CITIZEN

Miyano

Preface

Dear Readers,

Citizen Machinery Europe GmbH has successfully been selling Swiss type lathes and fixed head automatic lathes of the brands Cincom and Miyano all over Germany and in large parts of Europe for many decades. With our 4 locations in Esslingen, Villingendorf, Neuss and Radebeul, we are always personally at your disposal and always in close vicinity throughout Germany to answer your questions regarding sales and other issues. In all service matters, we are there for you in whole of Europe.

Under the Cincom brand, we sell Swiss-type lathes which demonstrate their full power and performance when machining long workpieces and small diameters.

The Miyano brand measures up to all challenges when turning short workpieces in fixed-headstock applications. The machines distinguish themselves by high productivity, quality and precision and grant excellent results in diameter ranges of up to 80 mm.

Our path-breaking LFV Technology as well as laser integration have revolutionized the cutting process. We will continue to work hard on developing new innovations and provide optimum solutions to our customers. With future-oriented products, we look forward to stepping into the future together with you.

Markus Reissig
General Manager Citizen Machinery Europe GmbH

BNA 42 S

Space-saving design with improved functions and maximum precision. Sets the new standard in bar machining.

The BNA series combines high-tech functions and maximum precision in an extremely compact space-saving machine. The series includes the model BNA-S equipped with one back spindle (SP2) for back machining.

Advantages

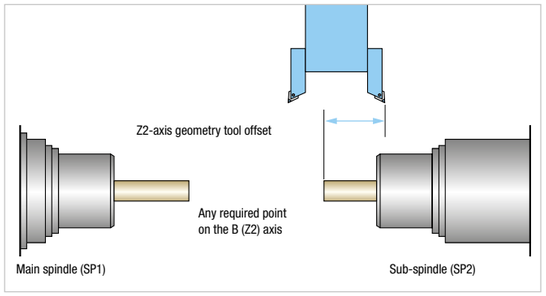
Equipped with a back spindle for tapping the workpiece and for backside machining.

Due to several tool holders, numerous tools can be used.

2,77 m²

Machining examples

Arbitrary point control by B (Z2) axis



The approach for secondary operation can be made at any required point on the B (Z2) axis, so there is no need to consider the position of the B (Z2) axis when setting the offset for tools that operate on the sub-spindle (SP2).

Wasted motion is eliminated, and a smooth transition from primary to secondary operation can be made at turret index, helping to reduce cutting time.

Machining program example

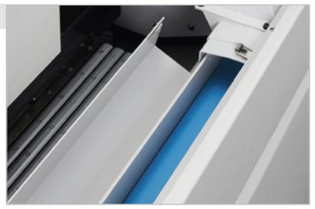
```
O1000 ;
G591 ;          G591 : B-axis program registration start
G0 B-260. ;     B-axis forward
G01 B-290.43 F4000. ;   B-axis positioning
M408 ;          M408 : M403 completion confirmation
M118 ;          M118 : SP2 chuck close
G590 ;          G590 : B-axis program registration end
•
•
N8 (CUT OFF) M91 ;      M91 : SP1 position coder selection
G28U0 ;         X-axis origin point return
M291 ;          M291 : B-axis program execution start
T0808M117 ;     Turret selection, M117 : SP2 chuck open
G0G97Z0.S2000M403P11 ;  Z-axis positioning,
                M403SP1&2 Synchronous forward
                Immediate completion
X23.0 ;         X-axis positioning
M290 ;          M290 : B-axis program execution
                completion confirmation
G506K0.05F500 ;         G506 : B-axis incremental move
G99G1X-1.0 ;    Cut off
G0X50.0M205 ;   M205 : SP1&2 Synchronous stop
•
```

Synchronous Execution from M291

B (Z2) axis independent multiple block commands can make it possible for B (Z2) axis programs input in advance to run independently from the main program.
B (Z2) axis commands can contain maximum 10 blocks.

Standard

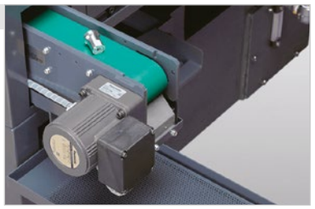
1 

2 

1 Part catcher
2 Part conveyor belt

Options

1 Part conveyor
2 Chip conveyor
3 Barfeeder
4 Tool monitor

1 

2 

3 

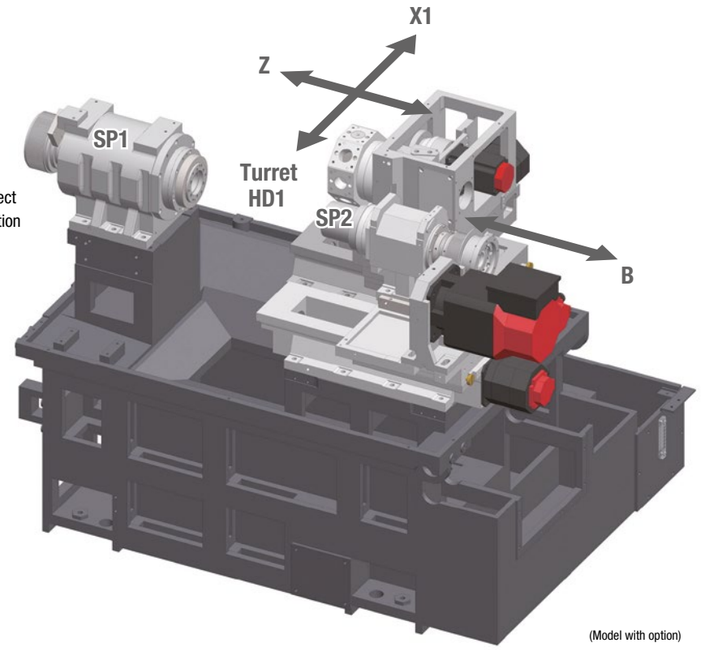
4

```
TOOL MONITOR  MONITORING   No.01
%    25   50   75   100  125  150  PEAK
X  ********************          100
Z  ********************          103
Y
B
C
A
S1
S2 *                               5
```


Layout

Stable, accurate and strong

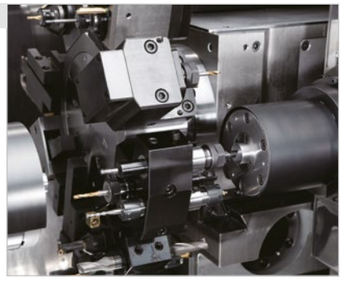
The machine bed has a platform structure with traditional square, hand-scraped slidways for assured accuracy and long tool life. The unit mounting faces are not distorted by the effects of heat, and even if the units are subject to thermal expansion they are all displaced in the same direction (perpendicular to their mounting faces), minimizing relative deviations between the workpiece and cutting tools.

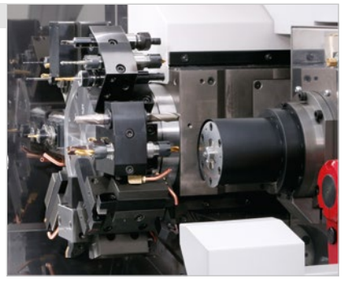


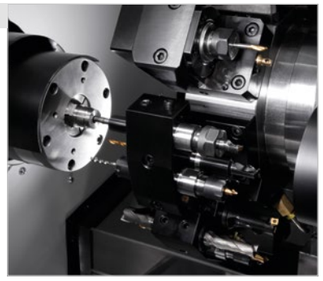
(Model with option)

Working area

1 Back spindle for complete machining.
2 The turret may be expanded to accommodate 16 stations.
3 The BNA-S disposes of two spindles and one turret.
4 Easy to use tooling system.

1 

2 

3 

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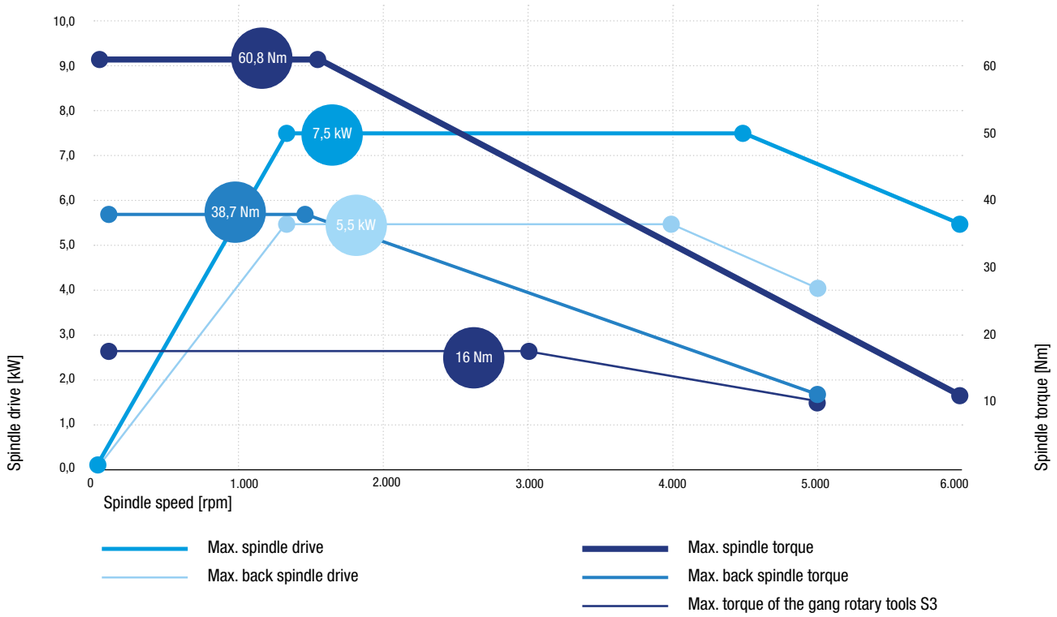
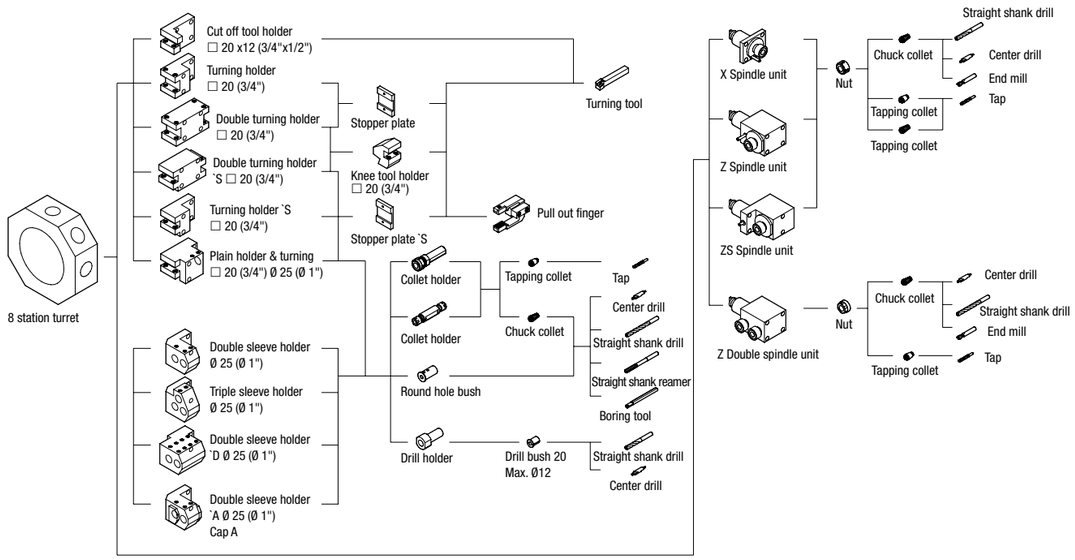
Performance diagram

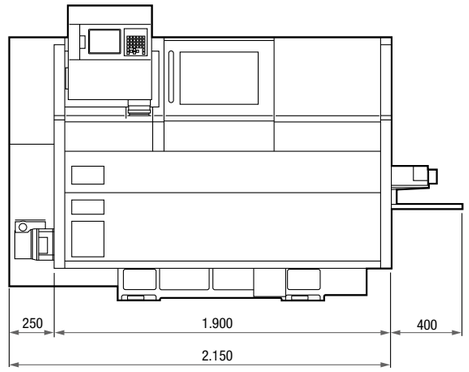


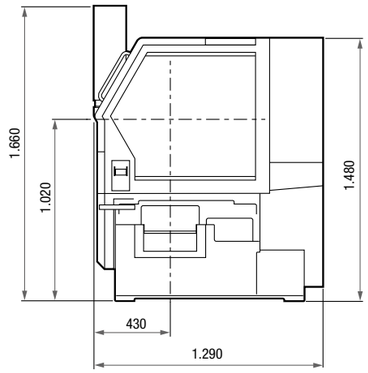
Tooling System



Floor plan

S





Machine specification

Item	BNA-42S
Max. machining diameter (main spindle)	Ø 42 mm
Max. machining diameter (back spindle)	Ø 42 mm
Maximum machining length	100 mm
Axis strokes	
X1 axis	135 mm
Z1 axis	235 mm
B axis	310 mm
Spindle	
Number of spindles	2
Inner diameter of draw tube – spindle 1	Ø 43 mm
Inner diameter of draw tube – spindle 2	Ø 30 mm
Speed – spindle 1	6.000 rpm
Speed – spindle 2	5.000 rpm
Collet type – spindle 1	DIN collet
Collet type – spindle 2	DIN collet
C axis – spindle 1	0.001°
C axis – spindle 2	0.001°
Turret	
Number	1
Number of stations – turret 1	8
Turning tool cross section	☐ 20 mm
Sleeve diameter	Ø 25 mm
Rotary tools	
Number of rotary tools	max. 8
Rotary tool speed	5.000 rpm
Max. drilling diameter	Ø 10 mm
Max. front tapping diameter	M6 x 1
Rapid feed rate	
X1 axis	20 m/min
X2 axis	20 m/min
B axis	20 m/min
Motor Output	
Main spindle	5.5/7.5 kW
Back spindle	3.7/5.5 kW
Rotary tools	1.0/2.8 kW
Volume of tank	
Coolant tank	165 l
NC Specification	
Control type	Fanuc 0i-TD
Screen	8.4 inch color liquid crystal display (LCD)
Controllable axes	X1, Z1 (BNA-C), -X1, Z1, Z2 (BNA-S), X1, Z1, Y, X2, Z2 (BNA-DHY)
Auxiliary axes	C3, TI
Input	ISO
Tool compensation	80 pairs
Memory capacity	1 Mbyte (2560 m)
Interpolation	G01, G02, G03
Thread cutting cycle	G32, G92
Fixed cycles	G90, G92, G94
Input/output interface	PC card
NC standard functions	
Corner chamfering / rounding function, tool nose R compensation, Constant cutting speed control (G70–G76), Synchronous tapping, Drilling cycle (G80–G86), Tool life monitoring,	
Machine dimensions	
Machine height	1.660 mm
Floor plan	W 2.150 × D 1.290 mm
Weight	2.800 kg
Machine equipment (standard)	
4 pces. Standard spindle liner tube; Automatic central lubrication; Cooling lubricant system; Compressed air unit; Hydraulic equipment; Hydraulic clamping cylinder; Main spindle collet system DIN173E; Back spindle collet system DIN171E, Limit switch clamping system open/closed at main spindle & back spindle; Machining area door with safety lock; Total parts counter & preset parts counter; Parts catcher and part conveyor belt; Signal lamp (tricolor); Cut-off control (electrical); Automatic shut-off in case of alarm; Pneumatic parts ejector (at back spindle), Interface for bar loading magazine	
Special machine equipment (options)	
Cable 4G25 for transformer 35 kVA to machine; Compressed air gun and compressed air supply; 5" 3-jaw chuck for Ø 51 main spindle; Cartridge for back spindle SKF; DIN173E holder back spindle, Oil pan; Chip chute; Long part option for Miyano BNA-42S2	

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