Miyano
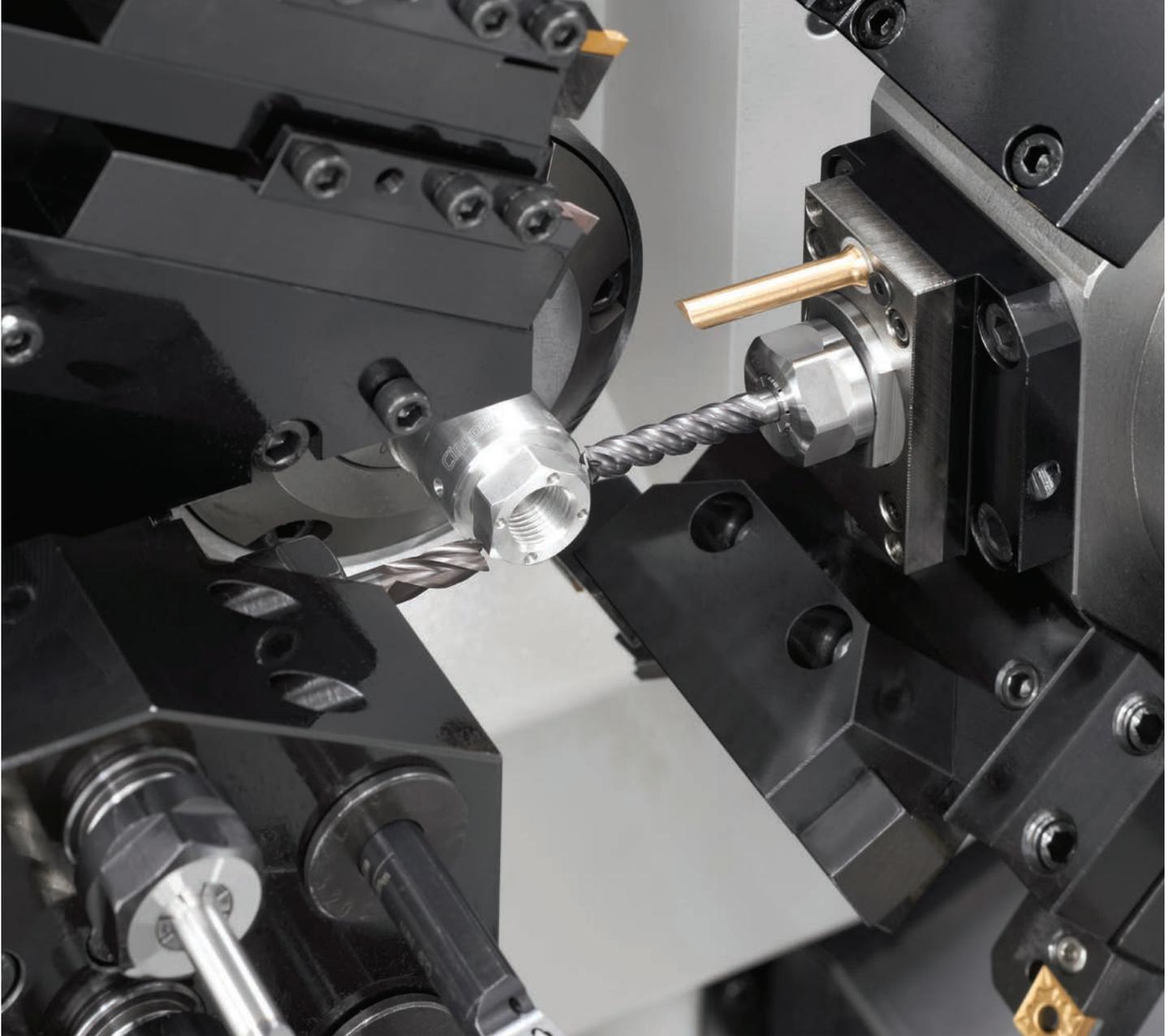
BNA-42GTY

Fixed Headstock Type Automatic CNC Lathe

BNA

BNA-42GTY

Configured with two spindles, one turret, two Y axes, gang tools and X3 axis to back spindle, the BNA-42GTY can mount up to 45 tools.

- 3 tool simultaneous cutting
- renowned Miyano accuracy
- high productivity with fast cycle times
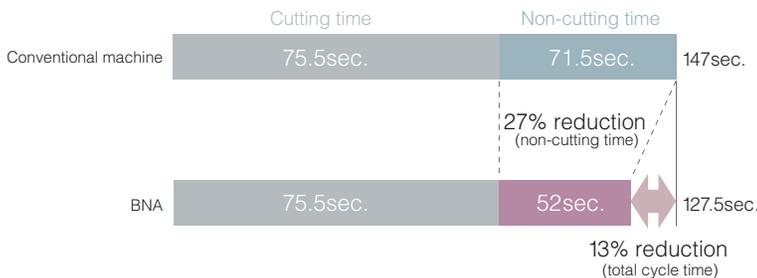- versatile tool layout

Designed for accuracy and long tool life

High-rigidity hand scraped slideways are used on all axes. These slideways with face contacts have exceptional rigidity and damping characteristics, enable powerful cutting, and help to prolong cutting tool life. The bed where major machine units such as spindles and tool slides are mounted has a platform-like surface table structure.

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.
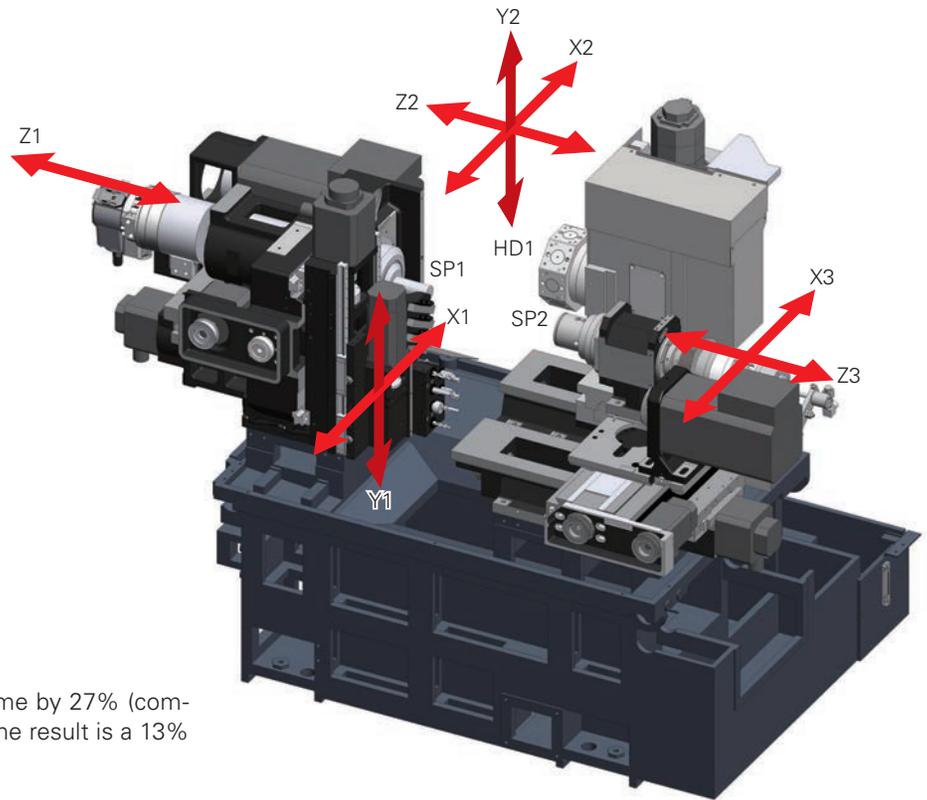
Substantial Reduction in Non-cutting Time

The unique control system cuts non-cutting time by 27% (compared to earlier equivalent Miyano products). The result is a 13% reduction in cycle time.

	Cutting time	Non-cutting time	
Conventional machine	75.5sec.	71.5sec.	147sec.

27% reduction
(non-cutting time)

BNA	75.5sec.	52sec.	127.5sec.

13% reduction
(total cycle time)
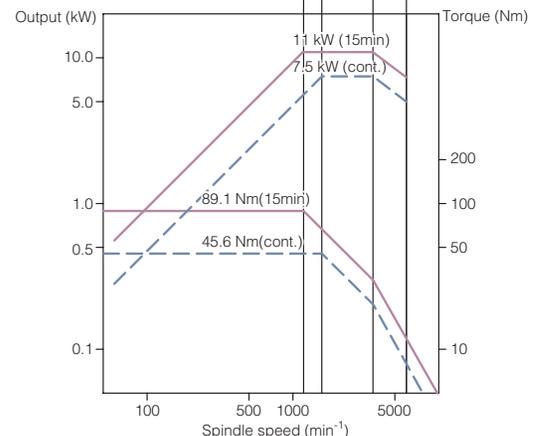
Easy to Use Tooling System

The turret has 8 stations, but the half-indexing mechanism makes it possible to mount tools at up to 16 positions. The use of optional multiple tool holders can further increase the number of tool positions.

Spindle Motors with Increased Output

The spindle 1 motor has the highest output in the BNA series. This enables powerful cutting.

Motor pulley diameter: ϕ125mm Moto r(min^{-1}) 1500 2000 4500 7632
Speed-reduction rate: 0.786
Spindle pulley diameter: ϕ159mm Spindle (min^{-1}) 1179 1572 3537 6000

Output (kW) Torque (Nm)

11 kW (15min)
7.5 kW (cont.)

89.1 Nm(15min)
45.6 Nm(cont.)

Spindle speed (min^{-1})

Cycle time shortened by superimposition control

Superimposition control allows simultaneous cutting with two tools at the main spindle (SP1), or with three tools when the sub spindle (SP2) is included, shortening cycle times.
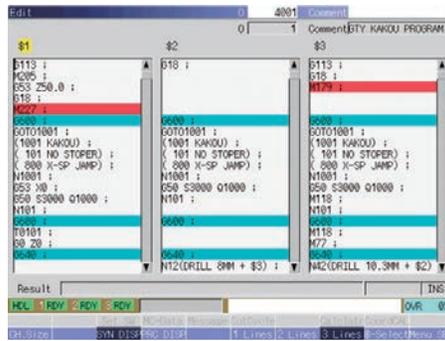

Examples

	Simultaneous machining with 2 tools			Simultaneous machining with 3 tools
	■ Independent simultaneous machining of front/ back faces	■ Superimposition simultaneous machining of front/ back faces	■ Simultaneous machining of front/ back faces	■ Superimposition simultaneous machining of front/ front/ back faces
Turning				
Turning				
Milling				
Milling				

Tooling area

Tooling system

Triple turning tool holder □0.79"	
Double turning toll holder □0.79"	
Cut off tool holder □0.79" × 0.47"	
Turning holder □0.79"	
Double turning holder □0.79"	
Double turning holder S □0.79"	
Turning holder S □0.79"	
Plain holder & turning □0.79" φ1"	
Double sleeve holder φ1"	
Triple sleeve holder φ1"	
Double sleeve holder D φ1"	
Double sleeve holder A φ1"	
Quad sleeve holder φ1"	

8 Station turret

Stopper plate
Knee tool holder □20
Stopper plate S
Pull out finger
Turning tool

Collet holder
Collet holder
Round hole bush
Drill holder

Tapping collet
Chuck collet
Drill bush 20

Tap
Center drill
Straight shank drill
Straight shank raemer
Boring tool
Straight drill
Center drill

X Spindle unit ER16/AR16
Z Spindle unit ER16/AR16
ZS Spindle unit ER16/AR16
Z Double spindle unit ER11/AR11
X Double spindle unit ER11/AR11
Z Quad spindle unit ER11/AR11

Nut
Chuck collet
Tapping collet
Tapp collet

Straight shank drill
Center drill
End mill
Tap

Nut
Chuck collet
Tapping collet

Center drill
Straight shank drill
End mill
Tap

Gang tool slide

Turning tool holder □20
Revolving unit ER16/AR16 (3 positions)
Revolving tool drive unit
Back tool post Ø25

Turning tool

Collet holder
Collet holder
Round hole bush
Drill holder

Nut
Chuck collet
Tapping collet
Tapp collet
Tapping collet
Chuck collet
Drill bush 20

Straight shank drill
Center drill
End mill
Tap
Tap
Center drill
Straight shank drill
Straight shank reamer
Boring tool
Round shank tool for external
Straight drill
Center drill

Support screens improve operating convenience

The program screen, organized for easy reading, can be displayed in synchronization with the editing screen. This simplifies the editing of complex programs with a lot of queuing.
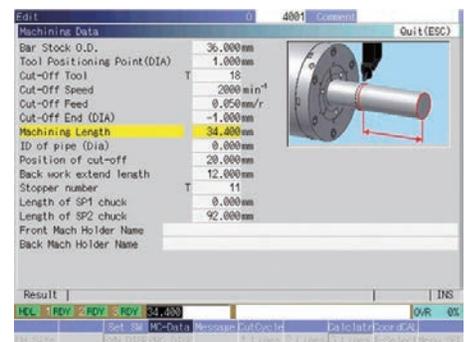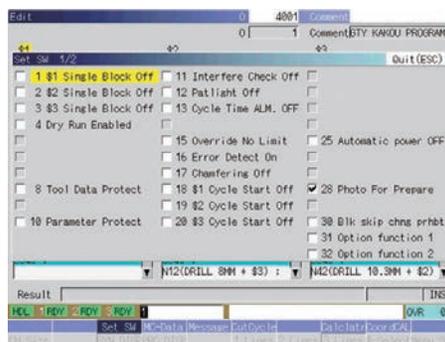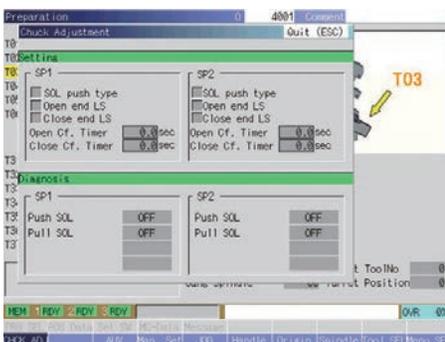

HMI (Human Machine Interface) is adopted
Graphics displayed for each item and screens that display all the necessary information in one place greatly improve operating convenience.
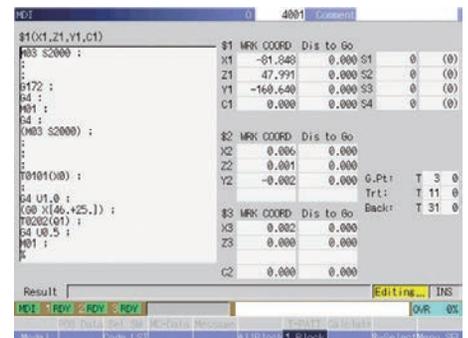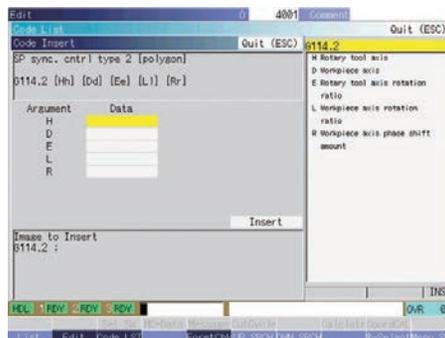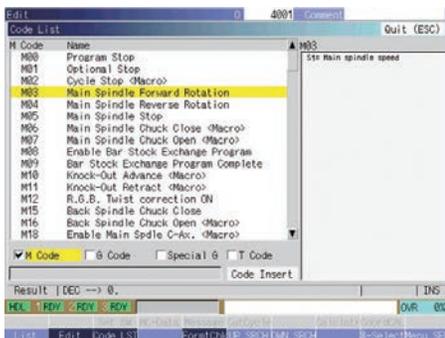
The function displays the list of G and M codes including explanations of the arguments to support programming.
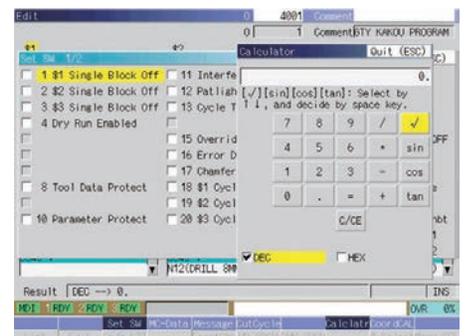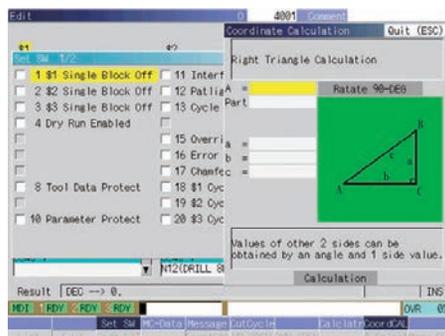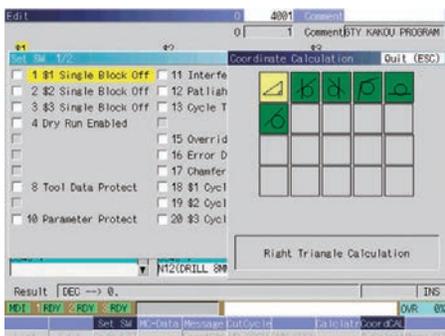

The coordinate calculation function and calculator function incorporated in the NC unit can be used for complex intersection point calculations.
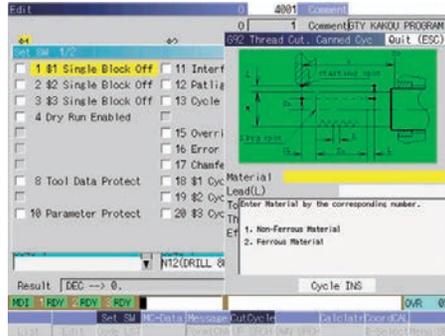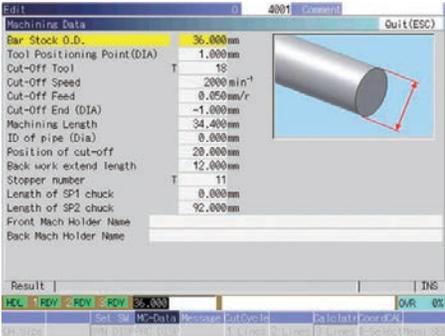
All you have to do is input the machining length, chucking length and so on, and the escape and approach positions are automatically calculated. This is useful for collision prevention and shortening setup times.

Programs for canned cycles etc. can be created in the conversational style.

External View

58

1658

1120

182

2350

460

2810

530

648

1508
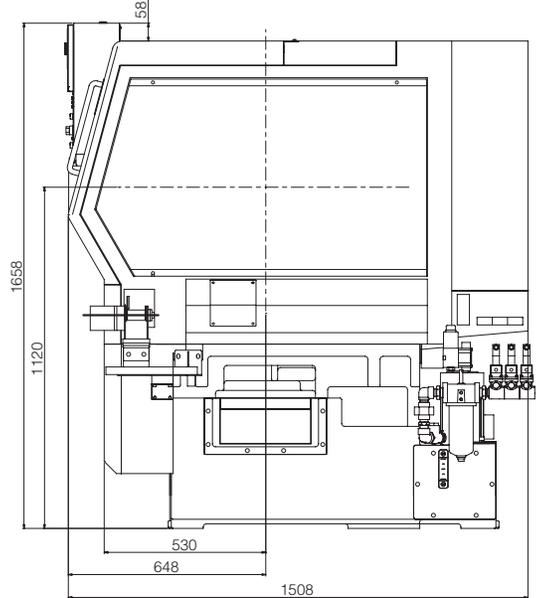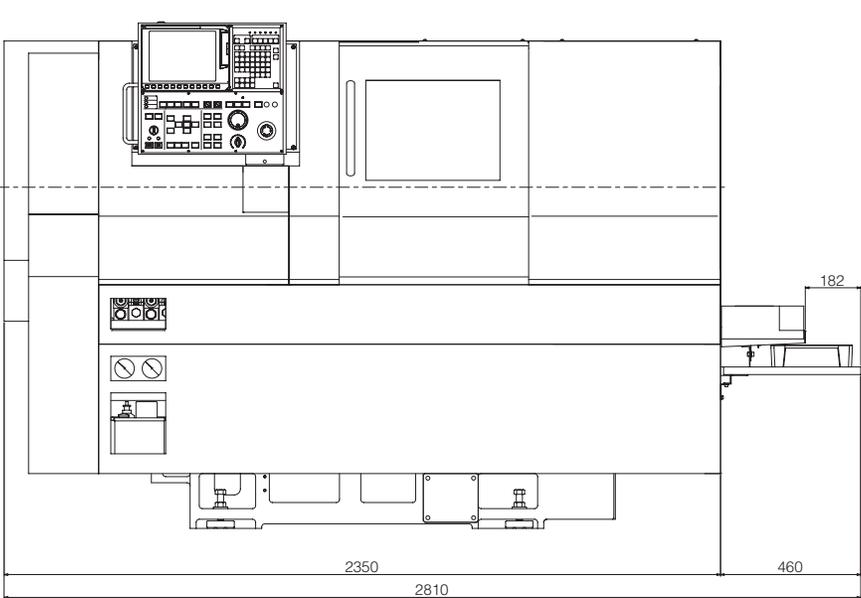
Machine Specifications

Item		BNA-42GTY	
Machining capacity			
Max. machining diameter of bar work	SP1	Ø42 mm	
	SP2	Ø42 mm	
Max. machining length		110 mm	
Spindle			
Number of spindle		2	
Spindle speed range	SP1	6,000 rpm	
	SP2	5,000 rpm	
Spindle minimum index angle	SP1	0.001°	
	SP2	0.001°	
Turret			
Number of tools		21 ~ 45	
Gang tool post	Front Turning	3	
	Front revolving	3	
	Back ID tools	5	
Turret		8 Sta.	
	Revolving tool	8 Sta. available	
Shank size of turning tool		3/4"	
Diameter of sleeve holder		1"	
Revolving tool chuck		ER16	
Tool spindle speed range		6,000 rpm	
Slide stroke			
Axis stroke/Rapid speed	Z1 axis	110 mm	30 m/min
	X1 axis	95 mm	24 m/min
	Y1 axis	260 mm	30 m/min
	Z2 axis	235 mm	20 m/min
	X2 axis	140 mm	20 m/min
	Y2 axis	70 mm	12 m/min
	Z3 axis	360 mm	20 m/min
	X3 axis	190 mm	12 m/min
Motors			
Spindle drive	SP1	11/7.5 kW (15min/cont.)	
	SP2	5.5/3.7 kW (15min/cont.)	
Revolving tool drive	Turret	1.0 kW	
	Gang tool	1.5 kW	
Power supply			
Electrical capacity		34 KVA	
Air supply		0.5 MPa	
Coolant tank capacity		165 L	
Machine dimensions			
Machine height		1,680 mm	
Floor space		2,350 W × 1,475 mm D	
Machine weight		3,740 kg	

Standard Accessories
Main spindle chucking device
Back spindle chucking device
Filler tube assembly
Spindle air blow (SP1)
Inner high pressure coolant & air blow (SP2)
Spindle disk brake (SP1 & SP2)
Coolant system (with level detector)
3-color signal tower
Lubricating oil supply unit (with level detector)
Machine relocation detector
Door lock
Workpiece conveyor
Cut-off confirmation
Chip conveyor
Recommended tool package
High pressure coolant device

Optional Accessories
5″ power chuck (SP1)
SP2 Chucking system for B42 (compatible with DIN173E) (~42mm)

Standard NC Functions
Background editing
User macro
Geometry & wear offset
Number of tool offset: 80 pairs
Part program storage capacity 320 m
RS232C Interface
Run hour/parts number counting
Total & preset counter
C-axis for Main (left) and Back (right) spindles
Milling interpolation
Helical interpolations
Canned cycle for drilling
Chamfering / Corner R
Constant surface speed control
Multiple Repetitive Cycle
Rigid tapping for SP1/SP2 and revolving tool
Skip function
Tool nose R compensation
Y-axis offset
Polygon Turning

Optional NC functions
Network I/O function

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