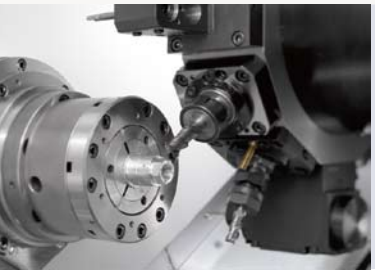
Miyano

CITIZEN
Micro HumanTech



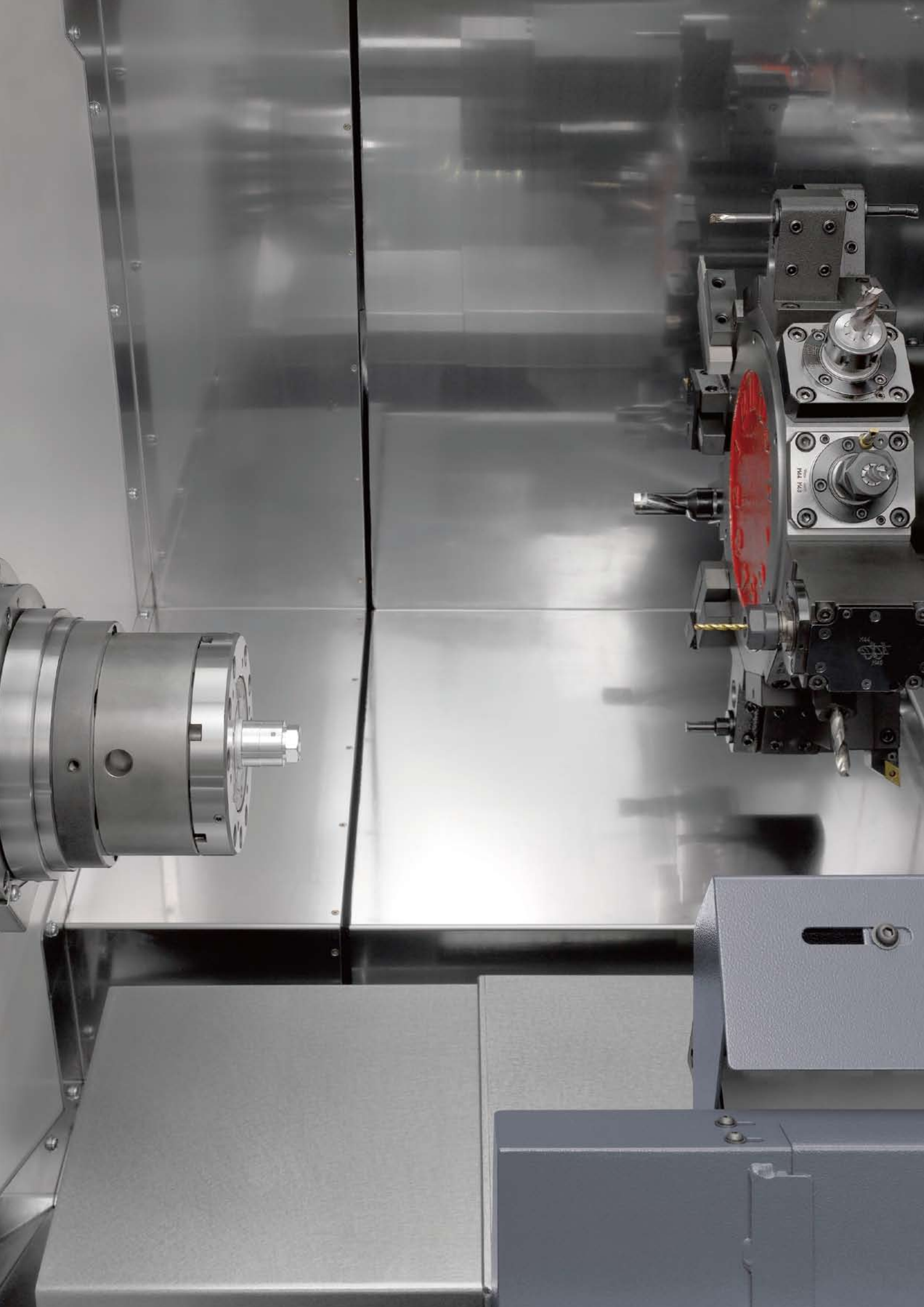
BND-51SY2

CNC Turning Center

BND

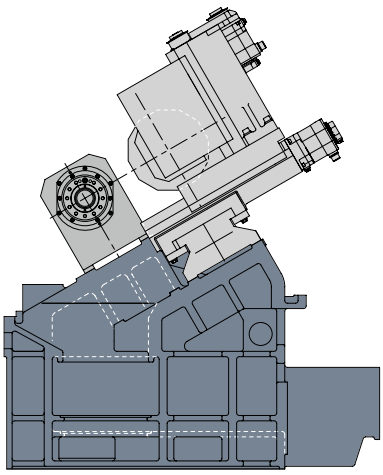
Cincom Miyano

"Evolution and Innovation" is the Future



BND-51SY2

We introduce a new bar machine equipped with a subspindle and a Y axis that can machine bar material up to ϕ 51 mm.
The structure of the machine, consisting of precision scraped square guideways that provide high rigidity and excellent vibration damping characteristics and a heavy 30° slanted bed of a platform construction with appropriately arranged ribs ensuring good thermal stability and minimum dimensional changes over time, realizes consistent high machining accuracy.



Strong, Highly Rigid Construction

Rigid square guideways are used for all axes. The 30° slanted bed where major machine units such as spindles and tool slides are mounted has been given a platform-like ribbed structure to provide rigidity and stability.
This structure combined with exceptional rigidity ensures the Miyano characteristics of high precision, consistent production and extended tool life.

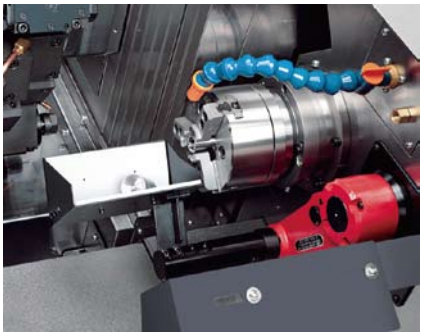
Complex Machining with Y Axis Control

The combination of independently driven revolving tools that can be mounted at all positions on the turret with the Y axis and the subspindle realizes a high level of process integration in complex machining.

Easy to Use Tooling System

Double sleeve holders and double turning holders allow multiple tools to be mounted at a single position on the turret to maximize tooling flexibility.

Standard Equipment and Options



Part catcher (standard)

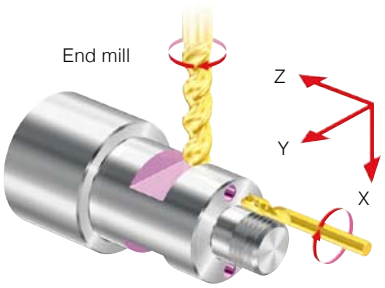
Part conveyor (standard)

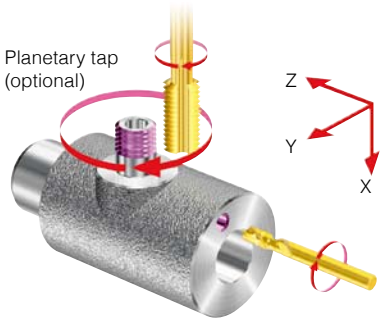
Chip conveyor (optional)

Wide Range of Complex Machining with Revolving Tools

■Basic Complex Machining

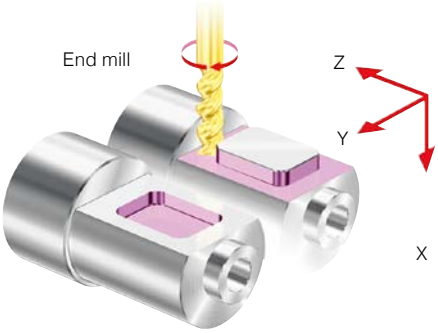
The ability to perform off-center cross-drilling, cross-tapping and end milling in the X-Y and Z-Y planes as well as milling by controlling the C axis allows machining of high level functional parts beyond the capabilities of conventionally available models.





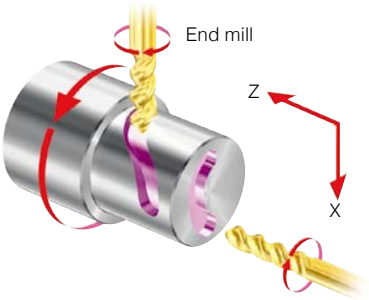
■Large Boss and Pocket Milling

Large boss and pocket milling can be done in the Y-Z plane using the circular and linear interpolation functions.



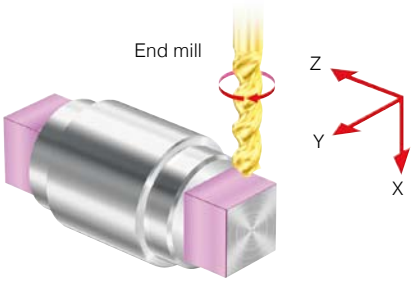
■Contouring

Contouring using simultaneous 3-axis control (C, X and Z axes) is possible.



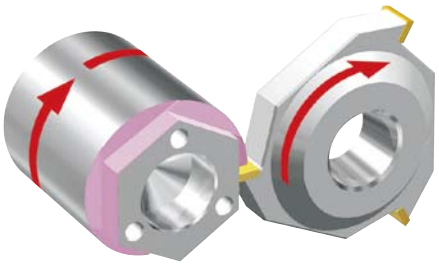
■High-precision Milling

High-precision complex machining thanks to the high C axis positioning accuracy and the ability to control the Y axis with high accuracy expands the range of machining.

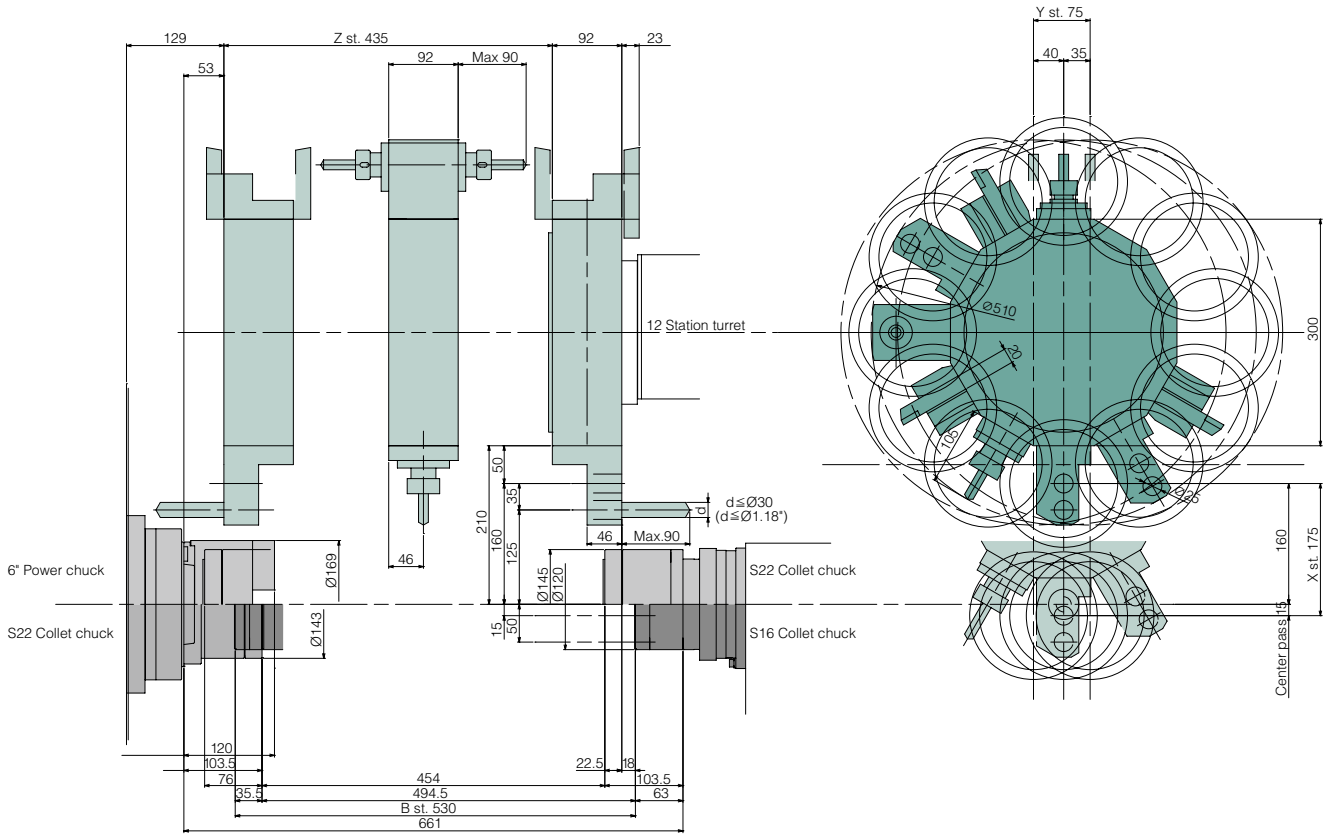


■Polygon Machining（Optional）

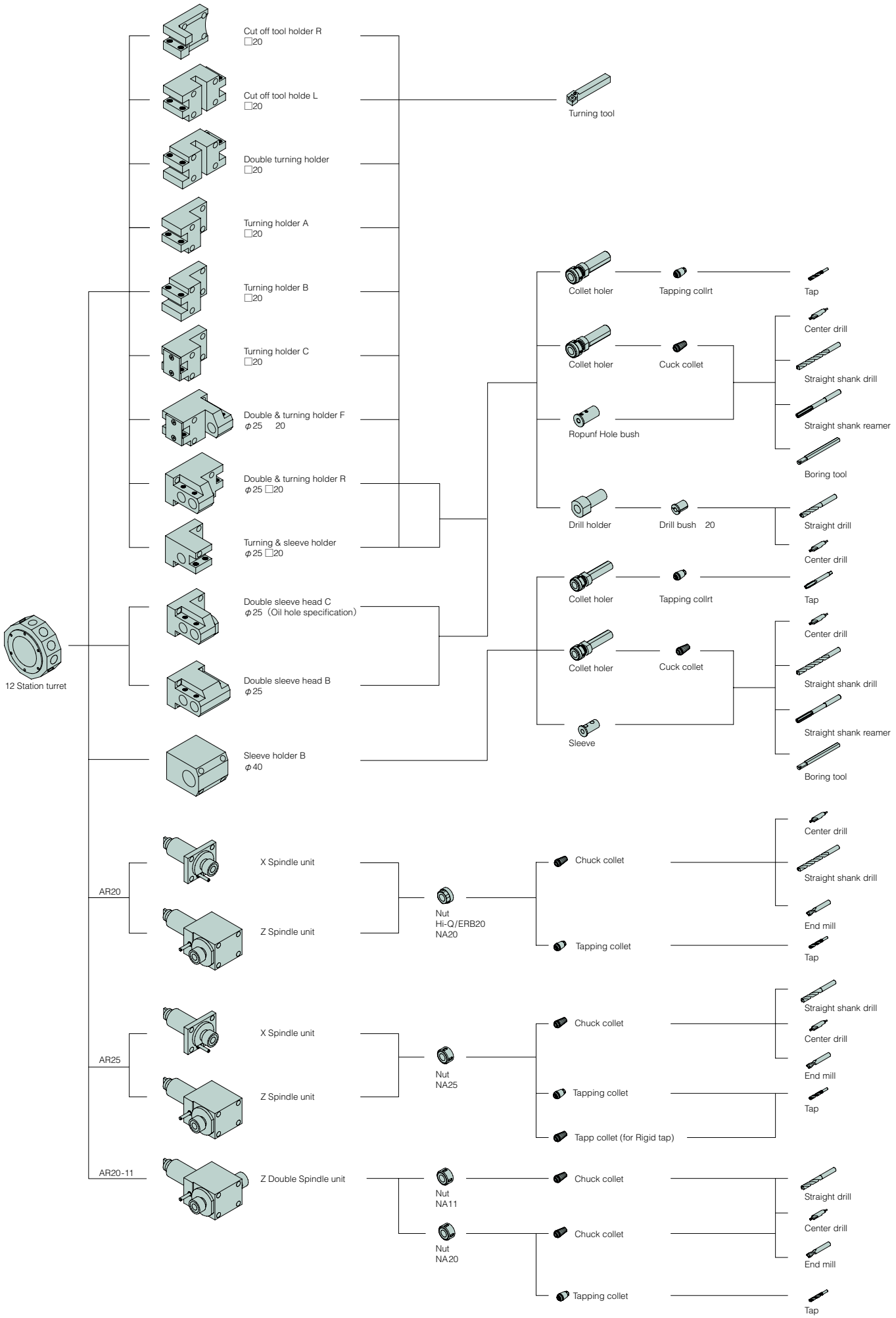
Synchronizing the revolving tool speed with the spindle speed at two times permits polygon machining, such as two-, four- and six-sided machining, with a polygon cutter.



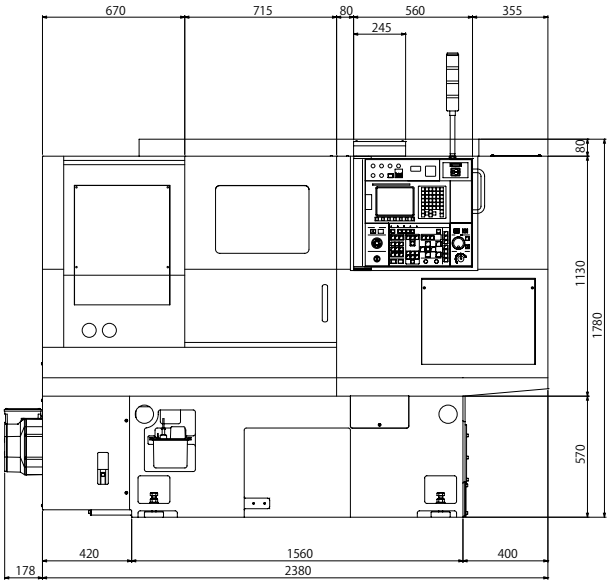
Tooling Area

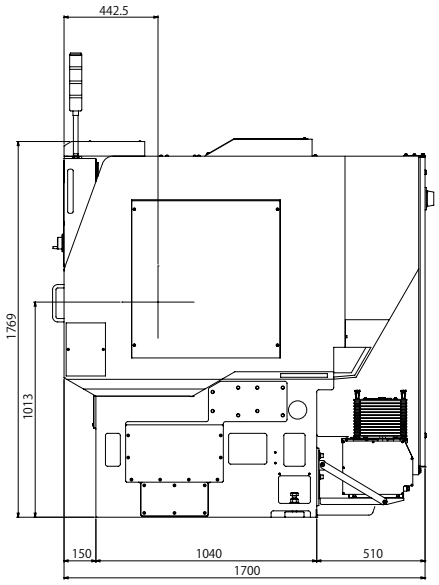


Tooling system



External view



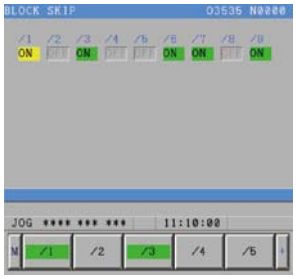


NC Custom Menu

'One-touch' functions for faster set-ups.

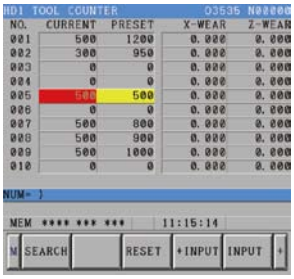
CUSTOM MENU

Displays the list of custom screens.



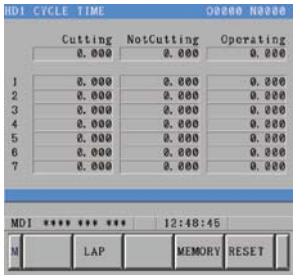
BLOCK SKIP

Used to set block skip 1 to block skip 9.



TOOL COUNTER

Used to set and reset the tool counter stop value and enter the tool wear offsets.

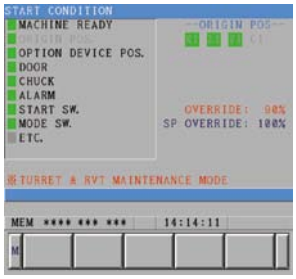


CYCLE TIME

Measures the cutting time, non-cutting time and running time in each cycle.

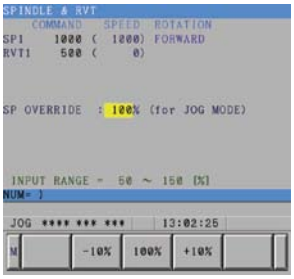
AUTOMATIC RUNNING MONITOR

Displays the control status of each axis.Used to set ON / OFF for the machine lock function.



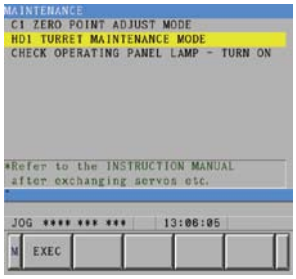
START CONDITION

Used to set the start conditions for automatic running.



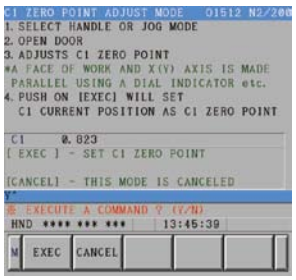
SPINDLE & RVT

Used to set the rotational speed of the spindle and revolving tools. Used to set the spindle override.



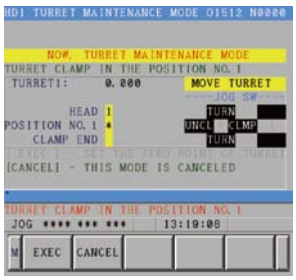
MAINTENANCE

Used to set ON / OFF for the maintenance items.
Used to set ON / OFF for turret zero point adjustment.



C ZERO POINT ADJUST MODE

Easy to adjust the C axis zero point .

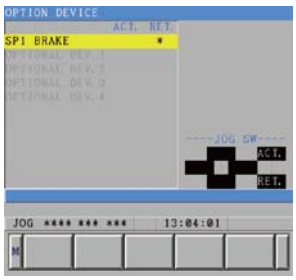


TURRET MAINTENANCE

Used to adjust the turret zero point.

MANUAL OPERATION

Displays the zero point lamp status and the machine coordinate of each axis.



OPTION DEVICE

Used to select an auxiliary device such as a part catcher to be operated manually.

Machine specifications

Item		BND-51SY2
Machining capacity		
Maximum work length		320mm
Maximum bar Dia.		φ 51mm
Maximum blank diameter	chucker	Max. φ 210mm
Spindle		
Number of spindles		2
Spindle speed		50～5,000min^{-1}
Draw tube Dia	SP1	φ 52mm
	SP2	φ 26mm
Power chuck type		Hidraulic
Type of collet chuck	SP1	H-S22 Pads
	SP2	H-S16, S22 pads
Power chuck size and type	SP1	6" Through hole type
	SP2	5" Through hole type
Turret		
Number of turret		1
Turret stations		12ST.
Shank height of square turning tool	□20mm	
Diameter of drill shank		φ 25mm
Turret index time		0.25 sec./1pos.
Feed rate		
Rapid feed rate	Xaxis	175mm
	Zaxis	435mm
	Yaxis	+40mm～-35mm
	Baxis	530mm
Slide stroke	Xaxis	18m/min.
	Zaxis	20m/min.
	Yaxis	12m/min.
	Baxis	18m/min.
Revolving tool		
Number of revolving tools		Max12
Tool spindle speed range		60～6,000min^{-1}
Capacity	Drill	Max φ 13
	Tap(Steel)	Max M8
	Tap(Al, Brass)	Max M8
Tank capacity		
Hydraulic oil tank capacity		10L
Lubricatibg oil tank capacity		2L
Coolant tank capacity		150L
Machine dimensions		
Machine height		1,700mm
Floor spase		2,560mm×1,700mm
Machine weight		4,500kg
Motors		
Spindle motor	SP1	AC 15/11kW
	SP2	AC 5.5/3.7kW
Revolving tool motor		AC 2.2kW 20Nm
Power supply		
Voltage		AC 200V-220V +5% -10%, 50/60Hz±1%
Capacity		37KVA
Air supply		0.5MPa (5kgf/cm2)
Fuse		125A
Others		
Splash guard interlock, Revolving tool driving unit, Pneumatic, Spindle brake No.1, High pressure coolant,		
Parts Catcher, Parts conveyor, Work ejector & inner high pressure coolant.		
Optional accessories		
Collet chuck system, Power chuck system, Spindle brake No.2 Chuck air blow, Automatic fire extinguisher,		
Automatic power shut-off, Coolant level switch, Sub spindle Inner high pressure coolant & air blow, Speed setter,		
Chip conveyor, Chip box, Foot switch, Total & preset counter, Coolant mist collector, Oil mist damper, Warning light,		
Cut-off confirmation, Large bore spindle, Bar feeder interface, Filler tube, Spindle inner bushing, RS-232C port, etc.		

NC specifications	
	FANUC 0i-TD
Axial control	X, Z, Y, B, Cs
Simultaneous control axis	4 axis
Minimun setting unit	0.001mm、 0.001deg（Cs axis）
Minimum setting unit	X: 0.0005mm Z: 0.001mm
	Y: 0.001mm, B: 0.001mm, Cs: 0.001deg
Interpolation functions	G00, G01, G02, G03, G04, G32, G33
Program storage capacity	1Mbyte(2560m)
Spindle function	S4 digit
Cutting feed rate	F3.4 digits per revolition,
	F6 digits per minute directly specified
Feed rate override	0～150%(10% steps)
Rapid feed override	F0, 25, 50, 100%
Thread cutting	G32, G33, G92
Canned cycle	G90, G92, G94
Tool function	T ○○△△
	（○○ =Tool number and geometry,
	△△ =Wear offset number）
Tool position direct input function	by measured MDI
	Data input-and-output
	Memory card interface, USB memory interface,
	Auto data backup
Autmatic operation	1cycle/Automatic operation, Single block,
	Block delete, Machine lock,
	Optional block skip,
	Dry run, Feed hold
Others	8.4" color LCD/MDI,
	Program storage capacity addition: 800pieces,
	A decimal point input, Manual pulse generator
	Memory protect, AC digital servo motor, etc.
Others	The circle radius R command, Nose radius compensation,
	Constant surface speed control(G96),
	Back ground editing, Programmable date input (G10),
	Run hour/Parts count display,
	Multiple repetitive cycles(G70 ～ G76),
	Spindle rigid tap, Polar coordinate interpolation,
	Custom macro B, Canned cycles for drilling,
	Tool life management. etc.
Option	Helical interpolation, Leader puncher interface, etc.

ISO 9001
ISO 14001
BUREAU VERITAS
Certification

CITIZEN MACHINERY MIYANO CO., LTD.

CITIZEN
Micro HumanTech

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