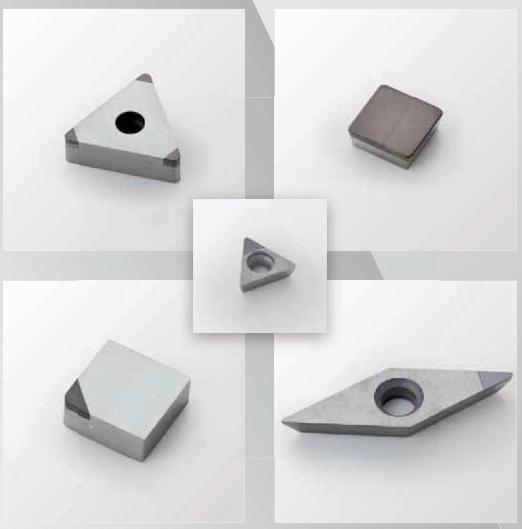
WAIDA

Fully Automatic
Insert Periphery Grinder

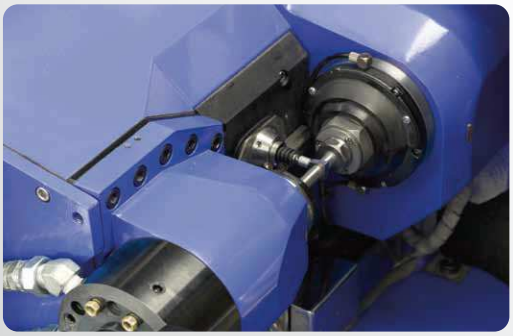
APX-101



Global standard machine with various options for

MAIN FEATURES

Product measurement



Work head for high clamping pressure

Option

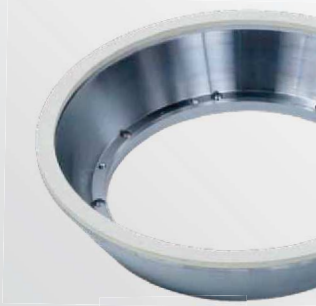
1. Peripheral and one side K-land (option) grinding for standard throw away insert.
2. Work head is selectable from "Standard work head", "Work head for high clamping pressure", and "Work head for one side K-land grinding"as option.
3. Interactive software, APX ToolLab, is standard specification.
4. Adopted 3 axis rectangular coordinate loader for loading & unloading, 3 standard type pallet (vertical type) can be equipped.
5. Main body and the loader unit are fully covered. Partition and shutter are installed to prevent the intrusion of liquid mist to the drive unit.
6. Automatic oil mist lubrication system for feeding unit on X axis (In-feed) and Y axis (Oscillation).

Loading unloading device

Robot hand

Jigs

Option



Fully Automatic Insert Periphery Grinder

your requirements

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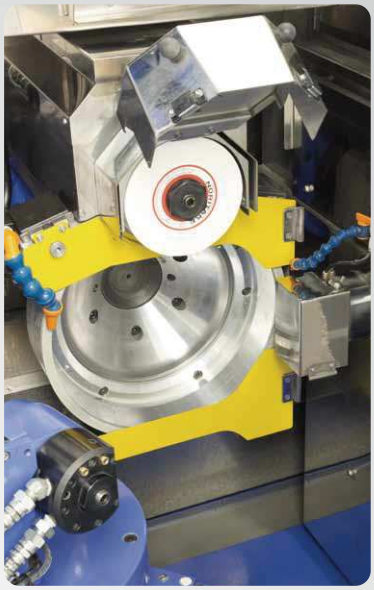
Dressing device

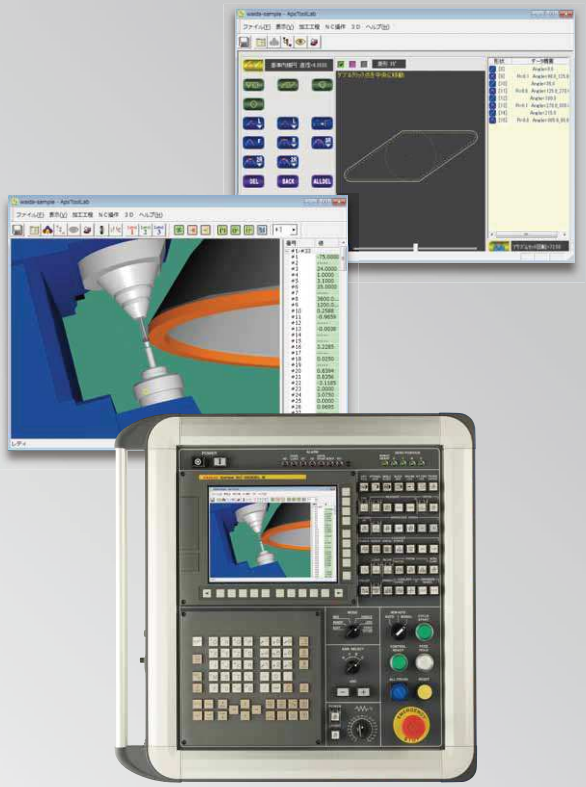
In-process cleaning device

Option

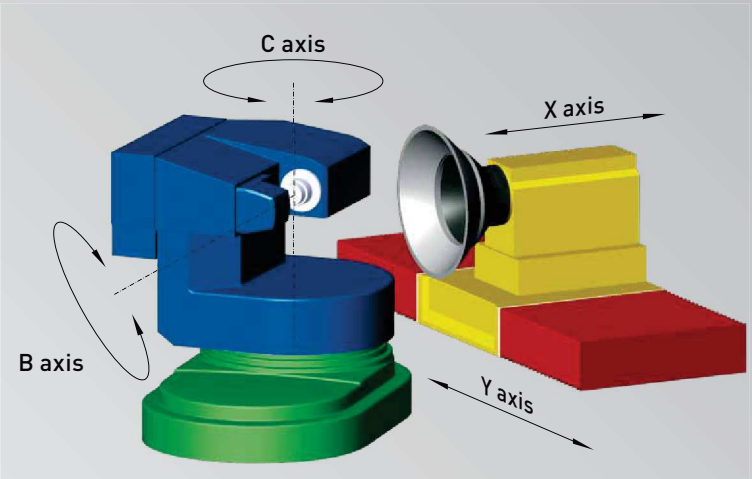


Operation panel special software

Option



Axis Structure



X axis (In-feed)
Y axis (Oscillation)
B axis (Insert rotation)
C axis (Swiveling table)

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STANDARD SPECIFICATIONS

Workpiece	Objects of grinding	Periphery part of indexable insert
	Material	Carbide, Cermet, Ceramics, CBN, PCD
	Minimum inscribed circle	Equilateral triangle: 3.5 mm
		Others: 4.7 mm
	Maximum circumscribed circle	45 mm
	Maximum thickness	15 mm
X axis (In-feed)	Maximum rapid feed rate	10 m/min
Y axis (Oscillation)	Maximum rapid feed rate	10 m/min
B axis (Insert rotation)	Travel	∞
	Maximum rapid feed rate	100 min^{-1}
C axis (Swiveling table)	Grinding range	-45～+36 deg. (Some limitations depending on the conditions.)
	Maximum travel	-70～+36 deg.
	Maximum rapid feed rate	9,000°/min
Spindle	Grinding wheel size	Outside diameter ϕ350 mm
	Spindle rotation speed	500～2,000 min^{-1}
	Motor	7.5 kW
Tail stock	Maximum chuck pressure	10 kN (Theoretical value at supplied pressure 7 MPa.)
Dressing device	Diameter of dressing wheel	Outside diameter ϕ100 mm
	Wheel rotation speed	300～1,500 min^{-1}
Centering pin device		Exchanging system
Manual centering device	Adjusting system	Back/forward, up/down manual adjustment system
Measuring device	Measuring probe	Flat type carbide probe ϕ7
Loading unloading device	Type	3 axis rectangular coordinate loader
	Control axis	X axis (Left & right), Y axis (Back & forward), Z axis (Pallet position change)
	Robot hand	Loading hand, unloading hand each 1 set, insert pusher
Work stock	Vertical pallet type : No. of pallet	Standard pallet (240 mm x 300 mm) : 3 pallets

NC STANDARD SPECIFICATIONS

NC Unit (without PC)	FANUC Series 31i-MODEL B
Control Axis	X axis (In-feed)
	Y axis (Oscillation)
	B axis (Insert rotation)
	C axis (Swiveling table)
Maximum Simultaneous Control Axis	4 axes

DRIVE SOURCE

Total Electric Capacity	10 kVA AC200 V (50/60 Hz)
Compressed Air Primary Pressure	0.35 MPa or More
Air Comsumption	450 Nℓ/min
Hydraulic Unit Maximum Pressure	7 MPa

MACHINE SIZE

W×D×H	2,575×2,330×2,160 mm
Machine weight	5,500 kg

OPTION

Work head for high clamping pressure (incompatible with K-land grinding)		
AE Sensor		
Thickness measuring device (incompatible with high clamping pressure work head)		
In-process cleaning device	Cleaning wheel size	Outside diameter ϕ150 mm
	Wheel speed	300～1,500 min^{-1}
Splash gun / Air gun		
Air blow for measuring		
Mist collector		
Washing device		
Grinding fluid supply device		Tank capacity: 300 ℓ
Oil cooling unit for spindle	Cooling part	Grinding wheel spindle
Measuring device (for large diameter workpiece)		
Work stock	Pallet type (vertical) / No. of pallet	T-type pallet (190 mm × 370 mm) :4 pallets
Oil grinding specification	Automatic fire extinguisher	
	Coolant temperature controller	
	Oil flow sensor	
Inverter controlled hydraulic unit		

JIGS OPTION

Grinding wheel
Dressing wheel
In-process cleaning wheel
Driving arbor
Clamping arbor
Centering block
Robot finger
Centering pin
Pallet
Work guide for lay down pallet specification

SPECIAL OPTION FOR NC WITH PC

NC controller with PC		
Automatic centering device	Control system	Back/forward, up/down automatic control
Y axis incremental linear scale		
Work head for one side K-land grinding	Maximum travel on C axis	-90～+30 deg. (Some limitations depending on the conditions.)
Workpiece for lay down pallet specification		Electric hand rotation axis
		Magnetic specification
		Vacuum suction specification
Camera for lay down pallet		For lay down pallet Work position / phase

Caution

* This product may be regulated by the Foreign Exchange and Foreign Trade Control Law. Be sure to consult us before exporting the product to a foreign country.
* Specifications in this catalog may be changed without notice due to improvement of the product, etc.

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