

CITIZEN

Miyano

ABX65/80THY

Fixed Headstock Type Automatic CNC Lathe



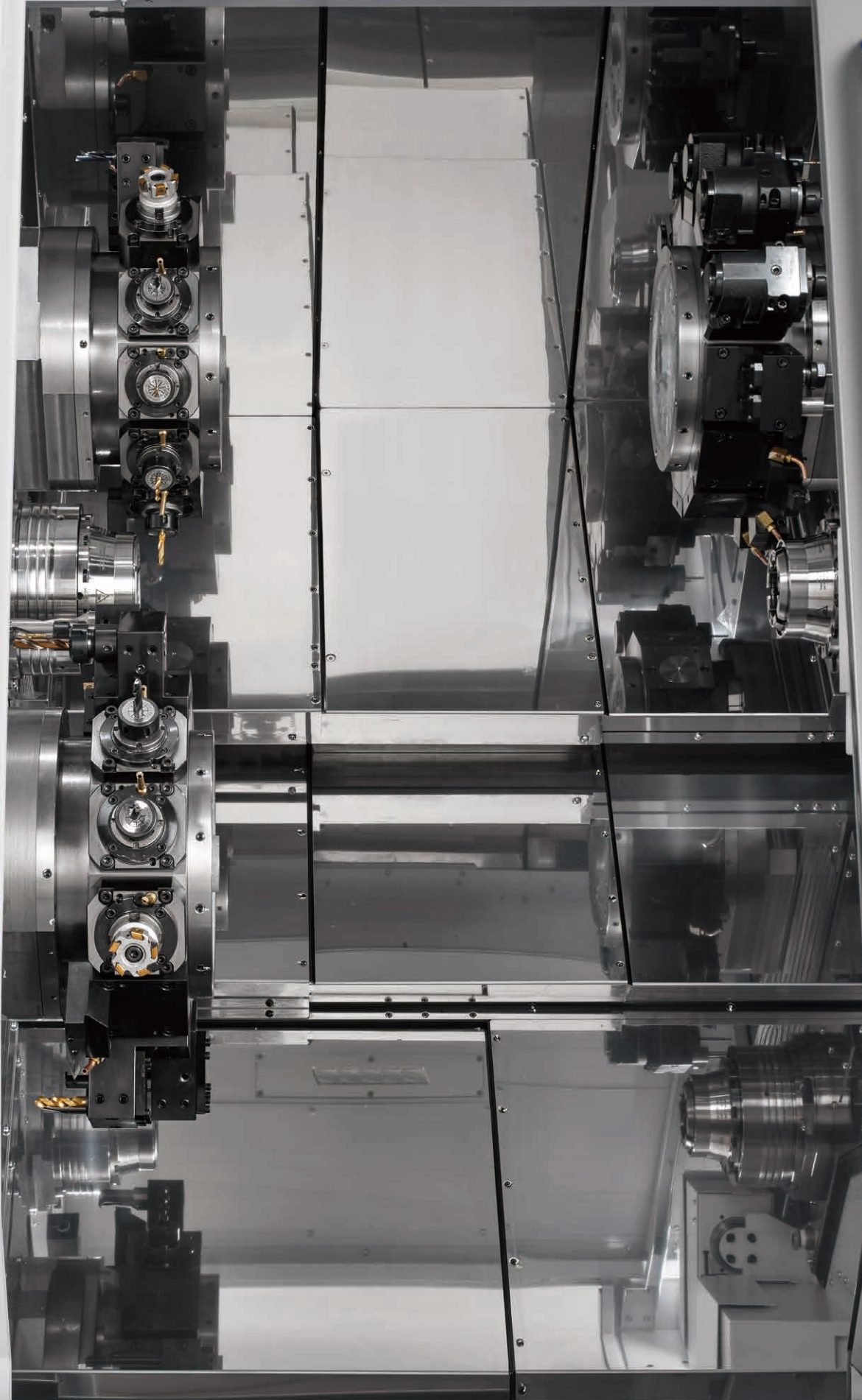
80mm and 65mm Revamped ABX Series

The new ABX Series is equipped with a ϕ 80-/ ϕ 65-mm front spindle. The back spindle is ϕ 65 mm. In combination with three turrets equipped with a Y axis, this extends the range of workpiece machining capabilities. The product design has also been completely overhauled. A large window and 19-inch touchscreen operation panel are provided for better operability and visibility. In addition, environmental performance is improved by visualizing power consumption and reducing air consumption.



EcoBalance Machine

CITIZEN Machinery aims to create a sustainable society by innovating customers' manufacturing workflow with a focus on their future issues as well as their current ones. We work to continuously enhance corporate value through "sustainable management" that takes into account social issues such as human rights and the global environment throughout the value chain, while at the same time promoting the provision of "sustainable products" such as our proprietary technologies, which include LFV (low-frequency vibration cutting) technology, the "FA-friendly" robot system, and "alkaplysolution" utilizing ICT technology, centering on the Cincom and Miyano brands.



△警告

本装置は、高圧、高電圧を発生する装置です。
誤った使用やメンテナンスは、人身の安全や装置の正常な動作を損なう恐れがあります。
必ず以下の注意事項を厳格に遵守してください。

- 装置の内部には高電圧が残留する場合があります。メンテナンスを行う際は、必ず電源を切断し、安全を確認してください。
- 装置の内部には鋭利な部品や高温部があります。メンテナンスを行う際は、必ず保護手袋を着用し、安全を確認してください。
- 装置の内部には可燃性物質が使用されています。メンテナンスを行う際は、必ず換気を行い、安全を確認してください。
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Basic Construction

Spindle 1

Spindle speed : 5,000 min⁻¹(65THY)/ 4,000 min⁻¹(80THY)
 Collet chuck type : DIN 185E
 HAINBUCH(φ 65)
 H-S26
 HAINBUCH(φ 80)
 Power chuck type : 6" power chuck

Turret 1

Type of the tool slide : 12 stations
 Revolving tool capacity : Max. 12 tools
 Rotational speed of revolving tools : 6,000 min⁻¹
 Revolving tool torque : 40Nm

Turret 3

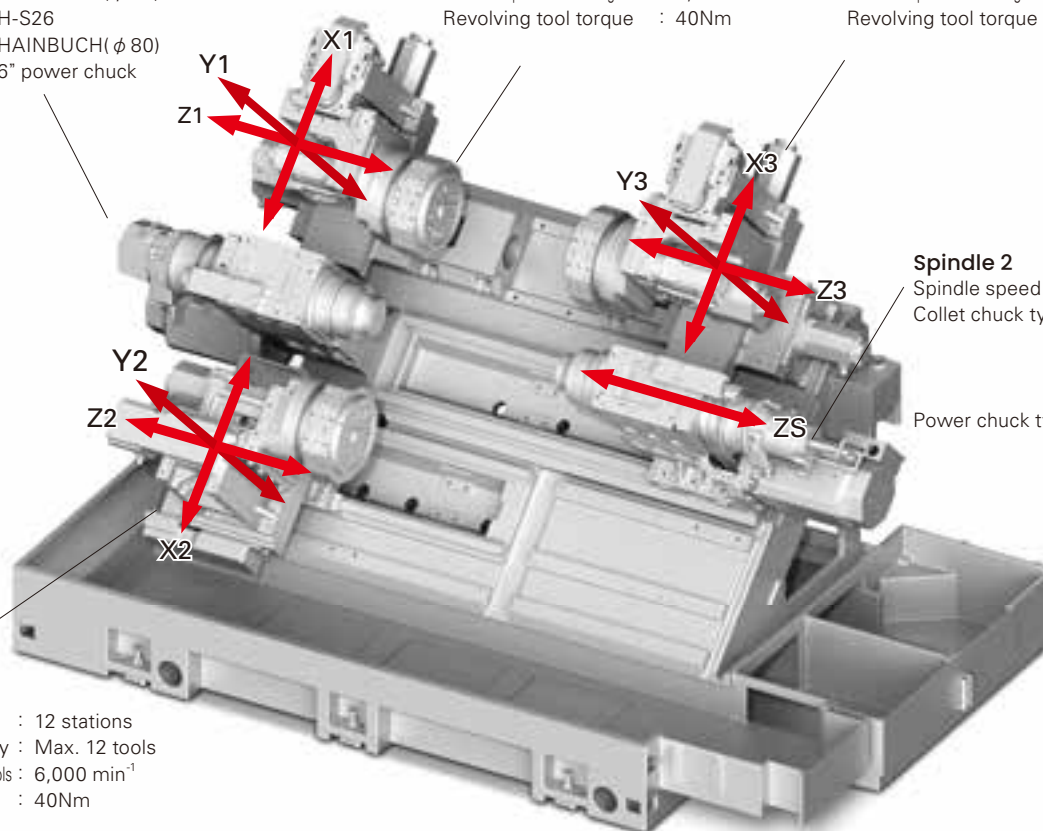
Type of the tool slide : 12 stations
 Revolving tool capacity : Max. 12 tools
 Rotational speed of revolving tools : 6,000 min⁻¹
 Revolving tool torque : 40Nm

Spindle 2

Spindle speed : 5,000 min⁻¹
 Collet chuck type : DIN 185E
 H-S26
 HAINBUCH
 (φ 65, φ 80)
 Power chuck type : 6" power chuck

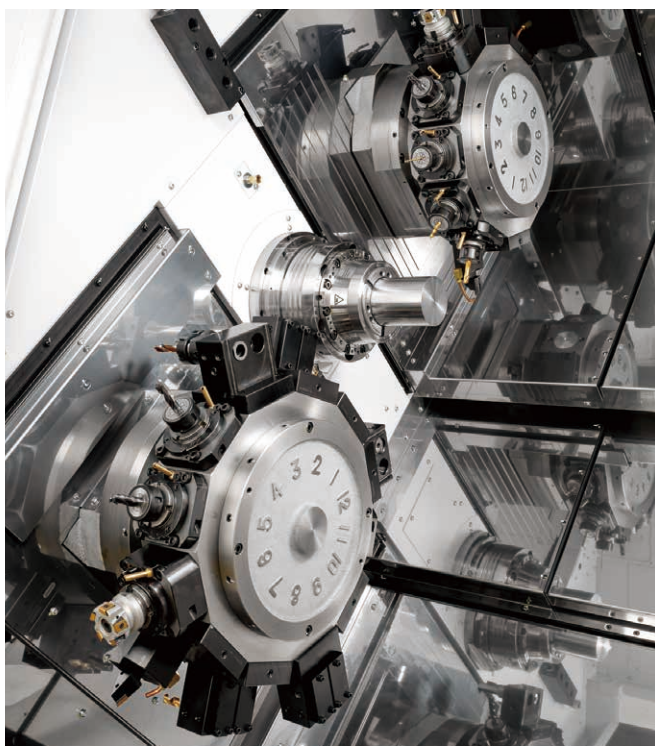
Turret 2

Type of the tool slide : 12 stations
 Revolving tool capacity : Max. 12 tools
 Rotational speed of revolving tools : 6,000 min⁻¹
 Revolving tool torque : 40Nm

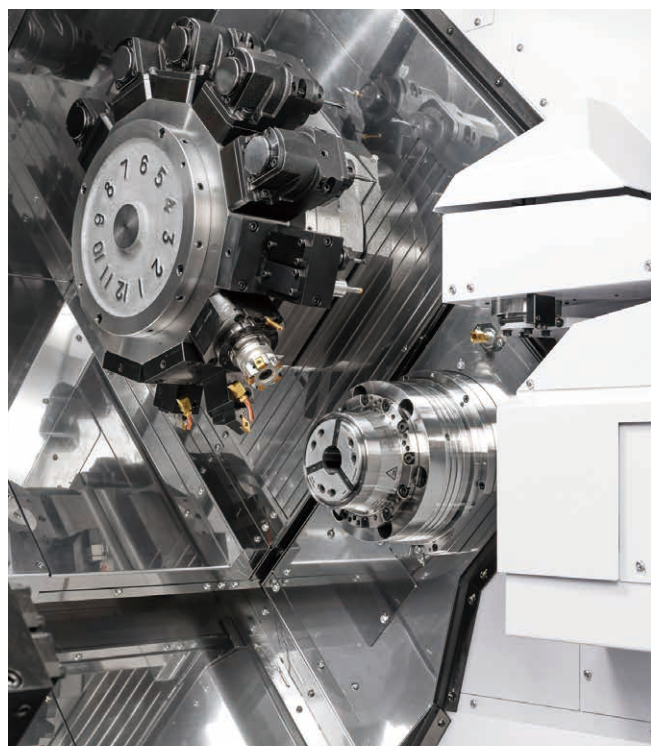


Equipped with a φ80mm front spindle

With the ABX80THY, the maximum machining diameter of the front spindle is φ 80 mm, and the back spindle can also be used with an 80-mm chuck. This configures a new machining area.



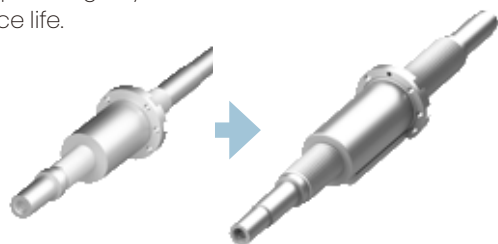
Front side



Back side

Ball screw diameter enlarged to $\phi 32$ mm for all axes

The ball screw diameter for all axes has been increased to improve rigidity. This also helps to extend the machine's service life.



Spindle Air Purge Function Incorporated

An air purge function is standard on front and back spindles. This prevents coolant from entering the spindles, protecting their bearings and other internal structures. In addition, the spindle air purge is turned ON/OFF automatically according to operating status in order to suppress air consumption.

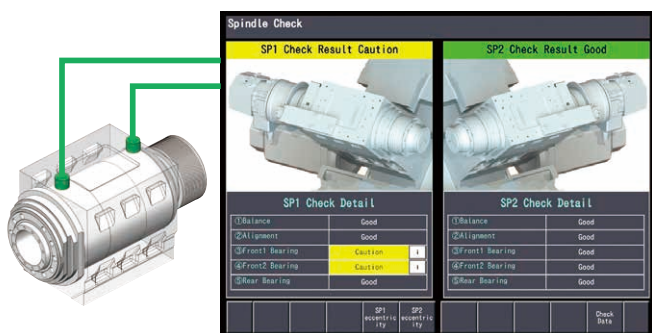


Air blow intermittent discharge function

Air blow is discharged intermittently to reduce air consumption.

Spindle diagnosis function

The health status of the spindles is shown on the NC screen. Early detection of spindle faults prevents unexpected machine stoppages and contributes to stable production.



Thermal displacement correction function

This makes it possible to maintain a high level of accuracy during cutting, and increases machine reliability. Warm-up operation time is also shortened, which contributes to power and labor savings.

Power Consumption Visualized

The Ecoll function visualizes power consumption and CO2 emissions on the screen to support customers' efforts to save energy.

Large window area

The visibility in the tooling area is greatly improved. This means that the chuck end face and machining point can be seen at a glance.



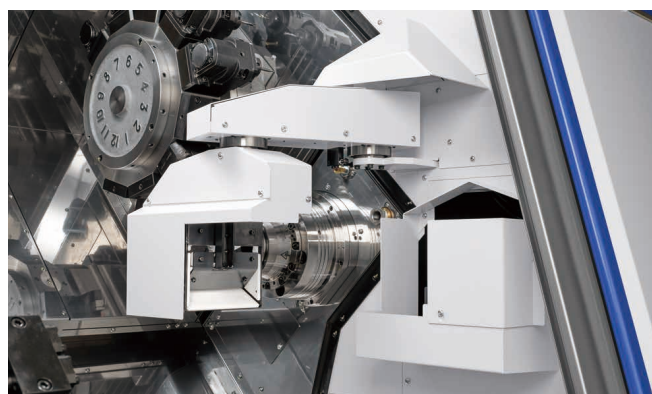
19-inch touchscreen operation panel

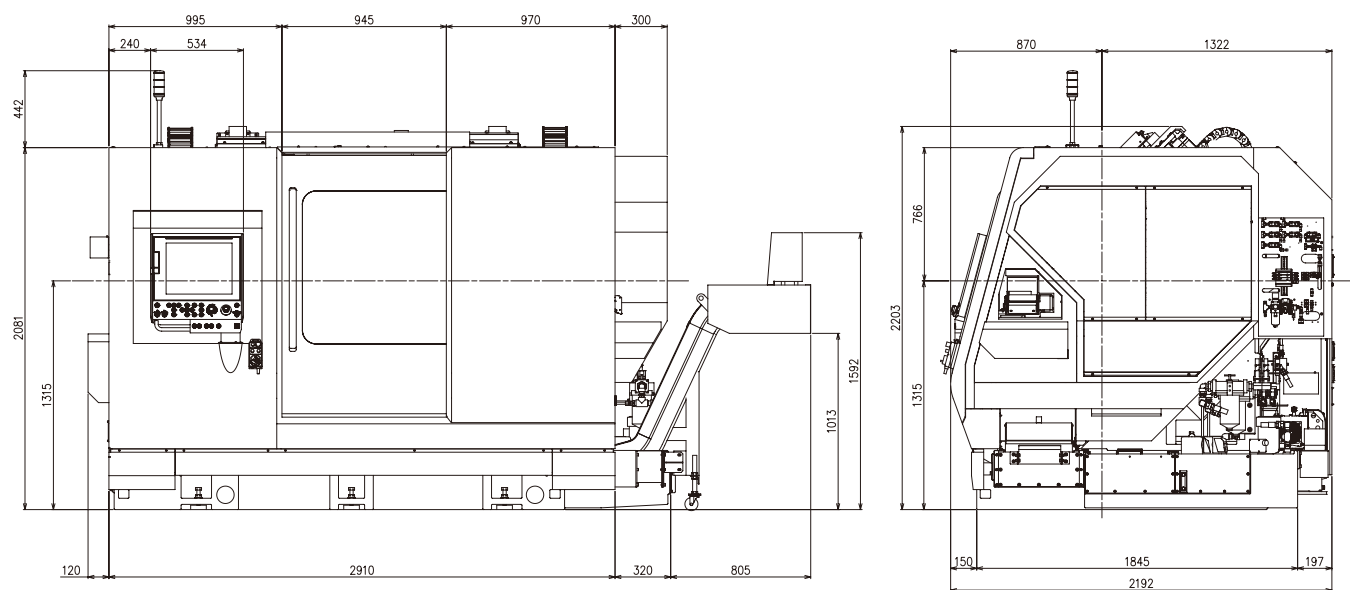
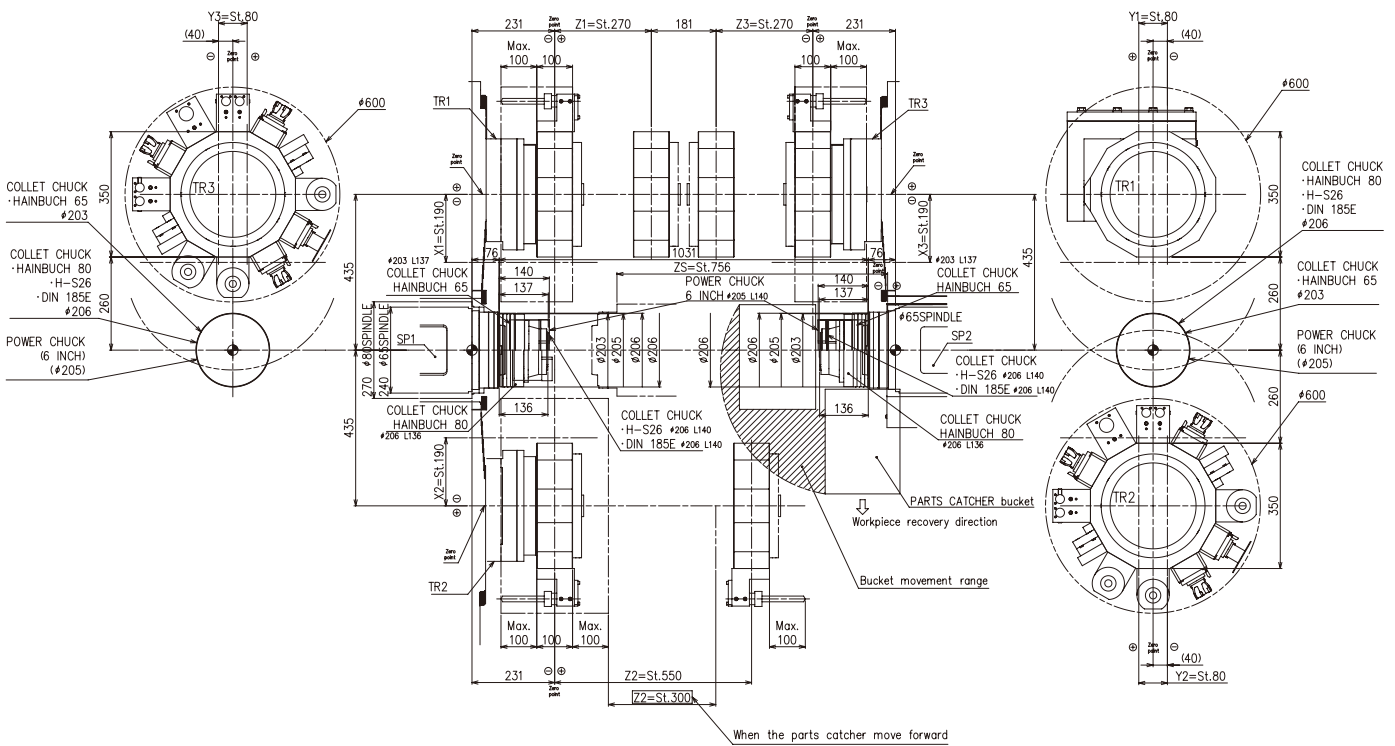
The center of the screen is set at the optimal height, and the panel surface is inclined, to facilitate operations by touch so as to reduce fatigue.



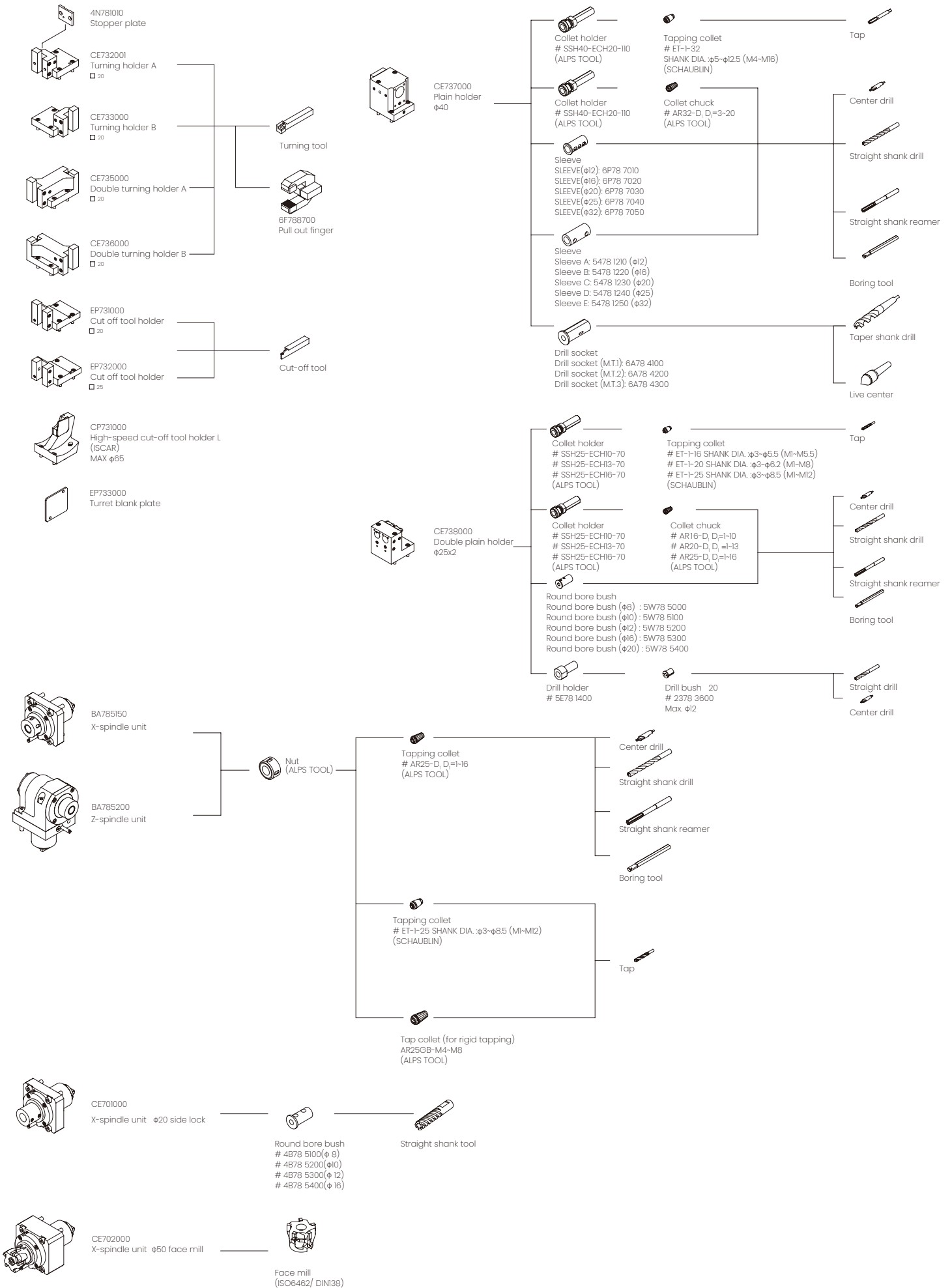
Part catcher

The maximum load length (maximum collection length) is 150 mm, and the maximum weight is 6.5 kg.





Tooling system



Machine specifications

Item			ABX-65THY3	ABX-80THY3
Capability / capacity				
Standard machining diameter (gripping diameter)	SP1		φ 65 mm	φ 80 mm
	SP2		φ 65 mm	φ 65 mm
Distance between spindle end faces			1031 mm	
Slide stroke				
TR1, TR2, TR3	X1, X2, X3 axis		190 mm	
	Z1 axis		270 mm	
	Z2 axis		550 mm	
	Z3 axis		270 mm	
	Y1, Y2, Y3 axis		80 (± 40)	
	ZS axis		756 mm	
Spindle				
Number of spindles			2	
Spindle speed	SP1		5,000 min ⁻¹	4,000 min ⁻¹
	SP2		5,000 min ⁻¹	
Draw tube through-hole diameter	SP1		φ 66 mm	φ 81 mm
	SP2		φ 66 mm	
Collet chuck type	SP1		DIN 185E	
			HAINBUCH 65	HAINBUCH 80
			H-S26	
	SP2		DIN 185E	
			HAINBUCH 65/ 80	
			H-S26	
Power chuck type	SP1, SP2		6" POWER CHUCK	
Machining capacity	SP1, SP2	Drill	φ 25 mm	
		Tap	M22 × 2.5	
Spindle indexing				
Minimum spindle indexing command	SP1, SP2		0.001°	
Tool post				
Number of tool slides			3	
Type of the tool slide	TR1, TR2, TR3		12 st.	
Distance between opposite sides of tool slide	TR1, TR2, TR3		350 mm	
Maximum indexing diameter of tool slide	TR1, TR2, TR3		φ 600 mm	
Dimensions of tools used			□ 20	
Dimensions of tool mounting holes			φ 25	
Revolving Tool				
Revolving tool capacity			Max. 12/ 12/ 12	
Revolving tool drive type			Single clutch drive	
Rotational speed of revolving tools			6,000 min ⁻¹	
Machining capacity	Drill		Max. φ 20	
	Tap		Max. M14 x 2	
Feed rate				
Rapid feed rate	X1, X2, X3 axis		20 m/min	
	Z1 axis		20 m/min	
	Z2 axis		30 m/min	
	Z3 axis		20 m/min	
	Y1, Y2, Y3 axis		12 m/min	
	ZS axis		30 m/min	
Motor for feed axes	X1, X2, X3, Z1, Z2, Z3, ZS axis		1.8 kW	
	Y1, Y2, Y3 axis		1.2 kW	
Motor drive				
Motor for spindle	SP1, SP2		18.5/ 15 kW (30min./ cont.)	
Motor for revolving tools	TR1, TR2, TR3		4.5 kW	
Motor for coolant pump			0.25 kW × 2	
Motor for medium-pressure coolant (1 MPa) (option)			0.8/ 11 kW (50/ 60Hz) × 2	
Required power source				
Power source used			AC200/ 220 V/ Hz +5%-10% 50/ 60 Hz ± 1%	
Rated power consumption			56 KVA	
Load operation average power consumption			33.1 KVA	
Fuse capacity at machine side			250 KVA	
Pneumatic source			0.5 MPa	
Tank capacity				
Hydraulic tank capacity			18 L	
Lubricating oil tank capacity			5 L	
Coolant tank capacity			400 L	
Machine size				
Machine height			2,210 mm	
Required floor space (length x width)			3260 × 2200 mm	
Machine weight			11,300 kg	

Special Accessories

Air blower	Workpiece ejector
Automatic fire extinguisher	Chip box
Part conveyor	Medium-pressure coolant (1 MPa)
Through-spindle air blower	Turret air blower
Tool setter	Part catcher
Part box	Chuck system
Chip conveyor	Mist collector duct & fire-prevention damper
Through-spindle bushing	3-color signal tower
Front ejection of remnant bar	Drill checker
RS-232C	

Standard NC Functions

FANUC Series 3iI-MODEL B Plus	19-inch SXGA touchscreen operation panel
USB slot	On-machine program check function
Operating time display	Product counter: max. 8 digits
Automatic power-off function	Collision detection function
Tool offset pairs 200	Program storage capacity 4 MB
User macro	Corner chamfering/Corner rounding
Optional block skip (9 sets)	Spindle constant surface speed control function
Spindle C-axis function	Spindle synchronized function
Canned drilling cycle	Helical interpolation function
Synchronized tapping function	Sub-micron specifications
Inch specifications	Sub-inch specifications
Thermal displacement correction function	Variable lead thread cutting
Multiple repetitive cycle for turning	Milling interpolation function
Cylindrical interpolation	Polygon machining function
Spindle diagnosis function	

Special Additional NC Functions

ool offset pairs 400	Program storage capacity 8 MB
Tool monitor	RS232C Connector

Environmental Performance Information

Basic information	Model		ABX-65/ 80THY3
	Energy consumption	Supply voltage	AC 200V ±10%
		Electrical power requirement	56 kVA
		Required pneumatic pressure	0.5 MPa
Environmental Performance Information	Power consumption	Standby power ^{*1}	1.09 kW
		Power consumption with model workpiece ^{*2}	0.363 kWh/ cycle
		Power consumption value above converted to a CO2 value ^{*3}	152.8 g/ cycle
	Air consumption	Required air flow rate	3l/ 36/ 375 L/ min (power on/stationary / using air blow)
	Lubricating oil consumption	At power ON ^{*4}	4.2 cc/ 15 min
	Noise level	Value measured based on JIS	73 dB
Approach to Environmental Issues	Recycling	Indication of the material names of plastic parts	Detailed in the Instruction Manual ^{*5}
	Environmental management		We pursue "Green Procurement", whereby we make our purchases while prioritizing goods and services that show consideration for the environment.

^{*1} This is the standby power in the idle stop mode (a function that turns servomotor excitation off when it is not necessary, for example during program editing).

^{*2} This is the power consumption in program operation (when not cutting) for one of our standard test pieces, shown for the purpose of comparing the environmental performance with that of existing models.

^{*3} This is the value converted in accordance with the CHUBU Electric Power CO2 emissions coefficient (actual emissions coefficient) for 2023 as published by the Ministry of the Environment.

^{*4} At power ON, a certain period of time after the operation is stopped, at 0 L/min.

^{*5} If polyvinyl chloride (PVC) and fluoroc resin are not processed correctly, they can generate harmful gases. When recycling these materials, commission a contractor that is capable of processing them appropriately.

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