

GENERAL NUMERIC

GRAPHIC DISPLAY CONFIRMATION AND DIRECT DRAWING DIMENSION PROGRAMMING

The GN6TB, already a leading member in the GENERAL NUMERIC lineup of CNC systems, has been significantly enhanced to offer even higher performance and easier operation. Among the new features incorporated in the GN6TB are graphic display functions and direct drawing dimension programming. The new GN6TB is ideally suited to meet a wide range of user needs.

TURNING CONTROL GN6TB-2



CONTENTS

ADDITIONAL OPTIONAL BLOCK SKIP	8	GRAPHIC DISPLAY	5
AUTOMATIC ACCELERATION/ DECELERATION FOR FEED	9	HANDLE INTERRUPTION	4
AUTOMATIC COORDINATE SYSTEM SETTING	7	HIGH PERFORMANCE, EXTREMELY HIGH RELIABILITY	9
AUTOMATIC INSERTION OF CHAMFERING AND CORNER ROUNDING	7	HIGHLIGHTS	3
AUTOMATIC RECOGNITION OF EIA OR ISO (ASCII)	7	INCH/METRIC CONVERSION	7
AUTOMATIC REFERENCE POINT RETURN AND CHECK	7	INCREMENTAL FEED	7
AUTOMATIC TOOL COMPENSATION	8	LEAST INPUT INCREMENT 1/10	4
3-AXIS/4-AXIS CONTROL	4	MAX. RAPID TRAVERSE RATE	4
BUILT-IN TYPE 1	3	MIRROR IMAGE FOR DOUBLE TURRETS (G68, G69)	7
BUILT-IN TYPE 2	3	MENU SWITCH	4
CIRCULAR INTERPOLATION BY RADIUS DESIGNATION	6	MULTIPLE REPETITIVE CYCLES FOR VARIOUS APPLICATIONS	6
COMBINED USE OF ABSOLUTE AND INCREMENTAL DIMENSION DATA WITHIN THE SAME BLOCK	7	PART PROGRAM STORAGE AND EDITING	5
CONSTANT SURFACE SPEED CONTROL	8	PROGRAM RESTART	7
CONTINUOUS THREADING	4	PENDANT TYPE	3
CRT CHARACTER DISPLAY AND KEYBOARD-TYPE MANUAL DATA INPUT (MDI)	7	RAPID TRAVERSE OVERRIDE	7
CUSTOM MACRO	5	RESOLVER AND INDUCTOSYN INTERFACE	5
DECIMAL POINT PROGRAMMING	6	RUN HOUR DISPLAY	8
DIRECT DRAWING DIMENSION PROGRAMMING	4	SEQUENCE NUMBER COMPARISON STOP	4
DIRECT INPUT OF OFFSET VALUE MEASURED	7	SKIP FUNCTION	9
DIRECT PROGRAMMING IN INCH/REV. or MM/REV.	7	SPECIFICATIONS	9 & 10
EASIER MAINTENANCE	9	STORED STROKE LIMIT	8
ELECTRIC SPINDLE ORIENTATION CONTROL	9	TEMPORARY STOPPING OF THE THREAD CUTTING CYCLE ..	6
EXTERNAL TOOL COMPENSATION	8	THREAD CUTTING BY E6-DIGIT COMMAND	9
EXTERNAL WORK NUMBER SEARCH	8	TOOL GEOMETRY OFFSET AND TOOL WEAR OFFSET	4
FEED RATE SINE CURVE CONTROL	4	TOOL LIFE MANAGEMENT	5
FREE-STANDING TYPE	3	TOOL NOSE RADIUS COMPENSATION	6
GENERAL NUMERIC CASSETTE	8	TURNKEY SYSTEM	3
GENERAL NUMERIC PC	9	UNBUNDLED TYPE	3
GENERAL NUMERIC PPR	8	VARIABLE LEAD THREAD CUTTING	8
		WORK COORDINATE SYSTEM SHIFT	7



FREE-STANDING TYPE

59(H)x23.6(W)x27.5(D) inch. Allows you to configure an NC-independent CNC machine tool in which the main control unit, tape reader with reels, velocity control units, and MDI/DPL unit are all incorporated in the cabinet. Machine tool and CNC can be handled separately.



BUILT-IN TYPE 1

47.2(H)x30.3(W)x10.2(D) inch. Allows you to configure a CNC machine tool with integrated electrical and mechanical systems, in which the main control unit, tape reader without reels, and MDI/DPL unit are incorporated in the cabinet, while the velocity control units are connected separately on the machine.



BUILT-IN TYPE 2

43.3(H)x15.7(W)x33.5(D) inch. Allows you to configure a CNC machine tool with integrated electrical and mechanical systems in which the main control unit, tape reader without reels, and velocity control units are incorporated in the cabinet, while the MDI/DPL unit is connected separately on the machine.



UNBUNDLED TYPE

29.5(H)x22.0(W)x13.0(D) inch. Allows you to configure a small CNC machine tool with integrated electrical and mechanical systems in which only the main control unit is incorporated in the cabinet. The velocity control units, tape reader, MDI/DPL unit, and other units are all connected separately on the machine.



PENDANT TYPE

23.6(H)x23.6(W)x13.8(D) inch. Allows you to configure a CNC machine tool in which the main control unit is incorporated in a pendant operator panel, eliminating the need for additional space for the control unit on the machine side.

Tape reader and velocity control units are connected separately on the machine.



TURNKEY SYSTEM

Allows you to configure a CNC machine tool by simply connecting the turnkey system with the appropriate machine tool.

The main control unit, velocity control units, power box, machine operator's panel, MDI/DPL unit, and other units are all included in the turnkey system.

80 ft./min. (24m/min.) MAX. RAPID TRAVERSE RATE

The rapid traverse rate can be increased up to 80 ft./min. (24m/min.) for reduced machining time.

LEAST INPUT INCREMENT 1/10

The least input increment can be changed to 0.00001 inch, or 0.0001 mm. The new least increment is useful for a precision lathe.

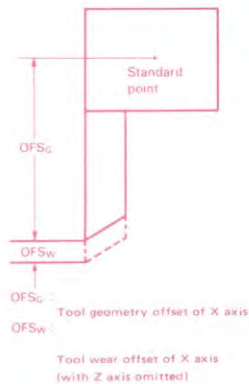
CONTINUOUS THREADING (option)

It is possible to designate the threading blocks (G32, G34) continuously. The dead time in the pulse distribution between the threading blocks is eliminated.



TOOL GEOMETRY OFFSET AND TOOL WEAR OFFSET (option)

The tool offset is divided to the offset for compensating the tool shape or the tool mounting position (tool geometry offset), and the offset for compensating the tool nose wear (tool wear offset). These can be set individually. This feature greatly facilitates the machining. The operator only needs to set and change the wear offset (small value).

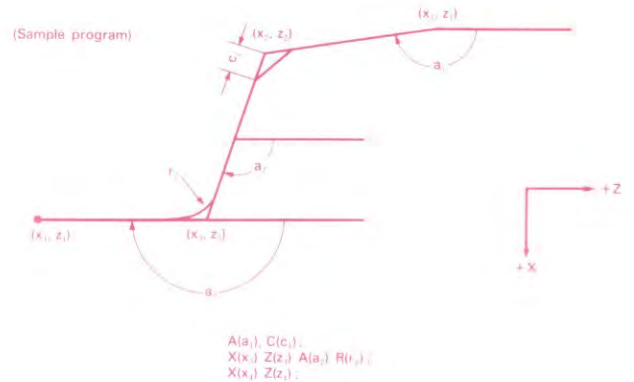


HANDLE INTERRUPTION (option)

During automatic operation, it is possible to adjust the position of the tool with the manual pulse generator, without the need for mode changing. Pulses from the manual pulse generator are added to the automatic operation commands without interrupting machining.

DIRECT DRAWING DIMENSION PROGRAMMING (option)

The angle of straight line, chamfering value, corner radius value, etc. indicated on the machining drawing can be used directly in programming. Further, it is possible to insert chamfering and corner rounding between straight lines at an arbitrary angle.



MENU SWITCH (option)

With this feature, it is possible to carry out certain operations which earlier were controlled by switches on the machine operator's panel by setting via MDI and CRT. This permits simplification of the operator's panel.

Sample functions controllable by menu switch:

- Single block
- Machine lock
- Display lock
- Auxiliary function lock
- Dry run
- Optional block skip
- Mirror image
- Absolute switching

3-AXIS/4-AXIS CONTROL (option)

Spindle-axis and turret-axis can be controlled. Spindle-axis can be controlled either by the spindle motor indexing or by an additional feed motor for continuous control with X and Z axes.

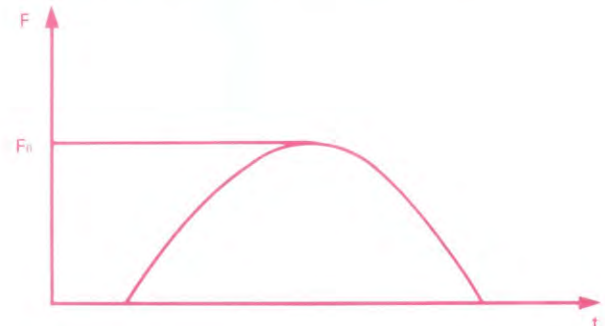
Turret-axis control permits quick tool post indexing and shortens cycle time.

SEQUENCE NUMBER COMPARISON STOP (option)

During programmed operation, when the block with a preset sequence number appears, operation ceases following execution of that block.

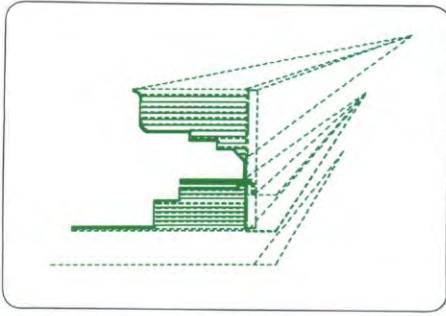
FEED RATE SINE CURVE CONTROL (option)

In case of a single axis (X or Z) command, the feed rate can be changed sinusoidally.



GRAPHIC DISPLAY (option)

The programmed locus of the tool being used can be drawn on the 9-inch CRT screen. Progress in machining can be checked by watching the locus displayed on the CRT screen.



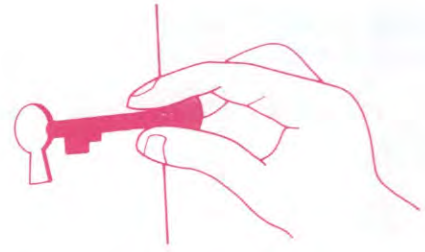
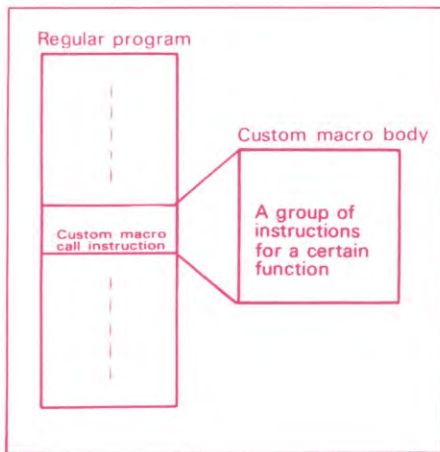
TOOL LIFE MANAGEMENT (option)

With this function, it is possible to designate a spare tool in advance and carry out automatic tool changing. The NC counts the tool utilization time or number of tool utilizations, and when the preset tool life is reached, the tool is automatically exchanged for a new one. Cutter compensation data can be automatically changed at this time.

CUSTOM MACRO (option)

With custom macro (body) the user can program, store, recall and execute his own automatic cycles, family programs, etc. In other words, the user or machine tool builder creates his own software, thereby creating unique software designed to match the needs of the given NC machine tool, for enhanced functional expandability and individually tailored work capability.

- variables can be used.
- inter-variable calculations (add/subt/mult/div, trigonometry, binary/decimal transformations, etc.) are possible.
- branching is possible.
- remote reading of actual variable values and output are possible. (patent pending)



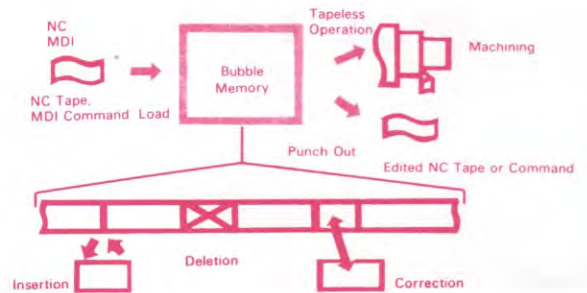
The registered custom macro can be locked in to prevent copying.

PART PROGRAM STORAGE AND EDITING (patent pending)

- stores part programs and subprograms in the memory.
Capacity: 66 ft. (20m) of tape information as standard and 132/262/1050/2100/4200 ft. (40/80/320/640/1280m) as options.
- allows tapeless operation by part program or custom macro stored in the memory and by calling the stored subprogram as required.
- searches, deletes and corrects stored words, and blocks and inserts new words.
- searches and deletes part programs stored in the memory.
- operates the machine by the corrected part program.
- Connecting GENERAL NUMERIC PPR with the RS232C interface, programs can be input and output. (option)

This simplifies and speeds up program debugging and correction. The trouble of setting or changing NC tape is eliminated.

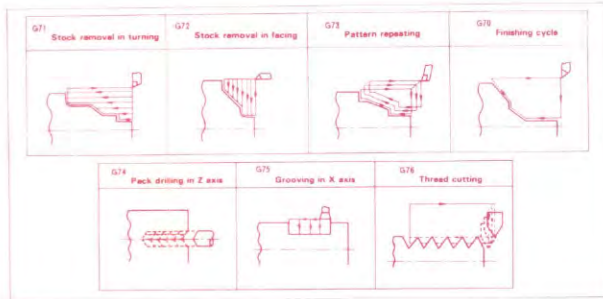
The part program stored in the memory can be quickly modified to machine under the most suitable cutting condition. Furthermore, a large program memory capacity is available. It can store machining programs for days or months just like DNC. As bubble memory is employed, memory is retained without battery back-up.



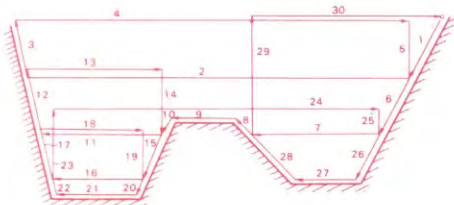
MULTIPLE REPETITIVE CYCLES FOR VARIOUS APPLICATIONS (option)

This is one of the G6TB's unique advantages. This macro-programming feature generates a series of cutting paths with simple tape commands. For instance, the data of the finished work shape decides the tool path for rough machining automatically.

(Multiple repetitive cycle A (G70, G71, G72, G76) or B (G70 - G76))



Rough-cutting cycles (G71, G72) can be carried out automatically for up to 10 concaves (pockets) (multiple repetitive cycle C (G70 - G76)).

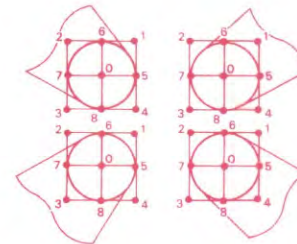
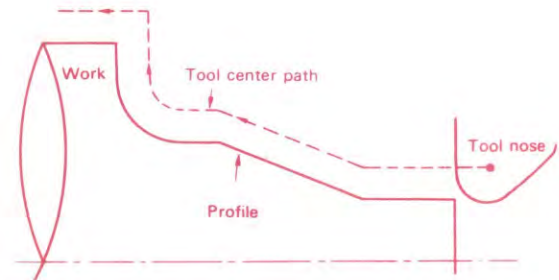


TEMPORARY STOPPING OF THE THREAD CUTTING CYCLE(option)

Temporary stopping during the thread cutting cycle (G92, G76) is possible. Thread cutting cycle is continued by cycle start button.

TOOL NOSE RADIUS COMPENSATION (option)

Tool center path is automatically generated from the tool nose profile by offsetting the tool nose radius, higher accuracy and finer adjustments are possible without the need for tedious calculations or the use of a computer. Furthermore, the setting point of the tool nose can be specified. Compensation and offset pairs can be expanded up to 32 pairs.



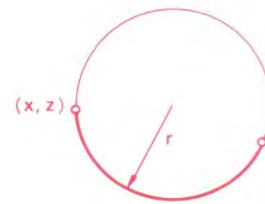
Setting point of tool nose

DECIMAL POINT PROGRAMMING

A decimal point can be used in the dimension word and is also displayed with it. Therefore, the dimensions, the positions and the feed rates can be verified at a glance.

CIRCULAR INTERPOLATION BY RADIUS DESIGNATION (option)

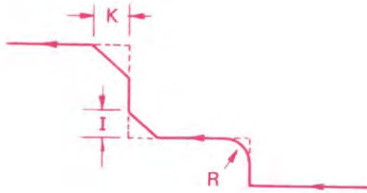
Circular interpolation is directly specified by the end point of an arc (X, Z) and the radius (R). Thus, no auxiliary calculations for center coordinates are necessary. (The conventional method using parameter I and K is also possible.)



G02 X_Z_R_*

AUTOMATIC INSERTION OF CHAMFERING AND CORNER ROUNDING (option)

Chamfering and corner rounding are programmed without computation.



MIRROR IMAGE FOR DOUBLE TURRETS (G68, G69) (option)

Using G68 instructions, subsequent X-axis command value codes can be reversed, for symmetry cutting (mirror image).

INCH/METRIC CONVERSION (option)

Any one of the following is possible.

1. Inch dimension input to a machine tool with inch ball screw.
2. Inch dimension input to a machine tool with metric ball screw.
3. Metric dimension input to a machine tool with inch ball screw.
4. Metric dimension input to a machine tool with metric ball screw.

As inch/metric conversion is designated by G code, erroneous operation caused by an operator's mistake can be eliminated.

COMBINED USE OF ABSOLUTE AND INCREMENTAL DIMENSION DATA WITHIN THE SAME BLOCK

For absolute dimensions X/Z word addresses are used, and for incremental dimensions U/W. In the same block, X/W or U/Z may be programmed, as well as X/Z or U/W.

DIRECT PROGRAMMING IN INCH/REV. or MM/REV.

Since feed is synchronized with the spindle revolution, surface finish remains unchanged in spite of any drift in the spindle speed. INCH/MIN. or MM/MIN. programming is also available.

AUTOMATIC RECOGNITION OF EIA OR ISO (ASCII)

After reading the first EOB code, either EIA or ISO code is automatically selected.

CRT CHARACTER DISPLAY AND KEYBOARD-TYPE MANUAL DATA INPUT (MDI) (patent pending)

The 9" CRT character display can simultaneously display various types of data, complete with explanatory sentences, thereby greatly enhancing operability and facilitating operating status confirmation. The following types of data setting and display are possible:

- input and display of NC command data.
- setting and display of tool offset values for each axis, with simultaneous display of current position.
- display of various alarm signals.
- display of self-diagnostic results.
- setting and display of various functions and parameters such as minimum increment values, rapid traverse speeds, acceleration/ deceleration time constants for rapid traverse for X and Z axes and backlash compensation values.

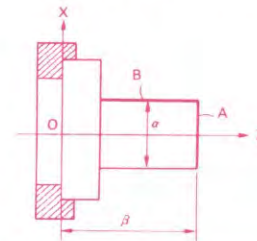
- display of current position (triple size numerics are displayed) and sequence number
- display of programs stored in the memory during cycle operation.
- display of remaining movement amount during cycle operation.
- display of programmed feed rate, spindle speed and actual feed rate including override.
- display of various data related to spindle speed and tool functions during cycle operation.
- in addition to the operating block, block programs are displayed for several preceding and subsequent blocks during memory operation.
- remote signals can be used for displaying custom (prepared by machine tool builder) alarm messages or message to the operator. (option)

PROGRAM RESTART (option)

With this function, it is possible to restart machining by setting the desired sequence number of the program being used. The NC stores in memory the modal status from the program start to the given sequence number. To attain a desired M, S, T-Code, first output the code on the MDI, then push the start button; the tool will automatically move to the start position and machining will restart.

DIRECT INPUT OF OFFSET VALUE MEASURED (option)

First cut the workpiece manually, taking measurement of the cut diameter or length. Then input this measurement value into the MDI, and the offset value will be set.



Cut side A or B. Measure α or β and input the measured value. The difference between this value and the coordinate value will then automatically be set as the offset value.

AUTOMATIC REFERENCE POINT RETURN AND CHECK

With this function, the tool is automatically returned to the reference point, through the point specified by the program. The lamp indicates whether or not the tool has been correctly returned. It is also possible to set a 2nd reference point. (option)

RAPID TRAVERSE OVERRIDE

One of 100%, 50%, 25% or a predetermined slow speed is selectable as a rapid traverse override. Therefore, tape verification has now become easier.

INCREMENTAL FEED

Movement amount per step by manual feed, 0.0001, 0.001, 0.01, 0.1, 1 and 10 inches (0.001, 0.01, 0.1, 1, 10 and 100mm) are available.

AUTOMATIC COORDINATE SYSTEM SETTING (option)

When the tool is returned to the reference point manually, the specified coordinate system is automatically set.

WORK COORDINATE SYSTEM SHIFT (option)

Shifting of the work coordinate system, i.e., the entire tool path required for machining, is possible for compensation of work chucking variations, tooling system variations, etc.

AUTOMATIC TOOL COMPENSATION (option)

When the tool nose comes in contact with a sensor located at a premeasured position, the tool offset value is automatically calculated and stored in the memory.

EXTERNAL TOOL COMPENSATION (option)

A measuring device is installed in the machine tool and the correct measured value of tool compensation is inputted to the NC, the offset value can be changed accordingly.

EXTERNAL WORK NUMBER SEARCH (option)

With this function, remote instructions (e.g., from the machine) can indicate selection from the NC memory of the machining program required and thereby execute that program.

ADDITIONAL OPTIONAL BLOCK SKIP (option)

By the addition of a number (1~9) after the slash code (/), it is possible to increase the variety of optional block skips to 9.

RUN HOUR DISPLAY (option)

Automatic operation time of the machine can be integrated and displayed to the second, reset is also possible. The result is easier progress management of work, tool management and maintenance.

GENERAL NUMERIC CASSETTE (option)

A compact and easy-to-use "GENERAL NUMERIC cassette" (patent pending) can be used for convenient transfer and storage of the NC command data. Bubble cassette 264/528 ft. (80/160m) tape equivalency. LSI cassette 66 ft. (20m) tape equivalency.



GENERAL NUMERIC PPR (option)

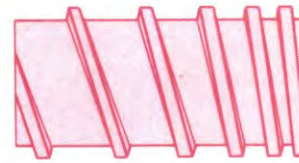
The GENERAL NUMERIC PPR can serve as an input/output device for the NC command data. It performs paper tape punching and reading as well as NC data printout.

- Printer
- Punch
- Reader



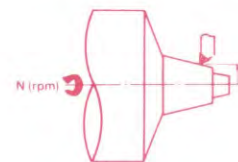
VARIABLE LEAD THREAD CUTTING (option)

Variable lead thread cutting is possible.



CONSTANT SURFACE SPEED CONTROL (option) (patent pending)

Maintains constant surface speed for superior surface finish, lengthens tool life, reduces tape length and of course simplifies programming. Even if the tool moves in rapid traverse, it is so designed that the spindle speed responds as quickly as possible to reduce the cycle time. (patent pending)



S0000

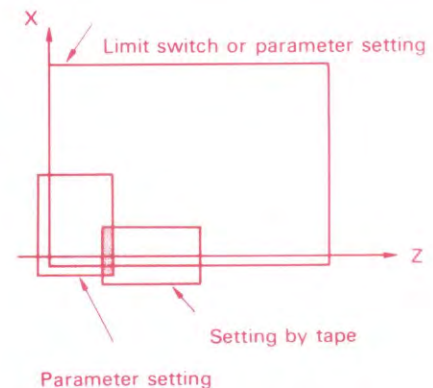
Surface speed V (unit m/min. or feet/min.) is programmed

The spindle speed is calculated by the equation $N (rpm) = \frac{V}{2\pi r}$ and controlled continuously.

STORED STROKE LIMIT (option) (patent pending)

A restricted area can be established by parameters or program. Parameters determine whether the tool is inside or outside the restricted area.

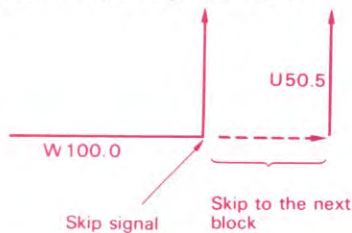
It can prevent the tool from colliding with the chuck or jig because of a programming mistake or erroneous operation.



SKIP FUNCTION (option)

Upon remote signaling, the remaining area of linear interpolation can be skipped and processing will proceed immediately to the succeeding block.

Use for skip feed of grinding machine, etc.



AUTOMATIC ACCELERATION/ DECELERATION FOR FEED (option)

Exponential type acceleration/deceleration can be carried out during cutting feed and JOG feed.

Use in combination with large-scale servo motors.

GENERAL NUMERIC PC (Programmable Controller) (option)

Thanks to unique functional instructions, the NC-incorporable GENERAL NUMERIC PC can carry out even complicated power sequence control functions with ease.

- MODEL A: 2,000-step
- MODEL B: 5,000-step

ELECTRIC SPINDLE ORIENTATION CONTROL (option) (patent pending)

When spindle orientation control is performed electrically without mechanical structure, reliability is increased and orientation time is substantially reduced.

This option is available only when a GENERAL NUMERIC Spindle Motor is used.

RESOLVER AND INDUCTOSYN INTERFACE (option)

For position feedback devices, not only pulse encoder and optical linear scale but also resolver and inductosyn can be used.

THREAD CUTTING BY E6-DIGIT COMMAND (option)

Lead of thread cutting can be designated by the unit of 0.000001 inch or 0.0001mm. Therefore, an odd-lead thread (e.g. unified thread) can be machined with high accuracy.

HIGH PERFORMANCE, EXTREMELY HIGH RELIABILITY

Overall reliability has been increased and the performance/cost ratio substantially improved with many pioneering techniques, such as the adoption of the "Bubble Memory", the latest memory device in addition to a high-speed microprocessor, several custom LSI's etc. Moreover, since cabinets are totally enclosed using a unique heat exchanger, they are long-lasting and highly reliable.

Even if a drift in the servo loop occurs, it is automatically compensated to maintain accurate positioning.

Furthermore, very careful selection of components and very extensive performance testing before shipment ensure long-lasting trouble free operation.

EASIER MAINTENANCE

Maintenance of the GN6TB is extremely easy.

- Thanks to self-diagnostics, internal operating conditions can be continuously monitored, data can be checked, etc. In the event of a malfunction, operation ceases immediately and the source of the malfunction is detected and displayed.

- All On/Off signals going out of and into the logics can be shown on the display even during cycle operation.
- All signals going out of and into the NC can be checked at the connectors.
- Any On/Off signal going out of the NC can be issued manually through the manual data input in a bit-by-bit manner.
- Various preset parameters such as acceleration/deceleration time constants and rapid traverse speed can be shown on the display.
- Causes for alarm are classified in detail (about 130 types) and shown on the display.
- NC operating status is continuously displayed based on 9 types of classification.
- Signals from pulse encoder and position encoder appear on the display.

SPECIFICATIONS

(Functions are upgraded.)

STANDARD

Automatic Acceleration/Deceleration:

Linear for rapid traverse, exponential for feed

Automatic Drift Compensation of Servo Position Loop

Auxiliary Function: M2

Auxiliary Function Lock

Backlash Compensation: Refer to Table 1

Buffer Storage

Canned Cycles: G77, G78, G79

Combined Use of Absolute/Incremental Programming in the same block of tape

Constant Tangential Feed Rate Control

Controlled Axes: 2 axes (X and Z)

Connection Unit: DI: 96 points, DO: 64 points

Decimal Point Programming

Dwell

Feed Rate Designation: Direct programming in inch/rev. or mm/rev. (Manual override 0 ~ 200%)
inch/min. or mm/min. is also possible

GENERAL NUMERIC Standard Operator's Panel

Block Delete

Cycle Start

Dry Run

Emergency Stop

Feed Hold

Feedrate Override (0-200%)

Incremental Feed: Movement amount per 1 step: 0.0001,
0.001, 0.01, 0.1 inch or 0.001, 0.01,
0.1, 1mm

Machine Lock

Manual Slide Movement Button (JOG and STEP Feed)

Optional Stop

Rapid

Rapid Traverse: Refer to Table 1

Single Block Operation

Z Axis Lock

In Position Check

Increment System: Refer to Table 1

Interlock

ISO Code Input: ISO 840 (Automatic recognition of EIA/ISO)

Keyboard-type Manual Data Input (MDI) and CRT

Character Display

Least Input Increment: 1/10

Maximum Programmable Dimensions:

±8 digits, refer to Table 1

NC Ready Signal

Override Cancel

Overtravel

Part Program Storage and Editing:

Capacity: (66" basic) 132/262/
1050/2100/4200 ft.
(20"/40/80/320/640/1280m) of
tape information are optional.
*Max. 49 ft. (15m) when stored pitch
error compensation is selected.

Positioning, Linear Interpolation, Circular Interpolation (Multiple quadrants)

Power Supply: AC 200/220V +10%, -15% or
AC 200/220/230/240/330/415/440/
460/480/550V +10%, -15%
3-phase, 50/60 Hz \pm 1Hz

Program Number Search

Programming of Absolute Zero Point

Radius Programming on X-axis.

Rapid Traverse Override: Fo, 25%, 50%, 100%

Reference Point Return A: Manual, Automatic (G27, 28, 29)

Remote Power ON/OFF

Remote Reset

Self Diagnosis

Sequence Number Display:

4 digits, independent display other
than data

Sequence Number Search

Servo Ready Signal

Simultaneously Controllable Axes: 2 axes

Spindle Encoder: Maximum speed 4000 rpm or 6000
rpm (optional)

Spindle Function: S2

Tape Code: EIA RS-244-A

Tape Format: Refer to Table 2

Tape Input of Offset Data

Tape Reader:

Without reels: 300 ch/sec (60Hz)
250 ch/sec (50Hz)
Photoelectric (Light emitting diodes)
Tumble box capacity: Free-standing type
cabinet, 99 ft.
(30m)
Built-in type 1 and
2 cabinets; 33 ft.
(10m)

Thread Cutting: Refer to Table 1

Tool Function: T2/T4

Tool Offset: \pm 6 digits, 16 pairs in memory

OPTIONS

Addition of Registerable Programs:

Total 191 (This option is possible only
when part program storage capacity is
264/1050/2100/4200 ft.)

Additional Connection Unit: For a Total of DI; 192 points and DO;
128 points

Additional Offset pairs A: 16 pairs (Total: 32 pairs)

Additional Offset pairs B: 48 pairs (Total: 64 pairs)

This option is possible only when part
program storage capacity is
262/1050/2100/4200 ft.)

Additional Optional Block Skip

Automatic Acceleration/Deceleration for feed

Automatic Coordinate System Setting

Automatic Insertion of Chamfering and Corner R

Automatic Tool Compensation

Bubble Cassette and Adaptor

Circular Interpolation by Radius Designation

Constant Surface Speed Control A: 12 bits binary output

Constant Surface Speed Control B: Analog output

Continuous threading

Custom Macro (Memory capacity for variables:

2.5 ft. (1m) of tape information)

Diameter Programming on X-axis

Direct Drawing Dimension Programming

Direct input of Offset Value Measured

Door Interlock

EIA G Code Set

External Data Input: Alarm message and operator message
can be displayed

External Tool Compensation

External Work Number Search

Feedback: Resolver/Inductosyn

Feedrate Sign Curve Control

GENERAL NUMERIC PPR: Printer, Punch, Reader

Graphic Display

Handle Interruption

Inch/Metric Conversion: Switchable by G codes

Incremental Offset

LSI Cassette and Adaptor

Manual Pulse Generator: Multiplication (\times 1, \times 10, \times 100) is
possible.

Menu Switch

Mirror Image for Double Turrets

Multiple Repetitive Cycles A: G70, 71, 72, 76

Multiple Repetitive Cycles B: G70 ~ 76

Multiple Repetitive Cycles C: G 70 ~ 76 (with x Axis Direction
Change Capability)

Part Program Storage and Editing

B) 132 ft., 40m

D) 262 ft., 80m

D) 1050 ft., 320m

E) 2100 ft., 640m

F) 4200 ft., 1280m

Program Restart

Programmable Controller:

GENERAL NUMERIC PC-MODEL A
2000 steps
GENERAL NUMERIC PC-MODEL B
5000 steps

Programmable Limit Switch

Reference Point Return B: Manual, Automatic (G27, 28, 29, 30)
Return to the 2nd reference point is also
available.

Remote Type Position Display

Run Hour Display

Servo Motors: GENERAL NUMERIC Servo Motor series

Servo Units: PWM or SCR

Skip Function

Spindle Encoder: 6000 RPM

Spindle Motors: GENERAL NUMERIC Spindle Motor series

Stored Pitch Error Compensation

Stored Program Verification

Stored Stroke Limit

Tape Punch Interface: EIA RS232C, FACIT4070 or ASR43/33

Tape Reader With reels:

Temporary Stop of Thread Cutting

Thread Cutting by 6-digit E code

3/4-Axis Control

Tool Geometry Offset and Tool Wear Offset

Tool Life Management

Tool Nose Radius Compensation

Variable Lead Threading Cutting

Work Coordinate System Shift

Table 1. Range of command values

	Metric thread for feed screw		Inch thread for feed screw		
	Metric input	Inch input	Inch input	Metric input	
Least input increment	0.001 mm/0.01 mm*	0.0001 inch	0.0001 inch	0.001 mm	
Least command increment	x: 0.0005mm/p z: 0.001mm/p	x: 0.0005mm/p (= 0.00002 in./p) z: 0.001mm/p (= 0.00004 in./p)	x: 0.00005 inch/p z: 0.0001 inch/p	x: 0.00005 in./p (= 0.00127mm/p) z: 0.0001 in./p (= 0.00254mm/p)	
Max. programmable dimensions	± 99999.999 mm	± 3937.0078 inch	± 9999.9999 inch	± 99999.999 mm	
Max. rapid traverse speed	24000 mm/min	24000 mm/min.	960 ipm	960.0 ipm	
Feedrate command	Per rev.	0.01 ~ 500.00 mm/rev	0.0001 ~ 50.0000 ins./rev	0.0001 ~ 50.0000 ins./rev	0.01 ~ 500.00 mm/rev
	Per min.	1 ~ 15000 mm/min	0.01 ~ 600.00 ins./min	0.01 ~ 600.00 mm/min	1 ~ 15000 mm/min
Thread lead command	F4	0.01 ~ 500.00 mm	0.0001 ~ 50.0000 inches	0.0001 ~ 50.0000 inches	0.01 ~ 500.00 mm
	E6	0.0001 ~ 500.0000 mm	0.000001 ~ 9.999999 ins.	0.000001 ~ 9.999999 inches	0.0001 ~ 500.0000 mm
Jog feedrate	1 ~ 2000 mm/min.	1 ~ 2000 mm/min.	0.02 ~ 40.00 ipm	0.02 ~ 40.00 ipm	
Incremental feed	0.001/0.01/0.1/1/10/100 mm/step	0.0001/0.001/0.01/0.1/1/10 inch/step	0.0001/0.001/0.01/0.1/1/10 inch/step	0.001/0.01/0.1/1/10/100 mm/step	
Rapid traverse override	Fo*, 25%, 50%, 100%	Fo*, 25%, 50%, 100%	Fo*, 25%, 50%, 100%	Fo*, 25%, 50%, 100%	
Tool offset	0 ~ ± 999.999 mm	0 ~ ± 99.9999 inch	0 ~ ± 99.9999 inch	0 ~ ± 999.999 mm	
Dwell time	0 ~ 99999.999 sec.				
Backlash compensation	0 ~ 0.255 mm	0 ~ 0.255 mm	0 ~ 0.0255 inch	0 ~ 0.0255 inch	

*Setting by parameter

Table 2. Detailed format classification (including options)

Metric system	O04. N04. G03. αL + 053. βL + 053. ID053. KD053. F050/F042/E034.S02/S05. T02/T04. L04. P053. M02*
Inch system	O04. N04. G03. αL + 053. βL + 044. ID044. KD044. F031/F034/E016.S02/S05. T02/T04. L04. P053. M02*

NOTE: THE ABOVE TABLES DO NOT APPLY TO THE 1/10 LEAST INPUT INCREMENT FUNCTION.

(Note) α: X or U, β: Z or W

GENERAL NUMERIC

**TOTAL VERSATILITY FOR ALL TYPES OF
NC MACHINING TAPE PREPARATION**

The GENERAL NUMERIC ("SYSTEM P-G") is an automatic NC tape preparation system specially developed by GN based on its many years of experience as a specialist in the field of automated machining. The SYSTEM P-G is ideal for handling the complete spectrum of NC machining tape preparation—from manual to automatic programming.

- Automatic programming using the FAPT language
- Conversational input of graphics (Symbolic FAPT)
- Manual tape preparation and editing/correction
- Automatic reading from drawings, using the digitizing tablet
- Automatic three-dimensional die sculpturing from two-dimensional section curves
- Expandable to mini-DNC by connection to the NC
- Wide range of I/O devices and software



PROGRAMMING SYSTEM P-G

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