

**Swiss-Type CNC
Automatic Lathes**

NN-13 Series



NOMURA

The leader in turning machine productivity, versatility and profitability

NN-13 Series

Swiss-Type CNC Automatic Lathes

When you choose Nomura - you choose precision, reliability, and innovation.

In return, you receive machining capabilities and performance that have set the standard for the entire swiss turning industry; an array of standard equipment that no competitor can match; and a wide range of options to further match Nomura's capabilities to your exact needs.

The NN-13 Series consists of four configurations of amazingly compact Swiss-type screw machines possessing unrivaled machining capabilities and interchangeability to handle almost any precision turning operations.

Nomura's extensive experience in designing both traditional and cam-operated turning machines combined with the best of today's Japanese manufacturing technology, has made the NN-13 Series the industry leader - and the standard by which all other Swiss-type screw machines are judged.

Only Nomura Can Meet the Most Demanding Turning Operations with:

Machining Flexibility

The Nomura NN-13 Series comes in four models designed to meet any machining requirement.

The NN-13T

For turning and end working capabilities featuring 7 turning tools and 3 end working tools.

The NN-13TB

Features the same tooling configuration as the NN-13T but adds Sub Spindle and 3 Face/Back working tools to accomplish finish drilling work on the back side of a part.

The NN-13S

Combines 3 Cross Mill/Drill driven tooling positions, 3 end working positions and 5 turning positions for enhanced machining capabilities. An optional interchangeable Polygon turning unit can be mounted in place of the driven tools to add flexibility to your machine and can work on parts up to .5 inch.

The NN-13SB

Has the same tooling configuration and optional Polygon turning capability as the NN-13S but adds a Sub Spindle and 3 Face/Back working tools to accomplish finish drilling work on the back side of a part.

All Nomura NN-13 Series Turning Machines Feature:

- 40 meters of memory
- 40 pairs of tool offsets - which is 2.5 times the nearest competitor
- 100 variable commands - which no competitor features as a standard item
- MELDAS 520 32-bit CNC Control Unit
- Preset quick change tooling to reduce set-up times by about 60%
- Highly refined tool post and holders, which optimize thermal stability for micron accuracy
- Large workspace for ease of set-up
- Pneumatic Sub Spindle part ejector
- Cutoff tool breakage detector
- Rigid Tapping
- Unique 30° slant tool post
- Main Spindle Overload Detection

Ultra Precision Machining

The standard "Parts Support" on the NN-13T and NN-13S models prevents cut-off marks on the back of the finished workpieces and ensures that they drop directly into the parts chute.

The unique arrangement of the "Tool Post and Holders" optimizes thermal stability ensuring micron accuracy all day long.

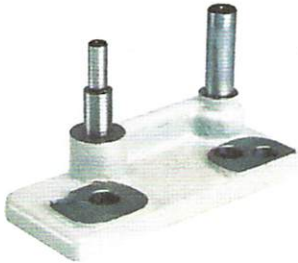
The innovative "35° Slant Tool Post" prevents chip build-up around the tools, allowing for uninterrupted operation and a sound and stable operation environment.

Unmatched Speed

Nomura's original "Tool Presetter" increases machine utilization through "off machine" tool presetting of quick change tooling, reducing the time required to replace and adjust tools up to 60%.



With an optional "Tool Centering Unit", available separately as a part of the presetter, you can easily upgrade your current presetter to be compatible with the NN-13 Series.

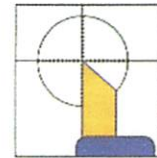
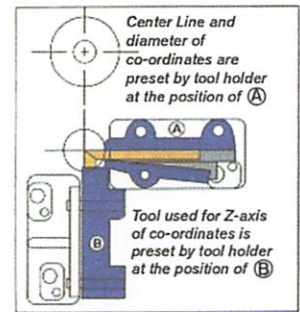


Microscope

The Nomura Tool Presetter is a microscope-type unit that presets a turning tool to the same gage length. This makes programming and operation much easier.

It also makes it unnecessary to "touch off" tools after they are mounted on the machine, making the tool-change process a 2-screw operation.

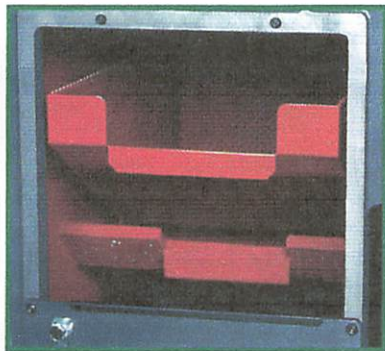
With this unit, tooling can be set up even while the machine is running parts. Tooling can be quickly changed and you can get back into operation fast.



Tool setting co-ordinates are easily set with speed and accuracy.

Improved Efficiency

A chip tank employing "Triple Filter Layers" keeps the coolant free of chips for consistently smooth work finishes.



Superior Ease of Operation



The "MELDAS 520LT CNC" unit is mounted to the back of the machine to facilitate easier maintenance of the control.

All controls and the new LCD screen are conveniently front-loaded at operator eye-level for ease of operation, including program editing.

Space allocation is always a vital issue in a workshop. The compact NN-13 Series has been specially designed to provide top performance in the "Least Possible Work Space". With all coolant and chips contained inside the enclosure, the space around the machine can also be optimally used.

Synchronous Rotary Guide Bush Unit

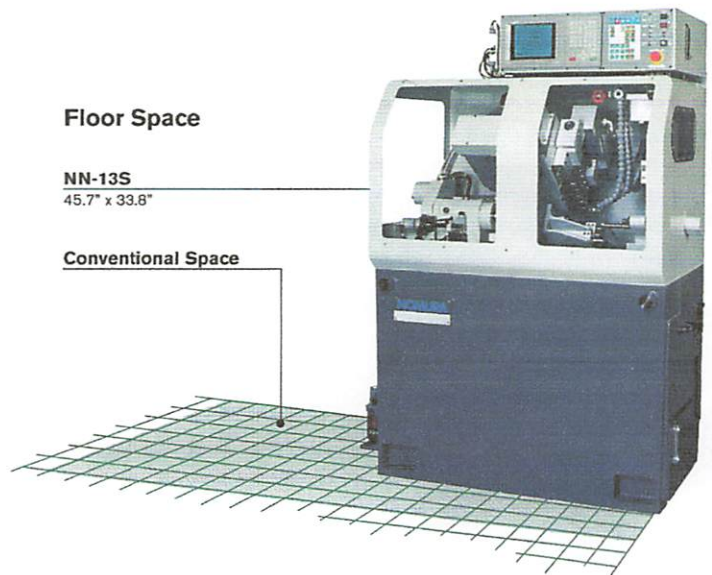
The Synchronous Rotary Guide Bush Unit is an original design by Nomura. It helps support the workpiece to allow for heavy duty cutting on both non-round bar shapes and hard to machine materials. The unit eliminates part seizure in the guide bushing and surface scratches on the finished part. The maximum part working stroke is 2.40" (60mm) along the Z-axis.



Floor Space

NN-13S
45.7" x 33.8"

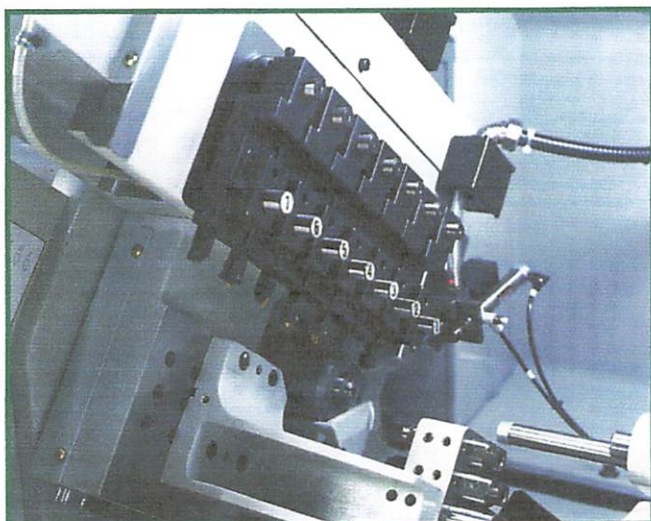
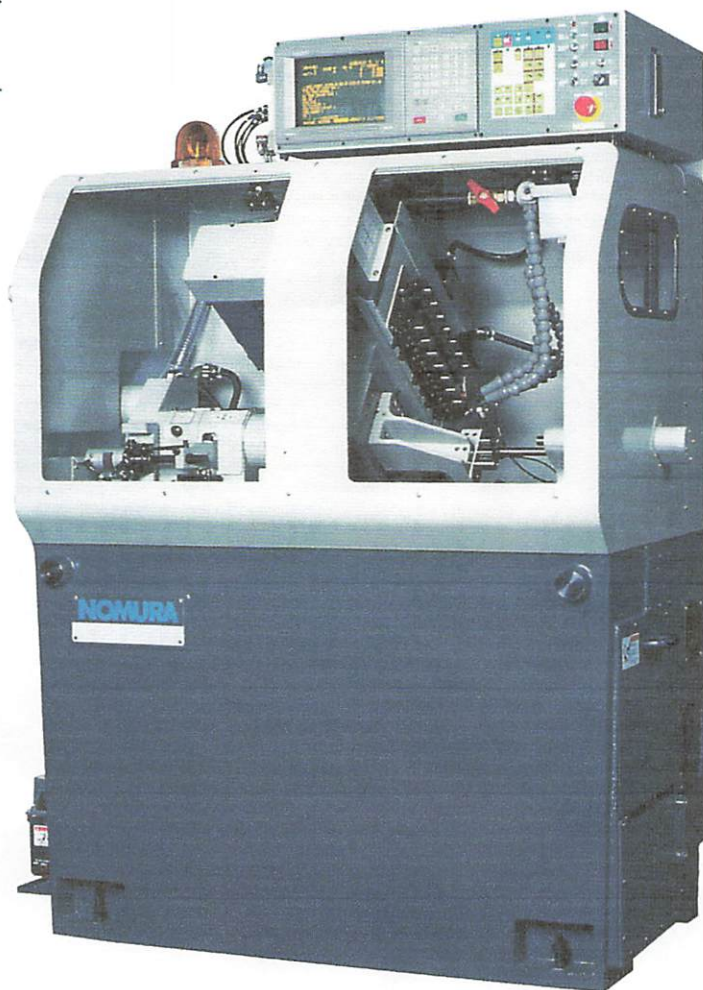
Conventional Space



NN-13T

Swiss-Type CNC Automatic Lathe

- Precision turning from OD to ultra-high speed
- 13mm slant bed Swiss lathe available at the price and size of a smaller 12mm lathe
- Tool Post features a unique 35° slant to prevent chip build up



7-tools Tool Post

The NN-13T/TB

Perfect for turning and end working capabilities featuring 7 OD Turning Tools and 3 end working tools.

The Nomura NN-13T/TB Swiss-type screw machines are designed to provide top performance in the least possible workspace with unmatched machining capabilities and interchangeability that will handle almost any precision turning operation from ordinary OD to ultra-high speed turning.

The NN-13T/TB is the only Swiss lathe that comes with preset, quick change tooling that saves up to 60% of setup time and boasts a host of standard machine options such as tool breakage detector, main spindle overload detection and rigid tapping on the machine.

You can buy a NN-13T/TB at the price and size of a 12mm lathe and it comes with an array of standard equipment that no competitor can match. This includes multiple repetitive canned cycles for drilling and turning, users macros, geometric programming, and math calculations within a program line. On top of those standard items there is also 40 meters of memory, 40 pairs of tool offsets - which is 2.5 times the nearest competitor, and 100 pairs of variable commands - which no competitor features as a standard item.

Pneumatics have replaced hydraulic chucking, work catching and spindle locking resulting in much quieter machines, and the large capacity chip tank helps assure uninterrupted operation.



NN-13TB

Swiss-Type CNC Automatic Lathe
with Sub Spindle

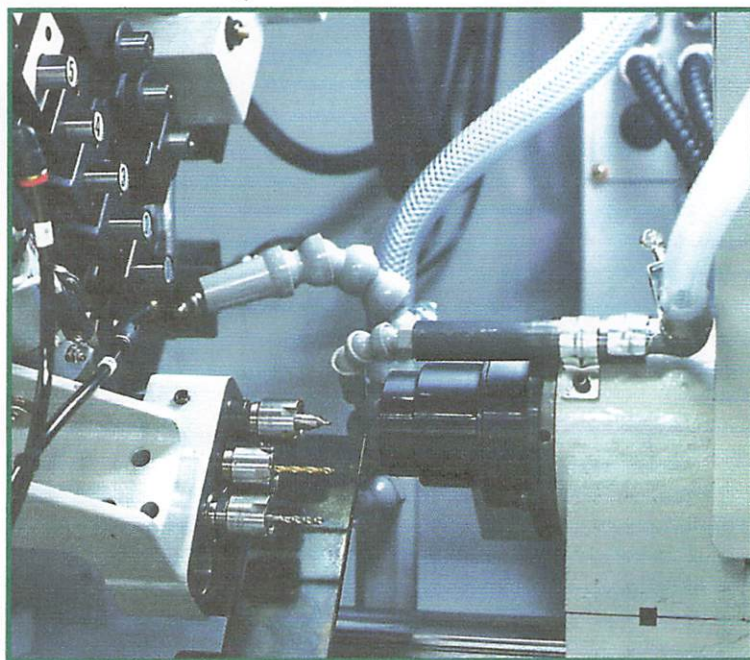
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The NN-13TB

Features the same tooling configuration as the NN-13T but adds a Sub Spindle and 3 Face/Back working tools.

The 3 Face/Back Drills Unit allows machining on the back of a workpiece while simultaneously working on the face of a new piece.

The Sub Spindle features a revolutionary new design that grips an almost finished workpiece over the bushing on the Main Spindle so that simultaneous machining can occur on the back and front of the piece.



3-Face/Back Drills Unit

NN-13T/TB Features:

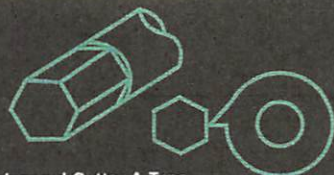
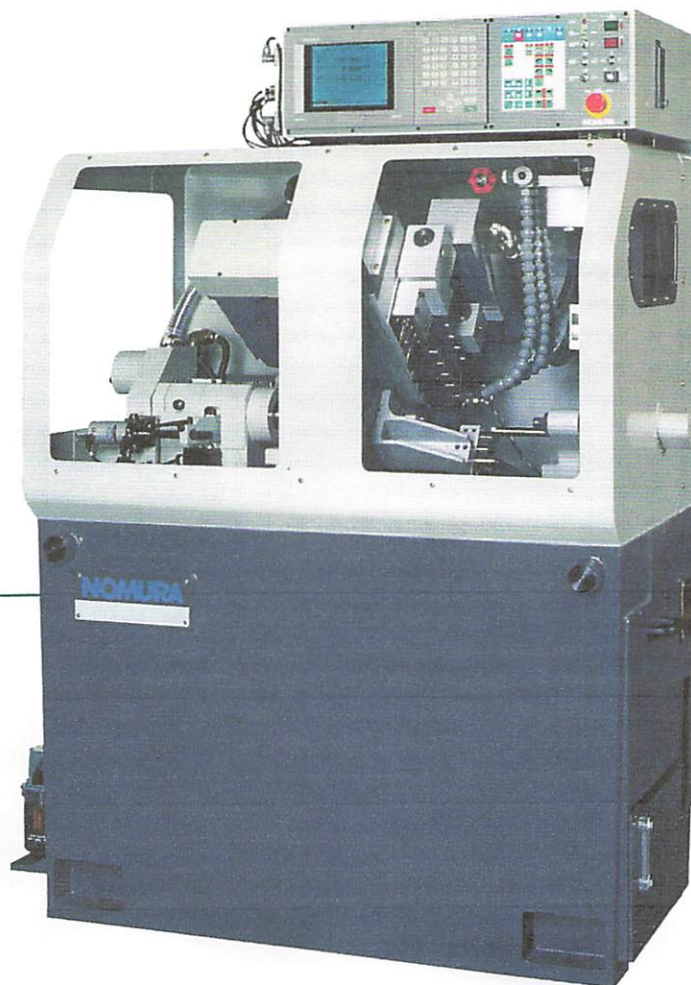
- 7 OD Turning Tools
- 13TB 3 Face/Back Drill Unit for simultaneous machining on Sub Spindle

NN-13S

Swiss-Type CNC Lathe

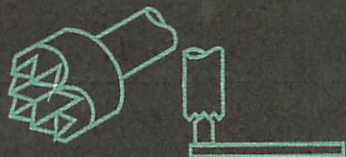
The NN-13S/SB

The NN-13S/SB combines 3 Cross Mill/Drill driven tooling positions, 3 end working positions and 5 turning positions for enhanced machining capabilities. An optional interchangeable Polygon turning unit can be mounted in place of the driven tools to add flexibility to your machine and can work on parts up to .5 inch.



Polygonal Cutter A-Type

Polygonal processing on the surface of product.



Polygonal End Cutter A-Type

Ditch processing at the end of product.



Work Samples A-Type



Polygonal Cutter B-Type

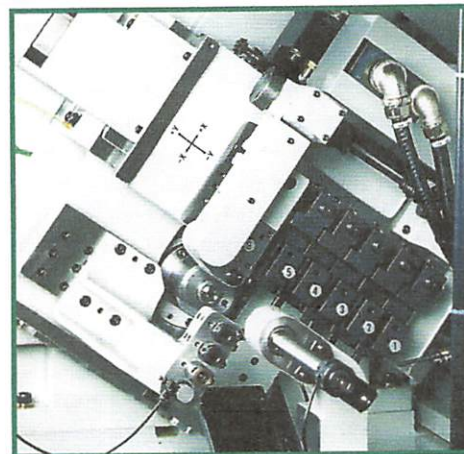
V-Ditch processing on the taper-end of product.

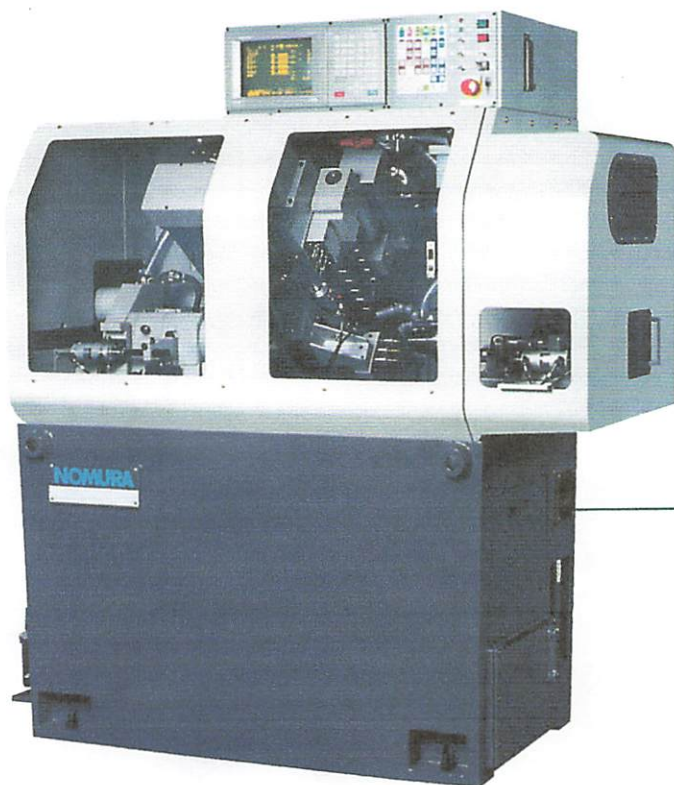


Work Samples B-Type

Polygon Cutter Attachment

This option features polygon turning or face end cutting of the workpiece. The unit drives a cutter in synchronous rpm with the main spindle. It can plane or polygon turn the OD or recess the end of a part. The unit can be easily programmed to work with either a rotating or locked spindle.





NN-13SB

Swiss-Type CNC Lathe with Sub Spindle

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The NN-13SB

Has the same tooling configuration and optional Polygon turning capability as the NN-13S but adds a Sub Spindle and 3 Face/Back working tools to accomplish finish drilling work on the back side of a part.

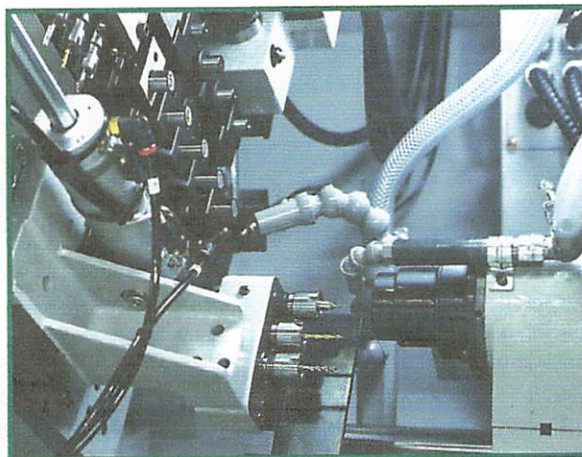
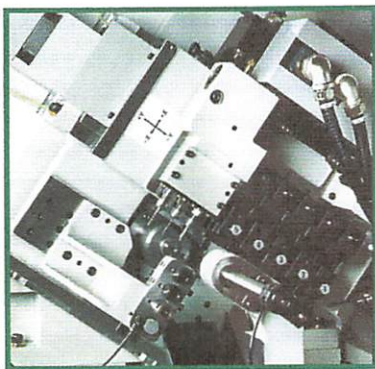
The Sub Spindle features a revolutionary new design that grips an almost finished workpiece over the bushing on the Main Spindle so that simultaneous machining can occur on the back and front of the piece. The 3 Face/Back Drills Unit allows machining on the back of a workpiece while simultaneously working on the face of a new piece.

Flexible Machining Application

Selection of either "Cross Drill Attachment" or "Polygon Cutter Attachment" enhances versatility of the NN-13S/13SB. Either unit can be optionally selected and assembled on the standard tool post, allowing the operator easy access to drive tools during setup. They can be factory-installed, retrofitted or replaced with each other in the field after the machine's installation.

Cross Drill Attachment

The unit enables precision cross drilling, driving 3 different drills cross-way against the bar-stock work material. This option comes with an "ER-11 Drill Chuck" plus "3 Drill Sleeves".



3-Face/Back Drills Unit

NN-13SB Features:

- 5 OD Turning Tools and 3 Cross-Driven Tools
- 13SB 3 Face/Back Drill Unit for simultaneous machining on Sub Spindle
- Optional polygon turning capacity

Major Specifications	NN-13T	NN-13TB	NN-13S	NN-13SB
Max. Machining Diameter	0.512" (13mm)			
Max. Working Length	3.94" (100 mm) - 50 mm with rotary guide bush			
Max. Drilling Diameter	0.315" (8mm)			
Max. Tapping Diameter	1/4-20 UNC (M6)			
Main Spindle Through Hole Diameter	0.551" (14mm)			
Main Spindle Speed	300 ~ 10,000 rpm			
Main Spindle Motor	2 HP			
Main Spindle Center Height	39.4" (1,000 mm)			
Number of OD Tools	7			5
Standard OD Tool Shank Size	0.375" sq x 5.12" long			
Number of End Working Tools	3			3
Face/Back Drill Maximum Collet Diameter	0.39" (10mm) (ER-16)			
Double Drill Holder Diameter	0.906" (23mm)			
Number of Live Tools	NA			3
Live Tool Spindle Speed	NA			200 ~ 8000 rpm
Live Tool Spindle Motor	NA			0.4 kW
Max. Live Tool Collet Diameter	NA			0.276" (7mm) (ER-11)
Max. Working Diameter on Sub-Spindle	NA	0.512" (13mm)	NA	0.512" (13mm)
Max. Working Length on Sub-Spindle	NA	0.512" (13mm)	NA	0.512" (13mm)
Max. Drilling Diameter on Sub-Spindle	NA	0.24" (6mm)	NA	0.24" (6mm)
Max. Tapping Diameter on Sub-Spindle	NA	12-24 UNC (M5)	NA	12-24 UNC (M5)
Sub-Spindle Speed	NA	200 ~ 8000 rpm	NA	200 ~ 8000 rpm
Sub-Spindle Motor	NA	0.4 kW	NA	0.4 kW
Number of End Working Tools on Sub-Spindle	NA	3	NA	3
Back Spindle Z2 Stroke	NA	6.69" (170mm)	NA	6.69" (170mm)
Back Spindle Z2 Rapid Feedrate	NA	590 ipm (15m/min.)	NA	590 ipm (15m/min.)
Back Spindle Z2 Motor	NA	0.5 kW	NA	0.5 kW
Rapid Feedrate X & Y Axis	551 ipm (14 m/min.)			
Rapid Feedrate Z Axis	590 ipm (15 m/min.)			
Minimum Setting Increment X Axis (Dia.)	0.0001" (0.001 mm)			
Minimum Setting Increment Y & Z Axis	0.0001" (0.001 mm)			
X, Y, Z Axis Motor	0.5 kW			
Coolant Pump Motor	0.25 kW			
Lubrication Pump Motor	3 W			
Air Supply Requirement	71 psi			
Air Consumption	2.64 gpm			
Coolant Reservoir Capacity	23 gal.			
Coolant Viscosity Requirement	ISO VG32 or Less			
Total Power Consumption	4.5 kVA	4.9 kVA	4.9 kVA	4.9 kVA
Machine Floor Space Requirement	45.7" (L) x 33.8" (W)	55.9" (L) x 33.8" (W)	45.7" (L) x 33.8" (W)	55.9" (L) x 33.8" (W)
Machine Height	68.9" (H)	67.9" (H)	68.9" (H)	67.9" (H)
Machine Weight	2,445 lbs. (1,100kg)	2,756 lbs. (1,250kg)	2,445 lbs. (1,100kg)	2,756 lbs. (1,250kg)

STANDARD EQUIPMENT

Machine:

Quick Change Tool Holders
Cutoff Tool Breakage Detector
Automatic Power Shutoff
Synchronous Rotary Guide Bushing
Part Catcher
Bar Feeder Interface
Coolant Unit
Automatic Lubrication Unit
Low Coolant Level Detector
Work Light
Rotary Encoders
Leveling Pads
Tool Holders

13SB/5 pcs. 13TB/7 pcs.

3-Face/Back Drill Holders
ER-16(2 Drilling & 1 Tap)

Bushing Holders:

11mm, 14mm, 16mm, 22mm

Bushing Adjustment Nuts:

M10, M14, M20

Spindle Cap

Chuck Sleeve

Chuck Spring

**Main Spindle Indexing 5 Degree

** Cross Drilling Unit - 3 Drill Holders

CNC:

Automatic Chamfering
Automatic Corner Rounding
Geometric Programming
User Macros
Background Editing
40M Memory
Tool Offsets - 40 Pairs
I/O Interface
Multiple Repetitive Canned Cycles
Drilling Cycles
Tool Nose Radius Compensation
100 Variables
Main Spindle Overload Detector

(** for 13SB only)

OPTIONS

Machine:

Fixed Guide Bushing
Tap Breakage Detector Main Spindle
Tap Breakage Detector Main
& Sub-Spindle
Guide Bushing Breakage Detector
Warning Light
Bar Feeder
Pipe Type Parts Unloader
OD-20mm, ID-8mm, 11mm, 13mm
Tool Presetter with Microscope
Special Machine Color
Chip Cleaning Unit For Face Drill Unit
Spindle Tube Liner for Small Bar
Stock (10mm)
13S Centering Unit
**Thread Milling
**Back Turning Tool Including
Centering Gauge
**Polygon Turning Unit

CNC:

Tool Life Monitoring
40M Additional Memory: 80M Total
Constant Surface Speed Control

(** for 13SB only)

Nomura Swiss Turning Machines are available exclusively through KGK International.



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