

# CITIZEN

## Miyano

# ANX-42SY

Fixed Headstock Type CNC Automatic Lathe





## Innovative mill-turn centre ANX opens up a new era

The new model ANX featuring new functions opens up a new era for mill-turn centres. Now a fixed head lathe from Miyano brand is equipped with LFB technology for the first time utilising a Fanuc control. This solves the problem of swarf management that has persisted for many years.

Another aspect is the operating panel featuring the new HMI (human machine interface). Machine operating convenience has been improved, including compatibility of operations that assures ease of use for users of the Cincom brand in addition to Miyano customers. New operating methods are common between brands simplifying ease of use and speeding up setting times.

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 reduces cycle times significantly.

These advanced functions are packed into a compact machine footprint only 2,650 x 1,630 mm. The ANX achieves advanced functions, space savings and high productivity.

## LFB

LFB technology is featured on a fixed head lathe under the Miyano brand for the first time, fitted with the latest Fanuc 3li control. LFB\* is a technology for performing machining while oscillating the X and Z servo axes in the cutting direction synchronised with the rotation of the spindle.

It reduces issues caused by swarf entangling with the component or tool, and is effective for small-diameter deep hole machining and the machining of difficult-to-cut materials.

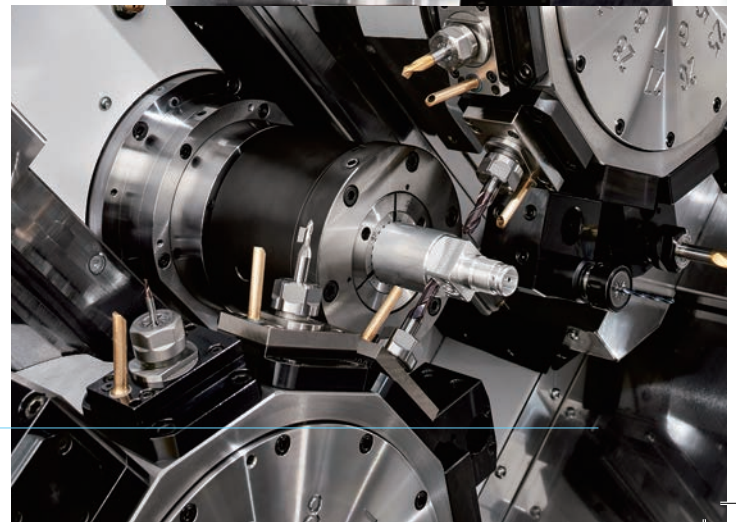
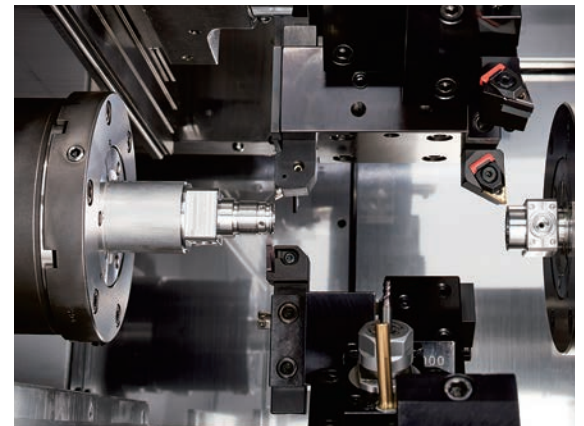


\* "LFB" is a registered trademark of Citizen Watch Co., Ltd.

Item	LFB 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	HD1 LFB	HD2 LFB	LFB mode 1
ANX-42SYY	X1, Z1 Conventional cutting on the HD2 side	X2, Z2 Conventional cutting on the HD1 side	✓

Note 1: LFB machining cannot be performed with the Y axis.  
Note 2: LFB machining can be performed simultaneously on a maximum of two axes at the same time.



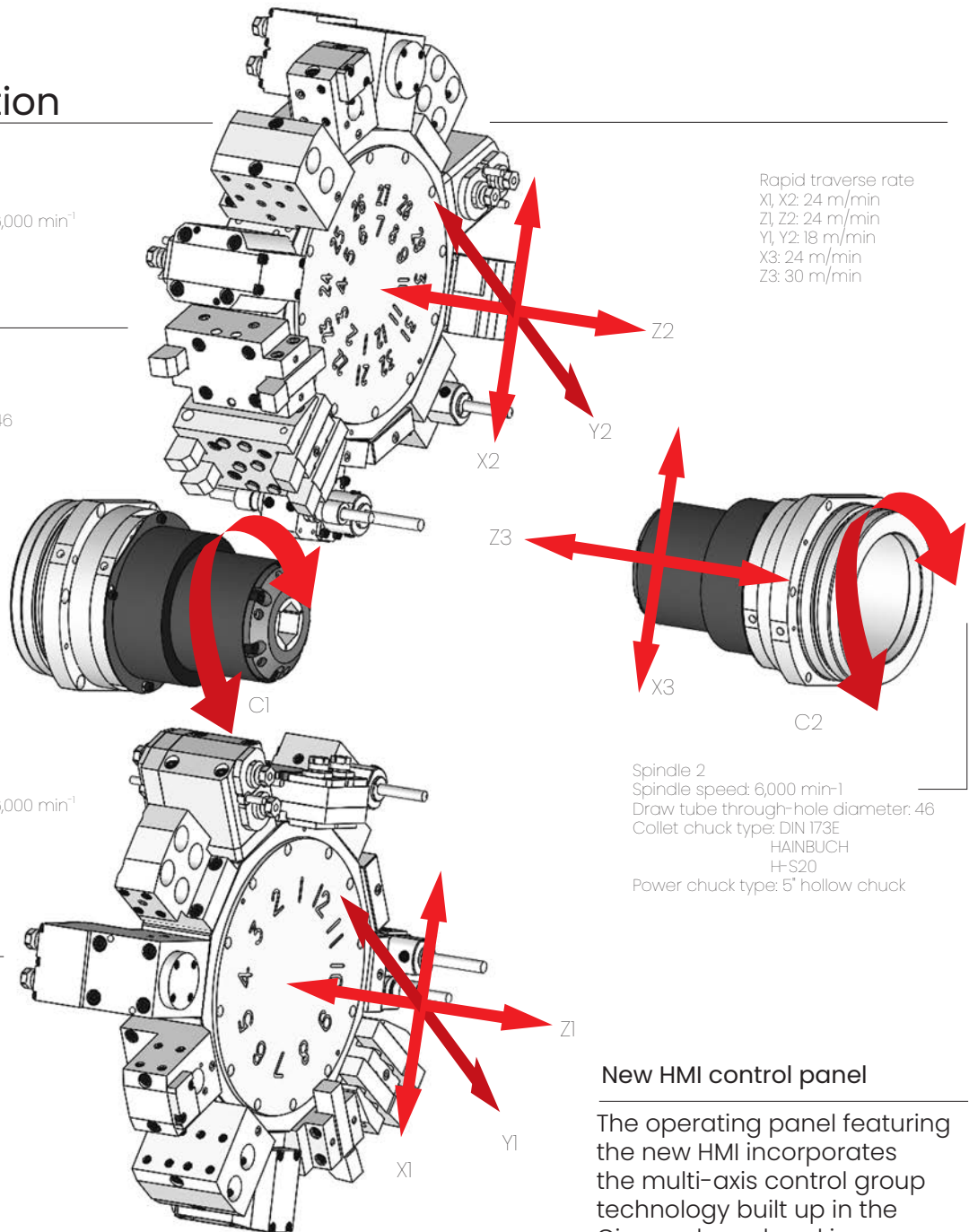
# Basic construction

Turret head 1  
 12 stations all-driven  
 Multiple tool holders available  
 Rotational speed of revolving tools: 6,000 min<sup>-1</sup>  
 Revolving tool torque: 20Nm

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

Turret head 2  
 12 stations all-driven  
 Multiple tool holders available  
 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 2  
 Spindle speed: 6,000 min<sup>-1</sup>  
 Draw tube through-hole diameter: 46  
 Collet chuck type: DIN 173E  
 HAINBUCH  
 H-S20  
 Power chuck type: 5" hollow chuck

## New HMI control panel

The operating panel featuring the new HMI incorporates the multi-axis control group technology built up in the Cincom brand and improves productivity with simultaneous machining.

In addition, the latest NC unit and 15" touch panel have greatly improved operating convenience.



## 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 true opposed spindles also have the same capabilities and the built-in motor incorporated in each spindle achieves shorter acceleration and deceleration with better response for improved cycle times.

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



## Unloader

An in-machine unloader has been added. It contributes to automation and labor savings by preventing dents and transferring workpieces to the next process.



# Machine specifications

Item	ANX-42SYY	
<b>Machining capacity</b>		
Maximum machining length		130 mm
Bar capacity, round	SP1, SP2	42 mm Dia.
<b>Slide stroke</b>		
Turret slide HD1	X1	140 mm
	Z1	315 mm
	Y1	70 (±35) mm
Turret slide HD2	X2	140 mm
	Z2	430 mm
	Y2	70 (±35) mm
Spindle No.2	X3	240 (±120)
	Z3	440 mm
<b>Spindles</b>		
Number of spindles		2
Spindle speed	SP1, SP2	6,000 min <sup>-1</sup>
Inner diameter of draw tube	SP1, SP2	46 mm Dia.
Collet chuck model	SP1, SP2	DIN173E(42 mm Dia.) HAINBUCH, H-S20
Power chuck model	SP1, SP2	5" Power chuck
Cutting capability	SP1, SP2	Drill 20 mm Dia. Tap M12 x 1.75
<b>Spindle indexing</b>		
Minimum indexing command	SP1, SP2	0.001°
<b>Turret</b>		
Number of turrets		2
Number of tool stations	HD1, HD2	12 St.
Distance across flat	HD1, HD2	300 mm
Maximum index clearance	HD1, HD2	505 mm Dia.
Tool shank size		20 mm Sq.
ID tool hole size		25 mm Dia.
<b>Revolving tool</b>		
Number of rev.tool installed		Max12/ 12
Rev.tool drive type		Single clutch drive
Rev.tool speed		6000 min <sup>-1</sup>
Cutting capability		Drill Max. 12 mm Dia. Tap Max. M8 x 1.25
<b>Rapid traverse rate</b>		
Rapid traverse rate	X1, X2, X3	24 m/ min.
	Z1, Z2	24 m/ min.
	Y1, Y2	18 m/ min.
	Z3	30 m/ min.
Motor for slide	X1, X2, X3	1.8 kw
	Z1, Z2, Z3	1.2 kw
	Y1, Y2	1.2 kw
Motor for spindle	SP1, SP2	11/ 7.5 kw (10 min/ cont.)
Motor for rev.tool	HD1, HD2	2.2 kw
Motor for coolant pump		0.18 x 2
Motor for medium-pressure coolant (2 MPa)		1.5 kw (50/60 Hz)
<b>Power supply</b>		
Voltage		AC 200/ 220 + 5 % - 10 % 50/ 60 Hz±1 %
Capacity		34 KVA
Air supply		0.5 Mpa
Fuse		125 A
<b>Tank capacity</b>		
Hydraulic oil capacity		18 L
Lubricating oil capacity		2 L
Coolant tank capacity		280 L
<b>Machine dimensions</b>		
Machine height		1,900 mm
Floor space		2,650 x 1,630 mm
Machine weight		6,200 kg

## Standard NC functions

MIYANO SYSTEM Fs3li-Model B Plus	
15-inch XGA touch panel	Program operation storage capacity 4 MB
USB slot	User macro
On-machine program check function	Corner chamfering/ Corner rounding
User authentication function	Optional block skip (9 sets)
Operating time display	Spindle constant surface speed control function
Product counter Max. 8 digits	Spindle C-axis function
Machine operation information display	Spindle synchronised function
Eco display	Canned cycle drilling
Preparation function	Program Part way restart function
Automatic power-off function	Synchronized tapping function
Collision detection function	Sub-micron specifications
B code I/ F	Inch specifications
Tool offset pairs 200	Sub-inch specifications
Program storage capacity 10 MB	Interference check function
Multiple repetitive cycle for turning	Thermal displacement correction function
Milling interpolation function	Cylindrical interpolation

## Special NC functions

LFV mode I	Program operation storage capacity 8 MB
Revolving tool feed per revolution	Variable lead thread cutting
Tool offset pairs 400	Circular thread cutting
Tool life management	Polygon turning function
Tool monitor	alkarttransfer
Program storage capacity 100 MB	Helical interpolation function

## Standard equipment

Spindle brake	Tool setter
Spindle Air blow	Swarf conveyor
Turret air blow	Swarf bin
Through-spindle air blow	Mist collector duct
Workpiece ejector	Tailstock function
Parts catcher	
Parts conveyor	
Coolant level switch	
Chuck System	
RS-232C	

## Options

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