

CITIZEN

Miyano

ABX65/80THY  
ABX65/80SYY

Fixed Headstock Type CNC Automatic Lathe



EcoBalance Machine

## Revamped ABX Series ø80 mm and ø65 mm

The flagship model of the Miyano brand, packed with functionality in the smallest floor space in the industry.

Four models are available: the ABX80THY and ABX80SYY, which feature a ø80mm spindle on the front side and provides a new machining area, and the ABX65THY and ABX65SYY, which expand the range of machining by increasing the size of the front and back spindles to ø65mm.



High-rigidity slideways and spindle motors with increased power greatly improve the basic performance.

These models are certified as EcoBalance Machines that feature Citizen's unique environmental technology including visualization of power consumption and reduction of air consumption.





n max. 5500  
F axial max. 50 N

Fax. max. 50kN

CE732001





## ABX-THY

Constructed with two spindles and three turrets, the machine has a lower turret that can approach both spindles without restriction, allowing flexible process distribution together with the left and right upper turrets.

It accomplishes powerful cutting with 40 Nm revolving tools. Simultaneous machining using three turrets equipped with the Y axis allows machining of complex shapes.

A total of 36 tool stations provided by the three 12-station turrets enables highly productive tool setup, including tooling for multiple workpieces at the same time.

# THY



**△ 警告**

本装置は、高圧ガスを使用するため、取り扱いには十分注意してください。また、本装置は、高圧ガスを扱うため、取り扱いには十分注意してください。また、本装置は、高圧ガスを扱うため、取り扱いには十分注意してください。

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## ABX-SYY

Constructed with two spindles and two turrets, the machine features the Y-axis on the upper and lower turrets, allowing simultaneous machining in conjunction with the front and back spindles.

It also excels in pinch turning of long workpieces utilizing its long strokes, achieving efficiency through simultaneous machining using two turrets.

The upper and lower turrets, which can approach either spindle in a generous machining space, are easy to use and can handle a variety of workpieces.

# SYY



**⚠ 警告**

- PC62 及 PC61 為生物學用途之培養箱，請勿存放化學藥品。
- 請勿存放揮發性有機溶劑，以免發生火災或爆炸。
- 請勿存放易燃性化學藥品，以免發生火災或爆炸。
- 請勿存放劇毒性化學藥品，以免發生中毒。
- 請勿存放放射性物質，以免發生輻射。
- 請勿存放生物危險性物質，以免發生感染。

**⚠ 警告**

- 請勿將手伸入箱內，以免受傷。
- 請勿將頭部伸入箱內，以免受傷。
- 請勿將身體任何部分伸入箱內，以免受傷。
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# Basic Construction of the ABX-THY

## Spindle 1

Spindle speed : 5,000 min<sup>-1</sup>(65THY)/ 4,000 min<sup>-1</sup>(80THY)  
 Collet chuck type : DIN 185E  
 HAINBUCH(Dia. 65)  
 H-S26  
 HAINBUCH(Dia. 80)

Power chuck type : 6" power chuck

## Turret 1

Turret station : 12 stations  
 Revolving tool capacity : Max. 12 tools  
 Rotational speed of revolving tools : 6,000 min<sup>-1</sup>  
 Revolving tool torque : 40 Nm

## Turret 3

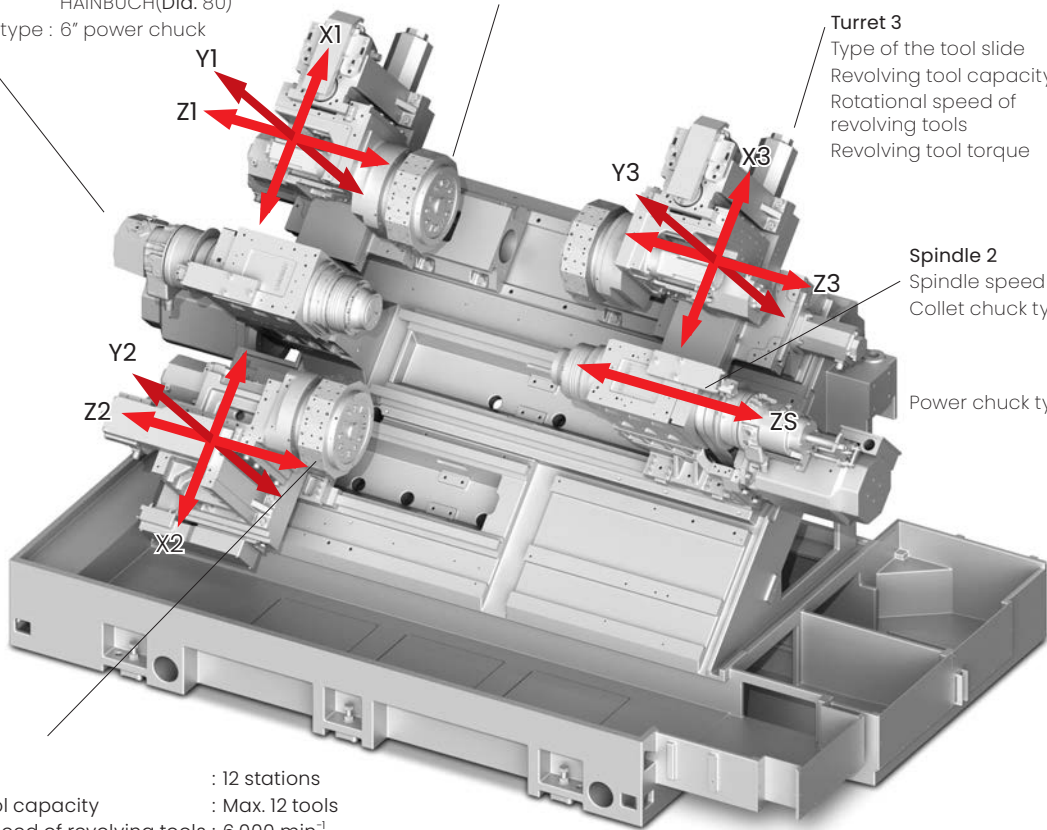
Type of the tool slide : 12 stations  
 Revolving tool capacity : Max. 12 tools  
 Rotational speed of revolving tools : 6,000 min<sup>-1</sup>  
 Revolving tool torque : 40 Nm

## Spindle 2

Spindle speed : 5,000 min<sup>-1</sup>  
 Collet chuck type : DIN 185E  
 H-S26  
 HAINBUCH  
 (Dia. 65, Dia. 80)  
 Power chuck type : 6" power chuck

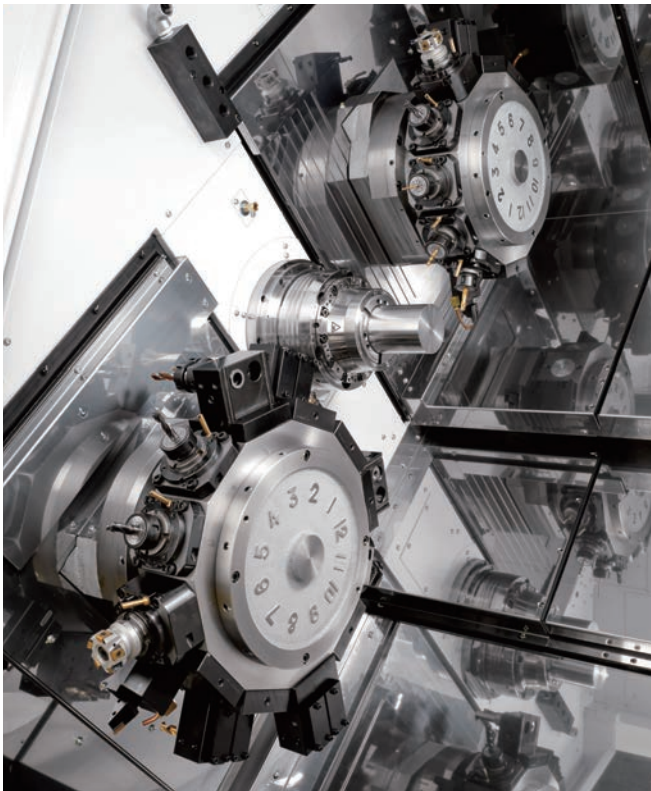
## Turret 2

Turret station : 12 stations  
 Revolving tool capacity : Max. 12 tools  
 Rotational speed of revolving tools : 6,000 min<sup>-1</sup>  
 Revolving tool torque : 40 Nm

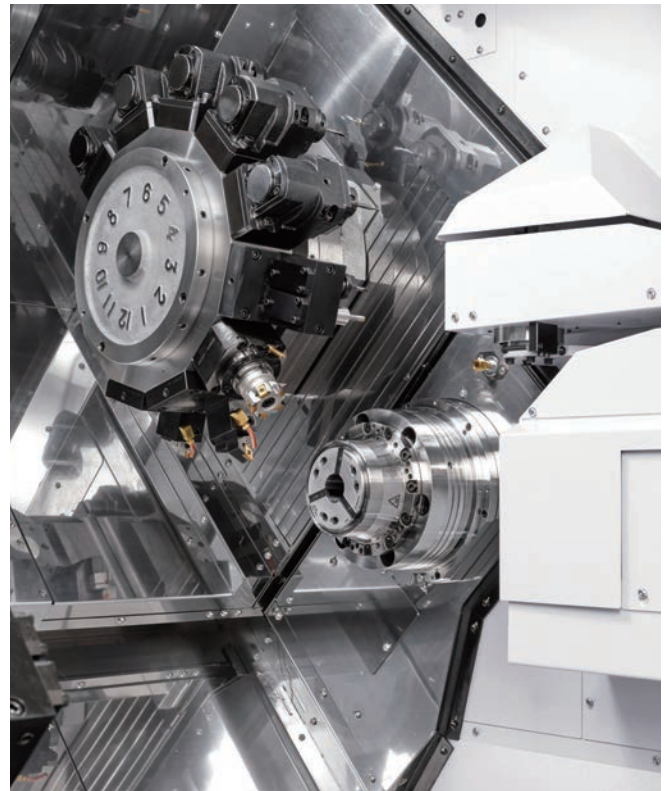


# Equipped with a ø80mm front spindle

With the ABX80THY/ABX80SYY, the maximum machining diameter of the front spindle is Dia. 80 mm, and the back spindle can also be used with an Dia. 80-mm chuck. This configures a new machining area.

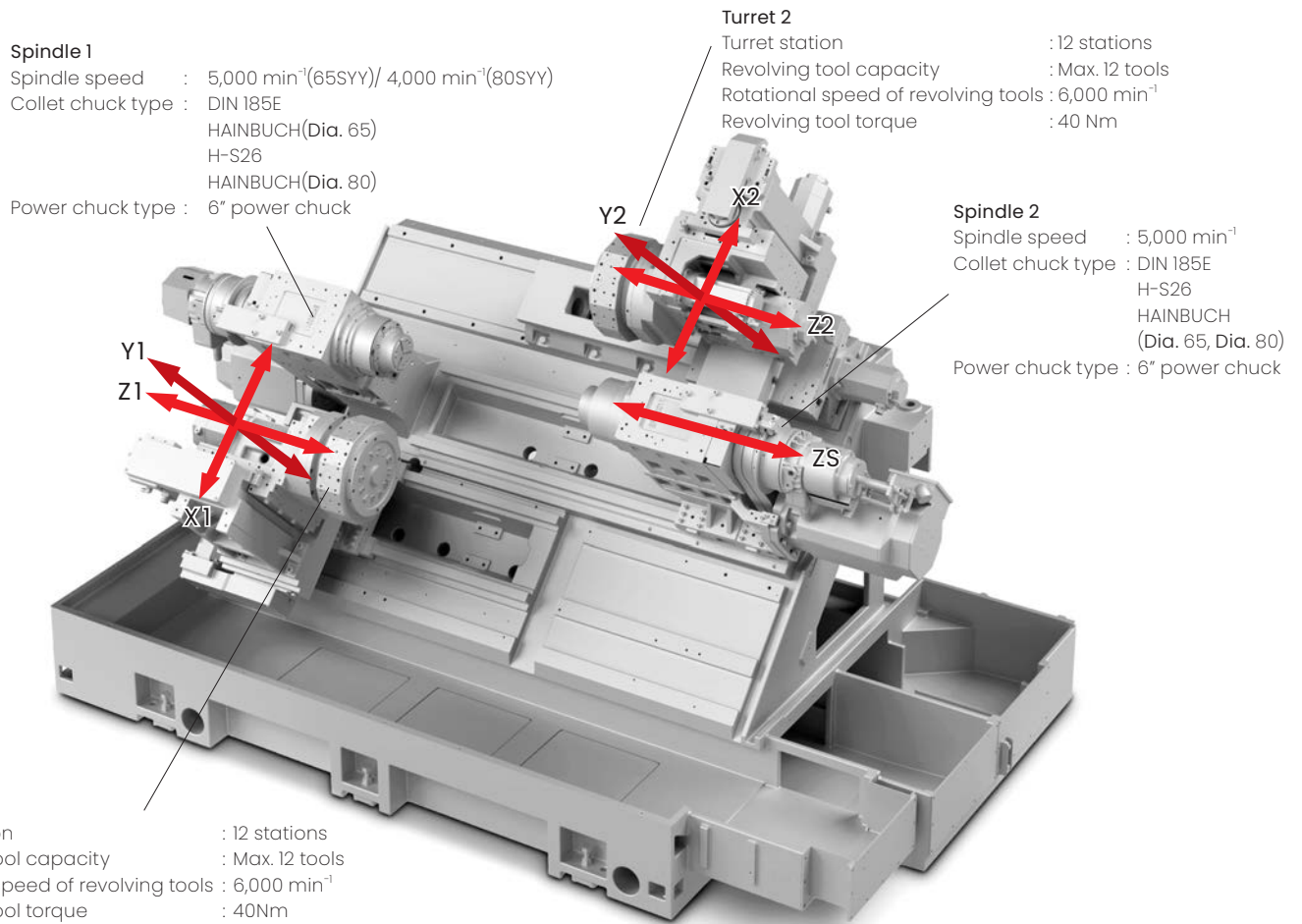


Front of ABX80THY



Back of ABX80THY

# Basic Construction of the ABX-SYY



## 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.



## 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.



# 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 "alkappliesolution" utilizing ICT technology, centering on the Cincom and Miyano brands.

## Technology Supporting "EcoBalance Machine"

### Idling stop function

Used to stop unnecessary machine operation in the standby status where no programmed operation is in progress, thereby reducing power consumption.

### Air blow intermittent discharge function

Air consumption is reduced through intermittent control of the air blow.



### Power consumption visualised

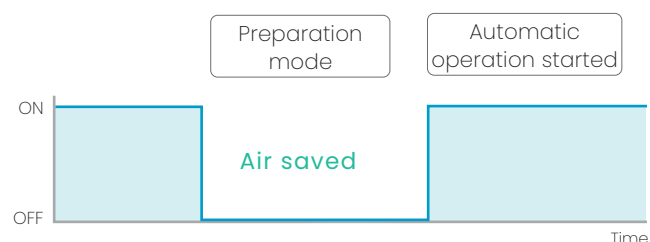
The Ecoll function visualises power consumption and CO2 emissions on the screen to support customers' efforts to save energy.

### 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.

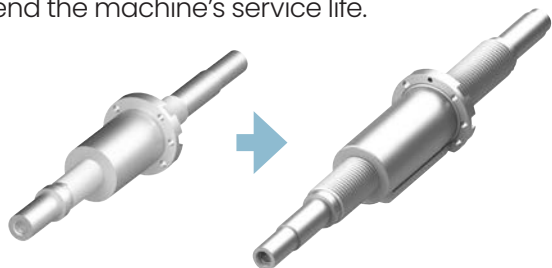


**Air purge OFF during setup or non-operation, and air purge ON during coolant discharge or machine operation**



## Ball screw diameter enlarged to 32 mm diameter 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.



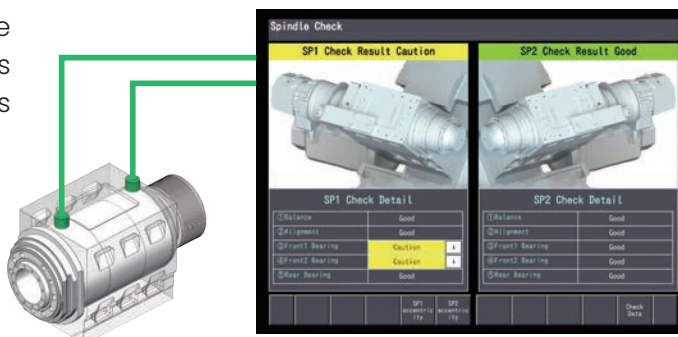
## Thermal displacement correction function

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.

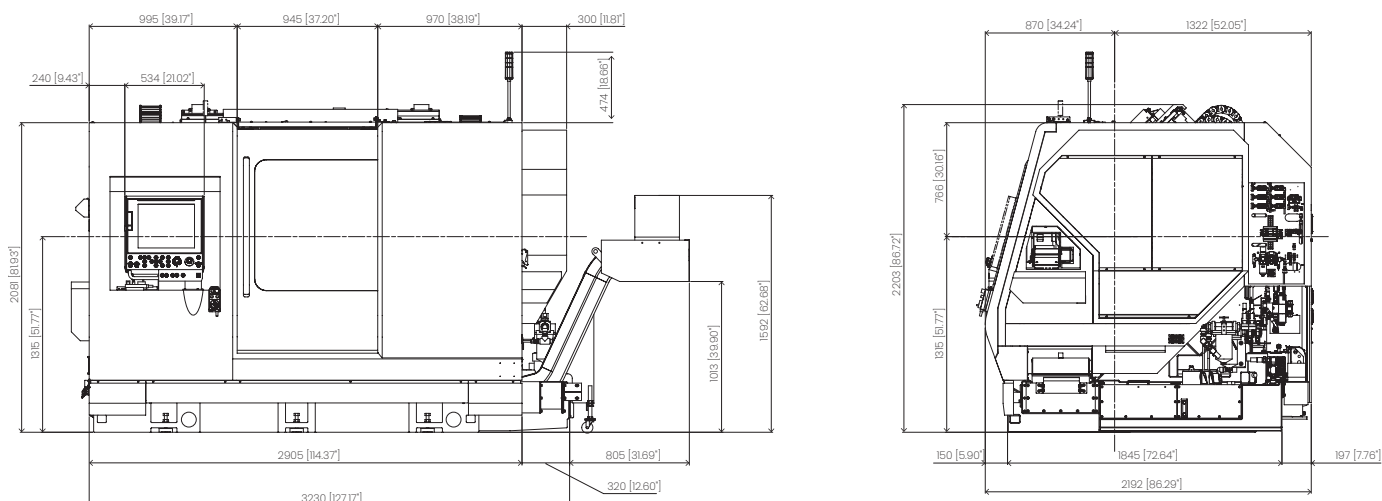
## Spindle diagnosis function

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.



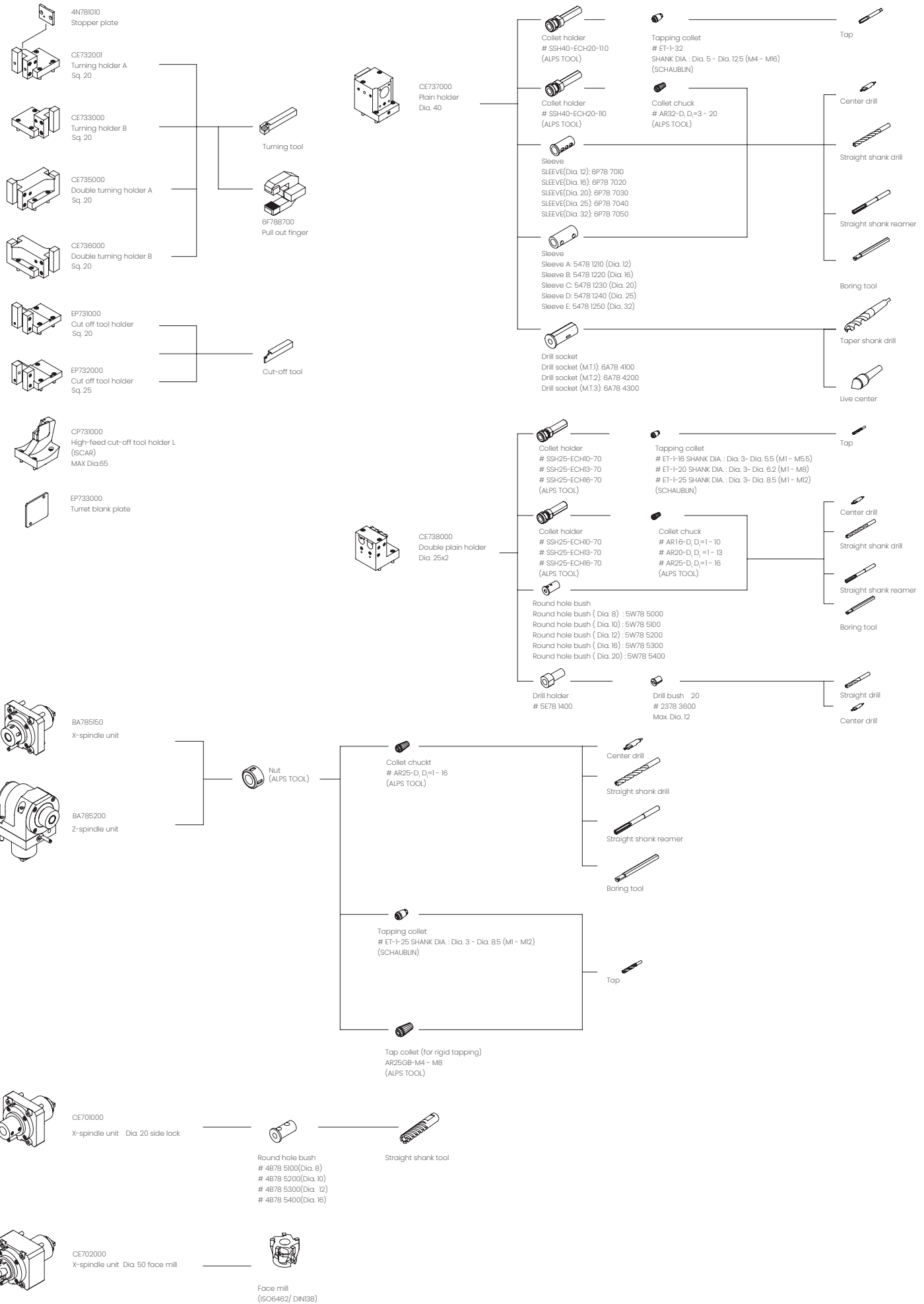
## External View

### Common





# Tooling System



# Machine Specifications

Item	ABX-65THY3	ABX-80THY3	ABX-65SYY3	ABX-80SYY3	
<b>Capability</b>					
Standard machining diameter (gripping diameter)	SP1	Dia. 65 mm	Dia. 80 mm	Dia. 65 mm	Dia. 80 mm
	SP2	Dia. 65 mm	Dia. 80 mm	Dia. 65 mm	Dia. 80 mm
Distance between spindle end faces		1031 mm			
<b>Slide stroke</b>					
TR1, TR2, TR3	X1, X2 axes	190 mm			
	X3 axes	190 mm			
	Z1 axes	270 mm		550 mm	
	Z2 axes	550 mm		721 mm	
	Z3 axes	270 mm			
	Y1, Y2 axes	80 (+40) mm			
	Y3 axes	80 (+40) mm			
	Z5 axes	756 mm			
<b>Spindle</b>					
Number of spindles		2			
Spindle speed	SP1	5,000 min <sup>-1</sup>	4,000 min <sup>-1</sup>	5,000 min <sup>-1</sup>	4,000 min <sup>-1</sup>
	SP2	5,000 min <sup>-1</sup>			
Draw tube through-hole diameter	SP1	Dia. 66 mm	Dia. 81 mm	Dia. 66 mm	Dia. 81 mm
	SP2	66 mm Dia.			
Collet chuck type	SP1	DIN185E	-	DIN185E	-
		HAINBUCH 65	HAINBUCH 80	HAINBUCH 65	HAINBUCH 80
		H-S26	-	H-S26	-
	SP2	DIN185E, HAINBUCH 65/80, H-S26			
Power chuck type	SP1, SP2	6" POWER CHUCK			
Machining capacity	SP1, SP2 Drill	Dia. 25 mm			
	Tap	M22xP2.5			
<b>Spindle indexing</b>					
Minimum spindle indexing command	SP1, SP2	0.001°			
<b>Tool post</b>					
Number of tool slides		3		2	
Type of tool post	TR1, TR2	12 st.			
	TR3	12 st.			
Distance between opposite sides of tool slide	TR1, TR2	350 mm			
	TR3	350 mm			
Maximum indexing diameter of tool slide	TR1, TR2	Dia. 600 mm			
	TR3	Dia. 600 mm			
Dimensions of tools used		Sq. 20 mm			
Dimensions of tool mounting holes		Dia. 25 mm			
<b>Revolving Tool</b>					
Revolving tool capacity		Max. 12/12/12		Max. 12/12	
Revolving tool drive type		Single drive mechanism			
Rotational speed of revolving tools		6,000 min <sup>-1</sup>			
Machining capacity	Drill	Max. Dia. 20 mm			
	Tap	Max. M14 x P2.0			
<b>Feed rate</b>					
Rapid feed rate	X1, X2 axes	20 m/ min			
	X3 axes	20 m/ min			
	Z1 axes	20 m/ min		30 m/ min	
	Z2 axes	30 m/ min		20 m/ min	
	Z3 axes	20 m/ min			
	Y1, Y2 axes	12 m/ min			
	Y3 axes	12 m/ min			
	Z5 axes	30 m/ min			
Motor for feed axes	X1, X2, Z1, Z2, Z5 axes	1.8 kW			
	X3, Z3 axes	1.8 kW			
	Y1, Y2 axes	1.2 kW			
	Y3 axes	1.2 kW			
<b>Motor drive</b>					
Motor for spindle	SP1, SP2	18.5/15 kW (30min/cont.)			
Motor for revolving tools	TR1, TR2	4.5 kW			
	TR3	4.5 kW			
Motor for coolant pump		0.25 kW x2			
Motor for medium-pressure coolant (1MPa) (option)		0.8/1.1 kW (50/60Hz)x2		0.8/1.1 kW (50/60Hz)x1	
<b>Required power source</b>					
Power source used		C 200/220 V +5% -10% 50/60 Hz ±1%			
Rated power consumption		56.4 kVA		51.6 kVA	
Load operation average power consumption		33.1 kVA		31.7 kVA	
Fuse capacity at machine side		250 A			
Pneumatic source		0.5 MPa			
<b>Tank capacity</b>					
Hydraulic tank capacity		18 L			
Lubricating oil tank capacity		5 L			
Coolant tank capacity		400 L			
<b>Machine size</b>					
Machine height		2,210 mm			
Required floor space (length x width)		3,260 x 2,200 mm			
Machine weight		11,300 kg		10,700 kg	

## Special Accessories

Air blow	Workpiece ejector
Automatic fire extinguisher	Chip box
Part conveyor	Medium-pressure coolant (1MPa)
Internal air blow	Turret air blow
Tool setter	Part catcher
Part box	Chuck system
Chip conveyor	Mist collector duct & fire prevention damper
Spindle inner bushing	3-colour signal tower
Remnant front ejector	Drill checker
RS-232C	

## Standard NC Functions

FANUC Series 31i-MODEL B Plus	19-inch SXGA touch 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 synchronised function
Canned drilling cycle	Helical interpolation function
Synchronised 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 turning function
Spindle diagnosis function	

## Special Additional NC Functions

Tool offset pairs: 400	Program storage capacity: 8 MB
Tool monitor	RS-232C connector

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