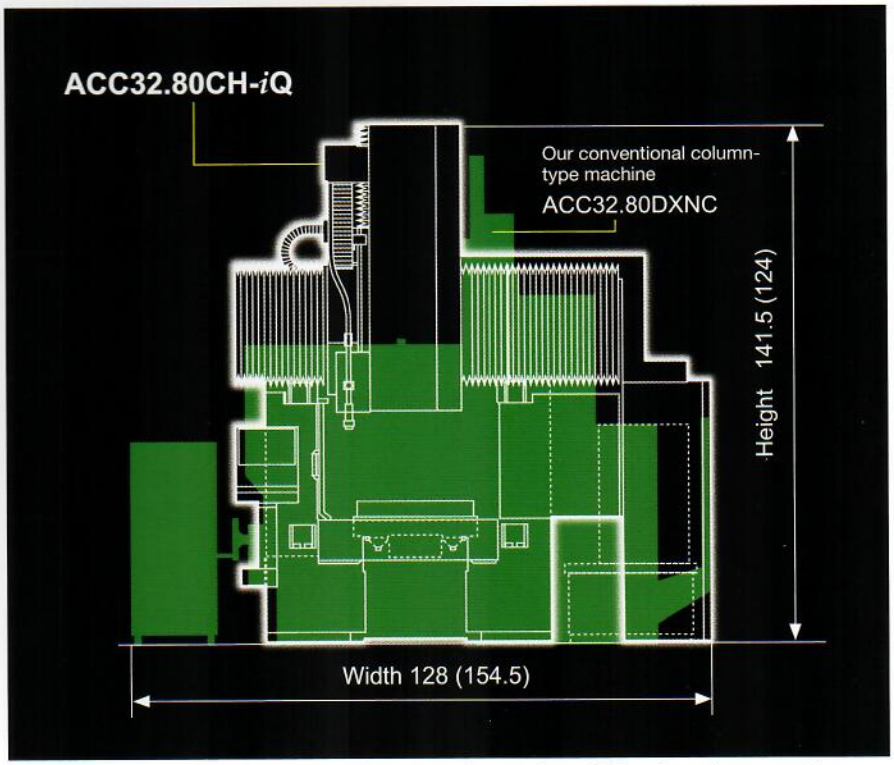
demands for high accuracy and high efficiency.



ACC32.80CH-*i*Q

Space-saving design minimizes footprint

This double-column grinding machine requires no more installation space than our CNC column-type machine.



Unit: in The dimensions in parentheses are those of our CNC column-type machine.

*i*Q software facilitates the processing of large workpieces with the double-column grinding machine.

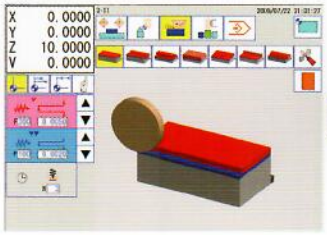
The innovative *i*Q software radically simplifies data input.
Cycle time has been dramatically shortened.

*i*Q data is automatically generated by inputting the grinding wheel's grain size.

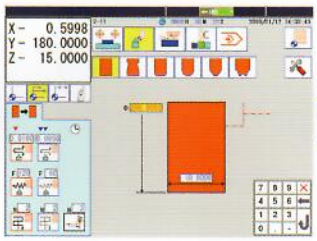
Input the total machining allowance and precision machining allowance.
Then, simply input the grinding wheel size to automatically create the optimum grinding wheel conditions based on our know-how and grinding process theory.

Data input can be completed using only two screens.

There is no text on the screen.
The panel buttons cover the full range of surface grinding and complicated grinding operations.



Grinding data setting screen



Dress data setting screen

Diversified *i*Q Functions

■ Keys to shortening cycle time (Fine- and rough-dressing selection)

Optimum combination of upper dress for rough dressing and table top dress for finishing. An automatic diamond tracking device is provided with the upper dresser with dress cycle function (optional).
By using shift plunge grinding, the cycle time can be effectively shortened.

■ Automatic setting of process conditions

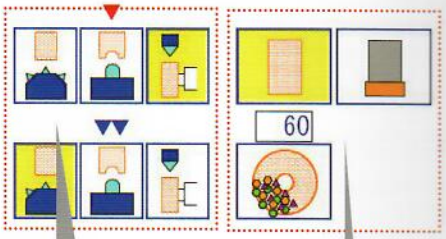
Grinding processes used to rely on the user's skill and intuition. To automate this processing, we developed a function for automatically setting the recommended process conditions based on grinding process theory and our know-how. The basic data on which this automatic setting is based is the grain size of the grinding wheel.
This software supports the use of both Alundum-type grinding wheels and ultra-abrasive-coating grinding wheels. Users can also input their own condition settings.

■ *i*Q graphical display of actual grinding position

The position at which grinding is to be performed is displayed on the screen.

■ *i*Q cycle type projection

The cycle end time is displayed, thus saving setup time.



Fine and rough dress setting
Supports an optimal combination of upper dress for rough dressing and on-the-table dress for fine dressing.

Automatic setting of process conditions
Select either a general grinding wheel or ultra abrasive coating grinding wheel, and then enter the grain size in the column below.
The optimal grinding/dressing conditions are automatically set based on the grain size.

Standard accessories

- Grinding wheel adaptor
- Foundation plate or Anchor bolt
- Filling nozzle for 4″ wide grinding wheel
- Lifting bolt for grinding wheel adaptor
- Hydraulic upper dresser (with automatic dress correction function)
- Dresser stand with diamond tool
- Spindle speed controller 30 hp
- Automatic oil temperature regulator
- Automatic circuit breaker
- *i*Q Software

Optional accessories

Item		Specifications	Model CH-*i*Q 32″×80″	32″×100″	32″×140″
Coolant system 160 gal	With magnetic dust separator	・Tank capacity: 160 gal ・Coolant pump:1/2 hp / 2ph, Separator disposal capacity: 32 gal/min	○		
	Magnetic dust separator with temperature regulator	・Tank capacity: 160 gal ・Coolant pump:1/2 hp / 2ph, Separator disposal capacity: 32 gal/min ・Temperature regulator: 1 hp	○		
	Magnetic dust separator with auto. paper filter	・Tank capacity: 160 gal ・Coolant pump:1/2 hp / 2ph, Separator disposal capacity: 32 gal/min ・Processing capacity: 32 gal/min (15-μm mesh)	○		
	Magnetic dust separator with auto. paper filter and temperature regulator	・Tank capacity: 160 gal ・Coolant pump:1/2 hp / 2ph, Separator disposal capacity: 32 gal/min ・Processing capacity: (32gal/min with 15-μm mesh) ・Temperature regulator: 1 hp	○		
Oil mist dust collector		・Dust collector motor: 2hp / 2ph, Air flow: 6000 gal/min ・Dust collection port: 6″	○		
Dust collection port	Diameter for OKB-20: 6″	・Mounted to the top of "left rear cover with top"	○		
Electro-magnetic chuck	32″×79″×4″		○	–	–
	32″×98″×4″		–	○	–
	32″×138″×4″		–	–	○
Permanent electro-magnetic chuck	32″×79″×4″		○	–	–
	32″×98″×4″		–	○	–
	32″×138″×4″		–	–	○
Demagnetizing controller	With automatic 20-A electro-magnetic adjustment	・Chuck "rated current" applicable range Max: 16 A	○		
Grinding wheel external diameter φ24″	4″	・Applicable grinding wheel: 24″×4″×5″	○		
Spare grinding wheel diameter: φ20″	4″	・20″×4″×5″ (both concave)	○		
Spare grinding wheel diameter: φ24″	4″	・24″×4″×5″	○		
Vertical grinding attachment		・5 hp	○		
Dynamic balancing apparatus	BW-5 type (with standard arbor)	・Applicable grinding wheel diameter: 20″ max. balance type	○		
	BW-6 type (with standard arbor)	・Applicable grinding wheel diameter: 24″ max. balance type	○		
Balance arbor (balance type)	L = 11″, For both BW-5 and 6 types	・Grinding wheel internal diameter: 5″	○		
Automatic dynamic balancing apparatus	Full-automatic balancer non-contact electric type	・Full-automatic measurement and automatic correction ・3 electrical balance weights shift ・Rotational speed: Max. 1200 min^{-1} ・Measurement range unbalanced vibration displacement: 0.01 to 100 μm ・Controller, ACC sensor-equipped, integrated controller	○		
Grinding wheel adaptor	For standard	・20″×4″×5″	○		
	For full automatic balancer	・20″×4″×5″	○		
Table T groove grinding	Number of grooves: 3	・Size of T groove and pitch: Okamoto's standard	○		
High column specification	8″ up		○		
Hydraulic oil		・Required amount: 80 gal	○		
Cycle end power shut off	For 30 hp spindle motor	・Power shut-off at cycle end	○		
Electro-magnetic chuck interlock	Spindle motor activates	・The spindle does not rotate unless the electro-magnetic chuck is "ON."	○		
	Table activates	・The table does not rotate unless the electro-magnetic chuck is "ON." ・Should it switch to "OFF" while the table is rolling over, the table stops immediately.	○		
Door interlock	Table activates	・The table does not activate unless the door is "ON." ・Should it switch to "OFF" while the table is rolling over, the table stops immediately.	○		
Grinding head meter relay			○		
Calendar timer		・A weekly timer turns the hydraulics "ON" at a set time.	○		
Three-stage signal tower	Red, Yellow, Green / Signal meaning	・Yellow: Lights at the end of a cycle. ・Green: Lights during a cycle.	○		
Working light (LED)		・Mounted on the underside of the cross rail	○		
*i*Q Software	Forming dressing software (with 3 point dresser)		○		
	G code program		○		
	Automatic programming UP CAM		○		

Specifications

Item			Unit	32.80CH-iQ	32.100CH-iQ	32.140CH-iQ
Capacity	Table working size (Length×Width×Height)		in	32×80	32×100	32×140
				Max Dist. Under Wheel 23.5		
	Max. pass width		in	41		
	Table working cap (Length×Width)		in	33×81	33×101	33×140
	Maximum weight of table (Including chuck)		lbs	5512 (2601)	7055 (3263)	10580 (4564)
	Chuck size (Length×Width)		in	32×79	32×98	32×138
Longitudinal feed	Max. travel feed		in	89	108	148
	Longitudonal feed rate		ft/min	6～98		
Cross feed	Max. travel feed		in	36		
	Minimum increment		in	0.00001		
	Max. rapid feed		in	236		
	Automatic feed	Continuous feed rate	in/min	0～39.4		
	Manual feed	Hand feed per revolution	in	0.001/0.01/0.1		
		Graduation of hand wheel		0.00001/0.0001/0.001		
Vertical feed	Max. travel feed		in	24.4		
	Minimum increment		in	0.00001		
	Max. rapid feed		in/min	78.7		
	Automatic feed	Rough grinding	in	0.00001～0.04		
		Fine grinding				
	Manual feed	Hand feed per revolution	in	0.001/0.01/0.1		
		Graduation of hand wheel		0.00001/0.0001/0.001		
Grinding wheel	Size (OD×W×ID)		in	ϕ20×4×ϕ5		
				(Option : 24×4×5)		
	Spindle speed		rpm	400～1600		
	Motor		hp/ph	30 / 4		
Oil pressure unit	Capacity		gal	80		
Machine space	Length×Width×Height		in	259×152×140	305×152×140	402×152×140
Machine weight	Standard		lbs	34,200	37,500	44,100

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⚠ CAUTION

*When and before using our products, you are requested to well go through the articles on danger, warning and attention for the sake of safety described in operation manual attached to the machine and also in the warning plates mounted on the machine.
*Specifications subject to change without notice.
*When a product manufactured at our factory comes under the Foreign Exchange And Foreign Trade Control Law and is exported or carried overseas, it is necessary to receive permission or approval of the Japanese Government.