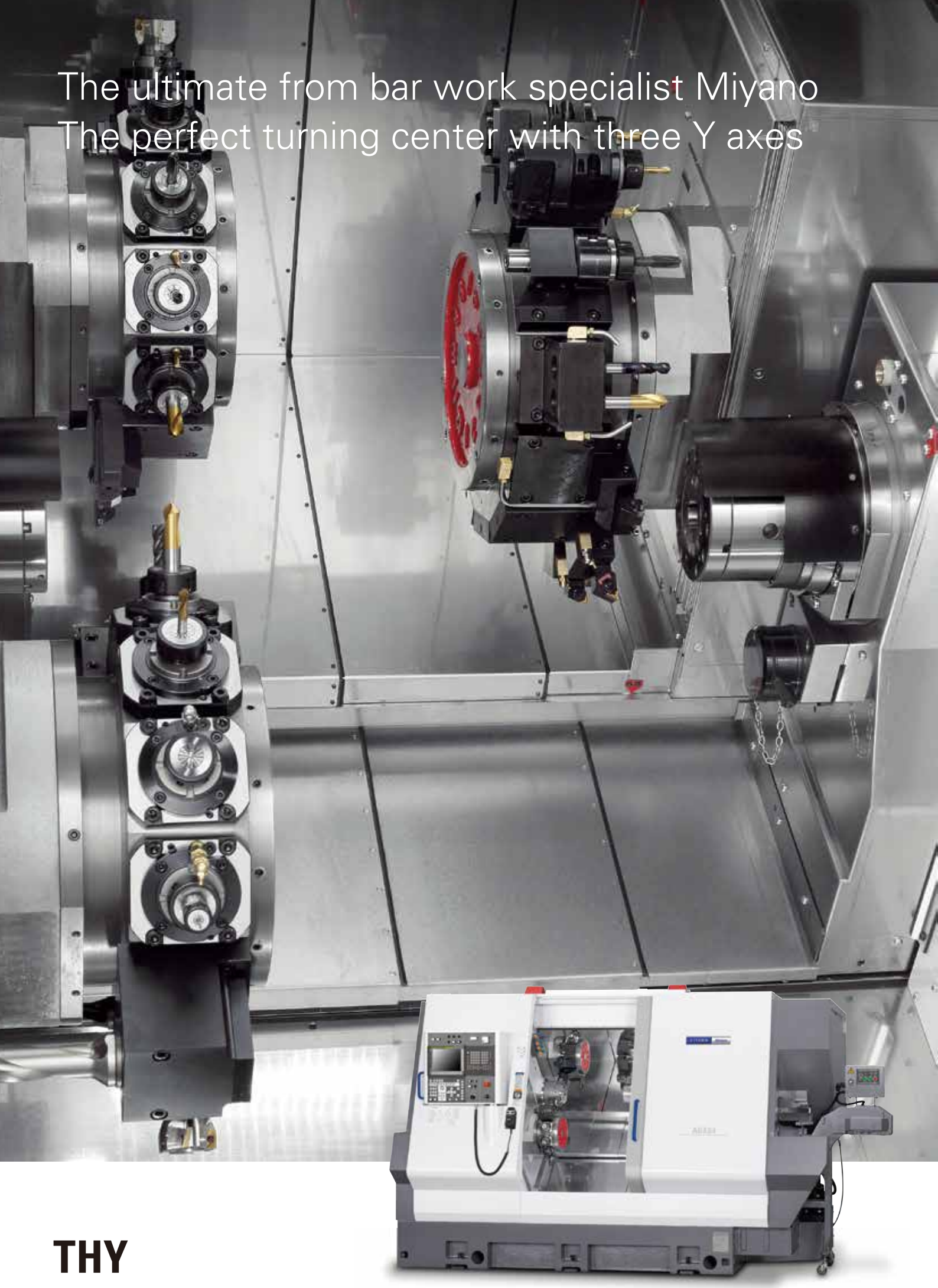
CITIZEN

Miyano

ABX51/64

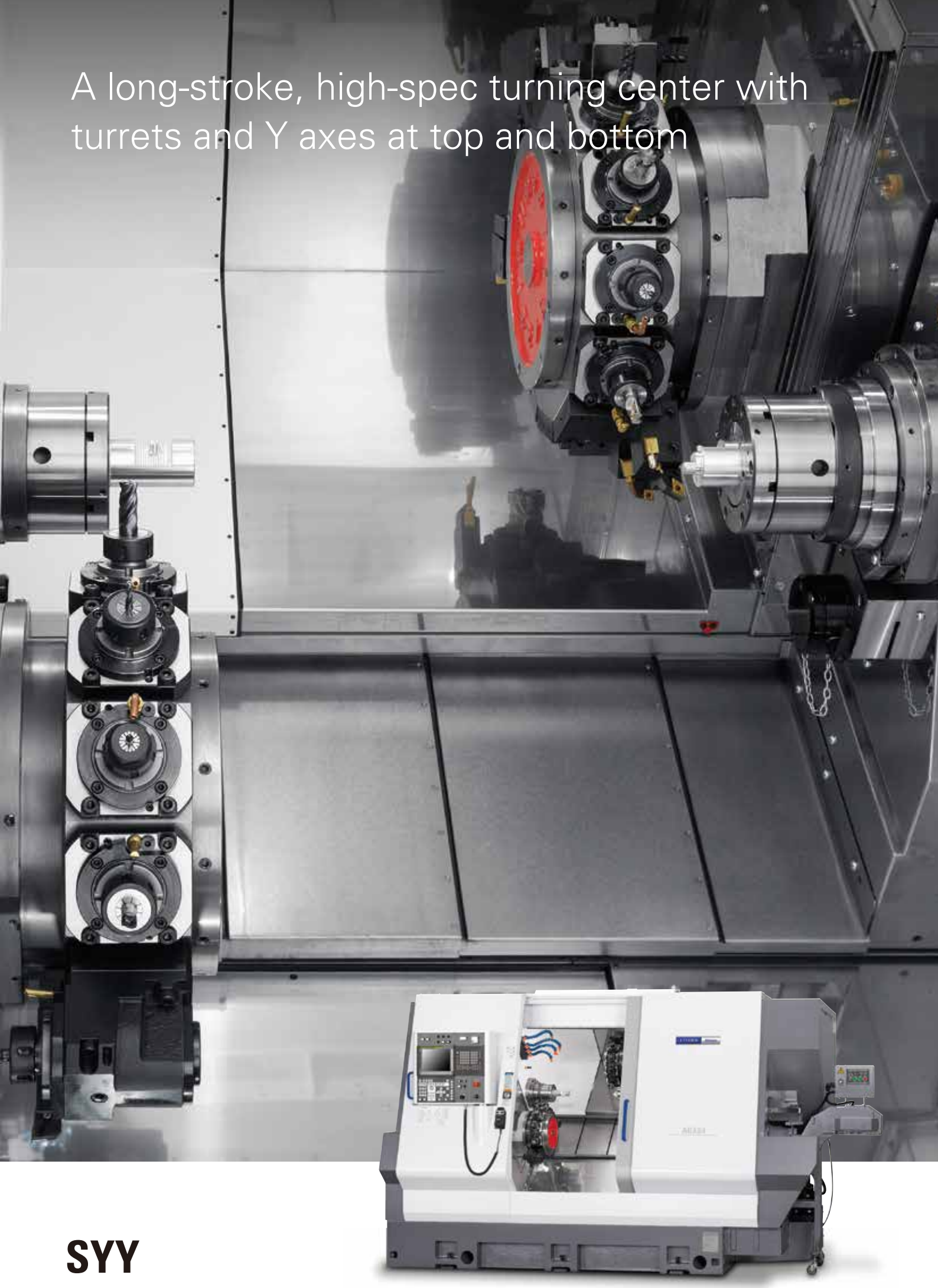
Fixed Headstock Type CNC Automatic Lathe

The ultimate from bar work specialist Miyano
The perfect turning center with three Y axes



THY

A long-stroke, high-spec turning center with turrets and Y axes at top and bottom



SYY

THY

Three Y axes give high efficiency and heigh productivity

Right and left upper turrets equipped with a Y axis, and a lower turret also with a Y axis that can unrestrictedly approach both spindles, enable the ideal process allocation and flexible tooling without any limitations imposed by machining balance.

High rigidity and high torque with 40 Nm revolving tools

The use of rigid 40 Nm revolving tool drives capable of heavy cutting ensures stable milling.
Three turrets with a total of 36 tool positions handle complex machining just like a machining center.

Simultaneous complex machining with three turrets

SYY

Cutting time shortened by simultaneous cutting at left and right with two Y axes

The ability to machine simultaneously at the left and right spindles using the upper and lower turrets, both featuring a Y-axis function, means that complete front and back machining of products with complex shapes can be accomplished simply and in a short time.

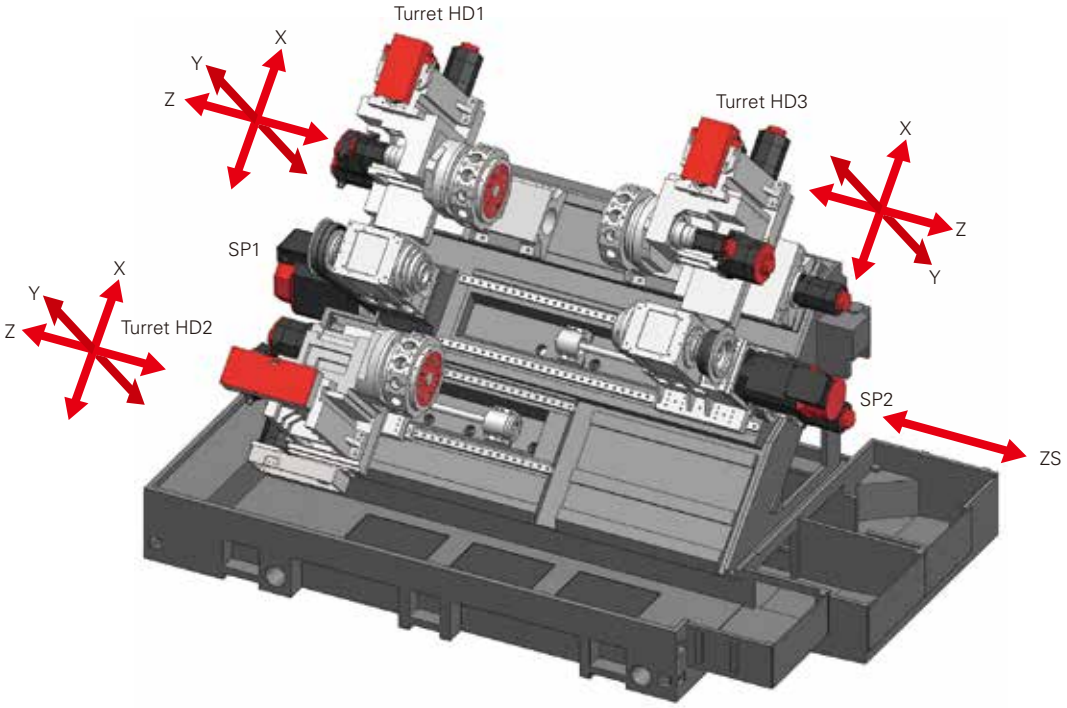
High rigidity and high torque with 40 Nm revolving tools

The use of rigid 40 Nm revolving tool drives capable of heavy cutting ensures stable milling.
Two turrets with a total of 24 tool positions handle complex machining just like a machining center.

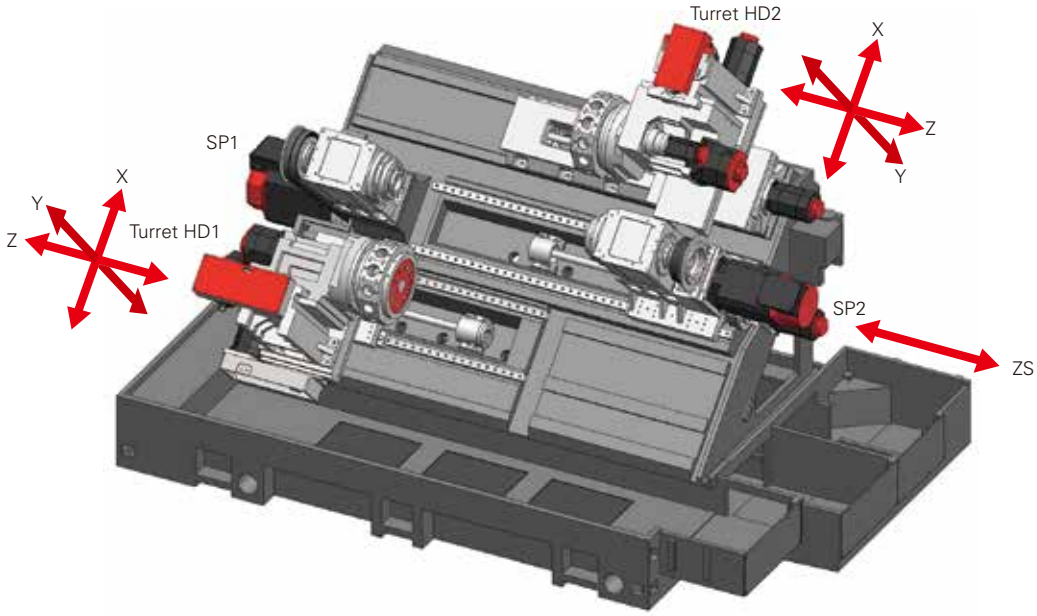
Simultaneous complex machining with two turrets

Basic construction

ABX-THY



ABX-SYY

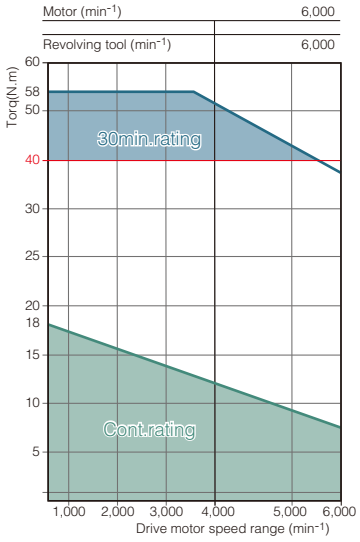


Turret and revolving tools

High-rigidity 12-station turret

40 Nm revolving tools

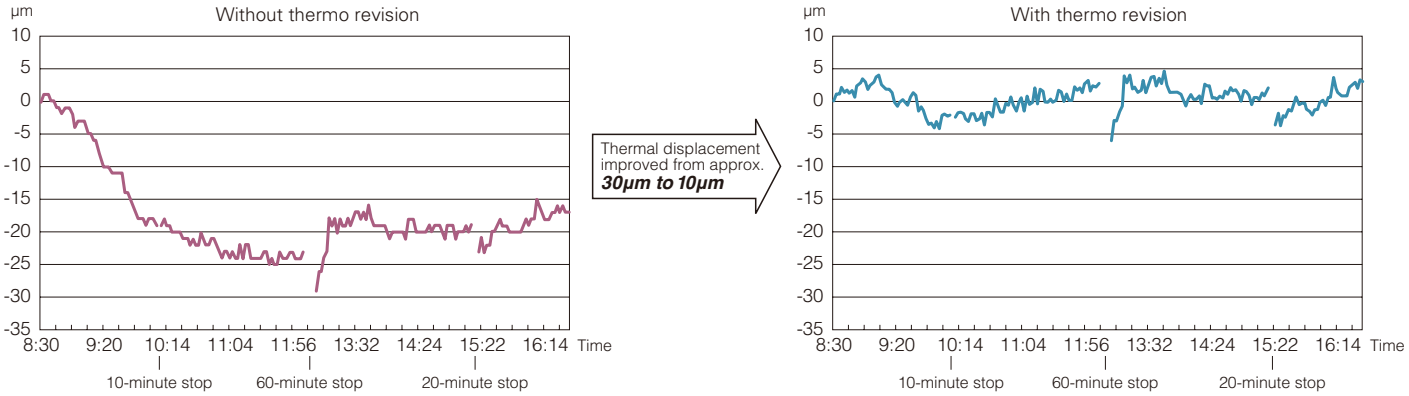
Revolving tool torque diagram



Thermo revision for 'round-the-clock' accuracy

Temperature discrepancies are automatically measured by temperature sensors, and the position data (*) is corrected using pre-set correction coefficients. (*) The axes that are corrected differ depending on the machine model.

Thermal displacement between the X1 axis and SP1 (water soluble coolant used)

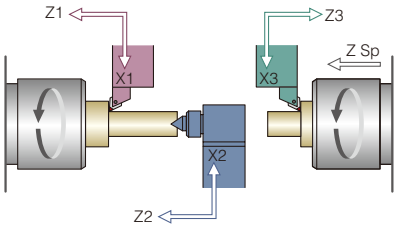


Although the values above are the results of measurement, they are not guaranteed. Values will vary according to the machining conditions, workpiece material and other conditions.

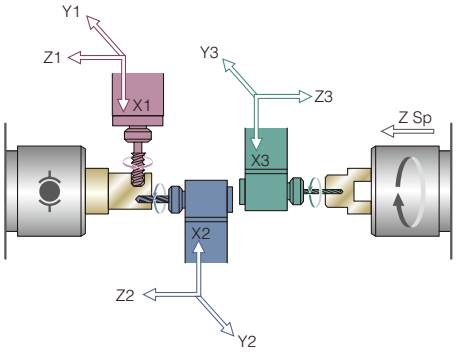
Examples of simultaneous complex machining

ABX-THY

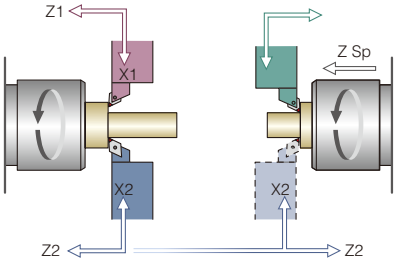
Center Support



Drilling & tapping

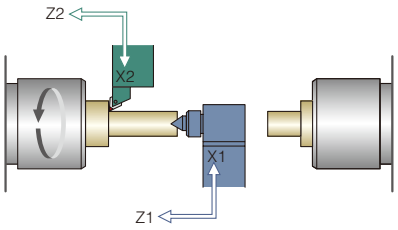


Simultaneous machining

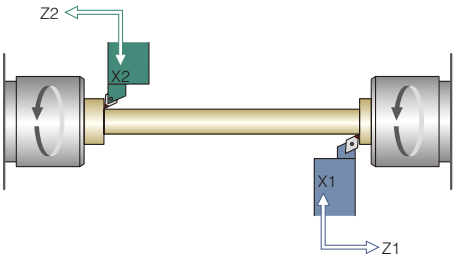


ABX-SYY

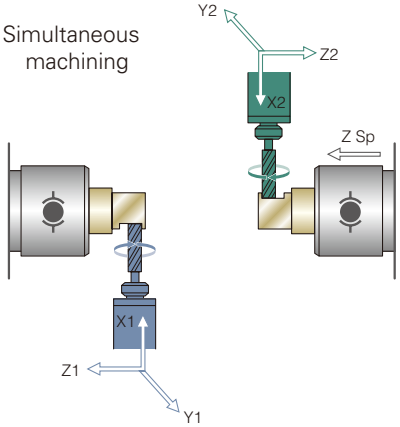
Center support



Long shaft machining



Simultaneous machining



Options

Tool setter

Tool offsets can be set accurately and easily with a manually detachable double-arm tool setter. For both OD and ID cutting tools, tool offset values accurately measured with sensors in four directions mounted at the ends of the arms are automatically input to the NC unit.

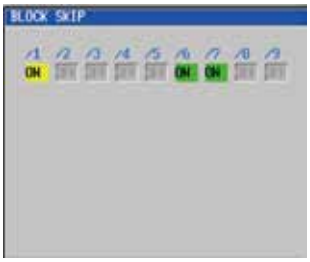
Chip conveyor

The hinged belt type conveyor ejects chips smoothly and is an optional unit that is indispensable for unmanned operation. Alternative types of conveyor are available depending on the material being cut.

Parts catcher
Parts conveyor

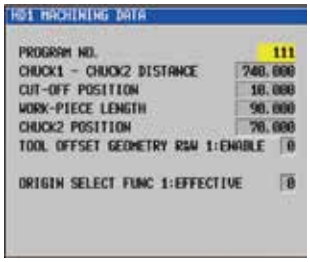
The servo-driven part catcher can collect products from both spindles. It places the products on the part conveyor, which unloads them outside the machine without damage.

Support Screens



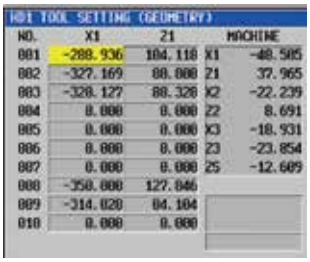
Block skip

Used to set block skip 1 to block skip 9.



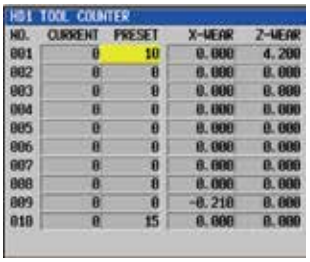
Machining data

Entering the machining length and position of the cut-off here makes it easier to measure geometry offsets and to mount tools.



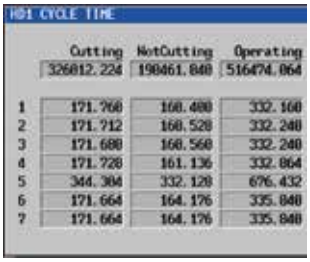
Tool setting

Used to measure geometry offsets. It can also be used for tool mounting support, to ensure that the overhang of all tools is fixed at a constant value.



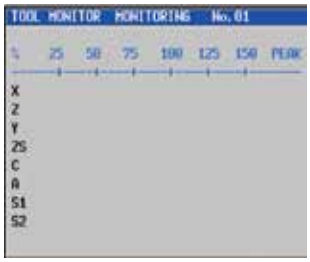
Tool counter

Informs you of the timing (count-up) for tool changes in accordance with the set tool counter stop value.You can also enter wear offsets.



Cycle time

Allows you to measure the cutting time, non-cutting time and running time in each cycle.



Tool monitoring (option device)

Allows you to monitor tool wear and breakage by checking the current state of the machining and status of the cutting tools in terms of numerical values based on the sampling data.

Automatic running monitor (Spindle/ revolving tools) (axis)

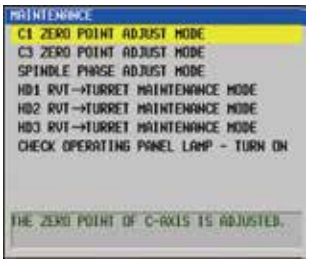
Allows you to check the status of the spindle during automatic running and feed axes during automatic running.

Start condition

Displays information on the start conditions for automatic running.

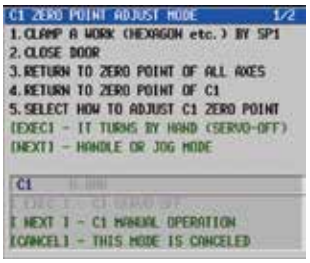
Spindle and revolving tool unit

Allows you to set the rotational speed (in manual operation) of the spindle and revolving tools, and to set the spindle override.



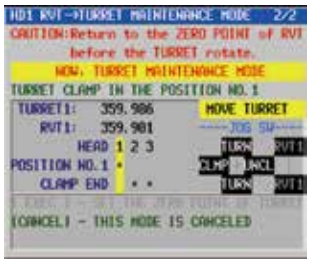
Maintenance

Used to turn the settings for maintenance ON and OFF.



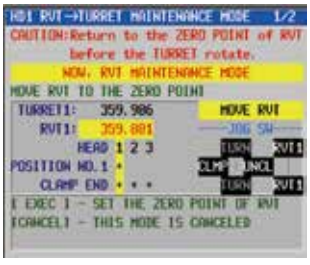
C1 Zero point adust mode

Used to adjust the C axis zero point; the screen displays the zero point adjustment instructions.



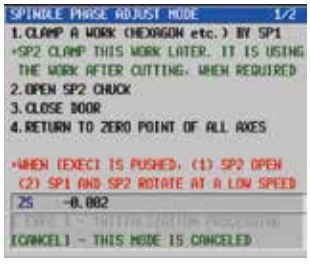
Turret Maintenance

Used to adjust the turret zero point; the screen displays the zero point adjustment instructions.



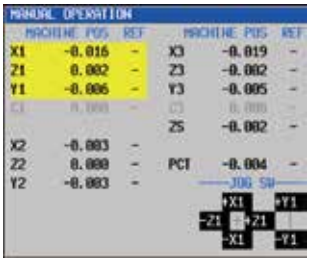
Revolving tool adjustment

Used to adjust the revolving tool zero point; the screen displays the zero point adjustment instructions.



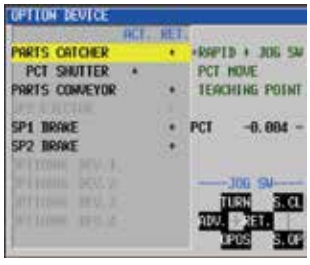
Spindle phase Synchronization adjustment

Used to adjust the spindle phase synchronization by following the instructions on the screen.



Manual operation

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



Option devise

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

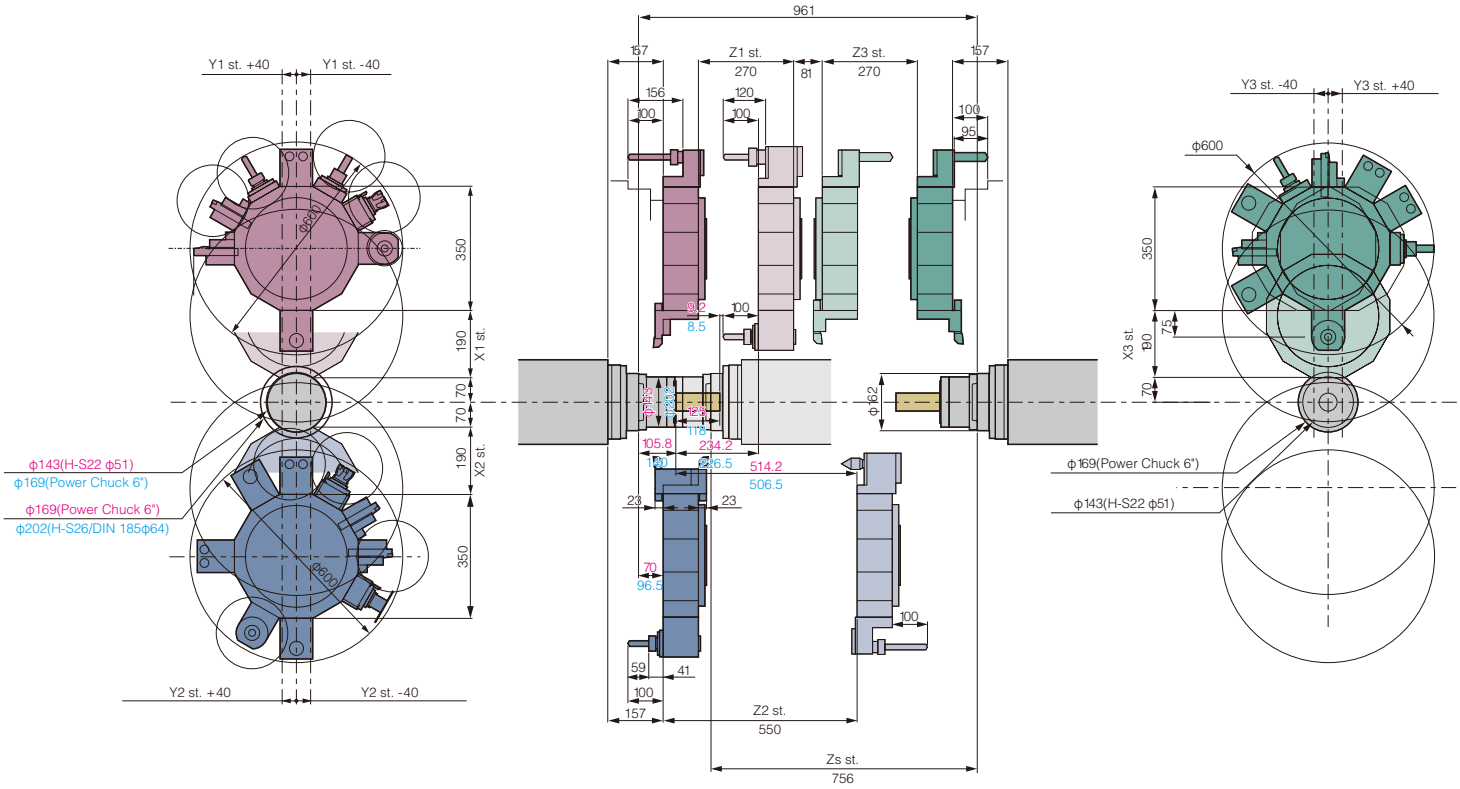
Tooling area

ABX-THY

Common

51

64

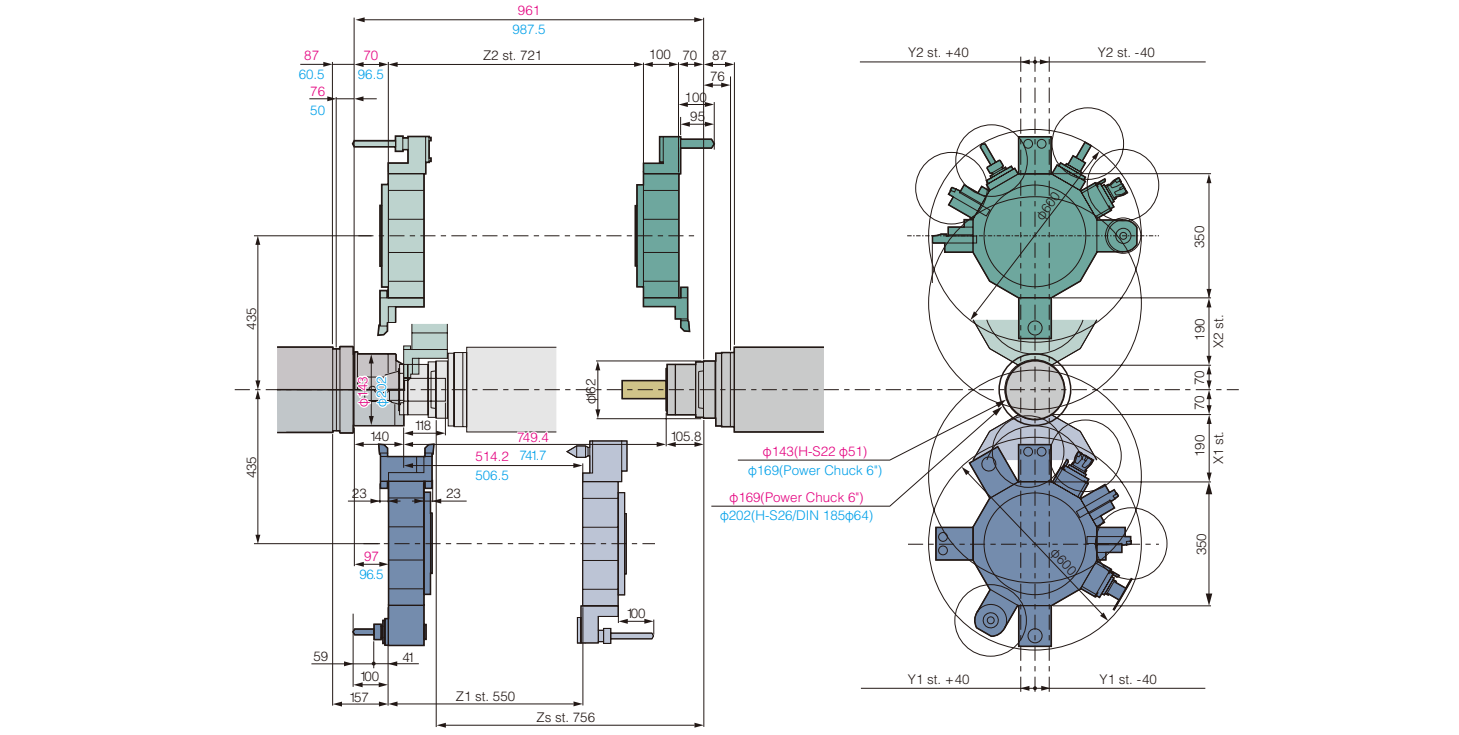


ABX-SYY

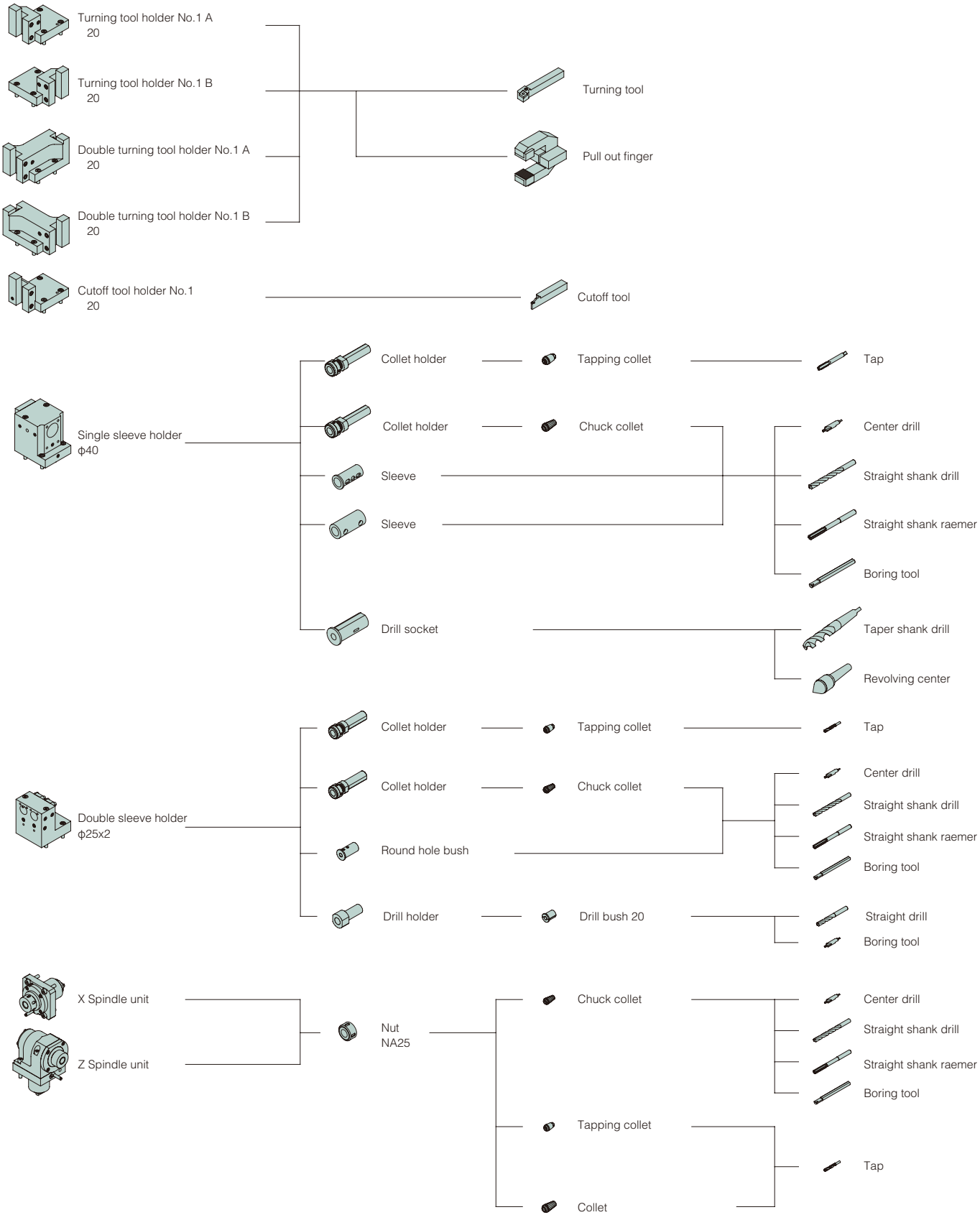
Common

51

64

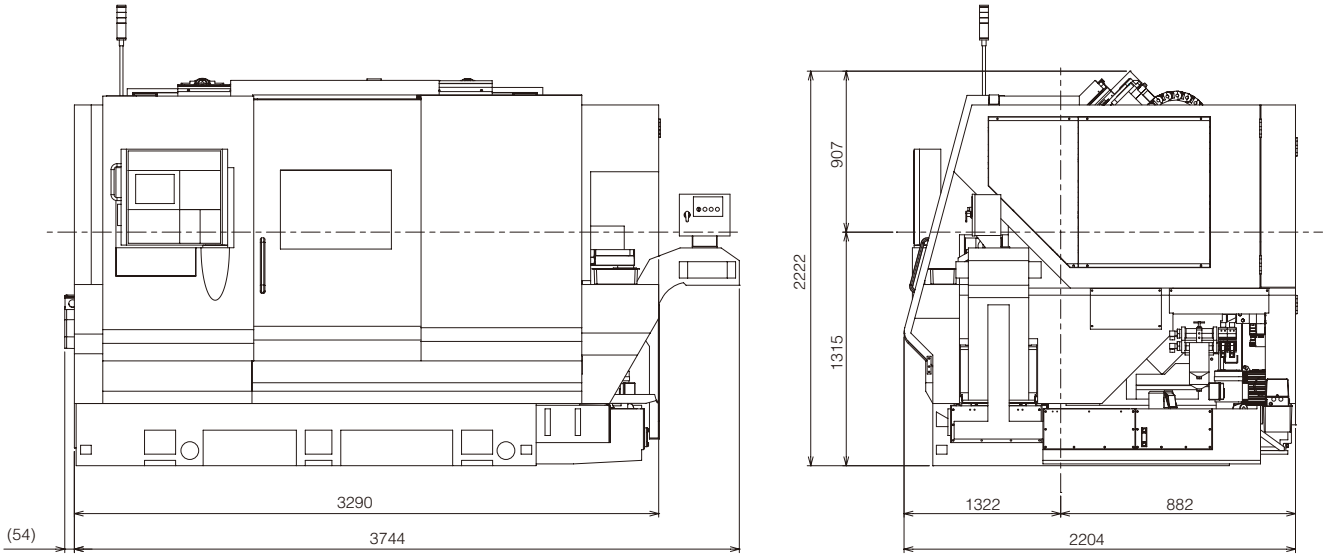


Tooling system



External view

Common



NC Specifications

ABX-THY2	FS.31i-B 3 system
Axial control	HD1: X1,Z1,Y1,C1,A1,E1(T1)
	HD2: X2,Z2,Y2,(C2),A2,E2(T2)
	HD3: X3,Z3,Y3,C3,A3,E3(T3),PC,ZS
Minimum setting unit	0.001mm, 0.0001inch, 0.001deg
Interpolation functions	G01, G02, G03
Thread cutting	G32, G33, G92
Rapid feed override	0-100%
Feed rate override	0-150%
Feed rate per minute/Feed rate	G98/ G99
Single form fixed cycle	G90, G92, G94
Program storage capacity	The sum total of 3 systems : 128KB (320 m)
Registered program number (Extension)	The sum total of 3 systems : 250 programs
Spindle function	S4 digit
Constant surface speed control	G96
Tool function	T AABB (AA =Tool number and geometry,
	BB =Wear offset number)
Tool compensation number	32 pieces, 96 pieces (3 systems)
Automatic operation	Single-cycle automatic operation, Single block, Block delete,
	Machine lock, Optional block skip, Dry run, Feed hold
Data input-and-output function	RS -232C, Memory card interface
Others	10.4" color LCD, Feed axis absolute position detection unit,
	Synchronization / mixture control, Cs outline control,
	Many article thread cutting, Continuation thread cutting,
	Polar coordinate interpolation, A decimal point input
	Programmable date input G10, Automatic coordinate system setup,
	Custom macro, Program protection, Manual handle retrace,
	Self-diagnostic function, etc.
Options	Superimposed control, Variable lead thread cutting,
	Cylindirical interpolation, Helical interpolation, Inch / metric change,
	Chamfering /Corner R control, Drawing size direct input,
	Canned cycles for drilling, Multiple repetitive cycles,
	Program storage capacity addition,
	Program simultaneous edit number,
	Spidle rigid tap, Revolving tool rigid tap, Polygon cutting,
	Tool compensation number addition,
	Amount measured value of tool compensation direct input,
	Tool life management, Tool nose radius compensetion,
	Run hour and the number of parts display, Graphic display,

ABX-SYY2	FS.31i -B 2 system
Axial control	HD1: X1, Z1, Y1, C1, A1, E1 (T1), (ZS)
	HD2: X2, Z2, Y2, C2, A2, E2 (T2), PC, ZS
Minimum setting unit	0.001 mm, 0.0001 inch, 0.001 deg
Interpolation functions	G01, G02, G03
Thread cutting	G32, G33, G92
Rapid feed override	0-100%
Feed rate override	0-50%
Feed rate per minute/Feed rate	G98 /G99
Single form fixed cycle	G90, G92, G94
Program storage capacity	The sum total of 2 systems : 64KB (160 m)
Registered program number (Extension)	The sum total of 2 systems : 125 programs
Spindle function	S4 digit
Constant surface speed control	G96
Tool function	T AABB (AA =Tool number and geometry,
	BB =Wear offset number)
Tool compensation number	32 pieces, 64 pieces(2 systems)
Automatic operation	Single -cycle automatic operation, Single block, Block delete,
	Machine lock, Optional block skip, Dry run, Feed hold
Data input-and-output function	RS -232C, Memory card interface
Others	10.4" color LCD, Feed axis absolute position detection unit,
	Synchronization /mixture control, Cs outline control,
	Many article thread cutting, Continuation thread cutting,
	Polar coordinate interpolation, A decimal point input
	Programmable date input G10, Automatic coordinate system setup,
	Custom macro, Program protection, Manual handle retrace,
	Self-diagnostic function, etc.
Options	Superimposed control, Variable lead thread cutting,
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	Tool compensation number addition,
	Amount measured value of tool compensation direct input,
	Tool life management, Tool nose radius compensetion,
	Run hour and the number of parts display, Graphic display,

Machine specifications

Item		ABX-51THY2	ABX-64THY2	ABX-51SYY2	ABX-64SYY2
Machining capacity					
Maximum work length	SP1	125 mm	118 mm	125 mm	118 mm
	SP2	125 mm			
Maximum work diameter					
for bar work	SP1	51 mm Dia.	64 mm Dia.	51 mm Dia.	64 mm Dia.
	SP2	51 mm Dia.			
for power chuck	SP1	165 mm Dia.	---	165 mm Dia.	---
	SP2	165 mm Dia.			
Spindle					
Number of spindles		2			
Spindle speed	SP1	50 - 5,000 min^{-1}	40 - 4,000min^{-1}	50 - 5,000min^{-1}	40 - 4,000 min^{-1}
	SP2	50 - 5,000 min^{-1}			
Inner diameter of draw tube	SP1	52 mm Dia.	65.5 mm Dia.	52 mm Dia.	65.5 mm Dia.
	SP2	ϕ52mm			
Chucking system	SP1, SP2	Hydraulic cylinder			
Type of collet chuck	SP1	S collet system			
		H-S22 / DIN177E	H-S26 / DIN185E	H-S22 / DIN177E	H-S26 / DIN185E
	SP2	S collet system			
		H-S22 / DIN177E			
Type of Power chuck	SP1, SP2	6" Hydraulic chuckTurret			
Number of turrets		3		2	
Turret stations	HD1, HD2, HD3	12 st.			
Tool shank size	HD1, HD2, HD3	20 mm Sq.			
I.D tool hole size	HD1, HD2, HD3	25 mm Dia. /40mm Dia.			
Index time	HD1, HD2, HD3	0.25 SEC/ 1POS			
Rapid traverse rate HD1	X1	16 m/ min			
	Z1	20 m/ min		30 m/ min	
	Y1	12 m/ min			
HD2	X2	16 m/ min			
	Z2	30 m/ min		20 m/ min	
	Y1	12 m/ min			
HD3	X3	16 m/ min		---	
	Z3	20 m/ min		---	
	Y3	12 m/ min		---	
SP2	Zs	30 m/ min			
Revolving tool (Option)					
Number of revolving tools	HD1, HD2, HD3	12 (MAX.36)		12 (MAX.24)	
Maximum spindle speed		6,000 min^{-1}			
Machining capacity	Drilling	MAX. 20 Dia.			
	Tapping	MAX. M14×2			
	End mill	MAX.ϕ16			
Tank capacity					
Hydraulic tank capacity		10 L			
Lubricating tank capacity		4 L			
Coolant tank capacity		400 L			
Machine dimensions					
Machine height		2,222 mm			
Floor space		3,290 × 2,204 mm			
Machine weight		11,350 Kg		10,900 Kg	
Spindle motor	SP1	AC 15/ 11 Kw			
	SP2	AC 7.5/ 5.5 Kw			
Revolving tool motor	HD1, 2, 3	AC 4.5 Kw			
Power supply					
Voltage		AC 200/ 220 V ± 10% 50/ 60Hz±1Hz			
Capacity		49 KVA		48 KVA	
Air supply		0.5 MPa (5 kgf/ cm^2)			
Fuse		150 A			
Others					
Pneumatic, Spindle brake, Revolving tools and driving unit, Thermo revision, Spalsh guard interlock, High pressure coolant,Parts catcher (Servo type).					
Optional accessories					
100V, Collet chuck system, 6" Power chuck, Air blow, No.2 spindle inner high pressure coolant & air blow, Coolant level switch, Automatic power shut-off and extinguisher, Automatic power shut-off					
Chip conveyor, Chip box, Parts carrier, Coolant mist collector, Blast-proof dumpers, Tool setter, Signal light (3 steps), Total & preset counter, Bar feeder interface, Spindle inner bushing					
Drill breakage detector, Work ejector No2, etc.					

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CITIZEN

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