

CITIZEN

Miyano

ANX42sYY

Fixed Headstock Type Automatic CNC Lathe



## Innovative Turret Lathe ANX opens up a new era

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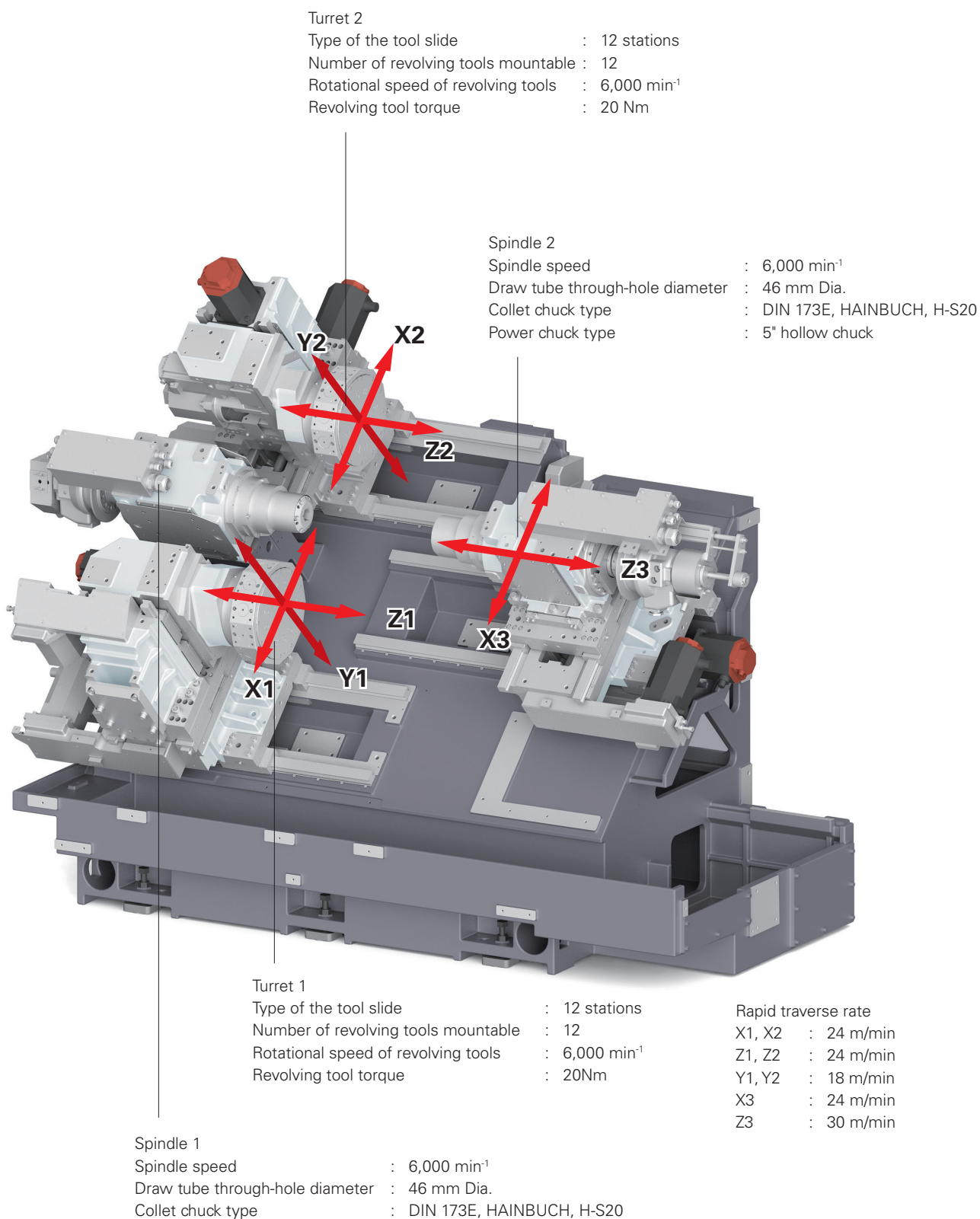
The new model ANX featuring new functions opens up a new era for turret lathes. Now a turret lathe from Miyano brand is equipped with LRV technology for the first time. This solves the problem of chip entanglement that had persisted for many years.

Another noteworthy feature is the operation panel featuring the new HMI (human machine interface). Machine operating convenience has been improved, including compatibility of operations that assures ease of use even for users of the Cincom brand in addition to those of the Miyano brand. We propose new operating methods that lessen the feeling of struggling due to differences in NC systems and cross the boundaries between brands.

The machine is configured with two spindles, two turrets and a double Y axis, and the rapid traverse rate has been increased by adopting linear guides for all axes. The spindles have built-in motors, which shortens acceleration/deceleration times and improves response time. The turrets can use the same tool holders as the BNA Series, and accommodate 20 Nm revolving tools.

These advanced functions are packed into a compact machine body only 2,650 mm wide. The ANX achieves advanced functions, space savings and high productivity.

# Basic Construction



Turret 2  
 Type of the tool slide : 12 stations  
 Number of revolving tools mountable : 12  
 Rotational speed of revolving tools : 6,000 min<sup>-1</sup>  
 Revolving tool torque : 20 Nm

Spindle 2  
 Spindle speed : 6,000 min<sup>-1</sup>  
 Draw tube through-hole diameter : 46 mm Dia.  
 Collet chuck type : DIN 173E, HAINBUCH, H-S20  
 Power chuck type : 5" hollow chuck

Turret 1  
 Type of the tool slide : 12 stations  
 Number of revolving tools mountable : 12  
 Rotational speed of revolving tools : 6,000 min<sup>-1</sup>  
 Revolving tool torque : 20Nm

Rapid traverse rate  
 X1, X2 : 24 m/min  
 Z1, Z2 : 24 m/min  
 Y1, Y2 : 18 m/min  
 X3 : 24 m/min  
 Z3 : 30 m/min

Spindle 1  
 Spindle speed : 6,000 min<sup>-1</sup>  
 Draw tube through-hole diameter : 46 mm Dia.  
 Collet chuck type : DIN 173E, HAINBUCH, H-S20

# LFV



LFV\* is a technology for performing machining while vibrating the X and Z servo axes in the cutting direction in synchrony with the rotation of the spindle.

It reduces various problems caused by chips entangling with the product or tool, and is effective for small-diameter deep hole machining and the machining of difficult-to-cut materials.



Item	LFV mode 1
Operation	Multiple vibrations per spindle revolution
Specification	The axes execute multiple vibrations during one spindle revolution, reliably breaking chips up into small pieces.
Application	Ideal for outer/ inner diameter machining and groove machining
Waveform	

Type	Tr 1	Tr 2
ANX42SYY	✓	✓

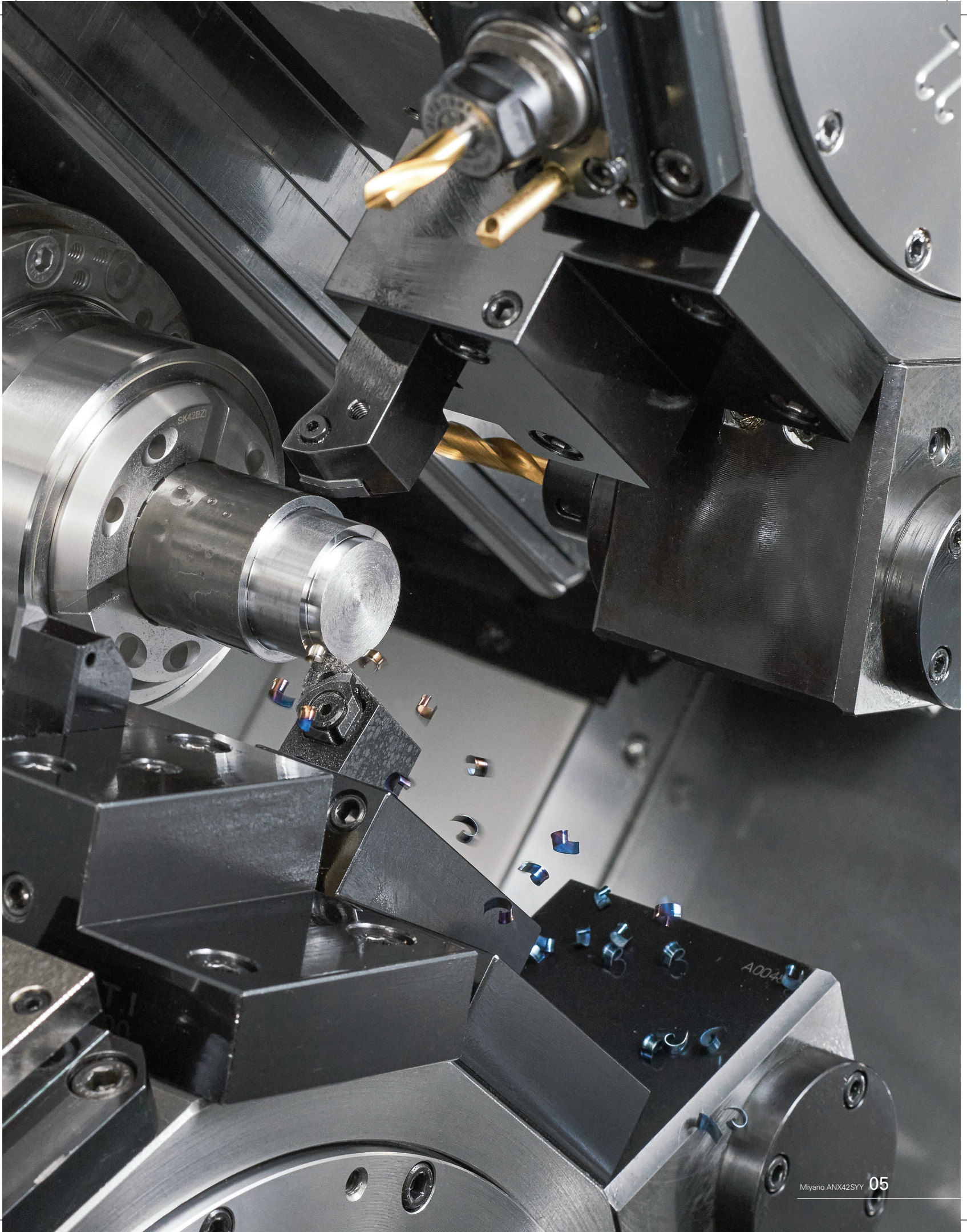
Note 1. LFV machining cannot be performed with the Y axis.

Note 2. LFV machining can be performed simultaneously on a maximum of two axes.

Note 3. For LFV machining with rotary tools, the "LFV function" and "rotary tool feed per revolution" options are required.

\* "LFV" is a registered trademark of Citizen Watch Co., Ltd.





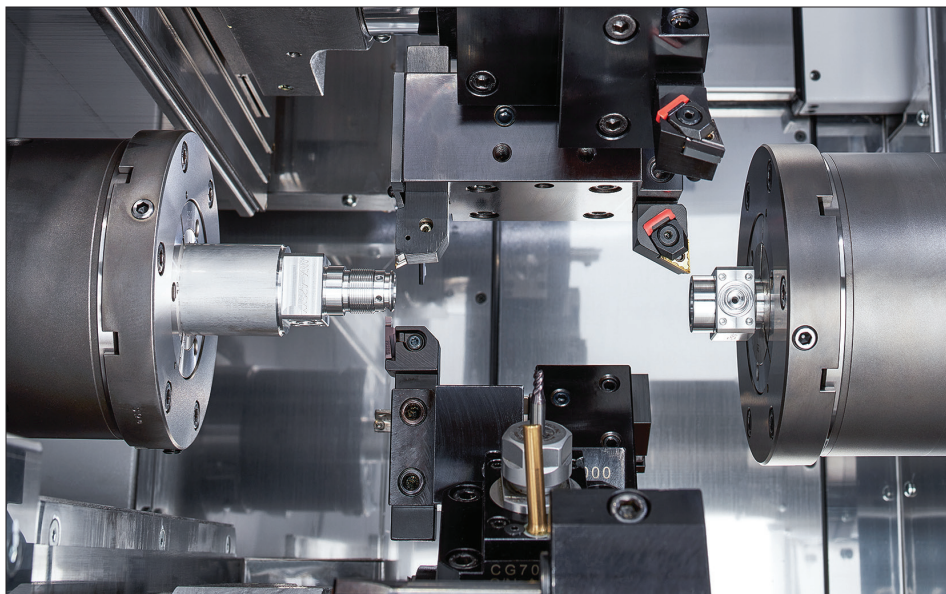


## Turrets Common to the BNA Series and Spindles with Built-in Motors

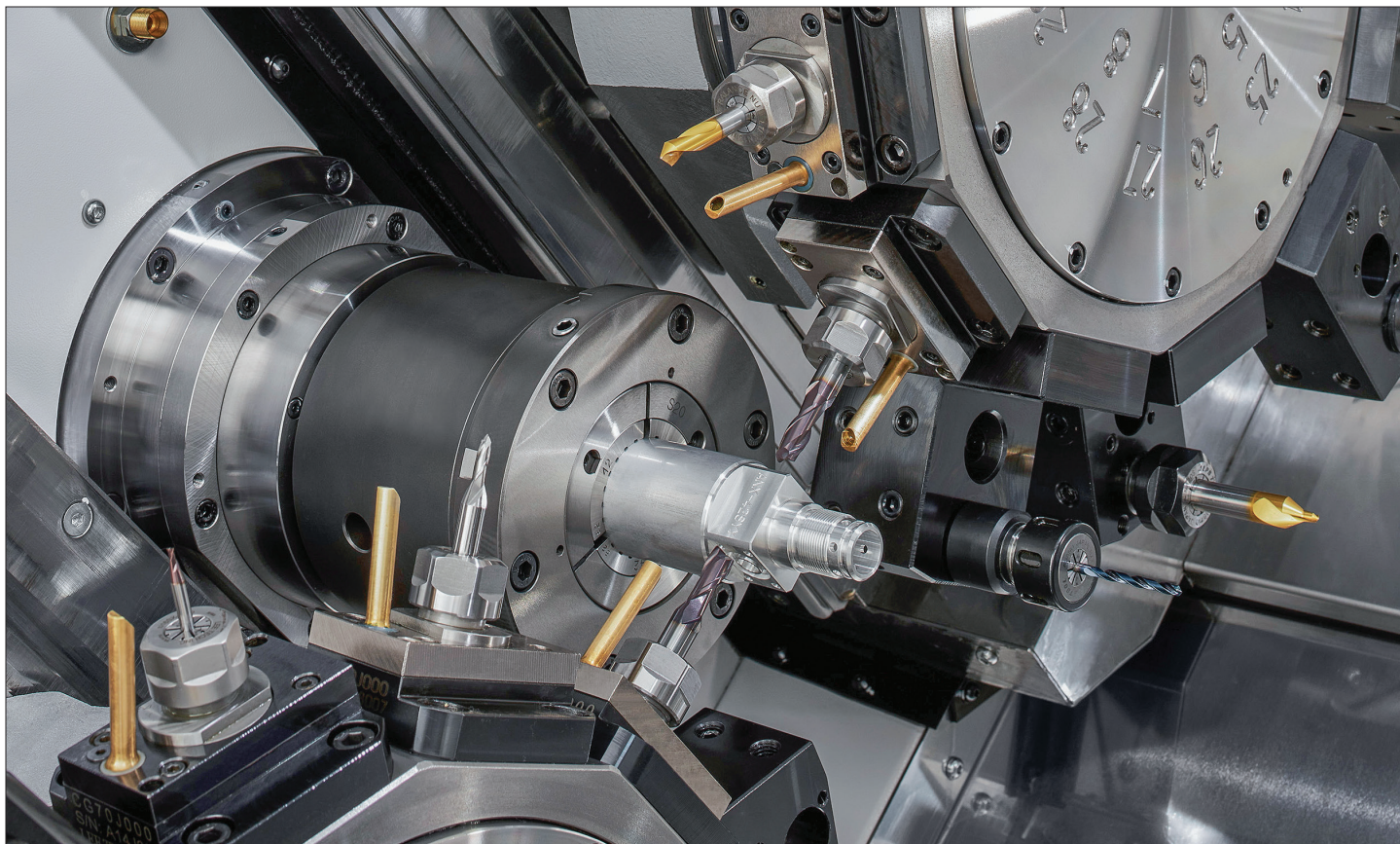
The two 12-station turrets equipped with a Y axis have the same capability and adopt tool holders that are common to the BNA series, enabling use of the same tools. 20 Nm revolving tools can be mounted at all stations.

The two spindles also have the same capabilities and the built-in motor incorporated in each spindle achieves shorter acceleration and deceleration times and better response time than on existing models.

Complex machining including 3-axis simultaneous machining, superimposition machining and double Y axis machining are possible.



MOVIE  
3

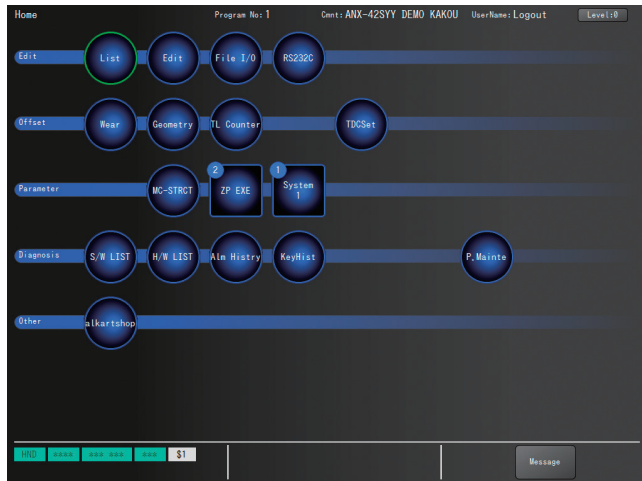






# New HMI (Human Machine Interface) and Supporting Screens

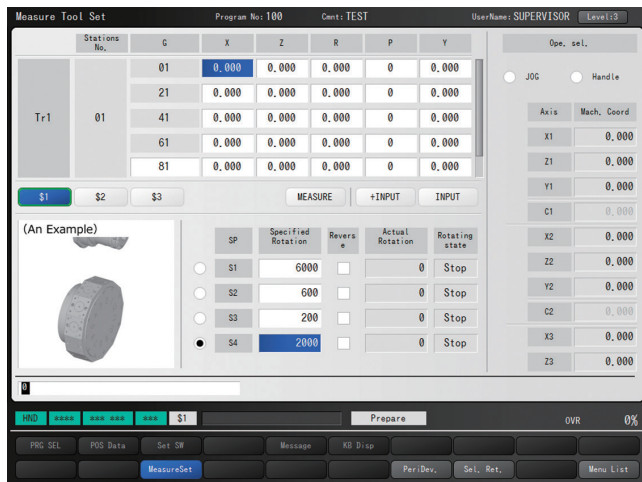
Screens that display graphics and all the necessary information collectively are compatible with touch panels, greatly improving operating convenience.



## Home screen

Displaying shortcut icons for screens that will inevitably be used in a group allows the screens in that group to be accessed easily.

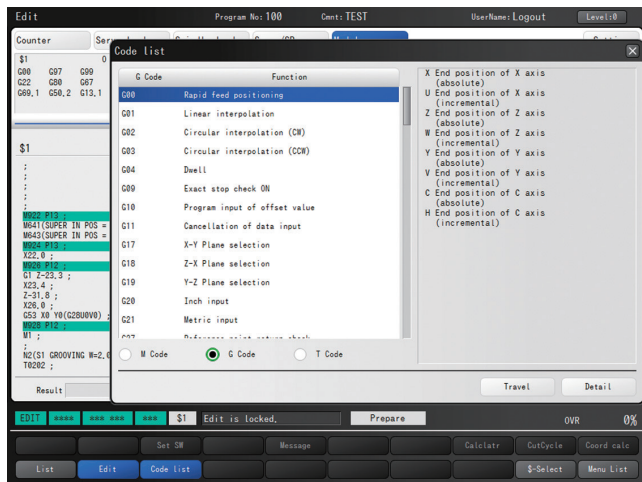
## Support for Setup



## Measurement tool setting screen

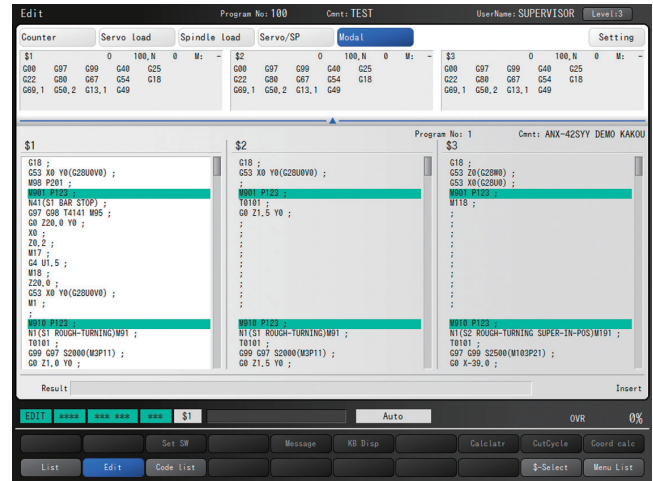
Allows you to link face numbers and G numbers, actually cut workpieces, and input tool geometry offset values. All tool setting can be accomplished on this screen.

## Support for Programming



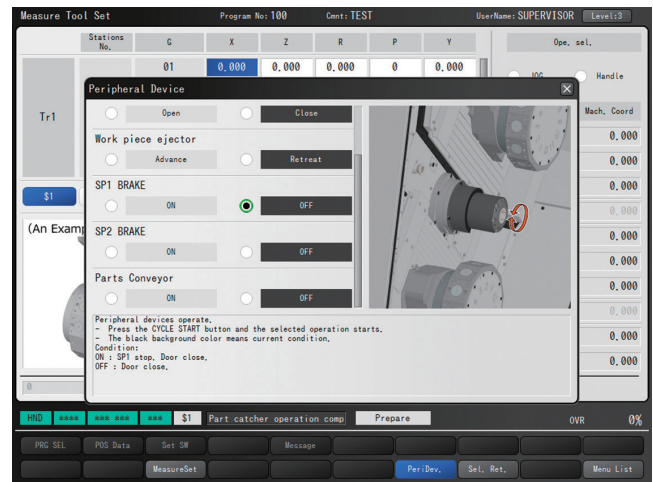
## Code list

Displays the usable G and M code arguments in a list. You can set arguments selected from this list and insert them into programs.



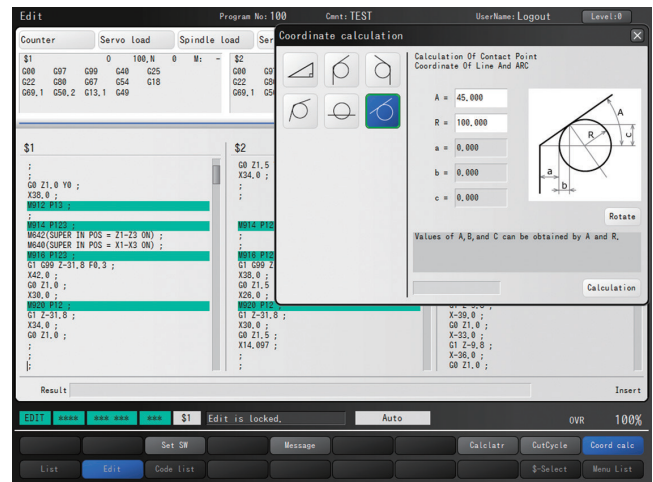
## Edit screen

Simultaneous display is possible with programs for three axis control groups. Synchronizing the displays when there is queuing between axis control groups provides an easy-to-understand view for even complex programs.



## Peripheral unit screen

During setup prior to operation, operation of the workpiece ejector, brake, and other items classified as peripheral units, can be checked just by tapping the screen and using the start button.

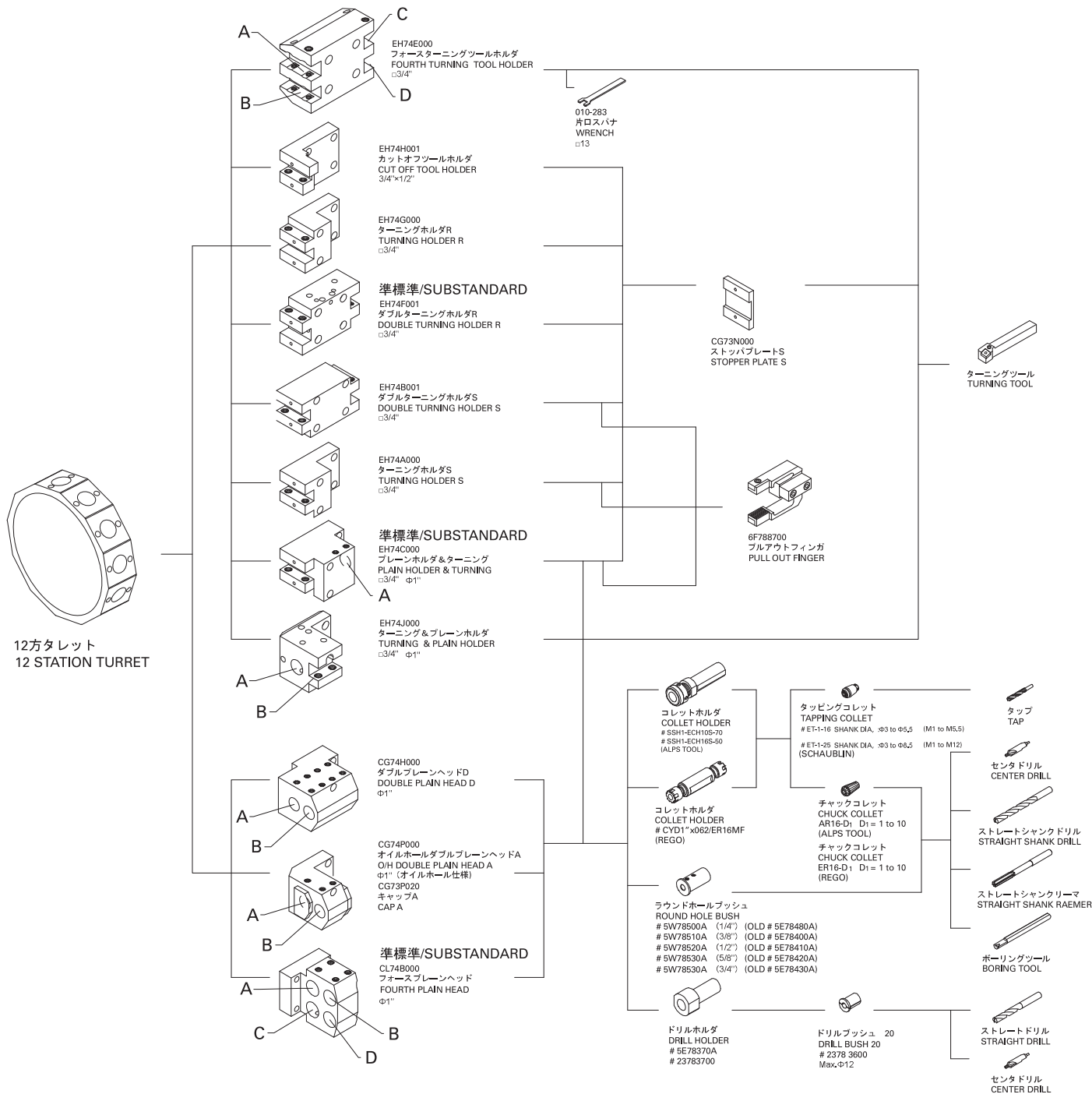


## Coordinate calculation

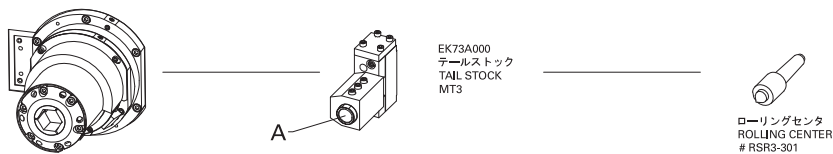
Complex intersection calculations can be performed on the display unit.

# Tooling System

## TURNING TOOL

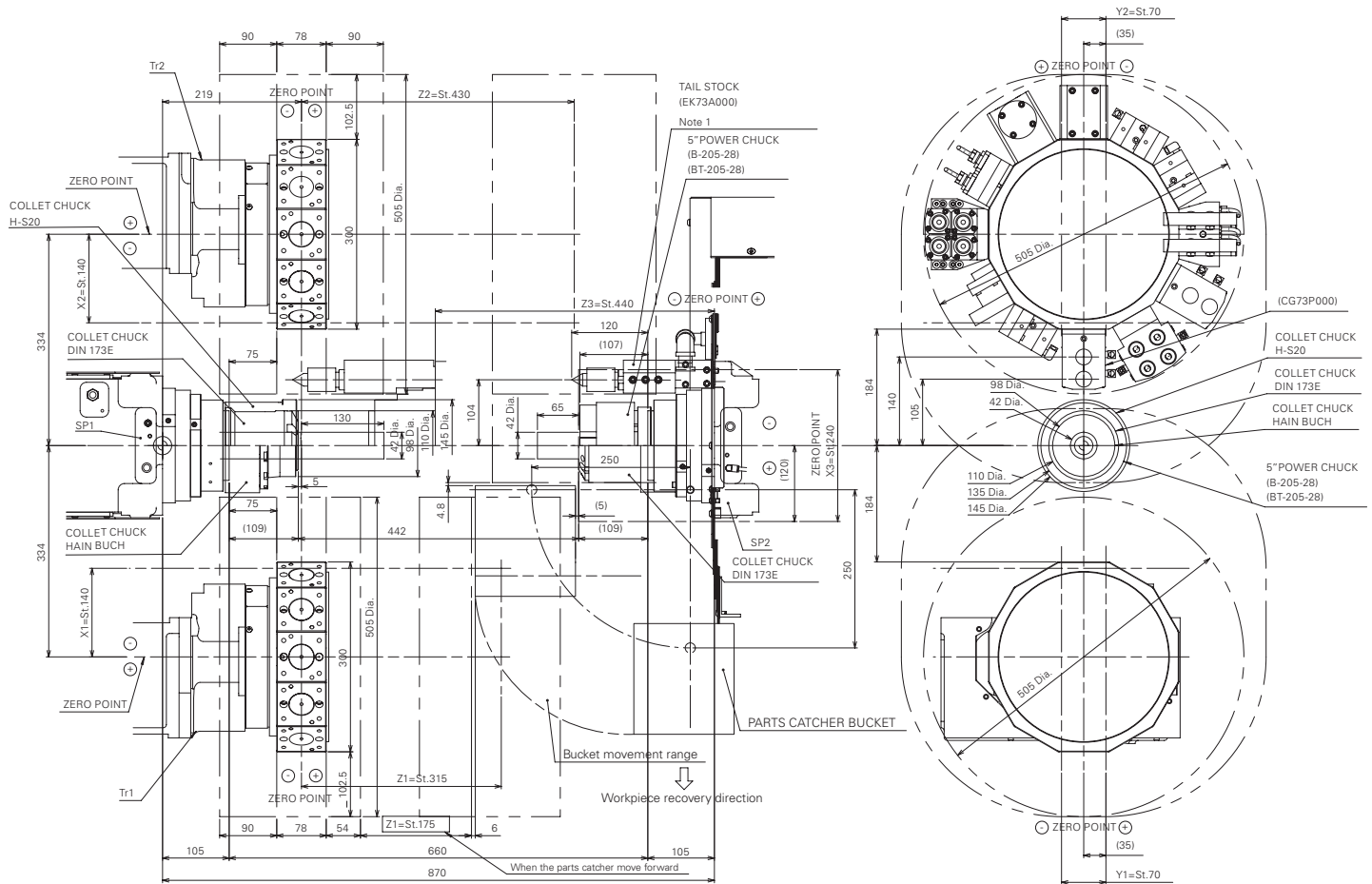


## TAIL STOCK



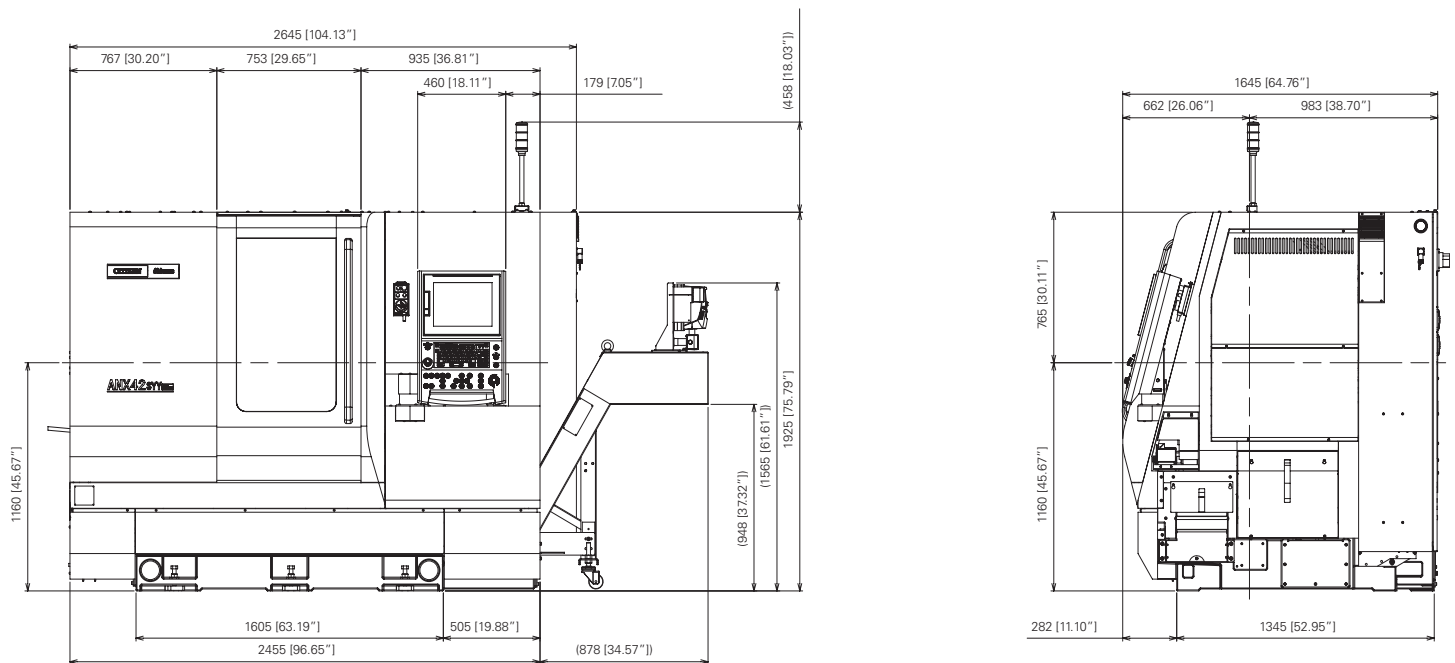
\* "A," "B," "C," "D" in the chart represent the tool holder hole positions. For the coordinates where the tool holder hole position and the spindle center coincide, refer to the instruction manual.

# Tooling Area



Note 1: Interference Tr2 tooling when attaching TAIL STOCK (EL73A000) Attention

# External View



# Machine Specifications

Item	ANX-42SYY		
Capabilities and requirements			
Maximum machining length		130 mm	
Max. machining diameter	S 1	Ø42 mm	
	S2	Ø42 mm	
Slide stroke			
Turret 1	X1	140 mm	
	Z1	315 mm	
	Y1	70 (±35) mm	
Turret 2	X2	140 mm	
	Z2	430 mm	
	Y2	70 (±35) mm	
S 2	X3	240 (±120) mm	
	Z3	440 mm	
Spindle			
Number of spindles		2	
Spindle speed	S1, S2	6,000 rpm	
Draw tube through-hole diameter	S1, S2	Ø46 mm	
Collet chuck type	S1, S2	DIN 173E (42 mm Dia.), Standard HAINBUCH, H-S20 Option	
Power chuck type	S1	Not available	
	S2	5" 2jaws/3jaws Chuck Option	
Machining capacity	S1	Drilling	Ø20 mm
		Tapping	M12 x 1.75
	S2	Drilling	Ø20 mm
		Tapping	M12 x 1.75
Spindle indexing			
Minimum spindle indexing command	S1, S2	0.001°	
Tool post			
Number of tool slides		2	
Type of the tool post	Tr 1, Tr 2	12-station turret	
Distance across turret head	Tr 1, Tr 2	300 mm	
Maximum indexing diameter	Tr 1, Tr 2	Ø505 mm	
Turning tool		Ø20 mm	
Drilling		Ø25 mm	
Revolving Tool			
Number of revolving tools mountable		Max.12/12	
Revolving tool drive type		Single drive mechanism	
Rotational speed of revolving tools		6000 min <sup>-1</sup>	
Machining capacity	Drilling	ØMax. 12 mm	
		Tapping	Max. M8 x 1.25
Rapid traverse rate			
	X1, X2, X3	24 m/min.	
	Z1, Z2	24 m/min.	
	Y1, Y2	18 m/min.	
	Z3	30 m/min.	
Motor			
Motor for spindle	S1, S2	11/7.5 kW (10 min./cont.)	
Motor for feed axes	X1, X2, X3	1.8 kW	
	Z1, Z2, Z3	1.2 kW	
	Y1, Y2	1.2 kW	
Motor for revolving tools	Tr 1, Tr 2	2.2 kW	
Coolant pump		0.18 kW x 2	
Motor for medium-pressure coolant (2 MPa)		1.5 kW Standard	
Required electric power source			
Power source used		AC 200/220 V + 5 % - 10 % 50/60 Hz±1 %	
Rated power consumption		34 kVA	
Load operation average power consumption		18.4 kVA	
Fuse capacity at machine side		125 A	
Pneumatic source		0.5 MPa	
Tank capacity			
Hydraulic tank capacity		4.8 Gallons	
Lubricating oil tank capacity		0.5 Gallons	
Coolant tank capacity		68.7 Gallons	
Machine size			
Machine height		1,925 mm	
Required floor area		2,650 mm x 1,645 mm	
Machine weight		13,779 lb	

## Standard Accessories

DIN 173E (42 mm Dia.) for S1 and S2	
Spindle brake	Air blower
Medium-pressure coolant (300 psi = 2 MPa)	Chip Conveyor
3-color signal tower	Workpiece Conveyor
Workpiece Ejector	Parts Catcher
Main Spindle Inner bushing	3-color signal tower

## Optional Accessories

Chip box	Chuck System (5" Power Chuck, H-S20)
High Pressure Coolant System (1000 psi = 7 MPa)	Mist collector
Drill Checker	

## Standard NC Functions

MIYANO SYSTEM Fs31i-B Plus	Interface: USB, RS232
15-inch XGA touch panel	User authentication function
On-machine program check function	Product counter: max. 8 digits
Operating time display	Automatic power-off function
Preparation function	B code I/F
Collision detection function	Tool offset 80 pairs per Line
Tool offset 200 sets (Total)	Program operation storage capacity 4 MB
Program storage area 10 MB	Sub-inch specifications
User macro	Corner chamfering and rounding
Optional block skip (9 sets)	Spindle constant surface speed control function
Spindle C-axis function	Spindle synchronized control function
Canned drilling cycle	Helical interpolation function
Synchronized tapping function	Milling interpolation function
Cylindrical interpolation	Thermal displacement correction function
Variable lead thread cutting	

## Special Additional NC Unit

Tool offset 400 Sets (Total)	Tool offset 99 Pairs per Line
Program storage capacity 100 MB	Program operation storage capacity 8 MB
Multiple repetitive cycle for turning	Circular thread cutting
LFV mode 1	Polygon turning function
Rotary tool feed per revolution	

## Environmental Performance Information

Basic Information	Model		ANX-42SYY
	Power consumption	Supply voltage	
Electrical power requirement			34 kVA
Required pneumatic pressure			0.5 MPa
Environmental Performance Information	Power consumption	Standby power*1	0.983 kW
		Power consumption with model workpiece*2	0.074 kWh/ cycle
		Power consumption value above converted to a CO2 value*3	31.524 g/ cycle
Air consumption	Required air flow rate		52.7 NI/min (max. 202.7 NI/min: when using air blow)
	Lubricating oil consumption	At power ON	3.0 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**
	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 2020 as published by the Ministry of the Environment.

\*\* 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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