

- **New NC M70L (MITSUBISHI) built in**
- **Shorten idle time at rapid feed rate speed of 36m/min.**
- **Facilitate complicated machining by C-axis of the simple belt**
- **Enable selection of the best tool suitable for versatile application**



**NN-16SB6**

#### Safety System (Standard Equipment)



##### Coolant oil cut-off detector

Stops the machine automatically when the pressure of coolant oil decreases below specified level.



##### Door safety interlock switch

Causes the main power breaker to trip and the power to shut down when electric cabinet cover is opened.



##### Lightning surge protection function

Protects electronic circuit from high voltage to shut down noise such as lightning.



##### Auto power interception

Switches off the power breaker on the machine automatically when the machine is stopped during the automatic operation for any reason.



##### Main spindle load detection mode

Stops the machine detecting defects in the main spindle when standard load and actual main spindle load are different.



##### Cut-off tool breakage detector

Stops the machine automatically detecting materials that cannot be completely cut-off due to the breakage failure of the parting tool.



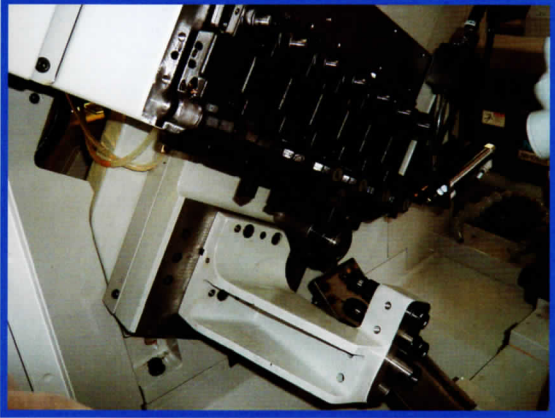
##### Tap breakage detector (Option)

Stops the machine automatically detecting broken tap while processing the edge face of the tap.

## Versatile advanced SB6 series, covering from simply turning to complicated machining

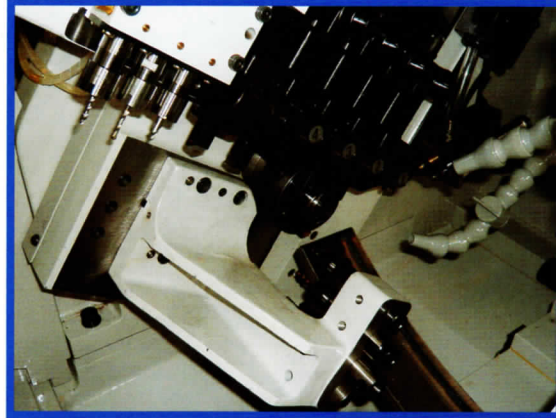
NN-16SB6 series of its sophisticated mechanism, being combined with the latest NC (MITSUBISHI 70 series) built in, are easier to operate than ever, and improve precision and speed on machining. The 4 types are to answer your machining needs respectively. Type 1 is an appropriate machine for turning, and Type 3 is a multiple machine for complicated machining, which enables higher precision and speed. For each type, refer to the followings.

### type 1 (Turning + Front-face)



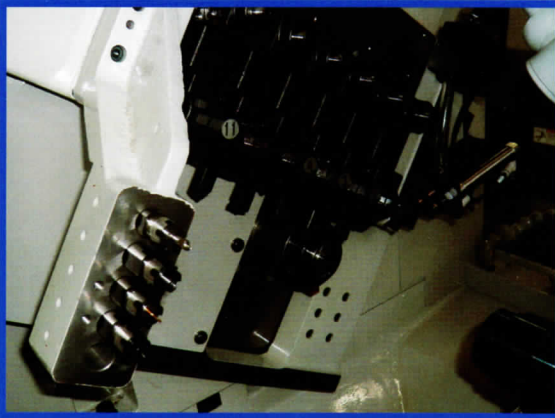
Tool Name	Size	Equipment
OD tool (Tool Holder)	□ 12.7 × 7 (130mm max.)	Standard
ID tool	ER11 × 4 (Single drill holder)	Standard
	ER16 × 3 (Single drill holder)	Option

### type 2 (Turning + Cross + Front-face)



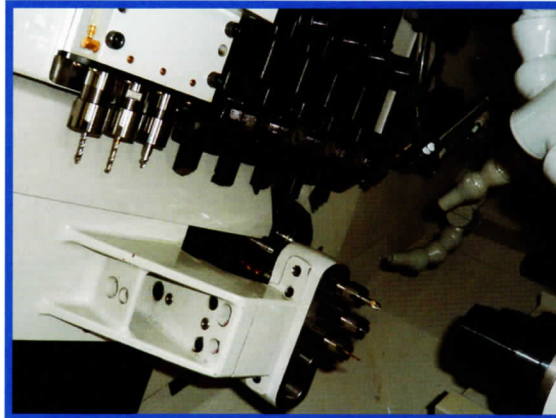
Tool Name	Size	Equipment
OD tool (Tool Holder)	□ 12.7 × 5 (130mm max.)	Standard <sup>(*)</sup>
ID tool	ER11 × 4 (Single drill holder)	Standard
	ER16 × 3 (Single drill holder)	Option
Live tool	ER11 × 3	Standard
	ER16 × 3	Option
	ER11 × 4	Option
	ER16 × 4	Option <sup>(*)</sup>

### type 2.5 (Turning + Front-face + Back)



Tool Name	Size	Equipment
OD tool (Tool Holder)	□ 12.7 × 6 (130mm max.)	Standard
ID tool	ER11 × 5 (Double drill holder)	Standard

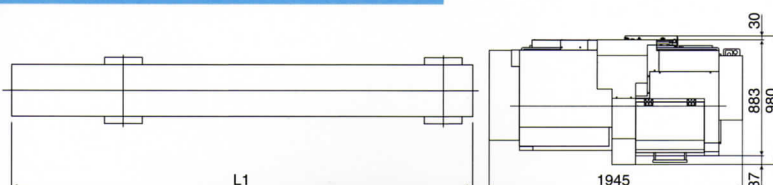
### type 3 (Turning + Cross + Front-face + Back)



Tool Name	Size	Equipment
OD tool (Tool Holder)	□ 12.7 × 5 (130mm max.)	Standard <sup>(*)</sup>
ID tool	ER11 × 4 (Double drill holder)	Standard
	ER16 × 3 (Double drill holder)	Option
Live tool	ER11 × 3	Standard
	ER16 × 3	Option
	ER11 × 4	Option <sup>(*)</sup>
	ER16 × 4	Option <sup>(*)</sup>

(\*) In case that you choose 4 Live tool, the maximum number of OD tool (Tool Holder) is 4.

#### Floor Plan



Bar feeder	Diameter	L1 (mm)		
		2.5M	3.0M	4.0M
Z-16	16φ	3,164	3,664	4,664
ASR X-16Z	16φ	3,172	3,672	4,672
S163	16φ	3,108	3,608	4,608
OS163E	16φ	3,420	3,870	4,725

	Specification Item	16SB6			
		type1	type2	type2.5	type3
Max. Machining Capacity	Machining diameter	φ16mm			
	Machining length	Fixed Bush (160mm)		Rotary Bush (110mm)	
	Max. Parts unloading length	160mm		80mm	
Main Spindle	Main spindle through-hole diameter	φ17mm			
	Main spindle RPM (\$1)	300~1000r.p.m (~8000r.p.m Rotary Bush)			
	Main spindle RPM (\$2)	-		200~7000r.p.m	
	Max. Back spindle chuck diameter	φ16mm			
\$1	Max. no. of tools (as standard)	11	12	16	16
	OD tool (□12.7×130mm max)	7	5	6	5
	Frontal hole ER11 (*)	4		5	4
	Live tool ER11 (as standard)	-	3	-	3
	Max. frontal drill diameter	φ7mm			
	Max. frontal drill length	30mm			
	Max. frontal tap diameter	M6			
	Max. live tool spindle drill diameter	-	φ7mm	-	φ7mm
	Max. live tool spindle tap diameter	-	M5	-	M5
	Live main tool spindle	-	200~8000r.p.m	-	200~8000r.p.m
\$2	Frontal hole ER11	-		5	4
	Max. frontal drill diameter	φ6mm			
	Max. frontal tap diameter	M5			
Rapid feed	Rapid feed speed rate	36m/min			
	Min. command unit	0.0001mm			
	Main spindle C-axis min. command unit (\$1,\$2)	0.001°			
Motor	Main spindle motor	2.2kW (Both use for C1)			
	Live tool motor	-	0.4kW	-	0.4kW
	Back main spindle motor	-		0.75kW (Both use for C2)	
	Axis feed motor X1, Y1, Z1, Z2	0.5kW			
	Coolant pump	0.25kW			
	Lubricant pump	0.003kW			
	Hydraulic pump	-		0.75kW	
	Dimensions and Others	Main spindle center height	1000mm		
Input power capacity		4.43kVA	6.4kVA	6.8kVA	7.1kVA
Pneumatic pressure & flow rate		0.6MPa/40L			
Coolant tank		70L			
Lubricant tank		0.8L			
W×D×H		1945×980×1655			
Weight (incl. options)		1.7t			
NC Standard Function		MITSUBISHI NC	M70A		
	NC display (8.4 color TFT LCD)				
	Machining program memory capacity 230KB (600 m)				
	Number of Tool off-set correction (40 pairs)				
	Background programming editing function				
	Main spindle C-axis function (\$1,\$2 C-axis of the simple belt)				
	User macro function				
	Tool nose wear compensation				
	Corner chamfering/Corner rounding				
	Fixed cycle				
	Complex fixed cycle				
	Geometric commands				
	Operation manual				
	Serial In/Output interface				
	CF card interface				
	10 nanometers Interpolation control				

Standard Accessories	
Frontal drill attachment (ID tool unit)	φ17(ER11)
Tool holder (OD tool)	□12.7
Chuck sleeve	P16
Chuck spring	P16
Spindle cap	P16
Working light (High luminous LED)	
Automatic lubricator	
Parts catcher	
Parts box	
Cut-off tool breakage detector	
Automatic power interception	
Coolant cut-off detector	
Main spindle overload detector	
Door safety interlock	
Leveling pads	

Optional Accessories	
3 Live tool unit	ER16
4 Live tool unit	ER16
4 Live tool unit	ER11
Synchronous rotary guide bush	
Synchronous rotary guide bush drive unit	
Tool for synchronous rotary guide bush	
Fixed guide bush	
Tool presetter 10	
Spindle tube liner for small parts	Rotary type
Drill holder	φ22Doudle (With NA nut)
Tap holder	φ22Doudle (With NA nut)
Tap breakage detector	φ17/φ22
Back tool unit	φ17/φ22
Parts support device	type1/type2
Parts conveyor	type3
Signal warning light	3-Stage
MITSUBISHI NC manual	CD-ROM/Book
Working tool set	

(\*)1)type1/2: Single drill holder  
type2.5/3: Double drill holder

Spec. type	\$1		\$2
	Turning	Cross drill	Back main spindle
type1	○	×	×
type2	○	○	×
type2.5	○	×	○
type3	○	○	○

The above-mentioned machine capability is for the case when work material is SUS303.

Depending on the processing condition such as the quality of work material and the tools to be used, machine capabilities values may differ from the above-mentioned values.

Note: The specification is based on the specifications applied within Japan. Specifications are subject to change without notice.

Note: This product could be classified as strategic item or other export regulated under the Foreign Exchange and Foreign Trade Law. Contact our sales representative when exporting this product.

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